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OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 84

NO 1 THRU 13

JUL- SEP -1898

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME LXXXIV.

JULY 5 TO SEPTEMBER 27, INCLUSIVE,

1898.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1898.

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ERRATA.

606,684, page 20, in heading, assignment, after the word "assignor" insert the words *of one-half.*

607,035, page 161, in heading, residence of inventor, for "Middlesborough" read *Middlesbrough.*

607,621, page 427, in heading, after residence of inventor, insert *assignor to the Westinghouse Electric and Manufacturing Company, same place.*

609,060, page 1010, in heading, assignment, after the word "assignor" insert the words *to himself and.*

609,083, page 1016, in heading, assignment, name of assignee, for "Charles K. Hendelman" read *Charles K. Henkelman.*

609,511, page 1189, strike out all after number—heading, drawing, and claims—and insert WITHDRAWN.

609,562, page 1206, strike out drawing and insert same at end of claim of 609,561, same page. This figure was inadvertently inserted in 609,562 and the drawing pertaining to the case omitted.

609,800, page 1301, in heading, assignment, residence of assignee, for "of same place" read *Philadelphia, Pa.*

610,261, page 1484, in heading, assignment, name of assignee, for "The Detrick Cigarette Machine Company of Baltimore City" read *the United States Standard Machine Company, of New Jersey.*

610,288, page 1496, in heading, residence of inventor, for "Morristown, Pa." read *Norristown, Pa.*

610,930, pages 1749–1750, strike out all after number—heading, drawing, and claims—and insert WITHDRAWN.

611,348, page 1918, in heading, date of filing application, for "June 30, 1897" read *July 30, 1897.*

611,447, page 1953, in heading, date of foreign patent, for "April 16, 1896" read *April 16, 1898.*

11,695, (Reissue,) page 1854, in heading, assignment, name of assignee, for "Société Anonyme l'Exploitation," etc., read *Société Anonyme d'Exploitation,* etc.

29,375, (Design,) page 1860, in heading, name of inventor, for "Fritz Handel" read *Fritz Haudel.*

29,423, (Design,) page 2012, strike out all after number—heading, drawing, and claim—and insert CANCELED.

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JULY—SEPTEMBER, 1898.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 84—No. 1. TUESDAY, JULY 5, 1898. PRICE—$5 per year.

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DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 25, 1898.

The attention of persons having business before this Office is called to the provisions of the act entitled "An act to provide ways and means to meet war expenditures, and for other purposes," approved June 13, 1898. That part of this act which relates to matters arising in this Office takes effect July 1, 1898.

The first sentence of section 9 of this act provides:

That in any and all cases where an adhesive stamp shall be used for denoting any tax imposed by this act, except as hereinafter provided, the person using or affixing the same shall write or stamp thereupon the initials of his name and the date upon which the same shall be attached or used, so that the same may not again be used.

The first sentence of section 14 provides:

That hereafter no instrument, paper, or document required by law to be stamped, which has been signed or issued without being duly stamped, or with a deficient stamp, nor any copy thereof, shall be recorded or admitted, or used as evidence in any court until a legal stamp or stamps, denoting the amount of tax, shall have been affixed thereto, as prescribed by law.

Section 15 provides:

That it shall not be lawful to record or register any instrument, paper, or document required by law to be stamped unless a stamp or stamps of the proper amount shall have been affixed and canceled in the manner prescribed by law; and the record, registry, or transfer of any such instruments upon which the proper stamp or stamps aforesaid shall not have been affixed and canceled as aforesaid shall not be used in evidence.

Schedule A contains the following provisions:

Certificates of any description required by law not otherwise specified in this act, ten cents.

* * * * * * * *

Mortgage or pledge, of lands, estate, or property, real or personal, heritable, or movable, whatsoever, where the same shall be made as a security for the payment of any definite and certain sum of money, lent at the time or previously due and owing or forborne to be paid, being payable; also any conveyance of any lands, estate, or property whatsoever, in trust to be sold or otherwise converted into money, which shall be intended only as security, either by express stipulation or otherwise; on any of the foregoing exceeding one thousand dollars and not exceeding one thousand five hundred dollars, twenty-five cents; and on each five hundred dollars or fractional part thereof in excess of fifteen hundred dollars, twenty-five cents.

* * * * * * * *

Power of attorney * * * to perform any and all other acts not hereinbefore specified, twenty-five cents.

Notice is hereby given that to all certificates required by law to be issued by this Office there must be affixed the proper revenue-stamp, to the value of ten cents, which must be provided or paid for by the party ordering the certificate, and that mortgages of patent-rights, and conveyances of such rights "in trust to be sold or otherwise converted into money, which shall be intended only as security, either by express stipulation or otherwise," which are offered for registration in this Office, and all powers of attorney, must be provided with the stamps required by this act. Unless every such mortgage, conveyance, or power of attorney be stamped in accordance with this act it will not be registered or entered on the records of this Office, but will be returned to the party offering it for compliance with the provisions of this act.

C. H. DUELL.
Commissioner.

Schedule of stamp taxes required upon papers filed in or issued by the United States Patent Office.

Certificates. (This includes certificates of registration of Trade-Marks, Labels, and Prints issued by the Patent Office)	$0.10
Mortgages, and conveyances in trust—	
Exceeding one thousand dollars and not exceeding fifteen hundred dollars	.25
And on each five hundred dollars or fractional part thereof in excess of fifteen hundred dollars	.25
Power of attorney	.25

Attorneys' Use of Assignment Records.

It has been brought to my attention that certain attorneys and other persons have made use of the assignment records to obtain the addresses of persons having applications pending before this Office, in order to send them letters and circulars offering to secure foreign patents or to transact other business which it may be presumed the attorneys of record in such applications are competent and willing to do. Such use of the assignment records is not a proper or legitimate use. These records are not open to the public for any such purpose.

It is hereby ordered that any attorney or other person who is known to make such use of the assignment records of this Office will be denied access thereto.

C. H. DUELL,
Commissioner.

CERTIFICATES OF REGISTRATION ISSUED JULY 5, 1898.

Labels.

6,621.—Title: "SUPREME CHIEF." (For Cigars.) *Theo. H. Freter*, Chicago, Ill. Application filed May 28, 1898.

6,622.—Title: "HIRSAU CLOISTER-DROPS." (For Medicine.) *Joseph Schlenker*, Chicago, Ill. Application filed May 31, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business June 28, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Between one and two months.			
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	Apr. 29	June 14	162
	Between two and three months.			
88	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	Apr. 4	June 20	244
102	XIX. Stoves and Furnaces	Apr. 4	June 18	277
255	XII. Mechanical Engineering, Store-Service, etc.	Apr. 6	June 17	189
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Apr. 1	June 14	215
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Mar. 29	June 14	237
89	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Mar. 28	June 14	273
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Apr. 11	June 11	194
158	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	Apr. 4	June 11	219
253	X. Carriages and Wagons	Mar. 31	June 11	248
	Between three and four months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Mar. 26	June 21	395
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	Mar. 1	June 17	304
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Mar. 19	June 16	239
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Mar. 12	June 15	379
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Mar. 10	June 14	370
246	I. Tillage and Fences	Mar. 9	June 14	263
243	XVIII. Steam-Engineering, etc	Mar. 5	June 14	296
120	IX. Hydraulics, Fire-Extinguishers, etc.	Mar. 2	June 14	273
80	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Mar. 9	June 13	475
98	XXI. Textiles, etc	Mar. 7	June 7	283
	Between four and five months.			
128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Feb. 1	June 21	190
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87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Feb. 26	June 16	142
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Feb. 21	June 16	354
240	VII. Velocipedes	Feb. 9	June 15	689
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211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Jan. 21	June 20	446
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Jan. 13	June 13	571
217	XXXIII. *Trade-Marks, etc.*, †Designs, Drafting, and Optics.	Jan. 3	June 1	241
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95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	Dec. 27	June 14	333
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215	XVII. Printing, Type-Writing Machines, and Linotyping.	Nov. 8	June 14	557
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Nov. 26	May 18	522

Total number of applications awaiting action 12,187

Under one month.			
†Designs	June 23	June 25	18
Between one and two months.			
*Trade-Marks	May 23	June 17	211

ISSUE OF JULY 5, 1898.

Patents	370—	No. 606,637 to No. 607,006, inclusive.
Designs	48—	No. 28,965 to No. 29,012, inclusive.
Trade-Marks	24—	No. 31,769 to No. 31,792, inclusive.
Labels	2—	No. 6,621 to No. 6,622, inclusive.
Prints	None.	
Reissues	2—	No. 11,676 to No. 11,677, inclusive.
Total issue	446	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	----	New Hampshire	4	1
Arizona Territory	----	----	New Jersey	24	2
Arkansas	1	----	New Mexico Territory	----	----
California	9	1	New York	63	3
Colorado	9	----	North Carolina	----	----
Connecticut	14	----	North Dakota	1	----
Delaware	1	----	Ohio	34	----
District of Columbia	2	----	Oklahoma Territory	2	----
Florida	----	----	Oregon	----	----
Georgia	1	----	Pennsylvania	45	----
Idaho	----	----	Rhode Island	5	----
Illinois	34	5	South Carolina	----	----
Indian Territory	1	----	South Dakota	----	----
Indiana	9	----	Tennessee	5	1
Iowa	6	----	Texas	9	1
Kansas	4	----	Utah	----	----
Kentucky	2	----	Vermont	1	----
Louisiana	1	1	Virginia	3	----
Maine	3	1	Washington	3	----
Maryland	10	----	West Virginia	----	----
Massachusetts	27	3	Wisconsin	7	1
Michigan	11	2	Wyoming	----	----
Minnesota	3	1	U. S. Army	----	----
Mississippi	1	----	U. S. Navy	----	----
Missouri	12	2	Total to citizens of the United States	371	25
Montana	1	----			
Nebraska	2	----			
Nevada	----	----			

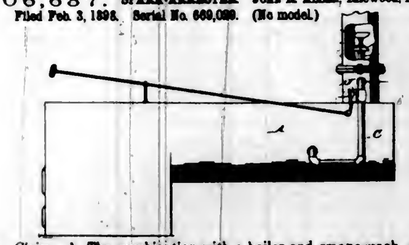
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	----	----	Italy	1	----
Australia	----	----	Mexico	1	----
Austria-Hungary	1	----	Netherlands	----	----
Barbadoes	----	----	Newfoundland	----	----
Belgium	----	----	New South Wales	----	----
Brazil	----	----	New Zealand	1	----
Canada	8	----	Norway	----	----
Cape Colony	----	----	Portugal	----	----
Chile, Republic of	----	----	Queensland	----	----
China	----	----	Russia	----	----
Colombia	----	----	Scotland	----	----
Cuba	----	----	South African Republic	1	----
Denmark	----	----	South Australia	----	----
Egypt	----	----	Spain	----	----
England	17	1	Sweden	2	----
Finland	----	----	Switzerland	2	----
France	9	----	Turkey	----	----
Germany	4	----	Victoria	----	----
Guatemala	----	----	Total to citizens of foreign countries	47	1
Hawaii	----	----			
India	----	----			
Ireland	----	----			

PATENTS

GRANTED JULY 5, 1898.

606,637. SPARK-ARRESTER. JOHN R. ALLEN, Idlewood, Ill. Filed Feb. 3, 1898. Serial No. 669,089. (No model.)

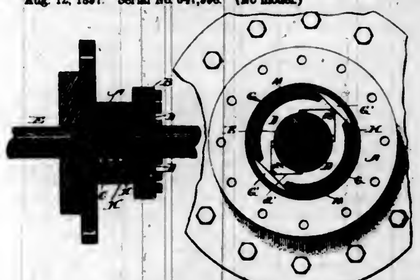


Claim.—1. The combination with a boiler and smoke-stack, of a pipe leading from the boiler below the water-line into the smoke-stack and extended vertically therein, an inverted cup upon the top of said pipe, having perforations in its upper surface, and a deflector adjustably mounted above these perforations, whereby the ejected water is deflected in all directions, substantially as described.

2. The combination with a boiler and smoke-stack, of a pipe leading from the boiler below the water-line into the smoke-stack and extended vertically therein, an inverted cup upon the upper end of said pipe, provided with perforations in its upper surface, a threaded stem projecting centrally and vertically from said cup, and a second cup threaded upon said stem with its curved side downward, whereby it performs the functions of a spreader or deflector for the water ejected through the perforations of the lower inverted cup, substantially as described.

3. The combination with a boiler and smoke stack, of a pipe leading from the boiler below the water line into the smoke-stack and extended vertically therein, an inverted cup forming the top of said pipe, a central, vertical, threaded stem leading from said inverted cup, a curved or cup-shaped deflector threaded upon said stem, a spring-closing valve in the pipe, a pivoted lever bearing at one end upon the stem of said valve, and a rod reaching from the opposite end of said lever into the cab of the engine, substantially as described.

606,688. METALLIC PACKING. JOHN BADNER, Omaha, Nebr., assignor, by direct and mesne assignments, to Thomas Wesley Mitchell, Missouri Valley, Iowa, and Walter Everett, Lyons, Nebr. Filed Aug. 12, 1897. Serial No. 647,998. (No model.)



Claim.—1. In a metallic packing, the combination with the segments arranged in parallel transverse planes and having interlocking projections with coöperating bearings d', d^3, of a support having oppositely-arranged parallel bearing-surfaces located in the plane of bodily movement of the segments and with which bearing-surfaces the ends of the segments are adapted to coöperate, whereby the lateral spreading or straightening out of the segments is prevented; substantially as described.

2. In a metallic packing, the combination with the segments constituting the packing rings arranged to break joints and with central projections extending between the ends of the adjacent segments, of an inclosing-ring support having oppositely-arranged parallel bearing-surfaces lying in the plane of bodily movement of the segment and with which bearing-surfaces the ends of the segments coöperate to prevent lateral spreading or straightening out of the segments; substantially as described.

3. In a metallic packing, the combination with the segments having straight parallel bearings at their ends, arranged to break joints and having central projections extending between the ends of adjacent segments with coöperating bearing-surfaces d', d^3, respectively, of an inclosing supporting-ring having parallel oppositely-arranged bearing-surfaces lying in the plane of bodily movement of the segments and with which bearing-surfaces the ends of the segments coöperate to prevent lateral spreading or straightening of the segments; substantially as described.

4. In a metallic packing the combination with the gland, the rod, the spring and the cover for the gland, of the segments formed with parallel end bearings and central projections fitting between the ends of adjacent segments, the loose inclosing supporting-ring having parallel bearings with which the bearings on the ends of the segments coöperate to prevent lateral spreading of the segments, the washer overlying the segments and against which the spring takes its bearing and supplemental springs for holding the segments in contact with the rod; substantially as described.

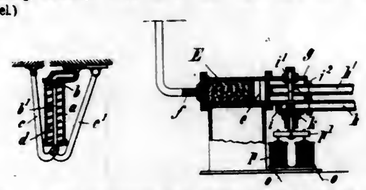
606,689. TRACE-HOLDER. GERHARD BAUMANN, Monmouth, N. J. Filed Aug. 28, 1897. Serial No. 649,876. (No model.)



Claim.—1. A trace-holder, comprising a metal socket adapted to engage over the end of a whiffletree, the outer portion of the said socket being flattened and reduced in thickness, a partition between the reduced portion and the inner portion of the socket, the said partition being adapted to bear against the end of the whiffletree, the said reduced portion of the socket being of box-like construction and having a slot or opening at its outer end and also at its front and rear edges, jaws pivoted at their inner ends within the reduced portion of the socket and adjacent to the said partition, the outer or free ends of said jaws being curved and normally projected through the slots or openings in the front and the rear of the said reduced portion of the socket, the outer surfaces of the said jaws inward of the curved ends being inclined at an acute angle to the socket when the jaws are in the divergent position, and a spring inclosed within the box-like end of the socket and engaging the jaws to hold them in the normal position, substantially as specified.

2. A trace-holder, comprising a socket having its outer portion reduced in thickness and having a slot or opening extending through the end and through a portion of the front and rear wall of the reduced portion, a partition formed between the reduced portion and the inner or main portion of the socket, diverging jaws pivoted at their inner ends within the said reduced portion adjacent to the said partition, the outer or free ends of the said jaws being normally projected through the slots or openings at the front and the rear, and a spring for holding the jaws in the normal position, the said spring having a coiled body portion arranged between the jaws at the rear and arms extending along the inner surface of said jaws to a point near their front ends, substantially as shown and described.

606,640. DOOR-OPERATING APPLIANCE. HENDRIK BENNIK, Hamburg, Germany. Filed Feb. 21, 1898. Serial No. 671,211. (No model.)



Claim.—1. The combination with a door, a power-cylinder on the door-framing, a spring-controlled actuating piston in said cylinder and the levers *c c'* operated by the piston and adapted to open or close the door according to the direction of motion of said piston; of means for admitting a fluid under pressure to said cylinder to move the piston against the stress of its spring, means for exhausting the fluid from said cylinder, and appliances controlling the admission and exhaust of the fluid to and from said cylinder, said appliances adapted to be operated by the weight of a person approaching the door, and means operating automatically to return the controlling appliances to a normal position, for the purpose set forth.

2. The combination with a door, a power-cylinder on the door-frame, a spring-controlled piston in said cylinder, and the levers *c c'* operated by the piston to open or close the door according to the direction of motion of said piston; of a fluid-conduit connected with the cylinder to move the piston by fluid-pressure against the stress of its spring, a supply-pipe adapted to be connected with a source of fluid-supply under pressure, an exhaust-pipe, each of said pipes provided with a valve-port in communication with the fluid-conduit, valves for said ports adapted to move together to open one port and close the other or vice versa, and appliances for operating said valves by the weight of a person approaching the door and to automatically return the valves to a normal position when said appliances are relieved of such weight, for the purpose set forth.

3. The combination with a door, a power-cylinder on the door-frame, a spring-controlled piston in said cylinder, and the levers *c c'* operated by the piston to open or close the door according to the direction of motion of said piston, of a compressing-cylinder, a conduit containing a liquid connected with one end of the power and compressing cylinders respectively, a supply and exhaust pipe each provided with a valve-port in communication with the other end of said compressing-cylinder, a valve for each of said ports, said valves adapted to move together, and appliances operated by the weight of a person approaching the door to open the supply-port and close the exhaust-port and to automatically close said supply-port and open the exhaust-port when said appliances are relieved of such weight, for the purpose set forth.

4. The combination with a door, a power-cylinder, a fixed support therefor, a spring-actuated piston in said cylinder, levers operated by the piston to open or close the door according to the direction of motion of the piston, a conduit for conducting a fluid under pressure to said cylinder to move said piston against the stress of its spring, a supply and exhaust pipe each provided with a port in communication with said conduit, and a valve for each of the ports, said valves having motion together to open one port and close the other or vice versa; of an electromagnet, its armature connected with said valves, an electric circuit, spring-controlled circuit-closing devices at the approaches to the door adapted to be operated by the weight of a person to close the electric circuit, and a relay in said circuit electrically connected with the aforesaid electromagnet, for the purpose set forth.

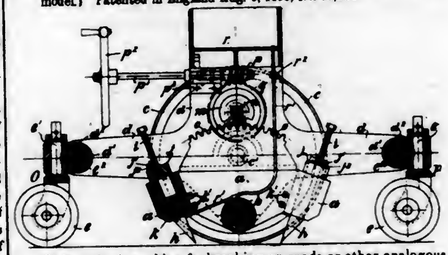
5. The combination with a door, a power-cylinder, a fixed support therefor, a spring-actuated piston in said cylinder, levers operated by the piston to open or close the door according to the direction of motion of said piston, a conduit containing a substantially non-congealable liquid connected with one end of said cylinder to move its piston by the pressure of such fluid against the stress of its spring, a compression-cylinder having one end connected with said conduit, a piston in the last-named cylinder, a supply and exhaust pipe provided each with a valve-port in communication with the other end of the compression-cylinder, and a valve for each of said ports, said valves having motion together to open one port and close the other or vice versa; of an electromagnet, its armature connected with said valves, an electric circuit, spring-controlled circuit-closing devices at the approaches to the door adapted to be operated by the weight of a person to close the electric circuit, and a relay in said circuit electrically connected with the aforesaid electromagnet, for the purpose set forth.

6. The combination with the cylinder E, the supply and exhaust pipes, each having a valve-port in communication with one end of said cylinder, the valves for said ports adapted to move together to close one point and open the other or vice versa, an electromagnet, its armature connected with said valves an electric circuit, the door-mat made of two superposed mats of non-conductive material, a plurality of spring-contacts on the lower mat included in said electric circuit in series, cooperating contact-springs on said lower mat adapted to support the upper mat, and a relay in said electric circuit electrically connected with the aforesaid electromagnet, for the purpose set forth.

7. The combination with a door and its framing, of a power-cylinder connected with said framing a spring-controlled piston in said cylinder, a pair of levers having one of their ends pivotally connected with the framing and door respectively, and having their opposite ends pivotally connected together and to said piston respectively, and means for applying fluid-pressure to the piston and relieving the same of such pressure to open and close the door, substantially as set forth.

8. The combination with a door and its framing, of a power-cylinder pivotally secured to said framing to swing in a horizontal plane, a spring-controlled piston in said cylinder a pair of levers having one of their ends pivotally connected with the framing and door respectively, the other ends of said levers pivotally connected together and to said piston respectively, and means for applying fluid-pressure to the piston and relieving the same of such pressure to open and close the door, substantially as set forth.

606,641. APPARATUS FOR SCARIFYING AND BREAKING ROADS. RAYMOND BOMFORD, Salford Priors, BENJAMIN BOMFORD, Harrington, and HENRY EVERSHED, Salford Priors, England, assignors to the Road Breaking Company, (Voysey and Hossacks Patents,) Limited, London, England. Filed Dec. 21, 1897. Serial No. 662,902. (No model.) Patented in England Aug. 9, 1893, No. 15,214



Claim.—1. A machine for breaking up roads or other analogous hard surfaces, and adapted to break said surfaces when being propelled in either direction, comprising a tool-holder mounted upon a transverse axis, and adapted to oscillate thereon, and having tools mounted therein on the opposite side of the axis, and adapted to be raised from and lowered onto the surface to be broken, alternately; and means, by which said tool-holder is oscillated about its axis; substantially as set forth.

2. A machine for breaking up roads or other analogous hard surfaces, and adapted to break said surfaces when being moved in either direction, comprising a tool-holder mounted upon a transverse axis, and adapted to oscillate thereon, and having tools mounted therein on opposite sides of the axis, and a hand-actuated worm and worm-wheel driven thereby, for oscillating said tool-holder, and to raise and lower the tools on the opposite ends, alternately, off and onto the surface to be broken, whereby said tool-holder can be readily moved by hand, and cannot move of itself after being set; substantially as set forth.

3. A machine for breaking up roads, or other analogous hard surfaces, and adapted to break said surfaces when being propelled in either direction, comprising a tool-holder, mounted upon a transverse axis in a carrier-frame, separate from the propelling-engine, said tool-holder having tools secured in opposite ends of said casting or block, and means for oscillating said tool-holder about its axis, and to alternately raise or lower one or other of the said sets of tools onto and off the road; and road-wheels, on which said frame carrying the tool-holder is mounted and runs; substantially as described.

4. In a machine for breaking up roads or other analogous hard surfaces, an oscillating tool-holder *a*, supportedon and adapted to oscillate about an axis *b*, and having a plurality of tools *h* carried on each end, on opposite sides of said axis: these sets of tools being adapted to be alternately lowered onto, and raised off, the surface to be broken.

5. In a machine for breaking up roads, or other analogous hard surfaces, an oscillating tool-holder *a*, supported on and adapted to oscillate about an axis *b*, and having a plurality of tools *h* carried on each end, on opposite sides of said axis, these sets of tools being adapted to be alternately lowered onto, and raised off, the surface to be broken; and a mechanism for oscillating said holder *a*, comprising hand-actuated worm *p*, and driven worm-wheel *q*.

6. In a machine for breaking up roads, or other analogous hard surfaces, an oscillating tool-holder *a*, the supporting-shaft *b*, about which the said holder is adapted to oscillate, and sets of tools *h*, disposed and supported in *a* on opposite sides of the shaft *b*, and disposed in echelon.

7. The oscillating tool-holder *a*, with tools *h* arranged in sets at the opposite ends of same, and in echelon, and the tooth-quadrant *o*, by which the oscillations are effected.

8. In a machine for breaking up macadam roads or other analogous hard surfaces, the combination of the tool-holder *a*, shaft *b* supporting *a*, frame *d* carrying the shaft *b*, road-wheels *c* supporting the frame *d*, and worm and worm-wheels *p q*, pinion *m*, quadrant *o* on *a*, and the shaft *n*; said tool-holder being adapted to be moved and adjusted laterally along its supporting-shaft *b*: as set forth.

606,642. SAD-IRON. WILLIAM G. BOUGHTON, Frostburg, Md. Filed July 3, 1897. Serial No. 643,409. (No model.)



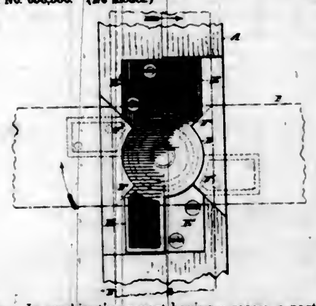
Claim.—1. The combination with a body, and a handle, of the base-plate united to the handle and having the slot and the hollow guide, a stud or post rigid with the body and provided with the inclined-faced head and with the overhanging lips, one of which is adapted to interlock with a beveled end of the slot in said base-plate, and a movable spring-pressed catch fitted in the hollow guide to engage with the other lip of said headed post or stud, as and for the purposes described.

2. In a sad-iron, the body, and the pyramidal-headed stud having its faces arranged to converge in an upward direction both transversely and longitudinally of the iron-body to meet in a point at the vertical axis of the stud, combined with a handle-plate provided with a boss adapted to turn on, and be properly positioned by, the laterally-divergent faces of the pyramidal head of said stud, and a catch carried by the handle-plate to engage with said stud, substantially as described.

3. In a sad-iron, the combination of a pyramidal-headed stud on the iron-body, a slotted base-plate provided with a guide, and a tapered catch which rides against one side of the guide and is adapted to bear against one face of the headed stud, substantially as described.

4. In a sad-iron, the combination of a body having flanges, 5, 5' which extend upwardly in planes parallel to the longitudinal axis of the iron body, the stud having the pyramidal head with its side faces diverging transversely to the axis of the body, the handle plate carrying the boss to fit the headed stud and the flared tongues to fit snugly between the flanges of the body, and a catch mounted on the handle-plate to engage said stud, substantially as described.

606,643. TRANSOM-CENTER. CROMWELL O. CASE, New Britain, Conn., assignor to the P. & F. Corbin, same place. Filed Nov. 15, 1897. Serial No. 658,536. (No model.)

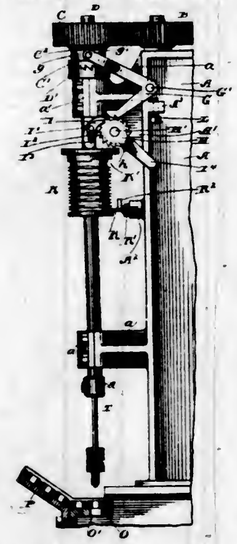


Claim.—In combination a part having a recess, a part having a pivot adapted to enter said recess, said parts being adapted to turn on said pivot relatively to each other, and a washer having a base to fit against one of the faces of one of said parts, and a tubular projection vertically of said washer to fit over said extension, a circular bead on one part, a circular recess on the other part into which said bead fits, each part having two oppositely-arranged wings having shoulders thereon, the shoulders on one part abutting against the shoulders on the other part, substantially as described.

606,644. LIQUID FOR EXTERMINATING GRASS OR SIMILAR GROWTHS. WILLIAM A. CHAPMAN, Cleburne, Tex. Filed Apr. 18, 1896. Serial No. 588,168. (No specimens.)

Claim.—The liquid herein described for destroying grass and vegetable growths, consisting of an arsenious solution having nitrate of soda dissolved therein to maintain the solubility of said arsenious acid, as and for the purposes set forth.

606,645. NUT-TAPPING MACHINE. JOSEPH A. COSTELLO, Cleveland, Ohio. Filed Oct. 25, 1897. Serial No. 656,336. (No model.)



Claim.—1. In a nut-tapping machine, the combination with the suitably-rotated and suitably-supported tap-carrying spindle capable of reciprocation; of a double feed screw operatively and slidably mounted upon said spindle, a relatively stationary thread or tooth for operatively engaging the said screw, and means for causing the spindle to move endwise with the screw but capable of yielding to the feed occasioned by the engagement of the tap with the threads being cut in the nut-blank, substantially as and for the purpose set forth.

2. In a nut-tapping machine, the combination with the suitably-rotated tap-carrying spindle capable of reciprocating, and a double-feed screw slidable upon the said spindle and having such operative connection with the spindle as to accommodate the reciprocation of the spindle independently of the reciprocation of the screw; of a suitably-supported oscillating shaft provided with a thread or tooth having the arrangement required to render it capable of being actuated into an operative position relative to the aforesaid screw, and the said shaft being provided with a laterally-projecting arm, and a member formed upon or rigid with the spindle and arranged in the position required to engage the said arm during the reciprocation of the spindle, substantially as and for the purpose specified.

3. In a nut-tapping machine, the combination with the suitably-rotated tap-carrying spindle provided with the shoulder or collar D^3, the nut-holder O perforated to accommodate the location and operation of the tap, and the inclined feed-trough P communicating with the nut-holder; of the double-feed screw K operatively and slidably mounted upon the spindle, means arranged within the spindle and bearing outwardly upon the screw and thereby establishing frictional operative connection between the screw and spindle, and the oscillating shaft provided with the tooth or thread R and the laterally-projecting arm R^2, all arranged and operating substantially as shown, for the purpose specified.

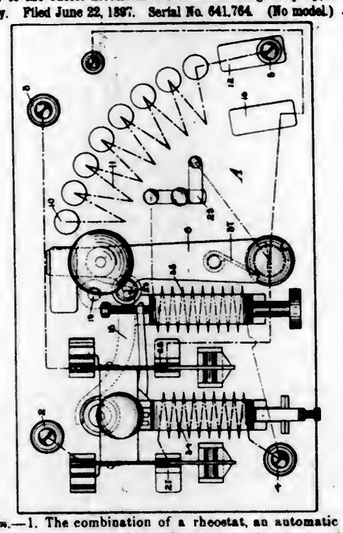
4. In a nut-tapping machine, the combination with the tap-carrying spindle, a suitably-driven driving-wheel loosely mounted upon the spindle, a clutch for controlling operative connection between the said wheel and the spindle, and the clutch-operating lever; of an

intermittently-rotated wheel provided with a projecting member arranged to engage and actuate the said lever once during every complete rotation of the wheel, means for actuating the said wheel or intermittently-rotated member upon the return or idle strokes of the spindle, substantially as and for the purpose specified.

5. In a nut-tapping machine, the combination with the tap-carrying spindle having the collar or shoulder D^2, the suitably-driven driving wheel loosely mounted upon the spindle, a clutch for controlling operative connection between the wheel and the spiodle, and the clutch operating lever; of the ratchet-wheel H provided with a projecting member *h*, the tilting lever l^2 bearing a pawl I and having a member extending into the path of the aforesaid shoulder or collar, all arranged and operating substantially as shown, for the purpose specified.

6 In a nut-tapping machine, the combination with the tap-carrying spindle, a driving-wheel loosely mounted upon the said spindle, a clutch for controlling operative connection between the said clutch and the spindle, and the clutch-operating lever; of the ratchet-wheel H provided with the projecting member *h*, the suitably-supported lever l^2 provided with the pawl I, the arm l^4, and the member l^3 normally projecting into the path of the aforesaid shoulder or collar, and the stop L, all arranged and operating substantially as shown, for the purpose specified.

606,646. RHEOSTAT. HENRY B. CUTTER, Philadelphia, Pa., assignor to the Cutter Electrical and Manufacturing Company, of New Jersey. Filed June 22, 1897. Serial No. 641,764. (No model.)



Claim.—1. The combination of a rheostat, an automatic magnetic circuit-breaker, adjustable with respect to the above or below normal flow of current necessary for its actuation, and means of preventing the closing of the circuit-breaker when the rheostat-arm is in certain positions, substantially as described.

2. The combination of a rheostat, an automatic magnetic circuit-breaker and means independent of the rheostat-arm of preventing the closing of the circuit-breaker when the rheostat-arm is in certain positions said means adapted to be actuated to permit said closure when the rheostat-arm is in certain other positions, substantially as described.

3. In combination with a rheostat means of automatically breaking the circuit independently of the movement of the movable contact-arm of the rheostat, upon the occurrence of a predetermined above-normal flow of current and automatic means independent of said movable contact-arm of preventing the closure of the circuit-breaker until actuated by the said movable contact-arm to permit the same, substantially as described.

4. In combination with a rheostat means of automatically breaking the circuit independently of the movement of the movable contact-arm of the rheostat, upon the occurrence of a predetermined below-normal flow of current and automatic means independent of said movable contact-arm of preventing the closure of the circuit-breaker until actuated by the said movable contact-arm to permit the same, substantially as described.

5. In combination with a rheostat means of automatically breaking the circuit independently of the movement of the movable contact-arm of the rheostat, upon the occurrence of a predetermined above-normal or below normal flow of current and automatic means independent of said movable contact-arm of preventing the closure of the circuit-breaker until actuated by the said movable contact-arm to permit the same, substantially as described.

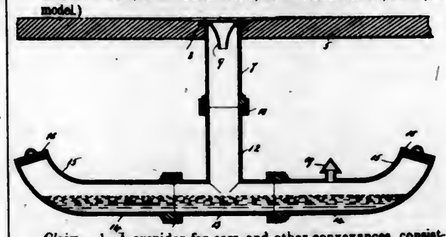
6. The combination of a rheostat, an automatic magnetic circuit-breaker, the spring-actuated piston-rod and automatic means of locking said piston-rod when the circuit-breaker is open and the rheostat-arm is in certain positions, said locking means adapted to be actuated to release said piston rod when the rheostat-arm is in certain other positions, substantially as described.

7. The combination of a rheostat, an automatic magnetic circuit-breaker, automatic means of preventing the closing of the circuit-breaker when the rheostat-arm is in certain positions and means of manually interrupting the flow of current through the automatic magnetic circuit-breaker to cause its arbitrary actuation, substantially as described.

8. The combination of a rheostat, an automatic magnetic circuit-breaker, automatic means of preventing the closing of the circuit-breaker when the rheostat-arm is in certain positions and means of preventing the rheostat-arm from resting on any of the intermediate resistance contact-points after the withdrawal of the hand from the said rheostat-arm, substantially as described.

9. The combination of a rheostat, an automatic magnetic circuit-breaker, a spring-actuated piston and a pivoted lever cooperating therewith as means of preventing the closure of the circuit-breaker when the rheostat-arm is in certain positions, substantially as described.

606,647. CUSPIDOR FOR CARS, &c. CHRISTOPHER F. CUTTINGHAM, New York, N. Y. Filed June 5, 1897. Serial No. 639,533. (No model.)

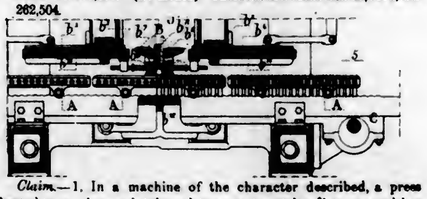


Claim.—1. A cuspidor for cars and other conveyances, consisting of a pipe which passes through the floor of the car, and which is provided with a flange or rim which is countersunk therein, said pipe being also provided with a hollow conical attachment the apex of which projects downwardly therein, and the base of which is provided with a flange which is also countersunk in the floor of the car, and said pipe being provided at its lower end with a tubular cross-head with which are connected two tubular extensions the ends of which are curved upwardly, and provided with detachable plugs, said extensions being adapted to be turned in said connections with said cross-head, substantially as shown and described.

2. A cuspidor for cars and other conveyances, consisting of a pipe as 7, a tubular extension as 12, connected therewith, and provided with a cross head as 13, and tubular extensions as 14, connected with said cross-head, and the ends of which are curved upwardly, and provided with detachable plugs, substantially as shown and described.

3. A cuspidor for cars and other conveyances, consisting of a pipe as 7, a tubular extension as 12, connected therewith, and provided with a cross head as 13, tubular extensions as 14, connected with said cross-head, and the ends of which are curved upwardly, and provided with detachable plugs, and the pipe 7, being also provided with a hollow conical attachment in the upper end thereof, the apex of which is directed downwardly, and the base of which is provided with cross-bars, substantially as shown and described.

606,648. MANUFACTURE OF WOODEN MATCHES. FRANÇOIS A. DEBIZE and LOUIS F. CHAMBIGNE, Paris, France. Filed Dec. 23, 1897. Serial No. 663,155. (No model.) Patented in France Dec. 24, 1896, No. 262,504.

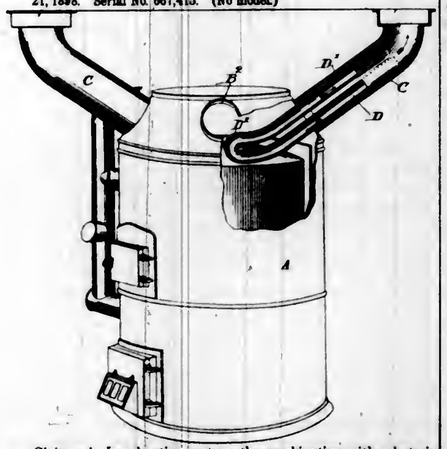


Claim.—1. In a machine of the character described, a press adapted to receive, maintain and transport match-splints, comprising two parallel perforated plates, the perforations of one plate registering with those of the other, end pieces immovably securing the plates in parallel relationship and a series of longitudinally-movable fluted cylinders arranged between the plates and each directly in line with the perforations in the plates, whereby when the cylinders are moved in one direction the splints may be introduced into the perforations of the plates and when moved in the opposite direction the splints are held firmly in position in said plates, substantially as and for the purposes described.

2. In a machine of the character described, a fixed grid upon which the match-splints are adapted to rest, a pusher adapted to move the splints on the grid, a movable tilting block adapted in one position to receive the splints from the grid, a fixed grooved partition arranged adjacent to the block and to which the splints are presented when the block is tilted, and a propelling or feed roller located adjacent to the partition and adapted to propel the splint from said partition, substantially as and for the purposes described.

3. In a machine of the character described, a match-press, comprising two perforated plates the perforations whereof register, means for locking match-splints in the perforations of said plates and for releasing said splints, two stationary rails provided with notches adapted to support the press in stationary position, and two movable rails adapted to move upward to raise said press from the stationary rails and to support said press, said movable rails also adapted when raised to move forward to feed the press, substantially as and for the purposes described.

606,649. HEATER. JOHN DEHAENST, Malden, Mass. Filed Jan. 21, 1898. Serial No. 667,415. (No model.)



Claim.—1. In a heating system, the combination with a hot-air heater, of a heat-conveying pipe connected to the heater and open both at top and bottom, and a hot-air flue supported within said heat-conveying pipe at the lower end of the latter, said flue being of U shape, the upper ends thereof being open to provide a separate inlet and outlet for the air, said flue being closed at all other points and affording conduits for the air separate from each other from the top to the bottom of the flue and connected together at the bottom only, said bottom being adjacent the heater, and so arranged relative to the heater as to have established therein an air-current, substantially as described.

2. In a heating system, the combination with a hot-air heater, of a heat-conveying pipe, and a hot-air flue supported within and at the lower end of said heat-conveying pipe, the lower end of said flue resting in contact with the heater, said flue having a U shape and being closed throughout its extent excepting at its upper end where it is provided with a separate inlet and outlet, said flue having a continuous air-passage from said inlet to said outlet following the U shape of the flue and so arranged relative to the heater as to have established therein an air-current, substantially as described.

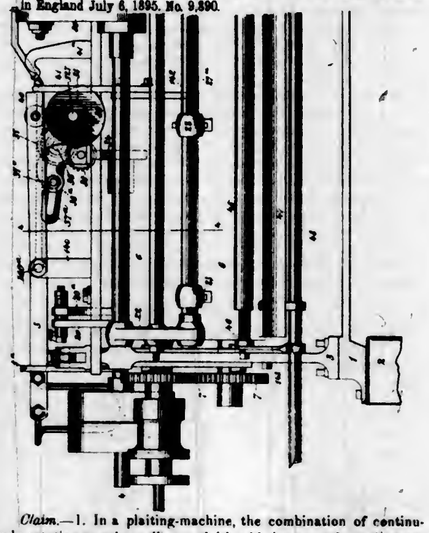
606,650. BICYCLE-LOCK. LOUIS DOHN and CHARLES H. SCHLUNDT, Rahway, N. J. Filed Dec. 21, 1896. Serial No. 616,385. (No model.)

Claim.—1. In a bicycle-lock, the frame which is adapted to be clamped to the frame of the bicycle, a longitudinally-moving spring-actuated bolt which has one of its ends to project beyond the end of the lock-frame, and provided with a groove in its upper side, and a projection at its inner end, combined with a pivoted lever for catching against the projection and forcing the bolt inwardly, a spring-actuated push-rod provided with a recess in its under side to straddle over the top of the bolt, and which is adapted to catch in the groove in the top of the sliding bolt to hold said bolt retracted, and a locking-bolt which is grooved on its under side, and which is adapted to catch against the inner end of the bolt, and prevent it from being forced inwardly, substantially as described



2. In a lock, a suitable base-plate which is adapted to be clamped to the frame of the bicycle, and which is provided with ears or projections upon its upper side, and having its outer end turned upwardly so as to form a guiding-flange for the bolt, and an endwise-moving spring-actuated locking-bolt which has one of its ends to always project beyond the frame, and which bolt is provided with a groove in its top, and a projection extending from the lower side of its inner end, combined with a pivoted lever for catching against the bolt, and forcing the bolt inwardly, a spring-actuated push-rod placed at right angles to the sliding bolt, and provided with a recess in its lower edge so as to straddle over the bolt, and which is adapted to catch in a groove in the top of said bolt to hold the bolt retracted, and a locking-bolt which is also grooved on its under side, and which is adapted to catch against the inner end of the bolt to prevent it from being forced inwardly; the locking-bolt and the push-rod being adapted to alternately engage with the main bolt, substantially as specified.

606,651. PLAITING-MACHINE. ERNEST F. DOSNE, London, England, assignor to the Kursheedt Manufacturing Company, New York, N. Y. Filed Feb. 2, 1897. Serial No. 621,649. (No model.) Patented in England July 6, 1895, No. 9,390.



Claim.—1. In a plaiting-machine, the combination of continuously-rotating pressing-rollers, a plaiting blade, means for reciprocating the same, comprising an oscillating shaft 26, a connection intervening between the shaft and the plaiting blade to which the plaiting-blade is pivoted, a slotted arm rigidly mounted upon the shaft 26, a cam-operated link adjustably connected to the slotted arm to oscillate the shaft, and a positively-acting means for positively raising and lowering the plaiting-blade, substantially as described and for the purposes set forth.

2. A plaiting-blade for plaiting-machines comprising a plaiting-blade 27^a, provided with stop-bits 29 at an angle to the length of the blade, and a plurality of bevel-edged blades 28^a secured to the blade 27^a with which blades the stop bits cooperate to lock the said blades from swinging on their fastenings.

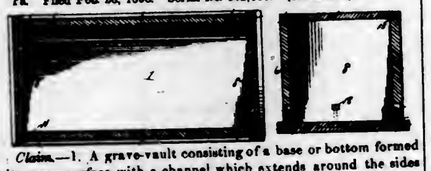
3. In a plaiting-machine, the combination of a plaiting-blade, a link 41 for lifting the same into an inoperative position, actuating mechanism for raising the said link, and a support 41^a, the said link being readily disengageable from its actuating mechanism and capa-

ble of engagement with the support 41ª so as to hold the blade permanently in an inoperative position when desired.

4. In a plaiting-machine, the combination of plait-permanentizing means, a plaiting-blade, means for oscillating the same, a positively-acting means for raising and lowering the said plaiting-blade positively, and means for moving the plaiting-blade into a position where it will not be operative to plait the fabric, comprising in its structure a cam 39, a gearing driven from the main shaft for driving the said cam, a support 35ª, an arm 37ª adjustably carried by the said support and carrying one of the gears 37 of the gearing for driving the cam, whereby the said arm 37ª may be adjusted in its support so as to adjust the gearing 37 with respect to the other gears, substantially as described.

5. In a plaiting-machine, the combination of plait-permanentizing means, a plaiting-blade cooperating therewith to plait a fabric, and means for oscillating the said blade, comprising in its structure a shaft 26 having arms 25 rigidly secured thereto from which the blade is pivotally suspended, means for swinging the said shaft whereby the blade is reciprocated and means for intermittently swinging the blade on its pivot comprising a cam operating to raise and lower the blade and adjustable means intervening between the driving-shaft of the machine and the cam to regulate the motion of the cam.

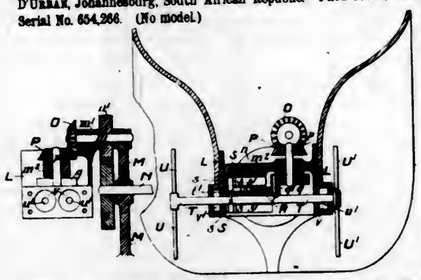
606,652. GRAVE-VAULT. BENJAMIN F. DOUGLAS, Mount Union, Pa. Filed Feb. 28, 1898. Serial No. 672,068. (No model.)



Claim.—1. A grave-vault consisting of a base or bottom formed on its upper surface with a channel which extends around the sides and ends thereof, the bottom of said channel being formed with a continuous dovetail groove 4', in combination with side and end sections, the lower ends of which fit within and are supported by the walls of the channel in the base, and the lower edges of which are formed with dovetail grooves registering with the groove 4' in the channel of the base, the vertical meeting edges of said side and end sections being also formed with cooperating oppositely-disposed dovetail grooves which communicate at their lower ends with the groove 4' in the base, whereby each corner of the structure is provided with a vertical filling-opening, through which molten metal is supplied to the continuous double dovetail groove between the base and the lower edges of the side and end sections, substantially as described.

2. The combination with the grooved bottom, of the sides, and ends, grooved at their edges, to cooperate with the groove in the bottom, and having vertical grooves communicating with the bottom groove, said sides having supplemental filling-grooves near their lower edges also communicating with the bottom groove.

606,653. DEVICE FOR PROPELLING SHIPS, &c. CHARLES J. D'URBAN, Johannesburg, South African Republic. Filed Oct. 6, 1897. Serial No. 654,266. (No model.)

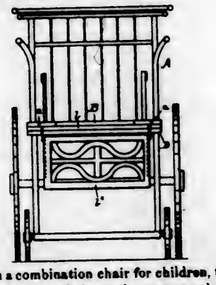


Claim.—1. In a device for propelling ships, boats and the like the combination of the vertical propelling-blades U U', the connecting-rods T T' pivotally connected thereto, the cross-head R and connecting-links *t t'*, and the disk-crank *q* coupled up with and driven by the main driving-shaft, substantially as described.

2. In a device for propelling ships, boats and the like the combination of the vertical propelling-blades U U', the connecting-rods T T' pivotally connected thereto, the cross-head R, connecting-links *t t'*, pin S, slippers or blocks *s*, the disk-crank *q*, spindle *p*, shaft *m*, bevel-gear *n*, P, main driving shaft N and spur-gear *n n'*, substantially as described and shown.

3. In combination, the rectangular framing L fitted in the stern of the vessel, the standard M, the main driving-shaft N journaled therein, the shaft or spindle *m* journaled in the standard M on the one side and a part *m'* fitted in the framing L on the other, the part *m'* of the framing fitted within the rectangular framing L, the spur-wheels *n n'* gearing the shafts N and *m*, the vertical spindle *p* supported by the part *m²* of the framing L, the bevel-wheels O P gearing the shaft *m* with the spindle *p*, the disk-crank *q*, the cross-head R, the pin or rod S, the slippers or sliding blocks *s* working in grooves or recesses *s'* formed in the part *m²* of the frame, the grooves or recesses *s'*, the connecting-links *t t'*, the rods T T' projecting through the holes *u u'* in the sides of the frame L, the holes *u u'* and circular recesses *v v'* surrounding the same provided for the reception of a suitable packing, the caps or covers V, the links *u²* pivotally connected with the rods T T' and the propelling-blades U U', and the vertically-disposed propelling-blades U U' substantially as described and shown.

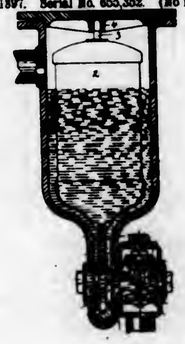
606,654. COMBINATION-CHAIR FOR CHILDREN. CHARLES J. FIORYL, Jersey City, N. J. Filed Jan. 21, 1898. Serial No. 667,468. (No model.)



Claim.—1. In a combination chair for children, the combination, with a wheeled frame, of a chair portion supported thereon and carrying an extensible portion slidably mounted within said chair portion and carrying at its front end a hinged portion adapted to swing into a vertical position either above or below the plane of the seat of said extensible portion, said chair portion being provided with a hollow post at its corners, vertical rods projecting upwardly from the corners of the wheeled frame and adapted to engage the hollow posts of the chair portion, said rods being provided with perforations, and a locking device arranged upon the under side of the chair portion and embodying horizontal rods slidably mounted and having ends engaging the perforations in said vertical rods, substantially as and for the purpose set forth.

2. In a combination-chair for children, the combination with a suitable wheeled frame, of a chair portion supported thereon a hollow post arranged at each corner of said chair portion, a vertical rod provided with perforations at each corner of the wheeled frame and adapted to engage the said hollow posts, a locking device arranged upon the under side of the chair portion, comprising two side rods, an angular lng arranged on each end of said side rods and adapted to enter perforations of the said vertical rods, a transverse bar connecting the side rods, a handle-bar arranged upon said transverse rods, suitable guides for the said rods and a spring sleeved on the handle-bar adapted to hold the lugs in said perforations, substantially as and for the purpose set forth.

606,655. FLOAT-VALVE. JAMES H. FOGARTY, New York, N. Y. Filed Oct. 15, 1897. Serial No. 655,352. (No model.)

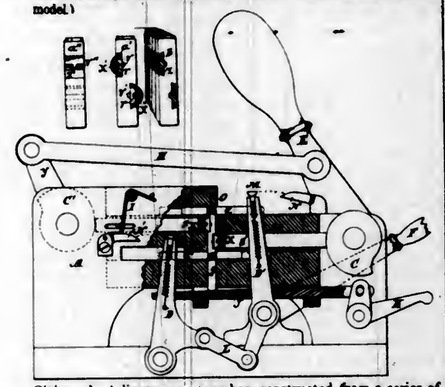


Claim.—1. The combination of a chamber, a float therein, a bearing at the top of the float, a tubular stem forming a bearing at the lower end of the float, a tube extending laterally between the float-bearings, a valve carried upon said lateral tube, a valve-seat for the valve, and inlet and outlet ports for the chamber, the tubular stem and lateral tube forming a drainage connection for the interior of the float.

2. The combination of the chamber, the float therein, a bearing at the top of the float, a tubular stem forming a bearing at the lower end of the float, a tube extending laterally between the float-bearings, a tubular valve-stem secured to said lateral tube, a double balance-valve carried upon the said valve-stem, valve-seats for the valves, and inlet and outlet ports for the chamber, the float-stem, lateral tube and valve-stem forming a drainage connection for the interior of the float.

3. The combination, in a trap, of the hollow float, a bearing at the top of the float, a tubular float-stem forming a bearing at the lower end of the float, a lateral tube connected therewith, a reciprocating tubular valve-stem having an opening at right angles thereto to receive the lateral tube, adjustable means for securing the valve-stem upon the lateral tube and a slide-valve carried upon said valve-stem.

606,656. MACHINE FOR MAKING SWAGE-LOCKED TYPE-BARS AND PRODUCT PRODUCED BY SUCH MACHINE. MERRITT GALLY, Brooklyn, N. Y. Filed Feb. 16, 1897. Serial No. 623,743. (No model.)



Claim.—1. A linotype or type-bar, constructed from a series of individual types and a locking piece or pieces, swage-locked together.

2. A linotype composed of a series of individual types, each provided with a recess or recesses, and a sub recess or recesses for preventing longitudinal movement of the types on the bar, and a locking-piece for uniting them.

3. In a mechanism for justifying a line of type, dies, or matrices; two justifying-wedges, occupying different planes crosswise of the type and in one and the same word-space, for spacing the line; and adapted and arranged to be thrust through the word-space from opposite sides of the line.

4. In a mechanism for justifying a line of type, dies or matrices; two sets of justifying-wedges, occupying different planes crosswise of the type, and arranged in pairs of one from each set; the wedges of each pair occupying different positions in one and the same word-space for justifying the line.

5. The conical-shaped justifying-space.

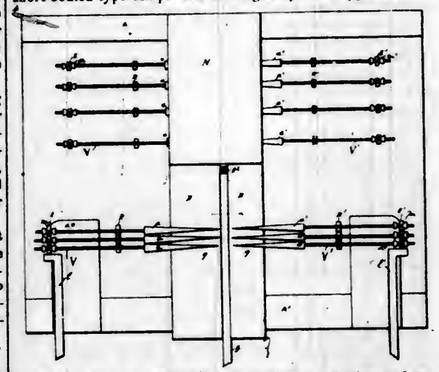
6. The recessed justifying-wedges and their driving-bar, provided with cams and lifting-spurs for securing the connection of the bar and wedges at the beginning of the movement of the bar and disconnecting them at the close of the return movement of the bar; substantially as specified.

7. In a mechanism for justifying types, dies or matrices, two sets of justifying-wedges entering the spaces in the line from opposite directions; each set of wedges having a driving mechanism; the two driving mechanisms being positively connected together to secure an equal movement to both sets of wedges; and to prevent any movement of any wedge on either side of the line unequal to that of the counter-wedge on the opposite side of the line.

8. In a machine for making linotypes, two sets of swaging mechanism connected together, to secure a similar operation to both swages.

606,657. SWAGED TYPE-BAR AND APPARATUS FOR CONSTRUCTING SAME. MERRITT GALLY, Brooklyn, N. Y. Filed Mar. 20, 1897. Serial No. 628,536. (No model.)

Claim.—1. A linotype or type-bar having a series of separate short-bodied type compressed or swaged upon the type-body.



2. A linotype or type bar composed of a body-slug and an arranged line of individual short-bodied types; the types being justified as to the measure of the slug and compressed or swaged rigidly upon the type-body.

3. A slug or bar and separate short-bodied type rabbeted together; the tongue and groove of the rabbeted parts having locking-joints which interlock the bar and short-bodied type firmly together.

4. In a machine in which types, dies or matrices are justified to line-measure; the combination with a justifying wedge or space of a justifying-lever, having movement longitudinally as to the line, and a steady-arm moving therewith holding the justifying-wedge practically at right angles to the line.

5. In a machine in which types, dies or matrices are justified to line-measure; the combination with a justifying wedge or space, of a steady-arm having movement longitudinally as to the line, and a justifying-lever moving therewith and having also a transverse movement for producing the justifying action of the wedge.

6. In a machine in which types, dies or matrices are justified to line-measure; the combination with a justifying wedge or space with a guiding-stem, having movement longitudinally as to the direction of the line and two bearings for the wedge-stem in the steady-arm and justifying-lever, for holding the wedge at right angles to the line.

7. In a machine in which types, dies or matrices are arranged in spaced line; the combination with the justifying wedge or space and its lever, having a movement longitudinally as to the line and a transverse movement at right angles therewith, of a retaining-stop as a^4 and a motor-spring as *i*, for placing the spacer in the line; substantially as set forth.

8. In a machine in which types, dies or matrices are spaced and justified to line-measure; the space or justifying-wedge and its lever, having a longitudinal movement as to the line and a restricted transverse movement for placing the wedge or space in the line, a movement with the line to justifying position, and a secondary transverse movement for justification, substantially as set forth.

9. In a machine in which types, dies or matrices are spaced and justified to line-measure; the justifying-lever and its space or justifying-wedge attached thereto, having a movement longitudinally with the line to position for justification, a transverse justifying movement, a reversed transverse movement for withdrawing the wedge from the justified line, and a reversed longitudinal movement to return the lever and its wedge to first position.

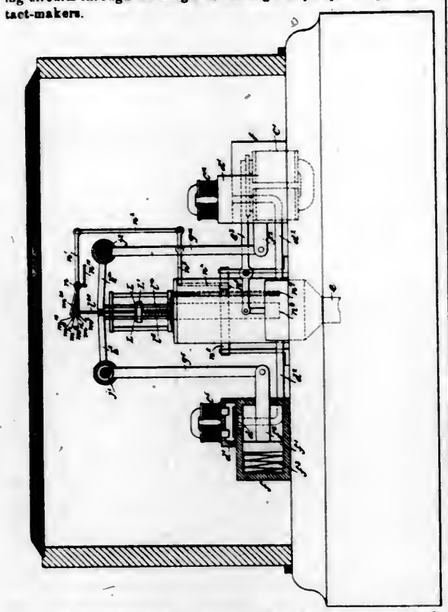
10. The combination with the reciprocating carrying-lever with justifying-wedge attached thereto, as E *a*; of the driving-bar as G, and motor-spring as *y*; substantially as set forth.

11. The combination with the steady-arms R, R, and justifying-levers E, E, of the rocking frame with cammed lever P, and the revolving cams J, J'; substantially as and for the purpose set forth.

606,658. MACHINE FOR PUNCHING TELEGRAPHIC PAPER. GODFREY M. GIBSON, Chulmleigh, England. Filed July 26, 1897. Serial No. 646,027. (No model.)

Claim.—1. The combination of a number of punches so arranged in relation to each other that the action of one or more of them will without moving the paper produce the holes corresponding to any of the letters or characters employed, electromagnets controlling the punches, contact-makers closing circuits through the magnets, bars mounted as parallel-rulers operating the contact-makers, finger-keys arranged transversely to the bars, and projections between the bars and keys whereby the depression of each key depresses one or more of the bars.

2. The combination of a number of punches so arranged in relation to each other that the action of one or more of them will without moving the paper produce the holes corresponding to any of the letters or characters employed, air-cylinders operating the punches, an air-chest common to the cylinders, valves admitting air to and allowing it to escape from the chest, valves between the chest and cylinders, electromagnets controlling the valves, contact-makers closing circuits through the magnets, and finger-keys operating the contact-makers.



3. The combination of a number of punches so arranged in relation to each other that the action of one or more of them will without moving the paper produce the holes corresponding to any of the letters or characters employed, air-cylinders operating the punches, electromagnets controlling the valves of the cylinders, contact-makers closing circuits through the magnets, bars mounted as parallel-rulers operating the contact-makers, finger-keys arranged transversely to the bars, and projections between the bars and keys whereby the depression of each key depresses one or more of the bars.

4. The combination of a number of punches so arranged in relation to each other that the action of one or more of them will without moving the paper produce the holes corresponding to any of the letters or characters employed, electromagnets operating the punches, contact-makers closing circuits through the magnets, bars mounted as parallel-rulers operating the contact-makers, finger-keys arranged transversely to the bars, and projections between the bars and keys whereby the depression of each key depresses one or more of the bars.

5. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, and means for operating the punches of the two outer rows.

6. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, electromagnets controlling the punches of the two outer rows, contact-makers closing circuits through the magnets, and finger-keys operating the contact-makers.

7. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, electromagnets controlling the punches of the two outer rows, contact-makers closing circuits through the magnets, bars mounted as parallel-rulers operating the contact-makers, finger-keys arranged transversely to the bars, and projections between the bars and keys whereby the depression of each key depresses one or more of the bars.

8. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, air-cylinders operating the punches of the two outer rows, electromagnets controlling the valves of the cylinders, contact-makers closing circuits through the magnets, and finger-keys operating the contact-makers.

9. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, air-cylinders operating the punches of the two outer rows, electromagnets controlling the valves of the cylinders, contact-makers closing circuits through the magnets, bars mounted as parallel-rulers operating the contact-makers, finger-keys arranged transversely to the bars, and projections between the bars and keys whereby the depression of each key depresses one or more of the bars.

10. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, electromagnets operating the punches of the two outer rows, contact-makers closing circuits through the magnets, and finger-keys operating the contact-makers

11. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, means for operating the punches of the two outer rows, means for feeding the paper, a shaft operating the same, and arms fixed to the shaft one above each central punch, the distances between the successive arms and the tops of their punches increasing progressively.

12. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, electromagnets controlling the punches of the two outer rows, contact-makers closing circuits through the magnets, finger-keys operating the contact-makers, means for feeding the paper, a shaft operating the same, and arms fixed to the shaft one above each central punch, the distances between the successive arms and the tops of their punches increasing progressively.

13. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, electromagnets controlling the punches of the two outer rows, contact-makers closing circuits through the magnets, bars mounted as parallel rulers operating the contact-makers, finger-keys arranged transversely to the bars, projections between the bars and keys whereby the depression of each key depresses one or more of the bars, means for feeding the paper, a shaft operating the same, and arms fixed to the shaft one above each central punch, the distances between the successive arms and the tops of their punches increasing progressively.

14. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, air-cylinders operating the punches of the two outer rows, electromagnets controlling the valves of the cylinders, contact-makers closing circuits through the magnets, finger-keys operating the contact-makers, means for feeding the paper, a shaft operating the same, and arms fixed to the shaft one above each central punch, the distances between the successive arms and the tops of their punches increasing progressively.

15. The combination of three rows of punches, cross-bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, air-cylinders operating the punches of the two outer rows, electromagnets controlling the valves of the cylinders, contact-makers closing circuits through the magnets, bars mounted as parallel-rulers operating the contact-makers, finger-keys arranged transversely to the bars, projections between the bars and keys whereby the depression of each key depresses one or more of the bars, means for feeding the paper, a shaft operating the same, and arms fixed to the shaft one above each central punch, the distances between the successive arms and the tops of their punches increasing progressively.

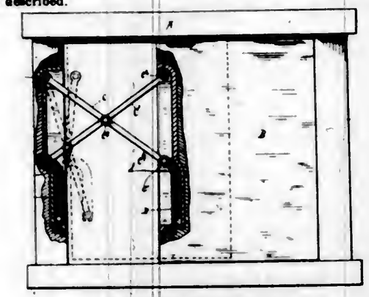
16. The combination of three rows of punches, cross bars fixed to the punches of the middle row, collars on the other punches bearing on the cross-bars, electromagnets operating the punches of the two outer rows, contact-makers closing circuits through the magnets, finger-keys operating the contact-makers, means for feeding the paper, a shaft operating the same, and arms fixed to the shaft one above each central punch, the distances between the successive arms and the tops of their punches increasing progressively.

606,659. **DOOR-HANGER.** JOSEPH E. HARTMAN, Cleveland, Ohio. Filed Jan. 3, 1898. Serial No. 665,261. (No model.)

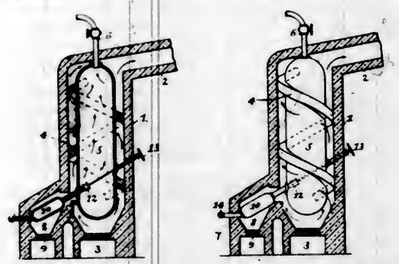
Claim.—1. The combination with a door, of pivoted cross-levers pivoted at one end, one to the door and the other to the frame or building, and at their opposite end guided by ways provided, respectively, in the door and frame or building, said guides or ways being offset, at their upper ends, substantially as and for the purpose shown and described.

2. In combination with a door, of pivoted cross-levers pivotally secured at one end to the door and frame or building respectively, and at their lower end provided with rollers guided by ways provided, respectively, in the door and frame or building, said ways being offset at their upper end, whereby when the door is opened it is raised from the sill, and when closed is lowered to the sill, substantially as shown and described.

3. The combination with two pivoted levers secured by pivots to the door and frame or building, and at their central part pivoted so that one arm of one lever passes to one side of the other lever and the other arm of the first lever passes to the opposite side of the second lever, whereby the said levers will operate to pass each other when the door is opened, substantially as and for the purpose shown and described.



606,660. **GAS HEATING AND EXPANDING DEVICE.** JOHN C. HENDERSON, New York, N. Y. Filed Aug. 4, 1897. Serial No. 647,121. (No model.)



Claim.—1. A gas-heating apparatus provided with a large and small chamber, the small chamber being a pressuperheater, for suddenly heating the medium by one application of the direct action of heat.

2. A pressuperheating attachment for gas-heating apparatus independent of and separated from the heating or expanding chamber, and having suitable connections therewith and means for supplying the medium to the pressuperheater whereby the medium is suddenly heated by one application of the direct action of heat.

3. A gas-heating apparatus, consisting of an expansion-chamber, a separate and independent pressuperheater to suddenly heat the medium by one direct application of heat while expanding into the expansion-chamber, connections between said parts, and means for supplying the medium to the pressuperheater.

4. A gas-heating apparatus, consisting of a furnace, an expansion-chamber adjacent thereto, a separate and independent pressuperheater to heat the medium by the direct action of the furnace while expanding into the expanding-chamber, connections between the pressuperheater and expansion-chamber, a valve or valves to control said connections and means for supplying the medium to the pressuperheater.

5. A gas-heating apparatus consisting of an expansion-chamber, a furnace adjacent thereto, a pressuperheating-chamber receiving the direct heat from said furnace, and in juxtaposition to said expansion-chamber and communicating therewith and means for introducing the medium to the pressuperheater, whereby the medium is suddenly and directly heated from the furnace while expanding into said expansion-chamber.

606,661. **HEATING OR COOLING APPARATUS.** JOHN C. HENDERSON, New York N. Y. Filed Aug. 4, 1897. Serial No. 647,122. (No model.)



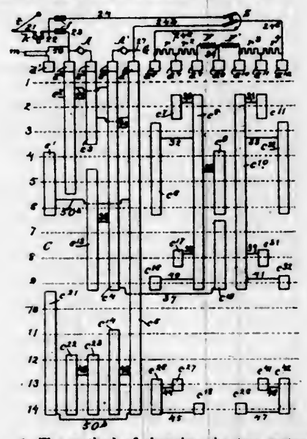
Claim.—The combination of a conduit or receptacle with a heat-conductor situated therein, said conductor consisting of a chain formed of links of a length greater than the diameter of said conduit or receptacle, and arranged to extend from side to side thereof.

606,662. **PIPE-JOINT PACKING.** JOHN C. HENDERSON, New York, N. Y. Filed Aug. 4, 1897. Serial No. 647,123. (No model.)



Claim.—A pipe-joint packing consisting of a casting or forging provided with an enlarged opening having a screw-threaded orifice, the bottom of said opening sloping or converging to a central screw-threaded bore, a screw-threaded pipe or rod secured in said bore, a frusto-conical elastic ring around the screw-threaded portion of said pipe or rod and resting upon said sloping or converging bottom said screw-threaded portion of the pipe or rod extending the entire length of the packing-ring, a follower above said ring having a beveled under surface corresponding to the bevel of said ring and a packing-nut about said pipe or rod and having only connection with the screw-threaded walls of said orifice.

606,663. **ELECTRIC RAILWAY.** JOHN C. HENRY, Denver, Colo. Filed Mar. 28, 1898. Serial No. 675,411. (No model.)



Claim.—1. The method of changing the two motors of a car equipment from series to parallel relation which consists in short-circuiting the field-magnet of one of said motors, subsequently short-circuiting the armature of said motor, breaking the series connection and closing a connection placing said armatures in parallel, and breaking the short-circuit through its field-magnet.

2. The method of changing from series to parallel relation the two motors of a car equipment whose armatures and field-magnets are in independent circuits, which consists in short-circuiting the field-magnet of one of said motors and simultaneously delivering correspondingly greater amount of current to the field-magnet of the other motor, and then connecting the motor armatures in parallel, by changing the connections of the armature under the short-circuited field-magnet.

3. The combination with the armatures and field-magnets of the two motors of a car equipment provided with a field-magnet-energizing circuit independent of the armature-circuit, of controlling mechanism and connections adapted to change the armatures from series to parallel relation by short-circuiting the field-magnet of one of the motors, subsequently short-circuiting the armature of such motor, closing a parallel connection to the other armature after breaking the series connection of such armature and the short circuit around its field-magnet.

4. The combination with the armatures and field-magnets of the two motors of a car equipment, provided with a field-magnet-energizing circuit, independent of the armature-circuit and including both field-magnets in series, of controlling mechanism and connections for changing the armature from series to parallel relation by short-circuiting the field-magnet of one of the motors, thereby deenergizing such field-magnet and superenergizing the field-magnet of the other motor, then closing a parallel connection and breaking a series connection for the armatures.

5. The combination with the armature and field-magnets, of the two motors of a car equipment provided with a field-magnet-energizing circuit independent of the armature-circuit and including both

field-magnets in series, of means for connecting the armatures in series relation, and means for establishing a cross connection from a point between the two armatures in series to a point between the two field-magnets.

6. The combination with the armature and field-magnets of the two motors of a car equipment provided with a field-magnet-energizing circuit independent of the armature-circuit and including both field-magnets in series, of means for connecting the armatures in series relation, and means for establishing a cross connection from a point between the two armatures in series to a point between the two field-magnets, regulating-resistances being included in each side of the field-magnet circuit and provided with means whereby they may be cut out simultaneously and symmetrically on the two sides.

7. The combination with the armatures and field-magnets of the two motors of a car equipment provided with a field-magnet-energizing circuit independent of the armature-circuit and including both field-magnets in series, of means for placing the armatures in either series or parallel relation, and controlling devices and connections adapted to be brought into operation when the armatures are in series relation, to close a cross connection from a point between the two armatures to a point between the two field-magnets.

8. The combination with a motor of a car equipment, having its armature and field-magnet included in independent circuits, of means for opening and closing the armature-circuit, and a shunt-circuit including a resistance and means for bringing said shunt-circuit into connection across the field-magnet circuit when the armature-circuit is opened.

9. The combination with a motor of a car equipment, having its field-magnet and armature in independent circuits, a controller comprising contacts for opening and closing the armature-circuit, a blow-out magnet arranged in operative relation to such controller-contacts, and means for bringing said blow-out magnet into operative connection with the motor-circuits when the said contacts break the armature-circuit.

10. The combination with an electric motor and independent supply connections for the armature and field-magnets thereof, of a controller for controlling such connections and an electromagnetic brake for said controller having operating connections with the armature and field-magnet circuits of the motor and responding to an excessive current in the armature-circuit to brake or stop the controller.

11. The combination with an electric motor and supply connections therefor, a controller for controlling the connections of said motor to bring its counter electromotive force above that of the supply connections and an electromagnetic controlling device responsive to an abnormal current flowing back from said motor through the supply connections, to retard or stop the motion of the controller.

12. An electric controller compriaing an insulating-cylinder, a series of contacts mounted thereon, a plurality of annular magnets surrounding, and mounted on, said cylinder, and having extensions projecting into proximity with such contacts.

13. An electric controller comprising an insulating-cylinder, a series of contacts supported thereon in such manner as to leave free intermediate spaces and blow-out magnets located in such spaces and having pole-pieces extending into proximity to such contacts.

14. An electric-circuit-controlling device comprising two relatively-movable contacts, one of such contacts being rotatably adjustable so as to present different contact-surfaces, and means for clamping said contact in adjusted position.

15. In an electric-circuit controller, the combination of a rotary contact, and a device contacting therewith, and consisting of a rounded block rotatably movable at right angles to the direction of motion of the other contact.

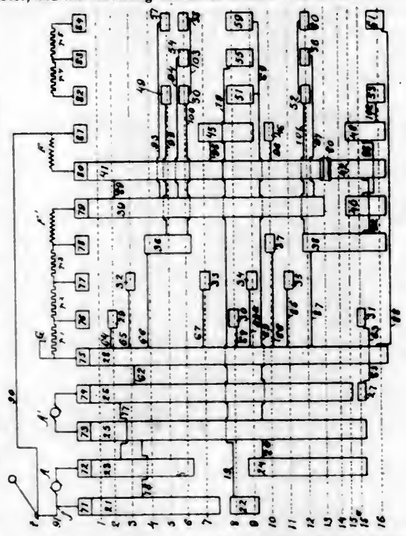
16. In an electric-circuit controller, the combination of a rotary contact, having a rounded groove, a rounded contact-block engaging in said groove, and a spring-rod on which said block is rotatably adjustable at right angles to the direction of motion of the other contact.

17. In a controller arranged to connect a pair of motors from series to parallel relation, means for establishing a cross connection centrally between the fields and armatures when the motors are working in series, and breaking said connection when the motors are to be operated in parallel.

18. In combination with dynamo-electric machines an independent circuit in parallel with said machines and switching devices arranged to complete said circuit when the armature-circuit is broken.

606,664. ELECTRIC RAILWAY. JOHN C. HENRY, Denver, Colo. Filed Apr. 7, 1896. Serial No. 676,735. (No model.)

Claim.—1. The method of controlling the two motors of a car equipment, wherein the field-magnets are connected in series in a circuit independent of the armature-circuit, which consists in closing a shunt around one of the field-magnets, said shunt including a resistance, then decreasing said resistance, so as to increase the current in and energization of, the field-magnet of the other motor and thus correspondingly decreasing the current in the armature of such other motor, and then breaking the circuit of such other armature.



2. The method of controlling electric motors whose field-magnets are in a circuit independent of their armatures which consists of decreasing the resistance of the field-maguet circuit of one motor so as to increase the energization of the field-magnet of the other motor and correspondingly decrease the armature-current of said other motor.

3. The method of changing from parallel to series relation the armatures of the two motor-armatures of a car equipment whose field-magnets are connected in an independent circuit, which consists in closing a shunt-circuit, including a resistance, around the field-magnet of one of the motors decreasing the resistance of the shunt-circuit so as to increase the field magnetization of the other motor and to correspondingly decrease the armature-current of such other motor, then opening the circuit of the armature of such other motor and closing a series connection between the armatures.

4. In a controlling system for a two-motor equipment the combination with the armatures and field-magnets of the two motors, of controlling devices and connections adapted to place the armatures of such motors in parallel relation, and to place the field-magnets of such motors in series relation, said controlling device comprising means for closing a shunt-circuit including a resistance around the field-magnet of one of the motors, and for decreasing the amount of such resistance, and means for opening or breaking the circuit of the armature of the other motor and connecting the motors in series.

5. In a controlling system for a two-motor equipment the combination with the armatures and field-magnets of the two motors, of controlling devices and connections adapted to place the armatures of such motors in parallel relation, and to place the field-magnets of such motors in series relation, said controlling device comprising means for closing a shunt-circuit including a resistance around the field-magnet of one of the motors and means for opening or breaking the circuit of the armature of the other motor and connecting the motors in series.

6. The method of controlling an electric motor whose armature and field-magnets are in independent circuits, which consists in short-circuiting the field-magnet of such motor then breaking the armature-circuit and simultaneously closing a circuit including the armature and a resistance.

7. The combination with the armatures and field-magnets of two electric motors, of controlling devices and connections for placing the said armatures in parallel relation, and placing the said field-magnets in series relation in an independent circuit, said controller comprising also means for short-circuiting the field-magnet of one of the motors, a resistance and means comprised in the controller for opening the circuit of the armature which is under the short-circuited field-magnet, for closing a circuit including said armature and said resistance, and for closing a series connection between the armatures.

8. The combination with two electric motors having their field-magnets connected in series in a circuit independent of their armatures, of controlling devices and connections for connecting the armatures in either parallel or series relation, a resistance and means comprised in said controlling devices for removing one of the armatures from its parallel connection, connecting it in a closed circuit with said resistance, connecting it in series with the other armature, and then breaking the said circuit through the resistance.

9. The combination with two electric motors having their field-magnets connected in a circuit independent of their armatures, of a resistance and means for closing a circuit, including said resistance around one of said field-magnets.

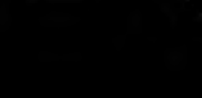
10. The combination with two electric motors having their field-magnets connected in circuit by connections independent of their armatures, of controlling devices for changing the said field magnets from series to parallel relation.

11. The combination with two electric motors having their field-magnets connected in circuit by connections independent of their armatures, of controlling devices for changing said field-magnets from series to parallel relation, said controlling devices comprising means for closing a shunt-circuit around one of said field-magnets, and then breaking the circuit of said field-magnet and then connecting such magnet in parallel relation with the other field-magnet.

12. The combination with two electric motors, having their field-magnets connected in circuit by connections independent of their armatures, means for connecting said magnets in series relation, a resistance and controlling devices for closing a shunt-circuit, including said resistance around one of said magnets, thus short-circuiting such magnet, open-circuiting it and connecting it in parallel with the other magnet.

13. The combination with the armatures and field-magnets of two electric motors, independent circuits comprising said armatures and field-magnets respectively, means for breaking said armature-circuit, and a shunt-circuit including a non-inductive resistance and means for closing a circuit including said resistance and said field-magnets when the armature-circuit is broken.

606,665. BOTTLE. JAMES T. HOLLAND, near Memphis, Tenn. Filed Dec. 15, 1896. Serial No. 615,773. (No model.)

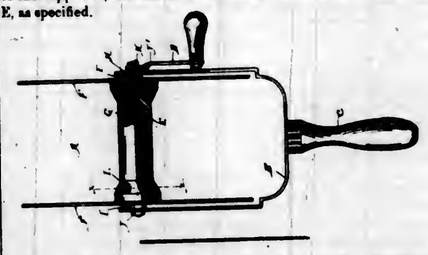


Claim.—1. The combination with a bottle having a laterally-enlarged lip, and a neck which is reduced below the lower surface of the lip and is downwardly expanded to form a gradual taper of which a portion below, and spaced from, the lip is of slightly-larger diameter than the lip, of a frangible cap inclosing the upper end of the bottle-neck and having upper and lower annular seats respectively fitting the lip and the bottle-neck at said point of slightly-larger diameter than the lip, the cap, from its upper seat upon the bottle-lip, being upwardly tapered, and means, inclosed by the cap, and between the under side of the bottle-lip and the lower edge of the cap, for preventing the axial upward displacement of the cap, substantially as specified.

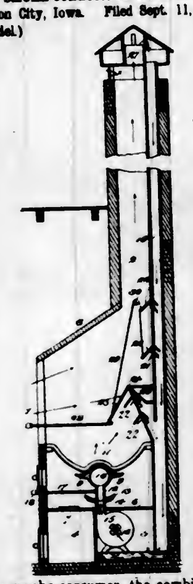
2. The combination with a bottle having a laterally-enlarged lip, and a neck which is of less diameter than the lip at the under side of the latter, and is enlarged downwardly therefrom in a gradual taper to a point of slightly-larger diameter than the lip, of an upwardly and continuously tapered frangible cap inclosing the upper end of the neck and having a bore which, at a point spaced from its upper closed end, is of equal diameter with the bottle-lip, and having its lower end contracted to form a neck-seat of slightly-larger diameter than the lip, and fitting snugly upon the bottle-seat at the point where said neck is of slightly-larger diameter than the lip, said contraction of the lower end of the cap forming an interior shoulder, and a locking device or catch arranged within the cap, in the annular space between the under side of the lip and said shoulder of the cap, and comprising a split ring, snugly fitting the reduced portion of the neck contiguous to the under surface of the lip, and downwardly-divergent spring-arms for terminally engaging the shoulder of the cap, whereby the extremities of said arms occupy positions in a circle of larger diameter than the neck-seat of the cap, substantially as specified.

606,666. CLOTHES-LINE REEL. HARRY HÜBNER, Philadelphia, Pa. Filed Dec. 31, 1897. Serial No. 662,869. (No model.)

Claim.—In combination, a spindle E, a rod G driven therethrough, side pieces F through which the rod G passes, having openings therein for allowing free access of air to the clothes-line for drying the same, nuts I threaded upon the rod G outside of said side pieces for clamping the spindle E between the side pieces F, a U-shaped support B, the upper ends of the two arms of which form bearings for the rod G, a nut J threaded upon the rod G outside of one arm of the support B, a crank D and nut K threaded upon the opposite end of the rod G outside of the other arm of the support B, a handle C secured to the support B, and means for attaching a clothes-line to the spindle E, as specified.



606,667. SMOKE-CONSUMING FIREPLACE. FRANKLIN E. HUMPHREYS, Mason City, Iowa. Filed Sept. 11, 1897. Serial No. 651,364. (No model.)



Claim.—1. In a smoke-consumer, the combination with a fireplace and its smoke-flue, of a fresh-air flue adjoining the smoke-flue and communicating therewith at one or more points above and below the fireplace, and means for controlling the air-supply for the purpose specified.

2. In a smoke-consumer, the combination with a fireplace and its smoke-flue, of a fresh-air flue adjoining and communicating with the smoke-flue at one or more points above and below the fireplace and deflectors arranged in or adjacent to the communicating ports above the fireplace, for the purpose specified.

3. In a smoke-consumer, the combination with a fireplace and smoke-flue, of a fresh-air flue extending alongside of the smoke-flue and communicating therewith by means of ports arranged at intervals, and angular deflectors arranged within and at the upper end of said ports and projecting into the smoke-flue, substantially as and for the purpose specified.

4. In a smoke-consumer, the combination with a fireplace and its smoke-flue, of a fresh-air flue adjoining and communicating with the smoke-flue at a point above the fireplace by way of a port, and a deflector pivoted adjacent the port, for the purpose specified.

5. In a smoke-consumer, the combination with a fireplace and smoke-flue leading therefrom, of a fresh-air flue at one side of the smoke-flue and communicating therewith by means of a port, an oblique-faced ledge arranged above said port and projecting over the fireplace, and a pivoted deflector connected to said ledge and made adjustable, substantially as described.

6. In a smoke-consumer, the combination with a fireplace and its smoke-flue, of an air-tight chamber arranged beneath the grate, a blower within the chamber, and a fresh-air flue adjoining and communicating with said smoke-flue and chamber, for the purpose specified.

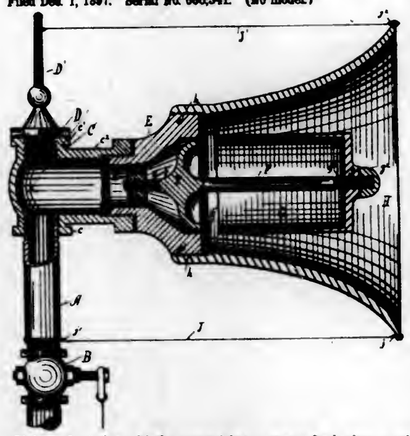
7. In a smoke-consumer, the combination with a fireplace and smoke-flue, of a fresh-air flue extending alongside of the smoke-flue, a blower communicating with said fresh-air flue, a suitable burner adjacent to the grate and communicating with said blower, abutting

pipes leading from the blower and burner and communicating with each other, curved plates secured to the adjacent ends of said pipes, and a rod connected to the pipe of the burner and extending through the front of the fireplace, substantially as and for the purpose described.

8. In a smoke-consumer, the combination with a fireplace and a smoke-flue leading upward therefrom, of a fresh-air flue extending alongside of the smoke-flue and communicating therewith at intervals, a cap covering both of said flues, and a hollow cylindrical gatherer arranged within said cap and operating, substantially in the manner and for the purpose specified.

9. In a smoke-consumer, the combination with a fireplace, and a smoke-flue leading therefrom, of a fresh-air flue at one side of the smoke-flue, a series of pivoted deflectors arranged contiguous to ports placing the smoke and fresh-air flues in communication, and means for simultaneously operating said deflectors, substantially as described.

606,668. FOG-WHISTLE. SILAS H. HUNTER, Cleveland, Ohio. Filed Dec. 1, 1897. Serial No. 660,341. (No model.)



Claim.—1. A fog-whistle comprising a steam-feed pipe, a suitable steam-port and a bell or sounding-cylinder, the said bell or sounding-cylinder being inclosed by a trumpet, said trumpet being open only at its mouth or forward end, substantially as and for the purpose shown and described.

2. In a fog-whistle, the combination with the whistle-bell of a steam or air tight trumpet open only at its mouth or forward end, said trumpet surrounding the said bell, substantially as and for the purpose shown and set forth.

3. In a fog-whistle, the combination with the whistle including the sounding-bell and a steam-supply pipe and suitable ports, of a steam or air tight trumpet surrounding the said bell or sounding-cylinder, the trumpet provided with sustaining-guys secured at the mouth of said trumpet at one end and at the opposite end to suitable supports substantially as and for the purpose shown and described.

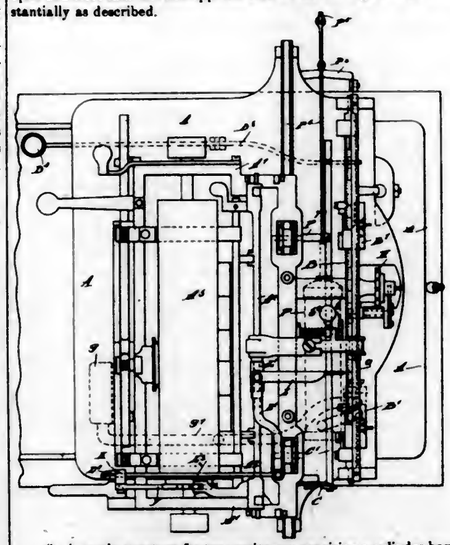
4. In a fog-whistle, the combination with the whistle proper, of a trumpet surrounding the bell of the said whistle, the said trumpet being internally screw-threaded at its inner or contracted end, and an external screw-thread on the whistle proper, and engaging the internal screw-thread of the trumpet, whereby the trumpet is held in proper relation to the whistle proper, substantially as shown and described.

5. In a fog-whistle, the combination with the pipe A, T-fitting C, plug D with shaft D' fitting into the upper end of the T-fitting, casting E and diaphragm F, bell G and trumpet H surrounding the bell G, and provided with guys J J' connected at one end to the mouth of the trumpet and at the other end, respectively, to the steam-pipe A and the shaft D', all operating substantially as and for the purpose shown and described.

606,669. AUTOMATIC DEVICE FOR RETURNING CARRIAGES FOR TYPE-WRITING MACHINES. WILLIAM R. JACKSON, Jr., Augusta, Ga. Filed Mar. 12, 1897. Serial No. 627,162. (No model.)

Claim.—1. A carriage-return for type-writers, comprising a cylinder having its piston connected to the carriage, a pneumatic reservoir, means actuated by the carriage at one end of its travel to connect the reservoir and cylinder, and means similarly operated for disconnecting the reservoir and cylinder by the return movement of the carriage, substantially as described.

2. A carriage-return for type-writers, comprising a cylinder having its piston connected to the carriage, a pneumatic reservoir, connections from the reservoir to the cylinder containing a valve which is normally closed, and a lever connected therewith projecting into the path of the carriage, whereby it is engaged by the carriage to open and close said valve at opposite ends of the carriage travel, substantially as described.



3. A carriage-return for type-writers, comprising a cylinder having its piston connected to the carriage, a pneumatic reservoir, and means controlled by the travel d' of the carriage for temporarily connecting the reservoir and cylinder, said cylinder having a connection of small area with the outside air which can be closed at will substantially as described.

4. In a carriage-return for type-writers, the combination of a vacuum-chamber, with a cylinder having a connection of small area with the atmosphere which can be closed at will, the piston of said cylinder being connected to the carriage, connections from the cylinder to the vacuum-chamber containing a valve which is normally closed, means for automatically opening the said valve by the travel of the carriage, and means controlled by a key for opening said valve at will, substantially as described.

5. A carriage-return for type-writers, comprising a pneumatically-operated device connected to the carriage to impart the return movement to the same, means for throwing said pneumatically-operated device into action, and means actuated by the return movement of the carriage for throwing said pneumatically-operated device out of action, substantially as described.

6. A carriage-return for type-writers, comprising a cylinder having its piston connected to the carriage, a power-reservoir, a valve adapted to establish communication between the cylinder and reservoir, said valve being normally closed, means actuated by the carriage at one end of its travel to move said valve to connect the reservoir and the cylinder, and means similarly operated to move said valve to close the communication between the reservoir and cylinder at the end of the return movement of the carriage, substantially as described.

7. A carriage-return for type-writers, comprising a cylinder having its piston connected to the carriage, a power-reservoir, a valve arranged to establish communication between the cylinder and reservoir, the said valve being normally closed, a lever connected with the valve to open and close the same, mechanism controlled by a key for moving said lever to open the valve, and means connected with the lever and operated by the travel of the carriage to close said valve, substantially as described.

8. A carriage return for type-writers, comprising a cylinder having its piston connected to the carriage, a power-reservoir, a valve adapted to establish communication between the cylinder and reservoir and normally closed, a bar mounted upon the machine to have a limited longitudinal movement, a lever operated by the movement of the said bar and connected with the said valve to open the same, and means controlled by a key for moving said bar, substantially as described.

9. A carriage-return for type-writers, comprising a cylinder having its piston connected to the carriage, a pneumatic reservoir, a connection between the reservoir and the cylinder, containing a normally-closed valve, a bar mounted upon the machine-frame to have a limited longitudinal movement, stops upon said bar, a trip carried by the carriage and adapted to engage the said stops on the bar to move the latter, and a lever operated by the movement of the said bar, and connected with the said valve to move the same to connect and disconnect the cylinder and reservoir, substantially as described.

10. In a carriage-return for type-writers, the combination with a vacuum-chamber, and mechanism for exhausting air therefrom, of a cylinder having its piston connected to the carriage, connections from the cylinder to the vacuum-chamber containing a valve which is normally closed, means for opening said valve at will, and means for closing said valve by the travel of the carriage, substantially as described.

11. In a carriage-return for type-writers, the combination with a vacuum-chamber, and mechanism for exhausting air therefrom, of a cylinder having its piston connected to the carriage, connections between the cylinder and vacuum-chamber containing a normally-closed valve, means actuated by the carriage at one end of its travel to open said valve to connect the reservoir and cylinder, and means similarly operated for closing said valve by the return movement of the carriage, substantially as described.

12. In a type-writer, the combination with a carriage provided with a power-return, of a sleeve mounted to turn upon a bar located upon the rear side of the carriage, a bell-crank lever mounted upon said sleeve, a stop adapted to engage one end of said lever at the end of the return movement, and a link connected at one end to the other end of said lever, the opposite end of the said link having a sliding connection with the paper-feeding mechanism, substantially as described.

13. In a type-writer, the combination with a carriage provided with a power-return, of a sleeve mounted to turn, a bell-crank lever mounted upon said sleeve, a stop engaging one end of the lever at the end of the return movement, a perforated lug on the paper-feeding mechanism, a link connected at one end with the said lever, the other end of the said link extending through the perforation in the lug and having free movement therein in one direction, and means for limiting the movement of the link in the opposite direction, substantially as described.

14. In a type-writer, the combination with a carriage, of a power-return normally inactive, a lever pivoted at its lower end to the frame of the type-writer, the upper end of said lever being connected with the carriage, a connection between the power-return and the said lever, a bar mounted upon the machine-frame, to have a limited longitudinal movement, stops upon said bar, a trip carried by the carriage and adapted to engage the said stops on the bar to move the latter, projections from the under side of the said bar, and a second lever connected with the power return and engaged by the said projections, the said lever being operated by the movement of the said bar to throw the power-return into and out of operation, substantially as described.

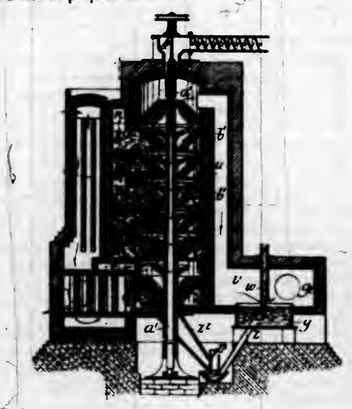
15. In a type-writer, the combination with a lever pivoted at its lower end to the frame of the type-writer and connected at its upper end with the carriage, of a pneumatically-operated device connected with said lever to impart the return movement to the carriage, a second lever pivoted to the frame of the type-writer and connected with the said pneumatically-operated device, to throw the same into or out of operation, means for moving the said lever to throw the pneumatically-operated device into action, and means actuated by the return movement of the carriage for moving the said lever to throw the device out of action, substantially as described.

16. In a type-writer, the combination with a lever pivoted at its lower end to the frame of the type-writer, and a link connecting the upper end of said lever with the carriage, of a vacuum-chamber, means for exhausting air therefrom, a cylinder having its piston connected with the said lever, connections from the said chamber to the cylinder containing a normally-closed valve, and a lever connected with the said valve and operated by the movement of the carriage to open and close said valve at opposite ends of the carriage travel, substantially as described.

606,670. APPARATUS FOR TREATING AURIFEROUS OR OTHER ORES. JOHN W. H. JAMES and THOMAS R. JORDAN, New York, N. Y., assignors to the Anglo American Reduction Company, of West Virginia. Filed Oct. 16, 1896. Serial No. 609,074. (No model.)

Claim.—1. In the treatment of auriferous and other ores to extract their values, means for roasting or calcining the particles, consisting of a vertically-arranged series of revoluble dishes for imparting a centrifugal action to the particles, a series of hollow rings having inclined surfaces adjacent to and respectively below said dishes, a mechanism for feeding the particles to the dishes, means for supplying hot air only in direct contact with the particles, and independent means for circulating products of combustion in and around the rings, whereby the particles are subjected to a roasting or calcining action while in suspension, substantially as described.

2. In the treatment of auriferous and other ores to extract their values, a roasting and calcining furnace having a vertically-arranged series of revoluble dishes for imparting centrifugal action to the particles, a series of rings alternating with said dishes and provided with annular chambers and inclined surfaces, a furnace for circulating heat to the chambered rings whereby the particles are subjected to a roasting and calcining action while in suspension, said furnace having a checker-work air-regenerator and fire-clay tubes within the combustion-chamber for superheating the air and means for supplying the superheated air directly to the particles substantially in the manner and for the purpose set forth.



3. In the treatment of auriferous and other ores to extract their values, a roasting and calcining furnace having a vertically-arranged series of revoluble dishes for imparting a centrifugal action to the particles, a series of chambered rings alternating with said dishes and having inclined surfaces adjacent thereto, a furnace having connection with the chambered rings whereby the heat from the circulating products of combustion is brought by radiation from the inclined surfaces in contact with the particles while in suspension, said furnace having a checker-work air-regenerator, fire-clay tubes within the combustion-chamber by which the air from the regenerator is superheated, a passage leading to the base of the roasting and calcining furnace, by which the superheated air is brought in direct contact in its ascent with the descending particles, and a downtake and precipitating-box in combination with a deflector and water-tank, all substantially as and for the purpose set forth.

4. In the treatment of auriferous and other ores to extract their values the combination with a roasting and calcining furnace in which the particles are subjected to centrifugal action, a furnace to supply heat by radiation to the particles and means for supplying superheated air directly to the particles while in suspension, consisting of a checker-work air-regenerator in combination with fire-clay tubes within the combustion-chamber for superheating the air, a deflector and water-tank for the purpose of cleansing the superheated air and freeing it from float metal or noxious elements and precipitating same in the tank, a gas-port at the entrance to the combustion-chamber and a passage connecting the precipitating-box with the gas-port, for returning the heated air and mingling the same with the gas substantially in the manner and for the purpose set forth.

606,671. PAPER BOX. FRANK KNOBELOCH, Dayton, Ohio, assignor, by mesne assignments, to the Kennard Manufacturing Company, same place. Filed Nov. 11, 1897. Serial No. 658,131. (No model.)



Claim.—1. A paper vessel made of a single blank of suitable material, cut and scored to fold into trapezi form, with a double bottom, the inner bottom formed of two triangular extensions of the narrower middle sides of the blank and the outer bottom consisting of two triangular extensions of the outer wider sides of the blank, substantially as and for the purpose described.

2. A paper vessel of trapezi form made from a single blank having triangular flaps *e*, *f*, integral with the outer wider sides of the blank and the triangular extensions *g*, *h*, integral with the narrower inner sides of the blank, said blank scored to fold in the manner described, to produce double bottom extending over the entire surface, substantially as and in the manner described.

3. A paper vessel of trapezi form made of a single blank cut and scored to form the four sides, each of these sides being provided with a triangular extension, one of the outer extensions being provided with a flap to overlap and be glued to the other outer extension, and one or both of the inner triangular extensions being provided with an overlapping flap to be glued to the other to form the inner bottom, both bottoms extending over the entire bottom, substantially as and in the manner described.

4. A paper vessel made of a single blank cut and scored to fold into trapezi form, with a double bottom, each bottom extending over the entire surface and one bottom consisting of two triangular extensions of the inner sides, the edges of which are glued together, substantially as and in the manner described.

5. A paper vessel made of a single blank cut and scored to fold into trapezi form without a top but having a double bottom, said bottom consisting of four triangular extensions integral with the four sides, two of which are glued together at their edges to form the inner bottom, and the other two are glued together at their edges to form the outer bottom, substantially as and in the manner described.

6. A collapsible box made of a single blank of suitable material, cut and scored to fold into trapezi form, with a double bottom, the inner bottom provided with extensions so arranged as to brace and hold the box firmly in shape when pushed to its normal position, substantially as shown and described.

7. A collapsible box of trapezi form made from a single blank and provided with double bottom, the triangular extensions forming the inner bottom having marginal flaps or extensions arranged to fold perpendicularly and form a brace for the bottom, substantially as and in the manner described.

8. A collapsible box of trapezi form made of a single blank the triangular extensions forming the inner bottom, being provided with marginal flaps *h'' g''* which fold up and rest against the inner sides of the box, forming a strengthening and stiffening brace, substantially as and in the manner described.

9. A collapsible box of trapezi form made of a single blank and having a double bottom, one of the triangular extensions forming the inner bottom being provided with a marginal flap or extension to lap over the edge and onto the other extension, where it is glued to form a solid and flat bottom, each triangular extension being provided with bracing-flaps, substantially as and in the manner described.

10. A collapsible box of trapezi form made from a single blank cut and scored, both the triangular extensions which together form the inner bottom, being provided with marginal flaps or extensions *g' h'* to lap over one another and the opposite triangular extension where they are glued to form a plain horizontal bottom stiffened by the doubling of these flaps and also provided with bracing extensions, substantially as and in the manner described.

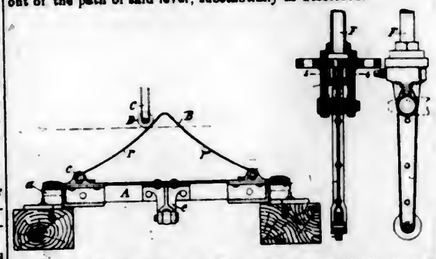
11. A collapsible box of trapezi form made from a single blank cut and scored, the triangular extensions which together form the inner bottom being provided with marginal flaps *g' h'*, bent at right angles to the bottom and glued together to form a vertical brace for the inner bottom.

12. A collapsible box of trapezi form made from a single blank cut and scored, having double bottom consisting of two triangular extensions of the narrower inner sides, provided with marginal flaps on their approximate sides, bent at right angles to the bottom and glued together to form a vertical brace, the triangular extensions also having outer flaps bent at right angles to rest against the inner side of the vertical walls, substantially as and for the purpose described.

606,672. SAFETY APPARATUS FOR RAILWAY-LINES. JEAN M. LAFFAS, Paris, France. Filed Dec. 28, 1897. Serial No. 664,031. (No model.) Patented in France Oct. 27, 1891, No. 219,024, and Sept. 12, 1896, No. 256,654; in Belgium Apr. 2, 1892, No. 99,080; in Germany May 31, 1892, No. 67,119; in Spain June 25, 1894, No. 15,990; in Switzerland July 23, 1894, No. 8,944; in Luxemburg July 23, 1894, No. 2,075; in Tunis July 26, 1894, No. 116; in Sweden Aug. 1, 1894, No. 7,410; in Italy Aug. 3, 1894, LXXII, 342; in Portugal Aug. 8, 1894, No. 1,227; in Austria Aug. 9, 1894, No. 44/5,429, and in Norway Aug. 13, 1894, No. 3,909.

Claim.—1. In a safety system for railways, an abutment or block of elastic material pivoted to the track, a lever controlling vents in the train-pipe of an air-brake system and suspended from a passing train, and means whereby said block or abutment may be operated from a distance and raised into the path of said suspended lever or depressed below the same as may be desired, substantially as described.

2. In a safety system for railways, an abutment or block of elastic material pivoted to the track, a shock-absorbing lever suspended from a passing train and controlling vents in the train-pipe of an air-brake system, and means for turning said abutment or block into or out of the path of said lever, substantially as described.

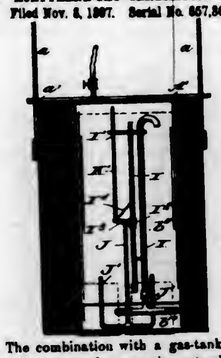


3. In a safety railway system an abutment or block pivoted to the track and capable of being raised into position to set the air-brake of a passing train, a signal-operating lever attached to the track in the path of the wheels of a passing train, and connections between said signal-lever and the brake-operating block or abutment, whereby the safety-brake block will be raised and the danger-signal set, each automatically by the passage of a train, substantially as described.

4. In a safety railway system, an abutment or block pivoted to the track and capable of being raised into position to set the air-brakes of a passing train, a signal-operating lever attached to the track in the path of the wheels of a passing train, connections between said signal-lever and the brake-operating block or abutment, whereby the safety-brake block will be raised and the danger-signal set, each automatically, by a passing train, and locking means therefor under the control of the passing train while in the protected area, substantially as described.

5. In a safety railway system, a block on the track capable of adjustment to operate the air-brakes of a passing train, a signal system in proximity to the track and operated by a passing train to set the signal to "danger," connections between the brake-operating block and the signal system, whereby the operation of the latter by a passing train throws the brake-operating block into position to set the brakes of a succeeding train, a restoring-lever, and connections between the same and the signal system and brake-setting block, whereby each may be restored to its normal or "clear-track" position, a gate protecting a crossing of the track, a lock for said gate, a lock for the restoring-lever, a single key for both locks, said key being irremovably engaged in the gate-lock except when the gate is closed, and its lock thrown, whereby the restoring-lever can only be unlocked and thrown to restore the signal system and the brake-operating block to normal or clear track position when the gate is closed and locked, substantially as described.

606,678. ACETYLENE-GAS GENERATOR. THOMAS R. LEWIS, Dublin, Tex. Filed Nov. 6, 1897. Serial No. 657,867. (No model.)

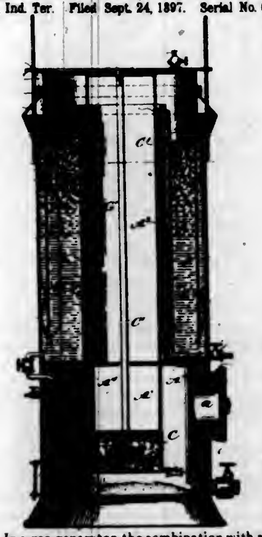


Claim.—1. The combination with a gas-tank provided with a dome, of a generating-receptacle, a gas-pipe extending therefrom into the tank, a water-pipe communicating with said generating-chamber, a stand-pipe having open ends and communicating with the water contained in said tank, a valve located in said stand-pipe and provided with ports to permit the entrance of water therein from the lower portion of said tank when the dome is elevated, and connecting devices adapted in the descending movement of the dome to shift said valve to discharge water into the water-pipe communicating with said generating-chamber; substantially as specified.

2. The combination with a tank and the movable dome thereof, of a generating-chamber, a gas-pipe extending therefrom into said tank, a stand-pipe open at its opposite ends and communicating with the water in said tank at its lower end, a two-way valve located on said stand-pipe and provided with an operating-lever, a pipe extending from said valve and communicating with said chamber, and an operating-rod normally supported by said stand-pipe and held in an elevated position to be actuated in the movement of the dome to shift said valve and permit the escape of water from the stand-pipe into the pipe communicating with the generating-chamber; substantially as specified.

3. The combination with a tank and the movable dome thereof, of a generating-chamber, a gas-pipe extending therefrom into said tank and provided with a check-valve, a stand-pipe supported from said gas-pipe and open at its opposite ends, a two-way valve located on said stand-pipe and provided with an operating-lever, a water-pipe extending from said valve and discharging into said gas-pipe below said check-valve, a reciprocating operating-rod carried by the end of said valve-lever, and means carried by said valve and its lever to normally maintain the latter in an elevated position: substantially as specified.

606,674. ACETYLENE-GAS GENERATOR. THOMAS R. LEWIS, Dougherty, Ind. Ter. Filed Sept. 24, 1897. Serial No. 652,913. (No model.)



Claim.—1. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, and a receptacle suspended from said cover or dome, substantially as specified.

2. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, and a gas-outlet pipe extending from the upper portion of said dome through said water-chamber, substantially as specified.

3. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, and a guide-ring supported from said generator and surrounding said dome, substantially as specified.

4. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a guide-ring supported from said generator and surrounding said dome, and means engaging said guide-ring and dome to hold the latter in its relation to the former, substantially as specified.

5. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a cover or dome located in said chamber, a receptacle suspended from said cover or dome, a water-chamber into which the lower end of said cover extends, an inlet-pipe provided with a cock and communicating with said water and generating chambers, and an outlet-cock at the lower portion of said generating chamber, substantially as specified.

6. In a gas-generator, the combination with a generating chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a manhole-cover provided with a packing, and a bail pivoted to said cover to engage a flange upon the edge of a manhole, substantially as specified.

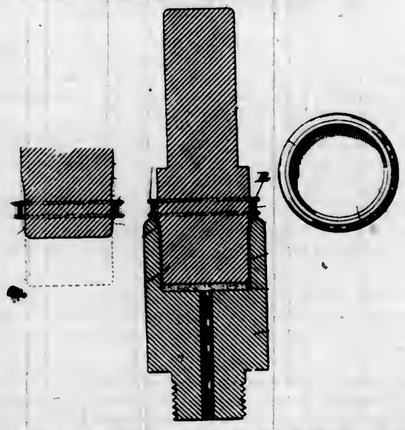
7. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a feed-valve located on said tubular extension, and means for operating said valve carried by said cover or dome, substantially as specified.

8. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a pivoted feed-valve located on said tubular extension and provided with a finger, and a stop carried by said cover or dome and adapted to engage said finger in the downward movement of the cover, substantially as specified.

9. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a feed-valve carried by said tubular extension, a finger extending outwardly from said valve, a stop carried upon the cover or dome to engage said finger, and parallel guide-flanges carried by the cover upon opposite sides of said finger, substantially as specified.

10. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a gas-outlet pipe extending from the upper portion of said cover or dome downward through the water-chamber, an inlet-feed valve pivotally mounted upon said tubular extension, and a stop carried by the cover or dome to engage said valve, substantially as specified.

606,675. METHOD OF AND APPARATUS FOR TRUING SPINNING-RINGS. FRANK M. MARCY, Worcester, Mass., assignor to the Draper Company, Portland, Me., and Hopedale, Mass. Filed Dec. 18, 1897. Serial No. 662,376. (No model.)



Claim.—1. The method of truing hardened spinning-rings, which consists in reheating the ring, mechanically expanding the ring by the temporary insertion of an arbor or form having a diameter greater than the interior diameter of the heated ring, and immersing the ring

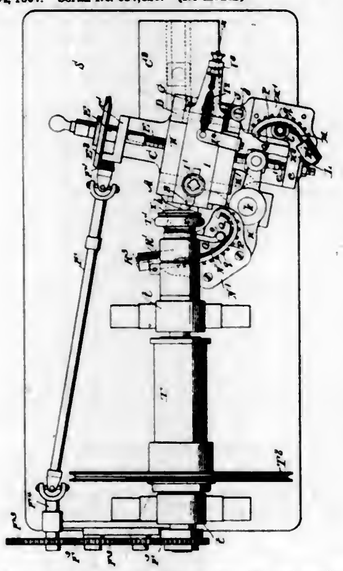
in a cooling medium while on the form, to harden the ring at its proper internal diameter, and finally removing the ring from the form.

2. The method of truing rings, which consists in heating the ring, temporarily inserting therein a cylindrical arbor or form having a tapering end, to gradually stretch the ring to the desired internal diameter, cooling the ring by immersion in a cooling medium while upon the cylindrical portion of the form, and finally removing the cooled ring from the form.

3. In an apparatus for truing spinning-rings, an annular support to sustain the ring beneath its web, and an arbor or form having a tapering end and adjacent cylindrical portion of the diameter desired for the interior of the ring, the form being adapted to be driven into the ring while held upon the support, to gradually stretch the ring to the diameter of the cylindrical portion of the form.

4. In an apparatus for truing spinning-rings, an annular support to sustain the ring beneath its web, an arbor or form having a tapering end and adjacent cylindrical portion of the diameter desired for the interior of the ring, and a cushion for the end of the arbor, the latter being adapted to be driven into the ring while held upon the support.

606,676. ENGRAVING-MACHINE. FRITZ MINK, Philadelphia, Pa., assignor to the Keystone Watch Case Company, same place. Filed May 24, 1897. Serial No. 637,829. (No model.)



Claim.—1. The combination with the movable tool-carrier of an engraving-machine, of mechanism for imparting movements to the tool-carrier, embracing a cam, having an adjustable cam-face, yieldingly supported at one end, and adjusting devices for independently adjusting the cam face at different points in its length.

2. The combination with the tool-carrier of an engraving-machine, of mechanism for imparting movements thereto, embracing a cam having a flexible cam-face yieldingly supported at one end, and means for bending the flexible face

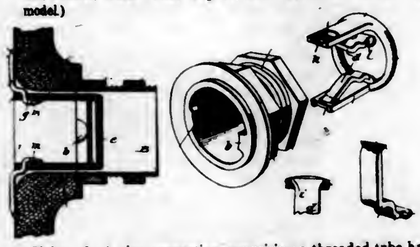
3. The combination with the tool-carrier of an engraving-machine, of mechanism for imparting movements thereto, embracing a cam having a flexible cam-face yieldingly supported at one end, and means for bending the flexible cam-face consisting of a series of independent adjusting-screws bearing upon the flexible cam-face.

4. The combination with the tool-carrier of an engraving-machine, of mechanism for imparting movements thereto, embracing a cam composed of a flexible strip Q yieldingly supported at one end and a series of independent adjusting-screws q bearing upon the rear of the strip.

5. The combination with the tool-carrier of an engraving-machine, of mechanism for imparting movements thereto, embracing a cam composed of a flexible strip Q, a spring-pressed plug R carrying the strip at one end and forming a yielding support therefor, and a series of adjusting-screws q bearing upon the rear of the strip.

6. In an engraving-machine, the combination of a traversing carriage, a tool-carrier carried thereby, means for moving the tool-carrier longitudinally as the carriage travels, a cam for operating said means for moving the tool-carrier longitudinally, means for rocking the tool-carrier as the carriage travels, a rocking cam for operating said means for rocking the tool-carriage, and means for rocking said cam when the traversing carriage moves.

606,677. PIPE-COUPLING. JAMES MORRISON and HANS P. HANSEN, Seattle, Wash. Filed Aug. 13, 1897. Serial No. 648,153. (No model.)



Claim.—1. A pipe connection comprising a threaded tube having an interior stop, a nut mounted on said tube, and a grapple having a body arranged in the tube and bearing against the interior stop thereof and provided with a transverse aperture in its wall, and a finger loosely arranged in said aperture and having a portion adapted to bear against the wall thereof, and a portion adapted to bear against the inner side of a water-closet bowl or the like, substantially as specified.

2. A pipe connection comprising a threaded tube having an interior stop, a nut on said tube, a grapple having a body arranged in the tube and bearing against the stop thereof and provided with transverse apertures in its wall, and fingers loosely arranged in said apertures and having enlargements adapted to bear against the inner side of the body, shoulders to engage the walls of the apertures and portions to engage the inner side of a water-closet bowl or the like, substantially as specified.

3. A pipe connection comprising a threaded tube having an interior stop, a nut on said tube, a grapple having a body arranged in the tube and bearing against the stop thereof and provided with transverse apertures in its wall, and fingers loosely arranged in said apertures and having enlargements at their outer ends to hold them in the apertures while the grapple is being placed in position, enlargements at their inner ends adapted to bear against the inner side of the body, shoulders to engage the walls of the apertures in the body, shoulders to engage the outside of the body and portions to engage the inner side of a water-closet bowl or the like, substantially as specified.

4. A pipe connection comprising a threaded tube having one or more interior stops rounded or convex on their sides contiguous to the outer end of the tube, a nut on said tube, and a grapple having a body of less diameter than the tube arranged in the same and bearing against and adapted to rock upon the rounded stops thereof and provided with transverse apertures in its wall, and fingers loosely arranged in said apertures and having enlargements adapted to bear against the inner side of the body, shoulders to engage the walls of the apertures and portions to engage the inner side of a water-closet bowl or the like, substantially as specified.

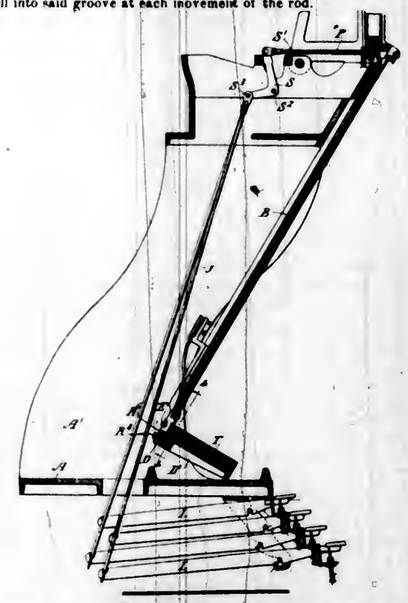
606,678. TYPE-SETTING MACHINE. RICHARD J. MOXLEY, New York, N. Y., assignor to the Empire Typesetting Machine Company, same place. Filed Nov. 23, 1895. Renewed May 26, 1898. Serial No. 681,843. (No model.)

Claim.—1. In a machine for setting type, the combination with plunger mechanism for ejecting type from type-cases, of finger-levers for actuating said plunger mechanism, provided with fulcrum-points in proximity to the point of power, and springs, capable of regulation, for assisting the power to any desired amount.

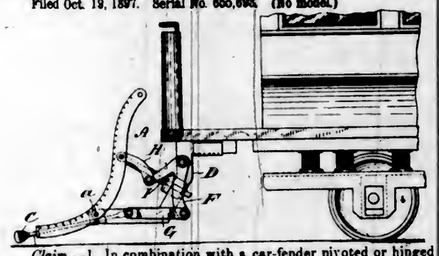
2. In a machine for setting type operated by finger-levers, the combination of such levers so pivoted as to bring the fulcrum-point in proximity to the source of power, of springs so placed as to assist such power to any desired amount, and a screw for regulating the tension of said spring, as described.

3. In a machine for setting type operated by finger-levers, the combination with the levers of a finger-key attached thereto, a pin pivoted to the bottom of said key, a sleeve screwing into a screw-bearing on the frame-plate, into which said pin slides vertically, and a spring connected with the pin of the finger-key for assisting the power of the operator, the tension of which is regulated by screwing the sleeve up or down in its bearing.

4. In a machine for setting type, the combination with a back plate having grooves through which type fall into a raceway, of a hollow rod or tube, open at both ends, attached to the side of the back plate above an open groove leading to the raceway, a spring whereby the rod is normally held away from said open groove, and held on a ledge of said back plate, and means for drawing said rod forward over said open groove, so that a single paragraph-mark can fall into said groove at each movement of the rod.



606,679. CAR-FENDER. OTTO W. NORLING, Brooklyn, N. Y. Filed Oct. 19, 1897. Serial No. 655,693. (No model.)



Claim.—1. In combination with a car-fender pivoted or hinged in arms as explained, a movable buffer sustained in front of said fender and on sliding rods, the latter being connected with the bell-crank levers, and the said levers connected with the fender, the whole arranged to tilt up the front end of the frame as soon as the buffer is forced back by contact with an obstacle, for the purposes and objects set forth.

2. The combination with the hinged fender, the movable buffer supported thereon and connected with a bell-crank lever, the latter being coupled with the fender and the whole constructed and arranged to operate substantially as and for the purposes set forth.

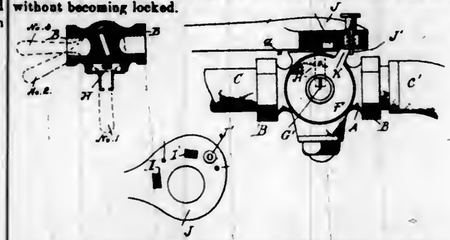
3. In combination with the hinged fender the movable buffer sustained thereby and bell crank levers connecting the two as set forth, of a spring or springs, as I, applied to the fender for the purpose of reducing shock, substantially as explained.

4. In a fender provided with a movable buffer and means for connecting the two as set forth, the combination with the first-named buffer of a second one and light springs connected therewith, for the purposes and objects named.

5. The combination as before set forth of the frame pivoted in the arms, the buffer sustained upon the frame, the sustaining-rods, bell-crank lever, coupling-pieces and springs connected with the frame, substantially as shown and described.

606,680. LOCK-VALVE FOR BRAKE MECHANISM. MICHAEL O'SULLIVAN, Flint, Mich., assignor to I. Wixom Whitehead, same place. Filed Oct. 6, 1897. Serial No. 654,282. (No model.)

Claim.—1. In a stop-cock provided with a locking device for locking the same in its closed position, a movable stop operating to arrest the movement of the stop-cock in a contingent closed position without becoming locked.

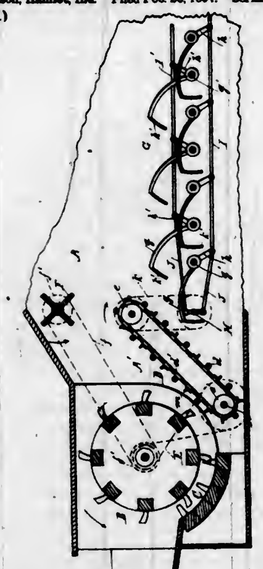


2. In a stop-cock provided with a self-locking device for locking the same in its open and closed positions, a spring-stop operating to arrest the movement of the stop-cock in a contingent closed position without becoming locked.

3. In a locking stop-cock, the combination of the casing, a lock-bolt, a handle having recesses engaging with said lock-bolt to lock the stop-cock, and a spring-stop on the handle adapted to hold the stop-cock in a contingent closed position.

4. In a locking stop-cock, the combination of the casing the spring-bolt in an enlargement of the casing adapted to be operated by a detached key, a handle provided with a disk-shaped inner end having recesses therein for locking the same in open and closed positions, fixed stops on the handle corresponding with the locking positions of the handle, and a spring-stop J′ for holding the handle in a contingent position of being closed but not locked.

606,681. THRESHING-MACHINE. LEMUEL D. PARMLEY, Waynesborough, Pa., assignor to Charles J. Danielson and Minnie D. Ellingson, Hamlet, Ind. Filed Feb. 26, 1897. Serial No. 625,213. (No model.)



Claim.—1. In a threshing-machine, the combination, with shafts arranged one behind the other, of rows of arms carried by the said shafts and operating to shake the straw, arms secured to the said shafts and arranged to project upward and downward alternately, coupling-rods connecting all the upwardly-projecting arms and all the downwardly-projecting arms, a crank-shaft provided with two cranks at opposite sides of its center, and connecting-rods arranged between the respective cranks and coupling-rods, substantially as set forth.

2. In a threshing-machine, the combination with shafts arranged one behind the other, of arms carried by the said shafts and operating to shake the straw, the arms of each rear shaft being arranged to overlap the shaft in front of them, coupling devices connecting

the arms on each alternate shaft in two series, and driving mechanism for raising the arms of one series when the arms of the other series are depressed, substantially as set forth.

606,682. FRUIT-GATHERER. DANIEL H. PEARCE and LEONARD ARBAUGH, Arbaugh, Ohio. Filed May 8, 1894. Serial No. 510,569. (No model.)



Claim.—A fruit-gatherer, consisting of an apron having a concaved central portion, a stiffened outer edge, an upwardly-tapering collar extending from and integral with the central concaved portion of the apron and a discharge-opening at the base of said collar, a flexible outwardly-curved spout secured to and depending from the under edge of said discharge-opening an apron-suspension rod having an eyed lower end connected with the apron and a hooked upper end to engage the tree, a bifurcated inturned pronged grab-hook secured at one end to the under face of the apron its prongs being adapted to grasp the tree, a series of inwardly-extending braces having eyed connection with the edges of the apron, a series of outwardly-extending braces also having top eyed connection with the edge of the apron and a series of anchor-pins pivotally connected with the lower ends of the outwardly-extending braces, as set forth.

606,683. SPRING BED-BOTTOM. PETER P. PEUGH and JOSEPH M. FRAZER, Wheeling, Mo. Filed Aug. 7, 1897. Serial No. 647,459. (No model.)



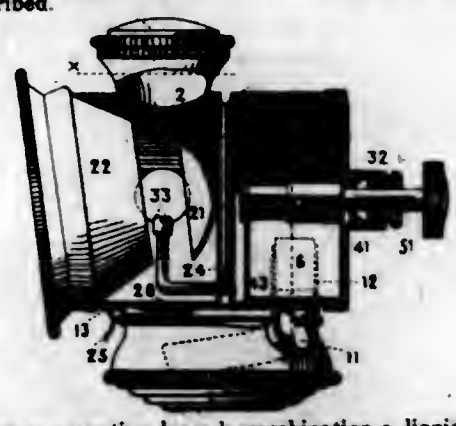
Claim.—1. A spring bed-bottom, comprising a bottom frame, conical or flaring resilient springs 4 mounted thereon in parallel longitudinal rows, each spring having its upper end bent to form a hook 4^a extending under its upper coil and an eye 4^b, projecting laterally beneath said coil, and short spiral springs 5 each having one of its ends connected with the upper coil of one resilient spring diametrically opposite its eye and its other end inclined downwardly and connected with the lateral eye of an adjoining spring in the same longitudinal row, substantially as described.

2. A spring bed-bottom, comprising a frame, guides on the outer side and end edges of the frame, conical or flaring resilient springs 4 mounted in parallel rows on said frame, each spring having its upper end bent to form a hook 4^a extending under its upper coil and having a laterally-projecting eye, a series of short spiral springs 5 having one of its ends connected with the upper coil of one resilient spring diametrically opposite its eye and its other end connected with the eye of the next adjoining spring in the same longitudinal row, a series of long spiral springs 6 extending continuously between and connecting the inner sides of adjoining resilient springs, said springs being arranged in crossed pairs and extending parallel with the diagonal rows of resilient springs, and a brace-wire extending continuously through the said guides around the frame and provided with lateral loops engaging the side and end resilient springs, substantially as described.

606,684. ACETYLENE-GAS-GENERATING LAMP. FRANK REHND, Bridgeport, Conn., assignor to The Bridgeport Brass Company, same place. Filed Sept. 10, 1897. Serial No. 651,193. (No model.)

Claim.—1. In a gas-generating lamp in combination a liquid-containing chamber, a gas-generator and an invertible solid-containing chamber in said generator, substantially as described.

2. In a gas-generating lamp in combination a liquid-containing chamber, a gas-generator and a rotatable solid-containing chamber substantially segmental in cross-section in said generator, substantially as described.



3. In a gas-generating lamp in combination a liquid-containing chamber, a gas-generator, a rotatable solid-containing chamber in said generator and a separately rotatable blade or partition in said solid-containing chamber, substantially as described.

4. In a gas-generating lamp in combination a liquid-containing chamber, a gas-generator, a rotatable solid-containing chamber in said generator, a hub in said solid-containing chamber, a bearing in said generator, a rotatable shaft passing through said hub and said bearing and a blade or partition on said shaft within said solid-containing chamber, substantially as described.

5. In a gas-generating lamp in combination a liquid-containing chamber, a wick extending from said chamber, a gas-generator, an invertible solid-containing chamber and means for bringing said chamber into and out of contact with said wick, substantially as described.

6. In a gas-generating lamp in combination a liquid-containing chamber, a wick extending from said chamber, a gas-generator, an invertible solid-containing chamber and a movable blade or partition in said solid containing chamber, substantially as described.

7. In a gas-generating lamp in combination a liquid-containing chamber, a gas-generator adjacent thereto, a wick-tube extending from said liquid-containing chamber into said generator and a rotatable solid-containing chamber in said generator adapted to be moved into and out of contact with said wick, substantially as described.

8. In a gas-generating lamp in combination a liquid-containing chamber, a gas-generator adjacent thereto, a wick-tube extending from said liquid-containing chamber into said generator, a rotatable solid-containing chamber in said generator, a separately rotatable blade or partition in said solid-containing chamber and integral means for rotating said blade and said solid-containing chamber, substantially as described.

606,685. TORPEDO-EXPLODER. AUGUST RIBOKE, Baltimore, Md. Filed Apr. 5, 1897. Serial No. 630,809. (No model.)



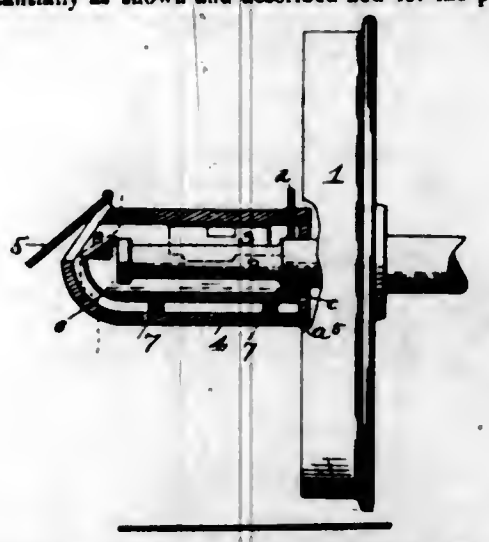
Claim.—1. The herein-described combination of a staff, a hollow body attached thereto provided with a top forming a buffer, a shield depending from the top into the hollow portion, a head having a contact-surface coinciding with that of the body, a bolt on the head depending through an aperture in the top of the body and a spring encircling the bolt and exerting a downward pressure on the head, substantially as described.

2. In a device of the character described, a hollow body having a cylindrical shield formed with the under side of the top depending into the hollow portion, a bolt having a head fitting against the walls of the shield, a spring interposed between the head and the top, a head having an aperture to receive the bolt, the spring holding the head normally against the body, as and for the purpose described.

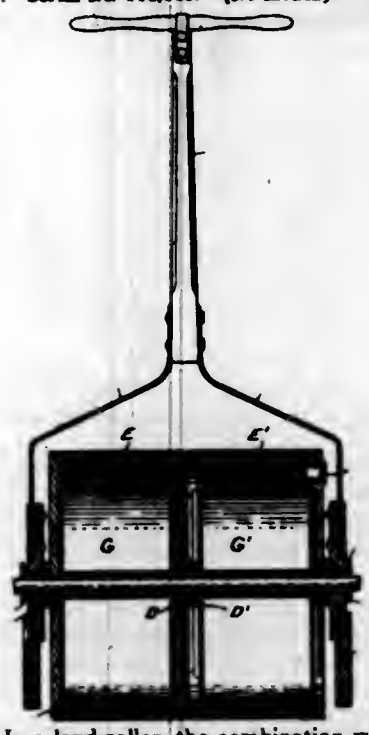
606,686. OIL-BOX CELLAR AND DUST-GUARD. JOHN M. SCROGIN and HENRY C. WOHLENDORFF, Tyler, Tex. Filed Aug. 24, 1897. Serial No. 649,386. (No model.)

Claim.—An oil-box cellar and dust-guard combined, consisting of the body 6; hinged door 8; spring-feet 7; plate *a*, having flange *a'*, plate *x*, having flange a^3, and plate *b*, having flange *b'*, leaving between said flanges, gullies a^2 and b^2; dust-guard a^3, its inner surface corresponding with the periphery of the axle, and seated in gully a^2, gasket or dust-guard *c*, fitting in gully b^2, and having its inner surface corresponding to the periphery of the axle; upper gasket or dust-guard *d*, having its wings *d'* fitting against the outer edges of the gasket *c*, and its inner surface d^2, corresponding to the periphery of the

axle, substantially as shown and described and for the purposes set forth.



606,687. LAND-ROLLER. JAMES M. SEYMOUR, Jr., Newark, N. J., assignor to the Peter Henderson & Company, of New Jersey. Filed Dec. 15, 1897. Serial No. 661,965. (No model.)



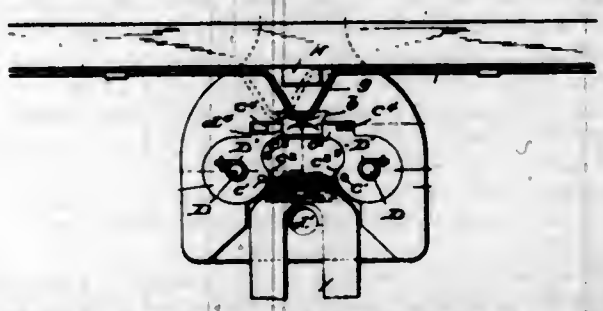
Claim.—1. In a land roller, the combination with suitable journal-bearings of a roller journaled thereon, a separable and independent tank contained within and stationary with reference to said roller.

2. In a land-roller, the combination with a shaft of a roller journaled thereon, a separable and independent tank contained within said roller and surrounding but not bearing upon said shaft.

3. In a land-roller, the combination with suitable journal-bearings of a roller journaled thereon, a separable and independent tank contained and entirely filling the space within said roller stationary with reference to it and bearing directly upon it.

4. In a land-roller, the combination with a shaft of a roller journaled thereon, an annular, separable and independent tank contained within and being stationary with reference to said roller and surrounding but not communicating its weight to said shaft.

606,688. CAR-COUPLING. JACOB E. SMITH, Homestead, Pa. Filed Oct. 8, 1897. Serial No. 654,584. (No model.)



Claim.—1. In a car-coupling, the combination of the draw-head, rotatable jaws mounted therein and provided with cam projections, a locking-pin having a vertical movement in the draw-head and adapted to engage the rotatable jaws, swinging dogs pivoted at their upper ends to the draw-head, said dogs having hooks and gravitated to engage the pin when the latter is raised, the dogs being so positioned as to be tripped by the jaws, substantially as shown and described.

2. In a car-coupling, the combination of the draw-head, rotatable jaws mounted therein and provided with cam projections, swinging dogs mounted within the draw-head at the rear end thereof, said dogs presenting hooks and tails, and a locking-pin engaged by the hooks of the dogs and held normally elevated thereby; the tails being positioned to be struck by the rotatable jaws, substantially as shown and described.

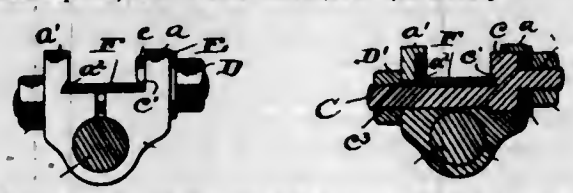
3. In a car-coupling, the combination of the draw-head, rotatable jaws mounted therein and having axial openings, stationary rods extending through said openings, springs encircling the rods and connected thereto and to the jaws to move the latter in one direction, and stops limiting the movement of the jaws; together with swinging dogs pivoted within the rear end of the draw-head, said dogs having hooks and tails, and a locking-pin supported by the hooks of said dogs, the latter being so positioned that the tails will be struck by the rotatable jaws to trip said dogs, substantially as shown and for the purpose set forth.

4. In a car-coupling, the combination of the draw-head having a vertical dovetailed recess in its rear end and segmental recesses in the sides of the link-chamber, cylindrical jaws mounted in said segmental recesses and provided with arms and cam projections, the former having shoulders at their upper ends; dogs pivoted within the rear end of the draw-head, and a locking-pin having a forward projection at its upper portion and beveled side edges, the pin being supported by the dogs engaging the projection thereof and said dogs tripped by the upper shoulders on the jaws, substantially as herein shown and described.

5. In a car-coupling, the combination of the draw-head having oppositely-inclined open-ended slots in the top communicating with the link-chamber and opening through the said top; rotatable jaws mounted within the link-chamber and presenting cam projections, and a locking-pin adapted to engage the jaws; together with a coupling-link shaped to be engaged by the cam projections of the jaws and of a size to pass through the open-ended slots, substantially as shown and for the purpose set forth.

6. In a car-coupling, the combination with a skeleton draw-head, of a body or frame adapted to slip laterally therein, top plates secured to the body to bear against the top of the skeleton draw-head, a supplemental front bolted to the draw-head; rotatable jaws mounted within the draw-head or body and presenting cam projections, and a locking-pin having a vertical movement in the draw-head to engage the rotatable jaws, substantially as shown and for the purpose set forth.

606,689. BICYCLE-SADDLE CLAMP. JAMES C. SMITH, Elyria, Ohio, assignor to the Garford Manufacturing Company, same place. Filed Sept. 15, 1897. Serial No. 651,803. (No model.)



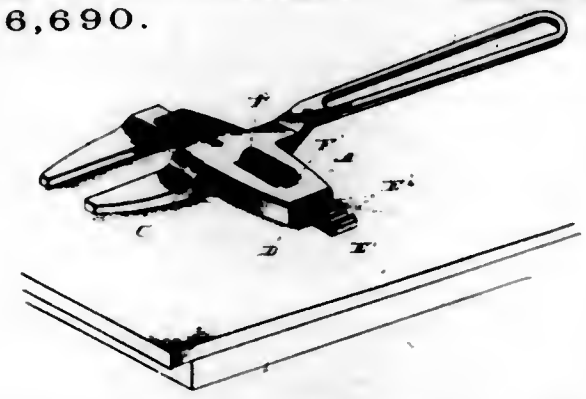
Claim.—1. In a clamp, the combination of the body comprising a split ring having two perforated ears, with the movable clamping member comprising a disk, which is slidable in the perforation in one ear, stems which project from opposite sides of said disk and pass through said ears, and the nuts upon said stems, substantially as and for the purpose specified.

2. In a bicycle saddle clamp, the combination of the body, comprising a split ring and two ears *a a'* which are perforated out of line with each other, with the movable clamping member, comprising the disk, which fits the perforation in one ear, and two threaded stems which project from opposite sides of said disk, the inner face of the disk and the opposing ear being grooved, the washer, and two nuts, substantially as and for the purpose specified.

606,690. WRENCH. THOMAS SPRIGGS, Little River, Kans. Filed May 26, 1897. Serial No. 638,208. (No model.)

Claim.—A combined nut and pipe wrench comprising a head, A, having a handle, B, and jaw, C, formed integral therewith, a transverse slot provided in said head, a movable jaw, E, having a shank formed at right angles thereto provided with teeth on its upper face adapted to slide in the said transverse slot, an opening provided in the head, A, having upwardly-extending lugs in its ends, a worm-sleeve mounted in the opening between the said lugs adapted to engage the teeth on the shank of the movable jaw, substantially as described.

606,690.



606,691. ADJUSTABLE SHOE-FITTING CHAIR. NARCISSA S. SPRINGER, Cleveland, Ohio. Filed Mar. 12, 1897. Serial No. 627,128. (No model.)



Claim.—1. The combination with a chair, of a foot-rest pivotally secured at one end to one of the front legs of the chair to swing horizontally, means for securing the foot-rest at different vertical adjustments, and a series of supports secured to the other front leg of the chair for supporting the other end of the foot-rest at different elevations.

2. The combination with a chair, of a rod secured to one of the front legs of the chair, a foot rest pivotally secured at one end to said rod, a clamping device for securing the foot-rest at different vertical adjustments, a series of supports secured to the other front leg of the chair to support the foot-rest at different elevations, and a device projecting from the foot-rest for engaging said supports.

3. In an adjustable shoe-fitting chair, the combination with the legs and seat of the same, of a mounting-step secured to the front of the chair, a vertically-adjustable foot-rest pivotally secured at one side only to the forward part of the chair, fastening means attached to the other side of the foot-rest, and means projected from one of the front legs of the chair for supporting one side of said foot rest, substantially as shown and described.

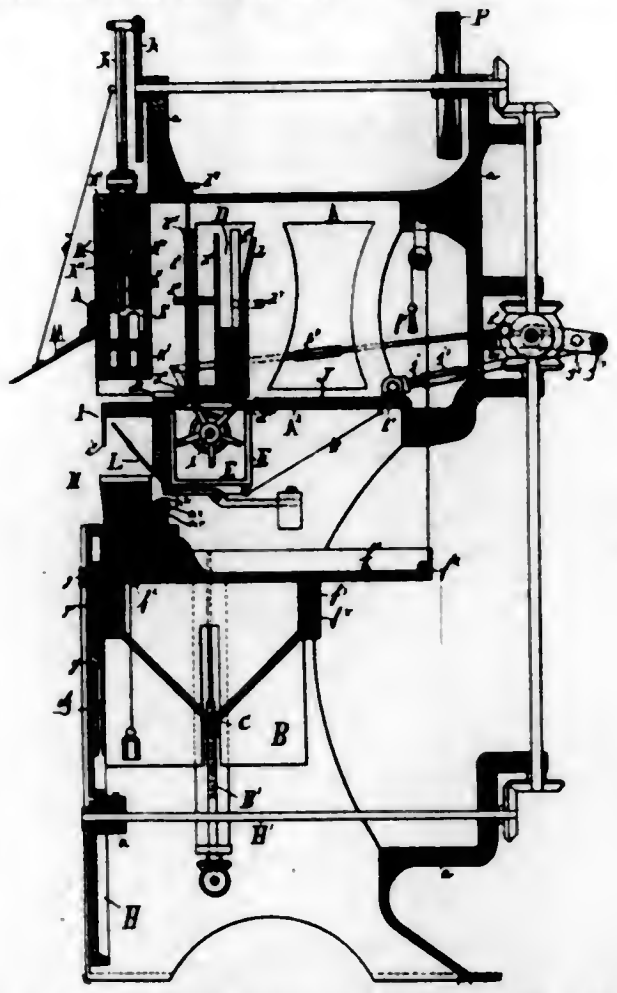
606,692. BOX-FORMING MACHINE. HENRY STEWART, Prophetstown, Ill. Filed Nov. 16, 1896. Serial No. 612,388. (No model.)

Claim.—1. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, magazines for the reception of side and bottom blanks, and plungers for placing the respective side and bottom blanks in position for being formed into boxes, substantially as described.

2. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, a magazine for the reception of the bottom blanks and a plunger for feeding bottom blanks one at a time from said magazine, substantially as described.

3. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, a plunger for feeding bottom blanks one at a time from the magazine for bottom blanks, a magazine for bottom blanks, and a follower in said magazine, substantially as described.

4. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, a plunger for feeding one at a time bottom blanks from the magazine for bottom blanks, a follower in said magazine, and the means of forcing the bottom blanks forward as they are fed out of said magazine, substantially as described and for the reason set forth.



5. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, a plunger for bottom blanks guides in which said plunger reciprocates, and a cam for raising said plunger and allowing a quick return of the same, substantially as described.

6. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, a plunger for feeding bottom blanks from the magazine for bottom blanks, a magazine for bottom blanks and means of adjusting the height of said magazine, substantially as described.

7. In a box-forming machine, in combination with a folding mechanism, a plunger for feeding bottom blanks from a magazine for bottom blanks, a magazine for bottom blanks, the circular parts f^7 which project from a magazine for bottom blanks, the circular openings f^8, which are situated on a suitable base for the support of a bottom magazine, and means of adjusting the circular parts f^7 in the circular openings f^8, substantially as described and for the reasons set forth.

8. In a box-forming machine in combination, a forming-head, a forming-block, a clenching-block, a bottom support, magazines for the reception of side and bottom blanks, and plungers for placing the side and bottom blanks in position to be formed into boxes, substantially as described.

9. In a box-forming machine, in combination, a forming-head, a forming-block, a clenching-block, a support for retaining the bottom blanks against the face of the forming-block while the boxes are being formed, a magazine for side blanks, a magazine for bottom blanks, a plunger for placing side blanks in position, a plunger for placing bottom blanks in position, and an extractor for removing the completed boxes from the forming block, substantially as described.

10. In a box-forming machine in combination, a forming-head, a forming-block, a clenching-block, and a plunger for placing bottom blanks in position against the forming-block, substantially as described.

11. In a box-forming machine in combination, a forming-head, a forming-block, a clenching-block, a plunger for placing bottom blanks against the forming-block, a recess in said plunger for the reception of the bottom blanks one at a time, and means of adjusting the vertical position of said recess, substantially as described and for the reason set forth.

12. In a box-forming machine, in combination, a forming-head, a forming-block, a clenching-block, a plunger for placing bottom blanks against the forming-block, the circular part g, of said plunger means of fitting said circular part g to said plunger, and means of adjusting said circular part substantially as described and for the reasons set forth.

13. In a box-forming machine in combination a magazine and a plunger for side blanks, a magazine and a plunger for bottom blanks, a forming-head a forming-block, a clenching-block, the recess *b*, in which the clenching-block is fitted, the lug n^4 the screw n^5 and the spring n^6, substantially as described and for the reasons set forth.

14. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, a magazine for bottom blanks, a follower, a cord, and a weight, in connection with said magazine, a plunger for feeding bottom blanks from said magazine, means of reciprocating said plunger and means of retaining bottom blanks in position while being formed into boxes, substantially as described.

15. In a box-forming machine in combination, magazines for side and bottom blanks plungers for side and bottom blanks, a forming-head a forming-block, a clenching-block mounted on the auxiliary frame B, the auxiliary frame B, and means of adjusting said frame, to secure for the clenching-block a variety of vertical positions, substantially as described and for the reasons set forth.

16. In a box-forming machine in combination, a forming-head, a forming-block, a clenching-block, the lower part n^5 and the upper part n^6 of said clenching-block, means of fitting said upper part to said lower part and means of adjusting said upper part, substantially as described and for the reasons set forth.

17. In a box-forming machine in combination, a forming-head, a forming-block, a clenching-block mounted on the auxiliary frame B, a magazine for bottom blanks mounted on the auxiliary frame C, the auxiliary frames B and C and means of adjusting said auxiliary frames, substantially as described.

18. In a box-forming machine in combination, a forming-head, a forming-block, a clenching-block mounted on the auxiliary frame B, the auxiliary frame B, a magazine for bottom blanks, mounted on the auxiliary frame C, the auxiliary frame C, the screws B', and means of adjusting the frames B, and C, by means of the screws B', substantially as described and for the reasons set forth.

19. In a box-forming machine in combination, a forming-head, a clenching-block, a forming-block, removable face-plates to said forming-block whereby face-plates of different sizes may be interchanged, substantially as described.

20. In a box-forming machine in combination, a forming-head, a clenching-block, a forming-block, a forming-block frame, and means of attaching the forming-block to the forming-block frame so as to secure the circular or tilting adjustment of the forming-block, substantially as described.

21. In a box-forming machine in combination, a magazine for side blanks, a magazine for bottom blanks, a plunger for feeding side blanks, a plunger for feeding bottom blanks, a clenching-block, a forming-block, a forming-head, the forming-clapper frames of said forming-head and the forming-clappers thereof, substantially as described.

22. In a box-forming machine in combination, magazines for side and bottom blanks, plungers for placing the side and bottom blanks in position, a clenching-block, a forming-block, a forming-head, the forming-clappers and forming-clapper frames of said forming-head, and the screws for adjusting said forming-clapper frames, substantially as described.

23. In a box-forming machine in combination, a forming-block, a clenching-block, a forming-head, and means of tilting the side walls of the inverted-V-shaped recess k^3, of said forming-head without altering the position of the apex of said inverted-V-shaped recess, substantially as described and for the reason set forth.

24. In a box-forming machine in combination a forming-head, a forming-block, a clenching-block, a magazine and a plunger for side blanks, a magazine and a plunger for bottom blanks, and a box-extractor, substantially as described.

25. In a box-extractor of a box-forming machine in combination with a folding mechanism, the forming-block frame, the hinged support the extending arms, the cord and the spring, substantially as described.

26. In a box-extractor of a box-forming machine in combination with folding mechanism a forming-block frame, a hinged support, the extending arms, the cords, the spring, the trip at the rear of the plunger J and the plunger J, substantially as described.

27. In combination in a box-forming machine a forming-head, a forming-block, a clenching-block, a magazine for bottom blanks, a plunger for conveying bottom blanks to the forming-block, and a bottom support for retaining the bottom blanks against the forming block while the box is being formed, substantially as described.

28. In combination in a box-forming machine, a forming-head, a forming-block, a clenching-block, a magazine for bottom blanks, a plunger for conveying bottom blanks to the forming-block, a bottom support for retaining bottom blanks against the forming-block while the box is being formed and means of reciprocating said bottom support, substantially as described.

29. In a box-forming machine, in combination with a forming-head, a forming-block, a clenching-block, a magazine for side blanks, mechanism for feeding side blanks, a tank for the reception of glue or other adhesive material, a shaft extending longitudinally and journaled in appropriate bearings in said tank and brushes upon said shaft which apply glue or other adhesive material to the side blanks, substantially as described and for the reasons set forth.

30. In a box-forming machine, in combination, a forming-head, a forming-block, a clenching-block, a magazine and feeding mechanism for side blanks, a tank for the reception of glue or other adhesive material, a shaft penetrating one end and extending longitudinally to the other end of said tank, proper bearings for said shaft, brushes which apply glue to the said blanks, means of fitting said brushes to said shaft, and means of adjusting said brushes on said shaft, substantially as described and for the reasons set forth.

31. In a box-forming machine, in combination, a forming-head, a forming-block, a clenching-block, a magazine and feeding mechanism for side blanks, a glue-tank, a shaft journaled to revolve in said tank, brush-wheels on said shaft, and means of fixing at proper intervals in said wheels brushes, which apply glue to the side blanks, substantially as described and for the reasons set forth.

32. In a box forming machine, in combination, a forming-head, a forming-block, a clenching-block, a magazine and feeding mechanism for side blanks, a tank for the reception of glue or other adhesive material, a shaft which penetrates said tank, appropriate bearings for said shaft, brushes which apply glue or other adhesive material to the side blanks, means of attaching said brushes to said shaft, means of spacing brushes longitudinally on said shaft, and means of spacing brushes at intervals around said shaft, and means of revolving said shaft, substantially as described and for reasons set forth.

33. In a box-forming machine in combination, a magazine for side blanks, a bottom plate for said magazine, openings in said bottom plate for the passage of glue-brushes, a tank for the reception of glue or other adhesive material, a shaft in said tank and brushes on said shaft, substantially as described.

34. In a box-forming machine in combination, a magazine for side blanks, a bottom plate for said magazine, openings in said bottom plate, means of adjusting said openings a tank for the reception of glue or other adhesive material and means of applying said adhesive material in the V-grooves and locking corner grooves of the side blanks, substantially as described.

35. In a box-forming machine, in combination, a forming-head, a forming-block, a clenching-block, a magazine and feeding mechanism for side blanks, a tank for the reception of glue or other adhesive material, means of applying adhesive material to the side blanks, and means of heating said adhesive material, substantially as described.

36 In a box-forming machine, in combination, a forming-head, a forming-block, a clenching-block, a magazine and feeding mechanism for side blanks, the end stop d^3 of said magazine, means of adjusting said end stop, a tank for the reception of glue or other adhesive material and means of applying said adhesive material to the side blanks, substantially as described.

37. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, a plunger for side blanks, a flange-like projection from the bottom of said plunger, and the guiding-groove in A^3, substantially as described and for the reason set forth.

38. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block, a magazine for side blanks, a plunger for side blanks, and the reciprocating mechanism thereof, substantially as described.

39. In a box-forming machine in combination with a forming-head, a forming-block, a clenching-block a magazine for side blanks, a plunger for side blanks, and the means of adjusting the throw of said plunger, substantially as described.

606,698. AUTOLUMINOUS COMPOSITION. ALEXIS SYMOVENT and LOUIS BRALY, Lyons, France. Filed Dec. 14, 1897. Serial No. 661,851. (No specimens.) Patented in France Oct. 23, 1897, No. 271,593.

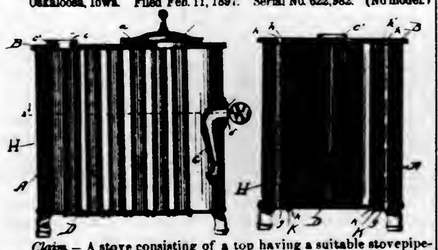
Claim.—1. An incandescing mantle or porous body subjected to a composition consisting of thorium, cerium, iridium and vanadium, dried and coated with a composition consisting of rhodium, ruthenium, cerium and vanadium, substantially as and for the purposes described.

2. An autoluminous composition formed of a mixture, in suitable proportions, of the soluble salts of rhodium and ruthenium freed from elements foreign to their group or family and the soluble salts of cerium and vanadium, in suitable proportions, substantially as and for the purposes described.

3. The process of making an incandescing mantle or other body, which consists in immersing the tissues or fabric employed in the manufacture of such a mantle or body in a solution of thorium, cerium, iridium and vanadium, in suitable proportions, then allowing the mantle or body to dry and giving shape thereto, then coating with another solution, consisting of rhodium, ruthenium, cerium and vanadium, in suitable proportions, then destroying any organic mat-

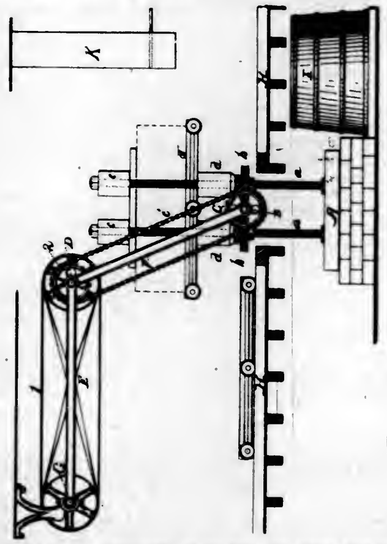
ter by any known means, then submitting in a heater to the vapors of ethyl alcohol and then to a current of pure hydrogen until complete reduction is effected of the reducible metals of the same, substantially as and for the purposes described.

606,694. STOVE. ALBERT C. TERRELL and SILAS MCCLURE, Oskaloosa, Iowa. Filed Feb. 11, 1897. Serial No. 622,982. (No model.)



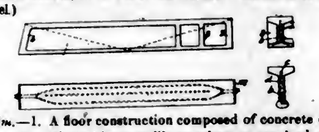
Claim.— A stove consisting of a top having a suitable stovepipe-opening and fuel-opening therein, and provided with a series of openings A therein, each having an annular flange made homogeneous with the top and extending down into the stove from its edges, a shell to the top edges of which said top is secured, and a bottom having a series of openings *g* therein, each of which is in vertical alinement with some one opening *h* in said top, in combination with a series of tubes arranged in vertical alinement between companion openings in said top and bottom, and with their upper end telescoping over said flanges, and angle-iron rings K having their vertical portions slightly tapered and inserted up through openings *g* and into the lower ends of tubes K and removably secured to said bottom, as set forth.

606,695. PRESS. WILLIAM A. TRAVER, Weedsport, N. Y., assignor of one-half to Eugene Traver, same place. Filed Dec. 26, 1896. Serial No. 616,989. (No model.)



Claim.— In a cheese-press, the two platforms located upon opposite sides of the screws, combined with two pairs of screws *a* which are rigidly secured to a suitable base at their lower ends, the cross-bars *c* for rigidly connecting the upper ends of the screws, the perforated, movable bearing-plates *e* upon which the cross-bars rest, and which plates have their lower surfaces made concave, and are located just above the operating mechanism by which the cross-bars *d* are moved, the perforated plates *f* through which the screws pass, and which are made convex upon their upper surfaces so as to correspond to the shape of the plates *e;* the operating-shafts B provided with worms, and worm-wheels, a sprocket-wheel upon the end of the shaft and suitable driving mechanism for the operating mechanism, substantially as shown.

606,696. BEAM CONSTRUCTION FOR BUILDINGS. GUY R. WAITE, Hoboken, N. J. Filed Mar. 12, 1897. Serial No. 627,163. (No model.)



Claim.—1. A floor construction composed of concrete or similar substance, strengthened by metallic members as required, formed in the shape of a succession of eye (I) shaped beams placed with their upper flanges close together, in the manner and for the purpose specified.

2. A floor construction composed of separate concrete or similarly-constructed beams each with a comparatively thin web connected with flanges, the upper and thicker flanges forming the floor and the lower flanges forming the ceiling; substantially as specified.

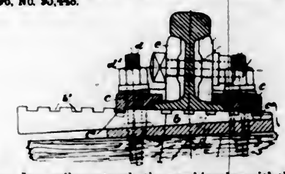
3. A floor construction formed of concrete or similar beams having comparatively thin webs connected with upper flanges placed close together and having smaller lower flanges prepared to receive ceiling-blocks to go between same substantially as shown.

4. An eye (I) or deck (T) shaped beam formed of concrete or a similar substance having for the strengthening of the web *b* ribs *s* extending across the web substantially as shown.

5. Composite beams of substantially I form placed side by side to form floors or similar structures, the flanges of the beams being separated, and the space between said flanges being filled with blocks which are held in position by said flanges.

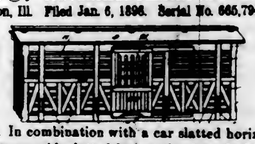
6. Composite flanged beams placed side by side to form floors or similar structures, the upper flanges of the beams being of unequal thickness throughout the length of the beam, the thickest part of the flange being where the stresses on said flanges are greatest, and gradually diminishing in thickness to the parts of the flange where the stresses on the flanges are least.

606,697. DEVICE FOR REGULATING POSITION OF HEIGHT OF RAILS OVER JOINT-SLEEPERS. ALBERT WANNEMACHER, Frankfort, Germany, assignor to Sholto-Douglas, Berlin, Germany. Filed Dec. 23, 1897. Serial No. 663,164. (No model.) Patented in Germany Nov. 26, 1896, No. 95,448.



Claim.—In a railway-track, the combination with the joint-sleepers and the rails, of displaceable wedge-like plates placed between said parts, recesses provided in said plates, clamping-plates taking over the feet of the rails and means for securing the said clamping-plates in position, for the purpose as described.

606,698. CONVERTIBLE FREIGHT-CAR. MASON F. WHITE, Bloomington, Ill. Filed Jan. 6, 1898. Serial No. 665,794. (No model.)



Claim.— 1. In combination with a car slatted horizontally, a series of vertically-movable slatted frames, the slats of which are adapted to fit between the slats of the car, weights in hollow posts of the car, and cables attached to the weights and to the frames, as and for the purpose described.

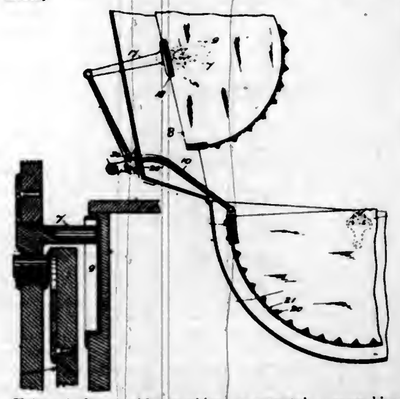
2. A car having an intermediate horizontal rail between its top and bottom and having the lower portion of the car slatted horizontally, in combination with a series of vertically-movable slatted frames, the slats of which are adapted to fit between the fixed slats at the lower portion of the car, the said frames being suspended upon cables passing over pulleys and having weights attached thereto, the said weights traveling up and down in hollow uprights forming a portion of the frame of the car-body, substantially as described.

3. In a combination-car, a car-body provided with a horizontal rail intermediate the top and bottom thereof and having the lower portion of the car beneath said intermediate rail slatted horizontally and the upper portion thereof above the intermediate rail open, in combination with a series of vertically-movable slatted frames, the slats of which are adapted to fit between the stationary slats of the car-body, means for elevating and suspending said slatted frames, and screen-frames forming auxiliary closing means for the upper portions of the car sides, substantially as described.

4. The combination with a car-body provided with horizontal rails intermediate its top and bottom and having the space above said rails left open, of a series of screen-frames pivotally hung from a point above said opening, the said frames being adapted to cover the openings and be swung upward against the roof or top of the car, and means for holding said frames in their folded positions, substantially as described.

5. In a car, the combination with the car-door having a recessed upper portion, of a vertically-slatted frame removably fitted in said upper portion of the door, and fixed inclined ways secured to the inner adjacent surfaces of the door-posts for the purpose of receiving said slatted frame, substantially as described.

606,699. WASHING-MACHINE. ALBERT C. F. WICHMAN, Fort Wayne, Ind., assignor to the Anthony Wayne Manufacturing Company, St. Louis, Mo. Filed Dec. 29, 1897. Serial No. 664,266. (No model.)



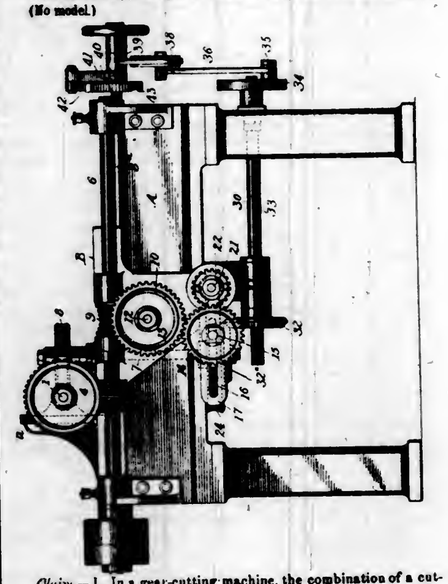
Claim.—1. In a washing-machine, an outer tub, a cover hinged to the same, sectional bearings having one section of each bearing carried by the tub, and the other section by the cover, an inwardly-projecting boss carried by the section mounted in the cover, a lower rubber pivotally mounted in the bearing-sections carried by the tub, the pivotal trunnions of the lower rubber being embraced by the medial sections of the bearings when the cover is closed, an upper rubber pivotally suspended from the bosses carried by the bearing-sections mounted on the cover, a suitable operating-shaft, and intermediate connections between the shaft and rubbers for operating the latter, substantially as set forth.

2. In a washing-machine, a sectional bearing composed of two parts, one part being adapted to be secured to the tub and the other to the cover hinged thereto, the former being adapted to support the trunnion of the lower rubber, and the latter having formed integrally therewith an inner projecting boss for the support of the upper rubber, substantially as set forth.

3. In a washing-machine, an operating-shaft, crank-arms carried thereby, a crank-pin connecting said arms, a pitman having one end partially embracing said pin, a detachable coupling section adapted to embrace the remaining portion of the crank-pin, said coupling-section having terminal fingers, lateral projecting pins carried by the pitman below the inner end of the partially-embracing portion referred to adapted to be engaged by said fingers, the opposite end of the coupling section being adapted to be secured directly to the pitman along the free outer end thereof, substantially as set forth.

4. In a washing-machine, an outer tub, a cover hinged to the same, sectional bearings having one section of each bearing secured to the tub, and the other to the cover, an inwardly-projecting boss forming an integral part of the section secured to the cover, a lower rubber having trunnions pivotally suspended in the bearing-sections carried by the tub, the lower ends of the bearing-sections carried by the cover being adapted to close over said trunnions when the cover is closed, an upper rubber, grooved plates carried by the same, said grooves being adapted to receive the inner ends of the bosses forming part of the cover bearing-sections, whereby, while oscillating about the bosses the rubber may be free to yield to variable thicknesses of clothes interposed between the rubbers, and means for simultaneously oscillating the rubbers, substantially as set forth.

606,700. GEAR-CUTTING MACHINE. WILLIAM H. BRASTOW, Manchester, England, assignor to Samuel Herbert Brooks and Richard Alexander Doxey, same place. Filed Sept. 30, 1895. Serial No. 564,166. (No model.)



Claim.—1. In a gear-cutting machine, the combination of a cutter, means for rotating the same, a spindle adapted to hold the wheel-blank, a carriage for supporting the spindle means for rotating the spindle, and devices actuated by the rotation of the spindle for automatically moving the carriage toward the cutter, substantially as described.

2. In a gear-cutting machine, the combination of a driving-shaft, a cutter, means for rotating said cutter from the driving shaft, a spindle adapted to hold the wheel-blank, a carriage in which the spindle is supported, means on the carriage adapted to be actuated by the driving-shaft to rotate the spindle, and devices actuated through the spindle for moving the carriage toward the cutter, substantially as described.

3. In a gear-cutting machine the combination of a driving-shaft, a cutter, means actuated by the driving-shaft for rotating said cutter, a spindle adapted to support the wheel-blank, a traveling carriage on which the spindle is supported, a worm-gear engaged by the carriage and mounted upon the driving-shaft to rotate therewith and move longitudinally thereon, and devices intermediate of the worm-gear and spindle whereby the latter is rotated, substantially as described.

4. In a gear-cutting machine the combination of a driving-shaft, a cutter, means actuated by the driving-shaft for rotating said cutter, a spindle adapted to support the wheel-blank, the gear-wheel 22, means intermediate of said gear and the spindle, the gear 13, intermediate gearing between said gear and the driving-shaft, an adjustable slotted frame, and a gear mounted in said frame, and arranged to intermesh with the gears 13 and 22, substantially as described.

5. In a gear-cutting machine the combination of a cutter means for rotating the same, a supporting-spindle adapted to hold the wheel-blank, means for rotating the spindle, a carriage for supporting the spindle and devices intermediate of the spindle and carriage driven by the spindle, whereby a progressive movement toward the cutter is imparted to the carriage, substantially as described.

6. In a gear-cutting machine, the combination with a rotating cutter and its operating means, a traveling carriage and means for moving the same, a spindle adapted to support a wheel-blank, mounted on the carriage, a driving-shaft, and gearing intermediate the driving-shaft and spindle for driving the latter, said gearing being supported wholly upon the carriage to move therewith, substantially as described.

7. In a gear-cutting machine, the combination of a cutter, means for operating the same, a supporting-spindle adapted to hold the wheel-blank, means for constantly rotating the spindle, devices for automatically moving the supporting-spindle farther toward the cutter after each rotation of said spindle, and adjustable devices for varying the relative movements of the spindle and cutter, substantially as described.

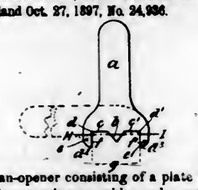
8. In a gear-cutting machine, the combination with a cutter and its operating means, a traveling carriage, and means for moving the same, a spindle adapted to support a wheel-blank mounted on the carriage, a driving-shaft, a chain of gears supported upon the carriage and arranged intermediate the driving-shaft and spindle for driving the latter, and an adjustable slotted support for one of said chain of gears, substantially as described.

9. In a gear cutting machine, the combination of a cutter, means for operating the same, a traveling carriage a spindle supported on the carriage, a screw-shaft engaging the carriage, a ratchet-wheel secured upon said shaft, a pivoted arm carrying a pawl for engaging the ratchet-wheel and provided with a slot, and means engaging said slot for reciprocating the arm at predetermined intervals, substantially as described.

10. In a gear-cutting machine, the combination of a cutter, means for operating the same, a traveling carriage a spindle supported on the carriage, a screw-shaft engaging the carriage, a ratchet-wheel secured upon said shaft, a pivoted arm carrying a pawl for engaging the ratchet-wheel and provided with a slot, a shaft having a spline and a crank-pin, a connecting-rod engaging said crank-pin and the slot in the pivoted arm, a gear adapted to move longitudinally upon the splined shaft, and a gear supported on the traveling carriage through which the movable gear is rotated, substantially as described.

11. In a gear-cutting machine, the combination with a driving-shaft, of a cutter, means for operating the same from the driving-shaft, a traveling carriage, a spindle supported on the carriage, a chain of gears supported upon the carriage intermediate the driving-shaft and spindle for driving the latter, and devices intermediate the spindle and the carriage for moving said carriage, substantially as described.

606,701. CAN-OPENER. JOSEPH S. BEEMAN, London, England, assignor to Charles Edward Lambert, Charles Butler, and Walter Butler, same place. Filed Nov. 9, 1897. Serial No. 657,942. (No model.) Patented in England Oct. 27, 1897, No. 24,936.



Claim.—1. A can-opener consisting of a plate having along one of its edges projections serving as guides and a cutter, the edge between the projections serving as a stop.

2. A can-opener consisting of a plate having along one of its edges three projections, the two outer projections being inclined to the plate in one direction and serving as guides, the middle projection being inclined in the other direction and serving as a cutter, the edge between the projections serving as a stop.

606,702. WOOD-PRESERVING COMPOSITION. HARRISON H. BLODGETT, Omaha, Nebr. Filed Feb. 10, 1898. Serial No. 669,772. (No specimens.)

Claim.—A wood-preserving composition consisting of sulfate of iron, sulfite soda, sodium nitrate, magnesium sulfate, and chlorid of sodium, in substantially the proportions named, and for the purpose set forth.

606,703. GAS APPARATUS. STEPHEN BRONGHAM, Milwaukee, Wis., assignor of two-thirds to William Saefke and Henry Saefke, same place. Filed Sept. 13, 1897. Serial No. 651,463. (No model.)

Claim.—1. An automatic gas apparatus comprising an air-pump consisting of a water-tank having an air-chamber therein higher than the water-level, this chamber being provided with a bottom outlet and valve-controlled inlet; an elongated piston having reciprocative engagement with the air-chamber, and an air-chamber jacket having its upper end in continuous flange union with the piston.

2. An automatic gas apparatus comprising a duplex air-pump consisting of a pair of water-tanks each having an air-chamber therein higher than the water-lever, this chamber being provided with a bottom outlet and valve-controlled inlet; an elongated piston having reciprocative engagement with each air-chamber, an air-chamber jacket having its upper end in continuous flange union with each piston, and a power-actuated rocker connected to the pistons.

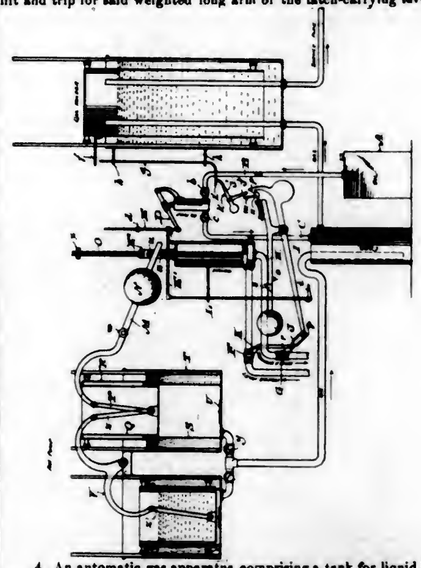
3. An automatic gas apparatus comprising a tank for liquid hydrocarbon, a pump for this liquid, an air-pump, a carbureter in valve-controlled pipe connection with the pumps, a reciprocative holder for gas generated in the carbureter, a valve-controlled fluid-pressure motor for said pumps, a lever having a long arm, in loose-play connection with the valve-gear of the motor, and a weighted short arm provided with a catch; another lever having a weighted long arm and a short arm provided with a spring-controlled latch engageable with the catch of the former lever, a latch-retracting mechanism arranged to be operated by the gas-holder, and a motor-actuated reciprocative rod provided with a pivotal foot operative on the aforesaid lever-lug.

5. An automatic gas apparatus comprising a tank for liquid hydrocarbon, a pump for this liquid, an air-pump, a carbureter in valve-controlled pipe connection with the pumps, a reciprocative holder for gas generated in the carbureter; a fluid-pressure motor for said pumps, valves controlling the inlet and discharge of the motor, link-connected valve-stem cranks, a lever having a long arm in loose-play connection with one of the valve stem cranks and a weighted short arm provided with a catch, another lever having a weighted long arm and a short arm provided with a spring controlled catch-engaging latch, a latch-retracting mechanism operated by the gas-holder, and a motor-actuated lift and trip for the long arm of the latter lever.

6. An automatic gas apparatus comprising an air-pump, a carbureter in valve-controlled pipe connection with the air-pump, a reciprocative gas-holder, a fluid-pressure pump-motor, valves controlling the inlet and discharge of the motor, cranks on the stems of these motor-control valves, a link connecting the valve-stem cranks, and mechanism in connection with one of these cranks operative in conjunction with the gas-holder and motor to automatically effect simultaneous action of said motor-control valves, whereby when either opens the other closes.

7. An automatic gas apparatus comprising an air-pump, a carbureter in valve-controlled pipe connection with the air-pump, a reciprocative gas-holder, a fluid-pressure pump-motor, valves controlling the inlet and discharge of the motor, link-connected valve-stem cranks, a lever having a long arm, in loose-play connection with one of said cranks, and a weighted short arm provided with a catch; another lever having a weighted long arm and a short arm provided with a spring-controlled latch engageable with the catch of the former lever, a latch-retracting mechanism arranged to be operated by the gas-holder, and a motor-actuated reciprocative lift and trip for said weighted long arm of the latch-carrying lever.

8. An automatic gas apparatus comprising a tank for liquid hydrocarbon, a pump for this liquid, an air-pump, a carbureter in valve-controlled pipe connection with the pumps, a reciprocative holder for gas generated in the carbureter, a valve-controlled fluid-pressure motor for said pumps, a lever having a long arm, in loose-play connection with the valve-gear of the motor, and a weighted short arm provided with a catch; another lever having a weighted long arm and a short arm provided with a spring-controlled latch engageable with the catch of the former lever, a latch-retracting mechanism arranged to be operated by the gas-holder, and a motor-actuated lift and trip for said weighted long arm of the latch-carrying lever.



4. An automatic gas apparatus, comprising a tank for liquid hydrocarbon, a pump for this liquid, an air-pump, a carbureter in valve-controlled pipe connection with the pumps, a reciprocative holder for gas generated in the carbureter, a valve-controlled fluid-pressure motor for said pumps, a lever having a long arm, in loose-play connection with the valve-gear of the motor, and a weighted short arm provided with a catch; another lever having a weighted long arm and a short arm provided with a lateral lug and a short arm provided with a spring-controlled latch engageable with the catch of the former lever, a latch-retracting mechanism arranged to be operated by the gas holder, and a motor-actuated reciprocative rod provided with a pivotal foot operative on the aforesaid lever-lug.

for gas generated in the carbureter, a motor for said pumps, a lever having a long arm, in loose-play connection with the motor-control mechanism, and a weighted short arm provided with a catch; another lever having a weighted long arm and a short arm provided with a spring-controlled latch engageable with the catch of the former lever, a latch-retracting mechanism arranged to be operated by the gas-holder and a motor-actuated reciprocative lift and trip for said weighted long arm of the latch-carrying lever.

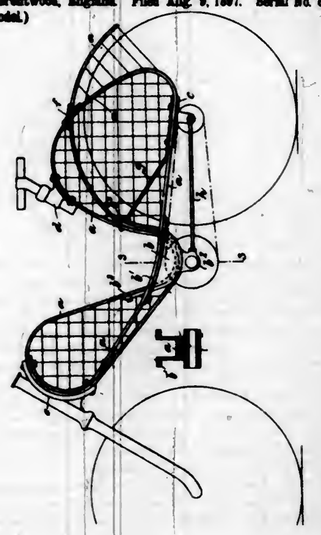
9. An automatic gas apparatus comprising a tank for liquid hydrocarbon, a pump for this liquid, an air-pump, a carbureter in valve-controlled pipe connection with the pumps, a reciprocative holder for gas generated in the carbureter, a motor for said pumps, a lever having a long arm, in loose-play connection with the motor-control mechanism, and a weighted short arm provided with a catch; another lever having a weighted long arm and a short arm provided with a spring-controlled latch engageable with the catch of the former lever a stop arranged under the weighted long arm of the latch-carrying lever, and a motor-actuated reciprocative lift and trip for said stop-opposed lever-arm.

10. An automatic gas apparatus comprising a tank for liquid hydrocarbon, a pump for this liquid, a duplex air-pump, a carbureter having valve-controlled pipe connection with the pumps, a reciprocative holder for gas generated in the carbureter, a motor for said pumps, a lever having a long arm, in loose-play connection with the motor-control mechanism, and a weighted short arm provided with a catch; another lever having a weighted long arm and a short arm provided with a spring-controlled latch engageable with the catch of the former lever, a latch-retracting mechanism arranged to be operated by the gas-holder, and a motor-actuated reciprocative lift and trip for said weighted long arm of the latch-carrying lever.

11. An automatic gas apparatus comprising a tank for liquid hydrocarbon, a pump for this liquid; a carbureter, a gas-holder and a duplex air-pump, the latter having one weighted piston and a rocker in connection with both pistons; a motor having a reciprocative element operative in connection with the liquid-pump, a weighted lever in connection with the lighter air-pump piston and reciprocative element of the motor, a lever having a motor-control long arm and weighted short arm provided with a catch, another lever having a weighted long arm and a short arm provided with a spring-controlled catch-engaging latch, a latch-retracting mechanism operated by the gas-holder, and a motor-controlled lift and trip for the long arm of the latter lever.

12. An automatic gas apparatus comprising a tank for liquid hydrocarbon, a pump for this liquid; a carbureter, a gas-holder, and a duplex water-seal air-pump; a motor having a reciprocative element in operative connection with the pumps, a lever having a long arm, in loose-play connection with the motor-control mechanism, and a weighted short arm provided with a catch, another lever having a weighted long arm and a short arm provided with a spring-controlled catch-engaging latch, a latch-retracting mechanism operated by the gas-holder, and a motor-controlled lift and trip for the long arm of the latter lever.

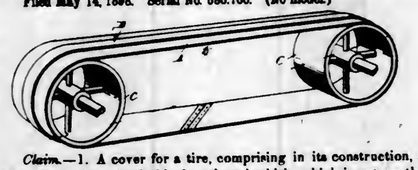
606,704. BICYCLE. CHARLES T. BURGESS and WILLIAM B. BURGESS, Brentwood, England. Filed Aug. 9, 1897. Serial No. 647,570. (No model.)



Claim.—1. A bicycle having its frame formed from a strip or ribbon of tough wood or other material bent into two upwardly-extending loops one extending forward and the other backward from the central portion of the frame and having this central portion secured to one bracket-piece, the portion of the strip connecting the lower part of the two loops being divided longitudinally and its two parts connected to side flanges of the bracket at a distance apart from one another and the portion connecting the upper portions of the two loops connected to a curved central portion of the same bracket.

2. A bicycle having its frame formed from a strip or ribbon of tough wood or other material bent into two loops one in front of the other and having the under side of each loop and the portion connecting them slit longitudinally and the two parts of this connecting portion secured to two plates or flanges one at each side of a bracket carrying the treadle-spindle bearing and also having the descending bend which connects the upper portion of the two loops passing down between these two parts and secured to a corresponding curved surface at the center of the bracket.

606,705. PNEUMATIC-TIRE COVER. JESSE CHASE, Omaro, Wis. Filed May 14, 1898. Serial No. 680,700. (No model.)



Claim.—1. A cover for a tire, comprising in its construction, a strip of material of suitable length and width, which is cut on the bias and has its ends secured together, and a second strip, constituting a patch, which is cut straightwise of the goods and secured on top of the first-mentioned piece of material, while the latter is in a stretched condition, substantially as described.

2. A cover for a tire, comprising in its construction, a strip of material of suitable length and width, which is cut on the bias and has its ends secured together, and a second strip, constituting a patch, which is cut straightwise of the goods and secured on top of the first-mentioned piece of material, while the latter is in a stretched condition, the patch being of less width than the cover portion proper and formed by folding the material, substantially as described.

3. A cover for a tire, comprising in its construction, a strip of material of suitable length and width, which is cut on the bias and has its ends secured together, and constituting a cover proper, and a second strip, constituting the patch, which is cut straightwise of the goods and secured on top of the first-mentioned piece of material, while the latter is in a stretched condition, the patch being of less width than the cover portion proper and formed by folding the material, tacks placed in the folds of the patch with their points projecting outwardly from the patch, substantially as described.

4. In combination with a tire, a cover comprising in its construction a strip of material of suitable length and width, which is cut on the bias and has its ends secured together, a second strip, constituting a patch, which is cut straightwise of the goods and secured on top of the first-mentioned piece of material, while the latter is in a stretched condition, and means for securing the cover to the tire, substantially as described.

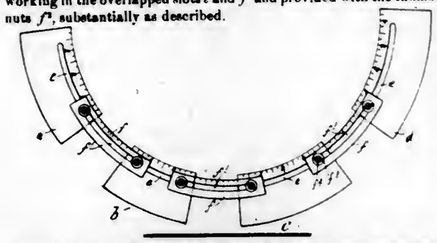
5. In combination with a tire, a cover comprising in its construction, a strip of material of suitable length and width which is cut on the bias and has its ends secured together, and a second strip, constituting a patch, which is cut straightwise of the goods and secured on top of the first-mentioned piece of material, while the latter is in a stretched condition, the cover enveloping the tire and secured thereto by lacing or sewing, substantially as described.

6. In combination with a tire, a cover comprising in its construction, a strip of material of suitable length and width which is cut on the bias and has its ends secured together, and a second strip, constituting a patch, which is cut straightwise of the goods and secured on top of the first-mentioned piece of material, while the latter is in a stretched condition, wire hoops secured to the cover, the cover enveloping the tire and being held in place by said hoops, substantially as described.

606,706. SKIRT CUTTING RULE. MARY C. COLLINS, Minneapolis, Minn. Filed Nov. 26, 1897. Serial No. 659,733. (No model.)

Claim.—1. A skirt or cape cutting scale comprising a series of segmental body-sections graduated on their concave edges and provided with longitudinal slots, a series of supplemental scale-sections with longitudinal slots, and thumb-screws working in the overlapped slots of said body-sections and said supplemental sections, substantially as described.

2. A skirt or cape cutting scale comprising the graduated segmental body-sections *a b c* and *d*, with slots *e*, the parallel graduated supplemental scale-sections *f*, with slots *f'*, and the set-screws f^3 working in the overlapped slots *e* and *f'* and provided with the thumb-nuts f^3, substantially as described.



606,707. **FABRIC-TURFING IMPLEMENT.** MATTHEW F. CONNETT, San Antonio, Tex., assignor to Layton Y. Hancock, same place. Filed Jan. 10, 1898. Serial No. 666,135. (No model.)



Claim.—1. A fabric-turfing implement comprising a sheath or casing, a reciprocating needle-bar, a needle carried by the needle-bar, a tension device attached to the sheath or casing and through which the thread passes from the supply, and a thread-clamping device carried by the needle-bar, whereby as the needle-bar ascends the clamp is operated by the tension imposed upon the thread by the tension device to supply sufficient slack in the thread for the formation of the succeeding loop, substantially as described.

2. A fabric-turfing implement comprising a sheath or casing, a tension device on the sheath or casing, a reciprocating needle-bar, a needle carried by the needle-bar, a thread-clamping device having a pivoted member and carried by the needle-bar, and in contact with which the thread passes, whereby when the thread is drawn through the tension device the clamp will be operated and the passage of the thread through the needle on the upward movement of the needle will be prevented, and a quantity of thread sufficient to form a succeeding loop will be drawn from the supply, substantially as described.

3. A turfing implement comprising a sheath or casing, a reciprocating needle-bar, a needle carried by the needle-bar, a thread-clamping device attached to and movable with the needle-bar and through which the thread passes, a tension device on the sheath or casing, and an adjustable stop arranged on the sheath or casing by which the movement of the needle-bar is determined, substantially as described.

4. A fabric-turfing implement comprising a reciprocating needle-bar having a transverse perforated plate at its lower end, a movable socket arranged adjacent to the plate, a spring-plate adjacent to the socket, and a needle projecting through the plate, received by the socket, and borne upon by the spring whereby the needle will be normally kept in an inclined position, and will be prevented from displacement in use, substantially as described.

5. A turfing implement comprising a reciprocating needle-bar having a transverse perforated plate at its lower end, a socket arranged adjacent to the plate and carried by and movable with respect to the needle-bar, a spring having one end attached to the needle-bar, and having its other end bent, a needle having a beveled end and also a groove adjacent to the bevel, the groove being designed to receive the bent end of the spring, substantially as described.

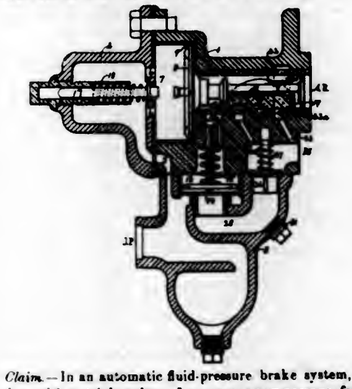
6. A turfing implement comprising a reciprocating needle-bar having a transverse plate at its lower end, the plate being provided with an opening, a socket arranged on the needle-bar adjacent to the plate, the socket being movable with respect to the needle-bar and having a curved portion and lateral wings, the lower end of the curved portion being removed, a spring attached to the needle-bar at one end and having its other end bent and a needle designed to enter the socket and having its upper end beveled, and having a notch adjacent to the beveled portion, the notch being designed to receive the bent end of the spring, substantially as described.

7. A fabric-turfing implement comprising a sheath or casing, a reciprocating needle-bar having a transverse plate at its lower end, a lever pivoted adjacent to and adapted to bear against the transverse plate and provided with thread-receiving arms on opposite sides of the pivot, a needle, and a tension device arranged on the sheath or casing, substantially as described.

8. A turfing implement comprising a sheath or casing, a reciprocating needle-bar having a transverse plate at its lower end, a pivoted clamp arranged adjacent to the plate and provided with two arms, the arms being arranged on opposite sides of the point at which the clamp is pivoted, one arm being placed adjacent to and parallel with the transverse plate, and the other arm being provided with an arm bent at an angle to the arm, a needle, and a tension device on the sheath or casing arranged between the thread-supply and the clamp, substantially as described.

9. A fabric-turfing implement comprising a sheath having a presser-foot formed at its lower end, a notch in the lower end of the sheath between the parts of the presser-foot, a tension device attached to the face of the sheath, one end being bent parallel with the lower end of the sheath and bearing against the face thereof, and the other being formed into an open eye, a needle-bar having a clamp thereon, and a needle attached to the needle-bar, substantially as described.

606,708. **AIR-BRAKE.** MURRAY CORRINGTON, New York, N. Y. Filed Feb. 19, 1898. Serial No. 670,918. (No model.)



Claim.—In an automatic fluid-pressure brake system, the combination, with a triple valve, of an emergency-passage for venting the air from the train-pipe, a piston, one of whose sides closes the mouth of said passage and normally having its sides partly or wholly exposed to fluid under pressure, and a passage opened by a part of the triple valve for releasing the pressure from one side of said piston, whereby the same may be moved by the pressure on its other side away from its position of rest to open said emergency-passage.

606,709. **PRODUCTION OF LITHOGRAPHIC PLATES.** LÉON FIVÉ, Paris, France, assignor to La Société des Plaques Lithographiques, same place. Filed Apr. 19, 1897. Serial No. 633,855. (No specimens.)

Claim.—1. A composition of matter for factitious lithographic plates, consisting of a paste formed from crushed lithographic stone treated with sulfuric acid to which is added a mixture of hydrochloric acid, solid perchlorid of iron, chlorid of manganese, and bicarbonate of soda and an adhesive mixture consisting of albumen, glue and potassium silicate in suitable proportions, substantially as and for the purposes described.

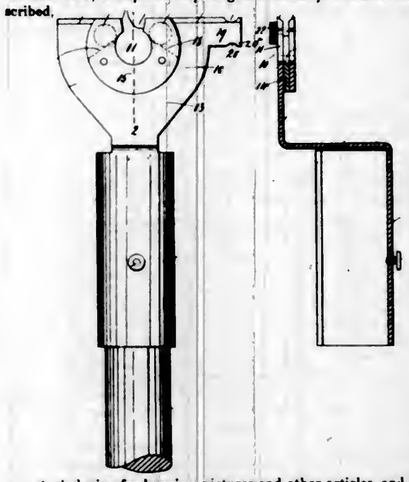
2. A composition of matter for factitious lithographic plates, consisting of a paste formed from crushed lithographic stone treated with sulfuric acid to which is added a mixture, consisting of hydrochloric acid, solid perchlorid of iron, chlorid of manganese and bicarbonate of soda, then adding an adhesive mixture, consisting of albumen, glue and potassium silicate and finally adding a coloring mixture consisting of perchlorid of iron, substantially as and for the purposes described.

606,710. **PICTURE-HANGER.** ALFRED FOSGATE, Auburn, N. Y. Filed Dec. 1, 1897. Serial No. 660,867. (No model.)

Claim.—1. A picture-hanger comprising a suitable arm which is provided with two upwardly-directed curved arms between which is a circular space which opens upwardly, a segmental plate secured to said arms below said circular space, a plate secured to said segmental plate, the upper portion of which is cut away and provided with an opening, substantially as described.

2. A picture-hanger comprising a sleeve or casing which is adapted to receive a handle, said sleeve or casing being also, provided at one side thereof with an extension which projects across the upper end thereof, and which is provided with an upwardly-directed arm, which is provided with two upwardly-directed curved arms between which is a circular space which opens upwardly, a segmental plate secured to said arms below said circular space, a plate secured to said segmental plate, and the upper portion of which is cut away and provided with an opening, substantially as shown and described.

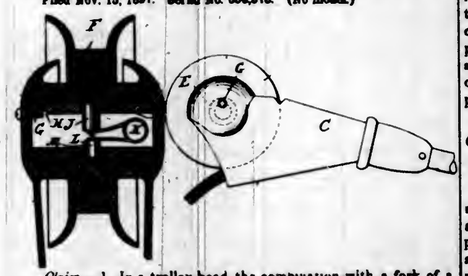
3. A hanger for picture and other frames, consisting of a sleeve or casing which is adapted to receive a handle, said sleeve or casing being provided at its upper end with an arm which is offset therefrom, said arm being provided with two curved arms which are separated at their upper ends, and with a segmental plate, which is open at its upper side, and between the separate parts of which and the said arms, is a space or opening, substantially as shown and described.



4. A device for hanging pictures and other articles, and which is also adapted for use in operating gas cocks or valves, said device being provided with two upwardly-directed curved arms which are separated at their upper ends, and between which is an open space, the upper edges of said arms being beveled on their front sides, and a plate which is also open at the top and which is secured to said arms, and between the opposite sides of which and said arms is an open space or slot, and the upper portions of the opposite sides of which are beveled on their rear surfaces, substantially as shown and described.

5. A hanger for picture and other frames, consisting of a sleeve or casing which is open at both ends and provided at one side of one end with a strip which projects transversely of said end, an upwardly-directed arm integral with said strip, said arm being provided with two curved arms which are separated at their upper ends, and with a segmental plate which is open at its upper side, and between the separate parts of which and the said arms is a space or opening, substantially as described.

606,711. **TROLLEY-HEAD.** CHARLES GROVER, Kansas City, Mo. Filed Nov. 13, 1897. Serial No. 658,373. (No model.)



Claim.—1. In a trolley-head, the combination with a fork of a tubular spindle mounted therein, a trolley-wheel mounted to rotate upon said spindle, said spindle provided with an opening through the wall thereof, and a contact-plug arranged within said tubular spindle and projecting through said opening and into contact with said wheel, as and for the purpose set forth.

2. In a trolley-head, the combination of a fork, a tubular spindle mounted therein, a contact-wheel mounted to revolve on said spindle, said spindle provided with an opening through the wall thereof, a contact-plug arranged within said tubular spindle to project through the opening therein and into contact with said wheel, and a spring arranged to press upon said contact-plug to maintain efficient electrical contact with said wheel, as and for the purpose set forth.

3. In a trolley-head, a fork, a tubular spindle mounted therein, a contact-wheel mounted to rotate upon said spindle, said spindle provided with an opening through the wall thereof, and a lubricating-plunger mounted in said spindle to project through said opening and into contact with the bearing-surface of said wheel, whereby a lubricant introduced to said tubular spindle may be supplied to said wheel, as and for the purpose set forth.

4. In a trolley-head, a fork, a tubular spindle mounted therein, a contact-wheel mounted to rotate upon said spindle, said spindle provided with an opening through the wall thereof, a plunger having passages and arranged to project through said opening and into contact with the bearing-surface of said wheel, whereby a lubricant admitted to said tubular spindle is applied to the bearing-surface of said wheel, as and for the purpose set forth.

5. In a trolley head, a fork, a tubular spindle mounted therein, a trolley-wheel mounted to rotate upon said spindle, said spindle provided with an opening through the wall thereof, a plunger provided with channels and arranged to project through said opening and into contact with the bearing-surface of said wheel, a spring arranged to press said plunger into contact with said wheel, whereby a lubricant introduced into said spindle is applied to said wheel, as and for the purpose set forth.

6. In a trolley-head, a fork having juxtaposited screw-threaded recesses in the opposed faces of the arms thereof, a spindle having threaded ends arranged to be received in said threaded recesses, a contact-wheel mounted to rotate upon said spindle, and a plunger of conducting material arranged to project through said spindle into contact with said wheel for preventing arcing between said wheel and spindle, as and for the purpose set forth.

7. In a trolley-head, a fork having juxtaposited screw-threaded sockets or recesses in the opposed faces of the arms thereof, a tubular spindle having exterior screw-threads upon the ends thereof arranged to be received in said sockets or recesses, a contact-wheel mounted to revolve upon said spindle, said spindle provided with an opening through the wall thereof, whereby a lubricant introduced to said tubular spindle may be applied to the bearing-surface of said wheel, and a conducting-plunger arranged to project through the wall of said spindle into contact with said wheel for preventing arcing between said wheel and spindle, as and for the purpose set forth.

8. In a trolley-head, a fork comprising oppositely-arranged arms, a spindle mounted in said arms, a trolley-wheel mounted to rotate upon said spindle, said arms provided with converging flanges on the under side thereof, said flanges extending to a point opposite the axis of rotation of said wheel, whereby said trolley-wheel is inclosed on the under side thereof, as and for the purpose set forth.

9. In a trolley-head, a fork comprising arms having converging flanges on the under side thereof, a spindle mounted in said arms, a contact-wheel mounted to rotate upon said spindle, said flanges extending to a point opposite the axis of rotation of said wheel, whereby the under side of said wheel is inclosed thereby, said contact-wheel provided with outwardly-flaring flanges, thereby forming a dish in the faces of said wheel, the extremities of said fork-arms being curved inwardly into the dish of said faces, as and for the purpose set forth.

10. In a trolley-head, a fork having screw-threaded sockets or recesses in the opposed faces of the arms thereof, a spindle having threaded ends arranged to be received in said threaded sockets or recesses, a trolley-wheel mounted to rotate upon said spindle, a contact plug or plunger projecting through said spindle into contact with said wheel, and washers interposed between said wheel and the arms of said fork to offset said wheel from said arms, as and for the purpose set forth.

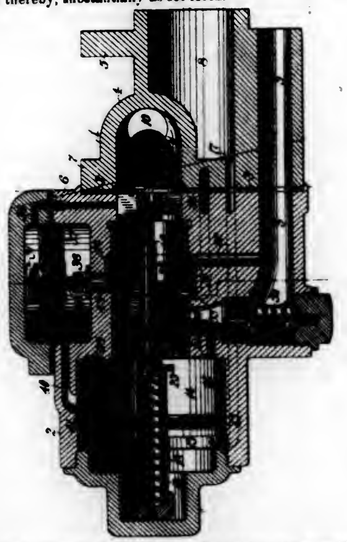
606,712. **AIR-BRAKE.** FRANÇOIS L. GUILLEMET, San Francisco, Cal., assignor to the Westinghouse Air Brake Company, Wilmerding, Pa. Filed June 3, 1896. Serial No. 594,094. (No model.)

Claim.—1. The combination, in a triple-valve device having connections to a train-pipe and to an auxiliary reservoir, of a movable abutment which is normally exposed on its opposite sides to train-pipe pressure, admitted thereto through freely-connecting passages, and a graduating-valve operated by the abutment and controlling the release of fluid from the auxiliary reservoir to the brake-cylinder, substantially as set forth.

2. The combination, in a triple-valve device, of a movable abutment, exposed on one side to auxiliary-reservoir pressure and on the other side to train-pipe pressure, a valve operated thereby and controlling the exhaust of fluid from the brake-cylinder, an independent movable abutment and a graduating-valve operated thereby for controlling the flow of fluid from the auxiliary reservoir to the brake-cylinder, substantially as set forth.

3. The combination, in a triple-valve device having connections to a train-pipe and to an auxiliary reservoir, of a movable abutment normally exposed on its opposite sides to train-pipe pressure, a graduating-valve operated by the abutment and controlling the flow of fluid from the auxiliary reservoir to the brake-cylinder, a separate movable abutment, and a valve operated thereby and controlling the exhaust of fluid from the brake-cylinder, substantially as set forth.

4. The combination, in a triple-valve device, of a movable abutment, a valve operated thereby and controlling the local release of fluid from the train-pipe, and the exhaust of fluid from the brake-cylinder, an independent movable abutment, and a graduating-valve operated thereby, substantially as set forth.

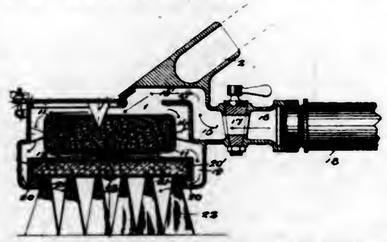


5. The combination, in a triple-valve device, of a movable abutment exposed on one side to auxiliary-reservoir pressure and on the other side to train-pipe pressure, a valve operated thereby, which is located on the train-pipe side of the movable abutment and which controls directly the release of fluid from the train-pipe and the exhaust of fluid from the brake-cylinder, and an independent valve device for controlling the flow of fluid from the auxiliary reservoir to the brake-cylinder, substantially as set forth.

6. The combination, in a triple-valve device, of a movable abutment which is normally exposed on its opposite sides to train-pipe pressure, a graduating-valve operated by the abutment, and means whereby, in applications of the brakes, the abutment is exposed on one side to auxiliary-reservoir pressure, substantially as set forth.

7. The combination, in a triple-valve device, of a movable abutment, a graduating-valve operated by the abutment, a passage through which fluid under pressure is admitted to one side of the abutment from the train-pipe, and a movable abutment, or piston, by whose movement the passage is put in communication with the auxiliary reservoir, substantially as set forth.

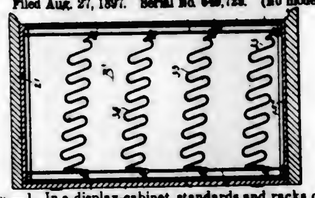
606,713. BRUSH. THOMAS H. GULICK, St. Louis, Mo. Filed Aug. 16, 1897. Serial No. 648,416. (No model.)



Claim.—1. In a scrubbing-brush holder, a suitable casing adapted to hold a cake of soap, a nozzle communicating with the chamber of the casing, a socket for securing a handle to the casing located at a point above the nozzle, a lid for the casing located adjacent to the base of the socket, means for holding a cake of soap within the casing and permit the free flow of water about the surface of the soap, suitable discharge-openings leading from the casing, and a brush adapted to be carried by the casing in proximity to the discharge-openings whereby the water is fed to the brush, substantially as set forth.

2. In a scrubbing-brush holder, a suitable casing, a nozzle communicating with the chamber thereof, a deflecting-wall interposed between the nozzle and chamber of the casing, a lid hinged to the upper wall of the casing, a knob carried by the inner surface of the hinge, suitable supporting-ribs disposed along the bottom of the casing and adapted to support a cake of soap, soap-retaining knobs carried by the deflecting-wall and the wall of the casing opposite thereto, outlet-passages leading from the casing at opposite ends thereof and forming by their walls suitable grooves for the reception of the back of a brush, a locking-arm for retaining the brush within its supporting-grooves, and suitable discharge openings or slits leading from the outlet-passages and arranged to discharge in converging streams against the brush, substantially as set forth.

606,714. DISPLAY-CABINET. FRANK R. HALDEN, Winthrop, Minn. Filed Aug. 27, 1897. Serial No. 649,729. (No model.)



Claim.—1. In a display-cabinet, standards and racks of yielding material formed in a series of loops and adjustably supported by said standards, for the purpose set forth.

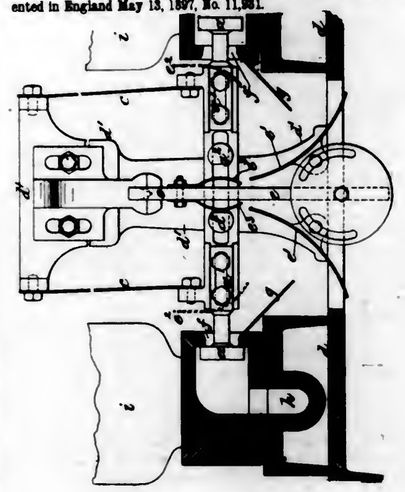
2. In a display-cabinet, standards, supporting-bars adjustably carried by the standards, and racks of a yielding material formed in a series of loops and carried by the said supporting-bars, for the purpose set forth.

3. In a display-cabinet, the combination, with standards and supports adjustably carried by the said standards, of racks made from a yielding material and convoluted, the convoluted racks having removable connection with the said supports, for the purpose specified.

4. In a display-cabinet, the combination, with standards, sleeves held to slide upon the said standards, locking devices for the sleeves, and supporting-bars connecting sundry of said sleeves, of convoluted racks constructed of a yielding material, the ends of the racks being removably secured in opposing supporting-bars, for the purpose specified.

5. The combination, with a cabinet comprising a base and a top, a central fixed section from which the base and top are projected at the ends, and end sections hinged to the fixed section, being adapted to close within the extended portions of the base and the top, of standards secured in each of the said sections at the front and at the rear, supporting-bars slidably connected with the standards in the several sections, locking devices for the supporting-bars, and convoluted racks located in each section of the cabinet, being carried by the supporting-bars, for the purpose set forth.

606,715. HYDRAULIC RAM. GEORGE H. HARRIS, Wadebridge, England. Filed Dec. 28, 1897. Serial No. 664,045. (No model.) Patented in England May 13, 1897, No. 11,981.



Claim.—1. In hydraulic rams, the combination with two drive-pipes, two air vessels, and two retaining-valves, of two waste-valves, and a pendulum pivotally supported between said waste-valves and adapted to receive impulse from the waste water and to operate said waste-valves, simultaneously opening one and closing the other alternately, substantially as described.

2. In hydraulic rams, the combination with two drive-pipes, two air vessels, and two retaining-valves, of two waste-valves connected together, and a pendulum pivotally supported between said waste-valves and adapted to receive impulse from the waste water and to operate said waste-valves simultaneously to open one and close the other alternately, substantially as described.

3. In hydraulic rams, the combination with two drive-pipes, two air vessels, and two retaining-valves, of two waste-valves connected together, a pendulum pivotally supported between said waste-valves, and plates or floats secured to opposite sides of said pendulum and adapted to receive impulse from the waste water thereby to cause said pendulum to operate said waste-valves simultaneously to open one and close the other alternately, substantially as described.

4. In hydraulic rams, the combination with two drive-pipes, two air vessels, and two retaining-valves, of two waste-valves connected together, a pendulum pivotally supported between said waste-valves, plates or floats adjustably secured upon opposite sides of said pendulum, and guides for directing the waste water onto said plates or floats to give impulse to the pendulum thereby to cause said pendulum to operate the waste-valves simultaneously to open one and close the other alternately, substantially as described.

5 In hydraulic rams, the combination of two or more drive-pipes, an air vessel on each of said pipes, a retaining-valve to each air vessel, a waste-valve to each drive pipe, a bar carrying said waste-valves, springs carrying said waste-valve bar, and a pendulum acting to start the waste-valves and receiving its impetus from the waste water, substantially as herein set forth.

6. In hydraulic rams, the combination of two drive-pipes, two air vessels, two retaining-valves, two waste-valves carried by a bar, a pendulum acting on the waste-valve bar, springs on said pendulum, adjustable studs on the waste-valve bar on which said springs act, and means for causing the waste water to give impetus to said pendulum, substantially as herein set forth.

606,716. TOBACCO-PIPE CLEANER. WARD B. HAUSMAN, Philadelphia, Pa. Filed Aug. 31, 1897. Serial No. 650,073. (No model.)



Claim.—In combination with a pipe, a plug threaded in the end of the stem thereof, a cleaner consisting of a core formed with the plug, a slow-pitched thread formed thereabout and fitting against the walls of the passage within the stem, whereby when the plug is unscrewed the edges of the thread will scrape said walls, a threaded shank partly screwed within said plug, a cleaner similar to the first named formed with said shank and a mouthpiece threaded to said shank, the cleaner fitting within the passage thereof, whereby when the mouthpiece is unscrewed the cleaner will act after the manner of a screw conveyer and scrape the walls of the passage, as and for the purpose set forth.

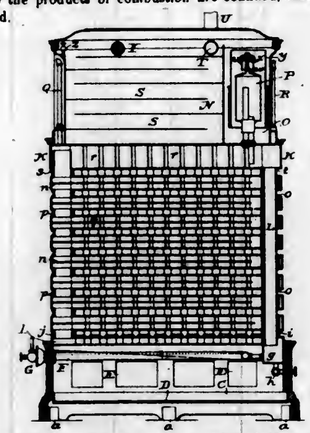
606,717. HEATING AND VENTILATING SYSTEM. THOMAS HENNESSY, Excelsior Springs, Mo., assignor to the American Incandescent Gas Company, Kansas City, Mo. Filed July 14, 1896. Renewed Apr. 27, 1898. Serial No. 679,047. (No model.)

Claim.—1. As a new article of manufacture, a radiator-section having openings near one end on opposite faces; a diaphragm extending from that end from side to side approximately to the opposite end; and a series of passages extending directly through the sides and the diaphragm.

2. A radiator comprising a series of sections communicating with each other at one end and having its outer sections directly connected at its opposite end, diaphragms in said sections, substantially as described; and a series of pipes extending through the sections and forming air-passages, substantially as described.

3. A radiator comprising a series of sections directly connected at one end by a series of short nipples, and having the upper and lower sections connected directly at the opposite end by a pipe screwed into the upper section and extending into the lower section, the lower end of said pipe being provided with a long thread, and a collar mounted thereon, as and for the purposes set forth.

4. In combination with the base and its burner; a hot-water radiator mounted thereon comprising a series of connected sections; passages extending through said sections one above the other; a series of pipes mounted in said passages and communicating with the base and its burner; and a chamber mounted upon the top of the radiator in direct communication with the upper ends of said pipes, whereby the products of combustion are confined, substantially as described.



5. In combination with the base and its burner; a hot-water radiator mounted thereon comprising a series of connected sections; passages extending through said sections one above another; a series of pipes of an external diameter smaller than said openings and mounted therein, said pipes communicating with the base; and a chamber mounted upon the top of the radiator in direct communication with the upper ends of the pipes, whereby the products of combustion are confined and air is permitted to pass up and around the entire exterior of the pipes.

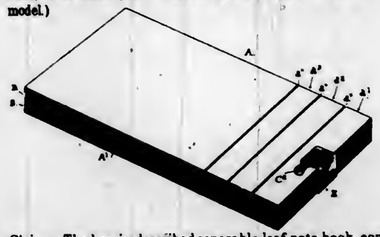
6. A hot-water radiator comprising a series of sections directly connected at one end; a pipe L connecting the outer sections at the opposite end; a collar *i* formed integral with the lower section and extending toward the bottom thereof, whereby a trap is formed for the lower end of the connecting-pipe.

7. In a radiator, the combination of the base provided with air-passages extending therethrough; a series of sections mounted upon said base, and also provided with openings in line with the passages in the base; and a series of tubes passing down through the openings in the sections and resting upon the base.

8. In a radiator, the combination of the base provided with air-passages extending therethrough; rings or collars formed around said air-passages; a series of sections mounted upon said base, and also provided with openings in line with the passages in the base; and a series of tubes passing down through said openings in the sections and resting upon the base around the rings or collars.

9. In combination with the base and its burner; a radiator-section mounted thereon having depending sides *f* inclining down from one end to the other, and a downdrop *g* at the lower end of said depending sides; a series of sections mounted on said bottom section and connected thereto; and a top section connected to said intermediate sections and also directly connected with the downdrop.

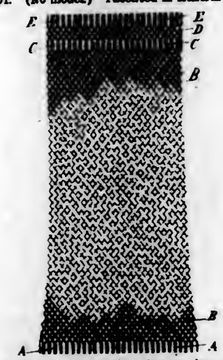
606,718. WRITING-TABLET AND NOTE-BOOK. EDWARD W. HILL, Corte Madera, Cal. Filed Nov. 8, 1897. Serial No. 657,757. (No model.)



Claim.—The herein-described separable-leaf note-book, comprising the stiff front cover having narrow sections a' a^2 a^3 joined together by flexible joints; metal strip C riveted to the first or outermost section, solid studs C' rigidly fixed in and standing perpendicularly from said strip; the back cover having the metal strip D riveted thereto; tubular studs D' rigidly fixed in said strip in position to register with the solid studs; the metal clasp pivotally attached to

one of the aforesaid strips and having side pieces adapted to fit closely over the edges of the two corners on the back of the book, and separable leaves provided with perforations to fit over the studs, substantially as hereinbefore set forth.

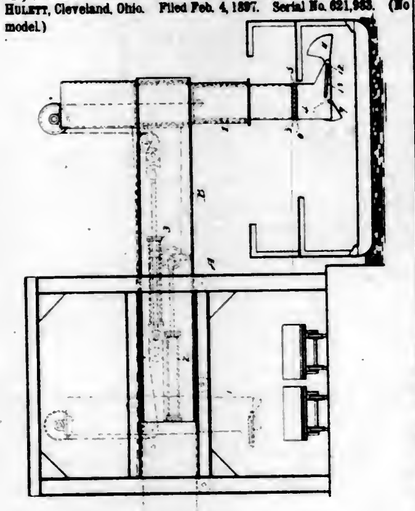
606,719. THREAD FOUNDATION FOR INCANDESCENT MANTLES. HENRY HILL, Nottingham, England. Filed Jan. 23, 1897. Serial No. 621,101. (No model.) Patented in Austria Dec. 16, 1896, No. 46/5,022.



Claim.—1. A thread foundation for an incandescent mantle formed of warp-lace fabric without a seam and of parallel or conoidal form with pillarings A and E at its ends substantially as described.

2. A thread foundation for an incandescent mantle formed of warp-lace fabric without a seam and of parallel or conoidal form with pillarings A and E at its ends and with holes C for the reception of the draw or suspensory threads substantially as described.

606,720. LOADING OR UNLOADING MACHINE. GEORGE H. HULETT, Cleveland, Ohio. Filed Feb. 4, 1897. Serial No. 621,983. (No model.)



Claim.—1. In a loading and unloading machine, the combination with a beam movable outwardly from its support, of a leg depending therefrom and movable at right angles thereto, and mechanism located at the lower end of the leg and constructed and adapted to reach out laterally from the leg and to be elevated by the upward endwise movement of the leg.

2. In a loading and unloading machine, the combination with an endwise-movable beam projecting laterally from its support, of a non-pivotal leg movable endwise up and down with respect to the beam, and a scoop connected with and operated from the lower end of the leg.

3. In a loading and unloading machine, the combination with a support, of a depending non-pivotal endwise-movable leg, a foot rotatably connected with the lower end of the leg, and a scoop connected with and operated from the foot.

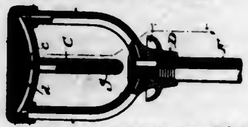
4. In a loading and unloading machine, the combination with a main support, a beam movable endwise with respect thereto, of a leg composed of two or more telescoping tubes depending from the beam, a foot rotatably connected with the lower section of the leg, and a scoop reaching out from the lower end of the foot

5. The combination with the depending leg of a loading and unloading machine, of two buckets pivoted to the leg, and one having a sliding connection therewith, and hydraulic rams for operating the two buckets.

6. The combination in loading and unloading machine, with a depending leg, and a rotary section connected therewith, of a bucket having a sliding pivotal connection with the rotary section, and means for swinging and sliding this bucket whereby to reach out laterally and scoop up material from any side of the leg.

7. The combination with a leg, of a foot rotatably connected with the lower end of the leg, said foot having drums connected therewith, and means connected with these drums for turning the foot in either direction.

606,721. VAPOR-BURNER. GUSTAF JOHNSON, Milwaukee, Wis., assignor of five-sixths to Charles C. Wentworth, Rinaldo R. Wentworth, Monta D. Wentworth, and Peter Munson, same place. Filed Jan. 13, 1898. Serial No. 666,502. (No model.)



Claim.—1. A vappr-burner consisting of a disk having an annular chamber therein adjacent to its rim, as well as cross-channels that are open to each other and said chamber, hollow lugs depending from the disk at quarter-circle intervals of the same in register with terminals of the cross-channels, a supply-pipe coupling having hollow branches whose ends are joined to one pair of disk-lugs, a U-pipe joined to the other pair of disk-lugs, and a jet-nozzle extending upward from the bend of the latter pipe, said bend being above the supply-pipe coupling.

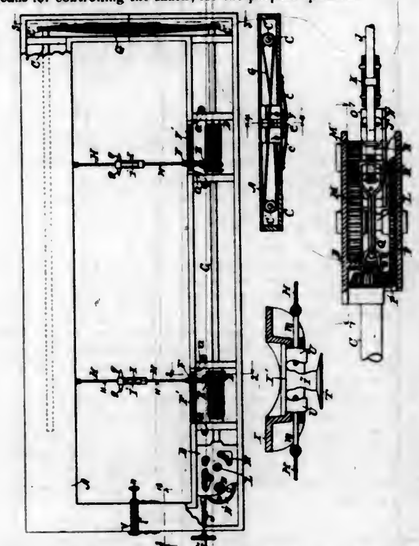
2. A vapor-burner consisting of a disk having an annular chamber therein adjacent to its rim, as well as cross-channels that are open to each other and said chamber, hollow lugs depending from the disk at quarter-circle intervals of the same in register with terminals of the cross-channels, a supply-pipe coupling provided with a drip-cup flange and having hollow branches joined to a pair of disk-lugs, a U-pipe having its ends joined to the other pair of disk-lugs, and a jet-nozzle extending upward from the bend of the latter pipe, said bend being above the supply-pipe coupling.

606,722. BURIAL APPARATUS. RICHARD R. KINNEY and GARDNER P. BARNARD, Coldwater, Mich., assignors of one-third to William L. Barth, same place. Filed July 29, 1897. Serial No. 646,347. (No model.)

Claim.—1. In a burial apparatus, the combination of a suitable framework; longitudinal shafts C, C, to each side supported therein; sprocket-wheels C', C', on the ends of said shafts; a crossed sprocket-chain G, connecting the same; a block *b* between the parts of the chain to prevent their engaging and rubbing upon each other; windlasses D, D, D, D, two on each shaft opposite each other formed with right and left hand spirals facing each other; lowering-ropes H, to rest in said spirals; guides E, engaging said spirals to be carried thereby and having eyes for the passage of the ropes; and rods F', toward the inside of said frame carrying sheaves F, to receive the lowering-ropes.

2. In a burial apparatus, the combination of a suitable framework, longitudinal shafts C, C, to each side supported therein; sprocket-wheels C', C', on the ends of said shafts; a crossed sprocket-chain G, connecting the same; a block *b* between the parts of the chain to prevent their engaging and rubbing upon each other formed with right and left hand spirals facing each other; lowering-ropes H, to rest in said spirals; guides E, engaging said spirals to be carried thereby and having eyes for the passage of the ropes; and rods F', toward the lowering-ropes; a detaching device between the ends of the ropes; and suitable brake mechanism to apply to one of the shafts, all coacting together substantially as described for the purpose specified.

3. In a burial apparatus the combination of a suitable frame; shafts to each side thereof, windlasses on said shafts opposite to each side containing right and left hand spirals; lowering-ropes adapted to be received by said spirals; guides engaging the spirals on said windlasses to be carried thereby having suitable eyes for the passage of the ropes; suitable means of detaching the lowering-ropes and means for controlling the shafts, for the purpose specified.



4. In an apparatus of the class described, the combination of a windlass D, containing a suitable spiral groove; a rope or cable therefor; guide E, engaging said spirals to be carried thereby containing a suitable eye for the passage of the rope to deliver the same into the spirals, for the purpose specified.

5. In an apparatus of the class described, the combination of a windlass D, containing a suitable spiral groove, a rope or cable therefor; guide E engaging said spirals to be carried thereby containing a suitable eye for the passage of the rope to deliver the same into the spirals; a shaft extending parallel with said windlass bearing a suitable guiding-roller adapted to slide over the same to receive and guide the rope, for the purpose specified.

6. In a burial apparatus, the combination of lowering-ropes; a separate releasing device between the ropes consisting of a plate I, with laterally-projecting wings *g g*, pins U, U, joined together by a plate I', having a depending portion I", with a foot T at the bottom to engage loops upon the lowering-ropes so that when a load is lowered the plate I, will press down upon the loops and force them below the pins and thereby release the said ropes, for the purpose specified.

7. In a burial apparatus, the combination of suitable shafts carrying windlasses, ropes adapted to extend therefrom across a grave; a brake mechanism consisting of a pinion P', on one of said shafts, parallel shafts L and N, gear P, on said shaft meshing with the pinion P'; the gear-wheels M, M', on said shafts L and N, respectively meshing with each other; a brake-wheel N': a metal band O, having facing O', of leather or similar material embracing the wheel N', brackets R, R', containing screw-threads on the ends of said band O, rod J, with a screw-thread for adjusting said brackets R, R', to apply and release the brake; a link Q, supported on a loop Q', and loosely surrounding the rod J, between the brackets R, R', to support the same and suitable means of rotating the shaft J', to apply and release, coacting for the purpose specified.

8. In a burial apparatus, the combination of suitable shafts with windlasses thereon for actuating and controlling the lowering-ropes; a brake-wheel with a band O, having a facing O', of leather or similar material round the same to form a brake; a suitable rod with a screw at its end extending through brackets on the ends of said bands for applying and releasing the brake; a link connecting the same with the supporting-case and a train of gears between the brake-wheel and the controlling-shaft for the purpose specified.

9. In a burial apparatus the combination of a suitable frame; lowering-ropes; means of controlling the same and a suitable gage consisting of a bracket V, with an adjustable rod i, having a guide-plate *n*, at its end to locate the coffin or casket in position for the purpose specified.

10. In a burial device a frame corresponding to the top of a grave divided longitudinally into two parts; hinges joining the said parts so they may fold on each other; lowering mechanism on each part; a chain or belt connecting the parts together, and a separating-block *b*, and loop *f* to support the same and prevent displacement in folding as specified.

606,728. HAIR-TONIC. HANNA KOORIE, New York, N. Y. Filed Feb. 10, 1897. Serial No. 622,742. (No specimens.)

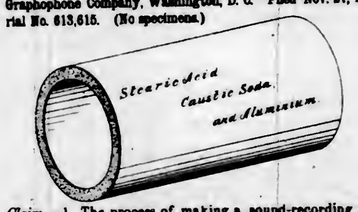
Claim.—A compound for promoting the growth of the hair, consisting of the ashes of date-seeds and of English walnuts, and garlic-water, in or about the proportions set forth.

606,724. FARM-GATE. FREDERICK M. LUCAS, Rathmel, Pa. Filed June 24, 1897. Serial No. 642,153. (No model.)



Claim.—The combination with a gate constructed of an upper oblique bar, and lower horizontal ones, confined between uprights arranged in pairs, and secured to a pintle-bar shorter than the adjacent pair of uprights, said pintle-bar carrying near its top two short strips firmly attaching it to said adjacent uprights, of a short post having a socket to receive the lower end of said bar, and a rear hinging-post carrying an overhanging plate to receive its upper end, substantially as described.

606,725. MANUFACTURE OF GRAPHOPHONE-TABLETS. THOMAS H. MACDONALD, Bridgeport, Conn., assignor to the American Graphophone Company, Washington, D. C. Filed Nov. 27, 1896. Serial No. 613,615. (No specimens.)



Claim.—1. The process of making a sound-recording material, by dissolving aluminium in soda-lye, and adding the solution to stearic acid, substantially as described.

2. The process of making a sound-recording material by melting stearic acid, free from glycerin and oleates, adding thereto soda-lye and aluminium, and heating the mass, substantially as described.

3. In the process of making a sound-recording material, the improvement consisting in adding to stearic acid soda-lye with which a metal such as aluminium has been united in such quantity as to produce partial saponification, and heating the mixture, substantially as described.

4. The process of making a sound-recording material by treating stearic acid with soda-lye in quantity sufficient to produce about a forty-per-cent. saponification, the lye containing a metal and heating the mixture, substantially as described.

5. The process of making a sound-recording material by forming a soda-lye, heating to about its boiling-point, adding a small quantity of aluminium thereto, heating pure stearic acid to about the same temperature, adding the compound of lye and aluminium and continuing the heating until the moisture is expelled, substantially as described.

6. The process of making a graphophone-tablet by forming a soda-lye, heating to about its boiling-point, adding a small quantity of aluminium thereto, heating pure stearic acid to about the same temperature, adding the compound, continuing the heating until the moisture is expelled, molding into the desired shape and then quickly cooling, substantially as described.

7. The process of making a sound-recording material, by partial saponification of stearic acid with soda-lye having aluminium united therewith, substantially as described.

8. The process of making a sound-recording material, by adding aluminic hydrate to caustic-soda lye, adding the compound to melted stearic acid, and heating the mixture, substantially as described.

9. The process of making a sound-recording material, by adding aluminium to soda-lye, adding the same to stearic acid, heating the mixture, and adding a softening material such as paraffin, substantially as described.

10. A composition of matter for a sound-recording tablet formed of pure stearic acid (free from oleic acid and glycerin) partly saponified by caustic soda, and having aluminium incorporated therein, substantially as described.

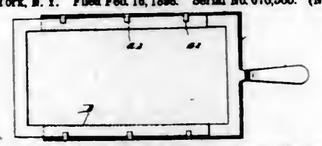
11. The process of making a sound-recording material by adding aluminate of soda to stearic acid and heating the mixture, substantially as described.

606,726. INCANDESCENT-LIGHTING SUBSTANCE. WILLIAM MAHLER, New York, N. Y. Filed July 31, 1897. Serial No. 646,704. (No specimens.)

Claim.—1. A mantle or hood for incandescent lighting, composed of a large percentage of thorium oxid, a small percentage of cerium oxid and a percentage of neodymium oxid considerably smaller than the percentage of cerium oxid, substantially as specified.

2. A mantle or hood for incandescent lighting, composed of about ninety-eight and one-half per cent. (98½%) of thorium oxid, about one per cent. (1%) of cerium oxid and about one-half of one per cent. (½ of 1%) of neodymium oxid, substantially as specified.

606,727. PHOTOGRAPHIC-FILM HOLDER. CHARLES M. MALI, New York, N. Y. Filed Feb. 16, 1898. Serial No. 670,505. (No model.)



Claim.—1. In a film-holder, the combination with a body portion, provided with longitudinal arms, and a guideway formed in said arms, of a sliding clamp provided with longitudinal arms and adapted to slide in said guideway, substantially as described.

2. In a film-holder, the combination, with a body portion having two parallel arms each of which is provided with a guide or way, of a sliding clamp provided with two parallel arms adapted to slide in said guides or ways.

3. In a film-holder, the combination with a suitable body portion provided with longitudinally-extending arms, an inwardly-inclined rim or flange arranged upon the outer edge of said body portion and arms, of a sliding clamp adapted to be engaged by said inclined rim, substantially as described.

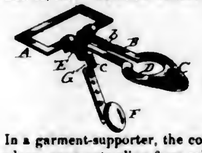
4. In a film-holder, the combination with a body portion having longitudinally-extending arms, an inwardly-inclined rim or flange extending around the edges of said body portion and arms, of a sliding clamp having longitudinally-extending arms, an inclined flange or rim arranged upon the outer edge of said arms, and adapted to be retained in place by the inclined flange of the body portion, substantially as described.

606,728. FRAME FOR ORNAMENTAL HAIRWORK. HERMANN MAY, Jr., Meiningen, Germany. Filed Nov. 12, 1897. Serial No. 658,277. (No model.)



Claim.—A wig composed of a false scalp, a hair covering, and a series of flexible inexpansible textile bands secured directly to the inner face of the false scalp, and containing a number of covered longitudinal wire threads interposed between the textile threads, substantially as specified.

606,729. GARMENT-SUPPORTER. WALTER E. MOULTON, Shelby Ohio. Filed Dec. 13, 1897. Serial No. 661,698. (No model.)



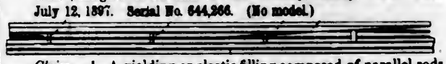
Claim.—1. In a garment-supporter, the combination of a member comprising a loop, arms extending from said loop and terminating in an open eye; a second rigid member hinged directly to the loop and provided with a head designed to enter the eye; and a catch for the members intermediate the eye and loop.

2. In a garment-supporter, the combination of a member comprising a loop, arms extending from said loop and terminating in an open eye; a tongue pivoted to the loop; a head or enlargement carried by the end of the tongue in line with the eye; and a projection formed on the tongue intermediate its pivotal point and the head, for passing up between the arms and being held thereby.

3. In a garment-supporter, the combination of a member comprising a loop, arms extending from said loop and terminating in an open eye; inwardly-extending projections upon the inner faces of said arms; a tongue pivoted to the loop; a head carried by the end of the tongue; and a projection upon the tongue in line with the projections on the faces of the arms.

4. In a garment-supporter, the combination of a loop A, arms B extending therefrom and provided with inwardly-extending projections *b*; eye D formed at the ends of said arms B; a tongue E pivoted to the loop and having its free end turned up; a head F secured upon said upturned end in line with the eye; and a projection G formed upon the tongue having the cross bar or member *c*, substantially as described.

606,730. RAILROAD-SWITCH. WILLIAM MCCAFFERY, Tyler, Wash., assignor of one-half to John Cassady, Cheney, Wash. Filed July 12, 1897. Serial No. 644,266. (No model.)

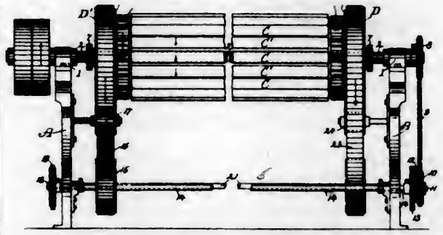


Claim.—1. A yielding or elastic filling composed of parallel rods interposed between the fixed rail and the movable rail or switch-tongue, in combination with supports for said rod connected with the rails, and yielding loops or eyes on said support for said rods, substantially as described.

2. In a filling interposed between the fixed rail and the movable rail or switch-tongue, the yielding rods forming said filling, in combination with the supporting transverse rods connected with the rail and tongue, spacing-loops on said rods, and a spring permitting said loops and the yielding rod passing through them to yield and move, one toward or away from the other, substantially as described.

3. The filler-rods interposed between the fixed portion of a railway-rail and the switch-tongue looped, at their shank ends to a transverse rod or bolt and extending thence toward the movable end of the switch-tongue, their guiding-supports permitting their yielding movement, substantially as described.

606,731. NAPPING-MACHINE. EDWARD MCCREARY, Cohoes, N. Y. Filed Dec. 21, 1897. Serial No. 662,836. (No model.)

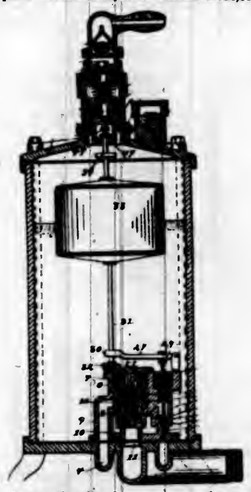


Claim.—1. In a napping-machine, the combination, with a napping-cylinder provided with two independent series of napping-rollers—the rollers of one series alternating with the rollers of the other series and the rollers of one series having pulleys secured to one end of the rollers and the rollers of the other series having pulleys secured to the opposite end, of driving-pulleys arranged at opposite ends of the napping-cylinder and fitted to rotate loosely on the shaft of the latter; each driving-pulley having a flexible rim extending therefrom so as to overlap onto and take in frictional contact with the corresponding roller-pulleys, as specified.

2. In a napping-machine, the combination of a series of napping-rollers each having a pulley on one of its outer ends, a driving-pulley provided with a flexible rim extending therefrom and adapted to overlap onto and take in frictional contact with each roller-pulley of the series of napping-rollers, and a driving-belt arranged to bear upon the outer face of the flexible rim of the driving-pulley so as to force down said flexible rim into positive frictional contact with the roller-pulleys, as specified.

3. In a napping-machine the combination of a spider provided with journal-bearings for the napping-rollers, and having an annular oil-chamber, a series of sleeves which form said journal-bearings, a series of oil ducts leading from said oil-chamber to said journal-bearings, tubular extensions from said oil-ducts adapted to engage with the sleeves of the journal-bearings, and a porous plug secured to the outer end of the said tubular extensions and adapted to bear upon the journals of the napping-rollers, as and for the purpose specified.

606,732. HYDRAULIC AIR-COMPRESSOR. ADOLPH G. NOACK and LORENZ S. GROSSMAN, Cleveland, Ohio, assignors, by mesne assignments, to Clement L. V. Evans, trustee, of The Berner-Mayer Company, same place. Filed Dec. 24, 1896. Serial No. 616,839. (No model.)



Claim.—1. In a hydraulic air-compressor, the combination of an air-and-water chamber provided with a water waste-port in its bottom, a main controlling-valve chamber supported a distance above said waste-port to form a water-outlet between its lower edge and the waste-port and having communication at its upper end with the water-inlet and having a port in its side communicating with the interior of the air-and-water chamber, a main controlling-valve having play in said valve-chamber and constructed of such length as to remain partly or entirely within the valve-chamber when lowered to close the water-outlet and cover the waste-port and to uncover the port in the side of the valve-chamber or raised to uncover the outlet and waste-port and to cover the port in the side of the valve-chamber, a piston and chamber connected to actuate said main controlling-valve, and a primary valve controlling the water for said piston and chamber and connected to be actuated by the rise and fall of the water in the air-and-water chamber, substantially as set forth.

2. In a hydraulic air-compressor, the combination of an air-and-water chamber, an actuating-piston chamber having the water-inlet at its lower end and a water-outlet at its upper end, a main controlling-valve chamber having its upper end open into the bottom of the piston-chamber and having a port in its side opening into the air-and-water chamber and forming a water-outlet at its lower end, a main controlling-valve in said valve-chamber and an actuating-piston provided with a packing and sliding in the piston-chamber and connected to the valve by a stem having a passage extending through its side and up through the top of the piston, and a primary valve controlling the outlet from the top of the piston-chamber and connected to be actuated by the rise and fall of water in the air-and-water chamber, substantially as set forth.

3. In a hydraulic air-compressor, the combination of an air-and-water chamber, a main valve controlling the inlet and outlet of the actuating-water into and out of the chamber, an actuating-piston chamber connected to the inlet at one end and having an outlet at the other end, an actuating-piston reciprocating in said chamber and connected to the main controlling-valve and provided with a water-passage through it, a primary-valve chamber having an outlet at its end formed with a valve seat and having the outlet from the piston-chamber opening into it, and a primary valve of less diameter than the primary-valve chamber playing against the valve-seat and connected to be actuated by the rise and fall of water in the air-and-water chamber, substantially as set forth.

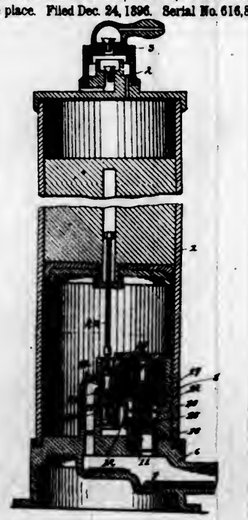
4. In a hydraulic air-compressor, the combination of an air-and-water chamber, a main valve controlling the inlet and outlet of the actuating-water into and out of the chamber, an actuating-piston chamber connected to the inlet at one end and having an outlet at the other end, an actuating-piston reciprocating in said chamber and connected to the main controlling-valve and provided with a water-passage through it, a primary-valve chamber having an outlet at its end formed with a valve-seat and having the outlet from the piston-chamber opening into it, a primary valve of less diameter than the primary-valve chamber playing against the valve-seat, a lever fulcrumed at one end and having movable connection with the valve-stem near said end, and a float connected to said lever to raise the same at the upper end of its upstroke and to depress the same at the lower end of its downstroke, substantially as set forth.

5. In a hydraulic air-compressor, the combination of a valve-actuating lever, a float-rod and a float upon the same, said rod sliding through an opening in said lever and having a stop at its end for engaging said opening, and a cup-shaped guide which registers with the end of said float-rod and receives said stop when the rod is lowered, substantially as set forth.

6. In a hydraulic air-compressor, the combination with a float and float-rod constructed to actuate the valve mechanism, said rod having a stop at its upper end and constructed to be lifted and lowered at the two extremities of the stroke of the float, of a valve-casing in the top of the compressor-cylinder and having valve-controlled air inlet and outlet, a piston in said casing and having an axial passage and a yoke upon its under side through which the upper end of the float-rod passes and which engages the stop upon the same, a spring bearing downward against the piston, and an upwardly-closing valve for the passage through the piston and resting against the upper end of the float-rod, substantially as set forth.

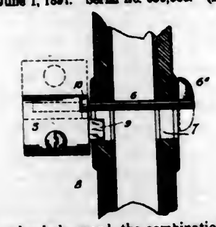
7. In a hydraulic air-compressor, the combination with a float and float-rod constructed to actuate the valve mechanism, said rod having a stop at its upper end and constructed to be lifted and lowered at the two extremities of the stroke of the float, of a valve-casing in the top of the compressor-cylinder and having valve-controlled air inlet and outlet, a piston in said casing and having an axial passage and a yoke upon its under side through which the upper end of the float-rod passes and which engages the stop upon the same, a spring bearing downward against the piston, and an upwardly-closing valve for the passage through the piston and resting against the upper end of the float-rod, and an auxiliary air-inlet valve in the top of the cylinder, substantially as set forth.

606,733. HYDRAULIC AIR-COMPRESSOR. ADOLPH G. NOACK and LORENZ S. GROSSMAN, Cleveland, Ohio, assignors, by mesne assignments, to Clement L. V. Evans, trustee, of The Berner-Mayer Company, same place. Filed Dec. 24, 1896. Serial No. 616,840. (No model.)



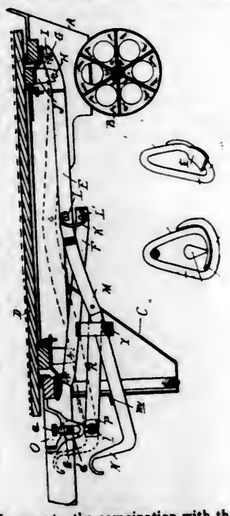
Claim.—In a hydraulic air-compressor, the combination of an air-and-water chamber having an air inlet and outlet at its top and water inlet and outlet at its bottom, a main controlling-valve controlling the water inlet and outlet for the chamber and having an actuating-piston connected to it by a stem formed with a water-passage through it and the top of the piston, a piston-chamber for said piston and having inlet for the actuating-water at one end and a water-outlet at the other end, a primary-valve chamber open at both ends and having a waste-port near its upper end and a port near its lower end communicating with the outlet from the actuating-piston chamber, and a primary valve having means for raising it and lowering it at the extreme upper and lower water-level in the air-and-water chamber and provided with a packing-piston at its upper end, a distributing-piston playing at both sides of the waste-port, and a packing-piston at its lower end permanently below the port communicating with the outlet from the actuating-piston chamber, substantially as set forth.

606,734. KEYHOLE-GUARD. FREEMAN R. OLMSTEAD, Denver, Colo. Filed June 1, 1897. Serial No. 639,000. (No model.)



Claim.—In a keyhole-guard, the combination of a lock, a stem adjustable thereon, means for securing the stem rigidly on the lock-case, the said stem having a projection at its free extremity adapted when the stem is properly turned in the keyhole to prevent its withdrawal, the lock being provided with a movable bolt adapted to enter the keyhole and prevent the turning of the stem, the parts being so arranged that when the projection on the stem is adapted to enter the keyhole, the bolt of the lock is out of line therewith, but when the bolt is in line with the keyhole, the said projection is out of line therewith, and suitable means for actuating the said bolt for the purpose set forth.

606,735. WEIGHING-TRUCK. ORLANDO W. PARSELL, Flushing, Mich. Filed Jan. 18, 1897. Serial No. 619,563. (No model.)



Claim.—1. In a scale, the combination with the beam and the platform of the long lever having an extension to form a handle for raising or lowering the same, a link connected at opposite ends to this lever and to the beam, and means for connecting the lever to the link for the purpose described.

2. In a scale, the combination with the beam and the platform of the long lever, a link connecting said lever with the beam, and a hook for supporting the lever on the link intermediate its ends.

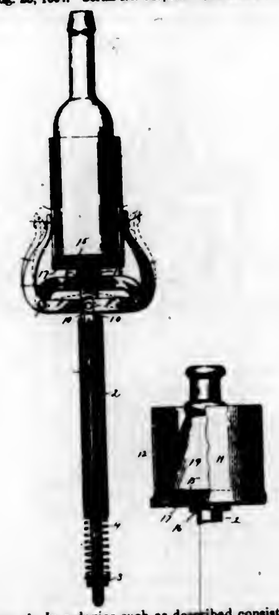
3. In a scale, a double beam comprising a graduated member or bar, brackets or extensions at the ends, a second bar engaged in apertures in the brackets, a fulcrum-block attached to this second bar in which the beam-rod and fulcrum-pivots are secured, and counterbalance and weighing poises on this beam on opposite sides of the fulcrum-block.

4. A pivot-loop formed of a single piece bent into loop shape with separated overlapping and concentric end portions the inner one of which portions forms a spring pivot-bearing.

5. A pivot-loop having the separated overlapping and concentric end portions the inner one of which is reduced in thickness to form a spring pivot-bearing.

6. A pivot-loop having overlapping separated ends one of which forms a yielding pivot-bearing and the other of which forms a reinforce for said bearing portion and is adapted to limit the movement thereof.

606,736. IMPLEMENT FOR HOLDING BOTTLES, &c. CYRUS W. PLATT, JOHN M. PATTERSON, and JAMES HAMMELL, Jr., Windfall, Ind. Filed Aug. 25, 1897. Serial No. 649,489. (No model.)



Claim.—1. In a device such as described consisting of a handle provided with a suitable clamping mechanism, a receptacle adapted to hold a bottle, said receptacle having in its sides openings, the clamping mechanism adapted to pass through said openings and come in contact with the sides of the bottle.

2. In a device such as described consisting of a handle having a clamping mechanism, a receptacle removably attached to the handle, said receptacle having in its sides openings, the clamping mechanism adapted to extend through said openings and come in contact with the sides of the bottle.

3. In a device such as described consisting of a handle having a clamping mechanism, a receptacle attached to the handle and adapted to receive the bottle, openings in the sides of the receptacle, the clamping mechanism having at its inner ends heat-non-conducting material, said material adapted to come in contact with the sides of the bottle and retain the same.

4. A device such as described consisting of a receptacle adapted to contain the bottle, a hollow handle attached to the receptacle, a rod passing through said handle, the lower end of said rod being screw-threaded, an adjustable tap located on the screw-threaded end of the rod, a coiled spring interposed between the end of the handle and said tap, clamping-arms pivoted at their ends to the upper end of said rod, a cross-piece attached to the handle, said clamping-rods being fulcrumed to said cross-piece, the upper ends of the clamping-arms adapted to engage the bottle.

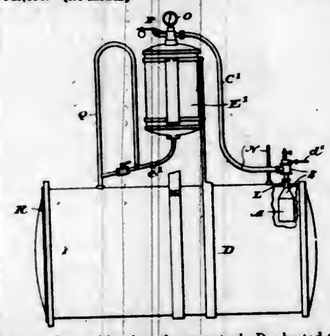
606,787. WIRE FENCE. ABRAHAM B. PROSSER, near Lebanon, Ohio. Filed Nov. 22, 1897. Serial No. 659,360. (No model.)

Claim.—1. In a fence consisting of wires stretched between posts the combination of square end or corner posts set so as to be with their *diagonals* in line with the wires, a loop on those ends of the latter which are to be connected to the posts above mentioned, the size of such loops being considerably in excess of the size of the post, the excess of the loop which has the fence-wire connected to it being all on one side of the post with a clear space between it and the nearest corner of the post, while the other part of the loop rests against the corner opposite to the one mentioned, the excess of the size of the loop permitting the same to be reduced by twisting it against the corner last mentioned for the purpose of stretching the fence-wire.



2. In a fence consisting of wires stretched between posts, the combination of wires 8, being considerably short of reaching the post and having loops 12 at their ends, a loop 7 attached to each loop 12 and passing around the post for the purpose of connecting the wire to the post, such wires being stretched by reducing the size of the loop 7 by twisting the ends of the wire forming it against the post whereby such ends are prevented from coming apart, all as shown and described.

606,738. PRESSURE-REGULATOR FOR LIQUID-STERILIZERS. AXEL L. ROSENBÖM, Norberg, Sweden. Filed Aug. 12, 1897. Serial No. 648,055. (No model.)



Claim.—1. In combination, the receptacle D adapted to receive the containing vessels and the regulator adapted to connect with the interior of the receptacle and with one containing vessel, said pressure-regulator being exposed to the internal pressure of said containing vessel, substantially as described.

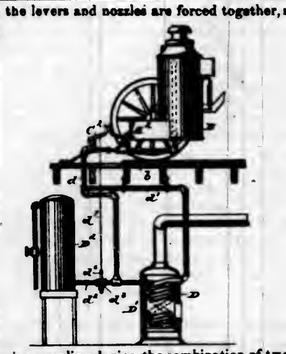
2. In combination in a pasteurizing apparatus, the receptacle D for receiving the containing vessels and a pressure fluid, a generator located above the receptacle and connected therewith and an automatic pressure-regulator controlled by the relative pressure in one containing vessel and the generator and receptacle, substantially as described.

3. In combination, the receptacle D adapted to receive the containing vessels and a pressure-regulator for regulating the pressure therein to exert an external pressure on the exterior of the containing vessels, the said regulator being connected with a vessel having the same interior volume and containing the same substances to be sterilized as the regular containing vessels and having a valve with controlling means therefor acted upon by the pressure in the aforesaid vessel, said valve controlling the pressure in the receptacle D, substantially as described.

4. In combination, the receptacle D adapted to receive the containing vessels, the regulator adapted to connect with the interior of the receptacle and with one containing vessel, said pressure-regulator having a valve and a diaphragm connected therewith and exposed to the internal pressure of said containing vessel, substantially as described.

606,739. FEED-WATER COUPLING FOR FIRE-ENGINES. FRANK A. ROTHERMEL, Cleveland, Ohio. Filed Feb. 1, 1898. Renewed Feb. 1, 1898. Serial No. 668,773. (No model.)

Claim.—1. In a pipe-coupling device, the combination of two nozzles constructed to engage and form a fluid connection, valves controlling the passages through said nozzles, and bumper-levers, each connected to open one of said valves when rocked, and having a circularly-curved bumping end which may engage and bear against the similar end of the opposite lever and rock upon the same to rock the levers when the levers and nozzles are forced together, substantially as set forth.



2. In a pipe-coupling device, the combination of two nozzles constructed to engage and form a fluid connection, valves controlling the passages through said nozzles and provided with means for automatically closing them, and bumper-levers, each connected to open one of said valves when rocked, and having a circularly-curved bumping end which may engage and bear against the similar end of the opposite lever and rock upon the same to rock the levers and open the valves when the levers and nozzles are forced together, substantially as set forth.

3. In a pipe-coupling device, the combination of an outwardly-tapering nozzle, a valve controlling the passage through said nozzle and having a spring for closing it, a bumper-lever connected to open the valve when raised and having a circularly-curved outer bumper end, an outwardly-flaring nozzle adapted to have the tapering nozzle fit into it, a valve controlling the passage through said nozzle and having a spring for closing it, and a bumper-lever connected to open the valve when raised and formed with a circularly-curved outer bumper end, the two bumper-levers being so arranged and constructed with circularly-curved bumper ends that their curved ends engage and gradually raise the levers by rocking one upon the other when forced together in coupling the nozzles, substantially as set forth.

4 In feed-water-heating apparatus, the combination with stationary and engine-coupling nozzles having bumpers for controlling their valves, of a heating-coil connected to said nozzles, a supply-tank connected to one branch of said coil, and an automatically-opening valve upon the connection between the tank and coil and provided with a connection to a bumper whereby the valve is closed when the bumpers are engaged and released to open when the bumpers are disengaged, substantially as set forth.

606,740. FEEDER FOR CORN-SHELLERS. WILLARD C. ROWE, Decatur, Ill., assignor to the Union Iron Works, same place. Filed Oct. 9, 1897. Serial No. 654,638. (No model.)



Claim.—1. A feeder for corn-shellers comprising a deflected section of drag-frame one end of which extends horizontally and the other end of which extends obliquely upward, a horizontal section of drag-frame abutting endwise against the horizontal portion of the deflected section, and separable therefrom, a drag-belt in the oblique portion of the deflected section, and a second drag-belt extending through the horizontal section and the horizontal portion of the deflected section and discharging onto the lower end of the oblique belt.

2. A feeder for corn-shellers comprising a deflected section of drag-frame one end of which extends horizontally and the other end of which extends obliquely upward, a horizontal section of drag-frame abutting endwise against the horizontal portion of the deflected section, and separable therefrom, a drag-belt in the oblique portion of the deflected section, carrying cleats to prevent slippage of corn, and a second drag-belt without cleats extending through the horizontal section and the horizontal portion of the deflected section and discharging onto the lower end of the oblique belt.

3. A feeder for corn-shellers comprising a deflected section of drag-frame one end of which extends horizontally and the other end of which extends obliquely upward, a plurality of horizontal sections of drag-frame abutting endwise against each other and against the horizontal portion of the deflected section in a separable manner, a drag-belt in the oblique portion of the deflected section, and a second drag belt extended through the horizontal sections and the horizontal portion of the oblique section and discharging onto the lower end of the oblique belt.

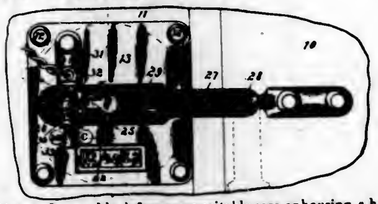
4. A feeder for corn-shellers comprising a deflected section of drag-frame one end of which extends horizontally and the other end of which extends obliquely upward, a horizontal section of drag-frame abutting endwise against the horizontal portion of the deflected section, and separable therefrom, a drag-belt in the oblique portion of the deflected section, a roller in the horizontal portion of the deflected section above the lower end of the oblique belt, and a second belt running through the horizontal section and around said roller in the horizontal end of the deflected section.

5. A feeder for corn-shellers comprising a deflected section of drag-frame one end of which extends horizontally and the other end of which extends obliquely upward, a horizontal section of drag-frame abutting endwise against the horizontal portion of the deflected section in a manner permitting separation by vertical motion, a drag-belt in the oblique portion of the deflected section, a roller in the horizontal portion of the deflected section over the lower end of the oblique drag-belt, and a second drag-belt extended through the horizontal section and around said roller in the horizontal portion of the deflected section.

6. A feeder for corn-shellers comprising a deflected section of drag-frame one end of which extends horizontally and the other end of which extends obliquely upward, a horizontal section of drag-frame abutting endwise against the horizontal portion of the deflected section, and separable therefrom, a drag-belt in the oblique portion of the deflected section, a roller in the horizontal portion of the deflected section above the lower end of the oblique belt, and a second belt running through the horizontal section and around said roller in the horizontal portion of the deflected section at a speed slower than that of the oblique drag-belt.

7. A feeder for corn-shellers, comprising an elevator-section of drag-frame having a horizontal extension, a horizontal section of drag-frame abutting endwise against the horizontal extension of the elevator-section, and separable therefrom, an elevator-belt in the elevator-section, a drive-roller for the conveyer-belt journaled in the horizontal portion of the elevator-section, such roller being driven from the elevator-belt, and a conveyer-belt running through the horizontal section and the horizontal extension and around the said roller, substantially as set forth.

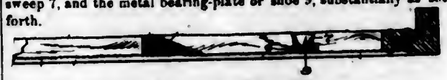
606,741. INDICATOR-LOCK. WILLIAM SCHARNWEBER, St. Louis, Mo., assignor of one-half to Beverly A. Dyer, same place. Filed Nov. 17, 1897. Serial No. 658,823. (No model.)



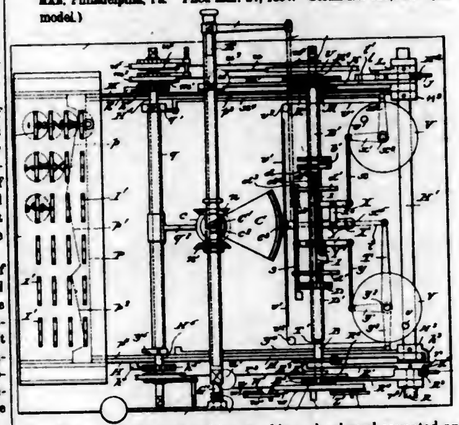
Claim.—In a seal-lock for cars, a suitable case or housing, a hasp, one of said parts being secured to the car and the other to the door, a rotary receptacle carried by said case and containing indicating devices, said receptacle being provided with a main chamber and a display-chamber, a spindle rigidly secured to said receptacle, and locking devices carried by said spindle for engaging with said hasp when said spindle is rotated.

606,742. CLEANER FOR SHAKING-SIEVES. JOHN E. SRAY, Noblesville, Ind., assignor to the Nordyke & Marmon Company, Indianapolis, Ind. Filed Oct. 4, 1897. Serial No. 654,060. (No model.)

Claim.—The combination, with a sieve composed of a frame and a sieve fabric secured on both its upper and its lower side, of a cleaner mounted loosely between said fabrics to slide on one and brush against the other, said cleaner being composed of a leather base 6, the wool sweep 7, and the metal bearing-plate or shoe 9, substantially as set forth.



606,743. TYPE-WRITING MACHINE. FERDINAND G. STALLMAN, Philadelphia, Pa. Filed Mar. 27, 1897. Serial No. 629,006. (No model.)



Claim.—1. In a type-writing machine a keyboard mounted on pivoted levers, means controlled by said levers for actuating a hammer and a type-segment including means for returning the type segment to its normal position after the hammer has acted upon the paper, and two equalized resisting devices coacting with the hereinbefore-mentioned instrumentalities, substantially as shown.

2. In a type-writing machine, a lever and its shaft having two equalized resistance forces, a type-segment adapted to be rotated by a quadrant-lever, the type segment having changeable movements, a finger-board, a pinion carried by the quadrant-lever shaft, and means for controlling said pinion through the keyboard so as to check through the pinion and quadrant-lever the movement of the type-segment at a certain time in order that a required letter, character or type may be brought into printing position substantially as shown and for the purpose described.

3. In a type-writing machine, a type-segment, a finger-board, a quadrant-lever and its shaft having two resisting forces, a pinion meshing with a rack and secured to the quadrant-lever shaft, a pawl-arm and connecting-rods, and a slide carried by the connecting-rods and contacting with a stop of the finger-board, to check the type-segment, substantially as set forth.

4. A type-writing machine provided with a type-segment, a finger-board, equalized levers upon which one end of the finger-board is supported, toothed racks and pinions connected to the levers, a quadrant-lever having two resisting forces, a hammer actuated by said finger-board and its lever, and means for governing the movement of the type-segment through the finger-board, its levers and quadrant-lever, substantially as and for the purpose described.

5. A type-writing machine provided with a type-segment, a finger-board supported on one end of the double-sided lever and movable therewith, a quadrant-lever and its accessories fulcrumed to the other end of the double-sided lever and means for actuating and controlling the extent of movement of said type-segment through said finger-board its lever and quadrant-lever, substantially as and for the purpose described.

6. In a type-writing machine a type-segment capable of a pivotal movement and a movement at right angles thereto, a hammer adapted to move toward the pivotal point and to be held against the type of the type-segment, a finger-board mounted on one end of the fulcrumed lever, a rack and pinion connected therewith, a quadrant-lever and its accessories, and means for checking and controlling through said finger-board the range of movement of the type-segment, substantially as shown and for the purpose set forth.

7. In a type-writing machine a type segment having a reversible oscillating movement and a movement changeable at right angles to the same, a laterally-movable frame, a hammer operating on a line with the pivotal point of the type-segment, means for raising and lowering the type-segment automatically, and a finger-board having

a sliding plate and controlling mechanism governed thereby when the key of the finger-board is depressed, substantially as set forth.

8. In a type-writing machine, a type-segment, a gear mechanism therefor, a fulcrumed lever having on one side a finger-board and on the opposite side of the fulcrum a shaft, the lever being fulcrumed directly opposite a point where the pitch-circle of one gear coincides with that of another, substantially as shown.

9. In a type-writing machine, a type-segment, a main lever, provided at one end with a finger-board and at the other end with a shaft, the lever being provided with racks located adjacent to the finger-board and meshing with pinions carried by a shaft, together with arms or projections for throwing into gear the segment, controlling mechanism, and hammer substantially as shown.

10. In a type-writing machine, a type-segment, a lever supporting a finger-board having keys which are adjustable upon said finger-board and capable of a vertical movement, the projecting ends of the keys when depressed extending beyond the finger-board and a sliding plate carried by the finger-board to control the position of the type-segment substantially as shown.

11. A type-writing machine provided with stops or keys adapted to be turned upon fulcrums therefor, the keys being carried by a keyboard having recesses therefor, a sliding plate carried by the keyboard together with a type-segment mounted on a vertical shaft and means for imparting different movements to the type-segment, one of the movements being limited by the stops or keys, substantially as shown and for the purpose set forth.

12. A type-writing machine provided with a finger-board having stops or keys, said keys or stops having a vertical and an oscillating movement, the latter for adjustment; together with a sliding plate having three beveled edges, said plate being carried by the keyboard, substantially as shown.

13. In a type-writing machine, a keyboard, a series of keys mounted thereon so as to be normally projected above the face of the keyboard, each key being fulcrumed so that its lower projecting end can be shifted; together with a sliding plate which is adapted to engage with a depressed key, for the purpose set forth.

14. In a type-writing machine, a finger board provided with stops or keys having semicircular upper faces or edges, said stops or keys having a vertical movement in the finger-board and a movement to change the normal position of the lower ends thereof, the keys being arranged as shown, levers upon which the keyboard is mounted, a sliding plate carried by the keyboard and levers; together with a movable type-segment, a hammer, and means controlled by the stops of the finger-board, and sliding plate for governing the type-segment and its hammer, substantially as shown.

15. In a type-writing machine, a finger-board provided with keys susceptible of a vertical and a rocking movement in the finger-board, a lever to which said finger-board is secured, a hammer, ribbon-rolls, a type-segment having different ranges of movement, the hammer, ribbon-holder and type-segment being actuated and controlled by the depression of a key and the finger-board, substantially as shown and described.

16. In a type-writing machine provided with a type-segment an oscillating finger-board, a quadrant-lever controlled by the keys in the movement of said finger-board and having two resisting forces, said quandrant-lever meshing with a pinion to check the type-segment at a certain time during the downward movement of the finger-board in order that the required character of type may be left opposite the impression end of a hammer, substantially as, and for the purpose set forth.

17. A type-writing machine provided with a type segment, a finger-board mounted on one end of parallel levers, keys arranged close together and movable vertically in said finger-board, a quadrant-lever having two resisting forces, and a pinion, the quadrant-lever meshing with said pinion to check the type-segment by the travel of the finger-board, said quadrant-lever being afforded changeable movements to check the movement of the type-segment, a pawl, an arm and connecting-rod, said pawl adapted to release said quadrant-lever automatically through said arm and connecting-rod, substantially as and for the purpose described.

18. A type-writing machine provided with an oscillating finger-board, a main lever, a vertically movable and oscillating type-segment, a quadrant-lever controlled by said finger-board and having two resisting forces, a pinion, the quadrant-lever meshing with said pinion to check the type-segment during the travel of the finger-board so that characters or type may be left in the printing position before said finger-board has completed its travel, two sets of pinions, a set on each side of the machine, a pawl carried by the quadrant-lever, an arm and a rod connected with a slide engaged by a stop or key of the finger-board, said pawl adapted to release said quadrant-lever automatically through said arm and connecting-rod, the same causing the fulcrum of the quadrant-lever to be changed from a point of the pitch-circle of one pinion to that of another, one of the pinions being connected to the driving-shaft, an involute secured to one of each set of pinions, the same having a spring and a cord, the cord being attached at the widest part of said involute and connected at its other end to a spring, whereby is equalized the power of said spring as its force relaxes through the diminution of the tension by the gradual diminishing of the resistance of the cord and through its increased distance from the axis of the involute imparting its resisting force to the quadrant and then to said main lever to maintain equal pressure throughout upon the finger-board, substantially as shown and for the purpose set forth.

19. A type-writing machine provided with a feed-gear comprising a frame, a type-segment, a cord attached to said frame and to a sheave having a lug or handle, a complemental sheave attached to the other end of said cord and provided with an involute and spring for resisting the force applied to the handle or lug of the opposite sheave, a main lever, a finger-board supported at one end thereof, a lever provided with a pawl adapted to contact with the main lever and feed the complemental sheave automatically, substantially as and for the purpose described.

20. In a type-writing machine, a finger-board mounted on the ends of parallel levers, the finger-board being provided with stops or keys arranged in rows close together, each key being fulcrumed so as to be independently adjustable, means controlled by said finger-board for governing and actuating a type-segment and imparting rotary and lateral movement thereto, and automatically return the type-segment to its normal position after printing, substantially as set forth.

21. In a type-writing machine, a finger-board having flat, thin semicircular stops or keys arranged close together and adapted to move vertically and be independently adjustable upon a fulcrum, a type-segment, a ribbon-holder, and ribbon-rolls, means controlled by said finger-board and the keys when depressed for actuating the type-segment and imparting a rotary or a vertical movement thereto and automatically returning the type-segment to its initial position after printing a line, substantially as described.

22. In a type-writing machine, a double-sided lever carrying the finger-board and having racks meshing with pinions secured to a rod or shaft, said shaft having bearings at the sides of the machine and forming a guiding-gear to maintain uniform pressure upon the finger-board, a shaft loosely mounted in end bearings and adapted to counterpoise said main lever and weight of the finger-board, substantially as described.

23. In a type-writing machine, a rotary type-segment, a finger-board provided with keys or stops having a vertical and an oscillating movement therein, a double main lever pivoted to the side of the machine and carrying said finger-board at one end, a slide carried by the double lever adapted to check the type-segment and controlled by the movable stops or keys, substantially as described.

24. In a type-writing machine, a finger-board mounted on a double main lever and provided with stops or keys arranged in a straight line, the semicircular upper surfaces of which extend over the finger-board, said keys or stops being provided with fingers or stems to have a vertical movement in said finger-board and adjustable upon their fulcrums, a bottom plate located under the said finger-board and traversed by the stems or fingers of said stops, and a plate sliding beneath said plate and abutting against the fingers of said stops when the same are depressed, substantially as shown and for the purpose set forth.

25. In a type-writing machine, a quadrant-lever shaft afforded a vertical movement and rotary movement, a finger-board, two arms keyed to the shaft and connected to rods, said rods having a sliding plate with slanted edges located under said finger-board, the finger-board being provided with stops or keys arranged close together in a straight line, the ends of said sliding plate running in grooves at the ends of the finger-board and contacting with a stop or key to limit the movement of the sliding plate, substantially as shown and for the purpose set forth.

26. In a type-writing machine, a type-segment mounted on a shaft and afforded different movements by means of a keyboard, a quadrant-lever and its shaft, two pinions geared to each other substantially as shown, one of the pinions being mounted on the driving-shaft in mesh with the quadrant-lever and the other on the quadrant-lever shaft, substantially as shown and for the purpose set forth.

27. In a type-writing machine, a grooved keyboard, stops or keys consisting of thin, flat semicircular pieces and downwardly-projecting fingers or stems, guides having a range of vertical movement in the grooves of the keyboard, pins securing the guides to the stops or keys, and springs placed beneath the guides to normally support the same in the keyboard, all arranged so that the keys or stops are afforded a range of vertical movement in the keyboard against the tension of said springs, and a turning movement about the pins securing the keys to the guides, substantially as shown and for the purpose set forth.

28. In a type-writing machine, a main lever, a finger-board supported at one end thereof, stops or keys arranged close together and

in a straight line in said finger-board, guides secured to the keys or stops, a slotted bottom plate secured to said finger-board, fingers depending from the keys or stops, springs located under the guides and adapted to support the keys or stops in the finger-board, all arranged so that when the keys or stops are depressed against the springs the fingers will traverse the slotted plate, substantially as shown and for the purpose set forth.

29. In a type-writing machine, a double-sided lever, a finger-board supported at the free end thereof, stops or keys having a vertical movement and its lower extremity a shift movement in said finger-board, a slotted bottom plate secured to the finger-board and traversed by the keys or stops when vertically moved in the finger-board, springs supporting the keys or stops normally above the slotted plate, a slide moving in and carried by the double-sided lever, fingers on the stops or keys controlling the movement of the slide, arms connected to the slide and carried by a shaft, a quadrant-lever mounted on said shaft, a rotary type-segment controlled through said quadrant-lever and shaft, the parts being organized substantially as shown and for the purpose set forth.

30. In a type-writing machine, a rotary and laterally-movable type-segment, a double-sided lever, a finger-board supported at the free end thereof, stops or keys having a vertical movement in the finger-board, a slotted bottom plate secured to the finger-board and traversed by the stops or keys, a slide movable in and carried by the double sided lever, said slide beneath the slotted plate being limited in its movement under the same by the stops or keys, mechanism controlled by the slide for rotating the type-segment, a hammer movable toward the type-segment, and means for actuating said hammer at right angles to the horizontal movement of the type-segment for effecting an impression from the type-segment substantially as shown and described.

31. In a type-writing machine, the combination with an oscillating type-segment, of a movable keyboard, double-sided levers upon which the keyboard is mounted, a series of vertically-movable keys carried by the keyboard, said keys being susceptible of a sidewise movement with respect to the keyboard, a slide having three slanted edges of the same angle said slide being movable beneath the keyboard and controlled in its movement by the keys and mechanism controlled by the slide for actuating the type-segment, substantially as shown and for the purpose set forth.

32. In a type-writing machine, a type-segment mounted upon a shaft adapted to be actuated by gear mechanism, a keyboard provided with thin semicircular stops or keys, said keyboard being mounted on a double-sided lever whose fulcrum is opposite a point where the pitch-circle of one gear coincides with that of another, said double-sided lever being adapted to actuate said gear mechanism when depressed, substantially as shown and described.

33. In a type-writing machine, a type-segment mounted upon a shaft, a quadrant-lever mounted upon a shaft with special mechanism for operating said type-segment shaft, an equalizing tension device for said quadrant-lever, said quadrant-lever and shaft being capable of vertical and rotary movements and the said lever capable of being locked and unlocked automatically from said quadrant-lever shaft by means of pawls, substantially as shown and described.

34. In a type-writing machine, a shaft, a carriage riding thereon, a cord secured to the carriage and adapted to slide the same upon the shaft, an oscillating and vertically-movable type-segment, a type-segment shaft therefor, a sheave mounted on a stub-shaft and secured to one end of the cord actuating the carriage, an involute secured to said sheave, said involute controlling tension of a spring, a second sheave mounted at the other side of the machine and secured to the other end of the cord actuating the carriage to act as the driver for said carriage, substantially as shown and for the purpose set forth.

35. In a type-writing machine, a shaft, a carriage riding thereon, a cord secured to the carriage and adapted to slide the same on the shaft, an oscillating and vertically-movable type-segment, a type-segment shaft, a sheave mounted on a stub-shaft and secured to one end of the cord actuating the carriage, an involute secured to said sheave, said involute controlling tension of a spring, a second sheave having rack-teeth and a handle, mounted on a stub-shaft at the other end of the machine and connected to the carriage, whereby the carriage can be shifted manually by said handle, substantially as and for the purpose described.

36. In a type writing machine, a type-segment and gear mechanism for operating the same, a quadrant-lever meshing with said gear mechanism and rotating with its shaft, said shaft being provided with a resisting force or tension device consisting of a complemental quadrant and a pinion meshing therewith normally under the influence of an involute and spring, substantially as shown and described.

37. In a type-writing machine, a segment provided with type, a keyboard provided with a series of stops or keys, each having a finger or stem and arranged close together in rows, and a sliding plate having three slanted edges, the slanted edges of said plate allowing said series of stops or keys to be arranged in a straight groove of the keyboard, and said stops or keys being arranged to adjust the movement of said plate by the change of position of the fingers or stems, the adjustment of said plate also permitting of a sharp and distinct impression being effected by means of said stops or keys, thus regulating the position of the type of the machine, substantially as described.

38. In a type-writing machine, a double-sided main keyboard-lever having a shaft journaled in its rear end, a quadrant and pinion mounted on said shaft and connected to each other and in engagement with the pinion, a second pinion mounted on a stub-shaft and provided with a tension device consisting of an involute, a cord secured to said involute, a helical spring attached to the other end of the cord, and grooved disk, substantially as shown and for the purpose set forth.

39. In a type-writing machine, a double-sided main keyboard-lever having a shaft journaled in its rear end, a quadrant and pinion mounted on said shaft and connected to each other by an arm and pawl, a segment-rack secured to the main frame and in engagement with the pinion, a second pinion mounted on a stub-shaft and provided with a tension device: together with a supplemental tension device consisting of a quadrant and pinion mounted on a shaft connected to the shaft of the main keyboard-lever, connecting said quadrant and pinion, a pinion in mesh with said quadrant, an involute formed on the latter pinion, a cord attached to said involute, and a spring connected to the other end of the cord, substantially as shown and for the purpose set forth.

40. In a type-writing machine, the combination with a keyboard-lever having a series of movable keys girdered or fulcrumed thereon, of means for actuating a type-segment and a hammer, and imparting independent movements to said segment, means controlled by lugs for regulating a feed movement of said segment and hammer; together with means controlled by the keys through the intervention of sliding-plate levers for regulating the oscillating movement and a movement at right angles thereto independent of the said feed movement and for maintaining an equal tension throughout the entire depression of each stroke and of each key with the keyboard, said segment having independent springs to return it to its normal position, the lever having means adapted to cause a reversible toothed member to travel horizontally with the segment substantially and for the purpose set forth.

41. In a type-writing machine, the combination of a keyboard, its keys and a slide, the movement of which is limited by engagement with a key of the keyboard, a quadrant-lever, a type-segment, springs, and connecting means, the springs supplying tension for the keyboard-lever and the type-segment, substantially as shown and for the purpose set forth.

42. In a type-writing machine, the combination with quadrant-levers for the purpose set forth of springs coacting therewith to effect an equal tension for each stroke of the keyboard, substantially as shown.

43. In a type-writing machine, the combination with a type-segment supported so as to be susceptible of three movements in both directions, of springs acting upon said type-segment so that a single spring is brought into play for each movement one at a time, for the purpose of maintaining an equal tension for each stroke of the keyboard-lever, substantially as shown and set forth.

44. The combination in a type-writing machine having a keyboard and means for connecting said keyboard with a type-segment, of a type-segment having means for imparting thereto an equalized horizontal resistance; together with the controlling and actuating mechanism for said type-segment, substantially as shown and for the purpose set forth.

45. A type-writing machine having a feed-lever, a pawl and rack-teeth with which the pawl engages, a keyboard-lever and type-segment, in combination with a supplemental lever having a pawl, lugs which engage with the pawl to exchange its hold upon the teeth of the feed-lever pawl, and means whereby the supplemental lever is acted upon at a certain time to effect the automatic return of the type-segment, substantially as set forth.

46 The combination in a type-writing machine, of a keyboard and supporting-levers therefor, a vertically-movable and oscillating type-segment, a toothed governing-wheel mounted on a shaft, bars controlling the rotation of said wheel and shaft and connections between the governing-wheel, type-segment and keyboard, substantially as shown.

47. The combination in a type-writing machine having a shaft the movement thereof being controlled by the keys and a sliding plate carried by the keyboard, of a quadrant-lever, a type-segment and controlling mechanism therefor including a toothed wheel and locking-bars which are spring-actuated in one direction to provide an equal tension for each stroke of the keyboard and control the vertical movement of the type-segment substantially as, and for the purpose set forth.

48. In a type writing machine provided with a keyboard and supporting-levers therefor, in combination with controlling mechanism, a pawl, a ratchet-wheel, and connecting mechanism organized to permit the rebound of the ratchet-wheel previous to the release of the controlling mechanism for the purpose set forth.

49. The combination in a type-writing machine provided with a keyboard-lever and an open-ended sliding frame, which in conjunction with a swinging frame operates a hammer in two directions, the sliding frame being connected to a type-segment to cause the same to travel laterally therewith, a telescopic extension-tube adapted to be drawn out manually as a support for the sliding frame, said frame having a step-by-step movement, a spring and means for maintaining an equal resistance for each stroke of the keyboard-lever; together with pawl controlled by lugs which engage with rack-teeth; the tension of said spring being released automatically at the end of a line of printing to bring the type-segment back to its normal position substantially as and for the purposes described.

50. In a controlling mechanism for the type-segment of a type-writing machine the combination of a rotary controlling-wheel, levers whose ends are adapted to be held against a fixed point, and said ends actuated alternately to maintain an equal resistance and regulate the shift movement of the type-segment substantially as described.

51. The combination in a type-writing machine of a lever whose ends are adapted to be held against a fixed point and controlled through the keyboard of a sliding plate having slanted edges, and a pawl for regulating the extent of the movement of said lever.

52. The combination in a type-writing machine provided with a lever whose ends are held against a fixed point, said ends being actuated alternately, and controlled through the keyboard by the intervention of a slanted triple-edge sliding plate, of a pawl and a controlling wheel or governor for shifting a segment in opposite directions and regulating the said shift, and the said edges of the sliding plate being of the same angle but deviating throughout the breadth of plate one of each outer edge following an inner, one after the other, substantially as set forth.

53. In a type-writing machine, the combination with a shaft or cross-bar, a sleeve mounted to slide thereon and provided with a projecting arm and carriage, of a type-segment supported by said carriage and members depending from the carriage having rolls to engage the cross-bar, substantially as shown and described.

54. In a type-writing machine, the combination with its keyboard of a slanted edge plate a type-segment and a series of vertically-movable stops or keys fulcrumed in the keyboard and held in an adjusted position by frictional contact, said keys when depressed extending in the path of the slanting edge plate, substantially as shown and described.

55. A type-writing machine provided with a type-segment mounted on a shaft and adapted to slide thereon, and to have a movement with the shaft, the two movements being in opposite directions independent of one another, in combination with independent springs for each movement to bring the type-segment or its shaft normally against a fixed point, substantially as shown.

56. The combination in a type-writing machine provided with a controlling-wheel and locking-bars, each having an equal resisting force of keyboard-lever for actuating the controlling-wheel and its locking-bars, for the purpose set forth.

57. The combination in a type-writing machine having a type-segment of an equalized tension and means for operating said segment and tension device by the depression of the keyboard, substantially as shown.

58. In a type-writing machine, the combination with a type-segment having characters arranged in line horizoutally and out of line vartically; of actuating-keys therefor, a slide having three faces for controlling the position of the type-segment so as to bring one of the type thereof in printing position.

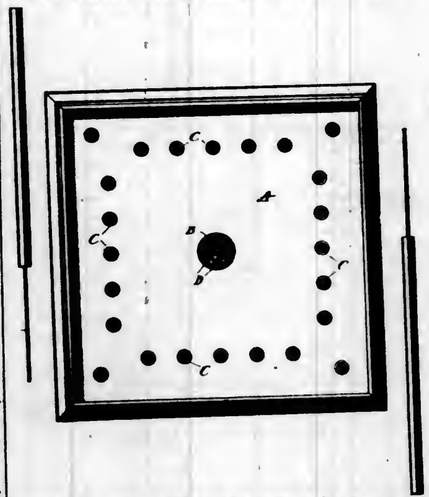
59. In a type-writing machine, the combination with mechanism for controlling a type-segment by an independent key-lever, said key-lever actuating the type-segment and means to effect a movement of the mechanism so as to bring the caps or large letters into printing position when said lever is depressed.

60. In a type-writing machine the combination with a sliding frame open at one end of means for connecting thereto the paper to be printed upon and hold the same stationary; together with a transversely-movable hammer and type-segment and means for effecting a step-by-step movement thereto.

61. In a type-writing machine, the combination of a transversely-movable carriage carrying a type-segment, a hammer also mounted to move in unison with the type-segment, of an open-ended frame and means for connecting the paper to be printed upon thereto; together with ribbon-rolls mounted on fixed supports so that the ribbon and paper holder will remain stationary during the travel of the type-segment and its hammer substantially as shown.

62. In combination with a keyboard having three groups of keys, a slide P, having three deviating edges and a type-segment having three sets of characters arranged in a horizontal series so as to be out of line with each other vertically; together with the controlling mechanism having three checking-rods for the purpose set forth.

606,744. GAME APPARATUS. THOMAS M. ST. JOHN, New York, N. Y. Filed Mar. 24, 1897. Serial No. 629,068. (No model.)



Claim.—1. The herein-described game apparatus, comprising a number of spheres or balls of magnetic material, a board having a large receptacle for all the balls and a plurality of pockets, each of which is approximately of the same size as a ball, and a magnetic shifting device for transferring the balls from one receptacle to others.

2. The herein-described game apparatus, comprising a number of play-pieces of magnetic material, a board having a large receptacle for all the play-pieces, and a plurality of receptacles for the play-pieces individually, and a magnetic shifting device for transferring the play-pieces from one receptacle to others.

3. The herein-described game apparatus, comprising a number of play-pieces of magnetic material, a board having a large receptacle for all the play-pieces and a plurality of receptacles for the play-pieces individually, each of which receptacles corresponds in size with one of the play-pieces, and a magnetic shifting device for transferring the play-pieces from one receptacle to another.

606,745. BOTTLE-LABELING MACHINE. FRANK C. H. STRASBURGER, Chicago, Ill. Filed May 19, 1896. Serial No. 592,122. (No model.)

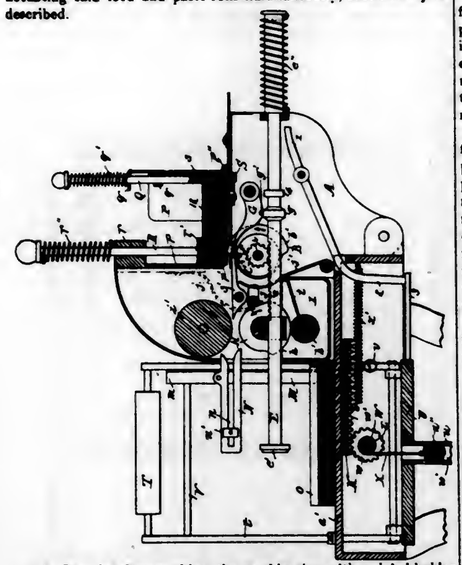
Claim.—1. In a labeling-machine, the combination with a label-holder for containing a pile of labels, of feed-rolls adapted to engage the bottom label in said pile and feed the same forward, paste-rolls adapted to apply adhesive material to said labels, horizontally-reciprocating carriers operating above the article to be labeled and arranged to receive the label from said paste-rolls and carry it into proper position with relation to the article to be labeled and means for operating said carriers, substantially as described.

2. In a labeling-machine, the combination with a label-holder, of feed-rolls having cam-faces on a portion of their peripheries adapted to engage the bottom label of a pile in said label-holder and feed said bottom label forward from the pile, and means operated by the insertion of the bottle in the machine to actuate said feed-rolls, substantially as described.

3. In a labeling-machine, the combination with a label-holder, of feed-rolls having cam-faces on a portion of their peripheries adapted to engage the bottom label of a pile and feed the same forward, paste-rolls spaced a suitable distance apart, cam-faces on a portion of the peripheries of said paste-rolls adapted to receive paste and apply the same to the label and feed the label forward from the feed-rolls, and means for operating said feed and paste rolls actuated by the insertion of the bottle in the machine, substantially as described.

4. In a labeling-machine, the combination with a label-holder, of feed-rolls provided with cam-faces on a portion of their peripheries adapted to engage the bottom label of a pile in said label-holder and advance the same forward, paste-rolls, cam-faces on a portion of the peripheries of said paste-rolls adapted to apply adhesive materials

to portions of the surface of said label and advance the label forward, an idle-roll operating above said paste-rolls and upon the label to hold the label in contact only with the cam-faces on the paste-rolls and means operated by the insertion of the bottle in the machine for actuating said feed and paste rolls simultaneously, substantially as described.



5. In a labeling-machine, the combination with a label-holder adapted to receive a pile of labels, of feed-rolls provided with cam-faces on a portion of their peripheries to engage the bottom label of said pile and advance the same forward, means operated by the insertion of a bottle in the machine for actuating said feed-rolls and means for automatically stopping said feed-rolls at the end of each complete revolution, substantially as described.

6. In a labeling-machine, the combination with a label-holder adapted to receive a pile of labels, of feed-rolls provided with cam-faces adapted to engage the bottom label and advance the same forward, paste-rolls arranged in advance of said feed-rolls and provided with cam-faces to apply adhesive material to portions of the surface of the label, supporting-bars arranged intermediate of the feed-rolls and the paste-rolls to support the label while being advanced by the feed-rolls to the paste-rolls, a vat arranged beneath the paste-rolls to contain the paste or adhesive material, the spring-arms secured to the side of said vat, the paste-feed roll on said arms and arranged to engage with the cam-faces of the paste-rolls, a scraper yieldingly supported adjacent to the paste-rolls and adapted to engage therewith, and a guard arranged intermediate of the feed-rolls and paste-rolls to protect the feed-rolls, substantially as described.

7. In a labeling machine, the combination with a label-holder adapted to receive a pile of labels, of feed-rolls adapted to advance the bottom label of said pile, paste-rolls adapted to apply adhesive material to portions of the surface of said label, reciprocating carriers to receive the label from the paste-rolls and carry it into its proper position with relation to the article to be labeled, and means for simultaneously affixing the label to the article and throwing the carriers out of the way of the article, substantially as described.

8. In a labeling-machine, the combination with a label-holder, of feed-rolls for advancing a label from said holder, paste-rolls adapted to apply paste to a portion of the surface of said label, horizontally-reciprocating carriers to receive the label from the paste-rolls and carry it into position above the article to be labeled, and a push-bar adapted to be operated by the insertion in the machine of the article to be labeled and thereby actuate the feed-rolls to advance a single label from the holder to the carriers, substantially as described.

9. In a labeling-machine, the combination with a label-holder, of feed-rolls adapted to advance a label from said holder, paste rolls adapted to apply adhesive material to a portion of the surface of said label, a push-bar operated by the insertion of the article to be labeled in the machine and actuating the feed and paste rolls, and means for stopping the operation of said rolls after they have completed a full revolution, substantially as described.

10. In a labeling-machine, the combination with a label-holder, of feed-rolls adapted to advance a label from said holder, paste-rolls adapted to apply adhesive material to a portion of the surface of said label, a push-bar operated by the insertion of the article to be labeled in the machine and actuating the feed and paste rolls, and means for holding said push-bar after it has been thrust in, substantially as described.

11. In a labeling-machine, the combination with a label-holder, of feed-rolls adapted to advance a label from said holder, a shaft supporting said feed-rolls, a disk on said shaft and provided with a slot in its periphery, a pivoted arm having a downturned end adapted to engage the slot in said disk, a push-bar adapted to actuate said feed-rolls, and a collar carried by said push-bar and arranged to engage the pivoted arm to raise the downturned end thereof out of engagement with the disk, substantially as described.

12. In a labeling-machine, the combination with a label-holder, of feed-rolls adapted to advance a label from said holder, a shaft supporting said rolls, a gear-wheel mounted loosely on said shaft and provided with a sleeve at one end thereof, a ratchet-wheel secured rigidly on said sleeve, a box secured on the shaft and over said ratchet-wheel, pawls pivotally secured in said box and arranged in engagement with the ratchet wheel, and a push-bar provided with a rack to engage the gear-wheel and operate the same whereby, when the push-bar is thrust backward, the shaft and feed-rolls will be revolved forwardly, and, when the push-bar resumes its normal position, the feed-rolls will remain stationary, substantially as described.

13. In a labeling-machine, the combination with a label-holder, of feed rolls adapted to advance a label from said holder, a shaft supporting said feed-rolls, a disk mounted on said shaft and provided with a slot, a pivoted arm provided with a downturned end adapted to engage the slot in said disk, a gear-wheel loosely mounted on the shaft adjacent to said disk and provided with a sleeve at one end thereof, a ratchet wheel secured on said sleeve, a box arranged over the sleeve and secured to the shaft, spring-pressed pawls pivoted in the box and arranged in engagement with the ratchet-wheels, a push-bar adapted to be operated by the insertion of the article to be labeled in the machine, a rack on said push-bar arranged to engage the gear-wheel, and a collar carried by said push-bar and arranged to engage the pivoted arm and raise the end thereof from engagement with the disk, substantially as described.

14. In a labeling-machine, the combination with a frame, and means for advancing the label therethrough, of a label-holder pivotally mounted on the frame and adapted to receive and hold a pile of labels, and spring-controlled devices bearing on the pile for maintaining said labels in a compact pile, substantially as described.

15. In a labeling-machine, the combination with a frame, and means for advancing the label therethrough and affixing the same to the article to be labeled, of a label-holder pivotally mounted on the frame and adapted to receive the pile of labels, said pile of labels being partly inclosed within the walls of said holder and projecting partly from the forward end thereof, and the label-holder being adapted to be turned on its pivot to bring the labels into a vertical position, substantially as and for the purpose described.

16. In a labeling-machine, the combination with a frame, and means for advancing a label therethrough and affixing the same to the article to be labeled, of a label-holder pivotally mounted on the frame and adapted to be turned on its pivot to bring the pile of labels into a vertical position, substantially as and for the purpose described.

17. In a labeling-machine, the combination with a frame, and means for advancing a label therethrough and affixing the same to the article to be labeled, of a label-holder pivotally mounted on the frame and adapted to receive the pile of labels, said pile of labels being partly inclosed within the walls of said holder and projecting partly from the forward end thereof with the bottom label in position to be engaged by the advancing means, a pin projecting up from the bottom of the holder and adapted to engage the bottom labels of the pile therein, a holding-rod adapted to bear upon the pile of labels and having a socket in its lower end to receive said pin and a spring-pressed holding-rod arranged to press the forward part of the pile, uninclosed by the holder, downward in position to be engaged by the feed-rolls, substantially as described.

18. In a labeling-machine, the combination with a frame, of a label-holder mounted on said frame, feed-rolls adapted to advance a label from said holder, a device projecting up through the bottom of the holder and adapted to engage the bottom labels of a pile in said holder at the edge thereof, and a spring-controlled holding-rod arranged to bear upon the pile of labels and provided with a socket in its lower end to receive said engaging device when the pile of labels is entirely or nearly exhausted, substantially as described.

19. In a labeling-machine, the combination with a frame and means for advancing a label therethrough, of a pivoted label-holder mounted on the frame and adapted to receive a pile of labels, said pile of labels being partly inclosed within the walls of said holder, a plate arranged in front of said pile, a spring-pressed holding-rod supported on said plate and arranged to bear upon the forward end of the pile of labels to bring the lower label into position to be fed from the pile, a spring-pressed holding-rod arranged to bear upon the rear end of the pile of labels, and supported on said pivoted label-holder and a device for retarding the movements of the lower labels, substantially as and for the purpose described.

20. In a labeling-machine, the combination with a frame, a label-holder mounted thereon and means for advancing a label through the machine, of a cushion to receive the article to be labeled, vertically-movable affixing-rolls, arms supporting said rolls, carriers to receive the label from the advancing means and means for reciprocating said carriers in a horizontal plane to carry the label forward in position above the article to be labeled and simultaneously operate the affixing-rolls to affix said label to the article, substantially as described.

21. In a labeling-machine, the combination with a frame a label-holder mounted on the frame, and means for advancing a label through the frame, of vertically-movable affixing-rolls, arms supporting said rolls, horizontally-reciprocating carriers connected with said arms and adapted to receive the label from the advancing means and carry it into position above the article to be labeled, and means for simultaneously operating the carriers and lowering the arms to cause the affixing-rolls to affix the label to the article and the carriers to move out of the path of said affixing-rolls, substantially as described.

22. In a labeling-machine, the combination with a frame, a bed-plate, a label-holder mounted on the frame, and means for advancing a label through the frame, of carriers adapted to receive the label and support the same above the article to be labeled, loops *m* forming a part of said carriers, the affixing-rolls, the arms supporting said affixing-rolls, the cross-bars on the said arms and operating in the loops, and means for lowering said arms to bring the rolls into contact with the article to be labeled, substantially as described.

23. In a labeling-machine, the combination with a frame a label-holder, and means for advancing the label through the frame, of carriers provided with slotted holders to receive the label, and means for reciprocating said carriers back and forth in the frame to carry the label from the advancing means into position above the article to be labeled, substantially as described.

24. In a labeling-machine, the combination with a frame, a label-holder mounted on the frame, and means for advancing a label through the frame, of a bed-plate having slots therein, a plate arranged beneath the bed-plate and having lugs projecting up through said slots, the bases pivotally mounted on said lugs, the arms secured on said bases, the holders carried by said arms and adapted to receive a label and support the same above the article to be labeled, and adjusting devices in said holders to adapt the holders to receive labels of different sizes, substantially as described.

25. In a labeling-machine, the combination with a frame having a bed-plate, a label-holder mounted on the frame, and means for advancing a label through the frame, of affixing-rolls, a plate arranged beneath the bed-plate, the arms pivoted on said plate and carrying the affixing-rolls, the carriers adapted to support a label above the article to be labeled, a plate arranged beneath the bed-plate and provided with lugs extending up through slots in the bed-plate, the bases mounted on said lugs and supporting the carriers, and means connected with the plates beneath the bed-plate and adapted to actuate the same to operate the affixing-rolls and the carriers simultaneously, substantially as described.

26. In a labeling-machine, the combination with a frame having a bed-plate, of a plate located beneath the bed-plate, arms supported on said plate and carrying the affixing-rolls, a vertically-operating bar connected to said plate, means for raising and lowering said bar to cause the affixing-rolls to contact with the article to be labeled, carriers adapted to support the label above the article to be labeled, a plate arranged beneath the bed-plate and having lugs extending up through the bed-plate to support the carriers, racks on the under side of said plate, a shaft journaled in the frame, pinions carried by said shaft and adapted to engage the racks, and a connection intermediate of the shaft and vertically operating bar, whereby the carriers are operated simultaneously with the affixing-rolls, substantially as described.

27. In a labeling-machine, the combination with a frame having a bed-plate, of a plate located beneath the bed-plate, arms supported on said plate and carrying the affixing-rolls, a vertically-operating bar connected to said plate, means for raising and lowering said bar to cause the affixing-rolls to contact with the article to be labeled, carriers adapted to support the label above the article to be labeled, a plate arranged beneath the bed-plate and having lugs extending up through the bed-plate to support the carriers, racks on the under side of said plate, a shaft journaled in the frame, pinions carried by said shaft and adapted to engage the racks, a spring arranged in the socket at the upper end of the vertical bar, a strap connected to said spring and the shaft whereby the shaft is rotated as the rod is lowered, and a spring connected to the frame and to the plate carrying said racks and adapted to return said plate to its normal position after being advanced, substantially as described.

28. In a labeling-machine, the combination with a frame, means for feeding a label through the frame, a push-bar adapted to operate said feeding means, means for affixing the label to the article to be labeled, a vertically-operating rod adapted to actuate said affixing means, a shaft connected with said vertical rod and adapted to operate the same, a clutch on said shaft, and a rod connected to said clutch and adapted to be engaged by said push-bar to close the clutch, substantially as and for the purpose set forth.

29. In a labeling-machine, the combination with a frame, and means for advancing a label therethrough, of carriers adapted to receive the label and adjust the same in position over the article to be labeled, the affixing-rolls normally maintained above the carriers, arms supporting said affixing-rolls, and means adapted to bring said rolls into contact with the article to be labeled and, at the same time, throw the carriers out of engagement with the label and on each side of the article, substantially as described.

30. In a labeling-machine, the combination with a frame, and means for advancing a label therethrough, of affixing-rolls normally arranged above the article to be labeled, arms supporting said affixing-rolls, carriers provided with holders adapted to receive the label and support it in position above the article to be labeled, and adjusting devices on said holders whereby the carriers can be changed to suit labels of different sizes, substantially as described.

31. In a labeling-machine, the combination with a frame, and means for advancing a label therethrough, of carriers adapted to support a label above the article to be labeled, and comprising guide-arms bent to form loops, the supporting-arms and the holders carried by said supporting-arms and provided with slots to receive the labels, substantially as described.

32. In a labeling-machine, the combination with a frame, and means for advancing a label therethrough, a bed-plate, carriers adapted to receive and support the label above the article to be labeled, a plate arranged below the bed-plate and provided with lugs extending up through slots in said bed-plate, a shaft journaled in bearings in the frame, gearing devices intermediate of said shaft and said plate, whereby the latter is reciprocated as the shaft rotates, the affixing-rolls, the arms supporting said rolls, a plate U carrying said arms a vertically-operating bar *w* connected to said plate, and yielding devices intermediate of the shaft and said bar, whereby the shaft is rotated as the bar is lowered, substantially as and for the purpose described.

33. In a labeling-machine, the combination with a frame, and means for advancing a label therethrough, of horizontal reciprocating carriers adapted to receive the label and support the same in position above the article to be labeled, vertical reciprocating affixing-rolls, arms supporting said affixing-rolls and means for operating the same and connections between said arms and the carriers, whereby the carriers are thrown out of the path of the affixing-rolls as the latter descend to affix the label to the article, substantially as described.

34. In a labeling-machine, the combination with a frame, and means for advancing a label therethrough, of horizontally-reciprocating carriers adapted to receive a label from the advancing means, vertically-reciprocating affixing-rolls, arms supporting said affixing-rolls and normally holding the carriers in their proper position to receive and support the label and operating to throw said carriers out of the path of the affixing-rolls while the latter are in operation, and means for operating said carriers and affixing-rolls, substantially as described.

606,746. ELECTRIC-LIGHT SWITCH. FREDERIC L. TEMPLE, St. John, Canada. Filed Oct. 7, 1897. Serial No. 654,385. (No model.)



Claim.—1. In an electric light switch, the shears-like levers or members, having their upper portions or jaws adapted to readily receive between them the inner end of the door-key, and the spring-metal electric conductors, with their lower ends adapted to be connected to electric wires, and having upper end engaging contact-points, said levers or members also having insulated projections or studs adapted to engage said spring-conductors and hold said contact-points in engagement with the aid of the door-key, substantially as set forth.

2. In an electric-light switch, the shears-like levers or members having their upper portions or jaws beveled and provided, where thus beveled, with opposite recesses, to receive the inner end of the door-key, and their lower ends provided with insulated studs or projections, and the spring-metal electrical conductors insulated from said levers or members and having at their upper ends lapping contact-points and their lower ends secured in place by nutted bolts adapted to effect connection with electric wires, said electric conductors insu-

lated from said levers, and said levers having insulated studs or projections arranged in a slot in the insulation and adapted to engage said electric conductors, substantially as set forth.

606,747. ATTACHMENT FOR SPECTACLES OR EYEGLASSES

GEORGE THOMAS, Philadelphia, Pa. Filed Sept. 22, 1897. Serial No. 652,518. (No model.)



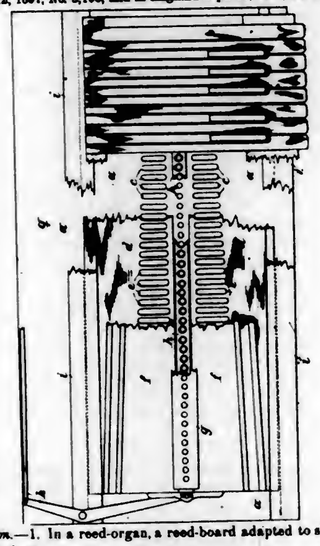
Claim.—1. In combination with a pair of eyeglasses or spectacles, vertically-extending prongs secured to each of the lenses at the nose-bridge thereof, secondary glasses, clips carried thereby, sockets formed with the clips fitting over the prongs, as and for the purpose described.

2. In combination with a pair of eyeglasses or spectacles, two U-shaped members each having one of its arms secured to the rim of one of the lenses, the other arm projecting upwardly forming a prong, a pair of secondary glasses carrying sockets fitting over the prongs, as and for the purpose described.

3. In combination with the lenses of a pair of spectacles, of a nose-piece, secondary clips detachably secured to the lenses, means for holding said clips in proper relative positions to the nose-piece, a prong formed with the secondary clip, a socket fitting over the prong, a clip with which said socket is formed and a secondary glass attached to said clip, as and for the purpose described.

606,748. TRANSPOSING ACTION FOR ORGANS.

ERNST E. THORIN, Stockholm, Sweden. Filed Nov. 20, 1897. Serial No. 659,322. (No model.) Patented in Germany May 24, 1897, No. 11,302; in Sweden Aug. 12, 1897, No. 8,196, and in England Sept. 18, 1897, No. 21,469.



Claim.—1. In a reed-organ, a reed-board adapted to slide along the wind-chest.

2. In a reed-organ a reed cell board adapted to slide along the wind-chest and means for moving said reed-cell board relatively to the wind-chest.

3. In a reed-organ a transposing action consisting of movable reed-board or reed-boards adapted to slide along the series of reed-valves.

4. In a reed-organ a transposing action consisting of reed-boards movable in guides along the wind-chest and means for moving said reed-boards by moving a knob or other part, projecting in the front of the organ.

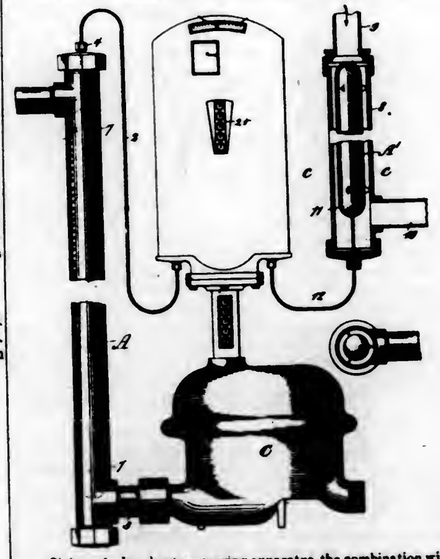
5. In a reed-organ a device for transposition, consisting of reed-cell boards movable in guides lengthwise upon the upper board of the wind-chest and means for moving said reed-boards in their guides by actuating a stop-knob or such like in front of the organ.

6. In reed-organs a board or slide adapted to move in guides lengthwise upon the upper board of the wind-chest, a reed-cell board fastened on the slide, and slots or openings in the slide; said slots or openings communicating upward with the cells of the reed-cell board and downward with the reed-valve openings of the upper board of the wind-chest, and means for actuating the slide or reed-cell board from the front of the organ.

7. In reed-organs with movable reed-boards, the extra boards *d d* fastened to the reed-boards *f f*, the guides *i i* and *g*, *h*, connection between the reed-boards or extra boards, and means for actuating the connected reed-boards or extra boards.

606,749. CALORIMETER OR HEAT-MEASURING APPARATUS.

EDWARD A. UEHLING, Newark, N. J. Filed Sept. 28, 1897. Serial No. 653,295. (No model.)



Claim.—1. In a heat-measuring apparatus, the combination with two fluid-chambers, of a bell-jar dipping into a well containing mercury and suspended to an arm pivoted at or near its center, the space in the upper part of said bell-jar having communication with one of said fluid-chambers, another bell-jar and well of like construction and having communication with the other of said fluid-chambers and an indicator attached to said arm, whereby the indicator is made to show the difference in temperature of the fluids contained in said fluid-chambers.

2. In a heat-measuring apparatus, the combination with two fluid-chambers of a bell-jar dipping into a well containing mercury and suspended to an arm pivoted at or near its center, the space of the upper part of said bell-jar having communication with one of said fluid-chambers, another bell-jar and well of like construction and having communication with the other of said fluid-chambers, a chart mechanism and a tracing-point adapted to have contact therewith attached to said arm, whereby the difference in temperature of the fluids contained in said bulbs is recorded.

3. In a heat-measuring apparatus, the combination with two thermometers adapted to be introduced at the beginning and end, respectively, of the circuit of a heat-conveying fluid of a fluid-meter introduced into said circuit, a registering device connected to said meter by friction-gearing and means controlled by said thermometers, whereby the velocity ratio between the said registering device and the fluid-meter is made to correspond to the difference in temperature of the heat-conveying fluid at the points where the thermometers are introduced.

4. In a heat-measuring apparatus, the combination with two fluid-chambers adapted to be introduced at the beginning and end, respectively, of the circuit of a heat-conveying fluid, a fluid-meter introduced into the circuit of the said circulating fluid, a register actuated by said meter and means connected with said fluid-chambers, whereby the speed of said register relative to that of said meter is controlled.

5. In a heat-measuring apparatus, the combination with two fluid-chambers adapted to be introduced at the beginning and end, respectively, of a circuit of a heat-conveying fluid, of a fluid-meter introduced into said circuit, a register or counter connected by friction-gearing with said meter, a bell-jar, dipping into a well containing mercury and having the space in its upper part in open communication with one of said fluid-chambers, and attached to an arm, said arm being pivoted at or near its center and carrying at its opposite end a similar bell-jar connected in like manner to the other fluid-chamber, and means connected with said arm whereby the speed of said counter relative to that of the meter is controlled.

6. In a heat-measuring apparatus, the combination with a thermometer adapted to be introduced into the circuit of a heat-conveying fluid, a fluid-meter introduced into said circuit, a register, a friction-disk geared to said meter, a friction-wheel having contact therewith geared to said register and a lever actuated by said thermometer and attached to said friction-wheel, whereby the position of said friction-wheel relative to said friction-disk is determined.

7. In an apparatus for measuring the heat gained or lost by a fluid flowing through a system of pipes or ducts, the combination of a register or counter, a meter operated by the flow of said fluid through said pipes or ducts, a friction-disk driven by said meter and a friction-wheel engaging said disk and geared to said register, and means controlled by the difference in temperature at two points along the course of said flow, whereby the velocity ratio between said friction-wheel and said friction-disk is governed and the register made to indicate the quantity of heat gained or lost by the fluid in its circuit.

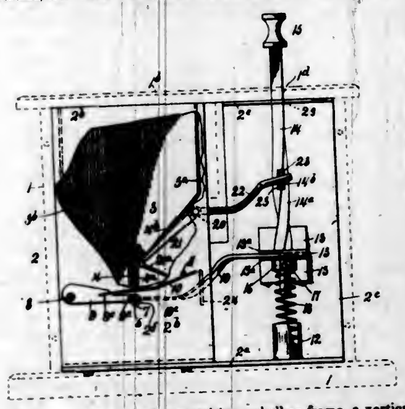
8. In a calorimeter or heat-measuring apparatus, the combination with the circuit of a heat conveying fluid of an indicator, a chart mechanism, a tracing-point adapted to have contact therewith, a fluid-meter introduced into the circuit of said heat-conveying fluid, a register or counting device actuated by said meter, two thermometer-bulbs introduced at the beginning and end, respectively, of the circuit of said heat conveying fluid, and means whereby difference in temperature of the fluids contained in said thermometer-bulbs is made to control the indicator, the tracing-point and the register, whereby the difference in temperature at the points where the bulbs are introduced is indicated and recorded, and the quantity of heat gained or lost by the fluid passing between these two points is registered.

9. In the described heat-measuring apparatus, the combination of the bulbs 1 and 11, the arm 18, the bell-jars 17 and 43 attached thereto the register 25 geared to the friction-wheel 26 the arm 24 attached to the arm 18 and carrying the said friction-wheel, the friction-disk 31 and the fluid-meter C geared to said friction-disk.

10. In a heat-measuring apparatus, the combination with a thermometer adapted to be introduced into the circuit of a heat-conveying fluid, of a fluid-meter introduced into said circuit, a registering device actuated by said meter, and means connected with said thermometer for controlling the velocity ratio or relative speed between the registering device and the fluid-meter.

606,750. SINGLE-DELIVERY MATCH-SAFE.

JOHN VAIL, Frostburg, Md., assignor to Sigmund Tanner and Patrick J. Sullivan, Cumberland, Md. Filed Feb. 3, 1898. Serial No. 668,974. (No model.)



Claim.—1. A match-safe comprising a shell or frame, a vertical reciprocated rod or shaft having a spiral or twisted body portion, a hopper or magazine, a horizontal trough located beneath the hopper or magazine, a bracket, and an ejecting-arm mounted loosely in the bracket by means of the said spiral or twisted body portion; substantially as described.

2. A match-safe comprising a shell or frame, a vertical reciprocated rod or shaft having lateral pins or projections, a hopper or magazine having a side and neck or chute formed with open slots, and a rock-shaft provided with inner arms having elbows working through the open slots, and an outer arm engaging the pins or projections, substantially as described.

3. A match-safe comprising a shell or frame, a magazine or hopper having a neck or chute, the trough located beneath the neck or chute and projecting through the shell or frame to provide a lower jaw, an upper jaw having a roughened interior face, overlapping the lower jaw and pivoted to the shell or frame, a spring for holding down the upper jaw, and means for ejecting the matches through the jaws; substantially as described.

4. A match-safe comprising a shell or frame, a sleeve secured to the floor of the shell or frame, a bracket, a vertical reciprocated shaft having a spiral or twisted body portion, passed through the bracket and into the sleeve, the collar secured to the body portion beneath the bracket, a spring surrounding the rod or shaft beneath the collar, a hopper or magazine having a side formed with open slots, located beneath the hopper or magazine, a rock-shaft having inner arms formed with elbows working through the open slots, and an outer arm connected with the rod or shaft, and an ejecting-arm loosely secured by the body portion within the bracket and having its forward end projecting over the trough; substantially as described.

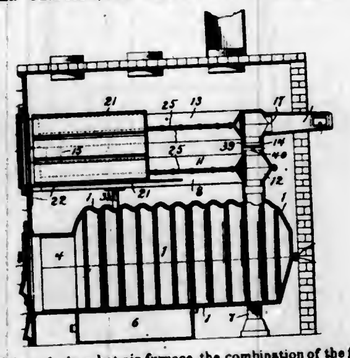
606,751. COMPOUND FOR CLOSING PUNCTURES IN PNEUMATIC TIRES.

NAUM WEINTRAUB-SCHNORR, Geneva, Switzerland, assignor to La Société Chimique des Usines du Rhône, anciennement Gilliard, P. Monnet et Cartier, Lyons, France. Filed July 1, 1897. Serial No. 643,164. (No specimens.)

Claim.—An alkaline liquid for closing punctures in pneumatic tires, said liquid consisting of an aqueous solution of water-glass, sugar and dextrine in substantially the proportions specified.

606,752. HOT-AIR FURNACE.

HENRY L. WINGERT, Montpelier, Ohio. Filed Oct. 7, 1897. Serial No. 654,461. (No model.)



Claim.—1. In a hot-air furnace, the combination of the fire-box, the two radiators located above the same, the lower radiator being in communication with the rear of the fire-box and the upper radiator in communication with the rear and the front of the lower radiator, said radiators having their forward ends separated from each other to leave a space to which access can be had from the front of the furnace, an oven located in said space between the radiators, and a front to the furnace provided with a door for access to the fire-pot, with separate doors for access to the front ends of the radiators, and a door between the radiator-doors for access to the oven between the radiators, substantially as and for the purposes described.

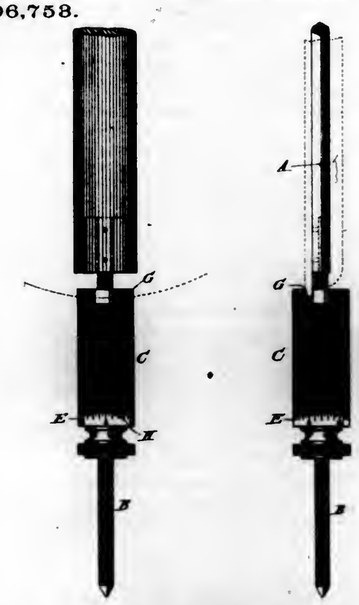
2. The hot-air furnace consisting of the fire-box having corrugated sides and top, the U-shaped radiator in communication with the rear of the fire-box and supported at its forward portion upon the fire-box, the second U-shaped radiator located above and in communication with the rear of the lower radiator and also with both forward ends of the same radiator and having an exit-flue, the forward ends of each radiator being separated from each other and open next to the front of the furnace, air-tubes passing vertically through each radiator, and a front plate to the furnace formed with doors for access to the separate forward ends of the radiators, a door for access to the space between the radiators, a door to the fire-pot and a door to the ash-pit, all substantially as and for the purposes described.

606,758. COMPENSATING PENDULUM.

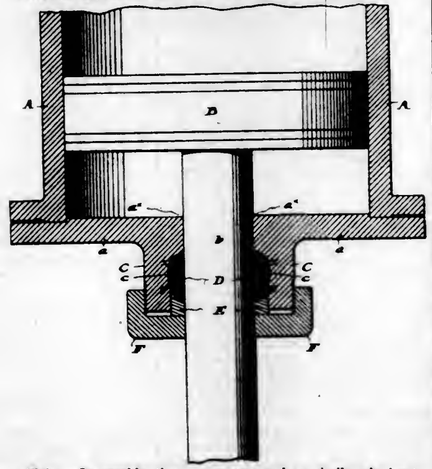
ERNEST K. ADAMS, New York, N. Y. Filed Jan. 10, 1898. Serial No. 666,902. (No model.)

Claim.—The combination with a pendulum-rod having a threaded extension at its end, of a nut adjustable on said extension, a cylinder of a material such as hard rubber which has a much higher coefficient of expansion than the pendulum as a whole resting on said nut and a bob supported by the cylinder and movable freely on the pendulum-rod, as set forth.

606,753.



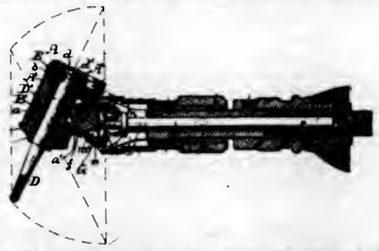
606,754. STUFFING-BOX. ERNEST ARMSTRONG, Camden, N. J., assignor to John S. Latta and James J. Mulconroy, Philadelphia, Pa. Filed Mar. 25, 1898. Serial No. 675,066. (No model.)



Claim.—In combination:—a piston rod or similar device,—a stuffing box through which said rod extends and which embodies an annular pear-shaped undercut recess of greater diameter than said rod,—a packing ring of rubber mounted on said rod, the interior diameter of which is normally less than the diameter of the rod and the exterior diameter of which is normally less than the diameter of said opening, so that when said ring is forced upon said rod it will be expanded against the inner face of said opening,—and means for maintaining said ring in position with the said stuffing box,—substantially as set forth.

606,755. DENTAL-ENGINE HANDPIECE. ARTHUR W. BROWER, Prince's Bay, N. Y., assignor to The S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Mar. 9, 1896. Serial No. 673,192. (No model.)

Claim.—1. The combination, in a dental-engine adjustable-angle handpiece, of the handle portion, the head, a ball-and-socket supporting connection between said handle portion and said head, a driving-spindle mounted in said handle portion, a tool-holder mounted in said head at an angle to said handle portion, and a universal driving connection between said driving-spindle and said tool-holder, the said universal supporting and driving connections having a common center, substantially as and for the purposes hereinbefore described.



2. The combination, in a dental-engine adjustable-angle handpiece, of the handle portion, the head, a ball-and-socket supporting connection between said handle portion and said head, a driving-spindle mounted in said handle portion, a tool-holder mounted in said head, a universal driving connection between said driving-spindle and said tool-holder, and an adjustable clamping device for frictionally clamping said ball-and-socket supporting connection between the handle portion and the head, whereby any desired degree of frictional tension may be applied to said supporting connection, substantially as and for the purposes hereinbefore described.

3. The combination, in a dental-engine adjustable-angle handpiece, of the handle portion, a head having ball-and-socket supporting connection therewith, a tool-holder mounted in said head at an angle to said handle portion and provided with gear-teeth, a gear mounted in said head at an angle to said tool-holder and meshing with the gear-teeth thereof, and a rotary driving-spindle mounted in said handle portion and having universal driving connection with said gear, substantially as and for the purposes hereinbefore described.

4. The combination, in a dental-engine adjustable-angle handpiece, of the handle portion provided with a split socket, a head provided with a ball fitted in said split socket, an endwise-movable sleeve surrounding said split socket for causing the same to frictionally clamp the ball on said head, means for adjusting said sleeve, a tool-holder mounted in said head, a driving-spindle mounted in said handle portion, and a universal driving connection between said tool-holder and said driving-spindle, substantially as and for the purposes hereinbefore described.

5. The combination, in a dental-engine adjustable-angle handpiece, of the handle portion, a head having ball-and-socket supporting connection therewith, a tool-holder mounted in said head at an angle to said handle portion and provided with gear-teeth, a gear mounted in said head at an angle to said tool-holder and meshing with the gear-teeth thereof, said gear being provided with a socket, and a concave seat in the bottom of said socket, and also with slots in the side of said gear and which open into said socket, a rotary driving-spindle mounted in the handle portion and provided with a rounded extremity having bearing in the seat in said gear and also with lateral projections which engage the slots in said gear, substantially as and for the purposes hereinbefore described.

6. The combination, in a dental-engine adjustable angle handpiece, of the handle portion, a spring-jawed socket provided with a tubular externally-threaded extension connected to said handle portion, a clamp-sleeve surrounding said spring-jawed socket, a nut screwing upon the threaded extension of said socket and having swiveling connection with said sleeve, a collar secured to said nut, a driving-spindle having bearing in said handle portion and passing through said tubular socket extension and projecting into said socket, a head provided with a ball seated in said socket, a tool holder mounted in said head at an angle to said handle portion and provided with gear-teeth, a gear also mounted in said head at an angle to said tool-holder and meshing with the gear-teeth thereof, and a universal driving connection between said gear and the driving-spindle of the handle portion, substantially as and for the purposes hereinbefore described.

7. The combination, in an adjustable-angle handpiece for dental engines, of the handle portion, the driving-spindle mounted therein, the head provided with a tool-holder arranged at an angle relatively to said handle portion, said head and tool-holder being adjustably connected to said handle portion and said driving spindle, respectively, and an adjustable clamping device for frictionally clamping said head, whereby it may be either firmly held in any position whatever to which it may be adjusted or yieldingly held against working pressure while in operation, but free to be angularly adjusted without operating the clamping mechanism, substantially as described.

606,756. BRAKE-BEAM. LUTHER C. BURGESS, Chicago, Ill., assignor to the Chicago Railway Equipment Company, same place. Filed Sept. 30, 1897. Serial No. 653,633. (No model.)

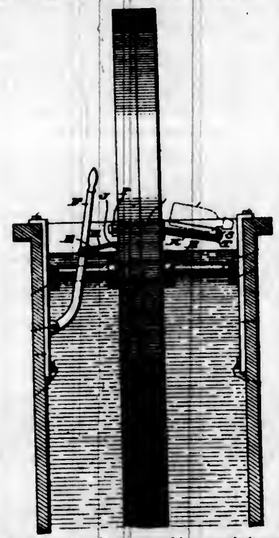


Claim.—1. In a trussed brake-beam, the combination with a tension member and a brake-head, of a tubular compression member having an indentation constituting a seat for the tension member and a reëntrant edge, of a filler-block having a bearing-face in a plane at right angles to the tension member, and which engages the reëntrant edge of the compression member, substantially as and for the purposes specified.

2. In a trussed brake beam, the combination with a tension member and a brake-head, of a compression member having an indentation constituting a seat for the tension member, and a reëntrant edge, and a disk having an inclined offset which engages the reëntrant edge of the compression member and a perforation for the passage of the tension-rod, substantially as and for the purposes specified.

3. In a trussed brake-beam, the combination with a tension-rod, a brake-head, and a compression member having an indentation for the reception of the tension member, of a disk having an inclined offset or filler-block and notched at its edge to engage a lug in the socket of the brake-head; substantially as and for the purposes specified.

606,757. BOTTLE-WASHER. WILLIAM J. CUNNINGHAM, Philadelphia, Pa. Filed Sept. 20, 1897. Serial No. 652,272. (No model.)



Claim.—1. A bottle-washing machine consisting of a tank, a wheel or disk rotatably mounted therein and holders projecting at an angle from a side of said wheel, said holders being adapted to retain the bottles in position and said wheel having openings therein between said holders.

2. A bottle-washing machine consisting of a tank, a shaft mounted therein, a wheel mounted on said shaft, a lever suitably fulcrumed, connections from said lever to said wheel for shifting the latter longitudinally on said shaft, means for holding said wheel in the desired position and holders mounted in said wheel and projecting at an acute angle therefrom.

3. A bottle-washing machine consisting of a tank and a shaft rotatably mounted therein, a wheel supported on said shaft and holders carried by said wheel, said holders having a trough-shaped body portion, a flange at one extremity thereof, and a threaded stem projecting from said flange out of an alinement with said body, the other extremity of said holder having a head projecting therefrom and a washer supported adjacent to said head.

4. In a bottle-washing machine, a tank, a disk or wheel rotatably supported therein, and holders supported on said wheel and inclined at an angle thereto, said holders being arranged in groups of three which are adapted to support a single bottle, and said wheel having openings therein intermediate said holders.

5. A bottle-washing machine consisting of a tank, a shaft mounted thereon, a wheel adjustable longitudinally on said shaft and inclined holders secured to said wheel, the latter having openings therein permitting the insertion of the necks of the bottles on said holders.

606,758. NON-REFILLABLE BOTTLE. PHILIPP DOPLEIN and KASPAR BILLING, Philadelphia, Pa. Filed May 8, 1897. Serial No. 635,623. (No model.)



Claim.—1. In a non-refillable bottle, a shell having a chamber with a longitudinal passage leading from opposite ends thereof with a valve-seat at the upper end of the innermost passage and laterally-disposed ports from said chamber through the walls of the shell and a head with a transverse passage leading to the longitudinal passage communicating with the outer end of the chamber, and a single valve located in the chamber of the shell and having an upward extension working in the outer longitudinal passage, a portion extending into said lateral ports, and a downward extension carrying a weight with beveled upper face provided with grooves.

2. A non-refillable bottle having in its neck a shell provided with a chamber with longitudinal passages from opposite ends, a side discharge-passage C' communicating with the outer longitudinal passage, ports through the walls of the shell communicating with the chamber and a shoulder formed in said ports intermediate their upper and lower walls to arrest the valve midway said ports when the bottle is inverted.

3. A non-refillable bottle having in its neck a shell with chamber and longitudinal passages and lateral ports with a shoulder formed therein intermediate their upper and lower walls, packing about the upper and lower parts of the shell, and a valve in said chamber and adapted to close the inner longitudinal passage when the bottle is in its normal position and having a portion extending into said ports to be arrested midway the lateral ports by said shoulder when the bottle is inverted.

606,759. STONE-CLEANING COMPOSITION. JOSEPH W. FIBERTY, Milford, N. H. Filed Oct. 26, 1896. Serial No. 610,061. (No specimens.)

Claim.—As a material for removing stains and discolorations from granite, marble, and the like, the composition resulting from the admixture of oxalic acid and chlorid of lime, and the addition thereto of nitric acid diluted with water, all in about the proportions specified, when combined to form a homogeneous paste, substantially as as and for the purpose described.

606,760. WIRE-STRETCHER. JOHN H. HERBST, Monticello, Iowa. Filed Nov. 13, 1897. Serial No. 658,962. (No model.)



Claim.—1. In a wire-stretcher, the combination of a frame or casing, a shaft or drum journaled therein and provided with ratchet-teeth, an operating-lever fulcrumed on the shaft or drum, an actuating-pawl carried by the operating-lever, and a check-pawl arranged in the path of the actuating-pawl and provided with an angularly-disposed arm adapted to be engaged by the same, whereby its tooth is swung outward and is adapted to carry the engaging end of the actuating-pawl away from the ratchet teeth to permit the shaft or drum to rotate freely, substantially as described.

2. In a wire-stretcher, the combination of a frame or casing, a shaft or drum provided at its ends with journals arranged in suitable bearings of the sides of the frame or casing, said shaft or drum being provided with ratchet-teeth spaced from one of the sides of the frame or casing, an operating-lever fulcrumed on the shaft or drum in the space between the ratchet-teeth and the frame or casing, a spring-actuated pawl pivoted between its ends on the operating-lever and engaging the ratchet-teeth, and a check-pawl pivoted to the frame or casing, engaging the ratchet-teeth and provided with an angularly-disposed arm arranged in the path of the said pawl, whereby it is adapted to throw the same out of engagement with the ratchet-teeth, substantially as described.

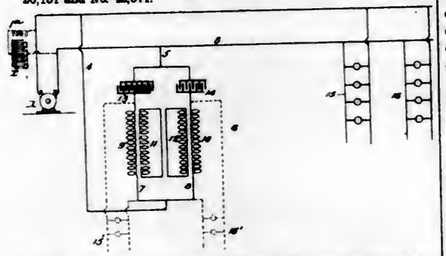
3. In a wire-stretcher, the combination of a frame or casing hav-

ing sides, a shaft or drum journaled between the sides, an operating-lever mounted on one side of the frame or casing and provided with means for actuating the shaft or drum, said lever being disposed longitudinally of the wire-stretcher, and a rigid bar or handle mounted on the other side of the frame or casing and extending longitudinally of the same at an angle to the fence-wire to be stretched and in the same general direction as the operating-lever, said arm or bar being provided at its outer end with a grip, substantially as described.

4. In a wire-stretcher, the combination of a frame comprising a flat back, parallel sides, a longitudinal arm 8, extending from the back at one end of the frame and having a guide-eye, and the longitudinal arm 9, extending from the back at the other end of the frame and provided at its outer extremity with oppositely-disposed hooks 12 and serving as a shank for the same, a shaft or drum journaled in the frame, a rope or cable passing through the guide-eye and connected with the shaft or drum, and an anchoring-chain having its ends connected to the hooks, substantially as described.

5. In a wire-stretcher, the combination of a frame or casing, a shaft or drum journaled therein and provided with ratchet-teeth, an operating-lever provided with an actuating-pawl arranged to engage the ratchet-teeth, and a check-pawl engaging said teeth and arranged in the path of the operating-lever and adapted to be engaged by the same, whereby it is swung away from the ratchet-teeth to permit the shaft or drum to rotate freely, substantially as described.

606,761. METHOD OF AND APPARATUS FOR GENERATING ALTERNATING CURRENTS. MAURICE HUTIN and MAURICE LEBLANC, Paris, France, assignors to the Société Anonyme pour la Transmission de la Force par l'Electricité, same place. Filed Mar. 13, 1894. Serial No. 503,534. (No model.) Patented in France Oct. 3, 1891, No. 216,620; in Germany Oct. 30, 1891, No. 72,461, and in Austria Oct. 23, 1892, No. 20,131 and No. 42,071.



Claim.—1. The method of generating alternating electric currents, by causing electrical alternations of the desired frequency, and reinforcing the same to the desired volume, substantially as described.

2. The method of generating alternating electric currents, which consists in producing a rotating field of force, by dephased alternating currents coming from an exterior source, and rotating an armature, having circuits closed upon themselves, in either direction, independently of and with reference to the said field of force, substantially as described.

3. The method of generating alternating currents of high frequency and any desired volume by first causing electrical alternations of the desired frequency and then reinforcing the same to the desired volume, substantially as described.

4. The method of generating alternating currents of high frequency and any desired volume, which consists in producing by initial alternating currents or discharges an initial magnetic field rotating with the desired frequency, and reinforcing the initial charges by and in accordance with the speed of rotation of an armature in said magnetic field, substantially as described.

5. The method of generating currents of high frequency and of any desired volume, which consists in first producing by initial alternating currents or discharges a magnetic field rotating with the desired frequency; inducing thereby currents of higher frequency and greater volume by and in accordance with the rotation of circuits in said magnetic field; reducing the frequency of these currents to that of the initial charges, and superimposing them upon the latter, substantially as described.

6. The method of generating alternating electric currents, which consists in producing a magnetic field or fields by initial alternating currents from an exterior source, and reinforcing said initial currents by the rotation, by external power, of an armature having circuits closed upon themselves, within said magnetic field or fields, substantially as described.

7. A system of generation of alternating currents of any desired frequency and of any desired volume, comprising an exciter defining the frequency of the currents to be obtained and a reinforcing-generator operating in conjunction therewith substantially as described.

8. A system of generation of alternating currents of any desired frequency and of any desired volume, consisting of an exciter furnishing faint currents or charges of the desired frequency and a generator having stationary circuits receiving the exciting-currents and moving circuits in inductive relation to the former and reinforcing the currents in the same, substantially as described.

9. An apparatus for generating alternating electric currents of high frequency and any desired volume which consists of sets of field-coils connected with the line and receiving an initial charge of the desired frequency, an armature in inductive relation to the field-coils rotating to have currents of increased frequency and volume induced therein, and a converter of frequency reducing the frequency of these currents to that of the field-currents and superimposing them upon the latter, substantially as described.

10. A system of generation of alternating currents of any desired volume, comprising an exciter consisting of a condenser for defining the frequency of the currents to be obtained, and a reinforcing-generator operating in conjunction therewith, substantially as described.

11. A generator of alternating electric currents comprising a field magnet or magnets, a condenser for exciting the same, and an armature, substantially as described.

12. A generator of alternating electric currents comprising an armature, rotatable within a rotary magnetic field of force, and a condenser or condensers for exciting such rotary field, substantially as described.

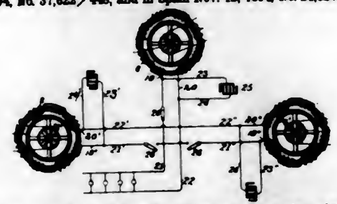
13. The method of exciting a magnetic field of force for an alternating-current dynamo, which consists in passing oscillatory discharges of a condenser through the field-coils of such dynamo, substantially as described.

14. The method of generating alternating electric currents, by causing oscillatory discharges from a condenser and reinforcing the same to the desired volume, substantially as described.

15. The method of generating alternating electric currents by causing oscillatory electrical discharges in an exciting circuit or circuits, and reinforcing the same by the rotation, by external power, of circuits closed up on themselves, within inductive proximity of the exciting circuit or circuits, substantially as described.

16. A generator of alternating currents provided with an exciting circuit or circuits, and means for maintaining oscillatory electrical discharges in the same, substantially as described.

606,762. ALTERNATING-CURRENT DYNAMO. MAURICE HUTIN and MAURICE LEBLANC, Paris, France, assignors to the Société Anonyme pour la Transmission de la Force par l'Electricité, same place. Filed Apr. 19, 1895. Serial No. 546,407. (No model.) Patented in France June 13, 1894, No. 239,283; in Germany June 26, 1894, No. 82,217; in Austria July 4, 1894, No. 46,301; in Hungary July 14, 1894, No. 1,627; in Belgium Nov. 9, 1894, No. 113,648; in Switzerland Nov. 9, 1894, No. 9,636; in England Nov. 12, 1894, No. 21,827; in Italy Nov. 12, 1894, No. 37,623/445, and in Spain Nov. 12, 1894, No. 21,827.



Claim.—1. The method of generating alternating electric currents, which consists in producing periodically alternating magnetic poles, fixed with reference to a field-magnet, reinforcing the same by the movement of a closed circuit or circuits with reference and in inductive relation thereto, and inducing by the reinforced field or fields alternating currents, in a circuit or circuits traversing the said reinforced fields, substantially as described.

2. The method of generating and utilizing alternating electric currents, which consists in producing by single-phase initial alternating electric currents or discharges an initial alternating magnetic field or fields, reinforcing the said field or fields and initial currents or discharges by the movement within said field or fields of a closed electric circuit or circuits, and conveying the reinforced currents to a line of distribution, substantially as described.

3. The method of generating alternating electric currents, by rotating an armature circuit or circuits, closed upon themselves, within inductive proximity to a circuit traversing an alternating magnetic field or fields, with a speed exceeding the frequency of alternations of the field, divided by half the number of poles of the same, substantially as described.

4. The method of generating periodic alternating currents, which consists in producing, in suitable field-magnets, alternating magnetic

poles fixed with reference to said magnets, reinforcing said poles by moving a closed circuit or circuits with reference and in inductive relation thereto, with a speed exceeding the frequency of the alternations divided by half the number of poles, and inducing, by the reinforced poles, alternating currents in a circuit or circuits in the magnetic field of said poles, substantially as described.

5. The method of generating alternating electric currents, which consists in producing, by initial alternating electric currents or discharges, an initial alternating magnetic field or fields fixed with reference to a field magnet or magnets, reinforcing the said field or fields and initial currents or discharges, by moving within said field or fields a closed electric circuit or circuits with a speed exceeding the frequency of the initial alternating currents divided by half the number of field-poles, and conveying the reinforced currents to a line of distribution, substantially as described.

6. The method of generating and distributing two or more alternating currents of like periods and tension, which consists in simultaneously charging the field-coils of two or more independent generators from the same initial source of alternating currents or discharges, reinforcing the field-currents by rotating, independently of each other, within the field of each generator, a closed circuit or circuits, with any speed exceeding the frequency of the exciting currents or discharges divided by half the number of poles of the field, and conveying the reinforced currents each directly to the same system of electrical distribution, substantially as described.

7. The method of generating and distributing two or more alternating currents of the same period and tension, but dephased with reference to each other, which consists in simultaneously charging the field-coils of two or more independent generators from the same initial source of dephased alternating currents or discharges, reinforcing the field-currents by rotating, independently of each other, within the field of each generator, a closed circuit or circuits, with any speed exceeding the frequency of the dephased exciting currents or discharges divided by half the number of poles of the field, and conveying the reinforced currents to a multiphase system of distribution, substantially as described.

8. An alternating-current dynamo-electric generator, consisting of a field-magnet having initial alternating poles fixed with reference to the field-magnet and excited by alternating currents or discharges from an exterior source, an armature having one or more circuits, each closed upon itself, and adapted to be rotated by external power in inductive proximity to the poles, and a line or lines of conductors receiving currents from the field-circuit, substantially as described.

9. An alternating-current dynamo-electric generator, consisting of a number of field-magnets having alternating oppositely-wound coils connected with a distributing system, a source of alternating exciting-currents or electrical discharges connected with the field-coils in a branch derived from the line, charging the coils with single-phase currents, and an armature having one or more circuits, each closed upon itself, adapted to be rotated by external power in inductive proximity to the field-poles, substantially as described.

10. An alternating-current dynamo-electric generator, consisting of a number of field-electromagnets, the polar faces of which are circularly arranged, so as to define the curved surface of a cylinder, the coils of the alternate magnets being oppositely wound and all connected in a single series with a line of distribution, a source of alternating exciting-currents or electrical discharges also connected with the coils, in a branch derived from the line, and an armature having circuits, each closed upon itself, adapted to be rotated by external power in inductive proximity to the pole-faces, substantially as described.

11. An alternating-current dynamo-electric generator, consisting of a field-magnet having circularly-arranged pole-pieces, each with a coil wound in opposition to the next adjacent coils and all excited by single-phase alternating currents or electrical discharges from an exterior source, a rotatable armature composed of two parallel metal rings connected by metal bolts embedded in laminated iron, and adapted to be rotated by external power, and a distributing line or lines of conductors connected with the field-circuit in multiple arc with the exciting circuit, substantially as described.

12. An alternating-current dynamo-electric generator, consisting of a field-magnet having circularly-arranged pole-pieces, each with a coil wound in opposition to the next adjacent coils and all excited by alternating currents or electrical discharges through alternately oppositely wound coils, an armature composed of a ring of laminated iron having a copper annulus on each side and copper rods traversing the iron ring and connecting the copper rings, and a distributing line or lines of conductors connected with the field-circuits in multiple arc with the exciting-circuit, substantially as described.

13. A system of generation and distribution of alternating electric currents, composed of a number of dynamo-electric generators, each consisting of a field-magnet or magnets and an armature having circuits closed upon themselves; means for connecting the field-circuits of the different dynamos in multiple-arc connection with a line or lines of distribution, a single ultimate source of faint initial alternating exciting currents or discharges for the field-circuits in a shunt or shunts around the line or lines of distribution, and means for rotating the armature, by external power, with a speed exceeding the frequency of the exciting currents or discharges divided by half the number of poles of the field, substantially as described.

14. A system of generation and distribution of multiphase alternating currents, composed of a series of dynamos each having its field-circuit excited by a current properly dephased with reference to the exciting-current of the other or others, and each having an armature with circuits closed upon themselves, rotatable by external power with a speed exceeding the frequency of the exciting currents or discharges divided by half the number of poles of the field, and lines of distribution proceeding from the field-windings, substantially as described.

15. The method of generating alternating electric currents, by rotating an armature circuit or circuits closed upon themselves, within inductive proximity to a resonant circuit traversing an alternating magnetic field or fields, with a speed exceeding the frequency of electrical oscillations in the resonant circuit, divided by half the number of poles of the field, substantially as described.

16. An alternating current generator composed of a series of field-magnets having alternately oppositely wound coils, all included in and forming part of a resonant exciting-circuit adjusted to a definite frequency of electrical oscillation, an armature having circuits closed upon themselves within inductive proximity to the field-poles, means for rotating the armature with reference to the field-poles with a speed exceeding the frequency of the exciting-current divided by one-half the number of poles of the field, and a line of distribution connected with the field-winding, substantially as described.

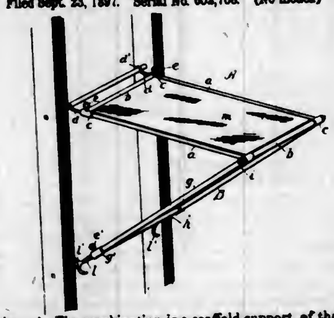
17. An alternating-current dynamo-electric generator consisting of a field-magnet having initial alternating poles, fixed with reference to the field magnet and excited by the electrical oscillations in a resonant circuit, an armature having one or more circuits, each closed upon itself, and adapted to be rotated by external power in inductive proximity to the poles, and a line or lines of conductors receiving currents from the field-circuit, substantially as described.

18. A system of electrical generation and distribution which consists in a number of alternating-current generators, each having a magnetic field formed by alternating magnetic poles fixed with reference to its field-magnet and each excited by a resonant circuit; an armature with circuits closed upon themselves for each generator; means for rotating each armature with a speed exceeding the frequency of the exciting currents divided by one-half the number of poles of the machine, a working circuit proceeding from each field-circuit, means for coupling the resonant circuits in multiple, and means for coupling the working circuits in multiple, substantially as described.

19. As a means of exciting a number of alternating-current generators independently and jointly with alternating currents or discharges of the same frequency, the combination of electrical resonant circuits, one for each generator, and each tuned for the same frequency, with means for coupling the resonator-circuits in multiple, substantially as described.

20. As a means of exciting a number of alternating-current generators jointly with alternating currents or discharges of the same frequency, the combination of a resonant exciting-circuit for each generator, with means for coupling the resonator-circuits in multiple, substantially as described.

606,763. SCAFFOLD-SUPPORT. HARRY D. LUKENS, Spring City, Pa. Filed Sept. 23, 1897. Serial No. 653,708. (No model.)

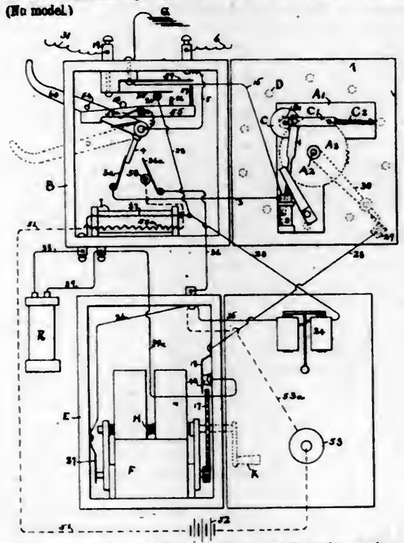


Claim.—1. The combination in a scaffold-support, of the tubular frames arranged to fold one within the other, extensible hooked bars adapted to slide within the side tubes of each of the frames, and means for confining said bars in position, substantially as specified.

2. In combination, two tubular frames arranged to fold together, hooked bars guided within the side tubes of each frame, and set-screws for confining the bars in the adjusted position.

3. The combination of the frame A comprising side and end tubes *a* and *b* respectively, extensible bars *d*, carried by the side tubes and having hooked ends for engagement with ladder-rungs, a frame B, comprising side and end tubes *g*, *h*, respectively, extensible bars *l*, carried by the side tubes *g*, and having hooked ends for engagement with the ladder-rung, set-screws for confining the hooked bars in their respective tubes, and a pivot-bolt *i*, connecting said frames to each other, substantially as specified.

606,764. **TELEPHONE-EXCHANGE.** FRANK A LUNDQUIST, Chicago, Ill., assignor of two-thirds to John Anderson, Salina, and Gustaf A. Anderson, Lindsborg, Kans. Filed May 19, 1897. Serial No. 637,209. (No model.)



Claim.—1. A contact-closing device consisting of a crank, a pitman connected thereto, an electrical connection with which said pitman makes a contact once during each revolution of said crank, a device connected to said crank and adapted to draw it to and hold it at a position where said pitman will not be in electrical contact, and connections between said crank and a crank-arm for permitting said first-mentioned crank to be turned by hand.

2. In a circuit-closing device, a crank, a pitman connected thereto, a mercury-receptacle into which said pitman is thrust by said crank, means for causing said crank to stop at a fixed position, and connections for permitting said crank to be rotated by hand.

3. In combination with a circuit-closing device consisting of a crank, a pitman, and a mercury-receptacle into which said pitman is thrust by said crank, a hand lever, and connections between said hand-lever and said crank for giving said crank a rapid revolution.

4. In combination with a telephone, a mercury-receptacle, a pitman adapted to be thrust into said receptacle by a crank, a crank for so thrusting it, devices for turning said crank by hand, a bell-ringing device located at a distant telephone, and connections from said receptacle and said pitman to said bell-ringing device.

5. A receiver-hook provided with a pin, a flexible lever adjacent thereto and provided with a curved or inclined part for permitting said pin to pass said lever when moving in one direction by bending it but to engage and move said lever when moving in the other direction, and means for disengaging said lever from said pin when moved a required distance.

6. A circuit-closing device consisting of a mercury-receptacle and a pitman adapted to be thrust therein, a crank-arm adapted to be rotated about a pivot and provided with connections for operating said circuit-closing device, a stop in the path of said crank-arm at its normal position and against which it is normally held, and electrical connections whereby a circuit may be completed from the support for said crank-arm through said mercury-receptacle when said arm is being rotated and from said support through said stop when said arm is in normal position.

7. A circuit-closing device operated by the rotations of an arm about its pivot, a stop in the path of said arm against which it is normally and automatically held, a bell-ringing generator, a pointer located at a distant station and adapted to be rotated about a pivot, a magnet for moving said pointer into successive contact with a series of insulated points, electrical connections from said contact-closing device to said magnet, a separate connection from said stop through said generator to said pointer, and a series of connections from said insulated points to a series of telephones.

8. A ratchet-wheel mounted upon a spindle, devices for turning said wheel step by step, means for connecting and disconnecting said wheel and spindle, a spring for returning said spindle to normal position when released, a pointer carried by spindle, a series of insulated contact-points in the path of said pointer, connections from a telephone to said pointer, and means for controlling the movement of said pointer from said telephone.

9. A ratchet-wheel loosely mounted on a spindle, a magnet and pawl for turning said wheel step by step, means for connecting and disconnecting said wheel and spindle, a spring for returning said spindle to a normal position when released from said wheel, a pointer carried by said spindle, a series of insulated contact-points over which said pointer sweeps and into electrical contact with which it comes, connections from a telephone to said magnet and to one of said contact-points, connections from each of the other contact-points to a different telephone, and means for enabling the subscriber at the first-mentioned telephone to operate said magnet so as to move the said pointer into electrical connections with any one of said other telephones.

10. A ratchet-wheel loosely mounted on a spindle, spur ratchet-teeth on said wheel by which it receives and crown ratchet-teeth by which it transmits motion, a magnet and connections for turning said wheel, a stationary pawl for holding it, an arm secured to said spindle and provided with a lug for engaging said crown-teeth, a second magnet and connections for raising said arm to release it from said wheel, a spring for returning it to normal position when so released, and a second spring for returning it to engagement with said wheel when returned to normal position.

11. A ratchet-wheel, a magnet and devices for causing it to turn in one direction only, an arm mounted on the axis of said wheel and arranged to turn in two directions, means for engaging said arm to and disengaging it from said wheel, a series of contact-points connections to which are closed in succession when said arm is rotated by said wheel, and means for controlling said operations from a distant telephone.

12. A circuit-closing device and a stop for holding it open, a bell-ringing generator, a pointer and a series of insulated points, a magnet for moving said pointer into successive contact with said points, connections from the circuit-closing device to said magnet, separate connections from said stop through said generator to said pointer, and a series of connections from said insulated points to a series of telephones.

13. An arm movable about a pivot, a circuit-closing device, connections between said arm and said circuit-closing device for operating the latter rapidly by the movement of the former, a series of fixed points in the path of said arm each one representing a position in which said circuit-closing device is open, a spring the tension of which is exerted to stop said arm at said points, a second circuit-closing device closed by said arm when stopped at its normal position, connections from the first-mentioned circuit-closing device to mechanism for making electrical connections between a given telephone and any one of a series of other telephones, and connections from the second circuit-closing device to the calling mechanism of the selected telephone.

14. A ratchet-wheel loosely mounted on a spindle, spur-teeth on said wheel by which it receives and crown-teeth by which it transmits motion, means for turning said wheel in one direction only, means for engaging said spindle to and disengaging it from said wheel, a spring for returning said spindle to a normal position when disengaged from said wheel, and means for controlling said operations from a distance.

15. A series of contact-points, a pointer adapted to be moved into successive contact with said points, a ratchet-wheel connected to said pointer, devices for turning said wheel in one direction and preventing its turning in an opposite direction, means for disengaging said pointer from said wheel, a spring for moving said pointer in an opposite direction when disengaged and a stop for said pointer at its normal position.

16. A flexible and resilient arm adapted to be rotated about a pivot and to operate a circuit-closing device a successive number of times during each revolution, a stop against which said arm rests when in normal position, an opening in said stop for permitting said arm to pass when depressed, and electrical connections from said stop and also from the support of said arm whereby said arm and stop form part of an electric circuit when said arm is in normal position.

17. A circuit-closer, an arm for operating it, a spring for stopping said arm at positions that will leave said circuit-closer open, a second circuit-closer closed by said arm when stopped at its normal position, a pointer and a series of insulated contact-points, connections from each contact-point to a different telephone, a magnet for moving said pointer into successive contact with said points, and connections from the first circuit-closer to said magnet and from the second circuit-closer to said pointer.

18. A circuit-closing device, an arm for operating it, a second circuit-closer closed by said arm when in its normal position, a third circuit-closer operated by the receiver-hook of a telephone, a bell-ringing generator, a pointer and a series of insulated contact-points, a magnet for moving said pointer into successive contact with said points, connections from each point to a different telephone, connections from the first circuit-closer and through the third to said magnet, and separate connections from the second circuit-closer through said generator to said pointer.

19. A circuit-closing device consisting of a crank having a pitman adapted to be thrust into a cup of mercury once during each revolution of said crank, a spring arranged to hold said pitman normally from contact with said mercury, a revoluble arm and connections for giving said crank a number of revolutions for each revolution of said arm, and indicating-marks in the path of said arm for showing the number of times that said circuit-closing device is operated.

20. A circuit-closer operated by the rotation of an arm about its pivot, a second circuit-closer closed by said arm when at its normal position, a selecting device for making connections from a pointer to any one of a series of telephones, connections from the first-mentioned circuit-closer to the selecting device, a separate connection from the second circuit-closer through a telephone-receiver to said pointer and thence to the selected telephone, a bell-ringing generator, a crank for turning it, and means connected therewith for breaking connection through the receiver and completing it through said generator.

21. A series of telephones connected to a series of contact-points, a pointer adapted to be moved by successive steps into electrical connection with said contact-points, a magnet for so moving it, connections from said magnet to a circuit-closing device operated by the receiver-hook of a telephone, means whereby said circuit-closing device will be open when said hook is depressed and closed when elevated, connections from said circuit-closing device to a second circuit-closer for completing a circuit through said magnet when the first-mentioned circuit-closing device is closed, an arm for operating said second circuit-closer and adapted to be moved by hand over the face of a dial, and distinguishing-marks on the face of the dial for indicating the number of times said second circuit-closer has completed a circuit through the magnet for moving said pointer.

22. A series of electrical contact-points, a pointer adapted to be moved into successive contact with said points, a magnet and connections for moving said pointer by successive steps from one point to the next, a spring for returning said pointer to normal position when released from its propelling mechanism, a second magnet and connections for causing such release, a circuit-closing device operated by a crank for making connections to said first-mentioned magnet, an arm and connections for turning said crank, indicating-points in the path of said arm for showing the number of times said circuit-closing device is operated, a telephone-receiver and a hook for supporting it, a lever adjacent to said hook and arranged to be moved and released by the descent of said hook, and means whereby the movement of said lever will close the circuit through said second magnet and cause the release of said pointer from its propelling and holding mechanism.

23. In combination with a switching mechanism provided with propelling and releasing devices, connections from each device to a telephone, a circuit-closer located in the connection to one device and operated by the other device, contact-terminals on each connection at the telephone, a second circuit closer adapted to make simultaneous contact with both terminals, a receiver-hook, and means for operating said second circuit-closer by the movement of said hook.

24. A ratchet-wheel, devices for moving it intermittently in one direction and preventing its return, a pointer carried by said wheel, means for releasing said pointer from said wheel and returning it to normal position when so released, a series of insulated contact-points in the path of said pointer, connections from a telephone to one of said contact-points and to said propelling and releasing mechanisms, connections from each of the other contact-points to a different telephone, and means for enabling the subscriber at the first-mentioned telephone to operate the propelling and releasing devices to move said pointer into connection with any one of said telephones and to return it to normal position.

25. A propelling mechanism arranged to turn in one direction, devices for preventing it from turning in an opposite direction, a pointer, means for connecting said pointer to and releasing it from said propelling mechanism, a spring for returning it to normal position when released, connections from the propelling and releasing mechanisms to a telephone, a circuit-closing device located at said telephone and operated by hand for controlling said propelling mechanism, and a second circuit-closing device operated by the weight of a telephone-receiver for controlling said releasing mechanism.

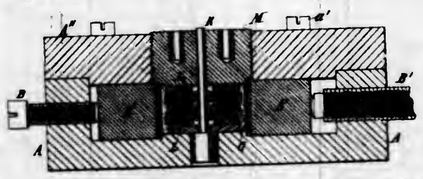
26. A pointer and an electrically-operated propelling mechanism therefor, a magnet for releasing said pointer from its propelling mechanism, separate connections from said magnet and said propelling mechanism to a telephone, a circuit-closer located in the line to said magnet and operated by said propelling mechanism, a second circuit-closer adapted to make simultaneous contacts with each of said connections, a movable receiver-hook, and means for operating said second circuit-closer by the movement of said hook.

27. A magnet, a ratchet-wheel and a circuit-closer operated by said magnet, a pointer carried by said wheel, a second magnet for releasing said pointer from said wheel and provided with connections to said circuit-closer, separate connections from said first-mentioned magnet and from said circuit-closer to a telephone, and means operated by the weight of a receiver for sending simultaneous electrical impulses over each of the connections to said telephone.

28. A ratchet-wheel, a magnet and pawl for turning it, a second pawl for holding it, a pointer adapted to engage and be turned by said ratchet-wheel, a second magnet for releasing such engagement, a spring for returning said pointer to normal position when so released, connections from each magnet to a telephone, a circuit-closer located in the connection to one magnet, said circuit-closer being normally open but closed by the movement of the other magnet, a second closer located at the telephone and adapted to make simultaneous electrical contact to both connections, a movable receiver-hook, and means for operating said second circuit-closer by the movement of said hook.

29. A pointer and a ratchet-wheel for moving it, a magnet for turning said wheel, a second magnet for releasing said pointer from said wheel, connections from each of said magnets to a telephone, a circuit-closer operated by a crank for sending a current through the propelling-magnet, and separate circuit-closers operated by the weight of a receiver for sending simultaneous currents through both magnets.

606,765. **MANUFACTURE OF RUBBER-FACED TYPE-WHEELS.** JOHN S. OGDEN, Brooklyn, N. Y. Filed June 25, 1897. Serial No. 642,280. (No model.)



Claim.—1. A resilient or flexible matrix for making rubber-faced type-wheels adapted to be folded or wrapped around the rubber-faced wheel and to compress the crude rubber when completely encircling the same, as set forth.

2. A resilient or flexible matrix for making rubber-faced type-wheels, adapted to be folded or wrapped around the rubber-faced wheel and to compress the crude rubber when completely encircling the same, in combination with means for holding the matrix in position on the wheel while the rubber is undergoing vulcanization, as set forth.

3. A matrix for rubber-faced type-wheels in the form of a resilient split ring adapted to encircle the rubber-faced wheel, as set forth.

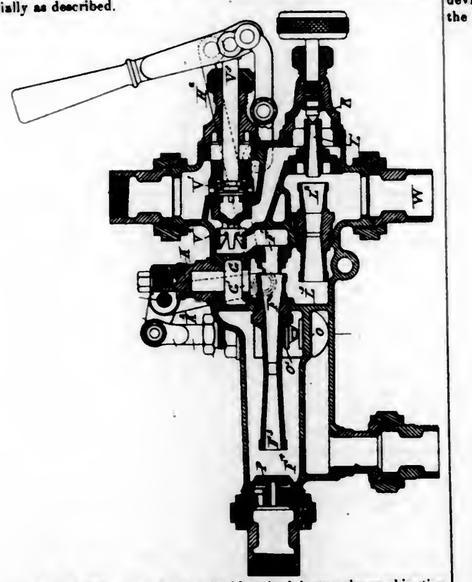
4. The apparatus for making rubber-faced type-wheels comprising in combination, a box A, blocks A′ adjustable therein, and a split-ring matrix, adapted to encircle a rubber faced wheel and to be compressed thereon by the blocks A′, as set forth.

5. The combination of the box A, the adjustable blocks A′, the split-ring matrix, the centering-spindle K and the screw-plug M, as set forth.

606,766. **INJECTOR.** WILLIAM R. PARK, Taunton, Mass., assignor to the Hancock Inspirator Company, Boston, Mass. Filed May 16, 1896. Serial No. 690,794. (Model.)

Claim.—1. In a lifting and forcing double-tube injector, the combination of a lifter, a lifter delivery-chamber, a forcer, a forcer delivery-chamber, a final overflow from the forcer delivery-chamber, an intermediate overflow-passage from the lifter delivery-chamber to the forcer delivery-chamber, the said passage provided with a reservoir-chamber intermediate between the lifter delivery-chamber and the forcer delivery-chamber, an intermediate overflow-valve controlling the said passage, the lifter delivery-chamber and intermediate overflow-passage constituting a conduit from the lifter delivery-tube to and past the entraining end of the forcer combining-tube, through

the passage and reservoir to the forcer delivery-chamber, substantially as described.



2. In a lifting and forcing double-tube injector, the combination of a lifter, a lifter delivery-chamber, a forcer, a forcer delivery-chamber, a final overflow from the forcer delivery-chamber, an intermediate overflow-passage from the lifter delivery-chamber to the forcer delivery-chamber, a valve controlling said passage, a reservoir in said passage between the said valve and the lifter delivery-chamber, the forcer combining-tube being located in the lifter delivery-chamber between the lifter delivery-tube and the entrance to the intermediate overflow-passage, substantially as described.

3. In a lifting and forcing double-tube injector, the combination of a lifter, a lifter delivery-chamber, a forcer, a forcer delivery-chamber, a final overflow from the forcer delivery-chamber, an intermediate overflow-passage having a reservoir therein, leading from a part of the lifter delivery-chamber above the forcer combining-tube into the forcer delivery-chamber, and an intermediate overflow-valve controlling the said passage, substantially as described.

4. In a lifting and forcing double-tube injector the combination of a lifter, a lifter delivery-chamber a forcer, a forcer delivery-chamber, a final overflow from the forcer delivery-chamber, an intermediate overflow-passage, having a reservoir therein, leading from a part of the lifter delivery-chamber above the forcer combining-tube into the forcer delivery-chamber, and an intermediate automatic check-valve controlling said passage, adapted to close in response to pressure from the forcer delivery-chamber, substantially as described.

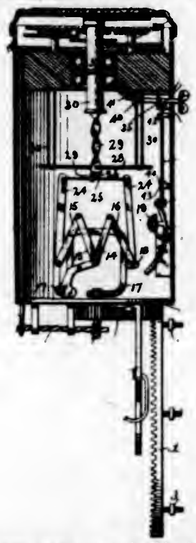
5. In a lifting and forcing double-tube injector, the combination of a lifter, a lifter delivery-chamber, a forcer delivery-chamber, a final overflow from the forcer delivery-chamber, an intermediate overflow-passage, having a reservoir therein, leading from a part of the lifter delivery-chamber above the forcer combining-tube to a point in the forcer delivery-chamber below the forcer delivery-tube, and an intermediate overflow-valve controlling the said passage, substantially as described.

606,767. **SPEED-MEASURER.** DICKINSON L. ROSE, Mankato, Minn. Filed Sept. 18, 1897. Serial No. 652,203. (No model.)

Claim.—1. A speed-indicator and cyclometer having a common dial-plate, an interiorly spirally threaded sleeve provided with a pointer and having a midway plate, ball-bearings above and below said plate, and means to operate said sleeve, all combined as set forth.

2. A speed-indicator and cyclometer having a common dial-plate, an interiorly spirally threaded sleeve provided with a pointer and having a midway plate, ball-bearings above and below said plate, a spiral working in said sleeve and carrying means to prevent its turning, and means to operate said sleeve, all combined and arranged as set forth.

3. A speed-indicator and cyclometer having a common dial-plate, an interiorly spirally threaded sleeve having a pointer and a midway plate, ball-bearings above and below said plate, a spiral working in said sleeve and carrying means to prevent its turning, a vertical rod having a single tooth, a cyclometer-wheel cooperating therewith, and devices connecting said rod and spiral with a face-wheel, whereby all the parts are operated by said wheel, all combined as set forth.



4. A cyclometer-wheel, a vertical rod having a single cog engaging said wheel, said rod terminating in a spiral, a worm-gear engaging the spiral and devices operating the worm-gear connected to the face-wheel and operated thereby, all arranged as set forth.

5. In a speed-indicator, a device carrying a sounder, means to adjust said device, a shaft provided with a pinion, a frame having bifurcated arms and supported by said shaft and carrying a collar having a series of levers and a series of strikers, said levers operating in the bifurcated arms with the strikers outside of said arms and means to operate the same, all arranged as set forth.

6. A casing provided with a slotted hood, a sounder having a support located in said hood, a set-screw working in said slot and carrying pointers and means to operate the sounder, all arranged as set forth.

7. A casing having a slotted hood, a revolving frame carrying strikers, a sounder consisting of a coiled spring surrounding said frame having one end attached to a support located in said hood.

8. A casing having a slotted hood, a revolving frame carrying striker-arms, a sounder consisting of a coiled spring encircling said frame having one end attached to an adjustable support located in said hood, a set-screw working in said slot and carrying pointers whereby said support may be adjusted to any height, as set forth.

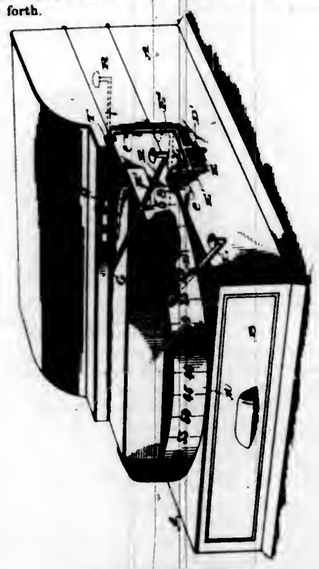
606,768. **CASH REGISTER AND RECORDER.** BENNETT F. SEIBERT, Mansfield, Ohio. Filed Sept. 11, 1897. Serial No. 651,371. (No model.)

Claim.—1. A cash register and recorder comprising a set of reel-wheels and recording-tape carried thereon, mounted in a suitable casing, the said wheels having a central flange against which the tape rests, and the lower portion of one of the wheels having a band, and an operating-lever having points which are designed to prick into and cause a step-by-step rotation to the said wheels as the lever is swung out to indicate a purchase amount, as set forth.

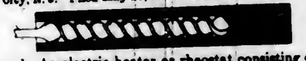
2. In a cash register and recorder the combination with the casing and recording mechanism as described, the indicating-dial having a notched portion in which the operating-lever rests, of the member E having an arm against which the said lever is adapted to bear when released from said notch, of the money-drawer and catch and levers D and C all arranged and operated substantially as shown and described.

3. In a cash register and recorder, the combination with the casing and recording mechanism as described, a portion of the casing notched as at T adapted to normally receive the operating-lever, of the vertically-movable member E^3 and guide-staple *e*, against which member the said lever strikes as it is depressed, and the connections between the said member and the money-drawer as shown and described.

4. A cash register and recorder, comprising in combination the horizontally-disposed reels, each having a flange 1 centrally about its circumference, a band about one of the reels below its flange, an operating-lever having a rigid shoulder thereon, pointed pawls on said shoulder, adapted to engage with the said band to rotate the reel, as the operating-lever is swung out on its pivot and to ride on the surface of the band, as the lever is swung back to its starting position, as set forth.



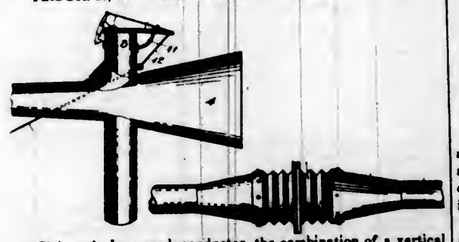
606,769. **ELECTRIC HEATER OR RHEOSTAT.** RICHARD VAN RENSSELAER SILL, New York, N. Y., assignor of three-fourths to Timothy Cohalan and George N. Chase, same place, and Daniel F. Cohalan, Jersey City, N. J. Filed May 29, 1897. Serial No. 638,819. (No model.)



Claim.—1. An electric heater or rheostat consisting of an outer shell, and a resistance filling therein in the form of a spiral layer of comminuted material with the convolutions in contact, substantially as set forth.

2. An electric heater or rheostat consisting of an outer shell, a densely-packed resistance filling therein in the form of a spiral layer of even thickness with the convolutions in contact, and electrodes in the ends of the shell, substantially as set forth.

606,770. **SPARK-CONDUCTOR.** CLARENCE SLEISTER, Peoria, Ill. Filed Dec. 16, 1897. Serial No. 662,214. (No model.)



Claim.—1. In a spark-conductor, the combination of a vertical tube designed to be connected with a locomotive, a flaring mouth or funnel extending forward from the mouth of the tube, a rearwardly-extending tube connected with the vertical tube and disposed opposite the flaring mouth or funnel, and a vertical hood located directly above the vertical tube and provided with a cap, the rear wall of the hood terminating short of the front wall, and being provided with the inclined portions 7 connected with the rearwardly-extending tube and extending downward and rearward from a point above the lower edge of the front wall of the hood, substantially as and for the purpose described.

2. In a spark-conductor, the combination of two pipe-sections having their adjacent ends flared or funnel-shaped to increase the diameter of the conductor, and the flexible bellows-shaped connections secured to the flaring or funnel-shaped ends of the pipe-sections, substantially as described.

3. In a device of the class described, the combination of a tube, a hinged cap or valve provided with an arm pivoted between its ends, a catch mounted at the free edge of the cap or valve and adapted to engage the tube, and a cord or rope secured to the catch and connected with the arm, said cord or rope having a limited movement independent of the arm, whereby the catch is released before the cap or valve is raised, substantially as described.

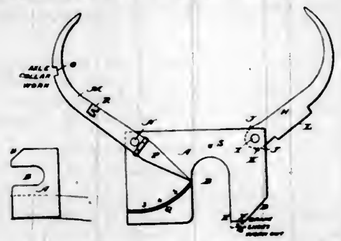
4. In a device of the class described, the combination of a tube, a hinged cap or valve provided with an arm pivoted between its ends and having an opening in its outer portion, a catch pivoted between its ends at the free edge of the cap or valve and having its lower portion adapted to engage the tube, and a cord or rope passing through the opening of said arm and connected with the upper portion of the catch, said cord or rope being provided between the arm and the catch with a stop adapted to engage the former, substantially as described.

606,771. **FUSE-BOX.** JOSEPH B. SMITH, Manchester, N. H. Filed Feb. 23, 1897. Serial No. 624,590. (No model.)



Claim.—In a fusible cut-out, the combination, with a box provided with partitions, the upper edge of each of which is provided with a notch, and the inner edge of the walls of the box is recessed or provided with a shoulder even with the top of the partitions, the notches being out of alinement with each other and the central partition being provided with a shouldered opening extending from the bottom of the box to the top of the partition, and each end wall of the box being provided with an opening, of a cover for the box provided with a series of openings, the central one of which registers with the opening in the middle partition, and each of the other openings registers with the compartment between two partitions, a bolt through the box and the cover, the head of which fits within the larger portion of the opening in the partition and the point projects above the cover, a spring between the head of the bolt and the shoulder of the opening, a nut upon the bolt above the cover, a binder in each end compartment, and a fusible connector secured at its ends to the binders and having its intermediate portion passed through the notches in the partitions, substantially as set forth.

606,772. **CAR WHEEL AND AXLE GAGE.** ALFRED H. SMITH and WALTER A. BRAINARD, Youngstown, Ohio. Filed Mar. 1, 1897. Renewed Dec. 18, 1897. Serial No. 662,207. (No model.)



Claim.—1. A plate-metal gage, for measuring car wheels and axles, having a recess in the body thereof for the purpose specified, a scale on the face, and provided with two caliper-arms pivoted at opposite ends of the plate, one of said arms registering with the scale, in substance as set forth.

2. A recessed plate-metal gage adapted for measuring car wheels and axles having two arms pivoted thereto at different points on opposite sides or faces, one of said arms being provided with a pointer registering with a scale on the face of the plate, and both said arms folding in planes parallel with the plate, so that the gage can be brought within a small compass, in substance as set forth.

3. A gage for car-wheels having two pivoted arms and one of said arms provided with a hinged pointer, substantially as described.

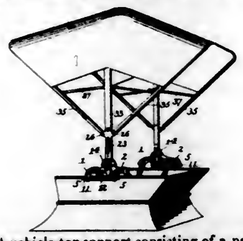
4. A gage for car-wheels having a scale on the body thereof, and two pivoted arms, one of said arms being provided with a hinged pointer adapted to the scale, in substance as set forth.

5. In combination with a car-wheel gage, a curved arm provided with a hinged pointer said arm having a guard R to protect the end of the pointer when folded, in substance as set forth.

6. A car-wheel gage having two arms pivoted at different points, one of said arms having a pointer adapted to a scale on the gage and the other arm provided with a shoulder adjacent the pivot for engaging a stop on the body of the gage, as set forth.

7. A car-wheel gage consisting of a metal plate having a recess B, caliper-arms pivoted at the corners, and one corner of the plate cut away from D to F, adapting the gage for measuring chipped rims and worn flanges, in substance as described.

606,773. SUPPORT FOR WAGON OR BUGGY TOPS. JAMES H. SPRAGUE, Norwalk, Ohio. Filed Apr. 18, 1898. Serial No. 678,074. (No model.)



Claim.—1. A vehicle-top support consisting of a pair of brackets each cast in a single piece with an attaching-shank and provided with perforated arms, a transverse bow-supporting bridge adapted to be fitted in either of the openings in said brackets, and a clamping-bolt which unites the free ends of the bracket-arms and sustains a sleeve which is fitted between said brackets, substantially as described.

2. A means for supporting a carriage-bow on seats of different widths comprising a pair of brackets, a transverse bridge-piece which spans the space between said brackets and clamped to the same for adjustment toward or from the free ends of the brackets, and a bow-supporting device attached to said transverse bridge, substantially as described.

3. A means for supporting a carriage-bow on seats of different widths comprising a pair of brackets to be fastened in parallel relation to each other on the end of a carriage-seat, a transverse bridge arranged to span the space between the brackets and having its ends secured adjustably to the same for permitting said bridge to assume either of several positions relative to the seat, and a bow-attaching plate clamped to said bridge for adjustment thereon in a plane at right angles to the adjustment of the bridge itself, substantially as described.

4. The combination of a pair of fixed brackets adapted to project outwardly from a seat, a bridge spanning the space between the brackets to which said bridge is secured for adjustment laterally with respect to a seat and provided, at a point intermediate of its length, with the disk, and a bow-supporting plate pivoted to the disk at right angles to the axis of the bridge, and means for adjustably clamping said plate to the disk of the bridge, substantially as described.

5. The combination with brackets, of a horizontal bridge adjustably clamped to said brackets and having its flanged disk formed with a vertical socket and a horizontal stop-lug, a slatted bow-supporting plate having a stem adapted to fit the socket or against said stop-lug, and a clamping-bolt which adjustably fastens the plate to the disk of said bridge, substantially as described.

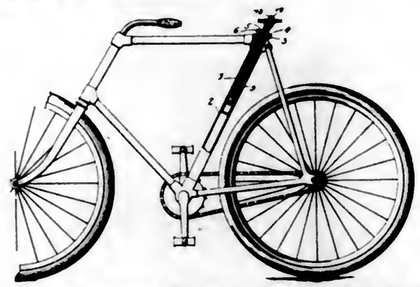
606,774. BUSHING FOR DIE-STOCKS. GEORGE P. BARD, Norwich, Conn. Filed Dec. 9, 1897. Serial No. 661,220. (No model.)



Claim.—As a new article of manufacture, a separate and independent bushing for a die-stock and which is provided with a collar that is adapted to fit in a corresponding collar upon a die-stock, whereby the same bushing is adapted to be used upon different die-stocks, combined with the adjustable jaws pivoted in the bushing, substantially as shown and described.

606,775. BICYCLE SADDLE-POST. CLARENCE A. F. BERG, Providence, R. I. Filed Nov. 25, 1896. Serial No. 613,391. (No model.)

Claim.—1. In a vehicle a saddle-post comprising a tubular socket or saddle-post tube closed at one end and open at the other, a saddle-post proper mounted to reciprocate therein, a tubular rod passing through said saddle-post and movable longitudinally, an expansible packing-ring arranged under said post and surrounding said rod, a nut mounted on the upper end of said rod and adapted to adjust said rod longitudinally for expanding said packing-ring, and a valve in the upper end of said rod substantially as described.



2. The combination with a tubular socket or saddle-post tube closed at one end and open at the other, of a tubular saddle-post mounted to reciprocate therein, a hollow rod passing through said post, a packing-ring arranged at the lower end of said post, means at the top of the post for expanding said ring, and a valve arranged in the upper end of said hollow rod and adapted to receive an air-pump, whereby air may be compressed in the lower end of said socket and beneath the saddle-post, substantially as and for the purpose described.

3. The combination with a tubular socket or saddle-post tube having one end closed and the other end open, and provided at its upper end with an annular enlargement recessed to form an oil-receptacle which communicates with the inside of said socket or saddle-post tube, a pin movable through the upper portion of said socket, a pin-actuating spring contained within the annular enlargement, and a tubular saddle-post mounted slidingly in said socket or saddle-post tube, the said tubular saddle-post being provided with a longitudinal slot or groove in which the inner end of said spring-pin works, substantially as described.

606,776. PROCESS OF PRODUCING WHITE EFFECTS ON FABRICS. STEWART F. CARTER, North Adams, Mass., assignor to the Windsor Company, same place. Filed Oct. 28, 1897. Serial No. 656,722. (No specimens.)

Claim.—1. The improved process for producing white effects on cotton and other fabrics, which consists in first subjecting the fabric to the action of a sulfocarbonate of cellulose, such as viscose, in imprinting designs upon the fabric with a suitable pigment, and in subjecting the fabric to heat so as to decompose the viscose, substantially as set forth.

2. The improved process for producing white effects on cotton and other fabrics, which consists in subjecting the fabric to the action of a sulfocarbonate of cellulose, such as viscose, in imprinting designs upon the fabric with tungstate of barium, and in subjecting the fabric to heat so as to decompose the viscose, substantially as set forth.

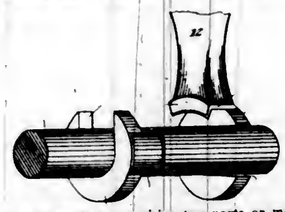
3. The improved process for producing white effects on cotton and other fabrics, which consists in imprinting designs upon the fabric with a mixture of viscose and tungstate of soda; then in subjecting the fabric to heat so as to decompose the viscose; and finally, in passing the fabric through a bath of barium chlorid, so as to form upon the fabric tungstate of barium in the form of the designs, substantially as set forth.

606,777. PROCESS OF PRODUCING WHITE EFFECTS ON FABRICS. STEWART F. CARTER, North Adams, Mass., assignor to the Windsor Company, same place. Filed Oct. 28, 1897. Serial No. 656,723. (No specimens.)

Claim.—1. An improved process for producing white effects on cotton and other fabrics, which consists in printing upon the fabric, in suitable designs, tungstate of barium, together with albumen, and in finally subjecting the fabric to heat, so as to coagulate the albumen, thereby mechanically binding the pigment to the fabric, substantially as set forth.

2. An improved process for producing white effects on cotton and other fabrics, which consists in printing upon the fabric, in suitable designs, with a pigment comprising tungstate of barium, to which has been added a suitable binding agent, such as albumen, and in finally subjecting the fabric to heat, substantially as set forth.

606,778. SELF-LOCKING COUPLING OR BEARING. CONRAD DIETZ, Cincinnati, Ohio. Filed Feb. 24, 1898. Serial No. 671,464. (No model.)



Claim.—1. A coupling comprising two parts or members each having a hook-like portion formed with an opening adapted to permit it to be engaged with a journal upon which the parts or members are adapted for turning or rotative movement, and the said journal, one of said parts or members having a laterally-projecting segment adapted, when one of the members is turned or rotated, to engage with the periphery of the hook-like portion of the other part or member to hold the parts or members locked in engagement upon the journal, substantially as set forth.

2. A coupling comprising two parts or members each having a hook-like portion formed with an opening adapted to permit it to be engaged with a journal upon which the parts or members are adapted for turning or rotative movement, the said journal, and means to prevent the parts or members from movement endwise along said journal when engaged therewith, one of said parts or members having a laterally-projecting segment adapted when one of the members is turned or rotated to engage with the periphery of the hook-like portion of the other part or member to hold the parts or members locked in engagement upon the journal, substantially as set forth.

3. A coupling comprising two parts or members each having a hook-like portion formed with an opening adapted to permit it to be engaged with a journal upon which the parts or members are adapted for turning or rotative movement, and the said journal, each of said parts or members having a laterally-projecting segment adapted when one of the members is turned or rotated to engage with the periphery of the hook-like portion of the other part or member to hold the parts or members locked against accidental disengagement from the journal, substantially as set forth.

4. A coupling comprising two parts or members each having a hook-like portion formed with an opening adapted to permit it to be engaged with a journal upon which the parts or members are adapted for turning or rotative movement, the said journal, one of said parts or members having a laterally-projecting segment adapted, when one of the members is turned at an angle to the other member, to engage with the periphery of the hook-like portion of such member to hold the parts or members locked against accidental removal from the journal, and having a lug adapted to prevent disengagement of the parts or members by movement from each other endwise along the journal when engaged therewith, substantially as set forth.

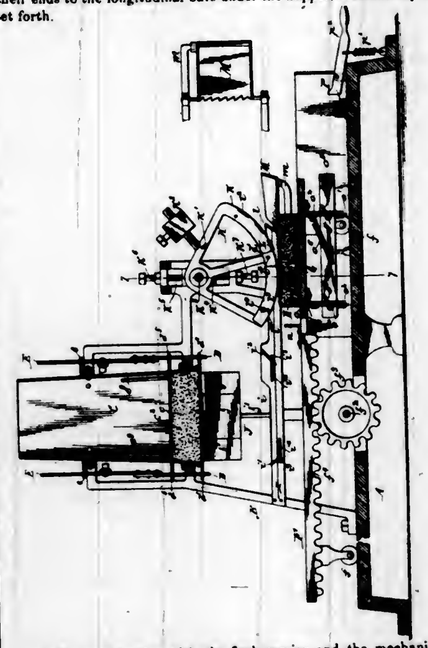
606,779. MOLDING-MACHINE. GEORGE FLICKINGER, Buffalo, N. Y., assignor of thirty-three fiftieths to Charles A. Hager and Gustavus Steinwachs, same place. Filed July 6, 1896. Serial No. 596,198. (No model.)

Claim.—1. In a molding-machine, the combination with the flask-carrier, of a sand-hopper arranged above the carrier and provided with a measuring-chamber, a lower valve pivoted to the hopper at the lower end of the measuring-chamber and provided with a pin, an upper valve sliding transversely in the hopper at the upper end of the measuring-chamber and provided with a pin, and a vertically-movable shifting plate provided with upper and lower slots which receive the pins of the upper and lower valves, respectively, the lower slot consisting of a vertical portion and a horizontal portion extending outwardly from the upper end of the vertical portion, and the upper slot consisting of a vertical portion and an oblique portion extending downwardly and outwardly from the lower end of the vertical portion, substantially as set forth.

2. In a molding-machine, the combination with a flask-carrier, of a sand-hopper arranged above the flask-carrier, and provided with a measuring chamber, valves arranged at the upper and lower ends of the measuring chamber, a filling-piece detachably fitted into the measuring-chamber and a deflector detachably secured to the inner side of the hopper above the filling-piece and provided with an inclined side which deflects the sand beyond the upper end of the filling-piece, substantially as set forth.

3. The combination with the sand-hopper and the flask-carrier, of stationary retaining-bars arranged lengthwise over the sides of the flask whereby the latter is held in place on the carrier during its longitudinal movement, substantially as set forth.

4. The combination with the sand-hopper and the flask-carrier, of stationary longitudinal retaining-bars arranged lengthwise over the flask and adapted to hold the flask on the carrier during its longitudinal movement and two transverse bars secured adjustably at their ends to the longitudinal bars under the hopper, substantially as set forth.



5. The combination with the flask carrier and the mechanism whereby the same is moved back and forth, of an oscillating compressor having a segmental presser-face and pivotally supported above the path of the flask so as to swing forward when engaged by the flask during the forward movement of the latter with the flask-carrier, and means for moving the compressor backward to its normal position after the flask during its forward movement has cleared the compressor and before the flask-carrier begins its subsequent backward movement, substantially as set forth.

6. In a molding-machine, the combination with the flask-carrier, of an oscillating compressor having a segmental presser-face and pivotally supported above the path of the flask so as to swing forward when engaged by the flask, a weight mounted on said compressor and adapted to move the same backwardly and a stop which arrests the backward movement of the compressor when the front end of its face stands in the path of the sand on the mold, substantially as set forth.

7. In a molding-machine, the combination with the flask-carrier and the sand compressing device, of a striker or scraper pivoted above the path of the flask and a tappet arranged on the carrier and adapted to turn said striker, substantially as set forth.

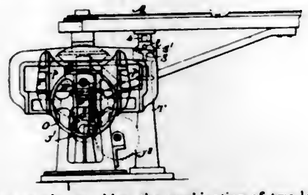
8. In a molding-machine, the combination with the flask-carrier and the sand-compressing device, of a scoop-shaped striker or scraper pivoted above the path of the flask and adapted normally to stand with its bottom in line with the top of the flask, a spring whereby the striker or scraper is yieldingly held in its normal position, and a tappet arranged on the carrier and adapted to turn the striker or scraper into an elevated position, substantially as set forth.

9. In a molding-machine, the combination with the flask-carrier, and the vertically-movable lifting-frame adapted to engage with the flask and provided with depending stems, a shifting bar capable of longitudinal movement on said carrier and provided with inclines engaging with said stems, a spring whereby said bar is shifted for lowering the lifting-frame, a stop-lever having a stop-arm and a spring whereby the stop-lever is normally held with its stop-arm in the path of the shifting bar, substantially as set forth.

606,780. TENTERING-MACHINE. CHARLES J. GADD, Philadelphia, Pa., assignor to the H. W. Butterworth & Sons Company, of Pennsylvania. Filed Apr. 17, 1897. Serial No. 632,835. (No model.)

Claim.—1. In a tentering-machine, the combination of two lon-

gitudinal carriers or conveyers for holding the cloth to be treated, a transverse driving-shaft pivoted at a point intermediate of said conveyers or carriers upon a vertical axis, power-transmitting connections between said driving-shaft and the conveyers or carriers whereby the same may be moved to cause the material to travel through the machine, power devices to cause said driving-shaft to rotate, means to reciprocate said driving-shaft in a horizontal plane consisting of a reciprocating frame supported independently of the driving-shaft having a movable connection maintaining continuous power-transmitting relation with the driving-shaft, a cam arranged parallel to the said frame for reciprocating it, power devices for rotating the cam, and means for varying the throw of the cam to change the extent of the reciprocation of the driving-shaft comprising a box secured to a cam driving-shaft, a connection between the cam and box whereby the cam is guided relatively to the box and movable transversely to the cam-shaft, and an adjusting-screw for adjusting the cam upon the box.



2. In a tentering-machine, the combination of two longitudinal carriers or conveyers for holding the cloth to be treated, a transverse driving-shaft pivoted at a point intermediate of said conveyers or carriers upon a vertical axis, power-transmitting connections between said driving-shaft and the conveyers or carriers whereby the same may be moved to cause the material to travel through the machine, power devices to cause said driving-shaft to rotate, a fixed frame, a reciprocating frame arranged close to the end of the driving-shaft movable on and having its weight carried by the fixed frame independently of the driving-shaft, a mechanical connection between the reciprocating frame and the end of the driving-shaft whereby the latter is oscillated, and a cam directly acting upon the reciprocating frame to reciprocate it.

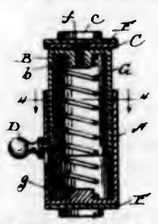
3. In a tentering-machine, the combination of two longitudinal carriers or conveyers for holding the cloth to be treated, a transverse driving shaft pivoted at a point intermediate of said conveyers or carriers upon a vertical axis, power-transmitting connections between said driving-shaft and the conveyers or carriers whereby the same may be moved to cause the material to travel through the machine, power devices to cause said driving-shaft to rotate, horizontal guide-supports for each end of the driving-shaft, a rotating cam arranged adjacent to one end of the driving-shaft, means embracing the cam and mechanically connected to the driving-shaft operated by the rotating cam for imparting a horizontal oscillation to said driving-shaft, means for adjusting the throw or cam action of the cam, and power-transmitting connections between the power devices and the cam whereby the rotations of the cam to produce the oscillation of the driving-shaft are commensurate with the rotations of the said driving-shaft.

4. In a tentering-machine, the combination of two longitudinal carriers or conveyers for holding the cloth to be treated, a transverse shaft pivoted at a point intermediate of said conveyers or carriers upon a vertical axis, power-transmitting connections between said driving-shaft and the conveyers or carriers whereby the same may be moved to cause the material to travel through the machine, power devices to cause said driving-shaft to rotate, supports for the driving-shaft to hold it against vertical movement while permitting horizontal movement, a guide-frame, a reciprocating frame independent of the driving-shaft movable in the guide-frame, a power connection between the reciprocating frame and the driving-shaft, a cam shaft, an adjustable cam upon the cam-shaft operating to reciprocate the reciprocating frame, and connecting devices between the cam-shaft and the power devices for rotating the driving-shaft whereby the several parts are operated from a single source of power and the movements are properly timed.

5. In a tentering-machine, the combination of two longitudinal carriers or conveyers for holding the cloth to be treated, a transverse driving-shaft pivoted at a point intermediate of said conveyers or carriers upon a vertical axis, power-transmitting connections between said driving-shaft and the conveyers or carriers whereby the same may be moved to cause the material to travel through the machine, power devices to cause said driving-shaft to rotate, a rectilinear guide located to one side of the vertical axis of the transverse driving-shaft, a reciprocating frame guided in said rectilinear guide, a movable connection between the reciprocating frame and the driving-shaft whereby the latter is positively reciprocated about its pivot, a cam for reciprocating the reciprocating frame in the rectilinear guides having its plane of rotation substantially parallel to the said guides, and power devices for rotating the cam.

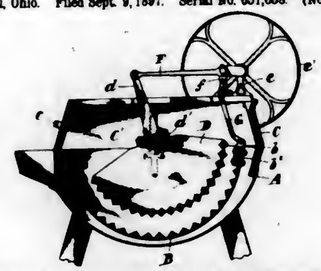
6. In a tentering-machine, the combination of two longitudinal carriers or conveyers for holding the cloth to be treated, a transverse driving-shaft pivoted at a point intermediate of said conveyers or carriers upon a vertical axis, power-transmitting connections between said driving-shaft and the conveyers or carriers whereby the same may be moved to cause the material to travel through the machine, power devices to cause said driving-shaft to rotate, a rectilinear guide located to one side of the vertical axis of the transverse driving-shaft, a reciprocating frame guided in said rectilinear guide, a movable connection between the reciprocating frame and the driving-shaft whereby the latter is positively reciprocated about its pivot, a cam for reciprocating the reciprocating frame in the rectilinear guides having its plane of rotation substantially parallel to the said guides, means for varying the throw of the cam, and power devices for rotating the cam.

606,781. **DENTAL JAW-BRACE.** ROBERT L. HALPERIN, Chicago, Ill. Filed Sept. 16, 1897. Serial No. 651,919. (No model.)



Claim.—The combination in a dental mouth-prop of the telescoping tubes A and B with the spring G; slot E with curved notches *e* and screw-handle D, all as and for the purposes set forth.

606,782. **WASHING-MACHINE.** JOHN F. HERBERGER, Cincinnati, Ohio. Filed Sept. 9, 1897. Serial No. 651,038. (No model.)

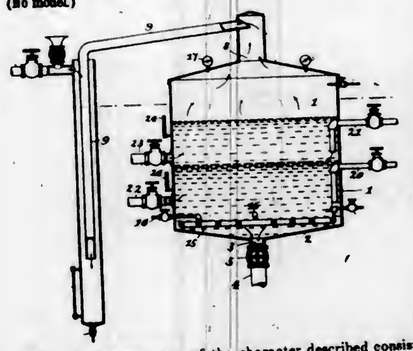


Claim.—1. In a washing-machine the combination of the tub having bearings secured in its sides at the top edge thereof, a cover hinged to the tub at one end, the concave rubber pivotally mounted in the bearings in said tub, the convex rubber pivotally mounted in elongated bearings in the sides of the cover, a lever projecting from the convex rubber through the top of the cover, a crank-shaft mounted in bearings secured upon the hinged end of the cover, a pitman connecting the crank-shaft and upper end of the lever projecting from the convex rubber, and a rod permanently connected to the said pitman and to the top edge of the concave rubber, whereby the rubbers are reciprocated in opposite directions when the machine is in use and both rubbers adapted to be swung up out of the tub without disconnecting any of the parts for the purpose of cleansing the machine, substantially as shown and described.

2. In a washing-machine the combination of the tub having open bearings in the upper edges of its sides, the cover hinged to one end of said tub and having a half-top hinged to one edge of the cover and adapted to be thrown open for convenient access to the machine without lifting the cover, elongated pivotal bearings secured to the inside faces of the cover, the concave rubber pivoted in the bearings in the top of the sides, the convex rubber pivoted in the elongated bearings in the sides of the cover and having a lever projecting up from it through the top of the cover, the crank-shaft mounted in brackets secured to the fixed half of the top of the cover, the pitman connecting the wrist-pin of the crank-shaft and upper end of the convex-rubber lever and having downwardly-projecting lugs, the connecting-rod permanently secured between said lugs at one end and between lugs upwardly projecting from the bar secured to one end of the concave rubber, whereby access may be had to the machine without lifting the cover for the purpose of adjusting the clothes between the rubbers or supplying the tub with suds, and the convex and concave rubbers are adapted to be swung up and supported by the cover when elevated for the purpose of cleansing the tub, substantially as shown and described.

3. In a washing-machine of the character described the hinged cover having one half of its top rigid and the other half hinged to the side wall of the cover, bracket-bearings secured upon the rigid half of the top, a crank-shaft journaled in said bearings and having a wrist-pin projecting over the joint of the cover to receive the pitman and connecting-rod for actuating the rubbers, the rubbers and the pitman and connecting-rod for actuating them substantially as shown and described.

606,783. **APPARATUS FOR REFINING OILS.** JOHN C. HENDERSON, New York, N. Y. Filed Aug. 25, 1897. Serial No. 649,451. (No model.)
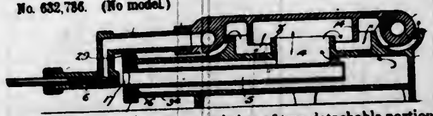


Claim.—1. An apparatus of the character described consisting of a tank having a sloping bottom converging toward a valve-controlled discharge-opening and a sloping top provided with a closed pipe, a drain-chamber adjacent to the tank, a pipe connecting the former and the latter, a steam-jet near the top of the tank to drive the air therefrom, a perforated steam-coil on the bottom of the tank, a water-inlet at one side of the tank above said coil and an inlet for the material above said water-inlet, whereby the water is introduced above the coil then the material is introduced upon the water and is treated by the ebullition of the water.

2. An apparatus for separating, extracting and purifying oils consisting of a tank having an upwardly-inclined top converging toward a central closed pipe to facilitate the removal of the air and vapors, a drain-chamber, connections between said pipe and chamber, a perforated steam-coil in the bottom of the tank, a water-supply pipe in one side of the tank above the coil to permit the introduction of the water upon the coil, an oil-supply pipe above the water-pipe to direct the oil upon the top of the water, and a steam-jet above the oil-pipe adapted to drive off the air and vapors through said central closed pipe, all operating as specified.

3. An apparatus for separating, extracting and purifying oils consisting of a tank having an upwardly-inclined top converging toward a central closed pipe to facilitate the removal of the air and vapors, a drain-chamber, connections between said pipe and chamber, a perforated steam-coil in the bottom of the tank, a water-supply pipe in one side of the tank above the coil, to permit the introduction of the water upon the coil, an oil-supply pipe above the water-pipe to direct the oil upon the top of the water, a steam-jet above the oil-pipe adapted to drive off the air and vapors through said central closed pipe, and a discharge-pipe for extracts and for purified oil, substantially as and for the purpose set forth.

606,784. **OIL-BURNER.** JONATHAN JOHNSTON, Morgan Park, Ill., assignor to Herbert O. Bennett, Chicago, Ill. Filed Apr. 19, 1897. Serial No. 632,786. (No model.)

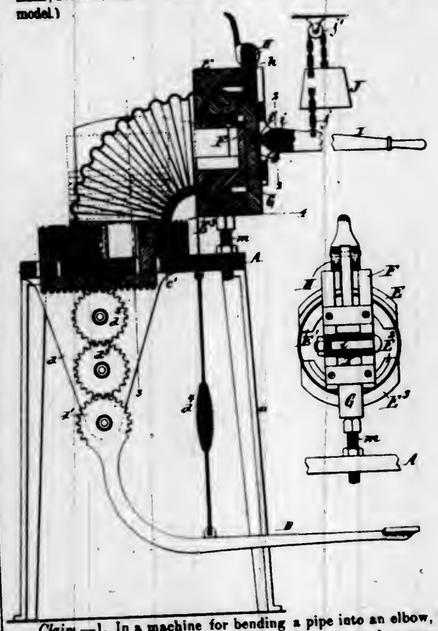


Claim.—1. An oil-burner consisting of two detachable portions, the upper one of which is in the form of an inverted cup or pan having its depending surrounding wall or rim made hollow and constituting a retort having an inlet and an outlet, a ring or rim depending from the bottom of said pan and being arranged concentrically within and at a distance from said wall, and the base or other of which portions is in the form of two concentric channels or troughs in which said retort and ring on the upper portion depend respectively, the inlet for the vapor being formed through the bottom of said base portion and surrounded by the inner one of said channels and being in communication with the outlet of the retort, substantially as set forth.

2. An oil-burner consisting of two detachable portions one of which is in the form of an inverted cup or pan whose depending outer wall or rim is hollow and constitutes a retort having an inlet and an outlet and a ring or flange arranged concentrically within said wall and depending from the bottom of said cup or pan, and the other of which portions consists of two annular concentric channels into which said retort and flange depend respectively, the inlet for the vapor being formed through the bottom of said second portion and surrounded by the inner one of said channels, supporting-lugs arranged in one of said channels for holding said first portion of the burner aloof, and bolts passing through said portions of the burner for binding the same together, substantially as set forth.

3. An oil-burner consisting of two detachable portions, the upper one of which is in the form of an inverted cup or pan having its depending surrounding wall or rim made hollow and constituting a retort having an inlet and an outlet, and the base or other of which portions is provided in its upper side with a surrounding channel or trough into which the bottom side of said retort depends and is supported at a distance from the bottom of said trough, said base portion having a bottom inlet for the vapor and a flange rising therefrom around said inlet and around which said trough extends, and an injector connected with the outlet of said retort and having its end directed into said inlet of the base portion, substantially as set forth.

606,785. **PIPE-ELBOW-BENDING MACHINE.** WILLIAM A. KEMP, Toronto, Canada. Filed Sept. 23, 1897. Serial No. 652,735. (No model.)



Claim.—1. In a machine for bending a pipe into an elbow, the combination with a stationary clamping device adapted to securely grasp one end of the pipe, and a movable clamping device adapted to grasp the opposite end of the pipe and to swing laterally with reference to the other clamping device, of retaining-plates adapted to bear against the sides of the pipe and arranged parallel with the plane in which the movable clamping device swings, substantially as set forth.

2. In a machine for bending a pipe into an elbow, the combination with a laterally-swinging clamp adapted to grasp the free end of the pipe, of a stationary clamping device composed of two pairs of jaws, two of said jaws being stationary and engaging one against the outer and the other against the inner side of the pipe, and two of said jaws being movable and engaging respectively against the inner side and the outer side of the pipe, substantially as set forth.

3. In a machine for bending a pipe into an elbow, the combination with a laterally-swinging clamp adapted to grasp the free end

of the pipe, of a stationary clamping device composed of two pairs of jaws, two of said jaws being stationary and engaging one against the outer and the other against the inner side of the pipe, and the other two of said jaws being movable and connected to move simultaneously in the same direction, substantially as set forth.

4. In a machine for bending a pipe into an elbow, the combination with a laterally-swinging clamping device adapted to grasp the upper end of the pipe, of a stationary clamping device composed of two pairs of jaws adapted to engage against opposite sides of the lower end of the pipe, each pair consisting of a fixed and a movable jaw, a gear-rack connecting the movable jaws, and a gear-wheel meshing with the gear-rack, substantially as set forth.

5. In a machine for bending a pipe into an elbow, the combination with a stationary clamping device adapted to grasp one end of the pipe, of a laterally-swinging clamping device consisting of two pairs of jaws adapted to grasp opposite sides of the opposite end of the pipe, and bars connecting the inner jaw of each pair with the outer jaw of the other pair, substantially as set forth.

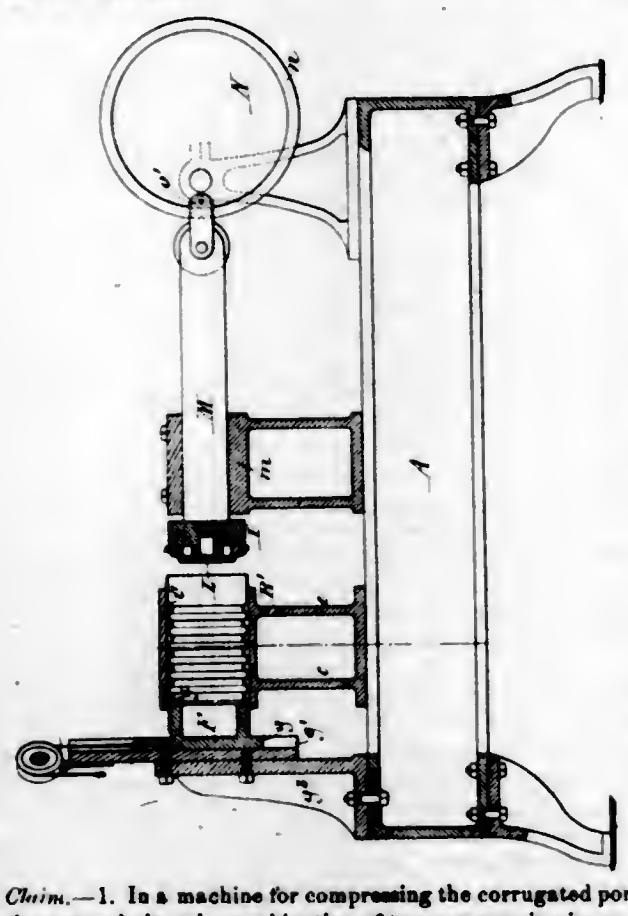
6. In a machine for bending a pipe into an elbow, the combination with a stationary clamping device adapted to grasp one end of the pipe, of a laterally-swinging clamp consisting of two pairs of jaws adapted to grasp opposite sides of the opposite end of the pipe, bars connecting the inner jaw of each pair with the outer jaw of the other pair, and a tightening-cam bearing against one bar and connected with the other bar, substantially as set forth.

7. In a machine for bending a pipe into an elbow, the combination with a stationary clamping device adapted to grasp one end of the pipe, of a laterally-swinging clamping device consisting of two pairs of jaws adapted to grasp opposite sides of the opposite end of the pipe, bars connecting the inner jaw of each pair with the outer jaw of the other pair, and a lever pivoted on one of said bars and provided with a tooth engaging with a notch in the other bar, substantially as set forth.

8. In a machine for bending a pipe into an elbow, the combination with a stationary clamping device adapted to grasp one end of the pipe and a laterally-swinging clamping device adapted to grasp the opposite end of the pipe, of a stop which limits the lateral movement of the swinging clamping device, substantially as set forth.

9. In a machine for bending a pipe into an elbow, the combination with a stationary clamping device adapted to grasp one end of the pipe and a laterally-swinging clamping device adapted to grasp the opposite end of the pipe, of a fixed retaining-plate and a laterally-movable retaining-plate adapted to bear against opposite sides of the pipe, substantially as set forth.

606,786. **CORRUGATED-PIPE-COMPRESSING MACHINE.** WILLIAM A. KEMP, Toronto, Canada. Filed Sept. 23, 1897. Serial No. 652,736. (No model.)



Claim.—1. In a machine for compressing the corrugated portion of a sheet-metal pipe, the combination of two compressing-jaws, each of a diameter which enables the jaw to enter the pipe and of larger diameter than the internal diameter of the corrugations, whereby each jaw engages within the pipe against the adjacent outermost corrugation and the corrugated portion of the pipe is compressed longitudinally between the jaws, substantially as set forth.

2. In a machine for compressing the corrugated portion of a sheet-metal pipe, the combination with two compressing-jaws, each of a diameter which enables the jaw to enter the pipe and of larger diameter than the internal diameter of the corrugations, and a divided cylindrical housing which surrounds the corrugated portion of the pipe between the compressing-jaws, substantially as set forth.

3. In a machine for compressing the corrugated portion of a sheet-metal pipe, the combination with a divided cylindrical housing which surrounds the corrugated portion of the pipe, of a plunger engaging in one end of the pipe against the adjacent outermost corrugation, and an abutment engaging in the other end of the pipe against the adjacent outermost corrugation and capable of movement toward and from the center of the pipe, substantially as set forth.

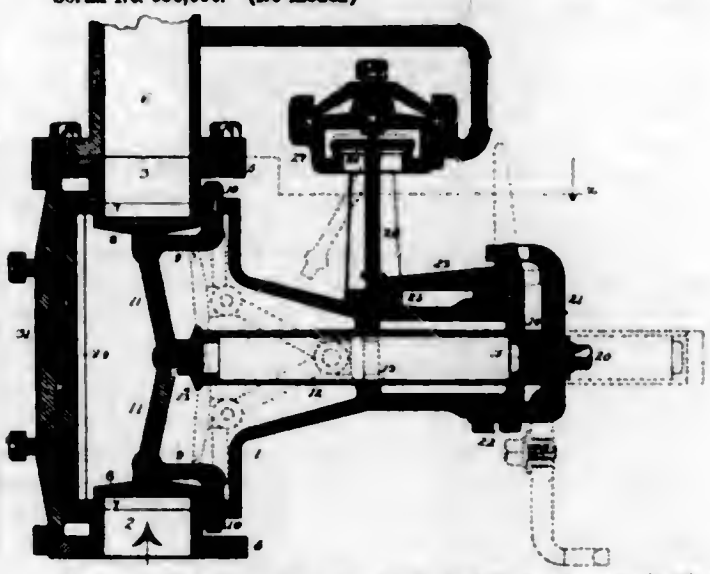
4. In a machine for compressing the circumferential corrugations of sheet-metal pipes, the combination with jaws for holding the central portion of the pipe, of a plunger engaging with one end of the pipe, an abutment engaging with the other end of the pipe, a vertically-movable slide supporting the abutment, and a lifting-cord passing around a roller and connected with its opposite end to a treadle, substantially as set forth.

5. In a machine for compressing the circumferential corrugations of sheet-metal pipes, the combination with a pipe-holding device, of a plunger adapted to engage in the end portion of the pipe and guides arranged on the plunger and capable of movement toward and from the center thereof, substantially as set forth.

6. In a machine for compressing the circumferential corrugations of sheet-metal pipes, the combination with a pipe-holding device, of a cylindrical plunger adapted to enter the end portion of the pipe, and laterally-movable guides arranged on the plunger and provided on the outer edge of their front sides with inclined faces, substantially as set forth.

7. In a machine for compressing the circumferential corrugations of sheet-metal pipes, the combination with a pipe-holding device, of a cylindrical plunger adapted to enter the end portion of the pipe, of segmental guide-blocks capable of moving radially on the front side of the plunger and provided on the front sides of their outer ends with inclined faces, springs interposed between the plunger and the guide-blocks, pins arranged on the plunger and engaging with slots in the guide-blocks, and a retaining-disk secured to the plunger and bearing against the front sides of the guide-blocks, substantially as set forth.

606,787. **DUPLEX INDUCTION-VALVE FOR AUTOMATIC SPRINKLERS.** CHARLES W. KENESTER, Akron, Ohio, assignor to the Niagara Fire Extinguisher Company, same place. Filed Aug. 31, 1897. Serial No. 650,099. (No model.)



Claim.—1. In a valve for automatic sprinklers the combination with a cylindrical case having oppositely-disposed water-supply and jet-supply openings, and a perpendicular branch intermediate of said openings; valves to close said openings, intermediate links connected together and with said valves; a follower connected with said links and arranged to slide in said branch, a cross-head on said follower, of springs connected with and arranged to press said follower outward, a yoke to retain said follower, latch to retain said yoke, and trip mechanism arranged to be actuated by a decrease of pressure in the jet-supply pipes and to release said latch, substantially as shown and described.

2. An improved valve for automatic sprinklers consisting of a cylindrical case adapted to have its ends connect with the water-supply pipe and jet-pipe system respectively, and provided with valve-seats adjacent to its ends, and a hollow sleeve perpendicular to and

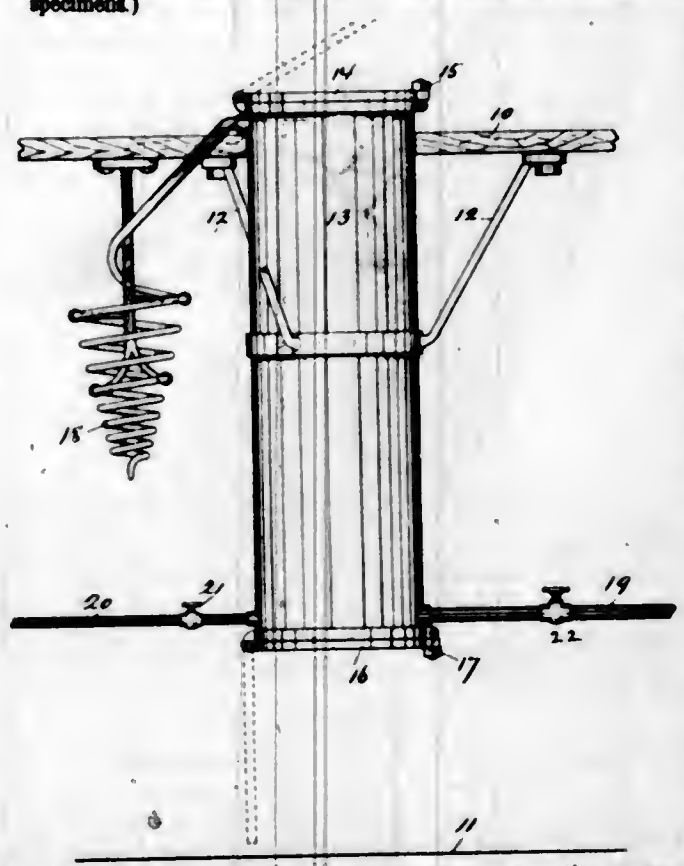
between said ends, with valves adapted to close said valve-seats, hinged in said case and arranged to swing inwardly, two links severally connected with said valves, hinged at their opposite ends to each other; a follower hinged to the links at their joint and extending in and through said sleeve, a beveled ring on said follower, and a counter-ring in said sleeve to form a valve therewith: a cross-head on the outer end of said follower, and parallel rods extending thence in guides beside said sleeve; coiled springs on said rods to constantly press said cross-head outward; a yoke to hold said follower inward; a latch to retain said yoke, an arm to hold said latch; a valve case connected with the jet-pipes, and a valve therein arranged to be held outward by the pressure in said jet-pipes, connected with said latch-holding arm and arranged to move inward with said valve and release the yoke-holding latch, all constructed and arranged substantially as shown and for the purpose specified.

606,788. IRONING-BOARD. THOMAS H. KINSMAN, St. Louis, Mo. Filed Feb. 15, 1897. Serial No. 623,468. (Model.)



Claim.—In an ironing-board, a suitable board, a pair of legs hinged at one end of the same to the under surface of the board, a toggle-lever having a short and long member connecting the legs to the under surface of the table, the toggle being connected to the legs at a point slightly below the middle of the length of the legs, whereby when the toggle is unfolded the legs will incline slightly outwardly from the vertical, and whereby upon the closing of the parts the legs will be firmly drawn toward the board by the short member of the toggle after the long member has been closed against the board, substantially as set forth.

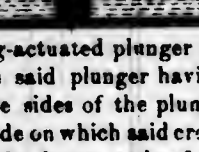
606,789. METHOD OF DISTILLING EXTRACTS. JAMES W. LATHROP, Mystic, Conn. Filed Jan. 17, 1898. Serial No. 666,982. (No specimens.)



Claim.—The described process of distillation consisting of first placing the chips to be distilled in a tight retort having connected therewith a worm still, heating the contents of said retort by steam, and introducing alcohol into said retort during the process of distillation.

606,790. PNEUMATIC TIRE. LUCIUS J. PHELPS, New Brunswick, N. J. Filed May 11, 1897. Serial No. 636,010. (No model.)

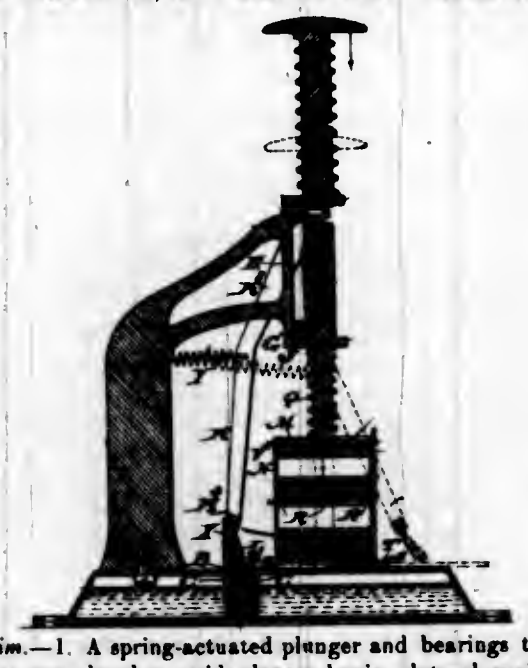
Claim.—1. A pneumatic tire made inextensible circumferentially on the opposite sides of the tire and adapted to be held upon a wheel-rim by inflation, and molded or otherwise formed with a normally inwardly projecting portion between the inextensible portions of the tire, substantially as described.



2. A pneumatic tire molded or otherwise formed with a longitudinal groove in its rim-surface formed by a normally inwardly projecting fold in the tire, and the edges of the groove rendered inextensible, substantially as described.

The pneumatic tire B having the endless bands c on opposite sides and having the normally inwardly projecting fold *d* between the bands, substantially as described.

606,791. STAMP-AFFIXER. FREDERICK QUEDNOW, Clementon, N. J. Filed Nov. 29, 1897. Serial No. 660,089. (No model.)



Claim.—1. A spring-actuated plunger and bearings therefor, a transverse cross-head on said plunger having lateral projections, a pair of arms on opposite sides of the plunger with which the said projections engage, a guide on which said cross-head has sliding movement, a pad carried by the lower ends of said arms, a hollow base directly under said plunger, a box carried by the lower end of said plunger, and a piece of absorbent material in said base and partly rising therefrom, said pad being adapted to contact with said piece, and to pass under said box and contact with the face of an envelop, &c. supported on the base.

2. A base having an unyielding pressure-surface and adapted to contain fluid, a piece of absorbent material adapted to dip into said base, a frame on the base for supporting the said piece, the back of said frame rising above said piece as a stop, a spring-controlled plunger mounted in bearings, a stamp-receptacle carried by and movable with said plunger, swinging arms mounted on the bearings of said plunger, a downwardly-projecting pad on the lower ends of said arms, and a cross-head on the plunger adapted to engage and operate said arms, said arms being movable between the stamp-receptacle and said base, and adapted to contact in normal position with said piece, and when in operation to pass over the base in contact with the face of an envelop, &c. thereon.

3. A base adapted to contain a fluid, and a piece of absorbent material dipping thereinto, an elbow rising from said base, a vertical plate connected with said elbow, a boss on said plate, a spring-pressed plunger in said boss, a stamp-receiving box having its top freely carried by said plunger, a movable head in said box, connected with said plunger, a deflected arm mounted on said boss and having a shoulder on its upper end, a cross-head on said plunger adapted to engage with said shoulder, and ride along the right-lined portion of said arm, a pad carried by the lower end of said arm, and projecting downwardly adapted to contact with said absorbent material, and sweep over said base, a spring connected with said arm for returning the same to its normal position and yielding fingers on said base elevated above the same.

4. In a stamp-affixer, the combination of a rigid hollow base having a moistening-piece rising therefrom, a guide supported by said base, a plunger mounted in said guide and having a cross-head secured thereto provided with outwardly-projecting projections, a pair of spring-actuated arms pivotally attached at their upper ends to the guide and carrying a pad at their lower ends, said projections bearing upon the arms and operating them when the plunger is depressed, and a stamp-box supported solely by and movable with the plunger.

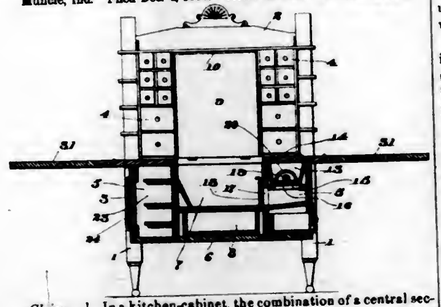
606,792. ELECTRIC RADIATOR. FREDERICK W. GUIDAS, Mount Washington, Md., assignor of one-half to Edward A. Griffith, Baltimore, Md. Filed July 22, 1897. Serial No. 645,578. (No model.)



Claim.—1. The combination in an electric heater, of a resistance, a casing surrounding the same, a block of poor heat-conducting material inclosing the back of the casing and in contact with it and having a portion of said material extending along the edges of the front to hold said casing in the block, substantially as described.

2. A car-heater comprising a casing having a partially-cylindrical back, a resistance inclosed in said casing, a reflector in the rear of the resistance and inside the casing, and a block of poor heat-conducting material in which the casing is partially embedded leaving its front mainly exposed, all substantially as described and shown.

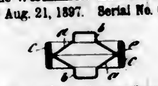
606,793. KITCHEN BAKERY-CABINET. WILLIAM S. RENNER, Muncie, Ind. Filed Dec. 4, 1897. Serial No. 660,750. (No model.)



Claim.—1. In a kitchen-cabinet, the combination of a central section, a dough-box in the upper part thereof, a movable dough-board for covering the dough-box, side sections, a flour-compartment in one of the side sections, an opening between the side section and the dough-box, compartments in the central and side sections, and hinged covers for covering the central and side sections and dough-board.

2. In a kitchen-cabinet having a central section, the combination of a dough-box situated in the upper part of said central section, a flour-compartment situated at one side thereof and provided with a screened opening at its bottom, a reciprocating sifter adapted to work back and forth upon said screened opening, and a partition between said flour-compartment and dough-box, having an opening, substantially as described.

606,794. GROOVED PULLEY. CHARLES ROCHOLL, London, England, assignor to the Westminster Manufacturing Company, Limited, same place. Filed Aug. 21, 1897. Serial No. 649,047. (No model.)

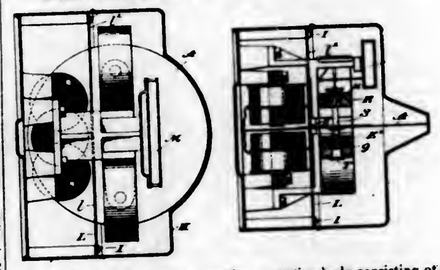


Claim.—1. As a new article of manufacture, a grooved pulley or wheel formed of two parts having opposed hollow flanges forming the periphery of the wheel and a locking-strip extending into said flanges, said flanges and inclosed locking-strip being bent to form the groove of the pulley and so that the edges of the outer walls of the flanges extend within the groove below the edges of the locking-strip, substantially as described.

2. As a new article of manufacture, a grooved pulley or wheel formed of two parts having opposed hollow flanges forming the periphery of the wheel, and a locking-ring extending into said flanges, said flanges and inclosed locking-ring being bent to form the groove of the pulley and so that the outer walls of the flanges extend within the groove below the edges of the locking-ring, substantially as described.

3. As a new article of manufacture, a grooved pulley formed of two parts having opposed hollow flanges forming the periphery of the wheel and having each a central boss *b*, and a locking-strip extending into said flanges, said flanges and inclosed locking-strip being bent to form the groove of the pulley and so that the outer walls of the flanges extend within the groove below the edges of the locking-strip, substantially as described.

606,795. ELECTRIC METER. WILLIAM STANLEY, Pittsfield, and FREDERICK DARLINGTON, Great Barrington, Mass., assignors to the Stanley Instrument Company, of Massachusetts. Filed Jan. 13, 1896. Serial No. 666,530. (No model.)

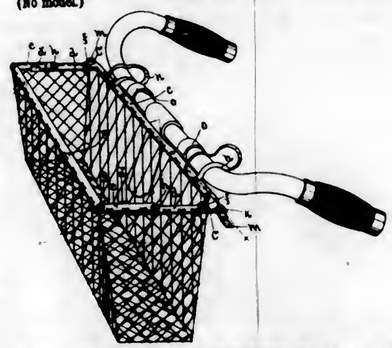


Claim.—1. Means for supporting a rotating body consisting of a permanent magnetic system having polar portions with recesses therein, a cylindrical shaft having its lower end projecting a considerable distance into the lower polar portions of said system, and the body of its upper portion being substantially at the mouth of the upper recess, and means for holding the ends of said shaft concentric with said recesses, substantially as described.

2. In an electric meter, a magnetic brake consisting of a rotating disk mounted upon the shaft to be retarded, and a permanent magnetic system having a permanent magnet provided with a soft-iron pole-piece and adjustable projections engaging with said soft-iron pole-piece, substantially as described.

3. In an electric meter, a braking device consisting of a disk mounted upon the shaft to be retarded, two permanent magnets having their like poles connected by soft-iron pole-pieces, said pole-pieces having projecting arms and adjustable magnetic projections mounted at the ends of said arms, substantially as described.

606,796. LUGGAGE-CARRIER FOR BICYCLES. FRANK M. UFFORD, Norwich, Conn. Filed Aug. 12, 1897. Serial No. 648,080. (No model.)



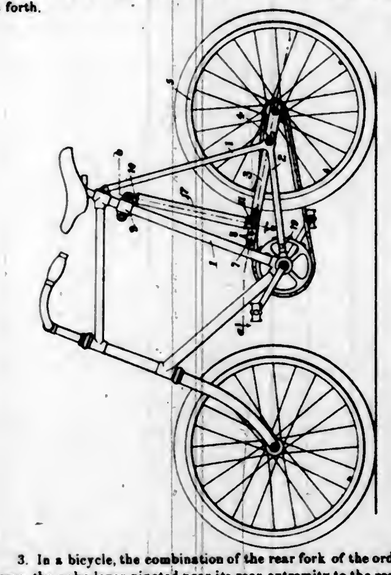
Claim.—In a luggage-carrier, in combination, a frame, and a net suspended therefrom, said frame being formed of side and end bars hinged together as set forth, each end bar being jointed midway its length to form two foldable sections, one of which sections is provided at one end with a stop *d'* and at its other end with an extension bearing pin *k*, and perforated springs secured to one of the side frames and adapted to engage and lock the said extensions when the frame is opened.

606,797. BICYCLE. JAMES R. WILSON, Bridgeport, Conn. Filed Aug. 9, 1897. Serial No. 647,617. (No model.)

Claim.—1. In a bicycle, the combination of the rear fork of the ordinary frame, with the integral lever comprising a yoke which extends within the frame around the front of the rear wheel and rigid short offset portions at the ends of said yoke and separated from the latter by intermediate cylindrical hubs, said lever being pivoted within said fork at the point where the offset portions are joined to the yoke, the rear wheel journaled in the ends of said portions, and the spring connected to the frame and to the front part of said yoke, substantially as set forth.

2. In a bicycle, the combination of the frame having the usual rear fork, the lever which has a yoke portion that extends inside the

frame around the front of the rear wheel and rigid outwardly-spread offsets which terminate the rear ends of said lever, the cylindrical hubs intermediate of said yoke and offsets and pivoted to said fork and within the same whereby clearance is afforded both for the rear wheel and the chain, the rear wheel journaled within said offsets immediately beyond said pivotal point, and the spring whose extremities are connected respectively with the forward end of said yoke and with the upper part of the bicycle-frame, substantially as set forth.



3. In a bicycle, the combination of the rear fork of the ordinary frame, the yoke-lever pivoted near its rear extremity to the rear end of said fork and inside the latter, the rear wheel journaled in the rear end of said lever immediately beyond the pivotal point thereof, the forward extremity of said yoke-lever extending inside the bicycle-frame and around the forward portion of the rear wheel and provided with a perforated extension, the plugs having threaded portions and pivoted respectively to said extension and to the upper portion of the frame, the coil-spring into whose extremities said plugs are driven, and the telescoping tubes inclosing said spring and respectively secured to said plugs, substantially as set forth.

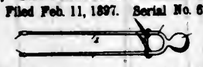
606,798. BASKET. ALDEN BIGGS, Jr., Westhampton, N. Y. Filed Feb. 18, 1898. Serial No. 670,765. (No model.)



Claim.—1. A basket, the body portion and bottom of which are composed of a spirally-wound strip of suitable material, said basket being also provided at the top thereof with a reinforcing annular strip, and side braces which are secured thereto, and which extend downwardly and across the bottom, said braces being connected with the spiral coils of which the body and bottom are formed, substantially as shown and described.

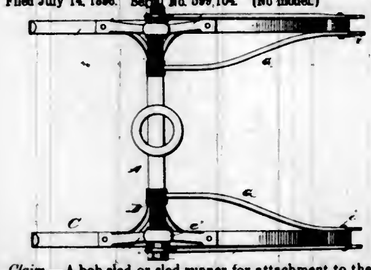
2. A basket, the body portion and bottom of which are composed of a spirally-wound strip of suitable material, said basket being also provided at the top thereof with a reinforcing annular band or strip, and said basket being provided with braces which are passed across the bottom and up the sides thereof, said braces being connected with the spiral coils of which the body and bottom are composed, and with the annular reinforcing strip or band at the top thereof, and one of said braces at the opposite sides being projected upwardly to form handles, and bent downwardly and secured to the spiral coils which form the body of the basket, substantially as shown and described.

606,799. HAT-FASTENER. WILLIAM A. CALLAHAN, Colorado Springs, Colo. Filed Feb. 11, 1897. Serial No. 623,022. (No model.)



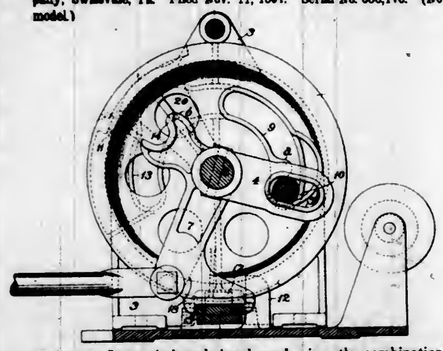
Claim.—In a hat-fastener the combination with a holding device formed of a single piece of wire bent into rectangular form with pointed or sharpened ends, and having eyes formed by the looping of the wire at the angles of the said device, adapted to spring or give slightly, of a two-pronged pin having the prongs tapering and adapted to wedge tightly when pushed entirely into the eyes or loops of the holding device, and knobs or enlargements at the extremities of the prongs substantially as specified.

606,800. BOB-SLED. NATHAN T. CANFIELD, Lynxville, Wis. Filed July 14, 1896. Serial No. 599,104. (No model.)



Claim.—A bob-sled or sled-runner for attachment to the axle of a vehicle having an axle with spindles provided with an intermediate shoulder, a runner the knee thereof having a vertical member and a diverging member with eyes, the inner eye of the knee being adapted to abut against the inner shoulder of the spindle, the eye of the vertical member carrying a sleeve which abuts against the intermediate shoulder, substantially as shown.

606,801. SWITCH AND SIGNAL MECHANISM. JAMES CHALMERS, Jr., Pittsburg, Pa., assignor to the Union Switch and Signal Company, Swissvale, Pa. Filed Nov. 11, 1897. Serial No. 658,176. (No model.)



Claim.—1. In a switch and signal mechanism, the combination of a lever, a signal-shifting mechanism, a switch-shifting mechanism, a lock for said signal and switch mechanisms and connections from the lever to the switch and signal shifting mechanisms and the lock, so arranged that the said parts may be operated in due succession by a continuous movement of the lever in the same plane, substantially as set forth.

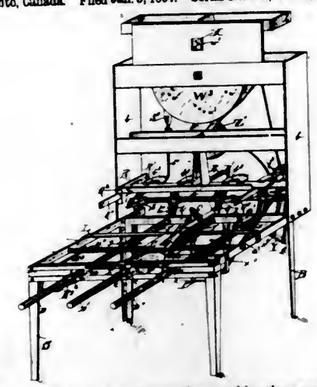
2. In a switch and signal mechanism, the combination of a shaft, driver-arms secured to said shaft, a signal-operating wheel and a switch operating arm, the wheel and arm being loosely mounted on the shaft and connections from the driving-arms to the signal-wheel and switch-arm, whereby said parts may be operated in succession in the rotation of the shaft, substantially as set forth.

3. In a switch and signal mechanism, the combination of a shaft, driver-arms secured to said shaft, a signal-operating wheel, a switch-operating arm, the wheel and arm being mounted on the shaft, a lock for preventing the movement of the wheel and arm, and connections from the driving-arms to the signal-wheel, switch-arm and lock, whereby said parts may be operated in succession on the rotation of the shaft, substantially as set forth.

4. In a switch and signal apparatus, the combination of a shaft,

slotted arms secured to said shaft, a signal-wheel loosely mounted on the shaft and provided with a slot having a pocket at one end, a pin arranged through the slots in the arms and wheel, and a switch-arm loosely mounted on the shaft and provided with a horn or projection adapted to engage the pin while moving along the slot in the wheel, substantially as set forth.

606,802. AUTOMATIC VENDING-MACHINE. GEORGE A. CLINE, Toronto, Canada. Filed Jan. 5, 1897. Serial No. 618,097. (No model.)



Claim.—1. In an automatic vending-machine the combination of a magazine, a transversely-grooved push-rod adapted to deliver the goods from the magazine, a rock-shaft, a coin-testing balance consisting of a scale-pan suspended from the rock-shaft, adapted to receive the coins after their insertion, and a counterbalance suspended from the rock-shaft to act in conjunction with the scale-pan, and a locking-bar carried by the rock-shaft adapted to normally engage the groove of the push-rod and to be upset therefrom, after the receipt by the scale-pan of the requisite operating-coin, substantially as specified.

2. In an automatic vending-machine a delivery mechanism consisting of a push-rod, a rock-shaft, an arm loosely mounted on the rock-shaft, one end pivotally connected to the push-rod and the opposite end adapted to discharge the goods from its respective magazine, and a finger carried by the rock-shaft and opposed to the end of the push-rod, whereby the rock-shaft is operated by the inthrust of the push-rod, substantially as specified.

3. In an automatic vending-machine the combination of a plurality of plungers, a tilting locking-bar normally engaging all of the plungers, a coin-operated balance to actuate the tilting bar to release the plungers after the insertion of the requisite coin, and a locking-slide to prevent the simultaneous operation of more than one plunger, substantially as specified.

4. In an automatic vending-machine a delivery mechanism consisting of a push-rod, a rock-shaft, an arm loosely mounted on the rock-shaft, one end pivotally connected to the push-rod and the opposite end adapted to discharge the goods from its respective magazine, a finger carried by the rock-shaft and opposed to the end of the push-rod, whereby the rock-shaft is operated by the inthrust of the push-rod, a tilting locking-bar normally locking the push-rod, and a coin-operated balance to actuate the locking-bar to release the plunger after the insertion of the requisite coin, substantially as specified.

5. In an automatic vending-machine, a delivery mechanism consisting of a plunger, a rock-shaft, an arm loosely mounted on the rock-shaft, one end of the arm hinged to the plunger, the opposite end of the arm hinged to a delivery-plate, a finger moving in conjunction with the rock-shaft, bearing against the adjacent end of the plunger, and means for returning the parts to their normal position after having been operated, substantially as specified.

6. In an automatic vending-machine, a delivery mechanism consisting of a plunger, a rock-shaft, an arm loosely mounted on the rock-shaft, one end pivotally connected to the adjacent end of the plunger, a delivery-plate connected to the opposite end of the arm, a finger mounted on the rock-shaft and moving in conjunction therewith, bearing against the adjacent end of the plunger, and a spring to return the parts to their normal position after having been operated, substantially as specified.

7. In an automatic vending-machine, a delivery mechanism consisting of a plunger, a rock-shaft, an arm loosely mounted on the rock-shaft, one end pivotally connected to the plunger, the opposite end pivotally connected to a delivery-plate, a finger moving in conjunction with the rock-shaft, adapted to bear against the adjacent end of the plunger and return it to its normal position, simultaneously with the return of the rock-shaft, and a spring to return the rock-shaft to its normal position after being operated, substantially as specified.

8. In an automatic vending-machine the combination of a spinning disk, having indicated on its face a series of characters to represent a game of chance, a primary delivery mechanism arranged to spin the disk during its delivery action and to instantaneously stop the spinning of the disk by its return action, substantially as specified.

9. In an automatic vending-machine the combination of a spinning disk, having indicated on its face a series of characters to represent a game of chance, a primary delivery mechanism arranged to spin the disk during its delivery action and to instantaneously stop the spinning of the disk by its return action, and a secondary delivery mechanism actuated by the stoppage of the spinning disk at a predetermined part of its revolution, substantially as specified.

10. In an automatic vending-machine the combination of a spinning disk, having indicated on its face a series of characters to represent a game of chance, a primary delivery mechanism arranged to spin the disk during its delivery action and to instantaneously stop the spinning of the disk by its return action, a secondary delivery mechanism, an intermediate connection between the spinning disk and the secondary delivery mechanism, actuated by the stoppage of the disk at a predetermined part of its revolution, substantially as specified.

11. In an automatic vending-machine the combination of a plurality of push-rods, a rock-shaft, a locking-bar carried by the rock-shaft normally engaging each of the push-rods, a scale-pan suspended from the rock-shaft, consisting of two forks, each having an inwardly-extending flange to support the operating-coin, and a lever projecting between the forks to clear the scale-pan of all substances on the insertion of a coin through the coin-receiving slot and on each operation of the machine, substantially as specified.

12. In an automatic vending-machine the combination of a plurality of push-rods, a rock-shaft, a locking-bar carried by the rock-shaft normally engaging each of the push-rods, a scale-pan suspended from the rock-shaft, consisting of two forks, each having an inwardly-extending flange to support the operating-coin, a lever projecting between the forks to clear the scale-pan of all substances, and a lever pivotally connected to the machine, adapted to be actuated by the insertion of a coin through the coin-receiving slot, and on each operation of the machine to actuate the first lever to clear the scale-pan, substantially as specified.

13. In an automatic vending-machine a coin-testing apparatus consisting of a coin-receiving slot, a pivoted lever one end of which is contiguous to the coin-receiving slot, a cam carried by the pivoted lever, a supplemental pivoted lever one end of which is engaged by the cam, and the opposite end of which is contiguous to the scale-pan of the coin-testing balance, the pivoted levers adapted to be operated by the insertion of each coin during its passage through the coin-receiving slot, substantially as specified.

14. In an automatic vending-machine a coin-testing apparatus consisting of a coin receiving slot, a pivoted lever one end of which is contiguous to the coin-receiving slot, a cam carried by the pivoted lever, a supplemental pivoted lever one end of which is engaged by the cam, and the opposite end of which is contiguous to the scale-pan of the coin-testing balance, the pivoted levers adapted to be operated by the insertion of each coin during its passage through the coin-receiving-slot, in combination with the primary delivery mechanism, released by the tilting of the scale-pan, caused by the insertion of the operating-coin, substantially as specified.

15. In an automatic vending-machine a coin-testing apparatus consisting of a pivoted scale-pan, to receive and weigh each inserted coin, a normally-locked delivery mechanism released by the operation of the scale-pan, a lever pivoted contiguous to the coin-receiving slot actuated by the insertion of the coins, and also by the action of the delivery mechanism to eject the contents of the scale-pan, substantially as specified.

16. In an automatic vending-machine a coin-testing apparatus consisting of a pivoted scale-pan, to receive and weigh each inserted coin, a normally-locked delivery mechanism released by the operation of the scale-pan, a lever pivoted contiguous to the coin-receiving slot actuated by the insertion of the coins, and a cam actuated by the delivery mechanism to operate the lever during the operation of the delivery mechanism to eject the contents of the scale-pan, substantially as specified.

17. In an automatic vending-machine, the combination of a primary delivery mechanism, a secondary delivery mechanism placed in position by the operation of the primary delivery mechanism, to be actuated by an intermediate mechanism controlled by the primary delivery mechanism, substantially as specified.

18. In an automatic vending-machine the combination of a primary delivery mechanism, a disk having a series of numbers or symbols indicated on one of its side faces, mounted on an easily-revoluble spindle revolved by the delivery action and stopped by the return action of the primary delivery mechanism, a lug carried by the spindle, a secondary delivery mechanism, an intermediate connection for the secondary delivery mechanism actuated by the lug on the stoppage of the revolution of the disk at a predetermined part of its revolution, substantially as specified.

19. In an automatic vending-machine the combination of a primary delivery mechanism, a magazine, a permanent bottom for the magazine, an opening in the bottom of the front of the magazine for the delivery of the goods, a sliding bar opposed to the opening, arms connected to the sliding bar and to the primary delivery mechanism, to allow of the primary delivery mechanism moving the sliding bar away from the opening to deliver the goods through the opening formed between the bottom of the magazine and the sliding bar, and to cause the sliding bar to return the undelivered packages of goods to their original position in the magazine on the return of the primary delivery mechanism, substantially as specified.

20. In an automatic vending-machine the combination of a plurality of plungers, a delivery mechanism operated by each plunger, a tilting locking-bar normally engaging each of the plungers, a balance to actuate the locking-bar after the insertion of the requisite coin to release the plungers, and a locking-slide consisting of a series of sections each having a spring-pressed latch adapted to engage the remaining plungers and prevent their operation while one plunger is being operated, substantially as specified.

21. In an automatic vending-machine the combination of a frame, a plurality of plungers passing through the frame, guides formed in the frame contiguous to the plungers, a locking-slide moving in the guides, consisting of a plurality of sections, one section interposed between each adjacent pair of plungers, and a spring-pressed latch carried by each section, adapted to engage the remaining plungers and prevent their operation while one plunger is being operated, substantially as specified.

22. In an automatic vending-machine the combination of a frame, a plurality of plungers passing through the frame, guides formed in the frame contiguous to the plungers, a locking-slide moving in the guides, consisting of a plurality of sections, one section interposed between each adjacent pair of plungers, a spring-pressed latch carried by each section, adapted to engage the remaining plungers and prevent their operation while one plunger is being operated, and a coin-actuated locking-bar normally engaging the plungers to prevent their operation until the insertion of the requisite coin, substantially as specified.

23. In an automatic vending-machine the combination of a frame, a plurality of plungers passing through the frame, guides formed in the frame contiguous to the plungers, a locking-slide moving in the guides, consisting of a plurality of sections, one section interposed between each adjacent pair of plungers, a spring-pressed latch carried by each section, adapted to engage the remaining plungers and prevent their operation while one plunger is being operated, and a cam for each plunger adapted to move the locking-slide sections to bring the spring-pressed latches into engagement with their respective plungers, substantially as specified.

24. In an automatic vending-machine the combination of a frame, a plurality of plungers passing through the frame, guides formed in the frame contiguous to the plungers, a locking-slide moving in the guides, consisting of a plurality of sections, one section interposed between each adjacent pair of plungers, a spring-pressed latch carried by each section, adapted to engage the remaining plungers and prevent their operation while one plunger is being operated, and a spring to return the locking-slide sections to their normal position after the return of the operated plunger to its normal position, substantially as specified.

25. In an automatic vending-machine the combination of a frame, a plurality of plungers passing through the frame, guides formed in the frame contiguous to the plungers, a locking-slide moving in the guides, consisting of a plurality of sections, one section interposed between each adjacent pair of plungers, a spring-pressed latch carried by each section, adapted to engage the remaining plungers and prevent their operation while one plunger is being operated, a coin-actuated locking-bar normally engaging the plungers to prevent their operation until the insertion of the requisite coin, and a spring to return the locking-slide sections to their normal position after the return of the operated plunger to its normal position, substantially as specified.

26. In an automatic vending-machine the combination of a frame, a plurality of plungers passing through the frame, guides formed in the frame contiguous to the plungers, a locking-slide moving in the guides, consisting of a plurality of sections, one section interposed between each adjacent pair of plungers, a spring-pressed latch carried by each section, adapted to engage the remaining plungers and prevent their operation while one plunger is being operated, a cam for each plunger adapted to move the locking-slide sections to bring the spring-pressed latches into engagement with their respective plungers, and a spring to return the locking-slide sections to their normal position after the return of the operated plunger to its normal position, substantially as specified.

27. In an automatic vending-machine the combination of a plunger provided with a cam, and a groove opposed to the cam, a locking-slide consisting of a plurality of movable sections arranged to move independently and in conjunction with each other, and to be actuated by the cam during the movement of the plunger, and a spring-pressed latch carried by each of the locking-slide sections, adapted to enter the groove in its respective plunger, substantially as specified.

28. In an automatic vending-machine, the combination of a primary delivery mechanism, a secondary delivery mechanism consisting of a spring-actuated delivery-plate, a stop to hold the delivery-plate in an operative position, a pivoted lever, a connection between the stop and the pivoted lever, and an intermediate connection between the lever and the primary delivery mechanism, substantially as specified.

29. In an automatic vending-machine, the combination of a primary delivery mechanism, a revoluble disk, a pinion-wheel moving in conjunction with the revoluble disk, a dog engaging the teeth of the pinion-wheel, and a connection between the primary delivery mechanism and the dog, to revolve the pinion-wheel and afterward to stop its motion, substantially as specified.

30. In an automatic vending-machine, the combination of a primary delivery mechanism, a revoluble disk, a pinion moving in conjunction with a revoluble disk, a pivoted dog normally engaging the teeth of the pinion-wheel, a spring to free the dog from engagement with the teeth of the pinion-wheel, and a movable stop operated by the primary delivery mechanism, to normally hold the pivoted dog in engagement with the teeth of the pinion-wheel, and to return it to its normal position after setting the pinion-wheel in motion, substantially as specified.

31. In an automatic vending-machine the combination of a primary delivery mechanism, a secondary delivery mechanism consisting of a delivery-plate, placed in position by the action of the primary delivery mechanism, a spring connected to the delivery-plate, a stop to hold the delivery-plate in its set position, a pivoted lever, a link connecting the pivoted lever and stop, a revoluble disk actuated by the primary delivery mechanism, adapted on its stoppage to operate the pivoted lever, and release the delivery-plate from the stop, substantially as specified.

32. In an automatic vending-machine, a primary delivery mechanism, consisting of a coin-controlled plunger, a rock-shaft, an arm loosely mounted on the rock-shaft, one end pivotally connected to the adjacent end of the plunger, a delivery-plate hinged to the opposite end of the arm, a finger moving in conjunction with the rock-shaft, and bearing against the adjacent end of the plunger, in combination with a secondary mechanism, consisting of an arm loosely mounted on the rock-shaft, a delivery-plate hinged to the arm, a lever actuated by the rock-shaft to set the delivery-plate, and a stop to temporarily hold the delivery-plate in its set position, substantially as specified.

33. In an automatic vending-machine, the combination of a primary delivery mechanism, consisting of a plunger, a rock-shaft, an arm loosely mounted on the rock-shaft, one end of the arm pivotally connected to the adjacent end of the plunger, a delivery-plate hinged to the opposite end of the arm, a finger moving in conjunction with the rock-shaft, adapted to bear against the adjacent end of the plunger, and a secondary delivery mechanism consisting of an arm loosely mounted on the rock-shaft, a delivery-plate hinged to the said arm, a lever actuated by the rock-shaft to set the delivery-plate in its operative position, a stop to hold the delivery-plate in its set position, a pivoted lever, a link connecting the pivoted lever and stop, and a revoluble disk actuated by the primary delivery mechanism, adapted to actuate the pivoted lever to release the delivery-plate from the stop, substantially as specified.

34. In an automatic vending-machine, the combination of a primary delivery mechanism, consisting of a plunger, a rock-shaft, an arm loosely mounted on the rock-shaft, one end of the arm pivotally connected to the adjacent end of the plunger, a delivery-plate hinged to the opposite end of the arm, a finger moving in conjunction with the rock-shaft, adapted to bear against the adjacent end of the plunger, and a secondary delivery mechanism consisting of an arm loosely mounted on the rock-shaft, a delivery-plate hinged to the said arm, a lever actuated by the rock-shaft to set the delivery-plate in its operative position, a stop to hold the delivery-plate in its set position, a pivoted lever, a link connecting the pivoted lever and stop, a revoluble disk actuated by the primary delivery mechanism, adapted to actuate the pivoted lever to release the delivery-plate from the stop, and a spring to operate the delivery-plate of the secondary delivery mechanism substantially as specified.

35. In an automatic vending-machine the combination of a delivery mechanism, a coin-testing apparatus consisting of a rock-shaft, a scale-pan connected to the rock-shaft to receive and weigh each

inserted coin, and upset the rock-shaft on the insertion of a specific coin, a lever to eject all substances contained in the scale-pan on each insertion of a coin through the coin-receiving slot, a cam operated by the primary delivery mechanism to actuate the said lever, and a locking-bar carried by the rock-shaft to normally engage the primary delivery mechanism, and to release the primary delivery mechanism on the insertion of the requisite coin, substantially as specified.

36. In an automatic vending-machine, the combination of a delivery mechanism consisting of a plurality of plungers, a rock-shaft, a plurality of arms loosely mounted on the rock-shaft, one end of each arm pivotally connected to the adjacent end of its respective plunger, a delivery-plate hinged to the opposite end of each arm, a plurality of fingers moving in conjunction with the rock-shaft, each finger adapted to bear against the adjacent end of its respective plunger, a forwardly-extending arm connected to the said rock-shaft, a cam carried by the said arm, a coin-testing apparatus consisting of a rock-shaft, a balance carried by the rock-shaft, a locking-bar connected to the rock shaft adapted to engage each of the plungers, and a lever to remove all substances from the balance actuated by the cam, substantially as specified.

37. In an automatic vending-machine, the combination of a delivery mechanism, consisting of a plurality of plungers, a rock-shaft, a plurality of arms loosely mounted on the rock-shaft, one end of each of the arms pivotally connected to the adjacent end of its respective plunger, a delivery-plate hinged to the opposite end of each of the said arms, a plurality of fingers, each finger adapted to engage the adjacent end of its respective plunger, a rock-shaft, a locking-bar carried by the rock-shaft normally engaging each of the said plungers, a coin-testing apparatus consisting of a balance connected to the rock-shaft of the locking-bar, a coin-chute to receive the coin from the coin-receiving slot, and deposit it on the scale-pan of the balance, a pivoted lever operated by the admission of the coin, and by a cam carried by the rock-shaft of the delivery mechanism, a pivoted lever, one end of which is adapted to remove all substances from the scale-pan of the balance, and the opposite end of which is actuated by the pivoted lever, substantially as specified.

38. In an automatic vending-machine, the combination of a delivery mechanism, consisting of a plurality of plungers, a rock-shaft, a plurality of arms loosely mounted on the rock-shaft, one end of each of the arms pivotally connected to the adjacent end of its respective plunger, a delivery-plate hinged to the opposite end of each of the said arms, a plurality of fingers, each finger adapted to engage the adjacent end of its respective plunger, a rock-shaft, a locking-bar carried by the rock-shaft normally engaging each of the said plungers, a coin-testing apparatus consisting of a balance connected to the rock-shaft of the locking-bar, a coin-chute to receive the coin from the coin-receiving slot, and deposit it on the scale-pan of the balance, a pivoted lever operated by the admission of the coin, and by a cam carried by the rock-shaft of the delivery mechanism, a pivoted lever, one end of which is adapted to remove all substances from the scale-pan of the balance, and the opposite end of which is engaged by a cam carried by the pivoted lever, substantially as specified.

39. In an automatic vending-machine the combination of a plurality of primary delivery mechanisms, each operated by its own push-rod, a locking-bar normally engaging each of the push-rods, a rock-shaft carrying the locking-bar, and a scale-pan connected to the rock-shaft, substantially as specified.

40. In an automatic vending-machine the combination of a plurality of primary delivery mechanisms, each operated by its own push-rod, a locking-bar normally engaging each of the push-rods, a rock-shaft carrying the locking-bar, a scale-pan connected to the rock-shaft, a pivoted lever operated by the insertion of a coin and also by the action of the primary delivery mechanism, a cam connected to the pivoted lever, a second pivoted lever, one end of which is adapted to be engaged by the said cam, and the opposite end of which is adapted to remove all substances from the scale-pan of the balance, substantially as specified.

41. In an automatic vending-machine the combination of a plurality of primary delivery mechanisms, each independently operated by its own push-rod, a locking-bar normally engaging the push-rods, a rock-shaft carrying the locking-bar, a scale-pan connected to the rock-shaft, a pivoted lever operated by the insertion of the coin, and by a cam carried by the delivery mechanism to remove all substances from the scale-pan, substantially as specified.

42. In an automatic vending-machine, the combination of a delivery mechanism, consisting of a plurality of plungers, a rock-shaft operated by each of the said plungers, a delivery-plate coacting with each plunger, the magazines, a permanent bottom for the magzines, and a removable flange for the permanent bottom, substantially as specified.

43. In an automatic vending-machine, the combination of a primary delivery mechanism, a spindle journaled in the framework, a pinion and a disk mounted on the spindle, a pawl engaging with the teeth of the pinion, a supplemental tooth revolving with the spindle, a trip-dog pivoted to the pawl, adapted to engage with the supplemental tooth, a pivoted lever engaging with the trip-dog, adapted to operate a secondary delivery mechanism, a primary delivery mechanism, and means connected to the primary delivery mechanism to operate the pawl, substantially as specified.

44. In an automatic vending-machine, the combination of a primary delivery mechanism, a vertically-sliding plate operated by the primary delivery mechanism, cams connected to the sliding plate, a laterally-moving plate, cams connected to the laterally-moving plate, engaging the cams on the sliding plate, a stop carried by the laterally-moving plate, a pawl normally resting on the said stop, a spring to actuate the pawl, a pinion engaged by the said pawl, a spindle on which the pinion is rigidly mounted, a disk mounted on the said spindle, a trip-dog pivotally connected to the pawl, adapted to be engaged by a tooth on the said spindle, and a stop to limit the movement of the pawl and return it to its normal position after having been actuated, substantially as specified.

45. In an automatic vending-machine, the combination of a primary delivery mechanism, a vertically-sliding plate operated by the primary delivery mechanism, cams connected to the sliding plate, a laterally-moving plate, cams connected to the laterally-moving plate, engaging the cams on the sliding plate, a stop carried by the laterally-moving plate, a pawl normally resting on the said stop, a spring to actuate the pawl, a pinion engaged by the said pawl, a spindle on which the pinion is rigidly mounted, a disk mounted on the said spindle, a trip-dog pivotally connected to the pawl, adapted to be engaged by a tooth on the said spindle, a stop to limit the movement of the pawl and return it to its normal position after having been actuated, a pivoted lever engaged by the trip-dog, a secondary delivery mechanism, consisting of a delivery-plate held in an operative position by a stop, a link connected to the said stop and pivoted lever, and a spring to actuate the stop, substantially as specified.

46. In an automatic vending-machine, the combination of a primary delivery mechanism, a vertically-sliding plate operated by the primary delivery mechanism, cams connected to the sliding plate, a laterally-moving plate, cams connected to the laterally-moving plate, engaging the cams on the sliding plate, a stop carried by the laterally-moving plate, a pawl normally resting on the said stop, a spring to actuate the pawl, a pinion engaged by the said pawl, a spindle on which the pinion is rigidly mounted, a disk mounted on the said spindle, a trip dog pivotally connected to the pawl, adapted to be engaged by a tooth on the said spindle, a stop to limit the movement of the pawl and return it to its normal position after having been actuated, a pivoted lever engaged by the trip-dog, a secondary delivery mechanism, consisting of a delivery-plate held in an operative position by a stop, a link connected to the said stop and pivoted lever, a spring to actuate the stop, a gong, and a hammer actuated by the return of the delivery-plate to sound the gong, substantially as specified.

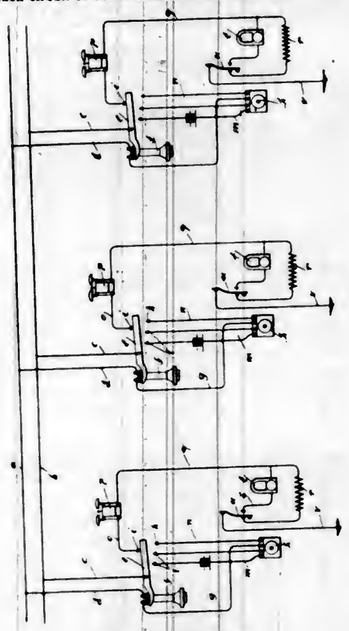
47. In an automatic vending-machine, the combination of a primary delivery mechanism, consisting of a plunger, a rock-shaft actuated by the plunger, and a secondary delivery mechanism consisting of an arm loosely mounted on the rock-shaft, a delivery-plate hinged to the arm, a lever pivotally connected to the framework, a lever moving in conjunction with the rock-shaft, a link connecting together the said levers, and a claw connected to the first lever to draw backward the arm and delivery-plate, substantially as specified.

48. In an automatic vending-machine, the combination of a primary delivery mechanism, consisting of a plunger, a rock-shaft actuated by the plunger, and a secondary delivery mechanism consisting of an arm loosely mounted on the rock-shaft, a delivery-plate hinged to the arm, a lever pivotally connected to the framework, a lever moving in conjunction with the rock-shaft, a link connecting together the said levers, a claw connected to the first lever to draw backward the arm and delivery-plate, and a spring to operate the delivery-plate, substantially as specified.

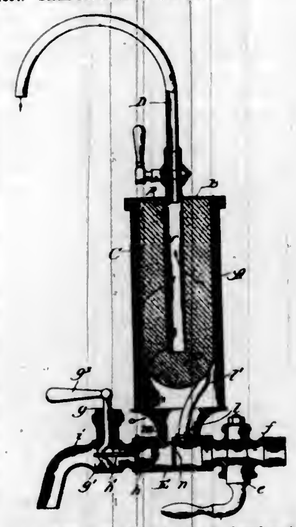
606,803. TELEPHONE SYSTEM. BURTON R. DODGE, Post Mill Village, Vt. Filed June 17, 1897. Serial No. 641,140. (No model.)

Claim.—1. A party-line telephone system having two metallic main leads and a plurality of stations, each station having a talking-circuit, a signaling-circuit and a telephone-switch alternately closing the circuits, the signaling-circuit comprising a signal-bell, a generator and a resistance, the resistance being in parallel with the generator and in series with the bell, and the signaling-circuit also comprising a switch for normally holding the resistance in the closed circuit and capable of throwing the bell in such circuit to the exclusion of the resistance.

2. A party-line telephone system having two main metallic leads and a plurality of stations, each station comprising a talking-circuit, a signaling-circuit, and a telephone-switch alternately closing the circuits, the signaling-circuit having a ground-tap and the signaling-circuit also having a signaling-bell, a generator and a resistance, the resistance being in parallel with the generator and in series with the bell, and the talking-circuit also having a switch for normally holding the resistance in the closed circuit and capable of throwing the bell into such circuit to the exclusion of the resistance.



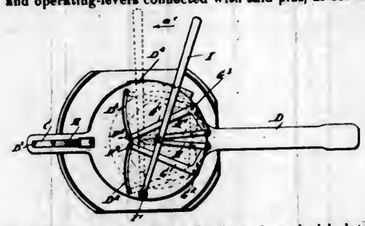
606,804. WATER-FILTER. OLAF EASTMAN, Chicago, Ill. Filed Sept. 1, 1897. Serial No. 650,258. (No model.)



Claim.—In a self-cleaning filter having a chamber A containing a filtering medium C, the combination with said chamber of a faucet device for unfiltered water comprising a tube E containing a partition *n* flanked by openings *m*, *l*, a valve *h* at one side of said partition for controlling the overflow of unfiltered water and a valve *e* at the opposite side of said partition for controlling the supply of water to said chamber, substantially as described.

606,805. CAN-OPENER. FRANK R. GOWEN, Norris, Colo. Filed July 23, 1897. Serial No. 646,332. (No model.)

Claim.—1. A can-opener, provided with a hand-lever formed with slots, a flexible cutter fastened between its ends to said lever and having its free ends provided with pins arranged to move in said slots, and operating-levers connected with said pins, as set forth.



2. A can-opener, provided with a lever formed with slots, a flexible cutter secured between its ends to said lever, bell-crank levers connected through said slots with the free ends of said cutter, and a lever for operating said bell-crank levers, as set forth.

3. A can-opener, provided with a hand-lever D formed with radial slots, a flexible cutter in the form of a band secured between its ends to the under side of said lever and having its ends formed with upwardly-extending pins adapted to move in said slots, a bell-crank lever secured to each pin, and a lever I pivoted to the lever D and connected with said bell-crank levers, as and for the purpose set forth.

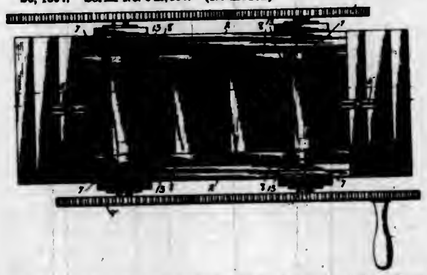
4. A can-opener provided with a hand-lever, a flexible cutter secured to said lever, levers connected with the ends of said cutter to move the same, and means for moving said last-named levers simultaneously, as set forth.

5. A can-opener, consisting of a base formed with a plurality of concentric circles all in the same horizontal plane, a standard on said base and provided with a plurality of recesses on one of its side edges, and a hand-lever carrying the cutter, said lever being formed with an opening by which it is received on said standard to rest in any one of said recesses, and a spring secured to said lever and extending in said opening, said spring being adapted to press against the side of said standard opposite the recessed side, as set forth.

6. A can-opener provided with a hand-lever formed with slots, a flexible cutter secured between its ends to the under side of said lever, bell-crank levers pivoted to the upper side of the first-named lever and connected through said slots with the free ends of said cutter, and a lever I also pivoted to the first-named lever and connected with said bell-crank levers, said lever I being provided with a spring-pressed tooth and the first-named lever being formed with a series of notches to receive said tooth and hold the lever I in adjusted position, as set forth.

7. In a can-opener, the combination with the standard and its base, of the hand-lever connected with said standard and adjustable at its point of connection to and from said base, a flexible cutter secured between its ends to said hand-lever and having its ends free to move to and from each other, and levers mounted upon said hand-lever for adjusting the said ends and locking them in adjusted position, as set forth.

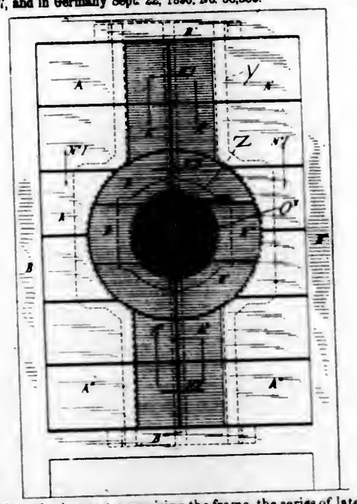
606,806. CHURN. JOHN LIEBLANG, Amityville, N. Y. Filed June 26, 1897. Serial No. 642,467. (No model.)



Claim.—An improved multiple-dasher churn, consisting of a receptacle for cream, a detachable cover therefor, spindles projected through the side walls of said receptacle, rotatable dashers secured upon the opposite ends of said inwardly-projected spindles, means for rigidly securing said dashers upon said spindles, a gear-pinion secured upon the exterior ends of each of three of said spindles, a rotatable gear-wheel secured upon a spindle projected from one of the side walls of the cream-receptacle the said gear-wheel adapted to engage with the adjacent gear-pinion and the pinions upon the opposite side of the casing adapted to engage with each other, the gearing so arranged as that the rotation of the gear-wheel will effect the opposite

rotation of the dashers, the whole constructed, arranged and adapted for operation, substantially as herein shown and described.

606,807. **TARGET.** GIUSEPPE DI PAOLO MAGINI and SILVESTRO FOLLI, Florence, and ERCOLE ANTICO, Cagliari, Italy. Filed June 28, 1895. Serial No. 554,370. (No model.) Patented in Italy Jan. 29, 1894, No. 35,696, and Aug. 15, 1894, No. 37,017; in Belgium May 24, 1895, No. 115,745; in Hungary June 8, 1895, No. 33,265/2,917; in Austria June 25, 1895, No. 2,315; in England July 13, 1895, No. 9,968; in France Sept. 2, 1895, No. 247,213; in Switzerland Jan. 15, 1896, No. 10,597, and in Germany Sept. 22, 1896, No. 88,539.

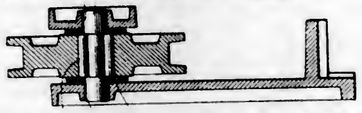


Claim.—1. A target comprising the frame, the series of laterally-swinging main shutters hinged thereto and the counter-shutters hinged to the frame in rear of the main shutters, each counter-shutter being arranged to be operated by any one of a series of main shutters, and signal-flags carried by the counter-shutters, substantially as described.

2. A target comprising the frame, the outer main shutters, the inner main shutters located in a plane in rear of that of the main shutters, the counter-shutters arranged to control a series of the outer main shutters, said counter-shutters having extensions arranged to be operated by the inner shutters and the signal-flags carried by said counter-shutters, substantially as described.

3. A target comprising the frame, the outer main shutters, the inner main shutters located in a plane in rear of that of the outer shutters, the central bull's-eye located in a plane in rear of the inner shutters, the counter-shutters arranged to be operated by sets of main shutters, the signal-flags carried by the counter shutters, and the signal-flag arranged to be operated by the bull's-eye, substantially as described.

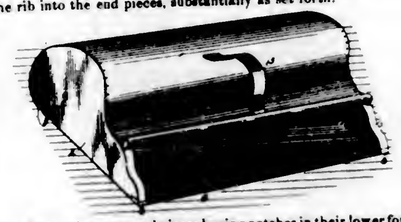
606,808. **DOOR-HANGER.** VAN ZANDT M. MOORE, Cleveland, Ohio, assignor to the Moore Manufacturing Company, same place. Filed Feb. 23, 1898. Serial No. 671,231. (No model.)



Claim.—In a door-hanger, the combination of two parallel plates, containing horizontal slots, one of said plates being adapted to be secured to a door, with an axle whose ends lie and are movable in said slots, and whose middle part is of smaller diameter than the ends, a plurality of antifriction-rollers which encircle the reduced part of said axle, a wheel which embraces and is mounted upon said rollers, and two washers embracing the axle and lying between the said plates and the wheel, substantially as specified.

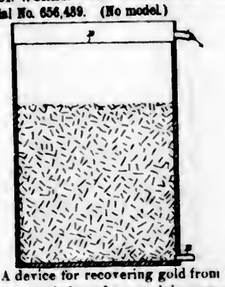
606,809. **DUST-PAN.** JORDAN M. OURSLER, Council Bluffs, Iowa. Filed Dec. 21, 1897. Serial No. 662,837. (No model.)

Claim.—1. A dust-pan, comprising end pieces having notches formed in their lower forward ends, a rib having its end portions fitted into the said notches, and having the intermediate portions beveled upwardly and rearwardly from the front edge, a sheet-metal-body portion bent around the edges of the end pieces and secured thereto, and having its lower forward edge underlapping the said rib, and fastenings passing upwardly through the underlapping edge portions of the rib into the end pieces, substantially as set forth.



2. In a dust-pan, end pieces having notches in their lower forward edges, a rib having its terminal portions fitted in the notches, and the intermediate portion beveled upwardly and rearwardly, a sheet-metal body bent around the end pieces and secured to the edges thereof, and having its lower forward edge portion underlapping the rib and secured thereto, the pan comprising a rear portion of approximately cylindrical form, and a front portion having its upper and lower walls converging, and a handle applied to the contracted part in advance of the rear portion to cause an upward tilting of the pan when lifting it by means of the handle, substantially as specified.

606,810. **RECOVERY OF GOLD FROM WASTE SOLUTIONS OF CHLORINATION-WORKS.** JOHN W. PACK, Berkeley, Cal. Filed Oct. 27, 1897. Serial No. 656,489. (No model.)



Claim.—1. A device for recovering gold from waste solutions of chlorination-works, consisting of a containing vessel having metallic aluminium disposed therein, an inlet-passage at the lower portion and an outlet-passage at the upper portion of said vessel whereby the solution is caused to flow upwardly through the interposed metal, and a means above said metal and between the same and the outlet-passage, adapted to arrest and collect the fine precipitated gold from the solution which has passed through the metal and prevent its passing off with the liquid.

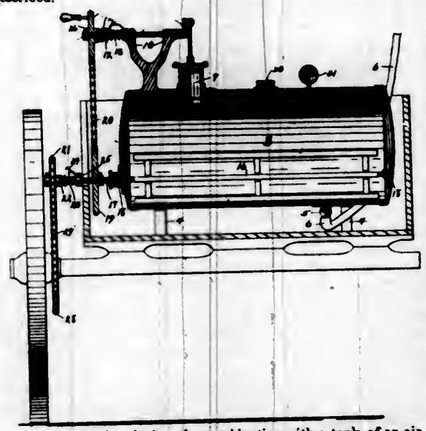
2. A means for recovering gold from waste solutions of chlorination-works, consisting of a tank having an inlet-passage at the lower portion and an outlet-passage at the upper portion and having metallic aluminium contained therein, and intermediate between the inlet and outlet passages of the tank, and a filter fixed within the tank between the metal and the outlet-passage and having its lower side coated with a substance which will arrest the fine precipitated gold and prevent it from passing off with the liquid.

3. A means for recovering gold from waste solutions of chlorination-works, consisting of a tank with inlet and outlet passages for the solution, metallic aluminium placed within the tank in the line of flow of the solution, and a filter placed between the metal and the outlet, said filter having a coating of an iron salt upon the surface against which the current impinges.

606,811. **SPRAYING DEVICE.** JAMES H. POTTENGER, Franklin, Ind. Filed Dec. 18, 1897. Serial No. 662,424. (No model.)

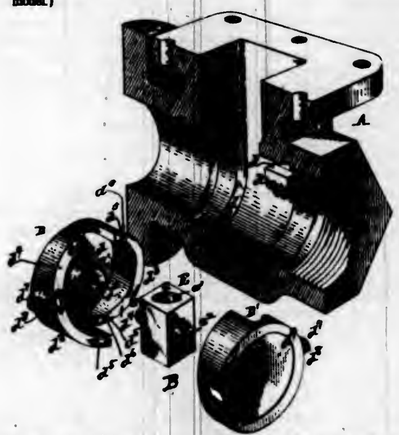
Claim.—1. In a spraying device, the combination with a tank adapted to be detachably mounted upon any suitable truck, of an air-pump arranged to force air into said tank, intermediate connecting mechanism between said truck and pump whereby the movement of the truck operates the pump, means for disengaging said pump from the truck, and means for operating the pump by hand, substantially as described.

2. In a spraying device, the combination with a tank adapted to be detachably mounted upon any suitable truck, of an air-pump arranged to force air into said tank, a mechanical stirrer mounted within said tank, intermediate connecting mechanism between the stirrer and the pump whereby they may be operated simultaneously, means for allowing the stirrer and pump to be operated independently, and intermediate connecting means between the said parts and the truck whereby they may be operated thereby, substantially as described.



3. In a spraying device, the combination with a tank, of an air-pump arranged to force air into said tank, a shaft provided with means for operating said pump, a pulley mounted on said shaft, a clutch carried by the shaft and arranged to normally engage said pulley, means for holding said clutch out of engagement with the pulley, a stirrer rotatably mounted within the tank, a pulley mounted on the stirrer-shaft and connected by a suitable belt with the first-mentioned pulley, a second pulley rotatably mounted upon the stirrer-shaft, a clutch carried by said shaft and arranged to normally engage said second pulley, and means for holding said clutch out of engagement with said pulley, all combined and arranged substantially as and for the purpose set forth.

606,812. **STRAIGHTWAY OR GATE VALVE.** SAMUEL G. REED, Chelsea, Mass., assignor to the Crosby Steam Gage and Valve Company, Boston, Mass. Filed Jan. 9, 1897. Serial No. 618,634. (No model.)

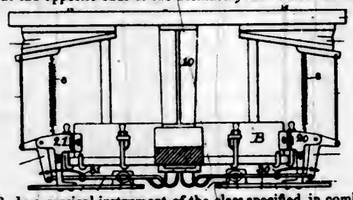


Claim.—1. A valve, consisting of the parts, D, E, D', in combination with the valve stem, F, as set forth.

2. The valve consisting of separable parts having meeting edges, such meeting edges being transversely oblique to the seating-faces of the valve on transverse radial lines, as set forth.

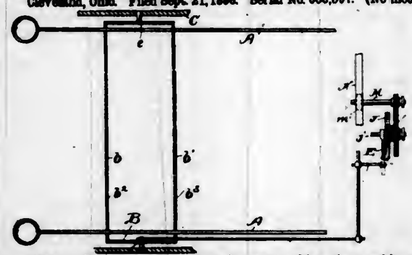
606,813. **DEVICE FOR STRINGED MUSICAL INSTRUMENTS.** WILLIAM S. REED, Leominster, Mass., assignor to the American Automatic Banjo Company, of New Jersey. Filed Sept. 22, 1897. Serial No. 653,512. (No model.) Patented in England Aug. 3, 1896, No. 17,616, and in France Aug. 3, 1896, No. 256,580.

Claim.—1. In a musical instrument of the class specified, in combination with a picker and a guiding-cam therefor, a pivotally-mounted lever for reciprocating the picker, and a controller carried by the lever and engaging with the picker to press it laterally in opposite directions at the opposite ends of the oscillatory movements of the lever.



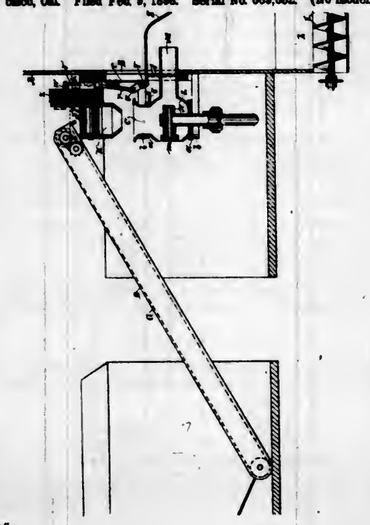
2. In a musical instrument of the class specified, in combination with the picker and a guiding-cam therefor, the cam being provided with an approximately oval cam-groove with which the picker engages, means for reciprocating the picker and for guiding its cam-engaging projection continuously in one direction around the oval path of its groove, consisting of an oscillating lever operatively connected with the finger, and of a resilient controller mounted upon the lever and engaging with the picker-finger; the controller being so disposed upon the lever that the angular movement of the latter serves to press the picker laterally in one direction at one end of the stroke of the lever, and in the opposite direction at the other end of that stroke.

606,814. **KEY-ACTUATED EQUALIZING-BAR.** CHARLES SEARS, Cleveland, Ohio. Filed Sept. 21, 1896. Serial No. 606,597. (No model.)



Claim.—In a type-writer or analogous machine, the combination of a pivoted frame having two notched bars on opposite sides of the pivot, the notches in one bar being complementary to the notches in the other bar, with a plurality of operating-levers extended across said bars and adapted to engage with them, substantially as and for the purpose specified.

606,815. **MECHANICAL STOKER.** FRED A. STEVENS, San Francisco, Cal. Filed Feb. 9, 1898. Serial No. 669,632. (No model.)



Claim.—1. A mechanical stoker for furnaces, consisting of a hopper or receiver into which the fuel is deposited, a chamber below said receiver and a connecting-passage through which the fuel passes into the chamber, a pipe leading from said chamber into the furnace, tubes connecting with the chamber adapted to deliver air and steam into the furnace with the fuel, and a mechanism whereby the feed-chamber and discharge-pipe are oscillated transversely.

2. A mechanical stoker consisting of a vertically-journaled chamber having air and steam passages opening into it from the rear, a discharge-pipe leading from the chamber into the furnace, means for oscillating said vertical chamber about its journals, and a receiving hopper mechanism through which fuel is delivered into the chamber.

3. A mechanical stoker consisting of a vertically-journaled chamber standing in front of the fire-box, having a pipe projecting therefrom and delivering into the fire-box, steam and air passages delivering into said chamber and through the discharge-pipe, a mechanism by which the chamber and pipe are oscillated transversely, a receiving-passage above the chamber and a crushing device through which fuel is passed and delivered into the hopper and chamber.

4. A device for feeding fuel to furnaces consisting of a vertically-journaled transversely-oscillating chamber having air and steam pipes connecting therewith and a delivery-pipe opening into the fire-box, a crushing mechanism, means for delivering the fuel thereto, means for delivering the fuel from said crusher into the chamber whereby it is discharged with the air and steam into the fire-box and distributed from side to side thereof, and a vertically-oscillating apron projecting into the fire-box above the supply-pipe or passage whereby the fuel delivered into the fire-box is distributed from the front to the rear end thereof.

5. In a device for feeding fuel to furnaces, a horizontally-oscillating feed-pipe discharging into the furnace, with mechanism whereby it is moved from side to side in combination with a vertically-oscillating apron by which the fuel thus delivered is deflected and deposited from the front to the rear end of the furnace.

6. In an apparatus for feeding fuel to furnaces, a horizontally-oscillating delivery-pipe opening into the furnace, in combination with a vertically-oscillating deflecting-apron whereby the fuel is constantly delivered from side to side and from end to end of the furnace, mechanism by which the fuel is crushed and supplied to the delivery apparatus, a shaft and gearing connecting with the movable supply and distributing devices whereby they are actuated in unison.

7. In a device for feeding fuel to furnaces, the combination of a transversely-oscillating feeder and a vertically-oscillating deflector by which the fuel is distributed from side to side and end to end of the furnace, a vertically-journaled crank-shaft with rod connecting it with the journaled feed-pipe, a horizontal shaft carrying the deflector, a main shaft journaled across the front of the furnace and mechanism by which it is rotated, and gearing carried by said shaft whereby the distributer and deflector are oscillated at right angles with each other and in unison.

8. In a fuel-feeding device for furnaces, a vertically-journaled chamber and feed-pipe leading therefrom to the furnace, means for supplying air and steam to said feed device, means for oscillating it transversely, a horizontally-journaled deflector and means for oscillating it vertically and in unison with the oscillations of the feeder, a crushing device through which the fuel is passed to the feeder and a conveyer discharging into said crusher having its receiving end so placed as to continuously bring the fuel to the crusher, a main driving-shaft and mechanism connecting the shaft with the conveyer, the crusher the feeder, and the deflector, whereby all are actuated in unison.

9. A fuel-feeding device for furnaces of the character described, and comprising a chamber with a feed-pipe leading therefrom to the furnace, means for supplying air and steam to said feed-pipe, a segmental ash-pan situated below the fire-box, an endless screw fitting and turnable within the ash-pan, a main power-shaft through which motion is communicated to the feeding and deflecting mechanism and also to the endless screw, to continuously feed the fuel into the furnace and discharge the ashes therefrom.

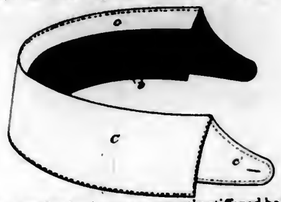
10. In a fuel-feeding device of the character described, an oscillating distributing chamber and pipe, steam and air jets and a supplemental oil-jet connection whereby a fire may be maintained and steam raised.

606,816. PICTURE-FRAME HANGER. JAMES R. TURNER, Coudersport, Pa. Filed Aug. 4, 1897. Serial No. 647,108. (No model.)



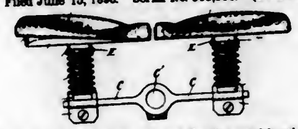
Claim.—The herein-described frame-hanger, comprising a pair of bars which are telescopically connected, the lower bar engaging the lower portion of the frame, a set screw for holding the bars in positive engagement with each other, a link rigidly attached to the upper cross-bar of the frame, a slide adjustably connected to the upper bar, and means for pivotally connecting the link and slide, substantially as shown and for the purpose set forth.

606,817. COLLAR AND CUFF. THEODORE R. WEIDEMANN, West Hoboken, N. J. Filed Aug. 12, 1897. Serial No. 648,075. (No model.)



Claim.—A collar having a permanently-stiffened body comprising an upper and an under band and provided with a facing of finished leather on the outer surface of the upper band and on the exposed ends of the lower band, the said facing extending over onto the lower band so as to protect the same and form a durable connection between the two bands.

606,818. BICYCLE-SADDLE. WILLIAM J. BEST, Grand Rapids, Mich. Filed June 15, 1896. Serial No. 595,590. (No model.)

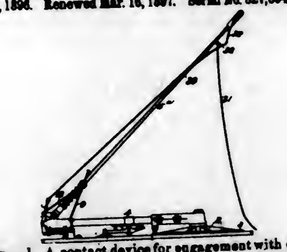


Claim.—1. In a divided bicycle-saddle, the combination with the separate seat divisions, of a transverse bar for each of the same, each of said bars having upturned ends engaging the sides of the seat divisions, respectively, an adjustable means for attaching one side only of each seat division adjustably to the adjacent upturned end of said transverse bar, whereby the angle of inclination transversely of each seat division is independently adjustable, prop-plates secured to said support and engaging the rear ends of said seat divisions, and means for attaching said rear ends adjustably to said prop-plates and for holding the same rigidly in adjusted position, substantially as shown and described.

2. In a bicycle-saddle, in combination, a divided seat, transverse bars beneath said divisions, slotted upturned ends on said bars, bolts passing through said slots, and securing said bars to said seat, U-shaped springs secured to said bars, prop-plates having slots, secured to said springs, and bolts securing said seat to said plates, substantially as described.

3. The combination of a divided seat, transverse bars beneath said seat, slotted upturned ends on said bars, bolts securing said seat to said ends, U-shaped springs secured to said bars, slotted prop-plates secured to said springs, bolts securing said seat to said plates, spiral springs, clasps on said springs engaging said U-shaped springs and longitudinally adjustable thereon, a transverse bar, and clips securing said bar to said U-shaped springs, substantially as described.

606,819. CONTACT DEVICE FOR ELECTRICALLY-PROPELLED VEHICLES. HARRY P. DAVIS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Apr. 6, 1896. Renewed Mar. 16, 1897. Serial No. 627,894. (No model.)



Claim.—1. A contact device for engagement with overhead electric conductors, comprising a roller, a supporting head or frame therefor, formed of two sheet-metal strips of different shape rigidly fastened together and provided with suitable bearings for the roller, laterally-extending guard and brace rods and curved, tapering, sheet-metal plates forming continuations of the contact-surface of the roller.

2. A supporting-arm provided at one end with a contact-head comprising a roller, a supporting-frame therefor constructed of a plurality of sheet-metal strips riveted together to form an open-work structure and provided with suitable bearings for the roller, laterally-extending guard and brace rods and curved sheet metal plates supported by said frame and brace-rods and constituting continuations of the contact-surface of the roller.

3. The combination with a contact-supporting arm, a reversible support to which said arm is pivoted or hinged so as to move in a vertical plane and a coiled spring surrounding said arm near one end thereof, of a freely-movable head mounted on said arm above the spring, tension-rods extending from said head to the reversible support and check-rods extending from said support through the head and provided with stops for limiting the upward movement of the supporting-arm.

4. The combination with a contact device for engagement with overhead conductors, a supporting-arm therefor pivoted or hinged to move in a vertical plane, a supporting-base for said arm pivoted to swing in a horizontal plane, a coiled spring surrounding said arm near the lower end thereof, a movable head mounted on the arm above the spring, a pair of tension-rods extending from said head to the horizontally-movable supporting-base and at an angle to the supporting-arm, and a pair check-rods loosely fastened at one end to the horizontally-movable supporting-base, extending through the movable head at an angle to the supporting-arm and provided with stops for engagement with said head to limit the upward movement of the supporting-arm.

5. A reversible support for electric-railway contact devices provided with a locking-bolt, in combination with a locking-head comprising a pair of dogs extending inwardly toward each other and means for yieldingly holding said dogs in position to be engaged by the locking-bolt.

6. A reversible support for electric-railway contact devices provided with a spring-actuated locking-bolt at one end thereof, in combination with a stationary locking-head comprising a pair of pivoted dogs spaced apart for the reception of the locking-bolt between their inner ends and provided with auxiliary projections or teeth for engagement with the end of the locking-bolt.

7. A locking-head comprising a casting having an upper and a lower plate spaced apart, a pair of double-toothed dogs pivoted between such plates and projecting inwardly toward each other, and means for yieldingly retaining them in their normal position.

8. A locking-head comprising two plates separated by an intervening space, a pair of dogs pivoted in said space and projecting inwardly toward each other, and a spring holding said dogs yieldingly in normal position.

9. A reversible support for electric-railway contact devices, in combination with mechanism for locking said support in position, portions of said mechanism being located respectively on the car-roof and on the reversible support and each having a movable member.

10. A reversible support for electric-railway contact devices having a lock or latch member which is actuated to release the support, in combination with a member attached to the car-roof which is actuated to lock the support in position.

11. A lock for reversible current-collecting devices comprising a pair of movable dogs and a coöperating bolt.

12. A lock for reversible current-collecting devices comprising two coöperating members each of which has a movable part and a spring against which said movable part rests.

13. Means for locking a reversible support for electric-railway contact devices in position comprising jaws and a coöperating, spring-actuated bolt, in combination with means for withdrawing the bolt from the jaws.

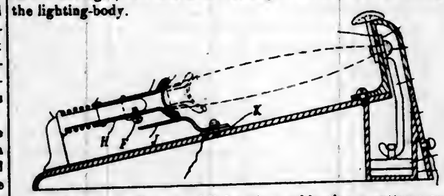
14. The combination with a reversible support for electric-railway contact devices, of a spring-actuated locking member supported thereby and two stationary members having spring-actuated parts with which said first-named member engages.

15. A reversible support for electric-railway contact devices, in combination with automatically-operated means for locking the support in either of two positions and means connected with the contact device for unlocking said support.

606,820. MACHINE FOR CUTTING AND LIGHTING CIGARS. EDWARD A. JOHNSTON, Chicago, Ill. Filed July 21, 1897. Serial No. 645,484. (No model.)

Claim.—1. In a cigar clipper and lighter in combination, a clipping mechanism, a body adapted to be heated to the desired temperature for lighting a cigar, a holder to hold the cigar in contact with or in proximity to the body to be heated, and means for actuating the clipper and heating the lighting-body.

2. In a cigar clipper and lighter in combination, a cutter, a holder for one end of the cigar, electric wires, a lighting-body at the other end of the cigar, with means for sending an electric current through the lighting-body.



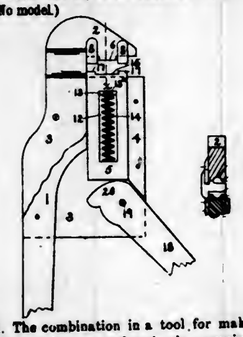
3. In a cigar clipper and lighter in combination, a cutter, a support for the end of the cigar to be cut, located in proximity to the cutter, a holder for the other end of the cigar, a body carried thereby and adapted to be heated to a lighting temperature by an electric current when the cigar is placed in the holder.

4. In a cigar lighter and clipper, the combination of a cutting device, a supporting device, a lighting-body, and means for heating the lighted body at one end of the cigar and for drawing the air through the other end of the cigar.

5. In a cigar clipper and lighter, electric connections, a lighter, a support or supports for the butt-end of the cigar, by the movement of which a circuit is formed and the lighting device heated and means for clipping the cigar and drawing a current of air through it.

6. In a cigar clipper and lighter the combination of an electrically-heated body for lighting the cigar, the clipping device and the piston acting in conjunction therewith for the purpose specified.

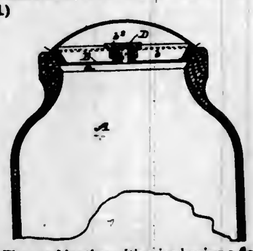
606,821. TOOL FOR MAKING FENCES. DEXTER J. JONES, Cleveland, Ohio. Filed June 26, 1896. Renewed May 27, 1898. Serial No. 681,955. (No model.)



Claim.—1. The combination in a tool for making fences, of a fixed jaw provided with a grooved projection, a spring-actuated plunger, a movable jaw grooved and having projections at one end of said plunger, and means for actuating said plunger against the resiliency of the spring, substantially as and for the purpose set forth.

2. The combination in a tool for making fences, of a fixed jaw provided with a grooved projection, a spring-actuated plunger, a movable jaw grooved and having projections at one end of said plunger, and a cam-headed lever arranged to actuate said plunger against the resiliency of the spring, substantially as and for the purpose specified.

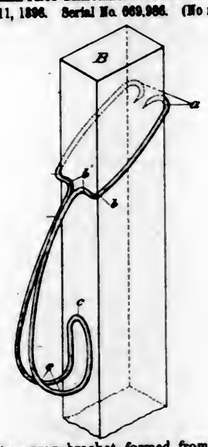
606,822. PRESERVE-JAR AND COVER THEREFOR. ALBERT LEGRAND, Manchester, N. H. Filed Oct. 9, 1897. Serial No. 654,675. (No model.)



Claim.—The combination with a jar having a flaring mouth, of a cover composed of a disk and an annular upwardly and outwardly inclined flange surrounded by a gasket, a vent in said cover, a screw-cap designed to close the same, and a handle secured at its opposite

ends to the upper edge of the flange whereby said flange may be sprung slightly to facilitate the removal of the cover from the jar, substantially as specified.

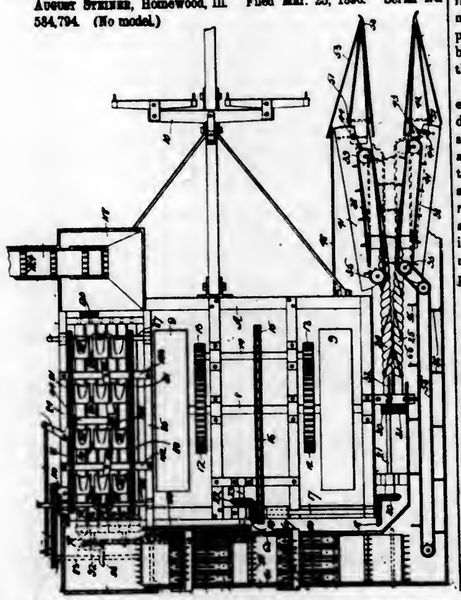
606,828. TREE-PROP BRACKET. GEORGE S. MYERS, Riverside, Cal. Filed Feb. 11, 1898. Serial No. 669,966. (No model.)



Claim.—1. A tree-prop bracket, formed from a single piece of wire, having sharp ends the wire being bent to form in the rear end thereof a loop adapted to encircle the standard and the ends to engage with and pierce the rear edge of the standard, whereby the same is adjustable thereon, and to form in the front edge thereof a pocket curving downwardly, inwardly then upwardly adapted to receive and support the limb of the tree; the part thereof forming the connection between the loop and pocket adapted to pass over the supported limb.

2. A tree-prop bracket, formed of a single piece of wire, sharp at the ends, bent in its central portion to form a depending pocket to receive and support the limb of a tree, the top of the pocket adapted to pass over the supported limb and bent at its rear ends into an adjustable loop to encircle a standard, the ends of the wire adapted to pierce the standard on the side opposite to the pocket, substantially as shown and described.

606,824. CORN STRIPPING AND HUSKING MECHANISM. AUGUST STEINER, Homewood, Ill. Filed Mar. 25, 1896. Serial No. 584,794. (No model.)



Claim.—1. In a corn harvester and husker, a main frame, an axle journaled therein, traction-wheels mounted on said axle, ear-detaching devices arranged in said main frame, alongside the traction-wheel on one side of the machine but on the outside of such wheel, said ear-detaching device extending longitudinally of the machine, husking devices arranged alongside the traction-wheel on the opposite side of the machine but on the outside of said wheel, and extending longitudinally of the machine, husk-loosening devices arranged to extend transversely of the machine and to the rear of the traction-wheels, and means for conveying the detached ear from said detaching devices past said husk-loosening devices and delivering the same to said husking devices, as and for the purpose set forth.

2. In a corn harvester and husker, a main frame, an axle journaled therein, traction-wheels mounted on said axle and adapted to support said main frame, snapping-rolls for detaching the ears of corn, said rolls being arranged to extend in the direction of travel of the machine and alongside the traction wheel on one side of the machine but outside of such wheel, husk-removing rolls arranged to extend in the direction in which the machine travels, and alongside the traction-wheel on the opposite side of the machine, but on the outside of said wheel, a carrier for conveying the detached ear from the snapping-rolls to the husk-removing rolls, said carrier arranged to travel transversely of the machine, to the rear of the traction-wheels, and husk-loosening devices arranged in the path of travel of such carrier, as and for the purpose set forth.

3. In a corn-harvester, snapping-rolls, means for actuating the same, gathering devices for engaging and presenting the stalks to said rolls, vertical shafts arranged to be driven by said snapping-rolls for actuating said gathering devices, auxiliary chains arranged above said gathering devices for supporting and guiding the stalks while being presented to said snapping-rolls, vertical shafts for actuating said auxiliary chains, said shafts loosely connected to and driven by the gathering devices driving-shafts, as and for the purpose set forth.

4. In a corn-harvester, snapping-rolls, means for actuating the same, gathering devices, vertical shafts arranged to be driven by said snapping-rolls for actuating said gathering devices, auxiliary chains arranged above said gathering devices for supporting and guiding the stalks, means for adjusting said chains toward and from each other, vertical shafts for actuating said auxiliary chains, and flexible connections, whereby said shafts are driven by the driving-shafts of said gathering devices; as and for the purpose set forth.

5. In a corn-harvester, snapping-rolls, means for actuating the same, vertical shafts arranged to be driven by said rolls, gathering devices actuated by said shafts, a coupling-joint provided with squared sockets mounted on the upper ends of said shafts, auxiliary shafts vertically arranged and adapted to be loosely stepped in and driven by said coupling-joint, supporting-chains actuated by said auxiliary shafts, and means for adjusting said chains toward and from each other; as and for the purpose set forth.

6. In a corn-harvester, snapping-rolls, for detaching the ears from the stalks, said snapping rolls provided with spiral corrugations, means for rotating said rolls in opposite directions, one of said rolls provided with a knife adjacent to the rear end thereof, said knife being arranged longitudinally with respect to said roll; as and for the purpose set forth.

7. In a corn harvester, a pair of snapping-rolls for detaching the ears of corn from the stalks, means for rotating said rolls in opposite directions, an independent journal-box for the front end of each of said rolls, said journal-boxes being rigid with reference to each other, a journal-box common to both of said rolls at the rear ends thereof, the bearing for the rear end of one of said rolls being immovable, said last-mentioned journal-box provided with an elongated slot to receive the rear end of the other of said rolls, a spring-pressed adjustable block mounted in said slot and adapted to form part of the bearing for said roll whereby said roll is permitted a lateral yielding movement only at the rear end thereof with reference to its companion roll, as and for the purpose set forth.

8. In a corn-harvester, means for loosening the husks on the ears preparatory to the removal thereof from said ears, comprising a conveyer belt or chain arranged to convey the ears of corn, means for actuating the same, and a series of independent plates arranged above the plane of, and in angular relation to the path of travel of said conveyer, said plates being pivotally mounted independently of each other at the end thereof farthest from the conveyer, and yieldingly mounted at the end thereof in closest proximity to the conveyer, as and for the purpose set forth.

9. In a corn harvester, means for loosening the husks on the ears preparatory to the removal thereof from said ears, comprising a conveyer arranged to convey the ears of corn, means for actuating the same, and a series of independent plates arranged alternately edgewise and flatwise in a plane above, and in angular relation to the path of travel of said conveyer, said flatwise-arranged plates provided with spikes and said edgewise-arranged plates presenting a smooth under surface, and all of said plates pivotally mounted independently of each other at the end thereof farthest from the conveyer, and yieldingly mounted at the end thereof in closest proximity to the conveyer, as and for the purpose set forth.

10. In a corn-husker, a trough, a conveyer-belt arranged to travel therein, cross bars supported upon said trough, a series of plates having rods secured thereto, said rods arranged to be slidingly supported by said cross-bars, said plates having spikes projecting from the under side thereof, and springs interposed between said plates and said cross-bars; as and for the purpose set forth.

11. In a corn-harvester, husking rolls, adapted to remove the husks from the ears means for rotating said rolls, a traveling carrier arranged over said rolls, a series of spring-plates mounted on said carrier and adapted to feed the ears along and hold the same to the action of said rolls, and means for imparting a lateral vibration to said carrier; as and for the purpose set forth.

12. In a corn-harvester, husking-rolls adapted to remove the husks from the ears, means for rotating said rolls, a series of spring-plates attached at one end thereof to said carrier and then bent to form one or more spiral convolutions, and having their other or free ends extending in a direction opposite to that in which the carrier travels, and means for imparting a lateral vibration to said carrier; as and for the purpose set forth.

13. In a corn-husker, husking-rolls adapted to remove the husks from the ears, means for rotating said rolls, a traveling carrier arranged over said rolls, a series of spring-plates attached at one end thereof to said carrier and then bent to form one or more spiral convolutions and having their other or free ends extending in a direction opposite to that in which said carrier travels, said free ends being bent or stamped to form a hollow or corrugation longitudinally thereof, and means for imparting a lateral reciprocation to said carrier; as and for the purpose set forth.

14. In a corn-husker, a trough, a series of husking-rolls mounted therein, means for rotating said rolls, a shaft mounted transversely in said trough at each end thereof, a pair of sprocket-chains mounted on said shaft, cross-bars connecting said chains, spring-plates mounted on said bars, means for rotating one of said shafts, and means for simultaneously therewith imparting a lateral reciprocation to said chains; as and for the purpose set forth.

15. In a corn-husker, a trough, a series of husking-rolls journaled therein, means for rotating the same, a shaft arranged transversely in said trough at each end thereof, a carrier mounted on and adapted to be actuated by said shafts, collars mounted on each shaft, pivoted levers having their ends arranged between said collars, means for positively rotating one of said shafts, and means for simultaneously therewith vibrating the opposite ends of said levers, whereby a reciprocatory vibration is imparted to said carrier; as and for the purpose set forth.

16. In a corn-husker, means for husking the ears, a conveyer-belt adapted to receive and deliver the husks, a receptacle arranged adjacent to the delivery end of said conveyer, adapted to receive the detached grains of corn, a grating arranged over said receptacle, and means for vibrating said grating; as and for the purpose set forth.

17. In a corn-husker, means for removing the husks from the ears, a conveyer-belt adapted to receive and deliver the husks, a receptacle arranged adjacent to the delivery end of said conveyer, adapted to receive the detached grains of corn, a pivotally-mounted rearwardly-inclined grating arranged over said receptacle, and means for periodically rocking said grating about its pivots; as and for the purpose set forth.

606,825. CONTACT DEVICE FOR ELECTRIC RAILWAYS. CHARLES A. TERRY, New York, N. Y., and HARRY P. DAVIS, Pittsburg, Pa., assignors to the Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Filed Mar. 2, 1896. Serial No. 581,493. (No model.)



Claim.—1. A contact device for electric railways consisting of a revolving cylinder or roller, a fork carrying the same, stationary pieces at the end of said roller constituting continuations thereof and tapering outwardly, and a supporting-arm rigidly joined at its upper end directly to said fork, substantially as described.

2. A contact device for electric railways consisting of a cylindrical roller, a fork carrying the same, extensions of said fork constituting prolongations of the roller and tapering outwardly, cylindrical prolongations of said extensions, and a supporting-arm the upper end of which is rigidly joined directly to said fork.

3. A contact device for electric railways consisting of a rotating cylindrical contact, a skeleton casting or fork receiving the same, wearing-pieces constituting continuations of said cylindrical contact secured to said casting, a supporting-arm rigidly joined at its upper end directly to said fork and braces extending from the ends of the casting to its supporting-arm.

4. A contact device for electric railways consisting of a rotating contact-cylinder, a fork carrying the same and having lateral extensions in the general line of the surface of the cylinder tapering toward their outer ends, removable shields or wearing-pieces covering the same, and a supporting-arm rigidly joined at its upper end directly to said fork.

5. A contact device for electric railways consisting of a rotating contact-cylinder, a fork for carrying the same having lateral extensions in the general line of the surface of the cylinder and tapering toward their outer ends, and braces extending from the stem of the fork to the respective ends of the lateral extensions.

6. A contact device for overhead conductors for electric railways consisting of a contact-roller; a fork receiving the same, tapering lateral extensions of the arms of said fork; tubular extensions of the ends of the taper-sections, and downwardly and outwardly projecting guards or braces constituting extensions of said tubular sections.

7. The combination with an arm hinged to move in a substantially vertical plane, of a contact device supported by the outer end of said arm and comprising a hollow cylindrical roller, heads fitting within the respective ends of said roller and projecting to form fillets or beads of slightly larger diameter than the diameter of the roller, extensions at the respective ends of the roller, the adjacent bearing portions of which are flush with said fillets or beads, and guards projecting outwardly and downwardly from said extensions to points outside of the plane which includes the contact roller and the axis on which the supporting arm turns.

8. In a contact device for electric railways, a cylindrical roller, bearings therefor, a shaft carrying the roller, a fork receiving the respective ends of the shaft, slots formed in the arms of the fork through which said shaft is inserted and wearing-pieces covering said slots, substantially as described.

9. In a contact device for electric railways, a cylindrical roller, a shaft carrying the same, a fork receiving the roller between its arms, lateral extensions formed upon said fork, tubular prolongations of the lateral extensions, and rods passing through said tubular extensions into said fork.

10. In a contact device for electric railways, the combination of a fork having lateral projections, tubular extensions of said projections, rods passing through said tubular extensions, said rods extending outwardly and downwardly from the respective ends of said tubular extensions and bent backward and extending into said fork.

11. The combination with a fork or frame having lateral extensions, and a cylindrical roller journaled in said fork or frame in alinement with said extensions, of a supporting arm or stem for said fork or frame hinged to move in a substantially vertical plane and curved guards projecting from the ends of said extensions to points outside the plane which includes the roller and the axis on which the supporting-arm turns.

12. A fork for supporting the contact-roller of a contact device for electric conductors consisting of a stem having the arms b' with lateral extensions b^2, and provided with the inner web k and the outer strengthening-webs k', substantially as described.

13. A guard for laterally-extending contact devices, consisting of a helically-curved arm projecting outwardly and downwardly from the end of the main contact portion and constituting a longitudinal extension thereof.

14. The combination of a hinged supporting-arm, with means tending to raise said arm to a vertical position and a horizontally and laterally extending head comprising a main contact portion, and guides projecting outwardly and downwardly from said contact portion to points outside the plane which includes it and the axis on which said supporting arm turns, and constituting longitudinal extensions of said main contact portion.

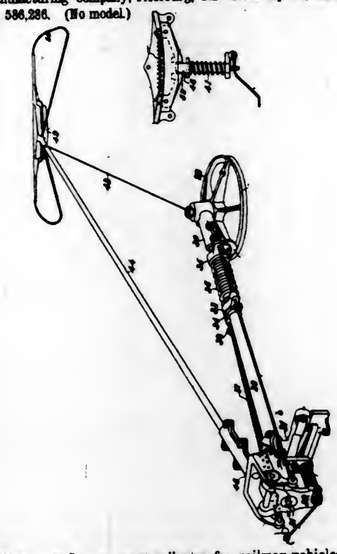
15. A contact device consisting of a support mounted upon a horizontal axis and yieldingly pressed upward, a horizontally and laterally extending contact portion and curved guide portions projecting outwardly and downwardly from said contact portion to points outside the plane which includes it and the axis of the support and constituting longitudinal extensions to prevent entanglement with intersecting and supporting wires.

16. A device for making contact with overhead supply-conductors comprising a spring-actuated supporting-arm hinged to move in a vertical plane and a laterally-extending head carried by the free end of said arm, said head being provided with guards which constitute longitudinal extensions of the contact portion of said head and are curved outwardly and downwardly to points outside the plane which includes the contact portion of the head and the axis on which the supporting-arm turns and thence extend inwardly to the supporting-arm.

17. A spring-actuated arm hinged at its lower end to a suitable base and provided at its upper end with a contact-head comprising a laterally-extending horizontal roller, non-rotatable extensions in alinement therewith, and guard-pieces projecting from the ends of the extensions in approximately helical curves to points outside the plane

which includes the contact-roller and the axis on which the supporting-arm turns, and thence extending inwardly to the supporting-arm.

606,826. CURRENT-COLLECTING APPARATUS FOR ELECTRIC RAILWAYS. CHARLES A. TERRY, New York, N. Y., and HARRY P. DAVIS, Pittsburg, Pa., assignors to the Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Filed Apr. 6, 1896. Serial No. 586,286. (No model.)



Claim.—1. In a current-collector for railway-vehicles mounted to turn upon two axes substantially at right angles to each other, a locking device normally serving to prevent movement upon one of said axes and means actuated by said collector to unlock the same upon its movement a predetermined distance in one direction on the other axis.

2. In a current-collector for railway-vehicles mounted to turn upon a vertical axis, a locking device normally acting to prevent such turning movement and means actuated by the downward movement of the collector to release the same from the locking device.

3. The combination with a contact-supporting arm and a pivoted base to which said arm is hinged, of means for pressing said arm upwardly, a locking device normally acting to hold said base against movement and means actuated by the downward movement of said arm to release said base.

4. The combination with a contact supporting arm and a pivoted base to which said arm is hinged, of a locking device normally acting to hold said base against movement on its pivot, and means actuated by the downward movement of said arm to unlock said base.

5. The combination with a device for making contact with overhead conductors, its supporting-arm and a reversible base or support therefor, of a spring-actuated locking-bolt, a device projecting laterally therefrom and means connected with the contact-supporting arm for engagement with said device to withdraw the bolt when the arm is lowered a predetermined amount.

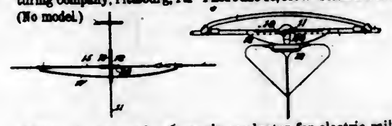
6. The combination with a supportiug-arm for overhead contact devices, of a reversible support pivoted to swing in a horizontal plane and provided with a spring-actuated locking-bolt, a head projecting laterally from one end of said bolt and a cam-faced projection connected to and movable with the supporting-arm to engage said head and withdraw the bolt when the supporting-arm is depressed a predetermined amount.

7. The combination with a supporting-arm for overhead contact devices, a pivoted casting to which the lower end of said arm is hinged, and a tube extending laterally from the said casting, of a coiled spring surrounding said tube, a movable head engaging one end of said spring, means connecting said head with lugs projecting from the supporting-arm below its hinge or pivot, a locking-bolt extending through the said casting and its tube and provided with a head with which the projections on the supporting-arm engage to withdraw the bolt when the arm is lowered.

8. The combination with hollow casting pivoted to swing in a horizontal plane, of a tubular extension projecting horizontally from one end of said casting, a spring-actuated locking-bolt extending through said casting and extension and provided at one end with a laterally-projecting head, spring-actuated dogs for engagement with the opposite ends of said locking-bolt, a contact-supporting arm pivoted or hinged to said casting, and provided with cam-faced projections for engagement with the laterally-projecting head on the locking-bolt, and means coöperating with said projections for elevating said contact-supporting arms.

9. The combination with a contact-supporting arm and a reversible supporting-base to which said arm is hinged, of means for elevating said arm, a spring-actuated locking-bolt carried by said support and having a laterally-projecting head and means projecting from said arm to engage the bolt-head and withdraw the bolt when the arm is depressed.

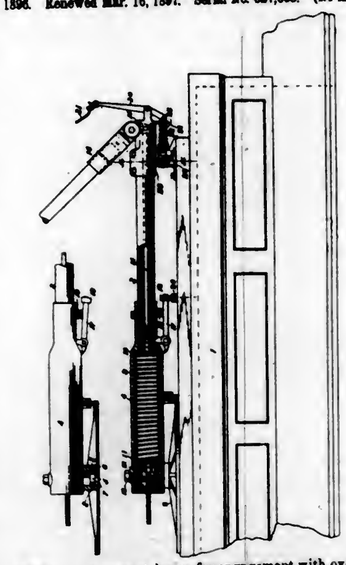
606,827. OVERHEAD CONSTRUCTION FOR ELECTRIC RAILWAYS. CHARLES A. TERRY, New York, N. Y., and HARRY P. DAVIS, Pittsburg, Pa., assignors to the Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Filed June 10, 1896. Serial No. 594,993. (No model.)



Claim.—1. An overhead supply-conductor for electric railways having an insulated section bridged by an auxiliary section, a second supply-conductor extending at an angle to said first-named conductor, and a casting having arms extending in the direction of the crossing conductors and fastened thereto, one of said arms having a narrow groove at each side of the other arm to receive the flanges of a trolley-wheel.

2. An overhead supply-conductor for electric railways having a section insulated from the main portion, an auxiliary section bridging said insulated section, a second supply-conductor crossing said insulated section and a casting having guiding-arms respectively fastened to said insulated section and to the conductor crossing the same.

606,828. TRAVELING CONTACT DEVICE FOR ELECTRIC RAILWAYS. GEORGE WESTINGHOUSE, Pittsburg, Pa. Filed Apr. 6, 1896. Renewed Mar. 16, 1897. Serial No. 627,896. (No model.)



Claim.—1. A contact device for engagement with overhead conductors and its supporting-arm, in combination with a reversing-boom pivotally supported at or near one end and having two bearing-arms extending laterally therefrom at or near its outer end, and locking mechanism, the stationary member of which is provided with a bearing-plate and a pair of rollers with which said bearing-arms engage.

2. The combination with a contact device, its supporting-arm and a reversing-boom therefor, of a spring-actuated locking-bolt for said boom, a pivoted lever connected to said bolt at one end, and a cord extending from the other end of said lever through or over a guide near the outer end of the supporting-arm.

3. The combination with a contact device and its supporting-arm, of a tubular reversing-boom, a coiled spring seated therein, and means extending through said boom and connecting said spring with a projection from said supporting-arm, whereby the arm is normally yieldingly supported in an elevated position.

4. The combination with a contact device and its supporting-arm, of a tubular reversing-boom pivoted to a suitable support to swing in a horizontal plane, and a hinge connection between the other end of the boom and the supporting-arm, a coiled spring located in said boom, a movable head or plate bearing against one end of the spring, and a rod extending through said boom and connecting said plate with a projection on the supporting-arm.

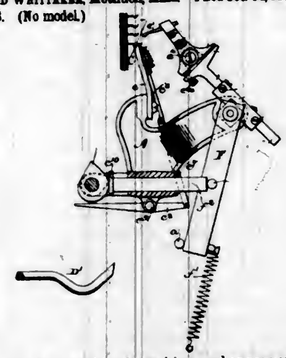
5. The combination with a contact device for engagement with overhead conductors, a supporting-arm therefor, and a pivoted boom, to one end of which the lower end of the supporting-arm is hinged, of means for locking said boom in operative position, and a circuit-closing device, one member of which is carried by the boom.

6. The combination with a device for making contact with overhead conductors, a supporting-arm therefor and a pivoted boom to one end of which the lower end of the supporting-arm is pivoted or hinged, of means for automatically locking the boom in operative position, a contact device pivotally supported upon the boom, and a stationary coöperating contact device in position to be engaged by the said movable contact in order to close the electric circuit when the boom is in operative position.

7. A current-collector for electrically-propelled vehicles, comprising an arm pivotally supported at one end and a head at its other end, consisting of a rotatable portion, a frame having bearings therefor, lateral stationary extensions and brace-rods forming continuations of said extensions, said rods being curved outwardly and downwardly and laterally with reference to the head proper to form guards, and thence extending away from the head but inwardly to the supporting-arm.

8. The combination with a current-collecting device for electrically-propelled vehicles, of a reversible support therefor, means for locking said support in either of two positions and a circuit-closing device one member of which is carried by said support.

606,829. DEVICE FOR BENDING TEETH IN CARD-CLOTHING. EDWARD WHITTAKER, Methuen, Mass. Filed Oct. 14, 1897. Serial No. 655,203. (No model.)



Claim.—1. In a machine for making card or napper clothing, the combination with a support for the unformed tooth bearing on two points thereof, of a forming-tool acting upon said tooth between said points and coöperating grooves on the support and forming-tool, substantially as described.

2. In a machine for making card or napper clothing, the combination with a mold across which the unformed tooth is projected, of a forming-tool arranged to engage said tooth and move longitudinally and laterally thereof to force it into the mold, substantially as described.

3. In a machine for making card or napper clothing, the combination with a mold across which the unformed tooth is projected, of a forming-tool, and movable section for said mold arranged to be moved to permit the forming-tool to enter the mold, substantially as described.

4. In a machine for making card or napper clothing, the combination with a laterally-grooved mold, of a longitudinally-grooved forming-tool, substantially as described.

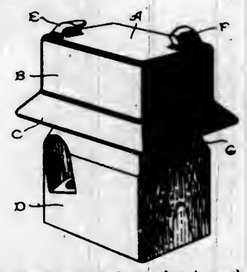
5. In a machine for making card or napper clothing, a forming-tool comprising a plurality of forming-fingers arranged to have a limited independent movement during the operation of the machine, substantially as described.

6. In a machine for making card or napper clothing, a forming-tool comprising a plurality of forming-fingers, suitable mechanism for actuating said fingers, and means whereby said fingers are capable of a limited movement independent of said actuating mechanism during the operation thereof, substantially as described.

7. In a machine for making card or napper clothing, a former or mold having a movable section extending along the side thereof adjacent to the point of the tooth, substantially as described.

8. In a machine for making card or napper clothing, the combination with a forming-tool, of a rocking carriage for said tool, and means for permitting a rocking movement of said tool independently of said carriage, substantially as described.

606,830. INSULATOR. BEN WILLARD, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 18, 1898. Serial No. 677,936. (No model.)



Claim.—1. In an insulator for an electric conductor, the combination with a body of insulating material of a metal cap, free to move up and down on the insulating material, supporting the conductor, and means for preventing the cap from turning on the insulating material, and means for securing the insulating material to a support.

2. In an insulator for an electric conductor, the combination of a metal cap having a receptacle which is other than round, with a body of insulating material arranged to fit into the cap and be free to move in and out, but prevented from turning therein, and means for securing the insulator to a support.

3. In an insulator for an electric conductor, the combination of a metal cap, lugs on the cap for holding the conductor, a receptacle formed on the under side of the cap which is other than round, a body of insulating material having a portion formed thereon which corresponds to the receptacle in the cap, the arrangement being such that the cap and insulating material are capable of independent movement in a vertical plane, but not in a horizontal, and means for securing the body of insulating material to a support.

4. In a third-rail insulator which is arranged to be applied to the rail by a slightly-rotary movement, the combination of a cap having lugs thereon cut away at an angle for gripping the rail, a receptacle formed on the under side of the cap and provided with angular surfaces, a body of insulating material adapted to be secured to the cross-tie and provided with angular surfaces corresponding to the surfaces on the cap, the cap and body of insulating material being so arranged that they are capable of free independent movement in a vertical plane, but not in a horizontal plane.

5. In a third-rail insulator adapted to be secured to the rail by a slight rotary movement, the combination of a cap having cut-away lugs formed integral therewith, and a four-sided receptacle formed in its under side, a wooden base for supporting the cap, having a notched or cut-away portion arranged to increase the creeping-surface, and lag-screws for securing the wooden base to the cross-ties.

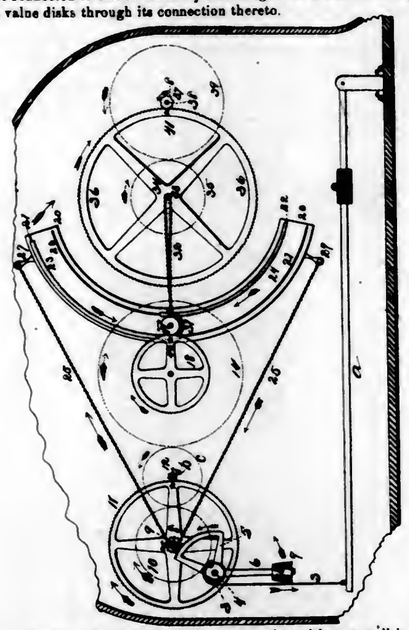
6. As an article of manufacture, an insulating-cap comprising a body of metal having rail-securing lugs E and F formed integral therewith, the lugs being cut away at an angle to receive the rail, a flaring flange C, and a receptacle formed in the under side of the cap having angular faces to prevent rotation of the insulating-support when the insulator is assembled.

606,831. WEIGHING-MACHINE. JAMES P. ARMSTRONG, Port Byron, N. Y. Filed Apr. 6, 1897. Serial No. 630,698. (No model.)

Claim.—1. In a weighing-machine, a casing in combination with a rotatable rate-disk, its shaft adapted to slide in its bearings, and a lock-pin adapted to engage with said disk at any predetermined point indicative of any desired rate.

2. In a weighing-machine, a casing, a shaft mounted therein and adapted to be reciprocated longitudinally, combined with a rate-disk upon said shaft, a lock-pin upon said casing engaging with said disk to lock it at any rate-indicating point, and a spring holding said disk in its locked position.

3. In a weighing-machine, the combination with rotating weight-indicating disks, and rotating value-showing disks, of a swinging segment connected to and actuated by said weight-disks, and actuating said value disks through its connection thereto.



4. In a weighing-machine, the combination with a rate-disk of a segment, and slides mounted thereon adapted to be shifted according to the rotation of said disk and the rate indicated by it at any point in its revolution.

5. In a weighing-machine, the combination with a rotatable rate-indicating disk, of a segment and slides mounted therein adapted to be shifted in opposite directions by the rotation of said disk and the rate indicated at any point in its revolution.

6. In a weighing-machine, the combination with rotatable weight-indicating disks, and a rotatable rate indicating disk, of a swinging segment connected to and actuated by said weight-disks, and slides in said segment adapted to be shifted therein by the rotation of said rate-disk isochronous with the rate at which it is set.

7. In a weighing-machine, the combination with rotatable weight-indicating disks, and a rotatable rate-indicating disk, of a swinging segment connected to and actuated by said weight-disks, and rate-slides in said segment adapted to be shifted in opposite directions by the rotation of said disk isochronous with said rate-disk, and means to lock them and said rate-disk at any predetermined point.

8. In a weighing-machine, the combination with a rate-indicating disk, rate-slides isochronous therewith at all times, and a swinging segment carrying said slides, of value-indicating disks connected to said slides and rotatable by the swing of said segment, and means to swing it.

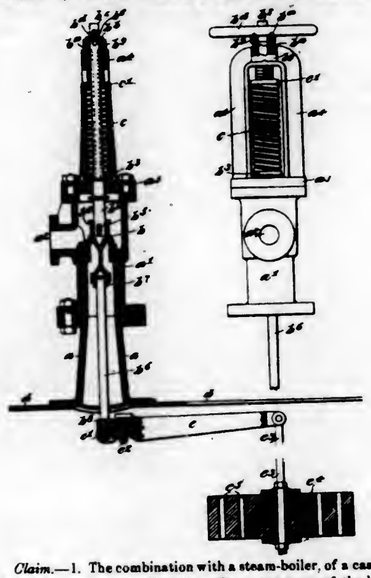
9. In a weighing-machine, the combination with a rate-indicating disk, rate-slides always isochronous therewith, and a swinging segment carrying said slides, of value-indicating disks connected to said slides and rotatable by the swing of said segment in varying degree according to the positions assumed by said slides, and means to swing said segment.

10. In a weighing-machine, the combination with rotatable value-indicating disks, of a swinging bar, a belt connecting it thereto, and means to shift the location of the points of connection of said belt to said segment, whereby said disks are variably rotated according to the shift of said belt.

11. A weighing-machine comprising the following instrumentalities combined with a scale, viz: rotatable weight-indicating disks, a rotatable rate-indicating disk, value-indicating disks operatively connected to said weight-indicating disks, and rotatable in varying degree according to the weight upon the scale, in conjunction with said rate-indicating disk whereby said value-indicating disks indicate the product of the weight by the rate.

12. In a weighing-machine, the combination with rotatable disks indicating pounds and ounces, and a vibratory scale-beam connected to one of said disks to drive it to rotate the other, of an auxiliary scale-beam and weights, connected to said disks to rotate them according to its deflection whereby the tare of a package is determined and said disks restored to their normal zero-points by the adjusting of the weights upon said auxiliary beam.

606,882. LOW-WATER-ALARM AND SAFETY VALVE. WILLIAM L. BOSH, Manchester, England. Filed Dec. 14, 1897. Serial No. 662,443. (No model.) Patented in England Aug. 29, 1896. No. 16,225



Claim.—1. The combination with a steam-boiler, of a casing provided with a passage leading from the steam-space of the boiler to the atmosphere, a valve interposed in said passage and controlling the flow of steam therethrough to the atmosphere, said valve provided with a stem projecting outwardly from the said casing, a bearing for said stem above the casing, a coiled spring on the projecting portion of said stem acting as a load for the valve, and adjusting devices on said projecting portion of the stem adapted to cooperate with its bearing in the adjustment of the tension of the spring, for the purpose set forth.

2. The combination with a steam-boiler, of a casing provided with a passage leading from the steam-space of the boiler to the atmosphere, a valve interposed in said passage and controlling the escape of steam therethrough to the atmosphere, said valve provided with a stem projecting outwardly from the casing, a bearing for said stem above said casing, a coiled spring on the projecting portion of the stem, acting as a load for the valve, appliances cooperating with said bearing for adjusting the tension of the spring, and means for displacing the valve on its seat, likewise carried by said valve-stem, for the purpose set forth.

3. The combination with a steam-boiler, of a casing provided with a passage leading from the steam-space of the boiler to the atmosphere, a float-controlled valve interposed in said passage and controlling the flow of steam therethrough to the atmosphere, said valve provided with a stem projecting outwardly from said casing, a bearing for said stem above the casing, a coiled spring on the projecting portion of said stem acting as a load for the valve, and adjusting devices on said projecting portion of the stem adapted to cooperate with its bearing in the adjustment of the tension of the spring, for the purposes set forth.

4. The combination with a steam-boiler, of a casing provided with a passage leading from the steam-space of the boiler to the atmosphere, a float-controlled valve interposed in said passage and controlling the escape of steam therethrough to the atmosphere, said valve provided with a stem projecting outwardly from the casing, a bearing for said stem above said casing, a coiled spring on the projecting portion of the stem, acting as a load for the valve, appliances cooperating with said bearing for adjusting the tension of the spring, and means for displacing the valve on its seat, likewise carried by said valve-stem, for the purpose set forth.

5. The combination with a steam-boiler, of a valve-casing provided with a passage leading from the steam-space of the boiler to the atmosphere, a valve controlling the flow of steam through said passage, and provided with a stem whose upper portion is exposed, a lever at the end of said exposed portion, and a bearing on which said lever is adapted to rock, for the purpose set forth.

6. The combination with a steam-boiler, of a valve-casing provided with a passage leading from the steam-space of the boiler to the atmosphere, a valve controlling the flow of steam through said passage and provided with a valve-stem whose upper portion is exposed, a coiled spring thereon, abutments for the ends of said spring, a tension-adjusting sleeve through which the valve-stem passes freely, said sleeve adjustable in a suitable bearing and adapted to operate on one of the spring-abutments, a lever at the upper exposed end of the valve-stem, and a rocking bearing for and on which said lever is adapted to rock, substantially as and for the purpose set forth.

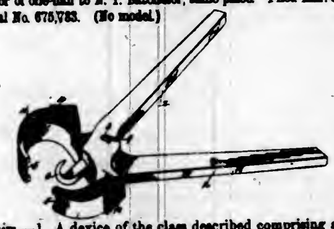
7. A float for low-water indicator-valves for steam-boilers provided with perforations or passages parallel with its minor axis, for the purpose set forth.

8. The combination with a steam-boiler, of a casing provided with a main passage leading to the steam-space of the boiler, and with a plurality of branch passages leading from said main passage to the atmosphere, a float-controlled valve interposed in one of said branch passages, a pressure-controlled valve in the other branch passages, and means for simultaneously displacing the pressure-controlled valves on their seats, for the purpose set forth.

9. The combination with a steam-boiler, of a casing provided with a main passage leading to the steam-space of the boiler and with three branch passages leading from said main passage to the atmosphere, a float-controlled valve in one of said passages, a pressure-controlled valve in the other two passages, means for displacing the valves on their seats independently of one another, and means for displacing the pressure-controlled valves simultaneously, for the purpose set forth.

10. The combination with a steam-boiler, of a casing provided with a main passage leading to the steam-space of the boiler and with three branch passages leading from said main passage to the atmosphere, a float-controlled valve in one of said branch passages, a pressure-controlled valve in each of the other branch passages, said valves provided with stems carrying the load for these valves, casings inclosing the stems of the pressure-controlled valves, a cap loosely fitted to said casings, cotters passing through elongated slots in said casings, and in the valve stems, and means adapted to lock the cotters against unauthorized removal, for the purposes set forth.

606,883. WIRE TIGHTENER. WILLIAM BROWN, Como, TEX., assignor of one-half to H. T. Batchelor, same place. Filed Mar. 30, 1898. Serial No. 675,783. (No model.)

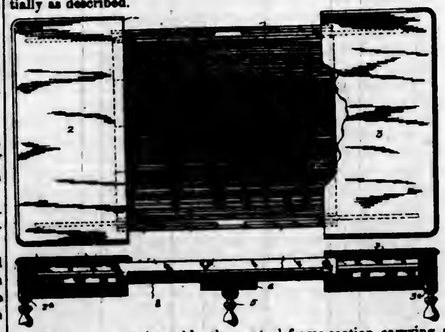


Claim.—1. A device of the class described comprising a pair of bars or members provided with wire-engaging jaws, a pivot connecting the bars or members to form a pair of pincers, and a hook arranged between the jaws and having its shank interposed between the bars or members and provided with an eye receiving the said pivot, whereby it is secured to the device, substantially as described.

2. A device of the class described comprising a pair of bars or members provided with jaws and having opposite recesses at their inner faces, a pivot passing through the bars or members and located at the inner ends of said recesses, and a wire-engaging hook housed between the jaws and having a shank arranged in the space formed by the said recesses and provided with an eye receiving the said pivot, substantially as described.

606,884. EXTENSION-TABLE. CHARLES A. CURL, Beaver Falls, Pa., assignor of one-third to J. D. McAnlis, same place. Filed Apr. 9, 1898. Serial No. 677,011. (No model.)

Claim.—1. In an extension-table, the central frame-section, the permanent horizontal shelf extending across said central frame-section, the shelf-supports secured to the sides of the central frame-section on a horizontal plane above the permanent shelf, and a horizontal removable shelf fitted within the central frame-section to rest upon the shelf-supports and sustained in an elevated position thereby parallel to the permanent shelf, combined with extension frame members slidably fitted to the central frame-section for adjustment without hindrance from the shelves, and a series of leaves adapted to be individually stored on the permanent and removable shelves, substantially as described.



2. In an extension-table, the central frame-section carrying a permanent top section, a horizontal permanent shelf secured within said frame-section to extend across from side to side thereof and having one edge exposed beyond the plane of the permanent top section, the shelf-supports secured to the sides of the central frame-section and on a horizontal plane above the permanent shelf, and another horizontal shelf resting on the shelf-supports within the frame-section in parallel relation to the permanent shelf and having one edge of said shelf extended beyond the other edge of the permanent top section, combined with extension frame-sections slidably fitted to the central frame member for adjustment in relation thereto without hindrance from the shelves, and removable leaves adapted to be stored individually on the upper and lower shelves, substantially as described.

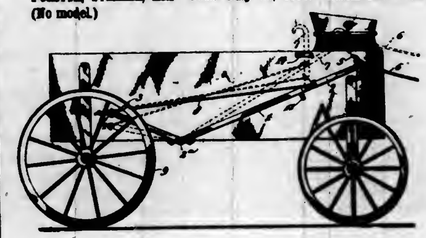
606,885. WHEEL-CULTIVATOR APPLIANCE. WILLIAM A. DOUGLAS, Bronson, Mich. Filed Mar. 30, 1897. Serial No. 630,014. (No model.)



Claim.—1. A convertible cultivator and wheelbarrow comprising the frame having the tie-bars, 3, and the wheeled axle, the transverse rod, 15, loosely journaled in the frame in substantially the horizontal plane of the tie-bars and provided with a central clamp, the sectional barrow-body with its front and sides fastened removably to the frame and with its bottom resting on the side and transverse rails of the frame and provided with a keeper which fits beneath one of said rails, and a cultivator-standard adapted for use on the frame interchangeably with the barrow-body and fitted in the clamp and provided with the braces detachably fastened to the frame, substantially as described.

2. A convertible cultivator and wheelbarrow comprising a frame having its side rails joined by the transverse rails and provided with a wheeled axle, a rocking bar, 15, journaled in the side rails in the plane of the transverse rails and having an obliquely-arranged clamp, a barrow-body having its front and side walls seated on rails of the frame to which they are detachably secured, and its bottom resting on the rails and rocking bar and provided with a keeper which engages with the frame, and a cultivator-standard clamped in the rocking bar and adapted for attachment to the frame interchangeably with the barrow-body, substantially as described.

606,886. HORSE CHECK AND HITCHING DEVICE. DANIEL M. FORSYTH, Franklin, Ind. Filed July 16, 1897. Serial No. 644,822. (No model.)



Claim.—1. A horse-hitching device to be applied to a vehicle, consisting of a lever fulcrumed between its ends to the vehicle-body, and provided at its front end with means for connection therewith of the reins or lines, a latch having pivotal connection with the rear end of the lever, a lock-lever applied to the front end of the first-mentioned lever, and a rod connecting the lock-lever with the pivoted latch for throwing the latter into and out of the path of a wheel of the vehicle, substantially as and for the purpose set forth.

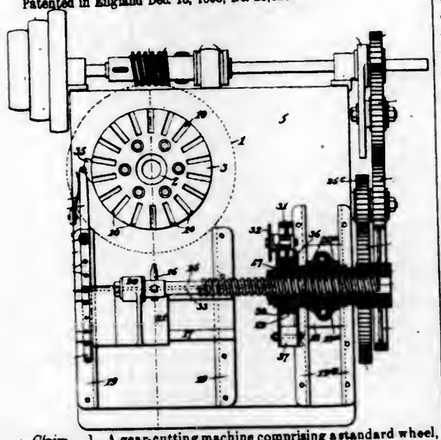
2. In a horse-hitching device to be applied to a vehicle, the combination of an approximately elbow-shaped lever having pivotal connection with the vehicle-body at a point between its ends, said lever adapted to have the reins or lines attached to its front end, a pivoted latch applied to the rear end of the lever, and a lever applied directly to the front end of the said elbow-lever, and having connection with the pivoted latch, for throwing it into and out of the path of a wheel of the vehicle, substantially as and for the purpose specified.

3. In a horse-hitching device for vehicles, the combination of an approximately elbow-shaped lever having pivotal connection with the wagon-body at a point between its ends, and having its rear end bent laterally, forming an extension, a latch having pivotal connection with the lateral extension, a lever pivoted to the front end of the elbow-lever, and having its front end hooked or constructed to receive the lines, and a rod connecting the lever with the pivoted latch, substantially as set forth.

4. In combination, an approximately elbow-shaped lever fulcrumed at the elbow upon a spindle applied to the lower side of the vehicle-body and having its rear end bent forming a lateral extension, a pivoted latch applied to the lateral extension, a lock-lever fulcrumed to the front end of the elbow-lever, and having its free end hooked or constructed to receive the lines, and a rod connecting the lock-lever with the pivoted latch, substantially in the manner set forth for the purpose specified.

5. In combination, an approximately elbow-shaped lever fulcrumed to a spindle applied to the lower side of the wagon-body, and having its rear end bent laterally, a slotted latch pivoted to the bent end of the lever, a lock-lever pivoted to the front end of the elbow-lever and having a lateral extension to engage therewith, and adapted to have the reins applied thereto, a rod connecting the lock-lever with the pivoted latch in the manner set forth, a stop, and a catch applied to a side of the wagon-body, substantially as shown for the purpose described.

606,837. **GEAR-CUTTING MACHINE.** JOSEPH H. GIBSON, Egremont, England. Filed Dec. 13, 1897. Serial No. 661,654. (No model.) Patented in England Dec. 10, 1895, No. 23,628.



Claim.—1. A gear-cutting machine comprising a standard wheel, a holder for the wheel-blank revolved by said standard wheel, a cutter-shaft, a driving-shaft geared to the standard wheel and cutter-shaft, a cutting-tool on said cutter-shaft, and mechanism adapted to automatically impart to the latter shaft successive rectilinear movements independently of its normal rotation to successively move the cutting edge of the tool into positions on an imaginary helical curve of pitch corresponding with that of the gear destined to mesh with the wheel to be cut, for the purpose set forth.

2. A gear-cutting machine comprising a standard wheel, a holder for the wheel-blank revolved by said standard wheel, a cutter-shaft, a driving-shaft geared to the standard wheel and cutter-shaft, a cutting-tool on said cutter-shaft, and mechanism adapted to impart to the latter shaft successive partial rotary and rectilinear movements, independently of its normal rotation to successively move the cutting edge of the tool into positions on an imaginary helical curve of pitch corresponding with that of the gear destined to mesh with the wheel to be cut, for the purpose set forth.

3. A gear-cutting machine comprising a standard wheel, a holder for the wheel-blank revolved by said standard wheel, a cutter-shaft carrying a cutter, a driving-shaft geared to the standard wheel and cutter-shaft, the latter provided with a screw-thread of the same pitch as that of the teeth to be cut, a nut fitting said thread, said nut revoluble with the shaft but held against endwise movement, and mechanism adapted to impart to the shaft successive partial rotary movements in the nut to move the shaft endwise and cause the edge of the cutter thereon to occupy successive positions on an imaginary helical curve corresponding with that of the gear destined to mesh with the wheel to be cut, for the purpose set forth.

4. A gear-cutting machine comprising a standard wheel, a holder for the wheel-blank revolved from said standard wheel, a screw-threaded cutter-shaft, a nut fitting the thread on said shaft, a driving-shaft geared to the standard wheel and to the nut on the cutter-shaft, transmitting-gearing between the cutter-shaft and its nut to cause the same to revolve together and mechanism adapted to periodically impart a partial rotation to the shaft in its nut, for the purpose set forth.

5. A gear-cutting machine comprising a standard wheel, a holder for the wheel-blank revolved by said standard wheel, a cutter-shaft provided with a screw-thread of the same pitch as that of the teeth of the wheel to be cut, a cutter on said shaft, a nut fitting the thread thereon, a driving-shaft geared to the standard wheel and the said nut to revolve the cutter-shaft in synchronism with the wheel-blank, transmitting-gearing between the nut and its shaft to cause the same to revolve together, and an epicyclic wheel or wheels in gear with the transmitting gear-wheels, for the purpose set forth.

6. A gear-cutting machine comprising a standard wheel, a holder for the wheel-blank revolved by said standard wheel, a cutter-shaft provided with a screw-thread of the same pitch as that of the teeth of the wheel to be cut, a cutter on said shaft, a nut fitting the thread thereon, a driving-shaft geared to said nut and standard wheel to revolve the cutter-shaft in synchronism with the wheel-blank, transmitting gear-wheels between the nut and its shaft to cause the same to revolve together, an epicyclic wheel in gear with the transmitting gear-wheels, and a balanced support for the epicyclic wheel secured to one of the transmitting-wheels, for the purpose set forth.

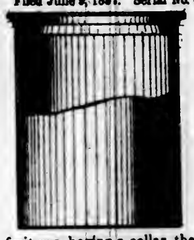
7. A gear-cutting wheel comprising a standard wheel, a holder for the wheel-blank revolved by said standard wheel, a cutter-shaft provided with a screw-thread of the same pitch as that of the teeth of the wheel to be cut, a cutter on said shaft, a nut fitting the thread thereon, a driving-shaft geared to said nut and to the standard wheel to revolve the cutter-shaft in synchronism with the wheel-blank, transmitting gear-wheels between the nut and its shaft to cause the same to revolve together, an epicyclic wheel in gear with the transmitting gear-wheels, a balanced support for the epicyclic wheel carried by the transmitting-wheels, and mechanism controlled by the rotation of the standard wheel to impart to the epicyclic wheel a partial rotation at each revolution of such standard wheel, for the purpose set forth.

8. The combination with a standard wheel, a face-plate on the shaft of such wheel adapted to receive and carry the wheel-blank, said face-plate provided with a peripheral projection; of a cutter-shaft provided with a screw-thread of the same pitch as that of the teeth of the wheel to be cut, a cutting-tool on said shaft, means for adjusting the latter in the plane of its axis and toward and from said face-plate, a nut fitting the thread on the cutter-shaft, a driving-shaft geared to said nut and to the standard wheel to cause them to revolve synchronously, transmitting gear-wheels between said nut and the cutter-shaft to cause them to revolve together without interfering with endwise motion of the shaft, an epicyclic wheel in gear with said transmitting-gearing, a balanced support for said epicyclic wheel carried by the transmitting gear-wheels, a star-wheel on the spindles of said epicyclic wheel, a two-armed rock-lever, one of whose arms is held in contact with the periphery of the aforesaid face-plate, a rod adjustable lengthwise on the other arm of said rock-lever and adapted to be moved thereby into and out of the path of the aforesaid star-wheel, substantially as and for the purpose set forth.

9. In a machine such as described, the combination with the screw threaded cutter-shaft, of a revoluble bearing-sleeve, a nut fitting the thread on said shaft removably seated in one end of said sleeve and revolubly therewith, and transmitting-gearing connecting said sleeve with the shaft to cause them to revolve together without interfering with endwise motion of said shaft, whereby the shaft and its nut can be removed from their bearings without interfering with the driving-gearing, substantially as set forth.

10. The combination with the standard wheel, a face-plate on the shaft of such wheel adapted to receive and carry the wheel-blank, said face-plate provided with a peripheral projection; of a cutter-shaft provided with a screw-thread of the same pitch as that of the teeth of the wheel to be cut, a cutting-tool on said shaft, a nut fitting the thread thereon, a driving-shaft geared to said nut and to the standard wheel to revolve them synchronously, transmitting gear-wheels connecting the nut with the cutter-shaft to cause the same to revolve together without interfering with the endwise motion of such shaft, an epicyclic wheel in gear with the transmitting gear-wheels, a balanced support for said epicyclic wheel carried by the transmitting gear-wheels, a star-wheel on the spindle of the epicyclic wheel, a two-armed rock-lever, one of whose arms is held in contact with the periphery of the face-plate, a rod pivoted to the other arm of said lever and adapted to be moved into and out of the path of the aforesaid star-wheel, for the purpose set forth.

606,888. **CAN OR RECEPTACLE FOR FRUIT.** JOHN J. HEISS, New York, N. Y. Filed June 9, 1897. Serial No. 639,988. (No model.)



Claim.—1. A fruit-can having a collar thereon with a central opening leading therethrough and an annular groove therein and a resilient ring secured in the inner edge of said collar, in combination with a cover having an annular rib thereon engaging with the said groove, substantially as shown and described.

2. In a can for containing fruits, liquids, &c., the combination of a receptacle having one end open, a circular nosing securely fastened to the open end of said receptacle, a groove formed in the said nosing, a spring-wire involved in the interior periphery of the nosing, a cap for suitably covering the open end of the aforesaid receptacle, a rib formed upon the said cover and adapted to engage the aforesaid groove in said nosing, the said cover having an overlapping edge, substantially as shown and described.

3. In a can for containing fruits, liquids, &c., the combination of a receptacle having one end open, a nosing securely fastened on the open end of said receptacle, a groove formed in the said nosing, a resilient wire ring secured in the interior periphery of the nosing, a cap for suitably covering the open end of the aforesaid receptacle, having a rib formed thereon adapted to engage in the aforesaid groove on said nosing, and an overlapping circumferential portion projecting beyond the can and adapted to be struck by a suitable instrument to release the nosing and open the can, substantially as shown and described.

606,839. **MATCH-BOX.** GEORGE W. HOUSE, Bloomsbury, N. J. Filed Aug. 23, 1897. Serial No. 649,096. (No model.)

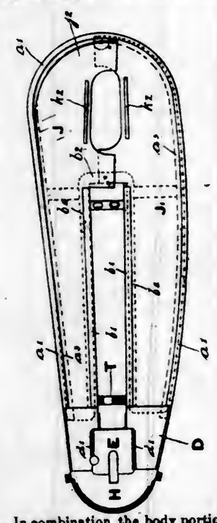


Claim.—1. An improved safety match-box, comprising the hopper or reservoir, the transverse rock-shaft mounted with relation to the bottom opening of the same and having the groove or recess and a projecting arm, an inclined apron or guide extending from said rock-shaft, spring ignition mechanism arranged at the bottom of said guide and provided with a projecting operating-arm adapted to be engaged by the arm upon the rock-shaft, substantially as and for the purpose set forth.

2. An improved safety match-box, comprising the hopper or reservoir, a transverse rock-shaft mounted with relation to the outlet-opening at the bottom of the latter and provided with the groove or recess and with the projecting arm, an inclined apron or guide extending from said rock-shaft, and the spring-plate arranged at the bottom end of the guide proper and bearing with relation thereto and provided with the projecting arm adapted to be engaged with the arm upon the rock-shaft, substantially as and for the purpose set forth.

3. An improved safety match-box, comprising the hopper or reservoir having the transversely-convergent bottom leading to the transverse bottom throat-opening, the transverse rock-shaft mounted below said opening and provided with the groove or recess registering therewith, and with the projecting arm, a spring controlling the operation of said rock shaft to normal position, the inclined apron or guide extending from said rock-shaft and provided with the approximately U-shaped spring ignition end having the projecting arm at the top, and a spring bearing upon said ignition end, substantially as and for the purpose set forth.

606,840. **GEAR-CASE.** JOSEPH H. HUGHES and JOHN T. MUSGROVE, Birmingham, England. Filed Mar. 29, 1898. Serial No. 675,564. (No model.)



Claim.—1. In combination, the body portion formed of a single piece of sheet metal having a laterally-turned edge provided with an inwardly-extending flange, said body portion having a slotted center, a strip secured to the body portion parallel with the inwardly-turned edges and forming a groove or channel, parting-strips secured at the edges of said slotted center, and a divided front portion having its outer edges connected with the parting-strips, substantially as described.

2. In combination, the body portion formed of a single piece of sheet metal having a laterally-turned edge provided with an inwardly-extending flange, said body portion being slotted for a portion of its length, a strip secured to said body portion parallel with the inwardly-turned flange forming a groove or channel parting-strips secured to the edges of the slotted portion, and a two-part front portion having its outer edges seated in said groove or channel and its inner edges connected with the parting-strips, the portions of said two part front portion forward of the slotted portion being overlapped and secured, substantially as described.

3. In combination, the body portion having a slotted central portion, and having a laterally-turned outer edge provided with a groove or channel, parting-strips secured at the edges of said slotted portion and having grooves or channels opposite the groove or channel in the body portion, said grooves or channels in the parting-strips terminating in advance of the end of the slotted portion to provide spaces b^3 and the front having its edges seated in the said grooves or channels, substantially as described.

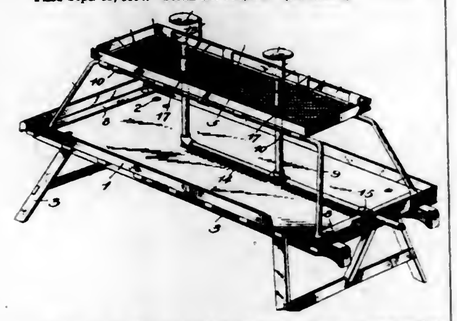
4. In combination, the body portion having the partially-slotted center and having slots or channels at the outer and inner edges, the front portion formed in two parts and having its edges seated in said grooves or channels and having overlapping portions with a slot or recess therein for the bicycle crank-shaft, guides carried by said front portions on each side of said recess, and slides K and K' inserted in said guides, substantially as described.

606,841. **PENHOLDER.** SAMUEL KRAUS, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Jan. 27, 1898. Serial No. 668,207. (No model.)



Claim.—The herein-described penholder, consisting of a handle A, having the longitudinal socket *a*, and reduced grip portion *a'*, the pen-tip inserted and held in said socket, and a covering for the portion *a'* of the handle, consisting of the thin external film-like cork sheet D, and the paper sheet E interposed between and united to the handle part *a'* and the cork sheet D, as hereinbefore shown and specified.

606,842. **DISPLAY-STAND.** PERCIVAL MILLER, Carbondale, Pa. Filed Sept. 13, 1897. Serial No. 651,532. (No model.)



Claim.—1. A display-stand having a main tray, a supporting-frame removably seated in said main tray, and an auxiliary tray supported by and removably secured to the frame, substantially as specified.

2. A display-stand having a main tray, a frame removably seated in the main tray and including rods having parallel horizontal portions, and an auxiliary tray seated upon and removably secured to the horizontal portions of the frame, substantially as specified.

3. A display-stand having a main tray, a supporting-frame seated in the main tray and having transverse brace-bars provided with notches, and a removable upper tray having depending stop-ears fitted in said notches, substantially as specified.

4. A display-stand having a main tray provided with a drain, a superjacent tray having a reticulated floor, and means for spraying the contents of the upper tray, substantially as specified.

5. A display-stand having a tray, vertical spray-nozzles communicating with a supply-pipe, and flat deflecting-disks arranged in the path of streams discharged by said nozzles, substantially as specified.

6. A display-stand having upper and lower trays, a supply-pipe arranged contiguous to the plane of the lower tray, spray-nozzles connected with the supply-pipe, and removable branch pipes interposed between the spray-nozzles and the supply-pipe, substantially as specified.

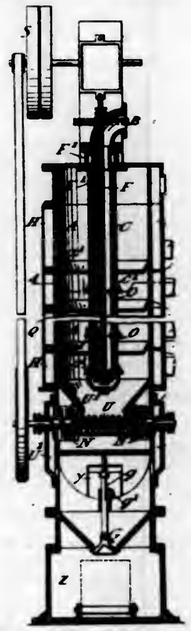
7. A display-stand having upper and lower trays, a supply-pipe arranged contiguous to the plane of one of the trays, and spray-nozzles connected with the supply-pipe and adapted to discharge upon the contents of either tray, substantially as specified.

8. A display-stand having a tray, spray-nozzles communicating with a supply-pipe, and disk deflectors having supporting-arms terminating in sleeves removably fitted upon said nozzles, substantially as specified.

9. A display-stand having a main or lower tray, an auxiliary supporting-frame removably seated in said main tray, an auxiliary or upper tray removably seated upon the said supporting-frame and having a reticulated bottom provided with spaced openings, a supply-pipe having spaced unions alined with said openings in the bottom of the auxiliary tray, spray-nozzles arranged in alinement with said openings in the bottom of the auxiliary tray and having connections with the unions of the supply-pipe, and deflectors disposed in the paths of streams discharged from the nozzles and provided with supporting devices removably engaged with said nozzles, substantially as specified.

10. A display-stand having a main tray, a supply-pipe extending through and parallel with said main tray, a supporting-frame removably seated in said main tray and having terminal transverse base-bars, one of which is provided with a yielding expansible arch extending over and removably engaged with said supply-pipe, an auxiliary tray seated upon said supporting-frame, and spraying devices connected with the supply-pipe, substantially as specified.

606,843. **PROCESS OF AND APPARATUS FOR OBTAINING NICKEL FROM NICKEL-CARBONYL.** LUDWIG MOND, London, England. Filed Jan. 21, 1898. Serial No. 667,456. (No model.)



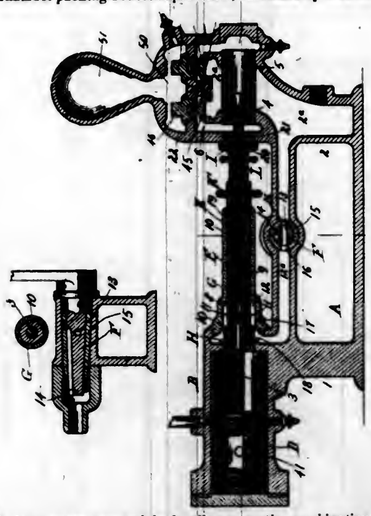
Claim.—1. The herein-described process of separating metallic nickel from nickel-carbonyl, which consists in passing gases containing nickel-carbonyl through interstices between heated pellets or small pieces of nickel, whereby the carbonyl is decomposed and the nickel deposited on said pellets, and slowly moving the said pellets to keep them from cohering, substantially as described.

2. In apparatus for separating metallic nickel from nickel-carbonyl, the combination of a vessel for receiving nickel pellets or fragments, means for heating said vessel, a perforated tube extended into the vessel for introducing therein gases containing nickel-carbonyl to pass through interstices between the heated nickel pellets, means for cooling said tube, and conveyer and sifting mechanism for continuously withdrawing the pellets from the bottom of the vessel and returning those of small size at the top to keep the pellets in motion and prevent them from cohering as they become enlarged by deposit of nickel upon them, substantially as described.

606,844. **STEAM-PUMP.** JAY R. ROGERS, Chicago, Ill., assignor to Frederick C. Austin, same place. Filed Jan. 23, 1897. Serial No. 620,386. (No model.)

Claim.—1. In a steam-actuated hydraulic pump, the combination with the oppositely-arranged steam and pumping cylinders, of a hollow pump-plunger-operating piston-rod which serves as an exhaust-outlet for the steam exhausting from the steam-cylinder; an exhaust-chamber into which the piston-rod extends, and discharges

the steam exhausting from the steam-cylinder; piston-rod packing-boxes for the steam and pumping cylinders, and for the exhaust-chamber, and means for simultaneously adjusting the adjustable packing-glands with which the steam and pumping cylinder, and exhaust-chamber packing-boxes are provided; substantially as set forth.



2. In a steam-actuated hydraulic pump, the combination with the oppositely-arranged steam and pumping cylinders, of a hollow pump-plunger-operating piston-rod which serves as an exhaust-outlet for the steam exhausting from the steam-cylinder; an exhaust-chamber inclosing the piston-rod between the steam and pumping cylinders, and receiving the exhaust from said piston-rod exhaust-port; a couple of rotary and longitudinally-adjustable piston-inclosing sleeves having their adjacent ends respectively internally and externally screw-threaded so as to fit together the one within the other, so that the sleeves can be relatively adjusted simultaneously in opposite directions, and having their opposite ends formed so as to provide packing-glands for one and the other of a couple of piston-rod packing-boxes which are situated at the adjacent ends of the pumping-cylinder and the exhaust-chamber; and a ported longitudinally movable sleeve arranged over the piston-rod within the exhaust-chamber and having its ends formed so as to provide packing-glands for one and the other of a couple of piston rod packing-boxes which are arranged at the adjacent ends of the steam-cylinder and the exhaust-chamber, substantially as set forth.

3. In a steam-actuated engine, the combination with the steam-cylinder and the piston working therein, of the piston-rod extending from the cylinder and serving as an exhaust-outlet for the steam exhausting therefrom; an exhaust-chamber into and through which the piston-rod extends, and into which it discharges the steam exhausting from the steam-cylinder; a couple of piston-rod packing-boxes arranged at the opposite sides of the exhaust-chamber, and provided with adjustable packing-glands; and means for simultaneously and coincidently adjusting the adjustable packing-glands of both of said packing-boxes, substantially as set forth.

4. In a steam-actuated engine, the combination with the steam-cylinder and the piston working therein, of the piston-rod extending from the cylinder and serving as an exhaust-outlet for the steam exhausting therefrom; an exhaust-chamber into and through which the piston-rod extends, and into which it discharges the steam exhausting from the steam-cylinder; a ported longitudinally-adjustable sleeve inclosing the piston-rod within the exhaust-chamber; a couple of piston-rod packing-boxes for the exhaust-chamber, each of which has one of its glands provided by one of the ends of said longitudinally-adjustable piston-inclosing sleeve, and one of which has its other gland independently adjustable along the piston-rod so as to permit of its tightening the packing between itself and the end of the sleeve forming the other gland thereof and thereby simultaneously and coincidently adjusting said sleeve longitudinally so as to tighten the packing in the other packing-gland, substantially as set forth.

5. In a steam-actuated engine, the combination of a steam-cylinder having one of its ends provided with an outwardly-extending shell or casing which provides an exhaust-steam chamber; a hollow piston-rod extending from the steam-cylinder into the exhaust-chamber and providing an outlet for the exhaust-steam, and having an exhaust-port which communicates with said exhaust-chamber; a ported longitudinally-adjustable piston-rod-inclosing sleeve arranged within the exhaust-chamber and constructed so as to be removable therefrom by way of the open outer end of the shell or casing without detaching the shell or casing from the cylinder; a piston-rod packing-box intermediate of and common to, the piston-cylinder and the exhaust-chamber, and having its adjustable packing-gland provided by one of the ends of said sleeve; and means for adjusting said sleeve so as to adjust the packing-gland provided thereby, independently of the shell or casing, said means being fitted within the open outer end of the shell or casing, and constructed so as to be exteriorly manipulated for adjustment, substantially as set forth.

6. In a steam-actuated engine the combination with the steam-cylinder and the piston working therein, of the piston-rod extending from the steam-cylinder and serving as an exhaust-outlet for the steam exhausting therefrom; an exhaust-chamber into and through which the piston-rod extends, and into which it discharges the steam exhausting from the steam-cylinder; piston-rod packing-boxes for the steam-cylinder and for the opposite sides of the exhaust-chamber, said boxes being provided with adjustable packing-glands; and means for simultaneously and coincidently adjusting the adjustable packing-glands of all of said packing-boxes; substantially as set forth.

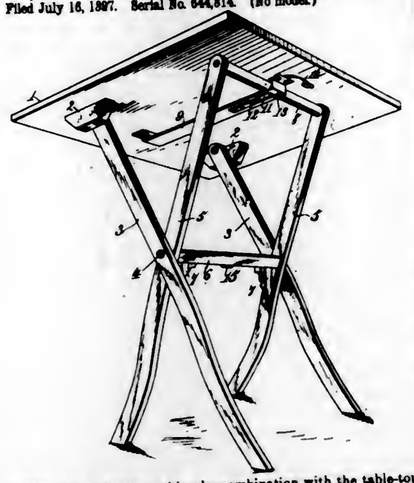
7. In a steam-actuated hydraulic pump, the combination with the oppositely-arranged steam and pumping cylinders, and with the steam-actuated piston and pump-plunger therefor, of the piston-rod extending between the steam and pumping cylinders and serving as an exhaust-outlet for the steam exhausting from the steam-cylinder; an exhaust-chamber into and through which the piston-rod extends, and into which it discharges the steam exhausting from the steam-cylinder; piston rod packing-boxes for the pumping-cylinder, and for the opposite sides of the exhaust-chamber, said boxes being provided with adjustable packing-glands; and means for simultaneously and coincidently adjusting the adjustable packing-glands of all of said packing-boxes; substantially as set forth.

8. In a steam-actuated engine, a steam-cylinder having one of its ends provided with a tubular packing-box H having its inner end formed so as to provide a packing-gland, and provided also with an outwardly-extending shell or casing which provides an exhaust-steam chamber; a hollow piston-rod extending from the steam-cylinder into the exhaust chamber and out of the latter by way of the open outer end of the shell or casing, and providing an outlet for the steam exhausting from the steam-chamber, and having an exhaust-port which communicates with the exhaust-chamber; a ported longitudinally-adjustable piston-inclosing sleeve arranged within the shell or casing and constructed so as to be removable therefrom by way of the open outer end thereof, and also constructed so that its inner end fits within the tubular packing-box H and provides an adjustable gland therefor, and also so that its outer end fits within the outer end of the shell or casing and provides an adjustable packing-gland therefor; and a second and independently longitudinally adjustable sleeve inclosing the piston-rod and having its inner end fitted within the open outer end of the shell or casing and constructed so as to provide the other packing-gland therefor, substantially as set forth.

9. The combination of a cylinder having a suitable supply-port; a piston working in said cylinder and comprising an outer hollow cylindric portion and an inner concentrically-arranged hollow central portion having a peripheral exhaust-recess which communicates with its interior, and also having its external diameter less than that of the internal diameter of the bore of the outer cylindric portion so as to form an annular space between the two; and a steam-actuated valve working in said annular space and having a straight bore adapted to fit over the central portion of the piston; said outer portion of the piston and said steam-actuated valve being provided with cooperating ports adapted to receive steam from the cylinder supply-port and to exhaust the same into the peripheral recess of the central piston portion, and to cause a continuous reciprocation of the piston; and a hollow piston-rod which receives the exhaust from the interior of the central portion of the piston; substantially as set forth.

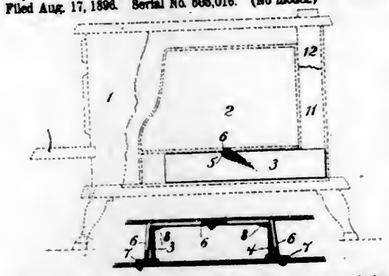
10. The combination of a steam-cylinder having a suitable supply-port; a piston working in said cylinder and comprising a pair of oppositely-arranged cylindric heads, an intermediate hollow body part 25 clamped between said heads, and a concentrically-arranged hollow central portion 26 having a peripheral exhaust-recess 27 which communicates with its interior, and also having an external diameter less than that of the bore of the body part 25 so as to form an annular space between the two; a steam-actuated valve working in said annular space and having a straight bore adapting it to fit over the central portion 26; said body part 25 and steam-actuated valve being provided with cooperating ports adapted to receive steam from the cylinder supply-port and to exhaust the same into the peripheral exhaust-recess 27 of the central piston portion 26, and to effect a continuous reciprocation of the piston; and a hollow exhaust-receiving piston-rod having an external diameter less than that of the central piston portion 26, and fitting in a socket formed in the same; substantially as set forth.

606,845. FOLDING TABLE. JOHN H. SIMMONS, Warren, Pa. Filed July 16, 1897. Serial No. 644,814. (No model.)



Claim.—In a folding table, the combination with the table-top, of a pair of legs having hinged or pivotal connection with the under side of the table-top, another pair of legs pivotally attached to the first-named pair of legs and connected by a cross-bar at the said point of pivotal attachment and by a round at the upper ends of said legs, a guide-bar secured to the under side of the table-top, a roller mounted on the said round and having flanged ends engaged with the edges of said guide bar to prevent lateral movement of the legs, a spring-catch mounted on said guide-bar to engage the round and look the table in unfolded position, and a spring-catch at one end of the said guide-bar to engage the cross-bar located between the pivotal connection of the legs and secure the folded table, substantially as described.

606,846. COOKING-STOVE. OTIS W. SNYDER, Lexington, Ky. Filed Aug. 17, 1896. Serial No. 603,016. (No model.)

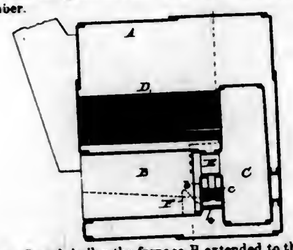


Claim.—1. The combination with a cooking-stove, and the bottom flue-strips notched in the upper edge, of a yoke-shaped oven-support and brace secured to the stove bottom and provided on the under side of its horizontal portion with recesses to engage and lock with the notches in the upper edges of the bottom flue-strips to brace said strips and provide a firm and even support for the oven, substantially as described.

2. The combination with a cooking-stove, of the bottom flue-strips, the vertical back flue-strips, a yoke-shaped oven-support and flue-brace interlocked with the bottom flue-strips and having the top of its horizontal portion flush with the top edges of said bottom flue-strips, means for securing said yoke to the stove-bottom and an oven supported on said bottom flue-strips and yoke-shaped brace and secured to the latter, substantially as described.

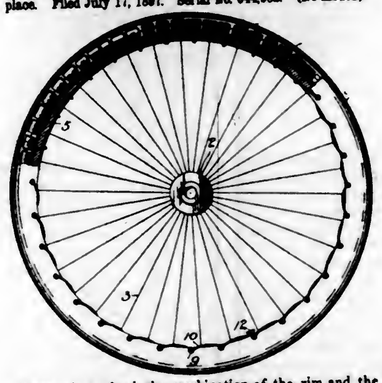
606,847. MARINE BOILER. WALFRID T. SYLVES, Washington, D. C. Filed Jan. 6, 1896. Serial No. 574,506. (No model.)

Claim.—1. As an improvement in Scotch boilers, the cylindrical body A and fines D in combination with the cylindrical furnace B seated wholly within the body and closed at the rear end by a vertical plate, the combustion-chamber having a vertical front plate adjacent to the rear end of the furnace, and the short and relatively large tube extending horizontally from the furnace to the combustion-chamber.



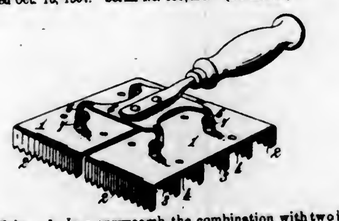
2. In a Scotch boiler the furnace B extended to the rear part of the boiler and closed by a vertical rear plate, in combination with the smoke-chamber having vertical walls and one or more large short tubes extending from the furnace to said chamber without downward inclination; whereby an unimpeded draft is permitted and a prompt circulation of the water from beneath the furnace insured.

606,848. TIRE FOR VEHICLE-WHEELS. NELSON THERIEN, South Chicago, Ill., assignor of one-half to Charles Kroscher, same place. Filed July 17, 1897. Serial No. 644,962. (No model.)



Claim.—In a wheel, the combination of the rim and the pneumatic tire secured thereto, of the corks located in said tire, isolated from each other and of a smaller diameter than the interior of the tire, so as to leave an air-space therebetween, the cord passing longitudinally through said corks and the shield of textile material surrounding the outer side of the tire and the inner side of the rim and the eyelets and lacing-cords, substantially as described.

606,849. CURRYCOMB. WILLIAM A. TOWNES, Milan Tenn. Filed Oct. 16, 1897. Serial No. 655,421. (No model.)

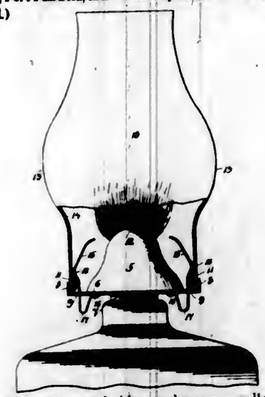


Claim.—1. In a currycomb, the combination with two independently-acting comb-sections, of a connecting-bar having downwardly-turned end portions, and means for pivotally attaching each comb-section to one of said downwardly-turned portions of said connecting-bar, whereby each comb-section is adapted to have a yielding movement independent of the other comb-section, substantially as described.

2. In a currycomb, the combination with two independently-acting comb-sections, of a transversely-arranged connecting-bar having each end provided with downwardly-turned prongs, and means for pivotally connecting the comb-sections with said prongs, whereby each comb-section is adapted to have a yielding movement independent of the other comb-section, substantially as described.

3. In a currycomb, the combination with two spaced-apart and independently-acting comb-sections having their backs provided with eyes or rings, of a transversely-arranged connecting-bar having each end provided with downwardly-turned prongs engaged with the said eyes or rings of the comb-sections whereby each comb-section is adapted to have a yielding movement independent of the other, and a handle attached to said connecting-bar, substantially as described.

606,850. CHIMNEY-HOLDER. JAMES H. WALLACE and ARTHUR G. HILTON, Fort Fairfield, Me. Filed Sept. 20, 1897. Serial No. 652,310. (No model.)



Claim.—1. In chimney-holders, a burner, a gallery around the burner and having a circumferential upturned flange to receive the base of the chimney; and two or more spring-fingers, one end of each secured to the floor of the gallery and depending below the same and formed with a compressing-handle consisting of a return-bend from which each finger rises freely through an aperture in the gallery-floor, each finger being shaped with an outward-projecting offset above which the fingers converge in slanting positions toward the common center, and below the top of the burner; substantially as described.

2. In chimney-holders, a burner mounted upon a gallery-floor having two or more apertures through it and two or more spring-fingers each secured to the floor and projecting downward and having a compressing-handle consisting of a return-bend from which each finger rises through one of the said apertures in the gallery-floor and is shaped with an outward offset to engage a shoulder of the chimney and terminates upward with an inward slant, the said offset in each finger being located below the level of the burner; substantially as described.

3. In chimney-holders a burner having a gallery with two or more apertures through the floor and spring-fingers depending from the floor and having each a compressing-handle consisting of a return-bend, the free end of the finger passing up through the floor and adapted to engage a chimney on the inner side thereof; substantially as described.

606,851. RAILWAY-TIE-PLATE SURFACER AND GAGE. HENRY WARE, Springville, N. Y. Filed Apr. 18, 1896. Serial No. 677,990. (No model.)



Claim.—1. A railway-tie-plate surfacer and gage, comprising a rod provided at its ends with heads having surfacers in the same plane for leveling tie-plates and straight-edges at right angles to the inner faces of said surfacers for squaring and gaging the tie-plates, substantially as described.

2. A railway-tie-plate surfacer and gage, consisting of a rod having at one end a fixed head and at the other end an adjustable head, the said heads being provided with surfacers in the same plane for leveling tie-plates and having straight-edges at right angles to the inner faces of said surfacers for squaring and gaging the tie-plates, substantially as described.

3. A railway-tie-plate surfacer and gage, consisting of two heads provided with surfacers in the same plane for leveling tie-plates and having straight-edges at right angles to the inner faces of said surfacers for squaring and gaging the tie-plates, a rod connecting the said heads and on which one head is adjustable to accord with the required gage, the said connecting-rod being located at an elevation above the surfacers and having one end provided with a scale adjacent to the adjustable head, and means for securing said adjustable head in required position on said rod, substantially as described.

4. A railway-tie-plate surfacer and gage consisting of two heads provided with surfacers in the same plane, one fixed and the other adjustable, the surfacer on the fixed head being concaved at its end, a rod connecting the said heads and having its end provided with a scale adjacent to the adjustable head, and means for securing the adjustable head on said rod, substantially as described.

5. A railway-tie-plate surfacer and gage consisting of two heads provided with surfacers in the same plane, one fixed and the other adjustable, the surfacer on the fixed head being concaved at its end and the surfacer on the adjustable head being provided with an arm at one corner, a rod connecting the said heads, and means for securing the adjustable head on said rod, substantially as described.

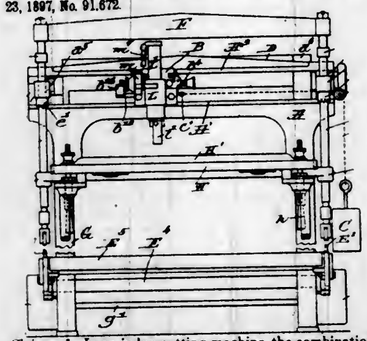
606,852. TELEPHONIC TRANSMITTER. THOMAS F. AHERN, Detroit, Mich. Filed June 19, 1897. Serial No. 641,418. (No model.)



Claim.—1. An electric telephone-transmitter or analogous device to be operated by varying electric currents, consisting of two substantially triangular carbon electrodes placed in frictional contact, the area of which is varied by the sound-vibrations of the diaphragm carrying one of the electrodes, substantially as described.

2. An apparatus for reproducing sound by means of a varying electric current, consisting of a vibrating plate carrying a triangular carbon electrode placed in frictional contact with the triangular face of an opposite carbon electrode, from one to the other of which the electric current is caused to pass, substantially as described and for the purpose set forth.

606,853. INDEXING-MACHINE. ARTHUR H ALEXANDER, London, England. Filed Aug. 2, 1897. Serial No. 646,721. (No model.) Patented in England Aug. 10, 1896, No. 15,067, and in Germany Apr. 23, 1897, No. 91,672.



Claim.—1. In an index-cutting machine, the combination with a cutting-tool and mechanism to operate the same, of feeding mechanism intermittingly to move said cutting-tool forward for its successive cuts, and a pattern-surface coöperating with said feeding mechanism, to govern the said intermittent movement thereof, said pattern-surface comprising a series of grooves, said grooves being divergent from each other, and means to change the relative positions of the traveling tool-carrier and said pattern-surface for regulating the intermittent movements of the former, substantially as described.

2. In an index-cutting machine having an intermittingly-traveling tool-carrier, a pattern-surface having directing-grooves extending transversely to the direction of travel of said tool-carrier, said grooves diverging from each other in one direction, and means to adjust said pattern-surface relatively to said tool-carrier to coöperate therewith in regulating the intermittent travel thereof, substantially as described.

3. In an index-cutting machine, a pattern-surface, a tool-carrier, said tool-carrier being provided with a reciprocable pin, said pin being mounted in said carrier to move laterally therein, and means alternately to move said tool-carrier and said pin laterally relatively to said pattern-surface to permit said pin to successively engage the pattern-surface, substantially as described.

4. In an index-cutting machine, a pattern-surface, a tool-carrier, said tool carrier being provided with a longitudinally-reciprocable pin, said pin being mounted in said carrier to move laterally therein, and means alternately to move said tool-carrier and said pin laterally relatively to said pattern surface to permit said pin to successively engage the pattern-surface, said means including a spring mounted on said carrier and engaging said pin, substantially as described.

5. In an index-cutting machine, a pattern-surface, a tool-carrier, said tool-carrier being provided with a reciprocable pin, said pin being mounted in said carrier to move laterally therein, and means alternately to move said tool-carrier and said pin laterally relatively to said pattern-surface to permit said pin to successively engage the pattern-surface, and adjusting mechanism to regulate said relative lateral movement, substantially as described.

6. In an indexing-machine having a pattern-surface and a tool-carrier to coöperate therewith, feeding mechanism to move said tool-carrier step by step across said pattern-surface, said feeding mechanism comprising two pins carried by said tool-carrier, means to reciprocate said pins in said carrier in the direction of their length and means to move said pins in said carrier transversely of their length, substantially as described.

7. In an indexing machine, having a pattern-surface and a tool-carrier to coöperate therewith, feeding mechanism to move said tool-carrier step by step across said pattern-surface, said feeding mechanism comprising two pins carried by and reciprocable in said tool-carrier transversely thereof, means to reciprocate said pins, means to move said pins laterally relatively to said carrier, and adjusting devices to regulate the amount of said lateral movement, substantially as described.

8. In an indexing-machine having a pattern-surface and a tool-carrier to coöperate therewith, feeding mechanism to move said tool-carrier step by step across said pattern-surface, said feeding mechanism comprising two pins carried by and reciprocable in said tool-carrier transversely thereof, means to reciprocate said pins, means to move said pins laterally relatively to said carrier, and independent adjusting devices for each of said pins to regulate the lateral movement thereof, substantially as described.

9. In an indexing-machine, a work-table, having slots therein, sleeves movable in but non-removable from said slots, means to fix said sleeves immovably in any desired adjustment in said slots, bolts freely movable longitudinally in said sleeves, a work-clamp extending from one bolt to the other and carried thereby, said bolts being threaded at their upper ends and provided with nuts for setting or adjusting the work-clamp for any particular thickness of work, and having quick-clamping means at their lower ends for drawing said bolts and guide down in the sleeves for clamping the work, substantially as described.

10. In an indexing-machine, a tool and its carrier, a work-table, a work-clamp, an end gage, a width-gage, means to automatically move said width-gage into inoperative position upon operation of said tool, and means to adjust said clamp and said gages, substantially as described.

11. In an indexing-machine, a width-gage pivotally mounted on the machine, springs normally tending to move said gage out of gaging position, a tool and its carrier, and mechanism to operate said tool, said mechanism being provided with a tripping device to engage said width gage and release the same to permit said springs to move said gage out of the way of said tool as the latter descends, substantially as described.

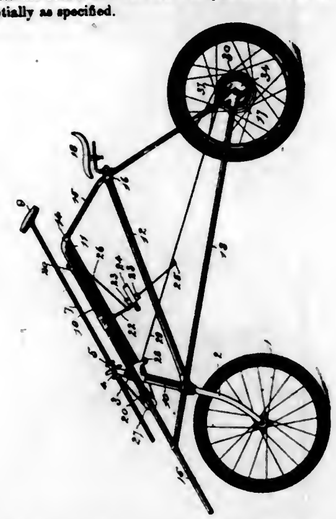
12. In an indexing-machine, a pattern-surface provided with a graduated scale, a reader fixed on the machine to coöperate therewith, a tool-carrier, mechanism to intermittingly feed said carrier along said pattern-surface, adjusting devices to regulate the feed of said mechanism, and a graduated scale for said adjusting devices arranged to indicate when said feeding mechanism is adjusted to correspond to the position of said pattern-surface, substantially as described.

606,854. BICYCLE. JOHN H. BERGSTROM, Danbury, Conn. Filed Apr. 22, 1897. Serial No. 633,384. (No model.)

Claim.—1. In combination in a velocipede, wheels, a frame supported by the wheels, handles loosely connected with the frame and adapted to be given a free reciprocation, pedals loosely connected with the frame and adapted to be given a free reciprocation, and a continuous flexible connection between the handles, the pedals and the driving-wheel, substantially as specified.

2. In combination in a velocipede, wheels, a frame supported by the wheels, handles loosely connected with the rotatable steering-head and adapted to be given a free reciprocation, a driving-spring connected with the driving-wheel, a sleeve connected with the driving-spring, a ratchet-and-pawl connection between the sleeve and the frame, a cord-pulley, a ratchet-and-pawl connection between the cord-pulley and the sleeve, a spring connection between the cord-pulley and the frame, and a flexible connection between the handles and the cord-pulley, substantially as specified.

3. In combination in a velocipede, wheels, a frame supported by the wheels, pedals loosely connected with and adapted to be given a free reciprocation along the frame-tubes, a driving-spring connected with the driving-wheel, a sleeve connected with the driving-spring, a ratchet-and-pawl connection between the sleeve and the frame, a cord-pulley, a ratchet-and-pawl connection between the cord-pulley and the sleeve, a spring connection between the cord-pulley and the frame, and a flexible connection between the pedals and the cord-pulley, substantially as specified.



4. In combination in a velocipede, wheels, a frame supported by the wheels, handles loosely connected with the frame and adapted to be given a free reciprocation, pedals loosely connected with the frame and adapted to be given a free reciprocation, a spring driving mechanism connected with the driving-wheel, and a continuous flexible connection between the handles, the pedals and the driving-spring for placing the spring under driving torsion, substantially as specified.

5. In combination in a velocipede, wheels, a frame supported by the wheels, handles having a free reciprocation, a sleeve loosely supporting the handles and pivotally connected with the steering-head, reciprocating pedals, and a continuous flexible connection between the handles the pedals and the driving-wheel, substantially as specified.

6. In combination in a velocipede, wheels, a frame supported by the wheels, handles connected with the frame and adapted to be given a free oscillation and reciprocation, pedals loosely connected with the frame and adapted to be given a free reciprocation, and a flexible connection attached to the handles and attached to the driving-wheel and loosely passing around a portion attached to a part connected with the pedals, substantially as specified.

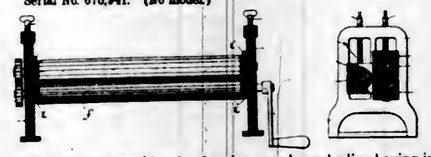
7. In combination in a velocipede, wheels, a frame supported by the wheels, handles rotarily connected with a handle-rod, said handle-rod having a free reciprocation and an oscillation, pedals loosely connected with the frame and adapted to be given a free reciprocation, and a flexible connection attached to the handles and to the driving-wheel and loosely passing around a portion attached to a part connected with the pedals, substantially as specified.

8. In combination in a velocipede, wheels, a frame supported by the wheels, handles connected with the frame and adapted to be given a free reciprocation, a pedal-slide having wheels which run upon portions of the frame-tubes, pedals connected with the pedal-slide, and a continuous flexible connection attached to the handles and attached to the driving-wheel and loosely passing around a part attached to the pedal-slide, substantially as specified.

9. In combination in a velocipede, wheels, a frame supported by the wheels, handles loosely connected with the frame and adapted to be given a free reciprocation, pedals connected with the frame and adapted to be given a free reciprocation, a cone cord-pulley adjacent to the driving-wheel, a continuous flexible connection between the handles, pedals and cord-pulley, a spring for rotating the cord-pulley in one direction, a pawl connected with the cord-pulley, a ratchet borne by a sleeve and adapted to be engaged by the pawl, a hub, and a spring located within the hub with its inner end connected with the sleeve and its outer end connected with the hub, substantially as specified.

10. In combination in a velocipede, wheels, a frame supported by the wheels, handles loosely connected with the frame and adapted to be given a free reciprocation, pedals loosely connected with the frame and adapted to be given a free reciprocation, a cord-pulley rotatably mounted adjacent to the driving-wheel, a flexible connection between the handles, the pedals and the cord-pulley, a spring for turning the cord-pulley in one direction, a pawl borne by the cord-pulley, a sleeve rotatably mounted upon the axle of the driving-wheel and bearing a ratchet that is adapted to be engaged by the cord-pulley pawl and a ratchet that is adapted to be engaged by a pawl connected with the frame, a hub rotatably mounted upon the sleeve, and a spring located within the hub with its inner end connected with the sleeve and its outer end connected with the hub, substantially as specified.

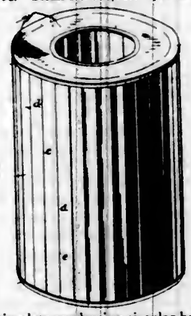
606,855. ROLLER-MACHINE FOR FORMING ROUND CAN-BODIES. HENRY C. CAMPEN, Baltimore, Md. Filed Feb. 19, 1898. Serial No. 670,941. (No model.)



Claim.—1. A machine for forming round can-bodies having in combination, two plain-surfaced round rollers; and a third roller provided with numerous flat faces all around it, each face extending longitudinally of the roller, whereby a tin-plate flat blank may be run through said rollers and converted into a cylindric shape having numerous narrow flat sides.

2. A machine for forming round can-bodies having in combination, two plain-surfaced round rollers; and a third roller provided with numerous flat faces all around it, each face extending longitudinally of the roller and longitudinal grooves—the flat faces and grooves alternating.

606,856. ROUND TIN CAN. HENRY C. CAMPEN, Baltimore, Md. Filed Feb. 18, 1898. Serial No. 670,749. (No model.)



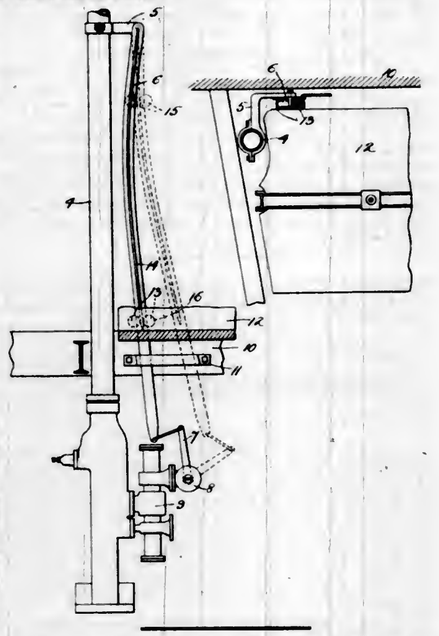
Claim.—1. A tin-plate can having circular heads and a body provided with numerous narrow flat sides of uniform width from end to end and every two sides forming an angle and extending endwise between the two heads.

2. A tin-plate can having circular heads each provided with a circular rim-flange, and a body provided with numerous straight flat sides and angles, extending longitudinally from end to end, the said flat sides and angles at the end of the body fitting within the said circular flanges of the heads.

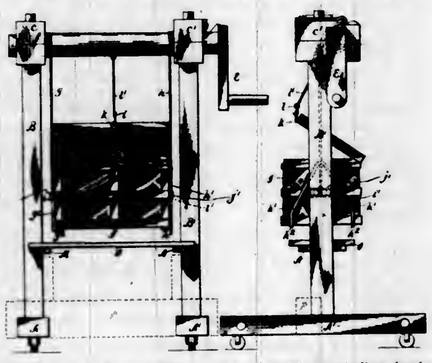
606,857. AUTOMATIC ELEVATOR SAFETY-STOP. RICHARD T. CRANE, Chicago, Ill. Filed May 29, 1897. Serial No. 638,823. (No model.)

Claim.—1. In an automatic elevator-stop, the combination with a stop-motion device, of a cam having one end pivoted on a fixed fulcrum and its other end operatively connected to such stop-motion device, and a pair of rollers or studs carried by the car and adapted to engage said cam when the car is at the limit of its movement, substantially as described.

2. In an elevator, the combination of a car, controlling mechanism operative from the car, a stop-motion device separate from said controlling mechanism and constructed to control the movement of said car independently of said controlling mechanism, and mechanism for actuating said stop-motion device comprising two elements, one of said elements being a cam and the other a pair of rollers or studs adapted to engage said cam at the limit of movement of the car, one of the elements being operatively connected with such stop-motion device and the other being carried by the car, substantially as shown and described.



606,858. TRUNK-LIFTING DEVICE. ELIAS EDWARDS, Rural Hill, Miss. Filed Jan. 19, 1897. Serial No. 619,804. (No model.)



Claim.—1. A trunk-lifting device comprising a windlass having two pendent cords or ropes each provided at its free end with a bail-shaped hook to engage the bottom of the trunk at the ends thereof, and engaging members to take beneath the end handholds of the trunk, substantially as described.

2. In a trunk-lifting device the combination with a windlass to lift the trunk, of a hook to engage the trunk-lid and hold it open, substantially as described.

3. In a trunk-lifting device, the combination with a windlass to lift the trunk, of bail-shaped hooks to engage the bottom of the trunk at the ends thereof, and a hook to engage the trunk-lid and hold it open, substantially as described.

4. In a trunk-lifting device, the combination with a windlass to lift the trunk, of bail-shaped hooks to engage the bottom of the trunk at the ends thereof, engaging members to take beneath the handholds on each end of the trunk, and a hook to engage the trunk-lid and hold it open, substantially as described.

5. In a trunk-lifting device, the combination with a windlass-frame mounted on casters, of a windlass, hook members pendent therefrom to engage the trunk, and a push-block adapted to engage the windlass-frame and provided with handles whereby the said frame may be moved upon its casters, substantially as described.

6. In a trunk-lifting device, the combination of base-blocks, standards rising therefrom, a crank-driven windlass journaled at the upper ends thereof, hooks pendent from the windlass to engage the trunk, and a rest-board supported between the standards and adapted to assist in supporting the trunk, substantially as described.

7. In a trunk-lifting device, the combination with a windlass-frame, of a windlass, hook members pendent therefrom to engage the trunk, a hook to engage the trunk-lid and hold it open, and a pawl to hold the windlass immovable, substantially as described.

8. In a trunk-lifting device, the combination of a windlass-frame mounted on casters, a crank-driven windlass, bail-shaped hooks pendent therefrom to engage the trunk at the ends thereof, engaging members to take beneath the handholds on the end of the trunk, a pawl to hold the windlass immovable, and a rest-board supported in the frame and adapted to assist in supporting the trunk, substantially as described.

606,859. COLLAR. ALBERT D. FENWICK, Philadelphia, Pa., assignor to the Fenwick Collar and Cuff Machine Company, Portland, Me. Filed July 8, 1897. Serial No. 643,530. (No model.)



Claim.—1. A band composed of two or more plies, the outer plies constituting the sides of the band being turned inwardly at their longer edges, the said longer edges overlapping at one end of each ply of the band an inturned end, and being overlapped at the other end of each ply of the band by an inturned end, the said assembled plies having at each end an overlapping interned end inserted into an inturned end of the opposed half of the band which is overlapped by said longer edges, both of said plies being stitched together, leaving the ends of the band interlocked one with the other, substantially as described.

2. A band composed of two or more plies, the outer plies constituting the sides of the band being turned inwardly at their longer edges, the said longer edges overlapping at one end of each ply of the band an inturned end, and being overlapped at the other end of each ply of the band by an inturned end, the said band having at each end an overlapping inturned end inserted into an inturned end of the opposed half of the band which is overlapped by the longer edges, both of said plies being stitched together, leaving the ends of the band interlocked one with the other, combined with a top inserted into the open upper edge of the band between its ends, and united thereto by stitches, substantially as described.

3. A collar-band comprising two or more plies, each outer ply having its sides and ends infolded and lying flat, one end fold of each ply lying flat upon the fabric, the side folds lying upon said end folds and the fabric, and the opposite end fold of each ply lying upon the side folds, said respective plies being secured together, substantially as described.

4. A collar-band comprising two or more plies, each outer ply having its sides and ends infolded and lying flat, one end fold of each ply lying flat upon the fabric, the side folds lying upon said end folds and the fabric, and the opposite end fold of each ply lying upon the side folds, and the respective plies being secured together in reverse position with respect to the end folds, substantially as described.

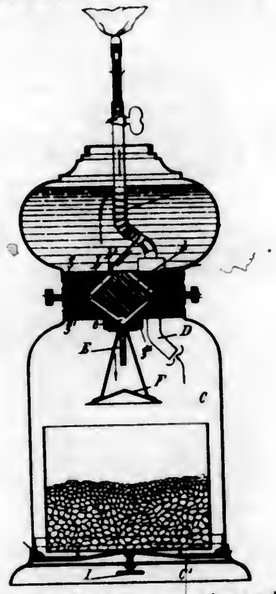
606,860. INNER SOLE. ATHELSTON B. GOOCH, South Braintree, Mass. Filed Nov. 17, 1897. Serial No. 658,780. (No model.)



Claim.—An inner sole for a welted boot or shoe comprising a body portion, and a strip made in a separate piece from the sole, placed edgewise on the outer surface thereof, the inner edge of the strip being split to form two flanges, one of which projects outwardly toward the edge of the sole, while the other projects inwardly toward the center of the sole and is attached to the sole, the solid body of the strip being supported by the lips in position for attachment to the upper and welt.

606,861. ACETYLENE-GAS GENERATOR. EMILE GOMART, Bordeaux, France. Filed Dec. 31, 1897. Serial No. 665,907. (No model.) Patented in France May 5, 1896, No. 255,978, and in Belgium Oct. 26, 1896, No. 134,199.

Claim.—1. The combination of an upper water-receiver, a carbid-receiver, one or more bent capillary regulation-tubes counecting bot'i receivers, and larger passages which can be stopped at will forming xtensions of the capillary tubes so as to let fall larger drops substantially as and for the purpose set forth.

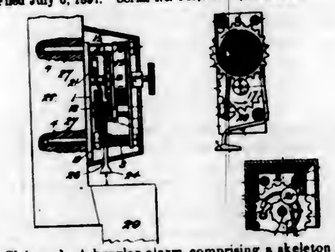


2. The combination of an upper water-receiver, a carbid-receiver, one or more bent capillary regulation-tubes connecting both receivers, larger passages forming extensions of the capillary tubes, a water-collecting recess and an escape directing the water on the cap from which it falls on the carbid substantially as and for the purpose set forth.

3. The combination of an upper water-receiver, a carbid-receiver, one or more bent capillary regulation-tubes connecting both receivers, and an auxiliary passage which can be closed at will and which allows direct admission of water on the carbid when starting the apparatus substantially as and for the purpose set forth.

4. The combination of an upper water-receiver, a carbid-receiver with a movable bottom, one or more bent capillary regulation-tubes, a plug bearing both receivers and the capillary regulation tube or tubes, the auxiliary passages for collecting water and starting the apparatus, the water-escape tube, the dividing-cap, and the gas-escape tube, substantially as and for the purpose set forth.

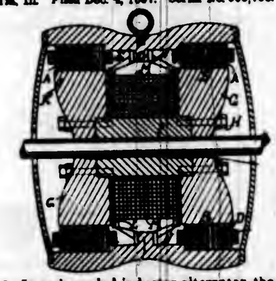
606,862. BURGLAR-ALARM. ASTOR G. GRAY, Emporia, Kans. Filed July 6, 1897. Serial No. 643,609. (No model.)



Claim.—1. A burglar alarm, comprising a skeleton frame, to be attached to a door or window, a casing or bell, a vibratory clapper, an angle-arm to prevent the vibratory movement of said clapper, a pin rotatably mounted, and a rod pivoted to said pin and provided with a head for engagement at times with the angle-arm, substantially as and for the purpose described.

2. A burglar alarm, comprising a skeleton frame, to be attached to a door or window, a casing or bell, a vibratory clapper, an angle-arm to prevent the vibratory movement of said clapper, a plate provided with a bifurcated angle-arm, a pin removably mounted in said plate above said bifurcated angle-arm, a rod pivoted in said plate and adapted to rest in substantially a horizontal position upon the bifurcated angle-arm and to swing downward to a vertical position through the bifurcation of said arm, substantially as described.

606,863. ALTERNATING-CURRENT DYNAMO. LUDWIG GUTMANN, Peoria, Ill. Filed Dec. 4, 1897. Serial No. 660,768. (No model.)



Claim.—1. In an iron-clad inductor-alternator the combination with one or more stationary annular armature-cores and windings for the same, of a stationary field-winding, a field-core for said winding, in three solid and separable structures, and a removable shaft for said field magnet core, as and for the purpose described.

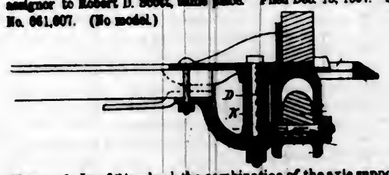
2. In an inductor-alternator the combination of an annular armature-core having two sets of laminated structures with radially inwardly projecting poles, coils mounted on said poles, a field-energizing coil, means for securing said coil to the armature-frame, a field-magnet core adapted to rotate within the pole projections of said armature, an independent shaft for supporting said field-magnet core, and means for removing said magnet-core in parts, as and for the purpose described.

3. In an alternator the combination with a stationary iron-clad armature, of a field magnet core for said alternator consisting of three solid structures, a shaft for said field-magnet core adapted to rotate, and means for temporarily removing said pieces from said shaft, as and for the purpose described.

4. In an alternating-current generator the combination of a rotary field-magnet core of solid magnetic material, having outwardly-projecting poles; an energizing-coil securely held between said polar projections; a stationary magnetic annulus having inwardly-extending polar projections, alternate ones corresponding with those of said field-magnet; stationary induced coils mounted on said inwardly-extending projections; and means for removing parts of the field-magnet core, as and for the purpose described.

5. In an inductor alternator the combination with an iron-clad armature-core and winding, of a rotary field-magnet core located within said armature-core, temporarily detachable in parts.

606,864. FIFTH-WHEEL. MARTIN HALPTHENY, Pontiac, Mich., assignor to Robert D. Scott, same place. Filed Dec. 13, 1897. Serial No. 661,807. (No model.)



Claim.—1. In a fifth-wheel, the combination of the axle supported to oscillate vertically in the lower circle, a horizontal bolt on which the axle is pivotally supported, swiveled at its inner end about the king-bolt.

2. In a fifth-wheel, the combination of the two circles, the king-bolt passing through the same, a rigid brace for the lower end of the king-bolt, a bearing or yoke on the lower circle and the axle supported therein by a transverse pivotal bolt.

3. In a fifth-wheel, the combination of the two circles, the king-bolt passing through the same and extending downward, a rigid brace for the lower end of the king-bolt, downwardly-projecting lugs on the under side of the lower circle, the axle between the lugs, and a bolt, swiveled on the king-bolt adjacent to the brace passing through the lugs and the axle, substantially as described.

4. In a fifth-wheel, the combination of the reach, the upper circle secured thereto, the under circle, lugs depending from the under circle, a bolt passing therethrough and through the axle-stock, a reinforcing-plate on the axle-stock, curved bearings N thereon in which the ends of the lugs bear, as and for the purpose described.

606,865. POLICE-PATROL SYSTEM. ORLANDO W. HART, Fall River, Mass. Filed Aug. 3, 1897. Serial No. 646,874. (No model.)



Claim.—1. A signaling system consisting of a closed circuit extending through a central station and a plurality of substations or patrol-boxes; a battery common to all of the said stations; means for transmitting telegraphic signals from each substation or patrol-box to the central station, and means for receiving the same at said station; and means at all of the stations for transmitting and receiving telephonic signals consisting of a low-resistance transmitter whose contacts are upon the front of the diaphragm and directly in the circuit as set forth; and a magneto telephone-receiver in inductive relation with the circuit.

2. A signaling system consisting of a closed circuit extending through a central station and a plurality of substations; a battery common to all the said stations; means for transmitting telegraphic signals from each substation to the central station and means at the latter station for receiving the same; means at all the stations for transmitting and receiving telephone-signals, consisting of a microphone having a plurality of contacts in the main circuit supported between a fixed or rigid support near the mouthpiece and a diaphragm or vibrating surface at the rear of said support; and a magneto telephone-receiver in inductive relation with said circuit.

3. A police or other signaling system adapted for telegraphic and telephonic signaling, consisting of a closed circuit including telegraphic transmitting apparatus at a plurality of substations or patrol-boxes and telegraphic receiving apparatus at a central station; a battery common to all of the said stations; and means at all of the stations for transmitting and receiving telephonic signals consisting of a receiving-telephone in inductive relation with the main circuit; a telephone support or switch; a microphone having a plurality of contacts in series with each other, supported in an inclosing case between the front of a diaphragm or vibrating surface and a fixed or rigid support, in an alternate path of the main circuit, which path is open when the telephone is upon the switch, and which forms a part of the main circuit when the telephone is removed from the said switch.

4. A police or other signaling system adapted for simultaneous telegraphic and telephonic signaling, consisting of a closed circuit extending through telegraphic apparatus at a central station and also at a plurality of substations or patrol-boxes; a battery common to all of said stations; means for transmitting telegraphic signals from each substation or patrol-box to the central station, and means for receiving the same at said station; means at all of the stations for transmitting and receiving telephonic signals consisting of a receiving-telephone in inductive relation with the main circuit, a telephone support or switch, a low-resistance transmitter operating as set forth in an alternate path of the main circuit, which path is open when the telephone is upon the support or switch, and which forms a part of the main circuit when the telephone is removed from the said switch, and an electromagnetic or impedance coil in parallel with the electrodes of the transmitter, as set forth.

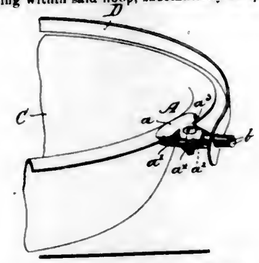
5. A telephone-transmitter consisting of a case, a mouthpiece on the front of the case, a diaphragm at the rear of the case, a plurality of electrodes extending from the diaphragm toward the mouthpiece and provided thereat with a rigid support and with means of adjustment.

6. The combination in a police-patrol system, with a closed circuit including a battery, of a plurality of substations or patrol-boxes and a central station; telegraphic signal-transmitting apparatus at each substation, and telegraphic signal-receiving apparatus at the central station; telephonic transmitting and receiving instruments at all of the stations normally disconnected from the circuit, the transmitting instruments having a plurality of contacts in series, supported in an inclosing case between the front of the diaphragm and a fixed or rigid support; the receiving instruments being in inductive relation to the main circuit and normally suspended from a support or switch; whereby when the receiving-telephones are suspended from the switches telegraphic signals only can be transmitted over the circuit, and when the telephones at any two stations are removed from their switches both telegraphic and telephonic signals can be transmitted.

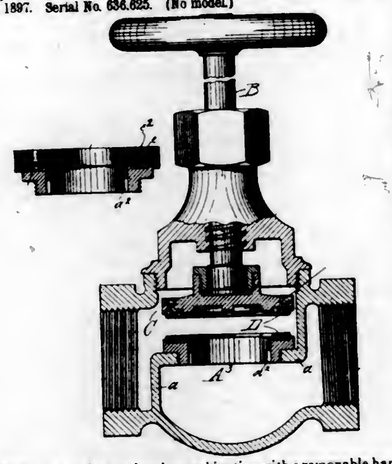
606,866. CLAMPING AND PIVOT-SUPPORTING DEVICE. THEODORE S. HEINEKEN, Burlington, N. J. Filed May 11, 1897. Serial No. 636,043. (No model.)

Claim.—In a clamping and pivot-supporting device for washbasins, the combination of two separable internally-grooved flat-faced and contracted jaws *a* and *a'*, having a pintle *b*, a vertical bolt extending through the contracted portion of said jaws and a nut for

adjustably securing said jaws to the rim of the washbasin C, and a hoop D, to which said pintle is detachably connected to permit of said basin swinging within said hoop, substantially as specified.

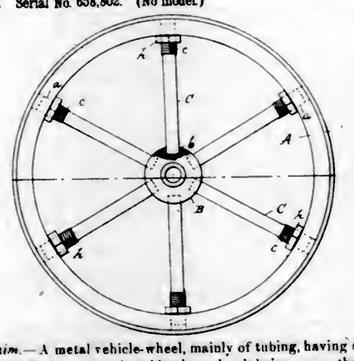


606,867. VALVE. WALTER I. HOOVER, Aurora, Ill. Filed May 15, 1897. Serial No. 636,625. (No model.)



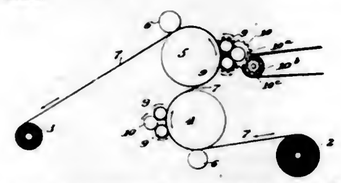
Claim.—In a globe-valve the combination with a removable hard-metal seat of relatively high melting-point screwed into the valve-casing, and a soft-metal bearing-ring of relatively low melting-point cast into a groove into said hard-metal seat and projecting above the surface thereof so as to receive the thrust and wear of the valve-disk, of a removable hard-metal valve-disk made of the same external diameter as said removable seat and having a soft-metal bearing-ring similar to the seat bearing-ring cast into a groove in the disk and projecting below the surface thereof to contact with the bearing-ring of said seat, the grooves in the seat and disk which receive the bearing-ring being also of similar size and shape, whereby both rings may be cast in by the use of a mold fitting over the perimeter of the seat and disk.

606,868. WHEEL. JAMES LLOYD, Blandon, Pa. Filed Nov. 17, 1897. Serial No. 658,802. (No model.)



Claim.—A metal vehicle-wheel, mainly of tubing, having spokes enlarged at their outer ends, said enlarged ends being screw-threaded externally, a solid hub having a series of holes adapted to receive the inner ends of said spokes, a rim of oval cross-section having a series of holes arranged on line radially with the holes in the hub, said spokes adapted to pass through the holes in the rim before entering those in the hub, nuts for securing said spokes therein and a tire adapted to encircle said rim and close the holes therein, all substantially as set forth.

606,869. APPARATUS FOR COATING PAPER OR OTHER FABRICS. CHARLES C. MACBRAIR, Cincinnati, Ohio, assignor to C. C. Macbrair & Co., same place. Filed Oct. 4, 1897. Serial No. 653,989. (No model.)



Claim.—1. In an apparatus for coating paper or other fabric, the combination of a support over which the fabric is passed, a rotative brush arranged to contact with the fabric passed over the support, and means for holding a supply of coating substance in contact with the brush, said means being mounted for movement in a direction tangential to the contacting surface of the brush substantially as set forth.

2. In an apparatus for coating paper or other fabric, the combination of a support over which the fabric is passed, a rotative fabric-coating device arranged to contact with the fabric passed over the said support, means for holding a supply of coating substance in contact with said coating device, and means for moving the said supply in a direction tangential to the surface of the coating device, substantially as set forth.

3. In an apparatus for coating paper or other fabric, the combination of a support over which the fabric is passed, a fabric-coating device arranged to contact with the fabric passed over said support, and means for supplying coating substance to said coating device, said means being mounted for tangential movement relative to the coating device while said coating device is in contact therewith, substantially as set forth.

4. In an apparatus for coating paper or other fabric, the combination of a support over which the fabric is passed, a fabric-coating device arranged to contact with the fabric passed over the said support, means for holding a supply of coating substance in contact with said coating device, and mechanism for rotating said supply-holding means while said coating device is in contact with the coating substance, whereby the supply presents a constantly-changing surface in contact with the coating device, substantially as set forth.

5. In an apparatus for coating paper or other fabric, the combination of a support over which the fabric is passed, a rotative brush arranged to contact with the fabric passed over said support, means for holding a supply of coating substance in contact with the brush, said means being mounted for movement while said brush is in contact with said supply, and mechanism to feed said supply toward said brush, substantially as set forth.

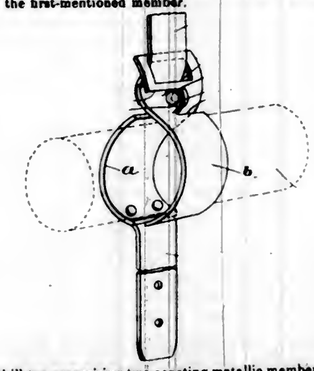
6. In an apparatus for coating paper or other fabric, the combination of a support over which the fabric is passed, a rotative brush arranged to contact with the fabric passed over said support, means for holding a supply of coating substance in contact with said brush, mechanism for rotating said supply-holding means while said brush is in contact with said supply, and means to feed the said supply toward said brush, substantially as set forth.

7. In an apparatus for coating paper or other fabrics, the combination of a support over which the fabric is passed, a carriage movable toward and away from the support, a brush on the carriage arranged to contact with the fabric passed over the support, means for holding a supply of coating substance on the carriage for movement in contact with said brush and means to feed said supply toward said brush, substantially as set forth.

8. In an apparatus for coating paper or other fabric, the combination of a support over which the fabric is passed, a rotative brush arranged to contact with the fabric passed over said support and formed of a roller having a facing of lambskin, means to hold a supply of coating substance in contact with the brush and means for moving said supply while held in contact with said brush, substantially as set forth.

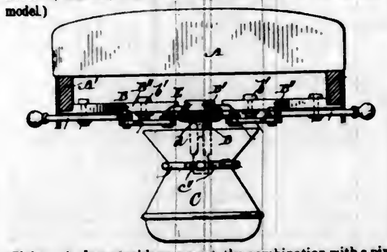
606,870. THILL-TUG. CHARLES R. MACCALL, Howland, Me., assignor of one-half to Nathaniel M. Jones, Lincoln, Me. Filed July 21, 1897. Serial No. 645,315. (No model.)

Claim.—1. A thill-tug comprising two coacting metallic members curved to conform to a vehicle thill or shaft and hinged together above the shaft, one of said members having an upwardly-extending portion provided with an opening, and having a strap attached to its lower end, and the other member having its upper end extending beyond the hinge and provided with a strap passing through the opening of the first-mentioned member.



2. A thill-tug comprising two coacting metallic members or jaws curved to conform to a vehicle thill or shaft and having ears formed on or attached thereto, and a stud pivotally connecting said ears together above the shaft, one of said members being adapted for attachment at its lower end to the girth-strap of a harness and having at its upper end an eye or slot, and the other being adapted for attachment to the saddle of the harness by means of a strap passing through said eye or slot.

606,871. CAR-CUSPIDOR. FRANK H. MANNING and JOHN P. BOUCHET, Oshkosh, Wis. Filed Dec. 18, 1897. Serial No. 662,458. (No model.)



Claim.—1. In a cuspidor-support, the combination with a pivoted arm for holding the cuspidor, of a frame for supporting the same comprising a central portion and side attaching portion, the said side attaching portions being adjustably secured to the central portion whereby the frame may be attached to seats, tables or similar devices as may be desired, substantially as described.

2. In a cuspidor-support, the combination of a frame comprising a central portion, side portions adjustably secured to said central portion and adapted to be attached to any suitable support, an arm pivotally mounted upon the said central portion and levers connected thereto whereby the same may be swung out from beneath the support, substantially as described.

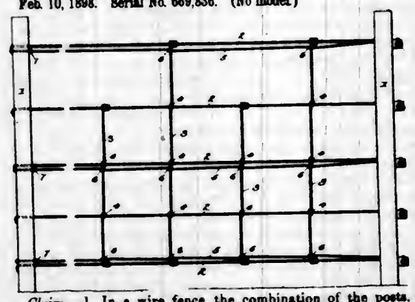
3. In a support for a cuspidor, the combination with a suitable frame, of an arm pivotally mounted thereon, levers pivotally mounted on the said frame and extending beyond the frame, links connecting the said levers with the said arm whereby the cuspidor may be swung upon its pivotal point, substantially as described.

4. In a support for cuspidors, the combination with a frame for attaching it to a seat or other supporting means, of a sleeve portion pivotally mounted on said frame, an arm adjustably secured in the said sleeve, lever extensions or arms mounted upon the said sleeve portion, links connected therewith and levers connected with the said links and projecting beneath the seat or other support whereby the cuspidor may be brought from beneath the same and returned to its place, substantially as described.

5. In a support for cuspidors, the combination with a suitable frame adapted to be attached to a seat or other similar support, of an arm for carrying a cuspidor pivotally mounted upon the said frame, lever projections secured to said arm, links pivotally attached thereto, levers pivotally mounted on the said frame and adjustably engaging the said links, the said levers being adapted to rotate the arm carrying the cuspidor upon its pivotal point, substantially as described.

6. In a support for cuspidors, the combination with a suitable frame, of a pivoted arm mounted thereon for carrying a cuspidor, links connected to said arm and levers connected to said links, the said levers extending beyond the support of the cuspidor-frame and stops for engaging the said levers to limit their movement, substantially as described.

606,872. WIRE FENCE. LUTHER MATTHEWS, Paris, Tenn. Filed Feb. 10, 1898. Serial No. 669,836. (No model.)



Claim.—1. In a wire fence, the combination of the posts, the line-wires or runners and vertical stay-wires secured thereto, with spacer wires or lines tied to the said stays and secured at their ends for preventing the sliding of the stay-wires on the line-wires.

2. In combination with the posts, the line-wires or runners and vertical stay-wires secured thereto, a finer wire along the line-wires, engaging with the stay-wires for the purpose stated.

3. In a wire fence the combination with the vertical stays and the line-wires or runners, of lines running along the line-wires looping the stays at their connection with the line-wires, and fastened at one end and adjustable at the other end.

4. In a wire fence, the combination of the posts, the line-wires and the vertical stay-wires, with spacer-wires tied to said stays parallel to the line-wires and winders connecting both the line and the spacer wires and tightening both by the same winding movement.

5. In a wire fence and in combination with the line-wires and the vertical stays connecting them, of finer wires running along the line-wires connecting the vertical stays and having one end fixed to one of the corner-posts and the other end tightened at the other post.

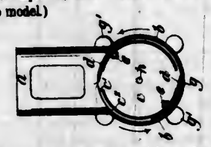
606,873. POST-WINDER FOR WIRE FENCES. LUTHER MATTHEWS, Paris, Tenn. Filed Feb. 10, 1898. Serial No. 669,837. (No model.)



Claim.—1. In a post-winder for wire fences, the combination, of the line wires or runners and the post, with a winding device consisting of a box, a winding-pin movable endwise in said box and having longitudinal surface ribs, and a key adapted to engage said ribs, whereby the said pin is free to be moved endwise to wind the wire thereon one coil deep.

2. In a wire fence and in combination with the line-wires and the winder-post, a bearing-box, a winding-pin movable endwise therein and a gravity-acting key in said box for engaging and locking said pin in its winding function while at the same time it is free to be slid endwise in its bearings.

606,874. TOBACCO-CUTTER. CHARLES C. MORRIS, Waldeck, New Zealand. Filed Apr. 18, 1896. Renewed Jan. 3, 1898. Serial No. 665,473. (No model.)



Claim.—1. A tobacco cutter comprising a feed-tube formed with a slot at one side, a case into which said feed-tube opens at one end of the feed-tube, a rotatable carrier in said case and a cutting knife

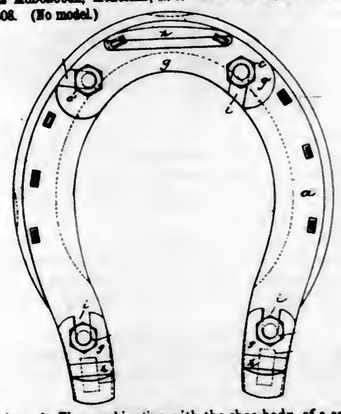
upon said carrier, said carrier having a guide-surface above which the cutting edge of the knife projects and said case being open at one side and said carrier also open at the same side, and said carrier having an opening in its circumference for the passage of the slice cut by the knife and said feed-tube having its greatest length of cross-section substantially at right angles to the axis of rotation of the knife, substantially as set forth.

2. A tobacco-cutter comprising the feed-tube *a* having a slot at its front side, the cylindrical case *b* into which said feed-tube opens at one end of the feed-tube, the rotatable cylindrical carrier *c* in said case having a circumferential part c^3 of smaller diameter than the inner periphery of the case, and having flanges *c'*, *c'*, the knives *d*, *d*, secured upon said carrier *c* with their cutting edges in the annular space between the carrier and case and projecting above the circumferential part c^3 of the carrier, whereby said circumferential part c^3 forms a guide or stop during the cutting operation to gage the thickness of the slice, said circumferential part c^3 having openings in proximity to the cutting edges of the knives for the passage of the slices cut, said case *b* and carrier *c* being open in front for the final escape of such slices, and said carrier *c* having a central projection *f* extending rearwardly through the case, and the actuating-disk *g* secured upon said projection *f*, substantially as set forth.

3. In a tobacco-cutter, in combination, the case *b*, the rotatable cylindrical carrier *c* in said case having a circumferential part c^3, the knives *d*, *d*, secured upon said carrier with their cutting edges extending beyond the outer periphery of the circumferential part c^3, whereby said circumferential part c^3 forms a guide or stop during the cutting operation to gage the thickness of the slice, said circumferential part c^3 having openings in proximity to the cutting edges for the passage of the slices cut, said case *b* and carrier *c* being open in front for the final escape of such slices, and said carrier *c* having a central projection *f* extending rearwardly through the case, and the actuating-disk *g* secured upon said projection *f*, substantially as set forth.

4. A tobacco-cutter comprising the feed-tube *a* having a slot at its front side, the case *b* into which said feed-tube opens at one end of the feed-tube, the rotatable cylindrical carrier *c* in said case having a circumferential part c^3, the knives *d*, *d*, adjustably held against the outer periphery of the circumferential part c^3 with their cutting edges extending beyond said circumferential part c^3, whereby said circumferential part c^3 forms a guide or stop during the cutting operation to gage the thickness of the slice, said circumferential part c^3 having openings in proximity to the cutting edges for the passage of the slices cut, said case *b* and carrier *c* being open in front for the final escape of such slices, and said carrier *c* having a central projection *f* extending rearwardly through the case, and the actuating-disk *g* secured upon said projection *f*, substantially as set forth.

606,875. HORSESHOE AND REMOVABLE CALK THEREFOR. JAMES MCDONOUGH, Montclair, N. J. Filed Oct. 20, 1897. Serial No. 655,808. (No model.)

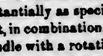


Claim.—1. The combination with the shoe-body, of a calk comprising a downward projection and a flange, the flange being provided with an open slot adapted to permit of the calk being withdrawn in a direction parallel with the plane of the body of the shoe, substantially as set forth.

2. The combination with the horseshoe, of a calk having a downward projection to engage the ground and a flange to engage the under side of the shoe, the said flange being provided with an open slot to receive a retaining-screw and adapted to permit the withdrawal of the said flange without entirely removing the said retaining-screw and cooperating means adapted to prevent pivotal action of the calk on said retaining-screw, substantially as set forth.

3. The combination with the horseshoe, having threaded holes at the toe portion, at points at opposite sides of the center line and retaining-screws arranged in said holes of a toe-calk comprising a curved piece of metal corresponding in shape with the fore part of the shoe and having a downward projection to engage the ground, and a flange, said flange being provided near its opposite ends with open slots one of which opens outwardly toward the convexity of the calk and the other opening inwardly toward the concavity of the said calk, whereby the said toe-calk may be adjusted to shoes of various shapes, substantially as set forth.

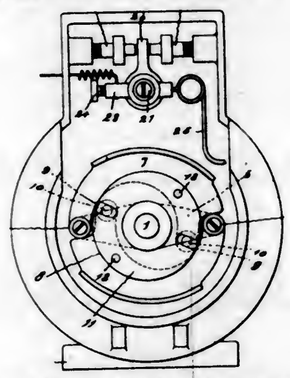
606,876. SKIRT-PROTECTOR. JOHN R. POYET, Philadelphia, Pa., assignor to the Hensel Colladay Company, of Pennsylvania. Filed Feb. 23, 1898. Serial No. 671,219. (Specimens.)



Claim.—1. A skirt-protector consisting of a head, a brush thereon, and an auxiliary fabric within said brush adjacent to said head.

2. In a skirt-protector, a brush having therein means independent of and within the brush for spreading or flaring the same laterally.

606,877. SPEED-LIMIT FOR ENGINES. JOHN R. REYNOLDS, Hartford, Conn. Filed Mar. 9, 1898. Serial No. 673,317. (No model.)



Claim.—1. In a speed-limit, in combination, a case, a rotary spindle, means for connecting the spindle with a rotating part, a helical spring connected with the spindle, weights loosely connected with the spindle so as to rotate therewith and held from outward movement by the spring, and electric-circuit terminals that extend outside of the weights in the plane of revolution to which the weights will move under centrifugal influence when the spindle rotates more rapidly than normal, substantially as specified.

2. In a speed-limit, in combination, a case, a rotary spindle, means for connecting the spindle with a rotating part, a spring adjustably connected with the spindle, weights loosely connected with the spring and with the spindle so as to rotate therewith, and electric circuit terminals that extend outside of the weights in the plane of revolution into which the weights will move under centrifugal influence when the spindle rotates more rapidly than normal, substantially as specified.

3. In a speed-limit, in combination, a case, a rotary spindle, means for connecting the spindle with a rotating part, weights pivotally connected with the spindle so as to rotate therewith, a spring connected with the spindle, a connection between the free ends of the weights and the spring and electric-circuit terminals that extend outside of the weights in the plane of revolution into which the weights will move under centrifugal influence when the spindle rotates more rapidly than normal, substantially as specified.

4. In a speed-limit, in combination, a case, a rotary spindle, means for connecting the spindle with a rotating part, weights pivotally connected with the spindle, a spring-barrel and a head borne by the spindle, one part being loosely connected with the spindle and the other part being free on the spindle, a spring with one end connected with the barrel and the other end connected with the head, weights loosely connected with the spindle and loosely connected with the loose part to which the spring is attached, and electric-circuit terminals that extend outside of the weights in the plane of revolution into which the weights will move under centrifugal influence when the spindle rotates more rapidly than normal, substantially as specified.

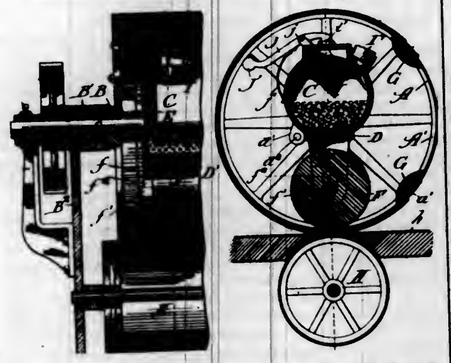
5. In a speed-limit, in combination, a case, a rotary spindle, means for connecting the spindle with a rotating part, a yoke secured to the spindle, weights pivoted to the yoke, a spring-barrel loosely mounted on the spindle, a barrel-head fixed to the spindle, a spring with one end connected with the barrel and the other end connected with the head, a loose connection between the weights and the spring-barrel, and electric-circuit terminals that extend outside of the weights in the plane of revolution into which the weights will move under centrifugal influence when the spindle rotates more rapidly than normal, substantially as specified.

6. In a speed-limit, in combination, a case, a bearing sleeve removably supported by the case, a rotary spindle adjustably supported upon bearings retained by the bearing-sleeve, means for connecting the spindle with a rotating part, weights loosely connected with the spindle, a spring connected with the spindle, a connection between the spring and the weights, and electric-circuit terminals that extend outside of the weights in the plane of revolution into which the weights will move under centrifugal influence when the spindle rotates more rapidly than normal, substantially as specified.

7. In a speed-limit, in combination, a case, a sleeve in the case, a rotary spindle provided with a fixed and an adjustable ball-cone arranged to be supported by balls between the cones and the sleeve, means for connecting the spindle with a rotating part, which means are arranged to lock the adjustable ball-cone in position, weights loosely connected with the spindle, a spring connected with the spindle, a connection between the weights and the spring, and electric-circuit terminals that extend outside of the weights in the plane of revolution into which the weights will move under centrifugal influence when the spindle rotates more rapidly than normal, substantially as specified.

8. In combination with the centrifugally-acting weights of a speed-limit, a single helical spring for retaining the weights against centrifugal movement, electric-circuit terminals that extend outside of the weights in the plane of revolution in which the weights will move under centrifugal influence when the spindle rotates more rapidly than normal, means for connecting the circuit-wires with the terminals, and adjustable means for accurately locating the contact portions of the terminals, substantially as specified.

606,878. PRINTING-PRESS. LOVELL M. ROUSE, Chicago, Ill. Filed June 18, 1897. Serial No. 641,277. (No model.)

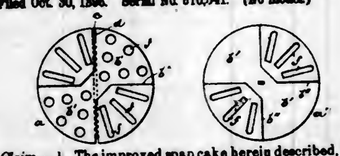


Claim.—1. In a printing-press, the combination of a perforated inking-cylinder, a distributing-roller arranged therein, a fountain or ink-receptacle within the perforated inking-cylinder for supplying ink to the distributing-roller, and a sliding perforated plate for intermittently and automatically permitting and preventing the passage of ink from the ink-receptacle to the distributing-roller, substantially as described.

2. In a printing-press, the combination of a perforated inking-cylinder, a distributing-roller arranged therein, a fountain or ink-receptacle within the perforated inking-cylinder for supplying ink to the distributing-roller provided with perforations in its bottom, and means for intermittently and automatically opening and closing the perforations in the bottom of the ink-receptacle, substantially as described.

3. In a printing-press, the combination of an inking-cylinder, a distributing-roller arranged therein, a fountain or ink-receptacle within the perforated inking-cylinder for supplying ink to the distributing-roller, and means for intermittently and automatically permitting and preventing the ingress of air to the interior of the ink-receptacle, substantially as described.

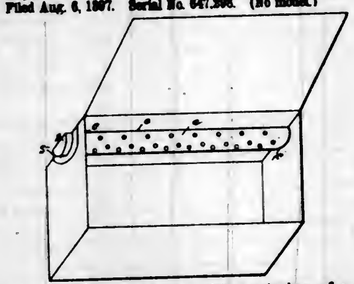
606,879. SOAP CAKE. LEOPOLD S. SAMUEL, Newark, N. J. Filed Oct. 30, 1896. Serial No. 610,541. (No model.)



Claim.—1. The improved soap cake herein described, comprising a plurality of saponaceous sections, *a*, *a'*, each having alternating male and female parts at their meeting faces, the male parts corresponding in plan with the female parts and extending out to the periphery of the said soap cake and thereat forming a crenelated or crenate joint, and means for holding the soap-sections together, substantially as set forth.

2. The improved soap cake herein described, comprising a plurality of saponaceous sections differing from one another in quality or color, each of said sections having corresponding tongues and sockets extending out to the periphery of the soap cake and at the periphery forming a crenelated joint open to receive saponaceous rubbings, said sections being grooved peripherally, and an elastic band inclosed in said groove and serving to hold the sections temporarily together while the saponaceous rubbings are being formed or deposited within said joint to hold the sections more permanently together, substantially as set forth.

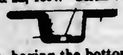
606,880. CAKE-BOX, &c. SUSAN F. SAVIDGE, Asbury Park, N. J. Filed Aug. 6, 1897. Serial No. 647,266. (No model.)



Claim.—1. The combination with a cake-box, of a tube horizontally arranged in, and having external communication at both its ends through two of the walls of, said box, said tube being provided with a series of ventilative perforations opening into said box, substantially as described.

2. The combination with a cake-box, of a tube horizontally arranged in, and having external communication at both its ends through two of the walls of, said box, said tube being provided with a series of ventilative perforations opening into said box and having a cap for each of its ends, substantially as described.

606,881. TACK-FASTENED BUTTON. ALFRED J. SHIPLEY, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed Dec. 22, 1897. Serial No. 663,089. (No model.)



Claim.—1. A button, having the bottom of its shank provided with a reinforce having a tack-opening, the metal of the bottom of the shank being pierced up through the tack-opening in such reinforce, substantially as described.

2. A tack-fastened button, having a shank, and a reinforce having a tack-opening and located in the bottom of such shank and united with it by the projection of the metal of the bottom of the shank through the opening of the reinforce, substantially as described.

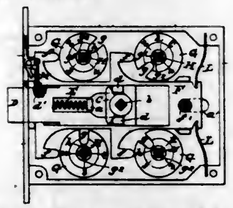
3. A tack-fastened button, having an anvil, die or clenching-piece constructed with a perforated bottom, the metal of the bottom of the shank of the button being projected through the perforation in the bottom of said anvil, die or clenching-piece, substantially as described.

606,882. PROCESS OF MAKING WATERPROOF LEATHER. CHARLES H. STONE, Melrose, Mass. Filed May 6, 1897. Serial No. 635,403. (No specimens.)

Claim.—The process of rendering leather waterproof, consisting of dampening the leather and when the latter is partially dried, subjecting it to pressure, then allowing it to dry, heating the leather to

approximately 80°, applying a waterproof dressing thereto, while the leather is at said temperature, the dressing also being at substantially the same temperature, causing said dressing to thoroughly penetrate the leather, then baking or warming said leather in a chamber at a temperature from 80° to 100° more or less, substantially as described.

606,883. LOCK. HILAIRE VINCENT, Manchester, N. H., assignor of one-half to Napoleon Daigle, same place. Filed Nov. 12, 1897. Serial No. 658,355. (No model.)



Claim.—1. In a lock, the combination with the casing, of a bolt, a knob-spindle in operative relation thereto, a spring-actuated frame movable independently of the bolt, a series of independent tumblers or wheels, mechanism carried by the frame designed to coöperate with the tumblers, means for locking the bolt to the frame, and mechanism independent of the knob spindle for actuating the frame from the exterior of the casing, substantially as specified.

2. The combination with the casing and bolt therein, of an independently-movable frame, a series of independent tumblers or wheels designed to coöperate with the frame, mechanism for securing the bolt to the frame, mechanism independent of the tumblers for actuating the bolt and frame in unison, and independent mechanism for actuating the frame from the exterior of the casing, substantially as specified.

3. In a lock, the combination with the casing and independently-movable spring-actuated bolt and frame, of means for actuating the frame, a knob-spindle operatively connected with the bolt, a rocker carried by the frame, locking mechanism connected to the rocker and designed to engage the bolt, a series of independent slotted tumblers designed to coöperate with arms upon the frame, spindles upon which said tumblers are mounted, and means for adjusting the relations of the spindles to their tumblers, substantially as specified.

606,884. ELECTRIC SNAP-SWITCH. ALFRED F. WOOD, Philadelphia, Pa., assignor of one-half to John R. Edwards, same place. Filed Oct. 8, 1897. Serial No. 654,520. (No model.)



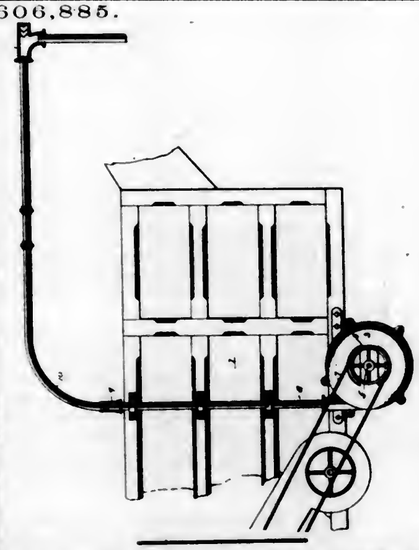
Claim.—1. An electric snap-switch consisting of a suitable casing a disk journaled therein, a lever pivoted concentric with the disk, a spring connected between said disk and said lever, two dogs pivoted to the lever, a locking-plate with which the noses of the dogs are adapted to engage, a spring drawing said dogs together, and means for oscillating said disk, as specified.

2. In combination, a suitable casing, a bar arranged across the same, a disk journaled upon said bar, a lever pivoted concentric with the disk, arms formed with the lever, two springs connecting the disk, and said lever, dogs pivoted to the arms terminating in hooked noses, a plate with which said noses are adapted to engage, a spring for drawing the dogs toward each other, suitable contact-points in which the lever is adapted to engage, and push-buttons pivoted to the disk so as to bring about its initial movements, as specified.

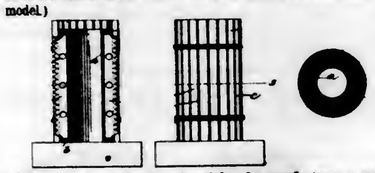
606,885. PNEUMATIC GRAIN-ELEVATOR. JESSE BROGAN, Meservey, Iowa. Filed July 29, 1897. Serial No. 646,385. (No model.)

Claim.—An attachment for a thresher, comprising the fan-casing, the fan and means for operating the same, the vertical pipe connected with the fan-casing, the coupling at the upper end thereof, the curved pipe swiveled to said coupling, the extension, the three-way elbow secured to the outer end of said extension, a portion of which is open to the atmosphere, the conical wire-gauze screens located therein, and the discharge-pipe secured to the vertical portion of the elbow, substantially as described.

606,885.



606,886. SECTIONAL FEED-ROLL FOR GANG-EDGERS. CHAS. R. BUEE, Richmond, Va. Filed July 31, 1897. Serial No. 646,583. (No model.)



Claim.—1. As an improved article of manufacture, a sectional feed-roll for gang-edgers, comprising a shaft or spindle, a bearing-collar fixed thereon, a series of change sections arranged on the shaft or spindle and having blades arranged in longitudinal parallel rows, the said sections being adapted to be changed end for end and rearranged at pleasure upon the shaft or spindle, a screw-threaded seat on said shaft or spindle at the end opposite the bearing-collar, and a nut on said seat adapted to be crowded against the near section and to press the sections together and against the collar and frictionally hold them on said shaft or spindle to turn with it, substantially as described.

2. A sectional feed-roll, comprising a shaft or spindle, a series of roll-sections mounted upon said shaft or spindle, an externally-screw-threaded split seat countersunk in said shaft or spindle, and a nut applied to the shaft or spindle on such split seat and abutted against the endmost section, substantially as described.

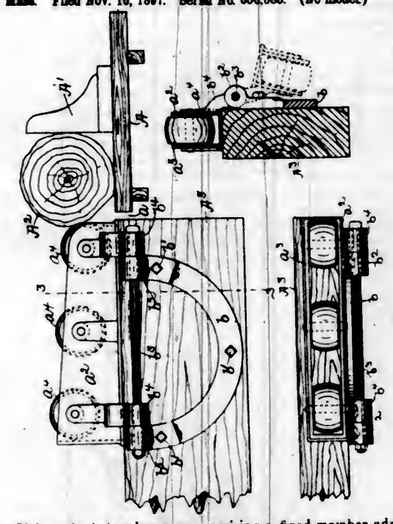
3. A sectional feed-roll, comprising a shaft or spindle of uniform diameter, a series of roll-sections mounted upon said shaft or spindle, an externally-screw-threaded split seat countersunk in said shaft or spindle, and a nut applied to the shaft or spindle on such split seat and abutted against the endmost section, substantially as described.

606,887. ELECTRIC EXTRACTION OF POISONS. JOHN B. CAMPBELL, Cincinnati, Ohio. Filed Oct. 5, 1896. Serial No. 607,955. (No model.)



Claim.—The herein-described method of extracting poisons from the human body, consisting in providing the negative electrode of an electric battery with interchangeable receivers of animal, vegetable or mineral substance, to extract a poison from the body of a nature or kind corresponding with or to the negative electrode employed, as set forth.

606,888. LOG-DUMPER. WILLIAM F. CURTIS, Miller's Falls, Mass. Filed Nov. 16, 1897. Serial No. 658,685. (No model.)

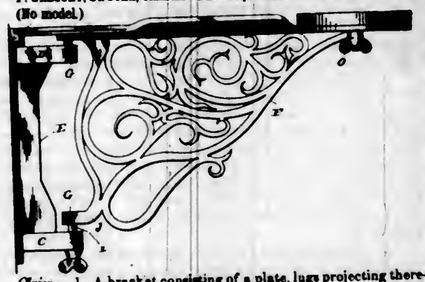


Claim.—1. A log-dumper, comprising a fixed member adapted to be attached to the side of the bed of a log-sawing machine below the upper surface thereof, and a movable member consisting of a roll-supporting frame adapted to rest upon the upper surface of said bed and pivoted to the said fixed member below the upper surface of said bed and provided with a plurality of rollers journaled in said frame to present an inclined supporting-surface for the log, substantially as described.

2. A log dumper, comprising the plate or bar b adapted to be fastened to the side of the bed of a log-sawing machine and having hubs b^3, and the supporting-box adapted to rest upon the upper surface of the bed and having one of its sides provided with lugs or ears b^4 projecting below the upper surface of said bed and pivotally secured to the said hubs, and a plurality of rolls a^4 journaled in said box to present an inclined supporting-surface for the log, substantially as described.

3. The combination with a log-sawing machine, of a log-dumper comprising a fixed member attached to the side of the bed of said machine below its upper surface, and a movable member consisting of a frame provided with sides a^3, a^3 adapted to rest upon the upper surface of said bed and having lugs or ears b^4 extended below said upper surface, a pivot pin or bolt b^5 to secure said lugs or ears to the said hubs, and a plurality of rolls a^4 journaled in the sides of said frame and arranged to afford a log-supporting surface inclined downward toward the carriage of said machine, substantially as described.

606,889. SUPPORT FOR TYPE-WRITERS OR THE LIKE. JOHN F. GREGORY, St. John, Canada. Filed Sept. 22, 1897. Serial No. 652,584. (No model.)



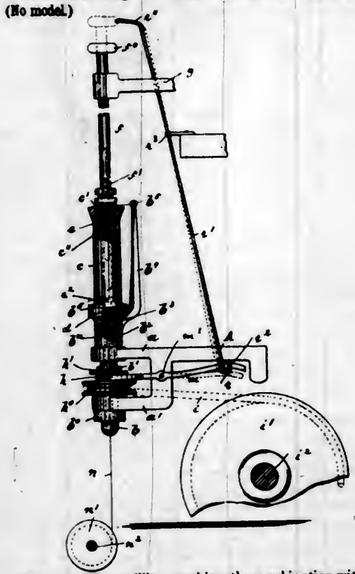
Claim.—1. A bracket consisting of a plate, lugs projecting therefrom, a beveled ledge formed with the plate, a bracket hinged to said lugs, a disk formed with said bracket having a beveled edge bearing against the beveled ledge of the plate, and means for drawing said disk downward against the ledge to bind thereon, as and for the purpose described.

2. A bracket consisting of a plate, a beveled ledge formed thereon, a bracket hinged to the plate, a disk formed with the bracket having a beveled edge bearing against the beveled ledge of the plate and means for drawing the disk downward against the ledge to bind thereon, as and for the purpose described.

3. In combination, a bracket-plate, lugs formed therewith, a rib connecting said lugs, a ledge also formed with the plate, said ledge having a beveled edge, a bracket pivoted to the lugs, a thumb-screw for drawing said bracket downward, a surface plate formed with the bracket having enlarged ends, one of said ends having a beveled edge adapted to operate in conjunction with the beveled ledge, a disk adjustably secured to the other enlargement, a thumb-nut for securing said disk in its adjustment, and two ears projecting from the surface plate and having holes therethrough for securing the base-board of a type-writer, as shown and described.

4. In a device of the character described, a plate, lugs formed thereon, said lugs having holes formed therethrough and a beveled ledge also formed on said plate, a bracket having pins operating in holes in the lugs, and a disk having a beveled edge bearing against the beveled edge of the ledge, and a thumb-screw threaded through a lug on the plate into a pin of the bracket, as and for the purpose described.

606,890. SPINDLE FOR QUILLING-MACHINES. FRIEDRICH KEMMERICH, Sterling, N. J. Filed Mar. 18, 1898. Serial No. 674,314. (No model.)



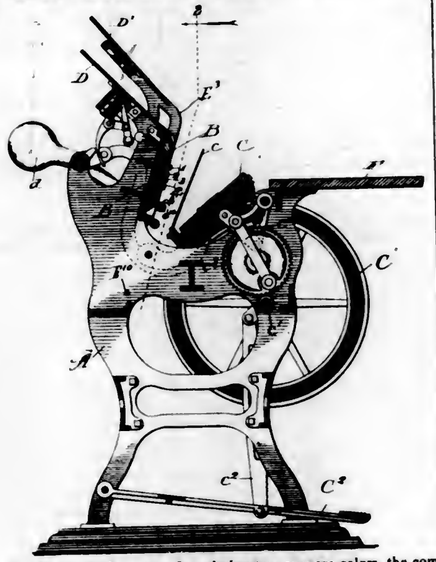
Claim.—1. In a quilling-machine, the combination with the spindle-rail, of a spindle revolubly mounted in said rail and provided with a vertical central hole and connecting-channel, an eye-carrying arm upwardly projecting from said spindle, an auxiliary spindle revolubly mounted on the top portion of the spindle and having an annular central chamber with a flaring mouth, a vertical reciprocating rod above the auxiliary spindle and in the center line thereof, and means for rotating the spindle, substantially as and for the purposes described.

2. In a quilling-machine, the combination with the spindle-rail, of a spindle revolubly mounted in said rail and provided with a central vertical hole and connecting-channel, the upper portion of said spindle being enlarged and provided with an annular flange, an auxiliary spindle revolubly mounted on the enlarged portion of the spindle and provided with a central vertical chamber having a flaring mouth, a series of antifriction-balls interposed between said auxiliary spindle and the enlarged portion of the revolving spindle, a vertical reciprocating rod above the auxiliary spindle and in the center line thereof, an eye-carrying arm upwardly projecting from the enlarged portion of the spindle, and means for rotating the spindle, substantially as and for the purposes described.

3. In a quilling-machine, the combination with the spindle-rail, of a spindle revolubly mounted in said rail and provided with a vertical central hole and connecting-channel, an eye-carrying arm up-

wardly projecting from said spindle, an auxiliary spindle revolubly mounted on the top portion of the spindle and having an annular central chamber with a flaring mouth, a vertical reciprocating rod above the auxiliary spindle and in the center line thereof, a driving-pulley revolubly mounted upon the spindle, means for securely connecting said driving-pulley with the spindle, and means operated from the reciprocating rod for automatically disengaging said grooved pulley from its firm connection with the spindle, substantially as and for the purposes described.

606,891. COLOR-PRINTING PRESS. SIDNEY KLOTZ, Chicago, Ill., assignor of one-half to Minnie R. Simon, same place. Filed Jan. 26, 1895. Serial No. 536,337. (No model.)



Claim.—1. In presses for printing two or more colors, the combination with a bed portion adapted to hold a form of type or similar element, plane inking-surfaces arranged in multiple relation with each other and each adapted to contain ink of a different color, an inking roll or rolls for each inking-surface arranged to apply its color to the type of the form, and a track for each roll leading from the form to the corresponding inking-surfaces, substantially as described.

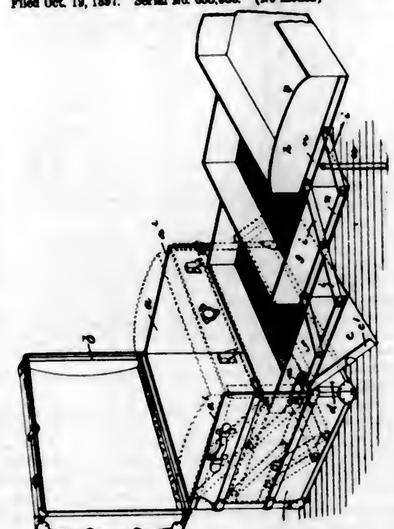
2. In presses for printing in two or more colors, the combination of a bed portion adapted to hold a form with lines of type arranged in transverse relation to the bed, an inking-roll for each different color, plane inking-surfaces arranged in multiple relation to each other and each adapted to contain ink of a different color, a track or tracks upon which each roll is moved and guides leading from the form to each inking-surface provided with means for raising and lowering the rolls to apply the proper color to a complete line of type in the form as desired, and means for carrying the article to receive the impression into parallelism with the form and transfer the colors so disposed all in one complete operation, substantially as described.

3. In presses for printing in two or more colors, the combination of a bed portion adapted to hold a form of type, an inking roll or rolls for each different color and provided with wheels at each end thereof, plane rotating inking-surfaces arranged in multiple relation to each other—one above the other—adapted to contain different-colored inks, a track or tracks upon which each roll is moved and guided provided with means for raising and lowering the rolls away from and into contact with the desired lines of type and leading from the form to each inking-surface, vibrating arm or arms for moving the rolls along their proper tracks from the inking-surfaces into contact with the form, and a vibrating platen to carry the article to receive the impression into parallelism with the form and transfer the colors so disposed all in one complete operation, substantially as described.

4. In presses for printing in two or more colors, the combination of a bed portion adapted to hold a form of type with the lines of type in transverse relation to the bed, an inking-roll for each different color, plane rotating inking-surfaces arranged one above the other to supply different-colored inks to each roll, track or tracks upon which each roll is moved and guided provided with adjustable cams for raising and lowering the rolls away from and into contact with the desired lines of type in alternating or successive series and leading from the form to each rotating inking-surface, one of such portions—the track or cams—being slotted to adjustably receive the other, vibrating arm or arms for removing the inking-rolls upon their proper tracks, and a vibrating platen to carry the article to receive the impression into parallelism with the form and transfer the colors so disposed all in one complete operation, substantially as described.

5. In a printing-press, the combination with the ink-table of ordinary form and form-rollers, of a chromatic printing attachment consisting of an upper ink-table removably attached to the press parallel to the ordinary table thereof, a set of form-rollers mounted upon a shaft removable with respect to the ordinary form-rollers, a wheel or wheels on said shaft, and a track upon which said wheels are adapted to run and raise the second set of rollers out of contact with the lower ink-table and into contact with the upper table, substantially as described.

606,892. TRUNK. CHARLES H. MESSEREAU, Paterson, N. J., assignor to the Inventor's Novelty Manufacturing Company, same place. Filed Oct. 19, 1897. Serial No. 655,636. (No model.)



Claim.—1 A trunk consisting of the body having the upper portion of the front hinged to the lower portion thereof, of a base-compartment removably arranged in said trunk, a series of separate tills or compartments carried by said base-compartment and pivotally connected with and between but independently movable from each other, and a series of links connecting the said base-compartment with the rear portion of the lowermost of said series of tills, substantially as and for the purposes described.

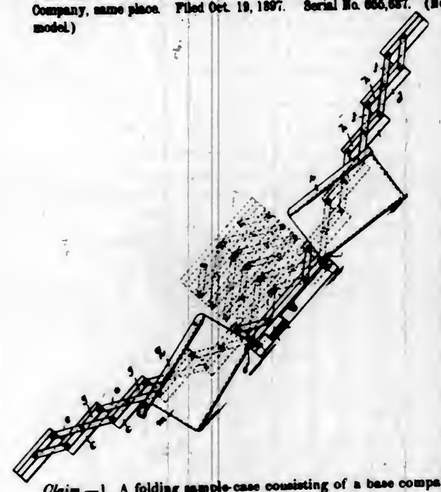
2. A trunk consisting of the body having the top portion of its front hinged to the lower portion thereof, a base-compartment removably arranged in said trunk and of a height substantially equal to the height of the stationary portion of the front of said trunk, a series of tills or compartments carried by said base-compartment, and pivotally connected with and between, but independently movable from each other, and means for pivotally connecting the rear portion of the lowermost of said series of compartments with the base-compartment, substantially as and for the purposes described.

3. A trunk consisting of the body, a base-compartment removably arranged in said body and provided in its sides with one or more elongated vertical slots, a series of separate tills or compartments in said trunk and above the base-compartment and pivotally connected with and between but independently movable from each other, and one or more links pivotally connected with their upper portions to the lowermost compartment of said series and provided at their lower ends with pins or projections slidingly arranged in said elongated slots in the base-compartment, substantially as and for the purposes described.

4. A trunk consisting of the body having the upper portion of the front hinged to the lower portion thereof of a base-compartment removably arranged in said trunk, a series of separate tills or compartments carried by said base-compartment and pivotally connected with and between but independently movable from each other, a series of links connecting the said base-compartment with the lowermost of said series of tills, and means carried by one of said series of compartments or tills for supporting said series when opened, substantially as and for the purposes described.

5. A trunk consisting of the body, a base-compartment removably arranged in said body and provided in its sides with one or more elongated vertical slots, a series of separate tills or compartments in said trunk and above the base-compartment and pivotally connected with and between but independently movable from each other, one or more links pivotally connected with their upper portions to the lowermost compartment of said series and provided at their lower ends with pins or projections slidingly arranged in said elongated slots in the base-compartment, and means carried by one of said series of compartments or tills for supporting said series when opened, substantially as and for the purposes described.

606,893. FOLDING SAMPLE-CASE. CHARLES H. MESSEREAU, Paterson, N. J., assignor to the Inventor's Novelty Manufacturing Company, same place. Filed Oct. 19, 1897. Serial No. 655,637. (No model.)



Claim.—1. A folding sample-case consisting of a base compartment, a tray in said base-compartment, series of compartments carried by said tray and pivotally connected with and between each other, and a cover comprising two sections or halves pivotally connected with said base-compartment, and adapted when opened to support with its inner upper edges their respective extended series of compartments, substantially as and for the purposes described.

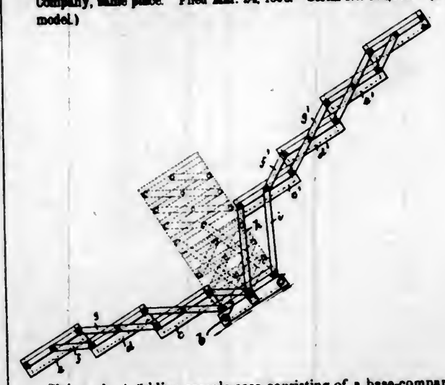
2. A folding sample-case consisting of a base-compartment, a tray removably arranged in said base-compartment, series of compartments of uniform size but half the area of the tray carried by said tray and on each side of the center thereof and pivotally connected therewith and between each other, and a cover comprising two halves or sections pivotally connected with the base-compartment and adapted when opened to support with its inner upper edges their respective series of extended compartments, substantially as and for the purposes described.

3. A folding sample-case consisting of a base-compartment, a tray removably arranged in said base-compartment, series of compartments carried by said tray and pivotally connected therewith and between each other, a cover comprising two halves or sections pivotally connected with the base-compartment and adapted when opened to support with its inner upper edges their respective series of extended compartments, and a catch or lock carried by the base-compartment and on each side thereof and adapted to engage the said cover, substantially as and for the purposes described.

4. A folding sample-case consisting of a base-compartment, a tray removably arranged in said base-compartment, two series of separate compartments of uniform size, but of half the area of said tray, arranged on said tray and on each side of the center thereof and having their lowermost compartments pivotally connected therewith, means for pivotally connecting the separate compartments of each series, and a cover pivotally connected with the base-compartment, and adapted when opened to support with its inner upper edges said series of extended compartments, substantially as and for the purposes described.

5. A folding sample-case consisting of a base-compartment, a tray removably arranged in said base-compartment, two series of separate compartments of uniform size, but of half the area of the tray, arranged on said tray and on each side of the center thereof and having its lowermost compartments pivotally connected therewith, means for pivotally connecting the separate compartments of each series, a cover comprising two halves or sections pivotally connected with the base-compartment and adapted when opened to support with its inner upper edges their respective series of extended compartments, and a catch or lock carried by the base-compartment and on each side thereof and adapted to engage the said cover, substantially as and for the purposes described.

606,894. FOLDING SAMPLE-CASE. CHARLES H. MESSEREAU, Paterson, N. J., assignor to the Inventor's Novelty Manufacturing Company, same place. Filed Mar. 24, 1898. Serial No. 674,976. (No model.)



Claim.—1. A folding sample-case consisting of a base-compartment, and of two series of separate but pivotally-connected trays or compartments on said base-compartment and of uniform size with the latter, links connecting the lowermost compartment of each series with the base-compartment, and a cover removably connected with the base-compartment substantially as and for the purposes described.

2. A folding sample-case consisting of a base-compartment, two series of separate but connected compartments, of uniform size with the base-compartment, carried by the latter and pivotally connected therewith, and means for pivotally connecting the separate compartments of each series, substantially as and for the purposes described.

3. A folding sample-case consisting of a base-compartment, two series of separate compartments of uniform size with said base-compartment and arranged on the latter—one above the other, means for pivotally connecting the separate compartments of each series, and means for pivotally connecting the lowermost compartment of each series with the base-compartment, substantially as and for the purposes described.

4. A folding sample-case consisting of a base-compartment, two series of separate but connected compartments carried by said base-compartment and of uniform size with the latter, means for pivotally connecting the separate compartments of each series means for pivotally connecting the lowermost compartment of each series with the base-compartment, and a cover removably connected with the base-compartment, substantially as and for the purposes described.

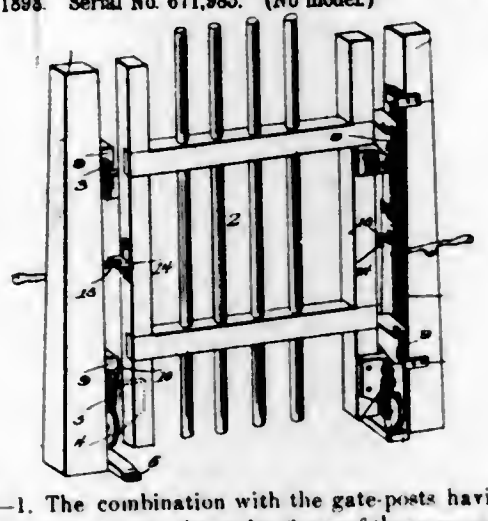
606,895. PLOW. JOHN F. MILLER, Indianapolis, Ind., assignor of three-fourths to John C. Hamilton, Noah J. Clothilter, and John L. Green, same place. Filed July 12, 1897. Renewed June 2, 1898. Serial No. 682,410. (No model.)



Claim.—1. In combination with a plow, an attachment therefor comprising a bracket-arm extending between the stilts and having its ends bent in reverse directions, a wheel or roller journaled in the lower end of the arm and disposed in rear of the moldboard, and a clevis engaging the arm at opposite sides of the point of bend of the upper end thereof, and adjustably securing the same to the plow-beam, substantially as described.

2. The combination in a plow, of the beam and stilts, a runner connecting the same, the share and attachment parts, a spring metal bracket-arm secured to the front end of the beam and carrying a wheel or roller, and a second bracket-arm extending between the stilts, and having its ends bent in reverse directions, a roller journaled in the lower end of the arm, and clips securing the upper end of the arm to the beam, substantially as described.

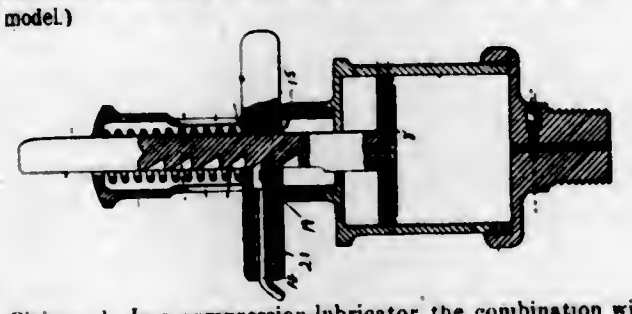
606,896. GATE-HINGE. OLIVER H. PEED, Nickerson, Kans. Filed Feb. 28, 1898. Serial No. 671,985. (No model.)



Claim.—1. The combination with the gate-posts having sliding bars provided with catches, the under faces of those on one post being inclined in an opposite direction to those on the other post and provided with vertical sockets, of a gate having at its side edges vertical pins and vertical stud-latches adapted to the vertical sockets of said catches, and means for reciprocating vertically either of said bars, substantially as set forth.

2. The combination with the gate-posts provided with sliding bars, of catches in the form of blocks secured to said bars, the catches of one post having their under edges beveled in a direction reverse to the bevel of those of the other post, and each catch provided with a groove in its beveled edge, said groove being intersected by a vertical socket, brackets secured to the lower ends of the gate and provided with rollers, vertical pins projecting from said brackets, said latches secured above said vertical pins, said pins and stud-latches adapted to the vertical sockets aforesaid, levers for operating the sliding bars, and blocks inclined in opposite directions secured below the rollers, substantially as set forth.

606,897. COMPRESSION LUBRICATION-CUP. WILLIAM K. RICHART, Scranton, Pa. Filed Oct. 22, 1897. Serial No. 656,056. (No model.)



Claim.—1. In a compression-lubricator, the combination with a lubricant receptacle, of a movable compressor having a stem provided with notches, a hollow cap located on the receptacle and having opposite guide-slots, the stem of the compressor entering the interior of said cap, an actuator having an aperture adapted to receive said stem, the ends of the actuator passing through the guide-slots of the cap, a releasable locking-catch carried by the actuator and adapted to engage the notches to lock the compressor, a spring bearing at one end on the actuator and at the other against an inner portion of the cap.

2. In a compression-lubricator, the combination with a lubricant-receptacle, of a movable compressor having a stem provided with notches, a hollow cap located on said receptacle and having opposite guide-notches, an actuator having an aperture adapted to receive the stem of the compressor, the ends of said actuator passing through the guide-slots of the cap, one of the said ends being hollow, a spring-actuated locking-catch located in said hollow end, the end of said catch being adapted to engage the notches to lock the compressor, a spring bearing at one end against said actuator and at the other end against an inner portion of the cap.

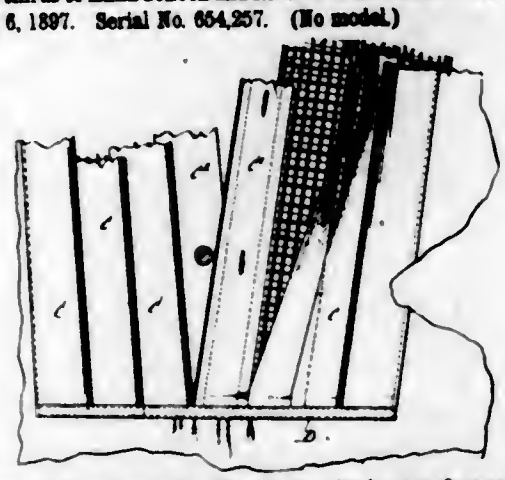
3. In a compression-lubricator, the combination with a lubricant-receptacle, of a movable compressor having a stem, the stem of the compressor being provided on one side with a flattened surface and notches located in said flattened surface, an actuator having an aperture adapted to receive said stem, one side of the said aperture being flattened and adapted to come opposite the flattened surface of the compressor-stem and thus prevent the said stem from revolving, a releasable locking-catch carried by the actuator and adapted to engage the notches of the stem and lock the compressor and a suitable support for the actuator.

4. In a compression-lubricator, the combination with a lubricant-receptacle, of a lubricant-compressor having a stem provided with notches, a movable actuator, guiding means for said actuator, a releasable locking-catch carried by the actuator and adapted to engage the notches aforesaid, and a spring adapted to urge the actuator and maintain compression of the lubricant by the compressor.

5. In a compression-lubricator, the combination with a lubricating-cup, of a cap secured thereto having guide-slots a lubricant-compressor movable in the cup and having a notched stem movable in the cap, an actuator movable in the slots, a spring-actuated releasable locking-catch carried by the actuator, and an actuating-spring within the cap and urging the actuator to maintain the compression of the lubricant by the compressor.

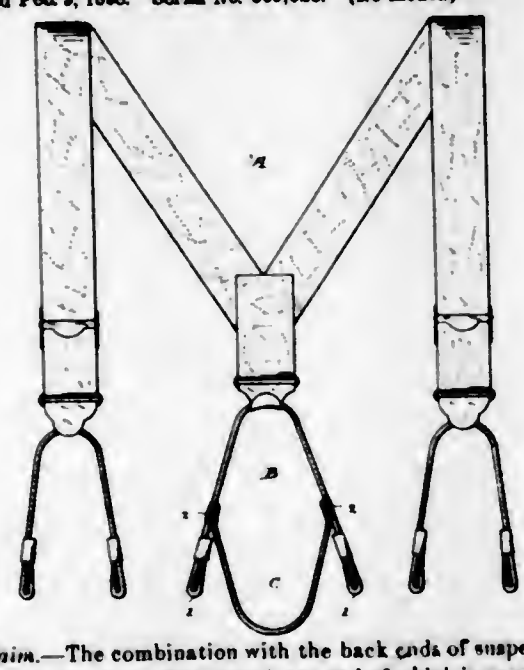
6. In a compression lubricator, the combination with a lubricant-cup, of a hollow tubular cap having opposite guide-slots, an actuator movable in said slots and having an apertured enlargement of substantially the same diameter in one direction as the interior of the cap and cut away or flattened in another direction to be of less width than the slots, thereby permitting the insertion of said enlargement in the cap, a lubricant-compressor having a stem fitted loosely in the enlargement, a releasable locking-catch for securing the stem to the actuator, and automatic means for urging the actuator.

606,898. SHIRT. PAUL SCHOEN, Glens Falls, N. Y., assignor of two-thirds to Anna Schoen and Albert H. Silverman, same place. Filed Oct. 6, 1897. Serial No. 654,257. (No model.)



Claim.—A shirt or the like having its bosom formed of a backing of open-mesh fabric, and a series of independent plaits each secured along one longitudinal edge to the outer surface of the backing and overlapping one another, substantially as described

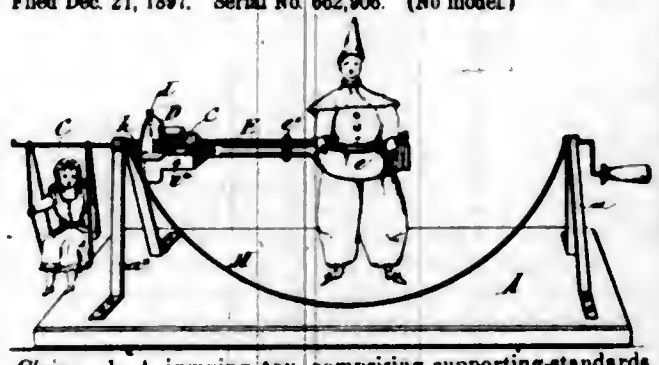
606,899. SUSPENDERS. EDWIN N. SCOFIELD, Cos Cob, Conn. Filed Feb. 9, 1898. Serial No. 669,628. (No model.)



Claim.—The combination with the back ends of suspenders having loops 1, of a depending loop C one end of which is connected with one of the said back ends above the loop 1 thereof, and the other end of said loop C being connected with the other back end above the loop 1 thereof, the lower depending part of the loop C extending approximately down to the said loops 1, whereby the loop C may be

engaged by one finger to draw down and hold both loops 1 while the latter are being attached to buttons by the thumb and another finger.

606,900. JUMPING TOY. FRANK P. SHEK, Brooklyn, N. Y. Filed Dec. 21, 1897. Serial No. 662,906. (No model.)

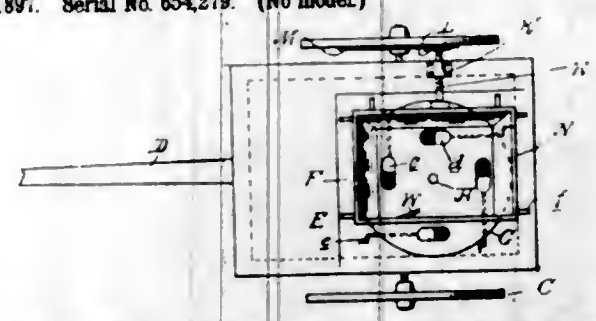


Claim.—1. A jumping toy, comprising supporting-standards, a rope journaled in one of said standards, a tripping-disk rotatably secured to the opposite standard and connected with said rope, said tripping-disk being provided with primary tripping-lugs and an intermediate tripping-lug and a holding device supported between said standards and provided with tripping-levers extending at either side of said disk and adapted to be operated by said tripping-lugs, substantially as set forth.

2. A jumping toy comprising supporting-standards, a rod secured in one of said standards, a rope journaled in the other standard and provided with a sleeve rotatably secured to said rod, a disk secured to said sleeve and provided with tripping-lugs, and a holding device pivoted to said rod and provided with tripping-levers extending upon either side of said disk, and adapted to be operated by said tripping-lugs, substantially as set forth.

3. A jumping toy comprising supporting-standards, a rod secured in one of said standards, a rope journaled in the other standard and provided with a sleeve rotatably secured to said rod, a disk secured to said sleeve and provided with tripping-lugs, and a holding device pivoted to said rod and constructed of two spring members forming a clamp at one end and provided at the other end with tripping-levers adapted to be operated by said tripping-lugs, substantially as set forth.

606,901. POTATO-PLANTER. JOHN SKINNER, Davison, Mich., assignor of one-third to Rivingston Ashley, same place. Filed Oct. 6, 1897. Serial No. 654,279. (No model.)

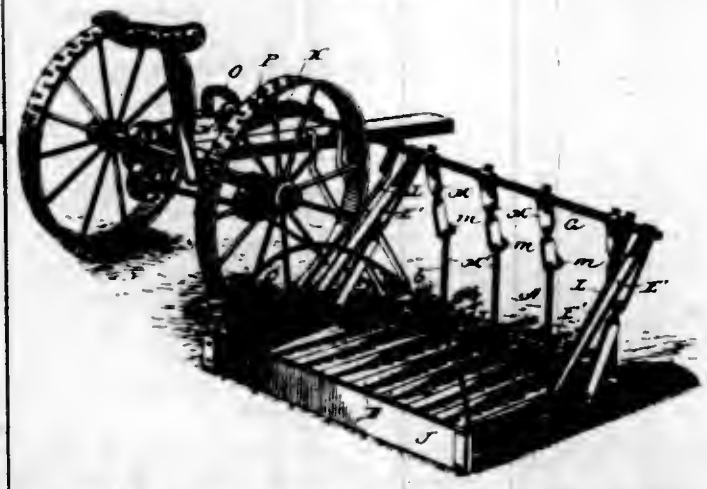


Claim.—1. In a potato-planter, the combination with the ground-wheels, the main frame having a forwardly-projecting tongue and seed-carrier on the frame, of a planter-tube-carrying frame comprising separated bars pivotally connected at their forward ends to the tongue, and having at the rear ends an upwardly-extending arm or handle at the rear of the platform, vertically adjustably secured to said main frame, a planter-tube pivotally secured to the planter-tube-carrying frame, and an adjustable brace-rod for holding said planter-tube in either its vertical or horizontal positions

2. In a potato planter, the combination with the ground-wheels and the frame supported therein, of the raised platform F on said frame having the aperture O therein, the disk G rotatorily secured upon the pivot H, having the apertures or pockets *c* arranged concentrically around the pivot and adapted to register with the aperture O and the circular rack I secured to the under side of the disk near the periphery thereof, a drive connection for said disk from one of the ground-wheels, comprising the shaft K the pinions J and L and the gear-wheel M on said ground-wheel, a hopper secured to the platform above said disk but to one side of the aperture O and in such position that the pockets *c* pass therebeneath, a vertically-adjustable planter-tube beneath the platform and adapted to catch the potatoes discharged from the aperture O and a coverer in rear of said planter-tube, substantially as described.

3. In a potato-planter the combination with the hopper, of the rotary feed-disk having pockets therein, slide-plates one for each pocket, and means adapted to be operated from the periphery of said disk for moving said slides to regulate the size of the pockets, substantially as described.

606,902. BUNCHING ATTACHMENT FOR MOWING-MACHINES. JOHN L. TANDY and WILLIAM E. RADER, Columbia, Mo. Filed Oct. 4, 1897. Serial No. 654,047. (No model.)



Claim.—1. In a bunching attachment for mowing-machines, a crank-shaft, mounted to be rotated above the finger-bar, and a series of arms arranged at intervals thereon, and a series of depending rods or fingers flexibly connected to said arms, substantially as and for the purposes described.

2. In a bunching attachment for mowing-machines, a crank-shaft mounted above the finger-bar, and means for rotating said shaft, a series of arms adjustably secured to said shaft at intervals, and a series of depending rods or fingers flexibly connected to said arms, substantially as and for the purposes described.

3. In a bunching attachment for mowing-machines, a crank-shaft mounted above the finger-bar and means for rotating said shaft, a series of arms arranged at intervals on the shaft, a series of depending rods or fingers flexibly connected to the arms and stops for the rods or fingers, substantially as described.

4. In a bunching attachment for mowing-machines a crank-shaft mounted above the finger-bar, and in substantially the same vertical plane, means for rotating the crank-shaft, a receiver for the cut grass or grain, depending rods or fingers flexibly connected to the crank-shaft, an end-gate or tail-board mechanism connecting the crank-arm and end gate adapted to raise and lock the gate, substantially as described.

5. In a bunching attachment for mowing-machines, a bar secured to the finger-bar in the rear thereof, converging sides or runners with flanged bottoms rigidly secured to the rear bar, a series of slats or fingers having the bodies thereof bent downwardly at their front ends in rear of the pivots, adjacent to the bar, and upwardly at their rear ends, said fingers being pivoted to the bar, and a suitable end-gate and means for operating the same, substantially as described.

6. In a bunching attachment for mowing-machines, means substantially as described for bunching the cut grass or grain, means for cleaning the finger-bar comprising a crank-shaft and arms, and means mounted upon the tongue or other suitable part of the mower for adjusting the crank-shaft and arms to a higher or lower position to correspond with the height of the mower or the wheels thereof, substantially as described.

7. In a bunching attachment for mowing-machines, means, substantially as described, for bunching cut grass or grain and discharging the bunches, a crank-shaft mounted above the finger-bar of the machine proper, a foot-lever, a link connected at one end to the foot-lever and at the other to the crank, and a second link pivoted at one end to a standard on the frame or tongue of the mower and formed at the other with a bearing for the crank-shaft, substantially as described.

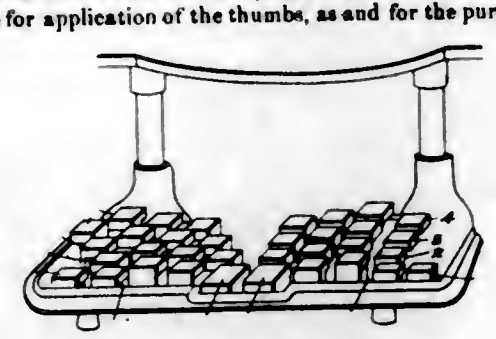
8. In a bunching attachment for mowing-machines, means substantially as described for bunching cut grass or grain and discharging the bunches, a crank shaft mounted above the finger-bar of the machine for operating said mechanism, a foot-lever, a link connected at one end to the foot-lever and at the other to the crank, and a second link pivoted at one end to a standard on the frame or tongue of the mower and formed at the other with a bearing for the crank-shaft, and means for adjusting the length of the links, substantially as described.

606,908. KEYBOARD FOR TYPE-WRITERS. BATES TORREY, Weymouth, Mass. Filed Feb. 17, 1897. Serial No. 623,906. (No model.)

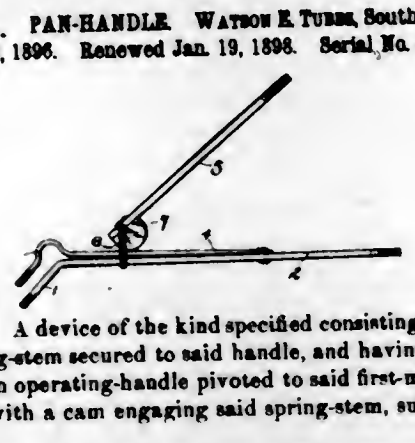
Claim.—1. The improved keyboard for type-writing machines, comprising right and left groups of keys, there being four rows of four keys each, and the central keys of each row being elevated above the others on each side, so that the group presents an arched form, as shown and described for the purpose specified.

2. The improved all-finger keyboard, comprising two right and

left groups of keys arranged in alined rows, four in each row, the central keys being elevated to form an arch as specified, and each of the keys back of the front row being arranged diagonally from the one in front of it, and two supplemental keys located between the two divisions of the front row and projecting forward from the same, to provide for application of the thumbs, as and for the purpose specified.



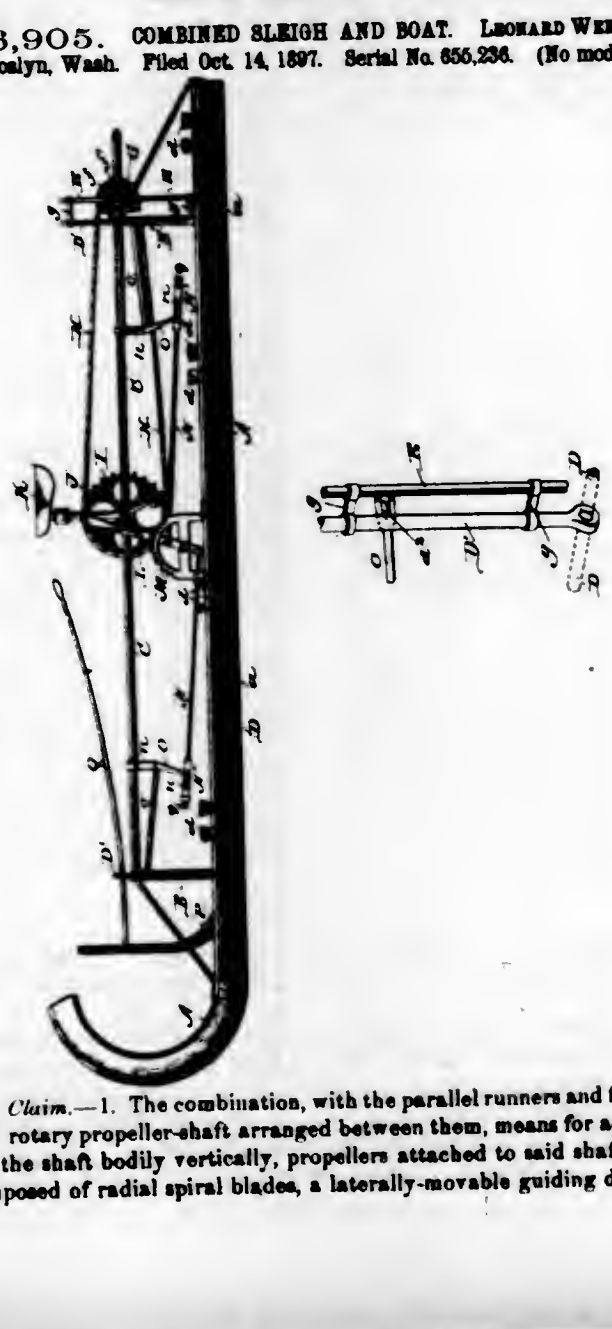
606,904. PAN-HANDLE. WATSON E. TUBBS, South Haven, Mich. Filed Nov. 6, 1896. Renewed Jan. 19, 1898. Serial No. 667,177. (No model.)



Claim.—1. A device of the kind specified consisting of a jaw and handle, a spring-stem secured to said handle, and having a jaw at its free end and an operating-handle pivoted to said first-mentioned jaw and provided with a cam engaging said spring-stem, substantially as described.

2. A device of the kind specified consisting of a lower jaw and handle, a spring-stem rigidly secured to said handle, and having a jaw at its free end, an upwardly-extending bail upon said handle, and an operating-handle pivoted to said bail and provided with a cam engaging the upper face of said spring-stem, substantially as described.

606,905. COMBINED SLEIGH AND BOAT. LEONARD WEBER, Roslyn, Wash. Filed Oct. 14, 1897. Serial No. 655,236. (No model.)



Claim.—1. The combination, with the parallel runners and floats, of a rotary propeller-shaft arranged between them, means for adjusting the shaft bodily vertically, propellers attached to said shaft and composed of radial spiral blades, a laterally-movable guiding device which is pivoted between the runners and made adjustable vertically, so that its lower edge may work in the same plane as the propeller-blades, as shown and described.

2. The combination, with the parallel runners and floats, of the guiding-rudder arranged at the front between said runners, and a lever connected with and supporting the rudder and pivoted on a fixed fulcrum, and extending back toward the operator's seat, as shown and described, whereby shifting the lever shifts the rudder bodily as specified.

3. The combination, with the parallel floats or hulls, and propeller-shafts D, of the vertically-slidable rods D', in which said shafts are hung, rock-shafts O, arms o connecting the latter with said rods, the hand-lever L, and connecting-rods extending from it to the rock-shaft, as shown and described.

4. The combination, with the two parallel floats, of a propeller-shaft arranged in the free space between them, and carrying a series of propellers properly arranged at different points in its length, vertically-slidable rods, or hangers, attached to the end portions of said shaft, levers and rods for adjusting the hangers vertically, and means arranged intermediately for connecting the rods, substantially as shown and described.

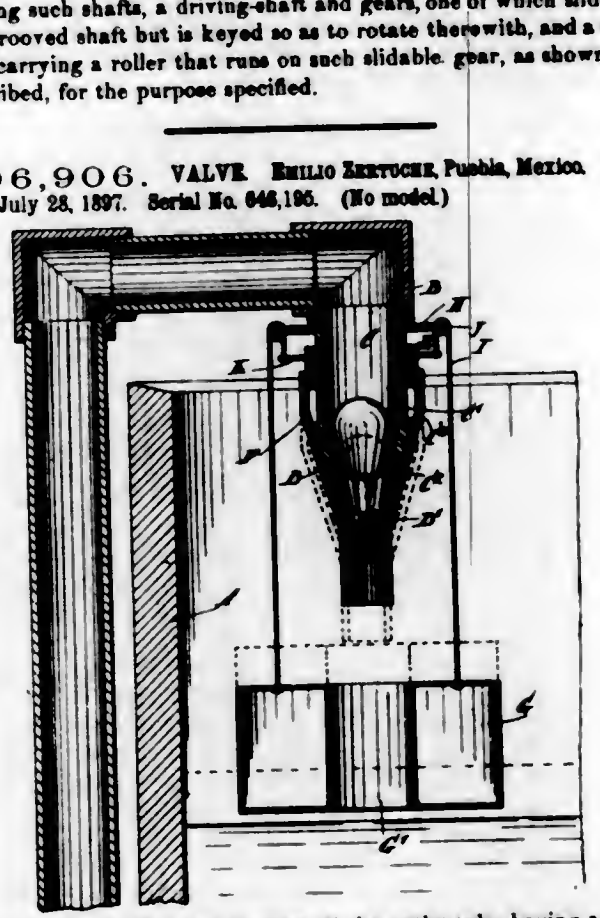
5. The combination with the floats and propeller-shafts, vertically-slidable carriers or supports for the latter, rock-shafts connected with such carriers, and lever and rods for actuating the rock-shaft to adjust the propeller-shafts higher or lower, substantially as shown and described.

6. The combination, with the runners or floats, and shafts carrying propellers, of vertically-adjustable carriers for said shafts, rock-shafts having arms for raising and lowering said carriers, a lever and rod connecting the same with the crank-arm of the rock-shaft, and an elastic connection between the rod and said crank-arm, as shown and described.

7. The combination, with the parallel runners or floats, and a propeller-shaft arranged between them, of vertically-slidable tubes or rods, supporting said shaft, rock-shafts having arms that are loosely connected with said rods, a lever and connecting-rods which are provided with slotted sections wherein the crank-arms of the rock-shafts are adapted to slide, and springs pressing on said arms, as shown and described for the purpose specified.

8. The combination, with runners or floats, and a propeller-shaft, of a vertically-slidable shaft, having a groove as specified, gears connecting such shafts, a driving-shaft and gears, one of which slides on the grooved shaft but is keyed so as to rotate therewith, and a fixed arm carrying a roller that runs on such slidable gear, as shown and described, for the purpose specified.

606,906. VALVE. EMILIO ZERTUCHE, Puebla, Mexico. Filed July 28, 1897. Serial No. 646,195. (No model.)



Claim.—1. The combination of the outlet-tube having a valve-casing at its end, said casing being tapered toward its outer end, a valve within said casing, and a valve-operating device movable longitudinally of the outlet and arranged to engage the valve, said operating device being also arranged to engage the tapering surface of the casing, whereby the said surface will form a stop for the valve-operating device, substantially as described.

2. The combination of the outlet-tube having a valve-casing at its end, said casing having a tapered outer surface, a valve within the casing, and a valve-operating tube movable longitudinally of the

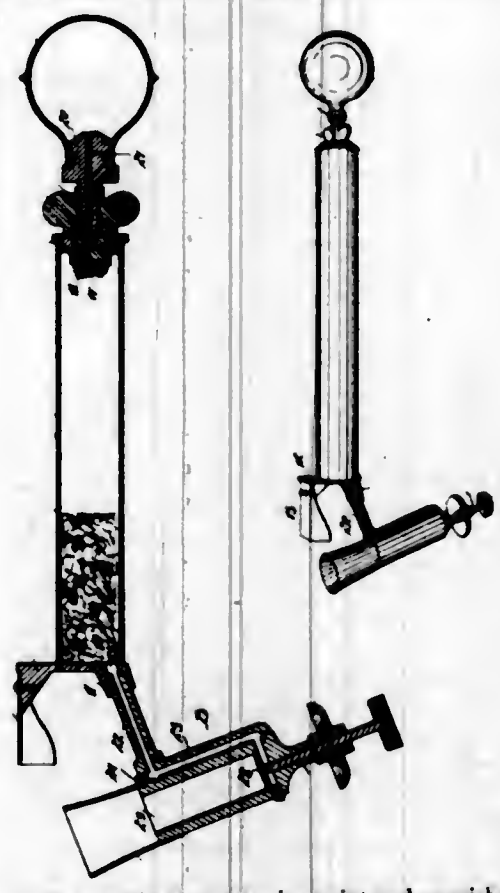
outlet and having a tapered inner surface arranged to engage the tapered outer surface of the valve-casing, substantially as described.

3. The combination of the outlet-tube having a tapered end forming a valve-casing, and a portion of uniform cross-section adjacent to said tapered end, a valve in said casing, and a valve-operating device comprising a sleeve fitted to slide on said portion of uniform cross-section, and a tapered tube adapted to engage the valve and the tapered valve-casing, substantially as described.

4. The combination of the tubular casing, the valve located therein and having an end portion with spaced radial arms located exteriorly of the outlet of the casing and of greater length radially than the radius or half-width of the outlet, whereby that surface of said arms which is toward the valve is adapted to engage the casing at the outlet thereof, and the longitudinally-movable valve-operating device adapted to engage said arms, substantially as described.

5. The combination of the valve-casing, the valve movable therein, the longitudinally-movable valve-operating device and the counterbalancing float connected to said valve-operating device, said float being apertured in line with the liquid-outlet, substantially as described.

606,907. **DEVICE FOR CLEANING PAINT AND VARNISH FROM SURFACES.** BENJAMIN F. AIKEN, Freetown, Mass. Filed May 18, 1897. Serial No. 637,039. (No model.)



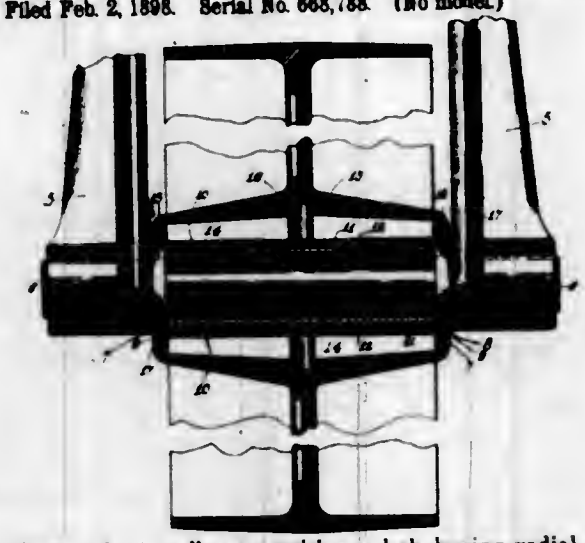
Claim.—1. In a device for removing paint and varnish from surfaces, a reservoir, a burner connected with said reservoir, a filling-plug provided with a passage communicating with the reservoir, and a pump having a shank arranged for connection with the said filling-plug, the shank having a passage adapted to communicate with the passage in the filling-plug, the said shank serving as a valve to establish and cut off communication between the pump and reservoir, substantially as shown and described.

2. In a device for removing paint and varnish from surfaces, a reservoir, a burner connected with said reservoir, a filling-plug removably connected with said reservoir and having a valve-controlled passage, and a pump consisting of an elastic bulb provided with a shank arranged for connection with the said filling-plug, the shank having a passage adapted to communicate with the passage in the filling-plug, the inner end of said shank serving as a valve to establish and cut off communication between the bulb and the reservoir substantially as shown and described.

3. The combination with a reservoir adapted to contain ignitible material, a burner connected with one end of said reservoir and a cap located at the opposite end of the reservoir, of a filling-plug removably secured to the said cap, the said plug having a screw-threaded opening extending from the top to a point at or near the center, the lower end of said opening being conical in shape, the said plug being provided with a passage extending from the bottom of said opening through the inner or bottom portion of said plug and provided at its inner end with a tension-controlled valve, a bulb provided with an exteriorly-threaded shank adapted to screw into the opening in the plug, the lower end of said plug being shaped to fit the lower end of the opening in the filling-plug and adapted to close the passage leading therefrom, the said shank being provided with a channel extending from the end connected with the bulb to a point near the opposite end, the inner or lower end of said channel being directed to one side and passing out of the shank above its inner end and opening into the lower part of the opening in the filling-plug, substantially as set forth.

4. The combination with a burner, and a reservoir connected at one end with said burner and serving as a handle for the device, a screw-plug removably secured to the other end of the reservoir and formed with a screw-threaded opening and a passage leading from said opening and communicating with the reservoir, of a pump provided with an exteriorly-threaded shank adapted to screw into the opening in the said plug, the said shank having a passage adapted to communicate with the passage in the plug, the shank serving as a valve to establish and cut off communication between the pump and reservoir, substantially as described.

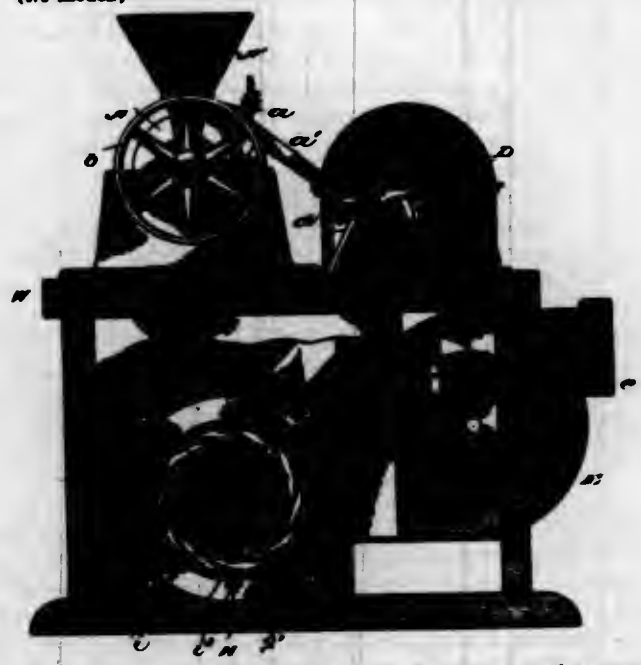
606,908. **PULLEY.** HENRY F. ARNOLD, Hyde Park, Mass., assignor to the American Tool and Machine Company, Boston, Mass. Filed Feb. 2, 1898. Serial No. 668,788. (No model.)



Claim.—1. A pulley comprising a hub having radial channels extending from the bore thereof, grooves at the ends of the hub connecting said channels, a central groove recessed beyond the bottoms of the channels, drip-collars partially contained within the end grooves, and a perforated sleeve or casing loosely fitting the bore of the hub.

2. The combination with suitable supports and a shaft therein of the collars 7 7 loose on the shaft, the rolls 10 arranged around the shaft, the perforated casing 11 embracing the rolls, and the hub 13 having the channels 14 14 the grooves 15 15 and 16, and the lips 17 17 rotatably mounted on the casing, as described.

606,909. **RICE HULLING AND POLISHING MACHINE.** HERMAN A. BARNARD, Moline, Ill., assignor to the Barnard & Leas Manufacturing Company, same place. Filed Sept. 13, 1897. Serial No. 651,524. (No model.)



Claim.—1. The herein-described polisher screen-casing, comprising the vertically-divided metal heads each formed of opposite vertically-divided halves provided with projecting semicylindrical flanges on their inner faces, the opposite heads being also respectively pro-

vided with inlet and discharge openings in said flanges, said openings being located above the axis of the polisher-casing and semicylindrical screen-frames fitted on and secured to the flanges of said heads, for the purpose and substantially as described.

2. The herein-described screen-casing consisting of the semicylindrical frames H carrying screens H', and the opposite metallic heads I and G each formed of two vertical parts, each part having a semicircular flange on its inner side, head G being also provided with an inlet g^3 and head I with an outlet i^3, all substantially as and for the purpose described.

3. The herein-described polishing-drum, consisting of a central cylindrical wooden body J shingled with leather straps j, and cylindrical metallic heads K and L fitted on the ends of the body and supporting the latter upon the shaft and respectively provided with inclined peripheral feed and discharge ribs or blades K' and L', for the purpose and substantially as described.

4. The combination with a polisher, having inlet and discharge openings, a fan-casing beside the polisher, a pair of inverted-U-shaped air-trunks respectively located on opposite sides of the fan-casing and beside the feed and discharge ends of the polisher, one leg of each air-trunk communicating with the fan-casing, and one leg of one air-trunk communicating with a spout leading to the feed-inlet of the polisher, and one leg of the other air-trunk communicating with the discharge-outlet of the polisher; said discharge-outlet being at one side of the polisher-casing and above the axis thereof with means for introducing grain to be polished into the leg of the air-trunk communicating with the feed-opening of the polisher, all constructed and arranged, substantially as described.

5. The combination of a polisher having a cylindrical wire screen and hollow heads respectively having inlet and discharge openings, a fan-casing beside the polisher, a pair of inverted-U-shaped air-trunks respectively located on opposite sides of the fan-casing and beside the feed and discharge ends of the polisher, one leg of each air-trunk communicating with the fan-casing, and one leg of one air-trunk communicating with a spout leading to the feed-inlet of the polisher, and one leg of the other air-trunk communicating with the discharge-outlet of the polisher, said discharge outlet being at one side of the polisher-casing and above the axis thereof; with means for introducing grain to be polished into the leg of the air-trunk communicating with the feed-opening of the polisher, all constructed and arranged, substantially as described.

606,910. SLEEPING-CAR. LISTON B. BASSETT and ELMER E. CASTLE, Norwich, N. Y.; said Castle assignor to said Bassett. Filed Feb. 14, 1898. Serial No. 670,288. (No model.)



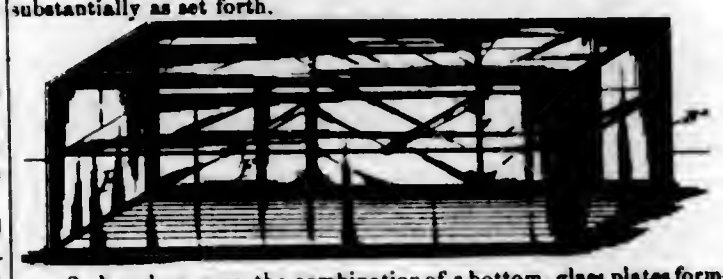
Claim.—1. In a sleeping-car, the combination with the partitions dividing the sections, of a sliding hood mounted on said partitions adapted to form a cover to the outer portion of the berth, as set forth.

2. In a sleeping-car, the combination with the partitions dividing the car into sections, each of the said partitions having a hinged and fixed portion, and grooved on the lower edges, and a board designed to slide in said groove to hold the sectional partition open, and the sliding hood mounted on the upper ends of the partitions adapted to form a cover for the exposed part of the berth, as set forth.

3. In a sleeping-car the combination with the seats of the section, the buttons secured to the forward edges of each seat, the couch-seat adapted to rest on said buttons, and cleats supporting the seats, the cushions, each of which is slitted, forming two flaps, one of which is adapted to form a cushion for the adjustable couch-seat, and the straps connecting the cushion to the under side of the said seat, as shown and described.

606,911. SHOW-CASE. CHARLES P. BIELK, New York, N. Y. Filed Sept. 13, 1897. Serial No. 651,467. (No model.)

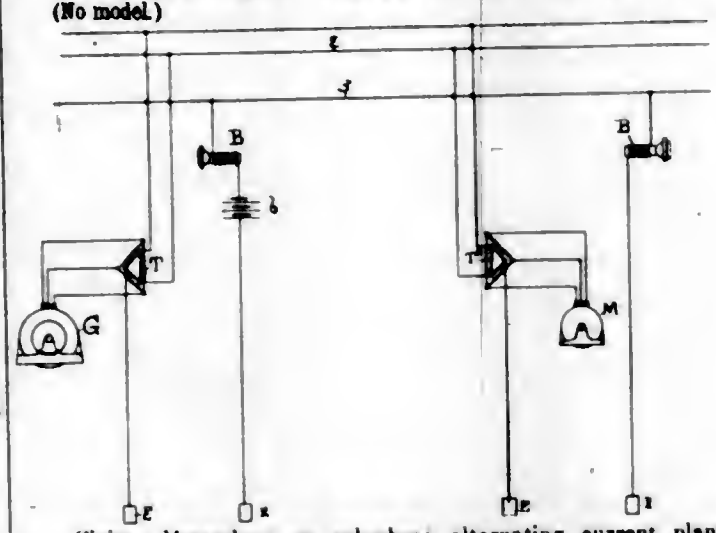
Claim.—1. In a show-case, the combination, with glass plates forming the walls and top of the same, of a corner-fastening for holding said plates in position, consisting of a corner-piece arranged between the contiguous edges of the plates, sheet-metal face-strips attached to said corner-piece and extending over the adjacent edges of said plates, interior sheet-metal glazing-strips provided with flanges adapted to bear against said plates and fastening-bolts extending through the main portion of said glazing-strips and connecting said strips with the corner-pieces so as to clamp said plates in position, substantially as set forth.



2. In a show-case, the combination of a bottom, glass plates forming the side walls and top of the case, corner pieces arranged between the contiguous edges of the plates, angular face-strips attached to said corner-pieces and extending over the adjacent edges of said glass plates, interior glazing-strips provided with openings, and fastening screw-bolts connecting the glazing-strips with the corner-pieces and provided with eyes at their inner ends for receiving shelf-supporting brackets, substantially as set forth.

3. In a show-case, the combination, with the bottom of the case and glass plates forming the sides of the case, of sheet-metal edge moldings attached to said bottom and extending over the adjacent edges of the same, and forming at their upper portion a groove for receiving the lower edges of said plates, substantially as set forth.

606,912. MEANS FOR PREVENTING DISTURBANCES IN TELEPHONIC CIRCUITS. OTTO T. BLÁTHY and KOLOMAN DE KANDÓ, Buda-Pesth, Austria-Hungary. Filed Apr. 27, 1897. Serial No. 634,173. (No model.)



Claim.—Monophase or polyphase alternating-current plants which have one of the conductors grounded, with alternating currents of a frequency less than twenty complete periods per second, in combination with monophase or polyphase alternating-current motors with slantwise slots, for preventing disturbing influence on telephone apparatus.

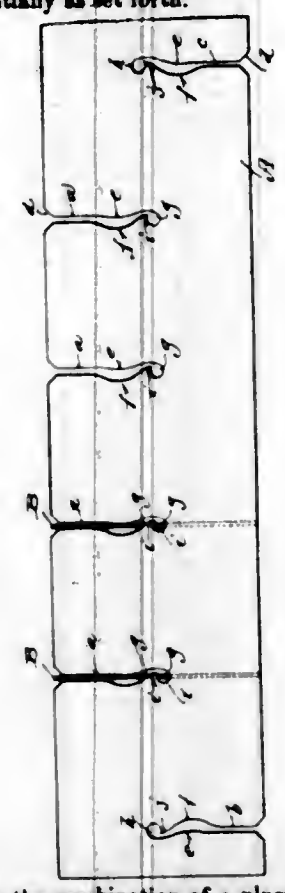
606,913. CELL-CASE. ELIJAH C. BOWER, Milwaukee, Wis. Filed July 12, 1897. Serial No. 644,261. (No model.)

Claim.—1. In a cell-case, a series of strips, each having an intermediate series of slots extending inward from one edge to a line beyond the longitudinal center of the strip, one wall of said slot projecting inward and forming a hook with its base at the said center line and said strips each having similar slots extending inward from the opposite edge adjacent to each end to a line beyond said longitudinal center on the other side thereof, substantially as set forth.

2. The herein-described cell case, comprising a plurality of strips, each provided with a series of slots in one of its edges and a slot at each of its ends formed in its opposite edge, each slot extending to a point just beyond the longitudinal center of the strip and there terminating in an enlarged aperture, and one wall of each slot extending inwardly in a rounded convex line beyond the initial straight line of the slot-wall, and the other wall of each slot extending outwardly in a rounded concave line and thence projecting inwardly, forming a hook or projection with its base on the longitudinal central line of said strip, and the said strips being arranged in two series, disposed transversely to each other, with the hooks or projections of one series in the base-apertures of the slots of the other series, the bases of the two series of hooks or projections being in contact, at right angles to each other, substantially as set forth.

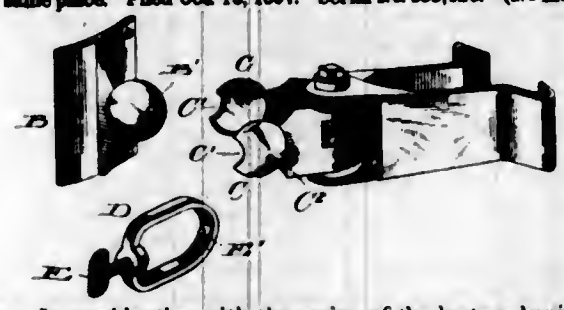
3. In a cell-case, the combination of a plurality of strips, all of exactly the same construction in all respects, said strips each having an intermediate series of slots extending inward from one longitudinal edge to a line beyond the longitudinal center of the strip, one wall of said slot projecting inward and forming a hook with its base

at the said center line and said strips each having similar slots extending inward from the opposite edge adjacent to each end to a line beyond said longitudinal center on the other side thereof, the bases of the hooks formed on the walls of the said last-named end slots also extending on the longitudinal central line of said strips, in exact line with the bases of the hooks on the walls of the said intermediate series of slots, substantially as set forth.



4. In a cell-case, the combination of a plurality of strips, all of exactly the same construction in all respects, said strips each having an intermediate series of slots extending inward from one longitudinal edge to a line beyond the longitudinal center of the strip, one wall of said slot projecting inward and forming a hook with its base at the said center line and said strips each having similar slots extending inward from the opposite edge adjacent to each end to a line beyond said longitudinal center on the other side thereof, and each slot starting from a flaring notch, and with parallel straight edges to both its walls, and one of said slot-walls thence extending inwardly in a rounded convex line beyond the initial straight line of the slot-wall, and the other wall of each slot extending outwardly in a rounded concave line, and thence projecting inwardly to form the described hook, said strips being put together, in forming the case, in two series, at right angles to each other, whereby the solid portions of the strips of one series beyond the slots will snugly fit between the straight walls of the slots in the strips of the other series, and the said rounded convex parts of the slot-walls of the strips of one series will crowd against the solid parts of the strips of the other series, substantially as set forth.

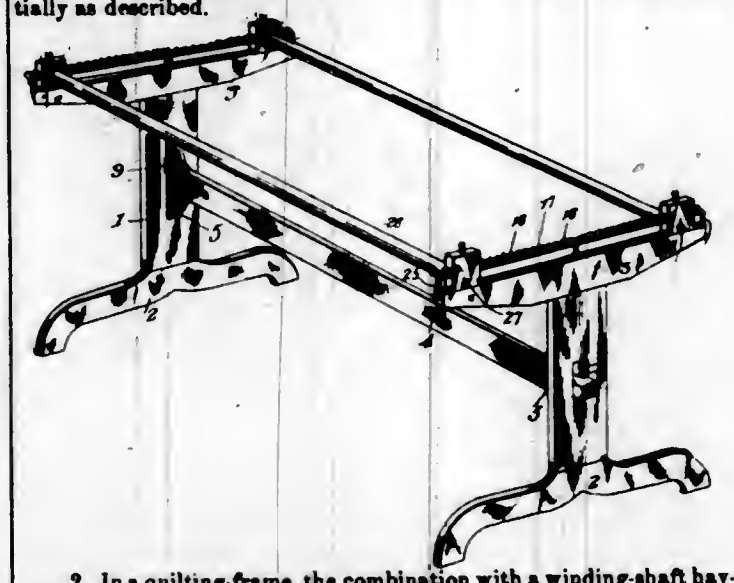
606,914. CLAMP FOR BALL-AND-SOCKET JOINTS. JOHN W. BRAGGER, Watertown, N. Y., assignor to the Hitchcock Lamp Company, same place. Filed Oct. 18, 1897. Serial No. 655,630. (No model.)



Claim.—In combination with the casing of the lantern having a ball-bracket secured thereto, the cups C scalloped out as at C', the clamp D, one end of which conforms to the curve of the cups, and having a lug E' adapted to engage in a depression in the convex surface of one of the cups, and the pointed thumb-screw carried by the clamp and designed to engage in a depression in the second cup, as shown and described.

606,915. QUILTING-FRAME. ROBERT H. BUTLER, Grayson, Ky., assignor of one-third to Martin Luther Butler, Ashland, Ky. Filed Aug. 30, 1897. Serial No. 650,019. (No model.)

Claim.—1. In a quilting-frame, the combination with a winding-shaft having a spindle at one end and a socket in its other end, of a sliding box supported at each end of the frame, one of said boxes having a horizontal opening to receive the spindle and a spring-actuated pin supported in the other box to enter the said socket, substantially as described.



2. In a quilting-frame, the combination with a winding-shaft having a spindle at one end and a socket in its other end, of a sliding box supported at each end of the frame, one of said boxes having a horizontal opening to receive the spindle, a spring-actuated pin supported in the other box to enter the said socket, ratchet-teeth on one end of the shaft and a dog pivoted on the sliding box to engage said teeth, substantially as described.

3. In a quilting-frame, the combination with a winding-shaft having a spindle at one end and being angular and provided with a socket at its other end, of a ratchet-wheel secured on said angular end, boxes slidably supported on the ends of the frame, one of said boxes having a horizontal opening to receive the shaft-spindle, a horizontally-disposed spring-actuated pin supported in the other box to enter said socket, and a gravity-dog pivoted on the last-named box to engage the teeth on the ratchet-wheel, substantially as described.

4. In a quilting-frame, the combination with toothed bars supported at the ends of the frame, boxes mounted to slide on said bars, locking-pins in said boxes to engage the teeth in the bars, and winding-shafts journaled in said boxes, substantially as described.

5. In a quilting-frame, the combination with the end cross-bars, of the frame, of boxes slidably supported on the cross-bars, each box comprising spaced blocks secured between plates and the upper block having a groove in its lower face, a bar supported at each end of the frame and loosely fitting in the space between the blocks of the respective boxes, and having a toothed rib on its upper face projecting into the grooves in the upper blocks, a locking-pin supported in the upper block of each box to engage the teeth on said rods, and winding-shafts journaled in said boxes, substantially as described.

6. In a quilting-frame, the combination with the end cross-bars of the frame, of boxes slidably supported thereon, a toothed bar extending through openings in the boxes on the respective bars and having its teeth reversely inclined from its middle toward its respective ends, brackets secured to said cross-bars and toothed bars at their ends and middle portions, spring-actuated locking-pins in each box to engage the teeth of the toothed bar, and winding-shafts supported by said boxes, substantially as described.

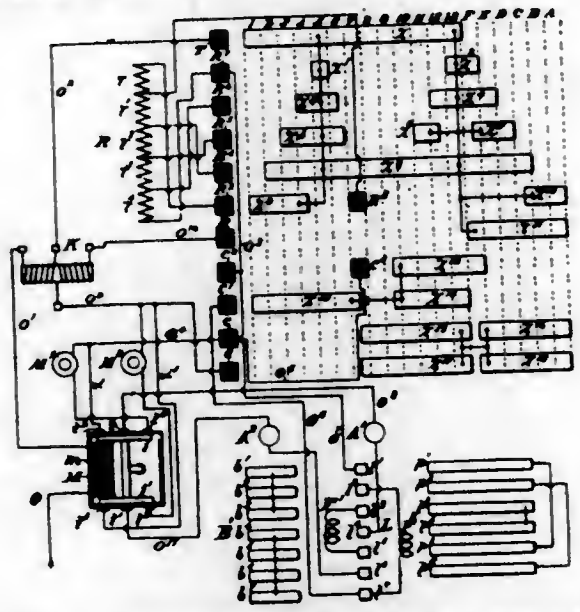
606,916. MACHINE FOR MAKING PAPER BOXES. PAUL A. CARTIER, Darnetal, France. Filed Aug. 25, 1897. Serial No. 649,455. (No model.)

Claim.—1. In a machine for making paper boxes, the combination with a vertically and horizontally adjustable frame, of a milling-wheel loosely mounted in said frame, a power-driven shaft, a milling-wheel fixed upon said shaft and loosely meshing with said loosely-mounted milling-wheel, and a vertically-adjustable guideway located between said milling-wheels, substantially as set forth.

2. In a machine for making paper boxes, the combination with a suitable frame, milling-wheels carried by said frame and means for operating said milling-wheels, of a guideway constructed of a rectangular bracket provided with a central recess, adjustable plates carried by said bracket and shaped to conform therewith, and means for vertically adjusting said bracket, substantially as set forth.

606,917. ELECTRIC BRAKE. HARRY P. DAVIS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed Oct. 22, 1897. Serial No. 656,023. (No model.)

Claim.—1 In an electric braking apparatus, a plurality of electric motors arranged in parallel in a local circuit to be driven as generators, in combination with a plurality of brake-magnets, one in each branch of such circuit.



2. In an electric braking apparatus, a plurality of electric motors arranged in parallel in a local circuit to be driven as generators, in combination with a plurality of brake-magnets—one in each branch of such circuit—and means for automatically cutting both of said magnets out when the motors are connected with the main generator

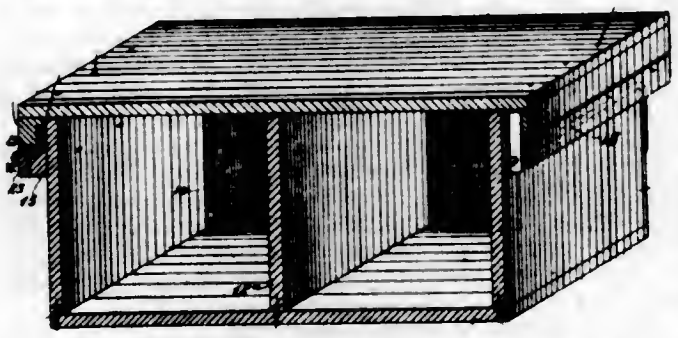
3. Means for propelling and regulating the speed of vehicles comprising a plurality of electric motors, means for connecting the same either in series or in parallel and for varying the resistance of their circuit or circuits, means for connecting the motors in parallel in a local circuit to be driven as generators by the momentum of the vehicle when the power-current is shut off, and a brake-magnet located in each branch of said local circuit.

4. In an electrically-propelled vehicle, the combination with a plurality of motors driven as generators by the momentum of the vehicle when the power-current is shut off, of means for establishing a local circuit which includes said motors in parallel and a variable resistance, a brake-magnet in each branch of such local circuit and means for progressively cutting out or short-circuiting the resistance.

5. In an electrically-propelled vehicle, the combination with a plurality of motors which are driven as generators by the momentum of the vehicle when the power-current is shut off, of means for establishing a local circuit having parallel branches through said motors, equalizing connections for said motors, a brake-magnet in each branch and means for varying the resistance of the circuit.

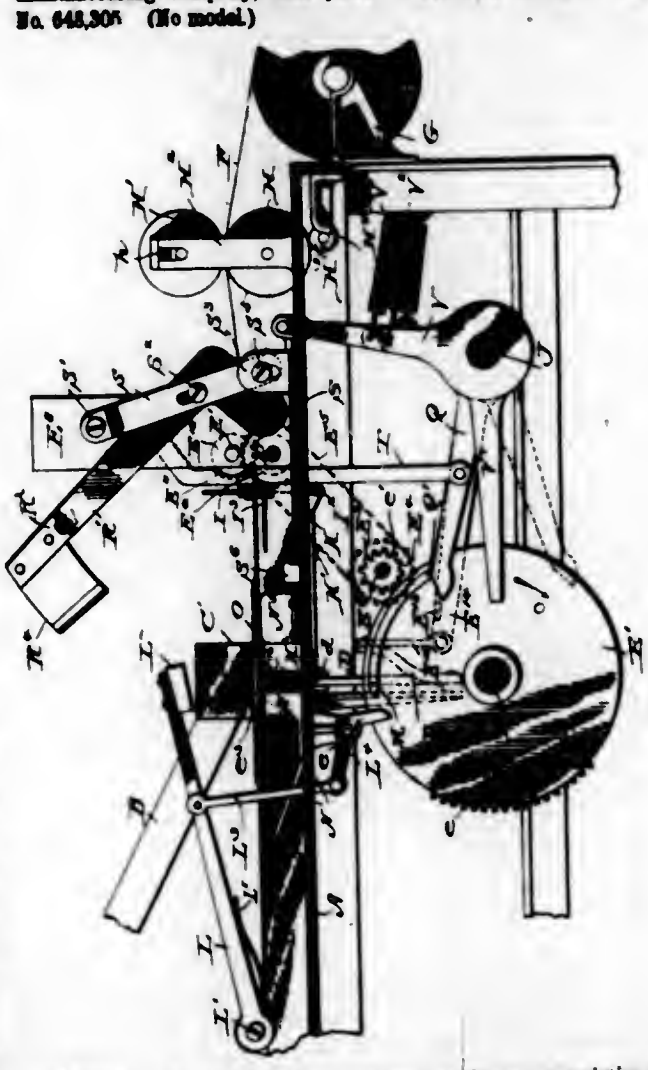
6. The combination with a vehicle, a plurality of electric motors for propelling the same and means for controlling their power and speed, of a plurality of brake-magnets normally out of circuit, and means for establishing a local circuit containing a variable resistance and having a plurality of branches each of which contains one of the motors and one of the brake-magnets.

606,918. BOX-FASTENER. JOHN W. EVANS, Greenville, Mo., assignor to Evans Brothers, same place. Filed May 7, 1897. Serial No. 635,468. (No model.)



Claim.—The combination of body portion, a cover for the body portion, a transverse bar secured to one end of the body portion and extending horizontally along the same and forming a handle, the bar having a recess produced in the upper surface thereof, a staple driven vertically into the bar and located in the recess thereof, and below the upper surface of the bar, and a rigid pin carried by the cover and projecting downward therefrom, the pin being bent downwardly and upwardly to form a hook, the hook being rigid and capable of fitting snugly within the recess and of locking with the staple.

606,919. MACHINE FOR WRAPPING SOAP, CARAMELS, &c. JOHN H. FELMLEE, Pittsburg, Pa., assignor to the Felmlee & Long Manufacturing Company, same place. Filed Aug. 14, 1897. Serial No. 648,305. (No model.)



Claim.—1. A machine for wrapping packages, consisting of a table and reciprocating bottomless carriage mounted thereon, means for operating the carriage and ejecting a package therefrom, combined with folding members operated by the carriage as it moves backward and forward, as set forth.

2. A machine for wrapping bars of soap, &c., in combination with a table, the longitudinally-movable carriage mounted thereon, the bracket-arm on the under side of the carriage, and means for operating the carriage, the pivoted wrapper-cutting knife, and a trip-lever connected with the same, which is disposed in the path of the said bracket-arm, as set forth.

3. In a machine for wrapping bars of soap, the combination with the table, the carriage mounted thereon, the inclined feeding-trough, opening into a bottomless receptacle of the carriage, designed to receive the soap, spring-flaps in the said receptacle having their free ends turned slightly inward, one of the said flaps being designed to engage against a portion of the table, to allow the cake to fall to the bottom of the carriage, and means for operating the carriage.

4. In combination with the carriage, the bracket-arm integral with the under side thereof, the pivoted paper-cutting knife, the lever K and connections with said knife, shouldered trip-lever K^3 pivoted to said lever K, and adapted to cause the said lever K to tilt as the carriage moves forward and the lever-joint to break on the return of the carriage, as set forth.

5. A machine for wrapping bars of soap, comprising in combination with the carriage having an integral arm on the under side thereof, an angle-lever pivoted to a bracket on the under side of the table, and loosely pivoted to said arm, of the operating-shaft and wheel thereon, having a lug on the inner face of the said wheel, of a trip-lever mounted on a shaft and having a lug which is designed to engage with a lug on the face of the said wheel, and a link connecting the said trip lever with the angle-lever, whereby as the said wheel makes a revolution, the carriage is driven forward, substantially as shown and described.

6. A machine for wrapping bars of soap, having in combination with the carriage the arm thereon and means for feeding the same forward as described, a cutting-knife pivoted at one end to a standard on the framework, a pivoted lever secured to the table of the machine, the free end of which lever is disposed in the path of the carriage-arm, designed to trip the lever as the carriage is brought forward, and a cable connecting the said lever with the cutting-knife for cutting the paper passing beneath the said knife, substantially as set forth.

7. In a machine for wrapping bars of soap, the combination with

the carriage adapted to receive the soap and carry it forward, means for operating the carriage and plunger for ejecting the bar of soap, of the main operating-shaft and wheel keyed thereto, of the folding-blades pivoted to the table, lugs carried on the carriage, adapted to tilt the said blades on the pivotal points as the carriage is moved backward and forward, substantially as shown and described.

8. In combination with the carriage mounted on the table and means for operating the same, the folding-blades pivoted to the table and provided with elongated slots which are angular in shape and lugs secured to the carriage adapted to travel in the said slots, the said blades arranged so they will rock on their pivotal points one in advance of the other, for the purpose set forth.

9. In a machine for wrapping bars of soap, the combination with the carriage and flat horizontally-disposed folding-blades pivoted to the table, each of the said blades having elongated and angular slots, lugs carried by the carriage and designed to travel in said slots, the angular portion in one of the said slots being shorter than the other for the purpose of causing the blades to rock on their pivotal points one in advance of the other, whereby the upper flaps of the wrapping-paper may be folded in turn, as set forth.

10. In a machine for wrapping bars of soap, the combination with the carriage adapted to convey the soap forward and deposit the same between the ends of troughs on the table of the machine, under which cake a wrapping-paper has been previously disposed between the ends of the troughs, the horizontally-disposed folding-blades pivoted to the table of the machine, the free ends of the said blades being adapted to fold over the upwardly-extended flaps of the wrapping-paper as the carriage returns to its starting position, substantially as set forth.

11. In a machine for wrapping bars of soap, the combination with the wrapping-blades described, the end-folding members, the loosely-journaled lever Q, the operating-shaft and wheel keyed thereto, a cam on the outer face of the said wheel, adapted to strike against the end of the said lever Q as the operating-shaft makes a revolution, of the levers S^4 to the forward ends of which are connected the said end-wrapping members, the rear ends of the said levers S^4 having apertured ears, of the links S pivoted at their upper ends to standards on the table, their other ends loosely pivoted to the ears on the said rods S^4, of the folding-levers R' pivoted to the said standards and to said links S and the links connecting the levers Q with the said levers R', whereby as the operating-shaft makes a revolution, the end and top folding members are brought forward against the wrapping-paper and cause the same to be pressed against the ends of the bars, the edge folding members being actuated slightly in advance of the said levers R', substantially as shown and described.

12. In a wrapping mechanism, the combination with the operating-shaft, the wheel keyed thereto, the cam integral with the outer face thereof, a lug carried at one end of the said cam, of the lever Q loosely mounted on a shaft J, the free end of the said lever being disposed in the path of the said cam, of the standards and angle-levers R' pivoted thereto, the folding flaps R^4 adjustably held to the said angle-levers R', of the edge-folding members S^5, the levers S^4, carrying said members S^5, the ears on said levers and the links S pivoted to the standards and having their lower ends loosely pivoted to the said ears, and loosely pivoted near their centers to the levers R', of the link T connecting the levers Q and R and the apertured guide-lugs S^6 mounted on the table and through which the said levers S^4 are given a lateral as well as a longitudinal movement as they are driven against the flaps of the wrapping-paper which are folded over the ends of the bars, substantially as shown and described.

13. In combination with the table of a wrapping-machine, the trough N having inclined slots N' therein, the folding-blade P resting over the end of the said trough, and the plunger-rod for forcing the partially-wrapped package in the end of the said trough, substantially as shown and described.

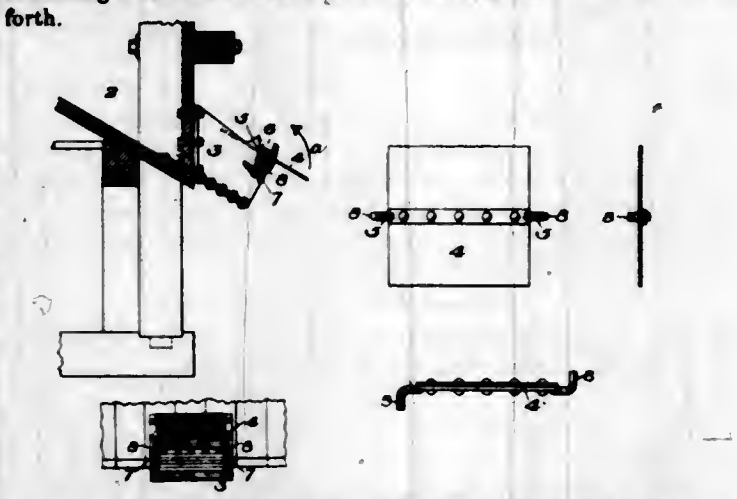
606,920. STOP-GATE. EDWARD L. FORD, Youngstown, Ohio. Filed June 5, 1897. Serial No. 639,562. (No model.)

Claim.—1. A rotary stop-gate or valve for spouts, in combination with a bottom or rest upon which it is adapted when closed to bear, said gate or valve having an axis movable away from the bottom or rest, to permit it to be swung open; substantially as described.

2. A rotary stop-gate or valve for spouts, in combination with a bottom or rest upon which it is adapted when closed to bear in an inclined position, said gate or valve having an axis at a middle point movable away from the bottom or rest, to permit it to be swung open; substantially as described.

3. A rotary stop-gate or valve having at a middle point journals mounted in slots, a shelf or surface, and an arm adapted to bear frictionally upon the shelf and to hold the gate in open position, substantially as described.

4. The combination with a spout, of a rotary stop-gate or valve pivoted in bearings permitting a vertical movement, the distance from the pivot to end of the valve being greater than the distance from the trunnion-bearings to the bottom of the spout, whereby the valve in making a revolution must rise in the bearings, substantially as set forth.



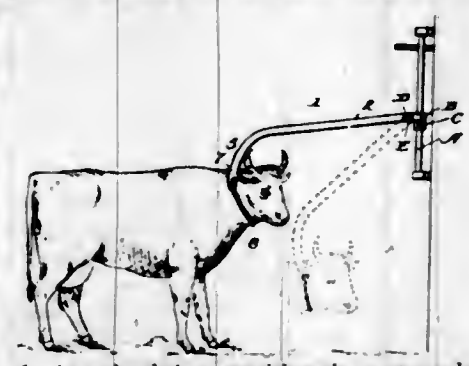
5. A rotary stop-gate or valve with pivots mounted in slots, a shelf, and an arm arranged to bear frictionally upon the shelf, the arm being longer than the normal distance of the axis of the valve to the shelf, so that the valve in revolving must be raised when the arm engages the shelf, substantially as set forth.

6. The combination with a spout, of a rotary stop-gate or valve, the distance from whose pivots to the end of valve is greater than the normal distance of the pivots to the bottom of the spout, so that the angle the valve makes with the bottom of spout, when first in contact, will be enough greater to prevent the material from raising the valve on its axis and opening the valve, substantially as set forth.

606,921. COMPOSITION OF MATTER FOR ELECTRIC HEATERS. GEORGE B. FRALEY, Philadelphia, Pa., assignor, by mesne assignments, to Oscar A. Fow and David W. Van Tine, same place. Filed Aug. 12, 1897. Serial No. 647,988. (No specimens.)

Claim.—A composition of matter consisting of talc, silicate of soda, carbonate of soda, and water in substantially the proportions set forth.

606,922. CATTLE-TIE. OLUS GATES, Estherville, Iowa. Filed May 13, 1897. Renewed Dec. 23, 1897. Serial No. 663,263. (No model.)



Claim.—1. An animal-tie comprising the rectangular bar 1 provided with the curved arm 5 formed with longitudinal parallel jaws 6 and 7 one of which is provided with the integral snap-hook 10, and the chain-loop 8, fixed at one end to one of said jaws, and having its free end provided with a ring or link adapted to detachably engage said snap-hook on the opposite jaw, substantially as shown and described.

2. An animal-tie, comprising the rectangular bar 1, provided with the horizontal hub 3, having the transverse orifice 4, and the curved arm 5 formed with the longitudinal parallel jaws 6 7, connected by the chain-loop 8, substantially as shown and described.

3. An animal-tie, comprising the rectangular bar 1 provided with the hub 3 and transverse orifice 4 and having the curved arm 5 formed with the longitudinal parallel jaws 6 and 7 connected by the chain-loop 8, in combination with the vertical rectangular fixed standard A, the collar C adjustably secured on said standard, the bracket B encompassing said standard and provided with the parallel arms D D and the bolt E, connecting the bar 1 and bracket A, substantially as shown and described.

606,923. SIGN. WILLIAM GOESSLING, St. Louis, Mo. Filed Nov. 10, 1897. Serial No. 657,998. (No model.)

Claim.—1. In an improved sign, hanger and support, having arms secured to clamps, said clamps adapted to be held secure around the trunk, limb of a tree, or other object, said arms carrying, and supporting a sign, said sign constructed of a spiral of wire, a facing

covering said wire upon which is printed or painted the wording, substantially as set forth.



2. In an improved sign, hanger and support, composed of an arm, said arm secured to a tree or other object, a sign held and supported by the end of said arm, said sign adapted to be placed or removed at the end of said arm, said sign composed of a spiral of wire or other material, said spiral carrying a facing of cloth, paper, or other material, for the purpose as shown and described.

606,924. **MUSIC-BOOK HOLDER.** CALEB D. HALE, Alpha, Md. Filed May 10, 1897. Serial No. 635,895. (No model.)



Claim.—1. The combination of two telescopic sections having guided longitudinal movement, the upper surface of the outer section forming a rest, a head carried at the outer end of each section, a spring arranged within the inner section and connected with the said heads to draw the sections together, a post carried on each section, a lever fulcrumed on each post, and a spring supported at the outer end of each section and engaging the lever, substantially as described.

2. The combination of two telescopic sections, one of which is provided with a longitudinal slot and the other with a stud projecting therefrom and adapted to engage the said slot, the outer section having a flat upper surface forming a rest, a spring arranged to draw the sections together and a leaf-holding device carried by each section, substantially as described.

3. The combination of two slidably-connected sections, a tube carried by each section, a lever fulcrumed on each section, and a spring held in each tube and respectively pressing the levers, substantially as described.

4. The combination of two telescopic sections, a spring drawing the sections together, a head contained in the outer end of each section, the heads having tubes rising therefrom, a post carried on each section, a lever fulcrumed on each post, and a spring contained within each tube and respectively pressing the levers.

5. The combination of two slidably-connected sections the outer section being provided with a ledge projecting at each side of the section and forming a rest, a spring drawing the sections together, a head carried at the outer end of each section, each head having a tube rising therefrom, a post carried on each section, a lever fulcrumed on each post, and a spring contained within each tube and respectively pressing the levers, substantially as described.

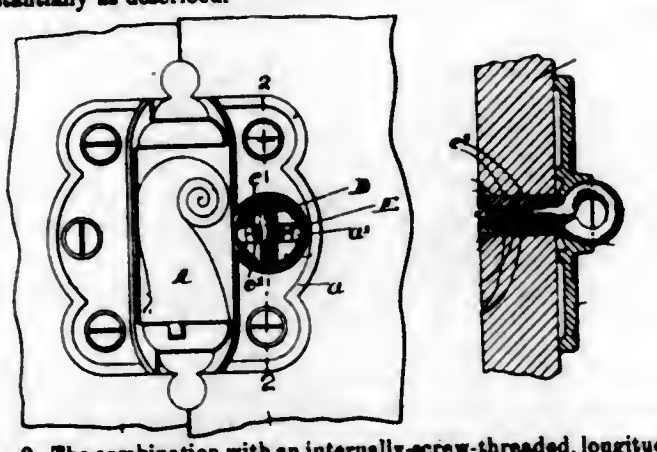
6. The combination of two slidably-connected sections, a head attached to the outer end of each section, a slotted tube carried by each section, a lever fulcrumed on each section and adapted to move in the slots in the tube, and a spring held in each tube and respectively pressing the levers, substantially as described.

7. The combination of two slidably-connected sections, a spring drawing the sections together, a head carried at the outer end of each section, each head being provided with a slotted tube rising therefrom, a post carried on each section, a lever fulcrumed on each post and adapted to move in the slots in the tube, a spring contained within each tube and respectively pressing the levers, and an ear at the outer end of each head, substantially as shown and described.

8. The combination of two telescopic cylindrical sections, one of said sections being provided with a longitudinal slot and the other with a stud projecting therefrom and adapted to engage the said slot, the outer section carrying a ledge projecting horizontally at each side of the section and forming a rest, a head carried in the outer end of each section, a spring attached at its ends to the said head and drawing the sections together, a tube carried by each head and formed with slots, a post carried on each section, a lever fulcrumed on each post and adapted to move in the slots in the tube, and a spring contained within each tube and respectively pressing the said levers, substantially as shown and described.

606,925. **DETACHABLE HINGE.** AUGUST S. HELD, Freeport, Ill., assignor to the Stover Manufacturing Company, same place. Filed Apr. 29, 1897. Serial No. 634,237. (No model.)

Claim.—1. The combination with a hinge having a slotted leaf, of a screw having a head adapted to enter the slot and engage the leaf by a quarter-turn with respect thereto, and an internally-screw-threaded, longitudinally-divided bushing adapted to be seated in a suitable opening and to receive the screw and be expanded thereby; substantially as described.



2. The combination with an internally-screw-threaded, longitudinally-divided bushing adapted to be seated in a suitable opening, of a screw adapted to enter and engage said bushing and spread the parts thereof; substantially as described.

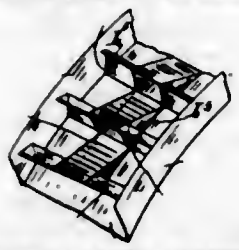
3. The combination with a longitudinally-divided bushing adapted to be seated in a suitable opening and having an inwardly-tapering screw-threaded bore, of a screw adapted to engage with the thread of the bore and expand the bushing; substantially as described.

4. The combination with an internally-screw-threaded, longitudinally-divided bushing adapted to be seated in a suitable opening and having elevations upon its outer surface to increase the frictional engagement thereof, of a screw adapted to enter said bushing and expand the same; substantially as described.

5. The combination with an internally-screw-threaded longitudinally-divided bushing adapted to be seated in a suitable opening, the parts of which have means of engagement, one with the other, to prevent longitudinal movement of one upon the other, of a screw adapted to enter the bushing, engage the internal thread therein and separate the parts thereof; substantially as described.

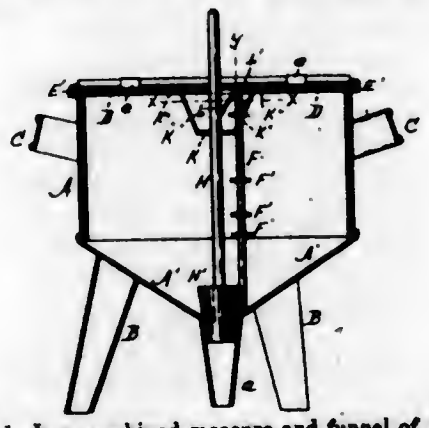
6. The combination with a longitudinally-divided bushing adapted to be seated in a suitable opening, said bushing having an inwardly-tapering screw-threaded bore and the parts of the bushing having engaging portions adapted to prevent longitudinal movement of one upon another, of a screw adapted to enter the bushing, engage the thread therein and separate the parts thereof to expand the bushing and secure it in the opening; substantially as described.

606,926. **MOTOR.** HENRY W. R. HORST, Rock Island, Ill. Filed Sept. 10, 1897. Serial No. 651,223. (No model.)



Claim.—The combination of the motor-wheel having a central series of bucket-sections, and lateral series of bucket-sections at each side of the central series, the impact-receiving walls of the said lateral series being in transverse alinement with each other, but out of transverse alinement with those of the central bucket-sections, substantially as described.

606,927. **COMBINED MEASURE AND FUNNEL.** GEORGE A. KEENE, Saugus, Mass. Filed Nov. 11, 1897. Serial No. 658,178. (No model.)

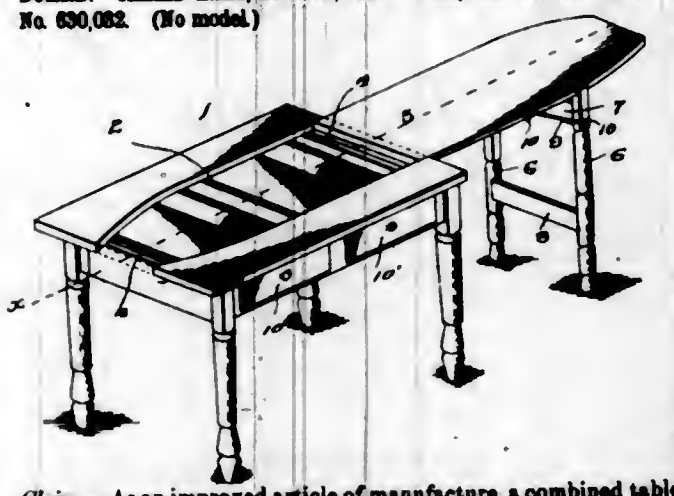


Claim.—1. In a combined measure and funnel of the character described, the combination with the vessel A, A' provided with the

discharge-tube *a*, the bar D extending across the top of the vessel and the plunger-rod H extending down through said bar; of the guiding-bracket K, K′, K″ secured to the under side of said bar and perforated to receive the plunger-rod; and the spring-support L secured to the under side of the bar and having its lower edge formed with the curved notch L″, said spring bearing against the plunger-rod at the curved notch and holding it in any desired position by friction, substantially as described.

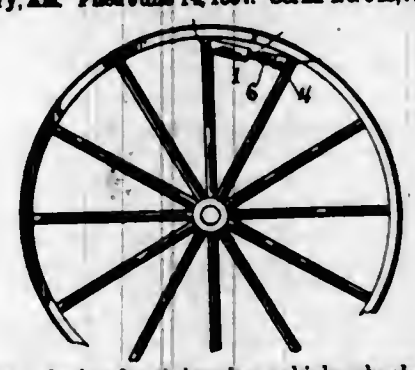
2. In a measure and funnel of the character described, the combination with the vessel A, A′ provided with the discharge-tube *a*, bar D extending across the top of said vessel, measuring-rod F, F″ secured within the vessel, and plunger-rod H extending down through said bar; of the two vertically-swinging lids or covers E hinged to the outer edges of said bar and provided on their outer edges with the flanges E′ adapted to fit over the top of the vessel, substantially as and for the purpose set forth.

606,928. COMBINATION KITCHEN-TABLE AND IRONING-BOARD. CARRIE LANE, Bradner, Ohio. Filed Mar. 31, 1897. Serial No. 630,082. (No model.)



Claim.—As an improved article of manufacture, a combined table and ironing board, the same comprising a table having a supporting-leg at each corner, and a top with an opening therein extending entirely therethrough and corresponding in outline to the shape of an ironing-board, an ironing-board pivotally connected at one end between the side walls of said opening at one end thereof and adapted to be turned on its pivot to extend beyond the end of the table to form an ironing-board, and in the reverse position filling said opening and completing the top of the table, and legs for supporting the outer end of said ironing-board when in its extended position, and hooks pivotally mounted on the legs of the ironing-board and engaging eyes on opposite sides of said board to brace said legs, all substantially as shown and described.

606,929. TIRE-TIGHTENER. TILMAN F. LEAK and ROBERT WEST, Montgomery, Ala. Filed June 14, 1897. Serial No. 640,714. (No model.)



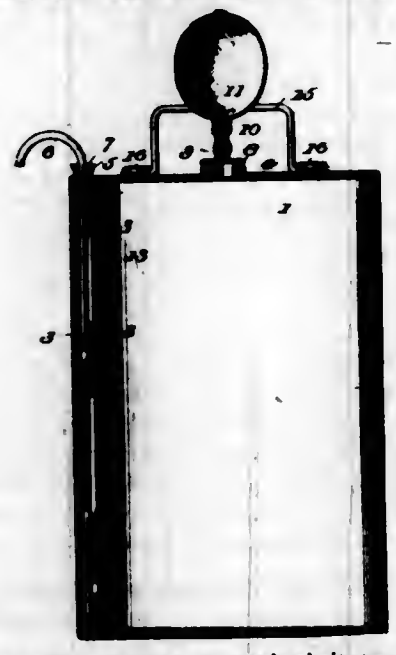
Claim.—In a device for tightening vehicle-wheels, the combination of the block having a threaded opening through the same and grooved transversely at one end, said groove being inclined with respect to the block, a block loosely mounted upon the other end of the screw, the outer end of said block being grooved similar to the corresponding end of the other block, a head or rigid collar formed on the screw adjoining the loosely-mounted block, said head or collar having transverse openings, and a lever or operating-rod adapted to be passed through said openings, substantially as described.

606,930. PROCESS OF OBTAINING HYDROXYLIZED PHENYL ETHERS. LEONHARD LEDERER, Munich, Germany. Filed July 9, 1897. Serial No. 644,019. (No specimens.)

Claim.—1. The herein-described process of obtaining hydroxylized phenyl ethers from mixtures which consists in bringing said mixtures into reciprocal action with carbonate of potassium, substantially as described.

2. The herein-described process of obtaining hydroxylized phenyl ethers from mixtures which consists in bringing said mixtures into reciprocal action with carbonate of potassium and then treating the resulting mixture with ether to dissolve the same, substantially as described.

606,931. AUTOMATIC CAN. FRANK LOWE, Oklahoma, Okla. Filed June 21, 1897. Serial No. 641,690. (No model.)



Claim.—An oil-can having an opening in its top adjacent its edge, an integral socket 5 surrounding the same and a central opening surrounded by a threaded collar, a screw-cap 8 engaging said collar and formed with an integral, upwardly-projecting socket 9, a collapsible bulb 11 provided with a nipple 10 adjacent to fit in said socket, a discharge-tube 3 extending on the inner side of the can to near the bottom thereof and projecting at its upper end through said socket 5 and formed with an elbow or gooseneck 6, a collar 7 on the tube at the base of the gooseneck fitted in said socket 5, and angularly-disposed guide-flanges 13 14 secured to the inner wall of the can and arranged to form a V-shaped passage through which the discharge-tube extends, the free edges of said flanges being adapted to clamp said tube between them, substantially as described.

606,932. EXTENSION-STEP FOR CARS. THOMAS MAXON, Dayton, Ohio, assignor of one-half to Ely Ensign, Huntington, W. Va. Filed Feb. 12, 1898. Serial No. 670,091. (No model.)



Claim.—1. The combination with a support, of an extension-step, depending links pivotally connecting the rear corners of the step to said support, rigid arms pivoted to the step at their lower ends and extending continuously upward and rearward intersecting the links and pivotally and slidingly connected to the support, means for limiting the forward movement of the arms, and a device carried by the links and engaging under the arms where they cross the links.

2. The combination with a support, and a supplemental step, a pair of links pivotally connecting its rear edge to said support, arms pivotally connected at their lower ends to the step and extending upward and rearward and slidingly connected to the support, each of said arms being provided with a curved cam, and a device carried by each link and engaging under the cam carried by the adjacent arm, as and for the purposes set forth.

3. The combination of a support, a movable step, depending links connecting the step to the support, said links being set out from the ends of the step and support, and a pair of arms pivotally connected at their lower ends to the step and extending upward and rearward between the links and the step and support, means for slidingly engaging the upper ends of said arms to the support, and means for

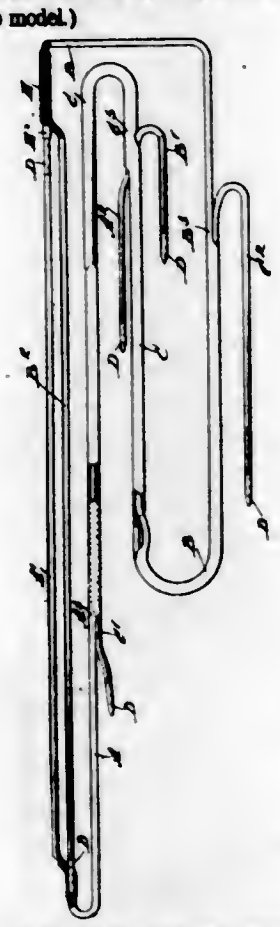
locking the links and arms together when the step is extended, substantially as described.

4. The combination of a support, an extensible step, a pair of links suspending the step from the support, a pair of swinging arms pivotally connected at their lower ends to the step and extending upward and rearward past the links and slidingly connected to the support, a cam-like projection on the forward, upper edge of each link and a stop carried by the support and adapted to engage said cam-like projections, as and for the purposes set forth.

5. The combination of a support, such as a permanent step, a slotted plate carried on each side of the support, a pair of depending links pivotally swung from said plates, a supplemental step having its rear edge connected to the lower ends of said links, said links being provided with a boss at each end to set the links away from the steps, a pair of arms pivotally connected at their lower ends to the movable step and slidingly connected at their upper ends to said slotted plates, the upper front edges of said arm being provided with cam projections abutting against the inward-extending bosses of the links, and a device carried by each link and engaging under the adjacent arm, as and for the purposes set forth.

6. The combination of a support, a movable step, a pair of links suspending the step from the support, a pair of swinging arms connected at their lower ends to the step and extending upward and rearward past the links and slidingly connected to the support, and a stop carried by the support in front of each arm and adapted to receive the forward pressure of said arm and relieve its connecting device, as and for the purposes set forth.

606,933. ENDLESS BAND OR CORD. JEREMIAH H. MURPHY, Flatonia, Tex. Filed Mar. 16, 1897. Renewed June 8, 1898. Serial No. 682,960. (No model.)



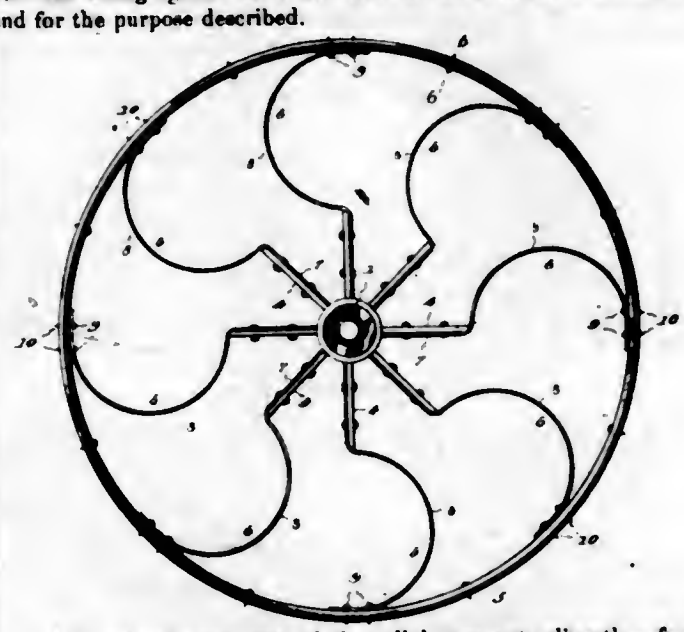
Claim.—1. An endless band or cord, consisting of a plurality of tubular bands, each filled in substantially its entire exposed or visible length with the ends of its adjacent tubular bands, substantially as shown and described.

2. A band or cord, consisting of a plurality of tubular bands, each band inclosing in its central portion the ends of the adjacent bands, said inclosed ends meeting, substantially as described.

606,934. SPRING-WHEEL. MAURICE O'BRIEN, Fresno, Cal. Filed Nov. 30, 1897. Serial No. 660,238. (No model.)

Claim.—1. A wheel comprising a rim, a hub, short radial arms extending from the hub and terminating short of the rim, and springs secured to the arms and to the rim and having curved outer portions, said springs forming shoulders or angles at the outer ends of the arms and resting against and supported by the same, substantially as and for the purpose described.

2. A wheel comprising a hub, a rim radial arms extending from the hub and terminating short of the rim, and the springs comprising straight inner portions secured to the arms and the regularly-curved substantially semicircular outer portions fastened to the rim, the curved and straight portions of the springs forming angles or shoulders and fitting against the outer ends of the arms, substantially as and for the purpose described.



3. A wheel comprising a hub, radial arms extending therefrom, a hollow metallic rim elliptical in cross-section and presenting an outer convex face, and springs connecting the arms and the rim, substantially as described.

4. A wheel comprising a hub, radial arms extending therefrom, a hollow metallic rim elliptical in cross-section and presenting an outer convex face, springs connecting the arms and the rim, and fastening devices passing through the outer ends of the springs and the rim and provided with spurs projecting from the outer convex face of the rim, substantially as described.

606,935. CAR-COUPLING. JOSHUA K. ODEN and SIDI K. BOLEMAN, Linden, Tex. Filed Nov. 22, 1897. Serial No. 659,437. (No model.)



Claim.—1. In a car-coupling, the combination of a draw-head provided at its top with a opening, a swinging pin mounted in the opening at the top of the draw-head and adapted to couple with an ordinary link, and a block detachably interlocked with the draw-head and forming the floor of the same, said lock being provided at its front with a shoulder to be engaged by the pin, and having at its back an arm arranged to engage the inner end of a link, whereby the same is supported in a horizontal position for guiding it into the mouth of a draw-head, substantially as described.

2. In a car-coupling, the combination of a draw-head provided at its bottom with a perforation, a swinging pin mounted in the draw-head and adapted to couple with an ordinary link, and a block arranged within the draw-head and forming the floor of the same and provided with an integral depending stud detachably interlocked with the perforation of the bottom of the draw-head, said block being provided at its front with a shoulder to engaged the pin and having an arm at its back to support a link in a horizontal position, substantially as described.

3. In a car-coupling, the combination of a draw-head provided at its bottom with a perforation or socket, a block arranged within the draw-head, provided in its upper face with a longitudinal recess and having a depending stud fitting in the said perforation or socket, an arm extending upward from the back of the block and provided with a forwardly-projecting overhanging flange, a link engaging the overhanging flange and supported by the same, and a swinging pin having its lower end fitting in the said recess, substantially as described.

4. In a car coupling, the combination of a draw-head provided at its top with a longitudinal opening, and having bearings at opposite sides thereof, a swinging coupling-pin operating in the opening of the draw-head and provided with journals arranged in said bearings, and a longitudinal spring secured at its rear end to the top of the draw-head and having its front end free and bifurcated to form a pair of arms, said arms being located at opposite sides of the coupling-pin and bearing upon the journals and detachably securing the

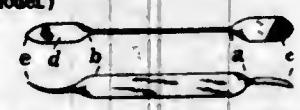
coupling-pin to the draw-head, the coupling-pin being adapted to be removed by lifting the front portion of the spring, substantially as described.

5. In a car-coupling, the combination of a draw-head, a block detachably interlocked with the draw-head at the bottom thereof and provided in its upper face with a longitudinal recess, an arm extending upward from the back of the block and provided with a forwardly-projecting overhanging flange, a link engaging the overhanging flange and supported by the same, a swinging pin having its lower end fitted in the recess of the block and arranged to engage the front wall thereof, substantially as described.

606,986. **HANDLE FOR PACKAGES.** AUGUSTUS W. OTTIESON, Boston, Mass. Filed Mar. 22, 1898. Serial No. 674,842. (No model.)

Claim.— As an improved article of manufacture, a package-handle formed of a strip provided at its ends with open slots forming at their inner portions longitudinally-extending, resilient, clamping-tongues having transverse free ends operating in connection with the opposed transverse wall of the slots to bite or clamp the cord to prevent slipping of the handle, substantially as described.

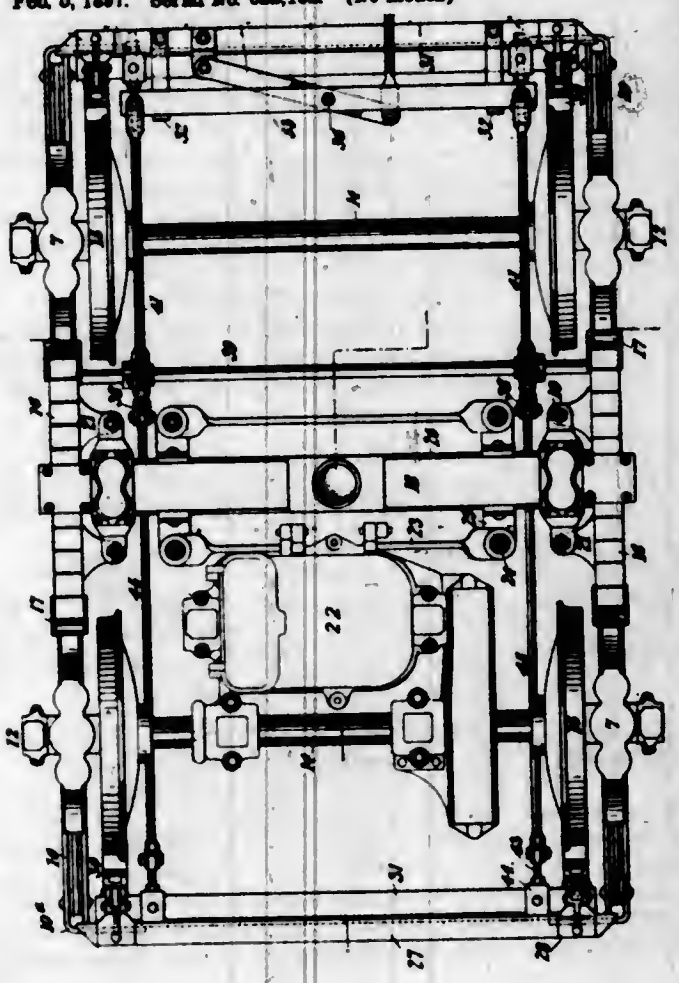
606,987. **INK-ERASER AND MANICURE IMPLEMENT.** RICHARD M. PASCOAST, Camden, N. J. Filed Aug. 19, 1896. Serial No. 603,244. (No model.)



Claim.—1. The herein-described implement consisting of a bar of metal provided with a "twist" in the body thereof for the purpose of disposing different parts of the bar in different planes; one end of the said bar being fashioned to form an abrading-surface, and the other end fashioned to form a burnishing-surface; substantially as and for the purpose set forth.

2. The herein-described implement consisting of a bar of metal provided with a "twist" in the body thereof for the purpose of disposing different parts of the bar in different planes; one end of the said bar being fashioned to form an abrading-surface, and the other end pointed and fashioned to form a burnishing-surface; substantially as and for the purposes set forth.

606,988. **CAR-TRUCK.** EDGAR PECKHAM, New York, N. Y. Filed Feb. 5, 1897. Serial No. 622,192. (No model.)



Claim.—1. In a car-truck the combination with the side frames including yokes or pedestals connected together by longitudinal beams, of half-elliptic springs mounted on said beams, abutments for the ends of said springs arranged on said beams between the pedestals and on a plane below their tops; a car-body-supporting bolster secured to said springs and bearing upon the same, appliances connected to the beams and continuously maintaining the bolster in a vertical plane and at right angles to the side beams and half-elliptic springs, and means for maintaining the ends of said springs at constant elevations in relation to the longitudinal beams, substantially as set forth.

2. The combination in a car-truck of the side frames including yokes or pedestals, upper duplex beams and lower beams connecting the pedestals half-elliptic springs, shoes or pockets mounted on the upper duplex beams in which the ends of the half-elliptic springs freely rest but so as to be capable of longitudinal movement in said shoes, a bolster supported by said spring, and vertical rods rigidly connected to the truck-frame and movably connected to the bolster so that the latter can move up and down and be kept in position relative to the springs.

3. In a car-truck, the combination with side frames comprising pedestals, and upper and lower beams connecting the pedestals together, said upper beams secured to the pedestals at about the center of their vertical height, of half-elliptic springs mounted on said upper beams to occupy a plane below the tops of the pedestals, a bolster secured to said half-elliptic springs and stays extending between said bolster and beams, the stays being fixedly secured to the lower beams and firmly held to the upper beams, substantially as set forth.

4. In a car truck, the combination with side frames including yokes or pedestals connected together by longitudinal beams, of half-elliptic springs mounted on the side frames between the pedestals, a car-body-supporting bolster mounted on said half-elliptic springs and secured thereto, cross-bars connected to the bolster contiguous to said springs and vertical guide-bolts secured to the side frames and operating through the ends of said cross-bars.

5. In a car-truck, the combination with side frames including yokes or pedestals provided with recesses in their top members and connected together by longitudinal beams and journal-boxes operating within said pedestals, of springs arranged within the recesses of the pedestals and resting on the tops of the journal-boxes, half elliptic springs mounted on the side frames between the pedestals, a car-body-supporting bolster secured to said half-elliptic springs and directly bearing upon the same, guiding mechanism connecting said bolster with the longitudinal beams for maintaining the proper relation between said bolster and half-elliptic springs, and means for holding the ends of said springs at constant elevations with reference to the seats of the springs within the recesses of the pedestals, substantially as set forth.

6. In a car-truck, the combination with side frames comprising pedestals and upper and lower longitudinal beams connecting the pedestals together, and end extension-beams and under truss-beams for supporting said end extension-beams, of transverse extension angle-beams 27 secured at each end of the truck-frame, substantially as set forth.

7. In a car-truck, the combination with side frames comprising pedestals, upper and lower longitudinal beams connecting said pedestals together, the lower beam being riveted to the pedestals and forming a support for the guiding mechanism of the bolster, and adapted to support a motor, of longitudinal beams projecting from the pedestals at both ends of the truck and riveted to said pedestals and transverse end extension-beams 27 riveted to said longitudinally-projecting beams, substantially as set forth.

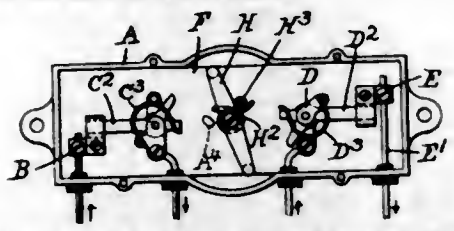
8. In a car-truck, the combination with side frames comprising pedestals, upper and lower longitudinal beams connecting said pedestals together, longitudinal beams projecting from the pedestals at both ends of the truck and transverse end extension-beams 27 riveted to said longitudinally-projecting beams, of half-elliptic springs mounted on the side frames between the pedestals and having their ends seated at constant elevations, a car-body-supporting bolster secured to said springs and directly bearing upon the same, and guiding mechanism connecting said bolster with the longitudinal beams for maintaining the proper relation between said bolster and springs, substantially as set forth

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606,989. **SWITCH FOR ARC-LAMPS.** CHARLES A. PFLUGER, Chicago, Ill. Filed Dec. 21, 1896. Serial No. 616,447. (No model.)

Claim.—1. A switch for electric circuits, comprising four terminals divided into two pairs, an arm associated with each pair of terminals and adapted to connect the terminals of the respective pairs together, a conducting controlling-arm located between the pairs of terminals and adapted to become part of the circuit at predetermined times, said controlling-arm adapted to operatively engage said arms when in a predetermined position and move them both into and out of contact with their opposed terminals.

2. A switch comprising four terminals, two of which are adapted to be connected with the main circuit and two with the branch circuit, arms associated with the main-circuit terminals and adapted to connect them with one of the branch-circuit terminals, a controlling-arm between the main-circuit terminals and said arms, but free therefrom, said controlling-arm adapted when in a predetermined position to electrically connect the main terminals together, said controlling-arm also adapted to operatively engage the arms associated with the main-circuit terminals and move them in either direction, so as to disconnect or connect each main-circuit terminal with its associated branch-circuit terminal, the parts so constructed that the connection between the main-circuit and branch-circuit terminals is completed before the controlling-arm becomes disengaged from said arm, so as to disconnect the main-circuit terminals.



3. A switch comprising four terminals, two of which are adapted to be connected with the main circuit and two with the branch circuit, an arm associated with each of the main-circuit terminals and adapted to connect it with one of the branch-circuit terminals, a controlling-arm between the main-circuit terminals and adapted when in a predetermined position to electrically connect them together, said controlling-arm adapted to operatively engage said arms and move them so as to disconnect the main-circuit terminals from the respective branch-circuit terminals.

4. A switch comprising two main-circuit terminals, branch-circuit terminals associated therewith, an arm associated with each of said main-circuit terminals and adapted when in predetermined positions to connect the main-circuit terminals with the branch-circuit terminals, each of said arms provided at one end with projections, a controlling-arm intermediate between said main-circuit terminals and adapted when in a predetermined position to engage said projections, a spring-piece associated with each of said main-circuit terminals, and adapted to engage said controlling-arm when said arm is in a predetermined position, thereby connecting the main-circuit terminals, said controlling-arm adapted to control the position of the arms associated with the main-circuit terminals by means of its engagement with said projections so as to make or break said branch circuit, the parts so arranged that the branch circuit is completed before the main circuit is broken and is not broken until after the main circuit is completed.

5. A switch comprising two main-circuit terminals, branch-circuit terminals associated therewith, an arm associated with each of said main-circuit terminals and adapted when in predetermined positions to connect the main-circuit terminals with the branch-circuit terminals, each of said arms provided at one end with projections, a controlling-arm intermediate between said main-circuit terminals and adapted when in a predetermined position to engage said projections, a spring-piece associated with each of said main-circuit terminals, and adapted to engage said controlling-arm when said arm is in a predetermined position, thereby connecting the main-circuit terminals, said controlling-arm adapted to control the position of the arms associated with the main-circuit terminals by means of its engagement with said projections so as to make or break said branch circuit, the parts so arranged that the branch circuit is completed before the main circuit is broken and is not broken until after the main circuit is completed, a box completely inclosing said switch and insulated therefrom, an operating-handle outside of the box and connected with said controlling-arm, an indicating-finger associated with said handle, indicating-points on the box adapted to show the condition of the switch, said indicating-points and indicating-finger so positioned that the finger shows the condition of the switch.

6. A switch comprising two main-circuit terminals, branch-circuit terminals associated therewith, an arm associated with each of said main-circuit terminals and adapted when in predetermined positions to connect the main-circuit terminals with the branch-circuit terminals, each of said arms provided at one end with projections, a controlling-arm intermediate between said main-circuit terminals and adapted when in a predetermined position to engage said projections, a spring-piece associated with each of said main-circuit terminals and adapted to engage said controlling-arm when said arm is in a predetermined position, thereby connecting the main-circuit terminals, said controlling-arm adapted to control the position of the arms associated with the main-circuit terminals by means of its engagement with said projections so as to make or break said branch circuit, the parts so arranged that the branch circuit is completed before the main circuit is broken and is not broken until after the main circuit is completed, a spring associated with said controlling-arm and adapted to move it suddenly at the point where the main-circuit terminals are disconnected thereby suddenly breaking the circuit, a box completely inclosing said switch so as to make it weatherproof, and being insulated from the parts of said switch, a controlling arm or handle projecting through said box and provided with a finger which engages said controlling arm, but which is unconnected therewith.

7. A switch comprising four terminals, two of which are adapted to be connected with the main circuit and two with the branch circuit, arms associated with the main-circuit terminal and adapted to connect it with one of the branch-circuit terminals, a controlling-arm between the main-circuit terminals adapted when in a predetermined position to connect them together but adapted to be moved so as to disconnect the main-circuit terminals, said controlling-arm being connected with the arms associated with the main-circuit terminals so as to move them and connect each main-circuit terminal with its associated and branch-circuit terminal, the parts so constructed that the connection between the main-circuit and branch-circuit terminals is completed before the main-circuit terminals are disconnected, a box entirely inclosing said switch mechanism, an operating-handle connected with a piece which projects through the box and engages said controlling arm, said piece free from said controlling-arm and provided with a water-tight joint which prevents the admission of moisture to the switch.

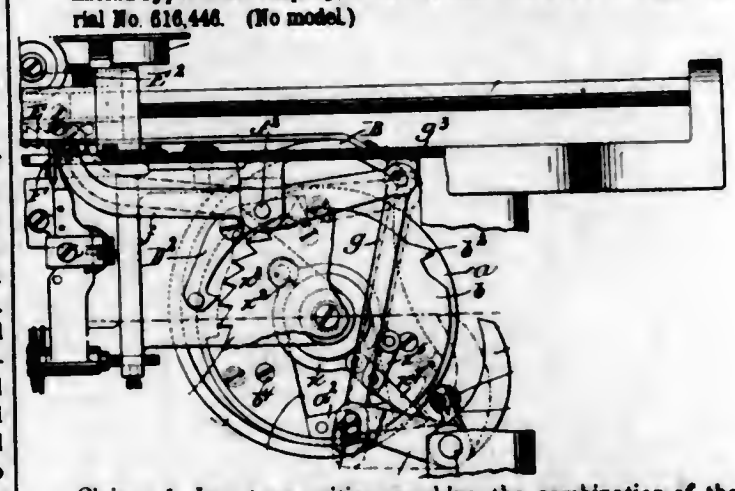
8. The combination with a switch mechanism of an inclosing box or case, an operating part projecting through the case and provided with a handle by which the switch mechanism is controlled, a projecting ring on said box surrounding said operating part, a cap-piece surrounding said controlling part and projecting downwardly over said ring, a gasket or packing surrounding said operating part and interposed between said cap and ring so as to make the joint water-tight, said cap being held in position by means of the operating-handle.

9. A switch for electric circuits comprising four terminals divided into two pairs, an arm associated with each pair of terminals and adapted to connect the terminals of the respective pairs together, a controlling-arm located between the pairs of terminals but free therefrom, said controlling-arm adapted to operatively engage said arms associated with the pairs of terminals and move them both into and out of contact with their opposed terminals and an operating arm free from said controlling-arm but adapted to engage the same when in a predetermined position.

10. A switch for electric circuits comprising four terminals divided into two pairs, an arm associated with each pair of terminals and adapted to connect the terminals of the respective pairs together, a controlling-arm located between the arms associated with said terminals but free therefrom, each of said arms provided with projecting parts so positioned as to be operatively engaged by said controlling-arm whereby said arms are positively moved into and out of contact with their respective opposed terminals by the movement of said controlling-arm.

11. A switch for electric circuits, comprising four terminals arranged substantially in line with each other and divided into two pairs, an arm associated with each pair of terminals adapted to connect the terminals of the respective pairs together, said arms each provided with two projecting parts, a controlling-arm located between the pairs of terminals, one end of said controlling-arm adapted to pass between the two projecting parts on each of said arms and operatively engage one of said projecting parts when moved in either direction, so as to move said arms to disconnect and connect the two pairs of terminals.

606,940. CARRIAGE-FEED MECHANISM FOR TYPE-WRITING MACHINES. JOHN R. PRICE, Wollaston, Mass., assignor to the Manhattan Typewriter Company, of New Jersey. Filed Dec. 21, 1896. Serial No. 616,446. (No model.)



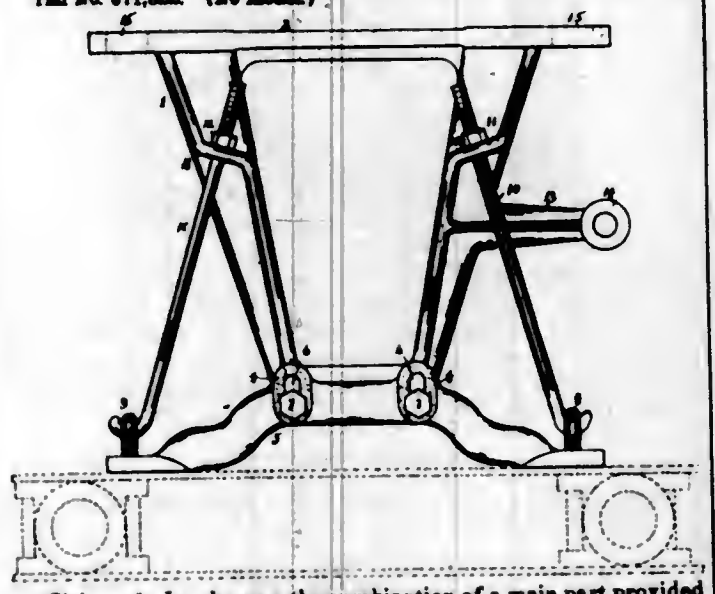
Claim.—1. In a type-writing machine, the combination of the carriage feed actuator provided with predetermined stops, of a movable stop-key normally held disengaged from said stops and adapted

to be moved into position to engage said stops, substantially as and for the purpose described.

2. The combination of the carriage and carriage-actuator provided with stops, and an escapement-feed for said carriage, with a stop-key cooperating with the stops of the feed-actuator, and mechanism controlled by said stop-key for disengaging the escapement-feed, substantially as described.

3. The combination of the carriage and carriage-actuator provided with stops, and an escapement-feed for said carriage, with a stop-key cooperating with the stops of the feed-actuator, and mechanism controlled by said stop-key for disengaging the escapement-feed, and a brake operated by said stop-key, substantially as described.

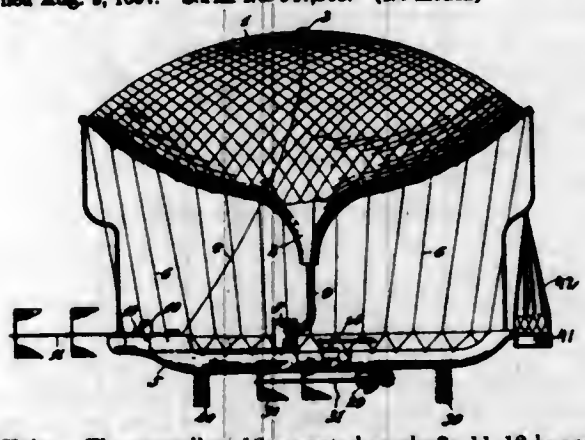
606,941. **HANGER.** MILTON O. REEVES, Columbus, Ind., assignor to the Reeves Pulley Company, same place. Filed Feb. 26, 1898. Serial No. 671,822. (No model.)



Claim.—1. In a hanger the combination of a main part provided with transversely-projecting lugs, an auxiliary part provided with one or more vertically-slotted openings, a bolt or bolts passing through said openings and secured to the main part, threaded truss rods secured to the ends of said auxiliary part and passing through the transversely-projecting lugs, and nuts mounted on said rods and taking against said lugs, substantially as shown and described.

2. In a hanger, the combination of a main part, 1, provided with angular bosses, 11, an auxiliary part, 5, provided with slotted openings, 6, bolts, 7, passing through said slots and into the main part, eyebolts, 9, secured to the outer ends of the auxiliary part, 5, and hook-bolts, 10, passing through lugs, 11, and nuts, 12, carried by said hook-bolts and taking against said lugs, substantially as shown and described.

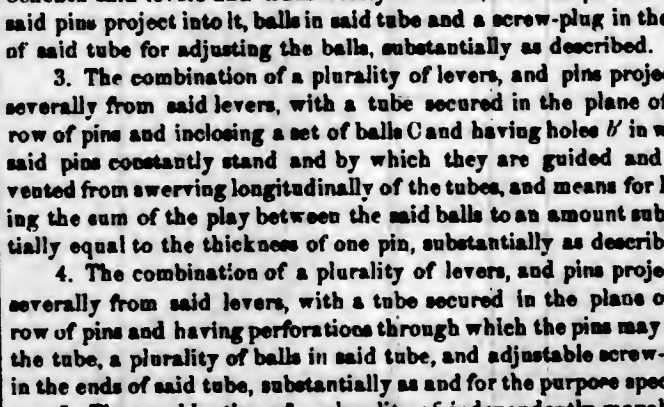
606,942. **FLYING-MACHINE.** JOEL T. RICE, Hot Springs, Ark. Filed Aug. 9, 1897. Serial No. 647,565. (No model.)



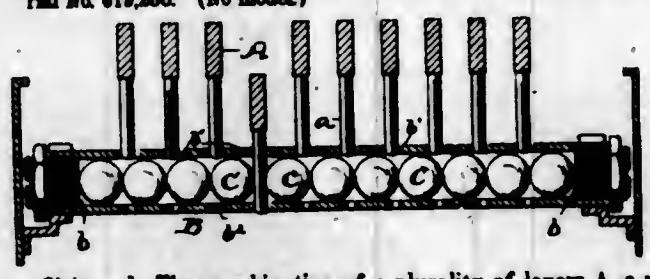
Claim.—The propellers 13 mounted on shafts 11, 12 in combination with the rings 16, turning loosely on bases 17, the curved segmental bar 26; the toothed wheel 25 meshing therewith; and the hand-wheel 25½ for operating wheel 25, the whole substantially as described.

606,948. **VELOCIPEDE.** FRANK SCHNEIDERLÖCHNER and MARTIN SCHNEIDERLÖCHNER, Pittsburg, Pa. Filed Mar. 11, 1897. Serial No. 627,011. (No model.)

Claim.—In a vehicle, longitudinal parallel bars 6 and 7, braces connecting said bars, a horizontal support carrying seats or saddles, a seat secured to the end of the longitudinal bars 6, cranks journaled in the longitudinal bars 7 and carrying sprocket-wheels 17, a crank-shaft 22 journaled in said bars 7 and substantially midway their length, sprocket-wheels 21 secured to the end of said crank-shaft, sprocket-chains connecting wheels 17 and 21, sprocket-wheels mounted on said crank-shaft intermediate the longitudinal bars 7, a sprocket-wheel 26 mounted on the rear axle, sprocket-chains connecting sprocket-wheels 23 and 26, a pivoted bar connecting the steering-forks, and means for operating the steering-forks, substantially as herein shown and described.



606,944. **INTERLOCKING DEVICE FOR TYPE-WRITING MACHINES.** CHARLES SEARS, Cleveland, Ohio. Filed Jan. 14, 1897. Serial No. 619,230. (No model.)



Claim.—1. The combination of a plurality of levers A, a pin *a* rigidly secured to each lever and projecting therefrom at substantially right angles to its length, a tube B suitably supported in the line of movement of the pins, there being an entrance to said tube in said line of movement, said tube inclosing a set of balls, and a screw-plug in the end of said tube for adjusting the balls, substantially as described.

2. The combination of a plurality of substantially horizontal levers A, a pin *a* projecting downward from each lever, a tube B supported beneath said levers and transversely of them, and adapted to have said pins project into it, balls in said tube and a screw-plug in the end of said tube for adjusting the balls, substantially as described.

3. The combination of a plurality of levers, and pins projecting severally from said levers, with a tube secured in the plane of the row of pins and inclosing a set of balls C and having holes *b'* in which said pins constantly stand and by which they are guided and prevented from swerving longitudinally of the tubes, and means for limiting the sum of the play between the said balls to an amount substantially equal to the thickness of one pin, substantially as described.

4. The combination of a plurality of levers, and pins projecting severally from said levers, with a tube secured in the plane of the row of pins and having perforations through which the pins may enter the tube, a plurality of balls in said tube, and adjustable screw-plugs in the ends of said tube, substantially as and for the purpose specified.

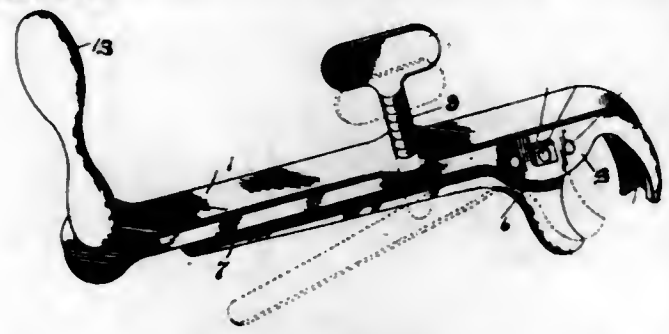
5. The combination of a plurality of independently-movable levers A, pins *a* projecting therefrom, a tube B extending transversely of the levers in the path of movement of the pins and containing a set of balls, holes *b'* and *b²* on opposite sides of said tube, said holes being adapted to embrace the pins and prevent their swerving longitudinally of the tube, and means for limiting the play between said balls, substantially as described.

6. The combination of a plurality of levers A, a pin *a* rigidly secured to each lever and projecting therefrom at substantially right angles to its length, a tube B suitably supported in the line of movement of the pins, said tube inclosing a set of balls C and having holes *b'* in which said pins constantly stand by which they are guided, the sum of the play between said balls being substantially equal to the thickness of one pin, and screw-plugs *b* screwing into the ends of the tube B and establishing and maintaining the proper play between the balls, substantially as described.

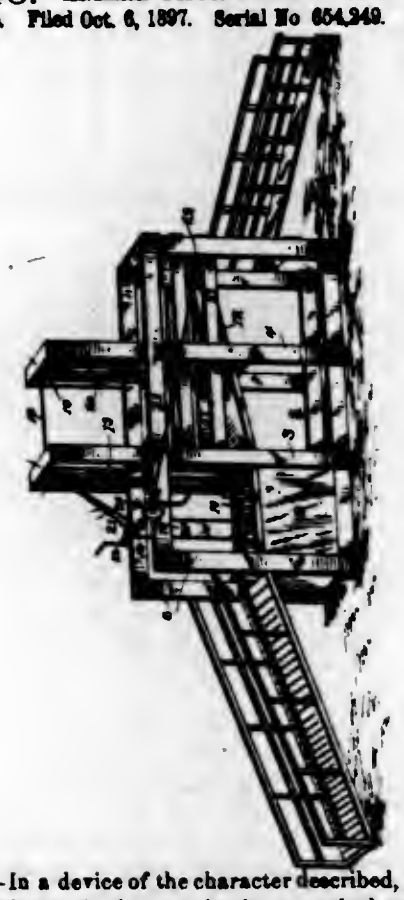
606,945. **BUGGY OR WAGON WRENCH.** WATSON SMITH and EDWIN J. GOULD, Valmont, Colo. Filed Nov. 20, 1897. Serial No. 659,266. (No model.)

Claim.—In a wrench, a fixed member embodying a handle provided at its opposite ends with a jaw and crank-handle, both extending at right angles to the member and in opposite directions, and spaced bearing-lugs on the fixed member provided with a series of bearing-apertures extending lengthwise of the handle, in combination with a movable member embodying a handle extending parallel to the main handle and provided with a jaw and with a bearing-lug fitting between the lugs on the main handle, a removable pivot pass-

ing through said lug and through one of the bearing-apertures and providing for the relative adjustment of the handles in parallel planes for primarily changing the distance between the fixed and movable jaws and setting them the desired distance apart, and a screw for forcing the handles apart and holding the jaws relatively fixed and in clamping engagement with the object between them, substantially as described.

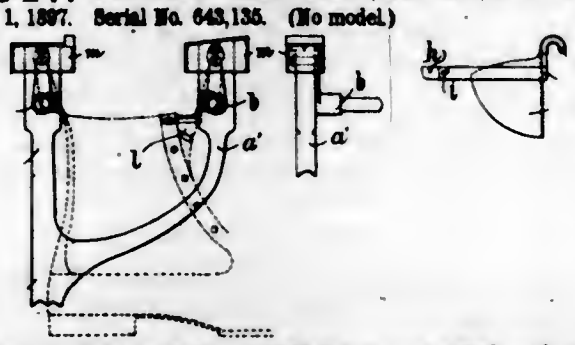


606,946. ANIMAL-DIPPING TANK. EDWARD A. STEER, Findlay, Ohio. Filed Oct. 6, 1897. Serial No. 654,249. (No model.)



Claim.—In a device of the character described, the combination with the dipping-tank, the cage having a vertical movement therein, a draining-pen, doors at the entrance and exit of said pen, a tilting platform entirely inclosed by a framework when in its elevated position, a windlass, and ropes leading from the cage, doors and pivoted platform to the windlass, whereby when the platform is lowered one of the doors or guards will be raised and the other lowered and at the same time, the tilting platform will be actuated.

606,947. BOOTJACK. HENRY STRATE, New York, N. Y. Filed July 1, 1897. Serial No. 643,135. (No model.)



Claim.—1. A boot-holder comprising a two-armed rack, outwardly-projecting abutments, one on each end of the rack; brackets having slotted ends pivotally secured to the arms of the rack, and pins for removably attaching thereto of shoes; and springs inserted between the projecting abutments and the ends of the slotted ends of the brackets.

2. A shoe-spreader, comprising a bow, a flexible shield secured to the bow, means for securing the ends of the bow to a shoe and a hook integral with the bow and adapted for attaching spreader to the brackets of a boot-holder.

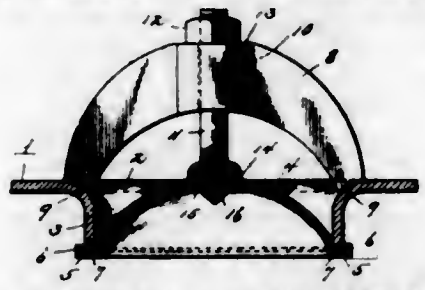
3. The combination with a boot-holder comprising a two-armed rack, outwardly-projecting abutments one on each end of the rack, swinging brackets one secured to each arm of the rack and having slotted heads, springs inserted between the projecting ends of the slotted heads of the brackets, of a shoe-spreader, comprising a bow, a flexible shield secured to the bow, means for securing the ends of bow to a shoe and means for attaching it to the bracket.

606,948. SASH-FASTENER. WALTER V. WALSH, Pittsburg, Pa. Filed Feb. 25, 1897. Serial No. 625,037. (No model.)



Claim.—In a sash fastener and lift, the combination of bearing-blocks secured to the lower sash-rail, and provided with cut-away portions having horizontal upper edges, a locking-bail pivotally secured in said bearing-blocks, and adapted to engage the horizontal edges thereof, and a lug secured to the window-frame, said lug having an inclined upper surface over which the bail slides to engage the under side of the lug by gravity.

606,949. MANHOLE AND COVER THEREFOR. HARRY L. WILSON, Erie, Pa. Filed Feb. 11, 1898. Serial No. 669,960. (No model.)



Claim.—1. A manhole-cover made of resilient sheet metal having a dome-shaped center and a surrounding laterally-projecting flange adapted to seat on the inturned flange defining the manhole, said cover-flange terminating in an outwardly-turned peripheral flange adapted to surround the inturned boiler-flange, said dome-shaped center being provided with a central perforation, in combination with a sustaining-bolt penetrating and riveted to said cover, substantially as described.

2. The combination with an arched and incurved flange defining a manhole, of a dome-shaped cover formed from resilient sheet metal and provided with a surrounding lateral flange engaging the edge of the manhole-flange and terminating in an outwardly turned peripheral flange surrounding said manhole-flange, a bail having its ends seated upon the arch of said curved manhole-flange, and a cover-bolt extending through and secured to the cover and bail, substantially as described.

606,950. FRUIT-GATHERER. OLIVER M. YOUNG, Bicknell, Ind. Filed Sept. 22, 1897. Serial No. 652,609. (No model.)

Claim.—1. In a device of the character described, the combination with an elongated conduit, provided at its opposite ends with a hopper and a receptacle respectively, of a rectangular frame around the upper edge of the hopper, arms depending from the frame and a ring carried at the lower extremities of the arms and encircling the conduit, a brace-rod or handle extending along the outside of the conduit and receptacle and permanently secured to the frame, quadrantal pivoted jaws designed when open to lie within the hopper, and mechanism at the lower end of the brace-rod or handle operatively connected with said jaws, substantially as specified.

2. In a device of the character described, the combination with an elongated conduit provided at its opposite ends with a hopper and a receptacle respectively, of a rectangular frame extending around the upper end of the hopper, converging arms depending from the frame, a ring carried at the lower extremities of said arms and encircling the conduit at its juncture with the hopper, an elongated brace-rod or handle extending longitudinally with respect to the conduit and secured to the rectangular frame, interfitting quadrantal jaws provided with oppositely-extending arms and pivoted at their con-

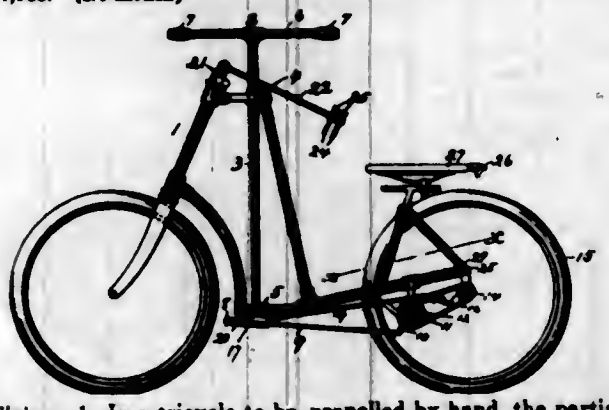
tiguous corners within the rectangular frame, a slide mounted upon the brace-rod or handle and provided with oppositely-extending arms, connecting-rods intermediate of the slide-arms and the arms around the jaws, a spring located above the slide and designed to actuate the same to retain the jaws normally in their open position, a sliding handle and a rod intermediate of the said handle and of the slide, substantially as specified.



606,951. SIZING COMPOSITION. CHARLES A. ADDE, Lock Haven, Pa., assignor of one-half to Thomas H. Harmon and Arthur A. Harmon, same place. Filed Nov. 26, 1897. Serial No. 659,829. (No specimens.)

Claim.—An aluminium-sizing consisting of the following ingredients combined substantially in the manner and proportions set forth, viz., fifty parts Japan gold size, twenty parts pure white lead, twenty-five parts white vitriol and five parts ultramarine-blue.

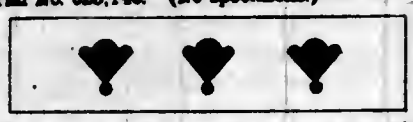
606,952. TRICYCLE FOR PROPULSION BY HAND-POWER. FREDERIC S. ALLEN, New York, N. Y. Filed Jan. 4, 1897. Serial No. 617,913. (No model.)



Claim.—1. In a tricycle to be propelled by hand, the partially-turning vertical rod 3, the cross-bar 6 secured to its upper end, the arms 8 secured to its lower end, and the wings 17 secured to the rod 3, and the arms 8, and which are curved upon their outer ends, combined with the bands 9 secured at their front ends to both the arms and the wings, the cranks, and means for transmitting motion to the rear wheel, substantially as shown.

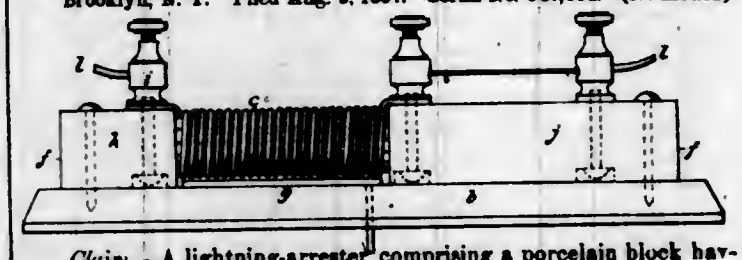
2. In a hand-propelled tricycle, the vertical partially-turning rod 3, provided with the bar 6 at its upper end, and the arms 8 at its lower end, combined with the wings 17 having curved outer ends and which are loosely hinged to the arms so as to have a rising and a falling movement, the bands 9 secured to the arms and the wings, the cranks to which the rear end of the pins are fastened, and means for communicating motion to the rear wheel, substantially as described.

606,953. PROCESS OF DECORATING WOOD IN IMITATION OF MARQUETRY. GEORGE H. ALLEN, Clinton, N. Y. Filed Feb. 26, 1897. Serial No. 625,146. (No specimens.)



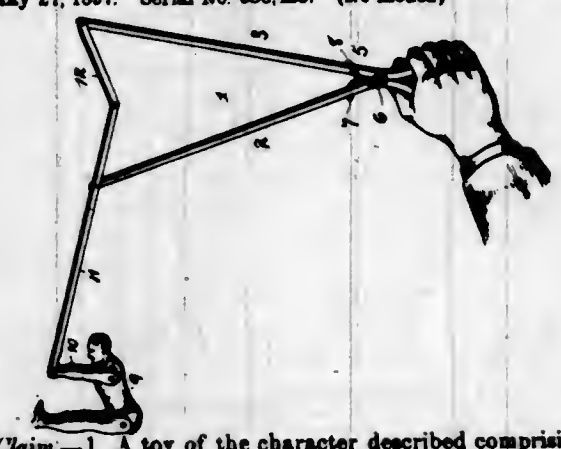
Claim.—The process of decorating wood in imitation of inlaid woodwork which consists of the following steps, viz: first applying to the surface of the panel an outline of the pattern or figure upon said panel; secondly, applying within the line of the pattern or figure and to different parts thereof transparent or translucent varnishes of different colors, the whole adapted to disclose to view the natural grain of the wood in the finished work; thirdly, coating the entire surface of the panel including the varnished and colored pattern thereon and the bare wood surface of said panel outside the ornamented portion with a stain suitable for the background and, finally, removing the stain while it is in a moist condition, from the panel within the limits of the pattern or figure formed by the varnished and colored surface described, whereby the figure or pattern formed by the colored varnish adheres to, and forms an integral part of, the decorated panel, substantially as described.

606,954. LIGHTNING-ARRESTER. WILLIAM E. ATHEARN, Brooklyn, N. Y. Filed Aug. 9, 1897. Serial No. 647,861. (No model.)



Claim.—A lightning-arrester comprising a porcelain block having a spiral molded on its middle portion to receive a coil of wire, one end of the block provided with a connector to receive one end of the coil and one end of the line, the other end of the block having two connectors one for the coil-terminal and one for the other end of the line, the two connectors being connected by a fusible wire, the whole mounted on a base with a ground-plate contiguous to the coil, substantially as herein shown and described.

606,955. TOY. FREDERICK W. BARBIDGE, Rockland, Me. Filed May 27, 1897. Serial No. 638,425. (No model.)

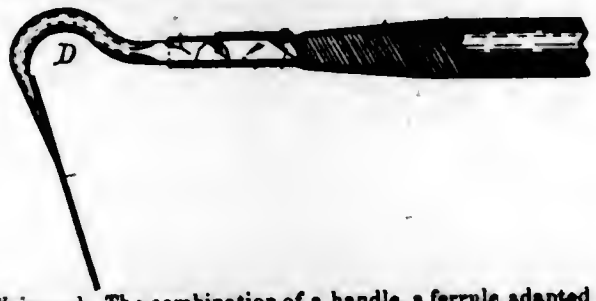


Claim.—1. A toy of the character described comprising a handle formed of two substantially parallel sections pivotally connected and provided with diverging handle portions, a puppet or figure, a rod connected with and carrying said puppet and pivoted intermediate its ends to one of said sections, and a link jointed at one end to the other section and at its other end to the inner end of said puppet-carrying rod, substantially as described.

2. A toy of the character described, comprising a handle formed of two pivotally-connected, parallel blades or sections having their lower ends flaring in opposite directions to constitute a hand-grasp, a spring-hinge connecting said sections, a figure or puppet, and a jointed link connection between the said puppet and the outer ends of the pivotally-connected sections, substantially as described.

3. A toy of the character described, comprising two pivotally-connected sections having their lower ends flaring or bent in opposite directions to constitute a hand-grasp, a spring-hinge connecting said sections and having a central coil arranged on a line between said sections and oppositely-projecting arms engaging the opposing sections, a figure or puppet, a rod carrying the figure or puppet, said rod being pivotally connected at a point intermediate its ends with the upper end of one section, and a link having one end jointed to the upper end of the other section and its opposite end jointed to one end of the said rod, substantially as described.

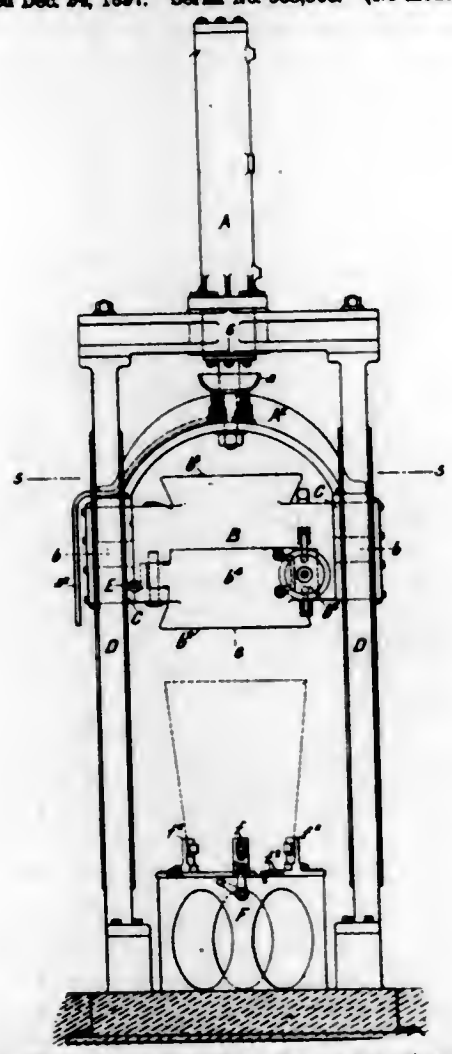
606,956. TOOL-HANDLE. JEFFERSON D. BARRY, Marlin, Tex., assignor of one-half to A. L. Branson, same place. Filed Feb. 7, 1898. Serial No. 669,391. (No model.)



Claim.—1. The combination of a handle, a ferrule adapted to fit upon the end of said handle, said ferrule being provided with an extension having a squared inner passage and further provided with a slot in one of the walls of said extension, a spring-arm rigidly attached at one end to said ferrule and bent at its opposite end at right angles, forming a catch, said catch entering said slot, a tool having a squared shank adapted to closely fit the passage in said ferrule, said shank having a notch on one side to engage the end of the spring-catch, substantially as described.

2. The combination of a handle having a flaring cylindrical end, a ferrule having one end adapted to fit upon said handle, and having an extension provided with a squared inner passage and a slot in one of the walls of said passage, a spring-arm rigidly attached at one end to said ferrule and bent at right angles at the other end, forming a catch with a beveled end which passes through said slot, and a tool provided with a squared shank, said shank being adapted to closely fit the passage in said ferrule, having a notch in one side which closely fits the end of the spring-catch and having a beveled end, substantially as described.

606,957. TRUSSING-MACHINE. ROBERT COLLEN, London, England. Filed Dec. 24, 1897. Serial No. 663,368. (No model.)

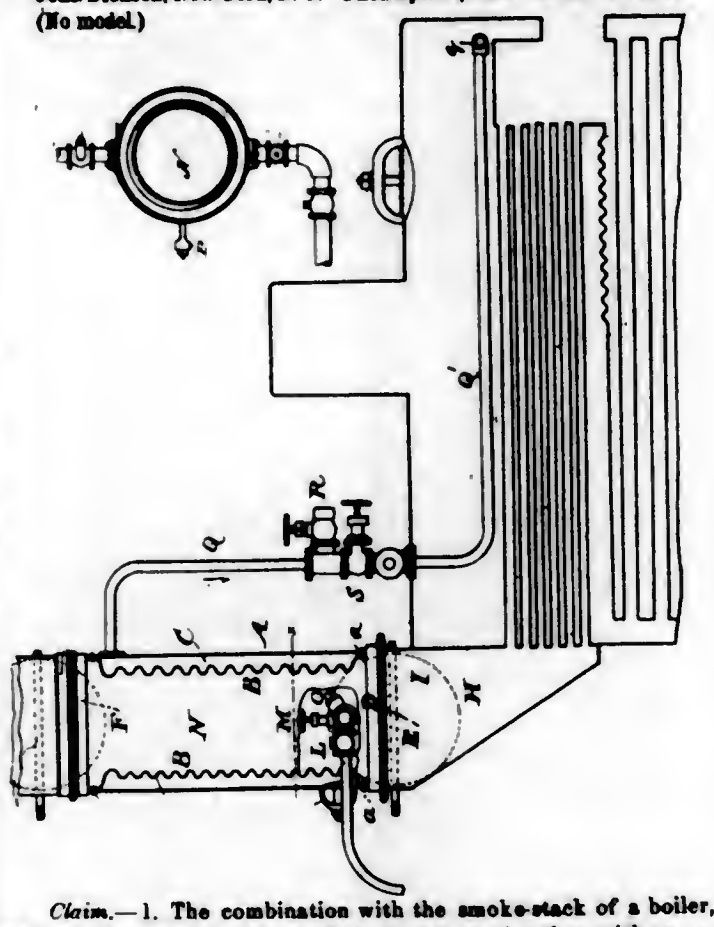


Claim.—1. In a trussing-machine the combination with a pressure device of a reversible head, pivots on the head connecting it to the pressure device, cones of different size at opposite sides of the head for operating on casks of different diameters, and lock devices for the head substantially as set forth.

2. The combination with a trussing-machine of reversible cones of different size for operating on casks of different diameters substantially as set forth.

3. In a trussing-machine the combination with a pressure device of reversible cones of different size and pivots connecting the cones to the pressure device substantially as set forth.

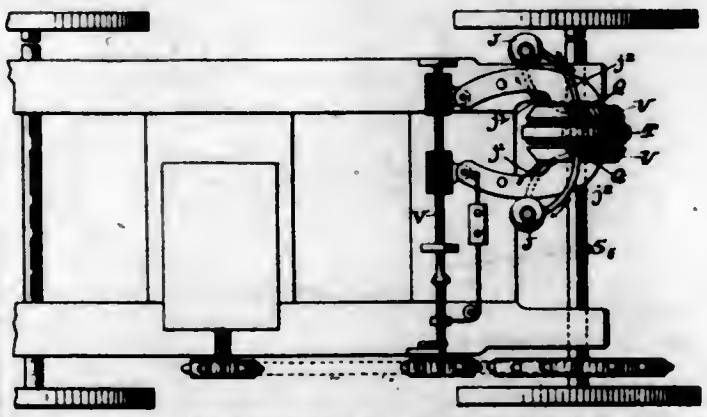
606,958. FEED-WATER HEATER FOR STEAM-BOILERS. JOHN DICKSON, New York, N. Y. Filed Apr. 16, 1896. Serial No. 587,826. (No model.)



Claim.—1. The combination with the smoke-stack of a boiler, and a shell arranged within said stack and forming therewith an annular heating-chamber, a cold-water feed-pipe having a valved discharge end coupled to the stack to communicate with the annular chamber thereof, a valved blow-off pipe coupled to the stack at a point opposite to the connection thereto of the feed-pipe, and an off-bearing pipe connected to the upper part of the annular heating-chamber and leading to a boiler, substantially as described.

2. The combination with a smoke-stack of a boiler, of a corrugated shell situated within said stack to form therein an inner smoke-flue and having flanges at its ends which are united directly to said stack to form therewith an annular chamber, the valved inlet-pipe coupled to the stack at the lower part of the chamber, a valved blow-off pipe also coupled to the stack and communicating with the annular chamber at a point opposite to the inlet-pipe, smoke-dampers situated in the stack on opposite sides of the inner shell, and a feed-pipe coupled to the stack to communicate with the annular chamber near its upper end and leading in the steam-space of the boiler, said feed-pipe being unvalved and serving to establish full communication between the annular chamber and the boiler, substantially as described.

606,959. WATER-JACKET FOR VEHICLE-BRAKES. PERRY R. DOOLITTLE, Toronto, Canada. Filed July 8, 1897. Serial No. 643,896. (No model.)



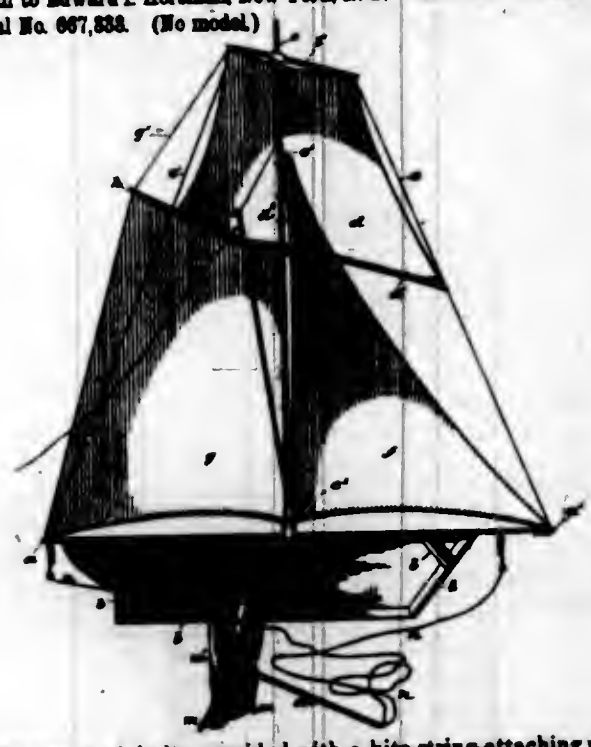
Claim.—1. The combination in a vehicle, of frictional brake contact-surfaces, with a water-jacket adjacent to said surfaces, a water supply and jacket and supply communications, whereby the heat engendered by the operation of said surfaces produces a water circulation for cooling said surfaces, substantially as described.

2. In a vehicle provided with alternating rotatable and non-rotatable friction brake-plates, and the driven support on which said plates are carried, in combination with a water-jacket forming part of the non-rotatable plate, a water supply and circulation, and means for forcing said plates together, whereby the heat accumulated by

the application of the brake mechanism is absorbed by the water circulation, substantially as described.

3. In combination with a brake mechanism comprising rotatable and non-rotatable frictional contacting plates, said non-rotatable plate or plates hollow and adapted to contain water, a water-supply, and inlet and outlet pipes between said plate or plates and supply, substantially as and for the purpose described.

606,960. KITE. JOHN DOYLE, Hoboken, N. J., assignor of one-half to Edward I. Horsman, New York, N. Y. Filed Jan. 24, 1896. Serial No. 667,838. (No model.)



Claim.—1. A knite provided with a kite-string-attaching means comprising an upwardly-projecting stick connected at one end to the body of the kite by which the said kite receives the thrust of the stick, and guyed to the kite so that the said kite receives the pull of the free end of the stick, substantially as described.

2. A kite structure of the character described, comprising a kite-body, a bridle secured thereto comprising a rigid stick bringing a thrusting force to bear upon the kite structure by one of its ends having its free portion guyed to the kite and bringing a pulling strain upon the said guy and a bifilarly-suspended inverted-parachute balancing device, substantially as described and for the purposes set forth.

3. A kite structure comprising a hull, a mast provided with sticks after the manner of yards or gaffs and independent sails secured to the said mast and yards or gaffs.

4. A kite comprising in its structure the hull *b*, the transverse stick *a*, the vertical stick or mast *c*, the yard *b'*, the gaff *h*, sails *d*, *f*, *g* and guys for securing the parts together, substantially as described and for the purposes set forth.

606,961. PNEUMATIC TOOL. DANIEL DRAWBAUGH, Eberly's Mill, Pa., assignor of one-half to H. R. Eberly, Shiremanstown, Pa. Filed Jan. 10, 1898. Serial No. 666,201. (No model.)



Claim.—1. In a pneumatic tool, the combination with a cylinder or body and a piston or hammer adapted to reciprocate therein, said piston or hammer having lateral ports with passages leading out to opposite ends of the said piston or hammer, pressure and exhaust ports in the body of the tool with which the ports in the piston or hammer are adapted to be brought into registry by the oscillation of the piston or hammer on its longitudinal axis, of an abutment mounted in a recess in said piston or hammer, means for preventing the lateral movement of the abutment and cooperating pressure and exhaust ports for admitting pressure alternately to opposite sides of said abutment, whereby the transverse oscillation of the piston or hammer is secured; substantially as described.

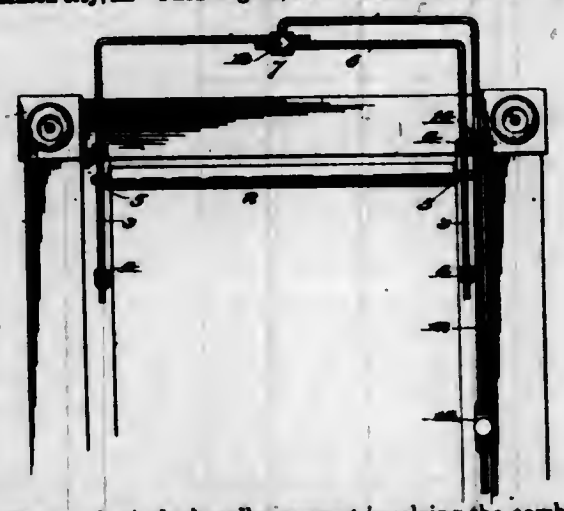
2. In a pneumatic tool, the combination with the body of the tool having the cylinder formed therein together with main pressure and exhaust ports and subordinate pressure and exhaust ports, of a piston or hammer mounted in said cylinder and having ports and passages leading out to opposite ends of the same, and adapted to be alternately put into communication with the main exhaust and pressure ports in the body of the tool by a transverse oscillation of the piston or hammer, said piston or hammer having a chamber or recess therein and an abutment located in said chamber or recess and held against transverse movement, said piston or hammer having ports communicating with said chamber or recess and adapted to be alternately brought into communication with the subordinate ports in the body of the tool by the longitudinal movement of the piston or hammer whereby pressure is admitted to opposite sides of the abutment and the transverse oscillation of the piston or hammer secured; substantially as described.

3. In a pneumatic tool, the combination with the body of the tool having a cylinder formed therein and having main pressure and exhaust ports leading into the side of said cylinder with subordinate pressure and exhaust ports also leading into the side of the cylinder, of a piston or hammer adapted to reciprocate in said cylinder and having ports adapted to register with the pressure and exhaust ports in the body of the tool and leading out to opposite ends of the piston, and also having a chamber or recess substantially as described, with ports for admitting and exhausting pressure alternately to opposite sides of said recess or chamber when brought into registry with the subordinate ports in the body of the tool, and an abutment-block located in said chamber to divide the same longitudinally, a keyway formed in said abutment-block and a fixed pin or spline for preventing the transverse oscillation of said abutment-block while permitting it to reciprocate in unison with the piston or hammer; substantially as described.

4. In a pneumatic tool, the combination with the body of the instrument having a cylinder formed therein, of the piston adapted to reciprocate in said cylinder and having a chamber formed in the cylindrical face thereof, an abutment-block mounted in said chamber and adapted to divide the same longitudinally, said block having a longitudinal keyway and a fixed key or spline for preventing the transverse oscillation of the abutment-block, the body of said tool and the piston or hammer having coöperating ports and passages whereby, when the hammer is reciprocated longitudinally, pressure is alternately admitted and exhausted to and from the chamber on opposite sides of the abutment-block, whereby the transverse oscillation of the piston or hammer is secured, and also having ports and passages whereby when said piston is oscillated transversely, pressure will be alternately admitted and exhausted to and from opposite ends of the cylinder; substantially as described.

5. In a pneumatic tool, the combination with the body of the tool having a cylinder formed therein, of a piston adapted to reciprocate in said cylinder and having a chamber formed in the side thereof, an abutment-block mounted in said chamber and adapted to divide the same, with means for preventing the transverse oscillation of the abutment-block, said tool-body and piston or hammer having coöperating longitudinally-extended and relatively narrow ports for admitting and exhausting pressure to the opposite ends of the cylinder and also having coöperating ports for admitting pressure to opposite sides of the chamber to secure the transverse oscillation of the piston or hammer and thereby bring the first-mentioned ports into proper registry to reciprocate the piston and maintain the pressure thereon throughout practically its entire movement in each direction; substantially as described.

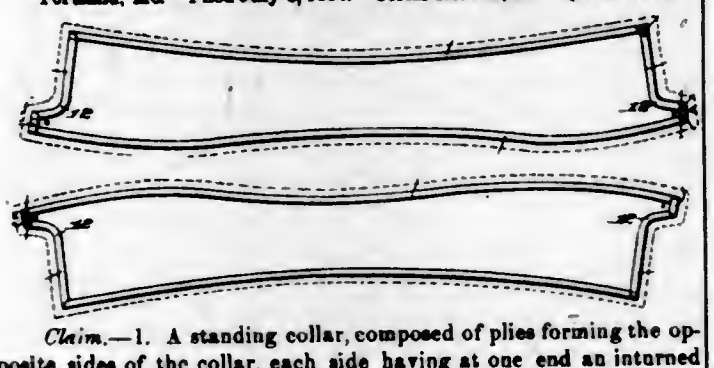
606,962. ADJUSTABLE CURTAIN-BRACKET. THOS. H. EULASS, Mason City, Ill. Filed Aug. 20, 1897. Serial No. 648,942. (No model.)



Claim.—1. A shade-roller support involving the combination of a pair of vertically-adjustable guide-rods adapted to reciprocate in suitable guides having loops for supporting the shade-roller, and a separate, vertically-reciprocating, operating-rod adapted to reciprocate in proper guides on the window-frame, said rod having an overhanging arm operatively connected with the upper ends of the pair of adjustable guide-rods, substantially as described.

2. A shade-roller support comprising guides to be attached to the window-frame, upright guide-rods movable therein and provided with loops for supporting a shade-roller, the upper ends of said guide-rods being provided with inwardly-extending arms, a clamping-sleeve to receive the ends of said arms, an operating-rod movable in guides upon said window-frame and provided with an overhanging arm having a depending end portion that enters said clamping-sleeve, and a set-screw for holding said depending end portion and the arms of the guide-rods within said clamping-sleeve.

606,968. STANDING COLLAR. ALBERT D. FENWICK, Philadelphia, Pa., assignor to the Fenwick Collar and Cuff Machine Company, Portland, Me. Filed July 8, 1897. Serial No. 643,831. (No model.)



Claim.—1. A standing collar, composed of plies forming the opposite sides of the collar, each side having at one end an inturned hook or overlapping end, and having its opposite end underlapped by the adjacent folds at the corners which are overlapped on said end, the plies of said opposite sides of the collar being interlocked by the insertion of the said hook of one against the underlapped end of the other under the said overlapped folds at said corners, both ends of the collar being interlocked, the side having the hook locked into the opposite side at one end receiving the hook from the said opposite side at the other end, and said plies so folded and interlocked being stitched together through and through, substantially as described.

2. A standing collar, composed of plies forming the opposite sides of the collar, each side having its top edge inturned, and an inturned end overlapped by said top-edge fold at one end, and an inturned end overlapping said top-edge fold at the other end, the plies of said opposite sides of the collar being placed and secured together with an overlapping end of the inner side against the overlapped end of the outer side, and the overlapped end of the inner side against the overlapping end of the outer side, substantially as described.

3. A standing collar, composed of inner and outer plies, each similarly folded, the inturned end at one end of a ply overlapping the top-edge fold and at the other end of said ply being overlapped by said edge fold, the said inturned ends having their folds extending down even and unbroken from the top edge to the tabs of the collar, and the said similarly-folded outer and inner plies being placed together face to face with an underlapped end of the inner ply flatwise against an overlapped end of the outer ply at one end, and at the other end an overlapped end of the inner ply flatwise against an underlapped end of the outer ply, said plies being stitched together through and through, substantially as described.

4. A standing collar composed of inner and outer plies of material, having all of its edges inturned, each of said plies having at its opposite upper corners a supplementary inner fold laid or folded over on top of the other inturned folds, to thus enable an acute-angled corner to be presented, substantially as described.

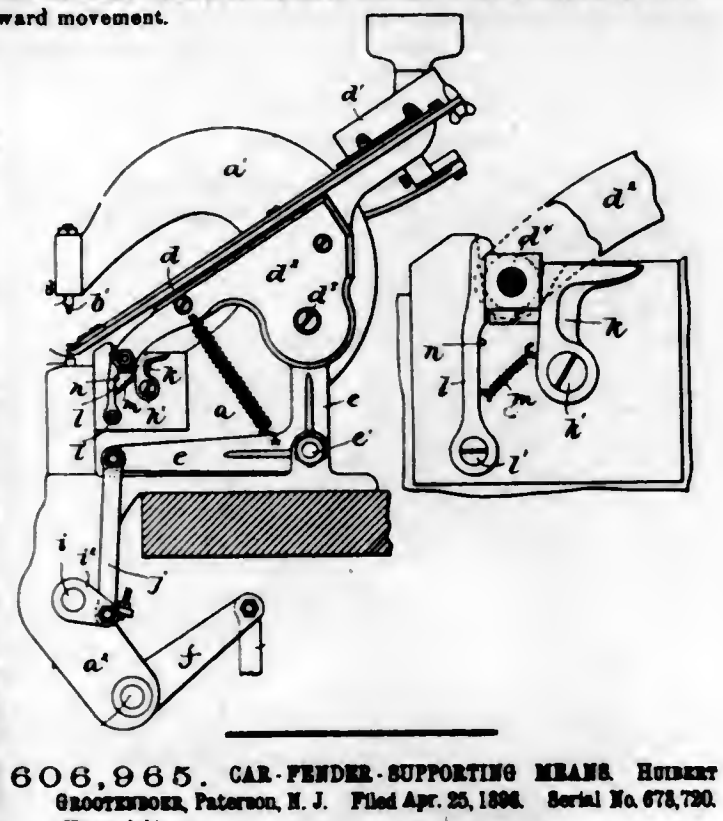
606,964. EYELETING-MACHINE. SEYMOUR FIELD, Quincy, Mass. Filed June 1, 1897. Serial No. 638,879. (No model.)

Claim.—1. In an eyeleting-machine, the combination with an eyeleting device, an eyelet-chute, mechanism for operating said parts, and a track for guiding the chute in its movement, of a latch for engaging it when it is in its lowermost position to prevent a rebound of the same.

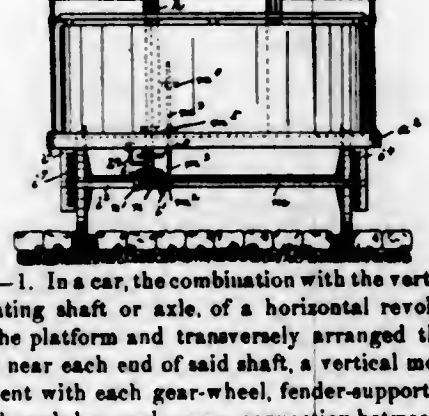
2. In an eyeleting-machine, the combination with an eyeleting device, an eyelet-chute, and mechanism for operating said parts, of the fixed track formed to raise the chute during its backward movement, the movable track adapted to guide the chute horizontally during its forward movement, and a latch or lock for said chute to prevent its rebound when it has reached the limit of its forward movement.

3. In an eyeleting-machine, the combination with the eyeleting device, the eyelet-chute, and mechanism for operating said parts, of the fixed track for the chute, a swinging arm formed to constitute an extension of a part of the fixed track and a latch for engaging the forward end of the chute.

4. In an eyeleting-machine, the combination with the eyeleting device, the eyelet chute, and mechanism for operating said parts, of the fixed track for the chute, a swinging arm formed to constitute an extension of a part of the fixed track, and a latch for engaging the forward end of the chute and having a portion to act as a seat for said chute when it has reached the limit of its forward and downward movement.



606,965. CAR-FENDER-SUPPORTING MEANS. HUBERT GROOTENDORST, Paterson, N. J. Filed Apr. 25, 1896. Serial No. 678,720. (No model.)



Claim.—1. In a car, the combination with the vertically-arranged brake-operating shaft or axle, of a horizontal revoluble shaft supported by the platform and transversely arranged thereon, a gear-wheel at or near each end of said shaft, a vertical movable rack-bar in engagement with each gear-wheel, fender-supporting means carried by each rack-bar, and a gear connection between the brake-operating shaft and the horizontal shaft, substantially as and for the purposes described.

2. In a car, the combination with the vertically-arranged brake-operating shaft or axle, of a horizontal revoluble shaft supported by the platform and transversely arranged thereon, a gear-wheel at or near each end of said shaft, a vertical movable rack-bar in engagement with each gear-wheel, fender-supporting means carried by each rack-bar, a beveled gear-wheel on the brake-operating shaft or axle, a beveled gear-wheel slidingly arranged on the horizontal shaft and adapted to be moved into and out of engagement with the beveled gear on the vertical shaft, and means for shifting said gear-wheel on its supporting-shaft, substantially as and for the purposes described.

3. In a car, the combination with the vertically-arranged brake-operating shaft or axle, of a horizontal revoluble shaft supported by the platform and transversely arranged thereon, a gear-wheel at or near each end of said shaft, a vertical movable rack-bar in engagement with each gear-wheel, fender-supporting means carried by each rack bar, a beveled gear securely mounted on the vertical shaft or axle, a beveled gear slidingly arranged on the horizontal shaft and adapted to be moved into and out of engagement with the beveled gear on the vertical shaft or axle, and means for locking the rack-bars in their uppermost position while the beveled gears are out of engagement, substantially as and for the purposes described.

4. In a car, the combination with the vertically-arranged brake-operating shaft or axle, of a horizontal revoluble shaft supported by the platform and transversely arranged thereon, a gear-wheel at or near each end of said shaft, a vertical movable rack-bar in engagement with each gear-wheel, fender-supporting means carried by each rack bar, a beveled gear securely mounted on the vertical shaft or axle, a spring-controlled beveled gear slidingly arranged on the horizontal shaft, a fulcrumed lever for moving said sliding beveled gear into engagement with the beveled gear on the vertical shaft, and means operated from said sliding gear to lock the rack-bars in their uppermost position, substantially as and for the purposes described.

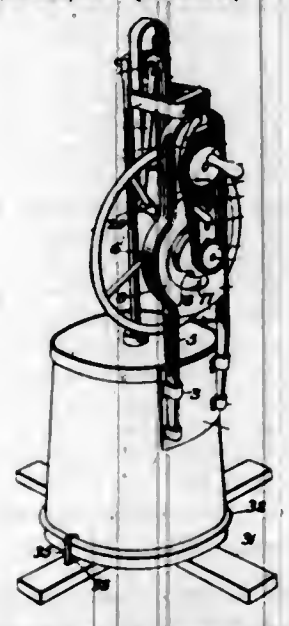
5. In a car, the combination with the vertically-arranged brake-operating shaft or axle, of a horizontal revoluble shaft supported by the platform and transversely arranged thereon, a gear-wheel at or near each end of said shaft, a vertical movable rack-bar in engagement with each gear-wheel, fender-supporting means carried by each rack-bar, a gear connection between the horizontal and vertical shafts, and a gong operated from the vertical shaft, substantially as described.

6. In a car, the combination with the vertically-arranged brake-operating shaft or axle, of a gong carried by the car, a gong-sounding mechanism also carried by the car, and means for automatically operating said gong-sounding mechanism, when the vertical shaft is being rotated, substantially as described.

7. In a car, the combination with the vertically-arranged brake-operating shaft or axle, of a pin or pins projecting therefrom, a fulcrumed lever carried by the car and having one arm in the path of said pin or pins and having its other arm provided with a loop or ring, a gong-hammer-carrying spring wire or wires penetrating said loop or ring and secured with their free ends at or near the fulcrum of the lever, and a gong carried by the car and in the path of the gong hammer or hammers, substantially as and for the purposes described.

8. In a car, the combination with the vertically arranged brake-operating shaft or axle, of a bracket on each side of the platform and depending therefrom, a vertical movable rack-bar supported and guided by each bracket, a horizontal shaft revolubly mounted in said brackets, a gear-wheel in engagement with each rack-bar and secured on the respective ends of the horizontal shaft, a gear connection between said horizontal shaft and the vertically-arranged brake-operating shaft, and means carried by the rack bars for supporting a fender, substantially as and for the purposes described.

606,966. **CHURN.** JACOB A. HANGER, Staunton, Va. Filed Mar. 18, 1897. Serial No. 628,089. (No model.)



Claim.—1. In an operating mechanism of the class described, the combination with a frame adapted to be applied to the body of a churn or the like, of a shaft journaled in said frame and suitably connected to the dasher of the churn or the like, and an adjustable supporting arm mounted adjacent to said shaft in a vertical plane and adapted to be locked at different angles in said plane with relation to said shaft, whereby the mechanism may be operated from different positions, substantially as described.

2. In an operating mechanism of the class described, the combination with a frame, of an attaching-band adapted to be applied to a churn-body or the like, said frame being adapted to be detachably secured to said band, a shaft journaled in said frame, means for operating said shaft, suitable connections between said shaft and the dasher of the churn or the like, and an adjustable supporting-arm arranged adjacent to the shaft in a vertical plane and adapted to be locked at different angles in said plane with relation thereto, whereby the mechanism may be operated from different positions, substantially as described.

3. In an operating mechanism of the class described, the combination with a frame, of a bearing-plate arranged therein, a shaft journaled in said bearing-plate, a supporting-arm pivoted in a vertical plane to the frame and adapted to be swung at different angles in said plane with relation to said shaft, and suitable gearing for operating the shaft, said supporting-arm being adapted to place said gearing so that the same may be operated from different positions, substantially as described.

4. In an operating mechanism of the class described, the combination with a frame adapted to be applied to a churn-body or the like, of a bearing-plate arranged within said frame, a shaft journaled in said bearing-plate, and having suitable connections with the dasher of the churn or the like, a supporting-arm carried by the bearing-plate and arranged in a vertical plane, suitable gearing carried by said supporting-arm for operating the shaft, and an adjusting-lever for locking said supporting-arm at different angles in said vertical plane with relation to said shaft, whereby said gearing may be operated from different positions, substantially as described.

5. In an operating mechanism of the class described, the combination with a frame adapted to be applied to a churn-body or the like, of a shaft journaled therein, a guide-frame arranged upon the first-mentioned frame, a guide wheel working within said guide-frame, suitable connections between said guide-wheel and the shaft, whereby when said shaft is rotated the guide-wheel is reciprocated in the guide-frame, said guide-wheel being adapted to have suitable connections with the dasher of the churn or the like, a swinging supporting-arm arranged in a vertical plane adjacent to the shaft, suitable gearing carried by said supporting-arm for rotating said shaft, and means for locking the supporting-arm at different angles in said vertical plane with relation to the shaft, whereby said gearing may be operated from different positions, substantially as described.

6. In an operating mechanism of the class described, the combination with a frame adapted to be applied to a churn-body or the like, of a bearing-plate arranged within said frame and provided with a segmental slot, a shaft journaled in said bearing-plate and having suitable connections with the dasher of the churn or the like, a supporting-arm carried by the bearing-plate and arranged in a vertical plane, said arm being adapted to be swung at different angles in said plane with relation to the shaft, suitable gearing carried by said supporting-arm for operating said shaft, and means for locking said supporting-arm at different angles in said vertical plane with relation to said shaft, substantially as described.

7. In an operating mechanism of the class described, the combination with a frame adapted to be applied to a churn-body or the like, of a bearing-plate arranged within said frame and provided with a segmental slot, a shaft journaled in said bearing-plate and having suitable connections with the dasher of the churn or the like, a supporting-arm carried by the bearing-plate and arranged in a vertical plane, said arm being adapted to be swung at different angles in said plane with relation to the shaft, suitable gearing carried by said supporting-arm for operating said shaft, and an adjusting lever carried by the supporting-arm and adapted to lock the latter at different angles in said vertical plane with relation to said shaft, substantially as described.

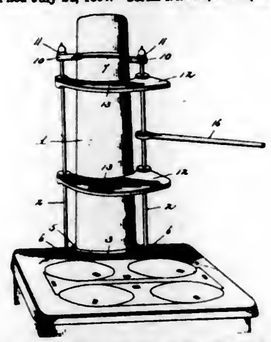
8. In an operating mechanism of the class described, the combination with a suitable frame adapted to be applied to a churn-body or the like, of a bearing-plate arranged within said frame and provided with a segmental slot, a shaft journaled in said bearing-plate, suitable connections between said shaft and the dasher of the churn or the like, a supporting-arm pivoted to the bearing-plate in a vertical plane and adapted to swing thereon, suitable gearing carried by said arm for operating the shaft, and an adjusting lever working within the segmental slot of the bearing-plate and provided with a head having its sides beveled and adapted to bite against the sides of said slot to lock the adjusting-lever, and thereby prevent movement of the supporting-arm, substantially as described.

9. In an operating mechanism of the class described, the combination with an attaching-band adapted to be applied to a churn-body or the like, of a frame adapted to be detachably secured to said attaching-band, a bearing-plate arranged within said frame and provided with a segmental slot, a shaft journaled in said bearing-plate, a fly-wheel mounted upon said shaft, a guide-frame arranged upon the first-mentioned frame, a guide-wheel working in said guide-frame and suitably connected to said fly-wheel, said guide wheel having suitable connections with the dasher of the churn or the like, a supporting-arm pivoted to the bearing-plate in a vertical plane and adapted to be swung at different angles in said plane with relation to the shaft, suitable gearing carried by said supporting-arm for operating said shaft, and an adjusting-lever also carried by said supporting-arm, the shank of said lever working in the segmental slot of the bearing-plate, and provided with a head having its sides beveled and adapted to bite against the sides of the slot, whereby the supporting-arm may be locked at different angles in said vertical plane with relation to the shaft, substantially as described.

10. In an operating mechanism of the class described, the combination with an attaching-band adapted to be applied to a churn-body or the like, of a frame adapted to be detachably secured to said attaching band, a bearing-plate arranged within said frame and provided with a segmental slot, a shaft journaled in said frame, a fly-wheel mounted upon said shaft, a guide-frame arranged upon the first-mentioned frame and provided with a plurality of guides, a guide-wheel working in said frame and upon said guides and having suitable connections with the dasher of the churn or the like, a swinging supporting-arm pivoted to the bearing-plate and arranged in a

vertical plane, suitable gearing carried by said supporting-arm for rotating the shaft, and an adjusting-lever also carried by said arm and having its shank working within the segmental slot of the bearing-plate and provided with a head, the sides of which are beveled and adapted to bite against the sides of said slot, whereby said adjusting-lever is adapted to lock the supporting-arm at different angles in said vertical plane with relation to said shaft, substantially as described.

606,967. **STOVEPIPE ATTACHMENT.** JACOB A. HANGER, Staunton, Va. Filed July 21, 1897. Serial No. 645,377. (No model.)

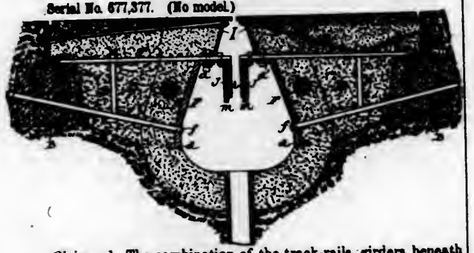


Claim.—1. In a shelf attachment for stovepipes, the combination of supporting-guides consisting of hollow rods, retaining-wires for embracing the stovepipe coupled with the supporting-guides by means of hooks projecting into the tubular rods, and adjustable shelves carried by the supporting-rods adapted to automatically engage said rods in whatever position they may be adjusted, substantially as described.

2. In a shelf attachment for stovepipes, the combination of a shelf, upright supporting-guides for said shelf, retaining-wires arranged in sets at the top and bottom of said guides embracing the stovepipe on opposite sides thereof and having their hooked ends engaging the open ends of the pipe, substantially as described.

3. In a shelf attachment for stovepipes, the combination of tubular, upright, supporting-guides, retaining-wires at the bottom of said guides which embrace the stovepipe each having a hooked end engaging one of the supporting-tubes and the other end engaging a second supporting-tube, a second set of wires at the top of the supports which embrace the stovepipe and have their ends fitted into the upper ends of the supports, covering-caps for the upper ends of the supports and wires, and shelves adjustably mounted on said supports, substantially as described.

606,968. **PERMANENT WAY FOR RAILWAYS.** PETER HEVNER, Philadelphia, Pa. Filed Mar. 24, 1897. Renewed Apr. 12, 1898. Serial No. 677,377. (No model.)

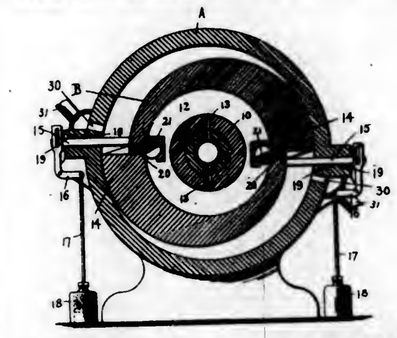


Claim.—1. The combination of the track-rails, girders beneath the same, a conduit disposed between the rails and below the street-surface and composed in part of opposite side walls and in part of a mass of concrete interposed between the rail-girders and conduit-walls, and extending beneath the latter to form the bottom of the conduit, and braces whereby both the upper and lower portions of each of the side walls of the conduit are confined laterally to the rail-girders, substantially as specified.

2. The combination of the track-rails, supporting-girders therefor, a central depressed conduit, bars connecting the upper portions of the conduit-walls to the girders and extending inward beyond the walls of the conduit, and depending conductor-bars mounted upon said inwardly-projecting portions of the brace-bars, substantially as specified.

3. The combination of the track-rails, girders supporting the same, a centrally disposed and depressed conduit, upper and lower braces connecting the walls of said conduit to the track-supporting girders, and vertical braces connecting said upper and lower transverse braces, substantially as specified.

606,969. **ROTARY STEAM-ENGINE.** MARTIN V. B. HOWE, Gardner, Mass. Filed June 10, 1897. Serial No. 640,107. (No model.)

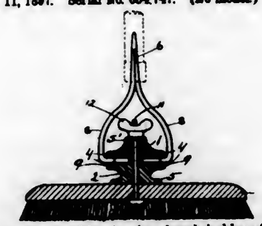


Claim.—1. In a rotary steam-engine, the combination of a cylindrical casing A, a hollow main shaft 10, a hollow core B having a plurality of abutments 14, connections for supplying steam to the hollow core B, whereby the same will form a steam-chest, and act substantially as a steam-jacket, a plurality of movable gates or partitions 15, inlet-valves 21 located in the core B for admitting steam to the spaces between the gates 15 and abutments 14, and means for operating said inlet-valves, substantially in the manner set forth.

2. In a rotary steam-engine, the combination of a casing A, a hollow core B having abutments 14, a hollow main shaft 10, connections for admitting steam to the hollow main shaft, gates or partitions 15 movably mounted in the casing, oscillating inlet-valves 21 mounted in and turning with said core, stationary stops 26 for opening the inlet valves, and a governor-controlled piece 27 having stops for closing said inlet-valves, substantially as described.

3. In a rotary steam-engine, the combination of the casing A, a hollow core B forming a steam-chest, a hollow main shaft 10, connections for admitting steam to the main shaft 10, movable gates or partitions 15 mounted in the casing A, oscillating inlet-valves 21 mounted in and turning with the core B, outwardly-extending arms 23 arranged to engage stationary stops 26 to open the inlet-valves, inwardly-extending arms 24 arranged to coöperate with stops 28 on a governor-controlled piece 27, and springs 25 for holding the valves in their adjusted positions, substantially as described.

606,970. **BRUSH-HOLDER.** GEORGE B. HUSSEY, Providence, R. I. Filed Oct. 11, 1897. Serial No. 654,747. (No model.)

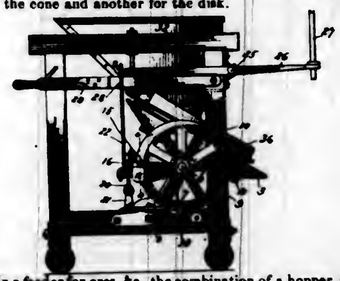


Claim.—1. The combination in a brush-holder of a handle, a bail attached to said handle and having an inturned prong at each lower end, a pair of plates to clamp said prongs between them, a bolt and nut to fasten said plates together and to a brush, substantially as described.

2. In a brush-holder the combination of a bail having prongs at its lower ends turned toward each other, two plates having grooves made in their contiguous faces to receive said prongs and clamp them fast, with means for removably securing said plates together and to a brush, substantially as described.

606,971. **ORE-FEEDER.** ULYSSES S. JAMES, Helena, Mont., assignor to Lewis H. Graves, same place. Filed Apr. 22, 1897. Renewed Jan. 26, 1898. Serial No. 668,063. (No model.)

Claim.—1. In a feeder for ores, &c., the combination of a hopper, a feed-disk supported thereunder, this disk being inclined bodily and provided with an upwardly projecting cone in the path of the feed means for imparting movement to the feed disk, and a scraping edge for the cone and another for the disk.



2. In a feeder for ores, &c., the combination of a hopper, a dished feed-disk mounted thereunder and provided with a central cone in the path of the feed, means for imparting movement to said disk, and a scraper having scraping edges bearing against the disk and the cone.

3. In a machine for feeding ores, &c., the combination of a hopper, a bodily-inclined feed-disk forming the bottom thereof and provided with a cone in the path of the feed, means for rotating the disk, and a scraper provided with scraping edges working against both the disk and the cone.

4. In a machine for feeding ores, &c., the combination of a hopper provided with a feed-opening in its front side, a dished feed-disk closing the lower end of the hopper except the feed-opening, the front half of the disk projecting in front of the hopper, said disk being provided with a central cone partially obstructing the feed-opening, a scraper projecting forward from the feed-opening to the feed edge of the disk and having two scraping edges, one scraping the cone and the other the rim, a curved arm extending forward from the hopper and terminating near the feed-point.

5. In a machine for feeding ore, &c., the combination of feed mechanism and means for intermittently rotating the same, said means consisting of a shaft carrying a friction-wheel, a pivoted arm and means for vibrating the same, a movable grip device carried by said arm and adapted to normally engage the friction-wheel, means for normally pulling said arm down and means for intermittently lifting it, and means for normally pressing down upon said grip device to force it against the friction-wheel, this latter means consisting essentially of a pivoted part adapted to swing in unison with said arm and having its free end bearing against said grip device, and an adjustable spring-tension device connecting said pivoted part to said pivoted arm and adapted to vary the pressure on the grip device, substantially as described.

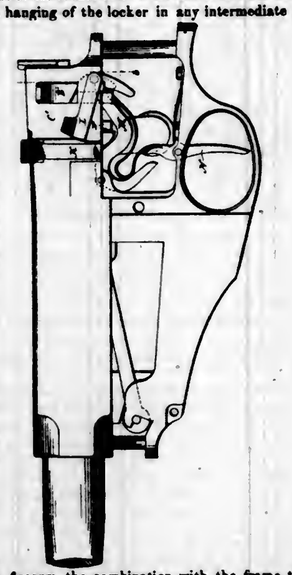
6. In an ore-feeder, the combination of a feed-disk, and means for intermittently rotating said disk, said means consisting of a shaft carrying a pinion, engaging the disk, and a friction-wheel, a pivoted, vibrating arm carrying gravitating friction-rollers gripping the rim of the friction-wheel, a pivoted part or hood embracing the friction-wheel and provided with projections resting on said rollers to normally hold them against the friction-wheel, means for normally drawing down the vibrating arm, and means for lifting said arm, as and for the purpose set forth.

606,972. **SAFETY DEVICE FOR BOLT-GUNS.** THOMAS C. JOHNSON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Dec. 27, 1897. Serial No. 663,497. (No model.)

Claim.—1. A firearm having a firing-pin, a firing-pin retracting and locking device or locker, a movable operating member, and a combined locking and retracting lug, the said movable operating member and lug being applied to the pin and locker, and coacting to retract the pin and positively lock it in its retracted position, and the said operating member insuring the movement of the locker into its full locked or unlocked positions, whereby it is prevented from hanging in any intermediate position.

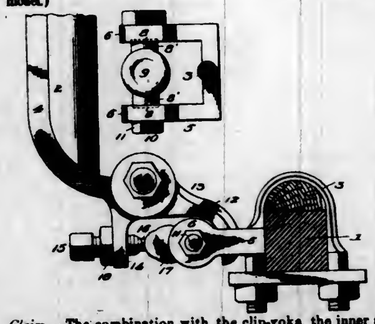
2. A firearm having a firing-pin provided with a retracting and locking lug, and a vertically-movable firing-pin retracting and locking device or locker mounted in the frame of the arm, and provided with a movable operating member coacting with the said lug to retract and lock the firing-pin and to insure the movement of the locker into its full locked or unlocked positions, whereby it is prevented from hanging in any intermediate position.

3. A firearm having a firing-pin provided with a depending arm furnished with a retracting and locking lug having a retracting-surface and a locking-recess, and a vertically-movable firing-pin retracting and locking device or locker mounted in the frame of the arm and provided with an operating member in the form of a roll which coacts with the said bevel and recess of the said lug for retracting the firing-pin and locking it in its retracted position and for insuring the movement of the locker into its full locked or unlocked positions, whereby the hanging of the locker in any intermediate position is avoided.



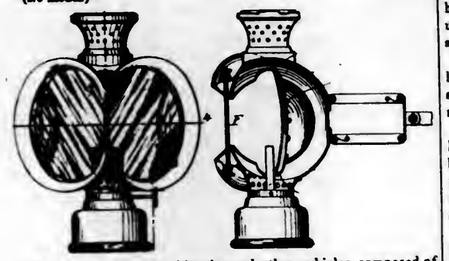
4. In a firearm, the combination with the frame thereof, of a firing-pin, a firing-pin retracting and locking device or locker mounted in the said frame for vertical movement therein and adapted in length and located so that when it is lifted into its full-locked position its upper end will be flush with the upper edge of the frame which constitutes a gage of its position, a movable operating member, and a combined locking and retracting lug, the said movable operating member and lug being applied to the firing-pin and locker, and coacting to insure the movement of the locker into its full locked and unlocked positions, whereby the locker is prevented from hanging in any intermediate position.

606,973. **THILL-COUPLING.** GEORGE P. LA POER and CHARLES E. WALKER, York, Pa. Filed Sept. 29, 1897. Serial No. 653,527. (No model.)



Claim.—The combination with the clip-yoke, the inner sides of the ears of which are provided with opposing recesses, open at their lower ends and closed at their upper ends, a hollow ball, having hollow tenons, said tenons fitted in said recesses, a bolt for securing the ball in position, a thill-iron, a thill-iron attachment secured to said thill-iron, and provided with a rearwardly and downwardly projecting arm that extends between the parallel ears of the yoke, and is provided with the countersunk ball-seat and said attachment being also provided at its forward end with a downwardly-projecting arm, a screw worked through said arm and being swiveled to a block having a ball-seat therein to embrace the ball on the point directly opposite that portion embraced by the recess carried by the other arm, and a jam-nut on said bolt for holding the block in position.

606,974. LAMP FOR BICYCLES. WILLIAM LEUCKERT, Brooklyn, N. Y. Filed Feb. 8, 1897. Renewed Dec. 1, 1897. Serial No. 660,425. (No model.)

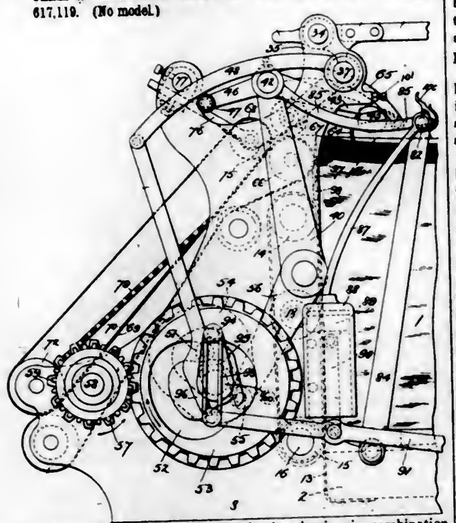


Claim.—1. A lamp for bicycles and other vehicles, composed of a lamp or other source of light, a reflector arranged back of the same and formed of two parabolic sections that are adapted to intersect at an obtuse angle of inclination in the center plane of the lamp, an exterior casing extending around the reflector and provided with angular forward-projecting portions, glass fronts supported at an obtuse angle by the front part of the casing, and means for connecting the forward-projecting front portions of the casing, substantially as set forth.

2. A lamp for bicycles and other vehicles, consisting of a lamp or other source of light, a reflector back of the same and formed of two parabolic sections arranged to intersect each other at an obtuse angle of inclination in line of the center plane of the lamp, a casing extending around the reflector and provided with forward-projecting angular portions, grooved seats and rims, glass fronts supported by said front forward-projecting portion of the casing and adapted to abut in line in front of the source of light, in a line with the side plane of the lamp, and means for applying the front part of the casing tightly to the glasses, substantially as set forth.

3. A lamp for bicycles and other vehicles, consisting of a lamp or other source of light, a casing applied to the body of said lamp, a perforated chimney-cap at the upper part of the casing, vertically above the light, a reflector located in the casing, formed of two parabolic sections intersecting in the vertical central plane of the lamp, angular front glasses arranged at an angle, the backs of which are in line with said center plane, and supported by angular forward-projecting portions of the casing, a center pillar located in front of the abutting glasses connecting the forward-projecting portions of the casing so as to apply the same tightly to the glasses, substantially as set forth.

606,975. PAPER-FEEDING MACHINE. ROBERT MIEHLE and JAMES W. MANSFIELD, Chicago, Ill. Filed Dec. 26, 1896. Serial No. 617,119. (No model.)



Claim.—1. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for pulling the surface sheet taut or straight, and means for drawing off the surface sheet after being so straightened, substantially as set forth.

2. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for bearing upon the surface sheet at one edge, and means for pulling upon the surface sheet at the other edge, substantially as set forth.

3. A sheet-feeding mechanism having in combination means for holding the surface of the pile normally bowed or sagged; means for stretching the surface sheet, and a suction sheet-pulling device arranged to contact with the stretched sheet, substantially as set forth.

4. A sheet-feeding mechanism having in combination means for holding the surface of the pile normally bowed or sagged, means for bearing upon the pile at one side and means comprising a suction device for pulling upon the sheet at the other side, said suction device being arranged above the normal level of the pile, substantially as set forth.

5. A sheet-feeding mechanism having in combination means for holding the surface of the pile normally bowed or sagged; means for stretching the surface sheet taut and then pulling it from the pile, comprising a suction device; and an automatic relief-valve for said suction device, substantially as set forth.

6. A sheet-feeding mechanism having in combination a sheet-pile-supporting table having its surface bowed or sagged; means for stretching the surface sheet taut or substantially straight and then pulling it from the pile, comprising a suction device; and an automatic relief-valve for said suction device, substantially as set forth.

7. A sheet-feeding mechanism having in combination a sheet-pile-supporting table having a number of sections whose combined surfaces or areas form a bowed or sagged support for the pile, and said sections being shiftable with relation to each other; and means for stretching the surface sheet taut and then pulling it from the pile, substantially as set forth.

8. A sheet feeding mechanism having in combination a sheet-pile-supporting table having a number of sections whose combined surfaces or areas form a bowed or sagged support for the pile, some of said sections being removable and others being shiftable transversely along the table; and means for stretching the surface sheet taut and then pulling it from the pile, substantially as set forth.

9. A sheet-feeding mechanism having in combination means for imparting a pull to the sheet to be fed; a sheet-supporting table divided transversely of the line of pull upon the sheet into a number of removable sections of different thicknesses whose combined areas form a bowed or sagged surface for supporting the pile of paper, substantially as set forth.

10. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for pulling upon the surface sheet at one edge of the pile; and means for bearing upon the pile at the opposite edge adjustable lengthwise of the line of pull upon the surface sheet, substantially as set forth.

11. A sheet-feeding mechanism having in combination means for pulling upon the surface sheet at one edge of the pile; means for bearing upon the pile at the opposite edge adjustable lengthwise of the line of pull, and a paper-supporting table having a depressed or sagged surface extensible or contractible lengthwise of the line of pull upon the surface sheet, substantially as set forth.

12. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the surface sheet at one edge; and means for rubbing the surface sheet at the opposite edge and thereby pulling it straight or taut, substantially as set forth.

13. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the surface sheet at one edge; a pneumatic rubbing device arranged at the opposite edge of the surface sheet, and means for moving said rubbing device toward and from said retarding means whereby a pull is imparted to the surface sheet, substantially as set forth.

14. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the surface sheet at one edge; a rising-and-falling pneumatic rubbing device arranged at the opposite edge of the surface sheet; and means for moving said rubbing device toward and from said retarding means, whereby a pull is imparted to the surface sheet and the latter straightened or raised from the pile, substantially as set forth.

15. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; a roller bearing upon and retarding the surface sheet at one edge; and means for imparting a pull to the surface sheet at the opposite edge thereof, substantially as set forth.

16. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; a cushioned roller bearing upon and retarding the surface sheet at one edge; and means for imparting a pull to the surface sheet at the opposite edge, substantially as set forth.

17. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the surface sheet at one edge; a rubbing device arranged at the opposite edge of the sheet and having independently-yielding portions throughout its length to conform to the irregularities in the surface of the pile; and means for moving said rubbing device toward and from said retarding means, substantially as set forth.

18. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the surface sheet at one edge; a rubbing device consisting of a pneumatic cushion arranged at the opposite edge of the sheet; and means for moving said rubbing device toward and from said retarding means whereby a pull will be imparted to the surface sheet, substantially as set forth.

19. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; a pair of hinged arms extending over the pile; a roller bearing upon the surface sheet at one edge and having an elastic connection with said arms; and means for imparting a pull to the surface sheet at the opposite edge, substantially as set forth.

20. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; a pair of hinged arms extending over the pile; means for limiting the downward movement of said arms and holding the same substantially horizontal; a roller bearing upon the surface sheet at one edge thereof and having an elastic connection with said arms; and means for imparting a pull to the surface sheet at the opposite edge thereof, substantially as set forth.

21. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a rubbing device arranged at the opposite edge of the surface sheet; means for moving said rubbing device toward and from said retarding means and thereby stretching or pulling upon the surface sheet; and an auxiliary sheet-pulling device arranged above the surface sheet and into the grasp of which the sheet is placed by said rubbing device, substantially as set forth.

22. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a hinged or pivoted rubbing device arranged to contact with the opposite edge of the surface sheet and having its center or hinge moving bodily upon an arc of a circle; a movable guide for controlling the independent oscillation of said rubbing device upon its hinge; and means for altering the position of said guide, whereby the rubbing device is caused to move into and out of contact with the sheet, substantially as set forth.

23. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a hinged or pivoted rubbing device arranged to contact with the opposite edge of the sheet and having its center or hinge moving bodily in an arc of a circle; a movable guide for controlling the independent oscillation of said rubbing device on its said hinge or center; said guide being curved concentrically with the arc through which the said hinge or center moves; and means for altering the position of said guide whereby the said rubbing device is caused to move into and out of contact with the sheet, substantially as set forth.

24. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a sheet-rubbing device arranged at the opposite edge of the sheet; hinged arms bodily movable toward and from said retarding means and supporting said rubbing device; and means for independently oscillating said arms toward and from the surface of the sheet, substantially as set forth.

25. A sheet feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a sheet-rubbing device arranged at the opposite edge of the surface sheet; hinged arms bodily movable toward and from said retarding means and supporting said rubbing device; a projection for controlling the independent oscillation of said arms; a movable guide against which said projection bears and means for altering the position of said guide to cause the rubbing device to approach and recede from the surface of the sheet, substantially as set forth.

26. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a sheet-rubbing device arranged at the opposite edge of the surface sheet; hinged arms bodily movable in the arc of a circle toward and from said retarding means and supporting said rubbing device; a projection for controlling the independent oscillation of said arms; a pivoted guide against which said projection bears, said guide being curved on an arc concentric with the arc described by the bodily movement of said arms, and means for oscillating said guide and thereby causing said rubbing device to rise and descend upon the sheet, substantially as set forth.

27. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a sheet-rubbing device arranged at the opposite edge of the surface sheet; a bodily-movable rocker-shaft; arms secured to said shaft and supporting said rubbing device; a lever by which one end of said shaft is supported; a cam for oscillating said lever; a projection secured on said rocker-shaft; a movable guide-bar against which said projection bears and which holds said shaft from independent rocking; and a cam for altering the position of said guide-bar, substantially as set forth.

28. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a sucker movable to and from the said retarding means and adapted to impart a pull to the surface sheet at the opposite edge thereof; means for moving said sucker to and fro; a weighted piston having a loose operative connection with the last said means; and a cylinder containing said piston and having air-passage connection with said sucker, substantially as set forth.

29. A sheet-feeding mechanism having in combination means for holding the surface of the pile bowed or sagged; means for retarding the movement of the surface sheet at one edge thereof; a sucker movable to and from said retarding means and adapted to impart a pull to the surface sheet; means for moving said sucker to and fro; a revolving crank-pin; a lever; a link connected to said lever and having a slot in which said pin slides; a piston connected to said lever; and a cylinder containing said piston and having connection with said sucker, substantially as set forth.

30. A sheet-feeding mechanism having in combination means for holding the pile of paper; a number of rollers arranged contiguous to the edge of the pile; guides or deflectors projecting upwardly between said rollers and across the surface plane of and toward said pile; a second roller arranged below said first rollers and in contact therewith and opposite the edge of the pile and across which said guides extend; and means for feeding the sheet to said rollers, substantially as set forth.

31. A sheet feeding mechanism having in combination a table for holding the pile of paper; elevating mechanism for raising said table having a ratchet; a continuously-moving pawl adapted to engage said ratchet; means for removing the sheets from the pile, said means being supported by the surface of the pile, and means having sliding connection with and supporting said pawl directly from said feeding means, substantially as set forth.

32. A sheet-feeding mechanism having in combination a table for supporting the pile of paper; a frame having a standard at each side thereof; the standards 11 arranged in pairs between said first standards and each pair carrying a roller or pulley; the shaft 7 passing through the lower ends of all of said standards; the stay-rod 12 passing through all of said standards and thereby holding the intermediate standards in place; and belts secured at one end to said shaft and passing over said pulleys or rollers and secured to said table at their other ends, substantially as set forth.

33. A sheet-feeding mechanism having in combination a table for holding the pile of paper; elevating mechanism for raising said table having a ratchet; a shaft having a crank; a pawl connected with said crank and adapted to engage said ratchet; means for removing the sheets from the pile, said means being supported by the surface of the pile; and an arm having elastic connection with said means at one end and a slotted or sliding connection with said pawl at the other end, substantially as set forth.

34. A sheet-feeding mechanism having in combination a table for holding the pile of paper; elevating mechanism for raising said table having a ratchet; a shaft having a crank-pin, and being independent of said ratchet; a pawl pivoted directly to said crank-pin and being supported thereby at one end and adapted to engage said ratchet; means for removing the sheets from the pile, said means being supported by the surface of the pile; and an arm having elastic connection at one end with said means and its other end being provided with slotted or sliding connection with said pawl so as to support and operate said pawl, substantially as set forth.

35. A sheet-feeding mechanism having in combination a table for holding the pile of paper; elevating mechanism for raising said table having a ratchet; a shaft having a continuously-operating crank; a pawl connected with said crank and adapted to engage said ratchet; means for removing the sheets from the pile, said means being supported by the surface of the pile, and an arm connected to said means and supporting and having sliding connection with said pawl, substantially as set forth.

36. A sheet-feeding mechanism having in combination a table for

holding the pile of paper; elevating mechanism for raising said table having a ratchet; a continuously-moving pawl adapted to engage said ratchet; means for removing the sheets from the pile, said means being supported by the surface of the pile, said means also having operative connection with and supporting said pawl for lifting the latter out of engagement with the ratchet, substantially as set forth.

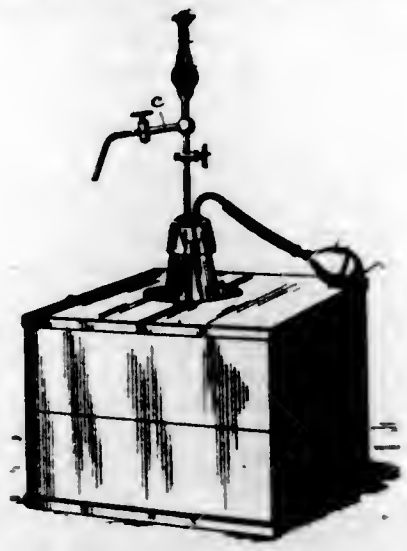
606,976. PROCESS OF COLORING AND PRESERVING FRUIT-JUICES. HERMANN MÜLLER-THURGAU, Wadenswell, Switzerland. Filed Feb. 1, 1897. Serial No. 621,558. (No specimens.) Patented in Italy Dec. 21, 1896, XXXII, 43,526, LXXXVI, 408; in France Dec. 22, 1896, No. 262,426; in Belgium Dec. 24, 1896, No. 125,362; in Tunis Dec. 23, 1896, No. 214; in Hungary Jan. 7, 1897, No. 3,249; in England Jan. 13, 1897, No. 978; in Turkey Jan. 29, 1897, No. 558; in Cape Colony Feb. 6, 1897, No. 6/170; in New South Wales Feb. 22, 1897, No. 7,283; in South Australia Feb. 22, 1897, No. 3,561; in Victoria Feb. 24, 1897, No. 13,873; in Canada May 1, 1897, No. 55,750; in Austria Aug. 27, 1897, No. 47/3,108; in South African Republic Sept. 3, 1897, No. 1,496; in Portugal Sept. 4, 1897, No. 2,391; in India Sept. 21, 1897, No. 78, and in Spain Dec. 29, 1897, No. 20,164.

Claim.—1. A process for the production of preservable fruit-juices consisting in subjecting fermented or unfermented juices for about half an hour to a temperature of about 60° to 70° Celsius, in then removing the matters in suspension, and finally subjecting the juices to another similar heating, the whole process being carried out, out of contact with the air.

2. The herein-described process of treating fresh fruit-juice to render it preservable, which consists in heating the juice out of contact with the air, by steam or hot water, to about 60° or 70° Celsius, to destroy the germs of fermentation and precipitate the mucilaginous substances held in suspension, then causing the settling of the juice to deposit the disturbing substances or sediment, then filtering the juice and finally subjecting it to a reheating out of contact with the air at 60° to 70° Celsius, to destroy any germs of fermentation that may have entered the juice during the process of filtration.

3. The herein-described process of treating fresh fruit-juice to color naturally and render it preservable, which consists in heating the juice in contact with the skins or outer covering of the fruit and at a temperature to open the color-cells, and extract the coloring-matter, &c., then subjecting the juice, out of contact with the air, to steam or hot-water heat of about 60° to 70° Celsius, to precipitate mucilaginous substances and destroy the germs of fermentation, then causing the settling of the juice to deposit disturbing substances or sediment, then filtering the juice and finally subjecting the juice to a reheating, out of contact with the air, at a temperature of about 60° to 70° Celsius.

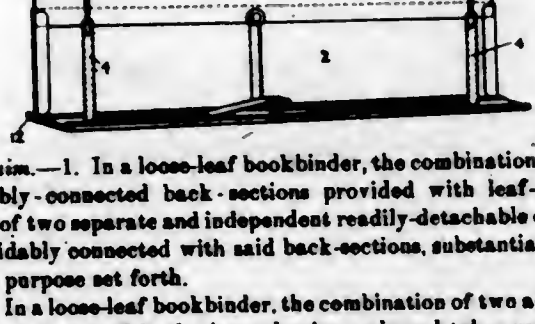
606,977. MEASURING DEVICE. CORNELIUS MCGLADE, Philadelphia, Pa. Filed Sept. 28, 1897. Serial No. 653,331. (No model.)



Claim.—1. The herein-described combination of a globe forming a chamber, a tube leading thereto, a cup formed upon an extension of the globe, a float located within the chamber, a valve formed upon the float adapted to close the passage leading from the chamber, an extension also formed upon the float, a knob carried by said extension adapted to fit within the cup, and a bulb for elevating the liquid within the globe, as specified.

2. The herein-described combination of a tube, a valve located therein, a faucet leading therefrom, a globe formed upon said tube, a cup formed upon an extension of the globe, a float located within the globe, a knob carried by an extension of the float and adapted to lie within the cup, and means for elevating the liquid within the globe, as specified.

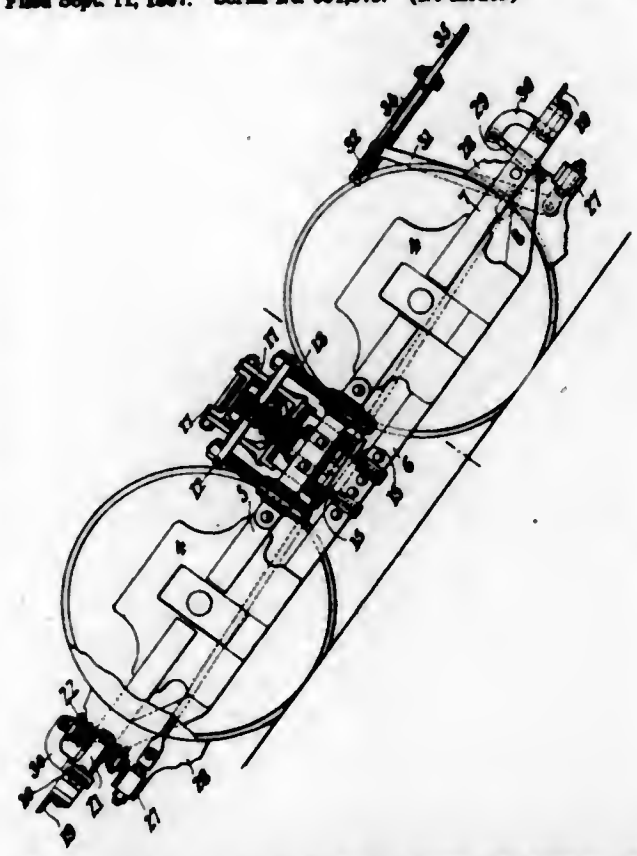
606,978. LOOSE-LEAF BOOKBINDER. ARTHUR OPALLA, Chicago, Ill. Filed Nov. 20, 1897. Serial No. 659,344. (No model.)



Claim.—1. In a loose-leaf bookbinder, the combination with two adjustably-connected back-sections provided with leaf-engaging means, of two separate and independent readily-detachable cover-sections slidably connected with said back-sections, substantially as and for the purpose set forth.

2. In a loose-leaf bookbinder, the combination of two adjustably-connected L-shaped back-pieces, having rods and tubes respectively with slides and hereto-attached covers of any convenient material, said slides formed to be slipped easily over the horizontal flanges of the back-pieces respectively and arrested by pins 8, mounted on springs 9, and passing through holes 10 of the horizontal flanges into holes 13 of said slides.

606,979. MOTOR-TRUCK. EDGAR PEckham, New York, N. Y. Filed Sept. 11, 1897. Serial No. 651,375. (No model.)



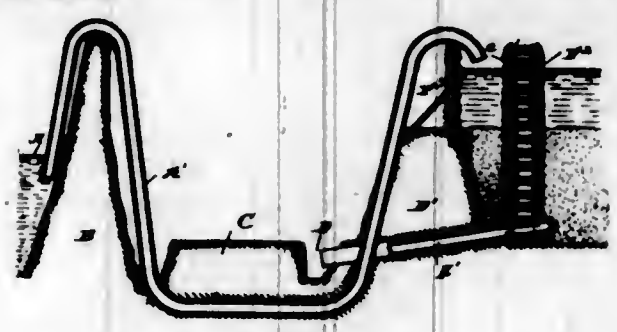
Claim.—1. In a car-truck having a short wheel-base, a center bearing-bolster, electric motors sleeved at one end on the axles, the bars 23 supported by brackets 21, bars 20 supporting said brackets and they in turn supported by inturned ends 18 of duplex end beams 7, other ends of the motors being supported by bars 23.

2. In a car-truck having a short wheel-base, a center bearing-bolster, electric motors sleeved at one end on the axles, the bars 23 supported by brackets 21, bars 20 supporting said brackets and they in turn supported by inturned ends 18 of duplex end beams 7, other ends of the motors being supported by bars 23, and cross-bars 19 secured to the outside of said inturned ends.

3. In a car-truck, the combination with the side frames, transverse beams riveted to the lower members of the side frames, and spiral springs seated in sockets on the upper members of the said side frames, said transverse beams and springs being located at the center of the wheel-base, of a pair of elliptic springs secured to said transverse beams, a car-body-supporting bolster resting on said spiral springs and suitable connections between the elliptic springs and bolster.

4. In a car-truck, the combination with the side frames and a pair of elliptic springs mounted on transverse beams connected to the lower members of said side frames, of a car-body-supporting bolster provided with cross-bars at its extremities, guide-bolts seated in brackets secured to the side frames and passing through the ends of the cross-bars at the ends of the bolster, spiral springs seated in pockets on the upper members of the side frames, and appliances connecting the elliptic springs with the bolster.

606,980. ART OF RAISING LEVELS OF LOW LANDS. PAUL POERCY, New Orleans, La. Filed Dec. 29, 1897. Serial No. 664,228. (No model.)

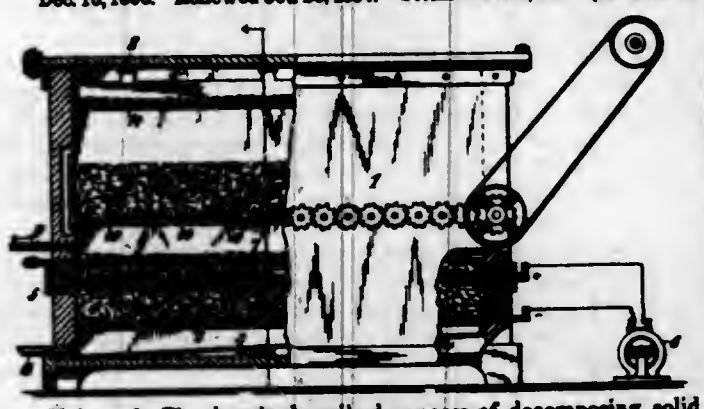


Claim.—1. A filter comprising an open framework of wood or other material, and a filling *b* of moss or other fibrous material woven on the framework and occupying and closely filling the interstices thereof, substantially as specified.

2. The means described for raising the level of low lands consisting of a combined filter and barrier surrounding the body of land, the level of which is to be raised, and extending above the land a sufficient distance to present a filtering-surface above the sediment deposited, a ditch surrounding the filter and barrier, pipes interposed between the base of the combined filter and barrier and the ditch at suitable intervals, and suitable means for conveying water from a source of supply into the inclosure formed by the filter and barrier, substantially as specified.

3. The means described for raising the level of low lands consisting of a combined filter and barrier surrounding the body of land, the level of which is to be raised, and extending above the same a sufficient distance to always present a filtering-surface above the sediment deposited, a ditch surrounding the combined filter and barrier, an auxiliary, hollow filter arranged within the inclosure formed by the combined filter and barrier, a trough or pipe interposed between the bottom of the auxiliary filter and said ditch, and suitable means for conveying water from a source of supply into the inclosure formed by the filter and barrier, substantially as specified.

606,981. PROCESS OF AND APPARATUS FOR DECOMPOSING SOLID SUBSTANCES. WILLIAM S. ROGERS, New Rochelle, N. Y. Filed Dec. 18, 1896. Renewed Oct. 26, 1897. Serial No. 656,479. (No model.)



Claim.—1. The herein-described process of decomposing solid substances electrically, which consists in placing the substance to be acted upon between electrodes, and causing a liquid solvent of the substance treated to percolate through the mass in such quantity as suffices merely to keep the mass moist, without submerging the mass in said fluid, and passing an electric current through the mass, substantially as described.

2. The herein-described process of decomposing soluble salts of sodium and like substances, which consists in placing the salt in a solid state between electrodes, and causing water to percolate through the mass in such quantity as suffices merely to keep the mass moist, without submerging the mass in the water, and passing an electric current through the mass, substantially as described.

3. The herein-described process of decomposing sodium chlorid and like chlorids electrically, which consists in placing the sodium or other chlorid in a solid state between electrodes, and causing water to percolate through the mass in such quantity as suffices merely to keep the mass moist, without submerging the mass in the water, and passing an electric current through the mass, substantially as described.

4. The method of electrolyzing a readily-soluble metallic salt, which consists in supplying to a granular body of such salt a liquid solvent in such quantity that the solvent will be retained between the particles of the salt by capillarity without submerging the body, in passing through such body and solvent a continuous current of electricity, and replacing as required such portions of the solvent as may have been removed by electrolysis and evaporation, substantially as described.

5. In an apparatus for electrically decomposing solid substances, the combination, with a tank adapted to contain the substance treated, of electrodes within said tank, placed one above the other and between which the substance treated may be placed, and adapted to be connected to an electric generator and to pass an electric current through the mass to be treated, the upper electrode having passages through which the substance to be treated may descend to the space between the electrodes, and the lower electrode being provided with openings through which fluids may pass, means for supplying a fluid to the mass within said tank, and means for collecting the soluble products of the decomposition which flow through the openings in said lower electrode, substantially as described.

6. In an apparatus for electrically decomposing solid substances, the combination, with a tank adapted to contain the substance treated, of electrodes within said tank, placed one above the other and between which the substance treated may be placed, and adapted to be connected to an electric generator and to pass an electric current through the mass to be treated, the upper electrode having passages through which the substance to be treated may descend between the electrodes, and the lower electrode being a perforated plate forming the bottom of the chamber in said tank in which the decomposition takes place, means for supplying a fluid to the mass within said tank, and a collecting-chamber below said lower electrode adapted to receive the soluble products of the decomposition which flow through said electrode, substantially as described.

606,982. HEAD-COVERING. JOSEPH SMYTH, Allentown, Pa. Filed July 12, 1897. Serial No. 644,207. (No model.)



Claim.—A head-covering comprising an outer waterproof fabric, a lining connected to the outer fabric by stitches, forming a chamber or chambers, a hollow ring at the center of the device communicating with said chamber or chambers, a tube connected to one side of the hollow ring and having a valve at its outer end, and a tab at the other side of the ring with which the end of said tube engages.

606,983. BRUSH SKIRT-BINDING. ALBERT S. WATTENFELDER, New York, N. Y., assignor to the Kursheedt Manufacturing Company, same place. Filed July 16, 1897. Serial No. 644,841. (Specimens.)



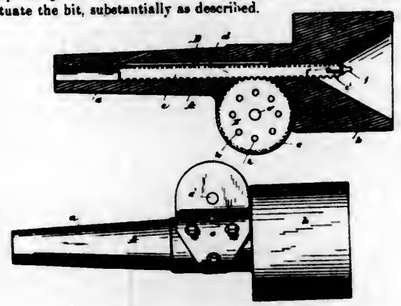
Claim.—In a skirt-binding, the combination of a heading *a*, a brush comprising a series of individual tufts *b* formed of doubled threads and laid in series side by side, a plurality of substantially parallel rows of stitching *c d*, the said stitching being of the character of a knitted stitch, individual stitches surrounding individual tufts and binding together the individual threads constituting the tufts and also binding the said individual tufts one to another in the series, whereby the individual threads forming the tufts are securely held from being pulled out of the said tufts and the tufts are firmly held in position *seriatim* in the brush, said brush being secured to the heading *a*, substantially as described and for the purposes set forth.

606,984. WITHDRAWN.

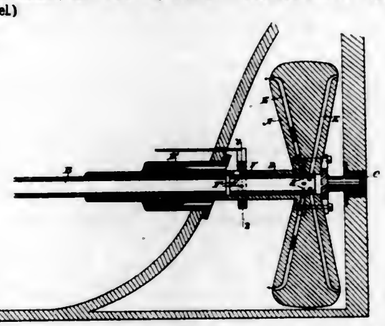
606,985. CENTERING-TOOL FOR LATHES. RICHARD C. WEBER, Detroit, Mich. Filed Dec. 8, 1896. Serial No. 614,987. (No model.)

Claim.—In a centering-tool the combination of a shank adapted to engage the tail-stock of a lathe, said shank being hollow and pro-

vided with a flaring opening adapted to engage the end of the work to be centered, a bit provided with a rack extending lengthwise of it and a pinion journaled in the shank engaging the rack and adapted to actuate the bit, substantially as described.



606,986. PROPELLER. SILAS W. CARTER and WILLIAM C. BUHLER, San Francisco, Cal. Filed July 22, 1897. Serial No. 645,566. (No model.)



Claim.—In a propeller for vessels, the combination of a hollow shaft, a propeller mounted thereon and having passages through its blades, a sleeve surrounding the shaft and an exterior ball-bearing for the inner end of the same, a ball-bearing to receive the end thrust of the propeller, a hollow sleeve interior to the outer sleeve and provided with openings to be alined with the passages in the blades, said interior sleeve having an inclined slot, a pin to engage said slot and means for moving the pin whereby the openings in the sleeve are brought into communication with the passages in the blades.

606,987. DITCHING-MACHINE. JOSEPH H. CLARK, Chicago, Ill., assignor to Frederick C. Austin, same place. Filed May 26, 1897. Serial No. 638,313. (No model.)

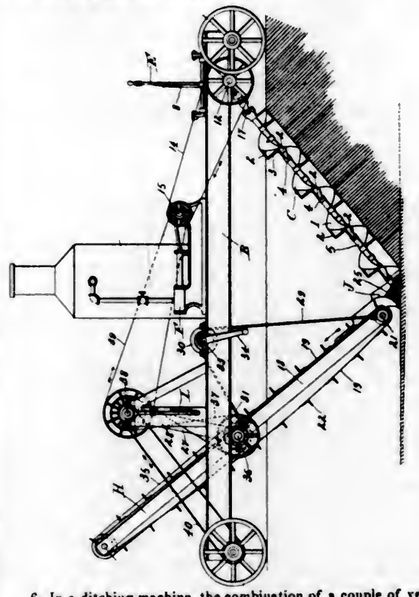
Claim.—1. In a ditching-machine, the combination of a couple of vertically-disposed cutting members mounted for laterally and upwardly divergent adjustment, and means for adjusting the same so as to vary the extent of such upward divergence; said cutting members being arranged to occupy and retain positions respectively at opposite sides of the ditch, substantially as described.

2. In a ditching-machine, the combination of a couple of vertically-disposed spiral screw-cutters provided with longitudinally-extending cutting-knives, and mounted for laterally and upwardly divergent adjustment; and means for adjusting the same so as to vary the extent of such upward divergence; said spiral screw-cutters having separate axes of rotation, substantially as described.

3. In a ditching-machine, the combination of a couple of cutting members connected with the body-frame so as to permit of their being lowered into a vertically-disposed position within the ditch, and mounted for laterally and upwardly divergent adjustment; means for lowering and raising the same into and out of the ditch; and means for adjusting the same so as to vary the extent of lateral divergence independently of the position thereof in vertical adjustment, as set forth.

4. In a ditching-machine, the combination of a couple of upwardly and laterally divergible rotary screw-cutters having separate axes of rotation and a rearwardly-extending traveling elevator arranged to receive the soil cut by the screw-cutters and to deposit the same in the ditch to the rear of the latter, as set forth.

5. In a ditching-machine, the combination of one or more cutting members connected with the body-frame so as to permit of their being lowered into a vertically-disposed position in the ditch; a traveling elevator adapted and positioned to receive the soil cut by said cutting member or members, and supported so as to permit of its being lowered into, and raised from the ditch; and means for simultaneously raising and lowering both the cutting member or members and the traveling elevator, as set forth.



6. In a ditching-machine, the combination of a couple of vertically-arranged cutting members having their lower ends connected with one another and adapted to retain positions respectively at opposite sides of the ditch; and a couple of laterally adjustable slides connected respectively with the upper ends of said cutting members, as set forth.

7. In a ditching-machine, the combination of a couple of rotary screw-cutters having their lower ends connected with one another; and a couple of laterally-adjustable slides having bearing portions adapted to receive the upper ends of said screw cutters, as set forth.

8. In a ditching-machine, the combination of a couple of rotary screw-cutters having their lower ends connected with one another and having their upper ends provided with gear-wheels; a couple of laterally-adjustable slides having bearing portions adapted to receive the upper ends of said screw-cutters; and a rotary shaft provided with longitudinally-adjustable gear-wheels adapted to engage the gear-wheels of the screw-cutters, and engaged in turn, by suitable engaging portions with which said slides are provided, substantially as described.

9. In a ditching-machine, the combination of a couple of cutting members arranged to retain positions respectively at opposite sides of the ditch, and having their lower ends connected with one another; a couple of laterally-adjustable holders for the upper ends of said cutting members; and means for adjusting said holders, as set forth.

10. In a ditching-machine, a rotary screw-cutter comprising a rotary spindle provided with a spiral cutting-blade; a series of longitudinally-extending cutting-knives having their rear ends attached at intervals to the outer edge of the spiral cutting-blade; and a series of radially-extending knife-holders having their inner ends attached to the rotary spindle and their outer ends attached to the forward ends of the cutting-knives, as set forth.

11. In a ditching-machine, the combination of a cutting member having its forward end jointedly connected with the machine, and having a vertically-adjustable rear end; an adjustable elevating-carrier having its forward end connected to the rear end of the cutting member, and having a swinging connection with the machine; a couple of flexible connectors attached respectively to the connected ends of the cutting and elevating members and to the swinging connection of the latter; and a couple of rotary winding-drums having sizes differing in proportion to the difference in the distance traveled by the points of attachment of said connectors during adjustment of the elevating member, and also, having said connectors wound upon them in opposite directions, substantially as described.

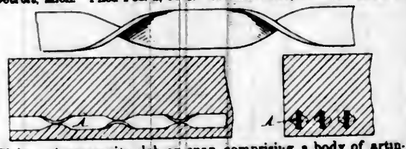
12. In a ditching-machine, the combination of a couple of rotary cutters having their upper end portions provided with universal joints; a couple of holders adapted to receive the upper ends of said rotary cutters, and arranged for lateral adjustment so as to permit of a laterally and upwardly divergent adjustment on the part of the cutters; means for thus laterally adjusting the cutter-holders; means for rotating the cutters independently of the position in adjustment of their upper ends; a shoe providing a hopper for the soil excavated by the cutters, and also providing bearings for the lower ends of said cutters; and means for elevating and lowering the lower ends of the cutters and the shoe attached thereto, as set forth.

13. In a ditching-machine, the combination of a cutting member having its forward end attached to the machine-frame, and its rear end arranged for depression into and elevation out of the ditch; a traveling elevator having its forward end attached to the rear end of the cutting member; means for simultaneously raising and lowering the rear end of the cutting member and the forward end of the traveling elevator; and means for supporting the traveling elevator so as to permit of its forward end being raised and lowered, and also so as to permit of its swinging bodily backward and forward as required by the elevation and depression of its forward end, as set forth.

14. In a ditching-machine, the combination of a cutting member having its forward end attached to the machine-frame, and its rear end arranged for depression into, and elevation out of, the ditch; a traveling elevator having its forward end attached to the rear end of the cutting member; a swinging frame having its upper end pivotally connected to the machine-frame, and its lower end pivotally connected to the traveling elevator at a point near the longitudinal middle thereof; and means for simultaneously raising and lowering the rear end of the cutting member, and the forward end of the traveling elevator, as set forth.

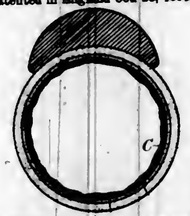
15. In a ditching-machine, the combination of a rotary cutter having a forward end portion connected to its rear end portion by a universal joint; means for laterally and bodily shifting the forward end portion; and means for swinging its rear end portion about such joint so as to raise and lower the said rear end portion, as set forth.

606,988. FIREPROOF CONSTRUCTION. ALPHONSE DE MAN, Detroit, Mich. Filed Feb. 2, 1898. Serial No. 668,795. (No model.)



Claim.—A composite slab or span comprising a body of artificial stone and a plurality of metallic tension members embedded therein each consisting of a flat thin bar having twists formed therein at intervals, said bars being arranged on edge side by side for the purpose described.

606,989. PNEUMATIC TIRE FOR WHEELS. WILLIAM GOLDING, Withington, England, assignor, by mesne assignments, to the Morgan & Wright, Chicago, Ill. Filed Apr. 1, 1896. Serial No. 585,801. (No model.) Patented in England Oct. 28, 1891, No. 18,541.



Claim.—1. An inflatable tube for a pneumatic tire constructed of larger size than normal of two concentric tubes (or of a tube and strip) of vulcanized rubber and of a tube or layer of a viscous or glutinous semiliquid substance placed between the two tubes or strips of vulcanized rubber so as to cement them together, substantially as and for the purpose hereinbefore described.

2. An inflatable tube for a pneumatic tire constructed of smaller size than normal of two or more concentric tubes, strips, or laminæ of vulcanized rubber containing a layer interposed between them of plastic and viscous material such as bird-lime, the whole being combined together throughout their contiguous surfaces into a single tube, substantially as and for the purpose hereinbefore described.

3. A pneumatic tire comprising a layer of viscous and sticky semiliquid matter confined between a couple of tubes or concentric layers.

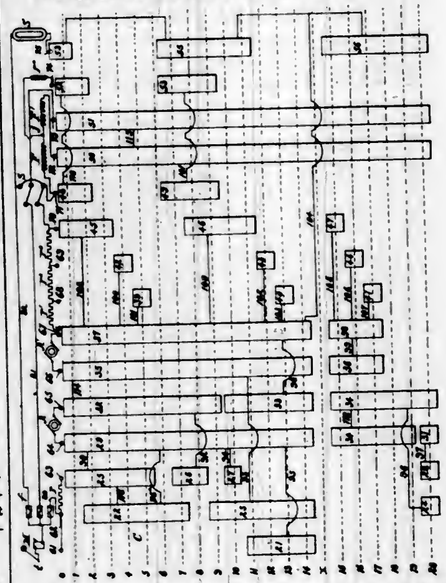
4. A pneumatic tire comprising an air-tube having an inner tube and an intervening layer of viscous semiliquid material such as bird-lime or the like.

5. A pneumatic tire comprising a casing, an inner air-tube, a rim-tube arranged within the air-tube, and a layer of viscous semiliquid material arranged between the two tubes and possessing certain properties of bird-lime.

6. An inflatable air-tube for a pneumatic tire in combination with an inner tube of greater dimensions than the outer tube whereby its walls are gathered or folded at one or more points within the outer tube, and an interposed layer of viscous material, substantially as and for the purposes hereinbefore set forth.

7. The combination with a pneumatic-tire tube of a layer of fabric capable of being adjusted independently of the tire-tube, and a layer of viscous material between the tire-tube and adjustable layer of fabric, substantially as described.

606,990. ELECTRIC RAILWAY. JOHN C. HENRY, Denver, Colo. Filed Apr. 18, 1896. Serial No. 677,857. (No model.)



Claim.—1. The method of changing the armatures of a two-motor car equipment from series to parallel connection which consists in closing a shunt around one of the armatures of such resistance as to substantially divert the line-current from the armature without the production of a short-circuiting current through the armature.

2. The method of changing the armatures of a two-motor car equipment from series to parallel connection which consists in closing a shunt around one of the armatures, of such resistance that the electromotive force from the line which is sufficient to overcome the counter electromotive force of such armature, will produce through such resistance the current required to operate the other armature, then breaking the circuit of the shunted armature and closing a connection thereto in parallel with the other armature.

3. The combination with the armatures and field-magnets of a two-motor car equipment, of controlling devices and a shunt-circuit closed around the armature of one of the motors by the operation of the controlling devices, said shunt-circuit including a resistance such as to permit the passage therethrough from the line, under an electromotive force substantially equal to the counter electromotive force of such armature, of the current required to operate the other motor, and the said controlling devices operating after the closure of such shunt, to break the series connection of the shunted armature, and then close a parallel connection to same.

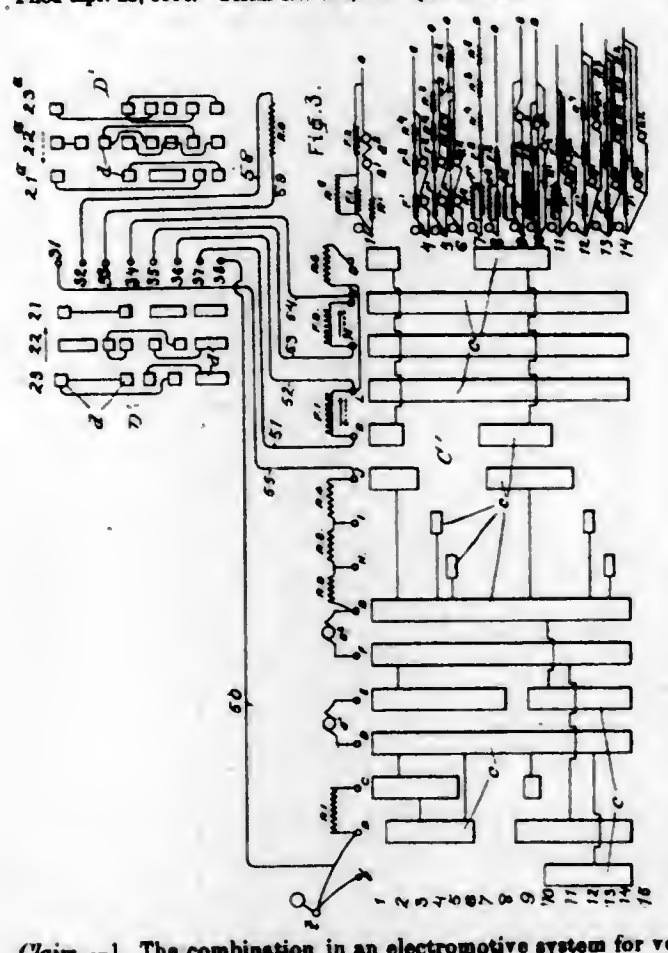
4. The method of changing the electromotive devices of a two-motor car equipment from series to parallel connection which consists in closing a shunt around one of the electromotive devices, of such resistan that the electromotive force from the line which is sufficient to overcome the counter electromotive force of such electromotive device, will produce through such resistance the current required to operate the other electromotive device, then breaking

the circuit of the shunted electromotive device and closing a connection thereto in parallel with the other electromotive device.

5. The combination with the electromotive devices of a two-motor car equipment, of controlling devices and a shunt-circuit closed thereby around one of the electromotive devices including a resistance such as to divert the line-current from the shunted electromotive device and to prevent the passage of a short-circuiting current through same from the shunted electromotive device, and the said controlling devices operating after the closure of such shunt-circuit, to break the series connection of the shunted electromotive device and close a parallel connection for same.

6. The combination with the electromotive devices of a two-motor car equipment, of controlling devices and a shunt-circuit closed thereby around one of the electromotive devices including a resistance such as to divert the line-current from the shunted electromotive device and to prevent the passage of a short-circuiting current through same from the shunted electromotive device, and the said controlling devices operating after the closure of such shunt-circuit, to break the series connection of the shunted electromotive device and close a parallel connection for same, including a resistance, and then to short-circuit such resistance.

606,991. ELECTRIC RAILWAY. JOHN C. HENRY, Denver, Colo. Filed Apr. 25, 1898. Serial No. 678,750. (No model.)



Claim.—1. The combination in an electromotive system for vehicle propulsion, of two motors having their armatures and field-magnets in separate circuits, a controller for controlling the operation of such motors, and a supplementary switch and connections arranged to connect said field-magnets in series or in parallel, substantially as and for the purpose set forth.

2. The combination in an electromotive system for vehicle propulsion, of two motors having their armatures and field-magnets in separate circuits, a controller for controlling the operation of such motors, and a supplementary switch and connections arranged to connect said field-magnets in series or in parallel, and to reverse the connections of said field-magnets.

3. The combination of an electromotive system for vehicle propulsion, of two motors having their armatures and field-magnets in separate circuits, a controller for controlling the operation of such motors, and a supplementary switch and connections arranged to connect said field-magnets in series or in parallel and to vary the resistance of the field magnet circuit, when said magnets are in parallel substantially as and for the purpose set forth.

4. The combination with two electric motors having their field-magnets and armatures in separate circuits and a controller for regulating the field-magnets and armatures thereof, of a supplemental switch arranged to independently vary the resistance of said field-magnet circuit.

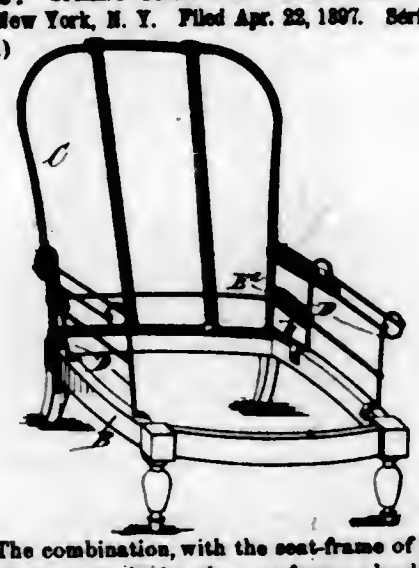
5. The combination with two electric motors having their armatures and field-magnets in separate circuits, of a controller for placing the armatures of such motors to the circuit in series or parallel relation, said controller comprising means for regulating the strength of said field-magnets and means for breaking the series armature connection and disconnecting the armatures from the circuit when the field-magnets are weak and connecting them in parallel when the field-magnets are strong.

6. The combination with two electric motors having their armatures and field-magnets in separate circuits, of a controller for connecting the armatures of such motors to the circuit in series or parallel relation, said controller comprising means for regulating the strength of said field-magnets and means for breaking the series armature connection when the field-magnets are weak and connecting them in parallel when the field-magnets are strong, such means being adapted to close the parallel connections of the two armatures successively.

7. The combination with two electric motors having their armatures and field-magnets in separate circuits, of a controller for placing the armatures of such motors in the circuit in series or parallel relation, said controller comprising means for regulating the strength of said field-magnets and means for breaking the series armature connection when the field-magnets are weak and connecting them in parallel when the field-magnets are strong, such means being adapted to close the parallel connections of the two armatures successively and to initially check the current in the armature inserted later, as by inserting resistance in its circuit.

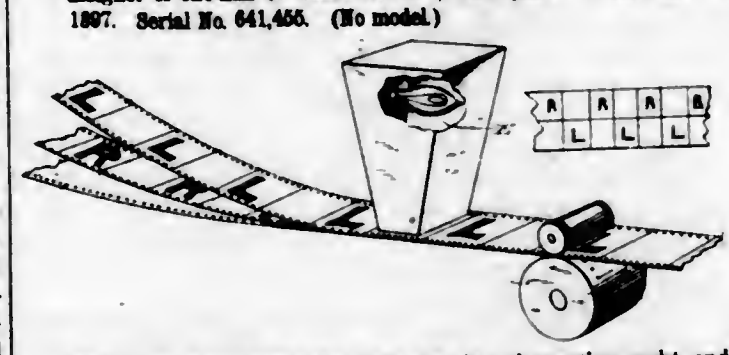
8. The combination with two electric motors having their armatures and field-magnets in separate circuits, of a controller adapted to place the armatures of such motors in connection with the circuit in series or parallel relation, and to break the connection of both armatures at a point between the series and parallel positions.

606,992. SPRING-BACK FOR FURNITURE. ADOLPH G. HOFSTATTER, New York, N. Y. Filed Apr. 22, 1897. Serial No. 633,310. (No model.)



Claim.—The combination, with the seat-frame of a piece of furniture, of side frames attached to the seat-frame, a back-frame hinged at its lower end to the seat-frame, cushioning-springs provided with stop devices connecting said back and side frames, whereby the throw of the back-frame is limited, and relief-springs located below the said cushioning-springs and connecting the back and side frames, substantially as set forth.

606,998. DEVICE FOR OBTAINING STEREOSCOPIC EFFECTS IN EXHIBITING PICTURES. CHARLES F. JENKINS, Washington, D. C., assignor of one-half to Emile Berliner, same place. Filed June 19, 1897. Serial No. 641,455. (No model.)



Claim.—1. A series-picture strip bearing alternating right and left pictures of the same object.

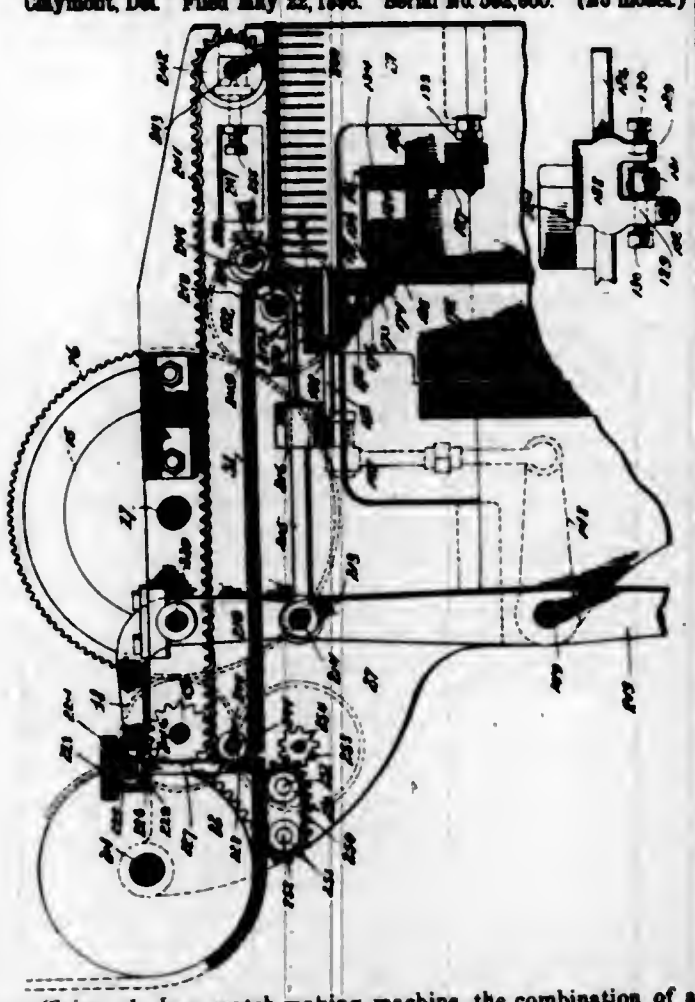
2. A series-picture strip bearing in alinement alternating right and left stereoscopic pictures.

3. The method of printing a series stereoscopic-picture strip by superposing right and left stereoscopic series negatives upon a sensitive blank strip in position to print both series in alternating succession upon said blank.

4. A series-stereoscopic-picture negative on which alined pictures all adapted to be viewed by the same eye alternate with blank spaces in width approximately equal to said pictures.

5. The combination with projecting devices, of means for advancing a series-picture strip therefor, a binocular eyepiece, a shutter adapted to alternately obstruct the lines of sight through said eyepiece, a solenoid arranged to actuate said shutter, conductors leading from said mechanism to said solenoid, and means whereby the movements of said mechanism control the current in said conductors.

606,994. MATCH-MAKING MACHINE. ALEXANDER KELLEY, Wilmington, Del., assignor, by direct and mesne assignments, of two-thirds to William R. Clerk, same place, and John Edward Addicks, Claymont, Del. Filed May 22, 1896. Serial No. 592,605. (No model.)



Claim.—1. In a match-making machine, the combination of a series of splint-engaging bars, carrier mechanisms adapted to successively engage said bars, and means independent of said mechanisms to transfer bars from one to another, and separate the bars; substantially as specified.

2. In a match-making machine, a series of disconnected bars, between adjacent ones of which splints are to be held, moving in a curved path in combination with means for controlling the rotation of said bars; substantially as specified.

3. In a match-making machine, a carrier embodying a plurality of disconnected parallel bars capable of independent rotary movement combined with means for giving the same a continuous movement while receiving, carrying and delivering matches, substantially as specified.

4. In a match-making machine, a carrier embodying a plurality of disconnected independently-rotatable bars, combined with means for giving the same a continuous movement, and devices for feeding splints to such carrier while in motion; substantially as described.

5. In a match-making machine, a carrier embodying a plurality of disconnected independently-rotatable bars, combined with means for giving the same a continuous movement, devices for feeding splints to said carrier while in motion, and means for separating the bars of the carrier during their movement; substantially as described.

6. In a match-making machine, a carrier embodying disconnected match-holding bars, means for carrying them in an endless circuit, and means for connecting them to travel during a portion of said circuit in a fixed parallel clamping relation; substantially as specified.

7. In a match-making machine, a carrier embodying bars disconnected from each other and capable of rotary movement, means for causing them to move in an endless circuit, and means for connecting them to travel during a portion of said circuit in a fixed parallel clamping relation; substantially as specified.

8. In a match-making machine, a carrier embodying independently-rotatable, disconnected bars mounted to travel in an endless circuit, having pintles, and splint-receiving grooves upon their faces, combined with means engaging said pintles to move the bars to cause their rotation; substantially as specified.

9. In a match-making machine, a carrier embodying disconnected, independently-rotatable bars having pintles, combined with means engaging said pintles to move the carrier; substantially as specified.

10. In a match-making machine, a carrier embodying disconnected, independently-rotatable bars having pintles, combined with means engaging said pintles to move the carrier, and means for transferring said pintles from one moving means to another; substantially as specified.

11. In a match-making machine, the combination with a carrier embodying disconnected independently-rotatable bars having pintles, of means for moving said carrier, having openings to receive said pintles; substantially as specified.

12. In a match-making machine, the combination with a carrier embodying disconnected independently-rotatable bars having pintles, of means for moving said carrier, having openings to receive said pintles, and means for moving the same away from the carrier to disengage the pintles from said openings; substantially as specified.

13. In a match-making machine, a carrier embodying disconnected independently-rotatable bars, combined with the main carrying-chains and an independent auxiliary chain for moving said carrier; substantially as specified.

14. In a match-making machine, a carrier embodying disconnected independently-rotatable bars, combined with the main carrying-chains and auxiliary chain, and independent subchains for moving said carrier; substantially as specified.

15. In a match-making machine, a carrier embodying disconnected independently-rotatable bars in a parallel clamping relation, combined with the main carrying-chains and auxiliary chain, and means for delivering the carrier from one to the other of such chains; substantially as specified.

16. In a match-making machine, a carrier embodying disconnected independently-rotatable bars, combined with the main carrying-chains and auxiliary chain, and a subchain, and means for delivering the carrier bars from one to the other; substantially as specified.

17. In a match-making machine, a carrier embodying disconnected independently-rotatable bars combined with the main carrying-chains and auxiliary chain, and a subchain, means for delivering the carrier-bars from one to the other, and means for throwing the main chains out of the path of the pintles of the bars of the carrier; substantially as specified.

18. In a match-making machine, the combination with the carrier embodying disconnected independently-rotatable bars, of auxiliary chains and main chains, and means for horizontally deflecting the latter away from the path traversed by the pintles of the carrier-bars; substantially as specified.

19. In a match-making machine, the combination with the carrier embodying disconnected independently-rotatable bars, of auxiliary chains, main chains, and means for horizontally deflecting the latter away from the path traversed by the pintles of the carrier-bars, and means for horizontally deflecting the said main chains into operative relation with said pintles; substantially as specified.

20. In a match-making machine, the combination with a carrier embodying disconnected bars mounted to travel in endless circuit and having pintles, of a chain having hollow rivets forming the pivots of the chain and adapted to receive said pintles of the carrier; substantially as specified.

21. In a match-making machine, the combination with a carrier embodying disconnected bars mounted to travel in endless circuit and having pintles, of a chain having hollow rivets forming the pivots of the chain and adapted to receive said pintles of the carrier, and a guide for deflecting the said chain from its straight path; substantially as specified.

22. In a match-making machine, the combination with a carrier embodying disconnected bars mounted to travel in endless circuit, of a main chain having hollow rivets forming the pivots of the chain, and an auxiliary chain having curved links; substantially as specified.

23. In a match-making machine, the combination with a carrier embodying disconnected bars mounted to travel in endless circuit, of a main chain having hollow rivets forming the pivots of the chain, and an auxiliary chain having curved links, and means for delivering the carrier-bars from one chain to the other; substantially as specified.

24. In a match-making machine, the combination with a carrier embodying disconnected bars mounted to travel in endless circuit, of a main chain having hollow rivets forming the pivots of the chain, an auxiliary chain having curved links, means for delivering the carrier-bars from one chain to the other, and a subchain having curved links; substantially as specified.

25. In a match-making machine, the combination with a carrier embodying disconnected bars, of a main chain having hollow rivets,

an auxiliary chain having curved links, means for delivering the carrier-bars from one chain to the other, a subchain having curved links, and a reciprocatory separator arranged at a point where the carrier-bars leave the said chain; substantially as specified.

26. In a match-making machine, the combination of a carrier embodying disconnected bars having pintles, a main chain having hollow rivets to receive said pintles, an auxiliary chain having curved links to engage said pintles, means for throwing the main chain off from engagement with said pintles, and a subchain mounted to act upon said pintles as they are thrown off by the main chain; substantially as specified.

27. In a match-making machine, the combination of a carrier embodying disconnected bars having pintles, a main chain having hollow rivets to receive said pintles, an auxiliary chain having curved links to engage said pintles, means for throwing the main chain off from engagement with said pintles, a subchain mounted to act upon said pintles as they are thrown off by the main chain, and a reciprocatory device mounted to act upon the bars at the time they are thrown off by the subchain, substantially as specified.

28. In a match-making machine, the combination of a carrier embodying disconnected bars having pintles, a main chain having hollow rivets to receive said pintles, means for throwing the main chain off from engagement with the pintles, a subchain mounted to act upon said pintles as they are thrown off by the main chain, a reciprocatory device mounted to act upon the bars at the time they are thrown off by the subchain, and means for throwing the main chain into operative contact with said pintles; substantially as specified.

29. In a match-making machine, the combination of a carrier embodying disconnected bars having pintles, combined with a chain for engaging the pintles, and means for causing a drop of said bars in a vertical plane each independent of the other during their passage through the machine; substantially as specified.

30. In a match-making machine, the combination of a carrier embodying disconnected bars having pintles, combined with a chain for engaging the pintles, means for causing a vertical drop of said bars in succession each independent of the other during their passage through the machine, and a positively-operated device for engaging the bars after they drop to force them forward; substantially as specified.

31. In a match-making machine, the combination of a carrier comprising a series of disconnected, match-receiving bars having pintles and traveling in an endless circuit, a main chain and auxiliary chain, and a subchain, each independent of the other and arranged to act upon the pintles of the carrier bars; substantially as specified.

32. In a match-making machine, the combination of a carrier comprising a series of disconnected, match-receiving bars having pintles and traveling in an endless circuit, main chains, auxiliary chains, and subchains, each independent of the other and arranged to act upon the pintles of the carrier-bars, and a sprocket-wheel for engaging and moving the subchains; substantially as specified.

33. In a match-making machine, the combination of a carrier comprising a series of disconnected, match-receiving bars having pintles and traveling in an endless circuit, main chains, auxiliary chains, and subchains, each independent of the other and arranged to act upon the pintles of the carrier-bars, a sprocket-wheel for engaging and moving the subchains, and a movable device for transferring the bars from the subchains to the auxiliary chains; substantially as specified.

34. In a match-making machine, the combination of a series of disconnected, match-receiving bars having pintles and traveling in an endless circuit, main chains, auxiliary chains, and subchains, each independent of the other and arranged to act upon the pintles of the carrier-bars, a sprocket-wheel for engaging and moving the subchains, a movable device for transferring the bars from the subchains to the auxiliary chains, and means for moving the main chains out of and into the path of the pintles of the carrier-bars; substantially as specified.

35. In a match-making machine, a chain composed of links provided with hollow rivets forming the pintles of said chain, combined with a series of disconnected match-receiving bars arranged to travel in an endless circuit; substantially as specified.

36. In a match-making machine, a chain composed of links connected by hollow rivets, combined with a series of disconnected match-receiving bars traveling in an endless circuit and having pintles at their ends to engage in said hollow rivets; substantially as specified.

37. In a match-making machine, the combination with a carrier moving in a curved path, comprising carrier-bars rectangular in form and having transverse grooves upon their various sides, and means for imparting a partial rotation thereto in the curved path of the carrier, substantially as specified.

38. In a match-making machine, a carrier-bar rectangular in form and having transverse grooves upon its various sides, and pintles at its ends; substantially as specified.

39. In a match-making machine and as elements of an endless carrier, rectangular bars having transverse grooves upon their various faces, and pintles at their ends, each bar being disconnected from the others and mounted for rotary movement upon its pintles; substantially as specified.

40. In a match-making machine, the combination with a reciprocatory cutter, an endless carrier movable at right angles thereto and embodying a series of disconnected, match-receiving bars, means for causing them to drop vertically each independently of the other, and a knocker mounted for reciprocation for engaging the rear of said bars and to advance them to grasp a splint between the same and the next forward bar; substantially as specified.

41. In a match-making machine, the combination of a reciprocatory cutter for severing and delivering the splints with a carrier composed of independent bars, and with means for moving the same, and devices for causing a drop of the bars, and a knocker for moving the same forward at a point where the splints are delivered thereto; substantially as specified.

42. In a match-making machine, the combination of a continuously-moving carrier embodying a series of disconnected, match-receiving bars mounted to travel in an endless circuit, auxiliary chains and main chains mounted for movement with the bars of the carrier during a portion only of its travel, and means for throwing the main chains out of operative relation with the carrier; substantially as specified.

43. In a match-making machine, the combination of a continuously-moving carrier embodying a series of disconnected, match-receiving bars mounted to travel in an endless circuit, auxiliary chains and main chains mounted for movement with the bars of the carrier during a portion only of its travel, means for throwing the main chains out of operative relation with the carrier, and subchains constructed and arranged to actuate the carrier while it is free from the influence of the main and auxiliary chains; substantially as specified.

44. In a match-making machine, the combination of a continuously-moving carrier embodying a series of disconnected, match-receiving bars mounted to travel in an endless circuit, auxiliary chains and main chains mounted for movement with the bars of the carrier during a portion only of its travel, means for throwing the main chains out of operative relation with the carrier, subchains constructed and arranged to actuate the carrier while it is free from the influence of the main and auxiliary chains, and means for transferring the carrier-bars from the subchains to the auxiliary chains; substantially as specified.

45. In a match-making machine, the combination of a carrier embodying disconnected bars arranged to travel in an endless circuit, a main chain, an independent auxiliary chain, a subchain constructed and arranged to move the carrier when the latter is not under the influence of the main or auxiliary chains, and an oscillatorily-mounted, reciprocatory device for transferring the bars of the carrier from the subchain to the auxiliary chain; substantially as specified.

46. In a match-making machine, the combination of a carrier embodying disconnected bars, a main chain, an independent auxiliary chain, a subchain constructed and arranged to move the carrier when the latter is not under the influence of the main or auxiliary chains, an oscillatorily-mounted, reciprocatory device for transferring the bars of the carrier from the subchain to the auxiliary chain, and means for causing a drop in the bars of the carrier at a point where the splints are supplied thereto; substantially as specified.

47. In a match-making machine, the combination of a carrier embodying disconnected bars, a main chain, an independent auxiliary chain, a subchain constructed and arranged to move the carrier when the latter is not under the influence of the main or auxiliary chains, an oscillatorily-mounted, reciprocatory device for transferring the bars of the carrier from the subchain to the auxiliary chain, means for causing a drop in the bars of the carrier at a point where the splints are supplied thereto, and a reciprocatory device for engaging the bars as they are dropped; substantially as specified.

48. In a match-making machine, the combination of a carrier mounted to travel in an endless circuit, main chains, independent auxiliary chains, subchains constructed and arranged to move the carrier when the latter is not under the influence of the main or auxiliary chains, an oscillatorily-mounted, reciprocatory device for transferring the bars of the carrier from the subchains to the auxiliary chains, means for causing a drop in the bars of the carrier at a point where the splints are supplied thereto, a reciprocatory device for engaging the bars as they are dropped, and means for moving the main chains onto and off the pintles of the bars of the carrier; substantially as specified.

49. In a match-making machine, the combination with a carrier embodying a series of disconnected, match-receiving bars having pintles and mounted for movement in an endless circuit, of main chains and auxiliary chains, and means for timing said chains with relation to each other; substantially as specified.

50. In a match-making machine, the combination with a carrier

embodying disconnected bars, having pintles, of auxiliary chains having curved links to engage said pintles, with means for deflecting said chains in their course, and a sprocket-wheel mounted to engage the pintles of the carrier at a point where said chains are deflected; substantially as specified.

51. In a match-making machine, the combination with a carrier embodying disconnected bars having pintles, of auxiliary chains having curved links to engage said pintles, with means for deflecting said chains in their course, a sprocket-wheel mounted to engage the pintles of the carrier at a point where said chains are deflected, and a knocker mounted to engage said bars as their pintles leave said sprocket-wheel; substantially as specified.

52. In a match-making machine, the combination with the carrier composed of disconnected bars having pintles and mounted to move in an endless circuit, of chains for engaging said pintles, means for deflecting said chains in their path during their travel, a sprocket-wheel for engaging the pintles at a point where the chains are deflected, means for delivering the splints between two of the bars where the chains are deflected, and means for engaging the rearmost of the bars between which the splints are grasped to move the same forward; substantially as specified.

53. In a match-making machine, the combination of a plurality of cutters having transverse notches, a bar arranged transversely of the cutters and engaging said notches, and means for removably holding one end of the bar in position; substantially as specified.

54. In a match-making machine, the combination of a plurality of cutters having transverse notches, a removably-mounted bar slidingly engaged in said notches, having its main portion vertically disposed and its outer end horizontally disposed and provided with an opening for the reception of means to facilitate its removal; substantially as specified.

55. In a match-making machine, the combination with a carrier embodying a series of disconnected bars mounted to travel in an endless circuit, of a separator mounted at one end for oscillatory movement, and means for reciprocating said separator vertically; substantially as specified.

56. In a match-making machine, the combination with a carrier embodying disconnected bars mounted to travel in an endless circuit, of a separator mounted at one end for oscillatory movement, means for reciprocating said separator vertically, and a spring bearing upon the head of said separator; substantially as specified.

57. In a match-making machine, the combination with a continuously-moving carrier composed of disconnected bars, of a pivoted arm having a socket at one end, a spring arranged within said socket, a separator having a head arranged within the socket and beneath the spring, said head being beveled; substantially as specified.

58. In a match-making machine, the combination with the carrier embodying a series of disconnected bars mounted to travel in an endless circuit, and the main chain, of a guide for said chain, having a channel with inclined walls for deflecting said chain laterally from a straight path; substantially as specified.

59. In a match-making machine, the combination with a carrier embodying a series of disconnected match-receiving bars mounted to travel in an endless circuit, of auxiliary chains, main chains and guides having a channel for the auxiliary chains, and a channel with inclined walls for deflecting the movement of the main chains from a straight path; substantially as specified.

60. In a match-making machine, the combination with a carrier embodying a series of disconnected match-receiving bars mounted to travel in an endless circuit, of auxiliary chains, main chains and guides having channels for the auxiliary chains, and channels with inclined walls for deflecting the movement of the main chains from their straight path, and guide-bars for the carrier to maintain the parallel relation thereof; substantially as specified.

61. In a match-making machine, a series of disconnected match-receiving bars mounted to travel in an endless circuit, a chain for moving said bars, and means for disengaging said chain from said bars, substantially as specified.

62. In a match-making machine, the combination of a series of disconnected match-receiving bars mounted to travel in an endless circuit, and a series of independent chains for moving said bars, and means for disconnecting said chains from said bars; substantially as specified.

63. The combination of a series of disconnected match-receiving bars mounted to travel in an endless circuit, a series of independent chains for engaging said bars and moving them continuously while receiving, carrying and delivering matches, and means for engaging and disengaging said chains and bars; substantially as specified.

64. The combination of a series of disconnected match-receiving bars having pintles and mounted to travel in an endless circuit, a series of independent chains for engaging and moving said bars, and means for deflecting one of said chains to cause it to move out of and afterward into the path of the pintles of said bars; substantially as specified.

65. The combination of a series of disconnected match-receiving bars, and means for causing them to move in an endless circuit in a parallel clamping relation, embodying a plurality of bar-carrying devices, and means for substituting one of said devices for the other; substantially as specified.

66. In a match-making machine, the combination with the endless carrier and the composition-applying devices, of means located at the front of the machine for moving the lower supporting-roll of the carrier in a longitudinal plane away from the composition-applying devices; substantially as specified.

67. In a match-making machine, the combination with the carrier and its moving mechanism comprising a lower end roll at the extreme rear end of the machine, a slidingly-mounted support therefor, and means located at the front of the machine for sliding said support, of a composition applying apparatus arranged beneath said end roll; substantially as specified.

68. In a match-making machine, the combination with the carrier and its moving mechanism comprising a lower end roll at the rear end of the machine, and a slidingly-mounted support therefor, of a composition-applying apparatus beneath said end roll, a paraffin-bath at a distance from said composition-applying apparatus, and means operated from the front of the machine for deflecting the carrier in said paraffin-bath; substantially as specified.

69. The combination with the endless carrier and the paraffin-bath, and means for deflecting the carrier into the same, of the composition-applying apparatus, and means located at the front of the machine for simultaneously moving the lower end roll which supports the carrier away from the composition-applying apparatus, and for actuating the devices which deflect said carrier at the paraffin-bath; substantially as specified.

70. In a match-making machine, the combination with a carrier embodying disconnected bars mounted to travel in an endless circuit, the paraffin-bath and the pivoted support with its rollers for deflecting the carrier into said bath, of means located at the front of the machine for moving said support upon its pivot and the lower supporting-roller for the endless match-carrying devices mounted for movement lengthwise of the machine and connected with said means; substantially as specified.

71. In a match-making machine, the combination with the carrier and the splint-supplying devices, of an exhaust-pipe, and rotary brushes therein to act upon said splints after they have been delivered to the carrier; substantially as specified.

72. In a match-making machine, the combination of a chain and a plurality of bars having pintles and mounted for movement with said chain, and a sprocket-wheel having long and short teeth arranged in different lateral planes; substantially as specified.

73. In a match-making machine, the combination with a chain and a carrier comprising a plurality of disconnected match-receiving bars having pintles and mounted to move in an endless circuit, of a sprocket-wheel having long and short teeth arranged in different lateral planes; substantially as specified.

74. In a match-making machine, the combination with a chain and a carrier comprising bars having pintles, of shafts parallel with said bars, and sprocket-wheels on said shafts having long and short teeth, with the long teeth of the wheels on one shaft arranged alternately with those of the wheels on the other shaft; substantially as specified.

75. In a match-making machine, the combination with a carrier embodying a series of disconnected bars having pintles and mounted to travel in an endless circuit, and chains having links with hollow rivets, of sprocket-wheels having long teeth to engage said pintles, and short teeth to engage between the links of the chains; substantially as specified.

76. In a match-making machine, the combination with the carrier embodying a plurality of disconnected match-receiving bars mounted to move in an endless circuit, and the composition-applying devices, of a sliding frame carrying a supporting-roll for said carrier in line with the dipping-roll of the composition-applying devices and another supporting-roll mounted on the other end of said frame, and over which the carrier passes, and means for moving said frame and the said rollers, whereby the end roll is moved away from the dipping-roll without interfering with the operation of the machine, substantially as specified.

77. In a match-making machine, the combination with a continuously-moving carrier comprising a plurality of disconnected match-receiving bars mounted to move in an endless circuit, of means for supplying splints thereto, means for applying paraffin to the splints, means for applying the composition to the ends of the splints, and means for delivering the splints from the carrier during the movement of the same; substantially as specified.

78. In a match-making machine, the combination with the endless carrier, of a composition-applying apparatus disposed at the end of the machine beyond the lowermost end roll of the carrier-moving mechanism, and a supply-chute at the rear side thereof whereby the

composition may be delivered to such apparatus parallel with the shaft of the dipping-roll thereof; substantially as specified.

79. In a match-making machine, the combination with the continuously-moving carrier comprising disconnected bars, of an oscillatory arm and connections with said arm for giving an intermittent movement to the vertically-reciprocating separator, and an oscillatory mounting for said separator; substantially as specified.

80. In a match-making machine, the combination with an endless carrier comprising disconnected bars, of an oscillatory arm, an oscillatorily-mounted vertically-reciprocatory separator, and a horizontally-reciprocatory knocker mounted for actuation by said arm; substantially as specified.

81. In a match-making machine, a carrier comprising disconnected bars, a vertically-disposed oscillatory arm, and means connected therewith for giving an intermittent movement to the feed-rolls for moving the block, and an oscillatorily-mounted vertically-reciprocatory separator operatively connected with said arm; substantially as specified.

82. In a match-making machine, the combination with a carrier comprising disconnected bars, of a vertically-disposed oscillatory arm, a vertically-reciprocatory separator mounted at its upper end for oscillation, a horizontally-disposed knocker, connections with said arm for actuating the vertically-reciprocatory separator and the horizontally-disposed knocker; substantially as specified.

83. In a match-making machine, the combination with a carrier comprising disconnected bars, of a vertically-reciprocatory separator mounted at its upper end for oscillatory movement, a vertically-disposed, oscillatory arm, connections therewith for actuating the vertically-reciprocatory separator, a horizontally-disposed knocker, and feed-roll-actuating devices; substantially as specified.

84. In a match-making machine, the combination with a feed-roll and its shaft, of a ratchet on said shaft, a pivotally-mounted pawl engaging the ratchet, and a plate loosely mounted on the shaft of the roll for engaging said pawl to hold it out of contact with the ratchet, and a removable pin adapted to be passed through an opening in said plate into some fixed part of the frame for holding the plate in its adjusted position; substantially as specified.

85. In a match-making machine, the combination with a feed-roll and its shaft, of a ratchet on said shaft, a pivotally-mounted pawl engaging the ratchet, and a plate loosely mounted on the shaft of the roll for engaging said pawl to hold it out of contact with the ratchet, a removable pin adapted to be passed through an opening in said plate into some fixed part of the frame for holding the plate in its adjusted position, and an oscillatory arm loose on the shaft of the feed-roll and carrying said pawl; substantially as specified.

86. In a match-making machine, the combination with a feed-roll and its shaft, of a ratchet on said shaft, a pivotally-mounted pawl engaging the ratchet, a plate loosely mounted on the shaft of the roll for engaging said pawl to hold it out of contact with the ratchet, a removable pin adapted to be passed through an opening in said plate into some fixed part of the frame for holding the plate in its adjusted position, an oscillatory arm loose on the shaft of the feed-roll and carrying said pawl, and a vertically-disposed oscillatory arm connected with and adapted to actuate the arm carrying the pawl; substantially as specified.

87. In an organized machine for the purpose described, the combination of the devices for severing the match-splints and delivering them to a carrier, means for applying composition to said splints, a carrier embodying a plurality of disconnected match-receiving bars mounted to travel in an endless circuit, means for moving the carrier, devices for actuating the carrier-moving means, and mechanism for feeding the material to the cutters, substantially as specified.

88. In an organized machine for the purpose described, the combination of devices for severing the match-splints and delivering them to a carrier, means for applying composition to said splints, a carrier embodying a plurality of disconnected match-receiving bars mounted to travel in an endless circuit, means for moving the carrier, devices for actuating the carrier-moving means, mechanism for feeding the material to the cutters, and means for separating the bars of the carrier at predetermined points; substantially as specified.

89. In an organized machine of the character described, the combination of a carrier embodying a plurality of disconnected match-receiving bars mounted to travel in an endless circuit, main chains, auxiliary chains and subchains for giving the necessary movements thereto, means for forming and feeding the match-splints to the carrier, means for separating the bars of the carrier at predetermined points, and mechanism for applying composition to the ends of the said splints; substantially as specified.

90. In an organized machine of the character described, the combination of a continuously-moving carrier embodying a plurality of disconnected match-receiving bars mounted to travel in an endless circuit, main chains, auxiliary chains and a subchain for giving the movements to such bars, means for transferring the bars from one chain to the other, means for applying the composition to the splints, and means for separating the bars of the carrier at predetermined periods; substantially as specified.

91. In an organized machine of the character described, the combination of a continuously-moving carrier embodying disconnected bars mounted to travel in an endless circuit, main chains, auxiliary chains and subchains for giving the movements to such bars, means for transferring the bars from one set of chains to the other, means for applying the composition to the splints, means for separating the bars of the carrier at predetermined periods, and means for throwing the main chains laterally into and out of operative relation with the bars of the carrier; substantially as specified.

92. In an organized machine of the character described, the combination of a continuously-moving carrier embodying disconnected bars, a main chain, an auxiliary chain and a subchain for giving the movements to such bars, means for transferring the bars from one chain to the other, means for applying the composition to the splints, means for separating the bars of the carrier at predetermined periods, means for throwing the main chain into and out of operative relation with the bars of the carrier, and means for deflecting the carrier in its path at a predetermined point; substantially as specified.

93. In an organized machine of the character described, the combination of a continuously-moving carrier embodying disconnected bars, a main chain, an auxiliary chain and a subchain for giving the movements to such bars, means for transferring the bars from one chain to the other, means for applying the composition to the splints, means for separating the bars of the carrier at predetermined periods, means for throwing the main chain into and out of operative relation with the bars of the carrier, means for deflecting the carrier in its path at a predetermined point, and means for bodily moving a bar independent of the others at a point where the carrier is deflected, substantially as specified.

94. In an organized machine of the character described, the combination of a carrier embodying disconnected bars mounted for rotary movement and for successive movement in an endless circuit, main, auxiliary and sub chains each independent of the other for actuating said carrier-bars, means for imparting motion to said chains, and means for throwing the main chains into and out of operative relation with the bars; substantially as specified.

95. In an organized machine of the character described, the combination of a carrier embodying disconnected bars mounted for rotary movement and for successive movement in an endless circuit, main, auxiliary and sub chains each independent of the other for actuating said carrier-bars, means for imparting motion to said chains, means for throwing the main chains into and out of operative relation with the bars, and means for causing a deflection of the carrier in its travel; substantially as specified.

96. In an organized machine of the character described, the combination of a carrier embodying disconnected bars mounted for rotary movement, main, auxiliary and sub chains each independent of the other for actuating said carrier-bars, means for imparting motion to said chains, means for throwing the main chains into and out of operative relation with the carrier-bars, means for causing a deflection of the carrier in its travel, and means for separating said bars at predetermined periods; substantially as specified.

97. In an organized machine of the character described, the combination of a carrier embodying disconnected bars mounted for rotary movement, main chains, auxiliary and sub chains each independent of the other for actuating said carrier-bars, means for imparting motion to said chains, means for throwing the main chains into and out of operative relation with the bars, means for causing a deflection of the carrier in its travel, means for separating said bars at predetermined periods, and a reciprocatory knocker for positive engagement with the bars at a point where they are deflected, substantially as specified.

98. In an organized machine of the character described, the combination of a carrier embodying disconnected bars mounted for rotary movement, main chains, auxiliary chains and sub chains each independent of the other for actuating said carrier-bars, means for imparting motion to said chains, means for throwing the main chains into and out of operative relation with the bars of the carrier, means for causing a deflection of the carrier in its travel, means for separating said bars at predetermined periods, a reciprocatory knocker for positive engagement with the bars at the point where they are deflected, and means for transferring the bars from the subchains to the auxiliary chains; substantially as specified.

99. In a match-making machine, a series of disconnected bars, between adjacent ones of which splints are to be held, endless chains for moving the bars in a curved path, sprockets cooperating with said chains, and a guide for controlling the rotation of the bars in said path; substantially as specified.

100. In a match-making machine, a series of disconnected bars, between adjacent ones of which splints are to be held, endless chains for moving the bars in a curved path, and sprockets cooperating with said chains; substantially as specified.

101. In a match-making machine, a series of disconnected bars, between adjacent ones of which splints are to be held, and endless chains for moving the bars in a curved path; substantially as specified.

102. In a match-making machine, a series of disconnected bars, between adjacent ones of which splints are to be held, and sprockets adapted to receive and carry said bars in a curved path; substantially as specified.

103. In a match-making machine, the combination with sprockets, of a series of disconnected bars between adjacent ones of which splints are to be held, the latter having pintles adapted to ride in the teeth of said sprockets and to be moved thereby in a carved path; substantially as specified.

104. In a match-making machine, a series of disconnected bars, between adjacent ones of which splints are to be held, means for moving said bars, means for causing said bars to travel in a curved path, and means for securing the presentation of the clamping-faces of said bars toward each other; substantially as specified

105. In a match-making machine, the combination of a series of bars, between adjacent ones of which splints are to be held, a chain or carrier therefor, means for disengaging said bars from the latter, and means for controlling the rotation of said bars while being disengaged; substantially as specified.

106. In a match-making machine, the combination of a series of splints engaging bars, between adjacent ones of which splints are held, a chain or carrier therefor, a rotary carrier device for disengaging said bars from the latter, and means for controlling the rotation of the bars when carried by said rotary device; substantially as specified.

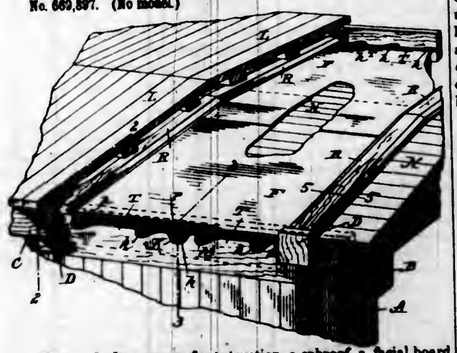
107. In a match-making machine, the combination of a series of splint-engaging bars, between adjacent ones of which splints are held, a chain or carrier therefor, means for disengaging said bars from the carrier, means to control the rotation of the bars when being so disengaged, and means for reengaging said bars with the carrier; substantially as specified.

606,995. WINDOW-CLEANER. JACOB KIRCHNER, JR., Cincinnati, Ohio, assignor of one-third to Herman C. Stags, Elmwood Place, Ohio. Filed Oct. 15, 1897. Serial No. 655,208. (No model.)



Claim.—The combination of the thimble I secured in the window-frame by screws J, the pivotal bar H, the handle L on the inner end of the pivotal bar within the vestibule, the spring M for normally holding the bar H in its normal position, the arm G extending at right angles to the outer end of the bar H, and the cleaner D mounted upon the outer end of said arm, substantially as described.

606,996. CAR-ROOF. LEWIS C. MARSHALL, Walpole, Mass., assignor to F. W. Bird & Son, same place. Filed Feb. 11, 1898. Serial No. 669,897. (No model.)



Claim.—1. In a car-roof construction, a subroof, a facial board secured on the side of the car opposite the edge of said roof, but out of contact therewith, thereby forming one or more chambers or open spaces between said roof edge and said board, a roofing-strip of flexible material applied to said subroof having several projections thereon entering said chamber, and means for attaching one of the said projections on said lower end in a bent-down position against the side of the car, whereby the lower end of said strip is secured to said car side, substantially as described.

2. In a car-roof construction, a subroof, a facial board secured on the side of the car opposite the edge of said roof, but out of contact therewith, thereby forming one or more chambers or open spaces between said roof edge and said board, a roofing-strip of flexible material applied to said subroof having several projections thereon entering said chamber and having the extremities of certain of the said projections of said strip extending across said chamber and held in a downbent position by engagement with the inner side of said facial board, and means for attaching one of the said projections in a bent-down position against the side of the car whereby the lower end of said strip is secured to said car, substantially as described.

3. In a car-roof construction, a subroof, a facial board secured on the side of the car opposite the edge of said roof, but out of contact therewith, thereby forming one or more chambers or open spaces between said roof edge and said board, a roofing-strip of flexible material applied to said subroof having several projections thereon entering said chamber and recessed spaces extending therebetween of a length exceeding the base of said projections, and means for attaching one of the said projections on said strip in a bent-down position against the side of the car, whereby the lower end of said strip is secured to said car side, substantially as described.

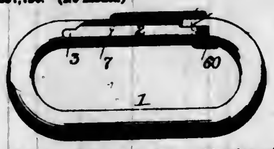
4. A roof-covering for cars consisting of a strip of prepared roofing-paper having several projections on its lower border, and having a metal gromet fixed in one or more of said projections for engagement with a strip-fastening object passing through said gromet into the side of the car, substantially as described.

5. In a car-roof construction, a subroof, a facial board secured on the side of the car opposite the edge of said roof, but out of contact therewith thereby forming one or more chambers or open spaces between said roof edge and said board, a roofing-strip of flexible material applied to said roof having several projections thereon entering said chamber, a gromet fixed in one of said projections, and a fastening object forced through said gromet into the side of the car thereby securing said last-named projection against said car side and the lower end of said strip to the car, substantially as described.

6. In a car-roof construction, a subroof whose lower edge terminates at the outer face of the side of the car, an inner facial board secured against the side of the car adjoining said lower edge of the roof and covering said edge, subrafters applied to said subroof having in their borders longitudinal grooves whose lower ends extend over and terminate at the outer face of said board, an outer facial board secured to the side of the car outwardly opposite said inner board and out of contact with the latter, thereby forming an open chamber between said boards opposite the lower edge of said subroof, a strip of flexible roof-covering material applied to said subroof between said subrafters whose longitudinal borders enter said grooves in said rafters having several projections on the lower end thereof entering said chamber, certain extremities of which extend across said chamber and are held in downbent positions by engagement with the inner side of said outer facial board, and having one of said projections bent downwardly against the side of the said inner facial board, and means for securing the same thereagainst whereby the said lower end of said strip is attached to the car, substantially as described.

7. In a car-roof construction, a subroof divided into cross-sections by subrafters fixed thereon and having chambers on the sides of the car opposite the lower ends of each of said sections, a strip of roof-covering material applied upon each of said sections having its lower end entering said chamber, and a part thereof turned down against the inner facial board below the eaves, and a strip-fastening device passing through said turned-down part, thus attaching said covering material to the side of the car at a single point between the longitudinal borders of said strip, substantially as described.

606,997. DETACHABLE LINK. ANDREW MEEL, Garrison, Md., assignor to Augustus L. Clayton, Baltimore, Md. Filed May 22, 1897. Serial No. 637,729. (No model.)



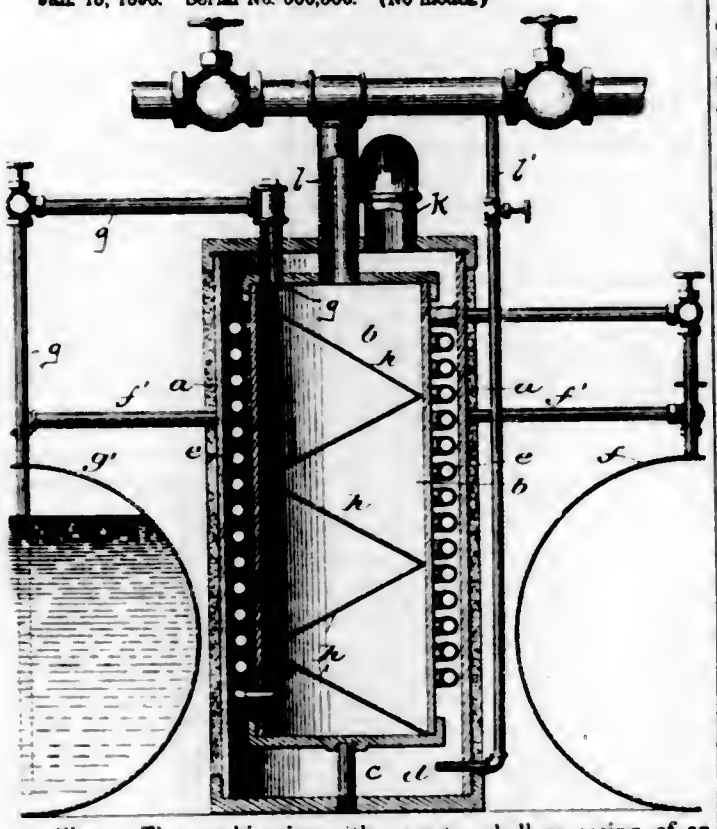
Claim.—1. In a detachable link, the combination with the body having an open side with a notch in one end and a groove in the other end of such opening, and a movable member having a tenon at one end fitting loosely within the notch and a tongue at the other end fitting loosely in said groove; of a pivot extending through the body

and across its notch and also through the tenon therein, and spring-wires extending thence in arms alongside the body and member respectively and away from said pivot, and finally having bent extremities turned into such members, as and for the purpose set forth.

2. In a detachable link, the combination with the body having an open side with a notch in one end of such opening, and a movable member having a tenon at one end fitting loosely within the notch; of a spring-wire extending through the body and across its notch and also through the tenon therein, and thence formed into arms extending alongside the body and member respectively and away from said pivot, and finally having bent extremities turned into such members, as and for the purpose set forth.

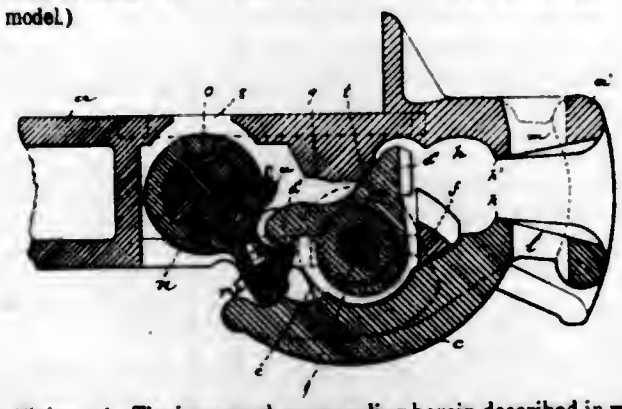
3. In a detachable link, the combination with the body having an open side notched at one end of the opening, and a movable member fitting the opening and loosely entering the notch; of a spring-wire passing through the interlocking parts of body and member to form a pivot, forming a coil at one end of the pivot, and extending thence at both ends alongside the body and member away from the pivot, and attached to these members, as and for the purpose set forth.

606,998. CARBURETER. JOHN A. MCGOWAN, Maywood, Ill., assignor of three-eighths to William R. Armstrong, Chicago, Ill. Filed Jan. 13, 1898. Serial No. 666,586. (No model.)



Claim.—The combination with an outer shell or casing, of an inner shell, an annular space being formed between the same, a series of coiled pipes situated in said annular space and opening into said inner shell, a space being provided beneath the bottom of said inner shell to constitute a combustion-chamber, an oil-inlet at the top of said inner shell, a series of oil-distributing plates within said inner shell, a gas-outlet leading from the upper end of said inner shell, and a branch pipe leading therefrom to a nozzle for directing a flame of gas into said combustion chamber, substantially as described.

606,999. CAR-COUPLING. BENJAMIN F. OLMSTED, Newark, N. J., assignor to William H. Olmsted, same place, and John H. Olmsted, Plainfield, N. J. Filed Apr. 12, 1897. Serial No. 631,869. (No model.)



Claim.—1. The improved car-coupling herein described in which is combined with the draw-bar *a*, having at its forward extremity an integral bell which is interiorly chambered to receive the end of a link, the upper part of said draw-bar chamber being closed at the top and having a recess *h*, and being open at the bottom where it receives said link end, a coupling-jaw working in said open bottom of the draw-bar and adapted to hold said link end in the recess of said draw-bar, a repression-piece arranged contiguous to said recess, *h*, to be engaged by the link end as the latter passes into the said recess of the draw-bar bell, a detent acted on by said repression-piece and engaging the jaw to hold the same in coupling relation, substantially as set forth.

2. The improved car-coupling herein described, comprising a recessed and bell-shaped draw-bar, the bottom of which is open for the reception of a coupling-jaw, and is provided with a forwardly-inclined bridge or integral bearing-surface *f*, adapted to raise the end of the link as it enters, into the recess of the draw-bar, a coupling-jaw for holding said link end into said recess, a detent for the grasping-jaw and a repression-piece for operating the detent, substantially as set forth.

3. The improved car-coupling herein described, comprising a hooded draw-bar with an open bottom, a lever-like repression-piece adapted to receive the end thrust of the coupling-link, a coupling-jaw operable at its forward end to engage the link to hold the same in its coupled position, and a detent engaged by the repression-piece and engaging the coupling-jaw, substantially as set forth.

4. The improved car-coupling herein described comprising a draw-bar, a repression-piece to be pressed by the link attached to the approaching car, a lever-like detent engaged by the repression-piece and a lever-like coupling-jaw engaged in turn by the lever-like detent and held thereby, substantially as set forth.

5. The improved car-coupling herein described comprising a draw-bar, a repression-piece fulcrumed on a transverse shaft or bar, a detent fulcrumed on another transverse bar and a lever-like coupling-jaw held in its coupling relation by said detent and repression-piece, substantially as set forth.

6. The improved car-coupling herein described comprising a draw-bar, repression-piece, a detent carried by an eccentric, and a coupling-jaw, arranged and adapted to operate, substantially as set forth.

7. The improved car-coupling, herein described, comprising a draw-bar, a repression-piece having arms *d'*, *d''*, a detent arranged on an eccentric, means for turning said eccentric and retiring the detent and a lever-like coupling-jaw, all arranged and combined, substantially as set forth.

8. The improved car-coupling herein described comprising a draw-bar, having a bottom opening bridged by an inclined portion *f*, of said draw-bar, a lever-like repression-piece having arms *d'*, *d''*, a detent adapted to be turned by hand-operable means, and a fulcrumed, vertically-movable coupling-jaw, arranged in said bottom opening, substantially as set forth.

9. The improved car-coupling herein described comprising a draw-bar, a repression-piece *d*, a jaw *c*, and a detent *e* engaging said jaw *c*, and adapted to be retired to permit an opening of said jaw and means for retiring said detent, substantially as set forth.

10. In a car-coupling, the combination with the draw-bar, a lever-like repression-piece adapted to receive the end thrust of the coöperating coupling device, a coupling-jaw adapted at its forward part to engage said coöperating device, a detent engaging said jaw to lock the same and engaged by said repression-piece, and an eccentric carrying said detent and means for turning the same, substantially as set forth.

11. The improved car-coupling herein described, in which is combined a draw-bar having a hollow hooked chamber provided with bearings *t* and 9, for limiting the movements of the repression-piece arms, a lever like repression-piece *d*, having arms *d'*, *d''*, adapted to engage said bearing and be limited in their movements thereby, a coupling-jaw and detent, all arranged and operating, substantially as set forth.

12. The improved car-coupling herein described in which is combined with the draw-bar having a segment-lug 7, a lever like coupling-jaw, a repression-piece and a detent having lugs 6, all arranged and combined, substantially as set forth.

13. The improved car-coupling herein described, comprising the draw-bar having a bell end and interior chamber the walls of which have the stops *t* and 9, and segmental lugs 7, a lever-like coupling-jaw, a lever-like detent for the same having lugs adapted to engage said lugs 7, an eccentric for retiring said detent and occasioning a sheering or rocking action upon the said lugs 7, and a repression-piece all arranged and combined, substantially as set forth.

14. The improved car-coupler herein described comprising a draw-bar, a lever-like coupling-jaw, a pivoted repression-piece having arms *d'*, *d''*, a detent having an arm engaged by the arm *d'*, and engaging the coupling-jaw, an eccentric and a lock for said detent, all arranged and combined, substantially as set forth.

15. The improved car-coupling herein described comprising a draw-bar, a lever-like coupling-jaw, a pivotal repression-piece, a de-

tent engaged by the repression-piece and holding said coupling jaw an eccentric for retiring the detent and a sliding lock-bolt arranged in a slot in said detent, substantially as set forth.

16. The improved car-coupling herein described comprising a draw-bar having a flaring forward end and open bottom the bottom opening having a bridge with an inclined bearing, and the interior of the walls having stop-bearings 9 and *t*, segmental bearing 7, and stop 5, for the lock-bolt, a shaft *j*, on which the repression-piece *d*, is fulcrumed said repression-piece having a forward arm *d''*, back of the bridge and adapted to receive the incoming link, and having a rearward arm *d'*, adapted to gear with the detent, said detent arranged on an eccentric *s*, back of said repression-piece and having a slotted arm engaged by the repression-piece and engaging the coupling-jaw, said eccentric having means whereby it may be turned and a lock-bolt within the slot of the slotted arm, said bolt engaging the stop 5, and said coupling-jaw having ears pivoted upon the said shaft *j*, all substantially as set forth.

17. In a car-coupling, the combination with the draw-bar having a bell end, open bottom and bridge, of a lever-like coupling-jaw working virtually within said open bottom and at its forward end adapted to form a socket to receive and hold the head of the coupling-link and at the rear end adapted to receive a detent adapted to hold said jaw in its coupling relation, substantially as set forth.

18. In a car-coupling, the combination with the draw-bar having the recess *h*, and inclined bridge, the inclined surface of which is adapted to guide the head of the link upward to cause the upper part of said link-head to enter the said recess, a coupling-jaw adapted to engage the side of said link-head and hold it in said recess, and a repression-piece adapted to be engaged by said link-head and operate a train of mechanism by which said jaw is closed against the link-head, of said link having opposite heads which are of conoid shape with rounded sides to give a quick upward movement when sliding on the inclined bridge, abruptly shouldered at the back and flattened at the front in line with the shank to present a broad surface to the repression-piece and reduce indentation under the force of impact, substantially as set forth.

19. In a car-coupling, the combination with the draw-bar having a flaring forward end and open bottom, the bottom opening having a bridge with an inclined bearing above which the draw-bar is interiorly recessed or socketed, a jaw for holding the link into said upper recess, means for fastening said jaw automatically in its holding position, and a link having a rounded head adapted to engage said inclined bridge and be raised into the socket or recess and held therein by the jaw, substantially as set forth.

20. In a car-coupling, the combination with the draw-bar, repression-piece and coupling-jaw, of a detent pivoted on an eccentric, and means for turning said eccentric, substantially as set forth.

21. In a car-coupling, the combination with the jaw draw-bar having a flaring end with a closed top within which a recess *h*, is formed and an open bottom to receive a coupling-jaw, which open bottom is bridged, the bridge being integrally formed in said draw-bar and having an inclined bearing-surface adapted to guide the link upward into said recess *f*, a repression-piece having a bearing to receive the forward extremity of the link, a detent operated by said repression-piece, a lever-like jaw adapted to be thrown by said detent into coupling engagement with the link-head and to hold said link-head in coupling engagement and recessed to produce a ball-socket with said recess *h*, and a link having a truncated conoid head rounded at the base to fit the recess in the draw-bar and coupling-jaw, to permit a ball-and-socket movement of the link, substantially as set forth.

22. In a car-coupling, the combination with the draw-bar, repression-piece, and coupling-jaw, of a detent pivoted on an eccentric, and having a projection *u*, said eccentric and means for operating the same, and a cross-bar or key-rod *v*, substantially as set forth.

23. The combination with the draw-bar, jaw *c*, detent and repression-piece *d*, of an eccentric carrying, said detent and a feather working in a slot larger than said feather whereby the detent is allowed a limited independence of movement on the eccentric, substantially as set forth.

24. The combination with the draw-bar, jaw, detent, operable by a hand-lever, and repression-piece arranged, substantially as described, said detent having the projection *u*, of a key-rod *v*, adapted to be thrust through the draw-bar sidewise into engagement with said projection, substantially as set forth.

607,000. TRACE-FASTENER. EDWARD L. PAINTER, Owen's Mills, Md. Filed June 8, 1897. Serial No. 639,811. (No model.)

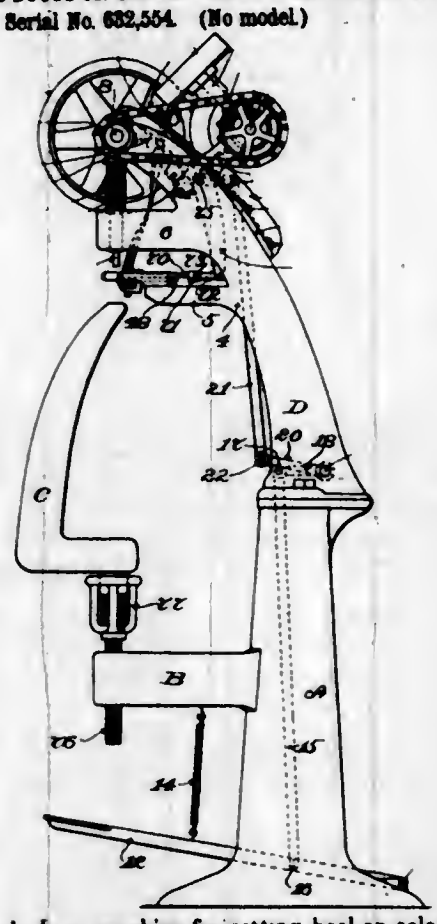
Claim.—1. In a trace-fastener the combination of a lug or projection adapted to be secured to the end of a whiffletree and having a shank for receiving a turn-button, the said shank being reduced in diameter and squared for a portion of its length between its outer end and the lug; a turn-button having a socket for the reception of the shank, the socket having an opening at one side registering with the squared portion of the shank, and a flat spring adapted to bear upon the squared portion of the shank through the opening in the rocket of the turn-button, substantially as and for the purposes specified.



2. In a trace-fastener the combination of a lug or projection adapted to be secured to the end of a whiffletree and having a shank for receiving a turn-button, the said shank being squared for a portion of its length between its outer end and the lug and having a shoulder adjacent thereto; a turn-button having a socket for receiving the said shank, the socket having an opening at one side thereof registering with the squared portion of the shank, and a flat spring adapted to bear upon the squared portion of the shank through the opening in the socket and engage with the shoulder on the shank, substantially as and for the purposes described.

3. In a trace-fastener the combination of a lug or projection adapted to be secured to the end of a whiffletree and having a shank for receiving a turn-button, the said shank being squared for a portion of its length between its outer end and the lug and having a shoulder adjacent thereto, a turn-button having a socket for receiving the said shank, the socket having an opening at one side thereof registering with the squared portion of the shank, and a flat spring adapted to bear upon the squared portion of the shank through the opening in the socket and engage with the shoulder on the shank, the spring and the opening in the socket being covered by a suitable cover, substantially as described.

607,001. MACHINE FOR SETTING HEEL AND SOLE PROTECTORS FOR BOOTS OR SHOES. IRA F. PECK, Auburn, R. I. Filed Apr. 17, 1897. Serial No. 632,554. (No model.)



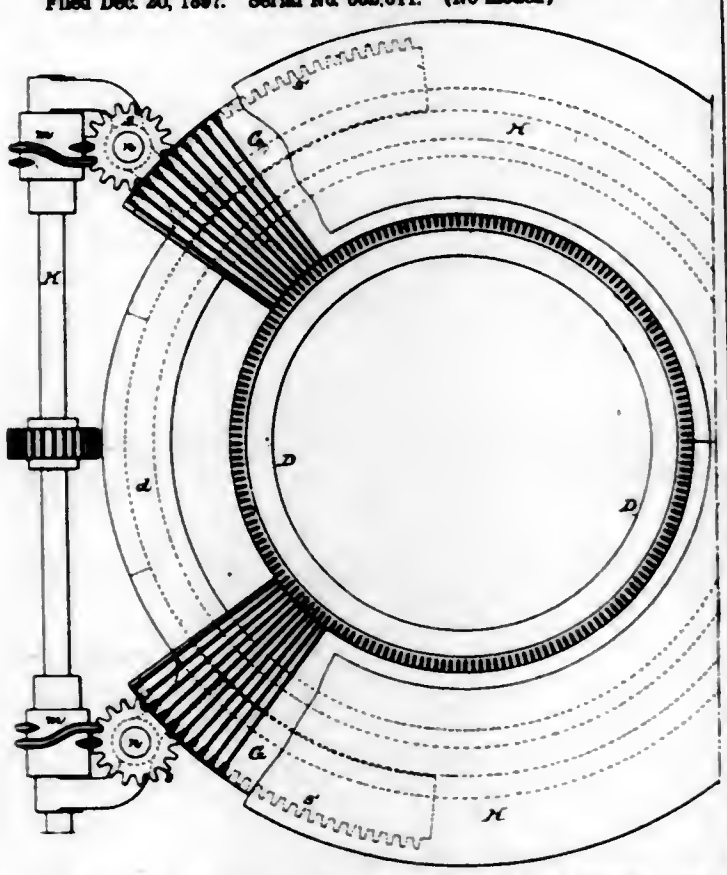
Claim.—1. In a machine for setting heel or sole protectors, a driver, and a raceway, in combination with a transferring device to transfer the protectors one at a time from the end of the raceway to a point underneath the driver, comprising a reciprocating slide-bar, a holder to present the protector properly to the driver and to guide it while it is being driven, and a feeding device for feeding forward the stock, said feeding device comprising a feed-wheel and means for rotating the latter consisting of a pawl and ratchet, said pawl being actuated by the reciprocating slide-bar and operating at each movement of the latter to cause the stock to be fed forward, substantially as set forth.

2. In combination, a driver, supplying and feeding devices including a reciprocating transferring device, feeding mechanism for feeding forward the work comprising a feed-wheel and a pawl and ratchet to rotate said feed-wheel, said pawl being actuated by the reciprocating transferring device, and means to adjust said feed-wheel

toward and from the line of movement of the driver, substantially as described.

3. The combination, in a machine for setting horseshoe-shaped heel or sole protectors, of a hopper, a raceway consisting of a blade having a thin upper end to receive the protectors astride the same after they leave the hopper, and also having a thickened or beaded edge throughout its lower portion substantially filling the interior of a protector to prevent dislodgment of the latter, the said raceway having a twist to present the opening of the protector to the front, a transferrer whereby the protectors are delivered one at a time from the raceway to a point underneath the driver, a holding and guiding device having yielding sides to hold the protector which is delivered thereto by the transferrer and a vertical opening to guide the protector while it is being driven, and a driver, substantially as described.

607,002. KNITTING-MACHINE. ROBERT W. SCOTT, Philadelphia, Pa., assignor of one-half to Louis N. D. Williams, Ashbourne, Pa. Filed Dec. 20, 1897. Serial No. 662,611. (No model.)



Claim.—1. The combination of the main needle-carrier, with a supplementary needle-carrier having needles which draw stitches to the same face of the fabric as those of the main needle-carrier, means for actuating the needles, provision for permitting movement of certain of the needles of one of said carriers into and out of operative position, and provision for laterally moving the supplementary needle-carrier.

2. The combination of the main needle-carrier having needles some of which are movable into and out of operative position, a supplementary needle-carrier having needles which draw stitches to the same face of the fabric as those of the main needle-carrier, means for actuating the needles, and provision for laterally moving said supplementary needle-carrier whereby its needles will maintain their proper lateral relation to the operative needles of the main needle-carrier.

3. The combination in a knitting-machine, of a needle-cylinder, a needle-carrying segment mounted so as to move part way around said cylinder, provision for moving needles of one of said needle-carrying elements into and out of operative position, and provision for laterally moving the needle-carrying segment in respect to the cylinder.

4. The combination in a knitting-machine, of a needle-cylinder having needles some of which are movable into and out of operative position, a needle-carrying segment mounted so as to be movable part way around said cylinder, and provision for moving said needle-carrying segment whereby its needles will always preserve the proper lateral relation to the acting needles of the cylinder.

5. The combination in a knitting-machine, of a needle-cylinder a pair of needle carrying segments mounted so as to be adjustable from and toward each other around said cylinder, provision for moving needles of one of said needle-carrying elements into and out of operative position, and provision for moving said needle-carrying segments from and toward each other.

6. The combination in a knitting-machine, of a needle-cylinder having needles some of which are movable into and out of operative position, a pair of needle-carrying segments mounted so as to be movable from and toward each other around said cylinder, and provision for moving said segments from and toward each other.

7. The combination in a knitting-machine, of a main needle-carrier, a supplementary needle-carrier, provision for permitting movement of needles of one of said carriers into and out of operative position, provision for laterally moving the supplementary needle-carrier, and a cam whereby certain of the needles of one of said carriers may be projected and retracted so as to cast their stitches.

8. The combination in a knitting-machine, of a main needle-carrier having needles some of which are movable into and out of operative position, a supplementary needle-carrier, provision for laterally moving the same in respect to the main needle-carrier, and a cam whereby certain of the needles of said main carrier can be operated so as to cast their stitches without affecting the stitches upon the remaining needles.

9. The combination in a knitting-machine, of a needle-cylinder carrying an interrupted series of needles, segments carrying needles adapted to fill the space between the needles of the cylinder set, certain of the needles being capable of being moved into and out of operative position, and provision for laterally moving the segments in respect to the needles of the cylinder.

10. The combination in a knitting-machine, of a needle-cylinder carrying an interrupted series of needles, certain needles at each end of the set being capable of being moved into and out of operative position, segments carrying needles which coöperate with those of the cylinder, and provision for racking said segments so as to cause them to approach or recede from each other.

607,008. COMPOSITION OF MATTER FOR MANUFACTURING GLASS. CHARLES G. VAN FLEET, Los Angeles, Cal., assignor to Baxter Todd and Howard W. Mills, same place. Filed July 14, 1896. Renewed Feb. 3, 1898. Serial No. 669,019. (No specimens.)

Claim.—1. A composition of matter for the manufacture of glass composed of silica, iron protoxid, iron oxid, magnesia, alumina, soda and potash, water and a flux, substantially as described.

2. The composition of matter for the manufacture of glass, composed of the following ingredients in about the proportions specified: silica, forty-six; iron protoxid, four; iron oxid, two; magnesia, twelve; alumina, eight; soda and potash, fourteen; and a suitable flux, substantially in the manner hereinbefore set forth.

3. The composition of matter for the manufacture of glass, composed of the following ingredients in about the proportions specified: litharge, two and one-half; commercial borax, two and one-half; soda bicarb., one and one-half; silica, forty-six; iron protoxid, four; iron oxid, two; magnesia, twelve; alumina, eight; soda and potash, fourteen, substantially as and for the purpose described.

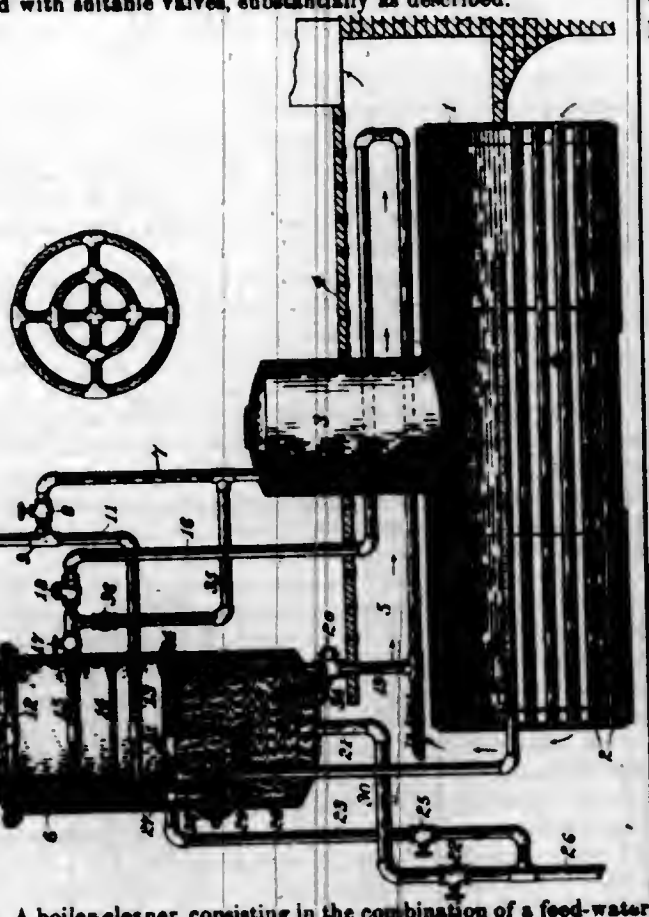
607,004. BOILER-CLEANER AND FILTER. WILLIAM DOUGHERTY, Chester, Pa., assignor of one-third to Crosby M. Black, same place. Filed June 30, 1897. Serial No. 642,964. (No model.)

Claim.—1. In a boiler-cleaner and filter, the combination of a shell, a feed-water pipe entering the upper portion of the shell and terminating in a spray-head, a steam-pipe, upper and lower branch pipes connected with said steam-pipe, said branch pipes entering said shell and terminating in spray-heads one above and one below the spray-head of said feed-water pipe, the spray-heads of said branch pipes arranged to discharge toward each other, a scum-blow-off pipe, a bottom blow-off pipe, a box supported within said shell and having a perforated bottom, a filter situated within said box, and a boiler feed-pipe having its mouth within said box, said piping provided with suitable valves, substantially as described.

2. In a boiler-cleaner and filter, the combination of a shell, a feed-water pipe entering the upper portion of the shell and terminating in a spray-head, a steam-pipe, upper and lower branch pipes connected with said steam-pipe, said upper branch pipe entering the upper portion of said shell and terminating in a spray-head, said spray-heads arranged to discharge toward each other, a perforated diaphragm secured beneath said spray-heads, said lower branch pipe entering said shell and terminating in a spray-head arranged below and adapted to discharge toward said diaphragm, a scum blow-off pipe, a bottom blow-off pipe, a box supported within said shell and having a perforated bottom, a filter situated within said box, and a boiler feed-pipe having its mouth within said box, said piping provided with suitable valves, substantially as described.

3. In a boiler-cleaner and filter, the combination of a shell, a feed-water pipe entering the upper portion of the shell and terminating in a spray-head, a steam-pipe connected with said feed-water pipe, a steam-pipe having upper and lower branches, said upper branch pipe entering the upper portion of said shell and terminating in a spray-head, said spray-heads arranged to discharge toward each

other, a perforated diaphragm secured beneath said spray-heads, said lower branch pipe entering said shell and terminating in a spray-head arranged below and adapted to discharge toward said diaphragm, a scum-blow-off pipe, a bottom blow-off pipe, a box supported within said shell and having a perforated bottom, a filter situated within said box, hand-holes affording access to said box and shell, and a boiler feed-pipe having its mouth within said box, said piping provided with suitable valves, substantially as described.



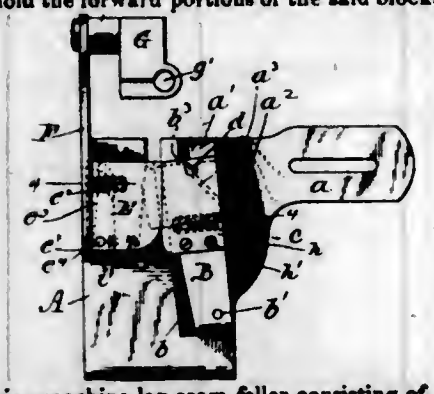
4. A boiler-cleaner, consisting in the combination of a feed-water heater having an inlet-pipe adapted for connection with a pump or feed-water source, a shell supported higher than said feed-water heater, a pipe connected with the outlet of said heater and terminating within the upper portion of said shell, a circulation-pipe connected with the inlet-pipe of said feed-water heater and terminating within the lower portion of said shell, said circulation-pipe having a check-valve opening from said shell, a boiler feed-pipe terminating within the lower portion of said shell, the mouth of said boiler feed-pipe opening within the shell above the level of the mouth of said circulation-pipe and below the mouth of the pipe from the heater-outlet, said shell provided with blow-off pipes, substantially as described.

5. A boiler-cleaner, having in combination with a boiler, a feed-water heater, a shell supported higher than said boiler and feed-water heater, a feed-water pipe connected with the outlet of said heater and entering the upper portion of said shell, said feed-water pipe possessing a check-valve opening toward the shell, a circulation-pipe entering the lower portion of said shell and having a check-valve opening from said shell, said circulation-pipe connected near the inlet of said feed-water heater, a steam-pipe connected with said boiler and entering the upper portion of said shell, a boiler feed-pipe entering the lower portion of said shell and passing into said boiler, said shell provided with pipes arranged to discharge scum and deposited matter, the piping having suitable cut-off valves, substantially as described.

6. A boiler-cleaner, having in combination with a boiler, a feed-water heater, a shell supported higher than said boiler and feed-water heater, a feed-water pipe connected with the outlet of said heater and entering the upper portion of said shell, said feed-water pipe possessing a check-valve opening toward the shell, a circulation-pipe entering the lower portion of said shell and having a check-valve opening from said shell, the mouth of said circulation-pipe within said shell opening downwardly, said circulation-pipe connected near the inlet of said feed-water heater, a steam-pipe connected with said boiler and entering the upper portion of said shell, a box supported within said shell and having a perforated bottom, a filter situated within said box, a boiler feed-pipe entering said shell and box and opening above said filter, said feed-pipe passing into said boiler, said shell provided with pipes arranged to discharge scum and deposited matter, the piping having suitable cut-off valves, substantially as described.

607,005. LAP-SEAM FELLER. JOHN B. PINKENBURG, St. Louis, Mo. Filed Nov. 13, 1894. Renewed Oct. 29, 1895. Serial No. 567,394. (No model.)

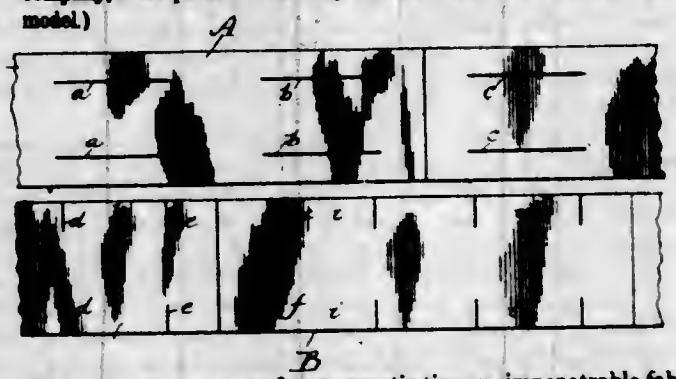
Claim.—1. A sewing-machine lap-seam feller consisting of two separate and independent guiding blocks or parts, one of which is provided with means whereby it may be attached to the work-plate of the sewing-machine, and the other of which is constructed to be supported from above the said work-plate, said blocks being pivotally connected with the parts by which they are supported, and having concave, guiding edges facing each other, combined with springs to yieldingly hold the forward portions of the said blocks in working positions.



2. A sewing-machine lap-seam feller consisting of two separate and independent guiding blocks or parts, one of which is provided with means whereby it may be attached to the work-plate of the machine, and the other of which is constructed to be supported from above the said work-plate, said blocks being pivotally connected with the parts by which they are supported, and having concave, guiding edges facing each other, combined with springs to yieldingly hold the forward portions of the said block in working positions, the said guiding block or part which is to be supported by the work-plate of the machine being provided at its upper side with a spring-plate overhanging its concave guiding edge, and the said block or part which is to be supported from above the work-plate being provided at its lower side with a spring-plate which extends inward beyond its concave guiding edges.

3. The combination with the base-plate A, of the guiding-block B pivotally attached at or near one of its ends to said base-plate, and having the concave guiding edge *b*, the spring *c* for yieldingly holding the free end of said block in working position, the block G, the arm F pivotally supported thereby, the guide-block E pivotally connected with the said arm F and provided with a concave guiding edge, and the spring c^2 for yieldingly holding the free end of the said guiding-block E in working position.

607,006. ARMOR FOR PNEUMATIC TIRES. RUDOLPH FAAS and HERBERT S. GRAY, Chicago, Ill., assignor to The No-Puncture Tire Company, same place. Filed May 9, 1898. Serial No. 680,209. (No model.)



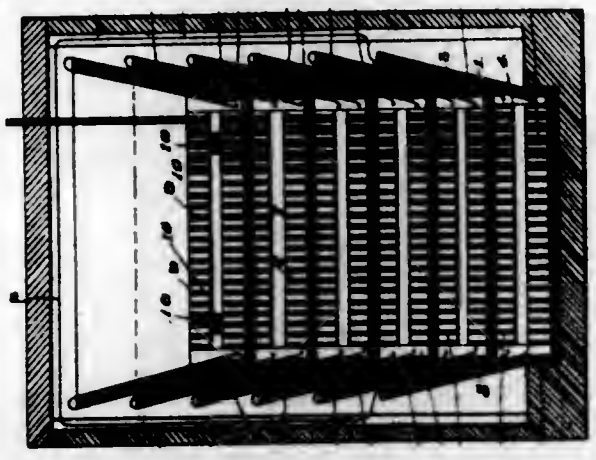
Claim.—1. In an armor for pneumatic tires an impenetrable fabric cut into short narrow strips joined together consecutively by lateral incisions near the edges at regular intervals at points opposite each other alternately with similar strips cut transversely from the edges toward the center to permit the portions of the edges of the latter to be inserted into the incisions of the former, the joints overlapping as described.

2. In an armor for pneumatic tires, a short narrow strip A, of fabric having lateral incisions at opposite points near the edges, a strip B, having short transverse incisions from the edges toward the center, the incisions in the strip A, adapted to permit the cut edges of the strip B, to be inserted therein, the strips A, and B, alternately overlapping, substantially as described.

REISSUES.

11,676. STORAGE OR SECONDARY BATTERY. RALPH ASHLEY, Port Republic, N. J., assignor, by direct and mesne assignments, to the Guarantor Electric Company, Camden, N. J. Filed Apr. 9, 1898. Serial No. 677,101. Original No. 594,313, dated Nov. 23, 1897.

Claim.—1. In a secondary or storage battery, the combination with the superimposed trays or cups each consisting of a rectangular base, outwardly-flaring upwardly-extending sides and supporting-lugs on the inner sides at the corners thereof, with spaces between said lugs, of the conductors running along the outside of the trays and then down the inside thereof, and the electrodes, substantially as described.



2. In a secondary or storage battery, the combination with the trays of insulating material nested within each other to form a stack or pile, the positive electrodes located in said trays, the negative electrodes secured to the bottom or under side of the trays, and the conductors secured to said trays, of the base upon which said stack or pile is supported, the box or housing having a closed top fitting over said stack, and secured to the base, and formed with a groove on the inner side, the conductor seated in said groove and passing through the top of the housing and secured to the positive electrode of the lowermost tray, the conducting-lug passing through said top and connected with a negative electrode located in the uppermost tray, and the insulating-strips supported by the positive electrode in said tray, and upon which said negative electrode rests; substantially as described.

3. An electrode for a storage or other battery consisting of the horizontal, straight, and corrugated metal strips alternating with each other, and the spacing-pieces between the ends thereof, and soldered thereto, substantially as described.

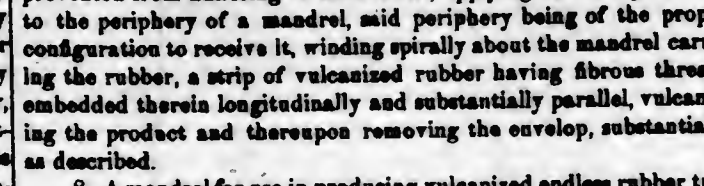
4. A storage battery, comprising a series of superposed nested hard-rubber or non-conducting trays, each tray having a relatively thin upper flaring portion and a bottom portion with substantially vertical sides, there being at the bottom of each tray a support or rest for directly receiving the bottom of the tray above, the relatively thin upper portions being held out of contact with each other, whereby short-circuiting is prevented, means engaging with the bottom of each tray to hold it against lateral displacement, electrodes arranged in couples, one couple for each tray, and connecting-conductors, substantially as set forth.

5. A storage battery, comprising a series of superposed nested hard-rubber or non-conducting trays, each tray having an upper relatively thin flaring portion and a bottom portion having tray-supports integral therewith and extending above the bottom thereof and adapted to receive directly the superposed tray, a couple of electrodes for each tray arranged adjacent to the said tray-supports, each tray bearing laterally, at the bottom directly against the tray below and having its flaring upper portion out of contact with the adjacent trays, and conductors supplemental to the trays and respectively connecting the electrodes of one of said couples, substantially as set forth.

6. A storage battery, comprising a series of superposed nested hard-rubber or non-conducting trays, each tray having a lower portion with relatively short substantially vertical sides and an upper portion with relatively thin outwardly-flaring walls, and said bottom portion being thickened at suitable places to provide lugs adapted to directly contact with and support the bottom of the tray above, electrodes arranged in couples, each couple having one electrode below the bottom of its tray and the other electrode above said bottom and one insulated from the other by the said rubber or non-conducting material, and an electrical conductor connecting the electrodes of each couple, substantially as set forth.

11,677. PNEUMATIC TIRE. JOHN F. PALMER, Riverside, Ill., assignor to the Palmer Pneumatic Tire Company, Chicago, Ill. Filed May 13, 1898. Serial No. 680,640. Original No. 489,714, dated Jan. 10, 1893.

Claim.—1. As a new article of manufacture, a pneumatic tire comprising a vulcanized annular rubber tube having incorporated therewith layers of spiral threads of relatively non-stretching character, and substantially out of contact with each other, the spirals of the successive layers being oppositely disposed whereby they cross each other, substantially as described.



2. As a new article of manufacture, an annular rubber tube for pneumatic tires having spirally wound thereon and embedded and held therein by vulcanization, layers of fibrous threads of a substantially non-stretching character, and substantially parallel with but out of contact with each other, the threads of the successive layers crossing each other, and being maintained out of frictional contact, substantially as described.

3. As a new article of manufacture, a pneumatic tire comprising two or more strips of rubber, or the like, each having embedded therein flexible threads substantially parallel with each other and each wound spirally about the tubing, one strip being wound in the direction opposite to the other, substantially as described.

4. As a new article of manufacture, a pneumatic tire comprising two or more strips of rubber, or the like, having embedded therein, substantially parallel fibrous threads extending longitudinally of the strip, said strips being wound spirally about the tube with their edges joined to form a continuous tubing, and one strip being wound in an opposite direction to the other, substantially as described.

5. As a new article of manufacture, a pneumatic tube for bicycles, and the like, comprising an endless annular tube of rubber having an envelop formed of two or more spirally-wound strips of rubber, or the like, having embedded therein substantially parallel fibrous threads, one of said strips being wound in the direction opposite to that of the other, substantially as described.

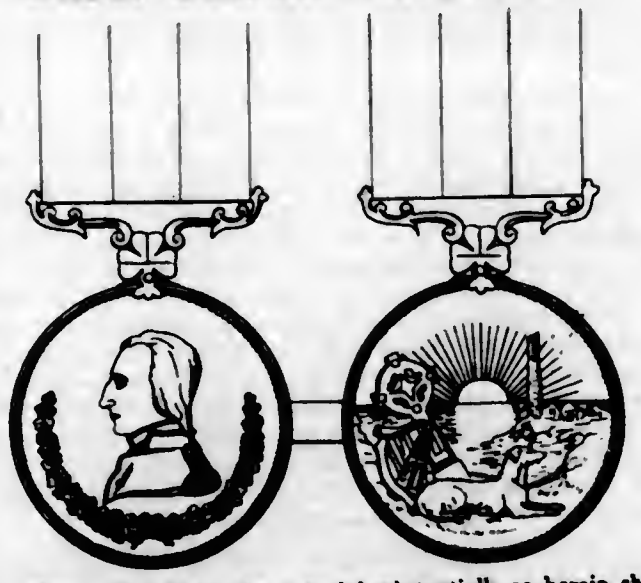
6. The method of forming vulcanized endless tubing, which consists in forming the soft rubber before vulcanizing into a collapsed tube having introduced therein a cohesion-preventing substance, such as soapstone, applying the same thus collapsed to a mandrel having a surface adapted to receive it, winding the mandrel carrying the rubber with a flexible envelop, and thereupon vulcanizing, substantially as described.

7. The method of producing vulcanized endless rubber tubing, which consists in forming the soft rubber supplied with a vulcanizing agent into an endless collapsed tube having its adjacent interior faces prevented from adhering to each other, applying the collapsed tube to the periphery of a mandrel, said periphery being of the proper configuration to receive it, winding spirally about the mandrel carrying the rubber, a strip of vulcanized rubber having fibrous threads embedded therein longitudinally and substantially parallel, vulcanizing the product and thereupon removing the envelop, substantially as described.

8. A mandrel for use in producing vulcanized endless rubber tubing, comprising an annular body having its periphery reduced to afford a seat for the collapsed unvulcanized tubing, substantially as described.

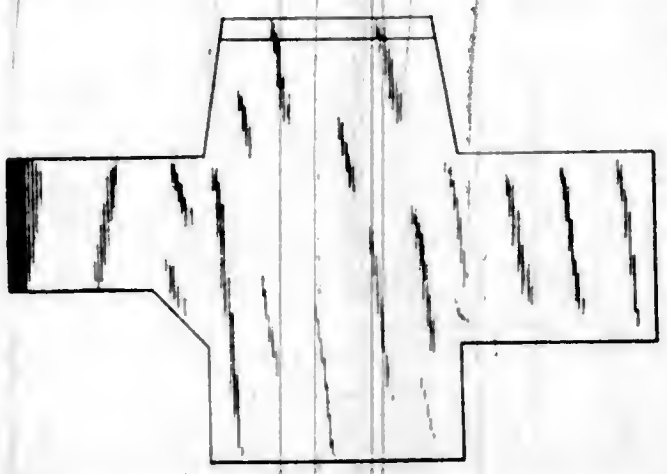
DESIGNS.

28,965. MEDAL. HUGH O'DONNELL, Liverpool, England. Filed Mar. 28, 1898. Serial No. 675,512. Term of patent 3½ years.



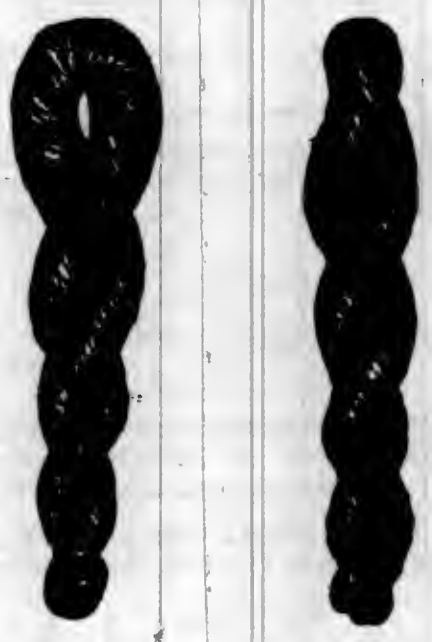
Claim.—The design for a medal substantially as herein shown and described.

28,966. ENVELOP-BLANK. WILLIAM HENRY SMITH, Omemee, N. D. Filed Apr. 29, 1897. Serial No. 634,478. Term of patent 14 years.



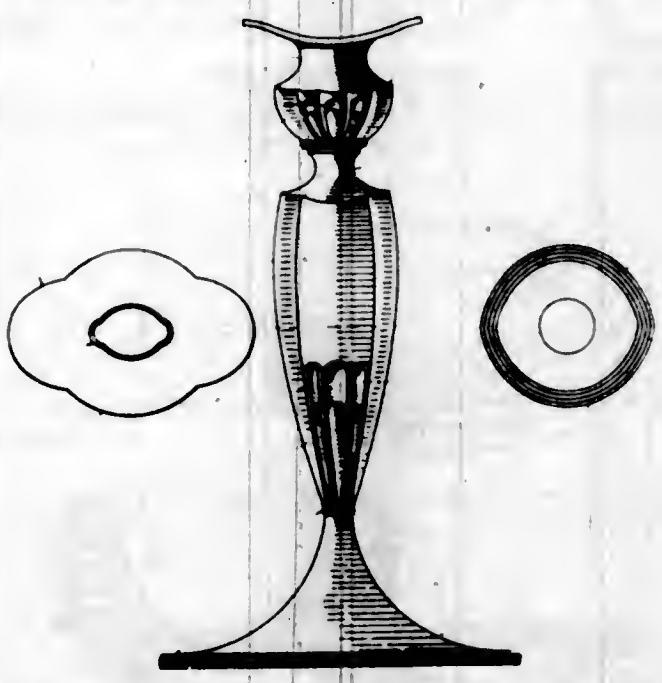
Claim.—The design for an envelop-blank as herein shown and described.

28,967. TOBACCO-PLUG. WILLIAM W. FORD, Carthage, Tenn. Filed June 1, 1896. Serial No. 593,927. Term of patent 14 years.



Claim.—The design for a tobacco-plug herein shown and described.

28,968. CANDLESTICK. BARTON P. JENES, Boston, Mass. Filed May 15, 1897. Serial No. 636,795. Term of patent 3½ years.



Claim.—The design for a candlestick herein shown and described.

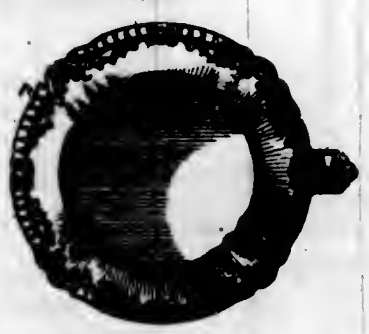
28,969. BOTTLE. WILLIAM S FOX, Philadelphia, Pa. Filed June 2, 1898. Serial No. 682,401. Term of patent 3½ years.



Claim.—The design for a bottle substantially as shown and described.

28,970. PITCHER. CHARLES EDWARD HAVILAND, Limoges, France. Filed June 1, 1898. Serial No. 682,804. Term of patent 7 years.





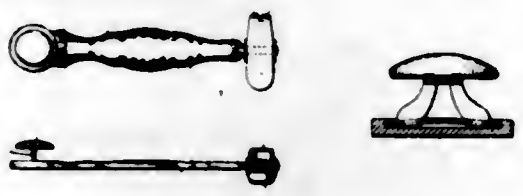
Claim.—The design for a pitcher or receptacle, substantially as shown and described.

28,971. PIN-PACKAGE CONTAINER. WILFRED STRAW, Waterbury, Conn., assignor to the Oakville Company, same place. Filed Dec. 22, 1897. Serial No. 663,101. Term of patent 7 years.



Claim.—The design for a pin-package container substantially as shown and described.

28,972. CUFF-HOLDER. RUBEN CASPAR, Attleborough, Mass. Filed June 8, 1898. Serial No. 682,953. Term of patent 14 years.



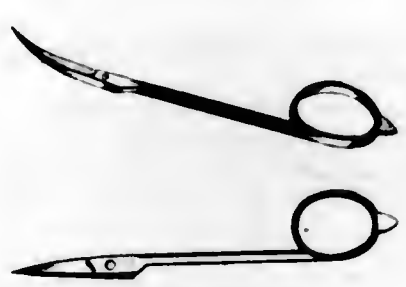
Claim.—The design for a cuff-holder substantially as herein shown and described.

28,973. TONGUE-DEPRESSOR. AMOS SAWYER, Hillsborough, Ill. Filed Apr. 18, 1898. Serial No. 678,064. Term of patent 7 years.



Claim.—The design for a tongue-depressor, herein shown and described.

28,974. MEMBER FOR MANICURE-SCISSORS. ALICE GIETAENER, New York, N. Y. Filed Dec. 18, 1897. Serial No. 662,493. Term of patent 7 years.



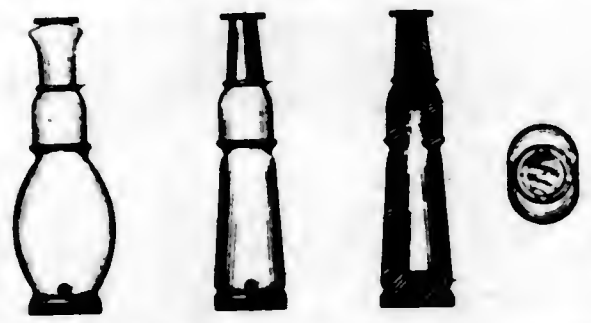
Claim.—The design for a member for manicure-scissors, substantially as herein shown and described.

28,975. TIP FOR ATOMIZERS OR SIMILAR ARTICLES. CHRISTIAN W. MEINECKE, Jersey City, N. J. Filed May 19, 1898. Serial No. 681,166. Term of patent 14 years.



Claim.—The design for a tip for atomizers and similar articles, substantially as herein shown and described.

28,976. ATOMIZER. ABBOTT LORING, Boston, Mass. Filed June 8, 1898. Serial No. 682,963. Term of patent 14 years.



Claim.—The design for an atomizer as herein shown and described.

28,977. NECKTIE-RETAINER. JOHN H. SHERTS, New York, N. Y. Filed May 19, 1898. Serial No. 681,168. Term of patent 3½ years.



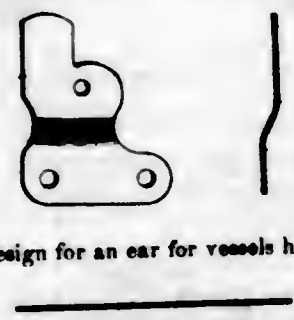
Claim.—The design for a necktie-retainer substantially as herein shown and described.

28,978. BLANK FOR GARMENT-FASTENING HOOKS. JACOB WHEATFIELD, Baltimore, Md. Filed June 4, 1898. Serial No. 682,609. Term of patent 3½ years.



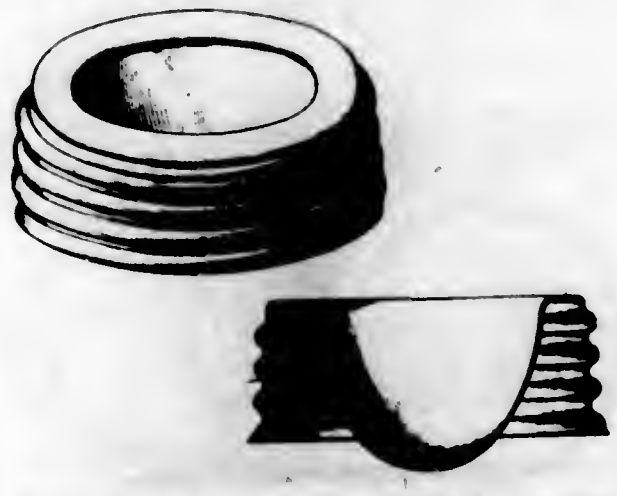
Claim.—The design for a blank for a garment-fastening hook as herein shown and described.

28,979. EAR FOR VESSELS. THOMAS LOYED, Worcester, Mass. Filed Apr. 13, 1898. Serial No. 677,500. Term of patent 14 years.



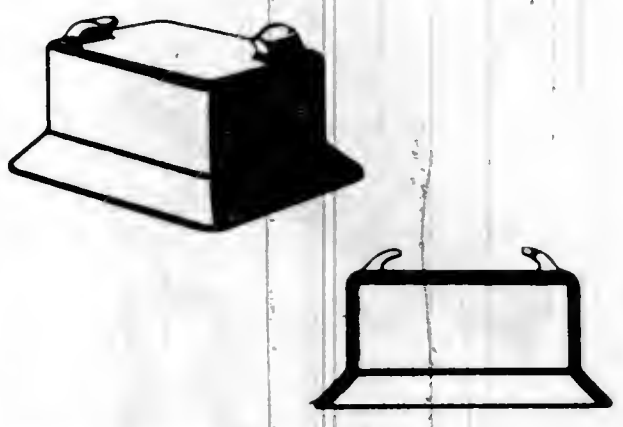
Claim.—The design for an ear for vessels herein shown and described.

28,980. JAR-CAP. WILLIAM R. SHARPE, Philadelphia, Pa. Filed June 9, 1898. Serial No. 683,086. Term of patent 14 years.



Claim.—The design for a jar-cap substantially as described and as shown in the accompanying drawings.

28,981. CAP FOR INSULATORS. BEN WILLARD, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 23, 1898. Serial No. 678,675. Term of patent 14 years.



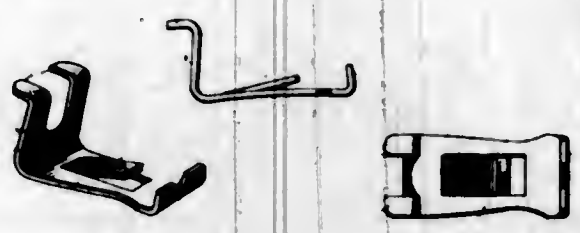
Claim.—The design for a cap for an insulator, substantially as shown and described.

28,982. HARNESS-LOOP. WILLIAM A. SCHLEICHER and MILFORD LEWIS, Cleveland, Ohio, and HENRY C. SWAN, Oshkosh, Wis. Filed June 6, 1898. Serial No. 682,772. Term of patent 14 years.



Claim.—The design for a harness-loop, substantially as herein shown and described.

28,983. ANTIRATTLING PLATE. CHARLES T. REDFIELD, Glen Haven, N. Y. Filed June 6, 1898. Serial No. 682,774. Term of patent 7 years.



Claim.—The design for an antirattling plate, as herein shown and described.

28,984. SWITCH-CONTACT. MONROE GUEST, Hartford, Conn. Filed May 23, 1898. Serial No. 681,514. Term of patent 14 years.

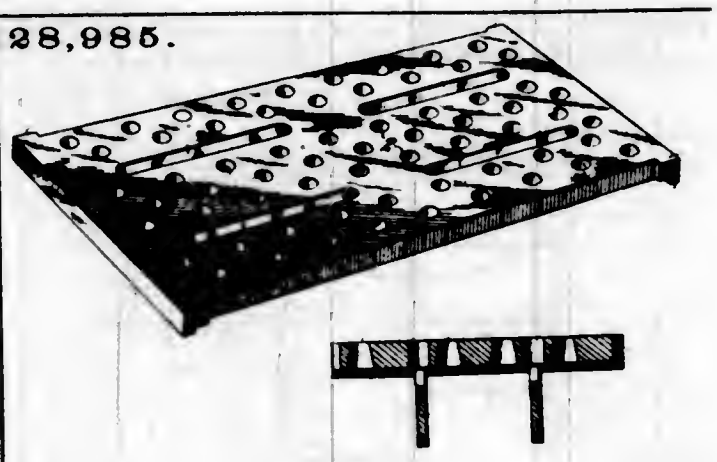


Claim.—The design for a switch-contact herein shown and described.

28,985. GRATE-BAR. PHILIP C. STRAHL, Lawrence, Kans., assignor of one-half to Henry Kline, same place. Filed June 9, 1898. Serial No. 683,096. Term of patent 14 years.

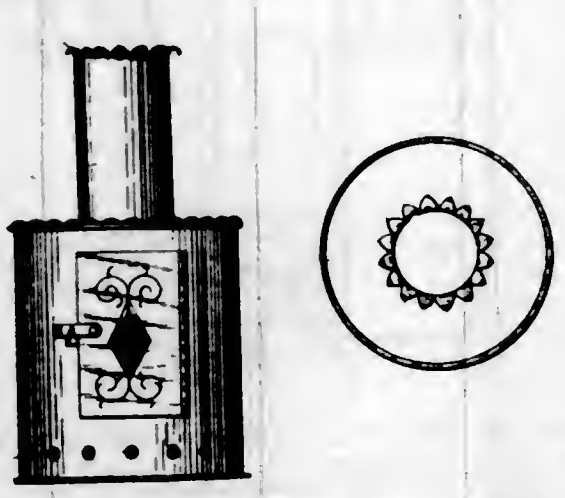


28,985.



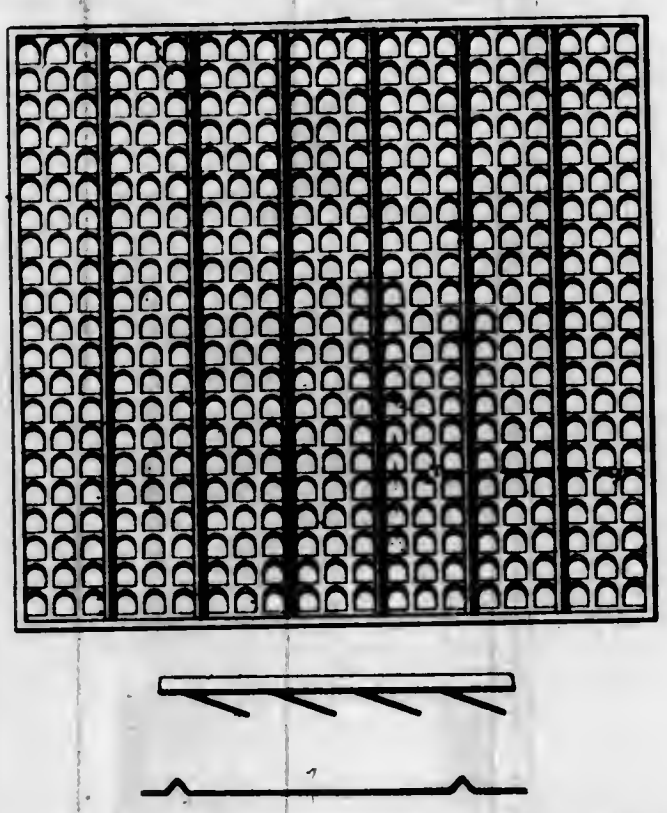
Claim.—The design for a grate-bar herein shown and described.

28,986. STUMP-BURNER. CALHOUN L. KELLEY, Kennett, Mo., assignor of three-fourths to Charles O. Hoffman, Joel P. Tribble, and Virgil McKay, same place. Filed May 27, 1898. Serial No. 681,954. Term of patent 14 years.



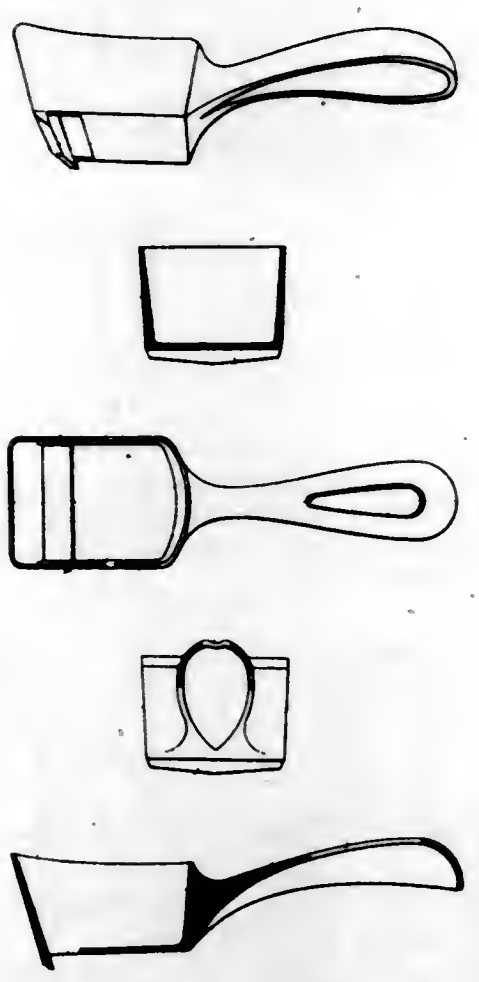
Claim.—The design for a stump-burner substantially as herein shown and described.

28,987. SEPARATOR-SIEVE. WILLIAM W. DINSER, Racine, Wis., assignor to the J. I. Case Threshing Machine Company, same place. Filed May 9, 1898. Serial No. 680,223. Term of patent 7 years.



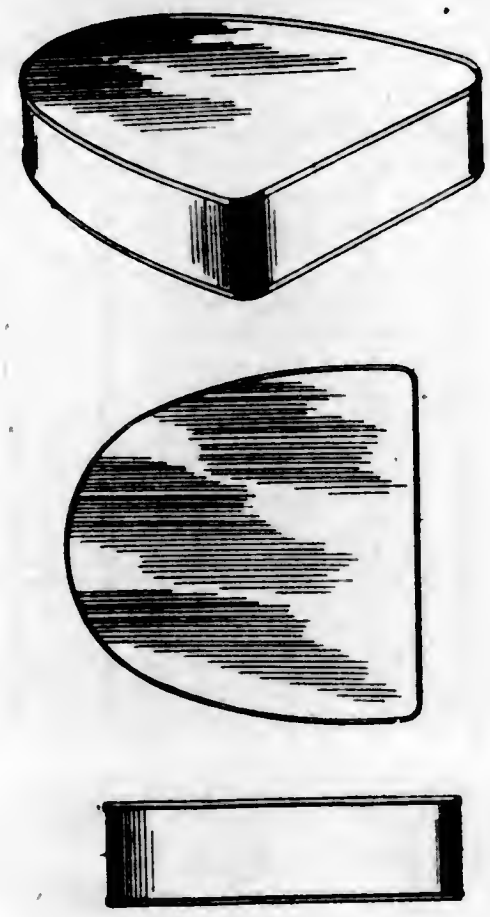
Claim.—The design for a separator-sieve, as herein shown and described.

28,988. ICE-SHAVER. ALVAH B. CLARK, Springfield, Mass. Filed Jan. 10, 1898. Serial No. 666,262. Term of patent 7 years.



Claim.—The design for an ice-shaver as herein shown and described.

28,989. MEAT-CAN. STEPHEN S. CONWAY, Chicago, Ill., assignor to Armour & Co., same place. Filed Feb. 21, 1898. Serial No. 671,204. Term of patent 7 years.



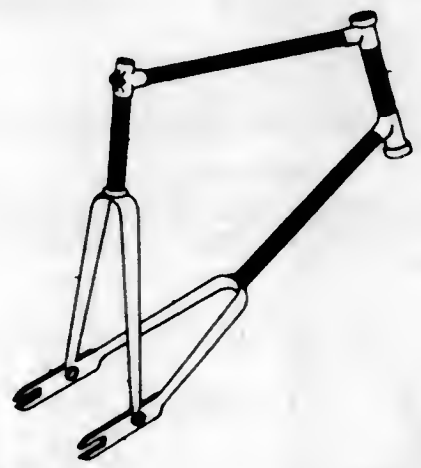
Claim.—The design for a meat-can, as herein shown and described.

28,990. WINDOW-CLEANER. PAUL RUSSELL CUMMING, Kansas City, Mo., assignor of one-half to Charles I. Pettibone, same place. Filed Apr. 16, 1898. Serial No. 677,893. Term of patent 14 years.



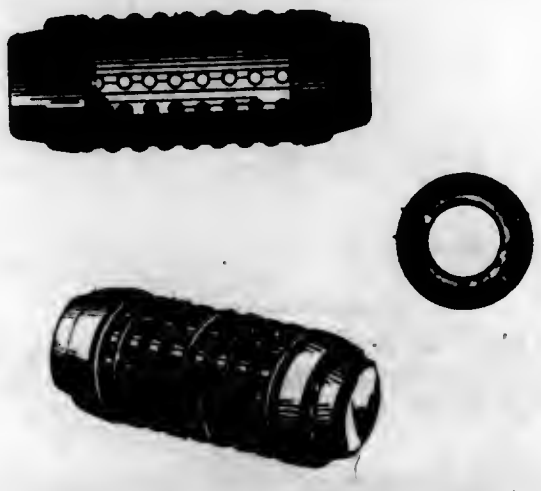
Claim.—The design for the window-cleaner, substantially as herein shown and described.

28,991. BICYCLE-FRAME. HENRY H. PEPPEL, New York, N. Y., assignor to the Multiple Power Company, of West Virginia. Filed May 7, 1898. Serial No. 680,071. Term of patent 14 years.



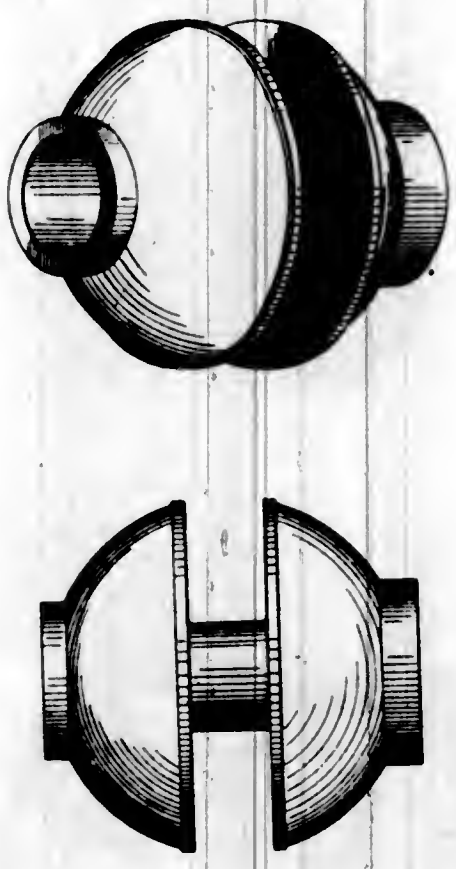
Claim.—The design for a bicycle frame substantially as herein shown and described.

28,992. HANDLE-BAR GRIP FOR BICYCLES. CHARLES H. ELDON, Williamsport, Pa. Filed Aug. 27, 1897. Serial No. 649,784. Term of patent 14 years.



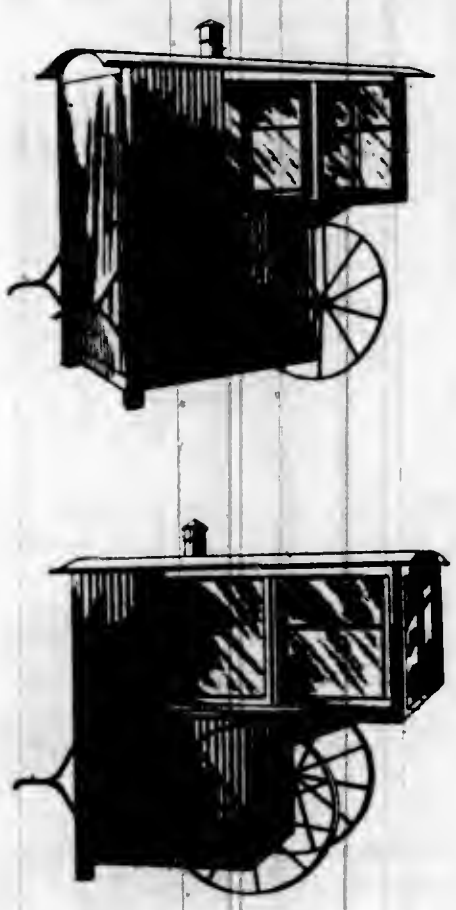
Claim.—The design for a handle-bar grip for bicycles herein shown and described.

28,993. WHEEL-HUB. CHARLES R. ROBERTS, Oak Park, Ill. Filed Feb. 3, 1898. Serial No. 669,017. Term of patent 14 years.



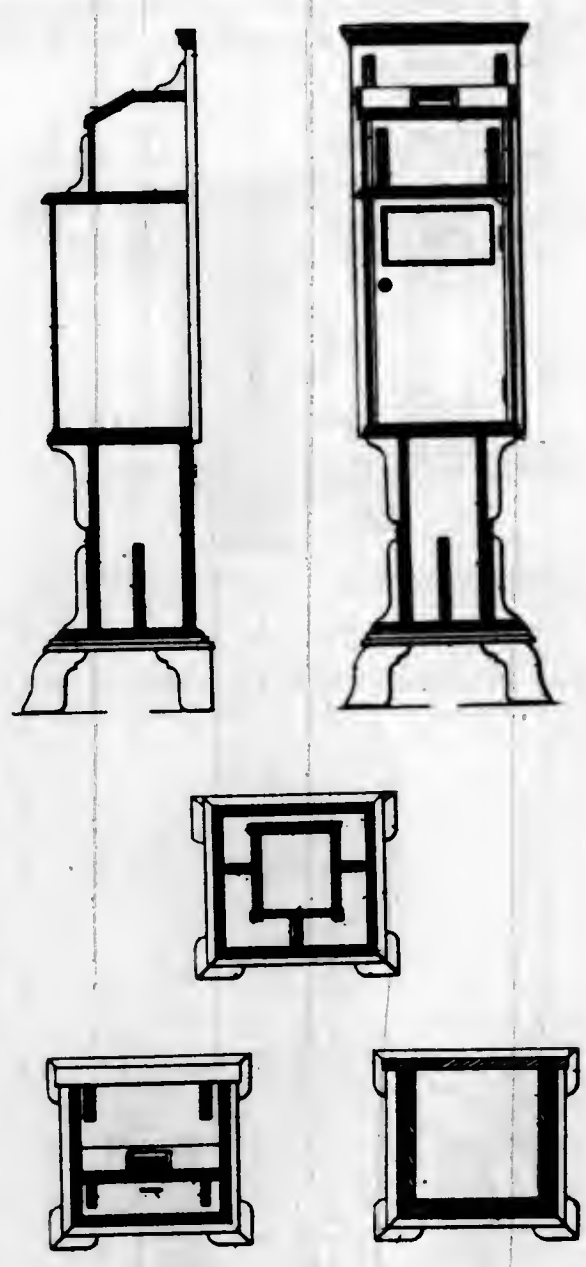
Claim.—The design for a wheel-hub, substantially as herein shown and described.

28,994. BODY FOR ROLLING STREET-STANDS. HENDRICKS S. MUNDY, Guthrie, Okla. Filed Jan. 18, 1898. Serial No. 667,114. Term of patent 7 years.



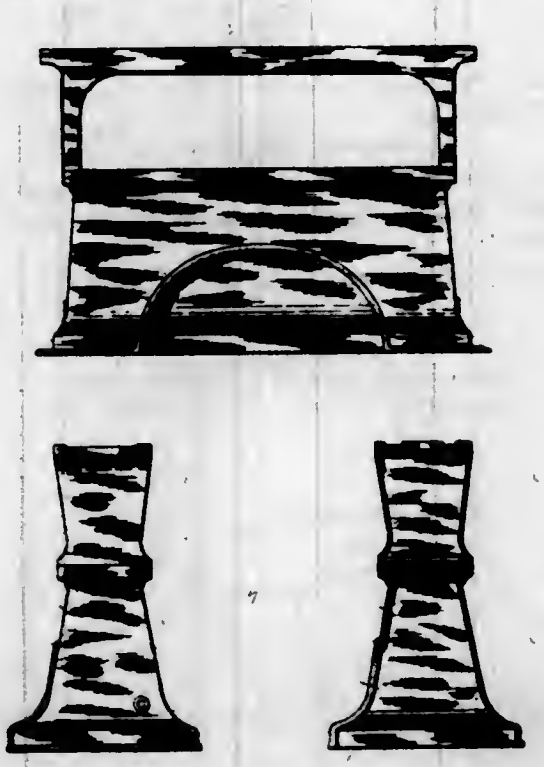
Claim.—The design for the body of a rolling street-stand herein shown and described.

28,995. CABINET FOR COIN-OPERATED MACHINES. RUDOLPH WAGNER, New York, N. Y. Filed June 11, 1896. Serial No. 683,233. Term of patent 7 years.



Claim.—The design for a cabinet, substantially as herein shown and described.

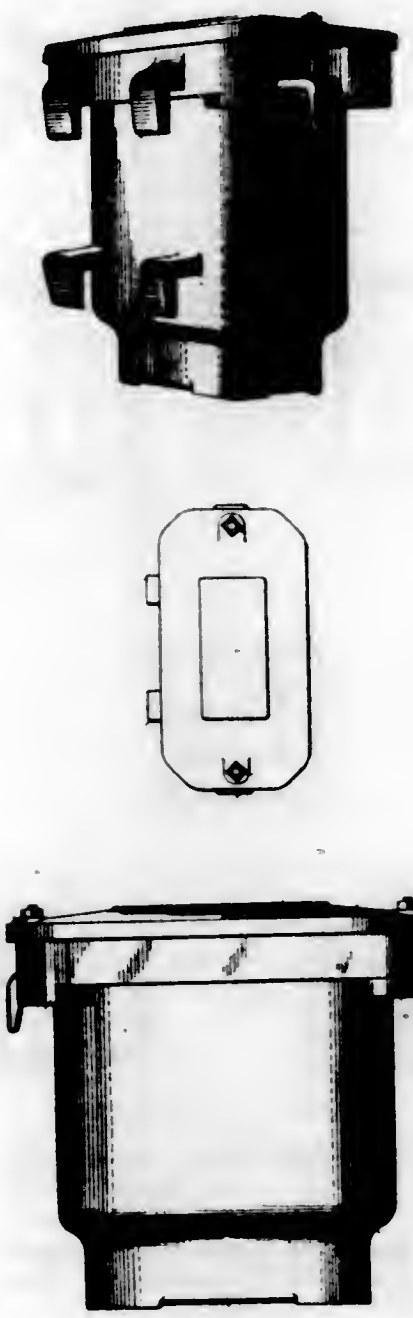
28,996. FRAME FOR PANTOGRAPH ENGRAVING-MACHINES. JOHN HOPE and JOHN HOPE, Jr., Providence, R. I. Filed June 13, 1898. Serial No. 683,364. Term of patent 14 years.



Claim.—The design for a frame for pantograph engraving-machines, substantially as herein shown and described.

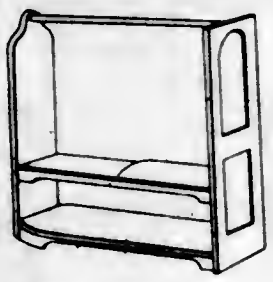
Claim.—The design for a frame for pantograph engraving-machines herein shown and described.

28,997. TRANSFORMER-CASING. JAMES W. PACKARD and HENRY W. WENWELL, Warren, Ohio. Filed May 20, 1898. Serial No. 681,259. Term of patent 7 years.



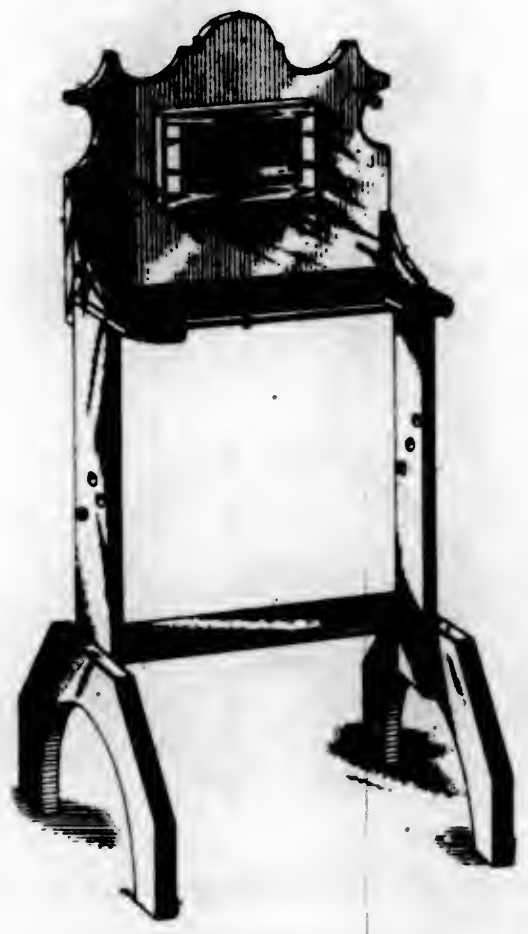
Claim.—The design for a transformer-casing substantially as shown and described.

28,998. WARDROBE-CASE. JOHN ERNEST KENNEDY, Montreal, Canada. Filed June 8, 1898. Serial No. 682,962. Term of patent 7 years.



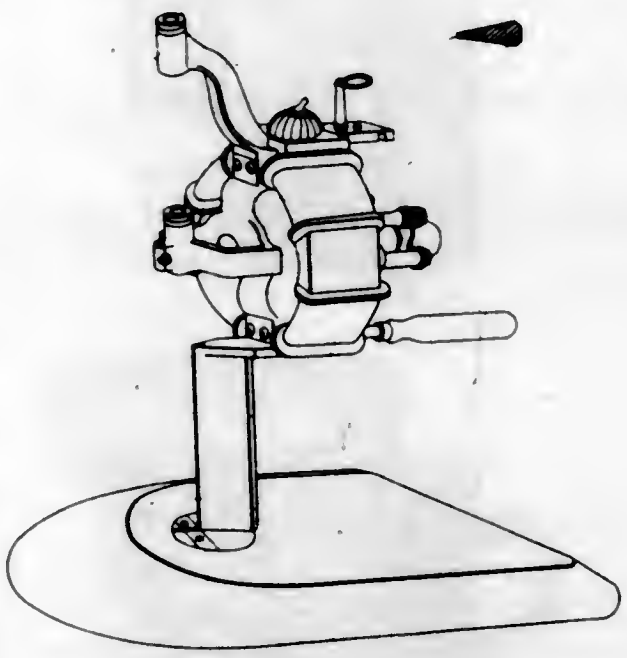
Claim.—The design for a wardrobe-case as herein shown and described.

28,999. QUILTING-FRAME STAND. BENJAMIN F. OVERTON and LOUIS R. BRYANT, Omen, Tex. Filed June 2, 1898. Serial No. 682,406. Term of patent 14 years.



Claim.—The design for a quilting-frame stand, herein shown and described.

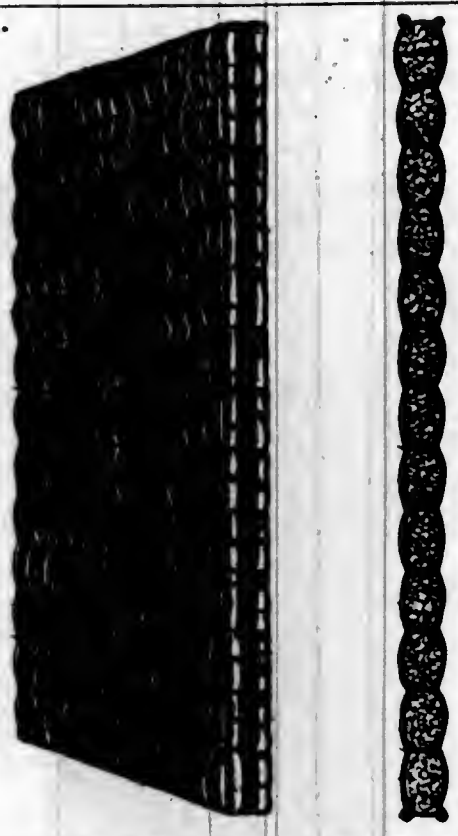
29,000. FRAME FOR ELECTRICALLY-OPERATED CLOTH-CUTTERS. GEORGE PETER EASTMAN, Toronto, Canada. Filed Apr. 26, 1898. Serial No. 678,919. Term of patent 7 years.



Claim.—The design for a frame for an electrically-operated cloth-cutter herein shown and described.

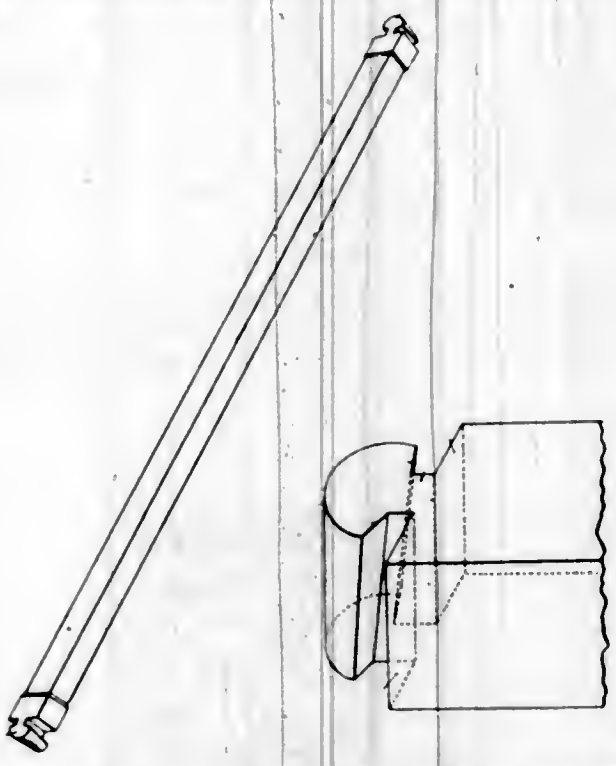
29,001. MATTRESS. HENRY IVES, Pueblo, Colo., assignor of one-half to Samuel F. Crawford and William F. Drake, same place. Filed June 28, 1897. Serial No. 643,755. Term of patent 14 years.

29,001.



Claim.—The design for a mattress herein shown and described.

29,002. BEDSTEAD-RAIL MEMBER. GEORGE BRAUN, Brooklyn, N. Y. Filed Oct. 22, 1896. Serial No. 609,767. Term of patent 7 years.



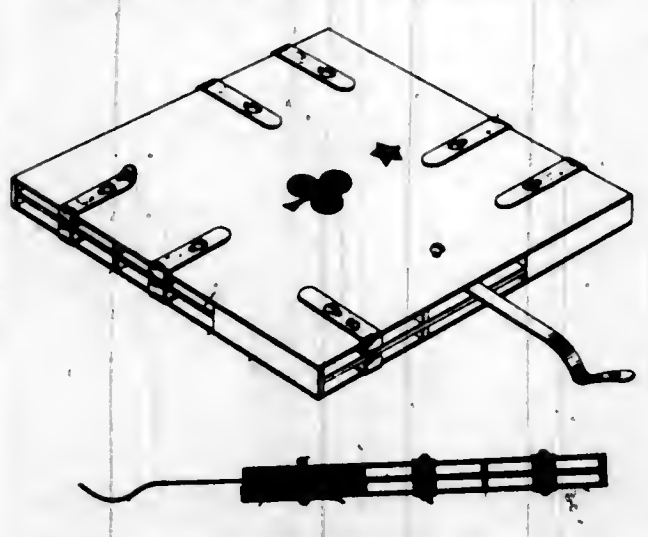
Claim.—The design for a bedstead-rail member substantially as shown and described.

29,003. TILE-BAND. JACOB JACOBS, Brooklyn, N. Y. Filed Dec. 31, 1897. Serial No. 665,243. Term of patent 14 years.



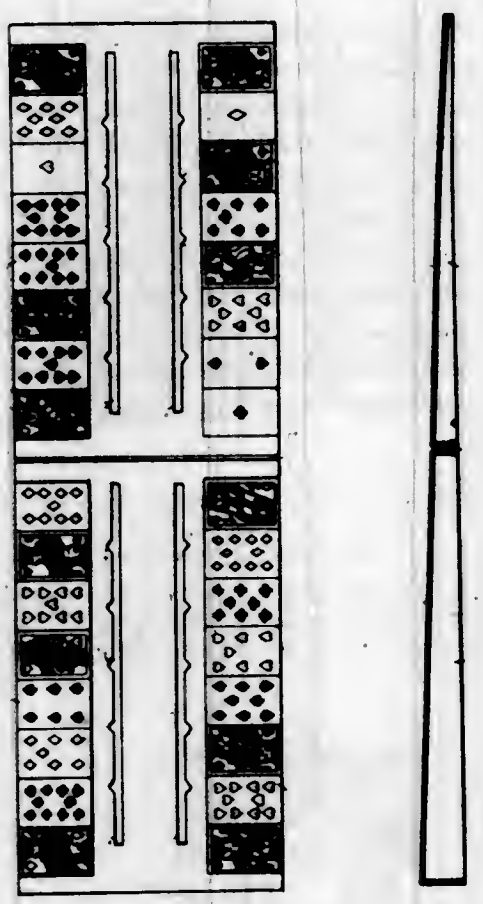
Claim.—The design for a tile-band, substantially as shown and described.

29,004. WHIST-TRAY. WALTER S. COLBE, Cincinnati, Ohio. Filed Jan. 20, 1898. Serial No. 667,346. Term of patent 7 years.



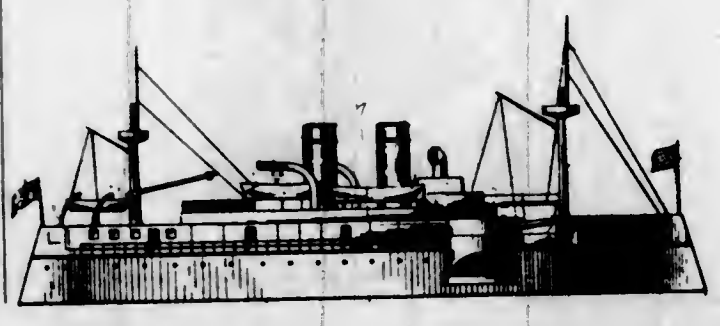
Claim.—The design for a whist-tray, substantially as herein shown and described.

29,005. GAME-BOARD. MINNIE GOLDSTEIN, San Francisco, Cal. Filed Apr. 7, 1898. Serial No. 676,827. Term of patent 3½ years.

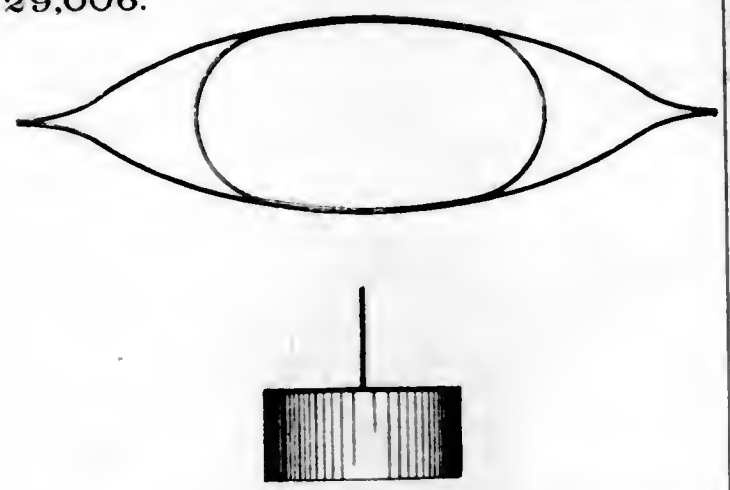


Claim.—The design for a game-board, substantially as shown and described.

29,006. HAT. FREDRICK C. ECKHARDT, North Wales, Pa. Filed May 21, 1898. Serial No. 681,378. Term of patent 3½ years.

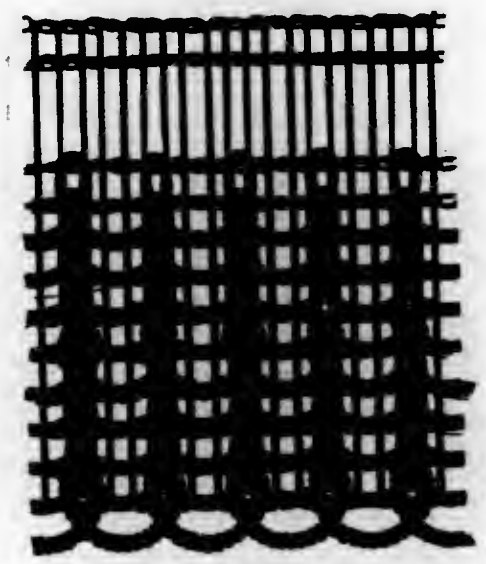


29,006.



Claim.—The design for a hat, as herein shown and described.

29,007. TRIMMING. LOUIS L. RUPP, New York, N. Y. Filed June 13, 1898. Serial No. 683,367. Term of patent 7 years.



Claim.—The design for a trimming, as herein shown and described.

29,008. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to William H. McCallum and Irving McCallum, Philadelphia, Pa. Filed June 3, 1898. Serial No. 682,498. Term of patent 3½ years.



Claim.—1. In a design for a carpet, the body *a*, substantially as described and shown.

2. In a design for a carpet, the border *b*, substantially as described and shown.

3. The design for a carpet consisting of the body *a*, and border *b*, substantially as described and shown.

29,009. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to William H. McCallum and Irving McCallum, Philadelphia, Pa. Filed June 3, 1898. Serial No. 682,499. Term of patent 3½ years.

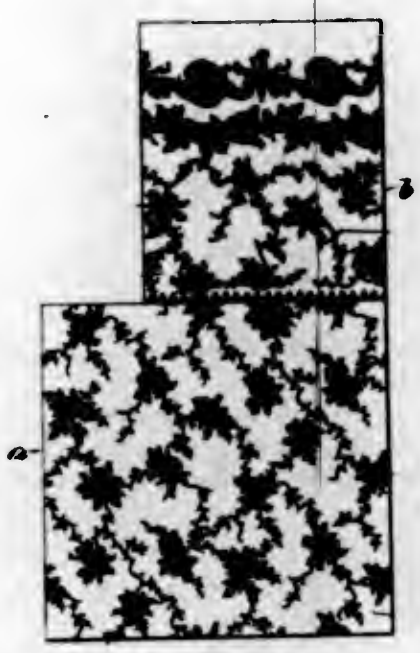


Claim.—1. In a design for a carpet, the body *a*, substantially as described and shown.

2. In a design for a carpet, the border *b*, substantially as described and shown.

3. The design for a carpet consisting of the body *a*, and border *b*, substantially as described and shown.

29,010. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to William H. McCallum and Irving McCallum, Philadelphia, Pa. Filed June 3, 1898. Serial No. 682,500. Term of patent 3½ years.

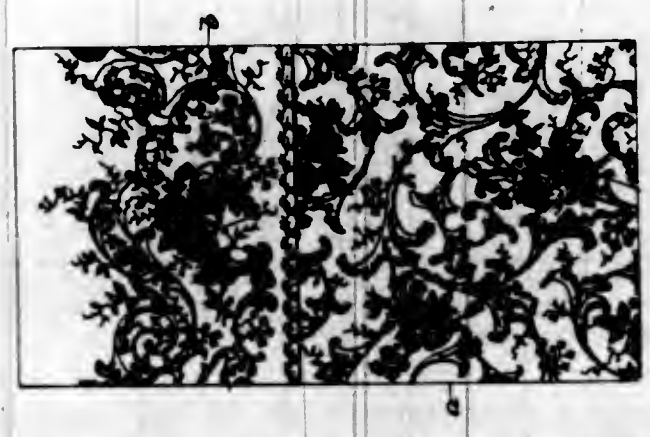


Claim.—1. In a design for a carpet, the body *a*, substantially as described and shown.

2. In a design for a carpet, the border *b*, substantially as described and shown.

3. The design for a carpet consisting of the body *a*, and border *b*, substantially as described and shown.

29,011. CARPET. ARTHUR MIDDLETON ROSE, Yonkers, N. Y., assignor to William H. McCallum and Irving McCallum, Philadelphia, Pa. Filed June 3, 1898. Serial No. 682,501. Term of patent 3½ years.

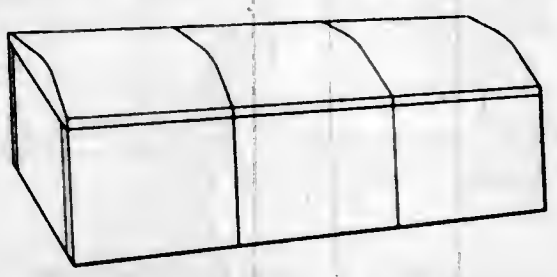


Claim.—1. In a design for a carpet, the body *a*, substantially as described and shown.

2. In a design for a carpet, the border *b*, substantially as described and shown.

3. The design for a carpet consisting of the body *a*, and border *b*, substantially as described and shown.

29,012. SARCOPHAGUS. EDWARD BARBER, Hope Valley, R. I. Filed Apr. 26, 1898. Serial No. 678,913. Term of patent 14 years.



Claim.—The design for a sarcophagus for caskets herein shown and described.

TRADE-MARKS

REGISTERED JULY 5, 1898.

81,769. BUTTONS. MORLEY BUTTON MANUFACTURING COMPANY. Boston, Mass. Filed May 13, 1898.

MILONITE

Essential feature.—The word "MILONITE." Used since February 1, 1898.

81,770. WRITING-PAPERS. WRITING PAPER COMPANY, Holyoke, Mass. Filed Mar. 8, 1898.

TEXTILE

Essential feature.—The word "TEXTILE." Used since September, 1892.

81,771. GOLF-BALLS AND GOLF-CLUBS. WILLIAM HILLMAN, Coventry, England. Filed May 13, 1898.

AGRIPPA

Essential feature.—The word "AGRIPPA." Used since November 26, 1896.

81,772. HORNS USED IN CONNECTION WITH SOUND-PRODUCING DEVICES. JOHN KAISER, New York, N. Y. Filed Apr. 14, 1898.

The "Kaiser Horn"



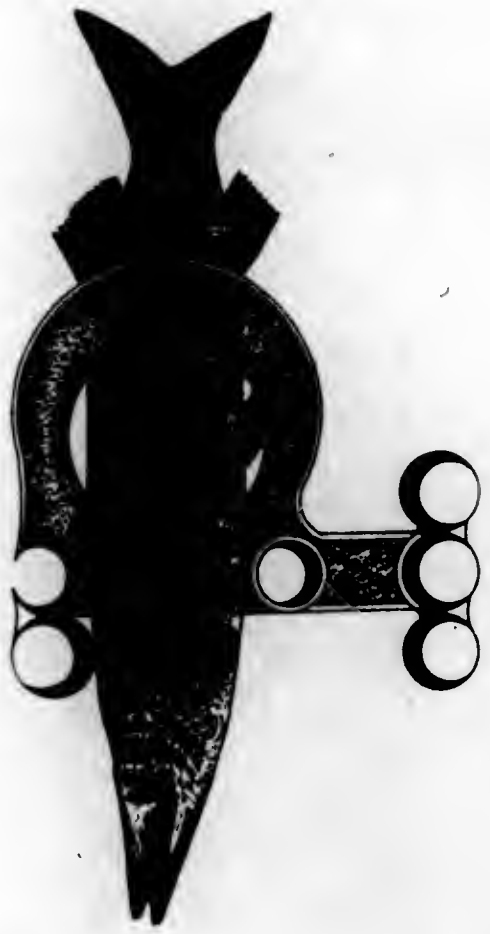
Essential feature.—The words "THE KAISER HORN," arranged above a phonograph, graphophone, or gramophone horn suspended from a tripod-support. Used since September 1, 1897.

81,778. ACETYLENE-GAS LAMPS. THE BADGER BRASS MANUFACTURING COMPANY, Kenosha, Wis. Filed Apr. 2, 1898.

SOLAR

Essential feature.—The word "SOLAR." Used since September 22, 1897.

81,774. SHARPENING-STONES. THE PIKE MANUFACTURING COMPANY, Haverhill, N. H., Evansville, Vt., Manlius and New York, N. Y., Orleans, Ind., and Hot Springs, Ark. Filed Nov. 27, 1897.



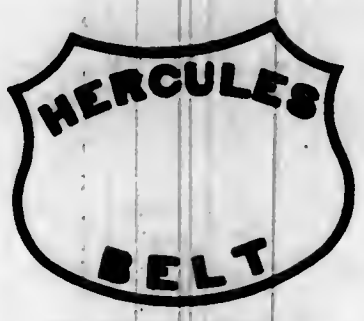
Essential feature.—The letter "P" with the representation of a pike-fish passing through the loop of the letter. Used since January 1, 1885.

81,775. MACHINERY FOR HARVESTING HAY AND CEREALS. THE PLANO MANUFACTURING COMPANY, Chicago, Ill. Filed Apr. 9, 1898.



Essential feature.—The representation in side elevation of a sprocket-wheel comprising a hub and an outer band, spokes connecting the two, peripheral teeth, and a capital letter "P" within the hub. Used since March 18, 1898.

81,776. ABRASIVE MATERIALS, SANDPAPER, AND EMERY PAPER AND CLOTH. UNION SAND PAPER AND EMERY WHEEL COMPANY, Portland, Me., Boston, Mass., and Chicago, Ill. Filed May 14, 1898.



Essential feature.—The representation of a shield and the words "HERCULES BELT." Used since May 25, 1897.

81,777. ROOF-PAINT. THE KANSAS CITY ROOFING AND CORRUGATING COMPANY, Kansas City, Mo. Filed Apr. 18, 1898.



Essential feature.—A representation in silhouette of a donkey and the word "DONKEY." Used since January, 1897.

81,778. PAINTS AND SURFACE COATINGS. AUGUST R. MAIER, Minneapolis, Minn. Filed Feb. 17, 1898.



Essential feature.—A monogram made up of the letters "M" and "O," with the picture or portrait of a person associated therewith. Used since May 1, 1897.

81,779. WASHING COMPOUNDS. MERRIMAN M. JONES, JOHN T. JONES, MAKE M. KORNEGAY, and AARON L. MAYHEW, Jonesborough, Tex. Filed Nov. 19, 1897.



Essential feature.—The representation of a live oak, a spring and stream at the base of the tree, a wash-pot and fire under the pot, with a woman standing at a tub with a clothes-wringer attached thereto, and a broken washboard on the ground. Used since July 1, 1897.

81,780. SUBSTITUTE FOR SOAP. FREDERICK W. TURNER, Jr., Boston, Mass. Filed Feb. 26, 1898.

LAVASA.

Essential feature.—The word "LAVASA." Used since 1890.

81,781. LIQUID ROUGE. MABEL EATON FARNUM, New York, N. Y. Filed Feb. 18, 1898.

GIRLHOOD BLOOM

Essential feature.—The words "GIRLHOOD BLOOM" and a monogram of the letters "G B." Used since February 10, 1898.

81,782. MEDICINE FOR RESTORING GRAY HAIR TO ITS NATURAL COLOR AND FOR GROWING NEW HAIR. THE GOULD GRAY HAIR REMEDY Co., Saginaw, Mich. Filed Apr. 16, 1898.

PRODU-RENU

Essential feature.—The compound word "PRODU-RENU." Used since July 1, 1896.

81,788. INTERNAL REMEDY FOR THE DISEASES OF WOMEN. HASKELTINE & PERKINS DRUG COMPANY, Grand Rapids, Mich. Filed Apr. 26, 1898.

SEDANINE

Essential feature.—The word "SEDANINE." Used since January 1, 1897.

31,784. MENTHO-QUININE AND LAXATIVE QUINIDINE TABLETS AND A KIDNEY CURE. VAN VLEET-MANSFIELD DRUG COMPANY, Memphis, Tenn. Filed Dec. 31, 1897.



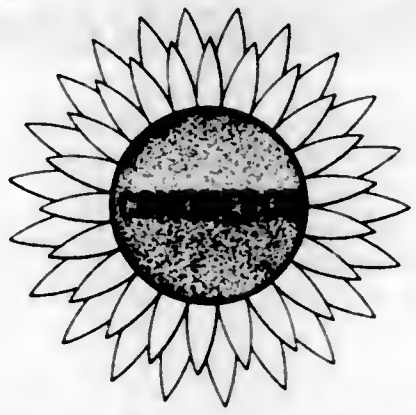
Essential feature.—The representation of the earth's sphere with its axis vertical and showing portions of both continents. Used since August, 1885.

31,785. HERB REMEDIES FOR CERTAIN NAMED DISEASES. CHARLES WILLIAM UHLER, Los Angeles, Cal. Filed Jan. 26, 1898.



Essential feature.—The word "Ovo" over a half-moon with a human face in it. Used since June, 1896.

31,786. SALVES. HARRIET M. GAFFNEY, St. Louis, Mo. Filed May 2, 1898.



Essential feature.—The word "CONQUEROR" upon the representation of a sunflower. Used since March 1, 1898.

31,787. LARD. BROWN & HARRIS, New Orleans, La. Filed May 10, 1898.

ALBO-BELLA

Essential feature.—The compound word "ALBO-BELLA." Used since October 1, 1896.

31,788. COMPRESSED FOOD. THE AMERICAN COMPRESSED FOOD COMPANY, Passaic, N. J. Filed Mar. 26, 1898.



Essential feature.—The representation of a soldier standing by a sailor sitting on the shore. On the water appears a vessel, while in front of the soldier and sailor is a box carrying the letters "S. E. R." Above the picture appears the sentence "STANDARD EMERGENCY RATION." Used since February, 1897.

31,789. CERTAIN NAMED CONFECTIONERY. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Apr. 4, 1898.

RICHELIEU

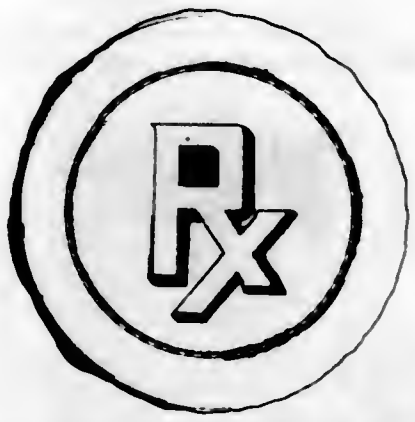
Essential feature.—The word "RICHELIEU." Used since February 20, 1896.

31,790. CERTAIN NAMED SACCHARINE SUBSTANCES. PRIME BROS., New York, N. Y. Filed Apr. 26, 1898.

Glycosine.

Essential feature.—The word "GLYCOSINE." Used since December 1, 1895.

31,791. MINERAL WATERS. THE WAUKESHA WATER COMPANY, Jersey City, N. J. Filed May 14, 1898.



Essential feature.—The representation of a seal, in the center of which is a recipe symbol. Used since December 15, 1897.

31,792. LAGER-BEER. INDEPENDENT BREWING ASSOCIATION, Chicago, Ill. Filed Mar. 16, 1898.



Essential feature.—The representation of a castle within a characteristic letter "E" and the letter "B," linked to the bottom of said letter "E." Used since March 5, 1898.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE KAUFMANN & BLACHE.

Decided May 26, 1898.

1. TRADE-MARKS—REPRESENTATION OF A CAT, WORDS "OLD TOM," ETC.

A trade-mark consisting in the pictorial representation of a cat in a crouching position, three of its legs resting on the ground and the fourth being in an elevated position, the whole being printed in gold on a red background, generally arranged as shown in the drawing, in which the colors, excepting black and white, are omitted, and the words "Old Tom" inclosed in a border surmounting the same, and the words "Celebrated Cordial Gin" appearing beneath the same, refused registration as a trade-mark for gin on a mark consisting of a cat standing upon a barrel on which are placed the words "Old Tom," on the ground that while there are differences in the details, the salient features of both marks being the representation of a cat, the minor differences are not such as to sufficiently differentiate the two marks.

2. SAME—REGISTRATION OF INTERFERING OR DECEPTIVE TRADE-MARKS CONDEMNED.

The Patent Office should not register trade-marks which would have a tendency to mislead or deceive the public or which would be held to be an infringement upon prior registered or unregistered marks.

ON petition.

TRADE-MARK FOR GIN.

Application for registration filed November 11, 1897, No. 54,568.

Mr. Frederic B. Keefer for the applicants.

DUELL, *Commissioner:*

Applicants seek to register a trade-mark for gin, the essential feature of which they state consists—

in the pictorial representation of a cat in a crouching position, three of its legs resting on the ground, and the fourth being in an elevated position, the whole being printed in gold on a red background. This has generally been arranged as shown in the accompanying drawing, in which the colors, excepting black and white, are omitted, and the words "Old Tom" inclosed in a border surmounting the same, and the words "Celebrated Cordial Gin" appearing beneath the same.

The Examiner has rejected the application upon a trade-mark for gin and other liquors, No. 15,521, registered May 29, 1888, the essential feature of which is stated to consist "of the representation of a cat standing upon a barrel."

An examination of the registered mark shows the cat standing upon a barrel upon which are placed the words "Old Tom." There are differences in the details, but the salient feature of both being the representation of a cat the minor differences are such as not to sufficiently differentiate the two marks. Placed side by side the ordinary observer would not be deceived; but a purchaser calling for the original brand would in nine cases out of ten as readily take the article bearing the mark now sought to be registered. I do not think that he would pay any attention to the fact that the cat of the mark sought to be registered is printed in gold on a red background, nor would he, in my opinion, notice the absence of the barrel.

The rights given by the trade-mark law of 1881 are very limited, as was stated by the Court of Appeals of the District of Columbia in *Einstein* v. *Sawhill*, (65 O. G., 918:)

The right is not created by the Federal Government, and does not emanate from it, as do patent-rights, and all that Congress has sought to do is to provide a recording act of a very limited character, the better to evidence the ownership of the right.

The Patent Office continually issues patents for inventions the making, use, or sale of which would infringe upon prior patents. This is lawfully and properly done. But the relation of the Patent Office to the issue of patents is very different from its relation to the registration of trade-marks. A patent is granted for a limited term, whereas a trade-mark is practically unlimited as to time, and while trade-marks are registered by the Patent Office in the first instance for thirty years, yet the law provides that—

at any time during the six months prior to the expiration of the term of thirty years, such registration may be renewed on the same terms and for a like period.

In my opinion the Office should not register trade-marks which would be held to be an infringement upon prior registered or unregistered trade-marks. The Patent Office should not register trade-marks which would have a tendency to mislead or deceive purchasers. The act of 1881 expressly provides that the Office shall not issue any trade-mark—

which is identical with a registered or known trade-mark owned by another, and appropriate to the same class of merchandise, or which so nearly resembles some other person's lawful trade-mark as to be likely to cause confusion or mistake in the mind of the public or to deceive purchasers.

A cursory examination of a few of the reported trade-mark cases shows that the decisions of the courts are uniform in holding that the marks need not be identical to constitute infringement. In one case the plaintiffs sold their condensed milk in tins bearing labels with the figure of a milk-maid, with a medal on each side. The defendants began to sell milk in tins labeled with the figure of a milkman, with the arms of Switzerland in a medallion on either side. The defendants were enjoined.

In another case the plaintiffs used the device of a bull's head, and although there were points of

difference between the bull's head used by the plaintiffs and the one put out by the defendant the court granted an injunction. The court said:

It is not necessary that the symbol, figure, or device used or printed and sold for use should be a facsimile or precise copy of the original trade-mark, or so close an imitation that the two cannot be distinguished except by an expert, or upon a critical examination by one familiar with the genuine trade-mark. If the false is only colorably different from the true, if the resemblance is such as to deceive a purchaser of ordinary caution, or if it is calculated to deceive the careless and unwary, and thus to injure the sale of the goods of the proprietor of the trade-mark, the injured party is entitled to relief. (*Colman* v. *Crump*, 70 N. Y., 578.)

In another case where the plaintiff employed the words "Charter Oak" and a sprig of oak-leaves the defendant was enjoined, although omitting the sprig of leaves.

The mere fact that the present applicants omit the barrel would under the latter case lead to the grant of an injunction against the use of their mark.

The books are replete with similar cases, but it is unnecessary to add to those already cited.

The action of the Examiner in refusing registration is affirmed.

PARK *v.* DAVIS.

Decided May 31, 1898.

1. INTERFERENCE — CONTINUING APPLICATION — REDUCTION TO PRACTICE.

Park filed an application on May 8, 1895, which disclosed and claimed substantially the subject-matter of the interference. This application was allowed, but became abandoned. Park filed a second application, the one involved in this interference, before the first became abandoned, containing substantially the claim of the allowed and abandoned application. *Held* that Park is entitled to claim a constructive reduction to practice as of May 8, 1895, as in the first application there was not only clearly disclosed the issue of the interference, but a claim was allowed which was repeated in the application in interference and which became the issue thereof.

2. SAME—NO INTERFERENCE IN FACT—DISSOLUTION.

While there is no interference in fact between Park's application and Davis's patent, yet in view of the fact that the interference has proceeded to final hearing and that Davis is a patentee whose patent cannot be recalled by the Patent Office *Held* that it is best not to direct that the interference be dissolved, but to award priority on the issue in controversy to Park.

APPEAL from Examiners-in-Chief.

BOILERS.

Application of Kennedy Park filed July 30, 1896, No. 601,089. Patent granted Leonard D. Davis November 17, 1896, No. 571,650.

Messrs. Wright, Brown & Quinby for Park.

Mr. J. C. Sturgeon for Davis.

DUELL, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief awarding priority of invention to Davis on the following issue:

As an article of manufacture, a header composed of two oppositely-inclined portions and provided at one side with holes to receive a series of tubes and at its ends with holes through which said ends may be connected with vertical circulating-pipes, the header being centrally depressed.

The questions involved in this proceeding are substantially the same as those presented for my consideration in the case of *Park* v. *Cain*, decided April 20, 1898, (83 O. G., 1345,) and I can see no reason for changing the opinion there expressed. Park's application involved in this interference is the same application as that involved in the above-entitled interference, and the record shows, as it did in that case, that Park filed an allowable application for patent on May 8, 1895, which application disclosed the invention now in issue, but also made a claim very similar thereto. I then held that the subject-matter of Park's first application being a part of his second application any idea that he intended to abandon the subject-matter of the application was negatived, and that while, strictly speaking, the second application for all purposes might not be susceptible of being treated as a continuation of the first application, yet for many purposes it could be so treated. I held that the second application was, for the purpose of showing a constructive reduction to practice, a continuation of the first application and that Park, having disclosed the subject-matter of the issue in the first application at a date prior to any date that could be given to his adversary, was entitled to an award of priority.

The facts in the present case are stronger than in the former one. What I then stated in reference to the drawings and specifications of Park's two applications still holds true, and in addition thereto it appears that Park in the first application made and was allowed the following claim:

3. As an article of manufacture, a header composed of two oppositely-inclined portions and provided at one side with holes to receive a series of tubes and at its ends with holes through which said ends may be connected with vertical circulating-pipes, the upper and lower walls of the header being continuous or unbroken, whereby passage of water from or to the header will be restricted to the said tubes and circulating-pipes.

When Park filed the second application, the one involved in this interference, which he did before the first application had become abandoned, he incorporated this claim into the new application. It appears that that claim, which had been allowed in the first application, was rejected and amended by striking out all after the words "circulating-pipes" in the fourth line and substituting in place thereof the words "the header being centrally depressed." The claim as amended was allowed and became the issue of this interference.

In my opinion Park is entitled to claim the constructive reduction to practice as of May 8, 1895, for in that application, as I have stated, there was not only clearly disclosed the issue of the interference, but a claim was allowed which was repeated in the present application and, with a slight amendment, was allowed and became the issue of this interference.

Being of the opinion that the second application is, for the purpose of showing a constructive reduction to practice, a continuation of the first application, I must award priority to Park, because his first application was filed at a date prior to any date that can be given to Davis. As I stated in the interference of *Park* v. *Cain*, I feel that an injustice would be done Park by holding that by filing a second application he is deprived of the earlier date of a constructive reduction to practice, which he would clearly have been entitled to by renewing his first application. So far as applica-

ble I adopt the decision made by me in the case of *Park* v. *Cain*, and to the authorities therein cited I add the case of *Weston* v. *White*, (13 Blatchf., 447–452.)

The Examiners-in-Chief having directed my attention to the fact that in their opinion no interference in fact exists under the provisions of Rule 126 I have considered the question and agree with the majority of the Board that no interference in fact exists; but in view of the fact that the interference has proceeded so far and that Davis is a patentee whose patent cannot be recalled by the Office I think it best not to direct that the interference should be dissolved, but to award priority of the issue in controversy to Park.

The decision of the Examiners-in-Chief awarding priority to Davis is reversed.

EX PARTE STEVENSON.

Decided June 24, 1898.

FINAL FEE—CERTIFICATE OF DEPOSIT, DELAY IN FORWARDING TO PATENT OFFICE.

An application was allowed December 16, 1895, twenty dollars was paid to the Assistant Treasurer of the United States at Philadelphia, and a certificate of deposit obtained June 15, 1896, which was not filed in the Patent Office until June 18, 1898, with a request that the certificate be applied to the said application and a patent issued thereon, *Held* that as the certificate was not promptly forwarded to the Office, as required by the rules, it should not be applied to the application, but returned to applicant.

ON reference.

LOCK AND LATCH.

Application of S. Price Stevenson filed November 19, 1895, No. 569,394.

Mr. S. Lloyd Wiegand for the applicant.

DUELL, *Commissioner:*

This case has been referred to me by the Chief of the Issue and Gazette Division for instructions in regard to applying a final fee paid by certificate of deposit which was not forwarded to this Office promptly after the receipt thereof by the applicant from the Assistant Treasurer of the United States.

The records show that the application was allowed and notice thereof mailed to applicant through his attorney on December 16, 1895, and the applicant was called upon to pay the final fee within six months from the date of the notice or else his application would be withheld from issue under the statutes and rules of this Office. On June 18, 1898, there was received in this Office a letter from the applicant inclosing a certificate of deposit issued by the Assistant Treasurer of the United States at Philadelphia, Pa., on June 15, 1896, for twenty dollars as a fee on the above-entitled application, and the applicant requested that the patent issue on this application. The Chief of the Issue and Gazette Division declined to apply this fee to the application without instructions from the Commissioner.

It is seen that while the twenty dollars as the final Government fee on this application was deposited in the Treasury within the six months required by law this Office had no notice of the payment of the fee until June 18, 1898, more than two years after the payment of the fee to the Treasury Department.

The records of this Office show that this is not the first time that the attorney in this case has failed to promptly forward certificates of deposit to this Office. In the case of *ex parte Wiegand*, (56 O. G., 803,) where he failed to promptly forward certificates of deposit for final Government fees and the Commissioner refused to apply them, he took an appeal to the Secretary of the Interior from the action of the Commissioner. In that case the Secretary ruled that the certificates of deposit should be applied, as it had been the practice of the Office to receive these certificates without regard to a time limit; but in this decision he suggested that the Office adopt a rule requiring the prompt presentation of certificates of deposit after they had been obtained from the proper official where the deposit had been made. In view of this suggestion of the Secretary present Rule 207 was adopted June 18, 1897, and this rule requires that certificates of deposit in case of payment of final fees shall be deposited in the mail for transmission to the Patent Office within six months from the allowance of the application.

Prominent notice of this rule was given to all persons having business before this Office by publication in the OFFICIAL GAZETTE July 27, 1897, and frequently thereafter.

If there were any excuse or supposed right that applicant had for withholding a certificate of deposit from this Office prior to the adoption of the rule, there has certainly been none since that rule was adopted, which was a year prior to the presentation of the present certificate of deposit to this Office. The certificate of deposit on its face gave notice to applicant that it should be promptly forwarded to the Commissioner of Patents. On the left margin of the certificate appear these words: "This shall be forwarded by the first mail by the depositor to the Commissioner of Patents."

As the Secretary of the Interior well said in his decision:

> The privilege of making payment to an authorized officer at his own home is a great convenience to the applicant, and he ought not to complain if required to do that which is necessary to the proper execution of the patent laws—*i. e.*, to promptly give to the Commissioner notice of such payment—by the presentation of his duplicate receipt or certificate of deposit.

The applicant has failed to carry out the printed instructions on the face of the certificate of deposit and has violated the clear intent and spirit of the statutes and a positive rule of this Office regarding the prompt presentation to the Commissioner of Patents of the evidence of the final fee having been paid to the Treasury Department.

The certificate will not be applied in this case, and it is directed that it be returned to applicant.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

MASON *v.* HEPBURN.

Decided June 7, 1898.

1. INTERFERENCE—REDUCTION TO PRACTICE—ABANDONMENT—PRIORITY.

Hepburn's date of invention is his record date, April 3, 1894. Mason conceived of the invention and made a complete drawing June 28, 1887. He reduced the invention to practice soon

after. The device was then stored away in the model-room of his company, and it was not produced until the institution of the interference proceedings. No devices of the kind were manufactured for any purpose and no exhibit of the device was made to the public, and no one saw it, except Mason and one or two other employees of his company. *Held* that Mason had abandoned the invention, and priority was awarded to Hepburn.

2. SAME—PRIORITY—FIRST INVENTOR FAILING TO DISCLOSE THE INVENTION TO THE PUBLIC.

Considering the interest of the public, it is *Held* that a subsequent inventor of a new and useful manufacture or improvement who had diligently pursued his labors to the procurement of the patent in good faith and without any knowledge of the preceding discoveries of another shall as against that other who has deliberately concealed the knowledge of the invention from the public be regarded as the real inventor and as such entitled to his reward.

3. SAME—ABANDONMENT AFTER COMPLETION OF AN INVENTION.

An abandonment after completion of an inventive act applies in a case where the right of the public to the use is involved and not in one where the contention is between rival claimants merely of a monoply. The ground for this doctrine lies in the spirit and policy of the patent laws and in the nature of the equity that arises in favor of him who gives the public the benefit of the knowledge of his invention, who expends his time, labor, and money in discovering, perfecting, and patenting in perfect good faith that which he and all others have been led to believe has never been discovered by reason of the indifference, supineness, or willful act of one who may, in fact, have discovered it long before.

4. SAME—REDUCTION TO PRACTICE—ACTUAL USE—TESTS.

What is successful construction is a matter the determination of which must largely depend upon the nature and purpose of the device in the particular case, as well as upon the special circumstances surrounding the alleged construction and use. Some devices are so simple and their purpose so obvious that the complete construction of one of a size and form capable of practical use might be regarded as a sufficient reduction to practice without actual use or test in an effort to demonstrate their complete success or probable commercial value.

5. SAME—SAME—ABANDONMENT, PRESUMPTION OF.

The fact that the construction of a device has not been followed within a reasonable time by practical use or application for patent affords a strong inference that what had been done was regarded by the inventor as experimental only and not a completion of the invention, and this would be reinforced if in the meantime the machine had been dismantled or destroyed.

6. SAME—SAME—DRAWING—MODEL.

A drawing perfect in every detail and plainly demonstrating the principle and practical utility of an invention is not reduction to practice, nor is a model, designed, constructed, and intended merely as a model.

Messrs. Earle & Seymour for the appellant.
Mr. Robert C. Mitchell for the appellee.

SHEPARD, *J.*:

First. This is an appeal from the decision of the Commissioner of Patents in the interference proceeding with the following issue:

In a magazine-firearm, the detachable end piece closing the outer end of the magazine provided with upwardly-projecting curved arms to clasp the sides of the barrel, substantially as described.

The device is a clip made in one piece instead of two, as formerly, one end of which is made to fit closely in the upper end of the magazine. The other is split or divided into two curved arms, which are elastic and clasp each side of the gun-barrel far enough around to hold securely without meeting each other. A side screw at the junction of magazine and barrel holds tight the clasp or releases it, as desired.

Hepburn received a patent for this invention September 11, 1894. Having taken no testimony, his date of invention must be confined to that of his application, filed April 3, 1894.

Mason's application was filed December 31, 1894. Mason offered testimony tending to show that he conceived the invention about June 28, 1887, on which date he made a complete drawing showing the device; that a working drawing was traced from that in July, 1887, and the clip made in the shops of the Winchester Repeating Arms Company; that during the same month a new "take-down" shotgun was made with this clip attached, which was tested, probably, in the shooting-gallery. This gun was stored in the model-room of the same company until produced in the course of the trial of this controversy. No clips of the kind were manufactured for any other purpose and no similar gun was made. No exhibition of the gun and clip was made to the public, and no one saw it besides the inventor and one or two other employees of the Winchester Company.

It appears that Mason filed an application for a detachable or "take-down" gun April 4, 1892, and the same was issued to him December 6, 1892. In this no mention is made of the device for clipping the upper end of the magazine to the barrel. On the same day, however, he received a patent for a clip, for which he applied August 1, 1892. This is made with projecting curved arms, as in the device of the controversy, to clasp the gun-barrel; but at the other end it has a hole made to receive the end of a pin on a separate piece that closes the end of the magazine.

Second. The testimony is sufficient to warrant the conclusion, in which all of the tribunals of the Patent Office have concurred, that Mason conceived the idea of this invention at the time claimed and that the gun, with the device attached, was actually completed and ready for use in July, 1887. They have not agreed, however, in respect of the sufficiency of the evidence to show with the required certainty that the gun, when constructed, was actually tested by firing in a manner that demonstrated the completeness and practical utility of the device of the controversy.

What is successful construction—that is to say, the embodiment of the inventor's conception in a substantial form which demonstrates at once its practical utility, constituting reduction to practice or use in the sense of the patent law—is a matter the determination of which must largely depend upon the nature and purpose of the machine or device in the particular case, as well as upon the special circumstances surrounding the alleged construction and use.

It is settled beyond all question that a drawing of even the simplest machine or device, perfect in every detail and plainly demonstrating the principle, efficacy, and practical utility of the invention, will not constitute reduction to practice. Nor will the requirements of reduction to practice or use be satisfied by a construction clearly designed and intended as a model and nothing more. They are but evidence of conception, furnishing the

foundation of an award of priority when accompanied by proof of subsequent diligence in the matter of actual reduction to practice. (*Porter* v. *Louden*, 73 O. G., 1551; 7 App. D. C., 64, 74.) At the same time some devices are so simple and their purpose and efficacy so obvious that the complete construction of one of a size and form intended for and capable of practical use might well be regarded as a sufficient reduction to practice without actual use or test in an effort to demonstrate their complete success or probable commercial value. This doctrine is maintained in the following cases: *Stitt* v. *Eastern R. R. Co.*, (22 Fed. Rep., 649;) *Sayles* v. *C. & N. W. R. Co.*, (4 Fish., 584;) *Parker* v. *Ferguson*, (1 Blatchf., 407;) *Pitts* v. *Wemple*, (2 Fish., 10, 15.)

In such instances, however, the fact that the construction of the device had not been followed within a reasonable time by practical or commercial use or application for patent would afford a strong inference that what had been done was regarded by the inventor as experimental only and not completion of invention, and this would be materially reinforced if in the meantime the machine had been dismantled or destroyed. It appears in this case that the Winchester Repeating Arms Company, which is the assignee of Mason, did not make or use another of these clips. The gun was laid away, and no application for a patent was made until three months after the patent to Hepburn had issued. Five years after its completion a patent for the detachable gun or one nearly resembling it was applied for without mention of the clip as a part of the combination, and then, some months later still, a patent was applied for and obtained for a clip working in the same general way, but made in two pieces.

All of the Board of Examiners-in-Chief agreed on reversing the decision of the Examiner of Interferences, because they were not satisfied with the evidence of reduction to practice. They said:

The clip evidently performs its expected office. Whether in use with no other means for holding it to the barrel and magazine than the clips and the sockets the construction is adapted to practical use has not been proven, and cannot be decided by us on a mere inspection of the gun. It has not been certainly established that this clip was ever proven to be perfected and adapted to practical use.

In reaching this conclusion they laid great stress upon the subsequent inaction of the inventor, and from their point of view rightly so.

In reaching our own conclusion we regard the examination of the evidence in respect of the actual firing test of the gun as immaterial, because, in our opinion, the reduction to practice of the clip was accomplished by its perfect construction and attachment to a gun apparently completely finished and ready for sale and use. It was demonstrably capable of producing the result sought to be accomplished—namely, that of closing the magazine and clipping it to the barrel. As admitted by the Examiners—

the clip evidently performs its expected office.

Actual test of the restraining power under the strain of repeated firing of the gun might be of importance in demonstrating the value of the clip, but was not necessary to the completion of the inventive act. (*Hall* v. *MacNeale*, 23 O. G., 937; 107 U. S., 90, 97.)

Third. Although the construction and adaptation to use of the clip were within the knowledge of several persons, these were all, with Mason himself, employees of the Winchester Repeating Arms Company, for whose benefit the invention was made. They had either been called on to aid in the construction and use or by the nature of their employment were necessarily cognizant of it. The invention was therefore as much secreted from the public as if it had been confined to the knowledge of Mason alone. (*Pennock* v. *Dialogue*, 1 Pet., 1, 19; *Kendall* v. *Winsor*, 21 How., 322, 330.)

The public did not and was not intended to receive any benefit from it during the seven years that intervened between the construction and the application for the patent. Not having been given or abandoned to public use there was nothing in the mere lapse of time to prevent Mason receiving a patent. (*Bates* v. *Coe*, 15 O. G., 337; 98 U. S., 31, 46.)

It seems that Mason attached no importance to the invention, for there is not a fact in evidence to account otherwise for his long inaction. Besides, as we have seen, he had in the meantime procured a patent for a gun, and on the same date another for a different clip to secure the magazine to the barrel. Apparently the invention as a thing of value had passed out of his mind, to which it was recalled by seeing the publication of the patent to Hepburn in the OFFICIAL GAZETTE.

It is unquestioned that Hepburn's invention was an independent act; that he had no knowledge whatever of the work done by Mason, and that when he applied for and received his patent he in good faith believed himself to be the original and only inventor.

In this state of the case it remains to be considered whether the Commissioner, maintaining the view expressed in a separate opinion of one of the Examiners-in-Chief, was right in awarding priority to Hepburn on account of this conduct of Mason in purposely withholding his invention from the public without excuse for the period of more than seven years.

First. In our opinion the decision cannot be upheld on the ground that the invention by reason either of secretion or forgetfulness on the part of Mason had become, as it were, a lost art. It is true that to entitle one to a patent for the discovery of a lost art it does not seem to be necessary that it shall have been buried and unknown for ages or even for any great length of time. (*Gayler* v. *Wilder*, 10 How., 477, 497, 498; *Hall* v. *Bird*, 6 Blatch., 438; *Taylor* v. *Wood*, 8 O. G., 90; 12 Blatch., 110, 121; *Converse* v. *Mathews*, 58 Fed. Rep., 246, 249; 1 Rob. on Pats., sec. 323.)

But it is necessary that the knowledge of the art or the improvement therein shall have completely disappeared. It must at least have been so far forgotten that its inventor, if living, or others who may have witnessed its use would not be able to recall it to memory and reproduce it without the

assistance of the description made of the subsequent discovery. (*Rich* v. *Lippincott*, 2 Fish., 1, 8.)

Now if this device had been lost or destroyed by Mason that fact, coupled with his subsequent invention and patent of another and different one to accomplish the same purpose, might be sufficient to uphold the patent to Hepburn as the inventor of a new and useful manufacture or improvement "not known or used by others" before his discovery, as those words are used in the law. (Rev. Stat., sec. 4886; *Gayler* v. *Wilder*, 10 How., 477, 498.) In this case, where it was made to appear that a safe similar in construction to the patentee's had been made and used some years before by one Conner, the Court, construing the like words in the act of 1836, said:

> The court put it to the jury to say whether this safe had been finally forgotten and abandoned before Fitzgerald's invention, and whether he was the original inventor of the safe for which he obtained the patent; directing them, if they found these two facts, that their verdict must be for the plaintiff. We think there was no error in this instruction. For if the Conner safe had passed away from the memory of Conner himself, and of those who had seen it, and the safe itself had disappeared, the knowledge of the improvement was as completely lost as if it had never been discovered. The public could derive no benefit from it until it was discovered by another inventor. And if Fitzgerald made his discovery by his own effort, without any knowledge of Conner's, he invented an improvement that was then new, and at that time unknown; and it was not the less new and unknown because Conner's safe was recalled to his memory by the success of Fitzgerald's.

The facts of this case, however, are quite different. The clip had not been lost or destroyed or even removed from the gun. It was where the inventor could readily put his hand upon it. Reminded simply of its existence or possible value by the publication of the patent to Hepburn he required no assistance from the specification of that patent to aid him in again making or using it. He may have forgotten that he had made it and been reminded of it by the grant of Hepburn's patent, but it cannot be said to have been so far forgotten as to have become what is called a lost art.

Second. The remaining question is, can the decision be upheld upon the ground that Mason's right to claim of priority has become barred by his designed or negligent concealment of his invention from the public and the subsequent entry of his rival in the apparently unoccupied field?

We concur with the Commissioner in the answer to this question, that under the circumstances Hepburn must be held to be the first inventor in the sense of the law regulating the grant of patents. (Rev. Stat., sec. 4886.)

A liberal interpretation of the words of the statute is demanded in the interest of the public, for the advancement of which the patent laws were enacted. (*Kendall* v. *Winsor*, 21 How., 322, 327, 328.) In the opinion in that case it was said:

> The true policy and ends of the patent laws enacted under this Government are disclosed in that article of the Constitution, the source of all these laws, viz., "to promote the progress of science and the useful arts," contemplating and necessarily implying their extension and increasing adaptation to the uses of society. (*Vide* Constitution of the United States, Art. 1, sec. 8, clause 8.) By correct induction from these truths it follows that the inventor who, designedly, and with a view of applying it indefinitely and exclusively for his own profit, withholds his invention from the public, comes not within the policy or objects of the Constitution or acts of Congress. He does not promote and, if aided in his design, would impede the progress of science and the useful arts; and with a very bad grace could he apply for favor or protection to that society which, if he had not injured, he certainly had neither benefited nor intended to benefit. Hence, if during such a concealment an invention similar to or identical with his own should be made and patented or brought into use without a patent, the latter could not be inhibited nor restricted upon proof of its identity with a machine previously invented and withheld and concealed by the inventor from the public. The rights and interests, whether of the public or individuals, can never be made to yield to schemes of selfishness or cupidity; moreover, that which is once given to or is invested in the public cannot be recalled nor taken from them.

That case was, it is true, an action for infringement by a patentee against one who before the application for the patent had made use of his invention without claim, himself, of discovery. The right was claimed in the patentee, on the one hand, as against the right of the public on the other. Nevertheless we think that our conclusion is in strict conformity with the principles which it enounces, and there is nothing in it inconsistent with the spirit of indulgence that has always been manifested toward those who in good faith delay application for patent while engaged in a diligent effort to perfect their inventions. (*Idem*, p. 329; *Agawam Co.* v. *Jordan*, 7 Wall., 583, 607; *Yates* v. *Huson*, 74 O. G., 1732; 8 App. D. C., 93, 98.)

Considering, then, this paramount interest of the public in its bearing upon the question as presented here, we think it imperatively demands that a subsequent inventor of a new and useful manufacture or improvement who had diligently pursued his labors to the procurement of a patent in good faith and without any knowledge of the preceding discoveries of another shall, as against that other, who has deliberately concealed the knowledge of his invention from the public, be regarded as the real inventor and as such entitled to his reward.

This right of second discoverer has been recognized with considerable uniformity for a number of years in the administration of the Patent Office. (Duncan, Acting Commissioner, in *Monce* v. *Adams*, 1 O. G., 1; Paine, Commissioner, in *Mallett* v. *Cogger*, 16 O. G., 45, and *Farmer* v. *Brush*, 17 O. G., 150; Marble, Commissioner, in *Sheridan* v. *Latus*, 25 O. G., 501.) And again recently by Commissioner Duell, in whose decision the authorities are extensively reviewed. (*Mower* v. *Crisp & Copeland*, 83 O. G., 155.)

It has the sanction also of the following judicial decisions: *Rowley* v. *Mason*, (2 Am. Law Times Rep., 106;) *Consolidated Fruit Jar Co.* v. *Wright*, (6 O. G., 327; 12 Blatch., 149;) *U. S. Rifle and Cartridge Co.* v. *Whitney Arms Co.*, (11 O. G., 373; 14 Blatch., 94, 101;) *Boyd* v. *Cherry*, (4 McCreery, 70, 77;) *Cahoon* v. *Ring*, (1 Cliff., 610;) *White* v. *Allen*, (2 Fish., 440, 454.)

In *Bates* v. *Coe* (15 O. G., 337; 98 U. S., 31, 46) the point was not directly involved; but Mr. Justice Clifford in affirming the right of the inventor to keep his invention secret for any length of time without modifying his right to a patent coupled it with the following exception, as if one of unquestioned application, namely:

> Unless another in the meantime has made the same invention, and secured by patent the exclusive right to make, use and vend the patented improvement. Within that rule and subject to that exception, inventors may delay to apply for a patent.

See also 1 *Robinson on Patents*, section 390.

In some of the decisions the first inventor is regarded as having abandoned the field to other inventors, while in others he is held to have lost his right by sleeping too long upon it.

Strictly speaking, abandonment after the completion of an inventive act applies in a case where the right of the public to the use is involved and not in one where the contention is between rival claimants merely of the monopoly.

The true ground of the doctrine, we apprehend, lies in the spirit and policy of the patent laws and in the nature of the equity that arises in favor of him who gives the public the benefit of the knowledge of his invention, who expends his time, labor, and money in discovering, perfecting, and patenting in perfect good faith that which he and all others have been led to believe has never been discovered by reason of the indifference, supineness, or willful act of one who may, in fact, have discovered it long before.

It follows that the decision of the Commissioner must be affirmed. It is so ordered, and this decision will be certified to the Commissioner of Patents, in accordance with the law.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 84—No. 2. TUESDAY, JULY 12, 1898. PRICE—$5 per year.

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War Revenue—Stamp Tax.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 25, 1898.

The attention of persons having business before this Office is called to the provisions of the act entitled "An act to provide ways and means to meet war expenditures, and for other purposes," approved June 13, 1898. That part of this act which relates to matters arising in this Office takes effect July 1, 1898.

The first sentence of section 9 of this act provides:

That in any and all cases where an adhesive stamp shall be used for denoting any tax imposed by this act, except as hereinafter provided, the person using or affixing the same shall write or stamp thereupon the initials of his name and the date upon which the same shall be attached or used, so that the same may not again be used.

The first sentence of section 14 provides:

That hereafter no instrument, paper, or document required by law to be stamped, which has been signed or issued without being duly stamped, or with a deficient stamp, nor any copy thereof, shall be recorded or admitted, or used as evidence in any court until a legal stamp or stamps, denoting the amount of tax, shall have been affixed thereto, as prescribed by law.

Section 15 provides:

That it shall not be lawful to record or register any instrument, paper, or document required by law to be stamped unless a stamp or stamps of the proper amount shall have been affixed and canceled in the manner prescribed by law; and the record, registry, or transfer of any such instruments upon which the proper stamp or stamps aforesaid shall not have been affixed and canceled as aforesaid shall not be used in evidence.

Schedule A contains the following provisions:

Certificates of any description required by law not otherwise specified in this act, ten cents.

* * * * * * *

Mortgage or pledge, of lands, estate, or property, real or personal, heritable, or movable, whatsoever, where the same shall be made as a security for the payment of any definite and certain sum of money, lent at the time or previously due and owing or forborne to be paid, being payable; also any conveyance of any lands, estate, or property whatsoever, in trust to be sold or otherwise converted into money, which shall be intended only as security, either by express stipulation or otherwise; on any of the foregoing exceeding one thousand dollars and not exceeding one thousand five hundred dollars, twenty-five cents; and on each five hundred dollars or fractional part thereof in excess of fifteen hundred dollars, twenty-five cents.

* * * * * * *

Power of attorney * * * to perform any and all other acts not hereinbefore specified, twenty-five cents.

Notice is hereby given that to all certificates required by law to be issued by this Office there must be affixed the proper revenue-stamp, to the value of ten cents, which must be provided or paid for by the party ordering the certificate, and that mortgages of patent-rights, and conveyances of such rights "in trust to be sold or otherwise converted into money, which shall be intended only as security, either by express stipulation or otherwise," which are offered for registration in this Office, and all powers of attorney, must be provided with the stamps required by this act. Unless every such mortgage, conveyance, or power of attorney be stamped in accordance with this act it will not be registered or entered on the records of this Office, but will be returned to the party offering it for compliance with the provisions of this act.

C. H. DUELL.
Commissioner.

Schedule of stamp taxes required upon papers filed in or issued by the United States Patent Office.

Certificates. (This includes certificates of registration of Trade-Marks, Labels, and Prints issued by the Patent Office)	$0.10
Mortgages, and conveyances in trust—	
Exceeding one thousand dollars and not exceeding fifteen hundred dollars	.25
And on each five hundred dollars or fractional part thereof in excess of fifteen hundred dollars	.25
Power of attorney	.25

Renewal of Forfeited Cases.

Rule 175. When the patent has been withheld by reason of non-payment of the final fee, any person, whether inventor or assignee, who has an interest in the invention for which such patent was ordered to issue may file a renewal of the application for the same invention; but such second application must be made within two years after the allowance of the original application. * * *

Rule 176. In such renewal the oath, petition, specification, drawing, and model of the original application may be used for the second application; but a new fee ($15.00) will be required. * * *

CERTIFICATES OF REGISTRATION ISSUED JULY 12, 1898.

Labels.

6,623.—Title: "ARMOR STRENGTH CHEVIOTS. WEAR AND COLOR GUARANTEED. SAKS AND COMPANY." *Andrew Saks*, New York, N. Y., and *Isadore Saks*, Washington, D. C. Application filed June 17, 1898.

6,624.—Title: "RUSSIAN NAVY." (For Serge.) *Andrew Saks*, New York, N. Y., and *Isadore Saks*, Washington, D. C. Application filed June 20, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 5, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Between one and two months.			
38	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	May 7	June 20	222
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	May 5	June 15	171
	Between two and three months.			
109	XIX. Stoves and Furnaces	Apr. 9	June 25	246
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Apr. 6	June 21	214
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Apr. 5	June 21	226
255	XII. Mechanical Engineering, Store-Service, etc.	Apr. 6	June 20	171
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	Apr. 8	June 17	214
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Apr. 11	June 15	184
	Between three and four months.			
260	VIII. Furniture, Beds, Store Furniture, etc.	Apr. 2	June 28	413
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	Apr. 1	June 27	292
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Mar. 24	June 23	234
80	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Mar. 14	June 21	448
246	I. Tillage and Fences	Mar. 14	June 20	209
263	X. Carriages and Wagons	Apr. 1	June 17	237
89	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Mar. 28	June 17	279
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Mar. 12	June 17	380
248	XVIII. Steam-Engineering, etc	Mar. 8	June 17	308
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Mar. 16	June 15	390
98	XXI. Textiles, etc	Mar. 7	June 10	290
	Between four and five months.			
106	II. Farm Stock, Products, etc	Feb. 21	June 23	520
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Feb. 26	June 22	135
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Feb. 5	June 23	695
240	VII. Velocipedes	Feb. 15	June 21	659
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Feb. 9	June 21	191
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Feb. 21	June 20	424
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Feb. 21	June 18	366
120	IX. Hydraulics, Fire-Extinguishers, etc.	Mar. 2	June 14	296
	Between five and six months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Feb. 2	June 25	447
85	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Jan. 21	June 21	542
217	XXXIII. *TRADE MARKS, ETC., †DESIGNS, Drafting, and Optics.	Jan. 10	June 8	249
	Between six and seven months.			
95	XXX. Paper Manufactures. Lamps, and Gas-Fittings.	Dec. 27	June 21	322
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Dec. 23	June 15	538

Applications Under Examination—Continued.

	Between seven and eight months.			
215	XVII. Printing, Type-Writing Machines, and Linotyping.	Nov. 19	June 21	557
221	XXIII. Instruments of Precision, Acoustics, etc.	Nov. 9	June 20	455
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Nov. 26	Mar. 21	531

Total number of applications awaiting action 12,057

Under one month.			
†Designs	June 30	July 1	35
Between one and two months.			
*Trade-Marks	May 27	June 20	186

ISSUE OF JULY 12, 1898.

Patents	410—	No. 607,007 to No. 607,416, inclusive.
Designs	39—	No. 29,013 to No. 29,051, inclusive.
Trade-Marks	17—	No. 31,798 to No. 31,500, inclusive.
Labels	2—	No. 6,693 to No. 6,694, inclusive.
Prints	None.	
Reissues	1—	No. 11,678.
Total issue	469	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	----	New Hampshire	----	----
Arizona Territory	1	----	New Jersey	19	1
Arkansas	4	----	New Mexico Territ'y	----	----
California	23	----	New York	57	4
Colorado	5	----	North Carolina	2	----
Connecticut	14	1	North Dakota	1	----
Delaware	----	----	Ohio	33	----
District of Columbia	----	----	Oklahoma Territory	1	----
Florida	4	----	Oregon	----	----
Georgia	2	----	Pennsylvania	45	1
Idaho	----	----	Rhode Island	4	----
Illinois	44	2	South Carolina	1	----
Indian Territory	----	----	South Dakota	2	----
Indiana	13	----	Tennessee	4	----
Iowa	7	----	Texas	7	----
Kansas	6	----	Utah	1	----
Kentucky	2	----	Vermont	----	----
Louisiana	2	----	Virginia	2	----
Maine	4	----	Washington	6	----
Maryland	2	----	West Virginia	3	1
Massachusetts	41	4	Wisconsin	8	----
Michigan	9	----	Wyoming	----	----
Minnesota	2	1	U. S. Army	----	----
Mississippi	2	----	U. S. Navy	----	----
Missouri	13	2			
Montana	----	----	Total to citizens of the United States	395	17
Nebraska	1	----			
Nevada	----	----			

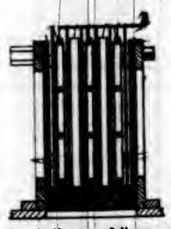
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	----	----	Italy	2	----
Australia	----	----	Mexico	----	----
Austria-Hungary	----	----	Netherlands	----	----
Barbadoes	----	----	Newfoundland	----	----
Belgium	1	----	New South Wales	----	----
Brazil	----	----	New Zealand	----	----
Canada	7	----	Norway	2	----
Cape Colony	----	----	Portugal	----	----
Chile, Republic of	----	----	Queensland	----	----
China	----	----	Russia	----	----
Colombia	----	----	Scotland	2	----
Cuba	----	----	South African Republic	----	----
Denmark	1	----	South Australia	----	----
Egypt	----	----	Spain	----	----
England	20	----	Sweden	2	----
Finland	----	----	Switzerland	----	----
France	5	----	Turkey	----	----
Germany	9	2	Victoria	3	----
Guatemala	----	----			
Hawaii	----	----	Total to citizens of foreign countries	54	2
India	----	----			
Ireland	----	----			

PATENTS

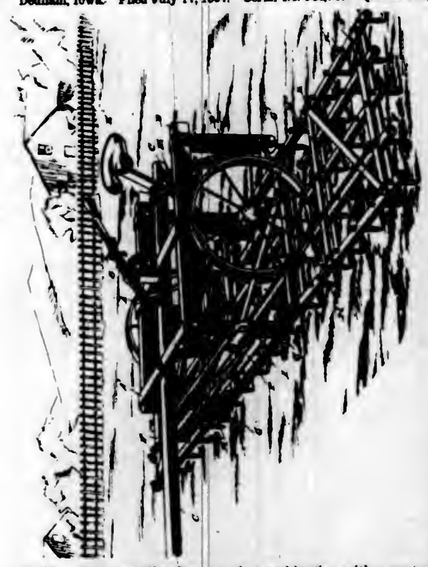
GRANTED JULY 12, 1898.

607,007. APPARATUS FOR MANUFACTURING OZONE. EMILE ANDREOLI, London, England. Filed Oct. 15, 1897. Serial No. 655,348. (No model.)



Claim.—An ozonizer built up as follows: an electrode consisting of a series of metallic strips having serrated edges, said strips being placed face to face in a row, and supported by rods passing through and mechanically connecting them together, a dielectric located opposite each set of serrated edges, a plate of wood or similar non-conducting material opposite each dielectric, said plate of wood provided on its opposite faces with a thin metallic layer constituting an electrode of opposing polarity to that first named, and so on, thus forming a series or plurality of ozonizers into a compact structure.

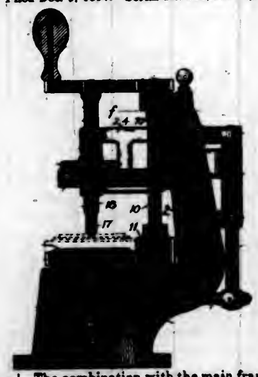
607,008. RIDING AND FOLDING HARROW. JOHN H. AYRHART, Dedham, Iowa. Filed July 17, 1897. Serial No. 644,919. (No model.)



Claim.—1. In a folding harrow, the combination with a central harrow-section, of side sections hinged thereto, rods hinged to said side sections adjacent to the outer ends thereof, and rods hinged at one end to the harrow-frame and at their opposite ends to the first-named rods, substantially as set forth.

2. In a harrow, the combination with the frame having guides depending from the rear portion thereof, a harrow-section having projections adapted to move in said guides and provided with shoulders which engage the guides, bars depending from the forward part of the frame, shouldered projections upon the forward part of the harrow-sections, said projections adapted to engage the bars with the shoulders thereof abutting thereagainst, a rod connecting the projections at the forward end of the harrow-section, whereby said section is movable vertically but is prevented from lateral movement, bails secured to the harrow and intersecting each other, an operating-lever, and a link connected to said lever and to the bails at their point of intersection, substantially as set forth.

607,009. LENS-CUTTING MACHINE. JOHN J. BAUSCH, Rochester, N. Y., assignor to the Bausch & Lomb Optical Company, same place. Filed Dec. 9, 1897. Serial No. 661,292. (No model.)



Claim.—1. The combination with the main frame, the rotary and vertically-movable work-support, and the arm on the frame extending over the support, the spindle on the arm and extending upwardly therefrom, the sleeve loosely mounted on the spindle, having the pattern thereon, of the laterally-movable tool-holder engaging the edge of the pattern, and means for rotating the pattern and support, substantially as described.

2. The combination with the main frame, the rotary and vertically-movable work-support, and the arm on the frame extending over the support, the vertical spindle on the arm, the sleeve loosely mounted on the spindle having the gear and the pattern thereon, gearing between said pinion and the work support, and a tool-holder engaging the pattern, substantially as described.

3. The combination with the main frame, the rotary work-support, and the arm on the frame extending over the support, the vertical spindle on the arm, the removable sleeve mounted on the spindle, having the gear and the pattern thereon, of the tool-holder engaging the pattern, the pinion mounted in the frame engaging the gear on the sleeve, and connections between the said pinion and the work-support, substantially as described.

4. The combination with the frame, the rotary work-support and the arm on the frame extending over the support, of the removable pattern mounted on upper side of the arm and the gear connected thereto, the pinion on the frame with which said gear engages, connections between the pinion and the work-support, the tool-holder, and a spring holding it in contact with the pattern.

5. The combination with the frame, the vertically-movable work-support having the gear-teeth, and the elongated pinion, of the supporting-arm on the frame, the pattern removably mounted on the upper side of the arm, the gear connected to the pattern, connections

between said gear and the elongated pinion, and the movable tool-holder engaging the pattern, substantially as described.

6. The combination with the frame having the supporting-arm, the rotary and vertically-movable work-support, and the spring-pressed work-holder on the arm, of the removable pattern rotating on the upper side of the arm, and connections between it and the work-support, the tool holder, and means for holding the latter in engagement with the pattern, substantially as described.

7. The combination with the main frame having the arm, the rotary removable pattern mounted on the upper side of said arm, the rotary work support beneath the arm having its center coincident with that of the pattern, and connections between the work-support and pattern for causing their simultaneous rotation, of the spring-operated carrier movable substantially radially of the pattern, the tool-holder thereon, and the adjustable block on the tool-holder for engaging the pattern.

8. The combination with the main frame having the arm, the spring-pressed work-holder on the lower side of the arm, the rotary removable pattern mounted on the upper side of said arm, the rotary work-support beneath the arm having its center coincident with that of the pattern and work-holder, and connections between the work-support and pattern for causing their simultaneous rotation, of the spring-operated carrier movable substantially radially of the pattern, the tool-holder thereon, and the adjustable block on the tool-holder for engaging the pattern.

9. The combination with the main frame having the arm thereon, the spring-pressed work-holder on the lower side of the arm, the rotary removable pattern mounted on the upper side of said arm, the rotary work-support beneath the arm having its center coincident with that of the pattern and work-holder, said work-support and arm being relatively movable toward and from each other, and connections between the work-support and pattern for causing their simultaneous rotation, of the spring-operated arm movable substantially radially of the pattern, the tool-holder thereon, and the adjustable block on the tool holder for engaging the pattern.

10. The combination with the pattern, of a movable support having a socket-bearing and an open bearing thereon, a tool-holder journaled in said bearings, and having a shoulder thereon for preventing longitudinal movement, substantially as described.

11. The combination with the pattern, of a movable support having a socket-bearing and a bearing thereon open toward the pattern, a tool-holder journaled in said bearings, and having a shoulder engaging the support and preventing longitudinal movement in the bearings.

12. The combination with the pattern, of the movable support having the upper and lower arms, the former provided with the socket-bearing, and the latter with the open-sided bearing, of the tool-holder pivoted in said bearings, and having the shoulder for engaging the lower arm and the adjustable block on the holder, substantially as described.

13. The combination with the frame, the rotary work-support, a pad adjustable on the support, and indicia for indicating their relative adjustment, of the rotary pattern, connections between the pattern and work-support for causing their simultaneous rotation, indicia for indicating the relative adjustment of the pattern and work-support, and a tool cooperating with the pattern and operating on the work, substantially as described.

14. The combination with the frame, the rotary work-support, the holding device for the latter, a pad on the work-support, and rotarily adjustable thereon, a scale and index between the pad and support for indicating in degrees their relative adjustment, of a rotary pattern, connections between said pattern and the work-support for rotating them simultaneously, indicia between the pattern and the frame, and a tool engaging the pattern and cooperating with the work, substantially as described.

15. The combination with the frame, the rotary and vertically-movable work-support having the gear-teeth, the arm on the frame extending over the work-support, the sleeve having the gear and the pattern thereon journaled on the arm and vertically removable therefrom, and the shaft in the frame having the pinions thereon, engaging the work-support and pattern-gear, of the swinging frame engaging the pattern and the tool-holder on said frame.

16. The combination with the main frame, the work-support, and the rotary pattern, of the swinging frame, the arbor therefor, the spring connected to the arbor, the rotary and adjustable sleeve to which the spring is connected journaled in the main frame, and projections between the sleeve and main frame for holding the sleeve in adjusted position.

17. The combination with the rotatable pattern embodying two relatively-adjustable sections, of a support movable toward and from the pattern, a tool-holder thereon, and adjusting devices between the tool-holder and pattern, substantially as described.

18. The combination with the rotatable pattern embodying the two relatively-adjustable sections, of the swinging tool-holder, a tool carried thereby, and adjustable connections between the tool and the pattern, whereby the path of the tool may be varied, substantially as described.

19. The combination with the rotatable elliptical pattern embodying the two sections relatively adjustable in the direction of the major axis of the ellipse, of the movable support, the tool-holder pivoted thereon engaging the pattern on opposite sides of the pivotal center of the holder, a tool carried by the holder, and means for adjusting the tool relatively of the pattern.

20. The combination with the rotatable elliptical pattern embodying the two sections adjustable in the direction of the major axis of the ellipse, of the swinging support, the tool-holder pivoted thereon, the block on the holder for engaging the periphery of the pattern, and means for adjusting the block on the holder.

21. A pattern embodying the base-plate having the guides thereon, the pattern-sections movable on the guides, and the springs connecting them, the rotary adjusting-sleeve, and serrated cam-surfaces and coöperating pins between the sleeve and pattern-sections, substantially as described.

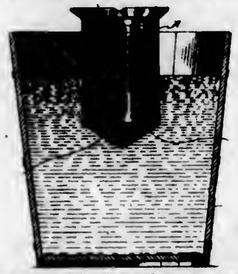
22. A pattern embodying the elliptical base-plate having the guides thereon, the semi-elliptical pattern-sections movable on the guides, the spring connecting them, the rotary sleeve having the notched cams, and the pins on the pattern-sections for engaging said cams, substantially as described.

23. In a lens-cutting machine, the combination with the stationary frame, a rotary work-support, and a diamond cutting-tool coöperating therewith, of a rotary shaft connected to the work-support, and an automatic clutch device on the stationary frame and engaging said shaft for preventing its backward rotation.

24. In a machine embodying a rotary work-support and a tool operating relatively thereto in one direction only, a rotary shaft communicating relative motion between said support and tool, and a clutch device for arresting said shaft, consisting of a spiral spring embracing the shaft by its own elasticity having a free end and stationary stops with which said end coöperates to clamp or release the spring from the shaft, substantially as described.
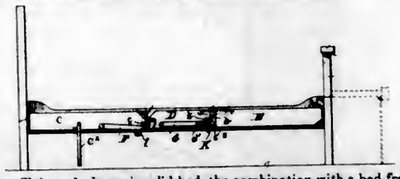
25. In a lens-cutting machine, the combination with a rotary work-support, and a diamond cutting tool coöperating therewith, of a shaft rotating with the support, a spiral spring embracing said shaft by its own elasticity, and having a free end, and stops with which said end engages to clamp or release the shaft.

607,010. WEIGHING-RECEPTACLE. GUSTAVE A. BAUMANN, Philadelphia, Pa. Filed Sept. 27, 1897. Serial No. 653,117. (No model.)



Claim.—As a new article of manufacture, a receptacle having its mouth flared and its lower portion V-shaped in cross-section, a weight arranged interiorly of the receptacle and comprising its bottom, said weight bringing the canter of gravity of the receptacle below the termination of the vertical walls thereof, as and for the purpose described.

607,011. INVALID-BED. ADRIAN R. BENNETT, Opelika, Ala. Filed Dec. 11, 1897. Serial No. 661,506. (No model.)

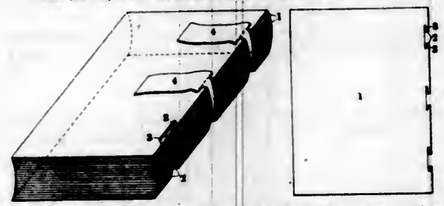


Claim.—1. In an invalid-bed, the combination with a bed-frame, of a bottom consisting of three movable sections, of means for pivotally and detachably securing the head-section to the frame, a swinging pivotal connection between the head-section and central section comprising substantially L-shaped members projecting below the pivotal connection between the head-section and the frame, locking-bolts for projecting below the L-shaped members, and links pivoted to the frame and having a sliding pivotal connection with the central section, substantially as described.

2. In an invalid-bed, the combination with the frame, of a bottom consisting of three movable sections, a pivotal connection between the head-section and the frame, means for maintaining the head-section at different inclinations, a pivotal swinging connection between the head-section and central section, means for locking the head-section and central section against independent movement, links connected to the frame and having a pivotal sliding connection with the central section, and laterally-swinging hooks on the frame for engaging the links, substantially as described.

3. In an invalid-bed, the combination with a frame, of a bottom consisting of three movable sections, a hinged connection between the central and foot sections, pivoted hooks on the frame for supporting the central and foot sections, a tripping-rod pivotally secured below the sections having upturned ends for engaging the hooks, and an extension on the rod for actuating the same, substantially as described.

607,012. BOOKBINDING. WILLIAM BOEHNER, Chicago, Ill. Filed Oct. 11, 1897. Serial No. 654,806. (No model.)



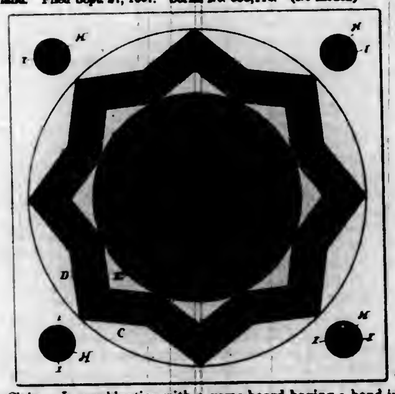
Claim.—1. A book comprising a plurality of leaves or sections having the cuts 2 and 3 in one edge and a binding-band seated in said cuts; said leaves being glued together along the edge overlapping the band substantially as described.

2. A book comprising a plurality of leaves or sections having the cuts 2 and 3 in one edge, and a binding band seated in said cuts; said leaves being glued together along the edge overlapping the back of the band, and glued to the band at said edge; substantially as described.

3. A book comprising a plurality of leaves or sections having the cuts 2 and 3 in one edge, a binding-band seated in said cuts and projecting from either side; said leaves being glued together along the edge overlapping the back of the band; and a cover permanently secured to the band at the base of such projecting parts; substantially as described.

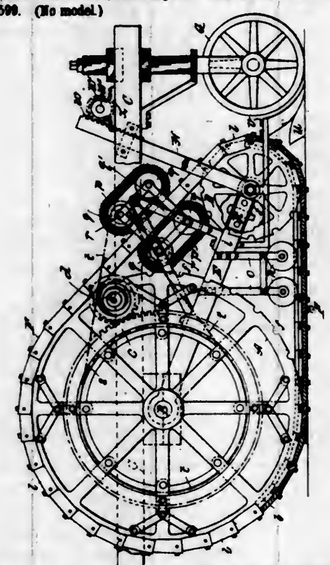
4. A book comprising a plurality of leaves or sections having the cuts 2 and 3 in one edge, a binding-band seated in said cuts and projecting from either side; said leaves being glued together along the edge overlapping the back of the band, and glued to the band at said edge; and a cover permanently secured to the band at the base of such projecting parts; substantially as described.

607,013. GAME APPARATUS. JAMES H. C. BOSS, Liverpool, England. Filed Sept. 27, 1897. Serial No. 653,118. (No model.)



Claim.—In combination with a game-board having a band indicated thereon said band being divided into transverse spaces and also a number of concentric paths designated from each other, a circle contained within said band, said circle being divided into spaces, said spaces being taken in groups, each group containing the same number of spaces as paths, and the spaces of each group being designated to correspond with said paths, groups of spots also designated to correspond with the paths arranged in each corner, and blocks or disks for each group of spots designated similarly thereto, as and for the purpose described.

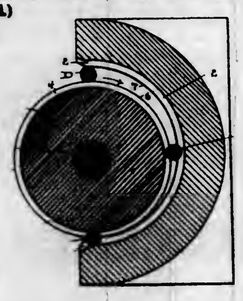
607,014. POWER MECHANISM FOR TRACTION-ENGINES. CHAUNCEY B. BOSTWICK, Pittsburg, Pa. Filed Nov. 23, 1897. Serial No. 659,599. (No model.)



Claim.—1. An improved power mechanism for traction-engines, consisting of the main driving-wheels and auxiliary wheels, each provided with recesses within their periphery for engaging a metal belt for forming a better and greater bearing-surface therefor, tension-wheels journaled in a frame which is secured to the arm or support, said tension-wheels being in constant contact with the inner surface of the belt for keeping said belt in close proximity with the ground, together with the revolving brushes, one on either side of the belt and in constant contact therewith, said brushes being operated by a sprocket-chain which passes over sprocket-wheels secured to the main driving-wheels and on the ends of the rollers over which the brushes rotate, substantially as shown and described.

2. An improved power mechanism for traction-engines, consisting of the main and auxiliary driving-wheels, said auxiliary wheels being journaled in arms or supports, a frame pivoted to the axles of said auxiliary wheels and provided at its forward end with a plow and its rear end resting against the under side of the arm or support, together with a pilot-wheel for supporting the forward end of the engine-frame proper, substantially as and for the purposes shown and described.

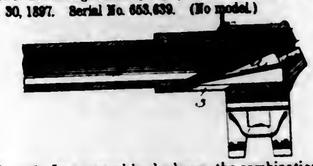
607,015. MACHINE FOR MAKING STEEL BALLS. WILLIAM W. BRIGGS, Cleveland, Ohio. Filed Nov. 21, 1896. Serial No. 613,049. (No model.)



Claim.—1. In a machine for making compressed-steel antifriction-balls, a base having a concave surface provided with a series of parallel grooves semicircular in cross-section at all points and cutting edges at their sides, in combination with a roller having a series of semicircular grooves and cutting edges matching the grooves and cutting edges in the base, the said roller being smaller relatively in cross-section than the base from the point where the stock enters to where the finished ball discharges and set into the base so as to bring the cutting edges together at the discharge side of the machine and apart at the entry side, thus causing a gradual and continuous cutting of the stock and compression of the ball from the initial point where the stock is introduced to substantially where the finished product is discharged, substantially as described.

2. In a machine for making compressed-steel antifriction-balls, a fixed base having a concave surface provided with a groove semicircular in cross-section at all points and having uniform cutting edges at its sides, in combination with a roller of uniform cross-section at all points having a smooth semicircular groove of uniform cross-section and with cutting edges extending around its periphery and matching the cutting edges of the base, the said roller set into the said base so as to produce a gradual biting cut from the entry side to the discharge side of the machine, substantially as described.

607,016. BRAKE-BEAM. LUTHER C. BURGESS, Chicago, Ill., assignor to the Chicago Railway Equipment Company, same place. Filed Sept. 30, 1897. Serial No. 653,639. (No model.)



Claim.—1. In a trussed brake-beam, the combination with a tubular compression member having an indentation for the reception of the tension member and a reëntrant edge formed by said indentation, of an end cup or sleeve provided with an inclined offset or filler-block adapted to engage the reëntrant edge of the compression member, and a suitable tension member, substantially as and for the purposes specified.

2. In a trussed brake-beam, the combination with a compression member, and a tension member, of an end sleeve, and a brake-head, said sleeve and head having the one a notch and the other a flange of greater width than the notch whereby that portion of the flange opposite the notch when the throw of the head is established may be forced into the notch to maintain the throw of the brake-head, substantially as and for the purposes specified.

3. In a trussed brake-beam, the combination of a tubular compression member having an indentation for the reception of the end of a tension member, a tension member, an end cup or sleeve having a filler-block to engage the reëntrant edge of the compression member and a tongue to engage a notch in the brake-head, and a brake-head having a notch with which the tongue on the end sleeve engages; substantially as and for the purposes specified.

607,017. PROCESS OF DESULFURIZING PETROLEUM. THEODORE F. COLIN, Jersey City, N. J. Filed Dec. 24, 1896. Serial No. 616,916. (No specimens.)

Claim.—1. The process of purifying Ohio and similar petroleum oils, which consists in distilling the crude oil or distillate with a peroxid, from which the oxygen is liberated in the presence of the hydrocarbons at the normal temperature of distillation, as set forth

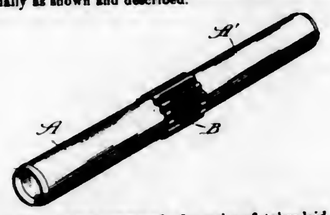
2. The process of purifying Ohio and similar petroleum oils, which consists in distilling the crude oil or distillate with a compound containing oxygen in an unstable condition and which is decomposed in the presence of the hydrocarbons at the normal temperature of distillation, liberating a metal in a nascent state that combines with the sulfur in the oil.

3. The process of purifying Ohio and similar petroleum oils, which consists in distilling the crude oil or distillate with a substance containing oxygen in an unstable condition so as to be liberated in the presence of the hydrocarbons at the normal temperature of distillation, and an alkaline hydroxid, as set forth.

4. The process of purifying Ohio and similar petroleum oils, which consists in distilling the crude oil or distillate with a mixture of such a substance as lead dioxid and caustic soda, as herein set forth.

607,018. UNDERGROUND ELECTRIC CONDUIT. THOMAS CONNELLY, Chicago, Ill. Filed Nov. 12, 1897. Serial No. 658,290. (No model.)

Claim.—1. A conduit composed of a series of tubes laid coaxially, said tubes being chamfered on their ends, and an unbroken, corrugated, metallic ring over the joints, for holding the said tubes in line, substantially as shown and described.



2. A conduit-duct composed of a series of tubes laid coaxially, said tubes being chamfered on their ends; an unbroken metallic ring, made expansible by having corrugations impressed therein, over the joints, for holding the said tubes in line, and a seal of cement or like material, around the said ring, substantially as shown and described.

3. In a conduit-duct, the combination of the chamfered tubes A and A', the corrugated ring B, and the seal C, substantially as shown and described.

607,019. VALVE AND FLUID-DISPENSER. HARRIS COMER, Philadelphia, Pa. Filed June 23, 1897. Serial No. 641,380. (No model.)

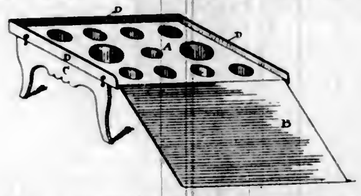


Claim.—1. In combination; a casing, an opening in said casing provided with a valve-seat, a valve fitted to said seat, a screw-thread upon the stem of said valve, a corresponding screw-thread in said casing, a packing adapted to hermetically seal the joint between said valve-stem, and said casing, a longitudinal passage-way in said valve-stem, an inlet to said longitudinal passage-way, between said valve end, and said screw-thread, a head whereby said valve-stem may be rotated, an outlet from said longitudinal passage-way, a removable nozzle-cap for said outlet, and a separate nozzle-piece secured in said nozzle-cap, substantially as set forth.

2. In combination; a casing, an opening in said casing provided with a valve-seat, a valve fitted to said seat, a screw-thread upon the stem of said valve, a corresponding screw-thread in said casing, a packing adapted to hermetically seal the joint between said valve-stem, and said casing, a longitudinal passage-way in said valve-stem, an inlet to said longitudinal passage-way, between said valve end, and said screw-thread, a head whereby the said valve-stem may be rotated, an outlet from said longitudinal passage-way, a removable nozzle-cap for said outlet, a removable nozzle-piece mounted in said nozzle-cap, and a removable packing whereby said nozzle-piece is secured in said nozzle-cap, substantially as set forth.

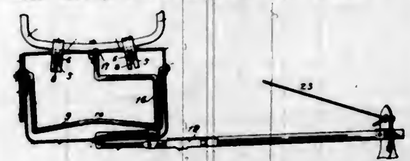
3. In combination; a casing, an opening in said casing provided with a valve-seat, a valve fitted to said seat, a screw-thread upon the stem of said valve, a corresponding screw-thread in said casing, a packing adapted to hermetically seal the joint between the said valve-stem and said casing, a longitudinal passage-way in said valve-stem, an inlet to said longitudinal passage-way, between said valve end, and said screw-thread, a head whereby said valve-stem may be rotated, an outlet for said longitudinal passage-way a removable nozzle-cap for said outlet, a removable nozzle-piece, of glass, a capillary passage-way through said nozzle-piece, and means to secure said nozzle piece in said nozzle-cap, substantially as set forth.

607,020. GAME APPARATUS. WILLIAM W. DODGE, Burlington, Iowa. Filed Nov. 19, 1897. Serial No. 659,105. (No model.)



Claim.—A game apparatus comprising a board having an opening formed therein, a pocket arranged beneath said opening, supporting-legs hinged to the board and adapted to fold thereon, means for securing the legs in position for supporting the board, and a board hinged at one edge to said board and adapted to fold thereon when not in use, said hinged board forming an inclined plane leading to the pocket, substantially as described.

607,021. CORN-ROW MARKER. WILLIAM M. DOUGLAS, Fletcher, Ohio. Filed Apr. 15, 1898. Serial No. 677,647. (No model.)



Claim.—1. In combination with a corn-planter; a corn-row marker comprising a frame; an upper rock-shaft journaled in suitable bearings mounted on said frame and terminating in a bent arm or extension, to which is connected a marker-arm provided at its end with a marking attachment; a lower rock-shaft—(resting underneath and supporting said upper rock-shaft)—said lower rock-shaft journaled in bearings mounted on said marker-frame and provided with means for throwing said lower rock shaft up or down thereby throwing said upper rock-shaft up or down so as to vertically swing said marker-arm and marking attachment from one side to the other of the corn-planter; substantially as specified.

2. A corn-row marker comprising a marker-frame provided with a ratchet-bar; an upper rock-shaft journaled in suitable bearings mounted on said frame and having a bent arm or extension to which is connected the marker-arm, carrying at its end the marking attachment; a lower rock-shaft resting beneath and supporting said upper rock-shaft—the said lower rock-shaft journaled in suitable bearings mounted on the said frame and having attached to one end a lever and pawl to engage said ratchet-bar, said lever adapted to throw said rock-shafts up or down so as to vertically swing said marker-arm and marking attachment from one side over to the other side, substantially as specified.

3. The combination with the frame of a corn-planter; of a corn-row marker, comprising a marker-frame provided at its front with lugs and adjustable clips—(so as to adjustably connect it to said corn-planter frame)—said marker-frame further provided at its side with a ratchet bar; an upper rock-shaft suitably journaled to said marker-frame and formed at its end in a bent arm or extension to which is connected the marker-arm provided at its end with a marking attachment; a lower rock-shaft resting beneath said upper rock-shaft, the said lower rock-shaft suitably journaled to said frame, and having attached to one end a lever and spring-pawl to engage said ratchet-bar, said lever adapted to throw said rock-shaft up or down thereby throwing said upper rock-shaft up or down at the same time so as to vertically swing the said marker-arm and marking attachment from one side over to the other side of the corn-planter, substantially as specified.

607,022. CORSET-FASTENING. WILLIAM B. H. DOWSE, Newton, Mass., assignor to the Consolidated Fastener Company, Portland, Me. Filed Feb. 15, 1897. Serial No. 623,346. (No model.)

Claim.—1. A fastening for corsets and other articles consisting of a male and female part, of which the female part consists of a plate provided with a socket-piece, having the stud-gripping extension X below the plate consisting of a neck and supporting-flange, substantially as shown and described.



2. A fastening for corsets and other articles consisting of a male and female part, the latter having a socket-piece having the cap, carried by a plate, an attaching-shoulder, and the gripping extension below the plate substantially as shown and described.

3. A fastening for corsets and other articles consisting of a male and female part, of which the female part consists of a split plate, having attached thereto a female or stud-receiving chamber, having attaching-shoulders and a gripping-neck, substantially as shown and described.

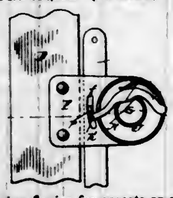
4. A fastening for corsets and other articles consisting of a metal strip A provided with male members, and a metal strip B provided with female members, of which the female members consist of a plate C and a socket D having the attaching-shoulder Y and a male gripping extension X substantially as shown and described.

5. A fastening for corsets and other articles consisting of a male and female member, of which the female member is provided with a socket-chamber having the male gripping extension X below the plate consisting of the neck V and the flange W, substantially as shown and described.

6. A fastening for corsets and other articles consisting of a male and female member, of which the female member is provided with a socket consisting of an attaching part provided with perforations and a stud-gripping extension, substantially as described.

7. In a fastening consisting of a male and a female member, a socket-piece for the female member, comprising a cap or attaching part and side walls with a shoulder thus forming a socket or chamber, the side walls being slitted and perforated, and formed at the lower end with a rolled-in shoulder, substantially as described.

607,023. CORSET. WILLIAM B. H. DOWSE, Newton, Mass., assignor to the Consolidated Fastener Company, Portland, Me. Filed Feb. 23, 1897. Serial No. 624,564. (No model.)



Claim.—1. A fastening device for corsets or other articles, consisting of a male and female member, the male member comprising a metal strip provided with studs, and the female member a metal strip provided with plates, each plate having a stud-receiving opening, a handle-operated lipped lever projecting across and above each of said openings, the ends of said levers being bent down underneath the plates, and a lever-holding piece I, substantially as described.

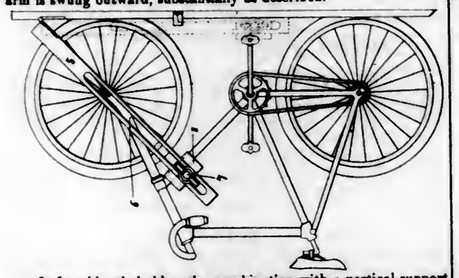
2. A fastening for corsets or other articles consisting of a male and female member, of which the male member comprises a metal strip provided with studs, and the female member a metal strip provided with a series of plates each having a socket, a lever having a handle and a lever-handle slot in the wall surrounding each of said sockets, substantially as described.

3. A fastening for corsets and other articles consisting of a male and female member, of which the male member comprises a metal strip provided with studs, and the female member a metal strip provided with plates and female sockets, and levers, in combination with a spring-actuated connecting lever-bar, substantially as described.

4. A fastening for corsets and other articles consisting of a male and female member of which the male member comprises a metal strip provided with studs and the female member a metal strip provided with plates having a lever and lever-holding piece, in combination with an operating-bar provided with elongated apertures whereby each fastener is locked separately and all simultaneously, substantially as described.

607,024. BICYCLE-HOLDER. CHARLES B. DURFEE and FRANK M. WILLIAMS, Belleville, N. Y.; said Durfee assignor to said Williams; said Williams assignor of one-half to David A. Brown, Woodbridge, N. J. Filed May 9, 1896. Serial No. 590,840. (No model.)

Claim.—1. In a bicycle-holder, the combination with a support, of an arm pivoted at one end to said support to fold down on the same when not in use, and a recessed block pivotally mounted and adjustably secured to said arm, whereby the recessed block can be made to engage a bicycle-frame to hold it to the support when said arm is swung outward, substantially as described.



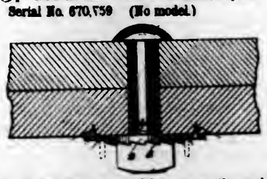
2. In a bicycle-holder, the combination with a vertical support provided with a recess to receive the tread of the wheels, of an arm pivoted at one end to said support to fold down on the same when not in use and a recessed block pivotally mounted and adjustably secured to said arm, whereby when the arm is swung outward from the support the recessed block can be engaged with a bicycle-frame to hold it against the said support and above the floor of the building or car, substantially as described.

3. In a bicycle-holder, the combination with a support provided with a recess to receive the tread of the wheels, of a longitudinally-slotted arm pivoted to the support to fold down on the same when not in use, a recessed block, and a bolt upon which the block is pivotally mounted, said bolt serving to secure the block to the arm, substantially as described.

4. A bicycle-holder, comprising strips spaced apart to receive between them the wheel-treads of a bicycle, an arm hinged adjustably to one strip and arranged to fold against the same, and a pivoted block adjustably mounted on the arm and arranged to engage the frame of a bicycle to be supported, substantially as set forth.

5. In a bicycle-holder, the combination of a car-wall or the like having vertical strips secured to it and spaced apart to form between them a recess to engage the wheel-treads of a bicycle, an arm hinged adjacent to the strips, and a block adjustably carried on the arm and arranged to engage the frame of a bicycle to be supported, substantially as set forth.

607,025. **NUT-LOCK.** JOHN H. ECKART, Joplin, Mo. Filed Feb. 18, 1898. Serial No. 670,759. (No model.)



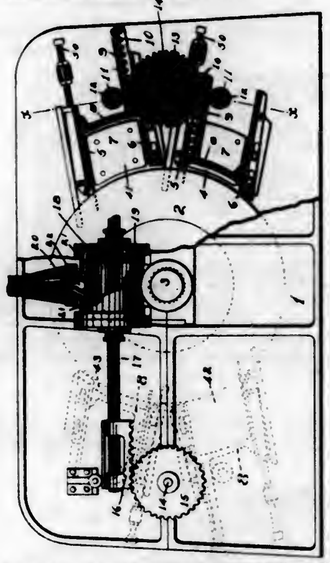
Claim.—1. A nut-lock, comprising an ordinary bolt, a washer having ratchet-teeth formed on the same and adapted to cooperate with the ratchet-teeth on the nut, and a holding device forming an integral part of the washer, and adapted to be bent or severed for permitting the washer to turn, substantially as described.

2. A nut-lock, comprising an ordinary bolt, a circular washer having ratchet-teeth formed on one of its faces, a nut also having ratchet-teeth formed on one side of the same and cooperating with the ratchet teeth on the washer, ears formed integral with the washer and also located diametrically opposite one another, a pin projecting from each ear, and a groove formed on each ear, and adjacent to the washer, whereby the metal is reduced, as and for the purpose described.

607,026. **WOOD-GRINDER FOR PULP-MAKING.** BERNARD BILLES, Rochester, N. Y., assignor of one-half to William A. Murphy, same place. Filed Dec. 21, 1896. Serial No. 616,494. (No model.)

Claim.—1. In a grinder, the combination with the grinding-cylinder, and a series of wood-pockets arranged around its periphery, of a series of pressers, one in each pocket, having the racks thereon facing each other in pairs, and gears arranged between the racks on adjacent pressers and engaging both of them, and means for rotating said gears in opposite directions alternately, whereby one presser of each pair engaged by a gear will be moved toward and the other from the cylinder, simultaneously.

2. In a grinder, the combination with the grinding-cylinder, and a series of wood-pockets arranged around its periphery, of a series of pressers or plungers, one for each pocket, and each having a rack thereon, the gears engaging directly with both the racks on adjacent plungers, and motor devices for operating said gears in opposite directions alternately, substantially as described.



3. In a grinder, the combination with the grinding-cylinder, and two pairs of pockets arranged around its periphery, each pair embodying the two pockets on approximately diametrically opposite sides of the cylinder, of a presser or plunger operating in each pocket, and having a rack thereon, gears engaging directly with the racks of adjacent pressers, and motor devices for rotating said gears in opposite directions alternately, substantially as described.

4. In a grinder, the combination with the grinding cylinder, and the pockets 4, 41, 42, 43, the pressers 8, each having a rack thereon, the arbors 14 having the gears 13 thereon meshing with the racks, the gears 15 on the arbors, the piston-rod 17 having racks 16, the piston 18, and the cylinder in which it operates, substantially as described.

5. In a grinder, the combination with the grinding-cylinder, and two wood-pockets at the periphery thereof, of the pressers operating in the pockets having the racks thereon, the single gear meshing with both the racks, and power mechanism for actuating the gear in opposite directions alternately, substantially as described.

6. In a grinder, the combination with the grinding-cylinder, and two wood-pockets on each side of the vertical diameter of the cylinder, one above and the other below the horizontal plane of the shaft, of the pressers operating in said pockets having the racks thereon, two gears, one engaging with the racks of each pair of pressers on one side of the vertical diameter of the cylinder, and reversible motor devices for rotating both gears in the same direction, substantially as described.

607,027. **AUTOMATIC FIRE EXTINGUISHING AND ALARM APPARATUS.** HENRY EVERMANN, Cincinnati, Ohio. Filed Aug. 21, 1897. Serial No. 649,009. (No model.)



Claim.—1. In a sprinkler system for fire-extinguishing purposes, the combination of a normally charged supply-pipe and a normally empty sprinkler-pipe, an intermediate valve-housing to which each connects and through which they communicate, a valve fitted into this valve-housing with a sliding adjustment and dividing the same into two parts in a manner to prevent communication between such parts at all times, so that when that part of the valve-housing opposite to the charged pipe is filled with a liquid at a pressure exceeding the pressure in the charged pipe, such valve is adapted to hold the valve-housing closed against the charged pipe, an outlet-opening in the charged part of the valve-housing and means to open and close this opening.

2. The combination of a normally empty sprinkler-pipe and a normally charged supply-pipe, a valve-housing through which they communicate with each other and to which they connect at different points, a valve fitted into this housing and dividing it in a manner to prevent at all times communication between the parts of the valve-housing on either side of the valve, said valve having a sliding adjustment whereby it is enabled to occupy a position within the valve-housing intermediate the points where the pipes first mentioned connect thereto, preventing then communication between them and as long as the valve is held in such position by a body of liquid back of it and confined in that part of the valve-housing opposite to where the charged pipe connects, an outlet-opening in this part of the valve-housing and means to open and close it.

3. The combination of a valve-housing 16 provided with an internal valve-seat, a normally charged supply-pipe 11 and a normally empty sprinkler-pipe 13 both connecting to the valve-housing at different points and to either side of the valve-seat therein, a valve 15 fitted into this housing with a sliding adjustment to or from the valve-seat and in a manner to prevent at all times communication between the parts of the valve-housing on either side of the valve, so that when said valve is seated against the valve-seat, communication between pipes 11 and 13 is prevented as long as the part of the valve-housing back of seat 15 is filled with a body of liquid, an outlet 27 in this part of the valve-housing and means to open and close it.

4. The combination of a sprinkler-supplying-pipe system, a supply-pipe for the same, a housing connecting the two and having openings leading to each, a valve contained in said housing and capable of a sliding movement therein to or from the opening leading to the main supply-pipe which latter is normally charged, a fluid contained in the housing at a pressure in excess of the pressure in the main supply-pipe which by acting against the back of the valve causes the same to be held against the opening leading to the supply-pipe for which purpose said valve is also so arranged and fitted as to absolutely close at all times the charged part of the housing against the two pipes, an outlet from the housing, a plug to close the same, a lever 31 to hold the latter in place, a drop-latch holding this lever in position and an electrically-controlled lever adapted to release the latch.

5. The combination of a sprinkler-supplying-pipe system, a normally charged supply-pipe for the same, a valve 15 normally closing the latter against the former, a fluid-charged housing which contains said valve, the latter being held to its seat by the pressure of the fluid in the housing, an outlet in the latter, a plug to close the same, a lever 31 to hold the latter in place, a drop-latch which holds lever 31 against the plug, a lever 36 to sustain the drop-latch, an electrically-connected contact-piece 44, a floor-indicator and a station-alarm and an electrically-controlled lever 38 which operates to release all parts for the purpose of opening valve 15 and for establishing a current between the floor-indicator and station-alarm, such current being established between contact-piece 44 and lever 36, when the latter, which is also electrically connected, drops after its release upon the former.

6. The combination of a supply-pipe 11, a housing 16 connected therewith, an opening 25 between the two, a valve 15 fitted into said housing in a manner as to have a sliding movement to or from said opening 25, pipes 13 also communicating with said housing, a nozzle 26 to charge the latter, an outlet 27, a cup-shaped socket 28 within which it ends and a plug 29 fitted into said socket for the purpose of closing the outlet from the housing.

607,028. **PROCESS OF MAKING PURIN DERIVATIVES.** EMIL FISCHER, Berlin, Germany, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Filed Nov. 13, 1897. Serial No. 658,462. (No specimens.)

Claim.—1. The process which consists in causing ammonia to act upon a chlorin derivative of purin having chlorin bound to the alloxan nucleus.

2. The process which consists in adding a chlorin derivative of purin to a solution of ammonia and heating the mixture under pressure, substantially as set forth.

3. The process which consists in adding a chlorin derivative of purin having the chlorin bound to the alloxan nucleus to a solution of ammonia, and heating the mixture under pressure.

4. The process which consists in adding a chlorin derivative of purin, having a chlorin atom bound to the carbon atom (2) or (6), to a solution of ammonia and heating the mixture under pressure.

5. As new chemical compounds amido-purin derivatives which are distinguished by having the amido radical bound to the alloxan nucleus of the purin residue.

6. As new chemical compounds amido-purin derivatives which have the amido radical bound to the alloxan nucleus of the purin residue and which are distinguished by the following properties: they are bases; they form crystalline products; they have no melting-point since they decompose at high temperatures before reaching the melting-point or while melting; they are all dissolved with difficulty in alcohol and water.

607,029. **ADENIN AND PROCESS OF MAKING SAME.** EMIL FISCHER, Berlin, Germany, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Filed Dec. 24, 1897. Serial No. 663,421. (No specimens.)

Claim.—1. The process which consists in subjecting an amido-halogen-purin or an alkyl derivative of the same to the action of a reducing agent.

2. In the art of preparing adenin, the process which consists in subjecting 6 amido 2.8 dichloro purin to the action of a reducing agent.

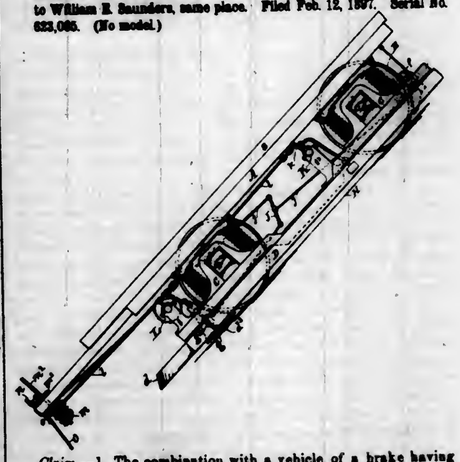
3 The process which consists in subjecting 6 amido 2.8 dichloro purin or an alkyl derivative of the same to the action of hydriodic acid and phosphonium iodid, substantially as described.

4. In the art of preparing adenin, the process which consists in agitating 6 amido 2.8 dichloro purin, together with hydriodic acid and phosphonium iodid, in the proportions and at the temperature and for the time, substantially as set forth, then heating the mixture to the boiling-point and until a clear solution results, then filtering and treating with an alkali added to the solution.

5. In the art of preparing adenin, the process which consists in agitating 6 amido 2.8 dichloro purin, together with hydriodic acid and phosphonium iodid, in the proportions and at the temperature and for the time, substantially as set forth, then heating the mixture to the boiling-point and until a clear solution results, then filtering and treating with ammonia added to the solution.

6. As a new chemical compound, 7 methyl-adenin, having the formula herewith given, whose melting-point is substantially 347° centigrade, which sublimes in part at a still higher temperature and which dissolves in about twenty-nine parts of boiling water.

607,030. **AUTOMATIC BRAKE AND SAFETY-GUARD FOR VEHICLES.** ALEXANDER W. PUNK, Cleveland, Ohio, assignor of one-half to William R. Saunders, same place. Filed Feb. 12, 1897. Serial No. 623,005. (No model.)



Claim.—1. The combination with a vehicle of a brake having shoes adapted to act as wheel-brakes or as track-brakes, a shaft from which the brake is suspended, an arm or drum on said shaft, a guard or fender posteriorly suspended and extending before the wheels and supported anteriorly on said brake-shoes, a chain suspending said brake from said shaft, a chain secured to said drum and to a winding-spool, a latch engaging said spool and retaining it in the wound-up position, and means for tripping said latch to drop the brake and guard, substantially as described.

2. The combination with a vehicle of a brake having shoes adapted to act as wheel-brakes or as track-brakes, a shaft from which the brake is suspended, an arm or drum on said shaft, a guard or fender extending before the wheels and suspended at its rear part from a shaft and intermediately upon said brake-shoes, a chain attached to said shafts and secured to a winding-spool, a latch retaining said spool in the wound-up position, and means for tripping said latch to drop the brake and guard, substantially as described.

3. The combination, with a vehicle, of a brake having shoes adapted to act as a track-brake, a shaft from which the brake is suspended, an arm or drum on said shaft, a guard or fender extending before the wheels and supported at its rear part by a shaft and intermediately by the brake-shoes, a chain attached to said shafts and secured to a winding-spool, a latch retaining said spool in the wound-up position, and an apron depending from the front of the vehicle and connected to said latch for tripping the same, substantially as described.

4. The combination with a vehicle, of a brake having shoes adapted to act as a track-brake, a rotatable shaft from which the brake is suspended, a guard extending before the wheels, a rotatable shaft from which said guard is suspended, a cord or chain secured to said shafts and acting to rotate the same, a spool on which said chain winds, a latch retaining said spool in the wound-up position, and means substantially as described for tripping said latch to drop the brake and frame.

5. The combination with a vehicle of a brake having shoes adapted to act as wheel-brakes or as track-brakes, a shaft from which the brake is suspended, an arm or drum on said shaft, a guard or fender extending before the wheels and suspended at its rear part from a shaft and intermediately upon said brake-shoes, a chain attached to said rear shaft and to said arm or drum and secured to a winding-spool, a latch retaining said spool in the wound-up position, and an apron depending from the front of the vehicle and connected to said latch, substantially as described.

6. The combination with the brake mechanism of a vehicle, of the shoes adapted to act as a wheel-brake and a track-brake, a shaft from which the brake-beam carrying the track-shoes is suspended, a pulley on said shaft, a shaft carrying a winding-spool and a notched disk, a chain secured to said spool and rotating said pulley and shaft to suspend the brake, a latch engaging said notched disk, and a swinging apron connected to said latch for tripping the same, substantially as described.

7. The combination with the brake mechanism, of the shoes adapted to act as a wheel-brake and a track-brake, a shaft from which the brake-beam carrying the track-shoes is suspended, a pulley on said shaft, a guard extending before the wheels, a rock-shaft from which said guard is suspended, a shaft carrying a winding-spool and a notched disk, a chain secured to said rock-shaft and said spool and passing around said pulley, a latch engaging said notched disk, and a swinging apron connected to said latch, whereby the latch is tripped when the apron is swung and the brake and guard are simultaneously dropped, substantially as described.

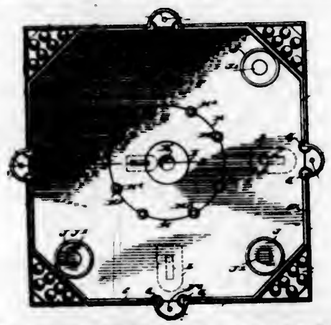
8. The combination with a vehicle of a brake having shoes adapted to act as track-brakes, a shaft from which said shoes are suspended, a chain attached to said shaft and to a winding-spool, a latch retaining said spool in the wound-up position, a sand-box discharging immediately beneath said brake-shoe and having a valve or cut-off connected to said shaft, and means for tripping said latch, whereby the brake is dropped and the sand-box opened simultaneously, substantially as described.

9. The combination with a vehicle of a brake having shoes adapted to act as track-brakes, a shaft from which said shoes are suspended, a chain attached to said shaft and to a winding-spool, a latch retaining said spool in the wound-up position, a sand-box discharging immediately beneath said brake-shoe and having a valve or cut-off connected to said shaft, and a depending apron connected to said latch for tripping the same, substantially as set forth.

10. The combination with a vehicle of a brake having shoes adapted to act as track-brakes, a shaft from which said shoes are suspended, a chain attached to said shaft and to a winding-spool, a notched disk rigid with said spool, a latch engaging said disk and retaining the spool in the wound-up position, a sand-box discharging immediately beneath said brake-shoe and having a valve or cut-off connected to said shaft, and a depending apron connected to said latch for tripping the same, substantially as set forth.

607,031. GAME APPARATUS. WILLIAM GILBERT, Albany, Mo. Filed July 14, 1897. Serial No. 644,594. (No model.)

Claim.—1. A table upon which balls or disks are to be impelled provided with suitable cushions and with pockets opening through said cushions, the corners of said pockets being surrounded by curved cushions extending toward the center of the table, slightly beyond the line of the cushions and slightly into the pockets, thereby to prevent straight shots into the pockets being made, substantially as described.

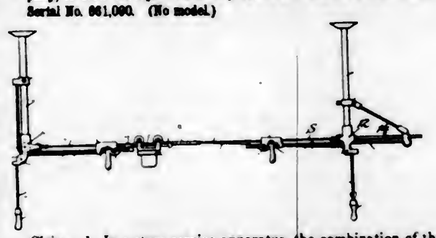


2. A table upon which balls or disks are to be impelled having marked thereon starting-points, a central pocket, side pockets, a circular series of pegs around the center pocket and obstructing-cushions at the sides of the side pockets, said obstructing-cushions being in line with the starting-points and side pockets, whereby no direct shot can be made from a starting-point into a side pocket, substantially as described.

3. A table arranged to be played upon with balls, having deep pockets, and slides below the surface of the table to be pushed into the pockets to cut off their lower portions and adapt the table to be played upon with disks, substantially as described.

4. A table upon which balls or disks are to be impelled provided with deep pockets, and slides for making said pockets shallow, said slides being located in the body of the table a short distance below its surface and having their forward portions covered with leather or similar material, substantially as described.

607,032. STORE-SERVICE APPARATUS. JOHN H. GOODFELLOW, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, of New Jersey. Filed May 12, 1896. Renewed Dec. 7, 1897. Serial No. 661,090. (No model.)



Claim.—1. In a store-service apparatus, the combination of the brackets, a way supported between said brackets, a wire extending between said brackets and substantially parallel with said way, a spring mechanism connected with the bracket at one end of the wire, and means connected with the bracket at the other end of the wire for varying the tension of said spring, and a carrier mounted on said way and adapted to be moved by the action of said spring.

2. In a store-service apparatus, the combination of the brackets, a way supported between said brackets, a wire extending between said brackets and substantially parallel with said way, a thimble connecting said wire with said way intermediate of its ends and allowing the said wire to freely pass through the same, a spring mechanism connected with the bracket at one end of the wire, and means connected with the bracket at the other end of the wire for varying the tension of said spring, and a carrier mounted on said way and adapted to be moved by the action of said spring.

3. In a store-service apparatus, the combination of a way, a wire running therewith substantially parallel with the same, a spring attached to each end of said wire and to a fixed point, means connected with each end of said wire for varying the tension of said springs, the means attached to one end of said wire operating through the wire to vary the tension of the spring attached to the other end of said wire, and a carrier mounted on said way and adapted to be propelled by said springs.

4. In a store-service apparatus, the combination of the supports, a way stretched between said supports, a wire extending between said supports and substantially parallel with said way, springs connecting the ends of said wire with said supports, means connected with the ends of said wire for varying the tension of said springs, so that the means at one end of the wire will operate on the spring at the other end, and a carrier mounted on said way and adapted to be moved by said springs.

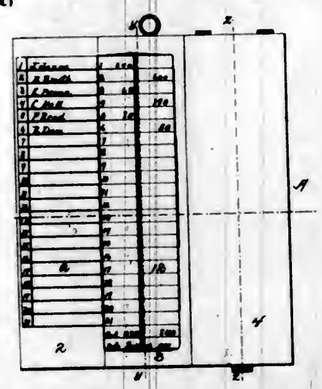
607,033. METAL TUBE. JOHN H. GRENTY, Huddersfield, England. Filed Dec. 14, 1897. Serial No. 661,853. (No model.) Patented in England Dec. 4, 1896, No. 23,198.



Claim.—1. A tube of wrought metal having cast-metal projections combined therewith, substantially as described.

2. In combination, a wrought-metal tube and a cast-metal tube having projections, substantially as described.

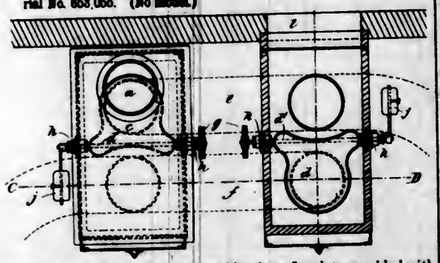
607,034. DELIVERY-SHEET HOLDER. JOHN W. GROTHIER, Sackett's Harbor, N. Y. Filed Oct. 15, 1897. Serial No. 655,308. (No model.)



Claim.—1. The combination with a casing divided into compartments and doors therefor, of a tablet upon the front containing a list of patrons, spring-fed record-strips in the compartment, adjacent to said tablet to receive the record of the weights through a suitable opening, and means to retain said filled record-strips in the other compartment.

2. The combination with a casing divided into compartments and doors therefor, of a tablet upon the front containing a list of patrons, a spring-actuated follower in one compartment, record-strips fed thereby to an opening in the casing, adjacent to said tablet to permit records to be made upon said strips, means to remove the filled strips and to retain them in the other compartment.

607,035. LIQUID-SEALED VALVE FOR AIR AND GASES. JOHN R. HANNAH, Middlesborough, England, assignor of two-thirds to John Hart and James Arthur Hart, same place. Filed Sept. 25, 1897. Serial No. 653,055. (No model.)

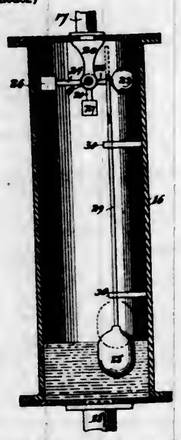


Claim.—1. In a valve, the combination of a plate provided with upwardly and downwardly extending flanges at its edges and a horizontal slot in one edge, a channel in the valve-seat filled with liquid and adapted to receive said flanges when the valve is closed, a spindle located in the slot in the edge of the valve with means for securing the same therein, bearings for said spindle, and means for rotating the spindle in its bearings so as to open and close the valve, as set forth

2. In a regenerative furnace, the combination of passages leading toward and away from the heating-chamber, a chamber connecting both passages with the gas-inlet, a second chamber connecting both passages with the chimney-outlet, valve-seats at the entrance of said passages in both chambers, channels in said valve-seats, a flanged plate horizontally pivoted between the valve-seats in each chamber, the upstanding flange of which forms a receptacle for liquid on the top of the plate, the lower flange being received in the channel in the valve-seat, and means for rotating said plate to close one or other of the passages as desired, as set forth.

3. In a regenerative furnace, the combination of passages leading toward and away from the heating-chamber, a chamber connecting both passages with the gas-inlet, a second chamber connecting both passages with the chimney-outlet, valve-seats at the entrance of said passages in both chambers, channels in said valve-seats, a flanged plate horizontally pivoted between the valve-seats in each chamber, the upstanding flange of which forms a receptacle for liquid on the top of the plate, the lower flange being received in the channel in the valve-seat, means for causing liquid to circulate through the receptacles on the tops of each plate and through the channels in the valve-seats, and means for rotating the plates to close one or other of said passages as desired, as set forth.

607,036. ELECTRIC CONTROLLING APPARATUS FOR SWITCH-VALVES. ELMO G. HARRIS, Rolla, Mo. Filed Sept. 25, 1897. Serial No. 653,006. (No model.)



Claim.—1. In an apparatus of the character described, the combination, with a vessel or tank, of a switch-valve controlling the admission and discharge of water and air to and from said tank, oppositely-acting solenoids controlling the position of the switch-valve, a battery or other source of electricity having a circuit through each of said solenoids to suitable contacts adjacent to the vessel or tank, and an arm controlled by floats in said vessel or tank and adapted to engage one of said contacts when the vessel or tank is substantially empty, and the other of said contacts when it is full, substantially as described.

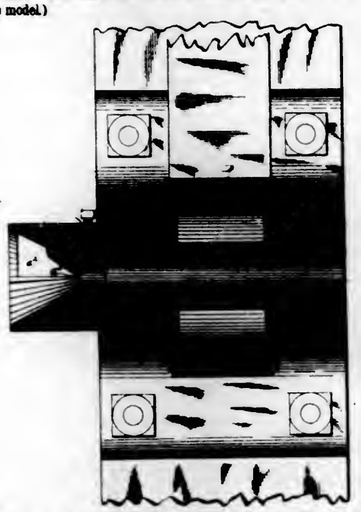
2. In an apparatus of the character described, the combination, with a vessel or tank, of a switch-valve controlling the admission and discharge of air and water to and from said tank, a motor to actuate the switch-valve, a valve controlling said motor, oppositely-acting solenoids for actuating the motor-controlling valve, a battery or other source of electricity having a circuit through each of said solenoids to suitable contacts adjacent to said vessel or tank, and an arm controlled by floats in said vessel or tank and adapted to engage one of said contacts when the vessel or tank is substantially empty, and the other of said contacts when it is full, substantially as described.

3. In a machine of the character described, the combination, with a vessel or tank having a vibrating arm and floats for actuating the same, contacts in the path of said arm, circuits extending from said contacts to a battery or other source of electricity, and oppositely-acting solenoids in said circuits respectively, circuit-breaking devices for each circuit, a switch-valve, and a motor for said switch-valve having a controlling-valve actuated by the solenoids, said circuit-breaking devices being connected to and actuated by a part moving with the switch-valve and motor, substantially as described.

4. In an apparatus of the character described, the combination, with a switch-valve, solenoids controlling said valve, a battery or other source of electricity, and circuits including the solenoids and

having terminal contacts adjacent to each other, of a tank having an air-inlet above and a water-inlet below, a rock-shaft in said tank having an external arm adapted to engage either of said contacts, and internal arms carrying a float and counter and balance weights, and a second float located near the bottom of the tank and having a slotted rod whereby it is connected with one of the arms of the rocker-shaft, substantially as described.

607,037. ROD-GUIDE FOR DOWEL-MACHINES. RUTLEDGE HARRIS, Cedar Falls, Iowa. Filed Mar. 15, 1897. Serial No. 627,734. (No model.)



Claim.—1. A revolving rod-guide for dowel-machines, having a main, central hole for the rod, of substantially the same size as the rod as left by the cutters, for nearly its entire length, but with a short non-expansible portion thereof of a reduced diameter, and adapted to compress, size, and polish the rod, as set forth, in combination with a cutter adapted to give cylindrical form to the stick, and a little larger than the constricted part of the said guide.

2. The herein described revolving rod-guide for a dowel-machine, having a flaring mouth and a central hole for the rod to pass through, which hole is constricted and non-expansible for a short distance back from the mouth, so as to compress, size, and polish the rod without burning or otherwise injuring it, in combination with a cutter adapted to give cylindrical form to the stick, and a little larger than the constricted part of the said guide.

607,038. METHOD OR PROCESS OF PREVENTING CLOSING OF CUT FLOWERS OF THE ORDER NYMPHÆACEÆ. GEORG HARSTER, Speyer, Germany. Filed Dec. 11, 1893. Serial No. 493,425. (No specimens.) Patented in Germany June 21, 1891, No. 61,971, and Sept. 13, 1893, Nos. 73,992 and 80,764; in France Sept. 14, 1891, No. 216,102, and Sept. 25, 1893, No. 233,036; in Belgium Nov. 9, 1893, No. 107,100; in England Nov. 11, 1893, No. 21,523, and in Austria-Hungary Nov. 23, 1893, No. 60,729 and No. 20,157.

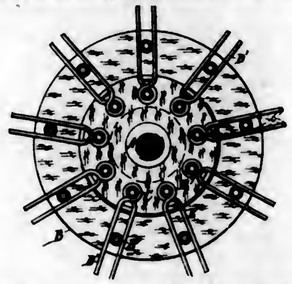
Claim.—The method or process for preventing the closing of cut flowers of the order *Nymphæaceæ* by destroying either partially or totally the life of the cellular texture or tissue in the interior of the torus or receptacle, substantially as described.

607,039. WHEEL FOR VEHICLES. GEORGE HAYES, New York, N. Y. Filed July 23, 1897. Serial No. 645,705. (No model.)

Claim.—1. A wheel for bicycles and other vehicles, in which resiliency is derived from cylindrically-coiled springs encircling spindles, cross-rods or pillars, extending parallel to the axle-hub between flanges thereof, the springs having ends extending radially outward, and engaging with a special spoke-nave encircling the axle-hub, essentially as set forth.

2. In a wheel for bicycles and other vehicles, a system of cylindrically-coiled springs upon spindles arranged parallel to the axle-hub between flanges thereof, the ends of the springs linked to other cylindrically-coiled springs upon spindles also arranged parallel to the axle-hub, but connected solely to cheeks or end disks of a special spoke-nave, essentially as set forth.

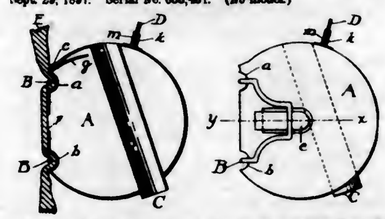
3. In a wheel for bicycles and other vehicles, a combination consisting of first: an axle-hub having end flanges between which certain spindles are arranged parallel to the axle-hub, connected therewith and encircled by cylindrically-coiled springs; second: a special spoke-nave encircling the axle-hub at a suitable distance therefrom, formed with end cheeks or disks connected by certain spindles extending across parallel to the axle-hub, and encircled by cylindrically-coiled springs; third: certain intermediate free-moving spindles arranged parallel to the axle-hub, and encircled by cylindrically-coiled springs, the spring-bearing spindles, arranged in sets with the springs of each set linked together, essentially as set forth.



4. In a wheel for bicycles and other vehicles, an axle-hub supported centrally within an encircling spoke-nave by sets of cylindrically-coiled springs arranged parallel to the axle-hub, and connected by plates of rigid metal to which projecting ends of the springs are secured, essentially as set forth.

5. In a wheel for bicycles and other vehicles, rigid link-plates arranged parallel to the axle-hub, standing outwardly edgewise thereto, and connected with cylindrically-coiled springs upon spindles arranged parallel to the axle-hub, essentially as set forth.

607,040. SCRUBBER. WILLIAM H. HEISE, Dayton, Ohio. Filed Sept. 29, 1897. Serial No. 653,431. (No model.)



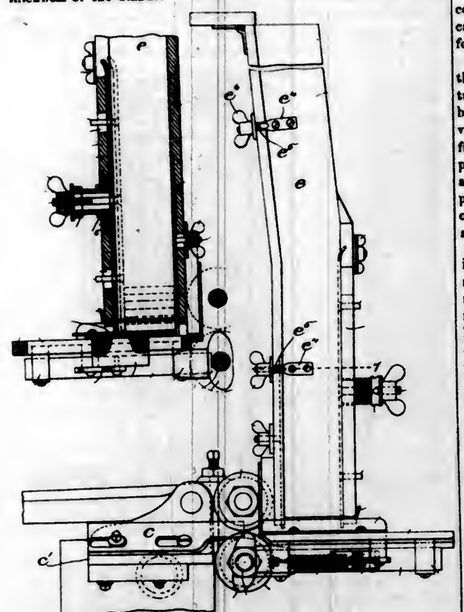
Claim.—1. In a scrubber and cleaner, the combination of a metallic reservoir having a longitudinal slot along the upper edge of the scrubbing-face, an inwardly-extending apron in the slot and reservoir, an aperture centrally located in the scrubbing-surface, the slot and aperture and scrubbing-surface to be covered by a removably-attached absorbent scrubber-pad in attractive contact with the moisture in the reservoir through the slot and aperture, with a cleaner oppositely placed to the scrubbing-surface and attached to the back of the reservoir, for the purpose mentioned, substantially as herein set forth.

2. In a scrubber and cleaner, the combination of reservoir A, provided with slot *c*, gutters *a*, and *b*, and hole F, apron *g* with scrubbing-pad E, wire frame B, hinged at one end to the end of the reservoir—the reservoir and frame adapted to hold and fasten the scrubbing-pad in attractive contact with the moisture in the reservoir, the rubber cleaner D suitably placed and attached to the reservoir, for the purpose mentioned, substantially as set forth.

3. In a scrubber and cleaner, the combination of reservoir A, provided with slot *c*, gutters *a*, and *b*, hole F, and apron *g*, scrubbing-pad E, wire frame B, hinged at one end to the end of the reservoir, the reservoir and frame adapted to hold and fasten the scrubbing-pad in attractive contact with the moisture in the reservoir, the rubber cleaner D, suitably placed and attached to the reservoir, with socket C, adapted to receive a handle to work the scrubber and cleaner, substantially as set forth.

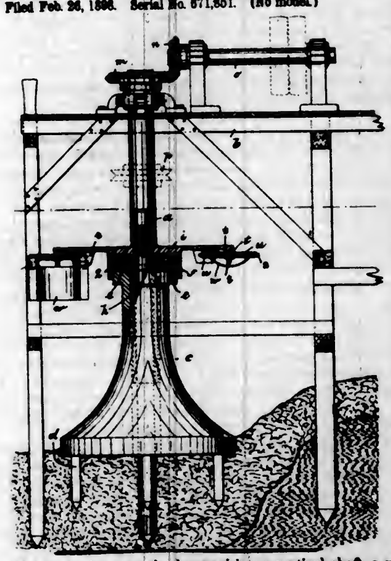
607,041. FEED FOR HEEL-CUTTING MACHINES. ALEXANDER A. HUDSON, Haverhill, Mass. Filed Aug. 4, 1897. Serial No. 647,092. (No model.)

Claim.—1. In a mechanism for feeding heel-blanks to a cutter, a reciprocatory slide and a magazine located above said slide and adapted to contain a plurality of superposed blanks, the said magazine having panels in its walls with provisions for adjusting said panels toward and away from the reciprocatory slide to correspond to the thickness of the blanks.



2. In a mechanism for feeding blanks to a cutter, a reciprocatory slide and a magazine located above said slide, and adapted to contain a plurality of superposed blanks, the said magazine having sides adjustable toward each other to accommodate different lengths of blanks and having a panel in one of its walls adjustable toward the opposite wall to accommodate different widths of blanks.

607,042. WATER-WHEEL. FREDERICK JACOB, Newark, N. J. Filed Feb. 26, 1898. Serial No. 671,851. (No model.)



Claim.—1. A water-wheel comprising a vertical shaft, a pillar surrounding the lower portion of said shaft, a horizontal disk revolubly mounted on said shaft and provided at or near its outer edge with a series of downwardly-extending lugs or projections, a series of antifriction-rollers intermediately arranged between the disk and the head of the pillar, a series of radially-arranged blades pivotally connected to their respective lugs or projections and having their central portions outwardly curved, and a power-transmitting wheel-carrying tube or hub connected with said disk, substantially as and for the purposes described.

2. The combination with a vertical shaft, of a pillar surrounding the lower portion of said shaft, a power-transmitting wheel-carrying tube revolubly mounted on said shaft and extending into the central bore of said pillar, a horizontal disk mounted on said tube and provided with a downwardly-extending annular flange, a series of antifriction-rollers intermediately arranged between said disk and the pillar, a circular frame surrounding the tube and supporting said antifriction-rollers, and a series of radially-arranged blades or floats pivoted to and depending from the outer portion of said disk, each of said blades being limited in its rearward movement, substantially as described.

3. A water-wheel comprising a vertical shaft, a pillar surrounding the lower portion of said shaft, a horizontal disk revolubly mounted on said shaft, a series of radially-arranged pins or axles carried by said disk, a series of antifriction-rollers intermediately arranged between the disk and the head of the pillar, a blade or float loosely mounted on each pin or axle, and a power-transmitting wheel-carrying tube or hub connected with the disk, substantially as and for the purposes described.

4. The combination with a vertical shaft, of a pillar surrounding the lower portion of said shaft, a power-transmitting wheel-carrying tube revolubly mounted on said shaft and extending into the central bore of said pillar, a horizontal disk mounted on said tube and provided with a downwardly-extending annular flange, a series of antifriction-rollers intermediately arranged between the disk and the head of the pillar, and a series of radially-arranged blades or floats pivoted to and depending from the outer portion of the disk, each of said blades being limited in its rearward movement, substantially as and for the purposes described.

607,043. PNEUMATIC TIRE. WILLIAM H. JAMES, Tulse Hill, England. Filed Dec. 28, 1897. Serial No. 664,112. (No model.) Patented in England Mar. 4, 1897, No. 5,769.



Claim.—1. In combination, a pneumatic tire, consisting of a single tube having its inner side or base thickened and split or divided circumferentially, the divided edges being arranged to form a seal or air-tight joint when they are in contact, of a wheel-rim adapted to receive the base of the tire and of a band mounted in or fixed to the sides of the wheel-rim so as to form a diaphragm in, or false bottom to, the groove of the rim on which the base of the tire rests, as set forth.

2. In combination, a pneumatic tire, consisting of a single tube having its inner side or base thickened and split or divided circumferentially, the divided edges being arranged to form a seal or air-tight joint when in contact, of a wheel-rim having a groove adapted to receive the base of the tire, and of a band adapted to form a diaphragm in, or false bottom to, the groove of the rim, one edge of the said band being permanently fixed to one edge of the tire and the other edge engaging with one of the edges of the wheel-rim, as set forth.

3. In combination, a pneumatic tire, consisting of a single tube having its inner side or base thickened and split or divided circumferentially, the divided edges being arranged to form a seal or air-tight joint when in contact, of a wheel-rim having a groove adapted to receive the base of the tire, and of a band adapted to form a diaphragm in, or false bottom to, the groove of the rim, one edge of the said band being permanently fixed to one edge of the wheel-rim and the other edge engaging with the other edge of the wheel-rim, as set forth.

4. In combination, a pneumatic tire, consisting of a single tube having its inner side or base thickened and split or divided circumferentially, the divided edges being arranged to form a seal or air-tight joint when in contact, of a wheel-rim having a groove adapted to receive the base of the tire, and of a band adapted to form a diaphragm in, or a false bottom to, the groove of the wheel rim, the edges of the said band engaging with the sides of the thickened base of the tire, as set forth.

5. In combination, a pneumatic tire, consisting of a single tube having its inner side or base thickened and split or divided circum-

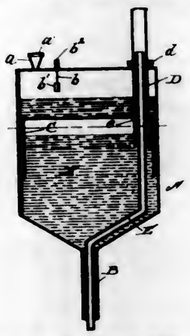
ferentially, the divided edges being arranged to form a seal or air-tight joint when in contact, of a wheel-rim having a groove adapted to receive the base of the tire, and of a band adapted to form a diaphragm in, or a false bottom to, the groove of the wheel-rim, one of the edges of the band being permanently fixed to one edge of the tire and the other edge engaging with the side or outer margin of the other edge of the tire, as set forth.

6. In combination, a pneumatic tire, consisting of a single tube having its inner side or base thickened and split or divided circumferentially, of a wheel-rim having a groove adapted to receive the base of the tire, of a band adapted to form a diaphragm in, or a false bottom to, the groove of the wheel-rim the edges of which engage with or are fixed to the sides of the wheel-rim, and of a band or hoop of an inverted-wedge shape in cross-section with the sides of which the divided edges of the split tube engage, as set forth.

7. A pneumatic tire, consisting of a tube A having its inner side or base *a* thickened and split or divided circumferentially, the divided edges being adapted to abut or interlock, and of a band or hoop B one edge of which is permanently fixed to one side of the base of the split tube and the other edge of which engages with an exterior ear or lug on the other side of the base of the split tube, as set forth.

8. A pneumatic tire, consisting of a tube A having its inner side or base *a* thickened and split or divided circumferentially, the divided edges being adapted to abut or interlock, and of a band or hoop B the edges of which engage by means of inextensible cores or hooks with ears or lugs on the sides of the base of the split tube, as set forth.

607,044. SUPPLY-TANK FOR GASOLENE-STOVES. JAY JENKINS, Chicago, Ill. Filed Oct. 2, 1897. Serial No. 653,822. (No model.)



Claim.—1. The combination with an outer tank or vessel having in its lower portion a supply-pipe, of a movable vessel located therein, a tube communicating with the interior of the movable vessel and extending through the top of the outer vessel, and another tube extending into the first-named tube and through the supply-pipe of the outer vessel, substantially as described.

2. The combination of the vessel A, having the supply-pipe B, communicating therewith, of the movable vessel C, located within the supply-tank, the tube D, extending through the tops of the vessels A and C, and fixed to the latter and having the opening *c*, the pipe E, located in the supply-pipe B, and extending into the pipe D, substantially as described.

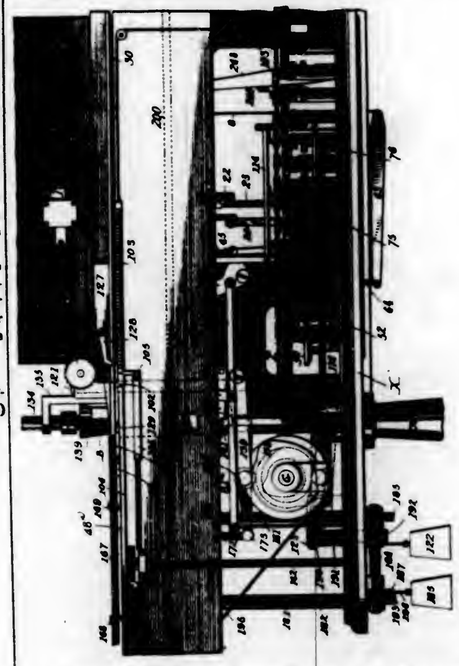
607,045. TYPE-SETTING AND JUSTIFYING MACHINE. FRANK A. JOHNSON, Philadelphia, Pa., assignor to the Johnson Typesetter Company, Portland, Me. Filed Sept. 18, 1895. Serial No. 562,891. (No model.)

Claim.—1. In a justifying mechanism for composing-machines, a wedge-piece consisting of a series of wedges upon a common support in combination with means for selecting any desired wedge and rendering said wedge operative to control the justification of a line, substantially as described.

2. In a justifying mechanism for composing-machines, a wedge-piece consisting of a series of wedges upon a common support, said support being movable in one direction to select any desired wedge and movable in another direction to bring the selected wedge into action, substantially as described.

3. In a justifying mechanism for composing-machines, a wedge-piece consisting of a series of radially-arranged wedges upon a common shaft or support, said shaft being rotatable to select any desired wedge and movable longitudinally to bring the selected wedge into action, substantially as described.

4. In a justifying mechanism for composing-machines, a wedge-piece provided with a series of wedges and capable of two movements, means for imparting one movement corresponding to the number of word-spaces in a line and adapted to select the proper wedge for the justification of the line, and means for imparting the other movement lengthwise of the wedges and in proportion to the unfilled measure of said line, substantially as described.



5. The combination in a type-setting machine, of the wedge-piece provided with a series of wedges, means for assembling a line of type upon a stick, means for moving the wedge-piece in a plane at right angles to the wedges and in proportion to the word-spaces in a line to select the proper wedge, a compacting device for compacting the line of type upon the stick and connections between said compacting device and the wedge-piece whereby the limiting of the movement of said device by the line of type also limits the longitudinal movement of the selected wedge, substantially as described.

6. In a type-setting machine, the combination with a stick and means for assembling a line of type thereon, a wedge-piece consisting of a rotatable shaft provided with a series of radially-arranged wedges, a word-space key and connections between said key and the shaft of the wedge-piece whereby said wedge-piece is rotated to bring a new wedge into operative position each time a space is selected, the compacting device for the line of type and connections between said device and the wedge-piece whereby the latter is moved longitudinally in proportion to the unfilled space in the line, substantially as described.

7. In a type-setting machine, the combination with the stick and means for assembling a line of type and temporary spaces upon the stick, of a vertically-movable wedge-piece provided with a series of wedges, a word-space key and connections between said key and the wedge-piece whereby a new wedge is brought into operative position for each word-space, means for lowering the wedge-piece after a line is assembled, a compacting device carried by a sliding rack, a rack movable vertically with the wedge-piece, and connections between said racks whereby the downward movement of the wedge-piece serves to compact the line, substantially as described.

8. In a type-setting machine, the combination with a magazine and a stick and means for assembling type and temporary spaces upon the stick, of a scale, a pointer for indicating upon the scale, and means operating independently of the spaces for causing the pointer to register an arbitrary amount upon the scale each time a temporary space is added to the line, substantially as described.

9. In a type-setting machine, the combination with a magazine and a stick, and means for assembling type and temporary spaces upon the stick, of a scale, a pointer for indicating upon the scale, and means operating independently of the spaces for causing the pointer to reg

ister a normal space upon the scale when a temporary space is added to the line, substantially as described.

10. In a type-setting machine, the combination with a magazine and a stick, of means for assembling type and temporary spaces upon the stick, a movable scale having a connection which is carried forward by the accumulating type upon the stick, an indicator for the scale, and means for moving the indicator forward a less amount than the scale each time a temporary space is added to the line, whereby an amount less than said temporary space is registered by the indicator, substantially as described.

11. In a type-setting machine, the combination with a magazine and a stick, of means for assembling type and spaces upon the stick, a movable scale having a head overlying the stick and in the path of the type whereby the movements of the scale are in proportion to the widths of type assembled, means for holding the scale-head against the type in the stick, and a pointer for indicating upon the scale the amount of type in the stick, substantially as described.

12. In a type-setting machine, the combination with a magazine and a stick, of means for assembling the type and temporary spaces upon the stick, a sliding scale having a head adapted to travel in advance of the accumulating type upon the stick, a weight tending to draw the scale in the opposite direction, a ratchet-bar and means for moving said bar each time the space-key is operated, and a pointer carried by said ratchet-bar and located adjacent to the sliding scale, substantially as described.

13. In a type-setting machine, the combination of a magazine and a stick and means for assembling type and temporary spaces upon the stick, of a movable abutment upon said stick for gaging the length of line, a wedge-piece provided with a series of wedges and capable of movement to bring the different wedges into action, a space-key, and connections between said space-key and the abutment and wedge-piece whereby the abutment is retreated to lengthen the stick and the wedge-piece is moved to bring a new wedge into operative position each time the space-key is operated, substantially as described.

14. In a type-setting machine, the combination with a magazine and a stick and means for assembling type and temporary spaces upon the stick, of a movable abutment forming one end of the stick, means for retreating said abutment to lengthen the stick each time a space is added to the line-compacting mechanism, and a locking device for locking the abutment when the line is assembled, whereby the abutment is rendered immovable when the line is compacted against it, substantially as described.

15. In a type-setting machine, the combination with the magazine consisting of two sections, of a runway adjacent to the magazine, means for ejecting the type from the magazine into the runway, and two reciprocating conveyer-fingers operating in the runway, one in front of each section of the magazine, one conveyer-finger being adapted to transfer type directly to the stick, and the second conveyer-finger being arranged to transfer its type to the first conveyer-finger, substantially as described.

16. In a type-setting machine, the combination with a magazine consisting of two sections in line with each other, of a runway adjacent to the magazine, means for ejecting type from the magazine into the runway and a pair of conveyer-fingers connected to a common reciprocating part, said conveyer-fingers extending into the runway and engaging the type during their forward movement and being automatically withdrawn from the runway during their backward movement, substantially as described.

17. In a type-setting machine, the combination with a runway, of a slide adapted to move in guides parallel with the runway, a type-conveyer finger pivoted on said slide and adapted during its forward movement to travel in the runway, a reciprocating part and an arm on said conveyer-finger connected with said part, whereby the slide and conveyer-finger are reciprocated bodily and the conveyer-finger receives an independent movement into and out of the runway, substantially as described.

18. The combination of the runway, the slides movable in guides parallel with the runway, the conveyer-fingers pivoted on the slides, the band to which the conveyer-fingers are connected, the reciprocating carriage and pulleys upon which said band is mounted, and means for holding a part of the band opposite the conveyer-fingers stationary, substantially as described.

19. In a type-setting machine, the combination with a magazine arranged in two sections for upper and lower case letters respectively, of pushers for ejecting the type, a reciprocating bar common to the pushers, lifting-rods connected with the type-keys and arranged to engage the pushers with the reciprocating bar, and means for throwing the rods corresponding to either section of the magazine out of operative position, substantially as described.

20. In a type-setting machine, the combination with a type-magazine, a series of pushers arranged to discharge the type from the magazine, a runway for receiving said type, a power-shaft, an escape-shaft, a laterally-movable bar operated from the escape-shaft, finger keys and connections arranged to engage the pushers with the bar, and means for starting the escape-shaft after a pusher is engaged with said bar, substantially as described.

21. In a type-setting machine, the combination with the magazine having two sections for upper and lower case type respectively, pushers for ejecting the type from the magazine, the bar reciprocating laterally adjacent to the pushers, lifting-rods for engaging the pushers with the reciprocating bar, the bank of finger-keys, and two sets of levers connecting said keys respectively with the rods for the upper and lower case characters corresponding with the keys, substantially as described.

22. A justifying line-quad having one of its dimensions proportioned to the width of the final spaces necessary to justify a line and adapted to control the justification of the line, substantially as described.

23. In a type-setting machine, means for assembling a line of type and temporary word-spaces, in combination with means for preparing a justifying line-quad which is adapted to control the justification of the line, substantially as described.

24. The combination with means for assembling lines of type and temporary word-spaces, of a magazine of line-quad blanks of uniform size and automatic means for cutting said blanks to different sizes to adapt them to control the justification of different lines, substantially as described.

25. The combination with means for assembling lines of type and temporary word-spaces, of blanks or timber for line-justifying quads, means, such as the wedge-piece, for gaging the lengths of justifying-quads for respective lines, and means for cutting off or forming said blanks into justifying line-quads, substantially as described.

26. The combination with means for assembling type and temporary spaces in lines, of a wedge-piece provided with a series of wedges, means for selecting the proper wedge and rendering operative a proper portion of said wedge as a gage for the justification of each line, a magazine of line-quad timber, and means for preparing justifying line-quads for different lines, said means being controlled by the points rendered operative upon the wedge-piece for the respective lines, substantially as described.

27. In a type-setting machine the combination with the magazine and means for assembling a line of type and temporary spaces, of the wedge-piece capable of two movements respectively in accordance with the number of word-spaces and the amount of unfilled space in a line, the line-quad blanks or timber, the knife for cutting said blanks to form justifying-quads, and the means controlled by the wedge-piece for gaging the lengths of said justifying line-quads, substantially as described.

28. The combination with the line-quad magazine, of means for ejecting a quad from the magazine, a knife for severing the quad, and means for automatically gaging the amount to be removed from the blank to form a justifying line-quad, substantially as described.

29. The combination with the line-quad magazine, the ejector for said magazine, the knife for cutting the quads, the wedge-piece for gaging the amount to be removed, a cam-shaft and connections for operating all of said parts, said shaft being normally at rest, and a starting-key whereby the shaft may be started at the end of each line, substantially as described.

30. In a type-setting machine, the combination with a magazine and a stick, and means for assembling type and temporary spaces upon the stick, of means for preparing a justifying line quad and devices for transferring the lines from the stick and assembling the justifying line-quads with their respective lines, substantially as described.

31. The combination with the stick, of a runway into which the assembled lines are to be transferred, an elevator adjacent to the stick, a type-hook for transferring the lines to the elevator, and means for moving the elevator to bring the line opposite the runway, and a finger for moving the line into the runway, substantially as described.

32. In a type-setting machine, the combination with means for feeding forward a line of type and temporary spaces with relation to space forming mechanism, of mechanism for forming final word-spaces for the line and for removing the temporary spaces and inserting said final spaces in lieu thereof, substantially as described.

33. In a type-setting machine, the combination with means for composing a line of type and temporary spaces, of a magazine provided with word-space blanks, means for cutting said blanks for forming final spaces for the justified line, and means for inserting the final spaces in lieu of the temporary quads, substantially as described.

34. In a type-setting machine, the combination with means for composing a line of type and temporary quads, of means for removing said quads from the line successively, and means for cutting final justifying-spaces and inserting them in said line successively in lieu of the temporary spaces, substantially as described

35. In a type-setting machine, the combination with means for assembling a line of type and temporary spaces and means for preparing a line-justifying quad adapted as a gage for the final word-spaces of the line, of mechanism for forming final spaces and substituting them in the line for the temporary spaces, said mechanism being controlled by the line-justifying quad, substantially as described.

36. The combination in a type-setting machine, of means for composing a line of type and temporary quads, means for preparing a line-justifying quad, means controlled by said line-quad for forming final spaces and inserting them in the line in lieu of the temporary quads, a galley and devices for transferring the line to the galley, substantially as described.

37. In a type setting and justifying machine, mechanism for preparing justifying word-spaces consisting of space-timber or blanks, a magazine therefor, means for ejecting the blanks from the magazine, a cutting device for trimming the blanks to the proper size, and means for gaging the amount to be removed by the cutting device, substantially as described.

38. The described blank or space-timber, the same being hollow and angular in cross-section and provided with thin rectangular ends, substantially as described.

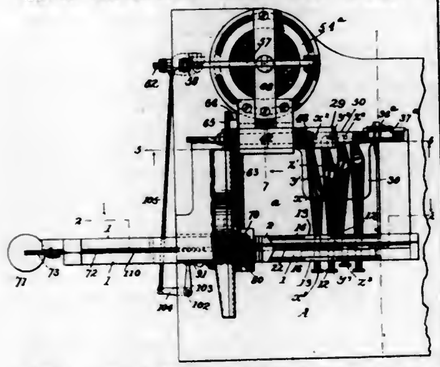
39. The cutting device for trimming the space-timber, the same consisting of a reciprocating frame and a cutting-off tool and chisel carried by said frame, and adapted respectively to sever the blank and trim the face of the quad, substantially as described.

40. The combination with two parallel ratchet-bars having differently-spaced teeth, of a moving pawl common to both ratchets and having a range of movement less than the length of the longer teeth, and means for starting the ratchet having the longer teeth, whereby the moving pawl is permitted to engage and move both ratchets, the movement of each ratchet being proportioned to the length of its teeth, substantially as described.

41. In a type-setting machine, the combination with the carrier-finger for moving the type from the magazine to the stick, of the intermediate hook 100, and the holding-pawl 47, said hook being adapted to receive the type from the reciprocating finger and transfer it to the holding-pawl, substantially as described.

42. In a type-setting machine, the combination with a magazine having sections for upper and lower case type, a pair of carriers for conveying the type from the magazine, one of said carriers being adapted to reciprocate opposite each section, a keyboard, means for reciprocating the carriers each time a key is depressed, an upper-case key, and means for giving the carriers an extra reciprocation as the upper-case is released, substantially as described.

607,046. TYPE-JUSTIFYING MACHINE. FRANK A. JOHNSON, Philadelphia, Pa., assignor to the Johnson Typesetter Company, Portland, Me. Filed Mar. 17, 1897. Serial No. 628,026. (No model.)



Claim.—1. In a justifying device for composing-machines, a series of levers having their fulcra at varying distances from their ends comprising a lever for each possible number of word-spaces in a line, and means operated by said levers for determining the widths of justifying word-spaces.

2. In a justifying device for composing-machines, a gage for determining the width of justifying-spaces, and a series of levers for setting the gage, the fulcra of the levers being at varying distances from their ends.

3. In a justifying device for composing-machines, a gage for determining the width of justifying-spaces, a series of levers adapted to operate on the gage and having their fulcra at varying distances from their ends, and means for measuring a line of type and operating a selected lever in accordance with the measurement.

4. In a justifying device for composing-machines, a gage for determining the width of justifying-spaces, a series of levers adapted to set the gage, means for selecting a lever corresponding to the number of spaces in the line, and means for measuring a line of type and operating the selected lever in accordance with the measurement.

5. In a justifying device for composing-machines, the combination of the ways, the abutment movable transversely to the ways, the follower, the compacting-head, the levers, devices carried by the head for operating the levers, and the space-gage adapted to be set by said levers.

6. In a justifying mechanism for composing-machines, the combination with ways, a means for moving a line of type along said ways, of a mold having a divided body-piece forming two sides thereof, a gage operating on one part of said body-piece whereby it is set relatively to the other, means for moving both parts of said body-piece, and means for transferring spaces from the mold to the ways.

7. In a device for casting spaces, the combination with a mold having upper and lower fixed sides, of slide 47, divided body-piece one part of which is fixed to the slide and the other part relatively movable and connected by a spring, and the gage for setting the relatively-movable part.

8. The combination with the ways and the follower, of an elevator, and means for retaining the follower while the elevator is in operation.

9. The combination with the ways and the follower for moving type along said ways, of an elevator, and means for relieving the pressure of the follower upon the type while the elevator is in operation.

10. The combination with the ways, the follower, and the ratchet connected to the follower, of the elevator, and the pawl connected to the elevator and arranged to engage the ratchet when the elevator is raised.

11. The combination with the ways, the follower and the ratchet connected with the follower, of the elevator, the pawl, and the link connecting the pawl with the elevator, said pawl being operated to engage the ratchet and move back the follower when the elevator is raised and to release the ratchet when the elevator is lowered.

12. The combination with the ways, the follower, and the abutment movable transversely to the ways, of means for relieving the pressure of the follower upon the type while the abutment is being withdrawn.

13. The combination with the typeways and the space-receiving magazine, of a space-elevator, and means for operating the elevator with a yielding pressure.

14. The combination with the typeways and the space-receiving magazine, of a space-elevator, a cam for operating the elevator, and a yielding connection between the cam and the elevator proper.

15. In a justifying device for composing-machines, a gage for determining the width of the justifying-spaces, and a series of levers for setting the gage, the fulcra of the levers being fixed and arranged at one-half, one-third, one-fourth, &c., of the length of the levers from the ends thereof.

16. In a justifying device for composing-machines, a space-casting mold having a movable wall, a series of levers, the fulcra of the levers being at varying distances from their ends, connections whereby the movable wall of the mold is adjusted by said levers, and means for measuring the line of type and operating the selected lever in accordance with said measurement.

607,047. TYPE SETTING AND JUSTIFYING MACHINE. FRANK A. JOHNSON, Philadelphia, Pa., assignor to the Johnson Typesetter Company, Portland, Me. Filed May 25, 1897. Serial No. 638,116. (No model.)

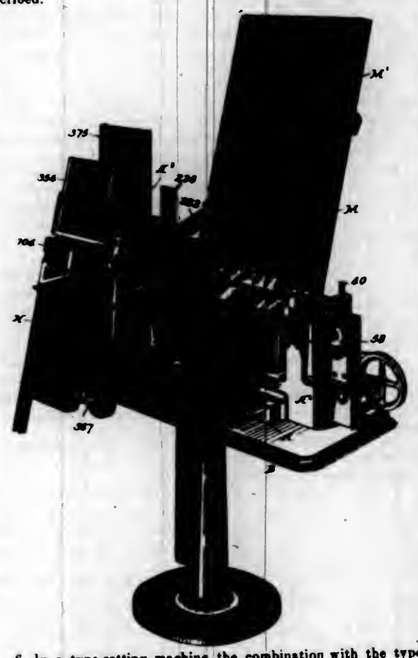
Claim.—1. In a type-setting machine, the combination with the key-levers, of a universal bar, an escape-shaft, devices connected with the universal bar for tripping the escape-shaft, and a locking-bar arranged to prevent the operation of a key while the escape-shaft is in operation, substantially as described.

2. In a type-setting machine, the key-levers, the universal bar, the key for shifting from lower to upper case, and means for locking the universal bar and the key-levers during the movement from lower to upper and upper to lower case, substantially as described.

3. In a type-setting machine, the combination of the key-levers, the universal bar, the type-ejectors, the ejector-bar, and means for preventing a key from being operated until the previously-indicated type has been ejected and its ejector and the ejector-bar returned to normal position, substantially as described.

4. In a type-setting machine, the combination with the key-levers and the magazine, of the type-ejectors, the ejector-bar, the universal bar, and a device, such as the lever 51, for interlocking the ejector-bar with the universal bar, substantially as described.

5. In a type-setting machine, the combination with the key-levers and the universal bar, of push-rods operated by the key-levers, a cap-key and connections for shifting the upper ends of the push-rods, and devices, such as the leg 28 and post 32, for interlocking the cap-key with the universal bar to prevent the operation of any character-key while the cap-key is being operated, substantially as described.



6. In a type-setting machine, the combination with the type-ejectors and the push-rods, of the guide 19 and the shifting bar 25 both having slots of varying widths through which the push-rods pass, substantially as described.

7. The combination with the key-levers, of the elbow-levers, provided with cam-surfaces 13ª and curved surfaces 14ª, as and for the purpose set forth.

8. In a type-setting machine, the combination with the key-levers having pins, of the elbow-levers having cam-surfaces coacting with the pins on the key-levers, and curved surfaces coacting with the pins and arranged to permit the key-levers to move without imparting further movement to the elbow-levers, and push-rods operated by said elbow-levers, substantially as described.

9. In a type-setting machine, the combination with a magazine, and a way upon which type are delivered from the magazine, said typeway having an assemblage portion or stick, of a carrier, and means for moving the carrier positively along the way past the magazine and yielding into the stick, substantially as described.

10. In a type-setting machine, the combination with a typeway having an assemblage portion or stick, of a type-carrier, a reciprocating driver for moving the carrier, and means for engaging the carrier positively with the driver during a portion of its movement along the ways and for engaging it yieldingly with said driver during the balance of said movement, substantially as described.

11. In a type-setting machine, the combination with a typeway, of a type-carrier, and a reciprocating driver, said driver and carrier being constructed to mutually engage positively during the backward movement and a portion of the forward movement, and to mutually engage frictionally during the balance of the forward movement, substantially as described.

12. The combination with a typeway and stick and a pair of type-carrier fingers having an arm 67, of a type driver having a post for positively drawing said arm rearward and a pawl for positively moving the arm forward, a spring-clamp for yieldingly carrying said arm forward, and means for shifting said arm from the pawl to the clamp as the type fingers enter the stick, substantially as described.

13. In a type-setting machine, the combination with a typeway and stick, of a type-carrier movable along said way, a type-driver, a reciprocating belt for moving the type-driver along the way, and means for engaging the carrier positively with the driver during a portion of its travel and for engaging it yieldingly with the driver during the balance of its travel, substantially as described.

14. In a type-setting machine, the combination with a typeway, a type-carrier movable along said way and a guide for said carrier, of a type-driver adapted to engage the type-carrier both positively and yieldingly, said guide having a cam portion for lifting the type-carrier out of positive engagement with the type-driver during its forward movement, substantially as described.

15. In a type-setting machine, the combination with a magazine and type-ejectors, of an ejector-bar, means for engaging the ejectors with said bar, a rock-shaft, arms and links connecting said rock-shaft and ejector-bar, and means for rocking said shaft one hundred and eighty degrees, whereby said ejector-bar is started and stopped gradually, substantially as described.

16. In a type-setting machine, a magazine having a fixed section containing channels and a hinged movable section containing channels, said movable section being adapted to swing backward and sidewise for loading and to register with the stationary section when loaded, substantially as described.

17. In a type-setting machine, the combination with a stationary section of the magazine, of the movable section provided with a hinge upon which it is adapted to swing backward and a pivot upon which it may swing sidewise into position for loading, substantially as described.

18. In a type-setting machine, a two-part magazine, the upper part having channels which register with channels in the lower part, and movable sustaining-pins for temporarily sustaining the type in the upper portion of the magazine, substantially as described.

19. In a type-setting machine, the magazine having a fixed section, a bracket pivoted to said section, a movable magazine-section hinged to the bracket, and a latch pivoted to said bracket and adapted to lock the hinged section of the magazine in line with the stationary section, substantially as described.

20. In a type-setting machine, the magazine having a movable section divided into channels by partitions, said partitions having notches or recesses at their upper ends to receive the ends of the typeways, substantially as described.

21. In a type-setting machine, the combination with assembling mechanism, justifying mechanism, and intermediate typeways, of a movable inspecting-stick adjacent to said typeways, and means for transferring a line of type from the typeways to said stick, substantially as described.

22. In a type-setting machine, the combination with the assembling mechanism, justifying mechanism, and intermediate typeways, of a detachable and removable inspecting-stick adjacent to said typeways, and means for transferring a line of type from the ways to said stick, substantially as described.

23. In a type-setting machine, the combination with the assembling mechanism and typeways, of an inspecting-stick which is movable into position adjacent to the typeways to receive a line of type and into an inclined position to present the faces of the type to the operator for inspection, substantially as described.

24. In a type-setting machine, the combination with the magazine and typeways, of an inspecting-stick and a laterally-movable nick-guide constructed to engage with and transfer a line of type from the ways to said stick, substantially as described.

25. In a type-setting machine, the inspecting-stick consisting of a plate pivotally supported in swinging arms and a flange movably connected to said plate and adapted to support the type when the plate is inclined, substantially as described.

26. The combination with the assembling mechanism, justifying mechanism and intermediate typeways, of the inspecting-stick adjacent to said ways, and manually-operated means for transferring type from said ways to said stick, substantially as described.

27. The combination with the assembling typeway and the inspecting-stick, of a device for transferring a line of type from the typeway to said stick, said device being normally locked in position for engaging with the type on the typeway, and means for unlocking said device and drawing it forward by hand to transfer the type to the inspecting-stick, substantially as described.

28. In a type-setting machine, the combination with the ways, of a hinged transfer nick-guide, constructed to move a line of type positively in one direction and to free itself from said type when moved in the opposite direction, substantially as described.

29. In a type-setting machine, the combination with the ways, of the transversely-movable bar 87 and the transfer nick-guide pivotally connected to said bar, substantially as described.

30. In a type-setting machine, the combination with the assembling-typeways and the justifier-typeways, of the transfer nick guide, means for moving the same laterally, the retaining nick-guide and means for moving the same vertically, whereby the type are transferred from the assembling-typeways to the justifier-typeways and retained on the latter typeways, substantially as described.

31. The combination with the slide 98, of the transfer nick-guide connected with and operated by said slide and the retaining nick-guide also connected with and operated by said slide, substantially as described.

32. In a type-setting machine, the combination with the magazine and assembling-typeway, of a primary nick-guide, and a secondary transfer nick-guide normally in line therewith, said secondary nick-guide being constructed to yield vertically, substantially as described.

33. In a type-setting machine, the combination with the magazine and assembling-typeway, of a primary nick-guide and a secondary transfer nick-guide normally in line therewith, said secondary nick-guide being spring-seated whereby it may yield vertically, substantially as described.

34. In a type-setting machine, a space-ejector operating in response to the space-key and a space-counting device operated by said space-ejector, substantially as described.

35. In a type-setting machine, a space-ejector provided with a cam-surface and a space-counting device operated from said cam-surface, substantially as described.

36. In a type-justifying machine, a justifying-lever, a series of fulcrum-bars, means for selecting the proper fulcrum for each line, and means for rendering said fulcrum operative upon the lever and positively withdrawing it therefrom, substantially as described.

37. In a justifying-machine, the combination with the typeway, and means for measuring a line of type upon said way, of a stop or abutment for the line, a holder for said abutment, said holder being adjustable to adapt the machine for different lengths of lines, substantially as described.

38. In a type-justifying mechanism, the combination with means for measuring a line of type, of a movable abutment against which the line is measured and a holder for said abutment, said holder being adjustable and said abutment being also adjustable relatively to the holder, to adapt the machine for different lengths of lines, substantially as described.

39. In a type justifying machine, the combination of a way and a follower for moving the type along said way, of the means for relieving the pressure of the follower upon the type consisting of a band connected with the follower, and a movable clamping device constructed to seize the band and draw the follower backward, substantially as described.

40. In a type-justifying machine, the combination of a way and a follower for moving type along said way, of a weight for drawing said follower toward the galley, a counterweight for returning said follower, a detent for sustaining the counterweight in an elevated position while a line is moving toward the galley, a band connected with the follower and with a button below said counterweight, said detent being released by said button as the line reaches the galley, whereby the counterweight is dropped upon the button and the follower-head returned, substantially as described.

41. In a type-justifying machine, means for feeding a strip of space-timber, a movable cutter for severing justifying-spaces from said timber, and a brush operating to remove the chips from said cutter, substantially as described.

42. In a type-justifying machine, means for feeding a strip of space-timber, a movable cutter for severing justifying-spaces from said timber, a cleaning-brush, and means for moving it to and from said cutter, substantially as described.

43. In a type-justifying machine, means for feeding space-timber, a reciprocating cutter constructed to sever a space during its forward movement and a brush arranged to remove the chips from the cutter during its backward movement, substantially as described.

44. In a type setting and justifying machine, a magazine for temporary word-spaces, means for assembling said spaces with type in lines, means for removing said spaces and inserting justifying-spaces in lieu thereof, a transfer-magazine for receiving the spaces removed from the line, and means for automatically carrying the transfer-magazine to the space-magazine and discharging the spaces into said latter magazine, substantially as described.

45. In a type-justifying machine, the combination of an elevator for removing the temporary spaces, a transfer-magazine arranged to receive said spaces and automatic means for carrying the transfer-magazine to the assembling mechanism and returning it to the justifying mechanism whereby the removed spaces are periodically deposited in the magazine of the assembling mechanism, substantially as described.

46. The combination of means for assembling a line of type and temporary spaces, means for removing the temporary spaces and automatically returning them to the assembling mechanism, and means for forming justifying-spaces and inserting them in lieu of the temporary spaces, substantially as described.

47. The means for returning temporary spaces to the assembling mechanism consisting of a pair of rock-shafts, parallel arms carried by said rock-shafts and a transfer-magazine carried by said parallel arms, substantially as described.

48. In a type setting and justifying machine, the temporary-space magazine, a space transfer-magazine, an elevator constructed to eject spaces from the ways into said transfer-magazine, and mechanism for moving said transfer-magazine from the elevator to the space-magazine and vice versa, said mechanism including a spring connection whereby the transfer-magazine is yieldingly seated over the elevator, substantially as described.

49. In a type-justifying machine, a space-timber magazine adapted to hold a plurality of pieces of timber, a space-cutter, and automatic means for feeding successive strips of space-timber from said magazine to said cutter, substantially as described.

50. In a type-justifying machine, a space-cutter, means for feeding a strip of space-timber to said cutter, a space-timber magazine, and automatic means for ejecting a remnant of timber from the feeding device and substituting a new strip of timber in lieu thereof, substantially as described.

51. In a type-justifying machine, a space cutter, a slide adapted to engage with a strip of space-timber, means for moving the slide and strip toward the cutter, means for withdrawing the slide and the remnant of strip when the available portion is consumed, and means for disengaging the remnant from the slide and engaging a new strip therewith, substantially as described.

52. In a type justifying machine, the combination of the space-timber magazine, the plunger for moving the bottom strip laterally from said magazine into line with the cutter, the means for moving the strip toward the cutter, and the cutter constructed to sever justifying-spaces from the strip, substantially as described.

53. In a justifying-machine, the combination of the space timber cutter, the slide adapted to engage a strip of space-timber, a weight connected to the slide for moving the timber to the cutter, and means for periodically raising the weight to return the slide, substantially as described.

54. In a justifying-machine, stripe of space-timber provided with notches in combination with a feeding device having a tooth adapted to engage said notches, substantially as described.

55. In a type-justifying machine, devices for forming justifying-spaces and inserting them in lines of type, said devices including a passage or runway for the spaces, and means for varying the width of the runway proportionately to the widths of the spaces, substantially as described.

56. In a justifying-machine, means for forming justifying-spaces, a gage for determining the widths of said spaces, and a runway into which the spaces are delivered, one side of said runway being stationary and the opposite side being movable with the gage, substantially as described.

57. In a justifying-machine, the combination with a cutter, and means for feeding space-timber to the cutter, of a gage, a runway into which the cut spaces are delivered, and a piece carried by said gage and forming one side of said runway, substantially as described.

58. In a justifying-machine, the combination with typeways, of a space-forming device situated higher than said typeways, and a curved runway extending from the space-forming device down to said typeways, substantially as described.

59. In a justifying-machine, means for feeding space-timber, a cutter for severing justifying-spaces, and a movable cutter-block, substantially as described.

60. In a justifying-machine, means for feeding space-timber, a cutter for severing justifying-spaces, a cutter-block, and means for imparting an intermittent movement to the cutter-block to carry it to and from the cutter, substantially as described.

61. In a justifying-machine, the combination with means for feeding space-timber, a cutter, a reciprocating cutter-block and a fork movable relatively to the cutter-block and adapted to discharge the cut spaces from said block into a runway, substantially as described.

62. In a justifying-machine, the combination with means for feeding space-timber, and a cutter, of a movable cutter-block and a fork arranged to slide on said cutter-block, means for moving the cutter-block and fork forward after the space is cut, and means for imparting to the fork an additional movement to eject the space into the runway, substantially as described.

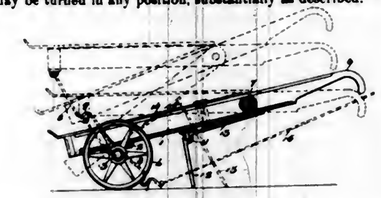
63. In devices for transferring lines of type from a runway to a galley, an ejecting-plate for moving the type and a supporting-plate normally forming part of the runway and movable to support the forward ends of the type during a portion of their movement into the galley, substantially as described.

64. In devices for transferring lines of type from a runway to a galley, a sliding plate normally forming part of the runway, means for moving said plate forward to carry the ends of the type over the nicks of the previous line in the galley, and means for returning said plate, substantially as described.

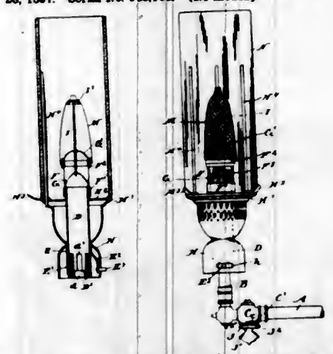
65. The combination of a part to be raised having an operative face, such as the foot 402, of a shaft, an arm on said shaft provided with a roll for engaging said face, and a cam on said shaft arranged to follow the roll and sustain the part raised thereby, substantially as described.

607,048. TRUCK. WILLIAM A JOHNSON, Kahoka, Mo. Filed Nov. 26, 1897. Serial No. 659,862. (No model.)

Claim.—A truck comprising an outer frame, an axle journaled on the same and provided with wheels, a second inner frame provided with handles and hinged or pivoted to the forward ends of the first-named frame, a swinging device carried by said inner frame and provided with shoulders adapted to cooperate with said axle for holding the forward end of the last-named frame in any desired elevation, rigid legs of different lengths and arranged at approximately right angles to one another also hinged to the last-named frame at a point between the hinged point of the frames and the swinging device, a chain or rope attached to the swinging device for pulling the same in one direction or releasing it from the axle, and a pivoted platform movably fixed to the inner frame whereby the object located thereon may be turned in any position, substantially as described.



607,049. GAS-BURNER. ELLIS T. JONES, Hoboken, N. J. Filed July 23, 1897. Serial No. 646,161. (No model.)



Claim.—1. In a burner of the character herein set forth, the burner-tube having an opening at the lower end adapted to match closely to and support the burner upon an ordinary gas jet or burner, in combination with the latter and means as the flaring casing or skirt serving as a base to support the burner in an upright position when not in use on said gas-jet, all substantially as herein specified.

2. In a burner of the character herein set forth, the burner-tube having a series of air-inlet openings, in combination with a rotatable sleeve mounted thereon, consisting of a series of tongues bent inwardly to grasp said tube and register with said openings, and an alternating series bent outwardly to serve as deflecting-plates for the air-currents flowing toward said openings, all substantially as herein specified.

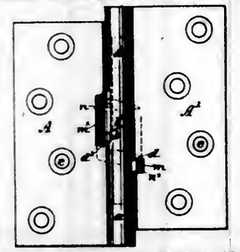
3. The burner-tube D receiving gas and air, in combination with the cap F having the rings F', F^2 and non-conducting cylinder F^3, the lower diaphragm G and upper diaphragm G' the rod I and button I' adapted to support the mantle M, the said lower diaphragm serving as a seat for said rod and also to prevent the flame extending to the interior of said tube, all substantially as herein specified.

4. The burner-tube D having the air-inlet openings d', in combination with the sleeve E and its series of inwardly-bent tongues E' narrower than said openings and adapted to register therewith, an alternating series of tongues E^2 bent outwardly and curved downwardly to deflect air-currents entering said openings toward the center of said tube, the operating-arm E^3, and casing H having the slot h receiving said arm, all substantially as herein specified.

5. In a burner of the character herein set forth, the burner-tube D having the opening d adapted to match closely to and support the burner upon an ordinary gas-jet B, and having the air-inlet openings d', in combination with said gas-jet and its controlling-cock C, and with the sleeve E, tongues E', E^2 and arm E^3 controlling said air-inlets, and the adjustable ring J and its projection J' attached to and limiting the motion of said gas-cock, all substantially as herein specified.

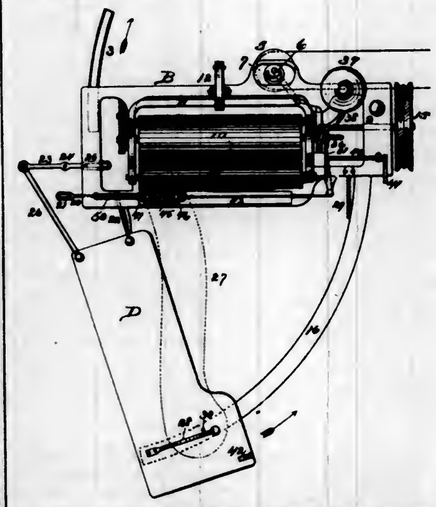
6. The tube D, casing H, sleeve E and tongues E', E^2 and arm E^3, cap F, rod I and button I', in combination with the gas-jet B, cock C, and ring J and its adjusting-screw J^3 and projection J' serving with said cock, all substantially as herein specified.

607,050. HINGE. FRANK R. JONES and FRED S. DEARBORN, Worcester, Mass. Filed Mar. 1, 1898. Serial No. 672,147. (No model.)



Claim.—A separable hinge composed of suitable attaching-plates having hubs a a' embracing the axial pintle, the abutting ends of said hubs formed for countermatching in a scroll-joint, and consisting of the inner helicoid bearing-scrolls b b', and outer helicoid bearing-scrolls d d' disposed in adjacent concentric circles about the axial pintle with the respective inclines of said inner and outer scrolls arranged at different portions of the circle, and affording bearing-contact at opposite sides of the axis or center pintle, substantially as set forth.

607,051. CIGAR-BUNCH-ROLLING MACHINE. FRANK R. KEYES, Binghamton, N. Y. Filed May 13, 1897. Serial No. 636,330. (No model.)



Claim.—1. In a machine of the class described, the combination with a suitable bunch-rotating mechanism, of a horizontal single-piece wrapper-table in front thereof mounted to permit its being bodily shifted upon a vertical pivot to vary the angle of presentation of a wrapper to a rotating bunch.

2. In a machine of the class described the combination with a bunch-rotating mechanism of a wrapper-stretcher adapted to be traversed in front thereof, and means to present a wrapper to said stretcher.

3. In a machine of the class described having bunch-rotating means a wrapper-stretcher comprising a body, wheels mounted thereon, and means to revolve them in opposite directions whereby a wrapper passing over it longitudinally is stretched and smoothed laterally.

4. In a machine of the class described the combination with a bunch-rotating mechanism mounted upon a swinging carriage, of a wrapper-stretcher and means to traverse it along the front of said carriage.

5. In a machine of the class described the combination with a bunch-rotating mechanism mounted upon a swinging carriage, of a wrapper-stretcher comprising a body and rollers and means to drive them in opposite directions, and means to traverse said stretcher upon said carriage.

6. In a machine of the class described, the combination with a bunch-rotating mechanism mounted upon a swinging carriage, a wrapper-stretcher upon the front thereof, and a wrapper-table in front of said stretcher.

7. In a machine of the class described, the combination with a bunch-rotating mechanism mounted upon a swinging carriage of a swinging wrapper-table in front thereof whereby the angle of presentation of the wrapper to the bunch is varied.

8. In a machine of the class described, the combination with a bunch-rotating mechanism mounted upon a swinging carriage of a traversing wrapper stretcher in front thereof, and a swinging wrapper-table in front thereof and means for so traversing it whereby the angle of presentation of the wrapper to the bunch is varied.

9. In a machine of the class described, the combination with a bunch-rotating mechanism mounted upon a swinging carriage of a wrapper-table mounted in front thereof upon a supporting-pivot adapted to traverse such support and means whereby a combined swinging and reciprocatory movement upon said pivot is imparted to it.

10. In a machine of the class described, the combination with a bunch-rotating mechanism mounted upon a swinging carriage of a pivoted wrapper-table, and intermediate connections whereby the swing of one swings the other.

11. In a machine of the class described, the combination with a bunch-rotating mechanism mounted upon a swinging carriage, of a pivoted wrapper-table and intermediate connections whereby the carriage is swung, and a combined swinging and longitudinally-reciprocatory movement is given to the said table.

12. In a machine of the class described, the combination with a bunch rotating mechanism mounted upon a swinging carriage, and a wrapper-stretcher upon said carriage, of a pivoted wrapper-table, and intermediate connections whereby the swing of said carriage traverses said stretcher, and swings said table.

13. In a machine of the class described, the combination with a bunch-rotating mechanism mounted upon a pivoted carriage, of a shaft, and an eccentric thereon engaging with said carriage to swing it upon its pivot.

14. In a machine of the class described, the combination with a bunch-rotating mechanism mounted upon a pivoted carriage, of a cranked shaft, an eccentric thereon engaging with said carriage, a wrapper-stretcher upon said carriage and a suitable connection to said crank whereby said eccentric swings said carriage and traverses said stretcher thereon.

15. In a machine of the class described, the combination of the following elements: a bunch-rotating mechanism mounted upon a pivoted carriage, a cranked shaft, an eccentric thereon engaging with said carriage, a wrapper-stretcher upon said carriage, a pivoted wrapper-table, and suitable connections whereby said eccentric swings said carriage and table, and traverses said stretcher.

16. The combination with a bunch-rotating mechanism upon a pivoted carriage, and an eccentric engaging with and swinging it upon its pivot, of a nicking-knife, a lever engaging with it, and a stationary rod with which it engages when said carriage swings.

17. The combination with a bunch-rotating mechanism, a paste-pot, a conduit therefrom, and a valve in said conduit, of a swinging wrapper-table provided with a lug adapted to be brought into engagement with the valve-stem by the swing of said table to open said valve.

607,052. PHOTOGRAPHIC-PLATE CARRYING AND TRANSFERRING CASE. JAMES C. KIMBEY, Little Rock, Ark., assignor to the Philadelphia Camera Company, Limited, Philadelphia, Pa. Filed Sept. 2, 1897. Serial No. 650,373. (No model.)



Claim.—1. A carrying and transferring case for photographic dry-plates, comprising a box enlarged interiorly at each end forming shoulders surrounding three sides of the interior, the front of the box having transverse openings at its upper and lower ends communicating with the enlarged spaces in said box, slides located adjoining the upper and lower shoulders, respectively, and forming a central storage-compartment, spring-plates secured at their upper ends within the box and having each an inturned blade located a certain distance above the lower slide, and rods extending from said plates directly through the sides of the box; the parts being constructed and arranged to receive an ordinary plate-holder passed into the enlarged spaces in the ends of the box through the openings in the front thereof, as shown and described.

2. A carrying and transferring case for photographic dry-plates, comprising a box having transverse openings through one side adjoining the top and bottom boards, shoulders surrounding the interior of the box on a line with the openings, flat springs secured to the inner sides of the top and bottom of the box and projected toward the shoulders; together with slides forming horizontal partitions adjoining the transverse openings, spring-plates attached to inner sides of the box and having inturned blades, and rods projecting from said blades through openings therefor in the sides of the box; the device being adapted for use in connection with an ordinary plate-holder, as herein shown and described.

3. A carrying and transferring case for photographic plates, comprising a box the top and bottom of which are hinged to the body, said box being enlarged interiorly at each end forming shoulders surrounding three sides of the interior while the front of the box is provided with transverse openings communicating with the enlarged spaces at the ends of said box, slides located adjoining the upper and lower shoulders, respectively, and forming a central storage-compartment, spring-plates secured within recesses in the box and provided at their free ends with inturned blades located a certain distance above the lower slide, and operating-rods extending from the center of said plates directly through the sides of the box; the parts being constructed and arranged to receive an ordinary plate-holder passed into the enlarged spaces in the ends of the box through openings in the front thereof, as shown and described.

607,053. PHOTOGRAPHIC-PLATE MAGAZINE. JAMES C. KIMBEY, Philadelphia, Pa., assignor to the Philadelphia Camera Company, Limited, same place. Filed Mar. 24, 1898. Serial No. 675,006. (No model.)



Claim.—1. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at the lower end, a plate adapted to cover said lower end and drawn against the box by springs which permit a movement of the covering-plate away from the box, a horizontal slide forming a partition in the box near the lower end thereof, movable plates or supports in the sides of the box located a slight distance above the slide, and means for operating said plates or supports, substantially as shown and for the purpose set forth.

2. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its lower end, a plate adapted to cover said lower end and drawn against the box by springs which permit a movement of the covering-plate away from the box, a horizontal slide forming a partition in the box near the lower end thereof, plates pivoted in the sides of the box with their inner ends projected normally into the box, springs acting upon said plates, and operating-rods for the plates provided with bent ends projecting through a slot in the front of the box, substantially as shown and for the purpose set forth.

3. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its lower end, a plate adapted to cover said lower end and drawn against the box by springs which permit a movement of the covering-plate away from the box, an apron attached to the covering-plate and extending from the sides and back thereof, a slide forming a partition in the box near the lower end thereof, movable plates or supports in the sides of the box a slight distance above the slide, and means for operating said plates or supports, substantially as shown, and for the purpose set forth.

4. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its upper and lower ends, frames or aprons extending around three sides of the box, covering-plates attached to said frames or aprons, and springs serving to draw the plates normally against the open ends of the box; together with slides forming upper and lower partitions, plates or supports located in the sides of the box a slight distance above the lower slide, and means for operating said plates or supports, substantially as shown and for the purpose set forth.

5. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its upper and lower ends, frames or aprons extending around three sides of the box and provided with inwardly-projecting flanges, covering-plates having channels or recesses in their edges to receive said flanges, and springs serving to draw the covering-plates normally against the open ends of the box; together with slides forming upper and lower partitions, plates or supports located in the sides of the box a slight distance above the lower slide, and means for operating said plates or supports, substantially as shown and for the purpose set forth.

6. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its upper and lower ends and provided with vertical recesses in its side walls, slides forming upper and lower partitions, plates or supports adapted to project into the aforesaid recesses, and means for operating said plates or supports; together with devices connecting two photographic plates and provided with projecting flanges or lips that extend into the vertical recesses of the box, the supports being located a distance above the lower slide equal to the combined thickness of the photographic plates and connecting means thereof, substantially as shown and for the purpose set forth.

7. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its upper and lower ends and provided with vertical recesses in its side walls, slides forming upper and lower horizontal partitions, plates or supports adapted to project into the aforesaid recesses, and means for operating said plates or supports, lugs projecting into the sides of the recesses below the supports, devices connecting two photographic plates and having projecting flanges or lips of less width than the aforesaid recesses, and a division-plate having flanges wider than the aforesaid flanges, substantially as shown and for the purpose set forth.

8. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its upper and lower ends, frames extending around the sides and back of said box and vertically movable with respect thereto, springs bearing upon the forward ends of the frames, covering-plates attached to said frames and adapted to bear normally against the open ends of the box; together with slides forming upper and lower horizontal partitions, plates or supports in the sides of the box a slight distance above the lower slide, and means for operating said plates or supports, substantially as shown and for the purpose set forth.

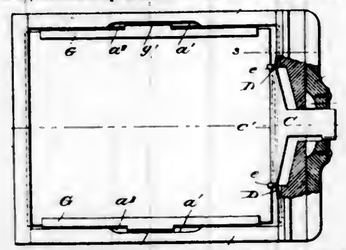
9. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its upper and lower ends, frames extending around the sides and back of said box and vertically movable with respect thereto, flanges at the upper and lower edges of said frames, plates having recessed edges engaging one set of flanges, and springs bearing against the opposite set; together with slides forming upper and lower partitions in the box, plates or supports a slight distance above the lower slide, and means for operating said plates or supports, substantially as shown and for the purpose set forth.

10. In a carrying and transferring case for photographic dry-plates, the combination, of a box open at its upper and lower ends, plates adapted to cover the open ends of the box and provided with aprons extending into the same, springs acting against the movement of the covering-plates away from the box, and slides forming upper and lower horizontal partitions; together with plates pivoted in recesses in the sides of the box, wire springs let into the forward end of the box and attached to the outer ends of said plates to project their inner ends into the box, and operating-rods let into horizontal recesses in the front of the box and provided with bent ends extending outward through a slot in the center of the front of the box, said rods being connected to the wire springs and their outer ends located adjoining each other, substantially as shown and for the purpose set forth.

11. A carrying and transferring case for photographic dry-plates, comprising an inner box having horizontal recesses in its sides and open at its top and bottom, frames embracing three sides of the box and having flanges extending into the recesses, springs located in the recesses and bearing upon the flanges, covering-plates removably connected to the frames, and an outer box inclosing the four sides of said inner box; together with slides forming upper and lower horizontal partitions, plates or supports located above the lower slide, and means for operating said supports, substantially as shown and for the purpose set forth.

607,054. PHOTOGRAPHIC-PLATE HOLDER. JAMES C. KIMBEY, Philadelphia, Pa., assignor to the Philadelphia Camera Company, Limited, same place. Filed Mar. 24, 1898. Serial No. 675,009. (No model.)

Claim.—1. A photographic-plate holder, comprising an open frame having shoulders therein at opposite sides, a sliding plate mounted in the frame and provided with projecting fingers; in combination with binding-strips for the photographic plates, said binding-strips having projecting flanges, the frame being provided with the usual slides, substantially as shown and for the purpose set forth.



2. A photographic-plate holder, comprising a frame having a longitudinal recess in the rear cross-piece and recesses in the side pieces thereof, upper and lower slides mounted within the frame, and a sliding plate provided with projecting fingers; the recesses in the sides of the frame extending slightly below the upper slide; in combination with strips for the photographic plates, said strips having projecting flanges, substantially as shown and for the purpose set forth.

3. A photographic-plate holder, comprising a frame having a longitudinal recess in the rear cross-piece and vertical recesses in the side pieces, a sliding plate located in the plate holder and having an extension passing through the same, fingers projecting from said sliding plate, and springs actuating the latter; in combination with binding-strips for the photographic plates provided with projecting flanges, the plate-holder having the usual slides, substantially as shown and for the purpose set forth.

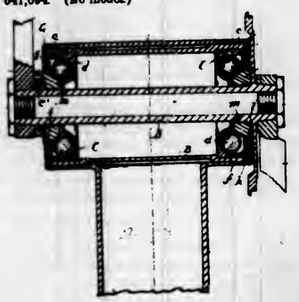
4. A photographic-plate holder, comprising a frame having a longitudinal recess in the rear cross-piece and vertical recesses in the side pieces, a sliding plate located in the plate holder and having an extension passing through the same, a handle portion and hook at the outer end of the extension, fingers projecting from the sliding plate, and springs actuating the latter; in combination with binding-strips for the photographic plates provided with projecting flanges, the plate-holder having the usual slides, substantially as shown and for the purpose set forth.

5. In combination with a plate-holder constructed substantially as shown, said plate-holder having slits to receive the slides and recesses communicating with said slits, of a shutter composed of a fabric secured to the plate-holder, and folded upon itself, a felt strip inclosed within the folds, and a plurality of springs bearing against the folded part of the shutter along its length, substantially as shown and for the purpose set forth.

6. In combination with a plate-holder constructed substantially as shown and described, of a septum adapted to separate the photographic plates, binding-strips attached to the septum, and flanges projecting from said binding-strips, substantially as shown and for the purpose set forth.

7. In combination with a plate-holder constructed substantially as shown and described, of a septum adapted to separate the photographic plates and provided with projecting tongues, binding-strips overlapping the edges of the plates and having recesses through which the tongues are passed and bent upon said strips, and flanges projecting from one edge of the binding-strips, substantially as shown and for the purpose set forth.

607,055. CRANK-SHAFT BEARING FOR BICYCLES. JOHN KNAPE and CHARLES W. DAKE, Grand Rapids, Mich., assignors to the Grand Rapids Cycle Company, same place. Filed June 17, 1897. Serial No. 641,094. (No model.)



Claim.—1. In a crank-shaft bearing for bicycles, the combination with the hanger, the removable case therein having threaded ends which project beyond said hanger, the ball-races in said case, the crank-shaft carrying the bearing-cones, and the jam-nuts adapted to screw onto the projecting ends of said case and having the right-angled flanges forming dust-caps, substantially as set forth.

2. In a crank-shaft bearing for bicycles, the combination with the hanger, a removable bearing-case therein, the ball-races in said case, the ball-retaining rings within the ends of said case forming an annular space between the outer face of said rings and the outer ends of said case, the crank-shaft having the bearing-cones having circumferential grooves in the edges thereof, the felt washers lying upon said ball-retaining rings within said annular space in the ends of said case, their inner edges lying in the circumferential grooves of said cones, the jam-nuts screwed onto the ends of said case having right-angled flanges which embrace said cones and confine said felt washers between the inner faces of said flanges and said ball-retaining rings.

607,056. PROCESS OF MAKING ALDEHYDO-BENZOIC ACID. JOSEPH KOETSCHET, St. Fons, France, assignor to La Société Chimique des Usines du Rhône anciennement Gilliard P. Monnet et Cartier, Lyons, France. Filed Dec. 14, 1897. Serial No. 661,868. (Specimens.)

Claim.—1. The method substantially as hereinbefore described of prodncing the anilin salt of the herein-described new acid, which method consists in treating ortho-oxalyl-benzoic acid with anilin in aqueous solution as set forth.

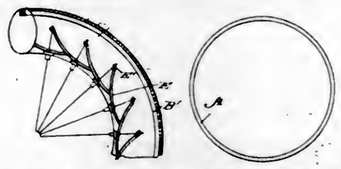
2. The method substantially as hereinbefore described of separating ortho-oxalyl-benzoic acid from phthalic acid, which method consists in treating with analin the solution obtained by oxidation of naphthalene or naphthalene derivatives with permanganate as set forth.

3. As a new product, the anilin salt of the herein-described new acid having the characteristic properties of being very sensitive to reagents, slightly soluble in water, of having a melting-point of 165° centigrade with evolntion of gas; and if melted becoming converted into an insoluble body with a melting-point above 250° centigrade.

4. The method substantially as hereinbefore described of producing anilido-benzylidene-ortho-carboxylic acid, which method consists in treating ortho-oxalyl-benzoic acid with anilin in aqneous solution, whereby an anilin salt is obtained, and in then heating said anilin salt in a neutral medium as set forth.

5. The method substantially as hereinbefore described of producing aldehydo-benzoic acid which method consists in treating ortho-oxalyl-benzoic acid with anilin in aqueous solution, whereby an anilin salt is obtained, in then heating said anilin salt in a neutral medium whereby anilido-benzylidene-ortho-carboxylic acid is obtained, and in then converting said anilido-benzylidene-ortho-carboxylic acid into aldehydo-benzoic acid by extracting with ether and vaporizing the ether, as set forth.

607,057. VEHICLE-WHEEL. JOSEPH A. LABATT and GEORGE H. LEWIS, Galveston, Tex., assignors of one-half to John Goggan, Leon Blum, and Henry J. Labatt, same place. Filed Oct. 11, 1897. Serial No. 654,847. (No model.)

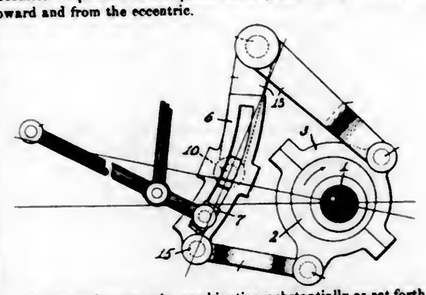


Claim.—1. In combination, the tubular tire, the spokes loosely passing into the same, and the series of independent springs carried within the tube, each spring having one end connected to one of the spokes, an opening approximately centrally thereof through which the next spoke passes, and having its opposite end bearing against the under face of the next adjoining spring, substantially as described.

2. In combination, the tubular metallic rim, the spokes passing loosely into the same, the series of springs located within the tube, each spring having one end connected to the extremity of one spoke, having an opening approximately centrally thereof through which the next spoke passes, and having its opposite end bearing against the under side of the adjoining spring, and an anxiliary tire or tread portion for said tubular rim, substantially as described.

607,058. VALVE-GEAR. LINCOLN A. LANG, Yule, N. D., assignor of one-half to Edward Freeman Walsh, St. Paul, Minn. Filed Jan. 24, 1898. Serial No. 667,721. (No model.)

Claim.—1. In a valve-gear, the combination, subtantially as set forth, of a single eccentric, a rodless strap therefor, a first pivot and a second pivot carried by said strap, a pivot fixed near the eccentric, a link-supporting arm mounted thereon, a link-pivot carried by the free end of said arm, a link pivoted on said link-pivot, a block adjustable in said link, a connecting-bar pivoted to the link and to the first pivot of the eccentric-strap, a connection from the second pivot of the eccentric-strap to said fixed pivot to restrain the turning of the eccentric-strap, and a connection between the second pivot of the eccentric-strap and said link-pivot whereby said link-pivot is moved toward and from the eccentric.



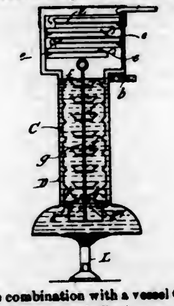
2. In a valve-gear, the combination, substantially as set forth, of a single eccentric, a rodless strap therefor, a first pivot and a second pivot carried by said strap, a pivot fixed near the eccentric, a link-supporting arm mounted thereon, a link-pivot carried by the free end of said arm, a link pivoted on said link-pivot, a block adjustable in said link, a connecting-bar pivoted to the link and to the first pivot of the eccentric-strap, and an arm mounted on said fixed pivot and connected with the second pivot of the eccentric-strap and rigidly connected with said link-supporting arm.

3. In a valve-gear, the combination, substantially as set forth, of a single eccentric, a rodless strap therefor, a first pivot and a second pivot carried by said strap, a pivot fixed near the eccentric, a bell-crank mounted on said fixed pivot and having one of its arms connected with the second pivot of the eccentric-strap, a link pivoted to the other arm of the bell-crank, a link-block adjustable in said link, and a connecting-bar pivoted to said link and to the first pivot of the eccentric strap.

4. In a valve-gear, the combination, substantially as set forth, of a single eccentric, a rodless strap, a link, a link-block adjustable therein, a connection pivoted to the link and to the eccentric-strap to impart an oscillating movement to the link, and a bell-crank interposed between the link and eccentric and serving to reciprocate the link and to restrain the turning of the eccentric-strap.

5. In a valve-gear, the combination, substantially as set forth, of a single eccentric, a rodless strap therefor, a link-supporting pivot mounted near the eccentric and capable of movement to and from the eccentric, mechanical connections between said pivot and strap for causing said pivot to move toward and from the eccentric, a link mounted on said pivot, a block adjustable in said link, and a connection pivoted to said strap and link for oscillating the link upon said supporting-pivot.

607,059. APPARATUS FOR PURIFYING WATER. WILLIAM LAWRENCE, London, England. Filed Nov. 21, 1896. Serial No. 613,008. (No model.) Patented in England Sept. 12, 1894, No. 17,872.



Claim.—1. The combination with a vessel C having an inlet in the upper part thereof of superposed diaphragms *f* below the intended water-level, the said diaphragms dividing the vessel C into superposed compartments with orifices of communication in said diaphragms, an exterior vessel D having communications with vessels C below the lowermost diaphragm and having an outlet at such a level as to maintain the water-level above the diaphragms.

2. The combination with a vessel C having an inlet in the upper part thereof, of superposed trays *e*, below said inlet and superposed diaphragms *f* below said trays, the latter dividing the vessel into superposed compartments with orifices of communication in said diaphragms, an exterior vessel D having communication with vessel C below the lowermost diaphragm and having an outlet at such a level as to maintain the water-level above the level of said diaphragms but below that of the trays *e* for the purpose set forth.

607,060. BUCKLE. ALBON LORD, Brooklyn, N. Y., assignor to the Consolidated Fastener Company, Portland, Me. Filed June 5, 1897. Serial No. 639,526. (No model.)



Claim.—1. A fastening device for gloves and other articles, consisting of two members wherein the upper or male piece A is provided with a lip at its rear end and a hook at its forward end, and the under or female piece B is provided at its forward end with a slot and at its rear end with a locking-spring, all substantially as shown and described.

2. A fastening device for gloves and other articles, consisting of two members, a male member having engaging ends, and a female member having a slot and a leaf-spring in rear thereof at one end, and a rolled-over engaging bar at the other end, all substantially as shown and described.

3. The combination with a glove or other article of a fastening device composed of male and female members secured respectively to the top surface of one flap and the bottom surface of the other flap, said male member having reversely-carved hooks at its opposite ends, and the female member being relatively arranged with a slot at its forward end and a bar at its rear end so that the ends of the male member may engage and lock with the female member, substantially as described.

607,061. RETAINING DEVICE FOR STORM-SLIPPERS, &c. FRANCIS J. LYONS, St. Louis, Mo. Filed Apr. 7, 1897. Serial No. 631,194. (No model.)

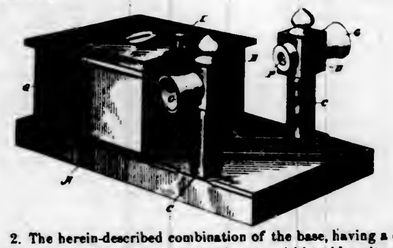


Claim.—1. The combination with a slipper, of means for securing the same to the foot of the wearer comprising two embracing jaws pivotally united at their rear ends and each having provisions for direct attachment to the sides of the slipper, and means carried by the jaws and located at the rear thereof for expanding, compressing, and locking the same, substantially as described.

2. The combination with a slipper, of means for securing the same to the foot of the wearer, comprising two embracing jaws pivotally united and each having provisions for direct attachment to the sides of the slipper, and a toggle mechanism carried by the jaws and spanning the pivotal connection, for locking, spreading and compressing the jaws, substantially as described.

607,062. AMUSING AND MYSTIFYING COIN-IN-THE-SLOT MACHINE. THOMAS R. MAGUIRE, Philadelphia, Pa., assignor of one-half to John J. Pradley, same place. Filed Mar. 1, 1897. Serial No. 625,506. (No model.)

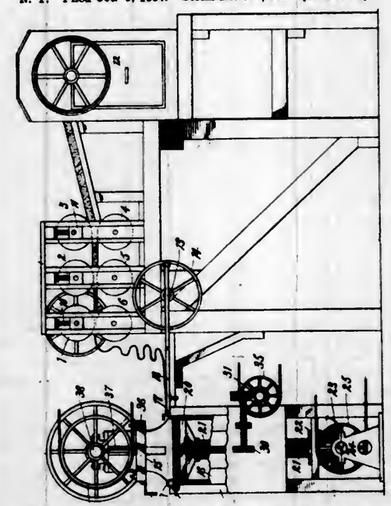
Claim.—1. In combination, a base having a cavity B therein, two hollow posts mounted upon said base, mirrors E set at forty-five degrees in the upper portion of the posts, mirrors F set at forty-five degrees within the cavity within the base and in line with the first-named mirrors, eyepieces for observing reflections upon the first-named mirrors, a shutter normally interposed between the mirrors F, mechanism attached to said shutter whereby the latter may be withdrawn from its normal position, a spring for returning said mechanism to its normal position, a lever adapted to lock said mechanism, and a chute arranged adjacent to said lever so that a coin passed therein will unlock the shutter mechanism, substantially as shown and described.



2. The herein-described combination of the base, having a cavity therein, mirrors F set at forty-five degrees within said cavity, hollow posts C projecting upward from the base, mirrors E arranged in the upper portion of said posts, eyepieces G for observing reflections upon the last-named mirrors, mirrors F arranged in the rear portion of the posts, a shutter normally interposed between the mirrors F, a bell-crank lever, a rod connecting said shutter and lever, an operating-rod attached to the bell-crank lever, a spring for normally holding said rod in its elevated position, a thumb-knob for depressing said rod, a pivoted lever R, one end of which is adapted to enter into engagement with the notch formed in the rod J, a spring for holding the lever in its locked position, a chute against which the lever R normally rests, a shield carried by said lever, and a cam carried by the rod J for removing said shield from beneath the chute, substantially as and for the purpose set forth.

3. In a device of the character described, a coin-chute, a shutter, a rod arranged to move the shutter back and forth, a lever pivoted at its center, one end engaging a notch in the rod to prevent its movement and the other end extending partly within the coin-chute whereby the edge of a coin will move the lever out of engagement with the rod, a shield on the lever closing the end of the chute until the lever is disengaged from the rod and pushed to one side, and means on the rod for forcing the end carrying the shield away from the coin-chute, as and for the purpose described.

607,068. COTTON-PRESS. CHARLES E. MALLETT, New York, N. Y. Filed Oct. 9, 1897. Serial No. 654,633. (No model.)



Claim.—1. In a cotton-press, the combination with a supporting-platen, a plunger reciprocating toward and away from said platen, and folding apparatus for laying a bat of cotton in continuous, successive, superposed folds between said platen and plunger, operating means for said folding apparatus bringing the same into action when the plunger is most removed from the platen, and then withdrawing said folding apparatus to permit of the operation of the plunger, and means for bringing said plunger into action alternately with the action of the folding apparatus.

2. A cotton-press comprising means for forming and feeding a continuous bat of cotton, a supporting-platen, a reciprocating plun-

ger, folding apparatus for laying the continuous bat of cotton in successive folds between said plunger and platen, and means for moving the plunger away from the supporting platen so as to be completely free of the cotton and the folding apparatus and to permit of the operation of the folding apparatus, and to then bring said plunger toward said platen so as to compress the folded bat, the folding apparatus and the plunger acting alternately.

3. A cotton-press comprising means for compressing and feeding a continuous bat of cotton, a supporting-platen, a plunger reciprocating toward and away from said platen, folding apparatus for laying the continuous bat of cotton in successive folds between said plunger and platen, and actuating means for operating said plunger and said folding apparatus in repeated alternation so as to form the bale by a series of steps of alternate folding and compression

4. A cotton-press comprising means for forming and feeding a continuous bat of cotton, a supporting platen, a plunger movable toward and away from said platen, folding apparatus for laying the continuous bat in successive folds between said platen and plunger, and means for operating said plunger, after each fold is laid down, to press such fold against the preceding folds by a direct tramping action.

5. A cotton press comprising means for forming and feeding a continuous bat of cotton, a supporting-platen, a plunger movable toward and away from the platen, folding apparatus for laying the continuous bat of cotton in successive folds between said platen and plunger, means for operating the plunger, in alternation with the folding apparatus, to compress the bat so folded, means for gradually withdrawing the platen from the plunger, as the bat is successively folded and pressed, and means for raising said platen to finally compress the bale.

6. In a cotton-press, the combination of a supporting-platen, means for gradually lowering same, a folding device for folding a bat of cotton in superposed layers on said platen, a plunger and means for moving same up and down above said platen, so as to compress the folds of batting against the supporting-platen, means for raising said platen, a vertically-movable box surrounding the platen and means for raising and lowering said box.

7. In a cotton-press, the combination with means for supplying a continuous bat of cotton, a supporting-platen, a plunger, means for moving said plunger, repeatedly toward and away from the platen during the formation of a bale, and a folding apparatus operating at the times when the plunger is farthest away from the platen to fold the continuous bat in successive layers between the plunger and platen, such successive layers being thus repeatedly compressed by the repeated operation of the plunger.

8. A cotton-press comprising means for supplying a continuous bat of cotton, a supporting-platen, a plunger movable toward and from said platen, a driving means, a crank connection between said driving means and said plunger whereby the latter is repeatedly reciprocated during the formation of a bale, a folding apparatus for folding the bat in layers between the plunger and platen, and means for operating said folding apparatus in alternation with the movements of the plunger.

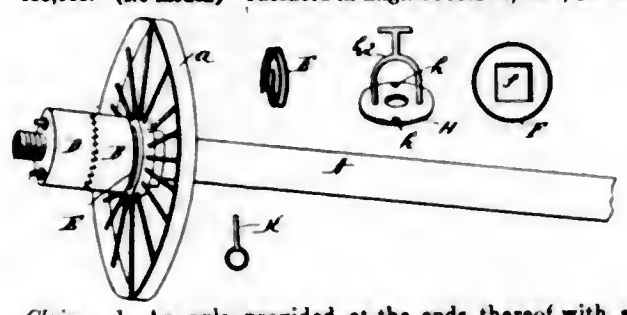
9. In a cotton press, the combination with the supporting-platen and the plunger, of a lower plate resting on the platen and an upper plate having means for removably attaching it to said plunger consisting of swivel bolts and nuts, and adjustable clamps with means for removably securing them to the aforesaid plates, whereby the said plates may act substantially as parts of the platen and plunger during the formation of the bale, and may then be secured over the bale by clamps and removed together with the bale from the press.

10. In a cotton-press, the combination with the supporting-platen, a plunger reciprocating toward and away from said platen, a reciprocating pusher for folding a bat of cotton between said platen and plunger, a clamping device located at one end of the path of said pusher, to hold the fold of cotton left by the pusher, and means operated by the movement of the plunger toward the platen to release said clamping device from the bat of cotton.

11. In a cotton-press, the combination with a reciprocating pusher for holding a bat of cotton, of a retaining device for the bat located at one end of the path of the pusher, and entering the path of the pusher laterally, means operated by the pusher to release the retaining device from the bat as the pusher approaches that end of its path and means for restoring the said device to engagement with said bat as the pusher reaches the end of its stroke, so that as the pusher reverses its movement, the bat will be folded over said retaining device.

12. In a cotton-press, a folding device comprising a reciprocating pusher adapted to engage with the bat and to fold it in successive layers, pivoted arms located at one end of the path of the pusher and engaging with the bat so as to form a fold therein, means connected to the pusher for removing said arms from engagement with the bat when the pusher is passing the same in one direction, and means for returning the arms to engagement with the bat when the pusher has completed its motion in that direction.

607,064. MEANS FOR SECURING WHEELS TO AXLES. BERNARD J. MALONEY, Edinburgh, Scotland. Filed Oct. 4, 1897. Serial No. 653,963. (No model.) Patented in England Jan. 27, 1896, No. 16,571.

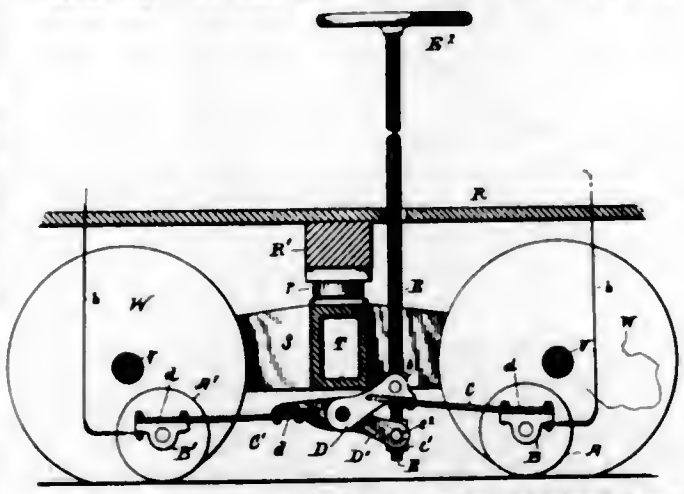


Claim.—1. An axle provided at the ends thereof with a part which is angular in cross-section, and a cylindrical screw-threaded part, and means for securing a wheel thereon, consisting of lock-nuts as B, and D, a washer F, and a spiral spring E, substantially as shown and described.

2. An axle provided at the ends thereof with an angular portion and a screw-threaded portion, a lock-nut adapted to be mounted on said angular portion, and a corresponding lock-nut adapted to be mounted on said screw-threaded portion, said lock-nuts being provided on their adjacent faces with interlocking teeth, a washer which is adapted to be placed between the bush of the wheel, and the lock-nut on the angular portion of the axle, a spring which is adapted to be placed between said washer, and said nut, a tube or collar as G, which is adapted to be placed between said nuts and which is provided with pins which pass through the nut on the screw-threaded portion of the axle, and a key by which said tube or collar is operated, substantially as shown and described.

3. An axle provided at the ends thereof with a washer, and a circular screw-threaded section, and means for securing the wheels thereon consisting of two lock-nuts one of which is mounted on the angular and the other on the screw-threaded portion, said lock-nuts being provided with interlocking teeth, a washer which is placed between the bush of the wheels, and the nut on the angular portion, a collar which is placed between said nuts, and provided with pins which project through the nut on the screw-threaded portion of the axle, a spring placed between said washer and the nut on the angular portion of the axle, and a key by which said collar is operated, substantially as shown and described.

607,065. TROLLEY FOR THIRD RAILS. LOWELL M. MAXHAM, Boston, Mass. Filed Sept. 1, 1897. Serial No. 650,276. (No model.)



Claim.—1. In combination, the plane-surfaced third rail, the trolley-wheel running thereon, bearings for said wheel adapted to resistingly permit a slight canting of the same, and means whereby such canting automatically guides said wheel toward the center line of the third rail, substantially as set forth.

2. In a trolley for third rails, the combination of the pivoted shank, the two parallel spring-arms carried thereby, bearing-boxes at the free ends thereof, the trolley-wheels revoluble in said boxes, and means for varying the downward pressure of said arms, substantially as and for the purpose set forth.

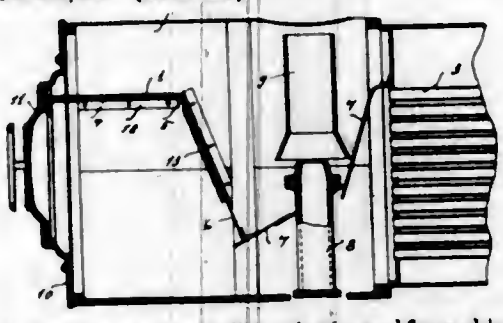
3. In a trolley for third rails, the combination of the substantially horizontal, parallel spring-arms held at one end, means for forcibly depressing their free ends, a trolley-wheel revolubly carried by said free ends and having its peripheral face made crowning, substantially as and for the purpose set forth.

4. In a trolley for third rails, the combination of the substantially horizontal, parallel spring-arms given a limited spiral twist in opposite directions and rigidly held at one end, bearings at the free end of the same, and the trolley-wheel having crowning peripheral face and loosely held in said bearings, substantially as and for the purpose set forth.

5. In a trolley for third rails, the combination of the two arms extending fore and aft from a single pivot, trolley-wheels at their free ends, the right and left hand threaded nuts carried by said arm, and the correspondingly-threaded rod turning in said nuts and having means for its easy rotation, substantially as and for the purpose set forth.

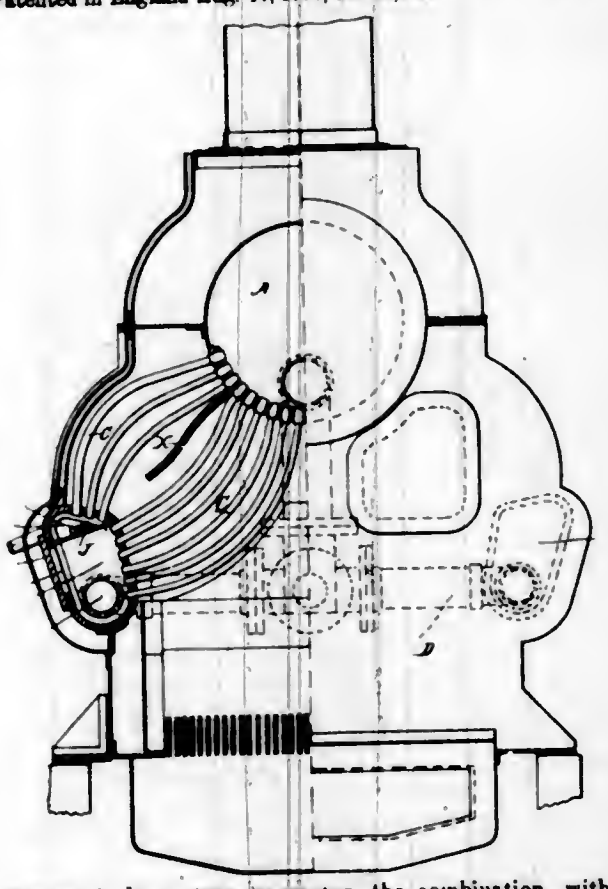
6. In a trolley for third rails, the combination of the rigidly-held pin, F, the shanks, D, D', pivoted thereon, oppositely-threaded nuts held by said shanks in vertical alinement, the correspondingly-threaded rod turning in said nuts and extended vertically, means for its easy rotation, the spring-arms rigidly held by said shanks, and the trolley-wheels carried at the free ends of said arms, substantially as and for the purpose set forth.

607,066. **DEVICE FOR RETAINING HEAT IN LOCOMOTIVE-BOILERS.** PETER MILLER, Ypsilanti, Mich. Filed Aug. 20, 1897. Serial No. 648,866. (No model.)



Claim.—In a locomotive-boiler, a horizontal flanged heat-retaining plate provided upon its under side with lugs, and secured at one end to the cover 10, the inclined screen secured to the opposite end of the plate, an oppositely-inclined baffle-plate secured to the screen, an exhaust-nozzle vertically located in the smoke-box, a smoke-pipe located over and in alinement with the nozzle, and a boiler provided with flues arranged adjacent to the smoke-pipe and nozzle, all arranged and operated as and for the purpose set forth.

607,067. **STEAM-GENERATOR.** ARTHUR G. MUMFORD, Colchester, England. Filed Dec. 28, 1897. Serial No. 664,059. (No model.) Patented in England Aug. 17, 1897, No. 19,008.



Claim.—1. In a steam-generator, the combination, with two superposed water-chambers connected by a valve which opens upward automatically; of a steam-chamber, two sets of water-tubes connecting the respective water-chambers with the steam-chamber, and a baffle-plate arranged between the two sets of tubes adjacent to the steam-chamber, a passage for the products of combustion being formed between the said baffle-plate and the water-chambers, substantially as set forth.

2. In a steam generator, the combination, with two superposed water-chambers connected by a valve which opens upward automatically; of a steam-chamber, water-tubes connecting the respective water-chambers with the steam-chamber, and a feed-water pipe connected to the upper of the said water-chambers, whereby the direction of the water circulating in the said tubes is reversed when water is forced through the said pipe into the said water-chamber, substantially as set forth.

3. For steam-generators consisting essentially of a steam-separator, two water-chambers, two series of tubes connecting the steam-separator with the water-chambers on each side of the furnace, and of one or more circulating-pipes connecting the steam-collector with the water-chambers; a device for heating the feed-water consisting of a second chamber in one of the water-chambers into which the feed-water is delivered, and of a valve between the said chambers, as set forth.

4. For steam-generators, consisting essentially of a steam-separator, two water-chambers, one or more circulating-pipes, and groups of tubes in combination with tube-boxes forming separate and detachable elements each of which is connected with the steam-collector and one of the water-chambers respectively by single pipes; a device for heating the feed-water consisting of a second chamber in one of the tube-boxes connected with one of the water-chambers, into which the feed-water is delivered, and of a valve between the said second chamber and the other part of the tube-box, as set forth.

5. In a steam-generator, the combination with a steam-collector, of two water-chambers of a three-sided or triangular shape in cross-section each of which is connected with the steam-collector by a series of small tubes, some of which are connected to one of the sides of the water-chamber and some to another of the sides thereof, the third side having the usual openings giving access to its interior and provided with suitable closing-plates; and of a device for heating the feed-water consisting of a second chamber in one of the water-chambers into which the feed-water is delivered and of a valve between the said chambers, as set forth.

6. In a steam-generator, the combination with a steam-collector, of two water-chambers of a three-sided or triangular shape in cross-section each of which is connected with the steam-collector by a series of small tubes, some of which are connected to one of the sides of the water-chamber and some to another of the sides thereof, the third side having the usual openings giving access to its interior and provided with suitable closing-plates; of a baffle-plate dividing each series of tubes into two groups; and of a device for heating the feed-water consisting of a second chamber in one of the water-chambers into which the feed-water is delivered and of a valve between the said chambers, as set forth.

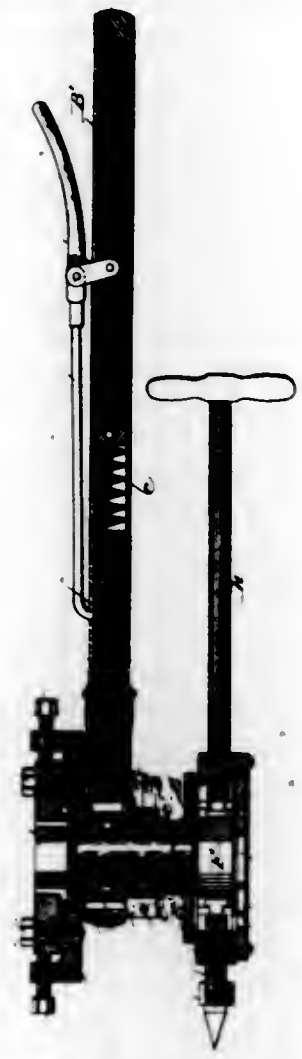
7. In a steam-generator, the combination with a steam-collector and two water-chambers, of groups of tubes connected to tube-boxes adapted to be connected to the steam-collector and water-chambers respectively by single pipes the said tube-boxes being of a three-sided or triangular shape in cross-section, the tubes of each group being connected to one of the sides of the said boxes, the pipes connecting the boxes with the steam-collector and water-chambers being connected to another of the sides of the said boxes, and the third side having an opening giving access to its interior and closed by a suitable plate; and of a device for heating the feed-water consisting of a second chamber in one of the tube-boxes connected with one of the water-chambers, into which the feed-water is delivered; and of a valve between the said chamber and the other part of the tube-box, as set forth.

607,068. **PLUMBER'S SCREW-THREADING DIE.** EDWARD C. MCKEE, Harrisburg, Pa. Filed Aug. 6, 1897. Serial No. 647,349. (No model.)

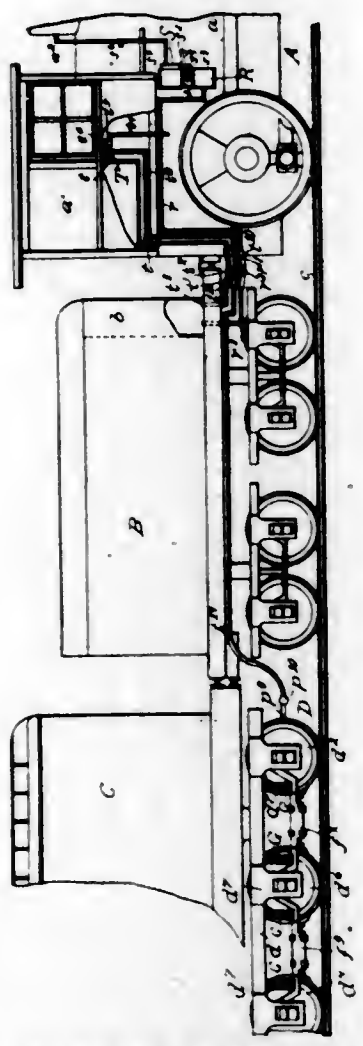
Claim.—1. In a plumber's screw-threading tool, the combination with the screw-threading head having the guides thereon and the central tubular hub, the adjustable threading-jaws mounted on said guides, the vise-head having the ways thereon and the central tubular threaded hub coöperating with the threaded hub on the threading-head, the oppositely-moving vise-jaws mounted in the ways in the guides on the vise-head, the oppositely-arranged screws for adjusting said vise-jaws and the index for indicating the proper adjustment of one of said jaws, of the handle having the annular enlargement surrounding the hub of the threading-head, the collar for holding the said annular enlargement in place, the toothed or recessed enlargement on said hub, the pawl working longitudinally in the handle and engaging said toothed or recessed enlargement and the controller for said pawl mounted on the handle and projecting through a slot therein; substantially as described.

2. In a plumber's screw-threading tool the combination with the screw-threading head carrying the dies and a vise-head having means for clamping the same to the pipe, of telescoping hubs or projections on the respective heads having relatively short coöperating screw-threaded sections whereby the initial feed may be given the threading-dies and relatively long unthreaded bearings or sections back of the threaded sections, permitting of a relatively longitudinal move-

ment of the parts without following the pitch of the threaded sections; substantially as described.



607,069. CAR-BRAKE. EDWIN C. NICHOLS, Topeka, Kans. Filed Dec. 17, 1897. Serial No. 662,332. (No model.)

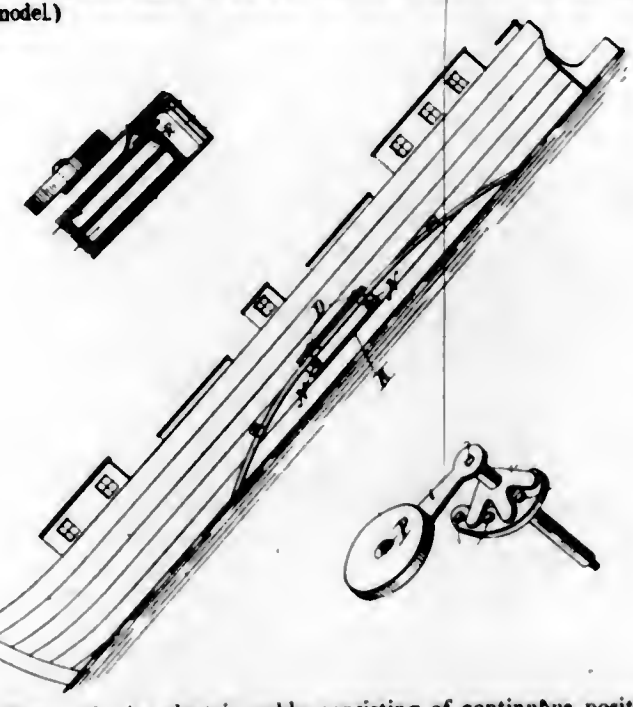


Claim.—1. In a car-truck the combination with the car wheels and axles of truss-bars on opposite sides of said truck connected with the car-axles, transverse bed-plates connected with said truss-bars, brake-cylinders on said bed-plates, between the opposing car-wheels each brake-cylinder having separate pistons and piston-rods and a spring between each piston and the head of said brake-cylinder, brake-shoes on the outer ends of said piston-rods adapted to contact with the respective car-wheels, a compressed-air storage-tank and an air-compressor, and a motor connected with and actuating said air-compressor separate air-conducting pipes connected with said storage-tank one of which pipes leads to and is connected with said air-compressor and the other with one end of a brake-controlling two-way valve or cock an air-exhaust pipe connected with the other end of said two-way cock an air-exhaust valve in said exhaust-pipe and a separate pipe connected with said exhaust-pipe between the brake-controlling and exhaust valves at one end and with the brake-cylinder at the other end at a point between the opposing pistons as and for the purpose described.

2. In a car-truck, the combination with the truss-bars, upon both sides of said truck, having a downwardly-extended portion, of a bed-plate extending between the opposing car-wheels of said truck, and connected with the lower edges of the respective downwardly-extended portions of said truss-bars, and a brake-cylinder mounted upon said bed-plate, having separate detachably-connected parts, one of said parts being detachably secured to one of said truss-bars, and the other part adapted to be moved upon said bed-plate, for the purpose described.

3. The combination with an engine and its tender and a car connected with the tender, of a car-truck having car-wheels, truss-bars upon each side of the truck, a brake-cylinder interposed between the car-wheels in line with each other and connected with one of the truss-bars, said brake-cylinder having separate pistons and piston-rods, and the inner side portion of said cylinder extending in the direction of the cylinder-heads in separate downwardly-inclined planes and at opposite angles to each other, and brake shoes upon the outer ends of said piston-rods, a compressed-air storage-tank upon said tender and separate conductors of compressed air, one of which conductors is connected at one end with said storage-tank and the other end extended within said engine and provided with a brake-operating valve, an exhaust-pipe connected with and extending from said brake-valve at one end, an exhaust-valve in said exhaust-pipe an air-compressor upon the engine and a motor, and a conductor of compressed air connected with said compressor and also with said compressed-air storage-tank and a conductor of compressed air connected at one end with said brake-cylinder at a point between the opposing-pistons, and the other end with the said exhaust-pipe at a point between the brake-operating and exhaust valves for the purpose described.

607,070. ELECTRIC CABLE FOR DRIVING CONVEYANCES. ADDISON NORMAN, Toronto, Canada, assignor of one-fourth to William McCabe, same place. Filed Apr. 19, 1897. Serial No. 632,890. (No model.)



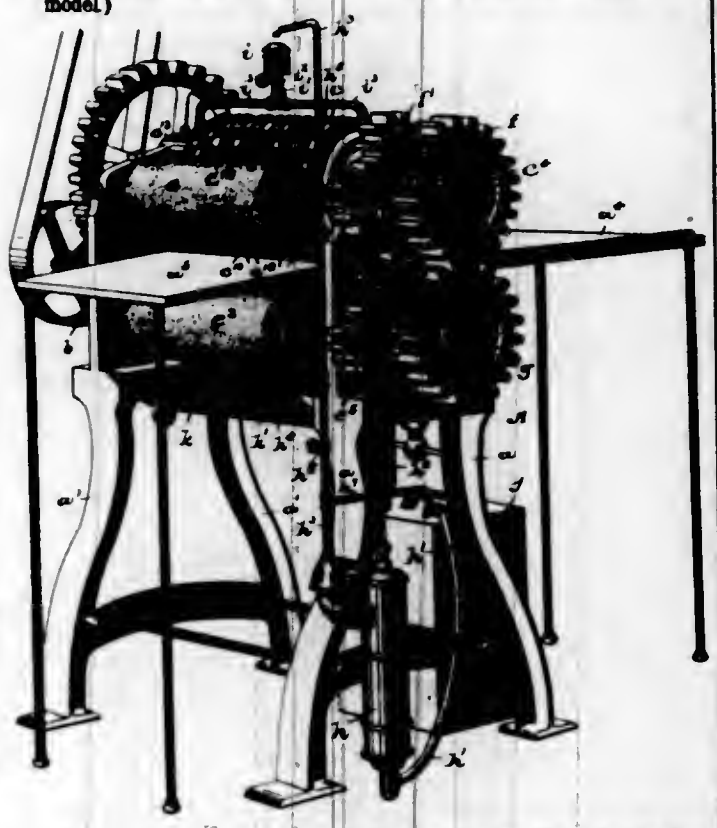
Claim.—1. An electric cable consisting of continuous positive and negative conductors, insulating material between and surrounding the said conductors, and a switch for each conductor attached to and surrounding the cable.

2. The combination of an electric cable consisting of continuous positive and negative conductors, insulating material between and surrounding the same, switches carried by said cable, and means carried on a conveyance for raising said cable from its path and closing said switches.

3. The combination of an electric cable consisting of continuous positive and negative conductors, insulating material between and surrounding the same, switches carried by said cable, and a guide carried by a conveyance for raising said cable from its path and closing said switches, said guide being provided with rollers and with current-collecting and switch-closing plates.

607,071. MACHINE FOR MAKING SHEET-METAL LATHS.

GEORGE A. OHL, Newark, N. J., assignor to the George A. Ohl & Company, of New Jersey. Filed June 19, 1897. Serial No. 641,456. (No model.)



Claim.—1. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, mechanism for feeding a lubricant or other liquid in contact with the cutting-surfaces of said rolls, and means for cleaning said surfaces of the rolls, when in operation, substantially as and for the purposes set forth.

2. In a machine for making sheet metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, mechanism for feeding a lubricant or other liquid in contact with the cutting-surfaces of said rolls, and a pair of revolving brushes in operative brushing contact with said cutting-surfaces of the rolls, substantially as and for the purposes set forth.

3. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operatieg the same, and mechanism for feeding a lubricant or other liquid in contact with the cutting-surfaces of said rolls and operated by the roll-operating mechanism, substantially as and for the purposes set forth.

4. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, and mechanism for feeding a lubricant or other liquid in contact with the cutting surfaces of said rolls and operated by the roll-operating mechanism, consisting, essentially, of a pump connected with a reservoir, a pipe h^3, a receiver i, and a perforated pipe i^3, substantially as and for the purposes set forth.

5. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, and mechanism for feeding a lubricant or other liquid in contact with said rolls and operated by the roll operating mechanism, consisting, essentially, of a pump connected with a reservoir, a pipe h^3, a receiver i, and a perforated pipe i^3, a trough k, and a pipe h^4 connected with said pipe h^3 and the trough k, substantially as and for the purposes set forth.

6. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, and mechanism for feeding a lubricant or other liquid in contact with the cutting-surfaces of said rolls and operated by a roll-operating mechanism, consisting, essentially, of a pump connected with a reservoir, a pipe h^3, a receiver i, and a perforated pipe i^3, a trough k, and a pipe h^4 connected with said pipe h^3 and the trough k, and regulating-valves h^5 and h^6 in said pipe h^3, substantially as and for the purposes set forth.

7. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, a pair of revolving brushes in operative brushing contact with said cutting-surfaces of the rolls, and mechanism for feeding a lubricant or other liquid in contact with the cutting-surfaces of said rolls and operated by the roll-operating mechanism, consisting essentially, of a pump connected with a reservoir, a pipe h^3, a receiver i, and a perforated pipe i^3, substantially as and for the purposes set forth.

8. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, a pair of revolving brushes in operative brushing contact with said cutting-surfaces of the rolls, and mechanism for feeding a lubricant or other liquid in contact with the cutting-surfaces of said rolls and operated by the roll-operating mechanism, consisting, essentially, of a pump connected with a reservoir, a pipe h^3, a receiver i, and a perforated pipe i^3, a trough k, and a pipe h^4 connected with said pipe h^3 and the trough k, substantially as and for the purposes set forth.

9. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, a pair of revolving brushes in operative brushing contact with said cutting-surfaces of the rolls, and mechanism for feeding a lubricant or other liquid in contact with the cutting-surfaces of said rolls and operated by the roll-operating mechanism, consisting, essentially, of a pump connected with a receiver, a pipe h^3, a receiver i, and a perforated pipe i^3, a trough k, and a pipe h^4 connected with said pipe h^3 and the trough k, and regulating-valves h^5 and h^6 in said pipe h^3, substantially as and for the purposes set forth.

10. In a machine for making sheet-metal lath, or the like, the combination, with the frame of the machine, of a pair of cutting-rolls and mechanism for operating the same, a pair of revolving brushes in operative brushing contact with said cutting-surfaces of the rolls, and mechanism for feeding a lubricant or other liquid in contact with the cutting-surfaces of said rolls and operated by the roll-operating mechanism, consisting, essentially, of a pump connected with a reservoir, a pipe h^3, a receiver i, and a perforated pipe i^3, a trough k, and a pipe h^4 connected with said pipe h^3 and the trough k, and a trough k' in the machine-frame, and beneath said rolls, substantially as and for the purposes set forth.

11. In a machine for making sheet-metal lath, a cutting-roll, comprising a series of disks, arranged and secured side by side on a shaft, a series of cutters on some of said disks, each cutter having a round cutting edge c^{14} for piercing the metal, and provided with oppositely-arranged sloping metal bending surfaces c^{15}, and a straight edge c^{16} at the back of each cutter, all arranged to make longitudinal cuts surrounded by ribs, substantially as and for the purposes set forth.

12. In a machine for making sheet-metal lath, a cutting-roll, comprising a series of disks, c^2 and c^3, arranged and secured side by side on a shaft, said disks c^3 having curved surfaces c^5, and a series of cutters c^6 on said disks c^3, each cutter having a round cutting edge c^{14} for piercing the metal, and provided with oppositely-arranged sloping metal-bending surfaces c^{15}, and a straight edge c^{16} at the back of each cutter, all arranged to make longitudinal cuts surrounded by ribs, substantially as and for the purposes set forth.

607,072. DIRECT-ACTING WAVE-POWER.

JOHN M. PALMER, Fort Grant, Ariz. Filed June 14, 1897. Serial No. 640,600. (No model.)

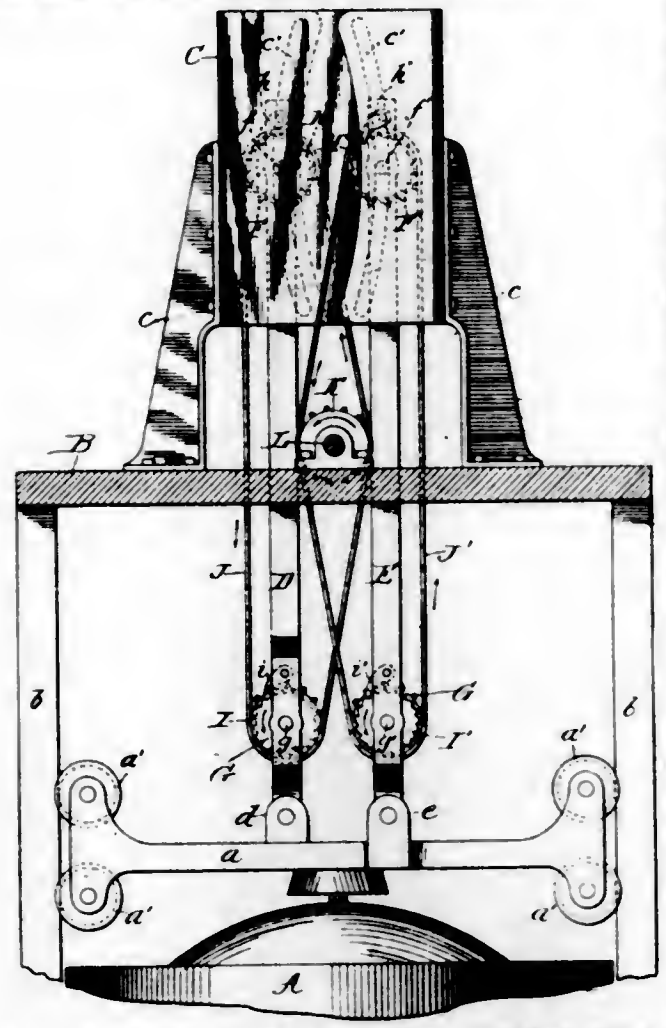
Claim.—1. The combination with a float capable of a bodily-vertical movement and a power-shaft, of driving-rods having their lower ends pivotally connected with the float and adapted to be actuated by the float, the lower ends of said driving-rods being movable in unvarying vertical planes and the upper ends of said rods having a lateral movement coincident with their vertical movement, and connections intermediate of the power-shaft and said driving-rods to actuate the power-shaft, substantially as described.

2. The combination with a vertically-movable float and a power-shaft, of pivoted driving-rods adapted to be moved vertically by the float, the upper ends of said driving-rods being guided to impart thereto a limited lateral movement, and connections between the driving-rods and the power-shaft for communicating to said power-shaft motion derived from the impulses of the waves acting on the float, substantially as described.

3. The combination with a vertically-movable float and a power-shaft, of driving-rods adapted to be moved vertically by the float and having a limited lateral movement at their upper ends sprocket-wheels carried by said driving-rods, sprocket-wheels on the power-shaft and sprocket-chains operating over said sprocket-wheels and adapted to rotate the power-shaft in one direction, substantially as described.

4. The combination with a vertically-movable float and a power-shaft, of driving-rods adapted to be moved by said float and carry-

ing sprocket-wheels at their upper and lower ends, sprocket-wheels on the main shaft, sprocket-chains operating over said sprocket-wheels and means for locking the sprocket-wheels to prevent their rotation in a reverse direction, substantially as described.



5 The combination with a vertically-movable float, of one or more reciprocating driving-rods adapted to be moved by the float and carrying sprocket-wheels, locking devices to prevent said sprocket-wheels from turning in a reverse direction, one or more sprocket-wheels on the power-shaft, and a sprocket-chain operating in contact with said sprocket wheels to rotate the power-shaft in one direction, substantially as described.

6. The combination with a vertically-movable float and a power-shaft, of pivoted reciprocating driving-rods adapted to be moved vertically by the float, sprocket wheels mounted on the driving-rods and the power-shaft, sprocket-chains operating over said sprocket-wheels, and means for maintaining the tension of said chains substantially regular and constant, substantially as described.

7. The combination with a vertically-movable float and a power-shaft, of pivoted reciprocating driving-rods adapted to be moved vertically by the float, sprocket-wheels carried by the driving-rods and the power-shaft, sprocket-chains operating over said sprocket-wheels, and means for giving a limited lateral movement to the upper ends of said driving-rods to maintain the tension of the chains substantially constant, substantially as described.

8. The combination with a vertically-movable float and a power-shaft, of pivoted reciprocating driving-rods adapted to be moved vertically by the float, connections between the driving-rods and the power-shaft to rotate said power-shaft in one direction, and a guide-frame adapted to direct the movement of the upper ends of said driving-rods in a curved path, substantially as and for the purpose described.

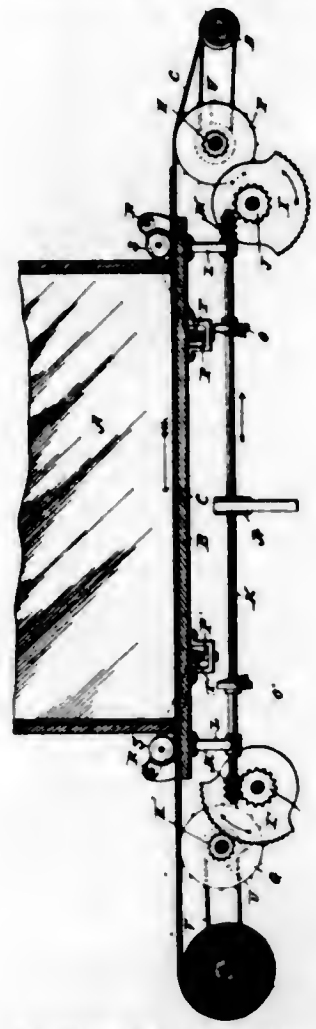
9. The combination with a vertically-movable float and a power-shaft, of pivoted reciprocating driving-rods adapted to be moved vertically by the float, connections between the driving-rods and the power-shaft to rotate said power-shaft in one direction, a guide-frame provided with curved ways or grooves and projections on the upper ends of said driving-rods to operate in said ways or grooves to give said driving-rods a limited lateral movement, substantially as and for the purpose described.

10. The combination with a vertically-movable float and a power-shaft, of pivoted reciprocating driving-rods adapted to be moved vertically by the float and having their upper ends guided in curved paths to impart thereto a limited lateral movement, sprocket-wheels carried by said driving-rods, sprocket-wheels on the power-shaft, sprocket-chains operating over said sprocket-wheels to impart to the power-shaft a movement in one direction, ratchet-wheels and pawls adapted to prevent the sprocket-wheels on the driving-rods from turning in a reverse direction, substantially as and for the purpose described.

11. The combination with a vertically-movable float and a power-shaft, of driving-rods adapted to be moved vertically by the float and carrying sprocket-wheels, sprocket-wheels on the power-shaft, chains operating over said sprocket-wheels, the driving-rods being located on opposite sides of the power-shaft and the sprocket-chains being crossed to engage opposite sides of the sprocket-wheels carried by said shaft, substantially as described.

12. The combination with a vertically-movable float and a power-shaft, of a cross-piece connected with the float, vertically-reciprocating driving-rods arranged on opposite sides of the power-shaft and pivotally secured to the cross-piece, a guide-frame provided with curved grooves, projections on the driving-rods to engage said grooves and thereby impart to the upper ends of the driving-rods a limited lateral movement, sprocket-wheels at the ends of said driving-rods, sprocket-wheels carried by the power-shaft, sprocket-chains operating over said sprocket-wheels on the driving-rods and being crossed to engage opposite sides of the sprocket-wheels on the power-shaft and devices for locking the sprocket-wheels on the driving-rods to prevent their rotation in a reverse direction, substantially as described.

607,073. PANORAMIC MYRIOSCOPE. ADOLPHUS PETERSON, Lansdowne, Pa. Filed Jan. 16, 1897. Serial No. 619,452. (No model.)



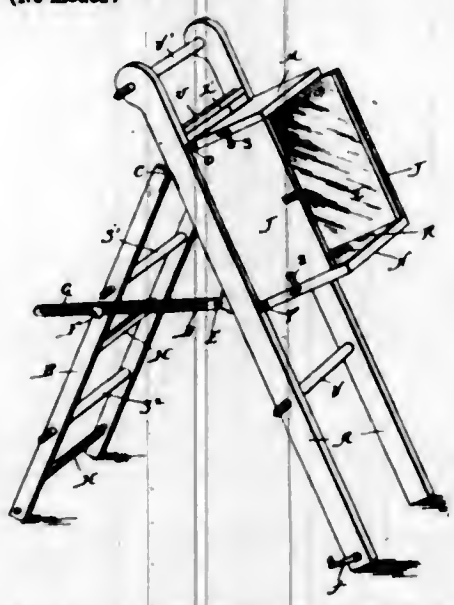
Claim.—1. In combination, a mirror-box, a base therefor, a belt adapted to travel over said base, two reels upon which said belt is wound, two sprocket-wheels meshing with said belt, pinions carried upon the same shafts as the sprocket-wheels, segmental gears adapted to intermittently mesh with said pinions, worm-gears carried by the segmental gears, a shaft so journaled as to slide within its bearings, worms carried upon the ends of said shaft, one or the other of said worms being adapted to mesh with one or the other of the worm-gears, cams carried upon the shaft, pins for bringing about the actions of the cams, and means depending upon the samples carried by the belt for lowering the pins into active position, all arranged substantially as and for the purpose set forth.

2. In combination, a mirror-box, a base therefor, a belt adapted to travel over said base, two reels upon which the belt is wound, two sprocket-wheels engaging the belt, pinions carried by the same shafts as the sprocket-wheels, segmental gears adapted to intermittently mesh with said pinions, worm-wheels carried by the segmental gears, a shaft so journaled as to slide within its bearings, worms on the shaft adapted to be moved into mesh with the worm-gears, cams carried by the shaft, pins for engaging the cams to slide the shaft in its bearings, levers pivoted to the base and supporting the pins, rolls jour-

naled in the levers and adapted to rest on the belt, as and for the purpose described.

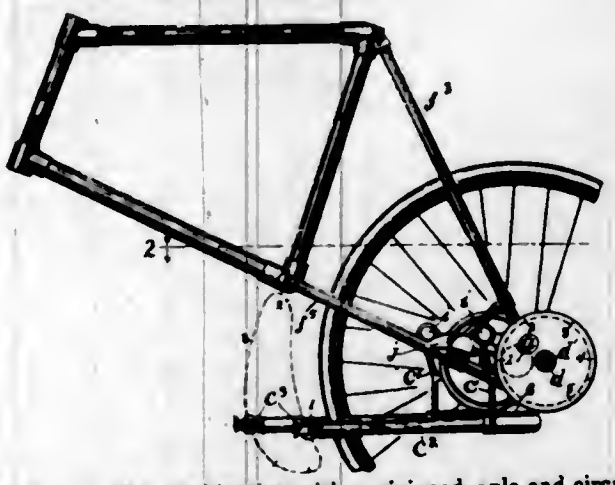
3. In combination, a mirror-box, a base therefor, a belt adapted to travel over said base, two reels upon which the belt is wound, two sprocket-wheels engaging the belt, pinions carried by the same shafts as the sprocket-wheels, segmental gears adapted to intermittently mesh with said pinions, worm-gears carried by the segmental gears, a shaft so journaled as to slide within its bearings, worms on the shaft adapted to be moved into mesh with the worm gears, cams carried on the shaft, pins for engaging the cams to slide the shaft in its bearings, levers pivoted to the base and supporting the pins, rolls journaled in the levers and adapted to rest on the belt, pulleys secured on the shafts with the sprocket-wheels, pulleys on the reels and loose belts connecting the sprocket-pulleys with the reel-pulleys, substantially as described.

607,074. PANORAMIC MYRIOSCOPE. ADOLPHUS PETERSON, Lansdowne, Pa. Original application filed Jan. 16, 1897. Serial No. 619,451. Divided and this application filed Nov. 6, 1897. Serial No. 657,669. (No model.)



Claim.—In a device of the character described, a member A, a mirror-lined box consisting of a board extending between the sides of said member, end pieces pivoted between the sides to fold upward and downward respectively, said end pieces having their lower ends grooved or channeled, guide-rolls journaled to lie in said channels, sides hinged to the side rails of said member to swing outward, a member B, hinged to the member A to support said member in a slanting or horizontal position, a slotted brace-bar pivoted to the member A, a thumb-screw threaded into the member B through the slot of the brace-bar, drums journaled in member A, and a sample-belt wound on said drums and run over the board and under the guide-rolls, as and for the purpose described.

607,075. BICYCLE. LUDWIG PETTERSON, Chicago, Ill. Filed Apr. 14, 1897. Serial No. 632,110. (No model.)



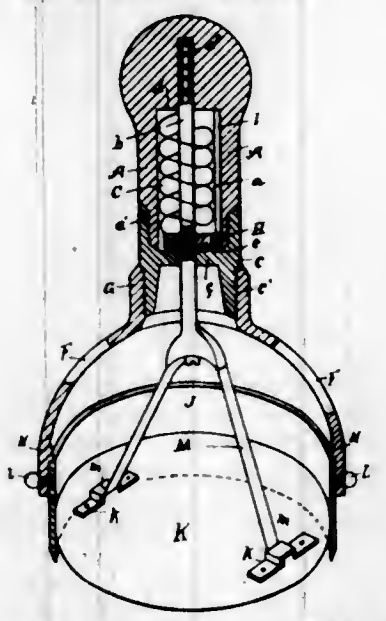
Claim.—1. The combination with a pinioned axle and circular inside gear-wheel and treadle-lever with moving fulcrum-point integral with said gear-wheel and mechanism, revoluble on said axle, connecting said gear-wheel and pinion and supporting the cycle-frame, of an upwardly-convexed fulcrum-support to said fulcrum-point, substantially as specified.

2. The combination with a pinioned axle and circular inside gear-wheel with thereto integral treadle-lever and fulcrum-point, of an independently-rotatable sleeve with crank-lever and handle on said axle connecting said wheels, a frame support on said sleeve and an upwardly-convexed fulcrum-support, substantially as specified.

3. The combination with a pinioned axle and circular inside gear-wheel thereto, a central fixed stud to said gear-wheel and mechanism, revoluble on said axle, with means to connect said wheels, a treadle-lever and fulcrum-point integral with said gear-wheel, of an upwardly-convexed fulcrum-support for said moving fulcrum-point, substantially as specified..

4. The combination with a pinioned axle and circular inside gear-wheel with fixed central stud, a sleeve on said stud with interior and exterior ball-bearings, a crank-lever to said sleeve connecting to an axle-sleeve with interior and exterior ball-bearings, a frame end on said exterior ball-bearings, and treadle-lever and thereto fixed moving fulcrum, integral with said gear, of a frictionless plate connected to said crank-lever and turning on said central stud, substantially as specified.

607,076. DOUGH-CUTTER. CARL J. POLL, Gillett, Ark. Filed Nov. 5, 1897. Serial No. 657,523. (No model.)



Claim.—In a dough-cutter, the combination of the cup G, arms or braces F and the cutting-blade E secured thereon, a recessed handle A provided with a threaded portion at its lower end, the coupling c having a diaphragm therein said coupling being adapted to unite said handle and cup, a stem adapted to be received within said handle, a U-shaped spring secured to the lower end of said stem, a motto-plate provided with loops upon its upper surface, adapted to engage with the lower ends of said U-shaped spring, an adjustable nut mounted upon said stem above the diaphragm in said coupling, and the spring within the recess in said handle arranged to engage against said adjustable nut and the top of the recess, whereby said motto-plate is adjusted, substantially as described.

607,077. PISTON-PACKING. FRED H. RAMSDELL, Melrose, Mass., assignor of one-half to Guy E. Mitchell, Medford, Mass. Filed Mar. 16, 1898. Serial No. 674,066. (No model.)

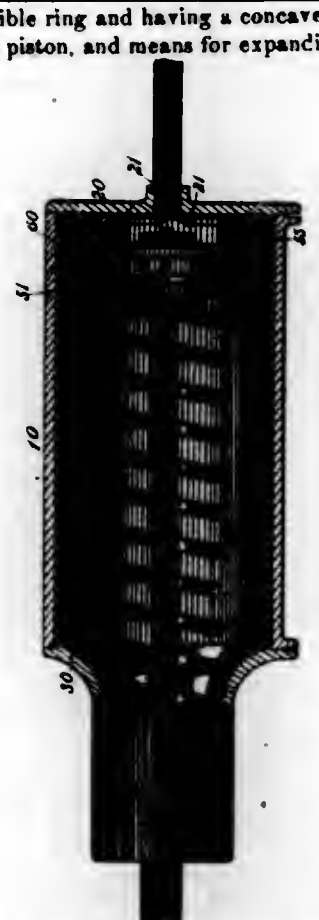
Claim.—1. In a piston-packing, the combination of a piston having a spherically-convex beveled resting-face for the packing, an expansible packing surrounding said piston and having a spherically-concave beveled face fitting the spherically-beveled face of the piston, and means for pressing said packing against said convex resting-face, the convex resting-face causing said packing to expand under said pressure.

2. In a piston-packing, the combination of a piston having a spherically-convex beveled resting-face for the packing, an expansible packing surrounding said piston and having a spherically-concave beveled face fitting the spherically-beveled face of the piston, and a movable follower adapted to be exposed to the fluid-pressure on the piston for expanding said packing, and means for holding and guiding said follower.

3. In a piston-packing, the combination of a piston having a spherically convex beveled resting-face for the packing, an expansible split packing-ring surrounding said piston and having a spherically-concave beveled face fitting the spherically-beveled face of the piston, a coupling-link forming a sliding connection between the split ends of said expansible ring, and means for expanding said ring.

4. In a piston-packing, the combination of a piston having a spherically-convex beveled resting-face for the packing, an expansible split packing-ring surrounding said piston and having a spherically concave beveled face fitting the spherically-beveled face of the piston, a coupling-link forming a sliding connection between the split

ends of said expansible ring and having a concave recess fitting said contact-face of the piston, and means for expanding said ring.



5. In a piston-packing, the combination of a piston having a spherically-convex beveled resting-face for the packing, an expansible split packing ring surrounding said piston and having a spherically-concave beveled face fitting the spherically-beveled face of the piston, a segment-shaped link disposed in registering slots in the ends of the split ring and spanning the joint between them, said link being provided with a recess adapted to fit the beveled face of the piston-head.

6. In a piston-packing, the combination of a piston-head having a beveled resting-face for the packing, a split expansible packing-ring provided with a beveled face adapted to fit the beveled face of the piston-head, means for applying pressure to said packing-ring for expanding it into operative position, said ring contracting automatically when the pressure is released, and a link disposed in registering slots in the ends of the split ring and spanning the joint between them, said link permitting said ends to move toward and from each other in expanding and contracting, and being provided with a recess at its inner edge which fits the beveled face of the piston-head.

7. In a piston-packing, the combination of a piston-head provided with guide-studs, and a beveled bearing-surface, an expansible packing provided with a beveled bearing-surface adapted to fit the bearing-surface of the piston-head, and a follower adapted to move on said guide-studs for applying pressure to said packing to expand it into operative position.

8. In a piston-packing, the combination of a piston-head provided with guide-studs, and a beveled bearing-surface, an expansible packing-ring provided with a beveled bearing-surface adapted to fit the bearing-surface of the piston-head, and a follower adapted to move on said guide-studs for applying pressure to said packing-ring to expand it into operative position, said ring contracting automatically into inoperative position when the pressure is released.

9. In a piston-packing, the combination of a piston-head provided with guide-studs, and a beveled resting-face for the packing, a follower, a split expansible packing-ring disposed between said piston-head and follower and provided with a beveled face adapted to fit the beveled face of the piston-head, and a link disposed in registering slots in the ends of the split ring and spanning the joint between them.

10. In a piston-packing, the combination of a piston-head provided with guide-studs, and a spherically-convex beveled resting-face for the packing, a follower, a split expansible packing-ring disposed between said piston-head and follower and provided with a spherically-concave beveled face adapted to fit the beveled face of the piston-head, and a coupling-link forming a sliding connection between the split ends of said expansible ring.

11. In a piston-packing, the combination of a piston-head provided with guide-studs, and a beveled resting-face for the packing, a follower adapted to slide on the guide-studs on said head, a split expansible packing-ring disposed between said piston-head and follower, and provided with a beveled face adapted to fit the beveled face of the piston-head, and a segment-shaped link disposed in registering slots in the ends of the split ring and spanning the joint between them, said link being provided with a recess adapted to fit the beveled face of the piston-head.

12. In a piston-packing, the combination of a piston-head having a spherically-convex beveled resting-face for the packing, and a shoulder at the inner edge thereof, an expansible split packing-ring surrounding said piston and having a spherically-concave beveled face fitting the spherically-beveled face of the piston, a coupling-link forming a sliding connection between the split ends of said expansible ring, and means for expanding said ring.

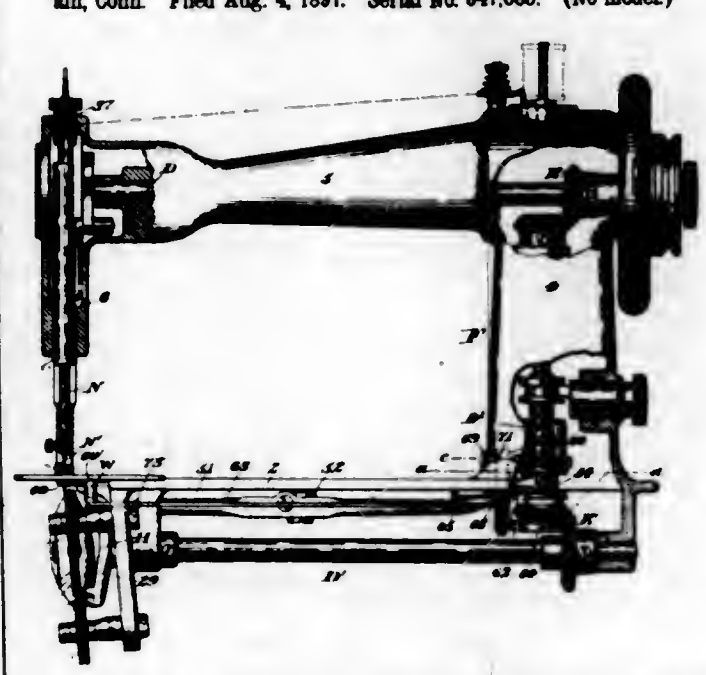
607,078. ELECTRODE-PLATE FOR ELECTRIC ACCUMULATORS. PAUL F. RIBBE, Berlin, Germany. Filed Jan. 25, 1898. Serial No. 667,906. (No model.)



Claim.—1. An electrode-plate comprising a lead plate *d*, having openings, the celluloid bars on each side of said plate and connected together through the openings thereof, said bars having undercut edges and the active material held thereby, substantially as described.

2. An electrode-plate comprising the perforated lead plate, the celluloid bars on each side thereof having portions bent through the said perforations and united by a celluloid solution, the said bar having undercut edges, the active material held thereby against the plate, and the perforated celluloid plate covering the active material and the celluloid bars, substantially as described.

607,079. SEWING-MACHINE. HUBERT P. RICHARDS, New Britain, Conn. Filed Aug. 4, 1897. Serial No. 647,065. (No model.)



Claim.—1. The combination, with stitch-forming mechanism embodying a needle and a looper having means for carrying simultaneously successive loops, of an independently-operable stitch-changing device located in position to engage and hold a portion of one of said loops out of the path of the needle and in the path of the looper to thereby permit the next succeeding of said loops to pass through the preceding loop.

2. The combination, with lock-stitch mechanism embodying a rotary looper adapted for carrying two loops simultaneously, of means independent of the looper for engaging one loop and for holding the same in such position that the succeeding loop will, during the rotation of the looper, pass therethrough.

3 The combination, with lock-stitch-forming mechanism including a rotary looper having means for carrying successive loops, of an independently-shiftable stitch-changing device for diverting one of said loops transversely of the needle-path whereby the next loop will pass through the diverted loop and enable the mechanism to form a stitch, and means for shifting the stitch-changing device into and out from operative position.

4. In a sewing-machine of the class having a rotary looper carrying successive loops at the same time and also having needle mechanism and means for actuating the looper and needle mechanism, a stitch-changing device located in position and adapted for so deflecting one of the loops transversely of the needle-path at a predetermined point in the movement of the needle that the succeeding loop will be carried through the preceding loop, and means for actuating the stitch-changing device in proper time with the looper and needle.

5. The combination, with stitch-forming mechanism including a

looper having a series of loop-takers or hooks, of an independent stitch-changing device operable for successively engaging successive loops and for diverting and holding an upper portion of each loop outward in advance of the vertical path of the needle until the bight of the next succeeding loop is formed and is carried below said stitch-changing device.

6. The combination, with stitch-forming mechanism including a rotary looper having a series of loop-takers or hooks, of means for engaging the upper portion of the first loop, after the same has been carried partially around the looper, and for throwing said portion forward and sidewise of the vertical path of the needle before a second loop is formed and engaged by the looper, and also adapted for retaining said loop in this position until the needle has descended to a position for preventing the retraction of the first loop, whereby the second loop will be carried by the looper through said first loop and thereby cause the stitch-forming mechanism to form a stitch.

7. The combination, with stitch-forming mechanism including a rotary looper having a series of loop-takers or hooks, of a stitch-changing device located to engage the upper portion of a first loop, after the same has been carried partially around the looper, and to throw said portion forward and sidewise of the vertical path of the needle before the second loop is formed and engaged by the looper, and also adapted to hold said first loop in this position until the bight of the second loop has been carried by the needle below and in the rear of this portion of said loop and in position to be carried through said first loop to thereby cause the stitch-forming mechanism to complete a chain-stitch; and means for throwing the stitch-changing device into an ineffective position to enable said mechanism to form a lock-stitch.

8. The combination, with stitch-forming mechanism embodying a reciprocatory needle, a rotary looper having a series of loop-takers or hooks, and means for actuating the needle and looper in consonance, of a stitch-changing or loop-diverting device shiftable into engagement with, and adapted for diverting a portion of a first loop from, its normal course so that the looper will carry a second loop through said first loop and thereby form a chain-stitch, and shiftable into an ineffective position to enable the stitch-forming mechanism to form a lock stitch.

9. In a sewing machine, the combination, with lock-stitch-forming mechanism including a reciprocatory needle and a looper having a series of peripheral loop-takers, of a stitch-changing device supported for rocking movement independent of the looper in juxtaposition to the path of movement of the needle; and means for actuating the stitch-changing device, during the descent of the needle, to cause the same to engage the upper portion of the loop and carry said portion forward to a point in advance of, and slightly at one side, the vertical path of said needle, and thereby permit a succeeding loop to pass through a preceding loop.

10. In a sewing-machine, the combination, with fabric-holding and fabric-feeding devices, of stitch-forming mechanism comprising a reciprocatory needle, a rotary looper having a series of loop-takers, and means for imparting comparative movements of predetermined velocities to the needle and loop-taker, whereby successive loops will be formed and carried around the loop-taker; a stitch-changing device shiftable into position for diverting the upper portions of successive loops in such manner that each succeeding loop will pass through a preceding loop; and actuating means in connection with, and timed and operating with respect to the looper to impart a loop-diverting movement to, said stitch-changing device during the travel of the loop from its fully-drawn-out position to its greatest-slack position.

11. In a sewing-machine, the combination, with fabric-holding and fabric-feeding devices, of combined lock-stitch and chain-stitch mechanism comprising a reciprocatory needle, a rotary looper having a series of loop-takers, and means for imparting comparative movements of predetermined velocities to the needle and loop-taker, whereby successive loops may be formed and carried around the loop-taker to inclose a lower thread and form a lock-stitch; a stitch-changing device located intermediate the loop-taker and fabric-holder in position to divert the upper portions of successive loops in such manner that each succeeding loop will pass through a preceding loop; and actuating means in connection with the stitch-changing device and timed and operating with respect to the looper to impart a loop-diverting movement to said device during the travel of the loop from its fully-drawn-out position to its greatest-slack position.

12. In a sewing machine, the combination, with fabric-holding and fabric-feeding devices, of stitch-forming mechanism comprising a reciprocatory needle, a rotary looper having a series of loop-takers, and means for imparting comparative movements of predetermined velocities to the needle and looper, whereby successive loops may be formed and carried around the looper to inclose a lower thread and form a lock-stitch; a stitch-changing device located intermediate the looper and fabric-holder in position to divert the upper portions of successive loops in such manner that each succeeding loop may pass through a preceding loop and cause a chain-stitch to be formed; and actuating means in connection with said stitch-changing device and timed and operating with respect to the looper to advance said device to a loop-diverting position immediately after the loop has arrived at its fully-drawn-out position, and to retract said stitch-changing device to an ineffective position immediately preceding the arrival of the loop at its retightening position.

13. The combination, with fabric-holding and fabric-feeding devices, of reciprocally-effective lock-stitch and chain-stitch mechanisms, the former of which comprises a reciprocatory needle, a rotary shuttle having a series of loop-takers, and means for rotating the shuttle and reciprocating the needle in consonance whereby loops will be formed and carried around the shuttle to inclose the lower thread and form a lock-stitch, and the latter of which comprises a stitch-diverter shiftable into position for deflecting successive loops laterally of the path of the needle so that each succeeding loop will pass through a preceding loop and thereby cooperate with the lock-stitch mechanism to form a chain-stitch.

14. The combination, with fabric-holding and fabric-feeding devices and with needle and looper mechanism, of an oscillatory loop-diverter pivotally supported between the looper and feed-lever for movement crosswise of the path of said looper, and means in connection with the looper mechanism for actuating said stitch-diverter at predetermined points in the rotation of the looper.

15. In a sewing-machine, the combination, with a reciprocatory needle and a rotary looper and actuating mechanism therefor and with a feed-lever and actuating mechanism therefor, of a stitch-diverting lever pivotally supported on the bed of the machine for oscillatory movement between the looper and feed-lever; a cam operative with the looper-actuating mechanism; an actuating-lever in operative relation with said cam; and a connection between said actuating-lever and loop-diverting lever.

16. The combination, with lock-stitch-forming mechanism, of a stitch-changing device comprising an oscillatory loop-diverter pivotally supported in position for movement crosswise of the path of the looper and means controlled by the lock-stitch mechanism for advancing and retracting the stitch-diverter at predetermined points in the rotative movement of the looper, whereby upper portions of successive loops will be deflected sidewise of the path of the needle and in position to cause each succeeding loop to pass through a preceding loop.

17. In a sewing-machine, the combination, with lock-stitch mechanism, of a stitch-changing device located in position to engage upper portions of successive loops and deflect said loops so as to cause succeeding loops to pass through preceding loops; means for actuating said stitch-changing device; and a throw-out device in operative connection with, and effective for holding the stitch-changing device in an operative or an inoperative position arbitrarily with respect to, the looper.

18. The combination, with lock-stitch mechanism, of an oscillatory loop-diverter pivotally supported above, and in close proximity to, the looper; an actuating-cam in connection with the lock-stitch mechanism; an actuating-lever in operative connection with the loop-diverter; and a throw-out device on which said lever is fulcrumed, said throw-out device being adapted for shifting the lever into and out of operative relation with the actuating cam.

607,080. LOOPER MECHANISM FOR SEWING-MACHINES.

FRANCIS H. RICHARDS, Hartford, Conn. Filed Sept. 20, 1897. Serial No. 652,242. (No model.)

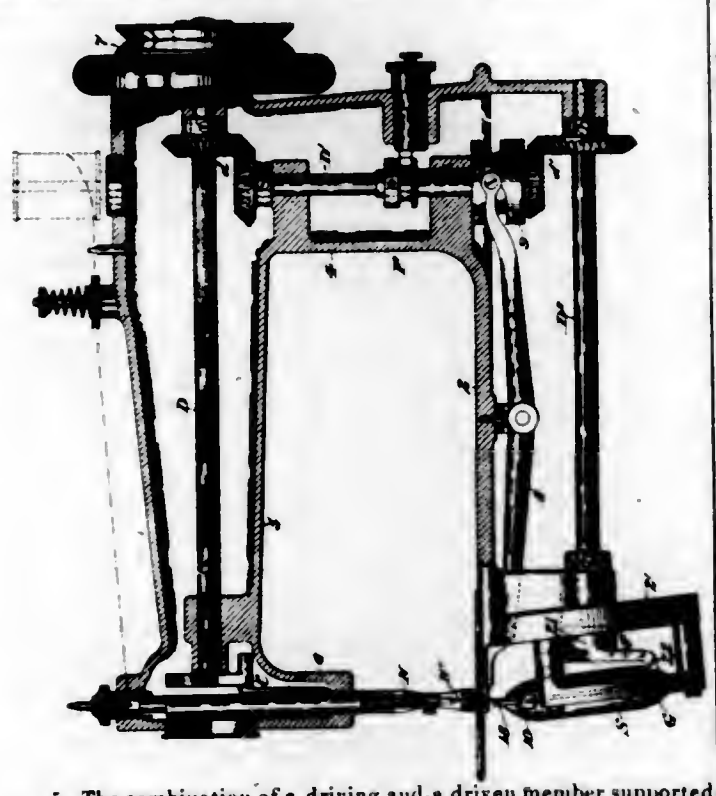
Claim.—1. A looper having in the side face thereof a series of recesses the adjacent faces of the end walls of which are spherical and concentric to a common center, combined with a driver having a series of projections the outer and inner end faces of which correspond in structure to the wall-faces of the looper-recesses and coöperate with said faces to support the looper.

2. A rotary looper having a series of recesses formed in one side face between the axis and periphery thereof and the inner and outer walls of which have spherical inner faces, in combination with a looper-supporting driver having projections adapted to enter said recesses, and which projections have inner and outer faces corresponding to, and coöperative with, the spherical faces of the recess-walls of said looper for holding said looper in fixed relation to the axis of rotation of said driver.

3. A discoidal looper having in the side face, remote from the periphery thereof, a series of tooth-like recesses bridged at their inner and outer ends by webs or walls having spherical inner faces concentric to a common center, combined with a looper-driver having driving teeth or projections corresponding to, and constructed to fit, the looper-recesses whereby the outer and inner end faces of the driver-teeth will coöperate with the adjacent faces of the end webs which bridge the looper-recesses and support the looper.

4. The combination of a driving and a driven member supported in coöperative relation, and one of said members having a series of

driver-sockets formed in one face thereof whose inner and outer end walls are spherical, and the other of said members having a series of driver-teeth whose outer and inner faces are spherical and are adapted to coöperate with the spherical walls of the other member to support said member, and means for rotating the driving member.



5. The combination of a driving and a driven member supported in coöperative relation with their axes oblique to each other, and one of said members having a series of driver-sockets formed in one face thereof, remote from the periphery, whose inner and outer end walls are curved in two relatively transverse directions and in arcs concentric to a common center, and the other of said members having a series of driver-teeth whose outer and inner end faces are curved in two relatively transverse directions in arcs concentric to a common center and are adapted to coöperate with the curved walls of the other member to support said member during rotation; means for rotating the driving member; and means for guiding, and for preventing lateral movement of, the driven member.

6. The combination of a driving and a driven member supported in coöperative relation with their axes oblique to each other, and one of said members having a series of driver-sockets formed in one face thereof whose inner and outer end walls are spherical and concentric to a common center, and the other of said members having a series of driver-teeth whose outer and inner faces are spherical and concentric to said common center and are adapted to coöperate with the spherical walls of the other member to support said member against diametrical movement, and means for guiding, and for preventing lateral movement of, the driven member

7. The combination, in a looper mechanism, of a rotary looper having a series of peripheral hooks or loop-takers and having in one face thereof a series of recesses the adjacent faces of the inner and outer walls of which are spherical and concentric to a point coincident with the axis of rotation of said looper; a looper-driver supported with its axis oblique to the axis of, and having a series of bevel-gear teeth disposed to enter the recesses in, said looper, and which teeth have their outer and inner end faces spherical and concentric to the point of intersection of the axes of the looper and driver; and guiding means for said looper.

8. A looper mechanism for sewing machines, comprehending a rotary looper having a series of circumferentially-disposed driver-sockets formed in one face thereof, and each socket having the inner end wall thereof curved in intersecting lines concentric to a common center; a rotary looper-supporting driver in coöperative relation with the looper and having a series of circumferentially-disposed driving projections each of which has its outer and inner ends curved in intersecting lines in coinciding arcs concentric to the aforesaid common center; actuating means for the driver; and a guiding-face peripherally disposed with relation to, and holding, the looper against movement transversely of its plane of rotation.

9. A rotary looper having a series of recesses in one face between and remote from the periphery and axis thereof, and the adjacent faces of the inner and outer end walls of which recesses are spherical and concentric to the cone center of said recesses, combined with driving means for said looper.

10. A wheel having intaglio bevel gear-teeth formed in the side face wholly between the periphery and axis thereof, and the adjacent faces of the inner and outer end walls of the tooth-spaces of which are spherical and concentric to the cone center of the teeth, combined with a supporting device having corresponding bevel-gear teeth whose outer and inner end walls are spherical and concentric to the cone center of the intaglio teeth of said wheel and which coöperate with the spherical faces of the intaglio-teeth spaces for supporting said wheel.

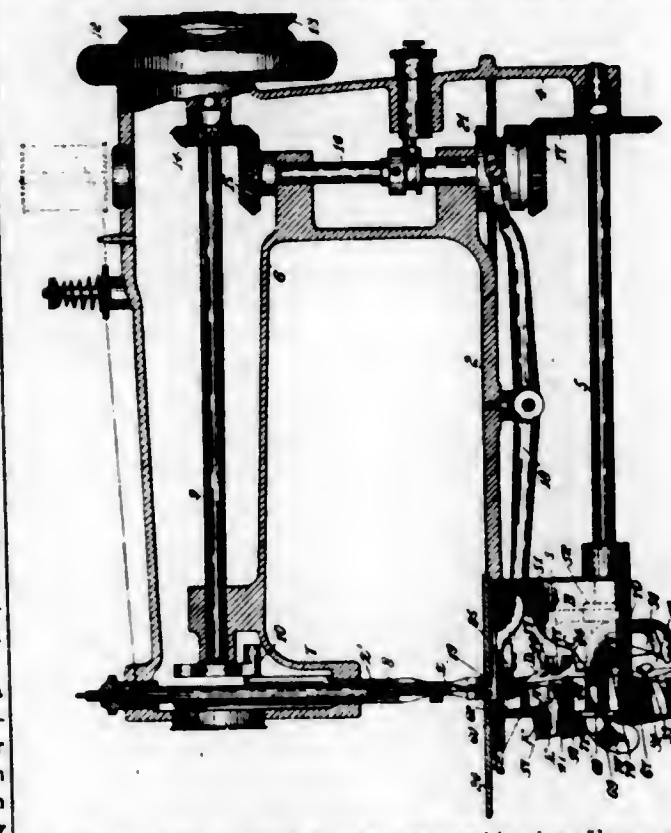
11. In a looper mechanism, the combination, with a rotary looper, of a channeled guide-race extending around the lower portion of the periphery of said looper and holding the same against movement transversely of its plane of rotation, the construction and disposition of said race being such as to provide an air-space between the inner wall of the channel and the perimeter of said looper, and means independent of the guide-race for supporting and rotating said looper.

12. In a looper mechanism, the combination of a rotary looper having a series of recesses in one face thereof whose onter and inner end walls are spherical and concentric to a common center; a rotary driver having a series of bevel-gear teeth conforming to the recesses of the looper and adapted for supporting and rotating said looper; and a guide-race supported below, and surrounding a portion of, the perimeter of said looper and having a channel for retaining a plenum of air to cushion said looper.

13. The combination, with a rotatable looper having opposing guide-faces in parallel planes, of a guide constructed to engage the looper guide-faces and hold the looper free for movement transversely of its axis of rotation, and a combined looper carrier and driver set with its axis of rotation inclined to the axis of the looper and fitted to engage and carry the looper free of diametrical support by the looper-guide.

14. In a sewing-machine looper mechanism, the combination of a rotatable looper and a rotary looper-carrying driver located with its axis of rotation inclined to the axis of rotation of the looper, said looper and the driver each having a series of corresponding bearing-faces disposed in a circuit and engaging the faces of the looper with the corresponding faces of the driver to support the looper, and each having driving-faces for rotating the looper with and by the driver, and non-looper-supporting means holding the looper against lateral movement and free for movement transversely of its axis of rotation.

607,081. SEWING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 17, 1896. Serial No. 609,200. (No model.)



Claim.—1. In a sewing-machine, the combination of looper mechanism comprising a looper having gear-teeth at each side thereof; a driver having gear-teeth meshing with the teeth on one side of the looper; and a rotatable support having gear teeth meshing with the teeth on the other side of said looper.

2. The combination, with needle mechanism including a reciprocatory needle and actuating means therefor, of looper mechanism including a rotary looper having two sets or two series of mortise-gear teeth formed, respectively, on opposite sides thereof; two rotary looper-supporting members disposed at relatively-opposing angles at opposite sides of the looper, with their axes inclined to the axis of said looper, and having teeth or projections disposed to enter and coöperate with the walls of the sockets or spaces between the teeth

of the looper, whereby to support said looper; and means operative with the needle mechanism for rotating one of said members and the looper supported thereby in proper timing with the needle.

3. In a sewing-machine, the combination, with a reciprocatory needle and an actuator therefor, of rotary looper mechanism including a rotary looper disposed below, and at an angle to the path of movement of, the needle and having two sets of teeth formed on opposite side faces, respectively thereof; two rotary looper-supporting members located at opposite sides, respectively, of the looper, with their axes oblique to the axis of the looper, and each having a series of teeth or projections disposed to enter and coöperate with the walls of the sockets between the teeth of the looper whereby to support the same, and the outer faces of the teeth of one supporting member describing a path whose plane is at right angles to the axis of said member and intersects the peripheral plane of the looper at a point below the axis of said looper; and actuating means in connection with the needle-actuator and effective for rotating one looper-supporting member and the looper in proper timing with the needle.

4. The combination, with needle mechanism including a reciprocatory needle and actuating means therefor, of looper mechanism including a rotary looper formed with two sets or two series of bevel-gear teeth on opposite sides, respectively thereof, the outer faces of which teeth are flush with the outer faces of said looper; two relatively oblique looper-supporting members located at opposite sides, respectively, of said looper and having bevel-gear teeth cooperative with the bevel-gear teeth of said looper for wholly supporting the looper, and said supporting members being so disposed as to engage the teeth of the looper at one side, and slightly above, the axis of rotation of said looper and disengage the teeth of said looper at the opposite side, and slightly above, said axis, whereby an intermeshing engagement is maintained throughout more than one-half of each complete cycle of rotation of said looper; and means operative with the needle mechanism for driving one supporting member whereby to rotate the looper in proper timing with the needle.

5. The combination, with needle mechanism including a reciprocatory needle and actuating means therefor, of looper mechanism including a rotary looper supported below at an inclination to the path of the needle and having a series of pairs of gear-teeth formed on each side face thereof, the pairs of each series being equidistantly disposed relatively to each other, and the spaces or sockets between one series of teeth being disposed intermediate, or alternating with, the spaces or sockets between the teeth of the other series: two obliquely-disposed rotary looper-supporting members located at opposite sides of the looper, and each having a series of pairs of projections or teeth disposed to enter the gear-tooth spaces or sockets in the adjacent face of the looper, and the pairs of teeth of one supporting member being disposed intermediate, or alternating with, those of the other member; and means for rotating one of said members.

6. A rotary looper mechanism for sewing-machines, embodying two bevel-gears supported with the front faces of the teeth of one in a plane oblique to the plane of those of the other; a discoidal looper having two sets of two series of bevel-gear teeth on opposite side faces, respectively thereof, which are complemental to the teeth of the bevel-gears, and said looper being wholly supported between, and having those teeth below the axis thereof in intermeshing engagement with the teeth of, said bevel-gears; and actuating means in connection with one of said bevel-gears.

7. Looper mechanism for a sewing-machine, comprising a looper and driving and supporting mechanism, the said mechanism consisting of rotatable gears located in position to support the looper at each side thereof intermediate its periphery and axis, one of said gears being movable toward and from the looper.

8. A looper mechanism for sewing-machines, comprising a rotary looper having two sets of gear-teeth formed on opposite sides, respectively thereof, and each set comprising a series of equidistantly-disposed pairs of teeth, and the spaces or sockets between the teeth having spherical inner and outer end walls; two relatively-oblique rotary supporting members disposed at opposite sides, respectively, of the looper, and each member having a series of equidistantly-disposed pairs of gear-teeth whose inner end faces are spherical and cooperate with the spherical end walls of the spaces or sockets between the gear teeth of the looper for supporting said looper, and both of which supporting members are so disposed that certain pairs of teeth thereof will engage the looper below the axis of rotation of said looper, while another pair thereof will be out of engagement with said looper above said axis, combined with means for rotating one of said members and the looper supported between said members.

9. In a sewing-machine, the combination, with framework, of rotatable looper mechanism comprising a looper; a driver journaled for rotation on said framework and in engagement with the looper; a swinging bracket pivotally supported on said framework; and a rotatable support carried by said bracket and movable therewith toward and from the looper for engagement with the same.

10. In a sewing-machine, the combination, with framework, of rotatable looper mechanism comprising a looper; a driver journaled for rotation on said framework and in engagement with the looper; a bracket supported on said framework and movable toward and from the looper; means for fastening said bracket in position; and a rotatable support carried by said bracket and movable therewith toward and from the looper, for engagement with the same.

11. In a sewing-machine, the combination, with framework, of rotatable looper mechanism comprising a looper; a driver journaled for rotation on said framework and in engagement with the looper; a movable bracket secured to said framework and having an annular opening or recess; and a rotatable support journaled in the recess of said bracket and also having an annular recess or opening and movable with said bracket toward and from the looper, for engagement therewith.

12. In a sewing-machine, the combination, with framework, of rotatable looper mechanism comprising a looper; a driver journaled for rotation on said framework and in engagement with the looper; a movable bracket secured to said framework and having an annular opening or recess, the walls thereof forming one member of a race or track; a rotatable support journaled in the recess of said bracket and also having an annular recess or opening and movable with said bracket toward and from the looper, for engagement therewith, the outer wall thereof forming the other member of said track or race; and antifriction-bearings in said race.

13. The combination with rotatable looper mechanism comprising a looper and driving and supporting mechanism, said looper and mechanism having coinciding spherical bearing-surfaces at each side of the peripheral line of said looper, whereby the looper is both supported and driven by said mechanism, and whereby also radial or diametrical vibratory movement thereof is prevented.

14. The combination with a rotatable looper; of a pair of gears, one of which is a driving-gear, supported for rotation one at each side of said looper, and said looper and gears having coinciding spherical bearing or engaging surfaces whereby the gears constitute supporting means for said looper, and whereby also radial or diametrical vibratory movement of the looper is prevented.

15. In a sewing-machine, the combination of rotatable looper mechanism comprising a bevel-gear looper and a pair of bevel-gears, one of which is a driving-gear, supported one at each side of said looper, and said looper and gears having coinciding spherical bearing-surfaces, whereby the gears constitute supporting means for said looper, and whereby also radial or diametrical vibratory movement thereof is prevented.

16. The combination of rotatable looper mechanism comprising a bevel-gear looper having a series of spaces at each side thereof forming true bevel-gear teeth, each of said spaces having spherically-shaped upper and lower walls; and a pair of bevel-gears supported for rotation one at each side of said looper and also having bevel-gear teeth adapted to mesh with the looper-teeth and having the top and bottom faces thereof spherically shaped, whereby the looper and gear-teeth have coinciding spherical bearing-faces to thereby support the looper and prevent radial or diametrical vibratory movement thereof.

17. The combination of rotatable looper mechanism comprising a bevel-gear looper having true bevel-gear teeth and a pair of bevel-gears, one supported at each side of said looper, and also having true bevel-gear teeth adapted to mesh with the teeth of the looper, the teeth of said looper and one or both of said gears having their outer ends cut away on inclined planes to form a thread-passage at each side of said looper.

18. The combination of rotatable looper mechanism comprising a looper, and a pair of gears supported for rotation one at each side of said looper, said looper and gears having bevel-gear teeth adapted to mesh with each other and the teeth of the looper and of one or both of said gears having the outer ends thereof cut away on inclined planes to form a thread-passage at each side of the looper, the teeth of the gear or gears being cut away at a greater angle of inclination than the teeth of said looper.

19. In a sewing-machine, the combination of rotatable looper mechanism comprising a bevel-gear looper having a series of spaces at each side thereof, thereby forming true bevel-gear teeth, each of said spaces having spherically-shaped upper and lower walls; and a pair of bevel-gears one supported for rotation at each side of said looper, each of said gears also having true bevel-gear teeth adapted to mesh with the looper-teeth and having the top and bottom faces thereof spherically shaped, whereby the looper and gears have coinciding spherical bearing or engaging faces at each side of said looper to thereby support the looper and prevent radial or diametrical movement thereof, and said looper and one or both of said gears having the outer ends of their teeth cut away on inclined planes to form a thread-passage at each side of the looper.

20. In a sewing-machine, the combination of a rotatable looper mechanism comprising a bevel-gear looper having a series of sockets or spaces at each side thereof forming bevel-gear teeth, each of said

spaces or sockets having spherical inner and outer end walls: and a pair of bevel-gears supported for rotation one at each side of said looper, and the teeth of said gears meshing with the looper-teeth and having spherical inner and outer end faces coinciding with the spherical bearing-faces at each side of said looper and coöperating therewith to support and prevent diametrical vibratory movement of said looper, and said looper and one or both of said gears having the outer ends of their teeth cut away in inclined planes to form a thread-passage between the teeth of the bevel-gears and looper at each side said looper, and the teeth for said gear or gears being cut away at a greater angle than the teeth of the looper.

21. The combination of rotatable looper mechanism comprising a bevel-gear looper having a series of bevel-gear teeth at each side thereof and a pair of bevel-gears supported for rotation one at each side of said looper, and each of said gears also having bevel-gear teeth of less width than said looper-teeth and adapted to mesh therewith.

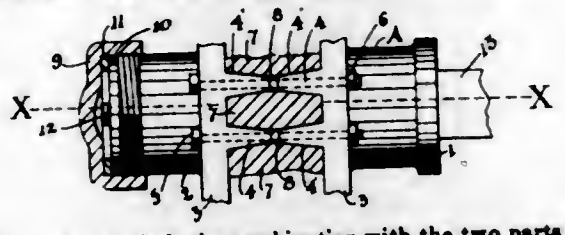
22. The combination of rotatable looper mechanism comprising a bevel-gear looper having a series of spaces at one side thereof forming a series of six bevel-gear teeth disposed in pairs and a series of spaces at the opposite side thereof forming a series of three teeth, each of said spaces having spherically-shaped upper and lower walls; a pair of bevel-gears supported for rotation one at each side of said looper, one of said gears having a series of nine teeth disposed in sets and the other gear having a series of six teeth disposed in pairs and adapted to mesh with the looper-teeth and having the top and bottom faces thereof spherically shaped, whereby the looper and gears have coinciding spherically bearing or engaging faces constituting means for supporting said looper and also preventing radial or diametrical vibratory movement thereof.

23. The combination of rotatable looper mechanism comprising a bevel-gear looper having a series of spaces at each side thereof forming true bevel-gear teeth, the spaces at one side of said looper alternating with the spaces at the opposite side thereof, and a pair of bevel-gears supported for rotation one at each side of said looper and each having bevel-gear teeth adapted to mesh with the looper-teeth to impart motion thereto, and one of said gears having a larger number of teeth than the other.

24. A looper mechanism for sewing-machines, embodying a looper having the opposite side faces thereof constructed as mortise-gears, each gear including a series of sets of teeth separated by sockets or recesses having curvilinear inner and outer end walls, and said teeth having their outer faces flush with the side face of the looper, and means complemental to, and coöperative with, the teeth and sockets of both mortise-gears for supporting and rotating the looper.

25. A sewing-machine having a series of bevel-gear teeth formed on opposite side faces thereof, the spaces or sockets between which teeth have spherical inner and outer end walls concentric to each other, combined with means including two rotary members located at opposite sides, respectively, of the looper and having teeth or projections complemental to the teeth of the looper, and the outer and inner end faces of which teeth are spherical and concentric and cooperate with the spherical end walls of the sockets between the teeth of said looper, for supporting said looper, and one of which members constitutes a looper-driver.

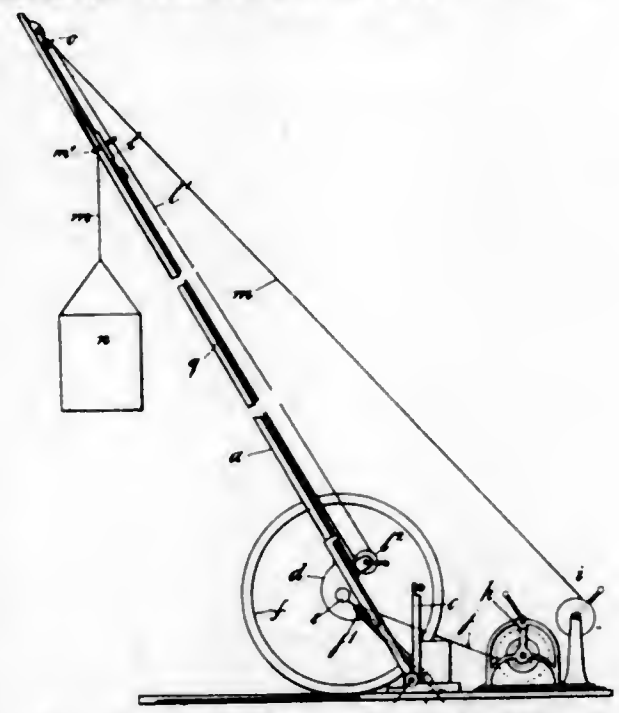
607,082. HUB. CHARLES W. ROBINSON, Saginaw, Mich. Filed June 7, 1897. Serial No. 639,665. (No model.)



Claim.—1. In a hub, the combination with the two parts of the hub, one fitting onto the other, each part having the annular collars 3, of the beveled radial flanges 4 on each collar, extending inwardly and opposite to each other, and extending from the sleeve on the axle radially to the top of the collars 3, whereby a complete walled socket will be formed for the spokes, the rib 3′ on the inside of each collar, bolt-holes through each flange in line with the hole in the opposite flange, a bolt passing through each set of opposite flanges having a nut on its end whereby the opposite flanges may be drawn together, the filling 8 of soft material between each set of opposite flanges, the transverse corrugations 4″ on the adjoining edges of the flanges for engaging the filling, the filling permitting the parts of the walled socket formed as described to be clamped around the spoke to a greater or less degree, and to take up any wear or shrinkage of the spoke, as and for the purpose set forth.

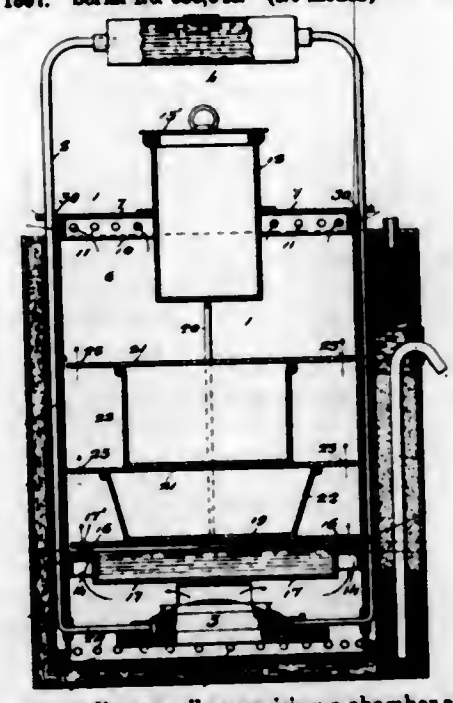
2. A hub made in two parts, one fitted upon the sleeve of the other, a complete walled and independent ribbed socket for the spokes formed by inwardly-extending radial beveled flanges on the parts of the hub, a segmental rib on each part between the flanges, means for holding the parts of the sockets in position, comprising bolts passing through the flanges, with a nut, whereby by turning upon the nut the spokes may be clamped in their sockets, means for holding the parts of the hub together consisting of a cap adapted to fit over and screw upon the outer threaded end of the hub, a nut upon the end of the axle within the cap, a ring within the cap and bearing against the nut, whereby the parts of the hub will be held together and the whole kept in its proper position on the axle, substantially as and for the purpose set forth.

607,088. FIRE-ESCAPE. DAVID ROCHE, London, England. Filed Nov. 15, 1897. Serial No. 658,601. (No model.)



Claim.—In means for raising and lowering a structure, a platform, a structure comprising limbs pivoted to said platform, wheels, a bearing carried by said wheels and slidably engaging said limbs, blocks and tackle for operating said bearing, plates slidably engaging said platform for the reception of said wheels, a cage, a bar adapted to travel upon said structure, means for operating said bar, and means engaging said bar for operating said cage, substantially as set forth.

607,084. DINNER-PAIL. YUBIE W. ROGERS, St. Louis, Mo. Filed Nov. 10, 1897. Serial No. 658,046. (No model.)

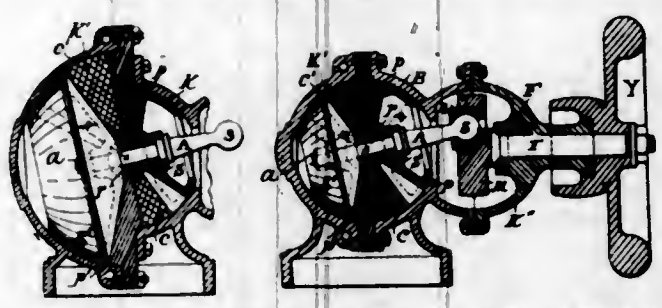


Claim.—1. A dinner-pail comprising a chamber a burner located within the same, a pipe in communication with the interior of the said burner, and movably fixed thereto a reservoir for containing liquid fuel forming a handle to which the opposite end of the pipe communicates, and a rod leading from the opposite side of the reservoir and leading to and movably connected to the burner, substantially as described.

2. A dinner-pail comprising a suitable chamber, a cover for the

same having an annular flange, a suitable burner located within said chamber, a pipe in movable communication with the interior of said burner, a reservoir for liquid fuel forming a handle, the said pipe being also in communication with said reservoir, a rod leading from the opposite side of the reservoir and leading to and also in movable connection with the burner, and slots formed in the flange of the cover through which the rod and pipe pass, whereby the handle is held in its proper position and the cover permitted to be removed from the chamber, substantially as and for the purpose described..

607,085. **ROTARY ENGINE.** CHARLES ROUX, Montbard, France, assignor of one-half to Philippe Bouhey, same place. Filed Oct. 14, 1897. Serial No. 655,231. (No model.) Patented in France Jan. 7, 1897, No. 262,871; in Switzerland May 4, 1897, No. 15,753; in Spain May 10, 1897, No. 20,832, and in Italy May 10, 1897, No. 44,666.



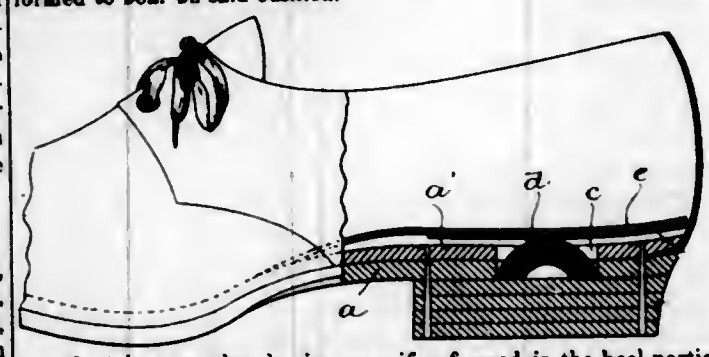
Claim.—1. In a motor, the combination with the casing formed in two semispherical parts, a partition interposed between said parts formed at its center as a ball with an opening therethrough, and having its opposite faces dished toward said central ball forming frusto-conical surfaces, and auxiliary partitions on each side of and projecting from the main partition along radii thereof, of two pistons having frusto-conical surfaces formed with bearing-recesses at their centers conforming to the contour of the bearing-ball of partition B, a piston-rod passing at one end through the pistons and through the opening in the center of the bearing-ball and tightly securing said piston in place, by means such as a nut screw-threaded onto the extremity of said piston-rod, and a shaft to which the outer end of said piston-rod communicates motion, substantially as described.

2. In a motor, the combination with the casing formed in two semispherical parts, a partition interposed between said parts and formed at its center as a ball with an opening therethrough, auxiliary partitions, one on each side of and projecting from the main partition along radii thereof extending in opposite directions, the inclosing casing having inlet and exhaust openings therethrough for the motive fluid on opposite sides respectively of said auxiliary partitions, one of the exhaust-openings communicating with the inlet-opening to the opposite side of the main partition, of two pistons, one on each side of the main partition, having truncated conical surfaces on one side operating against said partition, said surfaces being suitably recessed to receive the auxiliary partitions, a piston-rod connecting said pistons, passing through the opening in the ball of the main partition, and having a projecting end, and a shaft rotated by said projecting end of the piston-rod through suitable connections, substantially as described.

3. In a motor, the combination with the casing formed in two semispherical parts, a partition interposed between said parts and formed at its center as a ball with an opening therethrough, auxiliary partitions, one on each side of and projecting from the main partition along radii thereof extending in opposite directions, the inclosing casing having inlet and exhaust openings therethrough for the motive fluid on opposite sides respectively of said auxiliary partitions, one of the exhaust-openings communicating with the inlet-opening to the opposite side of the main partition, and a two-way valve controlling the passage for the motive fluid to, and the exhaust from, the motor, whereby the operation of the motor may be reversed, of two pistons, one on each side of the main partition, having truncated conical surfaces on one side operating against said partition, said surfaces being suitably recessed to receive the auxiliary partitions, a piston-rod rigidly connecting said pistons, passing through the opening in the ball of the main partition, and having a projecting end, and a shaft rotated by said projecting end of the piston-rod through suitable connections, substantially as described.

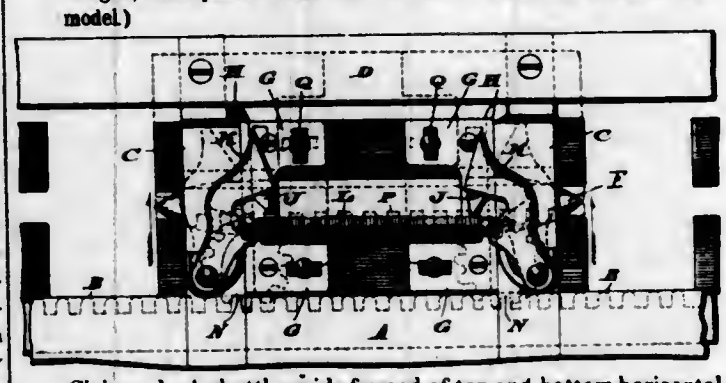
607,086. **CUSHIONED HEEL FOR BOOTS OR SHOES.** JOSEPH A. SAFFORD, Malden, Mass. Filed Apr. 17, 1897. Serial No. 632,651. (No model.)

Claim.—1. A boot or shoe having an orifice formed in the heel portion of the sole, a heel attached to the said portion in position to extend across the orifice, said orifice and the heel forming a pocket, a rubber spring having curved inner and outer walls and inserted in said pocket and projecting above the sole and bearing against the side walls of said pocket, and a slip-sole having a metal reinforcement formed to bear on said cushion.



2. A boot or shoe having an orifice formed in the heel portion of the sole, a heel attached to the said portion in position to extend across the orifice, said orifice and the heel forming a pocket, and an arched piece of rubber inserted in said pocket, the ends or abutments of the arch bearing on the bottom and two sides of the pocket, while its crown projects above the sole and forms a yielding support.

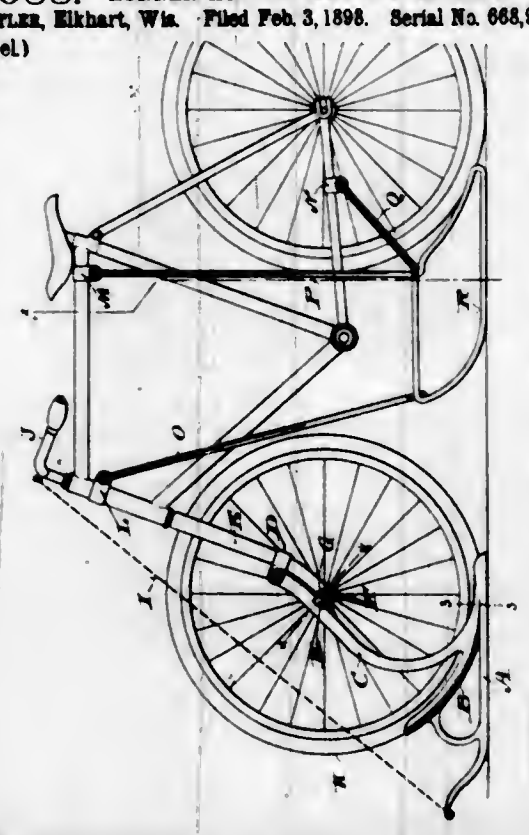
607,087. **SUPPORTING MECHANISM FOR LOOM-SHUTTLES.** MATHEW SAILE, Philadelphia, Pa., assignor of one-half to Spencer D. Wright, same place. Filed Oct. 12, 1897. Serial No. 654,939. (No model.)



Claim.—1. A shuttle-guide formed of top and bottom horizontal bars, means for connecting said bars and holding them apart to receive a shuttle between them, a beam, a frame carried by said beam, a pinion mounted on one of said bars, a reciprocating rack-bar adapted to mesh with said pinion, dogs and engaging devices therefor on said frame and guide for locking the latter to said beam, and a spring for holding said dogs and devices in engagement.

2. The combination with a beam and a reciprocating rack-bar thereon, of a frame carried by said beam, a shuttle-guide formed of top and bottom bars held apart to receive a shuttle between them, dogs and engaging devices on said guide and frame for locking the guide to said beam, means for holding said dogs and devices in engagement, said guide and frame being removably connected by dovetailed joints.

607,088. **RUNNER ATTACHMENT FOR BICYCLES.** GEORGE SATTLER, Elkhart, Wis. Filed Feb. 3, 1898. Serial No. 668,921. (No model.)

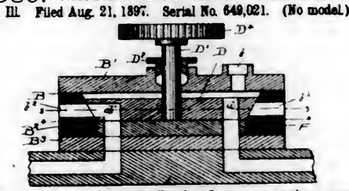


Claim.—1. A runner having a series of arms provided with clips for detachable rigid connection with frame members of a safety-type bicycle, the length of the several arms being such that the runner is held to travel in one track of a snow or ice road when the bicycle is propelled along the opposite parallel track of said road.

2. A runner having a series of arms provided with clips for detachable rigid connection with frame members of a safety-type bicycle, the length of the several arms being such that the runner is held to travel in one track of a snow or ice road when the bicycle is propelled along the opposite parallel track of said road, another runner having arms in detachable clip connection with steering-fork sides of said bicycle, and a tire-shield constituting part of the latter runner.

3. A runner having arms attachable to the frame of a bicycle, the length of the arms being such that the runner will travel one track of a snow or ice road when the bicycle is propelled along the other parallel track of said road, another runner having arms pivotally attachable to steering-fork sides of said bicycle and provided with a shield for the steering-wheel tire, brackets attachable to the steering-wheel axle to constitute rests for the arms of the latter runner, and a flexible lifting connection between said latter runner and the handle-bar of the aforesaid bicycle.

607,089. **ROTATING CUT-OFF VALVE.** ELISHA SEYMOUR, Chicago, Ill. Filed Aug. 21, 1897. Serial No. 649,021. (No model.)

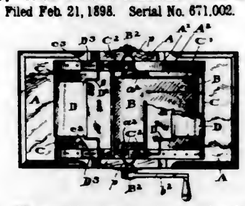


Claim.—1. A rotating cut-off valve for steam-engines, comprising in combination a valve-casing having a base or bottom plate, a rotating valve in said case provided with ports, an expansion-ring beneath said valve provided with segmental slots or ports, said base or bottom plate of the casing having stops projecting into and fitting said segmental slots or ports in said expansion-ring so that the operative length of said segmental slots or ports may be adjusted or regulated as required by turning or oscillating the expansion-ring, and the time and the amount of steam admitted and number of expansions governed from time to time as may be required, substantially as specified.

2. In a rotating cut-off valve, the combination with a casing having bottom plate B^2 provided with stops b^2 b^3, an oscillating expansion-ring F provided with segmental slots or ports *f f*, and a rotating valve D provided with ports *d d'*, mechanism for rotating said valve D, and means for turning or oscillating said expansion-ring, substantially as specified.

3. The combination with a valve-case, of a rotating valve D therein, an expansion-ring F provided with segmental slots or ports *f f*, and stationary stops b^2 b^3 fitting in said segmental slots or ports *f f*, substantially as specified.

607,090. **SHOE-BUTTON CLEANER.** JOHN H. SHELK, Shelbyville, Ind. Filed Feb. 21, 1898. Serial No. 671,002. (No model.)



Claim.—1. The combination, in a button-cleaning machine, of a rotary drum covered with a coarse fabric, and an inclosing casing covering the convex sides of the drum, the concave portions whereof are also composed of a coarse fabric, said casing being also provided with a hopper-like opening into which the buttons may be introduced.

2. The combination, in a button-cleaning machine, of a rotary drum covered with a cleaning fabric, and an inclosing casing therefor composed of stationary sides and two movable parts hinged together, said casing terminating in a hopper-like opening into which the buttons may be introduced.

3. The combination, in a button-cleaning machine, of a rotary drum, an inclosing casing therefor surrounding the same, the surrounding portion whereof is composed of a fabric, and a strap surrounding said flexible or fabric portion of said casing and adapted to be adjusted, whereby the space between said casing and said drum may be regulated.

4. The combination, in a button-cleaning machine, with the flexible inclosing casing thereof, of a flexible but substantially non-elastic strap surrounding and resting against said casing and serving to support the same.

5. The combination, in a button-cleaning machine, of a rotary drum, a surrounding casing therefor, the operative portion whereof is flexible and yielding, and an adjustable flexible but substantially non-elastic strap for supporting and regulating the same, and means for adjusting said strap.

6. The combination, in a button-cleaning machine, of a frame consisting of a base and supporting-standards, disks attached to said standards and forming sides between which a drum rotates, said drum, and a casing inclosing said drum and supported on said disks, the peripheral surface of said drum and the adjacent portion of said casing being each composed of a coarse fabric, substantially as set forth.

607,091. **TREATMENT OF MATERIALS CONTAINING CELLULOSE.** EIDAR SIMONSEN, Christiania, Norway. Filed Sept. 23, 1896. Serial No. 563,425. (No specimens.) Patented in Norway Nov. 24, 1894, No. 4,001; in Austria Feb. 16, 1895, No. 45/538; in England May 30, 1895, No. 10,762; in France June 1, 1895, No. 247,863; in Canada Oct. 21, 1896, No. 50,342, and in Hungary Dec. 3, 1895, No. 4,697

Claim.—In the manufacture of spirit from cellulose, the process of inverting the latter which consists in mashing the cellulose with a four-tenths to six-tenths of one per cent. solution of an inorganic acid in the proportions of from three to seven parts of the acid solution to one part of the cellulose, and boiling the mash under a pressure of not less than seven or more than ten atmospheres for a period not exceeding thirty minutes, and immediately fermenting the liquor in the usual manner for distillation, substantially as described.

607,092. **DRINK-REGISTER.** EMERSON H. SMITH, Marceline, Mo. Filed June 26, 1897. Serial No. 642,362. (No model.)



Claim.—1. A drink-register, comprising a pivoted tongue partitioning the spout of a decanter, a toothed counter-wheel rotatably mounted, a rotatable shaft, an escapement mounted thereon and engaging said wheel, connections between the shaft and the tongue, that the latter may impart movement to the escapement, and means to rotate the counter each time the tongue is raised, substantially as described.

2. A drink-register, comprising a windowed casing secured upon a decanter, a toothed wheel journaled therein and provided with numbers which successively appear through said windowed casing, an escapement controlling the time and amount of movement of said wheel, a tongue partitioning the spout of the decanter and adapted to open and permit of the escape of its contents when tilted sufficiently, and to simultaneously trip the escapement, and means to rotate said wheel as the escapement is tripped, a predetermined distance, substantially as described.

3 A drink-register comprising a windowed casing secured upon a decanter, a toothed wheel journaled therein and provided with numbers which successively appear through said windowed casing, an escapement controlling the time and amount of movement of said wheel, a tongue partitioning the spout of the decanter and adapted to open and permit the escape of the contents of the decanter when the latter is tilted sufficiently, and to simultaneously trip the escapement and the weighted lever set in operation by tilting the decanter, and adapted in such operation to rotate said wheel as the escapement is tripped, substantially as described.

4. A drink-register, comprising a windowed casing secured upon a decanter, a toothed wheel journaled therein and provided with numbers which successively appear through said windowed casing, an escapement controlling the time and movement of said wheel, a tongue partitioning the spout of the decanter and adapted to open and permit of the escape of its contents when tilted sufficiently, and to simultaneously trip the escapement, and a lever to operate said wheel as the escapement is tripped, and provided at its outer end with a sliding weight, substantially as described.

5. A drink-register, comprising a windowed casing secured upon a decanter, a toothed wheel journaled therein and provided with numbers which successively appear through said windowed casing, an escapement controlling the time and amount of movement of said wheel, a tongue partitioning the spout of the decanter and adapted to open and permit of the escape of its contents when tilted sufficiently, and to simultaneously trip the escapement, and a lever for operating the said wheel as the escapement is tripped, comprising a shank or stem, a tubular and inclined head at right angles thereto, and a sliding weight within said head, substantially as described.

6. A drink-register, comprising a windowed casing secured upon a decanter, a toothed wheel journaled therein and provided with numbers which successively appear through said windowed casing, an escapement controlling the time and amount of movement of said wheel, a tongue partitioning the spout of the decanter and adapted to open and permit of the escape of its contents when tilted sufficiently, and to simultaneously trip the escapement, and a lever for operating said wheel, comprising a shank or stem, a tubular inclined head at its outer end, and mercury within said head and adapted to slide from one end to the other, substantially as described.

7. A drink-register, comprising a casing surmounting a decanter, a toothed wheel journaled therein and numbered, and provided with ratchet-wheels, a swinging lever provided with a sprig-actuated pawl engaging one of said ratchet-wheels; a spring-pawl engaging the other, an escapement engaging said wheel, and means actuated by the pouring of the liquid from the decanter, to trip said escapement and permit said lever to rotate the counting-wheel, substantially as described.

8. A drink-register, comprising a casing surmounting a decanter, a toothed wheel journaled therein and numbered, and provided with ratchet-wheels, a swinging lever provided with a spring-actuated pawl engaging one of said ratchet-wheels, a spring-pawl engaging the other, an escapement engaging said wheel, means actuated by the pouring of liquid from the decanter to trip said escapement and permit said lever to rotate the counting-wheel, and means to insure the positive return of the escapement and lever to their original positions when the decanter is righted, substantially as described.

9. A drink-register, comprising a casing surmounting a decanter, a numbered and toothed wheel journaled therein, an escapement engaging said wheel and adapted to limit its movement, a pivoted tongue in the spout of the decanter, connections between the same and the escapement, whereby the pouring of liquor from the decanter opens the tongue and trips the escapement, and means for retarding the return movement of the escapement, substantially as described.

10. A drink-register, comprising a casing surmounting a decanter, a numbered and toothed wheel journaled therein, an escapement engaging said wheel and adapted to limit its movement, a pivoted tongue in the spout of the decanter, connections between the same and the escapement, whereby the pouring of liquor from the decanter opens the tongue and trips the escapement, and means for retarding the return movement of the escapement comprising an air-pump operatively connected, substantially as described.

11. A drink-register, comprising a windowed casing surmounting a decanter, divided into two chambers, one of them having an opening in its bottom and closed by a lid or cover, a set of stationary shafts in the other chamber, toothed and numbered wheels journaled thereon, and arranged relatively to the windows of the casing as described, representing units, tens, hundreds, and thousands, pins projecting from the "units," "tens" and "hundreds" wheels, and adapted to operate, respectively, the said "tens," "hundreds" and "thousands" wheels, a double-toothed escapement engaging the tooth of the "units-wheel," a tongue partitioning the spout of a decanter and operated by the flow of liquor therethrough, connections between the tongue and the escapement whereby the movement of the former is imparted to the latter, so as to trip it from the path of one tooth of the "units-wheel" and dispose it in the path of another, means to rotate said wheel one step during the operation of the escapement, and means for preventing back movement of said wheels, substantially as described.

607,093. **ELECTRICALLY-HEATED ROLL.** FRED P. SNOW, Lynn, Mass. Filed May 3, 1897. Serial No. 634,822. (No model.)



Claim.—1. A hollow cylindrical shell of iron, or of other material that has low electrical conductivity, two cylinder-heads of copper, or of other highly-conductive material, united with said hollow shell, and a shaft of copper, or of other highly-conductive material, uniting said cylinder-heads, in combination with an annular core, formed of magnetic material, encircling said shaft, and wound with insulated conductor, all adapted to be rotated about a common axis, substantially as and for the purpose specified.

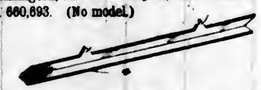
2. A cylindrical shell, formed of material that has low electrical conductivity, two cylinder-heads, formed of highly-conductive material, united electrically with that shell, and a shaft, formed of highly-conductive material, uniting said cylinder-heads, and provided with terminal bearing-pieces, in combination with an annular core, formed of magnetic material, wound with insulated conductor, and encircling said shaft, all arranged symmetrically about a common axis of rotation, substantially as and for the purpose specified.

3. A hollow shell, formed of iron, or of other material of low electrical conductivity, and having its wall of predetermined cross-sectional area, increasing toward the middle, and diminishing toward the ends of said shell, two cylinder-heads, formed of highly-conductive material, and electrically united with said hollow shell, a shaft, formed of highly-conductive material, and electrically uniting said cylinder-heads, and an annular core, formed of magnetic material, wound with insulated conductor, and encircling said shaft, in combination with current-collectors, connected with said insulated conductor, all being rotatable about a common axis upon suitable bearings, substantially as and for the purpose specified.

4. A hollow cylindrical shell, formed of material that has low electrical conductivity, two cylinder-heads that are formed of conductive material, and are united with said shell, a magnetic core, which is contained in said shell, and is wound with insulated conductor, in combination with a shaft, that is formed of conductive material, uniting said cylinder-heads and is provided with terminal bearing-pieces, and with rotary current-collectors, for supplying current to said insulated conductor during rotation, substantially as and for the purpose specified.

5. An annular core, wound with a primary conductor, and contained in a rotary shell, which forms the choking portion of a secondary circuit about the same core, substantially as and for the purpose specified.

607,094. **GLAZIER'S METALLIC STRIP.** JEROME SULLIVAN, New Kensington, Pa. Filed May 13, 1896. Renewed Dec. 3, 1897. Serial No. 660,893. (No model.)



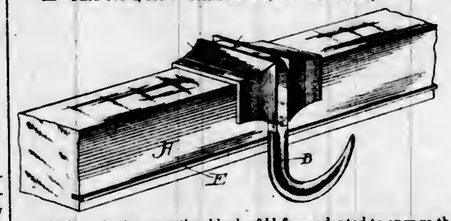
Claim.—In a device for securing panes of glass in sashes, a thin metallic strip folded on a medial longitudinal line to comprise two leaves or side portions one of which is provided along its edge with projecting barbs located at intervals between the extremities of the strip, substantially as described.

607,095. **METHOD OF AND COMPOSITION FOR PRODUCING IMITATION STONE OR WOOD, &c.** FRANS R. A. SUNDELL, Stockholm, Sweden. Filed July 26, 1897. Serial No. 645,934. (No specimens.) Patented in Sweden Sept. 13, 1893, No. 4,965.

Claim.—1. The method of producing imitations of minerals and wood consisting in forming the body portion of a mixture of cement and slaked lime, water containing a glutinous substance in solution and albolith, spreading out said mass, sprinkling the surface with a dry mixture of cement and slaked lime, then covering the surface with a mass of material of the same composition as that forming the body and again sprinkling the surface with a dry mixture of cement and slaked lime, pressing the mass, and allowing the same to dry, substantially as described.

2. The herein-described composition imitating mineral or wood substances consisting of a mixture of cement, slaked lime, a glutinous substance and albolith, substantially as described.

607,096. **MEAT-HOOK SUPPORT.** FRANCIS THACHER, Chicago, Ill. Filed Oct. 4, 1897. Serial No. 653,909. (No model.)



Claim.—1. A supporting-block of U form adapted to engage the upper edge of a rail and provided in its depending flanges with ver-

tical openings or slots to receive the vertical parts of the U-shaped shank of a hook.

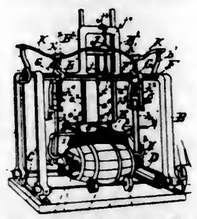
2. A supporting-block of U form adapted to engage the upper edge of a rail and provided with a transverse recess or groove to receive the U-shaped shank of a hook; said block being provided in its depending flanges with vertical openings or slots, in line with said groove, to receive the vertical parts of the shank.

3. A supporting-block of U form, adapted to engage the upper edge of a rail and provided with a transverse recess or groove to receive the U-shaped shank of a hook; said block being provided in its depending flanges with vertical openings or slots to receive the vertical parts of the shank, and the connecting-web beneath the groove being extended beyond the inner faces of the side flanges to hold the vertical parts of the shank free from contact with the side faces of the rail.

4. The combination with a rail and a hook having a U-shaped shank, of a supporting-block of U form adapted to engage the upper edge of the rail, said block being provided in its depending flanges with vertical openings or slots to receive the vertical parts of said shank and with antifriction-rollers which engage the upper edge of said rail.

5. The combination with a rail and a hook, having a U-shaped shank, of a supporting-block of U form adapted to engage the upper edge of the rail, said block being provided in its depending flanges with vertical openings or slots to receive the vertical parts of said shank and the connecting-web of said block extending beyond the said faces of the rail, and a metal guide-strip projecting from the face of the rail in position for contact with the hook.

607,097. BARREL-WASHING MACHINE. RUDOLPH TROEHLER, Cincinnati, Ohio. Filed Mar. 16, 1898. Serial No. 674,074. (No model.)



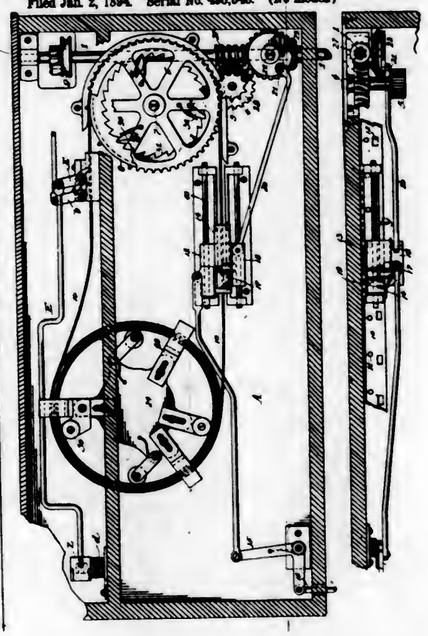
Claim.—1. In a barrel-washing machine the combination of the frame, the barrel-supporting rolls and shafts journaled in the bottom thereof, the top and side brushes supported on carriers fitted to slide vertically in said frame, the right and left screw-shaft journaled in the upper part of said frame, the sliding screw-boxes on the upper cross-bar of the frame through which the said screw-shaft passes, the end-brush carriers carried by said boxes, the bevel-pinion centrally secured upon said screw-shaft, a vertical screw-shaft fitted above the frame, the pinion on the lower end of said vertical screw-shaft to mesh with the pinion on the right and left screw-threaded shaft, the frame carrying the upper brush fitted to slide vertically in the upper extension of the main frame, the screw-threaded box secured to said brush-carrying frame through which the vertical screw-shaft is tapped, and the hand-wheel for operating the screw-shaft and simultaneously separating the top and end brushes when turned in one direction, or bringing them to the opposite position when turned in the opposite direction, substantially as shown and described.

2. In a machine of the character described the combination of the transverse shaft having right and left screw-threads on its opposite ends, screw-tapped boxes through which said shaft passes fitted to slide upon the top cross-bar of the frame, spring-bars secured to said boxes, the end brushes secured to the lower end of said spring-bars, the top-brush-carrying frame fitted to slide vertically in the machine-frame having hinged arms at its lower end, the top brush secured to said arms, the yokes secured to the brush-holding arms and passing around the rigid arms of the brush-carrier to permit a limited play of the brush within said yokes, the screw-threaded box secured to the upper part of the brush-frame, a vertical screw-shaft journaled in the frame passing through said screw-threaded box, a pinion on the transverse shaft and a pinion on the lower end of said vertical screw-shaft, a spring connection between the upper end of the frame and top of the brush to hold it with yielding pressure on top of the keg, and the hand-wheel to revolve the transverse shaft and simultaneously separate the brushes or bring them together, substantially as shown and described.

3. In a machine of the character described the combination of the frame, keg-supporting rolls and shafts and driving mechanism, the transverse shaft having right and left screw-threads upon its opposite ends journaled in the upper part of the frame, the sliding screw-threaded boxes through which said shaft is tapped, said boxes being adapted to slide apart or together as the screw-shaft is revolved in one or the other direction, the end-brush-carrying guides depending from the under side of said boxes, the top-brush-holding frame fitted to slide vertically in the frame of the machine, having a cross-bar near its upper end to which is secured a screw-threaded nut or box, a screw-shaft passing through said box and journaled in the upper part of the frame, bevel-pinions on both screw-shafts meshing together to separate the brushes or bring them together as the transverse screw-shaft is revolved to the right or left, bracket-arms extending from the top uprights of the machine, curved bars having their outer ends pivoted in said bracket-arms and their inner ends pivoted to the opposite ends of the screw-threaded box which is connected to the top-brush frame, U-shaped boxes passing over said curved bars, vertical sliding bars coupled to said boxes and passing through the sliding boxes for separating the end brushes, bars coupled to the lower end of said rod and guided by the frames depending from the under side of said sliding boxes, and the end brushes secured to the lower end of said bars, substantially as shown and described.

4. In a barrel-washing machine of the character described the combination of the frame having a central upright from its upper cross-brace to guide the top-brush carrier, a transverse shaft journaled in the upper part of the frame in front of the top cross-brace, said shaft having right and left threads upon opposite ends, a bevel-pinion secured centrally upon said shaft to mesh with a similar pinion on the lower end of a vertical screw-shaft having its bearing in the cross-brace and top bar of the center upright, the pinion on the lower end of said shaft, sliding screw-boxes carried by the transverse screw-shaft to carry the end-brush carriers away from or toward the center, a screw-box secured to the top-brush carrier to elevate or lower the top brush simultaneously with the spreading or contraction of the end-brush carriers, the curved bars having their outer ends coupled in the end upright and their inner ends coupled to the top-brush carrier, the boxes to ride over the said bars, the friction-wheels interposed between the top of the boxes and bars, the brush-carrying frames coupled to the screw-boxes, vertical bars coupled to boxes on the curved bars passing through the sliding screw-boxes and at their lower ends to the end-brush carriers, the end-brush carriers consisting of spring-bars, and the spring connection between the top brush and the frame, whereby the brushes are yieldingly held in contact with the barrel, simultaneously drawn away from it to permit its removal and the replacement of another, and the brushes simultaneously adjusted to fit barrels of different sizes, substantially as shown and described.

607,098. STATION-INDICATOR. HERBERT C. TURNER, San Francisco, Cal., assignor to the American Indicator Company, same place. Filed Jan. 2, 1894. Serial No. 495,348. (No model.)



Claim.—1. In combination with a continuously-rotating driving-rod in gear with a car-wheel, a station-indicator driven thereby by slip-gearing, a traveling perforated ribbon driven positively by said rod, and a lever actuated by said ribbon for alternately holding and releasing the station indicator to give it an intermittent movement, substantially as set forth.

2. In combination with a station-indicator driven by a continuously-moving shaft through gearing partly frictional, a latch for alternately holding and releasing the indicator, a lever connected to said latch, and an endless traveling ribbon having a series of perforations for actuating said lever and latch at prescribed intervals, substantially as set forth.

3. In a station-indicator the combination with the driving-rod geared to a car-axle, of rollers carrying an indicating belt or curtain, gearing partly frictional between said rod and said rollers, a loosely-mounted sprocket-wheel, an endless perforated controlling-ribbon thereon, a gear connected to the driving-rod and having pawls for operating the sprocket-wheel, and a latch and lever for alternately holding and releasing the indicator and operated by said ribbon, substantially as set forth.

4. In combination a station-indicator, an actuating-rod geared to a car-axle, a controlling-ribbon for intermittently releasing the indicator to permit it to be driven and loosely geared to the actuating-rod, and a correcting device operated by the actuating-rod for moving said ribbon independently of its driving-gearing, substantially as set forth.

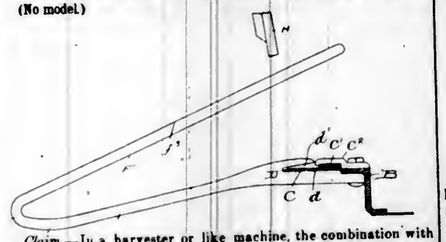
5. In combination with the perforated and notched ribbon and the actuating-rod for driving it, the slides 13 and 18, the pawl 17, the guard-spring 14, and connections from the respective slides to a swinging car-truck and to said actuating-rod, substantially as set forth.

6. In combination with the indicator-rollers and the reversibly-movable shaft M, the sliding clutch P, the shifting lever R, the controlling-ribbon having terminal holes 25, the bell-crank lever *b*, and gearing between said bell-crank and shifting lever, substantially as and for the purposes set forth.

7. In a station-indicator and in combination with the endless controlling-ribbon a support for said ribbon consisting of a center plate having adjustable guide-arms and yielding rollers to receive the coil of ribbon, substantially as set forth.

8. The combination with the perforated endless controlling-ribbon having correcting-notches in its edges, of the loose sprocket and ratchet wheel 8, the gear 6 provided with pivoted pawls, gearing for positively driving said gear 6, and a sliding correcting-pawl for moving said ribbon and sprocket independently of its driving gear-wheel, substantially as set forth.

607,099. ATTACHMENT FOR HARVESTERS. WILLIAM M. WADLEIGH, Milks Grove, Ill. Filed Mar. 14, 1896. Serial No. 583,235. (No model.)

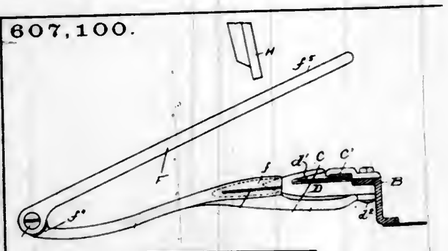


Claim.—In a harvester or like machine, the combination with a finger-guard, of an elevating guard or device projecting in advance of the finger-guard and comprising a lower member extending forwardly and downwardly from the finger-guard, and an upper member extending upward and backwardly, and a nose or rounded point between said upper and lower members, the nose or front end of said elevating-guard being rounded and blunt in respect to a vertical plane only, and sharp and narrow in respect to a horizontal plane to enable the same to readily penetrate the grain, and at the same time prevent lodgment of stalks or rubbish thereon, and also to ride upon the ground and pass under the grain lying thereon without digging deeply into the ground, substantially as specified.

607,100. HARVESTER, REAPER, &c. WILLIAM M. WADLEIGH, Milks Grove, Ill. Filed Mar. 14, 1896. Serial No. 583,236. (No model.)

Claim.—In a harvester or like machine, the combination with a finger-guard of an elevating-guard having a lower or supporting member to which the elevating-guard is adjustably secured by a clutch-joint or pivot-bolt at its nose or rounded point, substantially as specified.

607,100.

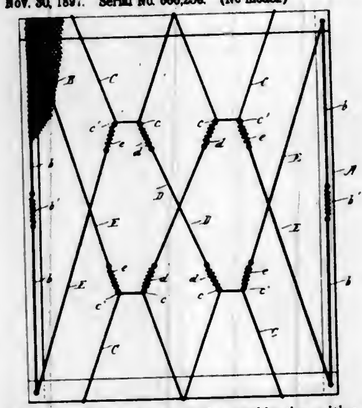


607,101. COMBINED SQUARE AND BEVEL. GEORGE F. WARNOCK, Jacksonville, Fla. Filed Feb. 3, 1897. Serial No. 621,736. (No model.)



Claim.—A square comprising a head and blade that are rigidly united and having a central space or division extending into both the head and blade, a graduated strip adapted to fold in and occupy said space, and having a longitudinal slot provided at the center and end with lateral offsets and at the other end with a terminal enlargement, and a set-screw passing through the square at the intersections of the head and blade and adapted to engage said slot substantially as and for the purpose described.

607,102. BED-BOTTOM. JOHN O. WEBNER, Cameron, S. C. Filed Nov. 30, 1897. Serial No. 660,258. (No model.)



Claim.—1. In a bed-bottom, the combination, with a frame, of loops secured to the frame, diagonally-arranged and crossed wires D operatively connected with the inner top portions of the said loops, and crossed wires E operatively connected with the frame at the sides thereof and with the outer top portions of the said loops, substantially as set forth.

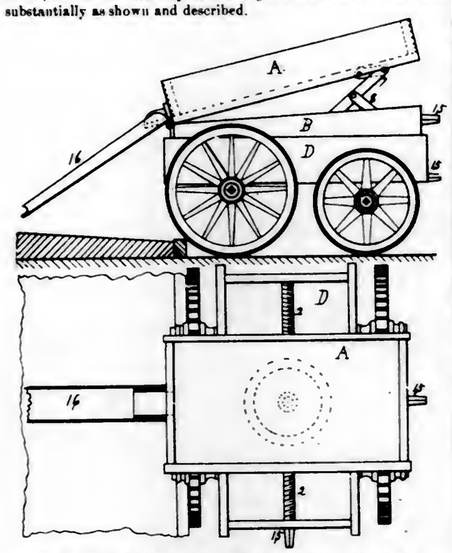
2. In a bed-bottom, the combination, with a frame, of loops connected with the frame, crossed wires E operatively connected with the frame at the side thereof and with the top portions of the said loops, means for preventing the said loops from being distorted by the side pull of said wires, and springs reliering the said loops and their connections from excessive tension, substantially as set forth.

3. In a bed-bottom, the combination, with a frame, of wedge-shaped loops secured to the said frame, crossed wires D, springs connecting the ends of the wires D with the apices of the said loops, crossed wires E secured at one end to the said frame at the sides thereof, and springs connecting the free ends of the wires E with the apices of the said loops, substantially as set forth.

607,103. DUMPING-WAGON. WILLIAM M. WEST, Camden, N. J. Filed Oct. 12, 1897. Serial No. 654,963. (No model.)

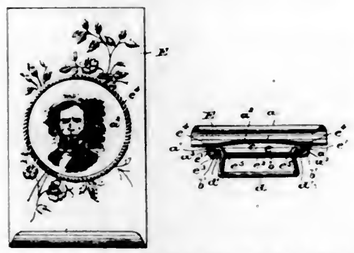
Claim.—1. In a coal dumping wagon, the combination of a body for carrying coal, intermediate frame, elevating mechanism to elevate the front of the body, and a bed with elevating mechanism to elevate

the frame and body, said body being pivoted upon the intermediate frame, so that the load may be discharged at the rear or at the side, substantially as shown and described.



2. In a coal-dumping wagon, the combination of a shaft carrying a right and a left hand screw, two cross-bars, and two lifting-arms, each arm consisting of three links, for elevating the front of the body to give such inclination to the body as will discharge the load from the rear, as shown and described.

607,104. DEVICE FOR DISPLAYING PHOTOGRAPHS, PICTURES, &c. BENJAMIN S. WHITEHEAD, Newark, N. J., assignor to the Whitehead & Hoag Company, of New Jersey. Filed Dec. 24, 1897. Serial No. 663,319. (No model.)



Claim.—1. In a device for displaying photographs, pictures, medallions, &c., the combination, with a frame-like device E, having a depression formed therein, provided with a perforated back, of a shell having an annular rim, arranged in said depression, and coöperating with the inner sides thereof for holding said shell in position therein, and a wire support extending through said perforated back of the depression and being in holding engagement with a portion of said shell, substantially as and for the purposes set forth.

2. In a device for displaying photographs, pictures, medallions, &c., the combination, with a frame-like device E, having a depression formed therein, provided with a perforated back, of a shell having an annular and inwardly-turned rim, forming a bead, a flexible covering on said shell bearing a picture, emblem, design, or the like, arranged in said depression, and coöperating with the inner sides thereof for holding said shell in position therein, and a wire support extending through said perforated back of the depression and being in holding engagement with a portion of the shell, substantially as and for the purposes set forth.

3. In a device for displaying photographs, pictures, medallions, &c., the combination, with a frame-like device having a depression formed by portions c' and c^3, and said portion c^3 having a hole or holes therein, of a shell having an annular rim, adapted to be arranged in said depression and held therein, a wire support d and lugs or prongs d' on said support adapted to be passed through said hole or holes in said portion c^3 and in operative engagement with said shell, substantially as and for the purposes set forth.

4. In a device for displaying photographs, pictures, medallions, &c., the combination, with a frame-like device having a depression formed by portions c' and c^3, and said portion c^3 having a hole or holes therein, of a shell having an annular and inwardly-turned rim, forming a bead, a flexible covering on said shell bearing a picture, emblem, design, or the like, said shell and covering being arranged in said depression and held therein, a wire support d and lugs or prongs d' on said support adapted to be passed through said hole or holes in said portion c^3 and in operative engagement with said shell, substantially as and for the purposes set forth.

5. In a device for displaying photographs, pictures, madallions, &c., the combination, with a frame-like device having a depression formed by portions c' and c^3, and said portion c^3 having a hole or holes therein, of a shell having an annular and inwardly-turned rim, forming a bead, a ring or collet b connected with said rim, a flexible covering over said shell and said ring or collet, and said flexible covering bearing a picture, emblem, design, or the like, said shell and covering being adapted to be arranged and held in said depression, a wire support d and lugs or prongs d' on said support adapted to be passed through said hole or holes in said portion c^3 and said lugs or prongs being operatively arranged between said rim of the shell and said ring or collet, substantially as and for the purposes set forth.

607,105. BRUSH. WALTER WILKINSON and IRVINE WILKINSON, Philadelphia, Pa. Filed Jan. 21, 1898. Serial No. 667,459. (No model.)



Claim.—The herein-described brush, consisting of a back having a tapered socket formed in each end thereof, each of said sockets having an annular groove formed near the inner end thereof, and a longitudinal groove or channel leading thereto, a handle having a tapered extension, and a locking-key consisting of a single piece of wire having the ends thereof bent oppositely at right angles to the body portion, said body portion and one end being embedded in the extension, the opposite end projecting outwardly to be inserted in said longitudinal groove or channel and be turned to engage the annular groove, in the manner described.

607,106. BICYCLE. ALEXANDER WINTON, Cleveland, Ohio. Filed Nov. 18, 1895. Serial No. 569,345. (No model.)



Claim.—1. A handle-bar clamp for bicycles, comprising a clamp connected with and supported by the front forks, said clamp extending within the handle-bar stem but independent thereof, substantially as described.

2. A handle-bar clamp for bicycles, comprising a clamp situated within the handle-bar stem at a point opposite the upper steering-head bearing-cone, and a supporting connection between said clamp and the front forks, substantially as described.

3. In a handle-bar clamp, the combination of a steering-tube, a handle-bar tube therein, a clamp-support extending upward from the lower portion of the steering-tube within and independent of the handle-bar tube or stem, a clamp carried by said support, and an operating device extending downward from the said clamp to a point below the steering-tube fork to be operated.

4. The combination of a steering-fork, and stem or tube, a handle-bar tube therein, an upwardly-extending tube within the handle-bar tube having an open lower end, an expanding clamp at the upper end of the tube, and an operating-rod extending upward within the clamping-tube, and engaging the clamp, the lower end of the rod extending below the fork to be operated.

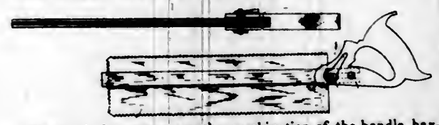
5. The combination of a steering-tube having a slit at its upper end, a bearing-cone surrounding said slitted end, a slitted handle-bar tube within the steering-tube, and an expanding clamp supported within the handle-bar tube at the upper end of the steering-tube, whereby the handle bar and the bearing-cone are clamped thereby.

6. In a handle-bar clamp, the combination of the steering-forks, the steering-head, the handle-bar tube or stem, an expansible clamp supported within the handle-bar stem, a support for the said clamp connected with the steering-forks, and an expanding device movable endwise by rotation, the expanding device or clamp having a tapered engaging surface for the purposes described.

7. A handle-bar clamp comprising an expansible collar, a support therefor, one of said members having a screw-threaded portion, an expanding device consisting of a screw-threaded rod engaging said screw-threads of one of the members, the said rod or expansible clamp having tapered engaging surface, for the purpose described.

8. In a bicycle, the combination of the steering-tube, the handle-bar tube therein, an expansible bushing movable within and independent of said handle-bar tube, and a screw-threaded rod, the rod and bushing carrying tapered engaging surfaces for expanding the independent bushing.

607,107. TENON OR BACK SAW. FREDERICK WUHRT, Lawrenceburg, Ind., assignor to George H. Bishop & Co., same place. Filed Feb. 28, 1898. Serial No. 671,916. (No model.)



Claim.—1. In a tenon-saw the combination of the handle having its front end mortised or grooved, a guide-screw, a clamping screw and bolt crossing the mortise in the handle, the back consisting of two bars slotted at their inner ends to pass over the clamping and guide bolts in the handle and having its outer end united by a bar notched upon its inner edge, and the saw-blade having its end toothed to engage the notches in the uniting-bar of the back, substantially as shown and described.

2. The handle mortised or grooved at its forward end, having guide-screw and clamping-bolt crossing said mortise, the back slotted at its inner end to pass over the clamping-bolt and guide-screw and having its connected bar at the front end provided with teeth, and the saw-blade having teeth on both edges and end, substantially as shown and described.

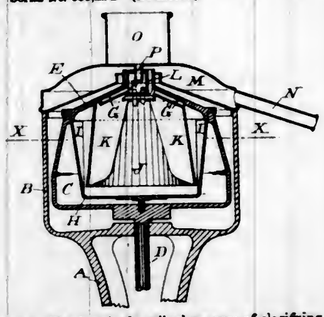
607,108. AWNING-FRAME. JOHN W. ZIMMERMAN, Wilmington, N. C. Filed July 2, 1897. Serial No. 643,306. (No model.)



Claim.—1. The combination with the extension rods or arms, of an awning, of spring guide-rods secured at one end and detachably connected at the other end by means of the spring action of the guide-rods.

2. A guide-rod for awnings constructed at one end only for attachment to the building to which the awning is to be secured, said securing end being in a different plane from and out of parallel with the main portion of the rod whereby when secured in place it causes the opposite end of the guide-rod to engage or approach more closely the side of the building to which the rod is secured.

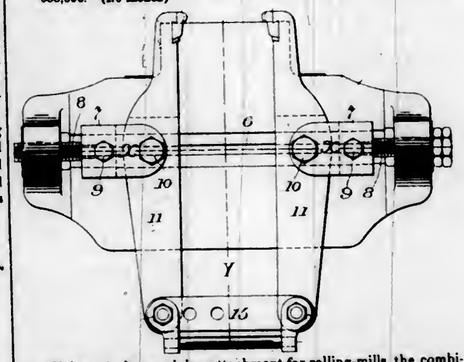
607,109. PROCESS OF AND APPARATUS FOR CLARIFYING MILK. JEFFERSON L. BEEBE, Cobleskill, N. Y., assignor of two-thirds George H. Thacher and Lewis Balch, Albany, N. Y. Filed June 3, 1897. Serial No. 639,234. (No model.)



Claim.—1. The herein-described process of clarifying milk consisting in first subjecting the milk within a closed vessel to a moderate centrifugal agitation sufficient to throw off the impurities but insufficient to entirely separate the milk from the cream, retaining the milk and cream together in the same vessel, and then recommingling the purified milk and cream by drawing them off together, substantially as described.

2. An apparatus for separating tangible impurities from milk, consisting of a revoluble shaft, D, an outer bowl, C, secured to and revolving with said shaft, an intermediate bowl, H, contained in said outer bowl and provided with wings, I, an inverted inner bowl, J, secured to a bonnet, E, that forms a closure for the top of the outer bowl, a receptacle, F, to the top of said bonnet, ducts, G, leading from said receptacle, and a duct, L', which forms an outlet for the commingled milk and cream: whereby the tangible impurities will be removed and the milk and cream be intimately commingled, as herein specified.

607,110. EDGING ATTACHMENT FOR ROLLING-MILLS. CHARLES F. BROOKER, Ansonia, Conn., assignor to the Coe Brass Manufacturing Company, Torrington, Conn. Filed Oct. 21, 1897. Serial No. 655,890. (No model.)



Claim.—1. In an edging attachment for rolling-mills, the combination with a supporting-base, of a pair of housings adjustable relatively to each other, a pair of pivoted levers mounted in said housings, and a pair of edge-finishing devices carried by said levers, substantially as described.

2. In an edging attachment for rolling-mills, the combination with the supporting-base, of a pair of housings, a pair of pivoted levers mounted in said housings, and a pair of removable edge-finishing devices carried by said levers, substantially as described.

3. In an edging attachment for rolling-mills the combination with a supporting-base, of a pair of housings, a pair of pivoted levers mounted in said housings, a pair of edge-finishing devices carried by

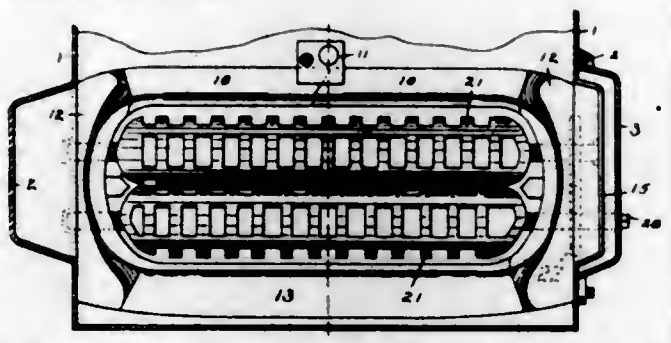
said levers, and an adjusting-plate also carried by said levers, substantially as described.

4. In an edging attachment for rolling-mills, the combination with the supporting-base, of a pair of housings, screws for adjusting and securing the position of said housings, a pair of pivoted levers mounted in said housings, and a pair of edge-finishing devices carried by said levers, substantially as described.

5. In an edging attachment for rolling-mills, the combination with the supporting-base, of a pair of housings, a pair of levers mounted in said housings, a pair of removable edge-finishing devices carried by said levers, an adjusting-plate, and a pair of horizontally-disposed guide-rollers, substantially as described.

6 In combination with a pair of horizontal rollers of a rolling-mill, an edging attachment, comprising a supporting-base, a pair of housings adjustable relatively to each other, a pair of pivoted levers mounted in said housings, and a pair of edge-finishing devices carried by said levers, substantially as described.

607,111. STOVE. ARTHUR B. CLUMER, Rochester, N. Y., assignor to the Sill Stove Works, same place. Filed Oct. 26, 1896. Serial No. 610,125. (No model.)



Claim.—1. In a stove for burning either wood or coal, the combination of a fire-pot provided with end extensions, a grate on which the fuel is supported, and removable end sections situated between the fire pot and its extensions, the said fire-pot being adapted for burning coal when the end sections are in place and for burning wood when said sections are removed.

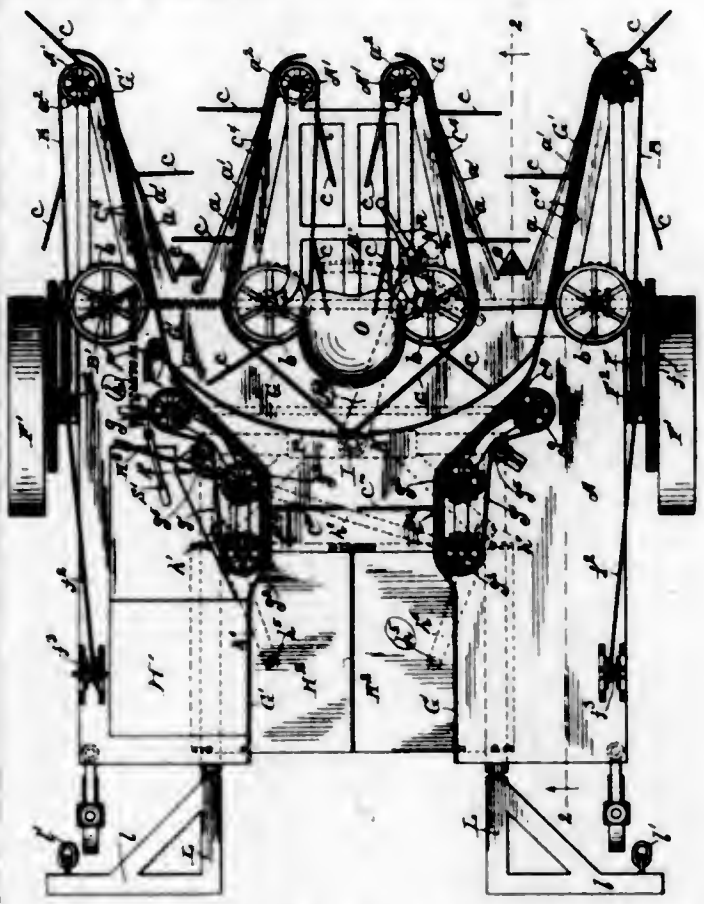
2. In a cooking-stove, the combination with the stove-casing having the fire-pot extensions at the end, the recessed door at one end and a fuel-grate arranged beneath the fire-pot, of the front and rear fire-pot linings extending to the ends but not into the extensions in the casing and door, and the removable end linings for the fire-pot located between the ends of the front and rear linings and between the fire-pot and the extension at the end thereof and in the door, substantially as described.

3. In a cooking-stove, the combination with the casing having the door at the end of the fire-pot and the removable casing-section beneath it, of the fire-pot-lining frame, the fire-pot linings at front and rear extending to the casing, and the removable lining at one end extending between the ends of the front and rear linings, said linings resting upon the frame, the supporting-ledges beneath the lining-frame, the removable grate movable on said ledges, whereby different grates may be used, and the fire-pot extended for burning wood by the removal of the end linings, substantially as described.

4. In a cooking-stove, the combination with the casing, having the fire-pot therein, the recessed door 3, the flange 15 at the end of the fire-pot extending into the recessed portion of the door, of the fire-pot-lining frame, the front and rear lining-sections extending to the casing, and the removable end lining-section, the ledges beneath the lining-frame, the grate movable thereon, and the removable casing-section for permitting the removal of the grate, substantially as described.

607,112. CORN CUTTER AND SHOCKER. ANDREW J. CROPP, Chicago, Ill. Filed Mar. 20, 1897. Serial No. 628,407. (No model.)

Claim.—1. The combination with a wheeled main frame provided with a stalk-cutting mechanism, of a driving-shaft journaled on the main frame rearwardly-extending hangers for the traction-wheels, secured on the driving-shaft near its ends, upright standards on the rear portion of said hangers and means to incline said standards, a series of vertical shafts B′, journaled on the main frame and geared to the driving-shaft and each provided with a sprocket-wheel near its top and bottom and with a brace-wheel about its middle, a series of shafts A′, vertically journaled in front of the shafts B′, and each having a sprocket-wheel near its top and bottom, sprocket-chains engaging the sprocket-wheels on the shafts B′ and A′ in pairs, a series of rods pivotally secured vertically on said chains and each having a number of fingers rigidly secured thereto, an arm fixed on the lower end of each of said rods and at an angle to the fingers thereon and having a roller on its free end, the rails c^4, located on the forward part of the main frame to form guideways for said rollers, substantially as described.



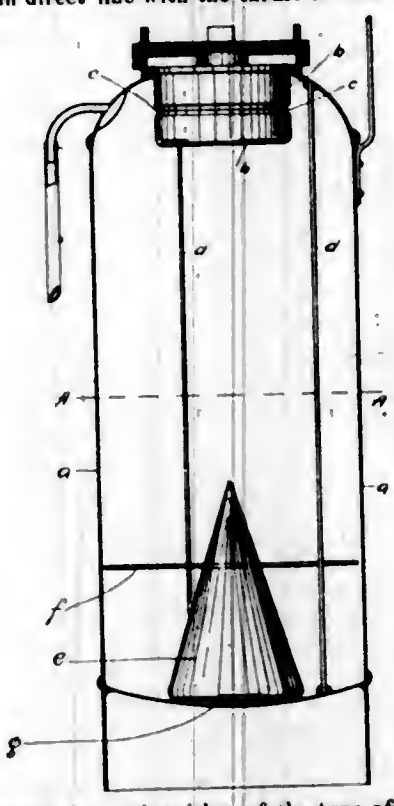
2. The combination with a wheeled main frame provided with a stalk-cutting mechanism and having its rear portion divided, of a driving-shaft journaled on the main frame, rearwardly-exteoding hangers for the traction-wheels, secured on the driving-shaft near its ends, upright standards on the rear portion of said hangers and means to incline said standards, a series of shafts B′, vertically journaled on the main frame and geared to the driving-shaft and each provided with a sprocket-wheel near its top and bottom, a series of shafts A′, vertically journaled in front of the shafts B′, and each having a sprocket-wheel near its top and bottom, sprocket-chains engaging the sprocket-wheels on the shafts B′ and A′ in pairs, a series of rods pivotally secured vertically on said chains and each having a number of fingers rigidly secured thereto, an arm fixed on the lower end of each of said rods and at an angle to the fingers thereon and having a roller on its free end, the rails c^4, c^{11} located as set forth to form guideways for said rollers, the sections H^3, movably located in the rear part of the main frame and adapted to close the divided portion thereof, and a mechanism to retract and extend said sections, substantially as described.

3. The combination with a wheeled main frame provided with a stalk-cutting mechanism, of a driving-shaft journaled on the main frame, a series of vertical shafts B′, journaled on the main frame and geared to the driving-shaft and each having a sprocket-wheel near its top and bottom, a series of shafts A′, vertically journaled in front of the shafts B′, and each having a sprocket-wheel near its top and bottom, sprocket-chains engaging the sprocket-wheels on the shafts B′ and A′ in pairs, the shafts B^3, and B^4, vertically journaled to the rear of the shafts B′, and each provided with sprocket-wheels near its top and bottom, the auxiliary shaft H, geared to the shafts B^3, and adapted to be thrown into gear with the driving-shaft, sprocket-chains engaging the wheels on the shafts B′, and A′, in pairs and on the shafts B^3, and B^4, in groups, rails c^4, forming guideways as set forth, a series of rods pivotally secured vertically on the chains and each having a number of fingers rigidly secured thereto, an arm fixed on the lower end of each of said rods and at an angle to the fingers thereon and having a roller on its free end adapted to operate between the rails c^4, and to bring and hold the fingers into action at the desired points, substantially as described.

607,113. PORTABLE FIRE-EXTINGUISHER. GEORGE H. DOWLING, New York, N. Y. Filed Aug. 21, 1897. Serial No. 649,068. (No model.)

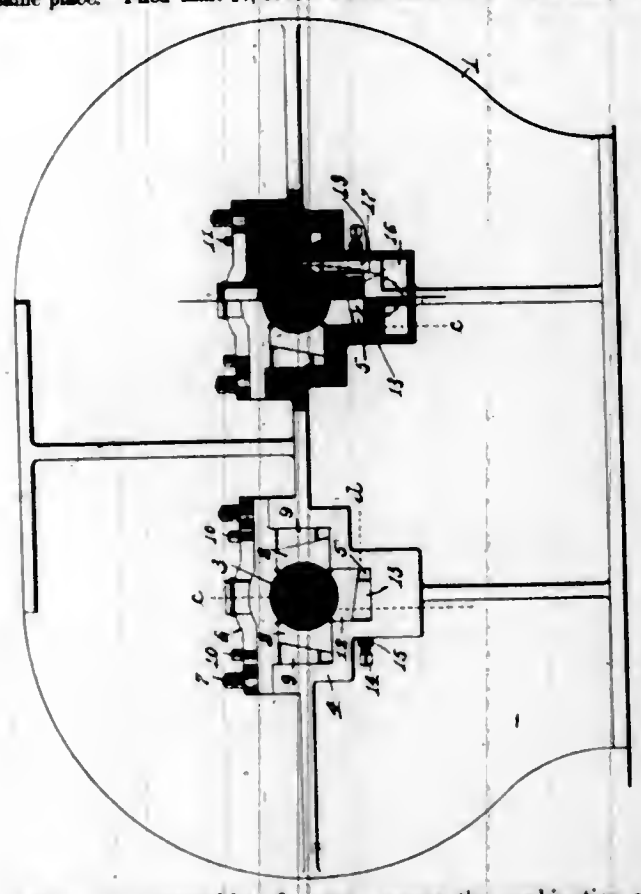
Claim.—1. In a portable fire-extinguisher of the type wherein two liquids when combined form a fluid which will extinguish fire are arranged in separate receptacles, adapted to operate through the breaking of one by a weight falling upon it, the combination of the closed cylindrical receptacle *a* of wood or metal having a concave bottom, the weight-guiding rods *d d d*, the weight *e*, arranged to move

between said rods endwise and provided with rods or prongs *f f f f* which engage with said vertical rods *d d d*, the horizontal reinforcing-bars *g g* fastened at the ends to the concave bottom of the case *a*, all constructed, arranged and combined to operate substantially as described so as to guide the said weight *e* when the extinguisher is reversed from its normal position upon the bottle fixed in the tube of the barrel in direct line with the thrust of said weight.



2. A portable fire-extinguisher of the type aforesaid, consisting of a metal or wooden case with a concave bottom and containing an alkaline solution, three or more metal guiding-rods fastened to the top and bottom of said case, a metal weight having horizontal bars through the same engaging with said vertical guiding-rods, an acid-containing bottle fastened in the top of said extinguisher, horizontal metal rods fastened by riveting or soldering to the bottom of the case so as to receive the impact of the metal weight when the vessel is reversed, substantially as described.

607,114. JOURNAL-BOX FOR ROTARY PUMPS. RALPH C. ENYART, Connersville, Ind., assignor to the P. H. & F. M. Roots Company, same place. Filed Mar. 17, 1898. Serial No. 674,188. (No model.)



Claim.—In a journal-box for rotary pumps, the combination, substantially as set forth, of a head-plate having an opening concentric with the desired position of the impeller-shaft, a box projecting outwardly from said plate and presenting a vertical wall at each side of the shaft and having a floor below the axis of the shaft and having a recess below the shaft provided with a floor and vertical side walls, a box-cap bolted to the tops of the side walls of said box and carrying the upper quarter-box of the journal-box, side quarter-boxes disposed within said box between the floor thereof and said box-cap and having inclined outer surfaces, wedges disposed within said box between the side walls thereof and the outer faces of said side quarter-boxes, a base quarter-box disposed in the recess of said box below said shaft and engaging the side walls of said recess and having an inclined lower surface, a wedge disposed within said recess between the floor thereof and the lower surface of said base quarter-box, and screws for adjusting said wedges upon the inclined surfaces of their respective quarter-boxes.

607,115. TOOL-HANDLE. FRED J. HALL, Wallingford, Conn. Filed Nov. 26, 1897. Serial No. 659,936. (No model.)

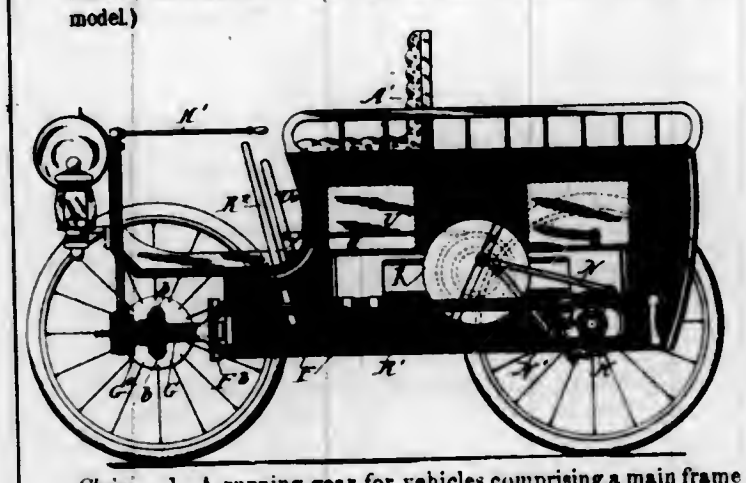


Claim.—1. The combination with a can-opener blade having a shank terminating at its end in a tack-puller, of a handle to which said blade is reversibly connected, said handle having its front end expanded laterally upon opposite sides of the plane of said blade, whereby said expanded end thereof is adapted to serve as a fulcrum both for said can-opener and said tack-puller, substantially as described.

2. The combination with a can-opener blade having a shank terminating in a tack-puller, of a handle having at its front end two flat bars which rest against opposite sides of said blade and a locking-bolt which passes through said bars and said blade, said bars, at their extreme front end, being bent outwardly and then inwardly to a bow shape, whereby they are adapted to serve as a fulcrum both for said can-opener and said tack-puller, substantially as described.

3. The combination with a handle composed at its front end of two flat strips of metal which, at their extreme front end, are bent outwardly and then inwardly to a bow shape, one of said strips being provided with an inward projection, of a can-opener blade having a shank which terminates in a tack puller, said blade being located between said strips and having two recesses to receive the projection on the latter, and a locking-bolt passing through a hole in one of said strips, and through a hole in said blade, located between the two recesses therein, and through a tapped hole in the opposite strip, substantially as set forth.

607,116. MOTOR-VEHICLE. ELWOOD HAYNES and ELMER APPERSON, Kokomo, Ind. Filed July 19, 1897. Serial No. 645,143. (No model.)



Claim.—1. A running-gear for vehicles comprising a main frame having horizontal frame members and provided at its forward end with a vertical disk to which the frame members are attached at their front ends, and a front axle, which is connected with the frame by a horizontal pivot and is provided with an annular flange in contact with said disk.

2. A running-gear for vehicles comprising a main frame having longitudinal frame members, and provided at its forward end with a vertical disk to which the frame members are attached, a pivot-shaft extending forwardly from said disk, and a front axle provided with a sleeve which surrounds the pivot-shaft and is provided with an annular flange in contact with said disk.

3. A running-gear for vehicles comprising a main frame having longitudinal frame members and provided at its forward end with a vertical disk and with a pivot-shaft extending forward from said disk, a front axle provided with a sleeve which surrounds said pivot-shaft and with a flange in contact with said disk, said pivot-shaft being provided at its forward end with a vertical sleeve which affords bear-

ings for the rock-shaft of a steering mechanism, and said axle being provided at its ends with pivoted axle-sections on which the wheels are mounted and which have actuating connections with said shaft.

4. A driving-gear for motor-vehicles comprising a clutch-disk, two oppositely-arranged clutch-arms, clutch-dogs pivoted to said arms, actuating means connected with and giving vibratory motion to both of said clutch-arms, shifting-levers for said dogs pivoted to the said clutch-arms, and means for moving said levers comprising endwise-sliding wedges.

5. The combination with a clutch-disk, clutch-arms, and clutch-dogs pivoted to the arms, of shifting-levers pivoted to the clutch-arms near the inner ends of said arms and connected at their outer ends with said dogs by elastic or yielding connections and means mounted on the shaft for actuating said shifting-levers.

6. A driving-gear for motor-vehicles comprising a clutch-disk, two oppositely-arranged clutch-arms, clutch-dogs carried by said arms, a revolving crank-pin, and connecting-rods uniting the crank-pin with said clutch-arms, one of said connecting-rods being engaged directly with the crank-pin and the other connecting-rod being pivoted to the first one.

7. A change-speed gear for motor-vehicles comprising a clutch-disk, two vibratory clutch-arms, a crank-pin connected with and giving motion to both of said clutch-arms, said crank-pin being movable toward and from its center of motion, and means for shifting or moving said crank-pin.

8. A change-speed gear comprising a clutch-disk, two vibratory clutch-arms, a crank-pin connected with and giving motion to both of said clutch-arms, said crank-pin being movable toward and from its center of motion, and means for shifting said crank-pin comprising a screw-shaft having engagement with the crank-pin, and means under the control of the operator for giving rotary motion to the screw-shaft in either direction.

9. A change-speed gear comprising a clutch-disk, two vibratory clutch-arms, a crank-disk provided with a crank-pin which is movable radially upon the disk, and means under the control of the operator for shifting said crank-pin inwardly and outwardly upon said crank-disk.

10. A change-speed gear comprising a clutch-disk, two vibratory clutch-arms, a crank-disk provided with a crank-pin which is radially movable upon the disk, means for shifting or moving the crank-pin on the disk embracing the screw-shaft which engages the crank-pin, and means for actuating said screw-shaft.

11. The combination with a crank-disk and crank-pin adapted to move radially thereon, of means for moving the crank-pin comprising two rings mounted on the disk, and a friction-brake adapted to act upon one or the other of said rings at will, said rings being severally connected with and adapted to operate the crank-pin.

12. The combination with a crank-disk and a crank-pin sliding upon the disk, of two gear-rings mounted in said disk, a friction-brake arranged to operate upon either of said rings at will, a screw-shaft engaging said crank-pin, said screw-shaft having geared connection with one of said rings, and a counter-shaft provided with a gear-pinion which intermeshes with the other of said rings and which has geared connection with the said screw-shaft.

13. The combination with a crank disk and crank-pin which slides upon the disk, of two gear-rings mounted in said disk, a friction brake arranged to operate upon either of said rings at will, a screw-shaft engaging said crank-pin, said screw-shaft being provided with a gear-pinion which intermeshes with one of the rings, and a counter-shaft provided with a gear-pinion which intermeshes with the other gear-ring, said screw-shaft and counter-shaft being provided with intermeshing pinions.

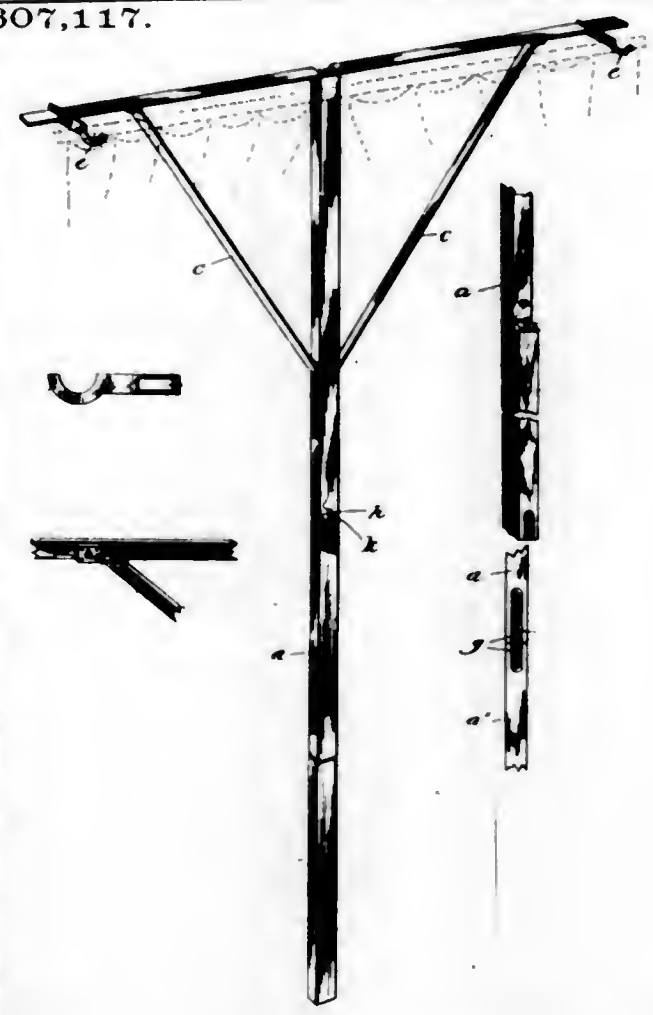
607,117. CURTAIN-POLE ADJUSTER. GEORGE LOOS, Pittsburg, Pa. Filed Sept. 13, 1897. Serial No. 651,424. (No model.)

Claim.—1. In a curtain-pole adjuster, the combination of the main standard, two horizontal bars hinged to its top, braces hinged to the underneath sides of said bars and adapted to support the same by engaging in notches provided therefor in the main standard, and adjustable brackets secured on the outer ends of the horizontal bars, substantially as shown and described.

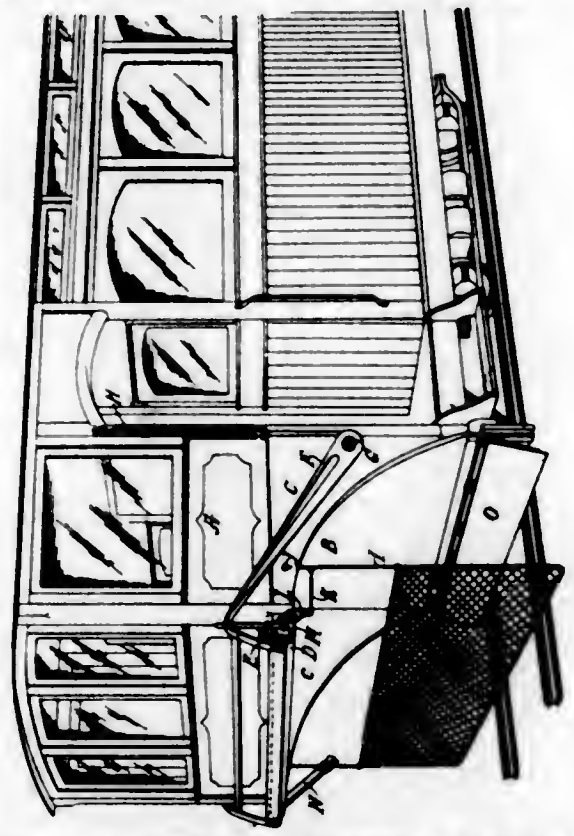
2. In a curtain-pole adjuster, the combination of the main standard, horizontal bars hinged to the top thereof, braces for supporting said bars, adjustable brackets on the said bars, and an auxiliary standard hinged to the lower end of the main standard, substantially as shown and described.

3. In a curtain-pole adjuster, the combination of the main standard provided with notches on two of its sides, horizontal bars hinged to the upper end of the main standard, supporting-braces hinged to the underneath sides of the bars and engaging in the notches provided therefor in the main standard, adjustable brackets on said bars, an auxiliary standard hinged to the lower end of the main standard, and means for locking said auxiliary standard in the extended or folded position, substantially as shown and described.

607,117.



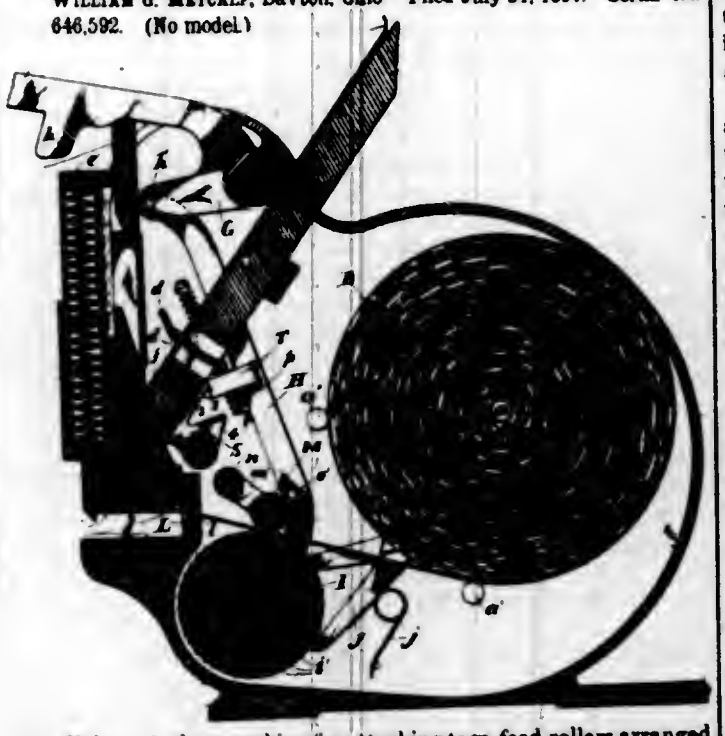
607,118. CAR-FENDER. WILLIAM H. MARTIN, Los Angeles, Cal. Filed Mar. 31, 1897. Serial No. 630,196. (No model.)



Claim.—The combination in a car-fender of a pendulous pivoted fence and cut-way car, said car being cut under at one or both ends, the bottom of said car forming a broken line, and beneath said car a reciprocating belt, said belt coöperating with said pendulous fence, and secured to the front of the car a ratchet-roller, said ratchet-roller being supplied with a canvas reef, spiral springs and bent arms for operating said canvas reef and ratchet-roller, a rod and dog connecting said pendulous fence with said ratchet-roller for locking and unlocking said ratchet-roller and canvas reef, whereby said spiral springs and bent arms operate said canvas reef and ratchet-roller when said pendulous pivoted fence meets an obstruction, all substantially as described.

607,119. MACHINE FOR ATTACHING TAGS TO FABRICS.

WILLIAM G. METCALF, Dayton, Ohio Filed July 31, 1897. Serial No. 646,592. (No model.)



Claim.—1. In a machine for attaching tags, feed-rollers arranged to feed a prearranged supply of cardboard, a staple-carrier arranged to feed the staples and a plunger or driver, in combination with a knife-carrying plunger provided with a slot or slideway for the staple and staple-driver, substantially as and for the purpose described.

2. In a machine for attaching tags, feed-rollers arranged to feed a prearranged supply of cardboard, a staple-carrier provided with an oscillating retainer to feed one staple at a time, and a staple-driver in combination with a knife-carrying plunger provided with a slot or slideway for the staple and staple-driver, substantially as and for the purpose described.

3. In a machine for attaching tags, feed-rollers arranged to feed a prearranged supply of cardboard, a staple-carrier provided with an oscillating retainer to feed one staple at a time, a staple-driver and a staple-straightener to prevent the staple being displaced by its descent from the sliding retainer, in combination with a knife-carrying plunger provided with a slideway for the staple and staple-driver, substantially as and for the purpose described.

4. In a machine for attaching tags, feed-rollers arranged to feed a prearranged supply of cardboard or other suitable material, with locking mechanism to lock the feed-rollers, a staple-carrier provided with an oscillating retainer to feed one staple at a time, a staple driver and a staple straightener to prevent the staple being displaced by its descent from the sliding retainer, in combination with a knife-carrying plunger provided with a slideway for the staple and staple-driver, substantially as and for the purpose described.

5. In a machine for attaching tags, a bifurcated lever with trip mechanism to actuate a knife-carrying plunger and permit a rapid return to its normal position, a staple-driver arranged to slide in a slot or slideway in said knife-carrying plunger, a staple-carrier arranged to feed the staples to the staple-driver, in combination with a pawl arranged to revolve the feed-rollers and feed a prearranged supply of cardboard or other suitable material, substantially as and for the purpose described.

6. In a machine for attaching tags, a bifurcated lever with trip mechanism to actuate a knife-carrying plunger and permit a rapid return to its normal position, a staple driver arranged to slide in a slot or slideway in said knife-carrying plunger, a staple-carrier provided with an oscillating retainer to feed one staple at a time, and feed-rollers in combination with a pawl arranged to control a staple-straightener and to revolve the feed-rollers and feed a prearranged supply of cardboard or other suitable material to form a tag, substantially as and for the purpose described.

7. In a machine for attaching tags, automatically-locked feed-rollers arranged to feed a prearranged supply of cardboard or other suitable material to form a tag, a staple-driver under spring-pressure, knife-carrying plunger provided with a slideway for said staple-driver, in combination with a staple-carrier provided with a latch to retain and feed one staple at a time, and spring-actuated mechanism to hold the staple fed in the staple-driver slideway, substantially as and for the purpose described.

8. In a machine for attaching tags, automatically-locked feed-rollers arranged to feed a prearranged supply of tag-making material, a staple-driver and knife-carrying plunger provided with a slot or slideway for said staple-driver, a staple-carrier provided with an oscillating latch arranged to feed a single staple at a time and spring-controlled mechanism for retaining the staple fed in the path of the driver, in combination with a bifurcated lever with trip mechanism to actuate the knife-carrying plunger and permit its rapid return to its normal position, and pawl to revolve the feed-rollers, substantially as and for the purpose described.

9. In a machine for attaching tags, a lever arranged to depress a staple-driver, a knife-carrying plunger with a slot or slideway therein for the staple-driver, said lever being provided with trip mechanism to depress the knife-carrying plunger and permit a rapid return to its normal position, and pawl pivoted to said lever feed-roller, and staple-straightener, said pawl arranged to revolve the feed-rollers and control the staple-straightener, in combination with a staple-carrier, provided with an oscillating retainer to feed the staples, and means for holding the staples in the path of the plunger, substantially as and for the purpose described.

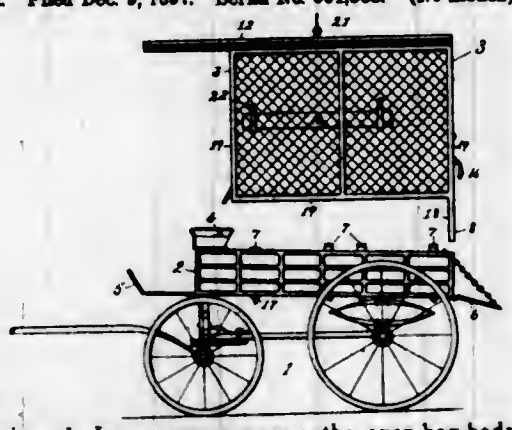
10. In a machine for attaching tags, feed-rollers arranged to feed a prearranged supply of cardboard or other suitable material, sustaining-pins for holding the roll of cardboard, a staple-carrier arranged to feed the staple to a plunger or driver, and spring-controlled mechanism for holding the staple in the path of said driver, in combination with a knife-carrying plunger provided with a slot or slideway for the staple and staple-driver, substantially as and for the purpose described.

11. In a machine for attaching tags, feed-rollers, mechanism for automatically locking the feed-rollers, sustaining-pins for holding the roll of cardboard or other suitable material, knife-carrying plunger provided with a slot or slideway for the staple-driver, in combination with a staple-carrier provided with an oscillating retainer arranged to feed a single staple at a time and spring-controlled mechanism for holding the staples fed in the path of the driver, substantially as and for the purpose described.

12. In a machine for attaching tags, the combination of feed-rollers, mechanism for automatically locking the feed-rollers, knife-carrying plunger provided with a slot or slideway for the staple-driver, the base of said knife-carrying plunger provided with cylinders or rolls of type arranged to make the desired impression on the tags simultaneously with the cutting and fastening of said tags, a staple-carrier arranged to feed the staples to the driver, with a lever provided with trip mechanism and pawl for actuating the knife-carrying plunger and permit a rapid return to its normal position and to revolve the feed-rollers, substantially as and for the purpose described.

607,120. EXPRESS-WAGON.

HENRY D. MORTON, San Francisco, Cal. Filed Dec. 9, 1897. Serial No. 661,308. (No model.)



Claim.—1. In an express-wagon, the open box-body 2, in combination with a removable crate-top 3, having roof 12 extended over the seat, rear swinging doors extending below the said crate, and means for attaching the said top to the body, substantially as specified.

2. The open box-body 2, in combination with a removable crate-top 3, adapted to set on and be secured to the said open body, said top being provided with hinged swinging doors at the rear which close not only the top but also the rear of said wagon-box, substantially as specified.

3. The open box-body 2, in combination with a removable crate-top 3, having woven-wire paneled sides and rear, and a movable goods-tray 10 adjustable at different heights within the top by means of hooks engaging with said paneled sides, substantially as specified.

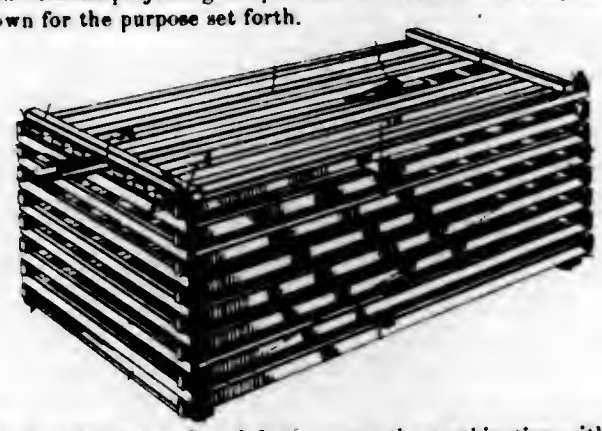
4. In an express-wagon, an open box-body 2, a removable crate 3 adapted to fit thereon, the latter provided with doors 8 and 9, one door fastened by bolts, an eccentric and handle 16, that prevents closing the second door until the first one is bolted, substantially as described.

607,121. FOLDING CRATE.

FRANK P. MURPHEY, Chicago, Ill., assignor of one-half to Robert G. Green, same place. Filed Dec. 3, 1897. Serial No. 660,625. (No model.)

Claim.—1. In a folding or knockdown crate, the combination with the sides and ends composed of bars having their end portions

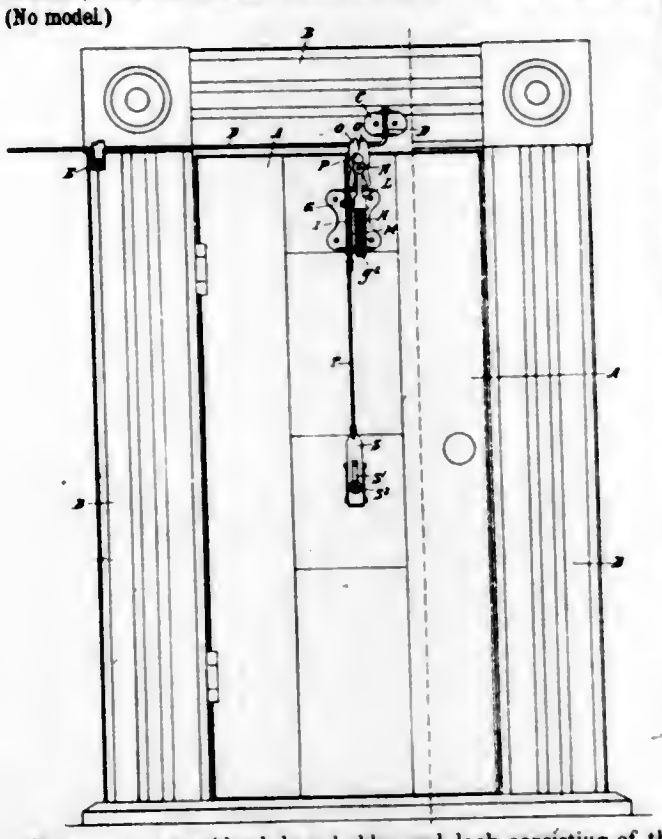
overlapping, of rods or wires passing through registering openings in the overlapping ends of the bars and having opposite ends projecting, and having the other end portions bent to extend about parallel with the end pieces, and constructed to make detachable connection with the projecting end portions of the said rods, substantially as shown for the purpose set forth.



2. In a folding or knockdown crate, the combination with the sides and ends of the body composed of bars having their end portions overlapping, of rods or wires passing through corresponding openings in the overlapping ends of the bars and having their diagonally oppositely disposed end portions projecting, and having the opposite end portions bent to extend about parallel with the ends of the crate and terminating in eyes to receive and make detachable connection with the aforesaid projecting ends of the rods, substantially as set forth.

3. In a folding or knockdown crate, the combination with the sides and ends composed of bars having their end portions overlapping, of rods passing through openings in the overlapping ends and having the diagonally-disposed end portions projecting and threaded, and having the opposite end portions bent to project across the top and bottom of the crate and terminating in eyes to receive the said threaded ends, and nuts mounted upon the threaded ends to retain the parts in position, substantially as set forth.

607,122. COMBINED DOOR HOLDER AND LOCK. WILLIAM H. MURRAY, Tavistock, Canada. Filed Oct. 11, 1897. Serial No. 654,909. (No model.)



Claim.—1. A combined door holder and lock consisting of the pivotal clamps, O, O, attached to the door, and each formed with an elongated slot, O^2, and a flange, O', in which an opening, O^3, is formed, in combination with the pivotal rod, D, attached to the door-case, or other suitable support, the bolt, N, and means for supporting and operating the latter, substantially as and for the purpose set forth.

2. A combined door holder and lock consisting of the pivotal clamps, O, O, attached to the door and the pivotal rod, D, in combination with the buffer-case, E, buffer, e', and hasp, F, said rod, D, and case, E, being attached to the door-case or other suitable support substantially as and for the purpose set forth.

3. A combined door holder and lock consisting of the pivotal clamps, O, O, attached to the door and the pivotal rod, D, secured to the door-case or other suitable support in combination with the spring-plate, R, spring, R', plate, S, in which an elongated slot, S', is formed and suitable means for securing these devices to the door substantially as and for the purpose set forth.

4. A combined door holder and lock consisting of the pivotal clamps, O, O, each formed with an elongated slot, O^2, and a flange, O', in which an opening, O^3, is formed, the pivotal rod, D, and means for supporting said clamps and said rod in combination with the pin, N, the plate, L, post, H, arm, J, spring, M, bar, I, and bracket, G, substantially as and for the purpose set forth.

5. A combined door holder and lock consisting of the pivotal clamps, O, O, each formed with an elongated slot, O^2, and a flange, O', in which an opening, O^3, is formed the pivot-bolt, P, the pivotal rod, D, and the bracket, C, in combination with the pin, N, the plate, L, provided with the angular end, L', post, H, arm, J, spring, M, bar, I, and bracket, G, substantially as and for the purpose set forth.

607,123. HOOK. JENNIE L. MCVAY, Winona, Minn. Filed May 18, 1897. Serial No. 637,066. (No model.)



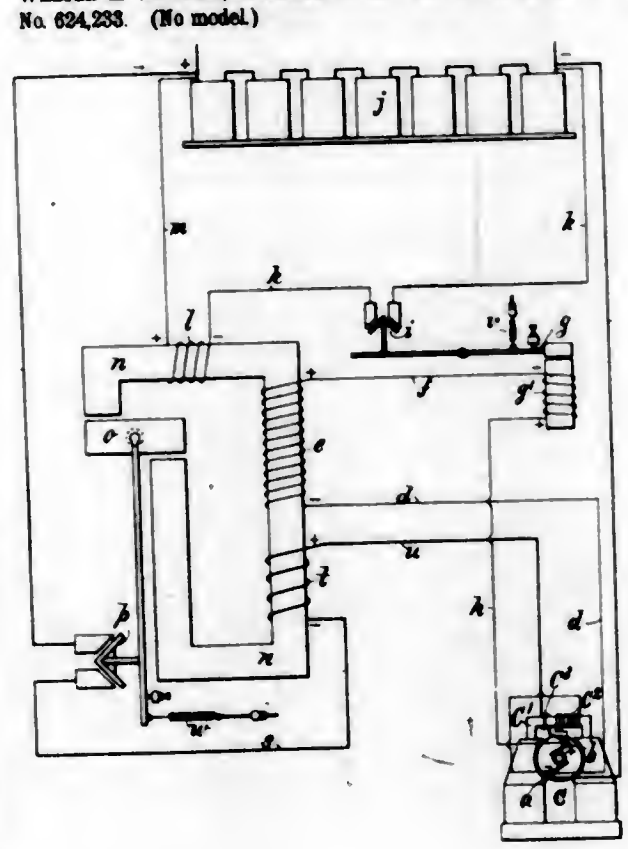
Claim.—1. The combination with a base or support provided with a shield, of a hook pivotally secured to the base, the free end of which is adapted to be secured in the shield, and a hook-shaped fastener pivotally secured to the base in position to hold the hook in a vertical position when secured to a garment, and means for locking the fastener, substantially as set forth.

2. The combination, with a base or support, provided with a shield, of two hooks pivotally secured to the base, the free end of one of which is adapted to be secured in the shield, and the free end of the other is adapted to engage with the first mentioned hook, substantially as set forth.

3. The combination, with a base or support, one end of which is provided with an eye and a shield, of two hooks, one of which is permanently secured in the eye and the free end of the other one is adapted to be secured in the shield, substantially as set forth.

4. The combination, with a base or plate, one end of which is provided with an eye and a shield and the central portion is stamped out of the plane of the plate to form a bearing for a pin, of a pin swiveled longitudinally in said stamped portion with its free end adapted to enter the shield, and an angularly-bent pin pivotally secured in the eye with its free end adapted to engage with the other pin, substantially as set forth.

607,124. AUTOMATIC CUT-OUT FOR SECONDARY BATTERIES. WALTER L. NEGRAUR, Brookline, Mass. Filed Feb. 19, 1897. Serial No. 624,233. (No model.)



Claim.—1. An automatic electric switch comprising a magnet-core provided with a non-polarized armature, a working circuit controlled by said armature, and two coils on said magnet-core wound and connected to oppose each other, the said armature being operated by the differential effect of the said coils, as set forth.

2. An automatic electric switch comprising a magnet-core provided with a non-polarized armature, a working circuit controlled by said armature, two coils on said magnet-core wound and connected to oppose each other, the said armature being operated by the differential effect of the said coils, and a relay arranged to make and break the circuit through one of said coils, for the purpose set forth.

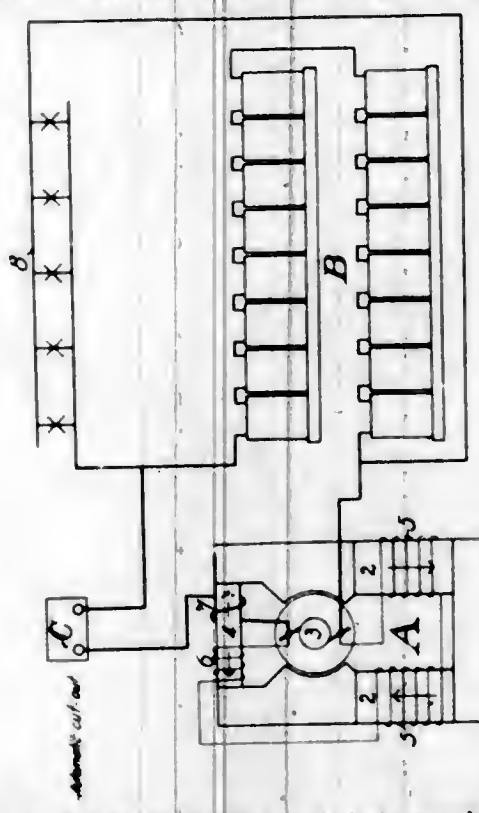
3. An automatic electric switch comprising a magnet-core provided with a non-polarized armature, a working circuit controlled by said armature, two coils on said magnet-core wound and connected to oppose each other, and a relay energized simultaneously with one of said coils to control the circuit through the other coil, for the purpose set forth.

4. An automatic electric switch comprising a magnet-core provided with a non-polarized armature, a working circuit controlled by said armature, two coils on said magnet-core wound and connected to oppose each other and arranged to operate the said armature by their differential effect, and a third coil on said magnet-core arranged to be energized when the working circuit is closed, for the purpose set forth.

5. An automatic electric switch comprising a magnet-core provided with a non-polarized armature, arranged to bridge the poles thereof, a working circuit controlled by said armature, one or more coils on said magnet-core for operating said armature, and a supplementary coil on said magnetic circuit arranged to be energized when the working circuit is closed, for the purpose set forth.

6. An automatic electric switch comprising a magnet-core provided with a non-polarized armature, a working circuit controlled by said armature, two coils on said magnet-core wound and connected to oppose each other and arranged to have independent voltages impressed upon them, a relay in series with one of said coils and controlling the circuit through the other coil, and a third coil on said magnet-core adapted to be energized when the working circuit is closed, for the purpose set forth.

607,125. METHOD OF AND APPARATUS FOR GENERATING ELECTRICITY. WALTER L. NEBRAUR, Brookline, and JOSEPH J. PERLY, Walpole, Mass. Filed June 17, 1897. Serial No. 641,131. (No model.)



Claim.—1. The herein-described method of generating by a dynamo electricity of practically constant pressure from a source of variable motion which consists in opposing to the generated voltage an independent, steady voltage, and automatically keeping the difference between the two voltages within narrow limits by impressing it on a circuit of low resistance and causing the resulting current to vary the magnetic conductivity of a magnetic shunt around the armature of the dynamo, for the purpose set forth.

2. In a system for generating electricity, a dynamo adapted to be driven at varying speeds and provided with means for keeping its voltage practically constant, comprising a magnetic shunt around its armature and means for varying the magnetic conductivity of said shunt and thereby automatically regulating the magnetic flux through the armature, for the purpose set forth.

3. In a system for generating electricity, a dynamo adapted to be driven at varying speeds and provided with means for keeping its voltage practically constant, said means comprising a magnetic shunt around its armature, a high-resistance coil on said shunt, and a low-resistance coil on said shunt in series with a low external resistance, said coils producing opposite polarities, substantially as described.

4. In a system for generating electricity, the combination with a storage battery of a dynamo adapted to be driven at varying speeds, said dynamo having a magnetic shunt around its armature and means for varying the magnetic conductivity of said shunt and thereby automatically regulating the magnetic flux through the armature, for the purpose set forth.

5. In a system for generating electricity, in combination with a storage battery, a dynamo having a magnetic shunt around its armature, a high-resistance coil on said shunt adapted to be fed with a practically constant current, and a low-resistance coil on said shunt connected in series with the external circuit and producing an opposite polarity to that of the first-mentioned coil, for the purpose set forth.

6. In a system for generating electricity, in combination, a dynamo adapted to be driven at varying speeds, and having a magnetic shunt around its armature and means for varying the magnetic conductivity of said shunt and thereby automatically regulating the magnetic flux through the armature, a storage battery, and an automatic switch arranged to close and open the external circuit, substantially as described.

7. In a system for generating electricity, the combination with a storage battery of a dynamo adapted to be driven at varying speeds, said dynamo having a magnetic shunt around its armature, a high-resistance coil on said shunt, and a low-resistance coil on said shunt connected in series with the external circuit and producing an opposite polarity to that of the first-mentioned coil, and an automatic switch arranged to close and open the external circuit, substantially as described.

8. In a system for utilizing variable power for generating electricity at a practically constant pressure, the combination with a storage battery of a dynamo the voltage of which is automatically regulated as herein described by means of an electromagnetic shunt around its armature, whereby the voltage of the storage battery may be kept practically constant, substantially as described

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607,126. CLAMP ATTACHMENT FOR ANVILS. MARTIN V. NICHOLS, Doyle Station, Tenn. Filed Oct. 28, 1897. Serial No. 656,665. (No model.)

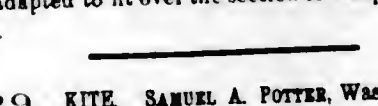


Claim.—1. The combination with an anvil-block, and an anvil, of spaced clamping-jaws provided with depending shanks, a cross-head connecting the lower ends of the shanks, an eye mounted on the anvil-block, a rod passing through the eye and connected at its upper end to the cross-head, a foot-lever fulcrumed on the block and connected with the lower end of the rod, and a coiled spring disposed on the rod and interposed between the cross head and the eye, substantially as described.

2. The combination with an anvil, of a plate arranged on the anvil and provided with a shank passing through the said anvil and having a nut to engage the same, spaced clamping-jaws provided with depending shanks passing through the plate, a cross-head connecting the lower ends of the shanks of the jaws, a guide-eye located beneath the cross head, a rod passing through the guide-eye and con-

nected with the cross-head, a spring disposed on the rod and interposed between the guide-eye and the cross-head, and a lever connected with the rod, substantially as described.

607,127. FILLET. CLIFFORD H. OAKLEY and ALFRED T. OAKLEY, Cleveland, Ohio. Filed July 30, 1897. Serial No. 646,451. (No model.)

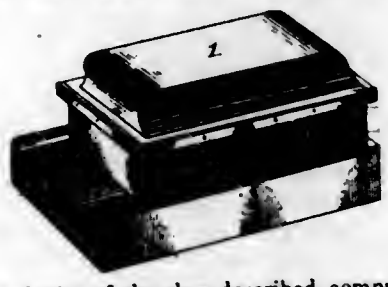


Claim.—1. A fillet of flexible, elastic material having a concave face and the sides opposite thereto covered with a facing of fibrous or textile material, substantially as described.

2. As a new article of manufacture, a fillet of molded rubber, formed with a curved side, and an angular side faced with fabric, substantially as set forth.

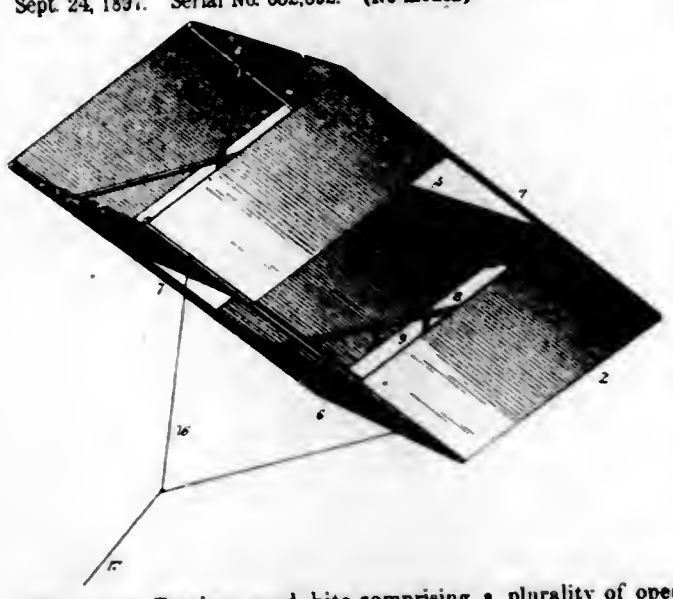
3. As a new article of manufacture, a fillet of molded rubber formed in a continuous length and having a curved side, and two or more angular sides, the latter sides being faced with fabric, substantially as set forth.

607,128. BUTTER-MOLD. MARIA PFENING, Santa Barbara, Cal. Filed Aug. 5, 1897. Serial No. 647,202. (No model.)



Claim.—A device of the class described, comprising a butter receptacle or section provided with a series of cells open at the top and bottom, said section or receptacle being designed to be placed on a suitable support or tray, a bandle, a series of plungers depending from the handle and provided at their lower ends with die-plates conforming to the configuration of and fitting in the cells of the section or receptacle, said plungers and die-plates being entirely removable therefrom, and a cover or plate provided with openings to receive the plunger and loosely arranged on the same between the die-plates and the handle, and carried by the said parts, said cover or plate being adapted to fit over the section or receptacle, substantially as described.

607,129. KITE. SAMUEL A. POTTER, Washington, D. C. Filed Sept. 24, 1897. Serial No. 652,892. (No model.)



Claim.—1. The improved kite comprising a plurality of open-ended cells having downwardly and inwardly inclined sustaining-surfaces, and suitable connections between said cells maintaining them in fixed relations.

2. The improved kite comprising a plurality of open-ended, four-sided cells, said cells having two of their sides inclining inward and downward toward each other, and suitable connections between said cells maintaining them in fixed relations.

3. In a cellular kite the combination with a cell, of longitudinal bars at the corners thereof and two truss-rods crossing each other and connected at their ends to the bars at the opposing corners of the cells.

4. The improved cellular kite composed of a plurality of diamond-shaped, open-ended cells, and suitable connections between said cells maintaining them in fixed relations.

5. The improved cellular kite comprising a plurality of diamond-shaped, open-ended cells, vertical and horizontal struts crossing each other and extending between the opposing corners of said cells, and suitable connections between said cells maintaining them in fixed relations.

6. The improved cellular kite consisting of an upper longitudinal bar 5, a lower longitudinal bar 6 extending thereunder and parallel to the same, two longitudinal side bars 7 extending on opposite sides of the upper and lower bars and about midway between the same, vertical struts 8 connected at their ends to the upper and lower bars, horizontal struts 9 crossing the vertical struts and connected at their ends to the side bars, and bands or coverings applied to said longitudinal bars, inclosing the struts and extending diagonally from bar to bar and forming inclined sustaining-surfaces at the front and rear of the kite.

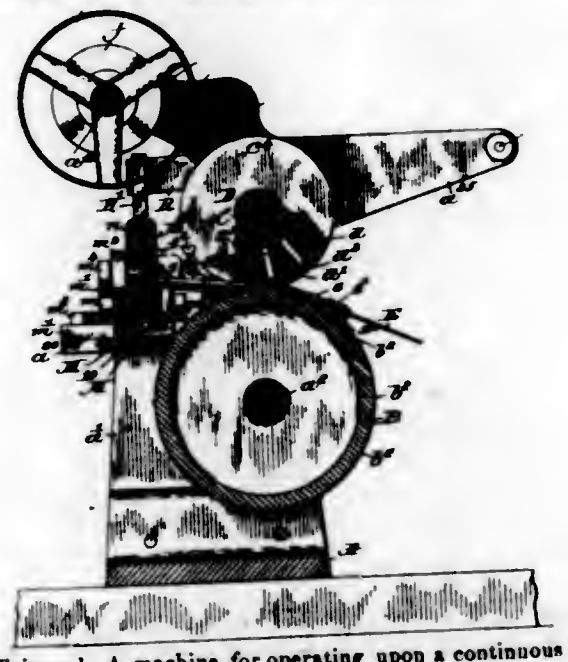
7. The combination with a cellular kite having front and rear diamond-shaped open-ended cells, and upper and lower longitudinal bars connecting said cells, of a bridle or belly-band connected to the lower longitudinal bar and adapted to be attached to the main string.

607,130. STRING-CASE. GUSTAV A. RAPP, Hudson, N. Y. Filed Dec. 31, 1897. Serial No. 665,037. (No model.)



Claim.—As a new article of manufacture, a pocket-case for the strings of musical instruments consisting of a continuous, imperforate foundation layer, a moisture-proof lining of oiled silk coextensive in area to the foundation layer, united at its edges only thereto, and folded with said layer to produce the pocket-forming flap, and the fasteners which pass at intervals through the folded flap and oil-silk layers within the limits of the back portion of said foundation layer and unite the flap and lining together at intervals to form a series of pockets; said foundation layer and lining being creased longitudinally and transversely to adapt the case to fold into compact condition, substantially as described.

607,131. PRINTING-MACHINE. ALBERT H RAY, Ashland, Mass. Filed Sept. 30, 1896. Serial No. 607,429. (No model.)



Claim.—1. A machine for operating upon a continuous web of flexible material, comprising web-severing mechanism; a rotary printing member or the like; a rotary impression member of large diameter, relatively to the effective area of the printing member, and capable of operation out of phase therewith; and means upon said impression-cylinder to engage the work and automatically position the same for a large number of printing and cutting operations during a single rotation of said impression member, substantially as described.

2. In a machine for operating upon a web; web-severing mechanism, and printing mechanism; said printing mechanism comprising a rotary printing member, and an impression-cylinder adapted to be

positively actuated at times and provided with means to engage and at all times determine the position of said web, said cylinder being normally independent of the printing member but arranged to rotate, at all times during its periods of actuation, in peripheral unison with said printing member, substantially as described.

3. In a machine for operating upon a web of cardboard or similar work, said work having a series of perforations: web-severing mechanism; and printing mechanism, comprising a rotary printing member, and an impression-cylinder having peripheral projections adapted to engage the perforations in said work to position the latter, said cylinder being normally independent of the printing member, but adapted to be intermittingly rotated, and arranged when rotated to move at all times in peripheral unison with the printing member, substantially as described.

4. A machine for operating upon a web; comprising a reciprocating cutting mechanism, a continuously-rotating printing member, and an impression-cylinder provided with means to engage and at all times determine the position of said web: connections whereby upon operation of the machine, the cylinder is caused to rotate to feed the web during and for the printing operation; and means to hold the cylinder stationary at times to permit severance of the web by the cutting mechanism, substantially as described.

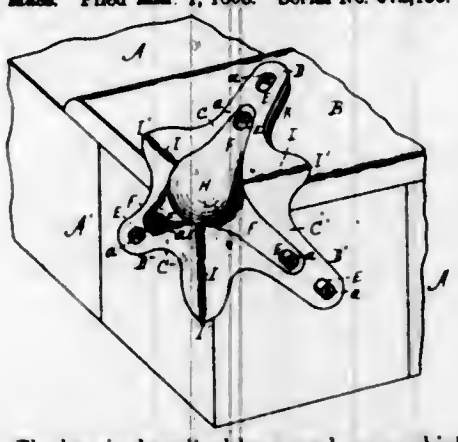
5. In a machine of the class described, the following instrumentalities, viz: a continuously-rotating driving-shaft; a rotary printing member fixed on said shaft; inking apparatus therefor: a combined impression and feed cylinder, adapted to be actuated from said shaft out of phase with said printing member, but at substantially the same peripheral speed therewith during the printing operation; reciprocating cutting mechanism; operating connections between said driving-shaft and mechanisms, all arranged to operate substantially as described.

6. In a machine of the class described, the driving-shaft and its driving-arm; a rotary printing member carried by the shaft; an impression-cylinder mounted parallel with said shaft; together with a driving-sheave having the same diameter as and connected with said cylinder and adapted to be peripherally engaged by said arm to provide for intermittent actuation of said cylinder by said shaft at exactly the same peripheral speed as that of said printing mechanism at all times during said engagement, substantially as described.

7. The combination with a sheave having a periphery serving as a friction surface and provided at intervals with radial projections, of a driving-shaft having an interrupted driving-surface arranged upon continuous rotation of the shaft to be brought into position to successively engage said projections immediately adjacent their region of union with the sheave, to impart at each of such engagements an impetus to the sheave and to maintain the movement then initiated during and by subsequent frictional engagement by the driving-surface with that portion of the sheave's periphery immediately behind the projection engaged, substantially as described.

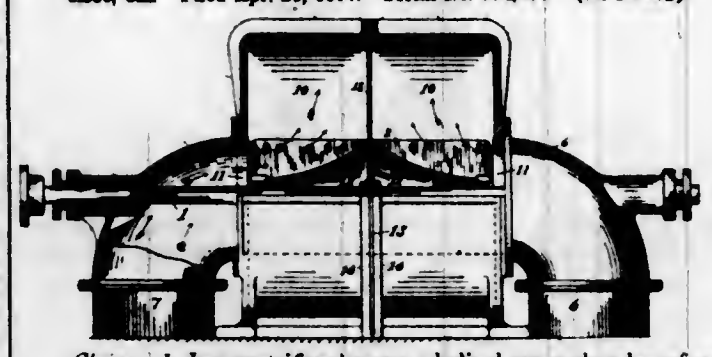
8. In a machine of the class described, a couple of coöperating rotary members, one of which is adapted to rest at times while the other is actuated, and means to impart positive rotation to said former member intermittently, said means being adapted and arranged to instantly start said former member at the exact peripheral speed of said other member at the beginning of each period of common rotation of said members, and to maintain said peripheral speed throughout each such rotative period.

607,132. CORNER-SHIELD FOR TRUNKS. WALTER H. RICH, Melrose, Mass. Filed Mar. 1, 1898. Serial No. 672,153. (No model.)



Claim.—The herein-described improved corner-shield for trunks, comprising an integral metallic plate formed into the portions C D, C' D', C'' D'', adapted to extend diagonally over the top or bottom, end, and side of a trunk next to the corner, said portions C D, C' D', C'' D'' being provided with elongated slots E set and extending in the diagonal line of direction of said portions; a layer of rubber corresponding substantially in shape to said plate and adapted to be interposed between the plate and the corner of the trunk; and fastening-screws extending through said slots next the outer ends thereof and through the rubber into the trunk, whereby the metallic plate is allowed to yield without injury thereto or to the screws, substantially as described.

607,133. CENTRIFUGAL PUMP. JOHN RICHARDS, San Francisco, Cal. Filed Apr. 29, 1897. Serial No. 634,389. (No model.)



Claim.—1. In a centrifugal pump, a helical pump-chamber of rectangular longitudinal section and tangential discharge-way, in combination with a rotary impeller provided with radial vanes arranged oppositely in pairs of rectangular outline, said impeller being of a length relatively greater than the diameter of said pair of vanes, and an inlet-way at each end of said pump-chamber, corresponding in diameter to the outer sweep of said radial vanes, substantially as shown and described.

2. In a centrifugal pump, a helical pump-chamber of rectangular longitudinal section, having an inlet-way at each end, in combination with a rotary impeller provided with radial vanes whose outer edges describe a cylinder of a length relatively greater than its diameter, said vanes being mounted on an axial spindle-formed core of double conoidal outline, tapering each way from the center at a point coincident with the outer margin of the vanes, on a curve, and borne on a central shaft, substantially as shown and described.

3. In a centrifugal pump, a helical pump-chamber of rectangular longitudinal section, having an inlet-way at each end, in combination with a rotary impeller provided with radial vanes whose outer edges describe a cylinder of a length relatively greater than its diameter, said vanes being mounted on an axial spindle-formed core of double conoidal outline, and a fixed partition 13 extending from the apex of the said double conoidal core to the outer wall of the said helical chamber, dividing it into two equal chambers, substantially as shown and described.

4. In a centrifugal pump, a helical pump-chamber of rectangular longitudinal section, having an inlet-way at each end, in combination with a rotary impeller provided with radial vanes whose outer edges describe a cylinder of a length relatively greater than its diameter, said vanes being mounted on an axial spindle formed core of double conoidal outline, and having their outer ends curved toward the direction of rotation, whereby the entrance of said vanes into the incoming stream with least disturbance is facilitated, substantially as shown and described.

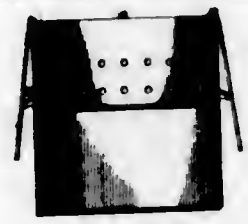
5. In a centrifugal pump, a helical pump-chamber of rectangular longitudinal section, having an inlet-way at each end, in combination with a rotary impeller provided with radial vanes whose outer edges describe a cylinder of a length relatively greater than its diameter, said vanes being mounted on an axial spindle-formed core of double conoidal outline, supported on a central shaft, the case of said helical chamber being divided into separable sections in a horizontal plane through the said impeller-shaft, and also in a vertical plane midway and at right angles to the said impeller-shaft, substantially as shown and described.

6. In a centrifugal pump, a helical pump-chamber of rectangular longitudinal section, having a circular inlet-way at each end, in combination with a rotary impeller mounted on a central shaft, having a double conoidal spindle or core borne on said shaft, tapering outward on curves each way from a central apex, carrying radial vanes whose outer edges describe a cylinder of a diameter equal to that of the said inlet-ways, and also equal to the diameter of the apex of the said conoidal spindle, the length of the said vanes being greater than the said diameter, the ends thereof having a forward curve to facilitate their entrance into the incoming stream, and a fixed partition midway of the said chamber, extending from the outer wall thereof to and inclosing the apex of the said conoidal spindle, all substantially as shown and described.

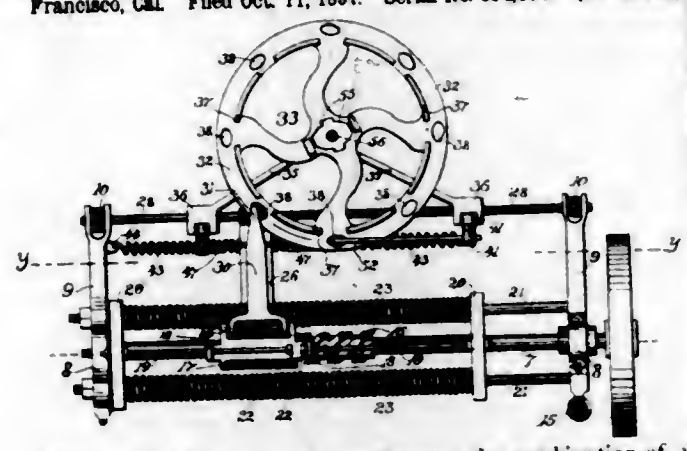
607,184. DISH-CLEANER. RAYMOND F. RIGHTMIRE, Parsons, W. Va. Filed Feb. 9, 1898. Serial No. 669,704. (No model.)

Claim.—A dish-washer, comprising an outer vessel or boiler, a tray or holder, arranged within the same, and the oppositely-disposed handles hinged to the tray or holder at the upper edges thereof and provided at their inner ends with bends forming angularly-disposed

arms adapted to engage the upper edge of the outer vessel when the handles are swung outward, whereby the tray or holder is supported in an elevated position, said arms being also adapted to engage the inner face of the tray or holder to support the handles in an elevated position within the outer vessel or boiler, substantially as described.



607,135. STATION-INDICATOR. GEORGE RISCHMULLER, San Francisco, Cal. Filed Oct. 11, 1897. Serial No. 654,884. (No model.)



Claim.—1. In a station-indicator for cars, the combination of a wheel arranged to be rotated by a rail on the car-track, a shaft for said wheel having a screw-threaded portion, a nut longitudinally moved by the rotation of said screw-threaded portion, a spring for retracting the nut, when no longer operated by the rotation of said wheel, a band-cylinder, and means, actuated by the return movement of the nut, when so retracted, for rotating said band-cylinder, substantially as described.

2. In a station-indicator for cars, the combination of a wheel arranged to be rotated by a rail on the car-track, a spring compressed by said wheel when so rotated, a band-carrier, and means for operating said band-carrier arranged to be set in motion by said compressed spring when released from the compressive force of said wheel, substantially as described.

3. In a station-indicator for cars, the combination of a wheel arranged to be rotated by a rail on the car-track, a band-carrier, a rotary shaft connected with said band-carrier, means for imparting rotation to said shaft, a spring for operating said means, said spring being energized by the rotation of the wheel, and an operative connection between said wheel and said means for carrying the same into position to be actuated by said spring, substantially as described.

4. In a station-indicator for cars, the combination of a wheel arranged to be rotated by a rail on the car-track, a band-carrier, a rotary shaft connected with said band-carrier, a wheel on said shaft, projections on said wheel, a reciprocating arm arranged to abut against the projections in succession, and partially rotate said wheel, a spring for so moving said arm, and an operative connection between the first-mentioned wheel and the arm, whereby said arm is, by the rotation of said first wheel, moved in a direction contrary to that rotating said secured wheel, said arm being connected with the spring to energize the same in the latter movement of the arm, substantially as described.

5. In a station-indicator for cars, the combination of a main wheel arranged to be rotated by a rail on the car-track, a band-carrier, a rotary shaft connected with said band-carrier, a wheel on said shaft, ribs on said wheel, a reciprocating arm moved in one direction by said main wheel, a spring energized by said wheel, a connection between said spring and the arm whereby the released force of the spring moves the arm in the other direction, and means whereby said arm engages one of said ribs when moving in the latter direction and is disengaged therefrom when moving in the former direction, substantially as described.

6. In a station-indicator for cars, the combination of a main wheel arranged to be rotated by a rail on the car-track, a band-carrier, a rotary shaft connected with said band-carrier, a wheel on said shaft, ribs on said wheel, a reciprocating arm moved in one direction by said main wheel, a spring resisting said movement, and retracting the arm when freed from the force so transmitted by said main wheel, a lever arranged to engage the wheel on the shaft at the end of the retractile movement, and means whereby the arm withdraws said lever and releases said wheel before commencing said movement, substantially as described.

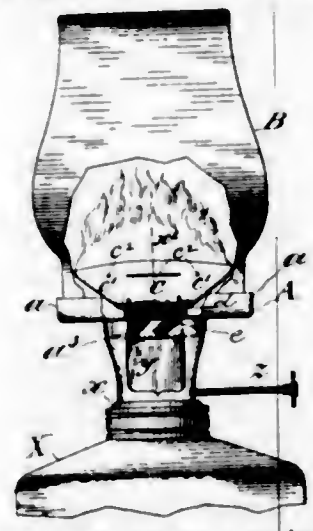
7. In a station-indicator for cars, the combination with the shaft and the wheel thereon provided with apertures, and means for rotating said wheel in either direction, of a pin for engaging one of said apertures to lock the wheel and connected levers actuating the pin, said levers being so arranged that one or the other will be actuated by said rotating means in whichever direction the wheel is rotated thereby, substantially as described.

8. In a station-indicator for cars, the combination with the shaft and the wheel thereon provided with apertures, of the lever having two arms, one vibrating above and one below the apertured circumference, each lever carrying a pin arranged to engage an aperture, whereby when one of said pins is withdrawn from an aperture the other will be moved in a direction to enter an aperture, a reciprocating arm arranged to be thrown out of operative engagement with said wheel when one of said pins enters the aperture, means for reciprocating the arm, and means whereby said arm withdraws the latter pin out of engagement with the aperture at the end of the reciprocatory movement, substantially as described.

9. In a station-indicator for cars, the combination with the car-body and car-axle, of hangers from the car-axle, a bar connecting the lower portions of the hangers, arms secured thereon, a bearing supported by said arms, a wheel pivoted in said bearing, a shaft rotated by said wheel, bars extending longitudinally of the car from said hangers and supported at their other ends from the car-body, a wheel supported by a longitudinal bar and adapted to be revolved by a rail on the car-track and mechanism carried by said longitudinal bars whereby the force imparted to said wheel by said rail is transmitted to the first-mentioned wheel and the shaft rotated thereby, substantially as described.

10. In a station-indicator for street-cars, the combination of a casing, cylinders revolubly mounted on the sides of the casing, a band wound from one cylinder to the other, and a glass front for said casing, pivotally mounted on a horizontal axis substantially midway in front of the cylinders, whereby said front can lie substantially parallel with the band, substantially as described.

607,136. HYDROCARBON-BURNER. ANDERS P. A. ROSENSTAR, Brooklyn, N. Y., assignor to George W. Dietz & Co., New York, N. Y. Filed Aug. 2, 1897. Serial No. 646,720. (No model.)



Claim.—1. A generator for a hydrocarbon-burner, consisting of a simple metal shell, laterally elongated in one direction and of a substantially oval or cordate transverse section in the opposite direction, as shown, said shell having a long and narrow slot along its top for the escape of the gases, a central slot in its broader bottom for the wick-tube, and contracted perforations in its sides to admit air, substantially as set forth.

2. A generator for a hydrocarbon-burner, consisting of a laterally-elongated, simple metal shell of substantially oval or cordate cross section, having a slot along its top for the escape of the gases, a central slot or aperture in its broader bottom to receive the wick, upwardly-sloping, flat ends c', and apertures c^2 in its sides to admit air, substantially as set forth.

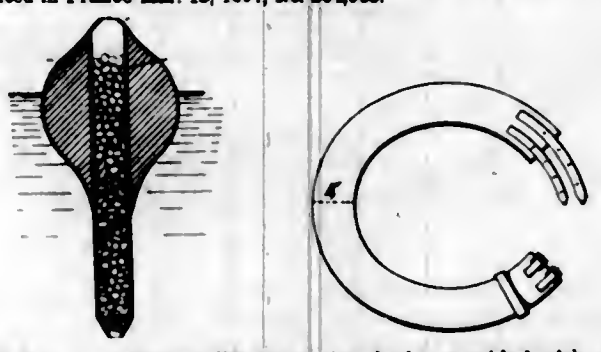
3. A generator C for a hydrocarbon-burner, consisting of a shell of metal of elongated form, and of substantially oval or cordate cross-section with its narrower edge uppermost, said shell having a long slot c in its top extending longitudinally, a shorter slot or aperture in its bottom, at the middle of its length, to receive the wick, apertures c^2 in its sides to admit air, and perforated sloping ends c', whereby the oil from the wick is converted into gas and a flame is produced which much exceeds the width of the wick, substantially as set forth.

4. The combination with an oil-holder having a wick-tube, and means for raising and lowering the wick therein, of a gas-generator on said wick-tube, said generator comprising a shell of metal, the lateral elongation of which greatly exceeds the width of the wick-

tube, said shell being substantially oval or cordate in cross-section, with an opening in its bottom to receive and fit about the wick-tube, a long slot c along its top for the escape of the gases, sloping ends c', and apertures c^2, in its sides and ends to admit air, substantially as set forth.

5. The combination with an oil-holder, having a wick-tube, means for raising and lowering a wick therein, and a support for the generator, of the said generator, consisting of an elongated shell of metal having a slot c, along its top, an aperture in its bottom to receive the wick-tube, and apertures in its sides to admit air, and the bails d, rigidly fixed to the generator at its respective sides, and one of said bails hinged to the generator-support, substantially as set forth.

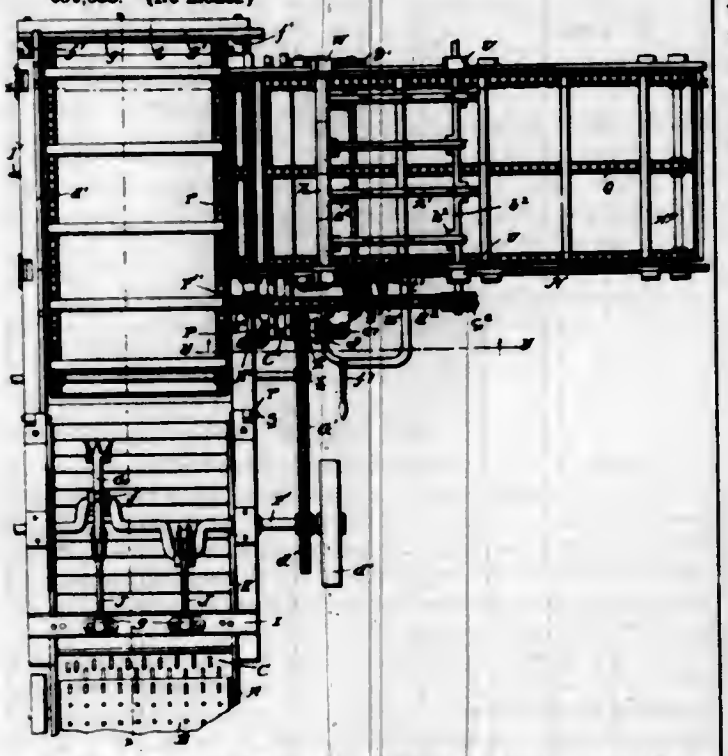
607,187. **LIFE-PRESERVER, &c.** EUGÈNE E. ROUSSEL, Lorient, France. Filed Sept. 8, 1897. Serial No. 651,000. (No model.) Patented in France Mar. 13, 1897, No. 264,905.



Claim.—1. A floating, life-preserving device provided with a filling of comminuted, torrefied cork in a loose, granular condition and of a high degree of buoyancy, substantially as set forth.

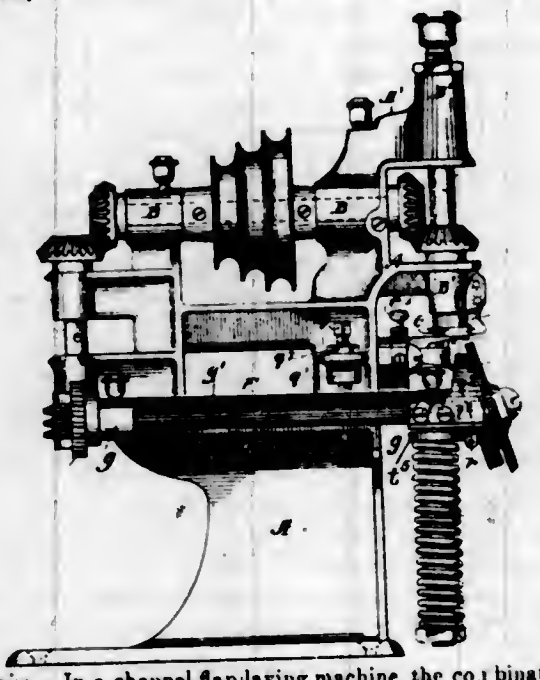
2. As a new material for filling buoyant articles and structures, comminuted, torrefied cork, in separate grains, substantially as set forth.

607,138. **SELF-FEEDER FOR THRESHING-MACHINES.** ADAM W. SEVERANCE, Walla Walla, Wash. Filed Nov. 26, 1897. Serial No. 659,856. (No model.)



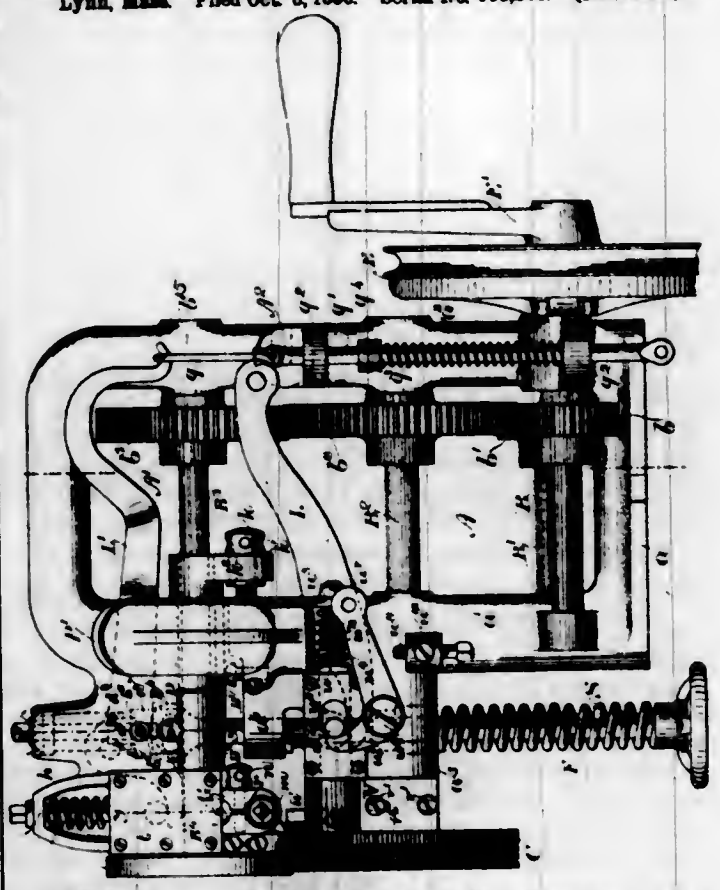
Claim.—A grain-feeder for threshing-machines, comprising a frame D, a crank-shaft journaled in said frame and adapted to operate grain-feeding forks, a sprocket-wheel d, fixed on said shaft, an apron-frame pivotally connected to and arranged in alinement with the frame D, and having a removable side guard and a removable end guard, shafts journaled in said frame, an endless apron taking around said shafts, a sprocket-wheel x, fixed on the forward shaft, a lateral feed-trough detachably connected to one side of the apron-frame, shafts journaled in said feed-trough, a feed-belt taking around said shafts, a band-wheel e^2, fixed on the forward shaft, a beveled gear-wheel H', also fixed on the forward shaft, a short shaft journaled in a bracket connected to the feed-trough and having a gear F', engaging the gear H', and also having a loose sprocket-wheel E', a friction-clutch for detachably fixing the wheel E', on the shaft, a sprocket-belt taking around the sprocket-wheels E', d, and passing over and engaging the sprocket-wheel x, a transverse shaft journaled on the feed-trough and having cranks at intervals in its length, bars connected with and adapted to be actuated by the said cranks and also adapted to carry knives or grain-spreading fingers, a band-wheel e^3, fixed on the crank-shaft, and a band taking around said wheel e^3, and the band-wheel e^2, all substantially as specified.

607,139. **CHANNEL-FLAP-TURNING MACHINE.** CHARLES P. STANDON, Lynn, Mass. Filed July 20, 1896. Serial No. 599,967. (No model.)



Claim.—In a channel-flap-laying machine, the combination with a rotating channel-flap-laying tool, of a rotating work-supporting feed-wheel, connected mechanism for actuating said tool and feed-wheel, a spring-sustained swinging frame upon which said work-support is carried, an adjustable stop limiting the upward movement of the swinging frame, a slotted head on said frame, a guide projection on the fixed frame of the machine, engaging the slotted head to guide the same, a table or guard carried by the swinging frame and curved upwardly and laterally along the feed-wheel and an adjustable gage, all arranged and operating, substantially as described.

607,140. **CHANNELING-MACHINE.** CHARLES P. STANDON, Lynn, Mass. Filed Oct. 8, 1896. Serial No. 608,270. (No model.)



Claim.—1. In a channeling-machine, the combination with a channeling-knife and a single grooving-knife arranged to cut a groove in the channel cut by the channeling-knife near the base of such channel, of independently vertically yielding carriers for such knives, means to impart a simultaneous vertical movement to said knives and carriers and means to impart an independent vertical movement to the grooving-knife, substantially as described.

2. In a channeling-machine, the combination with the independently-movable carriers, of the independently-adjustable blocks mounted in said carriers, a channeling-knife mounted in one block and a grooving-knife mounted in the other block, means for adjusting the blocks circularly and transversely in their carriers and means for adjusting the knives in the blocks, substantially as described.

3. In a channeling-machine, the combination with the independent carriers, of the independent blocks mounted in said carriers and arranged to be moved transversely of said carriers and to be turned therein, a channeling-knife mounted in one block and a grooving-knife mounted in the other block, and means to adjustably secure said blocks in the carriers, substantially as described.

4. In a channeling-machine the combination with a grooving-knife, of means to move it vertically and guide-stops to limit its vertical movement in both directions, substantially as described.

5. In a channeling-machine, the combination with a head or frame, and suitable guide-stops on said head or frame, of a knife-carrier movable in said head or frame, a guide rod on said carrier and a fixed collar on said guide-rod between said guide-stops, substantially as described.

6. In a channeling-machine, the combination with a movable block, a shaft having a bearing in said block, a feed-wheel on said shaft, and mechanism connected to the block to raise and lower the block of a swinging frame carrying a channeling-knife, and a yielding connection between said block and swinging frame, substantially as described.

7. In a channeling-machine, the combination with the swinging head, of a feed-wheel movable with and independently of said head, a spring-controlled connection between the feed-wheel and a fixed portion of the machine, and an independent spring connection between the feed-wheel and swinging head, substantially as described.

607,141. SELF-CLOSING UMBRELLA. WILLIAM N. STEVENSON, South Orange, N. J. Filed Dec. 31, 1897. Serial No. 665,141. (No model.)



Claim.—In a device of the character described, in combination, a channeled rib having lugs integral therewith, a stretcher pivoted between said lugs and having a short arm adapted to move within said channel, a spring also in part within said channel and attached at one end to said rib and directly at the other end to the end of said arm to automatically close said rib when released.

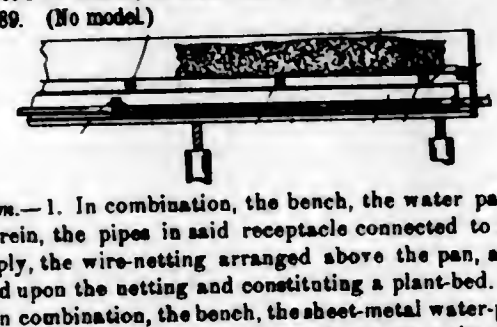
607,142. BICYCLE-LOCK. FERDINAND STIENER, Middletown, Conn. Filed Sept. 20, 1897. Serial No. 652,212. (No model.)



Claim.—1. A combination lock for velocipedes, said lock embodying a spring-released lock-bolt; a fixed member having an annular bearing-face; a pair of disks the inner one of which also has an annular bearing-face, and both of which have internal annular flanges and also notches for releasing-studs on the bolt, one of said disks having a plurality of said notches; a notched ring carried by said last-mentioned disk and settable to uncover any one of said notches of said disk; holding-screws carried by said fixed member and the inner one of the disks and having heads for engaging, respectively, the annular flange of each next succeeding disk and permitting the rotation of such disk; and a plurality of releasing and stopping studs on the lock-bolt.

2. A combination-lock for velocipedes, said lock embodying a spring-released lock-bolt; a fixed member having an annular bearing-face; a pair of disks the inner one of which also has an annular bearing-face and both of which have internal annular flanges and also notches for releasing-studs on the bolt; holding-screws carried by said fixed member and the inner disk and having heads for engaging, respectively, the annular flange of each next succeeding disk and permitting the rotation of said disk; and a plurality of releasing and stopping studs on the lock-bolt.

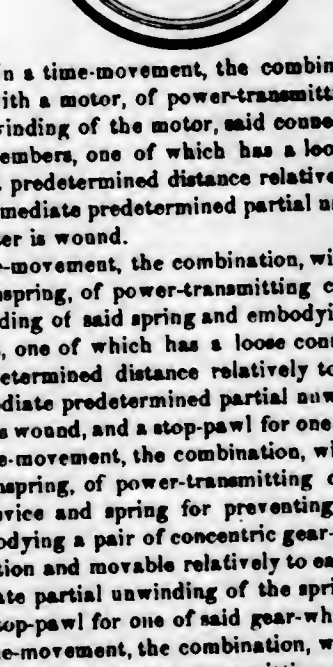
607,143. APPARATUS FOR HEATING AND MOISTENING SOIL. ANTHONY M. STOLTZ, St. Paul, Minn. Filed Apr. 19, 1897. Serial No. 632,789. (No model.)



Claim.—1. In combination, the bench, the water pan or receptacle therein, the pipes in said receptacle connected to a source of heat-supply, the wire-netting arranged above the pan, and the soil supported upon the netting and constituting a plant-bed.

2. In combination, the bench, the sheet-metal water-pan therein, having a series of transverse partitions, the heating-pipes in said pan extending through said partitions, the cross-bars above said pan, the wire-netting arranged thereon, and the soil supported upon said netting as and for the purposes set forth.

607,144. WINDING MECHANISM FOR TIMEPIECES. CHARLES L. TERRY, Hartford, Conn. Filed Mar. 8, 1898. Serial No. 673,111. (No model.)



Claim.—1. In a time-movement, the combination, with a winding device and with a motor, of power-transmitting connections for preventing overwinding of the motor, said connections embodying a pair of rotary members, one of which has a loose connection with, and is movable a predetermined distance relatively to, the other for permitting an immediate predetermined partial unwinding of the motor after the latter is wound.

2. In a time-movement, the combination, with a winding device and with a mainspring, of power-transmitting connections for preventing overwinding of said spring and embodying a pair of concentric gear-wheels, one of which has a loose connection with, and is movable a predetermined distance relatively to, the other for permitting an immediate predetermined partial unwinding of the spring after the latter is wound, and a stop-pawl for one of said gear-wheels.

3. In a time-movement, the combination, with a winding device and with a mainspring, of power-transmitting connections between said winding device and spring for preventing overwinding of the spring and embodying a pair of concentric gear-wheels having a pin-and-slot connection and movable relatively to each other for permitting an immediate partial unwinding of the spring after the latter is wound, and a stop-pawl for one of said gear-wheels.

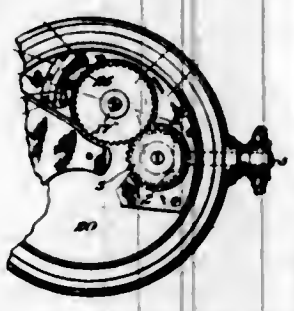
4. In a time-movement, the combination, with a winding device and with a mainspring, of power-transmitting connections between said winding device and spring for preventing overwinding of the spring and embodying a pair of concentric gear-wheels one supported on the other, said gear-wheels having a pin-and-slot connection for permitting an immediate partial unwinding of the spring after the latter is wound, and a stop-pawl for one of said gear-wheels.

5. In a watch-movement, the combination, with a winding-stem

and pinion, of a crown and intermediate wheel; a mainspring; a winding-wheel; a ratchet-wheel coacting with one of said first mentioned wheels and having a pin-and-slot connection therewith for permitting an immediate partial unwinding of the mainspring after the latter is wound; and a stop-pawl for said ratchet wheel, the construction being such that overwinding of the mainspring is prevented.

6. In a watch-movement, the combination, with a winding-stem and pinion, of a crown and intermediate wheel; a mainspring; a winding-wheel in mesh with said crown and intermediate wheel; a ratchet-wheel supported on the winding-wheel and movable relatively thereto and having a pin-and-slot connection therewith for permitting an immediate partial unwinding of the mainspring after the latter is wound; and a stop-pawl for said ratchet-wheel, the construction being such that overwinding of the mainspring is prevented.

607,145. WINDING MECHANISM FOR TIMEPIECES. CHARLES L. TERRY, Hartford, Conn. Filed Mar. 8, 1898. Serial No. 673,112. (No model.)



Claim.—1. In a driving mechanism, the combination, with a winding device and with a power-accumulating device to be wound, of connecting means between said devices and embodying a toothed wheel, and a holding device coacting with said wheel and embodying a carrier shiftable circumferentially thereof to permit partial unwinding of the power-accumulating device after the latter is wound.

2. In a time-movement, the combination, with a winding device and with a mainspring, of connecting means between the winding device and said spring and embodying a toothed wheel; a pawl-carrier shiftable circumferentially of said wheel; and a pawl coacting with said wheel and shiftable with said carrier to permit partial unwinding of the spring after it is wound.

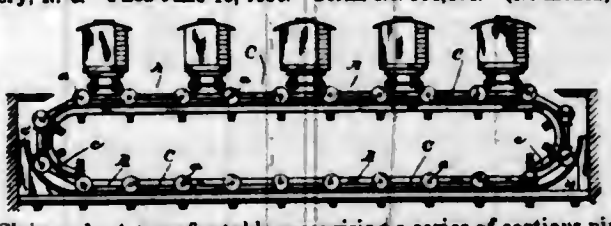
3. In a time-movement, the combination, with a winding device and with a mainspring, of connecting means between the winding device and said spring and embodying a toothed wheel; a pawl-carrier oscillatory about the axis of said wheel; and a pawl coacting with said wheel and shiftable with said carrier to permit partial unwinding of the spring after it is wound.

4. In a time-movement, the combination, with a winding device and with a mainspring, of connecting means between the winding device and said spring and embodying a toothed wheel; a pawl-carrier oscillatory about the axis of said wheel; and an oscillatory spring-pressed pawl coacting with said wheel and shiftable with said carrier to permit partial unwinding of the spring after it is wound.

5. In a time-movement, the combination, with a winding device and with a mainspring, of connecting means between the winding device and said spring and embodying a toothed wheel; a guide concentric with said wheel; an oscillatory pawl-carrier guided by said guide; and a pawl coacting with said wheel and shiftable with said carrier to permit partial unwinding of the spring after it is wound.

6. In a watch-movement, the combination, with a winding stem and pinion, of a crown and intermediate wheel; a mainspring, a winding-wheel; and a stop-pawl coacting with said winding wheel and having its pivot shiftable circumferentially of said winding-wheel to permit partial unwinding of the spring after it is wound.

607,146. RAILWAY TRANSFER-TABLE. JOSEPH TURNER, Tillery, N. C. Filed June 19, 1896. Serial No. 596,171. (No model.)



Claim.—1. A transfer-table comprising a series of sections pivotally connected and carrying tracks, supporting-wheels on the sections, and two sets of ways for the reception of the supporting-wheels, the members of the upper set being curved downward at their ends, and the members of the lower set being curved upward at their ends, the ends of the members of the respective sets being arranged to overlap, substantially as described.

2. A transfer-table comprising a series of sections pivotally connected and carrying tracks, supporting-wheels having V-shaped grooves in the treads and mounted on the sections, and two sets of ways having angular faces for the reception of the supporting-wheels, the members of the upper set being curved downward at ther ends, and the members of the lower set being curved upward at their ends, substantially as described.

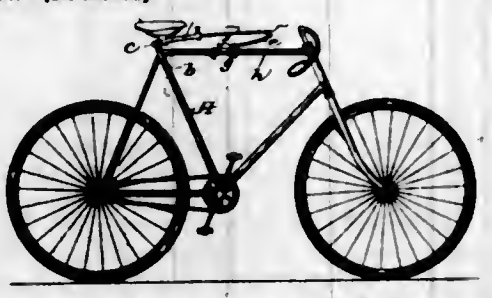
3 An endless transfer-table composed of sections, the sections being sustained on axles provided with supporting-wheels, and motors mounted on the axles and designed to give motion to the axles, substantially as described.

607,147. PRODUCING RELIEF-PHOTOGRAPHS. HORACE M. WAIDE, New York, N. Y. Filed Oct. 15, 1896. Renewed Dec. 18, 1897. Serial No. 662,481. (Specimens.)



Claim.—The method of producing relief or embossed photographs, which consists in cutting entirely out from the mount the portion thereof corresponding with the outline of the portion of the print to be embossed, mounting the print upon the face of the mount with the outline of the portion of the print to be embossed in register with the cut-out portion of the mount, moistening the portion of the print to be embossed, forcing said portion forward from the back with suitable tools, until the desired relief is obtained, and applying a hardening material to the back of the thus embossed print, through the opening in the mount, substantially as described.

607,148. BICYCLE-SADDLE ADJUSTING DEVICE AND SPRING. CHARLES F. WEBBER, Boston, Mass. Filed July 24, 1897. Serial No. 645,836. (No model.)



Claim.—1. A saddle-supporting spring for bicycles, provided at its rear with a post to enter the rear or seat-post tube and having pivoted to its forward end a lower rearwardly-extending member, and a clamp on the rear end of said member to engage the top frame bar or tube, substantially as described.

2. A saddle-supporting spring for bicycles, provided at its rear end with a pivotally-connected seat-post to enter the rear or seat-post tube, and having pivoted to its forward end a lower rearwardly-extended member, and a clamp pivotally connected to the rear end of said member and adapted to engage the top frame bar or tube, substantially as described.

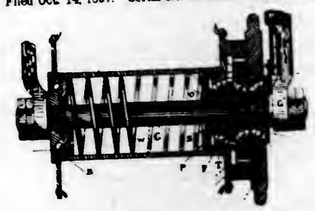
3. The combination with a longitudinally-extending seat-supporting spring, of an elongated slide adjustable along the spring and open between its ends to permit the spring to bow or curve under the weight of the rider, a saddle-clamp on the rear end of the slide and an adjusting device at its forward end substantially as described.

4. A saddle-supporting slide comprising a box-like front and rear members open at their ends for the passage of a spring therethrough and having parallel elongated side connecting-bars, a seat-clamp on the rear box-like member and a set-screw extending through the front box-like member; the front box-like member being far enough in advance of the corresponding rear member to expose the set-screw beyond the pommel of the saddle and within the reach of the rider, substantially as described.

5. The combination with the longitudinal spring having means for connecting its ends to a bicycle-frame, of a slide having parallel side bars at opposite edges of the spring, front and rear cross-pieces connecting the side bars above the spring, a saddle-clamping plate under the rear cross-bar, a bolt connecting the plate and cross-bar; upper and lower cross-pieces or bolts below the clamping-plate and between which the spring extends, a cross-piece or bolt under the spring at the front end of the slide and a set-screw extending down through the forward upper cross-piece into engagement with the spring, substantially as described.

6. The combination with a bicycle, of a spring hinged at its rear end to the upper end of the seat-post, and extending longitudinally above the top bar toward the head and provided with a hinged, lower extension having a clamp adjustable along the top bar, and a saddle-supporting slide mounted on the spring, provided at its rear end with a saddle-clamp and at its front end with means for clamping it to the spring, substantially as described.

607,149. BICYCLE-GEARING. VALENTIN WEBER, Princeville, Ill. Filed Oct. 14, 1897. Serial No. 655,148. (No model.)



Claim.—1. A gear-changing device for bicycles, consisting of a hollow hub, a shaft within the hub, a suitable ball-bearing at one end for the hub and shaft, an enlarged portion on the opposite end of the shaft to form an eccentric with the straight portion thereof, a ring secured to the straight portion of the shaft, adjacent to the said enlarged portion, a wall F in the hub in the same plane as the said ring, a series of balls between the wall and the ring to form a bearing, to correspond with the bearing at the opposite end of the hub, a cam-sleeve H upon the eccentric portion of the shaft, a gear-wheel surrounding the said cam-sleeve, a series of balls between the said gear-wheel and cam-sleeve to form a bearing, a series of teeth on the side of the gear-wheel, a series of teeth on the inside of the hub, a sprocket-wheel rigidly mounted on said gear-wheel, a shifting ring upon the shaft, lugs on diametrically opposite sides thereof, openings in the wall F for the entrance of said lugs for engagement with the teeth on the side of the gear-wheel, suitable means for giving the said ring longitudinal movement, a spring within the hub in contact with the ring and an operating mechanism for turning the cam-sleeve upon the shaft, all for the purposes set forth and described.

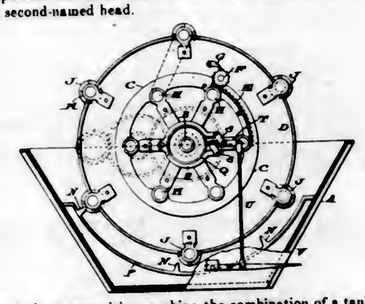
2. A gear-changing device for bicycles consisting of a hollow hub, a shaft within the hub, an enlarged portion at one end of the shaft to form an eccentric with the straight portion thereof, a cam-sleeve upon the said eccentric portion of the shaft, depressions in the end of the said sleeve, a gear-wheel upon the cam-sleeve, a series of teeth on the inside of the hub to engage with the teeth of the gear-wheel, means for shifting the gear-wheel eccentrically upon the shaft to bring the two series of teeth into engagement, teeth U on the side of the gear-wheel, a sprocket-wheel rigidly secured to the gear wheel, in combination with means for rigidly securing the said gear-wheel to the hub and for its disengagement therefrom, which consists of a shifting ring on the shaft, lugs on the ring for engaging the teeth U of the gear-wheel, a second ring upon the shaft having lugs to engage the depressions in the cam-sleeve, for the purpose herein set forth and described.

3. A gear-changing device for bicycles consisting of a hollow hub, a series of gear-teeth within the same, a shaft within the hub, suitable bearings between the hub and shaft, an enlarged portion on the shaft eccentric to the straight portion thereof, a cam-sleeve eccentrically mounted on the enlarged portion of shaft, a gear-wheel surrounding the cam-sleeve, a sprocket-wheel mounted on the said gear-wheel, suitable means between the gear-wheel and the wheel-hub for locking these portions together when desired, which consists of a shifting ring upon the shaft, lugs thereon for engaging the gear-wheel, suitable means for shifting the ring upon the shaft for the purposes set forth, in combination with the frame portions supporting the shaft, a series of lugs or teeth on the outer surface of the cam-sleeve, a pawl pivotally secured on one of the frame portions for engagement with the said lugs or teeth, a lever rigidly secured at one end to the cam-sleeve, both pawl and lever adapted to be operated by the foot of the rider, and an operating-spring suitably connected to the shaft and cam-sleeve, all working together substantially in the manner and for the purposes herein set forth and described.

4. A gear-changing device for bicycles consisting of a hollow hub, a shaft therein, suitable bearings between them, an enlarged eccentric portion on the shaft, a cam-sleeve on said eccentric portion, indentations in the cam-sleeve, teeth on the periphery and on the side of the gear-wheel, teeth in the hollow hub to correspond with those on the periphery of said gear-wheel, a sprocket wheel on the gear-wheel, a foot-lever for moving the cam-sleeve about the shaft, and a clutch for securing same, in combination with the wall F of the hub, a shifting ring on the shaft behind said wall, lugs on the ring for engaging the teeth on the side of the gear-wheel, a second ring bearing against the first, lugs thereon for engaging the indentations in the cam-sleeve all for the purposes set forth.

607,150. MACHINE FOR MERCERIZING YARN. CHARLES L. WEICHELT, WILLIAM S. GRADY, and ARTHUR JONES, Philadelphia, Pa. Filed Feb. 21, 1898. Serial No. 671,007. (No model.)

Claim.—1. In a mercerizing-machine, the combination of a tank adapted to contain mercerizing liquid, a shaft carrying a head, one or more rollers mounted on said head a second head mounted directly upon said first head and in the same plane and capable of independent movement thereon, and one or more rollers mounted on said second-named head.



2. In a mercerizing-machine, the combination of a tank, a shaft carrying a head, one or more rollers mounted on said head, a second head mounted directly upon said first head and in the same plane and capable of independent rotation thereon, one or more rollers mounted on said second-named head, and means for controlling said independent rotation of the heads, the contacting faces of the two heads being adapted to be controlled against lateral displacement.

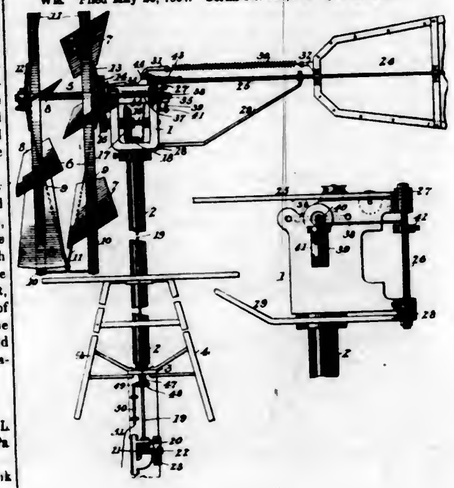
3. In a mercerizing machine, the combination of a tank, a shaft, a circular head mounted thereon, a circular head mounted directly on said first head and in the same plane and capable of independent movement thereon, a rack and a pinion carried by the respective heads, and a pawl therefor, and one or more rollers or sticks mounted on each head.

4. In a mercerizing-machine, the combination of a tank, a shaft carrying one or more revolving heads in the same plane, rollers or sticks mounted on said heads upon which the material to be mercerized is adapted to be placed, bosses on the heads of one side and sockets mounted in the heads of the opposite side and having squared openings, the ends of the sticks entering said openings being squared.

5. In a mercerizing-machine, the combination of a tank, a head mounted thereon, one or more rollers carried by said head, a second head mounted upon the first-named head and in the same plane and capable of independent movement thereon, a roller carried by the second-named head, means for controlling said independent movement, sockets carrying the ends of said rollers, lugs on said sockets, and a segmental base-plate in the tank having fingers adapted to be engaged by said lugs.

6. In a mercerizing-machine, a shaft with heads thereon, and rollers or sticks carried by said heads, a pulley on said shaft, a friction-strap around said pulley, toggles connected with said strap and means connected with one member of said toggles for operating the same.

607,151. WINDMILL. HENRY WICHMANN, New Holstein, Wis. Filed May 29, 1897. Serial No. 638,776. (No model.)



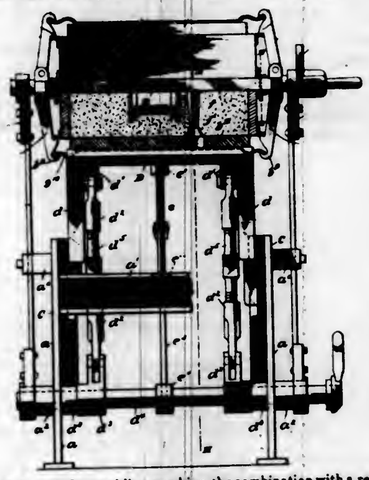
Claim.—I. In a windmill, the combination of a bearing-bracket, a wind-wheel shaft journaled thereon, a wind-wheel, a brake-shoe arranged to engage the hub of the wind-wheel, a vertical crank journaled on the bearing-bracket and located centrally of the wind-wheel, a rod connecting the brake-shoe and the crank, a vane hinged to the bearing-bracket at one side of the center of the wind-wheel, and a link connected with the crank and with the vane, whereby the crank will be partially rotated when the vane swings to and from the bearing-bracket, substantially as described.

2. In a windmill, the combination of a bearing-bracket, a wind-wheel shaft, a wind-wheel, a vane hinged to the bearing-bracket at one side of the center of the wind-wheel, a brake-shoe arranged to engage the hub of the wind-wheel, the horizontal U-shaped connecting-rod slidingly mounted on the bearing-bracket, extending along both sides of the wind-wheel shaft and connected to the brake-shoe, springs disposed on the sides of the connecting-rod, a centrally-arranged crank mounted on the bearing-bracket and engaging the bend of the U-shaped connecting-rod, and a link connecting the vane and the crank, substantially as and for the purpose described

3. In a windmill, the combination of a bearing-bracket, a wind-wheel, a vane hinged to the bearing-bracket at one side of the center of the wind-wheel, a brake-shoe arranged to engage the wind-wheel, the centrally-arranged crank 35 consisting of a plate or disk, a depending pivot 39 journaled in suitable bearings and the eccentrically-arranged pin 40 connected with the brake-shoe, a collar adjustably secured to the pintle of the vane, and a link eccentrically connected to the collar and to the plate or disk of the crank, substantially as and for the purpose described.

4. A wind-wheel comprising a double set of blades arranged in two annular series, the blades of one set being disposed opposite the intervals of the blades of the other set, the outer circular braces 10 arranged parallel with each other and passing through openings of the blades near the outer ends thereof, the inner parallel circular braces 9 supporting the inner ends of the blades and having the same secured to them, hub portions designed to be mounted on the wind-wheel shaft, and the radial spokes secured to the hub portions, converging toward the periphery of the wind-wheel and connected in pairs at that point, the outer terminals of the spokes being bent laterally and secured to the outer braces 10, substantially as described.

607,152. MOLDING-MACHINE. WILLIAM D. WIMAN, Moline, Ill. Filed Mar. 27, 1897. Serial No. 629,529. (No model.)



Claim.—1. In a molding-machine, the combination with a reversible pattern-plate and a ram, one bodily movable toward and from the other, of a flask adapted to bear against the pattern-plate, a ram-plate, laterally-movable devices for holding the flask and ram-plate to the pattern-plate, and means for automatically effecting disengagement of such devices from the flask and ram-plate by the relative movement between the ram and pattern-plate, and thereby disconnecting the flask and ram-plate from the pattern-plate and causing them to lodge on the ram, substantially as described.

2. In a molding-machine, the combination with a revoluble pattern-plate, the flask, devices for holding the flask on the pattern-plate, and a ram-plate, of a ram adapted to bear against the plate to compress the sand in the flask, and means for releasing the devices for holding the flask when depending from the pattern-plate, said means being operated by the ram-operating means whereby the flask is released from the pattern-plate and lowered with the ram, substantially as described.

3. In a molding-machine, the combination with a revoluble pattern-plate, the flask, means for retaining the flask on the pattern-plate, the ram-plate held on said flask, the ram engaging said plate to compress the sand in the flask, means for operating the ram, and means operated at the end of the stroke of the ram to disengage the retaining means from the flask and ram-plate, whereby the flask is removed from the pattern-plate when the ram is lowered, substantially as described.

4. In a molding-machine, the combination with a pattern-plate, the flask and ram-plate, the ram bearing against said plate to compress the sand in the flask, and means for operating the ram; of pivotal catches for suspending the flask from the pattern-plate in position for ramming and means for releasing the catches from the flask while in said position, said means being operated by the ram-operating means, substantially as described.

5. In a molding-machine, the combination of a pattern-plate, a flask-section, a ram-plate, catches attached to the pattern-plate, and a ram-plate-retaining device engaging said catches and adapted to suspend the flask from the pattern-plate when in position for ramming, with a ram, mechanism for operating the same to cause it to engage the ram-plate and compress the sand in the flask-section; and mechanism for disengaging said retaining device from said catches after the ram-plate has been engaged by the ram so as to free the flask from the pattern-plate, substantially as described.

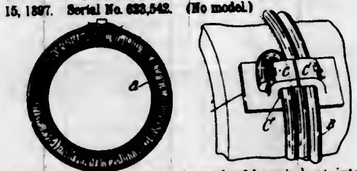
6. In a molding-machine, the combination of the revoluble pattern-plate, and pivotal catches carried thereby, the flask adapted to be removably held on said plate by the catches, the ram-plate, the ram for engaging the said plate, and means for operating the ram; with a plunger operated by the ram-operating means whereby the catches may be automatically released from the flask at the end of the stroke of the ram, substantially as described.

7. In a molding-machine, the combination with a pattern-plate, of a ram adapted to compress the sand in the flasks, means for operating the ram, pivotal catches or dogs for retaining the flasks in position upon the pattern-plate, a ram-plate, and a strip having its ends engaging the catches, and its body portion adapted to retain the ram-plate against the surface of the sand in the flask, substantially as described.

8. In a molding-machine, the combination of a revoluble pattern-plate, pivotal catches for retaining flasks in position upon the pattern-plate, a ram-plate and the spring engaging with the pivotal catches and ram plate to secure the latter in place upon the surface of the sand in the flask, a ram adapted to compress the ram-plate against the sand, a rock-shaft journaled in the frame of the machine, and pivotal connections between the ram and rock-shaft, substantially as described.

9. In a molding-machine, the combination of a revoluble pattern-plate, the flasks, pivotal catches for retaining the flasks in position upon the pattern plate, a ram-plate and a spring-strip carried by the ram-plate with which the pivotal catches engage to secure the ram-plate in place upon the surface of the sand in the flask, a ram adapted to compress the ram-plate against the sand, mechanism for operating the ram, a plunger adapted to engage the spring-strip, and means for operating said plunger to engage the strip so as to release the pivotal catches from the strip and flask, whereby the flask may be lowered by the ram, substantially as described.

607,153. WOODEN PIPE. WALTER J. WOODWARD, National City, Cal., assignor to Hattie I. Woodward, same place, and D. P. H. Little, C. W. Sanders, and Emma A. Harrington, Los Angeles, Cal. Filed Feb. 15, 1897. Serial No. 623,542. (No model.)



Claim.—1. A wooden pipe formed of boards bent into trough shape, the outside of the pipe being of the normal density of the wood used, and the inside being compressed upon itself to form a practically non-pervious lining for the pipe.

2. A pipe formed of wooden boards having alternate layers of hard and soft grain, the grain extending through the thickness of the boards and each board being bent into curved shape while subjected to pressure upon the edges, whereby the soft grain upon the interior of the pipe is compressed between the alternate layers of hard grain, thus rendering the inner surface of the pipe of practically uniform density throughout.

3. A pipe formed of sections, each section bent into trough shape and having the inner surface compressed upon itself and its outer surface of the normal density of the wood used, the sections being arranged together with their edges abutting, and a wrapping of wire or other bands wound around the pipe.

4. In a wooden pipe, the clip set forth comprising the body or base adapted to seat upon the body of the pipe and provided on its under side with corrugations or edges to take into the wood and provided on the other side with upwardly-projecting malleable lugs arranged to receive the wrapping-wire therebetween, and adapted to be bent down upon the wire and to clamp it firmly upon the base.

5. The fastening for wooden pipes comprising a clip having a base adapted to seat upon the body of the pipe and provided with outwardly-projecting malleable lugs adapted to seat the wires therebetween; the wire wrapped around the pipe and arranged between the lugs, the lugs being bent down upon the wire and the free end of the wire being bent back around one of the lugs, substantially as set forth.

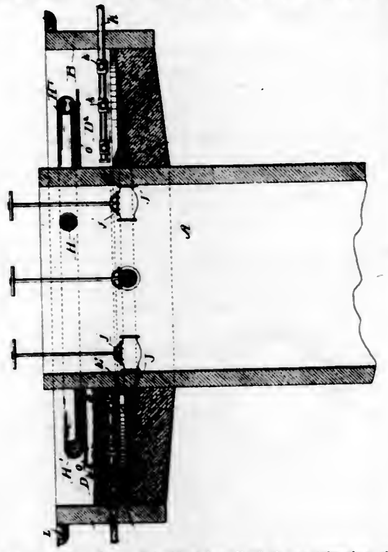
6. The clip for wooden pipes, comprising a base provided with outwardly-projecting malleable lugs adapted to have the wrapping-wires seated therebetween, and provided with sharp ridges to take into the wire, substantially as set forth.

607,154. SCOOP-HANDLE ATTACHMENT. GEORGE BERGE, Boelus, Nebr. Filed Apr. 24, 1897. Serial No. 633,654. (No model.)



Claim.—A handle attachment for scoops and like devices consisting of a saddle or U-shaped part in which the forearm rests; a standard depending therefrom and provided at its lower end with a curved extension, a piece pivoted to said extension and a bolt passing through the free end of the pivoted link and standard whereby the device may be secured to the handle.

607,155. FILTER. HUGH BLEAKLY and FRANK L. VENNERIAT, Alliance, Ohio. Filed Dec. 18, 1897. Serial No. 662,440. (No model.)



Claim.—1. In a filter of the kind described, the combination with a well, of a series of separated filter-bed compartments surrounding the upper portion thereof, valved discharges from the compartments into the well, a perforated supply-pipe extending through the compartments, valves for controlling the same, cleansing-pipes in the compartments the cleansing-water escaping from the compartments at points below the well-curb, substantially as described.

2. In a filter, the combination with a central well, of a series of independent filling-compartments at its upper end each having inclined bottoms, and valved discharge-pipes leading into the well, perforated partitions between the pipes and filtering material, a supply-pipe leading to the compartments, and water-pressure pipes located near the bottoms of the compartments and having jet perforations therein; substantially as described.

3. The combination with a well, of filter-compartments at the upper end thereof having inclined bottoms, horizontal plates spanning the compartments and supporting the filter-beds, a supply-pipe entering the well having a valve at its end, branch supply-pipes entering the compartments, valves in the branch and cleansing pipes in the compartments for introducing water into the filter-beds under pressure, substantially as described.

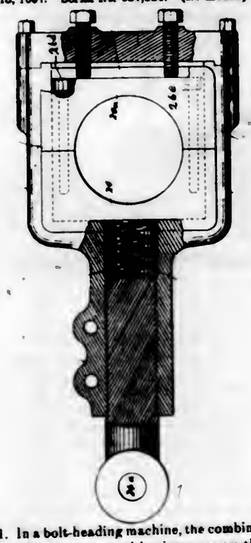
607,156. DETACHABLE HINGE. EVERT J. BLEKKINK, Amsterdam, N. Y. Filed Aug. 17, 1897. Serial No. 648,567. (No model.)



Claim.—1. A hinge having a stationary leaf, in combination with a socket adapted to be mortised in a jamb or frame, and provided at its front end with a face-plate having a guide-slot, and a locking-bolt fitted to slide in a guideway on the face-plate and having a terminally-exposed guide-pin extending into said slot, the hinge-leaf being fitted in said socket and having a notch for engagement by the locking-bolt, substantially as specified.

2. A hinge having a stationary leaf, in combination with a socket adapted to be mortised in a jamb or frame, and provided at its front end with a face-place having a guide-slot laterally offset at an intermediate point, and a locking bolt fitted to slide in a guideway on the face-plate and having a guide-pin mounted in said slot, and terminally exposed, the hinge-leaf being fitted in said socket and provided with a notch for engagement by said bolt, substantially as specified.

607,157. BOLT-HEADING MACHINE. FREDERICK W. BRUCH, Cleveland, Ohio, assignor to the Acme Machinery Company, same place. Filed Mar. 15, 1897. Serial No. 627,526. (No model.)

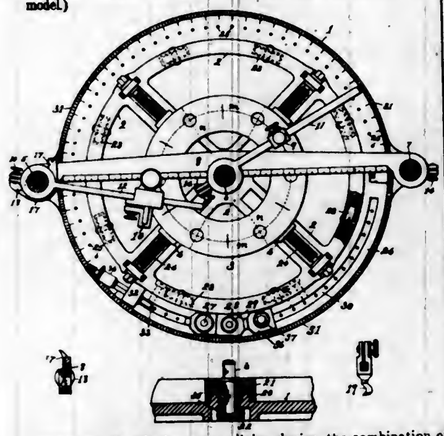


Claim.—1. In a bolt-heading machine, the combination of a shaft, a pitman provided with straps and having a recess therein, a spring within said recess, brasses connected together between the straps, a plate connecting the straps at their outer ends, and adjusting-screws passing through the plate to adjust the movement of the brasses between the straps, substantially as described.

2. In a bolt-heading machine, a shaft, a pitman adapted to carry a spring and having straps, brasses connected together between the straps, and an adjustment for the brasses adapted to close the brasses down tightly upon the spring to permit no movement of the brasses between the straps, and to be adjusted to allow a limited movement to the brasses, substantially as described.

3. In combination, in a bolt-heading machine, a shaft provided with a crank or a cam from which one of the dies of the machine is operated, a pitman connected with said crank or cam, brasses connected together and fitted upon the crank or cam and having adjustment longitudinally of the pitman, and a spring against which one of the connected brasses rests to allow a yielding of the pitman, substantially as described.

607,158. LAYING-OUT OR LINING DEVICE. HENRY M. BURNETT, San Francisco, Cal. Filed Jan. 4, 1898. Serial No. 665,537. (No model.)



Claim.—1. In a laying-out or lining device, the combination of a base-plate, having a circular spaced scale on its outer margin, a revoluble holding-chuck mounted on said base-plate concentrically with said circular scale, radially-moving jaws for holding the work to be lined, and means for adjusting the chuck to accurate divisions of arc, substantially as specified.

2. In a laying-out or lining device, the combination of a base-plate having a circular spaced scale on its outer margin, a revoluble holding-chuck mounted on said base-plate concentrically with said circular scale, means for adjusting said chuck to accurate divisions of arc, a centrally-rising standard 6 secured in said base-plate, and a radial swinging graduated arm 11, borne on said central standard, bearing a movable and adjustable trammel-block 9, substantially as specified.

3. In a laying-out or lining device, the combination of a base-plate having a circular spaced scale on its outer margin, a revoluble holding-chuck mounted on said base-plate concentrically with said circular scale, means for adjusting said chuck to accurate divisions of arc, upright standards 5, 6, 7, secured in said base-plate, a graduated straight-edge supported on standards 5, 7, capable of swinging on one of said standards, and a graduated radius-arm 11, swinging on central standard 6, said radius-arm bearing a movable trammel 9, substantially as specified.

4. In a laying-out or lining device, the combination of a base-plate having a circular spaced scale on its outer margin, a revoluble holding-chuck mounted on said base plate concentrically with said circular scale, means for adjusting said chuck to accurate divisions of arc, upright standards 5, 6, 7, secured in said base-plate, a graduated straight-edge supported on standards 5, 7, capable of swinging on one of said standards, a graduated radius-arm 11 swinging on central standard 6, said radius-arm bearing a movable trammel-block 9, and a graduated radius-arm 12, swinging on standard 5, said arm bearing a vertically-adjustable scaled bar 10, substantially as specified.

5. In a laying-out and lining device, the combination of the base-plate 1, centrally-mounted revoluble chuck 2, supported on bearing-rollers 23, radially-moving holding-jaws 4, means for setting the chuck to accurate divisions of arc, and radial swinging arm 11, bearing adjustable trammel 12, substantially as specified.

6. In a laying-out or lining device, the base-plate 1, revoluble holding chuck 2 set and moving concentrically thereon, the movable shell or sleeve 21 forming an axis for the chuck and a bearing for the removable standard 6 with nuts 35 and 22 to fasten the shell and standard respectively, substantially as described.

7. In a laying-out and lining device, the main base-plate 1, revoluble holding-chuck 2, means to adjust and hold the work thereon, vertical standards 5 6 and 7 and the adjustable shell-supports 13 adapted to sustain the straight-edge 8 swinging bars 11 and 12 and the marking tools thereon, substantially as specified.

8. In a laying-out or lining device, a revoluble chuck to hold and present the work, implements to mark parallel, radial and circular lines, standards on which these implements are mounted and the movable shells 13 provided with clamping-screws and interchangeable between the standards and for the marking implements, substantially as specified.

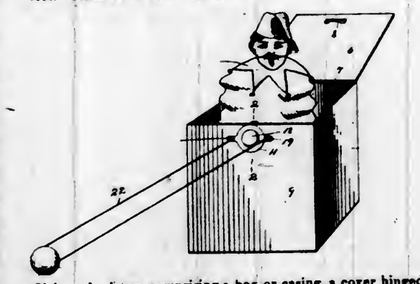
9. In a laying-out or lining device, a main base-plate 1 having a scale or division of arc around its periphery and a circle of spaced holes 25, a revoluble holding-chuck 2 mounted thereon and attached to the latter a spacing-sector 30 provided with a stop-pin 27 engaging the spaced holes 25 in the base-plate, substantially as specified.

10. In a laying-out or lining device, the base-plate 1 provided with the circular scale 31 and spacing-holes 25, a revoluble chuck 2 mounted thereon, provided with a sector 30, stop-pin 27 to fit in the holes 25, the clamping-screws 28 to attach the stop-pin 27, to the sector and the movable stop 36, all combined and operating in the manner, substantially as specified.

11. In a laying-out or lining device, the fixed base-plate 1 revoluble chuck 2 and spacing-holes 25 in the base-plate, a sector 30 attached to the chuck, the movable stop-pin 27, stop 36 and the micrometer-screws 34 for subdivisions of arc, combined and operating, substantially as described.

12. In a laying-out and lining device, the combination of base-plate 1, centrally-mounted revoluble chuck 2, having radially-moving holding-jaws 4, means for setting the chuck to accurate divisions of arc, standards 5, 7, supporting diametral scaled bar 8, and central standard 6, supporting radial swinging graduated arm 11, said arm carrying movable and adjustable trammel-block 9, substantially as specified.

607,159. TOY. ANNIE BUSH, San Antonio, Tex. Filed Nov. 4, 1897. Serial No. 657,403. (No model.)



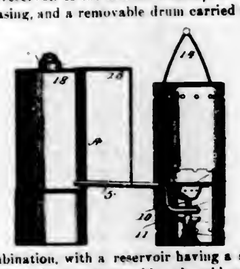
Claim.—1. A toy, comprising a box or casing, a cover hinged to one side of the top thereof, a spring-supported figure mounted in said box or casing, a slot or opening formed in one side of said box or casing, an angular catch mounted in said slot or opening, one arm of which projects inwardly and upwardly, and the other outwardly, the inner inwardly-projecting arm being adapted to operate in connection with a catch secured to the under side of the hinged cover, and the outwardly directed arm thereof being provided with a disk or head, and an elastic cord secured to the front of the box or casing adjacent to said opening, and a ball through which said cord is passed, substantially as described.

2. A toy consisting of a box or casing provided with a hinged cover, a spring-supported figure mounted in said box or casing, a spring-catch connected with the front of the box or casing and adapted to operate in connection with a catch secured to the cover for holding the latter in a closed position, and a ball provided with an elastic cord which is passed loosely therethrough, the ends of the cord being connected with the box or casing adjacent to said spring-catch, substantially as shown and described.

607,160. FOOT-WARMER. CHARLES S. CLARK and HENRY H. BALTELEY, Assumption, Ill.; said Balteley assignor to said Clark. Filed Aug. 9, 1897. Serial No. 647,557. (No model.)

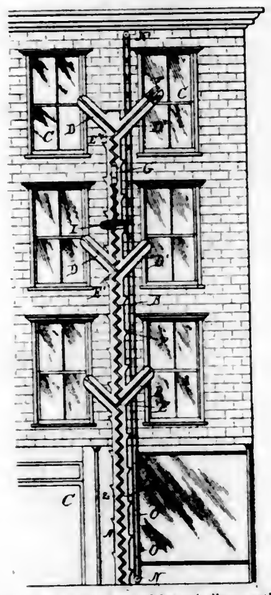
Claim.—1. In a foot-warmer, the combination, with a reservoir, of a heater-casing formed with a slot leading from its upper edge, a

heater within said casing and secured to the bottom thereof, said heater comprising a burner, a vaporizer, and an ignition-cup, a pipe leading from the reservoir to the heater and adapted to pass through the slot of the casing, and a removable drum carried by said casing.



2. The combination, with a reservoir having a screw-threaded neck, of a cap adapted to screw on said neck, said cap having a perforation in its top, a radially-perforated dome secured to the top of the cap, and a centrally-perforated dome-cover overlying the dome and secured to the top of the cap.

607,161. FIRE-ESCAPE. ALBINUS CONAWAY, Laurel, Md. Filed Aug. 9, 1897. Serial No. 647,558. (No model.)

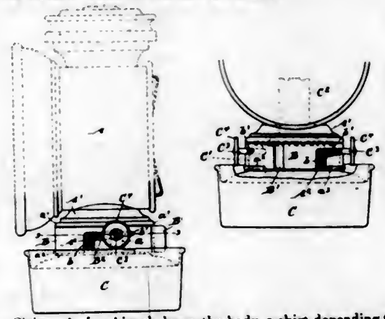


Claim.—1. A fire-escape comprising a hollow vertical column or casing secured to the building alongside of a row of windows or openings and provided with hollow arms extending laterally and upwardly therefrom to each of said openings or windows, a zigzag groove being formed in the front face of the column and consisting of a series of short grooves at opposite upward inclinations and joining each other at substantially right angles, one of such short sections of grooves being extended into and through each of the laterally-projecting arms on a straight line, substantially as described.

2. A fire-escape comprising a hollow vertical column or casing secured to the building and having in its face a zigzag groove consisting of a number of short grooves at opposite upward inclinations joined to form a continuous groove, in combination with a traveler consisting of a plate provided with means for attaching a belt or other support for a person and means adapted to occupy corresponding positions in alternate sections of the zigzag groove when placed therein, whereby as said means traverse the zigzag groove the plate will remain always in a vertical position, substantially as described.

3. The herein-described traveler for a fire-escape consisting of two plates arranged parallel to each other and provided with pins connecting the plates, a spring secured between the plates, and a set-screw passing through one plate and bearing against the spring, for the purpose set forth.

607,162. LAMP. WILLIAM P. CRARY, Brooklyn, N. Y. Filed Oct. 14, 1897. Serial No. 655,102. (No model.)



Claim.—1. In a bicycle-lamp, the body, a skirt depending therefrom receiving the upper portion of the fount and having oppositely-arranged notches, a ring carried by the skirt with liberty to turn thereon and having oppositely-arranged angular notches the vertical portions of which are adapted to register with the notches in said skirt, in combination with said fount and the burner and wick-raiser shaft thereof, the overhung ends of the latter adapted to be received in said notches and hold said fount to said body by the engagement of said ends in the horizontal portions of said angular notches when the ring is turned, all substantially as and for the purposes herein specified.

2. In a bicycle-lamp, the body, the skirt depending therefrom receiving the upper portion of the fount and having oppositely-arranged notches extending upward from the lower edge, and a ring carried by the skirt with liberty to turn thereon and having oppositely-arranged angular notches the vertical portions of which are adapted to register with the notches in said skirt, and the longitudinal portions having upwardly-inclined lower boundaries, in combination with said fount and the burner and wick-raiser shaft thereof, the overhung ends of the latter adapted to be received in said notches and to draw the fount into close relation with the body by the engagement of said ends by the said inclined boundaries, performing the double function of holding the parts together and preventing accidental turning of said shaft, all substantially as herein specified.

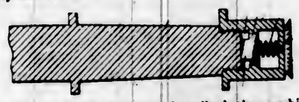
3. The body A, and skirt A^3 having the notches *a*, offset *a'* and upturned edge a^3 forming a pocket, the ring B carried by the skirt between said offset and pocket and free to turn thereon, having the lug B' and notches *b* and *b'*, the lower boundaries of the latter being upwardly inclined, in combination with the fount C, cylindrical portion C' received in said skirt, the burner and wick-raiser shaft C^3 carried by the fount, the overhung ends of said shaft adapted to be received in said notches and hold the fount to the body by the turning of said ring, all substantially as and for the purposes herein specified.

4. The body A, and skirt A^3 having the notches *a*, offset *a'* and upturned edge a^3 forming a pocket, the ring B carried by the skirt between said offset and pocket and free to turn thereon, having the lug B' and notches *b* and *b'*, the lower boundaries of the latter being upwardly inclined and having the indentations b^3, in combination with the fount C, cylindrical portion C' received in said skirt, the burner and wick-raiser shaft C^3 carried by the fount, the overhung ends of said shaft adapted to be received in said notches and hold the fount to the body by the turning of said ring, the parts being drawn together and locked by the action of said inclined boundaries and their indentations, all substantially as and for the purposes herein specified.

5. The body A, skirt A^3 having the offset *a'* and vertical notches *a*, the upturned edge a^3 forming a pocket, the ring B carried by the skirt with liberty to turn thereon, having the angular notches comprising the vertical portions *b* and horizontal portions *b'*, the lug B' lying in a cut-away recess in said pocket, one boundary forming a stop a^2 for said lug to arrest the motion of the ring when the said vertical notches *a* and *b* are in register, in combination with each other and with the fount C, cylindrical portion C' received in said skirt, and the wick raiser shaft C^3 adapted to be engaged in said notches by its overhung ends and hold the said fount to the body, all substantially as herein specified.

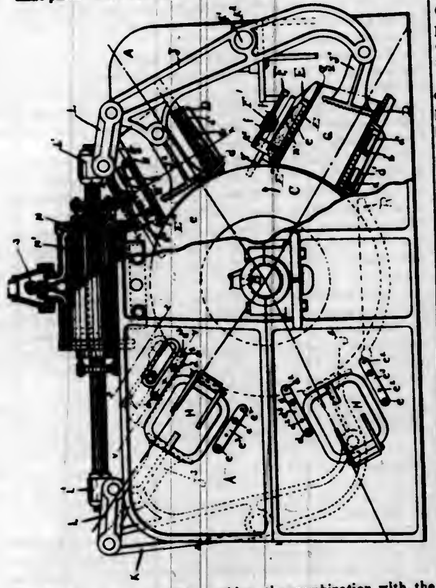
607,163. NUT-LOCK. CLINTON A. DETWILER, Palmyra, Pa., assignor of one-tenth to Abraham G. Stauffer. Filed Oct. 19, 1897. Serial No. 655,668. (No model.)

Claim.—1. In a nut-lock, in combination, a nut closed at its outer end with the exception of a small central opening, a web within the nut having a diametrical slot, the central portion of which is enlarged in circular form, a stem slidingly fitted in the opening in the end of the nut and carrying a head arranged exteriorly of the nut, a cross-head on the inner end of said stem adapted to slide into and out of the slot in the web and to be engaged behind the web, a spring coiled around said stem for giving the cross-head a normal inward tendency, and a key or lug extending inward beyond the face of the cross-head, substantially as described.



2. In a device of the character described, the combination with a spindle, provided with a reduced screw-threaded extremity having a pair of diametrically-extending kerfs in its outer face, disposed at right angles, of a nut having a closed end and a diametrical web intermediate of its ends, and screw-threaded between said web and the open end, whereby said nut may be screwed upon the reduced extremity of the spindle, a stem extending through the closed end of the nut and provided upon its outer extremity with a head, and upon its inner extremity with a cross-head, provided with a comparatively small lug, said web being provided with a circular opening of a diameter corresponding with the length of the lug, and with diametrical slots or recesses for the accommodation of the cross-head, and a spring intermediate of the cross-head and the closed end of the nut, substantially as specified.

607,164. WOOD-GRINDER FOR PULP-MAKING. BERNARD RILEDA, Rochester, N. Y., assignor of one-half to William A. Murphy, same place. Filed Oct. 23, 1896. Serial No. 609,813. (No model.)



Claim.—1. In a grinding-machine, the combination with the grinding-cylinder, of a plurality of pockets arranged symmetrically around the cylinder with the central longitudinal axis of each on the draw side of radial lines from the axis of the cylinder, pressers or followers operating in the pockets, means for maintaining the faces of the followers in the same plane relative to the surface of the cylinder, connections between the pressers on diametrically opposite sides of the cylinder for causing their simultaneous operation toward and from the surface of the cylinder, and motor devices for actuating said pressers, substantially as described.

2. In a grinding-machine, the combination with the grinding-cylinder, of four pockets arranged symmetrically around the cylinder with the central longitudinal axis of each on the draw side of radial lines from the axis of the cylinder, of pressers operating in said pockets, connections between the pressers whereby those on diametrically opposite sides of the cylieder will be operated in the same direction relative to the portion of the cylinder-surface with which they cooperate, and the pressers thus paired will move in opposite directions alternately, means for actuating the followers toward and from the cylinder-surface, and means for guiding the pressers to move radially of the cylinder-axis, and maintaining their faces in substantially the same plane relative to the cylinder-surface, substantially as described.

3. In a grinding-machine, the combination with the grinding-cylinder, of four pockets arranged around the cylinder with their central axes located on the draw side of radial lines from the cylinder-axis, the two pivoted levers connected at one end for simultaneous operation on their pivots, and the pressers or followers one for each pocket pivoted to the opposite ends of said levers and operating in the pockets, substantially as described.

4. In a grinding-machine, the combination with the grinding-cylinder, and four pockets arranged symmetrically around the cylinder, of the two pivoted levers, connections between the levers for causing their proximate ends to move simultaneously in opposite directions relative to the cylinder surface, the pressers or followers in the pockets pivotally connected to the ends of the levers, and a motor device for actuating the levers on their pivots, substantially as described.

5. In a grinding-machine, the combination with the cylinder, and the pockets arranged around the cylinder, of the pivoted levers J and K, the followers J', J^2, J^3, J^4 pivoted to the ends of the levers, the rod M, the links connecting it to the ends of the levers, and the motor for actuating the rod in opposite directions, substantially as described.

6. In a grinding-machine, the combination with the grinding-cylinder and a wood pocket, of a follower or presser operating in said pocket, and a lever pivoted on an axis parallel with that of the cylinder for actuating the follower and pivoted to the follower on an axis also parallel with that of the cylinder, substantially as described.

7. In a grinding-machine, the combination with the frame embodying the two side plates, the grinding-cylinder operating between them, and the top and bottom pocket-plates adjustably secured to the side plates and movable toward the cylinder, of the filling-plates G forming one side of the pockets, the feed-doors having the filling-plates G' thereon forming the other side of the pockets, and the pressers or followers operating in the pockets to press the wood against the cylinder, substantially as described.

8. In a grinding machine, the combination with the side plates or frames, and a grinding-cylinder operating between them, of the pocket-plate D forming one of the sides of the pocket, and the independent plate E forming the draw side of the pocket, securing devices for attaching said pocket-plates to the side frames, the adjusting-screws F connecting the plate E with the side frame, the presser or follower operating in the pocket, and means for actuating it, substantially as described.

9. In a grinding-machine, the combination with the grinding-cylinder, of the wood-pockets having the corrugations on the draw side gradually tapering toward the cylinder and a presser or follower operating in the pocket, substantially as described.

10. In a grinding-machine, the combination with the side plates or frames, and the grinding-cylinder operating between them, of the pocket-plate E constituting the draw side of the pocket and extending between the side frames, the bolts for securing said plate to the frames, the adjusting-screws and set-nuts between the frame and plate, the pocket-plate D adjustable toward the cylinder independently of the plate E, the bolts for securing it to the side frames, and a follower operating in the pocket, substantially as described.

11. In a grinder, the combination with the grinding-cylinder, a plurality of wood-pockets arranged around its periphery, plungers or pressers, one in each of the pockets, means for guiding the pressers to move approximately radially of the cylinder, means for maintaining the faces of the pressers in substantially the same plane relative to the cylinder-surface, connections between diametrically opposite pressers for causing their simultaneous movement in pairs toward and from the portions of the surface of the cylinder with which they cooperate, and connections between the several pairs of pressers for causing their simultaneous operation in opposite directions relative to the portions of the cylinder-surface with which they cooperate, substantially as described.

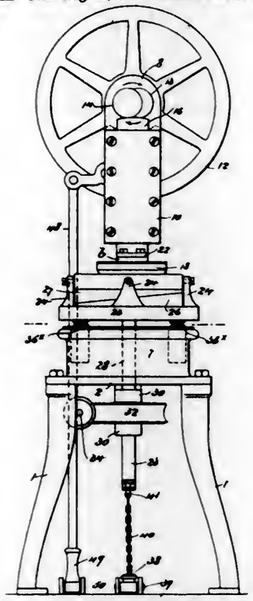
12. In a grinder, the combination with the grinding-cylinder, a plurality of wood-pockets arranged around its periphery, plungers or pressers, one in each of the pockets, means for guiding the pressers to move approximately radially of the cylinder, means for maintaining the faces of the pressers in substantially the same plane relative to the cylinder-surface, and connections between the diametrically opposite pressers for causing their simultaneous operation toward and from the portions of the cylinder-surface with which they cooperate, substantially as described.

13. In a grinder, the combination with a cylinder and a series of wood-pockets arranged around the periphery thereof, of a series of pressers or plungers, one operating in each pocket, means for guiding the pressers to move approximately radially of the cylinder, means for maintaining the faces of the pressers in substantially the same plane relative to the cylinder-surface, and connections between all of the pressers for causing the simultaneous movement of adjacent ones in opposite directions toward and from the surface of the cylinder

with which they cooperate, and motor devices for operating the pressers, substantially as described.

14. In a grinding-machine, the combination with the grinding-cylinder and two adjacent wood-pockets, of followers or pressers operating in said pockets and a lever pivoted on an axis parallel with that of the cylinder for actuating the followers, and pivoted to the followers on axes also parallel with that of the cylinder, substantially as described.

607,165. SOLE-CUTTING MACHINE. FRANCIS J. FRESER, Montreal, Canada. Filed Aug. 22, 1894. Serial No. 521,045. (No model.)



Claim.—1. In a sole-cutting machine, the combination of a frame, a work-support and a portion of said frame overhanging the work-support and having a vertical guideway therein and a divided cutter or die, the parts of which coincide to produce a complete die, with a pair of plungers located in said guideway for carrying the parts of the cutter and means for imparting alternative reciprocating motion in parallel lines of movement to the parts of said cutter or die for the purpose set forth.

2. In a sole-cutting machine, the combination of a frame, a movable or traveling work support or table and a portion of said frame overhanging the work-support and having a vertical guideway therein and a divided cutter or die, the parts of which coincide to produce a complete die with a pair of plungers having parallel movement, for actuating same, for the purposes set forth.

3. In a sole-cutting machine, the combination of a frame, a yielding and movable or traveling work support or table, and a portion of said frame overhanging the work-support and having a vertical guideway therein and a divided cutter or die, with a pair of plungers, means for actuating said table and imparting alternative reciprocating motion in parallel lines of movement to the parts of said cutter or die, for the purpose set forth.

4. In a sole-cutting machine, the combination of a frame, a yielding work-support and a portion of said frame overhanging the work-support and having a vertical guideway therein and a divided cutter or die with a pair of plungers, means for imparting alternative reciprocating motion in parallel lines of movement to the parts of said cutter or die for the purpose set forth.

5. In a sole-cutting machine having a vertically-reciprocating cutter or die, a yielding work-support normally held in contact with the cutter or die and adapted with such cutter to maintain a constant pressure upon both sides of the stock, for the purpose set forth, and adapted to be depressed for a limited distance, with means for limiting such depression.

6. In a sole-cutting machine, the combination of a frame, a yielding work support or table adapted to yield vertically and travel in a horizontal plane and a portion of said frame overhanging the work-support and having a vertical guideway therein and a divided cutter or die with a pair of plungers, means for imparting alternative reciprocating motion in parallel lines of movement to the parts of said cutter or die, for the purposes set forth.

7. In a sole-cutting machine, the combination of a frame, a cutter or die and a yielding work support or table normally held by a spring in contact with the cutter or die, and a support for such table limiting the depression of same and such table adapted to be depressed for the distance determined by such support, and further adapted with such cutter to maintain a constant pressure upon both sides of the stock, to travel in a horizontal plane and be adjusted in working distance relatively to said cutter or die and means for actuating said die and effecting the travel of said work-support and of adjusting same, for the purposes set forth.

8. In a sole-cutting machine, the bombination of a frame, a divided cutter or die, the parts of which coincide to produce a complete die and a yielding work-support adjustable in working distance relatively to said cutter or die and a portion of said frame overhanging the work-support and having a vertical guideway therein with means for actuating said cutter or die and of adjusting said work-support, for the purpose set forth.

9. In a sole-cutting machine, the combination of a frame, a driving-shaft carried therein, a work-support and a portion of said frame overhanging the work-support and having a vertical guideway therein, a divided cutter or die, the parts of which coincide to form a complete die, a pair of carriers or plungers located in said guideway for carrying the parts of said cutter, a pair of disks mounted eccentrically upon said shaft acting to depress said carriers and springs normally elevating same for the purpose set forth.

10. In a sole-cutting machine, the combination of a frame, a driving-shaft carried therein, a work-support, and a portion of said frame overhanging the work-support and having a vertical guideway therein, a depressible divided cutter or die with its parts normally elevated, and a pair of disks eccentrically carried by said shaft for acting upon the cutter-carrying parts to depress same in parallel lines of movement.

11. In a sole-cutting machine, the combination of a frame, a driving-shaft carried therein, a vertically-movable cutter or die, a yielding work-support normally held in contact with the movable cutter or die, a driving-pulley mounted loosely on said shaft and clutch mechanism for connecting and disconnecting said pulley with the shaft for the purpose set forth.

12. In a sole-cutting machine, the combination of a frame, a driving-shaft carried therein, a vertically-movable cutter or die, a yielding work-support normally held in contact with the movable cutter or die, a driving-pulley mounted loosely on said shaft and clutch mechanism carried in part by said pulley and in part by said shaft with which the latter part has a sliding connection with means for connecting and disconnecting the parts as and for the purpose set forth.

13. In a sole-cutting machine, the combination of a frame, a driving-shaft carried therein, a vertically-movable cutter or die, a yielding work-support normally held in contact with the movable cutter or die, a driving-pulley mounted loosely on said shaft and adjustable clutch mechanism for connecting and disconnecting said pulley with the shaft as and for the purpose set forth.

14. In a cutter, a stationary interior frame or body piece and an outer encircling cutter or die with continuous transformable cutting edge adjustably carried thereby and variable in form thereon.

15. A divided cutter or die having a pair of interior integral body-pieces and a pair of integral outer encircling edge pieces adjustably secured to the outer faces of such body-pieces and the ends of the separate parts of which edge pieces abut each other and coincide to produce a complete die, for the purpose set forth.

16. A cutter or die formed in two cutting parts the ends of which abut each other and coincide to produce a complete die and which are independently operative with a plunger or carrier for independently carrying each part upon its end and operating same in parallel lines of movement, for the purpose set forth.

17. The combination with the cutter or die formed of two main cutting parts adapted to be independently carried and operated and either of which is adjustable, of an auxiliary or enlarging plate or section carrying two cutting edges and adapted to be interposed between and attached to either of said main cutting parts for the purpose set forth.

18. The combination with the cutter formed of the two main cutting parts comprising frame-pieces and cutting blades or strips attached therein adapted to be independently carried and operated and either of which parts is adjustable, of an auxiliary or enlarging cutting part fitting longitudinally of the dies and comprising a frame-piece with cutting-blades at each end adapted to be interposed between and attached to either of said main cutting parts, for the purpose set forth.

19. The cutter or die formed of two main cutting parts, and an auxiliary or enlarging cutting plate or section having a body portion and cutting-blades at each end thereof and adapted to be interposed longitudinally between the main cutting parts to locate such cutting-blades in line with the blades of the main cutting parts for the purpose set forth.

20. The cutter or die formed of two main cutting parts comprising integral stationary frame-pieces and separate continuous flexible cutting blades or strips removably attached and adapted to couform to the outer configuration of the sides thereof, said frame-pieces having their side edges to which said blades are attached formed with a series of notches or recesses for the purpose set forth.

21. A cutter or die having a frame or body piece and a movable flexible cutting blade or strip attached to the edge thereof by means of screws mounted so as to rotate but held against longitudinal movement in said blade and entering said frame-piece, for the purpose set forth.

22. A cutter or die having a frame or body piece and a removable flexible cutting blade or strip attached to the side edge thereof, such side edge being formed with a series of notches or recesses for the purpose set forth.

23. In a cutting-machine, a divided cutter or die, the parts of which coincide to produce a complete die, and means for imparting alternative reciprocating motion in parallel lines of movement to said parts, for the purpose set forth.

24. In a sole-cutting machine, a rotatable work-supporting table having a base mounted on a suitable rotating spindle, a detachable top or block to carry the work, intermediate annular bearing sections or rings each having two separate inclined faces and means for retaining the parts in position when adjusted for the purpose set forth.

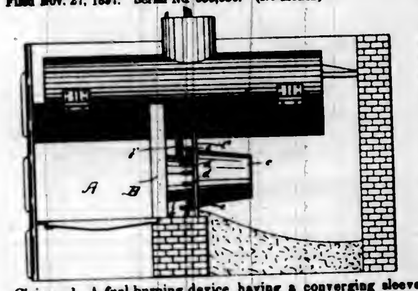
25. In a sole-cutting machine, a work-supporting table having a base, an adjustable top or block to carry the work and a pair of intermediate annular bearing-rings each having inclined faces movable relatively to the other with clamping devices passing through and clipping such rings for the purpose set forth.

26. In a sole-cutting machine, a rotatable work-supporting table having a base with upwardly-projecting legs carrying set-screws, an adjustable top or block to carry the work, intermediate annular bearing sections or rings, each having an inclined face adapted to be moved one upon the other and clamping devices passing through said sections between their edges and adapted to clip both edges for securing such sections in position when adjusted for the purpose set forth.

27. The combination with the frame, the vertically-movable cutter or die, the rotatable work-supporting table and the vertical shaft carrying same, of a gear-wheel supported by the frame and having a rotary connection with said shaft, a counter-shaft suitably carried, a worm on said counter-shaft in mesh with said gear-wheel, a ratchet on said counter-shaft and an operating-pawl movable into and out of engagement with said ratchet for the purpose set forth.

28. In a sole cutting machine, the combination of a driving-shaft, a divided cutter or die the parts of which coincide to produce a complete cutter or die, a work-support, an operative connection between said cutter or die and the driving-shaft, means for operating said driving-shaft and adjustable mechanism for connecting and disconnecting said driving-shaft and its means of operation, for the purpose set forth.

607,166. SMOKE-BURNING FURNACE. GEORGE L. FOSLER, Washington, D. C., assignor of one-half to Otis D. Swett, same place. Filed Nov. 27, 1897. Serial No. 659,959. (No model.)

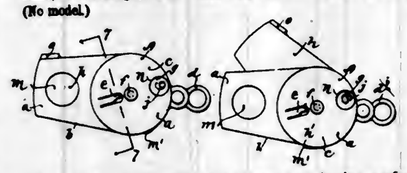


Claim.—1. A fuel-burning device having a converging sleeve-exit in combination with a secondary sleeve converging from one end to the other and adapted to contain a substantial portion of the primary sleeve within its larger end, leaving a space between the two sleeves for the passage of a secondary draft, as shown.

2. A fuel-burning device having a converging sleeve-exit partially closed in at its outer end in combination with a secondary sleeve converging from one to the other end and adapted to contain a substantial portion of the primary sleeve within its larger end, leaving a space between the two sleeves for the passage of a secondary draft, as shown.

3. In a fuel-burning device, a hollow bridge-wall having a sleeve, of similar construction, for conducting the flame, smoke, and gases from the fire-box; in combination with a secondary sleeve, extending beyond the primary sleeve so as to receive the flame, smoke, and gases from it, and carrying a draft in the space between the sleeve, substantially as shown.

607,167. REGISTERING CIGAR-TIP CUTTER. FRANK FONTNEAU, Attleborough, Mass. Filed May 20, 1897. Serial No. 637,443. (No model.)



Claim.—The combination of the outer case having perforated opposite sides to receive the point of a cigar, and a side perforation for access to the registering-disk, and the dog connected with the case and serving to prevent the backward movement of the registering-disk, with the pivoted registering-disk provided with the series of ratchet teeth or notches and the pivoted cutter provided with the dog for imparting forward movement to the registering-disk, substantially as described.

607,168. DEVICE FOR REMOVING SCALE FROM BOILER-TUBES. EDWARD P. GWYNN, Delaware, Ohio. Filed July 21, 1897. Serial No. 645,369. (No model.)



Claim.—1. In a device for removing scale from boiler-tubes, the combination with a body adapted to be inserted within a boiler-tube, said body having an angular passage therethrough, of a hammer contained in one arm of said passage, a movable plunger contained in the other arm of said passage and a quantity of liquid between said plunger and hammer, substantially as and for the purpose specified.

2. In a device for removing scale from boiler-tubes, the combination with a body adapted to be inserted within a tube, said body having an angular passage therethrough, of a hammer movably retained in one arm of said passage, a plunger adapted to move in the remaining passage-arm, a tubular neck extension of said body, a handle arm extending therefrom and a quantity of liquid contained between said plunger and hammer, substantially as and for the purpose specified.

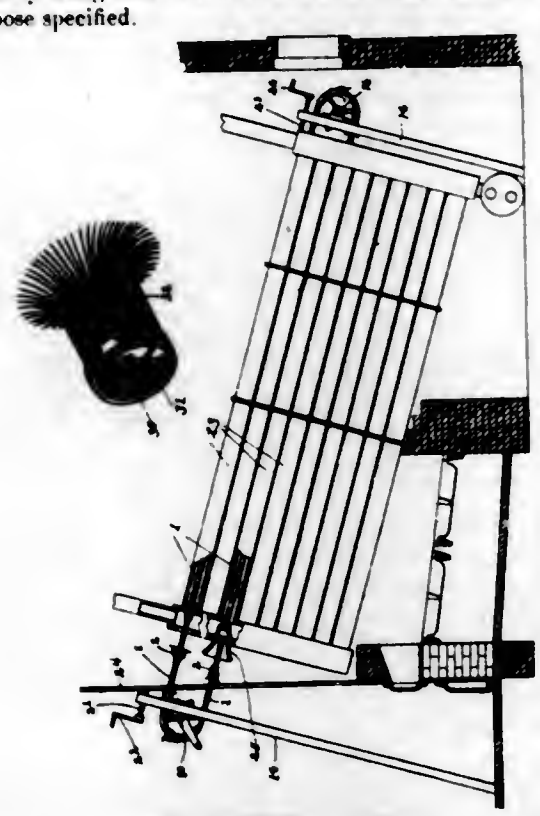
3. In a device for removing scale from boiler-tubes, the combination with a body adapted to be inserted and rotated within the tube, said body having an angular passage therethrough and a peripheral shoulder on said body of a hammer movably fitting in one arm of said passage, a groove in the head of said hammer, a spring secured to the body and engaging in said hammer-groove, a plunger movably contained in the remaining arm of said passage, a quantity of liquid contained in the passage between the hammer and plunger and means for imparting successive blows to said plunger, substantially as and for the purpose specified.

607,169. BOILER-TUBE CLEANER. EDWARD P. GWYNN, Delaware, Ohio. Filed Nov. 19, 1897. Serial No. 659,138. (No model.)

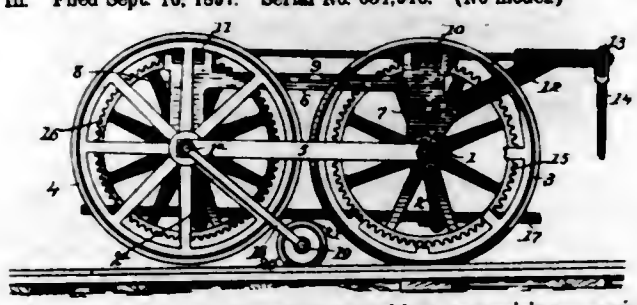
Claim.—1. In a boiler-tube-cleaning mechanism, the combination with an endless chain adapted to pass through adjacent boiler-tubes and suitably-mounted segmental sprocket-wheels at opposite ends of said boiler-tubes over which said chain passes, of cleaning devices consisting of upper and lower block-sections 3 and 4 recessed to embrace the side arms of chain-links, means for detachably connecting said block-sections with said links and scraping-strips having their shanks secured to said block-sections and having their outturned ends toothed, substantially as and for the purpose specified.

2. In a boiler-tube cleaner, the combination with an endless chain adapted to pass through adjacent boiler-tubes, suitably-mounted segmental sprocket-wheels at opposite ends of said boiler-tubes over which said chain passes, of cleaning devices consisting of blocks detachably connected with links of said chain, scraping-strips having their shanks secured to said blocks and having outwardly-bent scraper ends and conical spreading-blocks detachably and adjustably connected with the links of said chain and adapted to spread said scrap-

ing-strips by being forced between the latter, substantially as and for the purpose specified.



607,170. MINING-MACHINE. WILLIAM G. HALBERT, Westville, Ill. Filed Sept. 16, 1897. Serial No. 651,910. (No model.)



Claim.—1. A truck for mining-machines comprising a pair of axles cranked at their ends, spindles on the ends of the cranks of the axles and a platform mounted loosely on the axles between the cranked portions thereof, substantially as set forth.

2. A truck for mining-machines comprising a pair of axles cranked at their ends, spindles on the ends of the cranks of the axles, a platform mounted loosely on the axles between the cranked portions thereof, a worm-wheel on a spindle of each of the axles and a shaft having worms in mesh with the worm-wheels substantially as set forth.

3. A truck for mining-machines comprising a pair of axles cranked at their ends, spindles on the ends of the cranks of the axles, stay-bars connecting the spindles of one axle with those of the other, a platform mounted loosely on the axles between the cranked portions thereof, a worm-wheel on a spindle of each of the axles and a shaft having worms in mesh with the worm-wheels, substantially as set forth.

4. In a truck for mining-machines, the combination of a pair of crank-axles, carrying-wheels journaled on the spindles of the crank-axles, a platform mounted loosely on the crank-axles and a supplementary truck between the crank-axles adapted to carry an end of the main truck, substantially as set forth.

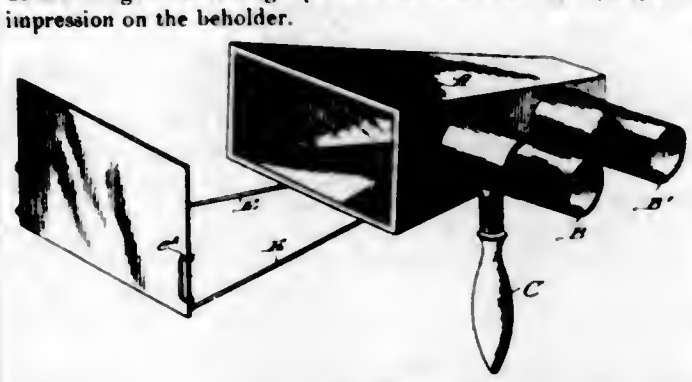
5. In a truck for mining-machines, the combination of a pair of crank-axles, carrying-wheels journaled on the spindles of the crank-axles, a platform mounted loosely on the crank-axles, a supplementary truck between the crank-axles and a swingable block on the supplementary truck adapted to sustain an end of the main truck when the block is raised to a vertical position and the platform is lowered.

607,171. OPTICAL INSTRUMENT. HENRY H. HILL, Chicago, Ill. Filed June 7, 1897. Serial No. 639,674. (No model.)

Claim.—1. In an optical instrument, the combination of a case, viewing tubes, and means in the case for transmitting to the eyes of the beholder double images of a single picture.

2. In an optical instrument, the combination of a case, viewing-tubes, and reflecting-mirrors in the case for transmitting to the eyes of the beholder double images of a single picture.

3. In an optical instrument, two lenses and two mirrors, the mirrors being placed at angles to the lenses, respectively, for forming a double image from a single picture and thus creating a perspective impression on the beholder.



607,172. PHARMACEUTICAL COMPOUND AND PROCESS OF MAKING SAME. KARL HOCK, Aschaffenburg, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Nov. 4, 1897. Serial No. 657,373. (Specimens.) Patented in Germany Dec. 6, 1896, No. 95,186.

Claim.—1. The process for the production of a new insolable condensation product from hexamethylenetetramin and tannin by causing solutions of hexamethylenetetramin to act on solutions of tannin and rendering the resulting condensation product insoluble and tasteless, substantially as hereinbefore described.

2. The process for the production of a new insoluble condensation product from hexamethylenetetramin and tannin, consisting in treating a cold concentrated solution of one molecule of hexamethylenetetramin with a cold concentrated solution of three molecules of tannin, separating the thus-produced amorphous white precipitate by filtration and pressing, and finally rendering this precipitate insoluble and tasteless by heating it in a porcelain pan until it forms a hard lump which can be ground, substantially as described.

3. As a new article of manufacture the new condensation product from one molecule of hexamethylenetetramin and three molecules of tannin, being an odorless and tasteless powder of a yellowish-brown color, insoluble in water, alcohol, and ether, substantially as described.

607,178. BEVERAGE COMPOUND. GEORGE J. L. JANES, Chicago, Ill. Filed June 16, 1897. Serial No. 640,962. (No specimens.)

Claim.—1. A compound for use in making beverages, the same consisting of the roasted shells of the cacao-bean reduced to flaky form, and mixed with a smaller proportion of the granulated kernel of the roasted bean; substantially as described.

2. A compound for use in making beverages, the same consisting of the roasted shells of the cacao-bean reduced to flaky form, a smaller proportion of roasted and granulated kernel of the bean, and a still smaller proportion of a roasted and granulated cereal, substantially as described.

607,174. ENVELOP-SEALING MACHINE. OLIVER S. JORDAN, Newark, N. J., and EDWARD F. BAUM, Harrisburg, Pa., assignors of one-half to Henry D. Fuller, New York, and David Hyman, Rochester, N. Y. Filed Aug. 31, 1897. Serial No. 650,069. (No model.)

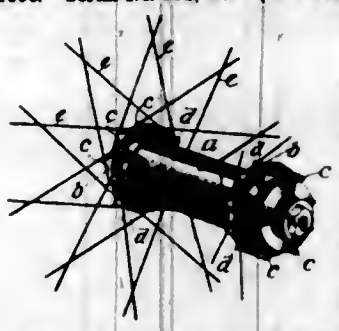
Claim.—1. The combination with the moistening-trough provided with absorbent material at its outlet, of the hinged plate carrying an absorbent material at its free edge, and means for feeding envelops past said edge, as and for the purpose set forth.

2. The combination with the moistening-trough provided with absorbent material at its outlet, of the hinged plate carrying an absorbent material at its free edge for engagement with the absorbent material, the pair of feeding-rolls at the end of the trough, and the pair of pressing or sealing rolls following the feeding-rolls, as and for the purpose set forth.

3. The combination with the hopper and the trough 8, under it, provided with the opening 9, of a moistening-pad in the trough at said opening, and the plate 11 provided with a strip of absorbent material at its edge resting normally on said pad, as and for the purpose set forth.

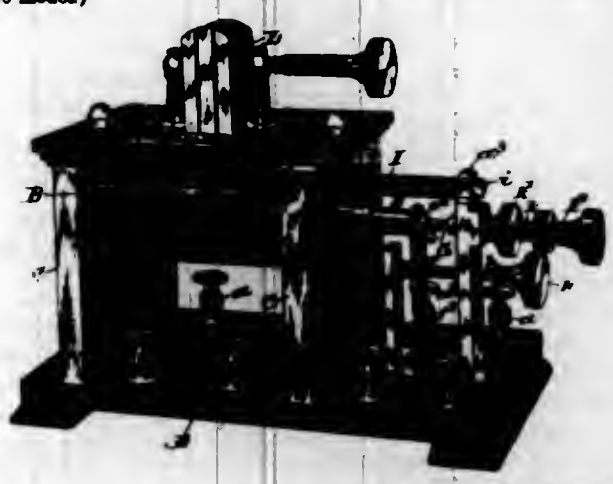
4. The combination with the plate 7, of a moistening-pad as 10, located below an opening therein, a movable plate as 11, hinged at one end above the plate 7, and provided with a strip of absorbent material at its free edge normally resting upon said pad for the purpose set forth.

607,175. WHEEL. ROBERT M. KEATING, Springfield, Mass. Filed May 23, 1896. Serial No. 592,723. (No model.)



Claim.—In a wheel of the character described, a hub, annular vertical flanges adjacent to each end of the hub, a plurality of laterally-extending radially-disposed spoke-flanges in non-coincident alternation on the opposite faces of the annular flanges, integral with the hub at their base and with the annular flanges at their inner side edges and provided with spoke-holes, as shown and specified.

607,176. ELECTRIC BREAK FOR INDUCTION-COILS. THOMAS B. KINRAIDE, Boston, Mass. Filed Feb. 26, 1897. Serial No. 625,173. (No model.)



Claim.—1. A high-speed break, comprising a coil and its core, an anvil in electric circuit with said coil, a standard supporting the anvil, and a vibrating hammer in and interrupting said circuit and vibrating between said core and anvil, combined with means substantially as described to prevent compound vibrations of said anvil and hammer, for the purpose set forth.

2. In a high-speed break, the combination with a vibrating hammer, and an anvil, of a standard supporting said anvil, and a brace rigidly secured between said standard and the frame of the break, substantially as described.

3. In a high-speed break, having a hammer vibrating between a core end and an anvil, means to vary the vibrating resistance of said hammer, and means to maintain said hammer in approximately unvarying end alinement with said core end and anvil, substantially as described.

4. In a high-speed break, a hammer, a vibrator supporting the same, and an adjustable tension device to vary the resistance of said hammer, said vibrator having an extended rigid portion extending from said hammer, substantially as described.

5. In a high-speed break, a hammer, a vibrator supporting the same, and an adjustable tension device to vary the resistance of said hammer, said vibrator having an extended rigid portion extending from said hammer and being provided at its opposite end with means to permit said rigid portion to be deflected slightly, substantially as described.

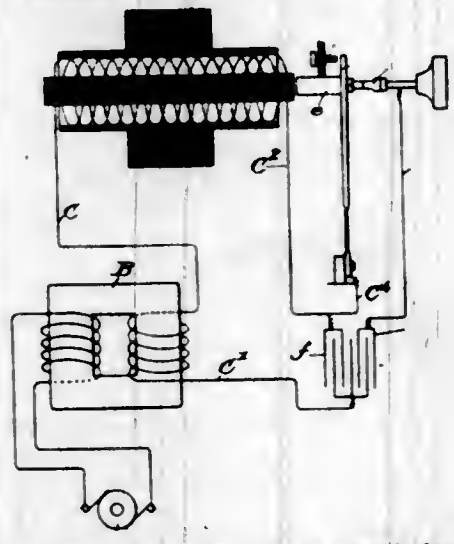
6. In a high-speed break, the combination with a hammer, of a rigid vibrator, means permitting the latter to move laterally, a tension-spring engaging said rigid vibrator, and means to adjust said spring, substantially as described.

7. In an electric break, having a hammer vibrating against an anvil, and means to adjust the latter, means to rotate said anvil independently of its said adjustment, substantially as described.

8. In an electric break, the combination with a hammer, its anvil, and a hollow adjusting-screw for the latter, of a spindle carrying said anvil and rotatably mounted therein, substantially as described.

9. The herein-described anvil, the same consisting of an interiorly-threaded cap, and a centrally-extended platinum contact integrally secured thereon, substantially as described.

607,177. ELECTRIC BREAK AND INDUCTION APPARATUS. THOMAS B. KINRAIDE, Boston, Mass. Filed July 26, 1897. Serial No. 645,880. (No model.)



Claim.—1. The combination with an electric break having an electromagnet, an anvil, and a vibrating hammer, of a collector to concentrate the lines of magnetic influence on said hammer, substantially as described.

2. The combination with an electric break having an electromagnet, an anvil, and a vibrating hammer, of a collector to concentrate the lines of magnetic influence on said hammer, and means to vary the position of said collector relatively to said hammer, substantially as described.

3. The combination with an electric break, having an electromagnet, an anvil, and a vibrating hammer, of means to shear or drag sidewise the hammer from the anvil whenever the break-gap between the hammer and anvil is partially short-circuited by the fusing or clinging of the metal at the contact-points, substantially as described.

4. An electric break of the vibrator class, provided with a hammer composed of laminated material, substantially as described.

5. In an electric break, a core, hammer, and collector, to concentrate the lines of magnetic influence on the hammer, said collector being composed of laminated material, substantially as described.

6. The combination with an electric break, having an anvil and a vibrating hammer, of a positive stop to limit and positively stop the movement of the latter from the anvil, substantially as described.

7. The combination with an electric break, having an anvil and a vibrating hammer, of a positive stop to limit and positively stop the movement of the latter from the anvil, and means to adjust said stop, substantially as described.

8. The combination with a break, having an anvil, a vibrating hammer, and a positive stop for the latter, of a condenser interrupted by said break, and an induction-coil in series circuit therewith, substantially as described.

9. The combination with a break, having an anvil, and a vibrating hammer, of an electric circuit operating the same and interrupted thereby, an induction apparatus in said circuit, and a condenser having independent connections to said anvil and said hammer, substantially as described.

10. The combination with an electric circuit, including an induction apparatus, and an interrupter, of a double condenser also in said circuit, said induction apparatus having continuous connection with one part of said condenser and interrupted connection with the other part of the condenser, substantially as described.

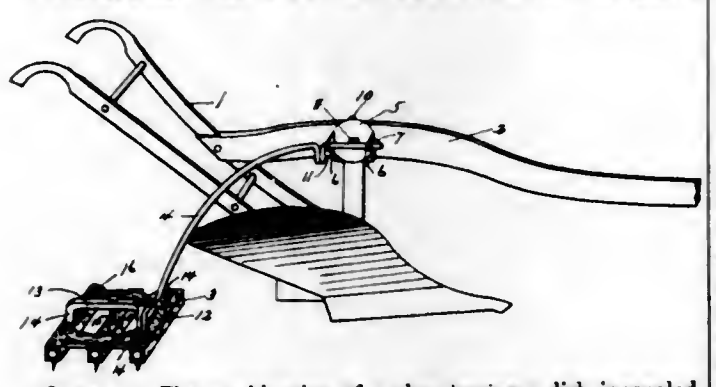
11. The combination with an electric circuit, including an induction apparatus, and an interrupter including a hammer and anvil, of a double condenser also in said circuit, said induction apparatus having continuous connection with one part of said condenser and interrupted connection with the other part of the condenser, and means to regulate the movement of said hammer so as to bring the discharge of the said interrupted part of said condenser into synchronism with the period of said circuit, substantially as described.

12 The herein-described method of operating an induction apparatus in a system including said induction apparatus, an interrupter, condenser, and source of electric energy, said method consisting of energizing the induction apparatus from said source of energy in connection with said condenser, and when the wave is at its extreme fluctuation, cutting out the condenser, substantially as described.

13. The herein-described method of operating an induction apparatus in a system including said induction apparatus, an interrupter, condenser, and source of electric energy, said method consisting of

energizing the induction apparatus from said source of energy in connection with said condenser, and when the wave is at its extreme fluctuation, cutting out the condenser the induction apparatus being then in direct circuit with the source of energy, substantially as described.

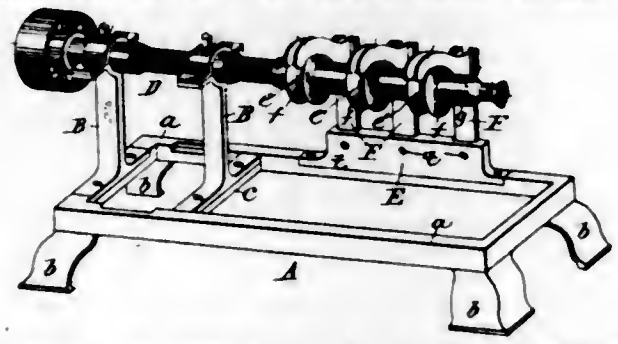
607,178. COMBINED PLOW AND HARROW. JACOB KOLB, Wichita, Kans. Filed May 3, 1897. Serial No. 634,802. (No model.)



Claim.—1. The combination of a plow having a disk journaled to the beam, an arm with one end journaled to said disk, and the other end secured to a harrow, said disk having the lug 10, and said arm having the arm 11.

2. A harrow having a circular plate secured to said harrow, an arched girder held on said circular plate, a disk secured to the plow-beam, an arm connecting said harrow to said disk, said disk giving said arm a double oscillating motion.

607,179. COLLAR AND CUFF EDGER. GEORGE N. KRAMER, Terre Haute, Ind., assignor of one-half to Christopher J. Duddleston, same place. Filed Mar. 8, 1897. Serial No. 626,545. (No model.)



Claim.—1. An ironing-machine for the edges of collars, cuffs and the like, comprising a rotatable shaft provided with an annular groove and outwardly-flared flanges at said groove, and guides adjustable with relation to said flanged groove, substantially as described.

2. An ironing-machine for the edges of collars, cuffs and the like, comprising a rotatable shaft provided with annular grooves of varying widths and outwardly-flared flanges at said grooves, and guide-arms adjustable with relation to said grooves, substantially as described.

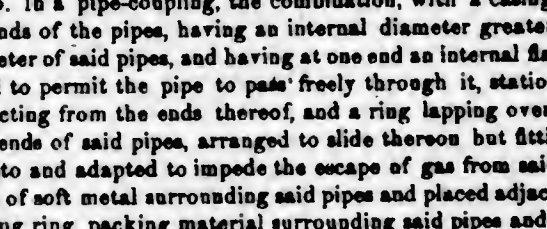
3. An ironing-machine for the edges of collars, cuffs and the like, comprising in combination a hollow shaft horizontally mounted near one end on a suitable base and having near its opposite end annular grooves of varying widths formed by outwardly-flared flanges, guide-arms at the flanged grooves carried by bars vertically adjustable on said base, substantially as described.

4. An ironing-machine for the edges of collars, cuffs and the like, comprising a horizontal shaft provided with annular grooves and outwardly-flared flanges at said grooves, means by which the shaft may be rotated, means by which the shaft may be heated, and guide-arms carried by bars and vertically adjustable with relation to said grooves, substantially as described.

5. An ironing-machine for the edges of collars, cuffs and the like comprising a rotatable shaft having annular grooves and outwardly-flared flanges at said grooves, and having its outer end free and provided at said end with a groove having flaring sides, and guide-arms adjustable with relation to the aforesaid grooves, substantially as described.

607,180. PIPE-COUPLING. FREDERICK B. LANDIS, St. Louis, Mo., assignor to the Ammonia Refrigerating and Supply Company, same place. Filed Feb. 13, 1893. Renewed Dec. 17, 1897. Serial No. 662,340. (No model.)

Claim.—1. In a pipe-coupling, the combination, with a casing inclosing the ends of the pipes and having an internal diameter greater than the diameter of said pipes, stationary rings projecting from the pipes at a suitable distance from the ends thereof, and a ring lapping over the adjacent ends of said pipes, arranged to slide thereon and fitting closely thereto and adapted to impede the escape of gas from said pipes, of compressible packing material surrounding said pipes and placed between said stationary rings and said lapping ring, and means for compressing said packing material, substantially as described.



2. In a pipe-coupling, the combination, with a casing inclosing the ends of the pipes and having an internal diameter greater than the diameter of said pipes, a ring lapping over the adjacent ends of said pipes, fitting closely thereto but arranged to slide thereon, and adapted to impede the escape of gas from said pipes, and projecting rings screwing onto said pipes and situated at a suitable distance back from the ends thereof, of compressible packing material interposed between said screw threaded rings and said lapping ring, and means for pressing the pipes together, thereby compressing said packing material, substantially as described.

3. In a pipe-coupling the combination, with a casing inclosing the ends of the pipe, having an internal diameter greater than the diameter of said pipes, and having at one end an internal flange apertured to permit the pipe to pass freely therethrough, stationary rings projecting from the pipes at a suitable distance from the ends thereof, and a ring lapping over the adjacent ends of said pipes, arranged to slide thereon, but fitting closely thereto and adapted to impede the escape of gas from said pipes, of compressible packing material surrounding said pipes and placed between said stationary rings and said lapping ring, a gland screwing into the open end of the casing and apertured to permit the pipe to pass freely therethrough, and means for causing the screwing inward of said gland to press said pipe inward and compress the packing, substantially as described.

4. In a pipe-coupling, the combination, with a casing inclosing the ends of the pipes and having an internal diameter greater than the diameter of said pipes, and a ring lapping over the adjacent ends of said pipes, fitting closely thereto, and adapted to impede the escape of gas from said pipes, of compressible packing material surrounding the pipes and placed back of the ends of said lapping ring, rings of soft metal surrounding said pipes and likewise placed back of said lapping ring, springs surrounding said pipes and placed back of said packing material and soft-metal rings, and means for compressing said springs, thereby forcing said packing material against the walls of the tubes and casing, substantially as described.

5. In a pipe-coupling, the combination, with a casing inclosing the ends of the pipes, having an internal diameter greater than the diameter of said pipes, and having at one end an internal flange apertured to permit the pipe to pass freely through it, stationary rings projecting from the ends thereof, and a ring lapping over the adjacent ends of said pipes, arranged to slide thereon but fitting closely thereto and adapted to impede the escape of gas from said pipes, of rings of soft metal surrounding said pipes and placed adjacent to said lapping ring, packing material surrounding said pipes and placed on both sides of said stationary rings, metal rings surrounding said pipes and placed back of said stationary rings and packing material, springs surrounding said pipes and placed back of said last-named metal rings, and a gland screwing into the open end of said casing and apertured to permit the passage of the pipe therethrough, and arranged to compress said springs and packing material when screwed inward, substantially as described.

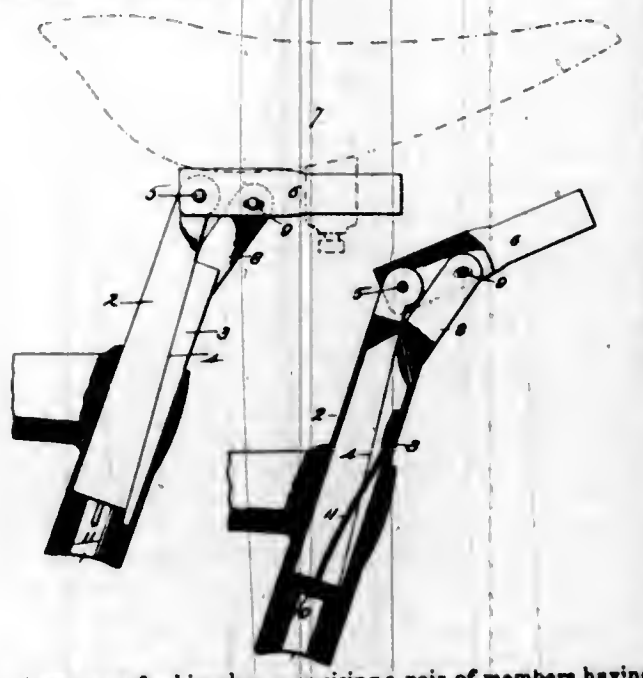
607,181. SEAT-POST FOR BICYCLES. GEORGE W. LORD, Excelsior Springs, Mo., assignor, by mesne assignments, to the Watson Automatic Seat Post Company, Paterson, N. J. Filed Jan. 11, 1897. Serial No. 618,875. (No model.)

Claim.—1. A seat-post for bicycles, comprising an upwardly-tapering member, a downwardly-tapering member, and a seat-supporting lever fulcrumed upon the first-named member and pivotally connected to the last-named or sliding member, substantially as described.

2. The combination with the tubular seat-post-supporting standard of a bicycle-frame, of a cylindrical seat-post fitting snugly within said standard and formed by cutting a piece of tubing in half longitudinally, so as to produce opposing inclined faces on the members thus formed, a lever fulcrumed at its front end upon the member forming the body of the post and adapted to swing in a vertical plane, and pivotally connected to the upper end of the other member nearer its rear end, and a seat mounted upon said lever rearward of its connection with the last-named member, substantially as described.

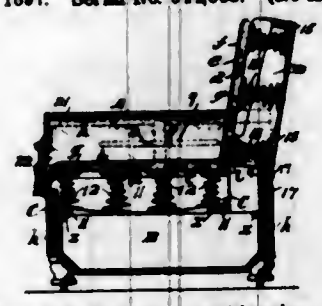
3. A seat-post for bicycles, comprising a pair of members having

cam or inclined faces fitting slidingly together, and a spring holding them yieldingly in this position.



4. A seat-post for bicycles, comprising a pair of members having opposing inclined faces fitted together, and one of them provided with an apertured bottom, and a spring extending through said aperture and secured at its upper end to the member not provided with the apertured bottom.

607,182. COMBINED BED AND SOFA. ADAM MARKEL, New York, N. Y., assignor to the Pottier & Stymus Company, same place. Filed July 16, 1897. Serial No. 644,805. (No model.)



Claim.—1. In a sofa-bed, the combination with the frame, of a seat-cushion mounted to slide on said frame transversely to the sofa, a back-cushion adapted to be moved into horizontal position to form a bed, and a support on the frame beneath the back-cushion for supporting the back-cushion in vertical position and movable out of supporting position to permit the back cushion to be moved into horizontal position, substantially as described.

2. In a sofa-bed, the combination with the frame, of a seat-cushion mounted to slide on said frame transversely to the sofa, a back-cushion adapted to be moved into horizontal position to form a bed, means for limiting the movement of the seat-cushion, a support on the frame beneath the back-cushion for supporting the back-cushion in vertical position and movable out of supporting position to permit the back-cushion to be moved into horizontal position, substantially as described.

3. In a sofa bed, the combination with the frame, of a seat-cushion mounted to slide on said frame transversely to the sofa, a back-cushion adapted to be moved into horizontal position to form a bed, a support on the frame beneath the back-cushion for supporting the back-cushion in a vertical position and movable out of supporting position to permit the back-cushion to be moved into horizontal position, and a box in the frame below said seat-cushion and adapted to be uncovered by the movement of the sliding seat-cushion and raising of the back-cushion for access to its contents, substantially as described.

4. In a sofa-bed, the combination with the frame, of a seat-cushion mounted to slide on said frame transversely to the sofa, a back-cushion hinged to said seat-cushion and adapted to be moved into horizontal position to form a bed, a support on the frame beneath the back-cushion for supporting the back-cushion in vertical position and movable out of supporting position to permit the back-cushion to be moved into horizontal position, and bolster-supporting bars adapted to be withdrawn from the frame for use of the construction as a bed and moved into the frame for use of the construction as a sofa, substantially as described.

5. In a sofa-bed, the combination with the frame, of a seat-cushion mounted to slide on said frame transversely to the sofa, a back-cushion hinged to said seat-cushion and adapted to be moved into horizontal position to form a bed, means for supporting the back-cushion in a vertical position, bolster-supporting bars at opposite sides of one or both of the sofa-arms adapted to be withdrawn from the arms for use of the construction as a bed and moved into the arms for use of the construction as a sofa, substantially as described.

6. In a sofa-bed, the combination with the frame, of a seat-cushion mounted to slide on said frame transversely to the sofa, a back-cushion hinged to said seat-cushion and adapted to be moved into horizontal position to form a bed, and means for supporting the back-cushion in a vertical position, said seat and back cushions having their adjacent edges provided with parallel bars forming adjacent spring edges, substantially as described.

7. In a sofa-bed, the combination with the frame, of a seat-cushion mounted to slide on said frame transversely to the sofa, a back-cushion hinged to said seat-cushion and adapted to be moved into horizontal position to form a bed, means for supporting the back-cushion in a vertical position, said seat and back cushions having their adjacent edges provided with parallel bars forming adjacent spring edges, and a single cover extending over both of said cushions, substantially as described.

8. The combination with end frames A, A', and sliding cushion C, of lugs 2 on the cushion entering slots 1 in said frames and forming guides and stops for the cushion, back-cushion D hinged to the seat-cushion C, and bar 17 for supporting the back-cushion D in vertical position, substantially as described.

9. The combination with end frames A, A' and sliding seat-cushion C, of back-cushion D hinged to seat-cushion C, hinged bar 17 on the frame for supporting the back-cushion D in vertical position, and a catch for locking the back-cushion D to the bar 17, substantially as described.

10. The combination with end frames A, A' and sliding seat-cushion C, of back-cushion D hinged to seat-cushion C, hinged bar 17 on the frame for supporting the back-cushion D in vertical position, a catch for locking the back-cushion D to the bar 17, and sliding bolster supporting bars 21 in one or both of the end frames, substantially as described.

11. The combination with a frame and a sliding seat-cushion C, of back-cushion D hinged to cushion C, and bar 17 hinged on the frame beneath the back-cushion for supporting the back-cushion D in vertical position and extending the full length of the cushion to close the rear side of the space between the back-cushion and frame when the back-cushion is in vertical position, substantially as described.

12. The combination with an end frame, of seat and back cushions adapted to be moved into position side by side to form a bed, and sliding bolster-supporting bars 21 moving in said frame and adapted to be drawn out at opposite sides of the bed, substantially as described.

13. A sofa-bed having separate seat and back cushions C, D adapted to be moved into position side by side to form a bed-mattress by the upholstery of the seat-cushion abutting against the upholstery of the back-cushion, and having the adjacent top edges of the upholstery of the seat and back cushions provided with parallel bars forming spring edges meeting to form a continuous level top of the bed-mattress, substantially as described.

14. The combination with seat-cushion C, of separate back-cushion D hinged thereto and adapted to be moved into horizontal position to form a bed by the upholstery of the seat-cushion abutting against the upholstery of the back-cushion, said cushions having springs supporting the upholstery and having their adjacent top edges provided with parallel supporting-rods *l* forming spring edges meeting to form a continuous level top of the bed-mattress, substantially as described.

15. The combination with seat-cushion C, of separate back-cushion D hinged thereto and adapted to be moved into horizontal position to form a bed by the upholstery of the seat-cushion abutting against the upholstery of the back-cushion, said cushions having springs supporting the upholstery and having their adjacent top edges provided with parallel supporting-rods *l* forming spring edges meeting to form a continuous level top of the bed-mattress, and a single cover *g* extending over both cushions to form a continuous cover of the bed-mattress, substantially as described

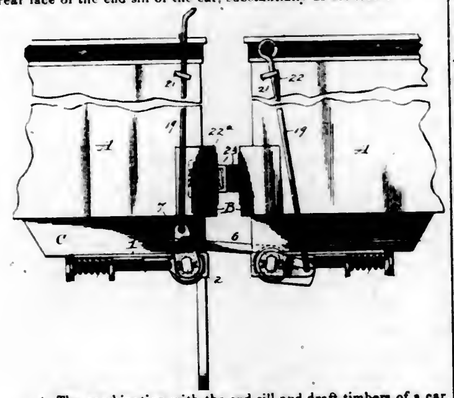
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607,188. CAR-COUPLING. JACOB O. MARKS, Urbana, Ill. Filed Feb. 11, 1898. Serial No. 669,982. (No model.)

Claim.—1. The combination with the draft-timbers of a car, of a link pivotally attached directly thereto and an arm projecting from said link and adapted to engage the end sill of the car, whereby to receive a link projecting from another car, substantially as set forth.

2. The combination with the draft-timbers and end sill of a car, of a link pivotally attached directly to said draft-timbers, an arm projecting from said link and adapted to pass through a link on another car, and an abutment-plate secured to the end sill and draft-timbers and adapted to be engaged by said arm on the link, substantially as set forth.

3. The combination with the end sill and draft-timbers of a car, of a link having a pivotal and sliding connection with the draft-timbers, and an arm projecting from the link and adapted to engage the rear face of the end sill of the car, substantially as set forth.



4. The combination with the end sill and draft timbers of a car, of elongated bearings secured to said draft timbers, a shaft mounted in said bearings, a link secured to said shaft, yielding connections between the ends of said shaft and the draft-timbers and an arm projecting from the link and adapted to engage the rear face of the end sill of the car, substantially as set forth.

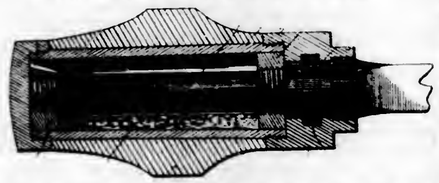
5. The combination with the draft-timbers and end sill of a car, of elongated bearings secured to the draft-timbers, a shaft mounted in said elongated bearings, a link secured to said shaft, an arm projecting from the link and adapted to engage the rear face of the end sill of the car, rods connected with the ends of said shaft and flexible connections between said rods and said draft-timbers, substantially as set forth.

6. The combination with the end sill and draft-timbers of a car, of elongated bearings secured to said draft-timbers, a shaft mounted in said bearings, a link secured to the shaft, an arm projecting from the link and adapted to engage said end sill, two lugs projecting from each draft-timber, rods attached to the ends of said shaft, passing through one lug of each pair and adapted to bear at its end on the other lug of each pair, and springs encircling the rods between the lugs, substantially as set forth.

7. The combination with the end sill and the draft-timbers of a car, of a link having a pivotal connection with said draft-timbers, an arm projecting from said link and adapted to engage the rear face of the end sill, a crank-arm secured directly to the ends of the journals of said link and means connected with one of said crank-arms for locking the link in a horizontal position, substantially as set forth.

8. The combination with a car, of a shaft connected with the draft-timbers thereof, a link secured to said shaft, an arm projecting from said link and adapted to engage the rear face of the end sill of the car, a crank-arm secured directly to said shaft, a rod attached to said crank-arm and extending to the top of the car, a guide through which said rod passes and a shoulder on said rod and adapted to engage said guide whereby to retain the link in a horizontal position, substantially as set forth.

607,184. LUBRICATING-BEARING. JACOB O. MARKS, Urbana, Ill. Filed Feb. 12, 1898. Serial No. 670,125. (No model.)



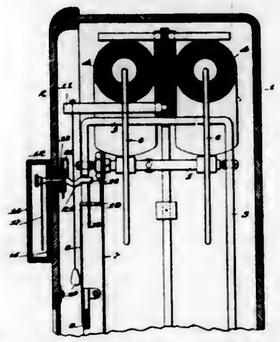
Claim.—1. In a lubricating-bearing, the combination with a boxing having an unbroken interior wall and a shaft extending through the boxing, the internal diameter of the boxing being much greater than the diameter of the shaft, whereby a large, annular chamber having straight, smooth, walls, is formed within the boxing, of a collar secured to the shaft within said annular chamber and having its bearing against the wall of said chamber, whereby oil in said chamber will be agitated when said collar passes through it and be thrown against the wall of the chamber to lubricate the bearing of the collar thereon, substantially as set forth.

2. In a lubricating-bearing, the combination with a spindle, an axle-box having an oil-chamber of much greater diameter than the diameter of the spindle and extending from end to end of the axle-box, and a hub on the axle-box of collars fixed on the spindle at the respective ends of said oil-chamber and having their bearings in said oil-chamber, the outer collar having an oil-hole, a cap on the outer end of the spindle and closing said oil-chamber and oil-hole, an annular cap secured to the axle-box at the inner end of the spindle and oil-chamber and encircling the axle, said annular collar bearing against one end of the hub and a packing within grooves in said annular cap, substantially as set forth.

3. The combination with an axle, the spindle thereon, a hub and an axle-box within the hub, said axle-box being of much greater internal diameter than the diameter of the spindle whereby to form an oil-chamber extending from end to end of said axle-box, of collars secured to the respective ends of the spindle and having their bearings in the axle-box and within said oil-chamber, a cap on the outer end of the axle-box, an annular cap on the inner end of the axle-box and having a collar to rotate about the axle, said caps and last-mentioned collar being out of actual contact with the spindle and a packing within said annular cap, substantially as set forth.

4. The combination with a spindle, a hub and an axle-box therein, said axle-box having an oil-chamber of much greater diameter than that of the spindle, of fixed collars on said spindle having their bearings in the axle-box and within said oil-chamber, and removable caps screwed on the respective ends of the axle-box and bearing against the ends of the hub and also against said fixed collars, substantially as set forth.

607,185. ELECTRIC METER. WILLIAM D. MARKS, Philadelphia, Pa., assignor to the American Electric Meter Company, same place. Filed Nov. 4, 1897. Serial No. 657,344. (No model.)



Claim.—1. The combination with an electric meter wherein is used an ampere-indicator, of a supplemental pointer the movement of which in one direction is effected or controlled by said ampere-indicator, and means for preventing return movement of said supplemental pointer, substantially as set forth.

2. The combination with an electric meter wherein is used an ampere-indicator, of a shaft, connections between said shaft and said ampere-indicator, and a supplemental pointer carried by said shaft, substantially as set forth.

3. The combination with an electric meter wherein is used an ampere-indicator and a plumb-bob, of a shaft, connections between said shaft and the ampere-indicator, said shaft being provided with a curved portion for passing the cord of said plumb-bob, and a supplemental pointer carried by said shaft, substantially as set forth.

4. The combination with an electric meter wherein is employed an ampere-indicator, of a pointer carried by said ampere-indicator, a supplemental pointer for indicating the maximum amperes which may be registered by said ampere-indicator, and connections between said supplemental pointer and the pointer of the ampere-indicator, substantially as set forth.

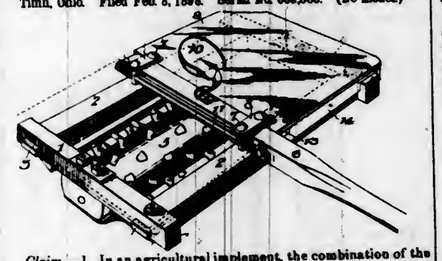
5. In an electric meter wherein is used an ampere-indicator, the combination of a shaft, a finger on said shaft engaged by an element connected with said ampere indicator, and a supplemental pointer operated by said shaft, substantially as set forth.

6. The combination with an electric meter wherein is used an ampere-indicator, of a shaft, connections between said shaft and said ampere-indicator, a supplemental pointer operated by said shaft, and a spring for preventing return movement of said shaft, substantially as set forth.

7. An improved maximum-load or ampere indicator cooperating with an electric meter, comprising a supplemental index movable only in one direction by said meter and cooperating with a suitable scale, substantially as set forth.

8. A maximum-load or ampere indicator cooperating with electric meters, comprising a shaft, connections between said shaft and the meter by which the shaft will be turned in one direction only, and a supplemental finger connected to said shaft and cooperating with a scale, substantially as set forth.

607,186. LAND ROLLER AND PULVERIZER. MARTIN MILLER, Tiffin, Ohio. Filed Feb. 8, 1898. Serial No. 669,583. (No model.)

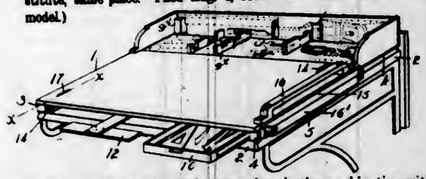


Claim.—1. In an agricultural implement, the combination of the frame, a pole or tongue secured thereto, a platform closing the upper side of the frame and having an interlocking connection at its inner edge with the pole or tongue at one side of the latter, said platform having front and rear transverse strips at the lower side thereof adapted to engage with corresponding sides of the front and rear bars of the frame, and having their outer ends engaging with the inner side of the longitudinal bar of the frame, substantially as set forth.

2. In an agricultural implement, the combination of a frame, a pole or tongue, vertical bolts or fastenings at the sides of the pole or tongue and securing it to the front and rear bars of the frame, yoke-plates connecting the upper ends of the fastenings and projecting beyond the sides of the pole, a strip secured to a side of the pole, and a platform closing the upper side of the frame and having its inner edge portion resting upon the strip secured to a side of the pole and coming beneath the projecting end portions of the yoke-plates, substantially as described.

3. In an agricultural implement, the combination of a rectangular-shaped frame composed of longitudinal and front and rear bars having their end portions joined and projecting, forming end or corner extensions, a pole or tongue placed centrally upon the front and rear bars, vertical bolts for connecting the pole to the frame-bars, yoke-plates extending over the pole and receiving the upper ends of the bolts and projecting beyond the sides of the said pole, strips applied to the sides of the pole, platforms closing the top side of the frame at each side of the pole and having their inner edges notched to receive the vertical bolts and resting upon the strips secured to the sides of the pole and coming beneath the end extensions of the yoke-plates, outer strips secured to the platforms and overlapping the outer side of the longitudinal frame-bars and resting upon the end extensions of the front and rear bars, and front and rear transverse strips secured to the ends of the platforms and embracing the sides of the front and rear frame-bars and having their outer ends notched to receive the end extensions of the longitudinal bars, substantially as and for the purpose set forth.

607,187. DESK ATTACHMENT. WILLIAM W. MURRAY, Rochester, N. Y., assignor to the Rochester Athenæum and Mechanics Institute, same place. Filed Aug. 4, 1897. Serial No. 647,062. (No model.)



Claim.—1. In a desk attachment or bench, the combination with the tapered supporting-pieces, clamping devices extending below the latter and adapted to engage a desk-top, of a shooting-board upon one end of the bench consisting of a stop secured at right angles to the edge of the latter, a plane-guide at the end of the bench below the level of the top thereof, and an upper plane-guide extending over the edge of the bench substantially as described.

2. A bench top or attachment for school-desks having the tapered supporting-pieces whereby the bench is held in a horizontal plane when applied to a slanting desk-top, a shooting-board upon one end and a work-stop 17, arranged upon the other end in close proximity to the edge, and a wedge 18 adapted to engage with the lower end of said stop and adapted to project it through an aperture in the desk-top.

3. In a desk attachment, for the purpose described, the combination with the top having the tapered supporting-pieces 3 and 4 at the sides, of the stationary strip 5 on one side, and a clamping-piece 6 on the other, and the bolt for operating the latter, both said strip and piece 6 extending below the pieces 3 and 4 and operating to clamp the attachment to a desk, substantially as described.

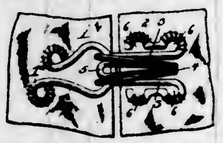
4. The combination with the bench having the vertical aperture and means for securing the bench removably to a desk-top, of the vertically-movable work-stop, operating through the aperture, and the wedge sliding beneath the bench and engaging the lower end of said stop for adjusting it vertically, substantially as described.

607,188. BOOT OR SHOE. FRANK MCDONALD, Medford, Mass., assignor of one-third to Clarence J. Herrett, same place. Filed June 26, 1897. Serial No. 642,411. (No model.)



Claim.—As a new article of manufacture, a detachable boot or shoe heel made up of an elastic heel and a metallic coupler provided with a clamping mechanism: the coupler being formed at its upper part with an inturned, sole-gripping lip, and, at its under part, with an inclined lip, and the heel being molded on the inclined lip with a sole-edge-receiving space between its upper surface and the under surface of the sole-gripping lip.

607,189. HOOK FOR HOOK-AND-EYE FASTENING. BENJAMIN F. OREWILER, Shelby, Ohio, assignor of one-half to James Currie, same place. Filed May 9, 1896. Serial No. 590,905. (No model.)



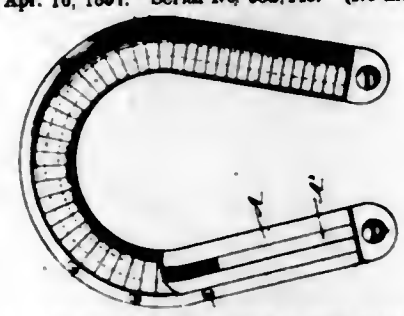
Claim.—1. A hook for garment fasteners having shank members arranged in a common plane and provided with attaching-loops, forwardly-convergent bill members connected respectively with the shank members by yielding loops perpendicular to the plane of the shank members, tongue members respectively connected with the bill members by yielding loops perpendicular to the plane of the shank members, and connected at the opposite end by a transverse loop by which the front ends of the bill members are yieldingly held in lateral contact, substantially as specified.

2. A hook for garment-fasteners having parallel spaced shank members provided with attaching-loops, forwardly-convergent bill members respectively connected with the shank members by yielding loops perpendicular to the plane of the shank members, the front ends of the bill members being in lateral contact, rearwardly-divergent tongue members arranged between the planes of the bill members and shank members and respectively connected with the bill members by yielding loops arranged perpendicular to the plane of the shank members, the rear ends of the tongue members being connected by a transverse yielding loop arranged between the perpendicular planes of the loops at the rear ends of the bill members, and manually accessible between said loops, said transverse loop being laterally yielding to normally hold the front ends of the bill members in lateral contact, and the tongue members being deflected at intermediate points toward the plane of the shank members, and occupying positions between the perpendicular planes of said shank members, for depression therebetween, substantially as specified.

3. A hook for garment-fasteners constructed of a single blank of spring-wire, doubled upon itself at its center to form a looped holding-tongue of which the sides or members are in a common transverse plane; having said tongue members folded upon themselves to form parallel loops perpendicular to the plane of the tongue-loop, and extended rearwardly and divergently to form bill members of which the rear ends are spaced apart a distance equal to the width of the rear end of said tongue-loop; having said bill members folded upon themselves to form loops perpendicular to the plane of the first-named transverse loop, and extended forwardly to form parallel

spaced shank members; and having said shank members folded upon themselves, outwardly, to form attaching-loops, in the plane of the shank members, the open sides of the attaching-loops being disposed to face inwardly or toward the shank members, and said shank members being capable of swinging movement perpendicular to the plane of the attaching-loops and opposed by the torsional elasticity of the wire blank at the points of connection of the shank members with the attaching-loops, substantially as specified.

607,190. SOFT-TREAD HORSESHOE. JOHN PATRICK, Chicago, Ill. Filed Apr. 16, 1897. Serial No. 632,449. (No model.)



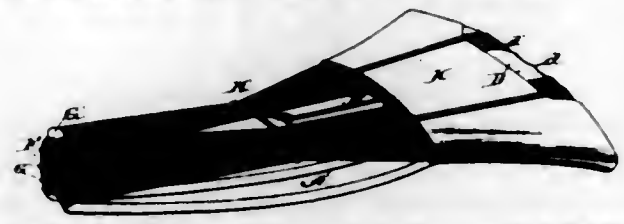
Claim. 1. A horseshoe comprising a shoe proper made of one piece and provided on its exposed surface with a slot, an enlarged recess within the body of the shoe and communicating with said slot, a cushion provided with a part adapted to fit said recess, said cushion provided with an enlarged projecting part adapted to extend beyond said slot, the part adapted to fit said recess being of such size that the cushion can be inserted into and removed from the recess while the shoe is in position, and a removable holding device at each end of said recess adapted to hold said cushion in position.

2. A horseshoe comprising a shoe proper provided on its exposed face with a slot, an enlarged recess within the body of the shoe communicating with said slot, a cushion inserted in said recess and provided with an enlarged projecting part, and a holding device associated with the shoe to hold the cushion against longitudinal motion, said holding device free from said cushion.

3. A horseshoe comprising a shoe proper having a slot extending along the outer face thereof, an enlarged recess communicating with said slot, a cushion inserted in said recess and provided with a projecting part which projects through said slot, said cushion composed of a series of pieces of rawhide placed in proximity to each other so as to form a substantial continuous cushion-holding device engaging the two end pieces of rawhide so as to hold the whole series in position.

4. A horseshoe comprising a shoe proper, a slot extending along the outer face of said shoe, an enlarged recess in the body of said shoe, a cushion shaped to fit said recess, and provided with a projecting part which extends through the slot, in the face of the shoe; said cushion adapted to be inserted into the end of said recess and forced therealong, the ends of said shoe projecting slightly beyond said slot, and a holding-piece adapted to be attached to said projecting parts and provided with an angular piece adapted to cover the ends of said recess so as to hold the cushion in place.

607,191. BICYCLE-SADDLE. HERBERT C. PHILLIPS, New Castle, Pa. Filed Apr. 28, 1897. Serial No. 634,272. (No model.)

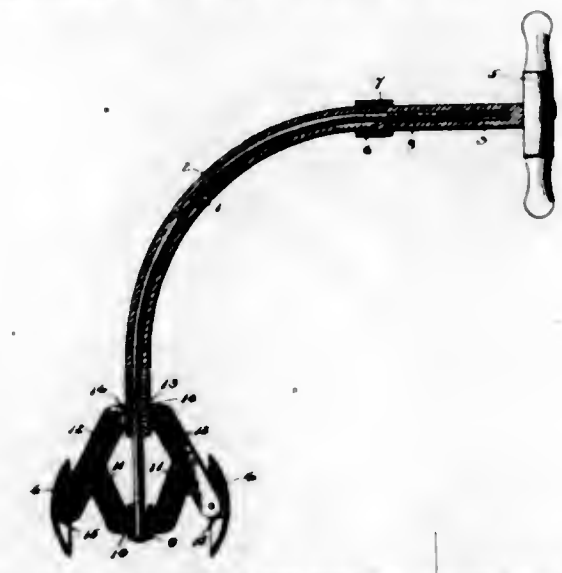


Claim.—1. In a cycle-saddle, the combination with the frame, provided with substantially vertical parallel side portions and a cantle supported directly on the rear end of said frame, of divided seat material connected with the cantle and passing around the substantially vertical sides of the pommel, the seat material from the sides of the cantle passing around the lower portions of said vertical sides and the seat material from the center of the pommel passing around the upper portions of said sides whereby the elasticity of the frame will allow the center portion of the seat to relax more quickly and with less pressure than that at the sides and thereby support the major weight of the rider on the side portions of the saddle; substantially as described.

2. In a saddle, the combination with the frame formed of a rod doubled at the center and bent upwardly to form a pommel and having its rear ends brought together and rounded to form a pivot-bearing, of a cantle having a socket for the reception of the rounded ends of the frame forming a universal joint and curving forwardly from said socket on each side, of seat material strained around said cantle and at the forward end passing through and strained around the pommel whereby the cantle is pivotally supported; substantially as described.

3. In a saddle, the combination with the frame, pommel cantle and lacing passed back and forth between the pommel and cantle, of a leather cap, or casing inclosing said lacing at the rear end and transverse lacing uniting the edges of the leather on the under side of the saddle whereby the same may be adjusted in width; substantially as described.

607,192. BOOT OR SHOE STRETCHER. CHARLES H. PRESCOTT, Athens, Tenn., assignor of one-half to William B. Hunt, same place. Filed Feb. 26, 1897. Serial No. 625,065. (No model.)



Claim.—1. In a boot or shoe expander, the combination with a suitable tube, of a rod loosely mounted therein and formed at one end with screw-threads, an operating-handle bearing loosely against one end of said tube and formed internally with screw-threads which engage the screw-threads upon the protruding ends of the rod, and an expanding device located at the lower end of said rod and operated by the longitudinal movement of the same, substantially as described.

2. In a boot or shoe expander, the combination with the hollow curved tube, of a flexible rod mounted within the same, a screw-handle for moving said rod longitudinally, and an expanding device connected to the inner end of said rod and adapted to be operated by the longitudinal movement of the same, substantially as described.

3. In a boot or shoe expander, the combination with a tube adapted to be inserted into a shoe, of a screw-threaded rod mounted in said tube, an operating-handle mounted on the threads of one end of said rod, and an expanding device mounted on the opposite end of said rod and comprising toggle-levers, expanding-buttons connected thereto, and a sliding sleeve, the latter adapted to engage the inner end of the tube when the rod is moved longitudinally, substantially as described.

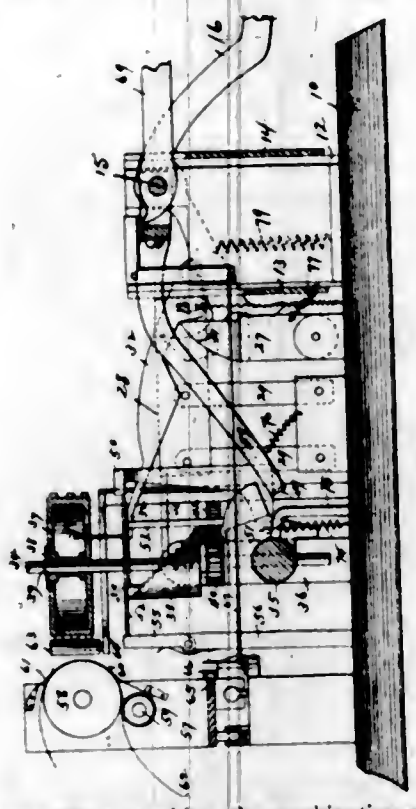
4. In a boot or shoe expander, the combination with a curved tube, of a flexible rod mounted therein and screw-threaded at one end, an operating-handle adapted to bear against the outer end of said tube and provided with a screw-threaded portion engaging the screw-threads of said rod, toggle levers mounted on the lower end of said rod, a sliding sleeve also mounted on said lower end, toggle-levers pivotally mounted on said sliding sleeves and the before-mentioned toggle-levers, and expanding-buttons mounted on the lower ends of toggle-levers connected to the sliding sleeves, substantially as described.

607,193. TYPE-WRITER. WILLIAM P. QUENTELL, New York, N. Y. Filed Apr. 29, 1897. Serial No. 634,446. (No model.)

Claim.—1. In a type-writing machine, the combination with a rotary type-holder and a series of finger-keys operatively connected therewith, whereby to rotate the type holder, of a stop mechanism comprising a tubular cam concentric with the axis of the type-holder, rotating in unison therewith, constructed in a single piece and having its contact-points in a plane oblique to said axis and arranged at equal distances in two symmetrical halves around the entire edge of said cam, and a pivoted stop-arm moving in a path substantially parallel to said axis, actuated by said finger-keys and adapted to be projected into the path of said cam to arrest the rotation of the cam and type-holder, substantially as described.

2. In a type-writing machine, the combination with a rotary type holder and oscillating frame whereon said type-holder is mounted a pinion for driving said type-holder, a segment mounted upon said

frame enmeshed with said pinion and a reciprocating frame interposed between said segment and the ends of the key-levers, whereby the depression of the key-lever operates through said frame to move said segments and thereby the pinion and type-holder, substantially as described.



3. In a type-writing machine, the combination with a series of pivoted keys, a rotary type-holder mounted upon a swinging frame, gearing operated by said keys for rotating the type-holder, a stop mechanism for arresting said type-holder, comprising a vertically-moving stop-arm actuated by the key-levers and a tubular cylindrical cam mounted on the axis of the type-holder and having an oblique cam surface, and a pivoted bail adapted to be rocked by the key-levers and having an arm to engage the swinging frame, whereby the latter may be oscillated, substantially as described.

4. In a type-writing machine, the combination with a rotary type-holder, gearing for rotating said type-holder, a sliding frame, a series of key-levers engaging said frame at variable distances from their pivots, a stop mechanism comprising a cam concentric to the axis of the type-holder, a pivoted stop-arm projecting into the path of the cam, a bail for operating said stop-arm and said key-levers also engaging said bail at variable distances from their pivots, substantially as described.

5. In a type-writing machine, the combination with a rotary type-holder, a shaft on which said type-holder is mounted, a gear-wheel or pinion loosely mounted on said shaft, a mutilated locking-disk moving with said gear, gear-segments pivoted eccentrically to said shaft enmeshed with said gear, said segments having stop-pins thereon and adapted to engage the mutilated locking-disk to retain said type-holder in its normal position, substantially as described.

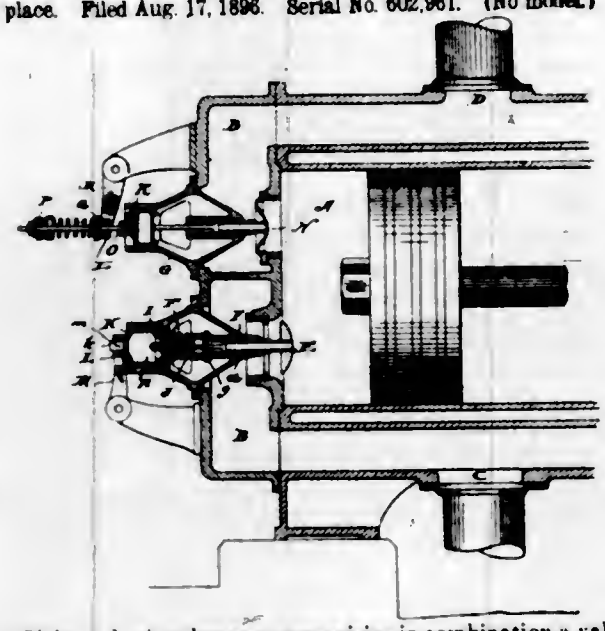
6. A key-lever for a type-writer constructed from a sheet metal blank having its terminal portion in the form of a disk separated from the body of the key by two parallel slits and disposed at right angles to the plane of the body of the key and adapted to receive a suitable label or tab, said disk having a notched or recessed portion and said tab having a lip adapted to engage said recess, and means for binding the parts together, substantially as described.

607,194. TROLLEY. WILLIAM H. RUSSELL, Chicago, Ill. Filed May 24, 1897. Serial No. 637,923. (No model.)



Claim.—The combination with a trolley arm or pole, of a base, comprising a tubular portion fitting over the trolley arm or pole, a flaring portion extending from such tubular portion upward and outward and a table at the upper end thereof, and a fork having a trolley-wheel rotatably mounted therein, such fork comprising a tubular portion fitting over the table on the base, a pivot extending, in a vertical plane, through such fork and base, an arm on the under side of the fork, extending under the base and a spring on the trolley-pole engaging with such extension; substantially as described.

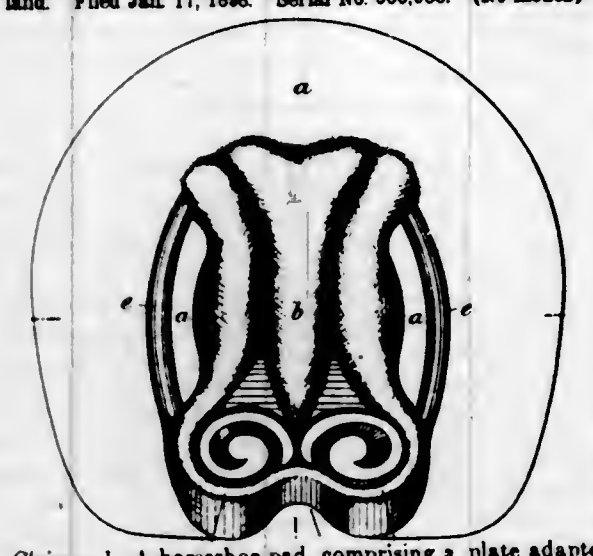
607,195. VALVE-GEAR FOR AIR-COMPRESSORS. EDWARD T. SEDERHOLM, Chicago, Ill., assignor to the Fraser & Chalmers, same place. Filed Aug. 17, 1896. Serial No. 602,961. (No model.)



Claim.—1. A valve-gear comprising in combination a valve-stem carrying a piston, and a movable dash-pot operated by the valve-gear and adapted to be moved away from the piston whereby to allow the valve to open and to cushion the valve in the opening movement, and to be returned while in operative contact with the piston to close the valve, substantially as described.

2. In a valve mechanism the combination with a valve and its stem of a piston mounted upon and moving with said stem, a movable dash-pot, a stem connected thereto a lever for moving the dash-pot away from the piston to permit the valve to open and to cushion the valve in the opening movement and a spring for returning the dash-pot to its closed position, said spring acting upon the dash-pot stem, substantially as described.

607,196. HORSESHOE-PAD. CHARLES SHEATHER, London, England. Filed Jan. 17, 1898. Serial No. 666,980. (No model.)



Claim.—1. A horseshoe-pad, comprising a plate adapted to be secured between the hoof and the ordinary metallic shoe, and an elastic arch open at the sides and springing from the front and rear of the foot.

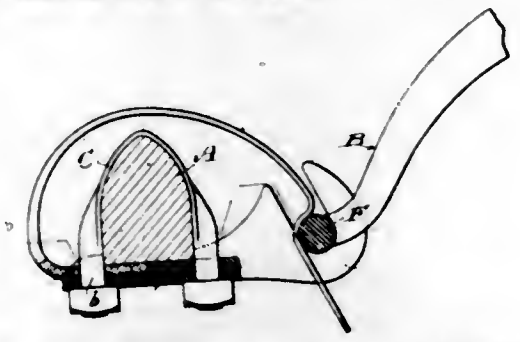
2. The combination of a horseshoe-shaped plate, a boss connecting its rear ends, and an elastic arch open at the sides springing from the boss and from the inner edge of the front of the plate.

3. The combination of a horseshoe-shaped plate, a boss connecting its rear ends, ribs along its inner edge, and an elastic arch springing from the boss and from the inner edge of the front of the plate.

4. The combination of a horseshoe-shaped plate, a boss connecting its rear ends and extending completely across the foot, and an elastic arch open at the sides springing from the boss and from the inner edge of the front of the plate.

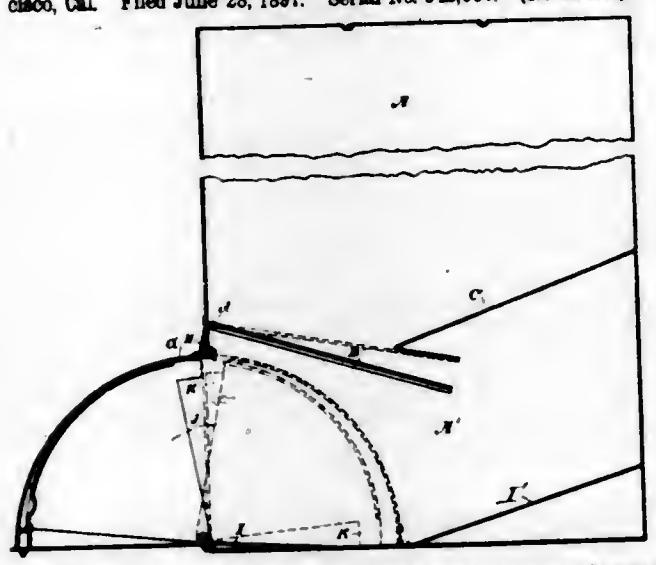
5. The combination of a horseshoe-shaped plate, a boss connecting its rear ends and extending completely across the foot, ribs along its inner edge, and an elastic arch springing from the boss and from the inner edge of the front of the plate.

607,197. THILL-COUPLING. HENRY SIEVERS, West Bend, Wis., assignor of one-half to Herman Degner, same place. Filed Nov. 29, 1897. Serial No. 660,075. (No model.)



Claim.—A thill-coupling comprising a plate having forward hook extensions and a rear upper longitudinal seat, the latter extending under an axle to which the plate is made fast, a spring having a recurved horizontal rear end engaging the aforesaid seat to impinge the axle, and a thill-iron engageable with hook extensions of said plate against a bend in the forward portion of the spring, the recurved horizontal rear end of this spring having an aperture for the engagement of one end of the clip by which the aforesaid plate is held to an axle.

607,198. GROCER'S CADDY. CLARENCE M. SYMONDS, San Francisco, Cal. Filed June 28, 1897. Serial No. 642,607. (No model.)



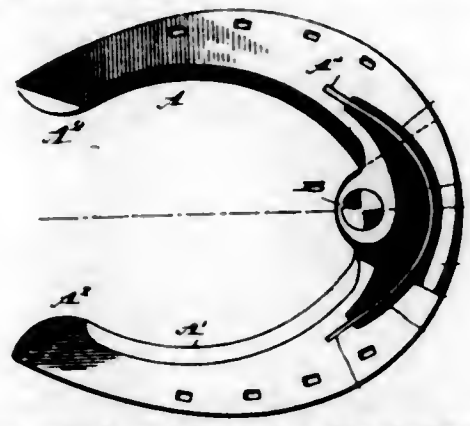
Claim.—1. A containing case or caddy having a rectangular opening in one side near the bottom, a segment having the meeting angle of its sides hinged in the lower part of said opening, and having an opening in its curved face, a cover controlling the opening in said curved face, means for regulating the flow of material through the case and a shelf or plate I fixed in the bottom of the case and extending inwardly and downwardly from the hinge connection of the segment so as to form a close smooth joint with said hinge portion and to allow a scoop to be introduced for the removal of portions of the contents of the case.

2. An improved case or caddy having a rectangular opening in one side near the bottom, a segment having the meeting angle of its sides hinged in the lower part of said opening, and having an opening in its curved face, a second segment within the first-named one and independently hinged, and having short legs projecting from the upper angles of its rear edges, adapted to rest on the bottom of the case, when the segment is closed, so as to leave a small open space at the bottom, oppositely-inclined directing-plates in the case forming a tortuous passage for the contents, and oppositely-inclined plates secured to the bottom of the case one of said last-named plates directing the contents toward the discharge-opening and the other plate extending from the hinge connection of the first-named segment and forming a close smooth joint therewith to permit the introduction of a scoop for the removal of portions of the contents of the case.

607,199. EXPANSIBLE HORSESHOE. LOUIS P. TOUCHET, Watertown, N. Y. Filed Mar. 5, 1898. Serial No. 672,771. (No model.)

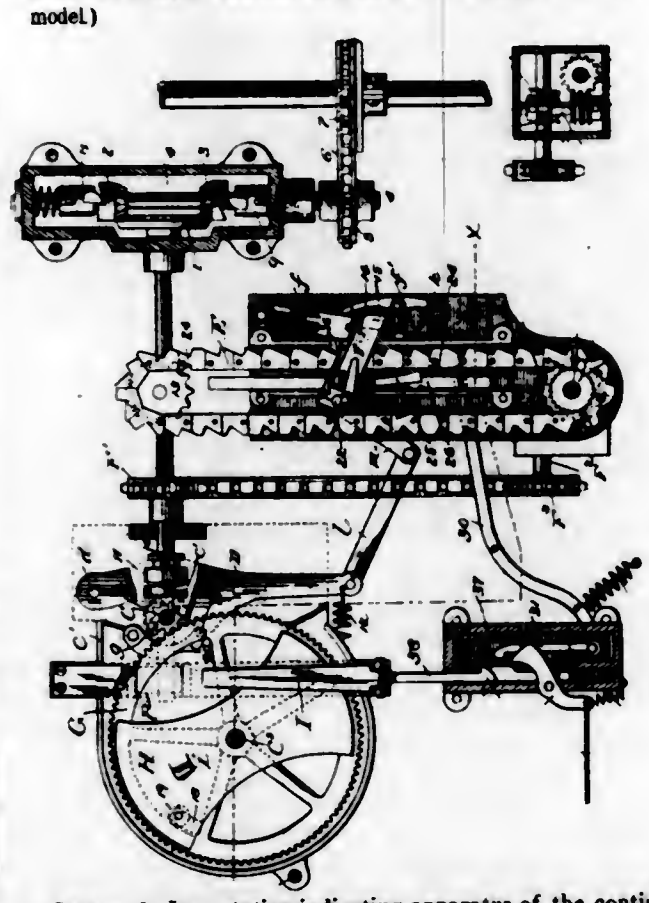
Claim.—1. An expansible horseshoe composed of separable members pivotally connected together and provided with spring-containing recesses and spring-holding sockets adjacent to the pivot, and a spring held in said sockets and extending circumferentially of said pivot; substantially as specified.

2. An expansible horseshoe composed of separable members pivoted together at the inner face of the toe portion and provided with spring-retaining sockets, a flat spring seated at its opposite ends in said sockets, upwardly-extending clips provided at the inner ends of said members, and a contacting shoulder to limit the expansion of said members; substantially as specified.



3. An expansible horseshoe composed of recessed members pivoted together at the center of their inner edge opposite to the point of the frog of the hoof, a semicircular flat spring held at its opposite ends in sockets formed in the opposite members of the shoe adjacent to the pivot, and stops to limit the expansion of said shoe; substantially as specified.

607,200. STATION-INDICATOR. WILLIAM A. TURNER, San Francisco, Cal., assignor to the American Indicator Company, same place. Filed Oct. 7, 1890. Renewed Dec. 13, 1897. Serial No. 661,756. (No model.)



Claim.—1. In a station-indicating apparatus of the continuous type, the combination of a continuously-moving driving-shaft, an indicator-shaft, a clutch for intermittently connecting said shafts, a mechanism for controlling said clutch and causing its connection with the indicator-shaft at proper times, and a corrector for moving said controlling device independently of its normal motion, to correct errors in its position, substantially as described and shown.

2. In a station-indicating apparatus, the combination with the continuously-moving driving-shaft, of a chain geared thereto, a reciprocating slide operated by said shaft, a sliding corrector in proximity to the chain, connections from said corrector to the reciprocating slide, held normally out of engagement therewith, and a releasing-cord for permitting said connections to engage with said slide whereby the corrector is operated, substantially as and for the purposes set forth.

3. In a station-indicating apparatus the combination of a driving mechanism operated continuously by the motion of the car; an indicating apparatus operated intermittently by said driving mechanism; a continuously-moving endless controller for controlling the engagement of the said driving mechanism and indicating apparatus at proper times; and connections operated intermittently by the indicating mechanism for disengaging said driving mechanism from the indicator apparatus, substantially as described.

4. In a station-indicating apparatus the combination of a driving mechanism operated continuously by the motion of the car; an indicating apparatus operated intermittently by said driving mechanism; a continuously-moving endless controller for controlling the engagement of the said driving mechanism and indicating apparatus at proper times; connections operated intermittently by the indicating mechanism for disengaging said driving mechanism from the indicating apparatus, and a corrector for moving said controlling mechanism independently of its normal motion, to correct errors in its position, substantially as described.

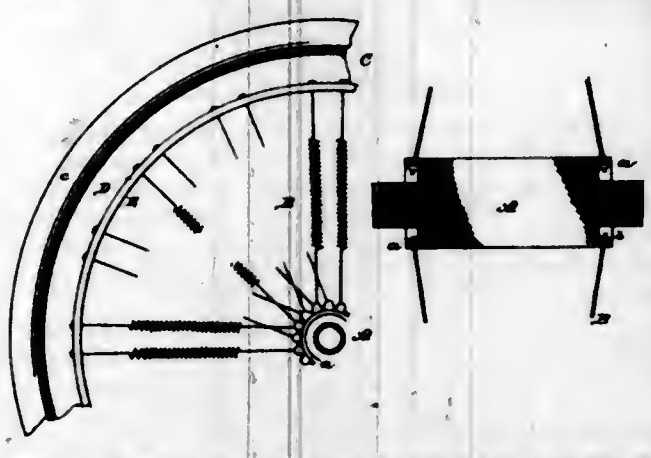
5. In station-indicating apparatus the combination of a continuously operated driving-shaft; an indicator-shaft; a sliding clutch for connecting and disconnecting said shafts; a lever connected to said clutch; connections operated by the intermittent motion of the indicator-shaft for positively moving said lever to disengage the clutch; a continuously-moving notched chain; and connections between said chain and lever for alternately holding the clutch out of engagement and permitting its engagement with the indicator-shaft at proper times, substantially as described.

6. In station-indicating apparatus of the continuous type, the combination of a continuously-operated driving mechanism, an indicator-shaft operated intermittently thereby through a sliding clutch, and means for disengaging said clutch automatically after each indication, consisting of a lever connected to said clutch, a wheel geared to the indicator shaft, and a device operated by the rotation of said wheel for moving said lever and disengaging said clutch, substantially as set forth.

7. In station-indicating apparatus of the continuous type, the combination of a continuously-operated driving mechanism, an indicator-shaft operated intermittently thereby through a sliding clutch, and means for disengaging said clutch automatically after each indication, consisting of a lever connected to said clutch, a wheel geared to the indicator-shaft, and a rotary plate operated by said wheel for moving said lever and clutch, substantially as described and shown.

8. In a station-indicator and in combination, a continuously-operating driving shaft, and intermittingly-operated indicator-shaft, a clutch for engaging and disengaging said shafts, a gear-wheel G geared to said indicator-shaft, a pivoted plate H, operated by said gear-wheel, and a slide 38 connected to said driving-shaft and adapted to move said pivoted plate when said clutch is disengaged substantially as described.

607,201. SPRING-WHEEL FOR VEHICLES. ALBERT R. WAGGONER, Arkansas City, Kans., assignor of one-half to William Waggoner, same place. Filed July 13, 1897. Serial No. 644,434. (No model.)



Claim.—1. In a spring-wheel, the combination of the hub having the end flanges *a*; with the rim or felly having the central web D and the flanges E on opposite sides thereof; and the spring-spokes having their ends passed through openings in the said end flanges *a* and side flanges E, and having the taps *b* on their projecting ends, substantially as described.

2. In a wheel, the rim C made of rolled metal bent to form the outer annular hollow rim *c*, which constitutes the tire, the straight intermediate web D, the proximate portions of which are plane and bear against each other throughout their entire extent, and the flanges E, and the double series of screws or bolts F, which secure the straight or plane proximate portions of the web together, for the purpose set forth, substantially as described.

3. In a spring-wheel, the rim-sections having the dowels and ears, at their proximate ends, for the purpose set forth, substantially as described.

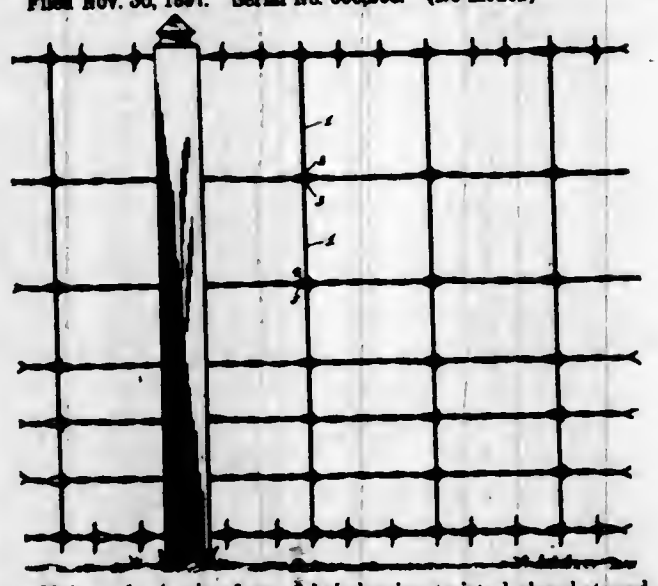
4. In a spring-wheel, the rim-sections, made of rolled metal, bent to form the outer, annular, hollow rim *c*, the web portions, D, and the inner flanges E, in combination with the ring-sections L, adapted to be inserted in the proximate ends of the hollow tire, for the purpose set forth, substantially as described.

607,202. COP. SIMON W. WARDWELL, Jr., Boston, Mass., assignor to the Universal Winding Company, Portland, Me. Filed Mar. 20, 1893. Serial No. 466,922. (No model.)



Claim.—A conical cop consisting of a series of concentric layers, each layer coinciding with the face of a cone, and consisting of spiral coils crossing each other between the ends of the cop, and each coil bent back with abrupt bends at the ends of the cop, said bends at each end succeeding each other in regular order, and all at each end upon the same plane at right angles to the axis of the cop, substantially as described.

607,203. WIRE FENCE. CHARLES E. WARNER, Waverly, Kans. Filed Nov. 30, 1897. Serial No. 660,260. (No model.)



Claim.—1. A wire-fence fabric having twisted plural-strand runners, and connecting-stays intersecting the runners at points where the runner-strands are in common longitudinal planes, and connected therewith by means of a lock consisting of oppositely-extending closed single-strand-engaging loops forming eyes which are axially disposed in the common longitudinal plane, substantially as specified.

2. A wire-fence fabric having twisted plural-strand runners, and connecting-stays intersecting the runners at points where the runner-strands are in a common longitudinal plane, and provided at each point of intersection with a lock consisting of oppositely-extending closed single-strand-engaging loops arranged in different transverse planes and axially in a common longitudinal plane, the contiguous portions of the stay being disposed at the sides of the runner-strands in different transverse planes from said loops and in the same longitudinal planes as those sides of the loops which are on the same sides of the runner-strands, substantially as specified.

607,204. WIRE FENCE. CHARLES E. WARNER, Waverly, Kans. Filed Feb. 19, 1897. Renewed Dec. 2, 1897. Serial No. 660,553. (No model.)

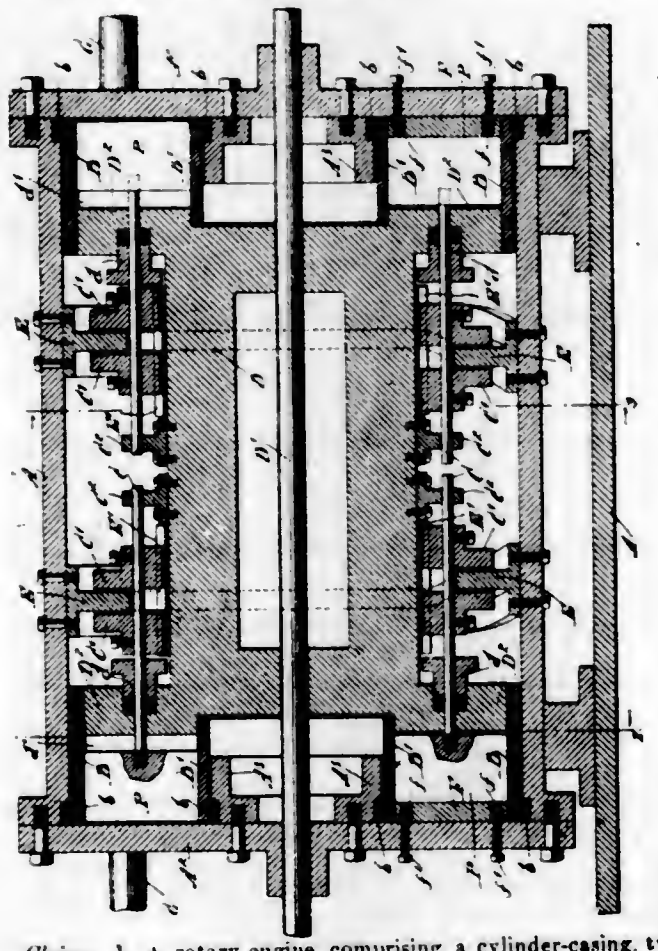


Claim.—1. A wire fence having plural-strand runners, and stays intersecting the runners at points where the runner-strands are in common vertical planes, each stay at its point of intersection with a runner being provided with upwardly and downwardly extending engaging or interlocking loops having their sides arranged in different transverse planes and transversely contracted to form closed eyes through which the runner-strands respectively extend, and the outer sides of the engaging or interlocking loops being extended to form inclosing loops, having their sides arranged in different transverse planes from the engaging loops and extending around the runner-strands collectively, substantially as specified.

2. A wire fence having plural-strand runners, and stays intersecting the runners at points where the runner-strands are arranged

in common vertical planes, each stay at its point of intersection with a runner being provided with upwardly and downwardly extending engaging loops for receiving the runner-strands separately, and downwardly and upwardly extending inclosing loops which receive the runner-strands collectively, the sides of the engaging and inclosing loops being arranged in different transverse planes to avoid doubling the thickness of the stay-wire at either side of the runner, and the loops being contracted transversely to avoid the projection of the sides of the lock beyond those portions of the runner at which the strands are arranged in a common horizontal plane, substantially as specified.

607,205. ROTARY ENGINE. SAMUEL T. WILSON, Charleston, W. Va., assignor to himself and W. W. Branch, same place. Filed Aug. 21, 1897. Serial No. 649,024. (No model.)



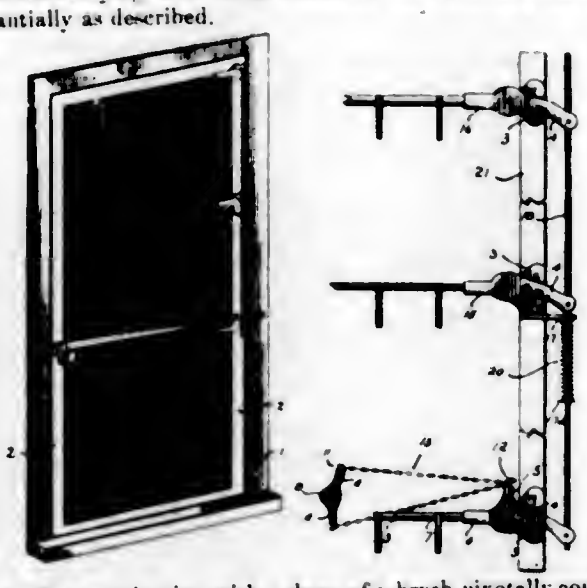
Claim.—1. A rotary engine, comprising a cylinder-casing, two separable rings attached to the heads thereof and forming therewith an annular cylinder open at one end, an abutment projecting from the casing head, a cylindrical piston rotating concentric with the cylinder and having a flange at its end of greater diameter than the body thereof and projecting longitudinally into the annular cylinder, said flange having a slot extending across its face, a piston-head fitting said slot and cylinder, a stem attached to the said head, and extending longitudinally the piston and through the flange, a cam-ring surrounding the piston and lugs attached to the stem engaging the cam-ring to reciprocate the piston-head when it passes the abutment, substantially as described.

2. A rotary engine, comprising a cylinder-casing, two separable rings attached to the heads thereof and forming therewith an annular cylinder open at one end, an abutment projecting from the casing-head, a cylindrical piston rotating concentric with the cylinder and having a flange at its end, of greater diameter than the piston-body and projecting longitudinally beyond the end thereof into the annular cylinder, said flange having a slot extending across its face, a piston-head fitting said slot and cylinder, a stem attached to said head and extending longitudinally through the flange, a cam-ring surrounding the piston-lugs adjustably secured to the stem and engaging the cam-ring to reciprocate the stem-head when it passes the abutment, and guideways attached to the rotating piston and engaging the sides of said lugs, substantially as described.

607,206. FLY-BRUSH FOR SCREEN-DOORS. MICHAEL ACKERMAN, Howard, S. D. Filed June 12, 1897. Serial No. 640,466. (No model.)

Claim.—1. In a brush attachment for screen-doors, the pivotally-mounted brush-carrying-arm, means for connecting said brush-carrying arm to the door, a lever-arm connected to said brush, and means for connecting said lever-arm to the door-knob for actuating the brush, substantially as described.

2. The combination in a brush attachment to doors, of a two-arm lever connected with the door-knob and actuated thereby, and a brush carrying arm pivotally connected with the door, said lever and brush-carrying arm being connected for operating the latter, substantially as described.

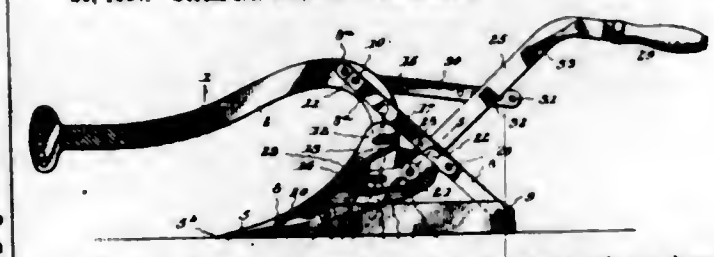


3. The combination with a door, of a brush pivotally connected with said door at or near its hinged edge, and a lever connected with the door-knob to be operated thereby, said lever being connected with the brush for actuating it, substantially as described.

4. In a brush attachment to doors, a series of connected brushes pivoted to the door, in combination with a lever connected with the door-knob and with said brushes for actuating them, substantially as described.

5. The combination with a screen-door, of a series of brushes, pivoted brush-carrying arms, a rod connecting said brush-arms, means connecting the said brush-arms to the lever actuating the door-knob, and a spring for retracting the brushes to their normal position after being operated by said door-knob, substantially as described.

607,207. PLOW. NELS ANKARSTOLPE, Lund, Tex. Filed Sept. 29, 1897. Serial No. 653,517. (No model.)



Claim.—1. The combination with a plow-beam having a downwardly-curved stock, of a foot-bar attached at a point intermediate of its length directly to said beam-stock, inclined braces attached to the foot bar and beam, a substantially horizontal brace-bar attached to the inclined braces and adjustably fastened to the beam-stock, and the handles attached to the brace-bar and linked to the beam, substantially as described.

2. The combination with a beam, and a foot-bar, of inclined braces attached to the foot-bar and adjustably attached to the beam, a brace-bar attached to the inclined braces and adjustably fastened to the foot or stock formed by the beam, handle-bars fastened to the brace-bar between the foot or stock and the inclined braces, and braces between the beam and the handle bars, as and for the purposes described.

3. The combination with a beam having a foot or stock, a foot-bar, and inclined braces, of a transverse brace-bar attached to the inclined braces and adjustably fastened to the foot or stock, handle-bars fastened to the transverse brace-bar between its attachment to the inclined braces and adjustable connection to the foot or stock, and suitable braces for the handle bars, as and for the purposes described.

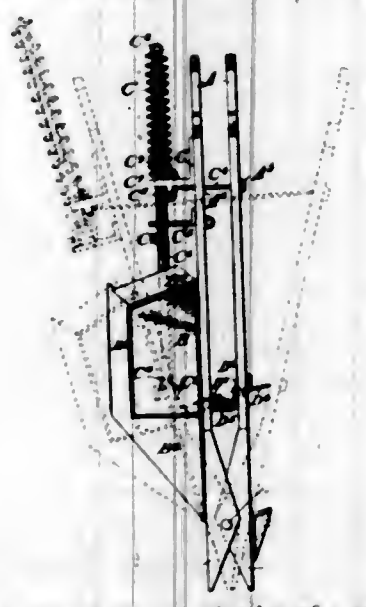
4. The combination with a beam having a foot or stock, of a foot-bar bolted at a point intermediate of its length to said foot or stock and provided at its front extremity with an integral tapered point and with a seat in rear of the cutting edges of said point, a winged carrier fastened to the foot and having a clasp which embraces the foot bar and is detachably bolted thereto, a share fitted to the seat of the point and fastened to the winged carrier, and a moldboard attached to said carrier, substantially as described.

5. The combination with a beam having a foot or stock, and a foot-bar, of a carrier fastened adjustably to the foot or stock and to the foot-bar, the share and moldboard mounted on said carrier, inclined braces between the foot-bar and the beam and adjustably fas-

tened to the latter, and means for the attachment of the handles, as and for the purposes described.

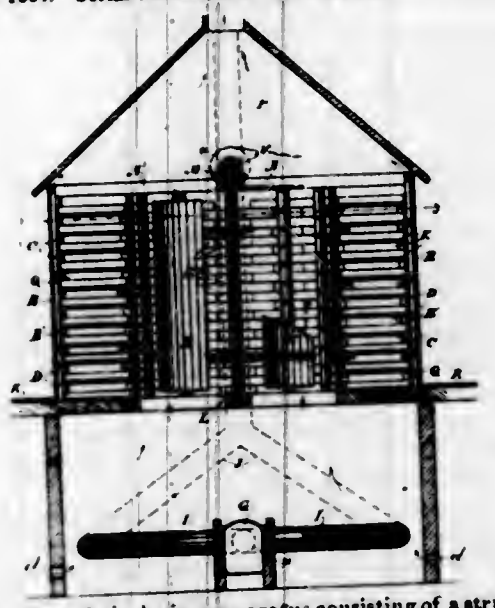
6. The combination with a beam having a foot or stock, and a foot bar, of a carrier mounted adjustably on the foot or stock and detachably fastened to the foot-bar, inclined braces adjustably fastened to the beam, a brace-bar attached to the inclined braces and adjustably fastened to the foot or stock, handle-bars attached to the brace-bar, and braces attached to the handle-bars and to the beam as and for the purposes described.

607,208. HAND SEED-PLANTER. CYRUS N. BAKER, Nicholasville, Ky., assignor, by direct and mesne assignments, to Charles H. Harnell and Walter H. Hearn, Crawfordsville, Ind. Filed Oct. 6, 1897. Serial No. 654,311. (No model.)



Claim.—In a planter, the combination of a pair of hinged metallic cutters which have vertical operating-bars, a rectangular seed-box, a hinged lid having upstanding flanges and a pair of small hinged lids, a delivery-chute, and means of extracting rough seed from the box and discharging it into the delivery-chute, the same comprising a suitable bracket having a vertical tubular sleeve, a movable plunger, a spiral spring, a discharge-fork, and an operating-cable, all made in the manner and for the purposes set forth, substantially as specified.

607,209. FRUIT-DRIER. THOMAS BECK, Watsonville, Cal. Filed Nov. 22, 1897. Serial No. 659,394. (No model.)



Claim. 1. A fruit-drying apparatus consisting of a structure having a heating-furnace and flues in the lower part, a central chamber superposed upon the heating portion having a rotary fan or air-forcing apparatus therein, doors forming polygonal faces around the exterior of the structure, tray-supports interior to said doors extending radially toward the central chamber, vertical jambs which with the doors form three sides of vertically-disposed flues, exterior to the tray-fronts whereby air forced outwardly over and through the fruit is independently discharged through each of the vertical flues.

2. In a drier, a heating-chamber containing a furnace and heating-flues, a superposed chamber having a vertical central shaft, a rotary fan and mechanism by which it is driven, tray-supports exterior to said chamber, said supports being disposed so that alternate trays are situated above and below the adjacent ones so that they overlap each other, vertical jambs or door-posts forming the angles of a polygon and doors closable between each pair of jambs so as to form an exterior polygonal face when closed and allowing the fruit-trays to be introduced and removed when opened, vertical flues formed between the jambs and the doors and the front faces of the trays whereby heated air forced outwardly by the rotating fan is delivered vertically upward to an escape flue after having passed over the fruit.

607,210. SELF-CLOSING COCK OR TAP-VALVE. ERIK A. BOLINDER, Stockholm, Sweden. Filed July 24, 1897. Serial No. 645,828. (No model.) Patented in Sweden Feb. 9, 1894, No. 5,384; in England Mar. 13, 1894, No. 5,229, and in Denmark May 31, 1895, No. 1,493.



Claim.—1. In a cock or tap, a hollow valve open in one end and in the other end provided with a small auxiliary valve, said hollow valve moving on a piston or the like fastened with one end to the valve-casing and in said fixed end provided with openings through which the fluid has to flow when the cock is open, a seat for said valve around the fixed end of said piston, and a stem passing through the said piston and connected to the bottom of said hollow valve, substantially as and for the purpose specified.

2. In a cock or tap for liquids a hollow valve open in one end, moving and fitting on a piston which is fastened with one end to the valve-casing and in the fixed end provided with openings through which the fluid has to flow when the cock is open, a seat for said valve around the neck of the piston and a stem passing through the said piston and connected to the bottom of said hollow valve, substantially as and for the purpose set forth.

607,211. ARTIFICIAL TOOTH. GEORGE BUCHANAN, Philadelphia, Pa. Filed Dec. 17, 1897. Serial No. 662,250. (No model.)



Claim.—1. An artificial tooth having a main cavity extending transversely therein, auxiliary rearwardly-extending cavities at the ends of said main cavity, laterally-extending cavities at the ends of said side cavities, shoulders extending inwardly toward each other and interposed between said laterally-extending cavities and the rear wall of the tooth and an opening extending rearwardly from said main cavity and aside of the rearwardly and laterally extending cavities to the back of the tooth, in combination with an anchor consisting of a strip of metal formed of a main transverse portion, rearwardly-extending legs at the ends of said main portion and laterally-extending feet at the rear ends of said legs, the members of the anchor occupying the respective cavities in the tooth.

2. An artificial tooth having a main cavity extending transversely therein, auxiliary rearwardly-extending cavities at the sides of said main cavity, laterally-extending cavities at the end of said side cavities, shoulders extending inwardly toward each other between said laterally-extending cavities and the rear wall of the tooth and an opening extending rearwardly from said main cavity aside of said rearwardly and laterally extending cavities through the back of the tooth, in combination with an anchor, formed of a transverse plate, rearwardly-extending legs at the ends of said plate and laterally-extending feet at the rear ends of said legs, and a pin connected with the crown of said anchor and passing between said side legs and through the back of the tooth.

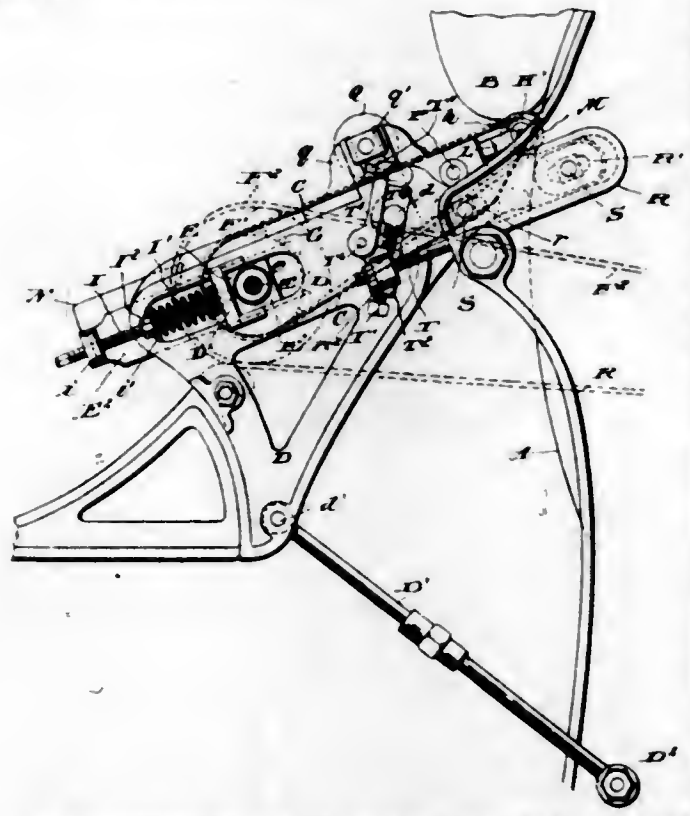
607,212. MECHANICAL FEED DEVICE. EDWARD W. BUELL, Chicago, Ill., assignor to the Troy Laundry Machinery Company, Limited, same place. Filed Nov. 7, 1896. Serial No. 611,414. (No model.)

Claim.—1. The combination with a roll and an endless apron and its moving and guiding mechanisms, of means yielding transversely of the apron for automatically adjusting the lateral tension of said apron; substantially as described.

2. The combination with a roll and an endless apron and its moving mechanism, of means yielding transversely of the apron for the automatic change of position of the edge of the apron in accordance with the lateral shrinking and stretching thereof; substantially as described.

3. The combination with an apron-supporting bed having a stiffening bar or truss thereunder and an endless apron, of chains to which the edges of the apron are attached, means for moving said chains, and means for deflecting the apron out of the plane occupied by said

bar or truss and the plane traversed by said chains; substantially as described.



4. The combination with an apron-supporting bed and an endless apron, of chains to which the edges of the apron are attached, means for moving said chains, means for deflecting the apron out of the plane traversed by said chains, and springs to permit a lateral movement of said apron, substantially as described.

5. The combination with a receiving element of a machine, of feed mechanism comprising an endless apron, a framework for supporting said apron and its driving mechanism, said framework being mounted adjustably to and from and independently of said receiving element, and means yielding transversely of the apron for automatically adjusting the lateral tension of said apron, substantially as described.

6. The combination with a receiving element of a machine, of feed mechanism comprising an endless apron, a framework for supporting said apron and its driving mechanism, said framework being mounted adjustably to and from and independently of said receiving element, means yielding transversely of the apron for automatically adjusting the lateral tension of said apron, and means for adjusting the longitudinal tension of said apron, substantially as described.

7. The combination with a feed-apron, of sprocket-chains secured to the edges thereof, means for causing the apron to travel, sprockets coöperating with the chains, and a yielding device coöperating with the sprockets and arranged and operating to retain the apron in a smooth condition, substantially as described.

8. The combination with a feed-apron, of sprocket-chains secured to the edges thereof, means for causing the apron to travel, sprockets loosely mounted upon the shaft of the driving-roll and coöperating with said chains, and a yielding device operating with the sprockets to exert a lateral tension on said apron, substantially as described.

9. The combination with an endless apron, of the chains to which the edges of said apron are connected, the sprockets over which said chains pass, and a driving-roll on the shaft of which both of said sprockets are loosely mounted; substantially as described.

10. The combination with an endless apron, of the chains to which the edges of said apron are connected, the sprockets over which said chains pass, a driving-roll on the shaft of which both of said sprockets are loosely mounted, and springs around the ends of said shaft acting upon the sprockets; substantially as described.

11. The combination with the roller and its shaft mounted in spring-held bearings, of an endless apron having chains, sprockets loose on said shaft, springs around the shaft bearing against the sprockets, and spring-held arms carrying the companion sprockets; substantially as described.

12. The combination with the roller and its shaft mounted in spring-held bearings, of an endless apron having chains, sprockets loose on said shaft, springs around the shaft bearing against the sprockets, spring-held arms carrying the companion sprockets, and means for deflecting the apron out of the plane of the chains; substantially as described.

13. The combination with the frame having a socket, of a forked piece mounted to move endwise in guides in said socket, a spring located in said socket to project said forked piece, a journaling shaft in said forked piece, a sprocket-wheel loosely mounted upon said journaling shaft, and a spring interposed between said sprocket and an arm of said forked piece, substantially as described.

14. The combination with the frame having sockets, of the forked pieces at opposite sides of the frame mounted to move endwise in guides therein, and having lugs disposed in said sockets, sprockets carried by the shafts mounted in said arms, springs located in the sockets and bearing on the lugs, collars on said shafts and springs around said shafts bearing against the inner faces of the sprockets; substantially as described.

15. The combination with the side frames and the truss-rod connecting the same, of the bed and its extension, an endless apron having chains, slidingly-mounted sprockets for said chains and a block disposed beneath said extension and having rounded under face to deflect the apron out of the plane traversed by its moving chains; substantially as described.

16. The combination with the side frames and the truss-rod connecting the same, of the bed and its extension, an endless apron having chains, a block disposed beneath said extension and having rounded under face to deflect the apron out of the plane traversed by its moving chains, and an angle-plate disposed beneath the extension and in which said block is located; substantially as described.

17. The combination with a receiving-roll of a machine, of an endless apron having its supporting mechanism mounted independent of that of the receiving-roll and adapted to support the apron with relation to the said roll, and means yielding transversely and longitudinally of the apron for automatically adjusting the tension of the apron in all directions; substantially as specified.

18. The combination with an endless apron and its supporting-bed, of means yielding transversely of the apron for automatically controlling the tension on the apron and for automatically conforming to lateral changes of such apron during its travel; substantially as described.

607,218. PENHOLDER. JAMES H. CAMPBELL, San José, Cal.

Filed Oct. 7, 1897. Serial No. 654,354. (No model.)



Claim.—1. A penholder consisting of a tube which is provided with a longitudinal slot which opens at the outer end thereof, a curved or segmental plate mounted in said tube beneath said slot and provided with a similar slot, a pin mounted to slide in said slots, said tube and said plate being connected at the inner end of said plate, and an open spring-ring mounted in said tube near the outer end thereof, and serving to support the outer end of said plate, substantially as shown and described.

2. A penholder consisting of a tube which is provided with a longitudinal slot which opens at the outer end thereof, a curved or segmental plate mounted in said tube beneath said slot and provided with a similar slot, said tube and said plate being connected at the inner end of said plate, and an open spring-ring mounted in said tube near the outer end thereof, and serving to support the outer end of said plate, said spring-ring having overlapping ends and terminal flanges, and a longitudinally-movable pin which passes through the slots in said tube and said plate, substantially as shown and described.

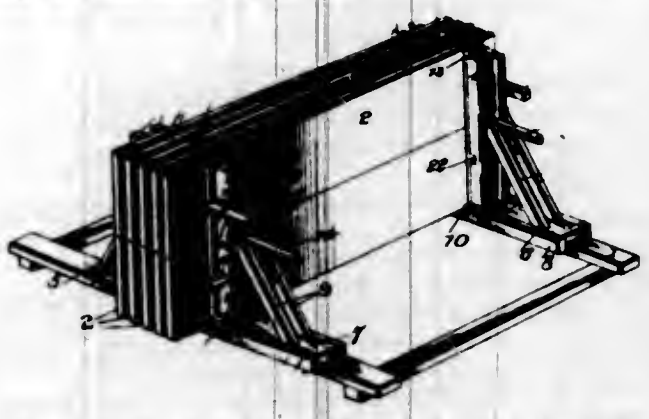
3. A penholder consisting of a tube which is provided with a longitudinal slot which opens at the outer end thereof, a curved or segmental plate mounted in said tube beneath said slot and provided with a similar slot, said tube and said plate being connected at the inner end of said plate, and an open spring-ring mounted in said tube near the outer end thereof, and serving to support the outer end of said plate, and a longitudinally-movable pin which passes through the slots in said tube and said plate, the outer end of said tube being also provided with a backwardly-curved annular flange or rim, substantially as shown and described.

4. A penholder consisting of a tube which is provided with a longitudinal slot which opens at the outer end thereof, and a backwardly-curved flange or rim, a curved or segmental plate mounted in said tube beneath said slot and provided with a similar slot, said tube and said plate being connected at the inner end of said plate, and an open spring-ring mounted in said tube near the outer end thereof, said ring having overlapping and flanged ends and serving to support the outer end of said plate, and a longitudinally-movable pin which passes through the slots in said tube and said plate, and said plate being provided at the edges or sides thereof with outwardly-directed longitudinal flanges, substantially as shown and described.

607,214. LUMBER-STACKER. WILLIAM R. CARROLL, Keatchie, La. Filed July 21, 1897. Serial No. 645,478. (No model.)

Claim.—1. In a device of the class described, the combination with a suitable support, of fixed and movable standards mounted thereon, a vertical bar arranged to bear against the stack and adapted to

drop back automatically when released, and means for operating the vertical bar, substantially as described.



2. In a device of the class described, the combination with a suitable support, of fixed and movable standards mounted thereon, an operating-lever fulcrumed on one of the standards and adapted to force the latter apart, and a vertical bar arranged to be engaged by the lever and adapted to bear against the stack, said bar being beveled at its lower end, whereby it is adapted to drop back automatically when released by said lever, substantially as described.

3. In a device of the class described, the combination with a suitable support, of fixed and movable standards mounted thereon, means for forcing the standards apart, and a stick-supporting clip provided with inverted-U-shaped sides adapted to straddle a board and receive a stick between them to hold the same against lateral movement, substantially as described.

4. In a device of the class described, the combination with a suitable support, of fixed and movable standards mounted thereon, means for forcing the standards apart, the upper and lower automatically-operating catches pivoted to one of the standards and adapted to engage a spacing stick or strip, and stops limiting the pivotal movement of the catches, substantially as described.

5. In a device of the class described, the combination with a suitable support, of fixed and movable standards mounted thereon, means for forcing the standards apart, the upper and lower stick engaging catches mounted on one of the standards, and a substantially U-shaped clip provided at its sides with inverted-U-shaped bends adapted to straddle a board and support a stick against lateral movement, substantially as described.

6. In a device of the class described, the combination of a sill, a fixed standard mounted thereon, a slide arranged on the sill and having depending sides embracing the same, a pair of adjustable standards mounted on the slide, an operating-lever fulcrumed between the adjustable standards, a bar adapted to engage a stack and arranged between the adjustable standards, and upper and lower catches, substantially as described.

7. In a device of the class described, the combination with a suitable support, of fixed and movable standards mounted thereon, one of the standards being provided with a recess, a vertical bar located adjacent to the recessed standard and arranged to bear against the stack, and a wedge arranged in the recess of the standard and locking the bar against backward movement, substantially as described.

607,215. RIPRAP. WILLIAM W. CARSON, Knoxville, Tenn. Filed Jan. 31, 1898. Serial No. 668,639. (No model.)

Claim.—1. A riprap made largely of sawed lumber and composed of unit-pieces, each of which is definite in design, complete in itself, and is weighted by one or more sinkers of definite design attached externally.

2. A unit-piece of definite design, for a riprap largely of wood, in which one or more planks, scantlings, rods or bars pass through one or more sinkers.

3. A riprap made of open frames constructed largely of sawed lumber and weighted by external sinkers made with one or more eyes or slots to facilitate attachment.

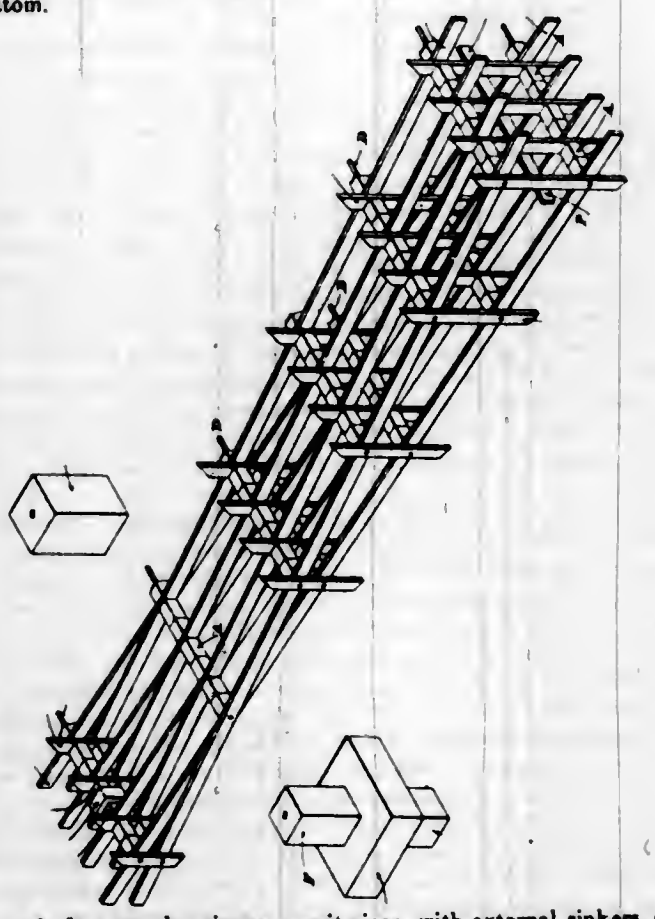
4. A riprap, constructed largely of sawed lumber, in which external sinkers, shaped according to design, are attached to the unit-pieces in such manner as to determine, with more or less room for play, spacings and directions of the wooden members.

5. A riprap, constructed largely of sawed lumber, in which external sinkers, fashioned according to design, are attached to the unit-pieces in such manner as to determine, with more or less room for play, spacings of the wooden members.

6. A wooden riprap with unit-pieces most heavily weighted at or near one end.

7. A unit-piece for a riprap, largely of wood, weighted externally and having projecting members to indent the bottom of the stream so as to make sliding more difficult.

8. A unit-piece for a riprap, largely of wood, weighted externally and having pointed projections to aid in preventing sliding on the bottom.

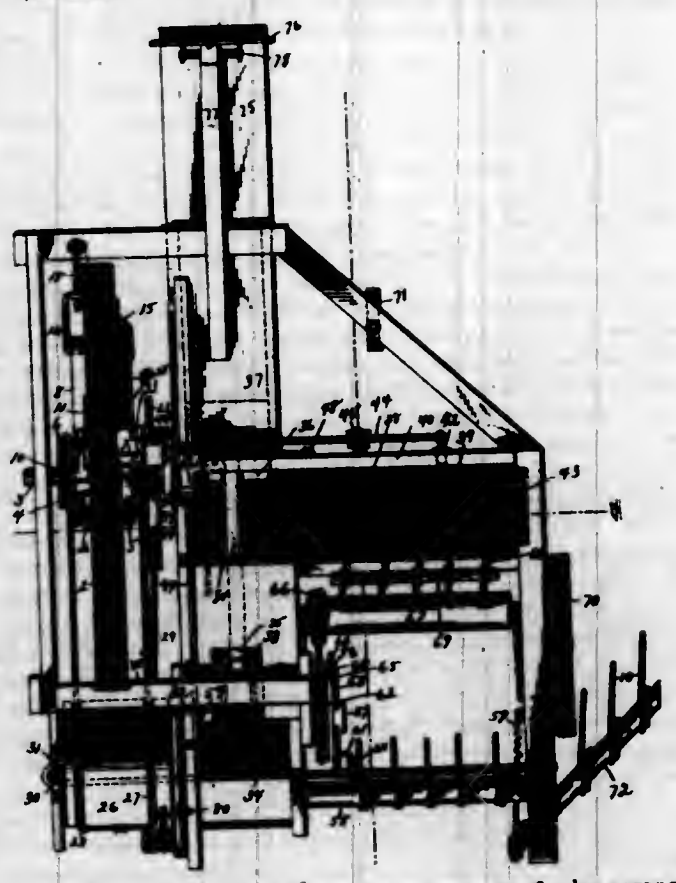


9. In a wooden riprap, a unit-piece, with external sinkers, constructed with bottom and top practically alike, so that whether the one or the other turns uppermost in sinking the same action and manner of action will result.

10. A unit-piece, for a wooden riprap, with one or more detachable external sinkers.

11. In a riprap, largely of wood, a molded cap of waterproof material over the nut on the end of a metal rod, to prevent the more rapid oxidation that would otherwise result from contact of the metals in presence of water.

607,216. COMBINED HAY-RAKE AND BALING-PRESS. THOMAS CASWELL, Cherokee, Iowa. Filed July 22, 1897. Serial No. 645,543. (No model.)



Claim.—1. In a rake and baling-press, two sets of rakes arranged one in front of the other, the first set adapted to collect the hay and deposit it in the second set, in combination with a baling-press composed of fixed and movable sections, said movable sections adapted

to open outwardly, the second set of rakes adapted to deposit hay on said outwardly-open sections of the press and means for operating the rakes and movable sections.

2. In a rake a baling-press composed of two sets of rakes arranged one in front of the other, the front set adapted to collect the hay and deposit it on the second set, in combination with a baling-press having fixed and movable sections, springs for normally holding said movable sections open, the second set of rakes being adapted to deposit the hay on the movable sections of the press and suitable means for operating the rakes and closing the said movable sections.

3. In a rake and baling-press, two sets of rakes located one in front of the other, the first set adapted to collect the hay and deposit it on the second set, in combination with a baling press, said baling-press having fixed and movable sections, springs for normally holding said movable sections open, a projection located at one side of the outer end of the movable sections and passing through a guide-slot formed in a fixed partition, a cord attached to said projection, means for drawing said cord and closing said sections, the second set of rakes being adapted to deposit the hay on the open sections of the baling-press.

4. In a rake and baling-press, in combination with the rake and press, an axle, a driving-wheel mounted thereon, a disk located on the axle adjacent the driving-wheel, said disk having a projection located on its periphery, a dog suitably pivoted on the side of the wheel, the end of the dog adapted to engage the projection on the disk, a trip located on the framework of the machine and adapted to disengage the dog from said projection, a drum mounted on a counter-shaft, an eccentric disk attached to the first said disk, a flexible connection connecting said drum with the said eccentric disk, a cam-lever journaled on the driving-wheel of the axle adjacent said eccentric disk, a cord connecting said lever with said drum, a pivoted block attached to said lever at its outer end and a pin located on the driving-wheel and adapted at times to engage said block, the disk and the lever thus adapted to act alternately in actuating the drum in opposite directions and operate said rakes and press.

5. In a rake and baling-press, an axle, a driving-wheel mounted thereon, a disk loosely mounted on said axle, said disk having a projection on its periphery, an eccentric disk located adjacent and secured to the side of said disk, a dog pivotally connected to the side of the driving-wheel, said dog adapted to engage the projection on said disk, a trip attached to the framework of the machine and adapted to disengage the dog from the projection, a counter-shaft journaled in the framework of the machine, a drum fixed to said shaft, a flexible connection connecting said drum with the eccentric disk, a lever journaled on the axle, a pivoted block secured to the outer end of said lever, a projection located on the side of the driving-wheel and adapted at times to engage said pivoted block, a flexible connection connecting said lever with the drum, the disk and the lever thus adapted to act alternately in actuating the drum in opposite directions thereby operating the rakes and press.

6. In a rake and baling-press, a shaft journaled in the framework of the machine, a drum mounted on said shaft, an axle supported by the framework of the machine, a driving-wheel mounted on said axle, a disk having a projection on its periphery, said disk mounted on said axle, a flexible connection connecting said disk with the drum, a dog pivoted on the side of the driving-wheel and adapted to engage and disengage the projection of said disk and thereby cause the driving-wheel to operate the rake and baling-press.

7. In a rake and baling-press, an axle carried by the framework of the machine, a driving-wheel and a disk mounted on said axle, said disk having on its periphery a projection, a dog having a pivotally-attached end adapted to engage said projection and operate said disk, said dog being pivotally attached to the said driving-wheel, a spring confined at one end to the said driving-wheel and engaging at its other end the pivoted end of the dog and means for engaging said dog to cause it to disengage the projection of the disk, a flexible connection connecting said disk with the raking mechanism and adapted to operate the raking mechanism as the disk is turned.

8. In a rake and baling-press, an axle carried by the framework of the machine, a driving wheel mounted on said axle, a disk loosely mounted on the axle, said disk having a projection on its periphery, a dog pivotally attached to the said driving-wheel, said dog being adapted to engage and disengage the projection on the disk, a link attached to the end of the dog, a trip attached to the framework of the press and adapted to engage said link and cause the dog to disengage the projection of the disk, a flexible connection connecting the disk with the raking mechanism and adapted to operate the raking mechanism as the disk is turned.

9. In a rake and baling-press, an axle carried by the framework, a driving-wheel mounted on said axle, a disk loosely mounted on said axle, said disk having a projection on its periphery, a dog pivoted to the said driving-wheel, a link connected to the end of the dog, said link passing through a perforation in the wheel at the end of the dog, a trip attached to the framework of the press and adapted to engage said link and cause the dog to disengage from the projection on the disk.

10. In a rake and baling-press, an axle carried by the framework of the machine, a disk mounted on said axle, a suitable means for engaging and disengaging said disk, and causing it to turn, an eccentric disk attached to the side of said disk, a drum supported by the framework of the machine, a flexible connection connecting the drum with the eccentric disk, the raking mechanism being connected to and operated by the drum.

11. In a rake and baling-press, an axle carried by the framework of the machine, a disk loosely mounted on said axle, a pivoted dog suitably supported, said dog adapted to engage and disengage said disk and cause it to turn, a spring normally holding the dog in close contact with the disk, a trip suitably supported and adapted at times to disengage the dog from the disk, a flexible connection connecting the disk with the raking mechanism as the disk is turned.

12. In a rake and baling-press, an axle carried by the framework of the machine, a driving-wheel journaled on said axle, a disk loosely mounted on said axle, a dog adapted to engage said disk and cause it to turn, said dog being pivotally attached to the said driving-wheel, a link attached to the end of said dog, said driving-wheel having an angular perforation, the lower end of said link passing through said perforation, a trip secured to the framework of the press and adapted to engage said link and cause it to carry the angular extension of said perforation, thereby disengaging the dog from the disk, a flexible connection connecting the disk with the raking mechanism and adapted to operate the raking mechanism as the disk is turned.

13. In a rake and baling-press, an axle carried by the framework of the machine, a driving-wheel journaled on said axle, a disk loosely mounted on said axle, a dog pivoted to the said driving-wheel, a link attached to the end of said dog, said driving-wheel having an angular perforation, the lower end of the link passing through said perforation, a spring attached at one end to the driving-wheel and bearing against said link, a trip secured at one end to the framework of the press and adapted to engage said link and cause it to enter the angular extension of the angular perforation, thereby disengaging the dog from the disk, a flexible connection connecting the disk with the raking mechanism and adapted to operate the raking mechanism as the disk is turned.

14. In a rake and baling-press, an axle carried by the framework of the machine, a driving-wheel journaled on said axle, a disk loosely mounted on said axle, a dog pivotally attached to the said driving-wheel, said driving-wheel having a slot opposite the end of the dog, a link passing through the slot and connected to the end of the dog, said driving-wheel having a second slot of angular form, said link at its lower end passing through said angular slot, a trip attached to the framework of the press and adapted to engage said link, a spring attached to the said driving-wheel and bearing against the lower end of the link, a flexible connection connecting said disk with the raking mechanism and adapted to operate the raking mechanism as the disk is turned.

15. In a rake and baling-press, an axle carried by the framework of the machine, a driving-wheel journaled on said axle, disks loosely mounted on said axle on opposite sides of the driving-wheel, dogs pivoted on opposite sides of the driving-wheel and adapted to engage and disengage said disks the driving-wheel having an elongated slot at the ends of the dogs, a link connecting the ends of the dogs through said link-slot, the driving-wheel also having an angular slot, the lower end of the link passing through said angular slot, a trip attached to the framework of the press and adapted to engage said link and cause the dogs to simultaneously disengage the disks, a flexible connection connecting the disk with the raking mechanism and adapted to operate the raking mechanism when the disk is turned.

16. In a rake and baling-press, an axle carried by the framework of the machine, a driving wheel mounted on said axle, a lever fulcrumed on said axle, the lower end of said lever being substantially cam-shaped, a block pivoted to the upper end of said lever, said block having in its lower side a recess, a projection located on the said driving-wheel, said projection adapted to enter the lower recess of the block and carry the end of the lever around with the wheel, said block adapted to come in contact with a portion of the framework of the machine and thereby disengage the projection from the recess, a flexible connection connecting the lower end of said lever with the raking mechanism and adapted to operate the raking mechanism as the lever is moved.

17. In a rake and hay-press, an axle carried by the framework of the machine, a driving-wheel mounted on said axle, a cam-lever loosely mounted on said axle, said driving-wheel having on its side a projection, a pivoted block attached to the upper end of the cam-lever, a spring confined at one end to the lever, and at the other end to the pivoted block, said block having in its lower edge a recess, the projection of the driving-wheel adapted to enter said recess and engage the block, said block having at its upper corner a second recess, a trip on the framework of the press adapted to enter the upper

recess of the block and cause the block to revolve on its pivotal point and disengage the projection of the wheel from the block, a flexible connection connecting the cam-lever with the raking mechanism and adapted to operate the raking mechanism as the lever is moved.

18. In a rake and baling-press, a drum mounted on a shaft, journaled in the framework of the machine and adapted to operate the baling-press and the rakes, a flexible connection passing over the top of said drum, a flexible connection passing under said drum and suitable means for alternately operating the upper and lower connections and thereby alternately turning the drum in opposite directions and alternately manipulating the rakes and the baling press.

19. In a rake and baling-press, a shaft suitably journaled, a drum located on said shaft, a means for alternately turning said drum in opposite directions, a crank-arm attached to the said shaft, a plunger located in the baling-press, said crank-arm being adapted to operate the plunger of the baling-press, and a suitable means for depositing hay in the baling-press.

20. In a rake and baling-press, a shaft suitably journaled, a drum attached to said shaft, a suitable means for alternately turning said drum in opposite directions, a baling-press having opening sections, a means for closing said sections, said means consisting of a cord attached at one end to the sections, a reciprocating arm located in the framework, said cord surrounding said arm, a section located on the shaft and adapted to operate said arm.

21. In a rake and baling-press, a shaft suitably journaled, a drum attached to said shaft and means for turning said drum alternately in opposite directions, a baling-press having opening sections, a cord attached to said sections, a reciprocating arm located in the framework of the machine, said cord surrounding said arm, said arm having a downward extension, a section located on the shaft and adapted to come in contact with the downward extension of the arm and operate the same to close said sections.

22. In a rake and baling-press, a shaft suitably journaled, a drum located on said shaft, a means for turning said drum alternately in opposite directions, a baling-press having opening sections, a cord attached to said sections, a reciprocating arm located in the framework of the press, said cords surrounding said arm, a projection located on the under side of said arm, an offset formed at the end of the baling-press, said projections being adapted to engage said offset and hold the arm in its outer position, said arm having at its end a downward extension, a section located on the shaft and adapted to engage the downward extension and operate the arm, a projection located on the side of the drum and adapted to engage the downward extension of said arm and disengage the projection thereof from the offset on the baling-press.

23. In a rake and baling-press, suitably-located opening sections adapted to form portions of the sides of said baling-press, a cord attached at one end to said sections and at the other end to a stationary part of the framework of the machine, a reciprocating arm, located on the framework of the machine, said cord engaging said arm, and suitable means for reciprocating the arm and closing the sections.

24. In a rake and baling-press, a press-box located on the framework of the machine, opening sections adapted when closed to form portions of the sides of said box, a partition located behind the rear edges of said sections, said partition having curved slots, a projection located on the outer section and passing through said slot, a cord attached at one end to said projection and at the other end to a stationary part of the machine, a reciprocating arm located in the framework of the machine, said cord engaging said arm and closing the sections, and a suitable means for reciprocating the arm.

25. In a press and baling-machine, a press-box located on the framework of the machine, opening sections adapted when closed to form portions of the sides of the press-box, a partition located behind the rear edges of said sections, said partition having a curved slot, a projection located on the outer section and passing through said slot, a cord attached at one end to said projection, a pulley attached to said partition, a cord passing over said pulley, the pulley attached to the top of the press-box, said cord passing around said pulley, the other end of the cord being attached to a stationary part of the machine, a reciprocating arm located in the framework of the machine, a pulley carried by said arm, the cord passing around said pulley, and a suitable means for reciprocating the arm and closing the sections.

26. In a rake and baling-press, a press-box located on the framework of the machine, opening sections adapted when closed to form portions of the sides of the press-box, said sections being hinged together, a suitable means for closing said sections, rakes located in front of said sections and adapted to elevate hay and deposit the same on the open sections, and a suitable means for operating said rakes and baling-press.

27. In a rake and baling-press, a press-box located on the framework of the machine, opening sections adapted when closed to form portions of the sides of the press-box, said sections being hinged together, springs located on the outer sides of said sections and adapted to normally hold the sections open, a means for closing said sections, rakes located in front of said sections and adapted to elevate hay and deposit it upon the open sections, and suitable means for operating said rakes and baling-press.

28. In a rake and baling-press, a press-box located on the framework of the machine, opening sections adapted when closed to form portions of the sides of the press-box said sections being hinged together, a block located on the framework of the machine at the outer edge of the outer extended section and adapted to support the same, a suitable means for closing said sections, a suitable means located in front of said sections adapted to deposit hay on the open sections, and a means for operating the press and forming the bale.

29. In a hay rake and press, a press-box located on the framework of the machine, a reciprocating plunger adapted to operate in said box, a spring attached to said plunger and bearing at its outer end against the inner side of the top of the press-box and adapted to retain the plunger against the bottom of the press-box.

30. In a rake and baling-press, a shaft journaled in the framework of the machine, and suitable means for operating said shaft, an arm attached to said shaft, said arm having an offset, a rake-bar journaled in front of said shaft, suitable teeth attached to the rake-bar, an arm attached to said bar, the offset of the shaft-arm adapted to engage an arm of the rake bar and operate the rake.

31. In a rake and baling-press, a shaft journaled in the framework of the machine, an arm attached to said shaft, said arm having a suitable offset, a rake-bar journaled in front of said shaft, a spring attached at one end to said rake-bar and at the other end to a stationary part of the machine, said rake-bar having suitable teeth, an arm attached to said rake-bar and adapted to engage the offset of the shaft-arm, and suitable means for operating the shaft.

32. In a rake and baling-press, a shaft suitably journaled, a rake-bar journaled in front of said shaft, said rake-bar carrying suitable teeth, an arm attached to said rake-bar, said arm having at its upper end an angular extension, an offset connected to the shaft and adapted to engage the angular extension of the rake-bar and operate the rakes, and a suitable means for operating the shaft.

33. In a rake and baling-press, a shaft suitably journaled, an arm attached to said shaft, said arm having at its end an angular extension, a pulley journaled to a stationary part of the framework of the machine, a rake-bar having a pulley, a belt passing around said pulleys, projections located on the first of the said pulleys, the extension of the shaft-bar adapted to engage said projections and operate the pulley, suitable teeth carried by the rake-bar, said teeth adapted to elevate the hay and deposit it in the press, and a suitable means for operating the shaft.

34. In a rake and baling-press, a shaft suitably journaled, an arm attached to said shaft, said arm having at its end an angular extension, a pulley journaled to a stationary part of the framework, said pulley having on its periphery projections of different lengths, the angular extension of the shaft-arm adapted to enter the space between the said projections and operate the pulley, a rake-bar having a pulley, a belt passing around said pulleys, suitable teeth carried by the rake-bar, said teeth adapted to receive and deposit the hay, and a suitable means for operating the shaft.

35. In a rake and baling-press, a shaft suitably journaled in the framework, an arm attached to said shaft, said arm having at its end an angular extension, a pulley journaled to a stationary part of the framework, projections of different lengths located on the periphery of said pulley, the shorter projection being at an incline, the angular extension of the arm adapted to enter the space between said projections and the pulley, a rake-bar, a suitable pulley, a belt-cord surrounding said pulleys, teeth attached to the rake-bar and adapted to receive and elevate the hay, and a suitable means for operating the shaft.

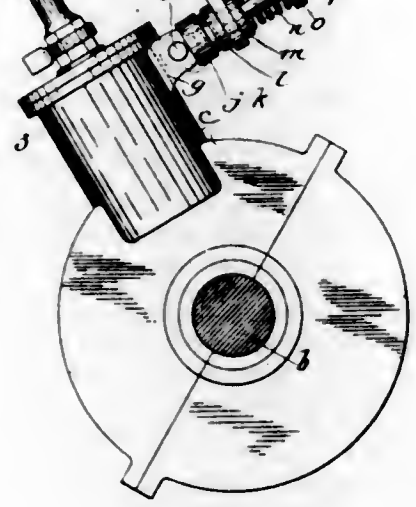
607,217. MEANS FOR SUSPENDING AIR-PUMPS. NIELS A. CHRISTENSEN, Milwaukee, Wis. Filed Nov. 7, 1896. Serial No. 568,183. (No model.)

Claim.—1. In combination with the truck frame or body, and its axle; an air-pump mounted upon said axle; a rigid hanger depending from the body or truck and provided with an enlarged opening; a bolt or rod connected to the air-pump and passing through the opening in the hanger, and capable of both lateral and longitudinal motion therein; and springs or cushions adapted to limit the movement of the bolt in both directions.

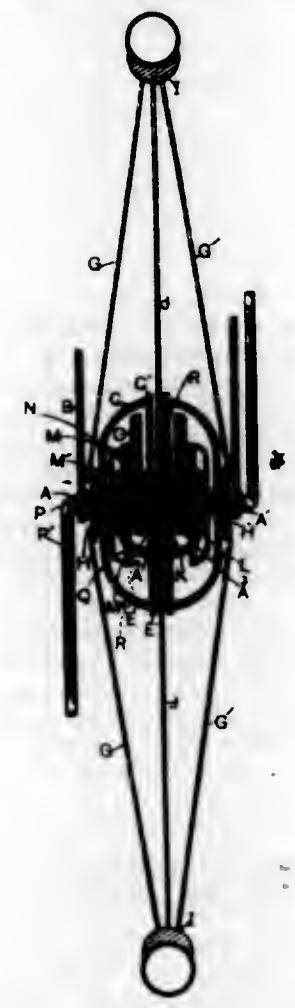
2. In an air-pump mounted upon a revolving axle, the forging *e* fastened at one end to the framework and having a large hole at the other end, in combination with an eyebolt, *h*, for sustaining the pump passing through the said forging and having mounted on said forging the spring *n* and the disk or spring *k*, with suitable washers for holding said forging in position on said eyebolt, substantially as shown and described.

3 In an air brake pump operated by a car-axle, the forging *e*,

in combination with the eyebolt *h*, pin *i*, rings *j*, *l*, *m*, *o*, the disk *k*, and spring *n*, substantially as shown and described.

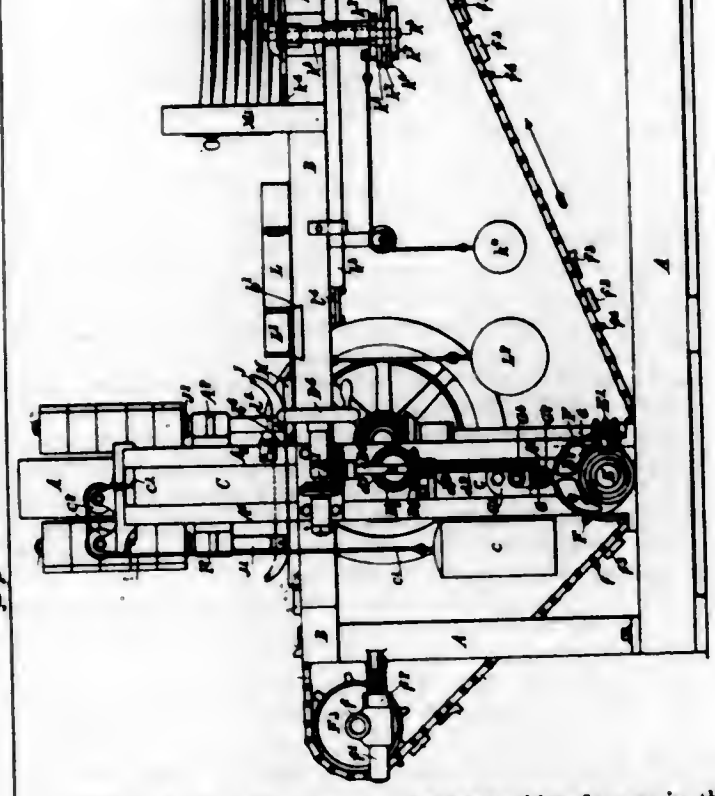


607,218. **GEARING FOR BICYCLES.** NORMAN P. COBB, Chicago, Ill., assignor of one-half to Allie C. Perry, same place. Filed Dec. 29, 1897. Serial No. 664,381. (No model.)



Claim.—In a bicycle, a drive-wheel comprising a series of side spokes on each side with the peripheral ends secured to the felly or rim thereof, and the axial ends of each of the said series of spokes secured to a flange which is revolubly mounted upon a stationary portion connected with the bicycle-frame, in combination with a central series of spokes having the peripheral ends attached to the wheel-rim and the axial ends secured to a flange which is pivotally mounted, axially coincident with and between the said side flanges, and is connected with the cranks outside of the drive-wheel through the medium of a series of external and internal cog-wheels, in the manner substantially as shown and described.

607,219. **MACHINERY FOR MANUFACTURING CASKS OR BARRELS.** ROBERT COLLEN, London, England. Filed Dec. 24, 1897. Serial No. 663,365. (No model.) Patented in England July 28, 1896, No. 16,670.



Claim.—1. In a "jointer" or jointing-machine for use in the manufacture of casks and the like, the combination with means for holding a pile of staves or stave-blanks arranged one on top of another, of a chain for successively feeding stave-blanks from the bottom of said pile, said chain having thereon abutments for making contact with the ends of the stave-blanks respectively, for advancing them with the chain, projections in the rear of said abutments against which the pile rests while the lower stave thereof is being removed, and blades or spikes in the rear of said projections for engaging the staves respectively to prevent displacement thereof from the chain as they are carried forward, said abutments, projections and blades or spikes being disposed at intervals along the chain in sets of three arranged in the order above named, substantially as described.

2. In a "jointer" or jointing-machine, the combination with means for holding a pile of stave-blanks arranged one on top of another, of means for successively feeding stave-blanks from the bottom of said pile, means acting on the lowermost blank of the pile for centering the same, said means consisting of vertically-arranged shafts mounted in suitable bearings on opposite sides of the pile of blanks, centering-arms on the upper ends of said shafts, respectively, adapted to act against opposite edges of the blanks, gearing connecting the vertical shafts, and connections with an operative part of the jointer whereby said shafts are automatically rotated at predetermined intervals to move the centering-arms toward and from each other, substantially as described.

3. In a "jointer" or jointing-machine, the combination with means for holding a pile of stave-blanks arranged one on top of another, of means for successively feeding stave-blanks from the bottom of said pile, means acting on the lowermost blank of the pile for centering the same, said means consisting of two sets of two concentrically-arranged shafts, centering-arms, one carried by each of said shafts, the centering-arms corresponding to the two sets of shafts being located on opposite sides of the pile of stave-blanks respectively, gearing connecting the inner and outer shafts of the sets, respectively, and connections with an operative part of the jointer whereby the shafts are automatically rotated at predetermined intervals to move the free ends of the oppositely-disposed centering-arms toward and from each other, substantially as described.

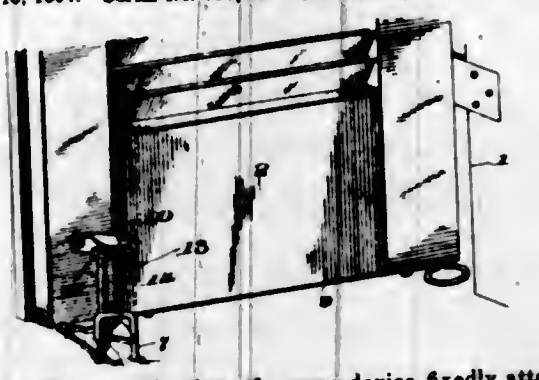
4. In a machine of the kind described, the combination with a fixed frame, of a movable frame mounted to reciprocate vertically therein and carrying cutters and cutter-shafts, means—such as a hand-wheel and a shaft mounted on the fixed frame and having a sliding connection with gear-wheels and a shaft on the movable frame—for adjusting one end of the cutter-shafts with relation to each other in

accordance with the width of the skives or stave-blanks to be acted upon, two transversely-movable guides or cheeks normally held in and returned to a certain relative position by suitable means—such as a weight—a feed-chain for passing the skives or stave-blanks between the guides or cheeks and to the cutters, an index or pointer movable with said guides, and a second index or pointer operating in conjunction with said first-named pointer and connected to and movable with one of the cutter-shafts whereby the proper adjustment of the cutters in accordance with the width of the skive or stave-blank is indicated, substantially as described.

5. In a machine of the kind described, the combination with the cutter-shafts and cutters, means for adjusting the same in accordance with the width of the skive or stave-blank to be acted upon, and an index or pointer movable with said cutters in the adjustment thereof, of two guides or cheeks between which the skives or stave-blanks are adapted to pass as they are advanced to the cutters, an index or pointer connected therewith and operating in conjunction with the first-mentioned pointer to indicate the proper adjustment of the cutters, and means for automatically moving the guides away from each other at predetermined intervals to allow of the introduction of the stave-blanks therebetween, substantially as described.

6. In a machine of the kind described, the combination with a fixed frame, a reciprocatory frame mounted therein and means for reciprocating the latter, of cutters mounted in said reciprocating frame, and devices partly mounted on the fixed frame and partly on the reciprocating frame for adjusting the cutters with relation to each other in accordance with the width of the blank to be acted upon, substantially as described.

607,220. FASTENING FOR BLINDS. ANDREW J. CURTIS, Monroe, Me., assignor of one-half to Frederick L. Palmer, same place. Filed May 15, 1897. Serial No. 636,785. (No model.)



Claim.—The combination of a cam device fixedly attached to the inner side of the blind, a vertically-sliding pin having a lever-arm at its upper end, coacting with said cam device, and a two-part double-ended latch having holes in its respective parts to coact with the lower end of said pin, substantially as hereinbefore specified.

607,221. JOINING RAILWAY-BARS. WILLIAM G. CURTIS, San Francisco, Cal. Filed Jan. 13, 1898. Serial No. 666,507. (No model.)

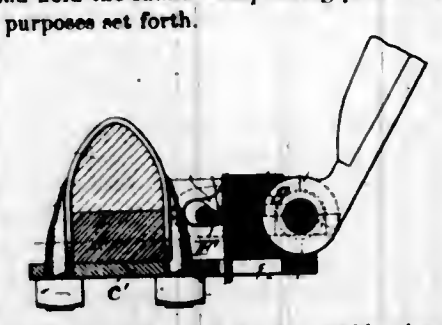


Claim.—1. A rail-junction for railway-rails laid in line with other rails of different cross-section, consisting of a bar for intermediate use, having the cross-section of one line of rails at one end and the cross-section of the other line of rails at the other end, said bar having an intermediate portion formed on an incline on its bottom and outer side, making a gradual transition from the cross-section of one end portion to the cross-section of the other end portion, substantially as specified.

2. A rail-junction for railway-rails of different cross-sections, consisting of a bar adapted to be interposed between said rails, having the cross-section of one rail at one end and the cross-section of the other rail at the other end, said bar being formed on straight lines perpendicular to said sections on the top and inner side, and having an intermediate portion formed on an incline on its bottom and outer side, making a gradual transition from the cross-section of one end portion to the cross-section of the other end portion on the bottom and outside thereof, substantially as specified.

607,222. SHAFT OR POLE COUPLING FOR VEHICLES. ORIN C. DAVIS, Manistee, Mich., assignor of one-half to William R. Thorsen and Henry W. Leonard, same place. Filed May 24, 1897. Serial No. 637,828. (No model.)

Claim.—1. In a shaft or pole coupling for vehicles the combination with a pair of ears, a shaft or pole eye, a coupling-pin having a headed end and loosely fitted in the holes of said ears and eye, and a spring for taking up play between the parts of the coupling, of a cam having bearings in said ears behind and parallel with the coupling-pin and provided with an arm adapted, when turned forward and downward, to force the cam against the spring and to press the latter against the eye and recessed to pass over and engage with the headed end of the coupling-pin and thus retain the latter in place and arrest and hold the cam in compressing position, substantially as and for the purposes set forth.



2. In a shaft or pole coupling, the combination with a shaft or pole eye, a pair of perforated ears, a coupling-pin for connecting them and a spring for taking up play between the parts of the coupling, of a cam having cylindrical journals which are held and adapted to turn in said ears behind and parallel with the coupling-pin and provided at its ends with arms which are recessed to pass over and engage with the protruding ends of the coupling-pin, said arms serving to retain the pin in place, to force the cam into and out of operative position for compressing the spring, and to hold the cam in operative position, substantially as and for the purposes set forth.

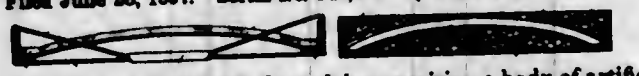
3. In a shaft or pole coupling the combination of a pair of transversely-perforated ears having downwardly and rearwardly inclined recesses formed through their upper edges behind and parallel with the holes for the coupling-pin, a shaft or pole eye, a pin for connecting said eye with said ears, a spring for taking up play in the coupling and a cam having journals adapted to turn in the recesses in said ears and provided with arms which are formed integrally therewith and are adapted to turn down approximately parallel with said ears to compress said springs against the back of said eye and by engagement with the ends of the pin to retain it in place and to arrest and hold the cam in compressing position, substantially as and for the purposes set forth.

4. In a shaft or pole coupling the combination of a shackle having a pair of transversely-perforated ears connected together by a bottom piece having a slot or opening therein between said ears, a shaft or pole eye, a coupling-pin for connecting said eye with said ears, a cam journaled in said ears behind and parallel with the coupling-pin, a rubber spring inserted between said cam-bar and eye, and a bearing-plate interposed between the back of the rubber and said cam, and notched to engage with the edges of the opening in the bottom of the shackle, substantially as and for the purposes set forth.

5. In a shaft or pole coupling the combination of a shackle having a pair of ears, a shaft or pole eye, a coupling-pin for connecting the eye with said ears, a cam journaled in said ears, a rubber spring between the eye and cam, and a plate interposed between the rubber and the cam and formed on the back with a rib or projection for holding the cam in engagement therewith, substantially as and for the purposes set forth.

6. In a shaft or pole coupling the combination of a shackle having two transversely-perforated ears formed integrally with a clip-yoke and a slot in the bottom between the ears, a shaft or pole eye, a coupling-pin for connecting said eye with said ears, a cam loosely journaled in recesses which open through the upper edges of said ears, and formed integrally with flat arms which fit close to and correspond in shape with the outer sides of said ears and are recessed to pass over and engage with the ends of said pin, one of said arms being formed with an ear or flange for turning the cam into and out of operative position, a rubber spring between the eye and cam, and a bearing-plate interposed between the rubber and cam, and notched to engage the edges of the slot in the shackle, substantially as and for the purposes set forth.

607,223. ARTIFICIAL SLAB. ALPHONSE DE MAS, Detroit, Mich. Filed June 23, 1897. Serial No. 641,879. (No model.)



Claim.—1. A composite floor-slab comprising a body of artificial stone and a skeleton frame embedded therein consisting of longitudinal trusses and connecting end cross-bars the latter also forming bases for the slabs.

2. A skeleton frame for artificial-stone slabs comprising longitudinal tension members and compression members and end cross members forming connecting-headers to which said tension and compression members are secured and also supporting-bases for the slab.

3. A skeleton frame for artificial-stone slabs, comprising end cross-bars or headers, longitudinal tension members strung across between and secured to said headers, and one or more bowed compression members extending between said headers, the whole forming a bow-string truss.

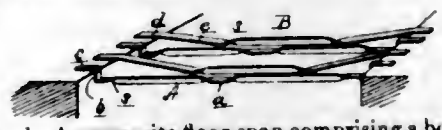
4. A skeleton frame for artificial-stone slabs comprising end cross-bars or headers, longitudinally-extending loops lashed around said cross-bars having their upper strands centrally depressed and longitudinally-bowed compression members extending between and connected to said end cross bars.

5. A composite slab comprising a skeleton frame having end cross-bars and longitudinal bow-trusses connected thereto, and a body of artificial stone in which said frame is embedded cored out between the cords of said bow-trusses.

6. A floor construction, comprising a metallic floor-beam, an artificial-stone block forming a side protecting casing for said beam, an artificial-stone slab spanning the space beside said beam and a saddle hung over said beam having the downwardly-extending portion *g* and outwardly-extending portion *h* adapted respectively to secure said block to the beam and form a support for the slab.

7. A floor structure comprising metallic beams, blocks of artificial stone resting on the lower flange of said beams, the side ledges *e* and upward extension *f*, the saddles K hung on the tops of the beams, a composite slab resting on said saddles which separate it from the ledge *e* and extension *f* of the block, and cement filling the space between said slab and block and uniting the two.

607,224. FIREPROOF FLOOR CONSTRUCTION. ALPHONSE DE MAN, Detroit, Mich. Filed July 14, 1897. Serial No. 644,559. (No model.)



Claim.—1. A composite floor-span comprising a body of artificial stone, and independent horizontal and double-inclined tension members embedded therein, the horizontal member being located below the neutral line and the double-inclined member extending from at or below the neutral lines in the central portion of the span diagonally upward to the ends of the span.

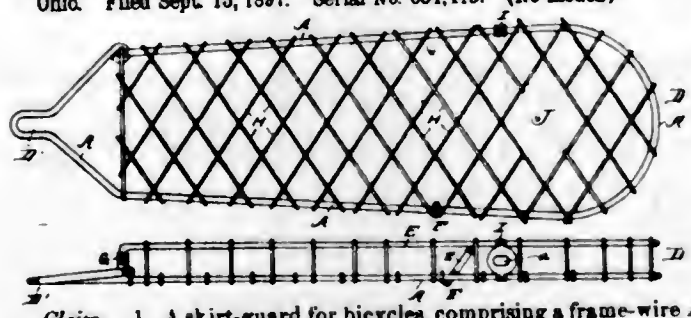
2. A composite floor-span comprising a body of artificial stone and metallic tension members embedded therein consisting of alternate horizontal bars located below the neutral line and double-inclined bars extending from below the neutral line in the central portion of the span diagonally upward to the ends of the span.

3. A composite floor-span comprising a body of artificial stone and the alternately-arranged metallic tension members A and B embedded therein, the former consisting of U-shaped bars having the horizontal portions *a* the upturned portions *b* and the outwardly-extending end portions *c*, and the latter consisting of the central horizontal portion, the upwardly-inclined portions *e* and the outwardly-extending end portions *d*, the portions *c* and *d* forming supporting arms or hooks for the span.

4. A monolith floor construction comprising a composite beam or girder having a skeleton trussed metallic frame, composite spans supported at one end on said beams or girder, having the alternate metallic tension members A and B, and a body for said beam or girder and spans formed of artificial stone in which said metallic members are embedded.

5. A composite floor-span comprising a body of artificial stone and metallic tension members embedded therein, consisting of flat thin bars arranged side by side having their ends projecting beyond the ends and near the upper face of the body and forming supporting arms or hooks therefor, the portions of said bars extending across the body being arranged on edge and twisted at intervals for the purpose described.

607,225. SKIRT-GUARD FOR BICYCLES. ROBERT A. DENNIS, Dayton, Ohio, assignor of one-half to Chas. B. Oglesby, Middletown, Ohio. Filed Sept. 13, 1897. Serial No. 651,415. (No model.)

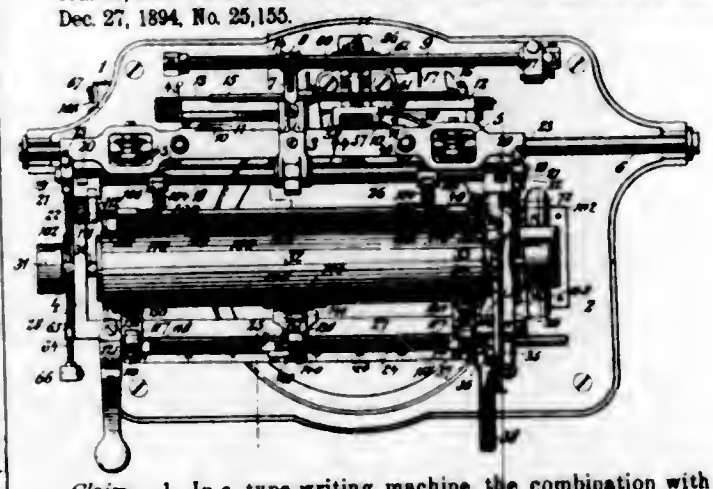


Claim.—1. A skirt-guard for bicycles, comprising a frame-wire A forming the outer side of the frame, and an inner frame-wire E running parallel with the upper horizontal portion and the rounded portion of the outer wire A, and having its rearward end joined to the rearward horizontal terminal of wire A, and its forward end joined to the lower horizontal portion of wire A as at F, a series of cross-wires having their ends clenched to the frame-wires A and E, said wires being soldered at each cross and joint, and means for adjustably mounting said guard so that in adjusting the sprocket-chain of the bicycle, the guard will move or yield to the extent of such adjustment, substantially as herein shown and described.

2. A skirt-guard for bicycles, comprising the wire frame A and E, the latter running parallel with the rounded and upper horizontal parts of the former whereby open space is provided at the lower side of the guard so that there will be no obstruction in the way of the sprocket-chain, the rear end of said frame terminating in an oblong eye by which said end is secured, and upper and lower transverse clips secured to the forward end of said frame, the said clips having oblong holes therein by which the said forward end is secured, and a series of mesh-wires having their ends clenched to the frame-wires, the said wires having their joints and crossed portions soldered, all constructed and arranged substantially as and for the purpose specified.

3. As a new article of manufacture, a skirt-guard for bicycles, consisting of a wire frame having its rear end terminating in an oblong eye D', and its forward end rounded, the lower horizontal portion of said frame being open by the omission of the inner frame-wire, a series of cross-wires essentially of smaller gage than the frame-wires, said gage cross-wires having their ends clenched to the frame-wires, and the whole united by means of a tin-bath, and means for movably securing said frame to a bicycle, as herein shown and described.

607,226. TYPE-WRITING MACHINE. LOUIS P. DIBB, Ilion, N. Y., assignor to The Wyckoff, Seamans & Benedict, New York, N. Y. Filed Jan. 16, 1895. Serial No. 535,089. (No model.) Patented in England Dec. 27, 1894, No. 25,155.



Claim.—1. In a type-writing machine, the combination with a power-driven paper-carriage and escapement-rack, substantially as described, of a holding-dog having a working face arranged at an angle to the plane of movement of the dog and adapted to coöperate with the carriage and the rack, so as to enable them to commence their letter-space movement at the commencement of the return movement of the dog and the type, and a feeding-dog having its entire working face at right angles to the line of motion of the rack or parallel to the plane in which the dog moves, substantially as set forth.

2. In a type-writing machine, the combination of a power-driven paper-carriage, an escapement-rack, substantially as described, a pivoted or flexible feeding-dog having its entire working face parallel to the plane in which it moves or at right angles to the line of motion of the rack, and a holding-dog having a working face arranged at an angle to the plane in which the dog moves and adapted to free the rack and carriage so as to enable them to commence their letter-space movement at the commencement of the return movement of the dog and the type, substantially as set forth.

3. In a type-writing machine, the combination of a power-driven paper-carriage, an escapement-wheel operatively connected to the paper-carriage, a feeding-dog having its entire working face parallel to the plane of its movement or at right angles to the line of motion of the wheel, and a holding-dog having a working face arranged at an angle to the plane of movement of the dog and adapted to release the carriage at the commencement of the return movement of the dog, substantially as set forth.

4. In a type-writing machine, the combination of a power-driven paper-carriage having a feed-rack, a cross-shaft having a pinion at one end to gear with said rack, an escapement-wheel at the opposite end, a feeding-dog whose entire working face is parallel to its plane of movement or at right angles to the line of motion of the wheel, and a holding-dog having a working face arranged at an angle to the plane of movement of the dog and adapted to release the carriage at the commencement of the return movement of the dog, substantially as set forth.

5. In a type-writing machine, the combination of a power-driven paper-carriage, a feed-rack, substantially as described, a feeding-dog whose entire working face is parallel to its plane of movement or at right angles to the line of motion of the rack, and a holding-dog having a detaining portion and also a lateral or offset portion arranged at an angle to the plane of movement of the dog, whereby the rack and carriage may be partially moved during the return movement of the holding-dog and while it is still in the plane of said rack, and whereby the rack and carriage may complete their letter spacing movement when the holding-dog entirely leaves said rack and the feeding-dog comes into engagement therewith, substantially as set forth.

6. In a type-writing machine, the combination of a power-driven paper-carriage, a feed-rack, substantially as described, a vibratory dog-holder carrying a spring-actuated feed-dog whose entire working face is parallel to its plane of movement or at right angles to the line of motion of said rack, and a holding-dog having a lateral or offset portion arranged at an angle to the plane of movement of said dog to permit the carriage to commence its letter space movement simultaneously with the commencement of the return movement of said dog, substantially as set forth.

7. In a type-writing machine, the combination of a power-driven paper-carriage, a feed-rack, substantially as described, a vibratory dog-holder carrying a pivoted and spring-actuated feed-dog whose entire working face is parallel to its plane of movement or at right angles to the line of motion of said rack, and a holding-dog having a straight portion and a lateral or offset portion arranged at an angle to the plane of movement of said dog to engage with said rack and adapted to permit the carriage to commence its letter-space movement simultaneously with the commencement of the return movement of said dog, substantially as set forth.

8. In a type-writing machine, the combination of a power-driven paper-carriage, an escapement-wheel, a holding-dog, and a spring-pressed feeding-dog provided with a device adapted to contact with the escapement-wheel during the return movement of the carriage and by such contact move and hold the feeding-dog out of engagement with the escapement-wheel during such time, substantially as described.

9. In a type-writing machine, the combination of a power-driven paper-carriage, an escapement-wheel, a holding-dog, and a pivoted spring-actuated feeding-dog provided with an arm adapted to contact with the side of the escapement-wheel, substantially as described.

10. In a type-writing machine, the combination of a power-driven paper-carriage, an escapement-wheel, a holding-dog, a feeding-dog having a central normal position and adapted to be moved to either side thereof, and a friction device upon said feeding-dog adapted to engage with the side of the escapement-wheel during the return movement of the carriage, substantially as described.

11. In a type-writing machine, the combination of a power-driven paper-carriage, an escapement-wheel, a holding-dog, a pivoted feeding-dog having two faces and a spring adapted to bear thereupon, and an arm mounted upon said feeding-dog and adapted to engage with the escapement-wheel during the return movement of the carriage, substantially as described.

12. In a type-writing machine, the combination of a power-driven paper-carriage, an escapement-wheel, a holding-dog, and a feeding-dog provided with a friction device adapted to contact with a rotative surface connected to the paper-carriage and during the return movement thereof, as and for the purpose described.

13. In a type-writing machine, the combination of a turn-up platen, a platen ratchet-wheel, and a detent adapted to automatically engage said ratchet-wheel during the turning-up movement of the platen and to automatically disengage itself therefrom during the turning-down movement of said platen, substantially as described.

14. In a type-writing machine, the combination of a turn-up platen, a platen ratchet-wheel, a pivoted detent having a weight to maintain it out of engagement with the ratchet-wheel when the platen is down and to cause the detent to automatically engage with said ratchet-wheel when the platen is turned up, substantially as described.

15. In a type-writing machine, the combination of a turn up platen, a platen ratchet-wheel, a pivoted detent having a weight to maintain it out of engagement with the ratchet-wheel when the platen is down and to cause the detent to automatically engage with said ratchet-wheel when the platen is turned up, and having also a finger-piece adapted when pressed upon, while the platen is in its upturned position, to remove the detent from said ratchet-wheel to permit intentional rotation of said platen, substantially as described.

16. In a type-writing machine, the combination of a turn-up platen, a platen ratchet-wheel, a feed-roller hung by arms or links upon a rock-shaft supported in the platen-carrier, means for casting off said roller, and a gravity-detent for said ratchet-wheel pivoted upon said rock-shaft, substantially as described.

17. In a type-writing machine, the combination with a front bar of the platen-carrier, of a bracket mounted thereupon and adapted to carry either a paper-guide or a paper-roller, or both, a clamping-plate for said bracket engaging both the bar and the bracket, a screw for connecting the clamping-plate and the bracket, and a spring back of the clamping-plate whereby the bracket is held yieldingly and frictionally upon said bar and is adapted to be adjusted endwise thereof, substantially as described.

18. In a type-writing machine, the combination with the front bar of the platen-carrier, of a bracket adapted to carry either a paper-guide or a paper-roller, or both, consisting of the main part 117, the clamping-plate 118, the shouldered screw 119, and the spring 121, substantially as described.

19. In a type-writing machine, the combination with the front bar of the platen-carrier, of a bracket having a horizontal portion resting upon said bar, an upwardly-extending portion and a downwardly-extending portion, a paper-guide attached to said bracket, a paper-roller frame pivoted to the downwardly-extending portion of said bracket, a roller in said frame protruding through an opening in said paper-guide, a clamping-plate adapted to engage the upwardly-extending portion of said bracket and the under side of said front bar, a shouldered screw passing through said clamping-plate and engaging with said bracket, and a spring between the head of said screw and said clamping-plate, substantially as described.

20. In a type-writing machine, the combination with a platen, of a curved guide-finger terminating on the under side of said platen, and a thin band or presser attached at one end to the lower free end of said finger and connected to a spring-pressed device at its other end and arranged and operating to automatically conform to the surface of the platen and the paper thereon, as described.

21. In a type writing machine, the combination with the platen, of a curved guide-finger, a thin metallic band or presser attached at one end to the lower end of said finger and attached at its other end to a spring-actuated arm or holder, substantially as described.

22. In a type-writing machine, the combination with a platen, of a curved guide-finger having a slot, a thin band or presser attached at one end to said finger and having also a slot and attached at its upper end to a spring-actuated arm or holder, and a feed-roller adapted to pass through said slots and bear upon the platen, substantially as described.

23. In a type-writing machine, the combination with a platen, of a curved guide-finger, and a thin band or presser attached thereto and to a pivoted spring-actuated arm or holder arranged on a movable or adjustable bracket, substantially as described.

24. In a type-writing machine, the combination of a platen, a bracket, a spring-actuated arm pivoted to said bracket and carrying a thin band or presser adapted to conform itself to the platen or the paper thereon, the said band or presser being attached to the pivoted arm or holder above the axis of the platen and being supported at its other end on the under side of the platen, substantially as described.

25. In a type-writing machine, the combination with an inking-ribbon and its ribbon-spools, of means for feeding said ribbon automatically only in the direction of its length and from one spool on to the other step by step during the course of the writing, a rotatory cam and intermediate devices connected to the ribbon and arranged to remain inactive during the entire longitudinal travel of the ribbon and adapted only to shift the ribbon sidewise, and means for manually rotating said cam a step at or about the end of the longitudinal travel of said ribbon whereby said ribbon is moved crosswise a step and a fresh field or portion thereof brought to position for use during the next longitudinal travel of the ribbon from one spool to the other; substantially as described.

26. In a type-writing machine, the combination with an inking-ribbon and its spools, of means for moving the ribbon automatically in the direction of its length only and from one spool to the other, a rotatory cam and intermediate devices for moving the said ribbon a step crosswise and arranged to be inoperative during the entire lengthwise feed of the ribbon, and means connected with the mechanism for reversing the longitudinal travel of the ribbon for rotating said cam a step after said longitudinal reversing action has been effected; substantially as described.

27. In a type-writing machine, an inking-ribbon having means for moving it longitudinally from one spool upon another and adapted to be moved crosswise by a rotatory cam and intermediate devices, in combination with means for manually turning said cam step by step, said means being adapted also to lock the shaft by which the ribbon-spool shafts and ribbon-spools are rotated, so that in the act of locking said driving-shaft on reversal of the longitudinal travel of the ribbon the cam is simultaneously partially rotated and the ribbon fed or moved a step widthwise or crosswise, substantially as described.

28. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools connected together, a pair of ribbon-spool shafts provided each with a bevel-gear, a driving-shaft having an endwise movement and provided with bevel-gears and adapted to engage and alternately drive the ribbon-spool gears, a cam mounted

to turn on said driving-shaft and provided with notches or teeth, a pivoted arm or lever for locking said shaft against endwise movement, and a driving-pawl mounted upon said arm or lever to partially rotate said cam during the locking of the driving-shaft and simultaneously through intermediate mechanism connected to the ribbon-spools effect a crosswise movement of the inking-ribbon, substantially as described.

29. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools connected together so as to move endwise in unison, and mechanism for moving said spools, consisting essentially of the slotted lever, the pivoted arm for vibrating the same, the cam for vibrating said arm, and means for turning said cam step by step, the said pivoted arm being arranged between said slotted lever and said cam and connected at its free end to each of said devices whereby the rotation of said cam effects the vibration of said slotted lever, and through the connection to the ribbon, a transverse movement thereof substantially as described.

30. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools connected together so as to move endwise in unison, a sliding bar, a slotted lever attached thereto at one end, a pivoted arm connected by the intermediate pin 184 to said lever and also to an underlying cam, and means for turning said cam step by step, substantially as described.

31. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools connected together so as to move endwise in unison, a sliding bar connected thereto, a slotted lever connected thereto at one end, a rotatory cam, an intermediate pivoted arm connected to said lever and to said cam, a driving-shaft for rotating the spool-shafts and movable endwise, and means for simultaneously locking said shaft and partially rotating said cam, substantially as described.

32. In a type-writing machine, the combination of an inking-ribbon, ribbon-spools, ribbon-spool shafts, a driving-shaft adapted to alternately rotate said ribbon-spool shafts and movable endwise, a latch for holding said shaft in either of its two positions, and which must be manually moved to unlock said shaft before it can be shifted, mechanism connected with the ribbon-spools for causing them and the ribbon to move transversely, and means for actuating said ribbon-moving mechanism connected to and operated simultaneously with said driving-shaft latch, when it is manually operated independently again to relock said driving shaft, substantially as described.

33. In a type-writing machine and in a ribbon-moving mechanism substantially as set forth, the combination with the driving-shaft and with the cam, of a lever carrying a latch or locking device for said shaft and also a driving-pawl to actuate said cam, substantially as described.

34. In a type-writing machine and in a ribbon-moving mechanism substantially as set forth, the combination with the driving-shaft and with the cam, of a lever carrying a latch or locking device for said shaft, and a spring-actuated driving-pawl to engage teeth or notches on said cam, and means for limiting the vibration of said lever, substantially as described.

35. In a type-writing machine and in a ribbon-moving mechanism, the combination with the driving-shaft having grooves, and the cam having teeth, of a lever carrying a fork and a spring-actuated driving-pawl, substantially as described.

36. In a type-writing machine and in a ribbon-moving mechanism, the combination with the driving-shaft having an endwise movement, of a cam mounted loosely thereupon to rotate independently thereof and having at one end a flange and intermediate neck, and a flange or shoulder on the framework for engaging said flange on its inner side to prevent the cam from moving endwise, while at the same time permitting it to rotate step by step, substantially as described.

37. In a type-writing machine, a detachable inking-ribbon plate extending across the machine and connecting one spool with the other, so that both spools may be moved endwise in unison and the ribbon carried bodily back and forth in the direction of its width, substantially as described.

38. In a type-writing machine, the combination with an inking-ribbon adapted to move transversely, of a sliding plate detachably connected by depending forks to the ribbon-spools, overlying the inking-ribbon, and connected thereto, substantially as described.

39. In a type writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, means for moving one of said spools endwise, and a detachable plate connected at one end with said spool and extending horizontally across the top plate and provided at its other end with depending forks to engage the other ribbon-spool, whereby both spools, the ribbon and the said plate are caused to move bodily in unison, substantially as described.

40. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, means for moving one of said spools endwise, and a plate connected to said spool at one end and extending horizontally across the machine, and provided at its opposite end with a fork or pair of fingers to embrace the other of said ribbon-spools and move it, substantially as described.

41. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools a horizontally-arranged bodily-movable hinged and detachable plate which overlies the horizontal portion of the inking-ribbon between the spools and which is provided with means for holding and guiding said portion of the ribbon and causing it to move transversely with said spools and said sliding plate, means for guiding said plate, and depending forks for embracing the spool-heads, substantially as described.

42. In a type-writing machine, the combination of an inking-ribbon, a pair of endwise-movable ribbon-spools, and an intermediate hinged and detachable horizontally-arranged connecting, sliding, shielding and ribbon-moving plate, substantially as described.

43. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, a fork or pair of arms for moving one of said spools endwise, and a plate detachably connected at one end to said fork or pair of arms and extending across the machine and provided at its opposite end with a fork or pair of arms to embrace the other ribbon-spool, substantially as described.

44. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, and an intermediate detachable, hinged and sliding connecting-plate provided with a type opening and with ribbon-guides on its under side which also support the horizontal portion of the ribbon and cause it to move crosswise with said plate, substantially as described.

45. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, a reciprocatory ribbon-spool carrier, a guide-rod therefor, a ribbon-plate detachably mounted upon said guide-rod at one end and movable with said ribbon-spool carrier, and having means at its opposite end to detachably engage with the other ribbon-spool substantially as described.

46. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, a reciprocatory ribbon-spool carrier, a guide-rod therefor, an inking-ribbon plate attached at one end to said rod and at its opposite end to the other ribbon-spool, the said rod being also adapted to turn when the ribbon-plate is swung up, and means for holding said rod and said ribbon-plate when the latter is in its upturned position, substantially as described.

47. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, a ribbon-spool carrier connected to one of said spools, a horizontally-arranged plate connected at one end to said carrier and at its other end to the opposite spool, a slotted lever connected to said ribbon-spool carrier, a pivoted arm connected to said plate and to an underlying cam, means for rotating the ribbon-spool shafts, including a sliding driving-shaft, and means for rotating said cam, carrying also means for locking said driving-shaft, substantially as described.

48. In a type-writing machine, the combination of the ribbon-spool carrier, the guide-rod therefor, the sliding ribbon-plate hooked upon said rod pivots for said rod, whereby the ribbon-plate may be swung upwardly, and a spring-catch engaging with said rod to hold it and the ribbon-plate when the latter is in its upturned position, substantially as described.

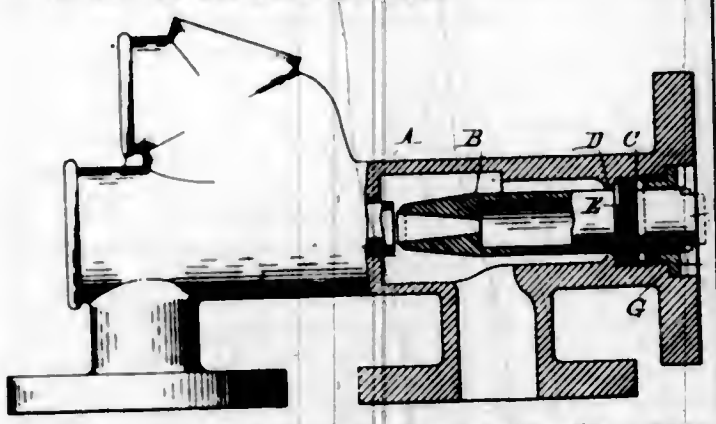
49. In a type-writing machine, the combination of the ribbon-spool carrier, the ribbon guide-rod mounted on pivots and having at one end a toothed flange, a spring-catch to engage with the same, and a ribbon guide-plate attached at one end to said guide-rod, the ribbon guide-plate having a hook at one end, a fork at the opposite end, a central type-opening, and oppositely-disposed supporting and guiding fingers arranged on the under side of said plate and one on each side of said opening, substantially as described.

50. In a type-writing machine, the combination of two endwise-movable ribbon-spools, an inking-ribbon adapted to pass from one to the other, a sliding inking-ribbon plate extending across the machine and connecting one spool with the other, and adapted to cause both spools to be moved endwise in unison and the ribbon to be carried bodily back and forth in the direction of its width.

51. In a type writing machine, the combination of an inking-ribbon, ribbon-spools connected together, ribbon-spool shafts provided with gears, an endwise-movable driving-shaft provided with gears for said spool-shafts, means for locking said shaft when it has been moved to disengage one ribbon-spool shaft and engage the other ribbon-spool shaft, and means connected to the inking-ribbon for moving it a step widthwise at the conclusion of its normal longitudinal travel, and simultaneously with each longitudinal reversing movement, and the said means being actuated by the means for locking the said driving-shaft after the latter has been moved endwise to change the direction of rotation of the spool-shafts.

52. In a type-writing machine, the combination with the bar of a platen-carrier, of a bracket bearing on one side thereof, a clamping-plate bearing on another side or portion of said bar and also engaging said bracket, means for holding said bar, bracket, and clamping-plate together, and a spring bearing against said clamping plate for holding the parts with a yielding force; substantially as described.

607,227. INJECTOR. WILLIAM A. DOWNES, Detroit, Mich., assignor to the Penberthy Injector Company, same place. Filed Jan. 27, 1898. Serial No. 668,406. (No model.)

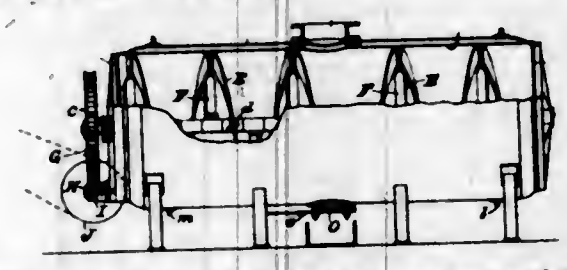


Claim.—1. In an injector, the combination of a casing, a steam-jet having a limited, longitudinal screw-threaded adjustment in the casing, two shoulders formed at opposite ends of the adjusting movement of the jet against which it may be turned to lock it, the outer shoulder being detachable.

2. In an injector, the combination of a casing, a steam-jet having a screw-threaded engagement within the casing, two shoulders which limit the adjusting movement of the jet and against which it may be turned to lock it, an exteriorly-screw threaded ring fitting around the jet and engaging a screw-thread in the casing, forming the outer shoulder.

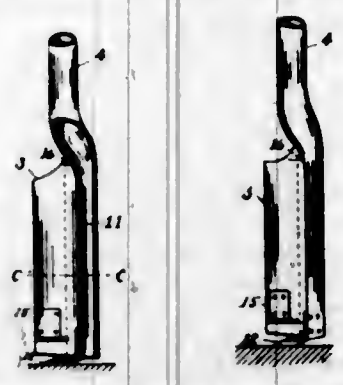
3. In an injector, the combination of the casing, an interiorly-screw-threaded portion at the steam end, a shoulder at the end thereof, a steam-jet, a screw-threaded collar on the steam-jet engaging said screw-thread in the casing, and a screw-threaded ring fitting over the jet and engaging the screw-thread in the casing, the collar on the jet adapted to be locked against the shoulder at the inner end of its movement or against the ring at the outer end of its movement.

607,228. MACHINE FOR CRYSTALLIZING SUGAR. HAROLD P. DYER, Cleveland, Ohio. Filed Jan. 14, 1897. Renewed Feb. 19, 1898. Serial No. 670,974. (No model.)



Claim.—In a crystallizing cylinder, the combination of the central revolving shaft, the narrow agitating worm or screw blade located near the sides of the cylinder, the flattened arms which connect and support the screw-blades from the shaft, with that portion of their length between the screw-blade and the shaft, formed to stand at an angle opposite to the angle or pitch of the screw-blade, substantially as and for the purpose hereinbefore set forth.

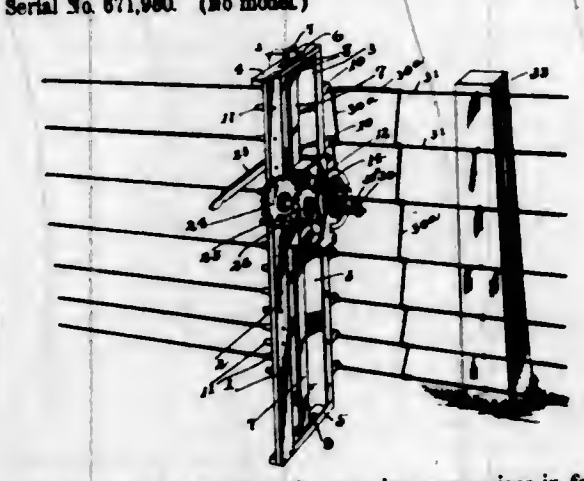
607,229. BORING IMPLEMENT FOR FROZEN EARTH. EBEN H. DYER, Alvarado, Cal. Filed Feb. 26, 1898. Serial No. 671,848. (No model.)



Claim.—1. A revoluble earth-auger, of concave, semicylindrical form, having in its semicylindrical wall inlet-passages 11 extending to the bottom, and outlet-passage 16 extending to the top of the cylindrical wall, a transverse cutting edge 12, a sustaining-ledge 15, and a hollow stem, communicating with passage 11, substantially as specified.

2. A revoluble earth-auger of concave, semicylindrical form, having in its semicylindrical wall inlet-passages 11 extending to the bottom, and outlet-passage 16 extending to the top of the cylindrical wall, a transverse cutting edge 12, a sustaining-ledge 15, and a hollow stem communicating with passage 11, in combination with means for heating a fluid, as air, means for forcing said heated fluid through said hollow stem and said passage 11, and means for rotating the auger, substantially as specified.

607,230. MACHINE FOR WEAVING CROSS-WIRES IN FENCES. JOSEPH B. EAGLESTON, Orient, Ohio. Filed Feb. 28, 1898. Serial No. 671,980. (No model.)



Claim.—1. In a machine for weaving cross-wires in fences, the combination with a vertical frame 1, and a central guide-bar supported therein, of a weaver-carrying frame adapted to slide on said guide-bar, substantially C-shaped arms 13 and 14 extending from opposite sides of said weaver-frame, a rotary tubular weaver journaled in said C-arms, a radial recess 22 in said weaver, a wire-carrying spool on said weaver, and means for imparting a rotary motion to the weaver, substantially as and for the purpose specified.

2. In a machine for weaving cross-wires in fences, the combination with a vertical frame 1, notched arms 10 projecting laterally therefrom, and a guide-bar 7 suspended centrally in said frame, of a weaver-carrying frame mounted to slide on said guide-bar, a substantially C-shaped arm projecting from each of said weaver-frame sides, a tubular rotary weaver journaled in said arms, a radial recess in said weaver as described, and a wire-carrying spool carried on said weaver, substantially as and for the purpose specified.

3. In a machine for weaving cross-wires in fences, the combination with a vertical frame 1, notched arms 10 projecting therefrom and adapted to engage the horizontal wires of a fence, and pins 11 also projecting at intervals from said frame, of a weaver-frame, a rotary weaver mounted therein and a wire-supply spool carried thereon, and a lever fulcrumed to said weaver-frame and adapted to contact with the desired one of said pins 11, substantially as and for the purpose specified.

607,231. ARTICICIAL TOOTH. CHARLES E. FOSTER, Washington, D. C., assignor to the National Tooth Company, York, Pa. Filed Mar. 19, 1898. Serial No. 674,539. (No model.)



Claim.—1. An anchoring-piece for artificial dentures consisting of a flat refractory-metal plate bent to an extent greater than a half-circle but less than a complete circle and constituting a clip, substantially as set forth.

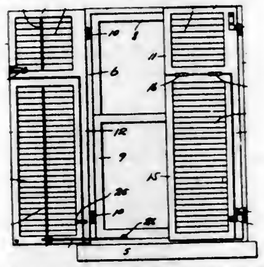
2. The combination in an artificial denture, of a body portion of the denture of porcelain, and an anchoring-piece of platina baked therein and consisting of a strip of metal bent to an extent greater than a half-circle but less than a circle, substantially as set forth.

3. An anchoring-piece for an artificial denture consisting of a strip bent to an extent greater than a half-circle but less than a circle provided with a projection 4, substantially as set forth.

607,232. COMBINATION WINDOW-SHUTTER AND AWNING. MAX GLÜCK, New York, N. Y. Filed July 23, 1897. Serial No. 645,647. (No model.)

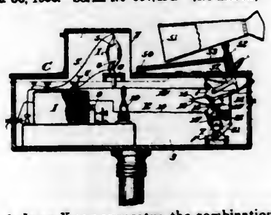
Claim.—1. The combination with a window-frame, of two shutters hinged to the sides thereof and each comprising a main-shutter frame to the lower end of the upper projecting part of which a supplemental shutter is hinged, the free or swinging sides or edges of the said upper part of the main-shutter frames and the outer edges of the supplemental shutters being in alinement and the width of said parts being such that when the shutters are closed the free or swinging sides or edges of the main shutter and the outer edges of the

supplemental shutters meet or are in contact, means for locking the supplemental shutters to the main-shutter frames, means for locking together the meeting edges of the main shutter frames, means for locking together the meeting edges of the supplemental shutters, and means for elevating and sustaining the lower ends of the supplemental shutters, substantially as described.



2. The combination with a window-frame, of two shutters hinged to the sides thereof, and each comprising a main-shutter frame having a depending extension at its hinged side and a supplemental shutter hinged to the lower end of the upper projecting part of the main-shutter frame and closely fitting against the inner face of the said extension, the free or swinging sides or edges of the said upper part of the main-shutter frames and the outer edges of the supplemental shutters being in alinement and the width of said parts being such that when the shutters are closed the free or swinging sides or edges of the main-shutter frames and the outer edges of the supplemental shutters meet or are in contact, means for locking the supplemental shutters to the said extensions, means for locking together the meeting edges of the main-shutter frames, means for locking together the meeting edges of the supplemental shutters, and means for elevating and sustaining the lower ends of said supplemental shutters, substantially as described.

607,283. X-RAY APPARATUS. HENRY GREER, Hartford, Conn. Filed Sept. 30, 1896. Serial No. 607,494. (No model.)



Claim.—1. In an X-ray apparatus, the combination, with a cabinet having a ray-penetrating partition or plate and with an electric circuit, of a fluorescing lamp located in said circuit within said cabinet and in juxtaposition to the ray-penetrating plate; two relatively-shiftable contact members located in said circuit; coin-controlled mechanism for shifting said contact members into and out of contact with each other; and a fluoroscope mounted on said cabinet and having an X-ray-penetrating screen in juxtaposition to the ray-penetrating plate of said cabinet.

2. In an X-ray apparatus, the combination with a cabinet having a ray-penetrating partition or plate; of a lamp located within said cabinet in juxtaposition to the ray-penetrating plate; electrical mechanism in connection with said lamp and effective for illuminating said lamp; and a fluoroscope shiftably mounted upon said cabinet and having a ray-penetrating screen in juxtaposition to the ray-penetrating plate of said cabinet.

3. In an X-ray apparatus, the combination, with a cabinet having a ray-penetrating partition or plate and with an electric circuit, of a fluorescing lamp located within said cabinet and in said circuit in juxtaposition to the ray-penetrating plate; coin-controlled mechanism for controlling the circuit and embodying two normally-separated shiftable contact members located in said circuit; means for shifting said members into contact, to close the circuit; a time-motor in connection with, and effective for limiting the duration of contact between, the contact members; and a fluoroscope mounted on said cabinet and having a ray-penetrating screen in juxtaposition to the ray-penetrating plate of said cabinet.

4. In an X-ray apparatus, the combination of an electrical circuit embodying an induction apparatus; a fluorescing lamp located in said circuit; shiftable contact members located in said circuit and normally maintaining the circuit open; a coin-controlled carrier in connection with one of said contact members; an oscillatory carrier in operative connection with the other contact member; and means operable on deposit of a coin for actuating one carrier to effect a circuit-closing movement of the two contact members.

5. In an X-ray apparatus, the combination of an electrical circuit; a fluorescing lamp located in said circuit; two normally-separated contact members located in said circuit; a coin-controlled oscillatory member for effecting engagement of the two contact members; a hand operable actuator for actuating the oscillatory member; a time-train for maintaining the contact members in their circuit-closing position for a predetermined length of time; and means for automatically separating said contact members at the expiration of this predetermined length of time.

6. The combination of a cabinet having a ray-penetrating partition or plate; a fluorescing lamp supported in said cabinet in juxtaposition to said plate; a coin-controlled electrical circuit in operative connection with said lamp and inclosed by the cabinet; a fluoroscope having a ray-penetrating screen in juxtaposition to the ray-penetrating plate of the cabinet; and means for supporting the said cabinet.

7. The combination of an inclosed cabinet having a ray-penetrating partition or plate; a lamp supported within said cabinet in juxtaposition to said plate; a coin-controlled electrical circuit in operative connection with said lamp and inclosed by the cabinet; a fluoroscope having a ray-penetrating screen in juxtaposition to the ray-penetrating plate of the cabinet; universally-shiftable supporting means for said fluoroscope; and means for supporting said cabinet.

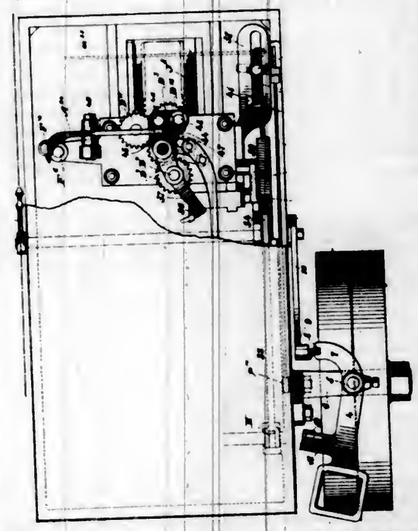
8. In an X-ray apparatus, the combination with a fluorescing lamp and with an electrical circuit for energizing said lamp; of hand-operable, coin-controlled mechanism comprising two normally-separated contact-members located in said circuit, two pivotally-supported contact-member carriers in connection with the two contact members, respectively, and one of which carriers has a coin-receiving pocket; an oscillatory hand-operable actuator for depressing one of said carriers and for shifting the other carrier with its contact member into its contact position; means for retracting the first-mentioned carrier and thereby effecting a contact between the two contact members; a train of gears for limiting the duration of contact between the two contact members and having means for automatically separating the contact members; and a chute for directing a coin to the coin-receiving pocket of the first-mentioned carrier.

9. In an X-ray apparatus, the combination, with a suitable cabinet having a ray-penetrating plate, of a normally open electrical circuit; a fluorescing lamp supported in said cabinet in juxtaposition to said plate; two normally-separated contact members in said circuit; a coin-controlled carrier in connection with one of said contact members; an oscillatory carrier in operative connection with the other of said members and controlled in its movements by the movements of the coin-controlled carrier; a motor embodying a time-train and having a stop-wheel; a detent on one contact-member carrier and controlled in its releasing movement by the return of the other contact-member carrier to its normal position; and means on the coin-controlled carrier, for locking the time-train against movement when the carrier is in its depressed position and the detent is in its unlocked position and for retaining said time-train in such locked position until said coin-controlled carrier is returned to its normal position.

10. In an X-ray apparatus, the combination, with a suitable cabinet, an electric circuit, and with a fluorescent lamp located in said circuit, of two normally-separated contact members located in said circuit; a coin-controlled carrier in operative connection with one of said contact members and effective on the descending movement thereof for shifting the contact member of the other carrier into position to be engaged by the first-mentioned contact member, when the coin-controlled carrier returns to its normally-elevated position; a spring-motor embodying a time-train having a stop-wheel; a detent in normal engagement with the stop-wheel and controlled by the descending movement of the coin-controlled carrier for releasing the detent from the stop-wheel; means on the coin-controlled carrier, for locking the time-train simultaneously with the release of the detent and for holding the time-train against movement until the coin-controlled carrier is returned to its normally-elevated position; a hand-operable actuator for depressing the coin-controlled carrier; a winding device controlled by the descending movement of the coin-controlled actuator, for winding the spring-motor; and means for returning the hand-operable actuator and coin-controlled carrier to their normal elevated positions and to thereby effect a contact of the two contact members and simultaneously release the time-train.

607,284. JACQUARD MECHANISM FOR EMBROIDERING-MACHINES. JOSEPH A. SPOERLI, New York, N. Y., assignor to the Kursheedt Manufacturing Company, same place. Filed July 23, 1897. Serial No. 645,674. (No model.)

Claim.—1. In a jacquard mechanism for embroidering-machines and the like, the combination of a hand-operated moving mechanism for the embroidering-machine frame or other moving part of the jacquard-controlled machine, an automatic stopping mechanism for the jacquard, and means for maintaining the stopping mechanism inoperative while the hand-operated moving mechanism is in an operative position.



2. In a jacquard machine for controlling an embroidering-machine or other mechanism, the combination of hand-operated moving mechanism for effecting functions and operations of the embroidering-machine or other jacquard-controlled mechanism, a stopping mechanism and a locking mechanism, part of the said locking mechanism forming part of the hand moving mechanism and part of the said locking mechanism forming part of the stopping mechanism and engaging with each other to alternately maintain one mechanism or the other inoperative at determined times.

3. The combination of a jacquard embroidering-machine having a constantly-moving part, a stopping mechanism adapted for engagement with the said constantly-moving part to stop the jacquard embroidering-machine, means for causing such engagement automatically from the jacquard and means for causing such engagement by hand.

4. In a jacquard mechanism for controlling embroidering-machines or other mechanism, the combination of a hand-operated fabric-frame-moving mechanism, a stopping mechanism, a constantly-moving part, means for effecting the engagement of the said constantly-moving part with the stopping mechanism and for maintaining the hand-operated mechanism locked until the constantly-moving part has actuated the stopping mechanism.

5. In a jacquard mechanism for controlling embroidering-machines or other mechanism, the combination of a stopping mechanism with means for engaging the same with a moving part of the jacquard, the said means comprising a coupling and a trip therefor combined with means for actuating the trip.

6. In a jacquard mechanism for controlling embroidering-machines or other mechanism, the combination of a stopping mechanism, a constantly-moving hook, a coupling and a trip for tripping the coupling.

7. In a jacquard mechanism for controlling embroidering-machines or other mechanism, the combination of a stopping mechanism, a constantly-moving hook, a coupling, a trip for tripping the coupling and a trip-arm for actuating the trip.

8. In a jacquard mechanism, the combination of a stopping mechanism comprised in part by an arm 13, a pivoted coupling carried by the arm and adapted to be engaged by a moving part of the jacquard mechanism, and means for operating the said coupling.

9. In a jacquard mechanism, the combination of a stopping mechanism comprised in part by an arm 13, a pivoted coupling carried by the arm and adapted to be engaged by a moving part of the jacquard mechanism, and a trip for controlling the coupling.

10. In a jacquard mechanism, the combination of a stopping mechanism comprised in part by an arm 13, a pivoted coupling carried by the arm and adapted to be engaged by a moving part of the jacquard mechanism, and a pivoted trip for controlling the coupling, substantially as described and for the purposes set forth.

11. In a jacquard mechanism, the combination of a stopping mechanism comprised in part by an arm 13, a pivoted coupling carried by the arm and adapted to be engaged by a moving part of the jacquard mechanism, and a trip pivoted upon the said arm for controlling the coupling.

12. Stopping mechanism for embroidering-machines combined with a jacquard mechanism having a constantly-moving part, and means for effecting the movement of the stopping mechanism comprising hand-operated means for engaging the moving part of the jacquard mechanism with the stopping mechanism, and automatic means for moving the stopping mechanism independently of the jacquard mechanism.

13. Embroidering-machine-stopping mechanism combined with a jacquard mechanism having a constantly-moving part, a hand-operated mechanism for manually moving the fabric-frame of the embroidering-machine and movable into two different positions in each of which positions it is adapted for engagement with mechanism for moving the frame of the embroidering-machine, so that when in either of said two positions the hand-operated mechanism may be engaged with the mechanism for moving the embroidering-machine frame and means for locking the said hand-operated mechanism in a position intermediate of its said operative positions.

14. In a jacquard mechanism for controlling embroidering-machines or other mechanism, the combination of a stopping mechanism, spring-actuated means for actuating the stopping mechanism, means for releasing the said spring-actuated actuating means actuated from the jacquard, and means for locking the stopping mechanism from the actuating means.

15. A jacquard embroidering-machine provided with mechanism for driving the fabric-frame, a hand-operated mechanism movable into two different positions and when in said positions adapted for engagement with the fabric-frame-moving mechanism and being effective to move the said mechanism to impart different movements to the fabric-frame when in the two different positions and means for locking the hand-operated mechanism in a position intermediate of its two operative positions, substantially as described and for the purposes set forth.

607,285. WATER BAG OR BOTTLE. JAMES HARDMAN, Jr., Belleville, N. J. Filed Mar. 18, 1897. Serial No. 628,110. (No model.)



Claim.—1. A water bag or bottle, consisting, essentially, of a main body b having a neck b', an annular bead b^3 and recess b^3, and a separate and detachable mouthpiece a having an annular flange a^3 and recessed portion a^3, adapted to fit into said recess and over said bead on said neck b', substantially as and for the purposes set forth.

2. A water bag or bottle, consisting, essentially, of a main body b having a neck b', an annular bead b^3 and recess b^3, and a separate and detachable mouthpiece a having an annular flange a^3 and recessed portion a^3, adapted to fit into said recess and over said bead on said neck b', and a clamping or holding ring or band c, substantially as and for the purposes set forth.

3. A water bag or bottle, consisting, essentially, of a main body b having a neck b', an annular bead b^3 and recess b^3, and a separate and detachable mouthpiece a having an annular flange a^3 and recessed portion a^3, adapted to fit into said recess and over said bead on said neck b', a clamping or holding ring or band c, and a lift or handle attached to said ring or band, substantially as and for the purposes set forth.

4. In a water bag or bottle, in combination, with the main body thereof, formed of a plastic and pliable material, of a detachable funnel-shaped mouthpiece, adapted to be arranged over the neck of the bottle, and having a groove a^{29} a ring or band for detachably securing said mouthpiece to said neck of the bag or bottle, and a lift or handle attached to said ring or band, said lift or handle being fitted in said groove and secured therein, substantially as and for the purposes set forth.

5. In a water bag or bottle, in combination, with the main body thereof, of a detachable funnel-shaped mouthpiece, adapted to be arranged over the neck of the bottle, and having a groove a^4, a ring or band for detachably securing said mouthpiece to said neck of the bag or bottle, a lift or handle attached to said ring or band, said lift or handle being fitted in said groove, and a rivet or pin d^2 for securing said lift or handle in said groove, substantially as and for the purposes set forth.

607,236. WATER BAG OR BOTTLE. JAMES HARDMAN, Jr., Belleville, N. J. Original application filed Aug. 2, 1897, Serial No. 646,797. Divided and this application filed Nov. 5, 1897. Serial No. 657,464. (No model.)



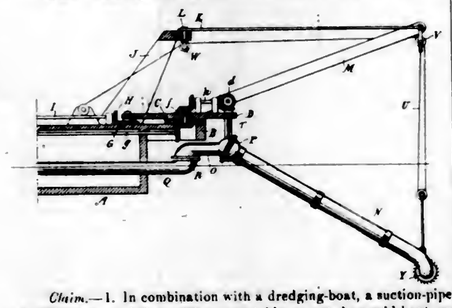
Claim.—1. In a water bottle or bag, the combination, with the neck thereof, and a detachable funnel portion, of a ring on said neck, and a handle piece or strip detachably connected with said ring, said funnel-shaped portion serving to hold said ring in position on the neck of the bottle, when said portion is in position thereon, substantially as and for the purposes set forth.

2. In a water bag or bottle, the combination, with the neck thereof, and a detachable funnel portion, of a ring on said neck having holding portions, and a handle piece or strip detachably connected with said holding portions on said ring, said funnel-shaped portion serving to hold said ring in position on the neck of the bottle, when said portion is in position thereon, substantially as and for the purposes set forth.

3. In a water bag or bottle, the combination, with the neck thereof, and a detachable funnel portion, of a ring c, having holding portions c' and c^2 provided with openings c^3 and cut-away parts c^4, and a handle-piece f, having ribs f^2 and f^1 formed with grooves f^3 between them, for securing the ends of said handle-piece in said holding portions of the ring, substantially as and for the purposes set forth.

4. In a water bottle or bag, the combination, with a ring c having slotted holding portions, of a handle piece or strip, and grooved end portions on said piece or strip, adapted to be detachably connected with the slotted holding portions of said ring, substantially as and for the purposes set forth.

607,237. SUCTION-DREDGE. FREDERICK H. HEATH, Tacoma, Wash. Filed Sept. 11, 1897. Serial No. 651,366. (No model.)



Claim.—1. In combination with a dredging-boat, a suction-pipe flexibly connected therewith, a turn table mounted on said boat, an operating-shaft run through the pivotal connection of said turn-table, a bevel-gear carried by said shaft, an excavator rotatably mounted in the end of said pipe, means for operating said excavator from said gear, and a derrick on said turn-table for supporting the outer end of said pipe, substantially as shown and described.

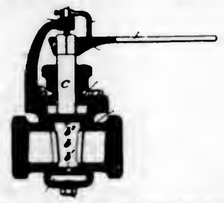
2. A dredge, consisting of a dredger-boat, an extension carried thereby, a turn-table mounted upon said extension, means for oscillating said table, a derrick carried by the turn-table, a tower-frame carried by the boat and swivelly connected with the derrick, a suction-pipe carried by the boat, a dredger-pipe flexibly connected therewith, an excavator carried by the outer end of the dredger-pipe, a truss-frame attached to the turn-table for assisting the strains transmitted to the excavator, and suitable tackle carried by the derrick for supporting the outer end of the dredger-pipe, substantially as shown and described.

3. In combination with a dredger-boat of the character described, a turn-table mounted upon an extension thereof, a derrick carried by said table, a tower carried by the boat and swivelly connected by means of a rod to said derrick, and a dredging apparatus the outer end of which is supported by suitable tackle passing over the derrick, substantially as and for the purpose set forth.

4. In combination with a dredger-boat, and an excavating apparatus swivelly connected therewith, a turn-table mounted upon an extension of the boat, a derrick carried by said turn-table, a tower-frame swivelly connected with said derrick, a tackle supported by the derrick and connected with the excavating apparatus, and means for operating said tackle, substantially as shown and described.

5. In combination with a dredger-boat of the character described, a turn-table mounted upon an extension thereof, a suction-pipe carried by said boat, a dredger-pipe flexibly connected with the first-named pipe, an excavator carried by the outer end of the dredger-pipe, and a truss-frame pivoted to the turn-table and adapted to assist the strains brought to bear upon the excavator, as specified.

607,238. VALVE. WILLIAM HESTON, Homestead, Pa., assignor, by mesne assignments, to the Homestead Valve Manufacturing Company, same place. Filed May 3, 1897. Serial No. 634,912. (No model.)

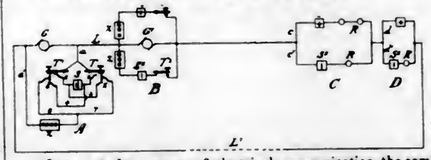


Claim.—1. A valve, having a plug provided with a stem, and means applied to such stem to turn the plug, combined with a stand, and a plug-locking device connected with and operated by the plug-turning means, supported in said stand directly over said stem, separated from it and in line with it, and adapted to act immediately upon the end of said stem in the direction of its length, to lock the plug in the desired position as said plug is turned, substantially as described.

2. A valve, having a plug provided with a stem, a plug-operating handle on said stem, a stand, and a screw mounted in such stand in line with the stem and wholly independent thereof, and connected with and operated by the said operating-handle to cause the said screw to impinge upon the stem lengthwise and lock the plug in desired position, substantially as described.

3. A valve, having a plug provided with a stem, an operating-handle, a stand adapted to limit the movement of the operating-handle, and a screw arranged in said stand over the plug's stem and wholly independent thereof, and operated by the plug's handle to impinge upon the stem lengthwise and lock the plug in any given position, substantially as described.

607,239. TELEGRAPH. LEO W. HILDBURGH, New York, N. Y. Filed June 2, 1897. Serial No. 639,189. (No model.)



Claim.—1. In a system of electrical communication, the combination with a main line and a source of alternating current therefor, of means for controlling the flow of the positive and negative impulses from the generator by short-circuiting one set of impulses at the time of generation of either set of waves, the other set being unaffected, substantially as set forth.

2. In a system of electrical communication, the combination with a main line and a source of alternating current therefor, of means for controlling the flow of the positive and negative impulses from the generator, said means being located at or near the generator, and means for maintaining the line resistance, substantially as set forth.

3. In a system of electrical communication, the combination with a main line, of two or more generators generating alternating currents of different frequencies, two branch circuits connected across the terminals of each generator, transmitting instruments located in each branch, and means for separately controlling the flow of the positive and negative impulses from each generator over the line to receiving instruments, substantially as set forth.

4. In a system of electrical communication, the combination with a main line, of two or more generators generating alternating currents of different frequencies, two branch circuits connected across the terminals of each generator, transmitting instruments located in each branch, and a device in each branch for causing a set of impulses of one sign to pass over the branch in which such device is located when the transmitting instrument is closed, thereby short-circuiting that set of impulses from the line, substantially as set forth.

5. In a system of electrical communication, the combination with a main line and a source of alternating current therefor, of a device combined with transmitting instruments for controlling the flow of the positive and negative impulses from the generator over the main line by causing one set of impulses to flow through a branch circuit, the other set being unaffected and allowed to pass over the main line, substantially as set forth.

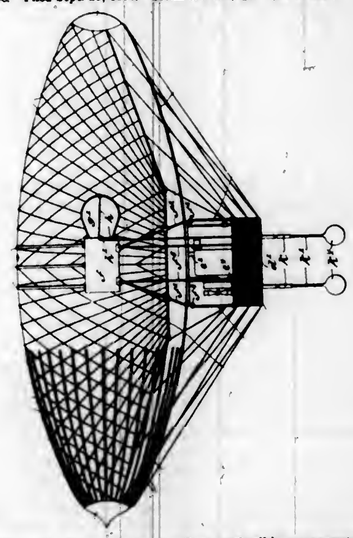
6. In a system of harmonic telegraphy, the combination with a main line, of two or more generators generating alternating currents of different frequencies, transmitting instruments for controlling the flow of the positive and negative impulses over the line, each transmitting instrument being arranged to short-circuit the impulses of a given sign and frequency, substantially as set forth.

7. In a system of harmonic telegraphy, the combination with a main line of two or more generators generating alternating currents of different frequencies, transmitting instruments for controlling the flow of the positive and negative impulses over the line, each transmitting instrument being arranged to short-circuit the impulses of a given sign and frequency, and a series of receiving instruments each adapted to receive impulses of a given sign and frequency, substantially as set forth.

8. In a system of electrical communication, the combination with a main line, of two or more generators connected in series and generating alternating currents of different frequencies, means for controlling the passage of the positive and negative impulses from each generator over the line, a transmitting instrument for each set of impulses of a given sign and frequency, and a series of receiving instruments connected in parallel and each arranged to receive impulses of a given sign and frequency, substantially as set forth.

9. In a system of electrical communication, the combination with a main line, of two or more generators connected in series and generating alternating currents of different frequencies, branch circuits connected across the terminals of each generator, means located in each branch for controlling the passage of the positive and negative impulses from each generator over the line, transmitting instruments in each branch, and a series of receiving instruments connected in parallel and each arranged to receive impulses of a given sign and frequency, substantially as set forth.

607,240. AIR-SHIP. CHARLES E. HITE, Philadelphia, Pa., assignor to the Hite Manufacturing and Navigation Company, same place. Filed Sept. 23, 1897. Serial No. 652,677. (No model.)



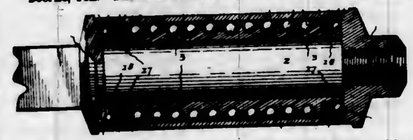
Claim.—1. In an air-ship, a balloon or flexible gas-receptacle, in combination with an inlet and outlet pipe for gas, a fan or similar suction apparatus connected with one of said pipes, and a heating-coil connected with the suction apparatus and with the other pipe, all arranged so that a constant circulation and heating of the gas in the balloon may be maintained, substantially as and for the purposes described.

2. In an air-ship, in combination with a balloon or flexible gas-receptacle, two tubes or hollow cylinders, each arranged on either side of the balloon and in the medial line thereof, a suction-fan located in the forward end of said tube and a rudder pivotally connected to the periphery of the tube at the rear end thereof, said rudder being curved in cross-section to correspond to the shape of that part of the periphery of the tube to which it is pivoted, substantially as and for the purposes described.

3. In an air-ship, in combination with a balloon or flexible gas-receptacle, two tubes or hollow cylinders each arranged on either side of the balloon and in the medial line thereof, a suction-fan located in the forward end of said tube, a rudder pivotally connected to the periphery of the tube adjacent to the balloon, a frame supported below the balloon, a lever pivoted at one end to said frame and adapted to support the tube in operative position and to permit of its dropping below the balloon when deflated, substantially as and for the purposes described.

4. In an air-ship, a ballasting device, comprising two telescoping tubes, a bag or sack closing the end of one of said tubes, means for collapsing said bag, and means for telescoping said tubes, substantially as and for the purposes described.

607,241. BALL-BEARING AXLE-BOX. CHARLES R. HORROM, Boerne, Tex. Filed Jan. 24, 1898. Serial No. 667,743. (No model.)



Claim.—1. In a device of the class described, the combination with a spindle provided at its inner end with a shoulder, of a bearing-sleeve arranged on the spindle and interlocked with the shoulder thereof and provided with a series of annular grooves or channels forming ball-races, an axle-box arranged over the bearing sleeve, balls arranged in the races of the bearing-sleeve and extended from one end of the axle-box to the other, and the end rings closing the ends of the axle-box, substantially as and for the purpose described.

2. In a device of the class described, the combination of a spindle provided at its inner end with a shoulder having a series of recesses, a bearing-sleeve provided with a series of annular ball-races and having at its inner end a series of projecting lugs fitting in the recesses of the spindle and interlocking the bearing-sleeve with the same, an axle-box, and balls arranged in the ball-races and interposed between the bearing-sleeve and the axle-box, substantially as described.

3. In a device of the class described, the combination of a bearing sleeve designed to be arranged on a spindle and provided with a series of annular channels forming ball-races, said sleeve having smooth extensions at its ends, an axle-box provided at its ends with recesses and having the same threaded, balls interposed between the bearing-sleeve and the axle-box, and the threaded end rings arranged on the smooth extensions of the bearing sleeve and fitting in and closing the ends of the axle-box and engaging the threads of the recesses, substantially as described.

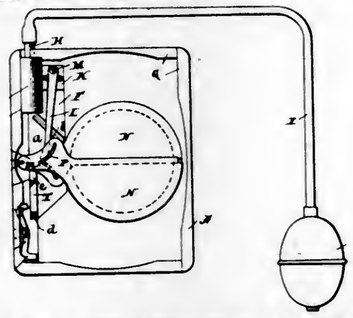
4. In a device of the class described, the combination of an axle-box spindle, balls arranged within the axle-box and interposed between the same and the spindle, an end ring secured to the axle-box and provided with openings threaded at their inner portions, balls arranged within the openings and projecting beyond the outer face of the ring, and threaded plugs closing the inner ends of the openings, substantially as described.

5. In a device of the class described, the combination with a spindle having a shoulder at its inner end, and an axle-nut, of an axle-box, balls interposed between the spindle and the axle-box, the end rings closing the ends of the axle-box and provided with openings having contracted outer ends, and antifriction-balls secured within the openings of the end rings and projecting through the contracted outer ends of said openings and engaging the shoulder of the spindle and the axle-nut, substantially as described.

607,242. PHOTOGRAPHIC SHUTTER. CHAUNCEY F. H. HUFF and ORLANDO C. HALE, Cincinnati, Ohio. Filed Jan. 27, 1898. Serial No. 668,192. (No model.)

Claim.—1. A shutter comprising a movable actuating member

provided with rigid parallel substantially V-shaped actuating-shoulders, the shutters provided with oppositely-extending substantially arc-shaped actuating shoulders, a lever pivoted at one end and having its free end provided with projections engaging respectively between the parallel shoulders of the cutters, substantially as described.



2. A shutter comprising an endwise-moving rod provided with a substantially V-shaped slot, a shutter provided with substantially arc-shaped slots extending in opposite directions, an actuating-lever pivoted at one end and having its free end extending between the shutters and the rod and oppositely-extending projections engaging the slots of the rod and the shutters, substantially as described.

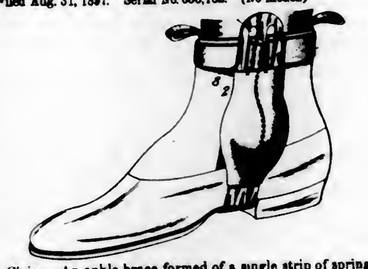
3. A shutter comprising an endwise-moving rod having a substantially V-shaped slot, the shutters having extensions provided with substantially oppositely-extending arc-shaped slots, the shutters pivotally supported at a point outside of the said arc shaped slot, and an actuating member engaging the slots of the endwise-moving rod and the shutters, substantially as described

4. A shutter comprising a cylinder, a piston within the cylinder having a piston-rod provided with a substantially V-shaped slot, the shutters having substantially arc-shaped slots and pivotally supported at a point outside of the said slots, an actuating member engaging the said rod and shutter slots, the rod having shoulders and a locking-lever for limiting the movement of the rod to one-half its distance, substantially as described.

5. A shutter comprising an endwise-moving rod provided with a substantially V-shaped slot, the shutters having substantially arc-shaped slots extending in opposite directions and pivotally supported, an actuating member engaging the slots of the rod and the shutters, the rod having two locking-shoulders, and a locking-lever having two locking members one for limiting the movement of the rod one-half of its distance and the other for locking the rod in its extended position, substantially as described.

6. A shutter comprising an endwise-moving rod having a substantially V-shaped slot, the shutters having substantially arc-shaped slots and supported at a point outside of the said slots, and an actuating member engaging the slots of the rod and shutters, the said rod having two locking-shoulders, a locking-lever having a yielding end adapted to be forced outward by one of the locking-shoulders and its opposite end adapted to move over the rod the parts cooperating for the purpose and in the manner described.

607,243. ANKLE-BRACE. WILLIAM C. HUFF, St. Paul, Ark. Filed Aug. 31, 1897. Serial No. 650,182. (No model.)

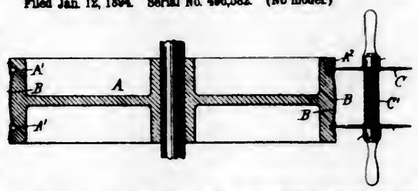


Claim.—An ankle-brace formed of a single strip of spring metal formed into a hook at its lower end to pass beneath and embrace the sides of the foot and secure the lower end of the brace thereto, and having the intermediate portion expanded or widened and pressed into a concavo-convex form to receive the ankle-joint, a padding applied to the hollow side of the brace to prevent injurious pressure upon the ankle-joint, and a transversely-disposed strap having loose connection with the upper end of the brace and serving as means to secure it to the foot above the ankle-joint, substantially as set forth.

607,244. STEAM-PACKING. CHARLES L. IRESON, Boston, Mass. Filed Apr. 4, 1898. Serial No. 676,327. (No specimens.)

Claim.—The steam-packing compound herein described, consisting of a vulcanizable rubber composition, substantially as described, combined with fossil-flour and ultramarine-blue in about the proportions indicated, as and for the purposes set forth.

607,245. PNEUMATIC TIRE. THOMAS B. JEFFERY, Chicago, Ill. Filed Jan. 12, 1894. Serial No. 496,582. (No model.)



Claim.—1. A tire or tire-cover in the form of an endless seamless band as distinguished from a band whose ends are joined after the band is made, or a tubular annulus, such band being composed of fabric embedded in vulcanized rubber, and having beads or flanges parallel to the lateral edges, which, as to the vulcanized rubber are integral with the endless band, and which contain integral tucks of the fabric folded up into the beads or flanges embedded in the integral rubber substance thereof.

2. A tire or tire-cover in the form of an endless band composed of fabric embedded in vulcanized rubber and having beads or flanges parallel to the lateral edges, which as to the vulcanized rubber are integral with the endless band, and which contain integral tucks of the fabric folded up into beads or flanges into the integral rubber substance thereof; in combination with a layer of fabric which is also embedded in the integral rubber substance and extends across the base or back of the tucks.

3. A tire or tire-cover in the form of an endless seamless band as distinguished from one whose ends are joined after the band is made or from a tubular annulus, such band being composed of oppositely-placed layers of bias fabric whose threads are embedded in vulcanized rubber and having beads or flanges parallel to the lateral edges, which, as to vulcanized rubber, are integral with the endless band and which contain integral tucks of the bias fabric folded up into the beads or flanges in the integral rubber substance thereof.

4. A tire or tire-cover in the form of an endless seamless band as distinguished from one whose ends are joined after the band is made, or from a tubular annulus, such band being composed of rubber-saturated bias fabric having beads or flanges parallel to the lateral edges, which beads or flanges as to the rubber are vulcanized and integral with the endless band and which contain integral tucks of fabric constituting the exterior surface of the beads or flanges having its threads embedded with the vulcanized rubber as distinguished from being inclosed bodily in such rubber.

607,246. MOMENTUM WATER-WHEEL BUCKET. GEORGE H. JOHNSON, Sisson, Cal. Filed July 22, 1897. Serial No. 645,541. (No model.)

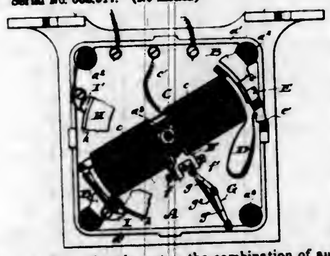


Claim.—1. Water-wheel buckets formed in pairs with one bucket in advance of the other, said buckets uniting in a common radial plane along the adjacent edges, for approximately one-half the distance from the inner to the outer end, and curving outwardly and independently away from each other for the remainder of the distance.

2. A water-wheel having a double row of buckets fixed upon its rim, so that the buckets of one row stand in advance of those of the other row in the direction of travel, the adjacent edges of the buckets lying in a common plane transverse to the axis of the wheel for approximately one-half of the bucket length outwardly, the buckets separating transversely away from each other for the remainder of the distance to the outer end.

3. A water-wheel having a double row of buckets fixed upon its rim so that the buckets in one row stand intermediate between those of the other row in the direction of travel with the inner edges of both rows of buckets lying in the same plane transverse to the axis of the wheel, said buckets diverging outwardly from each other from a point about half the length of the bucket from the rim to which they are attached, and a nozzle, the axis of which is in line with the plane of the inner edges of the buckets whereby water therefrom is delivered alternately into the buckets upon each side of the wheel.

607,247. ELECTRIC MOTOR. WARREN S. JOHNSON and HENRY WIENEWEBER, Milwaukee, Wis., assignors to the Johnson Electric Service Company, same place. Filed Nov. 9, 1896. Renewed June 4, 1898. Serial No. 682,617. (No model.)



Claim.—1. In an electric motor, the combination of an electromagnet and armature, one of which is capable of oscillation transversely to the lines of magnetic force, a weight for moving said oscillatory part in one direction, an elastic stop for limiting the movement and reacting upon the oscillatory part, and a circuit-controller arranged to close the circuit at or near the limit of the return movement of the oscillatory part produced by the weight, and to break the circuit at or near the limit of its advance movement produced by the magnet, substantially as and for the purposes set forth.

2. In an electric motor, the combination of an electromagnet and armature, one of which is capable of a limited oscillatory movement transversely to the lines of magnetic force, a non-magnetic weight for moving the oscillatory part in one direction, the magnet being arranged to move it in the other, a non-magnetic elastic stop for limiting the movement of and reacting upon the oscillatory part, a ratchet-wheel, and a pawl carried by the oscillatory part and adapted to engage with and turn said wheel, substantially as and for the purposes set forth.

3. In an electric motor the combination of an electromagnet and armature, one of which is capable of oscillation transversely to the lines of magnetic force passing through it, a ratchet-wheel having a rim of elastic, non-sonorous material, and a pawl carried by the oscillatory part and adapted to engage with said rim and turn said wheel, substantially as and for the purposes set forth.

4. In an electric motor, the combination of an electromagnet and armature, one of which is capable of oscillation, and a circuit-controller consisting of a knuckle-joint, a spring connecting the links of the joint and tending to turn and hold them in either direction out of line with each other and opposing points or projections between which the end of one of said links projects, one of said points and links constituting a part of an electric circuit through which said magnet is supplied with current, substantially as and for the purposes set forth.

5. In an electric motor, the combination of an electromagnet and armature, one of which is capable of oscillation an elastic stop for limiting the movement of said oscillatory part, a weight for moving the oscillatory part in one direction, and a circuit-controller consisting of two opposing adjustable points or projections carried by the oscillatory part, a knuckle-joint, a spring tending to throw and hold the links of said joint in either direction out of line with each other, one of said links projecting between the opposing points or projections on the oscillatory part of the motor, substantially as and for the purposes set forth.

6. In an electric motor, the combination with an electric circuit, of an electromagnet and armature, one of which is capable of oscillation transversely to the lines of magnetic force and adapted to be turned in one direction by the electromagnetic energy of said magnet, a weight for moving said oscillatory part in the opposite direction, an elastic stop for limiting the movement of and reacting upon said oscillatory part, and a circuit-controller arranged to open and close the circuit through the winding of the magnet at or near the opposite limits respectively of the movement of said oscillatory part, substantially as and for the purposes set forth.

7. In an electric motor, the combination with an electric generator or source of current, and a thermostat having two contacts and an intermediate expansion strip or movable part connected with one pole of said generator of an electromagnet and armature, one of which is capable of a limited oscillatory movement transversely to the lines of magnetic force, the coil of the magnet being connected with the other pole of the generator, a circuit-controller adapted to open and close the circuit through the coils of said magnet at determinate points near the limits of the movement of said oscillatory part and comprising two contacts, one of which is connected with the coil of the magnet, a rotary segmental contact arranged to be turned by the motor and electrically connected with the other contact of said circuit-controller and two contacts arranged in the path of said rotary contact and connected respectively with the contacts of said thermostat, substantially as and for the purposes set forth.

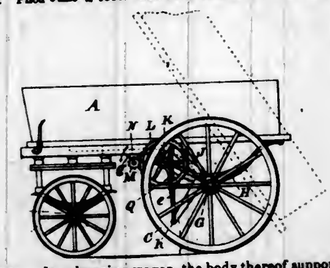
8. In an electric motor, the combination with an electric circuit comprising a generator or source of current, and a thermostat, of an electromagnet and armature, one of which is capable of oscillation transversely to the lines of magnetic force, a circuit-controller adapted to open and close the circuit at or near the limits of the oscillatory part of the motor, a weight for moving the oscillatory part in one direction, an elastic stop for limiting the movement of and reacting upon the oscillatory part, a segmental contact adapted to be turned by the motor and two opposite contacts in the path of said rotary contact connected with opposing contacts of said thermostat, whereby the alternate closing of the circuit through opposite contacts will cause the motor to turn saidrotary contact a determinate part of a revolution, substantially as and for the purposes set forth.

607,248. MARKING ATTACHMENT. SAMPSON W. LANE, Waco, Tex., assignor of one-half to Cora L. W. Sherar, Temple, Tex. Filed May 14, 1897. Serial No. 636,542. (No model.)



Claim.—In a marking device, the combination with a brush, of a gage consisting of a clamp extended downwardly and expanded to form angularly-bent arms having their outer surfaces on a straight plane, and adapted to be brought against the edge of a ruler or like device, and a feeder consisting of a plate converging toward its lower end and having upturned edges to form sides and provided at its upper end with a continuous clamp to engage the handle of the brush, the said brush being also passed through the clamp forming a part of the gage, substantially as described.

607,249. DUMPING-WAGON. WILLIAM LEONHARDT, Baltimore, Md. Filed June 4, 1897. Serial No. 639,425. (No model.)



Claim.—In a dumping-wagon, the body thereof supported at one end by stationary sills, and at the other by springs sustained by the rear axle, combined with a dumping-lever hinged to the rear axle or to an attachment thereof, a winding-shaft and winding chains connecting the winding-shaft to the dumping-lever at different sides of the pivotal point, whereby in the revolution of the winding-shaft, one chain is wound while the other is unwound, and the position of the lever and its attached body of the wagon changed, substantially as specified.

607,250. ELECTRIC CUT-OUT. HARRY A. LEWIS, Norristown, Pa., assignor of three-fifths to John T. Dyer, same place. Filed July 14, 1897. Serial No. 644,531. (No model.)

Claim.—1. An electric cut-out provided with a circuit-breaker interposed in the line-wire, a thermostat comprising a tube fixed at one end, a wire coil in the tube, a rod held in the said tube to press

the coil against the said tube to heat the latter, and intermediate mechanism for connecting the tube with the said circuit-breaker, substantially as shown and described.



2. An electric cut-out provided with a circuit-breaker and an electric thermostat comprising a tube fixed at one end and connected at its other end with said circuit-breaker, a rod held in the said tube, and a line-wire coiled on the said rod, and contacting with the said tube to heat the same, substantially as shown and described..

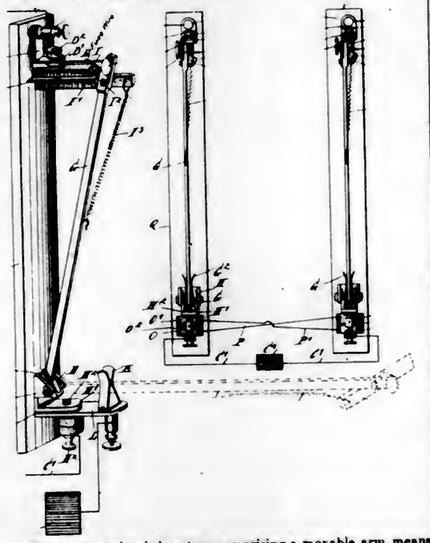
3. An electric cut-out provided with a circuit-breaker and an electric thermostat comprising a tube fixed at one end and connected at its other end with said circuit-breaker, a non-conducting rod held in the said tube, a line wire coiled on the said rod, and contacting with the said tube to heat the same, and metallic caps on the end of the rod for making electric contact, the ends of the said wire terminating in the said caps, substantially as shown and described.

4. An electric cut-out provided with a circuit-breaker and an electric thermostat comprising a tube for connection at one end with said circuit-breaker, a head on the said tube, a hollow screw-rod engaging the said head, to cause the tube to expand in one direction only, and a rod carrying a wire and held in the said tube and screw-rod, substantially as shown and described.

5. An electric cut-out provided with a circuit-breaker and an electric thermostat having an expansion-tube, and connected at one end with said circuit-breaker, a bar for supporting the said thermostat and the circuit-breaker and of the same material as the said tube, to hold the latter in the same position under ordinary temperature and means for heating the expansion-tube independently of the supporting-bars, substantially as shown and described.

6 An electric cutout provided with a tube, a non-conducting rod held removably in the said tube, a wire coiled on the said rod, caps held in the ends of the said rod, spring contact-plates engaging the said caps, and a circuit-breaker operated by the expansion of said tube, substantially as shown and described.

607,251. FUSE-HOLDER, CIRCUIT-BREAKER, AND LIGHTNING-ARRESTER. HARRY A. LEWIS, Norristown, Pa., assignor of three-fifths to John T. Dyer, same place. Filed July 14, 1897. Serial No. 644,532. (No model.)



Claim.—1. A circuit-breaker, comprising a movable arm, means adapted to be released by a high-tension discharge, for normally holding said arm stationary, a stationary contact, a contact held movably on said arm, a stationary insulation normally engaged by said movable contact and separating it from the stationary contact, and means for connecting the stationary and the movable contact in an electric circuit, substantially as described.

2. A circuit-breaker, comprising a stationary contact adapted for connection with an electric circuit, a movable arm likewise adapted for connection with the circuit, a stationary insulating-block normally engaged by the movable contact and separating it from the stationary contact, and means adapted to be released by a high-tension discharge for normally holding the movable contact stationary, said contact when released, being arranged to move first into engagement with the stationary contact, and then away therefrom, substantially as described.

3. The combination of the stationary contact adapted for connection with an electric circuit, a movable arm likewise adapted for connection with the electric circuit, a conducting connection adapted to be interrupted by a high-tension discharge and extending from said arm to the stationary contact, a contact loosely mounted on said arm to move relatively thereto, and a stationary insulation normally engaged by said movable contact and separating it from the stationary contact, substantially as described.

4. The combination of the fixed contact, the movable circuit-breaking arm, the fuse connecting said arm and contact, and the contact held movably on the said arm and adapted to engage the fixed contact when the fuse melts or breaks, substantially as described.

5. A device of the class described, provided with a circuit-breaker comprising a spring-pressed lever connected with one end of the line-wire and arranged for connection by a fuse with the other end of the line-wire, a fixed carbon connected with the line wire, a movable carbon carried by the lever, and stationary insulating material separating the carbons in their normal position, substantially as shown and described.

6. A circuit-breaker, having a movable arm adapted for connection with the circuit, a stationary contact, a metallic connection adapted to be interrupted by a high-tension discharge and normally connecting the said contact and arm, a high-resistance contact carried by said arm and normally out of engagement with the stationary contact, but adapted to be thrown against it when the arm is released by the severing of said metallic connection, and a third electric contact adapted to be engaged by the released arm at the end of its movement, substantially as described.

7. A circuit-breaker, having a movable arm adapted for connection with the circuit, a stationary carbon contact likewise adapted for connection with the circuit, a metallic connection adapted to be severed by a high-tension discharge and normally connecting the said contact and arm, another carbon-contact carried by said arm and normally out of contact with the stationary carbon-contact, but adapted to be thrown against it when the arm is released by the severing of said metallic connection, and a third electric contact adapted to be engaged by the released arm at the end of its movement, substantially as described.

8. A device of the class described provided with a spring-pressed lever connected with one end of a line-wire, a fuse connection for the free end of the lever and the other end of the line-wire, a fixed carbon connected with the line wire at the fuse connection, a carbon pivoted on the said lever and pressed on by a spring, and an insulation between part of the said carbons when the lever is in a normal position, substantially as shown and described.

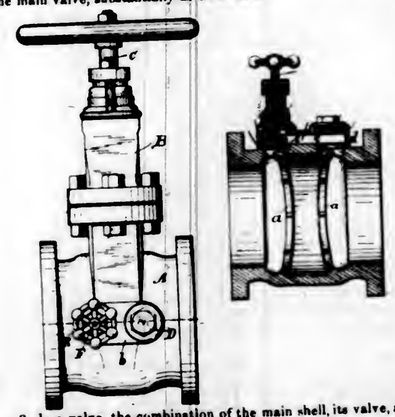
9. A device for receiving an excessive current, consisting of two resistance-blocks insulated from each other and apertured at their central portions, a line-connector passing through the apertures of the blocks, one block being electrically connected with the line-connector and the other insulated therefrom, and a short-circuiting connection leading from the insulated block, substantially as described.

10. A device for receiving an excessive current, consisting of two resistance-blocks apertured at their central portions and separated from each other by an insulator having a central aperture and a series of perforations between said aperture and the edge of the insulator, a line-connector passing through the central apertures of the blocks and insulator, one block being electrically connected with the line-connector and the other insulated therefrom, and a short-circuiting connection leading from the insulated block, substantially as described.

11. The combination of two circuit-breakers one located in the entrance line-wire and the other in the exit line-wire, a connection between said circuit-breakers, the instrument or instruments to be protected being included in said connection, a resistance-block on each circuit-breaker in permanent electrical connection with said connection to the instrument, another resistance-block located adjacent to the first-named block but insulated therefrom so as to afford a path only for high-tension currents, and an electrical connection from the insulated resistance-block of each circuit-breaker to the other, connected, resistance-block of the other circuit-breaker, substantially as described.

607,252. VALVE. EDMUND H. LUNKEN, Denver, Colo., assignor to the Lunkenheimer Company, Cincinnati, Ohio. Filed Dec. 17, 1897. Serial No. 662,347. (No model.)

Claim.—1. In a valve, the combination of the main shell, a flat-faced disk valve therein with means for opening and closing the same, a by-pass channel in the shell with ports opening to the interior thereof on opposite sides of the valve, and an exteriorly-operated valve adjacent to one of said ports and independent of the operation of the main valve, substantially as described.



2. In a valve, the combination of the main shell, its valve, a by-pass channel in the shell with seat-ports therein opening on opposite sides of the valve, exterior openings into the by-pass channel registering with the seat ports, and an interchangeable valve-carrying bonnet and a plug for said exterior openings, substantially as described.

3. In a valve, the combination of the main shell, its valve, a by-pass channel in the shell with seat-ports therein opening on opposite sides of the valve, removable seats for said ports, exterior openings into the by-pass channel registering with the seat-ports, and an interchangeable valve-carrying bonnet and a plug for said exterior openings, substantially as described.

607,253. KNITTING-MACHINE NEEDLE. ROBERT L. LYONS, Waltham, Mass., assignor to the Union Button Sewing Machine Company, Boston, Mass. Filed June 21, 1897. Serial No. 641,559. (No model.)



Claim.—1. A knitting-needle comprising a hooked needle-bar and an elastic non-pivoted latch adapted by its elasticity to occupy a normal stitch-casting position.

2. A knitting-needle comprising a hooked needle-bar and an elastic non-pivoted latch affixed thereto or forming a part thereof, the said latch being adapted by its elasticity to occupy a normal stitch-casting position, and to be pressed inwardly therefrom by suitable means to uncover the hook.

3. A knitting-needle comprising a hooked needle-bar and an elastic non-pivoted latch adapted by its elasticity to occupy a normal stitch-casting position, and having a recess adapted to receive the end of the hook.

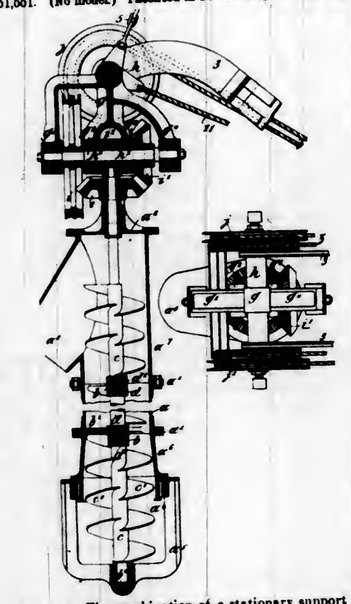
607,254. CLOTHES-RACK FOR BEDSTEADS. JOSEPH MANNY, Butler, Pa. Filed Dec. 1, 1897. Serial No. 660,398. (No model.)



Claim.—1. In a clothes rack, the combination of a bed-post provided with a longitudinal recess, a ring C operating in said recess, a series of arms secured to and circumferentially adjustable on said ring C, a ring *e* secured in the upper end of the recess whereby the ring C is retained in the same substantially as herein shown and described.

2. In a clothes-rack, the combination of a bed-post provided with a longitudinal slot *b*, a ring *e* secured in the upper end of said recess the internal diameter of which is less than the diameter of the slot, a ring C operating in said recess, a series of arms secured to said ring C, the engaging ends of said arms being circumferentially adjustable in relation to each other, substantially as herein shown and described.

607,255. ELEVATOR FOR GRANULAR MATERIAL. APOSTOLOS MARANGOS, Marseilles, France. Filed Sept. 13, 1897. Serial No. 651,651. (No model.) Patented in France Aug. 13, 1897, No. 266,356.



Claim.—1. The combination of a stationary support or mast, a boom movably connected to the mast, an elevator, and a universal joint by which the elevator is suspended from said boom, said universal joint comprising two horizontal pivots or axes arranged at different heights and crosswise, substantially as described.

2. The combination with a stationary support or mast, a boom movably connected to the mast, a hanger suspended from the boom to swing about a horizontal axis, a horizontal shaft journaled in said hanger below said axis and extending crosswise thereof, an elevator freely suspended on said horizontal shaft, and comprising a vertical screw-shaft and a casing surrounding the same, engaging gear-wheels located on said horizontal shaft and vertical shaft, and means for rotating the horizontal shaft, substantially as described.

3. The combination of a stationary support or mast, a boom movably connected to the mast, a hanger suspended from the boom to swing about a horizontal axis, a horizontal shaft journaled in said hanger below said axis and extending crosswise thereof, an elevator freely suspended on said horizontal shaft, and comprising a vertical screw-shaft and a casing surrounding the same, engaging gear-wheels located on said horizontal shaft and vertical shaft, a pulley mounted upon the horizontal shaft and connected to rotate with the gear-wheel thereon, pulleys mounted to rotate about the suspension-axis of the hanger, and a driving connection passing over said pulleys, substantially as described.

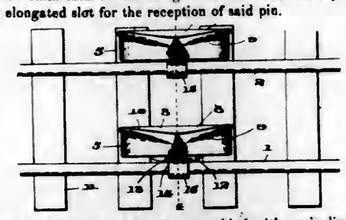
4. The combination of a stationary support or mast, a boom movably connected to the mast, an elevator, and a universal joint by which the elevator is suspended from said boom, the universal joint comprising two horizontal pivots or axes arranged crosswise, substantially as described.

607,256. CAR-REPLACER. THOMAS MAHONEY, Buffalo, N. Y. Filed Feb. 2, 1897. Serial No. 621,634. (No model.)

Claim.—1. A frog, provided with a lateral projection or offset adapted to bear against the side edge of the rail, and having mounted therein a vertically-adjustable securing-hook.

2. A frog, having a lateral projection or offset thereon, adapted to bear against the side of the rail, and provided with a groove constituting a guideway, and a securing-hook whose vertical portion is adapted to fit and move within said guideway.

3. A frog, provided with a lateral projection or offset, adapted to bear against the rail, the said offset having a vertical dovetailed groove or recess therein, a laterally-projecting pin located within said recess, and a securing-hook whose vertical portion is adapted to fit and move within said dovetailed groove or recess, and is provided with an elongated slot for the reception of said pin.



4. The combination with a frog provided with an incline-sided recess, of a securing-hook provided with a slot and incline-sided slide, and a screw designed to pierce one wall of the frog and provided with a squared extremity engaging the slot in the slide, substantially as specified.

607,257. PUZZLE APPARATUS. HENRY D. MARTIN, Shirley, Mass. Filed Oct. 16, 1897. Serial No. 655,422. (No model.)



Claim.—1. In a puzzle apparatus, the receptacle or bottle A provided with a downwardly-extending reversed neck or tube B with its lower end or mouth B' opening into the bottle or receptacle; and a ball as D within said receptacle and adapted to move freely therein, the diameter of said ball being no greater than the diameter of said mouth, substantially as described.

2. In a puzzle apparatus, the receptacle or bottle A provided with a downwardly-exteading reversed neck or tube B the lower end or mouth B' of which opens into the bottle or receptacle over the center of the bottom thereof, the bottom of said receptacle being formed up centrally so that its highest point is directly beneath the center of said mouth; and a ball as D within said receptacle and adapted to move freely therein, the diameter of said ball being no greater than that of said mouth, substantially as set forth.

607,258. FENCE-POST. LUTHER MATTHEWS, Union City, Tenn. Filed Nov. 19, 1897. Renewed June 17, 1898. Serial No. 683,764. (No model.)



Claim.—1. A plastic molded fence-post, combined with corner angle-plates and cross-ties connecting the angle-plates and embedded in the plastic body.

2. A plastic molded fence-post combined with angle corner-plates, bands for holding the plates in form for the post and cross-tie wires connecting the angle-plates and binding them upon the plastic body and the forming-bands.

3. An improved post for wire fences formed of a molded plastic body, corner angle binding-plates having ties for the line-wires, and cross-ties binding the angle-plates together and upon the corners of the molded post.

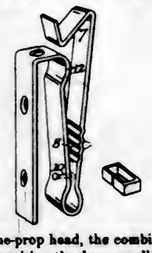
4. The combination with a plastic molded fence-post, of corner angle-plates having interior upset lips, forming-bands seated upon said lips, and cross-ties binding the angle-plates together and embedded within the plastic body.

5. As a new manufacture, a molded plastic post for wire fences having corner angle-plates, forming-bands and cross-ties holding the angle-plates together wherein and to which the plastic body is molded, and provided with means whereby to secure the line-wires.

6. A plastic molded post for wire fences, combined with a metal binding-frame formed of corner angle-plates having upset lips on their inner walls and cross tie wires fastened to said lips.

607,259. CLOTHES-LINE-PROP HEAD. WALTER H. B. MILLER, Melbourne, Victoria. Filed Dec. 28, 1897. Serial No. 664,017. (No model.)

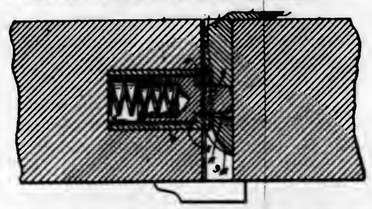
Claim.—1. In a clothes-line-prop head, the combination with a shank, of a resilient hook having a downwardly-extending member; a longer member extending forwardly and upwardly from the lower end of said downwardly-extending member, and having a corrugated gripping portion; a short bill at an acute angle to said longer member, and provided with a curved end near the base of said downwardly-extending member, substantially as described.



2. In a clothes-line-prop head, the combination with the shank, of a resilient hook comprising the downwardly-extending member, a longer member extending forwardly and upwardly from the lower end of said downwardly-extending member and at an acute angle thereto; and a short bill at an acute angle to said longer member, and provided with a curved end near the base of said downwardly-extending member, substantially as described.

3. In a clothes-line-prop head, the combination with a shank, of a resilient hook having a downwardly-extending member; a longer member extending forwardly and upwardly from the lower end of said downwardly-extending member, a short bill at an acute angle to said longer member, and provided with a curved end near the base of said downwardly-extending member; and a curved internal projection within the mouth of said hook at the base of said downwardly-extending member, substantially as described.

607,260. SEAL-LOCK. ELVIN H. MORSE, Colorado Springs, Colo. Filed Feb. 23, 1898. Serial No. 671,372. (No model.)



Claim.—1. A lock and seal, comprising a bolt, a keeper-plate for the bolt, and a seal-plate attached to and adapted to be broken from the keeper-plate before a door or lid, with which the keeper is engaged, can be opened, substantially as specified.

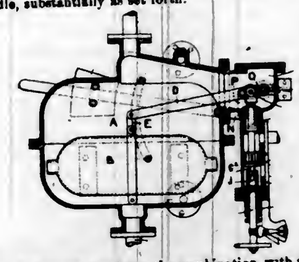
2. A lock and seal, comprising a spring-pressed bolt, a keeper-plate adapted to be loosely connected to a hinged lid or the like, and a seal-plate extended at right angles from the keeper-plate and adapted to engage against the outer surface of the lid or the like, substantially as specified.

3. A lock and seal, comprising a bolt-casing seated in a rail or jamb, and having its outer end projected beyond the edge surface of the rail or jamb, a keeper-plate having a recess to receive said projected end of the casing, a seal-plate on the keeper-plate, and a spring-pressed bolt in the casing to engage in an opening in the keeper-plate, substantially as specified.

4. A lock and seal, comprising a bolt-casing having an interior annular shoulder near its outer end, a bolt in the casing and having a shoulder to engage against the shoulder of the casing, a spring for pressing the bolt outward, a keeper-plate for the bolt, and a seal-plate on the keeper-plate, substantially as specified.

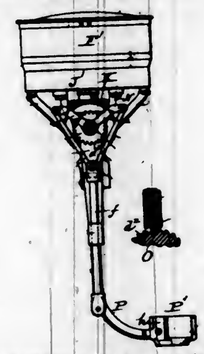
607,261. FEED-WATER REGULATOR FOR BOILERS. ARTHUR G. MUMFORD, Colchester, England. Filed Dec. 28, 1897. Serial No. 664,080. (No model.) Patented in England May 2, 1897, No. 9,307.

Claim.—1. In a feed-water regulator, the combination, with a casing provided with boiler connections, a float, a valve in the feed-water pipe, a lever D arranged inside the said casing and operatively connected with the said float, a valve-spindle adjustable in length and connecting the said valve and lever, and a pivot-spindle F secured to the said lever and projecting from the casing; of a pivoted balance-lever operatively connected with the projecting end portion of the said spindle F; and means for varying the length of the said valve-spindle, substantially as set forth.



2. In a feed-water regulator, the combination, with a casing provided with boiler connections, a float, a valve in the feed-water pipe, a lever D arranged inside the said casing and operatively connected with the said float and valve, and a pivot-spindle F secured to the said lever and projecting from the said casing; of a pivoted balance-lever, an arm secured on the said spindle outside said casing, and a link pivotally connecting the said arm and balance-lever, substantially as set forth.

607,262. AUTOMATIC FEED DEVICE FOR BOTTLE-STOPPERING MACHINES. NELSON MUELLER, West Boylston, Mass., assignor to John Joyce, Andover, Mass. Filed Oct. 20, 1897. Serial No. 655,823. (No model.)



Claim.—1. An automatic feed device for bottle-stoppering machines, comprising in combination the following elements, to wit: a single hopper or stopper-receptacle having a suitable cover; a central, rotary, horizontal disk mounted on a vertical shaft fitted therein, said vertical shaft; gearing connecting said shaft with a horizontal shaft; said horizontal shaft; ratchet pawl and lever mechanism, connecting said horizontal shaft with a fixed vertical rod attached to the frame of the bottle-stoppering machine; said fixed rod; a bifurcated or fork-shaped chute extending from suitable openings in the bottom of the hopper to a point about under the center of said hopper and thence to the centering-head over the bottle attached to the head of the bottle-stoppering machine; a swivel-guide located at the juncture of the main chute with the bifurcated or forked end under the hopper, means connected with the mechanism for rotating the hopper-disk, for moving said swivel-guide from one side to the other to bring the same into alinement with one of the branches of the chute, and means for imparting a yielding pressure to hold said swivel in its normal position, substantially as set forth.

2. In a feed device for a bottle-stoppering machine, the combination of the head and frame thereof with a bottle-stopper chute, having a centering-head at its lower end attached to said machine-head, and bifurcated or fork-shaped at its upper end with its upper terminal ends connected with openings in a single hopper or receptacle for containing said bottle-stoppers, said hopper or receptacle; a swivel-guide located at the juncture of the main chute with said bifurcated or forked end, adapted to be moved into alinement with one or the other of the branch chutes by means of suitable mechanism substantially as and for the purpose set forth.

3. In a feed device for bottle-stoppering machines, the combination of a single hopper and the bifurcated or fork-shaped chute, with a hopper for holding bottle-stoppers, a movable disk within said hopper, a swivel-guide arranged at the juncture of the main chutes with said bifurcated or forked end and means connected therewith and with the mechanism for operating the hopper-disk for moving said swivel-guide into alinement with one or the other of the branch chutes, substantially as and for the purpose set forth.

4. In a feed device for a bottle-stoppering machine, the combination of the head and frame thereof, with the bifurcated or fork-shaped chute, the hopper attached to the bifurcated or forked ends of said chute having openings for the discharge of the bottle-stoppers in alinement with the terminal ends of said branch chutes; the centering head mounted on the lower end of the main chute provided with a threaded hub for attachment to the head of the bottle-stoppering machine and consisting of a series of radial spring-dogs adapted to yield outward, when the head of the bottle is inserted therein, the swivel guide arranged at the juncture of the main chute with the bifurcated or forked end, and means connected therewith and with the mechanism for operating the hopper-disk, for moving said swivel-guide into alinement with one or the other of the branch chutes, substantially as and for the purpose set forth.

5. In a feed device for bottle-stoppering machines, the combination of the head and frame thereof, with the bottle-stopper chute, the hopper mounted thereon, the rotary disk mounted on the end of a shaft within the hopper, the shaft fitted to turn in a suitable bearing on the hopper, gearing connecting said shaft with another shaft, said shaft fitted to turn in suitable bearings, ratchet wheel, pawl lever and rod mechanism operatively connecting said last-named shaft with a fixed rod connected with the frame of the bottle-stoppering machine, and said fixed rod, and a centering-head secured to the operating-head for receiving the stoppers from the chute and provided with a series of spring-pawls adapted to support the bottle-stoppers in position for capping and to yield upon the insertion of the head of the bottle.

6. In a feed device for a bottle-stoppering machine, the combination of a frame and head thereof with the bottle-stopper chute, the hopper mounted thereon, the rotary disk having a friction device on the outer side of its rim and mounted on the end of a shaft within the hopper; said shaft fitted to turn in a suitable bearing on the hopper; gearing connecting said shaft with another shaft, said shaft fitted to turn in suitable bearings; ratchet wheel, pawl, lever and rod mechanism, operatively connecting said last-named shaft with a fixed rod connected with the frame of the bottle-stoppering machine, and said fixed rod, and a centering-head secured to the operating-head for receiving the stoppers from the chute and provided with a series of spring-pawls adapted to support the bottle-stoppers in position for capping and to yield upon the insertion of the head of the bottle.

7. In a feed device for bottle-stoppering machines, a single hopper for holding the bottle-stoppers, a main chute, branch chutes between said hopper and main chute, and means for controlling the passage of the stoppers from the branch chutes into the main chute.

8. In a feed device for bottle-stoppering machines, a single hopper for holding the bottle-stoppers, a main chute, branch chutes between said hopper and main chute, and means at the junction of said main chute and branch chutes for controlling the passage of the stoppers from the branch chutes into the main chute.

9. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, means for keeping said stoppers in motion in said hopper to bring them over said openings, and means at the junction of said main chute and branch chutes for controlling the passage of said stoppers from the branch chutes into the main chute.

10. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, means for keeping said stoppers in motion in said hopper to bring them over said openings, means at the junction of said main chute and branch chutes, for controlling the passage of said stoppers from the branch chutes into the main chute, means for normally holding said controlling means in alinement with one of said branch chutes, and mechanism operated by the movement of said head for bringing said controlling means into alinement with another branch chute to allow the passage of bottle-stoppers from said branch chute into the main chute.

11. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said bottle stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, means for keeping said stoppers in motion in said hopper to bring them over said openings, means at the junction of said main chute and branch chutes for controlling the passage of said stoppers from the branch chutes into the main chute, yielding means for normally holding said controlling means in alinement with one of said branch

chutes, and mechanism operated by the movement of said head for bringing said controlling means into alinement with another branch chute to allow the passage of bottle-stoppers from said branch chute into the main chute.

12. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, means for keeping said stoppers in motion in said hopper to bring them over said openings, means at the junction of said main chute and branch chutes for controlling the passage of said stoppers from the branch chutes into the main chute, and a centering-head for receiving the stoppers from the main chute.

13. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, means for keeping said stoppers in motion in said hopper to bring them over said openings, means at the junction of said main chute and branch chutes for controlling the passage of said stoppers from the branch chutes into the main chute, and a centering-head secured to the said operating-head for receiving the stoppers from the main chute.

14. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, means for keeping said stoppers in motion in said hopper to bring them over said openings, means at the junction of said main chute and branch chutes for controlling the passage of said stoppers from the branch chutes into the main chute, a centering head for receiving the stoppers from the main chute, and yielding means on said centering-head for centering the bottle as it enters said centering-head.

15. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, a disk within said hopper for keeping said stoppers in motion to bring them over said openings, mechanism for operating said disk, a swivel-guide at the junction of said branch chutes and main chute for controlling the passage of said stoppers from said branch chutes into said main chute, means connected to said swivel-guide extending into the path of movement of the mechanism which rotates the disk within the hopper and adapted upon the contact therewith of said mechanism to move the swivel-guide from one branch chute to another.

16. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said stoppers, a main chute through which the bottle stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, a disk within said hopper for keeping said stoppers in motion to bring them over said openings, mechanism for operating said disk, a swivel-guide at the junction of said branch chutes and main chute for controlling the passage of said stoppers from said branch chutes into said main chute and provided with an arm extending into the path of movement of the mechanism which rotates the disk within the hopper and adapted upon the contact therewith of said mechanism to move the swivel-guide from one branch chute to another.

17. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a single hopper for holding said stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes, a disk within said hopper for keeping said stoppers in motion to bring them over said openings, mechanism for operating said disk, a swivel-guide at the junction of said branch chutes and main chute for controlling the passage of said stoppers from said branch chutes into said main chute and provided with an arm extending into the path of movement of the mechanism which rotates the disk within the hopper and adapted upon the contact therewith of said mechanism to move the swivel-guide from one branch chute to another, and a spring for holding said swivel-guide normally in alinement with one of the branch chutes and adapted to yield to the movement of said swivel-guide upon the contacting of the mechanism which rotates the disk with the said arm of said swivel-guide to move said swivel-guide to alinement with another branch chute.

18. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes and formed and arranged to cause the stoppers to enter both of said branch chutes in the same predetermined position, and means for keeping said stoppers in motion in said hopper to bring them over said openings.

19. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes and formed and arranged to cause the stoppers to enter both of said branch chutes in the same predetermined position, means for keeping said stoppers in motion in said hopper to bring them over said openings, and means at the junction of said main chute and branch chutes for controlling the passage of said bottle-stoppers from the branch chutes to the main chute.

20. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes and formed and arranged to cause the stoppers to enter both of said branch chutes in the same predetermined position, means for keeping said stoppers in motion in said hopper to bring them over said openings, means at the junction of said main chute and branch chutes for controlling the passage of said bottle-stoppers from the branch chutes to the main chute, and a centering-head at the lower end of said main chute and secured to the operating-head for receiving the bottle-stoppers from the main chute.

21. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, openings in said hopper registering with said branch chutes and formed and arranged to cause the stoppers to enter both of said branch chutes in the same predetermined position, means for keeping said stoppers in motion in said hopper to bring them over said openings, means at the junction of said main chute and branch chutes for controlling the passage of said bottle-stoppers from the branch chutes to the main chute, a centering-head at the lower end of said main chute and secured to the operating-head for receiving the bottle-stoppers from the main chute, and yielding means on said centering-head for centering the bottle as it enters said centering-head and adapted to support the bottle-stoppers in position for capping.

22. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a hopper for holding said bottle-stoppers, a main chute through which the bottle-stoppers pass to said head, branch chutes between said hopper and main chute, and openings in said hopper registering with said branch chutes and formed and arranged to cause the stoppers to enter said branch chutes in the same predetermined position.

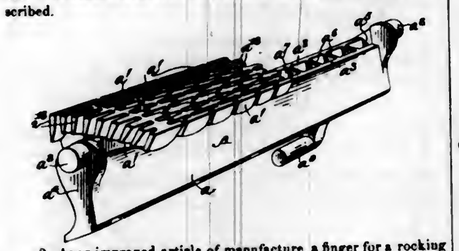
23. In a feed device, a single hopper for holding the articles to be fed, branch chutes leading from said hopper, a main chute with which said branch chutes communicate, openings in said hopper registering with said branch chutes and formed and arranged to cause said articles to enter said chutes in the same predetermined position, and means for controlling the passage of articles from the branch chutes into the main chute.

24. In a feed device for bottle-stoppering machines, an operating-head for capping the stoppers on the bottles, a bottle-stopper chute, a hopper containing bottle-stoppers and communicating with said chute for supplying the same with bottle-stoppers, means for keeping said stoppers in motion in said hopper, and a centering-head secured to said operating-head and to said chute for receiving the stoppers from said chute and provided with a series of spring-pawls adapted to support the bottle-stoppers in position for capping and to yield upon the insertion of the head of the bottle and center the same.

25. In a feed device for bottle stoppering machines, a reciprocating operating-head for capping the stoppers on the bottles, a bottle-stopper chute, a hopper containing bottle-stoppers and communicating with said chute for supplying the same with bottle-stoppers, means for keeping said stoppers in motion in said hopper, and a centering-head secured to said operating-head and to said chute for receiving the stoppers from said chute and provided with a series of spring-pawls adapted to support the bottle-stoppers in position for capping and to yield upon the insertion of the head of the bottle and center the same.

607,263. GRATE-BAR AND GRATE FOR BOILER OR OTHER FURNACES. WILLIAM MCCLAVE, Scranton, Pa. Filed Nov. 10, 1897. Serial No. 658,064. (No model.)

Claim.—1. As an improved article of manufacture, a finger for a rocking grate-bar composed of a single piece of metal, and comprising in its construction a head having laterally-extending teeth and a downwardly-extending flattened shank, a thin vertical web connecting the same, the shank extending at right angles to the web and parallel with the teeth, and an abutment-lug at the upper end of the shank to form a seat for the finger on the top of the body portion of the grate-bar, the said lug having outwardly and downwardly divergent top surfaces which prevent the collection of ashes on the lug, the finger being so constructed that a strong shank is secured which does not necessitate a socket portion on the bar so large as to materially obstruct the draft and to also materially diminish the depth of the pockets formed between the grate-bars, when the grate-bars are rocked to cut out clinkers and ashes, substantially as described.



2. As an improved article of manufacture, a finger for a rocking grate-bar composed of a single piece of metal, and comprising in its construction a head having laterally-extending teeth, which are beveled on their under surfaces and arranged in a zigzag manner, a downwardly-extending flattened shank, a thin vertical web connecting the same, the shank extending at right angles to the web and parallel with the teeth, and an abutment-lug at the upper end of the shank to form a seat for the finger on the top of the body portion of the grate-bar, said lug having an outwardly and downwardly divergent top surface which prevents the collection of ashes on the lug, substantially as described.

3. A rocking grate-bar comprising in its construction a body portion proper provided with spaced elongated sockets, fingers inserted in said sockets, each of said fingers comprising a head having laterally-extending teeth and a downwardly-extending flattened shank, and a thin vertical web connecting the same, the shank extending at right angles to the web and parallel with the teeth, whereby a strong shank is secured which does not necessitate a socket portion so large as to materially obstruct the draft and to also diminish the depth of the pockets when the bar is used in cutting out clinkers and ashes, substantially as described.

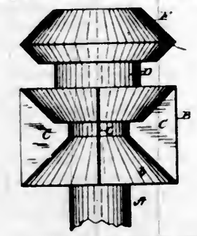
4. A rocking grate comprising in its construction a plurality of grate bars, each of which comprises in its construction a body portion proper provided with spaced elongated sockets, and fingers inserted into said sockets, each of said fingers comprising a head having laterally-extending teeth and a downwardly-extending flattened shank, and a thin vertical web connecting the same, the shank extending at right angles to the web and parallel with the teeth, whereby a strong shank is secured which does not necessitate a socket portion so large as to materially obstruct the draft and to also diminish the depth of the pockets when the grate is rocked to cut out clinkers and ashes, substantially as described.

5. A grate-bar comprising in its construction a body portion proper provided with spaced sockets, transverse openings formed in the side of the bar and extending into the sockets, fingers inserted in the said sockets, each of said fingers comprising a head having laterally-extending teeth and a downwardly-extending shank formed with a shoulder, and a key driven into the bar from its under side and bent over to engage the shoulder on the finger, substantially as described.

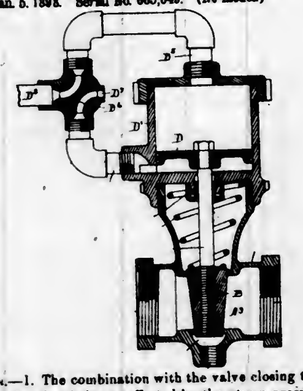
6. A grate comprising in its construction a plurality of grate-bars, each of which comprises in its construction a body portion proper provided with spaced sockets, transverse openings formed in the side of the bar and extending into the sockets, fingers inserted in the said sockets, each of said fingers comprising a head having laterally-extending teeth and a downwardly-exteeding shank formed with a shoulder, and a key driven in the bar from its under side and bent over to engage the shoulder on the finger, substantially as described.

607,264. FOUL-AIR ESCAPE OR VENT. JOSEPH MCCREERY, Toledo, Ohio. Filed Nov. 5, 1897. Serial No. 657,527. (No model.)

Claim.—The combination of the shaft, A, the box, B, surrounding the top of the shaft, having the conical bottom, *b*, the top, B, having the inverted conical-shaped lower portion, *d*, and the vertical cylindrical neck, *d'*, and the partitions or wings, C, having narrow extensions, *c*, and enlarged substantially triangular-shaped bottom portions, *c'*, such bottom portions being between the bottom, *b*, and the portion, *d*, and the narrow extensions, *c*, being between the shaft, A, and the neck, *d'*, such extensions terminating on a line with the top of the shaft, A, and the cowl, E, secured to the top of the neck, *d'*, the cowl, E, having the upper and lower conically-shaped portions, c^2 c^3, meeting at c^3, the top and bottom of the cowl being open, as set forth.



607,265. BLOW-OFF VALVE. DAVID MCLEAN, Chicago, Ill. Filed Jan. 5, 1898. Serial No. 665,649. (No model.)

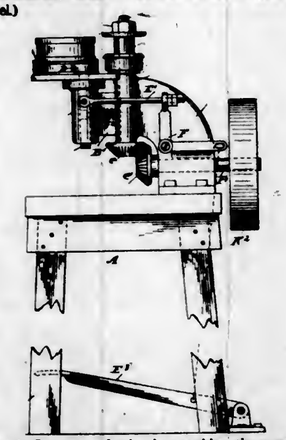


Claim.—1. The combination with the valve closing the blow-off passage, such valve being unaffected by the steam pressing against it, of means for moving said valve, and the spring F, substantially as specified.

2. The combination with the valve closing the blow-off passage, such valve being unaffected by the steam pressing against it, of means for both opening and closing said valve, and a spring acting to retain the valve in its closed position, substantially as specified.

3. The combination with the valve closing the blow-off passage, such valve being unaffected by the steam pressing against it, of a motor for opening the valve, and a spring tending to close it, substantially as specified.

607,266. CAN-END-CRIMPING MACHINE. JAMES F. NEILSON, New Westminster, Canada. Filed Oct. 27, 1897. Serial No. 656,518. (No model.)



Claim.—1. In a can-end-crimping machine, the combination with the rotary crimping-disk, of a loose rotating can-holding ring which

holds and supports the can during the operation of crimping, of mechanism for throwing the can-holding ring toward the crimping-disk so as to cause the said disk to engage with and crimp the projecting flange of the can carried and supported by the holding-ring and for moving the said ring from the disk after the flange of the can has been crimped and of devices for imparting rotary motion to the said can-holding ring.

2. In a can-end-crimping machine, the combination with the crimping mechanism, of a loose can holding and supporting ring shaped to conform to the shape of the can to be crimped, and of mechanism for moving the can-holding ring toward and from the crimping-disk.

3. In a can-end-crimping machine, the combination with the crimping mechanism, of a loose can holding and supporting ring shaped to conform to the shape of the can to be crimped and of devices actuated by said crimping mechanism for imparting rotary movement to the can-holding ring.

4. A can-end-crimping machine provided with a loosely-working and detached can seat or holder consisting of a rotatable holding-ring shaped to conform to that of the can to be crimped and having on its inner face a supporting-seat for the can.

5. In a can-end-crimping machine, the combination with the crimping mechanism, of a loose can-holding ring shaped to conform to that of the can to be crimped, a seat formed therein upon which the can rests, means for placing the can carried by the holder into engagement with the crimping mechanism to impart rotary motion to the said holder.

6. In a can-end-crimping machine, the combination with the crimping mechanism, of a loosely-working can-holding ring shaped to conform to the can to be crimped, mechanism which moves the can-holding ring carrying the can toward and from the crimping mechanism and imparts rotary motion to the can-holding ring, and of a device for holding the can in its seat during the crimping operation.

7. In a can end-crimping machine, the combination with the rotatable crimper-spindle, of the sleeve within which the same works, the crimping device carried by the said spindle, the guide-spindle working within a guide-spindle sleeve, a spring-clamp connection between the said sleeves, of mechanism for moving the guide-spindle sleeve toward the sleeve of the crimper-spindle, and of a can-holding seat carried by said guide-spindle sleeve

8. In a can-crimping machine, the combination with the crimper-spindle, of the crimping-disk carried thereby, the elastic cushioned collar mounted upon the said spindle below the crimping-disk, a guide-spindle provided with a circular head, a can-holding ring loosely fitting over the said head, said ring conforming to the shape of the can to be crimped, and of mechanism for moving the holding-ring toward the crimping-disk in order to clamp the said ring between the head of the guide-spindle and the face of the roll carried by the crimper-spindle so as to impart rotary motion to the said can holding ring.

9. In a can-end-crimping machine, the combination with the crimping mechanism, of a can-holding ring shaped to conform to the shape of the can to be crimped, rolls or spindles between which the can-holding ring is located and means actuated by said crimping mechanism for driving one of said rolls.

10. In a can-end-crimping machine, the combination with the crimping mechanism, of a detached can-holding ring which receives and supports a can and which is shaped to conform to that of the can to be crimped, and of mechanism for placing the can carried by the holding-ring into engagement with the crimping mechanism in order to cause rotation of the ring carrying the can and devices for moving the ring outward or away from the crimping mechanism after the can has been crimped.

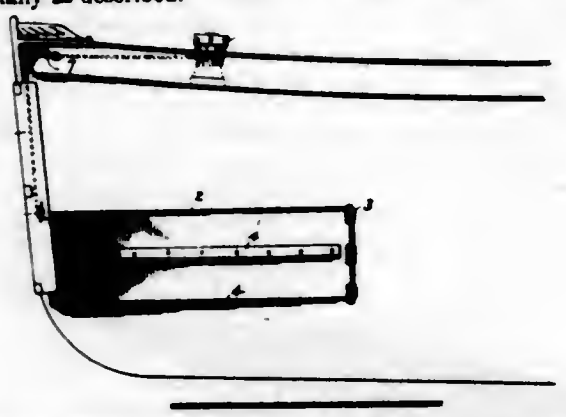
11. In a can-crimping machine, the combination with a crimping member, and means for driving the same, of a can-holder, means actuated by the driving means having contact with and moving the holder, and means for varying the relative positions between the holder and its driving means.

607,267. VESSEL-BRAKE. JOHN S. C. NICHOLS, Noble, Ill. Filed Dec. 10, 1897. Serial No. 661,422. (No model.)

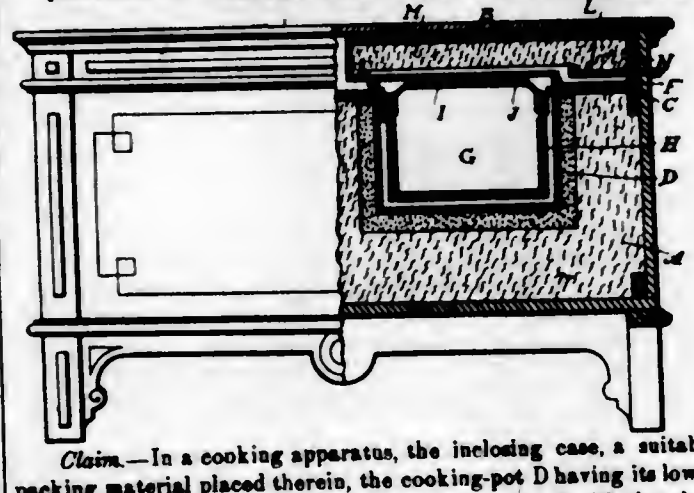
Claim.—1. The combination with a vessel, of a brake-plate hingedly connected thereto, operating means therefor, and a hinged bow-plate for covering in the free edge of the brake-plate, substantially as described.

2. The combination with a vessel, of a brake-plate hingedly connected thereto, means for holding said plate against the side of the vessel, and a hinged bow-plate constructed to interlock with the brake-plate and to be held inward by the brake-plate, substantially as described.

3. The combination with a vessel, of a brake-plate hingedly connected thereto at one end, a bow-plate also hingedly connected to the vessel, operating means for the brake-plate, and lugs on the bow-plate for engagement with the free end of the brake-plate, substantially as described.

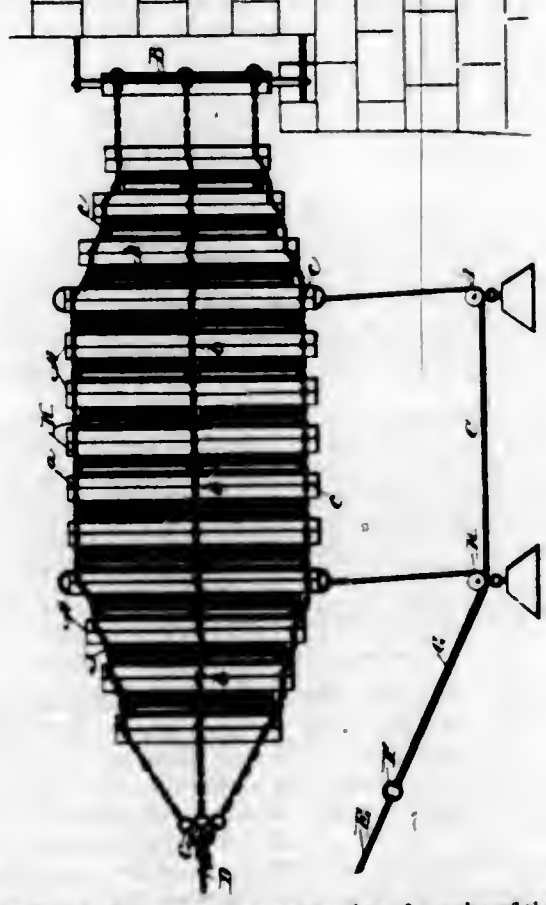


607,268. COOKING APPARATUS. HARRY P. A. NIELSEN, Newport News, Va. Filed Sept. 3, 1897. Serial No. 650,504. (No model.)



Claim.—In a cooking apparatus, the inclosing case, a suitable packing material placed therein, the cooking-pot D having its lower portion surrounded by the said packing and provided with the plate F which extends outwardly from the pot, the horizontal partition C upon which the plate rests, the upper edge of the pot being made to project above the plate F, and the cover I for the pot; combined with the cover B, a metal box M placed in the cover and which box is filled with a suitable packing, there being made a suitable opening through the bottom of the box just over the cover I, substantially as shown and described.

607,269. BOOM. CORNELIUS O'BRIEN, Rock Creek, S. D. Filed Nov. 13, 1897. Serial No. 658,419. (No model.)

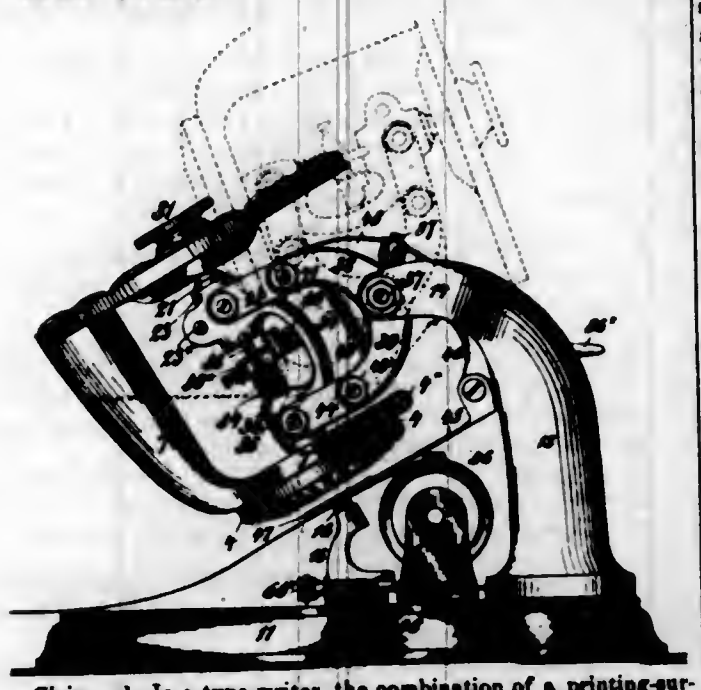


Claim.—1. In a boom the combination of a series of timbers held together by a number of chains, bolts passing through the said chains-

and timbers, coiled or spiral springs interposed between and secured to the said timbers parallel to the chains, and buoys secured between the springs and timbers, substantially as shown and described.

2. In a flexible boom, the combination of a series of timbers held together by chains, said chains forming loops at one end of the said boom which pass around a pivoted post, and provided at the other with enlarged links, a second cable connected to a ring which is secured to a cable having both ends passed through a double blocking-tackle, one end passed up and connected to the boom, the other passed along the bottom of the channel, through a single blocking-tackle and connected to the boom, substantially as described and for the purpose set forth.

607,270. TYPE-WRITING MACHINE. EUGÈNE PASTRE and FRANK LAMBERT, Brooklyn, N. Y. Filed Sept. 24, 1896. Serial No. 606,833. (No model.)



Claim.—1. In a type-writer, the combination of a printing-surface, with a nutating key, a type carried thereby, and a support for said key depressible in a right line; the aforesaid parts being constructed and arranged so that when said key is tilted on said support it carries the type into position over said printing-surface, and when said support is depressed said type is maintained parallel with and pressed against said printing-surface, substantially as described.

2. In a type-writer, the combination of a printing-surface, with a nutating key, a type carried thereby, a support for said key depressible in a right line, and a stop on said support limiting the extent of tilting of said key; the aforesaid parts being constructed and arranged so that when said key is tilted to its limit and meets said stop on said support it carries the type into position parallel to and over the said printing-surface, and upon further pressure of said key said support is depressed so that the type-face is maintained parallel with and brought against said printing-surface, substantially as described.

3. The combination in a type-writer of a nutating key, a series of type controlled thereby and means for equalizing the pressure exerted on said key to bring said type into the printing-line, substantially as described.

4. The combination in a type-writer of a nutating key having a series of pressure-points, type controlled thereby, and means of equalizing the pressure exerted on any of the said pressure-points of said key to bring said type into printing contact, substantially as described.

5. The combination in a type-writer of a nutating key having a series of pressure points, a support therefor downwardly movable by pressure upon said key, and a spring opposing the movement of said support, the said support being constructed substantially as specified so as to equalize the effects of pressure exerted on any point of the key-surface, substantially as described.

6. The combination in a type-writer of the nutating key 1, type-ring 4 having two or more circles of type on its outer surface, arm 7 connecting said type-ring to said key, and an adjustable stop 36 relatively stationary with respect to the tilting motion of said key and said ring, substantially as described.

7. The combination in a type-writer of the nutating key 1, having socket 24, sleeve 23, cylinder 21 entering said sleeve, ball 22 entering said socket, headed rod 25 passing through said ball and entering said cylinder, head 28, cap 31 and spring 29 acting upon said pin, substantially as described.

8. The combination in a type-writer of a nutating key, a type-ring connected to said key, a stop-pin entering said type-ring and means for longitudinally adjusting said pin, substantially as described.

9. The combination in a type-writer of a nutating key, type-ring actuated thereby, stop-pin entering said type-ring and rigid means for preventing said stop-pin from moving upward when said key is tilted, substantially as described.

10. The combination in a type-writer of the nutating key 1, type-ring 4 connected thereto having on its exterior two or more circles of type and on its interior two or more circles of recesses 20 corresponding thereto, and a longitudinally-adjustable stop-pin disposed within said ring and adapted to enter a recess of one or the other of said circles when said key is tilted, substantially as described.

11. The combination in a type-writer of the nutating key 1, type-ring 4 connected thereto, stop-pin 36, sleeve 35, cam-collar 50*, spring 54 between said collar and said sleeve, and pin 50, substantially as described.

12. In a type-writer, a type-ring having types on its outer surface and interior recesses corresponding in position to said types, a stop-pin located within said ring and having its end adapted to enter said recesses, the said stop-pin being beveled at its said entering end, and the recesses being shaped to correspond and to fit upon said stop-pin when said ring is tilted to bring said recesses and said pin into contact, substantially as described.

13. The combination in a type-writer of a nutating key, an arm thereon, a ring carried by said arm and a hollow type-ring supported on said ring, substantially as described.

14. In a type-writer, a centrally-supported key, a type-ring carried thereby and having its upper surface in a plane parallel to the plane of said key, said type-ring being adjustable in its support by rotation, substantially as described.

15. In a type-writer, a key having a plurality of pressure-points, a spring opposing the depression of said key and between said key and said spring a jointed rectangle or Roberval balance, substantially as described.

16. In a type-writer, a nutating key, an arm carried by said key, a type-ring carried by said arm, a movable support for said key, a spring opposing the depression of said support and between said support and said spring a jointed rectangle or Roberval balance, substantially as described.

17. In a type-writer containing a key and rigid central support (as sleeve 23, arm 34 and sleeve 35 unitedly) therefor, arms pivoted at their extremities to two points on said support, a rigid support (as forks 38 and 39) to two points on which the other ends of said arms are pivoted, a pivot-shaft 37 carrying said last-named support, and a spring acting upon said arms and operating to hold said key in definite position against gravity, substantially as described.

18. In a type-writer, a standard as 13, a pivot-shaft 37, rigidly-connected forks on said shaft, arms pivoted at their ends respectively to said forks, a rigid support to which the other ends of said arms are pivoted, a spring acting upon said arms to hold said support in elevated position against gravity, and a key centrally pivoted upon said support, substantially as described.

19. In a type-writer, a standard as 13, pivot-shaft 37, rigidly-connected forks on said shaft, arms pivoted at their ends respectively to said forks, a rigid support to which the other ends of said arms are pivoted, a spring acting upon said arms to hold said support in elevated position against gravity, a key centrally pivoted upon said support, an arm carried by said key, a type-ring carried by said arm, the center of said type-ring and key and said key-support being in line, substantially as described.

20. In a type-writer, a nutating key, an adjustable central support therefor, disposed normally at a right angle to the plane of said key, a type-ring carried by said key, and a stop-pin disposed within and at right angles to the normal plane of said type-ring, substantially as described.

21. In a type-writer, a nutating key, a central support therefor, an arm carried by said key, a type-ring carried by said arm and having two or more rows of type, and an adjustable center stop for said type-ring, the said center stop standing at a right angle to the normal plane of said type ring, substantially as described.

22. In a type-writer, a nutating key, an adjustable central support therefor, an arm carried by said key, a type-ring supported by said arm, and an adjustable stop within said type-ring, substantially as described.

23. The combination in a type-writer of a multiple key, a type-ring actuated thereby, having one or more rows of type, a stop in the path of said type-ring, means to set said stop in as many definite positions as there are rows of type on the said type-ring, said stop being relatively stationary with respect to the tilting movement of said key and said type-ring, substantially as described.

24. In a type-writer, the combination of a nutating key having a series of pressure-points, and means for equalizing the pressure applied at said points, a paper-carriage having a spring-actuated plate 65 provided with rack-teeth, pin carrying pinions 76 and 77 having pin 78 and slot 79, a spring acting on one of said pinions, pawl 82 and means for raising and lowering said pawl to cause the same to engage with one or the other of said pinions, substantially as described.

25. In a type-writer, the combination of a nutating key having a series of pressure-points, means for equalizing the pressure applied at said points, a depressible support for said key, a paper-carriage having a spring-actuated plate 65 provided with rack-teeth, pin carrying pinions 76 and 77 having pin 78 and slot 79, a spring acting on one of said pinions, pawl 82 and rod 83 actuated by said depressible support, and operating to raise and lower said pawl to engage with one or the other of said pinions, substantially as described.

26. The combination in a type-writer of a nutating key having a series of pressure-points, means for equalizing the pressure applied at said points, an escapement mechanism having spring-actuated toothed gear, a pin, a pinion mounted on said pin, and operated by said gear, a second pinion mounted on the same pin, a pin projecting from the face of one pinion and entering a slot in the opposing face of the other pinion, a spring acting on one of said pinions to rotate it, a pawl, and means for moving said pawl into and out of engagement with either of said pinions, substantially as described.

27. In a type-writer, the combination of a nutating key having a series of pressure-points, a paper-carriage having its motion controlled by said key, and means for equalizing the pressure applied at said points, substantially as described.

28. In a type-writer, the combination of a nutating key having a series of pressure-points, a printing device actuated by said key and means for equalizing the pressure applied at said points, substantially as described.

29. In a type-writer, the combination of a nutating key having a series of pressure-points, a printing device actuated by said key, a paper-carriage having its motion controlled by said key, and means for equalizing the pressure applied at said points, substantially as described.

30. The combination in an escapement mechanism of a toothed gear 65, a spring 67, gear 68 actuated by said spring, a shaft 71 carrying pinions 70 and 72, one of said pinions engaging with gear 65 and the other with gear 68, a pin 75, pinion 77 on said pin and engaging with gear 65, pinion 76 on said shaft, pin 78 on pinion 76 entering slot 79 in pinion 77, spring 80 acting on pinion 77 to rotate it, pawl 82 and means for moving said pawl into and out of engagement with either pinion 76 or 77, substantially as described.

31. In a type-writer having the base 11, fixed standard 13 thereon, the nutating key 1, type-ring 4 carried thereby, and a jointed rectangle supporting said key, substantially as set forth, and a pivot-shaft 37 received in said standard 13 and carrying said rectangle, substantially as described.

32. In a type-writer, the combination of the key 1, having arm 7, and type-ring 4, and a central longitudinally-adjustable support for said key, substantially as described.

33. In a type-writer, the combination of the key 1, having socket 24, ball 22 received in said socket, sleeve 23 and elongated support 21 for said ball adjustable in said sleeve, substantially as described.

34. In a type-writer, a multiple nutating key and a central rotatively-adjustable stop for said key, substantially as described.

35. In a type-writer, a centrally-supported multiple nutating key, and means connecting said key and said support whereby both key and support are caused to rotate together, substantially as described.

36. In a type-writer, a nutating key, a support rotatively adjustable therefor, and means interposed between said key and said support for preventing the rotation of said key in its own plane, substantially as described.

37. In a type-writer, a centrally-supported key, a type-ring carried thereby, said key and said type-ring being both adjustable by rotation, substantially as described.

38. In a type-writer, a nutating key provided with a central socket and a ball received in said socket, one of the said parts having a projecting pin entering a meridional slot in the other, substantially as described.

39. The combination of the key 1 having socket 24 provided with slot 33, and the fixed ball 22 received in said socket and provided with a pin 32 entering said slot 33, substantially as described.

40. The combination of the nutating key 1 having central socket, ball 22 entering said socket and provided with the cylindrical stem 21, rod passing through said ball and provided with heads, and a spring 29 between one of said heads and a shoulder in said cylindrical stem, substantially as described.

41. The combination of the nutating key 1, having central socket, ball 22 entering said socket, and provided with the cylindrical stem 21, rod passing through said ball and having a head within said cylindrical stem, spring 29 interposed between said head and the shoulder in said cylindrical stem and cap 31 carried by said stem, substantially as described.

42. In a type-writer, a tilting type-ring and a central stop relatively stationary with respect to the tilting movement of said type-ring, the said ring being provided with internal cavities or recesses adapted to receive and bear against the bottom face of the end of said stop whereby flexure of said ring is prevented at the time of printing, the said stop being adjustable nearer to or farther from the bottom of said recesses, substantially as described.

43. In a type-writer, a nutating key, a support therefor, a rigid arm depending from said key, and a type-ring supported by said arm below said key, the said type-ring and arm acting by gravity to restore said key to normal position after said key has been tilted, substantially as described.

44. In a type-writer, a nutating key, a support therefor, a rigid arm depending from said key and a type-ring supported by said arm below the key, and a spring, the said type-ring and arm acting by gravity and the said spring directly acting to restore said key to normal position after said key has been tilted, substantially as described.

45. In a type-writer, the combination of a nutating key. type actuated thereby, a printing-surface and a movable shield having an opening through which said type makes contact with said printing-surface, the said key, type and shield being jointly movable away from said printing-surface in order to expose the same to view, substantially as described.

46. In a type-writer, the combination of a paper-carriage, a roller supported thereon, said roller having a longitudinal groove, a bar within said groove having an inclined slot, and a fixed pin within said slot, whereby said bar when moved longitudinally travels over a diagonal path to clamp said paper upon said roller, with the edge of said paper parallel to the axis of said roller, substantially as described.

47. A multiple key capable of being bodily depressed and means to equalize the extent of motion at any portion of said key while it is depressed, substantially as described.

48. In a type-writer, a multiple key, type controlled thereby, and a printing-platen, the distance between said type and said platen being variable, and means to keep the face of said type and face of said platen parallel while their relative distance is reduced (and said type brought to print), substantially as described.

49. A multiple key, a support for said key, both said key and said support being depressible, the axis of said support as it moves downward always maintaining a position parallel to its normal position.

50. The combination of a multiple key, a movable support for said key, and means to vary the direction of line of motion of said support, substantially as described.

51. The combination in a type-writer of a multiple key, type actuated thereby, a movable support for said key and means to vary the direction of line of motion of said support, substantially as described.

52. A multiple key, a movable support for said key and means to equalize the pressure at any point of the key from its center thereof to move said support.

53. A type-ring having on its exterior two or more rows of type, and a concave interior with a corresponding number of rows of recesses, said recesses being formed in the shape of a semicone, all said conical recesses being of the same angle and size, substantially as described.

54. In a type-writer, a type-ring having a series of type on its exterior, and on its interior a corresponding series of recesses, said recesses being each formed in the shape of a semicone, substantially as described.

55. In a type-writer, a nutating key, a type-ring actuated thereby, and means to rotate said type-ring on its own axis to adjust it in proper relation with said key, and means to lock said ring in position when adjusted, substantially as described.

56. A multiple key, a support therefor, a resetting-cap resting on the face of said key, a sliding rod secured to said cap, said rod extending above and below the contact face of said key and said resetting-cap, substantially as described.

57. The combination of a multiple key, a support therefor, and a resetting spring-actuated cap for said key, said spring contained in said support below said cap, substantially as described.

58. The combination of a multiple key, a support therefor, with a resetting-cap for said key, a rod secured to the said cap, said rod being guided and free to slide in said support.

59. In a type-writer, a multiple key and a central longitudinally-adjustable support for said key.

60. A multiple tilting key and means to vary and gradually adjust the extent of tilting of said key, substantially as described.

61. A multiple key pivotally supported, a stop in the path of said key below said pivot and means to vary and predetermine the extent of tilting of said key, substantially as described.

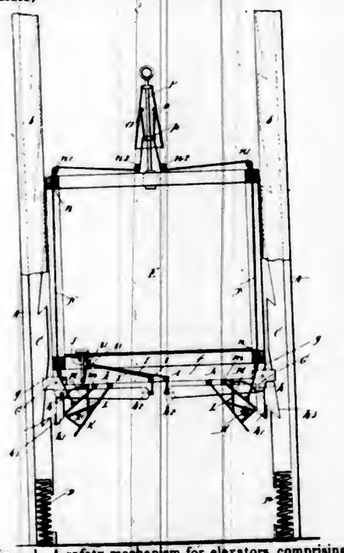
62. A multiple key capable of being tilted in various directions, a relatively stationary adjustable stop for said key independent of its tilting motion and means to vary and predetermine the extent of tilting of said key, substantially as described.

63. In a type-writer, a multiple tilting key, type actuated thereby and means to vary and gradually adjust the extent of tilting of said key and to stop said type in true printing position, substantially as described.

64. In a type-writer, a multiple tilting key, two type controlled thereby, a stop in the path of said type and means to vary and gradually adjust the stopping-point of said type to bring them in true printing position.

65. In a type-writer, a multiple key, type-ring actuated thereby and provided with an internal row of recesses, beveled stop in the path of said ring and fitting said recesses, said stop being adjustable nearer to or farther from the bottom of said recesses, substantially as described.

607,271. SAFETY MECHANISM FOR ELEVATORS. DAVID I. PRUDDEN, Morristown, N. J. Filed Dec. 9, 1897. Serial No. 661,284. (No model.)



Claim.—1. A safety mechanism for elevators, comprising vertical ratchet or rack bars, gravity catches or dogs fulcrumed upon the elevator-car, weighted arms adapted to bear upon and operate said dogs, ropes or cables extending from said weighted arms, and a foot-piece or operating device connected with said ropes or cables, whereby the gravity-dogs may be forced into engagement with the rack-bars by simple release of the foot-piece mechanism, substantially as and for the purpose set forth.

2. A safety mechanism for elevators, comprising vertical ratchet or rack bars, dogs or catches mounted upon the elevator-car and adapted to engage said rack-bars, and fan-plates pivotally swung from the car and normally depending in an inclined or diagonal position with relation thereto, said fan-plates being adapted to swing upwardly against the dogs or catches to throw the same into engagement with the rack-bars, substantially as and for the purpose set forth.

3. A safety mechanism for elevators, comprising vertical ratchet or rack bars, dogs or catches pivotally suspended from the elevator-car and adapted to engage said rack-bars, and fan-plates arranged transversely with respect to the elevator-car and with respect to the swinging movement of said dogs or catches and pivotally suspended at their upper edges from the car so that they normally depend in an inclined or diagonal position with relation to the suspended dogs or catches, said fan-plates being adapted to swing upwardly so that their free portions bear against and operate said dogs or catches, substantially as and for the purpose set forth.

4. A safety mechanism for elevators, comprising vertical ratchet or rack bars, dogs or catches pivotally mounted upon the elevator-car and adapted to engage said rack-bars, and fan-plates pivotally suspended from the car with their free portions in position for direct action against said pivoted dogs or catches, the fan-plates being adapted to swing upwardly so their free portions bear against the dogs or catches and force the catch edge of the same into engagement with the rack-bars, substantially as and for the purpose set forth.

5. A safety mechanism for elevators, comprising vertical ratchet or rack bars, dogs or catches mounted upon the elevator-car and adapted to engage said rack bars, and a fan mechanism carried by the car and swinging into direct operative contact against said dogs or catches when it is forced upwardly by air-pressure during the descent of the car at abnormal speed, substantially as and for the purpose set forth.

6. A safety mechanism for elevators, comprising vertical ratchet or rack bars, catches or dogs pivotally suspended from the elevator-car and adapted to engage said rack-bars, fan-plates suspended in pivoted or hinged position from the elevator-car and arranged transversely with respect to the swinging movement of said dogs or catches and adapted to bear against the latter when they are swung by air-pressure, and means for sustaining said fan-plates in normal operative position, substantially as and for the purpose set forth.

7. A safety mechanism for elevators, comprising vertical rack or ratchet bars, dogs or catches mounted upon the elevator-car and adapted to engage said rack-bars, a collapsible or folding parachute mechanism carried by the elevator-car, and devices connecting said parachute mechanism with the dogs or catches, whereby the latter are thrown into engagement with the rack-bars when the parachute opens, substantially as and for the purpose set forth.

8. A safety mechanism for elevators, comprising vertical rack or ratchet bars, dogs or catches pivotally suspended from the elevator-car, a parachute mechanism carried by the elevator-car, and comprising a collapsible or folding member and a sliding member, said collapsible or folding member and the sliding member being connected so that the collapsible or folding movement of one member slides the other member, and connecting cords or devices extending between the sliding member of the collapsible or folding parachute mechanism and the pivoted dogs or catches, whereby when the parachute opens and draws upon the cords the dogs or catches are carried outwardly into engagement with said rack-bars, substantially as and for the purpose set forth

9. The combination, with an elevator-car, of a collapsible or folding parachute mechanism, safty catch mechanism for governing the speed of operation of the car, and mechanism connecting the parachute mechanism with the safety catch mechanism, whereby when the collapsible or folding parachute mechanism is forced open by the action of the air-current its opening movement operates the catch mechanism, substantially as and for the purpose set forth.

10. A safety mechanism for elevators, comprising weighted arms, catch mechanism adapted to be operated by the dropping movement of said arms, a depressible foot-piece mechanism arranged within the car, and mechanism connecting said foot-piece mechanism with the arms and operating to retain the latter up in elevated position when the foot-piece is depressed, whereby when the operator leaves the car and the foot-piece mechanism is released the arms will automatically operate the catch mechanism to lock the car in position, substantially as and for the purpose set forth.

607,272. GAITER OR COVERING FOR THE LEGS. JOHN PULLMAN, London, England, assignor to George Bertchnell Winter and Francis Joseph Stohwasser, same place. Filed July 19, 1897. Serial No. 645,096. (No model.) Patented in England Nov. 6, 1896, No. 24,893, and in France Nov. 16, 1896, No. 261,319.



Claim.—1. The combination with a gaiter *a*, one vertical edge of which overlaps the other; of a flexible band having one end secured to the outer edge of said gaiter at the lower end thereof, and wound spirally around the outside of said gaiter and secured at or near the upper end of the latter; and loops secured to the outside of said gaiter for the passage of said spirally-wound band, substantially as described.

2. In a gaiter, the combination with the body portion *a*, one vertical edge of which overlaps the other; of a flexible band secured at one extremity to the lower portion of the overlapping edge of the gaiter; a detachable fastening secured to said flexible band near its other extremity, and adapted to engage the latter end of said band when wound upon said gaiter, and loops secured to the outside of said gaiter for the passage of said band, substantially as described.

607,273. COMBINED HOE AND EDGE-TRIMMER. CHARLES H. PURDY, Lynbrook, N. Y. Filed Dec. 28, 1897. Serial No. 663,853. (No model.)

Claim.—1. The herein-described combined horizontal hoe and edge-trimmer, consisting of a horizontal hoe-blade, a vertical edge-trimming blade extending from one end of said hoe-blade and having a sharpened longitudinal edge and terminating in an inclined cutting-point, and a handle connected with said horizontal and vertical blades, substantially as described.

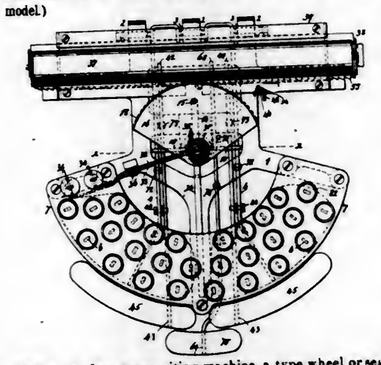
2. The herein-described combined horizontal hoe and edge-trimmer consisting of a horizontal hoe-blade, a vertical edge-trimming blade extending from one end only of said hoe-blade and having a

forwardly-inclined cutting edge, and a handle-bail one arm of which is attached to said vertical blade and the other arm to said horizontal blade, substantially as shown and described.



3. The herein-described combined horizontal hoe and edge-trimmer, consisting of a horizontal blade, a vertical blade extending from one end of said horizontal blade, and having a forwardly-inclined cutting edge and formed with a rounded free cutting end, and a handle-bail, the arms of which are respectively attached to said horizontal and vertical blades, in different horizontal planes, substantially as described and for the purposes set forth.

607,274. TYPE-WRITING MACHINE. WILLIAM P. QUENTELL, New York, N. Y. Filed June 10, 1897. Serial No. 640,202. (No model.)



Claim.—1. In a type-writing machine, a type wheel or segment, a vibrating platen-carriage support, and a vibrating arm having an ink-roller, said arm being vibrated by and mounted upon the support clear of or out of contact with the machine-frame, substantially as described.

2. In a type-writing machine, a type wheel or segment, a traveling platen-carriage, a vibrating support for the carriage, a vibrating arm having an ink-roller, and a spring connected with said arm and support said roller being made to contact with the type-wheel and said arm being connected to said support clear of the machine-frame so as to be vibrated to carry the roller over the type-wheel as the carriage-support vibrates toward said wheel substantially as described.

3. In a type-writing machine a type wheel or segment, a platen-carriage, a vibrating support for the carriage, an arm fixed to said support, a vibrating roller-carrying arm on said fixed arm, and an ink-roller on said roller-carrying arm substantially as described.

4. In a type-writing machine a type wheel or segment, a platen-carriage, a vibrating support for the carriage, an arm fixed to said support, a vibrating roller-carrying arm on said fixed arm, and a check or stop for said vibrating arm substantially as described.

5. In a type-writing machine a type wheel or segment, a platen-carriage, a vibrating support for the carriage, an arm fixed to said support, a vibrating roller-carrying arm on said fixed arm, and a check or stop for said vibrating arm, said stop being located at the joint or connection of said arms substantially as described.

6. An ink-roller having an axle and a carrying-arm having jaws or holders forming a bearing for said roller-axle, said jaws being slotted through from said bearings to the edge and being formed of spring metal normally tending to close or contract the slots substantially as described.

7. A hard-rubber type-wheel having an enlarged or projecting grooved central or axial portion, a metallic hub at said enlarged portion, a grooved shaft extended into said hub, and a looped wire made to engage said axial portion and extended therethrough to the shaft-groove substantially as described.

8. A hard-rubber hollow type wheel or segment comprising a periphery with top and bottom all in one piece, the central or axial parts of the top and bottom being left unconnected or separate from one another, and provided with a metallic sleeve or hub substantially as described.

9. A hard-rubber hollow type wheel or segment comprising a periphery with top and bottom all in one piece, the central or azial parts of the top and bottom being left unconnected or separate from one another and provided with an enlargement or thickening, and with a metallic sleeve or hub substantially as described.

10. A type wheel or segment, a shaft on which the wheel is loosely mounted, and is rotatable independently of such shaft, a rotating sleeve on the shaft connected to or made to engage the wheel, said sleeve being provided with a cam, and an actuating-lever made to engage the cam substantially as described

11. A type wheel or segment, a shaft on which the wheel is loosely mounted, and is rotatable independently of such shaft, a rotating sleeve on the shaft connected to or made to engage the wheel, said sleeve being provided with inclined or cam faces on opposite sides of said sleeve, and levers made to engage the cam-faces substantially as described.

12. A type wheel or segment, a shaft on which the wheel is loosely mounted, and is rotatable independently of such shaft, a rotating sleeve on the shaft connected to or made to engage the wheel, said sleeve being provided with inclined or cam faces on opposite sides of said sleeve, and oppositely-located actuating-levers having engaging brackets for said cam faces substantially as described.

13 A type wheel or segment, a shaft on which the wheel is loosely mounted, and is rotatable independently of such shaft, a rotating sleeve on the shaft connected to or made to engage the wheel, said sleeve being provided with a cam, an actuating-lever made to engage the cam, and a returning-spring for the type-segment substantially as described.

14. A type-wheel, and a shaft for said wheel, combined with an actuating-cam, and a stop-arm fixed to said cam, the wheel and cam being both mounted directly on said shaft, substantially as described.

15. A type wheel or segment actuating-cam faces for the wheel, actuating-levers for the cam-faces, and shoulders or stops, said levers when at rest being made to engage said stops substantially as described.

16. A type wheel or segment, actuating-cam faces for the wheel, shoulders or stops located above said faces, and vertically-oscillating actuating-levers for the cam-faces, said levers when at their upper or rest point being made to engage or lie in the path of said stops substantially as described.

17. A type wheel or segment, a shaft on which the segment is loosely mounted, a sleeve rotatively mounted on the shaft and made to engage the segment and provided with cam-faces and with stops or shoulders, and actuating-levers for the cam-faces, said levers when at rest being made to engage the stops, substantially as described.

18. A type wheel or segment, a shaft for the wheel, an actuating-arm for the wheel, said arm being provided with shoulders or stops, and actuating-levers for the wheel, said levers being made to engage the stops when at rest substantially as described.

19. A type wheel or segment, a shaft for the wheel, a sleeve mounted on the shaft, a double-faced cam on the sleeve, an actuating-arm also mounted on the sleeve and made to engage the wheel, said arm being provided with shoulders or stops, and actuating-levers made to engage the cams, said levers when at rest being made to engage the stops substantially as described.

20. A type wheel or segment mounted on a vertically movable or adjustable shaft, lifting or adjusting levers for said shaft, and a common stop for arresting said levers at a common level, one of said levers being step-shaped or cut away so that said levers respectively arrest or hold the wheel at different levels substantially as described.

21. A type wheel or segment mounted on a vertically movable or adjustable shaft, lifting or adjusting levers for said shaft, and a common stop for arresting said levers at a common level, one of said levers being step-shaped or cut away at its point of contact with the shaft so that said levers respectively arrest or hold the wheel at different levels substantially as described.

22. A type wheel or segment writing-machine provided with an independent key for each letter, mechanism substantially as described intermediate or connecting the key and type-wheel for causing said key to rotate or position the wheel, and a printing and spacing lever made to operate independently of the keys, said wheel being provided with a stop-arm and said keys when depressed having their shanks moved into the path of said stop-arm substantially as described.

23. A type wheel or segment writing-machine provided with a positioning-lever and with a printing-lever fulcrumed on the positioning-lever said levers swinging parallel to one another, substantially as described.

24. A type wheel or segment writing-machine provided with separate keys for respectively rotating or positioning the type-segment and for executing the printing stroke, levers actuated by said positioning keys, and levers actuated by said printing-keys, said printing-levers being fulcrumed on the positioning-levers substantially as described.

25. A type wheel or segment writing-machine provided with a positioning-lever fulcrumed at one end and having a plate at its other end, keys made to contact with said plate, a wheel-actuating cam engaged by said lever, and a stop-arm made to extend from the cam, each of said keys when depressed being moved into the path of said stop-arm substantially as described.

26. A type wheel or segment, a shaft on which the wheel is loosely mounted, a sleeve rotatively mounted on the shaft and provided with a cam, positioning-levers provided with brackets for engaging said cam, plates on said levers, keys made to engage said plates, and a stop-arm extended from said cam, each of said keys when depressed being moved into the path of said stop-arm substantially as described.

27. A type wheel or segment writing-machine provided with separate keys, one key set being made to rotate or position the wheel so that the letter on the wheel corresponding to the actuated key is brought to the printing-point, and the other key set being provided with a finger-plate and made to effect spacing and a printing contact between the type-wheel and the writing surface or paper said positioning-keys actuating the spacing and printing lever for a portion of its throw only, substantially as described.

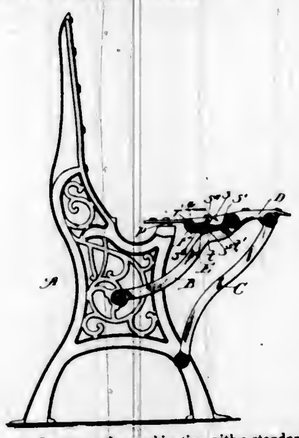
28. A type wheel or segment writing-machine provided with a keyboard, a positioning-lever having a plate, keys made to contact with said plate, a printing-lever fulcrumed to the positioning-lever, and a finger-plate on said printing-lever, said finger-plate being located in front of said keyboard substantially as described.

29. A paper-carriage and a feed-rack therefor, combined with a lever, a pawl pivotally mounted on said lever, and a stop on said lever for limiting the swing of the pawl in both directions substantially as described.

30. A paper-carriage and a feed-rack therefor, combined with a lever, a feed-spring made to engage the lever, a pawl pivotally mounted on said lever, and a spring for moving the pawl toward the rack, said lever having a shoulder extended to each side of the pawl pivot to act as a double stop for the pawl substantially as described.

31. A type-writing-machine key consisting of a shank having its upper portion shouldered and narrowed, a perforated disk riveted or secured at said shoulder and having a portion of its rim cut, a lettered or character disk having a lip bent into said cut, a transparent covering for the character-disk, and a securing ring or flange connected to the first-named disk and to the covering substantially as described.

607,275. SCHOOL-SEAT. FRED I. RAINBOW, Morrison, Ill., assignor to the Illinois Refrigerator Company, same place. Filed Feb. 14, 1898. Serial No. 670,205. (No model.)



Claim.—1. In a seat, the combination with a standard, of a seat-strap, a front and a rear arm pivotally joined to the seat strap and to the standard, and a spring confined between the upper front portion of said rear arm and the rear portion of said seat-strap and attached to one of said last-named parts and contacting with the other of said parts through a portion of the movement of the seat only and aiding in the initial movement of raising the seat, substantially as and for the purpose set forth.

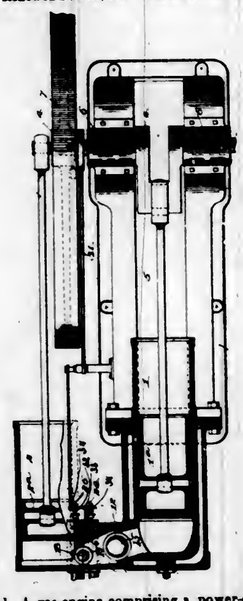
2. In a seat, the combination with a standard, of a seat-strap, a front swinging arm pivotally joined to the standard and to the front end of the seat-strap, a rear swinging arm pivotally joined to the standard and to the seat-strap near the center of the strap, a spring attached to the seat-strap a short distance to the rear of the upper end of the rear swinging arm and provided with a forwardly-projecting prong adapted to be engaged by the upper portion of said arm during a portion only of the movement of the seat, and means for limiting the downward movement of the seat, substantially as and for the purpose set forth.

3. In a seat, the combination with an end standard and a seat-strap, of arms B and C, having their ends pivotally joined to the standard and the seat-strap, a spring E provided with a loop e^2 attached to the seat-strap toward the rear end and having an upper arm e and a lower curved arm e', a bearing upon the seat-strap for the arm e, and a bearing on the arm B for the prong e' and means for limiting the downward movement of the seat, substantially as and for the purpose set forth.

4. In a seat, the combination with a standard, of a seat-strap, arms B and C pivotally joined to the inner side of the strap and standard, a two-prong spring E carried by the rear portion of said seat-strap, an offset f on the arm B affording a bearing on its upper surface for the lower prong of said spring when the seat is lowered, and a stop p on the standard in the path of the rear end of the seat-strap and limiting the downward movement, substantially as and for the purpose set forth.

5. In a rear-folding seat, the combination with a standard, of a seat-strap, front and rear swinging arms pivotally joined to the standard at their lower ends and to the seat-strap at their upper ends, a two-prong flat spring provided with a partially-closed loop, a stud on the seat-strap to receive the loop, an elastic collar confined between the loop and stud, bearings on the strap and the upper portion of the rear swinging arm for the prongs of the spring, and a stop p on the standard in the path of the rear portion of the seat-strap, substantially as and for the purpose set forth.

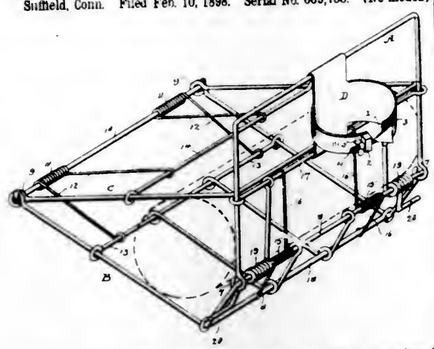
607,276. GAS-ENGINE. JOSEPH REID, Oil City, Pa. Filed Jan. 25, 1895. Renewed Dec. 21, 1897. Serial No. 662,935. (No model.)



Claim.—1. A gas-engine comprising a power-cylinder, a pump-cylinder, a connecting-web for the cylinders having a passage extending therethrough, a vertical power-valve channel and a vertical pump-valve channel, the removable mounting having a puppet check-valve and inserted in the power-valve channel, and the removable mounting formed with two cylindrical valve-housings in its lower portion provided with a puppet check-valve, and two cylindrical valves, and inserted in the pump-valve channel; substantially as described.

2. A gas-engine comprising a removable pump-valve mounting formed with cylindrical valve-housings, annular passages surrounding the housings and gas and air inlets connecting with the passages, the puppet check-valve and the cylindrical valves having perforations and adjustable as to length of play in the housings; substantially as described.

607,277. SELF-FOLDING PARCEL-CARRIER. FRANCIS S. ROOT, Suffield, Conn. Filed Feb. 10, 1898. Serial No. 669,733. (No model.)



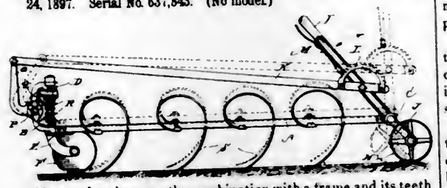
Claim.—1. A self-folding parcel-carrier comprising a member A provided with means for attachment, a member B pivotally secured to member A, a member C pivotally secured to member B and springs acting to fold member C upon member B and to fold members B and C upon member A and when in use to clamp a parcel between said members.

2. A self-folding parcel-carrier comprising a member A provided with means for attachment, a member B pivotally secured thereto, a member C pivotally secured to member B, springs acting to fold member C upon member B and member B upon member A, and stop-springs having arms which are engaged by member B when carrying a weight.

3. In a device of the character described the combination with member A having a clamp comprising an arm having a hook 1, an arm carrying a block and a hook 3 adapted to engage hook 1 and having a threaded shank passing through the block and a wing-nut by which the clamp is locked, of member B pivotally secured to member A, member C pivotally secured to the outer edge of member B and springs acting to fold member C upon member B and member B upon member A so that a parcel placed upon member C will be held by said members without straps.

4. The combination with member A having a clamp D, of an L-shaped member B pivotally secured to member A, a member C pivotally secured to the outer edge of member A and springs for holding a parcel without straps and for folding members C and B upon member A when not in use.

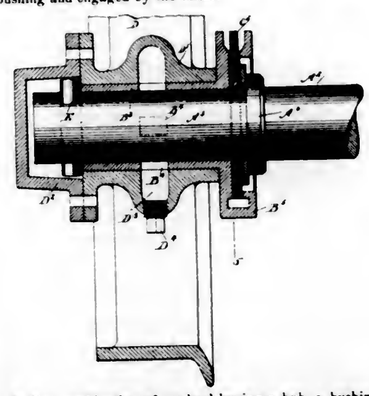
607,278. HARROW. ANDREW V. RYDER, Scio, Ohio. Filed May 24, 1897. Serial No. 637,843. (No model.)



Claim.—In a harrow, the combination with a frame and its teeth, an arched axle in its rear end and having wheels, a hand-lever secured to said axle, a forward extension to said frame, a lever pivoted in said extension, caster-wheel bars carrying a caster-wheel and having a shank, said shank being behind said extension and having circular bands projecting therefrom and engaging with said toothed lever, a pitman pivoted to said toothed lever and to said hand-lever, a toothed segment carried by said pitman, and a detent on the hand-lever to engage with said toothed segment, whereby the harrow is held in adjusted positions.

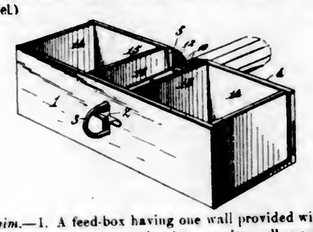
607,279. OIL-RETAINING BOX. SAMUEL SALMON, Drifton, Pa. Filed Apr. 2, 1898. Serial No. 676,201. (No model.)

Claim.—1. The combination of a wheel having a hub provided with an annular oil-chamber, a cap secured to the outer end of the hub, a bushing provided with an enlarged inner end, the bushing being fitted within the hub and provided with openings registering with the oil-chamber therein, and the head of the bushing being located at and engaging with the inner end of the hub, the head of the bushing being provided with a guideway-opening at the top of the enlarged inner end of the bushing, a journal mounted in the bushing and extending into the cap, the journal being provided with a collar adjacent to the enlarged inner end of the bushing, and a closing-shield fitting loosely in the guideway of the enlarged inner end of the bushing and engaged by the collar.



2. The combination of a wheel having a hub, a bushing fitted within the hub and adapted to carry the journal on which the wheel is mounted, the inner end of the bushing having an enlargement located at and in engagement with the inner end of the hub, and the enlargement of the inner end of the bushing being provided with a guideway-opening at the top thereof, and a closing-shield fitted loosely within the guideway and adapted to be carried on the journal.

607,280. FEED-BOX FOR WAGON-POLES. CHARLES SAMPLE, Valley Grove, W. Va. Filed Sept. 29, 1897. Serial No. 653,499. (No model.)



Claim.—1. A feed-box having one wall provided with means to engage the tip of a vehicle-pole, the opposite wall provided with a vertical opening to receive a part of the pole-body, and retaining means carried by the box for engaging over the upper side of the pole to secure the box on the pole, substantially as described.

2. A feed-box having one wall provided with a socket to engage the tip of a vehicle-pole, the opposite wall provided with a vertical opening to receive the pole, and dogs mounted on the box for engaging over the upper side of the pole to secure the box thereupon, substantially as described.

3. A feed-box having one wall provided with a socket to engage the tip of a vehicle-pole, the opposite wall provided with a vertical opening to receive the pole, and pivoted spring-pressed dogs having beveled hooks which are spread apart by the pole when the latter enters the said vertical opening and automatically spring into engagement with the pole to secure the box thereupon, substantially as described.

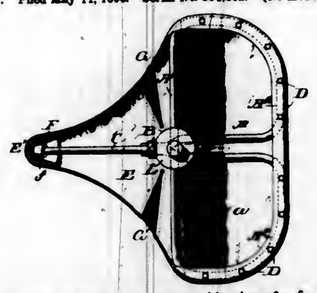
4. The combination with a feed-box having means to engage the tip end of a vehicle-pole and a vertical opening to receive a portion of the pole-body, of pivoted spring-pressed dogs arranged in juxtaposition to the edges of the vertical opening and having beveled hooks at their upper ends which are automatically spread apart by the pole as it enters the vertical opening and spring into engagement with the pole to secure the box thereupon, substantially as described.

5. The combination with a feed-box having in one wall a socket to engage the tip of a vehicle-pole and in the opposite wall a vertical opening to receive a part of the pole-body, of spring-pressed dogs pivoted to the box in juxtaposition to the edges of the vertical opening and having finger-pieces at their lower ends and beveled hooks at their upper ends, substantially as described.

607,281. MODE OF PRESERVING ALBUMINOUS MATTERS. PERCY G. SANFORD, London, England. Filed Nov. 19, 1897. Serial No. 659,182. (No specimens.) Patented in England May 20, 1897, No. 12,449.

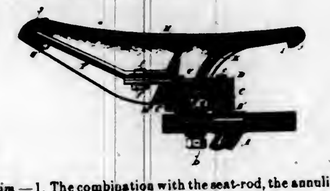
Claim.—The mode herein described of preserving albuminous matter, for use in the manufactures and arts, consisting in treating the same with ammonium fluorid and dialyzing the mixture, substantially as described.

607,282. BICYCLE-SADDLE. HENRY L. SCHAFFNER, Florence, Italy. Filed May 11, 1896. Serial No. 591,102. (No model.)



Claim.—In a bicycle-saddle the combination of a frame having a continuous horizontal portion A′ attached to the seat-post and its opposite extremities bent upwardly and rearwardly, inwardly and forwardly to form side loops A^2, lying in rear of and above part A′, and a beak-rod attached to the ends of the adjoining ends of the rod above part A′, substantially as and for the purpose described.

607,283. BICYCLE-SADDLE. HENRY L. SCHAFFNER, Florence, Italy. Filed Oct. 29, 1896. Serial No. 610,490. (No model.) Patented in England July 29, 1896, No. 16,533.



Claim.—1. The combination with the seat-rod, the annuli thereon, the seat-cover, and the tap-bolts for securing the cover to the annuli, substantially as described.

2. For a bicycle-saddle, a cover having elastic gores in its sides for the purpose and substantially as described.

3. In a bicycle-saddle, the combination of the seat-frame, with the cover having its beak pivotally attached to the frame, and provided with elastic gores, as G in its sides, substantially as and for the purpose set forth.

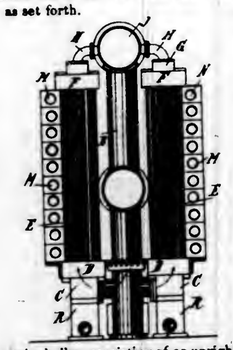
4. In a bicycle-saddle, the combination of the D shaped rod E having its free extremities approximating in the median line of the saddle, a supporting-plate D therefor secured to the straight portion of said rod E, devices for attaching said plate to the saddle-post; and a beak-rod attached to said plate with the cover having its seat portion attached to the extremities of the rod E, and its beak attached to the beak-rod, substantially as and for the purpose described.

5. In a bicycle-saddle, the combination of the plate D attached to the saddle-post, a rod E having front bar e, connected to plate D, and side parts e' and rear portions e^2 substantially as described, and the beak-rod adjustably attached to plate D; with the cover having its seat portion fastened to parts e^2 of the rod; and its beak attached to the forward end of said beak-rod, all substantially as described.

6. The combination of the saddle-post, the plate B′ attached thereto, the resilient laterally-yielding cushions on said plate, the plate D resting upon said cushions, the D-shaped rod E, and the beak-rod F adjustably attached to plate D; and the saddle-cover attached to said rods, all substantially as and for the purpose described.

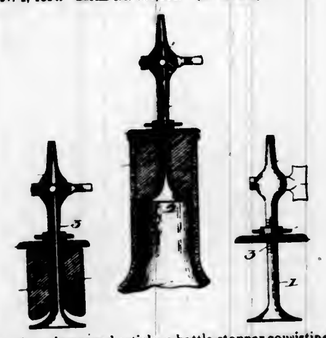
607,284. WATER-TUBE BOILER. JULIUS G. SCHMIDT, Erkner, Germany. Filed Nov. 10, 1897. Serial No. 658,025. (No model.)

Claim.—1. A water-tube boiler, consisting of an upright tube B, provided with an inlet, transverse tubes C connected with tube B below the inlet, two groups of upright tubes E E arranged one at each side of a central space and connected with the tubes C, horizontal collecting-tubes G above and connected with the respective groups E, E, a common steam-collector J arranged horizontally and centrally above and connected with said collecting-tubes G, said collector J being at one end connected with the upright tube B, and a collecting-tube L between the two groups of tubes E, E, arranged below the steam-collector J and connected at one end with the upright tube B, substantially as set forth.



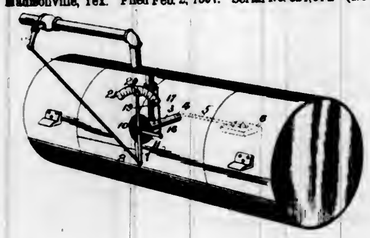
2. A water-tube boiler, consisting of an upright tube B provided with an inlet, transverse tubes C connected with tube B below the inlet, two groups of upright tubes E, E, arranged one at each side of a central space and connected with the tubes C, horizontal collecting-tubes G arranged above and connected with the respective groups E, E, a common steam-collector J arranged horizontally and centrally above and connected with said collecting-tubes G, said collector J being at one end connected with the upright tube B, and a series of horizontal tubes M connected in serpentine form and arranged at each side of said groups of tubes E, E, and being connected with the common steam-collector J, substantially as set forth.

607,285. BOTTLE-STOPPER. LOUIS A. SCHOLZ, Roanoke, Va. Filed Nov. 1, 1897. Serial No. 657,061. (No model.)



Claim.—As an improved article, a bottle-stopper consisting of the tube having a flaring or bell-mouth lower or inner end, the screw-threads formed intermediate the ends, the spigot at the upper or outer end of said tube, the nut engaging with said screw-threads, the circular washer adapted to rest on the top of a bottle, and through which said tube loosely passes, and the elastic cork through which said tube passes, formed with a recess in its lower end, corresponding with the shape of the said flaring end of the tube, the construction being such that when the stopper is inserted in the bottle and expanded by turning the nut, it will be compressed between the flaring end of the tube and the washer, so as to entirely fill the space therebetween, substantially as described.

607,286. AUTOMATIC BOILER-FEEDER. JOSHUA H. SHARP, Madisonville, Tex. Filed Feb. 2, 1897. Serial No. 621,614. (No model.)



Claim.—1. The combination with a steam-boiler, of a rock-shaft extending into the boiler, a float connected to the inner end of said rock-shaft for operating the latter, a crank loose on the rock-shaft, means for operatively connecting said crank with a valve, toothed engaging disks one fast on the shaft and the other fast to the crank, and provision for effecting relative adjustment of said disks for varying the angle of the crank, substantially as and for the purpose described.

2. The combination with a steam-boiler, of a rock-shaft passing through the side of the boiler, a float connected to the inner end of said rock-shaft for turning the latter, a disk fast on the outer end of said shaft, a second disk rotatably mounted on said shaft, the said disks being provided on their adjacent surfaces with interlocking ribs or serrations, a crank carried by said outer disk, and a connection between said crank and the water-supply-controlling mechanism, substantially as described.

607,287. PROCESS OF EXTRACTING METALS. ALF SINDING-LARSEN, Christiania, Norway. Filed Dec. 5, 1896. Serial No. 614,605. (No specimens.) Patented in Germany Feb. 29, 1896, No. 91,002, and in Austria June 17, 1896, No. 46/2,411.

Claim.—1. A process for the treatment of sulfid ores, which consists in subjecting the pulverized ore to the action of a halogen gas, collecting and separating the compound formed by the action of said halogen gas upon the metalloids by condensation, and recovering the metals from the ore thus treated, substantially as described.

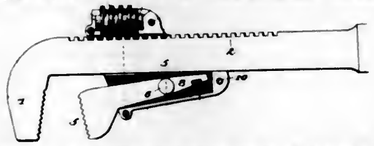
2. A process for the treatment of sulfid ores, which consists in reducing the ore to a predetermined degree of fineness, subjecting said ore to the action of a halogen gas, collecting the volatile compounds formed by the action of said gas upon the metalloids and extracting the metals from the mass, substantially as described.

3. A process for the treatment of sulfid ores which consists in subjecting pulverized ore to the action of a halogen gas, conducting off and collecting the volatile compounds formed by the action of the halogen gas upon the metalloids, leaching the ore thus treated and recovering the soluble constituents by electrolysis, and returning the resulting halogen gas to the cycle of operations, substantially as described.

4. A process for the treatment of cupriferous sulfid ores, which consists in subjecting the pulverized ore to the action of a halogen gas, collecting the volatile compounds formed by the action of the halogen gas upon the metalloids, electrically decomposing the same, returning the resulting halogen into the cycle of operations; leaching the ore treated with the halogen gas, precipitating the copper from such solution, then electrically recovering the halogen in such solution and returning the same into the cycle of operations, substantially as described.

5. A process for the treatment of cupriferous sulfid ores, which consists in subjecting pulverized ore to the action of a halogen gas, collecting and separating the volatile compounds formed by the action of said halogen gas upon the metalloids by condensation, electrolytically decomposing one or more of them and returning the resulting halogen gas into the cycle of operations; leaching the ore treated, precipitating and separating the copper from the solution, electrolyzing the remaining liquid, returning the resulting halogen into the cycle of operations, washing the residue and recovering the sulfur, substantially as set forth.

607,288. PIPE-WRENCH. ORAMEL C. STANLEY, Philadelphia, Pa., assignor of two-thirds to Charles W. Morrison and John J. McKinley, same place. Filed Dec. 3, 1897. Serial No. 660,666. (No model.)



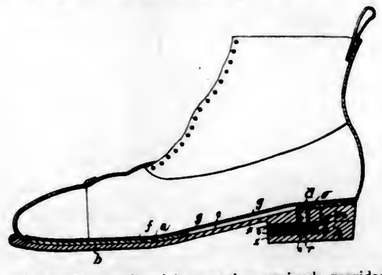
Claim.—1. In a pipe-wrench, the combination of the handle jaw-bar, a sliding box of two equal parts, each part having a coincident socket on its inner wall, and the swing grip-jaw having the cast trunnions on its opposite sides for engaging said sockets whereby to effect the mounting of the swing grip-jaw.

2. The combination, in a pipe-wrench, of the handle jaw bar having a rack on its back edge, the swing grip-jaw having the cast trunnions on the opposite sides of its shank, the worm-nut engaging the rack and having the cast trunnions, and a box divided into two equal parts each part having sockets wherein to mount the trunnions of the jaw and the nut in securing the box-sections.

3. In a pipe wrench, the combination of the handle jaw-bar having a rack on its back edge, a worm-nut for engaging said rack, having cast trunnions and a box divided into two equal parts, each part having sockets wherein to mount the nut-trunnions, and a swing grip-jaw mounted in the opposite sides of said box.

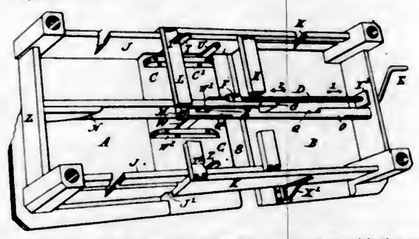
4. The combination, in a pipe-wrench of the handle jaw-bar, a sliding box of two equal parts, each part having a coincident socket on its inner wall, and the swing grip-jaw having cast trunnions on its opposite sides for engaging said sockets, the shank of the said swing-jaw having a tail-arm beyond the trunnions and a spring engaging said tail-arm whereby to maintain the swing grip-jaw in its normal position.

607,289. VENTILATED BOOT OR SHOE. PETER STAVERT, Pittsburg, Pa. Filed Mar. 20, 1897. Serial No. 628,481. (No model.)



Claim.—In a ventilated boot or shoe, an insole provided with apertures, an intermediate sole having slots registering with said apertures, a main sleeve provided with an extension *l* secured to the heel, said main sleeve being provided with an aperture registering with an aperture in the heel, an auxiliary sleeve provided with an aperture registering with the aperture in the main sleeve, a button formed on the inner end of the auxiliary sleeve and engaging the end of the main sleeve and recesses formed in the outer edge of the auxiliary sleeve to receive a key whereby the same is turned, substantially as herein shown and described.

607,290. EXTENSION TABLE, SEAT, &c. GEORGE STEPHEN, Melbourne, Victoria, assignor to George Garibaldi Turri, same place. Filed Dec. 28, 1897. Serial No. 664,014. (No model.) Patented in Victoria Aug. 24, 1894, No. 11,638, and in England Jan. 18, 1897, No. 1,351.



Claim.—1. In an extension-table the combination with the two end portions, arranged to slide toward or away from each other, and means for sliding the two end portions; of a movable leaf supported beneath one of the said end pieces, links pivoted to the framing and supporting the said movable leaf, a bar secured to the framing of the other part of the table in the path of the said levers, a lever W also pivoted to the movable leaf and to the framing, and a rod adapted to engage the end of the said lever W during the sliding movement of the parts, substantially as described.

2. In an extension table, the combination with the two end portions arranged to slide toward or away from each other, and means for sliding the two end portions; of a movable leaf supported beneath each of the said end pieces, links pivoted to the framing and supporting the said movable leaves, bars secured to other parts of the framing in the path of the levers as the parts slide, and causing the levers to raise the movable leaves to the height of the top of the table, levers W pivoted to the said movable leaves and to the framing, and rods adapted to engage the said levers W, to lower the said movable leaves, substantially as described.

3. In an extension-table, the combination with the two parts, each part having a top, and side bars beneath the said top, the side bars of one part being adapted to slide upon the side bars of the other part, a central bar secured to one part; of a movable leaf arranged beneath the top and above the said bars, levers pivoted to the said movable leaf and to the said bars of one part, a cross-bar secured to the side bars of the other part in the path of the said levers, and means connected with the said central bar for sliding the two parts to cause the ends of the said levers to impinge against the said cross-bar and raise the movable leaf between the two parts of the table, substantially as described.

4. In an extension-table, the combination with a plurality of parts, each part consisting of a top leaf and longitudinal side bars connected thereto, the said bars being arranged to slide one upon another, of movable leaves arranged between the said top leaves and the said bars, levers pivoted to the said movable leaves, and to the said bars, cross-bars secured to other of the said bars in the path of the said levers, and means for sliding the several parts of the table to cause the said levers to impinge against the said cross-bars, and raise the movable leaves to the level of the top leaves, substantially as described.

5. In an extension-table, the combination with a plurality of parts, each part consisting of a top leaf and longitudinal side bars connected thereto, the said bars being arranged to slide one upon another, and an intermediate longitudinal bar secured to one of the parts between the said side bars; of movable leaves arranged between the said top leaves and the said bars, levers pivoted to the said movable leaves and to the said side bars, cross-bars secured to other of the said longitudinal bars in the path of the said levers, means for sliding the several parts of the table to cause the said levers to impinge against the said cross-bars, and raise the movable leaves to the level of the top leaves, levers W pivoted to the said movable leaves and to the said intermediate bar, and rods journaled in the frame and adapted to engage the said levers W to lower the said movable leaves, substantially as described.

6. In an extension-table, the combination with a plurality of parts, each part consisting of a top leaf and longitudinal side bars connected thereto, the said bars being arranged to slide one upon another, and an intermediate longitudinal bar secured to one of the parts between the said side bars; of movable leaves arranged between the said top leaves and the side bars, levers pivoted to the said movable leaves and to the said side bars, cross-bars secured to other of the longitudinal bars in the path of the said levers, means for sliding the several parts of the table to cause the said levers to impinge against the said cross-bars, and raise the movable leaves to the level of the top leaves, levers W pivoted to the said movable leaves and to the said intermediate bar, rods journaled in the frame and adapted to engage the said levers W to lower the said movable leaves, and bevel-surfaces on the said intermediate bar to engage the said rods and turn the latter away from the levers W at the proper times, substantially as described.

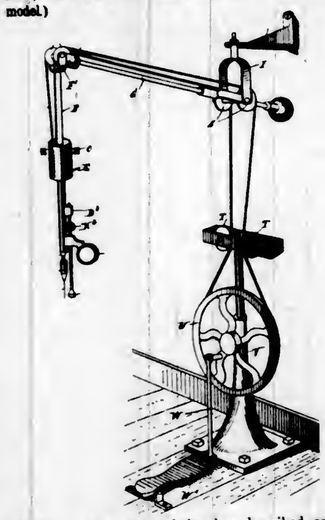
7. In an extension-table, the combination with a plurality of parts, each part consisting of a top leaf and longitudinal side bars connected thereto, the said bars being arranged to slide one upon another, and an intermediate longitudinal bar secured to one of the parts between the said side bars; of movable leaves arranged between the said top leaves and the said bars, levers pivoted to the said movable leaves and to the said side bars, cross-bars secured to other of the said longitudinal bars in the path of the said levers, screws journaled in the framing, threaded sockets in other parts of the framing to receive the said screws, means for turning the said screws to slide the several parts of the table to cause the said levers to impinge against the said cross-bars, and raise the movable leaves to the level of the top leaves, levers W pivoted to the said movable leaves and to the said intermediate bar, and rods journaled in the frame and adapted to engage the said levers W to lower the said movable leaves, substantially as described.

8. In an extension-table, the combination with two parts, each part consisting of a top leaf and longitudinal side bars secured thereto, the said bars being arranged to slide one upon another, and a longitudinal bar secured to one of the said parts; of a movable leaf arranged between the said top leaves and the said bars, levers pivoted to the said movable leaf and to the said side bars, cross-bars secured to other of the said side bars in the path of the said levers, means for sliding the two parts of the table to cause the said levers to impinge against the said cross-bars, and raise the movable leaf to the level of the top leaves, a lever W pivoted to the said movable leaf and to the intermediate bar, and a rod journaled in the frame and adapted to engage the said lever W, to lower the said movable leaf, substantially as described.

9. In an extension table, the combination with two parts, each part consisting of a top leaf and longitudinal side bars secured thereto, the said side bars being arranged to slide one upon another, and a longitudinal bar secured to one of the said parts between the said side bars; of a movable leaf arranged between the said top leaves and the said bars, levers pivoted to the said movable leaf and to the said side bars, cross-bars secured to other of the said side bars in the path of the said levers, means for sliding the two parts of the table to cause the said levers to impinge against the said cross-bars, and raise the movable leaf to the level of the top leaves, a lever W pivoted to the said movable leaf and to the said intermediate bar, a rod journaled in the frame and adapted to engage the said lever W, to lower the said movable leaf, and a bevel-surface on the said intermediate bar to engage the said rod and turn the latter away from the lever W at the proper time, substantially as described.

10. In an extension-table, the combination with two parts, each part consisting of a top leaf and longitudinal side bars secured thereto, the said bars being arranged to slide one upon another, and a longitudinal bar secured to one of the said parts between the said side bars; of a movable leaf arranged between the said top leaves and the said bars, levers pivoted to the said movable leaf and to the said side bars, cross-bars secured to other of the said side bars in the path of the said levers, a screw journaled in the framing, a threaded socket on the intermediate bar to receive the said screw, means for turning the said screw to slide the two parts of the table to cause the said levers to impinge against the said cross-bars, and raise the movable leaf to the level of the top leaves, a lever W pivoted to the said movable leaf and to the intermediate bar, and a rod journaled in the frame and adapted to engage the said lever W, to lower the said movable leaf, substantially as described.

607,291. MACHINE FOR MAKING STENCILS. JULIUS STERNFELD, New York, N. Y. Filed Oct. 26, 1897. Serial No. 656,447. (No model.)



Claim.—1. A machine of the class described, comprising a depending bearing mounted to turn, a counterbalanced arm pivoted in said bearing and having a forked outer end, pulleys on the pivot of the arm and bearing, a rod having a forked upper end and pivoted to the forked end of the arm, pulleys on the pivot of the arm and rod, a casing carried by the rod and having a tube projecting downwardly therefrom, a pulley mounted in the casing, a driven pulley, an endless belt passing over said pulleys, and a needle-carrying rod operated by an eccentric from the shaft of the pulley in the casing, substantially as described.

2. A machine of the class described, comprising a depending bearing mounted to turn, a counterbalanced arm pivoted in the bearing, a casing provided with a rod projecting from its upper face and pivoted to the arm, and with a tube projecting from its lower face, a cone-pulley mounted in the casing, an eccentric on the shaft of the pulley, a needle-carrying rod connected with the said eccentric and projecting out through the tube, pulleys on the counterbalanced arm, a driven pulley mounted in a support below the counterbalanced arm, an endless belt passing around said pulleys and tightening-pulleys carried by the support of the driven pulley, substantially as described.

3. A machine of the class described, comprising a pendent bearing mounted to turn, a counterbalancing-arm pivoted in the said bearing, a rod pivotally connected with the outer end of the said arm, a casing carried by the said rod and provided with a downwardly-projecting tube, a shaft journaled in the said casing and tube and receiving a rotary motion from a traveling belt passing over pulleys supported on the said arm, a rod fitted to slide in the said casing, and receiving its reciprocating motion from the said shaft by an eccentric, and an adjustable foot-piece carried by the said tube, and adapted to rest on the paper, to regulate the depth the needle is

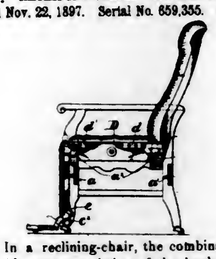
to pass into the paper, the needle being supported by the said rod, substantially as shown and described.

607,292. FIRE AND WEATHER PROOF COMPOSITION. JOHANNES STOCKER, FRIEDRICH MEISSNER, and HERMANN ZANDER, Rathenow, Germany. Filed June 25, 1897. Serial No. 642,343. (No specimens.)

Claim.—1. The herein-described fire and weather proof composition, consisting of sodium or potassium silicate, and caustic soda dissolved in the same, ground fire-clay, burnt magnesite, ground potters' clay, and a suitable filling material, substantially as set forth.

2. The herein-described fire and weather proof composition, consisting of sodium or potassium silicate, and caustic soda dissolved in the same, ground fire-clay, burnt magnesite, ground potters' clay, a suitable filling material, and oil of the ground-nut, substantially as set forth.

607,293. RECLINING-CHAIR. CHARLES F. STREIT, Cincinnati, Ohio. Filed Nov. 22, 1897. Serial No. 659,355. (No model.)



Claim.—1. In a reclining-chair, the combination of the fixed frame, the movable parts consisting of the back, the seat and the leg-rest, links secured to the back and leg-rest, pivotally connected to the seat-frame and journaled in the side frames of the chair.

2. In a reclining-chair the combination of the fixed frame consisting of the side pieces, including the legs, their upper extensions forming the arm-rests, the cross-bars connecting the legs and the transverse bars connecting the side frames, the lug-plates secured to the side frames, the removable parts consisting of the back, the seat and leg-rest, the links secured to the upper and lower ends respectively of the leg-rest and the back of the chair, pivoted to metal strips secured to the front and rear respectively of the seat-frame and having journal-pins from them between the fixed and pivoted ends and resting in the lugs secured to the frame of the chair.

3. In a reclining-chair the combination of the fixed frame, lug-plates secured thereto, said lug-plates being transversely perforated to receive cotter-pins to hold the movable parts removably to the fixed frame, the movable parts consisting of the back, the seat and the leg-rest, the links fixed to the back and leg-rest respectively, pivotally connected to the front and rear respectively of the seat, and having journal-pins projecting therefrom and resting in a journal-box formed of the lug-plates which are secured to the frame and the cotter-pins therein.

4. In a reclining-chair the combination of the fixed frame, the movable parts consisting of the back, the seat and the leg-rest, links secured to the back and leg-rest respectively, pivotally connected to the seat-frame and journaled in the side frames of the chair, the extensible foot-support at the lower end of the leg-rest.

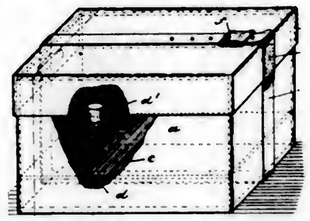
5. In a reclining-chair the combination of the fixed frame, the movable parts consisting of the back, the seat and the leg-rest, links secured to the back and leg-rest respectively, pivotally connected to the seat-frame and journaled in the side frame of the chair, the metal lug-plate secured to the bottom of the leg-rest, the link pivoted at one end to said lug-plate and pivoted at the other to an angle-plate secured to the foot-support and the angle-plate secured to the foot-support.

6. Conplings for reclining-chairs consisting of metal strips or bars to be secured to the opposite sides of the seat-frame, links formed in pairs right and left and pivoted to the ends of said bars, one pair being perforated for attachment to the leg-rest and the opposite pair perforated for attachment to the chair-back, all of said links having journal-pins projecting outwardly from them when secured in place to hang the seat, back and leg-rest between the stationary frame and lug-plates to be attached to the inside of the frame sides to receive said journal-pins, substantially as hereinbefore set forth

7. In a reclining-chair the combination of the fixed frame, the movable parts consisting of the back, seat, the leg-rest and the foot-support, the angle-plate secured along one leg to the foot-support and connected at the end of the other leg by a link to a lug-plate secured to the bottom of the leg-support, and the link pivoted at one end to the angle-plate and at the opposite end to the lug-plate, substantially as shown and described.

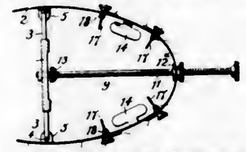
8. Couplings for an extensible foot-support for reclining-chairs consisting of an angle-plate, one leg of which is adapted to be secured to a foot-support, the other leg to receive a pivot, the lug-plate adapted to be secured to the leg-support and to receive a pivot, the link pivoted to the angle-plate and the lug-plate.

607,294. LUNCH-BOX. EDWIN R. SWIFT, Paterson, N. J. Filed Aug. 9, 1897. Serial No. 647,512. (No model.)



Claim.—The combination with a box or receptacle and its removable lid or cover, of an inverted box arranged in the lower portion of said receptacle and dividing the latter into an upper and lower compartment, the bottom of said inverted box being perforated and provided at or near one corner with an aperture or opening, while the sides or flanges thereof bear against the lower portions of the sides of the box or receptacle, a beverage-receptacle arranged in the lower compartment and provided at or near one corner with a capped mouth or spout adapted to penetrate the hole or aperture in the bottom of the inverted box, the dimensions of said beverage-receptacle being smaller than the dimensions of lower compartment, and a fastening-strap for normally holding the cover on the box or receptacle—and the beverage-receptacle within its respective compartment, all said parts, substantially as and for the purposes described.

607,295. DENTAL INSTRUMENT. WILLIAM O. TALBOT, Biloxi, Miss. Filed July 2, 1897. Serial No. 643,318. (No model.)



Claim.—1. In a dental measuring instrument, the combination of a spring-strip of a size to embrace a bank of teeth and arms connecting the free ends thereof, substantially as described.

2. In a dental measuring instrument, the combination of a spring-strip of a size to embrace a bank of teeth, arms adjustably connecting the free ends thereof, and means for clamping said arms, substantially as described.

3. In a dental measuring instrument, the combination with a spring-strip, of arms attached to the free ends thereof, a coupling-block receiving said arms, and a clamping-rod supported in said spring-strip, engaging said coupling-block, and provided with a coupling-head adapted to clamp said connecting-arms in said block, substantially as described.

4. In a dental measuring instrument, the combination of a spring-strip, arms adjustably connecting the free ends thereof and arranged to move in a coupling block, a clamping-rod supported in said strip, engaging said coupling-block, and provided with a clamping-head, and an adjusting-nut mounted upon and in screw-threaded engagement with said clamping-rod, substantially as described.

5. In a dental measuring instrument, the combination of a spring-strip, and gages adjustably carried thereby, substantially as described.

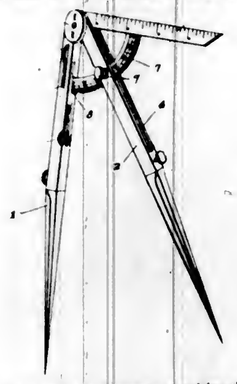
6. In a dental measuring instrument, the combination with a slotted spring-strip, of gages adjustably arranged in the slots thereof, substantially as described.

7. In a dental measuring instrument, the combination of a slotted spring-strip, gages adjustably carried thereby, and tooth-measuring instruments vertically adjustable in relation to said strips, substantially as described.

8 In a dental measuring instrument, the combination with a spring-strip, of arms adjustably connecting the free ends thereof, a clamping-rod supported by said spring-strip and engaging a coupling-block in which said arms are movably housed, an adjusting-nut in screw-threaded engagement with said clamping-rod, and gages adjustably carried by said spring-strip, substantially as described.

9. In a dental measuring instrument, the combination with a slotted spring-strip, of arms connected with the free ends thereof, a coupling-block in which said arms are movably received, a clamping-rod supported by said spring-strip and engaging with said coupling-block, a clamping head on said rod, an adjusting-nut mounted upon and in screw-threaded engagement with said rod, gages adjustably mounted in the slots of the spring-strip, and tooth-measurers carried by said gages and vertically adjustable relatively thereto, substantially as described.

607,296. CALIPERS AND DIVIDERS. JOSEPH E. TAULMAN, Hubbard City, Tex. Filed July 21, 1897. Serial No. 645,468. (No model.)



Claim.—1. A measuring instrument comprising the legs of a pair of dividers, one of which is slotted longitudinally, a graduated straight-edge normally housed in said slotted leg and journaled on the pivot connecting said legs, a graduated segment rigidly connected to the straight-edge and extending through slots in both legs, a set-screw in the leg adjacent to the straight-edge for holding said leg at the desired adjustment relative to the opposing leg and also to the straight-edge, and a spring-latch engaging a perforation in the segment for holding said leg and the straight-edge one at a right angle to the other, substantially as described.

2. A measuring instrument comprising a leg 1 having a spirit-level upon the same, said leg being provided with a recess in one of its outer sides, a second leg pivoted upon the first leg, said second leg having a slot 4 extending from its pivot end, a straight-edge having an opening in one end of the same whereby it is pivoted in common with the legs, a segment upon said straight-edge passing through the slot in the second leg, and also entering a slot through the first leg, said slot extending from the side of the said leg adjacent to the second leg, the segment being provided with an opening, a lever pivoted in the recess in the first leg, a lug upon said lever at one side of its pivot, said lug being adapted to enter the opening in the segment, a spring secured in a slot in said lever at the other side of its pivot, the free end of said spring resting upon the inner wall of the recess, a thumb-piece upon said lever projecting beyond the outer surface of the leg, and a set-screw in the second leg, said set-screw bearing upon the segment; substantially as described.

607,297. CLASP. ANGIE E. TAYLOR, Kennedy, N. Y. Filed July 28, 1896. Serial No. 600,826. (No model.)



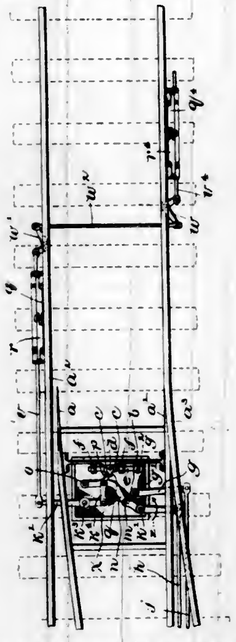
Claim.—The herein-described clasp, consisting of a single ribbon of resilient metal bent into a loop and having its ends bent into said loop so as to be disposed diametrically thereof and constituting levers which lie closely adjacent and have their extremities formed into feet which diverge from each other and which normally lie close to the inner face of the loop, and are thus adapted to slide upon and be guided by said inner face when the levers are spread.

607,298. BOW-GUARD FOR VESSELS. CHARLES G. THELEEN, Kenosha, Wis. Filed Mar. 18, 1897. Serial No. 628,065. (No model.)

Claim.—The bow of a vessel provided with a transverse slot or recess open in front, in combination with an elastic buffer-roller mounted in said slot to project in advance and on both sides of the bow, and laterally-projecting housings covering the projecting rear portions of said roller, substantially as described.



607,299. SWITCH OPERATING AND LOCKING MECHANISM. ANDREW THURESSON, Boston, Mass. Filed Feb. 7, 1898. Serial No. 669,319. (No model.)



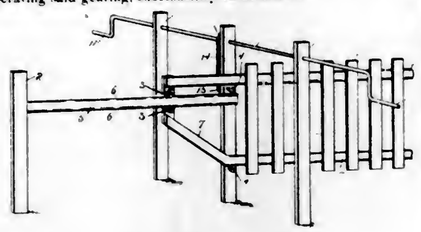
Claim.—1. A switch operating and locking appliance comprising a casing, a bar movable in the casing and projecting from opposite ends thereof for connection with the switch-points, a slide movable on guides in the casing and engaged with said bar, a slide-operating lever pivoted in the casing, and having one arm engaged with the slide, and another projecting from the casing, and adapted for connection with an operating-lever, a locking-arm pivoted in the casing and having provisions for locking the slide in either of two positions, and a lever pivoted in the casing, and having one arm engaged with the locking-arm, and another projecting from the casing, and adapted for connection with an operating-lever.

2. The combination with the fixed rails and switch-points, of a slide connected with the switch-points, means for imparting movement to the said slide to operate the switch, a locking-arm adapted to lock the slide and switch in either of two positions, means for imparting movement to the locking-arm, and a lever, such as l^3, connected at one end with the locking-arm, a rod or slide, such as v, connected with the other end of said lever, and provided with a projection v', and levers q, r arranged to be depressed by car-wheels approaching the switch, and provided with a projection adapted to engage the projection v', when said levers are depressed.

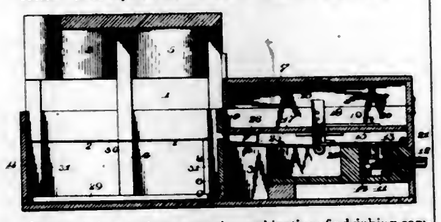
607,800. GATE. JOHN TRIBLER, Jamaica, Ill. Filed Aug. 26, 1897. Serial No. 649,640. (No model.)

Claim.—In a sliding gate, the combination with a fence proper having a horizontal beam, of a gate, antifriction-rollers mounted upon the gate and in engagement with the horizontal beam of the fence, antifriction-rollers mounted upon the fence and adapted to engage the gate, gearing for operating one of the last-mentioned antifriction-

rollers for opening and closing the gate, and a rotatable shaft for operating said gearing, substantially as described.



607,301. STOCK-WATERER. BEERI W. TUTTLE, Shullsburg, Wis.; Jerome L. Tuttle administrator of said Beeri W. Tuttle, deceased. Filed Sept. 25, 1895. Serial No. 563,627. (No model.)



Claim.—1. In a stock-waterer, the combination of a drinking-compartment, a series of vertical posts arranged at intervals and projecting above the upper edges of the compartment, and a vertical partition mounted on the posts and located above the upper edges of the compartment with an intervening space between its lower edge and the said upper edges, said partition being inwardly offset from the plane of the sides of the compartment to provide separate drinking-openings, whereby animals in drinking will be separated and their heads will be prevented from being caught in the drinking-openings, substantially as described.

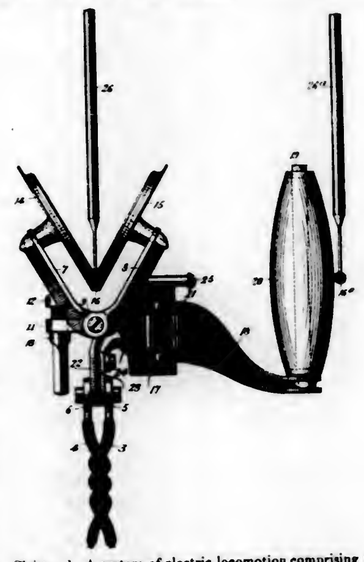
2. A stock-waterer comprising a trough, a transverse partition dividing the trough into a drinking-compartment and a float-compartment, and provided with a vertical water-passage and having openings at the top and bottom thereof communicating, respectively, with the float-compartment and the drinking-compartment, whereby surface water will be taken from the float-compartment and delivered to the drinking compartment at the bottom thereof, and a float-valve arranged in the float-compartment and arranged to control the supply of water to prevent the water in the float from flowing over the top of the transverse partition into the drinking-compartment, substantially as described.

3. A stock-waterer, comprising a trough, a supply-pipe, a valve chamber or casing communicating with the supply-pipe and having a valve-opening, a substantially horizontally-disposed lever 15, fulcrumed at its outer end at the top of the valve-chamber and provided at a point intermediate of its ends with a valve-plug arranged to cover the valve-opening, a counterbalancing-lever disposed in the same horizontal plane as the lever 15, fulcrumed intermediate of its ends and connected at one end with the adjacent end of the lever 15, and provided at its other end with a fixed weight, and a rectangular float fitting snugly within the trough and located above and concealing the levers, said float being adjustably connected with the lever 15, substantially as described.

4. A stock-waterer, comprising a trough, a supply-pipe, a valve chamber or casing compunicating with the supply-pipe and having a valve-opening, a substantially horizontally-disposed lever 15, fulcrumed at its outer end at the top of the valve-chamber and provided at a point intermediate of its ends with a valve-plug arranged to cover the valve-opening, a counterbalancing-lever disposed substantially horizontally, fulcrumed intermediate of its ends and connected at one end with the adjacent end of the lever 15 and provided at its other end with a fixed weight, a vertical link pivotally connected with the adjacent terminals of said levers and extending upward from them, and a horizontal float located above the valve-casing, provided with an opening receiving the link and adjustably secured to the same, substantially as described.

5. In a stock-waterer, the combination of a drinking-compartment, vertical posts arranged at intervals and extended above the drinking-compartment, and a partition mounted on the posts and located a considerable distance above the upper edges of the drinking-compartment to form an intervening space, said partition being constructed of sheet metal and being curved and inwardly offset from the plane of the sides of the compartment, substantially as described.

607,302. ELECTRIC LOCOMOTION. HENRY VAN HOEVENBERGH, New York, N. Y., assignor to Noah C. Rogers, same place. Filed Nov. 20, 1896. Serial No. 612,808. (No model.)



Claim.—1. A system of electric locomotion comprising two line conductors, electrically-propelled vehicles connecting therewith, and current-collectors for the vehicles traveling upon and supported by one conductor and provided with a folding contact engaging the other conductor, said contact being adapted to be withdrawn to permit another collector to pass.

2. A system of electric locomotion comprising two line conductors, electrically-propelled vehicles connecting therewith, and current-collectors for the vehicles traveling upon and securely connected with one conductor, oppositely-moving collectors being connected to opposite conductors, a folding, insulated, and elastically-yielding arm on each collector engaging the companion conductor and leading current therefrom, and guide-rails to automatically force aside the yielding contact-arms to permit two trolleys to pass.

3. A system of electric locomotion comprising two line conductors, electrically propelled vehicles connecting therewith, and current-collectors for the vehicles traveling upon and securely connected with one conductor, oppositely-moving collectors being connected with opposite conductors, a folding, insulated, and elastically-yielding arm on each collector engaging the companion conductor and leading current therefrom, and metallic guide-rails in electric connection with the collector-frame to force aside the yielding contact-arms to permit the trolleys to pass and preserve electric connection with the line conductors.

4. A current-collector or trolley provided with means for supporting it on one conductor of a supply system and having an elastically-yielding arm carrying a contact to engage a companion conductor, and means for guiding the arm of a similar trolley on the companion conductor around the first-mentioned trolley.

5. A current-collector or trolley provided with means for supporting it on one conductor of a supply system and having an elastically-yielding arm carrying a contact to engage a companion conductor, and means for guiding the arm of a similar trolley on the companion conductor around the first-mentioned trolley while preserving the circuit practically unbroken.

6. A current-collector or trolley provided with means for supporting it on one conductor of a supply system, an elastically-yielding arm adapted to make contact with a companion conductor, and a guide-rail on the trolley-frame to force aside the arm of a trolley on the companion conductor thereby permitting the trolleys to pass one another, substantially as set forth.

7. A current-collector or trolley mounted to roll on one conductor of a supply system, an elastically-yielding arm adapted to make contact with the companion conductor, and a guide-rail on the trolley-frame to force aside the arm of a trolley on the companion conductor, thereby permitting the trolleys to pass one another.

8. A current-collector or trolley provided with means for mechanically securing it to one conductor of a supply system, a yielding arm adapted to make contact with the companion conductor, and a guide-rail on the trolley-frame to force aside a similar yielding arm of a trolley on the companion conductor, thereby permitting the trolleys to pass one another.

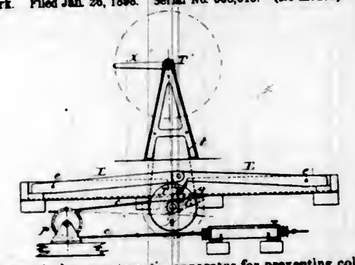
9. A current-collector or trolley provided with grooved current-collecting rollers holding it in mechanical engagement with one conductor of an electric supply system, a yielding arm insulated from the rollers making contact with the companion conductor, and a guide-rail on the trolley-frame for deflecting a similar yielding arm on passing an oppositely-moving trolley rolling on the companion conductor.

10. A current-collector or trolley supported by one conductor of an electric supply system, a yielding insulated arm engaging the companion conductor, and a metallic guide-rail secured to the trolley and electrically connected with the supporting-conductor and adapted to engage the said yielding arm while two trolleys are passing one another, whereby the circuit through a motor-driven vehicle may be preserved without material interruption while two oppositely-moving trolleys are passing one another.

11. A current-collector or trolley provided with grooved current-collecting rollers holding it in mechanical engagement with one conductor of an electric supply system, means for locking or unlocking the rollers to the conductor, and an insulated contact adapted to engage the companion aerial conductor.

12. A current collector or trolley provided with collecting-contacts mechanically locked in engagement with one conductor of an electric supply system, an insulated contact adapted to engage the companion aerial conductor, and a key accessible for operation from beneath for unlocking the trolley-contacts from the conductor to which they secure the trolley.

607,303. AUTOMATIC APPARATUS FOR PREVENTING COLLISIONS ON RAILWAYS. JOHANNES VERNEMREN, Hellerup, Denmark. Filed Jan. 26, 1898. Serial No. 668,013. (No model.)



Claim.—1. In an automatic apparatus for preventing collisions of railway-trains, of the kind herein referred to, an appliance situated at a suitable distance from the stopping-place at the side of the track and at such a height above the same that it can engage with an arm extending from the side of the locomotive arriving at that point and thereby actuate the brakes, such appliance being brought into the operative position by means of a mechanism at the stopping-place, which is actuated by an entering train, substantially as described and as illustrated in the accompanying drawings.

2. An automatic train-protecting mechanism, comprising a releasing mechanism located at a station and adapted to be actuated by engagement of the train therewith, a movable arm upon the train projecting beyond the sides thereof, a shifting member mounted adjacent to the track and distant from the station, and adapted in one position to engage the movable arm upon the passing train, a local shifting means for said shifting member and connections from said means to the releasing mechanism for restraining the same.

3. An automatic train-protecting mechanism, comprising a releasing mechanism located at a station and adapted to be actuated by engagement of a train therewith, a movable arm upon the train projecting beyond the sides thereof, a shifting member mounted adjacent to the track and distant from the station and adapted in one position to engage the movable arm upon the passing train, a weight attached to said shifting member to shift it into operative position, and connections from said weight to the releasing mechanism, whereby the same may be controlled.

4. An automatic train-protecting mechanism, comprising a releasing mechanism located at a station and adapted to be actuated by engagement of the train therewith, a movable bar upon the train projecting beyond the sides thereof, a shifting bar mounted upon pivoted arms adjacent to the track and distant from the station, and adapted in one position to lie at an incline with the direction of the rails, and adapted to engage the movable bar upon the train, and connections from said shifting bar to the releasing mechanism whereby said shifting mechanism is controlled.

5. An automatic train-protecting mechanism, comprising a releasing mechanism located at a station and adapted to be actuated by engagement of the train therewith, a movable bar upon the train projecting beyond the sides thereof, a shifting member mounted adjacent to the track and distant from the station, comprising a bar mounted upon arms of unequal length, whereby in one position said bar is held at an angle to the direction of the track and is adapted to engage the bar projecting from the passing train, a weight connected to said arms to swing the bar into operative position, and connections from said arms to the releasing mechanism.

6. An automatic train-protecting mechanism, comprising a releasing mechanism located at a station and adapted to be actuated by engagement of the train therewith, a reciprocable bar mounted upon the train and projecting beyond the sides thereof, a shifting member mounted adjacent to the track and distant from the station, comprising a support alongside the track, a shaft on said support parallel with the rails, arms of unequal length fixed to the shaft, a bar fixed to the outer ends of the arms and adapted in one position to engage the reciprocable bar projecting from the train, a sprocket-wheel upon the shaft, a chain upon said wheel, a weight connected to said chain, and connections from said chain to the releasing mechanism.

7. An automatic train-protecting mechanism, comprising a reciprocable bar mounted upon a train and projecting beyond the sides thereof, a movable actuating member therefor located distant from the station, pivoted arm located at the station, connections from said arm to the actuating member, whereby the position of the latter may be controlled by the former, a movable bar adapted to normally restrain the pivoted arm and also adapted to be engaged by the moving train to release the bar, and a weight connected to the movable actuating member to throw it into operative position.

8. An automatic train-protecting mechanism, a reciprocable bar mounted upon a train and projecting beyond the sides thereof, a movable actuating member therefor located distant from the station, a shaft located at the station and extending along the track, a releasing-arm on said shaft capable of rotation with the shaft, a cam-arm upon said shaft, bars supported in an inclined position and adapted to be engaged and depressed by a passing train, one of said bars engaging the cam to hold the releasing-arm in a fixed position, a cable connecting the end of the releasing-arm with the distant actuating member, and a weight acting upon the actuating member to move it, said cable at the end which is attached to the releasing-arm extending past the shaft center and a little to one side thereof, and the inclined bars bearing upon the cam so as to throw the cable beyond the center line of the shaft when depressed by a train.

9. An automatic mechanism for operating a signal upon a train, comprising a laterally-projecting bar having a contact engagement in one direction with the ordinary signal-operating mechanism, and an inclined bar adjacent to the track and capable of engaging the projecting bar to operate the signal.

10. An automatic mechanism for operating a signal upon a train, comprising a laterally-projecting bar having a contact engagement in one direction with the ordinary signal-operating mechanism, a spring acting to hold the bar back, from its operative position, an inclined bar adjacent to the track and capable of engaging the projecting bar to operate the signal, and means for moving the inclined bar into and out of its operative position.

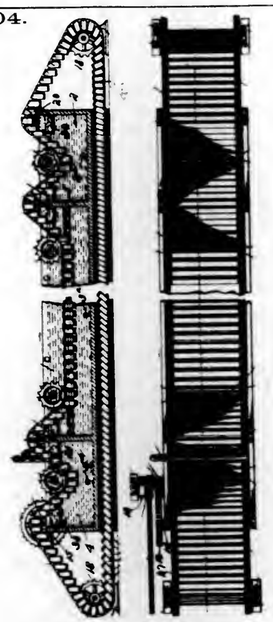
607,304. BEER-PASTEURIZING APPARATUS. EDWARD WAGNER, St. Louis, Mo. Filed Jan. 3, 1898. Serial No. 665,350. (No model.)

Claim.—1. In an apparatus of the character described, the combination of a tank, a pair of endless chains, sprocket-wheels in engagement with which said chains are adapted to travel, bottle-receiving receptacles pivoted to said chains, and means for driving said chains, substantially as described.

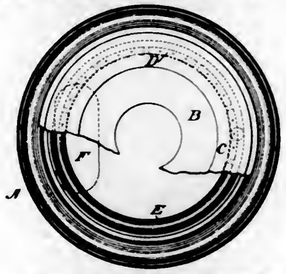
2. In an apparatus of the character described, the combination of a tank, a pair of endless chains, sprocket-wheels in engagement with which said chains are adapted to travel, bottle-receiving receptacles pivoted to said chains, said receptacles comprising U-shaped bars and cross-bars arranged on corresponding sides of said U-shaped bars, and means for driving said chains, substantially as described.

3. In an apparatus of the character described, the combination of a tank divided into three compartments for warm, hot and cold water, a conveyer arranged to travel through said compartments, said conveyer comprising a pair of endless chains, and bottle-receiving receptacles pivoted to said chains, sprocket-wheels in engagement with which said chains are adapted to travel, means for driving said chains, and a spray-pipe arranged to direct a spray of water onto the bottles in the conveyer after they leave the hot-water compartment of said tank, substantially as described.

607,304.



607,305. SANITARY CUSPIDOR. JOHN A. W. WALKER, New York, N. Y. Filed May 20, 1897. Serial No. 637,466. (No model.)



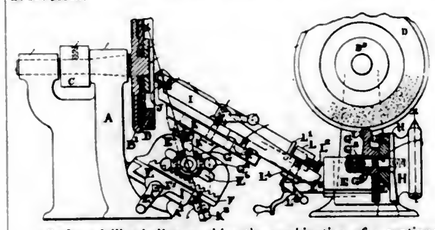
Claim.—1. The combination with a cuspidor having a slotted, funnel-shape top, of an inlet-pipe; a circular, perforated pipe within said cuspidor and connected with said inlet-pipe; perforations in said circular-pipe adjacent to the slots in said funnel-shape top; a conical ring above said funnel-shape top and concentric thereto; and an outlet-pipe, substantially as described.

2. A cuspidor having an inlet-pipe, a valve normally closing said pipe and provided with a rod, pressure upon which opens said valve; a circular, perforated pipe within said cuspidor and connected with the inlet-pipe; a funnel-shape top concentric to the circular pipe and having slots in the same plane with the perforations in the circular pipe; a conical ring above said funnel-shape top and concentric thereto; and an outlet-pipe, substantially as described.

607,306. TWIST-DRILL-GRINDING MACHINE. OAKLEY S. WALKER, Worcester, Mass. Filed Sept. 13, 1897. Serial No. 651,557. (No model.)

Claim.—1. In a drill-grinding machine the combination of a continuous V-shaped trough for holding the drills, a longitudinally-adjustable tail-stock fitting the said trough for feeding the drills to a grinding-wheel, and an adjustable drill-lip rest for setting the drill in proper position, the direction of the lip-rest adjustment being across the V-shaped trough to provide for a variation of the clearance of the drill-lips substantially as shown and described.

2. In a drill-grinding machine, the combination of a slotted V-shaped trough for holding the drills, the said trough being provided with parallel grooves longitudinally, a tail-stock adjustably mounted in the said trough and clamped by a screw through said slot and a bridge-piece or washer spanning said slot and provided with lugs or ways fitting said grooves, said bridge-piece being perforated for the tail-stock binding-screw and preventing the spreading of the trough when said binding-screw is tightened, all substantially as set forth.



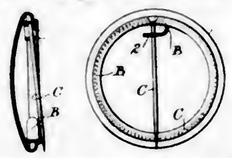
3. In a drill grinding machine the combination of a continuous V-shaped trough for holding the drills and the feeding tail-stock, a reversible drill-lip rest and a pivoted drill-holder support provided with V-shaped ways at the top upon which the drill holder trough is adapted to be adjusted as and for the purpose described.

4. In a drill-grinding machine the combination of an adjustable drill-lip rest, a V-grooved drill-holder with beveled end and a pivoted drill-holder support provided with a stop or pin from which, measuring from the said beveled end of drill-holder the setting of the drill-holder is determined for the different-sized drills substantially as shown and described.

5. In a drill-grinding machine the combination with the drill-holder and drill-holder support of a pivot and longitudinal feed-slide whose line of adjustment away from the grinding-wheel is inclined downward from a horizontal plane for the purpose above set forth.

6. In a drill-grinding machine the combination of a V-grooved drill-holder, a pivoted drill-holder support, and a longitudinally-adjustable pivot-slide, adjustable obliquely from a vertical plane substantially as shown and described.

607,307. BADGE. JAMES V. WASHBURNE, Waterbury, Conn. Filed Sept. 22, 1897. Serial No. 652,574. (No model.)



Claim.—1. The combination with the badge having a hollow rim, of a separate attaching-pin, an expansible arc-shaped strip of sheet metal adapted to being passed into and held by the rim of the badge and having a hole for the passage of the pin and a returned bent portion acting to steady the pin in its relation to the spring-strip, substantially as specified.

2. The combination with the badge having a hollow rim, of an expansible arc-shaped strip of sheet metal passing into and held by the rim and having a returned bent portion perforated, and a separate attaching-pin passing through holes in the spring, substantially as set forth.

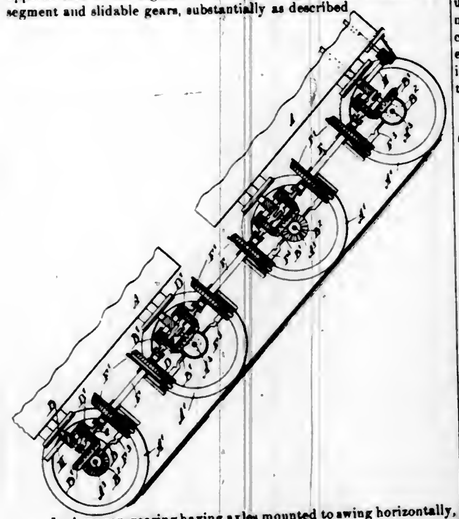
607,308. WAGON STEERING AND DRIVING MECHANISM. LEIGH WATKINS, Denver, Colo. Filed Aug. 16, 1897. Serial No. 648,436. (No model.)

Claim.—1. A wagon-gearing having axles mounted to swing horizontally, segment-gears attached to the axles, and extending horizontally toward each other, and a horizontal shaft having a gear slidingly keyed upon each end and meshing with the segment-gears, substantially as described.

2. A wagon-gearing having axles mounted to swing horizontally, segment-gears attached to the axles and extending horizontally toward each other, a horizontal shaft having a gear slidingly keyed upon each end and meshing with the segment-gears, and means for holding the segment-gears and sliding gears in contact, substantially as described.

3. A wagon-gearing having axles mounted to swing horizontally, segment-gears attached to the axles and extending horizontally toward each other, and a horizontal shaft having a gear slidably mounted on each end thereof and meshing with the segment-gears, said sliding gears and segment-gears having one a rib and the other a groove, which engage to lock the two and prevent relative movement longitudinally of the shaft, substantially as described.

4. A wagon-gearing having axles mounted to swing horizontally, segment-gears attached to the axles and extending horizontally toward each other, a horizontal shaft having a gear slidably keyed upon each end and meshing with the segment-gears, a bracket supported from the shaft, and a roller carried by the bracket and engaging the opposite side of the segment and maintaining contact between the segment and slidable gears, substantially as described.



5 A wagon-gearing having axles mounted to swing horizontally, segment-gears attached to the axles and extending horizontally toward each other, a horizontal shaft having a gear slidably mounted on each end thereof and meshing with the segment-gears, said sliding gears and segments having one a rib and the other a groove which engage to lock the two and prevent relative movement longitudinally of the shaft, a bracket supported from the shaft, and a roller carried thereby and engaging the opposite side of the segment and maintaining contact between the segment and slidable gears, substantially as described.

6. A wagon-gearing having axles mounted to swing horizontally, segment-gears attached to the axles and extending horizontally toward each other, a horizontal shaft having a gear slidably keyed upon each end and meshing with the segment-gears, and also having similar segment gear, gear-wheel and shaft upon the outer side of the axle by which two similar wagons may be connected and simultaneously controlled, substantially as described.

7. A wagon-gearing having axles mounted to swing horizontally, segment-gears attached to the axles, and extending horizontally toward each other, a horizontal shaft having a gear slidably keyed upon each end and meshing with the segment gears, a steering-segment fixed to one of said axles, a pinion meshing therewith, and a hand-wheel connected to said pinion, substantially as described.

8. A wagon-steering device, comprising axles mounted to swing horizontally, and connections between adjacent axles upon different wagons, comprising segment-gears fixed to the axles, longitudinal shafts, gears upon each end of said shafts and meshing with the segment gears, and hand-controlled means for turning one of said axles, substantially as described.

9. A wagon-driving mechanism, comprising wheels locked to the axles, each axle having a bevel-gear secured thereto and alternately upon opposite sides of the center of the axles, a bevel-gear mounted upon a vertical shaft and meshing with the axle-gear, said gear being double and having a toothed section upon each side, a shaft extending lengthwise of the wagon between the axles and having gears on each end meshing with the gear upon the vertical shaft, and means for applying power to one of said axles, substantially as described.

10. A wagon-driving mechanism, comprising wheels locked to the axles, each axle having a bevel-gear secured thereto and alternately upon opposite sides of the center of the axles, a bevel-gear mounted upon a vertical shaft and meshing with the axle-gear, said gear being double and having a toothed section upon each side, a yoke pivoted concentric to said vertical shaft, a horizontal shaft journaled in said yoke and having a gear-wheel meshing with the gear on the vertical shaft, horizontal shafts extending lengthwise of the wagons, and universal couplings connecting said horizontal shafts, substantially as described.

11. A wagon having axles mounted to swing horizontally, clutches upon the axles adapted to normally lock each wheel to the axle, a reach connecting front and rear axles, and connections from the reach to the clutches, whereby one wheel is automatically disconnected from the axle when turning a curve, and connected thereto when the wagon is straightened out, substantially as described.

12. A wagon having axles mounted to swing horizontally, clutched upon the axles adapted to normally lock each wheel to the axle, means connecting the axles to swing them together, pivoted levers controlling the clutches, cams adapted to engage said levers to disengage the clutches, and links connecting said cams with the steering mechanism to automatically disengage the inner wheels when turning a curve, substantially as described.

607,309. DUST-PAN. HAMILTON WEIR, La Porte, Ind. Filed Feb. 7, 1898. Serial No. 669,426. (No model.)



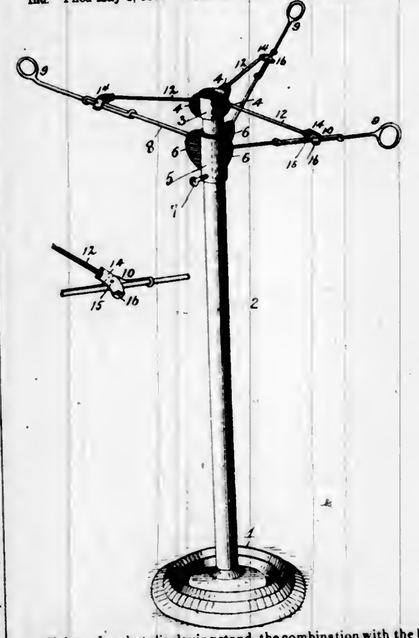
Claim.—1. A dust-pan bent or folded from a blank and consisting of a base-plate, side plates, a front extension, back-turned over the front end of the base-plate and secured to the side plates, and back-sections extended from the side plates and secured together and to the base-plate substantially as set forth.

2. A blank for a dust-pan consisting of the base-plate having lateral wings to form the sides of the pan, such wings being extended rearwardly to form the sections of the back of the pan and the rear extension extending from the base-plate between said back extensions to form the foot-piece, the blank being provided with connecting-tongues and slotted to receive such tongues whereby the parts may be united without soldering substantially as described.

3. A dust-pan having its back formed in sections meeting midway between the sides of the pan and having at their upper edges handle-sections which extend beyond the meeting point of the back-sections and overlap to form a handle substantially as set forth.

4 A dust pan having a foot-piece projecting rearwardly from its base, and a back composed of sections meeting midway between the sides of the pan and having extensions over and secured to the rearwardly-projecting foot-piece substantially as set forth.

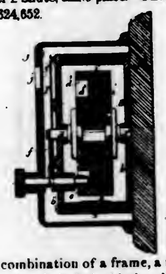
607,810. HAT-DISPLAYING STAND. LAURA WELLOCK, Delphi, Ind. Filed May 8, 1897. Serial No. 635,707. (No model.)



Claim.—In a hat-displaying stand, the combination with the base, the standard and the fixed collar at the upper end thereof provided

with apertured lugs, of the sliding collar having corresponding lugs, the outwardly-extending sectional arms connected with said sliding collar, and the inner ends of each section formed with loops through which the other section passes, the links provided with bifurcated lugs engaging with said arms and the set-screw passing therethrough, substantially as described.

607,311. ELECTRIC-CURRENT CONTROLLER. ERNEST E. WEBNER, Philadelphia, Pa., assignor, by mesne assignments, to S. Eldred Gilbert and Samuel I. Shute, same place. Filed Feb. 23, 1897. Serial (No model.) No. 624,652.



Claim.—1. The combination of a frame, a rotatable carrier journaled in said frame, a hand-shaft in frictional contact with the carrier, a segment of resistance material on the carrier, a brush in contact with the resistance material, a hand or pointer adapted to turn with the carrier and a dial fixed in relation to the carrier and its hand, substantially as described.

2. The combination of the frame, a carrier journaled therein and having an annular groove in one face thereof, a hand-shaft having a friction-roller bearing against one face of the groove in the carrier and by which the carrier is turned, segmental resistance material on the carrier, a hand, and a dial, substantially as described.

3. The combination of a frame, a carrier mounted therein, a hand-shaft for turning the carrier, a hand traveling with the carrier, a dial, said carrier having a segmental groove in its periphery, a homogeneous resistance compound adapted to the groove and a brush fixed to the frame and in contact with the resistance material, substantially as described.

4. The combination of a frame, a carrier journaled in the frame, an indicator on the carrier, means for driving the carrier, a segmental groove in the periphery of the carrier and a segmental groove at the back of the carrier, resistance compounds in each of said grooves, one of said compounds being in series with the shunt-circuit and a brush resting in contact with the other compound, substantially as described.

5. The combination of the frame, a carrier D journaled thereon and having a hand, a fixed dial over which the hand travels, an annular groove in the face of the carrier, a hand-shaft having its bearings in the frame, a frictional wheel mounted on one end of said shaft and in frictional contact with one of the walls of the groove in the face of the carrier, a segmental resistance-plate within the groove in the periphery of the carrier, a brush mounted on the frame and resting against the periphery of the carrier, and a segmental strip of resistance material at the back of the carrier, with a case inclosing the entire mechanism and having a segmental opening through which the dial is exposed, the hand-shaft extending through the case and having a knob by which it is turned, substantially as described.

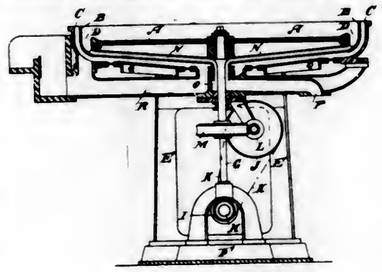
6. The combination of the rotatable carrier for the resistance material, with separated bearing-spindles for said carrier, one of said spindles being in electrical connection with one pole of the generator and the other with the other pole of the same, substantially as described.

7. The combination of the frame, a carrier mounted therein, and having a segmental groove in its periphery, a homogeneous resistance compound contained in the groove, a brush in contact with the resistance material, means for turning one in respect to the other, a stationary indicator and a pointer connected to the moving part and adapted to travel over the indicator, substantially as described.

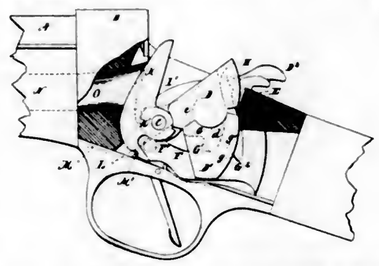
8. The combination of a carrier having a segmental groove in its periphery and a segmental groove in its back, resistance compounds in each of said grooves, one of said compounds being in series with a shunt-circuit, a brush resting in contact with the other compound, and means for moving either the carrier or the brush, substantially as described.

607,312. PULP-STRAINER FOR PAPER-MAKING MACHINES. ALEXANDER L. WESTWOOD, Edinburgh, Scotland. Filed Feb. 9, 1898. Serial No. 669,633. (No model.)

Claim.—In a rotary pulp-strainer, the combination of a fixed vat, a rotary frame carrying horizontal strainer-plates, a substantially vertical axis, on which said frame rotates, a circular channel on said frame on the outer side of the strainer-plates, a refuse-discharge pipe leading from the center of the frame, pipes leading from the aforesaid channel to the said discharge-pipes, a pulp-discharge pipe having a cup-shaped portion extending under the rotary strainer-plates, a pulsating diaphragm in said cup-shaped portion, means for pulsating said diaphragm and means for rotating the strainer-carrying frame.



607,313. BREECH-LOADING FIREARM. JAMES M. WHITTEMORE, Washington, D. C. Filed Aug. 16, 1884. Serial No. 140,740. (No model.)



Claim.—1. In combination with a pivoted breech-block and the locking-brace pivoted thereto, projecting from the rear side thereof, the hammer pivoted on a pin below the pivot of the breech-block, and having a portion which when the breech-block and brace are in position to leave the breech open engages a part of the locking-brace and forces the latter upward, closing the breech-block and camming the locking-brace up into locking position as the hammer flies forward to fire the cartridge, substantially as and for the purpose set forth.

2. In combination with the pivoted breech-block, the locking-brace pivoted thereto slotted vertically and centrally at its rear end and between the arms thus formed provided with a rearwardly-projecting tongue, the hammer pivoted below the pivot of the breech-block and provided with a recess adapted to fit the tongue on the brace when the brace is up in locking position, and a suitable lever-arm whereby the brace can be rocked down off of its recoil-surface, substantially as and for the purpose described.

3. In combination with the pivoted breech-block, the locking-brace pivoted thereto provided with a suitable lever-arm, and slotted vertically and centrally at its rear end and formed between the arms thus formed with a cam-tongue, the hammer pivoted below the breech-block provided with a recess with an inclined inner and lower side adapted to receive and fit the tongue on the locking-brace when said brace is up in position to lock the block, and the hammer is at the forward limit of its stroke, substantially as and for the purpose described.

4. In combination with the pivoted breech-block, the locking-brace pivoted thereto slotted vertically and centrally at its rear end, and provided between the arms thus formed with a cam-tongue, the hammer pivoted below the breech-block and playing up through the slot in the rear end of the brace, provided with a cam-surface up over which the tongue on the brace rides when said brace is rocked down on its pivot, whereby the hammer is cammed back to withdraw its firing end and pin from the front of the breech-block, and is held back as long as the brace is below the recoil-surface, substantially as and for the purpose described.

5. In combination with the pivoted breech-block the locking-brace pivoted to the rear side thereof, provided with a suitable lever-arm and a rearwardly-projecting cam-tongue and adapted to rock on the breech-block just far enough to carry its rear end off the recoil-surface, and the hammer pivoted below the breech-block pivot provided with a recess adapted to fit the tongue on the brace, the inner side of which is cam-shaped so that the end of the tongue rides up over and off of it onto the top of the hammer-arm just after the brace end has passed down off the recoil-surface, and a face on the hammer pressing upward on the tongue at all points of the travel of the brace after it is below the recoil-surface, substantially as and for the purpose described.

6. In combination with the pivoted breech-block, and locking-brace pivoted thereto at its rear side, the tongue or projection on the brace situated in a central longitudinal plane through the brace at right angles to its axis of motion, the hammer pivoted below the pivotal center of the breech-block and engaging the tongue or projection to automatically throw the breech-block and brace up into position to close and lock the breech when the gun is fired with the block down, substantially as and for the purpose described.

7. In a breech-loading gun, the means for holding the cartridge in the barrel when the breech is open which consists in a spring which bears against the periphery of the flange of the cartridge to hold it by friction, substantially as shown and described.

8. In a breech-loading gun a spring secured in a recess in the barrel and at its free end adapted to bear against the flange of a cartridge inserted in the barrel to hold it in place by friction, substantially as and for the purpose described.

9. In a breech-loading gun the means for holding a cartridge in place in the barrel when the breech is open, which consists of a spring secured in a recess in the under side of the barrel and at its free end projecting up into the rabbet for the cartridge-flange, the rear side or edge of such end being beveled or rounded to allow the cartridge to be freely inserted in place, substantially as shown and described.

10. In a magazine-gun, in combination with the cartridge-receiving magazine having its mouth turned rearward, means to guide the cartridges upward and rearward outside of the receiver, and a feed-stop at a point forward of the magazine-mouth operable by a finger of the hand placed to receive a cartridge from the magazine, substantially as and for the purpose shown.

11. In a magazine-gun having a swinging breech-block in combination with the magazine below the barrel provided with a suitable ejecting-spring and the passage-way extending rearward and upward from the magazine-mouth to the front of the breech-bolt when it is swung back and down, means for releasing the cartridges successively from the magazine as desired, in position to be operated by one or more of the fingers of the hand placed over the passage and block, substantially as and for the purpose described.

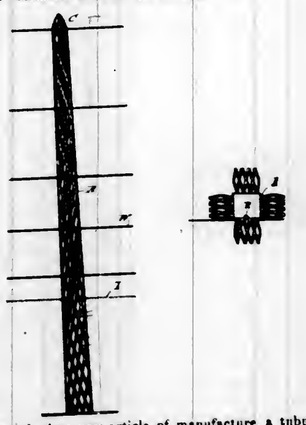
12. In a magazine-gun, in combination with the magazine and the spring, ejecting means therein, a discharge-passage leading upward and rearward to guide the cartridges up over the open breech-block, and a movable feed-stop for the magazine having its head situated at the side of the receiver in position to be operated by one or more of the fingers of the hand placed behind the mouth of the discharge-passage, substantially as and for the purpose described.

13. In combination with the magazine provided with suitable spring ejecting mechanism, the reciprocating stop extending across the top of the magazine-passage, provided with the lugs for successively engaging the flanges of the cartridges and with a head attached eccentrically to its shank and extending rearward therefrom and fitting in a suitably-shaped recess in the receiver side, a similarly-shaped turn-button centrally pivoted on the head and adapted to be turned to overlap the face of the receiver at the sides of the recess therein, and a spring tending to keep the stop forced out with its head flush with the receiver side, substantially as and for the purpose described.

14. In combination with the reciprocating magazine-stop, the head attached eccentrically to the shank thereof and extending rearwardly therefrom, the recess in the receiver side shaped to receive the stop head, the spring around the shank in said recess tending to throw the stop outward, the nut on the other end of the stop-shank playing in a recess in the receiver and adapted to limit the outward movement of the stop-shank under stress of the spring so that the stop-head will normally be flush with the receiver side and the turn-piece of the same shape as the head and adapted to be turned to overlap and rest upon the receiver-face, substantially as and for the purpose set forth.

15. The reciprocating magazine-stop having a head normally flush with the receiver side elliptical in shape and attached at or near its front end to the end of the stop-shank, the recess in the receiver in which the head fits and plays, and the turn-piece of the same shape as the head pivoted centrally on the outer face thereof, substantially as shown and described.

607,314. FENCE-POST. WILLIAM E. WILLIAMS, Chicago, Ill., assignor of one-half to Wallace Greene, Washington, D. C. Filed Apr. 1, 1898. Serial No. 676,098. (No model.)

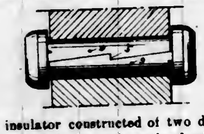


Claim.—1. As a new article of manufacture, a tubular post of thin, soft, or malleable, metal provided with numerous independent slits whose opposing faces are permanently separated, substantially as set forth; whereby the post is enlarged without increase of stock, adapted for attachment of horizontal wires at all heights, and for allowing the earth to pass freely into the interior of the post.

2. A tubular metal fence-post having its wall made up of numerous oppositely-inclined soft-metal strips integrally united at their points of intersection.

3. A tubular fence-post having its wall made up of oppositely-inclined slightly-separated, flat, metal strips integrally united at their points of intersection and each having the plane of its middle portion inclined to the general surface of the portion of the post in which the strip lies.

607,315. INSULATOR. CHARLES L. WINGARD, Walla Walla, Wash., assignor of one-half to Luella Hulme Wingard, same place. Filed Apr. 13, 1898. Serial No. 677,420. (No model.)



Claim.—1. An insulator constructed of two duplicate sections matching to form a tubular body, each section having its edges provided with interlocking shoulders, and each section also having a head provided with a notch leading to the bore thereof, through which notch the conductor may be passed, whereby the insulator may be placed on the conductor after the conductor is in place.

2. An insulator for electrical conductors, the insulator consisting in two duplicate sections matching with each other to form a tube, each section having interlocking shoulders on its edges, by which the sections are held together, and each section also having a head, the heads being provided with bevel-bores through which the conductor passes, and with notches leading to the bores to permit the application of the insulator to the conductor, and the insulator being provided with teats or projections adapted to be embedded in the material holding the insulator, to prevent the displacement of the insulator.

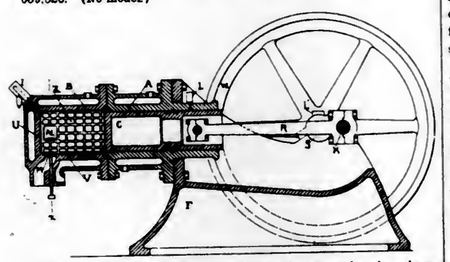
607,316. COUPLING-NUT FOR STAND-BOILERS. FREDERICK V. WINTERS, New York, N. Y. Filed Sept. 25, 1897. Serial No. 653,054. (No model.)



Claim.—The combination with a boiler formed with an aperture having a recess therein, of a coupling-sleeve formed with an annular head-flange, and a lug to engage in the recess of the aperture in the boiler, a soft-metal washer between the head-flange and the boiler, a soft-metal washer on the sleeve against the face of the boiler, a hard-metal washer having a beveled portion contiguous to the sleeve, and a clamping-nut formed with a beveled portion contiguous to the

sleeve, whereby the metal of the soft washer is clamped tight about the sleeve and at the juncture with the boiler.

607,317. **INTERNAL-COMBUSTION ENGINE.** GEORGE L. WOODWORTH, Stanford University, Cal. Filed June 8, 1897. Serial No. 639,820. (No model.)



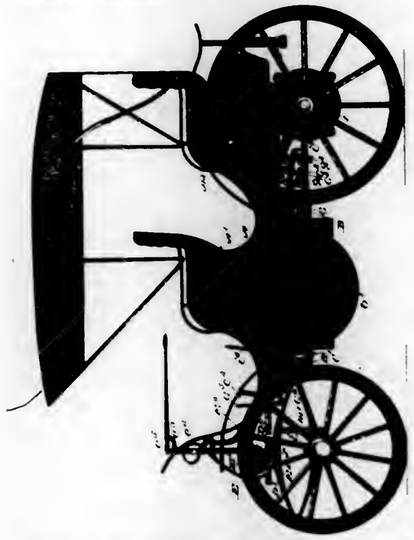
Claim.—1. In an internal combustion engine, a combustion-chamber made with integral recesses or pits in the interior surface of its walls, which said recesses or pits are filled or inlaid with vitrifiable enamel, substantially as described.

2. In an internal-combustion engine, a combustion-chamber made with integral crossing ribs or ridges on its interior surfaces, and the intervening spaces filled or inlaid with vitrifiable enamel, substantially as described.

3. In an internal-combustion engine, the inner face of the pistons made with integral recesses or pits therein, which said recesses or pits are filled or inlaid with vitrifiable enamel, substantially as described.

4. In an internal-combustion engine, the inner face of the cylinder head or cover made with integral recesses or pits therein, which said recesses or pits are filled or inlaid with vitrifiable enamel, substantially as described.

607,318. **MOTOR-VEHICLE.** WILLIAM O. WORTH, Chicago, Ill., assignor of two-thirds to William R. Donaldson, Louisville, Ky., and Henry W. Kellogg, Battle Creek, Mich. Filed Sept. 22, 1897. Serial No. 652,812. (No model.)



Claim.—1. In a motor-vehicle the combination of the driven shaft, the rear axle and the gearing for driving the same, with the mechanism for transmitting variable motion from the driven shaft to said gearing, consisting of the sectional shaft, a fixed pinion on one section of the shaft, and a loose gear on the other section thereof, the amplifying gearing between said pinion and loose gear, and the clutch splined on that section of the shaft carrying loose gear and adapted to be shifted into engagement either with the pinion or the said loose gear for the purpose and substantially as described.

2. In a motor-vehicle the combination of the rear axle made in sections, wheels on the outer ends thereof, opposite bevel-gears on the inner ends of said sections; a large bevel-gear intermediate said opposite beveled gears, diametrically opposite pinions journaled in slots in said large bevel-gear and meshing with both said opposite bevel-gears, and a bevel-pinion meshing with said large bevel-gear; with a sectional housing inclosing all said gears and provided with tubular extensions inclosing and supporting the axles, said axles having anti-friction-bearings in said tubular extensions, for the purpose and substantially as described.

3. In a motor-vehicle the combination of the main disk driven by the engine, a shaft lying parallel with the outer face of said disk and movable toward or from the same, a second disk on said shaft, and means for moving said shaft so as to cause the disks to contact or separate; with an idler pulley or wheel also mounted on the said shaft and adapted to counteract the pressure of the second disk against the main disk, substantially as described.

4. In a motor-vehicle the combination of the main disk, means for rotating it; a second disk adjustably mounted upon a shaft lying beside the main disk, mechanism for moving said shaft and disk thereon toward or from the main disk, and mechanism for shifting the disk longitudinally upon said shaft, with an idler pulley or wheel also mounted on the said shaft and adapted to counteract the pressure of the second disk against the main disk, substantially as described.

5. In a motor-vehicle the combination of the main friction-disk and mechanism for driving the same, with a rock-shaft lying beside the disk having its ends bent inward, a second or driven shaft journaled in the ends of said rock-shaft, a friction-disk splined on said driven shaft and adapted to contact the face of the main disk, the levers and connections for rocking said shaft, and mechanism for shifting said disk longitudinally upon the driven shaft; with mechanism for transmitting motion from said driven shaft to the axles or wheels, substantially as described.

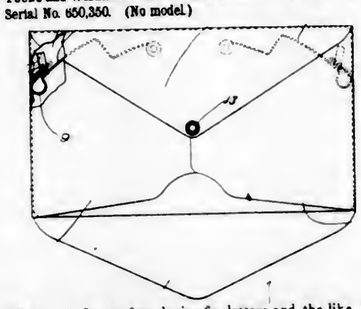
6. In a motor-vehicle the combination of the driving-shaft, and the adjustable gear or disk thereon, with means for shifting said gear longitudinally on said shaft, comprising a rack-bar, a gear meshing therewith, a vertical tube, a tubular rack thereon meshing with a pinion beside said gear, and a vertically-movable rod in said tube connected with said tubular rack by a pin passed through slots in the tube, all substantially as and for the purpose described.

7. In a motor-vehicle the combination with the power mechanism, and the steering mechanism of the controlling devices comprising a rotatable tube, having an arm on its lower end connected to the steering mechanism, a vertically-movable rod within said tube, a tubular rack exterior to the tube connected to said rod by pins projecting through slots in the tube, and gearing operated by said tubular rack controlling the power mechanism, with a lever fulcrumed on a bracket on said tube and pivoted to the said rod, whereby the rod may be raised or lowered, or the tube rotated separately or together, for the purpose and substantially as described.

8. In a motor-vehicle the combination of the front axle, the spindles pivoted thereto, and the steering-arms projecting from said spindles with the rotatable steering-arm, and the spring-rods connecting said spindle-arms to said steering-arm, for the purpose and substantially as described.

9. In a motor-vehicle the combination of the front axle, the yokes pivoted thereto having spindles for the wheels and steering-arms, substantially as described; with the rotatable steering-post, having a crank-arm on its lower end, and the spring-rods connecting said crank-arm to said steering-arms, for the purpose and substantially as described.

607,319. **SAFETY DEVICE FOR LETTERS, &c.** EDWARD T. YOUNG and WILLIAM A. MACDONALD, Boston, Mass. Filed Sept. 2, 1897. Serial No. 650,350. (No model.)



Claim.—1. In a safety device for letters and the like, the combination, with a card or sheet, of a movable arm applied thereto

with its outer extremity projecting slightly beyond the edge thereof, the said arm having capacity for a limited amount of movement and being adapted to engage with the inside of the fold of an inclosing envelop in the retraction of the card or sheet, and to prevent such retraction from being completed, substantially as described.

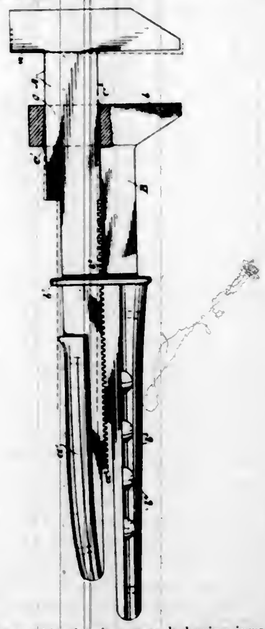
2. In a safety device for letters and the like, the combination, with a card or sheet, of a pair of movable arms applied thereto with their outer extremities projecting slightly beyond opposite edges thereof, the said arms having capacity for a limited amount of movement and being adapted to engage with the insides of the end folds of an inclosing envelop in the retraction of the card or sheet and prevent such retraction from being completed, substantially as described.

3. In a safety device for letters and the like, the combination with a card or sheet, of a movable arm applied thereto with its outer extremity projecting slightly beyond the edges thereof, the said arm having capacity for a limited amount of movement and being adapted to engage with the inside of the fold of an inclosing envelop in the retraction of the card or sheet to prevent such retraction from being completed, and also having the guard adjacent to the engaging portion of the arm, substantially as described.

4. In a safety device for letters and the like, the combination, with a card or sheet, of a pair of movable arms applied thereto with their outer extremities projecting slightly beyond opposite edges thereof, the said arms having capacity for a limited amount of movement and being adapted to engage with the insides of the end folds of an inclosing envelop in the retraction of the card or sheet and prevent such retraction from being completed, and also having the guards adjacent to the engaging portions of the arms, substantially as described.

5. In a safety device for letters and the like, the combination of an envelop having its side and bottom flaps secured together by a fastener incapable of temporary detachment and replacement, with a card or sheet designed for inclosure therein and provided with a movable arm applied thereto with its outer extremity projecting slightly beyond the edge thereof, the said arm having capacity for a limited amount of movement, and being adapted to engage with the inside of the fold of an inclosing envelop in the retraction of the card or sheet and to prevent such retraction from being completed, substantially as described

607,320. **WRENCH.** JOHN N. YOUNG, Alameda, Cal. Filed Aug. 3, 1897. Serial No. 646,911. (No model.)



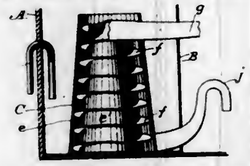
Claim.—1. The combination in a wrench, having jaws *a* and *b* perpendicular to the shanks A and B, of the teeth a^3 and b^3 on the contiguous sides of the shanks A and B, having a guide *b'* and a slot C in the head of the jaw *b* being rounded or flaring at C' on the side of the shank A and the head of the jaw *b* most remote from the head of the wrench, and being rounded at C^2 at the corner formed by the face of the jaw *b* and the shank B, and having the slot C otherwise fitting so closely around the shank A that when the handles and the teeth are closed the upper part, or head, of the jaw *b* inclosing the slot C shall bind tightly and hold in position the shank A, all substantially as described and for the purposes specified.

2. The combination in a wrench of the shanks A and B having teeth a^3 and b^3 in the adjacent sides of said shanks, and having jaws perpendicular to said shanks, and having a guide *b'* with space for separating the shanks, and having the flaring at C' of the slot at the head of the jaw *b* and the rounding of the slot at C^2 at the corner formed by the jaw *b* and the shank B, and having the divided handles *a'* and b^2 with the indentations b^4 in b^2 and the handle *a'* set with screws and detachable, and having the slot C otherwise fitting so closely around the shank A that when the handles and the teeth are closed the upper part or head of the jaw *b* inclosing the slot C shall bind tightly and hold in position the shank A, all substantially as described and for the purposes specified.

3. The combination in a wrench having jaws *a* and *b* perpendicular to the shanks A and B, and having a guide *b'* with space for separating the shanks sufficiently to allow the teeth a^3 and b^3 to pass each other, and having the flaring at C' of the slot at the head of the jaw *b* on the side most remote from the head of the wrench, and the rounding of the slot at C^2 at the corner formed by the jaw *b* and the shank B, and having the divided handles *a'* and b^2 with the indentations b^4 in b^2 and the handle *a'* set with screws and detachable, and having the slot C otherwise fitting so closely around the shank A that when the handles and the teeth are closed the upper part or head of the jaw *b* inclosing the slot C shall bind tightly and hold in position the shank A, all substantially as described and for the purposes specified.

4. The combination in a wrench of the jaws *a* and *b* perpendicular with the shanks A and B, with the said shanks A and B having the teeth a^3 and b^3 on the contiguous sides of the said shanks A and B, and with the slot C in the head of the jaw *b* being round or flaring at C' on the upper side of the shank A, and being rounded at C^2 the corner formed by the face of the jaw *b* and the forward end of the shank B, and the slot C otherwise fitting so closely around the shank A that when the shanks A and B and the teeth a^3 and b^3 are closed, the upper part or head of the jaw *b* inclosing the slot C and surrounding the shank A, shall bind tightly and hold firmly in position the shanks A and B and the said teeth, all substantially as described and for the purpose specified.

607,321. **REFRIGERATING APPARATUS.** HENRY W. ABBOTT, Chicago, Ill., assignor of one-half to William L. Reed, Stockton, Cal. Filed Sept. 13, 1897. Serial No. 651,538. (No model.)



Claim.—1. In an air refrigerating apparatus, the combination of the ice-chamber, the open truncated cone therein of less diameter than the chamber and the spiral air-flue formed about the outer surface of said cone, substantially as described.

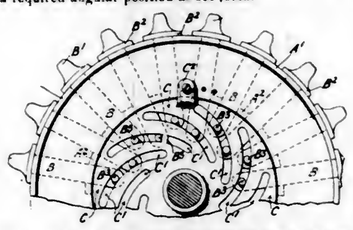
2. In an air refrigerating apparatus, the combination of the ice-chamber, the open truncated cone therein of less diameter than the chamber and the spiral air-flue formed about the outer surface of said cone, means for forcing air through said flue, and an overflow-pipe communicating with said chamber considerably above the bottom thereof, whereby the lower portion of the cone is kept submerged in the meltage, substantially as described.

3. In an air refrigerating apparatus, the combination of the ice-chamber, the open truncated cone therein of less diameter than the chamber, a second cone surrounding and spaced from the first-named cone, and a spiral air-flue formed between said cones, as described.

607,322. **CHAIN-WHEEL FOR VELOCIPEDES.** FREDERICK G. ADAMS, London, England. Filed Dec. 29, 1897. Serial No. 664,454. (No model.) Patented in England Mar. 10, 1897, No. 6,281.

Claim.—1. In chain-wheels for velocipedes and other chain-driven vehicles, the combination with the wheel frame or body and radially-extending guideways thereon, corresponding with the number of teeth with which the wheel is to be fitted, of separate teeth, stems or bars extending from the teeth and located in the guideways, a projecting

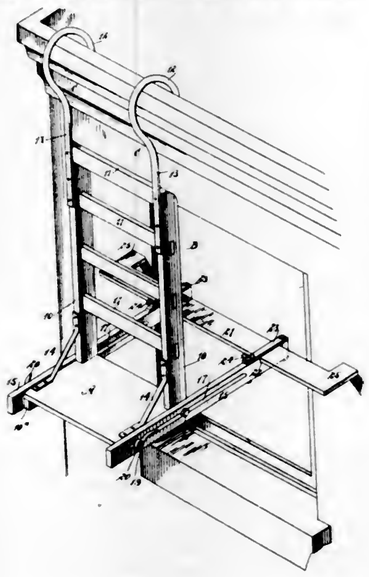
part on each bar, a disk capable of rotary adjustment on the wheel-axis and having curved slots into which the projecting parts on the bars enter and by which the bars are simultaneously moved radially outward by rotary adjustment of the disk, and means for fixing the disk in a required angular position as set forth.



2. In chain-wheels for velocipedes and other chain-driven vehicles, the combination with the wheel frame or body, and radially-extending guideways thereon corresponding with the number of teeth with which the wheel is to be fitted, a centrally-arranged disk capable of rotation on the wheel-axis, and having eccentrically-curved slots, and means for fixing the disk to the wheel-frame at a required angular position, of separate teeth to engage the links of the chain, a segmental base part on each tooth to support the links, a stem extending from the base part of each tooth and adapted to enter and be supported in the radial guideways of the wheel-frame, and projecting pins on the teeth-stems, entering the slots in the disk aforesaid, and by the rotation of which latter the teeth are all moved simultaneously outward, whereby the pitch of the teeth and the diameter of the wheel is increased, substantially as set forth.

3. In chain-wheels for velocipedes and other chain-driven vehicles, the combination with a wheel-frame having a peripheral concentric flange, an inner concentric flange with a number of apertures through the outer flange, and a corresponding number of apertures through the inner flange in radial lines with the apertures of the outer flange, of separate teeth to engage the chain-links, segmental base parts to same to support the links, stems extending inwardly from the teeth and passing through the slots in the two flanges, projections on the inner ends of the teeth-stems, a centrally-arranged disk capable of rotary adjustment and having eccentric-curved slots into which the projections on the teeth-stems enter, and by which the teeth are simultaneously moved radially outward by a rotary movement communicated to the disk, and means for securing the adjustable disk to the wheel-frame as set forth.

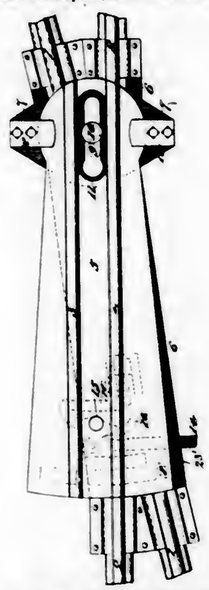
607,323. **CORNICE-LADDER.** JAMES W. ANDERSON, Philadelphia, Pa. Filed Apr. 2, 1898. Serial No. 676,208. (No model.)



Claim.—1. The combination, with a ladder, grapples secured to the upper portion of the ladder and a platform attached to the lower portion of the ladder, the said platform consisting of horizontal extensions from the side rails of the ladder, and a footboard secured to the said extensions, of fender-rails provided with longitudinal slots, guide-pins passed through the slots of the fender-rails and through the platform where it connects with the ladder, bolts attached to the platform near its forward end and extending through the slots in the fender-rails, nuts for the said bolts, a guard-rail supported at the rear portions of the fender-rails, and means for locking the guard-rail to the fender-rails, substantially as described.

2. The combination of a ladder having means at its upper portion by which it may be suspended, a horizontal platform secured to the lower portion of the ladder and at one side thereof, two fender-rails located respectively at each side edge of the platform and adjustable horizontally, the fender-rails extending laterally beyond the side of the ladder opposite the side having the platform, and a guard-rail secured to and extending transversely across the fender-rails, the guard-rail having its ends projected beyond the fender-rails and provided with transverse extensions.

607,824. **RAILROAD OBLIQUE CROSSING.** STEPHEN J. AUSTIN, Terre Haute, Ind. Filed Apr. 17, 1897. Serial No. 632,636. (No model.)



Claim.—1. A railroad oblique crossing, comprising a bed-plate with two separately traveled main rails at each end, an elongated pivoted plate located between the ends of the main rails, and parallel rail-sections carried by the plate; the pivot of said plate being located near one end thereof, with its center between said rail-sections and forward of the ends of the adjacent main rails, whereby the ends of the rail-sections move laterally into and out of line therewith, substantially as described.

2. A railroad oblique crossing, comprising a pivoted plate located between the ends of two separately-traveled main rails, and parallel rail-sections carried by the plate; the pivot of said plate being located within one end thereof between said rail-sections, whereby in closing the crossing the ends of said rail sections move laterally inward from the main rails at the pivot end and outward from the adjacent main rails at the free end, substantially as described.

3. A railroad oblique crossing, comprising a bed-plate, an elongated plate pivoted to the bed-plate, and rail-sections carried by the pivoted plate, the pivot of said plate being located near one end thereof with its center between two rail-sections and forward of the ends of the adjacent main rails whereby the ends of the rail-sections are displaced laterally, and said ends being cut in the line of movement, substantially as described.

4. A railroad oblique crossing, comprising a bed-plate, with two separately-traveled main rails at each end, an elongated plate pivoted to the bed-plate near one end thereof and parallel rail-sections carried by the pivoted plate; said pivoted plate forming a continuous bearing for said rail-sections, and said pivot being located between said rail-sections, within the end of the plate at a point to cause the pivoted ends of said plate to move laterally into and out of position, substantially as described.

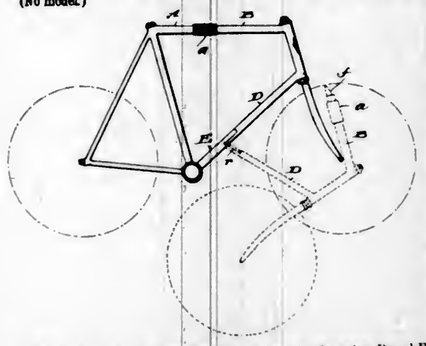
5. In combination with two separately-traveled main rails having a gap between them, an interposed pair of rail-sections in said gap located to receive the wheel-flanges on their outer pivoted sides, near one end whereby their free end moves laterally inward, out of line and outward into position with the main rails, whereby said rail-sections are held in closed position by passage of the wheels, substantially as set forth.

6. The combination of the bed-plate having main rails at each end, and a movable plate bearing rail-sections, and pivotal connection between said bed and movable plate consisting of a pivot-pin with grooved head, and a slotted locking-key adapted to engage the head of the pin, substantially as described.

7. A bed-plate having two separately-traveled main rails at each end, a movable plate between the ends of the said main rails and pivotal connection between said bed and movable plates, one pair of main rails being cut on the line in which the end of the movable plate moves, substantially as described.

8. The combination of a bed-plate having stops 23', 23, and two separate main rails at each end and a movable plate pivoted to the bed-plate and having stops 21, 22, cooperating with the stops on the bed-plate; and two rail-sections, substantially as described.

607,825. **SEPARABLE FRAME FOR BICYCLES.** BURR F. BARNES, Circleville, Ohio. Filed Aug. 19, 1897. Serial No. 648,834. (No model.)



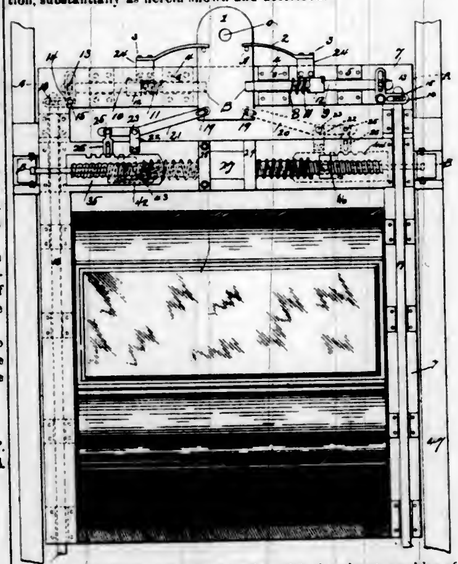
Claim.—1. In a separable frame for a bicycle, the tubes D and E, a filling in one tube having a notch near its free end, a pin mounted in the end of the other tube on which said notched end is designed to engage, combined with the horizontal tube-sections and means for holding same together, substantially as shown and described.

2. In a separable frame for a bicycle, the combination with the hollow tubes D and E, the filling in tube D and provided with a notch *n*, the pin *m* mounted in the tube E, and designed to be engaged by the said notched portion in tube D, the pin A and recess *i* to receive the same, of the tubes A and B, the filling *f* in tube B, lugs C on diametrically opposite edges of the ends of the said tubes A and B, and the slotted collar *a* adapted to fit over the said ends and lock the ends together, substantially as shown and described.

607,826. **ELEVATOR.** JULES BARREAUX, Pittsburg, Pa. Filed Mar. 13, 1897. Serial No. 627,389. (No model.)

Claim.—1. In an elevator, the combination with the elevator-guides, of a gripping mechanism adapted to grip said guides, a suspension-block slidably mounted on the elevator-car and to which the hoisting-rope is secured, a spring engaging said suspension-block, elbow-levers having slotted ends and fulcrumed intermediate the ends, one end of said elbow-levers pivotally engaging said suspension-block, a locking-catch pivoted to the opposite end of each lever and adapted to lock said gripping mechanism out of engagement with said guides, and means for bringing said gripping mechanism into engagement with the guides when released from the locking-catch, substantially as herein shown and described.

2. In an elevator, the combination with the elevator-guides of gripping mechanism therefor, two pairs of slidable plates on the elevator-car adjustably connected with said gripping mechanism, a screw-threaded bolt provided with an adjusting-head intermediate its ends, presser-bars on said bolt connected with said sliding plates, springs on said bolt tending to throw said gripping mechanism into engagement with said guides, nuts on said bolt for adjusting said springs, and means for holding said gripping mechanism normally out of action, substantially as herein shown and described.



3. In an elevator, the combination with the elevator-guides of gripping mechanism therefor, a pair of slidable plates on the elevator-car, connections between said gripping mechanism and said slidable plates, a screw-threaded bolt, a presser-bar on said bolt, connected with said slidable plates, a spring on said bolt tending to throw said gripping mechanism into engagement with said guides, a nut for adjusting said spring, a locking-catch for holding said gripping mechanism normally out of action, a suspension-block connected with the hoisting-rope, springs bearing on said suspension-block and elbow-levers pivotally connected with said suspension-block and with said locking-catch, substantially as herein shown and described.

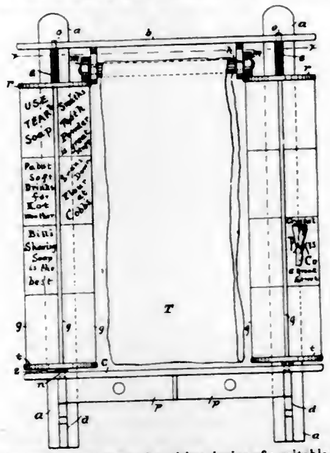
4. In an elevator, a spring-actuated suspension-head, spring-actuated safety-rods engaging openings in said head, levers 14, rods 16 and 17, one end of said levers being pivotally connected to said safety-rods and the opposite end to the rods 16 and 17, pins carried by said head near the lower end thereof, slotted elbow-levers fulcrumed to the frame, one end of said elbow-levers engaging the pins carried by said head, locking-pins pivotally secured to the opposite end of said elbow-levers, a screw-threaded bolt provided with a head intermediate the ends, adjusting-nuts carried by said bolt, presser-bars, said adjusting-nuts operating said presser-bars, spring-operated sliding plates, gripping devices, levers connecting said sliding plates and said gripping devices, means for releasing said sliding plates, and spring-actuated mechanism for throwing the gripping devices into engagement with the guideways, substantially as herein shown and described.

5. In an elevator, a frame, a spring actuated suspension-head, pins carried by the lower end of said suspension-head, elbow-levers pivotally mounted on the frame, one end of said elbow-levers engaging the pins carried by the suspension-head, locking-pins pivotally secured to the opposite ends of said elbow-levers in combination with a safety device provided with gripping means, a screw-threaded bolt having a head intermediate the ends, nuts carried by said bolt, adjustable presser-bars operated by said nuts, spring-actuated sliding plates secured to the frame having notches formed in their upper ends, gripping devices provided at one end with serrated heads and pivoted intermediate their ends, adjusting-bars connected to the gripping devices and sliding plates, spring-actuated mechanisms adapted to operate the gripping devices when the sliding plate is released, substantially as herein shown.

607,827. **ADVERTISING DEVICE.** ALBERT BARRETT, Kansas City, Mo., assignor of two-thirds to Alonzo Burt and R. C. Haldeman, same place. Filed Sept. 11, 1897. Serial No. 651,368. (No model.)

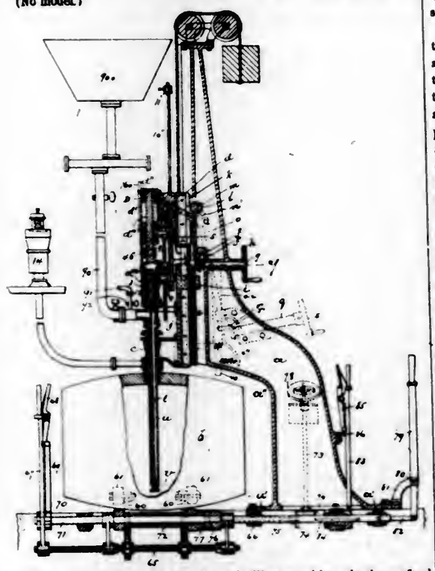
Claim.—1. The combination in an advertising device of a suitable back or frame; of one or more spindles held in bearings upon said frame provided with means for displaying advertisements; of a removable roller held in bearings but not resting thereon, the said bearings being provided with openings on one side thereof; an end-

less towel upon said roller; with means whereby the rotation of the roller is communicated to the spindles consisting of cooperating wheels upon the contiguous ends of the spindles and roller, as set forth.



2. The combination in an advertising device of a suitable back or frame; of two horizontal spindles held in bearings upon said frame provided with wings or surfaces for displaying advertisements; of a removable roller held loosely in bearings but not resting thereon, the said bearings being provided with openings on one side thereof; an endless towel upon said roller; with means whereby the rotation of the roller is communicated to the spindles consisting of cooperating friction-wheels upon the contiguous ends of the spindles and roller, as set forth.

607,328. RACKING OR BARREL-FILLING APPARATUS. DILLON BERRY, Newark, N. J. Filed Sept. 15, 1897. Serial No. 651,730. (No model.)



Claim.—1. In a racking or barrel-filling machine, the bung-feed herein described comprising a projecting plate 23, fastened to the packing-head of said barrel-filling machine a cap-like plate 24, imperviously secured to said plate 23, a bung storage receptacle 25, and means for imperviously closing the same, and an oscillating plate 35, arranged between said plates 23 and 24, and having a bung-receptacle adapted to be oscillated from the storage-receptacle to the filling-tube passage 39, a crank-shaft 32, for thus turning said oscillating plate, and a spring 29, for normally holding the said plate away from said filling-tube passage 39, substantially as set forth.

2. In a barrel-filling and bung-driving apparatus or machine, the combination with the filling-tube and its vertically-sliding head, valve and independently-moving valve-rod, a cylinder and piston in connection with said vertically-sliding head and means for conducting compressed air to said cylinder to drive the said head and filliug-tube, helped by gravity against said bungs, whereby the bung is driven by an unobstructed hammer-like action as distinguished from a mere mechanical pushing, and means for operating said valve-rod, substantially as set forth.

3. In a barrel filling or racking and bung-driving machine, the combination with the filling-tube and its vertically-sliding head, valve and valve-rod, a cylinder and piston for driving said filling-tube, means for supplying said cylinder with compressed air, and an inclosed bung-feed device having a passage for said filling-tube, the feeding-plate having an oscillating motion to and from said filling-tube passage and a spring for holding said plate in normal position, substantially as set forth.

4. The combination in a barrel filling machine of plates 23 and 24, bung-storage receptacle 25, spring-chamber 28, segmental plate 35, having a bung-receptacle 36, an arm 38, a shaft 32, for turning said segmental plate, a spring 29, a handle 34, and a cover imperviously closing the bung-receptacle, all said parts being arranged and combined, substantially as set forth.

5. In a barrel-filling machine, the combination with a suitable frame, a filling-tube, its valve and valve-rod duct for supplying said filling-tube with liquid, means for raising and lowering the filling-tube, pneumatic devices for raising and lowering the valve-rod, of pneumatic devices fastened to or arranged in connection with the filling-tube head and means for supplying said pneumatic devices with compressed air and regulating and controlling the flow thereof to effect a driving of said filling-tube against the bung, all substantially as set forth.

6. The combination in a racking-machine, with the frame thereof, of a vertically-sliding filling-tube head and its filling-tube and means for raising and lowering the same to bring the said filling-tube into proper relation with the barrel, of a cylinder, a piston arranged in said cylinder at its upper end provided with a piston-head and at its lower end supporting a second cylinder to which latter the filling-tube is attached, said second cylinder having a piston-head to which the valve rod of the filling-tube is attached, and compressed-air ducts and valves controlling the flow of air therethrough, substantially as set forth.

7. The combination in a racking or barrel-filling machine with the frame thereof having vertical slideways, of a filling-tube head and a packing-head arranged on said slideways and means adapted to be operated by hand for raising said packing-head and said filling-tube head from the barrel, the filling-tube head being provided with a cylinder having a piston-head, which supports the filling-tube, a piston-rod attached to said piston-head and having a lower cylinder and piston-head, a valve-rod attached to the second piston-head and extending through the filling-tube, and means for supplying said cylinders with compressed air and for regulating and controlling the flow of said compressed air to said cylinders, substantially as set forth.

8. The combination in a racking or barrel-filling machine, with the frame having vertical slideways and means for raising and lowering the packing-head and filling-tube head, of said packing head and filling-tube head arranged on said slideways, the packing-head being adapted to be raised and lowered from and to impervious relation to the barrel at the bung-hole thereof, and having a passage therethrough for the filling-tube and said filling-tube carried by a piston arranged within a cylinder forming a part of the filling-tube head, and compressed-air ducts and valves controlling the flow of the compressed air therethrough, substantially as set forth.

9. In a barrel-filling machine, the combination with the filling-tube head, its cylinder and piston having a second cylinder attached thereto and movable therewith, the said second cylinder containing a spring and a piston-head to which a valve-rod is attached, the said piston-head being seated upon said spring and held normally in a position to close the valve of the filling-tube, a valve at the lower end of the filling-tube controlled by said rod, and a duct for supplying said cylinder with compressed air for forcing the said valve-rod and its piston-head downward against the power of the said spring to open the said filling-tube valve all said parts being arranged and combined substantially as set forth.

10. In a racking apparatus, the combination with the frame having vertical slideways, of a packing-head, and means for raising and lowering the same, and a filling-tube head and a rack and pinion and means for rotating the pinion for raising and lowering said filling-tube head from and into the barrel, said filling-tube head having a cylinder d', a piston working in said cylinder and carrying a second cylinder d''', having a spring therein, a piston-head within said second cylinder seated on said spring, a filling-tube, attached to said second cylinder and extending downward through said packing-head and at its lower end provided with a valve, a valve-rod for operating said valve attached to said piston-head of the second cylinder, and means for furnishing said cylinders with fluid under abnormal pressure substantially as set forth.

11. In a racking apparatus, the combination with the frame having slideways, of a packing-head and means for raising and lowering the same, a filling-tube head and its valved filling tube, and a valve-rod extending through the filling-tube, from the valve in said tube, and mechanical means for raising and lowering heads, pneumatic means for operating the filling-tube valve-rod to open and close the said valve and for operating the filling-tube as a bung-driver, and means for adjusting the barrel beneath the filling-tube, substantially as set forth.

12. In a racking or barrel-filling apparatus, the combination with the frame, a, having vertical slideways, of a packing-head and filling-tube head working independently on said slideways and means for raising and lowering said heads on said slideways, a filling-tube and a valve at the lower end of said filling-tube, a valve-rod extending upward through said filling-tube, and pneumatic means adapted to be operated automatically to open and close said valve, substantially as set forth.

13. In a racking or barrel-filling apparatus, the combination with a frame having vertical slideways, of a packing-head and filling-tube head, each working independently of the other on said vertical slideways, and means for raising and lowering the same, the filling-tube head carrying pneumatic cylinders and pistons for driving the filling-tube against the barrel-bung and for operating the valve-rod, and means for controlling the movements of said piston, a valved filling-tube in connection with the filling-tube head and said valve-rod, all substantially as set forth.

14. In combination, the frame a, head d, a rack k, pinion m and train of devices for operating said pinion and raising said head, a packing-head having a filling-tube passage, means for raising and lowering said packing-head, a cylinder d', on said filling-head a piston working therein and carrying a second cylinder, a filling-tube attached to said second cylinder, a valve at the lower end of said second cylinder, a valve-rod for operating said valve and a piston in connection with said valve-rod, working in said second cylinder and means for operating said pistons, substantially as set forth.

15. In combination with the frame a, filling-tube head d, a rack k, pinion m and a train of devices for operating said pinion, a cylinder d', piston D, piston rod d'', cylinder d''', filling-tube having a valve at its lower end, a valve-rod having a piston-head working in the cylinder d''', a spring 3, bearing upon the last-said piston-head, a valve 50, and ducts leading thereto and therefrom to the cylinder d', ducts leading to the cylinder d''', a collar 46, rod 45, lever 44, connecting-rod 49, operating-valve 50, a rod 43, and hand-lever 40, all arranged and operating, substantially as set forth.

16. The combination with the filling-tube head, in a barrel-filling machine, having a cylinder and a piston carrying the filling-tube, of a valve 50, lever 44, connected to said valve to open and close the same, one arm of said lever being in connection with said piston and the opposite end being connected to a hand-lever, all substantially as set forth.

17. In a barrel-filling machine, the combination with the frame a, filling-tube head, its valved filling-tube, head and tube to force the bung fast in its seat, of a compressed-air reservoir 56, duct or tube 55, valve 5, bell-crank 6, a spring 7, stop 8, adjustable rod 9, a cylinder and piston and exhaust and supply passages controlled by the valve 5, whereby in the descent of the filling-tube, in the driving operation, the filling-tube valve will be opened, substantially as set forth.

18. In a barrel-filling machine, the combination with the frame a, filling-tube head, having a cylinder and a piston carrying a second cylinder having a valved filling-tube attached, and a piston having a rod connecting with the filling-tube valve, compressed-air ducts leading to said cylinders and a valve 5, adapted to be operated automatically in the descent of the filling-tube and connections to occasion a flow of compressed air into the second cylinder to operate the valve-rod, substantially as set forth.

19. In a barrel-machine, the combination with a frame a, a filling-tube head having an arm 15, attached to or formed on said head, a cylinder d', and means for supplying the same with compressed fluid, valves for controlling the flow of said fluid, a piston operating in said cylinder d', and carrying a second cylinder d''', a filling-tube attached to said second cylinder, a piston working in said second cylinder, a valve for closing the lower end of the filling-tube, a valve-rod extending from said valves to the piston of the second cylinder and operated thereby, a counter-pressure duct, and valve 13, a cylinder 18, spring 17, rod 19, lever 20, and rod 160, having an adjustable stop 16, adapted to engage the arm 15, substantially as set forth.

20. In a barrel-machine, the combination with the frame a, filling-tube head and means for raising and lowering the same to effect a lowering of the filling tube to and a withdrawal of the same from the barrel, independent means for driving the filling-tube to seat the bung, a filling-tube having a valve, at its lower end, means for holding said valve normally closed and means for opening said valve when the tube is lowered within the barrel, substantially as set forth.

21. In a barrel-machine, the combination with the frame a, a filling-tube head and means for raising and lowering the same, a valved filling-tube attached to said head, independent means for driving said head and filling-tube to effect a seating of the bung within the bung-hole, means for holding the valve normally closed, means for opening said valve when the filling-tube is lowered to its low position in the barrel, a counter-pressure cylinder duct and valve, and means for operating said valve to open the same upon the descent of the filling-tube, substantially as set forth.

22. In a barrel-filling machine, the combination with the packing-head, of the plate 25, hollow case-plate 24, imperviously fastened to said plate 25, a bung storage cylinder 25, attached to said case-plate and having a cap or cover 26, removably and imperviously clamped to said cylinder, a box 28, formed upon the case-plate, a spring in said box, a hand-lever 34, shaft 32, and a sliding bung-feed oscillated by said shaft and having a bung-receptacle adapted to be turned from coincidence with the cylinder to a position to be driven into the bung-hole, substantially as set forth.

23. In a barrel-filling machine, the combination with the packing-head and filling-tube and means for operating the same, of an air-tight case, attached to said packing-head and having a passage for the filling-tube, and a bung storage-receptacle, a segmental bung-feed having a receptacle 36, for a bung, adapted to be turned from coincidence with said storage-receptacle to the filling-tube passage and having an arm 38, a shaft 32, a handle 34, and a spring 29, adapted to hold the receptacle 36, normally in coincidence with the storage-receptacle, substantially as set forth.

24. In a barrel-filling machine, the combination with the packing-head and filling-tube, their connections, and means for operating the same to raise or lower them from and to the barrel, of a bell-crank lever 40, fulcrumed upon an arm 42, attached to the filling-tube connections, a spring 47, rod 43, slotted lever 44, connecting-rod 45, collar 46, piston D and its rod d''', a cylinder attached to the filling-tube connections and compressed-air ducts, a valve 50, and connecting-rod 49, all arranged and operating, substantially as set forth.

25. In a barrel-machine, the combination with the filling tube and means for operating the same, of a barrel-receiver having four arms 60, adjustable in relation to one another and adapted to be raised or lowered and be brought toward one another or separated, and means for operating the said arms, substantially as set forth.

26. In a barrel-machine, the combination with the filling-tube and means for operating the same, of bell-crank levers 62, having toothed segments, intermeshing as described, shafts 65, and a hand-lever for turning one of said shafts and transmitting motion therefrom to the bell-crank levers thereon and those in gear therewith whereby the barrel-engaging arms of said bell-cranks are raised or lowered, substantially as set forth.

27. In a barrel-machine, the barrel-receiver, comprising a frame, intermeshing toothed, segmental bell-crank levers fulcrumed on shafts 65, 65, a hand-lever for operating said bell-cranks simultaneously, a shaft 71, a cogged sleeve 72, a hand-shaft, bevel gear-wheels 74, a shaft 75, and a pinion 76, all arranged and combined, substantially as set forth.

28. In a barrel-filling machine, the barrel-receiver comprising a frame, shafts 65, 65, arranged therein, intermeshing toothed segmental levers having arms to engage and support the barrel, said arms being furnished with wheels or rollers, a hand-lever for operating said bell-crank levers, a shaft 71, a sleeve, means for rotating said sleeve and means for oscillating said bell-crank levers whereby when one pair of arms are raised another will be lowered, substantially as set forth.

29. In a barrel-filling machine, the barrel-receiver, comprising a frame, shafts 65, 65, arranged therein, intermeshing toothed segmental levers having arms to engage the barrel and means for oscillating said arms whereby when one pair at one side of the barrel center is raised the other pair will be lowered, substantially as set forth.

30. In a barrel-filling machine, the combination with the barrel-filling apparatus, of a barrel-receiver having arms for steadying the barrel, a rotary sleeve for turning said barrel on its axis and means for moving said arms in the direction of the longitudinal axis of the barrel, and means for turning said sleeve, substantially as set forth.

31. In a barrel-filling machine, the combination with the filling apparatus, of a barrel-receiver disposed beneath said filling apparatus, comprising a frame having shafts 65, 65, 71, pairs of segmental bell-crank levers, the teeth of which intermesh to secure a simultaneous movement in opposite directions in opposite pairs of barrel-supporting arms, means for turning said bell-crank levers on said shafts 65, 65, a sleeve 72, having teeth, a pinion intermeshing with said teeth, a shaft carrying said pinion, bevel gear-wheels 74, and a hand-shaft, a lever 79, for moving the shaft 71, and the parts con-

nected therewith longitudinally and a lever 83, for oscillating the said shaft 71, and connections, substantially as set forth.

607,329. TRUCK. WALTER H. BEEBE, New York, N. Y. Filed Oct. 1, 1897. Serial No. 653,678. (No model.)



Claim.—1. The combination with the platform-truck having supporting-wheels, of end pieces, hinges for connecting the end pieces to the platform and upon which such end pieces can be turned down to form inclines at the opposite ends of the platform and bolts for holding the ends when turned up vertically, substantially as set forth.

2. The combination with the platform-truck having supporting-wheels, of end pieces, hinges for connecting the end pieces to the platform and upon which such end pieces can be turned down to form inclines at the opposite ends of the platform, bolts for holding the ends when turned up vertically, and pivoted legs connected with the ends and near the hinges for supporting the end pieces and the platform of the truck when another platform or weight is passed over the truck, substantially as set forth.

3. The combination with the platform-truck having supporting-wheels, of end pieces, hinges for connecting the end pieces to the platform and upon which such end pieces can be turned down to form inclines at the opposite ends of the platform and bolts for holding the ends when turned up vertically, handles hinged to the truck ends and adapted to be turned up closely adjacent to such ends when they are swung down into an inclined position, substantially as set forth.

4. The combination with a platform-truck having supporting-wheels and a brake for the wheels, of end pieces, hinges for connecting the end pieces to the platform and upon which such end pieces can be turned down to form inclines at the opposite ends of the platform, and bolts for holding the ends when turned up vertically, substantially as set forth.

5. The combination with the platform-truck having supporting-wheels, of end pieces, hinges for connecting the end pieces to the platform and upon which such end pieces can be turned down to form inclines at the opposite ends of the platform, bolts for holding the ends when turned up vertically, springs for projecting the bolts and levers and a foot-piece for withdrawing such bolts, substantially as set forth.

6. The combination with a platform-truck and its supporting-wheels, of brake-bars adapted to engage the upper sides of the wheels and to pass in between such wheels and the under side of the platform, and mechanism for actuating such brake-bars, substantially as set forth.

7. The combination with a platform-truck and its supporting-wheels, of brake-bars at opposite sides of the upper portion of the wheel, springs for applying the brake-bars and a lever for separating such brake-bars and relieving the wheels, substantially as specified.

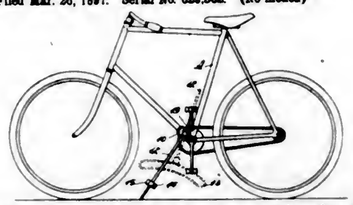
8. The combination with a platform-truck and the supporting-wheels, of brake-bars at opposite sides of the upper portion of the wheels, springs for applying the brake-bars and a pivoted cam-bar between the brake bars for moving them apart, and a lever extending to each end of the platform and adapted to being acted upon by the foot for swinging the cam-bar and liberating the brakes, substantially as set forth.

9. The combination with the platform-truck having supporting-wheels, of end pieces, hinges for connecting the end pieces to the platform and upon which such end pieces can be turned down to form inclines at the opposite ends of the platform, bolts for holding the ends when turned up vertically, brackets upon the truck ends of the platform and staple-bars adapted to engage the brackets upon two trucks for connecting them together, substantially as set forth.

10. The combination with the platform-truck having supporting-wheels, of end pieces, hinges for connecting the end pieces to the platform and upon which such end pieces can be turned down to form inclines at the opposite ends of the platform, bolts for holding the ends when turned up vertically, side bars connected to the platform with their upper edges above the top of the platform for guiding the wheels of another truck that may be passed over the inclined ends and the platform, substantially as set forth.

11. The combination with the platform-truck having supporting-wheels, of end pieces, hinges for connecting the end pieces to the platform and upon which such end pieces can be turned down to form inclines at the opposite ends of the platform, bolts for holding the ends when turned up vertically, side bars connected to the platform with their upper edges above the top of the platform for guiding the wheels of another truck that may be passed over the inclined ends and the platform, springs for raising the side bars and means for retaining the side bars in position, substantially as set forth.

607,330. BICYCLE-STAND. JOHN F. BENEDICT, Brooklyn, N. Y. Filed Mar. 26, 1897. Serial No. 629,362. (No model.)



Claim.—1. A stand for bicycle-frames, consisting of an upright, a foot connected with the upright, a socket formed upon the upright above the foot, having receiving-compartments at each side of the foot, and an auxiliary foot having projections arranged to enter the aforesaid receiving-compartments of the socket, as and for the purpose set forth.

2. A support for bicycles, consisting of a bracket attachment for a frame, a sleeve or socket held to rock upon said bracket attachment, a standard having end movement in said sleeve or socket and provided with a foot, a projection from the sleeve or socket, a washer located on said projection and arranged to enter an opening in the sleeve or socket and engage with the standard, and a locking device for said washer, as and for the purpose specified.

3. A support for bicycles, consisting of a bracket attachment for the frame, a sleeve held to rock upon said bracket attachment, a standard having end movement in said sleeve and provided with a foot, a projection from the sleeve, a washer located on said projection and arranged to enter an opening in the sleeve and engage with the standard, a locking device for said washer, and an auxiliary locking device for the sleeve connected with said bracket attachment, as and for the purpose specified.

4. The combination, with a bicycle-frame, a bracket secured thereto, and a sleeve having rocking movement on said bracket, being provided with a threaded pin and an opening above the pin, of a standard having end movement in the sleeve, a washer loosely mounted on the threaded pin, having a projection arranged to enter said opening in the sleeve, and a nut screwed upon the pin to an engagement with said washer, as and for the purpose specified.

607,331. CHARCOAL-KILN. JOSEPH BERRY, Tacoma, Wash. Filed Sept. 11, 1897. Serial No. 651,355. (No model.)



Claim.—1. A charcoal-kiln consisting of a foundation of longitudinally-laid sticks, a V-shaped space formed by the arrangement of sticks at the front portion of the kiln, a series of draft-spaces formed around the edge of the kiln by overlapping the ends thereof, and a superstructure composed of cord-wood built thereon, substantially as shown and described.

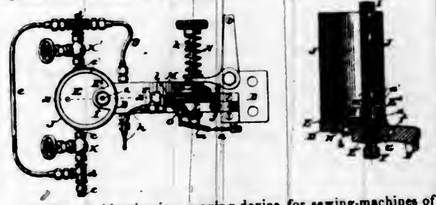
2. A charcoal-kiln consisting of a series of longitudinal sticks so laid as to provide lengthwise draft-spaces, cross-sticks laid thereon, a V-shaped space formed in the front end of the kiln by the proper stacking of the wood, a series of draft-spaces formed around the edge of the kiln by the proper overlapping of a series of sticks to the right and left, a block 4 from which these overlapping sticks start, and a block 3 upon which the outer ends of the last of these overlapping sticks rest, substantially as and for the purpose set forth.

3. In the formation of a kiln for burning charcoal the combination of a series of overlapping sticks arranged around the edge of said kiln, a block 4 from which said sticks start, and a block 3 upon which they end, substantially as and for the purpose set forth.

607,332. THREAD-WAXING DEVICE FOR SEWING-MACHINES. JOSEPH E. BERTRAND, Boston, Mass., assignor to the Bay State Shoe Machinery Company, same place and Portland, Me. Filed Nov. 8, 1897. Serial No. 657,840. (No model.)

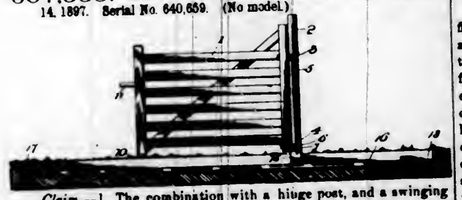
Claim.—1. In a waxing device for sewing-machines the combination of a wax-pot comprising a thick cup-like base and a thin cylinder projecting upward from said base; a thread-receiving tube set in said base, within, and projecting upward to or above the top of said thin cylindrical portion of said wax-pot and provided with a lateral opening through its wall near its lower end; and a thread-delivering opening through said base within the lower end of said thread-receiving tube.

2. A wax-pot composed of a thick cup-like base provided with a thread-delivering opening in its bottom and a cylindrical chamber of larger diameter below said opening, and a comparatively thin cylinder secured to said base and projecting upward therefrom; in combination with a thread-guiding tube set in said base within the walls of said wax-pot and projecting upward to the top of said wax-pot and provided near its lower end with a lateral opening communicating with the interior of the wax-pot; a thread-stripper inclosed in the cylindrical chamber beneath said tube, and a longitudinally-perforated set-screw set in the lower end of said chamber and adjustable to regulate the operation of said stripper.



3. The combination in a waxing device for sewing-machines of the bracket D provided with the steam-passages *b* and *f*; means substantially as set forth for supplying steam to one or both of said passages at the will of the operator; the wax-pot comprising the thick or heavy cup-like base E provided with the tubular hub E', and the thread-delivering perforation *a* in its bottom; and the comparatively thin cylindrical body J; the tube I set in said base above the opening *a* and provided with a lateral opening near its lower end; the stripper G; and the longitudinally-perforated set-screw F.

607,333. GATE. HENRY C. BETTS, Middletown, Cal. Filed June 14, 1897. Serial No. 640,659. (No model.)



Claim.—1. The combination with a hinge post, and a swinging gate, upper and lower hinges, the lower hinge comprising a slotted eye mounted on the post, and an eye mounted on the gate and provided with a depending pintle arranged in the said slot, the latter being disposed diagonally whereby the gate is thrown off its equilibrium, a rock-shaft disposed longitudinally of the roadway, journaled in suitable bearings and provided with a centrally upwardly-extending arm connected with the pintle and adapted to shift the same when the rock shaft is partially rotated, substantially as described.

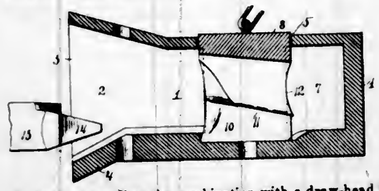
2. The combination with a hinge-post, and a swinging gate provided with upper and lower hinges, the lower hinge having a shifting pintle adapted to throw the gate out of equilibrium, a rock-shaft disposed longitudinally of the roadway, journaled in suitable bearings and provided with a central arm connected with the pintle, said rock-shaft having at its ends oppositely-extending arms, transverse levers fulcrumed between their ends and connected with the end arms of the rock-shaft, and treadles arranged in pairs and engaging the transverse levers at opposite sides of the fulcrum-point, substantially as described.

3. The combination of a swinging gate, a rock-shaft disposed longitudinally of the roadway, journaled in suitable bearings and provided with arms, and the depressible levers extending transversely of the roadway, fulcrumed between their ends and connected with the arms of the rock-shaft, whereby the latter is rotated when the levers are depressed, substantially as described.

4. The combination of a swinging gate, a rock-shaft disposed longitudinally of the roadway, journaled in suitable bearings and provided at its ends with oppositely-disposed arms, the depressible levers fulcrumed between their ends, disposed transversely of the roadway and connected with the arms of the rock-shaft, and the treadles connected with the transverse levers at opposite sides of the fulcrums, substantially as described.

607,334. CAR-COUPLING. WILLIAM H. BOSWELL, Jr., Whitcomb, Ind. Filed June 23, 1897. Serial No. 641,932. (No model.)

Claim.—1. In a car-coupling, the combination of a draw-head provided with a vertical opening, a cylindrical coupling-pin having rotatable movement therein, means for limiting the rotatable movement, the coupling-pin being provided with an opening through the lower part of the same presenting downwardly-inclined shoulders, and a coupling-bar having a head to engage the pin at the sides of the reduced portion, substantially as described.

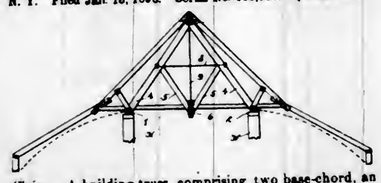


2. In a car-coupling, the combination with a draw-head having a flaring mouth and vertical cylindrical opening therein, a flange at one side of the opening, a coupling-pin adapted to fit within the vertical opening and provided with a recess with which the flange engages, said recess being slightly wider than the flange to permit a rotary movement of the pin, the said pin also having an opening through the same which is enlarged at its lower end to form shoulders which incline downwardly; together with a coupling-bar having a head the sides of which extend beyond the sides of the body of the bar, substantially as shown and described.

3. In a car-coupling, the combination of the draw-head provided with a flaring mouth and vertical cylindrical openings in the rear of the same, a flange at one side of said opening, a coupling-pin having a recess slightly larger than the flange with which it engages, said pin being also provided with an opening through the same enlarged at its lower end forming downwardly-inclined shoulders, the rear end of the pin having concave portions at opposite sides of the narrow part of the opening; together with a coupling-bar having arrow-heads at its ends, the rear ends of the said heads being curved outwardly, substantially as shown and described

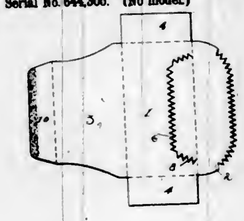
4. In a car-coupling, the combination of a draw-head having a flaring mouth, a vertical cylindrical opening in the rear of the same and a chamber beyond said opening, a flange located at one side of the opening, and a coupling-pin having a recess which engages the flange and a vertical opening through the same enlarged at its lower ends to form downwardly-inclined shoulders, the forward end of the opening in the pin being beveled at opposite sides, a coupling-bar having arrow-heads adapted to pass through the lower part of the opening in the coupling-pin; together with devices for raising the coupling-pin consisting of a transverse shaft connected thereto, said shaft having crank-handles at its ends and connected operating devices at the top of the car, substantially as shown and described.

607,335. BUILDING-TRUSS. WILLIAM A. BORING, New York, N. Y. Filed Jan. 13, 1898. Serial No. 666,556. (No model.)



Claim.—A building-truss, comprising two base-chord, an apex-chord, struts extended from the base-chords to the apex-chords a center beam extended longitudinally of the truss, at its base, knees extended from about the center of the struts to said beam and braces extended from about the center of each strut to the base-chord, said braces and knees serving to brace the struts in three directions, substantially as specified.

607,336. SAFETY-ENVELOP. ULYSSES S. G. BROBST, Columbus, Ohio, assignor of one-third to Charles Bentz, same place. Filed July 12, 1897. Serial No. 644,305. (No model.)



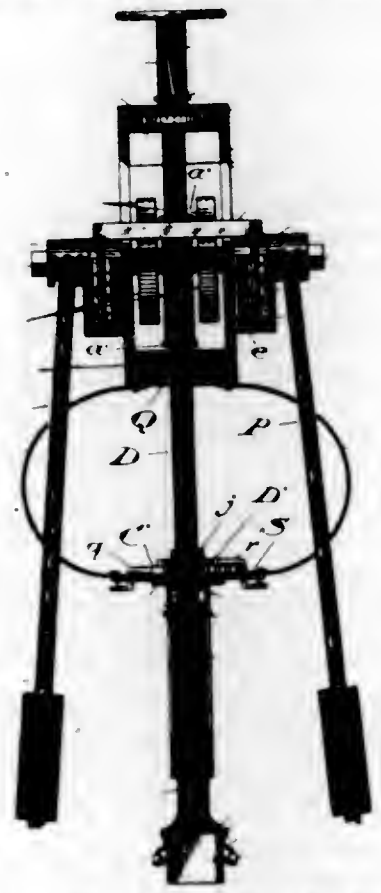
Claim.—1. An envelop provided with an inner and an outer sealing-flap folded in opposite directions, the said envelop having a slit for the passage of the inner flap, substantially as specified.

2. An envelop provided with a slit in its front, with an inner sealing-flap designed to be secured to the inside of the envelop above said slit, and with an outer sealing-flap, substantially as specified.

3. An envelop having a slit in its front, extending parallel to one edge and having extensions extending from the opposite ends of the slit to the edge of the envelop, an inner sealing-flap adapted to be secured to the inside of the envelop above the lower edge of said slit, and an outer sealing-flap designed to be secured to the back of the envelop, substantially as specified.

4. An envelop provided with a lining and with an inside sealing-flap designed to be folded over the upper open edge of the lining and to be inserted between the lining and the front of the envelop, with a serrated slit extending parallel to the upper edge of the envelop and provided with terminal extensions extending from the terminals of the serrated slit to the upper edge of said envelop, and with a sealing-flap designed to be folded down upon the back of the envelop, substantially as specified.

607,337. ROCK-DRILL. JOHN R. BROWN, Harrison Hot Springs, Canada. Filed Apr. 5, 1897. Serial No. 630,834. (No model.)



Claim.—1. In a drill, a frame and drill-bar movably supported therein in combination with a shaft journaled in the said frame; cams carried by the said shaft and adapted to raise the drill-bar; springs adapted to return the drill-bar to its original position; a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to said sleeve, a spring-actuated pawl upon the frame engaging with said ratchet-wheel; one or more pins projecting from the drill-bar in the slots in the said sleeve, and a hand-wheel connected with said sleeve, substantially as and for the purpose specified.

2. In a drill, a frame and drill bar movably supported therein a tappet connected with the drill-bar; and pistons connected to the ends of the tappet, in combination with a shaft journaled in the said frame; cams carried by the said shaft and adapted to raise the said tappet, vacuum-cylinders in which the said pistons play, a vacuum being formed below the pistons when the drill-bar is raised, which tends to return the drill bar to its original position; a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to said sleeve; a spring-actuated pawl upon the frame engaging with said ratchet-wheel; one or more pins projecting from the drill-bar in the slots in the said sleeve, and a hand-wheel connected with said sleeve, substantially as and for the purpose specified.

3. In a drill, a frame with slotted sides; a drill-bar movably supported therein, and provided with collars, and a tappet passing through the slots and embracing the said drill-bar between the collars; in combination with a shaft journaled in the said frame; cams carried by the said shaft and adapted to raise the said tappet and drill-bar; means for returning the said drill-bar to its normal position; a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to the said sleeve; a spring-actuated pawl upon the frame engaging with said ratchet-wheel, one or more pins projecting from the drill-bar into the slots in the sleeve whereby the said drill-bar is automatically fed, and a hand-wheel connected with said sleeve arranged to regulate the feed of said drill-rod independent of the automatic feeding device, substantially as and for the purpose specified.

4. In a drill, a frame; a drill-bar movably supported therein; and means for reciprocating the drill-bar; in combination with a sleeve surrounding a suitable portion of the drill-bar, and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to the said sleeve; a spring-actuated pawl upon the frame adapted to engage with the said ratchet-wheel; one or more pins projecting from the drill-bar into the slots in the sleeve; a drill-holder screwed upon the end of the drill-bar; a sleeve suitably supported about the said holder and held from turning; pins connected to the holder and adapted to engage with slots in the said sleeve whereby the said drill-bar is automatically fed, and a hand-wheel connected with said sleeve arranged to regulate the feed of said drill-rod independent of the automatic feeding device, substantially as and for the purpose specified.

5. In a drill, a frame; a drill-bar movably supported therein; and means for reciprocating the drill-bar; in combination with a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet wheel suitably supported and connected to the said sleeve; a spring-actuated pawl upon the frame adapted to engage with the said ratchet-wheel; one or more pins projecting from the drill-bar into the slots in the sleeve; a drill-holder screwed upon the end of the drill-bar; a plate supported from the frame of the drill so as to be capable of a reciprocating motion only with the drill-bar; a sleeve suitably supported about the said drill-holder; a ratchet-wheel rigidly connected to the said sleeve; a spring-actuated pawl upon the said plate adapted to engage with the said ratchet wheel; and pins connected to the holder and adapted to engage with slots in the said sleeve, substantially as and for the purpose specified.

6. In a drill, a frame; a drill bar movably supported therein; and means for reciprocating the drill-bar; in combination with a sleeve surrounding a suitable portion of the drill-bar, and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to the said sleeve; a spring-actuated pawl upon the frame adapted to engage with the said ratchet-wheel; one or more pins projecting from the drill-bar into the slots in the sleeve; a drill-holder screwed upon the end of the drill-bar; a plate supported from the frame of the drill so as to be capable of a reciprocating motion only with the drill-bar; a sleeve suitably supported about the said drill-holder; two ratchet-wheels rigidly connected to the said sleeve with their teeth set in opposite directions; two spring-actuated pawls upon the said plate adapted to engage with the said ratchet-wheels; and one or more pins connected to the holder and adapted to engage with slots in the said sleeve, substantially as and for the purpose specified.

7. In a drill, a frame with slotted sides; a drill-bar movably supported therein; and provided with collars; and a tappet passing through the slots and embracing the said drill-bar between the collars; in combination with a shaft journaled in the said frame; cams carried by the said shaft and adapted to raise the said tappet and drill-bar; means for returning the said drill-bar to its normal position; a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to the said sleeve; a spring-actuated pawl upon the frame engaging with said ratchet-wheel; one or more pins projecting from the drill-bar into the slots in the sleeve; a drill-holder screwed upon the end of the drill-bar; a sleeve suitably supported about the said holder and held from turning, and one or more pins connected to the holder and adapted to engage with slots in the said sleeve, substantially as and for the purpose specified.

8. In a drill, a frame with slotted sides; a drill-bar movably supported therein, and provided with collars; and a tappet passing through the slots and embracing the said drill-bar between the collars; in combination with a shaft journaled in the said frame; cams carried by the said shaft and adapted to raise the said tappet and drill-bar; means for returning the said drill-bar to its normal position; a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to the said sleeve; a spring-actuated pawl upon the frame engaging with said ratchet-wheel; and one or more pins projecting from the drill-bar into the slots in the sleeve; a drill-holder screwed upon the end of the drill-bar; a plate supported from the frame of the drill so as to be capable of a reciprocating motion only

with the drill-bar; a sleeve suitably supported about the said drill-holder; a ratchet-wheel rigidly connected to the said sleeve; a spring-actuated pawl upon the said plate adapted to engage with the said ratchet-wheel; and one or more pins connected to the holder and adapted to engage with slots in the said sleeve, substantially as and for the purpose specified.

9. In a drill, a frame with slotted sides; a drill-bar movably supported therein, and provided with collars; and a tappet passing through the slots and embracing the said drill-bar between the collars; in combination with a shaft journaled in the said frame; cams carried by the said shaft and adapted to raise the said tappet and drill-bar; means for returning the said drill-bar to its normal position; a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to the said sleeve; a spring-actuated pawl upon the frame engaging with said ratchet-wheel; one or more pins projecting from the drill-bar into the slots in the sleeve; a drill-holder screwed upon the end of the drill-bar; a plate supported from the frame of the drill so as to be capable of a reciprocating motion only with the drill-bar; a sleeve suitably supported about the said holder; two ratchet-wheels rigidly connected to the said sleeve with their teeth set in opposite directions; two spring-actuated pawls upon the said plate adapted to engage with the said ratchet-wheels; one or more pins connected to the holder and adapted to engage with slots in the said sleeve, substantially as and for the purpose specified.

10. In a drill, a frame with slotted sides; a drill-bar movably supported therein and provided with collars; and a tappet passing through the slots and embracing the said drill-bar between the collars; in combination with a shaft journaled in the said frame; cams carried by the said shaft and adapted to raise the said tappet and drill-bar; a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to the said sleeve; a spring actuated pawl upon the frame engaging with said ratchet-wheel; one or more pins projecting from the drill-bar into the slots in the sleeve; a drill-holder screwed upon the end of the drill-bar; a plate connected by springs with the frame of the drill and with the drill-bar so as to tend to return the drill-bar to its extended position after it has been raised, without interfering with its rotation; a sleeve suitably supported about the said drill-holder; a ratchet-wheel rigidly connected to the said sleeve; a spring-actuated pawl upon the said plate adapted to engage with the said ratchet-wheel; one or more pins connected to the drill-holder and adapted to engage with slots in the said sleeve, substantially as and for the purpose specified.

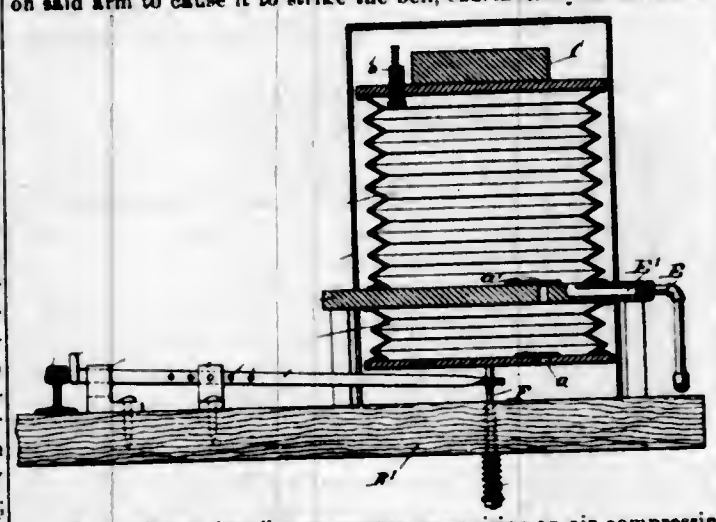
11. In a drill, a frame with slotted sides; a drill-bar movably supported therein and provided with collars; and a tappet passing through the slots and embracing the said drill-bar between the collars, in combination with a shaft journaled in the said frame; cams carried by the said shaft and adapted to raise the said tappet and drill-bar; pistons connected to the tappet; vacuum-cylinders in which the said pistons play; a sleeve surrounding a suitable portion of the drill-bar and provided with one or more diagonal slots; a ratchet-wheel suitably supported and connected to the said sleeve; a spring-actuated pawl upon the frame engaging with said ratchet-wheel; one or more pins projecting from the drill-bar into the slots in the sleeve; a drill-holder screwed upon the end of the drill-bar; a plate connected by springs with the frame of the drill and with the drill-bar so as to tend to return the drill-bar to its extended position after it has been raised, without interfering with its rotation; a sleeve suitably supported about the said drill-holder; a ratchet-wheel rigidly connected to the said sleeve; a spring-actuated pawl upon the said plate adapted to engage with the said ratchet-wheel; and one or more pins connected to the drill-holder and adapted to engage with slots in the said sleeve, substantially as and for the purpose specified.

12. In a drill, the combination with a frame, of a portion thereof having corrugated projections formed thereon, legs for said drill, split sleeves connected with said legs and arranged around said corrugated portions, and hinges and clamps provided for said split sleeves arranged to secure sleeves to said corrugated portions, substantially as described.

13. In a drill, a drill-holder provided with a socket, and a pinch-bolt in said socket for clamping the drill therein, a guide also secured to said socket, and a Y-shaped spring-plate embracing the bolt-head and having its stem passing under said guide, substantially as shown and described.

607,888. PNEUMATIC RAILWAY-SIGNAL. LEWIS S. BROWN, Columbus, Ohio, assignor to himself and Jacob C. Jennings, same place. Filed Jan. 19, 1898. Serial No. 667,165. (No model.)

Claim.—1. A railway signaling apparatus, comprising an air compressing or pumping device actuated by the passage of the train, a reaction wheel connected to the pumping apparatus and revolved by the escape of the air, an arm revolving with said wheel and having projections thereon, a bell and a striker engaged by the projections on said arm to cause it to strike the bell, substantially as described.

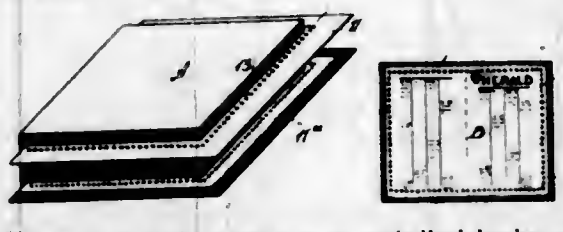


2. A railway signaling apparatus, comprising an air compressing or pumping device actuated by the passage of the train, a reaction wheel connected to the pumping apparatus and revolved by the escape of the air, a disk revolving with said wheel and having side projecting lugs or arms, a bell surrounding said disk, and a spring-controlled striker having a part thereof in the path of said lugs and engaged thereby to strike the bell, substantially as described.

3. A railway signaling apparatus, comprising an air compressing or pumping device actuated by the passage of the train, an air-supply pipe leading therefrom, a reaction wheel composed of hollow arms having tangential openings at their outer ends and having a hollow axis connected with the air supply pipe, a disk revolving with said wheel and having side projecting lugs or arms, a bell surrounding said disk, and a spring-controlled striker having a part thereof in the path of said lugs and engaged thereby to strike the bell, substantially as described.

4. In railway signaling apparatus, a pump-operating mechanism, comprising two connected bars lying one on each side of the track-rail and pivoted at one end, the bar upon the inner side of the rail being at a lower elevation than the other bar, and adapted to be engaged and depressed by the flanges of the car-wheels, and the other bar being adapted to be depressed by the treads of said wheels, and an operating-lever connected to the swinging ends of said bars, substantially as described.

607,339. NEWSPAPER OR BOOK PROTECTOR. WILLIAM H. BURLAND, Punta Gorda, Fla. Filed July 17, 1897. Serial No. 644,941. (No model.)



Claim.—1. A book, newspaper or periodical having sundry of its leaves extended beyond the other leaves at the three free edges of such other leaves, forming projecting margins, said margins being of sufficient length to overlap and being adapted for sealing engagement so as to completely conceal the contents of the book or the like between such extended leaves, substantially as described.

2. A book, newspaper or periodical having sundry of its leaves at the unbound portions extended beyond the other leaves of the book, forming projecting margins, the said projecting margins being arranged for sealing engagement and provided with perforations which outline the true margins of said leaves, the extended margins of the leaves being also reduced in width at the corners to form openings when the extended margin of one leaf is secured to the extended margin of another large leaf of the book or paper, for the purpose specified.

3. A book or the like, having one of the inner leaves provided with a marginal extension projecting beyond the leaves of the book, and an outer leaf, having a like extension, said marginal extensions being adapted for sealing engagement with each other, whereby a portion of the book may be concealed from view, substantially as described.

4. A book, newspaper or periodical having sundry of its leaves extended beyond the other leaves of the book, forming projecting margins, said margins being arranged for sealing engagement, and being also reduced in width at the corners to form openings when the extended margins of two leaves are secured together, substantially as described.

607,340. FLUE-CLEANER. CHARLES H. CARRICO, Salt Lake City, Utah. Filed Mar. 7, 1898. Serial No. 672,896. (No model.)



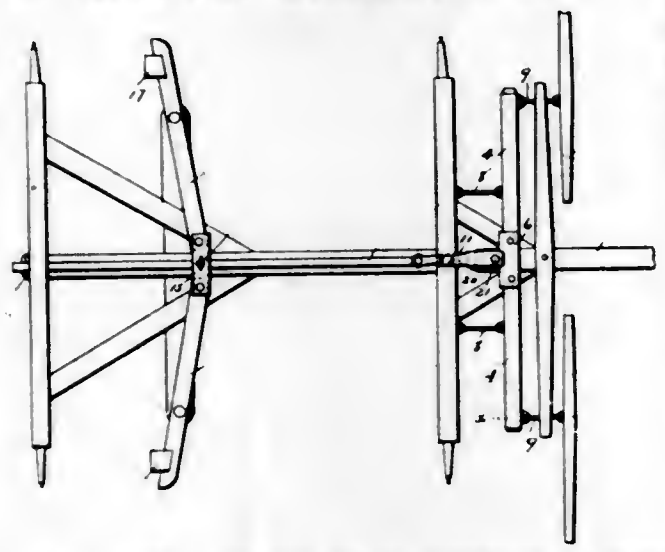
Claim.—1. A flue-cleaner, having a dam or stopper provided with an expansible tube running around its periphery, and capable of holding the dam or stopper in place and of effecting hermetic connection between the dam or stopper and the opening in which it is placed.

2 A flue-cleaner, having a dam or stopper comprising a circular body portion provided with a peripheral groove, and an expansible endless tube seated in said groove and projecting beyond the periphery of the body portion.

3. In a flue-cleaner, the combination of a dam or stopper comprising a circular body portion and also comprising an expansible endless tube encircling the body portion, a steam-pipe projecting centrally through the body portion, a gasket encircling the steam-pipe and bearing against a shoulder formed on the body portion, and a hollow screw-plug encircling the steam-pipe and pressing the gasket, to hold the steam-pipe in place and to effect a hermetic connection between the steam-pipe and the body portion.

4. In a flue-cleaner, the combination of a dam or stopper comprising a body portion with a passage run therethrough, a steam-pipe extending through the passage, the body portion having a shoulder formed in the walls of the passage, a gasket encircling the steam-pipe and bearing against the shoulder, and a hollow screw-plug encircling the steam-pipe and pressing the gasket against the shoulder and against the steam-pipe.

607,341. WAGON-BRAKE. AARON R CHITWOOD, Little Rock, Ark. Filed July 12, 1897. Serial No. 644,206. (No model.)



Claim.—1. The combination with the running-gear of a vehicle, of pivoted brake-levers mounted thereon, a rod connected to said levers, a spring connecting said rod and frame to the running-gear for normally forcing the levers into contact with the wheels, and pivoted levers connected to said rod and the singletrees, substantially as described.

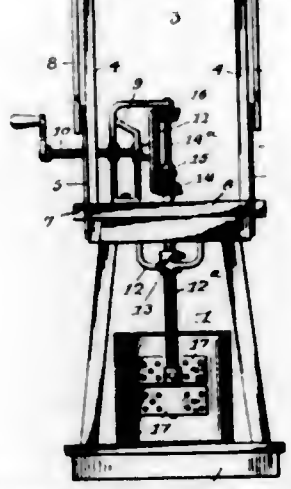
2. In a brake apparatus for vehicles, the combination with the running-gear proper, of pivoted brake-levers mounted thereon, a sliding rod engaging said levers, a spring connecting said rod and the frame of the running-gear for normally forcing the brake-levers in contact with the wheels, pivoted levers mounted upon the frame and connected to said sliding rod for operating it against the tension of the spring, a doubletree pivotally mounted upon the tongue, singletrees, and means connecting the same to the last-mentioned levers and the doubletree, substantially as described.

3. In a brake apparatus for vehicles, the combination of the running-gear proper and brake-levers, of a sliding spring-pressed rod for operating said brake-levers, pivoted levers mounted upon the frame and connected respectively to said rod, singletrees connected to said latter levers, and a locking-pin for locking said latter levers in either of their adjusted positions to hold the brakes on or off, substantially as described.

4. In a brake apparatus for vehicles, the combination with the running-gear proper, of pivoted brake-levers mounted thereon, shoes mounted on said levers, a casting connecting said levers, a sliding rod connected to said casting, a spring connecting said rod to the frame, whereby the brake-shoes are normally applied to the wheels, pivoted levers mounted upon the frame, a casting connecting these latter levers together and to the sliding rod, and singletrees connected to said latter levers, substantially as described.

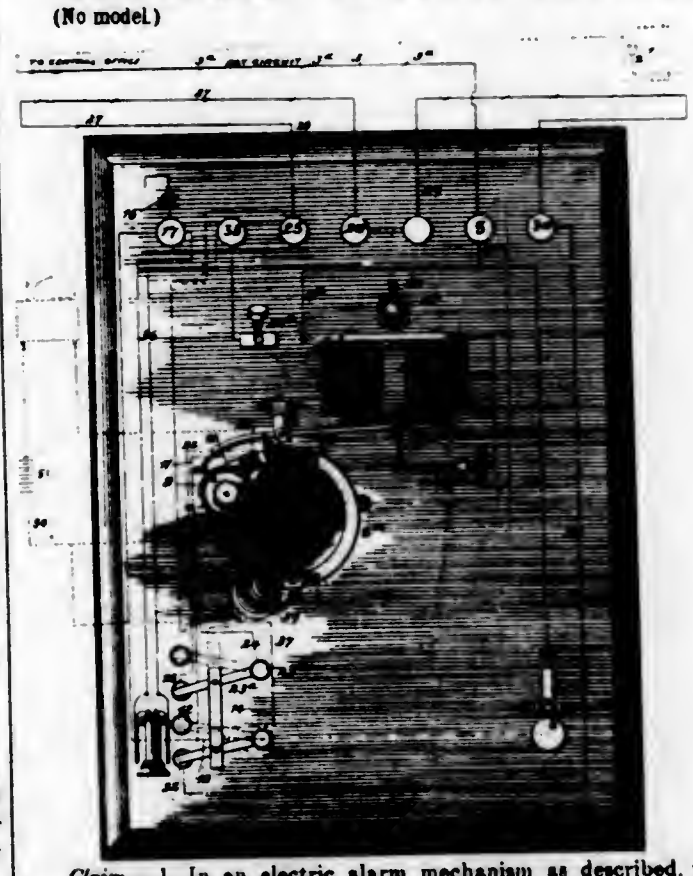
5. In a brake apparatus for vehicles, the combination with the running-gear proper, of pivoted levers mounted upon the frame, a doubletree pivotally mounted upon the tongue, links connected to the respective apertured ends of the pivoted levers and passing through guiding-staples upon the doubletree, singletrees connected to the outer ends of said links, a sliding spring-pressed rod connected to the pivoted levers, and brake-levers connected to said rod, substantially as described.

607,342. CHURN. WILLIE P. COKER, Oakdale, Okla. Filed Aug. 18, 1897. Serial No. 648,657. (No model.)



Claim.—A churn comprising a main frame, a supplemental frame secured to the upper end thereof having vertical slots in its side bars, a movable platform carrying dashers and the churn-operating mechanism provided with lateral projections adapted to fit and move in said slots, and hangers pivotally mounted to the supplemental frame at points adjacent to the upper end thereof and in line with said slots, the lower ends of said hangers being beveled and provided with hooks adapted to engage the projections on said movable platform, as and for the purpose set forth.

607,343. SWITCHBOARD AND ALARM MECHANISM. JOHN P. CONWAY, New York, N. Y. Filed May 5, 1897. Serial No. 635,155. (No model.)



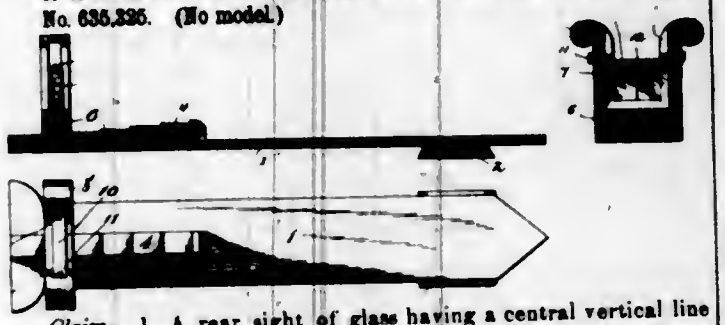
Claim.—1. In an electric alarm mechanism as described, the combination with the day and night circuits, and the main line having connection with the central-office indicator and signaling mechanism, of signaling devices consisting of a pair of signal-wheels, magnets in the main circuit, having the armature formed with a detent to engage the signal-wheels, said signal-wheels having independent circuits, a return or ground circuit and switch devices for connecting

either of the said independent circuits with the return or ground circuit, whereby to close either the day or night circuit as specified.

2. The combination of the magnets, the signaling-train in the main circuit, a detent forming the armature for the magnets for holding the signaling-train from operation, a day and night circuit in connection with the signaling-train, a return or ground circuit, a switch mechanism for placing either the day or night circuit in the return-circuit, said signaling-train having separate contacts 10 and 20 for the day and night circuit, a main circuit connected with the magnet and the clock-movement to a sub return-circuit having a contact adapted to short-circuit the main current through the signal-train and cut out the day and night circuits substantially as shown and for the purposes described.

3. In an electric alarm mechanism, the combination with the day and night circuits, the main line being connected with the central-office indicator and signaling devices, magnets adjustably secured to the switchboard and in the main circuit having an armature-lever adapted to engage with the said signaling devices, said signaling devices being provided with independent circuits, and means for closing either the day or night circuits.

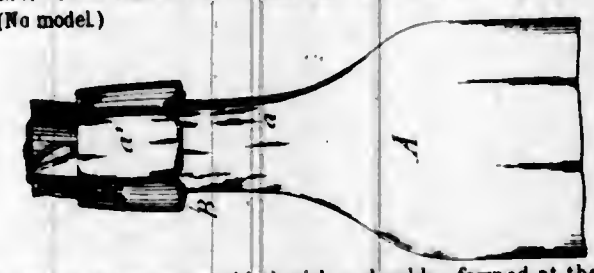
607,344. **GUN SIGHT.** JOHN A. COOPER, Adair, Iowa, assignor of one-half to A. C. Savage, same place. Filed May 6, 1897. Serial No. 635,836. (No model.)



Claim.—1. A rear sight of glass having a central vertical line thereon, a front transparent sight having a registering pointed projection of a different color on its upper side, all arranged as set forth.

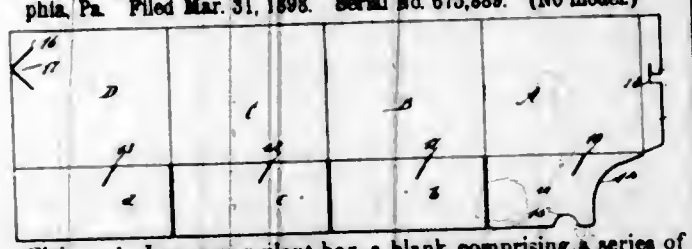
2. An integral circular rim having a widened lower half with a groove therein holding a semicircular sight, and means to retain said sight in place, whereby on removing said means, the sight by a half-turn can be removed, all arranged as set forth.

607,345. **BOTTLE.** USAL O. CRANE, New York, N. Y., assignor to Harry O. Crane, same place, and George W. Judson, Jersey City, N. J. Filed Jan. 21, 1897. Renewed Dec. 15, 1897. Serial No. 662,067. (No model.)



Claim.—A bottle, provided with a shoulder formed at the juncture of the head with the neck and constructed with an undercut recess in said shoulder, and shallow tapering grooves leading from said undercut recess along the side of the head in upward direction toward the mouth of the said bottle, substantially as set forth.

607,346. **PAPER PLANT-BOX.** JOSEPH T. CRAW, Jersey City, N. J., assignor of one-half to the Brown & Bailey Company, Philadelphia, Pa. Filed Mar. 31, 1898. Serial No. 675,889. (No model.)

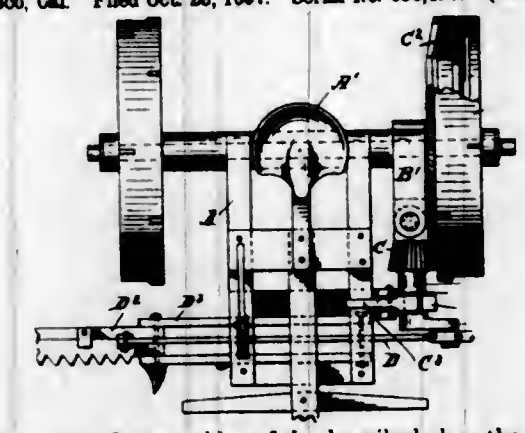


Claim.—1. In a paper plant-box, a blank comprising a series of panels of the shape of a parallelogram, one of the end panels being provided with a side flap, and all of the said panels being provided with rectangular flaps at their lower edges, each of the said bottom flaps being provided with a diagonal slot between its ends, for the purpose specified.

2. In paper plant-boxes, a blank consisting of a series of body-panels having the shape of a parallelogram, each body-panel being provided with a bottom flap at its lower edge and one of the side panels being provided with a vertical flap at its outer edge, the said vertical flap being provided with an angular slot at its edge, forming a tongue, the opposite end panel of the body being provided with an angular slot producing a triangular tongue, each of the bottom flaps having a diagonal slot made therein, all of the slots having the same inclination, and the bottom flap of one of the end panels being provided with recessed edges, for the purpose set forth.

3. A rectangular paper plant-box, the bottom whereof consists of flaps extending from the lower edges of the body-panels, each of the said bottom flaps being provided with a diagonal slot arranged to receive the corner portion of an adjacent overlapping flap, a drainage-opening being provided at the central portion of the body and bounded by the bottom flaps, for the purpose set forth.

607,347. **MOWING-MACHINE.** VANNETTI DANIELE, San Francisco, Cal. Filed Oct. 23, 1897. Serial No. 656,121. (No model.)



Claim.—1. In a machine of the described class, the combination with the drive-wheel, of an axle upon which the same is mounted, gear-teeth carried by said drive-wheel, a hanger mounted upon said axle, a pinion, a supporting connection for said pinion pivoted to said hanger, a lever for moving said supporting connection on its pivot to throw the pinion into and out of mesh with said gear-teeth, a cross-rod to which the cutter-bar is attached, and connection between said rod and said pinion whereby a reciprocating motion is transmitted to said cross-rod by the rotary movement of the pinion.

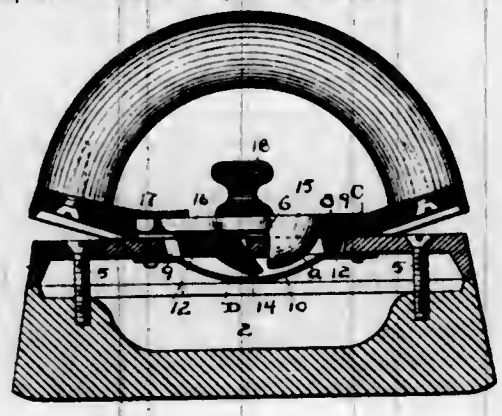
2. In a machine of the described class, the combination with the drive-wheel, of an axle upon which the same is mounted, gear-teeth formed on the inner face of said wheel, a hanger loosely mounted upon said axle, a pinion-shaft hinged to said hanger, a hub loosely working on said shaft, a pinion secured to said hub, a fulcrumed lever for turning the pinion-shaft on its hinge to throw the pinion into and out of mesh with the said gear-teeth on the drive-wheel, the cross-rod to which the cutter-bar is attached, and connection between said rod and the hub of said pinion whereby a reciprocating motion is transmitted to said rod by the rotary movement of the pinion.

607,348. **VARNISH.** CHARLES DAY, London, England. Filed Oct. 25, 1897. Serial No. 656,287. (No specimens.) Patented in England July 2, 1896, No. 14,643.

Claim.—1. A liquid varnish composed of the following ingredients in about the proportions stated, namely, gum-dammar, gum-elemi, gum-thus and bitumen, each one pound, ivory-black one-half ounce and turpentine one gallon, substantially as described.

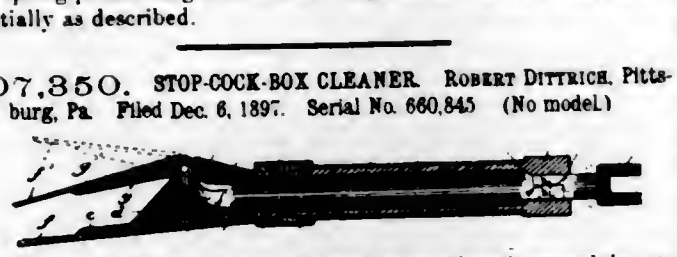
2. A liquid varnish composed of the following ingredients, in about the proportions stated, namely, gum-dammar, gum-elemi, gum-thus and bitumen, each one pound, linseed-oil one-half pint, ivory-black one-half ounce and turpentine one gallon, substantially as described.

607,349. **SAD-IRON.** GEORGE H. DIPPO, WILLIAM C. BRUCE, and WILLIAM T. SEMPLE, Chagrin Falls, and WILLIAM M. POWELL, Cleveland, Ohio, assignors to the Ferrosteel Company, Cleveland, Ohio. Filed Nov. 15, 1897. Serial No. 658,654. (No model.)



Claim.—In sad-irons, the body of the iron and a cap thereon having a central opening provided with angular extremities and a bridge midway across said opening and a flat surface about the opening, in combination with a handle having a base with a flat surface to rest on said cap and lugs to fit said angular extremities, and an anchor and spring-pressed dog between said lugs to lock on said bridge, substantially as described.

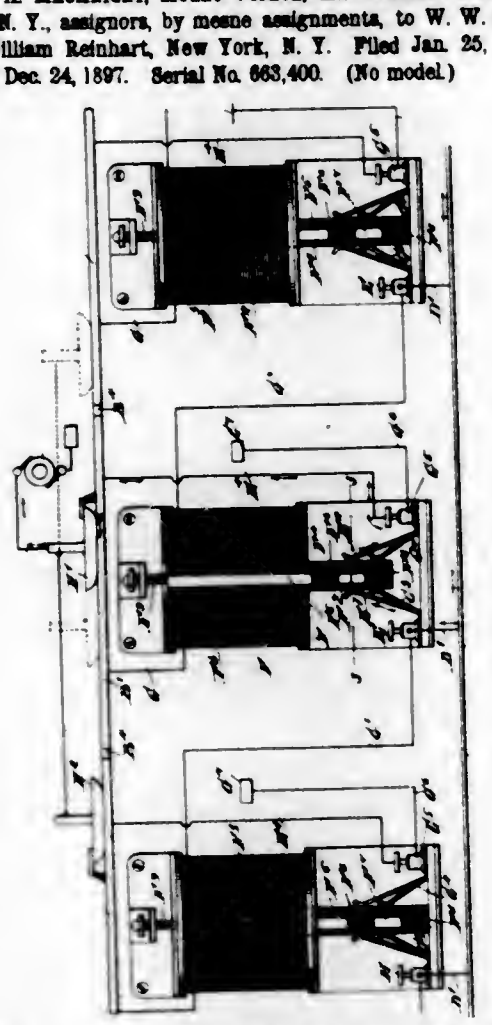
607,350. **STOP-COCK-BOX CLEANER.** ROBERT DITTRICH, Pittsburg, Pa. Filed Dec. 6, 1897. Serial No. 660,845. (No model.)



Claim.—1. In combination, a jaw-frame, a shovel secured thereto a dog pivotally secured within the frame and carrying a twin shovel, said dog having a groove in one end, to receive the end of an operating-rod to operate the movable shovel, a casing connected to said jaw-frame, substantially as shown and described.

2. In a device of the character described, the combination of the two shovels, one of which is rigidly attached to a movable dog, a groove in one end of said dog to receive the end of an operating-rod, and the other shovel rigidly attached to one side of the frame, substantially as set forth.

607,351. **ELECTRIC RAILWAY.** WILLIAM W. DOTY, New York, JAMES A. MACKNIGHT, Mount Vernon, and CHARLES GRAUTEN, New York, N. Y., assignors, by mesne assignments, to W. W. Doty & Co. and William Reinhart, New York, N. Y. Filed Jan. 25, 1897. Renewed Dec. 24, 1897. Serial No. 663,400. (No model.)



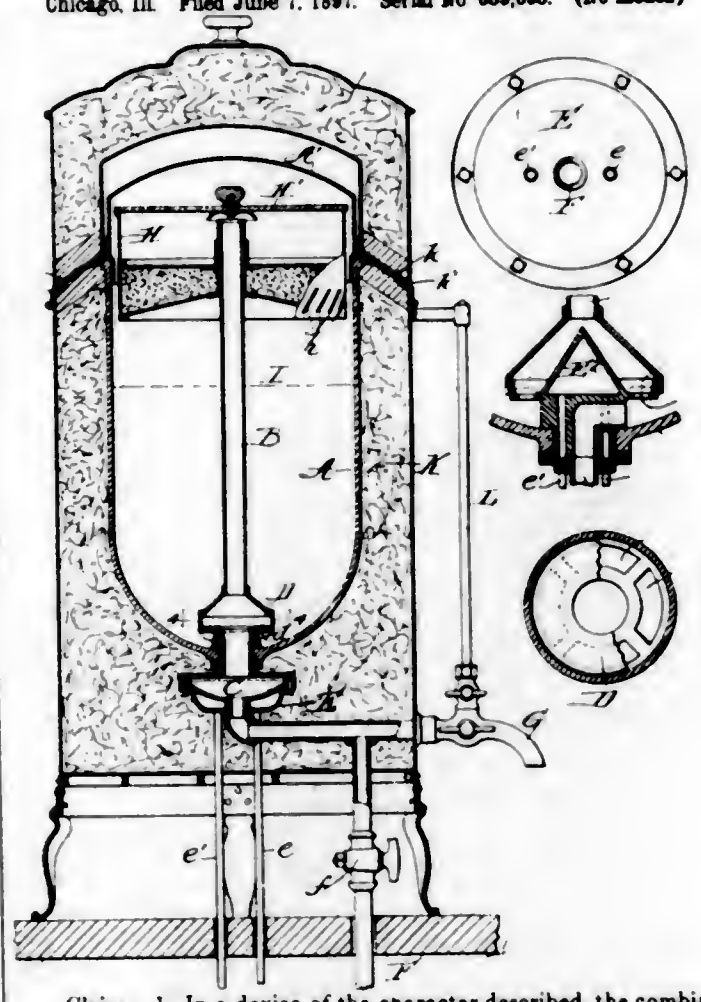
Claim.—1. The combination of the feed-wire, the sectional working conductor, and a series of circuit-controllers, one for each section of the working conductor, each of said circuit controllers comprising a switch made with a conducting and a non conducting section, an electric actuating device electrically connected to the working-conductor section belonging to that controller, and two circuit-closers controlled by the switch, and so arranged that only one of them can engage the non-conducting portion of the switch at a time, one circuit-closer operating, when the electric actuating device is energized, to connect the feed-wire with the working-conductor section belonging to the same controller, and the other circuit-closer operating, when the electric actuating device is deënergized, to connect the feed-wire with the working-conductor section belonging to the next controller, substantially as described.

2. The combination of the feed-wire, the sectional working conductor, and a series of circuit-controllers, one for each section of the working conductor, each of said circuit-controllers comprising a switch made with a conducting and a non-conducting section, an electric actuating device electrically connected to the working-conductor section belonging to that controller, two circuit-closers controlled by the switch and so arranged that only one of them can engage the non-conducting portion of the switch at a time, connections from the members of one circuit-closer leading respectively to the feed-wire and to the working-conductor section belonging to the same controller, and connections from the members of the other circuit closer leading respectively to the feed-wire and to the working-conductor section to which the next controller belongs, substantially as described.

3. The combination of the feed-wire, the sectional working conductor, and a series of circuit-controllers one for each section of the working conductor, each of said circuit-controllers comprising a switch made with a conducting and a non-conducting section, an electric actuating device electrically connected to the working-conductor section belonging to that controller, two circuit-closers controlled by the switch and so arranged that only one of them can engage the non-conducting portion of the switch at a time, connections from the members of one circuit-closer leading respectively to the feed-wire and to the working-conductor section to which the same controller belongs, and connections from the members of the other circuit-closer leading respectively to the ground or its equivalent and to the electric actuating device of the controller belonging to the next section of the working conductor, substantially as described.

4. An electric railroad provided with a working conductor made in sections insulated one from the other, a solenoid for each conductor-section and having its coil of wire connected with the said conductor-section and with the ground, the magnetic plunger of the solenoid being provided with alternately-arranged sections of conducting and non-conducting materials, sets of contact-plates engaging the plunger-sections, one set of the contact-plates being in the ground-wire for the preceding solenoid and the other set being in the wire for connecting the conductor-section with a feed-wire, substantially as shown and described.

607,352. **MEANS FOR MAKING INFUSIONS.** JOHN S. DUNLAP, Chicago, Ill. Filed June 7, 1897. Serial No. 639,696. (No model.)



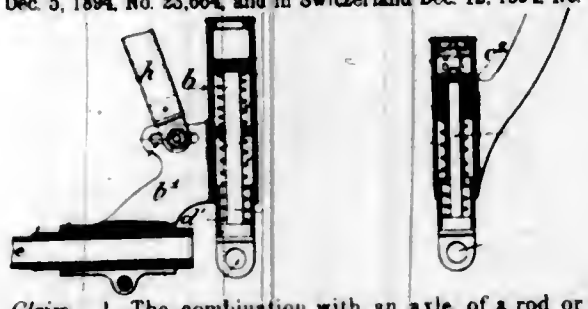
Claim.—1. In a device of the character described, the combination with a vessel having an elevated receptacle therein, of an upwardly-extending elevating or circulating tube arranged to discharge into the receptacle and communicating at its lower end with the interior of the vessel, a heating-chamber without the vessel communicating with the tube, a heating-drum for the chamber applied directly thereto, insulating material between the drum and vessel, and means for supplying a heating medium to the drum.

2. In a device of the character described, the combination with a vessel having an elevated receptacle therein, of an upwardly-extending elevating or circulating tube arranged to discharge into the receptacle, and communicating at its lower end with the interior of the vessel, a heating chamber without the vessel communicating with the tube, a heating-drum applied to the chamber having one of its

walls formed by a wall of the chamber, and means for supplying a heating medium to the drum.

3. In a device of the character described, the combination with a vessel having an elevated receptacle therein constructed to permit the escape of fluids therefrom to the vessel, of an upwardly-extending elevating or circulating tube arranged to discharge into the receptacle and communicating at its lower end with the interior of the vessel, a heating-chamber, without the vessel communicating with the tube, a heating-drum for the chamber applied directly thereto, means for preventing communicating heat from the drum direct to the vessel except through the tube, and means for supplying a heating medium to the drum, substantially as described.

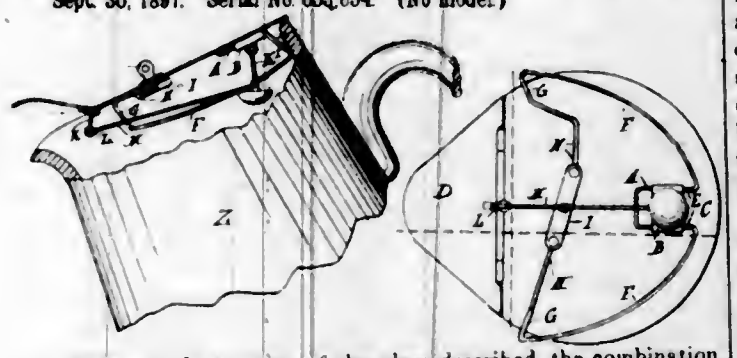
607,858. ADJUSTABLE SPRING-BEARING. NICOLAS DUVAL-PINET, Paris, France. Filed Jan. 25, 1895. Serial No. 536,279. (No model.) Patented in France Oct. 12, 1894, No. 242,031; in England Dec. 5, 1894, No. 23,664, and in Switzerland Dec. 12, 1894, No. 9,725.



Claim.—1. The combination with an axle, of a rod or support carried thereby, a sleeve or casing slidable on said rod, a spring connected to the rod and casing, a bracket connected to the casing, a frame on which the bracket is slidable, a threaded tube embracing the frame, and a nut engaging the bracket and having threads engaging with the threads of the said tube, substantially as described.

2. The combination with an axle, of a rod or support carried thereby; a casing surrounding said rod, a cushioning-spring connected to the casing, and to the rod, a bracket connected to the casing and having a forked portion, a frame straddled by the forked portion, a threaded sleeve or tube secured to the frame, and slidable in the forked portion of the bracket, a nut engaging the bracket and operating on the said tube, and means for holding the bracket in position, substantially as described.

607,354. JUG-LID. LEWIS F. EAST, Melbourne, Victoria. Filed Sept. 30, 1897. Serial No. 653,634. (No model.)



Claim.—1. In a cover of the class described, the combination with a socket under one edge of the cover; a bent spring mounted in said socket and having branching arms extending therefrom downward and backward to meet the vessel, thence forward and outward to press against the vessel at each side; thence upward to the cover; and means for compressing the ends of said spring toward each other from the exterior of the cover, substantially as described.

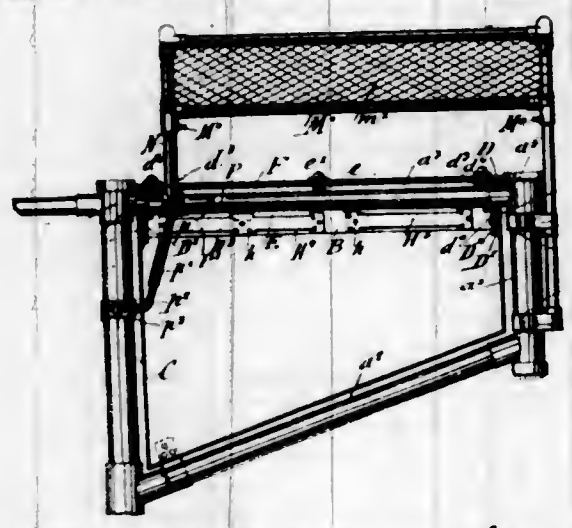
2. In a cover of the class described, the combination with a socket under one edge of the cover; a bent spring mounted in said socket and having branching arms extending therefrom downward and outward to meet the vessel, thence forward and outward to press against the vessel at each side; thence upward to the cover; and thence outwardly, beyond the edges of the said cover in position to be compressed by the hand, substantially as described.

3. The combination with a cover of the class described, of a lip hinged thereto; a weighted shank hung to the rear part thereof; a shank fixed to said hinged lip; and a link connecting the bases of said shanks, substantially as described.

4. In a cover of the class described, the combination with the cover proper; of a lip hinged thereto; a shank fixed to the under side of said hinged lip; a swinging weight suspended from said cover; a stiff connection between said weight and the said shank on said lip; a branching spring fixed to the under side of said cover; and connections on the exterior of said cover by means of which said spring may be compressed to release said cover from the vessel, substantially as described.

5. The combination with a removable cover of the character described, of a branching spring fixed to the under side of said cover, and adapted to take against the sides of the interior of the vessel, when extended; and connections upon the exterior of said cover, by means of which said spring may be compressed and released, substantially as described.

607,355. CARRIER FOR BICYCLES. CARL EICKEMEYER, Yonkers, N. Y. Filed Nov. 17, 1896. Serial No. 612,416. (No model.)



Claim.—1. In a bicycle, the combination with a connecting-tube or reach of the frame, of a valise or bag provided with a rigid distending-frame at its upper part, said connecting-tube or reach passing through the valise above said distending-frame, and clamps secured to the distending-frame and attached to said connecting-tube or reach, whereby the body of the valise or bag is supported below the latter, substantially as set forth.

2. In a bicycle, the combination with a connecting-tube or reach of the frame and suitable abutments thereon, of a valise or bag provided with a rigid distending-frame at its upper part, said connecting-tube or reach passing through the valise, and clamps secured to the distending frame and rigidly attached to the connecting-tube, said clamps being also seated against said abutments at each end of the valise, whereby the body of the valise or bag is supported immovably below the connecting-tube or reach, substantially as set forth.

3. In a bicycle, the combination with the frame and suitable abutments thereon, of a valise or bag provided with a distending-frame at its upper part, said bicycle-frame passing through the valise, and clamps secured to both ends of the distending-frame, and the inner surfaces of which clamps are constructed to conform to the portion of the frame of the bicycle upon which they are applied, and to enlargements formed by the abutments, said clamps being seated on and firmly applied to the abutments and the portion of the frame of the bicycle adjacent to said abutments, substantially as set forth.

4. In a bicycle, the combination, with the main frame constructed with a top connecting-tube or reach, of clamps applied rigidly to said connecting tube or reach near each end, said clamps consisting of upper and lower halves, and means for securing said halves together, and a valise or bag provided with a distending-frame and with a cover or lid, said lower halves of the clamps being rigidly secured to the end portions of the distending-frame, whereby the main support for the body of the valise or bag is furnished, while the upper halves of the clamps support the cover or lid of the valise or bag, substantially as set forth.

5. In a bicycle, the combination, with the frame and couplings, of clamps applied to the frame against the ends of said couplings and consisting of upper and lower halves, means for securing said halves together around the ends of the couplings, and a valise or bag provided with a distending-frame and with a cover or lid, said lower halves of the clamps being secured to the ends of the distending-frame for furnishing the main support for the valise or bag or the like, while the upper halves of the clamps support the cover or lid of the valise or bag, substantially as set forth.

6. In a bicycle, the combination, with the main frame provided with suitable abutments, of clamps applied rigidly to the frame against said abutments, a valise or bag suspended by said clamps and through which the frame of the machine passes, and a metallic connecting strip or bar applied to the clamps and extending along and above the frame, whereby the movement of the clamps toward each other is prevented, substantially as set forth.

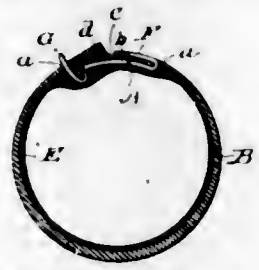
7. In a bicycle, the combination, with the main frame provided with suitable abutments, clamps applied to said abutments, and a valise or bag suspended by said clamps and through which the frame of the machine passes, of a connecting strip or bar rigidly applied to the clamps and extending along and above the frame, and a cover or lid

for the valise, said cover or lid being applied to and supported by said strip or bar, substantially as set forth.

8. In a bicycle, the combination with the main frame, of clamps applied to the main frame, a valise or bag suspended by said clamps and through which the frame of the machine passes, said valise or bag being provided with a distending-frame attached to the clamps and arranged under the supporting portion of said main frame of the bicycle, and a connecting strip or bar rigidly applied to the clamps and extending along and above said supporting portion of the main frame, substantially as set forth.

9. In a bicycle, the combination with the main frame, provided with a top connecting-tube or reach, of clamps rigidly supported on said connecting-tube or reach and provided with outturned flanges at an angle to the main bodies of the clamps, and a valise or bag provided with a distending-frame connected with said clamps, said flanges engaging with the end portions of said distending-frame, substantially as set forth.

607,356. BUCKLE FOR TIRE-CASES. CHRISTIAN EICKMANN, Indianapolis, Ind. Filed Feb. 14, 1898. Serial No. 670,196. (No model.)



Claim.—1. A buckle or clasp for the outer casing of flexible tires having a slit through the wall thereof and by which the two edges at the slit are drawn together and retained, and consisting of a body member curved to conform to the case and having at one end a rigid hook and at the opposite end a hook hinged to said body member, substantially as shown and described.

2. A buckle for flexible-tire cases, said buckle comprising a body member, a hook formed integrally at one end of said body member, a hook at the opposite end of said body member and hinged thereto, said hooks being adapted to enter suitable holes in said case, and said hinged hook being adapted to be opened at its point and closed, substantially as and for the purposes shown and described.

3. The combination with a case for pneumatic tires having a slit through which to insert the inner tube and having lacing-holes, of a buckle or metallic clasp consisting of a body member provided at one end with a rigid hook and at the opposite end with a hinged hook, said hinged hook being adapted to draw the two abutting edges of said slit together and retain them, substantially as shown and described.

4. The combination with the case provided with the slit and lacing-holes, of a metallic buckle or clasp provided at one end with a rigid hook engaging one of said lacing-holes and at the opposite end with a hinged hook engaging a lacing-hole at the opposite side of said slit, said hinged hook being adapted to draw the two edges of said slit together and retain them, substantially as shown and described.

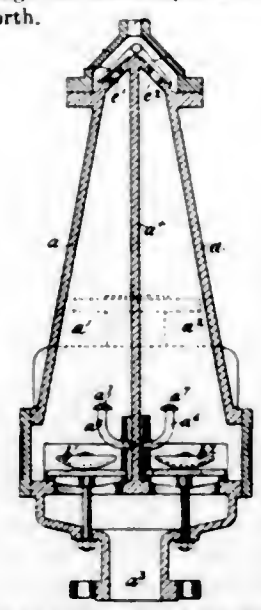
5. The combination with a tire-case having a slit for inserting the inner tube and having the lacing-holes at each side of the slit, of a metallic buckle or clasp consisting of a body member adapted to extend between two opposite lacing-holes, a rigid hook at one end of said body member and engaging one of said lacing-holes, a rigid hook at the opposite end of said body member but hinged thereto near the bend of the hook so that the point of said hinged hook may be thrown outward to enter the opposing lacing-hole and be used as a lever to draw the opposing edges of said slit together and whereby said edges are retained in close connection, substantially as shown and described.

6. In a device for connecting or lacing the opposing edges of the slitted case, the combination with the lacing-holes, of the metallic buckle or clasp consisting of the body member, the rigid hook at one end engaging a lacing-hole, and the rigid hook hinged to the opposite end of said body member and engaging a lacing-hole at the opposite side of said slit, substantially as shown and described.

7. In a tire-case, the combination with the holes *a a* of the buckle A provided at one end with the hook F and at the opposite end with the hook G, and the hinge I adapted to permit the opening and closing of the said hook G substantially as and for the purposes shown and described.

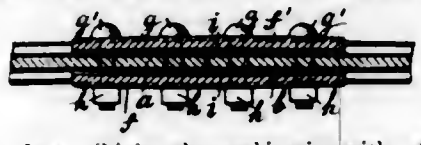
607,357. PULSATING STEAM-PUMP. WILLIAM T. ELLISON, Irlam's-O'th-Height, England. Filed Sept. 29, 1896. Serial No. 607,327. (No model.) Patented in England July 3, 1895, No. 12,306.

Claim.—1. A pulsating steam-pump in the form of a single vessel provided with a vertical partition across its broadest part acting as a condenser and dividing the vessel into two compartments, the said vessel being provided with a passage a^5 having openings a^6 communicating with each compartment of the vessel, and pipes a^4 leading from the said passage into the compartments, substantially as and for the purpose set forth.



2. A pulsating steam-pump in the form of a single vessel of suitable shape, provided with a vertical division-plate or partition extending from side to side thereof at the broadest part of the vessel and having valve-seats at the top thereof arranged at an angle of about ninety degrees to each other, thus forming a ridge, and a valve suspended on said ridge with its point of suspension above its center of gravity, substantially as described.

607,358. FISH-PLATE FOR RAILS. JOHN FISHER, Matlock Bath, England. Filed Oct. 16, 1897. Serial No. 655,606. (No model.)

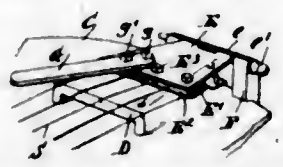


Claim.—1. In a rail-joint, the combination with a fish-plate provided with bolt-holes corresponding to the bolt-holes through the rails; of the rigid block *i* shaped upon its sides to fit the said fish-plate and the side of the rails, respectively; the said block being of slightly-greater length than the distance between the two inner bolt-holes through said fish-plate, and the ends of said block being provided with openings corresponding to the inner bolt-holes through said fish-plate, substantially as described.

2. In a rail-joint, the combination with a fish plate provided with bolt-holes corresponding to the bolt-holes through the rails, and having a concave inner face; of the rigid block *i* shaped upon its sides to fit the said fish-plate and the side of the rails, respectively; the said block being of less width than said fish-plate, and being of slightly-greater length than the distance between the two inner bolt-holes through said fish-plate, and the ends of said block being provided with openings corresponding to the said inner bolt-holes through said fish-plate, substantially as described.

3. In a rail-joint, the combination with a fish-plate provided with bolt-holes corresponding to the bolt-holes through the rails, and having a concave inner face; of the rigid block *i* shaped upon its sides to fit the said fish-plate and the side of the rails, respectively; the said block being of less width than said fish-plate, and of slightly-greater length than the distance between the two inner bolt-holes through said fish-plate, and the ends of the said block being provided with openings corresponding to the said inner bolt-holes through said fish-plate; and a metallic lining-plate *k* having a flexible extension upon one side edge adapted to be bent over upon the outside of said fish-plate, and engage the bolt-nuts of the joint, substantially as described.

607,359. STRINGED MUSICAL INSTRUMENT. ALBERT J. FORREST, Seattle, Wash. Filed Sept. 14, 1897. Serial No. 651,628. (No model.)



Claim:—1. An attachment for stringed musical instruments, comprising a pivoted plate adapted to engage the strings between the

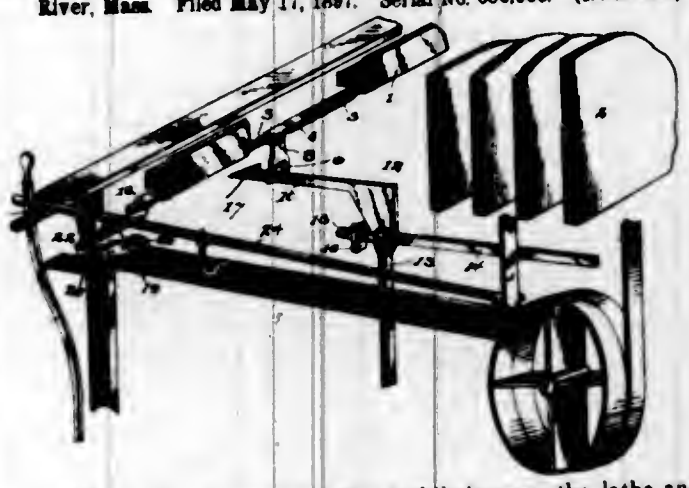
bridge and the end fastenings of the strings, and adapted to be engaged by the hand of the player, substantially as described.

2. An attachment for stringed musical instruments, comprising a pivoted plate adapted to engage the strings between the bridge and the end fastenings of the strings, and an arm attached thereto and extending alongside the strings, substantially as described.

3. An attachment for stringed musical instruments, comprising a pivoted plate adapted to engage the strings between the bridge and the end fastenings of the strings, and means by which the pressure of said bar or plate upon the strings may be varied at will, substantially as described.

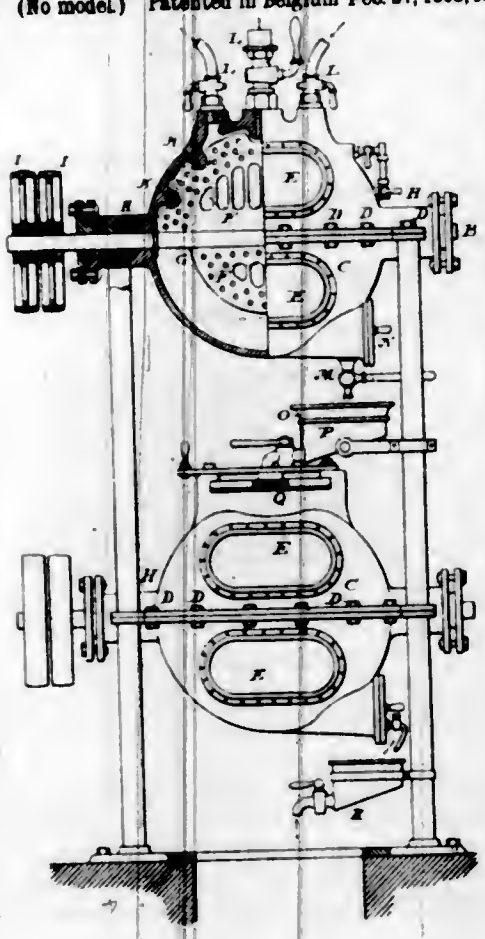
4. An attachment for stringed musical instruments, comprising a pivoted plate adapted to engage the strings between the bridge and the end fastenings of the strings, an arm attached to said plate and extending alongside the strings, and means for adjusting the position of said arm, substantially as described.

607,360. **LOOM.** ALOTHUS J. GILLET and GEORGE RUTTER, Fall River, Mass. Filed May 17, 1897. Serial No. 636,960. (No model.)



Claim.—A loom comprising the heddle-harness, the lathe and the belt-shifting lever, an oscillating shaft carried by said lathe, a dog fixed to said shaft, and a slotted arm depending from said shaft, in combination with a bell-crank lever fulcrumed in the loom-frame, and provided with one arm projecting into the path of the said slotted arm, and the other arm projecting into the path of the heddle-harness, and a pivoted bar, in operative contact with the trip-lever, and provided with a lug projecting into the path of the dog on the oscillating shaft, substantially as shown and described.

607,361. **PROCESS OF AND APPARATUS FOR PURIFYING WATER.** MICHEL GLAESENER and GEORGES GLAESENER, Chatillon, and EMILE D'HUART, Luxemburg, Belgium. Filed Aug. 21, 1896. Serial No. 603,551. (No model.) Patented in Belgium Feb. 27, 1895, No. 120,249.



Claim.—1. The method of softening water containing ingredients of a hardening nature, consisting in introducing into such water separately a fatty acid and an alkaline salt, agitating the water and first ingredient before the second ingredient is added, whereby insoluble earthy oleates are formed, and then mechanically separating said oleates from the water.

2. The method of softening water containing ingredients of a hardening nature consisting in introducing into such water oleic acid, agitating the water and oleic acid therein, introducing an alkaline salt into such water and acid, whereby insoluble oleates are formed of less specific gravity than the water, and then filtering the water to separate therefrom said oleates.

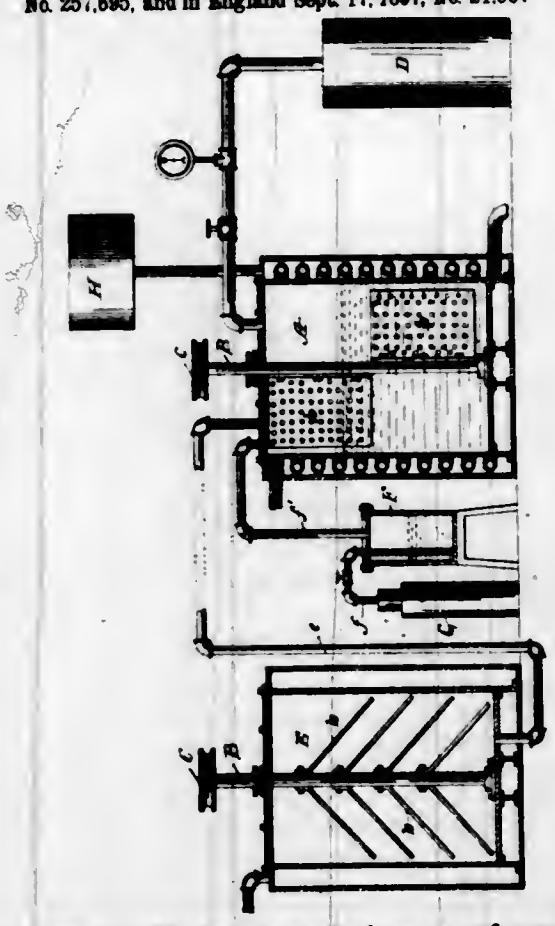
3. The method of softening and clarifying water containing ingredients of a hardening nature consisting in first treating the same with a fatty acid and an alkaline salt to form insoluble oleates, then adding salts having an acid reaction, such as iron acid salts, and then filtering the water.

4. The method of softening and clarifying water containing ingredients having a hardening nature, consisting of adding to such water oleic acid and an alkaline salt, then agitating the solution, then filtering the solution, then adding to such filtered solution salts having an acid reaction such as aluminium, acid salts, then agitating the solution so treated and finally filtering the solution.

5. In an apparatus for the purpose described, a support, a receptacle provided at or near its top with a plurality of valved inlet-ports, at its bottom with a valved discharge-port, and at its side near the bottom with a door, a filter below said discharge-port, a second receptacle having at or near its top a door through which said filter is adapted to discharge into said second receptacle, said second receptacle having a door at its side near the bottom, and stirrers in said receptacles, substantially as described.

6. In an apparatus for the purpose set forth, a substantially spherical receptacle composed of two substantially semispherical sections, secured together, the upper section having an inlet-port, and the lower section having a discharge-port at the bottom and a door at its side near the bottom, and a rotary stirrer in said receptacle, substantially as described.

607,362. **EFFERVESCENT MILK BEVERAGE AND METHOD OF MAKING SAME.** FRIEDRICH W. H. GRAEFF, Berlin, Germany, assignor to Maurice S. Wormser, of New York. Filed Dec. 1, 1897. Serial No. 660,405. (No specimens.) Patented in France Aug. 23, 1897, No. 257,695, and in England Sept. 17, 1897, No. 21,387.



Claim.—1. The herein-described process of manufacturing an effervescent sparkling durable beverage from dairy products, which consists in submitting the same under heat in a closed vessel to motion by stirring, and at the same time to a vacuum in order to completely evacuate the air contained therein, then cooling and finally impregnating with carbonic acid, which is admitted to the closed vessel under pressure, while the products are in motion, said carbonic acid having been previously charged with suitable proportions of

formic aldehyde by passing the same through a solution of formic aldehyde, substantially as described.

2. The herein-described process of manufacturing an effervescent sparkling durable beverage from whey, which consists in separating the albumen from the whey, then submitting the whey in a closed vessel to motion by stirring, and at the same time to heat and to a vacuum, in order to completely evacuate the air contained therein, then cooling and finally impregnating with carbonic acid, which is admitted to the closed vessel under pressure, while the products are continually in motion, said carbonic acid having been previously charged with suitable proportions of formic aldehyde by passing the same through a solution of formic aldehyde, substantially as described.

3. The herein-described process of manufacturing an effervescent sparkling durable beverage from whey, which consists in separating the albumen from the whey, then adding to the whey flavors influencing the taste, then submitting the same in a closed vessel to motion by stirring, and at the same time to a vacuum in order to completely evacuate the air contained therein, then cooling and finally impregnating with carbonic acid, which is admitted to the closed vessel under pressure, while the products are continually in motion, said carbonic acid having been previously charged with suitable proportions of formic aldehyde by passing the same through a solution of formic aldehyde, substantially as described.

4. The herein-described effervescent, sparkling, durable and digestible beverage, which consists of a pasteurized or sterilized dairy product such as described, which has been freed from atmospheric air, and then charged with carbonic acid and formaldehyde, substantially as set forth.

5. The herein-described effervescent, sparkling, durable and digestible beverage from whey, which consists in whey deprived of its albumen, freed from air and charged with carbonic acid and formaldehyde under pressure as set forth.

6. The herein-described effervescent, sparkling, durable and digestible beverage from dairy products, which consists of milk or a fluid product thereof in a sterilized condition, freed from atmospheric air and charged with a mixture consisting of carbonic acid and formaldehyde, as set forth.

7. The herein-described effervescent, sparkling, durable and digestible beverage from whey, which consists of whey which has been simultaneously heated, agitated and submitted to a vacuum to deprive it of air and gases, and which is free from albumen and charged with carbonic acid and formaldehyde under pressure, as set forth.

607,363. **GREEN-CORN CUTTER.** HENRI J. B. GRAVIER, Ithaca, N. Y. Filed Sept. 27, 1897. Serial No. 653,143. (No model.)

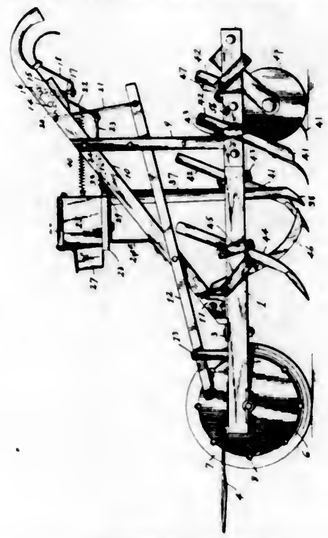


Claim.—As an improved article of manufacture, the herein-described hand implement for detaching the kernels of green corn from the cob of the green ear of corn, consisting of the handle provided with the concave bowl attached thereto and provided with the forwardly-projecting cutting-teeth having serrations in their edges, the large aperture in the base of the concave bowl, the anterior smaller aperture in the base of the bowl in front of the larger aperture, the rear wall of the bowl being inclined and terminating at its lower edge immediately in rear of the larger aperture of the implement, substantially as specified.

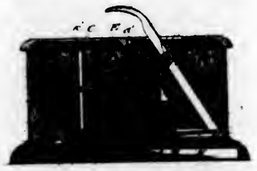
607,364. **COMBINED CULTIVATOR AND PLANTER.** ALECK H. GREEN, Owensborough, Ky. Filed Apr. 4, 1898. Serial No. 676,404. (No model.)

Claim.—1. In a device of the character set forth, the combination of a pair of longitudinally-disposed central beams adapted to support cultivating-blades, a ground-wheel rotatably mounted in the front portion of said beams and having jog-pins or projections on one side thereof, a pair of handles rising from said beams supporting an elevated trough or seedbox having a dividing-partition and independent slides in the bottom, a rock-shaft having bearing in said handles in rear of said seedbox, a U-shaped connecting plate or strap having its free ends attached to the opposite slides, a horizontal link movably connected to the central portion of said U-shaped connecting plate or strap, an elongated slide-actuating rod attached to the rear end of said horizontal link and also connected to the rock-shaft, a handle or grip loosely connected to the rock-shaft, a hook on one of the handle-bars adapted to be engaged by said handle or grip, a spring connected to the elongated slide-actuating rod and also to the seedbox or trough, a depending spout or dropping-tube having an upper enlarged end over which the slides work, and a reciprocating lever having its rear end attached to the rock-shaft and the front end loosely engaging the jog-pins or projections on the ground-wheel.

2. In a device of the character set forth, the combination of central beams adapted to have cultivator-blades attached thereto, supplemental beams movably connected to the outer sides of the said central beams and having harrow-teeth therein, a ground-wheel mounted in the front portion of the central beams and provided with jog-pins or projections on one side, a pair of handle-bars rising from the central beams, a seedbox supported by the said handle-bars and having a divided partition and horizontal slides therein with openings therethrough, brushes located above and bearing upon the said slides, a U-shaped plate having its free ends attached to the opposite slides, a depending spout or tube having an upper enlarged end over which both slides have movement, a rock-shaft supported by the handle-bars in rear of the seedbox, a horizontal link having its front end engaging the central rear portion of the U-shaped plate, an elongated slide-actuating rod attached to the rear end of said link and to the rock-shaft, a spring connected to said slide-actuating rod and the seedbox, a reciprocating lever fulcrumed on one of the handle-bars and having its front end loosely engaging the jog-pins or projections on the ground-wheel and its rear end movably attached to the rock-shaft, a vertical yielding arm engaging the front part of said lever to hold it in engagement with the jog-pins or projections on the ground-wheel, a supplemental handle attached to the rock-shaft for throwing the slides temporarily out of operation, and a trailing wheel between the rear portions of the central beams.



607,365. **COMBINED CIGAR-TIP CUTTER AND MATCH-SAFE.** EZRA M. HALL, La Crosse, Wis., assignor of one-half to Frank A. Bigelow and Volney A. Bigelow, same place. Filed Feb. 21, 1898. Serial No. 671,117. (No model.)



Claim.—1. In a cigar-tip cutter, the combination of a casing provided with a match-reservoir, a cutter, a reciprocatory match-delivery device, means for operating said cutter and delivery device, an igniting-plate provided at its free end with an igniting-face, and a set-screw for adjusting said free end of the plate, substantially as described.

2. In a cigar-tip cutter, the combination with a casing provided with a cigar-tip aperture and a match-reservoir, a cutter, a horizontal reciprocatory match-delivery plate arranged below said reservoir, a match-igniter extending parallel with the plate and having an igniting-face adjustable toward or from the adjacent side edge of said plate, a stop-plate arranged in rear of the face of the igniter to prevent the return of a fed match, and means for operating said cutter and match-delivery-plate, substantially as described.

3. In a cigar-tip cutter, the combination of a casing having a cigar-tip aperture and a match-reservoir, a cutter, a match-delivery plate adapted to be projected through an opening in the wall of the casing, means for operating said cutter and match-delivery plate, an adjustable match-igniter, a stop to prevent the return of a fed match, and a clamp independent of said igniter and stop device to receive and hold the unignited end of the match, substantially as described.

4. In a cigar-tip cutter, the combination of a base-plate, a casing resting thereon and provided with a cigar-tip aperture and a match-reservoir, a cutter below said aperture, a match-delivery plate mounted to slide horizontally on the base-plate and to be projected through an opening in the casing, said plate being provided with a match-receiving groove, means for simultaneously operating said cutter and delivery-plate, and a match-igniter extending parallel with the delivery-plate and having an igniting-face arranged to project into the path of the head of a match resting thereon, substantially as described.

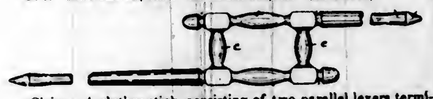
5. In a cigar-tip cutter, the combination of a base-plate, a casing resting thereon and provided with a match-reservoir and a cigar-tip aperture, a cutter below said aperture, a match delivery plate below the reservoir provided on opposite sides thereof with flanges arranged at the front and rear of its center and sliding on the base-plate, means for operating the cutter and delivery-plate, and a match-igniter secured to the casing in front of the said rear side flange of the delivery-plate, substantially as described.

6. In a cigar-tip cutter, the combination of a base-plate, a casing resting thereon and provided with a match-reservoir and a cigar-tip aperture, a cutter below said aperture, a match-delivery plate below the reservoir provided on opposite sides thereof with flanges arranged at the front and rear of its center and sliding on the base-plate, means for operating the cutter and delivery-plate, an igniting-plate secured to the side wall of the casing in front of the rear side flange of the delivery and having a free end provided with an igniting-face, and a set-screw for adjusting the said free end of the igniting-plate, substantially as described.

7. In a cigar-tip cutter, the combination of a base-plate, a casing resting thereon and provided with a match-reservoir and a cigar-tip aperture, a cutter below said aperture, a reciprocatory match-delivery plate provided with a transverse match-receiving groove and flanges arranged on opposite sides thereof and at the front and rear of its center, means for operating the cutter and delivery-plate, a stop-plate secured to the base-plate below the match-reservoir in line with and in advance of the said rear side flange of the delivery-plate, and adapted to prevent the return of a fed match, and a match-igniter secured to the casing adjacent to said stop-plate and having an igniting-face arranged in advance thereof, substantially as described.

8. In a cigar-tip cutter, the combination of a base-plate, a casing mounted thereon and provided with a match-reservoir and an opening in one of its walls immediately above the base-plate, a reciprocatory match-delivery plate provided on opposite sides thereof with flanges arranged at front and rear of its center and with a transverse match-groove, means for operating the plate, a match-igniter secured to the casing in advance of the said rear side flange of the delivery-plate, and a clamp to receive and hold the unignited end of the match arranged in the said opening of the casing above the front side flange of the delivery-plate, substantially as described.

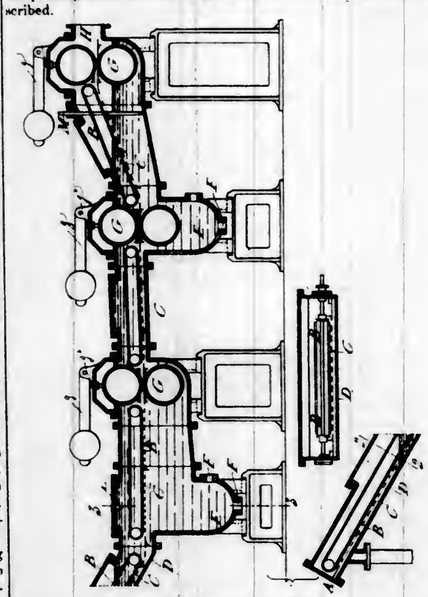
607,366. **CLOTHES-STICK.** CORNELIUS HAMERSMAN, Paterson, N. J. Filed Jan. 20, 1898. Serial No. 667,873. (No model.)



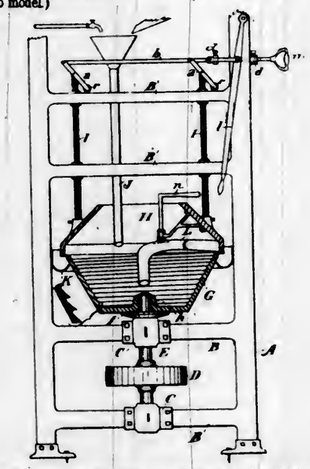
Claim.—A clothes-stick consisting of two parallel levers terminating at their inner ends in suitable handles, each of said handles being provided near its free end with an annular groove, while each of the levers is provided at the portion adjacent to its respective handle with an annular groove, cross-pieces or bridges connecting the end portions of the handles, and a double cone at the outer end of each lever, all said parts, substantially as and for the purposes described.

607,367. **APPARATUS FOR EXTRACTING OIL.** RICHARD B. HARDMAN, Bury, England. Filed Aug. 23, 1897. Serial No. 649,247. (No model.)

Claim.—In an apparatus for clearing fibers from grease and impurities, the combination with a continuous tank having an inlet at one end and an overflow at the other end and arranged to permit an uninterrupted flow of solvent from the fiber-discharge end to the fiber-feed end thereof, of perforated flooring arranged in the tank, a series of spiked endless carriers successively arranged in the tank above the perforated flooring and operating to drag the fibers thereover, pressing-rollers arranged between the adjacent ends of the endless carriers, and deep pockets formed in the bottom of the tank beneath the pressing-rollers for collecting solid impurities, substantially as described.



607,368. **MACHINE FOR GRINDING AND POLISHING.** GEORGE H. HATHORN, Bangor, Me. Filed May 25, 1897. Serial No. 638,065. (No model.)



Claim.—1. In a machine for grinding and polishing, the combination of a vessel having flaring or outwardly-inclined walls provided with a spiral groove; and means for imparting rotary motion to said vessel, substantially as set forth.

2. A machine for grinding and polishing spherical bodies, comprising a circular vessel increasing in diameter toward its top; a hood or cover placed above said vessel and of decreasing diameter toward its top; and means for imparting to the vessel a continuous rotary motion in one direction.

3. In combination with a suitable supporting-frame, a vertical spindle E provided with a spirally-grooved vessel G and with means for rotating the same: and a hood or cover above said vessel adapted to receive and direct inward the articles thrown off by centrifugal force at the circumference of the rotatable vessel.

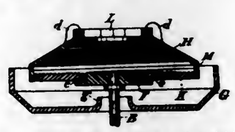
4. In combination with rotatable vessel G, spout or conductor L having one end in proximity to the circumference of the vessel, and the other end near the center thereof, whereby it is adapted to receive objects carried centrifugally to the circumference of the vessel, and to carry them inward toward the center thereof.

5. In combination with rotatable vessel G and hood H; annular trough K encircling the vessel and serving to collect the abrading and polishing materials thrown off by the vessel.

6. In combination with rotatable vessel G; stationary cover H provided with outlet *p* and spout *q*; and conductor L having its outer end normally in proximity to the skirt of the hood and across the outlet *p*, but capable of being thrown inward from its normal position, substantially as and for the purpose set forth.

7. In combination with rotatable vessel G; hood or cover H; rods I; levers *a*; connecting-rod *b*; and a lever or handpiece for moving the rod *b* and the levers *a*, and thereby elevating the rods I and hood H.

607,369. MACHINE FOR GRINDING AND POLISHING. GEORGE H. HAYNES, Bangor, Me., assignor to the Dirigo Ball Manufacturing Company, same place. Filed Aug. 16, 1897. Serial No. 648,441. (No model.)



Claim.—1. In a machine for grinding and polishing, the combination of a disk or plate rotatable about a vertical axis; and a fixed encircling skirt or body having a spiral groove or channel rising from the disk in the direction of rotation of the latter.

2. In a machine for grinding and polishing, the combination of a disk having in its face a spiral groove adapted to receive and guide the bodies to be ground or polished; and means for imparting to the disk a high speed of rotation; an open or unobstructed space being left above the disk to permit the free rise and fall of the articles placed thereon, and to enable them to freely change their axes of rotation.

3. In combination with a spirally grooved or channeled disk and with means for imparting rotation thereto; a fixed encircling wall to arrest bodies thrown off from the disk and to return them thereto.

4. In a machine for grinding and polishing, the combination of a spindle; a disk or plate carried thereby and having a spiral groove or channel formed in its face; means for rotating said spindle and disk; and a hood or cover having its skirt arranged to encircle the disk and provided with a spiral groove or channel rising in the direction of rotation of the disk.

5. In combination with spindle B and disk F secured thereto; detachable annular disk or plate K carried by disk F; and hood or cover H encircling and covering the disk F, substantially as described and shown.

6. In combination with shaft or spindle B, and step-plate *p*, the antifriction-bearing, consisting of block or enlargement *m* and plates or disks *l* and *j* with balls or rollers interposed between proximate faces, substantially as and for the purpose set forth.

7. The combination with spindle B and parts *i*, *l* and *j*, the latter provided with perforations; tube *q* communicating with said perforations; and cup *k* encircling said parts, substantially as and for the purpose explained.

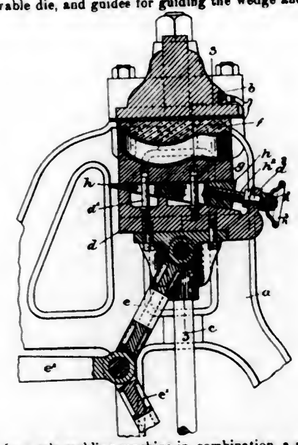
8. In a machine for grinding and polishing, the combination of a horizontal disk; means for rotating said disk; and a hood covering and encircling the disk and having a spirally-grooved skirt detachable from the top, substantially as and for the purpose explained.

607,370. SOLE-MOLDING MACHINE. JOHN J. HEYE, Lynn, Mass., assignor of one-half to Maurice V. Bresnahan, same place. Filed Apr. 30, 1897. Serial No. 634,638. (No model.)

Claim.—1. In a sole-molding machine in combination a frame, a stationary die, a movable die, a support for the movable die, means for moving said support toward and from the stationary die, a wedge placed between the movable die and its support, and means for guiding said die in the lines of its translatory movement when the wedge is adjusted.

2. In a sole-molding machine in combination a frame, a stationary die, a movable die, a support for the movable die, means for moving said support toward and from the stationary die, a wedge placed between the movable die and its support, means for guiding the die in the lines of its translatory movement, and means for adjusting the wedge.

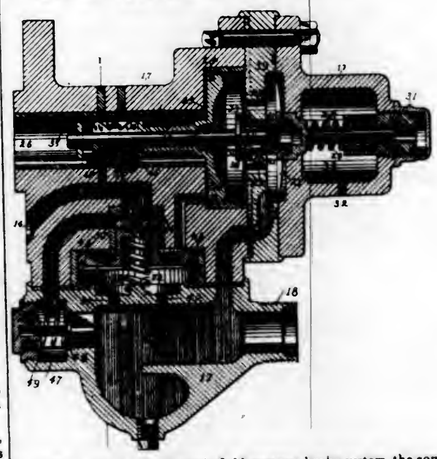
3. In a sole-molding machine in combination a frame, a stationary die, a movable die, a support for the movable die, said support having an inclined upper surface, a wedge placed between the support and said movable die, and guides for guiding the wedge and the die.



4. In a sole-molding machine in combination, a stationary die, a movable die, a support for the said movable die, a wedge inserted between said movable die and its support, a guide extending through an aperture in the wedge and from the support into an aperture in the movable die, and a screw-shaft for adjusting said wedge transversely of the lines of movement of the movable die.

5. In a sole-molding machine, in combination, a stationary die, a movable die, a support for said movable die, guides for guiding said movable die in the lines of its movement, a wedge inserted between the movable die and its support and having an aperture to receive the guides for the movable die, a screw-shaft journaled in a lug in said support for adjusting the wedge transversely of the lines of movement of the said movable die, and a hand-wheel or handle secured to the end of said screw-shaft.

607,371. AIR-BRAKE. WILLIAM HIRST, Trenton, N. J. Filed Feb. 1, 1897. Serial No. 621,439. (No model.)



Claim.—1. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and brake-cylinder, of a triple-valve device provided with a main valve having two faces, and provided with passages through it as described, a piston for operating the said main valve, an auxiliary valve having its seat on the back of the main valve, a flexible diaphragm or movable abutment for controlling the position of the auxiliary valve relative to the main valve to release the brakes, and the means whereby the main valve and its operating-piston are allowed to move the said auxiliary valve independent of the diaphragm when the train-pipe pressure is below the normal limit, substantially as shown and described.

2. In an automatic fluid-pressure brake system, a triple-valve device, a main valve having two faces and passages through it from one face to the other which are adapted to register with ports in the main valve's seat, a movable abutment or piston for operating the said main valve, an auxiliary valve having its seat on one of the faces of the main valve and adapted to control the passage of fluid-pressure through the same, a flexible diaphragm or movable abutment exposed on one side to fluid under pressure and on the opposite side to spring-pressure for controlling the position of the auxiliary valve and for controlling the travel of the main valve and its operating-piston allowing the said main valve and its operating-piston full or limiting its stroke according to the relative condition of the auxiliary reservoir and train-pipe pressures, substantially as set forth.

valve device provided with a main valve having two faces, and provided with passages through it as described, a piston for operating the said main valve, an auxiliary valve having its seat on the back of the main valve, a flexible diaphragm or movable abutment for controlling the position of the auxiliary valve relative to the main valve to release the brakes, and the means whereby the main valve and its operating-piston are allowed to move the said auxiliary valve independent of the diaphragm when the train-pipe pressure is below the normal limit, substantially as shown and described.

3. In an automatic fluid-pressure brake system, in a triple-valve device, a main valve having two faces and passages through it from one face to the other which are adapted to register with ports in the main valve's seat, a movable abutment or piston for operating the said main valve, an auxiliary valve having its seat on one of the faces of the main valve and adapted to control the passage of fluid-pressure through the same, a flexible diaphragm or movable abutment exposed on one side to fluid under pressure and on the opposite side to spring-pressure for controlling the position of the auxiliary valve and for controlling the travel of the main valve and its operating-piston allowing the said main valve and its operating-piston full or limiting its stroke according to the relative condition of the auxiliary reservoir and train-pipe pressures, substantially as set forth.

4. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake-cylinder, of a triple-valve device provided with a main valve having two faces and provided with the passages as described, a piston for operating the said main valve, an auxiliary valve having its seat on the back of the main valve, and a flexible diaphragm or movable abutment with means for controlling the movement of the said auxiliary valve whereby the pressure in the brake-cylinder may be exhausted into the atmosphere or retained in the brake-cylinder while the auxiliary reservoir is being recharged, substantially as shown and described.

5. In an automatic fluid-pressure brake system, in a triple-valve device, a main valve having two faces and passages through it from one face to the other which are adapted to register with ports in the main valve's seat, an auxiliary valve having its seat on one of the said faces and adapted to control the passage of fluid-pressure through the said main valve and means for controlling the positions of the said valves comprising a movable abutment actuated by fluid-pressure on both its sides and a movable wall exposed to fluid-pressure on one side and to spring-pressure on the other whereby fluid-pressure is admitted to the brake-cylinder released therefrom or retained therein according to the condition of the pressure in the train-pipe, substantially as set forth.

6. In an automatic fluid-pressure brake system, a triple-valve device provided with a main valve as described, a movable abutment or piston mechanically connected thereto and for operating the main valve, an auxiliary valve having its seat on the back of the main valve, a stem operatively connected to the auxiliary valve which passes through and operates in the main-valve piston, a flexible diaphragm or movable wall exposed on one side to spring-pressure and on the opposite side to fluid-pressure for operating the auxiliary valve, a stem held in the said diaphragm and a coupling by which the said stem and the auxiliary-valve stem are connected and which is adapted to allow the main valve and its operating-piston to partly or wholly control the movement of the auxiliary valve according to the condition of the pressure in the train-pipe, substantially as described.

7. In an automatic fluid pressure brake system, the combination with the train pipe auxiliary reservoir and the brake-cylinder, a main valve and its operating-piston, an auxiliary valve operated by means of a stem passing through the main piston, a movable wall exposed on one side to fluid-pressure and on the other to spring-pressure for operating the auxiliary valve, a stem held in the said movable wall and a loose coupling composed of two flanged members male and female by which the movable wall controls the position of the auxiliary valve through the said stem and the auxiliary-valve stem, substantially as shown and described.

8. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake cylinder, of a triple-valve device comprising a piston for operating the main valve, an auxiliary valve having its seat on the back of the main valve, a stem mechanically connected to and for moving the auxiliary valve, a flexible diaphragm or movable abutment for operating the auxiliary valve exposed on one side to train-pipe pressure and on the opposite side to spring-pressure and having a stem held in its center with means to connect the said stem with the auxiliary-valve stem by which the position of the auxiliary valve relative to the main valve is finally controlled but which allows the main valve and its operating-piston to effect a preliminary movement of the auxiliary valve in either direction, substantially as shown and described.

9. In an automatic fluid-pressure brake system, the combination in a triple-valve device, of a main valve, a piston mechanically connected to and for operating the main valve, an auxiliary valve having its seat on the back of the main valve, a stem operatively connected to and for moving the auxiliary valve, a flexible diaphragm or movable abutment for controlling the position of the auxiliary valve having a stem held in its center, and means to connect the said stem with the auxiliary-valve stem whereby the main valve and its operating-piston effect a preliminary movement of the auxiliary valve independent of the diaphragm into a position to cut off all intercommunication through the triple valve to graduate the pressure in the brake cylinder in a service application of the brakes, substantially as shown and described.

10. In an automatic fluid-pressure brake system, the combination in a triple-valve device, of the main valve as described, a piston for operating the main valve, an auxiliary valve having its seat on the back of the main valve adapted to control the passage of fluid-pressure through the main valve, a stem mechanically connected to the auxiliary valve, a flexible diaphragm or movable abutment for controlling the position of the auxiliary valve when the pressure in the brake system is manipulated to release the brakes, a stem held in the center of the said diaphragm and the means for connecting the said stem with the auxiliary-valve stem whereby the main valve and its operating-piston may be moved into the position to recharge the auxiliary reservoir with the auxiliary valve in the position relative to the main valve to retain the pressure in the brake-cylinder when the pressure in the train-pipe is below the normal limit, substantially as set forth

11. In an automatic fluid-pressure brake system, the combination in a triple-valve device, of the main valve as described, a piston for operating the main valve, an auxiliary valve having its seat on the back of the main valve adapted to control the passage of fluid-pressure through the main valve, a stem mechanically connected to the auxiliary valve, a flexible diaphragm or movable abutment for controlling the position of the auxiliary valve when the pressure in the brake system is manipulated to release the brakes; a stem held in the center of the said diaphragm which is moved to restrict the main valve and its operating-piston to half their normal travel when the pressure in the train-pipe is reduced, a slip-joint for connecting the said stem with the auxiliary-valve stem whereby the main valve and its operating-piston control the movement of the auxiliary valve when restricted to half-travel, and a passage through the main valve controlled by the auxiliary valve adapted to admit fluid under pressure from the auxiliary reservoir to the brake-cylinder, substantially as shown and described.

12. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and brake-cylinder, of a main valve as described, a piston for operating the main valve having a hollow stem adapted to receive the main valve, an auxiliary valve riding on the back of the main valve, a stem operatively connected to the auxiliary valve passing through the hollow stem of the main piston, a flexible wall or movable abutment having a stem held in its center and means whereby the said stem is connected to the auxiliary-valve stem by which the movement of the auxiliary valve may be controlled by the main valve and its operating-piston or by the movable wall or abutment to release or retain the pressure in the brake-cylinder according to the pressure of fluid in the train-pipe, substantially as set forth.

13. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake-cylinder, of a main valve and an auxiliary valve adapted by cooperation to release fluid under pressure into the brake-cylinder to exhaust it therefrom or to retain it therein by their different positions relative to each other and to the main-valve seat, and means separate and independent of each other for controlling the positions of the said valves which consists of a piston exposed on both sides to fluid-pressure and a movable wall exposed on one side to fluid-pressure and on the opposite side to spring-pressure, substantially as described.

14. In an automatic fluid-pressure brake system, the combination in a triple-valve device, of a main valve and an operating-piston as described, an auxiliary valve having its seat on the back of and adapted to control the passage of fluid-pressure through the said main valve, a stem operatively connected to the auxiliary valve and passing through and operating in the main-valve piston, a flexible diaphragm or movable abutment for operating the auxiliary valve having a stem held in its center and the means to connect the said stem with the auxiliary-valve stem, substantially as and for the purpose described.

15. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake-cylinder, a direct passage from the train-pipe to the brake-cylinder controlled by a release-valve which is operated by a differential piston which operates in a chamber separate from and unconnected with the said passage, the effective area of the opposite sides of the said piston being of such relative proportion that a service reduction in train-pipe pressure may be made without opening the release-valve, substantially as described.

16. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake-cylinder, a direct passage from the train-pipe to the brake-cylinder controlled by a release-valve which is operated by a differential piston which operates in chamber separate from and unconnected with the said passage the said chamber having communication with the train-pipe on the larger side of said piston and with the auxiliary reservoir on the smaller side by which one or a series of service applications of the brakes may be made without opening the release-valve, substantially as described.

17. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake-cylinder, of a chamber having communication with the train-pipe and the brake-cylinder, a release-valve for releasing fluid-pressure from the train-pipe to the brake-cylinder through the said chamber, a second chamber separate from the first having connections with the train-pipe and the auxiliary reservoir respectively, a differential piston operating in the secondary chamber between the said connections and operatively connected to the release-valve for operating the same, the said piston by means of the relative proportion of the areas of its opposite sides being adapted to hold the release valve to its seat by train-pipe pressure when a service reduction in the said pressure is made and to open the release-valve by auxiliary-reservoir pressure when an extraordinary reduction in train-pipe pressure is made at one time, substantially as and for the purpose described.

18. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake-cylinder, of a chamber having communication with the train-pipe through a passage in which operates a non-return valve, a release-valve for releasing fluid under pressure from the train-pipe through the said chamber, a second chamber separate from the first in which operates a movable abutment having a stem formed on one of its sides and extending through the partition between the said chambers, the said stem being enlarged for the purpose of reducing the effective area of one side of the abutment and for operatively connecting the same with the release-valve, substantially as shown and described.

19. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake cylinder, of a release-valve for releasing fluid under pressure from the train-pipe operated by a differential piston which is exposed to train-pipe pressure on one side and to auxiliary-reservoir pressure on the other, the said piston operating in a chamber separate from and unconnected with that controlled by the release valve and whose sides are proportioned to each other as the pressures in the train-pipe and the auxiliary reservoir by which an emergency application of the brakes is made whereby the piston remains inoperative except when the pressure in the train-pipe is reduced to cause an emergency application of the brakes to be made, substantially as shown and described.

20. In an automatic fluid-pressure brake system, the combination of a passage connecting the train-pipe and the brake-cylinder, a release-valve operating therein, a chamber separate from and unconnected with the said passage having communication with the train-pipe and the auxiliary reservoir respectively, and a movable abutment having an enlarged stem formed on one of its sides for reducing the effective area thereof and for operatively connecting the same with the release-valve, substantially as shown and described.

21. In an automatic fluid-pressure brake system, the combination with the train-pipe auxiliary reservoir and the brake-cylinder, of a direct passage from the train-pipe to the brake-cylinder controlled by a release-valve which is operated by a differential piston operating in a chamber which is separate from and unconnected with the said passage, the said piston controlling the opening of the release-valve by means of a proportionate inequality of the areas of its opposite sides whereby the said piston is adapted to control the operation of the release-valve by fluid-pressure alone, substantially as set forth.

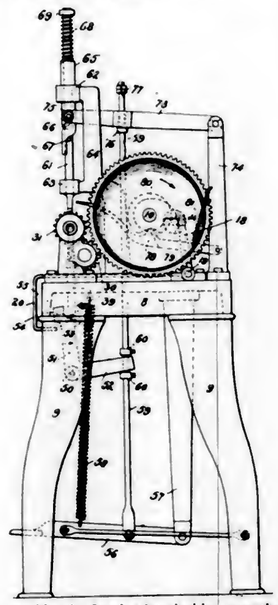
22. In an automatic fluid-pressure brake system, the combination of a direct passage from the train-pipe to the brake-cylinder, a release-valve for controlling the same, a chamber separate from and unconnected with the said passage, and a differential piston operating in the said chamber, the said piston being adapted to control the operation of the release-valve solely by fluid-pressure, substantially as shown and described.

607,372. MACHINE FOR FORMING INTERLOCKING EYES.

FREDERICK W. HOEFER and AUGUST G. HOEFER, Freeport, Ill., assignors to the Stover Novelty Works, same place. Filed Nov. 4, 1897. Serial No. 657,364. (No model.)

Claim.—1. In a machine for forming interlocking eyes, the combination with twister devices, of a wire-supporting device between said twister devices, and means for moving said wire-supporting device to carry the wires beyond the twister devices to permit of their being looped, substantially as described.

2. In a machine for forming interlocking eyes, the combination with twister devices, of a wire-supporting device between said twister devices, means for moving said wire-supporting device to carry the wires beyond the twister devices, means for looping the wires, and means for deflecting the ends of the wires before looping, substantially as and for the purpose specified.



3. In a machine for forming interlocking eyes, the combination with twister devices, of a wire-supporting device between said twister devices, means for moving said wire-supporting device to carry the wires beyond the twister devices, means for looping the wires, means for returning the looped wires to position between the twister devices, and means for operating the twister devices to wrap the ends of the wires, substantially as described.

4. In a machine for forming interlocking eyes, the combination with twister devices, of a wire-supporting device between said twister devices, means for moving said wire-supporting device to carry the wires beyond the twister devices, means for looping the wires, means for returning the looped wires to position between the twister devices, means for operating the twister devices to wrap the ends of the wires, and means for holding the wires down in position during the operation of the twister devices, substantially as described.

5. In a machine for forming interlocking eyes, the combination with a vertically-movable spindle, of twister devices at opposite sides of the upper end thereof, means for moving said spindle upward to carry the wires above said twister devices, and means cooperating with said spindle to loop the ends of the wires together, substantially as described.

6. In a machine for forming interlocking eyes, the combination with upper and lower longitudinally-movable spindles, means for moving said spindles toward each other, means for rotating one of said spindles to loop the wires together, and a controlling device adapted to be operated to actuate said spindles, substantially as described.

7. In a machine for forming interlocking eyes, the combination with upper and lower spindles, of a lever common to both said spindles, means controlled by said lever for moving said spindles toward each other, and means for rotating one of said spindles to form interlocking loops, substantially as described.

8. In a machine for forming interlocking eyes, the combination with upper and lower longitudinally-movable spindles, of means for rotating said spindles in opposite directions to form interlocking loops, and a controlling device adapted to be operated to move said spindles toward each other, and to effect their rotation, and twister devices, substantially as described.

9. In a machine for forming interlocking eyes, the combination with upper and lower longitudinally-movable spindles, of means for automatically rotating said spindles in opposite directions to form interlocking loops when said spindles are moved longitudinally, and twister devices, substantially as described.

10. In a machine for forming interlocking eyes, the combination with upper and lower longitudinally-movable spindles, of means for moving said spindles toward each other, means operated by the longitudinal movement of said upper spindle for rotating it to form interlocking loops, and twister devices, substantially as described.

11. In a machine for forming interlocking eyes, the combination with twister-heads, of a lengthwise-movable spindle arranged between said twister-heads, said spindle having a pin at one end, said pin being normally in line with the axes of said twister-heads, means for moving said spindle longitudinally, means for partially rotating said spindle after it has been moved longitudinally, and means for bending the wire around said spindle to form interlocking loops, substantially as described.

12. In a machine for forming interlocking eyes, the combination with twister-heads, of a spindle 39, an arm 51 adapted to support said spindle, a plate 55 carried by said arm, said plate being adapted to engage a pin carried by said spindle, said arm having an inclined surface 53, means coöperating with said spindle to form interlocking loops in the wires, and means for moving said arm 51 to operate said spindle, substantially as described.

13. In a machine for forming interlocking eyes, the combination with twister-heads, of a spindle 39, an arm 51 adapted to support said spindle, a plate 55 carried by said arm, said plate being adapted to engage a pin carried by said spindle, said arm having an inclined surface 53, means coöperating with said spindle to form interlocking loops in the wires, and a lever 56 connected to said arm 51 for rocking the same, substantially as described.

14. In a machine for forming interlocking eyes, the combination with twister-heads, of a spindle 39, an arm 51 adapted to support said spindle, a plate 55 carried by said arm, said plate being adapted to engage a pin carried by said spindle, said arm having an inclined surface 53, means coöperating with said spindle to form interlocking loops in the wires, a lever 56 connected to said arm 51 for rocking the same, and means for operating said looping devices by the movement of said lever, substantially as described.

15. In a machine for forming interlocking eyes, the combination with twister-heads, and means for rotating the same, of spindles 39 61, a bell-crank lever 50 adapted to operate said spindle 39, a lever 56, means connecting said lever 56 with the lever 50, a lever 73 connected to said spindle 61, means for operating said lever 73 from said lever 56, and means for rotating the spindle 61, substantially as described.

16. In a machine for forming interlocking eyes, the combination with twister-heads, and means for rotating them, of spindles 39, 61 a bell-crank lever 50, having an arm 51, a foot-lever 56, connecting-rod 59 connected to said bell-crank lever 50, lever 73 also connected to said connecting-rod 59, a sleeve 65 connected to said lever 73, said sleeve having a cam 66, a pin 67 carried by said spindle 61, and a spring 68 on the spindle 61, substantially as described.

17. In a machine for forming interlocking eyes, the combination with twister devices, of a wire-supporting device between said twister devices, means for moving said wire-supporting device to carry the wires beyond the twister devices, means for looping the wires, means for returning the wire-supporting device to its former position to return the looped wires to position between the twister devices, means for operating the twister devices to wrap the ends of the wires, a pivoted arm 78 adapted to rest upon the wire-supporting device, and a cam operated by the twister-head-driving mechanism for moving said arm 78, substantially as described.

18. In a machine for forming interlocking eyes, the combination with means for forming interlocking loops in the wires, of twister-heads arranged at opposite sides of the looping mechanism, a driving-shaft 10, gears fixedly mounted upon said driving-shaft, twister-head shafts, means for rotating said twister-head shafts oppositely to each other from said gears, a pulley loosely mounted upon said shaft 10, and clutch mechanism for connecting said pulley to said shaft 10, substantially as described.

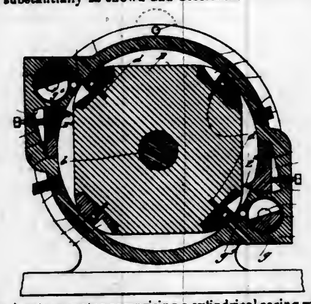
19. In a machine for forming interlocking eyes, the combination with means for forming interlocking loops in the wires, of twister-heads arranged at opposite sides of the looping mechanism, a driving-shaft 10, gears fixedly mounted upon said driving-shaft, twister-head shafts, means for rotating said twister-head shafts oppositely to each other from said gears, a pulley loosely mounted upon said shaft 10, clutch mechanism for connecting said pulley to said shaft 10, and means for automatically disconnecting said pulley and shaft at the conclusion of each operation of the twister-heads, substantially as described.

20. In a machine for forming interlocking eyes, the combination with upper and lower longitudinally-movable spindles, of a controlling device adapted to be operated to move said spindles toward each other, and to effect their rotation, substantially as described.

607,373. ROTARY MOTOR.

LYMAN S. HOLMES, Schoharie, N. Y. Filed Feb. 5, 1897. Serial No. 622,215. (No model.)

Claim.—1. A rotary motor, comprising a cylindrical casing which is closed at both ends by end plates secured thereto, said casing being also provided at opposite sides with longitudinal abutting-valve chambers which open inwardly, and which are triangular in cross-section, spring-operated abutting valves pivoted in said chambers, said valves being also triangular in cross-section, said casing being also provided at opposite sides and above and below said abutting-valve chambers with longitudinal circular cut-off chambers which are in communication with the interior of said casing, and with longitudinal steam-passages which are arranged between said cut-off-valve chambers and the interior of said casing, and which communicate with said cut-off-valve chambers, and the interior of said casing, cut off valves mounted in said cut-off-valve chambers, a shaft passing longitudinally through said casing, a piston mounted on said shaft within said casing, said piston being oblong in form and rectangular in cross-section, and the corners thereof, being provided with longitudinal chambers, piston-heads mounted in said longitudinal chambers which are circular on their outer surfaces, and provided at one side with longitudinal chambers which are triangular in cross-section, a steam-chest mounted at one end of said casing, and provided with pipes which are in communication with said cut-off-valve chambers, and said steam-passages, and a governor connected with said steam-chest, and provided with a piston or valve which operates therein to control the passage of steam into said steam-pipes, said governor being in operative connection with the main shaft, and devices in operative connection with said governor for opening and closing said cut-off valves, substantially as shown and described.

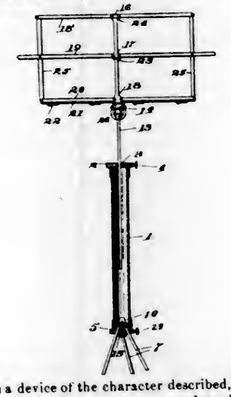


2. A rotary motor comprising a cylindrical casing which is closed at both ends by end plates secured thereto, longitudinal spring-operated abutting valves pivoted in valve-chambers in said casing at the opposite sides thereof, cut-off valves mounted in circular longitudinal cut-off-valve chambers formed in the opposite sides of said casing above and below said abutting-valve chambers, and which are in communication with the interior of said casing, said casing being also provided with steam-passages which are formed therein, between said cut-off valve chambers, and the interior of said casing, and which are in communication with said cut-off-valve chambers, and the interior of said casing, a shaft which passes longitudinally through said casing, and which is provided with a piston, said piston being oblong and rectangular in form, and provided with longitudinal piston-heads at each corner thereof, a steam-chest mounted at the end of said casing, and provided with pipes which are in communication with said cut-off-valve chambers, and said steam-passages, and a governor connected with said steam-chest, and provided with a piston or valve which operates to control the passage of steam into said steam-pipes, said governor being in operative connection with the main shaft, and with devices for operating said cut-off valves, substantially as shown and described.

3. A rotary motor comprising a cylindrical casing which is closed at both ends by end plates secured thereto, longitudinal spring-operated abutting valves pivoted in valve-chambers in said casing at the opposite side thereof, cut-off valves mounted in circular longitudinal cut-off-valve chambers formed in the opposite sides of said casing above and below said abutting-valve chambers, and which are in communication with the interior of said casing, said casing being also provided with steam-passages which are formed therein, between said cut-off-valve chambers, and the interior of said casing, and which are in communication with said cut-off-valve chambers, and the interior of said casing, a shaft which passes longitudinally through said casing, and which is provided with a piston, said piston being oblong and rectangular in form, and provided with longitudinal piston-heads at each corner thereof, a steam-chest mounted at the end of said casing, and provided with pipes which are in communication with said cut-off-valve chambers, and said steam-passages, and a governor connected with said steam-chest, and provided with a piston or valve which operates to control the passage of steam into said steam-pipes, said governor being in operative connection with the main shaft, and with devices for operating said cut-off valves, said piston-heads and

said abutting valves being also provided with packing, and the ends of said steam-passages and said valve-chambers being closed by the end plates of the cylinder, substantially as shown and described.

607,374. COMBINATION MUSIC STAND, CASE, AND FOLIO. CHARLES H. HOPE, Providence, R. I. Filed July 23, 1897. Serial No. 645,650. (No model.)



Claim.—In a device of the character described, the combination of a hollow main body portion, a cap secured to the lower portion thereof and provided with a central opening and concentric oblong openings, an upper removable cap with a central opening therein, a folding music-holder adapted to be contained within the said body and having a rod adjustably connected to the lower portion thereof which is movable through the upper cap, a set-screw passing through the upper portion of the cap to bind against the rod, a three-arm section having legs pivoted thereto and a depending central screw-stem, said legs being movable through the concentric openings in the cap, and a screw-stem adapted to extend through a central opening in the said lower cap, a button adapted to engage the said screw-stem, and a music-roll of flexible material attached to the outer portion of the said tubular body at opposite ends of the latter leaving a space for the insertion of sheet-music which may be rolled upon the said tube, substantially as described.

607,375. MAIL-BAG FASTENER. JOHN HOWELLS, Sagon, Pa. Filed Oct. 14, 1897. Serial No. 655,172. (No model.)



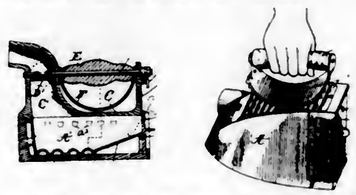
Claim. 1. The combination with a mail-bag having a series of openings in each side near its open end, adapted to register when the sides are brought together, of a flap secured to the exterior face of one side of the bag below the openings and adapted to fold over the open end of the bag, a series of staples projecting from the inner face of the flap near its free edge to pass through the registering openings, and devices supported on the inner face of the flap to lock the staples in the said openings, substantially as described.

2. The combination with a mail-bag having a series of openings in each side near its open end, adapted to register when the sides are brought together, of a flap secured to the exterior face of one side of the bag below the openings and adapted to fold over the open end of the bag, a series of staples projecting from the inner face of the flap near the free edge thereof to pass through the registering openings, and a tubular locking device mounted on the inner face of the flap at the inner end thereof and located at the bend of the flap to prevent the same from breaking, said locking device being adapted to engage the said staples, substantially as described.

3. The combination with a mail-bag having a series of openings in each side near its open end, adapted to register when the sides are brought together, of a flap secured to the exterior face of one side of the bag below the openings and adapted to fold over the open end of the bag, a series of staples projecting from the inner face of the flap near the free edge thereof to pass through the registering openings, a tubular casing mounted on the inner face of the flap at the inner end thereof and located at the bend of the flap when the same is folded over the bag, the transversely-curved bar mounted in the tubular casing and provided with pins 17 for engaging the staples, and the bar 19 adapted to receive a hasp and be engaged by a padlock and provided with an arm or pin 20 bearing against the tubular casing and retaining the transversely-curved bar in position, substantially as described.

4. The combination with a mail-bag having a series of vertically-disposed elongated openings in each side at its open end, and a horizontally-disposed opening in each side substantially midway their width, of a flap secured to one side of the bag below said openings and adapted to be folded over the open end of the bag and engage its opposite side, a tube secured to said flap to engage one side of the bag and having a series of openings to register with the vertically-disposed openings in the bag, a bar provided with a series of locking-bolts movably supported in the tube, an operating-bar connected to the bolt-carrying bar projecting through the tube to pass through the horizontally-disposed openings in the bag, a bar secured to the free edge of the flap, a series of staples carried by said bar and adapted to enter the registering openings in the bag and tube, and having an opening for the passage of the operating-bar, and means to lock the operating-bar in position, substantially as described.

607,376. SAD-IRON. WILLIAM E. HOYT, New York, N. Y. Filed Jan. 21, 1898. Serial No. 667,475. (No model.)



Claim.—1. The herein-described sad-iron having the hollow body or chamber with perforated side walls, the top resting on the side walls of the chamber and having an under side flange which fits inside of the walls of the body portion, and having a chimney for carrying off the products of combustion, a shell comprising vertical walls separated by the flange from the walls of the body and having inwardly-projected base-flues and an integral inwardly-sloping plate at its rear end, connecting the sides of the shell, and a sliding or movable door or gate in one end of the iron adapted to be tilted inward to rest upon the inclined plate of the shell, to allow the air to be fed through the rear end of the iron as well as through the base-flues of the sides, as and for the purpose specified.

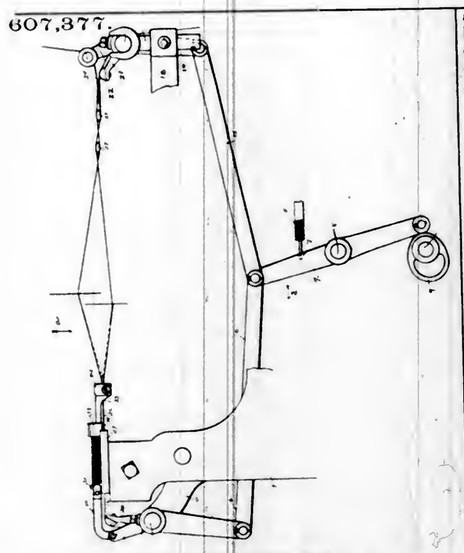
2. The combination with a sad-iron having a hollow combustion-chamber and a flue for the escape of the products of combustion, of a handle mounted on a rod supported by the iron and extending through the flue, and a damper mounted on the rod within the flue and changed in its position by rotating the handle, and an indicator on the handle-rod working in a notched segment, to show the position of the damper and prevent its too free action, substantially as specified.

3. The herein-described sad-iron having the hollow body or chamber with perforated side walls, the top resting on the side walls of the chamber and having an under side flange which fits inside of the walls of the body portion, and having a chimney for carrying off the products of combustion, a shell comprising vertical walls separated by the flange from the walls of the body and having inwardly-projected base-flues and an integral inwardly-sloping plate at its rear end connecting the sides of the shell, and a sliding or movable door or gate in one end of the iron adapted to be tilted inward to rest upon the inclined plate of the shell, to allow the air to be fed through the rear end of the iron as well as the base flues of the sides, and a handle mounted on a rod carrying a damper within the chimney, said damper changed in its position by rotating the handle substantially as specified.

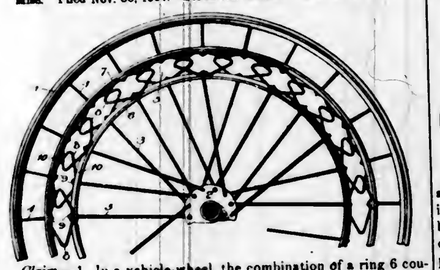
607,377. LOOM-TEMPLE. GEORGE F. HUTCHINS, Worcester, Mass., assignor to the Crompton & Knowles Loom Works, same place. Filed Oct. 4, 1897. Serial No. 654,056. (No model.)

Claim.—In a temple attachment of a loom, the combination with a stationary plate or stand, and a movable plate carrying the temple, of a connection intermediate said movable plate and a rock-shaft, and said rock shaft, and means for actuating the same to automatically move the plate carrying the temple, at regular intervals, in the direction of the length of the fabric, substantially as shown and described

607,377.



607,378. VEHICLE-WHEEL. JAMES M. JOHNSON, Hattiesburg, Miss. Filed Nov. 30, 1897. Serial No. 660,239. (No model.)



Claim.—1. In a vehicle-wheel, the combination of a ring 6 concentric with the hub, a second ring 7 concentric with and surrounding the ring 6, springs placed between the rings 6 and 7 near their outer edges and in alternate relation, and spokes connecting the inner ends of the springs with the ring 6 and the latter with the hub, a rim concentric with the ring 7, and other spokes set staggering and connecting the outer ends of the springs with the ring 7 and the latter with the rim, substantially as described.

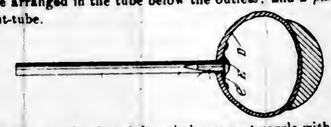
2. In a vehicle-wheel, the combination of concentric rings interposed between the hub and rim, approximately V-shaped springs interposed between the concentric rings and disposed in pairs, and having the springs of each pair arranged with their end portions overlapping, and inner and outer spokes connecting the pairs of springs together and to the rings and the latter to the hub and rim of the vehicle-wheel, respectively, substantially as set forth.

3. In a vehicle-wheel, the combination of concentric rings interposed between the hub and rim, and having ribs on their inner or opposing sides, springs arranged upon opposite sides of the ribs with their end portions in engagement with the sides thereof to prevent the springs from turning, and means for connecting the springs to the rings and the latter to the rim and hub of the wheel, substantially as described.

4. The herein-described vehicle-wheel, comprising a hub, a rim, concentric rings between the hub and rim and having ribs on their opposing sides, approximately V-shaped springs arranged in pairs upon opposite sides of the ribs and having their end portions overlapping, and inner and outer spokes connecting the springs in pairs and to the rings and the latter to the hub and rim, respectively, substantially as set forth.

607,379. REPAIR-KIT FOR SINGLE-TUBE BICYCLE-TIRES. WALTER M. JONES, Santa Monica, Cal. Filed June 21, 1897. Serial No. 641,724. (No model.)

Claim.—1. A tire repair outfit comprising a plug-guide having a plurality of spring-fingers at one end to form the plugway; a tubular cement-nozzle with plug-holding fingers at one end and lateral outlets from the tube near the base of such fingers; a partition or closure arranged in the tube below the outlets; and a piston for the cement-tube.

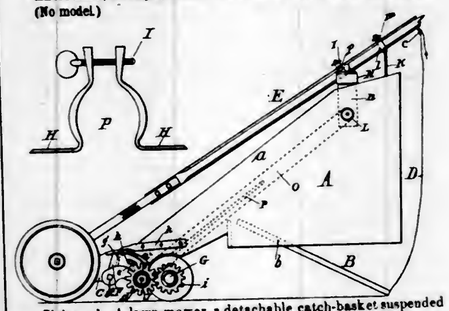


2. The combination of the tubular cement-nozzle with plug-holding fingers at one end and lateral outlets from the tube near the base of such fingers; a partition or closure arranged below the outlets; and a piston for the cement-tube.

3. A tire-repairing outfit comprising a plug-guide having a plurality of spring-fingers at one end arranged to normally spring apart to form the plugway; a tubular cement-nozzle with plug-holding fingers at one end and lateral outlets and plug-holding points arranged upon the inside of the fingers; a partition or closure arranged in the tube below the outlets; and a piston for the cement-tube.

4. The tubular cement-nozzle with plug-holding fingers at one end below the cement-outlets, and plug-holding points on the inside of said fingers.

607,380. CATCH-BASKET FOR LAWN-MOWERS. NICKOLAS KAUFFMANN, Dubuque, Iowa. Filed Oct. 4, 1897. Serial No. 654,071. (No model.)

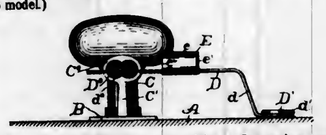


Claim.—1. A lawn-mower, a detachable catch-basket suspended at its upper end from the handle, and provided with an extension at its lower end that extends beyond the lower roller for the apron, combined with a roller that is journaled in the plates attached to the opposite sides of the mower, an upper roller, an endless apron which passes around the rollers, suitable haugers for the upper roller supported by the handle, and means for securing the lower end of the basket in position, substantially as shown.

2. As an attachment for a lawn-mower, the plate C, the slotted plates F adjustable upon the plates C, the lower roller J provided with a gear *d*, the roller provided with a gear *i*, and which meshes with the one *d*, combined with the catch-basket having a pivoted bottom, the upper roller L, the endless apron, hangers provided for the upper roller and which are suspended from the handle, a suitable fastening device for attaching the rear end of the basket to the handle, and suitable means for connecting the front end of the basket to the plates F, substantially as set forth.

3. In combination with a lawn-mower, a basket A, having a bottom B, pivoted to said basket, cord D, hanger K, with clasp *l*, and screw *m*, an endless apron traveling around the rollers J, and L, plate F, carrying the rollers J, and G, and plate *k*, adapted to engage plate F, for removably attaching the same to the mower, as, and for the purposes shown.

607,381. KEY-FASTENER. JOSEPH D. KING and MATTHEW A. BURNS, Menominee, Mich. Filed Aug. 9, 1897. Serial No. 647,599. (No model.)



Claim.—1. A key-fastener comprising a flat spring-arm fixed at one end to the door and having a straight integral portion extending over the keyhole at some distance therefrom, and provided with a longitudinal slot therethrough slightly shorter in length than the transverse length of the elliptical ring or bow of the key, said slot

being immediately opposite the keyhole and at an angle to the length of said ring or bow of the key when the latter is in position to be inserted or withdrawn, the parts being so proportioned and arranged that the key cannot be inserted or withdrawn without bending the spring-arm, so that when the door is locked the spring-arm will press against the ring or bow of the key and hold it fast in the lock, substantially as described.

2. A key-fastener, comprising a flat spring-arm fixed at one end upon the door and having a straight integral portion sprung outwardly therefrom and extending over the keyhole, and having a longitudinal slot therethrough at an angle to the length of the keyhole, said slot being slightly shorter than the greatest length of the elliptical ring or bow of the key; and the tension on said spring tending to hold the latter in engagement with the said ring or bow of the key when the latter is at an angle in the lock, substantially as described.

3. A key-fastener, comprising a flat spring arm fixed at one end upon the door and having a straight integral portion of uniform width sprung outwardly therefrom and extending over the keyhole, said straight integral portion having a longitudinal slot therethrough at an angle to the length of the keyhole, said slot being slightly shorter than the greatest length of the elliptical ring or bow of the key; and a sliding guard mounted upon said spring and adapted to be moved over and to inclose the ring or bow of the key when the same is engaged in said slot, substantially as described.

4. In a key-fastener, the combination with a spring-arm fixed at one end upon the door and having a straight integral portion of uniform width sprung outwardly therefrom and extending over the keyhole, said straight portion having a longitudinal slot therethrough at an angle to the length of the keyhole, said slot being slightly shorter than the greatest length of the elliptical ring or bow of the key, the tension on said spring tending to hold the latter in engagement with the said ring or bow of the key; of a sliding hollow guard mounted upon said spring-arm, and adapted to be moved over said slot and to inclose the ring or bow of the key when the latter is engaged in said slot, substantially as described.

5. In a key-fastener, the combination with a spring-arm having one end fixed upon the door and having a straight integral portion bent outwardly from the surface of the door and extending over the keyhole; said straight portion having a longitudinal slot therethrough at an angle to the length of the keyhole, said slot being slightly shorter than the greatest length of the elliptical ring or bow of the key, and being sufficiently enlarged midway of its length to allow the stem of the key to turn therein; of a sliding hollow guard mounted upon said spring-arm and adapted to be moved along said arm over said slot, and to inclose the ring or bow of the key while the latter is engaged in said slot, substantially as described.

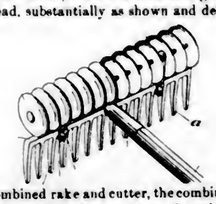
607,382. SCREEN FOR DOORS OR WINDOWS. JOHN H. KOONS, Seattle, Wash. Filed Aug. 28, 1897. Serial No. 649,810. (No model.)



Claim.—The frame having upper and lower cross-bars and side uprights, said upper cross-bar having inclined recesses in its outer face, and said side uprights having on their inner, opposite faces inclined grooves, and a wire-netting secured to the said upper cross-bar and extended over portions of said recesses, the side edges of said netting being held in said grooves, whereby overlapping portions of the netting will form chambers, holes being made in said overlapping portions by cutting intersecting strands of the netting-wires, substantially as and for the purpose set forth.

607,383. COMBINED RAKE AND ROLLER CUTTER. PERRY E. LOREE, Dayton, Ohio, assignor of one-half to John C. Ely, same place. Filed Feb. 21, 1898. Serial No. 671,075. (No model.)

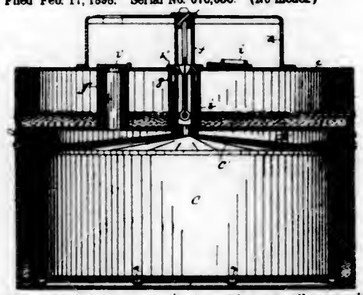
Claim.—1. In a combined rake and cutter, the combination, with the rake head and teeth, of a series of revolving cutting-disks secured to the rake-head, substantially as shown and described.



2. In a combined rake and cutter, the combination, with the rake head and teeth, of a shaft secured to the rake-head and parallel thereto, said shaft carrying a series of revolving cutting-disks, substantially as shown and described.

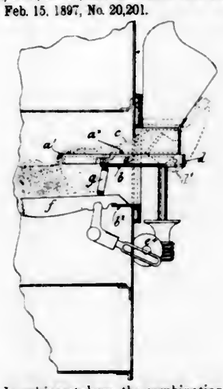
3. In a combined rake and cutter, the combination, with the rake head and teeth, of a shaft parallel to the rake-head, carrying a series of revolving cutting-disks and means for adjustably securing said cutting-disks to the rake-head, whereby said disks may be brought into operation simultaneously with the rake, substantially as shown and described.

607,384. COOKING-BOILER. JOHN MULLIGAN, Dayton, Ohio. Filed Feb. 17, 1898. Serial No. 670,630. (No model.)



Claim.—The herein-described cooking utensil, comprising an outer vessel, and an inner vessel, a lid for the latter vessel having an upper tubular extension, a cover for both the outer and inner vessels having an open top, and a transverse bar across said top with two tubular extensions which are adapted to receive a thermometer, one of said tubular portions inclosing the tube projecting from the cover of the inner vessel and communicating with the interior of said inner vessel, and the other of said tubular portions being adapted to inclose said thermometer and communicating with the interior of the outer vessel, as herein shown and described.

607,385. COKING STOKER. JAMES PROCTOR, Burnley, England. Filed May 3, 1897. Serial No. 634,933. (No model.) Patented in England May 21, 1896, No. 11,139; in France Nov. 28, 1896, No. 261,701, and in Spain Feb. 15, 1897, No. 20,201.



Claim.—1. In coking-stokers, the combination of a ram-box and rams separated from each other with spaces between them and sliding on the bottom thereof, with means for reciprocating said rams and causing them to carry the fuel on their surfaces into the furnace and then to be entirely withdrawn from the fire at the outward stroke thereof, and to distribute the fuel from their ends and sides as they recede, substantially as described.

2. A coking-stoker having reciprocating rams, in combination with oscillating levers adapted to engage therewith, projections $d\times$ $d\times\times$ formed on one of said levers, and a revolving shaft carrying a cam provided with a pin, said cam and pin adapted to engage with the projections on the oscillating lever as and for the purpose set forth.

3. A coking-stoker having a vertically-adjustable ram-box and means for securing it in its elevated position, substantially as described.

4. Coking-stokers having vertically-adjustable ram-boxes with catches to support said ram-boxes in their elevated position, substantially as described.

607,386. GATE. GEORGE R. ROGERS, Parkersburg, Ind. Filed Apr. 1, 1898. Serial No. 676,067. (No model.)



Claim.—1. The combination with a gate of the class described and oscillating levers, of slotted uprights or posts between which the gate works, the brackets on said posts, vertically-sliding rods working in said brackets, an arm extending from each of said sliding rods through slots in the posts, rods connecting said arms to the oscillating levers of the gate, and means for operating said vertically-sliding rods whereby the gate is thrown from side to side of said posts, substantially as described.

2. The combination with a gate of the class described, posts, oscillating levers and operating mechanism, of metal hinges, adapted to be attached to the said oscillating levers, and consisting of wings d^2 rigidly connected by cross pieces, the said wings having holes arranged at their lower ends for the insertion of a bolt on which the hinge works, substantially as described.

3. The combination with a gate of the class described and oscillating levers provided with weights, of slotted posts between which the gate works, brackets on said posts in which work vertically-sliding slotted rods, each of the said rods having an arm at upper end extending through slot in the post, bolts passing longitudinally through said arms and having antifrictional rollers working thereon in said slots, rods connecting said arms and oscillating levers operating-levers provided with weights pivoted to the lower ends of said vertically-sliding rods, and links or rods connecting the said operating-lever at an intermediate point with upper brackets on the gate-posts, substantially as described.

4. The combination with a gate of the class described and suitable means for operating the same, of a locking device adapted to remain unlocked in its normal position and locked by upward pressure exerted on lower bar of gate, substantially as described.

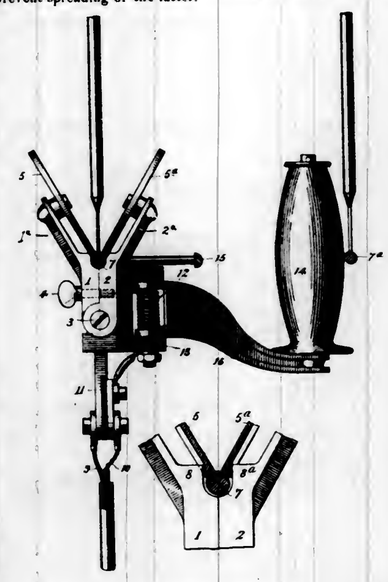
607,387. TROLLEY FOR ELECTRIC RAILWAYS. HENRY VAN HORNENBERGH, New York, N. Y. Filed Aug. 31, 1897. Serial No. 650,146. (No model.)

Claim.—1. A trolley provided with a plurality of wheels set at an angle to bear upon a supply-conductor at their peripheries, said wheels being mounted in a frame provided with projections lying close to their sides to prevent spreading.

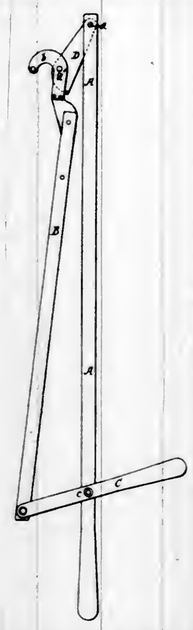
2. A trolley provided with a plurality of wheels having ungrooved peripheries, said wheels being set at an angle to one another to engage a supply-conductor, a frame in which the wheels are mounted having projections to limit the tendency of the wheels to spread, and a wall inclosing part of the conductor at or near a point opposite the bearing-point of the wheels.

3. A trolley provided with a plurality of wheels lying at an angle to embrace one side of a supply-conductor, a pivoted frame in which said wheels are journaled, an inclosing wall formed in the frame for a part of the conductor opposite the bearing-point of the wheels, and means for locking the frame upon the conductor or unlocking it therefrom.

4. A trolley provided with a plurality of wheels arranged in pairs lying at an angle to one another, said wheels being journaled in the arms of a frame and adapted to be locked upon a conductor, said frame having projections confronting the sides of the wheels to prevent spreading of the latter.

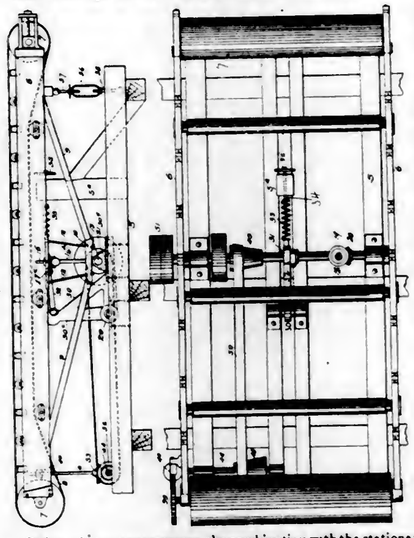


607,388. PRUNING-SHEARS. NEHEMIAH R. WHITACRE, Marlton, N. J. Filed Nov. 27, 1896. Serial No. 613,672. (No model.)



Claim.—The combination of the fixed pole A, a movable knife pivoted thereto, a movable pole B, a fixed hook carried by said pole B and pivoted to said knife, and a lever hung from the movable pole and pivotally mounted on the fixed pole, said lever adapted to bring the knife and hook into operative engagement with each other, substantially as described.

607,389. ORE-CONCENTRATOR. WILLIAM E. WILD, Denver, Colo. Filed Sept. 20, 1897. Serial No. 652,294. (No model.)



Claim.—1. In a concentrator, the combination with the stationary frame, of a yoke mounted thereon, an auxiliary frame slidingly mounted on said yoke, a concentrating-apparatus frame mounted on the auxiliary frame, a horizontal shaft journaled in the stationary frame, a vertical shaft journaled in the yoke, gears connecting the horizontal and vertical shafts, and an eccentric fast on the vertical shaft and engaging the auxiliary frame, whereby as the said shafts are rotated, a lateral or transverse movement is imparted to the frame of the concentrating apparatus.

2. The combination with the stationary frame, of the horizontal shaft journaled therein, the oscillatory yoke mounted on the stationary frame, the auxiliary frame slidingly mounted on the yoke, a concentrating apparatus frame mounted on the auxiliary frame, suitable means for imparting the lateral movement to the frame of the concentrating-apparatus, comprising a vertical shaft journaled in the yoke, gears connecting the horizontal and vertical shafts, an eccentric fast on the vertical shaft and engaging the auxiliary frame, and means for imparting to the frame of the concentrating apparatus the longitudinal movement, comprising a cam on the horizontal shaft, a bell-crank lever fulcrumed on the stationary frame, one arm of the lever projecting into the path of the cam on the horizontal shaft, and an arm interposed between the other arm of the lever and the auxiliary frame, and a spring engaging the auxiliary frame and cooperating with the lever.

3. In a concentrator, the combination with the stationary frame, of an upright yoke mounted thereon, a horizontal shaft journaled in the said frame, an auxiliary frame slidingly mounted on the yoke, a concentrating-apparatus frame mounted on the auxiliary frame, and suitable means cooperating with the horizontal shaft for imparting the lateral movement to the frame of the concentrating apparatus as the shaft is rotated, comprising a vertical shaft journaled in the yoke, gears connecting the horizontal and vertical shafts, and an eccentric fast on the upper extremity of the vertical shaft and engaging the auxiliary frame.

4. In a concentrator, the combination with the stationary frame, of the oscillatory yoke mounted thereon, a horizontal shaft journaled in said frame, an auxiliary frame slidingly mounted on the yoke, a concentrating-apparatus frame mounted on the auxiliary frame, and suitable means cooperating with the said shaft, whereby the longitudinal movement is imparted to the frame of the concentrating-table as the shaft is rotated, comprising a bell-crank lever fulcrumed on the stationary frame, a cam mounted on the horizontal shaft and engaging one arm of the said lever which projects beneath the shaft, an arm interposed between the upright arm of the bell-crank lever and the auxiliary frame, the said arm having ball extremities engaging counterpart sockets formed in the engaged parts, and a spring cooperating with the lever and having its tension so regulated as to hold the said interposed arm in place.

5. In a concentrator, the combination with the stationary frame, the upright yoke mounted thereon, the auxiliary frame mounted on the yoke, the concentrating-apparatus frame mounted on the auxiliary frame, the yoke being provided with a projection passing through an opening in the auxiliary frame and forming a bumper which the auxiliary frame engages as the lateral movement is imparted, a horizontal shaft journaled in the stationary frame, and means cooperating with the horizontal shaft for imparting the lateral movement to the frame of the concentrating apparatus as the shaft is rotated, whereby the auxiliary frame is caused to engage the bumper on the yoke, said means comprising a vertical shaft, gears connecting the horizontal and vertical shafts, and an eccentric fast on the upper extremity of the vertical shaft and engaging the auxiliary frame.

607,390. EAR FOR VESSELS. ALEXANDER YATES, Rockford, Ill., assignor to the H. H. Palmer Company, same place. Filed June 21, 1895. Serial No. 553,599. (No model.)



Claim.—1. A vessel having a ring-head, an ear having an eye portion and provided with a portion engaging the ring-head, and a portion engaging the outer face of the vessel.

2. A vessel having a ring-head, an ear having an eye portion and provided with a prong engaging the inner face of the vessel and having an engagement with the ring-head, a portion engaging the outer face of the vessel having a prong or projection adapted to engage the vessel, and a hoop placed on the outside of the vessel overlying the outer portion of the ear.

607,391. SOLE-EDGE-TRIMMING TOOL. CHARLES G. BELMER, Revere, Mass. Filed Nov. 2, 1896. Serial No. 610,861. (No model.)



Claim.—1. A tool for cutting the edges of a sole, comprising in its construction a shaft, a cutter on the end of said shaft, a sleeve movable longitudinally of the shaft and having buffer-blades adapted to cover a portion of the cutters, a collar on said shaft, a spring interposed between the sleeve and the collar, means for adjusting the sleeve on the shaft relatively to the collar, and means for adjusting the tension of said spring, for the purposes set forth.

2. A tool for cutting the edges of a sole, comprising in its construction a slotted shaft equipped at its end with a revolving cutter, a sliding sleeve having buffer-blades adapted to cover a portion of the cutter-blades, a collar on said shaft, a spring between the sleeve and the collar, an adjusting-bar placed in the slot in the shaft and having a stop on its forward end, means extending through the collar for clamping the bar against the shaft, and a projection extending in from the shaft and adapted to abut against the stop on the said bar.

3. An edge-trimming tool, comprising a shaft, a cutter, a sliding sleeve on the shaft having buffing blades extending between the cutter-blades, a spring bearing against the sleeve, and means arranged between the sleeve and the shaft for limiting the sliding movement of the sleeve.

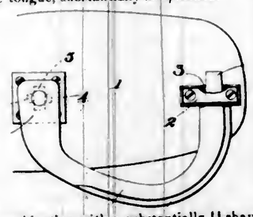
4. An edge-trimming tool, comprising a shaft, a cutter, a sliding sleeve on the shaft having buffing-blades extending between the cutter-blades, a spring bearing against the sleeve, and a bar adjustably secured to the shaft, and arranged between the sleeve and the shaft, for limiting the sliding movement of the sleeve.

5. An edge-trimming tool, comprising a cutter and a shield having its flat non-recessed, inner face against the cutter and its margin flush with the extreme ends of the welt-trimming lips of the knives of the cutter, said shield also having on its outer face a beveled portion 4, and a concave portion 5 for the purposes specified.

607,392. WEED-CUTTING IMPLEMENT. GUSTAV H. BRUHL, Lawrence, Kans. Filed Aug. 31, 1897. Serial No. 650,118. (No model.)

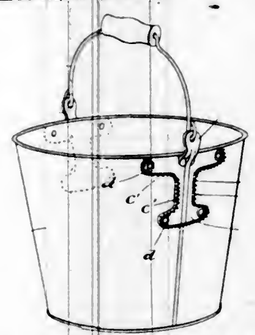
Claim.—1. In a device of the character described, the combination with a knife provided at one end with a locking-lug and at its opposite end with a tongue, of mechaniam cooperating with the locking-lug and tongue and adapted to be secured to the shoe-sole, substantially as specified.

2. In a device of the character described, the combination with a substantially U shaped knife having one arm provided with a locking-lug having an elongated head and provided with a tongue on the opposite arm, of a plate provided with an elongated slot designed to receive the locking-lug, and securing mechaniam designed to cooperate with the tongue, substantially as specified.



3. The combination with a substantially U-shaped knife having one arm provided with a locking-lug having an elongated head and with a tongue on the opposite arm, of a socket-plate provided with an elongated slot designed to receive the locking-lug, and a recessed plate designed to receive the tongue, substantially as described.

607,393. MILK-PAIL. EDWARD S. CAVE, Reading, Mass., assignor of one-half to Smith P. Burton, Jr., same place. Filed Dec. 15, 1897. Serial No. 661,976. (No model.)



Claim.—1. A pail provided at opposite portions of its outer periphery with teeth or projections so located as to engage the clothing on the knees of a person holding the pail, and prevent said pail from slipping.

2. A plate or boss for the outer periphery of a milk-pail, provided with teeth or projections for the purpose of engaging the clothing on the knees of a person holding the pail, and formed with an ear adapted to receive the bail of said pail.

607,394. SHAPING-CUTTER. JAMES HATCH, San Francisco, Cal. Filed Sept. 24, 1896. Serial No. 606,873. (No model.)



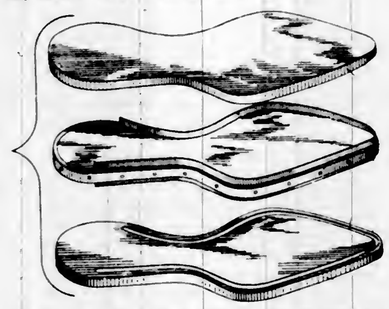
Claim.—In a planing, cutting, or grooving tool, two heads secured on a central spindle, a cutting or planing bit secured between said heads on opposite sides of said spindle and parallel with each other, and a gage-block fitted on said spindle and adapted to fill the space between said bits, said block having a circular rim to conform to the circle of the tool and a notch or throat adjoining each cuting blade or bit, substantially as described.

607,395. BICYCLE-SUPPORT. WILLIAM R. HUNT, Montreal, Canada. Filed July 14, 1897. Serial No. 644,516. (No model.) Patented in England July 28, 1897, No. 17,722; in Austria Aug. 14, 1897, No. 47/2,969; in Belgium Aug. 16, 1897, No. 129,722; in Canada Aug. 21, 1897, No. 57,167, and in Germany Aug. 23, 1897, No. 79,585.



Claim.—In a bicycle-support, the combination with a tubular upper portion having a longitudinal slot; of a cylindrical bar, slidably mounted in said tubular portion, said bar being split longitudinally for a portion of its length; and a clamping-screw connected to said bar and adjustably mounted operatively in said slot, substantially as described.

607,396. APPLIANCE FOR MAKING INNER SOLES. AUGUSTUS SEAVER, Boston, Mass., assignor to E. B. Seaver, same place. Filed July 16, 1897. Serial No. 644,761. (No model.)



Claim.—An appliance of the character specified, comprising two sole-shaped plates having grooves which are parallel with the edges of said plates and an intermediate plate having fixed ribs projecting from opposite sides of the plate and formed to enter the said grooves, whereby two sole-blanks, a right and a left, may be simultaneously treated.

607,397. FOUNTAIN-PEN. LEWIS E. WATERMAN, New York, N. Y. Filed Aug. 24, 1897. Serial No. 649,361. (No model.)



Claim.—1. A feed-bar of a fountain-pen externally beveled at and near the inner end of its plug portion so as to form, when in place in the nozzle, a capillary channel and passage-way for ink on the way from the reservoir to the pen, bounded on one side by the beveled surface of the feed-bar and on the other by the opposite inner surface of the nozzle, in combination with one or more capillary channels connecting such capillary channel and passage-way with the split in the writing-pen.

2. A fountain-pen provided with an annular capillary channel and passage-way for ink from the reservoir on its way to the pen, formed between the feed-bar and the nozzle at and adjoining the inner end of the plug portion, substantially as shown and described, in combination with one or more capillary channels connecting such capillary channel and passage-way with the split in the writing-pen.

3. A fountain-pen provided with an annular capillary channel and passage-way for ink between the feed-bar at and near the inner end of its plug part and the adjacent surface of the nozzle, in combination with one or more capillary channels connecting such capillary channel and passage-way with the split in the writing-pen.

4. A fountain-pen provided with an annular capillary channel and passage-way for ink formed at and around the inner end of the plug part of the feed-bar, in combination with one or more capillary channels connecting such capillary channel and passage-way with the split in the writing-pen.

5. A feed-bar of a fountain-pen beveled externally at and in front of the inner plug end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with one or more capillary channels connecting such capillary channel and passage-way with the split in the writing-pen.

6. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form an annular capillary channel and passage-way for ink, substantially as shown and described, in combination with a flat air-duct surface and channel on the top of the plug portion of the feed-bar and with a capillary channel or channels, passage-way or passage-ways, at one or both sides of the flat air-duct surface extending to and under the pen.

7. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form an annular capillary channel and passage-way for ink, substantially as shown and described, in combination with a flat air-duct surface and channel on the top of the plug portion of the feed-bar and with a capillary channel or channels, passage-way or passage-ways, at one or both sides of the flat air-duct surface extending to and under the pen and to the nibs or the split in the pen.

8. A feed-bar of a fountain-pen beveled externally at and in front of the inner end and so as to form an annular capillary channel and passage-way for ink, substantially as shown and described, in combination with a flat air-duct surface and channel on the top of the plug portion of the feed-bar, with a capillary channel or channels, passage-way or passage-ways, at one or both sides of the flat air-duct surface extending to and under the pen, and also with a secondary reservoir located under the pen.

9. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form an annular capillary channel and passage-way for ink, substantially as shown and described, in combination with a flat air-duct surface and channel on the top of the plug portion of the feed-bar, with a capillary channel or channels, passage-way or passage-ways, at one or both sides of the flat air-duct surface extending to and under the pen, and also with a secondary reservoir located under the pen and provided with an air-inlet through or under the pen.

10. In fountain-pens, a feed-bar provided with a secondary ink-reservoir located under the nibs of the writing-pen and in a groove or channel located on the top side of the feed-bar, and also provided on one or both sides of the secondary reservoir and on the top side of the feed-bar with a flat, horizontal or plate capillary channel or passage-way for ink connecting at one end with the secondary reservoir and with the nibs of the writing-pen and at the other end with the main reservoir through a continuous or connecting capillary channel located on the top of the plug portion of the feed-bar, an air-inlet being provided for the admission of air into the groove or channel above its lower end, substantially as shown and described.

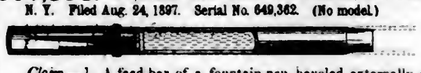
11. In fountain-pens, a feed-bar provided with a secondary ink-reservoir located under the nibs of the writing-pen and in a groove or channel located on the top side of the feed-bar, and also provided on one or both sides of the secondary reservoir and on the top side of the feed-bar with a flat, horizontal or plate capillary channel or passage-way for ink connecting at one end with the secondary reservoir and with the nibs of the writing-pen and at the other end with the main reservoir through a continuous or connecting capillary channel located on the top of the plug portion of the feed-bar, and also provided with an air-inlet connecting with the groove or channel on the top of the feed-bar above its lower end for admitting air to the main reservoir as the ink is drawn therefrom by capillary action.

12. In fountain-pens, a feed-bar provided with a secondary ink-reservoir located under the nibs of the writing-pen and in a groove or channel located on the top side of the feed-bar, and also provided on one or both sides of the secondary reservoir and on the top side of the feed-bar with a flat or horizontal capillary channel or passage-way for ink connecting at one end with the secondary reservoir and with the nibs of the writing-pen and at the other end with the main reservoir through a continuous or connecting capillary channel located on the top of the plug portion of the feed-bar, and also provided with an air inlet connecting with the groove or channel on the top of the feed-bar above its lower end for admitting air to the main reservoir as the ink is drawn therefrom by capillary action, located between the capillary channels on each side of the groove or channel in which the secondary reservoir is located.

13. In fountain-pens, a feed-bar provided with a secondary ink-reservoir located under the nibs of the writing-pen and in a groove or channel located on the top side of the feed-bar, and also provided on one or both sides of the secondary reservoir and on the top side of the feed-bar with a flat or horizontal capillary channel or passage-way for ink connecting at one end with the secondary reservoir and with the nibs of the writing-pen and at the other end with the main reservoir through a continuous or connecting capillary channel located on the top of the plug portion of the feed-bar, and also provided with an air-inlet connecting with the groove or channel on the top of the feed-bar above its lower end for admitting air to the main reservoir as the ink is drawn therefrom by capillary action, located adjacent to the capillary channel on each side of the groove or channel in which the secondary reservoir is located.

14. In fountain-pens, a feed-bar provided with a secondary ink-reservoir located under the nibs of the writing-pen and in a groove or channel located on the top side of the feed-bar, and also provided on one or both sides of the secondary reservoir and on the top side of the feed-bar with a flat or horizontal capillary channel or passage-way for ink connecting at one end with the secondary reservoir and with the nibs of the writing-pen and at the other end with the main reservoir through a continuous or connecting capillary channel located on the top of the plug portion of the feed-bar, and also provided with an air-iulet for admitting air to the main reservoir as the ink is drawn therefrom by capillary action, located adjacent to the capillary channel on each side of the groove or channel in which the secondary reservoir is located, the writing-pen being provided with an air-inlet opening located at or above the upper end of the split forming the nibs of the writing-pen and connecting with the groove or channel in the top of the feed-bar above its lower end.

607,398. FOUNTAIN-PEN. LEWIS E. WATERMAN, New York, N. Y. Filed Aug. 24, 1897. Serial No. 649,362. (No model.)



Claim.—1. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with an air-duct opening into the reservoir at the bottom or lower side of the feed-bar and with capillary channels or passage-ways for transferring the ink from the reservoir to the pen and cut into the body of the feed-bar.

2. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with capillary channels or passage-ways for transferring the ink from the reservoir to the pen and cut into the body of the feed-bar.

3. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with capillary channels or passage-ways for transferring the ink from the reservoir to the pen, both walls of which are formed in the body of the feed-bar.

4. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with an air-duct opening into the reservoir at the bottom or lower side of the feed-bar, with capillary channels or passage-ways for transferring the ink from the reservoir to the pen and cut into the body of the feed-bar, in combination with a secondary reservoir under the pen.

5. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with capillary channels or passage-ways for transferring the ink from the reservoir to the pen and cut into the body of the feed-bar, in combination with a secondary reservoir under the pen.

6. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with capillary channels or passage-ways for transferring the ink from the reservoir to the pen, both walls of which are formed in the body of the feed-bar, in combination with a secondary reservoir under the pen.

7. An annular capillary channel or passage way for ink from the reservoir located at and in front of the inner end of the feed-bar of a fountain-pen in a position to take the ink directly from the inner wall of the reservoir around its whole circumference and from the bottom end and lower side of the reservoir and conduct it to capillary fissures formed in the body of the feed-bar, to further conduct it on the way to the writing-pen, substantially in the manner and for the purpose set forth.

607,399. FOUNTAIN-PEN. LEWIS E. WATERMAN, New York, N. Y. Filed Aug. 24, 1897. Serial No. 649,363. (No model.)



Claim.—1. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with capillary channels or passage-ways, one or more, on the upper and outer side of the feed-bar for conducting the ink from the reservoir to the pen.

2. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with an air-duct channel consisting of a groove formed in the top of the plug portion of the feed-bar and with capillary channels or passage-ways on one or both sides of the air-duct formed between the plug and the nozzle and extending and conducting ink to the pen.

3 A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with an air-duct channel consisting of a groove formed in the top of the plug portion of the feed-bar, with capillary channels or passage-ways on one or both sides of the air-duct formed between the plug and the nozzle and extending and conducting ink to the pen, and a secondary reservoir located under the pen.

4. A feed-bar of a fountain-pen beveled externally at and in front of the inner end so as to form a capillary channel or passage-way for ink from the reservoir, substantially in the manner and for the purpose set forth, in combination with an air-duct channel consisting of a groove formed in the top of the plug portion of the feed-bar, with capillary channels or passage-ways on one or both sides of the air-duct formed between the plug and the nozzle and extending and conducting ink to the pen, and a secondary reservoir located under the pen provided with an air-inlet located in or under the pen.

607,400. FOUNTAIN-PEN. LEWIS E. WATERMAN, New York, N. Y. Filed Sept. 22, 1897. Serial No. 652,554. (No model.)



Claim.—1. A fountain-pen, provided with a chamber or cavity having an air-inlet and an air-outlet and acting automatically as a secondary reservoir, as an air-valve and as an ink-valve, in combination with a suitable capillary channel, or channels, as required to take ink from the main reservoir and supply it to the writing-pen.

2. A feed-bar of a fountain-pen provided with a secondary reservoir having an air-inlet duct connecting it with outer air and also with an air-outlet duct connecting it with the main reservoir, for the purpose of conducting air to and through the secondary reservoir and thence into the main reservoir, in combination with a suitable capillary channel or channels connecting the main reservoir, the secondary reservoir and the writing-pen.

3. In combination with top capillary feed devices and channels, a secondary reservoir located between the main reservoir and the writing-pen provided with an air-inlet duct and an air-duct communicating with the main reservoir.

4. In a fountain-pen a chamber or cavity located within the nozzle, in or near the feed-bar, and functionally related to top-feed devices, acting automatically as a secondary reservoir, an air-valve and an ink-valve as required to supply ink from the main reservoir to the writing-pen.

5. In a fountain-pen a chamber or cavity located within the nozzle, in or near the feed-bar, and functionally related to top feed devices, acting automatically as a secondary reservoir, an air-valve and an ink-valve as required to supply ink from the main reservoir to the writing-pen, in combination with top capillary feed devices and a longitudinal capillary channel, and with an annular capillary channel connecting with such channel and located at and opposite the inner end of the feed-bar.

6. In a fountain-pen a chamber or cavity acting automatically as a secondary reservoir, an air-valve and an ink-valve as required to supply ink from the main reservoir to the writing-pen, in combination with top capillary feed devices and with an annular capillary channel located at and opposite the inner end of the feed-bar.

7. In fountain-pens, an upper capillary feed-surface extending from the main reservoir along the top of the feed-bar and of the writing-pen to the nibs, together with the under and opposite capillary surface, in combination with a cavity or chamber opening into the capillary conduit or space between the two surfaces and provided with an air-inlet thereto for air from without and with an air-outlet connected with the main reservoir.

8. In fountain pens, an upper capillary feed-surface extending from the main reservoir along the top of the feed-bar and of the writing-pen to the nibs, together with the under and opposite capillary surface, in combination with a cavity or chamber opening, from below, into the capillary conduit or space between the two surfaces and provided with an air-inlet thereto for air from without and with an air-outlet connected with the main reservoir.

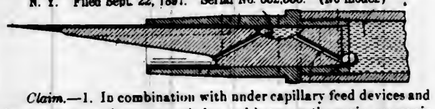
9. In fountain-pens, an upper capillary feed-surface extending from the main reservoir along the top of the feed-bar and of the writing-pen to the nibs, together with the under and opposite capillary surface, in combination with a cavity or chamber opening into the capillary conduit or space between the two surfaces and provided with an air-inlet thereto for air from without and with an air-outlet connected with the main reservoir, and with an annular capillary channel around the feed-bar at and near its inner end.

10. In fountain-pens, an upper capillary feed-surface extending from the main reservoir along the top of the feed-bar and of the writing-pen to the nibs, together with the under and opposite capillary surface, in combination with a cavity or chamber opening, from below, into the capillary conduit or space between the two surfaces and provided with an air-inlet thereto for air from without and with an air-outlet connected with the main reservoir, and with an annular capillary channel around the feed-bar at and near its inner end.

11. As elements in a combination of devices for feeding ink from the reservoir to the writing-pen of a fountain-pen, an annular capillary channel located at the inner end of the feed-bar, a connecting capillary channel on the upper side of the inner end of the feed-bar connecting with a secondary reservoir located in the feed-bar, which reservoir is provided with an air-inlet connecting with the outer air and an air-outlet connecting with the main reservoir, and a connecting-over capillary channel and feeder located on the upper side of the feed-bar and of the writing-pen between the secondary reservoir and the nibs of the writing-pen.

12. As elements in a combination of devices for feeding ink from the reservoir to the writing-pen of a fountain-pen, a capillary channel on the upper side of the inner end of the feed-bar connecting with the secondary reservoir located in the feed-bar, which reservoir is provided with an air-inlet connecting with the outer air and an air-outlet connecting with the main reservoir, and a connecting-over capillary channel and feeder located on the upper side of the feed-bar and of the writing-pen between the secondary reservoir and the nibs of the writing-pen.

607,401. FOUNTAIN-PEN. LEWIS E. WATERMAN, New York, N. Y. Filed Sept. 22, 1897. Serial No. 652,555. (No model.)



Claim.—1. In combination with under capillary feed devices and channels, a secondary reservoir located between the main reservoir and the writing-pen provided with an air-inlet duct and an air-duct communicating with the main reservoir.

2. In a fountain-pen, a chamber or cavity located within the nozzle, in or near the feed-bar, and functionally related to under capillary feed channels and devices, acting automatically as a secondary reservoir, an air-valve and an ink-valve as required to control the supply of ink from the main reservoir to the writing-pen.

3. In a fountain-pen, a chamber or cavity located within the nozzle, in or near the feed-bar, and functionally related to under capillary feed channels and devices, acting automatically as a secondary reservoir, an air-valve and an ink-valve as required to control the supply of ink from the main reservoir to the writing-pen, in combination with under capillary feed devices and a longitudinal capillary channel, and with an annular capillary channel connecting with such channel and located at and opposite the inner end of the feed-bar.

4. In a fountain-pen, a chamber or cavity acting automatically as a secondary reservoir, an air-valve and an ink-valve as required to control the supply of ink from the main reservoir to the writing-pen, in combination with under capillary feed channels and devices, and with an annular capillary channel located at and opposite the inner end of the feed bar.

5. In fountain-pens, an under capillary feed-surface extending from the main reservoir along the top of the feed-bar and under the writing-pen to the nibs, together with the over and opposite capillary surface, in combination with a cavity or chamber opening into the capillary condnit or channel between the two surfaces and provided with an air-inlet thereto for air from without and with an air-outlet connected with the main reservoir.

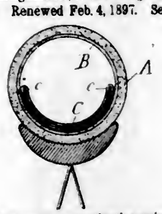
6. In fountain-pens, an under capillary feed-surface extending from the main reservoir along the top of the feed-bar and under the writing-pen to the nibs, together with the over and opposite capillary surface, in combination with a cavity or chamber opening, from below, into the capillary conduit or channel between the two surfaces, and provided with an air-inlet thereto for air from without and with an air-outlet connected with the main reservoir, and with an annular capillary channel around the feed-bar at and near its inner end.

8. As elements in a combination of devices for feeding ink from the reservoir to the writing-pen of a fountain-pen, an annular capillary channel located at the inner end of the feed-bar, a connecting capillary channel on the upper side of the inner end of the feed-bar connecting with a secondary reservoir located in the feed-bar, which reservoir is provided with an air-inlet connecting with the outer air and an air-outlet connecting with the main reservoir, and a connecting under capillary channel and feeder located on the upper side of the feed-bar and on the under side of the writing-pen between the secondary reservoir and the nibs of the writing-pen.

9. As elements in a combination of devices for feeding ink from the reservoir to the writing-pen of a fountain-pen, a capillary channel on the upper side of the inner end of the feed-bar connecting with the secondary reservoir located in the feed-bar, which reservoir is provided with an air-inlet connecting with the outer air and an air-outlet connecting with the main reservoir, and a connecting under

capillary channel and feeder located on the upper side of the feed-bar and on the under side of the writing-pen between the secondary reservoir and the nibs of the writing-pen.

607,402. PNEUMATIC TIRE. ERNEST W. YOUNG, Austin, Ill., assignor, by mesne assignments, to the Morgan & Wright, Chicago, Ill. Filed June 25, 1896. Renewed Feb. 4, 1897. Serial No. 622,024. (No model.)



Claim.—1. A hollow or pneumatic tire-tube containing an elastic patching-web which is normally held against and in contact with the rim side of the tire-tube throughout its length while unattached thereto and having free longitudinal edges, substantially as described.

2. A hollow or pneumatic tire-tube containing a longitudinally-extending, elastic patching-web normally detached from the tire-tube and in contact throughout its length with the rim side of the tire-tube, substantially as described.

3. A hollow or pneumatic tire-tube containing a longitudinally-extending elastic patching-layer normally held along its length close to the rim side of the tire-tube and being unattached thereto with its middle and edge portions free to be drawn up for patching punctures along the middle and at opposite sides of the middle portion of the tread side of the tire, substantially as described.

4. A hollow or pneumatic tire-tube containing a couple of longitudinally-extending patching-layers of elastic fabric, the one being normally upon the other with the upper layer flexibly connected with the lower layer and both layers being normally unattached to the tire-tube and having free edges, substantially as described.

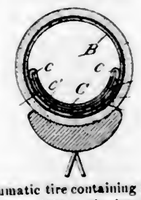
5. A pneumatic tire containing within its air-chamber a normally-flattened repair-tube adapted to communicate with the air-chamber and arranged to lie in a flattened condition normally at the base of the tire regardless of the inflation of the air-chamber, the said repair-tube having free bent edge portions and having its upper and lower flattened sides, free to be picked up and held by cementation for the purpose of closing punctures, substantially as described.

6. A pneumatic tire comprising a sheath or casing, an inner air-tube, and a normally-flattened repair-tube adapted to communicate with the interior of the air chamber and arranged to lie in a flattened condition adjacent to the base of the tire regardless of the inflation of the air tube, said repair tube being free along its longitudinal edges and having its upper and lower sides free to be picked up and held by cementation for the purpose of closing punctures, substantially as described.

7. A pneumatic tire containing within its air-chamber a normally-flattened repair-tube arranged to lie in a flattened condition adjacent to the base of the tire regardless of the inflation of the air-chamber, and having its longitudinal marginal portions free and provided with ports, substantially as described.

8. A pneumatic tire containing within its air chamber a normally-flatteued repair-tube arranged to lie in a flattened condition adjacent to the base of the tire regardless of the inflation of the air-chamber, and having its longitudinal marginal portions free and provided with notches c', substantially as described.

607,403. PNEUMATIC TIRE. ERNEST W. YOUNG, Austin, Ill., assignor, by mesne assignments, to the Morgan & Wright, Chicago, Ill. Filed Aug. 20, 1895. Renewed Feb. 12, 1897. Serial No. 623,196. (No model.)

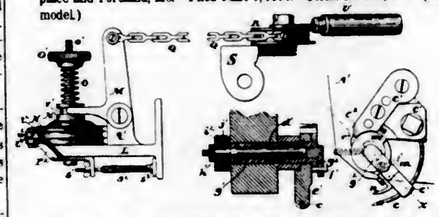


Claim.—1. A pneumatic tire containing a patching fabric having opposite side portions accessible to the interior of the air-chamber, the patching fabric being attached to the inner wall of the air-chamber along a longitudinal line between opposite sides of the tire, leaving on each side of said line of attachment a free unattached portion which extends opposite to and normally away from the tread side of the tire in position to be met by said tread side when the latter is depressed, and of such dimensions as to afford the slack requisite to permit it to be picked up by and carried back with the tread side of the tire when the latter is again expanded.

2. A pneumatic tire provided with internally-arranged patching fabric made up as a tube adapted to communicate with the air-chamber and secured to the inner wall of the latter along a line between opposite sides of the tire, the fabric thus secured, having free portions at opposite sides of the line of securement, and having opposite sides accessible to the interior of the air-chamber.

3. A pneumatic tire provided with an internally-arranged patching fabric made up as a tube adapted to communicate with the air-chamber and normally in a flattened condition regardless of the inflation of the tire, said tube being secured to the inner wall of the air-chamber at the base portion of the tire and having free marginal portions, through which air passages are provided.

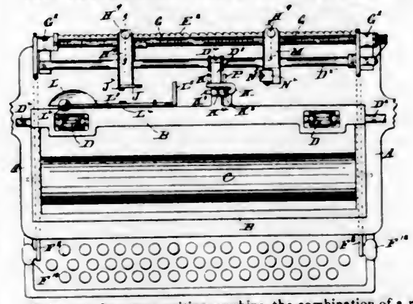
607,404. SEWING-MACHINE. JOSEPH E. BERTRAND, Boston, Mass., assignor to the Bay State Shoe Machinery Company, same place and Portland, Me. Filed June 8, 1897. Serial No. 639,825. (No model.)



Claim.—1. The combination of a needle-carrier provided with the stop shoulder c^3 and mounted upon and movable about a fixed stud or journal; a curved barbed needle set in said needle-carrier; means for oscillating said needle and carrier about said stud; the needle-guide mounted loosely upon said fixed stud and provided with the lug or shoulder c^3; the pin f' set in said needle-guide; the tubular stud d' set in a fixed position in the frame and provided with the stop-shoulders m and m'; the rocker-shaft g'; the arm g^3; the spring j', and the tack-puller n secured directly to, and movable only with said needle-guide.

2. The combination of the stand L; the stud o'; the tension-wheel N; the friction-hub N' provided with the circumferential groove r'; the elbow-lever M, the drum or grooved wheel R mounted on a fixed fulcrum, the handle U connected to said drum; and a flexible connection between said lever M and drum R substantially as described.

607,405. TYPE-WRITING MACHINE. ERNEST A. BRIGHAM, Cincinnati, Ohio, assignor to The Wyckoff, Seamans & Benedict, of New York. Filed June 24, 1895. Serial No. 553,854. (No model.)



Claim.—1. In a type-writing machine, the combination of a rod or bar, a vibratory adjustable marginal stop provided with an oscillatory suspensory stop and with means for holding the marginal stop in a fixed position relatively to said bar or rod both while said stop is in its normal working position and while it is in its vibrated or non-working position, and a stop or contact on the carriage; substantially as and for the purposes specified.

2. In a type-writing machine, the combination of a rod or bar, a vibratory adjustable marginal stop provided with an angulated pivoted arm having portion J^2 and portion J^4 and stationary stop J^5, a fastening device for holding said marginal stop in its adjusted position, means for vibrating said marginal stop and its pivoted arm without disturbing said fastening device, and a stop or contact on the carriage; substantially as and for the purposes specified.

3. In a type-writing machine, a scale, an adjustable right-hand margin stop, riding on a rod, and carrying the angulated pivoted arm having stop-arm J^3, and portion J^4 and stationary stop J^5, in combination with an adjustable stop consisting of the U-shaped piece K having stop arm K^2, and arm K^3, the latter located in the sleeve K^4 of the carriage and set-screws K^5, substantially as and for the purposes specified.

4. In a type-writing machine, a scale, an adjustable right-hand margin stop, riding on a rod, and carrying the angulated pivoted arm having stop-arm J^3, and portion J^4, and stationary stop J^5, in combination with the bell affixed to the carriage, clapper L^2 clapper-rod L^3 and arm L^5 with stationary stop L^7, substantially as and for the purposes specified.

5. In a type-writing machine, a scale, an adjustable right-hand margin stop, riding on a rod, and carrying the angulated pivoted arm having stop-arm J^3, and portion J^4 and stationary stop J^5, in combination with an adjustable stop consisting of the U-shaped piece K having stop-arm K^2, and arm K^3, the latter located in the sleeve K^4 of the carriage, and set-screws K^5, and the bell of the carriage, bell-clapper with rod and operating-arm, substantially as and for the purposes specified.

6 In a type-writing machine, in combination with an adjustable marginal stop, the two rods E and G, the stop being mounted on the rods, one of the rods being movable laterally to change the position of the stop, substantially as and for the purposes specified.

7. In a type-writing machine, in combination with an adjustable marginal stop, the two rods E and G, the stop being mounted on the rods, and mechanism for moving the rod E laterally to change the position of the stop substantially as and for the purposes specified.

8. In a type-writing machine, the combination of two rods or bars E and G, a vibratory marginal stop adjustably mounted on said rods or bars, a key-lever at the keyboard, and an intermediate connection whereby said rod or bar E may be vibrated and the said stop moved out of the plane of a stop or contact on the carriage; substantially as and for the purposes specified.

9. In a type-writing machine, the combination of the rods or bars G and E, a vibratory marginal stop adjustable thereupon, keys arranged at each end of the keyboard, and mechanism connecting said keys and said rod E whereby a depression of either of said keys will swing the rod E and effect a vertical vibration of said stop and move it out of the path of the stop or contact on the carriage; substantially as and for the purposes specified.

10. In a type-writing machine, the combination of a vibratory marginal stop, the rod G, the laterally-movable rod E, on both of which said marginal stop rides, a key at the keyboard, and intermediate means for vibrating said rod E to swing the stop out of the path of the stop or contact on the carriage; substantially as and for the purposes specified.

11. In a type-writing machine, the combination of a marginal stop, a rod G, a swinging rod E, a lever F connected to the latter, a connecting-rod F^6, and a key-lever F^8; substantially as and for the purposes specified.

12. In a type writing machine, a marginal stop, rod G, and shiftable rod E, and a lever-shifter for shifting the rod E laterally to change the position of the stop, consisting of the arm F^9 whose free end carries the rod E, and fulcrumed on rod G, and having the angulated arm F^8, F^4, connecting-rod F^6, lever F^8 and key F^{10}, substantially as and for the purposes specified.

13. In a type-writing machine, the combination of the vibratory rod E, a rod G, an adjustable stop having the front movable piece N^2, N^3, and the angulated arm F, connecting-rod F^6, lever F^8 and key F^{10}, and counter-stop on carriage, substantially as and for the purposes specified.

14. In a type-writing machine, the combination of the vibratory rod, as E, a rod G, an adjustable stop having an end J^3, J^4, counter-stop on carriage, and angulated arm F, connecting-rod F^6, lever F^8, key F^{10}, substantially as and for the purposes specified.

15. In a type-writing machine, the combination of an adjustable margin stop, and the rods E and G, the former vibratory and notched or serrated, and mechanism on the stop for engaging said stop with said notches, and for disengaging the stop therefrom, and mechanism for enabling the operator to vibrate the rod E, and release the stop, substantially as and for the purposes specified.

16. In a type-writing machine, the combination of a rod G, and a laterally-vibratory rod E, having two longitudinal rows of notches, and two margin stops on said rods, and mechanism for enabling each stop to be engaged with its respective line of notches, and be disengaged therefrom, substantially as and for the purposes specified.

17. In a type-writing machine, the combination of the rods G and E, the latter having two parallel longitudinal rows of notches, and the adjustable marginal stops, each having a resilient push-button and latch for engaging a given notch in its respective row of notches, substantially as and for the purposes specified.

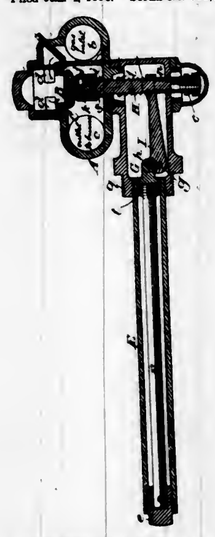
18. In a type-writing machine, the combination of the rods G and E, the latter having two parallel longitudinal rows of notches and the adjustable marginal stops, each having a resilient push-button and latch for engaging a given notch in its respective row of notches, the latch on one stop being at the side of the bar and in conjunction with one line of notches, as E^2, and the latch on the other stop being at the bottom of the bar, and in conjunction with that line of notches there located, substantially as and for the purposes specified.

19. In a type-writing machine, the combination of a carriage having a stop or contact, a vibratory adjustable margin stop provided with a pivoted or yielding contact portion adapted, when in normal position, to arrest the carriage, and adapted to be moved out of the way of the carriage stop or contact when the marginal stops vibrated to permit the carriage to pass beyond the said pivoted or yielding contact portion, and the latter being also adapted to vibrate or yield to permit the carriage to move in the opposite direction after the said vibratory stop has returned to its normal position, a fastening device for holding said marginal stop in its adjusted position, and means for vibrating said stop without causing a disengagement of said fastening device; substantially as set forth.

20. In a type-writing machine, the combination of a carriage having a stop or contact piece, a rod G, an arm or lever fulcrumed on said rod and provided with a pivoted contact-piece and a catch or fastening device which maintains its holding or locking engagement when said arm is swung or vibrated about said rod; substantially as set forth.

21. In a type-writing machine, the combination of a carriage having a stop or contact piece, a rod G, an arm or lever fulcrumed thereon, and provided with a pivoted contact-piece, a second parallel rod E, and means for securing said arm or lever at any desired locality thereupon; substantially as set forth.

607,406. THERMOSTATIC GAS-REGULATOR. JOHN S. COE, Paterson, N. J. Filed Jan. 4, 1898. Serial No. 665,558. (No model.)



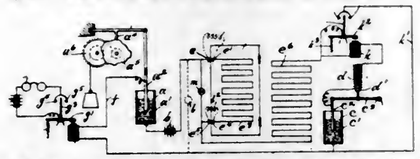
Claim.—1. In a thermostatic gas-regulator, the combination of a thermostat, a valve-box, a valve and a seat therefor in said box, a valve-operating spindle capable of a longitudinal movement independently of the valve and forming a connection between the thermostat and the valve, a guide for said spindle consisting of a fixed socket projecting within the valve-box, a screw-cap on said socket forming both a guide for the stem of the valve and an adjustable stop to limit the opening of the valve, substantially as herein described.

2. In a thermostatic gas-regulator, the combination of a thermostat, a valve-box, a valve and a seat therefor in said box, a valve-operating spindle in line with the stem of the valve and capable of a longitudinal movement independently of the valve, a lever connecting said spindle with the thermostat, a stop in the valve-box for limiting the opening movement of the valve, and a screw adjustment between said lever and spindle for adjusting the said spindle to the valve, substantially as herein described.

3. In a thermostatic gas-regulator, the combination of a tube constituting one member of a thermostat and having one end closed

and at the other end a hollow head-piece, a valve-box mounted on said hollow head-piece, a valve in said box, a valve-operating spindle passing between the said hollow head-piece and valve-box and capable of a longitudinal movement independently of the valve, a rod constituting the other member of a thermostat attached to the closed end of said tube and passing through its other end to said hollow head-piece, a lever in said hollow head-piece connecting the said spindle with the said rod, and means for adjusting said spindle to said lever and valve, substantially as herein described.

607,407. **ALARM SYSTEM.** CLYDE COLEMAN, Chicago, Ill., assignor, by mesne assignments, of two-thirds to George P. Jones, same place. Filed Oct. 13, 1897. Serial No. 655,525. (No model.)



Claim.—1. The combination with an electric protective circuit extending between a protected structure and the alarm-station, of a voltage-changer for varying the voltage of the current flowing thereover and a device responsive to said voltage variations acting to maintain the current constant within prescribed limits, substantially as described.

2. The combination with an electric protective circuit, of a voltage-changer situated therein at the alarm-station, a device responsive to said voltage-changer situated at the protected structure and acting to maintain the current constant within prescribed limits, substantially as described.

3. The combination with a protective circuit protecting a vault or other inclosure and extending through separable door-contacts, of means for varying the nature of the circuit within the vault at intervals, and a device responsive to a momentary separation of the door-contacts to permanently change the nature of the circuit, substantially as described.

607,408. **BLUE DYE FOR WOOL.** EMIL ELSAESSER, Barmen, Germany, assignor to Dahl & Co., same place. Filed July 2, 1896. Serial No. 597,847. (Specimens.)

Claim.—1. The process of making a blue dyestuff for wool consisting of oxidizing a mixture of beta-dinaphthylmetaphenylenediamindisulfonic acid and dimethylparaphenylenediaminthio-sulfonic acid in an aqueous solution, and then boiling the oxidized product thus obtained with soda, substantially as set forth.

2. A blue dyestuff for wool derived from beta-dinaphthylmetaphenylenediamin-disulfonic acid and dimethylparaphenylenediaminthio-sulfonic acid forming a dark-bronze shining powder, which is readily soluble and takes on a blue color in water but is with difficulty soluble in alcohol, and with the addition of hydrochloric acid to the aqueous solution is rendered somewhat greener, while the addition of soda-lye makes it somewhat redder.

607,409. **COMBINATION KITCHEN UTENSIL.** DENNIS L. FALARDEAU, Albany, N. Y., assignor of one-third to Thomas E. Donohoe, same place. Filed Sept. 13, 1897. Serial No. 651,488. (No model.)



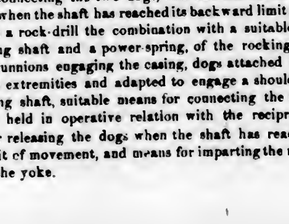
Claim.—1. In a combination kitchen or cooking utensil, a perforated cup or receptacle whose bottom is formed with a grating-surface, and a detachable cover for said receptacle, provided with a handle, substantially as specified.

2. In a combination kitchen or cooking utensil, a cup or receptacle having a perforated bottom formed with a grating-surface, and a removable cover therefor having a handle, and two concentric cutting-flanges on its under side, the inner of said flanges forming a holder for a nutmeg, substantially as specified.

3. In a combination cooking utensil, a perforated cup or receptacle whose bottom is formed with a grating-surface, a detachable cover for said cup, and a handle attached to the said cover and formed in two parts having a sliding connection with each other, whereby the length of said handle may be adjusted, substantially as specified.

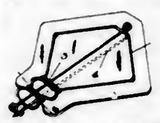
4. The herein-described combination kitchen or cooking utensil consisting of an outer can or receptacle having a removable slotted cover, a perforated inner cup or receptacle having a grating-surface upon its bottom, a flanged cover for said inner receptacle, and a handle connected to said cover and designed to extend out through the slot of the cover of the outer can or receptacle, substantially as specified.

607,410. **FENCE.** CHARLES H. FLANAGAN, Southville, and EDMOND MARTIN, Potsdam, N. Y.; said Martin assignor to said Flanagan. Filed Mar. 8, 1898. Serial No. 673,057. (No model.)



Claim.—In a fence, the combination with a fence-post, and the fence-wire, of a wire-tightener comprising a screw passing through a perforation of a fence-post and provided at its outer end with a head, and the sleeve having a threaded opening or bore receiving the screw and terminating short of the outer end of the sleeve to provide a solid outer portion, the latter being attached to the fence-wire, substantially as described.

607,411. **RUBBER FLOWER-HOLDER.** MARTHA P. HAYDEN, Joliet, Ill. Filed July 2, 1897. Serial No. 643,259. (No model.)



Claim.—1. A flower-holder, consisting of a wire frame to serve as a base or support for the flowers, said frame having a pair of opposite indentations in its longer sides, an elastic band seated in the indentations to grasp the stems of the flowers, and means for attaching the holder to wearing-apparel, substantially as described.

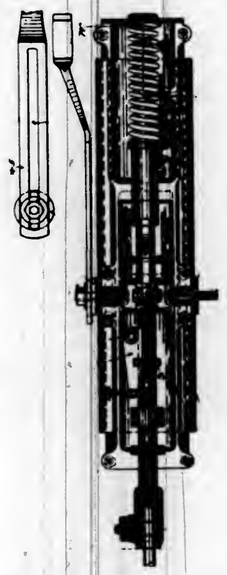
2. A combined flower-holder and dress-protector, consisting of a wire frame having longitudinally opposite bends or indentations in its sides, an elastic band seated in the indentations across the frame, a shield of flexible material connected with the frame and means for attaching the shield and holder to wearing apparel, substantially as described.

607,412. **HAND ROCK-DRILL.** LUDERNE JONES, Denver, Colo. Filed Apr. 12, 1897. Serial No. 631,825. (No model.)

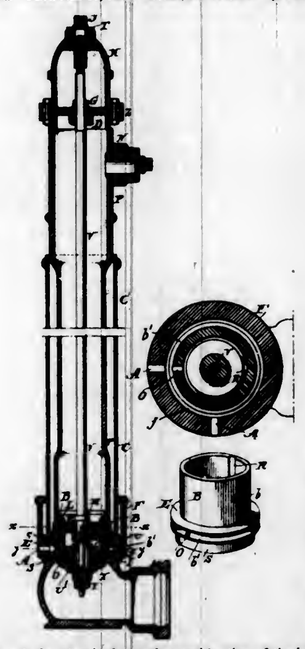
Claim.—1. In a rock-drill, the combination with a suitable casing, the reciprocating shaft and the power-spring, of a rocking yoke centrally apertured to allow the shaft to pass therethrough and having central trunnions journaled in the casing, a dog pivotally mounted on each extremity of the yoke, the dogs being adapted to alternately engage a shoulder on the reciprocating shaft as the yoke is actuated, a spring connecting the two dogs, and suitable means for releasing the dogs when the shaft has reached its backward limit of movement.

2. In a rock-drill the combination with a suitable casing, a reciprocating shaft and a power-spring, of the rocking yoke having central trunnions engaging the casing, dogs attached to the respective yoke extremities and adapted to engage a shoulder on the reciprocating shaft, suitable means for connecting the dogs whereby they are held in operative relation with the reciprocating shaft, means for releasing the dogs when the shaft has reached its backward limit of movement, and means for imparting the rocking movement to the yoke.

607,412.



607,413. **FIRE-HYDRANT.** SAMUEL R. C. MATHEWS, Philadelphia, Pa. Filed Jan. 19, 1898. Serial No. 667,133. (No model.)



Claim.—1. In a fire-hydrant, the combination of the lower elbow and the upright stock detachably secured together, with a bushing fitting within the lower end of the stock and having an annular flange clamped between the stock and elbow and with its lower edge formed into a valve-seat, a main valve arranged within the elbow and adapted to the seat of the bushing, a valve-stem extending down through the bushing to operate the main valve, and a guide projecting laterally from and movable with the stem and working upon the inside of the bushing.

2. In a fire-hydrant, the combination of the lower elbow and the upright stock detachably secured together, with a bushing fitting within the lower end of the stock and having an annular flange clamped between the stock and elbow and with its lower edge formed into a valve-seat and a waste-orifice through the annular flange, a valve-rod, a vertically-movable waste-valve fitted within the bushing and secured to the valve-rod, and a main valve arranged within the elbow and adapted to the seat of the bushing and also movable by the valve-rod.

3. In a fire-hydrant, the combination of the lower elbow and the upright stock detachably secured together, with a bushing fitting within the lower end of the stock and having an annular flange clamped between the stock and elbow and with its lower edge formed into a valve-seat and a waste-orifice through the annular flange, a valve-rod, a vertically-movable waste-valve fitted within the bushing and held against rotation by a vertical guide therein and also secured to the valve-rod, a bolt or pin extending through the stock into the bushing to hold it against rotation in the stock, and a main valve arranged within the elbow and adapted to the seat of the bushing and also movable by the valve-rod.

4. The combination of an elbow having an annular shoulder a stock having a flat rim on the bottom and adapted to be clamped or held down upon the elbow, a bushing of non corrodible metal fitted into the stock and extending into the elbow to form a valve-seat and having an annular flange intermediate of its ends clamped between the shoulder of the elbow and rim of the stock and also provided with a waste-orifice through said flange, a waste-valve movable in and guided by the bushing, and a main valve movable to and from the valve seat on the lower part of the bushing, and a stem common to both the main valve and waste-valve extending entirely through the bushing.

5. The combination of an elbow having an annular shoulder and clearance-space formed with one or more waste-orifices, a stock having a flat rim on the bottom and adapted to be clamped or held down upon the elbow, a bushing of non-corrodible metal fitted into the stock and extending down into the elbow to form a valve-seat and having an annular flange (of less diameter than the diameter of the clearance-space in the elbow) intermediate of its ends clamped between the shoulder of the elbow and rim of the stock and perforated to form a waste-orifice, a waste-valve movable in and guided by the bushing, and a main valve movable to and from the valve-seat on the lower part of the bushing.

6. In a hydrant, the combination of the elbow having an annular shoulder and clearance-space *f* having one or more waste-orifices opening therefrom, a stock P screwed or suitably secured to the elbow, a bushing B fitted into the bottom of the stock and having an annular flange E grooved as at *b'* on its perimeter and through which the waste-orifice O is formed the said flange resting upon the shoulder of the elbow and clamped thereon by the stock, a waste-valve within and guided by the bushing, and a main valve seating itself upon the lower edge of the bushing below the annular flange thereof.

7. In a hydrant, the combination of the elbow having an annular shoulder and clearance-space *f* having two waste-orifices opening therefrom and bushed with non-corrodible metal, a stock P screwed or suitably secured to the elbow, a bushing B fitted into the bottom of the stock and having an annular flange E and through which the waste-orifice O is formed the said flange to open into the annular clearance-space *f* resting upon the shoulder of the elbow and clamped thereon by the stock, a waste-valve within and guided by the bushing, and a main valve seating itself upon the lower edge of the bushing below the annular flange thereof.

8. In a hydrant, an elbow having an annular clearance-space *f* formed with two waste-orifices A, a stock secured to the elbow and supported above the clearance-space and having a waste-orifice opening into the clearance-space, a waste-valve within the stock, and a main valve to control the water to the stock.

9. A valve-bushing for a hydrant consisting of a deep cylindrical part having a valve-seat formed in its lower rim, an outer annular flange at a considerable distance from the upper rim and in which the entire space between the upper rim and flange is made smooth or without screw-threads or projections, and a straight waste-orifice through the flange.

10. A valve-bushing for a hydrant consisting of a cylindrical part having a valve-seat formed in its lower rim and an outer annular flange at a distance from the upper rim and in which the space between the upper rim and flange is made smooth, and furthermore the construction being such that a waste-orifice is formed through the flange.

11. A valve-bushing for a hydrant consisting of a cylindrical part having a valve-seat formed in its lower rim and an outer annular flange at a distance from the upper rim and in which the space between the upper rim and flange is made smooth, and furthermore the construction being such that a waste-orifice is formed through the

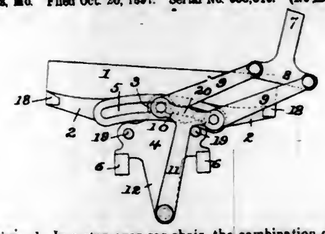
flange, and a guide for the waste-valve formed upon the interior thereof.

12. In a hydrant, the combination of an elbow having an annular shoulder, a stock secured to the elbow, a bushing fitting into the bottom of the stock without screw-threads and formed on its bottom rim with a valve-seat and upon its outer surface with an annular flange containing a waste-orifice and clamped between the stock and shoulder of the elbow said bushing being independent of the connection between the stock and elbow, a valve-rod, a waste-valve moved by the valve-rod within the bushing, and a main valve below the bushing and secured to the valve-rod.

13. In a hydrant, the combination of an elbow having an annular shoulder, a stock secured to the elbow, a bushing fitting into the bottom of the stock without screw-threads and formed on its bottom rim with a valve-seat and upon its outer surface with an annular flange containing a waste-orifice and clamped between the stock and shoulder of the elbow said bushing being independent of the connection between the stock and elbow, means for holding the bushing against rotary movement within the stock, a valve-rod, a waste-valve moved by the valve-rod within the bushing, and a main valve below the bushing and secured to the valve-rod.

14. In a hydrant an elbow provided with a waste-orifice in its upper flange, a stock detachably connected to the elbow, a bushing of non corrodible metal snugly fitting and secured to the stock and extending down into but not connected with the elbow and having a main-valve seat formed thereon, and also further provided with an annular flange having a straight transverse waste-orifice, a waste-valve guided upon the interior of the bushing, and a main valve arranged within the elbow and suspended from the stock, whereby in case of breakage of the bushing nothing will remain in the elbow when the stock is removed.

607,414. STEP-OVER CAR-SEAT. CHARLES K. PICKLES, St. Louis, Mo. Filed Oct. 20, 1897. Serial No. 655,816. (No model.)



Claim.—1. In a step-over car-chair, the combination of a fixed supporting-frame, a seat pivoted thereto, and having a plate portion formed with a track slot or recess, a reciprocating carriage having engagement with said track-slot, the movement of the carriage being in a predetermined plane, that differs from the plane of said track-slot, a step-over back, supporting-arms pivotally connected to the back and to the carriage, and means for effecting a positive movement of the carriage in its predetermined plane, substantially as set forth.

2. In a step-over car-chair, the combination of a fixed supporting-frame, a seat pivoted thereto, and having a plate portion formed with a curved track slot or recess, a reciprocating carriage having engagement with said track slot, the movement of the carriage being in a predetermined curved plane that differs from the plane of such curved track-slot, a step-over back, supporting-arms pivotally connected to the track and to the carriage, and means for effecting a positive movement of the carriage in its predetermined curved plane, substantially as set forth.

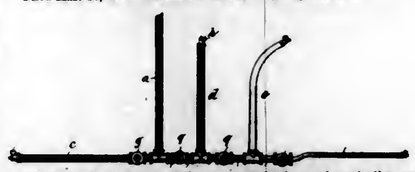
3. In a step-over car-chair, the combination of a fixed supporting-frame, a seat pivoted thereto, and having a plate portion formed with a track slot or recess, a reciprocating carriage having engagement with said track-slot, the movement of the carriage being in a predetermined curved plane that differs from the plane of such track-slot, a step-over back, supporting-arms pivotally connected to the back and to the carriage, and means for effecting a positive movement of the carriage in its predetermined curved plane, the same consisting of an elongated extension of said carriage, having pivotal connection with the fixed supporting-frame, substantially as set forth.

4. In a step-over car-chair, the combination of a fixed supporting-frame, a seat pivoted thereto, and having a plate portion formed with a track slot or recess, and stop-lugs 18, a reciprocating carriage having engagement with said track-slot the movement of the carriage being in a predetermined plane that differs from the plane of said track-slot, a step-over back, supporting-arms pivotally connected to the back and to the carriage, and means for effecting a positive movement of the carriage, in its predetermined plane, substantially as set forth.

5. In a step over car-chair, the combination of a fixed supporting-frame provided with stop-lugs 19, a seat pivoted to said frame and having a plate portion formed with a track slot or recess, a reciprocating carriage having engagement with said track-slot, the movement of the carriage being in a predetermined curved plane that differs from the plane of such track-slot, a step-over back, supporting-arms pivotally connected to the back and to the carriage, and means for effecting a positive movement of the carriage in its predetermined curved plane, the same consisting of an elongated extension of said carriage having pivoted connection with the fixed supporting-frame, substantially as set forth.

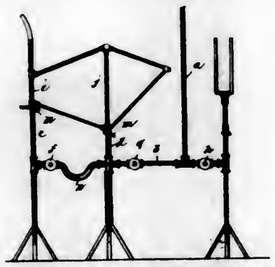
6. In a step over car-chair, the combination of a fixed supporting-frame, a seat pivoted thereto, and having a plate portion formed with a track slot or recess, a reciprocating carriage provided with a centrally-arranged stop 20, and having engagement with said track-slot, the movement of the carriage being in a predetermined plane that differs from the plane of said track-slot, a step over back, supporting-arms pivotally connected to the back and to the carriage, and means for effecting a positive movement of the carriage in its predetermined plane, substantially as set forth.

607,415. PROCESS OF FORMING CELLULOID OR SIMILAR OPEN-SEAM COVERINGS. JAMES R. ROBINSON, Chicago, Ill., assignor to the A. G. Spalding & Bros., Jersey City, N. J., and New York, N. Y. Filed Mar. 16, 1897. Serial No. 627,354. (No specimens.)



Claim.—The process of forming celluloid or other similar open-seam coverings for bicycle-frames, which consists in first cutting the blank from sheet-celluloid or other suitable material to proper shape and dimensions, then shaping the same by hand-pressure upon a heated mandrel with its longitudinal edges uncemented, so as to have a longitudinal seam or opening therein, and finally causing the temperature of the mandrel to be lowered sufficiently to enable the molded product to become set to the desired shape to permit its removal therefrom by opening its longitudinal edges; substantially as described.

607,416. PROCESS OF APPLYING CELLULOID OR OTHER LIKE COVERINGS TO HOLLOW METAL TUBES. JAMES R. ROBINSON, Chicago, Ill., assignor to the A. G. Spalding & Bros., Jersey City, N. J., and New York, N. Y. Filed Mar. 16, 1897. Serial No. 627,355. (No specimens.)



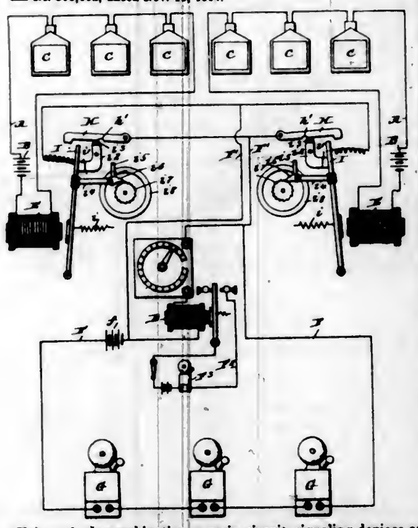
Claim.—1. The method of covering bicycle and other hollow framework with celluloid, which consists in first applying heat to the interior of the frame, then during the continuation of the application of the heat applying to the heated frame, and manually shaping thereto a permanent covering of celluloid and finally allowing the frame to cool; substantially as described.

2. The herein-described method of covering the bars of a hollow framework with celluloid, which consists in first applying heat to the interior of the frame-bars, then during the continuation of the application of the heat springing over the same, and manually shaping thereto open-seam tubes of celluloid corresponding in contour to the said frame-bars and uniting the tube edges, and finally allowing the frame to cool; substantially as described.

3. The herein-described method of covering the joints of bars of a hollow framework, which consists in first heating the hollow framework from within, then coating the heated joints with semiliquid celluloid, then applying to the heated frame-bars open-seam tubes corresponding in shape thereto, and uniting the longitudinal edges of the tubes together, and then allowing the frame to cool; substantially as described.

REISSUES.

11,678. ELECTRIC SIGNALING MECHANISM. LEWIS G. ROWLAND, Camden, N. J. Filed Dec. 15, 1897. Serial No. 662,075. Original No. 593,692, dated Nov. 16, 1897.



Claim.—1. In combination, a main circuit, signaling devices on said circuit, a second circuit, receiving devices on said circuit, an electric device on said main circuit, a switch device consisting of two members, controlling said second circuit, the first member of which is moved in one direction by said electric device when energized, and means to return said member to its initial position when said electric device is deënergized, and a device adapted to hold said second switch member out of electric connection with said first switch member in its movement under the action of the electric device.

2. In combination, a main circuit, signaling devices on said circuit, a second circuit, receiving devices on said circuit, an electric device on said main circuit, a switch device consisting of two members, controlling said second circuit, the first member of which is moved in one direction, by said electric device when energized, and means to return said member to its initial position when said electric device is deënergized, and a device adapted to hold said second switch member out of electric connection with said first switch member in its movement under the action of the electric device, and means to retard the return movement of said first switch member when said electric device is deënergized.

3. In combination, a main circuit, signaling devices on said circuit, a second circuit, receiving devices upon said circuit, an electromagnet upon said main circuit, said magnet having a pivoted armature, means to hold the armature of said magnet in its retracted position and move it toward that position when the main-line circuit is broken, the second circuit including the said armature, and a pivoted arm in alinement with the armature, the armature being free from said arm at its extreme position in either direction, the armature in its movement under the influence of the retractile device making electrical connection with said pivoted arm.

4. In combination, a main circuit, signaling devices on said circuit, a second circuit, receiving devices upon said circuit, an electromagnet upon said main circuit, said magnet having a pivoted armature, means to hold the armature of said magnet in its retracted position and move it toward that position when the main-line circuit is broken, the second circuit including the said armature and the pivoted arm in alinement with the armature, the armature being free from said arm at its extreme position in either direction, the armature in its movement under the influence of the retractile device making electrical connection with said pivoted arm, and a retarding device connected with the armature and acting during the movement of the armature under the action of the retractile device.

5. In combination, a main circuit, signaling devices upon said circuit, an electric device on said main circuit, a second circuit, receiving devices on said circuit, an electromagnet of high resistance on said second circuit, the circuit through the magnet being normally closed, a shunt about said magnet, said shunt being normally open, a switch device, consisting of two members controlling said shunt, the first member of which is moved in one direction by said electric device on the main circuit when said electric device is energized, and means to return said member to its initial position when said electric device is deënergized, and a device adapted to hold said second switch member out of electric connection with said first switch member in its movement under the action of the electric device, and a third circuit containing an indicating device, a switch controlling said circuit, said switch being controlled by the electromagnet of high resistance, and adapted to be held open when said magnet is energized.

6. In combination, a main circuit, signaling devices upon said circuit, an electric device on said main circuit, a second circuit, receiving devices on said circuit, an electromagnet of high resistance in said second circuit, the circuit through the magnet being normally closed, a shunt about said magnet, said shunt being normally open, a switch device consisting of two members controlling said shunt, the first member of which is moved in one direction by said electric device on the main circuit when said electric device is energized, and means to return said member to its initial position when said electric device is deënergized, and a device adapted to hold said second switch member out of electric connection with said first switch member in its movement under the action of the electric device, and means to retard the return movement of said first switch member when said electric device is deënergized, and a third circuit containing an indicating device, a switch controlling said circuit, said switch being controlled by the electromagnet of high resistance, and adapted to be held open when said magnet is energized.

7. In combination, a main circuit, signaling devices upon said circuit, an electric device on said main circuit, a second circuit, receiving devices on said circuit, an electromagnet of high resistance in said second circuit, the circuit through the magnet being normally closed, a shunt about said magnet, said shunt being normally open, a switch device controlling said shunt controlled by said electric device on the main circuit, and a third circuit containing an indicating device, a switch controlling said circuit, said switch being controlled by the electromagnet of high resistance and adapted to be held open when said magnet is energized.

8. In combination, a main-line circuit, signaling devices on said circuit, an electric device on said circuit, a second circuit having receiving devices thereon, a switch comprising two members one of which is moved by the electric device in one direction, and means independent of the electric device to move it in the other direction, and means to hold the second member of said switch out of alinement with the first-mentioned switch member, when moving under the action of the electric device.

DESIGNS.

29,013. BADGE. GEORGE HERBERT PERMOR, Toronto, Canada. Filed May 23, 1898. Serial No. 681,517. Term of patent 7 years.



Claim.—The design for a badge herein shown and described.

29,014. BADGE OR SIMILAR ARTICLE. ARTHUR A. MCRAE, Attleborough, Mass., assignor to McRae & Keeler, same place. Filed May 12, 1898. Serial No. 680,515. Term of patent 3½ years.



Claim.—The design for a badge or similar article herein shown and described.

29,015. BACK FOR BRUSHES OR SIMILAR ARTICLES. JOSEPH E. STRAKER, Jr., North Attleborough, Mass., assignor to Henry H. Curtis, same place. Filed June 10, 1898. Serial No. 683,132. Term of patent 7 years.



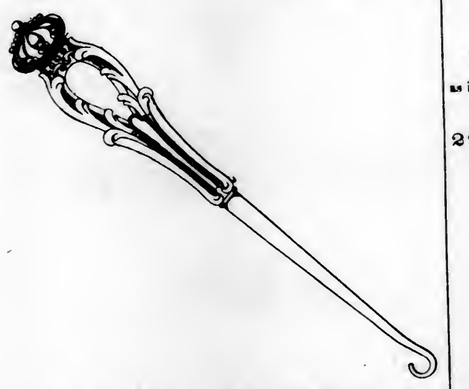
Claim.—The design for the back of a brush or similar article herein shown and described.

29,016. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. EUSTACE CREES and CHARLES S. COURT, Providence, R. I., assignors to Henry H. Curtis, North Attleborough, Mass. Filed June 15, 1898. Serial No. 683,539. Term of patent 7 years.



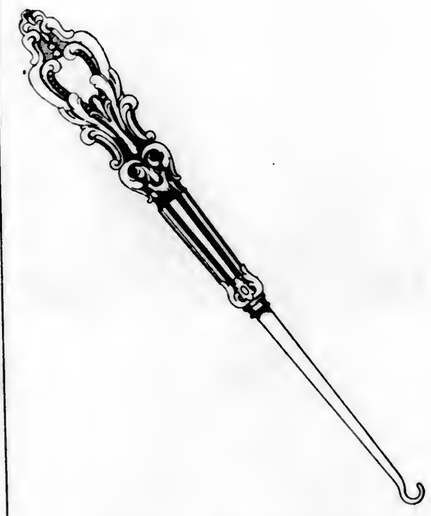
Claim.—The design for the handle of a button-hook or similar article herein shown and described.

29,017. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. FRANK J. DIACONT, Providence, R. I., assignor to William Bens, same place. Filed June 7, 1898. Serial No. 682,855. Term of patent 3½ years.



Claim.—The design for a handle for button-hooks or similar articles, substantially as herein shown and described.

29,018. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. FRANK J. DIACONT, Providence, R. I., assignor to Henry H. Curtis, North Attleborough, Mass. Filed June 10, 1898. Serial No. 683,133. Term of patent 7 years.



Claim.—The design for a handle for button hooks or similar articles, substantially as herein shown and described.

29,019. MANICURE TOOL. MARY E. SCHILL, Philadelphia, Pa. Filed June 20, 1898. Serial No. 684,010. Term of patent 7 years.



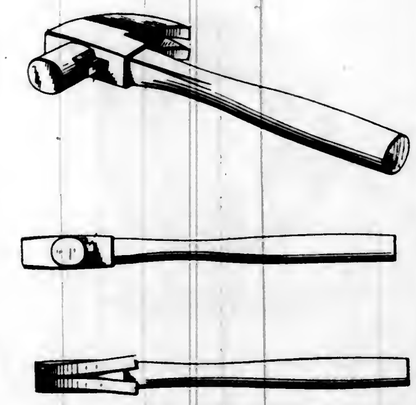
Claim.—The design for a manicure-tool as herein described and as illustrated in the accompanying drawing.

29,020. RAZOR-SACK. HENRIK CLAUSS, Fremont, Ohio. Filed May 19, 1898. Serial No. 681,167. Term of patent 14 years.



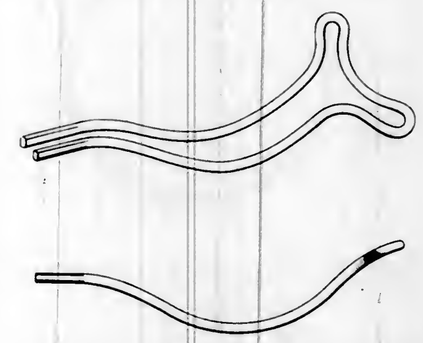
Claim.—The design for a razor-sack, substantially as herein shown and described.

29,021. HAMMER. GEORGE W. HILL, Blue Ridge, Mo. Filed June 20, 1898. Serial No. 684,004. Term of patent 14 years.



Claim.—The design for a hammer, substantially as herein shown and described.

29,022. SPRING. BENJAMIN S. SEAMAN, Canton, Ohio. Filed May 20, 1898. Serial No. 681,261. Term of patent 7 years.



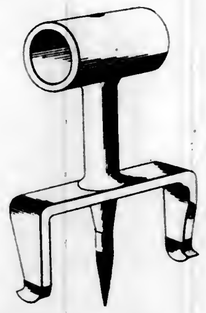
Claim.—The design for a spring as herein shown and described.

29,023. WASHER. ALONZO PERRINTON READ, Chicago, Ill. Filed Feb. 13, 1897. Serial No. 623,329. Term of patent 7 years.



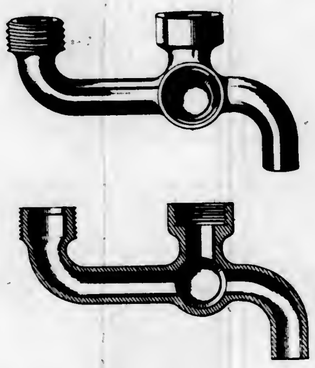
Claim.—The design for a washer substantially as herein shown and described.

29,024. BUNG-HOLE BORER. FRANCISCO JACINTO DEL CORRAL, Philadelphia, Pa., assignor to The Enterprise Manufacturing Company of Pennsylvania, same place. Filed Apr. 28, 1898. Serial No. 679,145. Term of patent 14 years.



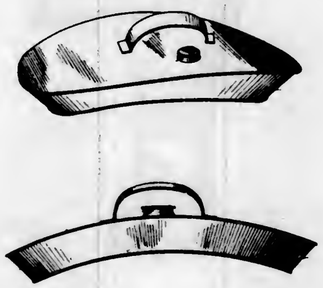
Claim.—The design for a bung-hole borer as herein described and as shown in the accompanying drawing.

29,025. FAUCET-BODY. AUGUST GIESE, New York, N. Y. Filed June 15, 1898. Serial No. 683,523. Term of patent 14 years.



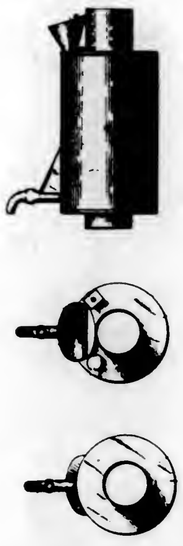
Claim.—The design for a faucet-body, substantially as shown and described.

29,026. HOT-WATER HOLDER. WALTER BARCHARD, Chicago, Ill. Filed June 3, 1898. Serial No. 682,491. Term of patent 7 years.



Claim.—The design for a hot-water holder as herein shown and described.

29,027. STOVEPIPE-SECTION AND HOT-WATER TANK. WILLIAM C. DANUM, Franklin, La. Filed Dec. 17, 1897. Serial No. 662,356. Term of patent 14 years.



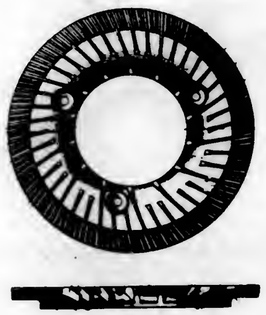
Claim.—The design for a stovepipe-section and hot-water tank, substantially as herein described and shown.

29,028. CAR-TRUCK FRAME. DWIGHT BRUCE KENNEDY, Oakmont, Pa. Filed May 16, 1898. Serial No. 680,581. Term of patent 7 years.



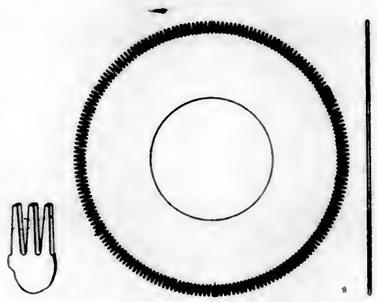
Claim.—The design for a car-truck frame, substantially as shown and described.

29,029. GRINDING-DISK FOR MILLS. JOHN WILSON BROWN, Jr., Philadelphia, Pa. Filed Apr. 23, 1898. Serial No. 678,144. Term of patent 14 years.



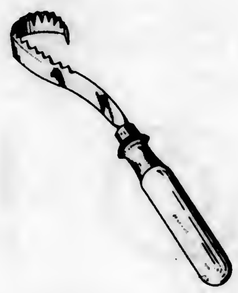
Claim.—The design for the grinding-disk of a grinding-mill as herein described and as illustrated in the accompanying drawings.

29,030. FRUIT-SEEDER DISK. JOHN WILSON BROWN, Jr., Philadelphia, Pa. Filed May 2, 1898. Serial No. 679,545. Term of patent 14 years.



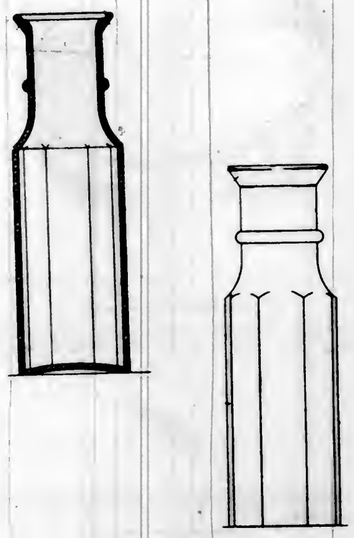
Claim.—The design for a seeding-disk of a fruit-seeder as herein described and as shown in the accompanying drawings.

29,031. BUTTER-CURLER. JULIA ELLEN HAWORTH and SAM HAWORTH, Southport, England. Filed Apr. 25, 1898. Serial No. 678,824. Term of patent 7 years.



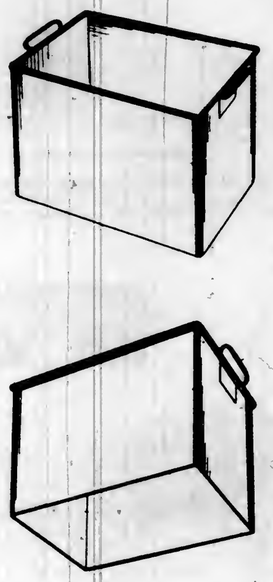
Claim.—The design for a butter-curler substantially as herein shown and described.

29,032. JAR. JOHN SCHEIB, Anderson, Ind. Filed Feb. 18, 1898. Serial No. 670,868. Term of patent 14 years.



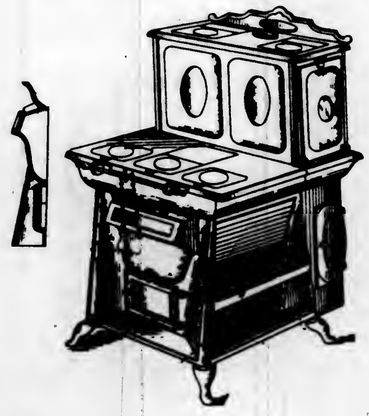
Claim.—The design for a jar as herein shown and described.

29,033. CHEESE-MOLD. LEVI C. SMITH, Whitesborough, N. Y. Filed Nov. 4, 1896. Serial No. 611,082. Term of patent 14 years.



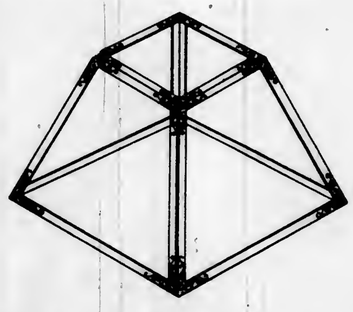
Claim.—The design for a mold for manufacturing cheese, substantially as herein shown and described.

29,034. COOKING-RANGE. AMBROSE V. FLETCHER, Athol, Mass. Filed June 3, 1898. Serial No. 682,496. Term of patent 14 years.



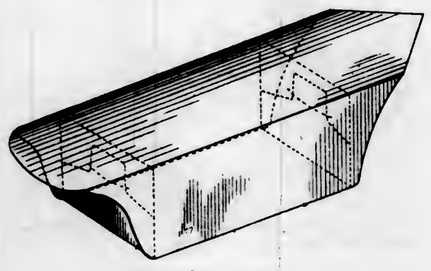
Claim.—The design for a cooking-range, substantially as herein shown and described.

29,035. SHOW-CASE. BENJAMIN V. ARMSTRONG and HARRY W. ARMSTRONG, Cleveland, Ohio. Filed Mar. 26, 1898. Serial No. 675,327. Term of patent 3½ years.



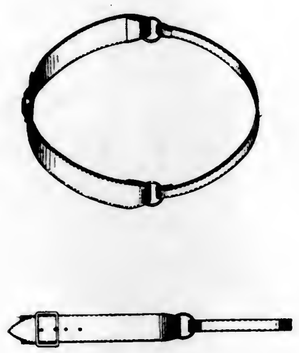
Claim.—The design for a show-case, as herein shown and described.

29,036. BOX. ISIDOR TAHL, New York, N. Y. Filed Mar. 28, 1898. Serial No. 675,509. Term of patent 7 years.



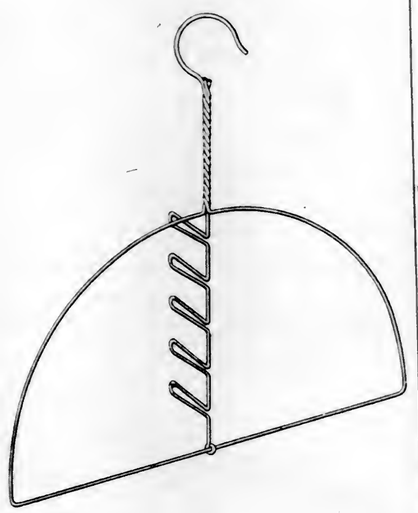
Claim.—The design for a paper box, substantially as herein shown and described.

29,037. WAIST-BELT. HENRY J. GAISMAN, New York, N. Y. Filed Dec. 1, 1897. Serial No 660,442. Term of patent 14 years.



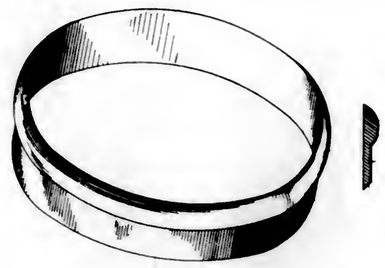
Claim.—The design for a waist-belt, substantially as shown and described.

29,038. SKIRT-HANGER. JOHN S HEATON, Philadelphia, Pa. Filed May 11, 1898. Serial No. 680,416. Term of patent 14 years.



Claim.—The design for a skirt-hanger as herein described and as shown in the accompanying drawing.

29,039. HOOP. CHARLES HUNTINGTON JACOBS, Detroit, Mich. Filed June 16, 1898. Serial No. 683 661 Term of patent 14 years.



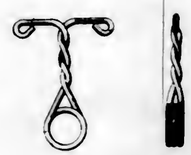
Claim.—The design for a hoop, as herein shown and described.

29,040. BOOT-CALK. REYNOLD O. JACOBSON, Bangor, Me. Filed May 7, 1898. Serial No. 680,095. Term of patent 7 years.



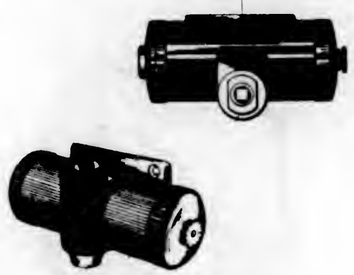
Claim.—The design for a boot calk substantially as herein shown and described.

29,041. BELAYING-HOOK. FRANK A. THOMAS, Cedar Rapids, Iowa. Filed May 9, 1898. Serial No. 680,239. Term of patent 14 years.



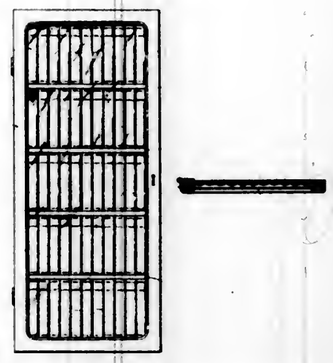
Claim.—The design for a belaying-hook substantially as herein shown and described.

29,042. CASING FOR DOOR-CHECKS. CROMWELL O. CASE, New Britain, Conn., assignor to the P. & F. Corbin, same place. Filed Apr. 23, 1898. Serial No. 678,678. Term of patent 14 years.



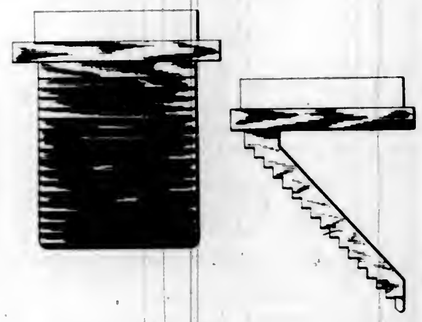
Claim.—The design for a casing for a door-check comprising a cylindrical body and a smaller cylindrical body at right angles to said first-mentioned body and partially merged therein as herein shown and described.

29,043. DOOR. DAVID PRICE, Philadelphia, Pa. Filed Mar. 22, 1898. Serial No. 674,838. Term of patent 7 years.



Claim.—The design for a door, substantially as herein shown and described.

29,044. VAULT-LIGHT. JAMES MAGNUSEN, Chicago, Ill. Filed July 3, 1897. Serial No. 643,461. Term of patent 7 years.



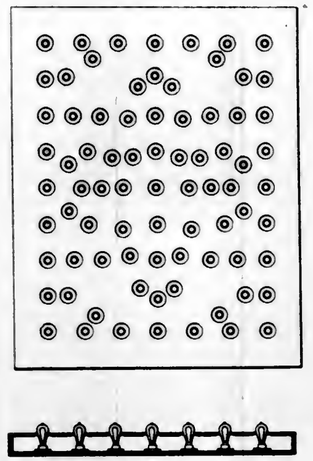
Claim.—The design for a vault light, as herein shown and described.

29,045. FINGER-BOARD GUIDE. MARTIN LEWIS ALTOP, Sacramento, Cal. Filed Feb. 18, 1898. Serial No. 670,866. Term of patent 7 years.



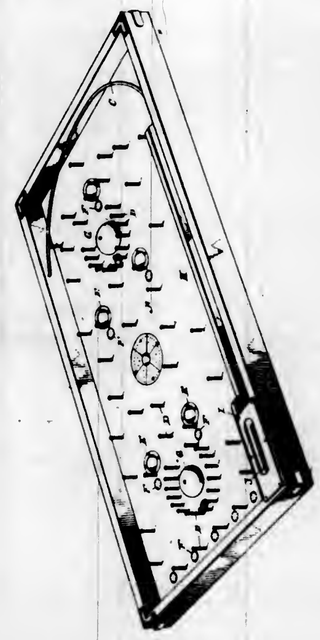
Claim.—The design for a guide for finger-boards, substantially as shown and described.

29,046. ELECTRIC-LIGHT SIGN. MORTIMER NORDEN, New York, N. Y., assignor to Joseph Norden, same place. Filed May 16, 1898. Serial No. 680,882. Term of patent 14 years.



Claim.—The design for an electric-light sign, substantially as shown and described.

29,047. BAGATELLE-BOARD. MONTAGUE REDGRAVE, Jersey City, N. J. Filed Jan. 18, 1897. Serial No. 619,685. Term of patent 14 years.



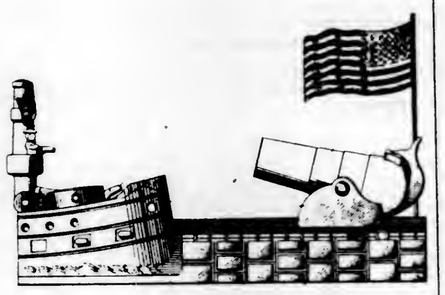
Claim.—The design for a bagatelle-board substantially as shown and described.

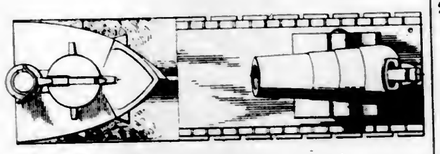
29,048. BLANK FOR TOY WIND-WHEELS. JAMES W. WOODRUFF, Berlin, Conn. Filed June 21, 1898. Serial No. 684,107. Term of patent 3½ years.



Claim.—The design for a blank for a toy wind-wheel, substantially as herein shown and described.

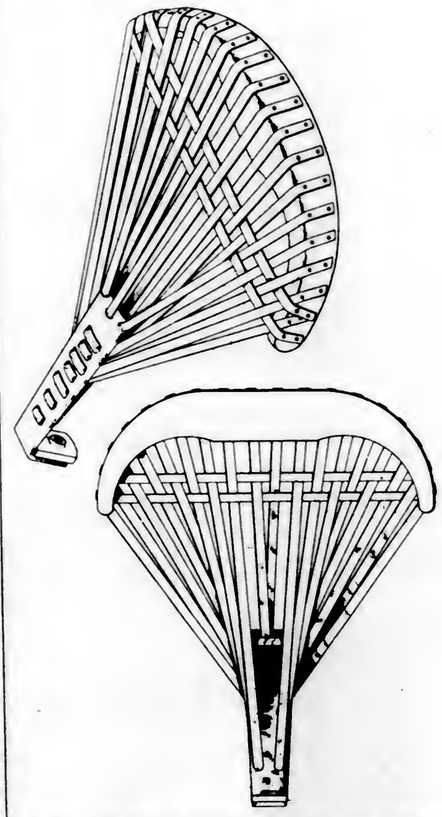
29,049. TOY BANK. CHARLES A. BAILEY, Cromwell, Conn., assignor to the J. & E. Stevens Company, same place. Filed May 26, 1898. Serial No. 681,844. Term of patent 3½ years.





Claim.—The design for a toy bank, substantially as herein shown and described.

29,050. SADDLE-SEAT SUPPORT FOR BICYCLES. GEORGE A. MACKER, Westborough, Mass. Filed June 1, 1897. Serial No. 639,056. Term of patent 3½ years.



Claim.—The design for a saddle-seat support for bicycles, substantially as shown and described.

29,051. FLAG-HOLDER. DAVID LAKE, Philadelphia, Pa., and LEWIS S. COSLEY, Hammonton, N. J. Filed Apr. 30, 1898. Serial No. 679,402. Term of patent 3½ years.



Claim.—The design for a flag-holder for bicycles as herein described and as illustrated in the accompanying drawing.

TRADE-MARKS

REGISTERED JULY 12, 1898.

31,793. WRITING-PAPER. WRITING PAPER COMPANY, Holyoke, Mass. Filed Mar. 14, 1898.

TRADE

Essential feature.—The word "TRADE." Used since February, 1898.

31,794. LADIES', MISSES', AND GENTLEMEN'S KID GLOVES. JOHN WANAMAKER, Philadelphia, Pa. Filed May 16, 1898.

ROYALE

Essential feature.—The word "ROYALE." Used since September 1, 1897.

31,795. CORSETS. THE WARNER BROTHERS COMPANY, Bridgeport, Conn. Filed May 19, 1898.

REGAL

Essential feature.—The word "REGAL." Used since January 1, 1898.

31,796. WAIST-FRONT DISTENDERS. SAHLIN NOVELTY COMPANY, Chicago, Ill. Filed May 16, 1898.

HEBE.

Essential feature.—The word "HEBE." Used since April 25, 1898.

31,797. PREPARATION OF SANDALWOOD IN PASTE FORM. MARTHA A. SARGENT, Jersey City, N. J. Filed Sept. 27, 1897.

GAUDICHAUD
SARGENTIS

Essential feature.—The words "GAUDICHAUD SARGENTIS." Used since March 29, 1897.

31,798. HAIR-TONIC. JENNIE RUTHEL JOHNS, Boston, Mass. Filed May 5, 1898.

SULTARA

Essential feature.—The word "SULTARA." Used since July 1, 1897.

31,799. CERTAIN NAMED PHARMACEUTICAL PREPARATIONS. CHEMISCHE FABRIK IN HELFENBERG BEI DRESDEN, EUGEN DIETERICH, Helfenberg, Germany. Filed Apr. 15, 1898.



Essential feature.—The representation of the bust of a shepherd boy in connection with a Mercury's staff and trumpet. Used since January 14, 1885.

31,800. REMEDY FOR SKIN DISEASES. OSMAR KLOPSCH, New York, N. Y. Filed Mar. 30, 1898.



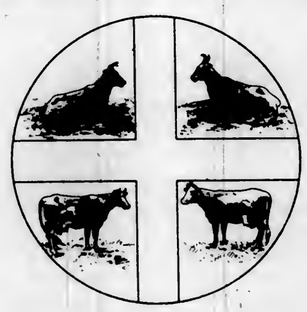
Essential feature.—The compound word "ALBA-LOTIO" and the representation of a shield with the monogram "OCC." Used since April 23, 1894.

31,801. CASTOR-OIL. THE MARSH OIL COMPANY, Kansas City, Mo. Filed Mar. 4, 1898.

IMPERIAL

Essential feature.—The word "IMPERIAL." Used since September, 1886.

31,802. REMEDY FOR THE DISEASES OF CATTLE. GEORGE BENJAMIN MCCLELLAN STEINHOFF, Scott, W. Va. Filed May 3, 1898.



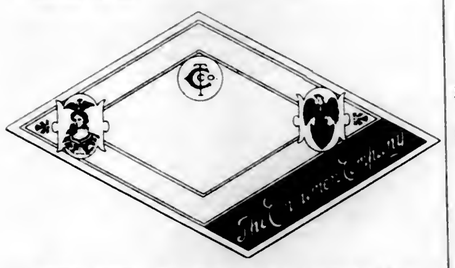
Essential feature.—The representation of recumbent cows, the cows being represented in opposite panels, and in the representation of cows in a standing position, likewise represented in opposite panels, the panels being separated by a cruciform space. Used since April 15, 1897.

31,803. ROASTED AND GROUND COFFEE. EUGENE ROSEDALE, Boston, Mass. Filed May 12, 1898.



Essential feature.—The word "EMPRESS." Used since February, 1894.

31,804. GINGER-ALE. THE CONSUMERS COMPANY, Chicago, Ill. Filed Apr. 19, 1898.



Essential feature.—The representation of a symbolical figure of Chicago, the words "I WILL" underneath the said figure, a shield with an eagle displayed thereon, and a monogram within a circular field, and all appearing on a red diamond-shaped figure surrounded by a white border, with a black panel at the right-hand lower side of the border, the panel containing in white script the legend "THE CONSUMERS COMPANY." Used since April 1, 1898.

31,805. MUSTARD, PICKLES, AND SAUCES. GEORGE A. BAYLE, St Louis, Mo. Filed May 16, 1898.



Essential feature.—The pictorial representation of a portion of the globe surmounted by clouds and the figure of a man riding a horse through the clouds. Used since May, 1895.

31,806. MACHINE-TOOLS. SCHUCHARDT & SCHÜTTE, Berlin, Germany. Filed Mar. 17, 1898.

INITIATIVE

Essential feature.—The word "INITIATIVE." Used since January 1, 1897.

31,807. BEDSTEADS MADE WHOLLY OR IN PART OF METAL. THE COBURN METALLIC BED AND PNEUMATIC TUBE MATTRESS COMPANY, Holyoke, Mass. Filed May 16, 1898.

CHAMELEONITE

Essential feature.—The word "CHAMELEONITE." Used since March 26, 1898.

31,808. WASHING-MACHINES. THE VANDERGRIFT MANUFACTURING COMPANY, Jamestown, N. Y. Filed Mar. 14, 1898.



Essential feature.—The words "THE WESTERN DEFENDER WASHER" and the representation of two yachts. Used since September 18, 1897.

31,809. LIGHT SPRING-VEHICLES ORDINARILY DRAWN BY HORSES. DEERE & WEBBER COMPANY, Minneapolis, Minn. Filed Mar. 21, 1898.

REINDEER.

Essential feature.—The word "REINDEER." Used since December 1, 1897.

PHOTO LITH. THE NORRIS PETERS CO. WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE PITTSBURGH PUMP COMPANY.

Decided June 15, 1898.

1. TRADE-MARK—"P-I-T-T-S-B-U-R-G-H P-U-M-P"—GEOGRAPHICAL AND DESCRIPTIVE WORDS.

The words "P-I-T-T-S-B-U-R-G-H P-U-M-P," arranged in letter-hyphenated form, refused registration as a trade-mark for pumps on the ground that the word "Pittsburgh" being geographical and "Pump" descriptive and the petitioner carrying on the business of the manufacture of pumps at Pittsburg, Pa., it follows that it has no right to monopolize the words, at least as against every other manufacturer of pumps in Pittsburg.

2. SAME—SAME—SAME—HYPHENATING WORDS—ESSENTIAL FEATURE.

By hyphenating the words the essential feature of the trade-mark has not been changed to a degree that would warrant registration. The geographical and descriptive words still remain, notwithstanding the form in which they are shown in the *facsimile*, the essential features of the trade-mark, and it would be a very close observer who would pay any heed to the manner in which the letters were separated.

3. SAME—AMENDMENT—CHANGING DATE OF ADOPTION.

Applicant applied for the registration of the words "Pittsburgh Pump" on April 16, 1897, and upon registration being refused he amended the application by setting forth that the essential feature "is the words P-I-T-T-S-B-U-R-G-H P-U-M-P, arranged in letter-hyphenated form," and amended the statement to set forth that the mark had been used since March 22, 1898. *Held* that the amendment ought not to have been received, as it is not good practice to permit such a change to be made in what is set forth as the essential feature of a trade-mark as might make the statement as to the period of use not apply to the new mark.

ON petition.

TRADE-MARK FOR PUMPS.

Application for registration filed April 16, 1897, No. 53,427.

Mr. Chas. M. Clarke and *Mr. W. B. Corwin* for the applicant.

DUELL, *Commissioner:*

This is a petition from the Examiner's refusal to register as a trade-mark for pumps the words "P-I-T-T-S-B-U-R-G-H P-U-M-P" arranged in letter-hyphenated form. The petitioner, the Pittsburgh Pump Company, is a firm domiciled and doing business in the city of Pittsburg, Pa. As originally presented applicant sought to register the words "Pittsburgh Pump." The words being objected to by the Office on the ground that they were geographical and descriptive in their nature, and hence not registrable, an attempt was made by amendment to register the words in a specific form shown by the *facsimile* which accompanied the application. As shown, the top and bottom lines of the letters formed arcs of circles convex to each other. A rejection followed this action, whereupon an amendment was filed consisting of a new drawing showing the words as hyphenated, and the statement was amended setting forth that the essential feature "is the words P-I-T-T-S-B-U-R-G-H P-U-M-P, arranged in letter-hyphenated form." The statement was also amended setting forth that the mark had been used since the 22d day of March, 1898, although the application was originally filed April 16, 1897.

I do not think this amendment ought to have been received. As stated by me in *ex parte Calvert & Brother*, (64 MS. Dec., 157:)

> I do not think it good practice to permit such a change to be made in what is set forth as the essential feature of a trade-mark as might make the statement as to the period of use not apply to the new mark.

In this case the period of use of the mark as originally claimed would not apply to the new mark. However, the amendment having been inserted, I will pass over that question and consider the case on its merits.

On the merits as presented the question is clean cut. Briefly stated, it is, can geographical and descriptive words, not registrable in themselves as lawful trade-marks, become registrable by arranging them in letter-hyphenated form?

In *ex parte Farnum & Co.* (18 O. G., 412) the following rulings applicable to the present case were made:

> 1. That as a rule geographical names cannot be allowed registration as trade-marks.
> 2. That before any geographical name can be said to be registrable it must clearly appear that the place of that name is such a one that the word will be understood by the general purchasing public as primarily fanciful, and that manufacturers of like goods at such place cannot so mark their wares and claim the protection of our laws.
> 3. That the essential features of a trade-mark are those only which serve in whole or in part to distinguish the goods of the party by whom such mark is adopted, and it is not proper that anything should be described as essential which the courts would hold otherwise.

The word "Pittsburgh" being geographical and "Pump" descriptive, and the petitioner carrying on the business of the manufacture of pumps at Pittsburg, Pa., it follows that it has no right to monopolize the words, at least as against every other manufacturer of pumps in Pittsburg.

The question remaining is whether by hyphenating the words the essential feature of the trade-mark has been changed to a degree that would warrant registration. The geographical and descriptive words still remain, notwithstanding the form in which they are shown in the *facsimile*, the

essential features of the trade-mark, and it would be a very close observer who would pay any heed to the manner in which the letters were separated.

In the case of *ex parte J. M. and V. Weil*, recently decided by me, I held that in my opinion a geographical word did not become a registrable trade-mark by inclosing it in a certain geometrical figure, because the geographical word still remained the essential feature of the mark. Equally so do the words "*Pittsburgh Pump*" remain the essential feature of the mark under consideration, and the insertion of hyphens between the letters does not in my mind make the words, otherwise not a lawful trade-mark, registrable.

The decision of the Examiner of Trade-Marks is accordingly affirmed.

EX PARTE DUNKLEY CELERY AND PRESERVING COMPANY.

Decided June 25, 1898.

TRADE-MARK—SHAPE OF BOTTLE—DESIGN PATENT.

Applicant sought to register as a trade-mark for mixtures of liquids containing celery a bottle of peculiar and original form. *Held* that registration should be refused, as the form of a package alone can rarely be the subject of trade-mark protection. If the form is peculiar enough to be protected, it should be the subject of a design patent.

ON petition.

TRADE-MARK FOR CELERY COMPOUNDS.

Application for registration filed April 6, 1898, No. 55,550.

Mr. Fred L. Chappell for the applicant.

DUELL, *Commissioner:*

Applicant seeks to register as a trade-mark for mixtures of fluids or liquids containing celery or the extract or flavor of the same a square bottle. This bottle is of peculiar and, so far as appears, original form. The Examiner of Trade-Marks having refused the registration his action is now before me by petition for review.

The rule of law applicable to the subject in controversy is, as I view it, thus correctly laid down:

The form of an article or package alone can rarely be the subject of trade-mark protection. If the form is peculiar enough to be protected for itself alone, it may be the subject of a design patent. (26 Am. and Eng. Encyc. of Law, 311.)

The decisions of the courts sustaining this proposition have been very uniform, and in only one or two instances do I find that a court of competent jurisdiction has otherwise held, and such exception rather proves the rule than otherwise.

Counsel for applicant in a well-considered argument, fortified by a brief, as well as a supplemental brief, has so strenuously contended for the right of registration that I have considered it advisable at this time to refer to a few of the many cases which support the rule heretofore referred to in order that the position taken by the Office be shown to be founded on principle and fortified by precedent.

The Court of Appeals of the State of New York in *Fischer* v. *Blank* (138 N. Y., 245) said:

The plaintiffs have no proprietary right to this form of package, and are not entitled to its exclusive use. It is a convenient form in which to inclose merchandise of this character, when offered for sale, and all who are engaged in the traffic in the commodity are free to use it without incurring the risk of liability for an infringement of the plaintiffs' rights. It has been too often reiterated to be now questioned that, under ordinary circumstances, the adoption of packages of a peculiar form and color alone, having no distinguishing symbol, letter, sign, or seal, is not sufficient to constitute a trade-mark.

In *Hoyt* v. *Hoyt* (143 Pa. St., 623) this statement may be found:

The trade-mark must relate to and distinguish the goods to which it is applied. For this reason, among others, the size, or shape, or mode of construction of a box, barrel, bottle, or package in which goods may be put is not a trade-mark. If there is any new and useful combination in the construction of such box or package, it should be patented as an invention, if the owner wishes to prevent others from using it; but such package cannot be registered as a trade-mark.

The decisions of the Federal courts have been quite uniform in holding that the form of a package or article is not the subject of lawful trade-mark protection. The United States Circuit Court for the Southern District of New York in *Harrington* v. *Libby* (12 O. G., 188) held that a tin pail used as a collar-box was not the subject of a lawful trade-mark. The criticism of the court on the attempt of manufacturers to appropriate the exclusive use of packages for special purposes is thus stated:

The question whether any one can seize upon such an article and make title to its exclusive use for a special purpose by calling it a trade-mark must be far from clear in favor of the claimant. The forms and materials of packages to contain articles of merchandise, if such claims should be allowed, would be rapidly taken up and appropriated by dealers, until some one, bolder than the others, might go to the very root of things, and claim for his goods the primitive brown paper and tow string as a peculiar property. It will be observed that it is not a mark at all which is claimed, but the whole enveloping package, the whole surface of which is covered by the ornamental pattern. There is no name, no symbol, no assertion of origin or ownership.

In *Adams* v. *Heisel* (31 Fed. Rep., 279) it was said:

It is well settled that a person cannot obtain the monopoly incident to a trade-mark by the mere form of a vendible commodity that may be adopted.

In *Moorman* v. *Hoge* (2 Sawyer, 78) the court said:

I find no case where the vessel, box, package, or whatever contained the article has been held to constitute a trade-mark by reason of its peculiar form or dimensions, independent of any symbol, figure or device impressed upon or connected with it for a trade-mark.

The decisions in the Patent Office in the main sustain the position here taken.

In *ex parte Kane & Co.* (9 O. G., 105) registration of "galvanized hoops placed on a barrel of dark color" as a trade-mark for liquors to be placed in the barrels was refused.

In *ex parte Jacob Gordon* (12 O. G., 517) the Commissioner said:

Thus the box, barrel, or wrapper containing merchandise, whatever its form, cannot, *per se*, be the trade-mark.

Applicant's counsel argues most earnestly that *Cook & Bernheimer Co.* v. *Ross et al.* (73 Fed. Rep., 203) is an authority justifying the registration. I think he misapprehends the scope of the decision in that case. It is true that the court enjoined the defendants from putting up a popular brand of whisky in bottles the same as used by the plaintiff, the bottles being of a peculiar shape originally devised by the complainant. The court expressly founded its judgment upon the fact that the act of the defendants was "unfair competition within the authorities, and should be restrained." Nowhere is it stated or intimated by the court that the shape of the bottle is, *per se*, a lawful trade-mark. The court simply affirmed the doctrine laid down in *Moxie Nerve Food Co.* v. *Baumbach* (32 Fed. Rep., 205) that where a manufacturer of a hitherto unknown fluid or beverage places the

fluid before the public in a form of bottle not theretofore used for bottling the same fluid another manufacturer ought to be enjoined from embarrassing the former and misleading the public by using the same bottle in putting up his preparation.

Without doubt if applicant's bottles become the identifying-mark by which his preparations are known the courts will protect him against any rival manufacturer who copies the form of bottle; but that will be done on the ground of unfair competition and not because the bottle is the subject for a lawful trade-mark.

The decision of the Examiner of Trade-Marks in refusing registration is affirmed.

EX PARTE ADAMS.

Decided June 4, 1898.

1. DESIGNS—REJECTION—APPEAL.

Where it is held that the device disclosed does not constitute proper subject-matter for a design patent, the Examiner should reject the claim for that reason, and from such action appeal lies to the Examiners-in-Chief.

2. SAME—PATENTABILITY—MACHINES.

The several articles of manufacture of peculiar shape which when combined produce a machine or structure having movable parts may each separately be patented as a design; but the machine itself cannot be so patented.

3. SAME—FORMAL APPLICATION—REFUSAL TO CONSIDER.

This Office has no authority to refuse to consider any formal application and require the applicant to substitute therefor an application for a mechanical patent or any other patent than that which he wishes.

1. IRREGULAR ACTION—REJECTION.

Where the Examiner's action was irregular but was in effect a rejection and was so recognized by the applicant, the case is in condition for appeal and will not be remanded for further action by the Examiner.

ON petition.

DESIGN FOR TRUCK SIDE FRAMES.

Application of Walter S. Adams filed November 1, 1897. No. 657,113.

Mr. Jos. L. Levy for the applicant.

GREELEY, *Assistant Commissioner:*

This is a petition from the action of the Primary Examiner refusing to consider the above-entitled application.

In the letter of November 29, 1897, the Examiner said:

A machine does not fall within the purview of section 4929, Revised Statutes. On the contrary, the only subject of the design act is the "manufacture" named in section 4886, Revised Statutes. (*Ex parte Lewis*, 54 O. G., 1890.) The application above entitled, for the reason above given, is filed under the wrong classification, failing to describe, show and claim a statutory design. Consideration of the same is therefore refused.

It is clear from the Examiner's letters that in his opinion a design patent cannot properly be issued on the device as now disclosed in this application; but he has not in clear and unmistakable terms rejected the application. This Office has no authority to refuse to consider any formal application and require the applicant to substitute therefor an application for a mechanical patent or any other patent than that which the applicant wishes, and therefore the Examiner's action should have been a rejection. The applicant asks for a design patent, and he must either be allowed or refused such patent without regard to the question as to whether some other form of patent could be granted on the device. As stated in *ex parte Schulze-Berge*, (42 O. G., 293:)

This application is pending in the Office and must be disposed of. I know of no way of disposing of it except by allowing or rejecting it.

The petitioner's brief and the Examiner's answer deal with the question as to whether a design patent can properly be granted on the device disclosed, thus recognizing the Examiner's action as in effect a rejection of the claim. In order to obtain a review of that question, the applicant should have filed an appeal to the Examiners-in-Chief instead of this petition. (*Ex parte Smith*, 81 O. G., 969.)

It may be well at this time, however, to call attention to the fact that the design law was never intended to apply to structures having movable parts. If the parts are movable, the structure presents a great variety of forms instead of being limited to a single shape or configuration of an article of manufacture, as provided in section 4929 of the Revised Statutes. As stated in *ex parte Hill and Renner*, (82 O. G., 1988:)

When an inventor has produced a design, he has produced a single shape or configuration, not several.

The several articles of manufacture of peculiar shape which when combined produce a machine or structure having movable parts may each separately be patented as a design; but the machine itself cannot be so patented, since it is not—

arbitrary and unchangeable, either by the separation or the rearrangement of its features. (*Ex parte Brower*, 4 O. G., 450.)

See also *ex parte Brand*, (83 O. G., 747.)

The mere fact that the several articles may be used together does not make them when so used constitute a patentable design, such as is contemplated by the design law.

It is immaterial whether design patents of this kind have or have not heretofore been granted, since a practice not well founded in law should not be followed.

Notwithstanding the irregularity in the Examiner's action it was in effect a rejection and was so recognized by the applicant, and to remand the case for further action by the Examiner would merely result in delay. This petition is therefore dismissed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

WARNER v. SMITH.

Decided June 7, 1898.

1. GRANTING PATENTS—CONSIDERATION OF THE RIGHTS OF THE PUBLIC AND INVENTORS.

In granting patents the interests of the public are the primary consideration, and to these the privileges granted to inventors are secondary and subordinate.

2. REDUCING TO PRACTICE, DILIGENCE IN—PUBLIC WITHDRAWING PRIVILEGES FROM AN INVENTOR.

When an inventor in any manner or for any reason refuses to give to the public the benefit of his invention, the public are entitled to withdraw from him the special protection accorded to him for his invention. On this principle an inventor is required to be diligent in reducing his conception or invention to practice.

3. FAILURE TO PROMPTLY DISCLOSE INVENTION AFTER ITS REDUCTION TO PRACTICE—CONTRAVENING INTERESTS OF THE PUBLIC—INJURING RIVAL INVENTOR.

One who has made an invention and who has locked it up in the secrets of his own exclusive knowledge and who produces it only when a rival inventor has entered the field cannot be held to have acted in accordance with the policy of the law or with the spirit and purpose of the Constitutional provision relating to promoting "the progress of science and useful arts." Such inaction not only contravenes the interests of the public, but also operates to injure a rival inventor who in the meantime enters the field of invention upon the faith of the conditions as they appear to exist and upon which he is entitled to rely.

4. SAME—PRESUMPTION AS TO ABANDONED EXPERIMENT—PROVING CASE BEYOND REASONABLE DOUBT.

Probably one who makes an invention and keeps it within his knowledge and fails to lay claim to it until a rival has entered the field is not barred by any statute from making his claim, and if he proves his case he and not his rival will be entitled to a patent; but such conditions make it imperative upon him that he should prove his case beyond all reasonable doubt, and the Patent Office and the courts are justified in presuming in such cases that what is claimed to be reduction to practice is no more than mere experiment until the contrary is clearly shown.

5. SAME—SAME—SAME.

Where Smith claims to have reduced the invention to practice in January, 1892, and thereafter did nothing and remained silent for three years and nine months, although there were several occasions when he might and should have spoken if his invention was such as he now claims it to have been, and he made no movement, either through the Patent Office or otherwise, to give the public the benefit of it in any way, and during this time there was a demand for the invention, and there is no explanation of the delay in filing an application, *Held* that under these circumstances the presumption is in favor of the theory that he did not have a completed invention in January, 1892, or at any time prior to the filing of his application in the Patent Office.

6. REDUCTION TO PRACTICE—DEVICE CAPABLE OF USE.

A device that could be used and might to some extent serve the purpose for which it was designed *Held* to be not necessarily a reduction to practice.

Messrs. Foster & Freeman for the appellant.

Mr. C. E. Mitchell for the appellee.

MORRIS, *J.*:

This is an appeal from the decision of the Acting Commissioner of Patents in an interference case, wherein the invention in controversy is stated to be:

As a new article of manufacture a button having a stem and a head, the head of a greater diameter than the stem, a disk on the stem, and a rubber, bearing on the head, extending beyond the periphery thereof (of the head), and held in position by the disk.

The button in controversy is for use in connection with garment-supporters. The button in ordinary use has a smooth, polished, and unyielding head, the result of which is frequently to permit the garment folded over it to slip away and be released. while the button involved in this interference, having a yielding ring of rubber projecting beyond the head, presents a surface to which the fabric of the garment more readily adheres on slight pressure. The appellant Warner's specification distinctly calls for a rubber ring, as stated in the issue. Smith's claim seems to be somewhat broader, being for "a yielding flange formed of suitable resilient material;" but in the view which we take of the case the difference is unimportant.

The appellant, Warner, was the first to file his application for a patent, which he did on January 4, 1895, and on being placed in interference he made his preliminary statement to the effect that he had conceived and disclosed the invention in June, 1894; that he made no model except a full-sized button in the same month; that he completed drawings of the invention in July of 1894, and that the buttons had not been manufactured commercially. Smith filed his application on October 15, 1895, upward of nine months after Warner, and in his preliminary statement claimed that he had conceived the invention about October 1, 1891; explained the invention to others about the same time; that he made a full-sized working button about January 1, 1892, and that on the last-mentioned day and since that time he had used the device, as he says—

to an extent sufficient to ascertain and determine its entire practicability and completeness.

As a matter of fact the proof shows that he made one full-sized button about January, 1892, but put it aside and never made any use of it and never followed up the invention in any way until after Warner had come into the Patent Office; but the proof sufficiently shows, and it is so found by all the tribunals of the Patent Office, that he had his conception of the invention some time between October, 1891, and January, 1892, and this conclusion is not very seriously contested by the appellant. Warner, therefore, was the first to apply for a patent and Smith the first to conceive the invention, and the determination of the controversy between them, so far as the present issue is concerned, depends upon the answer to be given to the question whether the button made by Smith in January, 1892, was a reduction of the invention to practice in the sense of the law or was merely an experimental model or device discarded and perhaps forgotten until the appearance of Warner in the same field of invention. This question the Examiner of Interferences decided in favor of Smith, the Board of Examiners in favor of Warner, and the Acting Commissioner again in favor of Smith, and from the decision of the latter Warner has appealed to this court.

The Board of Examiners was further of opinion that there was no interference between the parties, inasmuch as Warner's device called for a rubber ring, while that of Smith was of leather or other equivalent resilient substance, and called the attention of the Commissioner to the view that no interference should have been declared; but the Examiner of Interferences and the Acting Commissioner were of opinion that the two devices were mechanical equivalents of each other.

This difference of opinion we deem it unnecessary to consider, and this may not be the place to do so; but we concur with the Board of Examiners in its conclusion that there was no reduction of his invention to practice by the appellee, Smith, in January, 1892, or at any time afterward before the filing of Warner's application in the Patent Office, and that what he did was no more than an experiment that led to no practical results.

That the device constructed by the appellee in January of 1892 could have been used and worn upon the person and might to some extent have

served the purpose for which it was designed might perhaps be conceded; but this does not necessarily constitute reduction to practice. Without entering into any special examination of the record for the purpose of supporting our opinion that what the appellee did in January, 1892, was no more than a mere experimental model, discarded by him as soon as made and apparently forgotten by him for several years afterward—for which we need only adopt the opinion of the Board of Examiners, in which we fully concur—we are disposed to rest our conclusion upon a broader basis.

If there is any provision of our Federal Constitution which more than any other is intended to give practical effect to that portion of the preamble to that instrument which recites that one of its six avowed purposes is to promote the general welfare, it is that clause which vests in the Congress of the Federal Union the power—

to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.

The provision, it will be noticed, is not to benefit the inventor primarily, but the public. The purpose is—

to promote the progress of science and useful arts,

which are necessarily for the people at large, and this result is to be reached in the shape of a bounty to inventors by the offer to them of a monopoly for a limited time. The interests of the public are therefore the primary consideration, and to these the privileges granted to inventors are secondary and subordinate. The consideration of the exclusive right secured to the inventor is the present and prospective benefit to accrue to the public from the use of the invention, and when that consideration fails or when the purpose is thwarted by the inventor the exclusive right ceases and is determined. When the inventor in any manner or for any reason refuses to give to the public the benefit of his invention, the public are entitled to withdraw from him the special protection accorded to him for his discovery. On this principle the inventor is required to be diligent in reducing his conception or invention to practice, and it is usually the first who reduces to practice and not the first who conceives that is entitled in law to be regarded as the inventor. On this principle all our laws on the subject are based. By them a premium is placed upon diligence, and delay requires to be excused, and a delay of two years is in many cases regarded as an abandonment to the public. Even a much shorter delay without sufficient explanation or excuse is often regarded as evidence of laches, such as should preclude one guilty of it from advantage or benefit under the law. Can one who has made an invention and who has locked it up in the secrets of his own exclusive knowledge and who produces it only when some rival inventor has entered the field be held to have acted in accordance with the policy of the law or with the spirit and purpose of the constitutional provision? Such action, or inaction, as we might more properly term it, not only contravenes the interests of the public, but also operates to injure the rival inventor who in the meantime enters the field of invention upon the faith of the conditions as they appear to exist and upon which he is entitled to rely. Such rival inventor expends his time, his efforts, and his money in the elaboration of his conception in ignorance of the fact that any one else has been in the same field before him, and he goes into the Patent Office only to be confronted after several months of effort there with the claim of some one else, who then comes forward for the first time and alleges that he had the same invention long before. Probably such claimant is not barred by any statute from making his claim, and if he sufficiently proves it he and not his competitor will be entitled to the patent, for it is to the first inventor, the first to conceive and to reduce into practice, that the law awards priority. But such conditions make it imperative upon him that he should prove his claim beyond all reasonable doubt, and the Patent Office and the courts are justified in presuming in such cases that what is claimed to be reduction to practice is no more than mere experiment until the contrary is clearly shown.

The appellee in this case, if we admit that he had the conception of this invention in the latter part of the year 1891, claims to have reduced it to practice in January of 1892, and thereafter did nothing and remained silent for three years and nine months, although there were several occasions when he might and should have spoken, if his invention was such as he now claims it to have been, and he made no movement whatever, either through the Patent Office or otherwise, to give the public the benefit of it in any way. It is quite evident, too, that during all this time there was a demand for the article and that it could readily have found a market. Nor is there any explanation in the record of the delay of application to the Patent Office. Under these circumstances all the presumption is in favor of the theory that the appellee had no completed or perfected invention in January of 1892 or at any time before the appellant came into the Patent Office, and he has failed to adduce any testimony sufficient to overcome the presumption. We are of opinion, therefore, that judgment of priority should be awarded to the appellant, Warner.

The decision of the Commissioner of Patents is reversed, and judgment of priority of invention is awarded to the appellant, Warner.

The clerk of this court will certify this opinion and the proceedings in the cause in this court to the Commissioner of Patents, to be entered of record in his Office, according to law.

Court of Appeals of the District of Columbia.

GUILBERT *v.* KILLINGER.

Decided June 7, 1898.

INTERFERENCE—REDUCTION TO PRACTICE—ABANDONED EXPERIMENT.

Killinger stood on his record date of July 25, 1892. Guilbert claimed to have conceived the invention and reduced it to practice in November, 1891. *Held* that the exhibit offered by

Guilbert to show reduction to practice was at best nothing more than a mere experimental model abandoned or laid aside and recalled afterward by the publication of Killinger's patent. The decision of the Commissioner awarding priority to Killinger affirmed.

Messrs. Hunter & Hunter for the appellant.
Mr. A. M. Wooster for the appellee.

SHEPARD, *J.*:

The subject-matter of the interference in this case is an improvement in a "garment-hook," the hook of an ordinary "hook and eye." The improvement relates to a class of self-locking hooks provided with a spring tongue or shank that lies between the lower bars of the hook and has an elliptical projection or "hump" extending upward and nearly reaching the bill or upper turned-over part of the hook, by which the clasp with the eye is effected. It consists in the formation upon the free end of this shank or tongue of a laterally-extended shield adapted to abut from the rear against the side bars. While this shield, projecting underneath the lower bars of the hook, acts as a stop to limit the upward movement of the spring-shank with its hump, a very important part of its action is to prevent the small free end of the shank from sinking it and engaging with and injuring the fabric of the garment.

The appellee, Killinger, stands on the record of the Patent Office, which shows the issue of a patent to him for the improvement in controversy November 1, 1892, upon an application filed July 25, 1892.

The appellant, Guilbert, whose application was filed September 22, 1894, claims to have conceived the idea of the improvement and reduced it to practice in November, 1891. To establish his claim to priority in the face of the patent to Killinger he must prove both beyond a reasonable doubt. He must stand or fall upon the weight of his evidence tending to show reduction to practice on November 13, 1891, for if that fails there is nothing tending to show the exercise of any diligence thereafter in perfecting the invention.

While all the tribunals of the Patent Office have concurred in denying priority to Guilbert, they have not agreed upon the grounds of their decisions. Guilbert offered testimony tending to show that he conceived the invention early in November and that on November 13, 1891, he made two hooks roughly by hand and showed them to several persons. They were attached to paper tags bearing indorsements written with ink.

The indorsement upon the most important of the two reads as follows:

Garment-hook. Made Nov. 13, 1891, by J. Murray Guilbert. End of tongue may be headed like a pin. Witnesses: Theodore Foell, Joseph F. Henry.

They were made exhibits in taking testimony.

In the view that we have taken of this case we do not deem it necessary to review the evidence offered to show the genuineness of these exhibits. Conceding that it shows with sufficient certainty the conception of the invention as early as November 13, 1891, we do not regard the construction of that date as a sufficient reduction to practice. It is true that the hook "Exhibit A" nearly approaches the description of the issue. It has the spring-shank with the hump-bend extending between the lower bars, with its lower end bent under one of said bars. If it had the "pin-head" mentioned in the label, it is doubtful if it would act as an effectual stop to the upward movement of the spring-shank or to prevent engagement with the cloth of the garment and injury therefrom.

Comparing the exhibited construction with the details of the issue, in the light of all the surrounding circumstances, we cannot regard it as a demonstration of the practical efficacy and utility of the invention. It seems at best nothing more than a mere experimental model abandoned or laid aside by its maker and recalled to mind by something arising afterward, probably the publication or exploitation of his rival's patent.

That Guilbert himself regarded it as not worth further development may be inferred from his failure even to affix the "pin-head," which, according to the indorsement on the tag, was in his mind as a probable improvement. In the course of his direct examination he said:

A. 44. At the time of making the samples I had not decided just what shape the hook would be made that I would place upon the market, but my recollection is that it seemed to me that the best way to make the article for sale would be to construct the end of the tongue with a pin-head, or a compressed head, which would make it as neat as possible.

It is true that he also said he had subsequently made a sample hook with "a flattened or pin head." This was not produced, and the evidence as regards it and the date of its construction is vague and unsatisfactory. This was not his only invention. He had obtained patents on others and was not entirely ignorant of the law and practice of the Patent Office. This is apparent also in the care which he took to procure and preserve evidence of these exhibits and their date. He was in the service of a manufacturer by the name of Hart and remained therein until June, 1895. Hart had been interested in his inventions and advanced money to procure the patents. Among these was a patent for another hook and eye, which was assigned to Hart, who manufactured it and paid him royalty.

The exhibit hook in this case was submitted to Hart, who looked unfavorably upon it and was unwilling to stand the expense of procuring a patent for it. Guilbert was himself able to pay the necessary charges. The matter rested here until sometime in 1894 and early in 1895, when, according to Guilbert's testimony, he made inquiries with a view to have a machine made for the manufacture of the hook. This was long after Killinger had taken out his patent. Guilbert admitted that he kept himself informed respecting patents for and manufactures of hooks and eyes, having in his possession numbers of copies of patents and samples of manufacture. He admitted that he may have seen the publication of Killinger's patent in the OFFICIAL GAZETTE of the Patent Office, but denied that he saw the specification of the same or the patented hook until 1895.

The decision of the Commissioner awarding priority to Killinger will be affirmed, and this decision will be certified to the Commissioner of Patents in the manner required by the law.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Notice of Interference—Loosley v. Decker.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 14, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

An interference having been declared by this Office between the application of Ernest A. Loosley, deceased, of Birmingham, Ala., and an application of William Lloyd Decker, of Worcester, Mass., whose attorney of record is Rufus B. Fowler, of same place; and the notices of said declaration, mailed by the Patent Office in the usual manner to the said heirs, executor, or administrator of Ernest A. Loosley, deceased, having elicited no response, notice is hereby given to such heirs, executor, or administrator that if it is desired to contest this interference communication with the Commissioner of Patents should be immediately established, in order that the above-mentioned notices may be duly forwarded at once.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

C. H. DUELL,
Commissioner.

Roster of Registered Attorneys.

An alphabetical list of the individuals and firms registered in this Office under the provisions of Rule 17 of the Rules of Practice, as amended August 6, 1897, corrected to July 1, 1898, has been published, and copies will be furnished at the nominal price of five cents each, a five-cent coupon being acceptable in payment therefor.

Registrants are requested to give notice of any errors that appear in the list as published or any change of address since the list was prepared for publication.

Applications by Employees of the Patent Office.

All applications for patents now pending before the Office filed by employees of the Patent Office during the period of their service, either complete or incomplete, or completed after they had separated themselves from the service, are ordered to be stricken from the files and the fees returned.

The views of the Commissioner upon section 480 of the Revised Statutes are expressed in his decision in the case of *ex parte John H. McElroy*, (80 O. G., 1123.)

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading-room of the Scientific Library:

Astrophysical Journal, Chicago, a monthly title-index of publications on astrophysical and allied subjects.

Electrical World, New York, a weekly digest of electrical articles.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Electrical Engineer, New York, a weekly synoptical index of electrical literature, American and foreign.

Journal of the United States Artillery, a bimonthly title-index of current artillery literature.

Proceedings of the Physical Society of London, monthly abstracts of the principal articles on physics published in the American and Continental journals since January 1, 1895.

School of Mines Quarterly, New York, a quarterly synoptical index of articles on analytical chemistry and title-index of metallurgical literature.

CERTIFICATES OF REGISTRATION ISSUED JULY 19, 1898.

Labels.

6,625.—Title: "INTERNATIONAL AUTOMATIC COPYING BOOK." *Jacob O. Huchberger*, New York, N. Y. Application filed June 8, 1898.

6,626.—Title: "WAR SIGNALS." (For Cigars.) *American Lithographic Company*, New York, N. Y. Application filed June 15, 1898.

6,627.—Title: "RULE COLUMBIA." (For Cigars.) *American Lithographic Company*, New York, N. Y. Application filed June 18, 1898.

6,628.—Title: "AMICUS RELIEF." (For Medicinal Remedy.) *George Glanfield*, Cleveland, Ohio. Application filed June 9, 1898.

Print.

71.—Title: "ZIEGLER'S EFFERVESCENT SODA WATER TABLETS." *George Ziegler Company*, Milwaukee, Wis. Application filed May 31, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 12, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application by applicant awaiting office action.		No. of applications awaiting action.
		New.	Amended	
	In arrears—Between one and two months.			
38	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	May 19	July 1	132
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	May 14	June 21	161
	Between two and three months.			
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	Apr. 22	July 5	230
102	XIX. Stoves and Furnaces	Apr. 19	July 5	234
250	VIII. Furniture, Beds, Store Furniture, etc.	Apr. 12	July 5	398
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Apr. 14	June 29	208
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Apr. 16	June 27	184
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Apr. 6	June 27	265
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Apr. 18	June 25	143
255	XII. Mechanical Engineering, Store-Service, etc.	Apr. 16	June 24	161
253	X. Carriages and Wagons	Apr. 14	June 24	249
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	Apr. 8	June 23	201
	Between three and four months.			
248	XVIII. Steam-Engineering, etc	Mar. 14	June 29	290
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Mar. 16	June 28	386
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Mar. 15	June 28	342
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Mar. 11	June 28	495
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Mar. 31	June 27	244
246	I. Tillage and Fences	Mar. 14	June 27	242
93	XXI. Textiles, etc	Mar. 21	June 8	269
	Between four and five months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Feb. 16	July 5	416
128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Feb. 17	July 2	170
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Feb. 14	July 1	709
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Mar. 2	June 29	132
120	IX. Hydraulics, Fire-Extinguishers, etc.	Mar. 2	June 29	287
240	VII. Velocipedes	Mar. 3	June 28	635
106	II. Farm Stock, Products, etc.	Mar. 3	June 27	509
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Mar. 2	June 18	403
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Feb. 21	June 15	455
	Between five and six months.			
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Jan. 31	June 28	534
217	XXXIII. *Trade-Marks, etc., †Designs, Drafting, and Optics.	Jan. 18	June 24	245
	Between six and seven months.			
242	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Dec. 29	June 30	529
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	Dec. 27	June 28	306

Applications Under Examination—Continued.

	Between seven and eight months.			
215	XVII. Printing, Type-Writing Machines, and Linotyping.	Nov. 26	June 28	533
221	XXIII. Instruments of Precision, Acoustics, etc.	Nov. 18	June 24	457
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Nov. 26	June 2	522
	Total number of applications awaiting action			11,676
	Under one month.			
	†Designs	July 6	July 6	47
	*Trade-Marks	June 6	June 29	183

ISSUE OF JULY 19, 1898.

Patents	397—No. 607,417 to No. 607,813,	inclusive.
Designs	36—No. 29,052 to No. 29,087,	inclusive.
Trade-Marks	12—No. 31,810 to No. 31,821,	inclusive.
Labels	4—No. 6,625 to No. 6,628,	inclusive.
Prints	1—No. 71.	
Reissues	3—No. 11,679 to No. 11,681.	
Total issue	453	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	----	----	New Hampshire	2	2
Arizona Territory	----	----	New Jersey	18	----
Arkansas	----	----	New Mexico Territ'y	----	----
California	6	----	New York	58	4
Colorado	5	1	North Carolina	----	----
Connecticut	39	----	North Dakota	----	----
Delaware	----	----	Ohio	29	1
District of Columbia	2	----	Oklahoma Territory	1	----
Florida	1	----	Oregon	2	----
Georgia	4	----	Pennsylvania	43	2
Idaho	----	----	Rhode Island	1	----
Illinois	35	----	South Carolina	2	----
Indian Territory	----	----	South Dakota	----	----
Indiana	9	----	Tennessee	2	----
Iowa	5	----	Texas	3	----
Kansas	6	----	Utah	----	----
Kentucky	3	----	Vermont	1	----
Louisiana	2	----	Virginia	3	----
Maine	1	----	Washington	2	----
Maryland	3	----	West Virginia	1	----
Massachusetts	31	4	Wisconsin	5	1
Michigan	14	----	Wyoming	----	----
Minnesota	3	----	U. S. Army	----	----
Mississippi	1	----	U. S. Navy	1	----
Missouri	12	----			
Montana	3	----	Total to citizens of the United States	363	15
Nebraska	4	----			
Nevada	----	----			

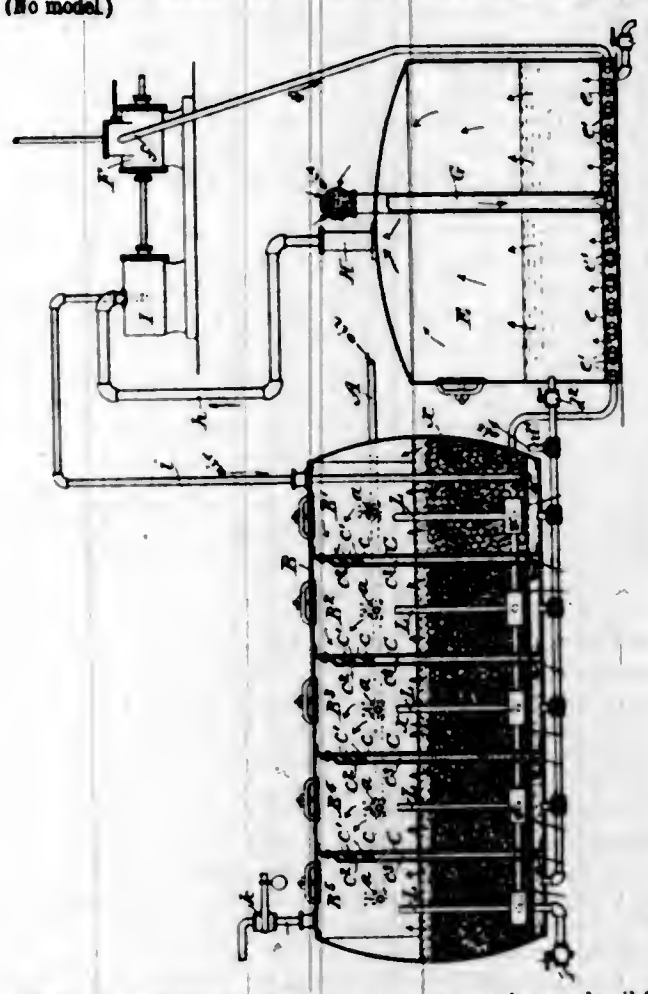
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	----	----	Italy	----	----
Australia	----	----	Mexico	1	1
Austria-Hungary	1	----	Netherlands	1	1
Belgium	4	----	Newfoundland	----	----
Bermuda	1	----	New South Wales	----	----
Brazil	----	----	New Zealand	----	----
Canada	8	----	Norway	----	----
Cape Colony	----	----	Portugal	1	----
Chile, Republic of	----	----	Queensland	----	----
China	----	----	Russia	1	----
Colombia	----	----	Scotland	4	----
Cuba	----	----	South African Republic	----	----
Denmark	2	----	South Australia	----	----
Egypt	----	----	Spain	----	----
England	22	----	Sweden	----	----
Finland	1	----	Switzerland	----	----
France	5	----	Turkey	----	----
Germany	15	----	Victoria	3	----
Guatemala	----	----			
Hawaii	----	----	Total to citizens of foreign countries	70	2
India	----	----			
Ireland	----	----			

PATENTS

GRANTED JULY 19, 1898.

607,417. **PROCESS OF AND APPARATUS FOR TREATING CRUDE OIL IN MANUFACTURING GAS AND LUBRICATING-OIL.** JOHN M. BAILEY, Boston, Mass. Filed Apr. 21, 1896. Serial No. 588,493. (No model.)



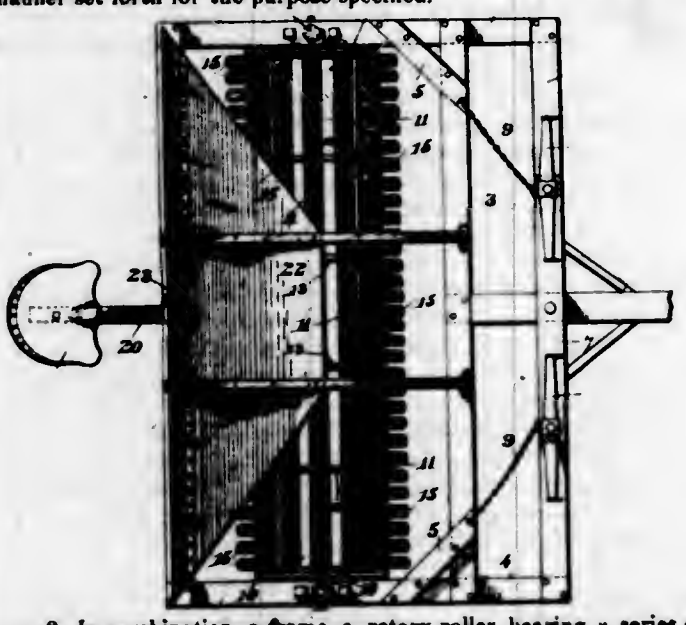
Claim.—1. The herein-described process of treating crude oil for the manufacture of gas and lubricating-oil which consists in forcing a gaseous vehicle through the oil until it ceases to give off its volatile elements readily, then drawing off the residual oil and continuing the process by drawing a fresh supply of the gaseous vehicle first through the residual oil under a partial vacuum and then forcing it through the crude oil, substantially as described.

2. The herein-described process of treating crude oil for the manufacture of gas and lubricating-oil which consists in forcing a gaseous vehicle through the oil until it ceases to give off its volatile elements readily, in then drawing off the residual oil and continuing the process by drawing the gaseous vehicle first through the residual oil under a partial vacuum and then forcing it through the crude oil, and in heating the oil to successively higher temperatures as it gives off its volatile elements, substantially as described.

3. The combination of a closed tank adapted to receive oil to be treated, a pump adapted to deliver a gaseous vehicle below the surface of the oil in said tank, a second closed tank adapted to receive the oil from the first tank, a supply-pipe adapted to deliver the gaseous vehicle beneath the surface of the oil in said second tank, and a pipe connecting the suction side of said pump to the top of said second tank whereby the gaseous vehicle is drawn through the oil in the second tank under a partial vacuum, substantially as described.

607,418. **CRUSHER AND PULVERIZER.** ANDREW RANDEEN and LLOYD E. RANDEEN, New Rochester, Ohio. Filed Aug. 31, 1897. Serial No. 650,180. (No model.)

Claim.—1. In an agricultural implement, the combination of a rectangular-shaped frame bearing earth-treating devices, forwardly-convergent braces spanning the angles formed between a transverse and longitudinal bars, a pole or tongue secured to the frame and located intermediate of the braces, a doubletree, and forwardly-convergent draft-chains connecting the extremities of the doubletree with the front terminals of the aforesaid braces, substantially in the manner set forth for the purpose specified.



2. In combination, a frame, a rotary roller bearing a series of earth-treating devices about its surface, a seat attached to the frame and located in the rear of the roller midway of its ends, curved bars extending over the upper portion of the roller and hinged at their front ends to the forward portion of the frame, and a housing extending over the upper rear portion of the roller and secured to the rear portion of the curved bars, and having its front corners cut away, substantially as shown for the purpose set forth.

3. A clod-crushing roller provided with parallel rows of teeth obliquely disposed to the line of motion of the implement, the alternate rows of teeth being inclined in one direction, and the intermediate rows of teeth inclining in an opposite direction, substantially as and for the purpose specified.

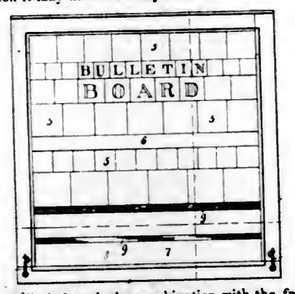
4. A clod-crushing roller, comprising a series of toothed slats, circular heads having the terminals of the slats secured thereto, circular supports arranged a short distance from the head and secured to the slats and adapted to strengthen and brace them, and spindles secured to the said heads and supports, substantially as described for the purpose set forth.

5. A clod-crushing roller comprising a series of toothed slats, circular heads having the extremities of the slats secured thereto, circular supports located a short distance from the heads and serving to strengthen and brace the slats, rings supporting the slats intermediate of their ends, and spindles applied to the heads and supports, substantially in the manner set forth for the purpose specified.

607,419. **BULLETIN-BOARD.** HERBERT E. BORDEN and CHARLES A. NIEDERSTADT, Saginaw, Mich. Filed Dec. 18, 1897. Serial No. 662,330. (No model.)

Claim.—1. In a bulletin-board, the rectangular block 5 provided with grooves 5″ in combination with means for securing the blocks in the board, comprising movable horizontal T-shaped bars 8, the flange of the bars adapted to enter the grooves 5″ of the blocks, and the lug 10 pivoted to the adjustable bars 8 adapted to strive against a portion of the frame and hold the bars 8 in the position to which they may have been moved.

2. In a bulletin-board, the means for securing the letter-blocks in the board, comprising the adjustable bars 8 adapted to rest upon the frame and fit over a cross-bar of the frame and having a lug pivoted to the adjustable bar and adapted when turned up to strive against the cross bar and thereby hold the adjustable bar in the position to which it may have been adjusted, as described.



3. In a bulletin-board, the combination with the frame of the board having a hinged side and end for the purpose of changing the bulletin, of adjustable bars adapted to be moved in the frame and be secured in the position to which they are moved by means of a pivoted lug adapted to engage the frame, and the lug 10 pivoted to the adjustable bar, the adjustable bars being T-shaped, and letter-blocks provided with grooves on opposite sides thereof whereby the blocks may be held between the bars, the flange of the bars entering the grooves, substantially as and for the purpose set forth.

4. In a bulletin-board, the combination with the frame having side pieces and end pieces and a cross-piece at its middle, and a hinged side piece and a hinged end piece whereby by opening the hinged pieces the contents of the bulletin-board may be removed and changed, of bars adapted to be moved in the frame and adjusted therein, a lock for securing the bars in position, comprising a lug pivoted to said movable bar and adapted to be pressed against the frame when the bar is adjusted, the bars being T-shaped, letter-blocks rectangular in form and having a groove on two opposite sides of the size of the flange of the movable bar whereby when the block is placed between the bars the flange will enter the groove and hold the block in position, as and for the purpose set forth.

607,420. ORE-ROASTING FURNACE. HORACE F. BROWN, Chicago, Ill. Filed Aug. 6, 1897. Serial No. 647,278. (No model.)



Claim.—1. In an ore-roasting furnace, the combination of a roasting-hearth, a cooling-floor above the roasting-hearth, mechanical stirring devices mounted to travel along the said hearth and floor to stir and advance the ore, and elevating means operating to raise the ore discharged from the roasting-hearth and deposit it upon the cooling-floor, substantially as described.

2. In an ore-roasting furnace, the combination of a roasting-hearth, a cooling-hearth above the roasting-hearth, heat-insulating means between the roof of the roasting-hearth and the floor of the cooling-hearth, mechanical stirring devices mounted to travel along the upper and lower hearths to stir and advance the ore, and elevating means operating to raise the ore discharged from the roasting-hearth and deposit it upon the cooling-hearth, substantially as described.

3. In an ore-roasting furnace, the combination of a roasting-hearth, a floor above the roasting-hearth forming throughout part of its extent a cooling-hearth, and forming throughout another part of its extent a drying-hearth, ore-feeding means at one end of the drying-hearth, ore-discharging means at the opposite end of the drying-hearth communicating with one end portion of the roasting-hearth, mechanical stirring devices mounted to travel along the hearths to stir and advance the ore, elevating means at the discharge end of the roasting-hearth operating to raise the ore and deposit it upon one end portion of the cooling-hearth, and discharging means for the ore at the opposite end portion of the cooling-hearth, substantially as described.

4. In an ore-roasting furnace, the combination of a roasting-chamber, a drying-hearth above the roasting-chamber, heating means for the drying-hearth comprising an inclosed chamber communicating with the roasting-chamber to be heated therefrom and extending longitudinally between the roof of the roasting-chamber and the floor of the drying-hearth, mechanical stirring devices movable along the hearth of the roasting-chamber and along the drying-hearth, and means for discharging the ore from the drying-hearth into the roasting-chamber, substantially as described.

5. In an ore-roasting furnace, the combination of a roasting-hearth, a cooling-hearth above the roasting-hearth, mechanical stirring devices, movable along the roasting-hearth, and thence upward to and along the cooling-hearth, and ore-elevating means at the end of the roasting-hearth actuated by the movement of the mechanical stirring devices to raise the ore discharged from the roasting-hearth and deposit it upon the cooling-hearth, substantially as described.

6. In an ore-roasting furnace, the combination of a roasting-chamber provided with a roof, a cooling-floor above the said roof, a dead air space between said roof and cooling-floor, mechanical stirring devices, movable along the hearth of the roasting-chamber and along the cooling-floor, and elevating means operating to raise the ore discharged from the roasting-chamber and deposit it upon the cooling-floor, substantially as described.

7. In an ore-roasting furnace, the combination of a roasting-chamber provided with a roof, a cooling-floor above the roasting-chamber, a layer of heat-insulating material on the roof, a dead-air space above said layer, a layer of heat-insulating material between said dead-air space and cooling-floor, mechanical stirring devices mounted to travel along the floor of the roasting-chamber and along the cooling-floor to stir and advance the ore, and elevating means operating to raise the ore discharged from the roasting-chamber and deposit it upon the cooling-floor, substantially as described.

8. In an ore-roasting furnace, the combination of a roasting-hearth, a cooling-floor above the roasting-hearth, mechanical stirring devices mounted to travel along the roasting-hearth and the cooling-floor to stir and advance the ore, elevating means operating to raise the ore discharged from the roasting-hearth and deposit it upon the cooling-hearth, an ore-receiving chute upon the cooling-floor, and means for moving the chute from its ore-receiving position to extend out of the path of the mechanical stirring devices as they pass, substantially as and for the purpose set forth.

9. In an ore-roasting furnace, the combination of a roasting-hearth, a cooling-floor above the roasting-hearth, mechanical stirring devices, mounted to travel along the roasting-hearth and along the cooling-floor, ore-elevating means, movable from the roasting-hearth to the cooling-floor and operating to raise the ore discharged from the roasting-hearth and deposit it upon the cooling-floor, and an ore-receiving chute normally above the cooling-floor, out of the path of the mechanical stirring devices, and in the path of the ore-elevating means, to be moved thereby to the cooling-floor to receive the ore discharged by the elevator, substantially as and for the purpose set forth.

10. In an ore-roasting furnace, the combination of a roasting-hearth, a cooling-floor above the roasting-hearth, mechanical stirring devices, mounted to travel along the roasting-hearth and along the cooling-floor, and means for raising the ore discharged from the roasting-hearth and depositing it upon the cooling-floor, comprising a pivotal support, a receptacle on the support and means for swinging the support on its pivot to move the receptacle back and forth between the roasting-hearth and cooling-floor, substantially as and for the purpose set forth.

11. In an ore-roasting furnace, the combination of a roasting-hearth, a cooling-floor above the roasting-hearth, a mechanical stirring device, movable along the roasting-hearth and along the cooling-floor, and means for raising the ore discharged from the roasting-hearth and depositing it upon the cooling-floor, comprising a pivotal support, a receptacle on the support, lever mechanism in the path of the stirring device connected with the pivotal support and operating when engaged by a stirring device to turn the support on its pivot and move the receptacle from its ore-receiving to its ore-discharging position, substantially as and for the purpose set forth.

12. In an ore-roasting furnace, the combination of a roasting-hearth, a cooling-floor above the roasting-hearth, a mechanical stirring device, movable along the roasting-hearth and along the cooling-floor, and means for raising the ore discharged from the roasting-hearth and depositing it upon the cooling-floor, comprising pivotal supporting-arms, a receptacle pivotally mounted between said arms and extending normally below the end of the roasting-hearth, pulleys connected with the supporting-arms, pivotal levers extending normally into the path of the mechanical stirring device, cables or the like, extending from the levers over the pulleys and operating when the levers are engaged and moved by a mechanical stirring device to rotate the pulleys and swing the supporting-arms upward to raise the receptacle to the cooling-floor, and means for upsetting the receptacle when it arrives at the cooling-floor, substantially as and for the purpose set forth.

13. In an ore-roasting furnace, the combination of a roasting-hearth, a mechanical stirring device provided with rabbles and mounted to travel in one direction along the roasting-hearth and return in a plane above the roasting-chamber, and an ore-feeder at the end portion of the roasting-hearth comprising a chute extending over the hearth whereby ore fed thereto moves down the chute and is deposited upon the hearth, and means for moving the chute toward and away from the path of the rabbles, substantially as and for the purpose set forth.

14. In an ore-roasting furnace, the combination of a roasting-hearth, a mechanical stirring device provided with rabbles and mounted to travel in one direction along the roasting-hearth and return in a plane above the roasting-chamber, and an ore-feeding device comprising a frame, a receptacle on the frame, a chute extending from the receptacle over the hearth and means for moving the frame to adjust the chute with relation to the path of the rabbles, substantially as and for the purpose set forth.

15. A mechanical stirring device for ore-roasting furnaces, comprising a carrier and means for moving it along the roasting-hearth, and reversible rabbles removably mounted upon the carrier and each comprising a body having the faces A A extending at acute angles from their junction, and beveled at its opposite ends to produce the working faces A' A', substantially as and for the purpose set forth.

16. A mechanical stirring device for ore-roasting furnaces, comprising a carrier-beam having a flange, means for moving the carrier-beam along the hearth, rabbles, supporting-arms for the rabbles, and means for securing the supports to the carrier-beam, comprising separably-intermeshing clips engaging the flange of the beam and to which the said supports are keyed, substantially as described.

17. In an ore-roasting furnace having upper and lower floors, the combination of a rabble-carrying frame, means for moving the frame along both floors and rabbles loosely secured to the frame in position to work upon one said floor and drop away from their said working position on the carrying-frame when moved to the other floor, substantially as and for the purpose set forth.

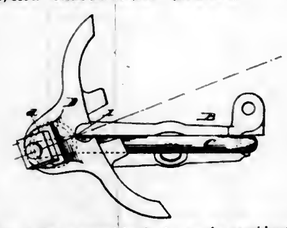
18. In an ore-roasting furnace having upper and lower floors, a rabble-carrying frame and means for moving it along both said floors and for upsetting it as it moves from one floor to the other, and rabbles loosely mounted upon the frame to drop into working position as they move to one floor, and drop away from said working position upon the frame when moved to the other floor, substantially as and for the purpose set forth.

19. In an ore-roasting furnace having upper and lower floors, the combination of a rabble-carrying frame and means for moving it along both floors and for upsetting it as it moves from one floor to the other, and rabbles pivotally mounted upon the frame to swing into working position when moved to one floor and swing out of said working position upon the frame when moved to the other floor, substantially as and for the purpose set forth.

20. In an ore-roasting furnace having a roasting-hearth and a floor above the roasting-chamber, the combination of a mechanical stirring device, having a rabble-carrying frame, means for moving the stirring device along the roasting-hearth and upper floor and for upsetting the frame as it moves from one floor to the other, rabbles mounted upon the frame to work upon the roasting-hearth, and rabbles loosely mounted upon the frame to extend and work upon the upper floor, and drop to a retracted position when the frame is upset to move along the roasting-hearth, substantially as and for the purpose set forth.

21. In an ore-roasting furnace, the combination of a roasting-hearth, series of vertically-disposed buckstaves along opposite sides of the hearth, chairs resting upon the hearth at the buckstaves, skewbacks resting upon the chairs and supporting the arch of the roasting-chamber, tie-bars connecting the buckstaves, rail-holding clips upon the tie-bars, and rails supported by the clips, substantially as described.

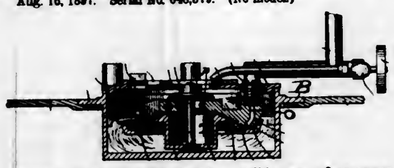
607,421. BRAKE-BEAM. LUTHER C. BURGESS, Chicago, Ill., assignor to the Chicago Railway Equipment Company, same place. Filed Dec. 30, 1897. Serial No. 664,563. (No model.)



Claim.—1. In a trussed brake-beam, the combination of a compression member, a tension device, a bearing or seat for the tension device, and a tension member having a kink or deflection where it passes through the seat or bearing of the tension device the end of the tension member being in a plane diverging from that of the tension member and strut whereby the draft is rendered radial of the head, substantially as and for the purposes specified.

2. In a trussed brake-beam, the combination of a compression member, a tension member, a tension-nut, and a brake-head having an inclined seat for the tension-nut, the tension member having a bend or deflection where it meets the compression member and having its free end at right angles to the inclined seat of the tension-nut, substantially as and for the purposes specified.

607,422. OIL-BURNER. LEON J. CAMPBELL, Chicago, Ill. Filed Aug. 16, 1897. Serial No. 648,379. (No model.)



Claim.—1. The combination, in an oil-burner, of an upper and a lower part, the lower part having a well therein and an outwardly and downwardly extending table from the upper edge of the well, a circumferential groove around the lower portion of the table and an extension of the table beyond the groove, and the upper part having a passage-way for oil therethrough discharging into the circumferential groove in the lower part, a table corresponding with the table on the lower part, such upper part having holes therethrough over the well in the lower part with a well above such holes, a plate above the well in the upper part, such plate in proximity to but not in contact with the upper part, an asbestos packing between the parts outside the circumferential groove, and means for securing the two parts firmly together; substantially as described.

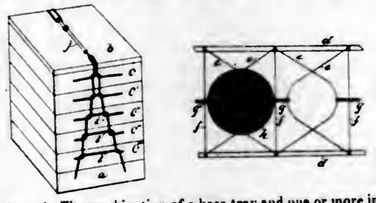
2. The combination in an oil-burner, of an upper and a lower part, the lower part having a well therein and an outwardly and downwardly extending table from the upper edge of the well, with a circumferential groove around the lower portion of the table, and the upper part having a passage-way for oil therethrough discharging into the circumferential groove in the lower part and a table corresponding with the table on the lower part, and such upper part having holes therethrough in the part thereof extending over the well in the lower part, with a well above such holes, a plate above the well in the upper part, such plate in proximity to but not in contact with the upper part, asbestos between the tables a portion of the way around the tables and an asbestos packing between the parts outside the circumferential groove, and a bolt extending between the two parts and securing them together; substantially as described.

3. In an oil-burner, the combination of a bowl having a horizontal flange resting on the top of a stove when the bowl is in one of the holes of such stove, with the circumferential wall of the bowl partially removed, a cover to the bowl having a central air-draft hole and damper-controlled air-holes outside the central one, and a vapor-generating part composed of two parts in the bowl, the lower part of the generator having a central well therein and an outwardly and downwardly extending table from the upper edge of the well, with a circumferential groove around the lower portion of the table, and the upper part having a narrow passage-way for oil therethrough discharging into the circumferential groove in the lower part and a table corresponding with the table on the lower part, and such upper

part having holes therethrough in the part thereof extending over the well in the lower part, with a well above such holes, a plate above the well in the upper part, such plate in proximity to but not in contact with the upper part and asbestos packing between the parts outside the circumferential groove and means for securing the two parts together: substantially as described.

4. The combination, in an oil-burner, of an inclined circular table, having a circular groove around the lower edge thereof and a well at the upper edge, an oppositely-faced table adjacent to the first-named table, such oppositely-faced table having a passage-way for oil therethrough discharging into the circular groove, a well above the first-named well, passage-ways from the first-named well into the second-named well, and a plate covering the last-named well and placed a short distance from the top thereof to obtain a passage-way for vapor from the last-named well; substantially as described.

607,423. EGG CRATE OR BOX. FRED H. CHAMPLIN, Long Meadow, Mass. Filed Mar. 10, 1897. Serial No. 626,873. (No model.)



Claim.—1. The combination of a base-tray and one or more individual trays arranged with their bodies to telescope one with the other, a cover and a series of loops arranged in each tray, the ends of the looped pieces being fixed to a rigid wall and the intermediate portion of oppositely-projecting loops being united by a coil-spring and a flexible covering arranged over the loops to receive the eggs and means to secure the trays together substantially as shown.

2. In an egg-crate the combination of a case looped wires attached to the case *e* and springs attached to the oppositely-projecting loops, substantially as shown.

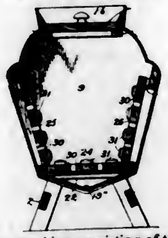
3. The combination in an egg-crate, of a tray having looped wires *e*, springs *g* and a covering *h*, substantially as shown.

4. The combination in an egg-crate of independent trays provided with two webs of looped wires, one web being looped in opposite direction to the other with adjacent loops connected by an intermediate coil-spring, substantially as shown.

5. The combination in an egg-crate of two or more independent trays arranged to lock together to prevent lateral movement between them and independent flexible looped handles with their ends attached to the outer side walls of each tray, each flexible looped handle being of sufficient length to be looped or interlocked with the next flexible handle, a bottom and a top, and means to connect and draw toward each other the top set of flexible loops which overlap the cover substantially as shown.

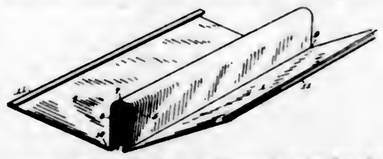
6. The combination in an egg-carrying crate of two or more independent trays having their walls rabbeted whereby the walls telescope with each other, a series of oppositely-looped wires secured to the trays and arranged so that their loops cross each other, two in a set, and a series of springs connecting adjacent loops so that the egg-receiving recesses are formed between the oppositely-arranged loops substantially as shown.

607,424. WASHING-MACHINE. JOSEPH W. CRAIG, Paulding, Ohio. Filed Dec. 1, 1897. Serial No. 660,412. (No model.)



Claim.—A washing-machine, consisting of the supporting-standards, the receptacle swingingly mounted between said standards, means for rocking said receptacle, and a washing mechanism arranged in the receptacle, consisting of one stationary central section and two hinged swinging sections secured to opposite sides of the stationary section and adapted to swing alternately as the receptacle is rocked to wash the clothes.

607,425. VALLEY FOR ROOFS. GERHARD F. DROUVÉ, Bridgeport, Conn. Filed Nov. 17, 1897. Serial No. 658,785. (No model.)



Claim.—1. The herein-described improvement in valleys for roofs which consists in forming an indentation in the body of a metal sheet and in the under surface thereof, so as to force the metal in the form of a housing above the upper surface to protect the intersection of two roofs, the remaining portion of the sheet forming wings adapted to rest on said roofs, the intersection of the said wings and sides of the housing forming gutters or channels for conveying off the water, the sides of said housing adapted to approach or recede from each other to compensate for contraction or expansion, for the purpose set forth.

2. The herein-described improved valley constructed of a single piece of metal, an indentation made in the under surface thereof, so as to force the metal in the form of a housing above the upper surface so that the open mouth of such housing will span the intersection of two roofs, the remaining portion of the metal sheet forming wings on each side of said housing adapted to rest on said roofs, the intersection of the said wings and vertical sides of said housing forming gutters or channels for conveying off the water, the vertical sides of said housing adapted to approach or recede from each other to compensate for contraction or expansion, for the purpose set forth.

607,426. PURIFYING SEWAGE, &c., BY BACTERIAL ACTION. WALTER M. DUCAT, London, England. Filed Oct. 5, 1897. Serial No. 654,110. (No model.) Patented in France May 18, 1897, No. 267,048, and in Belgium May 19, 1897, No. 128,347.



Claim.—1. The herein-described method of insuring the continuous aeration of a filter used for purifying sewage and other foul liquids by bacterial action, which consists in admitting ambient air through the sides, and into the midst, of the filter-bed supplying liquid to the bed and causing the same to flow through the bed and so limiting the supply of liquid to the filter that the filter-bed will never be fully charged with liquid and the motion of the liquid through the bed and consumption of the oxygen of the air will produce an exhaustive action whereby the air will be continuously drawn into the mass through the sides of the mass as described.

2. The herein-described method of insuring the efficient aeration of foul liquids while traversing the mass of filter-beds used to purify the said foul liquids consisting in supplying the foul liquid to the filter beds in such quantity as to spread the said liquid out in a film on the surfaces of the individual bodies constituting the filter-bed and simultaneously supplying air to the sides of the said filter-beds whereby the flow of the liquid will cause a circulation of air around the said bodies constituting the said filter-bed, whereby the foul liquid may be efficiently acted upon by the air while in a finely-divided condition.

3. A filter for purifying sewage and other foul waters by bacterial action having one or more filter-beds confined by walls of an open-work structure adapted to confine the filter-bed while giving free continuous lateral admission of air into the midst of the filter-bed, substantially as and for the purpose specified.

4. A filter for purifying sewage and other foul waters by bacterial action, having walls adapted to give free continuous admission of air into the midst of the filter-bed, in combination with a contained bed of filtering material divided into superposed strata graduated of progressively-decreasing coarseness in the downward direction substantially as and for the purpose specified.

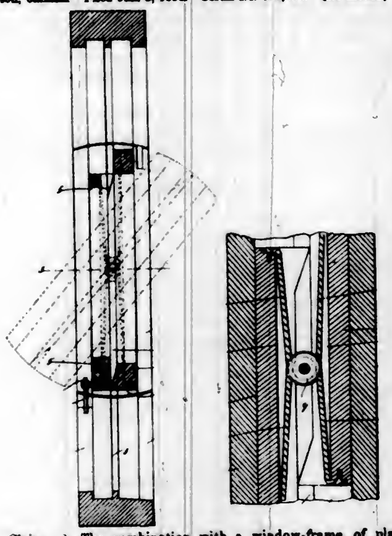
5. A filter for purifying sewage and other foul waters by bacterial action, having walls adapted to allow free continuous admission of air into the midst of the filter-bed in combination with a contained bed of filtering material divided into superposed strata of progressively-decreasing coarseness by intervening aerating strata of very coarse material substantially as specified.

6. A filter for purifying sewage and other foul waters by bacterial action having walls adapted to allow free continuous admission of air into the midst of the filter-bed in combination with a contained bed of filtering material divided into superposed strata of progressively-decreasing coarseness by intervening strata of very coarse material having aerating-pipes laid therein forming continuations of the lateral air-inlet passages as specified.

7. A filter for purifying sewage and other foul waters by bacterial action, having walls adapted to allow admission of air to the contained filter-bed, and surrounded by an outer inclosing air-chamber so as to exclude cold air and enable the temperature of the air to be raised before being supplied to the filter.

8. The combination, with a filter for purifying sewage and other foul waters by bacterial action having walls adapted to allow admission of air to the contained filter-bed and surrounded by an outer inclosing air-chamber, of air-admission pipes passing through the mass of the filter-bed and leading into said air-chamber so that the air before being admitted to said chamber will be warmed by the superfluous internal heat of the filter as described.

607,427. WINDOW FRAME AND SASH. ERNEST DUVAL, Hamilton, Canada. Filed Jan. 3, 1898. Serial No. 665,330. (No model.)



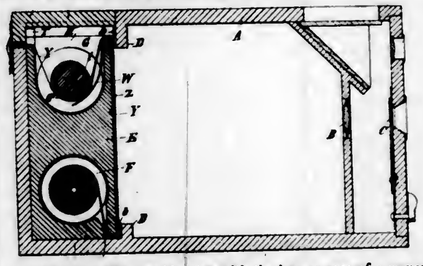
Claim.—1. The combination with a window-frame, of plates swiveled thereto by pins and carrying sections of the stops and beads, pulleys on the ends of said pins, and sash-cords connected with said sashes and passing around said pulleys, substantially as set forth.

2. A window-frame the opposite sides of which are provided with the usual beads or strips between which the sashes are placed, said sides of said frame being also provided with pivoted plates which form part of the frame and which carry part of said beads or strips, said plates being approximately of the same length as the window-sashes, sashes mounted between said beads or strips, the adjacent sides of which are provided with longitudinal grooves, a double pulley mounted in the said grooves at each side of the window-sashes, and two sash-cords at each side of the sashes, one of said sash-cords at each side being passed around said pulleys and connected with the top of both sashes and the other sash-cord at each side being passed around said pulleys and connected with the bottom of each sash, substantially as shown and described.

3. A window-frame the opposite sides of which are provided with the usual beads or strips between which the sashes are placed, said sides of said frame being also provided with pivoted plates which form part of the frame and which carry part of said beads or strips, said plates being approximately of the same length as the window-sashes, sashes mounted between said beads or strips, the adjacent sides of which are provided with longitudinal grooves, a double pulley mounted in the said grooves at each side of the window-sashes, and two sash-cords at each side of the sashes, one of said sash-cords at each side being passed around said pulleys and connected with the top of both sashes, and the other sash-cord at each side being passed around said pulleys and connected with the bottom of each sash, one of said sashes being longer than the other, substantially as shown and described.

4. A window-frame the sides of which are provided with the usual vertical strips or beads between which the sashes are placed, said sides of said frame being also provided with pivoted plates which form part of the frame and also carry part of the said beads or strips, sashes mounted in said frame, double pulleys mounted centrally of each of said pivoted plates, and two sash-cords connected with each of said pulleys, one of said sash-cords at each side being passed around the corresponding pulley and connected with the top of both sashes, and the other cord at each side being passed around the corresponding pulleys and connected with the bottom of both sashes, substantially as shown and described.

607,428. ROLL-HOLDING CAMERA. WILLIAM V. REMOND, New York, N. Y., assignor to Maximilian Kahn, same place. Filed Oct. 25, 1897. Serial No. 656,202. (No model.)



Claim.—1. The combination with the box or case of a camera, of a roll-holder having means for supporting a spool or reel of sensitized film, and a spool or reel for receiving the film as unwound, the said roll-holder being formed or provided with a guide or path for the passage of the film and a flexible strip through which path the said flexible strip may be drawn in frictional contact with the receiving-spool, so as to impart rotary movement thereto, and to and through a slot in the case of the camera, as set forth.

2. The combination with the box or case of a camera, of a means for transferring the film from the original to the receiving spool or roll, the said means consisting of a roll-holder constructed or provided with a guide or path for the film and a flexible strip or band, through which path the said strip or band may be drawn in frictional contact with the receiving-spool so as to impart rotary motion thereto, and to and through a slot in the case of the camera, as set forth.

3. The combination with the box or case of a camera of means for supporting a spool or reel carrying a sensitized film, and a receiving spool or reel for said film, means for directing the course of the film and a flexible strip from the original spool through the field of exposure to the receiving-roll, and a spring adapted to press the flexible strip in contact with the receiving-roll, the case of the camera being provided with a slot through which the flexible strip may be drawn after passing in contact with the receiving-reel, as set forth.

4. The combination with the box or case of a camera, of means for supporting the original and receiving film spools or reels therein, means for directing the film and a flexible strip or band from the original to the receiving spool or reel, and directing the said flexible strip or band in frictional contact with the receiving spool or reel to a slot in the camera-case, and a hinged flap covering the said slot, as set forth.

5. The combination with the box or case of a camera, of means for supporting the original and receiving film spools or reels therein, means for directing the film and a flexible strip or band from the original to the receiving spool or reel and directing the said flexible strip or band in frictional contact with the receiving spool or reel to a slot in the camera case, and a hinged flap provided with a rigid cutting edge, and covering the said slot, as set forth.

6. The combination with the box or case of a camera, of means for supporting the original and receiving film spools or reels therein, means for directing the film and a flexible strip or band from the original to the receiving spool or reel, and directing the flexible strip or band in frictional contact with the receiving spool or reel to a slot in the camera-case, a hinged flap covering the said slot and a spring acting therein to keep the slot closed or covered by said flap, as set forth.

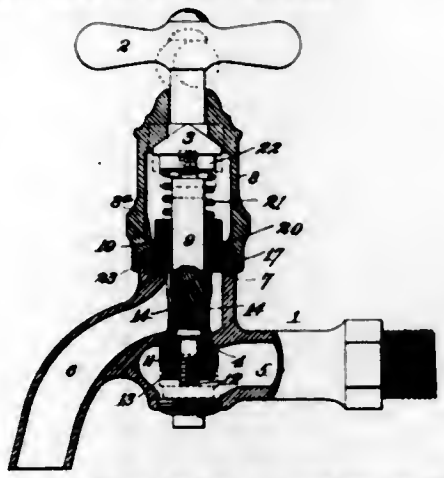
7. The combination with the case or box of a camera of a roll-holder consisting of a block, having a recess for a roll of film, a slot

leading from the same for the passage of the film, a recess for the receiving spool or reel, and a flat surface over which the film passes in its movement from one reel or spool to the other through the field of exposure, as set forth.

8. The combination with the box or case of a camera having a hinged lid and a slot for the passage of a paper band or strip, of a roll-holder adapted to be inserted in and withdrawn from the said case, means for supporting the original and receiving spools or reels therein, and formed with a guide or path through which a paper strip wound on the original reel with the film may be drawn in frictional contact with the receiving-reel, so as to impart rotary movement thereto, as set forth.

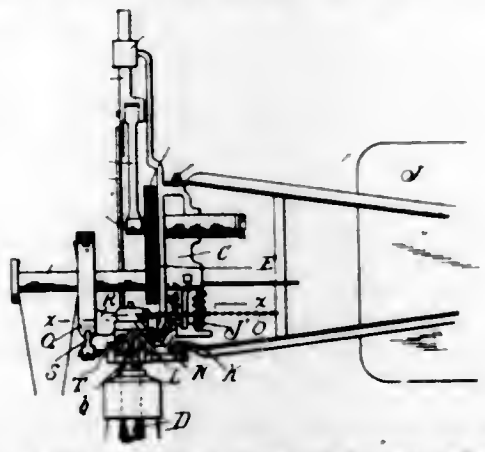
9. The combination with the camera-case having a slot for the passage of a paper band or strip, of a roll-holder provided with means for directing a paper strip from the original reel to the said slot and in frictional contact with the receiving-reel and a punch or marker set in the wall of the case at a point near the edge of the field of exposure, as set forth.

607,429. SELF-CLOSING FAUCET. JOHN P. FARLEY, Kansas City, Mo., assignor of one-fourth to Job Hollinger, same place. Filed May 24, 1897. Serial No. 637,926. (No model.)



Claim.—In a self-closing faucet, the combination with a casing having a valve-seat opening connecting its supply and discharge passages and an annular internal shoulder 7, near the upper end of the last-named passage, a packing-box comprising a tubular member or cap seated on said shoulder; the passage of said box tapering downward and inward as at 17, to its base, an upper member, or cap 18, fitting slidingly within the lower member and provided with an opening having its side walls tapering upwardly and inwardly, and a packing-ring of suitable material between said members or caps, a cap inclosing said packing-box and secured to the casing, a valve-stem extending through the packing-box including said ring, and the valve-seat opening, a valve on the lower end of the stem, a nut on the upper end of said stem, a spring upon said stem and pressing against the nut and the member or cap 18, of the packing-box, and a handle journaled in the cap of the casing, whereby the valve may be moved from its seat, substantially as described.

607,430. WINDMILL. HENRY A. FRENCH, Lansing, Mich. Filed Mar. 1, 1897. Serial No. 625,602. (No model.)



Claim.—1. The combination with a wind-wheel, and mechanism for automatically throwing it in or out of the wind, of a connection for throwing the wheel out by hand, a normally-released brake for said wheel, means connecting the hand connection and the throwing-out mechanism adapted to apply said brake when the wheel is thrown out by the hand connection and permit its complete automatic movement without applying the brake.

2. The combination with a wind-wheel, and mechanism for automatically throwing it out of the wind, of a normally-released brake for said wind-wheel, a hand connection for throwing the wind-wheel out of the wind and for applying said brake, and a connection of flexible material between the brake and the automatic throwing-out mechanism, whereby the automatic operation of the latter will not apply the brake.

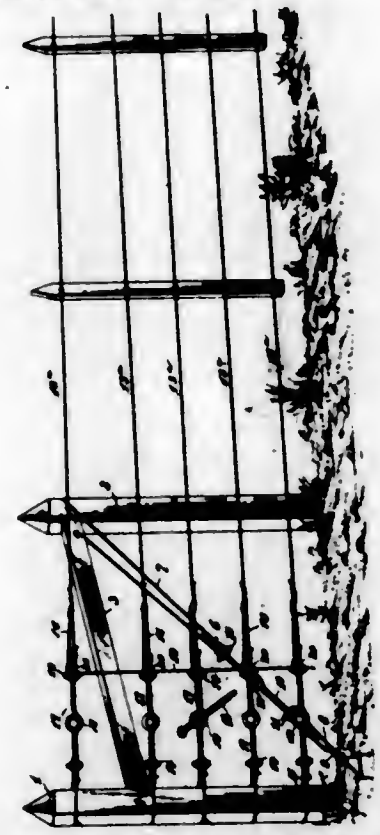
3. The combination with the wind-wheel and mechanism for automatically throwing it in or out of the wind, of a normally-released brake for said wheel, a lever for applying said brake, a flexible connection for actuating said throwing-out mechanism by hand, and a dog on said connection adapted to engage with and operate said brake-lever only when the wheel is thrown out by hand.

4. The combination with the wind wheel, the swiveled hollow head therefor, and automatic mechanism for throwing it in or out of the wind, of a brake-wheel on the shaft of said wind-wheel, a brake-strap therefor, a tightening-lever for said strap, an arm projecting laterally from said head, a connection of flexible material secured at one end to the vane and passing over a bearing on the end of said arm and down through said hollow head, and a dog on said connection adapted to engage with said tightening-lever, for the purpose specified.

5. The combination with the wind-wheel, the swiveled hollow head, a reciprocating connecting-rod passing down through said head, and mechanism for throwing said wheel in or out of the wind, of a chain or flexible connection for operating said throwing-out mechanism by hand passing down through said hollow head, and a pulley over which said flexible connection passes forming a guide for said reciprocating rod.

6. The combination with the wind-wheel, and mechanism for automatically throwing it out of the wind, of a flexible connection for throwing it out by hand, a brake mechanism, a lever for operating the same with which said flexible connection has a loose engagement, and a means carried by said flexible connection for engaging said lever to operate the same.

607,431. FENCE. FRANK W. GASPER, Wayne, N. Y. Filed Nov 30, 1897. Serial No. 660,223. (No model.)



Claim.—1. In a fence, the combination of spaced main and auxiliary terminal posts, a thrust-brace interposed between the posts contiguous to their upper ends, and a tension-brace extending from the upper end of the auxiliary post to an anchor between the posts, and including spaced relatively-adjustable nuts, stirrups connecting said nuts respectively with the post and the anchor, and a tension-bolt having oppositely-threaded arms engaged with the nuts and provided with an integral intermediate coil forming an eye for engagement by an operating rod or lever, substantially as described.

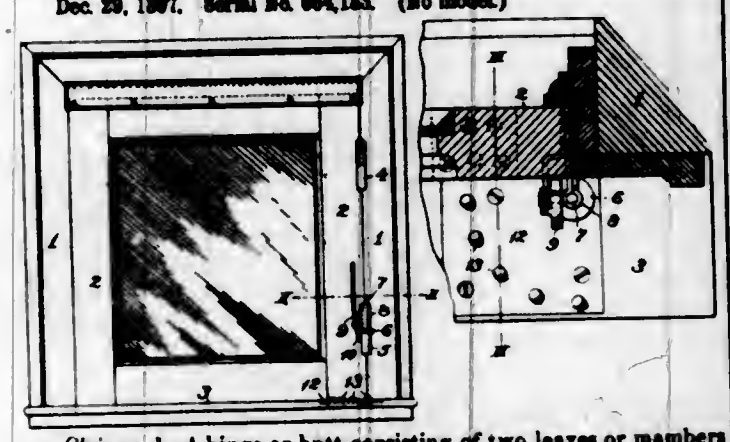
2. In a fence, the combination with spaced main and auxiliary terminal posts, a thrust brace interposed between said posts near their upper ends, and a tension-brace extending from the upper end of an auxiliary post to an anchor located near the bottom of the main post, and embodying looped stirrups, respectively connected with the post and anchor, nuts attached to the separated arms or sides of the stirrups and held thereby from rotation, and a tension-bolt having an

intermediate wrench-seat, consisting of a coiled eye, and oppositely-threaded arms engaged with the nuts, substantially as specified.

3. In a fence, the combination of a terminal post, runners, and adjustable connections between the runners and said post, each connection embodying a looped post-stirrup extending around the post with its sides or arms separated, a looped runner-stirrup attached to the adjacent end of the runner, nuts attached to the sides or arms of said stirrups, whereby that nut which is attached to the post-stirrup is held from rotation, and a tension-bolt having oppositely-threaded arms engaging the nuts and provided at an intermediate point with a wrench-seat, substantially as specified.

4. In a fence, the combination with a post and runners, of tension devices each having spaced nuts respectively connected with the post and a runner, those nuts which are connected with the runners having eyes, tension-bolts engaging and connecting the nuts, and a locking-rod threaded in the alined eyes of those nuts which are connected with the runners, substantially as described.

607,482. HINGE. JAMES H. GIBNEY, Highland City, Ohio. Filed Dec. 29, 1897. Serial No. 664,153. (No model.)



Claim.—1. A hinge or butt consisting of two leaves or members movable angularly with relation to each other, and having means for separating the leaves or members in the direction of their axes and means for locking the leaves as against such motion, substantially as set forth.

2. A hinge or butt consisting of two leaves movable angularly with relation to each other in combination with mechanism attached to one of the leaves or members and operative on a bearing carried by the other leaf or member for separating the leaves or members in the direction of their axes, substantially as set forth.

3. A hinge or butt consisting of two leaves or members movable angularly with relation to each other in combination with a rotating part or device connected to one of the leaves and operative on a bearing carried by the other leaf for separating the leaves or members in the direction of their axes, substantially as set forth.

4. A hinge or butt consisting of two leaves or members movable angularly with relation to each other, in combination with a rotatable cam mounted on one of the leaves and a bearing for the cam carried by the other leaf, substantially as set forth.

5. A hinge or butt consisting of two leaves or members movable angularly with relation to each other, in combination with a rotatable cam mounted on one of the leaves, a bearing for the cam carried by the other leaf, a hook carried by the cam and adapted to engage the leaf or member having the bearing, substantially as set forth.

6. A hinge having in combination therewith fingers formed on the end of the socket portion of one of the leaves, a cam or eccentric pivotally mounted between said finger, and a pintle supported in the other leaf and serving as a bearing for the cam or eccentric, substantially as set forth.

607,483. MILK-CAN. HENRY B. HAIGH, New York, N. Y., assignor to the Iron Clad Manufacturing Company, same place. Filed Oct. 22, 1897. Serial No. 656,077. (No model.)



Claim.—1. A milk-can comprising a breast member provided with a neck portion; and a mouth member provided with a neck portion, one of said neck portions extending within and being overlapped by the other neck portion, and one of said neck portions having a flaring reinforcing and locking flange, and one of said members having an annular recess for the reception of said flaring flange whereby the breast member and mouth member are locked together by a flush-joint interlocking means.

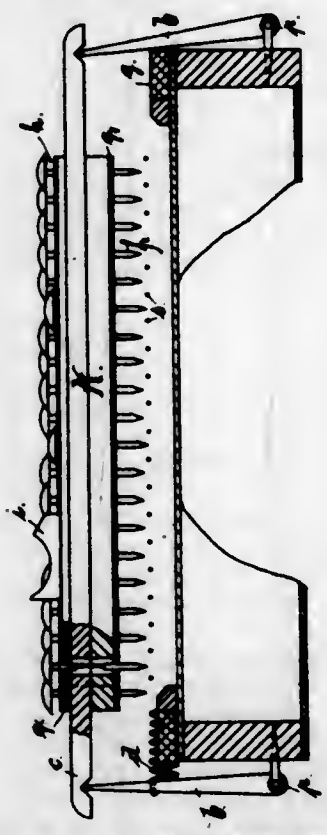
2. The herein-described milk-receptacle comprising a mouth member provided with a depending neck portion and an annular recess above said neck portion; and a breast member having an upwardly-extending neck portion extending within and overlapped by said mouth neck portion, and having a flaring locking and reinforcing flange seated in the recess of the mouth member and forming therewith a flush joint, whereby the mouth neck portion and the breast neck portion are each reinforced one by the other throughout the entire area thereof, and whereby the point of juncture of said neck portion is located outside of the interior of the can.

3. A milk-can comprising a breast member provided with an integral neck portion; and a mouth member provided with an integral neck portion, one of said neck portions extending within and being overlapped by the other neck portion to form an annular space intermediate said integral neck portions, and one of said neck portions having a flaring reinforcing and locking flange, and one of said members having an annular recess for the reception of said flaring flange, whereby the breast member and mouth member are locked together by a flush-joint interlocking means, and whereby such interlocking means forms a closure for completely closing said annular space.

4. A milk-can comprising a mouth member provided with an integral neck portion; a breast member also provided with an integral neck portion, said integral neck portions so overlapping each other and connected together as to form a closed protected annular space intermediate such integral neck portions; and a reinforcing-band inclosed in said space, intermediate said neck portions, and forming a treble-reinforced neck.

5. The herein-described milk-can comprising a mouth member provided with a depending neck portion and an annular recess above said neck portion; a breast member provided with an upwardly-extending neck portion extending through and overlapped by the mouth neck portion throughout the entire area thereof, and having an outwardly-extending flaring locking and reinforcing flange seated within the annular recess of the mouth member and forming therewith a flush joint above the neck of the can, said flaring flange constituting reinforcing means for the mouth member adjacent to the neck angle thereof; and an annular metal band intermediate the neck portions of said breast and mouth members and of the same area as each of the said neck portions, substantially as described.

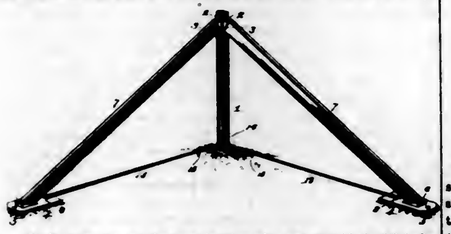
607,484. STRIKING APPARATUS FOR STRING INSTRUMENTS. ARTHUR HEINE, Leipsic, Germany, assignor to I. T. Müller, Dresden, Germany. Filed Apr. 28, 1897. Serial No. 634,305. (No model.)



Claim.—Striking apparatus for string instruments consisting of a frame located across the strings and supported at its ends by pivoted arms *b*; with pressure-springs *d* and buffers *g* of felt or the like, and of the keyboard consisting of pins *f* which can be pressed down, with dampers *m*, with broad key-heads and spring *k* situated underneath the latter.

607,485. POST-BRACE. HARRISON A. HILL, Huntsville, Kans. Filed Jan. 11, 1897. Serial No. 618,867. (No model.)

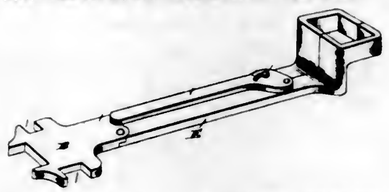
Claim.—1. In a post-brace, the combination of a post, provided with holes near the ground-line, foot-plates secured upon the ground at suitable distances from the post, inclined brace-bars connecting the post and the foot-plates, and wires, each doubled, looped to one foot-plate, extending through and around the post and twisted upon itself between the post and the foot-plate, substantially as described.



2. In a post-brace, the combination of a post, provided with holes near the ground-line, foot-plates secured upon the ground at suitable distances from the post, inclined brace-bars connecting the post and the foot-plates, and wires, each doubled, looped to one foot-plate, extending through and around the post and twisted upon itself between the post and the foot-plate, and having its ends twisted upon each other, substantially as described.

3. In a post-brace, the combination of a post provided with holes near the ground-line, foot-plates provided with lugs and secured upon the ground at suitable distances from the post, inclined brace-bars connecting the post and the foot-plates, and wires, doubled, and looped at their bends to the said lugs, and extending through the holes of the post; the strands of each wire being bent in opposite directions around the post and twisted upon the double strand intermediate of the post and the foot plates, substantially as shown and described.

607,436. CARRIAGE-WRENCH. ELMER E. HILLIKER, Kearney, Nebr. Filed Dec. 23, 1897. Serial No. 663,190. (No model.)



Claim.—1. An improved wrench comprising a handle part provided at one end with a jaw, a second cooperating jaw pivoted at its inner end to said handle, and a lever connected with the said handle part and with the jaw at a point outside of the pivotal point of the jaw, one of said connections being concentrically arranged for the purpose described.

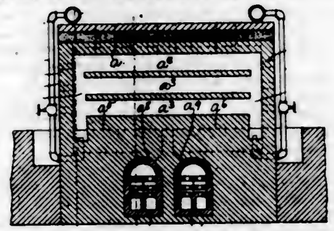
2. An improved wrench comprising a handle having at one end a jaw, a cooperating jaw having an inwardly-projecting arm pivotally connected with said handle, and a lever connected with the handle and with said arm at a point between the jaw and the pivotal point of the arm, said connection constructed to draw the arm and handle part together, or to separate them, substantially as described.

3. An improved carriage-wrench including a handle part carrying a jaw, a second jaw cooperating with the first-mentioned jaw and having a stem part pivotally secured to the handle, and a lever fulcrumed to one of the jaw-carrying parts and formed with a cam-slot to embrace a pin on the other jaw-carrying part, substantially as shown and described.

4. An improved carriage-wrench including a handle part formed with a jaw, a second jaw cooperating with the first-mentioned jaw and having a stem part pivotally secured to the handle, a lever fulcrumed at its extremity to said stem and adjacent to the fulcrum formed with the curved slot eccentric to the fulcrum-point, and a pin carried by the handle part, which is embraced by this slot, substantially as shown and described.

5. An improved carriage-wrench including a handle part cut away upon one edge and at one end carrying a jaw, a second jaw having a stem fitting in the cut-out portion of the handle and at its rear end pivotally secured to the rear end of the cut-out portion, and a lever fulcrumed at its forward extremity to the under side of the stem, and adjacent said fulcrum-point formed with a curved slot extending eccentrically to the fulcrum-point, and a pin carried by the handle part and extending through the lever-slot, substantially as shown and described.

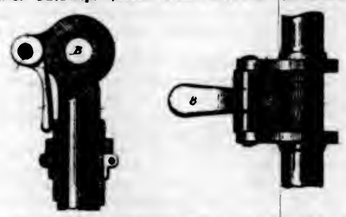
607,437. COKING-OVEN. LOUIS J. HIRT, Brookline, Mass. Filed July 20, 1897. Serial No. 645,222. (No model.)



Claim.—1. A coking-oven comprising a retort, a series of substantially horizontal flues arranged one above the other on opposite sides of the retort and extended substantially the length of the retort to form a continuous passage for the heat from end to end of the retort, vertical flues communicating with said horizontal flues at the opposite ends of the same, regenerators located below the retort near its longitudinal center, and substantially horizontal flues beneath the sole of the retort and connecting said end flues with said regenerators, substantially as described.

2. A coking-oven comprising a retort, a series of substantially horizontal flues arranged one above the other on opposite sides of the retort and extended substantially the length of the retort to form a continuous passage for the heat from end to end of the retort, vertical flues communicating with said horizontal flues at the opposite ends of the same, substantially horizontal flues communicating with the end flues and extended below the sole of the retort toward its center, and regenerators connected to said sole-heating flues, substantially as described.

607,438. BICYCLE. ARTHUR F. HOOD, Hopkinton, Mass., assignor to the Fenton Metallic Manufacturing Company, Jamestown, N. Y. Filed Sept. 6, 1895. Serial No. 561,641. (No model.)



Claim.—1. The combination with a handle-bar and a stem having an open socket permitting the insertion and withdrawal of the handle-bar, of a device carried by the handle-bar and constructed and arranged to engage and disengage the ends and side of the stem opposite to its socket and provided with means for clamping the stem and bar, substantially as described.

2. The combination with a handle-bar, of a stem having an open socket adapted to permit the lateral insertion and withdrawal of the handle-bar, a yoke pivotally supported upon the handle-bar, and a cam-lever pivoted to the yoke, substantially as described.

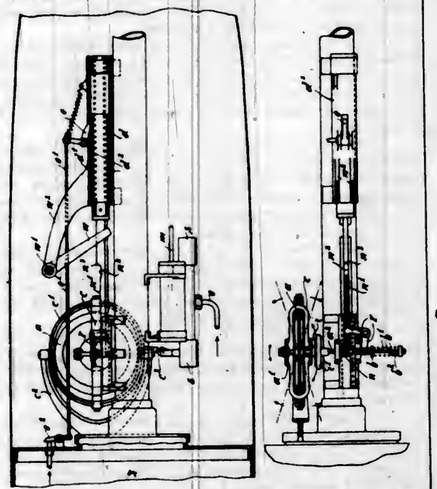
607,439. WRENCH-JACK. SAMUEL J. JOHNSTON, Leesburg, Va. Filed Sept. 15, 1896. Serial No. 605,914. (No model.)



Claim.—1. In a wrench-jack, for carriages and wagons, a jack-arm comprising separate members, one of which members is provided at its inner end with a loop or socket adjustably receiving a straight shank or bar portion of the other member, and a wrench connected to one of said members and having relatively fixed and sliding jaws, the sliding jaw of the wrench having a play in the space between the fixed jaw and said loop or socket at the inner end of one of the jack-arm members, substantially as set forth.

2. In a wrench-jack for carriages and wagons, a jack-arm comprising separate members, one of which is provided at its inner end with a straight connecting-bar portion, and the other of which members is provided at its inner end with a loop adjustably receiving said connecting-bar portion, and with an offstanding wrench-post projected from said loop and supporting a shank-piece lying parallel with the straight connecting-bar portion of one of the jack-arm members, and relatively fixed and adjustable wrench-jaws fitted on the shank-piece and provided at their inner ends with guide-flanges slidably embracing said straight connecting-bar portion, substantially as set forth.

607,440. AUTOMATIC STEERING DEVICE FOR TORPEDOES. EMIL KASKLOWSKY, Berlin, Germany. Filed Jan. 5, 1897. Serial No. 618,091. (No model.)



Claim.—1. In a fish-torpedo, having a gyroscopic disk or wheel, adapted to rotate around a horizontal axis, and to revolve around a vertical one, and having said disk or wheel arranged so as to have its plane of rotation stand parallel to the longitudinal axis of the torpedo, the combination with the shaft of the said disk or wheel, and with the driving device for the latter, of a coupling situated between the disk or wheel and said driving device, said shaft having a cog-wheel adapted to be longitudinally displaced, of a rack gearing with said cog-wheel, and of means for longitudinally displacing said rack; and other means for automatically disconnecting said coupling; said other means being adapted to be operated by the said rack, for the purpose as described.

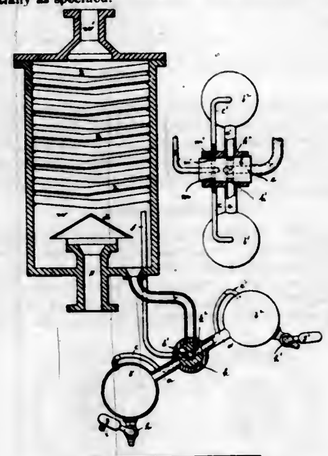
2. In a fish-torpedo having a gyroscopic disk or wheel adapted to rotate around a horizontal axis, and to revolve around a vertical one, and having said disk or wheel arranged so as to have its plane of rotation stand parallel to the longitudinal axis of the torpedo, the combination with the shaft of the said disk or wheel, and with another shaft arranged coaxially with the said former one, of a coupling situated between said two shafts; said coaxial shaft having a cog-wheel, and being adapted to be longitudinally moved: a rack gearing with said cog-wheel, and means for longitudinally moving said rack; and a lever, adapted to be turned by the said rack on the latter reaching the end of its path, and to move the said other shaft so as to disconnect said coupling, for the purpose as described.

607,441. SEPARATOR FOR STEAM AND WATER. HUGO KOHL, Dusseldorf, Germany. Filed June 3, 1897. Serial No. 639,271. (No model.)

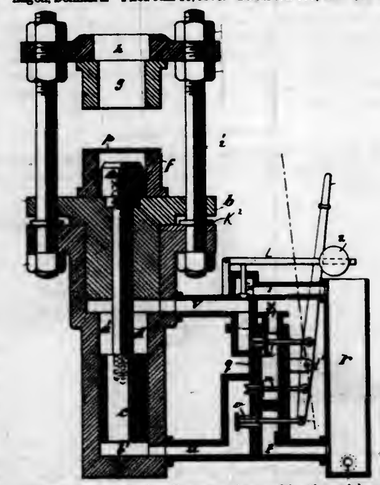
Claim.—1. A steam and water separator composed of bent perforated troughs arranged in staggered horizontal rows, and an inclosing receptacle having a steam inlet and outlet and a water-outlet, substantially as specified.

2. A steam and water separator composed of a receptacle, bent perforated troughs arranged in staggered horizontal rows contained therein, a pair of counterbalancing vessels having discharge-cocks and adapted to be brought into alternate communication with such receptacle, and means for opening the cock of the disconnected vessel, substantially as specified.

3. A steam and water separator composed of a receptacle, troughs contained therein, an outlet-pipe, a valve-plug controlling the same and having steam and water ports, a pair of counterbalancing vessels having discharge-cocks, water and steam pipes adapted to establish communication between the valve-plug ports and the vessels, and means for opening the discharge cock of the disconnected vessel, substantially as specified.



607,442. HYDRAULIC PRESS. LAURITS P. LANDTVED, Copenhagen, Denmark. Filed Jan. 10, 1898. Serial No. 666,215. (No model.)



Claim.—1. In a hydraulic press, the combination with a stationary die, the press-cylinder, two pistons of unequal diameter arranged in tandem, the piston of greater diameter adapted to support the material operated upon, and the cooperating die secured to the smaller piston; of means for admitting a fluid under pressure at will between the two pistons and below the smaller piston respectively, for the purpose set forth.

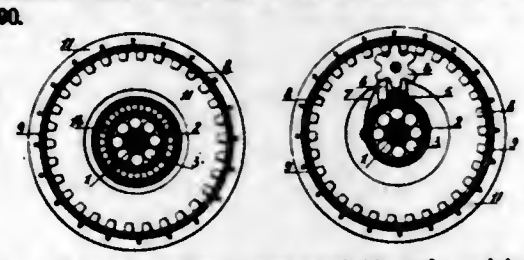
2. In a hydraulic press, the combination with a stationary die, the press-cylinder, and two pistons of unequal diameter arranged in tandem, the piston of greater diameter adapted to support the material operated upon, and the cooperating die secured to the smaller piston; of a valve-chest, a receiving-chamber, valved ducts leading from said valve-chest and chamber to the cylinder above and below the smaller piston respectively, a valved port leading from said chest to the duct connecting the cylinder with the receiving-chamber, and a shifting lever to which the three valves are connected, said valves arranged relatively to the ports controlled thereby to uncover the same when the lever is in a normal position, to respectively open and close the ports in the valve-chest for the ducts leading to the cylinder above and below the smaller piston and open the port connecting the last-named duct with the receiving-chamber when the lever is

shifted in one direction, and to cut off the communication between the cylinder and receiving-chamber and the duct leading to said cylinder above the smaller piston and to open the port leading from the valve-chest to the cylinder below the smaller piston when said lever is shifted in a reverse direction, for the purpose set forth.

3. In a hydraulic press, the combination with the cylinder, its two pistons of unequal diameter arranged in tandem, a valved duct leading to the cylinder between its pistons, and a receiving-chamber, of a by-path connecting the receiving-chamber with the aforesaid duct, and a pressure-regulating valve in said by-path, for the purpose set forth.

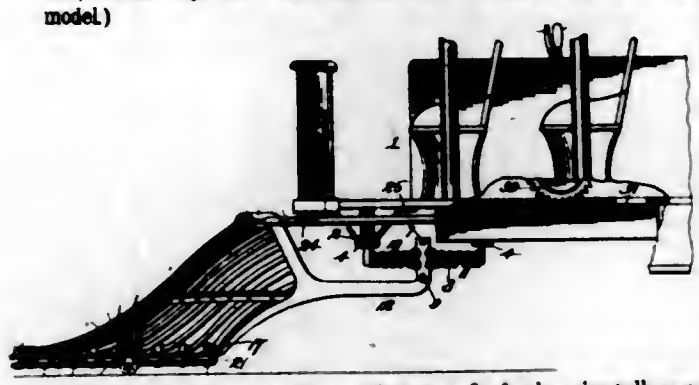
4. In a hydraulic press, the combination with the cylinder, its two pistons of unequal diameter arranged in tandem, a valved duct leading to the cylinder between its pistons, and a receiving-chamber; of a by-path connecting the receiving-chamber with the aforesaid duct, and an adjustable pressure-regulating valve in said by-path, for the purpose set forth.

607,443. DRIVING-GEAR FOR VELOCIPEDES, AUTOCARS, OR OTHER VEHICLES. CHARLES LARUE, Brussels, Belgium. Filed Aug. 3, 1897. Serial No. 646,825. (No model.) Patented in Belgium May 31, 1897, No. 128,586; in England July 16, 1897, No. 16,865; in France July 31, 1897, No. 268,955; in Italy Sept. 30, 1897, No. 33/45,667; in Austria Oct. 14, 1897, No. 24,656, and in Hungary Jan. 25, 1898, No. 10,690.



Claim.—In combination, a non-revoluble axle, a driving-sleeve revoluble thereon, a wheel-hub composed of the internally-toothed sleeve 9, and the flanged heads 10 and 11, the pinion 4 journaled in bearings on the driving-sleeve and gearing with the internal teeth of the wheel-hub, the spring-controlled pawl 6 pivoted to the said sleeve and held in engagement with the pinion, and ball-bearings interposed between the non-revoluble axle and the driving-sleeve and between the latter and the wheel-hub, for the purpose set forth.

607,444. CAR-FENDER. JAMES H. LEWIS and JOSEPH M. COURTNEY, Kansas City, Mo. Filed July 19, 1897. Serial No. 645,151. (No model.)



Claim.—1. The combination with a car, of a fender pivotally supported, a frame suitably supported, a rod extending rearwardly into said frame and provided with a head or collar, a link pivotally connecting the front end of said rod with the fender in a plane above the pivot thereof, and a spring within said frame and pressing rearwardly against said head or collar, for the purpose set forth.

2. The combination with a car, of a pivoted fender a sliding frame, a rod projecting rearwardly into said frame and linked at its front end to the fender above the pivot thereof, a head upon its rear end, a spring within the frame and pressing rearwardly against said head, and means to slide said frame forwardly to permit the fender to spring downwardly, substantially as described.

3. The combination with a car, of a pivoted fender, a sliding frame, a rod projecting rearwardly into said frame and linked at its front end to the fender above the pivot thereof, a head upon its rear end, a spring within the frame and pressing rearwardly against said head, and means to slide the frame rearwardly to elevate the front end of the fender, substantially as described.

4. The combination with a car, of a pivoted fender, a sliding frame mounted upon the car, a rod projecting rearwardly into said frame and provided with a head at its rear end, a spring pressing against the head of said rod so as to force it rearwardly, a link pivotally connecting the front end of the rod with the fender above the pivot thereof, a lever geared to the sliding frame, and means to lock it at the required point of adjustment, substantially as described.

5. The combination with a car, of a pivoted fender, a sliding frame mounted upon the car, and provided with rack-teeth, a rod projecting rearwardly into said frame and provided with a head at its rear end, a spring pressing against the head of the said rod so as to force it rearwardly, a link pivotally connecting the front end of the rod with the fender above the pivot thereof, a toothed sector secured within the car, a lever pivoted within the car and provided with a cog-segment engaging said rack-teeth, and a spring-actuated dog mechanism carried by said lever and engaging said sector, substantially as and for the purpose described.

6. The combination with a car, of rods supported below the same and extending in substantially longitudinal lines, sliding clips mounted upon said rods, springs bearing against the front and rear edges of said clips, a car fender pivoted to said clips, a sliding rod supported in a plane above the pivot of the fender, a link connecting the same with the fender above its pivot, and a spring holding said rod normally retracted, substantially as described.

7. The combination with a car, of a fender suitably supported, rods arranged below the floor of the car near its front end and forming opposite portions of the same circle, clips mounted slidingly upon said rods and pivoted to the fender, and springs bearing against the front and rear edges of said clips, substantially as and for the purpose described.

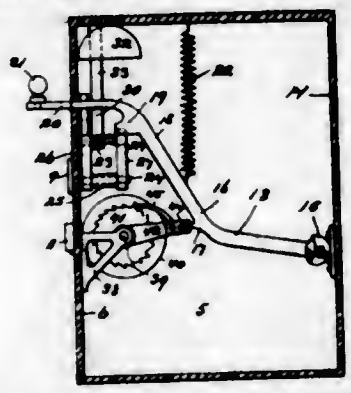
8. The combination with a car, of a fender suitably supported, brackets secured to the under side of the car, segmental oppositely-located rods carried by said brackets, clips provided with rollers which embrace the upper and lower sides of said rods and pivoted to said fender, and springs pressing against the front and rear edges of said clips, substantially as described.

9. The combination with a car, of a pivoted fender, a yielding support for the fender above its pivot, and a spring-depressed roller secured to the fender near its front end and adapted to contact with the high surfaces of the grip or track rails, according to the style of car structure, substantially as described.

10. The combination with a car, of a pivoted fender, a yielding support for the fender above its pivot, and a spring-depressed roller or caster carried by the fender and adapted for contact with the high surfaces of the grip or track rails, substantially as and for the purpose described.

11. The combination with a car of curved rods supported below the same and extending concentrically of a common point or center, sliding clips mounted upon said rods and held with a yielding pressure against back or forward movement, and a fender pivoted to said clips, substantially as described.

607,445. VOTING-MACHINE. ERNEST J. MEAD, Bridgetown, England. Filed Aug. 4, 1897. Serial No. 647,068. (No model.)



Claim.—1. A voting-machine comprising a box or casing, a transverse slot formed in the front thereof and provided at each end with a downwardly-directed extension, a registry apparatus mounted beneath each of said downwardly-directed extensions, and consisting of a plurality of registry-wheels which are adapted to be operated by an arm mounted on the shaft on which said wheels are mounted, a spring-operated lever pivotally connected with the back of the box or casing, and provided with an arm which projects through said transverse slot, said lever being also provided with an upwardly-directed portion, at the bottom of which is a forwardly-directed projection which is adapted to operate said arms, and at the upper part of which is a forwardly-directed shoulder or projection, a sliding bar mounted transversely of the downwardly-directed extensions of said transverse slot, and devices which operate in connection with said sliding bar, and which are adapted to be operated by the shoulder or projection formed on said lever for moving said sliding bar, substantially as shown and described.

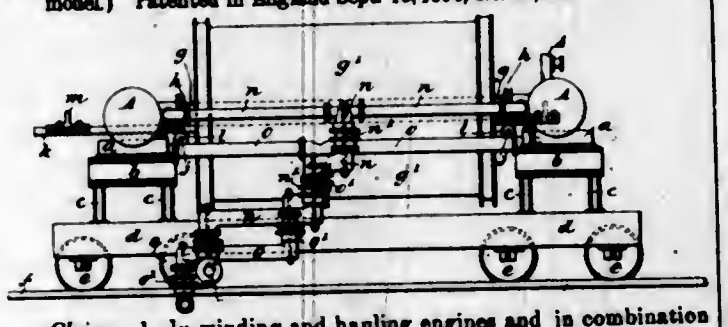
2. A voting-machine comprising a box or casing, a transverse slot formed in the front thereof and provided at each end with a downwardly-directed extension, a registry apparatus mounted beneath each of said downwardly-directed extensions, and consisting of a plurality of registry-wheels which are adapted to be operated

by an arm mounted on the shaft on which said wheels are mounted, a spring-operated lever pivotally connected with the back of the box or casing, and provided with an arm which projects through said transverse slot, said lever being also provided with an upwardly-directed portion, at the bottom of which is a forwardly-directed projection which is adapted to operate said arms, and at the upper part of which is a forwardly-directed shoulder or projection, a sliding bar mounted transversely of the downwardly-directed extensions of said transverse slot, and devices which operate in connection with said sliding bar, and which are adapted to be operated by the shoulder or projection formed on said lever for moving said sliding bar, said sliding bar being also provided with hinged plates in connection with which said shoulder or projection operates, substantially as shown and described.

3. A voting-machine comprising a box or casing, a transverse slot formed in the front thereof and provided at each end with a downwardly-directed extension, a registry apparatus mounted beneath each of said downwardly-directed extensions, and consisting of a plurality of registry-wheels which are adapted to be operated by an arm mounted on the shaft on which said wheels are mounted, a spring-operated lever pivotally connected with the back of the box or casing, and provided with an arm which projects through said transverse slot, said lever being also provided with an upwardly-directed portion, at the bottom of which is a forwardly-directed projection which is adapted to operate said arms, and at the upper part of which is a forwardly-directed shoulder or projection, a sliding bar mounted transversely of the downwardly-directed extensions of said transverse slot, and devices which operate in connection with said sliding bar, and which are adapted to be operated by the shoulder or projection formed on said lever for moving said sliding bar, said sliding bar being also provided with hinged plates in connection with which said shoulder or projection operates, and the said casing being provided with a bell or gong which is adapted to be operated by said sliding bar, substantially as shown and described.

4. A voting-machine comprising a box or casing in the front of which is formed a transverse slot, provided at each end with a downwardly-directed extension, a registry apparatus mounted beneath each of said downwardly-directed extensions, and consisting of a plurality of registry-wheels mounted on a shaft which is also provided with an arm by which said registry-wheels are operated, a lever pivotally connected with the back of the casing, and provided with an arm which projects through said slot, a sliding bar mounted within the casing and transversely of the downwardly-directed extensions of said transverse slot, and devices whereby said lever is adapted to operate said registry apparatus and said sliding bar, substantially as shown and described.

607,446. WINDING AND HAULING ENGINE. WILLIAM MORGANS, London, England. Filed Dec. 6, 1897. Serial No. 660,887. (No model.) Patented in England Sept. 10, 1896, No. 20,021.



Claim.— 1. In winding and hauling engines and in combination a platform, an engine and rope-drum carried thereby, means for supporting the platform so that it is capable of movement in a line at right angles to the travel of the rope or chain, and means operated by the motion of the drum during the winding and unwinding of the same for giving a proportioned and regulated motion to the same and to the platform and engine while the rope coils and uncoils, substantially as described.

2. In winding and hauling engines and in combination, a platform supported so as to be capable of movement in a line at right angles to the travel of the rope or chain, an engine and rope-drum carried thereby, a worm carried by the drum, a worm-wheel engaging therewith, a shaft in the platform on which such wheel is mounted, a pinion on such shaft, and a fixed rack outside of the platform with which such pinion engages, the winding and unwinding of the drum thus rotating the shaft and moving the platform through the medium of the pinion and rack, substantially as described.

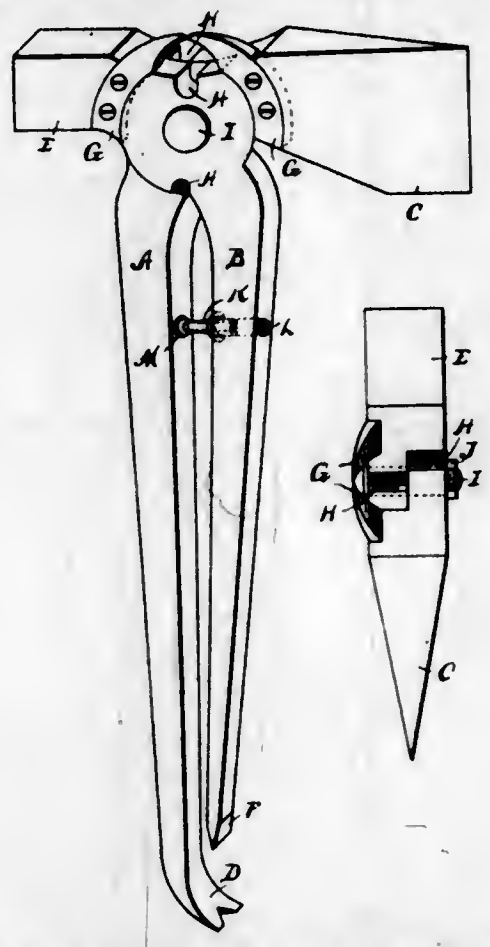
607,447. FASTENING DEVICE. CLEMENT S. MORRIS, Durham, N. H. Filed June 14, 1897. Serial No. 640,623. (No model.)

Claim.— 1. The herein-described fastening device which consists of a flat piece of suitable material having the body portion *a* and the laterally-projecting portion a^2 which projects from one edge of said portion *a*, the said edge being out of line with the end of said portion a^2 and extending beyond the sides thereof to engage the creased portion of a folded sheet through which the portion a^2 is adapted to project, and a tongue adapted to be bent away from said portion a^2 to fasten the said device, substantially as described.



2. The herein-described fastening device which consists of the portion *a* cut to form the loops 2 and the tongues 3, and the portion a^2 projecting from one edge of the portion *a*, the said edge being at an angle to and extending beyond the sides of said projection, and the tongue a^3 formed in said projection, substantially as described.

607,448. COMBINATION-TOOL. JOHN R. MORRIS, Jewel City, Kans. Filed July 6, 1897. Serial No. 643,639. (No model.)

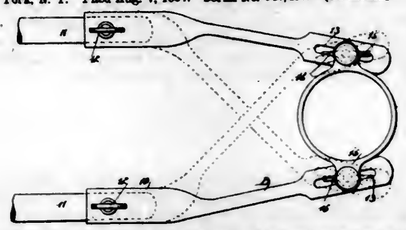


Claim.— 1. A combination-tool comprising two arms having a pivotal connection with each other, one end of one of the arms being provided with a hammer-head, and the corresponding end of the other arm being provided with a hatchet-blade, and both arms being provided on one side each with a groove, and two upwardly and inwardly extending prongs having their upper ends curved laterally and secured detachably therein, the grooves being so formed and disposed with reference to each other that the prongs may be interchanged and thus have their laterally-curved ends point inwardly or outwardly according to which groove they occupy, substantially as described.

2. A combination-tool comprising two arms having a pivotal connection with each other and provided with cooperative cutting edges on each arm, a groove on the side face of each arm, and two upwardly and inwardly extending prongs having their upper ends laterally curved and secured one in each groove, the grooves being so formed and disposed relatively to each other that the prongs may be interchanged and thus have their laterally-curved ends point inwardly or outwardly according to which grooves they occupy, substantially as described.

3. A combination-tool comprising the arms A and B hinged together and provided with the cooperative recesses H, the arm A having at one end the hatchet-blade C and the arm B having the hammer-head D on the corresponding end, each arm being provided in one side with a groove, the two prongs G located therein and having their upper ends laterally curved, the prongs being interchangeable from one groove to the other, whereby their laterally-curved upper ends may point inwardly or outwardly according to which grooves they occupy, substantially as described.

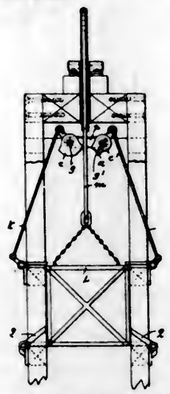
607,449. SUPPORT FOR FEED-BAGS. TIMOTHY MULGANY, New York, N. Y. Filed Aug. 7, 1897. Serial No. 647,417. (No model.)



Claim.—1. A support for feed-bags and for analogous purposes, consisting of an arm formed at one end with a socket, the opposite end of said arm being flattened in a horizontal plane and formed with a vertical longitudinal slot, a fastening device for securing the socket end of said arm to a pole or shaft, a holder for a feed-bag, pail or similar receptacle, the said holder being ring-shaped and provided with a projecting lug adapted to extend over the flattened slotted portion of the arm, and means for adjustably securing said lug to the slotted portion of the arm, for the purpose set forth.

2. A support for feed-bags and for analogous purposes, comprising arms each formed at its rear end with a socket and having its forward end flattened in a horizontal plane, the said forward end being provided with a vertical longitudinal slot, means for securing the socketed portions of the arms to the shafts of a vehicle, and a holder for a feed-bag, pail or similar receptacle, the said holder being ring-shaped and provided at opposite sides with projecting lugs adapted to extend over the flattened slotted portions of the respective arms, the said lugs being constructed to receive set-screws for adjustably securing the holder to the arms, substantially as specified.

607,450. AUTOMATIC SAFETY DEVICE FOR LIFTS, HOISTS, &c. ANTOINE MUSNICKI, Brussels, Belgium. Filed Nov. 29, 1897. Serial No. 660,061. (No model.)



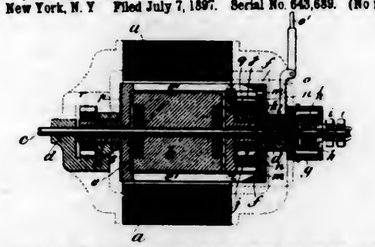
Claim.—1. In a safety device for lifts, hoists and the like, the combination with the framework, the cage and with the cable carrying said cage, of angle-levers fulcrumed to the framework at opposite sides of the cage and having their longer arms in the path of the latter, upwardly-extending rods pivotally connected with their lower portions to the shorter arms of the respective angle-levers, cutting means on each side of the cable and fulcrumed on the framework, an arm projecting from each cutting means and pivotally connected with the upper portion of its respective rod, substantially as and for the purposes described.

2. In a safety device for lifts, hoists and the like, the combination with the framework, the cage and with the cable carrying said cage, of angle-levers fulcrumed to the framework at opposite sides of the cage and having their longer arms in the path of the latter, upwardly-extending rods pivotally connected with their lower portions to the shorter arms of the respective angle-levers, cutting means on each side of the cable and fulcrumed on the framework, an arm projecting from each cutting means and pivotally connected with the upper portion of its respective rod, and spring-controlled stops fulcrumed on the framework and below the angle-levers and extending into the path of the cage, substantially as and for the purposes described.

3. In a safety device for lifts, hoists and the like, the combination with the framework, the cage and with the cable carrying said cage, of angle-levers fulcrumed on the framework at opposite sides of the cage and having their longer arms in the path of the latter, upwardly-extending rods pivotally connected with their lower portions to the shorter arms of the respective angle-levers, disks on opposite sides of the cable and fulcrumed on the framework and provided at their inner portions with series of teeth, a cutting-knife carried by one of said disks, and an arm projecting from each of said disks and pivotally connected with the upper portion of its respective rod, substantially as and for the purposes described.

4. In a safety device for lifts, hoists and the like, the combination with the framework, the cage and with the cable carrying said cage, of angle-levers fulcrumed to the framework at opposite sides of the cage and having their longer arms in the path of the latter, upwardly-extending rods pivotally connected with their lower portions to the shorter arms of the respective angle-levers, disks on opposite sides of the cable and fulcrumed on the framework and provided at their inner portions with series of teeth, a cutting-knife carried by one of said disks, an arm projecting from each of said disks and pivotally connected with the upper portion of its respective rod, and spring-controlled stops fulcrumed on the framework and below the angle-levers and extending into the path of the cage, substantially as and for the purposes described

607,451. ELECTROMAGNETIC MOTOR. ARCHIE B. MCMILLAN, New York, N. Y. Filed July 7, 1897. Serial No. 643,689. (No model.)



Claim.—1. The combination with a motor having an armature and field-magnet, of a secondary armature acted upon inductively by a rotating field of force produced by the rotating element of the motor, as set forth.

2. The combination with a motor having an armature and field-magnet, of a secondary armature with closed circuit in a rotary field of force produced by the rotating element of the motor, as set forth.

3. The combination with a motor having an armature and field-magnet, of a secondary armature, a circuit thereon, and means for varying the resistance of the armature-circuit, the said secondary armature being in a rotary field of force produced by the rotating element of the motor, as set forth.

4. The combination with a stationary primary armature, and a rotating field-magnet, of a secondary armature with circuit capable of being closed and varied in resistance, in the rotary field produced by the said field-magnet, as set forth.

5. The combination with the stationary element *a* and the rotating element *b* of a motor, of a cylinder *c* interposed between the two, the said cylinder being slotted longitudinally, and means for varying the resistance of the circuit of said cylinder.

6. The combination with the armature *a* and rotating field-magnet *b*, of the longitudinally-slotted cylinder *c* intermediate to the two, the end of the cylinder being beveled off to a thin edge, and a circuit-closer for completing the circuit of the cylinder and varying the resistance thereof by a movement in contact therewith along the beveled portion, as set forth.

7. The combination with the armature *a* and rotating field-magnet *b*, of the slotted cylinder *c*, having a beveled end, a circuit-closer movable over the beveled portion of the cylinder, and a magnet for shifting the circuit-closer to vary the resistance of the cylinder.

8. The combination with the stationary armature *a*, and the rotating field-magnet *b*, of the slotted rotatable cylinder *c*, a circuit-closer rotating with the cylinder, and a shifting magnetic coupler for operating the said circuit-closer, as set forth.

607,452. BUTTON. FRANKLIN G. MEUBERT, Waterbury, Conn., assignor to the Patent Button Company, same place. Filed Aug. 24, 1897. Serial No. 649,306. (No model.)

Claim.—1. A button containing a die, the lower edge of which is curled inwardly upon itself, thereby partially filling said die with the metal of which the latter is made, and forming a contracted chamber for the upset end of a tack or fastener, substantially as described.

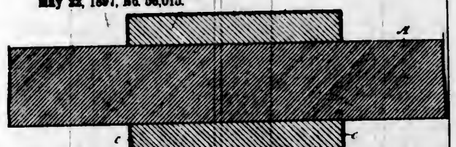
2. A button containing a die, the lower edge of which is curled inwardly upon itself and thickened, thereby partially filling said die and forming a contracted chamber for the upset end of the tack or fastener.



3. A button constructed with a depressed center, and a die located in said center, and having its lower edge curled inwardly upon itself and thickened, thereby partially filling said die and forming a contracted chamber for the upset end of a tack or fastener, substantially as described.

4. A button constructed with a die located therein having its lower edge curled and thickened, and provided on its outer side with a shoulder *a*, substantially as described.

607,453. COATED SPINDLE OR ROLLER. FREDERICK W. OLIVER, London, England, assignor, by mesne assignments, to the American Pegamoid Company, New York, N. Y. Filed Dec. 23, 1897. Serial No. 664,092. (No model.) Patented in England Feb. 27, 1896, No. 4,411; in Germany Apr. 23, 1896, No. 93,010; in France Sept. 17, 1896, No. 259,796; in Belgium Sept. 18, 1896, No. 123,575; in Hungary Sept. 21, 1896, No. 7,511; in Switzerland Oct. 2, 1896, No. 13,146; in Austria Nov. 24, 1896, No. 46/4,725; in Victoria Jan. 8, 1897, No. 13,845; in New South Wales Jan. 11, 1897, No. 7,190; in Spain Jan. 22, 1897, No. 20,049; in Cape Colony Feb. 12, 1897, No. 1,294; in Finland Feb. 18, 1897; in South African Republic Mar. 6, 1897, No. 1,341, and in Canada May 22, 1897, No. 56,015.

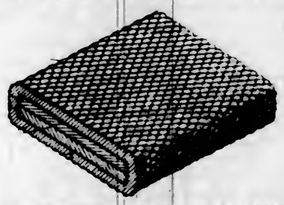


Claim.—1. As a new article of manufacture, a roller or spindle consisting of a core and a surrounding layer of fibrous material impregnated with celluloid and having a continuous unbroken superficial face of celluloid welded to the impregnating celluloid, substantially as and for the purpose set forth.

2. As a new article of manufacture, a roller or spindle consisting of a core and a surrounding layer of fibrous material, having a surrounding integral coating of celluloid, containing oil, forming a smooth continuous surface coating and impregnating or extending down into the body of the fibrous material and intimately united thereto.

3. As a new article of manufacture, a roller or spindle consisting of a core, enveloped by a strip of fibrous material whose ends are brought together to form a butt-joint, the fibrous material being impregnated by celluloid and having a continuous, unbroken superficial layer of celluloid welded to the impregnating celluloid, the compound filling, covering or concealing the butt-joint of the fabric, substantially as and for the purpose set forth.

607,454. BELTING. FREDERICK W. OLIVER, London, England, assignor, by mesne assignments, to the American Pegamoid Company, New York, N. Y. Filed Dec. 30, 1897. Serial No. 664,709. (No model.) Patented in England May 12, 1896, No. 10,104; in Germany July 9, 1896, No. 92,585; in Sweden Nov. 6, 1896, No. 7,911; in France Nov. 7, 1896, No. 261,063; in Belgium Nov. 9, 1896, No. 124,491; in Switzerland Nov. 19, 1896, No. 13,217; in Hungary Nov. 23, 1896, No. 8,267; in Norway Dec. 9, 1896, No. 5,658; in Austria Dec. 12, 1896, No. 46/4,979; in Spain Dec. 26, 1896, No. 19,921; in Italy Dec. 31, 1896, No. 84,238; in Victoria Jan. 8, 1897, No. 13,846; in New South Wales Jan. 11, 1897, No. 7,191, in India May 3, 1897, No. 437, and in Denmark Aug. 24, 1897, No. 1,229.



Claim.—1. The herein-described driving-belt composed of canvas impregnated with, and having its fibers cemented together by, celluloid.

2. The herein-described driving-belt composed of canvas impregnated with, and having its fibers cemented together by, celluloid containing castor-oil.

3. The herein-described driving-belt composed of strips of canvas impregnated with, and whose fibers are cemented together by, celluloid, and the strips of which are cemented together by celluloid, substantially as set forth.

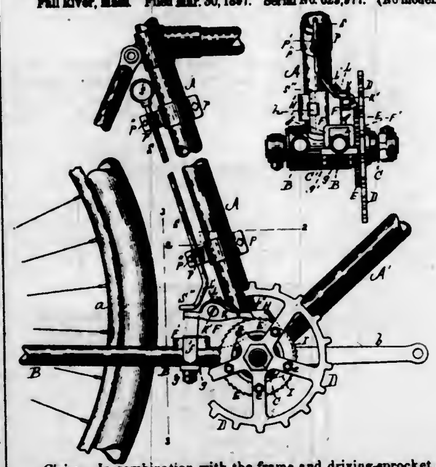
4. The herein-described driving-belt composed of strips of canvas impregnated with, and whose fibers are cemented together by, celluloid containing castor-oil, and the strips of which are cemented together by celluloid, substantially as set forth.

5. A driving-belt consisting of one or more strips of canvas impregnated with celluloid and enveloped in a wrapper of canvas impregnated with celluloid, the wrapper and core, or the component parts of the core, being all united or cemented together by celluloid, substantially as set forth.

6. A driving-belt consisting of one or more strips of canvas impregnated with celluloid containing castor-oil, and enveloped in a wrapper of canvas impregnated with celluloid containing castor-oil, the core, or the component parts of the core, and the wrapper being all united or cemented together by celluloid, substantially as set forth.

7. The herein-described driving-belt consisting of canvas having celluloid incorporated into it, and also a thin film of celluloid upon its face integrally united with the celluloid incorporated into the canvas and conforming to the inequalities of the face of the canvas without concealing or obliterating its characteristic surface.

607,455. ATTACHMENT FOR BICYCLES. GEORGE H. PACAUD, Fall River, Mass. Filed Mar. 30, 1897. Serial No. 629,977. (No model.)



Claim.—In combination with the frame and driving-sprocket of a bicycle, the ratchet-wheel E rigidly secured to the inner surface of the sprocket-wheel; the frame or clamp consisting of the head F', the stationary jaw H extending from said clamp on one side of the seat-supporting rod, and provided with a finger I curving downward and under the yoke-hanger through which the driving-shaft extends, the movable jaw H' extending from said clamp, swinging horizontally thereon and extending on the other side of the seat-supporting rod, said jaws being formed interiorly to fit said seat-supporting rod and being adapted to clamp around the same, the lip F' extending rearward from said head; mechanism for clamping said lip to the rear fork; and a pawl pivotally secured to the frame or clamp and adapted to engage the teeth on the ratchet-wheel, substantially as described.

607,456. OIL-CUP. ORANGE POUND, Bartow, Fla. Filed June 30, 1897. Serial No. 642,946. (No model.)

Claim.—1. The combination with an oil-cup having a vertical feed-tube, provided at the bottom of the cup with oil-passages, and a valve plug, extending into the tube to the passages, of a shield arranged upon the bottom of the oil-cup, a fibrous filter supported by the shield, and held away from the passages by the same, and a removable anchoring-plate or diaphragm resting upon and adapted to hold the filtering material to its place, substantially as described.

2. The combination with an oil-cup having a vertical feed-tube, provided at the bottom of the cup with oil-passages, and a valve-plug, extending into the tube to the passages, of a shield having an opening to receive the feed-tube and arranged upon the bottom of the oil-cup, said shield comprising a perforated plate, and a depend-

ing flange having openings, a fibrous filter arranged upon the shield and held away from the passages by the same, and an anchoring-plate or diaphragm having a central opening to receive the feed-tube, and provided with openings or perforations for the passage of the lubricant, substantially as described.



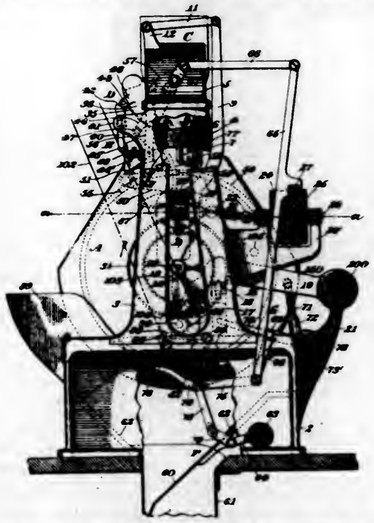
3. The combination with an oil-cup having a vertical feed tube, provided at the bottom of the cup with oil-passages, a valve-plug, extending into the tube to the passages, and a fibrous filter, of a shield supporting the fibrous filter above the bottom of the cup, and provided with perforations or openings of a size to permit the flow of oil and at the same time prevent the fibrous filter from collecting around and clogging the feed-tube, substantially as described.

607,457. STAIR COVER. PETER RASMUSSEN, Copenhagen, Denmark. Filed Dec. 21, 1897. Serial No. 662,955. (No model.) Patented in Denmark Apr. 26, 1897, No. 1,067; in England June 3, 1897, No. 13,986; in Sweden Sept. 23, 1897, No. 8,309, and in Norway Nov. 1, 1897, No. 5,764.



Claim.—The combination of the front side of the step A cut obliquely or beveled off and fitted with an angular metal edge piece or strip B the horizontal part of which is covered by linoleum, the front edge of the latter being covered by the vertical part of the strip B.

607,458. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Feb. 6, 1897. Serial No. 622,333. (No model.)



Claim.—1. The combination of weighing mechanism embodying a load-receiver having successive advancing movements to receive and discharge a load, and intermediate thereof successive overpoising and poising positions to obtain a true load to discharge; a mechanism operative to effect such results, and including a positively-acting load-reducing device operative to reduce the load preparatory to said discharge.

2. The combination of weighing mechanism embodying a load-receiver having advancing movements to receive and discharge a load; driving means for advancing said load-receiver; load-supply means for said receiver; and positively-acting load-reducing means operative to reduce the load preparatory to said discharge.

3. The combination of a load-receiver having successive advancing movements in a circular path to receive and discharge a load, and intermediate thereof successive descending and ascending movements; driving means for advancing said load-receiver; and positively-acting load-reducing means operative, intermediate the successive advancing movements of said receiver, to reduce the load preparatory to its final disposition.

4. The combination of a rotary load-receiver; load-supply means therefor; load-reducing means continuously movable during the entire load-reducing period, to permit or cause to be reduced the load in said receiver preparatory to the final discharge thereof; and means operative to impart rotary movement to said receiver, thereby to rotate the same into position to discharge the load therefrom.

5. In a rising-poise weighing-machine, the combination with a movable load-receiver, of the following instrumentalities: load-supply means; positively-acting load-reducing means operative to reduce the load preparatory to the final discharge thereof; and means operative to upset said receiver to effect the discharge of the load therefrom.

6. The combination with a movable load-receiver, of the following instrumentalities: overload-supply means; a load-reducing positively-acting conveyer operative to reduce the load preparatory to the final discharge thereof; and means operative successively to upset said receiver to effect the discharge of the load therefrom and to return said receiver into its normal position to receive a load.

7. The combination with a load-receiver having successive load-receiving, overload, true-load and load-discharging positions, of overload-supply means therefor; positively-acting load-reducing means operative to reduce the load preparatory to the final discharge thereof, thereby to permit the load-receiver to move to its true-load position; and means operative to actuate said receiver from its true-load position to its load-discharging position, thereby to permit the discharge of the load.

8. The combination with weighing mechanism including an advancing load-receiver, of load-supply means therefor; load-reducing means operative to reduce the load preparatory to the final disposition thereof; and means for advancing said receiver simultaneously with the operation of said load-reducing means, thereby to permit the discharge of the load at the proper predetermined period.

9. The combination, with framework, of a rotary load receptacle journaled therein for rotary movement; load-supply means; positively-acting load-reducing means supported by the journal of the load-receptacle and operable to reduce the load in said receptacle before the final discharge thereof; and means for rotating said receptacle to thereby effect the final discharge of the load.

10. The combination, with a rotary load-receptacle, of the following instrumentalities: overload supply means; positively-acting load-reducing means operative to force a part of such load from the receptacle thereby to bring the load to a poise preparatory to the final discharge thereof; and driving means operable to rotate said receptacle into position to effect the discharge of the load.

11. The combination with an advancing load-receiver, of the following instrumentalities: load-supply means; a load-reducing conveyer operative to permit or reduce the load in said receiver preparatory to the final discharge thereof; mechanism for continuously operating said conveyer and driving means for advancing said receiver, thereby to discharge the load.

12. The combination, with a rotary load-receptacle, of the following instrumentalities: overload-supply means; a load-reducing instrumentality comprising a conveyer, feeder, or discharger operative to permit or cause a part of the load to be conveyed, fed, or discharged from the receptacle thereby to bring the load to a poise preparatory to the final discharge thereof; and means operative to rotate said receptacle into position to discharge the load.

13. The combination, with a rotary load-receiver, of the following instrumentalities: overload-supply means; positively acting load-reducing means carried by the receiver and operative to reduce the load therein preparatory to the final discharge thereof; and driving means operative to rotate said receiver into position to effect the discharge of the load.

14. The combination, with weighing mechanism embodying a rotary load-receptacle, of load-supply means therefor; load-reducing means comprising a spiral device operative to reduce the load before the final discharge thereof; and driving means operative to rotate said receptacle into position to discharge the load.

15. The combination, with a rotary load-receptacle, of load-supply means therefor; load reducing means comprehending a plurality of members operative to discharge a continuous stream of material from said receptacle thereby to bring such load to a poise preparatory to the final discharge of the load; and driving means operable to rotate said receptacle into position to discharge the load.

16. The combination, with a rotary load-receptacle, of load-supply means therefor; load-reducing means comprising a propeller operative to propel a part of the load from said receptacle before the final discharge thereof; and means operative to rotate said receptacle into position to discharge the load therefrom.

17. The combination, with a rotary load-receptacle having an outlet or opening at one side thereof, of load-supply means; load-reducing means for positively passing through said outlet or opening a part of the load in said receptacle thereby to bring the load to a poise preparatory to the final discharge of said load; and driving means operative to rotate said receptacle, to thereby effect the final discharge of the load.

18. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of the following instrumentalities: load-supply means; load-reducing means operative simultaneously with during a part of the load-supply to bring the load to a poise preparatory to the final discharge thereof; and driving means operative to advance said receptacle into position to discharge and receive its load.

19. The combination, a movable load-receiver having successive overpoising and poising positions; of load-supply means therefor; rotary load-reducing means operative, when the receiver is in its overpoise position to reduce the load therein thereby to bring the load to a poise preparatory to the final discharge thereof; and driving means for actuating said receiver into position on its return to its poise from its overpoise position, to thereby effect the discharge of the load.

20. The combination with a load-receptacle having successive advancing movements to receive and discharge a load, of means for supplying material thereto to effect the overpoising of the same; rotary load-reducing means operative to reduce the load in said receptacle thereby to bring the load to a poise preparatory to the main discharge thereof; and driving means operative to advance said receptacle on its ascent to its poising position, to thereby effect the discharge of the load therein and after such discharge advance said receptacle into position to receive another load.

21. The combination, with a rotary load-receptacle, of the following instrumentalities: load-supply means; rotary load-reducing means operable to reduce the load thereby to bring said load to a poise preparatory to the final discharge thereof; and driving means operative to rotate said receptacle into position to effect the discharge of the load therein.

22. The combination, with a reciprocatory and rotary load-receptacle, of means for supplying material thereto to effect the overpoising of the same; rotary load-reducing means operative during a part of the reciprocatory movement of said receptacle to reduce the load therein, thereby to bring such load to a poise preparatory to the final discharge thereof; and driving mechanism operative on the ascent of said receptacle to its poising position to rotate the same into position to discharge the load therefrom.

23. The combination, with an upsettable load-receptacle having successive overpoising and poising positions; of load-supply means therefor; rotary load-reducing means operative to reduce the load on the overpoising of said receptacle, thereby to bring the load to a poise preparatory to the final discharge thereof; and means for upsetting said receptacle, on its return to its poise from its overpoise position, to thereby effect the discharge of the load.

24. In a weighing-machine, the combination of a load-receptacle having successive advancing movements to receive and discharge a load; a load-reducing instrumentality operative to bring the load to a poise preparatory to the final discharge thereof; driving means operative to advance said receptacle; and means controlled by a part of said weighing-machine, for regulating the operation of said driving means.

25. In an automatic weighing-machine, the combination of a movable load-receptacle having successive advancing movements to receive and discharge a load and intermediate thereof successive overpoising and poising positions to obtain a true load to discharge; and mechanism operative to effect such results and comprehending driving means controlled by a part of said weighing-machine and operative to advance said receptacle, load-supply means, and load-reducing means operative to reduce, at the proper period and before the final discharge thereof, the load supplied to said receptacle, thereby to bring said load to a poise preparatory to the final discharge thereof.

26. In a weighing-machine the combination of a rotary load-receptacle; load-supply means therefor; load-reducing means operative to bring the load to a poise preparatory to the final discharge thereof; driving means operable to rotate said receptacle into position to discharge the load; and means controlled by a part of the weighing-machine, for regulating the operation of said driving means.

27. In a weighing-machine, the combination of weighing mechanism operative to weigh a load, and embodying an advancing load-receiver; positively-acting load-reducing means therefor; driving means operative to advance said receiver; and means controlled at different periods by different parts of the machine for regulating the operation of said driving means.

28. In a weighing-machine, the combination of weighing mechanism operative to weigh a load, and comprising beam mechanism and an advancing load-receiver; load-reducing means therefor; driving means operative to advance said load-receiver; means controlled at one predetermined period by the beam mechanism, and at another predetermined period by the load-receiver, said receiver having a movement independent of the beam mechanism for regulating the operation of said driving means.

29. In a weighing-machine, the combination with a rotary load-receptacle, of load-supply means therefor; load-reducing means operative to bring the load to a poise preparatory to the final discharge thereof; driving means operative to rotate said receptacle into position to discharge the load; and means controlled by the weighing-machine, through the medium of the receptacle, for regulating the operation of said driving means.

30. The combination, with a reciprocatory and advancing load-receptacle: of load-supply means for said receptacle: load-reducing means operative before the final discharge of the load to reduce said load; driving means for advancing said receptacle; means for regulating the operation of said driving means and thereby the advance of said receptacle and partly controlled by the receptacle on its reciprocatory and advancing movement.

31. The combination of a load-receptacle having successive advancing movements to receive and discharge a load; load-supply means therefor; valve mechanism for regulating the supply of material thereto; load-reducing means operative to reduce the load before the final discharge thereof; driving means for advancing said receptacle; and means for regulating the operation of said driving means and thereby the advancing movement of said receptacle and partly controlled by said valve mechanism on the operation thereof.

32. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of load-supply means for said receptacle; load-reducing means operative to reduce the load in said receptacle before the final discharge thereof; driving means for successively advancing said receptacle; regulator mechanism; and means for regulating the operation of said driving means and thereby the advancing movements of said receptacle and partly controlled by said regulator mechanism on the operation thereof.

33. The combination with weighing mechanism embodying an advancing load-receiver, of stream-controlling means for regulating the supply of material to said receiver; regulator mechanism; load-reducing means operative to reduce the load preparatory to the final disposition thereof; driving means for advancing said load-receiver; and means partly controlled by said stream-controlling means and regulator mechanism for regulating the operation of said driving means, and thereby the advancing movement of said receiver.

34. The combination with weighing mechanism embodying an advancing load-receiver, of stream-controlling means for regulating the supply of material to said receiver; load-reducing means operative to reduce the load preparatory to the final disposition thereof; driving means for advancing said load-receiver; and means, partly controlled by said receiver and stream-controlling means, for regulating the operation of said driving means, and thereby the advancing movement of said load-receiver.

35. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of load-supply means for said receptacle; supply-regulating valve mechanism and regulator mechanism; load-reducing means operative to reduce the load before the final discharge of the said load; driving means for advancing said receptacle; and means controlled by said load-receptacle, regulator and valve mechanisms, for regulating the operation of said driving means and thereby the advancing movement of said load-receptacle.

36. The combination, with a reciprocatory and rotary load-receptacle, of load-supply means for said receptacle; a supply regulating valve and a regulator; driving means for rotating said receptacle; and means controlled by said load-receptacle, regulator, and valve, for regulating the operation of said driving means to permit said driving means to be thrown into action during a part of the reciprocatory movements of said receptacle, temporarily thrown out of action on the rotation thereof, again thrown into action on the operation of the regulator, and finally thrown out of action on the opening of the valve; and a load-reducing instrumentality operative to reduce the load within said receptacle before said driving means is first thrown into action and consequently before the rotation of said receptacle.

37. In a weighing-machine, the combination, with a rotatable load-receptacle having a mouth for both receiving and discharging

the load, of load-supply means for said receptacle; driving means for rotating said receptacle; means controlled by a part of the weighing-machine, for regulating the operation of said driving means and operative to stop the receptacle when the mouth thereof has been carried into position approximately diametrically opposite to its load-receiving position; and load-reducing means operative to reduce the load within said receptacle at that period thereof intermediate the load-receiving and load-discharging positions of said receptacle.

38. In a weighing-machine, the combination, with a movable load-receptacle having successive overpoising and poising positions, of load-supply means therefor; rotary load-reducing means operative, when the receptacle is in its overpoise position, to reduce the load; driving means for actuating said receptacle into position on its return to its poise from its overpoise position, to thereby effect the discharge of the load; means for regulating the operation of said driving means and controlled by a part of the weighing-machine on the operation thereof.

39. In a weighing-machine, the combination, with a load-receptacle having successive advancing movements to receive and discharge the load, of load-supply means for said receptacle; rotary load-reducing means operative to reduce the load before the final discharge thereof; driving means for advancing said receptacle; means controlled by a part of the weighing-machine, for regulating the operation of said driving means and thereby the advancing movements of said receptacle.

40. In a weighing-machine, the combination of a rotary load-receptacle, driving means for rotating the same; overload-supply means for said receptacle; means controlled by a part of said weighing-machine, for regulating the operation of said driving means and thereby the rotation of said receptacle; and rotary load-reducing means operative to reduce the load in said receptacle before the final discharge thereof.

41. The combination, with a rotary load-receptacle, of driving means therefor; overload-supply means; valve mechanism for regulating such supply; regulator mechanism; means for regulating the operation of said driving means and thereby the rotation of said receptacle and controlled by the receptacle, valve, and regulator mechanisms on the operation thereof; and a continuously-operative, during a predetermined period, load-reducing instrumentality operative to reduce the load before the final discharge thereof.

42. The combination with a load-receiver having successive advancing movements to receive and discharge a load, of load-supply means therefor positively-acting load-reducing means operative to reduce the load in said receiver preparatory to the final discharge thereof; and driving means for advancing said receiver, and including gear mechanism.

43. The combination with an upsettable load-receiver, of load-supply means therefor; a positively-acting load-reducing discharger operative to reduce the load in said receiver preparatory to the final discharge thereof; and means including gear mechanism for upsetting said receiver, thereby to discharge the load therefrom.

44. The combination with weighing mechanism embodying a load-receiver having successive advancing movements to receive and discharge a load, of load-reducing means therefor; regulator mechanism; driving means for advancing said receiver; and means for regulating the operation of said driving means, and thereby the advancing movement of said receiver and partly controlled by said receiver and regulator mechanism on the operation thereof.

45. The combination, with a rotary load-receptacle, of load-supply means therefor; load-reducing means operative on the overpoising of said receptacle to reduce the load therein; and driving mechanism operative on the poising of said receptacle from its overpoising position to rotate the same, and comprehending gear mechanism, actuating means therefor; and a universally-jointed coupling connection intermediate said gear mechanism and actuating means.

46. A weighing-machine comprising a plurality of mechanisms including weighing mechanism operative to weigh a load, and embodying an advancing load-receiver; positively acting load-reducing means therefor; driving means operative to advance said receiver; and means controlled by said mechanisms, one independently of the other, for regulating the operation of said driving means.

47. The combination, with a rotary load-receptacle, of the following instrumentalities: load-supply means; load-reducing means operative to reduce the load in said receptacle before a true load is obtained; driving means for actuating said load-reducing means; and driving means for rotating said receptacle into position, to thereby effect the discharge of the load.

48. The combination, with a rotary load-receptacle, of overload-supply means therefor; load-reducing means operative to reduce the load before a true load is obtained; actuating means therefor and embodying gear mechanism; and means for rotating said receptacle into position to effect the discharge of the load therefrom.

49. The combination, with a movable load-receptacle, of load-supply means therefor; a load-reducing device operative to discharge or feed the load from such receptacle before the final discharge thereof; actuating means therefor embodying peripherally-engaging gear mechanism; and means operative to move said receptacle into position to effect the discharge of the load therefrom.

50. The combination, with framework, of a movable load-receptacle supported thereby; load-supply means therefor; load-reducing means operative to reduce the load before the final discharge thereof; driving means for said load-reducing means, a part thereof carried by said framework and a part thereof movable with the receptacle and operative on the movement of said receptacle to engage and disengage that part thereof carried by said framework; and driving means operative to actuate said receptacle, to thereby effect the discharge of the load.

51. The combination, with framework, of a reciprocatory and rotary load-receptacle; overloading means therefor; load-reducing means carried by said receptacle and operative to reduce the load therein before the final discharge thereof; driving means carried by the framework and receptacle for actuating said load-reducing means during the descent and ascent of the receptacle; and driving means operative to rotate said receptacle into position to discharge the load therefrom.

52. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load of driving means for advancing said receptacle and embodying gear mechanism; load-supply means for said receptacle; load-reducing means operative to reduce the load within said receptacle before the final discharge thereof; and driving means therefor also embodying gear mechanism.

53. The combination, with weighing mechanism embodying a movable load-receptacle having overpoise and poise positions, of load-supply means therefor; load-reducing means operative to reduce the load within said receptacle before the final discharge thereof; driving means for said load reducing means, and embodying gear mechanism thrown into operation on the overpoising of said receptacle to thereby actuate said load-reducing means; and driving mechanism for actuating said receptacle on its return to its poise from its overpoise position, to thereby effect the discharge of the load

54. In a weighing-machine, the combination, with a rotary load-receptacle, of driving means therefor; load-supply means for said receptacle; load-reducing means; driving means for said load-reducing means; and means controlled by a part of the weighing-machine, for regulating the operation of the receptacle-driving means.

55. In a weighing-machine, the combination of a rotary load-receptacle, driving means therefor; means controlled by a part of the weighing-machine, for regulating the operation of said driving means and thereby the rotation of said receptacle; load-supply means for said receptacle; load-reducing means operative to reduce the load within said receptacle before the final disposition thereof; and driving mechanism therefor embodying gear mechanism and also controlled by a part of the weighing-machine.

56. The combination, with a rotary load-receptacle, of driving means therefor; load-supply means for said receptacle; valve mechanism for regulating the supply thereto; load-reducing means operative to reduce the load before the final discharge thereof; driving means for said load-reducing means; regulator mechanism; and means controlled by said receptacle, regulator, and valve mechanisms, for regulating the operation of the receptacle-driving means.

57. In a weighing-machine, the combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of driving means therefor embodying gear mechanism; means controlled by a part of the weighing-machine, for regulating the operation of said driving means and thereby the advancing movements of said receptacle; load-supply means for said receptacle; load-reducing means operative to reduce the load in said receptacle before the final discharge thereof; and driving means therefor also embodying gear mechanism.

58. In a weighing-machine, the combination, with a rotary load-receptacle, of driving means for rotating said receptacle; load-supply means for said receptacle; means controlled by a part of said weighing-machine for regulating the operation of said driving means and thereby the rotation of said receptacle; rotary load-reducing means operative to reduce the load within said receptacle before the final discharge thereof; and driving means therefor and embodying gear mechanism.

59. The combination, with weighing mechanism embodying a rotary and reciprocatory load-receptacle, of driving means for rotating the same and embodying gear mechanism; load-supply means for said receptacle; valve mechanism; regulator mechanism; means controlled by said receptacle; regulator and valve mechanisms for regulating the operation of said driving means and thereby the rotation of said receptacle; a continuously-operative, load-reducing instrumentality comprehending a conveyer, feeder, or discharger and operative to reduce the load within said receptacle before the final discharge thereof; and driving means therefor embodying intermeshing gears, thrown into and out of operation on the reciprocation of said receptacle.

60. The combination with a load-receiver having successive advancing movements to receive and discharge a load, of load-supply means therefor; a positively acting load-reducing device operative to reduce the load preparatory to the final discharge thereof: and reconveying means in position to receive the material acted on by the load reducing means.

61. In a weighing-machine, the combination with weighing mechanism including an advancing load-receiver, of driving means therefor; means controlled by a part of the weighing mechanism for regulating the operation of said driving means; a load-reducing device operative to reduce the load preparatory to its final disposition: and driving means for said load-reducing means and also controlled in its operation by a part of the weighing mechanism.

62. The combination with weighing mechanism operative to weigh a load and embodying an advancing load-receiver having successive advancing movements to receive and discharge a load, of a positively-acting load-reducing device operative to reduce the load preparatory to the final disposition or discharge thereof.

63. In a rising-poise weighing-machine, the combination with a load-receiver having successive advancing movements to receive and discharge a load, of overload-supply means therefor; and a positively-acting load reducing instrumentality operative, intermediate the advancing movements of said receiver, to reduce the load therein preparatory to the final discharge thereof.

64. The combination with a load-receiver having successive advancing movements alternating with successive positions of rest to thereby receive and discharge a load, of load-supply means therefor; and a positively-acting load-reducing device carried by the load-receiver and operative to reduce the load therein preparatory to the final discharge thereof.

65. The combination of weighing mechanism operative to weigh a load, and embodying a part having an advancing movement; and a positively-acting load-reducing device for reducing the load carried by said advancing part of the weighing mechanism preparatory to the final disposition or discharge of such load.

66. The combination with an upsettable load-receiver operative to effect the discharge of the load, of the following instrumentalities: load-supply means; and positively-acting load-reducing means operative to reduce the load preparatory to the final discharge thereof.

67. The combination with weighing mechanism embodying a rotary load-receiver, of load-supply means therefor; and a mechanically-operative device operative to force a part of the load from said receiver preparatory to the final disposition of said load.

68. The combination, with a rotary load-receptacle, of load-supply means therefor; and load-reducing means comprehending a propeller operative to project a part of said load from the receptacle before a true load is obtained.

69. The combination with weighing mechanism embodying a load-receiver having successive advancing movements to receive and discharge a load and also having a load-reducing period, of load-supply means therefor; and a load-reducing device continuously movable during the entire load-reducing period to reduce the load in said receiver preparatory to its final discharge.

70. The combination with an advancing load-receiver, of load-supply means therefor; and positively-acting load-reducing means operative simultaneously with or during a part of the supply of material to said receiver to reduce the load preparatory to the final disposition or discharge thereof.

71. In a rising-poise weighing-machine, the combination with a rotary load-receiver, of load-supply means therefor; and a force-feed load-reducing means operative to reduce the load in said receiver before or during the rotation of said receiver and preparatory to the final disposition or discharge of said load.

72. The combination, with a rotary load-receptacle, of overload-supply means therefor; and load-reducing means comprising a spiral conveyer operative to reduce said load before the final discharge thereof.

73. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of a load-supply instrumentality therefor; and a rotary load-reducing instrumentality operative to reduce the load in said receptacle before the final discharge thereof.

74. The combination, with weighing mechanism embodying an upsettable load-receptacle, of the following instrumentalities: load-supply means; and rotary load-reducing means operative to reduce said load before the final discharge thereof.

75. The combination, with weighing mechanism embodying a load-receptacle having successive load-receiving, overload, poising, and load-discharging positions; of a load-supply instrumentality therefor; and a rotary load-reducing instrumentality operative to reduce the load within said receptacle before the final discharge thereof.

76. The combination, with framework, of a rotary load-receptacle journaled therein and having a load-reducing opening or outlet in one side thereof intermediate the top and bottom of said receptacle; a load-supply instrumentality for said receptacle; and a rotary load-reducing instrumentality supported by the journal of said receptacle and operative to reduce the load therein before the final discharge thereof.

77. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of a load-supply instrumentality therefor; a load-reducing instrumentality operative to reduce the load therein before the final discharge thereof; and driving means for said load-reducing instrumentality.

78. The combination, with an upsettable load-receptacle, of a load-supply instrumentality; a load-reducing instrumentality operative to reduce the load therein before the final discharge thereof; and driving means for said load-reducing instrumentality.

79. The combination, with a rotary load-receptacle, of overload-supply means therefor; and load-reducing means carried within said receptacle for discharging a part of said load before the final discharge thereof and operative by means carried without said receptacle.

80. The combination, with a load-receptacle, of the following instrumentalities; load-supply means; load-reducing means operative to reduce the load before the final discharge thereof; and driving means for said load-reducing means and embodying peripherally-engaging gear mechanism.

81. In a weighing-machine the combination, with a load-receptacle, of the following instrumentalities: load-supply means; load-reducing means operative to reduce the load before the final discharge thereof; and driving mechanism therefor embodying intermeshing gears, the engagement thereof being controlled by and on the operation of a part of said weighing-machine.

82. The combination, with a load-receptacle, of the following instrumentalities: overload-supply means; load-reducing means operative to reduce the load before the final discharge thereof; and driving mechanism for said load-reducing means and embodying gear mechanism one part thereof carried by the receptacle.

83. The combination, with a movable load-receptacle, of load-supply means therefor; load-reducing means operative to reduce the load before the final discharge thereof; and driving means for said load-reducing means, and embodying peripherally-engaging gear mechanism operative on the movement of said receptacle.

84. In a weighing-machine the combination, with a load receptacle having successive advancing movements to receive and discharge a load, of the following instrumentalities: load-supply means for said receptacle; load-reducing means operative to reduce the load therein before the final discharge thereof; and driving means for said load-reducing means and embodying gear mechanism, the engagement and disengagement thereof being controlled by and on the operation of a part of said weighing-machine.

85. In a weighing-machine the combination, with a rotary load-receptacle, of the following instrumentalities: load-supply means for said receptacle; load-reducing means operative to reduce the load before the final discharge thereof; and driving means for said load-reducing means and embodying gear mechanism, the engagement and disengagement thereof being controlled by and on the operation of a part of the weighing-machine.

86. The combination, with a reciprocatory load-receptacle, of the following instrumentalities: load-supply means for said receptacle; load-reducing means operative to reduce the load before the final discharge thereof; and driving means for said load-reducing means and embodying peripherally-engaging gears, the engagement and disengagement thereof being effected on the reciprocation of said receptacle.

87. The combination, with a reciprocatory and advancing load-receptacle, of the following instrumentalities: load-supply means for said receptacle; load-reducing means operative to reduce the load before the final discharge thereof; and driving means for said load-reducing means and embodying intermeshing gears, the engagement and disengagement thereof being effected on the reciprocation of said receptacle.

88. The combination, with a movable load-receptacle, of the following instrumentalities: load-supply means for said receptacle; load-reducing means operative to reduce the load before the final discharge thereof; and driving means for said load-reducing means and embodying gear mechanism, a part thereof movable with the receptacle and a part thereof non-movable relatively thereto and the engagement and disengagement thereof controlled by said receptacle during its operation.

89. The combination, with a load-receptacle, of load-supply means therefor; a rotary load-reducing instrumentality operable to reduce the load before the final discharge thereof; and driving means therefor and embodying peripherally-engaging gear mechanism.

90. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of load-supply means therefor; a continuously-operative load-reducing instrumentality operative to reduce the load before the final discharge

thereof; and driving means therefor embodying peripherally-engaging gear mechanism.

91. The combination, with a rotary load-receptacle, of overload-supply means therefor; rotary load-reducing means operative to reduce the load before the final discharge thereof; and driving means therefor and embodying a pair of gears one carried by the receptacle and the other non-movable relatively thereto.

92. The combination, with a reciprocatory and rotary load-receptacle, of overload-supply means therefor; a rotary load-reducing conveyer, feeder, or discharger operative to reduce the load before the final discharge thereof; and driving means therefor and embodying gear mechanism comprising a pair of gears one carried by and movable with the receptacle and the other non-movable relatively to said receptacle and adapted to be engaged by the receptacle-gear on the descent of said receptacle below its poising position.

93. The combination, with framework of a rotary and reciprocatory load-receptacle supported thereby, overload-supply means therefor; load-reducing means operative to reduce the load before the final discharge thereof; and driving means for said load-reducing means and embodying a pair of gears one carried by the framework and the other by the receptacle and movable therewith and adapted to engage said framework-gear on the descent of the receptacle.

94. In a weighing-machine the combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of a load-supply instrumentality therefor; a load reducing instrumentality operative to reduce the load in said receptacle before the final discharge thereof; and driving means for said load-reducing instrumentality, and controlled by a part of said machine.

95. The combination, with weighing mechanism embodying a rotary load-receptacle, of load-supply means therefor; and weighing-mechanism-controlled rotary load-reducing means operative to reduce the load in said receptacle before the final discharge thereof.

96. The combination, with a rotary load-receptacle, of overload-supply means therefor; a continuously-operative load-reducing means operative to reduce the load before the final discharge thereof; driving means for said load-reducing means and controlled in its operation by the load-receptacle.

97. The combination with framework, of hanger mechanism secured thereto for movement; counterbalanced-beam mechanism for supporting said hanger mechanism; a load-receiver carried by the hanger mechanism; overload supply means for said receiver; and positively-acting load-reducing means operative to reduce the load in said receiver preparatory to the final disposition thereof.

98. The combination with framework, of hanger mechanism movably secured thereto; counterbalanced beam mechanism supporting said hanger mechanism; a load-receiver supported by said hanger mechanism for successive advancing movements to receive and discharge a load; load-supply means therefor; and positively-acting load-reducing means operative to reduce the load preparatory to the final discharge thereof.

99. The combination with an advancing load-receiver, of load-supply means therefor; stream controlling means operative to regulate such supply; and positively-acting load-reducing means operative to reduce the load in said receiver preparatory to the final disposition thereof.

100. The combination with a load-receiver having successive advancing movements to receive and discharge a load, of load-supply means therefor; stream-controlling means for regulating such supply, and directly controlled in its operation by said receiver; and a force-feed load-reducing device operative to reduce the load in said receiver preparatory to the final discharge thereof.

101. The combination, with weighing mechanism embodying a rotary load-receptacle, of load-supply means therefor; receptacle-controlled valve mechanism for regulating such supply; and rotary load-reducing means operative to reduce the load in said receptacle before the main discharge thereof.

102. The combination, with a rotary load-receptacle, of load-supply means therefor; an oscillatory valve operative to regulate such supply; rotary load-reducing means operative to reduce the load in said receptacle before the main discharge thereof; and driving means for rotating said receptacle into position to discharge the load therefrom.

103. The combination with a load-receiver having successive advancing movements to receive and discharge a load, of load supply means therefor; stream-controlling means for regulating such supply; reciprocally-effective locking means for said stream-controlling means and load-receiver, and operative to lock the receiver against movement when the stream-controlling means is in operation, and to lock the stream-controlling means against movement during the advancing movement of said receiver; and load-reducing means operative to reduce the load in said receiver preparatory to the final discharge thereof

104. The combination with weighing mechanism embodying a rotary load-receiver, of load-supply means therefor; receiver-controlled valve mechanism for regulating such supply; reciprocally-effective locking means for said valve and receiver; and load-reducing means operative to reduce the load in said receiver preparatory to the final disposition thereof.

105. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of driving means for effecting the advance thereof; load-supply means for said receptacle; a valve operable to regulate such supply; locking means for said valve and receptacle and comprehending an oscillatory and a rotary locker reciprocally effective; and rotary load-reducing means operative to reduce the load in said receptacle before the main discharge thereof.

106. In a weighing-machine, the combination with a load-receiver, of load-supply means therefor; a positively-acting load-reducing device operative to reduce the load in said receiver preparatory to the final disposition of said load; and regulator mechanism operative by the discharging load to control the operation of a part of the weighing-machine.

107. In a weighing-machine, the combination with a load-receiver having successive rotary advancing movements to receive and discharge a load, of load-supply means therefor; load-reducing means operative to reduce the load therein preparatory to the final discharge thereof; and regulator mechanism operative by the discharging load to control the operation of a part of the weighing-machine.

108. The combination with weighing mechanism embodying an upsettable load-receiver, of load-supply means therefor; load-reducing means operative to reduce the load therein preparatory to the final disposition or discharge thereof; and regulator mechanism operative by the discharging load to control the operation of a part of the weighing-machine.

109. In a weighing-machine, the combination with a load receiver, of load-supply means therefor; stream-controlling means for regulating such supply; positively-acting load-reducing means operative to reduce the load in said receiver preparatory to the final disposition thereof; and regulator mechanism operative by the discharging load to control the operation of a part of the weighing-machine.

110. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of overload-supply means for said receptacle; load-reducing means operative to reduce the load therein before the final discharge thereof; driving means for advancing said receptacle; and means for regulating the operation of said receptacle driving means, and comprehending shipper mechanism.

111. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of load-supply means therefor; valve mechanism for regulating such supply; load-reducing means operative to reduce the load before the final discharge thereof; regulator mechanism; driving means for advancing said receptacle; and means for controlling the operation of said driving means, and comprehending shipper mechanism operative at one period by the valve mechanism, at another period by the regulator mechanism, and at other periods by the receptacle.

112. The combination, with a movable load-receptacle having an overpoise and a poise position during the weighing operation, of load-supply means therefor; valve mechanism for regulating such supply; reciprocally-effective valve-receptacle-locking means operative to lock the receptacle against movement other than to its overpoise position when the valve is open and to lock the valve closed during the movement of said receptacle other than to its poise position; load-reducing means operative when the receptacle is in its overpoise position to reduce the load therein; and driving means for actuating said receptacle into position on its return to its poise position from its overpoise position, to thereby effect the discharge of the load therefrom.

113. The combination, with a movable load-receptacle having an overpoising and poising position, of load-supply means therefor; valve mechanism for regulating such supply thereto; load-reducing means operative when the receptacle is in its overpoising position to reduce the load therein; regulator mechanism; driving means for actuating said receptacle into position on its return to its poise from its overpoise position, to thereby effect the discharge of the load; locking means operative to prevent the actuation of said receptacle by the driving means when the valve is open, and to prevent the opening of said valve during the actuation of said receptacle by said driving means; and means for regulating the operation of said driving means, and controlled through the medium of the receptacle, regulator, and valve mechanisms.

114. The combination with weighing mechanism including a load-receiver having successive advancing movements to receive and discharge a load; driving means for advancing said receiver; and means embodying automatically-operative shipper mechanism for regulating the operation of said driving means, thereby to alternately advance and stop said load-receiver a plurality of times during each rotation thereof.

115. The combination with a rotatable load-receiver having a mouth for both receiving and discharging a load, of driving means for rotating said receiver; means comprehending automatic shipper mechanism for regulating the operation of said driving means, and operative to stop the receiver when the mouth thereof has been carried into position approximately diametrically opposite to its load-receiving position, then operative to permit the advance of said receiver to its load receiving or starting position, and then operative to stop said receiver in such load-receiving position.

116. The combination of a movable load-receiver; driving means for moving said receiver; and means comprehending shipper mechanism for regulating the operation of said driving means, and partly controlled directly by said receiver.

117. The combination, with a reciprocatory and rotary load-receptacle, of driving means for rotating said receptacle; and means comprehending shipper mechanism for regulating the operation of said driving means and thereby the rotation of said receptacle, and partly controlled by the receptacle on its reciprocatory and rotary movements.

118. The combination with an axially-supported bucket having successive advancing movements on its axis to receive and discharge a load, of stream-controlling means for cutting off the supply of material to said bucket; driving means for advancing said bucket; and means for regulating the operation of said driving means and thereby the advancing movement of said receptacle, and partly controlled by said stream-controlling means on the operation thereof.

119. The combination with a load-receiver having successive advancing movements to receive and discharge a load, of regulator mechanism operative by the discharging load; driving means for advancing said receiver; and means for regulating the operation of said driving means and thereby the advancing movement of said receiver, and partly controlled by said regulator mechanism on the operation thereof.

120. The combination with a rotary load-receiver, of stream-controlling means for regulating the supply thereto; regulator mechanism; driving means for rotating said load receiver; and means for regulating the operation of said driving means and thereby the rotation of said receiver, and partly controlled by said stream-controlling means and regulator mechanism on the operation thereof.

121. The combination with a rotary load-receiver, of stream-controlling means for regulating the supply thereto; driving means for rotating said receiver; and means for regulating the operation of said driving means and thereby the rotation of said receiver, and partly controlled by the stream-controlling means and load-receiver on the operation thereof.

122. The combination with a rotary load-receiver, of regulator mechanism; driving means for rotating said receiver; and means for regulating the operation of said driving means and thereby the rotation of said receiver, and partly controlled by said receiver and regulator mechanism on the operation thereof.

123. The combination with a rotary load-receiver, of load-supply means; stream-controlling mechanism; regulator mechanism; driving means for rotating said receiver; and means controlled through the medium of said receiver, regulator and stream-controlling mechanisms for regulating the operation of said driving means.

124. The combination, with a reciprocatory load-receptacle having successive advancing movements to receive and discharge a load, of supply regulating valve mechanism and regulator mechanism; driving means for said receptacle; and means controlled through the medium of said receptacle, regulator, and valve mechanisms for regulating the operation of said driving means, whereby said driving means is thrown into action during a part of the reciprocatory movement of said receptacle, temporarily thrown out of action during a part of the advance thereof, again thrown into action on the operation of the regulator mechanism, and finally thrown out of action on the opening of the valve mechanism.

125. The combination, with a reciprocatory and rotary load-receptacle, of supply-regulating valve mechanism operable by the load-receptacle during a part of its reciprocatory and rotary movements; regulator mechanism; driving means for rotating said receptacle; and means controlled through the medium of said receptacle, regulator, and valve mechanisms for regulating the operation of said driving means and thereby the rotation of said receptacle, whereby said driving means is thrown into action during a part of the reciprocatory movement of said receptacle, temporarily thrown out of action during a part of the rotation thereof, again thrown into action on the operation of the regulator mechanism, and finally thrown out of action on the opening of the valve mechanism, through the medium of the load-receptacle.

126. The combination with stream-controlled means, of an advancing load-receiver; a shiftable member operative to engage said stream-controlling means; a device operative on the advancing movement of said receiver, first to directly engage said stream-controlling means and partly throw the same into operation and into position to be engaged by said shiftable member, and then to engage said shiftable member and thereby completely throw said stream-controlling means into operation.

127. The combination, with supply-regulating valve mechanism, of a load-receptacle having successive advancing movements to receive and discharge a load; and means for locking the valve open and comprising a shiftable member adapted to engage the valve, and a locker carried by the receptacle and adapted to engage said shiftable member to thereby lock the same against movement.

128. The combination, with supply-regulating valve mechanism, of a completely rotatable load-receptacle; and means for locking the valve open and comprising a cam-faced shiftable member operable to engage the valve, and a locker carried by the receptacle and adapted to engage said shiftable member to lock the same against movement.

129. The combination of supply-regulating valve mechanism; and a load-receptacle having successive advancing movements to receive and discharge a load and adapted positively to lock the valve open intermediate its advancing movements and permit the same to close at the proper predetermined period and also positively to open said valve during a part of its advancing movement.

130. The combination, with supply-regulating valve mechanism, of a completely rotatable load-receptacle adapted positively to lock the valve open and permit the same to close at the proper predetermined period and also positively to open said valve on its rotary movement; and driving mechanism operative to rotate said receptacle.

131. The combination with framework, of stream-controlling means; a load-receiver having successive advancing movements to receive and discharge a load; a shiftable member carried by said framework and operative to engage said stream-controlling means; and a device carried by said receiver and operative on the advancing movement thereof, first to engage said stream-controlling means and partly open the same and shift it into position to be engaged by said shiftable member, and then to engage said shiftable member, and thereby completely open said stream-controlling means.

132. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load and with a supply-regulating valve therefor, of means operative to open and lock said valve open and comprising a shiftable member operative to engage said valve; and an actuator-locker operative on the advance of said receptacle first to engage the valve and partly open the same, and then to engage said shiftable member and completely open and lock said valve open.

133. The combination, with a supply-regulating valve, of a rotary load-receptacle; means operative to open and to lock said valve open and comprising a shiftable member in position to engage the valve on the opening thereof and an actuator-locker, the latter operative to first engage the valve on the rotation of said receptacle to open the same and then to engage said shiftable member to thereby lock the same against movement and the valve open; and driving means for rotating said load-receptacle.

134. The combination, with framework, of a supply-regulating valve; a rotary load-receptacle; and means operative to open and to lock said valve open, and comprising a pair of arms carried by the valve; a shiftable cam-faced member carried by the framework and in position to engage one of said valve-arms; and a cam-faced actuator-locker carried by the receptacle and adapted, during a part of the rotation thereof, to engage one of said arms and open the valve, and then to engage said shiftable member and thereby lock the same against movement and the valve open.

135. The combination, with a reciprocatory load-receptacle and having successive advancing movements to receive and discharge a load and with a supply-regulating valve, of means operative to open and lock said valve open, and comprising a shiftable member operative to engage said valve at a predetermined period and an actuator-locker operative to engage said valve during a part of the advance of said receptacle to thereby open the same, and then to engage said shiftable member and lock the valve open, and also operative to release said shiftable member during a part of the reciprocatory movement of the receptacle and thereby permit the valve to close.

136. The combination, with framework of a load-receptacle having successive advancing movements to receive and discharge a load; supply-regulating valve mechanism therefor; and locking means partly carried by said framework and receptacle, and operative to lock the valve closed during the major part of the advancing movement of said receptacle.

137. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of supply-regulating valve mechanism therefor; and reciprocally-effective locking means for said valve and receptacle.

138. The combination, with a supply-regulating valve mechanism and with a rotary load-receptacle, of driving means for said receptacle, and reciprocally-effective valve-receptacle-locking means operative to lock the receptacle against rotary movement when the valve is open, and to lock the valve closed during the major portion of the rotary movement of said receptacle.

139. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of a supply-regulating valve therefor; and a valve-receptacle-locking means operable to lock the valve closed during the major part of the advance of said receptacle and to lock the receptacle against advance movement when the valve is open, and comprehending an oscillatory and a rotary locker reciprocally effective.

140. The combination, with a rotatable load-receptacle, of a supply-regulating valve therefor; and valve-receptacle-locking means operative to lock the receptacle against rotation when the valve is open, and to lock the valve closed during the major part of the rotation of said receptacle and comprising rotary means carried by the receptacle, and a member operatively connected with the valve and coacting with said rotary means.

141. The combination, with framework carrying a completely rotatable load-receptacle, of a supply-regulating valve therefor; and valve-receptacle-locking means operative to lock the receptacle against rotation when the valve is open, and to lock the valve closed during the major part of the rotation of said receptacle, and comprising an oscillatory locker carried by the framework and operatively connected with the valve for movement therewith, and a coacting locker carried by the load-receptacle.

142. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of an oscillatory valve; valve-receptacle-locking means comprising an oscillatory locker operatively connected with said oscillatory valve for movement therewith, and a coacting locker comprehending a flange or rim carried by said receptacle for advance therewith.

143. The combination, with a rotary load-receptacle, of a supply-regulating valve therefor; locking means operative to lock the valve closed during the major part of the rotary movement of said receptacle, and to lock the receptacle against such movement while the valve is open, and comprising a shiftable member and a rotary member, the latter comprehending a circular flange or rim carried by said receptacle.

144. The combination, with a rotary load receptacle, of a supply-regulating valve therefor; locking means operative to lock the valve closed during the major part of the rotary movement of said receptacle, and to lock said receptacle against such rotary movement when the valve is open, and comprising an oscillatory locker operatively connected with said valve for movement therewith; and a rotary locker comprehending a circular flange or rim carried by and movable with said receptacle and having an opening or cut-away part whereby the oscillatory locker will abut against the end of said flange and thereby lock the receptacle against rotation, and will have its end engaged by the inner face of the flange on the rotation of said receptacle to thereby lock the valve closed.

145. The combination, with framework, of a rotary load-receptacle supported thereby; an oscillatory supply-regulating valve therefor; and locking means operable to lock the receptacle against rotation when the valve is open, and to lock the valve closed during a major part of the rotation of said receptacle, and comprising a flanged oscillatory locker pivotally secured to said framework, a connector pivotally secured to said locker and valve whereby said locker is movable with the valve, and a rotary locker carried at one side of the receptacle and comprising a circular rim or flange having a relatively large diameter and an opening or cut away portion and adapted to coact with said oscillatory locker.

146. The combination with a load-receiver having successive advancing movements to receive and discharge a load; stream-controlling means therefor; means for locking said stream-controlling means open; and independent means for locking said stream controlling means closed, a part of each of said locking means being carried by said load-receiver.

147. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of a supply-regulating valve therefor; means operative with the receptacle, during a part of its advance movement, to open said valve; and locking means operative to lock the valve closed during another part of the advancing movement of said receptacle, and to lock the receptacle against such advancing movement when the valve is open.

148. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of a supply-regulating valve therefor; means operative to open said valve during one part of the advancing movement of said receptacle; means operative to lock said valve open; and means operative to lock the receptacle against advancing movement while the valve is open and to lock said valve closed during another part of the advancing movement of said receptacle.

149. The combination, with a reciprocatory and rotary load-receptacle, of a supply-regulating valve therefor; means operative to open said valve during a part of the rotation of said receptacle; means operative to lock said valve open and to also unlock said valve during a part of the reciprocatory movement of said receptacle and thereby permit the same to close; and means operative to lock the valve closed during the major part of the rotation of said receptacle and to lock the receptacle against rotary movement while said valve is open.

150. The combination, with a reciprocatory and rotary load-receptacle, of a supply-regulating valve therefor; means operative to open and to lock said valve open, and comprising a shiftable member operative to engage said valve, and an actuator-locker operative during a part of the rotation of said receptacle, first, to engage said valve and partly open the same, and then to engage said shiftable member and completely open and lock said valve open, and also operative to unlock said valve during a part of the reciprocatory movement of said receptacle to thereby permit the valve to close; and valve-receptacle-locking means operative, first, to lock the receptacle against rotary movement while the valve is open, and then to lock the valve closed during the major part of the rotation of said receptacle, and comprising an oscillatory locker operatively connected with the valve; and a rotary locker comprehending a circular flange or rim carried by said receptacle.

151. The combination with framework, of hanger mechanism pivotally secured to said framework; beam mechanism supporting said hanger mechanism; an advancing load-receiver supported by said hanger mechanism; and driving means for advancing said load-receiver and embodying gear mechanism carried by said receiver and hanger mechanism.

152. In a weighing-machine, the combination of a rotatable load-receiver; driving means therefor; and means comprehending counterweighted shipper mechanism for regulating the operation of said driving means and controlled by a part of the weighing-machine.

153. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load, of supply-regulating valve mechanism and regulator mechanism; driving means for advancing said receptacle, and embodying a fast and loose pulley and a shiftable belt; and means for controlling the operation of said driving means and comprising shipper mechanism operatively connected with the valve and regulator mechanisms, for operation thereby and by the receptacle.

154. The combination, with a rotary load-receptacle, of supply-regulating valve mechanism therefor; regulator mechanism; driving means for rotating said receptacle into position to discharge a load, and embodying a fast and loose pulley and shiftable belt; means for controlling the operation of said driving means, and comprising counterweighted shipper mechanism operatively connected with the valve and regulator mechanisms and having means in position to be engaged by the receptacle, whereby said controlling means is operative on the operation of the receptacle, regulator, and valve mechanisms.

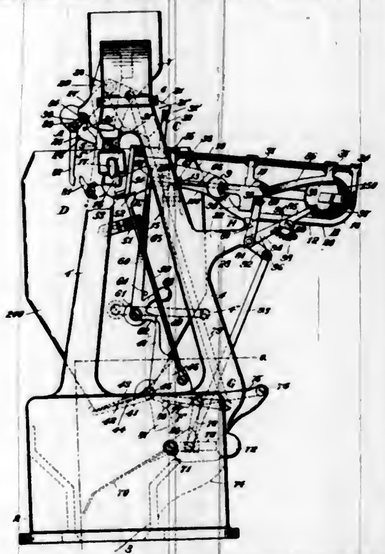
155. The combination, with a load-receptacle having successive advancing movements to receive and discharge a load and intermediate thereof successive overpoise and poise positions, of a supply-regulating valve therefor; a regulator; driving means for advancing said receptacle, and embodying a fast and a loose pulley and a shiftable belt; and means for controlling the operation of said driving means and comprehending shipper mechanism operatively connected with the valve and regulator, for operation by the same and by the receptacle, and operative to throw said driving mechanism into action as the receptacle moves to its poise position, to throw the same temporarily out of action on the advancing movement of said receptacle to its discharging position, to throw the same again into action on the operation of the regulator on its return to its normal position, and finally to throw the same out of action on the opening of the valve.

156. The combination, with a rotary and reciprocatory load-receptacle, of receptacle-controlled supply-regulating valve mechanism therefor; regulator mechanism; driving means for rotating said receptacle into position to discharge its load, and embodying a fast and a loose pulley and a shiftable belt; and means for controlling the operation of said driving means and comprehending counterweighted shipper mechanism operatively connected with the valve and regulator mechanisms, for operation by the same and by the receptacle, and operative to throw said driving mechanism into action on the ascent of said receptacle from an overpoise position, to throw the same out of action on the rotation of said receptacle to discharge the load, to throw the same into action on the operation of the regulator mechanism on the return thereof to its normal position, and finally to throw the same out of action on the opening of the valve effected by the receptacle as it is rotated into position to receive its load.

157. The combination, with a rotary and reciprocatory load-receptacle, of beam mechanism therefor; driving means for rotating said receptacle into position to discharge the load; and means for controlling said driving means, and comprehending shipper mechanism having a counterweighted actuator operatively connected with the beam mechanism, and a stop member; means for locking said counterweighted actuator against movement on the ascent of the counterweighted end thereof with the beam mechanism; means for unlocking the same on the ascent of the receptacle, to thereby permit the descent of the counterweighted end of said actuator and thereby the operation of the shipper mechanism, to throw the driving means into position to rotate said receptacle; and means carried by the receptacle, for engaging said stop member to thereby throw said driving means out of action on the rotation of said receptacle.

158. The combination, with weighing mechanism comprehending a rotary load-receptacle and beam mechanism supporting said receptacle, of supply regulating valve mechanism; regulator mechanism; driving means for rotating said receptacle into position to discharge a load; and means for controlling said driving means, and comprehending shipper mechanism operatively connected with the valve and regulator mechanisms, and having a counterweighted actuator operatively connected with the beam mechanism, and a stop member; means for locking said actuator against movement; means carried by the receptacle for unlocking the same, to thereby permit the actuatioe of the shipper mechanism, through the medium of said weighted actuator, to throw the driving means into operation to thereby rotate the receptacle; means also carried by the receptacle, for engaging said stop member, and thereby again actuating the shipper mechanism to throw the driving means out of action and stop the rotation of the receptacle, said driving means being again thrown into and out of action by the regulator and valve mechanisms, respectively.

607,459. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 24, 1897. Serial No. 642,047. (No model.)



Claim.—1. The combination with a load-receiver provided with a shiftable member operative to discharge a load; locking means for locking said shiftable member against movement; beam mechanism supporting said receiver and embodying a rolling counterbalancing means; and a reciprocatory rod non-connected with said locking means and mounted on said beam mechanism and in position intermediate said traveling counterbalancing means and locking means to engage said locking means on the engagement of said traveling counterbalancing means with said rod, thereby to unlock said load-discharge member and permit the discharge of a load.

2. In a weighing machine, the combination with a load-receiver and with means operative to discharge a load, of a pivotally-supported beam carrying said receiver; traveling counterbalancing means carried by said beam at the outer end thereof at one period, the complete traveling movement of said counterbalancing means taking place intermediate the pivotal point of said beam and the outer end thereof, whereby said counterbalancing means is always in position and effective, at that side of the beam-pivot opposite to that at which the load-receiver is carried, to return said load-receiver to its normal position; and means carried independently of the load-receiver and operative on the traveling movement of said traveling counterbalancing means to effect the operation of said load-discharging means and thereby permit the discharge of a load.

3. The combination with a load-receiver, of means operative to discharge a load; locking means for locking said load-discharging means in position; a pivotally-supported beam carrying said load-receiver; traveling counterbalancing means carried by said beam at the outer end thereof at one period, the complete traveling movement of said counterbalancing of means taking place intermediate the pivotal point of said beam and the outer end thereof, whereby the counterbalancing means is always in position and effective at that side of the beam-pivot opposite to that at which the load-receiver is carried, thereby to return said load-receiver to its normal position; and an actuator mounted on said beam and operative on the movement of said counterbalancing means to unlock the load-discharging means and permit the discharge of a load.

4. The combination with a load-receiver provided with a shiftable member operative to discharge a load, of locking means for maintaining said shiftable member shut; beam mechanism supporting said receiver and embodying a beam having a load-receiver-supporting arm, and a spherically-shaped traveling weight carried by said beam at the outer end thereof at one period, the complete traveling movement of said weight taking place intermediate the pivotal point of said beam and the outer end thereof, whereby the weight is always in position and effective, at that side of the beam-pivot opposite to that at which the load-receiver is carried, to return said receiver to its normal position; and a reciprocatory rod out of contact with said locking means at one period and mounted on said beam-arm in parallelism therewith, said rod having one end thereof in position to be engaged by said weight, and its opposite end in position to engage said locking means on the traveling movement of said weight in one direction, thereby to unlock the shiftable member and permit the same to open and discharge a load.

5. In a weighing-machine, the combination with a load-receiver, of means operative to discharge a load; locking means for locking said load-discharge means in position against movement; a beam supporting said receiver; a traveling weight carried by said beam; an actuator supported in position free of the load-receiver and operative to unlock the load-discharge means on the traveling movement of said weight; and means for locking said weight against traveling movement at one period, thereby to prevent the operation of said actuator.

6. In a weighing-machine, the combination with a load-receiver, of means operative to discharge a load; locking means for locking said load-discharge means in position against movement; a beam supporting said receiver; a rolling weight carried by said beam; an actuator carried on the beam and operative to engage said locking means on the traveling movement of the weight, thereby to unlock said load-discharge means; and means for locking said rolling weight against traveling movement at one period, thereby to prevent the operation of said actuator.

7. In a weighing-machine, the combination of weighing mechanism embodying a beam; stream-controlling means for said weighing mechanism; and means carried by said beam and operative in the same plane of movement as, and in a plane transversely to, the plane of movement of said beam for locking said valve mechanism shut.

8. The combination with a load-receiver; a beam supporting said receiver; a regulator; and means intermediate said regulator and beam, and operative to lock the regulator against movement during a predetermined period, and operative with the regulator, on the shifting of the beam, to lock said beam against movement during another predetermined period.

9. The combination with weighing mechanism embodying beam mechanism having a traveling weight; a regulator; and means coacting with said beam mechanism to lock said regulator against movement during a predetermined period, and operative with the regulator, on the shifting of said beam mechanism, to lock said beam mechanism against movement, and thereby hold the weight in its inoperative position, during another predetermined period.

10. The combination with stream-controlling means, of weighing mechanism embodying a traveling weight; and means operative by said weight to lock said stream-controlling means shut.

11. The combination with stream-controlling means, of weighing mechanism embodying traveling counterbalancing means, said stream-controlling means and counterbalancing means being reciprocally effective to lock the counterbalancing means against traveling movement, and the stream-controlling means in one position.

12. In a weighing-machine, the combination with stream-controlling means, of weighing mechanism embodying beam mechanism provided with traveling counterbalancing means, said stream-controlling means and beam mechanism being reciprocally effective to lock the counterbalancing means against traveling movement, and the stream-controlling means shut.

13. The combination with stream-controlling means, of weighing mechanism; and locking means for said stream-controlling means, and comprising a plurality of members, one of said members being disposed in position to have movements in intersecting planes, whereby

at one predetermined period it is operative in one plane to engage the other member, and thereby lock the stream-controlling means, and is operative at another period in all of its planes of movement to disengage said member and thereby unlock said stream-controlling means.

14. The combination with stream-controlling means, of weighing mechanism; and locking means for locking said stream-controlling means shut, and comprising a pair of movable members, one operative in a plane intersecting the plane of movement of the other member.

15. The combination with stream-controlling means, of weighing mechanism embodying a traveling weight; and locking means operative to lock the stream-controlling means shut when the weight is in its ineffective position, and to lock the weight in its counterbalancing position when the stream-controller is open.

16. The combination of a stream-controller, of weighing mechanism embodying a shiftable weight; and locking means operative to lock the stream-controller shut when the weight is in its ineffective position, and to lock the weight in its effective position when the stream-controller is open, and comprising a pair of members operative in intersecting planes.

17. The combination with a stream-controller, of weighing mechanism embodying a shiftable weight; and locking means operative to lock the stream-controller shut when the weight is in its ineffective position, and to lock the weight in its effective position when the stream-controller is open, and comprising a pair of members, both of said members having movements in the same plane, and one also having a movement in a plane intersecting the plane of movement of its companion member.

18. The combination with stream-controlling means, of weighing mechanism embodying beam mechanism having a traveling weight; locking means operative to lock the stream-controlling means shut and to assist in maintaining the weight in its ineffective position, and having a part thereof controlled by said weight on the traveling movement thereof.

19. The combination with stream-controlling means, of weighing mechanism embodying a traveling weight; locking means for said stream-controlling means, and an actuator operative by said weight on its traveling movement, thereby to lock the stream-controlling means shut.

20. In a weighing-machine, the combination with a supply-valve and with a stop movable therewith, of weighing mechanism embodying beam mechanism provided with a shiftable weight; a stop movable with said beam mechanism; and an actuator operative by said weight to shift said beam-stop into position to engage the valve-stop, thereby to lock the valve shut.

21. The combination with a supply-valve and with a stop movable therewith, of weighing mechanism embodying beam mechanism provided with a traveling weight; a stop carried by said beam mechanism and having a movement in a plane intersecting the plane of movement of said valve-stop; and an actuator carried by said beam mechanism and operative by the weight on the traveling movement thereof to actuate said beam-stop into position to lock the valve shut.

22. The combination with a supply-valve having a stop operative therewith, of weighing mechanism embodying beam mechanism provided with a rolling weight; a stop movable with said beam mechanism in the same plane of movement as the plane of movement of said valve-stop, and also operative independently of its movement with the beam mechanism, in a plane intersecting the plane of movement of said valve-stop; and a stop-actuator carried by said beam mechanism, and operative by the weight, on the traveling movement thereof, to shift said beam-stop in its intersecting plane to engage the valve-stop and lock the valve shut.

23. The combination with a supply-valve, of weighing mechanism embodying beam mechanism provided with a traveling weight; locking means for said valve and weight, and comprising a pair of stops, one operative with the valve and the other with the beam mechanism; and an actuator carried by said beam mechanism and operative by the weight to shift said beam-stop into position to lock the valve-stop when the valve is shut, said valve-stop coacting with the beam-stop when the valve is open to lock the weight in its effective position.

24. The combination with stream-controlling means, of weighing mechanism embodying beam mechanism having a traveling weight; an actuator-locker carried by the beam mechanism; and coacting means intermediate said beam mechanism and stream-controlling means, and operative by the traveling weight, through the medium of said actuator-lock, to lock the valve shut, and also operative at another period when the valve is open to lock the beam-weight in its effective position.

25. In a weighing-machine, the combination with a stream-controller, of weighing mechanism embodying beam mechanism including a traveling weight; a load-discharge-operated regulator; primary means, connecting said regulator and stream controller, for maintaining said stream-controller open; locking means coacting with said regulator and beam mechanism for locking said stream-controller in its open position during a predetermined period, thereby to prevent tampering therewith; and supplemental means operative to maintain said stream-controller open during a partial descent of the load-receiver after said controller is unlocked by said locking means and released by said primary means.

26. The combination with a load-receiver, of a beam supporting said receiver; a rolling weight carried by said beam; and automatically-operative locking means adapted to hold said rolling weight against movement during each loading period of the load-receiver.

27. The combination with a load-receiver, of a beam supporting said receiver; a spherically-shaped rolling load-weight movable on the upper plane of said beam and supported adjacent to the outer end thereof at one period; and automatically-operative locking means for locking said weight adjacent to the outer end of said beam on the return of the weight after each weighing operation.

28. The combination with stream controlling means, of weighing mechanism embodying beam mechanism provided with a traveling weight; a locker operative to hold said weight in its effective position; and coacting means intermediate said stream-controlling means and beam mechanism, and adapted to maintain said locker in its locking position.

29. The combination with stream-controlling means having a shiftable stop, of weighing mechanism embodying beam mechanism provided with a traveling weight; a locker carried by said beam mechanism; and a shiftable stop also carried by said beam mechanism and coacting with the valve-stop to lock the weight in its effective position through the medium of the locker.

30. The combination with a supply-valve having a shiftable stop, of weighing mechanism embodying beam mechanism provided with a traveling weight; a cam-faced actuator-locker carried by said beam mechanism, and a shiftable stop also carried by said beam mechanism and coacting with the valve-stop, whereby, on the traveling movement of the weight, said beam-stop is shiftable to lock, through the medium of the actuator-locker, the valve shut, and whereby, on the opening of the valve, the valve-stop is shiftable to lock, through the medium of said actuator-locker, the weight in its normal effective position.

31. The combination with a supply-valve having a shiftable stop, of weighing mechanism embodying beam mechanism provided with a traveling weight; a shiftable stop carried by said beam mechanism and operative to engage the valve-stop; and an actuator-locker carried by said beam mechanism and provided with a plurality of cam-faced members, one operative through the coaction of the beam and valve stops to lock the weight in its effective position when the valve is open, and also operative to shift said beam-stop on the traveling of the weight, thereby to lock the valve shut, and the other cam-faced member operative when the weight is in its ineffective position to limit the movement thereof.

32. The combination with a supply-valve provided with a shiftable stop, of weighing mechanism embodying beam mechanism provided with a traveling weight; a rock-shaft carried by said beam mechanism; a stop carried by said rock-shaft and adapted to coact with the valve-stop; and a cam-faced actuator-locker carried by said rock-shaft, and operative on the traveling of the weight to shift said beam-stop into position to lock the valve closed, and also operative, on the coaction of the valve and beam stops, when the valve is open, to lock said weight in its effective position.

33. The combination of a supply-valve provided with a shiftable stop; a load-receiver; beam mechanism supporting said receiver and embodying a rolling weight; a rock-shaft carried by said beam mechanism; a stop carried by said rock-shaft and coacting with the valve-stop; and an actuator-locker also carried by said rock-shaft and adapted to lock, through the coaction of said stops, the weight in its effective position when the valve is open, and adapted to actuate said stops into position relatively to each other to lock the valve shut on the traveling movement of the weight.

34. The combination with a supply-valve having a stop movable in the same plane of movement therewith, of weighing mechanism embodying beam mechanism provided with a traveling weight; a rock-shaft carried by said beam mechanism; a stop carried by said rock-shaft and movable with the beam mechanism in the same plane of movement as the valve-stop, and also having a movement with the rock-shaft in a plane intersecting the plane of movement of said valve-stop; and a cam-faced actuator-locker carried by said rock-shaft and operative, when the valve is open, through the coaction of the valve and beam stops, to lock the beam-weight in its effective position, and also operative on the traveling movement of the weight, when the valve is closed, to shift said beam stop into position to lock such valve shut.

35. In a weighing-machine, the combination of framework; weighing mechanism carried thereby and embodying beam mechanism; a load-discharge-operated regulator; and means carried by said framework and connected with the regulator and coacting with the beam mechanism to lock said regulator against movement during a predetermined period.

36. The combination of a cam-faced bracket; a stream-controller and a shiftable member carried by said stream-controller, one part thereof adapted to engage said cam-faced bracket thereby to receive the strain of said stream-controller when in its open position.

37. The combination with framework, of a supply-valve carried thereby; a cam-faced bracket carried by said framework; a toggle member carried by said valve and having a part thereof in engagement with said cam-faced member, whereby, when said valve is in its open position, the strain thereof is carried by said bracket.

38. The combination of a load-receiver provided with a shiftable member operative to discharge a load; a beam supporting said receiver; and locking means adapted to lock said shiftable member in one position, and having a part thereof carried by said beam.

39. In a weighing-machine, the combination of weighing mechanism embodying beam mechanism; stream-controlling means for controlling the supply of material to said weighing mechanism; regulator mechanism; means connected with the regulator mechanism and stream-controlling means and coacting with a part of the weighing mechanism for maintaining said stream-controlling means in operation; and means connected with the regulator mechanism and coacting with the beam mechanism for maintaining said regulator mechanism against movement at one predetermined period, and thereby prevent movement of the valve mechanism.

40. The combination with a load-receiver provided with a shiftable closer, of beam mechanism supporting said receiver and embodying a traveling weight; and locking means for locking said closer shut, and comprehending a pair of locking members, one carried by the beam mechanism and the other by the closer.

41. The combination of a load-receiver provided with a shiftable closer; beam mechanism supporting said receiver and embodying a rolling weight; and locking means for locking said closer shut, and comprehending a pair of locking members, one comprising a rod pivotally connected to the closer, and the other a depending locker carried by the beam mechanism and coacting to lock the closer shut.

42. The combination of a load-receiver provided with a closer shiftable to discharge a load; beam mechanism supporting said receiver and embodying a traveling weight; means for locking said closer shut, and comprehending a member carried by the closer, and an oscillatory locking member carried by the beam mechanism, and operative to unlock said closer on the traveling movement of the weight.

43. The combination of a stream-controller; a load-receiver provided with a shiftable member operative to discharge a load; beam mechanism embodying a traveling weight; locking means for said weight and stream-controller, and operative when the stream-controller is open to lock the weight in its effective position, and operative on the traveling movemeet of the weight to lock the stream-controller shut; and locking means for the shiftable member and operative on the traveling movement of the weight to unlock said member.

44. The combination of a supply-valve; a member operative therewith; a load receiver having a shiftable closer; a member operative with said closer; beam mechanism supporting said receiver and embodying a traveling weight; and a pair of lockers carried by said beam mechanism, one coacting with the valve member and the other with the closer member, and operative on the traveling movement of the weight to lock the valve shut and unlock the closer, and then unlock the valve and lock the closer shut.

45. The combination of a supply-valve provided with a shiftable stop; a load-receiver provided with a shiftable closer also having a stop operative therewith; beam mechanism comprehending a traveling weight; a pair of stops carried by said beam mechanism and coacting with the valve-stop and closer-stop; an actuator carried by said beam mechanism, and operative on the traveling movement of the weight to shift said beam-stops into position to lock the valve shut and unlock the closer; and supplemental locking means for said closer, and operative by the traveling weight to unlock the same.

46. The combination of valve mechanism; a load-receiver provided with a shiftable closer; beam mechanism supporting said receiver and embodying a traveling weight; main locking means for said closer; supplemental locking means therefor; and locking means for the valve, and all operative on the traveling movement of the weight to lock the valve shut and unlock the closer, and thereby permit the same to open.

47. The combination of stream-controlling means; a load-receiver having stream-discharge means; beam mechanism supporting said receiver and embodying traveling counterbalancing means; locking means operative to lock the stream-controlling means shut when the counterbalancing means is in its ineffective position, and operative to lock the counterbalancing means in its effective position when the stream-controlling means is open; main locking means operative to lock the stream-discharge means shut, and also supplemental locking means also operative to lock said stream-discharge means shut, said locking mechanisms all being operative on the traveling movement of the counterbalancing means.

48. The combination of stream-controlling means; a load-receiver having stream-discharge means; beam mechanism supporting said receiver and embodying traveling counterbalancing means; locking mechanism operative to lock the stream-controlling means shut when the counterbalancing means is in its ineffective position, and operative to lock the counterbalancing means in its effective position when the stream-controlling means is open; main locking mechanism operative to lock the stream-discharge means shut, and also operative to assist in locking the stream-controlling means closed; and supplemental locking mechanism also operative to lock said stream-discharge means shut, said locking mechanisms all being operative on the traveling movement of the counterbalancing means.

49. The combination of stream-controlling means; a load-receiver having stream-discharge means; beam mechanism supporting said receiver and embodying traveling counterbalancing means; locking mechanism operative to lock the stream-controlling means shut when the counterbalancing means is in its ineffective position and operative to lock the counterbalancing means in its effective position when the stream-controlling means is open; main locking mechanism operative to lock the stream-discharge means shut; and also operative to assist in locking said stream controlling means closed; and supplemental locking mechanism also operative to lock the stream-discharge means shut, said locking mechanisms being operative, first, to lock the counterbalancing means, and then, on the traveling movement of said counterbalancing means, to lock the stream-controlling means shut and simultaneously unlock the stream-discharge main locking means, and then operative to unlock the stream-discharge supplemental locking means, and thereby effect the discharge of the load.

50. The combination of stream-controlling means; a load-receiver having stream-discharging means; beam mechanism supporting said load-receiver and operative to lock the stream-controlling means shut, and then unlock the stream-discharging means and permit the discharge of the load.

51. The combination of stream-controlling means; a load-receiver having stream-discharging means; beam mechanism supporting said load-receiver and embodying traveling counterbalancing means; and means operative by said traveling counterbalancing means first to lock the stream-controller shut, and then to unlock the stream-discharging means.

52. The combination of stream-controlling means; a load-receiver; beam mechanism supporting said receiver; and means supported independently of said receiver and in non-engagement with the beam mechanism, but having an engagement, during a predetermined period, with a part of said receiver, and operative through the medium of said receiver, when maintained in its load-receiving position by the beam mechanism, to maintain the stream-controlling means in operation and permit a supply of material to said receiver.

53. The combination of stream-controlling means; a load-receiver having a shiftable member operative to discharge a load; beam mechanism supporting said receiver; and means supported free of said load-receiver and in non-engagement with said beam mechanism, but coacting with a part of said shiftable member, during a predetermined period, to maintain the stream-controlling means open during the period in which said load-receiver is maintained in its load-receiving position by said beam mechanism.

54. The combination of a supply-valve; a load-receiver having a shiftable closer; beam mechanism supporting said receiver and embodying a traveling weight; and means supported free of said load-receiver and in non-engagement with said beam mechanism, but coacting with a part of said closer, when said beam mechanism is in its normal position, to maintain the valve open.

55. The combination of a supply-valve; a load-receiver; beam mechanism supporting said receiver; means connected with said valve and supported in position free of said receiver and in non-engagement with said beam mechanism, but having a bearing engagement with a part of said load-receiver at one period, whereby it is operative by the beam mechanism, through the medium of the receiver on the ascent thereof, to open said valve.

56. The combination of stream-controlling means; a load-receiver; beam mechanism supporting said receiver; regulator mechanism; and means connecting said regulator mechanism with said stream-controlling means, and coacting with the load-receiver to maintain said stream-controlling means open.

57. The combination of a stream-controller; a load-receiver; beam mechanism supporting said receiver; regulator mechanism; and means connecting said regulator mechanism with said stream-controller, and coacting with the load-receiver, whereby, by means of said load-receiver, the stream-controller will be opened and then maintained open.

58. The combination of a supply-valve; a load-receiver; beam mechanism embodying a traveling weight supporting said load-receiver; regulator mechanism; and connecting means intermediate said regulator mechanism and supply-valve, and coacting with the

load-receiver, whereby, by means of the beam mechanism, through the medium of the load-receiver, the valve will be opened and maintained open.

59. The combination of a supply-valve; a load-receiver provided with a projection; beam mechanism supporting said load-receiver; a regulator; and connecting means between said regulator and supply-valve, and embodying a member coacting with said projection, whereby the beam mechanism, through the medium of the receiver, is adapted to open and maintain the valve open.

60. The combination of a stream-controller; a load-receiver provided with a projection; beam mechanism supporting said load-receiver; and means supported in position and operatively connected to said stream-controller, and embodying a member coacting with said projection, whereby the beam mechanism, through the medium of the receiver, is adapted to open and maintain the valve open.

61. The combination with framework, of a supply-valve; a load-receiver provided with a projection constituting a fulcrum; beam mechanism supporting said receiver; regulator mechaniam; an actuator connected with said regulator mechanism and framework, and adapted to engage the receiver projection; and a connector intermediate said supply-valve and actuator, whereby, on the return of the beam mechanism to its normal position, and the consequent ascent of the load-receiver, said supply-valve will be opened.

62. The combination with framework, of a supply-valve; a load-receiver having a projection constituting a fulcrum; a regulator having a counterbalancing-weight of greater gravity than the valve; beam mechanism supporting said receiver; an actuator connected with said regulator and framework; and a connector secured to said valve and to said actuator, whereby, on the ascent of the receiver, due to the return of the beam mechanism to its effective position, the supply-valve is opened and maintained open.

63. The combination with framework, of a supply-valve; a load-receiver provided with a projection constituting a fulcrum; beam mechanism supporting said receiver and embodying a traveling weight; regulator mechanism; an actuator connected with said regulator and framework, and in position to engage said receiver projection; and a connector secured to said actuator and valve, whereby, on the ascent of the load-receiver, through the medium of the traveling weight and the consequent engagement of the projection with said actuator, the supply-valve is opened and maintained open.

64. The combination of a supply-valve; a load-receiver; connecting mechanism in operative engagement with said receiver and supply-valve, and operative by the beam mechanism, through the medium of the receiver on the ascent thereof, to open and lock said valve open; and locking means operative by the beam mechanism to maintain said valve shut.

65. The combination of stream-controlling means; a load-receiver; beam mechanism embodying a traveling weight; connecting mechanism coacting with said load-receiver and with said stream-controlling means, and operative by the beam mechanism, on the ascent of the load-receiver, to open and lock said valve open; and locking means operative by the traveling weight, on the descent of the load receiver, to maintain said valve shut.

66. The combination of a supply-valve; a load-receiver; beam mechanism supporting said receiver; means supported in position independently of said receiver and in non-engagement with the beam mechanism, but coacting, during a predetermined period, with a part of said load-receiver, whereby it is operative, through the medium of said receiver, when maintained in one, or its load-receiving, position, by the beam mechanism, to maintain the valve open; and supplemental means also operative to maintain the valve open at another position of said receiver.

67. The combination of stream-controlling means; a load-receiver having a projection; beam mechanism supporting said receiver; means supported in position and coacting with said receiver projection and operative to maintain the valve open in one position of said load-receiver and until the projection is free of said coacting means; and supplemental means carried by said receiver and operative to engage and maintain said stream-controlling means open after the release of the first maintaining means and at another position of said receiver.

68. The combination of a supply-valve; a load-receiver having a projection constituting a fulcrum; beam mechanism supporting said load-receiver; regulator mechanism; means secured to said regulator mechanism and coacting with said load-receiver to open and maintain said valve open; and supplemental means operative to maintain the valve open during a partial descent of the receiver and after the disengagement of the projection with said coacting means.

69. The combination of a supply-valve having a depending arm; a load-receiver having a projection; beam mechanism supporting said receiver; an actuator in position to engage said projection, and connected with said valve, whereby, on the ascent of said receiver, said valve is opened, and during the major part of the loading period of said receiver is maintained open: and means carried by said receiver and adapted to engage said depending arm when the receiver descends into position to disengage the said projection and actuator, and thereby maintain the valve open during the final part of the loading period of the receiver.

70. The combination with framework, of a supply-valve having a depending arm; a load-receiver having a projection; beam mechanism supporting said load-receiver; a regulator; an actuator connected with said framework and regulator, and adapted to engage said projection; a connector secured to said actuator and valve, whereby, on the ascent of said receiver the valve is opened and maintained open; and a by-pass carried by said receiver and adapted to engage said depending arm, thereby to maintain the valve open after the disengagement of said projection and actuator.

71. The combination with framework, of a supply-valve having a depending arm; a load-receiver having a projection; beam mechanism supporting said load-receiver; a regulator; an actuator connected with said framework and regulator, and adapted to engage said projection; a connector secured to said actuator and valve, whereby, on the ascent of said receiver, the valve is opened and maintained open; a by-pass carried by said receiver, and adapted to engage said depending arm, thereby to maintain the valve open after the disengagement of said projection and actuator; and locking means operative by the beam mechanism to lock said valve closed.

72. The combination with framework, of a supply-valve having a depending arm; a load-receiver having a projection; beam mechanism supporting said receiver and embodying a traveling weight; a regulator; an actuator connected with said framework and regulator, and adapted to engage said projection; a connector secured to said actuator and valve, whereby, on the ascent of said receiver, the valve is opened and maintained open; a by-pass carried by said receiver, and adapted to engage said depending valve-arm, thereby to maintain the valve open after the disengagement of said projection and actuator; and locking means operative by the traveling weight to lock said valve closed.

73. The combination of a load-receiver provided with a shiftable closer; beam mechanism supporting said load receiver; main locking means for said closer, and operative by the beam mechanism to unlock said closer; supplemental locking means for said closer likewise operative by the beam mechanism to unlock the same; stream-controlling means; and connecting means coacting with the load-receiver and with said stream-controlling means, and also adapted to assist in locking said closer shut.

74. The combination of a load-receiver provided with a shiftable closer; beam mechanism supporting said load-receiver; main locking means for said closer and operative by the beam mechanism to unlock said closer; supplemental locking means for said closer likewise operative by the beam mechanism to unlock the same; stream-controlling means; and connecting means coacting with the load-receiver and with said stream-controlling means, and adapted to assist in locking said closer shut, and also adapted to open and maintain the valve open on the ascent of said load-receiver.

75. The combination of a load-receiver having a closer and a projection; beam mechanism supporting said load-receiver; regulator mechanism; valve mechanism; main locking means for said closer and controlled by the beam mechanism; supplemental locking means for said closer and also controlled by the beam mechanism; connecting means intermediate the regulator and valve mechanism, and coacting with the load-receiver to open and maintain the valve open, and coacting with the closer to assist in locking said closer shut.

76. The combination of a load-receiver having a closer and a projection; beam mechanism supporting said load-receiver and embodying a traveling weight; regulator mechanism; valve mechanism; main locking means for said closer and controlled by the beam mechanism; supplemental locking means for said closer, and also controlled by the beam mechanism and operative on the traveling movement of the weight to effect the discharge of a load; and means intermediate the regulator and valve mechanism, and coacting with the load-receiver to open and maintain the valve open, and coacting with the closer to assist in locking said closer shut.

77. In a weighing-machine, the combination with beam mechanism embodying a beam and a weight; a load-receiver carried by said beam mechanism; and means operative to lock said beam mechanism in its ineffective position and embodying a locking member supported in permanent juxtaposition to said beam and operative at a predetermined period directly to engage said beam and thereby lock said beam mechanism against movement after the descent of said load-receiver with its load.

78. In a weighing-machine, the combination of weighing mechanism; stream-controlling means for regulating the supply of material thereto; main means for maintaining said stream-controlling means in operation; and means for locking said stream-controlling means in its operative position during a predetermined period, thereby to prevent tampering therewith.

79. In a weighing-machine, the combination of weighing mechanism embodying beam mechanism; a load-discharge-operated regulator; a valve for controlling the supply of material to the weighing mechanism; main means for maintaining said valve open; and means coacting with the regulator and beam mechanism for locking said valve open during a predetermined period, and thereby prevent tampering therewith.

80. The combination of weighing mechanism embodying beam mechanism provided with traveling counterbalancing means; and means for locking said beam mechanism in its ineffective position and said weight in its inefficient position.

81. In a weighing machine, the combination of weighing mechanism embodying beam mechanism having a stop, a regulator; and means connected with said regulator and embodying a member coacting with said stop to lock the regulator against movement.

82. The combination of pivotally-supported beam mechanism having a traveling weight movable toward the beam axis; regulator mechanism; and means operative by the regulator mechanism to lock said weight in its ineffective position.

83. In a machine of the class specified, the combination of beam mechanism embodying a rolling weight; regulator mechanism; a locker operatively connected with said regulator mechanism and adapted to engage said beam mechanism, and thereby lock said beam mechanism and maintain said weight in their ineffective positions.

84. In a weighing-machine, the combination of weighing mechanism embodying beam mechanism; valve mechanism for controlling the supply of material to said weighing mechanism; regulator mechanism; means connected with the regulator mechanism and with the valve mechanism, and coacting with a part of the weighing mechanism for maintaining said valve mechanism open; and means connected with the regulator mechanism, and coacting with the beam mechanism for maintaining said regulator mechanism against movement at one predetermined period, and thereby prevent the valve mechanism from shutting, said means being operative after the shifting of the beam mechanism to lock said beam mechanism in its ineffective position on the operation of said regulator mechanism.

85. The combination with framework, of beam mechanism supported thereby, and comprehending a weight-supporting instrumentality having a stop; a traveling weight carried by said instrumentality; regulator mechanism; a locker secured to said framework and adapted to engage said stop, and operatively connected with the regulator mechanism, thereby to lock the weight in its ineffective position and maintain said weight-supporting instrumentality in its raised position.

86. The combination of a load-receiver having a shiftable member operative to discharge a load; beam mechanism supporting said receiver; stream-controlling means; means operated by the discharging stream on the discharge of a load; and mechanism operatively connected with said discharge-stream operated means, and one part thereof operative to lock the shiftable member open, another part operative to lock the beam mechanism in its ineffective position, and another part operative to open and maintain the stream-controlling means open.

87. The combination of a load-receiver provided with a closer; beam mechanism supporting said receiver; valve mechanism; regulator mechanism; and mechanism connected with said regulator mechanism, one part thereof operative to lock the closer open, another part thereof operative to lock the beam mechanism in its ineffective position, and another part thereof operative by means of said beam mechanism to open and maintain the valve mechanism open; said mechanism being timed and operative during the return movement of the regulator mechanism successively to unlock the closer from its open position, then to unlock the beam mechanism, and then to open and maintain said valve mechanism open.

88. The combination of a load-receiver provided with a shiftable member operative to discharge a load; beam mechanism supporting said receiver; main locking means for said shiftable member, and operative by the beam mechanism to unlock the same; and supplemental locking means for said shiftable member, likewise operative by the beam mechanism completely to unlock said shiftable member.

89. The combination of a load-receiver provided with a shiftable member operative to discharge a load; beam mechanism supporting said receiver and embodying traveling counterbalancing means; main locking means for said shiftable member, and operative by the beam mechanism to unlock the same; and supplemental locking means for said shiftable member and operative by the traveling counterbalancing means completely to unlock said shiftable member.

90. The combination of a load-receiver provided with a shiftable member operative to discharge a load; beam mechanism supporting said receiver, and embodying traveling counterbalancing means; main locking means for said shiftable member and operative by said beam mechanism, on the traveling of the counterbalancing means into its inefficient position, to unlock the same; and supplemental locking means for said shiftable member, and directly operative by the traveling counterbalancing means, thereby completely to unlock the shiftable member.

91. The combination of a load-receiver provided with a shiftable closer; beam mechanism supporting said receiver and embodying a traveling weight; main locking means for said closer; and supplemental locking means for said closer and operative by the traveling weight, thereby completely to unlock said closer.

92. The combination of a load-receiver provided with a shiftable member operative to discharge a load; beam mechanism supporting said receiver and embodying a traveling weight; and means operative by the weight when in its normal position to maintain the shiftable member locked shut, and operative by said weight on its movement to its ineffective position to unlock said shiftable member.

93. The combination of beam mechanism having a traveling weight; and a shiftable locker for said weight comprising a pair of connected members having a spring intermediate thereof.

94. The combination of beam mechanism having a traveling weight; and a pair of pivotally-connected members operative during a predetermined period to maintain said weight in its effective position.

95. In a machine of the class specified, the combination of a beam mechanism having a traveling weight; and means operative during a predetermined period to maintain said weight in its effective position, said means comprising a pair of shiftable members, one shiftable relatively to the other, and both shiftable as a whole at one predetermined period during the operation of the machine.

96. The combination, with weighing mechanism embodying beam mechanism provided with a traveling weight, of regulator mechanism; means operative thereby in one position of said regulator mechanism to lock the beam mechanism, and thereby the weight, in its inefficient position; and means operative by said regulator mechanism when in its normal position to lock said weight in its efficient position.

97. The combination with weighing mechanism embodying beam mechanism having a traveling weight, of main locking means for locking said weight in its normal effective position; and supplemental means for also maintaining said weight in said position.

98. The combination of weighing mechanism embodying beam mechanism provided with traveling counterbalancing means; a stream-controller; means operative by said stream-controller for locking said counterbalancing means in its normal effective position; regulator mechanism; and means operatively connected therewith and adapted also to lock said counterbalancing means in its normal effective position.

99. The combination with beam mechanism embodying a traveling weight, of means for locking said weight in its effective position; and means for locking said beam mechanism in its ineffective position.

100. The combination with beam mechanism embodying a traveling weight, of main locking means for locking said weight in its effective position; supplemental locking means for also locking said weight in its effective position; and means for locking said beam mechanism in its ineffective position.

101. The combination with stream-controlling means, of weighing mechanism embodying beam mechanism having a traveling weight; regulator mechanism; means operative by the regulator mechanism for locking said beam mechanism, and thereby the weight, in its ineffective position; means operative by said regulator mechanism for locking said weight in its effective position; and means operative by the stream-controller for also locking said weight in its effective position.

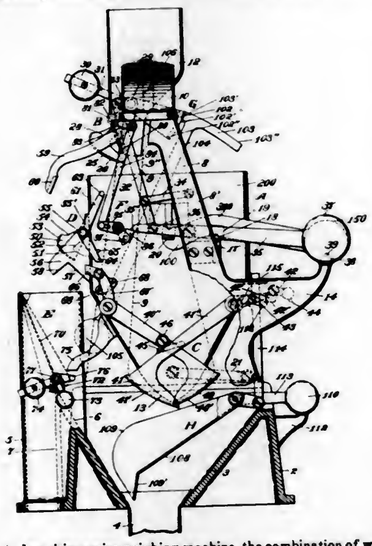
102. The combination with stream-controlling means, of weighing mechanism embodying beam mechanism provided with a traveling weight; regulator mechanism; means operative by the regulator mechanism for locking said beam mechanism and thereby the weight in its ineffective position; means operative by the regulator mechanism for locking said weight in its effective position; and means operative by the stream-controller for also locking said weight in its effective position, and operative in turn by said weight for locking said stream-controller shut.

607,460. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 14, 1897. Serial No. 644,563. (No model.)

Claim.—1. The combination of weighing mechanism embodying a load-receiver; load-supply means therefor; a load-reducing instrumentality operative to effect the reduction of the load before the final discharge thereof; and load-discharging means supported independently of, and adapted to control the closing of said load-reducing instrumentality at one predetermined period.

2. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; overload-supply means therefor; a load-reducing valve operative to effect the reduction of the load before the final discharge thereof; and load-discharging means supported independently of, and operative to control the closing of said load-reducing valve at one predetermined period.

3. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver: overload-supply means therefor; a load-reducing valve operative to effect the reduction of the load before the final discharge thereof; and load-discharging means supported independently of, and adapted to lock open said load-reducing valve to permit the reduction of the load.



4. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; overload-supply means therefor; a load-reducing valve operative to effect the reduction of the load before the final discharge thereof; and load-discharging means supported independently of, and adapted to lock open said load-reducing valve to permit the reduction of the load, and operative also to unlock said reducing-valve from its open-lock position and thereby permit the same to close.

5. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; overload-supply means therefor; an oscillatory load-reducing valve operative to effect the reduction of the load before the final discharge thereof; and load-discharging means supported independently of, and adapted when in its normal position to lock said load-reducing valve open, thereby to permit the reduction of the load, and adapted, on its operation to discharge the load, to unlock said load-reducing valve from its open-lock position, and thereby permit the same to close.

6. In a rising-poise weighing-machine, the combination of a load-receiver; load-supply means therefor: a load-reducing instrumentality operative to effect the reduction of a load before the final discharge thereof; load-discharging means adapted to control the operation of said load-reducing instrumentality at one predetermined period; and means, operative independently of the weight of the material in the receiver, for actuating said load-discharging means on the ascent of said load-receiver, thereby to effect the discharge of the load.

7. The combination of weighing mechanism embodying a load-receiver; load-supply means therefor; stream-controlling means for regulating the supply of material to said receiver; load-discharging means; and a load-reducing instrumentality operative to effect the reduction of the load before the final discharge thereof, and controlled in its operation at one predetermined period by the stream-controlling means, and at another predetermined period by the load-discharging means.

8. In a rising-poise weighing-machine, the combination of a load-receiver; overload-supply means for said receiver; stream-controlling means for regulating the supply of material to said receiver; load-discharging means; and a load-reducing valve opened at one predetermined period by the stream-controlling means, and locked open and unlocked from its open position at another predetermined period by the load-discharging means.

9. The combination of a load-receiver provided with a shiftable closer operative to discharge a load; overload-supply means for said receiver; valve mechanism for regulating the supply of material to said receiver; a load-reducing valve operative to effect the reduction of the overload; means operative by said valve mechanism to open said load-reducing valve; and means controlled by the closer and operative to lock said load-reducing valve open and then to unlock the same from its open-lock position, and thereby permit it to close.

10. The combination of a load-receiver having a shiftable closer operative to discharge a load; overload-supply means for said receiver; a load-reducing valve; a valve operative to regulate the supply of material to said receiver; means operative by said valve and coacting with the load-reducing valve to open the same on the shutting of the supply-valve; and means connected with the closer and operative to lock said load-reducing valve open when the closer is shut and to unlock said load-reducing valve from its open-lock position, and thereby permit the same to shut on the opening of said closer.

11. In a rising-poise weighing-machine, the combination of a load-receiver; load-supply means therefor; stream-controlling means for regulating the supply of material to said receiver; load-discharging means; means for actuating said load-discharging means on the ascent of said receiver thereby to effect the discharge of the load; and a load-reducing instrumentality operative to effect the reduction of the load before the final discharge thereof, and controlled in its operation at one predetermined period by the stream-controlling means, and at another predetermined period by the load-discharging means.

12. The combination of a load-receiver; load-supply means therefor; a load-reducing instrumentality carried by said receiver and having an arm; stream-controlling means operative to regulate the supply of material to said receiver; a depending arm having one end directly connected to said stream-controlling means and its opposite end swinging free and adapted to coact with the load-reducing-instrumentality arm, whereby on the shutting of the stream-controlling means, the load-reducing instrumentality is actuated, thereby to effect the reduction of the load.

13. The combination of a load-receiver: overload-supply means therefor; a load-reducing valve carried by said receiver and having an arm; stream-controlling means operative to regulate the supply of material to said receiver, and also having an arm extending into position to coact with the reducing-valve arm, whereby, on the shutting of the stream-controlling means, the reducing-valve is opened; load-discharging-means; and means operatively connected with said load-discharging means and adapted to control the closing of said reducing-valve.

14. The combination of a load-receiver having a shiftable closer operative to discharge a load; load-supply means for said receiver; a load-reducing valve having a pair of arms; a valve operative to regulate the supply of material to said receiver and also having an arm coacting with one of the load-reducing-valve arms, whereby, on the shutting of said supply-valve, the load-reducing valve is opened; and means connected with the closer and operative to engage the other arm of said load-reducing valve, thereby to lock said valve open when the closer is shut, and to unlock said load-reducing valve from its open-lock position and thereby permit the same to shut on the opening of said closer.

15. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver having closer mechanism operative to discharge a load on the ascent of said load-receiver: overload-supply means for said receiver; a load-reducing valve carried by said receiver and having a pair of arms; a valve operative to regulate the supply of material to said receiver, and also having an arm coacting with one of the load reducing-valve arms, whereby, on the shutting of said supply-valve, the load-reducing valve is opened; and means connected with the closer mechanism and operative to engage the other arm of said load-reducing valve, thereby to lock said valve open when the closer mechanism is shut, and to unlock said load reducing valve from its open-lock position, and thereby permit the same to shut on the opening of said closer mechanism.

16. The combination of weighing mechanism; overload-supply means therefor; a load-reducing instrumentality operative to effect the reduction of the overload, thereby to permit a true load to be obtained, and also operative to reduce such true load; and an instrumentality operative to direct the material constituting the overload discharge in one direction and to direct the material constituting the true-load discharge in another direction.

17. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; overload-supply means therefor; and a load-reducing instrumentality operative to effect the reduction of the overload, thereby to permit a true load to be obtained, and then operative to reduce such true load, and thereby effect the operation of a part of said machine.

18. The combination of weighing mechanism; overload-supply means therefor; load-discharging means; and means operative to effect the reduction of said overload, thereby to bring the true load to a poise, and also operative to effect the reduction of the true load, thereby to secure the operation of the load-discharging means and permit the discharge of the main load.

19. The combination of weighing mechanism embodying a load-receiver; overload-supply means for said receiver; load-discharging means; and a load-reducing instrumentality controlled at one predetermined period by said load-discharging means and operative to effect the reduction of the overload, and also to effect the reduction of the true load, whereby the operation of said load-discharging means is effected.

20. The combination of weighing mechanism embodying a load-receiver; overload-supply means for said receiver: stream-controlling means operative to regulate the supply of material to said receiver; load-discharging means; and a load-reducing instrumentality, controlled at one predetermined period by said stream-controlling means and operative to effect the reduction of the overload, and also operative to effect the reduction of the true load, whereby the operation of said load discharging means is effected.

21. The combination of weighing mechanism embodying a load-receiver; overload-supply means for said receiver; stream-controlling means operative to regulate the supply of material to said receiver; load-discharging means; and a load-reducing instrumentality controlled in its operation at one predetermined period by said stream-controlling means, and at another predetermined period by said load-discharging means, and operative to effect the reduction of the overload, thereby to bring the resultant true load to a poise, and also operative to effect the reduction of the true load, thereby to secure the operation of said load-discharging means and thereby effect the discharge of the main load.

22. The combination of a load-receiver having a closer; beam mechanism supporting said receiver; overload-supply means for said receiver; stream-controlling means for regulating the supply of material to said receiver; a load reducing instrumentality operative to effect the reduction of the overload and the consequent poising of the true load, and then operative to effect the reduction of such true load, thereby to secure the overbalancing of the resultant load by the beam mechanism, whereby the closer is opened to effect the final discharge of said load.

23. The combination of weighing mechanism; overload-supply means therefor; load-discharging means; means operative to effect the reduction of said overload, thereby to bring the true load to a poise, and also operative to effect the reduction of the true load, thereby to secure the operation of the load-discharging means and the consequent discharge of the main load; and means operative to direct that portion of the material constituting the overload in one direction, and to direct that portion of the material constituting a part of the true load in another direction.

24. The combination of weighing mechanism embodying a load-receiver; overload-supply means for said receiver; stream-controlling means operative to regulate the supply of material to said receiver; load-discharging means; a load-reducing instrumentality controlled in its operation at one predetermined period by said stream-controlling means, and at another predetermined period by said load-discharging means, and operative to effect the reduction of the overload, thereby to bring the resultant true load to a poise, and also operative to effect the reduction of the true load, thereby to secure the operation of the load-discharging means, and thereby effect the discharge of the load; and stream-deflecting means operative in one position to direct that portion of the material forming the overload in one direction, and operative in another position to direct that portion of the material forming a part of the true load into position to rejoin and again form a part of the main load on the discharge thereof.

25. The combination of a load-receiver provided with a closer shiftable to discharge a load; a closer-opening device in position to engage said closer at one period; and weighted beam mechanism supporting said receiver, and operative, on the return of the weighted part thereof to its position of rest, to shift said receiver, and thereby its closer, into position to have said closer engage said opening device, thereby to open said closer and permit the discharge of the load.

26. The combination of weighing mechanism embodying a load-receiver having a movement to and from its load-receiving position, and provided with a load-discharging device non-operative by the weight of the material in the receiver; and means supported in position to engage and operate said discharging device on the return movement of said receiver to its load-receiving position, thereby to throw said discharging device into operation to discharge the load.

27. The combination of a load-receiver having descending and ascending movements, and embodying closer mechanism comprising a pair of closers, one operative by the other; beam mechanism supporting said receiver; means disposed in position to engage a part of one of said closers to actuate the same, and thereby its companion closer, on the ascent of said load-receiver and the return of the beam mechanism to its position of rest, and thereby permit the discharge of a load.

28. The combination of a load-receiver having descending and ascending movements, and provided with closer mechanism; beam mechanism supporting said receiver; and means disposed in position and operative to engage the closer mechanism on the return of the beam mechanism to its normal position and on the ascent of the load-receiver, thereby to actuate said closer mechanism independently of the weight of the material in said load-receiver, and permit the discharge of the load.

29. The combination with framework, of a load-receiver provided with a shiftable member operative to discharge a load; beam mechanism supporting said receiver; and an actuator carried by said framework and in position to engage said shiftable member and thereby open the same on the return of said beam mechanism to its position of rest.

30. Weighing mechanism embodying a load-receiver having descending and ascending movements, and provided with a pair of shiftable members each having an arm crossing the arm of its companion member, and operative to open and permit the discharge of the load on the ascent of said load-receiver.

31. Weighing mechanism embodying a load-receiver having descending and ascending movements, and provided with a pair of shiftable closers operative to discharge a load on the ascent of said load-receiver, and each of said closers having a pair of arms pivotally secured to said receiver, the arms of one closer crossing the arms of its companion closer.

32. Weighing mechanism embodying a load-receiver provided with a pair of shiftable closers operative to discharge a load, each having an arm crossing the arm of its companion closer, and one closer being operative to open its companion closer, thereby to permit the discharge of the load on the ascent of said load-receiver.

33. The combination with weighing mechanism embodying a load-receiver having descending and ascending movements, and provided with a pair of shiftable closers, each of said closers having a pair of arms pivotally secured to said load-receiver and crossing the arms of its companion closer, of means disposed in position to engage one of the arms of one of said closers, thereby to open both of said closers on the ascent of said load-receiver.

34. The combination of weighing mechanism embodying a load-receiver having descending and ascending movements and provided with a pair of closers pivotally secured to said load-receiver, and having means intermediate thereof whereby one closer opens its companion closer: an actuator in position to engage one of said closers beam mechanism supporting said load-receiver, whereby, on the return of said beam mechanism to its normal position, and the ascent of said receiver, said actuator will engage said closer and thereby open both of said closers to permit the discharge of the load.

35. The combination with framework, of beam mechanism; a shiftable load-receiver supported by said beam mechanism and having a pair of closers, each of said closers having a pair of arms pivotally secured one at each side of said receiver, one of the closer-arms of one closer having a supplemental arm and also having a laterally extending and inclined projection, and one of the closer-arms of the other closer having a projecting member in engagement with said inclined projection, whereby, on the opening of one closer the other closer is also opened; and an actuator shiftably secured to the framework and in position to engage said supplemental closer-arm, thereby to open the closers on the shifting movement of the receiver.

36. The combination of weighing mechanism embodying a load-receiver having descending and ascending movements and provided with a shiftable member operative on the ascent of said receiver to discharge the load; and regulator mechanism operative in one direction to control the operation of said shiftable member at one predetermined time.

37. The combination with weighing mechanism embodying a load-receiver having descending and ascending movements, and provided with a shiftable member, of means adapted on the ascent of said load-receiver to open and maintain said shiftable member open, thereby to permit the discharge of a load; regulator mechanism; and means operative therewith and embodying a tripper adapted to unlock said shiftable member from its open lock position, and thereby permit the same to close.

38. The combination with weighing mechanism embodying a load-receiver having descending and ascending movements, and provided with a pair of shiftable closers, of means adapted to open and lock said closers open on the ascent of said receiver, thereby to permit the discharge of the load; and regulator mechanism operative in one direction to unlock said closers from their open-lock position, and thereby permit the same to shut.

39. The combination with weighing mechanism embodying a load-receiver having descending and ascending movements and provided with a pair of shiftable closers, of means adapted to open and maintain said closers open on the ascent of said receiver, thereby to permit the discharge of the load; regulator mechanism: and means connected therewith and embodying a tripper operative to unlock

said closers from their open-lock position and thereby permit the same to close.

40. The combination of weighing mechanism embodying a load-receiver having descending and ascending movements, and provided with a pair of shiftable closers; an actuator having a pair of projections, one adapted to engage one of said closers and thereby open and maintain said closers open on the ascent of said receiver, to permit the discharge of the load; regulator mechanism operative in one direction on the discharge of the load; and means connected therewith and embodying a tripper operative to engage the other actuator projection, thereby to unlock said closers from their open-lock position, and permit the same to shut.

41. The combination with material-supply means, of weighing mechanism embodying a movable load-receiver; and means, controlled by the direct engagement therewith of the supply material on its passage through or from the supply means, for locking the load-receiver against movement until a sufficient amount of material has been received by said receiver to overcome the action of said supply material in connection with said means.

42. The combination with a material-supply chute, of weighing mechanism embodying a shiftable load-receiver; locking means operative to retard the movement of said receiver, and comprising means disposed in position to be engaged by the material passing through or from the supply-chute; and means connected therewith and adapted to engage a part of the weighing mechanism, and thereby retard the movement of said receiver until the desired amount of material has been received thereby.

43. The combination of a material-supply chute; a shiftable load-receiver; beam mechanism supporting said receiver; locking means operative to retard the movement of said receiver and comprising a shiftable plate or blade, carried by said chute, and means connected with said plate or blade and operative to engage the beam mechanism, thereby to retard the movement of said load-receiver until the desired amount of material has been received thereby.

44. The combination of a load-receiver having descending and ascending movements; beam mechanism supporting the same; load-supply means for said receiver; locking means operative to retard the descent of said receiver until the desired amount of material has been received thereby, and comprising a shiftable member carried by the supply-chute and in engagement with the passing material; a locker disposed in position to engage the beam mechanism; and an adjustable connector intermediate said locker and said shiftable member.

45. The combination of a load-receiver; beam mechanism supporting said receiver; load-supply means for said receiver; and locking means operative to retard the movement of said load-receiver until the desired amount of material has been received thereby, and comprising an oscillatory member constituting one of the upright walls of the load-supply means, a locker adapted to engage said beam mechanism, and means connecting said oscillatory member and locker.

46. The combination with weighing mechanism, of a supply-chute therefor having a stream-passage for the supply of material to said weighing mechanism, said chute having a swinging blade or plate carried thereby and forming a part of one of the upright walls at the discharge end of said chute, and shiftable inwardly to reduce the supply-stream at one predetermined period.

47. The combination of a load-receiver provided with closer mechanism operative to discharge a load; overload-supply means for said receiver; stream-controlling means operative to regulate the supply of material to said receiver; a load-reducing instrumentality; means controlled by the closer mechanism and operative to lock said load-reducing instrumentality open; and means operated by the closer mechanism on the opening thereof to lock said stream-controlling means shut.

48. The combination of a movable load-receiver provided with closer mechanism operative to discharge a load; beam mechanism supporting said receiver; overload-supply means for said receiver; locking means operative to retard the movement of said receiver until an overload is assured; a load-reducing instrumentality; and means controlled by the closer mechanism and operative to lock said load-reducing instrumentality open and also to unlock the same on the opening of the closer mechanism, thereby to permit said load-reducing instrumentality to shut.

49. The combination of a load-receiver provided with closer mechanism operative to discharge a load; beam mechanism supporting said receiver; overload-supply means for said receiver; stream-controlling means adapted to regulate the supply material to said receiver; locking means operative to retard the movement of said receiver until an overload is assured; a load-reducing instrumentality; means controlled by the closer mechanism and operative to lock said load-reducing instrumentality open, and also to unlock the same on the opening of the closer mechanism, thereby to permit said load-reducing instrumentality to shut; and means operative with the closer mechanism on the opening thereof to lock said stream-controlling means shut.

50. The combination with weighing mechanism embodying a load-receiver adapted in one position to receive an overload, of means operative in another position of said receiver to effect the reduction of the material in said receiver; and means operative to commence the final discharge of the material remaining in the receiver on the return of said receiver to its load-receiving position after its ascent above its poising position.

51. The combination of weighing mechanism embodying a load-receiver adapted in one position to receive an overload, thereby to carry said receiver into position to have such overload reduced; means for reducing such overload, thereby to obtain a true load and carry the receiver to a poise position to permit the continuous operation of said reducing means to reduce such true load, thereby to carry the lever to a position above its poise position.

52. In a rising-poise weighing-machine, the combination of weighing mechanism; overload-supply means therefor; a load-reducing instrumentality operative to effect the reduction of the overload, and then reduce the true load; and a stream-deflecting instrumentality controlled by the weighing mechanism and operative to direct the overload discharge in one direction, and the true-load discharge in another direction.

53. In a rising-poise weighing-machine, the combination of weighing mechanism; overload-supply means therefor; a load-reducing instrumentality operative to effect the reduction of the overload, and then reduce the true load; and a shiftable counterbalanced stream-deflecting instrumentality operative in one position to direct the overload discharge in one direction and then shiftable into another position to direct the true-load discharge in another direction.

54. In a weighing-machine, the combination of weighing mechanism; load-supply means therefor; load-reducing means; and a shiftable stream-deflecting instrumentality provided with a weight and shiftable into one position by the weighing mechanism and into another position by said weight, thereby to direct one part of the material in one direction and another part thereof in another direction.

55. In a weighing-machine, the combination of weighing mechanism; overload-supply means therefor; load-reducing means operative to reduce both the overload and the true load; and an oscillatory stream-deflecting instrumentality provided with a weight and shiftable into one position by the weighing mechanism, on the descent thereof, to direct the overload in one direction, and then shiftable by its weight into another position, on the ascent of said weighing mechanism, to direct the true load in another direction.

56. The combination with rising-poise weighing mechanism embodying a load-receiver adapted in one position to receive an overload, of means operative to effect the reduction of said overload, and thereby permit the ascent of said receiver to a poise position, and also operative to effect the reduction of said resultant true load on the return of said receiver to its poise position; and means operative to discharge the load on the return of said receiver to its load-receiving position.

57. The combination of weighing mechanism embodying a load-receiver having a pair of spouts disposed one within the other; and a load-reducing valve carried by said receiver and in one position thereof adapted to extend under a part of one of said spouts and over a part of the other spout

58. In a weighing-machine, the combination of a load-receiver; beam mechanism supporting said receiver and embodying counterbalancing means; and stream-deflecting means disposed in position and adapted to constitute a part of the receiver-counterbalancing means.

59. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; and stream-deflecting means disposed in position and adapted to coact with said weighing mechanism, thereby to assist the ascent of said receiver and the poising thereof.

60. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; load-supply means for said receiver; a load-reducing instrumentality; and a stream-deflecting instrumentality operative to assist the poising of said load-receiver.

61. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; overload-supply means for said receiver; a load-reducing instrumentality operative to reduce the overload, thereby to secure a true load, and also operative to reduce a part of such true load; and a stream-deflecting instrumentality adapted to assist the poising of the load-receiver, and operative to direct the overload in one direction, and also operative to direct a part of the true load in another direction.

62. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver provided with a shiftable member operative to discharge a load; overload-supply means for said receiver; a load-reducing instrumentality operative to reduce the overload, thereby to secure a true load, and also operative to reduce a part of such true load, whereby the opening of the shiftable member is effected; and a stream-deflecting instrumentality controlled in its operation by said weighing mechanism, and adapted to assist the poising of the load-receiver, and operative to direct the overload in one direction, and also operative to direct a part of the true load in another direction.

63. A rising-poise weighing-machine, comprehending weighing mechanism comprising a load-receiver and beam mechanism supporting said receiver; overload-supply means; stream-controlling means for regulating such supply; material-discharge means controlled by the beam mechanism to permit the discharge of the load at the proper predetermined period; load-reducing means controlled at one predetermined period by the stream-controlling means and at another predetermined period by the material-discharge means, and operative to reduce the overload and also a part of the resultant true load; stream-deflecting means controlled by the weighing mechanism through the medium of the load-receiver; locking means adapted to prevent the descent of the load-receiver until an overload is secured; locking means operative to maintain the stream-controlling means shut on the opening of the material-discharge means, and to prevent the opening of said material-discharge means while said stream-controlling means is open; and regulator means adapted to control the operation of a part of said machine.

64. In a rising-poise weighing-machine, the combination with a main and a supplemental discharge-hopper communicating with each other, of weighing mechanism operative to discharge material into said main hopper at the proper predetermined period; overload-supply means for said weighing mechanism; load-reducing means for said weighing mechanism and operative to reduce the overload and then reduce the true load; and a stream-deflecting instrumentality operative to direct the overload discharge into the supplemental hopper, and the true-load discharge into the main hopper to rejoin and again form a part of the material discharged thereinto by the weighing mechanism.

65. The combination of weighing mechanism embodying a load-receiver; load-supply means therefor; stream-controlling means for regulating the supply of material to said receiver; a load-reducing instrumentality operative to effect the reduction of a load before the final disposition thereof, and thrown into operation at one predetermined period by said stream-controlling means; and means, non-connected with the stream-controlling means, for maintaining said load-reducing instrumentality in operation.

66. The combination of weighing mechanism embodying a load-receiver; load-supply means therefor; stream-controlling means for regulating the supply of material to said receiver; a load-reducing valve operative to effect the reduction of a load before the final discharge thereof, and opened at one predetermined period by said stream-controlling means; and means, non-connected with the stream-controlling means, for maintaining said valve open during the load-reducing period and operative to permit the valve to close after the reduction of the load.

67. In a rising poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; load-supply means therefor: a load-reducing device operative to effect the reduction of a load; and a load-discharging device adapted, before movement and on the operation of the load-reducing device, to maintain said load-reducing device in operation to reduce a load.

68. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; overload-supply means therefor; a load-reducing device operative to effect the reduction of a load; and a load-discharging device adapted, before movement and on the operation of the load-reducing device, to lock said load-reducing device in operation to reduce a load, and operative on its movement to discharge the load, to unlock said load-reducing device and permit the cutting off of such load reduction.

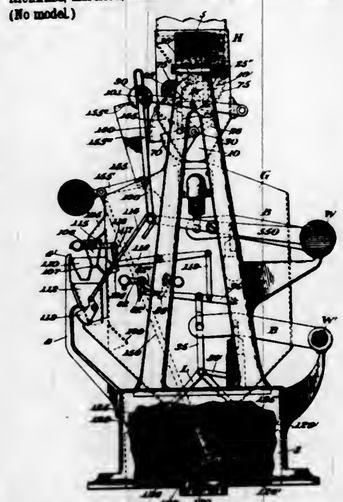
69. In a rising-poise weighing-machine, the combination of weighing mechanism embodying a load-receiver; load-supply means therefor embodying stream-controlling means; a load-reducing device operative to effect the reduction of a load, and controlled in its operation at one period by the stream-controlling means; and a load-discharging device adapted, before movement, to maintain the load-reducing device in operation to permit the reduction of a load, and operative on its discharging movement to unlock the said load-reducing device and permit the cutting off of such load reduction.

70. The combination of weighing mechanism embodying a load-receiver; load-supply means for said receiver; a load-reducing instrumentality operative to effect the reduction of a load before the final disposition thereof; a stream-deflecting instrumentality operative to divide and direct one part of the load-reducing stream in one direction, and another part thereof in another direction; and means operative to maintain said load-reducing instrumentality in operation during a predetermined period.

71. The combination of weighing mechanism embodying a load-receiver; overload-supply means for said receiver; a load-reducing instrumentality operative to effect the reduction of a load before the final disposition thereof; a stream-deflecting instrumentality operative to divide and direct one part of the load-reducing stream in one direction, and another part thereof in another direction; and load-discharge means adapted in one position to lock said load reducing instrumentality in operation, and operative, on its movement to discharge the load, to unlock said load-reducing instrumentality and permit the cutting off of the load reduction.

72. The combination of weighing mechanism embodying a load-receiver having a movement to and from its load-receiving position, and provided with non-locked closer mechanism supported in position to be non-operative by the weight of the material in the receiver; and means in position to engage and open said closer mechanism on the return movement of said receiver to its load-receiving position.

607,461. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Aug. 13, 1897. Serial No. 648,103. (No model.)



Claim.—1. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective dependently-operative safety cut-off valve controlled by the main valve on the failure of the latter to close properly; and valve-closing means operable for closing said valves selectively.

2. The combination, with a supply spout, of a pair of mutually-dependent cut-off valves one constituting a normally-effective main cut-off valve and the other a normally-ineffective safety cut-off valve controlled by the main valve on the failure of the latter to close properly; and valve-closing means for closing said valves selectively.

3. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective dependently-operative safety cut-off valve, normally open and controlled by the main valve on the failure of the latter to close properly; normally-effective valve-opening means for the safety cut-off valve; and valve-closing means.

4. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective dependently-operative safety cut-off valve, normally open and controlled by the main valve on the failure of the latter to close properly; a normally-effective valve-opening counterweight carried by the safety cut-off valve; and valve-closing means.

5. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective dependently-operative safety cut-off valve, normally open and controlled by the main valve on the failure of the latter to close properly; independently-operable valve opening actuators for said respective valves; and valve-closing means.

6. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety-valve, normally open; a common valve-closing actuator for said valves; and a pair of independently-operable valve-opening actuators for said respective valves.

7. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety cut-off valve, normally open; a linkage connecting said valves; and valve-closing means in operative relation with said linkage.

8 The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety cut-off valve, nor-

mally open; a linkage connecting said valves; and a common valve-closing actuator connected with said linkage.

9. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety cut-off valve, normally open; a linkage connecting said valves and having two alternately-effective fixed points; and a common valve-closing actuator connected with said linkage

10. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety cut-off valve, normally open; a linkage connecting said valves and having two alternately-effective fixed points at opposite ends of the linkage; and a common valve-closing actuator connected with said linkage.

11. The combination, with a supply-spout, of a pair of oppositely-closing cut-off valves one constituting a normally-effective main cut-off valve and the other a normally-ineffective dependently-operative safety cut-off valve controlled by the main valve on the failure of the latter to close properly; and valve-closing means operable for closing said valves selectively and in opposite directions.

12. The combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety cut-off valve, normally open; a linkage connecting said valves; a common valve-closing actuator connected with said linkage; and a stop movable in unison with the main cut-off valve for normally limiting the closing movement of the valve-closing actuator.

13. In an automatic weighing-machine, the combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety cut-off valve; valve-closing means; blocking-stops movable with said respective valves; and a coöperative blocking-stop operative with a movable discharge-controlling member of the weighing-machine.

14. In an automatic weighing-machine, the combination, with a pair of supply-spouts, of a pair of separately-mounted cut-off valves, one for each of said spouts and one normally effective and the other normally ineffective; valve-closing means; blocking-stops movable with said respective valves; and a coöperative blocking-stop operative with a movable discharge-controlling member of the weighing-machine.

15. In an automatic weighing-machine, the combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective dependently operative safety cut-off valve controlled by the main valve on the failure of the latter to close properly; valve-closing means; blocking-stops movable with said respective valves; and a coöperative blocking-stop operative with a movable discharge-controlling member of the weighing-machine.

16. In an automatic weighing-machine, the combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety cut-off valve; valve-closing means; blocking-stops movable with said respective valves; and a pair of blocking-stops coöperative with the first-mentioned stops and operative with a discharge-controlling member of the weighing-machine.

17. In an automatic weighing-machine, the combination, with a supply-spout, of a normally-effective main cut-off valve; a normally-ineffective safety cut-off valve; valve-closing means; blocking-stops movable with said respective valves; and a pair of blocking-stops coöperative with said first-mentioned stops and movable in unison and operative with a discharge-controlling member of the weighing-machine.

18. In an automatic weighing-machine, the combination, with overloading means and with weighing mechanism embodying a load-receiver having a load-reducing opening between its receiving and discharging ends, of a swinging spout in position to receive surplus material from the load-reducing opening; and actuating means operative on the descent of the load-receiver for swinging said spout away from the bucket and also operative on the discharge of the load for swinging said spout toward the load-receiver to thereby restore the material in the spout to the load.

19. In an automatic weighing-machine, the combination, with overloading means and with weighing mechanism embodying a load-receiver having a load-reducing opening between its receiving and discharging ends, of a swinging spout pivoted to the load-receiver beneath the load-reducing opening; and actuating means operative on the descent of the load-receiver for swinging said spout from the load-receiver and also operative on the discharge of the load for swinging said spout toward the load-receiver to thereby restore the material in the spout to the load.

20. In an automatic weighing-machine, the combination, with overloading means and with weighing mechanism embodying a load-receiver having a load-reducing opening between its receiving and discharging ends, of a swinging spout pivoted to the load-receiver beneath the load-reducing opening; a fixed cut-off plate on the load-receiver normally closing the discharge end of the spout; an auxiliary material-receiving opening in the load-receiver beneath said spout; and actuating means operative on the descent of the bucket for swinging said spout away from the cut-off plate and the load-receiver and also operative on the discharge of the load for swinging said spout toward the auxiliary material-receiving opening to thereby restore the material in the spout to the load.

21. In an automatic weighing-machine, the combination with framework and with stream-supplying means and weighing mechanism, of a counterpoised regulator located in the path of material discharged by the weighing mechanism and embodying a pair of oppositely-disposed inclined blades pivoted at their lower edges to the framework and connected for movement in unison and forming between them a trough having yielding sides.

22. An automatic weighing-machine embodying framework, a load-receiver, and a pair of independently-mounted separately-movable beam mechanisms both supported directly by the framework, and one carrying the load-receiver, and the other carrying another material-receiver coöperative with the load-receiver.

23. In an automatic weighing-machine, the combination, with framework, of a pair of separately-movable beam mechanisms both supported directly by the framework, and a load-receiver and a load-discharger supported, respectively, on said beam mechanisms.

24. In an automatic weighing-machine, the combination, with framework, of primary beam mechanism; secondary beam mechanism supported directly by the framework and normally movable in unison with the primary beam mechanism and separately movable during a determined period in the weighing of a load; a load-receiver carried by the primary beam mechanism; and a load discharger carried by the secondary beam mechanism.

25. In an automatic weighing-machine, the combination, with framework, of stream-supplying means; primary beam mechanism; secondary beam mechanism normally movable in unison with the primary beam mechanism and separately movable on the release of the load-discharger; a load-receiver carried by the primary beam mechanism; a load-discharger carried by the secondary beam mechanism; a latch for the load-discharger; and latch-tripping means.

26. In an automatic weighing-machine, the combination, with framework, of a pair of independently-mounted separately-movable superposed beam mechanisms both supported directly by the framework; and a load-receiver and a load-discharger superposed and carried, respectively, by said respective beam mechanisms.

27. In an automatic weighing-machine, the combination, with framework, of a pair of independently-mounted separately-movable beam mechanisms both supported directly by the framework; and a load-receiver and a load-discharger pivotally carried, respectively, by said respective beam mechanisms and having their pivots equidistant from the pivots of their respective beam mechanisms.

28. In an automatic weighing-machine, the combination, with framework, of valve mechanism; primary beam mechanism; secondary beam mechanism supported directly by the framework; a valve-opening actuator carried by the primary beam mechanism; a load-receiver also carried by the primary beam mechanism; and a load-discharger carried by the secondary beam mechanism.

29. In an automatic weighing-machine, the combination, with framework, of a pair of separately-movable beam mechanisms both supported directly by the framework; a load-receiver carried by one of said beam mechanisms; and a load-discharger suspended from the other beam mechanism.

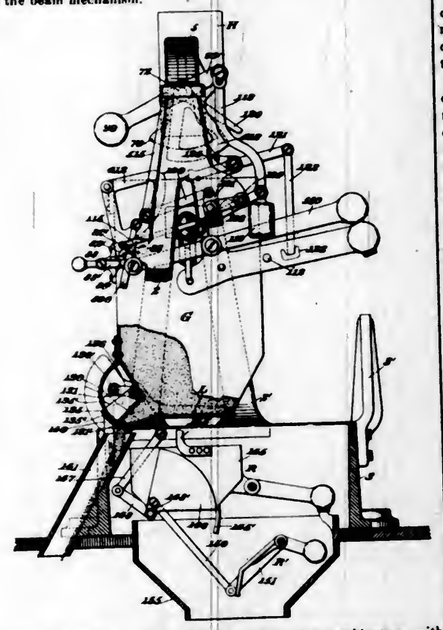
30. In an automatic weighing-machine, the combination, with framework, of a pair of separately-movable beam mechanisms both supported directly by the framework; a load-receiver carried by one of said beam mechanisms; a load-discharger suspended from the other beam mechanism; and guiding means for positioning the load-discharger during its movements.

607,462. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Aug. 23, 1897. Serial No. 649,144. (No model.)

Claim.—1. In an automatic weighing-machine, the combination, with stream-supplying means, of a valve; weighing mechanism; a valve-operated, pendent, resistance device normally supported on the weighing mechanism and automatically shiftable on each closing movement of the valve; and testing shifting means connected with the resistance device and also operative for shifting the latter.

2. In an automatic weighing-machine, the combination, with stream-supplying means, of a valve; beam mechanism; a valve-operated, pendent counterweight normally supported on the counterpoising side of the beam mechanism and automatically shiftable off from said counterpoising side on each closing movement of the valve; and testing shifting means connected with the counterweight and also operative for shifting said counterweight off from the counterpoising side of the beam mechanism.

3. In an automatic weighing-machine, the combination, with stream-supplying means, of a valve; beam mechanism; a load-receiver; a valve-opening actuator; a valve-opening thrust-rod; an automatically-shiftable, pendent counterweight normally supported on the counterpoising side of the beam mechanism; and shifting means connecting the thrust-rod and the counterweight for shifting the former out of operative relation with the valve-opening actuator and for automatically shifting the latter off from the counterpoising side of the beam mechanism.



4. In an automatic weighing-machine, the combination, with stream-supplying means, of a valve; beam mechanism; a load-receiver; a valve-opening actuator; a valve-opening thrust-rod; a valve-operated, pendent counterweight normally supported on the counterpoising side of the beam mechanism and automatically shiftable off from said counterpoising side on each closing movement of the valve; and testing shifting means connecting the thrust-rod and the counterweight for shifting the former out of operative relation with the valve-opening actuator and for also shifting the counterweight off from the counterpoising side of the beam mechanism.

5. In an automatic weighing-machine, the combination, with stream-supplying means, of a valve; weighing mechanism embodying a member shiftable for discharging a load; a latch for said shiftable member; a latch-tripper; an automatically-shiftable, pendent resistance device normally supported on the weighing mechanism; and shifting means connecting the latch-tripper and the resistance device for shifting the former out of operative relation with the latch and for also automatically shifting the resistance device.

6. In an automatic weighing-machine, the combination, with stream-supplying means, of a valve; beam mechanism; a load-receiver; a load-discharger; a valve-opening actuator; a valve-opening thrust-rod; a latch for the load-discharger; a latch-tripper; an automatically-shiftable, pendent resistance device normally supported on the weighing mechanism; and shifting means connecting the latch-tripper, the thrust-rod, and the resistance device for shifting the latch-tripper and the thrust-rod out of operative relation with the latch and the valve-opening actuator, respectively, and for also automatically shifting the resistance device.

7. In an automatic weighing-machine, the combination, with framework and with stream-supplying means, of a valve; beam mechanism; a load-discharger; a valve-opening actuator; a valve-opening thrust-rod; a latch for the load-discharger; a latch-tripper; a valve-operated counterweight normally carried on the counterpoising side of the beam mechanism and automatically shiftable off from the said counterpoising side on each closing movement of the valve; a crank on the framework; a crank-arm for operating said crank; and links connecting said crank-arm with the latch-tripper, the thrust-rod, and the counterweight, for shifting the latch-tripper and the thrust-rod out of operative relation with the latch and the valve opening actuator, respectively, and for also automatically shifting the counterweight off from said counterpoising side of the beam mechanism.

8. In an automatic weighing-machine, the combination, with overloading means, of weighing mechanism embodying a member shiftable for discharging a load; and a load-reducing spout carried by said load-discharger and shiftable therewith into position to discharge material from its opposite ends alternately.

9. In an automatic weighing-machine, the combination, with overloading means, of weighing mechanism embodying an oscillatory member shiftable for discharging a load; and a load-reducing spout carried by said load-discharger and shiftable therewith into position to discharge material from its opposite ends alternately.

10. In an automatic weighing-machine, the combination, with overloading means, of weighing mechanism embodying an oscillatory member shiftable for discharging a load; and a load-reducing spout carried by said load discharger at one side of the axis of oscillation of the latter and shiftable therewith into position to discharge material from its opposite ends alternately.

11. In an automatic weighing-machine, the combination with overloading means, of weighing mechanism embodying a member shiftable for discharging a load; and a load-reducing spout carried by said load-discharger and normally in position to discharge material from its outer end to reduce the load, and shiftable with said load-discharger into position to discharge its contents from its inner end with the main load.

12. In an automatic weighing-machine, the combination, with overloading means, of weighing mechanism embodying a member shiftable for discharging a load and having a load-reducing opening; and means for closing said opening.

13. In an automatic weighing-machine, the combination, with overloading means, of weighing mechanism embodying a member shiftable for discharging a load and having a load-reducing opening; and a valve carried by the weighing mechanism for closing said opening.

14. In an automatic weighing-machine, the combination, with overloading means, of weighing mechanism embodying an oscillatory member shiftable for discharging a load and having a load-reducing opening; and an oscillatory valve having its axis of movement coincident with that of said oscillatory member and controlling said load-reducing opening.

15. In an automatic weighing-machine, the combination, with overloading means, of a load-receiver; an oscillatory load-discharger having a load-reducing opening; a curved fixed cut-off plate carried by the load-receiver and having an opening normally registering with that in the load-discharger; and an oscillatory valve having its axis of movement coincident with that of said load-discharger and controlling the opening in the cut-off plate.

16. In an automatic weighing-machine, the combination, with overloading means, of weighing mechanism embodying a member shiftable for discharging a load and having a load-reducing opening; a shiftable valve carried by the weighing mechanism for closing said opening; and valve-actuating means operative on the overpoising of the weighing mechanism for shifting said valve to uncover said load-reducing opening.

17. In an automatic weighing-machine, the combination, with framework and with overloading means, of weighing mechanism embodying a member shiftable for discharging a load and having a load-reducing opening; a shiftable valve carried by the weighing mechanism for closing said opening; and a fixed valve-actuator on the framework in position and adapted for shifting said valve for uncovering said load-reducing opening on the overpoising of the weighing mechanism.

18. In an automatic weighing-machine, the combination, with stream-controlling means and with mechanism embodying a load-receiver, of a pair of regulators disposed at successive points in the path of a discharged load and one adapted to receive material from the other, said regulators having different periods of operation and also having separate and separately-effective counterpoising members.

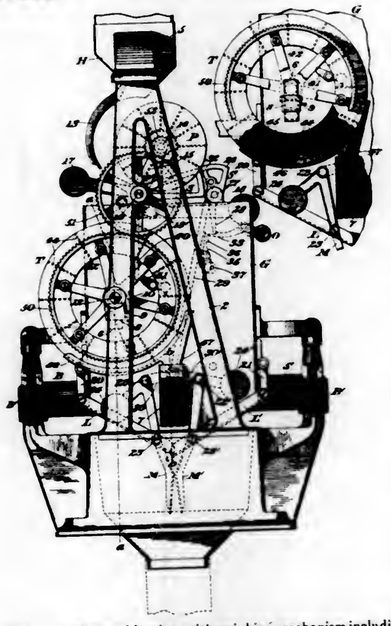
19. In an automatic weighing-machine, the combination, with stream-controlling means and with weighing mechanism embodying a load-receiver, of a pair of independently supported regulators disposed at successive points in the path of a discharged load and one adapted to receive material from the other, said regulators having different periods of operation and also having independently-oscillatory and separately-effective counterweights.

20. In an automatic weighing-machine, the combination, with stream-controlling means and with weighing mechanism embodying a load-receiver, of a pair of regulators disposed at successive points in the path of a discharged load and one adapted to receive material from the other, said regulators having different periods of operation and also having independently-oscillatory and separately-effective counterweights; and connecting means between said regulators.

21. In an automatic weighing-machine, the combination, with framework and with stream-controlling means, of weighing mechanism embodying a load-receiver; a counterweighted regulator-hopper; a valve supported on, and normally closing, the discharge end of said

hopper; a toggle connection between the framework and the valve and fixed to the latter; a second counterweighted regulator below said regulator-hopper; and connecting means between the second regulator and the valve of the regulator-hopper.

607,463. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Aug. 25, 1897. Serial No. 649,417. (No model.)



Claim.—1. The combination, with weighing mechanism including a reciprocatory load-receiver, of supplying means embodying a material-conduit, and a material-actuated stream-controlling wheel in cooperative relation with said conduit and receiver and having a shiftable axis of movement.

2. The combination, with weighing mechanism including a reciprocatory load-receiver, of stream-supplying means including a material-conduit, and a material-driven stream-controlling wheel interposed between said conduit and receiver and having two independent axes of movement.

3. The combination, with weighing mechanism including a reciprocatory load-receiver, of a material-supply chute or hopper disposed above said receiver, and a material-actuated stream-controlling wheel supported between said chute and receiver and shiftable in a plane crosswise of said chute.

4. The combination, with weighing mechanism including a reciprocatory load-receiver, of a supply-chute; a material-driven stream-controlling wheel supported between said supply-chute and receiver and having two independent axes of movement; and means actuated by the weighing mechanism for controlling the movement of said wheel.

5. The combination, with weighing mechanism including a reciprocatory load-receiver, of a stream-controlling wheel supported above said load-receiver for rotation about one axis and for movement in the arc of a circle about an independent axis, and means for supplying material to said wheel at one side of its axis of rotation to thereby impart rotative movement thereto.

6. The combination, with weighing mechanism including a reciprocatory load-receiver, of a material-conduit disposed above said load-receiver; a multicompartment stream-controlling wheel supported for rotative movement between said chute and said receiver, and in position to be actuated by the material as it passes through said chute, and having its axis of rotation shiftable in a plane crosswise of said chute.

7. The combination, with weighing mechanism including a reciprocatory load-receiver, of a material-conduit having a depending cut-off plate; a multicompartment stream-controlling wheel supported for rotation between the load-receiver and discharge end of the conduit, and shiftable bodily toward and away from the cut-off plate.

8. The combination, with weighing mechanism including a reciprocatory load-receiver and with a material conduit having a depending fixed cut-off plate, of a stream-controlling wheel supported between the receiver-conduit and shiftable toward and away from the cut-off plate; a movable carrier for said wheel: and means for actuating the carrier.

9. The combination, with weighing mechanism including a reciprocatory load-receiver and with a material-conduit having a depending curved cut-off plate or wheel-compartment closer, of a multicompartment material-rotated wheel disposed above the load-receiver; an oscillatory carrier for said wheel; and means controlled by the weighing mechanism for effecting an oscillatory movement of the carrier whereby said wheel will have movements alternately toward and away from said cut-off plate.

10. The combination, with weighing mechanism including a reciprocatory load-receiver, of stream-supplying means including a material-conduit having a depending cut-off plate; a stream-controlling wheel supported for rotation at one side of said plate and between the conduit and load-receiver; and means in connection with said wheel and effective at a predetermined point in the movement of the load-receiver for shifting said wheel bodily toward the cut-off plate whereby to gradually cut off the supply of material to said load-receiver.

11. The combination, with weighing mechanism including a reciprocatory load-receiver, of an oscillatory carrier; a stream-controlling wheel mounted for rotation on said carrier above the load-receiver; a chute supported above and in position to discharge material upon the wheel; means in connection with said carrier and effective for shifting the same transversely of the path of rotation of the wheel; and a cut-off plate or closer cooperating with the wheel for controlling the volume of the stream supplied to the load-receiver and for also stopping said wheel when in a chute-closing position.

12. The combination, with weighing mechanism including a reciprocatory load-receiver, of a stream-supplying chute having at the discharge end thereof a curved depending closer-plate; a wheel supported for rotation below the discharge end of said chute and above said receiver in position to be rotated by the stream of material, and having a circuit of compartments open at their outer ends; a shiftable wheel-carrier; and means rotated by the weighing mechanism for shifting the carrier to bring the periphery of the wheel in engagement with the inner face of the closer-plate to thereby arrest the rotation of said wheel and simultaneously close the open ends of the filled compartments.

13. The combination, with weighing mechanism including a reciprocatory load-receiver, of a supply-chute disposed above the load-receiver; a power-wheel supported between the load-receiver and chute for rotation in the path of the flowing material; means for shifting the wheel crosswise of the discharge end of the chute and into position to be rotated by the gravitating material; and a rotative device supported at one side the load-receiver and operatively connected with the power-wheel.

14. The combination, with weighing mechanism including a reciprocatory load-receiver, of overload-supply means including a material-conduit and an overshot power-wheel supported between the load-receiver and conduit; actuating instrumentalities for shifting the power-wheel transversely of its axis of rotation and crosswise of the discharge end of the conduit to a position whereby the same may be rotated by the gravitating material; load-reducing means including a rotative device supported at one side the load-receiver; an actuator between and operatively connecting the wheel and rotative device; and means controlled by the weighing mechanism for shifting said wheel to a conduit closing position.

15. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper disposed above said load-receiver, of a multicompartment rotary stream-controller supported between the load-receiver and hopper for rotation in the line of flow of the material and shiftable crosswise the discharge end of said hopper; a counterweighted controller-carrier normally holding said controller in position to cut off the supply of material to the load-receiver; and means controlled by the weighing mechanism for shifting the stream-controller into position to be operated by the gravitating material and with its axis to one side the line of flow of said material.

16. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply apparatus including a hopper, of a material-rotated stream-controlling wheel supported between the hopper and load-receiver and shiftable in a plane crosswise of its path of rotation; and means controlled by the weighing mechanism for causing the power-wheel to move to a hopper-closing and a hopper-opening position alternately.

17. The combination, with weighing mechanism including a load-receiver, of supply apparatus including a hopper having a depending curved wheel-compartment closer: an overshot power-wheel supported between the load-receiver and hopper for movement toward and away from the closer and having a series of circumferential compartments; means in connection with the power-wheel and effective for normally retaining the same in a hopper-closing position with its periphery in tight engagement with the closer; and means controlled by the weighing mechanism for shifting the power-wheel to a hopper-opening position away from said closer and in position to be actuated by the material flowing from the hopper to the load-receiver.

18. The combination, with weighing mechanism including a load-receiver having a closer and with a supply-hopper, of a material-actuated power-transmitter supported between the load-receiver and hopper; means for shifting the power-wheel transversely of its path of rotation to a hopper-closer and to a hopper-opening position alternately; reciprocally-effective stop devices one of which is connected with the power-wheel carrier and is effective for blocking the opening movement of the closer when the power-wheel is in its hopper-opening position, and the other of which is connected with the closer and is effective for blocking the hopper-opening movement of the power-wheel when the closer is in its open position.

19. The combination, with weighing mechanism including a reciprocatory load-receiver having a load-discharger and with a supply-hopper, of a multicompartment power-wheel supported between the hopper and load-receiver; a closer fixed to said hopper at one side the discharge opening thereof in position for closing the filled compartments of the power-wheel when the power-wheel is in one position; means for shifting the power-wheel normally into engagement with the closer, to thereby prevent rotative movement of said power-wheel and simultaneously close the discharge-opening of the hopper; means for shifting the power-wheel away from said closer into a position whereby the same will be rotated by the gravitating material; and reciprocally-effective stop devices in operative relation with the power-wheel and load-discharger and effective one for blocking the opening movement of the load-discharger when the power-wheel is in its hopper-opening position, and the other of which is effective for blocking the hopper-opening movement of the power-wheel when the load-discharger is in its open position.

20. The combination, with a reciprocatory load-receiver and with a supply-hopper, of a material-actuated rotary power-transmitter in cooperative relation with the receiver and hopper and having a shiftable axis of movement; and a movable conveyer in operative connection with, and actuated by, the power-transmitter.

21. The combination, with a reciprocatory load-receiver, and with a hopper, of a material-actuated power-transmitter in operative relation with said hopper and having a shiftable axis of movement; and a rotary conveyer actuated by the power-transmitter.

22. The combination, with a reciprocatory load-receiver, and with a material-conduit, of a material-actuated rotary power-transmitter located between said receiver and conduit and shiftable in a plane transverse to its path of rotation; and a rotary conveyer supported below and actuated by said transmitter.

23. The combination, with a reciprocatory load-receiver, and with a material-conduit, of a material-actuated rotary power-transmitter located below said conduit and shiftable in a plane transverse to its path of rotation; a conveyer supported for rotation below the power-transmitter; and gearing operatively connecting said conveyer and power-transmitter.

24. The combination, with an overload-supply apparatus, of a load-receiver having a surplus-discharger and a surplus-receiver; a rotary conveyer having a series of circumferentially-disposed compartments open at the periphery of said conveyer; and a fixed closer-plate extending around a portion of the periphery of said conveyer and closing the open ends of certain compartments.

25. The combination, with an overload-supply apparatus, of a load-receiver having a surplus-discharger and a surplus-receiver; a conveyer supported for rotative movement in a vertical plane and having a series of compartments in operative relation successively with a surplus-discharger and a surplus-receiver; and means independent of the weighing mechanism for rotating said conveyer to transfer material from the surplus-discharger to the surplus-receiver.

26. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-chute, of a rock-shaft journaled between the load-receiver and supply-chute and having two outwardly-extending arms; a stream-controlling wheel having a shaft journaled in the outer ends of said arms in position to be rotated by the material flowing from the supply-chute; and means for actuating the rock-shaft to shift the stream-controlling wheel into chute closing and opening positions alternately.

27. In a weighing-machine embodying a load-receiver and a superposed supply-chute, the combination of a combined stream-controller and power-transmitter comprising a power-wheel carrier pivotally supported between the load-receiver and supply-chute for oscillatory movement crosswise of the discharge end of the chute; a multichambered power-wheel pivotally supported on the carrier for rotation in a vertical plane and in position to be actuated by the material passing through the supply-chute; and a counterweighted arm for normally retaining the power-wheel in position for cutting off the supply of material from said chute.

28. The combination, with weighing mechanism including a load-receiver and with a supply-chute, of a power-wheel carrier pivotally supported for oscillatory movement between the load-receiver and supply-chute; a multichambered power-wheel journaled on the carrier remote from the axis of oscillation thereof and in position to be rotated by the material discharged from the chute; a compartment-closer fixedly supported in position for closing the filled compartments of the power-wheel when said wheel is in its chute-closing position; a counterweighted arm fixed to the rock-shaft and effective for normally retaining the power-wheel in its chute-closing position; and means controlled by the load-receiver at a predetermined point in the movement thereof for shifting the power-wheel to a chute-opening position.

29. The combination, with weighing mechanism including a load-receiver having a discharger and with a superposed supply-chute having a curved compartment-closer depending from the discharge end thereof, of a power-wheel carrier pivotally supported for oscillatory movement above the load-receiver; a multicompartment power-wheel journaled for rotation upon, and at one side the axis of oscillation of, the carrier; a counterweighted arm in connection with the carrier and effective for normally retaining the power-wheel in position for closing the outlet of the supply-chute and in tight engagement with the compartment-closer; interlocking mechanism in operative relation with, and effective for blocking the movements of, the power-wheel and load-discharger reciprocally; and a counterweighted actuator in operative relation with the power-wheel carrier and effective at a predetermined point in the movement of the load-receiver for shifting the power-wheel away from the compartment-closer and in position to be rotated by the impact of material from the supply-chute.

30. The combination, with a supply-hopper, of a material-actuated overshot wheel supported for rotative and bodily oscillatory movements below said hopper; means for shifting the wheel bodily first in one and then in an opposite direction crosswise of the hopper to open and close alternately the discharge end thereof; and a rotary conveyer in geared connection with, and actuated by, the overshot wheel.

31. The combination, with weighing mechanism including a reciprocatory bucket having a surplus-discharging conduit and a surplus-receiving conduit and with overload-supplying means, of an annular transferring-receiver divided radially in a circuit of compartments open at their inner and outer ends, and which receiver has a fixed horizontal axis of movement; a curved closer-plate circumferentially disposed with respect to the lower portion of the annular receiver and having a conduit whose discharge end is located in vertical alinement with the surplus-receiving conduit of the bucket; and means controlled by a member of the supply apparatus for rotating the receiver.

32. The combination, with weighing mechanism including a reciprocatory bucket having a surplus-discharger and a surplus-receiver and with overload-supplying means including a material-rotated wheel-closer, of an annular conveyer supported for rotation in a vertical plane at one side the bucket and in cooperative relation with the surplus-discharger and surplus-receiver thereof and having a multiplicity of circumferentially-disposed compartments open at their inner and outer ends; means in connection with, and effective on a rotative movement of the wheel-closer for rotating, the conveyer; and a fixed closer extending partially around the periphery of the conveyer and in position to close the filled compartments of said conveyer throughout a portion of their advancing movements.

33. The combination, with weighing mechanism including a bucket, of a multicompartment annulus having a fixed horizontal axis of rotation, and which compartments are open at the periphery and the inner side of the annulus; a valve-regulated surplus-discharge conduit having its inner end in communication with the interior of the bucket and having its outer end disposed between the axis and the compartments of the annulus in position for supplying material to said compartments; a fixed closer surrounding a lower portion of the periphery of the annulus and having an outlet or discharge conduit at one end thereof; a surplus-receiving conduit having its outer end in vertical alinement with the fixed closer-outlet and having its inner end in communication with the interior of the bucket; means controlled by the weighing mechanism on the descent of the bucket for governing the surplus discharged from said bucket to the compartments of the annulus; and means operative on the ascent of the bucket above the poising-line for rotating said annulus to transfer the material to the receiving-conduit of said bucket.

34. In a weighing-machine, the combination, with overload-supplying means including a material-driven rotary member, of a rotary conveyer and a reciprocatory load-receiver set side by side and having their respective movements in parallel planes and each of which includes means for transferring material to the other; means opera-

tive on the descent of the load-receiver for effecting a transfer of material from said load-receiver to the conveyer; and means operated by the rotary member of the overload-supplying means for imparting a rotative movement to the conveyer and thereby effect a transfer of material therefrom directly to the load-receiver.

35. A weighing-machine comprehending a rotary multicompartment conveyer; a bucket supported for reciprocatory movements in a plane parallel to the plane of rotation of the conveyer and having a surplus-discharger and a surplus-receiver in coöperative relation with the compartments of said conveyer; means for supplying an overload to the receiver and including a material-rotated member; means controlled by the weighing mechanism, on the descent of the bucket, for actuating the surplus-discharger of the receiver; and means operated by the material-rotated member, on the ascent of the bucket, for imparting a rotative movement to the conveyer.

36. The combination, with a reciprocatory load-receiver having a discharger and with means for actuating said discharger, of a vertically-disposed rotary conveyer; and means including a material-operated conveyer-actuator effective on the closing movement of the load-discharger for rotating said conveyer.

37. The combination, with weighing mechanism including a reciprocatory load-receiver having a load-discharger and with means for actuating said discharger, of a rotary multicompartment conveyer supported at one side of the load-receiver and having a fixed horizontal axis of movement; overload-supplying means including a material rotated power-transmitting stream-controller; means in connection with, and effective for holding, the power-transmitter normally against rotation; means operative with the load-discharger, on the closing movement thereof, for shifting the power-transmitter to a position to be rotated by the material supplied to the load-receiver; actuating means connecting the power-transmitter and rotary conveyer; and means in connection with the load-receiver and operative on the descending movement thereof below its poising-line for discharging a portion of the load of said receiver to the conveyer.

38. The combination, in a weighing-machine, of a reciprocatory load-receiver or bucket having completed load-discharger; means for holding the load-discharger normally in its closed position; a discharger-closing actuator; overload-supplying means in operative relation with the load-receiver; a valve-controlled surplus-discharge conduit and a surplus-receiving conduit communicating with the interior of the load-receiver; a rotary surplus-receiving conveyer having a fixed horizontal axis of movement and supported at one side of the load-receiver and in coöperative relation with the surplus-discharge conduit and surplus-receiving conduit thereof; means for imparting an opening movement to the valve of the surplus-discharge conduit during the descending movement of the load-receiver below its poising-line; and means operative subsequently to the closing movement of the load-discharger for effecting a surplus-transferring movement of the conveyer.

39. The combination, in a weighing-machine, of a reciprocatory load-receiver having a load-discharger; a load-discharger actuator; a superposed material-supply apparatus; a surplus-discharge conduit and a surplus-receiving conduit communicating with the interior of the load-receiver and the former having a self-closing valve; a rotary surplus-receiving conveyer supported at one side the load-receiver with the plane of its axis intersecting the path of movement of said receiver and having a series of compartments movable successively into coöperative relation with the surplus discharging and receiving conduits of the load-receiver; means operative on the descending movement of the load-receiver for imparting an opening movement to the valve of the surplus-discharge conduit; and means operative subsequently to the complete closing of the load-discharger for permitting a rotative movement of the conveyer.

40. The combination, in an automatic weighing-machine, of a reciprocatory load-receiver having a counterweighted self-shutting closer and also having a valve-controlled surplus-discharger and surplus-receiver; means for normally locking the closer in its closed position; a vertically-disposed rotary conveyer supported in operative relation with the surplus-discharger and surplus-receiver; means operative on the descending movement of the load-receiver below its poising-line for imparting an opening movement to the valve of the surplus-discharger; means operative on the ascending movement of the load-receiver for releasing the closer-locking means; and means operative subsequently to the closing movement of the closer for permitting a rotary movement of the conveyer.

41. The combination, with weighing mechanism including a reciprocatory bucket having a surplus-discharger and a surplus-receiver and with a supply-chute having a depending curved plate, of an annular conveyer supported for rotation in a vertical plane at one side of the bucket and in coöperative relation with the surplus-discharger and surplus-receiver thereof; a gear fixed to the annular conveyer; an intermediate gear supported above and meshing with the conveyer-gear; a power-wheel carrier mounted for oscillatory movement on the shaft of the intermediate gear and having radial arms extending beyond the periphery of said intermediate gear; a material-driven power-wheel having a shaft journaled in the outer ends of the arms of the power-wheel carrier; a pinion fixed to the power-wheel shaft and meshing with the teeth of the intermediate gear; means carried by the power-wheel carrier for normally retaining the power-wheel in position for closing the outlet of the supply-chute and with its periphery in engagement with the depending curved plate thereof; and means controlled by the weighing mechanism for shifting the power-wheel away from the depending plate in a plane concentric to the axis of the intermediate gear, and in position to be rotated by the material from the supply-chute.

42. The combination, with weighing mechanism including a load-receiver having a surplus-discharger and a surplus-receiver and with a supply-chute, of a vertically-disposed gear-wheel having a multicompartment annular conveyer fixed thereto; an intermediate gear meshing with the conveyer-gear; a multicompartment material-driven power-wheel having a pinion meshing with the intermediate gear and supported for movement transversely of the outlet of the supply-chute in a plane concentric to the axis of the intermediate gear; and means controlled by the weighing mechanism for effecting a transverse movement of said power-wheel in opposite directions alternately, to thereby control the supply of material to the load-receiver and also govern the operation of the conveyer.

43. The combination, with a reciprocatory load-receiver, of a pivotally-supported closer, and a regulator pivoted to the load-receiver and to said closer and embodying means for shutting said closer.

44. The combination, with a reciprocatory load-receiver, of a closer pivotally supported at its outer end on said load-receiver, and a regulator pivotally mounted on the load-receiver and pivoted to the inner end of said closer and having a counterweighted arm for actuating the regulator and closer simultaneously.

45. The combination, with a reciprocatory load-receiver, of two oppositely-disposed closers pivotally supported at their outer ends on the load-receiver; two operatively-connected, oppositely-disposed regulators pivotally supported on the load-receiver and pivotally connected to the closers at the inner ends thereof; and two counterweighted arms, one on each regulator, for normally retaining the closers in their shut positions.

46. The combination, with a load-receiver, of a load-discharger comprising two oppositely-disposed closer plates pivotally connected by links at their outer ends to opposite sides of the load-receiver; two vertically-disposed regulator-blades pivotally supported on the load-receiver above the inner ends of the closer-plates and pivotally connected to the inner ends of said closer-plates; means carried by the regulator-blades for normally imparting a closing movement to the closer-plates; and means in connection with the regulator-blades and load-receiver for normally holding said blades in their closer-shutting positions.

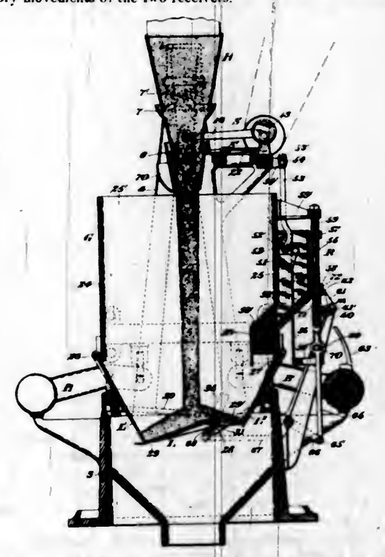
47. The combination, with weighing mechanism including a reciprocatory load-receiver, of a closer suspended at its outer end by links from one side of the load-receiver; a vertically-disposed regulator pivotally carried on the load-receiver and pivotally connected to the inner end of the closer; a counterweighted arm on the regulator, so disposed as to impart a closing movement to the closer; means in connection with the load-receiver and regulator for normally locking the regulator in its closer-shutting position; and means operative at a predetermined point in the movement of the load-receiver for releasing the closer-locking means.

48. The combination, with a reciprocatory load-receiver, of a closer pivotally supported at its outer end on the load-receiver; a regulator-blade disposed at an angle to the plane, and depending below the inner end, of the closer and pivotally connected to said closer; a counterweighted regulator-blade actuator pivotally carried on the load-receiver, and constructed and organized to effect a closing movement of the closer; means in connection with, and effective for normally locking, the regulator-blade actuator in its closer-shutting position; and means effective at a predetermined point in the movement of the load-receiver for releasing said actuator to facilitate an opening movement of the closer.

607,464. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 26, 1897. Serial No. 656,458. (No model.)

Claim.—1. A weighing-machine embodying two receivers supported one by the other side by side for independent reciprocatory movements in substantial parallel planes relatively to each other, and which receivers are reciprocally effective at predetermined points in their movements for supplying material to each other, and means for controlling the reciprocatory movements of said receivers.

2. The combination, with weighing mechanism including a reciprocatory load-receiver and with overload-supplying means, of alternately-effective load-reducing means and resupplying means the former of which includes a reducing-valve and the latter of which includes a surplus-receiver supported by the load-receiver for reciprocatory movement relatively to, and in parallelism with, the line of reciprocation of said load-receiver, and means for controlling the reciprocatory movements of the two receivers.



3. The combination, with weighing mechanism including a reciprocatory load-receiver having a discharge-conduit between the upper and the lower ends thereof and with overload-supplying means, of a valve pivotally supported on said conduit for controlling the discharge of surplus material; a valve-sustaining rod pivotally supported at its lower end on the valve in the rear of the pivotal point thereof and having an elongated slot at the upper end thereof; a fixed arm located above the load-receiver and having a projection extending into the elongated slot of said sustaining-rod, whereby on the descending movement of the load-receiver the valve and its sustaining-rod will have a limited amount of descending movement with the load-receiver, and whereby on the arrival of the load-receiver at its poising-line during the descending movement thereof, the further descent of the cut-off end of said valve will be arrested and the load-receiver will carry the pivoted end of said valve downward and thereby effect an opening movement of the cut-off end thereof.

4. The combination, with weighing mechanism including a reciprocatory load-receiver having a discharge-conduit and a return-conduit between the upper and the lower ends thereof, the former of which is furnished with a valve, of means for actuating the valve at a predetermined point in the descending movement of the load-receiver for discharging the surplus; and a surplus-receiver supported for independent reciprocatory movement in parallelism with, and at one side, the load-receiver, and in position to receive the surplus discharged from said receiver.

5. The combination, with weighing mechanism including a reciprocatory load-receiver having load-reducing means and with overload-supplying means, of a return-conduit located below the load-reducing means and communicating with the interior of the load-receiver; a surplus-receiver supported for independent reciprocatory movement in parallelism with, and at one side of, the load-receiver, and in position to receive material supplied by the load-reducing means and effective for discharging material into the return-conduit; and means controlled by the weighing mechanism for actuating the surplus-receiver.

6. The combination, with weighing mechanism including a load-receiver having a discharge-conduit and a return-conduit located intermediate the upper and the lower ends thereof and with overload-supplying means, of a receiver-actuated valve in operative relation with the discharge-conduit; and a vertically-shiftable surplus-receiver in operative relation with the discharge and return conduits; and means for actuating said surplus-receiver.

7. The combination, with weighing mechanism including a reciprocatory load-receiver and with overload-supplying means, of load-reducing means; surplus receiving and resupplying means, the former of which includes a discharge-conduit communicating with the interior of the load-receiver and having a valve operative for opening and closing the inlet of said discharge-conduit at predetermined points in the reciprocatory movements of the receiver, and the latter of which includes a return-conduit in communication with the load-receiver, a surplus-receiver supported for vertical reciprocatory movements independent of the load-receiver, and a reciprocatory cut-off plate located between the surplus-receiver and the return-conduit; and means controlled by the weighing mechanism for controlling the movements of the surplus-receiver and cut-off plate.

8. The combination, with weighing mechanism including a load-receiver having a closer and also having a discharge-conduit and a return-conduit located one above the other and intermediate the upper and the lower ends of said receiver, of a valve in operative relation with the discharge-conduit; means for actuating said valve; a surplus-receiver supported for movement crosswise of the receiving end of the return-conduit; a cut-off plate supported between the surplus-receiver and return-conduit for movement with, and also independent of, the surplus-receiver; and means controlled by the closer of the load-receiver for actuating the surplus-receiver and cut off plate.

9. The combination, with weighing mechanism including a load-receiver having a closer and also having a discharge-conduit provided with a valve and also having a return-conduit below said discharge-conduit and communicating with the interior of said receiver, of surplus receiving and resupplying means comprehending a surplus-receiver supported for vertical reciprocatory movement crosswise of the receiving end of the return-conduit, and a cut-off plate supported for reciprocatory movement between the surplus-receiver and return-conduit; and means controlled by the weighing mechanism on the descending movement of the load-receiver for effecting a descending movement of the surplus-receiver to bring its material-supporting wall below the material-supporting wall of the return-conduit, and in position to receive and store the surplus material discharged from the load-receiver; means controlled by the weighing mechanism on the ascending movement of the load-receiver for elevating the surplus receiver and cut-off plate in unison; and means controlled by the closer of the load-receiver, on the closing movement thereof, for actuating the cut-off plate to establish communication between the surplus-receiver and return-conduit.

10. The combination, with weighing mechanism including a load-receiver having a surplus-discharger and a return-conduit in communication therewith and with overload-supplying means, of a surplus-receiver disposed to receive the surplus as it is discharged from the load-receiver; a shiftable cut-off plate supported between the surplus-receiver and return-conduit of the load receiver; and means operative at a predetermined point in the ascending movement of the load-receiver for actuating the cut-off plate to establish communication between the surplus-receiver and return-conduit.

11. The combination, with weighing mechanism including a load-receiver having a closer and also having a valve-controlled discharge-conduit and a return-conduit having a vertically-inclined material-supporting wall, of means for actuating the closer; a surplus-receiver supported at one side of the discharge and return conduits and having a downwardly-inclined material-supporting wall; means controlled by the closer, on the opening movement thereof, for elevating the surplus-receiver to bring the material-supporting walls of said receiver and return conduit in substantial alinement; a cut-off plate supported between the surplus-receiver and return-conduit and shiftable, upon the opening movement of the closer, into a position for covering the receiving end of the return-conduit; means for locking the surplus-receiver in its elevated position during the closing movement of the closer; and means controlled by the closers, on the closing movemest thereof, for retracting the cut-off plate to establish communication between the surplus-receiver and return-conduit and allow the material contained in the surplus-receiver to flow into the load-receiver.

12. The combination, with weighing mechanism including a load-receiver having a closer and also having a valve-controlled discharge-conduit and a return-conduit having a vertically-inclined material-supporting wall, of means for actuating the closer; a surplus-receiver supported at one side of the discharge and return conduits and having a downwardly-inclined material-supporting wall; means controlled by the closer, on the opening movement thereof, for elevating the surplus-receiver to bring the material-supporting walls of said receiver and return-conduit in substantial alinement; a cut-off plate supported between the surplus-receiver and return-conduit and shiftable, upon the opening movement of the closer, into a position for covering the receiving end of the return-conduit; means for locking the surplus-receiver in its elevated position during the closing movement of the closer; means controlled by the closers, on the closing movement thereof, for retracting the cut-off plate to establish communication between the surplus-receiver and return-conduit and allow the material contained in the surplus-receiver to flow into the load-receiver; and means controlled by the weighing mechanism, on the descent of the load-receiver, for unlocking the surplus-receiver thereby to effect a descending movement of the same and bring the material-supporting wall thereof below the material-supporting wall of the return con-

duit and below the upper edge of the cut-off plate and into a position for receiving and storing the surplus material.

13. The combination, with weighing mechanism including a load-receiver having a valve-controlled discharge-conduit and a return-conduit in communication with the interior thereof, of overload-supplying means including a valve controlled in its opening and closing movements by the beam mechanism, on the descending and ascending movements, respectively, of the load-receiver; means for opening and closing the valve of the surplus-discharge conduit at predetermined points in the descending and ascending movements, respectively, of the load-receiver; a surplus-receiver supported at one side of the load-receiver for vertical reciprocatory movements independent of said receiver, and located in position to receive material from the discharge-conduit; means carried on the load-receiver for guiding the movements of the surplus-receiver: a cut-off plate supported between the surplus-receiver and entrance end of the return-conduit for reciprocatory movements in parallelism with the line of reciprocation of the load-receiver; and means controlled by the moving parts of the weighing mechanism for actuating the surplus-receiver and cut-off plate at predetermined points in the reciprocatory movements of the load receiver, whereby the surplus-receiver will, on the descending movement of the load-receiver, receive and store the surplus material discharged from the load-receiver and will discharge said surplus into the return-conduit upon the arrival of the load-receiver at its normal load-receiving position.

14. The combination, with weighing mechanism including a load-receiver having a closer and also having a surplus-discharger and a return-conduit in communication with the interior thereof and with overload-supplying means, of an independent vertically-reciprocatory surplus-receiver; and means in connection with the closer for actuating said receiver.

15. The combination, with weighing mechanism including a load-receiver having a closer and also having a valve-controlled discharge-conduit and a return-condnit in communication with the interior thereof, of a surplus-receiver supported for reciprocatory movement crosswise of the discharging and receiving ends of the discharge-conduit and return-conduit, respectively; means for actuating the closer; and instrumentalities actuated by the closer and beam mechanism for effecting ascending and descending movements, respectively, of the surplus-receiver, to bring the same into position for first receiving the surplus discharged from the load-receiver and for subsequently discharging said surplus into the said load-receiver.

16. The combination, with weighing mechanism including a vertically reciprocatory load-receiver having a closer and also having a valve-controlled discharge-conduit and a return-conduit located the former above the latter and intermediate the upper and lower ends of said receiver, of a surplus-receiver supported for ascending and descending movements in operative relation with the discharge and return conduits; a latch operative when the load-receiver is in its normal load-receiving position for holding the surplus-receiver in an elevated position and in position to discharge material into the return-conduit; a latch-actuator operative at a predetermined point in the movement of the weighing mechanism for tripping the latch to permit a descending movement of the surplus-receiver; a cut off plate supported for vertical movement between the surplus-receiver and return-conduit and effective for controlling the discharge of material from the surplus-receiver to the load-receiver; means actuated by the closer of the load-receiver for imparting ascending and descending movements to the cut-off plate on the closing and opening movements, respectively, of the closer, and which means is connected to the surplus-receiver and is effective on the closing movement of the closer for elevating said receiver.

17. The combination, with weighing mechanism including a load-receiver having a closer and also having a valve controlled discharge-conduit and a return-conduit located the former above the latter and between the upper and the lower ends of said receiver, of a vertically-disposed guide carried on the load-receiver; a surplus-receiver supported on said guide for vertical movements independent of the receiver and in operative relation with the discharge and return conduits; means operative, when the load-receiver is in its elevated position, for holding the surplus receiver in a load-discharging position; means controlled by the weighing mechanism for effecting a descending movement of the surplus-receiver; means controlled by the closer, on the closing movement thereof, for elevating the surplus-receiver; means effective during the weighing of a load for cutting off the supply of material from the surplus-receiver and the return-conduit, and also effective after the discharge of the weighed load and on the shutting of the closer for establishing communication between the surplus-receiver and load-receiver.

18. The combination, with weighing mechanism including a load-receiver having a closer and with closer-actuating means, of load-reducing means in connection with the load-receiver; a surplus receiving and resupplying device including a vertically-shiftable surplus-receiver and a return-conduit in communication with the load-receiver; means effective, when the load-receiver is in its load-receiving position, for holding the surplus-receiver in an elevated position; means controlled by the weighing mechanism for releasing and effecting a descending movement of the surplus-receiver and including an angle-lever pivotally supported on the framework and having one of its arms pivotally connected to the main closer of the load-receiver; an actuator-rod pivotally connected at its lower end to the other arm of the angle-lever and having at its upper end an elongated slot; a stud or projection on the surplus-receiver extending into said slot, the construction and organization of the actuator-rod, including the lever and its connection with the closer, being such that on the opening movement of the closer a shifting movement will be imparted to the surplus-receiver; and a cut-off plate shiftably supported between the surplus-receiver and return-conduit and connected to the actuator-rod in such manner that on the opening movement of the closer said cut-off plate will be elevated in unison with the surplus-receiver, and on the closing movement of the closer said cut-off plate will be depressed to establish communication between the surplus-receiver and return-conduit of the load-receiver.

19. The combination, with weighing mechanism including a load-receiver, of supply apparatus comprehending a series of supply-chutes pivotally connected and supported for oscillating movements in opposite directions respectively; a main supply-valve controlled by the weighing mechanism for regulating the discharge of material from the supply-chutes to the load-receiver; a power-driven chute-oscillator in operative connection with the oscillatory chutes; and means in connection with, and controlled by, the supply-valve for throwing the chute-oscillator into and out of action.

20. The combination, with weighing mechanism including a load-receiver, of a supply apparatus including a chute supported for vibratory movement; a valve for opening and closing the discharge ends of the supply apparatus; means controlled by the weighing mechanism for imparting an opening movement to said valve; a chute-vibrator in operative connection with the vibratory chute and including a clutch for throwing the chute-vibrator into and out of action; and means carried by the valve for actuating the clutch.

21. The combination, with weighing mechanism including a load-receiver, of a supply apparatus including a series of chutes located one above the other and one or more of which is supported for vibratory movement; an oscillatory stream-controller in connection with one of said chutes; means controlled by the weighing mechanism for imparting an opening-and-closing movement to the stream-controller; a power-driven chute-vibrator in connection with the vibratory chute or chutes and embodying a clutch device; a cam carried on the stream-controller; and means connecting said cam and clutch device and effective on the opening-and-closing-movement of the stream-controller for actuating the clutch device to render the chute-vibrator effective in its operation for vibrating the chute.

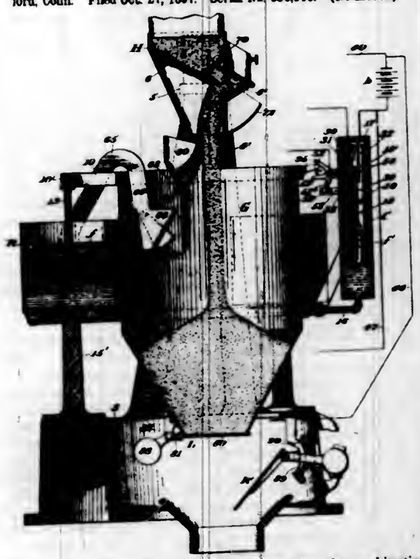
22. The combination, with weighing mechanism including a load-receiver, of a supply apparatus including a vibratory chute; an oscillatory stream-controller supported in position to open and close the discharge end of the supply apparatus; an eccentric-actuating shaft journaled in bearings on the framework and having an eccentric in operative connection with the vibratory chute; a power-driven wheel mounted upon said shaft; a clutch device intermediate to, and effective for locking, the power-wheel and eccentric-shaft together and for disengaging said power-wheel and eccentric-shaft; a clutch-actuating lever pivotally supported on the framework and having one end in engagement with the shiftable clutch member of the clutch device; a cam carried on the stream-controller and having a working face in engagement with the opposite side of the clutch-actuating lever and effective, on the opening movement of the stream controller, for shifting said lever to a position for throwing the members of the clutch device into operative engagement, to thereby cause the eccentric to impart vibratory movement to the chute.

23. The combination, with weighing mechanism including a load-receiver, of a supply apparatus having a vibratory chute and also having an oscillatory valve for controlling the discharge of material to the load-receiver; means controlled by the weighing mechanism for effecting a closing-and-opening movement of the valve at predetermined points in the movements of the load-receiver; a cam carried on the valve; a power-driven chute-vibrator including an eccentric in pivotal connection with the vibratory chute and a power-wheel, each of which has a clutch member in connection therewith; a clutch-actuating lever pivotally supported on the framework and having one end thereof in engagement with one of the clutch members and having its opposite end in engagement with the working face of the valve-cam, and which lever is effective, on opposing movements of the valve, for actuating the clutch member to render the chute-vibrator alternately effective and ineffective.

24. The combination, with a load-receiver, of a horizontally-disposed closer-supporting rock-shaft having its axis at one side the longitudinal axis of the receiver; a closer fixedly secured to said rock-shaft with its supporting-plate transverse to the line of flow of the material; and two oppositely-disposed side closers pivotally supported at their upper ends to the front and rear walls, respectively, of the load-receiver, and having their lower ends in juxtaposition to the opposite ends of the first-mentioned closer; two side-closer-actuating rods pivotally connected at their inner ends to the middle closer at opposite sides, respectively, of the rock-shaft, and pivotally connected at their outer ends to the two side closers, whereby, on the opening movement of the middle closer, an opening movement will be simultaneously imparted to the side closers.

25. The combination, with weighing mechanism including a load-receiver having closer-openings in the front and rear walls at the lower end thereof and also having a discharge opening in the bottom thereof, of a horizontally-disposed rock-shaft carried on the load-receiver at the lower end thereof; a bottom closer carried near one end on the rock-shaft and having that portion of its material-supporting plate of greatest area located in the rear of the axis of said rock-shaft; two oppositely-inclined side closers pivotally supported at their upper ends on the front and rear walls, respectively, of the load-receiver in position to cover the side openings, and having their lower ends, when in their closed positions, in contact with the front and rear ends of the bottom closer; means for normally locking the closers in their closed positions; means operative at a predetermined point in the movement of the load-receiver for releasing said locking means to effect an opening movement of said closers; toggle-links operatively connecting said side closers and bottom closer in such manner that on the opening-and-closing movement of the bottom closer corresponding movements will be imparted simultaneouly to the side closers; and means in connection with the bottom closer and operative, at a predetermined point in the movement of the load-receiver, for imparting a closing movement to said side closers.

607,465. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 27, 1897. Serial No. 656,560. (No model.)



Claim.—1. In an automatic weighing-machine, the combination, with a hydraulically-balanced load-receiver, of stream-supplying means; stream-controlling means; and a hydraulic controller governed by the movements of the load-receiver and controlling the movement of the stream-controlling means.

2. In a weighing-machine, the combination, with a hydraulically-balanced load-receiver, of stream-supplying means; stream-controlling means; and hydraulic controlling means governed by the movements of the load-receiver and controlling the movements of different members of the weighing-machine.

3. In a weighing-machine, the combination with a hydraulically-balanced load-receiver having a member shiftable for discharging a load, of stream-supplying means; stream-controlling means; and hydraulic controlling means governed by the load-receiver and controlling the movements of the stream-controlling means and the shiftable member of the load-receiver.

4. In a weighing-machine, the combination, with a hydraulically-balanced load-receiver and with a load-discharger, of stream supplying means; stream-controlling means; and hydraulic controlling means governed by the load-receiver and controlling the movements of the stream-controlling means and the load-discharger.

5. In a weighing-machine, the combination, with a hydraulically-balanced load-receiver, of stream-supplying means; stream-controlling means; a closed casing; and a hydraulic controller movable in said casing and governed by the movements of the load-receiver and controlling one of the movable members of the weighing-machine.

6. In an automatic weighing-machine, the combination, with a load-receiver, of a single counterpoised oscillatory load-discharger having two parallel axes of movement, and connections between the load-receiver and load-discharger to points at different distances from one of the axes of movement of the latter.

7. In an automatic weighing-machine, the combination, with a load-receiver, of a single counterpoised oscillatory load-discharger embodying two members, one carried by the other and having parallel axes of movement, and connections between the load-receiver and the load-discharger to points at different distances from one of the axes of movement of the latter.

8. In an automatic weighing-machine, the combination, with a load-receiver, of a single counterpoised oscillatory load-discharger embodying a counterweighted rock-frame and a closer pivotally carried by the rock-arms of said rock-frame, and connections between the load-receiver and load-discharger to points at different distances from the axis of oscillation of the rock-frame.

9. In a weighing-machine, the combination, with a load-receiver, of a single counterpoised oscillatory load-discharger having two parallel axes of movement; a rocker mounted for oscillation on said load-receiver; and a pair of connectors joined to the load-discharger at different distances from one of the axes of movement of the latter, and connected to the rocker in different angular positions with respect to the axis of the latter.

10. In a weighing-machine, the combination, with a load-receiver, of a single counterpoised oscillatory load-discharger having two parallel axes of movement; a rocker mounted for oscillation on said load-receiver; and a pair of connectors joined to the load discharger at different distances from one of the axes of movement of the latter and connected to the rocker at different distances from the axis of the latter and in different angular positions with respect to such axis.

11. In a weighing-machine, the combination, with a load-receiver, of a counterpoised oscillatory load-discharger having two parallel axes of movement; a rocker mounted for oscillation on said load-receiver; a connecting-rod pivoted to the load-discharger near the free end of the latter and pivoted to the rocker at a point which is substantially in the dead-center line of the latter when the load discharger is closed; and a second connecting-rod pivoted to the load discharger near the axis of movement thereof and pivoted to the rocker at a point which is substantially in the line of maximum leverage of the latter when the load-discharger is closed.

12. In a weighing-machine, the combination, with a load-receiver, of a single counterpoised oscillatory load-discharger having two parallel axes of movement; a rocker mounted for oscillation on said load-receiver; a pair of connecting-rods joined to the load-discharger at different distances from one of the axes of movement of the latter and connected to the rocker in different angular positions with respect to the axis of the latter; and a pair of alternately-operative holding devices for engaging the rocker at different points thereof to hold the load-discharger in its respective open and closed positions.

13. In a weighing-machine, the combination, with a support, of overloading means; a load-receiver; shiftable load-reducing means carried by said load receiver and in position to receive material directly from the overloading means; a fixed cut-off plate on the load-receiver and controlling the discharge end of the load-reducing means; and a surplus-receiver on the support.

14. In a weighing-machine, the combination, with a support, of overloading means; a load-receiver; an oscillatory load-reducing spout carried by said load-receiver and in position to receive material directly from the overloading means; a fixed cut-off plate on the load-receiver and embodying a cut-off member controlling the discharge end of the load-reducing spout, and also having an inclined surplus-deflector; and a surplus-receiver on the support.

15. In a weighing-machine, the combination, with a support, of an overloading-spout; a load receiver; shiftable load-reducing means carried by said load-receiver and in position to receive material directly from the overloading-spout; a fixed cut-off plate on the load-receiver and controlling the discharge end of the load-reducing means; a surplus-receiving reconveying-spout on the support; and a pair of valves connected for movement in unison and controlling, respectively, the overloading-spout and the surplus-receiving reconveying-spout.

16. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a load-receiver embodying a member shiftable for discharging a load; a regulator; electrically-controlled holding means for holding said shiftable mem-

ber in its open position; and an automatic electrical circuit-controller governed by the regulator for releasing said holding means on the return of the regulator to its normal position.

17. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a load-receiver; a load-discharger; a regulator; an electrically-controlled latch for latching said load-discharger in its open position; and an automatic electrical circuit-controller governed by the regulator for releasing said latch on the return of the regulator to its normal position.

18. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a hydraulically-balanced load-receiver, and a hydraulically-operated electrical circuit-controller governed by the movements of the load-receiver.

19. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a hydraulically-balanced load-receiver; and a hydraulically-operated electrical circuit-controller governed by the movements of the load-receiver and controlling the operation of a movable member of the weighing-machine.

20. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a vertically-movable hydraulically-balanced load-receiver embodying a member shiftable for discharging a load, and hydraulically-operated electrical circuit-controlling means governed by the vertical movements of the load-receiver and controlling the operation of the stream-controlling means and the shiftable member of the load-receiver.

21. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a vertically-movable hydraulically-balanced load-receiver; an oscillatory load-discharger carried by the load-receiver; and hydraulically-operated electrical circuit-controlling means governed by the vertical movements of the load-receiver, and controlling the operation of the stream-controlling means and the load-discharger.

22. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a vertically-movable hydraulically-balanced load-receiver embodying a member shiftable for discharging a load; a hydraulically-operated electrical circuit-controller governed by the vertical movements of the load-receiver; and an automatic electrical circuit-controller governed by the movements of said shiftable member of the load-receiver, and included in a single circuit with the hydraulically-operated circuit-controller, and controlling conjointly therewith the operation of the stream-controlling means.

23. In a weighing-machine, the combination, with a vertically-movable load-receiver, of overloading means; an oscillatory load-reducing member shiftable to opposite sides of a normal, central, closed position; a pair of solenoids for shifting said load-reducing member to opposite sides of such central position; and a pair of automatic electrical circuit-controllers governed by the movements of the load-receiver and controlling said respective solenoids.

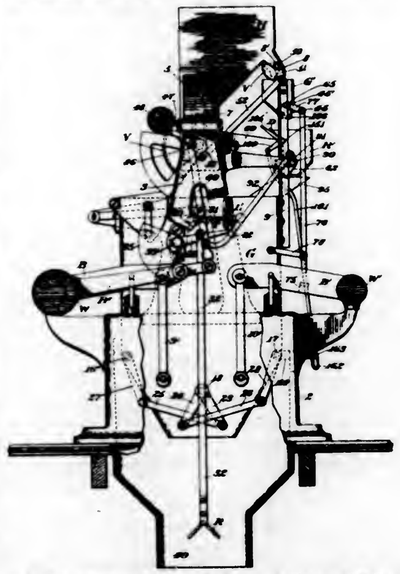
607,466. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 4, 1897. Serial No. 657,357. (No model.)

Claim.—1. The combination, with weighing mechanism embodying a plurality of receivers, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other receiver; means for removing the surplus; a surplus-receiver; a deflector mounted to coöperate with one of the first-mentioned receivers and with the surplus-receiver; and means for operating said deflector in one direction to permit the surplus to pass from the weighing mechanism and to enter the surplus-receiver and for operating said deflector in a different direction to prevent the entrance of material into said surplus-receiver.

2. The combination, with weighing mechanism embodying a plurality of load-receivers, of means for delivering an overload part of which is delivered to one receiver and the remainder to the other receiver; means for removing the surplus; a fixed surplus-receiver; a deflector mounted to coöperate with one of the load-receivers and with the surplus-receiver; and means for operating said deflector in one direction to permit the surplus to pass from the weighing mechanism and to enter the surplus-receiver and for operating said deflector in a different direction to prevent the entrance of material into said surplus-receiver.

3. The combination, with weighing mechanism embodying a plurality of receivers, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other receiver; means for removing the surplus; a surplus-receiver; an oscillatory deflector mounted to coöperate with one of the first-mentioned receivers and with the surplus-receiver; and means for operating said deflector in one direction to permit the surplus to pass from the weighing mechanism and to enter the surplus-receiver and for operating said deflector in the opposite direction to prevent the entrance of material into said surplus-receiver.

4. The combination, with weighing mechanism embodying a plurality of receivers, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other receiver; means for removing the surplus; a surplus-receiver; a deflector mounted upon the surplus-receiver; and means for shifting said deflector in different directions to permit or prevent the entrance of material into the surplus-receiver.



5. The combination, with weighing mechanism embodying a plurality of receivers, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other receiver; means for removing the surplus; a surplus-receiver; a deflector mounted to coöperate with one of the first-mentioned receivers and with the surplus-receiver; a deflector mounted upon the surplus-receiver and operable in different directions to permit or prevent the entrance of material into said surplus-receiver; and means coöperative with the discharge mechanism for shifting said deflector.

6. The combination, with weighing mechanism embodying a plurality of receivers, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other receiver; means for removing the surplus; a surplus-receiver; a deflector-plate mounted for oscillation upon the surplus-receiver; and means for shifting said deflector-plate on the completion of a load.

7. The combination, with weighing mechanism embodying a plurality of receivers, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other receiver; means for removing the surplus; a surplus-receiver mounted on the framework between the two first-mentioned receivers; a deflector mounted to coöperate with one of the first-mentioned receivers and with the surplus-receiver; and means for operating said deflector in one direction to permit the surplus to pass from the weighing mechanism and to enter the load-receiver and for operating said deflector in a different direction to prevent the entrance of material into said surplus-receiver.

8. The combination, with weighing mechanism embodying main and auxiliary receivers, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other of the receivers; means for removing the surplus; a surplus-receiver; a deflector mounted to coöperate with the auxiliary receiver and with the surplus-receiver; a valve on the auxiliary receiver; and means for simultaneously operating said valve and deflector on the discharge of a load.

9. The combination, with weighing mechanism embodying a plurality of receivers, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other receiver; a valve upon one of the receivers; means for operating said valve to remove the surplus; a deflector mounted to coöperate with the valved receiver and with the surplus-receiver; means for shifting said deflector to prevent the entrance of material into the surplus-receiver; and means operative with the deflector for opening said valve.

10. The combination, with weighing mechanism embodying a plurality of receivers, of means for delivering an overload part of which is supplied to one receiver and the remainder to the other receiver; a valve mounted upon one of the receivers; means operative with the weighing mechanism for opening said valve to permit the surplus to pass from the weighing mechanism; a surplus-receiver; a shaft; a deflector carried by said shaft for shifting movement in opposite directions; means for operating said shaft; and a device carried upon the shaft for opening said valve.

11. The combination, with weighing mechanism embodying a plurality of receivers one of which is provided with closer mechanism and the other of which is furnished with a valve, of means for delivering an overload part of which is supplied to one of the receivers and the remainder to the other; means for removing the surplus; a surplus-receiver; means for operating said valve to permit the surplus to escape from the weighing mechanism and enter the surplus-receiver; a deflector shiftable to prevent the entrance of material into the surplus-receiver; and connections between the deflector and the closer mechanism for operating the former.

12. The combination, with a main receiver having a closer provided with a crank-arm; an auxiliary receiver mounted upon the main receiver; a surplus-receiver; means for effecting the removal of the surplus from the auxiliary receiver; a deflector shiftable to prevent the entrance of material into the surplus-receiver; a shaft carrying the deflector and having a crank-arm; and a rod pivoted to said crank-arm and terminating in a loop embracing the pin on the first-mentioned crank-arm.

13. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers and a pair of auxiliary closers, a closer of each pair being supported for movement toward and from a coöperating closer of the other pair as said closers alternately open and shut.

14. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers and a pair of auxiliary closers, a closer of one pair being supported for movement toward and from a coöperating closer of the other pair as said closers open and shut; a shaft for supporting the auxiliary closers, one of the latter being fixed to said shaft and the other being loose thereon; and connections between the said closers.

15. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers and a pair of auxiliary closers, a closer of each pair being supported for movement toward and from a coöperating closer of the other pair as said closers open and shut; a shaft supporting the auxiliary closers, one of the latter being fixed to said shaft and the other being loosely sleeved thereon; a crank-arm extending from the shaft; a second crank-arm on the sleeve of the auxiliary closer, that is loose on the shaft; and connections between said crank-arms and the main closers.

16. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers at opposite sides thereof; shafts carried by the load-receiver, for sustaining said main closers; a pair of auxiliary closers intermediate the main closers; a shaft for supporting the auxiliary closers; and connections between said last-mentioned shaft and the shafts which support the main closers, for causing simultaneous motion of the closers.

17. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers at opposite sides of the load-receiver; shafts for supporting the main closers; a pair of auxiliary closers situated between the main closers; a shaft for supporting the auxiliary closers, one of the latter being fixed to said shaft and the other being sleeved thereto; a pair of crank-arms, one of these being fixed to the shaft that carries the auxiliary closer and the other fixed to a sleeve of the other auxiliary closer; links connected to said crank-arms; and crank-arms on the shafts of the main closers, connected with said links.

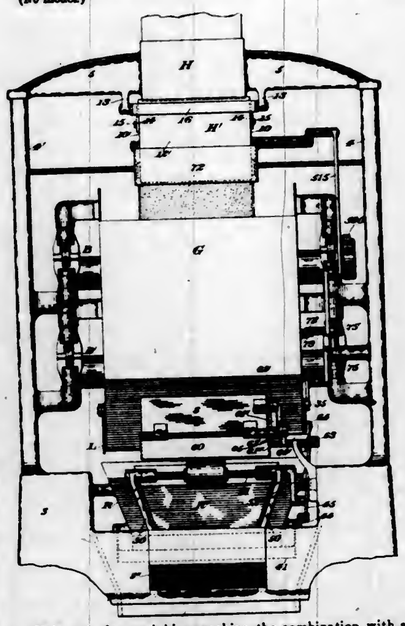
18. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers and a pair of auxiliary closers, a closer of each pair being supported for movement toward and from a coöperating closer of the other pair as said closers open and shut; connections between the several closers, for causing the simultaneous movement thereof; and a regulator connected with the closer mechanism.

19. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers and a pair of auxiliary closers, a closer of each pair being supported for movement toward and from a coöperating closer of the other pair as said closers open and shut; connections between the several closers for causing the simultaneous operation thereof; linkage joining the auxiliary closers; and a regulator connected with the linkage.

20. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers and a pair of auxiliary closers, a closer of one pair being supported for movement toward and from a coöperating closer of the other as said closers open and shut; connections between the closers; a rod coöperative with the closers; and means for holding the rod against action.

21. The combination, with weighing mechanism embodying a load-receiver, of a pair of main closers and a pair of auxiliary closers, a closer of each pair being supported for movement toward and from a coöperating closer of the other pair; connections between the closers; a pair of rods coöperative with the closers and extending below the load-receiver; and a regulator secured between said rods.

607,467. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 12, 1897. Serial No. 658,253. (No model.)



Claim.—1. In a weighing-machine, the combination, with a longitudinally-divided supply-hopper embodying parallel end sections and side sections converging gradually at an acute angle, of means for actuating said side sections longitudinally relatively to the end sections.

2. In a weighing-machine, the combination, with a longitudinally-divided supply hopper embodying parallel end sections and side sections converging gradually at an acute angle, of means for actuating said side sections in parallel planes longitudinally relatively to the end sections.

3. In a weighing machine, the combination, with stream-supplying means and with stream-controlling means, of a load-receiver having a discharge-opening, and a pair of oscillatory load-dischargers facing toward each other and movable about parallel axes adjacent to opposite sides of said opening and having their working faces concentric with their respective axes of oscillation and geared together for movement in unison.

4. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a load-receiver having a discharge-opening, and a pair of inwardly-facing oscillatory load-dischargers having their working faces concentric with their respective axes of oscillation and controlling said opening and geared together at different points in the length thereof for movement in unison.

5. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a load-receiver embodying a member shiftable for discharging a load, and a regulator operative for actuating said shiftable member to discharge the load.

6. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of a load-receiver; a load-discharger; and a load-discharger-actuating regulator operative for operating said load-discharger.

7. In a weighing-machine, the combination, with overloading means and with a load-receiver embodying a member shiftable for discharging a load, said load-receiver also having a load-reducing opening, of a regulator controlled by material discharged from said opening.

8. In a weighing-machine, the combination, with overloading means and with a load-receiver embodying a member shiftable for discharging a load, said load-receiver also having a load-reducing opening, of a regulator controlled by material discharged from said opening and governing the operation of a movable member of the machine.

9. In a weighing-machine, the combination, with overloading means and with a load-receiver embodying a member shiftable for discharging a load, said load-receiver also having a load-reducing opening, of a regulator controlled by material discharged from said opening and operative for actuating the shiftable member of the load-receiver.

10. In a weighing-machine, the combination, with overloading means and with a load-receiver embodying a member shiftable for discharging a load, said load-receiver also having a load-reducing opening, of regulators controlled by material discharged from said opening and governing the movements of different parts of the machine.

11. In a weighing-machine, the combination, with overloading means and with a load-receiver embodying a member shiftable for discharging a load, said load-receiver also having a load-reducing opening, of separately-operative regulators controlled by material discharged from said opening and governing the movements of different parts of the machine.

12. In a weighing-machine, the combination, with overloading means and with a load receiver embodying a member shiftable for discharging a load and also having a load-reducing opening, of a regulator controlled by material discharged from said opening, and a regulator-operated blocking device coöperative with a movable member of the machine for controlling the operation of the latter.

13. In a weighing-machine, the combination, with overloading means and with weighing mechanism embodying a load-receiver having a member shiftable for discharging a load and also having a load-reducing opening, of a regulator controlled by material discharged from said opening, and a regulator-operated blocking device coöperative with the weighing mechanism for controlling one of the movements of the latter.

14. In a weighing-machine, the combination, with overloading means and with beam mechanism supporting a load-receiver having a member shiftable for discharging a load and also having a load-reducing opening, of a regulator controlled by material discharged from said opening, and a regulator-operated blocking device coöperative with the beam mechanism for controlling one of the movements of the latter.

15. In a weighing-machine, the combination, with overloading means and with a load-receiver embodying a member shiftable for discharging a load and also having a continuously-discharging load-reducing opening, of separate receivers for material discharged from said load-reducing opening, and a steam-deflector shiftable adjacent to said load-reducing opening for deflecting material from the load-reducing opening into any one of the receivers.

16. In a weighing-machine, the combination, with overloading means, of a load-receiver having a continuously-discharging load-reducing opening; a load-discharger; separate load-receiving and surplus-receiving regulators for material discharged from said load-reducing opening; and a stream-deflector for deflecting the material from the load-reducing opening into said regulators alternately.

17. In a weighing-machine, the combination, with overloading means, of a load-receiver having a continuously-discharging load-reducing opening; a load-discharger; separate load-receiving and surplus-receiving regulators for material discharged from said load-reducing opening; and a load-discharger-operated stream-deflector for deflecting the material from the load-reducing opening into said regulators alternately.

18. In a weighing-machine, the combination, with overloading means and with a load-receiver embodying a member shiftable for discharging a load and also having a load-reducing opening, of a surplus-receiving regulator for surplus material discharged from said load-reducing opening, and operative for governing the operation of a movable member of the machine.

19. In a weighing-machine, the combination, with overloading means and with a load-receiver embodying a member shiftable for discharging a load and also having a load-reducing opening, of a counterpoised surplus-receiving regulator for surplus material discharged from said load-reducing opening, and operative for governing the operation of a movable member of the machine.

20. In a weighing-machine, the combination, with two members thereof movable relatively to each other, of a train of interdependent by-pass stops between said members and controlling the movements thereof, two of said stops being carried respectively by said movable members.

21. In a weighing-machine, the combination, with framework, of overloading means; beam mechanism; a load-receiver embodying a member shiftable for discharging a load, and also having a load-reducing opening; a surplus-receiving regulator in position to receive material from said load-reducing opening, and a beam-locking device mounted on the framework and operative by said surplus-receiving regulator.

22. In a weighing-machine, the combination, with framework, of stream-supplying means; a stream-controlling valve; a valve-opening actuator; a valve-opening thrust-rod; a load-receiver; a load-discharger; and a blocking device supported on the framework and operated by the load-discharger, and shiftable into and out of engagement with said thrust-rod.

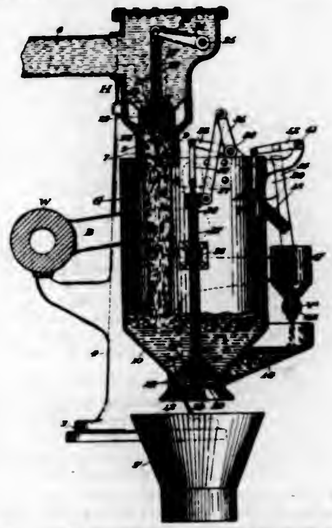
23. In a weighing-machine, the combination, with framework, of overloading means embodying a stream-controlling valve; a valve-opening actuator; a valve-opening thrust-rod; a load-receiver having a load reducing opening; a load-discharger; a load-discharger-operating regulator supported to receive material from the load-reducing opening in the load-receiver; and a blocking device supported on the framework and operated by the load-discharger, and shiftable into and out of engagement with said valve-opening thrust-rod.

24. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of weighing mechanism embodying a load-receiver and a load-discharger; a regulator having a relatively large discharge-opening; and a valve controlling the discharge opening in the regulator and having a relatively small discharge opening for the last portion of the discharged load.

25. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of weighing mechanism embodying a load-receiver and a load-discharger; a regulator having a relatively large discharge-opening; and a load-discharger-operated valve controlling the discharge-opening in the regulator and having a relatively small discharge-opening for the last portion of the discharged load.

26. In a weighing-machine, the combination, with stream-supplying means and with stream-controlling means, of weighing mechanism embodying a load-receiver and a load-discharger; a regulator having a relatively large discharge-opening; and a load-discharger-operated valve supported on, and controlling the discharge-opening in, the regulator and having a relatively small discharge-opening for the last portion of the discharged load.

607,468. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 17, 1897. Serial No. 658,845. (No model.)



Claim.—1. The combination, with weighing mechanism including a reciprocatory load-receiver, of stream-supplying means including an expansile valve, and valve closing and expanding means automatically controlled by the weighing mechanism and effective at predetermined definite points in the movements of the load-receiver for first closing and then expanding said valve.

2. The combination, with weighing mechanism including a reciprocatory load-receiver, of a piston-valve embodying a divided expanding ring, and independent instrumentalities automatically controlled by the weighing mechanism and effective one for closing the valve at one point in the movement of the load-receiver, and the other for expanding the ring at another point in the movement of the load-receiver.

3. The combination, with weighing mechanism including a reciprocatory load-receiver having a discharge-valve and a discharge-valve-shutting actuator, of stream-supplying means embodying a reciprocatory valve having a diametrically-expansible ring; automatically-operable means controlled by the weighing mechanism for first closing the valve and then expanding the ring; and means operated by the closer, on the closing movement thereof, for controlling the contraction of the expanding ring and the opening movement of the valve.

4. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper having a valve-chamber, of an expansile piston-valve supported for reciprocatory movements in said chamber, and two successively-effective devices automatically operative at predetermined points in the reciprocatory movements of the load-receiver for first advancing and subsequently expanding, and next contracting and subsequently retracting, said valve.

5. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper, of two expansile valves in coöperative relation with, and effective for closing the outlets of, the hopper and receiver, respectively, and one of which is controlled in one of its movements by the other, and automatically-operative means controlled by the weighing mechanism at predetermined points in the movements thereof for effecting a closing and expanding movement of one valve and a contracting and opening movement of the other valve in successive order.

6. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper, of a piston-valve supported in said hopper and having a divided expanding ring for closing the outlet of said hopper; a counterweighted valve-advancing actuator including means for operating the valve and ring, one slightly in advance of the other; means operative at a predetermined point in the movement of the load-receiver for effecting a movement of said valve-advancing actuator; and a seat for arresting the advancing movement of said valve.

7. The combination, with weighing mechanism including beam mechanism, a load-receiver, and a supply-hopper, of an expansile valve comprising a carrier and an expanding device movable in relatively transverse planes; means controlled by the weighing mechanism for operating the carrier and expanding device one in advance of the other, and comprising a rock-shaft journaled in the hopper and having two rocker-arms movably connected with the carrier and expanding device, respectively; and an actuator operatively connecting the rock-shaft and a member of the beam mechanism.

8. The combination, with weighing mechanism including a load-receiver, of overload-supplying means including a reciprocatory expansile valve; load-reducing means including a surplus-receiver having an oscillatory plug-valve; an actuator in direct connection with the expansile valve and plug-valve and operative, at a predetermined point in the movement of the weighing mechanism, for effecting opening and closing movements of said valves concurrently; and means effective, on the closure of the expansile valve, for expanding said valve.

9. The combination, with oscillatory beam mechanism and with a load-receiver supported thereon, of stream-supplying means including a valve; valve-reducing means in connection with the load-receiver; a surplus-receiver fixedly supported at one side the load-receiver in operative relation with the load-reducing means, and embodying a valve; and a valve-actuator directly connecting the two valves and having an offset portion disposed in the path of movement of one member of the beam mechanism, whereby the two valves will be operated concurrently.

10. A weighing-machine comprehending oscillatory beam mechanism; two receivers set side by side and one of which is carried by the beam mechanism and the other of which is fixedly supported; a vertically-reciprocatory expansile valve disposed to close the discharge-opening of one of said receivers; a plug-valve seated for oscillatory movement in the discharge end of the other receiver and having its axis in a horizontal plane; means controlled by the weighing mechanism and effective for first reciprocating the expansile valve and for expanding and contracting the same intermediate the closing and opening movements thereof; overload-supplying means including a supply-controlling valve; and means operatively connecting the supply-controlling valve and plug-valve, and effective, on the closing movement of the expansile valve, for imparting opening movements to the stream-controlling valve and plug-valve.

11. The combination, with weighing mechanism including a load-receiver having a discharge-opening and a supply-hopper having a discharge-opening, of two expansile piston-valves for closing the discharge-openings of the load-receiver and supply-hopper, respectively, and each comprising an axially-recessed carrier and a radially-divided expanding ring; a flexible ring surrounding the expanding ring; an expander rod extending through each carrier; a series of radially-disposed thrust members operatively connecting the lower end of each carrier and each divided expanding ring, and so disposed that on one movement of the expander-rod an expanding movement will be imparted to said expanding ring; independent valve-actuators controlled by the weighing mechanism and each including a rock-shaft having two rocker-arms in operative connection with the carrier and expander-rod, respectively, and effective for operating one in advance of the other; and interlocking instrumentalities between said actuators and effective for alternately blocking the valve-opening movements of each other alternately.

12. The combination, with weighing mechanism including a reciprocatory load-receiver, of overload-supplying means including a supply-hopper having a vertically-reciprocatory piston-valve adapted for closing the outlet of said hopper; load-reducing means including a fixedly supported surplus-receiver having an oscillatory valve; a valve-actuator directly connecting said two valves and actuated by a member of the weighing mechanism at predetermined points in the movements of the load-receiver for imparting a reciprocatory movement to one valve and an oscillatory movement to the other valve concurrently.

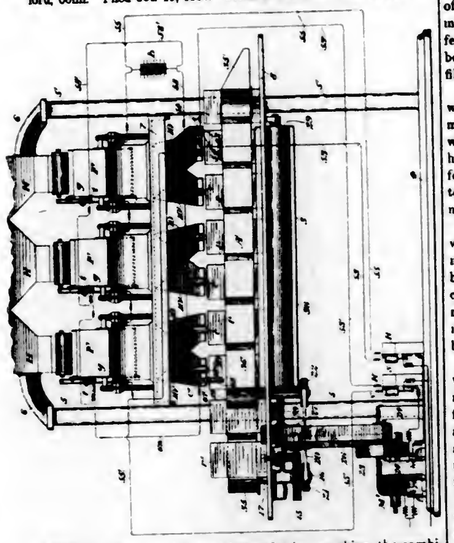
13. The combination, with a supply-hopper having a vertically-disposed tubular valve-chamber and also having internal radially-disposed valve-guides, of a tubular valve supported between the inner ends of said guides for reciprocatory movement, and having a circumferential groove; an expansile ring seated in said groove; a radially-divided expanding ring bearing against the inner face of said expansile ring; an expander-rod supported for reciprocatory movement in the valve-stem; radially-disposed thrust members in operative connection with the expander-rod and expanding ring and effective, on the movements of the expander-rod, for actuating the expanding ring to expand or contract the expansile ring; and oscillatory actuating means in operative connection with the expander-rod and valve and effective for imparting to one a movement slightly in advance of the other.

14. The combination, with weighing mechanism including a load-receiver and with a supply-hopper having a vertically-disposed valve-chamber, of an axially-recessed cylindrical valve-body having a circumferentially-disposed ring-receiving groove and an axially-recessed stem; an expansile ring seated in said groove; a divided expanding ring in operative engagement with the inner face of the expansile ring; radially disposed thrust-rods bearing at their outer ends against the inner face of the expanding ring; an expander or thrust rod supported for reciprocatory movement in the valve and embodying means for actuating the radial thrust members to expand, and permit the contraction of, the expansile ring; and means controlled by the weighing mechanism for effecting opening and closing movements of the valve, and for imparting reciprocatory movements to the expanding-rod.

15. The combination, with a load-receiver having a discharge-opening, of an axially-recessed cylindrical valve-body having a circumferential ring-receiving groove; an axially-recessed stem; a flexible ring seated in said circumferential groove; a divided expanding ring bearing against the inner face of the flexible ring; radially-disposed thrust members bearing at their outer ends against the inner face of the expanding ring; an expander-rod extending through, and supported for reciprocatory movement in, the valve-stem and embodying means for actuating the radial thrust members to force the parts of the expanding ring inward and outward to expand and contract the flexible ring; and means in connection with, and effective for imparting reciprocatory movements to, the valve and expander-rod, one slightly in advance of the other.

16. The combination, with weighing mechanism including a reciprocatory load-receiver having a discharge-opening and with a supply-hopper having a discharge-opening, of two expansile valves supported for reciprocatory movements in parallel planes and in operative relation, respectively, with the discharge ends of the load-receiver and supply-hopper; means controlled by the weighing mechanism for effecting opening and closing movements of the two valves in alternating order, and comprehending instrumentalities for expanding said valves on the closing movements thereof; a discharge-conduit and a return-conduit located the former above the latter and communicating with the interior of the load-receiver; a gravitative reciprocatory valve in operative relation with, and effective for closing the opening of, the discharge-chute; a surplus-receiver fixedly supported at one side of the load receiver between the discharge and return conduits, and having an oscillatory plug-valve journaled therein; an actuating-connector between the plug-valve of the surplus-receiver and the expansile valve of the supply-hopper, and operable on the opening and closing movements of said hopper-valve for imparting simultaneously opening and closing movements to the surplus-receiver valve; and means controlled by the load-receiver, on its descending movement, for imparting an opening movement to the valve of the discharge-chute.

607,469. BOX-FILLING MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 19, 1897. Serial No. 655,736. (No model.)



Claim.— 1. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a box-advancing feeder; a box-shifting feeder movable transversely to the box-advancing feeder, one of said feeders being intermittently operative; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

2. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of intermittently-operative box-advancing and box-shifting feeders movable transversely to each other; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

3. In a box filling and transferring machine, the combination, with automatically operative intermittently-discharging box-filling means, of alternately-operative box-advancing and box-shifting feeders movable transversely to each other; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

4. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of intermittently and alternately operative box-advancing and box-shifting feeders movable transversely to each other, and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

5. In a box filling and transferring machine, the combination, with automatically-operative and intermittently-discharging box-filling means, of traveling box-feeders movable in different directions, and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

6. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of endless traveling box-feeders movable in different directions, and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

7. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a traveling box-advancing feeder; a traveling box-shifting feeder movable transversely relatively to the box-advancing feeder; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

8. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a traveling box-advancing feeder; a traveling box supporting and shifting feeder, and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

9. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a box-advancing feed-belt; a box supporting and shifting feed-belt movable transversely to the box-advancing feed-belt; and automatic feeder-actuating mechanism for operating said feed-belts to move a box to its load-receiving position before the discharge of the box-filling means.

10. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of traveling box-advancing and box-shifting feeders, one of which feeders constitutes a box support, and the other of which feeders has box-actuating members projecting therefrom, and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means.

11. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of box-advancing and box-shifting feed-belts, one of which belts constitutes a box-support, and the other of which belts has a circuit of box-actuating members projecting therefrom, and automatic feeder-actuating mechanism for operating said feed-belts to move a box to its load-receiving position before the discharge of the box-filling means.

12. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of box-advancing and box-shifting feed-belts, one of which feed-belts constitutes a box-support, and the other of which belts has a circuit of equidistant actuating members projecting therefrom, and automatic feeder-actuating mechanism for operating said feed-belts to move a box to its load-receiving position before the discharge of the box-filling means.

13. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of box-advancing and box-shifting feed-belts, one of which belts constitutes a box-support, and each of which belts has a circuit of box spacing members projecting therefrom, and automatic feeder-actuating mechanism for operating said feed-belt to move a box to its load-receiving position before the discharge of the box-filling means.

14. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of box-advancing and box-shifting feed-belts, one of which belts constitutes a box-support, and each of which belts has a circuit of equidistant box-spacing members projecting therefrom, and automatic feeder-actuating mechanism for operating said feed-belts to move a box to its load-receiving position before the discharge of the box-filling means.

15. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a pair of separated box-advancing feeders; a box-shifting feeder movable in a different direction from the box-advancing feeders; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means, and to remove said box.

16. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a pair of separated box advancing feeders; a box-shifting feeder movable between, and transversely to, said box-advancing feeders for transferring a box from one to the other of such box-advancing feeders; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box filling means, and to remove said box.

17. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a pair of separated box-advancing feeders movable in the same direction; a box-shifting feeder movable in a different direction; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means, and to remove said box.

18. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a pair of simultaneously-operative separated box-advancing feeders; a box-shifting feeder movable in a different direction from the box-advancing feeders, and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means, and to remove said box.

19. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a pair of separated box-advancing feeders; a box-shifting feeder movable in a different direction and operative alternately with said box-advancing feeders; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means, and to remove said box.

20. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a pair of separated box-advancing feeders simultaneously and intermittently operative; an intermittently-operative box-shifting feeder operative alternately with said box-advancing feeders; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means, and to remove said box.

21. In a box filling and transferring machine, the combination, with automatically-operative intermittently-discharging box-filling means, of a pair of simultaneously-operative separated box-advancing feed-belts each having a circuit of box-actuating members projecting therefrom, said feed-belts having an interval between the ends of the box-actuating members of their working runs greater than the width of the box controlled thereby; a box-shifting feed-belt movable transversely to the box-advancing feed-belts and operative alternately therewith; and automatic feeder-actuating mechanism for operating said feeders to move a box to its load-receiving position before the discharge of the box-filling means, and to remove said box.

22. In a box filling and transferring machine, the combination, with box-filling means embodying a load-discharger, of a box-advancing feeder, and a box-shifting feeder movable in a different direction and controlling the load-discharging movement of said load-discharger.

23. In a box filling and transferring machine, the combination, with box-filling means, of a pair of box-feeders; box-controlled feeder-starting means governed by one of said feeders; and box-controlled feeder-stopping means governed by the other of said feeders.

24. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box-shifting feeder movable transversely to the box-advancing feeder; feeder-stopping means governed by the movement of the box-advancing feeder and operative for stopping the latter; and feeder-starting means governed by the movement of the box-shifting feeder and operative for starting the box-advancing feeder.

25. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box shifting feeder movable transversely to the box-advancing feeder and operative alternately therewith; and box-controlled feeder starting and stopping means controlling the starting and the stopping of both of said feeders.

26. In a box filling and transferring machine, the combination, with a plurality of box-filling means, each embodying a load-discharger, of box-advancing feeding means operative for advancing a plurality of boxes into position to be filled, one by each box-filling means; and a plurality of box-controlled load-discharger-controlling blocking devices, one for each box, for preventing the discharging movement of a load-discharger when the box corresponding thereto is not properly positioned.

27. In a box filling and transferring machine, the combination, with a plurality of box-filling means, each embodying a load-discharger, of box-advancing feeding means operative for advancing a plurality of boxes into position to be filled, one by each box-filling means; and a plurality of interdependent box-controlled load-discharger-controlling blocking devices, one for each box, for preventing the discharging movement of each of said load-dischargers until all of the boxes are properly positioned

28. In a box filling and transferring machine, the combination, with box-filling means embodying a load-discharger, of a box-advancing feeder; a box-shifting feeder movable transversely to the box-advancing feeder; and a pair of mutually-dependent load-discharger-controlling blocking devices controlled, respectively, by said respective feeders and controlling the discharging movement of said load-discharger.

29. In a box filling and transferring machine, the combination, with a plurality of box-filling means, each embodying a load-discharger, of alternately-operative box-advancing and box-shifting feeding means operative, respectively, for advancing a plurality of boxes into position to be filled, one by each box-filling means, and for subsequently shifting said boxes sidewise; and a plurality of interdependent load-discharger-controlling blocking devices for preventing the premature discharge of said load-dischargers and embodying a series of box-controlled blocking devices, one for each box, and controlled by the advancing movement thereof, and a blocking device controlled by the sidewise movement of the box-shifting feeding means.

30. In a box filling and transferring machine, the combination, with box-filling means embodying load-poising means and a load-discharger, of a box-feeder, and mutually-dependent load-discharger-controlling blocking devices controlled, respectively, by the load-poising means and the box-feeder for preventing premature discharge of the load-discharger.

31. In a box filling and transferring machine, the combination, with box-filling means embodying load-poising means and a load-discharger, of a box-advancing feeder; a box-shifting feeder movable transversely to the box-advancing feeder; and interdependent load-discharger-controlling blocking devices controlled, respectively, by the load poising means, the box-advancing feeder, and the box-shifting feeder, for preventing premature discharge of the load-discharger.

32. In a box filling and transferring machine, the combination, with automatically-operative box-filling mechanism embodying stream-supplying means and stream-controlling means for feeding a predetermined load, and also embodying a load-discharger shiftable for delivering such load to a box, of electrically-controlled box-feeding means operable for feeding a box in different directions, and automatic electrical circuit-controlling means governing such movement of the box-feeding means.

33. In a box filling and transferring machine, the combination, with box-filling means of a pair of electrically-controlled box-feeders movable in different directions and each controlling the movements of the other, and automatic electrical circuit-controlling means controlled by said respective box-feeders.

34. In a box filling and transferring machine, the combination, with box-filling means, of a pair of electrically-controlled box-feeders movable in different directions and each controlling the stopping of its own movement and the starting of the other in operation.

35. In a box filling and transferring machine, the combination, with automatically-operative box-filling mechanism embodying stream-supplying means and stream-controlling means for feeding a predetermined load, and also embodying a load-discharger shiftable for delivering such load to a box, of a pair of electrically-controlled box-feeders movable in different directions; a pair of electric circuits controlling such box-feeders; and automatic electrical circuit-controlling means for opening and closing said circuits alternately.

36. In a box filling and transferring machine, the combination, with box-filling means, of an electrically-controlled box-advancing feeder; an electrically-controlled box-shifting feeder movable transversely to, and operable alternately with, the box-advancing feeder; and a box-operated electrical circuit-controller governing the movements of said feeders and shiftable in one direction by the advancing box and shiftable in the other direction on the shifting of the box.

37. In a box filling and transferring machine, the combination, with box-filling means embodying beam mechanism and a load-discharger, of a box-feeder, and a pair of automatic electrical circuit-controllers governed, respectively, by the beam mechanism and the box-feeder and controlling conjointly the discharging movement of said load-discharger.

38. In a box filling and transferring machine, the combination, with box-filling means embodying beam mechanism and a load-discharger, of a box-feeder, and an electric circuit having two normally open breaks controlled by a pair of automatic electrical circuit-controllers governed, respectively, by the beam mechanism and the box-feeder and controlling conjointly the discharging movement of said load-discharger.

39. In a box filling and transferring machine, the combination, with a plurality of box-filling means, each embodying a load-discharger, of box-advancing feeding means operative for advancing a plurality of boxes into position to be filled, one by each box-filling means; and box-operated circuit-closers, one for each box, and all included in a single electric circuit controlling the discharging movements of said load-dischargers, whereby each circuit-closer is adapted to control the discharge of every load-discharger.

40. In a box filling and transferring machine, the combination, with box-filling means embodying beam mechanism and a load-discharger of a box-feeder; an automatic electrical circuit-controller governed by the beam mechanism; and an automatic box-operated electrical circuit-controller controlling conjointly with the first-mentioned circuit-controller the discharging movement of the load-discharger.

41. In a box filling and transferring machine, the combination, with a plurality of box-filling means, each embodying beam mechanism and a load-discharger, of box-feeding means; automatic electrical circuit-controllers governed, respectively, by the respective beam mechanisms of said box-filling means; and an automatic electrical circuit-controller governed by the box-feeding means and controlling conjointly with the other circuit-controllers the discharging movements of said load-dischargers.

42. In a box filling and transferring machine, the combination, with a plurality of box-filling means, each embodying beam mechanism and a load-discharger of box-advancing feeding means operative for advancing a plurality of boxes into position to be filled, one by each box-filling means; automatic electrical circuit controllers governed, respectively, by the respective beam mechanisms of said box-filling means; and box-operated electrical circuit controllers controlling conjointly with the other circuit-controllers the discharging movements of said load-dischargers.

43. In a box filling and transferring machine, the combination,

with box-filling means embodying beam mechanism and a load-discharger, of a box-advancing feeder; a box shifting feeder movable transversely to the box-advancing feeder; an automatic electrical circuit-controller governed by the beam mechanism; and a pair of electrical circuit-controllers governed, respectively, by the box-advancing and box-shifting feeders and conjointly with the first-mentioned circuit-controller the discharging movement of said load-discharger.

44. In a box filling and transferring machine, the combination, with box-filling means embodying beam mechanism and a load-discharger, of a box-advancing feeder; a box-shifting feeder movable transversely to the box-advancing feeder; an automatic electrical circuit-controller governed by the beam mechanism; and a pair of box-operated electrical circuit-controllers governed, respectively, by the movements of the box-advancing and box-shifting feeders and controlling conjointly with the first-mentioned circuit-controller the discharging movement of said load-discharger.

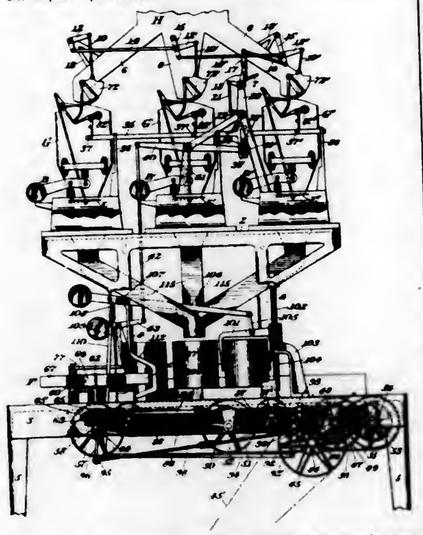
45. In a box filling and transferring machine, the combination, with a plurality of box-filling means, each embodying beam mechanism and a load-discharger, of box advancing feeding means; box-shifting feeding means; automatic electrical circuit-controllers governed, respectively, by the respective beam mechanisms of said box-filling means; box operated electrical circuit-controllers, one for each box to be filled, and governed by the movement of the box-advancing feeding means; and a box-operated electrical circuit-controller governed by the movement of the box-shifting feeding means and controlling conjointly with the other circuit-controllers the discharging movements of said load-dischargers.

46. In a box filling and transferring machine, the combination, with box-filling means embodying beam mechanism and a load-discharger, of a box-advancing feeder; a box-shifting feeder movable transversely to the box-advancing feeder; and a pair of automatic electrical circuit-controllers governed, respectively, by the beam mechanism and the box-advancing feeder and controlling conjointly the starting of the box-shifting feeder.

47. In a box filling and transferring machine, the combination, with a plurality of box-filling means, each embodying beam mechanism and a load-discharger, of a box-advancing feeder operative for advancing a plurality of boxes into position to be filled, one by each box-filling means; a box-shifting feeder movable transversely to the box-advancing feeder; automatic electrical circuit-closers governed, respectively, by said respective beam mechanisms and included in a normally open circuit; and an automatic electrical circuit-closer governed by the box-advancing feeder and controlling conjointly with the first-mentioned circuit-closers the starting of the box-shifting feeder.

607,470. BOX FILLING AND TRANSFERRING MACHINE.

FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 26, 1897. Serial No. 659,839. (No model.)



Claim.—1. The combination, with a plurality of operating members, of an operated member having a total movement comprising a plurality of partial movements controlled, respectively, by said respective operating members, and a movement-accumulating connector-train connected with the operating members at different points at one end of the train and connected with the operated member at a single point at the other end of the train.

2. The combination, with a plurality of operating members, of an operated member having a total movement comprising a plurality of equal partial movements controlled, respectively, by said respective operating members, and a movement-accumulating connector-train connected with the operating members at different points at one end of the train and connected with the operated member at a single point at the other end of the train.

3. The combination, with a plurality of independently-operating members, of an operated member having a total movement controlled respectively, by said respective operating members, and a movement-accumulating connector-train connected with the operating members at different points at one end of the train and connected with the operated member at a single point at the other end of the train.

4. The combination with a plurality of operating members, of an operated member having a total movement comprising a plurality of partial movements controlled, respectively, by said respective operating members, and a movement-accumulating lever-train connected with the operating members at different points at one end of the train and connected with the operated member at a single point at the other end of the train.

5. The combination, with a plurality of operating members, of an operated member having a total movement comprising a plurality of partial movements controlled, respectively, by said respective operating members, and a movement-accumulating lever-train connected with the operating members at different points at one end of the train and connected with the operated member at a single point at the other end of the train, said train embodying levers having shiftable pivots.

6. The combination, with a plurality of operating members, of an operated member having a total movement comprising a plurality of partial movements controlled, respectively, by said respective operating members; a movement-accumulating connector train connected with the operating members at different points at one end of the train and connected with the operated member at a single point at the other end of the train; and a shiftable member operative by the final partial movement of the operated member.

7. The combination, with a plurality of operating members, of an operated member having a total movement comprising a plurality of partial movements controlled, respectively, by said respective operating member; a movement-accumulating connector-train connected with the operating members at different points at one end of the train and connected with the operated member at a single point at the other end of the train; and a plurality of shiftable members all operative by the final partial movement of the operated member.

8. The combination, with a plurality of operating members, of an operated member having a total movement comprising a plurality of partial movements controlled, respectively, by said respective operating members; a movement-accumulating connector-train connected with the operating members at different points at one end of the train and connected with the operated member at a single point at the other end of the train; and a plurality of shiftable members simultaneously operative by the final partial movement of the operated member.

9. In weighing mechanism, the combination, with a plurality of operating members, of load-receivers each having a member shiftable for discharging a load; a releasing device for said shiftable members and having a total movement comprising a plurality of partial movements controlled, respectively, by said respective operating members; and a movement-accumulating connector-train connected with the operating members at different points at one end of the train and connected with the releasing device at a single point at the other end of the train.

10. In weighing mechanism, the combination, with a plurality of operating stream-controllers, of a plurality of load-receivers; a plurality of load-dischargers; holding means for said load-dischargers; a releasing device controlling all of said holding means and having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the releasing device at a single point at the other end of the train.

11. In weighing mechanism, the combination, with a plurality of oscillatory operating-valves, of a plurality of load-receivers each having a member shiftable for discharging a load; a releasing device controlling all of said shiftable members, and having a total movement comprising a plurality of partial movements controlled, respectively, by said respective valves; and a movement-accumulating connector-train connected with the valves at different points at one end of the train and connected with the releasing device at a single point at the other end of the train.

12. In a weighing-mechanism, the combination, with a plurality of operating stream-controllers, of load-receivers each having a member shiftable for discharging a load; releasing means for said shiftable member and embodying two members, one of which is shiftable relatively to the other, and one of which has a total releasing movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; controlling means governing one of said members of the releasing means; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and coenected with the releasing means at a single point at the other end of the train.

13. In weighing mechanism, the combination, with a plurality of operating stream-controllers, of a load-receiver having a member shiftable for discharging a load; releasing means for said shiftable member and embodying two members, one of which is shiftable relatively to the other, and one of which has a total releasing movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; automatic controlling means governing one of said members of the releasing means; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the releasing means at a single point at the other end of the train.

14. In weighing mechanism, the combination, with a plurality of operating stream-controllers, of a load-receiver having a member shiftable for discharging a load; an intermediate having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; a tripper controlling the release of the shiftable member of the load-receiver and shiftable into and out of operative relation with said intermediate and operative by the latter; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the intermediate at a single point at the other end of the train.

15. In weighing mechanism, the combination, with a plurality of stream-controllers, of a plurality of load-receivers each having a member shiftable for discharging a load; an intermediate having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; a tripping-slide operative for releasing all of said shiftable members of the load-receivers; a slide on said tripping-slide and shiftable into and out of operative relation with the intermediate; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the intermediate at a single point at the other end of the train.

16. In a box filling and transferring machine, the combination, with a plurality of weighing-machines each embodying a member shiftable for discharging a load, and holding means for said shiftable members, of automatic box-feeding means, and a releasing device common to all of said weighing-machines and automatically operative from said box-feeding means for releasing said holding means.

17. In a box filling and transferring machine, the combination, with a plurality of weighing-machines each embodying a member shiftable for discharging a load, and holding means for said shiftable members, of automatic box-feeding means, and a box-controlled releasing device common to all of said weighing-machines and automatically operative by a box for releasing said holding means.

18. In a box filling and transferring machine embodying weighing mechanism, the combination, with box-feeding means, of a plurality of operating stream-controllers; a load-receiver having a member shiftable for discharging a load; an intermediate having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; a tripping member controlling the release of the shiftable member of the load-receiver and controlled by the box-feeding means, and shiftable into and out of operative relation with said intermediate and operative by the latter; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the intermediate at a single point at the other end of the train.

19. In a box filling and transferring machine embodying weighing mechanism, the combination, with a box-advancing feeder and with a box-shifting feeder, of a plurality of operating stream-controllers; a load-receiver having a member shiftable for discharging a load; an intermediate having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; a tripping member controlling the release of the shiftable member of the load-receiver and controlled by the box-shifting feeder, and shiftable into and out of operative relation with said intermediate and operative by the latter; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the intermediate at a single point at the other end of the train.

20. In a box filling and transferring machine embodying weighing mechanism, the combination, with a box advancing feeder and with a box-shifting feed-belt, of plurality of operating stream-controllers; a load-receiver having a member shiftable for discharging a load; an intermediate having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; a tripping member controlling the release of the shiftable member of the load-receiver and controlled by the box-shifting feed-belt, and shiftable into and out of operative relation with said intermediate and operative by the latter; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the intermediate at a single point at the other end of the train.

21. In a box filling and transferring machine embodying weighing mechanism, the combination, with box-feeding means, of a plurality of operating stream controllers; a load-receiver having a member shiftable for discharging a load: an intermediate having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; a box-controlled tripping member controlling the release of the shiftable member of the load-receiver and controlled by the box-feeding means, and shiftable into and out of operative relation with said intermediate and operative by the latter; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the intermediate at a single point at the other end of the train.

22. In a box filling and transferring machine, the combination, with box-feeding means, of a plurality of stream-controllers; a load-receiver having a member shiftable for discharging a load; an intermediate having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; a counterpoised tripping member controlling the release of the shiftable member of the load-receiver and controlled by the box-filling means, and shiftable into and out of operative relation with said intermediate and operative by the latter; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the intermediate at a single point at the other end of the train.

23. In a box filling and transferring machine embodying weighing mechanism, the combination, with box-feeding means, of a plurality of operating stream-controllers; a load-receiver having a member shiftable for discharging a load; an intermediate having a total movement comprising a plurality of partial movements controlled, respectively, by said respective stream-controllers; a tripping member shiftable into and out of operative relation with the intermediate and cooperative therewith for releasing the shiftable member of the load-receiver; a reactive box-operated blocking device connected with said tripping member; and a movement-accumulating connector-train connected with the stream-controllers at different points at one end of the train and connected with the intermediate at a single point at the other end of the train.

24. In a box filling and transferring machine embodying weighing mechanism, the combination, with box-feeding means, of a stream-controller; a load-receiver having a member shiftable for discharging a load; tripping means embodying two cooperative tripping members one of which is shiftable into and out of operative relation with the other; and a box-operated blocking device connected with one of said tripping members and controlling the operation of the tripping means.

25. In a box filling and transferring machine embodying weighing mechanism, the combination, with box-feeding means, of a stream-controller; a load-receiver having a member shiftable for discharging a load; tripping means embodying two cooperative tripping members one of which is shiftable into and out of operative relation with the other; and a counterweighted box-operated blocking device connected with one of said tripping members and controlling the operation of the tripping means.

26. In a box filling and transferring machine, the combination, with box feeding means, of a stream-controller; a load-receiver having a member shiftable for discharging a load; and a reactive blocking device controlled by the box-feeding means and controlling the release of the shiftable member of the load-receiver.

27. In a box filling and transferring machine, the combination, with box-feeding means, of a plurality of weighing-machines each having a member shiftable for discharging a load, and a reactive blocking device controlled by the box-feeding means and controlling the release of all of said shiftable members of the load-receivers.

28. In a box filling and transferring machine, the combination, with a box-advancing feed-belt and with a box-shifting feed-belt, of a plurality of weighing-machines each having a member shiftable for discharging a load, and a reactive box-operated blocking device controlled by the box-shifting feed-belt and controlling the release of all of said shiftable members of the load-receivers.

29. In a box filling and transferring machine, the combination,

with box-filling means, of a box-advancing feeder; a box-shifting feeder; and a shiftable box-guide cooperative with said box-shifting feeder.

30. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box-shifting feeder; and a shiftable box-guide cooperative with, and disposed over, said box-shifting feeder.

31. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box-shifting feeder; and a box-guide cooperative with, and shiftable toward and from, said box-shifting feeder.

32. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box-shifting feeder; and a vertically-shiftable box-guide cooperative with said box-shifting feeder.

33. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box-shifting feeder; and a shiftable box-guide disposed at that side of an entering empty box which is adjacent to the discharge end of said box-shifting feeder.

34. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box-shifting feeder; a box-guide at that side of an entering empty box which is adjacent to the receiving end of the box-shifting feeder; and a shiftable box-guide at that side of said box which is adjacent to the discharge end of said feeder.

35. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; an intermittently-operative box-shifting feeder; means for starting and stopping said box-shifting feeder; and a box-guide shiftable on the starting of the box-shifting feeder.

36. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; an intermittently-operative box-shifting feeder; means for starting and stopping said box-shifting feeder; and a box-guide normally disposed at that side of an entering empty box which is adjacent to the discharge end of the box-shifting feeder, and shiftable out of the path of movement of such box on the starting of the box-shifting feeder.

37. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box-shifting feeder; and a box-operated shiftable box-guide cooperative with said box-shifting feeder.

38. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box-shifting feeder; a shiftable box guide cooperative with said box-shifting feeder; and a box-controlled box-guide actuator.

39. In a box filling and transferring machine, the combination, with box-filling means, of a box-advancing feeder; a box shifting feeder; a shiftable box-guide cooperative with said box-shifting feeder; and a counterweighted box-controlled box-guide actuator.

40. In a box filling and transferring machine, the combination, with box-filling means, of a pair of alternately operative box-feeders movable transversely to each other and one constituting a box-discharger; a shiftable box-guide; and a box-controlled box guide actuator.

41. In a box filling and transferring machine, the combination, with box-filling means, of a driving member; box-feeding means; and box-controlled coupling means controlling the movements of said box-feeding means.

42. In a box filling and transferring machine, the combination, with box-filling means, of driving means; a pair of alternately-operative box-feeders; and box-controlled coupling means controlling the movements of said box-feeders.

43. In a box filling and transferring machine, the combination, with box-filling means, of a driving member; box-feeding means; and reactive box-controlled coupling means controlling the movements of said box-feeding means.

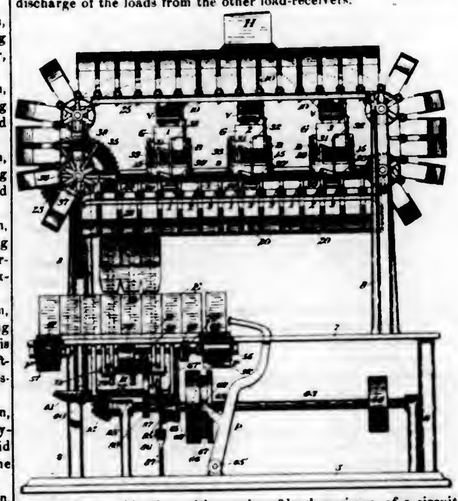
44. In a box filling and transferring machine, the combination, with box-filling means, of a pair of alternately-operative box-feeders movable transversely to each other and one constituting a box-discharger; driving means; a box-controlled box-guide; and box-controlled coupling means operative simultaneously with said box-guide and controlling the movements of said box-feeders.

607,471. BOX FILLING AND TRANSFERRING APPARATUS.

FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 29, 1897. Serial No. 660,117. (No model.)

Claim.—1. The combination, with a series of load-receivers, of a series of load-holders disposed in sets corresponding in number with the load-receivers, and means operative with each load-holder to effect the discharge of a cooperating load-receiver but not to cause the discharge of the loads from the other load-receivers.

2. The combination, with a series of load-receivers, of a series of traveling load-holders disposed in sets corresponding in number with the load-receivers, and means operative with each load-holder to effect the discharge of a cooperating load receiver but not to cause the discharge of the loads from the other load-receivers.



3. The combination, with a series of load-receivers, of a circuit of load-holders mounted for traveling movement and disposed in sets corresponding in number with and adapted to receive loads from the respective load-receivers, and means operative with each load-holder to effect the discharge of a cooperating load-receiver, but not to cause the discharge of the loads from the other load-holders in each set.

4. The combination, with a series of load-receivers, of means including a series of latches for controlling the discharge thereof; a series of load-holders disposed in sets corresponding in number with the load-holders; and means operative with each load-holder to effect the operation of one latch but not of the other latches of the series.

5. The combination, with a series of weighing mechanisms and with a series of load-receivers disposed in sets corresponding in number with the weighing mechanisms, and one of said series of devices being mounted for traveling movement relatively to the other, of means operative with each load-holder to effect the discharge of the cooperating load-receiver but not to cause the discharge of the loads from the other load receivers.

6. The combination, with a series of weighing mechanisms, each including a load-receiver provided with a closer, of a series of load-holders disposed in sets corresponding in number with the load-receivers; a latch operative with each weighing mechanism for holding the closer thereof shut; and means operative with each load-holder to effect the operation of one latch but not of the other latches.

7. The combination, with a series of load-receivers, of a series of load-holders disposed in sets corresponding in number with the load-receivers, and one of said series of devices being mounted for traveling movement relatively to the other; and means operative with the load-holders, and disposed in different planes, for effecting the discharge of the cooperating load-receivers.

8. The combination, with a series of load-receivers, of a series of load-holders disposed in sets corresponding in number with the load-receivers, and one of said series of devices being mounted for traveling movement relatively to the other, and means operative with the load-holders, and disposed in different vertical planes, for effecting the discharge of the cooperating load receivers.

9. The combination, with a series of load-receivers, of a series of load-holders disposed in a chain the two runs of which are located, respectively, above and below the load-receivers; mechanism for operating the chain of load-holders; means for simultaneously discharging the load-receivers into the proper load-holders at a predetermined point; and means operable for discharging the loads from a series of immediately adjacent load-holders when said series has reached a point beyond the primary load-receiver.

10. The combination, with a series of load-receivers, of a series of load-holders disposed in a chain and in sets corresponding in number with the load-receivers, the two runs of the chain being disposed above and below the load-receivers; mechanism for operating said chain of load-holders; and means operable with each load-holder for effecting the discharge of the corresponding load-receivers.

11. The combination, with a series of load receivers, of a series of load-holders disposed in sets corresponding in number with the load-receivers, and one of said series of devices being mounted for traveling movement relatively to the other; means operative with each load-holder for effecting the discharge of a cooperating load-receiver but not to cause the discharge of the loads from the other load-receivers; and means located in advance of the load-receivers for effecting the discharge thereof.

12. The combination, with a series of load-receivers, of a series of load-holders disposed in sets corresponding in number with, and adapted to receive the loads from, the respective load-receivers, and one of said series of devices being mounted for traveling movement relatively to the other; valves for the load-holders; means operative with each load-holder for effecting the discharge of a cooperating load-receiver but not causing the discharge of the loads from the other load-receivers; and means located in advance of the load-receivers for opening the valves of the load-holders.

13. The combination, with a series of load-receivers, of a series of load-holders disposed in sets corresponding in number with the load-receivers; means operative with each load-holder for effecting the discharge of a cooperating load-receiver but not to cause the discharge of the loads from the other load-receivers; means located in advance of the load-receivers for effecting the discharge of the load-holders; and means for feeding boxes into position to receive the loads from the load-holders.

14. The combination, with a series of load-receivers, of means involving a corresponding number of latches for controlling the discharge of the load-receivers; a series of load-holders disposed in sets corresponding in number with the latches; tripper-bars adapted for engaging the respective latches; levers connected with the tripper-bars; and trippers secured to the respective load-holders in each set for engaging the levers to operate the latches simultaneously.

15. The combination, with a series of load-receivers, of means involving a corresponding number of latches for controlling the discharge of the load-receivers; a series of load-holders disposed in sets corresponding in number with the latches; tripper-bars for engaging the respective latches; and trippers secured to the respective load-holders in each set for engaging the levers to operate the latches simultaneously.

16. The combination, with a series of load-receivers, of means involving a corresponding number of latches for controlling the discharge of the load-receivers; a series of load-holders disposed in sets corresponding in number with the latches; tripper-bars having transverse heads at their upper ends for engaging the latches and connected by links with the framework; counterweighted levers also mounted on the framework and connected, respectively, with the tripper-bars; and trippers secured to the respective load-holders in each set for engaging the weights of the levers to operate the latches simultaneously.

17. The combination, with a series of load-receivers, of a chain of load-holders each of which is carried by a shaft, the load-holders being disposed in sets corresponding in number with the load-receivers; a driving-wheel having pockets on its periphery to receive said shafts; and means operative with each load-holder to effect the discharge of a cooperating load-receiver but not to cause the discharge of the loads from the other load-receivers.

18. The combination, with a series of load-receivers, of a series of load-holders disposed in sets corresponding in number with the load-receivers; devices operable with each load-holder to effect the discharge of a cooperating load-receiver but not to cause the discharge of the other load-receivers; and power-controlled operating means for effecting the discharge of the load-holders in series.

19. The combination, with a load-holder, of a device for effecting the discharge of the load from said load-holder; an actuator for said device; a blocking device constructed to normally hold the actuator ineffective; and means for releasing the actuator.

20. The combination, with a load-holder, of means including an actuator for effecting the discharge of the load-holder; a blocking device for the actuator; and means for operating the blocking device to release the actuator.

21. The combination, with a load-holder, of means including a gravitative actuator for effecting the discharge of the load-holder; a blocking device for the actuator; and means for releasing the actuator.

22. The combination, with a load-holder, of a reciprocatory bar for effecting the discharge of the load-holder; an actuator for engaging the bar; a blocking device adapted normally to hold the actuator ineffective; and means for releasing the actuator.

23. The combination, with a series of valved load-holders each valve having an arm, of a series of bars for engaging the valve-arms; a shaft provided with arms corresponding in number with the bars and also having an oppositely-disposed weighted arm; and a blocking device adapted normally to engage said arm.

24. The combination, with a load-holder, of means including an actuator for effecting the discharge of the load-holder; a cam constructed normally to hold the actuator ineffective; and means for operating said cam to release the actuator.

25. The combination, with a load-holder, of a device for effecting the discharge of the load from said load holder; an actuator for engaging said device; a cam constructed normally to hold the actuator ineffective and subsequently to release and then to reset the same; and means for operating said cam.

26. The combination, with a load-holder, of means including an actuator for effecting the discharge of the load-holder; a blocking device normally adapted for holding the actuator ineffective; and means for continuously rotating the actuator.

27. The combination, with a load-holder, of means including an actuator for effecting the discharge of the load-holder; a blocking device adapted normally to hold the actuator ineffective; and means for releasing the actuator.

28. The combination, with a load-holder, of a device for effecting the discharge of a load from said load-holder; an actuator for engaging said device; a blocking device constructed normally to hold the actuator ineffective; pawl-and-ratchet mechanism one of the members being operative with the blocking device; and means for operating the pawl-and-ratchet mechanism.

29. The combination, with a load-holder, of a device for effecting the discharge of a load from said load-holder; an actuator for engaging said device; a blocking device adapted normally to hold the actuator ineffective; a ratchet connected with the blocking device; a pawl for said ratchet; gearing one member of which is connected with the pawl; and means for operating the gearing.

30. The combination, with a load-holder, of a device for effecting the discharge of a load from said load-holder; an actuator for engaging said device; a blocking device adapted normally to hold the actuator ineffective; meshing sector-gears; pawl-and-ratchet mechanism, the ratchet being secured to the blocking device and the pawl being connected with one of the sector-gears; a pitman connected to the other sector-gear and having a ring; and a power-shaft provided with an eccentric embraced by said ring.

31. The combination, with a series of load-receivers, of a series of load-holders disposed in sets corresponding in number with the load-receivers; means operative with each load-holder to effect the discharge of the cooperating load-receiver, but not to cause the discharge of the loads from the other load-receivers; a supply-feeder; a trough under the load-holders, in position to receive empty boxes from the supply-feeder; a pusher; means for operating the pusher to cause it to eject empty boxes from the supply-feeder into said trough; and mechanism for effecting the discharge of the load-holders in series beyond the primary load-receiver.

32. The combination, with a series of load-receivers, of a series of load-holders disposed in sets corresponding in number with the load-receivers; means operative with each load-holder to effect the discharge of a cooperative load-receiver, but not to cause the discharge of the loads from the other load receivers; a trough or runway in position to receive boxes and located under the load-holders; supply and delivery devices adapted to feed to, and receive boxes from, said trough; a pusher adapted to push the empty boxes from the supply device into said trough; mechanism for operating the pusher; and means for effecting the discharge of the load-holders in series at a point beyond the primary load-receiver.

607,472. BOX-FILLING MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 26, 1897. Serial No. 659,536. (No model.)

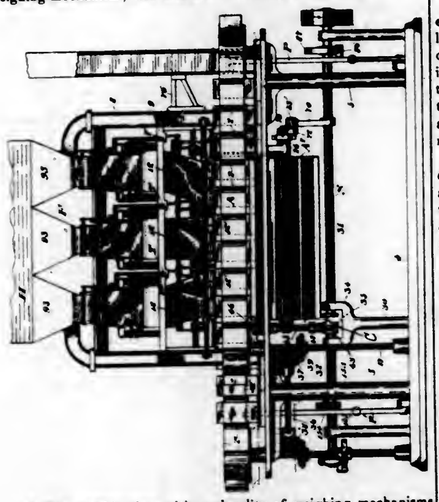
Claim.—1. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads; a tripper effective for simultaneously operating said latches; an actuator for said tripper; and catches for holding the tripper and operated by one of the members of the weighing mechanism.

2. The combination, with a series of load-receivers and their supporting-beams, of latches controlling the discharge of the loads; a tripper for simultaneously operating said latches; an actuator for the latch-tripper; and catches for holding the tripper and connected with the beams.

3. The combination, with a series of load-receivers each of which has a closer, of latches for holding the closer shut; a tripper effective for simultaneously actuating said latches; an actuator for the latch-tripper; catches for holding the tripper; and scale-beams for supporting the load-receivers and connecting the catches for operating the same.

4. The combination, with a plurality of weighing mechanisms each including a load-receiver and a counterweighted supporting scale-beam; latches for controlling the discharge of the loads; a tripper effective for simultaneously operating said latches; an actuator for said tripper; and catches for holding the tripper and connected with weights, respectively, of the scale-beams for operation.

5. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads; a tripper effective for simultaneously operating said latches; an actuator for said tripper; catches for holding the tripper and operated by one of the members of the weighing mechanism; and means for resetting said tripper.



6. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads; a tripper effective for simultaneously operating said latches; an actuator for said tripper; catches for holding the tripper and operated by one of the members of the weighing mechanism; and means for resetting said tripper and operated by a member of said weighing mechanism.

7. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads; a reciprocatory tripper operative on one stroke for simultaneously operating said latches; an actuator for imparting a working movement to said tripper; catches for holding the tripper and operated by one of the members of each of the weighing mechanisms; and independent means for returning the tripper to its primary position.

8. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads; a tripper effective for simultaneously operating said latches; a gravitative actuator for said tripper; and catches for holding the tripper and operated by one of the members of each of the weighing mechanisms to cause the release of said tripper.

9. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads; a tripper effective for simultaneously operating said latches; an actuator for said tripper; catches for holding the tripper and operated by one of the members of each of the weighing mechanisms to cause the release of said tripper; and connections between the tripper and a member of the weighing mechanism for resetting the tripper and involving a sliding joint.

10. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads and each provided with an arm; a tripper provided with a series of fingers adapted to engage said arms; an actuator for said tripper; and catches for holding the tripper and operated by one of the members of each of the weighing mechanisms.

11. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads; a tripper effective for simultaneously operating said latches; an actuator for said tripper; catches for holding the tripper and operated by one of the members of each of the weighing mechanisms; and a tripper-resetting lever connected, respectively, with the tripper and with the scale-beam.

12. The combination, with a plurality of weighing mechanisms each including a load-receiver and a supporting scale-beam, of latches controlling the discharge of the loads; a tripper effective for simultaneously operating said latches; an actuator for said tripper; gravitative catches pivoted to the framework and constructed for engaging and holding the tripper and operated by one of the members of each of the weighing mechanisms to effect the release of the tripper; a lever mounted on the framework and connected with the tripper; and a link pivoted to said lever and having a loop at one end embracing a stud on one of the scale-beams.

13. The combination, with a plurality of weighing mechanisms each including a load-receiver and a counterweighted scale-beam, of latches mounted on each load-receiver and controlling the discharge of the loads; a sliding tripper mounted on the framework and effective for simultaneously operating the latches; a counterweighted actuator for said tripper; pivoted catches for engaging and holding the tripper; a series of links connected, respectively, with the catches and their beam-weights, thereby to operate the latches to cause the release of the tripper; and means for resetting the tripper.

14. The combination, with a plurality of load-dischargers, of a device for effecting the simultaneous discharge of a series of loads; an actuator for said device; a detent normally operative for holding the actuator against operation; box-feeding means; and means operated by a series of empty boxes for causing the release of said actuator when said boxes are placed in their load-receiving positions.

15. The combination, with a plurality of load-dischargers, of a device for effecting the simultaneous discharge of a series of loads; an actuator for said device; a detent normally operative for holding the actuator against operation; box-feeding means; and a series of devices equaling in number the series of boxes to be filled and each operated by an empty box, said last-mentioned devices when operated serving to cause the release of said actuator.

16. The combination, with a plurality of load-dischargers, of a device for effecting the simultaneous discharge of a series of loads; an actuator for said device; a series of detents for holding the actuator against operation; box-feeding means; and a series of devices corresponding in number and connected, respectively, with said detents, said devices being located for operation by a series of empty boxes when the latter are fed into position to receive their loads.

17. The combination, with a plurality of load-dischargers, of a device for effecting the simultaneous discharge of a series of loads; an actuator for said device; a series of detents for holding the actuator against operation; a series of spouts leading from the load-dischargers; a series of devices equaling in number and connected with the detents for operating the latter; and box-feeding means for supplying a series of empty boxes into position under said spouts to receive their loads, the empty boxes serving to actuate said detent-operating devices.

18. The combination, with a plurality of weighing mechanisms, of a device for effecting the simultaneous discharge of a series of loads; an actuator for said device; a detent normally operative for holding the actuator against operation; box-feeding means; and means operated by a series of empty boxes for causing the release of said actuator when said boxes are placed in their load-receiving positions.

19. The combination, with a plurality of load-dischargers, of a device for effecting the simultaneous discharge of a series of loads; an actuator for said device; means for effecting the release of said actuator at a predetermined point; a supply-conveyer constructed for supplying a series of empty boxes; an alternately-effective transfer-feeder for conducting the empty boxes into position to receive a series of loads; driving mechanism for said transfer-feeder; and means operated by said actuator for throwing the transfer-feeder out of action.

20. The combination, with a plurality of load-dischargers, of means for effecting the simultaneous discharge of a series of loads; a supply-conveyer constructed to supply a series of empty boxes; an alternately-effective transfer-feeder for conducting the empty boxes into position to receive a series of loads; driving mechanism for said transfer-feeder; and means for throwing the transfer-feeder out of operation with its driving mechanism when a series of empty boxes have been placed in their load-receiving positions.

21. The combination, with a plurality of load-dischargers, of a device for effecting the simultaneous discharge of a series of loads; supply and discharge conveyers constructed, respectively, for advancing a series of empty and filled boxes; a transfer-feeder effective for conducting a series of empty boxes from the supply-conveyer into position to receive charges of material and then to conduct the same to the discharge-conveyer; driving mechanism for said transfer-feeder; and means operated by the placing of a series of empty boxes in their load-receiving positions for throwing the transfer-feeder out of action.

22. The combination, with a series of simultaneously-effective box conveyers, of an alternately-operable transfer-feeder adapted for conveying a series of boxes from one of the first-mentioned conveyers to the other; box-filling means; a member loosely carried by a shaft of the transfer-feeder and provided with means for operating said transfer-feeder; a driver for said member; and means controlled by the boxes for governing the operation of said member.

23. The combination, with a pair of simultaneously-effective box-conveyers, of an alternately-operable transfer-feeder adapted for conveying a series of boxes from one of the first-mentioned conveyers to the other; box-filling means; a ratchet operative with the transfer-feeder; a member operable with a pawl for actuating the ratchet; a driver for said member; and means controlled by the boxes for governing the operation of said member.

24. The combination, with a pair of simultaneously-effective box-conveyers, of an alternately-operable transfer-feeder adapted for conveying a series of boxes from one of the first-mentioned conveyers to the other; a ratchet secured to the other shaft of the transfer-feeder; a rocker loosely carried by said shaft and provided with a cam for operating the ratchet; a driver for said rocker; and means controlled by the boxes for governing the operation of said rocker.

25. The combination, with a pair of simultaneously-effective box-conveyers, of an alternately-operable transfer-feeder adapted for conveying a series of boxes from one of the first-mentioned conveyers to the other conveyer; box-filling means; a gravitative member loosely carried by a shaft of the transfer-feeder and provided with means for operating said transfer-feeder; a driver for said rocker; and means controlled by the boxes for governing the operation of said rocker.

26. The combination, with a pair of simultaneously-effective box-conveyers, of an alternately-operable transfer-feeder adapted for conveying a series of boxes from one of the first-mentioned conveyers to the other; box-filling means; a ratchet carried by a shaft of the transfer-feeder; a gravitative rocker loosely mounted on said shaft and provided with a pawl for operating the ratchet; a cam for engaging the rocker; and means controlled by the boxes for governing the operation of the rocker.

27. The combination, with a pair of box-conveyers, of a transfer-feeder operable for conducting a series of boxes from one of the first-mentioned box-conveyers to the other; a shaft in two sections one of which is continuously driven; a coupling device the two members of which are fixed to the respective shaft-sections; box-controlled means for operating one of the members of the coupling device; and conveyer-driving mechanism connected with said shaft.

28. The combination, with supply and discharge conveyers, of a transfer-feeder operable for conducting a series of boxes from the supply-conveyer to the discharge-conveyer; a shaft in two sections one of which is continuously driven; means operative with the continuously-driven section of the shaft for actuating the transfer-feeder; means operative with the other shaft-section for operating said conveyers; a coupling device; and box-controlled means for engaging the members of the coupling device.

29. The combination, with supply and discharge box-conveyers, of a transfer-feeder adapted to convey a series of boxes from the supply-conveyer to the discharge-conveyer; a shaft in two sections one of which is continuously driven; means operative with the continuously-driven shaft-section for operating the transfer-feeder; connections between the other shaft-section and the supply and discharge conveyers for operating the latter; a clutch the respective members of which are fixed to the shaft-sections; a clutch-operating lever in position to be operated in one direction by a box on one of said conveyers; and independent means for operating said clutch-lever in the opposite direction.

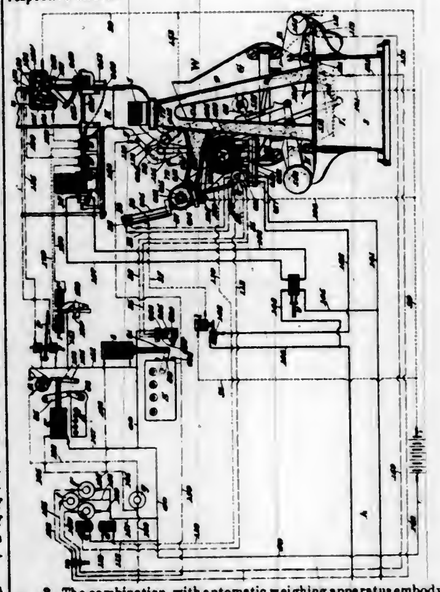
30. The combination, with box supply and discharge conveyers, of a transfer-feeder adapted to convey a box or boxes from the supply to the discharge conveyer; a box-supplying device; a box-pusher adapted to uphold a series of boxes in the box-supplying device; means for retracting said box-pusher; and automatically-operating mechanism for alternately stopping and starting said conveyers and the transfer-feeder.

31. The combination, with supply and discharge conveyers, of a transfer-feeder operable for conducting a series of boxes from the supply to the discharge conveyer; a supply-chute; a box pusher constructed to uphold a series of empty boxes; means for imparting successive movements to the box-pusher, first to effect the release of an empty box and then to advance it to the supply-conveyer; and a second box-pusher operable for ejecting the filled boxes from the discharge-feeder.

607,473. RECORDING APPARATUS FOR WEIGHING-MACHINES. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 16, 1897. Serial No. 632,380. (No model.)

Claims.—1. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; a pair of separately-operable automatic circuit-controllers governed, respectively, by the valve and the load-discharger and controlling said respective circuits; and indicating devices controlled by said respective circuits.

2. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; a pair of separately-operable automatic circuit-controllers governed, respectively, by the valve and the load-discharger and controlling said respective circuits; tape-feeding means; and recording devices controlled by said respective circuits; and recording devices controlled by said respective circuits.



3. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; a pair of separately-operable automatic circuit-controllers governed, respectively, by the valve and the load-discharger and controlling said respective circuits; tape-feeding means; and recording devices controlled, respectively, by said respective circuits and adapted to operate on the tape at different points in the width thereof.

4. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; a pair of separately-operable electric-circuit controllers governed, respectively, by the valve and the load-discharger and controlling said respective circuits; tape-feeding means; and puncturing recording devices controlled by said respective circuits and alined transversely of the tape, and thereby adapted to operate on the tape at different points in the width thereof.

5. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; a pair of separately-operable automatic electric-circuit controllers governed, respectively, by the valve and the load-discharger and controlling said respective circuits; tape-feeding means; and recording-knives controlled by said respective circuits and having their cutting edges alined transversely of the tape, and thereby adapted to operate on the tape at different points in the width thereof.

6. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; a pair of separately-operable automatic circuit-controllers governed, respectively, by the valve and the load-discharger and controlling said respective circuits; indicating devices controlled by said respective circuits; and a secondary automatic make-and-break controlling one of said circuits.

7. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; a pair of separately-operable electric-circuit controllers governed, respectively, by the valve and the load-discharger and controlling said respective circuits; tape-feeding means; recording devices controlled by said respective circuits; and a secondary automatic make-and-break controlling said circuits.

8. The combination, with weighing apparatus embodying a valve and a shiftable load-discharger; of a pair of electric circuits controlled, respectively, by the valve and the load-discharger; tape-feeding means; and recording devices controlled by said respective circuits.

9. The combination, with weighing apparatus embodying a valve, beam mechanism, and a shiftable load-discharger; of a plurality of electric circuits controlled respectively, by the valve, the beam mechanism and the load-discharger; tape-feeding means; and recording devices controlled by said respective circuits.

10. The combination, with automatic weighing apparatus embodying a valve, beam mechanism, and a shiftable load discharger,

of a plurality of electric circuits; a plurality of separately-operable automatic electric-circuit controllers governed, respectively, by the valve, the beam mechanism, and the load-discharger; and registering devices controlled by said respective circuits.

11. The combination, with a pair of electric circuits, of a stream-controller having circuit-controlling means for closing said circuits alternately; and an electromagnetically-operated indicator having a normal idle position and also having two indicating positions controlled by said circuits.

12. The combination, with a stream-controller, of driving means therefor; an electrically-operated reversing device; and automatic circuit-controlling means carried by the stream-controller and controlling the operation of the reversing device.

13. The combination, with a stream-controller, of driving means therefor; a pair of electric circuits; a reversing device controlled by said circuits; and automatic circuit-controlling means carried by the stream-controller and controlling the operation of the reversing device.

14. The combination, with a supply-chute and with a reciprocatory stream-controller therein, of driving means for said stream-controller; a pair of electric circuits; a reversing device controlled by such circuits; and automatic circuit-controlling means carried by the stream-controller and movable between two extreme positions and controlling the operation of the reversing device.

15. The combination, with an electric circuit, of an electromagnetically-controlled reactive circuit-closer in said circuit; a stream-controller; driving means therefor; and an automatic circuit-breaker carried by the stream-controller and operative at a determined point in the movement thereof.

16. The combination, with a pair of electric circuits, of a reactive circuit-closer for closing said circuits alternately; a pair of electromagnets in said circuits, respectively, for holding the circuit-closer in either of its circuit closing positions; a stream-controller; driving means therefor; and automatic circuit-breaking means carried by the stream-controller and controlling said circuits and operative at determined points in the movement of the stream-controller.

17. The combination, with a pair of electric circuits, of a reactive circuit-closer for closing said circuits alternately; a pair of electromagnets in said circuits, respectively, for holding the circuit-closer in either of its circuit-closing positions; a reciprocatory stream-controller; driving means for actuating the stream-controller in opposite directions alternately; and automatic circuit breaking means carried by the stream-controller and operative for breaking said circuits, respectively, on the opening and the closing of the stream-controller.

18. The combination, with an electric circuit, of rotary driving means; a rotary driven member; an electromagnetically-operated coupling member controlled by said circuits; a stream-controller operatively connected with the driven member; and an automatic circuit-breaker carried by the stream-controller and operative at a determined point in the movement thereof.

19. The combination, with an automatic weighing apparatus, of a signal-circuit therefor; a power-circuit; a relay in said signal-circuit and controlling the power-circuit; and circuit-controlling means for the signal-circuit.

20. The combination, with weighing apparatus, of a signal-circuit therefor; a power-circuit; a relay in said signal-circuit and controlling the power-circuit; and automatic circuit-controlling means for the signal circuit and controlled from the weighing apparatus.

21. The combination, with weighing apparatus, of a signal-circuit therefor; a power-circuit; a relay in said signal-circuit and controlling the power-circuit; a stop-register; and an automatic switch in the signal-circuit and controlled by the stop-register.

22. The combination, with an automatic weighing apparatus embodying a supply-valve, of a signal-circuit; a power-circuit; valve-operating means controlled by the power-circuit; a relay in said signal-circuit and controlling the power-circuit; a stop-register; and an automatic switch in the signal-circuit and controlled by the stop-register.

23. The combination, with a driven member, of a signal-circuit; a power-circuit; driving means controlled by the power-circuit; a relay in said signal-circuit and controlling the power-circuit; a stop-register; an automatic switch operative from the stop-register, for closing the signal-circuit; and an automatic switch for breaking said signal-circuit after a determined period of operation of the driving means.

24. The combination, with a driven member, of a pair of signal-circuits; a power-circuit; driving means controlled by the power-circuit; reversing means for the driven member and controlled by the signal-circuits; a relay controlling the power-circuit and controlled by the signal-circuits; a stop-register; a switch operative from the stop-register, for closing the signal-circuits alternately; and an automatic switch for breaking said signal-circuits alternately after determined periods of operation of the driving means.

25. The combination, with tape-feeding means and with a recording device, of automatic weighing apparatus embodying a settable stopping device; automatic electric-circuit controlling means governed by said stopping device; and electrically-operated means governed by the movements of said circuit-controlling means for starting and stopping said tape-feeding means.

26. The combination, with tape-feeding means and with a recording device, of a weighing apparatus embodying a valve and a valve-actuator shiftable from an operative to an inoperative position, and an automatic electric switch carried by the valve-actuator and controlling the starting and the stopping of said tape-feeding means.

27. The combination, with automatic weighing apparatus embodying a shiftable load-discharger, of an electric circuit; an automatic electric-circuit controller governed by the load-discharger and controlling said circuit; and a plurality of devices controlled by said circuit and operative for indicating separately in different ways the movements of said load-discharger.

28. The combination, with automatic weighing apparatus embodying a shiftable load-discharger, of an electric circuit, an automatic electric-circuit controller governed by said load-discharger and controlling said circuit; a plurality of registering and recording devices controlled by said circuit and operative for registering and recording the movements of said load-discharger; and tape-feeding means.

29. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of an electric circuit; an automatic electric-circuit controller governed by said load-discharger; a recording device and a numbering device both controlled by said circuit; and tape feeding means.

30. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of an electric circuit; an automatic circuit-controller governed by said load-discharger; a recording device and a numbering device both controlled by said circuit and operative at different intervals; and tape-feeding means.

31. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; automatic electric circuit controllers governed, respectively, by the valve and the load-discharger and controlling said circuits; indicating devices controlled by said circuits; and an independently-operative secondary automatic electric switch controlling the operation of one of said indicating devices

32. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; automatic electric-circuit controllers governed, respectively, by the valve and the load-discharger and controlling said circuits; indicating devices in parallel in one of said circuits; and an independently operative secondary automatic electric switch in one of such parallel branches.

33. The combination, with an automatic weighing mechanism, of tape-feeding means; a recording device; stopping means operative, at the end of a determined period, for stopping the operation of the weighing mechanism; and electrically-operated means controlled by said stopping means, for stopping said tape feeding means on the stopping of the operation of the weighing mechanism.

34. The combination, with a tape-feeding device and with a recording device, of actuating means for operating the tape-feeding device; a weighing apparatus; and electrically-operated coupling means controlled by the weighing apparatus, for coupling and uncoupling said actuating means and the tape-feeding device.

35. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of recording devices controlled, respectively, by the valve and the load-discharger; tape-feeding means; and independent time-recording means operative independently of the aforesaid recording devices for recording time indications on the tape.

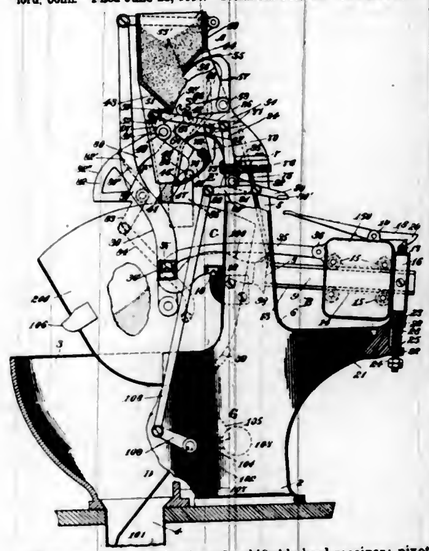
36. The combination, with weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of recording devices controlled, respectively, by the valve and the load-discharger; tape-feeding means; and an independent time-recording wheel operative independently of the aforesaid recording devices for recording time indications on the tape.

37. The combination, with a weighing apparatus, of a tape-feeding device; a recording device controlled by the weighing apparatus; time-recording means for recording time indications on the tape; actuating means for operating the tape-feeding device and the time-recording means; and coupling means controlled by the weighing apparatus, for coupling the feeding device and the time-recording means to, and uncoupling them from, said actuating means.

38. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits, automatic electric-circuit controllers governed, respectively, by the valve and the load-discharger and controlling said circuits; electrically-operated recording devices controlled by said circuits; tape-feeding means; and time-recording means for recording time indications on the tape.

39. The combination, with automatic weighing apparatus embodying a valve and a shiftable load-discharger, of a pair of electric circuits; automatic electric circuit controllers governed, respectively, by the valve and the load-discharger and controlling said circuits; electrically-operated recording devices controlled by said circuits; tape-feeding means; and a puncturing time-recording wheel operative independently of the aforesaid recording devices for recording time indications on the tape.

607,474. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 23, 1897. Serial No. 641,863. (No model.)



Claim.—1. The combination of a shiftable load-receiver; pivotally-supported beam mechanism carrying said receiver and embodying traveling counterbalancing means operatively connected with said load-receiver for movement toward and from the beam-axis, thereby to assist the shifting movement of said receiver.

2. Weighing mechanism comprising a load-receiver having movements in intersecting planes; a pivotally-supported beam carrying said receiver; traveling counterbalancing means carried by said beam and movable toward and from the beam-axis; and means, independent of the beam, connecting said counterbalancing means with said load-receiver.

3. The combination of a load-receiver; pivotally-supported beam mechanism carrying said receiver and embodying counterbalancing means movable toward and from the beam-axis; and means pivotally connecting said load-receiver with said counterbalancing means.

4. The combination of a load-receiver shiftable to discharge its load; a pivotally-supported beam carrying said receiver; self-moving traveling counterbalancing means carried by said beam and movable toward and from the beam-axis during each weighing operation and automatically-operative locking means in position to lock said counterbalancing means in its efficient position after each weighing operation.

5. The combination of an oscillatory load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying a traveling weight movable toward and from the beam-axis; a connector pivotally secured to said load-receiver and to said weight; and locking means in position to lock said weight in its load-counterbalancing position.

6. The combination with weighing mechanism embodying a load-receiver having movements in intersecting planes, and traveling counterbalancing means likewise having movements in intersecting planes, said counterbalancing means being self-operative in one of its planes of movement, of means automatically operative to lock said counterbalancing means against movement in one of its said planes during a part of each weighing operation.

7. The combination of a load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying counterbalancing means movable toward and from the beam-axis; means for locking said counterbalancing means in its normal efficient position; and means for unlocking said counterbalancing means, thereby to permit the shifting thereof with said load-receiver.

8. The combination of an oscillatory load-receiver; a pivotally-supported beam carrying said receiver; a weight carried by said beam and operatively connected with the load-receiver, and movable toward and from the beam-axis on the oscillation of said load-receiver; locking means for holding said weight in its efficient position during the load-receiving period of said receiver; and means for tripping said locking means, thereby to permit said weight to travel toward and from the beam-axis.

9. The combination of a load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying traveling counterbalancing means movable toward and from the beam-axis; and load-supply means adapted to control the movement of said counterbalancing means and permit the traveling movement thereof free of connection with said load-supply means.

10. The combination of a load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying a sliding weight movable toward and from the beam-axis; and stream-controlling means operative to control the movement of said counterbalancing means and permit the traveling movement thereof free of connection with said stream controlling means.

11. The combination of a shiftable load receiver; pivotally-supported beam mechanism carrying said receiver, and embodying traveling counterbalancing means operatively connected with said load-receiver for movement toward and from the beam axis; and material-supply means embodying stream-controlling means, and adapted through the medium of said stream-controlling means to control the movement of said counterbalancing means.

12. The combination of a load-receptacle; pivotally-supported beam mechanism carrying said receptacle, and embodying a traveling weight shiftable toward and from the beam-axis; locking means for holding said weight in its efficient position; valve mechanism for regulating the supply of material to said receptacle; and means operated by said valve mechanism for unlocking said weight, thereby to permit the shifting thereof independently of any movement of said valve mechanism.

13. The combination of an oscillatory load-receiver, a pivotally-supported beam carrying said receiver; a traveling weight carried by said beam; means pivotally connected to said receiver and weight, whereby said weight is movable toward and from the beam-axis on the oscillation of said receiver; means for locking said weight in its efficient position; valve mechanism for regulating the supply of material to said receiver; and tripper mechanism movable with the valve mechanism for unlocking said traveling weight, thereby to permit the same to travel toward its beam-axis.

14. In an apparatus of the class specified, the combination of a load-receiver having movements in intersecting planes; traveling counterbalancing means; and stream-controlling means operative to control the movement of said counterbalancing means and permit the traveling movement thereof free of connection with said stream-controlling means.

15. The combination of a load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying traveling counterbalancing means shiftable toward and from the beam-axis; and means operative by the discharging load to control said counterbalancing means.

16. The combination of a shiftable load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying traveling counterbalancing means shiftable toward and from the beam-axis; and regulator mechanism operable to control the traveling movement of said counterbalancing means.

17. The combination of a load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying a traveling load-weight shiftable toward and from the beam-axis; means pivotally connecting said load-receiver with said weight; and regulator mechanism operable to control the traveling movement of said weight.

18. The combination of a load-receiver; pivotally-supported beam mechanism carrying said load-receiver, and embodying a traveling weight movable toward and from the beam-axis; locking means for holding said weight in its normal counterbalancing position; and regulator mechanism adapted to unlock said weight to permit the same to move toward and from its beam-axis.

19. The combination of an oscillatory load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying a load-weight shiftable toward and from the beam-axis, a connector pivotally secured to said receiver and weight; locking means for holding said weight in its efficient position; and regulator mechanism operable to unlock said weight and thereby permit it to shift toward and from the beam-axis on the oscillation of said load-receiver.

20. The combination of a load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying traveling counterbalancing means movable toward and from the beam-axis; material-supply means operative at one predetermined period to control the traveling movement of said counterbalancing means; and

means operative by the discharging load likewise to control, at another predetermined period, the traveling movement of said counterbalancing means.

21. The combination of a shiftable load-receiver; pivotally-supported beam mechanism carrying said load-receiver, and embodying sliding counterbalancing means movable toward and from the beam-axis; load-supply means operative at one predetermined period to control the traveling movement of said counterbalancing means; and regulator mechanism also operative at one predetermined period likewise to control the traveling movement of said counterbalancing means.

22. The combination, with weighing mechanism, of material-supply mechanism; regulator mechanism; and compound tripping mechanism normally operative in one way by the supply mechanism and in another way by the regulator mechanism, and so operative from the one independently of its operation by the other to effect the discharge of the load.

23. The combination, with weighing mechanism, embodying traveling counterbalaocing means, of valve mechanism for controlling the supply of material thereto; regulator mechanism; and compound tripping mechanism normally operative in one way by the valve mechanism and in another way by the regulator mechanism, and so operative from the one independently of its operation by the other to control the movement of said counterbalancing means, and thereby permit the traveling thereof at the proper predetermined period to effect the discharge of the load.

24. The combination, with weighing mechanism embodying a load-receiver having movements in intersecting planes and counterbalancing means likewise having movements in intersecting planes synchronously with said load-receiver, of stream-controlling means operative to control the supply of material to said receiver; material-discharge-operated mechanism; and means operative by said mechanism and stream-controlling means, one independently of its operation by the other, to effect the movement of said counterbalancing means, and thereby the load-receiver, in one of its said planes of movement.

25. The combination of a shiftable load-receiver; pivotally-supported beam mechanism carrying said receiver and embodying a traveling weight movable toward and from the beam-axis; locking means for locking said weight in its normal efficient position; material-supply means; material-exit-operated means; and compound tripping mechanism intermediate the material-supply means and said material-exit-operated means, and operative from the one independently of the other to unlock said weight and permit movement thereof toward the beam-axis.

26. The combination, with framework, of a shiftable load-receiver; pivotally-supported beam mechanism carrying said receiver and embodying a traveling weight movable toward and from the beam-axis; locking means for holding said weight in its normal efficient position; valve mechanism for regulating the supply of material to said load-receiver; regulator mechanism controlled by the exit of the discharged load from said receiver; a locker-tripper carried by said framework; and connecting mechanism intermediate said valve mechanism and locker-tripper, and also intermediate said regulator mechanism and locker-tripper, and operative by each at a predetermined period to unlock said weight, and thereby permit the movement thereof toward the beam-axis.

27. The combination with framework, of hanger mechanism carried thereby; a load-receiver secured to said hanger mechanism, adjacent to the lower end thereof for shiftable movement; beam mechanism supporting said hanger mechanism and embodying a traveling weight operatively connected with said receiver and movable toward and from the beam-axis to assist the shifting of said receiver.

28. The combination, with framework, of hanger mechanism carried thereby; a load-receiver pivotally secured thereto for oscillatory movement; beam mechanism pivotally supporting said hanger mechanism and embodying a traveling weight; and means pivotally secured to said weight and to said receiver, whereby the weight is shiftable toward and from the beam-axis to effect the oscillation of said receiver.

29. The combination, with framework, of hanger mechanism supported thereby; a load-receiver pivotally secured to said hanger mechanism; a pivotally-supported beam carried by said framework and supporting said hanger mechanism; a sliding weight movable toward and from the beam-axis; means connecting said weight with said load-receiver; a locker for holding said weight in its normal efficient position; a tripper carried by said framework; valve mechanism; and means intermediate the valve mechanism and tripper for unlocking said weight at one predetermined period, thereby to permit the movement thereof toward the beam-axis.

30. The combination, with framework, of hanger mechanism supported thereby; an oscillatory load-receiver pivotally secured to said hanger mechanism; a pivotally-supported beam carried by said framework and supporting said hanger mechanism; a sliding weight movable toward and from the beam-axis; means connecting said weight with said load-receiver; a locker for holding said weight in its normal efficient position; a tripper carried by said framework; regulator mechanism; and means intermediate said regulator mechanism and tripper, and adapted to unlock said weight at one predetermined period and permit the movement thereof toward the beam-axis.

31. The combination, with framework, of hanger mechanism supported thereby; a load-receiver pivotally secured to said hanger mechanism; a pivotally-supported beam carried by said framework and supporting said hanger mechanism; a shiftable weight movable toward and from the beam-axis; means connecting said weight with said load-receiver; a locker for holding said weight in its normal efficient position; a tripper carried by said framework; valve mechanism; connecting means intermediate the valve mechanism and tripper for unlocking said weight at one predetermined period to permit movement thereof toward the beam-axis; regulator mechanism; and connecting means intermediate said regulator mechanism and tripper for unlocking said weight, thereby to permit movement thereof toward the beam-axis at another predetermined period.

32. The combination of a load-receiver; a pivotally-supported beam carrying said receiver; a traveling weight mounted on said beam and movable toward and from the beam-axis; a stop rigidly secured to said beam; and a locker carried by said weight and adapted to engage said stop, thereby to lock the weight against movement.

33. The combination of an oscillatory load-receiver; a pivotally-supported beam carrying said receiver; a traveling weight mounted on said beam; a connector pivotally secured to said load-receiver and weight; a stop rigidly secured to said beam; a locker carried by said weight, and adapted to engage said stop, thereby to lock the weight against movement; and means operable to actuate the locker, thereby to unlock the weight and permit movement thereof toward and from the beam-axis.

34. The combination of a movable load-receiver; a pivotally-supported beam carrying said receiver and having a track; a traveling weight mounted on said track and operatively connected with said receiver and provided with track-rolls, one or more above, and one or more below said track, whereby said weight is movable toward and from the beam-axis to assist the movement of said receiver.

35. The combination of a shiftable load-receiver; a pivotally-supported beam carrying said receiver and having a track; a traveling weight carried by said track and provided with a plurality of track-rolls engaging said track; and a connector secured to said weight and load-receiver.

36. The combination of a load-receiver; a pivotally-supported beam carrying said receiver and having a track; a traveling weight having a series of track-rolls engaging said track; a connector secured to said weight and load-receiver; and locking means for locking said weight in its normal efficient position.

37. The combination of an oscillatory load-receiver; a pivotally-supported beam carrying said receiver and having a track; a traveling weight provided with a series of rolls engaging said track; a connector pivotally secured to said weight and load-receiver; oscillatory locking means for locking said weight in its normal efficient position; and means for tripping said locking means, thereby to unlock the weight and permit movement thereof toward and from the beam-axis.

38. The combination of a shiftable load-receiver; beam mechanism pivotally supporting said receiver and embodying traveling counterbalancing means movable toward and from the beam-axis; and connecting means secured to said counterbalancing means and pivotally secured to said receiver, the pivotal point of said connecting means with said receiver coinciding with the pivotal point of the receiver with the beam mechanism.

39. The combination, with framework, of hanger mechanism supported thereby; an oscillatory load-receiver carried by said hanger mechanism; a beam pivotally supporting said receiver; a traveling weight carried by said beam; and a connector pivotally secured to said weight and to said receiver, whereby said weight is shiftable toward and from the beam-axis to effect the oscillation of said receiver, the pivotal point of said connector with said receiver coinciding with the pivotal point of said receiver with the hanger mechanism.

40. The combination with a load-receiver, of a pivotally-supported beam carrying said receiver; traveling counterbalancing means carried by said beam and movable toward and from the beam-axis during each weighing operation; a connector, independent of the beam, connecting said load-receiver and counterbalancing means; and a cushion or buffer in position to receive the jar of said traveling counterbalancing means on the return thereof to its position of rest.

41. The combination with a load-receiver, of a pivotally-supported beam carrying said receiver; a sliding weight carried by said beam and movable toward and from the beam-axis during each weighing operation; a linkage connection between said weight and load-receiver; and a buffer or cushion in position to receive the jar of said beam on the return thereof to its position of rest.

42. In an apparatus of the class specified, material-supply means comprising a series of three valves, disposed one above another and connected together for simultaneous operation, one to completely cut off the stream of material and two to reduce said stream.

43. Material-supply means comprising a supply-chute, and a series of three valves carried thereby and operative from alternately-opposite sides of said chute and disposed one above another, and all operable simultaneously to cut off and reduce the supply-stream.

44. In a weighing apparatus, material-cut-off means comprising a pair of valves, one having a convex working face and the other a concave working face, said valves being so disposed relatively to each other that the convex face of one valve and the concave face of the other valve constitute the material-receiving faces of said valves.

45. Stream-controlling means comprising a load-cut-off valve having a concaved valve-blade constituting the material-receiving face thereof, and two load-reducing valves disposed above said cut-off valve, one above the other, and each having a convexed valve-blade constituting the material-receiving face thereof.

46. Stream-controlling means comprising a cut-off valve and a reducing-valve connected together and movable simultaneously, one of said valves being adjustable relatively to the stream-passage; and means for adjusting said valve.

47. Stream-controlling means comprising a cut-off valve and a reducing-valve connected together, said reducing-valve having an adjustment whereby the stream can be partially reduced or completely cut off, and also an adjustment whereby the volume thereof can be regulated; and means operative to secure such adjustments.

48. Stream-controlling means comprising a series of three valves disposed one above another and all connected together for simultaneous movement, one to cut off the material and two to reduce such material, and one of said valves being adjustable relatively to the stream-passage independently of the other valves.

49. Material-supply means comprising a plurality of stream-controlling valves disposed one above another, and adjustable means connecting said valves whereby one of said valves is adjustable relatively to the stream-passage, and whereby also said valves are movable simultaneously to reduce and cut off the supply stream.

50. Material-supply means comprising a chute having a plurality of stream deflecting or break walls disposed one above another, and a plurality of stream-controlling valves likewise disposed one above another and connected together for simultaneous movement to reduce and completely cut off the stream of material.

51. Material-supply means comprising a supply-chute having a plurality of stream deflecting or break walls disposed one above another, a cut-off valve, and a plurality of reducing-valves disposed above the cut-off valve and one above another, and each reducing-valve being disposed adjacent to and below one of the stream deflecting walls.

52. In a weighing-machine, valve mechanism comprising a cut-off valve and an adjustable reducing-valve, and adjustable means connecting said reducing-valve and cut-off valve for regulating the movement of said reducing-valve.

53. In a machine of the class specified, valve mechanism comprising a reducing-valve and a cut-off valve, adjustable means intermediate said valves and comprising a slotted member adapted to permit the adjustment of the reducing-valve thereby to regulate the volume of the stream, and a connector secured to said cut-off valve and adjustable relatively to said slotted member to regulate the throw of said reducing-valve.

54. Valve mechanism comprising a shaft supported in position for rocking movement; a load-cut-off valve having a pair of upwardly-extending arms rigidly connected to said shaft; and a load-reducing valve disposed above said cut-off valve and having a pair of depending arms rigidly connected to said shaft, said valves being disposed in position relatively to each other to operate from opposite directions simultaneously to reduce and completely cut off a stream of material.

55. Valve mechanism comprising a cut-off valve, a reducing-valve disposed above and rigidly connected to said cut-off valve, and a second reducing-valve disposed above said first reducing-valve and adjustably connected to said cut-off valve.

56. The combination of a load-receiver supported for shiftable movement; a pivotally-supported beam carrying said receiver; a traveling load-weight carried at one predetermined period adjacent to one end of said beam and movable toward and from the beam-axis to assist the shifting of said receiver; valve mechanism; and locking means intermediate said valve mechanism and receiver and adapted to lock said receiver against shiftable movement and thereby the weight against traveling movement toward the beam-axis.

57. The combination of a load-receiver supported for oscillatory movement; a pivotally-supported beam carrying said receiver; a traveling load-weight carried at one predetermined period adjacent to one end of said beam and movable toward and from the beam-axis; valve mechanism; locking means intermediate said valve mechanism and receiver, and adapted to lock said receiver against oscillatory movement; and automatically-operative locking means adapted to lock said weight against traveling movement after each weighing operation.

58. The combination of a shiftable load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying a traveling weight movable toward and from the beam-axis; valve mechanism; locking means intermediate said valve mechanism and receiver, and adapted to lock said receiver against movement; locking means adapted to lock said weight against traveling movement; and means operative by the valve mechanism for unlocking said weight-locking means.

59. The combination of a shiftable load-receptacle; pivotally-supported beam mechanism carrying said receptacle, and embodying a traveling weight movable toward and from the beam-axis; locking means for said weight; valve mechanism; duplex locking means operable to lock the valve closed when the load-receptacle is in its discharging position, and to lock said receptacle against movement when the valve is open; and means operative by the valve for unlocking said weight.

60. The combination of a shiftable load-receptacle; pivotally-supported beam mechanism carrying said receptacle, and embodying a traveling weight movable toward and from the beam axis; locking means for said weight; valve mechanism; duplex locking means operable to lock the valve closed when the receptacle is in its discharging position, and to lock said receptacle against movement when the valve is open; and regulator mechanism operative to unlock said weight.

61. The combination of an oscillatory load-receptacle; pivotally-supported beam mechanism carrying said receptacle and embodying a traveling weight movable toward and from the beam-axis; locking means for said weight; valve mechanism; duplex locking means operable to lock the valve closed when the load-receptacle is in its discharging position, and to lock said receptacle against movement when the valve is open; means operative with the valve for unlocking said weight; and regulator mechanism also operative to unlock said weight.

62. The combination with hanger mechanism, of a shiftable load-receptacle carried by said hanger mechanism; valve mechanism for regulating the supply of material to said load-receptacle; and duplex locking means comprising a stop operative with the valve mechanism and a stop shiftably secured to the hanger mechanism and permanently connected to said load-receptacle for movement therewith and operative to engage the valve-stop, thereby to maintain the load-receptacle against shiftable movement.

63. The combination, with framework, of hanger mechanism carried thereby; an oscillatory load-receptacle pivotally secured to said hanger mechanism; valve mechanism for regulating the supply of material to said receptacle; duplex locking means, comprising a stop operative with the valve mechanism and a stop pivotally secured to said hanger mechanism, and a connector pivotally connecting said last-mentioned stop with the load-receptacle, the pivotal point of said connector with said receptacle being in the rear of the pivotal point of said receptacle with said hanger mechanism.

64. The combination with a load-receiver shiftable to discharge a load, of a beam supporting said receiver; a traveling counterbalancing means carried by said beam and movable toward the beam-axis to assist the load-receiver into its load-discharging position; a linkage connection between said receiver and counterbalancing means, whereby said counterbalancing means is movable simultaneously with said load-receiver; and regulator mechanism operative to lock said load-receiver in its load-discharging position and thereby maintain said weight in its inefficient position.

65. The combination of a load-receiver; pivotally-supported beam mechanism carrying said receiver, and embodying traveling counterbalancing means movable toward and from the beam-axis; locking means for holding said counterbalancing means in its normal efficient position; valve mechanism for regulating the supply of material to said load-receiver; regulator mechanism controlled by the exit of the discharging load from said receiver, and adapted to lock said load-receiver in its load-discharging position; and compound tripping mechanism intermediate said valve mechanism and regulator mechanism, and operative by each independently of the other, at a predetermined period, to unlock said counterbalancing means and thereby permit the movement thereof toward the beam-axis, to effect the discharge of the load.

66. The combination, with framework, of weighing mechanism supported thereby, and embodying a load receptacle and a traveling counterbalancing-weight movable toward and from said receptacle; locking means carried by said weight for locking the same in its normal efficient position; and means carried by said framework for unlocking said weight to permit movement thereof toward and from said receptacle.

67. In a machine of the class specified, the combination of a

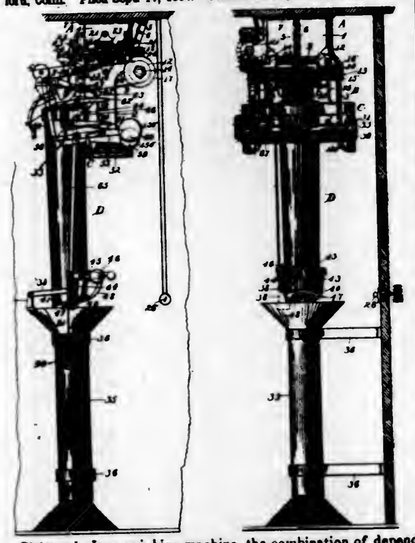
beam; a traveling load-weight carried at one predetermined period adjacent to one end of said beam and automatically shiftable during each weighing operation; and self operative locking means operative during the loading period to maintain said weight in its load-counterbalancing position.

68. The combination of beam mechanism having a traveling weight automatically shiftable during each weighing operation; and locking means carried by the weight and operative to hold said weight in its effective position.

69. Stream-controlling means comprising a reducing-valve; a cut-off valve movable simultaneously with said reducing-valve; and a pair of connectors between said valves, and secured, one to each valve, and also having an engagement with each other, whereby said valves are movable together, one to reduce and the other to completely cut off the stream of material.

70. The combination of an upsettable load-receiver; a pivotally-supported beam carrying said upsettable load-receiver; a self-movable, sliding weight carried by said beam; a linkage connection between said weight and the load-receiver, whereby, simultaneously with the upsetting of said receiver, the weight is movable toward the beam-axis; and a spring-controlled buffer or cushion in position to receive the jar of said beam and weight on the return thereof to their positions of rest, whereby said buffer takes up the jar of the beam and weight, and owing to such linkage connection also that of the load-receiver as it returns to its position of rest.

607,475. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Sept. 17, 1897. Serial No. 651,960. (No model.)



Claim.—1. In a weighing-machine, the combination of depending framework adapted to be supported from above and non-supported at its lower end, and embodying a supply-chute having the discharge end of its stream-passage intermediate the upper and lower ends of said framework; a shiftable conveyer; a motor carried by said depending framework for operating said conveyer; weighing mechanism carried by said depending framework and including a load-receiver having an inclined discharge-mouth, and having its upper load-receiving end in position permanently above the lower end of said framework, whereby it is in position to receive material in close proximity to the discharge end of said supply-chute, and its lower, load-discharging end permanently in position below said framework whereby said receiver discharges its load below said framework.

2. In a weighing-machine, the combination with depending framework adapted to be supported from above and non-supported at its lower end and embodying a supply-chute, of weighing mechanism supported by said framework; feeding means for feeding material from said supply-chute to the weighing mechanism and comprising a shiftable conveyer, an electric motor, and clutch members forming connection between said motor and conveyer, one of said members having a pawl for engaging the other member; clutch-controlling means carried by said framework and shiftable into position to engage said pawl and disengage the clutch members, and thereby throw said conveyer out of operative connection with said motor and consequently out of operation; a stream-controlling valve; and means directly carried by and shiftable with said valve to engage said shiftable clutch-controlling means, thereby to shift the same into position to disengage the clutch members.

3. In a weighing-machine, the combination with framework embodying a supply-chute, of weighing mechanism; a traveling conveyer for conveying material from the supply-chute to the weighing mechanism; means for operating said conveyer and comprising a driving-shaft supported in position, an electric motor and a clutch member mounted thereon, a driven shaft supported in position relatively to said driving-shaft and carrying a companion clutch member and a worm; a worm-wheel in operative engagement with said conveyer and worm for imparting motion from the motor to the conveyer; a pawl carried by one of said clutch members and adapted to engage the other clutch member, thereby to throw said conveyer into operative connection with the motor; shiftable clutch-controlling means carried by said framework and operative to disengage said clutch members and thereby throw the conveyer out of operative connection with the motor; and stream-controlling means operative to throw said clutch-controlling means into position to disconnect said clutch members.

4. In a depending weighing-machine, the combination of hangers or downrights adapted to be fixedly secured from above and non-supported at their lower ends and having a supply-chute; weighing mechanism carried by said downrights and embodying a relatively long, cylindrical chute load-receiver having its upper load receiving end in position above the lower ends of said downrights to receive the load from said chute, and its lower load-discharging end in position below said downrights; a traveling belt for feeding material from said supply-chute to the receiver; means for operating said belt and comprising an electric motor carried by one of said downrights, a worm operatively connected therewith, a worm-wheel in operative connection with said belt and worm, and clutch mechanism for forming connection between said worm and motor; clutch-controlling means for throwing said clutch mechanism into and out of operation; and stream-controlling means operative to cut off the supply of material to said receiver, and also to operate said clutch-controlling means, thereby to control the operation of the clutch mechanism and the conveyer-belt.

5. In a weighing-machine, the combination of hangers or downrights adapted to be fixedly secured from above and non-supported at their lower ends, and having a supply-chute; weighing mechanism carried by said downrights and embodying a relatively long, movable, cylindrical chute load-receiver having its upper load-receiving end in position above the lower end of said downrights to receive the load from said chute, and its lower load-receiving end in position below said downrights; a traveling belt for feeding material from said supply-chute to the receiver; means for operating said belt and comprising a motor carried by one of said downrights, a worm operatively connected therewith, a worm-wheel in operative connection with said belt and worm, and clutch mechanism for forming connection between said worm and motor; clutch-controlling means for throwing said clutch mechanism into and out of operation; stream-controlling means operative to cut off the supply of material to said receiver and also to operate said clutch-controlling means, thereby to control the operation of the clutch mechanism and the conveyer-belt; and a relatively long, non-movable cylindrical supplemental chute disposed below said movable load-receiver chute and having a linkage connection therewith, thereby to control lateral movement of said movable chute.

6. In a weighing-machine, the combination of a supply-chute; weighing mechanism; feeding means for feeding material from said chute to the weighing mechanism, and comprising a traveling conveyer, a motor, and clutch members intermediate said motor and conveyer for controlling the operation of said conveyer, and having a cam-faced pawl; clutch-controlling means embodying a cam-faced member shiftable into position to engage said pawl and disengage the clutch members and thereby throw said conveyer out of operation; a valve; a stop carried by said valve, and having a working part adapted to engage the clutch-controlling means to shift the same into position to disengage the clutch members on the closing of the valve, and adapted on the opening of said valve to release said clutch-controlling means, thereby to permit the reëngagement of the clutch members and the operation of the conveyer.

7. In a weighing-machine, the combination of a load-receiver; and beam mechanism for supporting said receiver, and comprising a pair of parallelly-extending arms, one of said arms carrying a main weight and the other carrying a supplemental weight, said supplemental weight normally having a position of rest above the position of rest of the main weight, whereby in operation said load-receiver is gradually brought to a poise.

8. In a weighing-machine, the combination of a load-receiver; and beam mechanism for supporting said receiver, and comprising a pair of parallelly-extending, pivotally-connected arms, one of said arms carrying a main weight fixedly secured thereto, and the other of said arms carrying a supplemental weight fixedly secured thereto, said supplemental weight normally having a position of rest above the position of rest of the main weight, whereby said receiver, during a part of its weighing movement, first acts to raise the main weight to the normal position of rest of the supplemental weight, and then, during the rest of its weighing movement, acts to raise both of said weights simultaneously, whereby the receiver is gradually brought to a poise.

9. Weighing mechanism comprising a load-receiver, and beam mechanism for supporting said receiver, said beam mechanism embodying a pair of weights, one having its normal position of rest above the position of rest of the other weight, and both of said weights having connection with said beam mechanism when in its position of rest and throughout the entire movement thereof to and from said position of rest, whereby one of said weights has an ascending movement independently of the other weight at one predetermined period, and whereby both of said weights have simultaneous movements at another predetermined period, thereby to permit the receiver to be brought gradually to a poise.

10. Weighing mechanism comprising a load-receiver, and beam mechanism for supporting said receiver, said beam mechanism embodying a pair of weights, one of said weights having its normal position of rest in a plane above the normal position of rest of the other weight, and both of said weights having a permanent connection with the beam mechanism, whereby both are movable with said beam mechanism to and from its position of rest, whereby said lower weight has an ascending movement independently of the upper weight during a predetermined period, and an ascending movement with said weight during another predetermined period, thereby to bring the load-receiver gradually to a poise.

11. In a weighing-machine, the combination of a load-receiver; and beam mechanism supporting said receiver and comprising a pair of arms disposed side by side and carrying a plurality of weights fixedly secured to said arms and connected one to the other for simultaneous movement during a part of the operation of the load-receiver, and one of said weights having an ascending movement independently of the other weight during another part of said operation of the load-receiver.

12. In a weighing-machine, the combination of a load-receiver; and beam mechanism supporting said receiver and comprising a pair of independent weights, one of said weights having its normal position of rest in a plane above the normal position of rest of the other weight; and means carried by said weights for maintaining them together for simultaneous movement during a part of the operation of the load-receiver.

13. In a weighing-machine, the combination of a load-receiver; and beam mechanism supporting said receiver and comprising a beam-arm, a main weight carried thereby, a supplemental arm pivotally secured to said beam-arm and extending in parallelism therewith, and a supplemental weight carried thereby, said weights having their normal positions of rest in separate planes, one above the other, whereby, during the first part of the operation of the main weight, said supplemental weight is stationary; and means carried by said weights for maintaining them together on the ascent of said main weight to the normal position of rest of the supplemental weight, whereby said weights act together during a part of the operation of the load-receiver.

14. In a weighing machine, the combination of valve mechanism; a load-receiver; weighted beam mechanism supporting said receiver and constructed and operative to maintain the valve in its wide-open position during a partial descent of the load-receiver and the non-weighted end of one part of said beam mechanism.

15. In a weighing-machine, the combination of valve mechanism; and weighing mechanism embodying beam mechanism operative to control the opening and closing of said valve, and comprising a main and a supplemental weight, the supplemental weight normally having a position of rest above the position of rest of the main weight, and in operative engagement with the valve while in such position of rest to maintain said valve open to its full extent during a partial descent of the non-weighted end of a part of the beam mechanism.

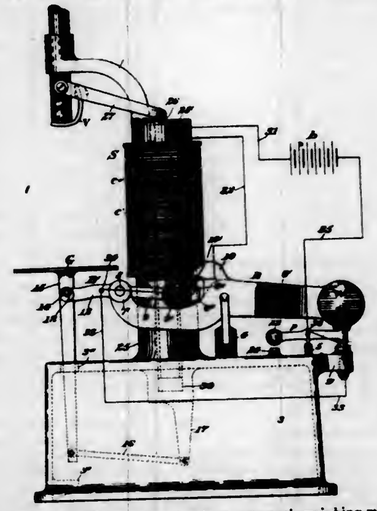
16. In a weighing-machine, the combination of valve mechanism; a load-receiver; beam mechanism supporting said receiver, and operative to control the opening and closing of said valve, and comprising a main and supplemental weight, the supplemental weight normally having a position of rest above the position of rest of the main weight, and in operative engagement with the valve while in such position of rest to maintain said valve open to its full extent during a partial descent of said receiver and the non-weighted end of a part of the beam mechanism; and means connected with said valve and beam mechanism, and operative after the valve commences to close to maintain said valve partially open during a further descent of the load-receiver.

17. In a weighing-machine, the combination of a valve; weighing mechanism embodying beam mechanism comprising a beam-arm, a main weight carried thereby, a valve-actuator secured to said beam-arm and carrying a supplemental weight having its normal position of rest above the normal position of rest of the main weight; and a thrust-rod connected with said valve and in engagement with said actuator, and operative to maintain said valve open to its full extent during a partial descent of the non-weighted end of the arm.

18. In a weighing-machine, the combination of a valve: a load-receiver; beam mechanism supporting said receiver and comprising a beam arm, a main weight carried thereby, a valve-actuator secured to said beam-arm and carrying a supplemental weight having its normal position of rest above the normal position of rest of the main weight: a thrust-rod connected with said valve and in engagement with said actuator and operative to maintain said valve open to its full extent during a partial descent of the load-receiver and a part of the beam mechanism; a by-pass carried by the beam mechanism; and an arm connected with the valve and adapted after the valve commences to close to engage the by-pass on the disengagement of the thrust-rod and actuator, thereby to maintain the valve partially open during a still further descent of the load-receiver.

19. In a depending weighing-machine, the combination of hangers or downrights having a chute; beam mechanism carried by said downrights, and comprising a main and a supplemental weight, the supplemental weight having its position of rest above the normal position of rest of the main weight; an elongated, tapering load-receiver carried by said beam mechanism and having a closer; a driving-shaft journaled on one of said downrights and carrying a motor and a clutch member; a driven shaft carrying a coacting clutch member and a worm; a traveling belt for conveying material from said chute to said load-receiver; a worm-wheel for imparting motion to said belt and in engagement with said worm; a valve operative to cut off the material from said receiver, and controlled in its opening and closing movements by the beam mechanism and adapted to be maintained open to its full extent by said beam mechanism during a partial descent of the load-receiver and a part of such beam mechanism; clutch-controlling means operative to throw said clutch members into and out of engagement; and a stop carried by said valve and operative, on the closing of the valve to shift said clutch-controlling means into position to disengage the clutch members, and thereby throw the belt out of operation, and operative on the opening of the valve, to permit the clutch-controlling means to allow the reëngagement of the clutch members, thereby to throw said belt into operation.

607,476. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 11, 1897. Serial No. 654,841. (No model.)



Claim.—1. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatic primary weighing means coöperative with the stream-controlling means for making up automatically predetermined loads; and secondary receiver-weighing means movable with the primary weighing means and operative for determining the weight of a receiver independently of the primary weighing action, for determining the weight of the load.

2. The combination, in an automatic weighing-machine, of stream-

supplying means; automatically-operative stream-controlling means; automatic primary weighing mechanism coöperative with the stream-controlling means for making up automatically predetermined loads; and secondary receiver-weighing mechanism mounted on the primary weighing mechanism and operative for determining the weight of a receiver independently of the primary weighing action, for determining the weight of the load.

3. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatic primary weighing means coöperative with the stream-controlling means for making up automatically predetermined loads; poise-regulating means; and secondary receiver-weighing means movable with the primary weighing means and operative for determining the weight of a receiver independently of the primary weighing action for determining the weight of the load.

4. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatic primary weighing mechanism coöperative with the stream-controlling means for making up automatically predetermined loads; and secondary receiver-weighing mechanism mounted on the primary weighing mechanism for movement therewith, and operative for determining the weight of a receiver independently of the primary weighing action for determining the weight of a load, and embodying secondary poise-regulating means.

5. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatic primary weighing mechanism coöperative with the stream-controlling means for making up automatically predetermined loads; and secondary receiver-weighing mechanism mounted on the primary weighing mechanism for movement therewith, and operative for determining the weight of a receiver independently of the primary weighing action for determining the weight of the load, and embodying an adjustable secondary poise-weight.

6. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatic primary weighing mechanism coöperative with the stream-controlling means for making up automatically predetermined loads; and secondary receiver-weighing mechanism mounted on the primary weighing mechanism for movement therewith, and operative for determining the weight of a receiver independently of the primary weighing action for determining the weight of the load, and embodying a scale-arm and an adjustable poise-weight slidable along said scale-arm.

7. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatically-operative counterpoised primary beam mechanism coöperative with the stream-controlling means for making up automatically predetermined loads; and counterpoised secondary receiver-weighing beam mechanism pivoted on the poising side of the primary beam mechanism, and operative for determining the weight of a receiver independently of the primary weighing action for determining the weight of the load.

8. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatic primary weighing means coöperative with the stream-controlling means for making up automatically predetermined loads; and secondary receiver-weighing means movable with the primary weighing means and operative for determining the weight of a receiver independently of the primary weighing action for determining the weight of the load, said two weighing means having a common load-receiver.

9. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatic primary weighing means coöperative with the stream-controlling means for making up automatically predetermined loads; and secondary receiver-weighing means movable with the primary weighing means and embodying the load-receiver of the latter, and operative for determining the weight of said load-receiver independently of the primary weighing action for determining the weight of the load.

10. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatic primary weighing means coöperative with the stream-controlling means for making up automatically predetermined loads; and secondary receiver-weighing means movable with the primary weighing mechanism and embodying a load-receiver pivotally supported thereon and operative for determining the weight of said load-receiver independently of the primary weighing action for determining the weight of the load.

11. The combination in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatically-operative counterpoised primary beam mechanism coöperative with the stream-controlling means for making up automatically predetermined loads; and counterpoised secondary receiver-weighing beam mechanism pivoted on the poising side of the primary beam mechanism and embodying a load-receiver pivotally supported on the poising side thereof and operative for determining the weight of said load-receiver independently of the primary weighing action for determining the weight of the load.

12. In an automatic weighing-machine, the combination, with weighing means embodying a poising device movable relatively to the main weighing means, of a circuit-controller carried directly by and on said poising device.

13. In an automatic weighing-machine, the combination, with weighing means embodying a poising device movable relatively to the main weighing means, and a pair of coöperative contact-makers carried, respectively, by the main weighing means and the poising device, of an electric circuit including said contact-makers.

14. In an automatic weighing-machine, the combination, with primary beam mechanism embodying a contact-maker, of secondary beam mechanism mounted thereon for movement therewith and embodying a contact-maker coöperative with that of the primary beam mechanism, and an electric circuit including said contact-maker.

15. In an automatic weighing-machine, the combination with weighing means embodying a pair of independently-operable poising devices movable relatively to the main weighing means, of a pair of circuit-controllers controlled, respectively, by said respective poising devices.

16. In an automatic weighing-machine, the combination, with a support, of weighing mechanism carried by said support and embodying a pair of independently-operable poising devices movable relatively to the main weighing mechanism and one carried by such main weighing mechanism and the other by the support, and a pair of circuit-controllers controlled, respectively, by said respective poising devices.

17. In an automatic weighing-machine, the combination, with a support, of weighing mechanism carried by said support and embodying a pair of independently-operable poising devices movable relatively to the main weighing mechanism and one pivotally supported on such main weighing mechanism and the other pivotally mounted on the support, and a pair of circuit-controllers controlled, respectively, by said respective poising devices.

18. In an automatic weighing-machine, the combination, with a support, of weighing mechanism carried by said support and embodying a pair of independently-operable poising devices movable relatively to the main weighing mechanism and one carried by such main weighing mechanism and the other mounted on said support and shiftable off from the weighing mechanism at a determined point in the movement thereof, and a pair of circuit-controllers controlled, respectively, by said respective poising devices.

19. In an automatic weighing-machine, the combination, with weighing means embodying a load-receiver movable therewith and relatively thereto, of an electrical circuit-controller controlled by the movement of the load-receiver relatively to the main weighing means.

20. In an automatic weighing-machine, the combination, with weighing means embodying a load-receiver movable therewith and relatively thereto, of a pair of electrical circuit-controllers controlled, respectively, by the main weighing means and the movement of the load-receiver relatively to the main weighing means.

21. In an automatic weighing-machine, the combination, with primary weighing means, of secondary weighing means movable therewith, and a pair of electrical circuit-controllers controlled, respectively, by the primary and the secondary weighing means.

22. In an automatic weighing-machine, the combination, with primary weighing means, of secondary weighing means movable therewith, and an electric circuit having two breaks controlled, respectively, by said respective weighing means.

23. In an automatic weighing-machine, the combination, with primary weighing means, of secondary weighing means movable therewith, and an electric circuit having a normally closed break controlled by the primary weighing means, and a normally open break controlled by the secondary weighing means.

24. In an automatic weighing machine, the combination, with counterpoised primary beam mechanism, of counterpoised secondary beam mechanism pivoted on the poising side of the primary beam mechanism, and an electric circuit having a normally closed break controlled by the primary beam mechanism and adapted to be opened at a determined point in the descent thereof, and also having a normally open break controlled by the secondary beam mechanism and adapted to be closed at a determined point in the descent.

25. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatically-operative counterpoised primary weighing mechanism coöperative with the stream-controlling means for making up automatically predetermined loads; and counterpoised load-receiving package-balancing secondary weighing mechanism having its counterpoising means of less efficiency than that of the primary weighing mechanism, and operative for determining the weight of a package independently of the primary weighing action for determining the weight of the load delivered to such package.

26. The combination, in an automatic weighing-machine, of stream-supplying means; automatically-operative stream-controlling means; automatically-operative counterpoised primary weighing mechanism coöperative with the stream-controlling means for making up automatically predetermined loads; a counterweighted load-receiving package-balancing secondary weighing mechanism having a counterweight of less efficiency than that of the primary beam mechanism, and operative for determining the weight of the package independently of the primary weighing action for determining the weight of the load delivered to such package.

27. The combination, in an automatic weighing-machine, of stream-supplying means; stream-controlling means; automatically-operating counterpoised primary weighing mechanism coöperative with the stream-controlling means; and counterpoised load-receiving package-balancing secondary weighing mechanism movable from a normal counterpoised position to another extreme position on the placing of a package thereon, and having its counterpoising means of less efficiency than that of the primary beam mechanism.

28. The combination, in an automatic weighing-machine, of stream-supplying means; stream-controlling means; automatically-operating counterpoised primary weighing mechanism coöperative with the stream-controlling means; counterpoised load-receiving package-balancing secondary weighing mechanism having a substantially flat package carrier pivotally mounted on the poising side thereof, and also having its counterpoising means of less efficiency than that of the primary beam mechanism and movable from a normal counterpoised position to another extreme position on the placing of a package on the package-carrier.

29. In an automatic weighing-machine, the combination, with a supply-spout, of a stream-controller; a stream-controller actuator; an electric circuit controlling said actuator; weighing means embodying a poising device movable relatively to the main weighing means; and a circuit-controller carried directly by said poising device.

30. In an automatic weighing-machine, the combination, with a supply-spout, of a valve; a valve opening and closing actuator; an electric circuit controlling said actuator; weighing means embodying a poising device movable relatively to the main weighing means; and a circuit controller carried directly by said poising device.

31. In an automatic weighing-machine, the combination, with a support, of weighing mechanism embodying counterpoised main weighing means mounted on said support and a poising device coöperative with and normally effective in opposition to the counterpoised side of the main weighing means.

32. In an automatic weighing-machine, the combination, with a support, of weighing mechanism embodying counterpoised main weighing means mounted on said support and a pivoted poising device mounted on the support independently of the main weighing means and coöperative with and normally effective in opposition to the counterpoised side of the latter.

33. In an automatic weighing-machine, the combination, with a support, of weighing mechanism embodying counterweighted beam mechanism and a poising device pivoted at different points on said support, said poising device normally acting on the beam mechanism in opposition to the counterweight of the latter.

34. In an automatic weighing-machine, the combination, with a support, of weighing mechanism embodying counterweighted beam mechanism pivoted on said support and a poising device independently pivoted on said support at the counterpoising side of the pivot of the beam mechanism, said poising device normally acting on the beam mechanism in opposition to the counterweight of the latter.

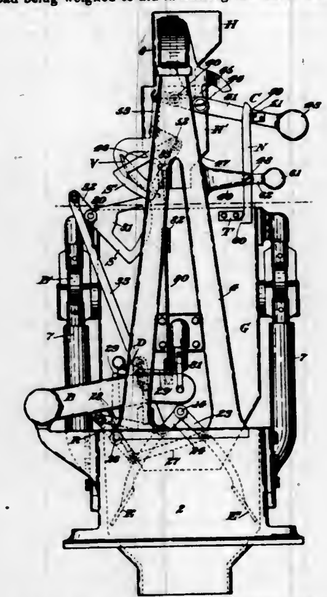
35. The combination, in an automatic weighing-machine, of stream-supplying means; stream-controlling means; automatically-operating counterpoised primary beam mechanism having a pair of beam-arms and coöperative with the stream-supplying means; and counterpoised secondary beam mechanism pivoted on the poising side of the primary beam mechanism between the beam-arms thereof.

607,477. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 28, 1897. Serial No. 656,690. (No model.)

Claim.—1. In a weighing-machine, the combination, with a load-receiver, of a closer, and a device which constitutes no part of the closer proper and which is operated upon by a portion of the load being weighed to aid in holding the closer shut.

2. In a weighing-machine, the combination, with a load-receiver, of a closer, and a device connected with the closer and operated upon by a portion of the load being weighed to aid in holding the closer shut, said device forming no part of the closer proper.

3. In a weighing-machine, the combination, with a load-receiver, of an oscillatory closer provided with a device which constitutes no part of the closer proper and which is operated upon by a portion of the load being weighed to aid in holding the closer shut.



4. In a weighing-machine, the combination, with a load-receiver having an inwardly-sloping wall, of a closer fitting, when shut, against the lower edge of said wall and provided with a device which constitutes no part of the closer proper and which is operated upon by a portion of the load being weighed to aid in holding the closer shut.

5. In a weighing-machine, the combination, with a load-receiver, of a transverse shaft in the load-receiver; a closer carried by said shaft and provided with a device which constitutes no part of the closer proper and which is operated upon by a portion of the load being weighed to aid in holding the closer shut.

6. The combination, with a load-receiver, of a closer controlling the discharge of the load-receiver; a hood situated in the load-receiver and above the closer; and a device coöperative with the closer and sustaining part of the load, said device being situated beneath the hood and being operable to aid in holding the closer shut.

7. In a weighing-machine, the combination, with a load-receiver, of a closer; closer-holding means embodying a latch; and a device coöperative with, but forming no part of, the closer proper, said device being operated upon by a portion of the load being weighed and serving to aid in holding the closer shut.

8. The combination, with a load-receiver, of a closer provided with a plate which constitutes no part of the closer proper and which is operated upon by a portion of the load being weighed to aid in holding the closer shut.

9. In a weighing-machine, the combination, with a load-receiver, of a closer provided with a plate disposed transversely to the closer and which constitutes no part of the closer proper, said plate being operated upon by a portion of the load being weighed and serving to aid in holding the closer shut.

10. In a weighing-machine, the combination, with a load-receiver, of a closer provided with a plate situated in the load-receiver and disposed at an angle to the closer and constituting no part of the closer proper, said plate being operated upon by a portion of the load being weighed to aid in holding the closer shut.

11. The combination, with a load-receiver, of a plurality of oppositely-oscillatory closers provided with means in the load-receiver above the closers and constituting no part of the closers proper, said means being operated upon by a portion of the load being weighed to aid in holding the closers shut.

12. In a weighing-machine, the combination, with a load-receiver, of a closer controlling the discharge of the load-receiver and provided with a device which constitutes no part of the closer proper and which is operated upon by a portion of the load being weighed to aid in holding the closer shut, and a regulator coöperative with the closer.

13. The combination, with a load-receiver, of a closer controlling the discharge of the load-receiver; a device coöperative with

the closer and sustaining part of the load, said device being operable to aid in holding the closer shut; and a closer-retarding regulator coöperative with the closer and in parallelism therewith.

14. The combination, with a load-receiver, of a closer controlling the discharge of the load-receiver; a device coöperative with the closer and sustaining part of the load, said device being operable to aid in holding the closer shut; a shaft for supporting the closer; a crank-arm secured to said shaft; and a closer-retarding regulator fixed to said crank-arm.

15. The combination, with a load-receiver, of a closer controlling the discharge of said load-receiver; a device coöperative with the closer and sustaining part of the load, said device being operable to aid in holding the closer shut; a shaft to which the closers are fixed and loose, respectively; crank arms connected with the shaft; a rocker mounted on the load-receiver; connections between the rocker and the two crank-arms; a stub shaft for supporting the rocker and provided with an arm; and a latch adapted to engage said arm.

16. The combination, with a load-receiver, of a closer controlling the discharge of the load-receiver; a shaft to which one of the closers is fixed and upon which the other one is loose; a sleeve on the loose closer, extending through the load-receiver; a second sleeve loose on the shaft and connected with the first-mentioned sleeve and having a crank-arm; a second crank-arm fixed to said shaft; a rocker; a stub-shaft on the load-receiver, for carrying the rocker and having an arm; links pivoted to the opposite ends of the rocker and also to said crank-arms; and a latch for engaging the arm of said stub-shaft.

17. The combination, with weighing mechanism embodying a load-receiver, of a supply apparatus including a movably-mounted device, and means supported independently of the weighing mechanism and actuated thereby, and adapted also to operate said movably-mounted device and so supported as to multiply the thrust applied to the weighing mechanism.

18. The combination, with weighing mechanism embodying a load-receiver, of a supply apparatus including a movably-mounted hopper and a device supported independently of the weighing mechanism and actuated thereby, and adapted also to operate the movably-mounted hopper and so supported as to multiply the thrust applied by the weighing mechanism.

19. The combination, with weighing mechanism embodying a load-receiver, of a supply apparatus including a movably-mounted hopper; a stream-controller operated by the hopper; and a device supported independently of the weighing mechanism and actuated thereby, and adapted also to operate the movably-mounted hopper and so supported as to multiply the thrust applied by the weighing mechanism.

20. The combination, with weighing mechanism embodying a load-receiver, of a supply apparatus including a movably-mounted device, and a lever supported independently of the weighing mechanism and actuated thereby, and adapted also to operate the movably-mounted device and so supported as to multiply the thrust applied by the weighing mechanism.

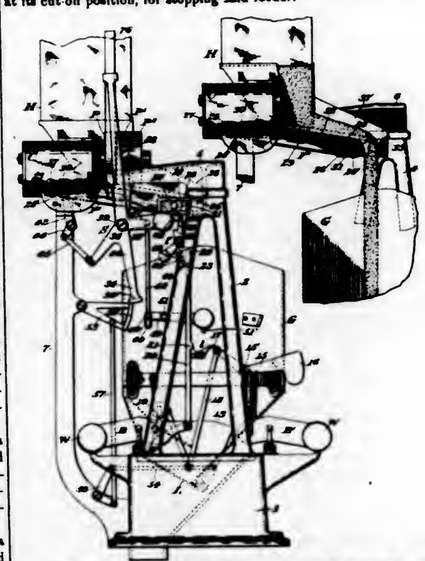
21. The combination, with weighing mechanism embodying a load receiver, of a supply apparatus including a movably-mounted device, and a counterweighted lever supported by the framework and in position to actuate the movably-mounted device and to be operated by the weighing mechanism and so supported as to multiply the thrust applied by the weighing mechanism.

22. The combination, with weighing mechanism embodying a load-receiver, of a supply apparatus including a movably-mounted hopper; a lever supported upon the framework and coöperative with said hopper; and a projection on the load-receiver, adapted to engage said lever between its fulcrum and the point at which it is in contact with said hopper on the ascent of said load-receiver.

607,478. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 5, 1897. Serial No. 657,520. (No model.)

Claim.—1. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper, of an endless-band feeder supported below said hopper; a feeder-actuator controlled by the weighing mechanism, and operable at successive points in the movements of the load-receiver for imparting a step-by-step advancing movement, bodily, to the feeder; and power-actuated differential driving mechanism in operative connection with said feeder and including means controlled by the feeder-actuator for varying the velocity of circuitous movement of the feeder according to the position of said feeder.

2. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply hopper, of a stream-controlling device coöperative with said hopper and embodying a feeder-carrier supported for horizontal movements bodily below said hopper, and an endless-band feeder supported on said carrier for circuitous material-advancing movements independent of the horizontal movements of the carrier; means controlled by the weighing mechanism, and operative at predetermined points in the movements of the load-receiver, for advancing the carrier to successive positions relatively to the hopper; and power-actuated mechanism for imparting a circuitous movement to the feeder and embodying means operative, on the arrival of the feeder at the drip position, for decreasing the velocity of said feeder, and also operative, on the arrival of said feeder at its cut-off position, for stopping said feeder.



3. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper having a cut-off plate, of an endless-band feeder supported below said hopper for movement toward and away from said cut-off plate; means controlled by the weighing mechanism at predetermined points in the descent of the load-receiver for advancing the feeder bodily toward the cut-off plate; means for arresting the feeder at successive points in its advancing movement; and power-actuated feeder-driving mechanism embodying differential-speed instrumentalities operable for varying the material-feeding velocity of the feeder concurrently with the arrival of said feeder at a predetermined point in its advancing movement toward the cut-off plate.

4. The combination, with stream-supplying means, of an endless traveling feeder coöperative therewith; means for imparting a cut-off movement to the feeder in a plane crosswise to the path of the supply-stream; and driving mechanism for the feeder, including means controlled by the feeder on the cut-off movement thereof for reversing the direction of traveling movement of said feeder.

5. The combination with stream-supplying means, of a stream-controller coöperative therewith and including an endless-band feeder, means for shifting the stream-controller crosswise of the path of the supply-stream, to cut off the supply; and feeder-actuating mechanism including means for imparting a material-advancing movement to the feeder in addition to means operative on the cut-off movement of the controller for imparting a material-retracting movement to the feeder.

6. The combination, with a supply-hopper, of a stream-controller including an endless, traveling material-feeder; means for imparting advancing and retracting movements to the stream-controller crosswise of the discharge end of the hopper; and feeder-actuating mechanism including reversing driving instrumentalities effective on the retracting and advancing movements of the stream-controller for imparting material-advancing and material-retracting movements, respectively, to the feeder to control the volume of the stream discharged by said feeder.

7. The combination, with stream-supplying means, of a stream-controller coöperative therewith and including a shiftable feeder-carrier and an endless traveling feeder; means for retracting and advancing the carrier across the path of the supply-stream, to increase and decrease the volume of the stream discharged by the feeder; and coöperative actuating mechanism for advancing and retracting the material-carrying run of the feeder simultaneously with the retracting and advancing movements of the feeder-carrier.

8. The combination, with weighing mechanism including a load-receiver and with stream-supplying means supported above said load-receiver, of a stream-controller coöperative with the stream-supplying means and including an endless traveling feeder; means controlled by the weighing mechanism for retracting and advancing the feeder bodily across the path of the supply-stream, to increase and decrease the volume of the stream supplied to the load-receiver; and means controlled by the retracting and advancing movements of the feeder for imparting simultaneously a material-advancing and a material-retracting movement to the material-supporting run of the feeder.

9. The combination, with stream-supplying means, of an endless-band feeder supported in coöperative relation with the supply means for differential movement, and two coöperative actuating devices one of which is controlled by the other, and one of which is effective for imparting a stream-controlling movement bodily to said feeder, and the other of which is effective for imparting a circuitous movement to said feeder, of different velocities, at different points in the stream-controlling movement of said feeder.

10. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply hopper, of an endless-band feeder supported below said hopper for circuitous material-feeding movements, and also for stream-controlling movements crosswise of said hopper, and two coöperative feeder-actuating devices one of which is controlled by the weighing mechanism and is effective for imparting a step-by-step stream-controlling movement to said feeder, and the other of which is effective for imparting a circuitous movement to said feeder and embodies instrumentalities for varying the material-feeding velocity of said feeder concurrently with the arrival of said feeder at predetermined points in its stream-controlling movement.

11. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper, of an endless-band feeder supported in coöperative relation with the supply-hopper for circuitous material-advancing movements and for independent stream-controlling movements, and instrumentalities controlled by the weighing mechanism, and operable at successive points in the movements of the load-receiver, for shifting the feeder first from its fully-retracted position to an intermediate or drip position, and concurrently imparting a circuitous movement to said feeder of reduced velocity and then shifting said feeder to its fully-advanced or cut-off position and concurrently arresting the circuitous movements of said feeder.

12. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper, of an endless traveling feeder supported below said hopper for independent material-advancing and reciprocatory movements in coinciding directions but in relatively intersecting planes, and compound actuating mechanism controlled by the weighing mechanism and including two actuators, one of which includes power-actuated differential feeder-driving devices and is effective at successive points in the movements of the load-receiver for imparting circuitous movements of varying velocities to said feeder, and the other of which is effective at such successive points in the movements of the load-receiver for shifting the feeder bodily crosswise of the supply-stream to vary the volume of material supplied to said receiver.

13. The combination, with weighing mechanism including a load-receiver and with stream-supplying means, of a stream-controller including a power-driven endless feeder; means controlled by the weighing mechanism for imparting an advancing movement to the stream-controller crosswise of the path of the stream; and differential feeder-driving mechanism effective at one stage in the advancing movement of the controller for reducing the material-advancing velocity of the feeder, and embodying means effective at another stage in the advancing movement of the controller for imparting a material-retracting movement to the feeder.

14. The combination, with stream-supplying means, of a stream-controller coöperative therewith and including an endless feeder; means for advancing and retracting the stream controller in a plane intersecting the path of the supply-stream, for varying the volume of said stream; and actuating mechanism in connection with, and effective for imparting differential circuitous movements to, the feeder concurrently with the advancing and retracting movements of said stream-controller.

15. The combination, with stream-supplying means, of a stream-controller coöperative therewith and including a power-actuated feeder; means for advancing and retracting the stream-controller in a plane intersecting the path of the supply-stream, for varying the volume thereof; variable speed driving mechanism in conuection with the feeder and effective, concurrently with the advancing and retracting movements of the stream-controller, for decreasing and increasing, respectively, the material-advancing movements of said feeder, and comprehending means for imparting a material-retracting movement to said feeder at a predetermined point in the advancing movement of said stream-controller.

16. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper, of an endless-band feeder coöperative with said supply-hopper; a cut-off plate fixedly secured to the supply-hopper in advance of the discharge end of the feeder; means controlled by the weighing mechanism for shifting the stream-controller toward and away from the cut-off plate to vary the effective area of the space between the said plate and the discharge end of the feeder; and power-actuating mechanism in connection with, and effective for imparting circuitous material-advancing movements to, said feeder of relatively-varying velocities in accordance with the position of said feeder relatively to the cut-off plate.

17. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper, of a shiftably-supported stream-controller including a material-advancing endless-band feeder; a cut-off plate supported in advance of the discharge end of the feeder; means controlled by the weighing mechanism for shifting the stream-controller and its feeder bodily toward the cut-off plate, crosswise of the path of the supply-stream, whereby to decrease the size of said stream as it passes between the discharge end of the feeder and cut-off plate; and power-driven differential-speed actuating mechanism controlled by the last-mentioned means and effective for imparting circuitous material-advancing movements of predetermined velocities to the feeder during the movement of the stream-controller toward the cut-off plate.

18. The combination, with stream-supplying means, of a stream-controller coöperative therewith and including a feeder-carrier movable in a horizontal plane and a feeder supported on said carrier for material-advancing movement in a plane oblique to the plane of movement of the carrier; a cut off plate in coöperative relation with the discharge end of the feeder; means in connection with, and effective for advancing and retracting, the feeder in a horizontal plane relatively to the cut-off plate, to vary the volume of the supply-stream; and differential-speed actuating mechanism for imparting a feed movement of high velocity to the feeder during the initial advancing movement of the carrier, for imparting a movement of decreased velocity to said feeder on the arrival of the carrier at an intermediate position, for stopping the feeder at the end of the advancing movement of said carrier, and for reëstablishing the high velocity at the end of the retractive movement of said carrier.

19. The combination, with weighing mechanism including a load-receiver and with stream-supplying means, of a stream-controller comprising a reciprocatory feeder-carrier; an endless-band feeder mounted on the carrier for independent circuitous movement; a gravitative feeder-carrier actuator controlled by the weighing mechanism for imparting a step by-step advauciug movement to the carrier crosswise of the supply-stream at predetermined points in the movements of the load-receiver; and differential-speed actuating mechanism in connection with the feeder and effective for imparting circuitous movements of relatively-different velocities to the feeder during the step-by-step advancing movement of the feeder-carrier.

20. The combination, with a supply-hopper and a supporting-frame therefor, of two pairs of slide-blocks supported in guideways on the frame, one pair in advance and the other pair in the rear of, and below, the said hopper; rolls having shafts mounted one shaft in each pair of slide-blocks; an endless-band feeder carried on said rolls; means for shifting the slide-blocks, together with the feeder, in a direction crosswise of the discharge end of the hopper, to regulate the supply; and driving mechanism in connection with one of the rolls and effective for imparting a circuitous movement to the feeder.

21. The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper and a supporting-frame therefor, of a feeder-carrier supported for reciprocatory movements in guideways on the frame and including feeder-supporting rolls; an endless feeder carried on said rolls; means controlled by the weighing mechanism and operative, at predetermined points in the movements of the load-receiver, for imparting intermittent reciprocatory movements to the feeder-carrier; and differential driving mechanism in connection with one of the feeder-rolls and controlled by the last-mentioned means for imparting circuitous movements to the feeder of different velocities at predetermined points in the reciprocatory movements of the carrier.

22. The combination, with a supply-hopper and a supporting-frame therefor, of a feeder-carrier having slide-blocks at opposite ends thereof supported in horizontally-disposed guideways on the frame, which guideways are located, respectively, one above the other at opposite sides of, and below, the hopper, and said feeder-carrier also having two feeder-supporting rolls carried on said slide-blocks; an endless feeder extending around said rolls, with its material-carrying run below, and extending across the discharge end of, the hopper; means for advancing and retracting the feeder-carrier together with the feeder; and differential-speed actuating mechanism in connection with, and effective, on the advancing and retracting movements of, the feeder-carrier, for imparting feed movements of decreased and increased velocity, respectively, to said feeder.

23. The combination, with a supply-hopper and with a support-

ing-frame therefor having guideways for supporting a feeder carrier; a feeder-carrier having slide-blocks supported on said guideways for reciprocatory movement; rolls carried by the slide-blocks; an endless feeder carried by said rolls; independent instrumentalities for actuating the feeder-carrier and feeder; and an adjusting device between the slide-blocks and effective for spreading said slide-blocks to draw the feeder taut.

24. The combination, with weighing mechanism including a load-receiver and with a supply-hopper, of an endless-band feeder cooperative with the supply-hopper; power-driven feeder-actuating mechanism including intermeshing driving and driven members supported with their axes in intersecting planes; and means controlled by the weighing mechanism for stopping the rotation of the driving member and for shifting the driven member bodily in parallelism with the axis of the driving member, whereby to reverse the direction of feed movement of the feeder.

25. The combination, with weighing mechanism, including a reciprocatory load-receiver and with a supply-hopper, of an endless-band feeder cooperative with the supply-hopper; power-driven feeder-actuating mechanism including two intermeshing rotative members one of which is operatively connected with the feeder; and means controlled by the weighing mechanism, at a predetermined point in the reciprocatory movement of the load-receiver, for stopping the rotation of one rotative member and for shifting the other member bodily in the plane of the axis of rotation of the first-mentioned member to effect a reversal in the direction of movement of the feeder.

26. The combination, with weighing mechanism including a load-receiver and with stream-supplying means, of an endless-band feeder cooperative with the stream-supplying means; power-driven feeder-actuating mechanism including a driving and a driven member, the latter of which is operatively connected with the feeder and is bodily shiftable in a plane intersecting the axis of its rotation; and means controlled by the weighing mechanism for starting and stopping the driving member to effect a reversal in the direction of rotation of the driven member.

27. The combination with weighing mechanism, including a load-receiver and with stream-supplying means, of an endless-band feeder cooperative with the stream-supplying means; power-driven feeder-actuating mechanism including a driving-worm and an intermeshing worm-wheel, the latter of which is operatively connected with the feeder; and means controlled by the weighing mechanism for arresting the rotative movement of the worm, and for moving the worm-wheel bodily in a plane parallel to the axis of the worm to effect a reversal in the direction of rotation of said worm-wheel.

28. The combination, with weighing mechanism including a load-receiver and with stream-supplying means, of a stream-controller cooperative with said means and embodying a movable carrier having feeder-supporting rolls and an endless-band feeder carried by said rolls; feeder-driving mechanism including intermeshing driving and driven members, the latter of which is carried by one of the feeder-rolls; and means controlled by the weighing mechanism for arresting the movement of the driving member for shifting the driven member together with the stream-controller longitudinally of the axis of said driving member, whereby to reverse the direction of rotation of said driven member and the direction of motion of the endless-band feeder.

29. The combination, with weighing mechanism including a reciprocatory load receiver and with a supply-hopper, of a stream-controller cooperative with said hopper and including a shiftable carrier having supporting-rolls and also an endless-band feeder carried by said rolls; feeder-driving mechanism including two intermeshing rotative driving and driven members, the driven member of which is carried by one of the feed-rolls; and means controlled by the weighing mechanism and effective, at a predetermined point in the movement of the load-receiver, for effecting a change in the velocity of the driving member, and effective at another point in the movement of said receiver for stopping the rotation of said driving member, said means including an instrumentality effective on the stopping of the driving member for shifting the driven member bodily in the plane of the axis of the driving member to effect a reversal in the direction of rotative movement of said driven member and in the direction of circuitous movement of the material-supporting run of the feeder.

30. The combination, with weighing mechanism including a load-receiver and with stream-supplying means, of a power-driven endless-band feeder cooperative with said means; feeder-actuating mechanism including a differential-speed driving member and an intermeshing driven member, the latter of which is operatively connected with the feeder; and means controlled by the weighing mechanism for first effecting a change in the velocity of, and then for stopping, the driving member, and also for shifting the driven member bodily along the driving member longitudinally to effect a reversal in the direction of said driven member.

31. The combination, with stream-supplying means, of a shiftable feeder-carrier including band-feeder-supporting rolls; an endless-band feeder supported on said rolls with its upper run intersecting the path of the supply-stream; a rotative driven member carried by one of said rolls; an intermeshing rotative driving member having its axis transverse to the axis of rotation of the driven member; means for rotating said driving member; and means for shifting the driven member in a plane parallel to the axis of the driving member concurrently with the rotative movement of said driving member.

32. The combination, with stream-supplying means, of a shiftable feeder-carrier including band-feeder-supporting rolls; an endless-band feeder supported on said rolls with its upper run intersecting the path of the supply-stream; a rotative driven member carried by one of said rolls; an intermeshing rotative driving member having its axis transverse to the axis of rotation of the driven member; means for shifting the driven member in a plane parallel to the axis of the driving member; and means in connection with, and effective for imparting rotative movements of different velocities to, the driving member at different points in the shifting movement of the driven member.

33. The combination, with weighing mechanism including a load-receiver and with stream-supplying means, of an endless-band feeder cooperative with the stream-supplying means; two coaxial driving members, one of which includes a worm; a driven member meshing with, and actuated by, the worm of one of the driving members and shiftable longitudinally of said worm; independent means for rotating the two driving members; connecting mechanism operative on the rotation of one driving member for coupling the same to the other driving member, and for rotating said last-mentioned member at a different velocity from that of the first-mentioned member, whereby to impart rotative movements of varying velocities to the driven member; and means controlled by the weighing mechanism for shifting the driven member longitudinally of the worm at a predetermined point in the operation of the weighing mechanism to effect a reversal in the direction of rotation of said driven member and in the direction of movement of the material-carrying run of the feeder.

34. The combination, with stream-supplying means and with a power-driven feeder cooperative therewith, of feeder-actuating mechanism comprising a primary and a secondary rotative driver; a rotary power-transmitter in operative connection with the feeder and primary driver; means for shifting the power-transmitter in a plane parallel to the axis of the primary driver; and means embodying a train of speed-reducing gears for rotating the primary and secondary drivers at relatively-different velocities.

35. The combination, with stream-supplying means and with a power-driven feeder cooperative therewith, of feeder-actuating mechanism comprising a primary and a secondary rotative driver having coincident axes of rotation, and the former of which includes a worm and a clutch member, and the latter of which has in operative connection therewith a train of speed reducing gears and a clutch member cooperative with the clutch member of the worm and effective on the rotation of said secondary driver for coupling the two drivers together; independent actuators in connection with the primary and secondary drivers; and a worm-wheel operatively connecting the feeder and driving-worm.

36. The combination, with stream-supplying means and with a power-driven feeder cooperative therewith, of feeder-actuating mechanism comprising a primary and a secondary rotative driver having coincident axes of rotation, and the former of which includes a worm, and the latter of which has in operative connection therewith a train of speed-reducing gears; a clutch device, one member of which is carried by the primary and the other by the secondary driver, and which device is effective on the rotation of said secondary driver for coupling the two drivers together; independent actuators in connection with the primary and secondary drivers; a worm-wheel operatively connecting the feeder and driving-worm; and means in connection with, and effective for shifting, the worm-wheel transversely of its axis of rotation in a plane parallel to the axis of rotation of the drivers, to thereby move the feeder bodily in a plane transversely of the path of the supply-stream.

37. The combination, with stream-supplying means and with a feeder cooperative therewith, of feeder actuating mechanism including two rotary driving members supported by, and in concentric relation with, the other; a train of speed-changing gears including a clutch connecting the driving members; a driven member in operative relation with one driving member and with the feeder and supported for movement transversely of its own axis and in parallelism with the axis of the driving member.

38. The combination, with stream-supplying means and with an endless-band feeder supported on rolls for circuitous movement and also for bodily-reciprocatory movements below said supplying means, of differential-speed feeder-actuating mechanism comprising a driving-worm; a power-transmitting worm-wheel fixed to one supporting-roll of the feeder and meshing with said worm: means for rotating the worm to impart a rotative movement to the worm-wheel and a circuitous movement to the feeder; and means for shifting the feeder and worm-wheel bodily in a path parallel to the axis of the worm, substantially as described.

39. The combination, with weighing mechanism including a load-receiver and with a supply-hopper, of an endless-band feeder supported for circuitous movement below the discharge end of said hopper; a feeder-carrier including feeder-supporting rolls; feeder-actuating mechanism including a driving and driven member in cooperative relation, and the latter of which is carried by one of the rolls of the feeder; means controlled by the weighing mechanism for effecting a change in the velocity of the driving member; and means also controlled by the weighing mechanism for shifting the driven member and feeder in a plane in parallelism with the axis of rotation of the driving member.

40 The combination, with weighing mechanism including a reciprocatory load-receiver and with a supply-hopper, of a feeder-carrier supported for reciprocatory movement below said supply-hopper and embodying feeder-carrying rolls; an endless-band feeder carried on said rolls with its material-supporting run oblique to the path of reciprocatory movement of the carrier; differential-speed feeder-actuating mechanism comprising two coaxially-rotative drivers, a train of speed-reducing gears including a clutch effective on the rotation of one driver for imparting a rotative movement of a different velocity to the other driver, and a power-transmitter in operative connection with the feeder and one of the drivers; means controlled by the weighing mechanism at predetermined points in the movements thereof for rotating first one and then the other driver; and means controlled by the weighing mechanism at predetermined points in the movements of the load-receiver for shifting the power-transmitter and connected feeder bodily longitudinally of the common axis of rotation of the drivers and in the path intersecting the path of feed movement of the material-carrying run of the feeder.

41. The combination, with stream-supplying means and with a material-advancing feeder, of differential-speed driving mechanism comprising a tubular primary shaft supported in suitable bearings and having a driving-pulley fixed at one end thereof; a worm fixed to said primary shaft and having a clutch member; a secondary driving-shaft extending through, and rotatable in, the primary driving-shaft and having a driving-pulley fixed at one end thereof; a gear of large diameter loosely mounted on the primary driving-shaft and having a clutch member cooperating with the clutch member of the worm; a gear of smaller diameter fixed to the secondary driving-shaft; a train of differential gears mounted on a stud and meshing with the two driving-shaft gears; and a power-transmitting worm-wheel meshing with the worm of the driving-shaft.

42. The combination, with a load-receiver having an oscillatory closer, of a load-sustaining plate pivotally supported within said receiver and between the receiving and discharging ends thereof, and an actuating-connector between the load-sustaining plate and closer.

43. The combination, with a load-receiver having an inclined bottom wall, of a closer pivotally supported on the load-receiver with its axis substantially midway between the side walls and below the inclined bottom walls of the said receiver; a closer-shutting actuator-plate pivotally supported within the receiver and above said closer; and an actuating-connector between the load-sustaining plate and closer, and effective on the opening movement of said closer for imparting a load-discharging movement to said sustaining-plate.

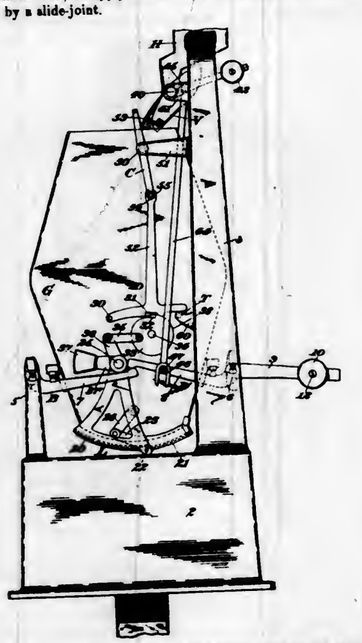
44. The combination, with a load-receiver having a downwardly-inclined deflecting-plate located above the discharge end thereof, of a closer pivotally supported on the receiver with its axis substantially in alinement with the vertical center of the load-receiver and embodying a closer-plate which, when the closer is in its closed position, is inclined upwardly toward the rear wall of the load-receiver; a closer-shutting actuator in operative connection with the closer; a load-sustaining plate pivotally supported on the inner end of the deflecting-plate of the load-receiver and having its outer end, when in position for sustaining the load, substantially in vertical alinement with the axis of the closer; and an actuating-connector between the sustaining-plate and the closer and effective, on the opening and closing movements of said closer, for simultaneously actuating the sustaining-plate.

607,479. WEIGHING-MACHINE. FRANCIS H. RICHARDS Hartford, Conn. Filed Nov. 6, 1897. Serial No. 657,636. (No model.)

Claim.—1. The combination, with weighing mechanism including a load-receiver, of a closer for said load-receiver; a latch for the closer, having a fixed arm; a supply-valve; and a valve-stop supported independently of the weighing mechanism connected with said arm and operated by the latch.

2. The combination, with weighing mechanism including a load-receiver, of a closer for said load-receiver; a latch for the closer; a supply-valve; and a valve-stop connected with the latch by a slide-joint and shiftable by said latch into position to prevent the action of the valve.

3. The combination, with weighing mechanism including a load-receiver, of a closer for said load-receiver; a latch for the closer, having a fixed arm; a supply-valve; and a valve-stop connected with said arm by a slide-joint.



4. The combination, with weighing mechanism including a load-receiver, of a closer for said load-receiver; a latch for the closer, having a fixed arm; a supply-valve; and a lever connected with said arm and shiftable by the latch into position to prevent the opening of the valve.

5. The combination, with weighing mechanism including a load-receiver, of a closer for said load-receiver; a latch for the closer, provided with a fixed arm having a notch in its upper end; a supply-valve; and a valve-stop shiftable into position to prevent the opening of the valve, said valve-stop having at its lower end a pin seated in said notch.

6. The combination, with weighing mechanism including a load-receiver, of a closer for said load-receiver; a latch pivoted to the load-receiver and serving to lock the closer shut, said latch having an arm between its pivot and its free end; a valve-stop connected with said arm and shiftable by the latch to prevent the opening of the valve; and a tripper disposed in the path of movement of the latch.

7. The combination, with weighing mechanism including a load-receiver, of a closer for said load-receiver; a latch for the closer, having a fixed arm; means operative with the closer and engaged by the latch and constructed to lift said latch when it is tripped; and a valve-stop connected with said fixed arm and shiftable by the latch into position to prevent the operation of the valve.

607,480. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 6, 1897. Serial No. 657,519. (No model.)

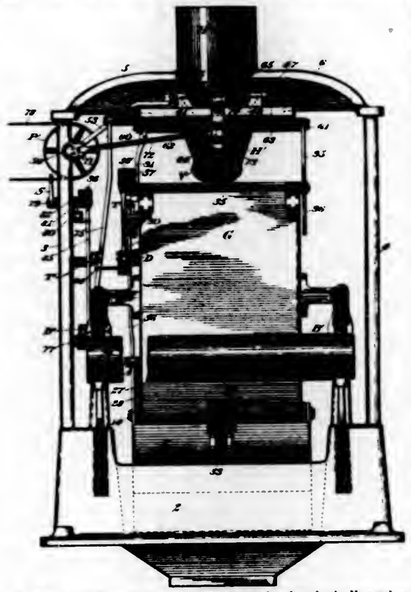
Claim.—1. The combination, with weighing mechanism including a load-receiver, of a series of tubular closers fitting against each other to prevent the escape of material.

2. The combination, with weighing mechanism including a load-receiver having a series of spouts, of a corresponding series of tubular closers connected with the respective spouts and fitting against each other to prevent the escape of material.

3. The combination, with weighing mechanism including a load-receiver, of a series of tubular closers, the upper and lower walls of said closers fitting against each other to prevent the escape of material.

4 The combination, with weighing mechanism including a load-receiver, of a plurality of tubular closers the upper and lower walls of which fit against each other, said closers being provided with side walls, the side walls of one closer overlapping the side walls of the other closer.

5. The combination, with weighing mechanism including a load-receiver having a plurality of spouts, of a corresponding series of counterweighted tubular closers pivoted to the respective spouts and fitting against each other to prevent the escape of material.



6. The combination, with weighing mechanism including a load-receiver, of a series of tubular closers fitting against each other to prevent the escape of material; a locker for said closers; and means for effecting the release of said closers.

7. The combination, with weighing mechanism including a load-receiver, of closer mechanism controlling the discharge of the load; a toggle for locking the closer mechanism; a gravitative toggle-breaking device mounted on the load-receiver; a detent for holding said toggle-breaking device against action; a supply apparatus; and means operative with the supply apparatus for tripping said detent.

8. The combination, with a load-receiver, of a pair of closers therefor; a toggle extending from one closer to the other for locking the closers; a counterweighted toggle-breaker; and a detent for normally engaging the toggle-breaker.

9. The combination, with weighing mechanism including a load-receiver, of a plurality of closers for said load-receiver; a toggle extending from one closer to another for locking the closers; a gravitative toggle-breaker mounted on the load-receiver and connected with the toggle; a detent for normally holding the toggle-breaker against action; and means for tripping said detent.

10. The combination, with weighing mechanism including a load-receiver, of a series of tubular closers; a toggle for locking the closers; a gravitative toggle-breaking device connected with the toggle; a detent for normally holding the toggle-breaking device out of action; a supply apparatus; and means operative with the supply apparatus for tripping said detent.

11. The combination, with weighing mechanism including a load-receiver, of a plurality of closers therefor, each having an upright arm; a toggle the members of which are connected with said arms; a toggle-breaking device mounted upon the load-receiver; a rod connecting the toggle-breaking device and the toggle; and a detent for normally holding the toggle-breaking device out of action.

12. The combination, with weighing mechanism including a load-receiver, of a plurality of closers for said load-receiver; a dead-lock toggle the respective members of which are connected with the two closers; a counterweighted lever mounted upon the load-receiver; a connection between said lever and the toggle; and a detent for engaging the counterweighted lever.

13 The combination, with weighing mechanism including a load-receiver, of a plurality of tubular closers therefor fitting against each other to prevent the escape of material; and closer-retarding mechanism coöperating with the closers.

14. The combination, with weighing mechanism including a load-receiver, of a series of tubular closers for said load-receiver, fitting against each other to prevent the escape of material; and regulator-plates connected to, and extending at an angle from, the respective lower walls of the two closers.

15. The combination, with weighing mechanism, of two fixed spout-sections; an intermediate movably-mounted spout-section; and means controlled by the weighing mechanism for continuously vibrating said movably-mounted spout-section during the weighing of a load.

16. The combination, with weighing mechanism, of two fixed spout-sections; an intermediate, movably-mounted annular spout-section; and means controlled by the weighing mechanism for positively operating said movably-mounted spout-section during the weighing of a load.

17. The combination, with weighing mechanism, of two fixed spout-sections; an intermediate, movably-mounted spout-section; and means controlled by the weighing mechanism for transversely reciprocating said movably-mounted spout-section during the weighing operation.

18. The combination, with weighing mechanism including a load-receiver, of stream-supplying means including a spout-section; a plurality of links suspending said spout-section from the framework; a crank-shaft connected with said spout-section; and means controlled by the weighing mechanism for operating said crank-shaft.

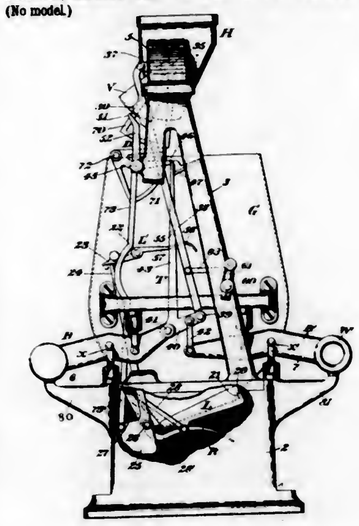
19. The combination, with weighing mechanism including a load-receiver, of stream-supplying apparatus including two fixed spout-sections and an intermediate movably-mounted spout-section; links for suspending said movably-mounted spout-section from the framework; a crank-shaft connected with the movably-mounted spout-section; and mechanism controlled by the weighing mechanism for rotating said shaft during the weighing of a load.

20. The combination, with weighing mechanism, of two fixed spout-sections; an intermediate movably-mounted tubular spout-section; mechanism for transversely vibrating said movably-mounted spout-section a number of times during the weighing of a load: driving mechanism including a shaft having a fixed pulley; a loose pulley on said shaft; a belt; and means for shipping said belt from each of the pulleys to the other, said means being controlled by the weighing mechanism.

21. The combination, with weighing mechanism including a load-receiver, of a supply-valve and its carrier mounted for movement in transverse directions; a crank-shaft; a ring embracing the crank-shaft; a link connected to said ring and having a ball at its opposite end fitted into a socket in the valve.

22. The combination, with weighing mechanism, of stream-supplying means; a carrier mounted for oscillation; a valve provided with an arm pivoted to said carrier and adapted to oscillate in a transverse direction to the carrier, said arm having a socket; a crank-shaft; a ring loosely embracing the crank-shaft; a link pivoted to said ring and provided with a ball at one end fitted into said socket; and means controlled by the weighing mechanism for operating said shaft.

607,481. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 8, 1897. Serial No. 657,745. (No model.)



Claim.—1. The combination, with a load-receiver, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load-receiver-supporting beams mounted on the framework, one of said beams constituting an actuator for the stream-controller; and means operable to prevent the return or ascent of the stream-controller-actuating beam while permitting the movement of the other beam for a predetermined period.

2. The combination, with a load-receiver, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable oscillatory load-receiver-supporting beams mounted on the framework, one of said beams constituting an actuator for the stream-controller; and means operable to prevent the return or ascent of the stream-controller-actuating beam while permitting the movement of the other beam for a predetermined period.

3. The combination, with a load-receiver, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load-receiver-supporting beams mounted upon the framework and of different efficiency, the beam of less efficiency constituting an actuator for the stream-controller; and means operable to prevent the return or ascent of the stream-controller-actuating beam with the other beam for a predetermined period.

4. The combination, with a load-receiver, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load-receiver-supporting beams mounted on the framework, the counterbalances of which are of different efficiencies, the beam having the counterweight of less efficiency constituting an actuator for the stream-controller; and means operable to prevent the return or ascent of the stream-controller-acteating beam with the other beam for a predetermined period.

5. The combination, with a load-receiver, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load receiver-supporting beams mounted on the framework, one of said beams having a chambered counterweight and constituting an actuator for the stream-controller; and means operable to prevent the return or the ascent of the stream controller-actuating beam with the other beam for a predetermined period.

6. The combination, with a load-receiver, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load-receiver-supporting beams mounted on the framework, one of the beams having a solid counterweight and the other having a chambered counterweight and constituting an actuator for the stream-controller; and means operable to prevent the return or ascent of the stream-controller-actuating beam with the other beam for a predetermined length of time.

7. The combination, with a load-receiver, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load-receiver supporting beams connected with each other and mounted on the framework, one of said beams constituting an actuator for the stream-controller; and means operable to prevent the return or ascent of the stream-controller-actuating beam while permitting the movement of the other beam for a predetermined period.

8. The combination, with a load-receiver, of load-discharging means; stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load-receiver supporting beams mounted on the framework, one of said beams constituting an actuator for the stream-controller; and means operable with the load-discharging means to prevent the return or ascent of the stream-controller-actuating beam while permitting the movement of the other beam for a predetermined period.

9. The combination, with a load-receiver having a closer, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load-receiver-supporting beams mounted on the framework, one of said beams constituting an actuator for the stream controller; and means operable with the closer to prevent the return or ascent of the stream-controller-actuating beam while permitting the movement of the other beam for a predetermined period.

10. The combination, with a load-receiver having a closer, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable load-receiver-supporting beams of different efficiencies mounted on the framework, one of said beams constituting an actuator for the stream-controller; reciprocally-effective stops operative, respectively, with the closer and the valve; and a connection between the valve and the beam of less efficiency.

11. The combination, with a load receiver, of a supply-valve; a valve supported for oscillatory movement beneath the outlet of the hopper; a plurality of simultaneously-descendable load-receiver-supporting beams of different efficiencies mounted on the framework, one of said beams constituting an actuator for the valve; and a connection between said valve and the beam of less efficiency.

12. The combination, with a load-receiver, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable beams supporting the load-receiver and mounted to have different ratios of movement, the beam having the greater ratio constituting an actuator for the stream-controller; and means operable to prevent the return or ascent of the actuator-beam with the other beam for a predetermined period.

13. The combination, with a load-receiver having a closer, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable connected load-receiver-supporting beams of different efficiencies mounted on the framework, one of said beams constituting an actuator for the stream-controller; a stop connected with the stream-controller; a coöperative stop mounted upon the load-receiver and connected with the closer, each of said stops being in position to block the action of the other; and a rod connected with the stream-controller and in position to be acted upon by the beam of less efficiency

14. The combination, with a load receiver having a closer, of stream-supplying means; a stream-controller; a plurality of simultaneously-descendable connected load-receiver-supporting beams of different efficiencies mounted on the framework, one of said beams constituting an actuator for the stream-controller; a stop connected with the stream-controller; a coöperative stop mounted upon the load-receiver and connected with the closer, each of said stops being in position to block the action of the other; a rod connected with the stream-controller and in position to be acted upon by the beam of less efficiency; and means for shifting said rod relatively to the actuator-beam.

15. The combination, with weighing mechanism including a load-receiver, and a pair of beams connected for movement one relatively to the other, of load-discharging means involving a latch; a latch-tripper mounted upon one member of the weighing mechanism and connected with another member of the weighing mechanism for operation; a detent normally operative for holding the latch-tripper against action; and means for actuating said detent at a predetermined period from the movement of one beam relatively to the other beam.

16. The combination, with a load-receiver, of load-discharging means including a latch; a plurality of beams for supporting the load-receiver; and a latch-tripper mounted upon one beam and connected with the other beam.

17. The combination, with a load-receiver, of load-discharging means involving a latch; a plurality of beams for supporting the load-receiver; a latch-tripper mounted upon one of the beams; and a link connected with the other beam and with said latch-tripper.

18. The combination, with weighing mechanism including a load-receiver, of load-discharging means including a latch; a latch-tripper mounted upon one member of the weighing mechanism and connected with another member for operation; a detent normally effective for holding the latch-tripper against action; a supply apparatus; and means operative with the supply apparatus for actuating said detent at a predetermined period of time to release the latch-tripper.

19. The combination, with weighing mechanism including a load-receiver, of load-discharging means involving a latch; a latch-tripper mounted upon one member of the weighing mechanism for operation; a detent normally effective for holding the latch-tripper against action; stream-supplying means; a stream-controller; and means governed by the stream-controller for actuating said detent at a predetermined time to release the latch-tripper.

20. The combination, with weighing mechanism including a load-receiver, of load-discharging means including a latch; a latch-tripper mounted upon one member of the weighing mechanism and connected with another member of the weighing mechanism for operation; a detent normally operative for holding the latch-tripper against action; a supply-valve; and a rod cooperative with said supply-valve and provided with means for actuating said detent at a predetermined time to release the latch-tripper.

21. The combination, with a load-receiver, of load-discharging means involving a latch, a plurality of beams for supporting the load-receiver; a latch tripper mounted upon one beam and connected with another beam for operation; a detent upon the framework, having an arm provided with a weighted offset located to engage the latch-tripper; and means for engaging the other arm of the detent to release the latch-tripper.

22. The combination, with a load-receiver, of a plurality of supporting-beams therefor, of load-discharging means involving a latch; a latch-tripping lever mounted upon one of the beams; a link connected with the other beam and with one of the arms of the latch-tripping lever; a detent located to engage the other arm of the latch-tripping lever; and means for actuating the detent to release the latch-tripping lever.

23. The combination, with a load-receiver, of a plurality of beams for supporting the same; load-discharging means involving a latch having a curved face; and a latch-tripper mounted upon one of the beams and connected with the other beam and provided with a device for engaging the curved face of the latch.

24. The combination, with a load-receiver, of a plurality of supporting-beams therefor; stream-supplying means; a supply-valve;

load-discharging means involving a latch; a latch-tripper mounted upon one beam and connected with another beam for operation; a detent one arm of which is weighted and engages the latch-tripper; and a rod connected with the supply-valve and operative with said beam and provided with a device for engaging the free arm of the detent to effect the release of the latch-tripper.

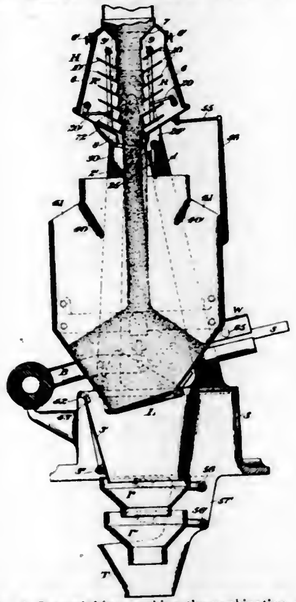
25. The combination, with weighing mechanism including a load-receiver, of load-discharging means involving a latch; a latch-tripper mounted upon one member of the weighing mechanism and connected with another member of the weighing mechanism for operation; a detent mounted upon the framework and having a weighted offset provided with an angular face, said offset being located to engage the latch-tripper; and means operative to engage the free arm of the detent, to effect the release of the latch-tripper.

26. The combination, with weighing mechanism including a load-receiver, of a closer covering the outlet of the load-receiver; a regulator mounted upon the load-receiver and having a pocket situated beneath the discharge edge of the closer; connections between the regulator and the closer; a closer-shutting weight connected with the regulator; an arm operative with the latter; and a latch for engaging said arm.

27. The combination, with weighing mechanism including a load-receiver, of a closer for covering the discharge-outlet of the load-receiver; a closer-retarding regulator mounted upon the load-receiver and having a pocket situated below the discharge edge of the closer; a crank-arm secured to the regulator and connected by a link with the closer; a closer-shutting weight; and an arm connected with the regulator and the latch for engaging said arm.

28. The combination, with a load-receiver, of stream-supplying means; a plurality of simultaneously-descendable load-receiver-supporting beams mounted on the framework, one of which constitutes an actuator; a member in position to be operated by the actuator-beam; and means operable for preventing the return or ascent of the actuator-beam, said means permitting the return of the other beam.

607,482. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 12, 1897. Serial No. 658,254. (No model.)



Claim.—1. In a weighing-machine, the combination, with stream-supplying means, of oscillatory stream-reducing means movable about an axis outside the flow-stream and embodying a plurality of superposed stream-reducing members simultaneously movable transversely to the path of the flow-stream, and having their forward edges in position to intersect successively the flow-stream, and means for actuating said stream-reducing means into the path of said stream in a direction transverse to the flow of the latter to reduce at all points simultaneously the flow of the stream from end to end of the path controlled by the stream-reducing means.

2. In a weighing-machine, the combination, with stream-supplying means, of two series of superposed stream-reducing members disposed at opposite sides of, and movable transversely to, the path of the flow-stream, the members of each set converging toward those of the other and toward the lower end of the flow-stream, and means for actuating said stream-reducing members into the path of said stream to reduce the volume of the latter.

3. In a weighing-machine, the combination, with stream-supplying means, of two series of superposed stream-reducing members disposed at opposite sides of, and movable transversely to, the path of the flow-stream, and forming between them a path of gradually-decreasing width, the members of each set converging toward those of the other and toward the lower end of the flow-stream; and means for actuating said stream-reducing members into the path of said stream to reduce the volume of the latter.

4. In a weighing-machine, the combination, with stream-supplying means, of two oppositely-operative series of simultaneously-operative superposed stream-reducing members disposed at opposite sides of, and movable transversely to, the path of the flow-stream, the members of each set converging toward those of the other and toward the lower end of the flow-stream; and means for actuating said stream-reducing members into the path of said stream to reduce the volume of the latter.

5. In a weighing-machine, the combination, with stream-supplying means, of a pair of stream-reducing devices oscillatory about axes at opposite sides of the path of the flow-stream, and each embodying a series of superposed stream-reducing members movable transversely to said path, the members of one series converging toward those of the other and toward the lower end of the flow-stream; and means for simultaneously actuating said stream-reducing devices into the path of said stream to reduce the volume of the latter.

6. In a weighing-machine, the combination, with stream-supplying means and with a load-receiver, of an oscillatory stream-reducing device controlled by the descent of the load-receiver and embodying a series of superposed stream-reducing members simultaneously movable transversely to the path of the flow-stream, and having their forward edges in position to intersect successively the flow-stream when shifted toward the latter.

7. In weighing mechanism, the combination, with stream-supplying means, of stream-controlling means embodying a main valve, a stream-spreading drip-valve for spreading the stream flowing thereover, and a cut-off valve having a cut-off face movable under the discharge end of the drip-valve.

8. In weighing mechanism, the combination, with stream-supplying means, of a plurality of superposed stream-reducing members movable transversely to the path of the flow-stream; means for actuating said stream-reducing members into the path of said stream to reduce the volume of the latter; and a stream-directing spreader below the stream-reducing members for spreading the stream delivered thereonto.

9. In weighing mechanism, the combination, with stream-supplying means, of a plurality of superposed stream-reducing members movable transversely to the path of the flow-stream; means for actuating said stream-reducing members into the path of said stream to reduce the volume of the latter; a main valve below the stream-reducing means and controlling the flow of the stream; and a stream-spreading drip-valve below the stream-reducing members and cooperative with the main valve.

10. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; an intermediate operatively connected with said toggle and having a multiplied movement on, and relatively to, the opening movement of the load-discharger; and holding means for engaging said intermediate.

11. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; an intermediate operatively connected with said toggle and having a multiplied movement on, and relatively to, the opening movement of the load-discharger; and a latch for engaging said intermediate.

12. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; an intermediate connected with said toggle by a slip-joint and having a multiplied movement on, and relatively to, the opening movement of the load-discharger; and holding means for engaging said intermediate.

13. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; an intermediate having a cam-face in operative relation with the toggle, and having a multiplied movement on, and relatively to, the opening movement of the load-discharger; and holding means for engaging said intermediate.

14. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger and disposed substantially on its dead-center line when the load-discharger is closed; a pivoted intermediate operatively connected with said toggle and also disposed close to a dead-center position when the load-discharger is closed, said intermediate having a multiplied movement on, and relatively to, the opening movement of the load-discharger; and holding means for engaging said intermediate.

15. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; a lever operatively connected near one of its ends with said toggle, and having a multiplied movement on, and relatively to, the opening movement of the load-discharger; and holding means for engaging said lever near its opposite end.

16. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; a lever having a cam-face near one of its ends in operative relation with said toggle, and having a multiplied movement on, and relatively to, the opening movement of the load-discharger; and holding means for engaging said lever near its opposite end.

17. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; an intermediate operatively connected with said toggle and having a toothed holding-face; and a latch for engaging any one of the teeth of said intermediate on the closing of the load-discharger.

18. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; a shiftable holding member operatively connected with said toggle and having a multiplied movement on, and relatively to, the opening movement of the load-discharger; and a cooperative holding member one of said holding members having a plurality of stop-faces any one of which is adapted to be engaged selectively by a stop-face on the other holding member on the closing of the load-discharger to hold the load-discharger in any one of several closed positions.

19. In a weighing-machine, the combination, with a load-receiver and with a load-discharger, of a toggle connecting said load-receiver and the load-discharger; a lever having a cam-face near one of its ends in operative relation with said toggle, and having a multipled movement on, and relatively to, the opening movement of the load-discharger, and also having at its opposite end a toothed stop-face; and a latch for engaging any one of the teeth of said stop-face on the closing of the load-discharger.

20. In a weighing-machine, the combination, with stream-supplying means and with a stream-controlling valve, of beam mechanism; a load-receiver embodying a member shiftable for discharging a load; a latch for said shiftable member; a valve-opening thrust-rod pivoted between its ends and cooperative at one side of its pivot with the beam mechanism; and a latch-tripper cooperative with said thrust-rod at the opposite side of the pivot of the latter.

21. In a weighing-machine, the combination, with stream-supplying means and with a stream-controlling valve, of beam mechanism; a load-receiver embodying a member shiftable for discharging a load; a latch for said shiftable member; a valve-opening thrust-rod pivoted between its ends and cooperative near its lower end with the beam mechanism; a latch-tripper carried by the upper end of said thrust-rod; and means for shifting the lower end of the thrust-rod out of operative relation with the beam mechanism.

22. In a weighing-machine, the combination, with stream-supplying means and with a stream-controlling valve, of beam mechanism; a regulator; connecting means between the regulator and the valve; and a valve-opening thrust member pivoted to said connecting means and in operative relation with the beam mechanism.

23. In a weighing-machine, the combination, with stream-supplying means and with a stream-controlling valve, of beam mechanism; a regulator; a linkage connecting said regulator and the valve; and a valve-opening thrust member pivoted to one member of said linkage and in operative relation with the beam mechanism.

24. In a weighing-machine, the combination, with framework, of stream-supplying means; a stream-controlling valve; beam mechanism; a regulator; a linkage connecting said regulator and the valve; a valve-opening thrust member pivoted to one member of said linkage and in operative relation with the beam mechanism; and a guide-link connected with the framework and pivoted to the thrust member at the point of connection of the latter with the linkage.

25. In a weighing-machine, the combination, with stream-supplying means and with a stream-controlling valve, of beam mechanism; a load-receiver embodying a member shiftable for discharging a load; a latch for said shiftable member; operating connections between the valve and the beam mechanism and embodying a lever pivoted between its ends and cooperative near one of its ends with the beam mechanism; and a latch-tripper cooperative with said lever at the opposite side of the pivot of the latter.

26. In a weighing-machine, the combination, with stream-supplying means and with a stream-controlling valve, of beam mechanism; a load-receiver embodying a member shiftable for discharging a load; a latch for said shiftable member; operating connections between the valve and the beam mechanism and embodying a lever pivoted between its ends, and cooperative near one of its ends with the beam mechanism; and a latch-tripper cooperative with said lever at the opposite side of the latter, and shiftable out of operative relation with the latch while the beam-operated end of the lever is in operative relation with the beam mechanism.

27. In a weighing-machine, the combination, with stream-supplying means and with a stream-controlling valve, of beam mechanism; a load-receiver; a load-discharger; a regulator below the load-discharger; and framework embodying a chambered base between the load-discharger and the regulator, said base having an oscillatory stream-supporting wall.

28. In a weighing-machine, the combination, with weighing mechanism, of regulating apparatus embodying a plurality of superposed counterpoised oscillatory regulators movable in arcs of different lengths; and connecting means between such regulators for modifying the movements thereof.

29. In a weighing-machine, the combination, with weighing-mechanism, of regulating apparatus embodying a plurality of superposed counterpoised oscillatory regulators having different ranges of movement; and connecting means pivoted to said regulators different distances from the axes of oscillation thereof.

30. In a weighing-machine, the combination, with weighing mechanism, of regulating apparatus embodying a pair of counterweighted oscillatory regulator-hoppers disposed one above the other and one within the other; and a link pivotally connected with said hoppers at a greater distance from the axis of oscillation of the upper, than from the axis of the lower, hopper.

31. In weighing mechanism, the combination, with beam mechanism embodying a scale-arm, of a main weight carried by, and movable longitudinally of, said scale-arm and having a longitudinal bore open at its outer end; a threaded cap for closing the open end of said bore; a poise-weight slidable in said bore; and a feed-screw carried by said cap and connected with the poise-weight for adjusting the latter.

32. In weighing mechanism, the combination, with a scale arm, of a main weight carried by, and movable longitudinally of, said scale-arm; a poise-weight carried by the main weight and movable relatively thereto; and common fastening means for securing the main weight to the scale-arm and the poise-weight to the main weight.

33. In weighing mechanism, the combination, with a scale-arm, of a main weight carried by, and movable longitudinally of, said scale-arm; a poise-weight carried by the main weight and movable relatively thereto; and a wedging fastening device common to the main weight and the poise-weight for securing the main weight to the scale-arm and the poise-weight to the main weight.

34. In weighing mechanism, the combination, with a scale-arm, of a main weight carried by, and movable longitudinally of, said scale-arm; a poise-weight carried by the main weight and movable relatively thereto; and a fastening device carried by the main weight, and common to the main weight and the poise-weight, and operative for securing the main weight to the scale-arm and the poise-weight to the main weight.

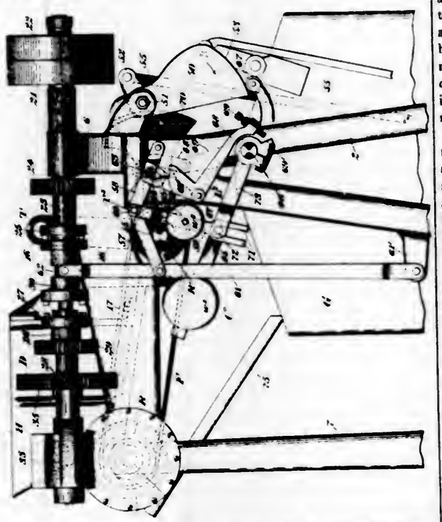
35. In weighing mechanism, the combination, with a scale-arm, of a main weight carried by, and movable longitudinally of, said scale-arm and having a longitudinal guide; a poise-weight carried by said guide and movable longitudinally thereof; and a wedging fastening device carried by the main weight and working between, and adapted to bind against, the scale-arm and the poise-weight, to clamp the main weight to the scale-arm and the poise-weight to the main weight.

36. In weighing mechanism, the combination, with a scale-arm, of a main weight carried by, and movable longitudinally of, said scale-arm and having a longitudinal guide; a poise-weight carried by said guide and movable longitudinally thereof; and a wedging fastening device carried by the main weight and working between, and adapted to bind against, the scale-arm and the poise-weight, to clamp the main weight to the scale-arm and the poise-weight to the main weight; and a threaded adjusting member for operating said fastening device.

607,488. AUTOMATIC WEIGHING-MACHINE. JOHN CHRISTIANSEN, Hartford, Conn., assignor to The Pratt & Whitney Company, same place. Filed Nov. 4, 1897. Serial No. 657,351. (No model.)

Claim.—1. The combination, with weighing mechanism including a load-receiver, of a feeder; driving mechanism for said feeder, including a shaft having a high and a low speed power-transmitter loosely mounted thereon; a clutch for coupling the transmitters to the shaft independently; a clutch-actuator embodying a toggle having a weighted vertically-disposed thrust member capable of moving

the toggle in one direction by its own gravity; means controlled by the weighing mechanism for imparting a vertical movement to the thrust member for shifting the toggle in another direction; and a device controlled by said means for arresting said toggle at successive points in one movement thereof.



2. The combination, with weighing mechanism including a load-receiver, of an endless-band feeder; driving mechanism for said feeder, including a shaft having a high speed power transmitter and a low-speed power-transmitter loosely mounted thereon; clutch mechanism including an actuating-toggle having a gravitative thrust member for coupling the two power-transmitters to the shaft successively and independently; a counterweighted actuator for imparting an upward movement to said thrust member; and a latch controlled by the counterweighted actuator for intermittently engaging a detent on the toggle for arresting said toggle at successive points in one movement thereof.

3. The combination, with weighing mechanism including a load-receiver and with a supply-hopper, of an endless feeder disposed below said hopper with its discharge end above the load-receiver; rolls supporting said feeder; power-driven actuating mechanism in connection with the shaft of one of said rolls and embodying a power-shaft, a high and a low speed power-transmitter loosely mounted on said shaft, and a clutch splined to said shaft and shiftable for coupling said power-transmitters to said shaft alternately or successively; means controlled by the weighing mechanism for actuating the clutch and embodying a toggle having a weighted thrust member; an actuating-lever for operating the toggle in one direction; and a device for arresting said toggle at successive points in its movements in the opposite direction.

4. The combination, with weighing mechanism including a load-receiver and with a supply-chute, of a material-feeder supported below said chute; differential-speed actuating mechanism in operative connection with said feeder and embodying a power-shaft and two power-transmitters of different speeds; a clutch device for coupling the power-transmitters to the shaft independently; a toggle in operative connection with the clutch and embodying a gravitative member for shifting the clutch in one direction; means controlled by the weighing mechanism for operating the toggle to shift the clutch in an opposite direction and an oscillatory latch having a series of catches and operative by the last-mentioned means for arresting the toggle at predetermined points in one movement thereof.

5. The combination, with a feeder and with actuating mechanism including a power shaft, two differential power-transmitters loosely mounted thereon, and a clutch for coupling the power-transmitters alternately to said shaft, of clutch-actuating mechanism compriaing a toggle having a weighted gravitative member for shifting the clutch in one direction; means controlled by the weighing mechanism for retarding the descending movement of the toggle actuating end of said lever; a toggle-arresting latch disposed between said toggle and lever and effective for arresting said toggle at successive points in its movement in one direction; and means carried by the weighted lever for engaging and releasing the said latch at successive points in the descending movement of said lever.

6. The combination, with weighing mechanism including a load-receiver and with a feeder, of variable-feed actuating mechanism therefor including a shiftable clutch device, a toggle in operative connection with the clutch device and embodying a gravitative member for shifting the clutch in one direction; a latch for arresting the toggle at successive points in its descending movements; a gravitative actuating-lever fulcrumed on the framework and having an arm in shiftable connection with the gravitative member of the toggle and embodying means for tripping the toggle-holding latch at a predetermined point in the gravitative movement of said lever; and means controlled by the weighing mechanism for imparting a toggle-actuating movement to said lever, and also for controlling the gravitative movement of said lever.

7. The combination, with weighing mechanism including a load-receiver and with an endless feeder having its discharge end above said load-receiver, of differential-speed actuating mechanism in operative connection with said feeder and embodying a shiftable clutch and a clutch actuator controlled by the weighing mechanism and embodying a gravitative toggle and a gravitative actuating lever, the former of which is controlled in its movements in one direction, and is operated in the opposite direction, by the latter.

8. The combination, with weighing mechanism including a load-receiver and with an endless feeder having its discharge end above said load-receiver, of differential-speed actuating mechanism in operative connection with said feeder and embodying a shiftable clutch; clutch-actuating mechanism controlled by the weighing mechanism and embodying a gravitative toggle and a gravitative actuating-lever, the former of which is controlled in its movements in one direction, and is operated in the opposite direction, by the latter; a latch having a series of catches for interrupting the gravitative movement of the toggle at successive points in said movement; and means carried by the gravitative actuating-lever for tripping the latch at successive points in the gravitative movement thereof.

9. The combination, with weighing mechanism including a load-receiver and with an endless feeder having its discharge end above said load-receiver, of differential-speed actuating mechanism in operative connection with said feeder and embodying a shiftable clutch; a clutch-actuator controlled by the weighing mechanism, embodying a gravitative toggle and a gravitative actuating-lever, the former of which is controlled in its movements in one direction, and is operated in the opposite direction, by the latter; a latch embodying means for engaging, and arresting, the toggle at successive points in the movement thereof in one direction; and means operative on the descent of the gravitative actuating-lever for releasing said latch.

10. A weighing-machine embodying a shiftable member; a weighted gravitative toggle in operative connection with, and effective for shifting, said member in one direction; a gravitative actuating-lever fulcrumed on the framework and having an arm operatively connected with the toggle in such a manner as to control the gravitative movement of the toggle; and means controlled by the weighing mechanism for elevating the toggle-actuating end of said lever to shift the toggle in an opposite direction.

11. In a weighing-machine, the combination, with a shiftable member, of an actuating toggle in operative connection with said shiftable member and comprising three pivotal connecting-links one of which is bifurcated at its lower end and is provided with a weight for shifting said toggle to, and below, its dead-center position; a gravitative actuating-lever fulcrumed on the framework and having a projection extending into the bifurcated end of the weighted toggle member; and means controlled by the weighing mechanism for shifting the actuating-lever to a position for carrying the toggle to, and above, its dead-center position.

12. A weighing-machine embodying a shiftable member; a toggle in operative connection with said shiftable member; means carried by, and effective for shifting, the toggle in one direction; an actuating-lever in connection with said toggle; a reactionary latch for arresting the toggle at successive points in one movement thereof; means carried by the actuating-lever for tripping the latch; and means controlled by the weighing mechanism for actuating said lever to shift the toggle in an opposite direction.

13. The combination, with weighing mechanism including a load-receiver and with a material-feeder and differential actuating mechanism therefor including a clutch for controlling the speed of the feeder, of a valve shiftable into operative relation with the feeder for cutting off the supply after the feeder is stopped; an actuating-lever in connection with said valve; means operable by the weighing mechanism for controlling the movements of the actuating lever; and a clutch-actuating toggle in operative connection with said lever.

14. In a weighing-machine, the combination, with a feeder and with a differential-speed mechanism in operative connection with said feeder and embodying a power-shaft, a high and a low speed power-transmitter loose upon said shaft, and a clutch splined to said shaft for coupling said power-transmitters thereto independently, of an oscillatory surplus-catcher or valve shiftable in a path crosswise of the supply-stream; a weighted valve-actuating lever in operative connection with the valve and adapted for closing said valve on the gravitative movement of said lever; a cam-plate pivotally supported in operative relation with the valve-actuating lever and having a cam-face for retarding the valve-actuator on the closing movement thereof; means controlled by the weighing mechanism for actuating said cam-plate to impart a valve-opening movement to the actuator; a clutch-actuating toggle in operative connection with the clutch and valve-actuator; and a device controlled by the valve-actuator for arresting said toggle at successive points in its movements.

15. In a weighing-machine, the combination, with a feeder, of differential-speed mechanism in operative connection with said feeder and embodying a power-shaft, a high and a low speed power-transmitter loose upon said shaft, and a clutch splined to said shaft for coupling said power transmitters thereto alternately; an oscillatory surplus-catcher or valve shiftable on a path crosswise of the supply-stream; a weighted valve-actuating lever in operative connection with the valve and adapted to close said valve on the gravitative movement of said lever; a cam-plate pivotally supported in operative relation with the valve-actuating lever and having a cam-face for retarding the valve-actuator on the valve-advancing movement thereof; means controlled by the weighing mechanism for actuating said cam-plate to impart a valve-opening movement to the actuator; and a toggle device in operative connection with the clutch and having a weighted depending member in shiftable connection with the valve-actuating lever.

16. The combination, with weighing mechanism including a load-receiver and with a power-driven feeder, of differential feeder-actuating mechanism in operative connection with the feeder and embodying a power-shaft, a high and low speed power-transmitter loosely mounted on said shaft, and a clutch device intermediate to, and effective for coupling, said power-transmitters to said shaft alternately; a valve supported for oscillatory movement and having a cut off plate shiftable below the discharge end of the feeder; means including a valve-actuating lever controlled by the weighing mechanism, for advancing and retracting said valve; a toggle in operative connection with the clutch device and having a weighted actuating member in shiftable connection with the valve actuating lever, the connection between the toggle and valve actuating lever being such that upon the valve-advancing movement of the actuating-lever the actuating member of the toggle will descend and shift the clutch device in one direction, and upon a valve-retracting movement of said valve-actuating lever an ascending movement will be imparted thereby to the toggle for shifting the clutch in an opposite direction; a clutch for arresting the toggle at successive points in one of its movements; and means carried by the valve-actuating lever for tripping said latch.

17. The combination, with weighing mechanism including a load-receiver and with a supply-hopper, of a power-driven feeder; differential-speed feeder-actuating mechanism including a driving-shaft and a driven shaft, the latter of which is in geared connection with the feeder; a high and a low speed power-transmitter loosely mounted upon the driving-shaft, the former having a gear of large diameter fixed thereto, and the latter having a gear of smaller diameter fixed thereto; a clutch splined to the driving-shaft, intermediate the high and low speed transmitters, and adapted for coupling said transmitters alternately to said shaft; a gear-wheel fixedly secured to the driven shaft and meshing with the larger gear of the high-speed power-transmitter; a gear-wheel loosely mounted on the driven shaft and meshing with the small gear of the low-speed power-transmitter; a pawl-and-ratchet device in connection with the driven shaft and its loose gear and effective, when the low-speed power-transmitter is coupled to the driving-shaft, for coupling the loose gear and driven shaft together to effect a rotation of said driven shaft; and means controlled by the weighing mechanism for operating the clutch device of the driving shaft at a predetermined point in the movement of the load-receiver to shift the same into operative engagement with first one and then the other power-transmitter, and then to a neutral position between and out of engagement with said power-transmitters.

607,484. PROCESS OF AND APPARATUS FOR PRODUCING RELIEFS IN METAL.

JOSEF RIEDER, Munich, Germany. Filed Dec. 21, 1897. Serial No. 662,842. (No model.) Patented in Germany Feb. 7, 1897, No. 95,061; in France June 30, 1897, No. 268,332, and in England June 30, 1897, No. 15,617.



Claim.—1. A process for reproducing reliefs and the like in metal by means of electrolysis, which consists in first producing on a porous mass a negative of the original to be copied, pressing a plate connected with the cathode of an electrolytic cell to one side of said block, placing the plate on which the relief is to be reproduced at the negative side of said block and constituting the same the anode, supplying the electrolyte to the porous block and supplying an electric current substantially as described.

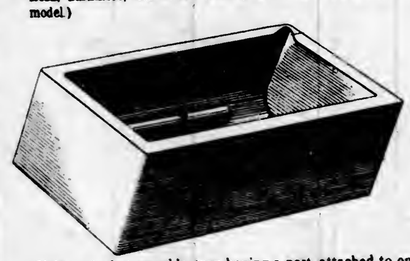
2. A process for reproducing reliefs and the like in metal by means of electrolysis, which consists of first producing on a porous mass a negative of the original to be copied, pressing a plate connected with the cathode of an electrolytic cell against the plain side of said block, placing the plate on which the relief is to be reproduced at the negative side of said block and constituting the same the anode, gently pressing said plate on said block, supplying an electrolytic solution to said block and supplying an electric current in the manner and for the purpose substantially as described.

3. A device for carrying out the process of reproducing reliefs by means of electrolysis, which consists of the combination of a receptacle having suitable cover, a sleeve mounted in said cover and extending downwardly into said receptacle, a block of porous material in said sleeve, a guide-frame on the top of said cover for the metal plate, a metal plate to receive the relief, means for gently pressing the same on said block, a cathode below said block and connections from the said plate to the positive pole of a battery in the manner and for the purpose substantially as described.

4. An electrolytic apparatus composed of a cathode, a porous mold-block, an anode in contact therewith, and an electrolyte that saturates the mold-block, substantially as specified.

607,485. PHOTOGRAPHIC DEVELOPING-TRAY.

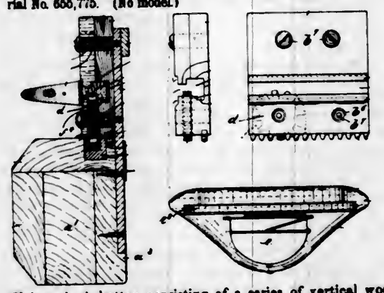
WILLIAM H. ROSE, Baltimore, Md. Filed Nov. 8, 1897. Serial No. 657,830. (No model.)



Claim.—A photographic tray having a post attached to one of its walls, said post extending part way across the tray in a direction substantially parallel with the bottom thereof and having a free or unsupported end under which films may be passed, substantially as described.

607,486. BATTEN, SHUTTLE-BLOCK, AND SHUTTLE FOR LOOMS.

OTTO W. SCHAUM, Philadelphia, Pa. Filed Oct. 20, 1897. Serial No. 655,775. (No model.)



Claim.—1. A batten consisting of a series of vertical wooden strips, and of a wooden top strip glued to said vertical strips and at right angles thereto and having its growth at an angle to the top surface of the batten and to the grain thereof, substantially as and for the purposes described.

2. A batten consisting of a series of wooden strips glued together and having their respective grain in alternate or opposite direction to each other, and of a wooden top strip glued to said vertical strips and at right angles thereto and having its growth at an angle to the top surface of the batten, substantially as and for the purposes described.

3. A shuttle-block consisting of two wooden plates glued together, the back plate having its growth at right angles to the growth of the front plate and its grain substantially at right angles to the base of said

shuttle-block, and having the shuttle-race penetrating the front plate and extending into the said back plate, substantially as and for the purposes described.

4. A shuttle-block consisting of two wooden plates glued together, the back plate having its growth at right angles to the growth of the front plate and its grain substantially at right angles to the base of said said shuttle-block and having the shuttle-race penetrating the front plate and extending into the said back plate, the top of said shuttle-race being arranged at right angles to the back thereof and forms with said back a sharp edge or corner, substantially as and for the purposes described.

5. The combination with a batten, of a rack-bar secured in said batten, a series of shuttle-blocks adjustably arranged on said batten, a toothed rack carried by each shuttle-block and adapted to engage the rack-bar in the batten, and means for removably securing said shuttle blocks to the batten, substantially as and for the purposes described.

6. The combination with a batten, of a rack-bar secured in the said batten, a series of vertical braces upwardly projecting from said batten, one or more shuttle-blocks adjustably secured to said braces, and a toothed rack carried by each shuttle-block and adapted to engage the rack-bar in the batten, substantially as and for the purposes described.

7. The combination with a batten, of a rack-bar secured in the top portion of said batten, a series of braces upwardly projecting from said batten, one or more shuttle-blocks carried by said braces and each provided with one or more horizontal holes, a screw penetrating its respective hole and engaging its respective brace and having its body of smaller diameter than the diameter of the hole which it penetrates, and a toothed rack carried by each shuttle-block and adapted to engage the rack-bar in the batten, substantially as and for the purposes described.

8. The combination with a batten, of a toothed rack secured in the top portion of said batten, a rack-bar slidingly arranged in said batten and adjacent to the toothed rack, one or more shuttle-blocks carried by said batten, a toothed rack on each of said shuttle-blocks and engaging the toothed rack in the batten, the shuttle-race in said batten, one or more pinions in each of said shuttle-blocks and extending into the shuttle-race and in engagement with the sliding rack-bar, and shuttles slidingly arranged in said shuttle-race and adapted to be operated by said pinions, substantially as and for the purposes described.

607,487. PARCEL-CARRIER FOR BICYCLES. OTTO W. SCHAUM, Philadelphia, Pa. Filed Dec. 31, 1897. Serial No. 665,132. (No model.)



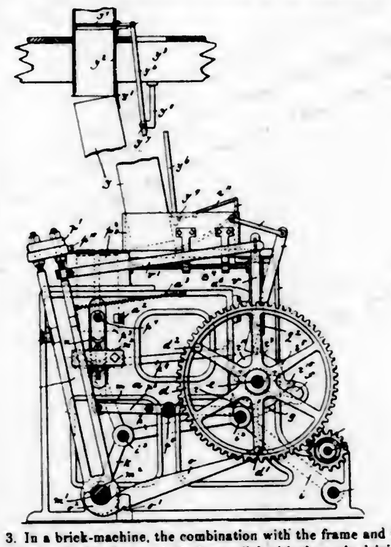
Claim.—1. The combination with two parallel rods or wires adapted to be arranged horizontally above and on each side of the rear wheel of a bicycle, of a plate fixed approximately upon and connectiug the free inner ends of said rods or wires and adapted to be transversely arranged upon and to bear against the outer portions of the rear stays of said bicycle, a plate parallel with the last-mentioned plate and adapted to bear against the inner portions of said stays, bolts penetrating said plates for securely clamping the same to said stays, and means for removably attaching the free outer ends of said rods or wires to a part of the bicycle-frame, substantially as described.

2. The combination with two parallel rods or wires adapted to be arranged horizontally above and on each side of the rear wheel of a bicycle, of a plate fixed approximately upon and connecting the free inner ends of said rods or wires and adapted to be transversely arranged upon and to bear against the outer portions of the rear stays of said bicycle, a plate parallel with the last-mentioned plate and adapted to bear against the inner portions of said stays, bolts penetrating said plates for securely clamping the same to said stays, and means—such as clamps—for detachably securing the free ends of said rods or wires to the mud-guard of the bicycle, substantially as described.

607,488. BRICK-MACHINE. JOSEPH SHARPE, Paterson, N. J. Filed Oct. 2, 1897. Serial No. 653,786. (No model.)

Claim.—1. In a brick-machine, the combination with the mold-box, of a slidable feed-box provided in its bottom with an opening adapted to register with said mold-box, mechanism for operating said feed-box, a fixed or supply spout above the mold-box, a movable feed-spout leading from said fixed spout to and within the feed-box, a damper or valve slidingly arranged in the fixed feed-spout, a bridge or bracket in the feed box, and a fulcrumed lever connected with one end to the sliding valve or damper and engaging with its other end the said bridge or bracket and adapted to be operated thereby, substantially as and for the purposes described.

2. In a brick-machine, the combination with the frame and the main driving-shaft, of a crank-shaft parallel with the main driving-shaft and operated thereby, disks mounted on said crank-shaft and each provided with a cam projection, a mold-box supported by said frame, a feed-box provided in its bottom with an opening slidingly arranged on said frame and adapted to register with said mold-box, an angle-lever suitably fulcrumed on the frame, a link connecting one arm of said angle-lever with the feed-box, a rod depending from the other arm of said angle-lever and adapted to be operated by the cam projection on one of said disks, a lever suitably fulcrumed on the frame and having its shorter arm in the path of the cam projection on another of said disks and adapted to be operated thereby, and a link connecting the longer arm of said last-mentioned fulcrumed lever with the feed-box, substantially as and for the purposes described.



3. In a brick-machine, the combination with the frame and the main driving-shaft, of a crank-shaft parallel with the main driving-shaft and adapted to be operated thereby, a spur-wheel on said crank-shaft and on each side of the machine and provided with two horizontally-extending studs or pins, a fulcrumed lever adapted to be operated by said studs or pins, a hub supported by said fulcrumed levers, double straining-bars on said hub, a mold-cap carried by said straining-bars, a mold-box on the frame and adapted to be engaged by said mold-cap, a series of disks mounted on the crank-shaft and each provided with a cam projection, a fulcrumed vertically-arranged lever adapted to be operated by the cam projection on one of said disks, a rod or brace connecting the other arm of said vertically-arranged fulcrumed lever with one of said straining-bars, an arm pivotally connected to about the central portion of one of said straining-bars, and having its free end in the path of the cam projection on another of said disks and adapted to be operated thereby, and a bridge or bracket projecting from the frame for guiding the free end of said last-mentioned pivoted arm, substantially as and for the purposes described.

4. In a brick-machine, the combination with the frame and the revolving crank-shaft mounted therein, of a mold-box on said frame, a reciprocating block carrying the dies in said mold-box, a link on each side of the reciprocating block and pivotally connected thereto, a fulcrumed lever on each side of the frame and having one end pivotally connected with the free end of its respective link, disks mounted on the crank-shaft and each provided with a cam projection adapted to operate the free ends of said last-mentioned fulcrumed levers, a hub suitably supported in the frame, a double straining-bar mounted on each side of said hub, a mold-cap on said straining-bars, means for operating said straining-bars to move the cap into and out of engagement with the mold-box, a reciprocating head or follower below the reciprocating block, and a series of links, arms and levers connecting the crank-shaft with the hub and with the follower or reciprocating head, substantially as and for the purposes described.

5. In a brick-machine, the combination with the frame and the main driving-shaft, of a crank-shaft parallel with the main driving-shaft and operated thereby, disks mounted on said crank-shaft and each provided with a cam projection, a mold-box supported by said frame, a feed-box provided in its bottom with an opening slidingly arranged on said frame and adapted to register with said mold-box, an angle-lever suitably fulcrumed on the frame, a link connecting one arm of said angle-lever with the feed-box, a rod depending from the other arm of said angle-lever and adapted to be operated by the cam projection on one of said disks, a lever suitably fulcrumed on the frame and having its shorter arm in the path of the cam projection on another of said disks and adapted to be operated thereby, a link connecting the longer arm of said last-mentioned fulcrumed lever with the feed-box, a feed or supply spout above the mold-box, a movable feed-spout leading from said fixed spout to and within the feed-box, a damper or valve slidingly arranged in the fixed feed-spout, a bridge or bracket in the feed-box, and a fulcrumed lever connected with one end to the sliding valve or damper and engaging with its other end the said bridge or bracket and adapted to be operated thereby, substantially as and for the purposes described.

6. In a brick-machine, the combination with the frame and the main driving-shaft, of a crank-shaft parallel with the main driving-shaft and operated thereby, a spur-wheel on said crank-shaft and on each side of the machine and provided with an externally toothed or corrugated hub, two pins projecting horizontally from each spur-wheel, fulcrumed levers adapted to be operated by said horizontal pins, a hub supported by said fulcrumed levers, a double straining-bar mounted on each side of said hub, a mold-box on the frame of the machine, a mold-cap adjustably arranged on said double straining-bars and adapted to be moved into and out of engagement with said mold-box, a series of disks having their central bore toothed or corrugated adjustably arranged on the toothed or corrugated hubs of the spur-wheels, each of said disks being provided with a cam projection, a fulcrumed lever adapted to be operated by the cam projection on one of said disks, a rod or brace connecting the other arm of said fulcrumed lever with one of said straining-bars, an arm pivotally connected to about the central portion of one of said straining-bars and having its free end in the path of the cam projection on another of said disks and adapted to be operated thereby, a bridge or bracket projecting from the frame for guiding the free end of said last-mentioned pivoted arm, a slidable feed-box provided with an opening in its bottom and adapted to register with the mold-box, and means for operating said feed-box, substantially as and for the purposes described.

607,489. ROOFING-TILE. HENRY R. SKEELS, Chicago, Ill., assignor to the Ludowici Roofing Tile Company, same place. Filed Feb. 23, 1897. Serial No. 624,708. (No model.)

Claim.—1. The herein-described roofing-tile consisting of the combination of the flat portion A, the roll portion B, larger below than above, the tongues *a*, *a* on the upper face, and the tongues *b*, *b* on the under face, which extend clear across both the flat and the roll portions and which fit into one another, and the tongues *a'*, *a'* on the upper face, and the extended portion *e* of the roll and tongue *f* on the under face of the roll which fit into one another, all substantially as shown and described.

2. The herein-described roofing-tile consisting of the combination of the flat portion A, the roll portion B, the tongues *a*, *a* on the upper face, and the tongues *b*, *b*, on the under face, which fit into one another, and the tongues *a'*, *a'* on the upper face, and the extended portion *e* and tongue *f* which fit into *a'*, *a'*, said tongue *f* having a projecting ledge *f'* which brings its face flush with the inner face of the inner tongue *a'*, all substantially as shown and described.

607,490. CORNER-IRON FOR VEHICLE-BODIES. AMOS W. SPRINGER, Leando, Iowa. Filed Jan. 29, 1898. Serial No. 668,422. (No model.)



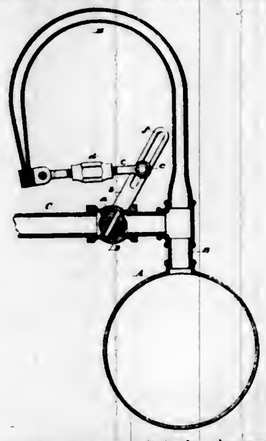
Claim.—1. A device of the class described, comprising a side iron composed of inner and outer plates adapted to receive and protect the end of a wagon-body side, and an integral arm extending outward from the bottom of one of the plates and forming a knee for supporting the side iron, said side iron being provided at its inner

plate with vertical ways, and an end-gate iron provided with a projecting portion or flange fitting in the said ways, substantially as described.

2. A device of the class described, comprising a side iron composed of inner and outer plates and provided at the bottom with an inwardly-extending integral arm forming a knee and adapted to be secured upon the bottom of a wagon-body, and an end-gate iron having a projecting portion to engage the side iron and provided with an upwardly-extending supporting-flange having an inclined upper edge and extended laterally thereat, substantially as described.

3. A device of the class described, comprising a side iron having inner and outer plates and provided at its bottom with an outwardly-extending arm forming a knee, and an end-gate iron engaging the inner plate of the side iron and provided with the rearwardly-extending flange 23 having a perforation to receive a transverse rod, substantially as described.

607,491. AUTOMATIC RELIEF-VALVE. MAGNUS SWENSON, Chicago, Ill., assignor to the American Cotton Company, of New Jersey. Filed Feb. 18, 1898. Serial No. 670,808. (No model.)



Claim.—1. In an automatic relief-valve, the combination of a valve for holding the pressure, and a closed tube connected with said valve and subjected internally to the pressure to be relieved, said tube being of a form adapted to be changed by pressure, substantially as set forth.

2. In an automatic relief-valve, the combination of a rotary valve for holding the pressure, and a closed tube connected with said valve and subjected internally to the pressure to be relieved, said tube being of a form adapted to be changed by pressure, substantially as set forth.

3. In an automatic relief-valve, the combination of a valve for holding the pressure, a closed tube subjected to the pressure to be relieved, said tube being of a form adapted to be changed by pressure, and adjustable connections between said tube and said valve, substantially as set forth.

4. In an automatic relief-valve, the combination of a rotary valve for holding the pressure, a closed tube subjected to the pressure to be relieved, said tube being of a form adapted to be changed by pressure, and adjustable connections between said tube and said valve, substantially as set forth.

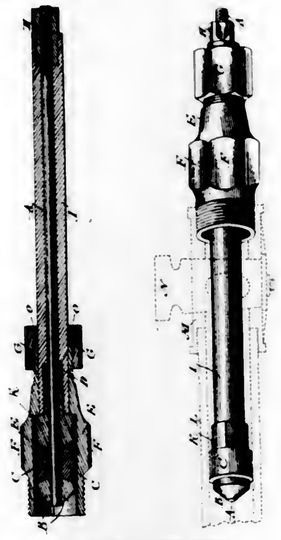
5. In an automatic relief-valve, the combination of a valve for holding the pressure, a curved tube subjected to the pressure to be relieved, a slotted lever connected to said valve, and a link connecting said slotted lever with the closed end of said tube, said link being adjustable in said slotted lever, substantially as set forth.

6. In an automatic relief-valve, the combination of a valve for holding the pressure, a curved tube subjected to the pressure to be relieved, a slotted lever-connected to said valve, and an adjustable link connecting said slotted lever with the closed end of said tube, said link being adjustable in said slotted lever, substantially as set forth.

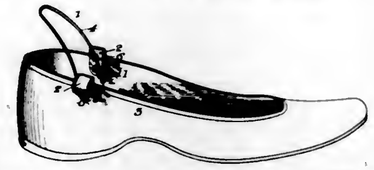
607,492. STOP-COCK REPLACER. HARRY L. THOMAS and WILLIAM C. NUMER, Findlay, Ohio, assignors of one-third to Edson R. Marvin, same place. Filed Dec. 27, 1897. Serial No. 663,555. (No model.)

Claim.—The combination of a barrel E E stuffing box O O with adjusting-nut G G and plunger-rod with expansion-tube containing a

stuffing-box D D whereby a stop-cock, gate or other valve of sufficient way may be removed and another replaced upon any pipe without the loss of the contents of the said pipe whether the same be under pressure or not which is accomplished substantially as set forth in this specification.



607,493. OVERSHOE-HOLDER. WILLIAM H. TILLSON, Quincy, Ill. Filed May 27, 1897. Serial No. 638,446. (No model.)



Claim.—1. An overshoe-holder comprising a substantially U-shaped bail, and a pair of clasps pivotally connected with the ends of the bail and each consisting of a substantially U-shaped loop presenting a smooth outer surface to avoid catching in a garment and having a straight inner portion to fit against the inner face of an overshoe and provided at the lower edge of its outer portion with an inwardly-extending flange, whereby it is adapted to conform to the configuration of and engage the thickened upper edge of an overshoe, said clasps being capable of ready adjustment longitudinally of the sides of an overshoe without defacing the same, substantially as described.

2. An overshoe-holder comprising a substantially U-shaped bail, and a pair of clasps pivotally connected to the ends of the bail and each comprising a plate doubled to form a loop to engage over the upper edge of the rubber, the outer portion of the loop being resilient, the ears or arms extending outward from the inner portion of the loop and being recessed at the bottom to receive the upper edge of the overshoe, and the angle-lever fulcrumed between the ears or arms and engaging the outer portion of the loop, said lever being extended over the top of the clasp to form a guard, substantially as described.

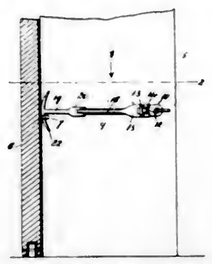
607,494. PROCESS OF MAKING PYROCATECHIN. GEORG TOBIAS, Berlin, Germany. Filed Dec. 28, 1897. Serial No. 664,105. (No specimens.) Patented in Germany May 26, 1894, Nos. 81,209 and 81,210; in France Dec. 31, 1894, No. 244,062; in England Jan. 2, 1895, No. 154, and in Austria Sept. 6, 1895, No. 45/3,108.

Claim.—1. The process of making salts of the pyrocatechindisulfo-acid, by heating salts of the phenoltrisulfo-acid with caustic alkali to temperatures above 200° centigrade.

2. The process of making pyrocatechin by heating salts of the phenoltrisulfo-acid with caustic alkali to temperatures above 200° centigrade and then heating the alkaline salt of the pyrocatechindisulfo-acid thus obtained with water in closed vessels to temperatures above 140° centigrade.

3. The process of making pyrocatechin by heating pyrocatechindisulfo-acid, derived from its alkaline salts, with water in closed vessels to temperatures above 140° centigrade.

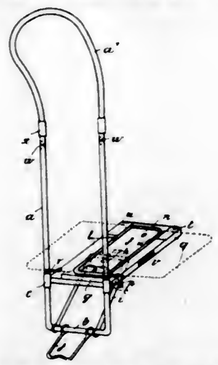
607,495. SLIDING-DOOR FASTENER. JOHN R. WASHBURN, Valley Junction, Wis. Filed Sept. 21, 1897. Serial No. 652,471. (No model.)



Claim.—1. A fastening device for doors, gates and other articles, said fastening device consisting of a staple or similar device as 8, a bar pivotally connected therewith, a supplemental bar provided at one end with an angular extension which is pivotally connected with the free end of the first-named bar, a catch pivotally connected with said first-named bar, and adapted to operate in connection with the free end of the supplemental bar, and an auxiliary bar pivotally connected with said supplemental bar adjacent to the angular extension of the end thereof, said auxiliary bar being provided at its free end with a hook, substantially as shown and described.

2. The fastening device herein described, consisting of a bar as 9, provided with a pivoted catch as 12, a supplemental bar as 16, pivotally connected with one end of the first-named bar, and provided with an angular extension at said end, an auxiliary bar as 19, pivotally connected with the supplemental bar, and provided at its free end with a hook, substantially as shown and described.

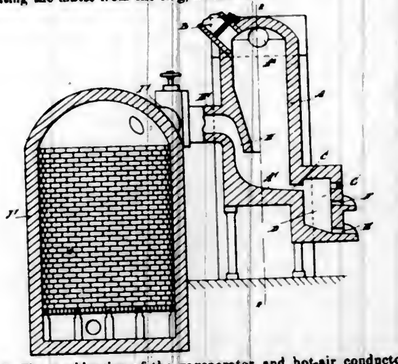
607,496. APPLIANCE FOR SUPPORTING BOOKS, PAPERS, OR OTHER ARTICLES. HENRY B. WATSON, London, England. Filed Feb. 14, 1898. Serial No. 670,342. (No model.)



Claim.—In an improved appliance for supporting books, papers, and other articles, the frame *a a' b*, having the curved part *a'*; the tubes *c*; the hinged table *f* having the rack *h* and the downturned edge *q* and upstanding ledge *g*, and boxes covered by lids *u t s*; the hinged frames *i* and *j*, *n* and *o*; the rack *e* and spring-catch *d*; the catches *p*; the lids *u t g*; the rule-joints *w* and the tubes *x*, the whole substantially as described and shown.

607,497. PROCESS OF AND APPARATUS FOR PYRITIC SMELTING. GUSTAV M. WESTMAN, New York, N. Y. Filed Feb. 1, 1897. Serial No. 621,516. (No model.)

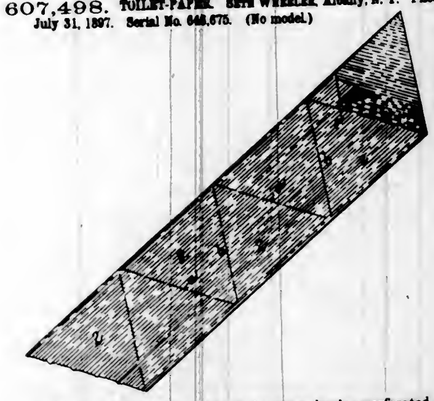
Claim.—1. The herein-described process for pyritic smelting, consisting in forcing highly-heated air free from products of combustion into and up through a column of sulfids free from carbonaceous fuel, and thereby converting these sulfids into oxide and volatilizing the oxids, with the production of matte and slag, drawing off the gaseous portion and volatilized products and condensing the oxids, conducting the remaining gases, consisting of nitrogen and sulfurous acid, into a lead-chamber, to form sulfuric acid, drawing off the matte and slag continuously from the base of the ore column, and separating the matte from the slag, as described.



2. The combination of the regenerator and hot-air conductor with the shaft furnace having a side channel H, which communicates with the aforesaid conductor and extends vertically downward as shown, its mouth being located within the ore-chamber and directly over the rear side of the bottom thereof which slopes from that point, as shown and described.

3. The shaft-furnace having the following parts and features of construction, namely: a sloping bottom whose lateral mouth is at its lowest point, the rear side of said bottom which is directly opposite said mouth being curved upward; a hot-air channel arranged vertically in the side of the ore-chamber and opening at the upper end of the curved portion of the bottom, as shown and described, whereby hot air discharged from said channel is directed downward in contact with the curved wall and guided thereby to the bottom of the ore-chamber, where it acts on the material and promotes the flow of the molten mass through the discharge-opening, as shown and described.

607,498. TOILET-PAPER. SETH WHEELER, Albany, N. Y. Filed July 31, 1897. Serial No. 646,675. (No model.)



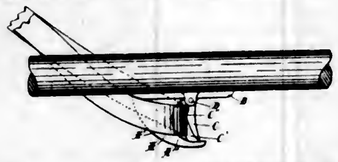
Claim.—1. A roll or strip of toilet-paper having perforated or incised lines of division to permit severance of sheets and having marked lines of division to denote where the sheets must be folded to cause the fibers to cross, substantially as set forth.

2. A roll or strip of toilet-paper having its fiber running lengthwise the strip and having perforated or incised lines of division to permit severance of sheets, and having marked lines of division to denote where the sheets must be folded to cause the fibers to cross, substantially as set forth.

3. A roll or strip divided into sheets by lines of division, said lines and sheets so arranged relative to each other that adjacent sheets lie point to base and base to point and when folded one upon another cross grain and approximately coincide at their edges.

4. A roll or strip of toilet-paper having division-lines indicated thereon whereby the strip is subdivided into connected triangular sheets, two sides of which at least are of equal length.

607,499. HOLDBACK-HOOK. IRAN WIRES, Grand Rapids, Mich. Filed Jan. 19, 1897. Serial No. 619,709. (No model.)



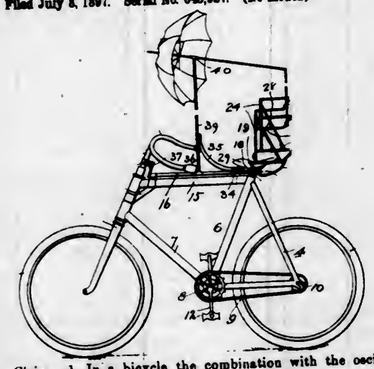
Claim.—1. In a holdback-hook, the combination of the base, a concave hook depending therefrom, a latch to hold the strap, pivoted adjacent to the concave side of the hook, and two ribs extending convergently from the rear end of the base to said hook and having inclined under surfaces merging into the lower end or point of said hook, substantially as described, whereby the strap will be guided to the point of said hook and unfailingly released when the thills are dropped and the animal starts to move from between the same.

2. In a holdback-hook, the combination of a hook having a concave forward side, and a latch pivoted to the base of the hook and engaging said concave side when closed, said latch having a longitudinal curved slot to receive the strap and a projection in one side of said slot to engage the side of said strap, whereby straps of different thicknesses will efficiently be held against movement in said slot when the latch is closed while being freely released therefrom when the latch is open, substantially as described.

3. In a holdback-hook, a hook having a concave forward side and diverging convex ribs at the rear side to facilitate detachment of the strap, and a latch having a convex side engaging the concave side of said hook, said latch also having a curved longitudinal slot to receive the strap and a projection in one side of said slot to engage the side of said strap and prevent free movement of the same in said slot, substantially as described.

4. As an improved article of manufacture, the herein-described holdback-hook, consisting of a base having a longitudinal recess and formed with a slot communicating with said recess, and also having a depending concave hook and ribs diverging from said hook to the rear end of the base, said ribs being of gradually-decreasing depth from their forward to their rear ends, to facilitate detachment of the strap, a spring seated in said recess and secured at one end to said base, and a latch having a convex side engaging the concave side of the hook, said latch being formed with a longitudinal slot and with an inward projection at one side of said slot, and the upper end of said latch being pivoted to the base and formed with a boss having reversely-flattened sides engaged by the free end of said spring, substantially as described.

607,500. BICYCLE. WILLIAM F. BRINTON, Washington, Iowa. Filed July 8, 1897. Serial No. 643,927. (No model.)



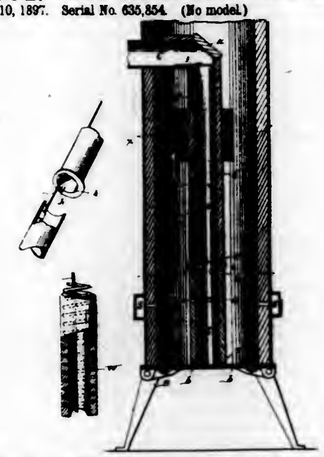
Claim.—1. In a bicycle, the combination with the oscillating shaft and means connected therewith for turning the steering-bar, and the seat secured to said shaft, of the oscillating seat-frame comprising the lower bar secured to said shaft, the upright tubes pivoted thereto, and having their upper ends curved rearwardly and inwardly and the toggle-joint brace-bars, substantially as described.

2. In a bicycle, the combination with the oscillating shaft, and means connected therewith for operating the steering-bar, and the seat secured to said shaft, of the oscillating seat-frame comprising the lower bar secured thereto, the upright tubes pivoted thereto, the upper ends of which are curved rearwardly and inwardly, telescop-

ing with each other, the set-screw and the toggle-joint brace-bars, substantially as described.

3. In a bicycle, the combination with the oscillating shaft and means connected therewith for turning the steering-bar, and the seat secured to said shaft, of the oscillating knockdown seat-frame comprising the lower bar secured to said shaft, the upright tubes pivoted thereto and having their upper ends curved rearwardly and inwardly, and one of said tubes extended downwardly below the seat and having its end bent outwardly, substantially as described.

607,501. CUPOLA. THEODORE P. BYRAM, Detroit, Mich. Filed May 10, 1897. Serial No. 635,854. (No model.)



Claim.—1. In combination with a cupola, a blast-pipe having a vertical portion suspended therein, suspension-rods engaging suitable supports near the top of the vertical pipe, and suitable suspension devices near the bottom thereof and located within the blast-pipe, substantially as described.

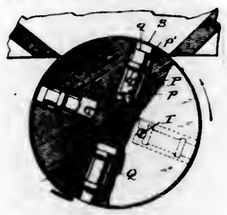
2. In combination with a cupola, a blast-pipe made in sections and suspended therein, one of said sections being provided with twyer-openings the section above the twyer-openings being provided with a collar adapted to support an inclosing casing of fire-brick, the section below the twyer-openings being independently suspended by a rod extending up inside the upper sections and engaging a suitable sustaining device near the top of the upper section, and the section below the twyer-openings being provided with means adapted to support a casing of fire-brick, substantially as described.

3. In combination with a cupola, a vertical blast-pipe suspended therein, suspension-rods engaging suitable supports near the top of the vertical pipe and suitable suspension devices near the bottom thereof and located within the blast-pipe, and means whereby access may be had to the suspension device, substantially as described.

4. In combination with a cupola, a blast-pipe suspended therein, provided with an air-inlet pipe at the top and with air-outlet openings between the inlet and the cupola-bottom, and having an open bottom against which the cupola-bottom closes, substantially as described.

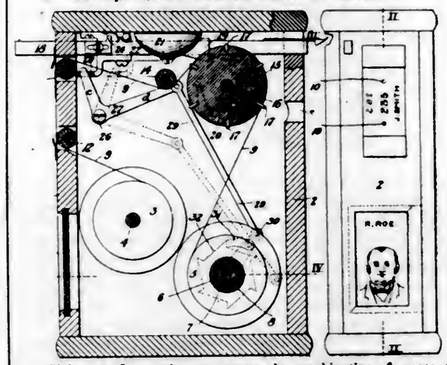
5. In combination with a cupola, a suspended blast-pipe provided with twyer-openings and made in sections, one of said sections being above the twyer-openings and being provided with means whereby it may be cooled by flowing water, another of said sections being below the twyers and being removable, substantially as described.

607,502. COTTON-SEED PLANTER. JAMES P. CALDWELL, Winnsborough, S. C. Filed May 6, 1898. Serial No. 679,919. (No model.)



Claim.—The combination of a hopper, the driving-wheel, the cultivating-blades, the seed-planting drum, driving connections between the seed-planting drum and the driving-wheel, a series of shouldered hollow cylinders or sleeves arranged in radial recesses in the seed-planting drum, a series of independently-movable plungers, one for each sleeve, arranged to slide in said sleeves, and each of which has a cylindrical portion at its outer end smaller in diameter than the portion of the sleeve in which it works, and adapted to work back and forth therein past the shoulder and which also has a reduced portion in the inner end of the sleeve provided with one or more collars and a set-screw for fixing the plunger so as to close the sleeve if desired.

607,503. VOTING APPARATUS. JAMES R. COREY, Braddock, Pa. Filed Apr. 17, 1897. Serial No. 632,566. (No model.)



Claim.—1. In a voting apparatus, the combination of a case, a magazine-roller mounted therein, a feeding-roller provided with centrally-alining pins, a winding-roller, a continuous perforated ballot mounted on such rollers and passing through openings in the case to expose a section of the strip, a push-rod provided with a pawl adapted to engage the ratchet-wheel of the feeding-roller and a bell-crank lever having one arm in engagement with a bracket secured to the push-rod and the other pivoted to a lever having a pawl designed to engage the ratchet-wheel of the winding-wheel, substantially as set forth.

2. In a voting apparatus, the combination of a case, a magazine-roller mounted therein, a feeding-roller provided with centrally-alining pins, a winding-roller, a continuous perforated ballot mounted on such rollers and passing through openings in the case to expose a section of the strip, a push-rod provided with a pawl adapted to engage the ratchet-wheel of the feeding-roller, and a bell mounted in proximity to the push-rod and a knocker pivoted to the case of the apparatus having an arm adapted to be engaged by a projection secured to the push rod, substantially as set forth.

607,504. SOLDER. DAVID CROWTHER, Huddersfield, England. Filed Dec. 20, 1897. Serial No. 662,559. (No model.)



Claim.—1. A collapsible strip or bar formed of solder and provided with means for holding in position a spring which presses it upon the object to which it is to be united, substantially as set forth.

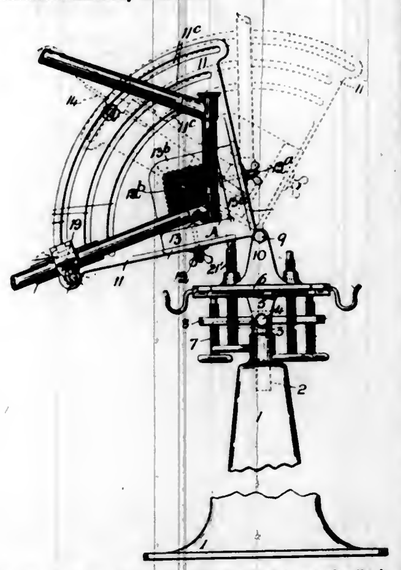
2. A collapsible circlet formed of solder and provided with an external groove for holding in position a spring which presses it upon the object to which it is to be united, substantially as set forth.

3. A collapsible hollow circlet formed of solder and containing flux, said circlet being also provided with an external groove for holding a spring in position, substantially as set forth.

607,505. MACHINE EMPLOYED IN BRAZING. DAVID CROWTHER, Huddersfield, England. Filed Dec. 20, 1897. Serial No. 662,560. (No model.)

Claim.—1. In a brazing-machine, a table centered longitudinally on a cross-head adapted to turn on a pillar or pedestal, screws for supporting said table a frame pivoted in brackets at one end of said table and provided near the fulcrum with side walls arranged at right angles to each other, fire-bricks secured to each of said side walls and to the face of the frame, segmental slots in said frame a clamp

secured to the frame by a screw extending through one of the slots whereby the clamp is adjustable to any position within the limits of said slots, a handle on said screw for turning the same to secure, loosen, and adjust the position of the clamp, and to move the frame on its center, and screws for supporting the frame in any position to which it is movable substantially as set forth.



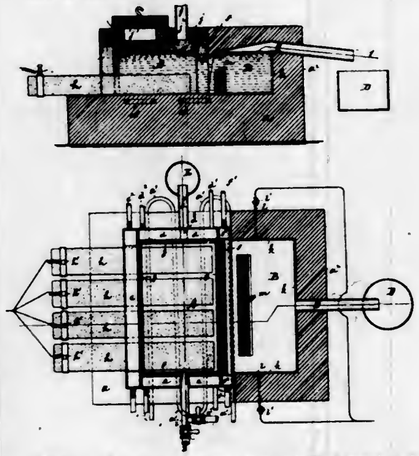
2. In a brazing-machine, a table centered longitudinally in a revoluble cross-head screws for supporting said table, an arm hinged on the under side of the said table near one end thereof and movable about its center in a horizontal plane, a segmental slot in said arm, a clamp secured to the arm by a screw passed through the slot and by which the clamp is adjustable within the limits of said slot, a hearth on the same end of said table comprising a set of fire-bricks forming a base, and three sides of a rectangle, a central opening in the base of the hearth an opening through the table coinciding therewith guides supported under said table in line with the opening therein, one of said guides being adapted to be forced upward against a confined spiral spring, and having a set-screw thereto by which to secure any part or fitting extending through same, the said spiral spring, and a disk or cover to close the opening through the table and base of the hearth substantially as set forth.

3. In a brazing-machine, the combination of a revoluble cross-head, a table hinged longitudinally thereto, screws for supporting said table in a horizontal or angular position, a pivoted or hinged frame on said table provided with a fire-brick hearth, and with segmental slots, a clamp adjustable on said frame within the limits of the slots, means for securing said clamp to the frame, screws for supporting the frame in any position to which it is movable, a hinged arm at the opposite end of the table movable in a horizontal frame from side to side of the table, and provided with a segmental slot, a clamp adjustable on said arm within the limits of the slot and means for securing it to the arm, a hearth on the same end of the table comprising a set of fire-bricks forming a base and three sides of a rectangle, openings in the base of the hearth and the table to receive fittings projecting vertically below the joint to be brazed, guides under the table to hold said projecting fittings vertically one of said guides being movable upward against a spiral spring and provided with a set screw to secure the fitting therein, and a disk or cover to close the opening through the table, substantially as set forth.

4. In a brazing-machine, the combination with a tilting table, means for supporting the same in a horizontal or angular position, and a rotatable cross-head on which said table is hinged, of a fire-brick hearth comprising three bricks arranged at right angles to each other, in the corner or angle of which the joint to be brazed can be placed, a pivoted frame carrying said hearth for adjusting various fittings to be brazed to a vertical position, a clamp adjustably secured to said frame in which to secure the fittings, means for supporting the pivoted frame in any position to which it is moved to bring the fitting to the vertical, a second fire-brick hearth on the opposite end of said tilting table comprising a base and three sides of a rectangle, a hinged arm movable in a horizontal plane to any extent within the compass of said hearth, a clamp secured to said arm and adjustable vertically thereon and in which the fittings can be secured in position to hold the joint to be brazed in a vertical position on the hearth, openings linable with each other in the base of the hearth and in the table, means under said table for holding any part of a fitting depending vertically below the joint to be brazed and means for holding said fitting firmly against the hearth substantially as set forth.

5. In a brazing-machine, the combination with a tilting revoluble table 6 pivoted frame 11 and means for supporting the same in the various positions to which they are adjustable of a hearth A on said frame, a hearth B on one end of the table, fire-bricks comprising said hearths made with separate layers or strips of open wirework embedded therein parallel with the faces of said bricks, a hinged arm 36 movable in a horizontal plane and means for securing fittings in position on said hearths, substantially as set forth.

607,506. APPARATUS FOR PRODUCING ALKALI METALS FROM THEIR CHLORIDS. PAUL DANCKWARDT, New York, N. Y., assignor of two-thirds to Henry Harms, same place. Filed Jan. 4, 1898. Serial No. 665,559. (No model.)



Claim.—1. In an apparatus for producing alkali metals, a double-walled jacket forming a positive compartment, means for passing a current of water through the jacket, anodes and independent means for generating heat within the compartment, a negative compartment, and a double-walled partition between the compartments and raised above the foundation of the apparatus to form a bottom passage between the compartments, substantially as specified.

2. In an apparatus for producing alkali metals, a double-walled jacket forming a positive compartment, means for passing a current of water through the jacket, anodes within such compartment, and an iron box open at one side and forming a negative compartment, said box communicating at its open side with the positive compartment, substantially as specified.

3. An apparatus for producing alkali metals composed of a double-walled jacket forming a positive compartment, means for passing a current of water through the jacket, anodes and independent means for generating heat within such compartment, an iron box forming a negative compartment that communicates with the positive compartment and has a top outlet, and electric connections for the anodes and iron box, substantially as specified.

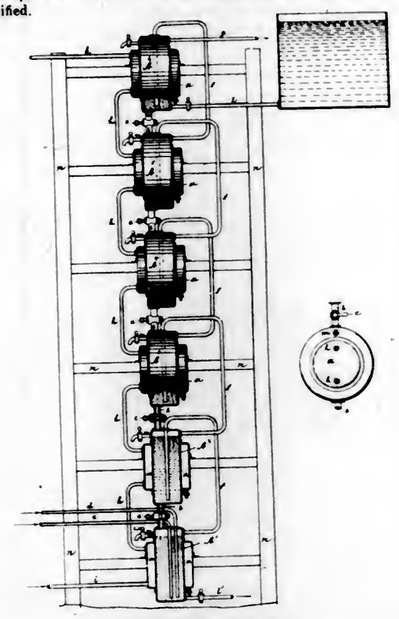
607,507. PROCESS OF AND APPARATUS FOR MAKING FERROCYANIDS. PAUL DANCKWARDT, New York, N. Y., assignor of two-thirds to Henry Harms, same place. Filed Jan. 4, 1898. Serial No. 665,560. (No model.)

Claim.—1. The process of producing alkali ferrocyanid which consists in mixing alkali sulfocyanid with lime, charcoal and a carbid, heating the mass, and then leaching it with water and separating the ferrocyanid, substantially as specified.

2. The process of producing alkali ferrocyanid which consists in mixing alkali sulfocyanid with sodium carbonate, lime, charcoal, carbid of lime and carbid of iron, heating the mass, and then leaching it with water and separating the ferrocyanid, substantially as specified.

3. An apparatus for producing sulfocyanid in the manufacture

of alkali ferrocyanid which consists of a battery of connected pots, heating-jackets surrounding the same, gas-inlet pipes entering the lowermost pot, a liquid-charging pipe entering the uppermost pot, a series of gas-pipes connecting the tops of the pots with the bottoms of the pots next above, and valves between the pots, substantially as specified.



607,508. ICE-CREEPER. KATE P. DEGGE, St. Louis, Mo. Filed June 9, 1897. Serial No. 640,085. (No model.)



Claim.—An ice-creeper consisting of a body-plate with attaching-flanges for interlocking with the edges of the sole or heel, spurs or points on its under face, and outwardly and upwardly projecting spring-arms to engage with their free ends or points the lower face of the sole or heel, press the body-plate away from the sole, and thereby hold the attaching-flanges in engagement with the sole, substantially as described.

607,509. AUTOMATIC STEAM-BOILER FEEDER. RICHARD DOWNS and AUGUSTUS M. JOHNSTON, Lima, Ohio. Filed Dec. 14, 1897. Serial No. 661,843. (No model.)

Claim.—1. The combination with a steam-boiler and connecting-pipes of an automatically-opened steam-valve, an injector having an internal whirling device operated by the admission of steam, a water-supply pipe in communication with said injector, and a check-valve opening into the boiler.

2. A boiler-feeding injector having an internal hollow screw and a rotary fan within the same for giving the steam and water a whirling or cyclonic movement.

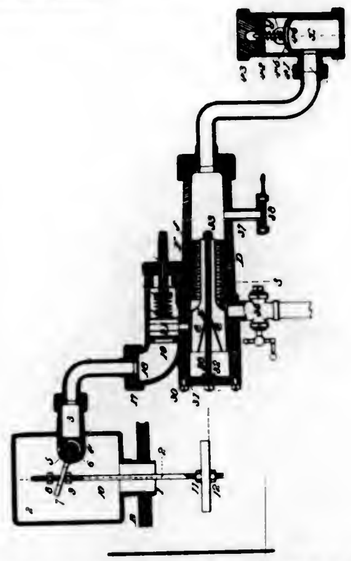
3. A boiler-feeding injector having a tapering hollow body and an internal hollow screw, correspondingly tapered externally, and removable through the larger end of said body.

4. In combination with a boiler-feeding injector, a check-valve in communication therewith having a removable seat for its main valve, and a supplemental valve within the boiler preventing the escape of water or steam therethrough when said seat is removed

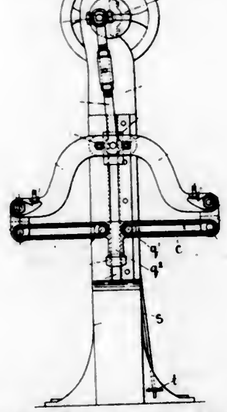
5. A check-valve having screw-caps at top and bottom, provided respectively with a main valve and its seat, and having a boiler connection provided with a supplemental valve to prevent the escape of water or steam when either of said caps is removed.

6. A normally-closed boiler-feeding injector having a horizontal hollow body provided internally with a whirling device, and having a removable cap giving access to its interior.

7. A boiler-feeding injector having a horizontal body containing a whirling device and provided with an overflow, substantially as hereinbefore specified.



607,510. METAL-BEATER HAMMER. JOHANN E. HERMANN, New York, N. Y., assignor to Grempler & Hermann, same place. Filed July 17, 1897. Serial No. 644,927. (No model.)

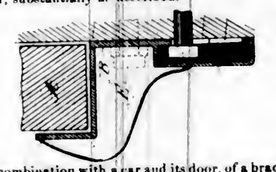


Claim.—1. A harness for a power-hammer, comprising a cross-head, a bow secured to the cross-head, arms pivoted to the ends of the bow, flexible links connecting the hammer to the arms, tension-springs set on the pivots and acting upon the arms, and means for adjusting the tension on the springs.

2. The combination with the driving mechanism of a power-hammer, of a cross-head mounted in guideways, secured to the standard and pivotally connected to the connecting-rod; a harness comprising a bow, rigidly secured to the cross-head, arms pivoted to the ends of the bow, springs set on the pivots and drawing the arms apart, a hammer integral with a cross-head sliding in guideways secured to the standard and of means for flexibly connecting the hammer to the arms.

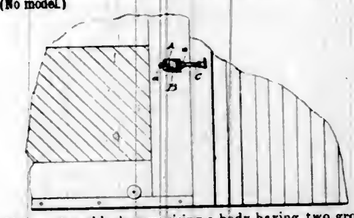
607,511. CAR-DOOR BRACKET. EDWARD A. HILL, Chicago, Ill., assignor of two-thirds to James I. Mallory and Edgar A. Hill, same place. Filed Jan. 19, 1896. Serial No. 535,514. (No model.)

Claim.—1. The combination with a car and its door, of an anchor, and a bracket engaged by the door provided with a hood for concealing said anchor, and having an opening in its rear wall, behind the hood, of a size sufficient to admit the head of the anchor, and a slot extending from said opening, of less width than the head of the anchor, substantially as described.



2. The combination with a car and its door, of a bracket engaged by the door, a headed bolt secured to the car-body, said bracket being provided with an opening in its rear wall of a size sufficient to freely admit the head of a bolt, and having a slot extending from said opening to receive the shank or body of the bolt, and a hood on the bracket covering said opening and slot, substantially as described.

607,512. SEAL-LOCK. OTTO B. KIRKPATRICK and GEORGE L. BANKS, Colorado Springs, Colo. Filed June 2, 1897. Serial No. 639,191. (No model.)



Claim.—A seal-lock comprising a body having two grooves arranged therein at right angles to each other and in different planes, one groove being adapted for the reception of a hasp or the like, and the other being adapted for the reception of a destructible body, the destructible body being provided on its under face with a groove corresponding to the first groove in the main body and with a spring projection, and a hasp having a hook at its end and adapted to enter the groove in the main body and also that in the destructible portion, and to be engaged by the spring projection, substantially as described.

607,513. COMBINED FILTER AND COOLER. EDWARD M. KNIGHT, New York, N. Y. Filed May 3, 1897. Serial No. 634,903. (No model.)



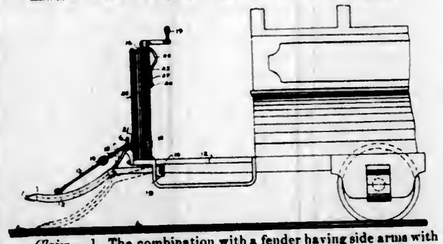
Claim.—1. A combined filter and cooler consisting of an exterior vessel of non-conducting material and an inner vessel of conducting material separated therefrom to form an intervening filtered-water space, in combination with a filtering-diaphragm comprising a foraminous disk having a covering of fibrous material and a peripheral band or flange set on edge and provided with a groove and annular series of perforations, and a cord or rope in said groove, said fibrous covering having its edge carried over the exterior of the band or flange and cord or rope and returned upon the interior thereof, and secured by stitching through said perforations.

2. A combined filter and cooler consisting of an inner and an outer vessel separated from each other to provide an intervening filtered-water space, a plurality of filtering-diaphragms in the inner vessel and each consisting of a foraminous, fibrous-covered disk having a peripheral band or flange set on edge and provided with a groove, a cord or rope in said groove and a mass of filtering material between the diaphragms and consisting of the fibers of an inorganic and an organic substance intimately mingled and compacted, said covering of the diaphragms having its edge carried over the exterior of the band or flange and the cord or rope and returned upon the interior of the band and secured.

3. In a filter, a foraminous filter disk or plate having a surrounding flange or band, said flange or band extending vertically above the disk or plate and having a circumferential groove, a sheet of filtering material over said disk and having its free edge turned up over said band or flange and secured, and a rope or cord within the groove of the flange or band and between the groove and the inner side of the sheet, adapted to maintain a tight joint with the walls of the vessel.

4. In a filter, a foraminious filter disk or plate having a surrounding flange or band provided with a groove and a series of holes, a sheet of filtering material passed over the disk or plate and flange or band, and having its free edges turned inward and secured to said holes, and a cord or rope within the groove of the band or flange interior of the filtering material and adapted to maintain a tight joint with the walls of the vessel.

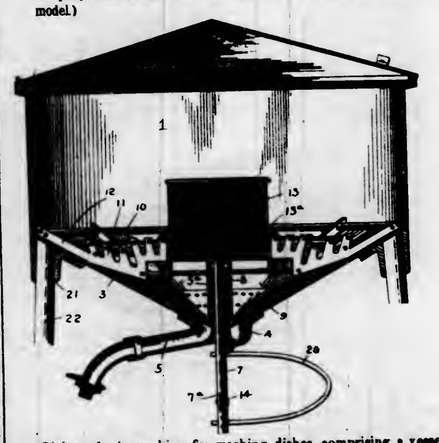
607,514. CAR-FENDER. ANDREW L. LAWTON and DAVID L. MACAFFREE, Colorado Springs, Colo.; said Macaffree assignor to said Lawton. Filed Mar. 14, 1898. Serial No. 673,734. (No model.)



Claim.—1. The combination with a fender having side arms with slots in or near their extremities adapted to be hooked to suitable pins which are permanently secured in duplicate at each end of the car, of a revoluble shaft and a cable or chain for lifting the fender, a barrel for inclosing said shaft, notches in said shaft, and a spring-latch secured to the barrel and adapted to engage the notches in the shaft substantially as specified.

2. The combination with a fender having side arms with slots in or near their extremities adapted to be hooked to suitable pins which are permanently secured in duplicate at each end of the car and with curved parallel slats extending above the car-bumper, of a revoluble shaft and a cable or chain for lifting the fender, a barrel for inclosing said shaft, notches in said shaft and a spring-latch secured to the barrel and adapted to engage the notches in the shaft substantially as specified.

607,515. DISH-CLEANER. WILLIAM E. LEONARD and CHARLES O. HESCOX, Tacoma, Wash., assignors to the Washington Dishwasher Company, same place. Filed Mar. 29, 1897. Serial No. 629,692. (No model.)



Claim.—1. A machine for washing dishes, comprising a vessel having a conical bottom with a catch-basin attached to the lower central portion thereof having an opening therethrough, a tray arranged within said vessel, adapted to hold the dishes, a cage arranged upon said tray to receive cutlery and internally divided by an upwardly-projecting portion, a perforate inverted conical dasher below the said tray and cage, conforming to the shape of the bottom, and a rod extending upwardly through the catch-basin and bottom of the vessel and the dasher for operating the latter, substantially as described.

2. A machine for washing dishes, comprising a vessel, a tray ar-

ranged within said vessel, composed of a series of circular wires supported in fingers arranged upon a series of radial arms and adapted to hold said dishes, a compartment-cage arranged upon said tray to receive cutlery, and a perforated dasher arranged below said cage, and means to operate said dasher to force the water on the dishes and cutlery, substantially as described.

3. A machine for washing dishes, comprising a vessel adapted to contain dishes, having a conical bottom, a dish supporting tray mounted in the said vessel and resting against the bottom, a cutlery-cage supported by the center of the said dish-supporting tray, and having an opening in the lower portion thereof, an inverted conical dasher having perforations therein and also provided with an upwardly-extending sleeve, and a vertically-moving rod extending through the bottom of the said vessel and attached to the said sleeve, the said rod and sleeve being movable upwardly through the opening in the cage, substantially as described.

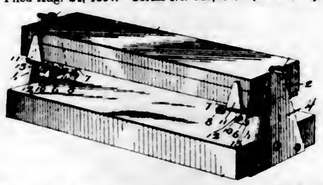
4. A machine for washing dishes, comprising a vessel having an inverted conical bottom provided with an opening, a catch-basin secured to said bottom below said opening, having an outlet-pipe and faucet and a central stem, and a dasher comprising a sleeve having one end formed into an inverted conical cup, and a threaded opening at its other end to receive the threaded end of a rod, and means of engaging said rod to operate the dasher to force the water among the dishes, substantially as described.

5. A machine for washing dishes, comprising a vessel provided with a conical bottom and a hinged cover, a tray arranged within said vessel, a dasher having tapering perforations, one end of a rod attached thereto, the other end being provided with a spring, a lever pivotally connected to said rod and suspended from a supporting-arm connected to the vessel, the other end of said lever being pivoted to a bar, and a cam adapted to bear upon and move said bar, substantially as and for the purposes described.

6. A machine for washing dishes, comprising a vessel provided with a conical bottom and a hinged cover, a tray arranged within said vessel, a dasher having tapering perforations, one end of a rod attached thereto, the other end being provided with a spring, a lever pivotally connected to said rod and suspended from a supporting-arm connected to the vessel, the other end of said lever being pivoted to a bar arranged in guideways secured to the vessel, the upper end of said bar being provided with an antifriction-block, and a cam supported on a shaft arranged in a bearing above said bar, the other end of the shaft being provided with a crank, substantially as and for the purposes described.

7. A machine for washing dishes comprising a vessel adapted to contain said dishes, and having a conical bottom, a tray mounted in the said vessel and resting against the bottom, the center of the said tray being open and clear, a cage mounted over the central open clear portion of the tray, an inverted conical dasher having an upwardly-projecting sleeve, and a rod extending upwardly through the bottom of the vessel and attached to the said sleeve of the dasher, said sleeve and attached rod being movable upwardly through the lower portion of the cage, substantially as described.

607,516. RAZOR-HONE HOLDER. WILLIAM J. LIBBY, St. Louis, Mo. Filed Aug. 21, 1897. Serial No. 649,063. (No model.)

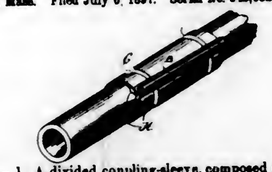


Claim.—1. In a razor-hone holder, a suitable saddle having terminal upturned arms, pins carried at the free or upper ends of said arms about which the saddle can swing, and means forming a part of or carried by the saddle for adjusting the hone carried by the saddle to bring the upper surface of the hone in the plane of the line of oscillation of the saddle, substantially as set forth.

2. In a razor-hone holder, a suitable saddle adapted to support a hone with the center of gravity of the hone to one side of and below the axis of oscillation of the saddle, and with the grinding-surface of the hone substantially in the plane of the axis of oscillation, substantially as set forth.

3. A razor-hone holder comprising a saddle having terminal upturned arms, pins carried by said arms about which the saddle can swing, grooved guide-arms carried by the saddle on each side of the center thereof, inner extensions leading from the side of each arm, adjusting screws carried by each of said extensions for supporting in proper elevation the hone resting on said screws, clamping-jaws adapted to embrace the sides of the hone resting in the saddle, the horizontal members of the jaws being guided and supported by the grooved guide arms, lugs depending from the jaws, a controlling-rod having right and left hand screw-threaded ends passing through the lugs, a polygonal collar forming a part of each rod for manipulating the same, the hone being adapted to rest in the saddle with its upper surface substantially in the plane of the axis of oscillation of the saddle, substantially as set forth.

607,517. PIPE-COUPLING AND PATCH. GEORGE W. MERRYE, Boston, Mass. Filed July 6, 1897. Serial No. 643,632. (No model.)

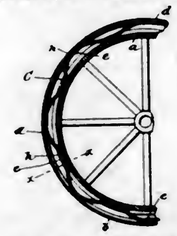


Claim.—1. A divided coupling-sleeve, composed of sheet metal, each member having one end narrower than the other, and having clenching flanges or jaws on the one part turned outwardly and upwardly, and on the other turned outwardly, upwardly and downwardly, adapted to unite and slide together substantially as and for the purpose set forth.

2. A divided coupling-sleeve, composed of sheet metal, each member having one end narrower than the other, and having clenching flanges or jaws on the one part turned outwardly and upwardly, and on the other turned outwardly, upwardly and downwardly, adapted to unite and slide together, and having a T-branch attachment, in one member of the sleeve, with distended mouth, bracing the joint, substantially as and for the purpose set forth.

3. A T-branch coupling of two pipes, end to side, by means of a hollow tap-screw driven into one end of the pipe, and exposed to receive the side wall of the other, and an inclosing sleeve, having a T-branch attachment in one member of the sleeve, with distended mouth bracing the joint, substantially as and for the purpose set forth.

607,518. WHEEL FOR VEHICLES. ALFRED MEYER, Zwickau, Germany. Filed June 26, 1897. Serial No. 642,517. (No model.)



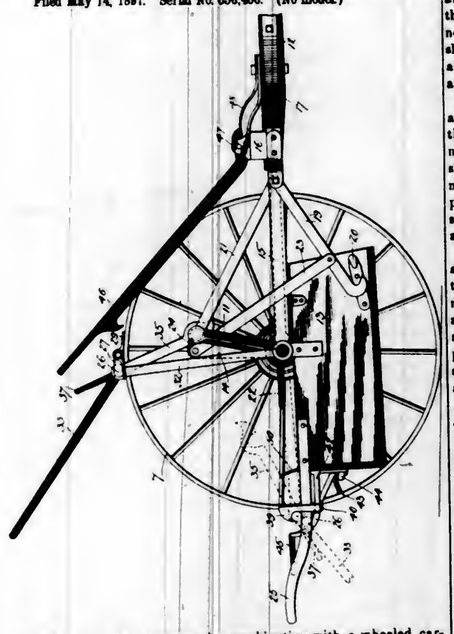
Claim.—The herein-described vehicle-wheel consisting essentially of the rim *b* having the outwardly-directed marginal flanges, the tire *a* corresponding in width to and surrounding the rim and having the inwardly-directed marginal flanges, the annular dust-excluding plates *f* connected to opposite sides of the rim and resting at opposite sides of the tire, the undulatory spring-metal ring interposed between the rim and the tire and impinging against the rim and tire alternately and having longitudinal slots in their portions contiguous to the rim and tire, and rivets *e* extending through said slots and connecting the ring to the rim and tire, substantially as specified.

607,519. TRANSPLANTER IMPLEMENT. ORVILLE I. MILLAR, Augusta, Mich. Filed July 27, 1897. Serial No. 646,129. (No model.)



Claim.—In a transplanter implement the combination of cylinder 1 open at one side, constructed of sheet metal, an elastic ring around the top of the same; a link 4 pivotally connected to the open side of the cylinder at the top so that the tension of the ring tends to open the bottom of the cylinder; reverse flanges 3, on the open sides of the cylinder and a slide 5 to crowd over the flanges and draw the bottom of the transplanter implement together so that when the implement is in use and the plant has been moved and the slide is drawn up the transplanter releases the load of the earth and the plant without disturbing the same as specified.

607,520. WHEELED SCRAPER. THOMAS R. MCKNIGHT, Aurora, Ill., assignor to the Western Wheeled Scraper Company, same place. Filed May 14, 1897. Serial No. 636,466. (No model.)



Claim.—1. In a scraper, the combination with a wheeled carriage, an arched axle, of a scraper-pan suspended from said axle, brake mechanism, and means for connecting the brake mechanism with and disconnecting it from said arched axle, substantially as and for the purpose specified.

2. In a scraper, the combination with a wheeled carriage, and an arched axle, of a scraper-pan suspended from said axle, brake mechanism, and a rigid connecting device for connecting the brake mechanism with and disconnecting it from the said arched axle, substantially as and for the purpose specified.

3. In a scraper, the combination with a wheeled carriage, of a scraper-pan, and brake mechanism for connecting the pan with one of the carriage-wheels for raising said pan to carrying position and also dumping it, substantially as described.

4. In a scraper, the combination with a wheeled carriage, of a scraper-pan, brake mechanism for connecting the pan with one of the carriage-wheels for raising said pan to carrying position, and for connecting said pan when in carrying position to one of the carriage-wheels, whereby the pan may be dumped by the rotation of such wheel, substantially as described.

5. In a scraper, the combination with an arched axle, and wheels, of a scraper-pan suspended from said axle, means adapted to be operated to connect the arched axle with one of the carriage-wheels for rocking the axle and raising the pan to carrying position, and means operated by the draft of the team for rocking the pan independently of the axle for dumping it, substantially as described.

6. In a scraper, the combination with an arched axle, wheels, and a scraper-pan, of devices connecting said pan to the arched portion of said axle, whereby the pan may be raised by rocking said arched axle, brake mechanism for rocking said arched axle by the draft of the team, and means for dumping the pan by the draft of the team, substantially as described.

7. In a scraper, the combination with an arched axle, wheels, and a pan, of devices supporting said pan from the arched portion of the axle, whereby the pan may be raised to carrying position by rocking said arched axle, brake mechanism for rocking said axle by the draft of the team, and brake mechanism for connecting said pan when in carrying position to one of said wheels, whereby the pan may be dumped by the rotation of such wheel, substantially as described.

8. In a scraper, the combination with an arched axle, wheels, and a pan, of devices suspending said pan from the arched portion of the axle, links 31 32 connected to the axle-spindles, a rock-shaft connected to said links, one or more brake-shoes carried by said rock-shaft, a lever whereby said rock-shaft may be rocked, and a rigid connecting device adapted to connect said rock-shaft with the arched portion of said axle, substantially as and for the purpose specified.

9. In a scraper, the combination with an arched axle, wheels, and a pan, of devices suspending said pan from the arched portion of the axle, links 31 32 connected to the axle-spindles, a rock-shaft connected to said links, one or more brake-shoes carried by said rock-shaft, a lever whereby said rock-shaft may be rocked, and a hook 34 adapted to connect said rock-shaft with the arched portion of said axle, substantially as and for the purpose specified.

10. In a scraper, the combination with an arched axle, wheels, and a pan, of devices suspending said pan from the arched portion of the axle, links 31 32 connected to the axle-spindles, a rock-shaft connected to said links, one or more brake-shoes carried by said rock-shaft, a lever whereby said rock-shaft may be rocked, a rigid connecting device adapted to connect said rock-shaft with the arched portion of said axle, and means for connecting the rear end of the scraper-pan to said rock-shaft, substantially as and for the purpose specified.

11. In a scraper, the combination with an arched axle, wheels, and a pan of devices suspending said pan from the arched portion of the axle, links 31 32 connected to the axle-spindles, a rock-shaft connected to said links, one or more brake-shoes carried by said rock-shaft, a lever whereby said rock-shaft may be rocked, a rigid connecting device adapted to connect said rock-shaft with the arched portion of said axle, and a hook at the rear end of the scraper pan, said hook being adapted to engage said rock-shaft, substantially as and for the purpose specified.

12. In a scraper, the combination with an arched axle, wheels, and a pan, of devices suspending said pan from the arched portion of the axle, links 31 32 connected to the axle-spindles, a rock-shaft connected to said links, one or more brake-shoes carried by said rock-shaft, a lever whereby said rock-shaft may be rocked, a rigid connecting device adapted to connect said rock-shaft with the arched portion of said axle, and hooks 22 and 46, substantially as and for the purpose specified.

13. In a scraper, the combination with a wheeled carriage, of a scraper-pan, brake mechanism adapted to be connected with the scraper-pan for raising said pan to carrying position by the movement of the carriage, and for dumping it, and means for throwing said brake mechanism into and out of operative connection with the scraper-pan, substantially as described.

14. In a scraper, the combination with a wheeled carriage, of a scraper-pan, means operated by the draft of the team for raising said pan to carrying position, and brake mechanism for dumping the pan, substantially as described.

15. In a scraper, the combination with an arched axle, wheels, and a scraper-pan, of devices connecting said pan to the arched portion of the axle whereby the pan may be raised by rocking said arched axle, means for rocking said axle by the draft of the team to raise the scraper-pan to carrying position, and means operated by the draft of the team for dumping the pan independently of the arched axle, substantially as described.

16. In a scraper, the combination with an arched axle, wheels, and a scraper-pan, of devices connecting said pan to the arched portion of said axle whereby the pan may be raised to carrying position by rocking said arched axle, brake mechanism for rocking said axle by the draft of the team, said brake mechanism being adapted to operate independently of said axle for dumping the pan, substantially as described.

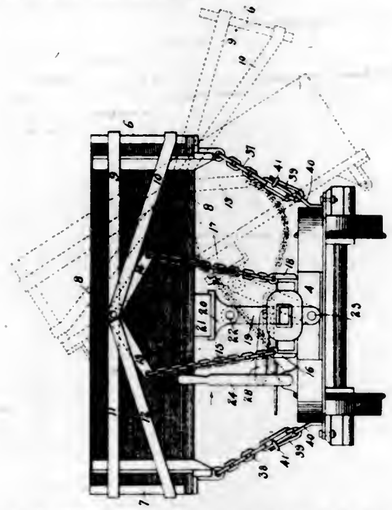
607,521. DUMP-CAR. THOMAS R. MCKNIGHT, Aurora, Ill., assignor to the Western Wheeled Scraper Company, same place. Filed May 14, 1897. Serial No. 636,467. (No model.)

Claim.—1. In a dump-car, the combination with a truck, of a box, a support for the box pivoted centrally upon the truck and pivoted centrally also to the box, and means for moving said box bodily to one side or the other and tilting it upon its support to discharge its contents at either side of the car, substantially as described.

2. In a dump-car, the combination with a truck, of a box, and a laterally-movable support for the box pivoted centrally upon the truck and pivoted centrally also to the box, substantially as described.

3. In a dump-car, the combination with a truck, of a box, a laterally-movable support for said box, pivoted centrally upon the truck and pivoted centrally also to the box, said box being arranged to tilt upon its support to discharge its contents, and a lever adapted to be operated to move said support in either direction, substantially as described.

4. In a dump-car, the combination with a truck, of a box, laterally-movable supports for said box, arranged centrally thereunder near the ends of the box, said box being arranged to tilt upon its supports to discharge its contents, and a lever at one end of the car and connected to one of said supports for moving it laterally to one side or the other, substantially as described.



5. In a dump-car, the combination with a truck, of a box, a rocking support for said box, said support being arranged centrally under the box, and the box being arranged to tilt upon its support in either direction, and locking mechanism adapted to engage said support and lock it in a vertical position, substantially as described.

6. In a dump-car, the combination with a truck, of a box, a laterally-movable support pivoted centrally upon the truck and pivoted centrally also to the box, said box being arranged to tilt upon its support in either direction, and lateral stays for said box, substantially as described.

7. In a dump-car, the combination with a truck, and a box, of rocking standards at the ends of the car, pivoted centrally upon the truck and pivoted centrally also to the box, locking devices at the ends of the car for holding said standards in a vertical position, a lever at one end of the car, and means for operating both said locking devices, to unlock the standards, by the actuation of said lever, substantially as described.

8. In a dump-car, the combination with a truck, and rocking standards mounted thereupon, near the ends thereof, of a box mounted upon said standards, a hand-lever, a rock-shaft to which said lever is connected, and links connecting said rock-shaft with said standards, whereby by rocking said shaft said standards may be rocked, substantially as described.

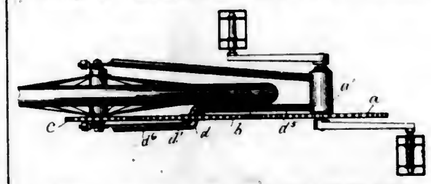
9. In a dump-car, the combination with a truck, and rocking standards mounted thereupon near the ends thereof, of a box mounted upon said standards, a hand-lever, a rock-shaft to which said lever is connected, links connecting said rock-shaft with said standards, whereby by rocking said shaft said standards may be rocked, and lateral stays connecting the sides of the box with the truck, substantially as described.

10. In a dump-car, the combination with a truck, and rocking standards mounted thereupon near the ends thereof, of a box mounted upon said standards, a hand-lever, a rock shaft to which said lever is connected, links connecting said rock-shaft with said standards, whereby by rocking said shaft said standards may be rocked, locking-plates at the ends of the car adapted to engage said standards to hold them in a vertical position, and a hand-lever for operating said locking-plates to release said standards, substantially as described.

11. In a dump-car, the combination with a truck, and rocking standards mounted thereupon near the ends thereof, of a box mounted upon said standards, a hand-lever, a rock shaft to which said lever is connected, links connecting said rock-shaft with said standards, whereby by rocking said shaft said standards may be rocked, locking-plates at the ends of the car adapted to engage said standards to hold them in a vertical position, a hand-lever 33 connected directly to one of said locking-plates, and a connecting-rod 35 connecting said hand-lever with the locking-plate at the other end of the car, substantially as described.

12. In a dump-car, the combination with a truck, and a box, of rocking standards at the ends of the car, said box being pivotally mounted upon said standards, locking devices at the ends of the car for locking said standards in a vertical position, a lever at one end of the car and means for operating both said locking devices, to unlock the standards, by the actuation of said lever, substantially as described.

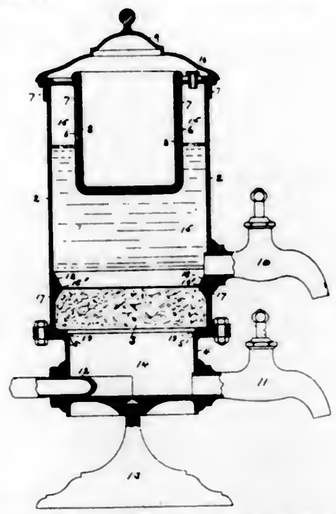
607,522. BICYCLE DRIVING-GEAR. LA VERNE W. NOYES, Chicago, Ill. Filed Aug. 5, 1897. Serial No. 647,170. (No model.)



Claim.—1. In a bicycle, the combination with the gear-wheels on the crank-hanger and the rear axle, of an intermediate gear-wheel meshing therewith, and a brace-rod extending between said crank-hanger and said rear axle and consisting of a front tube on the inside and a rear tube on the outside of the intermediate wheel and a forging having a transverse bearing portion and having the end portions bent respectively forward and rearward and fitting in the hollow ends or bores of said front and rear tubes respectively and secured therein to form a continuous brace-rod possessing lateral and longitudinal rigidity, substantially as described.

2. In a bicycle, the combination with a forging or casting having an intermediate portion of enlarged diameter and end portions of smaller diameter extending respectively in opposite directions and at right angles to said intermediate portion, of a pair of bracing tubes or rods in the ends of which said end portions are brazed or otherwise secured and a wheel having a bore of a diameter to permit the same to be placed upon the intermediate portion of said casting or forging by passing the same over and along the rear bracing-tube, said rear tube being detachably secured to the rear axle and to the upper rear frame-bar; substantially as described.

607,523. AIR-PRESSURE FILTER. JOSEPH H. PIERCE and ELMER A. THAYER, Pueblo, Colo. Filed Oct. 9, 1896. Serial No. 608,402. (No model.)



Claim.—1. The combination of the two closed vessels or chambers secured to each other integrally or otherwise, a porous wall forming a partition between said two vessels; a valve as 16 placed in the top of the upper vessel; means to draw the filtered water from the upper vessel; a supply-pipe adapted to discharge the water into the lower vessel with a rotary motion; means for the discharge of water from the lower vessel of greater capacity than the supply-pipe, preferably twice as much; and means to seal and hold the porous wall in place.

2. In a porous-wall filter, the combination of an upper chamber or vessel provided with inner projections, as 18, near its bottom, with a porous wall provided with beveled edges, as 16; a gasket adapted to impinge against said projections and provided with inner beveled faces to coincide with the beveled edges of said porous wall; a lower vessel provided with flanges adapted to hold said porous wall in place against said gaskets; and means to secure the upper and lower vessels to each other.

607,524. GARBAGE-RECEPTACLE. ADAM REED, St. Joseph, Mo., assignor of one-half to John H. Sparks, same place. Filed Oct. 28, 1897. Serial No. 656,663. (No model.)

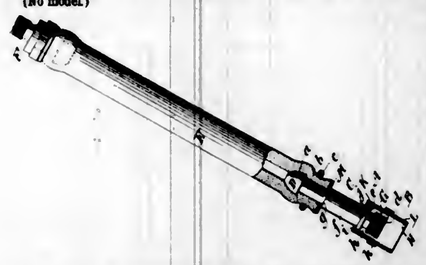


Claim.—1. The combination of a well in the ground, a casing therein having its upper end open, and a removable garbage-receptacle placed in the casing and having a permanently and fixedly connected cover sloped from its center to its edge and provided with an opening and a door for the same and also provided with the portion *c* extended beyond its side and resting entirely over and bearing on the upper end of the casing, and the depending marginal flange *d* surrounding the upper end of the casing, whereby, in the event of garbage being spilled incident to the filling of the receptacle it is prevented from settling upon any portion of or gaining access to the interior of the casing, substantially as specified.

2. The combination of a well in the ground, a casing arranged in the well and having its upper end open and extended slightly above the ground, and a garbage-receptacle removably placed in the well and having the permanently connected and fixed cover pitched downwardly from its center to its outer edge and provided with the portion *c* extended beyond the body of the receptacle and arranged to rest over and bear on the upper end of the casing, and the depending marginal flange *d* adapted to surround the upper end of the casing; said permanently connected and fixed cover being also provided with an opening, guides at opposite sides of said opening, and a slidable door arranged in the guides and having a stop at one end adapted to engage the guides at one end, substantially as specified.

3. The combination of a casing having its upper end open, and a garbage-receptacle removably placed in the casing and having a permanently and fixedly connected cover provided with means for lifting the receptacle and also with an opening and a door for the same; said cover being extended beyond the side of the receptacle so as to rest entirely over and close the upper end of the casing and thereby prevent garbage from settling upon any portion of or gaining access to the casing incident to the filling of the receptacle, substantially as specified.

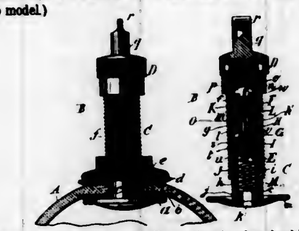
607,525. TIRE-VALVE AND PUMP-COUPLING. GEORGE H. F. SCHRADER, New York, N. Y. Filed May 18, 1895. Serial No. 549,740. (No model.)



Claim.—1. In a coupling, the combination of a body having an external thread G, an annular seating face at front and at rear thereof, a cylindrical part *f*, and a shoulder beyond said rear seating-face and between said thread and said part *f*, and an axially-movable sleeve rotatively swiveled on said part *f*, having an internal screw-thread H of greater diameter than, passing freely over, and surrounding, said thread G, and an inward flange *i* embracing said cylindrical part and engaging said shoulder, substantially as and for the purpose set forth.

2. A coupling consisting of a tubular member having a seating-face *d*, screw G, seating-face *e*, shoulder K, and cylindrical portion *f*, and adapted beyond the latter for attachment to a tube, in combination with a sleeve L having a thread H, a cylindrical interior *h*, and a flange *i* traversed by an aperture *j*, said sleeve fixed to said member with its flange above said shoulder and its screw-thread surrounding the thread G of the latter.

607,526. PNEUMATIC-TIRE OR OTHER VALVE. GEORGE H. F. SCHRADER, New York, N. Y. Filed June 4, 1896. Serial No. 594,263. (No model.)



Claim.—1. In valves, a shell member having double walls of different materials and a valve-chamber within said walls, in combination with a seat member carried by said shell member, having an annular face seating against the inner wall thereof and having a seat within said chamber, and a valve proper in said chamber seating against said seat.

2. In valves, a shell member having a valve-chamber, and a hard outer wall and an inner wall of relatively soft material, surrounding said chamber, in combination with a seat member separably coupled to said shell member, passing within and making a leak-tight joint with said soft wall, and having a valve-seat inwardly of said joint and within said chamber, and a valve proper in said chamber controlling communication through said parts.

3. In valves, a shell member having a valve-chamber, an internal annular seating-face beyond the latter and inwardly of the outer end of the shell and a screw-thread beyond said face, in combination with a seat member screwing into said shell, having a screw-thread engaging the thread thereof, an external annular face passing through and fitting said face thereof with a leak-tight joint, and having inwardly of said joint a valve-seat inwardly of said face, one of said parts having an annular groove opposite said faces an annular ring of relatively soft material in said groove and engaged by the face of the other part, said ring inwardly of the outer end of said shell, outwardly of said seat and exposing the latter, and a valve proper in said chamber engaging said seat.

4. In valves, a shell member, having a valve-chamber, an outer screw-thread, and having inwardly of its outer end, and intermediate of said parts, an internal annular tapering wall O, in combination with a seat member within said shell, having a seat in said chamber, having outwardly thereof and inwardly of the outer end of the shell, an annular tapering peripheral face passing into said chamber, through and making a leak-tight joint with said wall O, and having an outer screw-threaded portion engaging the thread of said shell, and a valve proper closing on said seat.

5. In valves, a shell having an inner wall M and a tapering face O, in combination with a seat member having a tapering face P making a leak-tight joint with said face M, and having a seat at its inner end, and a valve engaging said seat.

6. In valves, a shell C, having inner walls M and O, and screw-thread *o*, in combination with a plug F having a seat H, making a leak-tight joint with the walls of said shell, and having a thread *n* screwing into the thread *o* of the shell, and a valve proper engaging said seat.

7. In valves, a shell having a relatively small inner valve-chamber, an outwardly-flaring wall beyond the latter, and a screw thread of greater diameter than said chamber and beyond said wall, in combination with a plug having a small annular seat within said chamber, an outwardly-flaring wall extending from said seat, and a large screw-threaded portion beyond said wall and screwing into the thread of said shell, and a valve proper in said chamber and removable therefrom through the outer end of said shell.

8. In valves, a screw-threaded tabular shell adapted to be clamped to a tire and having a valve-chamber, and a valve proper therein, in combination with a tubular plug removably fitting within said shell, removable through the outer end thereof, and having a seat therein engaged by said valve proper, and a deflater extending through and carried by said plug for unseating said valve, movable independently

of and disconnected from said valve, and movable relatively to said plug, and removable therewith and inseparable therefrom, and a screw-threaded connection between said shell and plug.

9. In valves, a shell, and a valve proper therein, in combination with a removable tubular plug F, fitting within and removable through the outer end of said shell, and a deflater L, removable with and carried by, and permanently and irremovably connected to, said plug.

10. In valves, a shell, and a valve proper, in combination with a separable plug screwing entirely into and removable through the outer end of the shell, and having a seat opposite the valve proper and a notch *p* at its other end, and there exposed and free to receive a screw-driver, and a deflater carried by said plug and projecting into, and terminating at its outer end within, said notch, whereby said deflater must be operated when the screw-driver is inserted in said notch to unscrew said plug.

11. In tire and like valves, a shell having an inner valve-chamber and an outer screw-threaded socket communicating with said chamber and free to receive the end of a screw-driver, in combination with a tubular plug screwing entirely into said socket from its outer end closing one end of said chamber, having a valve-seat at the inner end of said plug, having a freely-exposed and unobstructed outer end within said socket, having a notch exposed and free to receive a screw-driver at its outer end, and a conduit from said seat to the outer end of said plug, a valve proper in said chamber retained therein by said plug and engaging said seat, removable through said socket when said plug is removed, and a stem extending through said conduit from said valve proper to the outer end of said plug and projecting, when said valve proper is seated, into the plane of said notch and freely movable inwardly with the valve proper, and when so moved permitting entrance of a screw-driver into said notch to adjust said plug, whereby a screw-driver can be applied to said plug without preliminary manipulation, and its application deflates such valve.

12. In tire-valves, a shell member, having an outer end, a screw-threaded socket in said end, a small valve-chamber inwardly of said socket, and an annular internal wall between said socket and chamber, in combination with a tubular seat member passing within the outer end of and removably coupled to said shell, and comprising a screw-threaded plug screwing entirely within said socket, and a valve-seat within said chamber, held therein by said plug, with a leak-tight joint at said annular wall of said shell, and a valve proper in said chamber and engaging said seat.

13. In tire and like valves, a shell member having a screw-threaded socket in its end, and a chamber inwardly of said socket, in combination with a tubular seat member having an external screw-threaded outer end, a valve-seat, and an inlet-duct, said seat member screwing into and passing entirely within the socket of said shell member and making a leak-tight joint therewith, a valve proper engaging said seat, and a deflating-stem for unseating the valve proper, extending through said member and projecting into said socket at the outer side thereof.

14. For tire and other valves, a seat member consisting of a tubular plug having a valve-seat, an inlet-duct leading to said seat, an annular face for engaging the inner face of a tire-tube, an external screw-thread of greater diameter than said face for engaging the internal screw-thread of such tube, and a notch for a screw-driver in its outer end, said member adapted to screw entirely within the socket in the end of a tire-tube.

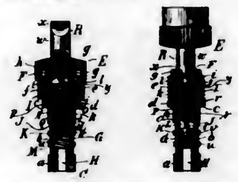
15. For tire and other valves, a seat member consisting of a tubular plug having a valve-seat, an inlet-duct leading to said seat, an annular face for engaging the inner face of a tire-tube, an external screw-thread of greater diameter than said face for engaging the internal screw-thread of such tube, and a notch for a screw-driver in its outer end, said member adapted to screw entirely within the socket in the end of a tire-tube, and a deflating-stem for a valve proper carried by said member.

16. In valves, a shell having an inner valve-chamber and an outer screw-threaded socket, in combination with a removable plug screwing into said shell from its outer end and having a seat in said chamber, and an inlet-conduit leading to said seat, and a valve proper in said chamber having a stem passing through said plug and permanently and irremovably coupled thereto.

17. In valves, a shell having a valve-chamber and a screw-thread at its outer end, in combination with a plug passing into said shell from its outer end, having a valve-seat in said chamber and an outer screw-thread screwing on that of the shell, a valve proper in said chamber, having a rigid stem traversing said plug and permanently and irremovably connected thereto.

607,527. TIRE OR OTHER VALVE. GEORGE H. F. SCHRADER, New York, N. Y. Filed Sept. 23, 1896. Serial No. 607,167. (No model.)

Claim.—1. In valves, a shell member having a relatively small inner valve chamber, a larger outer screw threaded socket, an outer end through which said socket opens, and an annular wall between said chamber and socket, in combination with a tubular plug entering said shell through its outer end having a valve-seat within said chamber, an external screw-thread screwing into said socket, and an annular groove surrounding its exterior between said seat and its screw-thread, a ring of relatively soft material in said groove outwardly of and exposing said seat and compressed between said plug and wall for making a tight joint between them, and a valve proper in said chamber engaging said seat.



2. In valves, a shell member having a relatively small valve-chamber, a relatively large internal screw-threaded socket, and an intermediate tapering wall formed of a single integral piece of metal, in combination with a plug having a large external screw-threaded outer end screwing in said socket from the outer end of said shell, having on its inner end an exposed annular seat within said valve chamber, and a tapering wall between said thread and seat fitting the tapering wall of the shell when the plug is screwed home in said socket and making a tight joint therewith, and a valve proper in said chamber seating directly on said plug.

3. In valves, a shell having a valve-chamber, a screw-threaded socket leading inwardly from its outer end, and an annular seating-face between said chamber and socket, in combination with a tubular plug removably held in said shell, and having an external screw-thread engaging the thread thereof, a valve-seat in said chamber and an annular ring of packing material connected to and removable with the plug and forced by the plug against said face of said shell when the plug is screwed home in the latter, and making a leak-tight joint around said seat, said plug having provisions for receiving a screw-driver at its upper end, and a valve proper in said chamber.

4. In valves, a shell having a valve-chamber, an internal screw-threaded socket, and a seating-face between said chamber and socket, in combination with a removable plug entering within the outer end of said shell having an external screw-thread screwing into said socket, a valve-seat held in said chamber by said plug, an annular ring of packing material surrounding said plug connected to and removable with the plug and forced by it against said face of the shell and making a tight joint around said seat, said plug having an inlet-conduit, and at its outer end adapted to be engaged by a screw-driver, and a valve proper in said chamber engaging said seat.

5. In valves, a shell having a valve-chamber and internal threaded socket, in combination with a tubular plug I having a screw-thread screwing into said socket from the outer end of said shell, having a valve-seat in said chamber, and an annular groove P between said thread and seat, and a ring of packing material independent of said seat in said groove and compressed between the latter and said shell when the plug is screwed home therein, and a valve proper in said chamber engaging said seat and held therein by said plug.

6. In valves, a shell having a valve-chamber and screw-threaded socket, in combination with a tubular plug I having a seat J in said chamber, an outer screw-thread engaging that of said socket, a tapering face *n* between said seat and thread, and a groove P in said face, a packing material in said groove inclosed within said shell, outwardly of and exposing said seat, and compressed by said plug against said shell, and a valve proper held in said chamber by said plug and engaging said seat.

7. In tire and like valves, a shell member having an internal chamber, and a screw-threaded socket in its outer end leading to said chamber, in combination with a tubular plug having a relatively small inner end passing into said chamber, a relatively larger outer end having an external screw-thread and screwing entirely within said socket, an outer annular groove between said ends, a valve-seat, and an inlet-duct leading thereto, a valve proper engaging said seat, and a packing-washer in said groove confined between the latter and the interior of said shell.

8. For tire-valves and the like, a seat member consisting of a tubular plug having a relatively small inner end, a relatively large screw-threaded outer end, an external groove surrounding it between said ends, a valve-seat, and an inlet-duct leading to said seat, said member adapted to pass entirely within the outer end of a valve-shell and make a leak-tight joint therein.

9. For tire and other valves, a seat member consisting of a tubular plug having an inner end, an externally-screw-threaded outer end, an annular groove surrounding it between said ends, a valve-seat, and an inlet-duct leading through it to said seat, and a valve-stem movably coupled to said member, said member and valve-stem adapted to pass entirely within the socket of a valve-shell.

10. For tire and other valves, a seat member consisting of a tubular plug having an inner end, an externally-screw-threaded outer end, an external groove surrounding it between said ends, a valve-seat, an inlet-duct extending through it to said seat, said member adapted to screw entirely within the socket of a valve-shell, and a valve proper engaging said seat and movably coupled to said member.

607,528. TREATMENT OF PEAT OR OTHER LIGNEOUS SUBSTANCES. ROBERT F. STRONG, London, England. Filed June 1, 1897. Serial No. 638,921. (No specimens.) Patented in England June 20, 1896, No. 13,649.

Claim.—1. The herein-described process for the treatment of peat and other ligneous substances for the purpose set forth, which consists in adding to, and thoroughly mixing with, such ligneous substance, when in a disintegrated condition, a caustic alkaline earth, and then adding to, and thoroughly mixing with such composition, pyroligneous acid, substantially as described.

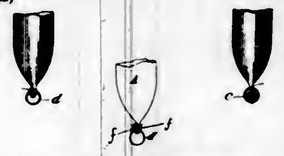
2. The herein-described process for the treatment of peat and other ligneous substances for the purpose set forth, which consists in adding to, and thoroughly mixing with, such ligneous substance, when in a disintegrated condition, a caustic alkaline earth, then adding to, and thoroughly mixing with such composition, pyroligneous acid, and finally adding silicate of soda, substantially as described.

607,529. COMPOSITION OF MATTER FOR AND PROCESS OF MANUFACTURING ARTIFICIAL FUEL. ROBERT F. STRONG, London, England. Filed June 1, 1897. Serial No. 638,922. (No specimens.) Patented in England Nov. 30, 1895, No. 22,915; in France Dec. 18, 1896, No. 249,895; in Belgium Dec. 31, 1896, No. 125,275, and in Spain Jan. 12, 1897, No. 19,942.

Claim.—1. The herein-described composition of matter for artificial fuel or coal briquet consisting of disintegrated coal, dry caustic alkaline earth, and pyroligneous acid, combined in the manner and proportion set forth.

2. The herein-described process for manufacturing artificial fuel or coal briquets, which consists in washing the coal, disintegrating the same, adding dry caustic alkaline earth to the same while moist, then adding heated pyroligneous acid, and finally pressing the mass into briquets.

607,530. COLLAPSIBLE TUBE FOR PLASTIC AND LIQUID MATERIALS. JOHN S. TAYLOR, London, England, assignor to the Winsor & Newton, Limited, same place. Filed June 29, 1897. Serial No. 642,802. (No model.)



Claim.—In combination with a collapsible tube for plastic or liquid materials and having one end flattened and folded upon itself as set forth, a longitudinally-slitted spring-tube clamping at its slitted portion and by its own resilience the folded portion of the tube, and serving to force the contents toward the discharging end of the tube, at the slightest turning or rolling of the clamp upon the tube.

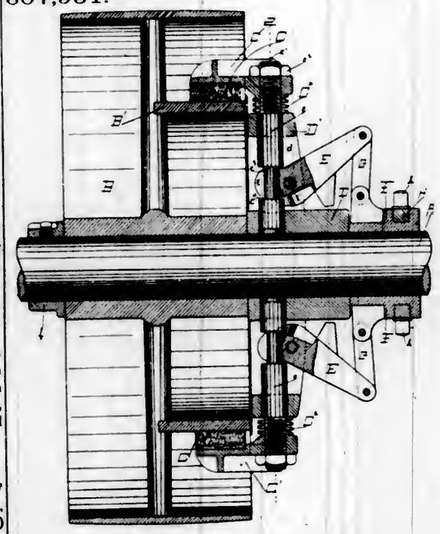
607,531. CLUTCH. WILLARD J. THOMAS, Westfield, N. Y. Filed May 23, 1896. Serial No. 592,761. (No model.)

Claim.—1. In a clutch the combination of a friction-band; a shoe; a slide screwed into and carrying said shoe; a carrier-guide for said slide arranged to allow the turning of said slide to operate the screw in the shoe; and means of actuating said slide in a direction longitudinally of the slide to carry the shoe to and from the friction-band.

2. In a clutch, the combination of a friction-band; a shoe; a slide screwed into and carrying said shoe, said slide being provided with an annular shoulder; a carrier-guide for said slide arranged to allow the turning of said slide to operate the screw in the shoe; and a lever arranged to operate upon said shoulder.

3. In a clutch, the combination of a friction-band B; the shoe and plate CC'; the slide *c* screwed into the shoe and having the shoulder c^4; the carrier-guide D D' provided with the opening *d* exposing the slide *c* at the shoulder; the forked lever E pivoted in the guide, the forks straddling the slide and arranged to operate upon the shoulder c^4; the link G; and sliding collar F.

607,531.



607,532. POWER MECHANISM FOR BICYCLES. CLIFTON T. UNSTED, Fort Scott, Kans. Filed Apr. 12, 1897. Serial No. 631,829. (No model.)



Claim.—In a power mechanism for bicycles, the combination of a crank-shaft provided with flattened portions at its ends, cranks provided with longitudinal slots 11 fitting upon said flattened portions of the shaft; said slots extending clear through the inner ends of the cranks, blocks 17 dovetailed in and closing the inner ends of said slots and provided with shoulders 18 bearing against the corresponding ends of the cranks, circular grooved guideways arranged eccentrically around the shaft, and pedals mounted rotatably on the cranks and provided with rollers traveling in said guideways, substantially as shown and described.

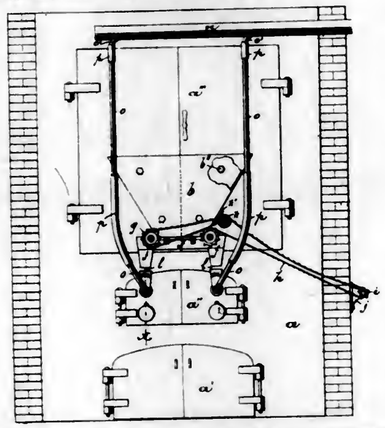
607,533. AUTOMATIC STOKER FOR FURNACES. DAVID R. WARD, Newark, N. J., assignor of two-thirds to Mary Fenimore Elliot, New York, N. Y. Filed Aug. 10, 1897. Serial No. 647,695. (No model.)

Claim.—1. The combination with the hopper and injectors receiving fuel therefrom, of oppositely-movable fuel-conveying chains for forcing the fuel from said hopper toward said injectors, and means for driving said chains, substantially as set forth.

2. The combination with the fuel receptacle or hopper with opposite end openings, sprocket-wheels arranged contiguous to said openings in pairs, a fast and loose wheel comprising a pair, and conveyer-chains connecting the fast wheels of one pair with the loose wheels of the opposite pairs and means for driving the fast wheels in opposite directions, of injectors receiving fuel from said hopper, substantially as set forth.

3. The combination with the fuel receptacle or hopper having opposite end openings, and means for forcing the fuel therefrom, of a trough-like receiver having ducts *f'* injectors arranged contiguous to, but independent of said ducts and receiving the fuel therefrom, and means for conveying compressed air to said injectors, substantially as set forth.

4. In combination with a boiler-furnace, having the tube-doors a''', and furnace-doors a'', of a hopper fastened to one of said doors and free to swing open therewith, a fuel-injector fastened upon another of said doors, independent of said hopper, means for conveying the solid fuel from said hopper to said injector, and means for conveying compressed air, substantially as set forth.



5. The improved fuel-feeding device for furnaces, comprising the hopper having opposite end openings, and a bracket with pairs of fast and loose sprocket-wheels journaled at opposite ends, contiguous to said openings, the shafts carrying said sprocket-wheels carrying also driving sprocket-wheels oppositely-moving conveyer-chains, a driving-chain arranged to operate the last said wheels in opposite directions, means for operating the said belt, a fuel-receiver f, fast to said hopper, separate injectors and flexible tubes or pipes for conducting air or fluid thereto, substantially as set forth.

6. The improved fuel-feeding device for furnaces, comprising the hopper having opposite end openings and a bracket with pairs of fast and loose sprocket-wheels and at their projecting ends with driving sprocket-wheels, oppositely-moving chains conveyers distributing the contents of said hopper, a driving-chain, operating the driving sprocket-wheels oppositely, an idler-wheel and means for driving said driving-chain, and injectors having vertical extensions receiving the gravitating fuel from the hopper, means for applying compressed air to the said gravitating fuel and a deflector for spreading said fuel, substantially as set forth.

7. In combination with the furnace and fuel-supply means, of an injector comprising a horizontal portion m'', and vertical portion m', the said horizontal portion being adapted to receive the air-supply duct and being enlarged beyond the junction with said vertical portion, and a deflector comprising the collar r', and deflecting projection r'', all arranged and adapted to operate, substantially as set forth.

8. The combination with the furnace-door, of an injector for solid or non-liquid or non-gaseous fuel, comprising the shouldered horizontal pipe fitted within said door, a collar for holding said pipe in position and having a deflecting projection extending into the path of the injected fuel, substantially as set forth.

9. The combination with the hollow and lined door having the passage a''', in the lining, of the injector having the horizontal pipe secured in said door opposite the passage in the lining and a nut-like deflector having said injector to the door and having its deflecting projection or spreader terminate approximately flush with the lining, substantially as set forth.

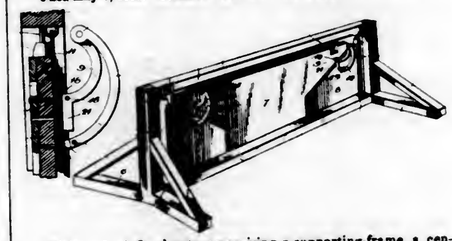
10. The combination with the door made hollow and having a lining substantially as described, of the shouldered horizontal injector, tube or pipe having an enlarged threaded end extending holding said tube to the door and having an oppositely-beveled projection extending into the path of the injected fuel to spread the same, substantially as set forth.

11. The combination with the furnace and its door, of an air-injector fastened to said door and a deflector also fast upon said door and extending into the paths of the injected fuel, the projection of said deflector being oppositely beveled, substantially as set forth.

12. In combination with the hollow and lined furnace-door, an injector for engaging the front of said door, and a nut-like deflector having an oppositely-beveled extension or projection, the nut-like part being fastened upon the injector to hold the same and the beveled extension or projection being disposed in the path of the injected fuel, substantially as set forth.

13. The combination with the shouldered and enlarged horizontal tube having a vertical extension m', of a nut-like deflector r, having the short deflecting projection r'', substantially as set forth.

607,534. FLOOD-GATE. JAMES W. ANDERSON, Chrisman, Ill. Filed May 9, 1898. Serial No. 680,164. (No model.)



Claim.—1. A flood-gate comprising a supporting-frame, a central section hinged at its top to the supporting-frame and arranged to swing vertically, the horizontally-swinging side sections, and connections between the sections for causing the same to open and close in unison, substantially as described.

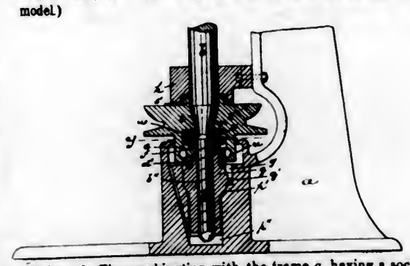
2. A flood-gate comprising a supporting-frame, a central gate-section hinged at its upper edge to the top of the frame and arranged to swing vertically, said section being provided with a tapering upper portion gradually increasing in width to the top of the section, the reversely-tapered horizontally-swinging end sections, the triangular or tapering wings mounted on the lower portion of the central section and arranged to engage the end section, and connections between the sections, substantially as described.

3. A flood-gate comprising a supporting-frame, a vertically-swinging central section, horizontally-swinging end sections, and the outwardly-extending curved bars pivoted together at their outer ends, pivotally connected at their inner ends to the sections, substantially as described.

4. A flood-gate comprising a supporting-frame, a vertically-swinging central section, horizontally-swinging end sections, the outwardly-extending bars pivoted at their outer ends and arranged in pairs, and the pivoted clevises mounted on the sections and receiving and pivoted to the inner ends of the bars, substantially as described.

5. A flood-gate comprising a supporting-frame, a vertically-swinging central section, horizontally-swinging end sections, and the outwardly-extending bars arranged in pairs and pivoted together at their outer ends and pivoted at their inner ends to the sections, the bars of the central section being provided with extensions forming stops arranged to be engaged by the end sections, substantially as described.

607,535. BEARING FOR VERTICAL SHAFTS. OSCAR ANDERSON, Newark, N. J. Filed Sept. 30, 1897. Serial No. 653,546. (No model.)



Claim.—1. The combination with the frame a, having a socket p' and a shaft having a reduced lower end forming a shoulder, of a pulley arranged around said shaft and supporting the same, a sleeve having a globular portion arranged in said socket and at its upper end having annular bearings and rollers interposed between the said annular bearings and the pulley and supporting the latter, substantially as set forth.

2. The combination with the frame a, having a socket and oil-receptacle, of a sleeve arranged in said oil-receptacle and supported in said socket and having bearings for balls w, a pulley seated on said balls and a shaft seated in said pulley and vertically removable therefrom and extending down into said sleeve, and oil-receptacle, substantially as set forth.

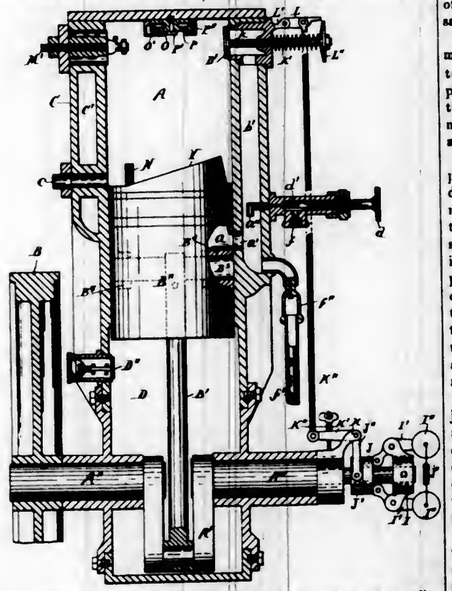
3. The combination with the frame a, having a socket of a sleeve having a globular part fitting said socket and having bearings for balls w, a pulley seated on said balls, the latter being interposed between the pulley and sleeve and a shaft seated in said pulley and extending into said sleeve, substantially as set forth.

4. The combination with the frame having an oil-receptacle, of a sleeve seated in said receptacle and having bearings for balls w, at its upper end, said balls and pulley seated thereon, and a shaft seated on said pulley and having a reduced and spirally-threaded end extending into said sleeve and oil-receptacle, substantially as set forth.

5. The combination with the frame a, having a threaded receptacle arranged adjustably therein, said receptacle having bearings at its upper end for a sleeve, of said sleeve, balls w, arranged on said sleeve, a pulley arranged on said balls and a shaft supported by said pulley and extending into said sleeve and adapted to be raised or lowered by said threaded receptacle, substantially as set forth.

6. The combination with the frame perforated from the bottom and provided with a vertically-adjustable receptacle for oil, of a sleeve bearing on the said receptacle, rollers, a pulley and a reduced and spirally-grooved shaft, extending through said pulley and sleeve into said receptacle, substantially as set forth.

607,536. GAS-ENGINE. MADISON F. BATES, Lansing, Mich. Filed Nov. 9, 1896. Serial No. 611,472. (No model.)



Claim.—1. In a gasolene-engine, the combination with a cylinder, a piston therein, the air-chamber at the lower end of said cylinder, a passage-way extending along the side of the cylinder and communicating through a valve with the upper end thereof, the pipe for conveying gasolene or the explosive mixture projecting into said way, the port through the side of the cylinder communicating with said way, and the port in the piston communicating with the air-chamber in the cylinder and adapted to register at the lower point of its stroke with the port in the cylinder communicating with said passage-way.

2. In a gasolene-engine, the combination with the cylinder, the piston therein having an air-chamber at the lower end thereof, means for supplying air thereto, the way extending longitudinally of the cylinder and communicating through a valve with the upper end thereof, a port through the wall of the cylinder communicating with the lower end of said way, a port in the piston communicating with the air-chamber in the cylinder and adapted to register with the port communicating with said way, the gasolene or gas discharge pipe entering said way above the port in the lower end thereof which communicates with the cylinder, means for supplying gasolene to said discharge-pipe so as to cause a continuous flow of gasolene therefrom, and the pipe communicating with said way below the point of the discharge of gasolene therein, and with the gasolene-tank.

3. In a gasolene-engine, the combination with the cylinder having an air-chamber in the base thereof, the piston in said cylinder, the way extending longitudinally of the cylinder communicating at its upper end with the interior of the cylinder through a valve-controlled opening, the port in the lower end of said way communicating with the cylinder, the port in the piston communicating with said air-space and with the port through the wall of the cylinder which communicates with said way, the gasolene-discharge pipe entering said way above said port, the air-chamber located in said supply-pipe, the pump for forcing gasolene into said air-chamber, and the overflow-pipe connected by a valve-controlled opening with the gasolene supply pipe below said air-chamber therein.

4. In a gasolene-engine, the combination with the cylinder and movable piston therein, means for supplying the explosive mixture at proper intervals to said cylinder, the two rock-shafts extending into the upper end of said cylinder, the electrodes on said shafts adapted to be moved into and out of contact, the arm on one of said shafts, and the pin on the piston adapted to engage said arm, a lever on the outer end of one of said shafts, a spring forming a terminal of an electric circuit standing adjacent to said lever, the springs for returning said rock-shafts to their normal position whereby, as the piston moves upward said mechanism is caused to produce an electric spark to ignite the explosive in the cylinder substantially as set forth.

5. In a gasolene-engine, the combination with the cylinder, the movable piston therein, and means for conveying the explosive mixture to said cylinder, of the automatic igniter consisting of heavy plates having a recess between their inner faces secured to the end of the cylinder and provided with an opening communicating with said inner recess, and a tube projecting from said opening.

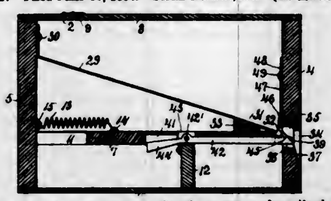
6. In a gasolene-engine, the combination with the cylinder, the movable piston therein, and means for supplying the explosive mixture to said cylinder, of the automatic igniter consisting of heavy plates having a recess between their adjacent faces and secured to the end of the cylinder, an opening through the outer plate communicating with said inner recess, a tube projecting from said opening and a housing embracing said plates.

7. In a gasolene-engine, the combination with the cylinder and piston therein and means for supplying gasolene-vapor to the cylinder, the crank and crank-shaft, the governor consisting of a head mounted on said shaft having angle-arms pivoted therein carrying the balls connected by a restraining-spring, a sliding collar on said shaft engaging said arms and rotated therewith, a second collar bearing against said first collar and loosely mounted on the shaft, the yoke pivoted thereto, the pivoted arm extending from said yoke, the link connected with said arm, and the spring bearing upon the upper face thereof, the valve controlling the ingress-port of the explosive mixture, the disk on the outer end of the stem thereof, the pivoted arm L connected to said link and adapted to move into the path of said disk and lock said valve upon its seat when the engine is running at normal speed.

8. In a gasolene-engine, the combination with the cylinder, the jacket surrounding said cylinder forming a water-space, the pump and connecting-pipe for forcing the current of water through said space, the discharge-pipe leading therefrom, the cooling device located in said pipe having a series of alternately-inclined plates therein over which the water falls, and having perforations through the sides thereof to permit a circulation of air therethrough, and the pipe communicating with the water-supply.

9. In an engine of the character described, the combination with the cylinder, the water-jacket around said cylinder forming a water-space, means for causing a circulation of water through said space, the discharge-pipe leading from the upper end of the water-space and communicating with the perforated case, the series of alternately-inclined plates located in said case between the rows of perforations therein, the upper of said plates having a series of diverging ribs for the purpose set forth.

607,537. MATCH-BOX. JOHN H. BENJAMIN, Smith's Landing, N. Y. Filed June 18, 1897. Serial No. 641,267. (No model.)



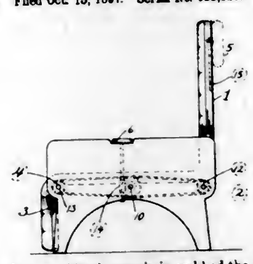
Claim.—1. In an apparatus for the purpose described, the combination of an inclosing case or shell having its interior divided into two compartments by an inclined apron, and having an outlet or discharge opening formed in one side wall adjacent to the lower end of said inclined apron, a reciprocating slide mounted beneath said apron and having at its forward end a match holder or support which extends across the space between the lower end of the inclined apron and the plane of the inner face of the aforesaid apertured side wall

of the case or shell, retaining means arranged in advance of and normally extending above said holder or support to prevent a match escaping therefrom through the discharge-opening, and means for automatically withdrawing said retaining means as the said holder or support is moved, by the slide, forward through the discharge-opening, substantially as set forth.

2. In a match-delivering apparatus, the combination of a shell or casing having a discharge-opening formed in one of its vertical walls and having an interior inclined apron, or support for a series of matches, extending to a point adjacent to said opening, a horizontally-movable slide mounted beneath said apron and provided at its forward end with forwardly-projecting fingers, 40, adapted to receive a match escaping over the lower end of the apron, a lever-arm, 42, pivotally mounted on said slide and having its forward end extending into the discharge-opening in the casing, in advance of the slide, and to points above said fingers, 40, whereby a match falling upon said fingers will be held thereon, and a stop or tripping device arranged in the path of the said lever-arm, 42, and adapted, when the slide has been advanced to cause the fingers, 40, thereof to project through the discharge-opening, to remove the forward end of said lever-arm vertically out of the planes of the match on said fingers, substantially as set forth.

3. In an apparatus for delivering matches, the combination of a box or casing having a discharge-opening formed in one of its vertical sides, an inclined apron arranged within said box and having its lower end terminating adjacent to the said discharge-opening, an adjustable stop-plate, 47, adapted to vary the size of the passage between the lower end of said apron and the discharge-opening, a reciprocating slide mounted beneath said apron and having a match holder or support adapted to project across the passage between the lower end of the apron and the discharge-opening, and a wedge-shaped abutment carried by said slide, and adapted to force the lower end of said apron against the aforesaid adjustable stop to close the passage through which matches pass from the upper surface of said apron to the holder on the slide, as the latter is advanced, substantially as set forth.

607,538. COMBINED CHAIR AND BED. JOHN A. BERGMAN, Chicago, Ill. Filed Oct. 15, 1897. Serial No. 655,323. (No model.)



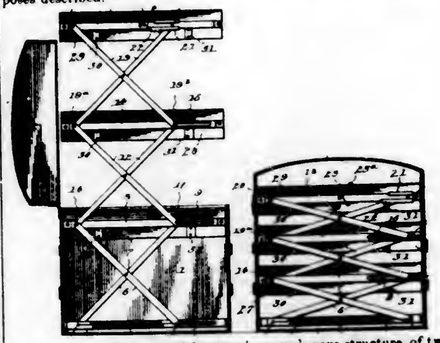
Claim.—In a combined easy chair and bed the combination of a hinged back and front apron, pivotal shafts, on which the apron and back are hinged, a small sprocket-wheel on each of the pivotal shafts, a central shaft 10, a worm-gear on shaft 10 carrying rigidly two larger sprocket-wheels, chain belts connecting the sprocket-wheels on the worm-gear with the smaller sprocket-wheels on the pivotal shafts at the front and back of the chair adapted to move simultaneously, a vertical worm to engage with the worm-gear and adapted to be operated by a lever stationed at the arm of the chair, substantially as described.

607,539. TRUNK, SAMPLE-CASE, &c. PAUL R. CAMP, Marietta, Ga. Filed Dec. 13, 1897. Serial No. 661,633. (No model.)

Claim.—1. The combination with a trunk or analogous structure, of two series of horizontal tray-carrying bars arranged near opposite ends of said trunk, the lazy-tongs support having the lower members thereof attached by fixed and slidable fulcra to said trunk and each pair of links of said lazy-tongs support connected by fixed and slidable fulcra to one of the tray-carrying bars, and trays arranged within the lazy-tongs support and attached to the carrying-bars, whereby the support and horizontal bars may be moved perpendicularly in relation to the trunk and the bars and trays sustained at all times in horizontal positions, substantially as described.

2. The combination with a trunk, or analogous structure, of a series of tray-carrying bars, a lazy-tongs support having its pairs of links connected with said bars by fixed and slidable fulcra, and a series of trays each supported on a pair of said bars to provide for the ready removal of either tray therefrom, substantially as and for the purposes described.

3. The combination with a trunk or analogous structure, of a series of parallel tray-supporting bars, a lazy-tongs support operatively connected with said trunk and said tray-carrying bars, by fixed and slidable fulcra, and a series of trays each slidably supported on a pair of said tray-carrying bars, substantially as and for the purposes described.



4. The combination with a trunk or analogous structure, of two series of horizontal tray-carrying bars arranged near opposite ends of said trunk and each bar provided with a longitudinally-slotted offset portion, the lazy-tongs support each pair of the links of which are connected by fixed and slidable fulcra to one of said bars and the slotted offset portion thereof, and a series of trays each of which is fitted to two of the tray-carrying bars within the offset portion thereof and the slidable fulcra to avoid interference with the latter, substantially as described.

5. The combination with a trunk or analogous structure, of a series of tray-carrying bars, a lazy-tongs support operatively connected with said trunk and said carrying-bars, a series of trays mounted on said bars, and a spring operatively conuected with the lower members of said lazy-tongs support, and tending to normally draw said members toward each other and project the support and the devices carried thereby, substantially as and for the purposes described.

6. The combination with a trunk or analogous structure, of a lazy-tongs support, a series of trays mounted thereon, a spring contacted with said lazy-tongs support and operating to normally project the latter and the trays beyond the trunk, a shiftable detent device movable with a slidable fulcrum of one lazy-tongs member on one carrying-bar, and a catch in the path of said shiftable detent for engaging therewith and restraining the upward tendency of the lazy-tongs support, substantially as and for the purposes described.

7. The combination with a trunk or analogous structure, of a series of tray-carrying bars, a lazy-tongs support connected with said trunk and said carrying-bars, a toothed slide mounted on one of said tray-carrying bars and having one of the upper links of the lazy-tongs support connected therewith, a spring-catch mounted on the upper tray-carrying bar in the path of said toothed slide, and a series of trays carried by said bars, substantially as and for the purposes described.

8. The combination with a trunk or analogous structure, of a series of tray-carrying bars, a fixed bar within the trunk or structure, a lazy-tongs support having its members connected by fixed and slidable fulcra with said fixed and carrying bars, and a series of trays each having keepers which embrace the carrying-bars, whereby the trays are removably and slidably supported on a pair of carrying-bars, substantially as and for the purposes described.

607,540. ELECTRICAL RESISTANCE. HARVEY S. CHASE, Boston, Mass., assignor, by mesne assignments, to the American Electric Heating Corporation, same place. Filed Jan. 11, 1897. Serial No. 618,711. (No model.)



Claim.—1. In an electrical-resistance device, the combination with a base or support of heat-conductive material of a plurality of separated resistance elements in electrical series, each complete in itself, and attachable independently one of another to and in heat-conductive contact with the said base or support, each of the said elements being incased in an envelop of insulating material, the envelop of each element being independent of those of the others.

2. In an electrical-resistance device, the combination with a base or support of heat-conductive material of a plurality of separated resistance elements in electrical series, each complete in itself, and attachable independently one of another to and in heat-conductive contact with the said base or support, the means employed to secure each of said resistance elements mechanically to the base or support being the electrical connection between the said element and a switch, each of said elements being incased in an envelop of insulating material, the envelop of one element being independent of those of the others, and a switch, adapted to operate in connection with the resistance elements, in substantially the manner set forth.

3. In an electrical-resistance device, the combination with a base-plate or support of a plurality of resistance elements, each resistance element consisting of a perforated metallic backing, a loop of resistance material and an enamel coating on the metallic backing which incloses and insulates the loop of electroconductive resistance material, terminal leads in electrical contact with the resistance-loop and emerging from the enamel coating, each resistance element secured to the base-plate or support by a fastening passing through the perforation in the backing, a plurality of contact plates or buttons secured to the base-plate or support and in electrical connection with the terminals of the resistance-pieces aforesaid, and a contact-switch, so located and adapted as to pass over the contact plates or buttons in succession, substantially as described.

4. In an electrical-resistance device, the combination with a flat base or support, of a plurality of separated resistance elements, each element complete in itself, and attachable independently one of another to the said base or support, each of the said elements consisting of a flat button of insulating material enveloping the resistance material, being secured to the base or support in such manner that the surfaces of the base and button substantially coincide.

5. In an electrical-resistance device, the combination with a base-piece or backing of a resistance-loop having its ends secured to terminal leads which are bound together, but capable of easy separation, the said resistance-loop being enveloped in an insulating material secured to the base-piece or backing.

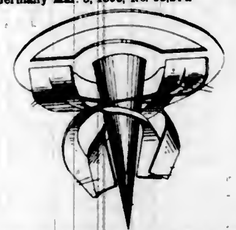
6. In an electrical-resistance device, the combination of a resistance-loop having its ends secured to terminal leads which are bound together but capable of easy separation, and an enamel envelop surrounding and insulating the resistance-loop.

7. In an electrical-resistance device, the combination with a base or support of a plurality of resistance elements, each resistance element consisting of a metallic backing bent to form an angle-plate, a loop of resistance material and an enamel coating on the metallic backing, which incloses and insulates the resistance-loop, and terminal leads in electrical contact with the resistance-loop and emerging from the enamel, each of said resistance elements secured to the base or support in such manner that the enameled portion of the metallic backing stands at an angle with the surface of the base-piece, contact-buttons secured to the base-piece and in electrical connection with the terminal leads of the said resistance-pieces, and a movable contact-switch arranged to pass over said contact-buttons and to make contact therewith, substantially as described.

8. In an electrical-resistance device, a base or support, a plurality of separated resistance elements in electrical series, each complete in itself, the said elements attachable, independently one of another to said base or support, each of said elements consisting of an electroconductive resistance embedded in an enamel envelop on a sheet-metal backing with electroconductive terminals in contact with the said resistance and emerging from the enamel envelop, and provided with means whereby it is secured to the said base or support in heat-conductive contact therewith and in electrical connection with an electroconductive contact point or button.

9. In a rheostat, the combination of a cast-iron support, and several separable steps of resistance so attached to the said support that the resistance material lies in close proximity to the support practically throughout its length, whereby a large portion of the heat energy developed in said steps under operative conditions, will be rapidly transmitted to said cast-iron support, substantially as described.

607,541. HEAT-GENERATING GAS-BURNER. EMANUEL HERZ, Berlin, Germany. Filed Apr. 28, 1896. Serial No. 589,416. (No model.) Patented in Germany Mar. 5, 1896, No. 90,214.



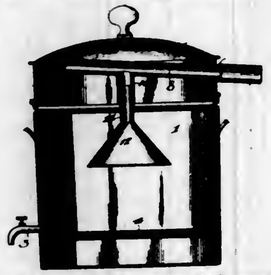
Claim.—1. A mixing apparatus for gas-burners, consisting of stationary spirals arranged concentrically one in the other, and having an ascending direction opposite to each other, substantially as set forth.

2. In gas-burners the combination of a conical mixing-chamber, with a cone centrally fixed in this chamber, and stationary spirals wound concentrically around the cone in a direction opposite to each other, substantially as and for the purpose specified.

3. In a gas-burner the combination of a conical mixing-chaniber, with a cone centrally fixed in the said chamber, and two pairs of stationary spirals arranged concentrically the one in the other, one pair being wound around the cone in a direction opposite to that of the other pair, substantially as and for the purpose set forth.

4. In a gas-burner the combination of a conical mixing-chamber, with a cone centrally fixed in this chamber, stationary spirals wound concentrically to each other around the cone in a direction opposite to each other, and a cylinder forming the head of the conical mixing-chamber, substantially as and for the purpose described.

607,542. COFFEE-POT. JACOB O. INGLE, Thorp Spring, Tex. Filed Feb. 28, 1898. Serial No. 672,029. (No model.)



Claim.—1. A device of the class described comprising a body or vessel, a lid, a short tube extending from the lid and forming a spout, a condensing-tube extending inward from the spout and closed at its inner end, and a depending cone provided with a tube and coupled with the condensing-tube at a point between the ends thereof, substantially as described.

2. A device of the class described comprising a body or vessel, a lid, a short tube extending outward from the lid and forming a spout, a condensing-tube extending inward from the spout, and a cone depending from the condensing-tube, substantially as described.

607,543. ADJUSTABLE HANDLE-BAR. ROBERT M. KEATING, Springfield, Mass. Filed June 1, 1896. Serial No. 593,732. (No model.)



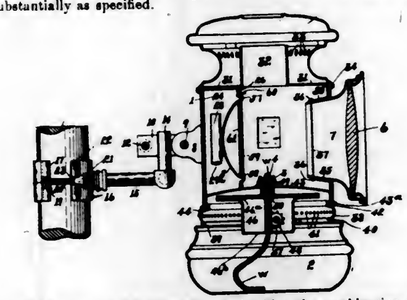
Claim.—1. The combination of a steering-head, having an opening through it, a handle-bar arranged in said opening and provided with teeth, a transverse opening through said head adjacent to the teeth upon the handle-bar, and a locking-piece having teeth upon its side arranged in said opening, its teeth engaging the teeth on the handle-bar by a longitudinal movement of the locking-piece past the handle-bar and means to secure the locking-piece in position, substantially as and for the purposes stated.

2. The combination of a steering-head having an opening through it to receive a handle-bar, a handle-bar mounted therein and provided with teeth parallel with the axial line of the bar; a locking-piece *f*, having teeth upon its side adapted to engage the teeth in the bar and mounted in the head with the teeth of the locking-piece arranged to engage the teeth on the handle-bar by a longitudinal movement of the locking-piece and means to secure the locking-piece in position, substantially as and for the purposes stated.

3. The combination of a head *b* having a stem *a* and a transverse opening through it for a locking-piece, with a handle-bar having a central portion *c* provided with teeth as *d*, a locking-piece *f* arranged in said opening and having teeth to engage the teeth on the handle-bar by a longitudinal movement and a nut on the end of the locking-piece, substantially as and for the purposes stated.

607,544. BICYCLE-LANTERN. JOSEPH H. LEHMAN, Philadelphia, Pa., assignor to the Lehman Manufacturing Company, same place. Filed Sept. 18, 1897. Serial No. 652,089. (No model.)

Claim.—1. The combination with a lantern having a projecting lug, a bifurcated or slotted spring arm or clip embracing the said lug and pivoted thereto, a set screw forming the pivot for the said arm and also providing means for securing its adjustment, the two parts of said arm being bent outwardly to form between them an approximately circular seat, and a second set-screw connecting the outer or free end portions of the clip, of a horizontal bracket-arm having means at its outer end whereby it may be secured to a bicycle-frame, or the like, and at its inner end a vertical arm or post designed to engage the approximately circular opening of the said arm or clip, substantially as specified.



2. In a lantern for bicycles and the like, the combination with the cylinder, of the reinforcing-plate secured to the inner rear portion thereof and provided with means for supporting the reflector, said reinforcing-plate being also formed with inward bends or depressions, closed at the bottom and open at the top, the cylinder in rear of the said bends or depressions having air-apertures which open into the spaces formed thereby, substantially as specified.

3. In a lantern for bicycles and the like, the combination with the cylinder, of the reinforcing-plate having the inward bends or depressions, closed at the bottom and open at the top, the holder-lug riveted to said plate and cylinder, the latter having the air-apertures leading into the space between the cylinder and said depressions in the reinforcing-plate, substantially as and for the purpose set forth.

4. In a lantern of the nature recited, the combination with the cylinder, of the tapering lens-holder and means for securing the latter to the cylinder; said means consisting of the annulus having a flange adapted to fit against the interior of the cylinder around the usual opening in the latter for the reception of the lens-holder, and against the inner end of which annulus the projecting end portion of the holder is knurled, whereby the holder is held securely in place, substantially as set forth.

5. In a lantern for bicycles or the like, the combination of the oil-reservoir, the burner-plate, the deflector, the box connected to said reservoir, closed at the bottom and having the contracted tubular opening at the top, the wick-tube within said box, and communicating with the oil-reservoir and said tubular portion of the box extending above the burner-plate, and below the top of the wick-tube and deflector; the slot or slots in the wick-tube, the star wheel or wheels, entered in said slot or slots and means for rotating said wheel or wheels from the exterior of the lantern, substantially as and for the purpose set forth.

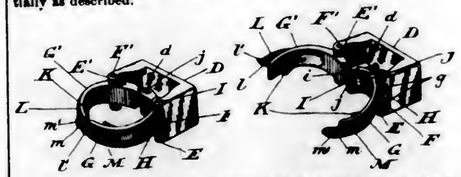
6. In a lantern for bicycles or the like, the combination of the oil-reservoir, the burner-plate, the wick-tube, the box connected to said reservoir closed at the bottom and having the top of considerably greatly diameter than that of the box, and provided with the contracted opening leading from the interior of said box to a point below and adjacent to the top of the wick-tube and deflector, together with the rotatable wick-adjusting star-wheel, or the like, entered into slots in the wick-tube; the said tube extending through the said box and communicating with the oil-reservoir and projecting above the burner-plate, substantially as and for the purpose set forth.

7. In a lantern for bicycles or the like, the combination of the wick-tube, the deflector, the oil-reservoir, the box secured to the latter and having an aperture communicating with the reservoir, and having also the tubular opening at the top adjacent to and below the said wick-tube and deflector, substantially as and for the purpose described.

8. In a lantern for bicycles and the like, the combination of the cylinder, the oil-reservoir, the burner, the annulus, 38, supported by and elevated above said reservoir, and having the upwardly-projecting flange, 42, together with the burner plate having the downwardly-projecting flange surrounding the said flange, 42, but not in contact therewith, so as to leave a passage-way into the space beneath the burner-plate, substantially as and for the purpose set forth.

607,545. BICYCLE-HOLDER. LOUIS L. MARTIN, Toronto, Canada. Filed Apr. 5, 1897. Serial No. 630,841. (No model.)

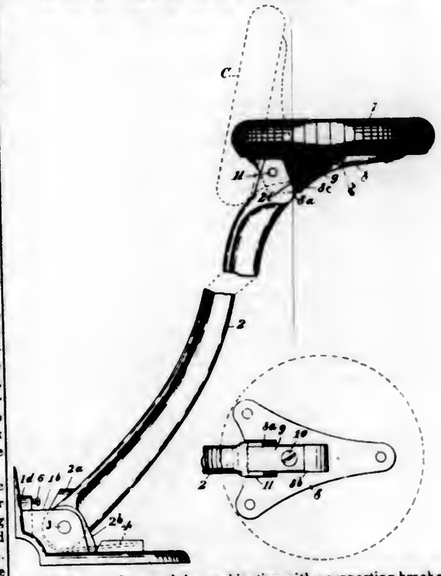
Claim.—1. A cycle-holder, comprising a bracket provided with means by which it may be rigidly secured to a wall or other support, two jaws pivoted to said bracket and having their rear ends hinged together intermediate of the points where they are pivoted, one of said jaws having a slot in which the pintle of the hinge works, and means for normally holding said jaws open to receive the tire, whereby the hinged ends of said jaws are normally held forward of their pivot-points ready for a wheel-tire to push them back and thereby cause the front ends of said jaws to come together, and means for automatically locking said jaws together when they close, substantially as described.



2. In a cycle-holder, the combination of bracket D; the pivots F, F'; the jaws G, G', suitably pivoted on the pivots F, F', and adjustably hinged together at their inner ends one of said jaws having a slot in which the pintle of the hinge works; the springs H; the slotted spring-holder L, and spring-tongue M, provided with catch *m*, adapted to engage the slot *l*, substantially as specified.

3. In a cycle-holder, the combination of bracket D, provided with bosses E, E'; the pivots F, F'; the jaws G, G', with perforated lugs *g*, formed thereon to receive the pivots; the projection I, slotted at *i*, and formed on the end of one jaw, and the recess J, in the end of the other jaw; and hinge-pin *j*, for holding the ends adjustably together; the rubber pads K, connected as shown; the springs H; the spring-holder L, with slot *l*, and upwardly-turned end *l'*; the spring-tongue M, provided with catch *m*, adapted to engage in the slot *l*, substantially as specified.

607,546. STOOL-STOOL. ALBERT R. MILNER, Canal Dover, Ohio, assignor to the A. R. Milner Seating Company, Canton, Ohio. Filed Mar. 22, 1897. Serial No. 628,706. (No model.)

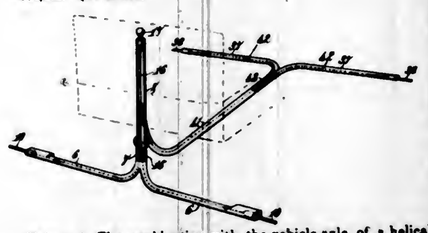


Claim.—1. In a stool the combination with a supporting-bracket, of an arm pivoted thereto, a stop to limit the downward movement of the arm, and an adjustable fulcrumed friction-plate secured to the bracket and engaging the lower end of the pivoted arm, substantially as described.

2. In a stool the combination of a bracket, an arm pivoted thereto, a stop to limit the downward movement of the pivoted arm, an adjustable stop to limit the upward movement of the pivoted arm, and a fulcrumed friction-plate adjustably secured to the bracket and engaging the lower end of the pivoted arm, substantially as set forth.

3. In a stool, the combination with a supporting-bracket of an arm pivoted thereto, a stop to limit the downward movement of the arm, an adjustable stop to limit the upward movement of the arm, an adjustable fulcrumed friction-plate secured to the bracket and engaging the lower end of the pivoted arm, a seat, a frictional plate secured thereto and engaging the upper end of the pivoted arm, substantially as described.

607,547. COMBINED HORSE-DETACHER AND WHEEL-LOCK. PERLAI W. PETERS, Washington, D. C. Filed Oct. 7, 1897. Serial No. 654,446. (No model.)



Claim.—1. The combination with the vehicle-axle, of a helical spring wound thereon and fixed thereto at its inner end, a knurl carried by the free end of the spring, a similar knurl fixed on the outer convolution of the spring and arranged to be brought into juxtaposition to the knurl on the end of the spring when the latter is wound up, a clip constructed to embrace said knurls and hold the spring in its wound position, a stop carried by the outer convolution of the spring, a band fixed on the hub and provided with a slot through which the said stop is projected when the spring is unwound and expands, and means under the control of the occupant of the vehicle for disengaging said clip from the knurls to release the spring, substantially as described.

2. The combination with the vehicle-axle, of a helical spring wound thereon and fixed thereto at its inner end, a knurl carried by the free end of the spring, a similar knurl fixed on the outer convolution of the spring and arranged to be brought into juxtaposition to the knurl on the end of the spring when the latter is wound up, a clip constructed to embrace said knurls and hold the spring in its wound position, a plurality of stops carried by the outer convolution of the spring, a band fixed on the hub and provided with a plurality of elongated slots through which the said stops are projected when the spring is unwound and expands, and means under the control of the occupant of the vehicle for disengaging said clip from the knurls to release the spring, substantially as described.

3. The combination with the vehicle-axle, of a sleeve fixed against rotation thereon, a helical spring coiled about said sleeve and attached thereto at its inner end, a knurl carried by the free end of the spring, a similar knurl fixed on the outer convolution of the spring and arranged to be brought into juxtaposition to the knurl on the end of the spring when the latter is wound up, a clip constructed to embrace said knurls and hold the spring in its wound position, a plurality of stops carried by the outer convolution of the spring, a band fixed on the inner end of the hub and projecting over said sleeve, said sleeve being provided with a plurality of elongated slots through which the said stops are projected when the spring is unwound and expands, and means under the control of the vehicle for disengaging said clip from the knurls to release the spring, substantially as described.

4. The combination with the vehicle-axle, of a helical spring coiled thereon and connected thereto at its inner end, a knurl carried by the free end of the spring, a similar knurl fixed on the outer convolution of the spring and arranged to be brought into juxtaposition to the knurl on the end of the spring when the latter is wound up, a clip constructed to embrace said knurls and hold the spring in its wound position, a plurality of stops carried by the outer convolution of the spring and each provided with a T-shaped head, a band fixed on the hub and provided with a plurality of elongated slots through which the said stops are projected when the spring is unwound and expands, and means under control of the occupant of the vehicle for disengaging said clip from the knurls to release the spring, substantially as described.

5. The combination with the vehicle-axle, of a helical spring wound thereon and fixed thereto at its inner end, a knurl carried by the free end of the spring, a similar knurl fixed on the outer convolution of the spring and arranged to be brought into juxtaposition to the knurl on the end of the spring when the latter is wound up, a clip constructed to embrace said knurls and hold the spring in its wound position, a plurality of stops carried by the outer convolution of the spring, a band fixed on the hub and provided with a plurality of elongated slots through which the said stops are projected when the spring is unwound and expands, a spring for holding said clip in engagement with the knurls, means under control of the occupant of the vehicle for disengaging said clip from the knurls to release the spring, and means for holding said clip in its disengaged position, substantially as described.

6. The combination with the vehicle-axle, of a helical spring wound thereon and connected thereto at its inner end, means for holding said spring wound up, a plurality of stops carried by the outer convolution of the spring and provided with T-shaped heads, a band fixed on the hub and provided with a plurality of elongated slots through which the said stops are projected when the spring is unwound and expands, and means under control of the occupant of the vehicle for releasing said spring to permit it to uncoil and expand to throw said stops into engagement with the hub-band, substantially as described.

7. The combination with the vehicle-axle, of a helical spring wound thereon and fixed thereto at its inner end, a knurl carried by the free end of the spring, a similar knurl fixed on the outer convolution of the spring and arranged to be brought into juxtaposition to the knurl on the end of the spring when the latter is wound up, a U-shaped clip constructed to embrace said knurls and hold the spring in its wound position, a plurality of stops carried by the outer convolution of the spring, a band fixed on the hub and provided with a plurality of elongated slots through which the said stops are projected when the spring is unwound and expands, and means under control of the occupant of the vehicle for releasing said spring to permit it to uncoil and expand to throw said stops into engagement with the hub-band, substantially as described.

8. The combination with the vehicle axle, of a helical spring wound thereon and connected thereto at its inner end, means for holding said spring wound up, a plurality of stops carried by the outer convolution of the spring and provided with T-shaped heads, a band fixed on the hub and provided with a plurality of elongated slots through which the said stops are projected when the spring is unwound and expands, means for detachably connecting the shafts to the vehicle, and means under the control of the driver for releasing the shaft-detaching mechanism and simultaneously releasing the said spring to permit it to uncoil and expand to throw said stops into engagement with the hub-band, substantially as described.

9. The combination with the vehicle-axle, of helical springs wound on the opposite ends thereof and connected thereto at their inner ends, means for holding said springs wound up, a series of stops carried by the outer convolutions of the springs, bands fixed on the hubs and provided with elongated slots through which the said stops are projected when the springs are unwound and expand, guide-tubes supported on the axle and connected at their adjacent ends to a single guide tube which at its forward end is curved upward and connected to a vertical tube fixed on the vehicle-body, and cables disposed in said tubes and connected to the spring-controlling mechanisms, said cables being under the control of an occupant of the vehicle for releasing the springs, substantially as described.

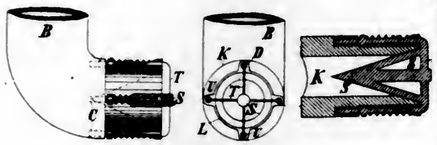
10. The combination with a vehicle, of means for detaching the shafts therefrom and mechanism for locking the rear wheels, of guide-tubes 6 supported on the front axle and terminating in an upward extension 7, a vertical tube 8 attached to the dashboard and swiveled on the extension 7, a longitudinal guide-tube 41 connected at its front end to the tube 8 and terminating at its rear end in two tubes 37 supported on the rear axle, cables disposed in the tubes 6 and 37 and respectively connected to the shaft-detaching and wheel-locking mechanism and connected to a cable in the tube 8, and means carried by the last-named cable in convenient reach of an occupant of the vehicle for operating the cables to detach the shafts and lock the wheels, substantially as described.

11. The combination with the front axle of a vehicle, of thill-couplings attached thereto and having perforated ears 4, the thill-irons 5 arranged between said ears, tubes 6 attached to the axle in alinement with said ears, said tubes at their adjacent ends terminating in a single upright tube 7; a vertical tube 8 attached to the dashboard and connected to the tube 7 by a universal joint, plungers 9 arranged in the outer ends of the tubes 6 and carrying coupling-pins 10 adapted to project through the perforations in the ears and coupling-pins to couple said parts together, springs 11 for ejecting said plungers, cables 15 disposed in the tubes 6, and a cable 16 disposed in the tube 8, said cable 16 being attached at one end to the cables 15 and provided at its other end with a knob 17, substantially as described and for the purpose specified.

607,548. SELF-ACTING CLOSING DEVICE FOR PROPELLER-PIPES. JOHANN G. PINKERT, Hamburg, Germany. Filed Dec. 30, 1897. Serial No. 664,517. (No model.) Patented in England Mar. 30, 1896, No. 6,872, and in France June 24, 1897, No. 268,157.

Claim.—An automatically-acting water-tight closing device, characterized by an easily-moved obturator in the form of a pointed cone, a sugar-loaf, or a paraboloid, placed at the discharge-opening of the propeller-pipe, which obturator, when opened, distributes the

issuing forces of explosions or other means onto a comparatively large quantity of water, and, when closed, preventing the entrance of water into the interior of the propeller-pipe, all substantially as, and for the purpose as described in the annexed specification.



607,549. PROCESS OF PREPARING HIDES FOR TANNING.

GEORG POPP and HEINRICH BECKER, Frankfort-on-the-Main, Germany. Filed Dec. 2, 1895. Serial No. 570,830. (No specimens.) Patented in Germany Apr. 19, 1895, No. 86,335.

Claim.—1. The hereinbefore-described process of treating hides preparatory to tanning which consists in propagating and isolating the hereinbefore-described useful bacteria of dung, (for example dog or bird dung) described as numbers 3, 7 and 12, cultivating them on suitable culture-beds, as set forth, and thereupon bating the hides with the said cultures of the described bacteria, substantially as described.

2. The process of bating which consists in submitting the previously-limed hide to a bate consisting of pure-cultures of one or more of the previously-described bacteria, designated as 3, 7 and 12, respectively, all substantially as set forth.

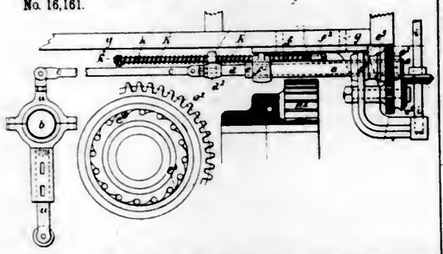
3. The herein-described process of treating hides preparatory to tanning, which consists in propagating and isolating the useful bacteria of dung, for example dog or bird dung, by suitable culture-beds as set forth, and thereupon bating the hides with the said cultures of bacteria, substantially as described and for the purposes set forth.

4. A new and useful tannage medium, consisting of compressed cakes of sterilized inert material impregnated with definite quantities of the hereinbefore-specified, desirable bacteria of dung, to wit: bird or dog dung.

5. As a new article of manufacture, a bating agent consisting of a solid or liquid material containing pure-cultures of the hereinbefore-described useful bacteria designated as 3, 7 or 12 and the products of their decomposition, substantially as described and for the purposes set forth.

607,550. ACTUATING MECHANISM FOR STATION-INDICATORS.

DUNDAS W. PORTEOUS, London, England. Filed Dec. 13, 1897. Serial No. 661,650. (No model.) Patented in England July 21, 1896, No. 16,161.



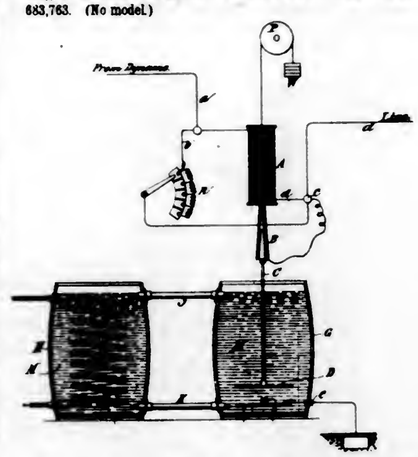
Claim.—1. In apparatus for communicating motion to station-indicators in railway-carriages, the combination with an actuating-lever, of a pair of grooved rods capable of being moved endwise by said lever within rotatable tubes provided with projections fitting the grooves of said rods, toothed wheels mounted on and driven by clutches fixed on said tubes so as to be moved in one direction and slip in the contrary direction, said toothed wheels giving motion to the indicator mechanism by suitable gearing, substantially as herein shown and described.

2. In apparatus for communicating motion to station-indicators in railway-carriages, the combination of an actuating-lever, connecting-link, cross-head connecting together two grooved rods, rotatable tubes fitting around such grooved rods and provided with projections fitting the grooves of said rods, toothed wheels mounted on, and driven by clutches on, said rotatable tubes gearing with an intermediate toothed wheel mounted on an axle having a bevel-pinion gearing with a bevel-pinion mounted at the lower end of a vertical shaft, substantially as herein shown and described and for the purpose stated.

3. In apparatus for communicating motion to station-indicators in railway-carriages, the combination of two rods actuated by a lever, each rod having a groove formed partly longitudinal therewith and partly inclined around the same, the groove in one rod being the reverse of that in the other rod, with two rotatable tubes provided with projections fitting the grooves of said rods, and gearing for communicating motion from said tubes to an indicator-operating shaft, substantially as herein shown and described and for the purpose stated.

607,551. ELECTRIC REGULATOR.

JOSEPH A. POWERS, Lansingburg, N. Y. Filed Oct. 28, 1897. Renewed June 17, 1898. Serial No. 683,763. (No model.)



Claim.—1. A regulator for electric-railway systems, consisting in the combination with a fluid resistance and separable plates therein, one of said plates being connected to earth and the other to the line, of a solenoid and core for varying the distance between said plates, the solenoid being included in the circuit from the generator and adapted to exert a pull or attractive force upon the core equal, with a given current, in all positions of said core, as set forth.

2. A fluid rheostat or variable resistance, comprising in combination two receptacles containing a conducting solution and communicating at different levels, means for cooling the solution in one receptacle, separable plates in the other, and a solenoid and core for varying the distance between said plates, as set forth.

3. The combination with a receptacle containing a conducting solution and fixed and movable plates therein, of a solenoid and a core connected with the movable plate, and a circuit to be regulated including the solenoid, and then divided between the line and the earth through the separable plates and solution, as set forth.

607,552. SPINNING-TOP.

EDWARD W. RISBROUGH, Philadelphia, Pa. Filed June 29, 1897. Serial No. 642,854. (No model.)

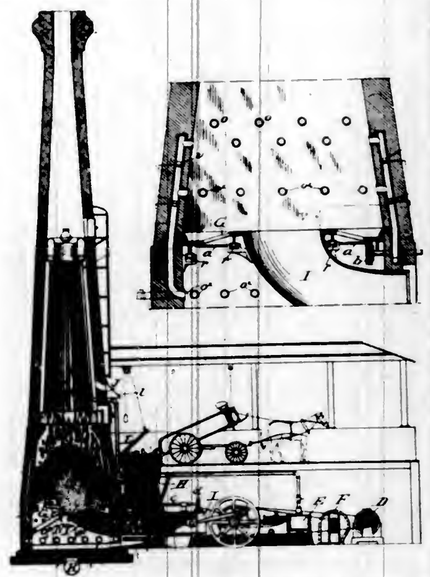


Claim.—A spinning-top having a pointed base, said top adapted to be spun by a cord wound around the ribbed or ridged tapering body of the same, numerals impressed into or onto the beveled upper portion of the top adjacent to a countersunk head forming a circular channel or way, within which is provided a truncated cone-shaped device carrying a rotatable reversely-bent wing or blade pointer or finger held to place by a bolt or pin extending through the same and said device into the top-body and said finger or pointer actuated by air-currents in the act of spinning said top to shift the position of the same within said channel or way, substantially as and for the purposes described.

607,553. GARBAGE-FURNACE.

ISAAC D. SMEAD, Toledo, Ohio, assignor, by mesne assignments, to the Smead Cremating and Power Company, same place. Filed Dec. 14, 1897. Serial No. 661,837. (No model.)

Claim.—1. A garbage crematory comprising a vertical stack, a furnace-chamber in the lower portion of said stack, a horizontal rotary grate in said chamber, an annular vertical boiler located within the stack above the furnace-chamber, a hopper for the reception of the material, a curved chute leading from the hopper below to the furnace-chamber above, a reciprocating plunger or follower in the horizontal portion of said chute, and an engine for operating said plunger, all being combined and arranged to operate substantially as and for the purpose set forth.



2. In combination with the furnace-chamber and hopper, the curved and perforated chute provided with a valve or gate and a reciprocating plunger, all arranged to operate substantially as shown and described, whereby the fluids may be expressed from the material while in said chute, and then be forced upward through the same into the furnace as set forth.

3. An apparatus for treating garbage, comprising a perforated receptacle for separating the fluid from the solid portion, a pit or receptacle arranged to receive the fluid portion, one or more pipes located and adapted to inject steam or disinfectants into the fluid as it is separated from the solids, a filter arranged to receive and filter the fluid as it passes from the pit or receptacle, with a drain or outlet arranged to conduct away the filtered fluid, the said parts being arranged for joint operation, substantially as set forth.

607,554. PYROXYLIN COMPOSITION OF MATTER.

JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, New York, N. Y., a Corporation of New Jersey. Original application filed Nov. 7, 1895, Serial No. 568,212. Divided and this application filed Apr. 6, 1898. Serial No. 676,640. (No specimens.)

Claim.—1. The process of manufacturing pyroxylin compounds which consists in combining pyroxylin with camphor and one or more members of the hereinbefore-specified group of crystalline derivatives of phenols or aromatic alcohols consisting of dimethylhydrochinon, thymochinon, thymol, and benzoylguaiacol, and afterward subjecting the mixture to heat and pressure sufficient to render the compound plastic, substantially as described.

2. The process of manufacturing pyroxylin compounds, which consists in mixing pyroxylin with camphor, one or more members of the hereinbefore-specified group of crystalline derivatives of phenols or aromatic alcohols consisting of dimethylhydrochinon, thymochinon, thymol, and benzoylguaiacol, and a liquid menstruum or liquid menstrua, and afterward subjecting the mixture to heat and pressure sufficient to render the compound plastic, substantially as described.

3. A new composition of matter consisting of pyroxylin, camphor and one or more members of the hereinbefore-specified group of crystalline derivatives of phenols or aromatic alcohols consisting of dimethylhydrochinon, thymochinon, thymol, and benzoylguaiacol substantially as set forth.

4. The process of manufacturing pyroxylin compounds, which consists in intimately mixing pyroxylin, camphor, one or more members of the hereinbefore-specified group of crystalline derivatives of phenols or aromatic alcohols consisting of dimethylhydrochinon, thymochinon, thymol, and benzoylguaiacol, and a liquid menstruum or liquid menstrua, sufficient in amount to convert the entire mixture into a pyroxylin solution or compound, substantially as described.

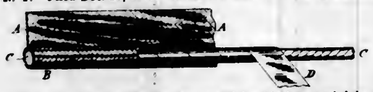
5. As a new composition of matter, a compound of pyroxylin containing pyroxylin, camphor, one or more members of the hereinbefore-specified group of crystalline derivatives of phenols or aromatic alcohols consisting of dimethylhydrochinon, thymochinon, thymol, and benzoylguaiacol, and a liquid menstruum or liquid menstrua, substantially as described.

6. As a new composition of matter, a compound of pyroxylin containing pyroxylin and one or more members of the hereinbefore-specified group of solid ingredients consisting of dimethylhydrochinon, thymochinon, thymol, and benzoylguaiacol, substantially as described.

7. A new composition of matter containing pyroxylin and thymol.

607,555. CORDED SKIRT-FACING.

LUDWIG SUTRO, New York, N. Y. Filed Dec. 20, 1895. Serial No. 572,742. (No specimens.)



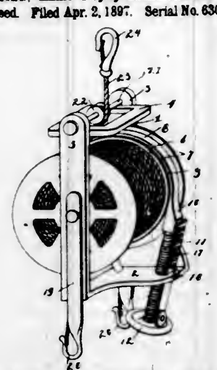
Claim.—1. A beaded skirt-facing of braided material having a waterproof adhesive core in the edge bead, substantially as described.

2. In a beaded skirt-facing of braided material, the tape A A, the bead B B and the core C C, coated with a waterproof adhesive substance uniting the strands of the bead B B to the core C C, substantially as and for the purposes described.

3. In a beaded skirt-facing of braided material, a core C C sheathed in adhesive gutta-percha uniting the strands of the bead B B and the core C C, substantially as and for the purposes described.

607,556. FIRE-ESCAPE.

HENRY V. SWYNY and JOHN H. MCDONALD, Butte, Mont.; Annie Swyny administratrix of said Henry V. Swyny, deceased. Filed Apr. 2, 1897. Serial No. 630,364. (No model.)



Claim.—1. A fire-escape, comprising a frame, a drum journaled in said frame, a spiral spring, a band-brake attached to the frame, a brake-wheel having flanges thereon attached to one end of the drum and means for adjustably controlling the action of the band-brake upon the brake-wheel, said means consisting of a screw-threaded shaft passing through the base of the frame, to one end of which the free end of the brake is attached, and a hand-wheel attached to the lower end of the shaft, a buffer interposed between the base of the frame and the block to which the other end of the brake is secured, and means for attaching a sling to the said frame, substantially as shown and described.

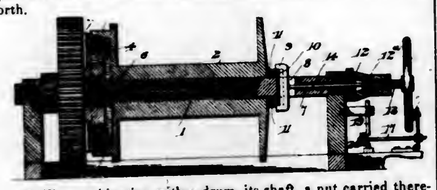
2. A fire-escape, comprising a frame, a drum journaled in said frame, a brake-wheel attached to one end of said drum, a spiral spring in the wheel, a shaft passing through the base of the frame, a hand-wheel connected to the shaft, a band-brake passing over the brake-wheel and attached to the base of the frame at one end and secured at its free end to the shaft, and means for attaching a sling to the said frame, substantially as shown and described.

607,557. FRICTION-CLUTCH.

EDWARD TURNEY, Portland, Oreg., assignor of one-half to the Smith & Watson Iron Works, same place. Filed Sept. 13, 1897. Serial No. 651,432. (No model.)

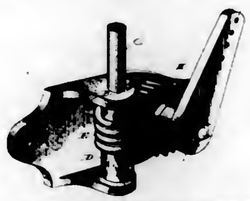
Claim.—1. The combination with a drum, its shaft and an endwise-movable clutch-adjusting screw-spindle carried by said drum-shaft, of a brake mechanism substantially as described having a brake-arm pivoted and adapted to move in the direction of movement of

said spindle and adapted to retard the latter when the shaft and spindle are in motion, for the purpose described, substantially as set forth.



2. The combination with a drum, its shaft, a nut carried thereby, and an endwise-movable spindle mounted in said nut and carrying a hand-wheel, of a brake-arm hung by a transverse pivot and movable toward or from the face of the hand-wheel in the direction of the endwise adjustment of said spindle, a brake-shoe carried by said brake-arm to ride against the face of the hand-wheel, and means connected to the brake-arm to adjust the latter, substantially as described.

607,558. BRAKE-OPERATING MECHANISM. RICHARD F. WALLS, Piagah, W. Va. Filed Aug. 25, 1897. Serial No. 649,513. (No model.)

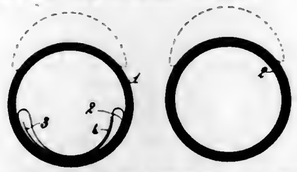


Claim.—1. An improved brake-operating means, comprising a base-plate adapted to be attached to the side of a vehicle, and having bearing-lugs, a stub-shaft, the worm-gear arranged between the lugs and having an operating-shaft and crank-handle, the worm-gear mounted upon the stub-shaft, and having laterally-projecting lugs, the lever-arm, mounted also upon the stub-shaft and having recesses to receive the laterally-projecting lugs of the worm-shaft, all arranged substantially as shown and described.

2 An improved brake-operating means comprising a base-plate having bearing-lugs and a stub-shaft, the worm-shaft mounted between the lugs, the operating-shaft passing through the lugs and worm-shaft and having a crank at its upper end, the annular boss formed upon the plate around the stub-shaft, the worm-gear having collars upon both faces, the lever-arm having a collar upon its inner face, means for connecting the lever-arm and worm gear, and the retaining-nut arranged upon the end of the stub-shaft, substantially as shown and described.

3. An improved operating means, comprising a base-plate having the bearing-lugs integral therewith, a stub-shaft mounted upon said plate and having an annular boss surrounding the same, the operating-shaft passing through said lugs and the worm-shaft, the crank-handle at the upper end of said shaft, the worm-gear having collars upon both faces, the collar of the outer face having laterally-projecting lugs, the operating-lever having a collar upon its inner face, which collar has recesses to receive the lugs of the worm-gear, and the retaining-nut, all arranged substantially as shown and described.

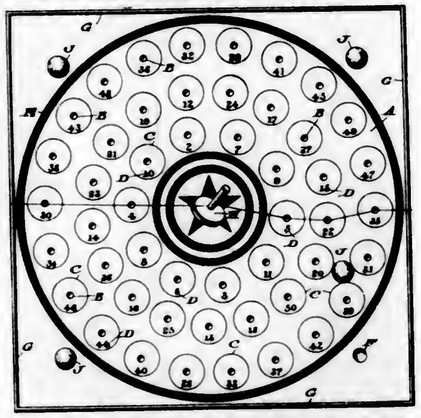
607,559. PNEUMATIC TIRE FOR BICYCLES. GEORGE A WOODMAN, Lima, Ohio, assignor of one-half to William T. Agerter, same place. Filed July 9, 1896. Serial No. 598,595. (No model.)



Claim.—1. A pneumatic tire, having an interior patching-film consisting of a single strip of rubber attached centrally along the center of the inner face of the tread side, and having two free, or unattached portions on opposite sides of the line of attachment and overlapping the rim side, substantially as described.

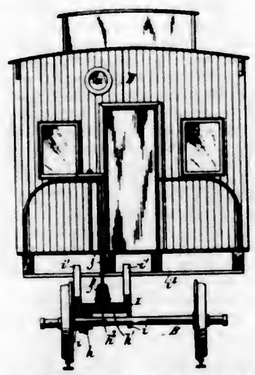
2. A pneumatic tire for a bicycle or other vehicle, having an interior patching-film consisting of a single strip of rubber of a width greater than the interior circumference of the tire, said strip being attached along its central part to the inner face of the tread of the tire and having two free portions on opposite sides of the line of attachment overlapped one on the other and held against the rim side by the interior air-pressure, substantially as described.

607,560. GAME. WILHELM ZOLPER, Elkton, Md. Filed Mar. 7, 1898. Serial No. 672,826. (No model.)



Claim.—A game consisting of a field with a series of numbered openings and pockets therein, a spinner whose point is adapted to enter either of said openings and balls adapted to occupy said pockets and be moved toward said openings.

607,561. CAR-SIGNAL. WILLIAM O. ABBOTT, Buffalo, N. Y., assignor of two-thirds to Clarence J. Coon, same place, and William R. Zulich, Cincinnati, Ohio. Filed Nov. 16, 1897. Serial No. 658,698. (No model.)



Claim.—1. The combination with the car-body and a car-axle having a gear-wheel, of a signal-light, a shutter for alternately exposing and concealing the light, a frame attached to the car-axle so as to rise and fall therewith and having an upward extension which is loosely guided on the car, and an operating-shaft for said shutter having a gear-wheel journaled in and carried by said frame and meshing with the gear-wheel of the car-axle, substantially as set forth.

2. The combination with a car-axle and an upright shaft geared therewith, of a horizontal disk or support mounted upon the upper end of said shaft, a rotary upright hood or shutter mounted on said support so as to turn therewith and having an open upper end and provided in its side with an aperture, a bracket arranged above said hood, and a signal-light arranged in said hood and suspended from said bracket, substantially as set forth.

3. The combination with a signal-light and a rotary hood surrounding the same and having an aperture in its side, of a direction-indicator arranged in front of said light and outside of the line of travel of said hood and consisting of differently-colored signal-plates adapted to be alternately placed in front of the signal-light, and actuating means for reversing the direction-indicator also located outside of the line of travel of said hood, substantially as set forth.

4. The combination with a car-axle, of a signal-light, a rotary hood or shutter for alternately exposing and concealing said light, a friction-disk operated from the car-axle, an oscillating indicator-frame arranged in front of said signal-light and containing differently-colored signal-plates, and a reversing-segment for said indicator-frame arranged to engage frictionally with said rotary disk, said segment being held in either of its positions by contact with said disk, substantially as set forth.

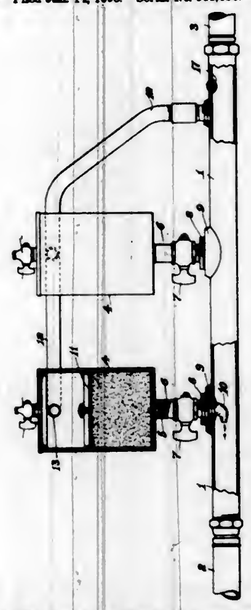
5. The combination with a car-axle, of a signal-light, a rotary hood or shutter for alternately exposing and concealing said light, a rotary horizontal disk operated from the car-axle, an upright oscillating indicator-frame arranged transversely in front of said signal-light and mounted on a horizontal pivot located above said rotary disk and a depending reversing-segment mounted on said pivot and engaging at its periphery with said rotary disk, substantially as set forth.

6. The combination with a car-axle, of a signal-light, a hood or shutter for alternately exposing and concealing the same, a rotary disk operated from the car-axle, an oscillating indicator-frame carrying signal plates and having a segmental slot, a rock-shaft having a pin adapted to engage alternately against the ends of said slot, and a segment secured to said rock-shaft and engaging with said disk, substantially as set forth.

7. The combination with a car-axle, of a signal-light, a hood or shutter for alternately exposing and concealing the same, a rotary disk operated from the car-axle, an oscillating indicator-frame carrying signal-plates and having a segmental slot, a rock-shaft having a pin adapted to engage alternately against the ends of said slot, a segment secured to said rock-shaft and engaging with said disk, and stops for limiting the oscillating movement of the frame, substantially as set forth.

8. The combination with a car-axle, of a signal-light, a hood or shutter for alternately exposing and concealing the same, a rotary disk operated from the car-axle and having a pin or projection, an oscillating indicator-frame carrying signal-plates, and a segment for actuating said frame having a pin or projection against which the projection of the disk is adapted to engage, substantially as set forth.

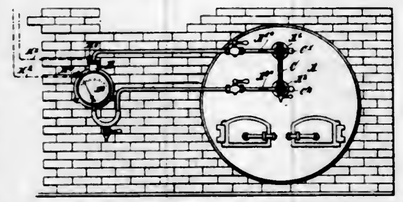
607,562. FIRE-EXTINGUISHER. GASTON W. ALMSTEAD, Bridgeport, Conn. Filed Jan. 14, 1898. Serial No. 666,630. (No model.)



Claim.—1. The method of supplying a solution to a stream of fluid passing through a conduit which consists in the following steps, viz: first, inclosing the soluble material in a suitable receptacle provided with vent-openings and with a dividing, movable septum, placing the material upon one side of said septum, second introducing fluid into said material from said conduit through a suitable branch conduit, third, closing the vent-openings, fourth, introducing fluid from said conduit into the space in said receptacle on the opposite side of said septum, suitable provision being made for a preponderance of pressure upon that side of the septum, all as and for the purposes described.

2. A main tube 1, provided with a deflecting-button 17, in combination with a canister for containing fire-extinguishing material, a movable, imperforate septum, an air-outlet from the upper part of the canister, a branch tube extending from the said tube 1 to the said canister above the said septum, and a tubular connection from the said pipe 1 to the said canister below the said septum, the said branch tube leading to the top of the canister joining the main tube a little beyond the said button in the line of flow of the water, but being wholly exterior to the bore of the said main pipe so as not to obstruct the same substantially as set forth.

607,563. WATER-LEVEL INDICATOR. WILLIAM C. FLÖRING, Waterbury, Conn. Filed Nov. 4, 1895. Serial No. 567,801. (No model.)



Claim.—1. In a water-level indicator, the vessel B provided with a core D, the energized spool G, in direct relation to said core to magnetize the same by establishing a magnetic field within the vessel, a float in said vessel, and boiler-pipe connections, in combination with an electric signaling device, circuit therefor and circuit-closing device, the changing position of the float serving to magnetically operate the circuit-closer by the induction established in the core, substantially as set forth.

2. In a liquid-level indicator, the vessel B provided with a core D, the energized spool in direct relation to said core to magnetize the same by establishing a magnetic field within the vessel, in combination with an electric signaling device arranged to be gradually influenced by a changing position of the float, and with two spiral connections G^2 G^3 adapted to yield elastically between such float and electric conductors outside and conduct a current through the float in any position thereof, substantially as set forth.

3. In a liquid-level indicator, the combination with the case B of the float E and spool G, carried thereby with its insulated connections, and the bar or core D secured in the end of such case to become excited by the spool and the armature M and index M^3, all substantially as herein specified.

4. In a liquid-level indicator, the combination with the case B of the float E and spool G, carried thereby with its insulated connections, bar or core D secured in the end of such case to become excited by the spool, and the armature M and attached index M^3, with the contact-pieces K, J^3, one of which is moved by such parts when in an extreme position, and an extra circuit controlled thereby, and the alarm device J operated by such extra circuit when the water changes from a predetermined level all arranged for joint operation, substantially as herein specified.

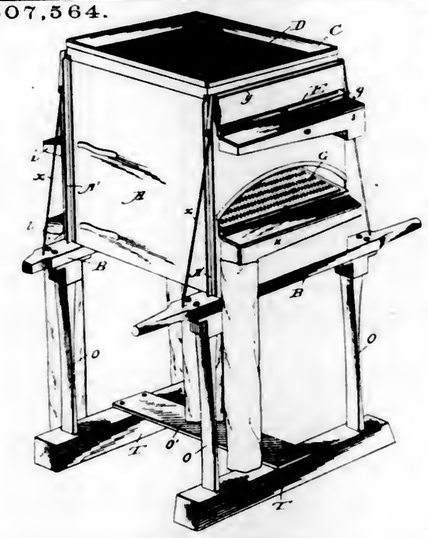
607,564. SIZING-MACHINE FOR GOLD OR LIKE METALS. WILLIAM GRAY, Lincoln, Nebr. Filed Feb. 10, 1898. Serial No. 669,845. (No model.)

Claim.—1. A sizing-machine, comprising a box having discharge-openings in front and rear, and a series of reversely-inclined screens and pans, said screens being provided with successively-decreasing elongated meshes, and discharging through said openings in front and rear into independent receptacles, handle-bars extending from front and rear, and flexible supporting-legs separable from the handle-bars, substantially as described.

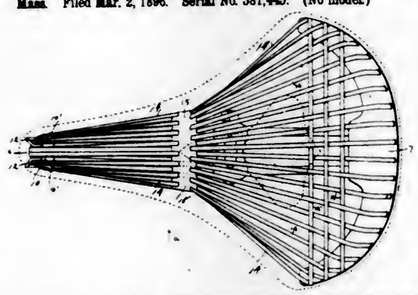
2. In a sizing-machine, the handle-bars having standards A′ fitted to receive the box and being provided with sockets underneath, and the detachable rods for holding the box thereon in combination with the flexible standards O of the supporting-frame.

3. In a sizing-machine, the box A having pans *f* with upturned edges fixed to the walls of the box, inclined screens placed on said edges, openings in the box for the discharge of the material for the screens, and chutes having hooks fitted to the edge of the wall on the lower part of the opening.

607,564.



607,565. BICYCLE-SADDLE. JONATHAN A. HUNT, Westborough, Mass. Filed Mar. 2, 1896. Serial No. 581,445. (No model.)



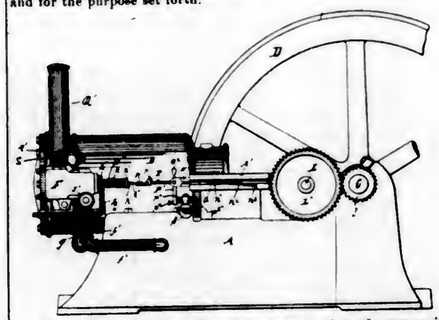
Claim.—1. A clamp for bicycle-saddles, &c., made in two parts, the lower part adapted to receive the saddle-post, and to be clamped thereto by a bolt turning in a threaded hole in said lower part, and the upper or removable part adapted to extend into the lower part, and to be drawn down, to clamp the rods of the spring between the two parts, by a bolt extending at one side of the clamp, and through threaded holes in the two parts thereof, substantially as set forth.

2. In a bicycle-saddle, the combination with a spring, of a cantle-plate secured to one end thereof, a pommel-plate at the other end thereof, and strips or strands of lacing intermediate the cantle and pommel, forming the foundation of the saddle, a retaining band or device through which the longitudinal strips or strands pass and are brought together, to reduce the width of the saddle at the pommel end, and a top or cover extending over said strips, and secured to the cantle and pommel, substantially as shown and described.

3. In a saddle for bicycles, &c., the combination with a cantle-plate, a pommel plate, and a spring or support intermediate the cantle and pommel, of longitudinal strips of flexible material, or lacing, attached to the cantle-plate, and passing through a retaining band or device intermediate the cantle-plate and the pommel-plate, and some of said strips passing around the sides of the pommel-plate, between two or more pins or projections thereon which separate the strips, and others of said strips passing over the top of said pommel-plate and around some of the other strips, and a top or cover extending over the strips or lacing, substantially as shown and described.

607,566. GAS-ENGINE. CHARLES JACOBSON, Erie, Pa. Filed Dec. 2, 1896. Serial No. 614,192. (No model.)

Claim.—1. The combination in a gas-engine, of a common valve-chest inclosing the inlet and exhaust valves of the engine, a valve-stem on said inlet-valve, cam and valve-rod mechanism adapted to operate said valve-stem, an adjustable toe-plate on the end of the valve-rod for lengthening and shortening the valve-rod and adapted to contact with the end of said valve-stem, governing mechanism on said valve-rod, comprising a vertical pendulum-arm, and a forwardly-projecting horizontal arm thereon, a weight on said horizontal arm, and means for adjusting and securing said weight in any desired position on said arm, and cam mechanism and an extensible valve-rod actuated thereby for operating the exhaust-valve, substantially as and for the purpose set forth.

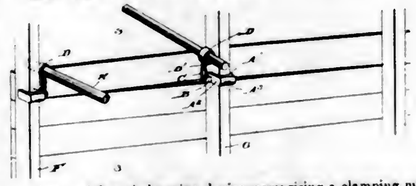


2. The combination in the valve-rod mechanism of a gas-engine, of a cam-actuated valve-rod reciprocating horizontally in guides on the engine-frame, a bell-crank lever pivoted in the rear end of said valve-rod, the horizontal arm of which is adapted to contact with the end of the inlet-valve stem, a longitudinally-adjustable toe-plate on the end of said arm, and a set-screw operating against the rear end of said plate, a forwardly-projecting arm on the pendulum-arm of said bell-crank lever, a weight on said forwardly-projecting arm, and set-screw and clamping mechanism for adjusting said weight in and out on said arm and clamping it thereto, substantially as and for the purpose set forth.

3. The combination in a pendulum-governor for gas-engines, of a reciprocating valve-rod N, a bell-crank lever P P' pivoted in the rear end of said valve-rod, a longitudinally-adjustable plate p on the end of the horizontal arm P thereof and set-screw p' operating against the rear end of said plate, a forwardly-projecting arm p^3 on the pendulum-arm P' of said bell-crank lever, a weight p^3 on said arm p^2 adapted to be adjusted forward and back thereon, and a set-screw p^4 for adjusting and securing said weight, substantially as and for the purpose set forth.

4. The combination in the firing-jet of a gas-engine, of a cap R having an opening r in the end thereof, an arm R' adapted to be adjusted in and out and clamped to the cap R, a gas-jet secured in said arm, substantially as and the purpose set forth.

607,567. BOARD-CLAMP. WALLACE JORDAN, Emerald, Wis. assignor of one-half to S. E. Lindfield, same place. Filed May 7, 1896. Serial No. 590,575. (No model.)
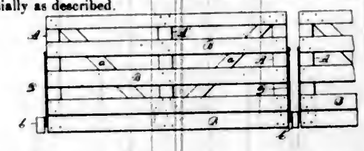


Claim.—A board-clamping device, comprising a clamping member, A, formed of the sides A' and A^2 and end A^3, the side A^2 being longer than the side A' and having near its end a laterally-projecting arm provided with an aperture near its end, a ferrule, provided with an eye and adapted to receive an operating-lever, a link, loosely connecting the eye of the ferrule and laterally-projecting arm, whereby the clamping member can be reversed to bring the operating-lever on either side of the stud or post and the device used with the operating-lever parallel with or at right angles to the clamping member, substantially as shown and described.

607,568. FLOOD-FENCE. SAMUEL F. MILLER, Bridgewater, Va. Filed Dec. 10, 1897. Serial No. 661,351. (No model.)

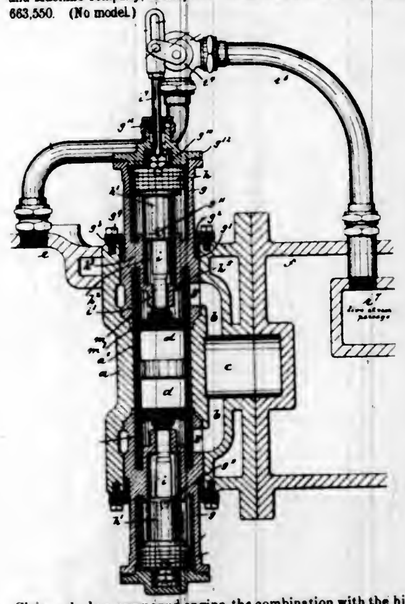
Claim.—1. A flood-fence formed in sections whose end posts above the middle, are pivotally connected by arms to anchor-posts, as herein described.

2. A flood-fence formed in sections, to whose end posts above their middle, are pivoted the ends of bracing-arms, whose other ends are pivotally connected to anchor-posts, and lock-rods, detachably connecting the lower ends of said end posts to said anchor-posts substantially as described.



3. A flood-fence having panels formed of two end posts A, A, a center post A', bars B, B, and frame-braces a, a, supporting-braces D, D, pivoted at one end to said panels above their middle, and at the other end to anchor-posts C, C, and lock-bars E, E, for the purpose herein described.

607,569. INTERCEPTING-VALVE FOR COMPOUND ENGINES. JOHN F. MURPHY, Paterson, N. J., assignor to the Cooke Locomotive and Machine Company, same place. Filed Dec. 27, 1897. Serial No. 663,550. (No model.)



Claim.—1. In a compound engine, the combination with the high and low pressure cylinders, and the channels or passages connecting the same, and with the live-steam passage, of an intercepting-valve between said high-pressure and low-pressure cylinders and communicating with and adapted to control the channels or steam-passages connecting the same, a piston controlling said intercepting-valve, a dash-pot intermediately arranged between the intercepting-valve and the piston for cushioning the latter, an admission-valve, pipes connecting said admission-valve with the live-steam passage and with the steam-passage of the low-pressure cylinder respectively, a crank controlling said admission-valve, a pin projecting from the free end of said crank, and a rod carried by the piston and provided with an elongated slot in engagement with said pin and adapted to operate the crank when the piston and intercepting-valve are being operated to convert the compound engine into a simple engine, substantially as and for the purposes described.

2. In a compound engine, the combination with the high and low pressure cylinders, and the channels or passages connecting the same, and with the live-steam passage, of an intercepting-valve between said high-pressure and low-pressure cylinders and communicating with and adapted to control the channels or steam-passages connecting the same, a piston controlling said intercepting-valve, a dash-pot intermediately arranged between the intercepting-valve and the piston for cushioning the latter, an admission-valve, pipes connecting said admission-valve with the live-steam passage and with the steam-passage of the low-pressure cylinder respectively, and means connecting said piston and the admission-valve for opening the latter when the piston and the intercepting-valve are being operated to convert the compound engine into a simple engine, substantially as and for the purposes described.

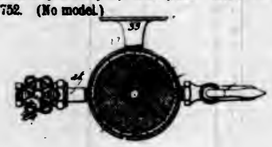
3. In a compound engine, the combination with the high and low pressure cylinders, and the channels or passages connecting the same, and with the live-steam passage, of an intercepting-valve between said high-pressure and low-pressure cylinders and communicating with and adapted to control the channels or steam-passages connecting the same, a piston controlling said intercepting-valve, a dash-pot intermediately arranged between the intercepting-valve and the piston for cushioning the latter, an admission-valve, pipes connecting said admission-valve with the live-steam passage and with the steam-passage of the low-pressure cylinder respectively, a crank controlling said admission-valve, a pin projecting from the free end of said crank, and a rod carried by the piston and provided with an elongated slot in engagement with said pin and adapted to operate the crank when the piston and intercepting-valve are being operated to convert the compound engine into a simple engine, substantially as and for the purposes described.

4. In a compound engine, the combination with the high and low pressure cylinders, the channels or steam-passages connecting the same, and with the main exhaust and the live-steam passage, of a pipe or pipes connecting the live-steam passage with the steam-passage of the low-pressure cylinder, an admission-valve intermediately arranged in said pipe or pipes, an intercepting-valve cylinder between the high and low pressure cylinders and communicating with the channels or steam-passages connecting the same, an auxiliary exhaust connecting said valve-cylinder with the main exhaust, an intercepting-valve in said valve-cylinder and normally closing said auxiliary exhaust and provided on one side with an aperture adapted to be brought in alinement with the respective channel or steam-passage in the valve-cylinder, when said valve-piston has been operated to convert the compound engine into a simple engine, a piston in alinement with the intercepting-valve and connected therewith, a dash-pot intermediately arranged between the intercepting-valve and the piston for cushioning the latter, and means for connecting said piston with the admission-valve to operate the same, when said piston and intercepting-valve are being operated, substantially as and for the purposes described.

5. In a compound engine, the combination with the high and low pressure cylinders, the channels or steam-passages connecting the same, and with the main exhaust and the live-steam passage, of a pipe or pipes connecting the live-steam passage with the steam-passage of the low-pressure cylinder, an admission-valve intermediately arranged in said pipe or pipes, an intercepting-valve cylinder between the high and low pressure cylinders and communicating with the channels or steam-passages connecting the same, an auxiliary exhaust connecting said valve-cylinder with the main exhaust, a valve-case removably secured to the end of the valve-cylinder and extending into the latter, a piston in said valve-case, an intercepting-valve in said valve-case and valve-cylinder and normally closing the auxiliary exhaust and provided on one side with an aperture adapted to be brought in alinement with the respective channel or steam-passage in the valve-cylinder, when said piston and intercepting-valve are being operated to convert the compound engine into a simple engine, and means for connecting the piston with the admission-valve to operate the latter, substantially as and for the purposes described.

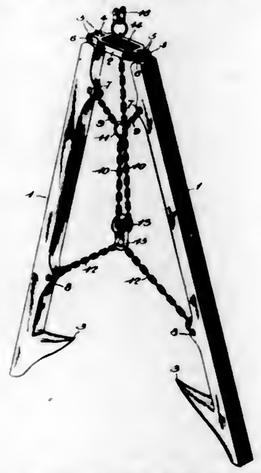
6. In a compound engine, the combination with the high and low pressure cylinders, the channels or steam-passages connecting the same, and with the main exhaust and the live-steam passage, of a pipe or pipes connecting the live-steam passage with the steam-passage of the low-pressure cylinder, an admission-valve intermediately arranged in said pipe or pipes, an intercepting-valve cylinder between the high and low pressure cylinders and communicating with the channels or steam-passages connecting the same, an auxiliary exhaust connecting said valve-cylinder with the main exhaust, a valve-case removably secured to the end of the valve-cylinder and extending into the latter and furnishing at its inner portion a dash-pot, a piston in said valve-case and having its reduced portion slidingly arranged and guided in said dash-pot, an intercepting-valve in the inner end of said valve-case and in the valve-cylinder respectively and normally closing the auxiliary exhaust in the latter and adapted to control the respective channel or steam-passage in said valve-cylinder, and means connecting the piston with the admission-valve for operating the latter, substantially as and for the purposes described.

607,570. FILTER. HORACE G. MCLEAN, Racine, Mo., assignor to the Allen Tripoli Company, same place. Filed Oct. 19, 1897. Serial No. 655,752. (No model.)



Claim.—An improved filter, comprising in combination, a cylinder having one end flared outwardly, a cast base having a central opening, a cylindrical stone having a central opening, a supply-pipe attached to the base and communicating with the interior of the cylinder between the casing and the stone, a cut-off valve in said pipe, an exhaust-cock fixed to the base and communicating with the interior of the cylinder between the casing and the stone, a rubber, cup-shaped packing device designed to overlap the upper end surface of the stone, a metal plate designed to be placed at the upper end of said stone upon said packing device, and having an inwardly-extending, internally-screw-threaded projection, a hollow projection extending upwardly from the said plate and communicating with the interior of the cylinder, a cock connected therewith through which the filtered liquid may be drawn off, a second plate designed to be placed at the lower end of said stone and having an internally-screw threaded opening, a screw-threaded rod designed to enter the aforesaid internally-screw-threaded projection and pass through the central opening of the stone and the opening in the said plate, and a T-shaped device designed to be detachably connected with the said rod and to enter the central opening in the base, all arranged and combined substantially in the manner set forth and for the purposes stated.

607,571. GRAPPLE FOR LIFTING LOGS. ANDREW PAULSON, Snake, Minn. Filed Mar. 30, 1898. Serial No. 675,773. (No model.)



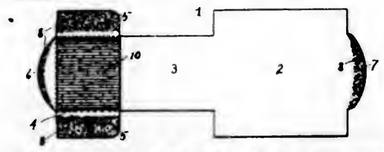
Claim.—1. A device of the class described, comprising a pair of arms or sides hinged at their upper ends and provided at their lower ends with means for engaging a log, a centrally-arranged flexible hoisting cable or chain extending downward between the sides or arms, and means for connecting the cable or chain with the sides or arms near the top and bottom thereof, whereby the weight of the load will operate to draw the sides or arms into contact with it, substantially as described.

2. A device of the class described comprising hinged sides or arms, short chains connected with the sides or arms near the upper ends thereof, a pulley, chains 12 extending from the pulley to the sides or arms and connected with the same near the lower ends thereof, and a hoisting-chain attached to the short chains and passing around the pulley and extending therefrom to the top of the device, substantially as described.

3. A device of the class described, comprising hinged sides or arms provided at their lower ends with engaging devices, the upper flexible connections extending inward from the upper portions of the sides or arms, the lower flexible connecting devices extending inward from the lower portion of the sides or arms, and a hoisting chain or cable attached to the upper flexible connections, extending downward therefrom to the lower connecting devices and passing upward therefrom, said hoisting chain or cable having a running engagement with the lower connecting devices, substantially as described.

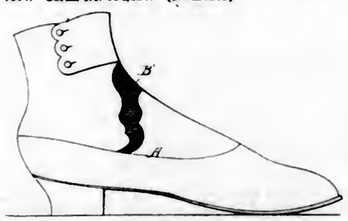
4. A device of the class described comprising a top piece or frame having an opening and provided with ears, sides or arms pivoted to the ears and provided with spurs or hooks and having eyes near their upper and lower ends, a pulley, a hoisting chain or cable passing around the pulley and extending through the opening of the frame or top piece, connections between one end of the hoisting chain or cable and the upper eyes of the sides or arms, and means for connecting the lower eyes of the sides or arms with the pulley, substantially as described.

607,572. WRAPPER FOR CUFFS OR LIKE ARTICLES. DON L. PETTS, Keene, N. H. Filed Aug. 5, 1897. Serial No. 647,195. (No model.)



Claim.—A wrapper for cuffs and the like having a pocket at one end and side wings at the other, an intermediate part 3 having the width of the pocket and connecting it to an end piece 2 the inside of said pocket consisting of a stiffening-piece 10 attached to and secured in place by flaps 5 and 6 and adapted to be rolled with the wrapper on the interior of the cuff, and means for fastening the package in the form of a roll, substantially as described.

607,573. SHOE. HENRY PIERSENS, Philadelphia, Pa. Filed Oct. 6, 1897. Serial No. 654,220. (No model.)



Claim.—In a shoe, an upper formed of non-elastic material and an elastic section extending up to the front of the upper at about the instep and a buttoning-flap *c* arranged around the front of the upper above the elastic section, substantially as specified.

607,574. SHIPPING-CRATE. JAMES A. REEDER, Memphis, Tenn. Filed Aug. 30, 1897. Serial No. 649,990. (No model.)

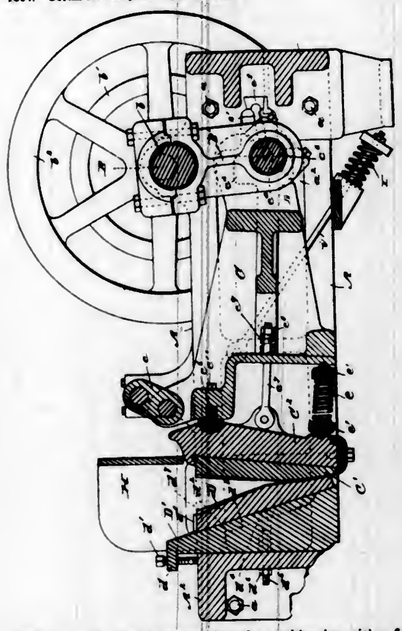


Claim.—1. A crate having top and bottom walls, uprights or standards pivotally mounted at their extremities upon the side edges of the top and bottom walls, and arranged exteriorly thereof, said uprights or standards being connected by interstitial webs to form pivotal side walls, removable side walls fitted in the intervals between, and arranged in the planes of, the side bars of the top and bottom wall frames, and bearing terminally against the inner surfaces of the uprights or standards, said removable side walls having vertical outside cleats bearing against the facing surfaces of said uprights and extended beyond one edge of each side wall to bear against the outer edge of the bottom wall, substantially as specified.

2. A crate having top and bottom walls, each including a frame and an interstitial filling-web, pivotal side walls connecting the top and bottom frames at opposite sides, opposite removable side walls fitted between the contiguous side bars of the top and bottom frames and provided at one edge with projecting cleats or studs to engage the contiguous frame-bar, and a catch for securing the opposite edge of each removable side wall to the contiguous frame-bar, substantially as specified.

3. A crate having top and bottom walls each consisting of a frame provided with an insterstitial filling-web, opposite pivotal side walls connecting the frames of the top and bottom walls, opposite removable walls fitting between the contiguous side bars of the top and bottom frames and provided at their lower edges with projections or cleats to engage the contiguous frame-bars, and pivotal stirrup-shaped catches mounted upon the frame-bars contiguous to the opposite edges of the removable walls, to engage and secure the latter in place, substantially as specified.

607,575. CRUSHING-MACHINE. THOMAS L. STURTEVANT, Quincy, and THOMAS J. STURTEVANT, Framingham, Mass. Filed Oct. 4, 1897. Serial No. 654,008. (No model.)



Claim.—1. In a crushing-machine, the combination with a fixed jaw, of a movable jaw-frame having a face plate or portion movably mounted thereon, and means, placed behind said face plate or portion, for opposing a certain predetermined resistance, but adapted to yield or give way under excessive pressure, to avoid injury to the machine.

2. In a crushing-machine, the combination with a fixed jaw, of a movable jaw-frame having a face-plate which is pivoted at its upper part to said movable jaw-frame and provided with a convex lower face portion, and means, placed behind the lower part of said face-plate, for opposing a predetermined resistance, but which will yield when such resistance is overcome, to avoid injury to the machine.

3. In a crushing-machine, the combination with a fixed jaw, of a movable jaw-frame having a face-plate which is provided with a convex lower face portion and which is pivoted at its upper part to said movable jaw-frame, said face-plate being yieldingly supported at its lower part by cushioning-springs which will oppose a certain predetermined resistance but which will yield when such resistance is overcome and thereby avoid injury to the machine.

4. In a crushing-machine, the combination with a fixed jaw, of a movable jaw-frame pivoted at its upper part to said movable jaw-frame and having a convex lower face portion, a spring or springs placed behind the lower part of said pivoted face-plate to permit the latter to yield under excessive pressure, and a yielding stop which limits the outward movement of the said face-plate under the influence of said spring or springs.

5. In a crushing-machine, the combination with a fixed jaw, of a movable jaw-frame provided with a face-plate pivoted at its upper part to said movable jaw-frame, and having a convex lower face portion, springs placed behind the lower part of said pivoted face-plate, and a case or frame in which said springs are held and which consists of bars connected by bolts and by which bolts the initial tension of said springs may be regulated.

6. In a crushing-machine, the combination with a fixed jaw, of a movable jaw-frame provided with a face-plate pivoted at its upper part to said movable jaw-frame, springs placed behind the lower part of said pivoted plate, and a case or frame in which said springs are held and which case or frame comprises bars connected by bolts by which the initial tension of said springs may be regulated, said bars being provided with convex ribs or portions and the said movable jaw-frame and pivoted face-plate being provided with concave seats for the reception of said convex ribs; whereby cramping of said springs is avoided when the pivoted face-plate yields.

7. In a crushing-machine, the combination with a fixed jaw, of a movable jaw-frame having a face plate or portion pivoted near its top and having a convex lower face portion, a spring or springs interposed between the lower part of said face-plate and said jaw-frame, and a holdback-bolt connecting the said pivoted face-plate to the said jaw-frame.

8. In a crushing-machine, the combination with a fixed jaw, of a movable jaw or jaw-frame C, the jaw-plate C', the backing-plate C^2 supporting said jaw-plate, the axis-block c^4 by which said backing-plate is pivotally supported on the said jaw-frame near its top, springs interposed between the lower part of said backing-plate and said jaw-frame, and a bolt connecting the central part of said backing-plate with said jaw-frame and provided with a nut between which and a portion of the said jaw-frame is interposed a coil-spring the tension of which may be regulated by said nut.

9. In a crushing-machine, the combination with a fixed jaw, of a movable jaw-frame or carrier mounted to have a rocking movement relative to said fixed jaw, and having a jaw plate or face which is cushioned or elastically mounted so as to yield to excessive pressure.

10. In a crushing-machine, the combination with a stationary jaw, of a movable jaw-frame or carrier mounted to have a rocking movement relative to said fixed jaw and having a pivoted jaw-plate, a spring or springs placed behind the said pivoted jaw-plate, and a holdback-bolt for limiting the outward movements of said pivoted jaw-plate under the influence of said spring or springs.

11. In a crushing-machine, a movable jaw or jaw-frame having laterally-projecting wings or trunnion portions, as c^3, and a pitman-pin between the same, of toggle-links connected with said wings or trunnion portions, a driving-shaft provided with a rotating crank or eccentric and a pitman connecting the said crank or eccentric with said pitman-pin.

12. In a crushing-machine, a movable jaw or jaw-frame having laterally-projecting wings or trunnion portions, as c^3, and a pitman-pin between the same, of toggle-links connected with said wings or trunnion portions, stationary abutments for said toggle-links, a driving-shaft provided with a rotating crank or eccentric and a pitman connecting the said crank or eccentric with said pin, the pivotal centers of said toggle-links and the center of said pin being in line with each other transversely of the machine.

13. In a crushing-machine, a movable jaw or jaw-frame having laterally-projecting wings or trunnion portions, as c^3, and a pitman-pin between the same, of toggle-links connected with said wings or trunnion portions, stationary abutments for said toggle-links, a driving-shaft provided with a rotating crank or eccentric and a pitman connecting the said crank or eccentric with said pitman-pin, the pivotal centers of said toggle-links and the center of said pin being in line with each other transversely of the machine, said movable jaw having a convex active face portion which is in the arc of a circle described from a center coincident with the said pivotal centers of said links and the said center of said pitman-pin.

14. In a crushing-machine, the combination with a movable jaw or jaw-frame provided with laterally-projecting wings or trunnion portions, as c^3, of the machine-frame provided with openings in which said wings or trunnion portions are housed, and toggle-links also housed in said openings.

15. In a crushing-machine, the combination with the driving-shaft thereof provided with a crank or eccentric, of a stationary jaw, a movable jaw-frame provided with a face or acting portion the lower part of which is convex, an operating-pitman directly connecting the rear part of said jaw-frame with the said crank or eccentric, a rigid guide-link jointed to the said jaw-frame and to the machine-frame and serving to pivotally support the forward end of said jaw-frame on said machine-frame, a stationary abutment, and a toggle link or links interposed between said abutment and the rear part of said jaw-frame.

16. The combination with the stationary jaw-plate D provided at its top with the laterally-projecting lugs d^2 resting on the top of the machine-frame, of a bolt or bolts and a nut or nuts on said bolt or bolts for securing said jaw-plate in place, said lugs serving to support said jaw-plate when said nut or nuts are loosened.

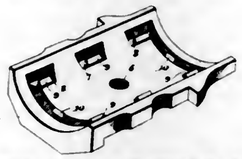
17. The combination with the stationary jaw-plate D provided at its top with the laterally-projecting lugs d^2 resting on the machine-frame, of the hopper H placed above said lugs and which, when bolted down, will serve to assist in holding the said jaw-plate in place.

18. In a crushing-machine, the combination with a movable jaw, having a convex face portion, and a second jaw with which the said movable jaw cooperates and which has a concave face portion, of a pitman jointed to the rear end of the frame of said movable jaw, a toggle or toggles connected with said movable jaw, and a rigid guide-

link coöperating with said toggle or toggles to force said convex face of the movable jaw to roll or rock in a predetermined course.

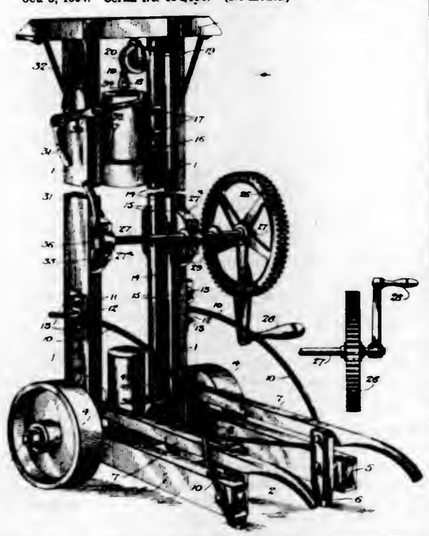
19. In a crushing-machine, the combination with a movable jaw, having a curved face portion, and a second jaw with which said movable jaw coöperates, of a pitman jointed to the rear end of the frame of the said movable jaw, a toggle or toggles connected with said movable jaw and having their front centers in line with the lower axis of said pitman, and a rigid guide-link connected with said movable jaw and which coöperates with said toggle or toggles to force the curved face of said jaw to roll or rock in a predetermined course.

607,576. JOURNAL-BEARING. JAMES SWAN, Topeka, Kans. Filed Oct. 14, 1897. Serial No. 655,146. (No model.)



Claim.—A journal bearing or brass comprising a solid body portion consisting of a single piece of metal and provided at opposite sides with narrow gutters formed by recessing the solid body portion, the malleable projections or lugs formed integral with the body portion and located at the sides of the recesses and adapted to be bent over the latter to form hooks, and a lining of soft material applied to the body portion in a molten condition, and having the projections or lugs embedded in it, whereby it is retained on the body portion, substantially as described.

607,577. POST-DRIVER. GEORGE W. TIPTON, Howard, Pa. Filed Oct. 5, 1897. Serial No. 654,130. (No model.)



Claim.—1. In a post-driving machine, the combination with a drop-weight, of a winding-drum, a cable between said weight and drum, a shiftable power-shaft adapted to be geared to the drum, a trip-lever fulcrumed at an intermediate point of its length and having one end thereof in the path of said weight, a spring, and a trip rod or bar connected to the other end of the trip-lever and having a cam-formed end to impinge against one end of the shiftable power-shaft, as and for the purposes described.

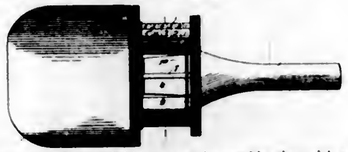
2. In a post-driving machine, the combination with a drop-weight, a winding-drum, and a cable or rope, of a shiftable power-shaft adapted to be geared to said drum, a trip-lever in the path of said weight, a trip bar or rod attached at one end to the lever and having a cam-formed end arranged to impinge directly against one end of the shiftable power-shaft, a guide in which the free end of the rod or bar plays, and a spring to return the trip-lever and trip-bar to their normal positions, as and for the purposes described.

3. In a post or pile driver, the combination with an upright guide-frame for the weight-hammer, and a wheeled axle, of the holding-frame attached to the axle and having the short posts, 6, the handle-bars pivoted to the upright frame and to the short posts, the sectional clamps having their base-plates fixed to the upright frame and their adjustable plates bolted to said base-plates, and the stay-rods attached to the holding-frame and adjustably confined by the clamp, substantially as described.

4. In a post or pile driver, the combination with an upright guide-frame having the grooves in the opposing faces of its side pieces, of a slidable post guide and clamp comprising a bent bar provided with the heads which are fitted loosely in said grooves and with an eye at a point intermediate of its length, a clamping-plate loosely fitted in said eye, and a bolt which unites the bar and plate detachably together, substantially as described.

5. In a post-driving machine, a slidable post-holder consisting of a guiding bar or rod provided with a post-seat and with a transverse bolt-hole at one side of said seat, an eyebolt attached to the bar or rod on the other side of the post-seat, a clamping-plate having a hook which loosely engages the eyebolt, and a clamping-bolt passing through the perforations in the guiding bar or rod and the clamping-plate, as and for the purposes described.

607,578. WEIGHING-SCOOP. GEORGE H. WATKINS, Ridgeway, Va., assignor of one-third to H. C. Clanton, Spencer, Va. Filed July 12, 1897. Serial No. 644,253. (No model.)



Claim.—1. In a weighing-scoop, the combination with a hollow handle, and a hinged scoop, of a compression-spring within said handle, an endwise-movable link pivoted at one end to the scoop and extending into the handle to connect with the compression-spring therein, a weight-indicating cylinder mounted between the handle and scoop on one side of the link, a cost-indicating cylinder also between the handle and scoop and on the other side of the link, and a pointer carried by said link to travel adjacent to both cylinders, substantially as described.

2. In a weighing-scoop, the combination with a hollow handle, and a hinged scoop, of an endwise-movable link attached to said scoop, a compression-spring seated in the handle and connected to the link, a cost-indicating cylinder rotatably mounted on the handle and parallel to the link, a weight-indicating cylinder fixed to the handle and on the opposite side of the link from the first-named cylinder, and a pointer attached to the link to travel adjacent to both cylinders, substantially as described.

3. In a weighing-scoop, a chambered handle and a transverse bridge attached to one end of the handle, combined with an arm fixed to said handle, a scoop pivoted to the free end of said arm, a slidable link pivoted to said scoop, the cylinders mounted on the bridge-plate and arranged between the scoop and handle and a pointer attached to the link and arranged to travel over both cylinders, substantially as described.

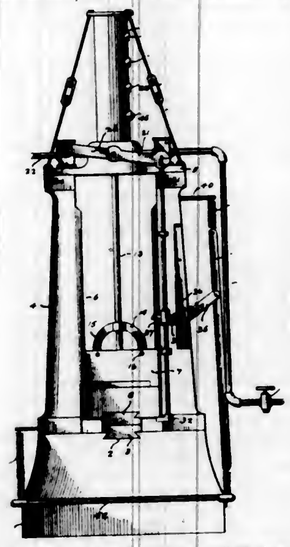
4. The combination of a handle provided with a transverse bridge-plate, a spring seated within the handle, a pivoted scoop carried by said handle, a link pivoted to the scoop and connected to the spring, a revoluble cost-indicating cylinder mounted on the bridge-plate on one side of the link, a weight-indicating cylinder attached to the bridge-plate on the opposite side of the link thereof, and an indicator attached to the link and having its terminals adjacent to the rate and weight indicating cylinders, substantially as and for the purposes described.

5. In combination, a handle, a pivoted scoop, a torsion-spring operatively connected with the scoop, a weight-cylinder, a revoluble cost-cylinder provided with columns of figures indicative of the total costs at different rates, and a pointer controlled by the connections between the scoop and spring and adapted to traverse the weight and cost cylinders, substantially as described.

607,579. DROP-PRESS. CHARLES F. WIELAND, Reedsville, Pa., assignor of one-half to Sven G. Swanson, same place. Filed May 21, 1897. Serial No. 637,553. (No model.)

Claim.—1. In a drop-press, the combination of the frame, the steam-cylinder mounted thereon and having inlet and exhaust ports at its base, and also a series of exhaust-ports throughout its length, with means for temporarily closing the said exhaust-ports, the valves for controlling the inlet and the main exhaust-port, said valves being

so arranged that when one is opened, the other is always closed, the oscillating lever engaging the stem of the said valves, the vertically-movable valve-actuating rod connected to one arm of the said lever, and having stops thereon, the piston, the platen connected to said piston, and adapted to engage respectively the said stops at the limits of its movement, and thereby to operate the said valves, and a treadle device arranged to act upon the said valve-actuating rod to operate the said valves independently of the platen, substantially as specified.



2. In a drop-press of the character described, the combination with the vertically-movable valve-actuating rod having an adjustable stop thereon, the lever adjustably pivoted to the frame and having one arm in position to engage the said stop, a spring-suspended rod or chain to which the opposite arm of said lever is connected, and a treadle to which said rod or chain is connected at its lower end, substantially as specified.

3. In a drop-press, the piston-rod for operating the drop-platen in combination with the slotted yoke connecting said rod and platen, and the cushion interposed between the piston-rod and the platen connected therewith, substantially as described.

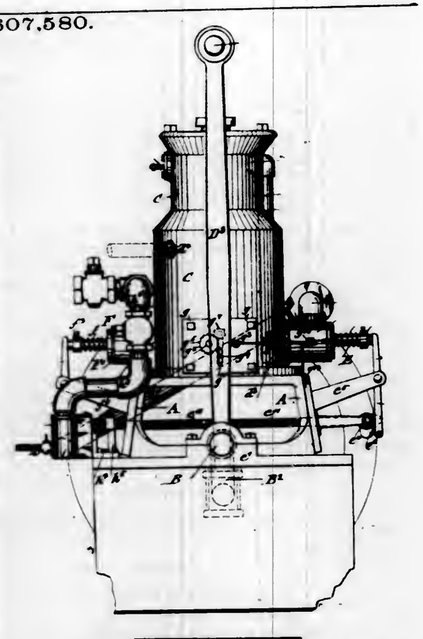
607,580. GAS-ENGINE. LEVI J. WISE, New York, N. Y. Filed Dec. 22, 1896. Serial No. 616,599. (No model.)

Claim.—1. In a gas-engine, the combination, with a single cylinder closed at both ends and having a jacketed portion, of a piston in the cylinder, a valved air-inlet opening in the unjacketed portion of the cylinder, an air-outlet opening in the unjacketed portion, a pipe connecting said air-outlet opening with the jacketed portion of the cylinder, a water-supply nozzle in said connecting-pipe, and an outlet-pipe for said jacketed portion, substantially as set forth.

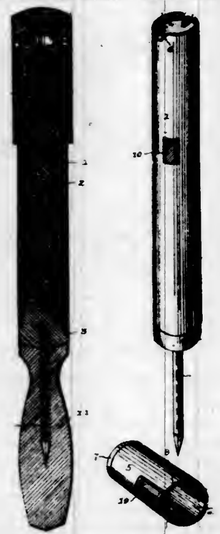
2. In a gas-engine, the combination with a single cylinder closed at both ends and having a jacketed portion, of a piston in the cylinder, a piston-rod provided with a cross head at its outer end, connecting-rods between said cross-head and the crank-shaft, an inlet-valve for the explosive air-and-gas mixture, an outlet-valve for the products of combustion, a valve gear for operating said inlet and exhaust valve from the crank-shaft, and an electric igniter located in the combustion-chamber and operated by one of the connecting-rods of the piston cross-head, substantially as set forth.

3. In a gas-engine, the combination, of a cylinder having a combustion-chamber at one end, an igniter in said combustion-chamber, an insulated pin passing through the casing of the igniter and being connected at its outer end with a source of electricity and provided at its inside with a wing or projection, a rotary shaft in said casing provided with a wing at the inner end that forms intermittent contact with the projection on said pin, a crank-arm pivoted to the igniter-casing and connected by a pin with a slot in one of the connecting-rods of the engine, a pinion on the pivot of said crank-arm, a gear-wheel on the rotary shaft meshing with said pin, said gear-wheel having twice the number of teeth as the pin so as to produce one rotation of the wing for every two rotations of the crank-arms, substantially as set forth.

607,580.



607,581. SIGNAL-TORCH. OSCAR V. WOOD and FRANK DUTCHER, Fostoria, Ohio. Filed Feb. 23, 1898. Serial No. 671,362. (No model.)



Claim.—1. In a pyrotechnical signal, the combination of a tube containing an inflammable composition, a plug closing an end of the tube, a pin or pointed spike fitted to the said plug, and a handle detachably connected with and closing over the projecting portion of the pin and bearing against the plug so as to admit of the signal device being held in the hand or applied to a support, substantially as set forth.

2. In a pyrotechnical signal, the combination of a tube containing the inflammable composition, an igniting device embedded into the inflammable composition and having its igniting end projecting beyond a side of the tube, and a cap slidably fitted upon the outer end of the tube and having an inner friction or abrading surface to engage with and light the igniting device when the cap is withdrawn

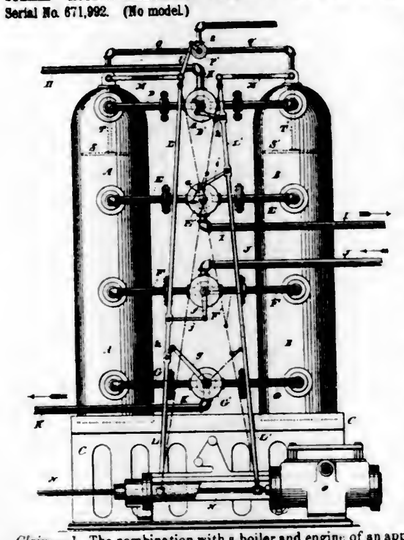
from the tube, whereby the cap serves the double function of a closure for the tube and an igniting device for the composition, substantially as set forth.

3. In a pyrotechnical signal, the combination of a tube containing the inflammable material, an igniting device in intimate connection with the inflammable composition and having its igniting end projecting beyond a side of the tube, a cap removably fitted upon the outer end of the tube and having an abrading-surface to engage frictionally with the igniting device and light the same when withdrawing the cap, and a sealing and designating strip overlapping the joint between the cap and tube and secured to each, substantially as and for the purpose set forth.

4. In a signal-torch, the combination of a tube containing an inflammable composition and having its outer end notched, a match embedded in the composition and having its headed end fitted into the aforesaid notch and projecting beyond a side of the tube, and a cap removably fitted on the outer end of the tube and having an abrading-surface engaged frictionally with the headed end of the match to ignite it and the torch when withdrawing the cap from the tube, substantially as set forth.

5. In a pyrotechnic signal, the combination of a tube containing an inflammable composition, oppositely-disposed matches embedded in the composition and having their headed ends projecting beyond opposite sides of the tube, and a cap removably fitted upon the tube and having oppositely-disposed abrading-surfaces with intervening spaces between their adjacent longitudinal edge portions, substantially as and for the purpose set forth.

607,582. **APPARATUS FOR REGENERATING EXHAUST-STEAM.** HUGH J. BARRON, New York, N. Y. Filed Feb. 28, 1898. Serial No. 671,992. (No model.)



Claim.—1. The combination with a boiler and engine of an apparatus adapted to receive steam interposed between said boiler and engine and communicating therewith, and valve mechanism for intermittently supplying steam to a portion of said apparatus prior to admitting the same to the engine, substantially as specified.

2. The combination with a boiler and engine of an apparatus adapted to receive steam interposed between said boiler and engine and communicating therewith, and valve mechanism for intermittently supplying steam to a portion of said apparatus prior to its admission to the engine, and intermittently supplying steam to a portion of said apparatus after its admission to, and discharge from the engine, substantially as specified.

3. The combination with a boiler and engine of an interposed apparatus communicating therewith and adapted to receive steam under different pressures, and valve mechanism for constantly supplying steam from the boiler to a portion of said apparatus, substantially as specified.

4. The combination with a boiler and engine of an interposed apparatus communicating therewith comprising a plurality of receptacles, adapted to receive steam, and valve mechanism for intermittently supplying steam to a part of said receptacles, substantially as specified.

5. The combination with a boiler and engine of an interposed apparatus communicating therewith comprising a plurality of receptacles adapted to receive steam, and valve mechanism for alternately supplying steam to said receptacles, substantially as specified.

6. The combination with a boiler and engine of an apparatus for the purposes specified interposed between said boiler and engine and communicating therewith comprising a plurality of receptacles adapted to receive steam under high and relatively low pressures, valve mechanism for reversing the course of the fluids through said receptacles, and means for reducing the temperature of steam which may be confined in said receptacles prior to the admission of relatively low-pressure steam thereto, substantially as specified.

7. The combination with a boiler and engine of an apparatus for the purposes specified communicating therewith comprising a receptacle for steam interposed between the boiler and high-pressure side of the engine, a receptacle for steam interposed between the boiler and low-pressure side of the engine, and valve mechanism for reversing the course of the fluids through said receptacles, substantially as specified.

8. The combination with a boiler and engine of an interposed apparatus communicating therewith adapted to receive steam, comprising a high-pressure receptacle and a relatively low-pressure receptacle, and valve mechanism for converting the said receptacle, substantially as specified.

9. The combination with a boiler and engine of an interposed apparatus communicating therewith comprising two receptacles adapted to alternately receive steam under high and relatively low pressures, and valve mechanism for admitting steam under high pressure to the receptacle containing steam under relatively low pressure, substantially as specified.

10. The combination with a boiler and engine of an apparatus for the purposes specified communicating therewith comprising two receptacles adapted to alternately receive steam under high and relatively low pressures, and valve mechanism for intermittently admitting steam under high pressure to one of said receptacles, and steam under relatively low pressure to the other of said receptacles, substantially as specified.

11. The combination with a boiler and engine of an interposed apparatus communicating therewith comprising two receptacles adapted to alternately receive steam under high and relatively low pressures, and valve mechanism for simultaneously admitting steam under high pressure to the receptacle containing steam under low pressure, and steam under low pressure to the other receptacle, substantially as specified.

12. The combination with a boiler and engine of an interposed apparatus comprising two receptacles adapted to receive steam, a main live-steam-inlet pipe, a main live-steam outlet pipe, and an exhaust-steam-inlet pipe, all common to said receptacles, valve mechanism for alternately admitting live steam to one of said receptacles, and exhaust-steam to the other of said receptacles, and means for shifting said valve mechanism, substantially as specified.

13. An apparatus for the purposes specified, comprising two receptacles, a live-steam-inlet pipe common to said receptacles, a live-steam-outlet pipe common to said receptacles, an exhaust-steam-inlet pipe common to said receptacles, valve mechanism arranged in said pipes for alternately admitting live and exhaust steam to said receptacles, and means for operating said valve mechanism, whereby to simultaneously permit live steam to enter one of said receptacles, and exhaust-steam to enter the other of said receptacles, substantially as specified.

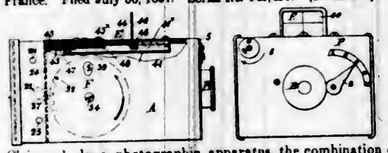
14. An apparatus for the purposes specified comprising two receptacles, a live-steam-inlet pipe having branch sections each connected to one of said receptacles, a live-steam-outlet pipe having branch sections likewise connected to said receptacles, an exhaust-steam-inlet pipe having branch sections likewise connected to said receptacles, and an outlet-pipe having branch sections and likewise connected to said receptacles, three-way valves located in the aforesaid pipes at the junctions of the main and branch sections, and means for shifting said valves, substantially as specified.

15. An apparatus for the purposes specified comprising two receptacles, a live-steam-inlet pipe having branch sections connected to said receptacles, and a three-way valve at the junction of the main and branch sections, a live-steam-outlet pipe likewise connected to said receptacle and provided with a three-way valve at the junction of its main and branch sections, said valves normally communicating with the live-steam inlet and outlet pipes and one of said receptacles; an exhaust-steam-inlet pipe having branch sections connected to said receptacles, and a three-way valve at the junction of its main and branch sections, and an outlet-pipe having branch sections likewise connected to said receptacles and provided with a three-way valve at the junction of its main and branch sections, said valves normally communicating with said last-named outlet pipe, and the exhaust-inlet pipe and the other of said receptacles, and operating-levers having their upper ends pivotally supported, one of said levers being adapted to operate the valves of the live-steam inlet and outlet pipes, and the other of said levers adapted to operate the valves of the exhaust-steam-inlet pipe and the outlet-pipe, substantially as specified.

16. An apparatus for the purposes specified comprising two receptacles, pipes D, E, F, G connecting said receptacles, a main steam-inlet pipe H connected to the pipe D, a main steam-outlet pipe I connected to the pipe E, a main exhaust-steam pipe J connected to the pipe F, an outlet-pipe K connected to the pipe G, a feed-water-inlet pipe I' having branches Q, Q' connected to the receptacles, three way valves D', E', F', G', P' arranged in pipes D, E, F, G and P respectively, said valves being provided with arms at the ends of their stems, links pivotally connected to the ends of said stems, arms M, M' each having one of its ends pivotally secured to the top of one of the receptacles, and operating-levers L, L', said lever L being pivotally connected at its upper end to the end of the arm M, and the link of the arms of the valve P', and adjacent to its upper end to the arms of the valves D' and E', and said lever L' pivotally connected at its upper end to the arm M', and adjacent to its lower end to the arms of the valves F' and G', substantially as specified.

17. An apparatus for the purposes specified, comprising two receptacles, a live-steam-inlet pipe common to said receptacles, a live-steam-outlet pipe common to said receptacles, an exhaust-steam-inlet pipe common to said receptacles, valve mechanism arranged in said pipes for alternately admitting live and exhaust steam to said receptacles, a water-supply pipe common to said receptacles, and valve mechanism arranged in said water-supply pipe, and means for operating the valve mechanism, first mentioned, whereby to simultaneously permit live steam to enter one of said receptacles, and exhaust-steam to enter the other of said receptacles, and the valve mechanism, last mentioned, to permit water to enter said receptacles prior to the admission of exhaust-steam thereto, substantially as specified.

607,583. **PHOTOGRAPHIC FINDER.** OLIVIER BERTE, Paris, France. Filed July 30, 1897. Serial No. 646,459. (No model.)



Claim.—1. In a photographic apparatus, the combination of a pivoted finder and a spring for retaining said finder in raised operative position, substantially as set forth.

2. In a photographic apparatus, the combination with the casing provided with a slot, of a finder, a film piercer, a pin guided in the slot of the casing, a finger-piece attached to said pin at its outer end, and means actuated by said pin at its inner end for simultaneously operating said finder and film-piercer, substantially as set forth.

3. In a photographic apparatus, the combination, with the casing provided with an opening in its top, of a depressed plate forming a compartment below said top opening, a spring-actuated finder, and means for lowering the finder into said compartment, substantially as set forth.

4. In a photographic apparatus, the combination, with the casing having a top opening, and a depressed top plate forming a compartment below said opening, of a finder adapted to move into said compartment, a film-piercer in said compartment, and means for simultaneously raising the finder and actuating the film-piercer, substantially as set forth.

5. In a photographic apparatus, the combination with the casing having a top opening, and a depressed top plate forming a compartment below said opening, of a finder adapted to move into said compartment, and a plate sliding in said compartment for closing said opening and inclosing said finder within the compartment, substantially as set forth.

607,584. **RETAINER FOR BALL-BEARINGS.** WILLIAM H. BINNS, Chicago, Ill. Filed Aug. 23, 1897. Serial No. 649,120. (No model.)

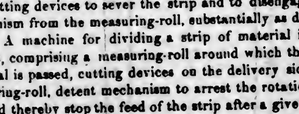


Claim.—1. A retainer for ball-bearings comprising a body portion of fixed diameter, and a separate elastic retaining ring or rim located radially outward beyond said body portion, and adapted to be engaged between said body portion and the wall of the bearing, and by its frictional engagement prevent movement of the retainer in either direction, substantially as described.

2. A retainer of the class described comprising a body portion or annulus of fixed diameter, having a grooved periphery, and a separate expansible elastic ring engaging said grooved periphery extending radially outward beyond the body and adapted to frictionally engage the wall of the bearing and prevent lateral displacement of the retainer in either direction, substantially as described.

3. A retainer of the class described comprising a body portion or annulus of fixed diameter, having its periphery notched or slit, forming projections which are alternately offset relatively to the plane of the body of the annulus, and a separate expansible elastic ring adapted to engage said alternating projections, substantially as described.

607,585. **NUT-LOCK.** LEO M. CHAPMAN and JAMES M. GELATT, Louisville, Ky. Filed Mar. 28, 1898. Serial No. 675,461. (No model.)



Claim.—1. A nut-lock, comprising a main nut having a central angular opening which passes therethrough, an annular chamber in the outer side thereof, and a circular opening which communicates therewith, the outer wall of said annular chamber being provided with a notch or recess which communicates with said opening, and a supplemental nut the inner side of which is adapted to enter the said circular opening, said lock-nut being provided with an angular lug or projection and with an annular flange or rim which is adapted to close said opening, substantially as shown and described.

2. A nut-lock, comprising a main nut which is provided with a central angular opening which passes therethrough, an annular chamber in the outer side thereof, a circular opening which communicates therewith, and a supplemental nut which is provided with a central screw-threaded bore, and on one side thereof with a lug or projection which is adapted to enter said annular chamber, said main nut and said supplemental nut being adapted to be used in connection with a spindle having an angular extension on which is formed a screw-threaded projection, substantially as shown and described.

3. In a nut-lock, the combination with a spindle provided with an angular extension on which is formed a screw-threaded extension, of a nut which is provided with a central angular opening and in the outer side thereof with a circular opening in the outer wall of which is formed an annular chamber, and a nut one side of which is adapted to enter said annular opening, said side of said nut being also provided with a lug or projection which is adapted to enter said annular chamber, substantially as described.

4. The combination with a spindle, rod or similar device provided with an angular extension on which is formed a screw-threaded extension, of a nut provided with a central angular opening which is adapted to receive said angular extension, said nut being provided in one side thereof with a circular opening in the outer wall of which is formed an annular chamber, and a nut one side of which is adapted to enter said opening, said nut being also provided with a lug or projection which is adapted to enter said annular chamber and with a flange or rim, substantially as described.

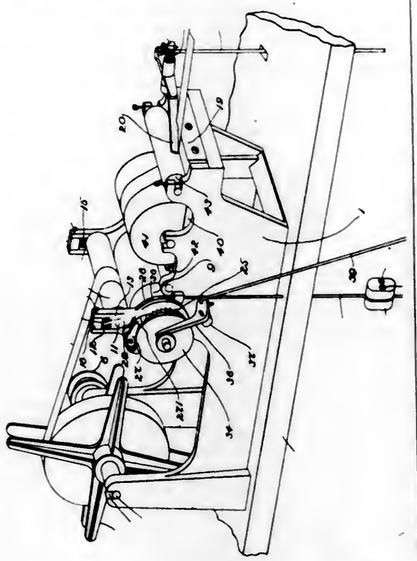
607,586. **MACHINE FOR CUTTING CLOTH.** CHARLES H. CROWELL, Lynn, Mass., assignor to James R. Carter, Boston, Mass. Filed July 17, 1897. Serial No. 644,907. (No model.)

Claim.—1. A machine for dividing a strip of material into measured lengths, comprising a measuring-roll around which the said strip of material is passed, means for preparing the said strip to adhere to the surface to which it is applied, cutting devices on the delivery side of the said measuring-roll, detent mechanism to arrest the rotation of the said roll and thereby stop the feed of the strip after a given length of the latter has been drawn forward past the cutting devices, and actuating connections whereby simultaneously to operate said cutting devices to sever the strip and to disengage said detent mechanism from the measuring-roll, substantially as described.

2. A machine for dividing a strip of material into measured lengths, comprising a measuring-roll around which the said strip of material is passed, cutting devices on the delivery side of the said measuring-roll, detent mechanism to arrest the rotation of the said roll and thereby stop the feed of the strip after a given length of the latter has been drawn forward past the cutting devices, and actuating connections whereby simultaneously to operate said cutting devices to sever the strip and to disengage said detent mechanism from the measuring-roll, substantially as described.

3. The improved machine comprising the measuring-roll around which a continuous strip of material is passed, cutting devices to act on the said strip after it has left the measuring-roll, a device interposed between the said measuring-roll and cutting devices for render-

ing the surface of the said strip adhesive, and detent mechanism to arrest the rotation of the said measuring-roll and thereby stop the feed of the strip after a given length of the latter has been drawn forward past the cutting devices, substantially as described.



4. The improved machine comprising the measuring-roll around which a continuous strip of material is passed, cutting devices to act on the said strip after it has left the measuring-roll, a trough and roll interposed between the said measuring-roll and cutting devices, detent mechanism to arrest the rotation of the said roll and thereby stop the feed of the strip after a given length of the latter has been drawn forward past the cutting devices, and actuating connections whereby simultaneously to operate said cutting devices to sever the strip and to disengage said detent mechanism from the measuring-roll; substantially as described.

5. The combination with the measuring roll, of the detent-wheel moving in unison therewith, the barrel movable independently of the said roll and provided with a detent to engage the said detent-wheel and thereby cause the barrel to move in unison with the roll, the cord or wire attached to the said barrel and provided with a stop, and a fixed stop with which the former stop engages to arrest the rotation of the measuring-roll, substantially as described.

6. The combination with the measuring-roll, of the detent-wheel moving in unison therewith, the barrel movable independently of the said roll and provided with a detent to engage the said detent-wheel and thereby cause the barrel to move in unison with the roll, the cord or wire attached to the said barrel and provided with a stop, a fixed stop with which the former stop engages to arrest the rotation of the measuring-roll, the throw-off disk to disengage the said detent from the detent-wheel, and means to actuate the said throw-off disk, substantially as described.

7. The combination with the measuring-roll, of the detent-wheel moving in unison therewith, the barrel movable independently of the said roll, a detent on the said barrel to engage the said detent-wheel and thereby cause the barrel to move in unison with the roll, the latch pivoted to the said barrel, the cord or wire connected to the said latch and provided with a stop, a fixed stop with which the former stop engages to arrest the rotation of the measuring-roll, throw-off devices to disengage the said detent from the said detent-wheel, and the fixed stop with which the said latch engages to determine the starting position of the barrel, substantially as described.

8. The improved machine comprising the measuring-roll around which a continuous strip of material is passed, cutting devices to act on said strip after it has left the measuring-roll, a device for rendering the surface of the said strip adhesive, detent mechanism in operative connection with said measuring-roll to arrest the feed of the strip after a given length of the latter has been drawn past the cutting devices, and actuating connections whereby simultaneously to operate the said cutting devices to sever the strip and to disengage said detent mechanism.

607,587. THREAD-PACKAGE. IRA DIMOCK, New London, Conn., assignor to the Nonatuck Silk Company, Northampton, Mass. Filed Sept. 26, 1894. Serial No. 524,129. (No model.)



Claim.—1. A thread-package consisting of a casing for surrounding the skein, the body of the casing itself being folded on a line transverse to its length, the bight of the fold forming a bearing for the inclosed skein over which bearing the threads may be withdrawn from the package, and a tongue extending through the bight of the skein, substantially as set forth.

2. A thread-package consisting of a casing folded on a line transverse to its length to form a bearing over which the threads of the skein are to be withdrawn and having indentations projecting inwardly from the wall of the casing to separate the threads of the skein, substantially as set forth.

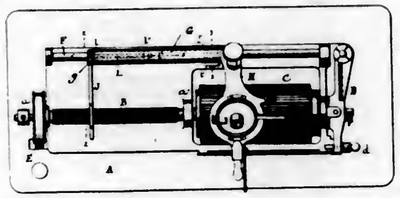
3. The thread-package consisting of a casing for surrounding the skein, the body of the casing itself being folded on a line transverse to its length, the bight of the fold forming a bearing over which the threads of the inclosed skein are to be withdrawn from the package, the casing being provided with indentations projecting inwardly from the wall of the casing to separate the threads of the skein, substantially as set forth.

4. The thread-package, consisting of a casing provided with a tongue projecting from the wall of the casing intermediate of the ends of the casing for separating the sides of the skein within the casing and a slide adapted to slip, over the casing, substantially as set forth.

5. A thread-package, consisting of a casing provided with a bearing-tongue projecting from the wall of the casing intermediate of the ends of the casing, the body of the casing itself being cut away opposite the tongue to expose a portion of the skein when in position between the tongue and the wall of the casing, substantially as set forth.

6. The thread-package, consisting of a casing provided with a tongue projecting from the wall of the casing intermediate of the ends of the casing for separating the sides of the skein within the casing and forming a bearing for the withdrawal of the threads, substantially as set forth.

607,588. PHONOGRAPH. THOMAS A. EDISON, Llewellyn Park, N. J. Filed Jan. 27, 1897. Serial No. 620,974. (No model.)



Claim.—1. In a phonograph, the combination with a recorder or reproducer, a mandrel for carrying the blank, and a feed-screw, of a carriage for the recorder or reproducer, a guide-rod to which the carriage is sleeved, a friction-roller supporting the carriage at its center of gravity, and a feed-arm pivoted to the carriage and engaging the feed-screw, whereby said feed-arm does not affect the balance of said carriage on the friction roller, substantially as set forth.

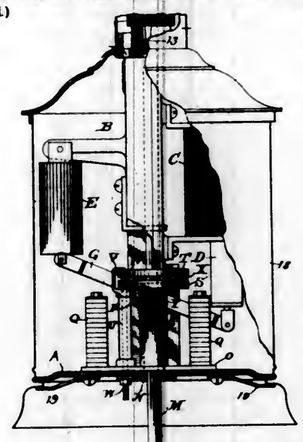
2. In a phonograph, the combination with the recorder or reproducer, of a carriage therefor, a guide rod and guide-bar on which said carriage travels, a roller-bearing for said carriage at its center of gravity, and means for adjusting said roller-bearing to adjust the carriage relative to the guide-rod to reduce friction, substantially as set forth.

3. In a phonograph, the combination with the recorder or reproducer, of a carriage therefor, a guide-rod and guide-bar on which said carriage travels, a roller-bearing for said carriage at its center of gravity, and an adjustable eccentric bearing for said roller, whereby the carriage is adjusted relative to the guide-rod to reduce friction, substantially as set forth.

4. In a phonograph, the combination of a guide-rod, a recorder or reproducer carriage having collars or sleeves fitting said rod, a feed-screw, and a feed-arm adapted to engage said feed-screw, said arm being pivoted to the carriage by a rod having bearings at two distant points, substantially as set forth.

5. In a phonograph, the combination of a guide-rod, a recorder or reproducer carriage having collars or sleeves fitting said rod, a feed-screw, and a gravity feed-arm adapted to engage said feed-screw, said arm being pivoted to the carriage by a rod having bearings at two distant points, substantially as set forth.

607,589. ELECTRIC-ARC LAMP. JOHN H. J. HAINES, New York, N. Y., assignor to the Haines Electric Company, Jersey City, N. J. Filed Oct. 29, 1896. Renewed May 12, 1898. Serial No. 680,530. (No model.)



Claim.—1. In an electric arc lamp, a detatched tilting clutch freely movable about its axis and provided on its inner periphery with rotary friction devices, for the purpose set forth.

2. In an electric-arc lamp, a tilting clutch provided with a raceway on its inner periphery, and a series of balls located in said raceway, as and for the purpose set forth.

3. In an electric-arc lamp, a tilting clutch consisting of two plates inwardly beveled on their inner periphery to form a raceway and secured together, and a series of balls located in said raceway.

4. A clutch for arc-lamps consisting of a series of balls and a tilting ring provided with a ball-raceway on its inner periphery formed by two inwardly-inclined surfaces separated by a surface of sufficiently less diameter than the inner periphery of the inclined surfaces to prevent the balls from simultaneously engaging both inclined surfaces, as and for the purpose set forth.

5. A clutch for arc-lamps consisting of a series of balls and a tilting ring formed of two plates inwardly beveled on their inner periphery, and a ring loosely inserted between the members of the tilting ring and having an internal diameter sufficiently less than that of the inner edges of the beveled surfaces to hold the balls from simultaneous engagement with both beveled surfaces.

6. A clutch for an arc-lamp consisting of a series of balls and a tilting ring formed of two inwardly-beveled countersink plates, and a ring mounted in the countersunk and of such internal diameter as to keep the balls from simultaneous engagement with both of said plates, as and for the purpose set forth.

7. A clutch for an arc-lamp consisting of a tilting ring formed of two united plates each provided with an undercut groove on its inner periphery, and a series of balls confined in the raceway formed by said grooves.

8. In an arc-lamp, the combination of a tilting clutch freely movable about its axis and provided on its clutching-surface with rotary friction devices, a movable platform under said clutch, means on the platform for tilting the clutch, and means controlled by the current of the lamp for raising and lowering the platform.

9. The combination with the carbon-carrying rod, the ring-clutch, the platform, and means thereon for tilting the clutch, of means for raising and lowering the platform and ring, and a part fixed in the path of the clutch for tripping it.

10. In an arc-lamp, the combination of the detached ring-clutch freely movable about its vertical axis, means for tilting and lifting the clutch, a weight normally out of engagement with the clutch but assumed thereby as the clutch is lifted, and a tripping device for the clutch, substantially as and for the purpose set forth.

11. The combination with the carbon-carrying rod, of the ring-clutch, the platform having a projection engaging one edge of the ring, means for raising the platform, a movable weight for engaging the ring at the edge opposite said projection, and means for tripping the ring, substantially as set forth.

12. In an arc-lamp, the combination of the detached ring-clutch freely movable about its axis, the vertically-movable platform supporting the clutch and provided with means for tilting it, the tripping device, the lever loosely engaging the platform, and the electro-magnet for tilting said lever, as and for the purpose set forth.

13. The combination with the solenoid-core provided with the socket in its end, of the clevis having its shank located in said socket, and provided with a collar or projection, and springs engaging the said collar or projection and the ends of the socket, as and for the purpose set forth.

14. A tilting ring-clutch having a number of freely-moving balls confined in a raceway on its inner periphery, as and for the purpose described.

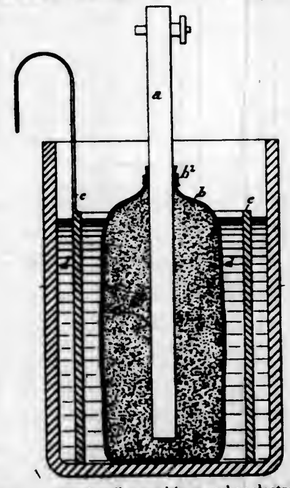
15. A ball-clutch having a loose ring or washer inserted in the ball-race.

16. An antifriction-ball race, having a loose ring or washer of slightly less diameter than the mean diameter of the raceway, for the purpose set forth.

17. The combination with the solenoid-core, provided with a socket in its lower end, of the feeding-lever, and a connection between the core and said lever-spring seated within said socket, substantially as and for the purpose set forth.

18. In an arc-lamp, the combination of the detached ring-clutch freely movable about its vertical axis and provided on its inner periphery with rotary friction devices, means for tilting and lifting the clutch, a weight normally out of engagement with the clutch but assumed thereby as the clutch is lifted, and a tripping device for the clutch, substantially as and for the purpose set forth.

607,590. GALVANIC CELL. ALBRECHT HEIL, Fränkisch Crumbach, Germany. Filed Dec. 1, 1897. Serial No. 660,430. (No model.)



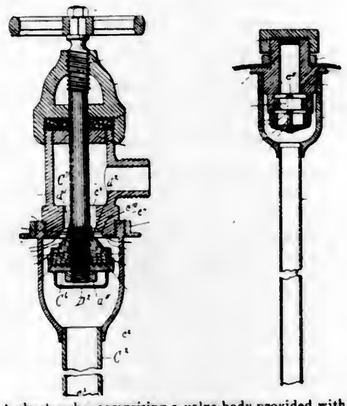
Claim.—A galvanic cell comprising a carbon electrode surrounded by about equal parts by volume of graphite, manganese peroxid and lead peroxid, a zinc electrode and an absorbent filling holding an electrolyte of zinc sulfate containing flocks of hydrate of zinc evenly distributed throughout the mass of said electrolyte, substantially as described.

607,591. FIRE-EXTINGUISHER. JOSEPH M. MILLER, Chicago, Ill. Filed May 20, 1897. Serial No. 637,471. (No model.)

Claim.—1. In a valve, the combination with a valve-seat, of a valve-stem arranged to reciprocate toward and from said seat, a soft-rubber valve-plug mounted upon said stem so as to be capable of a limited movement endwise thereon, a rigid follower mounted upon said valve-stem adjacent to the pressure side of the valve-plug and also capable of free movement upon the valve-stem toward said valve-plug, means for positively retaining the follower upon said stem and a sealing-cap mounted upon the follower and inclosing the end of the valve-stem, the form of said cap being such as to permit the necessary limited movement of the follower upon the stem.

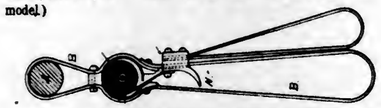
2. A check-valve comprising a valve-body provided with a passage therethrough, a seat surrounding said passage, a stem guided to

reciprocate toward and from said seat, a rigid valve-disk or follower mounted upon the stem at a distance from the valve-seat and a soft-rubber or analogous valve-ring interposed between the disk and valve-seat, said disk being free to move up toward the valve-seat but held positively from movement in the opposite direction beyond a determined position, said position being such as to hold the valve-ring under compression.



3. A check-valve comprising a valve-body provided with a passage therethrough, a seat surrounding said passage, a bar or support extending across the passage, a valve-stem arranged to reciprocate through said bar and arranged to project at one end beyond the valve-seat and provided at its opposite end with a stop adapted to contact with the guide-bar and limit its movement, in one direction, a rigid valve-disk or follower mounted upon said stem at a distance from the valve-seat and a soft-rubber or analogous valve-ring interposed between the disk and valve-seat, said disk being free to move up toward the valve-seat but held positively from movement in the opposite direction beyond a determined position, which position is such as to hold the valve-ring at all times under compression.

607,592. HAND-STRAP FOR STREET-CARS. WILLIAM R. SANDS, Newark, N. J. Filed Dec. 30, 1897. Serial No. 664,605. (No model.)



Claim.—1. An adjustable hand-strap which consists of a supporting-strap; a clip arranged to slide thereon, and to which is attached a hand-strap, and means for automatically returning said clip to the upper end of said supporting-strap when said hand-strap is released, substantially as described.

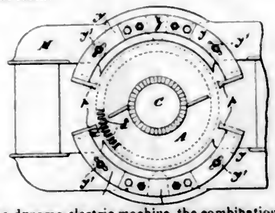
2. An adjustable hand-strap which consists of a supporting-loop; a clip arranged to slide thereon, and to which is attached a hand-strap, and a lug which bears upon the lower end of the supporting-loop when said hand-strap is pulled down; and means for automatically returning said clip to the upper end of the supporting-loop when said hand-strap is released, substantially as described.

3. An adjustable hand-strap which consists of a supporting-strap: a clip arranged to slide thereon, and to which is attached a hand-strap; a reel actuated by a spring and around which is wound a strap, one end of which is secured to said clip which is drawn to the upper end of said supporting-strap by the tension of said spring, when said hand-strap is released, substantially as described.

4. An adjustable hand-strap which consists of a supporting-strap forming a loop upon which slides a clip, to which is attached a hand-strap, and a lug which bears upon the lower end of the supporting-strap when the hand-strap is pulled down; a case secured to the supporting-loop, and within which revolves a reel actuated by a spring, the tension of which winds upon said reel a strap, one end of which is secured to said clip, and raises it to the upper end of the supporting-loop when said hand-strap is released, substantially as described.

607,593. DYNAMO-ELECTRIC MACHINE. WILLIAM B. SAYERS, Glasgow, Scotland, assignor to himself and Mavor & Coulson, Limited, same place. Filed Dec. 21, 1897. Serial No. 662,585. (No model.) Patented in England Nov. 30, 1896, No. 27,209.

Claim.—1. A dynamo-electric machine of the kind herein referred to provided on each of the two opposite sides as set forth of each pole of the field-magnet with a polar projection, the two such polar projections constituting a pair being arranged longitudinally in relation to the cylindrical surface of the armature, but separate therefrom and connected together magnetically so as to form with the armature-core a magnetic circuit in which there will be produced, when a current is flowing in the armature, a magnetic flux that will be proportional throughout a considerable range to the armature-current and in the proper direction in the adjacent polar projections of successive pairs of polar projections to bring about a reversal of the current in the armature-sections at the required times in whichever direction the machine be running and whether as a generator or motor as set forth.



2. In a dynamo-electric machine, the combination with an armature and a field-magnet having two or more poles of a corresponding number of pairs of reversing pole-pieces, the pole-pieces of each pair being arranged at opposite sides of the corresponding field-magnet pole, and arranged in proximity to the armature-core so as to be magnetized thereby when a current is flowing through the armature-winding.

3. A dynamo-electric machine having an armature in which the sections of the armature-winding are connected to the commutator-sections by commutator-coils, and a field-magnet each pole of which is provided with an independent pair of reversing pole-pieces arranged at opposite sides of and separate from said field-magnet pole, each pair of pole-pieces being magnetically connected together and arranged in proximity to the armature-core so as to form a magnetic circuit therewith, substantially as described.

4. In a dynamo-electric machine, the combination with an armature the sections of whose winding are connected to the commutator-sections by commutator-coils portions of each of which are located on opposite sides of a section of the said winding to one end of which said commutator-coil is connected, of separate pairs of reversing pole-pieces arranged around the armature and at opposite sides of the field-magnet poles, the pole-pieces of each pair being arranged at opposite sides of the corresponding field-magnet pole, connected magnetically together, and arranged in proximity to the armature-core so as to form therewith a magnetic circuit, substantially as herein described for the purpose specified.

5. In a dynamo-electric machine, the combination with an armature having the sections of its winding connected to commutator-strips by commutator coils arranged longitudinally upon or within the periphery of the armature and so that portions of the convolutions of each of them will be located on opposite sides of two sections of said winding to the portion of the main armature-winding uniting which said commutator-coil is connected, of pairs of magnetically-connected reversing pole-pieces arranged to be magnetically excited by the armature when a current is flowing through the winding thereof, the adjacent pole-pieces of successive pieces being arranged at a distance apart approximately equal to or a little greater than the distance between the two sides of each of said commutator-coils, substantially as herein described for the purpose specified.

6. In a dynamo-electric machine, the combination with an armature having the sections of its winding connected to commutator-strips by commutator-coils arranged longitudinally upon or within the periphery of the armature and so that portions of the convolutions of each of them will be located on opposite sides of two sections of said winding to the portion of the main armature-winding uniting which said commutator-coil is connected and a field-magnet having two or more poles of pairs of pole-pieces equal in number to the field-magnet poles, the pole-pieces of each pair being arranged longitudinally at each side of the corresponding field-magnet pole, connected together magnetically and arranged in proximity to the armature-core so as to form a magnetic circuit therewith, the distance apart of adjacent pole-pieces of successive pairs of such pole-pieces being approximately equal to or a little greater than the distance apart of the two sides of each of said commutator-coils, substantially as herein described for the purpose specified.

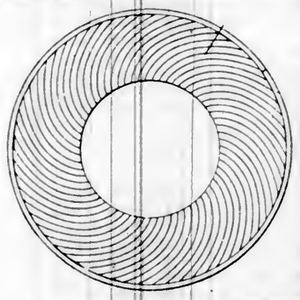
7. In a dynamo-electric machine, the combination with an armature, of reversing pole-pieces arranged to form with the armature-core magnetic circuits through which a magnetic flux is set up when a current is flowing through the armature-winding, and means for varying the resistance of said magnetic circuits and consequently the magnetic flux through such circuits, substantially as described.

8. In a dynamo-electric machine the combination with an armature and field-magnet having two or more poles, of a corresponding number of pairs of reversing pole pieces, the pole-pieces of each pair being magnetically connected together, arranged at opposite sides of the corresponding field-magnet pole and in proximity to the armature-core so as to form a magnetic circuit therewith, and one or more adjustable magnetic links arranged in each of said magnetic circuits, substantially as herein described for the purpose specified.

9. In a dynamo-electric machine, the combination with an armature having the sections of its winding connected to the commutator-sections by commutator-coils, and a field-magnet having two or more poles, of a corresponding number of pairs of pole-pieces consisting of iron bars arranged longitudinally of the armature with their inner ends near to but out of contact with the armature, each pair of iron bars being connected together and carried by a fixed iron frame extending around or partly around the corresponding field-magnet pole but out of contact therewith, substantially as herein described.

10. In a dynamo-electric machine, the combination with an armature having the sections of its winding connected to the commutator-sections by commutator-coils, and a field-magnet having two or more poles, of a corresponding number of pairs of pole-pieces consisting of iron bars arranged longitudinally of the armature with their inner ends near to but out of contact with the armature each pair of iron bars being connected together and carried by a fixed iron frame extending around or partly around the corresponding field-magnet pole but out of contact therewith, each of said iron frames being made in parts magnetically connected together through one or more adjustable blocks of iron, substantially as herein described for the purpose specified.

607,594. TUBULAR BODY. JAMES E. SHERIFF, New York, N. Y., assignor to Harvey M. Munsell and John H. Brown, same place. Filed Aug. 24, 1897. Serial No. 649,359. (No model.)



Claim.—1 A tubular body composed of subdivisions or pieces extending longitudinally of the body and having substantially the same thickness throughout their width, the said pieces being curved laterally to bring their adjacent sides into proximity to one another, substantially as set forth.

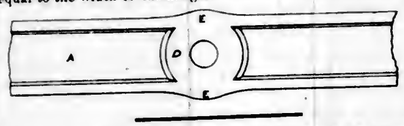
2. A tubular body composed of subdivisions or pieces extending longitudinally thereof and curved laterally, the sum total of the thicknesses of the said pieces on transverse lines along a circumferential line exterior to the wall of the bore being less than the length of said circumferential line and means for holding the said subdivisions or pieces in assembled adjustment substantially as set forth.

3. A tubular body composed of subdivisions extending longitudinally of the body and from the periphery of the bore to the exterior of the body, the said subdivisions being curved laterally and said subdivisions being curved continuously in the same direction from the periphery of the bore to the exterior of the body and means for holding the subdivisions in assembled adjustment, substantially as set forth.

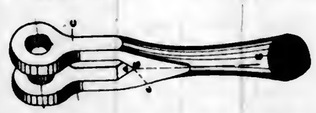
4. A tubular body composed of subdivisions extending longitudinally of the body and from the bore to the periphery of the body, said subdivisions being of substantially uniform thicknesses throughout and curved laterally, the curve being such that the subdivisions will rest with their adjacent faces in contact and means for holding the subdivisions in assembled adjustment, substantially as set forth.

607,595. BRAKE-LEVER FOR RAILROAD-CARS. JAMES H. BAKER, Allegheny, Pa., assignor to the Baker Forge Company, Ellwood City, Pa. Filed May 18, 1896. Serial No. 591,924. (No model.)

Claim.—A wrought-metal brake-lever of I-beam section having welded at its pin-hole a reinforcing-piece of sufficient size to make the thickness of the web of the I-beam at that point substantially equal to the width of the flanges.



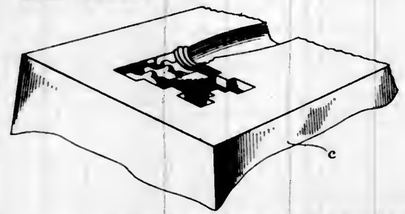
607,596. CONNECTING END FOR BRAKE-RODS. JAMES H. BAKER, Allegheny, Pa., assignor to the Baker Forge Company, Ellwood City, Pa. Filed May 18, 1896. Serial No. 591,926. (No model.)



Claim.—1. A forged connecting end for brake-rods, made in two parts and reinforced at the fork where the halves are welded together and having eyes with the fiber running completely around the same, the circles of the eyes being completed by welding.

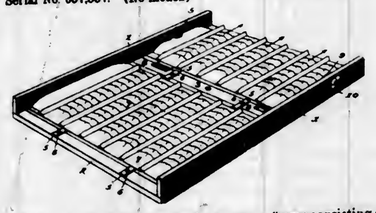
2. A forged connecting end for brake-rods, consisting of two halves welded together, each half having an eye with the fiber running completely around the same, the circles of the eyes being completed by welding and each half being reinforced at the fork where it is welded to the other half.

607,597. DIE FOR PRODUCING JEWEL-RECEIVING PINS. FRED C. BLENKNER, Columbus, Ohio. Filed Nov. 26, 1897. Serial No. 659,812. (No model.)



Claim.—A die-producing hub for the production of jewel receiving and holding devices consisting of a metallic body shaped to conform to the design of ornament to be produced and having substantially the same thickness thereof, said body having formed therewith jewel-holding cramp projections, substantially as and for the purpose specified.

607,598. GRAIN-SEPARATING SCREEN FOR THRESHING-MACHINES. CHARLES CLOSE, Webster City, Iowa. Filed Nov. 5, 1897. Serial No. 657,537. (No model.)



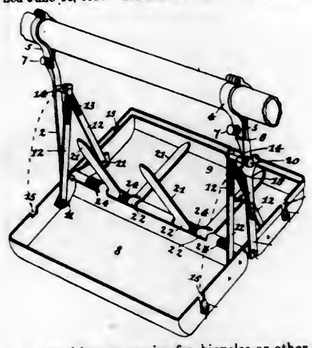
Claim.—1. In a grain-separating screen a frame consisting of side bars having seat-forming plates for the screen, an end cross-bar and a middle cross-bar, the said cross-bars having turn-buttons 5, 5, arranged in clamping pairs, each pair secured by a nutted bolt, in combination with the screen-frames supported and clamped by their cross-bars to the frame cross-bars by said pairs of turn-buttons, whereby the cross-bars of the screen-frames are prevented from sagging.

2. In a grain separating screen and in combination with the frame having the turn-buttons 5, 5, arranged in pairs on its cross-bars, the front sieve clamped between said turn-buttons, the hinged sieve, and the double turn-buttons 16 arranged to form supporting-seats for the meeting bars of both sieve-frames.

3. A grain separating screen the cross bars thereof provided with the turn-buttons 5, 5 arranged on the upper and under sides of said

bars and the double turn-buttons 16 arranged on the under side of the middle cross-bar, in combination with the sieve-frames, one of which is hinged to said middle cross-bar.

607,599. TOOL-BOX FOR BICYCLES OR OTHER VEHICLES. ISAAC N. DEITSCH, New York, N. Y., and HERMAN E. DOHN, Newark, N. J. Filed June 10, 1897. Serial No. 640,190. (No model.)



Claim.—1. A tool box or carrier for bicycles or other vehicles, consisting of hinged sides, hangers from which each side is supported and means for attaching the hangers to a vehicle, substantially as herein shown and described.

2. A tool box or carrier consisting of hinged sides, hangers from which each side is supported, and clamps carried by the hangers to secure the carrier to a vehicle, substantially as herein shown and described.

3. A tool box or carrier consisting of hinged sides, hangers supporting said sides, clamps carried by the hangers, to secure the carrier in position, and stops to limit the outward movement of the sides.

4. A tool box or carrier consisting of hinged sides, hangers connected therewith, clamps carried by the hangers, stops attached to the sides and hangers, and means for retaining the sides in a closed position, substantially as herein shown and described.

5. A tool box or carrier consisting of hinged sides, hangers connected therewith, clamps carried by the hangers, stops attached to the sides and hangers, and a spring-catch to retain the sides in a closed position, substantially as herein shown and described.

6. A tool box or carrier consisting of hinged sides, hangers connected therewith, securing-clamps carried by the hangers, stops to limit the downward movement of the sides, a spring-catch to retain the sides in a closed position, and spring-actuated retaining-fingers, to separate the sides and retain the contents in position, within the box or carrier, substantially as herein shown and described.

7. A tool box or carrier for bicycles or other vehicles, consisting of hinged sides, hangers connected therewith and stops carried by said hangers to limit the movement of the sides, substantially as herein shown and described.

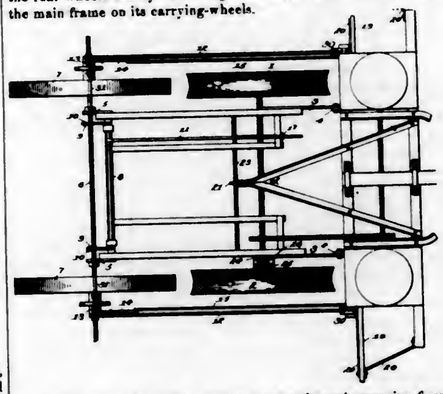
8. A tool box or carrier for bicycles and other vehicles, consisting of hinged sides, hangers connected therewith, slotted stops, and spring-actuated retaining-fingers, substantially as herein shown and described.

607,600. CORN-PLANTER. CHARLES H. DILL, Danville, Ind., assignor of one-half to Enoch P. Dill, same place. Filed Dec. 20, 1897. Serial No. 662,584. (No model.)

Claim.—1. The combination in a corn-planter of the main frame and its carrying-wheels, the hinged front runner dropping part and the rear wheels mounted for vertical adjustment on the main frame, with a hook 21, supported on the front runner part and crossing the hinged connection of the said frame parts, is adapted to automatically engage a fixed part on the main frame when it is desired to raise the front runner dropping part and the rear wheels from the ground and means connecting the rear wheels and the hopper dropping devices, for the purpose stated.

2. In a corn-planter the combination of the main carrying-frame having the vertically-slotted brackets 5, 5 at its rear end, the rear wheels by their axle mounted within said bracket-slots, with means for vertically adjusting said wheels consisting of the cross-rod 8 having the cranks 9, 9, the links 10, 10, connecting said cranks with the axle and the lever 11, connecting said cross-rod, the front hinged runner dropping part, means for actuating the corn-dropping devices from said rear wheels and the longitudinal bars 12, 12 pivotally connecting the ends of said axle and the said hinged front runner dropping part at each side of the frame.

3. In a corn-planter, the combination of the main carrying-frame, the front runner dropping part hinged to said frame, and the rear wheels adapted to be raised from the ground, with a device carried by a support on the front runner part, in position to engage a fixed part of the main frame and thereby cause the said front runner part to be lifted free from the ground simultaneously with the lifting of the rear wheels and by their weight causing the rearward tilting of the main frame on its carrying-wheels.



4. In a corn-planter, the combination of the main carrying-frame having one of its carrying-wheels loose on the axle, a front runner dropping part hinged to said main frame, and the rear wheels, and means connecting them with the dropping devices of the front runner part, with a ratchet device mounted on the axle of the main frame, consisting of a ratchet fixed on the axle, a ratchet fixed on the hub of the loose wheel, and a lever loose on the axle and having ratchets normally held out of engagement with said ratchet-wheels whereby the machine may be moved upon its carrying-wheels to set it to the starting line or hills, in the way stated.

5. The combination in a corn-planter, of the main carrying-frame, a front runner dropping part hinged to said frame, the rear wheels and means connecting them with the dropping devices, with hill-markers on each end of the axle of the rear wheels and line-markers on each end of the front runner dropping part, whereby the hills are marked as the corn is dropped and the starting-line of the machine indicated at the end of the row.

6. In a corn-planter, the combination with the main carrying-frame, the front runner dropping part and the rear wheels having knockers, slotted brackets on the main frame confining the axle of the knocker-wheels, with the longitudinal bars pivotally connecting the ends of the axle of the rear wheels and the front runner dropping part, and tripping devices pivotally mounted on the said side bar or bars and connecting the corn-dropping devices.

607,601. PIPE FOR SMOKING-TOBACCO. GIUSEPPE FERRATA, Greenville, S. C. Filed Aug. 26, 1897. Serial No. 649,565. (No model.)



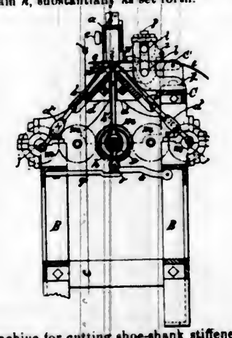
Claim.—The pipe-bowl consisting of two detachable parts B and C, the lower one of which is provided with a pipe-stem opening and a cotton-holding space, in combination with an annular diaphragm having a large opening for inserting and removing porous material, and a second diaphragm separated by an interval from the said annular diaphragm, both said diaphragms being held by the upper of said parts, substantially as set forth.

607,602. MACHINE FOR CUTTING SHOE-SHANK STIFFENERS. GEORGE E. M. LEWIS, Truro, Canada. Filed Oct. 30, 1897. Serial No. 657,137. (No model.)

Claim.—1. In a machine for cutting shoe-shank stiffeners, the combination of the holder, the reciprocating knives for cutting on a bevel, ejecting mechanism, and automatic means for successively operating said holder, knives, and ejector, substantially as set forth.

2. In a machine for cutting shoe-shank stiffeners, the combination with the cutting-block and holder, of the reciprocating knives, the driving-shaft, the cranks and connecting-rods for operating the knives and the intermediate gear connecting said driving-shaft and cranks, substantially as set forth.

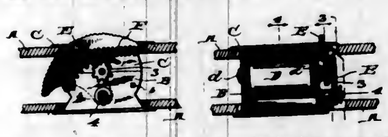
3. In a machine for cutting shoe-shank stiffeners, the combination with the cutting-block, the knives and the cam h, of the reciprocating holder i intermediate of the knives, the lever e' pivoted to the frame, the rods h' connecting the holder i with the lever e', the roller o' on the extremity of e', and the spring f for pressing the roller o' against the cam h, substantially as set forth.



4. In a machine for cutting shoe-shank stiffeners, the combination with the cutting-block, the holder, and the knives, of the pivoted fingers disposed between the strips to be cut, and automatic means for forcing the fingers rapidly apart to expel the strips when severed, substantially as set forth.

5. The combination in a machine for cutting shoe-shank stiffeners, with the cutting-block, holder, knives, and cam; of the pivoted fingers n' n', the spring m', the double-grooved cam h and the rollers on extremities of the fingers n' n' bearing on said cam h, substantially as set forth.

607,603. DUMPING-RECEPTACLE. EUGENE J. LITTLE, Bluffton, Ind. Filed May 5, 1897. Serial No. 635,188. (No model.)



Claim.—1. The combination, of a casing having concave sides, a revoluble dumping-receptacle mounted in bearings in said casing and having two correspondingly convex sides, one of the remaining sides being open, mechanism for revolving the same, and a spring operating oppositely to said mechanism, whereby the closed side of said receptacle is normally held upward.

2. The combination of the casing parts B and C, the dumping-receptacle D mounted in bearings therein and provided with a pinion E on one of its journals, the pivoted rocking lever E formed with an operating-face on its outer edge, the segmental rack-bar F mounted on one side of said lever and below said operating-face, with its cogs engaging the cogs of the pinion on the end of the receptacle-journal, and a spring connected to the operating mechanism to normally hold said receptacle to the limit of its movement in one direction, substantially as set forth.

3. The combination of a floor, a casing set in an orifice within said floor and substantially level therewith, a rotating dumping-receptacle mounted within said casing having one open and one closed side, the closed side being flat, thus maintaining the floor level when closed, and a lever having a segmental edge projecting through a slit in the casing to where it may be reached by the foot, and mechanism connecting said lever to said rotary dumping receptacle below the floor, substantially as and for the purposes set forth.

607,604. HAIR-FASTENER. EDITH M. M. MACKAY, London, England, assignor to William Lord Baillie Hinde, Birmingham, England. Filed Dec. 19, 1896. Serial No. 616,292. (No model.) Patented in England Mar. 11, 1896, No. 5,530; in France June 25, 1896, No. 257,567, and in Belgium June 26, 1896, No. 122,256.



Claim.—1. A fastener for the hair consisting of a flexible band provided at one end with an inwardly-bent hook adapted to enter and grasp the hair and, in rear of the inwardly-bent portion of said hook, with one member of an interlocking fastening device for connecting the ends of the band, and at its other end with the other member of said fastening device, substantially as described.

2. The improved hair-fastener consisting of the flexible band a, hook b, button c and ring d, substantially as described.

607,605. BATH SALT. FREDERICK F. MYLER, New Orleans, La. Filed Jan. 20, 1897. Serial No. 619,982. (No specimens.)

Claim.—1. The compound for use as a bath salt, comprising not less than eighty parts of salt (sodium chlorid) combined with not more than twenty parts of saponifiable and saponifying agents, substantially as described.

2. The compound comprising, not less than eighty parts of salt, combined with not more than twenty parts of saponifiable and saponifying agents having an excess of alkali, substantially as described.

3. The compound comprising not less than eighty parts of salt combined with not more than twenty parts of saponifying and saponifiable agents embracing oil, borax and soda-ash in proportions to leave an excess of alkali, substantially as described.

4. The compound comprising, not less than eighty parts of salt combined with not more than twenty parts of oil, glycerin, borax and soda-ash proportioned to leave a part of the alkali uncombined, substantially as described.

5. The compound for use as a bath salt, comprising not less than eighty parts of salt, combined with saponifiable, saponifying and perfuming agents not exceeding twenty parts, substantially as described.

6. The compound for use as a bath salt, comprising at least eighty parts salt, and not more than twenty parts of borax, soda-ash, glycerin, oil and agents serving as a perfume, substantially as described.

7. The compound for use as a bath salt, comprising not less than eighty parts of salt, and not more than twenty parts of borax, soda-ash, glycerin and oil combined with oil of lavender, oil of bergamot, sweet orange, and alcohol, substantially as described.

607,606. BICYCLE. LEWIS F. PARES, Cincinnati, Ohio. Filed May 10, 1897. Serial No. 635,772. (No model.)



Claim.—1. In a bicycle a saddle located over the rear wheel in position to operate the pedals in the usual manner, a seat located over the forward wheel between handle bars branching from beneath said forward saddle, and extending upward and rearward to be used by the rear rider, a rock-shaft journaled in bearings clamped to the main frame beneath said seat, hand-levers, in position to be used by the forward rider, for reciprocating said rock-shaft, and a crank-arm and connecting-link connection with and transmitting motion to one of the pedals, substantially as specified.

2. A bicycle-pedal composed of the main pedal H, stirrup A depending therefrom and brace-arm 10 provided with spur 11, substantially as specified.

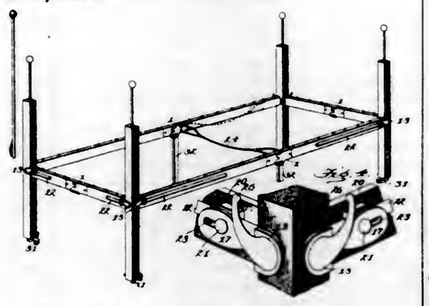
3. In a bicycle a saddle located over the rear wheel in position to operate the pedals in the usual manner, a seat located over the forward wheel, a rock-shaft journaled in bearings clamped to the main frame beneath said seat, hand-levers in position to be used by the forward rider for reciprocating said rock-shaft, a crank-arm and connecting-link connected with and transmitting motion to one of the pedals, and rests upon the front fork to receive the feet of the forward rider, substantially as specified.

607,607. FOLDING COT OR BEDSTEAD. EDWARD H. RINHELM, Galveston, Tex. Filed Sept. 20, 1897. Serial No. 652,289. (No model.)

Claim.—1. In a cot or bedstead the combination with the rails having the hooks and the posts having mortises, of the angle-irons each having one side crossing the post-mortises for the engagement of the rail-hooks, a swing or pivoted arm connected to the other side of each angle-iron, and a slide pivotally connecting the other end of each arm and the rail whereby the rails are secured to the angle-irons and posts adapted to be folded with and slid upon the rails in folding the structure.

2. In a folding cot or bedstead, the combination, with the rails

having longitudinal ribs and end hooks, and the posts, of angle-irons fixed to the posts and adapted by one part to form the keeper for the rail-hook, a swing-arm seated in a circular recess on the wall of the other angle part, and extending in lapping relation to the rail, and a slide pivoted at the outer end of said arm and adapted to engage the rail-rib, whereby the rails and posts may be firmly joined and folded in the way stated.



3. The combination in a folding cot or bedstead, of rails having hooks and posts having mortises, of angle-irons each having one side crossing said mortises for engaging the hooks, a swing-arm seated on the inner wall of the other side of each angle-iron and having a slot in its outer end, a slide having a dovetail groove pivotally connecting said slotted arm and engaging a dovetail rib on the rail for the purpose stated.

4. In a folding cot or bedstead, the combination, with the rails having longitudinal ribs and hooks and posts having angle-irons adapted for engagement by the rail-hooks, of swing-arms secured in seats between said angle-irons and the posts and slides pivoted to said arms and movable upon the rail-ribs for the purpose stated.

5. The combination, with the posts having mortises, and rails having hooks, of angle-irons for the posts having fixed wedge-engaging parts for the rail-hooks, swing-arms loosely seated in said angle-irons and a slide device for each arm adapted to engage the rail with a sliding connection and the arm with a pivotal connection for the purpose stated.

6. In a cot or bedstead, the combination, with the rails having side ribs and end hooks, and the posts, of the angle-irons fixed to the posts, one of its angle sides having a wedge form for engagement as a keeper with the hook, the other angle part having a circular recess on its inner wall, and a swing-arm seated and retained within said recess, projecting through a slot at the angle of the iron for limiting its swing, and a slide pivoting the swing end of said arm and adapted to have a sliding engagement with the rail.

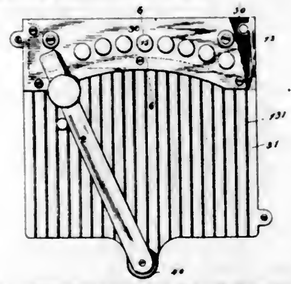
7. In a folding cot or bedstead having rails jointed mediately of their length, the combination with joint-forming irons fixed on the meeting ends of said rails and adapted for interlocking engagement to form a stiff joint, of a brace hinged to the box-iron of one of the rails, and having its other end pronged for engagement with the box-iron of the other rail, the said brace folding with one of the rails for the purpose stated.

8. In a cot or bedstead, the combination with the rails having ribs and end hooks, and the posts, of angle-irons fixed to the posts, one of its angle parts having a hook 26, and a circular recess on its inner wall, the other angle part having a wedge 16, adapted to engage the rail-hook with a drawing action, a swing-arm seated in the said recess, extending through a slot at the angle of said iron and having the slot 23, and the slide pivoted within said slot for engagement with the rail.

9. In a folding cot or bedstead having rails jointed mediately of their length, the joint-forming irons, consisting of a box fixed on the end of each rail part, one of the box parts having the outside vertical tongues 4, the inside horizontal tongues 5, and slots 7, the other tongue part having the inside tongues 3, the slots 6, and the outside tongues 9, one of said boxes having coincident slots, the other having pivots engaging said slots, whereby each box part has both outside and inside vertical and horizontal engaging parts to form a sliding joint rigid in every direction.

607,608. RHEOSTAT. MICHAEL J. SHIELS, Westfield, N. J. Filed Jan. 7, 1898. Serial No. 665,906. (No model.)

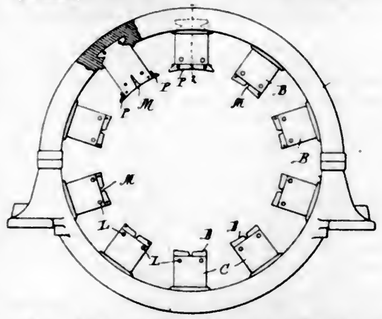
Claim.—1. In combination in a rheostat, the coils thereof, a casing within which the said coils are contained and supported, part of the said casing consisting of a plate or body of insulating material and the remainder of heat-conducting material, a plurality of switch-contacts mounted on the said plate or body, a plurality of terminal connections from the said coils to the said contacts, insulating-cement within the said casing embedding the said coils and extending between the said coils and the said casing, and a movable contact-arm and connections, substantially as set forth.



2. In combination in a rheostat, the coils thereof, a casing within which the said coils are contained and supported, part of the face of said casing consisting of a plate or body of insulating material and the remainder of the heat-conducting material, a plurality of switch-contacts mounted on the said plate or body and provided with posts, 14, which extend through the said plate or body, a plurality of terminal connections from the said coils, secured to the inner end of said posts, 14, insulating-cement embedding the said coils, said terminals and said inner ends of posts, 14, and extending between the coils and the casing, and a movable contact-arm and connections, substantially as set forth.

3. In combination in a rheostat, the casing thereof consisting in part of insulating material provided with a filling-hole, 33, the switch-contacts, 15, mounted upon the said insulating material and provided with posts, 14, extending through the said insulating material, resistance-coils within the said casing and connected to the inner ends of the said posts, and cement extending from the said filling-hole within the said casing and embedding the said coils, substantially as set forth.

607,609. FIELD-MAGNET FOR ELECTRIC MACHINES. SIDNEY H. SHORT, Cleveland, Ohio. Filed May 4, 1896. Serial No. 590,220. (No model.)



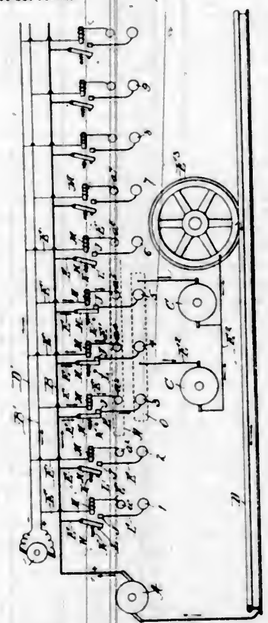
Claim.—1. In an electric machine, a supporting-ring, a core or support for the field-magnets, radially mounted on said ring, said core comprising a series of plates or laminations, thereby forming breaks in the continuity of the end surface of such cores presented to the armature, in combination with a ring of magnetic material arranged upon the end thereof adjacent to the path of rotation of the armature and forming a continuation of the surface of such laminations; as and for the purpose set forth.

2. In an electric machine, cores or supports for the field-magnet windings, each comprising a series of plates or laminations, whereby the continuity of the end surface of such cores is broken, in combination with a ring of magnetic material arranged to surround the armature end of each of said cores or supports; as and for the purpose set forth.

607,610. ELECTRIC-RAILWAY SYSTEM. SIDNEY H. SHORT, Cleveland, Ohio. Filed May 24, 1897. Serial No. 637,884. (No model.)

Claim.—1. In an electric-railway system, an auxiliary circuit adapted to carry a current of low potential, a series of insulated surface contacts alternately connected to the positive and negative wires of said auxiliary circuit said connections including an electro-

magnet, a shoe carried by the car and adapted to make successive contact with a plurality of said contacts whereby circuit is simultaneously completed through a plurality of said magnets, a main circuit, a second series of insulated surface contacts connected thereto through switches forming armatures for said magnets, means for normally maintaining said armature-switches open, a second shoe carried by the car and adapted to make electrical connection with said surface contacts of the said last-mentioned series, for completing the main circuit through the translating devices on the car, as and for the purpose set forth.



2. In an electric railway system, a road-bed, a trough arranged therein and containing a bed of cement or other suitable material, two rows of contacts arranged in said bed, all of said contacts being insulated from each other, a main circuit and an auxiliary circuit both arranged to extend through the length of the road, branches connecting said circuits respectively to the individual contacts of said rows of contacts at suitables distances apart, a switch arranged in each of said main-circuit branches, an electromagnet arranged in each of said auxiliary-circuit branches, said switch-levers forming the armature of said magnets, said switch-levers normally open, manholes arranged to contain said switches, and magnets, and shoes carried by the car respectively adapted to contact successively with the members of said rows of contacts, one of said shoes in electrical connection with the translating devices on the car and the other of said shoes adapted to bridge the space and to complete the circuit between adjacent contacts in the row of the auxiliary circuit, as and for the purpose set forth.

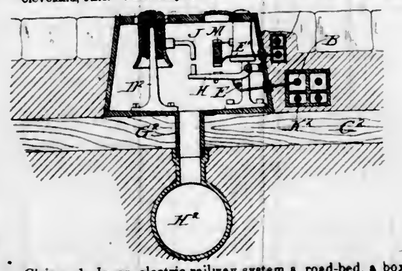
3. In an electric-railway system, a main supply-conductor extending throughout the length of the road-bed, an auxiliary circuit also extending throughout the length of the road, two rows of surface contacts, branch connections extending from the alternate contacts of one of said rows to the opposite sides of said auxiliary circuit, an electromagnet arranged in each of said auxiliary branch connections, main branch connections extending from said supply-conductor to each contact in the other of said rows, a switch-lever arranged in each of said main branch connections, said levers forming the armatures of said magnets and normally held in position to open said main branches, contact-shoes carried by the car, one of said shoes adapted to contact successively with the surface contacts in one of said rows to complete the circuit therefrom through the translating devices on the car, the other of said shoes adapted to make simultaneous contact with two or more adjacent contacts in the other of said rows of contacts to bridge the space therebetween and to complete the auxiliary circuit therethrough, as and for the purpose set forth.

4. In an electric-railway system, a normally open main supply-circuit extending throughout the length of the road, a normally open auxiliary circuit also extending throughout the length of the road, a series of contacts arranged in the road-bed, adjacent contacts of said series being respectively connected to the positive and negative wires of the auxiliary circuit, and means arranged solely in said auxiliary-circuit connections and actuated by the closing of the circuit between adjacent contacts of said series for closing said main circuit, as and for the purpose set forth.

5. In an electric-railway system, a normally open main supply-circuit extending throughout the length of the road, a normally open auxiliary circuit also extending throughout the length of the road, a series of contacts arranged in the road-bed, adjacent contacts of said series being respectively connected to the positive and negative wires of said auxiliary circuit, an electromagnet arranged in each of said auxiliary-circuit connections, means carried by the car for bridging the space between adjacent contacts of said series, and means actuated by the energization of said electromagnets for closing the main supply-circuit through the motor on the car, as and for the purpose set forth.

6. In an electric-railway system, a main supply-circuit, an auxiliary circuit, a series of contacts arranged in the road-bed, adjacent contacts of said series being respectively connected to the positive and negative wires of said auxiliary circuit, a second series of contacts arranged in the road-bed, a normally open connection extending from each of said second series of contacts to the main supply-circuit, electrically-actuated means arranged in each of said auxiliary-circuit connections for closing the corresponding main-circuit connection to its road-bed contact, means carried by the car for bridging the space between adjacent auxiliary-circuit contacts, and means also carried by the car for completing circuit from said main-circuit contacts through the translating devices on the car, as and for the purpose set forth.

607,611. ELECTRIC-RAILWAY SYSTEM. SIDNEY H. SHORT, Cleveland, Ohio. Filed July 9, 1897. Serial No. 643,993. (No model.)



Claim.—1. In an electric-railway system a road-bed, a box or casing arranged therein and having an opening in the top thereof and a surface contact of smaller size than said opening, and arranged to project therethrough, in combination with a circuit for said contact, and means carried by the car for completing the circuit through said contact, as and for the purpose set forth.

2. In an electric-railway system a road-bed, a box or casing arranged therein and having the top thereof flush with the surface of the road-bed, an opening being formed in the top of said box or casing, in combination with an insulated contact arranged to project through but of smaller size than said opening, a circuit including said contact and means for completing the circuit through said contact, as and for the purpose set forth.

3. In an electric-railway system a road-bed, a sewer or drain pipe, a box or casing arranged in said road-bed and in communication with said sewer or drain pipe, the top of said box or casing having an opening therein, a contact of smaller size than said opening arranged to project therethrough, a circuit for said contact and means for completing said circuit through said contact, as and for the purpose set forth.

4. In an electric-railway system a road-bed, a box or casing mounted thereon, a sewer or drain pipe with which said box or casing communicates, an opening in the top of said box or casing, a standard mounted in said box or casing in line with said opening, a contact mounted thereon and arranged to project through said opening, a circuit for said contact and means for completing the circuit through said contact, as and for the purpose set forth.

5. In combination a road-bed, a drain or sewer, a box or casing communicating therewith, a contact mounted in said box or casing but insulated therefrom, and arranged to project through the top thereof and out of contact therewith, a circuit including said contact, and means for completing said circuit through said contact, as and for the purpose set forth.

6. In combination, a road-bed, a box or casing having an open-

ing in the top thereof, a sewer or drain pipe with which said box or casing communicates, a standard mounted in said box or casing in line with said opening, a contact mounted thereon but insulated therefrom, and arranged to project through said opening, said contact being of smaller size than said opening, a circuit including said contact and means for completing said circuit through said contact, as and for the purpose set forth.

7. In combination, a road-bed, a box or casing having an opening in the top thereof, a sewer or drain pipe with which said box or casing communicates, a standard mounted in said box or casing in line with said opening, an inverted-bell-shaped contact mounted on but insulated from the upper end of said standard, said contact being of smaller size than said opening and arranged to project therethrough, a circuit including said contact and means carried by the car for completing the circuit through said contact, as and for the purpose set forth.

607,612. TROLLEY-BASE. HARRISON G. TAYLOR, Montreal, Canada. Filed Sept. 27, 1897. Serial No. 653,221. (No model.)



Claim.—1. In a trolley-base, a base-plate presenting an upwardly-projecting trunnion and having a groove to receive antifriction-bearings; a swinging pole-carrying plate provided with a hub adapted to take over said trunnion and presenting upper and lower bearing-surfaces having grooves to receive antifriction-bearings, and a cap having grooves for antifriction-bearings on its under side and adapted to fit over said hub, antifriction-balls within said grooves and a central retaining-bolt passing through said cap and screwing into said hub for holding said swinging plate in place, as shown and described.

2. In a trolley-base, a base-plate presenting an upwardly-projecting trunnion; a swinging pole-carrying plate provided with a hub adapted to take over said trunnion, a cap adapted to fit over said trunnion and hub, bearing-surfaces having grooves to receive antifriction-bearings between said cap and hub and between said hub and base-plate, and a central retaining-bolt passing through said cap and screwing into said hub for holding said cap in place upon such bearings.

3. In a trolley-base, the combination with the frame having a vertical projection at one end, and a pivoted socket-section for the trolley-pole at the other end, said socket section having a pair of integral arms of curved hook form projecting therefrom at a point between its pivot-point and free end, of springs adapted to normally yieldingly hold said trolley-pole in its working position, and means, comprising an integral T-shaped section having its cross-arms of curved hook form to receive the ends of the springs and its central arm screw-threaded to work in a screw-threaded horizontal boring in said vertical projection with jam-nuts on either side, for adjusting said springs, the latter having their ends connected to the hooked arms of the pole-section and to the hooked arms of said T-shaped section; and a spring-buffer carried by said frame adjacent to said trolley-pole socket and adapted to receive the impact of and to limit the distance said pole may be drawn by said springs, as and for the purpose set forth.

4. A trolley-base comprising a stationary base-plate said base-plate having a vertically-projecting trunnion formed integrally with and concentric thereof and having a central vertical screw-threaded perforation; a swinging plate having a hub formed centrally thereof and with a perforation extending vertically and centrally therethrough and through the swinging plate, the upper end of said hub being extended in thickness and grooved concentrically of the vertical perforation therethrough, a boss formed upon the lower side of said swinging plate, said boss and the face of the base-plate being correspondingly grooved to form a runway concentric of the said vertical perforation, for a series of balls; a circular cap of a circumference equal to the circumference of the upper end of the hub, and grooved correspondingly in order to form, with the groove in the upper end of said hub, a runway for a series of balls; a headed screw-threaded bolt adapted to pass freely downwardly through a perforation in said cap and take into the vertical screw-threaded perforation in the trunnion, said swinging plate carrying the trolley-pole normally yieldingly held in a vertical position and means for holding said pole, substantially as and for the purpose set forth.

5. A trolley-base comprising a stationary base-plate, said base-plate having a vertically-projecting trunnion formed integrally with and concentric thereof and having a central vertical screw-threaded perforation; a swinging plate having a hub formed centrally thereof and with a perforation extending vertically therethrough and through the swinging plate, the upper end of said hub being extended in thickness and grooved concentrically of the vertical perforation therethrough, a boss formed upon the lower side of said swinging plate, said boss and the face of the base-plate being correspondingly grooved to form a runway concentric of the said vertical perforation, for a series of balls; a circular cap of a circumference equal to the circumference of the upper end of the hub, and grooved correspondingly in order to form, with the groove in the upper end of said hub, a runway for a series of balls; a headed screw-threaded bolt adapted to take downwardly through a perforation in said cap and into the vertical screw-threaded perforation in the trunnion, a trolley-pole-carrying section pivotally connected to one end of said carrying-plate, one or more coiled springs connected at one end to said trolley-pole section and at the other end to the opposite end of said carrying-plate, and a buffer consisting of a hollow cylindrical section, having one end closed, connected rigidly to said plate adjacent to said trolley-pole section, a second hollow cylindrical section, having one end closed, adapted to slide within said first-mentioned cylindrical section, a spiral spring carried within said inner cylindrical section and adapted to bear between the inner side of the closed ends of said cylindrical sections, and a bolt connected to the closed end of the inner cylindrical section, and extending through a perforation in the closed end of the outer cylindrical section and having a nut screwed thereon, all substantially as described.

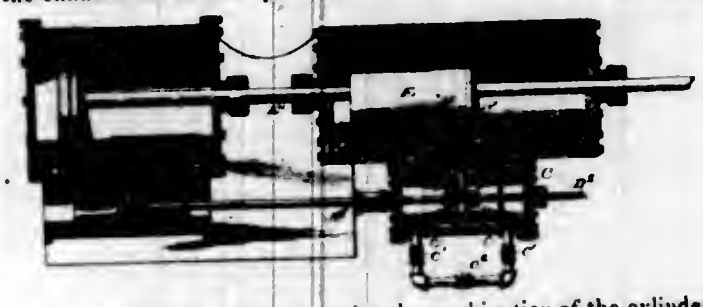
6. In combination with a carrying-plate, a trolley-pole, pivotally connected to one end of said carrying-plate, a bracket formed upon the opposite end of said carrying-plate and horizontally perforated in line with said trolley-pole, a T-shaped section having its vertical arm screw-threaded and adapted to take through said perforation in said bracket, a pair of jam-nuts taking upon said screw-threaded arm and located one at each side of said bracket, the cross-arms of said T-section being extended in a horizontal plane and having their ends hooked a curved cross-piece formed upon said trolley-pole section and having its ends hooked, and a pair of retractile spiral springs each connected at one end to one of the hooks of the T-shaped section and at its other end to one of the hooks of the trolley-pole section, substantially as and for the purpose set forth.

7. A trolley-base comprising a stationary base plate, said base-plate having a vertically-projecting trunnion formed integrally with and concentric thereof and having a central vertical screw-threaded perforation; a swinging plate having a hub formed centrally thereof and with a perforation extending vertically therethrough and through the swinging plate, the upper end of said hub being extended in thickness and grooved concentrically of the vertical perforation therethrough, a boss formed upon the lower side of said swinging plate, said boss and the face of the base-plate being correspondingly grooved to form a runway concentric of the said vertical perforation, for a series of balls; a circular cap of a circumference equal to the circumference of the upper end of the hub, and grooved correspondingly in order to form, with the groove in the upper end of said hub, a runway for a series of balls; a headed screw-threaded bolt adapted to take downwardly through a perforation in said cap and into the vertical screw-threaded perforation in the trunnion, a bracket formed upon the opposite end of said swinging plate and horizontally perforated in line with said trolley-pole, a T-shaped section having its vertical arm screw-threaded and adapted to take through said perforations in said bracket, a pair of jam-nuts taking upon said screw-threaded arm and located one at each side of said bracket, the cross-arms of said T-section being extended in a horizontal plane and having their ends hooked, a curved cross-piece formed upon said trolley-pole section and having its ends hooked, and a pair of retractile spiral springs each connected at one end to one of the hooks of the T-shaped section and at its other end to one of the hooks of the trolley-pole section, and a buffer consisting of a hollow cylindrical section, having one end closed, connected rigidly to said swinging plate adjacent to said trolley-pole section, a second hollow cylindrical section, having one end closed, adapted to slide within said first-mentioned cylindrical section, a spiral spring carried within said inner cylindrical section and adapted to bear between the inner side of the closed ends of said cylindrical sections, and a bolt connected to the closed end of the inner cylindrical section and extending through a perforation in the closed end of the outer cylindrical section and having a nut screwed thereon, all substantially as and for the purpose set forth.

607,618. HYDROCARBON-GAS ENGINE. WILLIAM O. WORTH, Benton Harbor, Mich. Filed July 1, 1895. Renewed July 3, 1897. Serial No. 643,467. (No model.)

Claim.—1. In a double-acting gas-engine, the combination of the cylinder, having an exploding-chamber in each end, and an exhaust-port, an air-inlet port and gas-inlet ports on opposite sides of the air-

inlet port, so arranged near the center of the cylinder that the piston forms the main valve for controlling said ports for both explosion-chambers; with said piston, a compressed-air supply communicating with the air-inlet port, and means for injecting a charge of highly-compressed gas into the explosion-chambers of the cylinders after the exhaust and air-inlet ports are closed, substantially as described.



2. In a double acting gas-engine the combination of the cylinder having an explosion-chamber in each end and piston, with exhaust, air-inlet, and gas-inlet, ports; all arranged near the center of the cylinder so that the piston forms the main valve for controlling the said ports for both explosion-chambers, substantially as described.

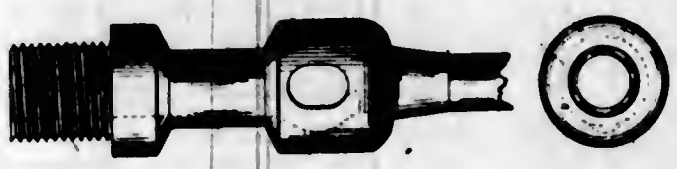
3. In a gas-engine, the combination of a cylinder having an exploding-chamber at each end and an elongated piston; with the exhaust, air, and gas ports, so arranged near the center of the cylinder that the power-piston also constitutes the controlling-valve for said ports, a compressed-air receiver communicating with the air-inlet port, an air-pump for forcing air into said receiver, and means for injecting a charge of highly-compressed gas into the explosion-chambers of the cylinders after the exhaust and air-inlet ports are closed, substantially as described.

4. In a double-acting gas-engine, the combination of the cylinder having an exploding-chamber in each end, and an elongated piston; with a single central exhaust-port, a single central air-inlet port; and two gas-inlet ports on opposite sides of the air-inlet port so arranged that the piston forms the main valve for controlling the said ports for both explosion-chambers, a compressed-air receiver communicating with the air-inlet port, an air-pump for forcing air into said receiver; and means for injecting a charge of highly-compressed gas into the explosion-chambers of the cylinders after the exhaust and air-inlet ports are closed, substantially as described.

5. In a gas-engine the combination of the cylinder having a central exhaust-port, a central air-inlet port, and a gas-inlet port at each side of the air-inlet port and the power-piston in the cylinder forming the main valve for opening and closing the proper gas-inlet port alternately, and also controlling the exhaust and air-inlet ports; with the gas-pump cylinder, the port therein connecting with the gas-inlet port, and the ported piston in said pump-cylinder whereby the gas is primarily compressed and then allowed to escape suddenly into the explosion-chambers, after the exhaust-port is closed, substantially as described.

6. In a gas-engine the combination of the cylinder having an explosion-chamber at each end, an exhaust-port, two gas-inlet ports near its center and an air-inlet port; and the power-piston in the cylinder forming the main valve for opening and closing said gas-exhaust and air-inlet ports; a compressed-air receiver communicating with said inlet-port and air-pump, supplying compressed air to said receiver, with the gas-pump cylinder, the port therein connecting with the gas-inlet port, and the ported piston in said pump-cylinder whereby the gas is primarily compressed and then allowed to escape suddenly into the proper explosion-chambers, after the exhaust-port is closed, substantially as described.

607,614. SUCKER-ROD JOINT. KENTON CHICKERING, Oil City, Pa. Filed Dec. 27, 1897. Serial No. 663,703. (No model.)

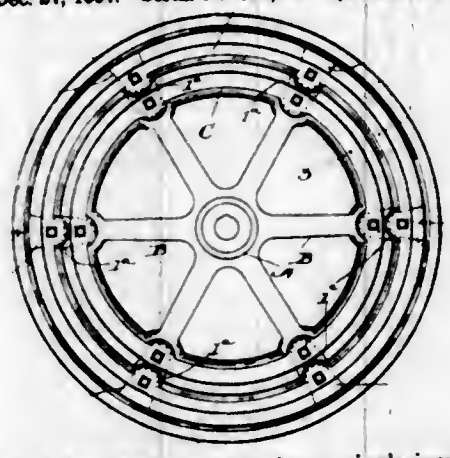


Claim.—1. A tubular open-ended sucker-rod joint-section having a transverse or lateral overflow outlet, substantially as and for the purposes specified.

2. The combination with a sucker-rod joint-section having a central bore and transverse overflow outlet or perforation, of a metal sucker-rod having an upset end forming a T-head or cross-pin integral with the sucker-rod, substantially as and for the purposes specified.

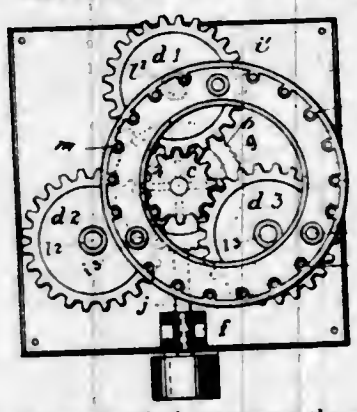
3. A sucker-rod joint-section having a central bore provided with a gage-shoulder and having a transverse overflow or outlet opening, substantially as and for the purposes specified.

607,615. FLY-WHEEL. KENTON CHICKERING, Oil City, Pa. Filed Dec. 27, 1897. Serial No. 663,705. (No model.)



Claim.—A fly-wheel adapted to be varyingly increased in diameter proportionally, and comprising a rim composed of a series of attachable and detachable rings of substantially uniform cross-section, substantially as set forth.

607,616. MECHANICAL MOVEMENT. KENTON CHICKERING, Oil City, Pa. Filed Dec. 30, 1897. Serial No. 664,561. (No model.)



Claim.—1. In a mechanical movement the combination with a plate or disk, of a plurality of gears, not less than three, arranged around and equidistant from a common center eccentrically connected with said disk, means for imparting uniform rotary motion to said gears, and means for transmitting power from said disk, substantially as and for the purposes specified.

2. In a mechanical movement, the combination of three equidistant gear-wheels provided with wrist-pins equidistant from the centers of their respective gear-wheels, a disk with which said wrist-pins are connected, means for driving said gear-wheels, and means for transmitting power from said disk, substantially as and for the purposes specified.

3. In a mechanical movement the combination with a central driving-pinion, of a plurality of driven pinions not less than three arranged around and meshing with said central pinion, each of said driven pinions having a wrist-pin, a disk or plate with which the wrist-pin of each of said driven pinions is connected, and means for transmitting power from said disk; substantially as and for the purposes specified.

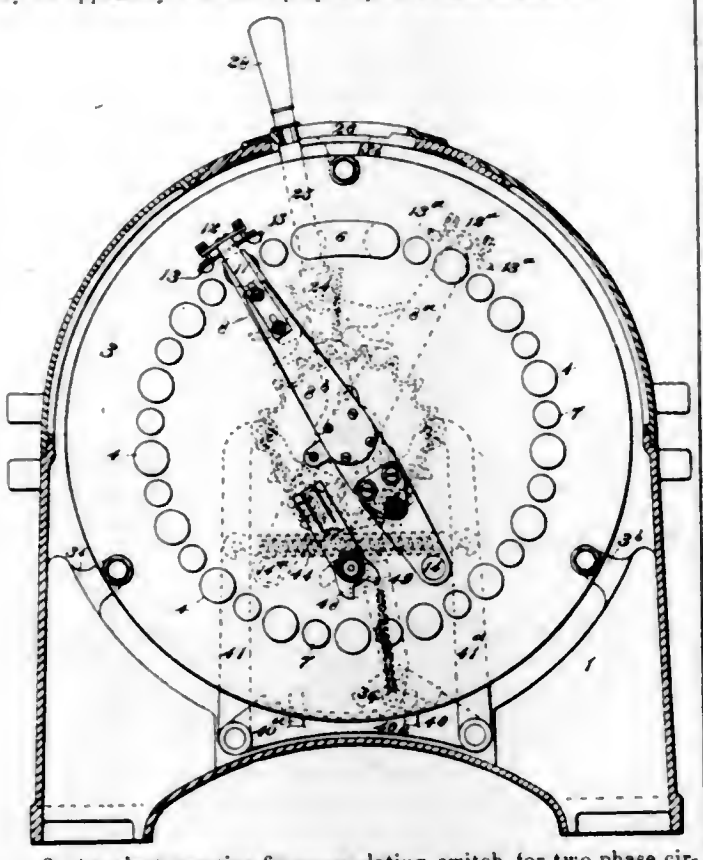
4. The combination with a suitable base-plate, of a central pivot-post and a driving-pinion journaled thereon, a series of not less than three pivot-posts arranged around and equidistant from said central post, driven gears journaled on said last-named posts each provided with a wrist-pin, and a disk or plate connected with and operated from the several wrist-pins of the driven gear, substantially as and for the purposes specified.

607,617. REGULATING-SWITCH FOR ELECTRIC CIRCUITS. HARRY P. DAVIS, Pittsburg, and GILBERT WRIGHT, Wilkinsburg, Pa., assignors to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed Sept. 18, 1897. Serial No. 652,168. (No model.)

Claim.—1. In a switch for electric circuits, the combination with two sets of annularly-arranged stationary contacts, a pivoted cooperating contact-arm for each set of stationary contacts, a single pivoted operating-lever having a limited reciprocatory movement and means intermediate the lever and each contact-arm whereby said arms may be oppositely moved from one stationary contact to the next through the entire set in either direction.

2. In a switch for electric circuits, the combination with two annularly-arranged sets of stationary contacts, a cooperating contact-arm for each set of stationary contacts provided with a ratchet-wheel, a single pivoted operating-lever having a limited reciprocatory movement, two reversible pawls pivoted to said lever, and means for re-

taining them in either operative position, whereby the contact-arms may be oppositely moved step by step in either direction.



3. An electromotive force-regulating switch for two-phase circuits comprising two non-conducting base-plates, two sets of stationary contact-pieces mounted respectively on said base-plates, corresponding movable contact-arms, a reciprocating actuating-lever, and pawl-and-ratchet mechanism between said lever and each of said movable contact-arms whereby these latter are moved one step in opposite directions by each double stroke of the operating-lever.

4. An electromotive-force-regulating switch for two-phase electric circuits comprising two sets of stationary contact-terminals—one for each phase—two corresponding movable contact-arms, a reciprocating lever, and pawl-and-ratchet mechanism between said lever and each of said movable contact-arms whereby a complete double stroke of the lever serves to move said contact-arms one step in opposite directions.

5. An electromotive-force regulator for two-phase circuits comprising two base-plates, a supporting-frame therefor, two sets of stationary contact-terminals, two corresponding movable contacts, a ratchet rigidly connected to each of said movable contacts, a pivoted operating-handle, a double-acting pawl for each ratchet pivoted to said handle and means for adjusting each pawl so as to actuate its ratchet in either direction.

6. In a switch for electric circuits, the combination with two sets of annularly-arranged stationary contacts, a contact-arm and ratchet-wheel for each set, a two part operating-lever having a reversible pawl for each ratchet-wheel pivoted to the inner part of the lever and elastic means connecting each pawl with the outer part of the lever whereby a partial rotation of the latter will reverse the pawls.

7. In a switch for electric circuits, the combination with an annularly-arranged series of stationary contacts, a pivoted coöperating contact-arm provided with a ratchet-wheel, a pivoted operating-lever provided with a reversible pawl and having a limited reciprocatory movement and means for preventing a reversal of movement of the lever before the completion of a stroke in either direction.

8. In a switch for electric circuits, the combination with an annularly-arranged set of stationary contacts, a coöperating contact-arm having a ratchet-wheel, an operating-lever provided with a reversible pawl, a reversible dog pivoted to the operating-lever and a notched plate or bar provided with stops for tripping or reversing the dog at the end of a stroke in either direction, the notches in said bar or plate preventing a reverse movement of the lever before it has made a complete stroke.

9. In a switch for electric circuits, the combination with a series of annularly-arranged stationary contacts, a pivoted contact-arm having a ratchet-wheel, a holding-pawl for said ratchet-wheel, a pivoted reciprocatory operating-lever provided with a reversible actuating-pawl, a holding-pawl, and a reversible stop-piece carried by the ratchet-wheel.

10. In a switch for two electric circuits, the combination with two sets of annularly-arranged stationary contacts, two coöperating contact-arms provided with ratchet-wheels, a pivoted operating-lever provided with reversible pawls for actuating said ratchet-wheels alternately, two holding-pawls—one for each ratchet-wheel—connected by a spring and an automatically-reversible stop-piece pivoted to each ratchet-wheel.

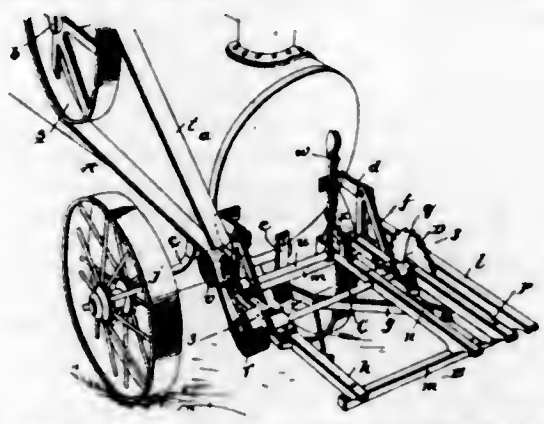
11. The combination with two sets of annularly-arranged stationary contacts, a coöperating contact-arm for each set, means for moving said arms from one contact to the next alternately and in opposite directions and means for stopping said arms when they have moved a predetermined distance.

12. The combination with a transformer, of an annularly-arranged series of stationary contacts connected to leads from a subdivided portion of the transformer winding, a contact-arm movable step by step to cut said portion of the winding progressively either into or out of circuit, and an auxiliary switch actuated by the contact-arm when the subdivided portion is all cut either in or out to simultaneously cut out or reinsert said subdivided portion and insert or cut out another substantially equal portion.

13. The combination with two transformers the winding of each of which has a portion subdivided by leads, two sets of annularly-arranged stationary contacts to which said leads are connected, contact-arms for said sets of stationary contacts, means for moving the same oppositely step by step in either direction, and an auxiliary switch for each transformer and set of contacts which is actuated by the corresponding arm when the subdivided portion is all cut either in or out to simultaneously cut out or reinsert the subdivided portion and insert or cut out another portion of the winding of substantially the same length.

14. An electromotive-force regulator for two-phase circuits comprising a transformer for each circuit, a set of stationary contacts for each transformer respectively connected to different points in one of its windings, a movable contact-arm for each set of stationary contacts and means for moving said contact-arms oppositely and alternately in either direction from contact to contact whereby the relation between the respective windings of the two transformers is varied to the same degree.

607,618. WOOD-SAWING ATTACHMENT FOR PORTABLE ENGINES. EMIL JACQUIN, Morrison, Mo. Filed Mar. 28, 1898. Serial No. 675,366. (No model.)



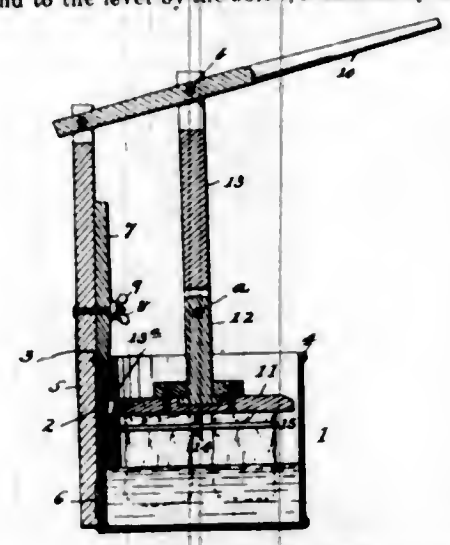
Claim.—The combination of a portable engine comprising a boiler, a drive-shaft, and a pivotally-connected front axle carrying traveling wheels, brackets connected to the boiler and extending forwardly from the head of the same, the main saw-frame, the hanger-arms *f* fixedly connected to the main frame adjacent to the inner end thereof and pivotally connected to the brackets adjacent to the outer ends thereof whereby the main frame may be swung up and back past the vertical center, the support permanently connected to the main frame, means for detachably connecting the support to the boiler, a shaft journaled in suitable bearings in the frame and carrying a saw and a band-pulley adapted to be connected by a band with the pulley of the engine, a shaft journaled in the frame and having a crank at one end and a pulley thereon arranged to engage the band, a hand-lever fixed on said shaft and provided with a detent, and a rack fixed on the main frame and adapted to be engaged by said detent, substantially as specified

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607,619. WASHING-MACHINE. FRANKLIN L. JOHNSON, Valley Springs, Cal. Filed Oct. 28, 1897. Serial No. 656,658. (No model.)

Claim.—A washing-machine comprising the tub 1, the vertical standard 5 provided at its lower end with the segmental bearing-block 6 resting against the tub, the clamping-piece 7 detachably and pivotally secured to the standard by the threaded bolt 8 having the wing-nut 9 fitted thereon, and provided with a reduced clamping-finger projecting down into and bearing against the inner side of the wall of the tub and a shoulder resting upon the rim of the tub, in combination with the lever 10 fulcrumed at its inner end to the top of the standard, the plunger 11 provided on its under side with the cleat 14 having the transverse pins 5 secured thereto, and the plunger-rod consisting of the section 12 fixed to the plunger and the section 13 pivoted at its lower end to the fixed section by the bolt *a* and

at its upper end to the lever by the bolt *b*, substantially as shown and described.



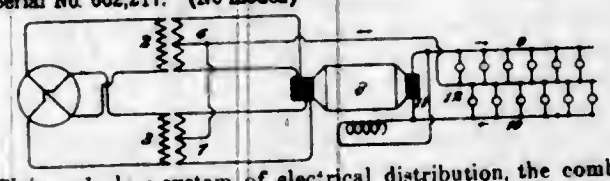
607,620. PIPE-ELBOW. WILLIAM A. KEMP, Toronto, Canada.

Filed Sept. 23, 1897. Serial No. 652,737. (No model.)



Claim.—A sheet-metal elbow having a simple lap-joint at its inner or throat side and having corrugations which extend without break circumferentially around the elbow at the outer curve thereof and which are pressed against each other at the inner or throat side of the elbow, whereby the two thicknesses of the lap-joint are clamped together while the elbow is composed of a single thickness of corrugated metal at the outer side, substantially as set forth.

607,621. SYSTEM OF ELECTRICAL DISTRIBUTION. BENJAMIN G. LAMME, Pittsburg, Pa. Original application filed Jan. 28, 1897, Serial No. 621,117. Divided and this application filed Dec. 16, 1897. Serial No. 662,217. (No model.)



Claim.—1. In a system of electrical distribution, the combination with a source of alternating current, transmitting-conductors connected therewith, a stationary transformer, a rotary transformer connected to the stationary transformer, two distributing-conductors connected to the direct-current terminals of the rotary transformer, and a balancing-conductor forming the third wire of a three-wire system and connected to an intermediate point of the stationary-transformer winding.

2. In a system of electrical distribution, the combination with a source of alternating currents of relatively-displaced phases, of transformers connected thereto, a rotary transformer connected to the stationary transformers, two direct-current conductors connected to the direct-current terminals of the rotary transformer and balancing-conductors forming with the direct-current conductors a multiple-wire system, said balancing-conductors being each connected to corresponding intermediate points in the windings of the stationary transformers.

3. In a system of electrical distribution, the combination with a source of alternating currents of relatively-displaced phases, of transformers connected thereto, a rotary transformer connected to the stationary transformers, two direct-current conductors connected to the direct-current terminals of the rotary transformer, and a balancing-conductor forming with the two direct-current conductors a three-wire system, which conductor is connected to intermediate points of relatively equal potential in the stationary transformer windings.

4. In a system of electrical distribution, the combination of a source of alternating currents, transmitting-conductors therefor, stationary transformers, rotary transformers connected therewith, distributing-circuits for direct current consisting of two conductors between which exists the full potential of the direct-current terminals of the rotary transformer, and balancing-conductors connected to the stationary transformers and having a potential midway between that of the distributing-conductors.

5. In a system of electrical distribution, the combination with stationary transformers connected to a source of two-phase alternating currents, of secondary conductors connected to said transformers, those in each phase between which the greatest difference of potential exists being led to a rotary transformer, while another connected to the middle points of the secondary windings of all the transformers serves as the balancing-wire for a three-wire distributing system supplied with a direct current from the rotary transformer.

6. In a system of electrical distribution, the combination with two groups of translating devices, connected in series across constant-potential mains, of a third wire connecting the intermediate points of the several series, a rotary transformer connected to the constant-potential direct-current mains, a stationary transformer connected to a source of alternating current, and also to a rotary transformer, said stationary transformer having the middle point of its secondary winding connected to the third wire of the translating devices, as set forth.

7. In a system of electrical distribution, the combination of two groups of parallel connected translating devices, said groups connected in series, two main distributing-conductors connected to said groups, a rotary transformer having its direct-current terminals connected to the two main distributing-conductors, stationary alternating-current transformers connected to the rotary transformer, a source of alternating currents of relatively-displaced phases connected to said stationary transformers, and a connection from the middle points of the secondaries of said transformers to a third or balancing conductor connecting the intermediate points of said series of translating devices, as set forth.

8. The method of distributing electrical energy which consists in generating an alternating current, transmitting the same to a stationary transformer, causing the stationary transformer to actuate a rotary transformer, supplying a direct current derived from the alternating current supplied to the rotary transformer to the outside wires of a multiple-wire distributing system, actuating therefrom groups of parallel connected devices in series, and compensating for unbalanced distribution of said devices by maintaining the intermediate terminals of the respective groups at the potentials of intermediate points of the stationary-transformer windings, as set forth.

9. The method of distributing electrical energy which consists in generating an alternating current, transmitting the same, transforming the same by a stationary transformer, feeding a multiple-wire distributing-circuit with direct current by causing a further transformation of the alternating into a direct current, and establishing a sensibly-constant potential between the pairs of conductors of the multiple-wire circuit, irrespective of the distribution of translating devices, by establishing upon the intermediate wire of the distribution system the potential of an intermediate point in the stationary-transformer winding, as set forth.

10. The method of supplying three-wire direct-current systems of distribution with energy from alternating-current transformers which consists in transforming the alternating currents into direct currents for the main direct current conductors and effecting the transfer of energy necessitated by inequality in loads to and from the middle point of the secondary of the alternating-current transformer.

11. The method of supplying a "three-wire" direct-current system of distribution with energy from an alternating-current transformer which consists in transforming the alternating current into direct current for the main direct-current conductors and transferring energy to and from the middle point of the secondary of the alternating-current transformer.

12. A system of distribution comprising a source of alternating current, an alternating-current transformer, a rotary transformer receiving energy from the secondary of said alternating-current transformer, a direct-current circuit supplied by said rotary transformer and comprising a neutral conductor connected to substantially the middle point of the alternating-current-transformer secondary and an additional working conductor, connected to another point in said secondary.

13. A system of distribution comprising a source of alternating currents, an alternating-current transformer supplied thereby, a rotary transformer supplied from the secondary of said transformer, two working conductors extending from the commutator-brushes of the rotary transformer and a third working conductor extending from a point in the secondary of the alternating-current transformer.

14. A system of distribution comprising a source of alternating current, a rotary transformer, a direct-current circuit supplied thereby and comprising a neutral or compensating conductor, and a stationary transformer interposed between the source of alternating current and the rotary transformer, to the middle point of the winding of which said neutral or compensating conductor is connected.

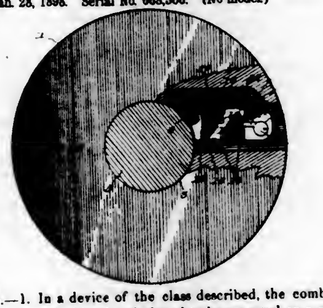
15. A system of distribution comprising a source of alternating currents, a rotary transformer supplied from said source, a direct-

current circuit supplied by said rotary transformer and comprising a neutral or compensating conductor, and a transformer having a winding connected across the alternating-current circuit, to the middle point of which the neutral or compensating conductor is connected.

16. A system of electrical distribution comprising a source of alternating currents, a stationary transformer supplied thereby, a rotary transformer supplied from said stationary transformer and a direct-current circuit the conductors of which are respectively connected to one of the rotary transformer direct-current terminals and the middle point of the secondary winding of the stationary transformer.

17. A system of electrical distribution comprising a source of alternating currents, a rotary transformer, a stationary transformer interposed between said source and the alternating-current end of the rotary transformer, and a plurality of direct-current circuits the conductors of each of which are respectively connected to the direct-current terminals of the rotary transformer and to the middle point of the secondary winding of the stationary transformer.

607,622. NUT-LOCK. WILLIAM R. METCALF, Jr., Auburn, Nebr. Filed Jan. 28, 1898. Serial No. 668,306. (No model.)



Claim.—1. In a device of the class described, the combination of a reciprocating locking-bar designed to be mounted on a nut, bolt or spindle and adapted to prevent a nut from unscrewing accidentally, a pivotally-mounted cam or eccentric engaging the locking-bar and adapted to reciprocate the same, and mechanism carried by the locking-bar for oscillating the cam or eccentric, substantially as described.

2. In a device of the class described, the combination of a reciprocating locking-bar designed to be mounted on a nut, bolt or spindle and adapted to prevent a nut from unscrewing accidentally, a slide mounted on the locking-bar, and a cam or eccentric connected with the slide and engaging the locking-bar, substantially as described.

3. In a device of the class described, the combination of a reciprocating locking-bar designed to be mounted on a nut, bolt or spindle, a pivotally-mounted cam or eccentric engaging the locking-bar and adapted to reciprocate the same, and a slide mounted on the locking-bar and connected with the cam or eccentric, substantially as described.

4. In a device of the class described, the combination of a locking-bar, a pivoted cam or eccentric engaging the locking-bar and adapted to reciprocate the same, a slide mounted on the locking-bar and provided with an angularly-disposed slot or shoulder, and an arm extending from the cam or eccentric and engaging the slot or shoulder, substantially as described.

5. In a device of the class described, the combination of a reciprocating locking-bar, a pivoted cam or eccentric engaging the locking-bar and adapted to reciprocate the same, a slide mounted on the locking-bar and connected with the cam or eccentric, and a spring having one arm bearing against the locking-bar and another arm engaging the slide, substantially as described.

6. In a device of the class described, the combination of a reciprocating locking-bar provided with an opening, a pivoted cam or eccentric arranged in the opening, a slide mounted on the locking-bar and provided with an angularly-disposed slot, an arm rigid with the cam or eccentric and engaging the said slot, and a spring, substantially as described.

7. In a device of the class described, the combination of a nut, a reciprocating locking-bar mounted thereon and having a hook-shaped engaging end provided with teeth and adapted to engage a bolt or spindle at different points, a slide, and a cam or eccentric connected with the slide and engaging the locking bar, substantially as described.

8 The combination of a locking-bar capable of reciprocation and adapted to swing to carry it away from a bolt or spindle, a slide mounted on the locking-bar, a cam or eccentric connected with the slide and engaging the locking-bar, and a nut receiving the locking-bar and provided with an L-shaped slot adapted for the reception of a projection of a tool, substantially as and for the purpose described.

607,623. MANUFACTURE OF SHOES OR OTHER ARTICLES WHOLLY OR IN PART OF PATENT-LEATHER. LOUIS J. NEU, New York, N. Y., assignor to James Cousins, Jr., same place. Filed Jan. 9, 1896. Serial No. 574,910. (No model.)



Claim.—1. The within-described process of making articles wholly or in part of patent-leather, which consists in first cementing a flexible crack-resisting patch upon the enameled surface of the patent-leather where the enamel is liable to crack, then proceeding with the manufacture, and lastly removing the patch.

2. In the manufacture of patent-leather shoes or shoes having patent-leather tips, the within-described process of preventing the enamel from cracking during the process of making the shoe which consists in cementing a removable crack-resisting patch of suitable flexible material upon the enameled surface of the leather where the enamel is liable to crack, and permitting the same to remain attached until after the shoe is lasted.

3. In the manufacture of patent-leather shoes, or shoes having patent-leather tips, the within-described process of preventing the enamel from cracking, during the process of making the shoe, which consists in applying to the enameled surface of the patent-leather, where the enamel is liable to crack, a removable crack-resisting patch of suitable cloth coated on the side next to the enamel with gutta-percha, heating said patch to cause the gutta-percha to adhere to the enamel, allowing said gutta-percha to cool and set, and permitting said patch to remain attached until after the shoe is lasted.

4. The within-described process of making merchandise from patent-leather, free from cracks, which consists in applying to the enameled side of the leather, before it is stretched, a flexible crack-resisting patch coated on the side next to the enamel with gutta-percha, heating said patch to cause the gutta-percha to adhere to the enamel, allowing said gutta-percha to cool and set, then proceeding with the manufacture in the ordinary way, and lastly heating the patch again and removing it from the manufactured article.

5. The within-described process of preventing patent-leather from cracking from change of temperature during its manufacture into merchandise which consists in first cementing a crack-resisting patch upon the enameled surface of the leather where the enamel is liable to crack, then proceeding with the manufacture in the ordinary way, and lastly removing the patch before packing the merchandise for sale.

6. A shoe-vamp or the like of patent-leather having its enamel temporarily reinforced by a superposed crack-resisting patch.

7. A shoe vamp or tip of patent-leather provided with a removable crack-resisting patch cemented to the enamel along the median line of the toe.

607,624. PROCESS OF ENAMELING STEEL. FREDRICK G. NIEDRINGHAUS, St. Louis, Mo., assignor to the St. Louis Stamping Company, same place. Filed Sept. 16, 1897. Serial No. 651,925. (No specimens.)

Claim.—1. The process herein described of enameling steel, which consists in stretching the steel after it is formed into sheets, forming said stretched steel as desired, and, finally, coating the same with enamel; substantially as described.

2. The process herein described of enameling on steel, the same consisting in stretching sheet-steel, shaping said stretched sheet of steel in the form it is desired the finished article to assume, coating such formed article with emanel, and, finally, baking the coated article; substantially as described.

3. The process herein described for preparing sheet-steel for receiving a coat, or coats of enamel, the same consisting in stretching the said sheet preparatory to applying the enamel thereto, substantially as described.

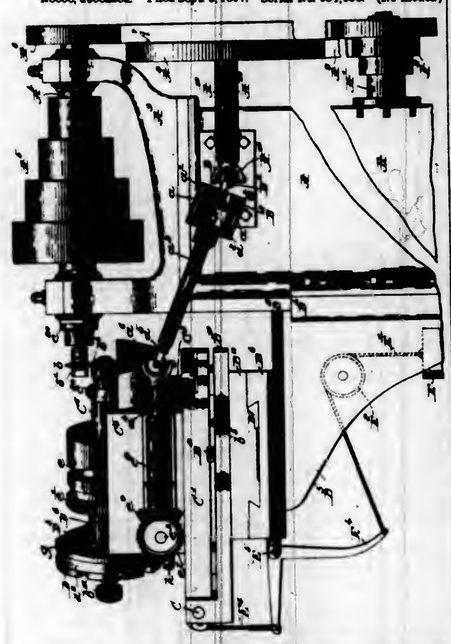
607,625. MANUFACTURE OF ENAMELED WARE. WILLIAM F. NIEDRINGHAUS, St. Louis, Mo., assignor to the St. Louis Stamping Company, same place. Filed Dec. 9, 1897. Serial No. 661,298. (No specimens.)

Claim.—1. The process herein described of preparing the base for receiving a coat of enamel, which consists in annealing said base in the presence of a chlorid, substantially as described.

2. The herein-described process of preparing the base for receiving a coat of enamel, which consists in immersing the same in a chlorid-bath, and then annealing said base, substantially as described.

3. The herein-described process of preparing a base for receiving a coat of enamel, which consists in immersing said base in a bath composed of two parts of water and one part of chlorid of calcium, sprinkling sulfur on the base after it has been so immersed, and then annealing the base, substantially as described.

607,626. MACHINE FOR CUTTING WORMS. MARIETTA REECE and FRANCIS A. SHEA, Brookline, Mass., administrators of John Reece, deceased. Filed Sept. 9, 1897. Serial No. 651,058. (No model.)



Claim.—1. A blank-holder, means to rotate it always in one and the same direction, a pattern-surface connected with said blank-holder for causing both feed and return movements of the blank-holder, a cutter, and automatic means to move the blank-holder into and out of cutting relation with the cutter, substantially as described.

2. A blank-holder, means to rotate it always in one and the same direction, a rotatable pattern-surface connected with said blank-holder for causing both feed and return movements of the blank-holder, means to rotate said pattern-surface, a cutter, and means to automatically move the blank-holder into and out of cutting relation with the cutter, substantially as described.

3. A blank-holder, means to rotate it intermittingly always in one and the same direction, a pattern-surface connected with said blank-holder for causing both feed and return movements of the blank-holder, means for continuously rotating said pattern surface, a cutter, and means to move the blank-holder into and out of cutting relation with the cutter, substantially as described.

4. In a machine for cutting worms, a cutter-carrying spindle, a carriage provided with a spindle having an attached spacing wheel or disk, a continuously-rotating sleeve surrounding said spindle, said sleeve having a cam and a disk, and said disk having a spacing-latch, combined with means to move said spindle longitudinally and to effect the disengagement of said latch from said spacing wheel or disk when the spindle is to be stopped and backed off, substantially as described.

5. In a machine for cutting worms, a cutter-carrying spindle, a carriage provided with a spindle having an attached spacing wheel or disk, a continuously-rotating sleeve surrounding said spindle, said sleeve having a cam and a disk, and said disk having a spacing-latch, combined with means to move said spindle longitudinally and to effect the disengagement of said latch from said spacing wheel or disk when the spindle is to be stopped and backed off, and a locking device to keep said latch locked to said spacing wheel or disk while said cutter is acting to cut a slot, substantially as described.

6. The spindle to receive a collar or hub to be cut spirally, means to impart to said spindle an upward, forward, downward and backward movement, and a motion of rotation during the said forward movement and means to hold the spindle against rotation during said backward movement, substantially as described.

7. The foot-plate the bed pivoted thereon and provided with a post having a roller or other stud, a carriage fitted to slide on said bed, and a wedge and slide between said foot-plate and bed and actuated by the movement of said carriage to raise and lower said carriage and bed on or with relation to said foot-plate, substantially as described.

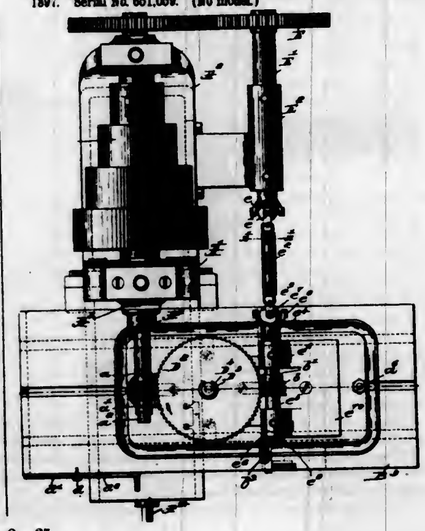
8. The movable carriage, a shaft a^4 mounted in bearings connected therewith, a rotating shaft A^{10} having fixed bearings, a connected universal joint provided with a plunger carrying opposite rollers, a shaft a^3 having at one end a box provided with longitudinal grooves in which the rollers of said plunger may slide, and a universal joint connecting said shaft a^3 with said shaft a^4, to operate substantially as described.

9. The spindle C^8, provided with the notched spacing wheel or disk, and the continuously-rotatable spindle having an attached disk provided with a latch having a lug to engage one after another the series of notches of said spacing-disk, combined with means to rotate said spindle, means to disengage said latch from said spacing wheel or disk and a locking device to engage and lock the spacing-wheel while the latch is being changed from one to another notch of the spacing wheel or disk, substantially as described.

10. The spindle C^8, provided with the notched spacing wheel or disk, and the continuously-rotatable spindle having an attached disk provided with a latch having a lug to engage one after another the series of notches of said spacing-disk, combined with means to rotate said spindle, means to disengage said latch from said spacing wheel or disk, and a locking device to engage and lock the spacing-wheel while the latch is being changed from one to another notch of the spacing wheel or disk, said locking device being under the control of the disk secured to said spindle, substantially as described.

11. A blank-holder, means to rotate it, a cutter, feeding mechanism to move the blank-holder toward and from the cutter, an inclined plane, a slide cooperating with said inclined plane and supporting the forward end of the blank-holder, and automatic means to move said slide from said inclined plane to lower the blank-holder and onto the inclined plane to raise the blank-holder, substantially as described.

607,627. MACHINE FOR CUTTING TEETH ON WORM TOOTHED GEARS. MARIETTA REECE and FRANCIS A. SHEA, Brookline, Mass., administrators of John Reece, deceased. Filed Sept. 9, 1897. Serial No. 651,059. (No model.)



Claim.—1. In a machine for cutting spiral toothed gears, a rotatable shaft provided with a hob having its teeth arranged spirally, of a shaft provided with a pattern-worm, and a stud to center the blank to be provided with worm-teeth, said pattern-worm engaging the blank and being adapted to rotate said blank continuously while the hob in its rotation acts simultaneously on a number of said teeth to cut or shape them, substantially as described.

2. A rotatable shaft provided with a hob-cutter, a stand having a stud to receive and center the blank to be provided with worm-teeth, a carriage movably mounted near said stud, a rotatable shaft having its bearings in said carriage, and provided with a pattern-worm, and means acting normally to keep said pattern-worm pressed into the gashes or partially-cut teeth of the said blank, to operate, substantially as described.

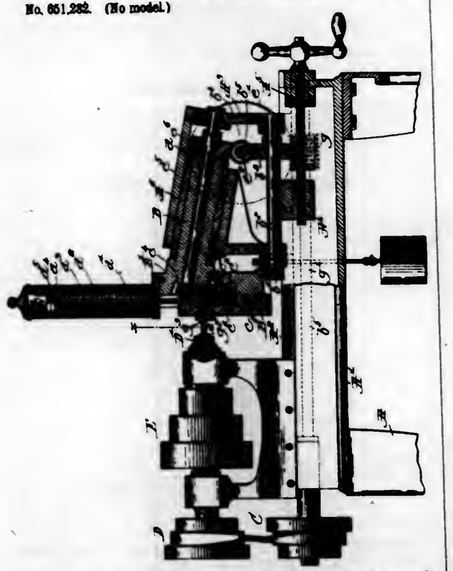
3. The stand having a stud to receive a blank to be provided with worm-teeth, a movable carriage, a rotatable shaft having its bearings therein and carrying a pattern-worm to drive the said blank, combined with an eccentric to put the said pattern-worm out of engagement from the teeth of said blank, substantially as described.

4. The stand having a stud to receive a blank to be provided with worm-teeth, a movable carriage, a rotatable shaft having its bearings therein and carrying a pattern-worm to drive the said blank, combined with an eccentric to put the said pattern-worm out of engagement from the teeth of said blank, and a spring to keep said pattern-worm in engagement with the gashes or teeth of said blank, substantially as described.

5. A hob-cutter, means to rotate it, a table, said table and hob-cutter being relatively vertically movable, a stand adapted to carry a blank horizontally thereon to be cut across its edges to form the gear, a two-part carriage mounted on said table, one part thereof carrying said stand and being movable relatively to the other part thereof, and a pattern-worm to rotate the blank moving with said movable part of the carriage, substantially as described.

6. The vertically-movable table, the two-part carriage B^2, B^3, mounted thereon, the stand adapted to carry the blank to be cut to form the gear, a pattern-worm to rotate said gear, a hob-cutter, means to rotate it, and means to move the part B^3 of said table B^2, B^3, toward said hob-cutter, and means to adjust the position of the part B^2 of said carriage B^2, B^3, on the extension of said table, substantially as described.

607,628. MACHINE FOR FORMING IRREGULAR CAM-GROOVES. MARIETTA REECE and FRANCIS A. SHEA, Brookline, Mass., administrators of John Reece, deceased. Filed Sept. 11, 1897. Serial No. 651,282. (No model.)



Claim.—1. In a machine for cutting cam-slots, the following instrumentalities, viz: a rotatable spindle, means to receive and hold a milling-tool; a pivoted head, a plate-holding carriage mounted on said head; means to rock said head; and means to slide the said carriage on said head, substantially as described.

2. The pivoted head provided with a segmental rack, and a plate-holding carriage mounted on said head and provided with a rack, combined with gears, and means to actuate them, to both rock said head and to slide said carriage thereon, substantially as described.

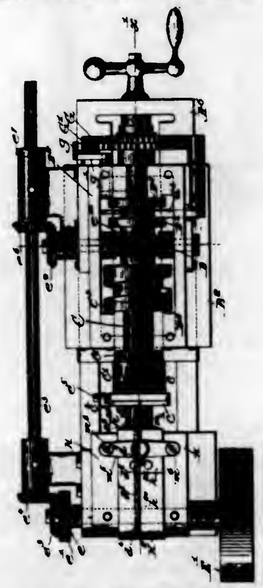
3. In a machine for cutting cam-slots, a rotatable spindle having a milling-tool, a head having a track for a carriage and provided with a sleeve extended therefrom at an angle to the length of said track, means to hold said sleeve in an angular position, a carriage mounted on said head, and means to move said carriage thereon, combined with means to oscillate said head, the sleeve referred to being extended from said head and being so supported that when the said head is started to be rocked the face of the carriage at the commencement of the rocking movement stands at an obtuse angle with relation to the longitudinal center of the tool-holding shaft and gradually assumes a position at right angles to said shaft, substantially as described.

4. The head having a toothed sector, a carriage mounted thereon and provided with rack-teeth; pinions engaging said toothed sector and said rack-teeth; two shafts carrying said pinions, a worm toothed gear on each of said shafts, and a worm for actuating both of said toothed gears, substantially as described.

5. In a machine for cutting cam-slots, the carriage having an angular chamber, a head having an angular sleeve entered within said chamber, a carriage mounted on ways of the said head, a spring to normally elevate said carriage on said head, a shaft C^9, means to actuate it, and means between it and said carriage to move said carriage on said head in opposition to said spring, substantially as described.

6. In a machine of the class described, a sliding carriage having jaws to hold a block to be provided with a cam-slot, a head having ways on which said carriage may be slid, a rotating shaft, as c^9, devices between it and said head to rock it, and also to slide said carriage on said head, a worm toothed gear loose on said shaft, means to actuate said worm toothed gear, and a friction disk or clutch, and means to operate it whereby when the said clutch is not held firmly in engagement with the said worm toothed gear, the shaft c^9 is held at rest, and when the said disk is in engagement with the said worm toothed gear the shaft c^9 is rotated to operate the machine, substantially as described.

607,629. MACHINE FOR CUTTING GEAR-TEETH. MARIETTA REECE and FRANCIS A. SHEA, Brookline, Mass., administrators of John Reece, deceased. Filed Sept. 11, 1897. Serial No. 651,281. (No model.)



Claim.—1. In a machine for cutting internal gear-teeth, the following instrumentalities, viz: a rotatable spindle having suitable chucks to hold the blank to be provided with teeth; a pivoted head having its end shaped to enter the opening in said blank, a rotatable milling-cutter mounted in said head, means to adjust said head vertically, a suitable actuating-train to rotate said milling-cutter, means to change the relative position of said spindle and head to enable said milling-cutter to cut a space across said blank, substantially as described.

2. In a machine for cutting gear-teeth on a blank, a spindle having suitable chucks for holding the blank to be toothed, a carriage on which said spindle is mounted, a head provided with a milling-cutter movable in a vertical plane intersecting the axis of said shaft, means to rotate said milling-cutter to cut a space in said blank for the formation of a tooth, and means to change the position of said shaft and said milling-cutter to cut a tooth-slot of the proper length, substantially as described.

3. In a machine for cutting internal gear-teeth, the following instrumentalities, viz: a rotatable spindle having suitable chucks to hold the blank to be provided with teeth; a head having its end shaped to enter the opening in said blank, a milling-cutter supported at the end of said head, a suitable actuating-train to rotate said milling-cutter, a locking device for holding said blank-carrying spindle against rotation while a tooth is being cut, a spacing device, and mechanism for automatically operating it, to rotate said spindle step by step, and means to regulate the extent of said rotation for producing teeth of any width desired, substantially as described.

4. In a machine for cutting internal gear-teeth, the following instrumentalities, viz: a rotatable spindle having suitable chucks to hold the blank to be provided with teeth; a head having its end shaped to enter the opening in said blank, a milling-cutter supported at the end of said head, a suitable actuating-train to rotate said milling-cutter, a locking-ring and cam mounted on said spindle, means engaged by said cam for intermittingly rotating the locking-ring, and a spacing-ring and mechanism, in connection with said locking-ring, for governing the extent of movement of the spindle, substantially as described.

5. In a machine for cutting gear-teeth, a milling-cutter, a shaft having means to hold the blank to be cut, a carriage on which said shaft is mounted, a sleeve surrounding said shaft loosely and provided with a grooved cam, and with two extra cams, an adjustable stud entering the groove of said cam, means to rotate said sleeve on said shaft, a locking-gear fixed on said shaft, a locking device to engage said locking-gear to restrain said shaft from rotation, a spacing gear or ring at one side of said locking-gear and adjustable with relation thereto, a spacing and feeding pawl, and means intermediate said locking-pawl and one of said extra cams to unlock said locking-pawl, and means between said spacing and feeding pawl to immediately thereafter actuate said spacing or feeding pawl and cause it in engagement with the said spacing gear or ring to impart a partial rotation to said shaft to put a new part of said blank in position to be attacked by said milling-cutter, substantially as described.

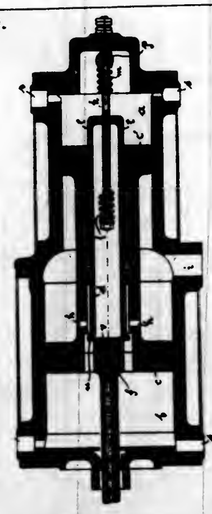
6. The pivoted head, a spring normally turning said head on its pivot, an adjusting device to set the head in opposition to said spring, the main shaft having an attached gear, and a milling-cutter arranged at one end of said head and having its teeth properly exposed, combined with a train of gears in said head intermediate said milling-cutter and the gear on said main shaft to rotate said milling-cutter, substantially as described.

7. The pivoted head, the main shaft having an attached gear, and a milling-cutter arranged at one end of said head and having its teeth properly exposed, combined with a train of gears in said head intermediate said milling-cutter and the gear on said main shaft to rotate said milling-cutter, and a chip-guard to prevent the chips made by the action of the milling-cutter from getting between the teeth of the train of gears in the head, substantially as described.

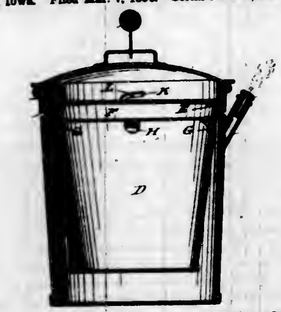
607,680. STEAM-ENGINE. OSCAR A. RINGDOM, Lahtis, Finland. Filed Oct. 14, 1897. Serial No. 655,241. (No model.) Patented in Sweden Aug. 1, 1895, No. 7,214, and Sept. 22, 1896, No. 7,910; in Norway Nov. 7, 1895, No. 5,065; in Belgium Mar. 20, 1896, No. 120,436; in France Mar. 31, 1896, No. 254,966; in Finland Sept. 23, 1896, No. 648, and in England Feb. 9, 1897, No. 2,867.

Claim.—A slide valve for differential piston of steam-engine moving in a longitudinal bore in the piston and itself provided with a longitudinal bore extending from the end of the slide-valve facing the piston-rod nearly to the other end of the same, side openings in the slide-valve so located that the bore in the same constantly communicates with the smaller steam-chamber and the steam inlet, an annular space in the bore in the piston near the end of the slide-valve facing the piston-rod said space being always in communication with the exhaust, a socket at the end of the slide-valve facing the piston-rod adapted to shut off the communication between the larger steam-chamber and said annular space when the slide-valve stands in its extreme position in relation to the piston nearest the smaller steam-chamber, a tap adapted to close the mouth of the said bore in the slide-valve a rod extending into the bore of the slide-valve and adapted to move the slide-valve to the first-mentioned position in relation to the piston, the slide-valve being adapted to be pushed to the other extreme position by the cylinder-head or a buffer in the same, substantially as and for the purpose specified.

607,630.



607,631. STEAM HEATER AND COOKER. EDWIN H. STALEY, Burt, Iowa. Filed Mar. 7, 1898. Serial No. 672,903. (No model.)



Claim.—In a steam-cooker, the combination of an outer containing vessel provided below its rim edge with inwardly-projecting pins and below said pins with an annular indentation forming an inturned bead or flange, an inner vessel having an outturned rim at its upper end resting on said bead, ears located therein below the bead and an angular rest located substantially in the plane of said ears, a bail-handle pivoted to the ears and adapted to be supported by said rest, and a cover for the outer vessel provided with a band having at its lower end an inturned flange or portion adapted to rest upon the bead of the inner vessel and prevent the contents thereof from slopping thereover, and bayonet slots to engage the pins on the outer vessel, the angular terminal ends of said slots being extended into said inturned flange of the cover-band, substantially as described.

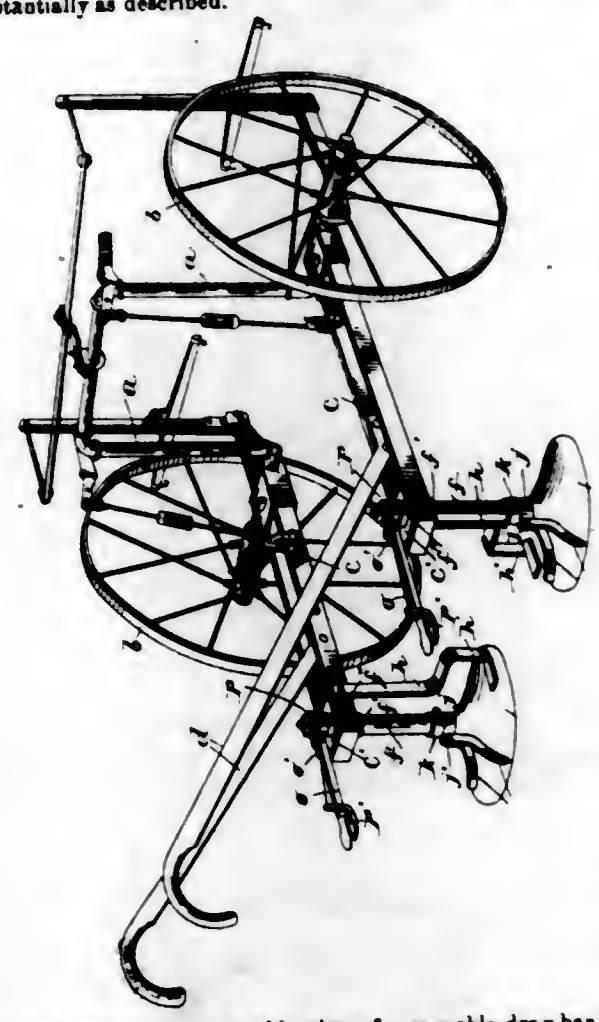
607,632. CULTIVATOR. ETTINGER R. WHIPPLE, Cooperstown, N. Y. Filed Nov. 11, 1896. Serial No. 611,774. (No model.)

Claim.—1. In a cultivator, the combination of a vertical turnable standard, a support therefor, a horizontally-disposed cultivator-disk on the lower end of the standard, a scraper, or cleaner on or above the top surface of the disk, and a lever mounted loosely on the standard and having a pawl-and-ratchet connection therewith to rotate the standard and disk when the lever is swung, and thereby cause the cleaner to scour the top surface of the disk.

2. In a cultivator, the combination of a standard, a support, a horizontally-disposed disk rigid on the lower end of the standard, a sleeve loose on the standard above the disk, and two blades or arms extending from the sleeve laterally and outwardly over the disk, substantially as described.

3. In a cultivator, a horizontally-disposed disk or tool arranged to travel just beneath the surface of the soil, in combination with two blades or arms independent of the disk and arranged at the top surface thereof and extending rearwardly, and laterally in different directions, substantially as described.

4. In a cultivator, the combination of a horizontally-disposed disk arranged to travel just beneath the surface of the soil, with means arranged immediately above the disk to throw the soil laterally, substantially as described.



5. In a cultivator, the combination of a movable drag-bar having a handle, a vertically-disposed standard depending therefrom, a horizontally disposed approximately flat disk on the lower end of the standard and arranged to travel beneath the surface of the soil, and an indicator bar or device, depending from the drag-bar, with its indicating or pointing end or portion over the outer side cutting edge of the disk and a distance above the same, thereby moving above the soil and enabling the operator to always accurately locate said buried edge of the disk and prevent the same cutting the plants.

6. In a cultivator, the combination of a bar, a vertical turnable standard carried thereby, a horizontal cultivator-disk rigid on the lower end of the standard, a ratchet-wheel rigid on the standard, a lever loose on said standard beside said wheel, and a pawl carried by the lever to engage said wheel and thereby rotate the standard as the lever is swung or oscillated, substantially as described.

7. In a cultivator, a part thereof laterally movable by hand and a cultivator blade or tool carried thereby and arranged to move horizontally beneath the soil, in combination with an indicator arranged above the edge or portion of the tool adjacent the plants, thereby pointing out to the operator the location of said buried edge when in operation and enabling him to move the parts to avoid cutting or disturbing the plants.

8. In a cultivator, the combination of a cultivator blade or tool arranged to extend beneath the surface of the soil approximately horizontally, with an indicator arranged over the edge or portion of the blade adjacent the plants, substantially as described.

9. In a cultivator, the combination of rearwardly-extending movable drag-bars, horizontally-disposed cultivating-tools, such as disks, carried thereby and arranged to travel beneath the soil between the rows of plants, and indicators moving with the drag-bars and arranged over the side edges of said tools adjacent the plants, whereby the visible indicators point out to the operator the location of those portions of the buried edges of the tools nearest the plants, substantially for the purpose stated.

10. In a cultivator, the combination of movable portions provided with handles, depending standards, horizontally-disposed cultivating-disks carried by the standards and arranged to travel beneath the surface of the soil at opposite sides of a row of plants, and the indicators for the disks, respectively, said indicators visible above the ground over the adjacent portions of the edges of the disks which portions of the edges are nearest the plants.

11. In a cultivator, the combination of a wheeled frame, laterally-movable drag-bars, standards depending from the drag-bars, horizontally-disposed circular disks on the lower ends of the standards and arranged to travel horizontally beneath the soil on opposite sides of the plants, and indicator bars or devices pointing out or locating the portions of said disks nearest the plants, each indicator moving with and depending from a drag-bar to a point to one side of the standard (in the line of draft) and over that portion of the disk nearest the plants, substantially as described.

12. In a cultivator, a cutting or cultivating tool disposed horizontally and arranged to move horizontally beneath the soil, and provided with an indicator above the soil and movable laterally therewith and ending above and pointing out the outer lateral extremity or portion of the edge of said tool between or intermediate the front and rear extremities or portions thereof, substantially as described.

13. In a cultivator, a circular rotary horizontally-disposed disk arranged to move beneath the soil in combination with a visible indicator above and locating the edge of said disk adjacent the plants, and a blade or arm above and conforming to the top surface and approximately radial of said disk, substantially as described.

14. In a cultivator, a horizontally-disposed disk having a central upwardly-extending standard, said disk approximately flat to travel beneath the soil, and a horizontally-disposed blade independent of and conforming to the top surface of the disk and extending from approximately the central portion thereof laterally about to the edge of the disk so that the soil slides on the top of the disk along said blade and past the outer end thereof, substantially as described.

15. In a cultivator, supporting means, and a horizontally-arranged cultivating-disk centrally secured, said disk formed approximately flat with a slightly-raised center, the top surface of the disk slightly concaved from the center to the edge which forms the lowest portion of the disk, whereby the concavity of the approximately flat disk from the raised center acts as the moldboard of a plow in turning out the soil while the disk moves horizontally just beneath the surface, substantially as described.

16. In a cultivator, a horizontally disposed disk arranged to travel beneath and loosen the soil, a cleaner or scraper such as a blade adjacent and coacting with the surface of said disk, and lever means for positively turning said disk, thereby enabling the cleaner to scour the same, substantially as described.

17. In a cultivator, the combination of a horizontally-disposed approximately circular rotary disk having a central vertical support, whereby the disk travels horizontally just beneath the surface of the soil, and a blade or arm arranged at the top surface of the disk and extending rearwardly from about the center thereof laterally toward the portion thereof adjacent the plants so as to engage and deflect the thin layer of soil on the top surface of the disk as the same moves forward beneath the surface of the soil.

18. In a cultivator, a vertical standard, an approximately circular rotary disk attached at or about its center to said standard, said disk approximately flat with a raised center and a slight drop from the center to the surrounding edge, the top surface concaved radially between said center and edge to turn the earth as the disk moves horizontally just beneath the surface of the soil, and an arm or blade arranged on and approximately radially of said top surface of the disk, and conforming to the concavity thereof and extending about to the edge thereof.

19. In a cultivator, a horizontally-disposed cultivator-disk arranged to travel horizontally beneath the surface of the soil, in combination with a hiller arranged about horizontally above the disk to throw the earth loosened thereby laterally, substantially as described.

20. In a cultivator, a horizontally-disposed rotary approximately circular cultivator-disk arranged to travel horizontally just beneath the surface of the soil, in combination with a combined hiller and scraper arranged at the top surface of the disk, substantially as described.

21. In a cultivator, a disk or blade arranged to travel beneath the surface of the soil, in combination with opposing arms or blades above the same whereby the lateral or side pressure on the disk or blade and its carrier is equalized, substantially as described.

22. In a cultivator, a laterally-movable member, such as a drag-bar, a standard depending therefrom, a horizontally disposed disk or blade carried thereby and arranged to travel within the soil, and soil-engaging means or member above said disk and equalizing the lateral thrust or side pressure of the soil on the disk and standard, substantially as described.

607,633. SKIRT-PROTECTOR. AUGUST ALLGOEVER, New York, N. Y. Filed July 2, 1897. Serial No. 643,186. (No model.)



Claim.—A skirt-protector, comprising a flat flexible core, and a body having an upright portion and a portion folded about the core, whereby lateral shoulders are formed at substantially right angles to and upon opposite sides of the body portion, one shoulder being wider than the other, the said core being extended into each shoulder.

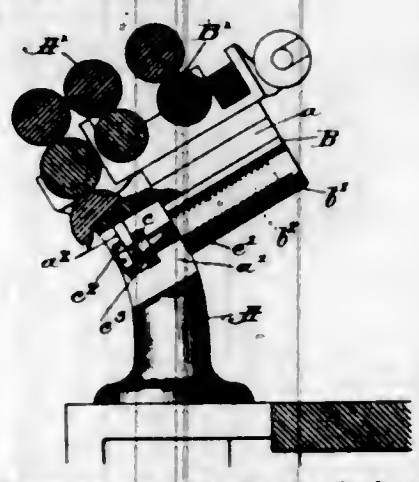
607,684. **KUMISS AND METHOD OF MAKING SAME.** HORATIO P. CONNELL, Philadelphia, Pa. Filed Dec. 13, 1897. Serial No. 661,723. (No specimens.)

Claim.—1. The process of manufacturing a pasteurized and practically sterile kumiss which consists in placing a mixture of milk and sugar, in suitable proportions, in a bottle, closing with a porous seal to exclude germs, pasteurizing it by heat, then cooling to the proper temperature, approximating 85° Fahrenheit, then removing said seal and adding a suitable proportion of yeast, corking, shaking, cooling and keeping at a low temperature till ripened.

2. The process of manufacturing a pasteurized and practically sterile kumiss which consists in placing a mixture of milk and sugar in solution in a bottle, plugging the same with absorbent cotton, subjecting the bottle to heat till the contents are heated to 212° Fahrenheit, then cooling to approximately 85° Fahrenheit, then removing the cotton plug and adding a suitable proportion of yeast, then corking, wiring and shaking well, and storing in a temperature of between 45° and 55° Fahrenheit, till ripened.

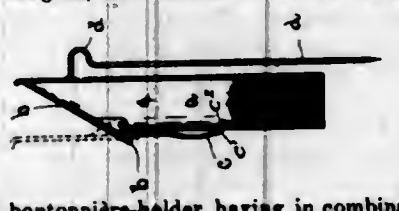
3. A bottled effervescent, ripened and practically sterile kumiss, obtained from sweetened pasteurized milk and yeast, free from antiseptic additions, and possessing the property of keeping for an almost indefinite period, substantially as set forth.

607,685. **ADJUSTABLE ROLL-FRAME FOR SPINNING-MACHINES.** FREDERICK S. CULVER, Taunton, Mass. Filed Nov. 6, 1897. Serial No. 657,603. (No model.)



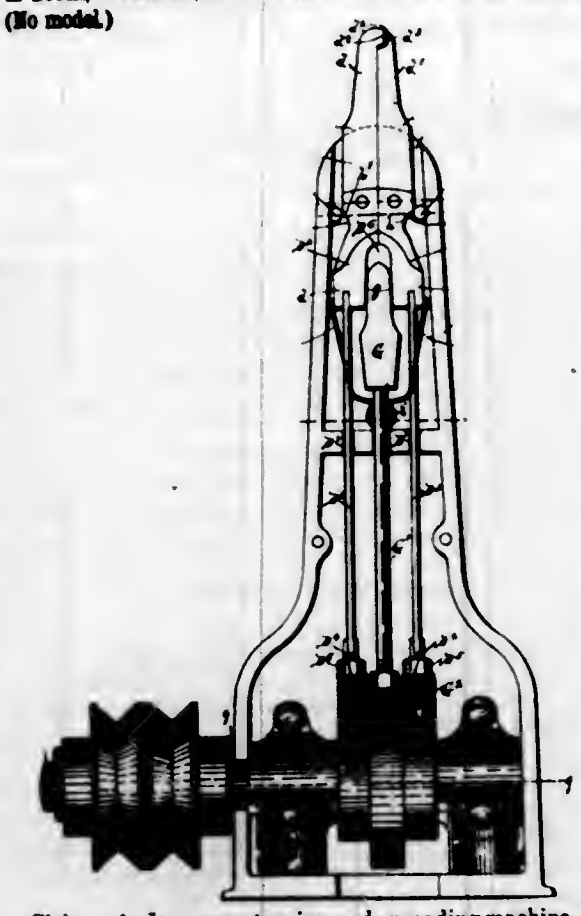
Claim.—In an apparatus of the class described, an upright standard having a rearward, longitudinally-slotted extension to form guideways, and an opening in the standard below said guideways, provided with opposite retaining-ribs, a headed screw-stud rotatably mounted in the opening in the standard below said guideways and accessible from the front of the standard, the ribs engaging and preventing longitudinal movement of the stud, and a lower-roll stand longitudinally grooved at each side to receive and slide upon the guideways and having a portion depending between and below the latter, said depending portion being provided with a threaded hole to be engaged by the screw-stud, whereby rotation of the latter will effect adjustment of the stand on the guideways toward or from the front of the standard, substantially as described.

607,686. **BOUQUET-HOLDER.** PATRICK DONNELLY, Norwich, Conn. Filed Aug. 28, 1897. Serial No. 649,798. (No model.)



Claim.—A boutonnière-holder having in combination an elongated vessel packed with sponge, or the like porous material, said vessel having a hinged cover formed with an extension, as set forth, a spring one of whose ends is formed with angular bends c' c^2 that are loosely entered in an opening a' in the body of the said vessel, the other end of said spring being in engagement with said extension b' of the cover and operating to close said cover, and a pin secured to said vessel; said pin being formed with a bend d', all substantially as specified.

607,687. **BEADING-MACHINE.** CHARLES B. HATFIELD, Utica, N. Y., assignor, by mesne assignments, to Quentin W. Booth and Irving R. Booth, Rochester, N. Y. Filed Jan. 23, 1892. Serial No. 419,046. (No model.)



Claim.—1. In a seam turning and spreading machine, a spreader composed of two vibrating blades, the working ends of which are movable to and from each other, in similar curves and in substantially the same plane, and means for simultaneously vibrating said blades, substantially as set forth.

2. The herein-described finger for beading-machines, the same comprising two rectilinearly-reciprocating separable sections arranged edgewise with their adjacent edges normally in proximity to each other and their upper extremities provided with cut-outs d^3 and lugs d^4 projecting laterally from said extremities of the sections, tapered from their base toward their free extremity and adapted to register with the cut-outs d^3, substantially as and for the purpose set forth.

3. The herein-described beader, the same comprising a finger-section, a cam for longitudinally reciprocating said section, and a cam for moving said section laterally, substantially as and for the purpose set forth.

4. The herein-described beader, the same comprising a finger section, a cam for longitudinally reciprocating said section, an adjustable end on the finger for varying its movement, and a cam for moving said section laterally, substantially as and for the purpose set forth.

5. The herein-described beader, the same comprising a finger-section adapted to be reciprocated laterally and provided with a cut-out in its edge, a cam adapted to register with said cut-out when the section is reciprocated in one direction, and an inclined shoulder on the cut-out adapted to engage the cam and force the section in the opposite direction, substantially as and for the purpose set forth.

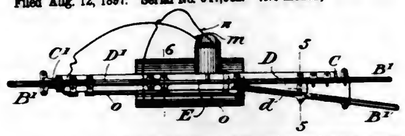
6. The herein-described beader, the same comprising a pair of turning-finger sections arranged side by side and movable laterally toward and away from each other, a cam movably mounted between the finger-sections for forcing them apart, and a spring for returning said sections to their normal position, substantially as and for the purpose set forth.

7. The herein-described beader, the same comprising a pair of turning-finger sections movable toward and away from each other, a cam adapted to engage the finger-sections and force them apart, cams for returning said sections to their normal position, and a spring for aiding the return movement of the sections, substantially as and for the purpose specified.

8. In a beader, the combination of a finger consisting of separable sections, cams for longitudinally reciprocating the sections, a separator for forcing the sections laterally, a cam for reciprocating the separator for laterally forcing the sections, cams for returning the sections to their normal position, a spring for aiding in the return of said sections to their normal position, substantially as and for the purpose set forth.

9. The herein-described beader, the same consisting of a finger-section, a spring-shank for said section, a cam for longitudinally reciprocating the finger-section, and a separator or cam for moving the section laterally, substantially as and for the purpose specified.

607,638. ELECTRIC-LINE SWITCH. ANTOINE R. DU PONT, Detroit, Mich., assignor to the Steel Motor Company, Johnstown, Pa. Filed Aug. 12, 1897. Serial No. 647,982. (No model.)



Claim.—1. A switch for suspended electric conductors comprising the combination of a continuous insulating member secured to and suspended from the main conductor, metal sections depending from the said insulating member and disconnected electrically from the main conductor, a movable tongue between said depending sections, and a magnet for actuating said tongue having a coil whose terminals are in connection with the main conductor and with the ribbed sections.

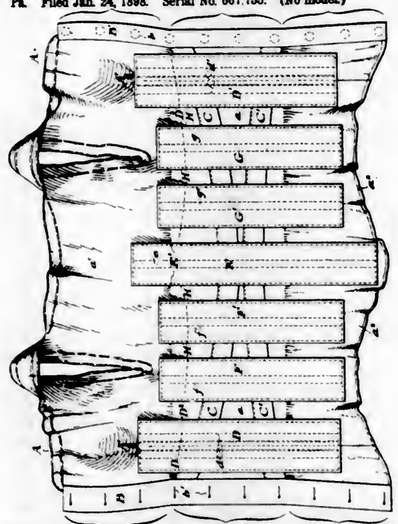
2. A switch for electric conductors comprising the combination of a tongue, ribbed sections at each end of the tongue insulated from the main conductor, a spring for holding the tongue in one of its operative positions, a solenoid-coil having its terminals connected respectively to the main conductor and to the ribbed sections and an armature connected to the said tongue and actuated by the current in the said coil.

3. In a switch for electric conductors the combination of the insulating member A, the main conductor B, the ribbed sections D and D' depending from said insulating member and disconnected from said conductor, the pivoted tongue E, the magnet for operating said tongue, and the roof J.

4. In a switch for electric conductors, the combination of a pivoted tongue, a magnet and spring for controlling the position of the tongue, a ribbed section, connected through the magnet-coil with the main conductor, at each end of the tongue, and roofs protecting the tongue, ribbed sections and magnet.

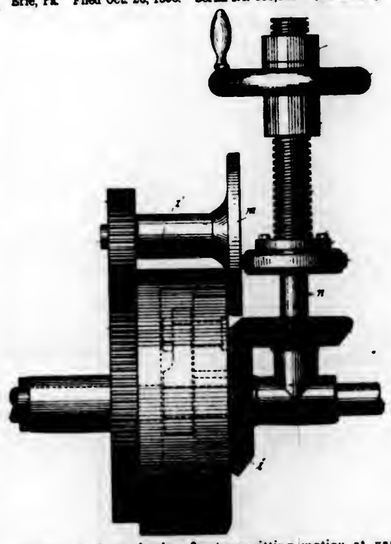
5. In a switch for suspended electric conductors, in combination, a continuous suspended insulating member, depending ribbed sections and a pivoted tongue secured thereto, a solenoid also secured to said insulating member, and having a spring-pressed armature connected directly to the tongue near its free end, and sheet-metal roofs J and J' also secured to said insulating member and protecting the tongue and magnet.

607,639. CORSET-WAIST. GUSTAV A. SCHNERRLI, Nazareth, Pa. Filed Jan. 24, 1898. Serial No. 667,733. (No model.)



Claim.—The hereinbefore-described corset-waist consisting of the body formed of integrally-knit web, narrowed at the waist and widened at the bust and hip portions; in combination with a transverse inelastic band running entirely across the body at the waist portion and secured thereto; the vertical pieces, D D', F F' and G G', of pliable but relatively inelastic material, arranged with relation to each other, as set forth, and extending from points well below the waist portion to points well above the upper limit thereof, said pieces being secured to the waist and hip portions but free above substantially the upper limit of the waist portion; and the back-piece, E, of pliable but inelastic material extending from substantially the bottom of the hip portion to a point well above the upper limit of the waist portion, said piece being secured at its edges to the waist and hip portions but being free above substantially the upper limit of the waist portion; said pieces D, E, F F' and G G', comprising casings and stiffening-ribs, substantially as set forth.

607,640. TRANSMISSION-GEARING. FREDERICK SCHNEIDER, Erie, Pa. Filed Oct. 26, 1896. Serial No. 610,148. (No model.)

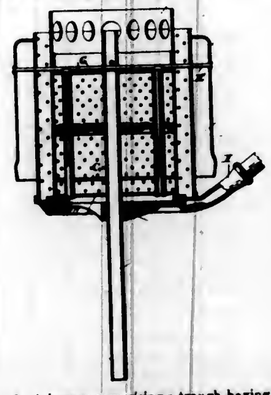


Claim.—1. A mechanism for transmitting motion at variable speed, comprising a driving and a driven shaft, a gear-wheel secured to the driving-shaft, a crank secured to the driven shaft, a stud set in the end of the crank, a pinion set rotatably on the stud and gearing with the gear-wheel secured to the driving-shaft, a gear-wheel set rotatably on the driven shaft and gearing with the pinion, and means for rotating this gear-wheel on the driven shaft.

2. The combination with mechanism for transmitting motion with a variable speed from a driving-shaft running at a constant speed, comprising a driving and a driven shaft, a gear-wheel secured to the driving-shaft, a crank secured to the driven shaft, a stud set in the end of the crank, a pinion set rotatably on the stud and gearing with the gear-wheel secured to the driving-shaft, a gear-wheel set rotatably on the driven shaft and gearing with the pinion, of a gear-wheel, set rotatably on the driven shaft and secured to the gear-wheel gearing with the pinion, a cog-wheel secured to the driving-shaft, an auxiliary shaft pillowed parallel to the driving-shaft, a cog-wheel secured to the auxiliary shaft and gearing with the cog-wheel set on the driving-shaft, a friction disk, rigidly secured to the end of the auxiliary shaft, a second auxiliary shaft pillowed at right angle to the driven shaft, a friction-wheel set on this auxiliary shaft and engaging with the friction-disk, a beveled gear-wheel secured to the same auxiliary shaft and gearing with the beveled gear-wheel secured to the gear-wheel set rotatably on the driven shaft, and of means for gradually shifting the friction-wheel in relation to the friction disk.

3. The combination with a transmission-gearing for driving a shaft with variable speed from a shaft having a constant speed, of mechanism for automatically changing the speed of the gearing in accordance with the load on the driven shaft, comprising an auxiliary shaft, a gear-wheel and a friction-disk secured to the auxiliary shaft, a flanged sleeve, sliding longitudinally on the driven shaft, and having an enlarged boring between its ends, longitudinal slots in the enlarged boring, a dog-collar, rollers rotating on set-screws, securing the collar to the shaft, and engaging in the slots of the sleeve, rods connecting the sleeve to the friction-wheel; semicircular slots in the flange of the sleeve driving-pulley mounted loosely on the shaft, and having its enlarged hub shaped into two segments, engaging in the semicircular slots of the flange of the sleeve; spiral ways provided in the segments, rollers set on studs, secured diametrically opposite in the sleeve, and engaging in the spiral ways, provided in the segments, a spiral spring, slid on the shaft and pressing the sleeve against the pulley, screw-threaded collars, screwed on the shaft and sustaining the spring in position, and a stationary collar adjustably secured to the shaft beyond the load-pulley and holding it in position against the action of the spring, and a brake-ring, surrounding the flange of the sleeve and acting as a load on the driven shaft when the driven pulley is relieved.

607,641. OIL-BURNER. ATWELL J. BLACKFORD, Cleveland, Ohio. Filed Dec. 6, 1897. Serial No. 660,884. (No model.)



Claim.—1. A burner comprising a trough having an oil vaporizing channel, and an oil-feeding channel parallel therewith and communicating with the vaporizing-channel through the dividing-walls, substantially as described.

2. A burner comprising a trough having an oil-vaporizing channel, an oil-feeding channel communicating therewith through the dividing-wall, and an oil-supply communicating with the oil-feeding channel at a point removed from the communication between said channels, substantially as described.

3. An oil-burner comprising an annular trough having an oil-vaporizing channel and an oil-supply channel concentric therewith and in practically the same horizontal plane, the dividing-wall having a passage-way establishing communication between said channels, substantially as described.

4. An oil-burner comprising an annular trough having an annular oil-vaporizing channel, and a concentric oil-feeding channel, the dividing-wall between said channels having passage-ways at opposite sides of the center of the trough which establishes communication between said channels, substantially as described.

5. An oil-burner comprising an annular trough provided with an annular oil-vaporizing channel, a concentric U-shaped oil-feeding channel, the dividing-wall having passages at the ends of the oil-feeding channel, and an oil-supply communicating with the oil-feeding channel at a point intermediate its ends, substantially as described.

6. An oil-burner comprising a trough having an oil-vaporizing channel, and an oil-feeding channel having positive and auxiliary oil-feeding communications with said oil-vaporizing channel, substantially as described.

7. An oil-burner comprising a trough having an oil-vaporizing channel, and an oil-feeding channel, the dividing-wall having a passage-way practically in a horizontal plane with the bottom of the oil-vaporizing channel forming a positive feed, and a passage-way in a plane above the bottom of said oil-vaporizing trough forming an auxiliary oil-feed, substantially as described.

8. An oil-burner comprising a trough having an oil-vaporizing channel and an oil-feeding channel, the dividing-wall having an elongated passage-way in a plane above the bottom of the oil-vaporizing channel, and a comparatively small passage-way in practically a horizontal plane with the bottom of the oil-vaporizing channel, substantially as described.

9. An oil-burner comprising a trough having a V-shaped oil-vaporizing channel, and an oil-feeding channel, the dividing-wall having a passage-way communicating with the apex of the V, and a passage-way in a horizontal plane above said apex, substantially as described.

10. An oil-burner comprising an annular trough provided with an annular vaporizing-channel, and an oil-feeding channel, the dividing-wall having passage-ways between the channels at points situated at opposite sides of the oil-vaporizing trough, substantially as described.

11. An oil-burner, comprising an annular trough provided with an annular V-shaped oil-vaporizing channel, an inclosing oil-feeding channel, the outer wall of the oil-vaporizing channel provided with passage-ways communicating with the oil-feeding channel at opposite sides of the oil-vaporizing trough, substantially as described.

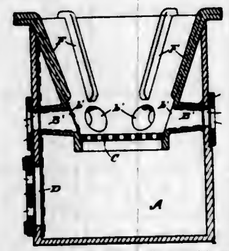
12. A perforated combustion-tube for oil-burners having its top and bottom portions composed of two metals, the metal forming the lower portion having relatively a less heat-conducting quality than the upper portion.

13. A combustion-tube for oil-burners composed of an upper and lower section united at their meeting-point, the upper portion composed of a durable metal, and the lower portion of a metal having a less heat-conducting quality than the upper portion.

14. A combustion-section for oil-burners composed of an inner and an outer tube, the inner tube having an upper and a lower section, the upper section composed of durable material and the lower section of a material having a less heat-conducting quality than the upper section, and the outer tube composed of a material having less heat-conducting qualities than the upper section of the inner tube.

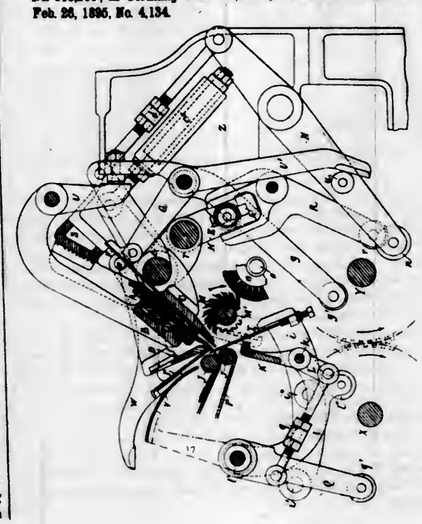
15. The combination with an oil-burner having a vaporizing-chamber, of an inner perforated combustion-tube composed of two metals, the upper portion where the heat is greatest composed of a metal having a greater heat-conducting quality than the lower portion, whereby the upper portion is prevented from being warped and scaled, and the lower portion from conducting heat to the vaporizing chamber or point, substantially as and for the purpose described.

607,642. PORTABLE FURNACE OR STOVE. ANTONIO M. BOTELHO, Cintra, Portugal. Filed Aug. 17, 1897. Serial No. 648,518. (No model.)



Claim.—In a portable furnace, the combination with the outer casing having holes in its side wall and an adjustable regulating-ring surrounding said casing, and having holes capable of registering with the holes in the casing, of a funnel-shaped fire-pot resting at its top on the top of the casing and having separate tubular projections extending from its lower part to connect with the openings in the casing.

607,643. COMBING-MACHINE. EUGÈNE DELETTE, Lure, France. Filed May 9, 1896. Serial No. 590,848. (No model.) Patented in France May 28, 1894, No. 238,825; in Belgium June 2, 1894, No. 110,266; in Germany June 14, 1894, No. 81,432, and in England Feb. 26, 1895, No. 4,134.



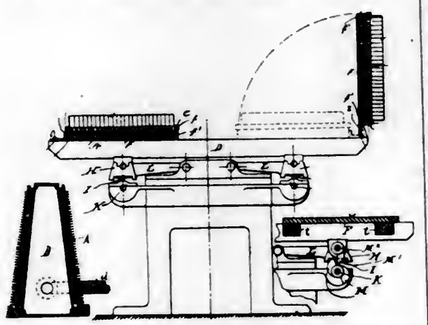
Claim.—1. In a combing-machine, the combination of a feed-box for holding the sliver, gripping-jaws and means for reciprocating said gripping-jaws to draw the sliver through said feed-box, means for opening said jaws in the position farthest from the feed-box, a pivoted lever and a plate carried thereby whose free end rests on the lower gripping-jaw, and means for causing said plate to move forward relatively to said gripping-jaws when the jaws are open.

2. In a combing-machine, the combination of gripping-jaws C, D, means for reciprocating said gripping-jaws to feed the sliver to the comb, a cleaning-plate F, means for reciprocating said cleaning-plate, pivoted lever G, *g* on which said plate *f* is mounted, a fixed picking-comb I′ adjustably secured to the frame of the machine, a movable picking-comb I, a lever *i*, carrying said comb I, means for rocking said lever *i*, a brush K, a lever *l* on which said brush is pivotally mounted and which oscillates about a fixed center, means for oscillating said lever *l*, a lever Q oscillating about the same center as lever *l*, means for oscillating said lever Q, and a link *q* connecting the brush K with the lever Q, as and for the purpose specified.

3. In a combing-machine, the combination with the feeding apparatus comprising fixed feed-box A, movable retaining-comb B, reciprocating gripping-jaws C, D, means for reciprocating said gripping-jaws to feed the sliver, of the carding-roller M, means for giving same an alternating rotary motion, pivoted lever G and cleansing and re-dressing plate F carried thereby, means for reciprocating said plate F, lever *i* and picking-comb I adjustably mounted thereon, a pair of plucking-rollers J, J and apron P, substantially as and for the purpose described.

4. In a combing-machine, the combination with means for holding, feeding and carding the sliver, of picking-combs I, I′, a lever *i* for supporting said picking-combs I, means for oscillating said lever, a brush K for cleaning picking-comb I, a piece *l* to which said brush is articulated, a lever L carrying said piece *l*, means for oscillating said lever L to move said piece *l* and brush K up and down to clean the comb I, and means for moving the piece L back and forth on lever L so as to cause it to approach or recede from the picking-comb I.

607,644. MATCH-MAKING. EMILE LAGNEAU, Lessines, Belgium. Filed Feb. 28, 1893. Serial No. 464,025. (No model.) Patented in Belgium Dec. 6, 1892, No. 102,415; in Switzerland Dec. 19, 1892, No. 6,456; in England Feb. 14, 1893, No. 3,267; in France Mar. 27, 1893, No. 228,933; in Germany Nov. 8, 1893, No. 73,450; in Norway Dec. 4, 1893, No. 3,540; in Sweden Dec. 7, 1893, No. 5,562; in Italy Dec. 7, 1894, No. 37,774/130, and in Denmark Mar. 3, 1897, No. 1,594.



Claim.—1. In a machine for making matches, the combination of a vat to contain the material to be applied to the splints, a perforated tray hinged to swing from vertical position down into said vat, a frame in which the splints are loosely supported, when said frame is in vertical position and which enters the tray when the latter is in vertical position, and a hinged cover adapted to hold the splints down into the composition which enters through the perforated bottom, substantially as set forth.

2. In a machine for making matches, the combination of a vat for holding the material to be applied to the splints, a tray formed with a perforated bottom and a sheet of felt, a frame for carrying the match-splints, having openings in which the splints are loosely supported, and means for forcing the splints down till their ends are embedded into the felt, substantially as set forth.

3. In a machine for making matches, the combination of a suitable frame carrying the match-splints, a vat B having a double-bottom trough V, a hinged flap T, the inclined supports P, and trunnions on the frame adapted to rest on the inclined supports, substantially as set forth.

607,645. CASE FOR SPECTACLES OR EYEGLASSES. HENRY L. LEHR, Newark, and JACOB GOEBEL, Irvington, N. J. Filed Aug. 26, 1897. Serial No. 649,662. (No model.)



Claim.—1. The improved case for spectacles comprising hinged sections *a*, *a*, centrally open and angular in cross-section with outwardly and oppositely extending flanges forming sockets or recesses at the outer sides of the said sections to receive the side parts, and said side parts consisting of supplemental frames, outer coverings turned at their edges on said supplemental frames and lying in the angles of said sections and linings fastened to said supplemental frames the edges being hidden in the angles of said sections, the said side parts being secured outside of said sections, in the sockets formed by the oppositely-projecting flanges, substantially as set forth.

2. The improved spectacle-case comprising the hinged sections *a*, *a*, centrally open and angular in cross-section, with outwardly and oppositely extending flanges forming sockets or recesses to receive the side parts, and said side parts consisting of supplemental frames, coverings and linings, the said supplemental frames, coverings and linings being joined and fastened into the sockets of the hinged sections, substantially as set forth.

607,646. ELECTROLYTIC BATH. PASCAL MARINO, Paris, France. Filed Dec. 1, 1896. Serial No. 614,121. (No specimens.) Patented in Belgium June 15, 1896, No. 121,776.

Claim.—1. The process of electrolytic production of metals, consisting in adding to a solution of a salt of the metal to be deposited alkali-metal salts of the same acid and an alkali-earth-metal salt of another acid in such quantity as to give, by an incomplete double decomposition, an insoluble precipitate and a mixed solution of different soluble salts of the metal to be deposited, and electrolyzing such mixed solution.

2. The process of electrolytic production of metals consisting in adding to a solution of a salt of the metal to be deposited, an alkali-metal salt of the same acid, and also adding an alkali-earth-metal salt of another acid in such quantity as to give, by an incomplete double decomposition an insoluble precipitate, and a mixed solution of different soluble salts of the metal to be deposited, adding to the mixed solution an organic acid and electrolyzing this mixture.

3. The process of electrolytic production of metals contained in minerals, consisting in adding to a solution containing the salt of the metal to be deposited mixed with alkali-metal salts of the same acid, an alkali-earth metal salt of another acid in such quantity as to give by incomplete double decomposition an insoluble precipitate and a mixed solution of different soluble salts of the metal to be deposited, and also adding an organic acid and an acid such as chlorhydric or sulfuric acid capable of attacking the mineral, and electrolyzing the mixed solution by passing an electric current therethrough, the mineral itself, in the bath, being used as the soluble anode.

607,647. ENGINE-GOVERNOR. JOHN V. RICE, Jr., Edgewater Park, N. J., assignor to the John V. Rice, Jr., Company, same place. Filed Apr. 27, 1895. Renewed Jan. 25, 1898. Serial No. 667,940. (No model.)

Claim.—1. The combination of the centrifugally-acting weights, a screw-shaft on which the weights are located and travel, and a valve-operating device likewise situated on the screw-shaft, substantially as described.

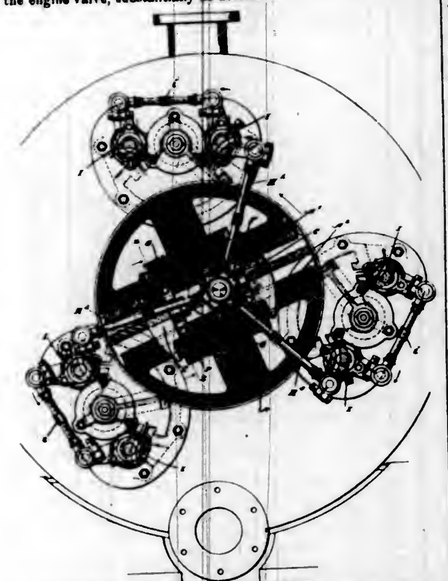
2. The combination of the centrifugally-acting weights, guides therefor, a screw-shaft which is engaged and rotated by said weights, and springs for restoring the weights to their normal position.

3. In an engine-governor, the combination of the centrifugally-acting weights, the screw-shaft whose sections are of different pitch, said shaft being engaged and rotated by the weights, and a block situated on the shaft and which is actuated by the rotation of the shaft, substantially as described.

4. In an engine-governor, the combination of centrifugally-acting weights, a screw-shaft on which said weights are located, the sections of which screw-shaft are of different pitch, guideways on which the weights travel, springs for returning the weights to their normal position and mechanical cut-off devices operated by the screw-shaft, substantially as described.

5. In an engine-governor, the combination of centrifugally-acting weights, a governor-wheel having parallel guideways on which the weights travel, a central screw-shaft whose sections are of different

pitch, said shaft having its sections of larger pitch passing through the weights, a block located on the central portion of the shaft which is of the smaller pitch and connections between the said block and the engine valve, substantially as described.



6. In an engine-governor, the combination with the centrifugally acting weights, of a screw-shaft whose threaded sections are of different pitch, the weights being located upon the sections of larger pitch, substantially as described.

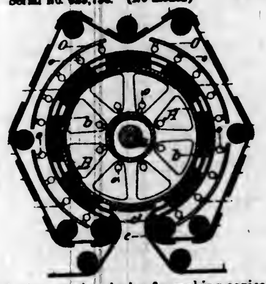
7. In an engine-governor, the combination of the governor-wheel having parallel guideways, the weights moving on said guides, the screw-shaft whose sections are of different pitch, the springs connecting the ends of the weights, the block situated on the central section of the screw-shaft and movable by the rotation of said shaft and connecting rod or rods attached to said block, substantially as described.

8. In an engine-governor, the combination of the governor-wheel, the engine-shaft to which it is attached, the screw-shaft whose sections are of different pitch, the weights traveling on said screw-shaft, parallel guides for supporting the weights, screw-bearings at the end of the screw-shaft and suitable springs for restoring the weights to their normal position, substantially as described.

9. The combination of the weights, guides therefor, a screw-shaft engaged and turned by the weights, and a connection between said shaft and the valve.

10. The combination of the centrifugally-acting weights, guides therefor, a screw-shaft engaged and turned by the weights, and springs connecting the weights, substantially as described.

607,648. CONTINUOUS PHOTOGRAPHIC-PRINTING APPARATUS. ARTHUR SCHWARZ, Berlin-Schöneberg, Germany. Filed Mar. 29, 1897. Serial No. 629,796. (No model.)



Claim.—1. An exposing device for making copies on sensitized paper, provided with an endless blanket, and means for exerting pressure upon the blanket and upon the negatives from which the copies are to be made, substantially as and for the purposes described.

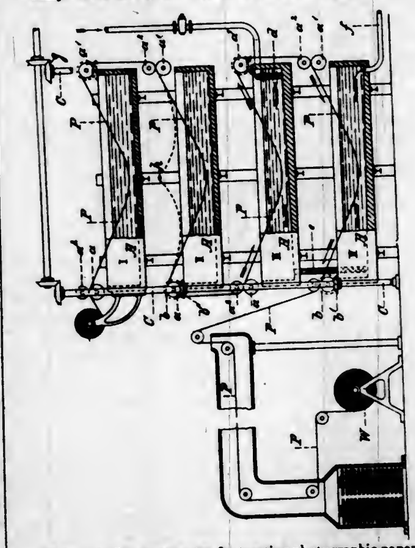
2. An exposing device for making copies on sensitized paper, provided with a transparent or translucent endless blanket, substantially as and for the purpose described and set forth.

3. An exposing device for making copies on paper sensitized on both sides, provided with a transparent or translucent blanket, circulating about a transparent or translucent cylinder, substantially as and for the purpose described and set forth.

4. In an exposing device, the combination of a rotary cylinder, an endless blanket circulating around this cylinder, and adapted to press the negatives upon the sensitized paper, substantially as described.

5. In an apparatus for exposing paper sensitized on both sides, a cylinder around which the blanket is passed, means for sustaining a portion of the blanket at a distance from the cylinder so as to leave a space between the cylinder and said portion of the blanket, and electric lamps located in said space, substantially as and for the purposes described.

607,649. APPARATUS FOR TREATING AND WASHING PHOTOGRAPHIC PAPER. ARTHUR SCHWARZ, Berlin-Schöneberg, Germany. Filed May 3, 1897. Serial No. 634,927. (No model.)



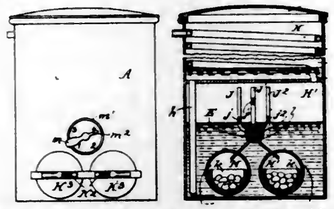
Claim.—1. In an apparatus for treating photographic paper, the combination of a series of independent baths arranged one above the other in horizontal planes so as to leave an open space between the baths for observation of the paper as it passes through the baths, guide-rolls arranged at opposite ends of each bath, outside thereof, for supporting the photographic paper at opposite ends of the bath and permitting it to hang loosely in the bath, and means for moving the paper from one bath to the other, substantially as and for the purposes described.

2. In an apparatus for treating photographic paper, the combination of a series of independent baths arranged one above the other in horizontal planes so as to leave an open space between the bath for observation of the paper as it passes through the baths, guide-rolls and feed-rolls located at opposite ends of the baths outside thereof for supporting the paper at opposite ends of the bath and permitting it to hang loosely in the bath, means for operating the feed-rolls for moving the paper lengthwise of one bath and thence downward to the next bath and so in opposite directions through the series of baths, and means for admitting a washing liquid into one end of certain of the baths and delivering from the opposite end into the bath next below, substantially as and for the purposes described.

607,650. ACETYLENE-GAS GENERATOR. FREDERICK H. SMITH, Dunblane, Scotland. Filed Sept. 22, 1897. Serial No. 652,575. (No model.)

Claim.—1. In an acetylene-gas generator, the combination with a tank formed in two chambers, connected with each other by a depending tube and having two carbid-chambers arranged side by side

within the lower chamber of the tank so that the water can circulate around them, of three upright tubes the two outer of which have slots at a lower level than the slot in the central tube, by which the water is caused to attack the carbid in the one chamber when the carbid in the other is exhausted and a five-way cock for controlling the supply of water by these tubes whereby the two chambers are automatically and alternately brought into action, as described and shown.



2. In an acetylene-gas generator, the combination with a tank formed with upper and lower chambers, connected with each other by a depending tube, and two carbid-chambers, of three upright tubes of which two communicate with the lower chamber aforesaid at a lower level than the other tube, and a five-way cock having ports connected to said tubes and to the carbid-chambers and adapted to connect the said tubes alternately with the said carbid-chambers, substantially as and for the purpose set forth.

607,651. SADDLE FOR VELOCIPEDES. HERBERT BLOSSOM, New York, N. Y. Filed July 13, 1897. Serial No. 644,404. (No model.)



Claim.—1. A saddle for a velocipede, comprising a seat-base of rigid material, a supporting-spring extending longitudinally of the saddle, a hinging device connecting the rear end of the supporting-spring with the back part of said seat-base, so that the front end of the latter may be elevated or depressed, means for turning the seat-base at the hinge so as to elevate or depress its front end, a pommel secured to the forward end of the supporting-spring, and a cover over said seat-base and pommel, substantially as set forth.

2. A saddle for a velocipede, comprising a broad seat-base, a supporting-spring extending longitudinally of the saddle and hinged at its rear end to the back of said seat-base so that the front end of the latter may be raised or lowered, a pommel carried on the end of said spring, a cover of flexible material over the seat base and spring, means for elevating or depressing the front edge of the seat-base by causing it to turn about its hinged connection to the spring, and means for securing said spring adjustably to the frame of a velocipede, substantially as set forth.

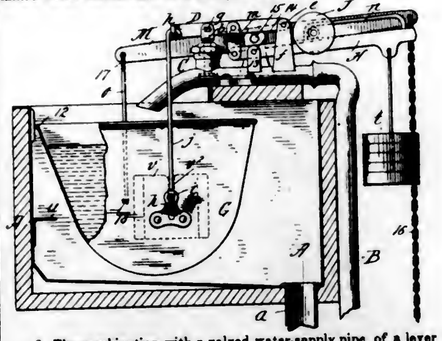
3. A saddle for a velocipede, comprising a U-shaped cantle to form the base of the seat proper, a supporting-spring extending lengthwise of the saddle, said spring being hinged to the rear part of the cantle, a flexible cover to which the front end of the spring is secured, and means for raising and lowering the front end of the cantle independently of the pommel and fixing it when adjusted, substantially as set forth.

4. In a saddle for a velocipede, the combination with the U-shaped cantle A, the flexible cover C thereon, and the supporting-spring B, secured at its front end to the front prolongation of said cover and hinged at the rear end to the cantle, of the slide F, between the spring and the cantle and serving as a wedge to raise the front end of the cantle, and the collared screw for operating the said slide, substantially as set forth.

5. A saddle for a velocipede having a U-shaped cantle, with arms extending forward, a cover of flexible material over said cantle and extending out forward to form a pommel, a supporting-spring, coupled to the cantle at the rear and to the pommel at the front, and a transverse stretcher between the forwardly-projecting arms of the cantle, for spreading the arms of the cantle, substantially as set forth.

607,652. WATER SUPPLYING AND CONTROLLING APPARATUS FOR WATER-CLOSET TANKS. ALFRED BURGIN, Springfield, Mass. Filed June 28, 1898. Serial No. 683,947. (No model.)

Claim.—1. The combination with the water-supply pipe having a valve and a lever for operating said valve, normally and automatically applied and operative to open the valve, of a receptacle suspended from said lever and adapted, on receiving a sufficient overbalancing quantity of water thereinto, to swing the lever and close the valve, and means for overturning said receptacle for discharging the contained water therefrom, substantially as described.



2. The combination with a valved water-supply pipe, of a lever device operatively connected with the valve, of a receptacle suspended on the lever device, means for discharging the receptacle of its contained liquid, and a roller-weight adapted to run back and forth on the lever device, substantially as and for the purposes set forth.

3. The combination with the water-supply pipe having a valve with a stem, of the lever D engaged with said stem, a receptacle with which the valve delivers, a second lever hooked to the lever D, a roller-weight thereon, and means for discharging said receptacle of its contained liquid, substantially as described.

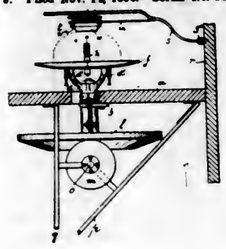
4. The combination with the water-supply pipe having a valve with a stem, and of the lever D engaged with said stem, a receptacle suspended from said lever D, a second lever hooked to said lever D, and constructed with the slot, a roller-weight adapted to run by its axle back and forth in the slot-provided lever, and means for overturning the said receptacle, substantially as described.

5. The combination with the water-supply pipe having the valve with a stem, the valve body being provided with the upstanding ear-lug *f* and 13, of the T-shaped lever D pivoted to lug *f* and engaging the valve, the lever H pivoted in lug 13, the link connecting it with lever D, the rods *j* depending from the transverse members of said T-lever, the open-top receptacle G having pivotal support on said rods *j* at points at one side of its middle, the lever M and connecting-rod *o* engaged with the receptacle at its side opposite its pivotal support, substantially as and for the purposes set forth.

6. The combination with the main tank A having outlet-passage *a*, and guard *u*, of the water-supply pipe having valve C with stem *b*, lever D engaging said stem and supporting pivotally in suspension, the tilting receptacle G, the lever H linked to lever D and provided with the roller-weight J, the lever M having operating connection 16, and the rod *o* connecting said lever with a portion of the receptacle forward of its pivotal support, substantially as and for the purposes set forth.

7. The combination with the water-supply pipe having a valve, with a stem, and the main tank A provided at opposite sides with the vertical guides *v*, of a lever device operatively connected with the valve, a receptacle suspended from and pivotally suspended below the lever and valve and having its pivot members located in said guides, and means for overturning said suspended receptacle, substantially as and for the purposes set forth.

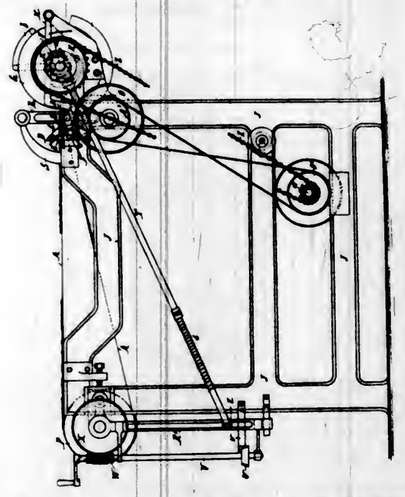
607,653. HAT-FINISHING MACHINE. WILLIAM E. CUMMINGS, Orange, N. J. Filed Nov. 14, 1896. Serial No. 612,049. (No model.)



Claim.—1. In a hat-finishing machine, the combination of a rotary shaft having at its upper end arms supporting a centrally-perforated plate, a brim-board fastened upon said plate to receive a hat-block, and holding means for said hat-block secured to said plate and extending downward through said plate into the space between said arms, substantially as set forth.

2. In a hat-finishing machine, the combination of a plate *e*, and brim-board *f*, a hat-block seated upon said brim-board and having bored at the center of its under surface a vertical socket, a split tube of uniform bore fastened to the upper surface of said plate *e*, and adapted to enter said vertical socket, and an expanding-piece *i*, lying in the split tube and having its lower end extending downward through the plate *e*, and threaded to receive a nut *k*, and having its upper portion flaring or conical and partially projecting from the top of the split tube, the projecting end being larger than the bore of the said tube but smaller than the bore of the socket, substantially as set forth.

607,654. MACHINE FOR DEPILATING SKINS. GUSTAVE DE KEUKELAERE, Alost, Belgium. Filed June 25 1897. Serial No. 642,337. (No model.) Patented in Luxemburg May 15, 1896, No. 2,353.



Claim.—1. In a machine for depilating skins, the combination of means for imparting a to-and-fro movement to the skins, a spirally-threaded pressure rod or roller adapted to rotate against the hair, means for rotating said rod whereby the stiff long hairs are separated from the shorter soft ones, and means for removing the long hairs, substantially as described.

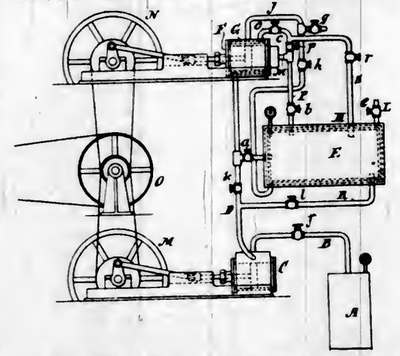
2. In a machine for depilating skins, the combination of means for imparting a forward-and-backward movement to the skin, the forward movement being greater than the backward, a spirally-threaded pressure-roller adapted to rotate in contact with the skin, means for rotating said rod and means for removing the long hairs for the purpose set forth.

3. In a machine for depilating skins, the combination of an endless belt upon which the skins are carried, a row of spring-fingers bearing upon the hair of the skins, a spirally-threaded roller, means for rotating said roller in contact with the hair on the skin at a point adjacent to the fingers, and means for imparting a forward-and-backward movement to the belt carrying the skin, substantially as described.

4. In a machine for depilating skins, the combination of an endless belt upon which the skins are carried, a row of spring-fingers bearing upon the hair of the skins, a spirally-threaded roller, means for rotating said roller in contact with the hair on the skin at a point adjacent to the fingers, means for imparting a forward-and-backward movement to the belt carrying the skin and a series of burners arranged between the row of fingers and the roller and adapted to burn off the exposed hairs.

5. In a machine for depilating skins, the combination of an endless belt upon which the skins are carried, a row of spring-fingers bearing upon the hair of the skins, a spirally-threaded roller, means for rotating said roller in contact with the hair on the skin at a point adjacent to the fingers, means for imparting a forward-and-backward movement to the belt carrying the skin, and a cylinder provided on a part of its surface with a brush adapted to sweep the hairs exposed between the fingers and roller, and in another portion of its surface with burners adapted to burn off the said exposed hair, substantially as described.

607,655. PROCESS OF AND APPARATUS FOR GENERATING POWER FROM COMPRESSED GASES. EDWARD N. DICKERSON, New York, N. Y. Filed Feb. 27, 1895. Serial No. 539,873. (No model.)



Claim.—1. The within-described process of generating power consisting in first producing a liquefied gas, then releasing the pressure and expanding the gas in contact with a movable object thereby securing the cooling of the gas, then passing the gas to an explosion-chamber to cool the latter, and then combining the gas with air and exploding the mixture in said chamber in contact with another movable object, substantially as described.

2. The process of generating power from liquefied gas, which consists in expanding the same through a motor, thereby cooling the gas, in utilizing said cooled gas in the jacket of an explosion-engine, and in exploding the gas with air in the gas-engine, substantially as described.

3. The process of generating power from liquefied gas, which consists in expanding the same through a motor, thereby cooling the gas, in utilizing said cooled gas in the jacket of an explosion-engine, and in exploding a mixture of the gas and air in the gas-engine, having previously heated the gas to be exploded by the exploded gas, substantially as described.

4. The combination of the liquefied-gas receptacle A, the motor C, the jacketed gas-engine G, the intermediate reservoir E, and the connections shown for cooling the gas-engine G and exchanging heat between the cooled gas coming from the motor C and the products of combustion from the gas-engine, G, substantially as described.

5. The combination of the liquefied-gas receptacle A, motor C, jacketed gas-engine G, jacketed reservoir E, and connections shown for leading the expanded cooled gas through the jacket of the gas-engine in connection with the reservoir E, and the connections shown from the exhaust of the gas-engine for warming the cooled gas in the reservoir E, substantially as described.

6. The combination of a receptacle for containing liquefied gas, a connection from said receptacle to a motor driven by the pressure of the gas, a motor driven by the pressure of the gas, a jacketed gas-engine operated by the explosion of said gas, a connection from the motor to the jacket of the gas-engine, and from the jacket of the gas-engine to the interior of the gas-engine, substantially as described.

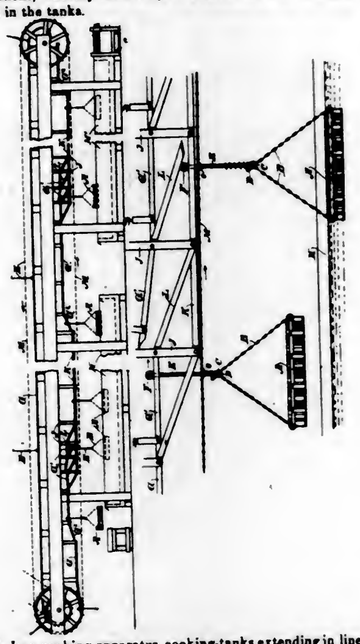
7. The combination of the liquefied-gas receptacle A, and motor C, driven by the pressure of the gas, with the gas-engine G, primarily cooled by the gas from the motor C, and subsequently operated by the explosion of the gas derived from said motor C, the said motor C and the gas-engine E being connected with and operating a driving-shaft, substantially as described.

8. The within-described improved mode of preventing the undue heating of parts of a gas-engine, consisting in conducting to said parts the gas resulting from releasing the pressure upon a combustible gas in a liquid state, substantially as described.

9. In the art of obtaining motive power from liquefied gas, releasing the pressure upon said liquefied gas and conducting the resultant gas to the heated parts of a gas-engine, then passing the gas in contact with parts heated by the exhaust, and combining air with the gas, and exploding the mixture, substantially as described.

607,656. AUTOMATIC COOKING APPARATUS FOR CANNERIES. FRANK A. DIXON, San José, Cal. Filed Mar. 2, 1897. Renewed June 2, 1898. Serial No. 682,409. (No model.)

Claim.—1. In a cooking apparatus, tanks extending in line with each other, pans adapted to contain cans of material to be cooked, a suspending device for each of said pans, tracks extending longitudinally above the cooking-tanks, one above the other, trolley-wheels adapted to travel upon the upper track to suspend the pans above the tanks and switch-track connections between the upper and lower tracks, whereby the trolleys are transferred and the pans submerged in the tanks.



2. In a cooking apparatus, cooking-tanks extending in line, parallel tracks situated one above the other in line over the tanks, trucks or trolleys adapted to travel on said tracks with suspending devices, pans adapted to contain the cans of material to be cooked with means for connecting them with the suspending devices and trolleys, sections formed in the upper track whereby its continuity is interrupted at any desired point, and switch-tracks forming continuations between the upper and lower track, at the points of interruption, whereby the suspending devices are transferred and the cans lowered into the cooking-tank at any desired point.

3. In a cooking apparatus, tanks disposed in line with each other, tracks situated above the tanks one above the other, trolleys or trucks with suspending apparatus and pans adapted to contain the cans of material to be cooked, said pans being connected with the suspending apparatus, jointed sections formed in the upper track adapted to be turned upward to break its continuity and inclined connections between the interrupted track and the one below, whereby the trolleys pass from one track to the other and the pans are submerged in the tanks beneath, and an endless traveling chain or chains with connections whereby the pans are constantly moved at a given rate of speed.

4. In a cooking apparatus, tanks situated in line with each other, double superposed tracks fixed in line above the tanks, trolleys adapted to travel upon said tracks, and pans containing cans of material to be cooked said pans being suspended from the trolleys, an endless traveling chain with means for engaging it with the suspending devices whereby the pans are moved at a uniform rate of speed, hinged sections in the upper track whereby its continuity is interrupted, and inclined connecting-sections between it and the track below whereby the pans containing the cans are submerged in the cooking-tanks and caused to travel therein for any desired length of time and other inclines whereby the cans are raised out of the tank whereby different pans traveling at the same rate of speed may be submerged in the cooking-tanks for different lengths of time.

5. In a cooking apparatus, tanks extending in line with each other, pans containing material to be cooked, with suspending and propelling mechanism whereby they are moved at a regular rate of speed above the cooking-tanks, and means for submerging the pans and their contents and again removing them whereby the time of submersion may be varied without change of speed of the carrier.

6. In a cooking apparatus, a transfer-car having a pivoted revoluble bottom, inclined slotted channels connected therewith, covers adapted to be placed upon the tops of the cans after the pan containing them has been lowered upon the car, and bars placed in inclined slots whereby the covers are held in place, a locking-pin whereby the car-bottom is retained in horizontal position until the car has been moved to one side of the line of the tank, said bottom being revoluble upon its axis to allow the pan and cans to be reversed upon the truck or support beneath, whereby the pan may be removed and the cans transferred bodily from the cooking-tanks.

7. In a cooking apparatus, a double transfer-car movable upon tracks transversely to the end of the cooking-tank, each end of the car having a pivoted revoluble bottom adapted to receive one of the pans when either end is brought opposite the tank, said bottom being capable of revolution upon its axis after the car has been moved so as to bring the loaded end within line with the tank whereby the contents of said end may be discharged while the other platform of the car is receiving another pan.

8. In a cooking apparatus of the kind described, a single continuously moving carrier, heated tanks in which the cans are first immersed to exhaust the air, and after sealing, again immersed to complete the cooking, and mechanism by which the cans are continuously moved and the time of immersion varied without changing the rate of speed of the carrier.

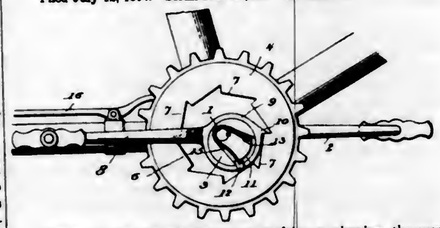
607,657. FURNITURE. ERNEST R. REMOND, New York, N. Y. Filed Jan. 17, 1896. Serial No. 575,833. (No model.)



Claim.—1. The combination of a series of standards, a series of drawers, a series of slides upon which the drawers rest, and a series of pieces extending angularly out beyond the path of the drawers and connecting the series of slides with the standards.

2. The combination of a series of standards, a series of drawers, a series of slides upon which the drawers rest, a series of pieces extending angularly out beyond the path of the drawers connecting the series of slides with the standards, and strips secured to the drawers supporting them upon the upper edges of the slides.

607,658. BICYCLE-GEAR. DANIEL W. GUILDS, Portland, Oreg. Filed July 12, 1897. Serial No. 644,304. (No model.)



Claim.—1. In a bicycle gear or propulsion mechanism, the combination with a shaft, a pedal-crank and eccentric in rigid engagement with each other, of a driving-wheel mounted loosely on the shaft, a pedal-crank movable upon the eccentric and means operated by the movement of the crank on the eccentric for effecting an engagement of said pedal-crank with the driving wheel.

2. In a bicycle gear or propulsion mechanism, the combination with a shaft, a pedal-crank on one end of the same and an eccentric on the other end, a driving-wheel loosely mounted on the shaft and provided with ratchet-teeth, a pedal-crank having a tooth or projecting portion for engagement with the ratchet-teeth of the driving-wheel said pedal-crank being loosely mounted on the eccentric.

3. In a bicycle gear or propulsion mechanism, the combination with a shaft, a pedal-crank on one end of the same and an eccentric

on the other, a driving-wheel having a flange or recess said wheel being rotatably mounted on the shaft, of a pedal-crank in movable engagement with the eccentric said pedal-crank having a projecting portion which is adapted to be brought into engagement with the flange or recess of the driving-wheel.

4. The combination with a crank-axle of a foot-propelled vehicle, of a crank fast thereon, an eccentric fast thereon, a sprocket-wheel with internal ratchet-teeth loose on the crank-axle, a second crank having a collar loosely surrounding said eccentric and provided with a toothed lip to engage the ratchet-teeth, and means for limiting the relative movement between said eccentric and loose crank, substantially as described.

5. The combination with a crank-axle of a foot-propelled vehicle, of two cranks one fast and the other loose thereon, an eccentric fast on said crank-axle, a collar on the loose crank loosely surrounding said eccentric and provided with a tooth or lip, means for limiting the relative rotative movement between said eccentric and collar, a spring for returning said parts to their normal operative positions, and a driving sprocket-wheel having an internal ratchet-tooth disk, all arranged for joint operation, substantially as described.

607,659. SUPPLEMENTARY HORSESHOE. RUPERT H. LANGDALE, Cincinnati, Ohio. Filed Jan. 15, 1898. Serial No. 666,749. (No model.)



Claim.—1. A supplementary horseshoe having a body B, with calk B^3, means for connecting it at front to the shoe A, and the pieces E, having the extensions E^3, slotted and provided with corrugations, and the locking-piece G, and bolt and nut, and clamps respectively located at the inner side of the shoe and adapted to independently engage the upper shoe, substantially as and for the purposes specified.

2. A supplementary horseshoe having a body B, with calk B^3, means for connecting it at front to the shoe A, and the pieces E, having the extensions E^3, slotted and provided with corrugations, and the locking-piece G, and bolt and nut, and the clamps, each consisting of an eccentric, having a shank H^2, and screw-tightening device, and flange H^3, substantially as and for the purposes specified.

3. A supplementary horseshoe having a body B, with calk B^3, means for connecting it at front to the shoe A, and the pieces E, having the extensions E^3, slotted and provided with corrugations, and the locking-piece G, and bolt and nut, and the clamps, each consisting of an eccentric, having a shank H^2, and screw-tightening device. and flange H^3, a flange E^3 of the piece E being present, substantially as and for the purposes specified.

4. A supplementary horseshoe having a body B, with calk B^3, means for connecting it at front to the shoe A, and the pieces E, having the extensions E^3, slotted and provided with corrugations, and the locking-piece G, and bolt and nut, and the clamps, having an eccentric and a shank H^2, provided with lug H^4 and adapted to fit a hole E^3, E^3, of the piece E, and a screw-tightening device, and a flange H^3 of the eccentric for overlapping the shoe, substantially as and for the purposes specified.

5. A supplementary horseshoe having a body B, with calk B^3, means for connecting it at front to the shoe A, and the pieces E, having the extensions E^3, slotted and provided with corrugations, and the locking-piece G, and bolt and nut, and the clamps, having an eccentric and a shank H^2, provided with lug H^4 and adapted to fit a hole E^3, E^3, of the piece E, and a tightening device, and a flange H^3 of the eccentric for overlapping the shoe, the piece E having a flange E^3, substantially as and for the purposes specified.

6. A supplementary shoe having a toe-recess, and the movable pieces E, adjustable relatively to the body of the shoe, and means for locking them in place, and eccentrics, and means for locking them, and clamping the pieces E to the upper or primary shoe, substantially as and for the purposes specified.

7. A supplementary horseshoe having a body B, with calk B^3, means for connecting it at front to the shoe A, and the pieces E, having the extensions E^3, slotted and provided with corrugations, and the locking-piece G, and bolt and nut, and the clamps, each consisting of an eccentric, having a shank H^2, and screw H^7, H^8, substantially as and for the purposes specified.

607,660. HEATER. JAMES A. MILLER, New Haven, Conn. Filed Oct. 6, 1896. Serial No. 608,089. (No model.)

Claim.—1. In a liquid-heater the combination of a series of flexible or extensible chambers forming a water-receptacle, said chambers being connected at their alternate ends to form a continuous zigzag passage and bearing upon each other in the direction of their flexibility, said receptacle having an inlet-passage and a controllable outlet-passage, a source of heat for said receptacle, means for preventing the expansion of the receptacle in one direction and means connected with the free end of said receptacle and adapted to regulate the source of heat, substantially as described.



2. In a liquid-heater the combination of a series of flexible or extensible chambers forming a water-receptacle, said chambers being connected at their alternate ends to form a continuous zigzag passage and bearing upon each other in the direction of their flexibility, said receptacle having an inlet-passage and a controllable outlet-passage, rigid separating means between the chambers and between the receptacle and the casing at one end, a source of heat for said receptacle, means for preventing the expansion of the receptacle in one direction and means connected with the free end of said receptacle and adapted to regulate the source of heat, substantially as described.

607,661. BEER-BARREL. RUDOLF PIOTROWSKI, San Francisco, Cal. Filed Sept. 20, 1897. Serial No. 652,276. (No model.)



Claim.—1. In combination with a barrel composed of wooden staves having grooves or channels near the ends, the heads consisting of coincident wooden and metal disks having their outer edges fitting said grooves or channels, an opening made entirely through the wooden disk and an opening made in the inner face of the metal disk and extending only part way through the same, a short bolt threaded at both ends, with one of the ends fitted in the opening in the metal disk, a nut upon the other threaded end of said bolt for drawing the disks together and a bushing fitted to an opening made through both disks and adapted to receive the draw-off faucet.

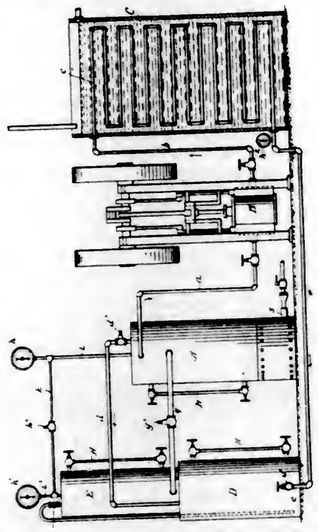
2. In a barrel the heads thereof each consisting of coincident disks fitted face to face and with their outer edges fitted in the grooves or channels of the staves, one of said disks of wood and the other of metal and both disks made thicker at their centers than at their outer edges, a bolt projecting from the inner face only of the metal disk and passing through a hole in the companion disk and slightly beyond the same, and a nut on said projecting end for drawing the central portions of the disk together.

607,662. METHOD OF UTILIZING LIQUEFIABLE GASES IN OPERATING ENGINES, &c. EDMOND V. ROUSE, Philadelphia, Pa., assignor of two-thirds to Cornelius A. Lane and John L. Kelly, same place. Filed July 21, 1896. Serial No. 600,018. (No specimens.)

Claim.—1. The herein-described method of utilizing liquefiable gases in the operation of engines, said method consisting in mixing with a liquefiable gas of high pressure at a given temperature, another liquefiable gas of lower pressure at the same temperature, which latter gas has an absorbing affinity for the first gas, heating said gases, conducting them through an engine to operate the same and condensing the gases, the affinity of the gas liquefiable at the higher temperature exerting itself at this stage of the process upon the other gas at a temperature higher than the point of liquefaction of the other gas.

2. The herein-described method of utilizing liquefiable gases in the operation of an engine, said method consisting in mixing two or more liquefiable gases when in a liquefied or nearly liquefied condition, one of said gases being liquefiable at a temperature lower than the point of liquefaction of the other gas, the gas liquefiable at the higher temperature having an absorbing affinity for the other gas, heating the mixed gases to separate the same and to increase their pressure, conducting said mixed gases to and through an engine to operate the same, and reducing the temperature of such gases to or below the point of liquefaction of the one gas and partly absorbing by it the vapors of the other gas before that temperature is reached at which the said other gas becomes liquefied, and continuing the reduction of temperature to or below the point of liquefaction of both gases.

3. The herein-described method of producing power in engines, said method consisting in generating gas from a mixture composed of two or more liquefiable gases liquefiable under different pressures at the same temperature, and reducing the back pressure after the operation of the gases upon the piston of the engine by cooling and first liquefying one of the gases and absorbing by the said liquefied gas, the vapors of the other gas before the point of liquefaction of said other gas is reached.



4. The herein-described method of utilizing carbon dioxid and chlorid of methyl in a gas-engine, said method consisting in mixing the two gases until the carbon dioxid is partially or wholly absorbed by the chlorid of methyl, heating said gases to separate the same and increasing their pressure, conducting the gas to and through an engine to operate the same, then reducing the temperature of the gases until the chlorid of methyl is liquefied and absorbs the vapors of the carbon dioxid while the carbon dioxid is in its gaseous form and continuing the reduction of temperature until both gases are liquefied for reducing the back pressure for the purposes described.

5. The herein-described method of utilizing carbon dioxid, chlorid of methyl and toluene in the operation of an engine, said method consisting in mixing the carbon dioxid, chlorid of methyl, and toluene under pressure until the toluene partially or wholly absorbs the chlorid of methyl, and the carbon dioxid is partially or wholly absorbed by the methyl and toluene, heating the gas to separate the same and increasing their pressures, conducting said gases to and through an engine to operate the same, reducing the temperature of the gases to the point of liquefaction of the toluene, absorbing a portion of the gases of the chlorid of methyl by the liquefied toluene, continuing the reduction of temperature to the point of liquefaction of the chlorid of methyl not absorbed, absorbing a portion of the gases of the carbon dioxid by the liquefied chlorid of methyl and continuing the reduction of temperature until the liquefaction of all the gases occurs for reducing the back pressure on the engine.

6. The herein-described compound for the operation of engines the same consisting of chlorid of methyl, carbon dioxid and toluene combined in or in about the proportions specified.

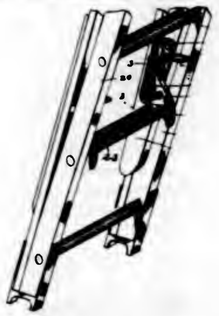
607,663. **DETERGENT COMPOSITION AND PROCESS OF MAKING SAME.** JAMES W. SALLADE, Pottsville, Pa. Filed Oct. 12, 1897. Serial No. 655,005. (No specimens.)

Claim.—1. The herein-described disinfecting and detergent composition consisting of Labarraque's solution of chlorinated soda, biborate of soda and ammonia in substantially the proportions specified.

2. The process of making a detergent and disinfecting solution which consists in mixing a solution of borax and ammonia finally adding Labarraque's solution of chlorinated soda substantially as described.

607,664. **AUTOMATIC COUPLING OR LOCK FOR EXTENSION-LADDERS.** FREDERIC S. SEAGRAVE, Columbus, Ohio. Filed Aug. 16, 1897. Serial No. 648,438. (No model.)

Claim.—In an automatic coupling or lock for extension-ladders, the combination with a base or back plate adapted to be secured to the inner side of an upper-ladder section, of a spring-actuated locking-arm fulcrumed in its upper portion to said plate, said locking-arm having a normally outwardly extending finger adapted to engage with the rung of the lower-ladder section, a trip-lever having a cam-shaped head eccentrically fulcrumed to said locking-arm and lugs 8 and 9 projecting from said back plate whereby the contact of said trip-lever with the upper or lower side of a rung of the lower ladder results in the lower portion of the locking-arm being thrown inwardly in position to pass a rung, substantially as and for the purpose specified.



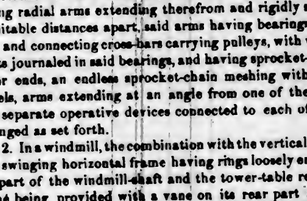
607,665. **TRUSSED LADDER.** FREDERIC S. SEAGRAVE, Columbus, Ohio. Filed Apr. 28, 1898. Serial No. 679,158. (No model.)



Claim.—In a trussed ladder, the combination with the legs, rounds and trusses, said legs and trusses having their adjoining end portions provided with recesses 7 and 8, of metallic clamping-yokes adapted to embrace the united end portions of said trusses and legs, the arms of said yokes being provided with transverse projecting ribs or lugs adapted to engage respectively the transverse recesses of said legs and trusses and bolts adjustably connecting the arms of said yokes and passing through said trusses and legs, substantially as and for the purpose specified.

607,666. **SURGICAL APPARATUS.** CHARLES S. SMITH, Providence, R. I. Filed Dec. 2, 1897. Serial No. 660,470. (No model.)

Claim.—1. A surgical apparatus consisting of a body-plate, two bars adjustably attached thereto, with means for securing the outer end of one of said bars to the upper arm, and means for securing the outer end of the other of said bars to the forearm, substantially as described.



2. In an apparatus for securing a fractured limb, the combination of a plate adapted to be attached to the body and having a vercal slot made therein, a clip having a slot made in it, a bolt to pass through the two slots and hold the clip to said plate, an angle-plate attached to said clip by a ball-and-socket joint, means attached to said angle-plate to hold the forearm and the upper arm, substantially as described.

3. In an apparatus for the purpose described; the combination, of a plate fitted to the body, plates curved to fit the upper arm and having slots to receive bolts to attach them to a plate having a slotted bar attached, a like set of plates for the forearm also attached to a slotted bar, with means for adjustably securing said slotted bars, to said body-plate substantially as described.

607,667. **EQUALIZING APPLIANCE FOR BICYCLES.** ALFRED I. THAYER, Newark, N. J. Filed May 19, 1897. Serial No. 637,201 (No model.)

Claim.—1. The combination with the frame of the bicycle of leg-hooks connected to the said frame by elastic connections substantially as set forth.

2. The combination with the bicycle, of the elastic pieces clamped to said bicycle and snap-hooks at the opposite ends of said elastic pieces and leg-hooks secured to the elastic pieces and adapted to be arranged upon the thighs of the rider and be removable from said elastic connections, substantially as set forth.

3. The combination with the bicycle-frame, of a clamp *b*, removable from the said frame and having an eye *b'*, hooks or links *d*, elastic pieces *e*, and leg-hooks *f*, all arranged and combined, substantially as set forth.

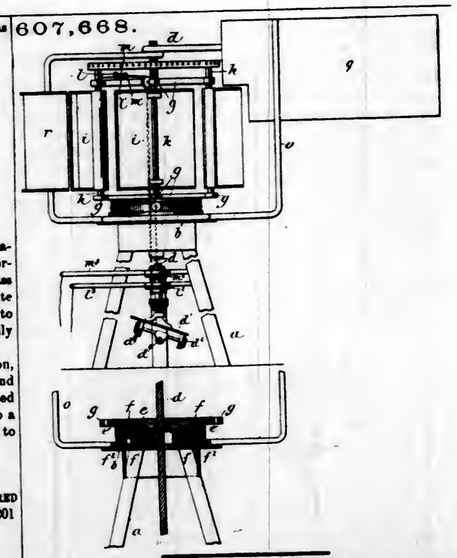
607,668. **WINDMILL.** JOSEPH B. TIMBLEY, Anthony, Kans. Filed Oct. 31, 1895. Serial No. 567,535. (No model.)

Claim.—1. In a windmill, the combination of the windmill-shaft having radial arms extending therefrom and rigidly secured thereto at suitable distances apart, said arms having bearings at their outer ends and connecting cross-bars carrying pulleys, with vertical bucket-shafts journaled in said bearings, and having sprocket-wheels on their upper ends, an endless sprocket-chain meshing with the sprocket-wheels, arms extending at an angle from one of the bucket-shafts, and separate operative devices connected to each of said arms, all arranged as set forth.

2. In a windmill, the combination with the vertical buckets thereof of a swinging horizontal frame having rings loosely encircling the upper part of the windmill-shaft and the tower-table respectively, said frame being provided with a vane on its rear part and a deflector journaled on its front part and a yielding device to normally hold the deflector in place but which will allow it to yield under great pressure as set forth.

3. In a windmill the combination with the vertical buckets thereof, of a swinging horizontal frame having rings loosely encircling the upper part of the windmill-shaft and the tower-table respectively, said frame being provided with a vane on its rear part and a deflector on its front part at an angle to said vane, and a spring to normally hold the deflector in place, all arranged as set forth.

607,668.



607,669. **VENTILATING-DAMPER.** ROBERT L. UNDERWOOD, Postoria, Ohio. Filed Jan. 31, 1898. Serial No. 668,531. (No model.)

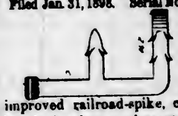


Claim.—1. A ventilating-damper comprising a horizontal base adapted to be secured within a main conductor-pipe provided with a central opening and surrounding openings with intervening closed portions, a revoluble damper-plate thereon provided with corresponding openings and closed portions, and an upwardly-projecting pipe secured to the damper-plate having openings adapted to register with air-inlet openings in the surrounding conductor-pipe above the damper-openings, substantially as set forth.

2. A ventilating-damper comprising a horizontal base adapted to be secured within a main conductor-pipe provided with a central opening and surrounding openings with intervening closed portions, a revoluble damper-plate thereon provided with corresponding openings and closed portions, an upwardly-projecting pipe secured to the damper-plate having openings adapted to register with air-inlet openings in the surrounding conductor-pipe above the damper-openings, and an operating-stem secured to the damper-plate and projecting through a slot in the conductor-pipe, substantially as set forth.

3. In combination with a pipe provided with air-inlet openings, a horizontal damper-base secured within the pipe below such air-inlet openings, a revoluble damper-plate thereon adapted to open and close the main passage through the pipe, a common reduced central opening through the base and damper-plate respectively, and an internal upwardly-projecting pipe secured to the damper having openings adapted to register with the air-inlet openings when the damper is closed and to close such passages when the damper is open, substantially as set forth.

607,670. **RAILROAD-SPIKE.** ARIE VAN VLIET and JAMES GARDENIER, Paterson, N. J., assignors of one-third to Meindert Van Dyk, same place. Filed Jan. 31, 1898. Serial No. 668,608. (No model.)



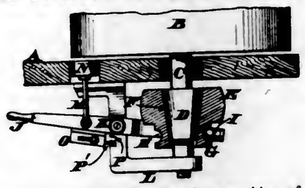
Claim.—1. An improved railroad-spike, comprising the main stem or shank carrying the head, a supplementary laterally-projecting bottom shank, and a supplementary laterally-projecting shank between said bottom shank and the head, said supplementary shanks projecting at right angles to the head of the spike and being respec-

tively provided with points relatively arranged at right angles to each other, substantially as and for the purpose set forth.

2. An improved railroad-spike, comprising the main stem or shank carrying the head, a supplementary laterally-projecting bottom shank, a supplementary laterally-projecting shank between said bottom shank and the head, said supplementary shanks projecting at right angles to the head of the spike and being respectively provided with points relatively arranged at right angles to each other and with projecting barbs or points, substantially as and for the purpose set forth.

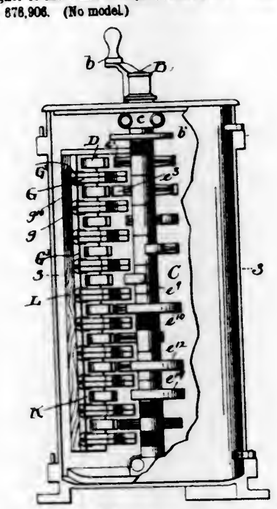
3. An improved railroad-spike, comprising a main stem or shank carrying laterally-projecting supplementary shanks having their points respectively arranged in different planes relatively to each other, substantially as and for the purpose set forth.

607,671. THRESHING-MACHINE. JOHN A. VOLK, New Point, Ind. Filed Feb. 20, 1897. Serial No. 624,368. (No model.)



Claim.—The combination in a threshing-machine, of a cylinder B, having a shaft C provided with a fixed cone D; a shiftable driving-pulley E carried by said cone, and having a tapering bore F and circumferential groove H; a hand-lever J, having a pin I engaged with said groove H; a buffer N and spring-bolt O, applied to said lever; and a pair of notches P, P', for said bolt to engage with, all as herein described.

607,672. CONTROLLER. THORSTEN VON ZWEIGBERGK, Cleveland, Ohio, assignor to the Walker Company, same place. Filed Apr. 8, 1898. Serial No. 676,906. (No model.)



Claim.—1. In a controller, in combination, the strip G^3, the metallic bars H and H', boxes carried by said strip, coils *g* within each box, some of said coils being connected together in series in different sets and the sets having one of their terminals connected to the bar H and the other terminal to the bar H', substantially as described.

2. In combination, the strip G^3, boxes G carried thereby, a metallic coil *g* within each box, slots G^4 through said strip near the boxes, through which slots the ends of said coils *g* extend, the bars H and H' secured to said strip G^3 on either side of the ends of said coils, the ends of the coils in some of the proximate boxes being connected together, whereby the coils are connected in sets, said sets having one of their terminals connected to the bar H and the other to the bar H', and a protecting-strip L which covers said bars and the ends of the coils, substantially as described.

3. In a controller, in combination, the block K, the strip G^3 secured thereto, the boxes G carried by said strip, coils in said boxes, the slots G^4 through said strip near said boxes, the ends of said coils projecting through said slots, said coils being connected alongside of said strip G^3, and a protecting-strip L secured to said block K and extending over the ends of the coil *g*, substantially as described.

4. In a controller, in combination, a suitably-supported strip G^3, a plurality of boxes G, brackets G^5 secured to the boxes and to the strip G^3 and thus supporting the boxes, and coils *g* contained in said boxes, substantially as described.

5. In a controller, in combination, a suitable strip G^3, a plurality of boxes G, each containing a coil, a bracket G^5 having arms G^5 G^6 which take over onto the top and bottom of said box, said brackets being secured to said strip G^3, slots in said strip, the ends of said coils projecting through said slots, substantially as described.

6. In a controller, in combination, the block K, a plurality of boxes G suitably secured in proximity to said block, and abutting against it at their rear, each of said boxes consisting of a recessed plate and a cover therefor, said recess being open at the rear, a block g^9 secured in said open end and closing part of it and projecting therefrom and bearing against the block K on its side whereby the block K forms a guide for said box and also closes its otherwise open end, substantially as described.

7. In a controller, in combination, a suitably-supported vertical strip G^3 having slots through it, a plurality of horizontal boxes G carried by said strip on one side and near said slots, coils of metallic ribbon within said boxes having their ends passing through said slots and connected up on the other side of said strip, substantially as described.

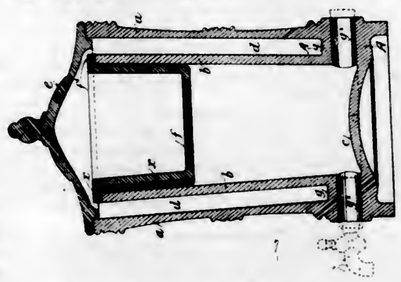
8. A suitably-protected solenoid-coil for a controller blow-out consisting of a spirally-wound ribbon of metal *g* interposed insulating material *g'*, two recessed plates g^4 and g^8 embracing the coil, plates of mica or similar material g^7 on each side of the coil, pins g^6 connecting the two plates together, substantially as described.

9. A solenoid-coil, for a controller blow-out, consisting of a plurality of ribbons of metal in contact with each other and wound as one ribbon into a spiral, with insulating material *g'* interposed between the different turns of the spiral, and a box of insulating material inclosing said coil, and having an opening through which the ends of the coil project the ends of said ribbons from the innermost coil of the spiral lying beside each other as shown when passing over the spiral, whereby the necessary thickness of the inclosing box is reduced, substantially as described.

10. In a controller, in combination, a suitably-journaled controller-shaft, contact-segments carried thereby, the supporting block or strip K, contact-fingers carried thereby the strip G^3 secured to said block K, the boxes G containing coils, the brackets G^5 securing said boxes to said strip G^3, the coils *g* within said boxes having ends projecting through slots G^4 in the strip G^3 and suitably connected, substantially as described.

11. The combination, with a series-connected governing resistance and a blow-out, of a controller which governs by successively cutting out resistance and in which there are contact-fingers having conductors leading to different portions of the governing resistance, and a line returning from the governing resistance and passing through the blow-out to a contact-finger, and a contact-finger having a line joining this last-mentioned line between the blow-out and the resistance, the controller having contact-plates into connection with which the contact-fingers come at different times, the last-mentioned contact-finger coming into contact with its plate after the contact-finger connected through the blow-out coil to the resistance has contacted with its plate, substantially as described.

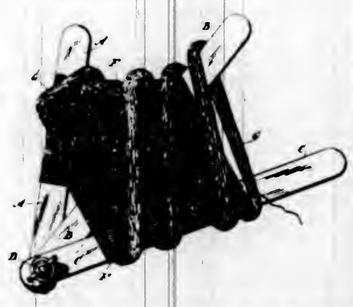
607,673. COMBINED FILTER AND COOLER. JAMES ARMSTRONG and WILLIAM HEYWOOD, Manchester, England. Filed July 20, 1897. Serial No. 645,237. (No model.)



Claim.—The combination with a vessel in the form of two concentric chambers having continuous sides and a single bottom common to both, and a cylindrical space for receiving broken ice between the two, of a removable inner receptacle provided with a perforated bottom carrying the filtering medium and with a projecting flange at the top for supporting the same on the inner cylinder, and an air hole or passage between the two; means for drawing off the filtered water from the inner cylinder, and a single cover for inclosing the two concentric chambers

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607,674. SKEIN-HOLDER. MARY A. ARROWSMITH, Freehold, N. J. Filed Apr. 20, 1898. Serial No. 678,210. (No model.)



Claim.—1. A skein-holder, comprising radiating fingers provided with a clamping or securing mechanism, and having a flexible connecting-web stopping short of the outer ends of the fingers, substantially as described.

2. A skein-holder, consisting of radiating fingers adjustably secured by a bolt and thumb-nut at one end, and having a flexible connecting-web stopping short of the outer ends of the fingers, substantially as described.

607,675. ARM-REST. LEWIS BARR, Dayton, Ohio. Filed Aug. 18, 1897. Renewed Apr. 1, 1898. Serial No. 676,137. (No model.)



Claim.—1. An arm-rest, comprising a frame having longitudinal guideways and adapted to extend substantially at right angles to the forearm, slide-blocks pivoted one on the other, the lower block fitting the guideways on said frame, and a plate acting as an arm-rest, having longitudinal guideways engaging the upper of the slide-blocks and slidable thereon, and ball-bearings intervening said blocks and guideways, substantially as described.

2. An arm-rest, comprising a frame having longitudinal guideways, cross-bars attached to each end of the frame and having a cushion of yielding material beneath them, slide-blocks pivoted one on the other, the lower block fitting the guideways on said frame, and a plate acting as an arm-rest and having longitudinal guideways engaging the upper of the slide-blocks and slidable thereon, substantially as described.

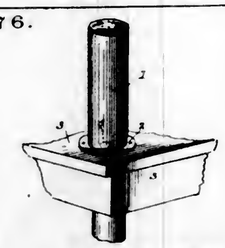
3. An arm-rest, comprising a frame having longitudinal guideways, two slide-blocks pivoted one on the other, the lower block fitting the guideways on the said frame, and an arm-rest consisting of a plate concaved upwardly and having longitudinal guideways beneath it and engaging the upper of the slide-blocks and slidable thereon, substantially as described.

4. An arm-rest, comprising two members, each having a longitudinal guideway, and two slides adapted to engage the respective guideways and pivoted one to the other, substantially as described.

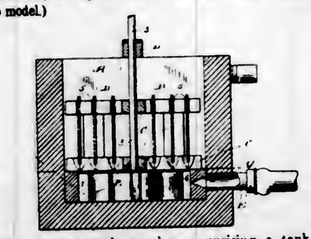
607,676. APPARATUS FOR MAKING MEAT-PACKAGES. WILLIAM G. BELL, Boston, Mass. Filed May 3, 1897. Serial No. 634,847. (No model.)

Claim.—The herein-described former for making packages, consisting of a hollow cylinder having an outwardly-extending base-flange secured to a table or support provided with an opening or air-inlet communicating with the flanged base of the hollow cylindrical former, the upper end of the hollow cylindrical former being open, and provided with a foraminous disk or cover, substantially as set forth.

607,676.



607,677. PHOTOGRAPHIC-PLATE WASHER. WILLIAM H. BIERWIRTH, Torrington, Conn. Filed Apr. 1, 1898. Serial No. 676,071. (No model.)



Claim.—1. A negative-washer comprising a tank, a turbine stepped therein and carrying a rotary frame provided with suitable means for holding negatives against movement relatively to the frame.

2. A negative-washer comprising a tank having in its bottom a recess, a turbine stepped in said recess, a frame within the tank which is carried by the turbine, an induction-pipe by which water is supplied to the turbine and an escape-pipe above the turbine so that the water which drives the turbine will rise in the tank and wash both sides of the negatives as they are carried about by the frame, said frame being provided with means for holding negatives against movement relatively to the frame.

3. A negative-washer comprising a tank having in its bottom a recess, a turbine stepped in said recess, and a frame carried by the turbine and provided with notches to receive negatives.

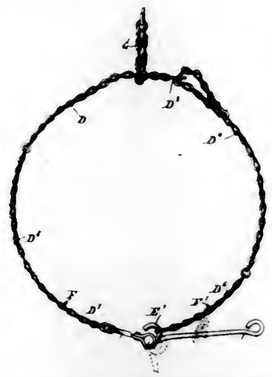
607,678. ROTARY ENGINE. FRED R. BRAINERD, Carbondale, Ill. Filed June 11, 1897. Serial No. 640,313. (No model.)



Claim.—A rotary engine, comprising a cylinder, a piston mounted to rotate in the cylinder, a series of abutments mounted to slide radially in the cylinder and at all times bearing on the piston and spring-rods connecting diametrically opposite abutments, the said rods having coiled ends engaging in hollowed-out portions of the abutments, substantially as specified.

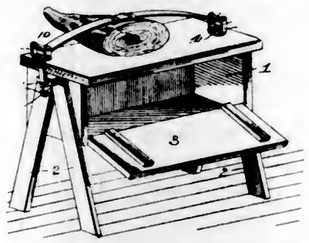
607,679. SLING-TRIP. ENEA CANCIENNE, Albemarle, La. Filed Mar. 26, 1898. Serial No. 675,294. (No model.)

Claim.—1. A sling-trip comprising a handled bar, loops mounted to turn on the bar, hooks stationary on the bar, and chains, each connected at one end to the loop and adapted to be hooked at its other end to the hook, substantially as shown and described.



2. A sling-trip comprising a handled bar, pairs of loops mounted to turn at the ends of the bar, hooks fixed on the bar between the members of the loops, to hold the same against lateral movement on the bar, and chains of which one is permanently connected at one end to the said loops, and the other is adapted to be hooked at one end to the said hooks, so that upon turning the bar the hooks release their chain, substantially as shown and described.

607,680. MEAT-HOLDING DEVICE. BENJAMIN P. COBB, Bozeman, Mont. Filed Sept. 13, 1897. Serial No. 651,438. (No model.)



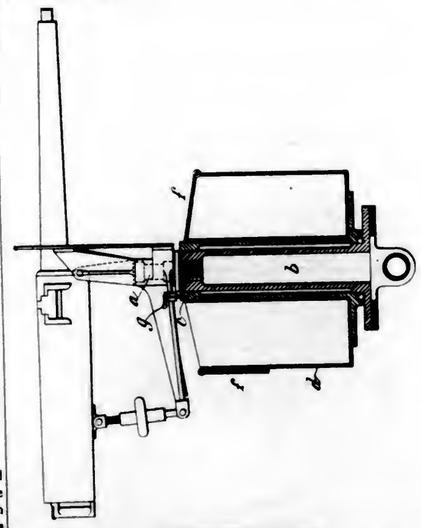
Claim.—1. In a device for holding meat, the combination with the box or other support, the plate secured thereto provided with a pin having an elongated head, the stirrup comprising the horizontal portion through which said pin passes, and two vertical arms and the pivot at the upper end of the stirrup, of the clamp connected with said pivot, the slide provided with pins, the bracket pivoted to said clamp provided with a hook, and the staple, substantially as described.

2. In a device for holding meat, the combination with a box or other support, the plate secured thereto, provided with a pin having an elongated head, the stirrup comprising the horizontal portion having an elongated opening through which said pin passes, and two vertical arms, the pivot at the upper end of said stirrup, the clamp connected therewith and the slide provided with pins, of the bracket pivoted to the other end of said clamp, the hooks of different lengths formed therewith, and the staple, substantially as described.

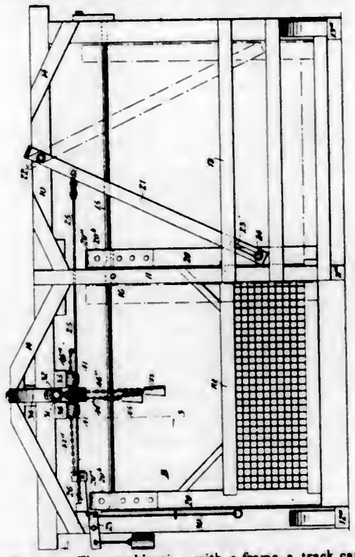
607,681. AMMUNITION-HOLDER FOR MACHINE-GUNS. DOUGLAS M. B. H. COCHRANE, London, England. Filed Jan. 24, 1898. Serial No. 667,763. (No model.)

Claim.—The combination with the vertical axis and a gun mount arranged to be rotated about said axis, of a sleeve arranged to be rotated about the said axis independently of the gun-mount, a plurality of ammunition-boxes detachably supported on said sleeve, and means for adjustably locking the gun-mount to the sleeve whereby the gun-mount and sleeve are caused to rotate in unison and the ammunition-boxes may be successively brought into operative position, substantially as described.

607,681.



607,682. GATE. PROSPER COUPAL, Bourbonnais, Ill., assignor of one-half to Joseph I. Leclaire and Peter Legris, same place. Filed Apr. 18, 1898. Serial No. 678,006. (No model.)

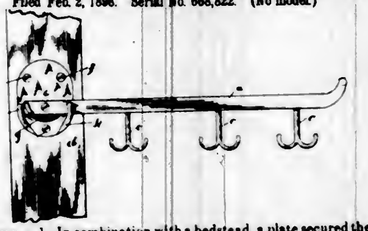


Claim.—1. The combination, with a frame, a track carried by the frame, and a gate suspended from and mounted to slide on the said track, of an arm pivotally connected with the rear end post of the gate and with the appor portion of the frame, a latch-bar pivoted to the said arm, a latch-head pivoted upon the latch-bar, a keeper for the latch-head carried by the frame, pulley-blocks located at opposite sides of the frame, and chains attached to the latch-head, being carried each through a pulley-block, and other chains attached to the latch-bar at the rear of the pulley-blocks, the latter chains being likewise carried in opposite directions through the pulley-blocks, for the purpose set forth.

2. In a gate, the combination, with a frame, a track carried by the said frame, a gate having a roller-support on the said track, and an arm pivoted to the frame at an upper point and to the rear portion of the said gate, of a latch-bar pivoted to the said arm, extending above the track, a latch-head pivoted in the latch-bar, a keeper for the latch-head carried by the frame, a supporting-bar located above the central portion of the gate when the gate is closed, the said supporting-bar being provided with pulley-blocks at its ends, chains attached to the latch-head, being adapted to raise the same from its keeper, which chains are carried in opposite directions through opposite pulley-blocks, and chains attached to the latch-bar at the rear of the supporting-arm, which chains are carried in opposite directions likewise through the said pulley-blocks, for the purpose set forth.

3. In a gate, the combination, with a frame, a weighted keeper pivoted to the said frame, means for operating the keeper against the action of the weight, a track carried by the frame, a gate suspended from the said track, having a roller bearing thereon, and a link pivoted to the upper portion of the frame at a point to the rear of the gate when the gate is closed, the lower ends of the said link being provided with slots, and pins passed through the slots into the rear post of the gate, of a latch-bar pivoted to the said link, extending parallel with the track and over the gate when in its closed position, a latch-head pivoted in the forward end portion of the latch-bar, being adapted for engagement with said keeper, adjustable supports extending beyond opposite sides of the frame at a point above the center of the gate when the gate is closed, and double pulley-blocks carried by the said supports near their outer ends, guide-pulleys located at opposite sides of the said supports, chains connected with the latch-head and passed over adjacent guide-pulleys, one chain being carried through each of the pulley-blocks, and chains secured to the latch-bar at a point to the rear of the supporting-arms, the latter chains being passed over adjacent guide-pulleys and through opposite pulley-blocks, for the purpose set forth.

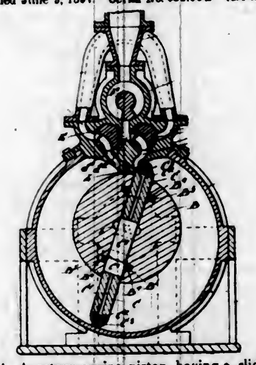
607,683. CLOTHES-RACK. WILLIAM S. DOWNER, Coal Centre, Pa. Filed Feb. 2, 1898. Serial No. 668,822. (No model.)



Claim.—1. In combination with a bedstead, a plate secured thereto, said plate being provided with supporting-brackets, and a segment-slot between the brackets, and a supporting-arm pivoted to said plate and provided with a double T-bolt adapted to engage in the slot of the plate, as and for the purpose set forth.

2. In combination, with a bed-post, the plate *c* secured thereto, said plate being provided with supporting-brackets, with a segment-slot, supporting-arm pivotally secured to the said plate, and provided with a double T-bolt, one end of which engages and rides in the slot, and said arm carrying supporting-hooks, substantially as shown and described.

607,684. ROTARY ENGINE. SUTTON H. DRAPER, Missoula, Mont. Filed June 9, 1897. Serial No. 639,994. (No model.)



Claim.—1. A rotary-engine piston, having a sliding head provided with a cavity in the outer edge thereof, and a friction-roller within said cavity, composed of two sections having their ends joined by spiral cam-surfaces, and means for rotating one section relatively to the other, substantially as described.

2. A rotary engine, having a piston consisting of a sliding head having a cavity in its outer edge, and a friction-roller in said cavity, composed of two sections having their ends joined by spiral cam-surfaces, said sections being hollowed and having a spring in said hollows acting to rotate one upon the other, substantially as described.

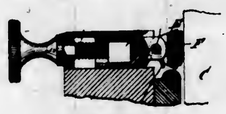
3. A rotary engine, having two reversing-valves, and a steam-admission valve, a reversing mechanism attached to said steam-valve, an operating-lever therefor, a pivoted lever attached at one end of said operating-lever, a link connected to the reversing-valves to operate them, and having stops engaging said pivoted lever at each end of its swing, whereby the movement of the reversing-valves occurs at each end of the swing of the reversing-lever and the steam-valve may be put on its center without affecting the reversing-valves.

4. A rotary engine, having two reversing-valves and a steam-admission valve, a reversing mechanism attached to said steam-valve, an operating-lever therefor, a pivoted lever attached at one end to said operating-lever, and the other end having a hole therethrough, a curved rod extending through this hole and having a stop thereon at each end, a link connecting this rod with the reversing-valves whereby the reversing-valves are shifted at the termination of the reversal of the steam-valve.

5. A rotary engine having a steam-supply port and two exhaust-ports located one on each side of the steam-port, said ports being comparatively long and narrow, an exhaust-pipe connection consisting of a yoke, the legs of which are hollow and taper from a long, narrow section at their base to an approximate circular section at their junction, said junction being above one end of the ports, and a steam-pipe connection consisting of a hollow casting similarly tapering from a long and narrow section at its base to an approximate circular section at its upper end, the taper being from one end and opposite that of the exhaust-yoke, whereby it is enabled to lie between the arms of the exhaust-yoke.

6. In a rotary engine a cylinder having two steam-ports opening therein, a central supply steam-passage, and two exhaust-passages in the body thereof, the exhaust-passages being located one at each side of the steam-passage and all outside of the steam-ports, reversing and admission valves controlling said steam-passages, an exhaust connection consisting of a yoke having hollow legs, the passages therein tapering from the shape of the port at their lower end to an approximate circular section at the junction of the legs, said junction being formed above one end of the ports, and a steam-pipe connection having a passage therein, the base of said section being long and narrow and tapering upward and toward one end of the port to approximately a circular section, said connection lying between the arms of the exhaust-yoke.

607,685. SASH-FASTENER. GEORGE FELTHAM, Waycross, Ga. Filed Oct. 8, 1897. Serial No. 654,327. (No model.)



Claim.—1. A window-sash fastener, comprising a casing adapted to be secured to the lower sash, a laterally-movable bar in the said casing, a pivoted head on the outer end of the said bar, and adapted to engage the upper sash, and a spring for holding the said head in position when not in use, substantially as shown and described.

2. A window-sash fastener, comprising a casing adapted to be secured to the lower sash, a screw-rod mounted to turn in the said casing, a bar fitted to slide laterally in the said casing and engaged by the screw-rod, and a spring-pressed head pivoted on the said bar and formed with an elastic tip, substantially as shown and described.

607,686. HEEL-PLATE FOR MEN'S SHOES. MICHAEL HEISER, Euclid, Ohio. Filed Dec. 2, 1897. Serial No. 660,560. (No model.)



Claim.—The combination with the plate A of the projection B, having the thumb-screw E, and the opening *b*, the curved plate C hinged in said opening *b*, and the forward plate F having curved and sharpened edge G, substantially as described.

607,687. LOCK-ROD FOR WAGON-BRAKES. JAMES H. HOOVER, Phœnix, Pa. Filed Feb. 25, 1898. Serial No. 671,590. (No model.)



Claims.—1. A lock-rod for wagon brakes, comprising a tension-rod having a head provided with a series of equally-spaced parallel studs or pins inclined with relation to the length of the rod and crossing the axis of said tenson-rod, in combination with a brake-actuating lever engaged by one of said studs or pins, and means for operating the parts, substantially as specified.

2. The combination, in a brake device for wagons, of a lever for actuating the brake-shoe, and a tension-rod provided at one end with a head having a series of parallel inclined studs for engaging said lever, a pivoted spring-closer for all of said studs, and means for exerting a pull upon said tension-rod, substantially as and for the purpose specified.

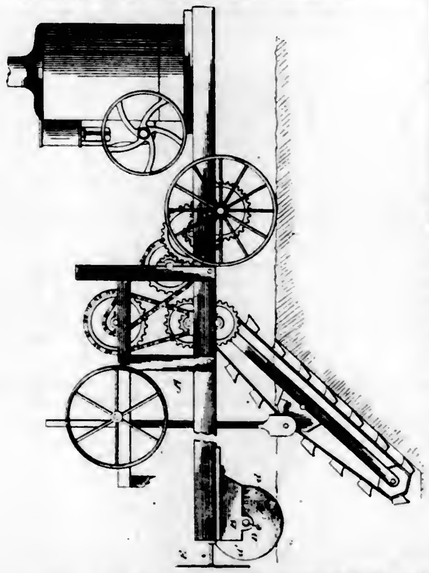
3. The combination, in brake mechaniams for wagons, of a tension-rod, and means for actuating it, and a lever, for operating the brake-shoes, coacting with said tension-rod, the latter being provided at one end with a series of inclined studs or rests to engage or hold said lever, and a closer to cover said studs, substantially as and for the purpose specified.

4. In a device of the kind described, a tension rod provided at one end with a series of equal parallel inclined studs arranged in a row, and another stud at the end of the row longer than the studs in said series, and a yielding or spring closer to cover the series of equal studs, formed with an opening to receive said long stud, substantially as shown and set forth.

5. A lock-rod for wagon-brakes, consisting of a tension-rod formed with a head having a series of inclined studs or pins, and an additional pin at the end having its extreme end portion straight and at right angles to the length of the rod, in combination with a lever for actuating the brake-shoes, adapted to be engaged by any one of said pins, and means for operating said tension-rod, and a closer or cover for said studs or pins, secured to said head and adapted to have a swinging motion thereon, substantially as set forth.

6. In a device of the kind described, a tension-rod having a head provided with a series of equal parallel inclined studs or pins arranged in a row, and another stud at the end of the row, longer than the studs in said series, and a spring closer or cover for all of said pins or studs, having an opening for receiving said long stud, the part of the latter in said opening being without slant or inclination, substantially as described.

607,688. DITCHING-MACHINE. JAMES W. HUMPHREYS, Iroquois, Ill. Filed Feb. 4, 1898. Serial No. 669,113. (No model.)



Claim.—1. In a ditching-machine, the combination of the ditch-traversing wheel, the wheel-axle carrying side pieces or bearings provided with a segmental rack, and a steering wheel or shaft geared to said segmental rack, substantially as set forth.

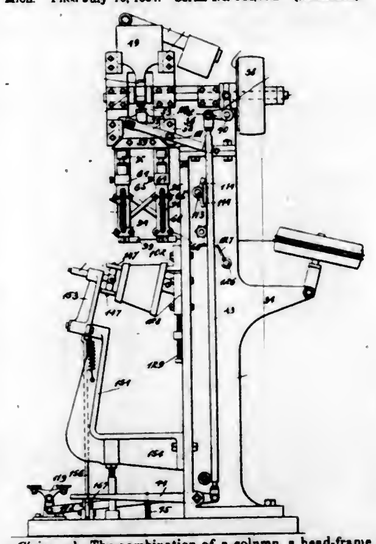
2. In a ditching-machine, the combination of the ditch-traversing wheel, the wheel-axle carrying side pieces or bearings provided with a segmental rack and a race of non-frictional rolls or balls, and a steering wheel or shaft geared to said segmental rack, substantially as set forth.

3. In a ditching-machine, the combination of the ditch-traversing wheel, the wheel-axle carrying side pieces or bearings provided with a segmental rack, the hand-wheel shaft having a pinion geared to said segmental rack, substantially as set forth.

4. In a ditching-machine, the combination of the ditch-traversing wheel having its tread adapted to be of slightly less width than that of the ditch, at the surface, and provided with diverging sides, the side pieces or bearings for the axle of said wheel provided with a segmental rack, and the handle-wheel shaft geared to said segmental rack, substantially as specified.

5. In a ditching-machine, the combination of the frame, the axle-bearing side pieces provided with a segmental rack, the ditch-traversing wheel carried by said axle, and the handle-wheel shaft geared to said segmental rack and having its bearings supported at the forward end of said frame and a short distance therein in front of said axle bearing side pieces, respectively, substantially as specified.

607,689. BASKET-MACHINE. WILLIAM JACKSON, Traverse City, Mich. Filed July 16, 1897. Serial No. 644,764. (No model.)



Claim.—1. The combination of a column, a head-frame carried at the top thereof and having an opening, a crown-plate lying flat against the head-frame and vertically reciprocatory thereon at a point above the opening thereof, a yoke attached to the crown-plate and extending through said opening, a shaft mounted on the head-frame and having a crank located in the broken-out portion, a wrist-pin of the crank being in connection with the yoke to vertically reciprocate the yoke, a plate located flat against the head-frame, and beneath the yoke and sliding vertically on the head-frame and having connection with the yoke, and a staple forming and driving tool attached to the second-named plate and operated thereby.

2. The combination of a column, a head-frame carried at the top of the column and having an opening, a shaft mounted on the head-frame and having a crank swinging in the said opening, a crown-plate carried at the upper portion of the head-frame above the opening and vertically reciprocatory against the slide of the head-frame, a yoke movable in the opening of the head-frame and having connection with the crank and also having connection with the crown-plate, a second plate vertically reciprocal on the head-frame and connected with the lower portion of the yoke, a staple forming and driving tool in connection with the second plate, a lever in connection with the second plate and rocked thereby, wire-feeding devices leading to the staple forming and driving tool, and means actuated by the lever for driving said wire-feeding devices.

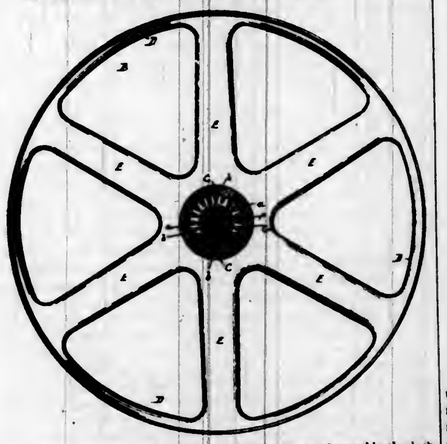
3. The combination with a support, of a basket-holder or form thereon, a bracket projecting out from said support, an arm mounted to swing on the bracket, the arm swinging in the plane of the bottom of the basket-holder or form, a spring actuating said arm, means for moving the arm against the tension of the spring, and antifriction-wheels yieldingly suppported by the arm and capable of engaging with the bottom of the basket-holder or form.

4. In a basket-making machine the combination of a column, staple forming and driving devices mounted thereon, means for operating said devices, a lever in connection with and operated by said means, pawls carried by the lever, wire feeding devices driven by the pawls, a rock-shaft having arms fixed thereto, the arms engaging the pawls to control the same, a crank in connection with the rock-shaft, a rod connected with the crank, and a treadle having connection with the rod to move the same whereby to control the feed of wire to the staple forming and driving devices.

5. In a basket-machine the combination of a column, a drive-shaft mounted revolubly at the top thereof, a plate connected with the drive-shaft to be vertically reciprocated thereby, staple forming and driving devices in connection with and operated by the plate, a lever having sliding connection with the plate and rocked by the movement thereof, wire-feeding devices, means for driving the wire-feeding devices from the lever, a rock-shaft, arms attached to the rock-shaft and controlling said means for driving the wire-feeding devices, a crank attached to the rock-shaft, a rod in connection with the crank, and a treadle having connection with the rod to throw the rock-shaft.

6. In a basket-machine, the combination of a column, a head-frame carried by the column and having an opening therein, a shaft revolubly mounted on the head-frame and extending across the column, a crown-plate mounted to reciprocate above the opening, a cross-head in connection with the crown-plate and extending through the opening in the head-frame, a crank on the shaft to vertically reciprocate the cross-head, a plate located below the opening and in connection with and driven by the cross-head, a weighted lever in connection with the crown-plate, and staple forming and driving devices in connection with the second-named plate.

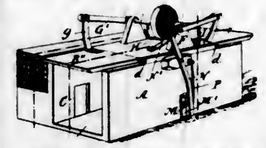
607,690. SELF-OILING LOOSE PULLEY. GEORGE F. KENNY, Hyde Park, Mass. Filed Dec. 15, 1897. Serial No. 662,080. (No model.)



Claim.—A loose pulley having an oil-chamber formed in the hub thereof, a plurality of rows of concentrically-arranged conical teats formed integral with the inner wall of the hub and extending into the oil-chamber, said teats covering the entire inner surface of the hub, a perforated bearing-sleeve fixed within the hub and having its opposite ends cut away at an angle to provide an annular oil-space at such ends between the hub and sleeve, cap-plates secured to the opposite ends of the hub and forming the outer walls of the said oil-spaces, and passages in the hub leading from the annular oil-spaces into the oil-chamber, substantially as described.

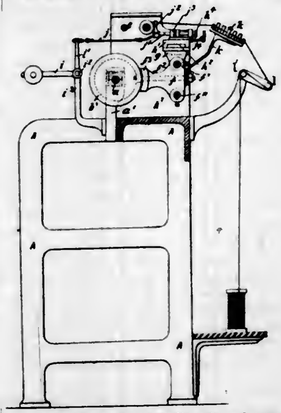
607,691. ANIMAL-TRAP. JOSIAH KNOOP, Canstown, Ohio. Filed Sept. 30, 1897. Serial No. 653,627. (No model.)

Claim.—1. In an animal-trap, the combination with the box or closure having two compartments therein which communicate with each other by a passage-way, and two gates or drops arranged in said passage-way, one in advance of the other, and moved by the animal to permit his passage therethrough in one direction only, a normally open swinging door which controls the entrance to the trap, a spring-actuated shaft operatively connected with the said door to open and close the same once upon each revolution thereof, a lever having a hook for engagement with a crank of the said shaft and lock it in position with the said door open, a treadle, an arm connected thereto and impinging against an arm of the said lever, a spring for maintaining such impingement, and a rock-shaft connected with the second of said gates or drops and also having an arm which is normally in the path of said crank and contacts the same at the end of the first one-half revolution of the said shaft, substantially as specified.



2. In an animal-trap of the character described, the combination with the swinging doors which control the entrances to the trap, and the spring-actuated shaft operatively connected with the said doors to open and close the same once upon each complete revolution thereof, of the pivoted lever having a hook engaging a crank of said shaft and holding the latter in position with the doors open, a rock-shaft, a treadle or platform connected thereto, an arm on said shaft which impinges against an arm of the said lever, a spring which maintains the contact between said arms, and means for holding said shaft at the end of its first half-revolution, together with means operated by the passage of the animal into a second compartment of the trap whereby such holding means are released, substantially as specified.

607,692. WINDING MACHINERY FOR THREAD, YARN, &c. BRUCE M. KNOX, Kilbirnie, Scotland. Filed June 19, 1897. Serial No. 641,461. (No model.) Patented in England June 10, 1896, No. 12,731



Claim.—1. In machinery for winding thread, yarn and the like upon tapered cops, the combination of a fixed frame, a frame *f* and means for reciprocating the latter, with a plate *g* mounted on and moving with said reciprocating frame, a plate *h h'* carrying a thread-guide, and having a pin-and-slot connection with plate *g*, and a guide-bar A^1 on which the plate *h h'* is mounted, substantially as described.

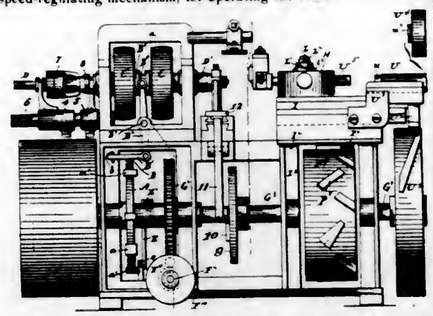
2. In machinery for winding thread, yarn and the like, the combination of a frame, a winding-spindle, a thread-guide and operating mechanism, with tension-rods, and means for automatically adjusting said tension-rods, as the winding proceeds, substantially as described.

3. In machinery for winding thread, yarn and the like, the combination of a frame, winding-spindle, reciprocating thread-guide and operating mechanism, with a pair of tension-rods and mechanism connecting a moving part of the machine with one of the said rods, whereby the latter is automatically moved through a segment of a circle as the winding proceeds, as and for the purpose described.

607,693. TURRET-LATHE. JOSEPH P. LAVIGNE, New Haven, Conn. Filed Aug. 16, 1897. Serial No. 648,413. (No model.)

Claim.—1. In a lathe, the combination with a work-holding chuck, of a clutch mechanism by means of which the work-holding chuck is reversed in the direction of its rotation, a speed-regulating

mechanism, for varying the speed of the said work-holding chuck and a single disk provided with reversing-cams and speed-cams respectively arranged to coact with the reversing mechanism, and the speed-regulating mechanism, for operating the same.



2. In a lathe, the combination with a work-holding chuck, of a clutch mechanism by means of which the work-holding chuck is reversed in the direction of its rotation, the said clutch mechanism including a clutch-lever; a speed regulating mechanism for varying the speed of the said work-holding chuck and including a belt-shifting lever; a cam-disk, and reversing-cams, and speed-cams mounted in the said disk and respectively coacting with the clutch-lever and belt-shifting lever for the operation of the clutch mechanism and the speed-regulating mechanism.

3. In the speed-regulating mechanism of a lathe, the combination with a worm-gear, of a worm located below the same, a hollow shaft upon which the worm is located, a shaft passing through the said hollow shaft, slow and fast pulleys mounted upon the adjacent ends of the hollow and inclosed shafts respectively, and the elements of a planet-motion mechanism connected with the opposite ends of the shafts, whereby the worm gear is driven fast or slow according as the power-belt runs upon the slow or fast pulley.

4. In a lathe, the combination with a worm-gear, of a worm located below and meshing into the same, a tubular shaft carrying the said worm, a shaft passing through the tubular shaft, a slow pulley keyed to one end of the tubular shaft, a fast pulley keyed to the projecting adjacent end of the inclosed shaft, a cup keyed to the projecting opposite end of the inclosed shaft, a pinion located within the said cup and mounted upon a stud located near the edge thereof, two gear-wheels located substantially within the said cup, corresponding to each other in size, differentiated in the number of their teeth, and both meshed into by the said pinion, the wheel having the fewest teeth being keyed to the adjacent end of the tubular shaft, and the wheel having the larger number of teeth being loosely mounted upon the said end of the said shaft, a ratchet connected with the gear-wheel last mentioned, and a pawl coacting with said ratchet whereby when the power-belt runs upon the slow pulley the gear-wheel into which the worm meshes will be driven at a comparatively high speed, while when the power-belt is shifted to the fast pulley the speed of the said gear-wheel will be reduced by the operation of the cup, the pinion, the differentiated gear-wheels, the ratchet-wheel and the pawl.

5. In a lathe, the combination with a slide-holder, of a slide mounted therein, a turret mounted upon the slide, an operating-ring rigidly secured to and depending from the turret, an operating-disk carried by the slide but located within the said ring, a pawl carried by the said disk, and coacting with notches formed in the said ring, an operating-spring located within the disk and oscillating the same for successively engaging the pawl with the notches in the ring, an operating-pin depending from the disk, and a dog mounted in the slide and coacting with the ring for positively rotating the turret in the backward movement of the slide, and at the same time compressing the spring which acts in the forward movement of the slide to oscillate the disk substantially as described.

6. In a lathe, the combination with a slide-holder, of a slide mounted therein, a turret mounted upon the slide, a turret-stud passing downward through the turret into the slide with which it is connected, a binding-rod passing downward through the said stud, a binding-nut applied to the upper end of the binding-rod and exerting a downward pressure upon the turret for clamping the same against rotation, an operating-head secured to the lower end of the rod, a spring coacting with the said head for turning the rod in one direction, and a yielding dog mounted in the said head, and operating to turn the rod in the opposite direction during the rearward movement of the slide.

7. In a lathe, the combination with a slide-holder, of a slide mounted therein, a turret mounted on the slide, a turret-stud passing downward through the turret and connected with the slide, a binding-rod passing downward through the turret-stud, a binding-nut applied to the upper end of the binding-rod, and adapted to exert downward pressure upon the turret, an operating-head secured to the lower end of the said rod, a spring coacting with the said head so as to turn the rod in one direction and bring the binding-nut at its upper end into operation, a yielding dog also mounted in the said head, and forced out of action during the forward movement of the slide, and a stud mounted in the slide and coacting with the said yielding dog which operates to turn the binding-rod in the opposite direction during the backward movement of the slide for taking off the clamping action of the binding-nut at the upper end of the rod.

8. In a lathe, the combination with the slide-holder, the slide and the turret thereof, of a reciprocating bar for positively locking the turret, means for actuating the said bar, and means for taking up the wear of the bar and restoring the alinement of the machine by shifting the forward end of the bar.

9. In a lathe, the combination with a slide holder, of a slide mounted therein and formed with a long groove and with two integral yielding arms forming the forward portions of the side walls of the said groove, a locking-bar located in the said groove and coacting with the turret to positively lock the same against rotation in either direction, means for reciprocating the slide, and adjusting-screws coacting with the said integral yielding arms for taking up wear and for restoring the alinement of the machine by shifting the forward end of the bar.

10. In a turret-lathe, the combination with a slide-holder, of a slide, a turret mounted upon the slide, a bracket secured to the rear end of the slide, a tool-carriage mounted in the said bracket, a tool-holder carried by the said carriage, and means for operating the said tool-holder, whereby work presented to the said cutter by the turret is cut on the opposite end from the end cut by the tools carried by the turret.

11. In a lathe, the combination with the bed thereof, of a worm-gear located below the same, a worm situated below the said worm-gear, a hollow shaft upon which the worm is located, a shaft passing through the said hollow shaft, slow and fast pulleys mounted upon the adjacent ends of the hollow and inclosed shafts respectively, planet-motion mechanism connected with the opposite ends of the shafts, whereby the worm-gear is driven fast or slow according as the power-belt runs upon the slow or fast pulley, and an oil-box located below the worm-gear and between the fast and slow pulleys and the planet-motion mechanism, and containing the said hollow shaft and therefore the worm, which is more or less submerged in the oil within the box.

12. In a turret-lathe, the combination with the turret thereof, of a turret-slide, a turret stud secured by its lower end to the slide, having the turret mounted for rotation upon it and projecting upward through the same, formed with a central longitudinal passage, and adapted to take up wear between it and the turret, a binding-rod passing through the said passage of the turret-stud and projecting above and below the upper and lower ends thereof, means applied to the projecting upper end of the stud and the projecting upper end of the rod for imposing downward pressure upon the upper face of the turret, and automatically-operated means connected with the projecting lower end of the binding-rod for automatically binding the turret in its operating positions.

13. In a turret-lathe, the combination with the turret thereof, of a turret-slide, a turret-stud passing through the turret which rotates upon it, secured to the slide, having a central longitudinal passage formed in it, and provided at its upper end with a threaded neck, a binding-rod extending downward through the central passage of the turret-stud, and having its upper end threaded, a binding-nut screwed upon the said neck of the stud, and also screwed upon the upper end of the binding-rod which is threaded for the purpose, the threads of the neck and the rod being differentiated, and means connected with the lower end of the rod for automatically operating the rod to bind the turret through the binding-nut in its operating positions.

607,694. MECHANISM FOR BURNING HYDROCARBONS. WILLIAM L. MERSFELDER, Cincinnati, Ohio. Filed Dec. 28, 1897. Serial No. 663,852. (No model.)



Claim.—1. In a hydrocarbon-burner, the combination of a chamber, having a horizontal opening in one of its walls at an upper corner, and a horizontal generator located a short distance outside of this opening and there being room afforded for the circulation of heated air and flame from the chamber, above and below the generator, one or more delivery jet-tubes from the generator being present in said opening, and adapted to deliver the hydrocarbon directly in the air in the chamber, approaching said opening, and intermingle the same, the combustion of the latter thereupon immediately taking place, means for causing air to flow from the casing out through the opening D^2, substantially as and for the purposes specified.

2. In a hydrocarbon-burner, the combination of a chamber, having a horizontal opening in one of its walls, at an upper corner, and a pan extending from the lower edge of said opening inwardly into the chamber, and a horizontal generator located approximately to this opening and outside of it, and there being room afforded for the circulation of heated air and flame from the chamber above and below the generator, one or more delivery jet-tubes from the generator being present and adapted to deliver the hydrocarbon directly into the air of the chamber, as the air approaches between the roof and the pan toward the opening, and to cause the air and hydrocarbon to intermingle, the combustion of the latter thereupon immediately taking place means for causing air to flow from the casing out through the opening D^2, substantially as and for the purposes specified.

3. In a hydrocarbon-burner, a chamber having an opening in one of its upper corners, a deflecting roof in connection therewith, arranged to force the air rising in the chamber out horizontally, through said opening, a generating horizontal conduit located in proximity to said opening, but arranged to allow the mixture of air and hydrocarbon vapor to surround said conduit as they issue from said opening, and the jets F and F^3, the one located near one end of the chamber and the other a little to one side of the mid-length of the opening, and arranged to discharge their jets horizontally into the air of the chamber, as it, the air moves toward its exit at the said upper opening of said chamber, and mixes therewith, substantially as and for the purposes specified.

4. In a hydrocarbon-burner, a chamber having an opening in one of its upper corners, a deflecting roof in connection therewith, arranged to force the air rising in the chamber out horizontally, through said opening, a generating horizontal conduit located in proximity to said opening, but arranged to allow the mixture of air and hydrocarbon vaper to surround said conduit as they issue from said opening, and the jets F and F^3, the one located near one end of the chamber and the other a little to one side of the mid-length of the opening, and arranged to discharge their jets horizontally into the air of the chamber, as it, the air moves toward its exit at the said upper opening of said chamber, and the gutter or pan located below the opening and extending from the lower edge of the latter into the chamber, and assisting in forming a horizontal passage wherein the air of the chamber is horizontally directed against the jets, and the air and hydrocarbon are intermixed, and issuing in combustion, envelop the generating-conduit, substantially as and for the purposes specified.

5. The combination of the casing, having upper opening D^2, and conduit located as shown, in reference to the same, and having burners, and a flange of the casing receiving through its opening one of the burners, and the bracket for securing the conduit, and the gutter beneath the burners, substantially as and for the purposes specified.

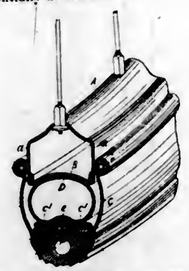
6. The combination of the casing, having upper opening D^2, and conduit located as shown, in reference to the same, and having burners, and a flange of the casing receiving through its opening one of the burners, and the bracket for securing the conduit, and the gutter beneath the burners, and a removable roof or cover, substantially as and for the purposes specified.

7. The combination of the casing, having upper opening D^2, and conduit located as shown, in reference to the same, and having burners, and a flange of the casing receiving through its opening one of the burners, and the bracket for securing the conduit, and the gutter beneath the burners, and a removable roof or cover, the walls of the casing inclining outward as they descend, substantially as and for the purposes specified.

607,695. ELASTIC TIRE AND RIM FOR WHEELS. ARTHUR C. MOORE and GEORGE RODWELL, London, England. Filed Dec. 21, 1897. Serial No. 662,880. (No model.)

Claim.—1. An elastic rim for wheels, constructed of an inner annular member having parallel sides, an outer annular member of approximately U-section whose sides or flanges are formed with hollow beaded edges, and rubber packings fitting within the hollow beaded edges and adapted to embrace and fit against the sides of the inner member, so as to make a dust and wet tight joint therewith, while permitting of relative motion in the radial direction, and of a pneumatically-inflated chamber or chambers interposed between the inner and outer annular members, substantially as and for the purpose specified.

2. An elastic rim for wheels, constructed of an inner annular member made jointless and of approximately U-section with parallel outwardly-directed side flanges, a concavely-grooved annular member embracing the edges of the said flanges so as to brace them and form a practically integral part of the inner member, an outer annular member of approximately U-section having inwardly-directed flanges adapted to embrace the inner member with freedom for relative radial motion, the outer member being made of two jointless annular semimembers united as described, and a pneumatically-inflated chamber or chambers interposed between the inner and outer annular members substantially as described.

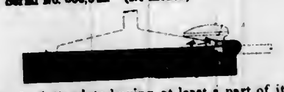


3. An elastic rim for wheels, constructed of an inner annular member made jointless and of approximately U-section with parallel outwardly-directed side flanges, a concavely-grooved annular member embracing the edges of the said flanges so as to brace them and form a practically integral part of the inner member, an outer annular member of approximately U-section having inwardly-directed flanges adapted to embrace the inner member with freedom for relative radial motion, the outer member being made of two jointless annular semimembers united as described, and so shaped as to form a peripheral grooved seat for a rubber tread a solid or cushion rubber tread fitted in such groove, and a pneumatically-inflated chamber or chambers interposed between the inner and outer annular members substantially as described.

4. An elastic rim for wheels, comprising an annular member having parallel outwardly directed side flanges, connected at their edges by an annular portion having its external surface concave, an outer annular member comprising a transverse peripheral portion and inwardly-directed side flanges, each side flange being formed with a hollow beaded edge adapted to receive a rubber packing, the side flanges of the inner member fitting between the said packings and a pneumatically-inflated chamber or chambers interposed between the inner and outer annular members, substantially as described.

5. An elastic rim for wheels consisting of an inner annular member approximately U-shaped in cross-section and having parallel outwardly-directed side flanges, an annular member bridging the space between the side flanges of the inner annular member thereof, the said member being concave on its outer face and having side flanges embracing the edges of the side flanges of the said inner annular member, an outer annular member approximately U-shaped in cross-section, the said member having inwardly-directed flanges formed with hollow beaded edges adapted to receive a rubber packing for engagement with the side flanges of the inner member, the said outer member comprising two annular parts, each having one side flange and a transverse or peripheral portion, the said peripheral portions being adapted to overlap each other, the side flanges of the said outer member extending below the peripheral portion and forming therewith a dovetailed grooved seat, a rubber tread fitted in said seat and a pneumatically-inflated chamber or chambers interposed between the concave face of the inner annular member and the peripheral portion of the outer annular member, substantially as described.

607,696. TIE-PLATE. ANDREW MORRISON, Pittsburg, Pa., assignor to Dilworth, Porter & Co., Limited, same place. Filed Jan. 17, 1898. Serial No. 666,842. (No model.)



Claim.—1. A tie-plate having at least a part of its end portion folded over in close contact with the upper face of the plate to form a shoulder the front edge of which abuts against the edge of the rail-base.

2. A tie-plate having lower ribs, and an end portion folded over in close contact with the upper face of the plate to form a shoulder against the front edge of which the edge of the rail-base abuts.

3. A rolled tie-plate having integral lower longitudinal truss-ribs, and an end fold extending at right angles to these ribs and in close contact with the upper face of the plate, the edge of the fold being arranged to contact with the edge of the rail-base.

4. A rolled tie-plate having an end portion folded over in close contact with the upper face of the plate to form a shoulder which abuts against the edge of the rail-base, said shoulder being shaped to allow the spike to engage the rail-base.

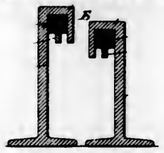
5. A tie-plate having a portion thereof folded over in close contact with the upper face of the plate and arranged to contact with the rail along its front edge, and a spike-hole extending through the fold.

6. A tie-plate of rolled metal having lower longitudinal truss-ribs, said ribs being cut away at the end portion of the plate, and this portion folded over in close contact with the upper face to form a shoulder against which the rail-base abuts.

7. A tie-plate of rolled metal having an end fold forming a shoulder or shoulders for the rail-base, the fold being thinned away around the spike-hole so as to allow the claw-bar to engage the spike.

8. A rolled tie-plate having an end fold forming a shoulder for the rail-base, said fold having a beveled or inclined upper face to allow the spike-head to engage the rail.

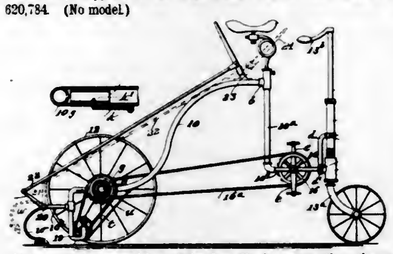
607,697. ELECTRIC RAILROAD. CLARENCE A. MYERS, Atlantic City, N. J. Filed Nov. 18, 1897. Serial No. 658,943. (No model.)



Claim.—1. A track-rail, comprising two sections spaced apart and forming opposite walls of a conduit, the tread of one section being below the plane of the other section-tread, an insulating material arranged in a groove in the under side of a section-tread and a conductor for electricity supported by said insulating material, substantially as specified.

2. A track-rail, comprising two sections spaced apart and forming opposite walls of a conduit, the tread of one section being below the plane of the other section-tread, an insulating material arranged in a groove in the under side of each section-tread, and conductors for electricity, supported by the insulating material, substantially as specified.

607,698. COMBINED MOWING AND RAKING MACHINE. JOHN MCCALLUM, Chippewa Falls, Wis. Filed Jan. 26, 1897. Serial No. 620,784. (No model.)



Claim.—1. In a machine of the described construction, the combination with a rotatable steering-wheel, and the forked steering-rod, of the upright internally-threaded sleeve-box, the tubular box extension having a threaded engagement with the internal thread of the sleeve-box, said box extension loosely supporting the steering-rod, the bent bracing-arm having integral rings at its ends that encircle the box extension and also a horizontal lower portion of the bicycle-frame, and are thereto detachably secured by set-bolts so as to stiffen the box extension, and a handle-bar on the upper end of the steering-rod, substantially as described.

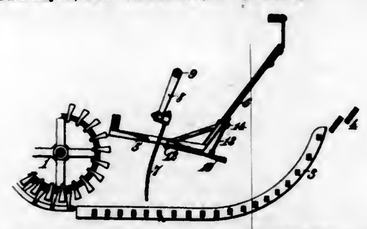
2. In a machine of the described construction, the combination of the main frame having two spaced depending frame portions at the rear of the transverse axle, two forwardly and upwardly bent integral hollow members on lower ends of the said depending frame portions and securable cap-pieces on the upwardly-bent parts of the hollow frame members, two laterally-bored boxes in the upright hollow members, a rotatable cutter-head, journal ends of which pass through vertical slots in the said hollow frame members to an engagement with the boxes therein, set screw-bolts screwing down through the cap-pieces and loosely engaging the boxes to elevate or depress them, and a fixed cutter-bar on horizontal portions of the integral hollow frame members, substantially as described.

3. In a machine of the described construction, the tubular frame having two limbs rearwardly projected from two axle-boxes, that are on said frame, two similar rearwardly-projected and depending frame portions on said frame-limbs, the upper horizontal parts of said frame portions being separable and provided with spring-latching connections to adapt the depending portions of the frame for convenient detachment from horizontal parts thereof, substantially as described.

4. The combination with a tricycle-frame, a rear main transverse axle thereon, two traction-wheels on ends of said axle, a swiveling front wheel controllable by a handle-bar, and a seat on the tricycle-frame, near the handle-bar, of a pedal-shaft, having crank-arms and pedals thereon, two sprocket-gears of different diameters fixed on the pedal shaft, a sleeve on the axle, two sprocket-gears on the sleeve, one of said gears connected by a sprocket-chain with one sprocket-gear on the pedal-shaft, a sprocket-gear on the axle, chain-connected with the other gear on the pedal-shaft, and a rotatable transverse cutter, having a sprocket-gear on its shaft, which is chain-connected with the remaining sprocket-gear on the sleeve, substantially as described.

5. In a machine of the described construction, the depending rear portions of the tricycle-frame having upright posts spaced from the depending legs of the frame by short horizontal members, said members being adapted to support ends of the flat cutter-bar of the machine, and the upright posts provided with vertically-adjustable boxes which carry journal ends of the shaft on the rotary cutter device which coacts with the cutter-bar, substantially as described.

607,699. GRAIN-SEPARATOR. JOHN R. MCCUTCHEON, Battle Creek, Mich., assignor to the Advance Thresher Company, same place. Filed May 27, 1897. Serial No. 638,449. (No model.)



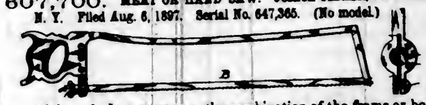
Claim.—1. The combination with a threshing-cylinder, a grating arranged in rear thereof, a slotted guard located above the grating in rear of the cylinder and having its base portion composed of spaced bars provided at their rear ends with upwardly-extending spaced bars, and devices operating through said slotted guard to carry the straw along said grating, of a deflector-shield, constituting a rearward extension of the base of the slotted guard below the upwardly-extending spaced bars thereof, and devices suspending the deflector-shield from the slotted guard, said deflector-shield serving to deflect flying grain onto the curved portion of the grating in rear of the base of the slotted guard and below said upwardly-extending spaced bars thereof, substantially as described.

2. The combination with a threshing-cylinder, a grating arranged in rear thereof, and having an upwardly-curved portion, a slotted guard located above a part of the grating in rear of the cylinder, and devices operating through the guard to carry the straw along the grating, of a deflector-shield secured to and projecting rearwardly from the base portion of the slotted guard for deflecting flying grain onto the curved portion of the grating, and means for vertically adjusting the rear end portions of the deflector-shield, substantially as and for the purposes described.

3. The combination with a threshing-cylinder, a grating arranged in rear thereof, a slotted guard located above the grating in rear of the cylinder and having its base portion composed of spaced bars provided at their rear ends with upwardly-extending spaced bars, and devices operating through said slotted guard to carry the straw along said grating, of a plurality of deflector-plates attached to the spaced bars, which constitute the base of said slotted guard, below the upwardly-extending spaced bars thereof, for deflecting flying grain at a point in rear of the base portion of the slotted guard and below the upwardly-extending spaced bars thereof, substantially as described.

4. The combination with a threshing-cylinder, a grating arranged in rear thereof and having an upwardly-curved portion, a slotted guard located above a part of the grating in rear of the cylinder, and straw-moving forks operating through the guard to move the straw along the grating, of a plurality of deflector-plates spaced apart for the passage of the said straw-moving forks and projecting rearwardly from the slotted guard to deflect flying grain onto the curved portion of the grating, and devices for vertically adjusting the rear end portions of the said deflector-plates, substantially as described.

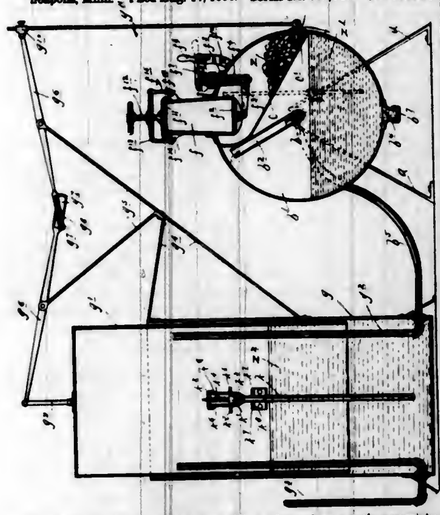
607,700. MEAT OR HAND SAW. JOSHUA OLDHAM, New York, N. Y. Filed Aug. 6, 1897. Serial No. 647,365. (No model.)



Claim.—1. In a meat-saw, the combination of the frame or bow having at its handle end a pendent split sleeve, itself also having downward parallel extensions or lips below its circular or sleeve portion proper and below the blade, said lips provided with a binding-screw, the blade connected at its forward end to that end of said frame, the split stud adapted to receive the rear end of said blade and held in said sleeve and provided with a nut, and a loose pin passed transversely through said split sleeve and through an aperture in said blade, and adapted to be drawn into said sleeve by actuating said nut, substantially as set forth.

2. In a meat-saw, the combination of the frame or bow having at its handle end a pendent split sleeve, itself also having downward parallel extensions or lips below its circular or sleeve portion proper, and below the blade, said lips provided with a binding-screw, the split distant or forward end of the frame or bow having coincident apertures, one screw-threaded, the blade let into said forward and near ends of said frame and having holes or apertures one registering with the aforesaid apertures, a binding-screw passed through the apertures in the forward ends of frame and blade with its threaded end engaging the threaded one of said apertures, a split apertured and nutted stud passed through said sleeve and receiving said blade, and the loose pin passed through coincident apertures in said split stud and through an aperture in that end of blade and adapted to be drawn into said sleeve by actuating the nut on said split stud, substantially as set forth.

607,701. ACETYLENE-GAS GENERATOR. JOHN A. OLSON, Minneapolis, Minn. Filed Aug. 17, 1896. Serial No. 603,047. (No model.)



Claim.—1. The combination with a pivoted generating-receptacle adapted to contain water and provided within with a carbid-holder, of means operated by the generated gas, for oscillating said pivoted generating-receptacle to bring the carbid and water therein contained into and out of contact.

2. The combination with a generating-receptacle, adapted to contain water, mounted for pivotal movement and provided with a carbid-holder located eccentric to its pivot, and means operated by the generated gas, for oscillating said receptacle and automatically moving the carbid on said carbid-holder, into and out of the water of said receptacle.

3. In a gas apparatus, the combination with a generating-receptacle, in the form of a drum, adapted to contain water, and pivoted on its axial center, of a carbid-holder formed therein by a perforated partition-plate extending longitudinally of said drum, substantially on an arc thereof, and a gas-tight filling device opening to said carbid-holder through the periphery of said drum.

4. The combination with a generating-receptacle, adapted to contain water, mounted for pivotal movement and provided with a carbid-holder located eccentric to its pivot, of an expansible storage-tank in communication with said generating-receptacle, and operating connections between the movable section of said storage-tank and said pivoted generating-receptacle, for causing the pivotal movement of the latter under the movements of the former.

5. The combination with a generating-receptacle, adapted to contain water, mounted for pivotal movement and provided with a carbid-holder located eccentric to its pivot, of an expansible storage-tank in communication with said generating-receptacle, and operating connections between the movable section of said storage-tank and said pivoted generating-receptacle, said connections involving as an element, an adjustable part by means of which the pivotal position of said carbid-holder with respect to the water contained in said generating-receptacle may be varied independent of the movement of said movable tank-section, substantially as described.

6. The combination with a generating-receptacle, adapted to contain water, mounted for pivotal movement and provided with a carbid-holder located eccentric to its pivot, of an expansible storage-tank in communication with said generating-receptacle, and operating connections between the movable section of said storage-tank and said pivoted generating-receptacle, said connections involving, as an element, means for varying the movement of the said pivoted generating-receptacle with respect to any given movement of said movable tank-section.

7. The combination with a generating-receptacle, adapted to contain water, mounted for pivotal movement and provided with a carbid-holder located eccentric to its pivot, of an expansible storage-tank or gasometer in communication with said generating-receptacle, and operating connections involving a pair of levers pivoted at their intermediate portions, connected together at their adjacent ends and connected at their opposite ends, one to the movable gasometer-section and the other to said generating-receptacle at a point eccentric to its axis, substantially as described.

8. The combination with a generating receptacle, adapted to contain water, mounted for pivotal movement and provided with a carbid-holder located eccentric to its pivot, of an expansible storage-tank in communication with said generatiog-receptacle, and operating connections involving the pair of levers g^6 pivoted at their intermediate portions to suitable supports and provided at their adjacent ends with the slots g^7, the adjustable head g^8 working in said slots g^7, the link g^9 connecting the extended end of one of the levers g^6 with the movable tank-section, the pivoted head g^{10} on the extended end of the other lever g^6, and the connecting-rod g^{11} secured at one end to the shell of said generating-receptacle and adjustably secured at its other end to said head g^{10}, substantially as described.

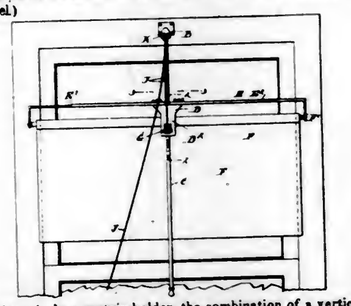
9. The combination with a generating-receptacle and a carbid-holder located therein, of a filling device involving a cylinder or tube opening through said receptacle, above said carbid-holder, and having its inner end cut on an incline, a removable cover for the outer end of said cylinder, a removable bottom for the beveled inner end of said cylinder, a rock-shaft extending through said generating-receptacle, substantially parallel to the axis of said cylinder, an arm secured on the inner end of said rock-shaft and carrying said removable bottom at its free end, and means for rocking said rock-shaft from its outer end, substantially as described.

10. The combination with a generating-receptacle and a carbid-holder located therein, of a filling device involving the cylinder or tube f opening through said receptacle above said holder and having its inner end beveled at f', a removable cover for the outer end of said cylinder, the removable bottom f^3 for the beveled inner end of said cylinder, the rock-shaft f^4 extending through said generating-receptacle, the arm f^5 secured to the inner end of said shaft f^4 and hinged or pivoted to said bottom f^3 at its free end, the operating-lever involving the section f^7 secured to the outer end of the shaft f^4 and the pivoted handpiece f^8 provided with the thumb-screw f^9, and the stop or bracket f^{10} fixed on said generating-receptacle, substantially as described.

11. The combination with a generating-receptacle, of a filling device for the same involving a cylinder or tube opening through said receptacle and having its inner end cut on an incline, a removable cover for the outer end of said cylinder or tube, a removable bottom for the inclined inner end of said cylinder or tube, a rock-shaft extending into said generating-receptacle, an arm on the inner end of said rock-shaft secured to and carrying said removable bottom, and means for rocking said rock-shaft from its outer end, substantially as described.

12. The combination with an expansible gasometer, of an escape-pipe k leading therefrom and provided at its inner open end with the valve bracket and cap k^2 k^3, the valve k' normally closing said pipe k and provided with the lateral extended arms k^4 working in the slots k^5 of said bracket k^2, and the trip-bar k^7 secured to the movable gasometer-section and provided with the elongated eye k^8 cooperating with the extended valve-arms k^4 and working substantially as described.

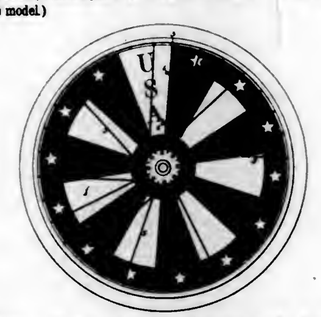
607,702. CURTAIN-HOLDER. ULYSSES S. PARISH and FLAVEL A. RUDOLPH, Carmi, Ill. Filed Oct. 4, 1897. Serial No. 653,958. (No model.)



Claim.—1. In a curtain-holder, the combination of a vertically-extending supported rod, a support slidable vertically on the rod, a spring-pressed locking-catch pivotally mounted on the support and engaging with the rod to lock the support at various positions on the rod, a cord attached to said catch and serving to move the same against its spring and to permit the vertical movement of the support, and a frame carried on the support and having the curtain hung therefrom.

2. The combination of a vertically-extending rod, an L-shaped frame, one member of which is provided with an orifice slidably receiving the rod, and the other member of which is provided with an orifice bounded on one side by a lug, a locking-catch pivotally mounted on said other member of the support and extending through the orifice therein and coacting with the rod to lock the support with the rod, the locking-catch being limited in its movement by the said lug, a spring pressing the locking-catch, a cord attached to the locking-catch, and a frame carried on the support and having the curtain hung therefrom.

607,703. DECORATIVE ATTACHMENT FOR WHEELS. JOHN P. PETERS, Philadelphia, Pa. Filed June 19, 1897. Serial No. 641,516. (No model.)



Claim.—1. The within-described attachment for the wheels of vehicles, the same consisting of an annular disk of material, stiff enough to be self-supporting, the periphery of the disk being supported by the opposite spokes of the wheel where they approach each other at the rim, and said disk having a central opening large enough to permit the passage of the hub-collar, and an opening extending from said central opening to the outer edge of the disk, substantially as specified.

2. The within described attachment for the wheels of vehicles, the same consisting of an annular disk of material stiff enough to be self-supporting, the periphery of the disk being supported by the opposite spokes of the wheel where the latter approach each other at the rim, and said disk having a central opening large enough for the passage of the hub-collar, and an opening extending therefrom to the outer edge of the disk, and having on opposite sides of the latter opening, means whereby the separated portions of the disk can be secured together, substantially as specified.

607,704. PEA-HARVESTER. ALANSING D. PITCHER, Mariette, Mich. Filed Sept. 21, 1897. Serial No. 652,469. (No model.)

Claim.—1. The combination with a finger-bar, and a runner on the off end thereof, of a shoe fitted to the lower edge of the finger-bar runner and extending forwardly thereof, the front end of said shoe being curved upwardly and provided with a vertical bar which is connected with the forward end of the finger bar runner, and a clamp for uniting the rear end of the shoe rigidly to the said runner, substantially as and for the purposes set forth.



2. In a harvester, a shoe having its front end curved upwardly and extended backward a suitable distance, and provided with a vertical bar which unites the shoe and its extended curved end, combined with a finger-bar runner which rests upon the shoe and has its front end attached to said vertical bar, and means for uniting said shoe and runner rigidly together, substantially as described.

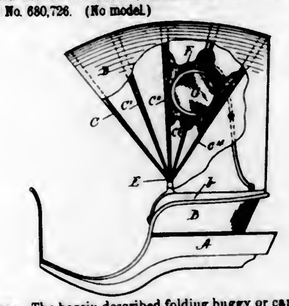
3. In a harvester, the shoe curved upwardly and extended backwardly of its curved front extremity, said extended part of the shoe terminating in a vertical perforated bar which is attached to the lower part of the shoe, combined with a finger-bar runner seated upon the shoe in rear of said vertical bar and having its front extremity fitted in a perforation of the vertical bar, and an angular clamp fastened to the finger-bar runner, substantially as described.

4. The combination with a finger-bar having a runner at its off end, of a rod supported above the finger-bar, a shoe clamped to the runner and vertically adjustable thereon, a wheel-carrying shoe on the near end of the finger-bar and also vertically adjustable thereon for sustaining the finger-bar, in connection with the off-end shoe, at the desired elevation, and a series of lifting-fingers arranged between the near and off end shoes and mounted loosely on the rod, substantially as described.

5. The combination with a finger-bar, and a runner thereon, of the shoe clamped detachably at its near end to the runner, said shoe being vertically adjustable from the clamp as an axis for connection with the front end of the runner at different elevations, substantially as described.

6. In a harvester attachment, a lifting-finger cast in a single piece of metal and consisting of the arched upper bar provided at a point in advance of its near extremity with a bearing-sleeve, 33, the lower bar, 30, in the vertical plane of the arched upper bar, the horizontal tapered foot, 28, which unites the upper and lower arms, and the vertical bar, 31, joining the two bars together and provided with a socket, substantially as described.

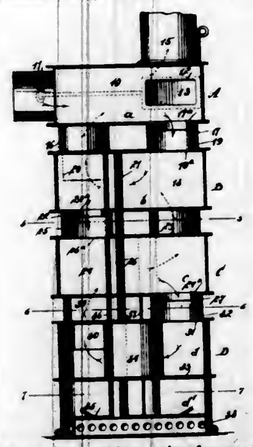
607,705. BUGGY-TOP SIDE LIGHT. GEORGE J. QUIMBLER, Brookline, and GEORGE W. MCNEAR, Auburndale, Mass. Filed May 14, 1898. Serial No. 680,726. (No model.)



Claim.—The herein-described folding buggy or carriage top consisting of a flexible hood, a series of pivoted bows connected thereto, one of said bows being divided and having secured to it a side-light frame containing a transparent side light, substantially as and for the purpose set forth.

607,706. HEATING-DRUM. CLAYTON M. RICHARDSON, Toronto, Canada. Filed Nov. 19, 1897. Serial No. 659,131. (No model.)

Claim.—1. In a heating-drum, the combination, with a series of sections, and means, substantially as described, for introducing heat into the upper section of the drum and conducting it to the lower sections, of return-pipes for the heated air and connecting said sections, each return-pipe from an upper section extending within the next lower section, forming a pocket, and an outlet-pipe having a pocket-section within the upper drum-section, as specified.



2. A heating-drum comprising a series of compartments arranged one above the other and connected together, the compartments with the exception of the lower compartment being divided into subcompartments by vertical partitions, one of which is provided with a valve, the lower compartment being provided with a partition extending only partially across the same, substantially as described.

3. A heating-drum comprising a series of compartments one above the other and connected together, the compartments being divided into subcompartments by vertical partitions with the exception of the lower compartment, and air-pipes extending through the lower compartment and through the next compartment above, said air-pipes having their outlets between compartments so as to discharge heated air under the bottom of compartments, substantially as described.

4. A heating-drum comprising a series of detachable sections, each section with the exception of the lower section being divided into compartments by vertical partitions, corresponding compartments of the divided sections being connected, all of the compartments being connected with the lower section, a cut-off valve for the outlet of the drum, and a direct-draft valve in the partition of the upper drum section, substantially as described.

5. The combination, with a drum comprising a series of connected sections, one above the other and provided with spaces between sections, one of said sections having an inlet for products of combustion and a flue connection, of flues arranged for the passage of air, each flue passing through sundry of the sections, the fine-outlets being between sections of the drum, for the purpose specified.

6. A heating-drum comprising a series of compartments, one above the other and connected together, the compartments being divided into subcompartments by means of vertical partitions except the lower compartment in which the partition is horizontal, the lower subcompartment having air-vents, air-pipes extending from the bottom of the drum through various compartments, having outlets between the compartments, and a tubular partition or jacket extending through the upper subcompartment of the lower compartment, substantially as described.

7. A heating-drum, comprising a series of sections, means for introducing heat into the upper section and conducting it to the lower sections, and return-pipes for the heated air and connecting said sections, each return-pipe from an upper section extending downwardly into the next lower section, forming a pocket, substantially as described.

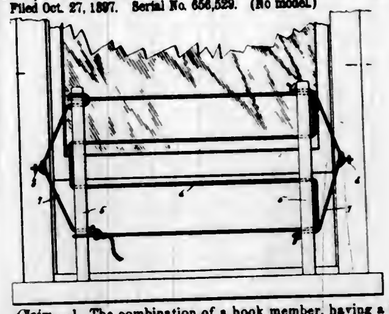
8. A heating-drum, comprising a series of superposed connected sections, and air-flues each extending through the lower compartment and through the next compartment above, substantially as described.

9. A heating-drum, comprising a series of superposed connected sections, and air-flues each extending through the lower compartment and through the next compartment above, said flues terminating between different compartments so as to discharge heated air at different heights, substantially as described.

10. A heating-drum, comprising a series of superposed connected sections, a tubular partition or jacket located in the lower section, and air-flues extending upwardly through said jacket, substantially as described.

11. A heating-drum, comprising a series of superposed connected sections, the lower section being provided with a partition dividing it into an upper and a lower subcompartment, a tubular partition or jacket located in the upper subcompartment, and air-flues extending upwardly through the lower subcompartment and through said jacket, substantially as described.

607,707. WINDOW-GUARD. JOHN L. SCHARFF, Reading, Pa. Filed Oct. 27, 1897. Serial No. 656,529. (No model.)



Claim.—1. The combination of a hook member, having a hook proper and an eye, and a lock sliding on the hook member and capable of closing the open end of the hook, and also having an eye, the eye of the lock being juxtaposed to the eye of the hook member.

2. The combination of a hook member, and a lock sliding thereon, the lock having an eye capable of receiving a line in connection with the hook member.

3. In a window-guard, the combination of a post, a bridle attached thereto, a hook member having connection with the bridle by means of a loop therein, and a lock sliding on the hook member and having an elongated eye through which the loop of the bridle is passed.

607,708. LEAD-PENCIL. GOTTHELF M. SKIDEL, Easthampton, Mass. Filed Oct. 7, 1897. Serial No. 654,380. (No model.)



Claim.—1. A lead-pencil, comprising a casing formed as a tube, one end of which is open and adapted to receive an ordinary pencil, rubber or the like, and the other end being provided with a head having multiple openings therein, each adapted to accommodate a lead, said head having inclined guide-surfaces and slides moving on said guide-surfaces and adapted to lock or free the leads.

2. A lead-pencil, comprising a tube forming a casing, a multiple-chambered lead-holder adapted to be held in the casing, a cap fitting over one end of the casing and having a conical or tapering outer surface and longitudinal slots therein corresponding to the lead-chambers in the holder, and lead-locking slides fitting in said slots.

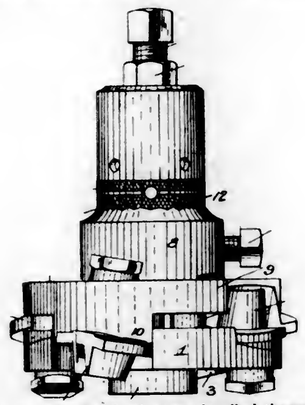
3. A lead-pencil comprising a casing formed with a series of longitudinal chambers each adapted to contain a lead, a head secured on the said casing, having guideways with inclined surfaces, and a slide on each guideway, adapted to engage a lead, to lock the same in place, substantially as shown and described.

607,709. CUTTER-HEAD. SAMUEL J. SHIMER, Milton, Pa. Filed Jan. 21, 1898. Serial No. 667,477. (No model.)

Claim.—1. In a rotary cutter-head of the character described, the combination with the lower section comprising the tubular shaft provided with radial flanges formed with bit-seats countersunk below the upper face of said flanges, of the upper section comprising the hub with flanges corresponding with the flanges of the lower section and formed with depending bosses interlocking with the flanges of the lower section and provided with bit-seats, the construction being such that the bit-seats are always below the dividing-space of said sections, substantially as described.

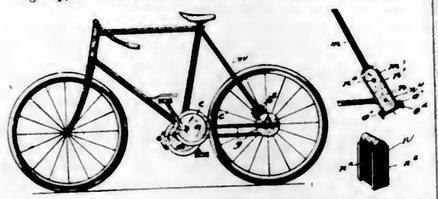
2. In a rotary head of the character described, the combination with the upper section, the lower section, comprising the tubular shaft provided with radial flanges and bit-seats, the said tubular shaft formed in its top with a central screw-threaded opening and with a recess eccentric thereto, the top screw passing through said

opening and provided with a nut, the screw-threaded cap having a central opening through which said top screw also passes and an opening registering with said eccentric recess, and the key-ring interposed between said cap and the nut of the top screw, provided with a depending pin extending into the eccentric opening and recess to lock said cap in position upon the said tubular shaft, substantially as specified.



3. In a rotary head of the character described, the combination with the upper section comprising the hub corrugated at the upper end and the radial flanges, of the lower section comprising the tubular screw-threaded shaft formed with a central screw-threaded opening in the upper end and a recess eccentric thereto, the screw-cap provided with a central opening and an eccentric opening registering with said recess, and the key-ring provided with a depending pin engaging with said eccentric opening and recess, and means for holding said key-ring in place, substantially as specified.

607,710. **CHAINLESS BICYCLE.** WILLIAM T. SHRYOCK, Allegheny, Pa. Filed Nov. 30, 1897. Serial No. 660,201. (No model.)

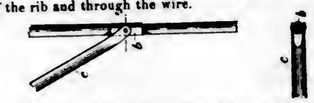


Claim.—1. In a driving mechanism for bicycles and the like, the combination of a pair of eccentrics mounted upon the crank-axle, a hinged band engaging said eccentrics; a disk mounted on each end of the driving-axle, each disk having a boss formed on its face, a gear-wheel mounted on said boss, braces *m*, terminating at their lower ends in jaws, adjustable blocks, longitudinal grooves formed in two sides of said blocks, said grooves being adapted to receive the jaws of the brace *m*, axles extending transversely through said blocks, gear-wheels mounted on said axles, clips secured to the lower ends of said jaws whereby the blocks are held in position, substantially as described.

2. In a driving mechanism for bicycles and the like, the combination of the pair of eccentrics mounted upon the crank-axle, and secured to each end of the driving-axle, connections between the eccentrics and the disks, a boss formed on the inner face of each disk, a gear-wheel mounted on each of said bosses, braces *m*, terminating at their lower ends in jaws, blocks *n*, and *n'*, longitudinal grooves n^2, an axle n^3, extending transversely through the block *n*, intermediate gears mounted on each end of said axle, the driving-axle extending transversely through the block *n'*, gear-wheels *l*, mounted on the hub of the rear wheel, said intermediate gears transmitting motion to the rear wheel, a clip secured to the jaws whereby the blocks *n* and *n'*, are held in position, all parts being arranged and operating substantially as described and for the purpose herein set forth.

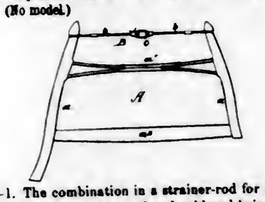
607,711. **UMBRELLA, PARASOL, &c.** JOHN SIMPSON, Sheffield, England. Filed Jan. 3, 1898. Serial No. 665,446. (No model.)

Claim.—1. A trough-rib having inclosed within it at the point where its stretcher is to be jointed to it a short length of wire and having a hole for the joint-pin pierced through the center of this portion of the rib and through the wire.



2. A trough-rib having within it at the point where its stretcher is to be jointed to it a short length of wire and having the sides of the trough squeezed together against the central portion of the length of the wire and turned over so as to inclose it and also having a strip of thin sheet metal around such narrowed portion to make this part of the rib of the same width as the remainder of the rib and also having a hole for the joint-pin pierced through the center of the portion of the rib so made solid.

607,712. **STRAINER-ROD FOR WOOD-SAWS.** WILLIAM SMITH and EDWIN F. SHAW, Philadelphia, Pa., assignors to the Henry Disston & Sons, Incorporated, same place. Filed July 14, 1897. Serial No. 644,513. (No model.)

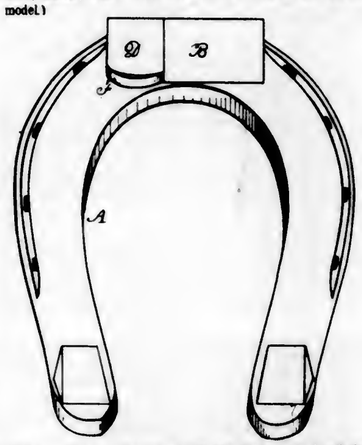


Claim.—1. The combination in a strainer-rod for wood-saws, of a rod having a reduced and flattened end, said end being bent to form a loop, with the flattened portion on the inside, the other end of the loop being bent and resting against the rod, with a sleeve confining the free end of the loop to the rod, and means for preventing the free end of the loop being drawn out of the sleeve, substantially as described.

2. The combination in a strainer-rod for wood-saws, of a rod having a reduced and flattened end, the end being bent so as to form a loop with the flattened portion on the inside, a projection on one portion of the rod and a recess in the other so that the projection will fit in the recess when the rod is bent, with a sleeve confining the free end to the rod and the projection within the recess, substantially as described.

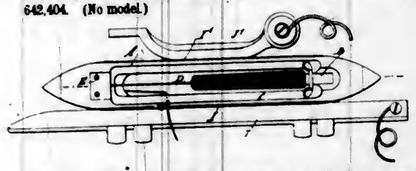
3. The combination in a strainer-rod for wood-saws, of a round rod reduced at one end so as to form a flattened surface on the inside, a loop formed by bending the flattened end of the rod some distance away from the round portion leaving a flat section against which the free flattened end of the rod is clamped, a projection on one part entering the recess on the other part, with a confining-sleeve, substantially as described.

607,713. **HORSESHOE.** DANIEL SOMRATY and ALEXANDER SOMRATY, Euclid, Ohio. Filed Dec. 2, 1897. Serial No. 660,562. (No model.)



Claim.—The combination with the horseshoe A, of the sharp-edged calk E having a screw-threaded lug C near one end and the eye F at the other end, and the bolt D having the sharp-edged head, for securing the part B to the shoe A, substantially as described.

607,714. **ELECTRIC STOP-MOTION FOR LOOMS.** ALEJANDRO STEPHENS, Guadalajara, Mexico. Filed June 26, 1897. Serial No. 642,404. (No model.)



Claim.—1. The combination with a shuttle provided at one end with two eyes at right angles to each other, and a guide-recess between them, of a loose disk arranged in said recess and guided thereby, and provided with an aperture through which the shuttle-thread is adapted to be passed to support and hold the disk, and contact arms or plates in the shuttle and with which the said disk contacts when the thread breaks, substantially as described.

2. The combination with the lay, and a stop-lever provided with a projection, of an electric circuit containing an electromagnet, a swinging armature lever carried by the lay and adapted to be moved into the path of the projection on the stop-lever when the electromagnet is energized, a shuttle provided with two eyes at right angles to each other and a guide-recess between the eyes, contact-plates in the shuttle, and a loose disk in the said recess of the shuttle and provided with an aperture to receive the thread by which it is supported out of contact with the contact-plates, substantially as described.

3. The combination with the lay having an aperture therein, and a stop-lever provided with a pin adapted to enter the aperture of the lay, of an electric circuit containing an electromagnet, a swinging armature-lever carried by the lay and adapted to be swung by the electromagnet over the aperture in the lay to prevent the pin of the stop lever from entering the said aperture, a shuttle provided with two eyes at right angles to each other, and a recess between the eyes, contact-plates in the shuttle, and a loose disk in the said recess and provided with an aperture to receive the thread by which it is supported out of contact with the said plates, substantially as described.

4. In an electric stop-motion for looms, the combination with a shuttle and contact-plates therein, of an eyeplate in the shuttle and having a segmental offset on its rear face, and a loose disk forming a circuit-breaker, and provided with a central aperture through which the shuttle-thread passes to support said disk, substantially as described.

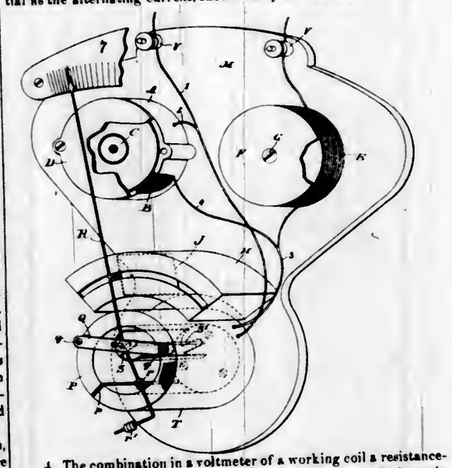
5. The combination with the lay having an aperture, a stop-lever provided with a pin, contact-plates on the shuttle-race connected with a source of electric supply, and an electric magnet in the circuit, of a swinging armature-lever for the electromagnet, said lever being adapted to be swung over the aperture of the lay to prevent the pin of the stop-lever from entering the same, a shuttle provided with two eyes at right angles to each other and a recess between the eyes, contact-arms in the shuttle, conductors on the outside of the shuttle and connected with said contact-arms, said conductors being adapted to make contact with the plates on the shuttle-race, and a loose apertured disk supported in the recess in the shuttle by the shuttle-thread out of contact with the said arms, substantially as described.

607,715. **VOLTMETER.** JOHN F. STEVENS, Philadelphia, Pa. Filed Apr. 22, 1897. Renewed May 4, 1898. Serial No. 679,733. (No model.)

Claim.—1. The combination in voltmeters of a working coil, and a resistance coil in shunt with said working coil, the ratio of the resistance of the shunt-coil to the resistance of the working coil, being by that much less than the ratio of the impedance of the shunt coil to the impedance of the working coil, that the field of force produced by the working coil will be substantially the same, within the usual limits of measurement, at the passage of an alternating current as at the passage of a direct current of the same potential as the alternating current, substantially as described.

2. The combination in a voltmeter of a working coil, and a resistance-coil connected in shunt across the terminals of the working coil said resistance-coil being provided with means for increasing the impedance in greater proportion than the resistance substantially as described.

3. The combination in a voltmeter of a working coil electrically connected to the terminals of the meter a non-inductive resistance introduced between one of the terminals and the working coil a shunt-coil electrically connected to the terminals of the working coil, the ratio of the resistance of the shunt-coil to the resistance of the working coil being by that much less than the ratio of the impedance of the shunt-coil to the impedance of the working coil, that the fields of force produced by the working coil will be substantially the same, within the usual limits of measurement, at the passage of an alternating current as at the passage of a direct current of the same potential as the alternating current, substantially as described.

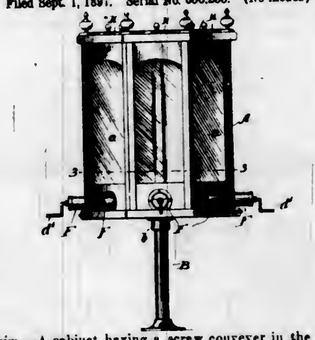


4. The combination in a voltmeter of a working coil a resistance-coil, connected in shunt across terminals of the working coil, the ratio of the impedance of the shunt-coil to the impedance of the working coil being sufficiently greater than the ratio of the resistance of the shunt-coil to the resistance of the working coil to cause the field of force within the working coil to be substantially of the same strength at the passage of an alternating current of a certain potential as at the passage of a direct current of the same potential, and a non-inductive resistance interposed in the instrument substantially as described.

5. In a voltmeter a resistance-coil connected in shunt across the terminals of the working coil and provided with a core and casing of iron which forms a magnetic circuit the amount of iron being sufficient not to be saturated by the current passing through the instrument substantially as described.

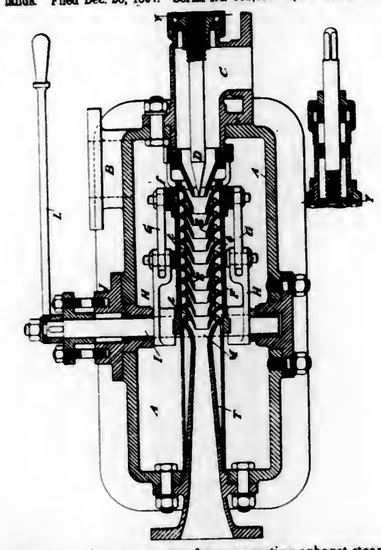
6. In a voltmeter a working coil, vane, needle, and counterpoise: the latter being bent near the bottom and having thereon two weights adjustable upon said counterpoise one being mounted upon either side of the bend in the counterpoise substantially as described.

607,716. **SPICE-CABINET.** CHARLES M. STEVENSON, Harvard, Ill. Filed Sept. 1, 1897. Serial No. 650,233. (No model.)



Claim.—A cabinet having a screw conveyer in the lower part thereof, a cylindrical discharge-spout inclosing the delivery end of the screw conveyer, a sector shaped valve-opening in the lower part of the front end of said discharge-spout, a valve of corresponding shape pivoted centrally upon the end of said discharge-spout, a handle extending from the screw conveyer outside of the cabinet and an agitator operated by said handle in the front end of the discharge-spout and provided with a series of radial wings adapted to c. owd the contents through the discharge-opening: substantially as described

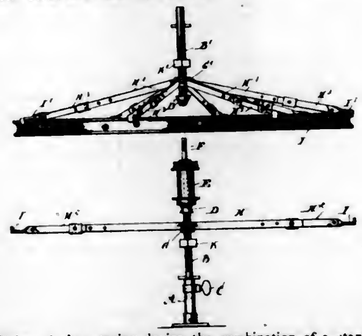
607,717. **MEANS FOR REGENERATING STEAM AS A WORKING FLUID.** HIERONIMUS VAN HEUMEN, Hof van Delft-by-Delft, Netherlands. Filed Dec. 20, 1897. Serial No. 662,627. (No model.)



Claim.—1. In an apparatus for regenerating exhaust-steam, the combination with the steam-chamber into which the exhaust steam is caused to enter, of an injector located within said steam chamber and provided with a plurality of inlets for the entrance of exhaust-steam, a sleeve adapted to slide over said injector and arranged to cover the inlet-openings therein as desired, a rotary shaft journaled in the steam-chamber and provided with means for operating it, and a linked connection between said shaft and sleeve whereby the latter is moved during the movement of the shaft.

2. In an apparatus for regenerating exhaust-steam, the combination with the steam-chamber into which the exhaust-steam is caused to enter, of an injector located within said steam-chamber and provided with a plurality of inlets for the entrance of the exhaust-steam, said injector being arranged to convey superheated steam therethrough, a sleeve arranged to slide over said injector and cover the openings therein as desired, a rotary shaft journaled in the steam-chamber, a handle fixed to one end of said shaft, arms projecting outward from said shaft, and link connections between said arms and sleeve, as and for the purpose described.

607,718. **TRUING DEVICE.** GEORGE WAGNER, St. Paul, Minn., assignor to himself and Henry J. Hadlich, same place. Filed Jan. 3, 1898. Serial No. 665,323. (No model.)



Claim.—1. In a truing device, the combination of a standard forming a support, a threaded spindle mounted in the standard and projecting upward therefrom and having a bearing at its top, a rod carried by the threaded spindle and projecting upwardly above the bearing, a second threaded spindle carried on the upper end of the rod and having a bearing at its lower end, a nut screwing on each spindle, and braces carried by the nuts and extending outward therefrom.

2. In a truing device, the combination of a support, a threaded spindle carried vertically thereon, a nut screwing on the threaded spindle, braces pivotally mounted on the nut and projecting radially therefrom, a rod carried at the upper end of the spindle and projecting above the same, a second threaded spindle carried on the upper portion of the rod, a nut working on the second threaded spindle, and braces pivotally connected to the second nut and projecting radially therefrom.

3. In a truing device, the combination of two threaded spindles, a rod connected with each and extending between the same, the rod serving to carry the hub of the wheel, a bearing carried at the inner end of each spindle, the bearings serving to engage the said hub of the wheel, and braces carried on each spindle to coact with the rim of the wheel.

4. In a truing device, the combination of two spindles, a rod connecting the spindles, a bearing carried at the inner end of each spindle, braces adjustably carried on each rod and projecting radially therefrom, extensions respectively for the braces by which to adjust the length thereof, and attaching devices carried by the extensions and adapted to engage with the rim of the wheel.

5. In a truing device for vehicle-wheels, the combination of a threaded spindle, a second threaded spindle longitudinally alined with the first spindle, the spindles being adapted to engage the respective ends of the hub of the wheel, and braces carried on each spindle and strained thereby, whereby to coact with the rim of the wheel.

6. In a truing device for vehicle-wheels, the combination of a threaded spindle, a second threaded spindle longitudinally alined with the first spindle, the spindles being adapted to engage the respective ends of the hub of the wheel, a nut working on each threaded spindle, and braces carried by each nut to coact with the rim of the wheel.

7. In a truing device for vehicle-wheels, the combination of two threaded spindles longitudinally alined with each other and adapted to engage the respective ends of the hub of the wheel, and braces carried on each threaded spindle and strained thereby, the braces having attaching devices at their outer ends and said devices engaging the outside of the rim of the wheel.

607,719. **PROCESS OF RECOVERING PRECIOUS METALS FROM THEIR SOLUTIONS.** MARTIN R. WALDSTEIN, New York, N. Y., assignor of two-thirds to Joseph R. de la Mar, same place. Filed Mar. 9, 1896. Serial No. 582,457. (Specimens.)

Claim.—1. The process of extracting precious metals from cyanid solutions, which consists in treating said solutions with zinc-dust, to wit the herein-described material, composed of zinc and zinc oxid, in a state of agitation substantially as described.

2. In the process of extracting precious metals from cyanid solutions, the use as a precipitating reagent of a definite quantity of zinc-dust in a state of agitation, the quantity of said zinc-dust being supplied in only a sufficient quantity to thoroughly precipitate the contained metals, substantially as described.

3. The process for extracting and recovering precious metals from their ores, and which consists essentially of the following steps; first subjecting the ore in a powdered state to the action of an aqueous solution of a cyanid; second supplying to the solution charged with the precious metals that quantity of zinc-dust, determined to be exactly sufficient to precipitate said metals; third agitating said solution and said zinc-dust until said metals are precipitated and said zinc-dust is absorbed; fourth recovering the precious metals from the valuable precipitate of the preceding step by filtration, or other process, substantially as described.

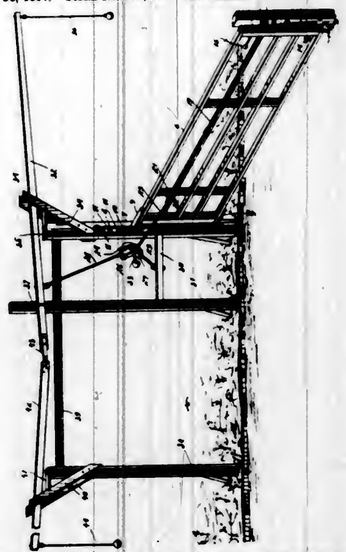
607,720. **BALL-CASTER.** BRUNO WERKELMANN, Göttingen, Germany. Filed Dec. 3, 1896. Serial No. 614,326. (No model.) Patented in Germany Nov. 6, 1896, No. 93,169, and in England Nov. 20, 1896, No. 26,223.



Claim.—As a new article of manufacture the herein-described furniture-caster consisting of a shell formed from a single piece of metallic tubing, a rotatable support arranged and retained therein, a round bearing-plate arranged in said tubing above the rotatable support and provided upon its periphery with a groove, a ball-spacing plate loosely arranged in said tubing between the bearing-plate and the rotatable support, antifriction-balls arranged in the recesses of said spacing-plate and having a rolling bearing on the rotatable support and bearing-plate, said tubing being pressed into the groove in the periphery of the bearing-plate to rigidly fix and hold the latter against

end thrust, and the upper end of the tubing being extended above the said groove and constructed for attachment to an article of furniture, for the purpose specified.

607,721. **GATE.** WILLIAM A. WHITCOMB, Downs, Ill. Filed Sept. 30, 1897. Serial No. 653,601. (No model.)



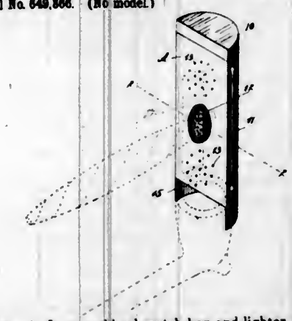
Claim.—1. The combination of a post, a gate swinging on the post, a rod connected to the gate, a cross-bar rigid with the post, a rod pivoted to the cross-bar, a lever swinging on the post, a rod pivoted to the lever, each rod having a clevis, and the clevises being pivoted to each other, and a weighted rod mounted to swing on one clevis and bearing against the pivot of the clevises.

2. The combination of a plurality of movable rods each having a clevis, a pivot joining the clevises and a weighted rod mounted to swing on one clevis and bearing against the pivot.

3. The combination of a plurality of movable members joined to each other on a common pivot and a weight mounted to swing on one member and exerting its pressure against the pivot.

4. The combination of a support, a gate hinged thereon, a rod connected to the gate, a rod pivoted to the support, an operating-lever, a rod pivoted to the operating-lever, the three rods being pivoted to each other, and a weight mounted to swing on one rod and exerting its pressure against the pivot.

607,722. **COMBINED MATCH-BOX AND CIGAR OR PIPE LIGHTER.** CHARLES WILSON, Newport, Ky. Filed Aug. 28, 1897. Serial No. 649,866. (No model.)

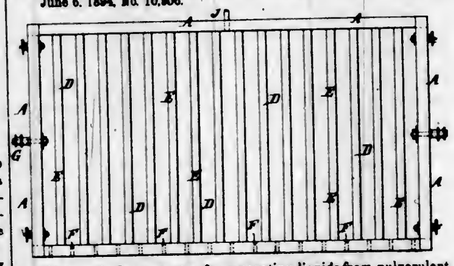


Claim.—1. In a combined match box and lighter, an outer casing provided with openings in its wall, and an inner casing of fireproof material the said inner casing forming a central lighting-chamber open at its bottom and having openings corresponding to the openings in the outer casing, the said chamber being provided with a roughened surface, a portion of the wall of the inner fireproof casing being spaced from the outer casing, for the purpose set forth.

2. The combination with an outer casing having an apron at its lower end and provided with a slot in one side for the introduction of a match, the said casing being provided with an opening at or near the center of the front wall for the introduction of the material to be lighted and also provided with ventilating-openings above and below said central opening, of an inner casing formed of asbestos, the said inner casing at the back and sides forming a series of pockets with the back and sides of the outer casing, the inner casing forming a chamber in communication with the slot in the side of the outer casing and the openings in the front wall thereof, as and for the purpose specified.

2. The combination, with a box semicircular or oval in cross-section, provided with a slot in its side and an opening for the introduction of material, together with ventilating-openings made in its front surface, the sides and back of the box extending below the front portion, forming a shield, of an asbestos lining located within the main casing and forming an inner casing, that portion of the asbestos lining opposite the back and side surfaces of the outer casing being corrugated to form a series of pockets adapted to hold matches, a bottom being provided for said pockets, and the said lining or casing also forming a main chamber which is in communication with the openings in the outer casing, which main chamber is uncovered at its bottom, for the purpose specified.

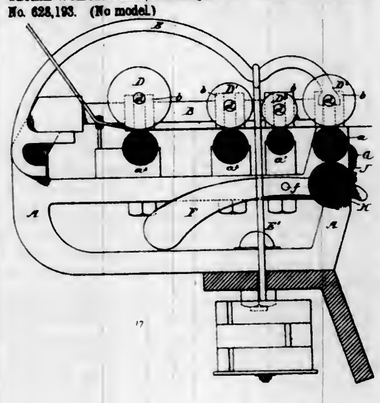
607,723. **APPARATUS FOR SEPARATING LIQUIDS FROM GRANULAR MATERIALS.** ROBERT WILSON, Govan, Scotland. Filed Dec. 10, 1897. Serial No. 661,388. (No model.) Patented in England June 6, 1894, No. 10,956.



Claim.—1. In apparatus for separating liquids from pulverulent or granular materials, seeds and the like, a series of open frames A, provided with cross-bars E and diaphragms B, the said frames being arranged in pairs to form a space C between the diaphragms of each pair, in combination with inlets J to such spaces C, all substantially as described.

2. In apparatus for separating liquids from pulverulent or granular materials, seeds and the like, a series of frames provided with diaphragms and arranged in pairs to form spaces between the diaphragms, with inlets to the spaces and means for latching the two frames of each pair together, on removal from the apparatus, as and for the purpose described.

607,724. **SHIELD OR DEFLECTOR FOR DRAWING-ROLLERS.** THOMAS WOLSTENHOLME, Philadelphia, Pa. Filed Mar. 18, 1897. Serial No. 628,193. (No model.)



Claim.—1. The combination in a spinning-machine, of a pair of drawing-rollers and an under-cleaner in contact with the lower drawing-roller, with a sharp-edged bar mounted in front of but not touching the lower roller, and so located with respect to the lower drawing roller that its sharp edge is substantially in a horizontal plane passing through the center of said drawing-roller, and serving as a shield or deflector whereby the loose fibers or strands from the partially-twisted yarn emerging from between the rollers are directed away from the periphery of the lower drawing-roller, substantially as described.

2. The combination in a spinning-machine, of a pair of drawing-rollers and an under-cleaner in contact with the lower drawing-roller, with a sharp-edged bar having a straight inner face and a curved outer face, said bar being mounted vertically in front of but not touching the lower drawing-roller, and so disposed with relation to the said drawing-roller that its sharp edge is substantially in a horizontal plane passing through the center of the lower drawing-roller, and serving as a shield or deflector whereby loose strands from the partially-twisted yarn emerging from between the rollers are directed away from the periphery of the lower drawing-roller, substantially as described.

3. The combination in a spinning-machine, of a pair of drawing-rollers, and an under-cleaner in contact with the lower drawing-roller, with a sharp-edged bar having a smooth outer face mounted vertically in front of but not touching the lower drawing-roller and having its upper edge closest to the periphery of said lower roller and disposed substantially in a horizontal plane passing through the center of said lower roller, so as to deflect loose fibers or strands away from said periphery, substantially as described.

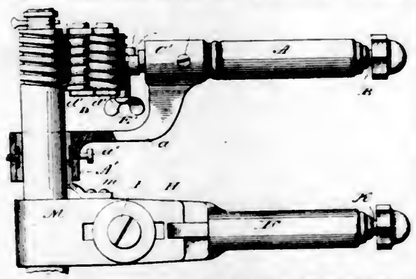
4. The combination in a spinning-machine, of a pair of drawing-rollers, an under-cleaner, bearings for the same, weighted levers carrying the under-cleaner for keeping it in contact with the lower drawing-roller, and a bar carried by the outer ends of the weighted levers and disposed in front of the lower drawing-roller and serving as a shield or deflector whereby loose strands from the partially-twisted yarn emerging from between the rollers are directed away from the periphery of said lower roller, the contact of said under-cleaner with the lower drawing-roller serving to limit the approach of the bar toward the same, substantially as specified.

607,725. NUT-LOCK. WARREN H. WORST and CHARLES W. HART, Nova, Ohio. Filed May 14, 1897. Serial No. 636,563. (No model.)



Claim.—In combination with a bolt and nut of a split ring or washer, of relatively less diameter than the bolt and having one side of its inner edge beveled to form the edge 3 in the same plane with the opposite plain side 3× of the ring thus adapting the latter to closely abut the nut.

607,726. PIPE-THREADING IMPLEMENT. CHARLES A. BAILEY, Cromwell, Conn. Filed Feb. 19, 1898. Serial No. 670,929. (No model.)



Claim.—1. In an implement for threading soft-metal pipe, the combination of a lever revoluble around the pipe, a yoke or bracket carrying two rolls or dies, and means for securing said yoke or bracket adjustably with respect to the lever, substantially as shown and for the purpose set forth.

2. In an implement for threading soft-metal pipe, the combination, of a lever revoluble around the pipe, a carrier adjustable therein, a yoke or bracket carrying two rolls said rolls having spiral ribs pitched in opposite directions, and means for adjusting the yoke or bracket upon the adjustable carrier, substantially as shown and for the purpose set forth.

3. In an implement for threading soft-metal pipe, the combination, of a lever revoluble around the pipe, a carrier adjustable in said lever, a yoke or bracket carrying two rolls having spiral ribs pitched in opposite directions, a projection on the yoke or bracket presenting angular corners adapted to engage an angular recess in the carrier, and means for holding the parts adjusted, substantially as shown and for the purpose set forth.

4. A holder for the purpose set forth, comprising a lever and a flexible metal strap secured to the end of said lever and formed into a binding-coil, the free end of the strap having teeth, substantially as shown and described.

5. A holder for the purpose set forth, comprising a lever, a flexible metal strap secured to the end of said lever and formed into a binding-coil, a slide engaging the binding-coil, and means for holding the adjustment of the slide, substantially as shown and described.

6. A holder for the purpose set forth, comprising a lever, a flexible metal strap secured to the end of said lever and formed into a binding-coil, a slide engaging the binding-coil, and a screw adjusting said slide, substantially as shown and described.

7. A holder for the purpose set forth, comprising a lever, a flexible metal strap secured to the end of said lever and formed into a binding-coil, a slide engaging the binding-coil, a screw adjusting said slide, and means for holding the adjustment, substantially as shown and described.

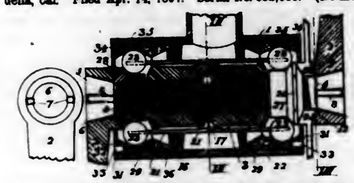
8. A holder for the purpose set forth, comprising a lever, a flexible metal strap secured to the end of said lever and formed into a binding-coil, a slide engaging the binding-coil, a screw adjusting the slide, and a bolt passed through the slide and lever, the bolt also clamping the strap to the lever through the intervention of a plate, substantially as shown and described.

9. A holder for the purpose set forth, comprising a lever, a flexible metal strap secured to the end of said lever and formed into a binding-coil, a slide engaging the binding-coil, and means for holding the slide adjusted, together with a bearing-ring carried by the lever, substantially as shown and described.

10. In combination, a holder for the purpose set forth, comprising a lever, a flexible metal strap secured to the end of said lever and formed into a binding-coil, means holding the coil wound upon the pipe, and a bearing-ring carried by the lever; together with a lever carrying a spirally-ribbed roll, and a ring on the last-mentioned lever bearing upon the ring of the other lever, substantially as shown and described.

11. In combination, a holder for the purpose set forth, comprising a lever, a flexible metal strap secured to the end of said lever and formed into a binding-coil, means holding the coil wound upon the pipe, and a bearing-ring carried by the aforesaid lever, the bearing-ring having a peripheral groove; together with a lever carrying a spirally-ribbed roll, a ring secured to said lever or formed integrally therewith, and set-screws passing through said ring into the same, substantially as shown and described.

607,727. BICYCLE HUB AND BEARING. JOHN BAKER, Pasadena, Cal. Filed Apr. 14, 1897. Serial No. 632,100. (No model.)



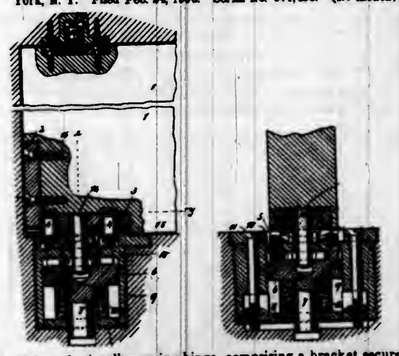
Claim.—1. In a crank-hub for bicycles the combination of the hub proper, suitable bearings therein, a sleeve within the hub, a locking-key within the sleeve, said locking-key having a central annular groove, lugs on the locking-key, and recesses on the inner ends of the crank-axle which engage said lugs, and means for engaging the annular groove substantially as set forth.

2. In a crank-hub for bicycles the combination of the hub proper having suitable bearings, a sleeve having an internal right and left screw-thread, a key within the sleeve having a peripheral groove and lugs on its faces, a divided axle having recesses into which the lugs extend, a hole extending into the hub and through the sleeve whereby a pin may be inserted to hold the locking-key from moving endwise, substantially as set forth.

3. In a crank-hub for bicycles, the combination with a divided axle, having cone-shaped sections on its outer ends facing toward the center of the axle, a locking-key, a sleeve having an internal right and left screw-thread and a crank having a tapering opening through it in which the cone-sections on the outer ends of the axle are adapted to be seated, means for clamping the crank on said cone-section, substantially as described.

4. In a bicycle-hub, the combination with a divided axle, cone-shaped sections integral with the outer ends of the same, facing toward the center of the axle, diametrically opposite beveled recesses in said cone-sections, a locking-key for the axle, of a crank having a tapering opening throughout it, and diametrically opposite beveled lugs in said tapering openings adapted to engage the recesses in said cone-sections and the cone-nuts 27 substantially as described.

607,728. ROLLER SPRING-HINGE. FRANK L. RARSICH, New York, N. Y. Filed Feb. 24, 1898. Serial No. 671,488. (No model.)



Claim.—1. A roller spring-hinge, comprising a bracket secured at the inner corner of the door, rollers journaled in said bracket, a box seated in the door-sill, a spring-raised plunger working in said box and having cam-surfaces projecting through the top thereof and on which said rollers travel, and a pivot-pin projecting downward from said bracket and working through an opening in the top of the box, substantially as described.

2. A roller spring-hinge, comprising a bracket secured at the inner corner of the door, rollers journaled in said bracket, a box seated in the door-sill, a plunger working in said box and having cam-surfaces projecting through the top thereof and on which said rollers travel, a spring located under the plunger and acting to press it upward, stops or pins projecting from the top of said box and a shoulder on the bracket adapted to contact with said stops or pins to limit the swing of the door in either direction, substantially as described.

3. A roller spring-hinge comprising a bracket secured at the inner corner of the door, rollers journaled in said bracket, a box seated in the door-sill, a plunger working in said box and having a head provided with cam-surfaces projecting through the top thereof and on which said rollers travel, and a spring interposed between said plunger-head and the bottom of the box and encircling the stem of the plunger, substantially as described.

4. A roller spring-hinge comprising a bracket secured at the inner corner of the door, rollers journaled in said bracket, a box seated in the door-sill having a movable bottom, a plunger working in said box and having a head provided with cam-surfaces projecting through the top thereof, and on which said rollers travel, and a stem working in an opening in the bottom of the box, a spring interposed between the plunger-head and the bottom of the box and encircling the stem of the plunger, and means for adjusting the height of the bottom of the box to vary the compression of said spring, substantially as described.

5. A roller spring-hinge comprising a bracket secured at the inner corner of the door, rollers journaled in said bracket, a box seated in the door-sill having an adjustable apertured bottom and an apertured top, a plunger working in said box and having a head provided with cam-surfaces projecting through the top thereof and on which said rollers travel and a stem working in the aperture in the bottom of the box, a spring interposed between the plunger head and the bottom of the box, a pivot-pin projecting from said bracket and working in the aperture in the top of the box, and a seat formed in the plunger-head to receive the lower end of said pivot-pin, substantially as described.

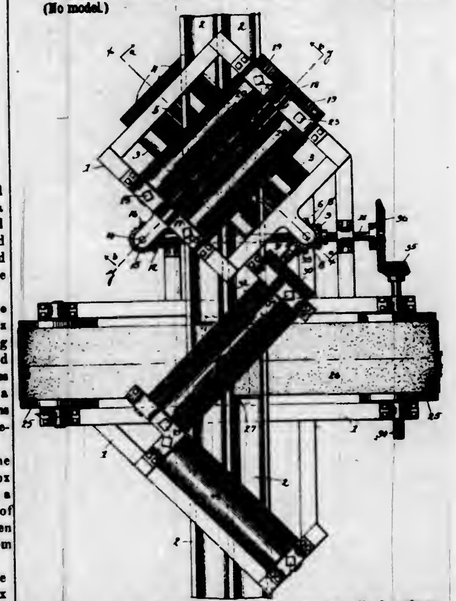
6. A roller spring-hinge comprising a bracket secured at the inner corner of the door, rollers journaled in said bracket, a box seated in the sill having an adjustable bottom and provided with lateral chamber portions and having a laterally-extended plate above the level of the top, screws extended through said plate and housed in said chamber portions and supporting the bottom of the box, and a plunger yieldingly supported on said bottom and having cam-surfaces projecting through the top of the box and on which said rollers travel, substantially as described.

607,729. HEEL AND TOE TIP. DANIEL A. BERRY, Northampton, England. Filed Sept. 23, 1897. Serial No. 652,681. (No model.) Patented in England Dec. 27, 1895, No. 24,784.



Claim.—A heel-tip for boots and shoes comprising the bar or strip bent to conform to the shape of the heel, said bar having a plurality of integral prongs extending from the inner lower edge of the strip, the inner upper edge of the strip having an inwardly-extending flange adapted to overlap the filling-piece to hold it in position, substantially as described.

607,730. POLISHING-MACHINE FOR BROOM-HANDLES. HUGH BERGENDRIDGE, Lynden, Wash. Filed Sept. 27, 1897. Serial No. 653,090. (No model.)

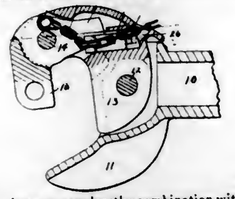


Claim.—1. In a machine of the character described, a frame, chutes arranged horizontally thereof, an abrading-belt adapted to travel at right angles to said chutes, frames mounted above and below said chutes at an acute angle thereto, presser-rolls journaled in sliding boxes in said frames and means for transmitting motion to the presser-rolls, substantially as described and shown.

2. In a machine of the character described, a frame, chutes arranged longitudinally thereof, an abrading-belt adapted to travel at right angles to the chutes, frames mounted above and below said chutes at an acute angle thereto and at right angles to each other, presser-rolls journaled in sliding boxes in the chutes, spring pressing said boxes toward the chutes, a shaft journaled beside each of said rolls, intermeshing gears on the ends of said rolls and the shaft adjacent thereto and means for rotating said shafts to act in unison, substantially as shown and described.

3. The herein-described combination of a suitable frame, two chutes arranged lengthwise thereof, two rolls journaled beneath said chutes and at forty-five degrees thereto, two rolls journaled above said chutes at forty-five degrees thereto and at right angles to the first-named rolls, suitable gearing for transmitting motion to both sets of rolls so as to cause them to act in unison, two drums journaled in extensions in the frame, an endless belt running over said drums, said belt being adapted to carry abrading material, means for transmitting power to the drums, a roll 28 journaled at forty-five degrees to the chutes and above the same, means for transmitting motion to the last-named roll, and a roll 29 also journaled at forty-five degrees to the chutes and above the same but at right angles to the roll 28, substantially as and for the purpose set forth.

607,731. CAR-COUPLING. PHILIP C. BROWN, New Albany, Ind., assignor of one-half to Joseph I. Irwin, Columbus, Ind. Filed May 10 1897. Serial No. 635,777. (No model.)



Claim.—1. In a car-coupler, the combination with the draw-head having a guard-arm, of a main knuckle pivoted on the draw-head in opposition to said guard-arm, the said knuckle having arms extending upon two sides of the pivot, one of said arms being arranged to be engaged by the opposing coupler so as to close the said knuckle, and a supplemental knuckle pivoted to the other arm of the main knuckle and forming a part of said main knuckle.

2. In a car-coupler, the combination with the draw-head having a guard-arm, of a main knuckle pivoted on the draw-head in opposition to said guard-arm, the said knuckle having arms extending upon two sides of the pivot, one of said arms being arranged to be engaged by the opposing coupler so as to close the said knuckle, a supplemental knuckle pivoted to the other arm of the main knuckle and forming a part thereof, and means for locking said supplemental knuckle to the main knuckle.

3. As an article of manufacture, a locking means for the knuckle of a car-coupler, the said means consisting of a swinging pin adapted to be engaged by the knuckle and swung backward by a closing movement thereof, and provided with a portion adapted to be engaged by said knuckle and thereby returned to its normal position by a continued closing movement of said knuckle.

4. As an article of manufacture, a swinging locking-pin 18, provided with the foot 23", adapted to be engaged by one arm of the knuckle thereby forcing the pin into position, substantially as shown and described.

5. In a car-coupler, the combination with the draw-head having a guard-arm, of a main knuckle pivoted thereon substantially in the line of draft, the said knuckle having arms extending upon two sides of the pivot, one of said arms being arranged to be engaged by the opposing coupler so as to close said knuckle, a supplemental knuckle pivoted to the other arm of the main knuckle to that side of the line of draft opposite the guard-arm, and means for locking said supplemental knuckle to the main knuckle.

6. In a car-coupler, the combination with the draw-head having a guard-arm, of a main knuckle pivoted thereon in opposition to said guard-arm, the said knuckle having arms extending upon two sides of the pivot, one of said arms being arranged to be engaged by the opposing coupler so as to close said knuckle, a supplemental knuckle pivoted to the other arm of the main knuckle and forming a part thereof, and a swinging pin mounted in the main knuckle, the said pin being so arranged that it may be engaged by one arm of the supplemental knuckle and first swung backward by a closing movement of said supplemental knuckle and then allowed to drop in front of said arm and thereby lock the supplemental knuckle to the main knuckle.

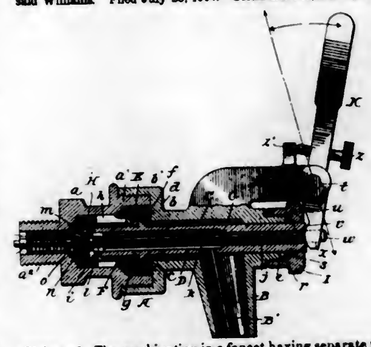
7. In a car-coupler, the combination with the draw-head, of a main knuckle pivoted thereon, a supplemental knuckle pivoted to and forming a part of the main knuckle, and a swinging pin mounted in the main knuckle, the said pin being provided with a portion which may be engaged by one arm of the supplemental knuckle and swung backward by a closing movement thereof, and being also provided with a portion adapted to be engaged by said supplemental knuckle and thereby returned to its normal position, substantially as described.

8. In a car-coupler, the combination with the draw-head having a guard-arm, of a main knuckle pivoted thereon substantially in the line of draft, the said knuckle having arms extending upon two sides of the pivot, one of said arms being arranged to be engaged by the opposing coupler so as to close said knuckle, a supplemental knuckle pivoted to the other arm of the main knuckle, to that side of the line of draft opposite the guard-arm, and forming a part thereof, and a swinging pin mounted in the main knuckle, the said pin being so arranged that it may be engaged by one arm of the supplemental knuckle and first swung backward by a closing movement of said supplemental knuckle and then allowed to drop in front of said arm and thereby lock the supplemental knuckle to the main knuckle.

9. In a car-coupler, the combination with the draw-head, of a main knuckle pivoted thereon substantially in the line of draft, a supplemental knuckle pivoted to and forming a part of said main knuckle, the pivotal point of said supplemental knuckle being to one side of the line of draft, and a swinging pin mounted in the main knuckle, the said pin being provided with a portion which may be engaged by one arm of the supplemental knuckle and swung backward by a closing movement thereof, and being also provided with a portion adapted to be engaged by said supplemental knuckle and thereby returned to its normal position by a further closing movement of said supplemental knuckle.

10. In a car-coupling, the combination with the draw-head, of a main knuckle pivoted thereon, a supplemental knuckle pivoted to and forming a part of said main knuckle, a swinging lock-pin mounted in the main knuckle, and a connection between said pin and supplemental knuckle, whereby the pin may first be withdrawn from engagement with the supplemental knuckle and a further movement of said pin will cause the supplemental knuckle to open.

607,732. SELF-CLOSING FAUCET. FRANK BURGER and HENRY M. WILLIAMS, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Filed July 23, 1897. Serial No. 645,716. (No model.)



Claim.—1. The combination in a faucet having separate passages therethrough, of a discharge-nozzle for each passage, valves and sliding stems therefor arranged one within the other, and means for operating the valves in succession by a movement in one direction, substantially as described.

2. The combination in a faucet having passages therethrough of different sizes, of a discharge-nozzle for each passage, valves and sliding stems therefor, and a pivoted operating-handle arranged to open the valves in succession by a movement in one direction, substantially as described.

3. The combination in a faucet having passages therethrough of different sizes, of a discharge-nozzle for each passage, valves and concentrically-arranged sliding stems therefor, a pivoted operating-handle arranged to open the valves successively by a movement in one direction, and means on the handle for maintaining it in position after adjustment, substantially as described.

4. The combination in a faucet having separate passages therethrough, of valves, concentrically-arranged stems for the valves, a pivoted handle for operating the valves, and an adjustable plug in the handle in line with one of the stems, substantially as described.

5. The combination in a faucet having separate passages therethrough, of valves, concentrically-arranged stems for the valves, an arm on the casing, a handle pivoted to the arm, a screw-plug in the handle in line with one of the stems, and a thumb-screw on the handle in position to engage said arm, substantially as described.

6. The combination in a faucet having two discharge-passages, of valves therefor, concentrically-arranged stems for the valves, a forked arm on the casing having a lug, a spade-handle pivoted to the arm, and a thumb-screw carried by the handle in line with said lug, substantially as described.

607,738. CURRYCOMB. JOHN CARDEN, Carpenteria, Cal. Filed Apr. 20, 1897. Serial No. 633,001. (No model.)



Claim.—1. In a currycomb, the combination with the comb body, and a rod disposed about centrally and secured to the end bars thereof and having an eye, of a back bearing a handle and having portions to engage with some of the toothed bars to retain it in place, and a fastening connecting the back and rod and passing through the eye of the latter and securing the handle to the comb, substantially as set forth.

2. In a currycomb, the combination with the comb-body, and a spring-rod disposed about centrally and secured to the end bars thereof and having an eye, of a back provided with a handle, and a fastening passing through the eye of the spring-rod and connecting the back to the comb and springing the said rod from a normal position, substantially as set forth.

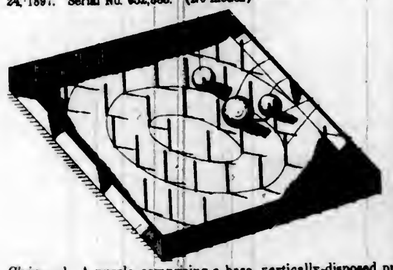
3. In a currycomb, the combination with the comb-body, and a rod applied thereto at a central point and having an opening or eye, of a cruciform plate bearing a handle and having the cross-bar formed at its longitudinal edges with ribs or projecting parts to embrace the sides of the intermediate toothed bars, and having the outer terminal of the shank-bar bent to engage with the outer toothed bar of the comb, and a fastening for connecting the plate with the aforesaid rod, substantially in the manner set forth.

607,734. SHIRT. SPENCER C. CHAMBERLIN, New Bedford, Mass. Filed Mar. 25, 1896. Serial No. 584,757. (No model.)



Claim.—In combination, a shirt having longitudinal slots at the terminals of its neckband, a stud loosely fitted in the slots to permit the neckband to automatically adapt itself to the size of the wearer's neck, a strap located wholly to one side of the neck-opening at all times and having the said stud secured thereto at its upper end, and a fastening pivotally and detachably connecting the lower end of the strap to the yoke, whereby the strap may be removed when laundering the shirt and will lie close against the shirt at all positions without puckering, and said fastening providing means for securing the yoke when closed, substantially as set forth.

607,735. PUZZLE. NED B. CRARY, Canisteo, N. Y. Filed Sept. 24, 1897. Serial No. 652,883. (No model.)



Claim.—1. A puzzle comprising a base, vertically-disposed projections thereon, spaced as described, and a series of balls, connected by flexible ligaments, and adapted to pass between certain of such projections and not between others, substantially as shown and described.

2. A puzzle, comprising the base, vertically-disposed projections thereon, and three movable objects or balls which are connected by flexible ligaments, one of the series being of greater diameter than the other two, and the spaces between the said projections being of different widths, as shown and described.

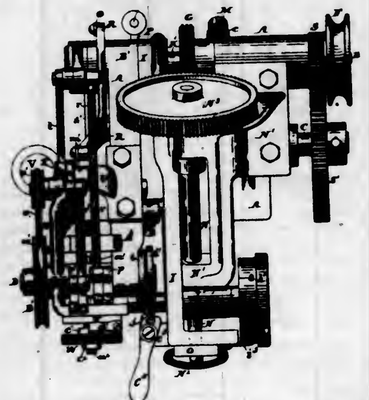
3. The puzzle, comprising the base, vertically-disposed pins thereon, which are arranged in concentric circles and spaced equidistantly, save at one point in the respective circles, a series of movable balls connected by flexible ligaments, one of such balls being of greater width than the spaces between the projections save at the point above specified, and the other ball or balls being of less width than any of the spaces between the pins, as shown and described.

4. A puzzle comprising a base, vertically-disposed projections thereon spaced as described, and a series of movable objects connected by ligaments, said objects being of different diameters, substantially as described.

5. A puzzle comprising a base, vertically-disposed projections thereon spaced as described, and a series of movable objects connected by ligaments, said objects being of different diameters, and the spaces between the projections being also of different widths, substantially as described.

607,736. SOLE-ROUGH-ROUNDING MACHINE. HANFORD T. CROSBY, Boston, Mass. Filed Dec. 18, 1897. Serial No. 662,365. (No model.)

Claim.—1. In a sole-rough-rounding machine the combination of a fixed frame; a cam-shaft mounted in bearings in said frame; a pair of right and left cams mounted upon said cam-shaft; means for automatically imparting intermittent semirotations to said cams; a cutter-carrying arm pivoted to said frame and movable about said pivot in a vertical plane; a revolnble eccentric mounted, or formed, upon a shaft fitted to a bearing in said cutter-carrying arm; a radius-arm pivoted at one end to said cutter-carrying arm, and resting at its other end upon said eccentric; a roll mounted upon a shaft having bearings in the movable end of said radius-arm and movable endwise therein; and means for moving said roll from a position beneath one of said cams to a position beneath the other of said cams.



2. In a sole-rough-rounding machine the combination of a fixed frame; the cam-shaft D mounted in said frame; the right and left cams *i* and *i'* mounted upon said shaft; a pawl-and-ratchet mechanism for intermittently moving said cam-shaft about its axis of motion to the extent of one-half a revolution; a cutter-carrying arm pivoted at its rear end to said frame and movable about said pivot; a stop to limit the downward movement of the front end of said arm; a revoluble eccentric-stop mounted in a bearing in said arm; the radius-arm d^1 pivoted to said cutter-carrying arm at one end and resting at its other end upon said eccentric; a hand-wheel for rotating said eccentric; a graduated scale and an index-finger as a guide in setting said eccentric; a roll mounted in the front end of said arm d^1; means for moving said roll in the direction of the length of its axis to positions beneath each of said cams alternately and means for raising the front end of the cutter-carrying arm to bring said roll into contact with said cams.

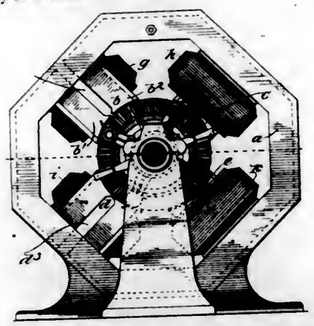
3. In a sole-rough-rounding machine, the combination of a fixed frame; a cam-shaft, and a feed-shaft mounted in bearings in said frame; a feed-disk mounted upon said feed-shaft; a pair of right and left cams mounted upon said cam-shaft; means for imparting a rotary motion to said feed shaft and disk; means for automatically imparting intermittent semirotations to said cams; the arm I pivoted to said frame at its rear end; a stop to limit the downward movement of the front end of said arm I; the bars K and L fitted to and movable endwise in bearings in the arm I; the cutter *a* carried by said bar K; the rolls *h h'* carried by the bar L; means for imparting a rapid reciprocation to the bar K and cutter *a*; means for imparting intermittent endwise movements to the bar L; the anvil-plate O; the revoluble eccentric *g'* carried by the arm I; the radius-arm d^1 pivoted at one end to said arm I, and resting at its other end upon the eccentric *g'*; the roll *j* carried by the free end of said arm d^1; and means for moving said roll *j* from a position beneath one of said cams to a position beneath the other of said cams.

607,737. DYNAMO-ELECTRIC MACHINE. ADOLF G. EICHER, St. Petersburg, Russia, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed May 7, 1898. Serial No. 679,994. (No model.)

Claim.—1. A field-magnet for dynamo-electric machines, said field-magnet being formed of separate complemental members joined together, each of said members having projections coöperating with the projections of another member to form complete polar projections, said members being separated to form slots in said polar projections, substantially as described.

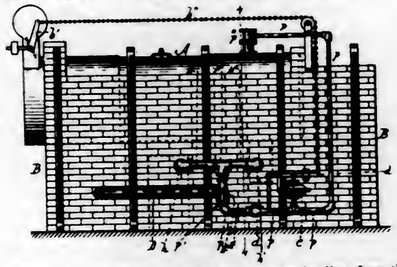
2. A multipolar field-magnet for dynamo-electric machines, said magnet being formed of two complemental members adapted to be joined together and magnetically separated from one another, each

of said members having projections adapted to coöperate with the complemental projections of the other member thereby to produce complete polar projections, the magnetic circuit of each of the polar projections thus lying partly in one member and partly in the other, substantially as described.



3. A field-magnet for dynamo-electric machines, said field-magnet being formed of separate complemental members joined together, each of said members having projections adapted to coöperate with similar projections on another member to form complete polar projections, said complemental members being magnetically separated from one another, substantially as described.

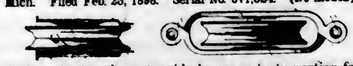
607,738. STEAM-BOILER FURNACE. EDWIN J. ELMS, Chelsea, Mass. Filed Mar. 23, 1898. Serial No. 675,419. (No model.)



Claim.—1. In a steam-boiler furnace, a pipe leading from the external air through the masonry of the furnace; a plurality of small jet-pipes connecting said pipe with the combustion-chamber under the boiler at or near the bridge-wall; a steam-pipe connected with the boiler and extending outside of the furnace to said air-pipe; a nozzle extending from said steam-pipe into the air-pipe; and a damper-regulator intermediate of the damper and the steam-pipe, whereby a plurality of small jets of air are automatically forced into the combustion-chamber, substantially as set forth.

2. In a steam-boiler furnace, in combination, the boiler, and masonry provided with the bridge-wall C and back arch C'; the pipes K, K' extending substantially horizontally into said bridge-wall and back arch; a plurality of small jet-pipes leading from said pipes K, K' into the combustion-chamber; the pipes H, H' connected with the outer ends of the pipes K, K'; the pipe E connected at its upper end with the pipes H, H' and with its lower end open; the feed-pipe D supplying said pipe E with external air; the pipe P provided with the nozzle P' extending into the lower end of said pipe E, the opposite end of said pipe P' connecting with the boiler; and means for regulating the injection of the steam into said pipe E, substantially as described.

607,739. SASH-CORD GUIDE. WILLIAM R. FOX, Grand Rapids, Mich. Filed Feb. 23, 1898. Serial No. 671,324. (No model.)



Claim.—1. A sash-cord guide having a body portion formed of duplicate sheet-metal sections having inwardly-turned abutting ends in combination with the pulley-axle having non-circular ends engaging correspondingly-shaped holes in the sections, said pulley-axle holding the abutting ends together, and the sections against all relatively independent movement, substantially as described.

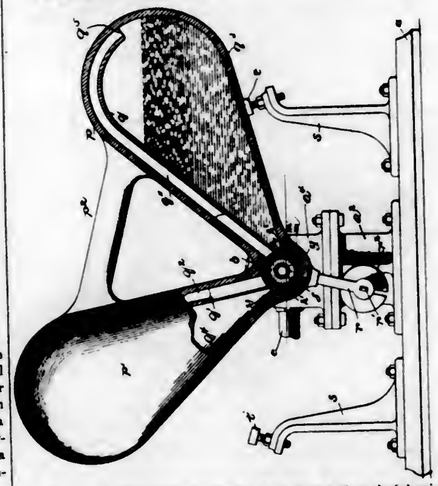
2. A sash-cord guide having a body portion formed of duplicate sheet-metal sections having inwardly-turned abutting ends and bent-over upper edges in combination with the pulley-axle having non-circular ends engaging correspondingly-shaped holes in the sections, said pulley-axle holding the abutting ends together, and the sections against all relatively independent movement, substantially as described.

3. In a sash-cord guide, a body portion formed of two sheet-metal sections having inwardly-turned abutting side edges, and having outwardly-turned upper edges forming bearing-flanges, said flanges being extended at the ends and overlapping each other and having alining holes in said overlapped portions, substantially as described.

4. In a sash-cord guide a body portion formed of two sheet-metal sections having inwardly-turned abutting side edges, and having outwardly-turned upper edges forming bearing-flanges, said flanges being extended at the ends and overlapping each other and having alining holes in said overlapped portions, the edges of said alining holes being swaged downwardly to form countersinks, substantially as described.

5. In a sash-cord guide, a body portion formed of duplicate sheet-metal sections having inwardly-turned ends provided with abutting flanges and outwardly-turned upper edges in combination with a pulley-axle having reduced and non-circular ends holding the abutting flanges in contact, substantially as described.

607,740. STEAM-TRAP AND BOILER-FEEDER. THOMAS G. GALLAGHER, Philadelphia, Pa. Filed Feb. 3, 1898. Serial No. 668,994. (No model.)



Claim.—1. The combination of a stationary hollow shaft having a number of transverse partitions dividing its interior into four separate compartments each provided with a pair of ports, water-conduits communicating with two of said compartments, steam-conduits communicating with the other two of said compartments, and an oscillatory structure mounted upon the hollow shaft and comprising water-receptacles each ported for alternate registry with the ports of a different one of the water-compartments of the hollow shaft, and steam-passages opening into the outer portions of the said water-receptacles respectively, and each ported for alternate registry with the ports of a different one of the steam-compartments of said hollow shaft, substantially as described.

2. In a steam-trap, the combination of a hollow shaft having a central imperforate partition and other partitions on opposite sides of the latter, dividing the interior of the shaft into separate chambers, the shaft having a pair of ports for each of the chambers; supply and exhaust steam pipes extending within the shaft and communicating respectively with the chambers separated by the central partition; water-pipe connections coupled to the ends of the hollow shaft; an oscillatory structure journaled on the shaft and comprising a pair of divergent bowls each having a water-chamber with ports to register alternately with ports of different chambers of the hollow shaft, and having a steam-passage with ports to register alternately with ports of other chambers of said hollow shaft; and suitable rests to limit the movements of the bowls.

607,741. NUT-LOCK. JACOB N. GARDNER, Savannah, Ga., assignor, by direct and mesne assignments, to Isidore Collat and Moses S. Byck, same place, and David A. Byck and Lilly Collat, Chatham County, Ga. Filed Feb. 3, 1898. Serial No. 668,915. (No model.)



Claim.—1. The combination with the soft-metal washer having a series of marginal upturned teeth, of means for preventing the rotation of said washer, and the disk provided with the central opening adapting it to fit over a nut and with marginal recesses adapted to receive said teeth respectively, the latter being long enough to project beyond the washer and to be bent down thereon.

2. The combination with the rails, fish plates, bolts and nuts, of the two integrally-connected washers each provided with upturned marginal teeth beyond the path of the nut, and the locking-disks each having both a central opening adapting it to fit over the nut and the marginal recesses adapted to be engaged by said teeth, respectively.

3. The combination with a pair of bolts and their nuts, of two washers for said nuts integrally connected by the bar and provided with the marginal teeth projecting from the washer in radial planes perpendicular thereto, and the locking-disks each having a marginally-flanged central opening to receive and hold the nut and having its margin notched to engage each of said teeth, the teeth being long enough to project beyond the disk and bend down upon the same, substantially as set forth.

607,742. HOSE-SUPPORTER. ROBERT GORTON, Newton, Mass. Filed Apr. 12, 1895. Serial No. 545,459. (No model.)

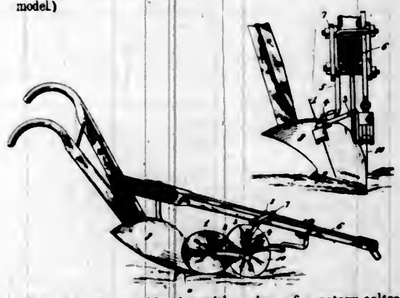


Claim.—1. In a garment-supporter, the loop having its opening contracted at its lower end, flexible cushioning material forming interior edges of the contracted lower end of the loop, and a clamp applied to the loop to hold such material in place, the larger upper end of the loop being adapted for the attachment of a supporting-webbing.

2. In a garment-supporter, the loop having its opening contracted at its lower end, flexible cushioning material forming interior edges of the contracted lower end of the loop, and a clamp applied to the loop to hold such material in place, the larger upper end of the loop being adapted for the attachment of a supporting-webbing, in combination with a button also supported from the webbing and coöperating with the loop, substantially as and in the manner set forth.

3. A garment-supporting loop formed of wire with an opening contracted at one end and the ends of the wire disposed at the smaller end of the loop, a flexible cushioning edging arranged in the contracted end of the loop, and a clamp embracing the smaller end of the loop and clamping the edging in place.

607,743. COLTER ATTACHMENT FOR PLOWS. THOMAS HAYNES, Edna, Tex. Filed Aug. 5, 1897. Serial No. 647,187. (No model.)



Claim.—1. The combination with a plow, of a rotary colter or disk cutter located about midway between the inner and outer edges of the plowshare and having its lower cutting edge directly above and about in line with the cutting edge of the said plowshare, whereby the slice of earth formed in turning the furrow is subdivided longitudinally, substantially in the manner set forth for the purpose specified.

2. The combination with a plow, of a rotary colter placed above the plowshare about midway of its inner and outer edges and inclining from the vertical and having its lower cutting edge about in line with the cutting edge of the plowshare, substantially as and for the purpose specified.

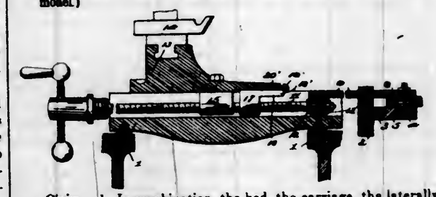
3. The combination with a plow, of a rotary colter located above the plowshare about midway of its inner and outer edges with its lower active edge about in line with the cutting edge of the said plowshare, and mounted in a movable frame or support to adapt itself to the line of travel and direction of strain, substantially as set forth.

4. The combination with a plow, of a rotary colter located above the plowshare about midway of its inner and outer edges and having the lower portion of its cutting edge about in line with the cutting edge of the plowshare, and adjustable mountings for the said rotary colter to admit of it being moved vertically and laterally, substantially as described for the purpose set forth.

5. The combination with a plow, of a standard having its lower end bent at an inclination to the horizontal, a plate adjustably connected with the bent end of the standard, and formed with a pendent arm, a frame mounted to turn upon the said arm, and a rotary colter journaled to the said frame and located above the plowshare about midway of its inner and outer edges with the lower portion of its cutting edge about in line with the cutting edge of the plowshare, substantially as described for the purpose set forth.

6. The combination with a plow, of a standard having its lower end bent at an inclination to the horizontal, means for adjustably connecting the standard with the plow-beam, a plate having a pendent arm, means for adjustably connecting the plate with the bent end of the standard, a frame mounted to turn loosely upon the said pendent arm, and a rotary colter journaled to the said frame and normally inclining from the vertical and arranged above the plowshare about midway of its inner and outer edges with its lower active edge about in line with the cutting edge of the said plowshare, substantially in the manner and for the purpose specified.

607,744. TAPER ATTACHMENT FOR LATHES. JOHN D. HALLET, Cincinnati, Ohio. Filed Jan. 11, 1898. Serial No. 666,324. (No model.)



Claim.—1. In combination, the bed, the carriage, the laterally-movable tool-holder, the cross-feed screw, the nut carried by the holder engaging said screw for adjusting said holder, a second nut carried by said screw, and a second screw engaging the holder and second nut and forming an adjustable connection between the same, substantially as described.

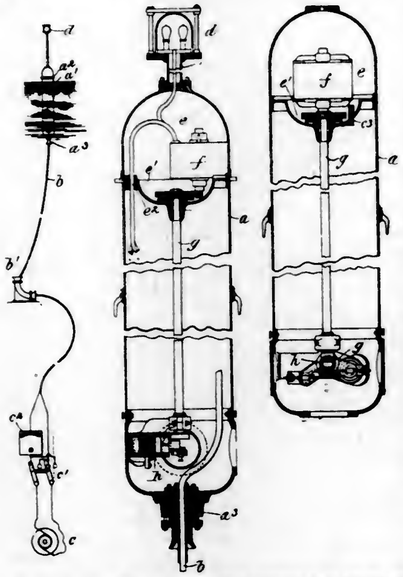
2. In combination, the bed, the carriage, the laterally-movable tool-holder having a guide therein, the cross-feed screw, the nut carried by the holder engaging said screw for adjusting said holder, a second nut threaded on said screw slidable in said guide having an extension projecting beyond the edge of said holder, and a screw fitted into the said holder having a head bearing upon the projecting edge of said extension, substantially as described.

607,745. ELECTRIC BUOY. ERNST W. G. C. HOFFMANN, Charlottenburg, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed May 23, 1896. Serial No. 593,427. (No model.) Patented in Germany Feb. 12, 1896, No. 89,218.

Claim.—1. In a device of the class described adapted to be floated and submerged, the combination with a pump designed to secure the entrance and exit of the water serving as variable ballast in the device, the said pump having a relatively large clearance, whereby the rarefaction of air in the device is avoided, of means for actuating said pump controllable from without the device, substantially as described.

2. In a submersible marine appliance, the combination with a closed water-ballast chamber normally filled with a gas under nominal pressure, of a reversible motor, a pump actuated thereby adapted to effect the entrance to and the expulsion of water from the same chamber, according to the direction of the motor's rotation, and

means for driving the motor in either direction, substantially as described.



3. In a device of the class described adapted to be floated and submerged as desired, the combination with pump mechanism A adapted to force water into and out of said device, of a reversible motor actuating the said pump, the direction of rotation of said motor being adapted to control the action of the pump, and means for operating the said motor in either direction, whereby the pump is caused to force water out of or into said device and float or submerge the same, substantially as described.

4. The combination in a submersible marine appliance, with a water-ballast chamber, of a pump associated therewith, a reversible electric motor actuating said pump and adapted to effect the entrance of water to or the expulsion of water from said chamber according to the direction of rotation of said motor, and means controllable from without the appliance for effecting the actuation of the motor and pump, substantially as described.

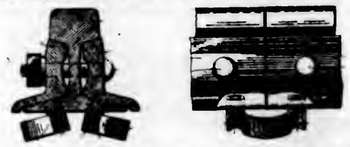
5. In a device of the class described adapted to be floated and submerged, the combination with an electric motor, of a single-acting pump driven thereby, a ballast-chamber adapted to be filled with water and secure the submergence of said device, a source of electrical current, conductors connecting the same with the motor, and an ammeter connected in the circuit, whereby the fluctuations in the torque of the motor are indicated and the proper operation of the device may be determined, substantially as described.

6. In a device of the class described, the combination with a water-ballast chamber, of a pump associated therewith, a reversible electric motor actuating said pump and adapted to effect the entrance of water to or the expulsion of water from said chamber, a source of electric current, and means controllable from a distance for effecting the operation of the motor, substantially as described.

7. In a submersible marine appliance, the combination with a closed water-ballast chamber normally filled with a gas under nominal pressure, of a pump associated with said chamber, a reversible electric motor actuating said pump and adapted to effect the entrance of water to or the expulsion of water from said chamber according to the direction of rotation of said motor, a source of electric current, and means controllable from a distance for effecting the operation of the motor, substantially as described.

8. The combination in an electrically-operated buoy adapted to be submerged or floated as desired, with a closed water-ballast chamber, of a reversible electric motor *f*, a pump *h* actuated by said motor and adapted to effect the entrance of water to or the expulsion of water from said chamber according to the direction of rotation of the motor, the said pump having disproportionally large clearances, and positively-actuated valves, the lantern *d* provided with incandescent lamps, a cable *b*, a source of electric current *c* connected by said cable with the motor and lamps, and means for effecting the actuation and reversal of the motor, substantially as described.

607,746. BOND FOR ELECTRIC CONDUCTORS. SLAUGHTER W. HUFF, Baltimore, Md., assignor of one-half to Jesse Hilles, same place. Filed Aug. 29, 1896. Serial No. 604,304. (No model.)



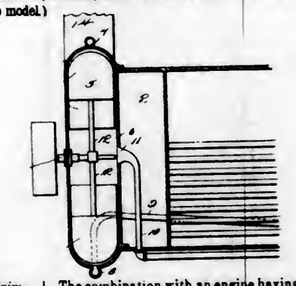
Claim.—1. A bond for making electrical connections, comprising a sheet-metal body portion bent or curved to lend resiliency to the structure, and having its end bent to form an integral tubular attaching-lug for insertion into the object to be connected, the axis of which lug is transverse to the plane embracing the curved body, whereby the latter lies close to the object, as explained.

2. A bond for making electrical connections formed of flat metal and comprising a body portion and an integral external extension bent about an axis transverse to the body portion into a tubular attaching-lug projecting laterally from the flat body portion, as explained.

3. In a bond for making electrical connections, the combination of the base-flange of the rail to be connected, having an opening, the tubular attaching-lug inserted in said opening from beneath, the rivet driven into said lug to permanently expand it into contact with the wall of the opening, left flush on the upper side, and upset on the lower side to expand it, and the fish-plate covering the bond-joint above as explained.

4. The herein-described blank for a bond for making electrical connections comprising the flat ribbon or strip of metal having at each end, a lateral extension parallel with the length of the bond and severed from the body of the bond for a portion of the length of the extension, and in dimensions adapted for bending into tubular shape to form lugs projecting axially beyond the body portion, as explained.

607,747. ATTACHMENT FOR LOCOMOTIVE-ENGINES. CHAS. HUMPHREY, Almond, N. Y. Filed Sept. 17, 1897. Serial No. 653,082. (No model.)



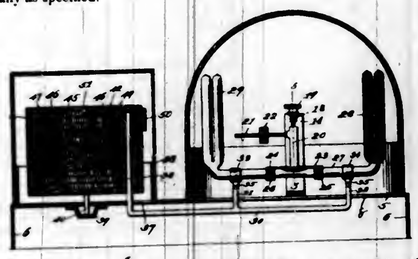
Claim.—1. The combination with an engine having a smoke-box, of a fan mounted therein and surrounded by a casing, an exterior passage-way communicating with said casing, an exhaust-steam pipe leading to the eye of the fan, and means for conveying the smoke, particles of combustion and gases away from the said fan, substantially as described.

2. The combination with a locomotive-engine having a smoke-box, of a fan located in the front part of said smoke-box and surrounded by a casing, a passage-way exterior of said casing having communication therewith, an exhaust-steam pipe leading to the eye of said fan, a pipe or analogous device for conveying the smoke and particles of combustion back to the fire-box or ash-pan, and an exhaust-pipe for hot air and exhaust-steam, substantially as described.

607,748. SUNSHINE-RECORDER. LEONARD HUNT, St. Louis, Mo. Filed Mar. 1, 1897. Renewed May 19, 1898. Serial No. 681,169. (No model.)

Claim.—1. In a sunshine-recorder, a pipe pivotally mounted with the substantially horizontal central portion filled with suitable liquid and having its ends turned upwardly into planes above said horizontal portion and filled with air and hermetically sealed, and said ends being constructed for the differential absorption and radiation of heat, an arm secured to said pipe and extending horizontally from said pipe, a recording instrument carried by the free end of said arm, a cylindrical casing mounted in a vertical position and having a recording-surface in position to be engaged by said recording instrument, and means of rotating said casing, substantially as specified.

2. In a sunshine-recorder, a pipe pivotally mounted; said pipe having a substantially horizontal central portion filled with a suitable liquid and having its ends turned upwardly into planes above said horizontal central portion, said ends being hermetically sealed and forming air-chambers communicating with said liquid and said ends being constructed to present large surfaces for the differential absorption and radiation of heat; an arm attached to and projecting horizontally from said pipe and in alinement therewith, a recording instrument carried by the free end of said arm, a vertical cylindrical casing rotatably mounted and having a recording-surface in position to be engaged by said recording instrument, and means of adjusting said recording instrument to and from said recording-surface, substantially as specified.



3. In a sunshine-recorder, a plate mounted in a horizontal position and having an opening through its center, a second plate mounted above the first-mentioned plate and transversely of said opening and having one of its ends pivotally connected to said first-mentioned plate, posts projecting upwardly from said second plate, a pipe pivotally mounted between the upper ends of said posts; said pipe having a substantially horizontal central portion filled with a suitable liquid and having its ends turned upwardly into planes above said horizontal central portion, said ends being hermetically sealed and forming air-chambers communicating with said liquid and said ends being constructed to present large surfaces for the differential absorption and radiation of heat; an arm secured to said pipe and extending horizontally from said pipe, a recording instrument carried by the free end of said arm, a cylindrical casing mounted in a vertical position and having a recording-surface in position to be engaged by said recording instrument, and means of rotating said casing, substantially as specified.

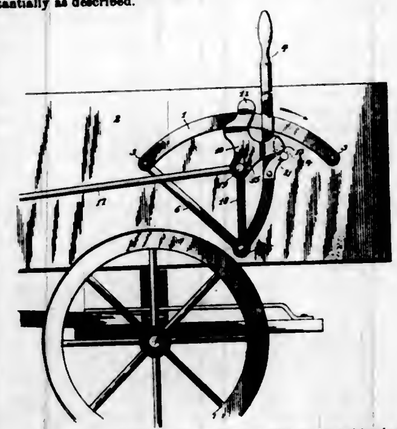
4. In a sunshine-recorder, a plate mounted in a horizontal position and having an opening through its center, a second plate mounted above the first-mentioned plate and transversely of said opening and having one of its ends pivotally connected to said first-mentioned plate, posts projecting upwardly from said second plate, a pipe pivotally mounted between the upper ends of said posts, means of adjusting and balancing said pipe; said pipe having a substantially horizontal central portion filled with a suitable liquid and having its ends turned upwardly into planes above said horizontal central portion said ends being hermetically sealed and forming air-chambers communicating with said liquid and said ends being constructed to present large surfaces for the differential absorption and radiation of heat; an arm secured to said pipe and extending horizontally from said pipe, a recording instrument carried by the free end of said arm, a cylindrical casing mounted in a vertical position and having a recording-surface in position to be engaged by said recording instrument, and means of rotating said casing, substantially as specified.

607,749. LOCK FOR WAGON-BRAKES. AMBROSE F. JACKSON, Oklahoma, Okla. Filed Dec 20, 1897. Serial No. 662,669. (No model.)

Claim.—1. In a wagon-brake, the combination with a segmental bar, a pivoted brake-lever, and a brake-rod, of a locking-block having a forwardly-extending arm provided with a slot receiving the brake-lever, said block being provided with upwardly and downwardly extending arms, one of the latter being pivoted to the brake-rod, and the other arm having a slotted engagement with the segmental bar, substantially as described.

2. In a wagon-brake, the combination with a segmental bar, a pivoted brake-lever, and a brake-rod, of a locking-block pivotally connected to the brake-rod, and having a slotted engagement with the brake-lever and the segmental bar respectively, and a lug on the lever located beneath and adapted to engage the locking-block when the lever is moved rearward, substantially as and for the purpose specified.

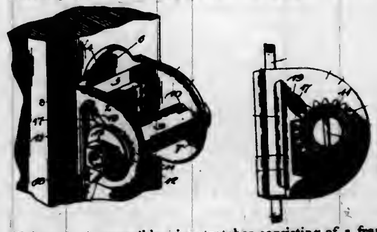
3. In a wagon-brake, the combination with a pivoted brake-lever having a slotted opening, of a fixed segmental bar extending through said opening, and a brake-rod, of a link pivoted at its lower end on the pivot of the lever, a locking-block pivotally connected to the upper end of the link and to the front end of the rod, and having arms provided with slotted openings through which the brake-lever and the segmental bar respectively pass, and a lug on the lever adapted to engage the locking-block and rock it on its pivot, substantially as described.



4. In a wagon-brake, the combination with a pivoted brake-lever having a slotted opening, of a fixed segmental bar extending through said opening, a brace-rod connecting the pivot of the lever to the segmental bar, and a brake-rod, of a link pivoted at its lower end on the pivot of the lever, a Y-shaped locking-block the stem of which is pivotally connected to the upper end of the link and to the front end of the brake-rod, and the arms of which are provided with slotted openings through which the brake-lever and the segmental bar respectively pass, and a lug on the lever adapted to engage one of the arms of the locking-block and rock the latter on its pivot, substantially as and for the purpose specified.

5. In a wagon-brake, the combination with a segmental bar, of a brake-rod, a brake-lever, a locking-block connected with the brake-rod and the lever and slidingly mounted on the segmental bar, said locking-block being adapted to bind against the segmental bar and be held in such engagement with the same by the tension on the brake-rod, and a link extending from the bottom of the block to the lever, substantially as described.

607,750. WIRE-STRETCHER. WILLIAM H. JONES, Liberty, Ind., assignor to Alva L. Kitselman and Davis M. Kitselman, Ridgeville, Ind. Filed May 6, 1896. Serial No. 679,923. (No model.)



Claim.—1. A reversible wire-stretcher consisting of a frame or bracket, a radially-toothed drum journaled therein, and a double slidable pawl confined within the bracket for engagement with said toothed drum in either of two positions in which the stretcher may be applied substantially as described.

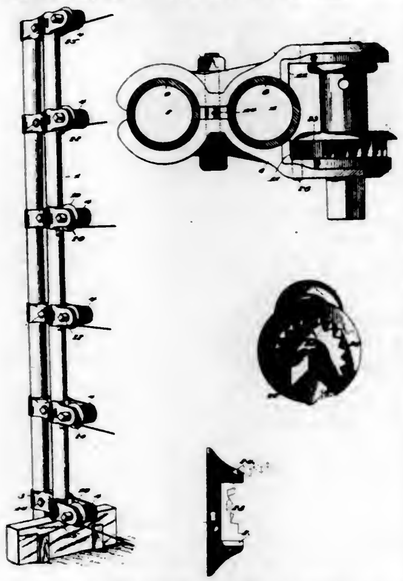
2. A reversible wire-stretcher consisting of a bracket or frame, a take-up drum journaled therein, and provided with a radially-toothed rim and with an imperforate flange which protrudes beyond said rim, and a double pawl slidably fitted to the bracket and held in place by said bracket and the flange of the drum, substantially as described.

3. A reversible wire-stretcher consisting of a flanged bracket, a flanged and toothed drum journaled thereio, and a slidable pawl loosely fitted to the bracket and confined thereon by its flange and the flange of the drum, said pawl provided with similar lips at its opposite ends, and having a limited vertical play with respect to the toothed section of the drum for giving the pawl-lips sufficient clearance for the drum-teeth and enable the drum to rotate without hindrance from the pawl, substantially as described.

4. A wire-stretcher consisting of a bracket having a vertical flange or rib on the outside of one of its plates, a drum journaled in the bracket and provided with a toothed rim and an imperforate flange which protrudes beyond said rim, and a slidable pawl provided at opposite ends with similar lips and fitted against the flange of the bracket to slide freely thereon said pawl being confined in place by the flange of the drum and the bracket, and the distance between the lips of said pawl being greater than the diameter of the toothed drum-rim, substantially as described.

5. A reversible wire-stretcher comprising a bracket having a guide-flange on one side, a drum slotted at one end and provided near its other end with a radially-toothed rim, a key or pin passing transversely through the slotted end of the drum, and a double pawl slidably confined between the bracket-flange and the drum, substantially as described.

607,751. **WIRE-STRETCHER.** ALVA L KITSELMAN, Ridgeville, Ind. Filed Apr. 16, 1898. Serial No. 677,879. (No model.)



Claim.—1. A wire-stretcher consisting of a column, a two-part bracket clamped to said column, and a take-up spool mounted on the bracket, substantially as described.

2. A wire-stretcher consisting of a column, a two-part bracket clamped to said column by frictional contact therewith, a take-up spool journaled in said bracket, and a pawl, substantially as described.

3. A wire-stretcher consisting of a column, a vertically-adjustable bracket clamped thereto, and a take-up spool journaled in the bracket for rotary adjustment therein and for vertical movement therewith, substantially as described.

4. A wire-stretcher consisting of a wire-column, a two-part bracket having complemental members held frictionally on the column by a single bolt, and a take-up spool journaled in said bracket, substantially as described.

5. In a wire-stretcher, a two-part bracket having its members provided with seats in their opposing faces, and a single clamping-bolt which couples the members together and is adapted to frictionally clamp the same on a column, in combination with a spool journaled in the bracket, and a pawl carried by the bracket in operative relation to the spool, substantially as described.

6. In a wire-stretcher, a two-part bracket having seats in the opposing faces of the members thereof and each member provided with a guideway for a pawl, and a clamping-bolt to draw the members frictionally against a column, in combination with a spool journaled in the members of the clamp, and a pawl adapted to fit slidably to either member of the clamp, substantially as described.

7. In a wire-stretcher, a two part clamp provided with the bearing-plates and with vertical ledges or shoulders between the clamping and bearing portions thereof, combined with a spool, and a pawl fitted to the shouldered portion of one clamp member and adapted for use interchangeably with either clamp member, substantially as described.

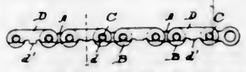
8. In a wire-stretcher, the combination with a column, of an invertible two-part clamp or bracket adapted to be held on the column in either of two positions by frictional engagement therewith, a spool journaled in the clamp or bracket, and a double pawl adapted to either member of said clamp, substantially as described.

9. In a wire-stretcher, the combination of a two-part column, a two-part clamp, the members of which are provided with seats on their opposing faces adapted to fit the members of said column, a single bolt which draws the members of the clamp together and holds the same in tight frictional engagement with said column, a take-up spool journaled in the members of the clamp, and a slidable pawl guided by the clamp and adapted to engage with said spool, substantially as described.

10. In a wire-stretcher, a two-part clamp provided within its bearing-plates with a guideway, combined with a spool, and a double pawl slidably fitted in the guideway of the clamp and adapted to engage with said spool, substantially as described.

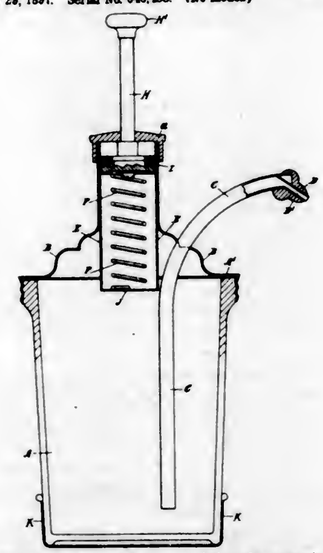
11. In a wire-stretcher, a two-part clamp consisting of the complemental shouldered members provided with vertical slots, combined with a spool journaled in said members of the clamp, and a double pawl adapted to be fitted slidably to either shouldered part of the clamp members and provided with a guide-pin to fit in the slot of one of the clamp members, substantially as described.

607,752. **BICYCLE-CHAIN.** LOUIS C. KRUMMEL, Chicago, Ill. Filed June 29, 1896. Renewed Apr. 11, 1898. Serial No. 677,245. (No model.)



Claim.—In a drive-chain, the combination with a link removable from its supporting transverse pins or rivets C C, such pins having grooves c, of a retaining-plate made of soft metal and located outside said links and extending over and entering the grooves in the pins, and provided with a tongue which may be bent under said link after the plate is positioned, substantially as specified.

607,753. **SANITARY EJECTOR.** LOUIS O. LAWRASON, London, Canada, assignor of one-half to James W. Butler, same place. Filed July 29, 1897. Serial No. 646,433. (No model.)

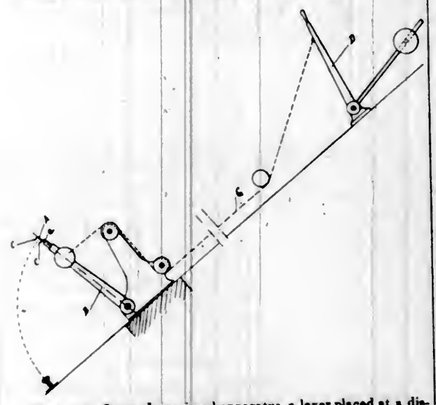


Claim.—1. A sanitary ejector, consisting of a reservoir, A, cover, B, piston-chamber, E, provided with the opening, J, the spring, F, contained within the piston-chamber, the piston, I, piston-rod, H, and cap, G, in combination with the tube, C, provided with the tip, D, having a passage, D', formed therein at an angle to the passage in the tube, C, substantially as and for the purpose set forth.

2. A sanitary ejector, consisting of a reservoir, A, cover, B, piston-chamber, E, in which the opening, J, is formed, the piston, I, piston-rod, H, and cap, G, in combination with the tube, C, opening into and near the bottom of said reservoir; and said chamber, E, opening into said reservoir, A, above the liquid contained therein, and thus permitting the piston, I, to compress the air above the liquid, so that as long as the pressure is retained on the knob, H', the liquid will discharge through said tube, C, substantially as and for the purpose set forth.

3. A sanitary ejector, consisting of a reservoir, A, cover, B, piston-chamber, E, in which the opening, J, is formed, the piston, I, piston-rod, H, and cap, G, in combination with the tube, C, provided with a tip, D, having a passage, D', formed therein, said tube, C, opening into and near the bottom of said reservoir, and said chamber, E, opening into said reservoir, A, above the liquid contained therein, and thus permitting the piston, I, to compress the air above the liquid, so that as long as the pressure is retained on the knob, H', the liquid will discharge through said tube, C, and tip, D, substantially as and for the purpose set forth.

607,754. **RAILWAY SIGNAL-ALARM.** PAUL E. LEGRAND, Paris, France. Filed Mar. 25, 1897. Serial No. 629,259. (No model.)



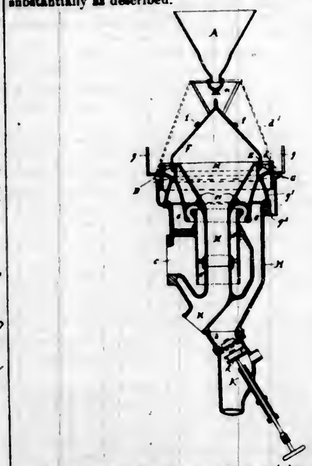
Claim.—1. In an alarm-signal apparatus, a lever placed at a distance from a station on the road, connected by suitable means with a lever in the station and adapted to be moved thereby, said lever on the road provided with means to loosely receive cartridges or torpedoes firmly secured in clamps, which are adapted to grasp the rail and to hold the cartridges thereon when said lever is lowered and to detach themselves from the lever, when it returns to its normal position, substantially as described and for the purpose set forth.

2. In a railway signal-alarm, the combination with a manipulating lever at a terminal station, of one or more vertical levers on the road, connected by a chain or cable with said manipulating-lever and adapted to be operated thereby, said levers on the road provided with cartridges loosely secured thereto in clamps, which are adapted to grasp the rail to hold the cartridges thereon, when said levers are lowered and to detach themselves from the levers when they return to their normal position, substantially as described and for the purpose specified.

607,755. **HYDRAULIC SEPARATOR FOR TREATING MIXED MINERALS.** WILLIAM S. LOCKHART, London, England, assignor to the Automatic Gem and Gold Separator Syndicate, Limited, same place. Filed July 7, 1897. Serial No. 643,767. (No model.)

Claim.—1. In combination in a hydraulic gravity-separator, an annular chamber, receiving the material to be separated, and in communication with the water-supply of separation; a vertically-adjustable ring connected to the outer edge of said annular chamber adapted to adjust height of local head of still water in said annular chamber to control speed of adjacent separation-current, an annular chamber beneath the upper receiving-chamber admitting gravity-separated particles through a contracted annular neck, a contracted annular overflow-orifice forming a vertical extension of said contracted neck, and an annular circuitous water-supply passage leading to the said lower chamber, substantially as described.

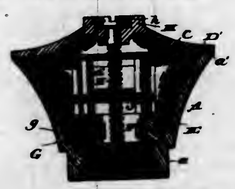
2. In combination, the cone for receiving at its point and spreading by its coned surface the material to be separated: the annular receiving-chamber at the base of the cone, adapted to discharge outwardly any excess of water with material, having a lateral communication with a narrow adjacent annular and vertical water-exit passage between its inner wall and the edge of the said cone, a chamber to receive the separated material beneath the said contracted annular passage between the cone and inner wall of upper chamber and an annular circuitous water-supply passage to said lower chamber, substantially as described.



3. In combination, the cone for receiving and distributing the material to be separated, the annular chamber beneath having a narrow exit-channel between its inner wall and the edge of said cone and forming a dead-water space between the cone and its outer wall, a vertically-adjustable sleeve forming an adjustable edge for said outer wall, a lower chamber having a narrow channel communicating with the upper chamber, and a circuitous water-supply leading to said lower chamber, substantially as described.

4. A self-contained hydraulic gravity-separator consisting of, in combination, a hopper for mixed wet material to be separated with central discharge, a cone-spreader with apex upward supporting said hopper or skeleton supports; an annular receiving-trough at base of cone adapted to discharge outwardly free from apparatus excess water with material, to receive and maintain a constant head of water from other constant supply to interior of apparatus and to transmit into an adjacent upward current annulus the particles to be separated, a downward means of exit to locked receptacles from base of upward current of heavy gravity-separated particles, and a free unrestricted exit inwardly toward center of apparatus of the light waste particles and separating current of water, substantially as described.

607,756. **GAS-BURNER.** WILLIAM LUDLOW, Buffalo, N. Y. Filed Jan. 14, 1896. Serial No. 666,726. (No model.)



Claim.—1. A gas-burner consisting essentially of two parts inclosing a chamber into which the gas is delivered, and formed with a flame-orifice leading from the said chamber, one of the parts of the burner provided with a seat upon which the other is loosely supported, and means for adjusting the parts of the burner whereby the size and shape of the flame-orifice may be regulated, the parts of the burner being easily separable without disturbing the adjustment of the said means which regulate the flame orifice, substantially as set forth.

2. A gas-burner having an open-top casing, a cap for covering the same, the casing being provided with a seat, means loosely supported upon said seat for sustaining the cap above the top of the casing whereby there is formed a flame-orifice between them, and means for adjusting the cap to change the size of such slit, the cap and said adjusting means being easily removable from the casing without necessitating a change of their relative positions, substantially as set forth.

3. A gas-burner comprising an open-top casing, a cap for cover-

ing the same, and screw-threaded adjusting means for the cap, comprising two parts, one supported by the casing but free to be removed therefrom, and the other part carried by the cap and engaging with the first-mentioned part, the cap and adjusting means being together removable from the casing, substantially as set forth.

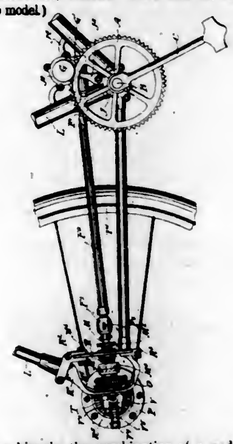
4. A gas-burner comprising a casing, a cap therefor, a screw-threaded ring connected with the cap, and a screw-threaded coupling or union piece with which the said ring engages, loosely mounted within the casing, but held from rotation therein, substantially as set forth.

5. A gas-burner comprising a casing with an open top, and shaped to have within it a chamber for the gas, a cap C arranged above the open end of the casing, so that there is formed between it and the upper edge of the casing a flame-slit, a union or coupling piece F loosely mounted within the casing, whereby it may be easily inserted into or removed from the casing, and the screw-threaded ring E connected with the cap, and engaging with the coupling or union F, substantially as set forth.

6. A gas-burner comprising a casing having a chamber into which gas is delivered through a pipe or passage *a*, a cap or cover for the casing, a screw-threaded stem K mounted in said cap or cover, a valve J mounted upon and adjustable by such screw-stem, and arranged to control the flow of gas into the chamber in the casing, and means for preventing the rotation of the valve, substantially as set forth.

7. The combination of the casing A, having an open top, and a gas-supply opening into the casing, a screw-threaded coupling or union F loosely mounted therein, a cap C arranged over the open end of the casing, a screw-threaded ring E connected with the cap and adapted to engage with the coupling or union F, a screw-threaded stem K, mounted in the cap, and a valve J mounted upon the said stem and adjustable toward and from the gas-supply opening, the cap being formed with a boss in which is seated the head of the screw-threaded stem K, substantially as set forth.

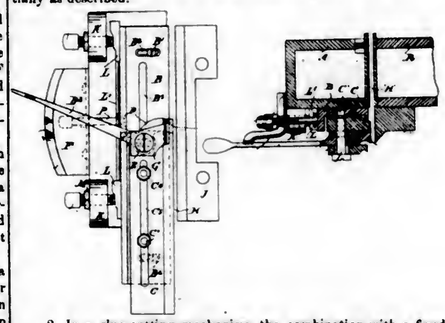
607,757. CHAINLESS GEAR FOR VELOCIPEDES. AUGUSTINE J. MADDEN, Melbourne, Victoria. Filed Dec. 18, 1897. Serial No. 662,480. (No model.)



Claim.—In a bicycle, the combination of a pedal axle, a gear-wheel mounted on said axle, a worm and a pinion mounted in ball-bearings in a dust-proof casing consisting of the cylinder G mounted upon a support comprising rings J J adapted to encircle the central bracket K of the bicycle, said ring J having an upwardly-extending arm J^3 carrying a ring J^4 adapted to encircle the cylinder G at one end, the opposite end of said cylinder being supported by stays J^4 connected with the frame of the bicycle, a worm-wheel secured upon a shaft mounted in ball-bearings and housed in a suitable dust-proof casing set at right angles to casing G, said worm-wheel adapted to transfer motion from said pinion to a connecting-rod connecting said shaft with a shaft contiguous the axle of the rear wheel by means of a universal joint, and suitable means interposed between said rear shaft and the axle of the drive-wheel for imparting motion to said drive-wheel, substantially as specified.

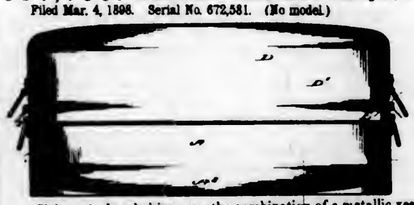
607,758. SLUG-CUTTING MECHANISM FOR LINOTYPE-MACHINES. GEORGE W. MASCORD, Glenferrie, Victoria. Filed Sept. 3, 1897. Serial No. 650,531. (No model.)

Claim.—1. In a slug-cutting mechanism, the combination with a fixed part, of a slotted shoe adjustably retained on said fixed part, a main slug-cutter, having a longitudinal slot, adjustably secured to said shoe by countersunk bolts passing through said slot, a slug-cutting lever mounted on a pivot in the end of said cutter, an auxiliary cutter-plate mounted near the outer extremity of said pivot and movable in a slot, a fixed planing-knife parallel and contiguous to said cutters, and suitable means for securing a true and rapid adjustment of said main cutter parallel to said fixed trimming-knife, substantially as described.



2. In a slug-cutting mechanism, the combination with a fixed part, of a slotted shoe adjustably retained on said fixed part, a main slug-cutter, having a longitudinal slot, adjustably secured to said shoe by countersunk bolts, passing through said slots a slug-cutting lever mounted on a pivot in the end of said cutter, an auxiliary cutter-plate mounted near the outer extremity of said pivot and movable in a slot, a fixed planing-knife parallel and contiguous to said cutters, a curved plate secured to said fixed part and having a projection adapted to securely retain said lever in either of its positions, and suitable stepped plates or liners mounted on said shoe adapted to secure a true and rapid adjustment of said main cutter parallel to the fixed cutter, substantially as specified.

607,759. BAKING-PAN. JOSEPH MATHY, Washington, D. C. Filed Mar. 4, 1898. Serial No. 672,581. (No model.)

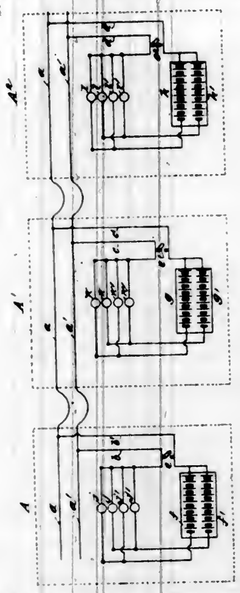


Claim.—1. In a baking-pan, the combination of a metallic vessel having vertical side walls formed with an outwardly-flaring flange on their upper edges, and its bottom formed integral with said side walls and concavo-convex in any cross-section so as not to present any angles or corners; with a frame surrounding the vessel and having vertical walls fitted closely against the vertical side walls thereof, said frame having an outwardly-flaring flange on its upper edge embraced by and inclosed within the flange on the upper edge of the vessel which is bent thereover, said frame also extending below the bottom of the vessel so as to uphold the same above the surface on which the pan is placed, substantially as and for the purpose described.

2. In a baking-pan, the combination of the imperforate body having vertical side walls and a bottom concavo convex in any cross section, and merging into the side walls without seam or angles, and a frame surrounding said vessel and adapted to uphold the same above the surface upon which the pan is placed, said frame being fitted closely against the vertical sides of the vessel so as to stiffen and reinforce the latter throughout, and having an outwardly-flaring flange on its upper edge which is inclosed within an outwardly-flaring flange formed on the upper edge of the vessel; with an imperforate cover having vertical side walls and a top concavo-convex in any cross-section, the edges of the top merging into the side walls without seam or angles, and said cover also having its lower edge adapted to fit within the upper end of the body, whereby a close baking-pan is formed without corners or seams for collection of grease or dirt, all substantially as and for the purpose described.

3. In a baking pan, the combination of a metallic vessel having vertical side walls formed with an outwardly-flaring flange on their upper edges, and its bottom formed integral with said side walls and concavo-convex in any cross-section so as not to present any angles or corners; with a frame surrounding the vessel and having vertical walls fitted closely against the vertical side walls thereof, said frame having an outwardly-flaring flange on its upper edge embraced by and inclosed within the flange on the upper edge of the vessel, which is bent thereover, said frame also extending below the bottom of the vessel so as to uphold the same above the surface on which the pan is placed; with a cover, constructed substantially like the vessel inverted, having vertical side walls and a top concavo-convex in any cross-section, said cover being provided with an upturned flange on its lower edge adapted to fit within the vessel when the cover is placed thereon, and an exterior band surrounding the lower edge of the cover and fitted into the flange thereof, and having its upper end flanged to support the cover on the flange of the vessel all substantially as and for the purpose described.

607,760. CIRCUIT ARRANGEMENT FOR ELECTRICAL APPARATUS. JULIUS MIEHLER, Vienna, Austria-Hungary, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Dec. 13, 1897. Serial No. 661,614. (No model.) Patented in Germany Mar. 21, 1896, No. 89,555; in Switzerland Mar. 30, 1896, No. 11,961; in Italy May 22, 1896, No. 41,960, and in Austria Sept. 18, 1896, No. 46/3,618.



Claim.—1. The herein-described circuit arrangement, consisting of the association with common mains or conductors *a a'*, of a plurality of individual or separate circuits in parallel relation therewith, each of said circuits being provided with a source or supply of electrical energy, a translating device, and a switch device disposed in said circuit and adapted to short-circuit the electrical apparatus connected between said mains when said device is closed.

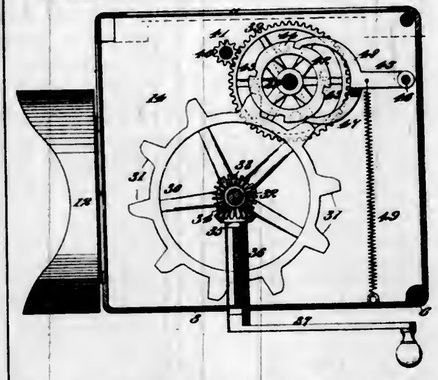
2. The circuit arrangement of electrical apparatus herein described, consisting of the connection with common mains or conductors, of a plurality of separate or individual circuits in multiple relation, each of said circuits having connected therein a source or supply of electrical energy, and a translating device or devices, and a plurality of circuit-controlling devices connected in multiple relation between the said mains adapted when closed individually to afford a path of low resistance for the several circuits connected with said mains.

3. The combination with mains *a a'*, of a plurality of separate circuits as A A' A^3 connected in parallel therewith, each of said circuits consisting of a translating device or devices, a source of electrical energy, and a circuit-controlling device associated with said circuit and with the mains and adapted when closed, to effect the closure of the corresponding circuit and afford a low-resistance path for the flow of current between the mains, substantially as described.

4. In a system of electric lighting, the combination with common mains or conductors, of a plurality of individual lighting-circuits connected in multiple therewith, each of said circuits being provided with a group of lamps, and a battery or source of electrical energy connected in series therewith, like poles of said batteries being connected with a common main, and a plurality of switching devices connected in said system and adapted individually to effect the short-circuit of the apparatus connected between the mains, substantially as described.

5. The herein-described system of electric-light control for trains comprising common mains *a a'* between which the individual circuits A A' A^3 are connected in multiple, each of said circuits having connected therein a battery or accumulator, and electric lamps connected in series, and a switch associated with said circuit adapted to short-circuit said battery through the lamps and afford a low-resistance path for the current from the other batteries through their respective lamps.

607,761. EXHIBITOR FOR SERIES PICTURES. FREDERICK H. MORSE, St. Louis, Mo., assignor of one-half to Jason C. Somerville and Wm. F. Bell, same place. Filed May 28, 1897. Serial No. 638,537. (No model.)



Claim.—1. In an exhibitor for series pictures, a feed-roller, a shaft on which said roller is mounted, a notched wheel also mounted on said shaft, studs extending from one side of said wheel, a pivoted bar provided with two arms, means for putting one of said arms into engagement with the notched wheel, and a toothed wheel adapted for engagement with the other arm of the rocking bar and also the studs.

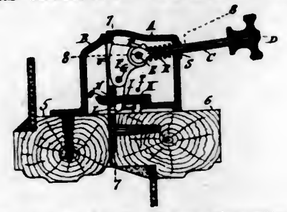
2. In an exhibitor of the character described, the combination with the toothed wheel, of the notched wheel studs projecting from one side of the same, the pivoted rocking bar provided with two arms arranged in different vertical planes adapted respectively for engagement with the notched wheel and the toothed wheel, and means for putting one of said arms into engagement with said notched wheel.

3. In an exhibitor for series pictures of the character described, the combination with the notched wheel, of studs extending laterally from said wheel, a pivoted rocking bar comprising two arms in different vertical planes, one of said arms being adapted to engage the notched wheel, means to engage the other arm and the said studs whereby the notched wheel is released from the first-named arm and rotated, and means for causing the said first-named arm to again engage the notched wheel.

4. In an exhibitor for series pictures, the combination of a casing, provided with an observation-tube open at its inner end, and adapted to have a photograph strip or sheet traverse the inner end of said tube, a feed-roller adapted to convey said strip or sheet, a shaft upon which said feed-roller is mounted, a notched wheel carried by said shaft, a device for engaging said notched wheel, studs carried by said notched wheel, and a toothed driving-wheel arranged to trip said engaging device from contact with said notched wheel and turn said notched wheel, substantially as described.

5. In an exhibitor for series pictures, the combination of a casing provided with an observation-tube open at its inner end and adapted to have a photograph strip or sheet traverse the inner end of said tube, a feed-roller adapted to convey said strip or sheet, a shaft on which said feed-roller is mounted, a notched wheel carried by said shaft, a pivoted rocking bar provided with two arms; one of which is adapted to engage said notched wheel, a spring arranged to draw said arm into engagement with said wheel, and a toothed driving-wheel arranged to strike the other arm of said rocking bar and to turn said notched wheel, substantially as described.

607,762. SASH-FASTENER. GEORGE C. NICHOLSON, Melbourne, Victoria. Filed Dec. 28, 1897. Serial No. 664,033. (No model.)



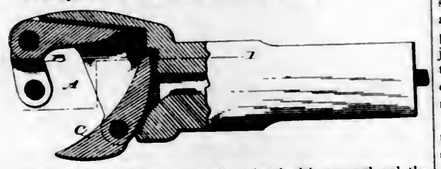
Claim.—1. In a sash lock or fastening the combination within a casing of a pivoted tumbler having a horn H engaging a bolt K having a notch O an aperture facing the keeper for the protrusion of the tumbler another aperture (underneath the apertnre for the tumbler) for the protrusion of the bolt, springs R and L respectively operating the tumbler and the bolt and means for operating the tumbler by hand from without said casing, substantially as and for the purposes set forth.

2. In a sash lock or fastening the combination within a casing A of a pivoted tumbler F having a projection P and horn H, with a spindle C, pivotally connected to the said tumbler, and passing through a spring R and through an aperture S in the casing so as to have an external end or handle D, substantially as and for the purposes set forth.

3. In a sash lock or fastening the keeper and the casing A with the lip N the pivoted tumbler F having the horn H engaging a bolt K having a notch O (not adapted to engage with lip N when the tumbler is actuated by the keeper), and the pin T, all in combination substantially as and for the purposes set forth.

4. In a sash-lock, the combination with a casing for the locking mechanism, and a keeper for engagement by such mechanism: of a tumbler pivoted within said casing; a sliding bolt also mounted in said casing; a rigid projection on said tumbler engaging said bolt and causing the projection of said bolt as said tumbler is retracted; means for engaging and holding said bolt in its extreme projected position, and at the same time holding said tumbler in its retracted position, the said bolt in such projected position being adapted to be struck by said keeper and disengaged; means tending to hold said tumbler projected from the mouth of said casing; and means for operating said tumbler by hand from without said casing, substantially as described.

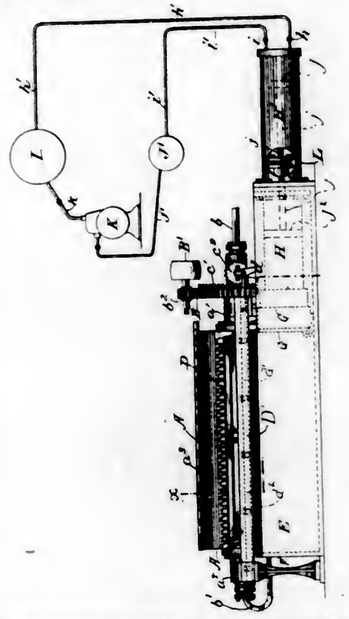
607,763. CAR-COUPLING. WILBERT K. NOLAND, Coupon, Pa. Filed Apr. 4, 1898. Serial No. 676,444. (No model.)



Claim.—In a car-coupler, the draw-head with recessed end, the knuckle and pivoted guard-arm pivoted in the said draw-head, the inner ends of which knuckle and arm are tapered, and adapted to swing within the recessed end of the draw-head, the inner ends of which knucle and guard-arm when in a locking position, being disposed near one corner of the said recessed portion, combined with the pin, which has a shoulder at its upper end and an enlarged portion, which has a double beveled portion merging into one of the edges of the enlarged portion, a semicircular portion immediately beneath the said beveled portion, and against which beveled surfaces the ends of the knuckle and pivoted guard-arm are adapted to swing, to raise the pin when the coupling is effected, substantially as shown and described.

607,764. ICE-MAKING APPARATUS. THOMAS L. RANKIN, Sackett's Harbor, N. Y., assignor to the Regelation Ice Machine Company, Alexandria, Va. Filed May 19, 1897. Serial No. 637,197. (No model.)

Claim.—1. An ice-machine comprising a water-tank, a rotating freezing-cylinder mounted longitudinally therein, means for supplying the cylinder with a refrigerant, a second tank alongside the first tank, a saw or scraper over the partition between the two tanks to remove the ice from the cylinder and discharge it into the second tank, a longitudinally-extending press having its compression-chamber opening into one end of the second tank and there provided with a door to admit the slush from said tank into the compression-chamber and permit the discharge of the formed block of ice into the tank by the plunger of the press.



2. The combinatioo with the water-tank and rotary freezing-cylinder, of a reciprocating bar parallel with the cylinder and provided with braces or arms projecting toward the cylinder, a saw-blade secured to the ends of the braces or arms adjacent to said cylinder and parallel with said reciprocating bar, to permit the ice as removed to fall down through the spaces therebetween, and mechanism for operating the cylinder and the bar.

3. The combination with the cylinder and its tank, of a second tank alongside thereof, a guideway extending longitudinally across said second tank, a reciprocating bar mounted on said guideway parallel with said cylinder, spring-pressed arms hinged to said bar and projecting toward the cylinder, a saw-blade secured to said arms adjacent to the cylinder and over the partition between the two tanks to remove the ice from the cylinder and direct it down into the second tank through the space between it and its operating-bar and means for operating the cylinder and the bar.

4. The combination with the cylinder and its tank, of a second tank alongside thereof, an angle-bar mounted longitudinally over the second tank, a reciprocating bar having vertical and horizontal rollers engaging the two sides of the said angle-bar, vertically-swinging spring-pressed arms projecting from the bar toward the cylinder and there provided with a saw-blade parallel with the bar with its tooth edge next to the cylinder, a combined spur and crown gear on the cylinder-shaft, a short transverse crank-shaft having a pinion meshing with said crown-gear, a rod connecting the crank with the reciprocating bar, and a drive shaft geared to said spur-gear.

5. A combined freezing and compressing apparatus, comprising parallel longitudinal tanks, the freezing cylinder in one tank, means for removing the ice from the exterior of said cylinder and discharging it into the second tank, a longitudinally-extending ice-press having its compression-chamber within one end of said second tank and there provided with a door through which the slush may be passed into said chamber and the formed block removed, the said chamber being provided with longitudinal water-outlet channels extending inwardly from its open end and communicating with the interior of said chamber and the door having a series of perforations registering with the outer open ends of said channels.

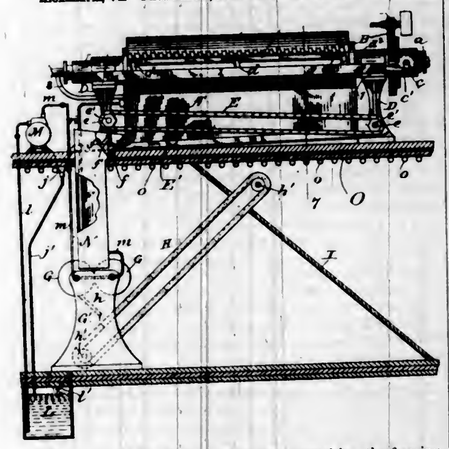
6. The combination with a longitudinally-extending tank and means for supplying the same with ice or slush, of a longitudinally-extending press having its compression-chamber entering the tank at one end and there provided with a door having outer and inner series of perforations, the said chamber having longitudinally-extending channels communicating with the interior of said chamber and at their outer open ends registering with the outer series of door-perforations.

7. The combination with a longitudinally-extending tank and means for supplying the same with ice or slush, of a longitudinally-extending press having its compression-chamber entering one end of the tank and there provided with a hinged door, and a latch mounted on the chamber to engage the free edge of the door and provided with an operating handle or lever projecting upwardly above the tank.

8. The combination with ice-forming mechanism, of a press provided with a compression-chamber open at its end to receive the ice or slush, and there provided with a door having inner and outer series of perforations, the said chamber having longitudinal channels registering with the outer series of door-perforations and communicating with the interior of said chamber.

9. The combination with ice-forming mechanism, of an ice-press in the form of a cylinder H provided at one end with an enlarged head G' forming the mold or compression-chamber, cast segmental linings H^3 having flat inner faces and outer longitudinal channels or grooves intersected by transverse openings I', and a door for the open end of the head G' and provided with openings registering with the outer ends of said channels or grooves.

607,765. ICE-MAKING APPARATUS. THOMAS L. RANKIN, Sackett's Harbor, N. Y., assignor to the Regelation Ice Machine Company, Alexandria, Va. Filed June 1, 1897. Serial No. 639,031. (No model.)

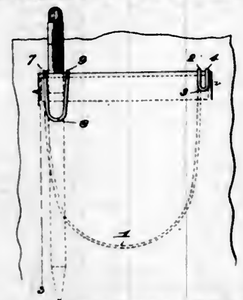


Claim.—1. An ice plant or apparatus, comprising the freezing-cylinder within a suitable room, means for removing the ice from the surface of the cylinder, a horizontally-disposed conveyer on which the ice is deposited from the cylinder, a vertical chute at the delivery end of the said conveyer and extending down into a lower refrigerating-chamber, ice-compression rollers mounted at the lower end of the chute, a slide below the said rollers, and an offtake-conveyer inclined upward from below the ice-compression rollers and at its upper end delivering into the upper portion of a storage-compartment.

2. An ice plant or apparatus comprising, the water-tank, the freezing-cylinder therein, means for removing the ice therefrom, an endless horizontal pervious conveyer to receive the ice as removed from the cylinder, a vertical jacketed chute into the upper end of which said conveyer delivers, hollow ice-compression molding-rollers at the lower end of the chute, a slide to receive the ice from the said rollers, an offtake-conveyer leading from the molding-rollers to a storage-chamber, a reservoir at a lower level than the molding-rollers to receive the drip therefrom, a trough under the said horizontal conveyer and also connected with the said reservoir, a pump to raise the water from said reservoir and discharge it down into the interior of the molding-rollers, a pipe connecting the outlet from said molding-rollers with the lower end of the chute-jacket, and a pipe connecting the upper end of the jacket with the main water-tank.

3. The combination with the water-tank, the rotating freezing-cylinder therein, and a vertical jacketed chute into which the ice is discharged from the cylinder, the upper end of the jacket having a pipe discharging into said tank, of hollow ice molding rollers at the lower end of the vertical chute and having their outlet connected with the lower end of said chute-jacket, a reservoir to receive the water expressed by the said ice-molding rollers, a pump having a supply-pipe connected with the said reservoir, and a discharge-pipe connected with the inlet of the molding rollers.

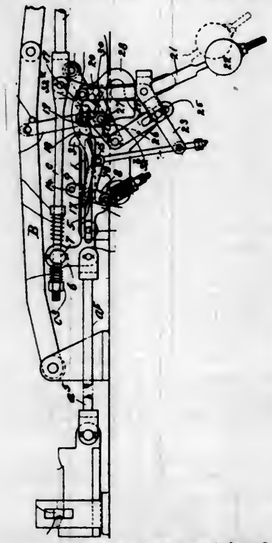
607,766. POCKET-HOLDER FOR PENCILS. JAMES L. RILEY, Xenia, Ill. Filed Dec. 7, 1897. Serial No. 661,095. (No model.)



Claim.—1. A pencil-holder constructed of a single piece of resilient wire bent into U shape and its ends being bent into hooks to engage the upper end of the pocket, one of which hooks is wider than the other, and provided with a horizontal portion for retaining an article within said last-named hook, substantially as specified.

2. The herein-described pocket-holder constructed of a single length of wire bent into U shape, one of the ends of said wire being formed into a hook to engage the edge of the pocket and the end of said hook being pointed, the opposite end of said wire being bent into a clamping-hook, the extreme end of said last-mentioned end being bent into a horizontal plane behind the clamping-hook, substantially as specified.

607,767. SPEED-CONTROLLING APPARATUS FOR RAILWAYS. BENTON C. ROWELL, Boston, Mass., and FRANCIS M. BRINCKERHOFF, Chicago, Ill., assignors to the Rowell-Potter Safety Stop Company, Portland, Me. Filed June 3, 1897. Serial No. 639,220. (No model.)



Claim.—1. The tripping mechanism consisting of an operating-rod; opposed springs controlling said rod; opposed detents upon said rod; a catch between said detents; opposed hooks upon said rod; and arms, each in the path of one of the hooks, all organized so that one of the hooks will engage one of the arms when the catch is released, substantially as described.

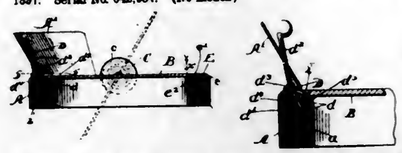
2. The setting mechanism consisting of a setting-rod; an arm pinned to that rod; an escapement; a pin upon the arm adapted to turn the escapement when the arm is moved by the setting-rod; a second arm connected to the escapement and adapted to move the signal, all organized and operating substantially as described.

3. The time-weight mechanism consisting of a setting-rod; an arm pinned to that rod; an escapement; a pin upon the arm adapted to turn the escapement when the arm is moved by the setting-rod;

a link pinned to the escapement; a bell-crank lever fast to the pendulum; a pin connecting the bell crank lever and the link; the pendulum; the pendulum-rod extension; an arm pinned to the top of that extension and having opposed notches and a stop with which one of the notches normally engages to hold the pendulum set and which is knocked out of stopping position by the other notch as the pendulum swings when released, to permit a signal, controlled by the stop, to shift, substantially as described.

4. The speed-controlling apparatus above described consisting of a catch operated by a passing train and at the entrance of the section over which the speed is to be controlled; an operating-rod carrying opposed detents controlled by the catch; those detents; a setting-rod carrying opposed springs controlling the operating rod; those springs; an escapement; a safety-stop; a pendulum; means whereby motion of the setting-rod will actuate the escapement and lift the safety-stop and set the pendulum.

607,768. TRAP. JOHN A. RUDE, Chicago, Ill. Filed June 30, 1897. Serial No. 642,957. (No model.)

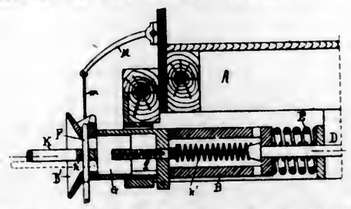


Claim.—1. In a trap, a frame, a rotatable door pivoted upon the frame, a spring adapted to rotate the door in one direction, a spring-catch engaging the door, a trigger pivoted upon the frame, and formed with a downwardly and forwardly inclined foot, said spring-catch being formed with an eye engaging the foot, and with an extension, d', adapted to rest upon a shoulder in the frame when the door is in a locked position, the rotation of the door in one direction being resisted by the spring-catch, except when drawn out of engagement with the door, and the rotation of the door in the opposite direction forcing the catch up the inclined foot and out of the way of the door.

2. In a trap, a rotatable door, a spring for intermittently rotating the door in one direction, a trigger for resisting such rotation, except when agitated to release the same, a spring-catch, E, adapted to prevent rotation of the door in the opposite direction, and a button e^3, adapted to be swung behind said catch when the latter is drawn out of engagement with the door, whereby the door may be rotated in a direction opposite to that given it by the spring without striking said catch in winding up the spring.

3. In a trap, the combination with the trough-shaped frame, A, of the rotatable door, B, pivoted upon the frame, a spring, C, adapted to rotate the door in one direction, a spring-catch, d, lying in a plane approximately with that of the door when in a locked position, and engaging the door, a trigger pivoted upon the frame and formed with a downwardly and forwardly inclined foot, the spring-catch, being formed with an eye engaging the foot and with an extension, d', adapted to rest upon a suitable part of the frame, the rotation of the door in one direction being resisted by the spring catch, except when drawn out of engagement with the door, and the rotation of the door in the opposite direction forcing the catch up the inclined foot and out of the way of the door.

607,769. CAR-COUPLING. WILLIAM W. RUDY, Bound Brook, N. J., assignor of one-third to Orlando W. Blauvelt, New York, N. Y. Filed Dec. 2, 1897. Serial No. 660,543. (No model.)

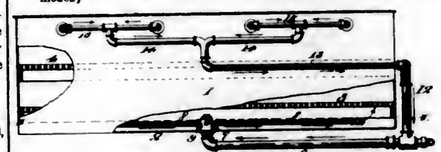


Claim.—1. A draw-head having a coupling-pin and containing a permanent link with a stationary box H embraced by the link, a spring-latch to support the coupling-pin, and a spring at the rear of the link to tend to push it outward, as and for the purpose described.

2. In a car-coupling, the combination of a coupling-pin and a draw-head having a slot in the top, with a flat box H removably fitted into said slot, and a spring-latch plate G in the box to support the coupling-pin, substantially as described.

3. The combination of the draw-head and coupling-pin with operating devices therefor, comprising a rod having a polygonal boss, a lever connected to the coupling-pin and having the said boss passing through its hub, with fixed guides for the hub, one of the said guides having an opening with which the polygonal boss on the rod can be locked, as and for the purpose described.

607,770. APPARATUS FOR PASTEURIZING BEER. WILLIAM J. RUFF, Quincy, Ill. Filed June 5, 1897. Serial No. 639,581. (No model.)



Claim.—1. An apparatus for pasteurizing bottled liquids comprising a tank adapted to receive the bottled liquid to be treated, means for circulating water through said tank, and means located outside of the tank for commingling a heating or a cooling liquid with the water as it passes from and to the tank, for changing the temperature of the water before it is introduced into the tank; whereby the temperature of the bottled liquid to be treated is raised and lowered by constantly replacing the tank-contained water by water of changed temperature until the desired temperature within the tank is reached for both heating and cooling the beer; substantially as described.

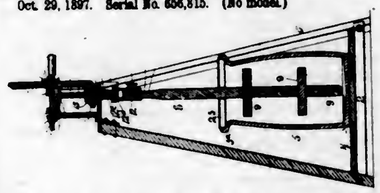
2. In an apparatus for pasteurizing beer, the combination of a tank for containing water, a perforated partition within the tank for supporting the bottles, a jet-pump, suction-pipe connecting with the jet-pump and having branches communicating with the upper part of said tank, an eduction-pipe connected to the jet-pump and extending to the bottom of the tank, and steam and cold-water pipes connecting with said pump, substantially as set forth.

3. In an apparatus for pasteurizing beer, the combination of a tank for containing water, a perforated partition within the tank for supporting the bottles, a jet-pump, a suction-pipe connecting with the jet-pump, and having branches communicating with the upper part of said tank, an eduction-pipe connected to the jet-pump and extending to the bottom of the tank, distributing-pipes located within the tank at the bottom thereof and communicating with said eduction-pipe, and steam and cold-water pipes connecting with said pump, substantially as set forth.

4. In an apparatus for pasteurizing beer, the combination of a tank containing water, a perforated partition within the tank for supporting the bottles, a jet-pump, a suction-pipe connecting with the jet-pump and having branches communicating with the upper part of said tank, an eduction-pipe connected to the jet-pump and extending to the bottom of the tank, feed-pipes 8 and 9, and distributing-pipes 10 and 11 located within the tank at the bottom thereof and communicating with said eduction-pipe, and steam and water pipes connecting with said pump, substantially as set forth.

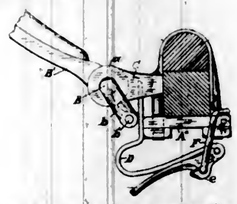
5. In an apparatus for pasteurizing beer, the combination of a tank for containing water, a perforated partition within the tank for supporting the bottles, a jet-pump, a suction-pipe connecting with the jet-pump, and communicating with the upper part of the tank through means of pipes 13, 14 and 15, an eduction-pipe connected to the jet-pump and extending to the bottom of the tank, feed-pipes 8 and 9, and distributing-pipes 10 and 11 located within the tank at the bottom thereof and communicating with the said eduction-pipe, and steam and cold-water pipes connecting with said pump, substantially as set forth.

607,771. CHURN. GEORGE R. SKYRMITE, Atchison, Kans. Filed Oct. 29, 1897. Serial No. 656,815. (No model.)



Claim.—A churn-gearing frame formed in one piece with an approximately T-shaped bed-piece having laterally-extending arms, provided with pendent recessed lugs, with an arch on the front arms of the bed-piece, with a post on the rear arm of the bed-piece, with a trough-shaped web having a shaft-socket on its under side and extending from the arch to the post, and with shaft-bearings surmounting the ends of the trough-shaped web, and the dasher-coupling formed with a vertical shaft passed through the bed-piece and seated in the shaft-socket of the trough-shaped web; substantially as described.

607,772. THILL-COUPLING. WILLIAM E. SHERWOOD, Oneida, N. Y., assignor, by direct and mesne assignments, of two-thirds to William E. Douglas and John H. Brown, same place. Filed Jan. 25, 1898. Serial No. 667,880. (No model.)



Claim.—1. In a thill-coupling, the combination with the usual clip, clip-plate and knuckle, of a bolt passing through the clip-ears and knuckle, having an arm at one end extending downwardly, a wear-plate bearing upon the rear side of the knuckle and having a depending horizontal projection pivoted to the said arm, a spring secured to the wear-plate and extending rearwardly below the clip-plate, a lever pivoted to the rear end of the spring, and a bail connecting the said lever with the rear end of the clip-plate, as set forth.

2. In a thill-coupling, the combination with the usual clip, clip-plate and knuckle, of a bolt passing through the clip-ears and knuckle, having an integral arm at one end extending downwardly, a wear-plate having a concave face bearing upon the rear side of the knuckle and having a depending horizontal projection pivoted to the end of the said arm, a spring secured to the rear side of the wear-plate and extending rearwardly below the clip-plate, a lever pivoted to the rear end of the spring, and an angular bail connecting the said lever with the rear end of the clip-plate, as set forth.

3. In a thill-coupling, the combination with the usual clip, clip-plate and knuckle, of a bolt passing through the clip-ears and knuckle, having an arm at one end extending downwardly, a wear-plate bearing upon the rear side of the knuckle and having a depending horizontal projection pivoted to the said arm, a spring secured to the wear-plate and extending rearwardly below the clip-plate, a lever pivoted to the rear end of the spring, a second depending horizontal projection on the wear-plate having an arm adapted to enter a recess in the side of the bolt, and a bail connecting the said lever with the rear end of the clip-plate, substantially as shown and described.

607,773. WATERPROOFING MATERIAL. CHARLES R. SMITH, Neenah, Wis. Filed Sept. 9, 1896. Serial No. 605,325. (No specimens.)

Claim.—1. A waterproofing material consisting of corn-oil and a gummy or resinous substance, substantially as set forth.

2. A waterproofing compound consisting of corn-oil, linseed-oil and a gummy or resinous substance, substantially as set forth.

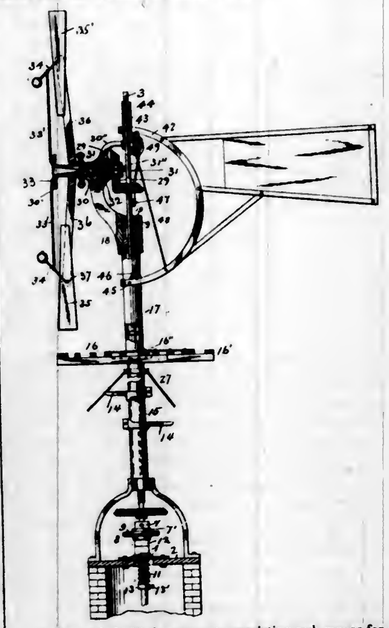
607,774. WINDMILL. HERMAN SCHLLNER, Rochester, N. Y. Filed May 12, 1897. Serial No. 635,218. (No model.)

Claim.—1. The combination of a wind-wheel, means for supporting it in operative position, the power-transmitting rod, gears intermediate the wheel and rod, a base, the rod-supporting ring mediately supported on the base, a hand-wheel surrounding the ring and provided with a recess below said ring, antifriction devices situated in said recess, and devices connecting the base and hand-wheel whereby the latter can be used to raise and lower the rod, ring and antifriction devices with respect to the base, substantially as described.

2. The combination of a wind-wheel, means for supporting it in operative position, the power-transmitting rod, gears intermediate the wheel and rod, a base, the rod-supporting ring, a hand-wheel, and the screw-threaded sleeve, said wheel engaging the sleeve and the latter engaging the base, substantially as described.

3. The combination of a wind-wheel, means for supporting it in operative position the power-transmitting rod, gears intermediate the wheel and rod, a base, the rod-supporting ring, a hand-wheel, the screw-threaded sleeve, said wheel engaging the sleeve and the latter engaging the base, and a jam-nut engaging the said sleeve adjacent the base, substantially as described.

4. The combination of a wind-wheel, means for supporting it in operative position, the power-transmitting rod, gears intermediate the wheel and rod, a base, the rod-supporting ring, a hand-wheel, the screw-threaded sleeve, said wheel engaging the sleeve and the latter engaging the base, and a ring or like stop fixed on the rod near the foot of the sleeve whereby the latter may be used to force down the rod, substantially as described.



5. In a windmill the power-transmitting rod, means for supporting said rod situated near the foot of the tower, the wheel-supporting pipe surrounding the rod, a rotatable fender between the rod and pipe, and flexible guys having their upper ends attached to a ring freely movable about the pipe, a clamping ring to support vertically said first-named ring at its upper part, said guys, and suitable fastenings for the other ends of the guys, substantially as described.

6. In a windmill the power-transmitting rod, means for supporting said rod situated near the foot of the tower, the wheel-supporting pipe surrounding the rod, a rotatable fender between the rod and pipe, and flexible guys having their upper ends attached to a ring freely movable about the pipe, a clamping-ring to support vertically said first-named ring at its upper part, said guys, and suitable fastenings for the other ends of the guys comprising a post and a movable ring to which the guys are fixed, substantially as described.

7. In combination with the wind-wheel support comprising a supporting-pipe, the frame or head having a tubular guide fitting said pipe, and a platform fixed to the guide and rotatable with it and with the frame, substantially as described.

8. In combination with the wind-wheel support comprising a supporting-pipe, the frame or head having a tubular guide fitting said pipe, and a platform fixed to the guide and rotatable with it and with the frame, said platform having a movable section, substantially as described.

9. In a windmill, the rotating head carrying the wind-wheel, a platform mediately fixed to and rotatable with the head and wheel about a wheel and head support, and said support, substantially as described.

10. The combination of the wind-wheel-supporting pipe, the head or frame, a rudder supported on said frame, a power-transmitting rod, gears intermediate the rod and wind-wheel, said gears being adapted to be disconnected by lowering the rod and mechanism intermediate the rod and rudder whereby the latter is turned parallel to the wheel to throw it edgewise of the wind when said gears are disconnected, substantially as described.

11. The combination of the wind-wheel-supporting pipe, the head or frame, a rudder supported on said frame, a power-transmitting rod, gears intermediate the rod and wind-wheel, said gears being adapted to be disconnected by lowering the rod and mechanism intermediate the rod and rudder whereby the latter is turned parallel to the wheel to throw it edgewise of the wind when said gears are disconnected, and a wind-wheel brake adapted to be put in operation by said movement of the rudder, substantially as described.

12. The combination of the wind-wheel-supporting pipe, the head or frame, a rudder supported on said frame, a power-transmitting rod, gears intermediate the rod and wind-wheel, said gears being adapted to be disconnected by lowering the rod and mechanism intermediate the rod and rudder whereby the latter is turned parallel to the wheel to throw it edgewise of the wind when said gears are disconnected, and a wind-wheel brake adapted to be put in operation by said movement of the rudder, said brake comprising a part fixed to the rudder to engage a spring or springs mediately connected to the wheel, substantially as described.

13. The combination of a wind-wheel shaft, spokes 36 fixed to the shaft, fan-sections comprising rods 37 each pivoted between spokes and immediately opposite the pivot-bearing of others, counterweight-levers fixed to the section-rods intermediate their ends, a spring supported by the shaft, and flexible connections between the spring and the weighted levers, substantially as described.

14. In a wind-wheel, the combination of a shaft, a spring, fans suitably supported from the shaft, counterweighted rods connected to the fans and a flexible connection directly joining each rod and the spring, substantially as described.

15. In a wind-wheel, the combination of a shaft, a spring, fans suitably supported from the shaft, counterweighted rods connected to the fans, a flexible connection directly joining each rod and the spring, and means to regulate the tension of the spring, substantially as described.

16. In a wind-wheel, the combination of a hollow shaft, a spring situated interiorly of the shaft, fans suitably supported from the shaft, counterweighted rods connected to the fans and a flexible connection directly joining each rod and the spring, substantially as described.

17. The combination of the wind-wheel and supporting-pipe, the head or frame supported by said pipe, the hollow plug 19 secured to the head and mediately bearing upon the supporting-pipe to support the head thereon, the power-transmitting rod passing through the plug, and means for temporarily supporting the head on the pipe independently of said plug, a removable screw or the like to prevent the turning of the plug, and means whereby the plug can be independently removed, substantially as described.

18. In a windmill the combination of a wind-wheel a power-transmitting rod, gears intermediate the rod and wheel, said gears being separable by moving the rod, a rudder, and devices intermediate the rudder and rod whereby when the gears are separated the rudder is turned, substantially as described.

19. In a windmill, the combination of the wind-wheel having adjustable fan sections to receive the force of the wind, a hollow wind-wheel shaft closed at its inner end by a cap or plug, a regulating-spring situated in the shaft and connected to said adjustable fan-sections, a connection between the spring and said sections, and a screw passing through the shaft-cap and bearing on the spring to adjust its tension, substantially as described.

20. In a windmill the combination of the wind-wheel having adjustable fans, the hollow trumpet-mouthed wheel shaft, the endwise-movable plug situated in the shaft, flexible connections between the plug and the fans, a spring to hold the plug in the shaft and a spring tension device adapted to hold the spring to the shaft, substantially as described.

21. In a windmill, a coiled spring connected to the wind-wheel shaft in combination with a braking-piece adapted to bear on the spring-coils successively and then rest between two coils to gradually arrest the wheel and then positively hold the same, substantially as described.

22. In a windmill the combination of a wind-wheel a power-transmitting rod, gears intermediate the rod and wheel said gears being separable by moving the rod, a rudder, and devices intermediate rudder and rod whereby when the gears are separated the rudder is turned, substantially as described.

607,775. CATTLE-PUMP. JAMES C. STINSON, Centre Point, Tenn. Filed June 26, 1897. Serial No. 642,451. (No model.)

Claim.— 1. The combination with a pump and a discharge-pipe connected with the pump and having a spout, of an elbow-shaped nozzle pivotally supported and adapted to have its vertical member register with the discharge end of the said spout, and a counterbalanced trough controlled in its vertical movements by the change of level of the water contained therein and adapted to rock the elbow-nozzle to bring its vertical member into and out of register with the aforesaid spout, substantially as set forth.

2. The combination with a pump, a discharge-pipe connected with the pump and having a spout, and a counterbalanced platform having connection with the pump for operating it when a weight is received upon such platform, of an elbow-shaped nozzle pivotally supported and adapted to have its vertical member register with the spout, a second counterbalanced platform, and a trough mounted upon an end portion of the last-mentioned platform and controlled in its vertical movements by the change of level of the water contained therein and adapted to rock the elbow-shaped nozzle to bring its vertical member into or out of register with the spout, substantially as set forth.



3. The combination with a pump, a discharge-pipe connected with the pump and having a spout, and a counterbalanced platform having connection with the pump for operating it when a weight is received thereon, of a second counterbalanced platform supporting a trough at one end and controlled in its movements by the change of level of water in the trough, and an elbow-shaped nozzle having its vertical member adapted to register with the spout and terminating in a flaring end, and having its horizontal member in engagement with the aforesaid trough and controlled in its movements thereby to bring the vertical member of the nozzle into and out of register with the aforesaid spout, substantially as described.

4. In combination, a pump, a discharge-pipe having connection with the pump and provided with a spout, a platform pivotally supported at its outer end and having connection at its inner end with the pump-rod, a counterbalanced lever applied to the pump-rod for returning it and the platform to a normal position, a base, a platform pivoted intermediate of its ends to the base and provided at one end with a weight and at its opposite end with a trough, an upright applied to said base, and an elbow-shaped nozzle having pivotal connection with the said upright and adapted to have its vertical member register with the spout of the discharge-pipe and having its horizontal member resting upon the trough and controlled in its vertical movements thereby and by the change of level of the water contained in the trough, substantially as set forth.

607,776. STEAM-COOKER. MARY A. SWAIN, St. Joseph, Ill. Filed Nov. 16, 1897. Serial No. 658,767. (No model.)

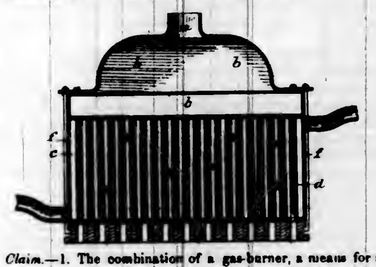


Claim.—1. In a steam cooking-oven, the combination of a generator, and an oven detachably mounted thereon, consisting of an outer casing and an inner casing smaller than, and spaced from, the outer casing, and secured within the latter, said outer casing being provided with an opening in its bottom, of less area than the inner casing and fitted over the generator, by which the vapors rising from said opening strike the under side of the inner casing and are deflected around the sides thereof, and said inner casing being provided with a valved opening, by which the vapors may be permitted to enter said inner casing, and a door at one side of the oven through which access can be had to the inner casing for the purpose and substantially as described.

2. In a steam cooking-oven, the combination of a water-pan or generator and an oven detachably mounted thereon, said oven being of larger diameter than said generator and consisting of an outer casing having openings in its top and bottom surrounded by flanges, and an inner casing within the outer casing, and spaced from the walls of the outer casing, said inner casing being interposed between and of larger diameter than the openings in the top and bottom of the outer casing, so that the vapors rising through said opening will strike the bottom of said inner casing, and be deflected outwardly, to, and around the sides thereof, and then inwardly over the top thereof, said oven being provided with a door whereby access may be had to the inner casing, substantially as described.

3. In a steam-cooker, the combination of a water-pan or generator, with superimposed steam-ovens detachably mounted upon said generator, each oven comprising an outer casing and an inner casing spaced from the outer casing, said outer casing being provided with openings in its top and bottom of a diameter less than that of the inner casing, whereby the vapors rising from the generator are caused to strike the under sides of the inner casing and be deflected outwardly around the sides thereof and then inwardly again to pass to the upper opening in the outer casing, and each of said openings being surrounded by a flange, the flanges of the lower openings being adapted to engage the flanges of the upper opening of the underlying oven or generator so as to keep the ovens in proper relative position, and a cover closing the top opening in the uppermost oven, for the purpose and substantially as described.

607,777. APPARATUS FOR APPLYING HEAT TO SURFACES OF ARMOR-PLATES, &c. TOMMIE J. TREDDDER, Sheffield, England. Filed Aug. 9, 1897. Serial No. 647,612. (No model.)



Claim.—1. The combination of a gas-burner, a means for supporting the same, a pipe for supplying the gas pivotally connected to said douche, and an adjusting-rod connected to said douche and provided with an adjusting means, substantially as described.

2. A gas-burner comprising a mixing-chamber *b*, tubes *d* leading therefrom, a water-chamber *c* surrounding said pipes, and a perforated plate *e* of refractory material attached to and forming part of said douche and inlets for supplying air, gas and water, substantially as described.

3. In a gas heating apparatus, the combination of a main gas-supply pipe, a series of multiplex gas-burners, and pipes having telescopic joints between the main supply-pipe and the multiplex gas-burners, and each pipe being pivotally connected both to the main supply-pipe and a multiplex gas-burner, substantially as described.

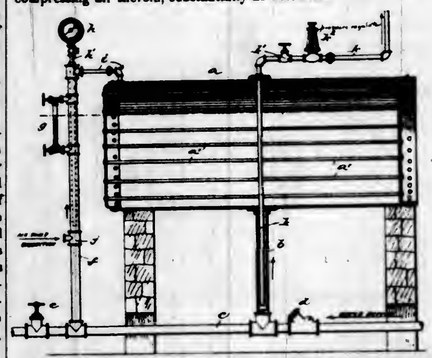
4. An apparatus for applying what has hereinbefore been termed a "fire-douche" to armor-plates projectiles or other articles the said apparatus consisting of a fan or forcing device in connection with the passage to which combustible gas or liquid are admitted and a chamber into which they are forced and tubes leading from the said chamber through which the mixture passes to the points of ignition and a chamber surrounding the said tubes with means for passing a cooling agent through the last-named chamber substantially as hereinbefore described.

607,778. DOMESTIC WATER-SERVICE. AARON J. TYLER, Passaic, N. J. Filed Feb. 27, 1895. Serial No. 539,904. (No model.)

Claim.—1. In compressed-air water-service, the combination of a tank, means for compressing the air therein, a service-pipe depending through the tank and extending below the bottom thereof, an automatic pressure-regulator in the service-pipe beyond the tank, a water-chamber connected to the tank and surrounding the portion of the service-pipe below the tank, and a supply-pipe, substantially as described.

2. In a compressed-air water-service, the combination of a tank, a service-pipe entering the tank and having its lower end open and depending below the tank for a considerable distance, a water-chamber connected to the tank and surrounding the portion of the service-pipe below the tank, and means for compressing the air and water therein, substantially as described.

3. The combination of a tank, a supply-pipe, an inlet-pipe *b* connecting the supply-pipe to the bottom of the tank, a service-pipe entering the tank and depending into the inlet-pipe, and means for compressing air therein, substantially as described.



4. The combination of a tank, a supply-pipe connected thereto, a service-pipe connected to the tank, a vertical branch pipe connected to the supply-pipe, a tube *h'* and a pressure-gage connected to said tube *h'*, said tube *h'* extending down through said branch pipe to a point below the level of the water in the tank substantially as described.

5. In a compressed-air water-service apparatus, the combination of a closed tank, a supply-pipe provided with a check-valve, an inlet-pipe connecting the supply-pipe to the bottom of the tank, a service-pipe depending into the inlet-pipe and provided with a stop-cock and pressure-regulator, a branch pipe *f* connected to the supply-pipe and having its upper end in communication with the upper part of the tank, a water-gage, a tube *h'* and a pressure-gage connected to the tube *h'*, said tube *h'* extending down through the pipe *f* to a point below the water-level, substantially as described.

6. The combination of a tank, a supply-pipe connected thereto, a service-pipe connected to the water-space of the tank, a pipe *f* having its lower end in communication with the water-space of the tank and its upper end closed, a pipe connecting said pipe *f* with the air-space of the tank, a tube *h'* depending through said pipe *f* to a point below the water-level, and a pressure-gage on the upper end of said tube *h'*, substantially as described.

607,779. BICYCLE-SUPPORT. SAMUEL WELCH and HENRY A. BURKHART, Fitzgerald, Ga., assignors to William A. Morgan, Dodge County, Ga. Filed Aug. 11, 1897. Serial No. 647,906. (No model.)

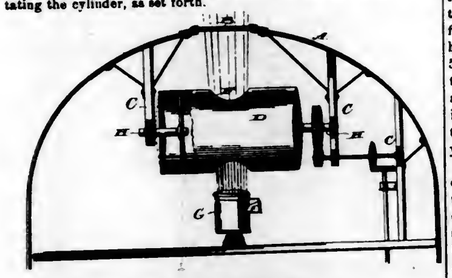


Claim.—A bicycle-support comprising a clamp having a pair of laterally-projecting ears with an inner vertical wall, a pin connecting said ears and a lever pivotally supported in the said ears and having a triangular head with oppositely-situated angular and straight edges adapted to contact with the vertical wall between the ears to hold the lever in a supporting and an elevated position respectively, the head being provided with a triangular slot to receive said pin, substantially as and for the purpose specified.

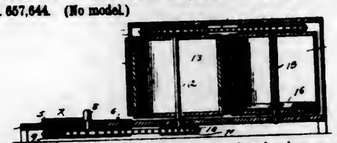
607,780. LIGHTHOUSE APPLIANCE. JOHN M. WILLIAMS, Flatts, Bermuda. Filed Oct. 7, 1897. Serial No. 654,451. (No model.)

Claim.—In a lighthouse, the combination with the oval tower with glass-covered openings B therein, and search-light G mounted vertically underneath said opening, of the supports C and stub-shafts

H journaled therein, the cylinder D mounted on said stub-shafts, between the search-light and glass-covered opening, and having diametrically opposite apertures F therein, of the brace mounted on the inner end of one of the said stub-shafts and having its ends engaging with the interior wall of the said cylinder, and geared means for rotating the cylinder, as set forth.



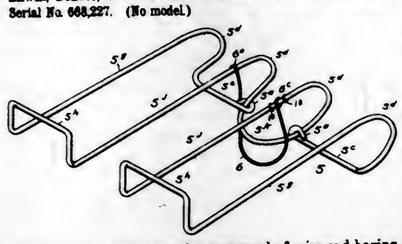
607,781. **INDEXER.** JOSIAH N. YOUNG, Sunnyside, Miss., assignor of one-half to David S. Jones, same place. Filed Nov. 6, 1897. Serial No. 657,644. (No model.)



Claim.—1. In an indexing device, a casing having an observation-opening in one end and also having a shelf extended in advance of the front of the casing and beyond said opening, in combination with a pair of cylinders rotatable on parallel axes within said casing, a retracting-spring located within one cylinder, an index-strip attached at its opposite ends to said cylinders and wound thereon, a dial on the shelf, an index-hand having an arbor extended through the shelf, and operative connections between said arbor and one of the cylinders whereby movement of the index-hand controls the movement of the cylinders and index-strip, substantially as described.

2. In an indexing device, a casing in the form of a rectangular box provided with an observation-opening in one end, and having its bottom extended in advance of the front of the casing and beyond said opening to form a dial-support, in combination with a pair of cylinders rotatable on vertical axes within said casing, a retracting-spring located within one cylinder, an index-strip attached at its opposite ends to said cylinders and wound thereon, a dial-plate on the extended bottom of the casing, an index-hand having an arbor extended through the bottom, wheels on said arbor and one of the cylinder-shafts beneath the bottom, and a band passing around said wheels, all arranged for joint operation substantially as described.

607,782. **PACKAGE-CARRIER FOR BICYCLES.** JOSEPH M. ERWIN, Denver, Colo. Filed Nov. 30, 1896. Renewed Jan. 27, 1898. Serial No. 668,227. (No model.)



Claim.—1. A package carrier composed of wire and having a central bend 5^b adapted to embrace the stem below the handle-bar, vertical bends 5^d leading from the part 5^b and passing upward around and engaging the handle-bar, extensions 5^j leading from the parts 5^d, lateral extensions 5^e rigidly connected with the parts 5^j and having bends 5^d passing around and engaging the handle-bar, and the parts 5^c connecting the lateral extensions with the part 5^b below the handle-bar.

2. As an improved article of manufacture, a bicycle package-carrier composed of a single piece of wire and comprising four package-supporting arms, and four vertical bends 5^d engaging the handle-bar, and a horizontal bend 5^b engaging the stem below the handle-bar and on the side opposite the bends 5^d, and the parts 5^c located below the handle-bar, and connecting the outer vertical bends with the part 5^b.

3. A package carrier composed of wire and comprising the central part 5^b adapted to embrace the handle-bar stem in front, the vertical bends 5^d adapted to embrace the handle-bar in the rear, the forward extensions forming a support for the package, the lateral horizontal parts 5^e connecting the outer vertical bends with the bend 5^b, and the fastening-yoke embracing the stem in the rear, one extremity of said yoke being movably attached to one of the extensions in front of the handle-bar, while the other extremity terminates in a hook adapted to engage the adjacent package-supporting extension forward of the handle-bar, the last-named extremity of the yoke being readily detachable for the purpose set forth.

4. A package-carrier formed from a single piece of wire and comprising the central horizontal bend 5^b embracing the stem below the handle-bar, the two inner and the two outer vertical bends 5^d engaging the handle-bar, the forward extensions 5^j and 5^e forming a support for the package, and the lateral horizontal parts 5^c located below the handle-bar and connecting the outer bends 5^d with the central bend 5^b.

5. A package-carrier for bicycles composed of wire and having a horizontal loop engaging the depending stem below the handle-bar and having arms embracing the handle-bar and forming a support for the package, and a metallic yoke adapted to engage the stem below the handle-bar and on the side opposite from the bend or loop, one extremity of said yoke being movably attached to one of the package-supporting arms in front of the handle-bar, and the other extremity being adapted to engage the adjacent package-supporting arm and being readily detachable therefrom, as and for the purpose set forth.

6. A package-carrier for bicycles composed of wire and having a horizontal loop engaging the stem below the handle-bar and having arms forming a support for the package, and a metallic yoke adapted to engage the stem below the handle-bar on the side opposite from the bend or loop, one extremity of said yoke being movably attached to one of the package-supporting arms in front of the handle-bar, and the other extremity being adapted to engage another package-supporting arm, and being readily detachable therefrom, as and for the purpose set forth.

7. A package-carrier for bicycles, composed of wire and having a horizontal loop engaging the same below the handle-bar and having arms forming a support for the package, and a metallic yoke adapted to engage the stem below the handle-bar on the opposite side from the bend or loop, one extremity of said yoke being movably attached to one of the package-supporting arms, and the other extremity being adapted to engage another package-supporting arm and being readily detachable therefrom, as and for the purpose set forth.

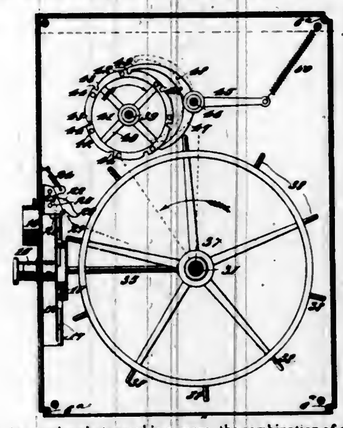
8. As an improved article of manufacture, a package-carrier formed from a single piece of wire and comprising the central horizontal bend 5^b embracing the stem below the handle-bar, the two inner vertical bends 5^d engaging the handle-bar and the extensions 5^j forming a continuation of the bends 5^d and the two outer arms 5^e having one extremity of each connected with the arms 5^j, while the opposite extremities of the arms 5^e rest upon the top of the handle-bar which forms their support.

607,783. **KINETOGRAPHIC CAMERA.** FREDERICK H. MORSE, St. Louis, Mo., assignor of one-half to Jason C. Somerville and William F. Bell, same place. Filed Sept. 7, 1897. Serial No. 650,816. (No model.)

Claim.—1. In a series photographic camera, the combination of a casing, a lens, a shutter, means for imparting motion to said shutter, a dog arranged to control said shutter, a delivery-spool, a receiving-spool, an intermediate positive feed-roller arranged to transmit a sensitized strip from the delivery-spool to the receiving-spool, a spacing-wheel mounted on the shaft with said feed-roller, studs carried by said spacing-wheel, and a trip-wheel arranged to contact with said spacing-wheel studs and said shutter-controlling dog and actuate said spacing-wheel with the feed-roller, and dog intermittently and alternately, sustantially as described.

2. In a series photographic camera, the combination of a casing, a lens, a shutter, means for imparting motion to said shutter, a dog arranged to control said shutter, a delivery-spool, a receiving-spool, an intermediate positive feed-roller arranged to transmit a sensitized strip from the delivery-spool to the-receiving-spool, a spacing-wheel mounted on the shaft with said feed-roller, studs carried by said spacing-wheel, a rocking bar or escapement arranged to engage said spacing-wheel and a trip-wheel arranged to trip said rocking bar and actuate said spacing-wheel with the feed-roller, and shutter-controlling dog intermittently and alternately, substantially as described.

3. In a series photographic camera, the combination of a casing, a lens, a shutter, means for imparting motion to said shutter, a dog arranged to control said shutter, a feed-roller arranged to transmit a sensitized strip, a notched spacing-wheel mounted on the shaft with said feed-roller, studs carried by said spacing-wheel, a rocking bar having an arm provided with a spur adapted to engage in the notches of said spacing-wheel, and a trip-wheel arranged to trip said rocking bar and actuate said spacing-wheel and shutter-controlling dog intermittently and alternately, substantially as described.



4. In a series photographic camera, the combination of a casing, a lens, a shutter, means for imparting motion to said shutter, a pivoted dog arranged to control said shutter, a feed-roller arranged to transmit a sensitized strip, a notched spacing-wheel mounted on the shaft with said feed-roller, studs carried by said spacing-wheel, a rocking bar having an arm provided with a spur adapted to engage in the notches of said spacing-wheel, a spring arranged to hold said rocking-bar arm to said wheel, a second arm carried by said rocking bar, and a trip-wheel arranged to strike said second arm to trip said bar and actuate said spacing-wheel and shutter-controlling dog, substantially as described.

5. In a series photographic camera, the combination of a casing, a lens, a shutter comprising a disk having openings therein, tongues carried by said disk, a spring arranged to impart motion to said shutter, a dog arranged to control said shutter, means for transmitting a sensitized strip, and means for actuating said strip-transmitting means and dog intermittently and alternately, substantially as described.

6. In a series photographic camera, the combination of a casing, a lens, a shutter, a spring arranged to impart motion to said shutter, means for controlling said shutter, means for transmitting a sensitized strip, means for actuating said strip-transmitting means and shutter-controlling means, and means connected with said actuating means and said shutter-operating spring for winding said shutter-operating spring at each movement of said actuating means, substantially as described.

7. In a series photographic camera, the combination of a casing, a lens, a shutter comprising a disk, a spring connected to said disk, a dog for controlling said shutter; a sensitized-strip-transmitting feed-roller, a spacing-wheel, means for holding said spacing-wheel from movement, a trip-wheel arranged to release said spacing-wheel and trip it and said dog, and a shaft providing connection between said trip-wheel and said shutter-spring at each movement of said trip-wheel, substantially as described.

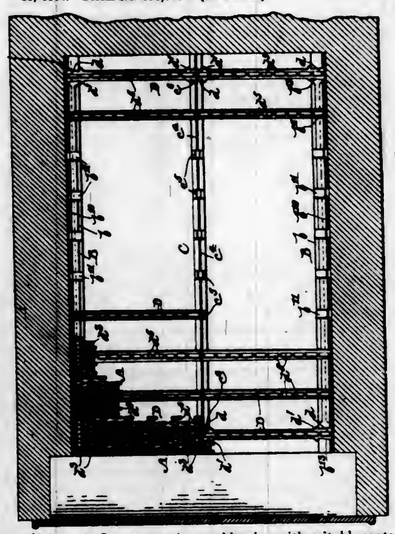
8. In a series photographic camera, the combination of a casing, a lens, a shutter, a spring for imparting motion to said shutter, a shaft upon which said shutter is mounted, a dog for controlling said shutter, a pull-pin by which said dog may be released, means for transmitting a sensitized strip, and means for actuating said strip-transmitting means and dog intermittently and alternately, substantially as described.

9. The combination of the camera-shutter and the means for controlling and operating the camera-shutter, a feed-roller, a shaft on which said feed-roller is mounted, a notched wheel also mounted on said shaft, studs extending from one side of said wheel, a pivoted bar provided with two arms, means for putting one of said arms into engagement with the notched wheel, and a toothed wheel adapted for engagement with the other arm of the rocking bar and also the studs; substantially as described.

10. The combination of the camera-shutter and the means for controlling the camera-shutter, the toothed wheel, the notched wheel, studs projecting from one side of the same, the pivoted rocking bar provided with two arms arranged in different vertical planes adapted respectively for engagement with the notched wheel and the toothed wheel, and means for putting one of said arms into engagement with said notched wheel; substantially as described.

11. The combination of the camera-shutter and the means for controlling the camera-shutter, the notched wheel, studs extending laterally from said wheel, a pivoted rocking bar comprising two arms in different vertical planes, one of said arms being adapted to engage the notched wheel, means to engage the other arm and the said studs whereby the notched wheel is released from the first-named arm and rotated, and means for causing said first-named arm to again engage the notched wheel; substantially as described.

607,784. **GRATE.** WILLIAM MCCLAVE, Scranton, Pa. Filed Nov. 10, 1897. Serial No. 658,065. (No model.)



Claim.—1. In a grate, the combination with suitable grate-bars, of carrier-bars provided with tapering edges upon their upper sides, the side carrier-bars of the said grate having their upper tapered edges extending to one side and slightly overhanging the body portion of the bar, whereby any ashes of the furnace will not be caught and held between the body portion and the wall, the construction being such that the upper edges of the carrier-bars are considerably below the fire-bearing surface of the grate-bars, and completely covered thereby, substantially as described.

2. In a stationary grate, the combination with suitable grate-bars, of carrier-bars provided with a body portion proper, a truss for strengthening the same, a reduced web portion formed upon the upper edge of the said body portion and a tapering portion formed on the top of the said web, recesses in the said web and tapering portion for receiving grate-bars, the construction being such that the fingers or fire-supporting surfaces of the grate-bars will extend above the plane of the upper edges of the carrier and grate bars proper, so that the said carrier-bars will be protected from the severe action of the heat, substantially as described.

3. In a stationary grate, the combination with suitable grate-bars, of carrier-bars provided with a body portion, a reduced web portion formed upon the upper edge of the body portion, and a tapering portion formed on the top of the said web, the said web and the said tapering portions having recesses formed in them for receiving grate-bars, the construction being such that the fingers or fire-supporting surfaces of the grate-bars will extend above the plane of the upper edges of the carrier and grate bars proper so that the carrier-bars will be protected from the severe action of the heat, substantially as described.

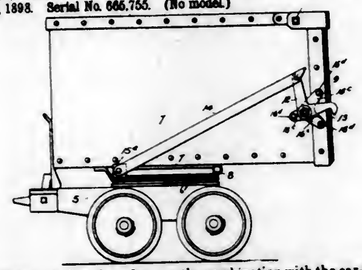
4. In a stationary grate, the combination of carrier-bars having recesses formed in their upper edges extending entirely through the said bars transversely, grate-bars adapted to rest in the same, means for locking them together comprising tapered end portions formed on the grate-bars and adapted to be dovetailed in the said recesses formed upon the carrier-bars, lugs adapted to engage the surfaces of the said carrier-bars for imparting further stability to the structure, the construction being such that the fire-supporting surfaces of the grate-

bars may completely cover the supporting structure beneath it, substantially as described.

5. In a grate, the combination of carrier-bars having recesses in their upper edges, the said recesses being provided with depressions or sockets in their bottom portions, grate-bars adapted to be supported by the said carrier-bars and rest in the said recesses, and lugs formed upon the said grate-bars adapted to engage the said depressions to hold the abutting ends of the grate-bars against each other, substantially as described.

6. In a grate, the combination of carrier-bars having recesses in their upper edges, the said recesses being provided with depressions or sockets in their bottom portions, grate-bars adapted to be supported by the said carrier-bars, and rest in the said recesses, and lugs formed upon the said grate-bars adapted to engage the said depressions to hold the abutting ends of the grate-bars against each other, the lugs on the outer ends of the grate bars being adapted to overhang the body portion of the side carrier-bars to hold them straight and in proper position, substantially as described.

607,785. ORE-CAR. GEORGE R. TRUAX, Denver, Colo. Filed Jan. 6, 1898. Serial No. 665,755. (No model.)



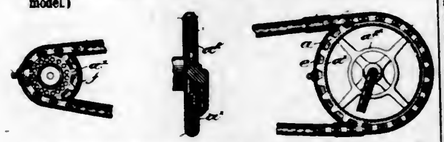
Claim.—1. In a dumping-car, the combination with the car-body, the hinged end door and the locking-lever, of a plate secured to the car side and having an opening adapted to receive the fastening-bolt passed through an aperture in the car side, the said plate being provided with an annular shoulder surrounding the said opening, and forming a fulcrum for the locking-lever.

2. The combination of the car-body, the hinged door, the locking-lever, and the fastening-bolt, the car side being provided with a fulcrum for the locking-lever surrounding the opening for the fastening-bolt, the said fulcrum being independent of the said bolt.

3. The combination with the car-body, the hinged door, the locking-lever and the fastening-bolt, of a fulcrum for the said lever, said fulcrum being mounted on the car side and apertured to register with the bolt-hole therein.

4. The combination with the car-body, the hinged door, the locking-levers fulcrumed on the car-body, and the arms connected with the locking-levers, the latter being fulcrumed relatively low on the car side, and the rear extremities of the said arms being pivoted on the turn-table to the rear of its center.

607,786. COVERING FOR DRIVE-CHAINS. GEORGE E. WHITNEY, Boston, Mass., assignor to the Whitney Bicycle Improvement Company, Kittery, Me. Filed Jan. 20, 1897. Serial No. 619,895. (No model.)



Claim.—1. A chain-covering for bicycles and motor-vehicles, comprising portions to inclose the upper and lower runs of the chain, a protective covering member for the driving sprocket-wheel, said member having a longitudinal slot in its portion of smallest diameter, whereby said member may surround and inclose the teeth of the driving sprocket-wheel and the chain thereon substantially from one to the other side of the wheel-rim, the edges of the covering member being turned into close proximity to the sides of the wheel adjacent the bases of the teeth and within the base-line thereof, and nowhere contacting with the sprocket-wheel, substantially as described.

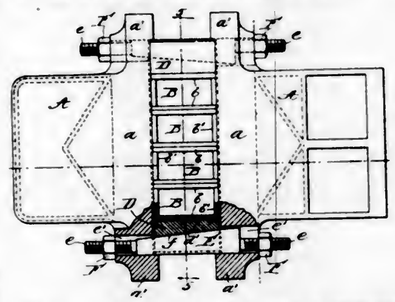
2. A chain-cover for bicycles and motor-vehicles, comprising portions to inclose the upper and lower runs of the chain, a protective covering for the driven sprocket-wheel, an annular tube-like member for the driving sprocket-wheel, having a longitudinal slot in its portion of smallest diameter, whereby said member may surround and inclose the teeth of the said driving sprocket-wheel and the chain thereon, substantially from one to the other side of the wheel-rim adjacent the bases of said teeth, and a movable annular member carried by the driving sprocket-wheel to coöperate with the adjacent fixed annular member of the cover and complete the closure of the circumferential opening therein, substantially as described.

3. A chain-covering for bicycles and motor-vehicles, comprising portions to inclose the upper and lower runs of the chain, and a two-part annular protective covering for the peripheral portion only of the sprocket-wheel, to inclose the chain thereon and the wheel-teeth substantially from their base-line outward and from one to the other side of the wheel-rim, the outermost part of the covering being fixed and the inner part carried by the sprocket-wheel, adjacent the bases of its teeth at or within the base-line thereof and extended at each side of the wheel-rim into close proximity to the edges of and to coöperate with the fixed part of said covering.

4. A protective covering for the endless driving member and the coöperating wheel of a cycle or other vehicle, said covering comprising means to surround and inclose the driving member non-adjacent the wheel, and a connected annular portion transversely surrounding and inclosing the peripheral portion only of the said wheel from one to the other side thereof, and the adjacent part of the driving member thereon, whereby the protective inclosure is confined to the driving member and the immediate engaging portion of the wheel, the edges of said covering being in close proximity to the said wheel.

5. A protective covering for the driving mechanism of a cycle or other vehicle, said covering including an annular portion to inclose the peripheral part only of the rotating member or members of the driving mechanism, whereby the protective inclosure is confined to only such peripheral and immediately adjacent part of the rotative member or members of such mechanism.

607,787. MOLD FOR BRICK-MACHINES. ANTON BERG, Chicago, Ill. Filed July 20, 1896. Serial No. 599,780. (No model.)



Claim.—1. A sectional mold comprising a pair of adjustable sides, a pair of end blocks independently adjustably arranged between said sides, spacing-plates arranged between said sides and end blocks and means for forcing said sides and end blocks toward each other, substantially as described.

2. A sectional mold comprising a pair of adjustable sides, a pair of independently-adjustable end blocks arranged between said sides, spacing-plates arranged between said sides and end blocks and means for forcing said sides and end blocks toward each other and locking the same in any adjusted position, substantially as described.

3. A sectional mold comprising a pair of sides, a pair of end blocks adjustably arranged between said sides, spacing-plates arranged between said sides and end blocks, and wedges interposed between the sides and end blocks for simultaneously forcing the same together, substantially as described.

4. A sectional mold comprising a pair of sides, a pair of end blocks adjustably arranged between said sides, spacing-plates arranged between said sides and end blocks, wedges working through and supported in the sides and engaging the end blocks so as to force the same toward each other, screw-threaded extensions on said wedges and nuts working on said extensions for operating the wedges, substantially as described.

5. A sectional mold, comprising a pair of sides, end blocks arranged between said sides, means for simultaneously adjusting the sides and end blocks and spacing-plates forming two or more compartments arranged between said sides and end blocks and simultaneously adjustable laterally, substantially as described.

6. A sectional mold, comprising a pair of sides, end blocks arranged between said sides, means for simultaneously adjusting the sides and end blocks and spacing-plates forming two or more compartments arranged between the sides and end blocks and simultaneously adjustable laterally and longitudinally, substantially as described.

7. A sectional mold, comprising spacing-plates forming two or more compartments arranged side by side, a pair of sides and end blocks arranged around said compartments and holding the plates forming the same in their proper relation to each other, and adjusting devices adapted to draw the sides and force the end blocks toward each other, respectively, and against the spacing-plates, substantially as described.

8. A sectional mold comprising a pair of sides having end extensions, end blocks arranged between said sides, and provided with grooves having a beveled vertical face, spacing-plates arranged between said sides and ends of the molds to form the compartments, the wedges operating in the grooves in the end blocks of the mold and against the beveled sides thereof, and means for moving said wedges to adjust the sides and ends of the mold simultaneously, substantially as described.

9. A sectional mold, comprising a pair of sides, having end extensions thereon, grooved end blocks arranged between said sides, spacing-plates forming the compartments between the sides and end blocks of the mold, wedges arranged to operate in grooves in the end blocks and against the vertical beveled sides of said grooves, threaded bolts on the ends of said wedges extending through openings in the extensions on the sides, and the nuts carried by said bolt and bearing against the outer faces of the sides, substantially as described.

10. A sectional mold, comprising a pair of grooved sides having end extensions thereon, end blocks arranged between said sides and provided with grooves having a beveled vertical side, spacing-plates provided with tongues arranged to fit in grooves on the inner faces of said sides, other spacing-plates forming, with the first-mentioned plates, the mold-compartments and provided with tongues on their ends to fit in the grooves in the inner faces of said sides, the wedges arranged to operate in the grooves in the end blocks and provided with beveled sides to engage the beveled vertical sides of said grooves, bolts on the ends of said wedges projecting through openings in the extensions on the sides, and nuts on said bolts adapted to be operated to move the wedges and adjust the sides and end blocks of the mold simultaneously, substantially as described.

11. A sectional mold, comprising a pair of grooved sides, end blocks arranged between said sides, means for adjusting the same simultaneously, spacing-plates b provided with tongues on their ends adapted to fit in the grooves on the inner faces of said sides, spacing-plates b' forming, with the first-mentioned plates, the compartments of the mold and provided with tongues to fit in the grooves in said sides, the adjacent side plates of two adjoining compartments being arranged back to back, and end plates of each compartment being arranged between the side plates of that compartment, substantially as described.

607,788. PULLEY FOR USE ON BRIDLES. JOHN E. CAMPBELL, Gaines, Pa. Filed Aug. 18, 1897. Serial No. 648,668. (No model.)



Claim.—In a bridle, a strap-connecting plate having an outwardly-projecting boss at its outer side, a pulley-casing fitting upon said boss, a pulley within the casing, and a pulley-journal passing through the casing and pulley and attached to the plate, thus serving to unite the casing to the plate and as a journal for the pulley, the casing having openings for the passage of the reins, substantially as described.

607,789. PRINTING OF MUSIC AND APPARATUS FOR EXPOSING SAME TO READERS. CHARLES GERARDAL, Mustapha, France. Filed Dec. 11, 1897. Serial No. 661,567. (No model.) Patented in France Mar. 19, 1897, No. 265,410.

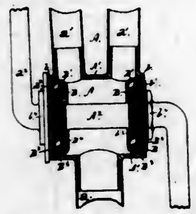


Claim.—1. A strip of music or other readable matter, printed within areas proportionate, or nearly proportionate, to the periods of time within which the music should be read off, and on a surface provided with projections and depressions or holes, either on one side or in the body of the music; such projections, depressions or perforations being spaced out according to the "time" or number of bars of the music.

2. An apparatus for moving strip-music provided with irregularities such as projections, perforations or depressions, consisting of mechanism for feeding said strip in either direction at will, clockwork for driving said feed mechanism, means for varying the speed of the clockwork, and a visible or audible alarm adapted to be operated by the irregularities of the strip at predetermined times, substantially as described.

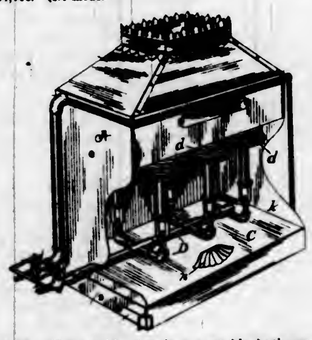
3. An apparatus for moving strip-music provided with irregularities such as projections, perforations or depressions, consisting of mechanism for feeding said strip, clockwork for driving said feed mechanism, and means whereby the speed of the clockwork will be governed by predetermined irregularities in the strip, substantially as described.

607,790. ANTIFRICTION-BEARING. JAMES C. REBER, Reading, Pa. Filed Oct. 1, 1897. Serial No. 653,765. (No model.)



Claim.—The combination of an axle or shaft having integral cranks, a sleeve or hub, ball-races fitting in the ends thereof, cones engaging the axle and each having a recess in its inner end producing an enlargement of its bore, balls between the races and cones, and ball-retainers fitting against the inner ends of the cones respectively, and each having a central flange fitting the recess of the cone, substantially as and for the purpose described.

607,791. PORTABLE BATH-ROOM AND WATER HEATER. WILLIAM H. THIELL, Chicago, Ill. Filed May 22, 1897. Serial No. 637,768. (No model.)



Claim.—The combination in a portable bath-room and water heater of a water-heating coil, of a supply-pipe therefor having a valve, the supply-pipe and discharge-pipe connected to the top edge of said coil, a gas-heater supported upon a slidable platform, the gas-supply for said heater being provided with a valve, a detachable connection between the water-supply valve and gas-supply valve whereby when it is desired to heat the apartment in which the water-heater is placed, the two valves may be disconnected and the gas-heater withdrawn for heating the room substantially as set forth.

607,792. WINDOW PANE OR LIGHT. OSWALD E. WIEGER, Chicago, Ill., assignor to Ralph D. Small, same place. Filed Oct. 15, 1897. Serial No. 655,341. (No model.)

Claim.—1. As a new article of manufacture, a pane formed of a single and integral piece of transparent material, as glass, having formed therein and inclosed between the light-receiving and light-discharging surfaces one or more interior cavities, the walls of which are constructed to form curved light-reflecting and curved entering and leaving light-refracting surfaces, substantially as described.

2. A pane formed of a single and integral piece of glass having opposed and substantially parallel light-receiving and light-discharg-

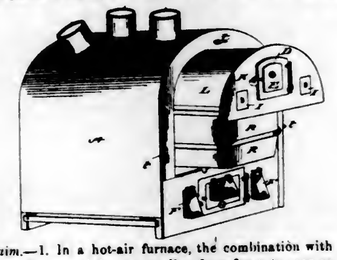
ing surfaces and having formed therein an interior cavity extending longitudinally into the pane between said substantially parallel receiving and discharging surfaces, said cavity having a wall constituting a light-deflecting surface and having its transverse dimension curved, substantially as described.



3. A pane formed of a single and integral piece of glass having light-receiving and light-discharging surfaces and formed between said surfaces with a cavity, having walls constituting curved entering and leaving light-refracting surfaces, substantially as described.

4. A pane formed of a single and integral piece of glass having light-receiving and light-discharging surfaces and formed between said surfaces with a cavity having walls constituting entering and leaving light-refracting surfaces, one of said surfaces being curved, substantially as described.

607,793. **HOT-AIR FURNACE.** JAMES T. BRIEN and THEODORE R. BRIEN, Hoosick Falls, N. Y., assignors of one-half to Henry W. Stone, same place. Filed Sept. 13, 1897. Serial No. 651,470. (No model.)



Claim.—1. In a hot-air furnace, the combination with a base and lower horizontal flues extending from front to rear on oppsite sides of the ash-pit in the base, and a casing mounted upon the base and provided with a front aperture; a fire-pot; and vertical flues connecting at the lower end with the base-flues; of an upper flue-box located within the casing and removable through the front aperture therein and having flues extending from front to rear and provided with bottom apertures communicating respectively with the fire-pot and the upper ends of the several vertical flues, substantially as described.

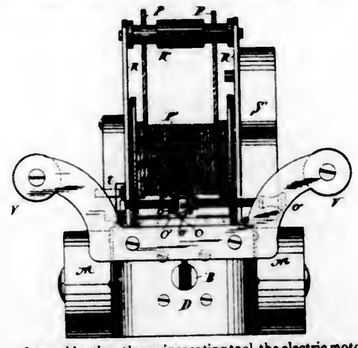
2. In a hot-air furnace, the combination with a fire-pot; a base provided with horizontal flues; vertical flue-pipes communicating at their lower ends with the base-flues; an inclosing casing having a front aperture; a smoke-pipe at the rear of the casing having an upper branch, and a lower branch communicating with the base-flues; and a damper in the upper branch of the smoke-pipe; of an upper flue-box removably inserted in the front aperture in the casing and provided with flue-partitions, an aperture in the rear end and apertures in the bottom communicating respectively with the upper branch of the smoke-pipe, and the fire-pot and upper ends of the vertical flue-pipes, when the flue-box is inserted within the casing, substantially as described.

607,794. **APPARATUS FOR CLEANING PAINT FROM SHIPS.** WARREN P. FREEMAN, New York, N. Y. Filed June 22, 1897. Serial No. 641,306. (No model.)

Claim.—1. In combination, the reciprocating tool, the electric motor for operating it, flexible connections by which the tool is suspended, means for carrying the current to the said electric motor, and mechanical means for adjusting the tool vertically, laterally, and forward and backward, consisting of a crane provided with a trolley running upon the crane, and a take-up device for the flexible connections which support the said tool, substantially as set forth.

2. In combination, the crane, the trolley running upon the crane, electric conductors P extending down from the said trolley, electric connections between the said trolley and stationary conductors, and the electrically-operated tool suspended by means of the said conductors P, substantially as set forth.

3. In combination, the crane, the trolley running upon the crane, electric conductors P extending down from the said trolley, electric connections between the said trolley and stationary conductors, the reciprocating tool provided with supporting-handles, the electric motor for operating the said tool, the drum P' upon which the said conductors P are wound, the said drum being mounted upon the said electric motor, and means for winding up the said conductors upon the said drum or unwinding them, substantially as set forth.



4. In combination, the reciprocating tool, the electric motor therefor, the electric conductors P for the said motor, means for winding and taking up or unwinding and letting out the said conductors P adjacent to the said motor, and a switch mounted in fixed relation to the said motor for controlling it, substantially as set forth.

5. In combination with the electrically-actuated tool and the casing or frame thereof, a drum mounted upon the said casing or frame, the conductors P' arranged to be wound upon the said drum, a counterbalance spring for the said drum, to counterbalance the weight of the tool and its connected parts when suspended by means of the said conductors, and means for locking and releasing the said drum, substantially as set forth.

6. In combination, the electrically-operated tool the electric conductors therefor, a drum mounted upon the casing or frame of the said tool, the ends of the said conductors being secured to the said drum and respectively connected to the terminals of the electric motor by contacts or brushes Q bearing upon metallic portions of the said drum, to which the ends of the said conductors are electrically connected, substantially as set forth.

7. In combination, the reciprocating tool actuated by the transverse shaft, two armatures mounted coaxially upon either side of the said tool and upon the said shaft, and the field-magnets, commutator-brushes, and electrical connections, therefor, substantially as set forth.

8. In combination, the electric motor provided with two coaxially-rotating armatures, the reciprocating tool actuated by the shaft of the said armatures and symmetrically placed between the two said armatures, and the commutator and electric connections for the said motor, the whole being arranged symmetrically to the said tool, substantially as and for the purposes set forth.

9. In combination with the electric motor, including a field-magnet and a pair of armatures, the reciprocating tool-bar extending through the said field-magnet and through the field-magnet windings, the said tool-bar being actuated by the shaft of the said motor, substantially as set forth.

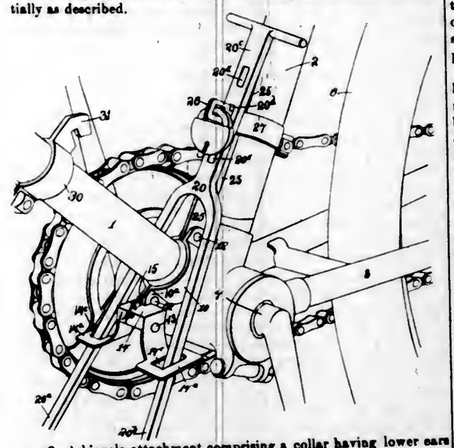
10. In combination, the reciprocating tool-bar and the electric motor therefor, the said tool-bar extending transversely to the shaft of the said motor, through the field-magnet and field-magnet coils, substantially as set forth.

11. In combination, the reciprocating tool, comprising the holder or bar C, the eccentric box G sliding transversely to the said bar or holder and mounted therein in guides, the eccentric F turning in the said box G, the shaft E, means for rotating the said shaft, and the guides for the said bar or holder C, substantially as set forth.

12. In combination with the reciprocating tool bar or holder, the electric motor actuating the said reciprocating tool bar or holder, and a tool end or tool proper movably secured to the said reciprocating tool bar or holder, and a spring interposed between the said tool end or tool proper and the said reciprocating tool bar or holder, substantially as set forth.

607,795. **BICYCLE-SUPPORT.** ALBERT I. GALLAWAY, Morristown, N. J., assignor of one-half to David Sayre Ensley, same place. Filed May 27, 1897. Serial No. 638,363. (No model.)

Claim.—1. A bicycle attachment comprising a collar, means for securing the collar to the lower forward reach of a bicycle-frame, the guide-bracket having downwardly-extending arms provided with elongated parallel slots and pivoted to the collar, a Y-shaped support having legs extending through the parallel slots of the arms and adapted to be swung therein, and means for securing the support; substantially as described.

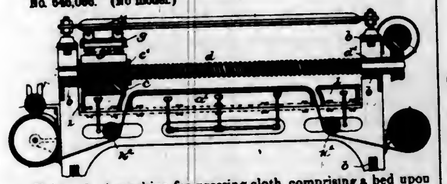


2. A bicycle attachmeat comprising a collar having lower ears formed with upper shoulders providing stops, the guide-bracket having a slot adapted to receive the lower ears, and downwardly-extending arms provided with elongated parallel slots, a pivot-bolt whereby the guide-bracket is pivoted to the lower ears of the collar beneath the upper shoulders and a Y-shaped support having legs extending through the parallel slots of the arms and adapted to be swung therein; substantially as described.

3. A bicycle attachment comprising a collar having lower ears formed with lower shoulders providing stops, the guide-bracket having a shoulder-plate adapted to bear against the lower shoulders, and downwardly-extending arms provided with elongated parallel slots, a pivot bolt whereby the guide-bracket is pivoted to the lower ears of the collar above the lower shoulders, and a Y-shaped support having legs extending through the parallel slots of the arms and adapted to be swung therein; substantially as described.

4. A bicycle attachment comprising a collar having lower ears formed with upper shoulders providing stops and with lower shoulders providing stops, the guide-bracket having a slot adapted to receive the lower ears, a shoulder-plate adapted to bear against the lower shoulder and downwardly-extending arms provided with elongated parallel slots a pivot-bolt whereby the guide-bracket is pivoted to the lower ears of the collar between the upper and lower shoulders, and a Y-shaped support having legs extending through the parallel slots of the arms and adapted to be swung therein; substantially as described.

607,796. **MACHINE FOR PRESSING CLOTH OR FABRIC.** WILLIAM HEBDON, Boston, Mass., assignor to the Hebdon Machine and Cloth Finishing Company, Portland, Me. Filed July 27, 1897. Serial No. 646,098. (No model.)



Claim.—1. A machine for pressing cloth, comprising a bed upon which the cloth may be placed, a pressing device movable back and forth over the bed to press the cloth thereon and movable into inoperative position out of engagement with the fabric, and means for drawing a continuous strip of fabric over the bed.

2. A machine for pressing cloth in open width, comprising a bed adapted to receive the cloth, a pressing device extending entirely across said bed and movable into inoperative position, a power device for moving said pressing device lengthwise of the said bed and means for drawing the fabric over the bed.

3. A machine for pressing cloth, comprising a bed having extensions at its ends, a pressing device adapted to travel across the said bed and rest upon either of said extensions, means for reciprocating the said pressing device, means for heating said device and means for drawing the fabric across said bed between said extensions.

4. A machine for pressing cloth comprising a bed having a main body portion over which the cloth is drawn and end portions or extensions, a pressing device movable from one end or extension to the other across the main portion of the bed and arranged to rest upon said end or extension and means for drawing the fabric over the main portion of the bed.

5. A machine for pressing cloth, comprising a stationary bed having a main portion over which the fabric passes and the separated extensions, a pressing device movable back and forth over said bed, so as to press the cloth thereon, and means for drawing a strip of cloth across the main portion of said bed, said means comprising a roll at each end of the bed, so that the cloth may be wound from one roll to the other.

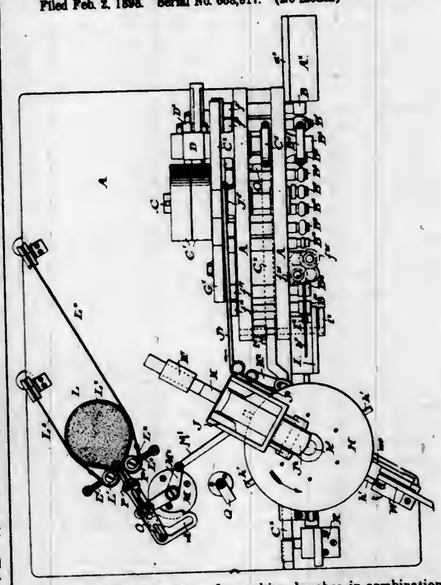
6. A machine for pressing cloth, comprising a suitable bed to receive the fabric, a pressing device, means for moving said device over said bed, a heating device arranged beyond each end of said bed whereby said device may be heated in the intervals between its being passed over the bed and means for drawing fabric over the said bed while the pressing device is being heated.

7. A machine for pressing cloth, comprising a bed over which the cloth may be drawn in a continuous strip, a pressing device, means for moving said pressing device longitudinally over the said bed, a tension device for causing said pressing device to bear against the cloth on the said bed with a yielding pressure and a guide against which said tension device presses as the pressing device travels over the bed.

8. A machine for pressing cloth comprising a traveling pressing device, a table having a central main portion to receive the fabric, and end portions to receive and support the pressing device while the fabric is being shifted, and means for heating the main and end portions of said table.

9. A machine for pressing cloth, comprising a frame, a bed secured to said frame on which the cloth may be pressed, a traveling pressing device having vertical dovetailed grooves in its sides, means for moving said device across the said bed, guide-bars mounted upon the said frame, and slides mounted in the grooves in the said pressing device and having collars sliding on the said guide-bars.

607,797. **BRUSH-MACHINE.** JOHN W. HOOKER, Philadelphia, Pa., assignor of one-half to Harry K. Walker, Fort Washington, Pa. Filed Feb. 2, 1898. Serial No. 668,817. (No model.)



Claim.—1. In a machine for making brushes, in combination, mechanism for forming a metallic handle tube, mechanism for inserting a tuft of bristles therein, mechanism for compressing the end of said handle tube upon said bristles and a movable holder, substantially as set forth.

2. In an organized machine for making brushes, in combination, mechanism for forming a metallic handle tube, mechanism for inserting a tuft of bristles within said tube, mechanism for compressing said

tube about said bristles, mechanism for trimming the ends of said bristles and a movable holder, substantially as set forth.

3. In an organized machine for making brushes, in combination, mechanism for forming a metallic handle tube, mechanism for inserting a tuft of bristles within the said tube, mechanism for compressing the end of said tube upon said bristles, mechanism for trimming the ends of said bristles, mechanism for ejecting the brushes from the machine and a movable holder, substantially as set forth.

4. In an organized machine for making brushes, in combination, mechanism for forming a metallic handle tube, mechanism for turning in the lips at the outer end of said tube, mechanism for inserting tufts of bristles in the open ends of said tubes, mechanism for compressing the ends of the tubes about said bristles and a movable holder, substantially as set forth.

5. In an organized machine for making brushes, in combination, mechanism for forming metallic handle tubes, mechanism for mounting caps upon the exteriors of said tubes, mechanism for inserting tufts of bristles within said tubes, mechanism for compressing the ends of said tubes upon said bristles and a movable holder, substantially as set forth.

6. In an organized machine for making bristles, a rotatable holder or carrier, means for imparting rotation to said carrier, cap-supplying mechanism, bristle-supplying mechanism, a swaging mechanism, all located in the vicinity of said rotatable carrier, sockets formed in said carrier for the reception of metallic handle tubes, which, in the movement of the carrier are presented in succession to the several instrumentalities named, substantially as set forth.

7. In an organized machine for making brushes, a socket provided rotatable holder or carrier, means for imparting intermittent rotation to the same, mechanism for forming metallic tubes, and conveying them to and inserting them in said sockets, as the carrier rotates in front of said tube forming mechanism, mechanism for inserting tufts of bristles in the tubes carried by the rotatable carrier, mechanism for forcing caps upon the tubes mounted in the rotatable carrier, and mechanism for compressing the metal of the tubes upon the inserted bristle tufts, all said mechanisms being arranged about the rotatable carrier, substantially as set forth.

8. In an organized machine for forming brushes, in combination, a pair of feed rolls, a shearing mechanism, a pair of cutting dies, and a series of tube forming rolls, the arrangement being such that the mechaniams stated continuously sever strips of metal from a sheet, divide said strips into blanks and roll said blanks into tubes, substantially as set forth.

9. In an organized machine for forming mucilage brushes, in combination with a receiver, such as a socket provided rotatable carrier or holder, a series of tube forming rolls adapted to form metallic handle tubes, a pair of delivery rolls which receive the tubes one by one from the tube forming mechanism, and a conveyer, which carries said tubes one by one, from said delivery rolls to sockets of the rotatable carrier, said conveyer consisting of a pair of spring fingers carried by a stud, mounted in a slot formed in a plate extending from the delivery rolls to said rotatable carrier, a crank arm mounted on said stud and carrying a wrist-pin, and a rock-arm having a longitudinal slot, in which said wrist-pin is entered substantially as set forth.

10. In a machine for making brushes, in combination with delivery rollers a conveyer mechanism, consisting of a slide plate having a longitudinal slot, a stud mounted in said slot free for axial and sliding movement therein, a pair of spring fingers mounted on said stud, a crank-plate connected with said stud, and equipped with a wrist-pin, a rock-arm having an elongated slot embracing said wrist-pin, and means for occasioning the rocking movement of said rock-arm, substantially as set forth.

11. In an organized machine for forming brushes, in combination with a series of operative devices, a carrier or holder provided with sockets adapted to receive metallic handle tubes, and adapted to be rotated to present said tubes in succession to the operative instrumentalities, said carrier consisting of a plate provided with a series of radial openings, and mounted upon an axial shaft, and means for imparting intermittent rotation to said carrier, substantially as set forth.

12. In an organized machine for forming brushes, in combination with a series of operative devices, a carrier or holder provided with sockets adapted to receive metallic handle tubes, and adapted to be rotated to present said tubes in succession to the operative instrumentalities, said carrier consisting of a plate provided with a series of radial openings, and mounted upon an axial shaft, and means for imparting intermittent rotation to said carrier, such means consisting of a ratchet plate carried by such carrier, and a ratchet pawl engaged therewith, and connected with a reciprocating driver, substantially as set forth.

13. In an organized machine for forming brushes, in combination with a series of operative devices, a carrier or holder provided with sockets adapted to receive metallic handle tubes, and adapted to be rotated to present said tubes in succession to the operative instrumentalities, said carrier consisting of a plate provided with a series of radial openings, and mounted upon an axial shaft, means for imparting intermittent rotation to said carrier, such means consisting of a ratchet plate carried by such carrier, a ratchet pawl engaged therewith, and connected with a reciprocating driver, a plate rotating with said carrier and embodying a series of marginal recesses, a locking bolt having a rounded head, adapted for engagement in said recesses, said locking bolt being constantly pressed by a spring against said locking plate, substantially as set forth.

14. In an organized machine for forming brushes, in combination with a series of stationary brush-forming instrumentalities, a rotatable carrier or holder provided with radial sockets, removable bushings or sleeves mounted in said sockets, substantially as set forth.

15. In an organized machine for forming brushes, in combination with a series of stationary brush-forming instrumentalities, a rotatable carrier or holder provided with radial sockets, removable bushings or sleeves mounted in said sockets, and convex blocks mounted in the inner ends of said bushings or sleeves, substantially as set forth.

16. In an organized machine for making mucilage brushes, in combination, a rotatable carrier or holder provided with sockets, a stationary cap-hopper provided with a holder at its lower end, adapted to hold caps one at a time in line with a handle tube presented before it by the carrier, and means for forcing said cap out of said holder, and upon the tube, substantially as set forth.

17. In combination with a rotatable carrier or holder provided with tube sockets, a cap-hopper of tapering form terminating in a throat, and holding devices for supporting said caps one by one in said throat, a plunger adapted to carry said caps from said holder to and force them upon the tube scarried by the carrier, substantially as set forth.

18. In a machine for forming mucilage brushes, in combination, a rotatable carrier or holder embodying sockets for the reception of metallic handle tubes, means for supplying handle tubes to said sockets, a cap hopper of general tapering form terminating in a throat, embodying front and back openings of approximately the circumference of the caps, means for arresting the descent of the caps, when they come in line with said opening, such means consisting of an adjustable supporting-plate, and adjustable side plates, and a plunger adapted to force said caps out of said holder, and upon tubes mounted in the carrier, substantially as set forth.

19. In an organized machine for making mucilage brushes in combination with a device for supporting a series of handle tubes and presenting them in succession to brush forming instrumentalities, a cap-hopper, of a general tapering form, terminating in a narrow throat, of such plan as to be adapted to receive the caps edgewise one by one, and means for causing said caps to present within said throat with their edges turned outwardly, such means consisting of a traveling apron, which moves along the inner face of the inclined wall of said hopper, from a point just above said throat, and means for conveying said caps to and forcing them upon the tubes, substantially as set forth.

20. In a machine for forming mucilage brushes in combination, a rotatable tube carrier, means for holding caps, one by one in line with tubes mounted in said carrier, a plunger having a hollow bore, and adapted in its advance movement to engage within the concave side of the cap, and in the continued advance of said plunger to force said cap upon the exterior of a tube, the outer end of said tube being received within its own hollow bore, substantially as set forth.

21. In a machine for forming mucilage brushes in combination, a rotatable tube carrier or holder, means for holding caps, one by one, in line with tubes carried by said carrier, a plunger having a hollow bore, and adapted in its advance movement to engage within the concave side of a cap, and in the continued advance of said plunger to force said cap upon the exterior of a tube, the outer end of said tube being received within its own hollow bore, a mandrel in the base of said bore preventing the distortion of the metal of the tube, substantially as set forth.

22. In an organized machine for forming brushes, in combination, a rotatable tube carrier, means for imparting intermittent rotation to said carrier or holder, a bristle holder in the vicinity of which the tubes of the carrier successively present and dwell, and means for conveying tufts of bristles from said bristle holder to said tubes, substantially as set forth.

23. In an organized machine for forming brushes, in combination, a movable tube carrier or holder, means for supplying metal handle tubes, to said carrier, means for imparting intermittent rotation to said carrier, a bristle holder in the vicinity of which said tubes are successively presented and held, means for conveying a tuft of bristles from said bristle holder to said tubes, said bristle holder consisting of a flexible band, the respective extremities of which pass round guide pulleys or similar devices located in close proximity to each other, the ends of said band being controlled by weights or springs, substantially as set forth.

24. In an organized machine for forming brushes, in combination, a movable tube carrier or holder, means for imparting intermittent rotation to said carrier, a bristle holder in the vicinity of which said tubes are successively presented and held, means for conveying a tuft of bristles from said bristle holder to said tubes, said bristle holder consisting of a flexible band, the respective extremities of which pass round guide pulleys or similar devices located in close proximity to each other, the ends of said band being controlled by weights or springs, and blocks placed in the interspace between said guide pulleys and yieldingly forced together by spring pressure to close the opening between said guide gulleys, substantially as set forth.

25. In an organized machine for forming brushes, in combination, a movable tube carrier or holder, means for imparting intermittent rotation to said carrier, a bristle holder in the vicinity of which said tubes are successively presented and held, means for conveying a tuft of bristles from said bristle holder to said tubes, said bristle holder consisting of a flexible band, the respective extremities of which pass round guide pulleys or similar devices located in close proximity to each other, the ends of said band being controlled by weights or springs, and blocks placed in the interspace between said guide pulleys and yieldingly forced together by spring pressure to close the opening between said guide pulleys, the passing faces of said blocks being inclined, substantially as set forth.

26. In an organized machine for forming bristles, in combination, a movable tube carrier or holder, means for imparting intermittent rotatioe to said carrier, a bristle holder in the vicinity of which said tubes successively present aad dwell, means for conveyiug tufts of bristles from said bristle holder to said tubes, said bristle holder consisting of a flexible band, the respective ends of which pass about two fixed devices located in the vicinity of each other, lip-blocks disposed between said fixed devices, and each mounted on a spring-controlled carrier, the springs of which carriers force said lip blocks into yielding contact, substantially as set forth.

27. In an organized machine for forming brushes, in combination, a movable tube carrier or holder, means for imparting intermittent rotatioe to said carrier, a bristle holder in the vicinity of which said sockets carrying the tubes successively present and dwell, means for conveying tufts of bristles from said bristle to said tubes, and consisting of a fixed plate embodying a guide slot, a reciprocating lever having a slotted arm, the slot of which registers with said guide slot, a bristle carrier plate having a longitudinal slot and a key slot, a key stud, mounted on said fixed plate and entered in said key-slot, a stud extending through the guide slot, the lever slot and the slot of the bristle carrier plate, and provided with a finger, bristle carrying fingers pivotally mounted on said plate and geared together, one of said fingers being provided with a shank adapted to be encountered by the finger of the stud, substantially as set forth.

28. In an organized machine for forming brushes, in combination, a movable. tube carrier or holder, means for imparting intermittent rotation to said carrier, a bristle holder in the vicinity of which said tubes successively present and dwell, means for conveying tufts of bristles from said bristle holder to said tubes, and consisting of a fixed plate embodying a curved guide slot, a reciprocating lever having a slotted arm, the slot of which registers with said guide slot, a bristle carrier plate having a longitudinal slot and a key slot, a key stud, mounted on said fixed plate and entered in said key-slot, a stud extending through the guide-slot, the lever slot and the slot of the bristle carrier plate, and provided with a finger, bristle carrying fingers pivotally mounted on said plate and geared together, one of said fingers being provided with a shank adapted to be encountered by the finger of the stud, an ejector plate, the recessed outer end of which reciprocates in ways formed in the opposing faces of the fingers, and the inner end of which is connected to the stud, substantially as set forth.

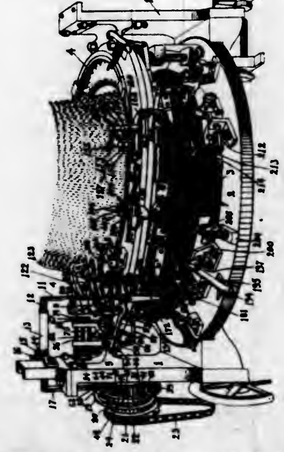
29 In an organized machine for forming brushes, in combination, a movable tube carrier or holder, means for imparting intermittent rotation to said carrier, a bristle holder in the vicinity of which said sockets carrying the tubes successively present and dwell, means for conveying tufts of bristles from said bristle holder to said tubes, and consisting of a fixed plate embodying a guide slot, a reciprocating lever having a slotted arm, the slot of which registers with said guide slot, a bristle carrier plate having a longitudinal slot and a key-slot, a key-stud, mounted on said fixed plate and entered in said key-slot, a stud extending through the guide slot, the lever slot and the slot of the bristle carrier plate, and provided with a finger, bristle carrying fingers pivotally mounted on said plate and geared together, one of said fingers being provided with a shank adapted to be encountered by the finger of the stud, the other of said fingers being provided with a spring shank which by pressure against the rigid shank of the other finger tends to keep said fingers closed, substantially as set forth.

30. In an organized machine for forming brushes, in combination, a movable tube carrier or holder, means for imparting intermittent rotation to said carrier, a bristle holder in the vicinity of which said sockets carrying the tubes successively present and dwell, means for conveying tufts of bristles from said bristle holder to said tubes, and consisting of a fixed plate embodying a guide slot, a reciprocating lever having a slotted arm, the slot of which registers with said guide slot, a bristle carrier plate having a longitudinal slot and a key-slot, a key stud, mounted on said fixed plate and entered in said key-slot, a stud extending through the guide slot, the lever slot, and the slot of the bristle carrier plate, and provided with a finger, bristle carrying fingers pivotally mounted on said plate and geared together, one of said fingers being provided with a shank adapted to be encountered by the finger of the stud, the other of said fingers being provided with a spring shank which by pressure against the rigid shank of the other finger tends to keep said fingers closed, substantially as set forth.

31. In an organized machine for making brushes, in combination, a rotatable tube carrier or holder, means for supplying tubes to said carrier, and for supplying said tubes with tufts of bristles, a pair of compressing dies, and means for causing the approach and recession of said dies, said dies being so located that the tuft provided handle tubes are in the movement of the carrier presented one by one between them, substantially as set forth.

32. In an organized machine for making brushes, in combination, a rotatable carrier or holder embodying sockets, means for inserting tubes in said socket, and for supplying said tubes with tufts of bristles, a pair of cutting blades, and means for causing the approach and recession of said dies, said dies being so located that the tuft provided handle tubes are in the movement of the carrier presented one by one between them, substantially as set forth.

607,798. CIRCULAR-KNITTING MACHINE. DANIEL HURLEY, Bennington, Vt., assignor to Charles Cooper, same place. Filed Dec. 3, 1897. Serial No. 660,674. (No model.)



Claim.—1. In a circular-knitting machine, the combination with the revoluble needle-cylinders, spring-needles, stitch-wheels, pressers adjacent to the stitch-wheels, and needle-actuating cams, of a series of levers connected with said pressers, a second series of levers connected to said cams and means for operating both series of levers to control the action of the cams and pressers on the needles to change the stitch, as and for the purpose set forth.

2. In a circular-knitting machine, the combination with the needle-cylinders, spring-needles, stitch-wheels, pressers adjacent to the stitch-wheels, and needle-actuating cams, of means for automatically changing the positions of the cams and pressers to change the stitch produced, as and for the purpose set forth.

3. In a circular-knitting machine, the combination with the needle-cylinders, spring-needles, stitch-wheels, pressers adjacent to the stitch-wheels, and needle-actuating cams, of a pattern-wheel, shipping-pins controlled by the pattern-wheel and carried by a needle-cylinder, and means connected with said cams and pressers and operated by the shipping-pin to change the stitch, as and for the purpose set forth.

4. In a circular-knitting machine, the combination with the needle-cylinders, needles, stitch-wheels, pressers adjacent to said stitch-wheels, and needle-actuating cams, of shipping-pins carried by a nee-

dle-cylinder, switching devices for adjusting said pins automatically, and means controlled by said shipping-pins to change the positions of the cams and pressers, as and for the purpose set forth.

5. In a circular-knitting machine, the combination with needle-cylinders, needles, stitch-wheels, pressers adjacent to said stitch-wheels, and needle-actuating cams, of a pattern-wheel, switches controlled by the pattern-wheel, shipping devices controlled by said switches, and a series of levers connected with said cams and another series of levers connected with said pressers and operated by the shipping devices to change the positions thereof, as and for the purpose set forth.

6. In a circular-knitting machine, the combination with the revoluble needle-cylinders, of a pattern-wheel having a series of projecting pins, means for operating said pattern-wheel, levers arranged in the paths of said pins, switch-plates connected with said levers and operated thereby, shipping-pins carried by one of the needle-cylinders operated by said switch-plates, and means controlled by the shipping-pins to change the stitch, as and for the purpose set forth.

7. In a circular-knitting machine, the combination with the revoluble needle-cylinders, needles, stitch-wheels, pressers adjacent to said stitch-wheels, and needle-actuating cams, of a pattern-wheel having a series of projecting pins, means for operating the pattern-wheel, levers arranged in the path of said pins, shipping-pins carried by a needle-cylinder, switch-plates connected with said levers and operated thereby to actuate the shipping-pins, and a series of levers supported by a stationary part and controlled by said shipping-pins and connected with the cams and pressers, as and for the purpose set forth.

8. In a circular-knitting machine, the combination with the revoluble needle-cylinders, the needles, shipping-pins carried by a needle-cylinder, means for operating the shipping pins, and devices engaging the needles for controlling the character of stitch produced thereby, of a series of levers supported by a stationary part and arranged in pairs and projecting into the paths of said shipping-pins, pivoted levers controlled by said series of levers and mechanism connecting said pivoted levers with the needle-engaging devices, as and for the purpose set forth.

9. In a circular-knitting machine, the combination with the revoluble needle-cylinders, the needles, the needle-controlling devices embodying movable needle-actuating cams, stitch-wheels, pressers adjacent to the stitch-wheels, and presser-wheels, of a series of levers supported by a stationary part and arranged in pairs adjacent to the upper needle-cylinder, mechanism operated by said pairs of levers for controlling the position of the cams, and another mechanism operated by said pairs of levers for controlling the position of the presser-wheels, shipping-pins carried by a needle cylinder for operating the levers, a pattern-wheel, and a switch-plate controlled by said pattern-wheel and operating said shipping-pins, as described, whereby the machine may be set to knit the regular course, the royal rib, and the welt, and changed automatically from one to another, as and for the purpose set forth.

10. In a circular-knitting machine, the combination with the revoluble needle-cylinders, and the needles, of means for changing the stitch automatically, said means embodying a series of levers supported on a stationary part, means operated by said levers for controlling the action of the needle, shipping-pins on one of the cylinders for operating said levers, a pattern-wheel, means for operating the pattern-wheel, and switch-plates operated by the pattern-wheel to actuate the shipping-pins, as and for the purpose set forth

11. In a circular-knitting machine, the combination with revoluble needle-cylinders, of means for changing the stitch automatically, embodying a pattern-wheel intermittently operated by actuating devices moved by one of the revoluble cylinders, a second pattern-wheel, actuating devices therefor connected with the actuating devices of the first pattern-wheel, means for rendering the actuating devices of the second pattern-wheel inoperative at predetermined intervals, means operated by the first pattern-wheel to restore the actuating devices of the second pattern-wheel to operative position, and mechanism controlled by the second pattern-wheel to govern the action of the needles, as and for the purpose set forth.

12. In a circular-knitting machine, the revoluble needle-cylinders needles, a pattern-wheel 31, a pawl and ratchet for imparting motion thereto, and means controlled by said pattern-wheel to govern the action of the needles, in combination with a second pattern-wheel 21, a cam 24 movable therewith, a second pawl and ratchet for imparting motion to said wheel 21, means actuated by one of the cylinders for actuating the pawls to drive the pattern-wheels 21 and 31 independently, a pivoted lever arranged in the path of said cam, a second lever adjacent to said first-mentioned pawl adapted to lift the latter out of engagement with its ratchet, means for holding said second lever elevated at intervals, and means connecting the second lever with the first lever, whereby when the latter is moved by the cam the former will be moved out of engagement with its elevating means, as and for the purpose set forth.

13. In a circular-knitting machine, the combination with the revoluble needle-cylinders, the needles, the needle-actuating cams, the stitch-wheels, and the pressers adjacent to said stitch-wheels, of the pattern-wheel 31, means controlled by said pattern-wheel to determine the positions of the cams and pressers, a pattern-wheel 21, independent actuating devices for the pattern-wheels 21 and 31 operated by one of the revolving cylinders, and mechanism operated by the pattern-wheel 21 to start the actuating device for the pattern-wheel 31, as and for the purpose set forth.

14. In a circular-knitting machine, the combination with the needle-cylinders and needles, of pattern-wheels 21 and 31, mechanism for operating said pattern-wheels consisting of pawls and ratchets, connected levers adjacent to the pattern-wheels, one of said levers being arranged so that when elevated it will raise the pawl of the pattern-wheel 31 out of engagement with the ratchet thereof, means movable with said pattern-wheel 31 for raising the lever at determined intervals, sprocket-teeth on said pattern-wheel 21, a sprocket-chain engaging the teeth and having a cam-link to engage the other of said levers and reëngage the raised pawl with its ratchet, and means operated by said pattern-wheel 31 to control the character of stitch produced, as and for the purpose set forth.

15. In a circular-knitting machine, the combination with the revoluble needle-cylinders, of the independently-movable pattern-wheels 21 and 31, a ratchet for each of said pattern-wheels, a cam 9 on one needle-cylinder, a rock-shaft, an arm depending from one end of said rock-shaft having means to engage said cam and thereby rock said shaft once at each revolution of the needle-cylinder, an arm depending from the other end of said rock-shaft, pawls carried by the latter arm and engaging said ratchets, means for lifting the pawl out of engagement with the ratchet of pattern-wheel 31 without affecting the pawl for the pattern-wheel 21, means operated by said pattern-wheel 21 for reëngaging said raised pawl with its ratchet, and mechanism controlled by the pattern-wheel 31 to govern the action of the needles, as and for the purpose set forth.

16. In a circular-knitting machine, the combination with the revoluble needle-cylinders, of the independently-movable pattern-wheels 31 and 21, ratchets 39 and 20 for the respective pattern-wheels, sprocket-teeth on pattern-wheel 21, a chain engaging said sprocket-teeth and having a cam-link, a cam 9 on one needle-cylinder, a rock-shaft 12, an arm depending from one end of said rock-shaft and having means to engage the arm, an arm depending from the other end of said rock-shaft and having a bearing at its lower end, a journal in said bearing, a pawl fast on one end of said journal and engaging ratchet 20, a pawl loose on the other end of said journal and engaging ratchet 39, a lateral projection from the loose pawl, a journal 27, a lever on one end of the journal having its free end in the path of said cam-link, a spring-pressed arm projecting from the other end of said journal 27, a lever 30 pivoted to the upper end of said arm and arranged adjacent to said lateral projection, projections from the pattern-wheel 31 to lift the lever 30, and mechanism controlled by the pattern-wheel 31 to govern the action of the needles, as and for the purpose set forth.

17. In a knitting-machine, means for changing the stitch automatically, said means comprising a pattern-wheel 31 having a series of perforations, pins removably set in said perforations, a ratchet for said pattern-wheel, a pawl engaged with the ratchet, means for operating the pawl to turn the pattern-wheel, a pivoted lever in the path of said pins and in engagement with said pawl to disengage said pawl from the ratchet at determined intervals, means operated by said pattern-wheel to control the action of the needles, a pattern-wheel 21, means for operating said wheel, and mechanism operated by said pattern-wheel 21 to disengage the lever from said pins and thereby cause the pawl to be reëngaged with the ratchet, as and for the purpose set forth.

18. In a knitting-machine, means for changing the stitch automatically consisting of a pattern-wheel 31 having a series of perforations, pins removably set in said perforations, a ratchet for said pattern-wheel, a pawl engaged with said ratchet, means for operating the pawl to turn the pattern-wheel, a pivoted lever arranged in the path of the pins and in engagement with the pawl, to disengage the pawl from the ratchet at predetermined intervals, means operated by said pattern-wheel to control the action of the needles, a pattern-wheel 21, means for operating the same, a cam moved by said wheel 21, a lever engaged by the cam, the journal carrying the latter lever, and an arm to which the first-mentioned lever is pivoted, said arm being carried by the journal, as and for the purpose set forth.

19. In a knitting-machine, the combination with the shipping-pins, and mechanism, operated thereby to control the action of the needles, of a series of pivotally-supported switch-plates, a perforated pattern-wheel having pins removably set in its perforations, levers operated by said pins, and connections between the levers and switch-plates, as and for the purpose set forth.

20. In a knitting-machine, the combination with the shipping-pins, and mechanism operated thereby to control the action of the needles, of a pattern-wheel having lines of projections, a series of

journals adjacent to said pattern-wheel, a series of levers on said journals arranged to be operated by the projections, a series of shafts above those just mentioned, switch-plates carried by the latter series of shafts, and arranged to actuate the shipping-pins, and a series of levers, links and arms connecting the upper and lower series of shafts, as and for the purpose set forth.

21. In a circular-knitting machine, the combination with the rotating needle-cylinders, the needles, the needle-actuating cams, the stitch-wheels, the pressers adjacent to the stitch-wheels, and, of the shipping pins carried by the upper needle-cylinder, mechanism operated by the shipping-pins to control the positions of the cams and pressers, the pivotally-supported switch-plates to actuate the shipping-pins, and a pattern-wheel to operate mechanism to move the switch-plates, as and for the purpose set forth.

22. In a knitting-machine, the combination with the switch-plates, and means for operating the same, of a series of pairs of shipping-pins, the upper shipping-pin of each pair being arranged to be operated by the switch-plates to actuate the lower shipping-pin of each pair, and mechanism operated by said lower shipping-pins to control the action of the needles, as and for the purpose set forth.

23. In a circular-knitting machine, the combination with the revoluble needle-cylinders, the relatively stationary switch-plates, and means for operating said switch-plates, of a stand carried by the upper needle-cylinder, a series of slides in said stand, said slides having depressions in their inner surfaces, springs at the rear of the slides, pins supported by said springs for engaging said depressions, shipping-pins projecting from the outer surface of said slides, the upper series of pins being arranged to engage the switch-plates to actuate the lower series of pins and means operated by said lower series of pins to control the action of the needles, as and for the purpose set forth.

24. In a circular-knitting machine, the combination with a revoluble needle-cylinder and needles, of a movable needle actuating cam, a lever operatively connected with the cam, and a pair of pivoted levers on a stationary part to control the first lever, and means carried by the cylinder to actuate said pair of levers, as and for the purpose set forth.

25. In a circular-knitting machine, the combination with the revoluble needle-cylinder, the shipping-pins carried thereon, means for operating the shipping-pins, and a movable cam supported on a stationary part, of a pair of pivoted levers operated by the shipping pins, and a lever controlled by said pair of levers and operatively connected with said movable cam, as and for the purpose set forth.

26. In a circular-knitting machine, the combination with a movable cam, the revoluble needle-cylinders and the needles, of a link carrying said cam, an angle-lever one arm of which is connected with said link, a pivoted lever engaged with the other arm of said angle-lever, and means actuated by one of the cylinders for operating the pivoted lever, as and for the purpose set forth.

27. In a circular-knitting machine, the combination with a movable cam, the needle-cylinders, and the revoluble needles, of a link carrying said cam, an angle-lever one arm of which is connected with said link, a pivoted lever engaged with the other arm of said angle-lever and having a projection, a lever to engage said projection, and means carried by one of the cylinders for operating the latter lever, as and for the purpose set forth.

28. In a circular-knitting machine, the combination with a movable cam, the needle-cylinders and needles, of a link carrying said cam, an angle-lever one end of which is connected with the link, a pivoted lever engaged with the other arm of the angle-lever, the pivoted lever having a projection, a pair of levers connected to move in unison and one of which engages the projection, a movable shipping-pin carried by the needle-cylinder for operating said pair of levers, and means for moving said shipping-pin automatically, as and for the purpose set forth.

29. In a circular-knitting machine, the combination with the revoluble needle-cylinder, a pattern-wheel, connections between the needle-cylinder and the pattern-wheel whereby the latter is operated by the former, the needles, and a movable cam to engage the needles, of a switch-plate controlled by said pattern-wheel, shipping-pins carried by the needle-cylinder and actuated automatically by the switch-plates, a pair of levers supported on a stationary part and arranged to be operated by said shipping-pins, and mechanism operated by said levers and connected with the cam, as and for the purpose set forth.

30. In a knitting-machine the combination with the revoluble needle-cylinders and needles, and means for controlling the action of the needles consisting of cams 101 and 115, of mechanism for automatically raising and lowering the cams embodying a pair of levers, means connecting said levers on a stationary part with one of the cams, a second pair of levers on a stationary part, means connecting the same with other of said cams, and mechanism carried by one of the cylinders for operating said levers, as and for the purpose set forth.

31. In a knitting-machine, the combination with the revoluble needle-cylinders and needles, and means for controlling the action of said needles, said means embodying movable cams 101 and 115, and mechanism for automatically raising and lowering the cams to change the stitch, said mechanism including a pair of levers on a stationary part, means connecting said levers with one of the cams, a second pair of levers and means for connecting them with the other of said cams, shipping-pins carried by the upper cylinder to operate said levers, and means for raising and lowering the shipping-pins, as and for the purpose set forth.

32. In a knitting-machine, the combination with the revoluble needle-cylinders, the needles and means for controlling their action, said means embodying movable cams 101 and 115, and mechanism for automatically raising and lowering said cams to change the stitch, a pair of levers on a stationary part, means connecting the levers with one of said cams, a second pair of levers and means for connecting the same with the other of said cams, shipping-pins carried by the upper cylinder to operate said levers, a switch-plate for raising and lowering the shipping-pins, a pattern-wheel and means operated by said pattern-wheel for changing the position of the switch-plate, as and for the purpose set forth.

33. In a knitting-machine, the combination with the needle-cylinders and needles, and means for controlling the action of the needles consisting of movable cams 101 and 115, and means for automatically raising and lowering the cams, consisting of a pair of connected levers 85 and 87, a lever 93 having a projection to engage the end of the lever 87, an angle-lever, one arm of which is engaged by the lever 93, a link connecting the other arm of the angle-lever with the cam 101, a second pair of connected levers 104 and 105, a lever 107 having a projection to engage the end of lever 104, an angle-lever one arm of which is engaged by the end of lever 107, a link connecting the other arm of said angle-lever with cam 115, and means for operating said levers 85 87, 104 and 105, as and for the purpose set forth.

34. In a knitting-machine, the combination with the revoluble needle-cylinders and needles, and cams 101 and 115 for controlling the action of the needles, of means for automatically raising and lowering the cams consisting of a pair of connected levers 85 and 87, a lever 93 having a projection to engage the end of lever 87, an angle-lever one arm of which is engaged by lever 93, a link connecting the other arm of said angle-lever with cam 101, a second pair of connected levers 104 and 105, a lever 107 having a projection to engage the end of lever 104, an angle-lever one end of which is engaged by the end of lever 107, a link connecting the other arm of said angle-lever with cam 115, shipping-pins carried by the upper cylinder for operating levers 85, 87, 104 and 105, a switch-plate for raising and lowering the shipping-pins, and a pattern-wheel controlling the action of the switch-plate, as and for the purpose set forth.

35. In a knitting-machine, the combination with a movable cam 115, the needle-cylinders and needles, of a pair of pivoted levers operatively connected with said cam, a supplemental lever connected with said pair, a device to engage said pair of levers, and a separate device to engage the supplemental lever, as and for the purpose set forth.

36. In a knitting-machine, the combination with a movable cam 115, the revoluble needle-cylinders and needles, of a pair of pivoted levers, connections between said levers and the cam, a supplemental lever connected with the pivoted levers, and independently-adjustable shipping-pins carried by the needle-cylinder for operating said levers, as and for the purpose set forth.

37. In a knitting-machine, the combination with a movable cam 115, the revoluble needle-cylinders and needles, and a pivoted lever operating said cam, of a pair of levers connected and arranged to operate said pivoted lever, a supplemental lever connected with said pair of levers, a movable shipping-pin to engage said pair of levers, an independent movable shipping-pin to engage the supplemental lever, the shipping-pin being carried by one of the needle-cylinders, switch-plates for moving the shipping-pins, and a pattern-wheel controlling the switch-plates, as and for the purpose set forth.

38. In a knitting-machine, the combination with the needle cylinders and needles, and cams 101 and 115 for controlling the action of the needles, of means for automatically throwing the cams into and out of action consisting of a pair of levers, means connecting the same with one of the cams, a second pair of levers and means connecting them with the other of said cams, a common means for shifting said levers, a supplemental lever operatively connected with one of said pairs of levers, and means independent of said shifting means, for operating the supplemental lever, as and for the purpose set forth.

39. In a knitting-machine, the combination with a revoluble needle-cylinder and needles, and cams 101 and 115 for controlling the action of the needles, of means for automatically throwing the cams into and out of action consisting of a pair of levers, connections between the levers and one of the cams, a second pair of levers and connections between the same and the other of said cams, a shipping-pin carried by the needle-cylinder and operating successively upon one lever of each pair to throw the respective cams into action and upon the other lever of each pair to throw the cams out of action, a

supplemental lever connected with one pair of levers, and a shipping-pin operating said supplemental lever to move one cam without affecting the position of the other cam, as and for the purpose set forth.

40. In a knitting-machine, the combination with the needle-cylinders and needles and means for controlling the action of the needles, comprising a stitch-wheel and a device for pressing the needles into said stitch-wheel, of means operatively connected with said pressing device, and mechanism for operating said means, to force the presser away from the stitch-wheel, inward into the stitch-wheel and farther into the same, as and for the purpose set forth.

41. In a knitting-machine, the combination with the needle-cylinders and needles, and means for controlling the action of the needles consisting of a stitch-wheel and a presser adjacent thereto, of a movable standard, connections between said standard and presser, and means for moving said standard to different parts to adjust said presser relatively to the stitch-wheel, as and for the purpose set forth.

42. In a knitting-machine, the combination with the needle-cylinders and needles, and means for controlling the action of the needles embodying a stitch-wheel and a pressing device adjacent thereto, of a movable standard for controlling the position of the pressing device relatively to the stitch-wheel and means for operating the standard to cause the needles to be pressed considerably into the stitch-wheel a less distance thereinto or away from the same, as and for the purpose set forth.

43. In a knitting-machine, the combination with the needle-cylinder and needles, and means for controlling the action of the needles, embodying a stitch-wheel and a presser adjacent thereto, of a movable standard, connections between said standard and presser, a spring connected with the standard, and means for forcing the standard forward against the action of the spring, as and for the purpose set forth.

44. In a knitting-machine, the combination with the needle-cylinders and needles, and means for controlling the action of the needles, comprising a stitch-wheel and a presser adjacent thereto, of a movable standard, connections between the standard and presser, a spring connected with the standard, a lever for forcing the standard against the action of the spring, and means for releasing the lever from the standard, as and for the purpose set forth.

45. In a knitting-machine, the combination with the needle-cylinders and needles, and means for controlling the action of the needles, consisting of a stitch-wheel and a presser adjacent thereto, of a movable standard connected with said presser, a spring connected with said standard, levers for pressing said standard forward against the spring to different points, and means for operating the levers automatically, as and for the purpose set forth.

46. In a knitting-machine, the combination with the needle-cylinders and needles, means for controlling the action of the needles comprising a stitch-wheel and a device for pressing the needles into the stitch wheel, of shipping-pins and means connected with the pressing device and operated by said shipping-pins to control the action of the pressing device on the needles, as and for the purpose set forth.

47. In a knitting-machine, the combination with the stitch wheel and the presser adjacent thereto, of a double pair of levers, means for operating the levers, a movable standard with adjustable screws projecting therefrom into position to be operated on by said levers, and means connecting the standard with the presser, as and for the purpose set forth.

48. In a knitting-machine, the combination with the needle-cylinders and needles, and means for controlling the action of the needles, embodying a stitch-wheel and a pressing device adjacent thereto, of a movable standard controlling the position of the said pressing device, said standard having projections extending inwardly therefrom, two pairs of levers, one lever of one pair being arranged to engage one of said projections to move the standard a certain degree and one lever of the other pair being arranged to engage the other projection and move said standard a further extent, and shipping-pins for operating said levers, as and for the purpose set forth.

49. In a knitting-machine, the combination with the stitch-wheel and the presser adjacent thereto, of a standard, a double pair of levers operated to force the standard forward different extents, a swinging arm carrying the standard, a sliding arm connected with the swinging arm, a spring for holding said parts against the action of the levers, and means connected with the sliding arm for supporting the presser, as and for the purpose set forth.

50. In a knitting-machine, the combination with the needle-cylinders and needles, and means for controlling the action of the needles embodying a stitch-wheel and a presser adjacent thereto, of a swinging arm, a standard carried thereby, means for forcing said standard forward, a sliding arm forced forward by the movement of said standard, a spring for returning said sliding arm and standard to rearward position, and means connected with said sliding arm for supporting the presser, as and for the purpose set forth.

51. In a knitting-machine, the combination with the needle-cylinders and needles, of a stitch-wheel, a spring-actuated sliding arm 132 having a depending end, means to move said arm against the force of the spring, an adjusting-slide 143 in said end, a presser pivotally connected with said slide, and a screw for adjusting said presser in its pivot, as and for the purpose set forth.

52. In a knitting-machine, the combination of the stitch-wheel, a pivoted presser adjacent thereto, means for adjusting said presser on its pivot, a slide carrying said presser and adjusted to raise and lower the same, and mechanism for automatically carrying the presser into and away from the stitch-wheel, as and for the purpose set forth.

53. In a knitting-machine, the combination with the needle-cylinders and needles, and means for controlling the action of the needles, consisting of a stitch-wheel and pressers adjacent thereto, of a swinging arm having a depending end, an adjusting-screw extending through the end and working against a relatively-fixed part of the machine, a sliding arm having an upwardly-extending end, an adjusting-screw extending through said end against the depending end of the swinging arm, connections between the sliding arm and presser, and means for operating said swinging arm, as and for the purpose set forth

54. In a knitting-machine, the combination with the stitch-wheel and the presser adjacent thereto, of a swinging arm, a sliding arm operated by said swinging arm, means for operating the swinging arm, and connections between the sliding arm and presser, as and for the purpose set forth.

55. In a knitting-machine, the combination with the stitch-wheel, and the presser adjacent thereto, of a swinging arm, a sliding arm operated by the swinging arm, means for adjusting the sliding arm relatively to the swinging arm, means for operating the swinging arm, and connections between the sliding arm and presser, as and for the purpose set forth.

56. In a knitting-machine, the combination with the needle-cylinders and needles, a ring-plate and means for controlling the action of the needles consisting of a stitch-wheel and device for pressing the needles into the stitch-wheel, of a swinging arm pivoted to the ring-plate and having a depending end, an adjustable screw extending through said end and engaging the ring-plate, a bracket attached to the under side of the ring-plate, a sliding arm in said bracket having an upwardly-extending end, and an adjustable screw extending through said end and engaging the depending end of the swinging arm, a retaining-plate in the bracket having a slot, a pin extending through said slot from the sliding arm, a spring attached to said pin and retaining-plate, an arm projecting downward from said sliding arm and having a groove, an adjusting-slide in the groove, the presser pivotally attached to said slide, an adjusting-screw for the presser, a vertical standard carried by the swinging arm, two adjustable screws projecting from said standard, two pairs of connected levers, one lever of each pair being designed to engage one of the latter screws, and means for operating said levers, as and for the purpose set forth.

57. In a circular-knitting machine, the combination with the needle-cylinders and needles, the stitch-wheels, and the shipping-pins, of movable cams, means operated by said shipping-pins to control the positions of the cams, devices for pressing the needles into the stitch-wheels, and means operated by the shipping-pins to adjust the needle-pressing devices so as to crowd the needles into the stitch-wheel an extent sufficient for knitting the regular course and farther inward to knit the loose course, and away from the stitch-wheel in knitting the welt, as and for the purpose set forth.

58. In a circular-knitting machine, the combination of the needle-cylinders and needles, the stitch-wheels, and the devices for pressing the needles into the stitch-wheels, of movable cams, levers operatively connected with said cams, means connected with the needle-pressing devices constructed to press the needles a regular extent or farther into the stitch-wheels, and means for controlling the position of said cams and pressing devices, as and for the purpose set forth.

59. In a circular-knitting machine, the combination with the needle-cylinders and needles, movable cams, the stitch-wheels and devices for pressing the needles into the stitch-wheels, of a series of levers connected with the cams, levers operating the needle-pressing devices to cause the same to press the needles a regular extent or farther inward into said stitch-wheels for knitting the regular and loose courses, and means for operating said cams and pressing devices, as and for the purpose set forth.

60. In a circular-knitting machine, the combination with the revoluble needle-cylinders and needles, shipping-pins carried by one of the needle-cylinders, and means for operating the shipping pins, of devices for engaging the needles to control the character of stitch produced thereby, a series of separate levers each operatively connected with a needle-engaging device, and means arranged in the path of said shipping pins for operating the series of levers, as and for the purpose set forth.

61. In a circular-knitting machine, the combination with the revoluble needle-cylinders and needles, the independently-adjustable shipping-pins carried by one of the needle-cylinders, and means for

operating the shipping-pins, of devices engaging the needles to control the character of stitch produced, a series of separate levers each operatively connected with the needle-engaging device and having a projection, and the series of pairs of levers each arranged in the path of a shipping-pin, and one lever of each pair engaging one of said projections, as and for the purpose set forth.

62. In a knitting-machine, the combination with the revoluble needle-cylinders and needles, and the presser-wheel to engage the needle-beards, of shipping devices carried by one of the needle-cylinders, and means operatively connected with the presser-wheel and operated by the shipping devices to withdraw the presser-wheel from the needle-beards automatically, as and for the purpose set forth.

63. In a knitting-machine, the combination with the revoluble needle-cylinders and needles and the presser-wheel to engage the needle beards, of shipping devices carried by a needle-cylinder, a shaft having a crank-arm connections between said shaft and presser-wheel, and means arranged in the paths of said shipping devices to engage the crank-arm in the manner and for the purpose set forth.

64. In a knitting-machine, the combination with the revoluble needle-cylinders and needles, and the presser-wheel to engage the needle-beards, of shipping-pins carried by a needle-cylinder, switch-plates to adjust the shipping-pins automatically, a pattern-wheel controlling the action of the switch-plates, levers arranged to be operated by the shipping-pins, and connections between the levers and presser-wheel, as and for the purpose set forth.

65. In a knitting-machine, the combination with the revoluble needle-cylinders and needles, a presser-wheel to engage the needle-beards, and a support for said presser-wheel, of a pattern-wheel, switch-plates controlled by said pattern-wheel, shipping-pins carried by one of the needle-cylinders and adjusted by switch-plates, a shaft having its lower end operated in connection with the support of the presser-wheel and projections at its upper end, and levers arranged to engage said projections and to be operated by said shipping-pins, as and for the purpose set forth.

66. In a knitting-machine, the combination of the shaft having a crank-arm, a lever to engage the crank-arm and turn the shaft, means for operating said lever automatically, a foot-piece projecting from the lower end of the shaft, the bracket 179, the journal 183, a bar 180 extending from said journal into position to be engaged by said foot-piece, and the presser-wheel connected with said journal, as and for the purpose set forth.

67. In a knitting-machine, the combination with the revoluble needle-cylinders and needles, and a presser-wheel to engage the needle beards, of two pairs of levers, devices carried by a needle-cylinder for operating said levers, a shaft having crank-arms, pins projecting from said crank-arms into position to be operated on by said levers, and means operated by said shaft for moving said presser-wheel, as and for the purpose set forth.

68. In a knitting-machine, the combination with the needle-cylinders and needles, the presser-wheel for engaging the needle-beards, the pivoted bracket 179, the journal supporting said presser-wheel, the bar projecting from said journal, the spring 181, of a shaft 173, crank-arms projecting from the upper end thereof, pins projecting from said crank-arms, a foot-piece projecting from the lower end of said shaft into operative relationship with said bar, the double pairs of levers arranged to engage said pins, and devices to engage said levers, as and for the purpose set forth.

69. In a knitting-machine, the combination with the revoluble needle-cylinders, and needles, the presser-wheel for engaging the needle-beards, the pivoted bracket 179, the journal 183, the bar 180 projecting from said journal, and the spring 181, of a pattern-wheel, switch-plates controlled thereby, shipping pins carried by one of the cylinders operated by the switch-plates, two pairs of levers on a stationary part operated by the shipping-pins, a shaft, crank-arms projecting from the upper end of the shaft, pins projecting from said crank-arms into position to be engaged by said levers, and a foot-piece projecting from the lower end of the shaft into the operation with said bar 180, as and for the purpose set forth.

70. In a knitting-machine, the combination with the stationary cam 201, a relatively-movable cam 203, the revoluble needle-cylinders, shipping devices carried by a needle-cylinder, a lever in the path of said shipping devices, and means connecting said lever with the movable cam, as and for the purpose set forth.

71. In a knitting-machine, the combination with a revoluble needle-cylinder, shipping devices carried thereby, switch-plates for operating the shipping devices, a pattern-wheel for controlling the action of the shipping devices, and a lever arranged in the path of said shipping devices to be operated thereby, of a stationary cam, a movable cam, and mechanism operated by said lever to control the position of said movable cam, as and for the purpose set forth.

72. In a knitting-machine, the combination with the revoluble needle-cylinders and shipping devices carried by one of the cylinders, of a lever arranged to be operated by the shipping devices, a lug projecting from said lever, a crank-arm having a rearwardly-extending part engaging said lug, a stationary cam, a movable cam, and means connecting said crank-arm with the movable cam, as and for the purpose set forth.

73. In a knitting-machine, the combination with the revoluble needle-cylinder, the shipping devices carried by one of the cylinders, and lever arranged to be operated by the shipping devices and having a lug, of a stationary cam, a movable cam, a link carrying the movable cam, a pivoted actuating-bar, a crank-arm, a rod connecting one member of said crank-arm with the adjusting-bar, and an arm extending rearward from the other member of the crank-arm into position to engage the lug, as and for the purpose set forth.

74. In a knitting-machine, the combination with the revoluble needle-cylinders, shipping devices carried by one of the cylinders, and a lever arranged to be operated by said shipping devices, and having a lug, a crank-arm, an arm extending inward from the other end of said crank-arm, an adjustable screw projecting from said inwardly-extending arm into engagement with the lug, an adjustable screw projecting from one member of said crank-arm into engagement with a fixed part of the frame, a stationary cam, a movable cam, and means connecting said movable cam with the crank-arm, as and for the purpose set forth.

75. In a knitting-machine, the combination with the revoluble needle cylinders, a presser-wheel, a stationary cam, and a movable cam, of shipping devices, levers arranged in the path of said shipping devices, means operated by said levers for forcing the presser away from the needle-beards, and mechanism operated by said levers for adjusting the movable cam, as and for the purpose set forth.

76. In a knitting-machine, the combination with the needle-cylinders, a presser-wheel, a stationary cam, a movable cam, of two pairs of levers, a shaft having projecting parts arranged to engage one lever of each pair, means connecting said shaft with the presser-wheel, to remove it from the needles, a lug projecting from one of said levers, a crank-arm arranged to operate on said lug, and means connecting said crank-arm with the movable cam, and means for actuating the levers, as and for the purpose set forth.

607,799. HAT-FASTENER. HARRY INGRAM, New York, N. Y., assignor of one-half to Charles P. Fay and Thaddeus Firth, Jr., same place. Filed Feb. 4, 1897. Serial No. 621,954. (No model.)



Claim.—1. In a hat-fastener the combination of a plurality of sections having means for permanently securing the same to a hat or bonnet and slidably connected to each other, a hair-pin sliding in each section, and means for sheathing the points of the hair-pins when it is desired to remove the hat or bonnet from the head.

2. In a hat-fastener, the combination of a plurality of sections slidably secured together at one end and provided with the bends b^2 b^3 and the depressed portion b^4 and the hair-pin passing through the bends b^2 b^3 and slidable in the said sections.

3. In a hat-fastener, the combination of a plurality of sections slidably secured together at one end and provided with the bends b^2 b^3 and the depressed portion b^4 and the hair-pin passing through the bends b^2 b^3 and slidable in the said sections, the said hair-pins being bent to form crossovers c^2 which serve as stops for limiting the movement of the hair-pin in the section.

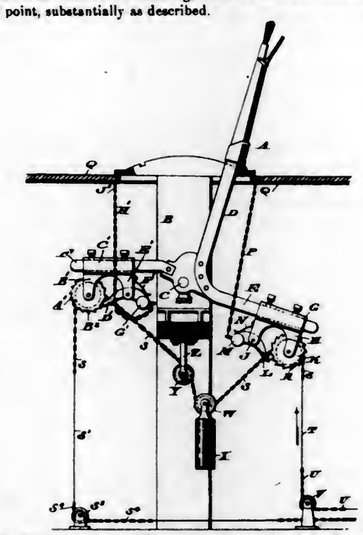
4. In a hat-fastener, the combination of a plurality of strips slidably secured together, each of the said strips being provided with a depressed portion c^4, the bends b^2 and the caps b^3, the space between the bends b^2 and the caps b^3 serving to sheathe the points of the hair-pins, substantially as described and for the purposes set forth.

607,800. COMPENSATING DEVICE FOR RAILROAD-SIGNALS, &c. JOSEPH R. JOHNS, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Union Switch and Signal Company, Swissvale, Pa. Filed Mar. 14, 1896. Serial No. 583,254. (No model.)

Claim.—1. In a compensating device, an arm, a ratchet-wheel rotatably mounted thereupon, a dog pivotally supported, and adapted to engage said wheel, and a chain or other connection having one end attached to said dog, and its other end secured to a fixed point, in combination with a weighted chain passing over said wheel and adapted to lead to a signal-arm, switch, &c., substantially as described.

2. In a compensating device for railroad-signals, a yoke, a ratchet-wheel journaled therein, and a dog pivotally mounted and adapted to engage said wheel, the latter having a sprocket-hub, and a chain passing over the same, in combination with a connection hav-

ing one end attached to said dog, and the other end secured to a fixed point, substantially as described.



3. In a compensating device, an operating-lever, arms extending laterally therefrom, yokes mounted on said arms, ratchet-wheels journaled in said yokes and provided with sprocket-hubs, weighted chains passing around said hubs, dogs pivotally supported and adapted to engage said wheels, and connections leading from said dogs to a fixed point, whereby one of said dogs and its wheel are in engagement when in elevated position and disengaged when in depressed position, substantially as described.

4. In a compensating device of the character described, an operating-lever having laterally-extending arms thereon, yokes mounted on said arms having ratchet-wheels provided with sprocket-hubs, gravitating dogs adapted to automatically engage said wheels, connections leading from said dogs to a fixed point, weighted chains passing over said sprocket-hubs, and connections from said chains adapted to lead to a signal-arm, switch, &c., substantially as described.

5. In a compensating device of the character described, an operating lever provided with laterally-extending arms, yokes mounted on said arms, dogs and ratchet-wheels mounted in said yokes, sprocket-hubs on said wheels, connections from said dogs to a fixed point, springs and counterbalances for said dogs, and weighted chains passing over the sprocket-hubs of said ratchet-wheels, and adapted to lead to a signal, switch, &c., substantially as described.

6. In a compensating device of the character described, a yoke, a ratchet-wheel journaled in ears attached thereto, a pawl or dog pivotally mounted in said ears below said ratchet-wheel, a counterbalance attached to said dog, a spring bearing thereon, and a chain having one end attached to said dog and the other to a fixed point, substantially as described.

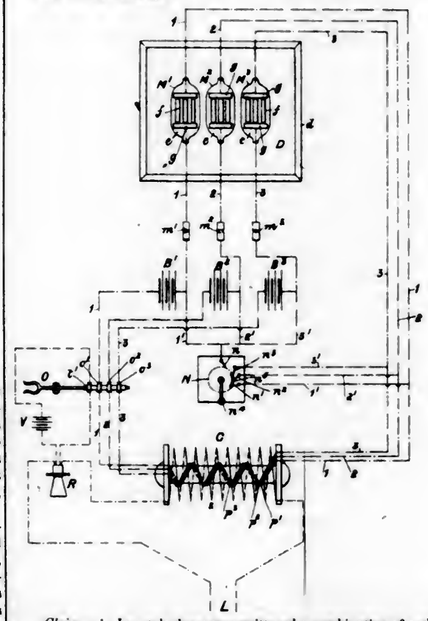
7. In a compensating device, laterally-extending arms, yokes mounted thereon, ratchet-wheels journaled in said yokes, dogs adapted to engage said wheels, springs bearing on said dogs, connections from the latter to a fixed point, and weighted chains passing over the hubs of said wheels, substantially as described.

8. In a compensating device for railroad-signals &c. a plurality of ratchet-wheels suitably supported, and provided with sprocket-hubs, means for locking either wheel in its raised position, and means for releasing said wheel when in inferior position, in combination with chains or other connections passing over said sprocket-hubs, one of said connections being secured to a fixed point and carrying a traveling pulley, and the other of said connections having an end secured to said pulley and carrying a traveling weight, substantially as described.

9. In a compensating device for railroad signals, &c. laterally-extending arms, compensating devices mounted on each arm, and chains adapted to lead to a signal, switch, &c. passing over each of said devices, one of said chains being attached to a fixed point and carrying a traveling pulley, while the other of said chains is attached to said pulley and carries a traveling weight, substantially as described.

10. In a compensating device, laterally-extending arms, ratchet-wheels suitably journaled thereupon, gravitating dogs, adapted to automatically engage and lock said wheels, connections leading from said dogs to a fixed point, weighted chains passing over the ... of said wheels, and connections from said wheels adapted to lead to a signal-arm, switch, &c., substantially as described.

607,801. **LONG-DISTANCE TELEPHONE.** PAUL DE KILDUCHEVSKY, London, England, assignor to the Kilduchevsky Mega-Telephone Syndicate, Limited, same place. Filed Feb. 10, 1897. Serial No. 622,779. (No model.)



Claim.—1. In a telephone-transmitter the combination of a plurality of microphones each formed of carbon pencils in parallel bound together so as to vibrate in unison and hermetically sealed within an exhausted bulb mounted on the diaphragm of the transmitter, the microphones being connected in parallel with as many batteries and with the primary windings of an induction-coil comprising as many parallel primary windings as there are microphones substantially as specified.

2. In a telephone-transmitter the combination of a plurality of microphones *in vacuo* and of an induction-coil having a plurality of independent parallel primary windings each in circuit through a switch with an independent microphone and a battery as specified, and of a make-and-break formed of a rotary toothed contact-wheel having an insulating segment, and of spring-contacts in shunts to the several microphones substantially as and for the purpose specified.

3. In a telephonic apparatus, the combination of a diaphragm, a plurality of transmitters mounted thereon, each comprising an exhausted vessel and a microphone vibratorily mounted therein and each in circuit with a separate battery, an induction-coil having as many parallel primary windings as there are microphones, a battery in circuit of each primary winding and microphone, and a single secondary winding to the induction-coil connected to a line, as specified.

4. In a telephone-transmitter the combination, with the diaphragm and with the walls of the case, of an attached lining of granular non-hygroscopic material as and for the purpose specified.

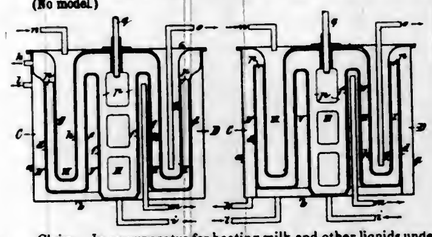
5. In a telephonic instrument, the combination of a diaphragm, oppositely placed, springy conducting holders carried thereby, a hollow body, a microphone carried therein, and terminals on the hollow body engaging the conducting-holders so that the holders support the hollow body and conduct current thereto.

6. The combination in a telephonic instrument of a sealed hollow body, a microphone contained therein, and having terminals at opposite ends of the said hollow body, a diaphragm, and a plurality of oppositely-placed conducting-supports mounted on the diaphragm and adapted to grasp the hollow body to support it between them so that the diaphragm will vibrate the hollow body.

7. In a telephonic instrument, the combination of a closed hollow body, a microphone contained therein, terminals on the hollow body, a diaphragm, supporting-terminals carried on the diaphragm and supporting the microphone between them, and a projection on the hollow body reaching contact with the diaphragm, whereby the diaphragm will be effective to bodily vibrate the hollow microphone-containing body.

8. In a telephonic instrument, the combination of a diaphragm, a vibratory hollow body containing a microphone and supported at or near each end from the diaphragm and provided with a projection intermediate of its ends reaching contact with the said diaphragm, substantially as described and for the purposes set forth.

607,802. **DEVICE FOR STERILIZING MILK, &c.** WILHELM KORTÜM, Berlin, Germany. Filed Nov. 30, 1896. Serial No. 613,965. (No model.)



Claim.—In an apparatus for heating milk and other liquids under pressure, the combination of an outer cylindrical vessel, partitions concentrically arranged in said vessel and alternately connected at their top and bottom, of a detachable cover provided with depending hollow concentrically-arranged partitions, said partitions adapted to fit within the spaces between the partitions of the cylindrical vessel, thereby forming a series of communicating annular chambers adapted to receive the material to be treated, and a stirring device located in said annular chambers, substantially as described.

607,803. **HOLDBACK.** FRANK R. LAGRANGE, Hastings Centre, N. Y. Filed Sept. 20, 1897. Serial No. 652,228. (No model.)



Claim.—The bracket or base provided with a shoulder having a groove formed in its forward edge, combined with a pivoted spring-actuated arm also provided with a groove in its edge, and a loop having a cut-away bar across one of its ends, and which bar fits in the grooves in the shoulder and arm, and locks the arm when the loop is lying flat, but which loop when turned upward allows the arm to turn upon its pivot, substantially as shown and described.

607,804. **POLE OR THILL SUPPORT FOR VEHICLES.** WILLIAM A. MAYCOCK, New Haven, Conn., assignor of one-half to John Harty, same place. Filed Dec. 27, 1897. Serial No. 663,490. (No model.)



Claim.—1. In a pole or thill support, the combination with an axle, of a trace-bar coupled therewith, a support connected with said bar and extending downward and rearward therefrom, and an upwardly-extending yoke carried by the axle and with which the inner end of the support is engaged, substantially as described.

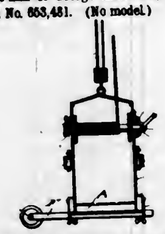
2. In a pole or thill support, the combination with an axle, of a trace-bar coupled therewith, a support connected with the said bar and extending downward and rearward from the center thereof, and a centrally-arranged yoke extending upward and forward from the center of the axle and with which the inner end of the support is engaged.

3. In a pole or thill support, the combination with an axle, of a trace-bar coupled therewith, a support connected with the said bar and extending downward and rearward therefrom, and formed with a notch at its inner end, and an upwardly-extending yoke carried by the axle and with which the inner end of the support is engaged, substantially as described.

4. In a pole or thill support, the combination with a trace-bar, a support extending downward and rearward therefrom, and formed with a notch in one side, and a yoke extending upward and forward from the axle, and provided with transverse bars between which the inner end of the support extends for engagement with the side of yoke, substantially as described.

5. In a pole or thill support, the combination with a trace-bar, a support extending downward and rearward therefrom and formed with a notch in one side a yoke extending upward and forward from the axle, and provided with transverse bars between which the inner end of the support extends for engagement with one side of the yoke, and a set-screw extending through the other side of the yoke for holding the inner end of the support in position, substantially as described.

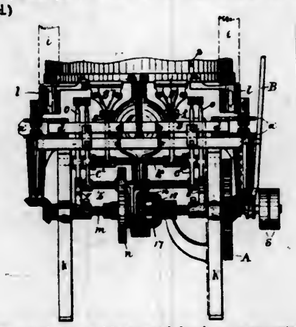
607,805. **SCAFFOLD.** JOHANN SLADEK, New York, N. Y., assignor of one-half to George Ladewich, same place. Filed Sept. 29, 1897. Serial No. 653,481. (No model.)



Claim.—1. The herein-described scaffold, comprising a platform, suspension-frames adapted to support said platform, stirrups projecting from said frames on line with said platform, side pieces resting on said stirrups, side rails removably secured to said suspension-frames above said side pieces, rearwardly-projecting arms having rollers mounted in their outer free ends, clamps for adjustably securing the inner ends of said arms to said platform, a windlass carried by each of said suspension-frames, and means for regulating the speed of rotation of said windlasses when said scaffold is being lowered, substantially as set forth.

2. The herein-described scaffold comprising a platform, suspension-frames adapted to support said platform, stirrups projecting from said frames on line with the platform, side pieces resting on said stirrups, a windlass carried by each of said suspension-frames, a drum mounted on the same shaft as said windlass and adapted to revolve therewith, a strap secured at one end to said suspension-frame and encircling said drum, a lever pivoted to said frame and connected to the free end of said strap, and means for rotating said windlass, substantially as set forth.

607,806. **CORN-COOKING AND CAN-FILLING MACHINE.** FRANK W. SMITH, Portland, Me., assignor, of one-half to Frederick O. Conant, same place. Filed Apr. 21, 1897. Serial No. 633,145. (No model.)



Claim.—1. In a cooking vessel having a separator with arms attached thereto, the combination of sleeves around said separator, a frame rigidly connected with said sleeves, arms connected with said frame and means for rotating said separator and sleeves in opposite directions, all of said sleeves and said frame being round upon one side and brought to an edge on the other and so arranged that when rotated the sharp side of the frame and said arms will be in front and uppermost on the frame and its arms and downward on the arms of the separator, substantially as described.

2. In a cooking vessel having a separator with arms attached thereto, the combination of sleeves around said separator, a frame

rigidly connected with said sleeves, arms connected with said frame said arms, sleeves and frame being hollow for the purpose of admitting steam or heat and means for rotating said separator and sleeves in opposite directions, all of said sleeves and said frame being round upon one side and brought to an edge on the other and so arranged that when rotated the sharp side of the frame and said arms will be in front and uppermost on the frame and its arms and downward on the arms of the separator, substantially as described.

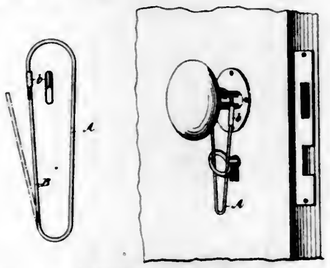
3. In combination with a cooking vessel having a revolving separator or drum, a tube or passage opening into said vessel, a valve in the upper part of said passage by which the size of the passage may be increased or diminished, a sliding valve by which said passage may be entirely closed and a valve, beneath said last named valve operated by a cam upon said separator, substantially as described.

4. In combination with a cooking vessel having a revolving shaft, a tube or passage opening into said vessel, a valve in the upper part of said passage by which the size thereof may be contracted, a sliding valve by which said passage may be entirely closed and a valve, beneath said last-named valve, operated by the cam upon the said shaft, substantially as described.

5. In a machine for cooking corn and other substances having a cooking-chamber, a passage opening into said chamber, a valve whereby the size of said passage may be contracted, a sliding valve connected with the shipping-lever of said machine and a valve beneath the last-named valve operated by a cam, substantially as described.

6. In a machine for filling cans, the combination of a hopper or cooker, the lower end of which opens into a charge-chamber, a filling-nozzle leading from the latter, a cut off plate intermittently interposed between said hopper and said charge-chamber, a plunger in said charge-chamber, mechanism for withdrawing said cut-off plate and immediately forcing it in and then allowing it to remain for a time equal to that occupied in withdrawing and inserting it, a mechanism for forcing in the plunger while said cut-off plate is interposed, the motion imparted to said plunger being at first rapid and then becoming gradually slower, said mechanisms then withdrawing the cut-off plate and plunger, substantially as described.

607,807. KEY-FASTENER. WILLIAM W. ST. JOHN, Binghamton, N. Y., assignor of one-half to S. A. Byron, same place. Filed July 26, 1897. Serial No. 645,925. (No model.)

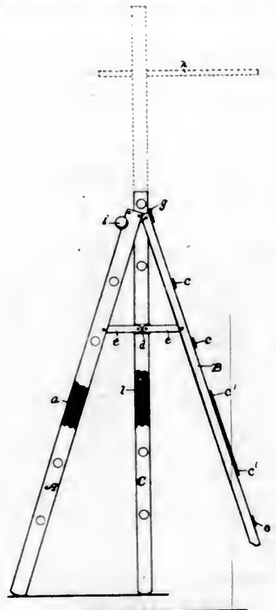


Claim.—A key-fastener consisting of a single piece of wire bent into a loop A, one end of the wire provided with concaved recess or seat for the other end of the wire loop, whereby when the two ends of the wire are engaged a smooth loop is formed without any projecting ends substantially as shown and described.

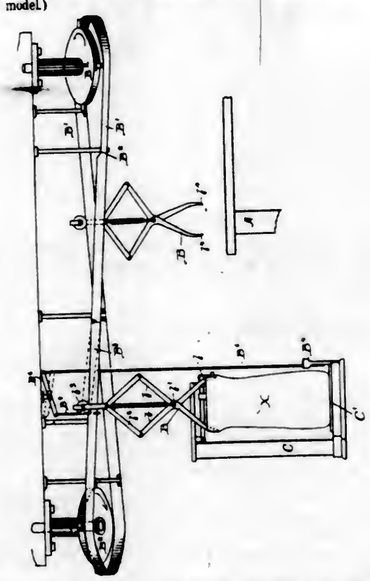
607,808. LADDER. LEONARD C. TIEFEL, Rochester, N. Y., assignor to Germain Mattison, same place. Filed Mar. 26, 1898. Serial No. 675,277. (No model.)

Claim.—1. A structure of the kind described having a pivotally-connected step-section and brace-section, in combination with an extension-section between said step and brace sections, movable rests or bearings for said extension-section slidingly mounted on the extension-section and pivotally connected with said step and brace sections below their upper ends, said step and brace sections being provided at their upper ends respectively with a step and tie-bar to confine said extension-section substantially as shown.

2. In a combined ladder a step-section and a brace-section pivotally connected, a pair of slide rests independent of the step and brace sections and slidingly mounted on the extension-section and held centrally between said sections, pivotal connecting-links joined to said sections and the slide-rests, the latter being provided with projections *f f* to control the actions of said links, said sections being provided at their upper ends respectively with a step and a tie-bar, in combination with an extension section or ladder occupying said slide-rests and held between said step and tie-bar, substantially as described.



607,809. MACHINE FOR TRANSFERRING AND SEWING FILLED SACKS. ARTHUR T. TINEWELL, Chicago, Ill., assignor to Albert Dickinson, same place. Filed July 6, 1897. Serial No. 643,510. (No model.)



Claim.—1. In a filled-sack transferring and sewing mechanism, the combination with a conveyer for the filled sack and a sewing mechanism of a traveling sack-holder comprising a pair of opening and closing clamps, between which, when open, the mouth of the filled sack may be slipped or moved: the two opening and closing clamps of said sack-holder being separate and unconnected when open to enable the mouth of the filled sack to enter between said

clamps, and to be slipped or moved forward lengthwise of the clamps into position between them, substantially as specified.

2. The combination with a filled-sack conveyer of a traveling sack-holder comprising a pair of clamp-bars, between which, when open, the mouth of the filled sack may be slipped or moved by said conveyer, and a sewing mechanism, substantially as specified.

3. The combination with a filled-sack conveyer of a traveling sack-holder comprising a pair of clamp-bars, between which, when open, the mouth of the filled sack may be slipped or moved by said conveyer, a sewing mechanism, and a slotted track for said holder, substantially as specified.

4. The combination with a filled sack conveyer of a traveling sack-holder comprising a pair of clamp-bars, between which, when open, the mouth of the filled sack may be slipped or moved by said conveyer, a sewing mechanism, a slotted track for said holder, and means for operating the transversely-movable bar of said holder, substantially as specified.

5. The combination with a filled sack conveyer of a traveling sack-holder comprising a pair of clamp-bars, between which, when open, the mouth of the filled sack may be slipped or moved by said conveyer, a sewing mechanism, a slotted track for said holder, means for operating the transversely-movable bar of said holder, and means for moving said holder along said track, substantially as specified.

6. The combination with a filled-sack conveyer, of a traveling sack-holder comprising a pair of opening and closing clamp-bars between which when open the mouth of the filled sack is slipped or moved by said conveyer, substantially as specified.

7. The combination with a filled-sack conveyer, of a traveling sack-holder comprising a pair of opening and closing clamp-bars between which when open the mouth of the filled sack is slipped or moved by said conveyer, the meeting faces of said clamp-bars having the one a groove and the other a tongue or rib to increase the grip of said clamp-bars upon the mouth of the sack when the clamp-bars are closed, substantially as specified.

8. The combination with a filled-sack conveyer, of a traveling sack-holder comprising a pair of opening and closing clamp-bars between which when open the mouth of the filled sack is slipped or moved by said conveyer, the meeting faces of said clamp-bars having the one a groove and the other a tongue or rib to increase the grip of said clamp bars upon the mouth of the sack when the clamp-bars are closed, and one of said meeting faces of said clamp bars being of rubber, or like material, substantially as specified.

9. In a filled-sack-sewing machine, the combination with a sewing mechanism of a traveling sack-holder comprising a pair of opening and closing clamps, between which, when open, the mouth of the filled sack may be slipped or moved, and then clamped by the closing of the clamps, said clamps when open being separate and disconnected at their sack-receiving end to enable the mouth of the sack to be entered between them and slipped or moved lengthwise of the clamps into position between them, substantially as specified.

10. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder reciprocating forward and back in the same path, of a slide projecting in the path of the traveling holder for setting the sewing mechanism in operation, said slide being provided with a hinged section to permit the holder to make its return movement in the same path without operating said slide, substantially as specified.

11. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder reciprocating forward and back in the same path, of a slide projecting in the path of the traveling holder for setting the sewing mechanism in operation, said slide being provided with a hinged section to permit the holder to make its return movement in the same path without operating said slide, and a second slide for operating the thread holder and cutter of the sewing mechanism and provided with a similar hinged section, substantially as specified.

12. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder, a track for the holder, and an overhanging guide for the holder provided with a guide-rail for holding the transversely-movable clamp-bar of the holder closed, said guide-rail being sectional to permit said clamp-bar of the holder to open after the holder passes the sewing mechanism, substantially as specified.

13. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder, a track for the holder, and an overhanging guide for the holder provided with a guide-rail for holding the transversely-movable clamp-bar of the holder closed, said guide-rail being sectional to permit said clamp-bar of the holder to open after the holder passes the sewing mechanism, and said guide-rail being provided with a hinged section to cause the transversely-movable clamp-bar of the holder on its return movement to open or separate from its fellow, substantially as specified.

14. In a filled-sack-sewing machine, the combination with an opening and closing sack-holder adapted to receive when open a filled sack, and a filled-sack conveyer provided with devices for grasping and suspending a filled sack from and and by opposite points of its mouth so as to draw its mouth edges together and adapt them to enter between the clamp-bars of the holder, substantially as specified.

15. In a filled-sack-sewing machine, the combination with an opening and closing sack-holder adapted to receive when open a filled sack, and a filled-sack conveyer provided with devices for grasping and suspending a filled sack from and by opposite points of its mouth so as to draw its mouth edges together and adapt them to enter between the clamp-bars of the holder, and a sewing mechanism, substantially as specified.

16. The combination with a traveling sack-holder, of a track for the holder, a rack on the holder, driving-pinion engaging said rack to propel the holder forward, a driving-shaft, a clutch between said driving shaft and pinion, and a slide connected with said clutch and projecting in the path of said holder and engaged thereby to hold the movable member of the clutch in engagement with its fellow, and a spring for opening the clutch when the holder passes said slide, substantially as specified.

17. The combination with a traveling sack-holder, of a track for the holder, a rack on the holder, driving-pinion engaging said rack to propel the holder forward, a driving-shaft, a clutch between said driving shaft and pinion, and a slide connected with said clutch and projecting in the path of said holder and engaged thereby to hold the movable member of the clutch in engagement with its fellow, and a spring for opening the clutch when the holder passes said slide, said slide having a hinged section to prevent said slide being operated on the return movement of said holder, substantially as specified.

18 The combination with a traveling sack-holder, of a track for the holder, a rack on the holder, driving-pinion engaging said rack to propel the holder forward, a driving-shaft, a clutch between said driving shaft and pinion, and a slide connected with said clutch and projecting in the path of said holder and engaged thereby to hold the movable member of the clutch in engagement with its fellow, a spring for opening the clutch when the holder passes said slide, said slide having a hinged section to prevent said slide being operated on the return movement of said holder, and a weight and line for returning the holder, substantially as specified.

19 The combination with a traveling sack-holder, of a track for the holder, a rack on the holder, driving-pinion engaging said rack to propel the holder forward, a driving-shaft, a clutch between said driving shaft and pinion, and a slide connected with said clutch and projecting in the path of said holder and engaged thereby to hold the movable member of the clutch in engagement with its fellow, a spring for opening the clutch when the holder passes said slide, said slide having a hinged section to prevent said slide being operated on the return movement of said holder, and a weight and line for returning the holder, an overhanging guide for the holder provided with a sectional guide-rail having hinged sections for holding the transversely-movable bar of the holder open on the return movement of the holder, substantially as specified.

20. In a filled sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder, a track for the holder, and an overhanging guide for the holder provided with a guide-rail for holding the transversely-movable clamp-bar of the holder closed, said guide-rail being sectional to permit said clamp-bar of the holder to open after the holder passes the sewing mechanism, and said holder being provided with rollers to bear against said guide-rail, substantially as specified.

21. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder, a track for the holder, and an overhanging guide for the holder provided with a guide-rail for holding the transversely-movable clamp-bar of the holder closed, said guide-rail being sectional to permit said clamp-bar of the holder to open after the holder passes the sewing mechanism, and said guide-rail being provided with hinged sections to cause the transversely-movable clamp-bar of the holder on its return movement to open or separate from its fellow, said holder being provided with rollers to bear against said guide-rail, substantially as specified.

22. In a filled-sack-sewing machine, the combination with an opening and closing sack-holder adapted to receive when open a filled sack, and a filled-sack conveyer provided with devices for grasping and suspending a filled sack from and by opposite points of its mouth so as to draw its mouth edges together and adapt them to enter between the clamp-bars of the holder, said filled-sack conveyer consisting in a pair of reversely-acting lazy-tongs, substantially as specified.

23. In a filled-sack-sewing machine, the combination with an opening and closing sack-holder adapted to receive when open a filled sack, and a filled-sack conveyer provided with devices for grasping and suspending a filled sack from and by opposite points of its mouth so as to draw its mouth edges together and adapt them to enter between the clamp-bars of the holder, a sewing mechanism, said filled-sack conveyer consisting in a pair of reversely-acting lazy-

tongs, and a track for said filled-sack conveyer to travel upon, substantially as specified.

24. In a filled sack-sewing machine, the combination with an opening and closing sack-holder adapted to receive when open a filled sack, and a filled-sack conveyer provided with devices for grasping and suspending a filled sack from and by opposite points of its mouth so as to draw its mouth edges together and adapt them to enter between the clamp-bars of the holder, a sewing mechanism, and a track for said filled-sack conveyer, having a hinged or movable section for lifting the filled sack from the platform or support upon which it rests, substantially as specified.

25. In a filled-sack-sewing machine, the combination with an opening and closing sack-holder adapted to receive when open a filled sack, and a filled-sack conveyer provided with devices for grasping and suspending a filled sack from and by opposite points of its mouth so as to draw its mouth edges together and adapt them to enter between the clamp-bars of the holder, a sewing mechanism, and a track for said filled-sack conveyer, having a hinged or movable section for lifting the filled sack from the platform or support upon which it rests, and mechanism for operating said hinged section, substantially as specified.

26. In a filled-sack-sewing machine, the combination with an opening and closing sack-holder adapted to receive when open a filled sack, and a filled sack conveyer provided with devices for grasping and suspending a filled sack from and by opposite points of its mouth so as to draw its mouth edges together and adapt them to enter between the clamp-bars of the holder, a sewing mechanism, and an endless track for said filled-sack conveyer having downwardly and upwardly inclined portions, and wheels or pushers for propelling said conveyer at the upwardly-inclined portions of said track, substantially as specified.

27. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder reciprocating forward and back in the same path, of a slide projecting in the path of the traveling holder for setting the sewing mechanism in operation, said slide being provided with a hinged section to permit the holder to make its return movement in the same path without operating said slide, a rack and pinion for propelling the holder forward and a weight and connecting line for returning the holder, substantially as specified.

28. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder reciprocating forward and back in the same path, of a slide projecting in the path of the traveling holder for setting the sewing mechanism in operation, said slide being provided with a hinged section to permit the holder to make its return movement in the same path without operating said slide, a rack and pinion for propelling the holder forward and a weight and connecting-line for returning the holder, a slotted track for the holder, and an overhanging guide for the holder having a sectional guide-rail, substantially as specified.

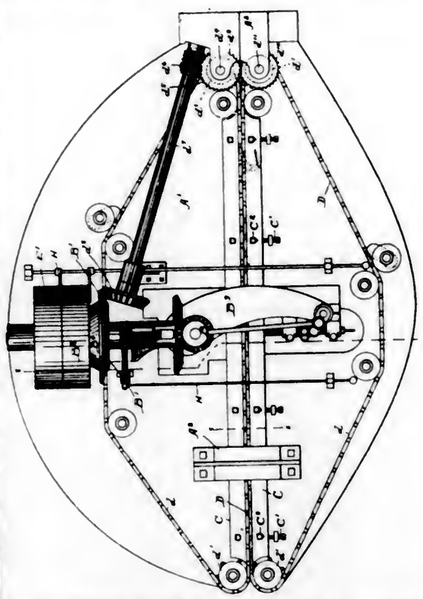
29. In a filled sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder reciprocating forward and back in the same path, of a slide projecting in the path of the traveling holder for setting the sewing mechanism in operation, said slide being provided with a hinged section to permit the holder to make its return movement in the same path without operating said slide, a rack and pinion for propelling the holder forward and a weight and connecting-line for returning the holder, a slotted track for the holder, and an overhanging guide for the holder having a sectional guide-rail, said holder having rollers engaging said sectional guide-rail, substantially as specified.

30. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a traveling sack-holder reciprocating forward and back in the same path, of a slide projecting in the path of the traveling holder for setting the sewing mechanism in operation, said slide being provided with a hinged section to permit the holder to make its return movement in the same path without operating said slide, a rack and pinion for propelling the holder forward and a weight and connecting-line for returning the holder, a slotted track for the holder, and an overhanging guide for the holder having a sectional guide-rail, said holder having rollers engaging said sectional guide-rail, said sectional guide-rail having hinged sections, substantially as specified.

607,810. FILLED-SACK-SEWING MACHINE. ARTHUR T. TIMEWELL, Chicago, Ill., assignor to Albert Dickinson, same place. Filed July 31, 1897. Serial No. 646,608. (No model.)

Claim.—1. In a machine for sewing filled sacks, the combination with a sewing mechanism of an endless traveling sack-holder comprising a pair of opening and closing endless flexible clamps for receiving and feeding the mouth edges of the filled sacks and holding the same closed in position for sewing, and conveying the same past the sewing mechanism, substantially as specified.

2. A filled-sack-sewing machine, comprising in combination a sewing mechanism and an endless traveling sack-holder comprising a pair of opening and closing continuous endless flexible clamps, substantially as specified.



3. A filled-sack-sewing machine, comprising in combination a sewing mechanism and an endless traveling sack-holder consisting of a pair of endless chains having opposing parallel portions between and by which the mouth edges of the sack are received, fed, clamped and held, substantially as specified.

4. In a filled-sack-sewing machine, the combination with a sewing mechanism, of a pair of endless chains having opposing parallel portions between and by which the sacks are received, fed and clamped, the backs or meeting faces of said chains having the one a groove and the other an interfitting tongue to increase the clamping or holding action of the chains upon the sacks, substantially as specified.

5. In a filled-sack-sewing machine, the combination with a sewing mechanism, of an endless traveling sack-holder comprising a pair of opening and closing continuous endless flexible clamps, and a conveyer for delivering the filled sacks to the endless traveling sack-holder, substantially as specified.

6. In a filled-sack-sewing machine, the combination with a sewing mechanism of an endless traveling sack-holder comprising a pair of opening and closing continuous endless flexible clamps and a conveyer for supporting the weight of the filled sacks as they are carried through the machine past the sewing mechanism, substantially as specified.

7. In a filled-sack-sewing machine, an endless traveling opening and closing continuous sack-holder consisting of a pair of endless chains having parallel opposing portions traveling together and between which the sacks are clamped, substantially as specified.

8. In a filled-sack-sewing machine, an endless traveling opening and closing continuous sack-holder consisting of a pair of endless chains having parallel opposing portions traveling together and between which the sacks are clamped, and guides for the parallel portions of said chains, substantially as specified.

9. In a filled-sack-sewing machine, the combination with a bed-plate having a longitudinal slot *a*, of a sewing mechanism, and a pair of endless traveling sack-holder chains, guides C C, and pulleys or sprocket-wheels upon which said endless chains travel, whereby the filled sacks are automatically received fed and clamped between and delivered from said chains, substantially as specified.

10. In a filled-sack-sewing machine, the combination with the sewing mechanism, of an endless traveling sack-holder comprising a pair of opening and closing continuous endless flexible clamps, and a knife or cutter for severing the chain of stitching or thread uniting the sewed sacks as they pass successively through the machine, substantially as specified.

11. In a filled-sack-sewing machine, the combination with the sewing mechanism, of an endless traveling sack-holder, a knife or cutter for severing the chain of stitching or thread uniting the sewed sacks as they pass successively through the machine, and an arm or lever projecting in the path of the filled sack for operating said knife or cutter, substantially as specified.

12. The combination with a sewing mechanism, of a pair of endless traveling sack-holder chains adapted to receive and feed the mouth edges of the sack between them, and a conveyer for delivering the sewed sacks from the machine, substantially as specified.

13. A filled-sack-sewing machine, comprising in combination a sewing mechanism and an endless traveling sack-holder consisting of a pair of endless chains having opposing parallel portions between and by which the mouth edges of the sack are fed, clamped and held, and guides for the parallel portions of said chains, substantially as specified.

14. A filled sack-sewing machine, comprising in combination a sewing mechanism and an endless traveling sack-holder consisting of a pair of endless chains having opposing parallel portions between and by which the mouth edges of the sack are fed, clamped and held, and guides for the parallel portions of said chains, one of said guides being adjustable to and from its fellow, substantially as specified.

15. In a filled-sack-sewing machine, the combination with the sewing mechanism, of an endless traveling sack-holder, a knife or cutter for severing the chain of stitching or thread uniting the sewed sacks as they pass successively through the machine, and an arm or lever projecting in the path of the filled sack for operating said knife or cutter by engagement with the sewed sack as it passes, substantially as specified.

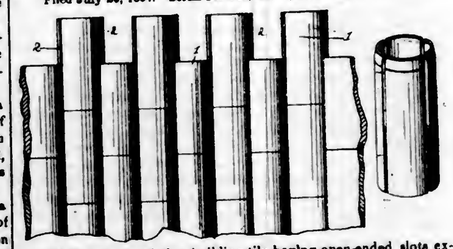
607,811. MACHINE FOR SEWING FILLED SACKS. ARTHUR T. TIMEWELL, Chicago, Ill., assignor to Albert Dickinson, same place. Filed Aug. 30, 1897. Serial No. 649,936. (No model.)

Claim.—1. The combination in a filled-sack-sewing machine, of opposing traveling gripping and feeding devices for laterally gripping the mouth of the bag and feeding it to the sewing mechanism, and a guide over which the mouth of the bag may be folded and presented to the gripping and feeding devices in position to insure stitching through both the folded and the unfolded part of the mouth, substantially as specified.

2. The combination in a filled-sack-sewing machine, of sewing mechanism, a carrier for the filled sacks, a bar or guide over which the mouths of the sacks may be folded, and opposing traveling sack-mouth gripping and feeding mechanism for laterally gripping feeding and conveying the folded mouth of the sack from the bar to the sewing mechanism, substantially as specified.

3. The combination in a filled-sack-sewing machine, of sewing mechanism, a carrier for the filled sacks, a bar or guide over which the mouths of the sacks may be folded, and opposing traveling endless gripping and feeding mechanism for laterally gripping feeding and conveying the folded mouth of the sack from the bar to the sewing mechanism, substantially as specified.

607,812. BUILDING-TILE. ELMER R. VAN WIE, Kenosha, Wis. Filed July 29, 1897. Serial No. 646,401. (No model.)



Claim.—1. A tubular building-tile having open-ended slots extending a part only of the length thereof, as and for the purpose set forth.

2. A building-tile, comprising a tube one end of which is provided with open-ended slots extending longitudinally to or near the center of the tube, the other part of the tube being grooved on a line with the slots, substantially as shown and for the purpose set forth.

3. A building-tile, comprising a tube one part of which is provided with an open-ended slot and the other part having grooves or channels on a line with the aforesaid slots, the said tube being tapered at one end and reamed out at the other, substantially as shown and for the purpose set forth.

607,818. LACE-HOLDER. HORATIO O. WHYMAN, Norfolk, Nebr., assignor to the Whyman Patent Shoe Lace Company, Aurora, Ill. Filed June 23, 1897. Serial No. 641,940. (No model.)



Claim.—1. A lace-holding device consisting of a plate or disk having an approximately V-shaped opening therein and an aperture adjacent to said opening arranged in the space between the converging lines of the opening, whereby the device is adapted to be readily adjusted and fixed at any desired point along the length of the lace.

2. A lace-holder comprising a plate having diagonally-arranged slots therein which cut into each other at their converging ends, and an eye therethrough arranged in the space within the converging lines of said slots, substantially as described.

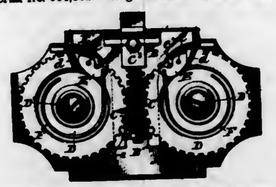
3. A lace-holder consisting of a disk having an eccentrically-arranged perforation or eye therein, and an approximately trefoil-shaped opening adjacent to said eye, substantially as described.

4. In combination with the lace-holder consisting of a plate having diagonally-arranged slots therein which cut into each other at their converging ends, and an eye therethrough arranged in the space within the converging lines of said slots, a lace or string passing through said eye and slots, whereby the holder may be made fast at any desired point upon the string by tightening the latter in engagement with said eye and slots, substantially as described.

5. A lace-holding device consisting of a plate or disk having an orifice therethrough, a second orifice slightly separated from the former, and divergent slots extending from the latter orifice; said first-mentioned orifice being arranged directly over the point where said slots meet or cut into each other, in the space between the converging lines thereof, substantially as described.

REISSUES.

11,679. KEYLESS LOCK. WINFRED B. HOLTON, Indianapolis, Ind., assignor to the Keyless Lock Company, same place. Filed May 21, 1898. Serial No. 681,392. Original No. 597,060, dated Jan. 11, 1898.



Claim.—1. In a permutation or combination lock, a tumbler provided with a slot having an inclined face, a dog adapted to enter the slot and make contact with the inclined face thereof, and means for

preventing the reëntrance of the dog when the tumbler has been moved, substantially as described.

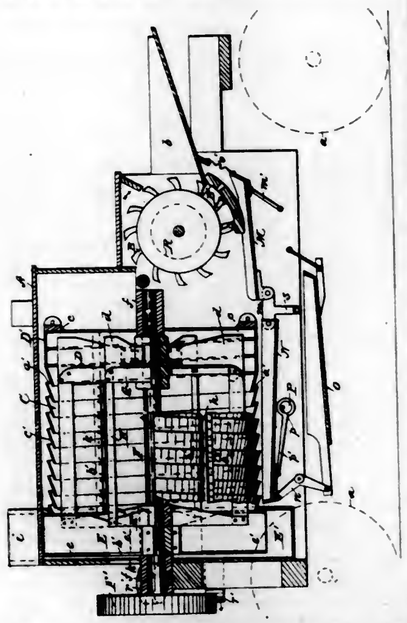
2. In a permutation or combination lock, a tumbler provided with a slot, a dog adapted to enter the slot of the tumbler, and a trip arranged on the tumbler adjacent to the slot and adapted to prevent the reëntrance of the dog, substantially as described.

3. In a permutation or combination lock, the combination of a tumbler provided with a slot having an inclined side, a pivoted trip on the tumbler, and a dog adapted to engage the inclined side or the trip according to the position of the tumbler, substantially as described.

4. In a permutation or combination lock, the combination of a tumbler provided with a slot, a spring-actuated trip arranged on the tumbler adjacent to the slot, and a dog adapted to engage the slot or the trip according to the position of the tumbler, substantially as described.

5. In a permutation or combination lock, the combination with the latch and dog, of a tumbler having a slot provided with an inclined side, and a pivoted trip arranged adjacent to the slot, whereby when the dog is operated the tumbler is partially rotated and when the dog is released the trip automatically moves into position to prevent its entering the slot, substantially as described.

11,680. CENTRIFUGAL GRAIN-SEPARATOR. FRANK F. LANDIS, Waynesborough, Pa. Filed Nov. 29, 1897. Serial No. 660,176. Original No. 551 492, dated Dec. 17, 1895.



Claim.—1. The combination, with a threshing-cylinder and its concave, of a suction-fan arranged behind the said parts, the axis of the said fan being substantially horizontal and opposite the upper side of the middle portion of the cylinder, and a gather-board arranged under the said cylinder and concave, leaving an open air-inlet space between its rear edge and the fan, whereby the grains are permitted to pass down the said space and the straw and chaff are drawn into the lower half of the eye of the said fan substantially as set forth.

2. The combination, with a threshing-cylinder and its concave and a suction-fan and a grain-separating chamber arranged behind the said parts, the axis of the said fan and chamber being substantially horizontal and opposite the upper side of the middle portion of the said cylinder, whereby the straw and chaff are drawn into the lower half of the eye of the fan; of the two gather-boards inclined toward each other and having an open air-inlet space between them under the entrance to the suction-fan, and means for supporting and oscillating the said gather-boards, substantially as set forth.

3. The combination, with a cylindrical grain-separating chamber having rearwardly and inwardly inclined passages at its periphery for the escape of grain and the inlet of air, of a suction-fan arranged at one end of the said chamber, means for whirling around the straw in the said chamber, and a discharger at its opposite end, substantially as set forth.

4. The combination with a cylindrical grain-separating chamber formed of spirally-arranged overlapping plates and having rearwardly and inwardly inclined passages in its periphery, of a suction-fan arranged at one end of the said chamber, and a spreading-disk secured to the said fan inside the chamber, whereby the straw is drawn in and whirled around in contact with the periphery of the chamber, substantially as set forth.

5. The combination, with a cylindrical grain-separating chamber having passages in its periphery, of a suction fan at one end of the chamber, a discharger at its opposite end, a spreading-disk inside the chamber, and bars arranged longitddinally in the chamber between the said fan and discharger, substantially as set forth.

6. The combination, with a cylindrical grain-separating chamber having passages in its periphery, of a discharger provided with arms and arranged at the rear end of the said chamber, radial supporting-arms secured to the discharger and arranged intermediate of its arms, a suction-fan provided with arms and arranged at the front end of the said chamber, and longitudinal bars secured to the arms of the suction-fan and to the said supporting-arms, substantially as set forth.

7. The combination, with a cylindrical grain-separating chamber provided with rearwardly and inwardly inclined passages at its periphery for the escape of grains and the inlet of air, and a discharger-casing arranged at the rear of the said chamber and provided with an air-inlet opening at its rear side; of a shaft passing through the said chamber and casing, means for whirling around the straw, secured on the said shaft inside the said chamber, and a discharger provided with arms and having a disk at its rear side provided with an air-inlet opening around its center, substantially as set forth.

8. The combination, with a cylindrical grain-separating chamber formed of conical overlapping rings having passages between them, of a central shaft, a suction-fan secured to the front end of said shaft, a discharger secured on its rear end, and bars supported intermediate of the said fan and discharger, for whirling around the straw in the said chamber, substantially as set forth.

9. The combination, with a cylindrical grain-separating chamber formed of conical spirally-arranged convolutions overlapping each other and having rearwardly and inwardly inclined passages between them, of means for whirling around the straw in the said chamber, substantially as set forth.

10. The combination, with a cylindrical grain-separating chamber formed of sections arranged in the form of conical and spiral convolutions having passages between the convolutions and between the adjacent ends of the sections, of supports for holding the said sections in position, and means for whirling around the straw in the said chamber, substantially as set forth.

11. The combination with threshing mechanism, of separating mechanism consisting of an outer case, a chamber within said case, a discharger beyond the discharge end of said chamber, a rotary reel or arms within said chamber, apertures in the sides of said chamber, and discharge-openings from said case for the grain, substantially as set forth.

12. A separator for threshing-machines consisting of a case, a chamber therein, a discharger beyond the discharge end of said case, a rotary reel or arms in said chamber, a spreading-disk covering the greater portion of the entrance to said chamber, and openings for the discharge of the grain, substantially as set forth.

13. A separator for threshing-machines consisting of an outer casing, a chamber therein, a discharger at the discharge end of said chamber, a shaft with a reel or arms within said chamber, a spreading-disk on said shaft at the entrance to said chamber, other arms carried by said shaft on the opposite side of said disk, and discharge-apertures for the grain, substantially as set forth.

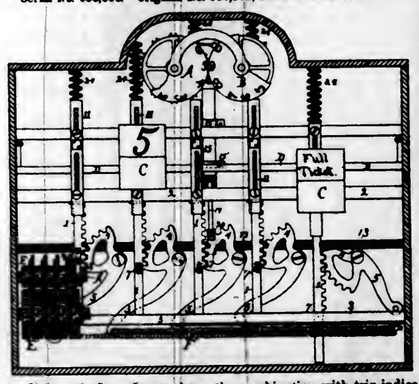
14. The combination, in a threshing-machine, of the threshing mechanism and a separating mechanism, consisting of a chamber provided with an annular entrance near its periphery of comparatively narrow width, a discharger at the other end, a rotary reel or arms within said chamber, openings in the sides of said chamber, and discharge-openings for the grain, substantially as set forth.

15. The combination, of the threshing mechanism, the separating-chamber, a spreading disk directly facing the material as it comes from the threshing mechanism, said disk covering the entrance to said separating-chamber to a point near its periphery and leaving a narrow annular interval, separating and conveying devices adapted to carry the material forward in the space next the periphery of the chamber, and the discharging mechanism, substantially as set forth.

16. The combination, in a threshing-machine, with the threshing mechanism, of a separator consisting of a perforated cylinder, a whirling and conveying reel within, the rits whereof are parallel with and a short distance from the inner surface of said cylinder, a spreading-disk of substantially the same diameter as said reel covering the entrance thereto to the size of said reel, whereby a narrow annular entrance and passage for the straw are provided through the chamber next to its outside, substantially as set forth.

17. The combination, of the threshing mechanism, the separating-chamber composed of spirally-arranged rings with spaces between them, a spreading-disk directly facing the threshing mechanism and the material as it comes therefrom, said disk covering the entrance to said separating-chamber to a point near its periphery and leaving a narrow annular interval, a reel within said chamber, means for feeding the material between the arms of said reel and the periphery of said chamber, and the discharger, substantially as set forth.

11,681. FARE-REGISTER. JOHN F. OHMER and HIRAM TYLER, Dayton, Ohio; said Tyler assignor to said Ohmer. Filed May 7, 1898. Serial No. 680,066. Original No. 567,561, dated Jan. 13, 1896.



Claim.—1. In a fare-register, the combination with trip-indicator-wheels; of a reciprocating slide; an oscillating shaft extending across the machine; a pivotal connection between said shaft and the slide, and a plurality of racks geared to said oscillating shaft, each one of said racks being adapted to impart similar movement to said oscillating shaft, substantially as described.

2. In a fare-register, the combination with trip-indicator wheels; a slide, and mechanism actuated thereby to advance said indicator-wheels; of an oscillating shaft; a pivotal connection between said oscillating shaft and the slide; a series of racks geared to said oscillating shaft; and a series of toothed sectors geared to said racks, substantially as described.

3. In a fare-register, the combination with trip-indicator wheels; a slide, and mechanism between said slide and trip-indicator wheels for imparting movement to the latter; of an oscillating shaft; a pivotal connection between said shaft and the slide; a series of racks geared to said shaft, and a series of oscillating gears geared to said racks.

4. In a fare-register, the combination with a series of fare-indicators denoting the various fares; and a series of trip-indicator wheels denoting the number of passengers; of a series of compound racks; a series of oscillating gears to impart movement to said racks, and mechanism actuated by the movement of each of said racks to move the fare and trip indicators, substantially as described.

5. In a fare-register, the combination with a series of sliding fare-indicators, and a series of rotating trip-indicators; of a reciprocating slide; mechanism actuated by said slide to move the trip-indicators; an oscillating shaft pivotally connected to said slide; a series of racks geared to said oscillating shaft; projections on said racks to engage with the fare-indicators to lower them, and an oscillating gear geared to each of said racks, whereby each of said racks may be moved independently of the others to simultaneously impart movement to the trip-indicators, and to a specific-fare indicator.

6. In a fare-register, trip-indicator wheels, in combination with a transverse oscillating shaft; a reciprocating slide pivotally connected to said shaft; mechanism actuated by said slide to turn the indicator-wheels; a series of compound gears geared to said oscillating shaft; a toothed sector geared to each of said racks, and a series of sliding fare-indicators one of which is simultaneously moved with each movement of the indicator-wheels.

7. In a fare-register, fare-register wheels arranged in series, each of said series denoting a specific class of fares; a series of sliding fare-indicators, each one of which denotes a specific kind of fare; and a series of trip-indicator wheels denoting the number of passengers taken on in each trip; of a series of compound racks each one of which operates in connection with a specific class of fares, and a specific fare-indicator, and all of said racks having a corresponding action on the trip-indicator wheels; oscillating gears geared to said racks, and mechanisms actuated by the movement of any one of said racks to actuate said fare-register wheels; fare-indicators, and the trip-indicator wheels, substantially as described.

8. In a fare-register, the combination of trip-indicator wheels; sliding fare-indicators denoting the various fares; fare-register wheels arranged in series each series having its own classification of fares; and a series of independently-movable parts each of which is adapted to actuate a specific-fare indicator and set of fare-register wheels, and to simultaneously and correspondingly move the trip-indicator wheels, substantially as described.

9. The combination with a fare-register having an indicating-dial, and a finger to point to the indication thereon; an auxiliary dial placed at various points and having indications thereon corresponding with the indications on the dial of the fare-register; of an operating-rod movable both axially and longitudinally; pointers on said rod adapted to be moved to simultaneously indicate a corresponding fare on the auxiliary dial, and connections between the dial on the fare-register and the operating-rod, whereby a similar fare is simultaneously indicated on the said fare-register dial, substantially as described.

10. In a fare-register, the combination of trip-indicator wheels; three or more series of register-wheels, each series registering a single class of fares; three or more fare-indicators denoting the various fares; and mechanisms for actuating a specific-fare indicator and a specific series of fare-register wheels, and to simultaneously and correspondingly move the trip-indicator wheels, substantially as described.

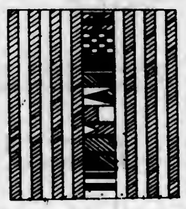
DESIGNS.

29,052. FLAG OR BANNER. JOHN F. DUKE, London, England. Filed June 1, 1898. Serial No. 682,297. Term of patent 7 years.



Claim.—The design for a flag or banner as herein shown and described.

29,053. FLAG OR SIMILAR ARTICLE. JOHN M. KENNEDY, Los Angeles, Cal., assignor of one-half to William H. Hoeges, same place. Filed May 11, 1898. Serial No. 680,413. Term of patent 3½ years.



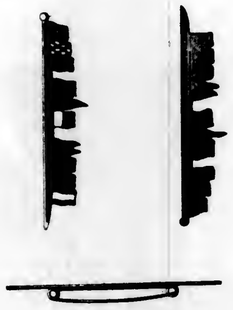
Claim.—The design for a flag or similar article, substantially as set forth.

29,054. BADGE. JOHN H. LEE HOLCOMBE, U. S. Navy. Filed June 2, 1898. Serial No. 682,405. Term of patent 7 years.



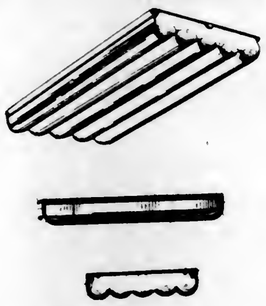
Claim.—The design for a badge, substantially as herein described and shown.

29,055. SCARF-PIN OR SIMILAR ARTICLE. DONALD R. CORBIN, New York, N. Y. Filed May 25, 1898. Serial No. 681,743. Term of patent 3½ years.



Claim.—The design for a scarf-pin or similar article, as described and shown.

29,056. BOX FOR CIGARS OR CIGARETTES. NATHAN WEISS, New York, N. Y. Filed June 16, 1898. Serial No. 683,619. Term of patent 7 years.



Claim.—The design for a cigar or cigarette box substantially as herein shown and described.

29,057. BOX. ALFRED A. FAXON, Philadelphia, Pa. Filed June 3, 1898. Serial No. 682,497. Term of patent 3½ years.



Claim.—The design for a box, as herein shown and described.

29,058. TEA-STRAINER. JOHN P. RUSTIS, Newton, Mass. Filed Feb. 28, 1898. Serial No. 672,105. Term of patent 7 years.

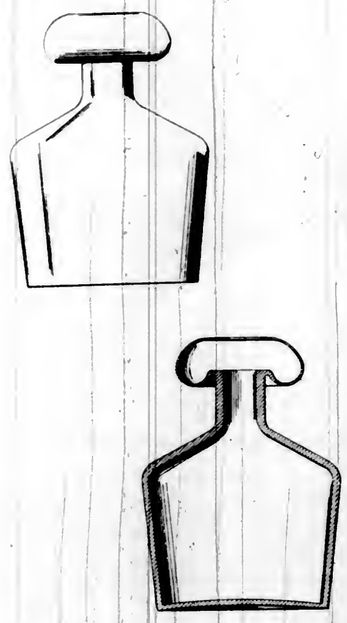
Claim.—The design for a strainer for tea, coffee and like pots, substantially as described.

29,059. MUSTACHE-GUARD. ELIZABETH C. DONALDSON, Detroit, Mich. Filed Mar. 28, 1898. Serial No. 675,506. Term of patent 14 years.



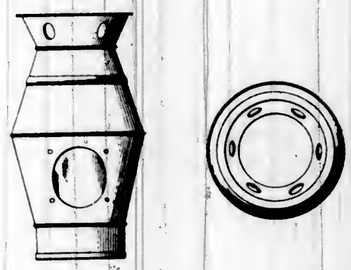
Claim.—The design for a mustache-guard, as shown and described.

29,060. BOTTLE. CHARLES MCGINN, Hartford, Conn. Filed Oct. 9, 1896. Serial No. 608,418. Term of patent 14 years.



Claim.—The design for a bottle as herein shown and described.

29,061. NIGHT-LAMP CHIMNEY. LOUIS O. SCHUETZ and BEN G. SHERMAN, Wauconda, Ill. Filed May 6, 1898. Serial No. 679,966. Term of patent 7 years.



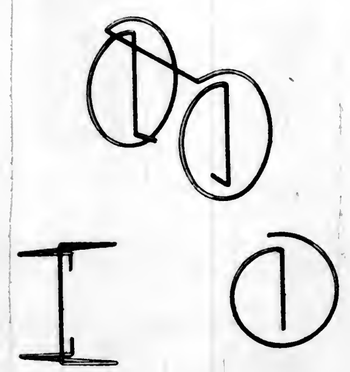
Claim.—The design for a night-lamp chimney, substantially as herein shown and described.

29,062. TAG-FASTENER. SIMON C. LAUBER, Toledo, Ohio. Filed June 24, 1898. Serial No. 684,437. Term of patent 7 years.



Claim.—The design for a tag-fastener as herein shown and described.

29,063. RIBBON-CLASP. HARRY A. JACKSON, Searsborough, Iowa. Filed June 25, 1898. Serial No. 684,508. Term of patent 7 years.



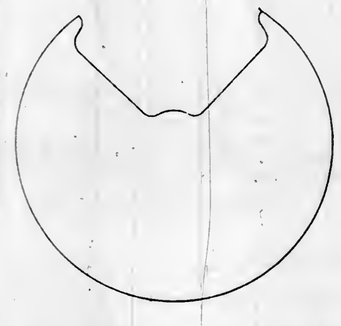
Claim.—The design for a ribbon clasp, as herein shown and described.

29,064. SUPPORTING-STEM FOR SCALE-PANS. JAMES M. TRINER, Chicago, Ill., assignor to the Pelouze Scale and Manufacturing Company, same place. Filed Feb. 28, 1898. Serial No. 672,101. Term of patent 14 years.



Claim.—The new and original design or useful shape for a supporting-stem for scale-pans substantially as herein shown and described.

29,065. FACE-PLATE FOR COMPUTING-SCALES. WALTER F. STIMPSON, Milan, Mich. Filed Nov. 5, 1897. Serial No. 657,572. Term of patent 14 years.



Claim.—The design for a face-plate for computing-scales, substantially as shown and described.

29,066. PUNCHING-DIE. HOOD WORTHINGTON, Danville, Ky. Filed June 20, 1898. Serial No. 684,012. Term of patent 14 years.



Claim.—The design for a punching-die, substantially as herein shown and described.

29,067. CHUCK. EDWARD J. SKINNER, New Britain, Conn., assignor to The Skinner Chuck Company, same place. Filed May 3, 1898. Serial No. 679,634. Term of patent 14 years.



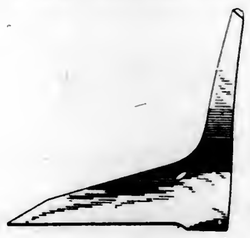
Claim.—The design for a chuck, substantially as shown and described.

29,068. TIP FOR HAY-FORKS. GEORGE F. CAREY, New York, N. Y. Filed Nov. 22, 1897. Serial No. 659,521. Term of patent 3½ years.



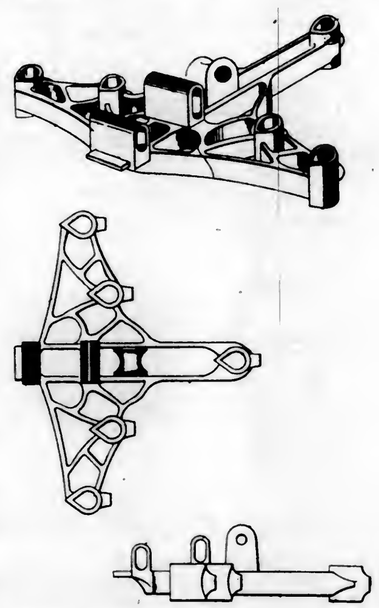
Claim.—The design for a tip for hay-forks, as herein shown and described.

29,069. PLOWSHARE. GEORGE W. REAM, Canton, Ohio, assignor to the Bucher & Gibbs Plow Company, same place. Filed June 15, 1898. Serial No. 683,521. Term of patent 14 years.



Claim.—The design for a plowshare as herein shown and described.

29,070. CULTIVATOR-TOOL FRAME. DAVID M. MOTHERWELL, Chicago, Ill., assignor to the Whitman & Barnes Manufacturing Company, Akron, Ohio. Filed Sept. 22, 1897. Serial No. 652,658. Term of patent 14 years.



Claim.—1. The design for the lateral arm of a cultivator-frame, substantially as shown and described.

2. The design for the central arm of a cultivator-frame having lugs arranged and disposed along said arm, substantially as shown and described.

3. The design for a tool-socket of a cultivator-frame, substantially as shown and described.

4. The design for a cultivator-frame as herein shown and described.

29,071. STALL-FIXTURE. HERBERT M. ELDRIDGE and REUBEN C. ELDRIDGE, Niagara, Canada. Filed June 23, 1898. Serial No. 684,303. Term of patent 7 years.



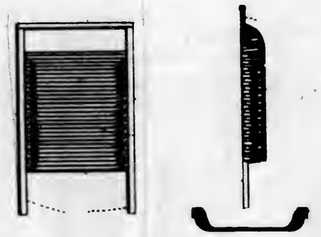
Claim.—The design for a stall-fixture substantially as herein shown and described.

29,072. TUB-FASTENING. THOMAS GEORGE FONNEREAU DOLBY, Elgin, Ill. Filed Nov. 30, 1898. Serial No. 614,007. Term of patent 14 years.



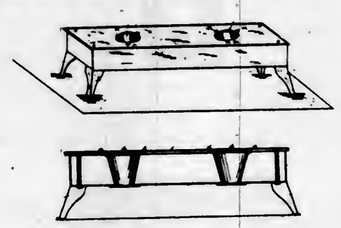
Claim.—The new and original design or useful shape for a tub-fastening, substantially as herein shown and described.

29,073. WASHBOARD. JAMES A. GALVIN, New York, N. Y. Filed Nov. 16, 1897. Serial No. 658,765. Term of patent 14 years.



Claim.—The design for a washboard substantially as herein shown and described.

29,074. STOVE. WILLIAM HARRISON ALBAGH, New York, N. Y. Filed Mar. 30, 1898. Serial No. 675,808. Term of patent 3½ years.



Claim.—The design for a stove as herein shown and described.

29,075. HEATING-STOVE. THOMAS R. KENNEDY, Rochester, N. Y., assignor to the Co-Operative Foundry Company, same place. Filed June 11, 1898. Serial No. 683,231. Term of patent 7 years.



Claim.—1. The design for a heating-stove, substantially as herein shown and described.

2. In a design for a stove, the design for the base, substantially as shown and described.

3. In a design for a stove, the design for the ash-pit section, substantially as shown and described.

4. In a design for a stove, the design for the stove-body, substantially as shown and described.

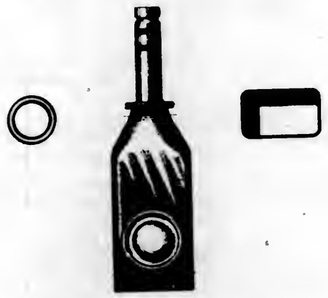
5. In a design for a stove, the design for the top section, substantially as shown and described.

6. In a design for a stove, the design for the panel 26, substantially as shown and described.

7. In a design for a stove, the design for the panel 27, substantially as shown and described.

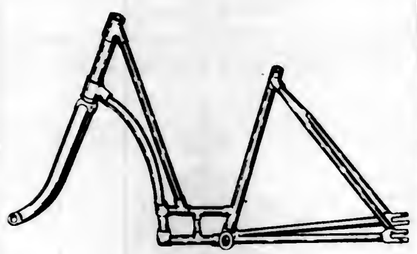
8. In a design for a stove, the design for the cover 31, substantially as shown and described.

29,076. OIL-CUP OR OILER. JOSEPH W. CUSHMAN, New York, N. Y. Filed May 25, 1894. Serial No. 512,492. Term of patent 14 years.



Claim.—The design for an oil-cup or oiler herein shown and described.

29,077. BICYCLE-FRAME. SYLVESTER B. HILL, Chicopee, Mass. Filed June 11, 1898. Serial No. 683,234. Term of patent 7 years.



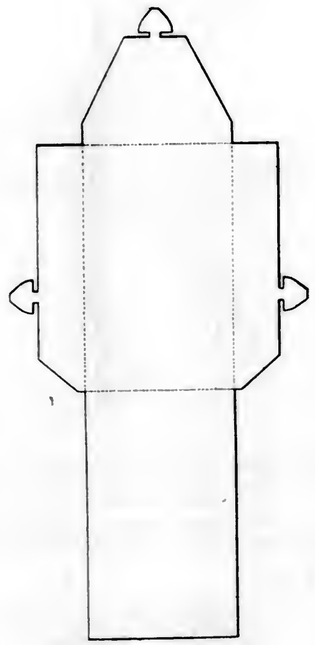
Claim.—The design for a bicycle-frame as herein shown and described.

29,078. POMMEL-CUSHION FOR VELOCIPEDE-SADDLES. MILLER M. DEER, Reading, Pa., assignor of one-half to P. & F. Manufacturing Co., same place. Filed Dec. 10, 1897. Serial No. 661,459. Term of patent 7 years.



Claim.—The design for a pommel-cushion for velocipede-saddles substantially as set forth.

29,079. ENVELOP-BLANK. GAIL B. PLUNKETT, New Richmond, Ind. Filed Dec. 19, 1896. Serial No. 616,346. Term of patent 14 years.



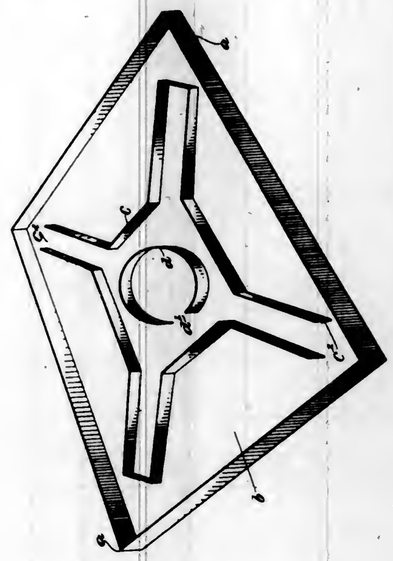
Claim.—The design for an envelop-blank as herein shown and described.

29,080. FONT OF PRINTING-TYPE. RUDOLPH GHICHWITZ, Ashbourne, Pa., assignor to Mather Manufacturing Co., Philadelphia, Pa. Filed June 20, 1898. Serial No. 684,008. Term of patent 7 years.



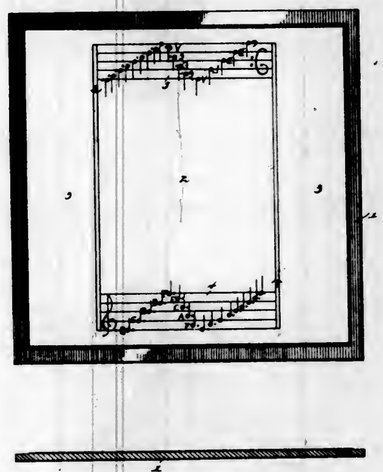
Claim.—The design for a font of printing-type, substantially as shown and described.

29,081. GAME-BOARD. ROBERT E. BOYLE, Norristown, Pa. Filed June 22, 1898. Serial No. 684,185. Term of patent 14 years.



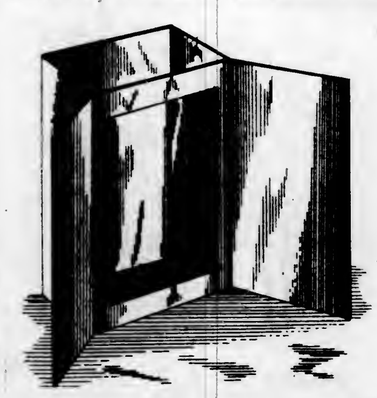
Claim.—The design for a game-board, substantially as shown and described.

29,082. GAME-BOARD. GEORGE LANTZ ROTHERMEL, Sunbury, and CHARLES HENRY DODGE, Northumberland, Pa. Filed June 25, 1898. Serial No. 684,509. Term of patent 3½ years.



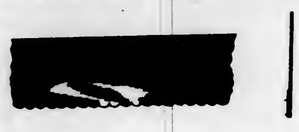
Claim.—The design for a game-board herein shown and described.

29,083. DISPLAY-CASE. THOMAS M. GUIGLEY, Logansport, Ind. June 10, 1898. Serial No. 683,134. Term of patent 3½ years.



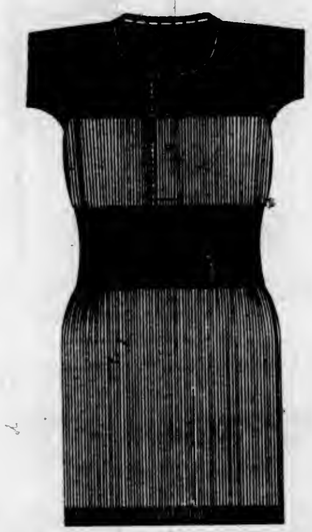
Claim.—The design for a display-case substantially as herein described and shown.

29,084. SKIRT-FACING. ISAAC B. KLEINERT, New York, N. Y., assignor to the I. B. Kleinert Rubber Company, same place. Filed Apr. 3, 1897. Serial No. 630,660. Term of patent 14 years.



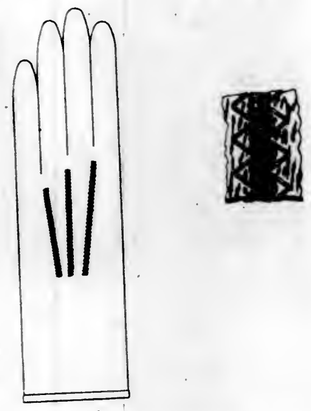
Claim.—The design for a skirt-facing herein shown as described.

29,085. UNDERVEST. ROBERT M. APPLETON, Boston, Mass. Filed Apr. 17, 1897. Serial No. 632,676. Term of patent 7 years.



Claim.—The design for an undervest substantially as herein shown and described.

29,086. GLOVE. WILLIAM T. LIETHER and JAMES T. DOWDALL, Gloversville, N. Y. Filed June 8, 1898. Serial No. 682,951. Term of patent 14 years.



Claim.—The design for a glove substantially as herein shown and described.

29,087. BICYCLE OR SIMILAR STOCKING. GRACE P. BROWN, New York, N. Y. Filed Dec. 1, 1897. Serial No. 660,452. Term of patent 3½ years.



Claim.—The design for a bicycle or similar stocking, substantially as shown and described.

TRADE-MARKS

REGISTERED JULY 19, 1898.

31,810. CERTAIN NAMED WOVEN LINEN FABRICS. THE UNION LINEN COMPANY, Guild, N. H. Filed May 16, 1898.

Madelin

Essential feature.—The word "MADELIN." Used since April 1, 1898.

31,811. BOOTS AND SHOES. HURLEY & CASSMAN, Lynn, Mass. Filed May 10, 1898.



Essential feature.—The representation of a shield having across its face an angular cross-bar with the representation of a shoe above and below the cross-bar. Used since Feburary, 1896.

31,812. TWINE AND BINDER-TWINE. PLYMOUTH CORDAGE COMPANY, North Plymouth, Mass. Filed Feb. 20, 1895.



Essential feature.—The representation of a sheaf of grain tied about midway with a twine. Used since January 1, 1891.

31,813. ROPES, CORDS, TWINES, THREADS, BAGGING, AND CARPETS OR FLOOR-COVERINGS. LA INDUSTRIAL, Merida, Mexico, and New York, N. Y. Filed Apr. 9, 1898.



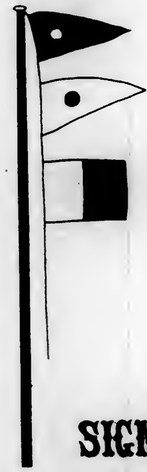
Essential feature.—The representation of an eagle and a series of bundles or coils of rope or twine. Used since October 1, 1897.

31,814. FINE DRIVING-WHIPS. LAY WHIP COMPANY, Westfield, Mass. Filed Mar. 2, 1898.



Essential feature.—The representation of a battle-ship and the words "WHITE SQUADRON LINE." Used since December 16, 1897.

31,815. TEA. EDWARD A. WILLARD, New York, N. Y. Filed Apr. 19, 1898.



SIGNAL CHOP

Essential feature.—The words "SIGNAL CHOP," combined with the representation of a flagstaff or masthead, with signal-flags flying therefrom. Used since October 1, 1897.

31,816. GIN. JOHN DE KUYPER & SON, Rotterdam, Netherlands. Filed Apr. 21, 1897.



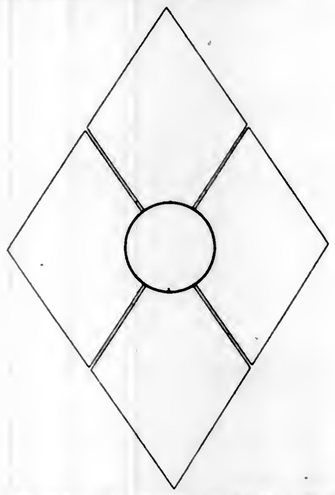
Essential feature.—The figure of a conventional heart upon an anchor constituting the central figure of the mark, with a scroll having wings extending beyond either side of the heart. Used since June 27, 1893.

81,817. CERTAIN NAMED MEDICINAL LIQUID. GEORGE B. FISHER, Denver, Colo. Filed May 7, 1898.

Gastrizone

Essential feature.—The word "GASTRIZONE." Used since March, 1897.

81,818. CARBON-BLACKS. PEERLESS CARBON BLACK COMPANY, LIMITED, Pittsburg, Pa. Filed Apr. 7, 1898.



Essential feature.—The representation of a diamond or lozenge shaped figure formed by combining several smaller diamond-shaped figures, which are cut by a circle at a common center. Used since February 10, 1898.

81,819. LONG-HANDLED BROOMS FOR HOUSEHOLD USE. HORACE THOMPSON, Concord, N. H. Filed May 10, 1898.

DANDY

Essential feature.—The word "DANDY." Used since February, 1897.

81,820. SEWING-MACHINES. FLORENCE MACHINE COMPANY, Northampton, Mass. Filed Apr. 26, 1898.



Essential feature.—A monogram of the letters "F," "M," and "C," with the letter "o." Used since February 1, 1898.

81,821. DRYING-MACHINES. PHILADELPHIA TEXTILE MACHINERY COMPANY, Philadelphia, Pa. Filed Sept. 17, 1897.

CYCLONE

Essential feature.—The word "CYCLONE." Used since October, 1893.

PHOTO LITH. THE NORRIS PETERS CO. WASH. D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE AMBERG.

Decided June 13, 1898.

1. DESIGNS—TITLE OF INVENTION—LIMITING APPLICATION TO WHAT HAS BEEN PRODUCED AND SHOWN AND DESCRIBED.

On petition from the action of the Examiner requiring applicant to limit the title of the application—a "design for banners, badges, buttons, and other decorative devices and displays"—to a design for a flag or banner, the thing shown and described, *Held* that applicant should confine the application to what he has produced and shown and described in his application, leaving to the courts the question as to whether he may use the design on any other article than a banner or flag or whether any other party using it on other devices would infringe his design.

2. SAME—REQUIREMENT TO REMOVE WORDS FROM THE DESCRIPTION AND DRAWING—COURSE OF APPEAL.

On petition from the requirement that applicant remove the words "Steady Progress" and "Milwaukee" from the description and drawing because they form no part of the design, *Held* that this is a question that affects the merits of the design and should be passed upon by the Examiners-in-Chief before it is brought to the Commissioner.

ON petition.

DESIGN FOR BANNERS, BADGES, BUTTONS, ETC.

Application of John Amberg filed April 4, 1898, No. 676,467.

Mr. H. G. Underwood for the applicant.

DUELL, *Commissioner:*

This is a petition praying that the action of the Primary Examiner requiring that the title of the application be changed and that certain words on the drawing be eliminated be not insisted upon. The title given to the application by applicant is a "design for banners, badges, buttons, and other decorative devices and displays." In describing this design appellant states:

> The leading feature of this design comprises a flag or ensign having a border of contrasting color to that of said flag or ensign, the said border being of equal width throughout, and following the outline of the said flag or ensign, while within the center of the space inclosed by said border there is shown a small branch of an oak-tree with a few clustering acorns on it, and a scroll or ribbon appears in ornamental curves across said branch. Minor features of this design comprise the bifurcated ends of the described scroll or ribbon, the said ends at the left hand being separated, and at the right hand the said ends cross each other; also, the motto "Steady Progress" in ornamental letters on said scroll or ribbon and the word "Milwaukee" below the oak-branch.

The claim is for—

> the design for banners, badges, buttons, and other decorative devices and displays, substantially as herein shown and described.

Considering first the objection to the title of the invention, it is seen that the description and drawing show that the only design that applicant has produced is a design for a banner or flag having the leading features as described in the specification above quoted.

Granting that applicant's contention is correct that the design is a surface ornamentation that may be placed on other articles than that shown, yet from his description this surface ornamentation has been applied or produced only on a flag or banner. Applicant has not invented and produced this design on any other article of manufacture than a flag or banner. He should confine the title of the invention and the claim to what he has produced and shown and described in his application, leaving to the courts the question as to whether he may use it on any other article than a banner or flag or whether any other party using it on other devices would infringe his design. This is the gist of the present practice, as indicated in *ex parte Hill and Renner* (82 O. G., 1988) and *ex parte Eldon*, (83 O. G., 748,) citing *Gorham* v. *White*, (14 Wall., 511.)

As to the requirement that applicant remove the words "Steady Progress" and "Milwaukee" from the description and drawing, as they form no part of the design, this is a question that affects the merits of the design and under the practice of the Office should be passed upon by the Examiners-in-Chief before it is brought to the Commissioner. (*Ex parte Van Slyke*, 60 O. G., 893.)

Applicant in his petition and brief has given reasons why it is important that he should obtain a decision on this question without delay. Under the circumstances I think applicant's request that the case be given early action should be granted, and the Primary Examiner may answer the appeal to the Examiners-in-Chief at once, should applicant take an appeal to them, and the Examiners-in-Chief are requested to give the case such precedence in the order of consideration as may seem proper under the special circumstances set forth by applicant's attorney.

The first prayer of the petition is denied, and the Examiner's requirement is sustained, and the second prayer is dismissed as relating to a matter not properly before the Commissioner.

EX PARTE MCMULLEN.

Decided June 4, 1898.

FUNCTION IN CLAIMS—OBJECTION—REJECTION.

Claims which, while including sufficient mechanical elements to effect a function expressed in the claims, depend upon that statement of function to distinguish them from the prior art are not to be objected to, but are subject to rejection.

ON petition.

FENCE-POST.

Application of David S. McMullen filed November 29, 1897, No. 660,064.

Mr. Louis K. Gillson for the applicant.

GREELEY, *Assistant Commissioner:*

This is a petition from the Examiner's objection to the expression "in such position that it is adapted to extend above and below the surface" in claims for a fence-post, the expression quoted referring to a block cast upon the post. The objection is that the expression is functional, and the suggestion was made by him that it be changed to *intermediate of the ends of the shaft.*

Functional claims—that is, claims for a function merely or which fail to include sufficient mechanical elements to effect the function expressed in the claim—are open to objection, and from objection made upon such ground petition may be taken to the Commissioner.

On the other hand, claims which while including sufficient mechanical elements to effect a function stated therein, depend upon that statement of function to distinguish them from what is old in the prior art are not to be objected to as functional, but are open to rejection if in the opinion of the Examiner the statement of function is insufficient, the question being a question of merits and not of form.

The question in this case must be regarded as a question of merits and not of form, and the requirement that the matter objected to be changed should not be insisted on.

The claims having been rejected and, as stated by the Examiner, in condition for appeal, except for the matter objected to, the applicant's remedy is by appeal.

The petition to the extent noted is granted.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

APPERT *v.* SCHMERTZ.

Decided June 7, 1898.

INTERFERENCE—PRIORITY—FAILURE TO FULLY DEVELOP PROCESS.

After reviewing the testimony, *Held* that while Schmertz may have come very near to developing the process of the issue prior to the date of Appert's constructive reduction to practice he lacked at least the final step that would have demonstrated the thoroughness of his conception and crowned his labors with success, and priority awarded to Appert.

Mr. Anthony Pollok and *Mr. Philip Mauro* for the appellant.

Mr. Wm. L. Pierce for the appellee.

SHEPARD, *J.:*

Leon Appert appeals from the decision of the Commissioner of Patents awarding priority of invention to his opponent in an interferenee proceeding, Edmund C. Schmertz, of a process of and apparatus for making what is called "wire-glass."

1. The issue in controversy is defined as follows:

1. The process of making glass sheets with wire inclosed therein, consisting in simultaneously forming a layer of glass and introducing wire thereto, and completing the sheet by forming another layer upon the first layer of glass, the process being carried on progressively.

2. An apparatus for making sheets of glass with wire inclosed therein, consisting of a table, a leading-roll to roll a layer of glass, means to support and introduce wire to the said layer, a second roll, behind the leading-roll, to form a layer of glass on the first or underneath layer, the periphery of the second roll being higher above the table than that of the leading-roll, and the two rolls being far enough apart to allow the glass for the second or upper layer to be poured between them.

Appert is a citizen of France and a manufacturer of glass in that country. October 19, 1893, he filed his application for a patent in France, and the same was issued to him January 12, 1894.

April 27, 1894, he filed his application in the United States Patent Office. In the course of proceeding thereon an interference was declared between him and one John E. Parker, which resulted in a decision in favor of Appert. (7 App. D. C., 270.)

It seems to have been for years an object of desire on the part of glass-manufacturers to obtain a process whereby thick plate-glass for skylights and similar uses could be strengthened by a wire support without materially interfering with its light-giving function.

What has been called the "European process," to distinguish it from the others mentioned in this case, was discovered and practiced in Europe in 1886. By this process a plate of glass was first rolled, the wire-gauze was laid upon it, and then a second plate was rolled on the top and welded to the other. The difficulty with this process was that the plates rarely cohered sufficiently and that they became blurred.

September 20, 1892, Frank Shuman, of Philadelphia, was granted a patent for a new process and combination which has been used in manufacture by him in this country. His apparatus consists of a carriage with three connected rollers mounted upon rails along the sides of the table. The piece of molten glass is laid in front of the first roller and by it rolled to the required thickness. The sheet of wire-gauze is fed down an inclined chute between the first and second rollers. The second roller is ribbed or corrugated and operates to force the wire sheet into the still soft plate to the required distance. The third roller closes up the openings made by the wire and ribbed roller and smooths the plate to a finish.

Appert in his specification describes the European and the Shuman processes, pointing out what he conceives to be the defects in each, and says:

To satisfy the various conditions which this manufacture requires, it is necessary, first that the metallic trellis be introduced into the glass paste in a regular manner, and at such distance from the surface of the sheet as may be determined upon beforehand; second that a trellis with wires as thin as possible and with a very large mesh should be employed, so as not to impair the transparency and solidity of the glass.

He then declares the object of his own invention and says:

It is characterized by the continuous and progressive formation of two layers of molten glass, and the simultaneous introduction between them of the metallic trellis or network and the compression of the whole into a solid, uniform and homogeneous body or sheet. The simultaneous formation of the two layers with the fabric inclosed between them and the progressive formation of the complete product makes my invention practical, successful and economical, and distinguishes it from the processes referred to above.

His apparatus and process as particularly described are set out substantially in the issues.

The superiority of this third process is claimed to lie in the simultaneous and progressive steps whereby the wire sheet is laid upon and attached to the first half of the contemplated sheet of glass, as it is rolled, while the second half is being rolled immediately behind and upon it. The wire is embedded at the desired uniform depth, the union of the plates complete, and the transparency of the whole unimpaired.

Edmund C. Schmertz filed an application for patent March 19, 1895, and followed with another on April 1, 1895. Both were rejected on reference to Appert's French patent, and he was notified that to contest priority of invention he must file an affidavit under Rule 75 showing that his invention was completed prior thereto. He filed affidavits stating that he had completed the invention before October 19, 1893. Through misunderstanding or inadvertence in the Patent Office Schmertz was not brought into the interference between Parker and Appert, and his applications were held to await the result of that controversy. Schmertz introduced evidence tending to show conception in June and July, 1893, and reduction, prosecuted with diligence, in January, 1894.

The Examiner of Interferences held that the proof was sufficient to show conception, as alleged, in 1893, but not sufficient to show reduction to practice before January 12, 1894, and decided in favor of Appert.

Appeal was taken to the Board of Examiners-in-Chief, who (two of them only sitting) reversed that decision, holding that the proof showed both conception in June or July, 1893, and diligence in reducing to practice before January 12, 1894.

Appeal having been taken to the Commissioner, he held that the proof was not sufficient to show conception by Schmertz until between January 1 and 10, 1894. He found, however, that having been so conceived by Schmertz it was followed by diligent efforts to embody it in an operative machine before January 12, and that a successful machine was made to operate and produce wire-glass by the process of the issue on January 16 or 17, 1894. On this finding of fact the decision in favor of Schmertz was affirmed, and that decision has been appealed from by Appert.

2. Two propositions of law have been urged on behalf of the appellant as requiring a decision in his favor, notwithstanding it may appear that Schmertz conceived the idea of the new process after October 19, 1893, and reduced it to practice or was diligently engaged in such reduction on and before January 12, 1894, the date of the issue of Appert's French patent. The first is that in an interference proceeding under section 4904, Revised Statutes, the foreign inventor may relate back on the issue of priority to the date of his invention abroad and is not to be confined to the date of the issuance of his patent in the foreign country. The second is that by virtue of the operation of Article 4 of the International Convention for the Protection of Industrial Property between the United States and France and other countries, proclaimed June 11, 1887, (25 Statutes Treaties, p. 1372; 40 O. G., 446,) the appellant is entitled to a right of property for the space of seven months from the date of the deposit of his application for his patent in France. The questions for determination under this last contention are whether that convention is self-executing and what is the true meaning of the first clause of the article in its reservation of the rights of third parties as applied to the conditions of this case.

These are interesting and important questions; but in the view that we have taken of the facts relating to the claim of invention by Schmertz we do not deem it necessary to consider and determine them.

3. Schmertz resides at Pittsburg, Pa., and is an expert glass-manufacturer. He is a stock-holder in and secretary of a corporation entitled the "Brownsville Plate Glass Company," which has operated one factory at Brownsville since 1879 and another at New Kensington since 1891. The Brownsville plant was first used in the manufacture of blown window-glass, and its product was changed to rough and ribbed skylight-glass in September, 1889. The New Kensington plant was applied to the same product. Both plants were not in operation at the same time in 1893. That at Brownsville was closed for a season about July 1, and on July 7 the Kensington plant was again operated. This gave Schmertz some leisure, which, he says, he occupied in studying the processes of wire-glass making. He says that he was aware of what is called the "European process" and as early as October, 1892, saw and examined copies of the two patents of Shuman and that of Brogan and Mallock. The Shuman patents were carefully studied. He says that he had a clear conception of the process and apparatus of the issue in June, 1893, and made sketches illustrating both between June 1 and July 7. Some of the many sketches claimed to have been made between June 1, 1893, and January 10, 1894, were produced in evidence and made exhibits in the case. The first appear on the backs of the Patent Office copies of the three patents aforesaid. During this time he says that he showed sketches to his bookkeeper, Hutchison, and to James A. Swearer, manager of the New Kensington works and an officer in the corporation, and consulted with the latter in respect of the best ways of arranging the machinery for operation of the new process. Schmertz produced other sketches—one upon a stock-list taken between December 2 and 9, 1893, another upon a trial-balance sheet from the books of the corporation, as of January 1, 1894, and a third upon an envelop containing some receipts for shipments of pieces used in his apparatus—in the first week of January, 1894. All of these sketches were roughly made with a lead-pencil, some having additions in blue. Whilst the foregoing papers used for sketching, save the envelop, each have dates, there is no date indorsed as that of the sketch itself. For the

sketch dates reliance is had solely upon memory. About all that is perfectly certain in respect of their dates is that the "trial-balance" sketch could not have been made earlier than some day between January 1 and 10, 1894. The date January 1, 1894, is indorsed upon this paper in pencil; but Schmertz admits that he wrote it there long afterward as a memorandum of the date to which the trial-balance referred.

All but the sketches on the stock-list and trial-balance, unless we except that made by erasures and insertions on Shuman's printed patent drawings, show rollers operating independently of each other; but two—that indorsed on Shuman's patent, No. 483,020, and that on the stock-list—show one wheel raised slightly above the other.

W. E. Hutchison, the bookkeeper, who occupied a desk very near that of Schmertz, testified that the latter made about twenty sketches between June 1 and October, 1893, the first of which was on an ordinary piece of paper and is not one of those produced. He recognized the drawing on the Shuman patent as one of those shown to him. He says that Schmertz explained his process when the first sketch was made; but, as repeated by the witness, this explanation was perfectly consistent with a plan to operate under the "European process." It adds no weight to the sketch as an exposition of the special process of the issue. The very number as well as the crudeness of Schmertz's sketches, instead of showing that he had a clear conception of a new process, tend rather to show uncertainty of mind or a confusion of ideas.

The European process, it will be remembered, consisted in making, first, a sheet of glass about one-half the required thickness of the completed one, placing the wire thereon, and then rolling another directly upon the top of the first, with the purpose of welding the two together. The objection to its practical working was chiefly in the difficulty of producing perfect cohesion between the two separately-made plates. The process of the issue seeks to overcome that difficulty by introducing the wire-gauze in the act of rolling the first half of the plate of glass and immediately rolling the second half on top of the first as it is being formed and while still in a state of fusion, admitting of its complete incorporation with the second, the two thereby becoming one perfect plate with the wire in the center of the mass. The table and roller of the ordinary process remain in use as formerly, but a second roller is necessarily added. Because, however, of the double thickness of the second roll the last roller cannot move on the same plane as the first. It has to be elevated to correspond with the increased thickness. This can be accomplished by recessing the ends of the first roller or the body of the second or by mounting the second on different strands or "trangs" raised the required height above the first. Feeding the wire on the first roll as it progressed was one of the features of Shuman's process. Schmertz was known to Shuman as engaged in the manufacture of glass for skylights and was visited by the latter in 1892 or at some time in 1893 prior to June 1. His object was to interest Schmertz in his ideas respecting the manufacture of wire-glass. He also disclosed ideas touching the rapid rolling of a second ball of glass upon the first plate and attached wire before it had time to cool too much for complete welding, but did not suggest the "simultaneous and progressive" rolling. Schmertz said that he would make trials and inform Shuman of the results. He afterward wrote to Shuman saying that he had given the matter considerable thought, had tried the processes suggested, and found they would have to be considerably modified before they would work. Nothing more was heard from Schmertz until after Shuman had arranged with the American Wire Glass Company and commenced the manufacture of wire-glass at Tacony, near Philadelphia.

James A. Swearer says that Schmertz discussed the subject with him at times in 1893 and explained his ideas; but he would not say expressly that Schmertz explained the distinctive process of making the wire-glass by simultaneous and progressive rolling of the plates, as now defined in the issue, and when testifying to the actual manufacture of glass on January 16 and 17, 1894, by Schmertz's apparatus and process the most that he would say was that as he now remembered (December 16, 1896) the principles were the same.

In a general sense the principle of all the processes is the same. Their foundation is the European process. The result sought is the same in all. The difficulty lies and invention is involved in the discovery of a new and practical means by which that result may be attained in such manner as to prove commercially valuable.

In accounting for the crudeness and incompleteness of Schmertz's sketches it has been urged that they were made for the benefit of his associates, who, like Swearer, were skilled glass-makers and could readily understand them when explained without necessity of fullness or exactness in detail. This suggestion, when applied in the consideration of Swearer's evidence, gives weight to his inability to state that the subsequent attempt at reduction to practice in January, 1894, was a carrying out, both in apparatus and process, of one distinct conception illustrated by all of the sketches. Considering all the direct evidence on behalf of Schmertz relating to his sketches and disclosures to his associates in 1893, we do not think it is sufficient to establish with reasonable certainty anything more than the fact that, stimulated by the suggestions of Shuman, he had tried to find a way in which the European process could be practically worked out for commercial purposes, but without reaching a satisfactory conclusion. With means and appliances and skilled assistants at hand and the necessary leisure he made no effort whatever until January, 1894, to put in execution a process conceived in the preceding June. The conclusion that he had no accurate conception of the process, as now claimed, is confirmed by evidence of conduct about which there can be no question.

Shuman, as Schmertz knew, was manufacturing glass by his process at Tacony in 1893. On November 10, 1893, he wrote Shuman a letter in which, after referring to a letter of introduction from one Webber, he says:

> As I explained to Mr. Webber while in New York, I have understood that you have made quite a success of the wire-glass business, and also that it was your intention to dispose of the right of making wire-glass for the western trade. As we are situated favorably for this very business I think we would be the proper people to talk to you on the subject. I will write you a day or so before starting east.

On December 1, replying to a letter of Shuman of November 29, he wrote that business matters had prevented his visit, but that he would go soon. On December 29 or 30 he visited Tacony and was shown through the works by Shuman. He saw and examined the operation of Shuman's apparatus and process. Returning to Pittsburg he wrote, January 4, 1894, to W. L. Elkins, president of the American Wire Glass Company, at Tacony, as follows:

> DEAR SIR: Since my return from the east we have been considering the "wire-glass" matter, and as yet have not decided on anything definite. Our attorney advises us to look into the matter of all the patents taken out in relation to "wire-glass" having in view to ascertain how thoroughly you have protected your patent. We would not care to go into the manufacture of this glass, with the danger of some other party afterward being able to make it by another process. Would you kindly send us a list of all the numbers of patents you have at present? Our president, Mr. James A. Swearer, would like to see your process, and if agreeable to you will come to Phila. some time within the next week to go through your factory. An early reply will oblige.

Receiving a favorable reply, James A. Swearer visited Tacony and spent January 11 and 12 in inspecting the Shuman process, for which every facility was afforded.

Assuming that these letters were written and these visits made in good faith, it is impossible to reconcile the conduct of Schmertz and Swearer with the fact that Schmertz then had a clear conception of a process different from that of Shuman and which had been explained to and understood by Swearer.

4. The evidence of conception and reduction to practice in January, 1894, consists, first, of sketches, one of which—that on the "trial-balance"—could not have been made before. The "stock-list" sketch could not have been made earlier than December 2, 1893. It shows one roll raised above the plane of the other. Under this is written with pencil: "First sheet half-thickness of finished glass. 1st roll recessed at each end." "1st," as shown, has been written over an erasure of the word "last."

The day after the last letter to Shuman, January 4, Schmertz ordered a large roller sent from the Brownsville works to Pittsburg, which upon arrival was sent to a foundry and recessed at each end. It was reshipped and received at the New Kensington works on January 10 and prepared for use on January 15, Swearer having in the meantime returned from his visit to Tacony. The purpose of recessing the end of the roll is to bring its intermediate part nearer the table in the process of rolling the glass.

As the strength of Schmertz's claim to the discovery of a new and complete process is made to depend largely upon the novelty of this recessed roller and its importance in the successful use claimed to have been made January 16 and 17, 1894, both are to be considered in the light of other facts and circumstances. In the first place, then, as before remarked, the European process required the second plate to be formed by a roller operating upon a higher plane than the one used in making the first, and this was easily accomplished by recessing the ends of the first roller to the necessary depth. In the next place, Shuman testifies that rollers recessed at ends were used in the works at Tacony at the time of inspection by both Schmertz and Swearer, for the purpose, when necessary, of bringing the rolling-surface nearer the table when mounted on the same strand or trang. This elevation at the time of the second roll is also a necessary feature of the European process.

Shuman is a disinterested witness. He could not be mistaken, and it is not probable that he would have made a false statement in regard to a thing that must have been within the knowledge of those in the factory who daily operated his apparatus. Schmertz and Swearer both say that they did not see a recessed roller; but if there it seems impossible that it could have escaped their notice. They were skilled in the art, were there to make a close inspection, and the recessed roller was, as they say, a leading feature of their own contemplated construction. They were either in good faith, as shown by their correspondence with Shuman, inspecting his process to ascertain the advisability of purchasing a right to its use or else they had, under false pretenses, obtained access to his works for the purpose of borrowing ideas in perfecting their own invention. Moreover, they did not go together; but Swearer, after consulting with Schmertz and after the order for the roller to be shipped from Brownsville, made his own independent visit and careful inspection. If their purpose was not that disclosed in the correspondence, it was carefully concealed from Shuman and the officers of his company. Immediately after Swearer's return the attempt was made to manufacture glass in accordance with Schmertz's plans.

Schmertz, Swearer, and Toynbee, a ladler in their service, testify to the preparation of the apparatus and the successful operation of the process on January 16 and 17. Necessarily another ladler was required in carrying out the process, as well as several other assistants. None of these were produced as witnesses. The three aforesaid testify that some well-made and merchantable wire-glass plates were rolled on those trials. Strange to say none has been preserved, and the earliest manufacture that has been exhibited in evidence was not made before May, 1895, notwithstanding it is said that the experiments were renewed at other dates in 1894.

Obviously, as stated by Shuman in giving his opinion of what was shown by Schmertz's sketches, successful improvement upon the European process depended upon rolling the second or half plate upon the first at the earliest practicable moment, else cohesion would not take place properly. The second rolling could follow more rapidly than in

the European process by reason of the Shuman idea of feeding the wire upon the first plate in the process of rolling it. Something necessarily depended upon the varying temperatures of the separate balls of glass. If the rollers were separately operated, the second must move with proper speed and at the opportune moment. If connected, space sufficient must be left for ladling in the second ball of glass, and this must be promptly done. Successful achievement depended upon many contingencies.

In rebuttal Appert called a witness, Charles C. Stauffer, who was employed at the New Kensington factory during 1894 until August. He witnessed the experiments, being engaged in introducing the plates into the annealing-furnace, which is the final act in the process of manufacture. Whilst so engaged he witnessed the experiments of 1894. These were regarded by him and other workmen as failures. The products were thrown in large quantities upon the refuse-dump. He was not impeached, and though an attempt has been made to discredit him by calling him "a witness with a grievance against Schmertz" we find nothing in the record to justify the censure. On the other hand, observing nothing from which to infer his prejudice or bias in the case, we regard his evidence as entitled to great weight. He was not only an experienced worker in plate-glass manufacture, employed at the very place and time of making the experiments, but also one possessed of some skill in mechanic art. His observation was quickened and his memory impressed by the fact that during the same period he was coöperating with one James N. Gregg in the invention of an apparatus and process for making this same wire-glass. It is reasonable to suppose that the complete success of Schmertz's simpler apparatus, wh'ch, if true, was bound to be known to Stauffer, would have abated his and his associate's zeal in the prosecution of their own invention; but instead it appears that they continued their labors and perfected their invention July 7, 1894, one month before Stauffer left New Kensington works. They filed their application, upon which a patent was issued, February 19, 1895. These facts were known to Schmertz. Looking at their drawings and specification, it is apparent that they did not borrow from the apparatus of Schmertz. Their process is more akin to Shuman's. Their plan is to feed the wire through a device whereby it is tightly held at the desired uniform distance above the bed or table—say one-half the proposed thickness of the glass plate when finished. The molten glass is then fed upon this stretched wire, passing in part through its meshes, and is followed by the roller that presses it into one solid plate, in the middle of which, theoretically, the wire will become embedded. In common with the others, its practical utility can only be determined by use. Schmertz, knowing their efforts, proposed to them to set up their machine and experiment with it for thirty days in his factory, making necessary changes and improvements at their expense. At the end of the thirty days he was to have an option of sixty days either to use the machine and process under a royalty of one and one-half cents per foot or to purchase the sole right to use in the United States for the sum of $30,000. The negotiation failed. Schmertz corroborates him in respect of the failure of this negotiation between them, and there is nothing in the testimony of either to indicate that it resulted in unfriendliness or ill will.

Now if the experiments of January 16 and 17 demonstrated the successful completion of invention what is there to account for the long delay in attempting to put the product upon the market? Why such long delay—nearly fifteen months—in applying for a patent even? Other inventors were at work in the same field. Shuman's testimony shows that there was considerable demand for his product, and Schmertz's conduct proves that he attached great value to the discovery of an effective process for making the new glass. The principal, if not the only, product of his factory during the time was skylight-glass.

The only excuse for this delay is in the great depression in trade in 1893 and 1894. Grant that notice will be taken of this general depression, still there is no evidence to indicate that it affected Schmertz's company other than that one of its factories had ceased operations. The New Kensington plant was turning out the ordinary rough and ribbed glass. The new product, being greatly superior, would surely have been in demand.

There was nothing whatever to prevent his applying for a patent, as Gregg and Stauffer did, and thus protecting his valuable discovery. His efforts in the matter of discovery attest his sense of the value of a better process for making the new glass. He expressed a desire to engage in manufacturing under Shuman's process, unless we assume that his representations to Shuman were falsely made in order to obtain an inspection of his apparatus and its operation. To assume their falsity would be to discredit his entire testimony.

In accounting for his proposition to obtain control of the Gregg and Stauffer patent he effectually disposes of the theory that his inaction in the matter of utilizing his process, and especially in delaying to apply for a patent, was due to the dullness of the markets and the stress of hard times. He said in that regard:

> I wished to keep the Gregg and Stauffer patent from getting into the hands of other manufacturers of glass who would prove competitors.

We are constrained to believe that while Schmertz may have come very near to developing the process of the issue in January, 1894, he lacked at least the final step that would have demonstrated the thoroughness of his conception and crowned his labors with success.

For the reasons given priority is awarded to Appert. The decision appealed from will be reversed and the proceedings herein certified to the Commissioner of Patents. It is so ordered.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 84—No. 4 TUESDAY, JULY 26, 1898. PRICE—$5 per year.

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Notice of Interference—Loosley v. Decker.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 14, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

An interference having been declared by this Office between the application of Ernest A. Loosley, deceased, of Birmingham, Ala., and an application of William Lloyd Decker, of Worcester, Mass., whose attorney of record is Rufus B. Fowler, of same place; and the notices of said declaration, mailed by the Patent Office in the usual manner to the said heirs, executor, or administrator of Ernest A. Loosley, deceased, having elicited no response, notice is hereby given to such heirs, executor, or administrator that if it is desired to contest this interference communication with the Commissioner of Patents should be immediately established, in order that the above-mentioned notices may be duly forwarded at once.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

C. H. DUELL,
Commissioner.

Changes in Classification.

(ORDER No. 1,219.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 18, 1898.

A new division is hereby established, which shall be numbered XXXVI and consist of the following class, transferred from Division XXVIII:

Class 34. Driers.

and the following subclasses from Class 73, Measuring Instruments, Division XXIII:

2. Anemometers.
3. Balances—
101. Electrical attachments,
99. Equal arms,
102. Pick-up weights,
100. Recording.
4. Barometers.
5. Bathometers.
6. Bevels.
15. Dynamometers.
16. Gages—
107. Depth,
77. Micrometer,
33. Rain,
66. Surface,
108. Thickness,
67. Track,
54. Water—
82. Float.
19. Grain-meters—
97. Double-trap bottom,
94. Oscillating,
96. Positively-actuated,
78. Rotating,
95. Twin buckets.
22. Hydrometers.
24. Hygroscopes.
79. Lactometers.
68. Leather-measuring.
Levels—
71. Plumb.
Measures—
36. Rotary,
40. Scale,
64. Shoemakers',
48. Tailors',
49. Tape.
80. Pitch-boards.
81. Planimeters.
72. Plumb-bobs.
31. Pressure-gages—
109. Bourdon,
Calipers—
105. Dial,
106. Stem.
9. Cloth-measuring machines.
88. Coin-packages.
11. Coin-testers.
73. Conformators.
13. Dividing-engines.
Pressure-gages—
110. Diaphragm,
111. Piston.
Scales—
39. Beams,
8. Cart,
23. Hydrostatic,
41. Pans,
29. Pendulum,
121. Platform,
104. Price,
38. Sack,
46. Spring.
113. Spacing instruments.
42. Specific-gravity apparatus.
47. Squares—
115. Center,
116. Folding.
103. Steelyards.
117. Telemetry.
50. Testing illuminating fluids.
51. Testing-machines.
52. Thermometers—
118. Metallic,
119. Oven,
32. Pyrometers,
85. Telethermometers.
21. Tollers.
120. Ullage-rods.
55. Weather-vanes.
56. Weights.

The following subclasses in Class 101, Printing, are hereby transferred from Division XVII to Division XXIII:

Hand-stamps—
67. Settable type-carrier—
68. Clock set,
69. Inking attachment.
92. Numbering-machines—
93. Form attachments,
Numbering-machines—
94. Hand,
95. Measurers and markers.
147. Ticket-machines.

A. P. GREELEY,
Acting Commissioner.

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 15, 1898.

SIR: The Secretary of the Interior has ordered that John Palmer, of Hampton, Va., be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

CERTIFICATES OF REGISTRATION ISSUED JULY 26, 1898.

Label.

6,629.—Title: "THE REFORM SELF BINDER." *Henry E. Veit*, Chicago, Ill. Application filed May 6, 1898.

Print.

72.—Title: "SELF FASTENING KNOBS FOR POT COVERS." *Isaac Finesilver*, New York, N. Y. Application filed June 17, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 19, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Between one and two months.			
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	May 25	July 11	196
88	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	May 27	July 9	180
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	May 21	July 5	156
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	May 19	June 28	175
	Between two and three months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Apr. 21	July 12	352
102	XIX. Stoves and Furnaces	Apr. 27	July 9	235
158	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	Apr. 25	July 6	202
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	May 5	July 5	184
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Apr. 21	July 5	200
255	XII. Mechanical Engineering Store-Service, etc.	Apr. 22	June 30	217
	Between three and four months.			
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Apr. 1	July 8	241
248	XVIII. Steam-Engineering, etc	Mar. 22	July 8	297
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Apr. 6	July 6	288
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Mar. 23	July 5	486
253	X. Carriages and Wagons	Apr. 16	June 29	252
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Apr. 2	June 28	396
93	XXI. Textiles, etc	Mar. 21	June 8	274
	Between four and five months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Mar. 1	July 11	416
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Mar. 8	July 6	136
120	IX. Hydraulics, Fire-Extinguishers, etc.	Mar. 4	July 6	282
246	I. Tillage and Fences	Mar. 17	July 5	245
240	VII. Velocipedes	Mar. 15	July 5	610
106	II. Farm Stock, Products, etc	Mar. 4	July 5	513
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Mar. 17	June 30	367
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Mar. 5	June 23	392
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Mar. 3	June 21	434
	Between five and six months.			
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Feb. 17	July 9	168
85	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Feb. 4	July 7	580
217	XXXIII. *Trade Marks, etc., †Designs, Drafting, and Optics.	Jan. 20	July 5	244
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Feb. 14	July 1	751
	Between six and seven months.			
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Jan. 4	July 7	526
95	XXX. Paper Manufactures Lamps, and Gas-Fittings.	Dec 27	July 7	304
	Between seven and eight months			
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Nov. 26	July 7	491
215	XVII. Printing, Type-Writing Machines, and Linotyping.	Dec. 10	July 5	505
	Between eight and nine months.			
221	XXIII. Instruments of Precision, Acoustics, etc.	Nov. 18	June 25	488
	Total number of applications awaiting action			11,715
	Under one month.			
	†Designs	July 15	July 15	41
	Between one and two months.			
	*Trade-Marks	June 9	July 9	177

Applications Under Examination—Continued.

ISSUE OF JULY 26, 1898.

Patents	352	No. 607,814 to No. 608,165, inclusive.
Designs	28	No. 29,088 to No. 29,115, inclusive.
Trade-Marks	6	No. 31,822 to No. 31,827, inclusive.
Labels	1	No. 6,029.
Prints	1	No. 72.
Reissues	4	No. 11,682 to No. 11,685.
Total issue	392	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	New Hampshire	.....	1
Arizona Territory	.....	.....	New Jersey	8	.....
Arkansas	.....	.....	New Mexico Territ'y	.....	.....
California	15	.....	New York	47	3
Colorado	4	.....	North Carolina	1	.....
Connecticut	9	.....	North Dakota	.....	.....
Delaware	.....	.....	Ohio	28	.....
District of Columbia	3	.....	Oklahoma Territory	.....	.....
Florida	2	.....	Oregon	.....	.....
Georgia	2	.....	Pennsylvania	33	.....
Idaho	.....	.....	Rhode Island	7	.....
Illinois	22	2	South Carolina	.....	.....
Indian Territory	.....	.....	South Dakota	2	.....
Indiana	10	.....	Tennessee	2	.....
Iowa	4	.....	Texas	2	.....
Kansas	6	.....	Utah	1	.....
Kentucky	4	.....	Vermont	.....	.....
Louisiana	2	.....	Virginia	1	.....
Maine	3	.....	Washington	5	.....
Maryland	12	.....	West Virginia	1	.....
Massachusetts	37	.....	Wisconsin	8	.....
Michigan	9	1	Wyoming	1	.....
Minnesota	3	.....	U. S. Army	.....	.....
Mississippi	2	.....	U. S. Navy	.....	.....
Missouri	6	.....	Total to citizens of the United States	308	7
Montana	2	.....			
Nebraska	3	.....			
Nevada	.....	.....			

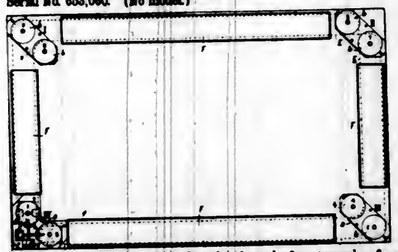
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Italy	2	.....
Australia	.....	.....	Mexico	.....	.....
Austria-Hungary	5	.....	Netherlands	.....	.....
Belgium	.....	.....	Newfoundland	.....	.....
Bermuda	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
Canada	9	.....	Norway	.....	.....
Cape Colony	.....	.....	Portugal	.....	.....
Chile, Republic of	.....	.....	Queensland	.....	.....
China	.....	.....	Russia	1	.....
Colombia	.....	.....	Scotland	2	.....
Cuba	.....	.....	South African Republic	.....	.....
Denmark	.....	.....	South Australia	.....	.....
Egypt	.....	.....	Spain	.....	.....
England	28	.....	Sweden	1	.....
Finland	.....	.....	Switzerland	1	.....
France	9	1	Turkey	.....	.....
Germany	14	.....	Victoria	.....	.....
Guatemala	.....	.....	Total to citizens of foreign countries	72	1
Hawaii	.....	.....			
India	.....	.....			
Ireland	.....	.....			

PATENTS

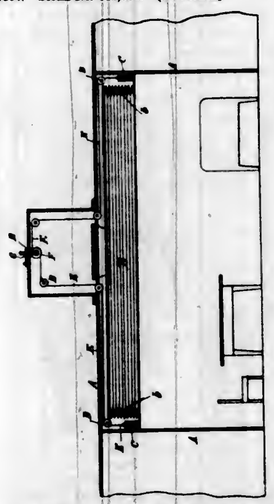
GRANTED JULY 26, 1898.

607,814. PARALLEL MOTION FOR DRAWING-BOARDS. ALEXANDER AIGNER, Buda-Pesth, Austria-Hungary. Filed Sept. 25, 1897. Serial No. 653,060. (No model.)



Claim.—In combination in a drawing-board of rectangular form, a pair of pulleys arranged at each corner of the board, two of said pairs being arranged with their axes on the hypotenuse of the right angle at the corner while the pulleys of the other two pairs have their axes on lines dividing the right angles, the cable extending around said pulleys and having its outer portions running in the same direction while its inner portions run in the opposite direction, the ruler and the clamps for attaching the same to the cable and the means for adjusting the cable, substantially as described.

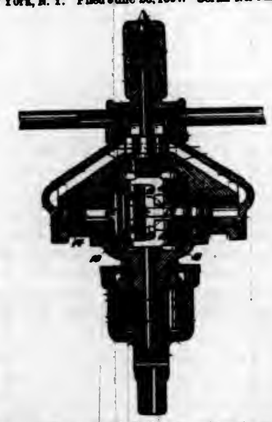
607,815. MEANS FOR INCREASING LIFTING CAPACITY OF FLOATING BODIES. WARRASOFFY ALEXANDROFF, St. Petersburg, Russia, assignor of one-half to Alexander Coumbary, same place. Filed Apr. 13, 1897. Serial No. 632,039. (No model.)



Claim.—1. A boat or vessel or other floating structure provided on its inside with an independent float not integral with such vessel or floating structure, the said float being in the form of bellows suspended from the ceiling or walls of the compartment to be protected and adapted to be readily lowered when required.

2. A boat or vessel or other floating structure provided on its inside with an independent float not integral with such vessel or floating structure, said float being in the form of bellows suspended from the upper part of the compartment to be protected, combined with weights normally held in elevated positions and adapted to expand such float when released.

607,816. PORTABLE DRILLING-MACHINE. JOHN F. ALLEN, New York, N. Y. Filed June 25, 1897. Serial No. 642,346. (No model.)



Claim.—1. In a portable drilling-machine, in combination, a driving-shaft, a drill-head in longitudinal alinement therewith, an eccentric fitted on the driving-shaft, a gear-wheel fitted to rotate on said eccentric, an internal gear fixed to the frame and concentric with said driving-shaft, another internal gear fixed to the drill-head and concentric with said driving-shaft, said internal gears being arranged side by side and one containing a greater number of teeth than the other, and the gear-wheel on the eccentric meshing with both internal gears, substantially as set forth.

2. A portable drilling-machine comprising a driving-shaft and a crank thereon, multiple cylinders and pistons therefor and connecting-rods respectively joining said pistons to said crank, a drill-head in longitudinal alinement with said driving-shaft, an eccentric fixed upon said driving-shaft, a gear-wheel fitted to rotate on said eccentric, an internal gear fixed to the drill-head and concentric with the driving-shaft, and connecting means holding said gear from rotation relatively to the frame, substantially as set forth.

3. A portable drilling-machine comprising a driving-shaft and crank thereon, multiple cylinders and pistons therefor and connecting-rods respectively joining said pistons to said crank, a drill-head in longitudinal alinement with said driving-shaft, an eccentric fixed upon said driving-shaft, a gear-wheel fitted to rotate on said eccentric, an internal gear fixed to the frame and concentric with said driving-shaft, another internal gear fixed to the drill-head and concentric with said driving-shaft, said internal gears being arranged side by side and one containing a greater number of teeth than the other, and the gear-wheel on the eccentric meshing with both internal gears, substantially as set forth.

4. A portable drilling-machine comprising a driving-shaft and crank thereon, multiple cylinders and pistons therefor and connecting-rods respectively joining said pistons to said crank, a drill-head in longitudinal alinement with said driving-shaft, and connecting means between said driving-shaft and drill-head whereby the move-

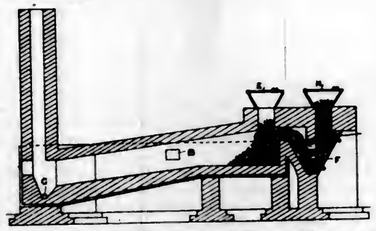
ment of said driving-shaft is communicated with diminished velocity to said drill-head, substantially as set forth.

5. A portable drilling-machine comprising a casing containing multiple cylinders, a driving-shaft and crank thereon, a piston in each of said multiple cylinders and a connecting-rod joining each of said pistons to said crank, said multiple cylinders being disposed about said driving-shaft on lines radial thereto, and being closed at their outer ends and open at their inner ends, a valve on said driving-shaft, said casing containing ports and passages leading from said valve to the outer ends only of said cylinders, a drill-head in longitudinal alinement with said driving-shaft, and connecting means between said driving-shaft and drill-head whereby the movement of said driving-shaft is communicated with diminished velocity to said drill-head, substantially as set forth.

6. A portable drilling-machine comprising a casing containing multiple cylinders, a driving-shaft and crank thereon, a piston in each of said multiple cylinders and a connecting-rod joining each of said pistons to said crank, said multiple cylinders being disposed about said driving-shaft on lines radial thereto and being closed at their outer ends and opening at their inner ends into a chamber formed in the casing and containing said crank, a valve on said driving-shaft, said casing containing an inlet and passage leading to said valve and an oil-inlet leading to said valve, and said casing containing ports and passages leading from said valve to the outer ends only of said cylinders and from the valve to the interior of the crank containing chamber, and said casing having an outlet from said chamber, and a drill-head and connecting means between said driving-shaft and drill-head whereby the movement of said driving-shaft is communicated with diminished velocity to said drill-head, substantially as set forth.

7. In combination, a casing containing multiple cylinders, a driving-shaft and crank thereon, a piston in each of said multiple cylinders and a connecting-rod joining each of said pistons to said crank, said multiple cylinders being disposed about said driving-shaft on lines radial thereto, and being closed at their outer ends and opening at their inner ends into a chamber formed in the casing and containing said crank, a valve on said driving-shaft, said casing containing an inlet and passage leading to said valve and an oil-inlet leading to said valve, and said casing containing ports and passages leading from said valve to the outer ends only of said cylinders, and leading from the valve to the interior of the crank-containing chamber, and said casing having an outlet from said chamber, substantially as set forth.

607,817. PROCESS OF TREATING COMPLEX ORES. JOHN ARMSTRONG, London, England. Filed Apr. 22, 1897. Serial No. 633,240. (No specimens.)



Claim.—1. The process of treating rebellious sulfid ores or mattes which consists in heating them by a reducing-flame to a red heat with a mixture of carbon, an alkali-metal salt such as described and lime in about the proportions used to form alkali metal thereby effecting the reduction of the ore by the nascent alkali metal and tapping out the metal.

2. The cycle of operations in the metallurgy of rebellious or complex sulfid ores or mattes containing zinc which consists in treating them by a reducing-flame at a red heat with carbonate of an alkali metal, carbon and a lime flux, thereby effecting the reduction of the ore by the nascent alkali metal tapping out the metal, separating the zinc, liziviating the slag and converting the alkaline sulfid into alkaline carbonate for use in the first operation of the cycle.

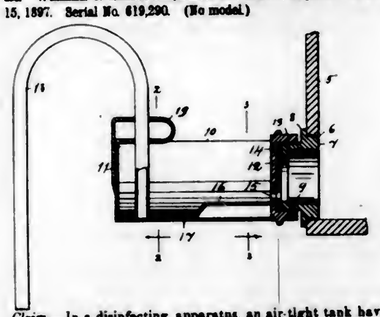
3. The process of treating rebellious or complex sulfid ores or mattes containing zinc, which consists in heating the same to a red heat with soda, carbon and lime in a reducing-flame thereby effecting the reduction of the ore by the nascent alkali metal until most of the metals separate, then separating the zinc from the slag substantially as described.

4. In the process of treating rebellious or complex sulfid ores or mattes containing zinc and other metals, such as lead silver, gold, antimony, arsenic and silicon by means of carbon, alkali-metal carbonate, and the requisite flux reducing the major part of the metals contained therein and bringing the slag into contact with molten metallic copper, thereby forming an alloy containing zinc and copper.

5. In the process of treating rebellious or complex sulfid ores or mattes containing zinc, first reducing the lead and silver and some of the zinc by means of carbon, an alkali-metal salt such as described and calcareous matter such as described by a reducing-flame at a red heat, thereby effecting the reduction of the ore by the nascent alkali metal, then separating the zinc from the slag at a higher heat.

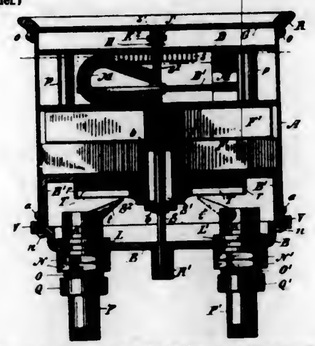
6. The process of treating rebellious sulfid ores or mattes, which consists in comminuting the ore or matte, intimately mixing with the comminuted mass, a compound of an alkali metal and a reducing agent, and exposing the mixture out of contact with the air to a red heat thereby liberating the alkali metal, and by action of the nascent alkali metal, reducing the ore or matte without previously fusing it, the heating being carried out at a temperature insufficient to reduce the alkali metal in the absence of the ore or matte.

607,818. DISINFECTING APPARATUS FOR WATER-CLOSETS, &c. WILLIAM G. ARMSTRONG, Dalton-in-Furness, England. Filed Jan. 15, 1897. Serial No. 619,290. (No model.)



Claim.—In a disinfecting apparatus, an air-tight tank having a screw-threaded opening therein, a receptacle 10, open at the top and provided with a longitudinal partition adjacent to the bottom of said receptacle and a well at the opposite end, a cap 12 having an opening therein, the lower edge of which is on the same horizontal plane as said partition, a screw-threaded flange thereon, a plug 7 provided with screw-threaded projections whereby said receptacle is connected with said tank, a yoke firmly attached to said receptacle and a siphon supported by said yoke, the short arm of which projects into said well into close juxtaposition to the bottom thereof, and the long arm of which communicates with a flush-tank, the action of which creates a vacuum to cause said siphon to act, substantially as described.

607,819. MEAN-PRESSURE INDICATOR OR POWER-GAGE. GEORGE P. ATWOOD, Orange, N. J., assignor of one-half to Frederick M. Hoyt, Stamford, Conn. Filed Mar. 9, 1897. Serial No. 626,565. (No model.)



Claim.—1. A mean pressure indicator or power-gage meter for steam, or analogous engines, consisting of a continuously-driven motor actuated directly by a part of the steam which drives the engine and having sufficient momentum to make its velocity substantially constant for successive impulse effects of the steam when of equal value, and an indicator driven by the motor and adapted to give visual indications of a unitary nature, substantially as described.

2. A mean-pressure indicator or power-gage consisting of a turbine motor having sufficient momentum to continue its movement during the interval between successive impulses of the moving agent, said motor being attached to a rotary fan, in combination with a second fan adapted to be propelled by the first-named fan and an indicating-hand carried by a shaft which sustains the second fan; means as a retractile spring for retarding or opposing the forward movement of said fan, together with a dial calibrated to read units of measurement, substantially as described.

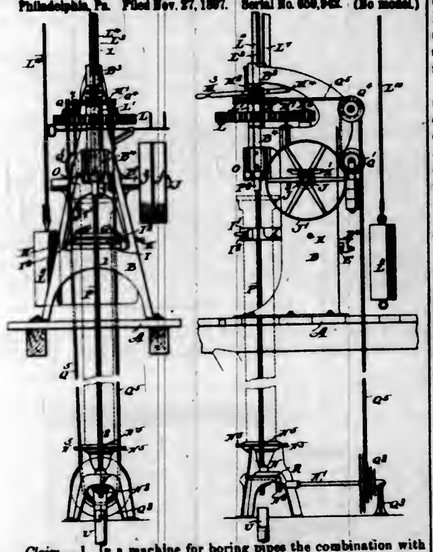
3. A mean-pressure indicator or power-gage meter for steam or analogous engines consisting of a rotary motor actuated directly by a part of the motive agent which drives the engine and having a sufficient moment of inertia to render its velocity a measure of the mean pressure of the successive impulses of such motive agent, in combination with an indicator driven by the motor and adapted to give visual indications of a unitary nature, such as horse-power, substantially as described.

4. A mean-pressure indicator or power-gage meter consisting of a turbine motor having a sufficient moment of inertia to continue its movement in the same direction between successive impulses of the motive agent, such as steam, in combination with one or more jet-pipes adapted to convey a part of the motive agent directly from the cylinder of the engine to and through the turbine motor at the same time that it is applied to the piston-head of the engine together with means for indicating definite units of energy attached directly to the movable part of said turbine motor, substantially as described.

5. A mean-pressure indicator or power-gage consisting of a movable motive device in the nature of a rotary turbine, said motive device having sufficient moment of inertia to continue its movement during successive applications of the motive agent, such as steam; one or more jet-pipes operatively connected with the engine the horse-power of which it is desired to ascertain, said jet-pipe or jet-pipes being so connected to the engine as to receive the steam therefrom at the same time that it is utilized by the engine, in combination with indicating mechanism driven by said rotary turbine, and opposing means in the nature of a retractile spring together with steadying means, all of said parts acting substantially as and for the purpose described.

6. A mean-pressure indicator or power-gage meter for steam or analogous prime movers or engines, consisting of a continuously-driven turbine constructed to have a sufficient moment of inertia to continue its movement during successive impulses and provided with one or more jet-pipes adapted to deliver steam upon the buckets of the motor; means for varying the angular location of said jet-pipes so as to adjust the instrument to the prime mover with which it is to be moved, in combination with an indicator driven by the motor, substantially as described.

607,820. PIPE-BORING MACHINE. BERNEY C. BATCHELLER, Philadelphia, Pa. Filed Nov. 27, 1897. Serial No. 659,942. (No model.)



Claim.—1. In a machine for boring pipes the combination with a boring-tool as O, and means connected at its rear end for turning said tool, of a feed-screw, as P, connected to the tool in position to extend through the pipe in advance thereof, said feed-screw being so connected to the tool as to move longitudinally with it while being unaffected by its rotative movement, a pipe-rest, as pedestal N, a feed-nut as T T adapted to engage the feed-screw P and means secured in the pipe-rest for actuating said nut and causing the tool O to feed through the pipe.

2. In a machine for boring pipes the combination with a boring-tool, as O, and means for turning said tool connected at its rear end, of a feed-screw, as P, connected to the tool in position to extend through the pipe in advance thereof, said feed-screw being so connected to the tool as to move longitudinally with it while being unaffected by its rotative movement, a pipe-rest, as pedestal N, a feed-nut as T T adapted to engage the feed-screw P and means secured in the pipe-rest and driven synchronously with the mechanism for turning the tool for actuating said nut and causing the tool O to feed through the pipe.

3. In a machine for boring pipes the combination with a vertically-movable boring-tool as O, and means for turning said tool connected at its rear end, of a feed-screw, as P, depending from said tool, said feed-screw being so connected to the tool as to move longitudinally with it while being unaffected by its rotative movement, a pedestal, as N, adapted to serve as a rest for the lower end of the pipe and situated below the tool O, a feed-nut as T T adapted to engage screw P, means secured in the pedestal for rotating said nut to cause the tool to feed through the pipe.

4. In a machine for boring pipes the combination with a vertically-movable boring-tool, as O, means for counterbalancing, and means for turning said tool, of a feed-screw, as P, depending from said tool, a pedestal, as N, adapted to serve as a rest for the lower end of the pipe and situated below the tool O, a feed-nut as T T adapted to engage screw P, means secured in the pedestal for rotating said nut to cause the tool to feed through the pipe.

5. In a machine for boring pipes substantially as described a pedestal N having a pipe-rest platform N^4 and means for centering the pipe thereon, in combination with a feed-screw P, means for engaging said screw to prevent its turning in the pedestal but without interfering with its longitudinal movement, a feed-nut adapted to engage screw P supported on the pedestal, and means for rotating said nut.

6. In a machine for boring pipes a pipe-rest platform N^4 and means for centering the pipe thereon, in combination with a feed-screw P, means for engaging said screw to prevent its turning in the pedestal, but without interfering with its longitudinal movement, a gear-wheel R having nut-bearings as R^2, a split feed-nut as T T secured in said bearings, means as bolts T' for securing the parts of the feed-nut together, and means for rotating gear-wheel R.

7. In a machine for boring pipes, a pipe-rest platform N^4 and means for centering the pipe thereon, in combination with a feed-screw P, means for engaging said screw to prevent its turning in the pedestal, but without interfering with its longitudinal movement, a gear-wheel R having nut-bearings as R^2, a split feed-nut as T T having one or more longitudinal recesses as t' t' cut through its threads, secured in said bearings, means as bolts T' for securing the parts of the feed-nut together, and means for rotating gear-wheel R.

8. In a machine for boring pipes, a pipe-rest platform as N and means for centering a pipe end thereon, in combination with a pipe-clamp as I I', clamp-adjusting slides D and F arranged to give said clamp a universal motion, means for clamping said slides together and to the frame of the machine to secure the clamp and pipe in a determined position, a boring-tool and means secured on the frame for rotating said tool, a feed-screw secured to the tool so as to be unaffected by its rotation, and a feed-nut connected with the pedestal aforesaid for engaging the feed-screw and moving it and the boring-tool longitudinally.

9. In a machine for boring pipes substantially as described, the combination with a vertically-movable boring-tool a frame and mechanism for guiding and rotating said tool, a pedestal for supporting the lower end of the pipe, mechanism situated in said pedestal for longitudinally feeding the boring-tool, a pulley and rope belt system for transmitting motion from the mechanism for rotating the tool to the pedestal, mechanism for feeding said tool and a clutch for engaging and disengaging said mechanism.

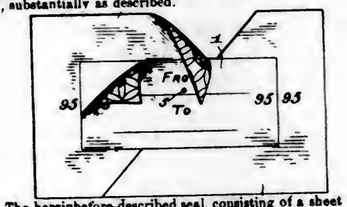
607,821. SEAL. WILLIAM F. BEARLEY, Baltimore, Md. Filed Jan. 18, 1896. Renewed Dec. 22, 1897. Serial No. 663,006. (No model.)

Claim.—1. The hereinbefore-described seal and counterfoil thereof, each having portions of continuous identifying-marks thereon, the marks upon the seal being concealed when the latter is in use, substantially as described.

2. The hereinbefore-described seal and counterfoil thereof, each having portions of continuous identifying-marks thereon, the marks upon the seal being concealed when the latter is in use and counterfoil being cut into a plurality of pieces, each having portions of the identifying-marks, thereon, substantially as described.

3. The hereinbefore-described seal and counterfoils thereof, the

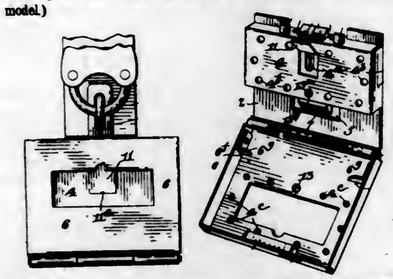
seal being cut from the counterfoil, and the counterfoil so formed being severed, whereby each piece thereof is a partial counterfoil of the seal, substantially as described.



4. The hereinbefore-described seal, consisting of a sheet of suitable material having a sheet of mica superimposed thereon, substantially as described.

5. The hereinbefore-described seal, consisting of a sheet of combustible material having a fulminating substance in the portion thereof to be mutilated, whereby the sheet will be burned upon the explosion of the fulminate, substantially as described.

607,822. SEAL-LOCK. WILLIAM F BEASLEY, Baltimore, Md. Filed Apr. 6, 1896. Renewed Dec. 22, 1897. Serial No. 663,097. (No model.)



Claim.—1. In a lock, the combination, with a seal-holder, of a locking-bolt therefor, composed of a plurality of independent sections, each of which is provided with a recess for the engagement of a key, the said recesses being covered by the seal when inserted in the said holder, substantially as described.

2. In a lock, the combination, with a seal-holder, of locking mechanism therefor, consisting of levers engaging the said holder, and having extensions projecting toward each other beneath the seal contained in the holder and a cover-plate over the said extensions having a key-slot therein to permit the sliding lateral movement of a key between the extensions to move the levers, substantially as described.

3. In a lock, the combination, with a seal holder, of locking mechanism therefor, consisting of levers engaging the holder, and extensions upon the said levers, having beveled corners, and abutting against each other, beneath the seal contained in the holder and a cover-plate over the said extensions having a key-slot therein to permit the sliding lateral movement of a key between the extensions to move the levers, substantially as described.

4. In a lock, the combination, with a seal-holder, of a locking-bolt therefor, and supplementary locking mechanism for the seal-holder, consisting of pivoted levers, having extensions projecting toward each other and abutting over the locking-bolt and beneath the seal contained in the holder substantially as described.

5. In a lock, the combination, with a seal-holder, of a slit locking-bolt therefor, each of the parts of the said bolt having registering notches in their adjoining sides, and also having notches in their opposite sides, and a supplemental locking mechanism, consisting of pivoted levers adapted to engage the seal-holder, each of the levers having an extension projecting to above the split in the locking-bolt, and ears upon the extensions engaging the last-named notches in the locking-bolt, substantially as described.

6. In a lock, the combination, with a main locking-bolt, of an auxiliary locking-bolt, of a hinged apron covering the keyway of the said last-named bolt, and a seal-holder adapted to be locked by the auxiliary locking-bolt and to prevent the retraction of the main locking-bolt, and to hold a seal over the said apron, substantially as described.

7. In a lock, the combination, with a seal holder, of a locking-bolt therefor, composed of a plurality of independent sections, each of which is provided with a recess for the reception of a key, the said recess being covered by the seal when inserted in the holder, and a main locking-bolt, engaged by the seal-holder, substantially as described.

8. In a lock, the combination, with a main locking-bolt, of levers, having extensions projecting toward each other, and a seal-holder adapted to be locked by the levers to hold a seal above the said extensions, the seal-holder when in position to be locked by the levers engaging the main locking-bolt to prevent the retraction thereof until the seal-holder be raised, substantially as described.

9. In a lock, the combination, with a main locking-bolt, of an auxiliary locking-bolt, a seal-holder adapted to be locked by the auxiliary locking-bolt, to prevent the retraction of the main locking-bolt and to hold a seal, and pivoted levers adapted to engage the seal-holder, and having extensions projecting toward each other and abutting over the auxiliary locking-bolt and beneath the seal, substantially as described.

10. In a lock, the combination, with a main locking-bolt, of an auxiliary locking-bolt, consisting of two parts provided with registering notches in their adjoining sides, and notches in their opposite sides, a seal-holder adapted to be locked by the auxiliary locking-bolt, to prevent the retraction of the main locking-bolt and to hold a seal, and pivoted levers adapted to engage the seal-holder, each of the levers having an extension thereon projecting to above the split in the auxiliary locking-bolt and below the seal, and having ears engaging the last-named notches in the auxiliary locking-bolt, substantially as described.

11. In a lock, the combination, with a box, of a main locking-bolt contained therein, a seal-holder adapted to hold a seal and to lock the said bolt against retraction, and means for locking the said holder, the said box having a key-slot therein covered by the seal through which a key may be inserted and laterally moved for unlocking the seal-holder, substantially as described.

12. In a lock, the combination with a box having a key-slot therein, of a main locking-bolt contained in the box, an auxiliary sliding locking-bolt contained in the box and adapted to be retracted by the lateral movement of a key inserted through the said key-slot, and a seal-holder engaged by the auxiliary locking-bolt, to lock the main locking bolt against retraction and to hold a seal over the said key-slot, substantially as described.

13. In a lock, the combination with a box, of a main locking-bolt, projecting beyond one side of the box and having a rearward extension through the opposite side thereof, of an auxiliary locking-bolt, and a seal-holder adapted to be engaged by the auxiliary locking-bolt and to engage the rearward extension of the main locking-bolt, substantially as described.

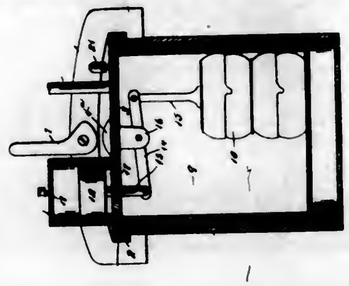
14. In a lock, the combination with a base-plate, having a box thereon, and seal-holder hinged thereto, the plate having an aperture therein for the passage of the post between the pivotal point of the seal-holder and the side of the box, a main locking-bolt and an auxiliary mechanism contained within the box, the auxiliary mechanism being adapted to lock the seal-holder upon the box, substantially as described.

15. In a lock, the combination with a box, of a locking-bolt therein, having a groove in its end, of a seal-holder adapted to be engaged by the bolt and having a ridge engaging the groove therein, substantially as described.

16. In a lock, the combination, with a box, of a split locking-bolt therein, composed of two spring-pressed pieces, each having a groove in its end, and a seal holder adapted to be engaged by the bolt and having a ridge entering the grooves therein, substantially as described.

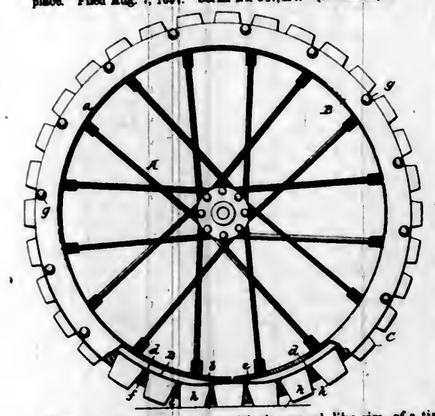
17. In a lock, the combination with a box, of a seal-holder fitting thereon and adapted to receive a seal, pivoted levers engaging the seal-holder upon opposite sides of the box and having abutting extensions, within the box, the box having a key-slot therein below the seal-holder and above the dividing-line of the extensions, substantially as described.

607,823. VULCANIZING APPARATUS. LUDVIG H. BERG, Brigham City, Utah. Filed Aug. 25, 1897. Serial No. 649,496. (No model.)



Claim.—A vulcanizing apparatus comprising a boiler, a cover therefor, means for securing said cover upon the boiler and for admitting steam thereto, a cylinder carried by said cover communicating with said boiler, a piston within said cylinder, a lever mounted upon the cover and connected at its opposite ends with said piston, and with a post and a frame depending from said cover.

607,824. ELASTIC TIRE AND RIM. FRANK BURGER, Fort Wayne, Ind., assignor of three-fourths to Henry M. Williams, same place. Filed Aug. 7, 1897. Serial No. 647,437. (No model.)



Claim.—1. The combination with the trough-like rim, of a tire located therein and composed of a series of compressible blocks having inclined sides, wedge-shaped studs or cross-pieces for securing the blocks in place, and a spring-metal hoop interposed between the blocks and the bottom of the rim, substantially as described.

2. The combination with the trough-like rim composed of sections each having inwardly-projecting wedge-shaped studs, of a tire consisting of compressible blocks having inclined sides and located between said studs, a yielding support below the studs for said blocks, and means for securing said sections together, substantially as described.

3. The combination with the trough-like rim composed of sections each having inwardly-projecting wedge-shaped studs, of a tire consisting of compressible blocks with inclined sides located between said studs, a flat spring-metal hoop normally engaging the inner edges of said studs and forming a support for said blocks, and bolts passing through said sections and studs, substantially as described.

607,825. SAND-BLAST. FRANK BURGER, Fort Wayne, Ind., assignor of three-fourths to Henry M. Williams, same place. Filed Sept. 1, 1897. Serial No. 650,290. (No model.)

Claim.—1. In a cleaning-machine, the combination with feeding mechanism, of vertical sand-blast apparatus arranged above and below the feeding mechanism and cooperating therewith to forcibly project sand in opposite directions, one of said apparatus being inclined in the direction of the line of feed and the other being inclined in the opposite direction, substantially as described.

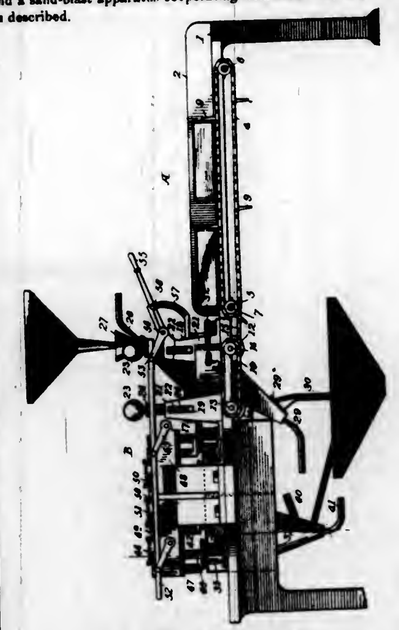
2. In a cleaning-machine, the combination with feeding mechanism, of a sand-blast apparatus upon each side of the said mechanism and cooperating therewith to forcibly project sand against opposite sides of the object being fed, one of said apparatus being arranged to project the sand in the same general direction in which the object is fed and the other in the opposite direction, substantially as described.

3. In a cleaning-machine, the combination with feeding mechanism, of sand-blast apparatus cooperating with said mechanism to forcibly project sand against the top, bottom and sides of the object being fed, substantially as described.

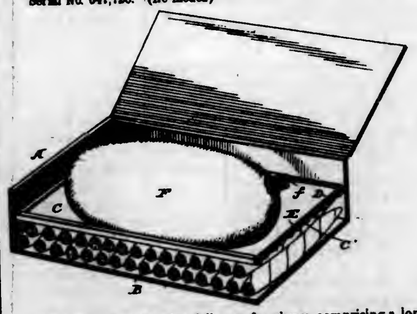
4. In a machine for cleaning hinged-top boxes, the combination with feeding mechanism, of sand-blast apparatus cooperating with said mechanism to forcibly project sand against the top, bottom and side of the box as it is being fed, devices for opening the lid of the box, and a sand-blast apparatus for forcibly projecting sand against the interior walls of the box and against the inner face of the lid thereof, substantially as described.

5. In a cleaning-machine, the combination with vertically-adjustable feed-rolls and means for driving the same, of a vertically-adjustable sand apparatus, substantially as described.

6. In a cleaning-machine, the combination of upper and lower vertically-adjustable feed rolls, laterally-adjustable side guide-rolls, and a sand-blast apparatus cooperating with said rolls, substantially as described.



607,826. CIGAR-MOISTENER AND PRESSURE DEVICE. FRANK BURGER and HENRY M. WILLIAMS, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Filed Aug. 10, 1897. Serial No. 647,720. (No model.)



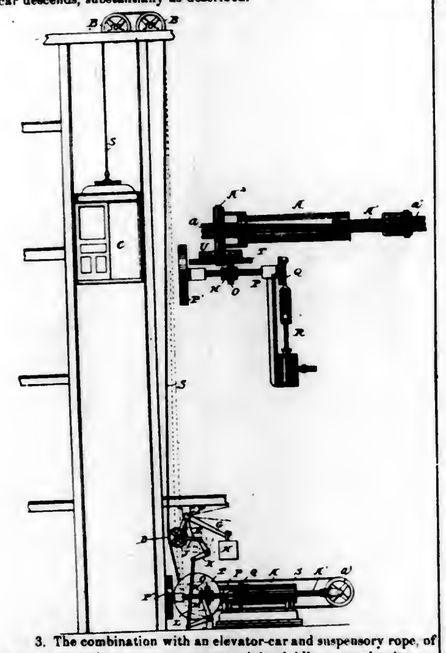
Claim.—1. A moistening-follower for cigars, comprising a longitudinally-corrugated plate, the corrugations being perforated on their upper portions, the plate having sides and one end turned up, a metal sheet held in position by the turned-up sides and end, and a sheet of moistening material interposed between the metal sheet and the corrugated plate and being in contact with the perforated corrugations, substantially as described.

2. A combined cigar moistener and holder, consisting of a follower provided with means for retaining moisture, and an inflatable pneumatic bag resting upon the follower, substantially as described.

607,827. REGULATOR OR POWER-GENERATING ATTACHMENT FOR ELEVATORS. FRANK BURGER and HENRY M. WILLIAMS, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Filed Aug. 16, 1897. Serial No. 648,704. (No model.)

Claim.—1. The combination with an elevator-car and suspensory rope therefor, of means for generating power, and connections between the rope and said means whereby the latter are operated by the descending car and in accordance with the load of the car, substantially as described.

2. The combination with an elevator-car and suspensory rope, of means for generating power, a counterweighted idler operating in connection with the rope, and connections between the idler and power-generating means whereby the latter are operated when the car descends, substantially as described.



3. The combination with an elevator-car and suspensory rope, of power-generating means, a counterweighted idler operating in connection with the rope, and connections between the idler and power-generating means whereby said means are operated when the car descends and are at rest when the car is elevated, substantially as described.

4. The combination with an elevator-car, suspensory rope, and engine for operating the same, of power-generating means, connections between the engine and power-generating means for operating the latter, and means controlled by the load of the car for controlling the operation of the connections between the engine and power-generating means, substantially as described.

5. The combination with an elevator-car, suspensory rope, and engine for operating the same, of power-generating means, a driving-disk connected with the engine, a friction-wheel connected with the power-generating means, and means controlled by the load of the car for controlling the friction-wheel, substantially as described.

6. The combination with an elevator-car, suspensory rope, and engine therefor, of a driving-disk connected to be operated by the engine in one direction, power-generating means, a friction-wheel connected with said power-generating means and operating on the driving-disks, a counterweighted idler controlled by the suspensory rope and connected to control the friction-wheel, substantially as described.

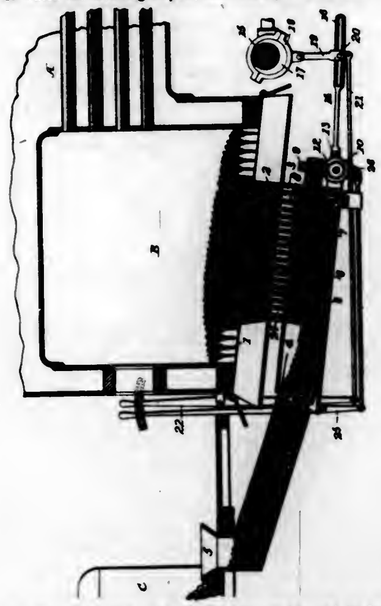
607,828. FUEL-FEEDING MECHANISM FOR FURNACES.

FRANZ BURGER and HENRY M. WILLIAMS, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Filed Jan. 15, 1898. Serial No. 666,794. (No model.)

Claim.—1. The combination of a locomotive, its furnace and a tender for carrying fuel, a fuel-supply pipe extending from a point adjacent the tender along one side of the locomotive beneath its platform and communicating with the furnace-chamber-feeding mechanism within said pipe, and devices operated from a moving part of the engine for actuating the feeding mechanism, substantially as described.

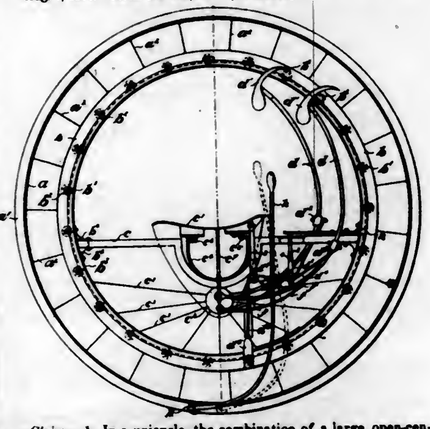
2. The combination with a locomotive and its furnace, of a fuel-supply pipe communicating with the interior of the furnace, feeding mechanism for conveying the fuel through said pipe, adjustable devices operated from a moving part of the engine for actuating the feeding mechanism, and means for adjusting said devices for varying the action of said feeding mechanism, substantially as described.

3. The combination with a furnace, of a fuel-supply pipe communicating with the interior thereof, a continuous feed-belt within said pipe provided with fingers, means for driving said belt, and a slotted guard-plate extending from a wall of the pipe through the slots of which the feed-fingers pass, substantially as described.



4. The combination with a locomotive-engine and its furnace having an inclined grate with an opening, of a vertical fuel-supply pipe leading to said opening, feeding mechanism for conveying fuel through said pipe, and means for driving said feeding mechanism from a moving part of the engine, substantially as described.

607,829. UNICYCLE. WILLIAM M. CAREY, Boston, Mass. Filed Aug. 7, 1896. Serial No. 602,077. (No model.)



Claim.—1. In a unicycle, the combination of a large open-centered wheel comprising a rim and tire thereon, and an inner ring-like structure rigidly connected with said rim by radial spokes, said ring-like structure consisting of two rings rigidly connected together by transverse bars arranged at regular intervals, a supporting-frame contained within and supported by said ring-like structure, two actuating arms borne by it having at their extremities gripping or clutching devices adapted to engage said transverse bars, means for operating said arms, and a seat also supported by said frame, substantially as described.

2. In a unicycle, the combination of an open-centered wheel having transverse bars arranged at intervals around the interior thereof, of two actuating-arms having at their extremities gripping or clutching devices adapted to engage said transverse bars, stirrups, and flexible connections connecting them with said arms for operating them, and springs acting upon said arms to restore them, substantially as described.

3. In a unicycle, the combination of a large open-centered wheel having transverse bars arranged at intervals around the interior thereof, two actuating-arms *b*, *b*, having at their extremities pivoted counterbalanced claws *b'*, *b'*, and stops therefor, and means for operating said actuating-arms, substantially as described.

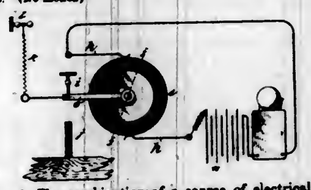
4. In a unicycle, the combination of a large open-centered wheel comprising a rim and tire thereon, and an inner ring-like structure connected with said outer rim by radial spokes and consisting of two flat rings located side by side and separated a short distance and secured together by transverse rods or bars, and propelling mechanism comprising two spring-actuated arms bearing gripping or clutching devices constructed and arranged to engage said bars, and means for operating said arms, substantially as described.

5. In a unicycle, a large open-centered wheel having transverse bars arranged at intervals around the interior thereof, each bar having mounted upon it a pair of large rolls and one or more small rolls between them, and an independent circular supporting-frame contained within said open-centered wheel, the rim of which occupies a position between said large rolls and bears upon said small rolls, substantially as described.

6. In a unicycle, the combination of a large open-centered wheel, a supporting-frame within it and steering devices supported thereon, consisting of two downwardly-extended arms each having a longitudinal slot or aperture formed therein, a pivot-pin passing therethrough, and a spiral spring contained in said slot or aperture having at its upper end a block which bears upon said pivot-pin, substantially as described.

607,830. DEVICE FOR OPERATING ELECTRIC SWITCHES.

JAMES H. CARY, Springfield, Mass. Filed Jan. 8, 1896. Serial No. 574,690. (No model.)



Claim.—1. The combination of a source of electrical energy; suitable conductors; means for switching in a predetermined amount of electrical energy; one or more rotary electromagnetic motors in the circuit; a switch-ring or equivalent device operated by the electromagnetic motor and a supplementary or derived circuit made or broken at will by the operation of the switch-ring, substantially as and for the purposes stated.

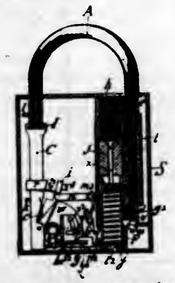
2. The combination of a source of electrical energy; suitable conductors; means to switch in a predetermined quantity of electric energy; a series of rotary electromagnetic motors; a switch-ring arranged to rotate with the armature of the electromotor; means to limit the extent of revolution; a supplementary circuit containing a signal or other operative device; suitable contact-springs *h* and contact-points mounted upon the switch-ring to complete the supplementary circuit, substantially as and for the purposes stated.

3. The combination of a source of electrical energy; suitable conductors; one or more electromagnetic motors having armatures free to move to a certain predetermined point without intermittent motion; means to reverse the current; a contact-piece operated by the armature; contact-springs *h* arranged to contact with the contact-points on the contact-piece; a supplementary circuit connected with the contact-springs and means to prevent movement of the contact-piece beyond a predetermined point, substantially as and for the purposes stated.

4. The combination of a source of electrical energy; suitable conductors; an electromotor having a rotating armature; a switch-ring *e* mounted to rotate with the armature and having contact-points *f*; means to limit the rotation of the switch-ring, and a supplementary circuit made or broken by the revolution of the switch-ring, substantially as and for the purposes stated.

5. The combination of a source of electrical energy; an electromotor having a rotary armature; a switch-ring *e* mounted to rotate with the armature and having contact-points *f*; a rod *o* mounted on the switch-ring; a tension-spring connected with the rod *o*; suitable stops to limit the rotation of the switch-ring, and a supplementary circuit made or broken by the revolution of the switch-ring, substantially as shown.

607,831. ALARM-PADLOCK. EDWARD M. CASE, Chicago, Ill., assignor of one-half to S. M. Fischer, same place. Filed Aug. 26, 1897. Serial No. 649,690. (No model.)



Claim.—1. In an alarm lock the combination of a casing, a shackle mounted therein, a barrel in said casing, an alarm device mounted in said barrel, and means actuated by the shackle for locking said alarm device within the barrel.

2. In an alarm-lock the combination of a casing, a shackle mounted therein, a barrel in said casing, an alarm device in said barrel, a dog mounted adjacent to said barrel and adapted to engage said alarm device, and a spring-pressed plunger engaged at one end by said shackle for actuating said dog.

3. In an alarm-lock the combination of a casing, a shackle mounted therein, a barrel in said casing, an alarm device comprising a hollow cylindric shell, a spring-pressed plunger in said shell adapted to strike an alarm, said shell being provided in its side wall with an opening and the barrel being provided with a registering opening, a dog mounted on the barrel adapted to pass through said openings and engage a shoulder on the shell to hold the same from movement within the barrel, and means operatively connected to shackle for maintaining said dog in its locking position.

4. In an explosive-lock the combination of a casing, a shackle mounted therein, a barrel in said casing adapted to receive at one end a cartridge, a firing device mounted in said barrel comprising a hollow cylindric shell provided with a spring-pressed firing-pin, and means operatively connected with the shackle for locking the said firing device within the barrel.

5. In an alarm-lock the combination of a casing, a spring-pressed shackle therein, an alarm device in said casing embracing a setting detent or trigger, tumblers in said casing adapted to be actuated by a key, operative connections between said tumblers and the shackle, said tumblers acting when engaged by a key of proper form to release said shackle, but when engaged by a key of other form to actuate said setting detent or trigger of the alarm device.

6. In an alarm-lock the combination of a casing, a spring-pressed shackle therein, an alarm device in said casing, a spring-pressed pawl on the outer end of said shackle, a locking-post adjacent to said pawl, a cam-plate connected with said post and adapted to actuate said pawl, and operative connections between said cam-plate and the alarm device.

7. In an alarm-lock the combination of a casing, a spring-pressed shackle mounted thereon, an alarm device in said casing, a spring-pressed pawl operatively connected with said shackle, a locking-post, a cam-plate connected with said post and adapted to actuate said pawl, tumblers operatively connected with said cam-plate, said tumblers being constructed and mounted in such relation to the firing device that when actuated by a key other than of the proper form they will release the alarm device and not release the locking mechanism.

8. In an alarm-lock the combination of a casing, a spring-pressed shackle mounted therein, a longitudinal sliding shackle-rod in said casing having swivel connection with said shackle, an alarm device in said casing, a spring-pressed pawl on the outer end of said shackle-rod, a spring-pressed lever engaged at one end by said pawl and operatively connected at its other end with the alarm device.

9. In an alarm-lock the combination of the casing provided with an alarm device, the shackle A, the shackle-rod C, the spring-pressed pawl *i* mounted on said rod, the spring-pressed lever *n* and lever *o*, all operating when the shackle is pulled from the casing to actuate the alarm device.

10. In an alarm-lock the combination of the casing, an alarm device, the shackle A, the shackle-rod C connected therewith, the spring pressed pawl *i* connected with said post, the locking-post *a*, the cam-plate *w* connected therewith, the tumblers *b*, b^3, b^5, opera-

tively connected with said plate, the detent *m* of the alarm device, said parts being so constructed and arranged that when a key of proper form is inserted into the locking-post the locking mechanism will be released without actuating the alarm device, but when a key of other form is inserted therein the alarm device will be actuated without releasing the locking mechanism.

11. In an alarm-lock the combination of a casing, a shackle mounted therein, an alarm device embracing a setting detent or trigger, a pawl mounted on one end of said shackle, a bell-crank lever one arm of which engages said pawl and the other arm of which is adapted to actuate said detent or trigger when tension is brought upon the shackle to draw it from the casing and a spring applied to said lever and acting in opposition to said tension upon the shackle.

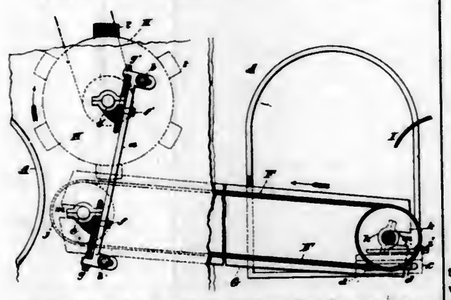
12. In an alarm-lock of the character described, the combination of the firing device embracing the shell *f* provided with the slot f^1 and a key provided with the projection L.

13. In an alarm-lock the combination of a casing, a locking and unlocking device therein, an alarm device in said casing, tumblers in said casing adapted to be actuated by a key, and operative connections between said tumblers and the locking and unlocking device, said tumblers acting when engaged by a key of proper form to actuate said locking and unlocking device, but when engaged by a key of other form to actuate said alarm device.

14. In an alarm-lock the combination of a casing, a shackle therein, an alarm device embracing a setting detent or trigger, operative connections between said shackle and detent or trigger acting to actuate the latter when tension is brought upon the shackle to draw it from the casing and a spring applied to maintain a predetermined tension required to actuate the alarm device.

15. In an alarm-lock, the combination of a casing, an alarm device therein, embracing a detent by which said alarm device is held out of action, a locking mechanism embracing tumblers which prevent the locking mechanism from being released except when said tumblers are actuated by the key designed therefor, said tumblers being constructed to engage and actuate the said detent and release the alarm device when acted upon by a key of other form, a part such as the shackle described which is movably connected with the lock case and which has operative connection with said detent acting to actuate the latter when tension is brought upon said movable part in a direction to draw it from the casing, and a spring applied to said movable part to maintain a predetermined tension required to actuate the alarm device.

607,832. FIBER-TREATING MACHINE. JOSEPH CHOQUETTE, St. Hyacinthe, Canada, assignor of two-thirds to Morits Bosa, same place, and William A. Torrance, Harrison, N. J. Filed July 3, 1896. Serial No. 597,929. (No model.)



Claim.—1. The device for treating waste from fiber treating machines which consists of a continuous conveyer, a cylinder at the delivery end of said conveyer, having bristles and clear spaces thereon, whereby the fiber and dirt contained in the waste borne on said conveyer are separated, and the fiber held and the dirt thrown off, and means for operating said conveyer and cylinder substantially as described.

2. The device for treating waste from fiber-treating machines which consists of a continuous conveyer, a cylinder at the delivery end of said conveyer, having straight bristles and clear spaces thereon, whereby the fiber and dirt contained in the waste borne on said conveyer are separated, and the fiber held and the dirt thrown off, and means for operating said conveyer and cylinder, substantially as described.

3. The device for treating waste from fiber-treating machines which consists of a continuous conveyer, a cylinder at the delivery end of said conveyer having parallel strips of bristles thereon, whereby the fiber contained in the waste borne on said conveyer, is separated from said waste and held, and means for operating said conveyer and said cylinder substantially as described.

4. In combination with a fiber-treating machine the device for saving and presenting to said machine the fiber contained in the waste therefrom, which consists of a continuous conveyer adapted to receive and convey the waste produced as the machine operates, a cylinder at the delivery end of said conveyer having bristles and clear spaces thereon whereby the fiber and dirt in said waste are separated, and the fiber held and returned to said machine and the dirt thrown off, and means for operating said device substantially as described.

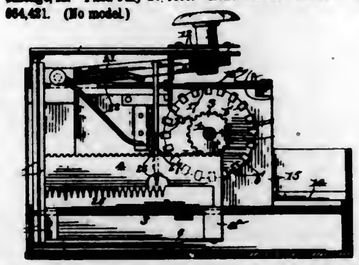
5. In combination with a fiber-treating machine, the device for saving and presenting to said machine the fiber contained in the waste therefrom which consists of a continuous conveyer adapted to receive and convey the waste produced as said machine operates, means for seizing and delivering to said machine the fiber contained in the waste on said conveyer and throwing off the residuum; means for receiving and regularly delivering to said conveyer portions of the waste produced as said machine operates, and means for operating said device, substantially as described.

6. In combination with a fiber-treating machine the device for saving and presenting to said machine the fiber contained in the waste therefrom which consists of a continuous conveyer adapted to receive and convey the waste produced as said machine operates, means for seizing and delivering to said machine the fiber contained in the waste on said conveyer and throwing off the residuum, means for protecting from dirt the working parts of said conveyer, means for receiving and regularly delivering to said conveyer portions of the waste from said machine, and means for operating said device, substantially as described.

7. In combination with a fiber-treating machine, the device for saving and presenting to said machine the fiber contained in the waste therefrom which consists of a continuous apron adapted to receive and convey the waste produced as said machine operates, means for preventing said waste from escaping from said apron or clogging the working parts thereof, means for receiving and regularly delivering to said apron portions of said waste, and means for operating said device, substantially as described.

8. In a continuous apron for conveying waste from fiber-treating machines, the device for preventing the escape of said waste from said apron as it is conveyed, and the clogging of the working parts of said apron thereby, which consists of side boards extending above the traveling plane of said apron and bearing a grooved ranway, and strips on the under edges of said apron adapted to run in said grooves, substantially as described.

607,888. CHECK-WRITING MACHINE. HENRY CLARKE, Chicago, Ill. Filed July 27, 1896. Renewed Dec. 29, 1897. Serial No. 664,631. (No model.)



Claim.—1. In a device for filling in amounts in words and figures, the combination, with two series of type-wheels, the corresponding wheels of the two series being connected together and having types thereon of equal value, the types upon the one series representing words and upon the other numbers, of means whereby the equivalent types upon each pair of coupled wheels may be brought into position for simultaneous printing, substantially as described.

2. In a device for filling in the amounts in checks, in words and numbers, the combination, with two series of type wheels, each wheel of each series having types thereon of equal value with the types upon the corresponding wheel of the other series, the types upon the one series forming words, and the other numbers, of a series of indicators, each of which is connected to one of the corresponding wheels of the two series, whereby the corresponding types upon the coupled wheels may be brought simultaneously into position for printing, substantially as described.

3. In a device for filling in the amounts in checks, in words and numbers, the combination, with two series of type-wheels, each wheel of each series having types thereon of equal value with the types upon the corresponding wheel of the other series, the types upon the one series of wheels forming words and the types upon the other forming numbers, of pinions upon the said wheels, racks gearing therewith, the racks engaging the pinions upon corresponding wheels of the two series being connected in pairs, and means connected to each pair of racks whereby they may be moved to bring the desired types upon the corresponding wheels actuated thereby into position for printing, substantially as described.

4. The combination, in a device for filling in the amounts in checks in words and numbers, of two series of type-wheels, the corresponding wheels of the two series being connected together and having types of equal value thereon, the types upon the one series representing words and the other numbers, of a top plate adjacent to the wheels and provided with a stop, whereby a check may be adjusted in position to receive the simultaneous imprint from both series of wheels, substantially as described.

5. In a device for filling in the amounts in checks, in words and numbers, the combination, of two series of type-wheels, the corresponding wheels of the two series being connected together, and having types thereon of equal valve, the types upon the one series representing words and upon the other numbers, and a slotted top plate, adjacent to the wheels, through which the types upon the two series are adapted to simultaneously imprint upon a single check, substantially as described.

6. In a device for filling in the amounts of checks, in words and numbers, the combination, with a shaft, of two series of type-wheels, mounted thereon side by side, the corresponding wheels of the two series being connected together and having the types thereon of equal valve, the types upon the one series representing words and upon the other numbers, and a top plate having a slot therein through which the types upon both series are adapted to simultaneously print upon a single check, substantially as described.

7. The combination, with a type-wheel, having a pinion thereon, of a rack-bar engaging therewith, whereby motion may be imparted to the said wheel to bring any of the types thereon into position for printing, a platen, and a lock-bar engaging the rack-bar upon the approach of the platen and type-wheel, substantially as described.

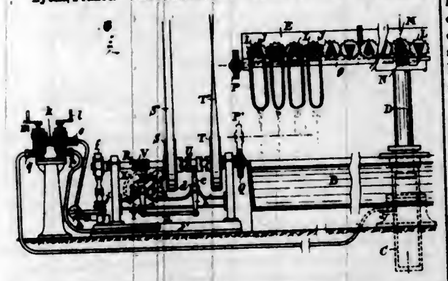
8. The combination, with a series of type wheels, each of which has a pinion thereon, of a series of rack-bars adapted to engage the said pinions and to impart motion thereof, a platen, and a lock-bar actuated upon the approach of the type-wheels and platen to engage the said rack-bars, whereby the types are alined and held against displacement, substantially as described.

9. The combination, with a wheel, having a series of numeral types upon its periphery, each of which is of the same value, of a second wheel having a series of types upon its periphery representing different values, two indicator-plates having recesses in their contiguous edges, and a connection between the said plates and the two type-wheels whereby a movement of the former will be communicated to the latter, substantially as described.

10. The combination, with a type-wheel, of a rack-bar provided with two series of teeth, one of which engages the said type-wheel, a platen, and a lock-bar actuated upon the approach of the wheel and platen to engage the second series of teeth, substantially as described.

11. The combination, with a type-wheel, of a rack-bar provided with two series of teeth, one of which engages the said type-wheel, a platen, an indicator-plate provided with a series of recesses corresponding to the types upon the wheel, and connected to the rack-bar, and a lock-bar actuated upon the approach of the type-wheel and platen to engage the second series of teeth upon the rack, substantially as described.

607,884. APPARATUS FOR DYEING, &c. CÉSAR CORRON, Lyons, France. Filed Feb. 23, 1898. Serial No. 671,300. (No model.)



Claim.—1. In an apparatus for dyeing, softening, steaming and finishing yarns, threads and the like the combination with a reciprocating tank or collecting-chest, of hank-carriers carried thereby, a hydraulic lift supporting said tank or collecting-chest and adapted to alternately raise and lower the same through the medium of its plunger, substantially as described.

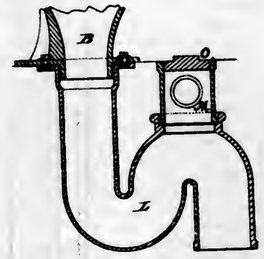
2. In an apparatus for dyeing, softening, steaming and finishing yarns, threads and the like the combination with a reciprocating tank or collecting-chest, of hollow hank-carriers supported thereby, vats located adjacent thereto, a hydraulic press adapted through the medium of its plunger to repeatedly move the hanks into and out of the vats, a pump adapted to force the liquid contained in the vats into the movable tank or collecting-chest from whence it passes to the hollow hank-carriers and through them is forced into the hanks, substantially as described.

3. In an apparatus for dyeing, softening, steaming and finishing yarns, threads and the like the combination with a reciprocating tank or collecting-chest, of hank-carriers carried thereby, vats located adjacent thereto, a hydraulic lift adapted through the medium of its plunger, to impart a vertical movement to the tank or collecting-chest, a pump returning constantly under pressure the contents of the vats into the center of the hanks and means for imparting an intermittent, alternating rotary movement to the hank-carriers, substantially as described.

4. In an apparatus for dyeing, softening, steaming and finishing yarns, threads and the like the combination with a reciprocating tank or collecting-chest, of eccentric hank-carriers carried thereby, vats located adjacent thereto, a hydraulic lift adapted through the medium of its plunger to impart a vertical movement to the tank or collecting-chest to dip or agitate the hanks in the contents of the vats, a centrifugal pump adapted to force the contents of the vats through the eccentric hank-carriers in a subdivided form and to spray it into the interior of the hanks, and means for imparting an intermittent alternating rotary movement to the hank-carriers, substantially as described.

5. In an apparatus for dyeing, softening, steaming and finishing yarns, threads and the like the combination with a reciprocating tank or collecting-chest, of a hydranlic lift adapted to move the same vertically, eccentric hank-carriers carried by the collecting-chest, means for imparting an intermittent alternating rotary movement to the same, and means for forcing simultaneously upon the interior and exterior of the hanks a finely-divided spray of the bath or product employed, substantially as described.

607,885. SANITARY FIXTURE FOR WATER-CLOSETS, &c. HENRI D. DICKINSON, New York, N. Y., assignor to The Meyer-Sniffen Company, Limited, same place. Filed Mar. 1, 1897. Serial No. 625,513. (No model.)



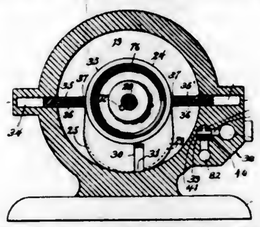
Claim.—1. In combination with the hopper suitably supported above a floor-surface, the trap or discharge-passage from the said hopper, the combined clean-out and vent therefor, seated upon an opening in the said trap or passage though which opening the discharging matters do not pass and extending up substantially to the said floor-surface, the cover therefor, and the vent-pipe extending laterally from the said combined clean-out and vent, substantially as set forth.

2. In combination with a trap or discharge-passage having an opening affording access from above, a combined clean-out and vent therefor, secured to a substantially annular seat surrounding the said opening, the cover for the said combined clean-out and vent, and the vent-pipe extending from the said combined clean-out and vent at a point between the said cover and the said seat, substantially as set forth.

607,886. ENGINE. JOHN P. DORAU, Lark, Wis. Filed May 17, 1897. Serial No. 636,887. (No model.)

Claim.—1. In an engine, the combination, of a casing and a piston within the chamber of the casing, one of said parts being rotatable and said piston provided with an inlet-passage and with an exhaust-passage in communication with the chamber of the casing, a part provided with a valve-opening, and having an inlet-opening lead-

ing thereto, and an exhaust-opening leading therefrom, and also having passages leading therefrom and adapted to communicate with the inlet and exhaust passages of the piston, a valve for regulating the inlet and exhaust passages, said valve provided with a projecting stem, a governor-shaft and governor mechanism in connection therewith, mechanism between the rotatable part and said governor mechanism for imparting the rotation of the rotatable part to said governor-shaft, a rod, a connection between said rod and the governor-ball stems of the governor-ball mechanism, an arm to which the lower end of said rod is connected, the opposite end of said arm being loosely mounted on the stem of the valve, a segmental rack fast on the end of the arm, and an operating-handle fast to the stem of the valve, and provided with a dog adapted to engage the segmental rack.



2. In an engine, the combination, of a casing and a piston within the chamber of the casing, one of said parts being rotatable, and said piston provided with a suitable inlet-passage and an exhaust-passage in communication with the chamber of the casing, a part having a valve-opening therein, with an inlet-opening leading thereto and exhaust-opening leading therefrom, and provided with passages leading to the inlet and exhaust passages of the piston, a valve for regulating the inlet and exhaust passages, said valve provided with a projecting stem, a tubular governor-shaft, mechanism between said shaft and the rotatable part for imparting the rotation of the latter to the governor-shaft, governor-ball stems pivoted to the governor-shaft and carrying governor-balls at their outer ends, a slidable cap fitted to the outer end of the governor-shaft, links connecting said cap with the governor-ball stems, a rod passing through the cap and through the governor-shaft, a coiled spring about the governor-shaft below the slidable cap, an arm to which the lower end of the rod is connected, the opposite end of said arm being loosely mounted on the stem of the valve, a segmental rack fast to the end of the arm, and an operating-handle fast to the stem of the valve, and provided with a dog adapted to engage the segmental rack.

3. In an engine, the combination of a casing, and a piston within the chamber of the casing, one of said parts being rotatable, said piston having peripheral steam-leads and provided with inlet and exhaust passages communicating with the chamber of the casing mechanism for regulating the inlet and exhaust passages, slidable gates working in passage-ways in the casing and bearing at their inner edges against the periphery of the piston, the steam-leads of the piston adapted to permit steam to bear against the inner edges of the gates, and means for conveying steam to the space of the passage-ways for the gates between the outer edges of said gates (which edges present greater surfaces than the inner edges) and the outer ends of the passage-ways.

4. In an engine, the combination, of a casing and a piston within the chamber of the casing, one of said parts being rotatable, said piston having inlet and exhaust passages communicating with the chamber of the casing mechanism for regulating the inlet and exhaust passages, slidable gates working in passage-ways in the casing, and bearing at their inner edges against the periphery of the piston, said inner edges having projecting arms which extend out to the external atmosphere, and means for conveying steam to the space of the passage-ways for the gates between the outer edges of said gates, and the outer ends of the passage-ways.

5. In an engine, the combination, of a casing, and a piston within the chamber of the casing, one of said parts being rotatable, said piston having inlet and exhaust passages communicating with the chamber of the casing mechanism for controlling the inlet and exhaust passages, with a double cylinder formed on or secured to the casing, the cylinders provided with ports for the inlet and outlet of exhaust-steam, and slidable gates working in passage-ways in the casing and bearing at their inner edges against the periphery of the piston, the said inner edges having arms projecting therefrom and extending into the cylinders and provided at their ends within the cylinders with pistons.

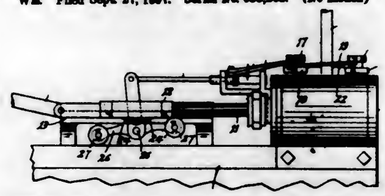
6. In an engine, the combination, of a casing and a piston within the chamber of the casing, one of said parts being rotatable, said casing provided with inlet and exhaust passages leading to recesses on the inner faces of the opposite sides of the casing, which recesses communicate with passages running through and out of the piston, and the piston provided upon opposite sides with steam-channels, which are in communication with the recesses on the inner faces of the sides of the casing by means of connecting-passages, set-screws for regulating said connecting-passages, and slidable gates adapted to act in conjunction with the piston to divide the chamber into interchangeable inlet and exhaust compartments, and a valve provided with suitable ports, so arranged that when one port is in register with the inlet, the other port is out of register therewith.

7. In an engine, the combination, of a casing and a piston within the chamber of the casing, one of said parts being rotatable, and the casing provided with an inlet and with an exhaust, and with a valve-opening in communication with the inlet, said valve-opening provided with passages leading therefrom to the interior chamber of the casing, and a valve within the valve-opening, and having ports therethrough at right angles to each other, one of said ports having a passage leading thereto at an angle, said ports being thus arranged so that when one port is in register with the inlet and with the passage leading to the chamber of the casing, the other port is out of register with the inlet but in register with the exhaust and with the other passage leading from the inner chamber of the casing, and when the valve is given a partial turn, the passage of said valve leading to the port at one end thereof will be brought into register with the inlet, and the other port of the valve to which said passage leads into register with the exhaust-passage, while the port at the opposite end of the valve is brought into register with the inlet-passage, whereby a reversal of the engine is obtained.

8. In an engine, the combination, of a casing and a piston within the chamber of the casing, one of said parts being rotatable, said casing provided with suitable inlet and exhaust passages, a valve for regulating the inlet and exhaust passages, said valve provided with a projecting stem, a governor-shaft and governor mechanism in connection therewith, mechanism between the rotatable part and said governor-shaft for imparting the rotation of the rotatable part to said governor-shaft, a rod, a connection between said rod and the governor-ball stems of the governor-ball mechanism, an arm to which the lower end of said rod is connected, the opposite end of said arm being loosely mounted on the stem of the valve, a segmental rack fast to the end of the arm, and an operating-handle fast to the stem of the valve and provided with a dog adapted to engage the segmental rack.

9. In an engine, the combination, of a casing and a piston within the chamber of the casing, one of said parts being rotatable, said casing provided with suitable inlet and exhaust passages, a valve for regulating the inlet and exhaust passages, said valve provided with a projecting stem, a tubular governor-shaft, mechanism between said shaft and the rotatable part for imparting the rotation of the latter to the governor-shaft, governor-ball stems pivoted to the governor-shaft and carrying governor-balls at their outer ends, a slidable cap fitted to the outer end of the governor-shaft, links connecting said cap with the governor-ball stems, a rod passing through the cap and through the governor-shaft, a coiled spring about the governor-shaft below the slidable cap, an arm to which the lower end of the rod is connected, the opposite end of said arm being loosely mounted on the stem of the valve, a segmental rack fast to the end of the arm, and an operating-handle fast to the stem of the valve, and provided with a dog adapted to engage the segmental rack.

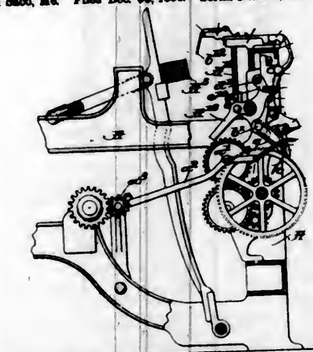
607,837. VALVE-GEAR FOR ENGINES. JOHN P. DORAU, Lark, Wis. Filed Sept. 27, 1897. Serial No. 653,202. (No model.)



Claim.—1. In an engine, the combination, of a cylinder provided with a member having induction and eduction ducts, a piston reciprocable within the cylinder, a piston-rod and a rocking arm, one of said parts provided with two contacting surfaces, whereby said rocking arm is rocked in opposite directions as the piston-rod is reciprocated, valves passing through and controlling one or more of the ducts, each of which valves consisting of a tubular shell and a revoluble cylindrical plug, having ports registering with each other and with the ducts aforesaid, a crank-arm on said tubular shell and on said plug, respectively, a connecting-rod secured to the crank-arm of the tubular shell, another connecting-rod secured to the crank-arm of the plug, a slide, connections between said slide and the connecting-rods of the shell and plug, an arm extending from the rock-shaft, and a connection between said arm and the slide.

2. In an engine, the combination, of a cylinder provided with a member having induction and eduction ports, the eduction-ports being wider than the induction-ports, a piston-rod provided on its upper surface with a raised portion or lug, said raised portion or lug having its ends oppositely beveled and provided medially with an upwardly-extending projection, an arm adapted to be rocked to a limited extent by the opposite inclines at the ends of the raised portion of the valve-rod, as the valve-rod is reciprocated in opposite directions, and to be rocked to its full extent when the medial upwardly-extending projection of the valve-rod contacts with the opposite ends of the rocking arm, on the opposite reciprocations of the valve-rod, valves for controlling the induction and eduction ports, and connections between said valves and the rocking arm.

607,838. LOOM. WILLIAM F. DRAPER and JAMES H. NORTHROP, Hopedale, Mass., assignors to the Northrop Loom Company, same place and Saco, Me. Filed Dec. 30, 1896. Serial No. 617,441. (No model.)



Claim.—1. In a loom, take-up mechanism, including a ratchet-wheel, and a plurality of successively-operative let-back pawls to engage said ratchet-wheel, combined with a weft-fork, and means controlled by double operation of said weft-fork to render one of said pawls inoperative and thereby permit the other pawl to operate, substantially as described.

2. In a loom, take-up mechanism, including a ratchet-wheel and its detent, a weft fork, and connections between it and the detent, operative upon failure of the filling to disengage the detent, combined with two let-back pawls to successively control the ratchet-wheel, and means to disengage the initially-acting pawl upon a double operation of the weft-fork, substantially as described.

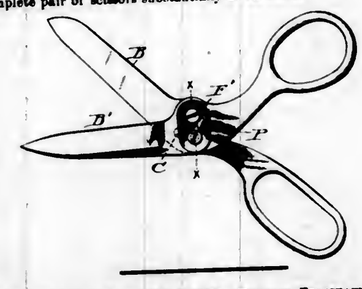
3. In a loom, take-up mechanism, including a ratchet-wheel and its detent, a weft-fork, and connections between it and the detent, operative upon failure of the filling to disengage the detent, combined with two independently-operative let-back pawls to successively control the ratchet-wheel, and means governed by release of the detent to disengage the initially-acting pawl upon a double operation of the weft-fork, substantially as described.

4. In a loom, take-up mechanism, including a ratchet-wheel, and its actuating pawl and detent, a weft-fork, and connections between it and the said pawl and detent, to render them inoperative upon failure of the filling, combined with a plurality of successively-operative let-back pawls to control the ratchet-wheel one after the other, and means carried by the detent to disengage the initially-acting let-back pawl upon a double operation of the weft-fork, substantially as described.

5. In a loom, take-up mechanism, including a ratchet-wheel and its detent, and two let-back pawls engaging said wheel at different points back of the detent, said pawls being longitudinally movable different distances on a common support, combined with a weft-fork, connections between it and the detent, to release the latter upon failure of the filling, and a dog on the detent, to engage and move the initially-acting pawl upon a double operation of the detent, substantially as described.

607,839. SCISSORS OR SHEARS. GEORGE W. ELLIOTT, Dunfermline, England. Filed Dec. 7, 1897. Serial No. 661,066. (No model.)

Claim.—The scissor-blade B, provided with a curved slot C, in combination with the scissor-blade B', the spring-plates, P, on opposite sides of the scissors and the two bolts F', C, both of which pass through the said plates and the said blades, the bolt, F', serving as a pivot above the center of the scissors and the bolt C being received in the slot C' and acting as a guide-pin, the said blades being provided with handles and constituting with said plates and bolts a complete pair of scissors substantially as set forth.

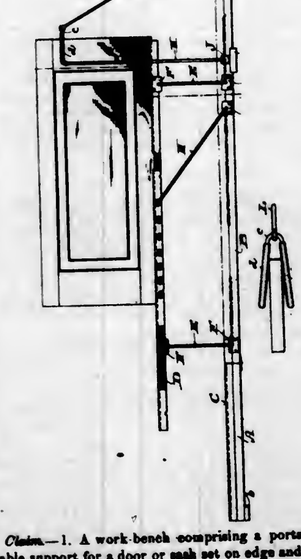


607,840. SKIRT-PROTECTOR. HERMANN EVINGHAUS and MAX HERBERER, Barmen, Germany. Filed Feb. 17, 1898. Serial No. 670,701. (Specimens.)



Claim.—A skirt-protector comprising weft-threads of varying lengths arranged in series, a series of warp-threads interwoven therewith, whereby there is formed a homogeneous fabric comprising a body portion and a gradually-diverging brush portion, a series of warp-threads interwoven with the longer weft-threads, whereby a core is formed over which the shorter weft-threads are spread and project therefrom, other series of warp-threads interwoven with the shorter weft-threads, whereby the brush portion is intimately interwoven with the body portion or heading of fabric, the gradually-diverging resilient brush mass having a velure or moquette finish.

607,841. WORK-BENCH. HARRISON FLEGEL, Racine, Wis. Filed Dec. 8, 1897. Serial No. 661,166. (No model.)



Claim.—1. A work-bench comprising a portable vertically-adjustable support for a door or sash set on edge and this support provided with means for preventing sway of the door or sash, together with a standard organized as a clamp for said door or sash.

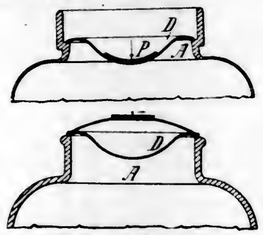
2. A work-bench comprising a base, a plank in link connection with the base and provided with means for preventing sway of a door or sash edge up thereon, a stay for maintaining the door or sash supporting plank in vertically-adjusted position and a standard organized for a door or sash clamp

3. A work-bench comprising a base having a longitudinally-grooved rear portion, a plank in link connection with the base forward of the grooving and shaped upon its upper side to match the same, a stay for maintaining the plank in vertically-adjusted position and a standard organized to serve as a clamp for a door or sash edge up on the bench.

4. A work bench comprising a base having lateral branches, a skeleton standard in pivotal connection with the base branches and having its upper end in the form of a tapered horizontal crotch, a base-engaging brace in hinge connection with the standard-crotch, a door or sash supporting plank linked to the base, and a stay for maintaining the plank in vertically-adjusted position.

5. A work-bench comprising a base having a hinged extension longitudinally grooved upon its upper surface, a correspondingly-grooved plank linked to the base forward of its hinged extension, a stay for maintaining the plank in vertically-adjusted position, a skeleton standard in pivotal connection with lateral branches of the base and having its upper end in the form of a horizontal crotch, and a base-engaging brace in hinge connection with the standard-crotch.

607,842. STOPPERING DEVICE FOR BOTTLES, JARS, &c. FERDINAND FLEISCHMANN, Modling, Austria-Hungary. Filed Nov. 8, 1897. Serial No. 657,835. (No model.) Patented in Germany Nov. 22, 1895, No. 93,246; in Austria Apr. 2, 1896, No. 46/1,364; in Hungary Aug. 8, 1896, No. 7,104; in Switzerland Jan. 18, 1897, No. 13,593; in France Jan. 18, 1897, No. 263,178; in Belgium Jan. 18, 1897, No. 125,786; in England Jan. 18, 1897, No. 1 356; in Norway Jan. 18, 1897, No. 5,523, and in Italy Mar. 31, 1897, XXXII, 43,645, and LXXXV, 257.



Claim.—1. The combination with a vessel, of a cover composed of a rigid portion and a more or less elastic encompassing rim or flange provided with a bearing or contact edge constructed to form a line contact with a seating-surface on the vessel, said cover adapted to be held to its seat by pressure applied thereto, for the purpose set forth.

2. The combination with a vessel, of a concavo-convex hollow cover comprising a rigid portion and a more or less elastic encompassing rim or flange provided with a bearing or contact edge constructed to form a line-contact with a seating-surface on the vessel, said cover adapted to be held to its seat by pressure applied thereto, for the purpose set forth.

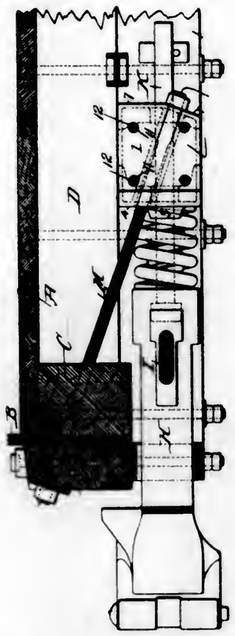
607,843. DRAFT-RIGGING. GEORGE G. FLOYD, Sedalia, Mo., assignor to the Western Railway Equipment Company, St. Louis, Mo. Filed Jan. 7, 1898. Serial No. 665,907. (No model.)

Claim.—1. A casting for use in draft-rigging which consists of parallel side walls having interior stiffening-webs and exterior locking-ribs, apertured front and rear walls for the passage of a tail-bolt, and apertured side walls for the passage of tie-rods; substantially as described.

2. A casting for use in freight-car draft-rigging, the same consisting of parallel side walls which are cored or raised longitudinally for the passage of tie-rods, said side walls having interior stiffening-webs and exterior locking-ribs, and apertured front wall, the front face of which forms a seat for the draft-spring, the inner face of said front wall having a boss or flange around its aperture and strengthening-webs, all of said parts being integral; substantially as described.

3. The combination with the end sill, of notched draft-timbers, a casting comprising parallel side walls having exterior locking-ribs fitting into the notches in said draft-timbers, said side walls having cored openings for the passage of tie-rods, through-bolts for clamping the draft-timbers to the sides of said casting, tie-rods which tie said casting to the end sill, a coupler tail-bolt which passes through the front wall of said casting, and a draft-spring which finds a bearing against said front wall; substantially as described.

607,848.



607,844. SNAP-HOOK. CHARLES F. FRANCISCO, Lakeside, and EUGENE R. SHAFFER, San Diego, Cal. Filed July 17, 1897. Serial No. 644,986. (No model.)



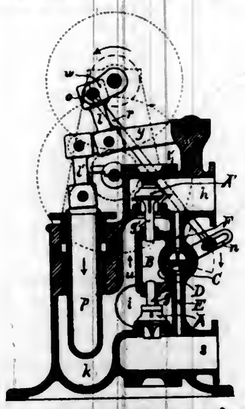
Claim.—1. The snap-hook herein described comprising the frame portion having the hooked portion a, and three cross-pieces a' a^3 a^4, the cross-pieces a' and a^3 being at the lower side with an open space between them, and cross-piece a^4 being arranged at the upper side and between cross-pieces a' and a^3, the U shaped spring C having its lower bent end c hooked over cross-piece a^3, its middle bend surrounding cross-piece a', and its free end pressing upwardly, and a latch B arranged within the frame and above the free end of said spring substantially as shown and described.

2. The combination of the frame having a hook at one end, and cross-pieces a' a^3 and a^4 arranged as described, the U-shaped spring anchored in fixed relation to the frame, and the latch B having shoulder b' and notch b^2 with its upper surface cut away to an incline between these points substantially as and for the purpose described.

607,845. VALVE-MOVEMENT FOR PUMPS. HORACE B. GALE, San Francisco, Cal., assignor to Charles C. Worthington, Irvington, N. Y. Filed Mar. 10, 1894. Renewed Dec. 23, 1897. Serial No. 663,261. (No model.)

Claim.—1. The combination, in a valve-movement for pumps, of a casing containing induction and discharge valves and an intermediate pressure-chamber, independent plungers or their equivalents attached to the said valves and entering the intermediate pressure-chamber, passages connecting the intermediate pressure-chamber with the fluid-spaces on, respectively, the induction and discharge side of the induction and discharge valves, and a supplemental valve mechanism controlling the flow of fluid through the said passages, substantially as set forth and for the purposes described.

2. The combination in a valve-movement for pumps, of a casing communicating with the working cylinder and containing induction and discharge valves and an intermediate pressure-chamber, plungers or pistons formed by extensions of the valve-stems entering said pressure-chamber, and a supplemental valve mechanism actuated by the pump mechanism by which the fluid-pressure in said chamber is varied so as to accelerate the closing of the induction and discharge valves, substantially as set forth and for the purposes described.



3. The combination, in a valve-movement for pumps of a casing containing induction and discharge valves and an intermediate pressure-chamber, plungers or pistons formed by extensions of the valve-stems entering said pressure-chamber, and a supplemental valve mechanism and passages by which the fluid-pressure in said chamber is varied so as to accelerate the closing of said suction and delivery valves, substantially as set forth and for the purposes described.

4. The combination with a pump-valve, of a plunger or piston projecting from its lower or face side, a body of fluid applied to press upon said plunger or piston, supplemental valve mechanism controlling said body of fluid, and means for actuating said supplemental valve mechanism to vary the pressure of said body of fluid upon said plunger or piston, substantially as described.

5. The combination with a pump-valve, of a plunger or piston projecting from its lower or face side, a body of fluid applied to press upon the said plunger or piston, and a supplemental valve mechanism, operated by connection with the pump, whereby the pressure of the said body of fluid is varied so as to accelerate the closing of the said pump-valve, substantially as set forth.

6. The combination, in a valve-movement for pumps, of an induction-valve and a discharge-valve communicating with the pump-cylinder on the same side of the main plunger, a pressure-chamber distinct from the pump-chamber containing a body of fluid which presses upon the said valves in a direction tending to close the induction-valve and to open the discharge-valve, and means of varying the said pressure during the stroke of the pump, so as to accelerate the closing of each of said valves, substantially as set forth.

7. The combination, in a valve-movement for pumps, of an induction-valve and a discharge-valve communicating with the pump-cylinder on the same side of the main plunger, a pressure-chamber distinct from the pump-chamber containing a body of fluid whose pressure is applied to the said valves in such a way as to tend to close the induction-valve and to open the discharge-valve, and a supplemental valve mechanism operated by connection with the pump, whereby the said pressure is varied so as to accelerate the closing of each of said valves, substantially as set forth.

8. The combination with the induction and discharge valves A, A' and intermediate pressure-chamber B, of plungers g, g' acting on said valves A, A' and acted upon by the fluid in the chamber B, and a valve mechanism for alternately admitting and discharging fluid from said pressure-chamber, substantially as set forth and for the purposes described.

9. The combination with the valves A, A' and intermediate pressure-chamber B, of plungers g, g' acting on said valves and acted upon by the fluid in said chamber, passages E, F, a valve-chamber connected with said pressure-chamber and passages E, F, and a valve mechanism for connecting said chamber with the fluid on the suction and discharge sides of the pump-valves alternately, substantially as set forth and for the purposes described.

10. In a double-acting pump, the combination with the plungers p, of induction and discharge valves A, A' and intermediate pressure-chambers B for the respective plungers p, plungers acting on said valves and acted upon by the fluid in said chambers, a valve mechanism controlling the admission and discharge of fluid from each of said pressure-chambers, and passages E, F controlled by said valve mechanism to connect said pressure-chambers with the fluid on the suction and discharge sides of the pump-valves alternately, substantially as set forth and for the purposes described.

607,846. CARLINE. HENRY W. GAYE, St. Louis, Mo. Filed Jan. 17, 1898. Serial No. 666,867. (No model.)



Claim.—1. A carline consisting of a body having hangers adapted to engage side plates, said carline being, also, provided with recesses or pockets on its upper face for receiving the purlins and ridge-pole, substantially as described.

2. A carline provided with inverted-U-shaped hangers on its ends adapted to engage the side plates, and recesses or pockets in its upper face adapted to receive their respective timbers, the carline being perforated in line with said pockets for receiving a bolt, substantially as described.

3. A carline provided with hangers and pockets suitably reinforced, said carline being, also, provided with lugs, or projections, which are arranged in said pockets for holding, or locking, suitable timbers in position, substantially as described.

4. A carline which is substantially I-shaped in cross-section throughout its length, said carline having hangers on its ends to engage the side plates, and recesses or pockets in its upper face to receive the purlins and ridge-pole, substantially as described.

5. In combination with the side plates of a car, of a carline which is substantially I-shaped in cross-section throughout its length, inverted-U shaped hangers formed on the ends of said carline for engaging the side plates, means for locking said hangers to the side plates, purlins and ridge-pole, and means for locking said purlins and ridge-pole to the carline, substantially as described.

6. A carline consisting of a body provided with hangers adapted to engage side plates, said carline being, also, provided with brackets or supports, said brackets or supports being adapted to receive the purlins and ridge-pole, substantially as described.

7. A carline provided with inverted-U-shaped hangers on its ends adapted to engage the side plates, and brackets resting on, or secured to, the upper face of said carline, said brackets being provided with flanges for embracing the purlins or ridge-pole, and flanges for embracing the carline, substantially as described.

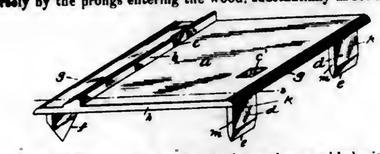
8. A carline provided with hangers, brackets for the purlins and ridge-pole, said brackets being provided with flanges for embracing said purlins or ridge-pole, and flanges for embracing the carline, and dowels for engaging said purlins or ridge-pole, and dowels for engaging said carline, substantially as described.

607,847. RAIL-SUSTAINING BAR OR TIE-PLATE. WILLIAM GOLDIE, Wilkinsburg, Pa. Filed Feb. 4, 1898. Serial No. 669,141. (No model.)

Claim.—1. A tie-plate having a body portion provided with long downwardly-projecting sharpened claws or prongs at its edges extending parallel with the rail, and narrow overhanging lips at such edges extending out a short distance beyond the faces of the prongs to hold down the fiber which is cut transversely by the prong in entering the wood, substantially as set forth.

2. A tie-plate or bar having a body portion provided with long downwardly-projecting sharpened claws or prongs at its edges extending parallel with the rail, and narrow overhanging lips at such edges extending out a short distance beyond the faces of the prongs and

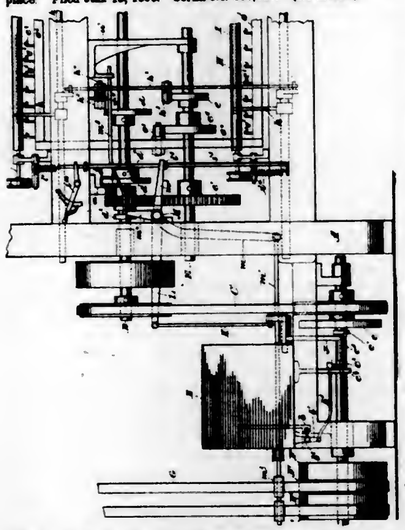
having square lower corner edges to hold down the fiber cut transversely by the prongs entering the wood, substantially as set forth.



3. A tie-plate or bar having a body portion provided with long downwardly-projecting sharpened prongs or claws at its edges extending parallel with the rail, and narrow overhanging lips *h* extending a short distance beyond the end portions of the prongs, substantially as and for the purposes set forth.

4. A tie-plate or bar having a body portion provided with long downwardly-projecting sharpened claws or prongs at its edges extending parallel with the rail, and narrow overhanging lips *g* at such edges extending out a short distance beyond the faces of the prongs and like narrow overhanging lips *h* extending out beyond the end portions of the prongs, substantially as and for the purposes set forth.

607,848. **EMBROIDERING-MACHINE.** JOSEPH A. GROEBLI, New York, N. Y., assignor to the Kursheedt Manufacturing Company, same place. Filed Jan. 15, 1898. Serial No. 666,767. (No model.)



Claim.—1. In an embroidering mechanism, the combination of embroidering means including needles and their coöperating means, of a festoon apparatus and pattern-controlled mechanism for operating the embroidering means and the festoon apparatus in harmony with each other.

2. In an embroidering mechanism, the combination of embroidering-needles and means for coöperating therewith to form a stitch, of a festoon apparatus with operating means therefor and pattern-controlled mechanism for bringing the festoon apparatus into operative relation with the work at predetermined times.

3. In an embroidering mechanism, the combination of means for driving the needles at a normal rate of speed, means for driving the needles at a speed different from the normal, combined with a festoon apparatus and means for driving the same in harmony with the needles, and pattern mechanism for controlling the interaction of the parts, whereby the needle operations will be changed to harmonize with the operation of the festoon apparatus.

4. In an embroidering mechanism, the combination of embroidering-needles and a festoon apparatus, pattern-operated means for bringing the festoon apparatus into harmonious operation with the embroidering-needles and means for bringing the festoon apparatus to rest at a predetermined point.

5. The combination of embroidering-needles and means coöperating therewith to form a stitch, tension apparatus for the threads of the embroidering-machine and a festoon apparatus, all combined with pattern-controlled mechanism for bringing the festoon apparatus into and out of operation.

6. The combination in an embroidering mechanism, of embroidering-needles, a festoon apparatus and automatic means for varying the operation of the embroidering-needles to harmonize with the operations of the festoon apparatus, as and for the purposes set forth.

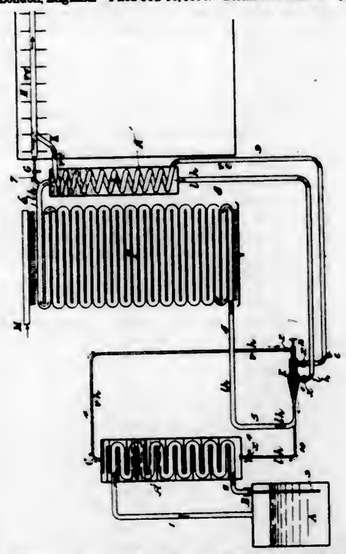
7. In an embroidering mechanism, the combination of a shaft for giving the embroidering-needles a normal movement, a shaft for giving the embroidering-needles an abnormal movement, and automatically-operated means for connecting the embroidering-needles with either shaft for operating the same by the said shaft.

8. In an embroidering mechanism, the combination of embroidering-needles and automatic means for driving the same, of pattern mechanism, means for driving the embroidering-machine at different rates of speed and means controlled by the pattern mechanism for effecting the driving of the machine at different rates of speed.

9. In an embroidering mechanism, the combination of embroidering-needles and their actuating mechanism, a festoon apparatus and its actuating mechanism and pattern-controlled means for driving the embroidering-needle-actuating mechanism independently of the festoon apparatus.

10. In an embroidering mechanism, the combination of embroidering-needles and their actuating mechanism, a festoon apparatus and its actuating mechanism, and a tension device and its adjusting mechanism, and pattern-controlled means for increasing the tension when the festoon apparatus is in action, and for allowing it to assume its normal tension as determined by the adjusting mechanism when the festoon apparatus ceases to operate.

607,849. **REFRIGERATING APPARATUS.** WILLIAM HAMPSON, London, England. Filed Oct. 10, 1896. Serial No. 608,499. (No model.)



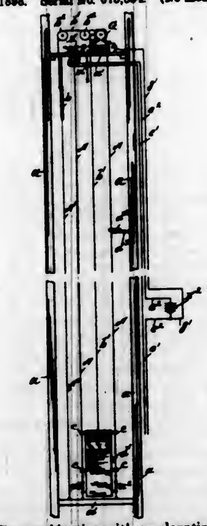
Claim.—1. In a refrigerating apparatus the combination of the vaporizer, the cooler, the expansion-coils, an injector, a connection between the vaporizer and the injector whereby the latter is operated by hot high-pressure vapor, a return connection from the injector to the vaporizer, a temperature-equalizer, a liquid-circuit including the injector, cooler and equalizer, means for delivering condensed refrigerant to the expansion-coil, and a connection including the equalizer between the expansion-coils and injector, the organization being such that the injector is operated by vapor at the high pressure of the generator and returns condensed liquid thereto and a circulation is maintained in the refrigerant-circuit, the expanded gas and liquid at high pressure being returned to the injector and then forced back into the circuit.

2. A refrigerating apparatus comprising a vaporizer, an injector and expansion-coils, a connection between the vaporizer and the injector whereby the latter is operated by hot high-pressure vapor, a return connection between the injector and the vaporizer to return condensed liquid to the vaporizer, a cooling-circuit in which the injector maintains an endless circulation of liquid under pressure as high as that in the generator and provided with an aperture through which the portion of liquid required to be vaporized is drawn off from the liquid-circuit to the expansion-coils, and a connection from the expansion-coils to the injector through which vapor or gas is passed to and through the injector and combined with the liquid circulating in the cooling-circuit.

3. A refrigerating apparatus comprising a vaporizer, an injector having its inlet end connected with the upper part of the vaporizer and its outlet end connected with the lower part of the vaporizer, a liquid-circuit extending from the outlet end of said injector to an inlet thereof, a cooler included in said circuit, an expansion coil, a connection between the expansion-coil and the liquid-circuit, and a connection from the expansion-coil to an inlet of the injector, substantially as set forth.

4. A refrigerating apparatus comprising a hot vaporizer, a cooler, expansion coils, a connection from the vaporizer to the cooler and from the cooler to the expansion-coil, an injector connected with the vaporizer and supplied with high-pressure gas therefrom, a connection between the injector and the vaporizer for returning liquid thereto, a connection between the cooler and injector through which liquid from the cooler passes to the injector, and a connection between the injector and the expansion-coils by means of which the expanded vapors are exhausted from the expansion-coils; whereby the refrigerating operation is maintained continuously and fluid taken from the vaporizer returned thereto by the injector.

607,850. **PARCEL-ELEVATOR.** ALBERT S. HECHT, Chicago, Ill. Filed Mar. 31, 1898. Serial No. 675,834. (No model.)



Claim.—1. The combination with an elevating mechanism, of a way for the carrier said carrier having an opening for the deposit of packages and a doorway for their discharge, a door hinged on the carrier to close said doorway, an arm rigidly secured to the door of the carrier and a tripping-lever located so as to trip said arm and thereby open the door of the carrier, substantially as described.

2. The combination with an elevating mechanism, of a way for the carrier, guide-rods located in said way, a carrier having means to engage the guide rods, and provided with an opening for the deposit of packages and a doorway for their discharge, a door hinged on the carrier to close said doorway, an arm rigidly secured to the door of the carrier, and a lever located so as to trip said arm and thereby open the door of the carrier, substantially as described.

3. The combination with an elevating mechanism, of a guide for the carrier, said carrier having means to engage the guide and provided with an opening for the deposit of packages and a doorway for their discharge, a door hinged on the carrier to close said doorway, an arm rigidly secured to the door of the carrier and a tripping-lever located so as to trip said arm and thereby open the door of the carrier, substantially as described.

4. The combination with an elevating mechanism, of a guide and way for the carrier, said carrier having means to engage the guide, and provided with an opening for the deposit of packages, and a doorway for their discharge, a door on the carrier to close said doorway, an arm secured to the doorway of the carrier, a tripping-lever located so as to trip said arm and thereby open the door of the carrier, and a spring-clasp located in the lower portion of the way, substantially as described.

5. The combination with an elevating mechanism, of guide-rods for the carrier, said carrier having on its sides swiveled guides to engage the guide-rods and provided with an opening for the deposit of packages and a doorway for their discharge, a door on the carrier to close said doorway, an arm secured to the door of the carrier, and a tripping-lever located so as to trip said arm and thereby open the door of the carrier, substantially as described.

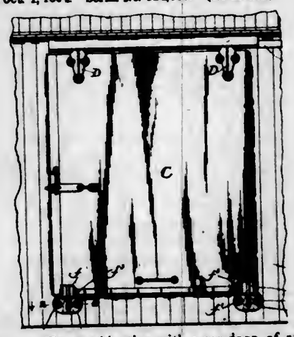
6. The combination with an elevating mechanism, of guide-rods for the carrier, said carrier having swiveled on its sides guides to engage said guide-rods, and provided with an opening for the deposit of packages and a doorway for their discharge, a door on the carrier to close said doorway, a spring secured on the carrier to close the door thereof, an arm secured to the door of the carrier, a tripping-lever located so as to trip said arm and thereby open the door of the carrier, and a spring-clamp located near the lower portion of the guide-rods to engage the lower end of the carrier, substantially as described.

7. The combination with a guide for the carrier, of a carrier having means to engage the guide and provided with an opening for the deposit of packages and a doorway for their discharge, a door on the carrier to close said doorway, an arm secured to the door of the carrier, a tripping-lever located so as to trip said arm and thereby open the door of the carrier, pulleys journaled at the upper end of the guide, a cable passing over said pulleys and secured at one of its ends to the carrier and having at its other end a weight, an electric motor geared to one of the pulleys and having a connection with an electric source, a magnet located near the pulleys and having a connection with an electric source, a lever pivotally secured above said magnet, a catch pivotally secured near the magnet and adapted to engage said lever and when freed therefrom to complete the circuit through the motor, substantially as described.

8. The combination of the pulleys b^3, suitably journaled, with the electric motor G, geared to one of the pulleys, and having a connection with, an electric source, of the magnet E, having a connection with an electric source, the lever e^3, fulcrumed above said magnet, the catch F pivotally secured near the magnet and adapted to engage one end of said lever and to complete the circuit through the motor, and a vertically-movable rod *m*, substantially as described.

9. The combination with an elevating mechanism, of a guide for the carrier, a plate or escutcheon located near said guide and having an opening provided with a hinged door, a spring-actuated rod vertically secured on the plate to the rear of said door, and having an arm extending into the guideway, a carrier located in the guideway and having an opening for the deposit of packages and a doorway for their discharge, a door on the carrier to close said doorway, an arm secured to the door of the carrier and a tripping-lever located so as to trip said arm and thereby open the door of the carrier, substantially as described.

607,851. **CAR-DOOR BRACKET.** JOHN HODGE, Topeka, Kans. Filed Oct. 1, 1894. Serial No. 524,689. (No model.)



Claim.—1. The combination with a car-door, of an attachment for preventing it from swinging outward, said attachment comprising a bracket provided in its back with a socket, an anchor separable from the bracket, secured to the side of the car and having a head occupying said socket, the head of the anchor being covered by the bracket, and means for preventing the disengagement of the bracket and anchor so long as the door is closed, substantially as set forth.

2. The combination with a car-door, of an attachment for preventing it from swinging outward, said attachment comprising a bracket and an anchor separable from each other, the bracket having in its back an undercut groove and the anchor a head occupying said groove so that they may be engaged and disengaged by sliding one upon the other, the anchor being secured to the side of the car and covered by the bracket, and means for preventing the disengage-

ment of the bracket and anchor so long as the door is closed, substantially as set forth.

3. The combination with a car-door of an attachment for preventing it from swinging outward, said attachment comprising a bracket adapted to engage the door, an anchor non-rotatively secured to the side of the car and having a non-rotative engagement with the bracket, and means for preventing the separation of the bracket and anchor so long as the car-door is closed, substantially as set forth.

4. The combination with a car-door of an attachment for preventing it from swinging outward, said attachment comprising a bracket adapted to engage the door, an anchor separable therefrom secured to the side of the car, and means whereby said anchor and bracket have non-rotative engagement with each other, the anchor being concealed by the bracket, substantially as set forth.

5. The combination with a car-door, of an attachment for preventing it from swinging outward, said attachment comprising a bracket adapted to engage the door, and provided in its back with an undercut groove, closed at its upper end, an anchor having a non circular head occupying said groove, and means for preventing said head from turning, substantially as set forth.

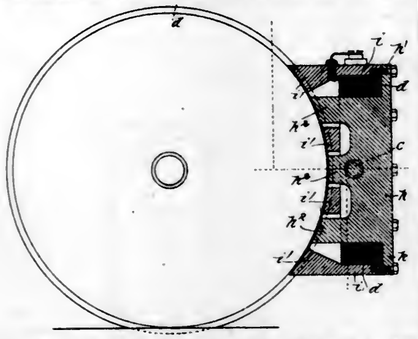
6. The combination with a car-door, of an attachment for preventing it from swinging outward, said attachment comprising a bracket having in its back an undercut groove, an anchor consisting of a perforated block occupying said groove and a bolt passing through said block and engaging the car, and means for preventing the block from turning, substantially as set forth.

7. The combination with a car and its door, of a bracket engaged by said door, an anchor secured to the side of the car, and means whereby said anchor is concealed by said bracket and detachably connected therewith, substantially as set forth.

8. The combination with a car and its door, of a bracket engaged by said door, an anchor separable therefrom, secured to the side of the car, and means whereby said anchor is connected to said bracket and has con-rotative engagement therewith, substantially as set forth.

9. The combination with a car and its door, of an anchor, a bracket engaged by the door, said bracket being provided with a socket and having in the rear face thereof a slot of less width than the greatest width of the anchor leading to said socket, whereby the bracket may be slidably connected with the anchor and the latter concealed thereby, substantially as set forth.

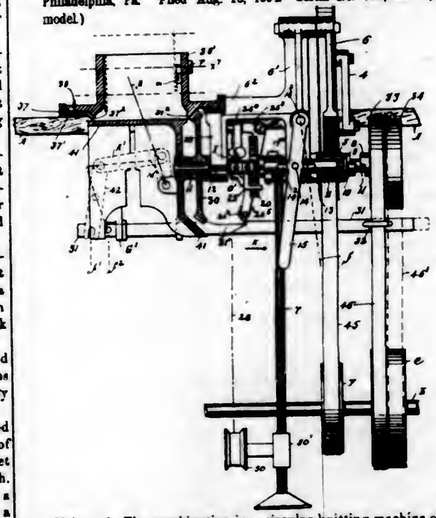
607,852. **BRAKE.** ERNST W. G. C. HOFFMANN, Charlottenburg, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Dec. 29, 1897. Serial No. 664,389. (No model.)



Claim.—1. In a brake-shoe, the combination with the magnetic core *h* provided with a plurality of poles h^2, of a helix *d* surrounding said core, and an inclosing magnetic mass *i* united with the core *h*, a space intervening between the core *h* and the mass *i* in which said helix is disposed, the mass *i* being provided with a plurality of polar projections *i'*, the polar projections of the core being alternately disposed with relation to the polar projections of the mass *i*, the surfaces of the polar projections that are to be applied to the wheel practically conforming in contour to the periphery thereof, substantially as described.

2. In a brake-shoe, the combination with two masses of magnetic metal, each having a plurality of polar projections which are adapted to engage a wheel, of an energizing-helix, the helix and magnetic masses being so disposed that when said helix is energized polar regions of one sign are formed at the polar projections of one mass and polar regions of an opposite sign are formed at the polar projections of the other mass, the polar projections of one mass of magnetic material being alternately disposed with relation to the polar projections of the other mass of magnetic material, certain of the polar projections of each mass being interposed between polar projections of the other mass, substantially as described.

607,853. **CIRCULAR-KNITTING MACHINE.** THOMAS J. HOLTON, Philadelphia, Pa. Filed Aug. 18, 1894. Serial No. 520,741. (No model.)



Claim.—1. The combination in a circular-knitting machine of a needle-retaining part, a cam-carrying cylinder, means for actuating said cam-carrying cylinder reciprocally, consisting of a segmental rack, an actuating secondary belt-wheel therefor, an intervening link pivoted to the belt-wheel at one end and to a rigid part of the rack at the other, a primary belt-wheel, a pinion actuated by said rack, a supporting-shaft for said pinion, pulley 33 and provisions to couple the pinion thereto, said shaft being the direct actuating-shaft for the cam-cylinder, a loose pulley arranged concentrically with the shaft, a spacing-chain arranged concentrically with the shaft, a series of tripping-pins carried by the chain, means for actuating said chain, a clutch-controlling mechanism, means adapted to be engaged and operated by the chain-pins to actuate said controlling mechanism and a belt connected with the primary source of power and adapted to be shipped from the loose pulley onto the fast pulley, when the reciprocating mechanism is idle.

2. The combination in a circular-knitting machine of a rotating cam-cylinder, a series of needles operated thereby, an actuating-shaft therefor, fast and loose belt-pulleys mounted on this shaft connected with a prime source of power, means for automatically arresting said actuating-shaft, consisting of a belt-shifter, an operating-lever therefor, a sprocket-wheel mounted concentrically on said shaft, a chain having a series of lock-trips carried thereby, a pivoted lever operated by said trips at predetermined positions of the chain, whereby on the said spacing-chain reaching a predetermined position the chain will actuate the aforesaid pivoted lever and through the means described force the belt from the fast to the loose pulley.

3. The combination in a circular-knitting machine of a rotating cam-cylinder, an actuating-shaft therefor, carrying a fast and loose pulley at one end and a cylinder-actuating gear at the other, a sprocket-wheel concentrically arranged with said shaft, a chain carrying a series of lock-trips, a pivoted lever operated by said chain at a predetermined position, a ratchet-wheel mounted concentrically with the shaft and adapted to actuate the sprocket-wheel, a tripping-pin carried by said shaft, a connecting-lever carrying a pawl interposed between the said pin and the said ratchet-wheel, a belt-shifter and a connecting mechanism between the said pivoted lever and belt-shifter.

4. The combination in a circular-knitting machine of a rotary cam-cylinder, an actuating-shaft therefor carrying a fast and loose pulley at one end and a cylinder-actuating gear at the other, a sprocket-wheel having its teeth arranged concentrically with said shaft and having a rotary motion independent of the motion of the shaft a tooth carried by said shaft and connecting means between said sprocket-wheel and said tooth whereby the former is actuated by the latter, a belt-shifter-controlling lever, a spacing-chain carried by the said sprocket-wheel having a series of locking-trips secured thereto at predetermined points thereon, and a belt-shifter operated thereby through an intervening mechanism.

5. The combination in a circular-knitting machine of a reciprocating cylinder, a series of needles operated thereby, means for arresting said cylinder at a predetermined number of reciprocations, consisting of a sprocket-wheel concentrically arranged with the shaft, but having a motion independent of the shaft, a tripping-tooth carried by the shaft, a connection between the tripping-tooth and the sprocket-wheel a spacing-chain having projecting pins carried by the sprocket-wheel, a lever adapted to be operated by said pins, a belt-shifter, a bell-crank lever connecting said lever and belt-shifter operated by said lever, a supporting and actuating shaft having a fast and loose pulley at one end and a cam-cylinder-operating gear at the other, means for reciprocating said shaft, consisting of a segmental rack, an actuating belt-wheel therefor, a connecting-link, a pinion mounted on the shaft, a clutch mechanism adapted to engage the pinion with the shaft, and means interposed between the pinion and the chain-controlled tripping-lever, and controlled by said lever, whereby when the chain-pins actuate the said lever the pinion is disengaged from the shaft and the reciprocating cylinder is thereby arrested.

6. The combination in a circular-knitting machine of a reciprocating cam-cylinder, a series of needles operated thereby, means for reciprocating said cylinder, consisting of a supporting and actuating shaft, a pinion carried by said shaft, an actuating-rack therefor, means for reciprocating said rack, means for arresting said cylinder after a predetermined number of reciprocations consisting of a sprocket-wheel concentrically arranged with the shaft a spacing-chain provided with pins and carried by said sprocket-wheel, a sleeve supported from the main shaft and on which the sprocket-wheel is journaled, an actuating ratchet-wheel therefor, an actuating-lever having a dog for rotating said wheel, a tooth carried by the shaft as an actuating means for said lever, a clutch mechanism adapted to engage the pinion to the shaft, a locking-lever adapted to be engaged by said chain-pins and means interposed between the pinion and the chain-controlled lever, whereby on said lever being engaged by the pins of the chain, it will unlock the pinion from the shaft.

7. The combination in a circular-knitting machine of a main actuating-shaft, a cam-carrying cylinder operated thereby, a sprocket-wheel arranged concentrically with said shaft, a spacing chain carried by said wheel, a trip-tooth carried by said shaft and adapted to actuate the sprocket-wheel through an intermediate mechanism consisting of a lever engaged by said tooth, a pawl carried by said lever and a ratchet-wheel fixed to the sprocket-wheel with which ratchet-wheel said pawl engages, a fast and loose pulley carried by said main shaft, a belt-shifter, a tripping-lever operated by said chain and a mechanical connection between the said lever and the belt-shifter.

8. The combination in a circular knitting machine of a rotating cam-cylinder, an actuating-shaft therefor carrying a fast and a loose pulley at one end and a cylinder-actuating gear at the other, a sprocket-wheel arranged concentrically with said shaft, a sleeve-support therefor, means to actuate said sprocket-wheel, a spacing-chain carried by said sprocket-wheel, a belt-shifter-operating lever, actuated by said chain and a bell-crank lever for connecting said actuating-lever and belt-shifter, as and for the purpose set out.

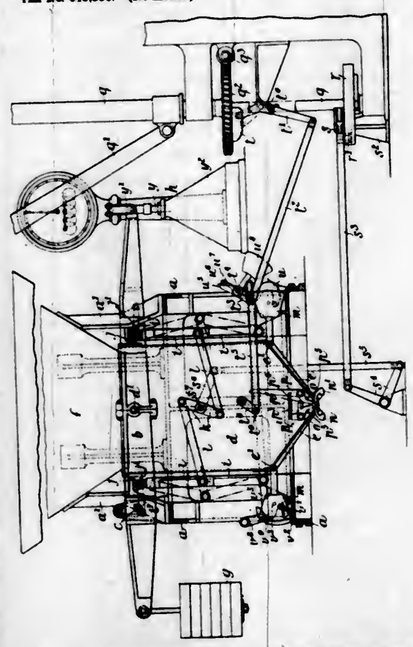
9. The combination in a circular-knitting machine of a cam-carrying cylinder, a series of needles actuated thereby, an actuating-shaft therefor, a sprocket-wheel carried concentrically with said shaft, a tripping-chain carried by said wheel, a tripping-tooth carried by said shaft means operated by said tooth for actuating said sprocket-wheel, means for rotatively reciprocating the shaft, a pinion clutch and means for arresting the reciprocal movements of the shaft, consisting of a lever actuated by the chain and a spring-contained clutch-operating rod controlled by the lever.

607,854. **BRAKE CONNECTION-ROD.** CHARLES F. HUNTOON, Chicago, Ill., assignor to the Chicago Railway Equipment Company, same place. Filed Dec. 30, 1897. Serial No. 664,657. (No model.)



Claim.—In a brake connection-rod, the combination with a threaded rod, of a jaw having an axial bore for the reception of the rod and a transverse nut-pocket, and a nut arranged within the nut-pocket of the jaw and held against rotation therein; substantially as and for the purposes specified.

607,855. **WEIGHING AND RECORDING APPARATUS FOR COAL.** CHARLES INGERT, London, England. Filed Dec. 11, 1896. Serial No. 615,350. (No model.)



Claim.—1. In a weighing-machine, a weigh-beam having an open frame extending all around the weighing-receptacle and provided with extensions at the opposite ends of such frame as set forth, combined with a weighing-receptacle having lugs thereon as described, and with toggle-levers not connected to, but serving to lift said receptacle by means of said lugs, above and entirely free from the weigh-beam and weighing devices, and to support it while receiving its load, and then serving to lower the receptacle with its load that it may again rest upon the knife-edges of the weigh-beam, all as set forth.

2. In combination with a supporting-frame having an oblong or square opening, a weigh-beam having a correspondingly-shaped opening and having projections at both ends for the purposes set forth, a weighing-receptacle having lugs *j* thereon and adapted to be supported on knife-edges on said beam, and toggle-levers serving to lift the receptacle away from such knife-edges by the act of bearing against the under side of said lugs, thus temporarily relieving the weigh-beam and serving to support the receptacle while loading and then to lower it again onto the knife-edges of the weigh-beam for the purpose of weighing.

3. In a weighing-machine, a weighing-receptacle having lugs thereon, toggle-levers pivoted at their lower ends to brackets upon the main supporting-frame of the machine and at their upper ends connected by links to the frame, said links serving to retain the upper ends of the toggle-levers in position relatively with said lugs, and means substantially as set forth serving to straighten the toggles and thus lift the receptacles off the weigh-beam and to support it while filling the receptacle.

4. The described means for raising the receptacle away from and for lowering it to rest again upon the weigh-beam, comprising in combination the toggles for such lifting and lowering, the links *l*, each connected at one of its ends to one of the toggle-joints, shaft s^7, levers *k* on said shaft and connected to the other ends of said links, lever-arm s^8 fixed to said shaft, rod s^9 connected to one end of said arm, bell-crank lever s^4 connected to the other end of said rod, rod s^6, connected at one end to lever s^4, lever *s*, connected at one end to rod

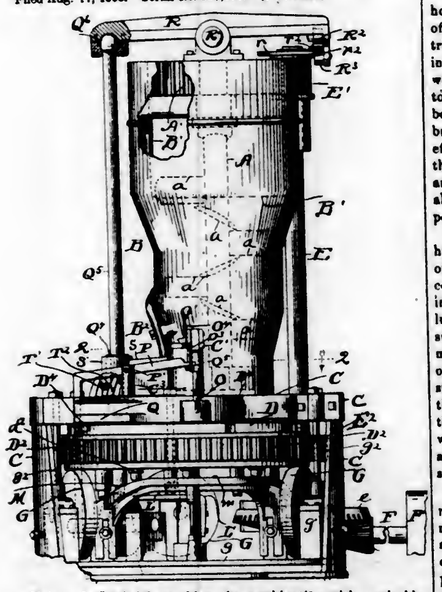
x^3, cam r for actuating said lever s, turning crane-post q, worm-wheel q^3 and worm q^2 for actuating the lever s and its described connections.

5. In combination with the weigh-beam, the weighing-lever w', the arm x pivoted to one end of said lever, and the stud x^3 and its adjusting-nuts serving to adjust said arm relatively to the fulcrum of said lever, all substantially as shown and described.

6. The described means for closing the bottom doors, consisting of the combination with them, of weights m, catches n n' pivoted to the weighing-receptacle and provided respectively with arms p p' and with lugs p^3 p^3 as described, stop-pins p^4 and p^4, and a spring connecting said arms and serving to draw the catches into their locking position.

7. The described means for opening the doors to discharge the load, and for again closing and locking them, consisting in the combination with a cam surface t on a worm-wheel, of a lever t' and link t^5 actuated by said wheel, arm t^2, rod t^3, link t^5 and its pin t^6, arms p p' and their catches n n', and lugs p^3 p^3, a spring connecting these levers, and counterweights m on the doors.

607,856. **BRICK-MACHINE.** JOHN N. KAUFFOLS, Cleveland, Ohio. Filed Aug. 17, 1895. Serial No. 559,696. (No model.)



Claim.—1. In brick-machine, the combination with a suitably-actuated horizontally-arranged mold-wheel provided with any suitable number of molds for the formation of brick therein and which molds have vertically-movable bottoms, and means for automatically elevating the mold-bottoms to bring the upper surface thereof flush with the upper surface of the mold-wheel, of the vertically-tilting follower O adapted to engage and discharge the brick from the mold-wheel, suitably actuated lever mechanism for operating the follower, and means acting to retain the follower in its normal or inoperative position, all arranged and operating substantially as shown, for the purpose specified.

2. In a brick-machine, the combination with a suitably-actuated horizontally-arranged mold-wheel provided with any suitable number of molds for the formation of brick therein and which molds have vertically movable bottoms, and means for automatically elevating the mold-bottoms to bring the upper surfaces thereof flush with the upper surface of the mold-wheel, of the follower O, vertically-tilting bell crank lever O', and suitably-actuated mechanism for actuating said bell-crank lever in the direction required to operate the follower, and means acting to retain the follower in its normal or inoperative position, substantially as shown, for the purpose specified.

3. In a brick-machine, the combination with a revolving mold and means for forcing the clay into said mold, of a suitably-actuated plunger for re-pressing the brick within the mold during the revolution of the mold, means for revolving the plunger with the mold during the compressing stroke of the plunger, and means for returning the plunger to the place of beginning after its compressing stroke, substantially as set forth

4. In a brick-machine, the combination with a suitably-actuated revolving mold whose bottom is movable vertically and provided with a depending stem, and means for forcing the clay into the mold, of a suitably-actuated plunger for compressing the brick from above during the revolution of the mold, means for revolving said plunger with the mold during the compressing stroke of the plunger, means for returning the plunger to the place of beginning after its compressing stroke, the horizontally-arranged bar or guide L and the contiguous inclines L', L^3, and the roller or wheel U, all arranged and operating substantially as shown, for the purpose specified.

5. In a brick-machine, the combination with a suitably-actuated horizontally-arranged mold wheel provided with any suitable number of radially-arranged molds located equal distances apart and in an annular path that is concentric with the axis of said wheel, of a vertically-reciprocating plunger for compressing the brick from above, means for effecting the downward or compressing stroke of the plunger, means for revolving the plunger with the mold-wheel during the compressing stroke of the plunger, and means for elevating the plunger from within the mold and returning it to its place of beginning after the compressing stroke of the plunger, all arranged and timed to operate substantially as shown, for the purpose specified.

6. In a brick-machine, the combination with a suitably-actuated horizontally-arranged mold-wheel provided with any suitable number of radially-arranged molds located in an annular path that is concentric with the axis of the wheel, said mold-wheel, a suitable distance in advance of each mold, being provided with a laterally and outwardly projecting lug D^4, of a vertically-reciprocating plunger adapted to enter the molds of the mold wheel at a given point from above, being adapted to revolve with the mold during its compression of the brick, and being provided with the depending member Q^3, means for effecting the downward or compressing stroke of the plunger during the rotation of the mold-wheel, and means for elevating the plunger and returning it to its place of beginning after its compressing stroke, all arranged and timed to operate substantially as shown, for the purpose specified.

7. In a brick-machine, the combination with a suitably-actuated horizontally-arranged mold-wheel provided with any suitable number of radially-arranged molds located in an annular path that is concentric with the axis of said wheel and provided a suitable distance in advance of each mold with a laterally and outwardly projecting lug D^4, of a vertically-reciprocating plunger Q provided with a pressure-surface Q^3, any suitable number of shoulders Q^5, and depending member Q'; arm or lever S pivoted or fulcrumed at the central portion of the mold-wheel, and at its outer end connected with the plunger; suitable means for effecting the downward or compressing stroke of the plunger; suitable means for effecting the upward movement of the plunger after its compressing stroke; oscillating shaft T provided with an upwardly-projecting roller-bearing arm or lever T' and with a depending arm or lever T^3, all arranged and timed to operate substantially as shown, for the purpose specified.

8. In a brick-machine, the combination with a suitably-actuated revolving mold and a plunger adapted to revolve with and enter the mold from above, of a vertically-tilting lever fulcrumed at any suitable elevation above the plunger, means operatively connecting one end of said lever with the plunger, mechanism for actuating the opposite end of the lever in the direction required to effect the downward or compressing stroke of the plunger, means for actuating the lever in the opposite direction, means for moving the plunger with the mold during the compressing stroke, and means for returning the plunger to its place of beginning upon its elevation from the mold, all arranged and operating substantially as and for the purpose set forth.

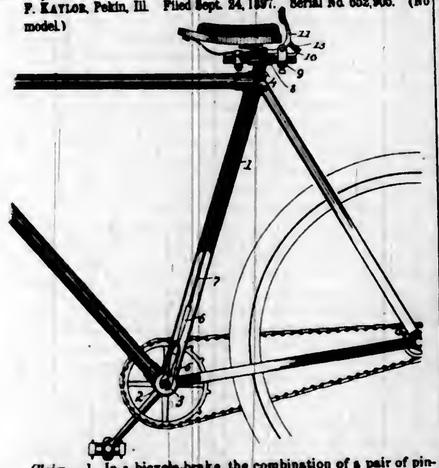
9. In a brick-machine, the combination with a suitably-actuated revoluble mold and a plunger adapted to revolve with and enter the mold from above, of a vertically-tilting lever fulcrumed at any suitable elevation above the plunger, means operatively connecting one end of said lever with the plunger, a suitably-actuated cam for actuating the opposite end of the lever in the direction required to effect the downward or compressing stroke of the plunger, a suitably-actuated cam for actuating the lever in the opposite direction, means for moving the plunger with the mold during its compressing stroke, and means for returning the plunger to its place of beginning upon its elevation from the mold, substantially as shown, for the purpose set forth.

10. In a brick-machine, the combination with a suitably-actuated mold and a plunger adapted to revolve with and enter the mold from above, of a vertically-tilting lever fulcrumed at any suitable elevation above the plunger, and a rod or bar operatively connected at one end by means of a ball-and-socket joint with the plunger and operatively connected, at its opposite end, by means of a ball-and-socket joint, with one end of said lever, mechanism for engaging and actuating the opposite end of the lever in the direction required to effect the downward or compressing stroke of the plunger, means for actuating the lever in the opposite direction, means for moving the plunger with the mold during the compressing stroke, and means for returning the plunger to its place of beginning upon its elevation from the mold, substantially as shown, for the purpose specified.

11. In a brick-machine, the combination of a horizontally-arranged mold-wheel D provided with any suitable number of radially-arranged molds located equal distances apart in an annular path that is concentric with the axis of the wheel, and a plunger adapted to enter the molds at a given point and capable of revolving with the mold-wheel during its compressing stroke, a vertically-tilting lever fulcrumed at a suitable elevation above and operatively connected with the plunger, a suitably-actuated upright shaft E intergeared with the mold-wheel, and cam mechanism upon said shaft for actuating the aforesaid tilting lever alternately in opposite directions, means for moving the plunger with the mold-wheel during the compressing stroke of the plunger, and means for returning the plunger to the place of beginning after its compressing stroke, all arranged and timed to operate substantially as shown for the purpose specified.

12. In a brick-machine, the combination of a suitably-actuated revolving mold having a vertically-movable bottom, a suitably-actuated plunger for entering the mold, said plunger being provided with a laterally-projecting lug Q', means for moving the plunger with the mold during the downward or compressing stroke of the plunger, means for elevating and returning the plunger to the place of beginning after its compressing stroke, means for elevating the bottom of the mold flush with the upper edges of the mold after the compression of the brick, a follower O for discharging the elevated brick from the mold, lever mechanism for operating the follower, said lever mechanism being adapted to be engaged and actuated by the aforesaid lug on the plunger during the upward stroke of the plunger, and means acting to retain the follower in its normal or inoperative position, all arranged and operating substantially as shown, for the purpose specified.

607,857. **BICYCLE-BRAKE.** JOHN KAYLOR, Decatur, and JACOB F. KAYLOR, Pekin, Ill. Filed Sept. 24, 1897. Serial No. 652,905. (No model.)



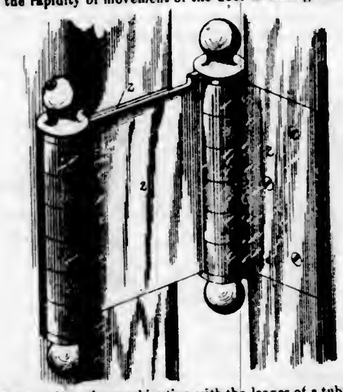
Claim.—1. In a bicycle-brake, the combination of a pair of pincers the jaws of which embrace the pedal-shaft inside the crank-hanger therefor, a slide-frame in engagement with the pincer-levers and adapted to open and close the same by lengthwise motion, an arm pivoted below the seat and having a bearing extended upward in the rear of the seat, and a connection between the side frame and the arm extended through the seat-post and the seat-post tube.

2. In a bicycle-brake, the combination of the pincers the jaws of which embrace the pedal-shaft, the wedge-frame having its wedge portion located between the ends of the levers of the pincers, the rod extended upward through the seat-post tube and the seat-post, and the pivoted arm connected with the rod and having a bearing extended behind the seat.

607,858. **COMBINED DOOR HINGE AND CHECK.** FRANCIS KEIL and HENRY F. KEIL, New York, N. Y. Original application filed Sept. 24, 1895, Serial No. 563,458. Divided and this application filed Mar. 2, 1897. Serial No. 625,705. (No model.)

Claim.—1. In a hinge the combination of the leaves with a fluid-chamber, pressure-equalizing check mechanism contained in said chamber and means for regulating the rapidity of movement of the door in closing substantially as described.

2. In a combined hinge and door-check, the combination with the leaves and their knuckle of a cylinder or barrel adapted to contain a liquid, located within said knuckle, pressure-equalizing check mechanism contained in said cylinder or barrel and means for regulating the rapidity of movement of the door in closing as set forth.



3. In a hinge the combination with the leaves of a tubular pintle for connecting said leaves, said tubular pintle adapted to contain a fluid, pressure-equalizing check mechanism contained in said pintle and means for regulating the rapidity of movement of the door in closing as set forth.

4. The combination of the hinge-leaves of a cylinder or barrel adapted to contain a fluid within the knuckle thereof, a valved partition in said cylinder to permit the passage of the fluid in one direction only during the movement of the hinge, a piston loosely fitted within the cylinder whereby a space is formed between the cylinder and piston, and additional means for the passage of fluid from one side of the partition to the other during the closing operation of the door as set forth.

5. In a door check and hinge the combination of the leaves of a cylinder or barrel within the knuckle thereof of a partition provided with an opening parallel with the longitudinal axis of said partition, an opening formed at an angle to and intersecting said first-mentioned opening and means for regulating the size of said intersecting opening, a piston loosely fitted within the cylinder whereby a space is formed between the inner surface of the cylinder and the outer surface of the piston as specified.

6. The combination of the hinge-leaves, of a tubular pintle forming a fluid-chamber a partition in said pintle extending lengthwise thereof, said partition provided with an opening therein intersected by one or more openings and adjustable means for closing said one or more openings with a piston loosely fitting said tubular pintle as set forth.

7. In a hinge, the combination of the leaves a tubular pintle adapted to contain a fluid with a partition provided with valved ports or passages for permitting the passage of the fluid in one direction only and ports or openings for the passage of the fluid in both directions and an adjustable pin or screw for closing one or more of said last-mentioned ports or openings as described.

8. In a combined hinge and door-check the combination with the leaves, a fluid chamber or barrel within the knuckle thereof suitable packing therefor, pressure-regulating mechanism contained in said chamber or barrel of speed-regulating mechanism contained in said barrel cooperating with said pressure-equalizing check mechanism as set forth.

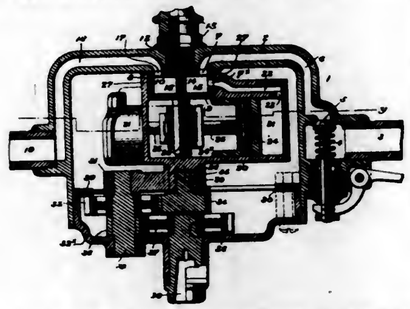
607,859. **ENGINE.** JULIUS KELLER and CHARLES H. HAMBLER, Philadelphia, Pa. Filed Feb. 7, 1898. Serial No. 669,353. (No model.)

Claim.—1. In an engine, a plurality of rotatable cylinders, a stationary valve, ports leading from said valve to the ends of said cylinders, the substantially central portion of the latter serving as a lubricant-chamber, a port extending through said valve, but out of communication therewith to said chamber, and means for rotating said cylinders.

2. An engine consisting of a casing, a plurality of rotatable cylinders inclosed therein, a stationary valve secured to said casing, inlet and exhaust ports leading from said valve to the ends of said cylinders, a portion of said cylinders serving as a lubricant-chamber and a port extending through said valve directly to said lubricant-chamber, in combination with means for rotating said cylinders and means for transmitting power to a drill or other tool.

3. In an engine, a casing, a stationary valve located therein, an eccentric stem projecting from said valve, inlet and exhaust chambers

contained within the latter, ports leading to and from said chambers, a plurality of cylinders rotatably mounted within said casing, said valve serving as a bearing for the upper portion of said cylinders, pistons located in said cylinders, piston-rods common to said pistons and eccentric stem, the substantially central portion of said cylinders forming a lubricant-chamber and a port leading from the casing of said engine through said valve to said lubricant-chamber.



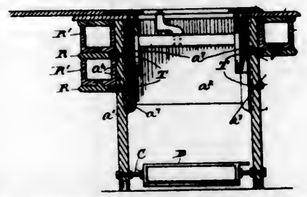
4. In an engine, a casing, a valve consisting of a base, an upwardly-extending wall of substantially uniform diameter, the outer periphery thereof serving as a bearing for a plurality of cylinders adapted to rotate in said casing, an eccentrically-located stem projecting from said valve into said casing, said valve having an oil-port leading therethrough into said cylinders, pistons in said cylinders, ports and passages leading to the extremities of said cylinders, pistons in the latter, rods common to said pistons and stem, a journal depending from said cylinders, a plate in which said journal is rotatably mounted, a spindle in which the drill or tool is adapted to be held and power-transmission devices common to said journal and spindle.

5. In an engine, a casing, a plurality of cylinders rotatably mounted therein, a stationary valve located within said casing, said valve consisting of a base provided with the upwardly-extending wall 10, said wall being adapted to serve as a bearing for the upper portion of said cylinders, a top 11 for said valve, a threaded stem 12 projecting therefrom, a transverse web 14 located in said valve and adapted to divide the latter into the inlet and exhaust chambers 15 and 16, inlet and exhaust ports communicating with said chambers, an oil-port passing through said valve but out of communication therewith, said oil-port communicating with the interior of said cylinders, and means for imparting rotation thereto.

6. In an engine, cylinders adapted to rotate bodily or in unison, a stationary valve, adapted to form a bearing for the upper portion of said cylinders, an oil-port extending from the exterior of the engine through said valve into said cylinders and means for effecting the rotation of the latter.

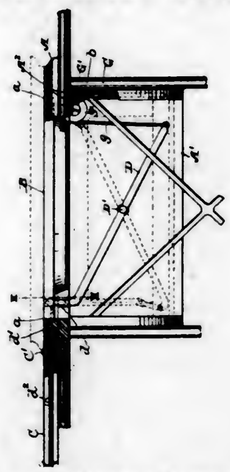
7. In an engine, a plurality of cylinders adapted to rotate in unison, a stationary valve, forming a bearing for the upper portion of said cylinders, a lubricant-chamber, contained in substantially the central portion of said cylinders, an oil-port extending from the interior of said engine through said valve for introducing oil into said chamber, a tool-carrying spindle and power-transmission devices common to said spindle and said cylinders.

607,860. SEWING-MACHINE CABINET. THEODOR KUNDTS, Cleveland, Ohio. Filed July 26, 1897. Serial No. 645,938. (No model.)



Claim.—A cabinet of the character indicated having two upright wooden supporting-frames arranged a suitable distance apart and provided, upon their outer sides, with horizontally-arranged mortises that correspond in size, and interchangeable shelves and moldings capable of fitting the said mortises, and means for removably securing the said moldings or shelves within the mortises, substantially as shown and described.

607,861. SEWING-MACHINE TABLE. THEODOR KUNDTS and JOSEPH GEDEON, Cleveland, Ohio; said Gedeon assignor to said Kundts. Filed Dec. 20, 1897. Serial No. 662,696. (No model.)



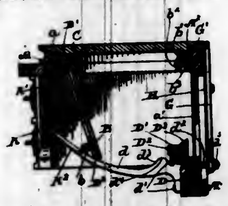
Claim.—1. In a table or cabinet of the character indicated, the combination with the top A having an opening therethrough, a vertically-tilting load-carrying leaf B horizontally hinged or pivoted to the said top and arranged to occupy the opening in the said top in its upwardly-tilted position, and a lifting leaf C hinged horizontally at the left-hand end of the top; of a suitably-supported vertically-tilting lever having a sweep below the rear end of the top, operative connection between the lifting leaf and the said lever, a suitably-supported lifting-lever arranged below and transversely of the right-hand end of the load-carrying leaf and operatively connected with the first-mentioned lever, and a roller or wheel resting upon the said lever and supported from the aforesaid load-carrying leaf, and the arrangement of parts being such that the load-carrying leaf is tilted downwardly or upwardly according as the lifting leaf is tilted over the opening in the top of the table or cabinet or in the opposite direction, substantially as and for the purpose set forth.

2. In a table or cabinet of the character indicated, the combination with the top A having and opening therethrough, a vertically-tilting load-carrying leaf B horizontally hinged or pivoted to the said top and arranged to occupy the opening in the said top in its upwardly-tilted position, and the lifting leaf C hinged horizontally and transversely of the cabinet at the left-hand end of the top; of a vertically-tilting lever fulcrumed at or near its central portion and arranged longitudinally of the cabinet and below the rear end of the top, operative connection between the lifting leaf and the left-hand end of the said lever, a suitably-supported lifting-lever arranged below and transversely of the right-hand end of the load-carrying leaf, a roller or wheel resting upon the said lever and supported from the aforesaid load-carrying leaf, and a suitably-guided chain or flexible connection between and operatively connecting together the aforesaid levers, substantially as and for the purpose set forth.

3. In a table or cabinet of the character indicated, the combination with the top A having an opening therethrough, a vertically-tilting load carrying leaf B horizontally hinged or pivoted to and longitudinally of the rear portion of the said top and arranged to occupy the opening in the top in its upwardly-tilted position, and the lifting leaf C hinged horizontally and transversely of the cabinet at the left-hand end of the top; of a vertically-tilting lever fulcrumed, at or near its central portion and arranged longitudinally of the cabinet below the rear end of the top, operative connection between the lifting leaf and the left-hand end of the said lever, a lifting-lever arranged below and transversely of the right-hand end of the load-carrying leaf and having its forward end fulcrumed to a member of the table or cabinet, a roller or wheel resting upon the said lever and supported from the aforesaid load-carrying leaf, a guide-sheave supported from and below the rear portion and right-hand end of the top, and a chain or flexible connection leading over the said sheave and operatively connecting the rear end of the roller-engaging lever with the right-hand end of the first-mentioned lever, substantially as and for the purpose set forth.

4. In a table or cabinet of the character indicated, the combination with the top A having the opening *a*, the vertically-tilting load-carrying leaf B, the tilting leaf C, and the back A'; of the vertically-tilting lever D, the rod *d'*, the link *d*, the lever G, the chain or flexible connection *g* and the guide-sheave *g'*, all arranged and operating substantially as shown, for the purpose specified.

607,862. SEWING-MACHINE TABLE. THEODOR KUNDTS and ANDREW EIBEN, Cleveland, Ohio; said Eiben assignor to said Kundts. Filed Dec. 20, 1897. Serial No. 662,726. (No model.)



Claim.—1. In a table or cabinet of the character indicated, the combination with the top A having an opening therethrough, the vertically-tilting load-carrying leaf B hinged or pivoted to the forward portion of the said top horizontally and longitudinally of the cabinet and arranged to occupy the forward portion of the opening in the leaf's upwardly-tilted position, another leaf arranged to occupy the rear or remaining portion of the opening and hinged or pivoted horizontally and longitudinally of the cabinet to the rear portion of the aforesaid top, and the lifting leaf C hinged horizontally and transversely of the cabinet at the top's left-hand end; of a slide movable up and down below the top's rear portion and having an arm extending forwardly in under the load-carrying leaf and having an upwardly-projecting member arranged to support the supplementary leaf in the elevated position of the slide, a slideway for the slide, an operative connection between the slide and the aforesaid lifting leaf, and a roller resting upon the aforesaid slide-arm and supported from the load-carrying leaf, substantially as and for the purpose set forth.

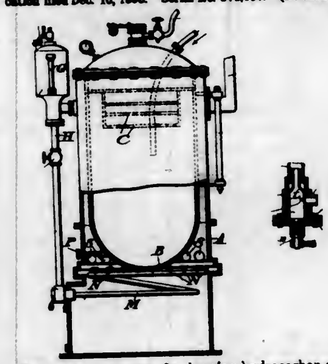
2. In a table or cabinet of the character indicated, the combination with the top A having an opening therethrough, a vertically-tilting load-carrying leaf B pivoted to the top's forward portion horizontally and longitudinally of the cabinet and arranged to enter the aforesaid opening in the leaf's upwardly-tilted position, and the lifting leaf C hinged horizontally at one end of the top and transversely of the cabinet; of a slide movable up and down below the rear portion of the top and having an arm extending forwardly in under the load carrying leaf, a slideway for the slide, a roller resting upon the said arm and supported from the load-carrying leaf, a lever operatively connecting the slide with the lifting leaf and arranged at the rear of the table or cabinet, and a suitably-supported bearing instrumental in supporting the said lever and accommodating the endwise movement of the lever, all arranged and operating substantially as shown, for the purpose specified.

3. In a table or cabinet of the character indicated, the combination with the top A having an opening therethrough, a vertically-tilting load-carrying leaf B pivoted to the top's forward portion horizontally and longitudinally of the cabinet and arranged to enter the aforesaid opening in the leaf's upwardly-tilted position, and the lifting leaf C hinged horizontally and transversely of the cabinet at one end of the top; of a slide movable up and down below the rear portion of the top and having an arm extending forwardly in under the load-carrying leaf, a slideway for the slide, a roller resting upon the said arm and supported from the load-carrying leaf, a roller secured to the rear side of the aforesaid back, a lever having bearing and slidable upon the said roller and having its two ends pivoted horizontally to the slide and lifting leaf, respectively, and the trend of the said lever being such that the slide is lowered or elevated according as the lifting leaf is tilted to the right or to the left, substantially as and for the purpose set forth.

4. In a table or cabinet of the character indicated, the combination with the top A having an opening therethrough, the vertically-tilting load-carrying leaf B hinged or pivoted to the top's forward portion horizontally and longitudinally of the cabinet and arranged to occupy the aforesaid opening in the leaf's upwardly-tilted position, and the lifting leaf C hinged horizontally and transversely of the cabinet at one end of the top; of a wooden slide movable up and down below the top's rear portion and having a metallic arm extending forwardly in under the load-carrying leaf, which arm is provided with a stud extending rearwardly through the aforesaid back, a slideway for the said slide, a roller secured to the said back, and a lever having bearing upon the said roller and embracing the rear end of the stud at one end and having its opposite end pivoted to the lifting leaf, and a nut mounted upon the said stud at the outer side of the lever, all arranged and operating substantially as shown, for the purpose specified.

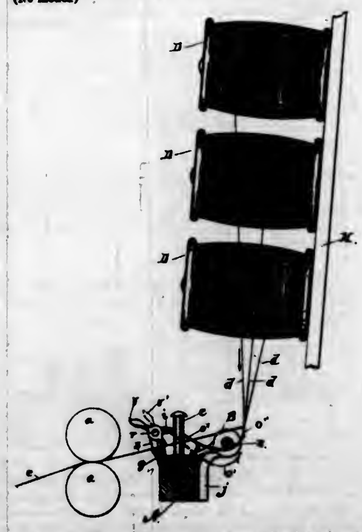
5. In a table or cabinet of the character indicated, the combination with the table A having the opening *a*, the vertical load-carrying leaf B provided upon its under side with roller *b*, the vertically-tilting supplementary leaf *b* cut away at b^3 upon its under side, and the hinged lifting leaf C; of the slide D having the forwardly-extending arm *d*, and the upwardly-projecting arm *D'* provided with the incline D^2, the slideway for said slide, and an operative connection between the slide and the aforesaid lifting leaf, all arranged and operating substantially as and for the purpose specified.

607,863. APPARATUS FOR BURNING HYDROCARBON OR OTHER OILS. CHARLES A. KENDEL, Jr., Hoboken, N. J. Original application filed May 15, 1894, Serial No. 511,330. Divided and this application filed Dec. 10, 1895. Serial No. 571,687. (No model.)



Claim.—An apparatus for bursing hydrocarbon and other oils, consisting of a furnace-casing, a shell fitting in a wall of said casing, a perforated discharge-pipe leading from said shell within said casing, a supply-pipe leading into said shell exterior to said casing, a hollow ring closely fitting in said shell and having an opening in its side registering with said supply-pipe and provided with a nozzle projecting into said discharge-pipe, whereby an annular expansion chamber is formed adjacent to and extending in the rear of said nozzle, and a stem connected with said plug and mounted in the wall of said shell, and provided with a handle outside of said casing.

607,864. STOP-MOTION FOR SPINNING-MACHINES. FRED LACEY, Valleyfield, Canada. Filed Aug. 27, 1897. Serial No. 649,789. (No model.)



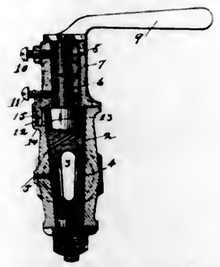
Claim.—1. In a stop-motion, the combination of a standard, a dog pivoted to said standard, the part of the dog below the pivot be-

ing longer than the distance between the pivot and the foot of the standard, a series of drop-wires, a pin in said dog extending under said series of drop-wires to receive them when they drop, substantially as described.

2. In a stop-motion the combination of a standard, a dog pivoted thereto, the part of the dog below the pivot being longer than the distance between the pivot and the foot of the standard, a series of drop-wires, a pin fast in said dog and extending under said series of drop-wires, a rod held to turn in brackets and having an arm carrying a wire under the drop-wires to raise them when down and allow the threads to be pieced when broken, substantially as described.

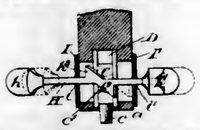
3. In a stop-motion the combination of a standard, a dog pivoted to said standard, the part of the dog below the pivot being longer than the distance between the pivot and the foot of the standard, a series of drop-wires, a pin fast in said dog and extending under said drop wires to receive them when they drop, a wire inserted in the front of said dog, and having a hook on its outer end to stop the roll and spool from winding in the end of the thread, substantially as described.

607,865. **STOP AND WASTE COCK.** ALBERT L. LAMBERT, Cleveland, Ohio. Filed Nov 30, 1897. Serial No. 660,317. (No model.)



Claim.—In a right and left hand cock the combination with a plug, provided with inlet and waste passages, and a square stem of a body, provided with similar passages and a taper bore to receive the plug—a cap provided with a rectangular opening in which said stem and the stem of the handle are inserted, set-screws whereby the said stems can be adjustably secured in the cap, a semicircular recess in the upper face of the body of the cock, inclosed by the vertical and horizontal walls of projecting lip, and a depending lug a quarter of a circle in width engaging said recess, substantially as described.

607,866. **LATCH.** ISAAC N. LAUDER, Binghamton, N. Y. Filed Nov. 7, 1896. Serial No. 611,426. (No model.)



Claim.—In a latch, a suitable support, a bolt fitted to slide longitudinally therein and a movable bolt-operating bar having a reverse double-wedge portion engaging the bolt, the reverse inclines of the wedge being located upon opposite sides of the bar for positively forcing the bolt in both directions as the bar is reciprocated, substantially as set forth.

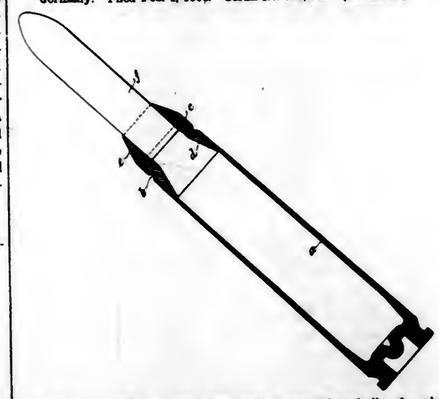
607,867. **TIMBER-POCKET.** GEORGE S. MARSHALL, St. Louis, Mo., assignor to the Missouri Railway Equipment Company, same place. Filed Dec. 10, 1897. Serial No. 661,410. (No model.)



Claim.—1. The herein-described timber-pocket comprising a base-plate provided with means of attachment to a timber, side walls formed with seats for a slide, the outer faces of which seats are inclined to force the slide inwardly as it is introduced to crowd or bind the end of the timber in the pocket, and a removable slide, substantially as described.

2. The herein-described timber-pocket comprising a base-plate, dowels rising therefrom, side walls f' and f^3, a slide f^7 and a key or slide f^{11}, substantially as described.

607,868. **METALLIC CARTRIDGE.** PAUL MAUSER, Oberndorf, Germany. Filed Feb. 1, 1898. Serial No. 668,699. (No model.)

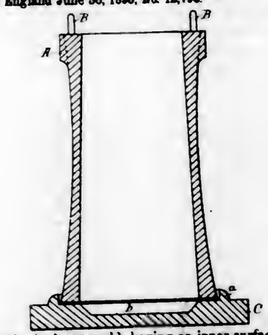


Claim.—1. The combination, with a cartridge-shell, of a ring for carrying the projectile, said ring being secured in the mouth of the shell and provided with a projecting conical portion, substantially as set forth.

2. The combination, with a cartridge-shell, of a ring for carrying the projectile, said ring being secured in the mouth of the shell and provided with a projecting portion which abuts against the end of the shell, substantially as set forth.

3. The combination, with a cartridge-shell, of a ring for carrying the projectile, said ring being secured in the mouth of the shell and provided with a projecting conical portion the base of which abuts against the end of the shell, substantially as set forth.

607,869. **INGOT-MOLD.** WILLIAM MAYER, Jarrow-on-Tyne, England. Filed July 30, 1895. Serial No. 557,568. (No model.) Patented in England June 30, 1893, No. 12,798.



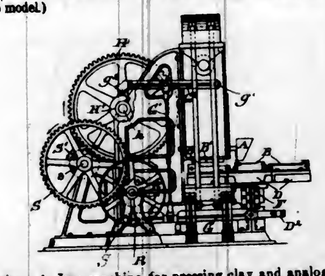
Claim.—1. An ingot-mold, having an inner surface, the vertical elements of which are straight lines, and having an outer surface, the vertical elements of which are continuously-curved lines, said latter elements being so continuously curved as to form a mold having side walls which are of least thickness at or slightly below a point midway between the top and bottom of said mold, as herein specified.

2. An ingot-mold, having integrant side walls, which have plane faces on the inner side, and continuously-curved faces on the outer side, the horizontal elements of said latter faces, being straight lines, and the vertical elements thereof being lines continuously curved so as to form a mold having side walls which are of least thickness at or slightly below a point midway between the top and bottom of said mold, as herein specified.

3. The combination with an ingot-mold, having an inner surface, the vertical elements of which are straight lines, and having an outer surface, the vertical elements of which are continuously-curved lines, said latter elements being so continuously curved as to form a mold having side walls which are of least thickness at or slightly below a

point midway between the top and bottom of said mold, of a base-plate, having a central depression, and a vertical lip, the latter surrounding said depression, and adapted to surround the bottom of said mold, all substantially as herein described and for the purpose set forth.

607,870. **MACHINE FOR PRESSING CLAY PRODUCTS.** JOHN J. MERRILL, Alfred, N. Y. Filed Sept. 1, 1897. Serial No. 650,244. (No model.)



Claim.—1. In a machine for pressing clay and analogous products, an automatically intermittently revolving table, carrying four or more molds and automatically presenting them each successively to be fed, pressed, emptied, and cleaned and oiled, to the end that each of the four operations may be going on at the same time, together with an automatically-reciprocating distributer and means for operating it, an upwardly-movable lower die of a pair of dies, mounted in a box upon said table, the box, and a plunger adapted to move said die upwardly above the plane of the side of the box, substantially as described and for the purpose set forth.

2. In a machine for pressing clay and analogous products a movable distributer, a die, a vertically-movable reciprocating arm, adapted to automatically move the distributer over the surface of the die to be fed and means for raising said arm with the distributer free from the die on its backward movement, substantially as described, and for the purposes set forth.

3. In a machine for pressing clay and analogous products an automatically-reciprocating distributer, an irregular-shaped former attached thereto and extending slightly below its under surface, adapted to distribute the material in unequal portions in one direction across the die, together with its operating mechanism substantially as described and for the purposes set forth

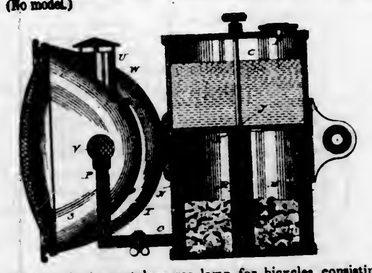
4. In a machine for pressing clay and analogous products a vertically-movable distributer, a die, an automatically-reciprocating arm, an irregular plate adapted to raise or lower said distributer, thereby causing the material to be distributed in unequal quantities in one direction across the surface of the die substantially as described, and for the purposes set forth.

5. In a machine for pressing clay and analogous products a vertically-movable distributer, an irregular-shaped former attached to and extending slightly below its under surface, adapted to distribute the material in unequal quantities in one direction across the surface of the die, a die, an automatically-reciprocating arm, connected to the distributer, an irregular plate adapted to raise or lower said distributer thereby distributing the material in varying quantities in the other direction across the surface of the die, with means for reciprocating the arm, substantially as described and for the purposes set forth.

6. In a machine for pressing clay and analogous products a die, movably contained in a mold-box, mounted upon a movable table, with an open space underneath said die, in combination with an automatically-operated vertically-movable plunger, F, adapted to operate through the open space of said table upon the under surface of said die, the arm G, adapted to operate against and raise the said plunger, a vertical rod G′, connecting the said arm G with the arm G^3, the horizontal arm, G^3, with one end adapted to operate in connection with the cam H′, the cam H′, adapted to raise and lower one end of the said arm G^3, and means for operating the same, all substantially as described and for the purposes specified.

7. In a machine for pressing clay products, the combination of a toggle-joint press consisting of an upper and lower arm, the upper arm hinged to the head-block of the press and the follower attached to the lower arm, the head-block, the follower, an upper die of a pair of dies attached to the bottom of the follower, a reciprocating arm attached at one end to the toggle-joint and to a crank-shaft at the other end, the crank-shaft and means for operating the same, together with an intermittently-revolving table and its operating mechanism, an automatically reciprocating distributer and means for operating it, an upwardly-movable lower die of the pair of dies, mounted in a box upon said table, the box, and a plunger adapted to move said die upwardly above the plane of the side of its box, all substantially as described and for the purposes set forth.

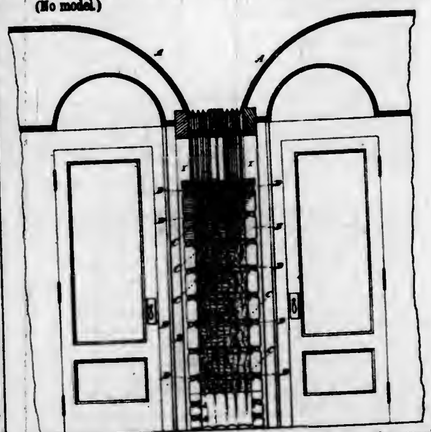
607,871. **ACETYLENE-GAS-GENERATOR LAMP.** WILLIAM H. MOORE, Washington, D. C. Filed Jan. 28, 1898. Serial No. 668,300. (No model.)



Claim.—1. An acetylene-gas lamp for bicycles, consisting of a casing or shell containing an upper water-chamber and lower generating chamber, an adjustable valve arranged in the water-chamber with its lower end seated in a discharge-opening in the lower wall of said water-chamber and its upper end extending out from said chamber whereby it may be operated by the rider, a removable carbid-holder connected to the casing and arranged in said lower chamber, and a distributing-tube leading from the bottom of the carbid-chamber and abutting against the wall of the upper chamber and surrounding the discharge opening, whereby the water from the water-chamber passes into the distributing-tube and from thence to the carbid in the carbid-chamber and generates the gas.

2. An acetylene-gas lamp for bicycles, consisting of a casing or shell containing an upper water chamber and lower generating-chamber, an adjustable valve arranged in the water-chamber with its lower end seated in a discharge-opening in the lower wall of said water-chamber and its upper end extending out from said chamber whereby it may be operated by the rider, a removable carbid-holder connected to the casing and arranged in said lower chamber, and a portions distributing-tube leading from the bottom of the carbid-chamber and abutting against the wall of the upper chamber and surrounding the discharge-opening, whereby the water from the water-chamber passes into the distributing tube and from theoce to the carbid in the carbid-chamber and generates the gas.

607,872. **CURTAIN FOR VESTIBULES OF CARS, &c.** ROBERT W. MORGAN, New York, N. Y. Filed Mar. 17, 1898. Serial No. 674,158. (No model.)



Claim.—1. For vestibule-cars, the curtain, and means for attaching the opposite side edges of said curtain to the adjoining portions of the cars, combined with means for automatically releasing the edge of the curtain upon the undue extending or stretching of the curtain; substantially as set forth.

2. For vestibule-cars, the curtain provided with elastic means for creating a tension therein when the curtain is in use, and means for attaching the opposite side edges of said curtain to the adjoining por-

tions of the cars, combined with means for automatically releasing the edge of the curtain upon the undue extending or stretching of the curtain; substantially as set forth.

3. For vestibule-cars, the elastic curtain, and means for detachably securing the opposite side edges of said curtain to the adjoining portions of the cars, combined with means for automatically releasing the edge of the curtain upon the undue extending or stretching of the curtain; substantially as set forth.

4. For vestibule-cars having the headed screws or pins the curtain having along its vertical edge the plates recessed to pass directly on said screws or pins, combined with the pivoted hooks on said plates to pass over the outer side of said screws or pins and close the recesses in said plates, and means for automatically releasing or opening said hooks upon the undue stretching or extending of the curtain; substantially as set forth.

5. For vestibule-cars having the headed screws or pins, the curtain having along its vertical edge the plates recessed to pass directly on said screws or pins, combined with the pivoted hooks on said plates to pass over the outer side of said screws or pins and close the recesses in said plates, the connected links pivoted at one end to said plates and at the other end to said hooks, and means for operating said hooks and links; substantially as set forth.

6. For vestibule-cars having the headed screws or pins, the curtain having along its vertical edge the plates recessed to pass directly on said screws or pins, combined with the pivoted hooks on said plates to pass over the outer side of said screws or pins and close the recesses in said plates, the connected links pivoted at one end to said plates and at the other end to said hooks, and means for automatically releasing or opening said hooks upon the undue stretching or extending of the curtain; substantially as set forth.

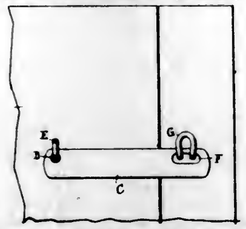
7. For vestibule-cars having the headed screws or pins, the curtain having along its vertical edge the plates recessed to pass directly on said screws or pins, combined with the pivoted hooks on said plates to pass over the outer side of said screws or pins and close the recesses in said plates, the connected links pivoted at one end to said plates and at the other end to said hooks, and the normally slack connections held at one end and at the other end secured to said links for automatically releasing or opening said hooks upon the undue stretching or extending of the curtain; substantially as set forth.

8. For vestibule-cars having the headed screws or pins, the curtain having along its vertical edge the plates recessed to pass directly on said screws or pins, combined with the pivoted hooks on said plates to pass over the outer side of said screws or pins and close the recesses in said plates, the connected links pivoted at one end to said plates and at the other end to said hooks, and means for operating said hooks and links, the said hooks, at their inner engaging edges being inclined whereby all usual pulling on the curtain serves to more securely hold them in closed position; substantially as set forth.

9. For vestibule-cars having the headed screws or pins, the curtain having along its vertical edge the plates recessed to pass directly on said screws or pins, combined with the pivoted hooks on said plates to pass over the outer side of said screws or pins and close the recesses in said plates, and the normally slack connections held at one end and at the other end secured to said hooks for automatically releasing or opening said hooks upon the undue stretching or extending of the curtain; substantially as set forth.

10. For vestibule-cars having the headed screws or pins, the curtain having along its vertical edge the hooks to engage said screws or pins, combined with the flexible connections for releasing said hooks upon the undue stretching or extending of the curtain; substantially as set forth.

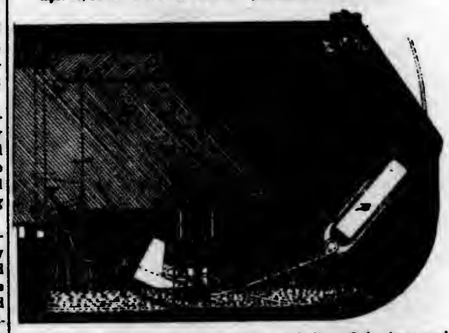
607,878. HASP-FASTENER. PATRICK MULLANE, Moline, Ill. Filed Nov. 28, 1896. Serial No. 613,747. (No model.)



Claim.—1. The combination with a hooked locking-staple and an attaching-staple, of a hasp having apertures for said staples near its upper edge so that the weight of metal in locking position is below the staples, and of such shape that the hasp must be brought to a horizontal position before being placed in or removed from locking position, substantially as set forth.

2. The combination with a hooked locking-staple, of a hasp having its upper edge shaped in cylindrical form, and apertures near its upper edge and close to the cylinder formed thereon for attaching the locking-staples, for the purpose substantially as set forth.

607,874. COMBINED CAR-AXLE LUBRICATOR, DUST-GUARD, AND HOT-BOX INDICATOR. JAMES S. PATTEN, Baltimore, Md. Filed Apr. 26, 1897. Serial No. 633,906. (No model.)



Claim.—1. The combination with an axle box of the improved apparatus hereinbefore described which is self-supporting therein, and free and detachable therefrom as a whole, the same comprising a spring which rests free on the bottom of the axle-box and is carved upward at its inner and outer ends and has a recurved rear extension, a dust-guard attached to the inner end of the spring, the lubricant-applier secured to the said recurved rear extension, the front end of the spring being extended and curved inward and having a bearing at the front end of the axle-box, as shown and described, whereby the apparatus is held in place in the box, as shown and described.

2. The combination with the axle-box and axle-journal, of the spring having the rear ends extended upward and recurved, the dust-guard and roller pivoted thereto, said spring having its front end curved and extended upward and bearing against the end of the box below its mouth and against the journal-bearing as shown and described.

3. The combination with the axle box and journal, of the dust-guard, and a curved supporting-spring whose convex portion bears upon the bottom and outer end of said axle-box and whose extended outer end rests upon the bearing of said journal whereby the dust-guard is held elastically in place, as shown and described.

4. The combination with an axle-box of a dust-guard composed of a flat plate, having journal-pins attached to its inner side, a bifurcated spring coiled about said pins, and bearing on the bottom and outer end of the axle-box, whereby it is adapted to support the dust-guard bodily and allow the latter to automatically adjust itself to place, as shown and described.

5. The combination with the axle-box and axle-journal, of the spring and the dust-guard pivoted to and supported upon the raised end of said spring, and having a flat body that abuts the inner wall of the box, a concave upper edge that fits the axle-shoulder, and two corner-flanges which are curved inward and extend over said shoulder and bear upon the journal proper, as shown and described.

6. As an improved article of manufacture, the metallic dust-guard having a flat body adapted to lie against the inner wall of the axle-box and having an integral central flange that projects outwardly and bears upon the body of the axle, and two integral corner-flanges which project inward and are curved toward each other and thus bear upon journal proper, to wipe the same, as shown and described.

7. The "hot-box" indicator comprising a box, or holder, having open perforations as described, means for supporting the latter in the axle-box above the oil-space and holding it in contact with a bearing, and a substance confined in such box, which is capable of emitting a strong, easily-perceptible odor when heated as specified.

8. The combination with the axle-bearing, of the improved hot-box indicator consisting of the metal box having perforations in its sides, the filling of hair, and the support for holding it above the oil-space, as shown and described.

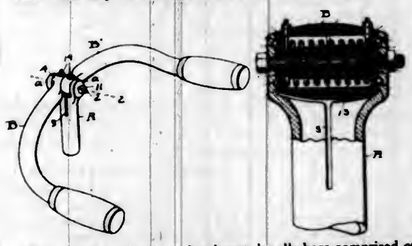
9. The combination with the axle-box, axle-journal, and bearing, of the spring support, the metal box held on the upper end of said spring, and having open perforations from which fumes have free escape, as shown and described.

10. The front guard F, and the box-like holder E, formed as continuation of the former, and the spring rigidly attached to said guard, and serving as a support for parts E, F, as shown and described.

607,875. PROCESS OF PRODUCING MAGNETIC OXID OF IRON. ROBERT H. FRAZ, Orlando, Fla. Filed May 20, 1896. Serial No. 592,349. (No specimens.)

Claim.—The process of converting ferric oxid into magnetic oxid, which consists in heating dry, finely-pulverized ferric oxid to a temperature somewhat below the fusing-point of the oxid, maintaining such temperature a suitable length of time under exclusion of atmospheric air, keeping the oxid in motion while being exposed to such temperature, and then allowing it to cool in its own gases while the atmospheric air is excluded, as herein set forth.

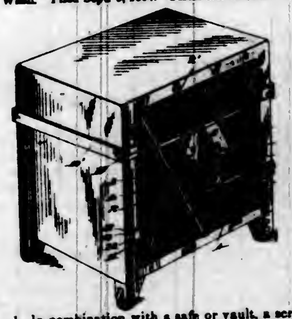
607,876. BICYCLE HANDLE-BAR. EDWARD PHIPPS, Glenville, Ohio. Filed July 19, 1897. Serial No. 645,046. (No model.)



Claim.—1. In a bicycle, a head-post, handle-bars comprised of two parts pivoted by a bolt to said post, the ends of said handle-bars being cup-shaped and depressions in their faces corresponding to depressions in the face of the head-post, balls for said depressions, a coiled spring to keep the ends of said handle bars in locking relation to said head-post by means of said balls, and said spring having enough torsional force to hold said handle bars in raised position while making an adjustment, substantially as described.

2. In a bicycle, a head-post, handle-bars B, B' supported on said post by a bolt, said handle-bars having their supporting ends cup-shaped, a coiled spring having its ends fastened to said cups to hold the handle-bars in raised position while an adjustment is about to be made, depressions in the face of the cups and the post, balls in said depressions to lock said post and handle-bars together when clamped by said bolt, and said spring being arranged to keep said parts in locking relation while an adjustment is being made, substantially as described.

607,877. METALLIC GATE-SCREEN. ANTHONY P. PRICHARD, Tacoma, Wash. Filed Sept. 9, 1897. Serial No. 651,047. (No model.)

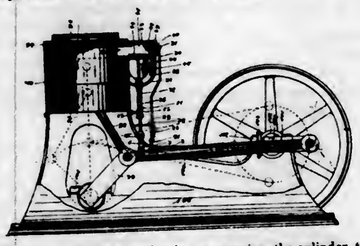


Claim.—1. In combination with a safe or vault, a screen, doors in the screen provided with openings or cut-away portions whereby they are permitted to fit over the knobs or handles of the doors, pivoted slides lying across the openings, said slides being adapted to come in contact with the handles or knobs by a forward movement of the screen and sound an alarm, substantially as described.

2. In a device of the character described, the combination with the door or doors of a vault or safe, of a metallic screen covering said door or doors and the crevices between said doors and the jamb, an insulator therefrom to the doors in the screen permitting the same to be closed over the projections on the safe or vault doors, spring-locks mounted on the doors of the screen, pivoted catches or slides on the doors adapted to make contact with the safe-handles and sound an alarm when the doors are opened or when the screen is moved outwardly, substantially as and for the purpose set forth.

3. The combination with the screen and door or doors of a safe or vault, wires connected thereto and extending through a pipe passing into the safe, said pipe being formed of an inner and outer pipe insulated from each other, branch wires connecting the screen-wire with the inner pipe, a branch wire connecting the wire from the door with the outer pipe, whereby the circuit is completed when connections between the outer and inner pipe are established, substantially as and for the purpose set forth.

607,878. GAS-ENGINE. CHARLES QUANT, Marion, Ohio. Filed Sept. 15, 1894. Serial No. 523,170. (No model.)



Claim.—1. In combination in a gas-engine, the cylinder, the piston, the inlet and exhaust valves, the connections for operating the inlet-valve, the governor for controlling the said connection and the degree and period of movement thereof, said governor being arranged to control the period of movement of the exhaust-valve, said exhaust-valve being held open by said governor connection when the inlet-valve is out of operation and thrown into operation when the inlet-valve is in operation, substantially as described.

2. In combination in a gas-engine, the cylinder and piston, the inlet and exhaust valves, the connection for operating the inlet-valve, the governor for controlling the degree of operation of the inlet-valve and the fuel-pump connected to the inlet-valve, and arranged to secure its working stroke from the opening movement of said valve and in proportions to said movement, said pump operating to force the fuel to the said valve, substantially as described.

3. In combination in a gas-engine, the cylinder and piston, the inlet and exhaust valves, the fuel-pump and the governor for controlling the action of said parts, said pump throwing the pump out of operation when the exhaust-valve is open and the inlet-valve closed and controlling the degree of movement of the pump to correspond with the degree of movement of the inlet-valve, substantially as described.

4. In combination in a gas-engine, the cylinder and piston, the inlet and exhaust valves, the fuel-pump, the connections for operating the inlet and exhaust valves and the pump and the governor mechanism for controlling the action of said parts to hold the exhaust-valve open, the inlet-valve closed and the pump at rest when the engine is up to speed, said governor having connection with both valve mechanisms and with the pump.

5. In combination in a gas-engine, the cylinder the piston, the valve mechanism, the igniter-lever pivoted at 19 and the eccentric with its strap and hand-lever carrying the pivot 19 and the adjustable bearing for said pivot, substantially as described.

6. In combination in a gas-engine, the cylinder the piston, the valve mechanism, the igniter, the igniter-lever, the cam for operating the same and the governor with connections extending to the fulcrum of the lever for releasing the same when the engine is up to speed to allow the said lever to operate without operating the igniter connections, substantially as described

7 In combination in a gas-engine, the cylinder the piston, the valve mechanism including the exhaust-valve, the igniter lever, the bearing on the exhaust-valve connection for holding the igniter-lever in operative position and the governor for controlling the action of the exhaust-valve and thereby the operation of the igniter-lever, substantially as described.

8. In combination in a gas-engine, the cylinder, the piston, the valve mechanism, the rod for operating one of said valves, the lever connected to the valve-rod the bearing 13 on the said lever, the cam for operating the lever, the igniter, the igniter-lever connected to the igniter at one end and pivoted at 19 at the other end and held by the bearing 13 when the valve is closed, substantially as described.

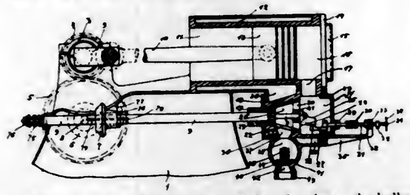
9. In combination in a gas-engine, the cylinder, the piston, the valve mechanism and the vaporizer, the exhaust-passage extending past the vaporizer to heat the same, the hot-air-outlet pipe 62, the air-jacket about the said pipe and the adjustable slides for regulating the quantity of air let into the same, substantially as described.

10. In combination in a gas-engine, the cylinder, the piston, the suction and exhaust valves, the governor-catch 52 for the exhaust-valve the governor connected thereto, the dog 49 on the suction-valve stem, adapted to receive different degrees of movement, the connection between the catch 52 and dog 49 the fuel-pump, the con-

nection between the suction-valve stem and the pump, the igniter, the igniter-lever with means for operating the same, said igniter-lever being arranged to be controlled by the exhaust-valve rod, substantially as described.

11. In combination in a gas-engine, the cylinder the piston, the valve mechanism including the suction-valve, the laterally-movable dog on the stem therefor having a series of bearing-points, the governor for shifting said dog laterally to bring said points into line with the operating-rod thus varying the amount of movement of the valve, and the pump connected with the inlet-valve stem and arranged to force fuel thereto when the valve is opened and in a degree corresponding to the degree of opening of the valve, substantially as described.

607,879. **GAS-ENGINE.** CHARLES QUAST, Bucyrus, Ohio. Filed Jan. 5, 1895. Serial No. 533,915. (No model.)



Claim.—1. In combination, the cylinder, the piston, the hollow conical valve, having its larger end open, and the ignition-chamber communicating with the hollow conical valve, substantially as described.

2. In combination the cylinder, the piston, the rotary main valve, the rotary shaft therefor, the oscillating supplemental valve, the gearing for rotating the rotary shaft, the pitman for operating the oscillating pitman and the governor carried by the gear-wheel and connected to the pitman substantially as described.

3. In combination, the cylinder, the piston, the rotary main valve, the rotary shaft therefor, the oscillating supplemental valve, the crank-shaft, the gears 4 and 5 and the bevel-gears 6 and 7 for rotating the rotary valve-shaft, the pitman for oscillating the supplemental valve and the governor operated by the gearing and connected to the pitman, substantially as described.

4. In combination, the cylinder, the piston, the rotary main valve of hollow conical form, the combustion-chamber 16, the ignition-chamber 71, a mixture-chamber in the hollow valve, a suction chamber, the supplemental valve therein and the exhaust-port, said hollow valve having a port arranged to connect the combustion, ignition and mixing chambers with the suction-chamber in one position and to connect the combustion-chamber, ignition-chamber and mixing-chamber with the exhaust in another position, substantially as described.

5. In combination the cylinder, the piston, the rotary valve of hollow form having an open end, the igniting-chamber at the open end of the valve, the igniter therein, one pole of which is carried by the open end of the valve and the lateral port in the valve leading to the interior thereof, substantially as described.

6. In combination the cylinder, the piston, the valve mechanism, the igniter comprising the moving pole, the yielding pole, the rotary shaft therefor under tension, and the screw for adjusting the yielding pole and the stops for limiting said adjustment.

7. In combination the cylinder, the piston, the valve mechanism, the igniter comprising a pole 24 and an adjustable pole and the positive stops for limiting the position of the adjustable pole in one of two predetermined positions substantially as described.

8. In combination the cylinder, the piston, the valve mechanism, the igniter comprising the pole 24, the pole 28, the shaft carrying the same, the coupling 30, the arm 65 secured thereto and under spring tension, and the adjusting-screw connected to the coupling and having stops substantially as described.

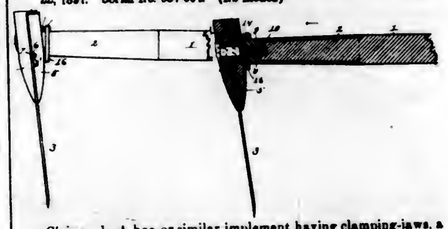
9. In combination the cylinder, the piston, the valve mechanism and the igniter comprising the taper-pole 24 and the pole to engage therewith said poles being adjustable relative to each other to vary the length of contact along the taper surface.

10. In combination the cylinder, the piston, the valve mechanism and the igniter comprising the yielding pole 28, the oscillating shaft carrying the same and means for adjusting the pole longitudinally.

11. In combination, the cylinder, the piston, the valve mechanism and the igniter device comprising the poles adjusted to have longer or shorter contact, the adjusting means and the adjustable lock-nuts for limiting the movement of the adjusting means substantially as described.

12. In combination, the cylinder, the piston, the rotary valve, the rotary stem therefor, the oscillating valve controlling the supply to the rotary valve, the shaft 8, the pitman for operating the oscillating valve, the governor connected to the pitman and arranged to rotate axially of the shaft 8 and the gearing between the shaft 8 and the valve-shaft, substantially as described.

607,880. **HOE.** LAFAYETTE RAUB, Greenfield, Ohio. Filed May 22, 1897. Serial No. 637,664. (No model.)



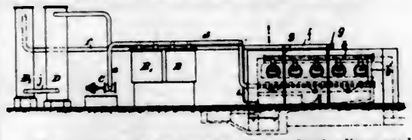
Claim.—1. A hoe or similar implement having clamping-jaws, a transverse groove in the inner face of one of the jaws, a blade having a bent portion to fit in said groove, and means for clamping the jaws upon the blade, substantially as set forth.

2. A hoe or similar implement having clamping-jaws, a transverse groove in the inner face of one of the jaws, a transverse shoulder on the inner face of the other jaw, a blade having a bent portion to fit in said groove and to engage said shoulder, and means for clamping the jaws upon the blade, substantially as set forth.

3. A hoe or similar implement having clamping-jaws, a blade clamped between said jaws, a bolt passing through said jaws and screwing into the handle, a rib or flange around said ferrule, said rib or flange having holes therein, and a pin passing through one of said holes and into a hole in one of said jaws, substantially as set forth.

4. A hoe or similar implement having clamping-jaws, a blade clamped between said jaws, said jaws having square holes, a bolt with square shank passing through said holes, said bolt having a square head which fits in a square recess in one of the jaws, one jaw having a transverse groove in its inner face, the other jaw having a transverse shoulder on its inner face, said blade having a bent portion which engages said groove and shoulder, a knob or projection on the head of one jaw engaging a notch or recess in the head of the other jaw, said bolt being screwed into the ferrule of the handle, substantially as set forth.

607,881. **PROCESS OF MAKING CYANIDS FROM MOLASSES-LYES.** HERMANN REICHARDT and JULIUS BUER, Dessau, Germany. Filed May 24, 1895. Serial No. 550,559. (No specimens.)



Claim.—1. The herein-described process for the direct production of cyanid of ammonium from molasses, or molasses-lyes, and simultaneously destroying the odor of the gases, consisting in distilling the substances under the exclusion of air and maintaining the products of distillation at a temperature of about 1,100° centigrade until cyanid of ammonium is formed.

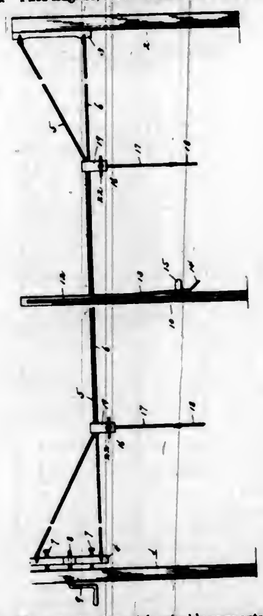
2. The herein-described process for the direct production of cyanid of ammonium from molasses, or molasses-lyes, and simultaneously destroying the odor of the gases, consisting in distilling the substances under the exclusion of air; maintaining the products of distillation at a temperature of about 1,100° centigrade until cyanid of ammonium is formed, and finally separating the cyanid of ammonium from the products of distillation.

607,882. **SPOKE-BRACE.** HENRY C. REID, Wilmurt, N. Y. Filed Aug. 11, 1897. Serial No. 647,918. (No model.)



Claim.—The combination with the hub, spokes and rim of a wheel, of two metal bands surrounding the hub at each side of the spokes, an independent pair of spoke-braces for each spoke arranged on opposite sides and bearing against the side faces of the spoke and provided with bent lower ends forming oppositely-extending feet adapted to engage under the bands on the hub, the said braces being provided at their outer ends with T-shaped heads forming oppositely-projecting ears having openings therein, and bolts passing through the ears of both plates, one in front and the other in rear of the spoke, substantially as and for the purpose specified.

607,883. **PINLESS CLOTHES-LINE.** FRANCIS M. RENFROW, Pearce, Miss. Filed Aug. 23, 1897. Serial No. 649,096. (No model.)



Claim.—1. The combination with suitable supports, of a clothes-line composed of a plurality of strands and line-clamps composed of clamping-blocks and adjustable loops carried by said blocks, and through which the strands are designed to pass, substantially as specified.

2. The combination with suitable supports, of a clothes-line composed of a plurality of strands, a slotted clamping-post through which said strands are passed intermediate of the supports, and clamping mechanism carried by the clamping-post and designed to regulate the relations of the strands within the limits of the slot, substantially as specified.

3. The combination with a pair of posts, of cleats carried by said posts, strands secured at their opposite ends to the opposite extremities of the cleats, a slotted clamping-post through which the strands are designed to be passed, and an adjustable clamping-loop carried by the clamping-post, means for securing said loop in place, and line-clamps carried by the strands, substantially as specified.

4. The combination with a pair of supports, of a clothes-line composed of a plurality of strands, a clamping-post provided with a slot through which the strands are passed, and a movable clamping-loop carried by the clamping-post, substantially as specified.

5. In a line-clamp of the character described, the combination with an elongated loop provided with a handle at one extremity, of a clamping-block provided with a bore designed for the reception of said loop, a transverse recess in the upper end of said clamping-block, and a set-screw upon said block designed to secure the same to the loop, substantially as and for the purpose specified.

6. The combination with a pair of supports, of a clothes-line composed of a plurality of strands secured at their opposite ends to the supports, a clamping-post provided with longitudinal slots at right angles, one of said slots being designed for the reception of the strands and a movable clamping-loop passing through the other of said slots and designed to regulate the relations of the strands, substantially as specified.

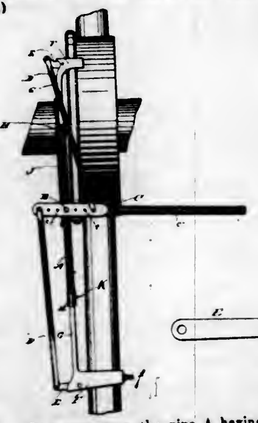
7. In a line-clamp of the character described, the combination with a loop, of a clamping-block provided with a longitudinal bore, and with a transverse recess in its upper end and in line with the eye or open portion of the loop, and means for adjustably securing said loop, substantially as specified.

607,884. **ASPHALTIC PAVEMENT.** CLIFFORD RICHARDSON, New York, N. Y., assignor to The Barber Asphalt Paving Company, same place. Filed Feb. 4, 1897. Serial No. 622,083. (No specimens.) Patented in England Apr. 12, 1897, No. 9,315.

Claim.—1. An artificial-pavement composition containing bitumen and mineral matter, in which the latter contains predetermined proportions of different grades, at least thirty-five per cent. of the mineral matter consisting of particles capable of passing—at least ten per cent. through a two-hundred-mesh sieve, at least ten per cent. through a one-hundred-mesh sieve, and at least ten per cent. through the eighty-mesh sieve, substantially as described.

2. An artificial-pavement composition containing bitumen and mineral matter, in which the latter contains predetermined proportions of different grades, as specified, and the proportions of bitumen exceeds 10.5 per cent., substantially as described.

607,885. **CAR-MOVER.** GEORGE W. RITTENHOUSE and FRANKLIN MILLER, Indianola, Ill. Filed June 23, 1897. Serial No. 641,866. (No model.)



Claim.—In a car-mover, the pipe A having pivot B, pivoted hook J and caps H, in combination with lever C having handle c', pivoted rods D, grips E and cap-heads having the shanks G, all arranged substantially as shown, for the purpose set forth.

607,886. **CARRIAGE-SPRING.** WILLIAM SCHUBERT, Oneida, N. Y. Filed Aug. 3, 1897. Serial No. 646,987. (No model.)

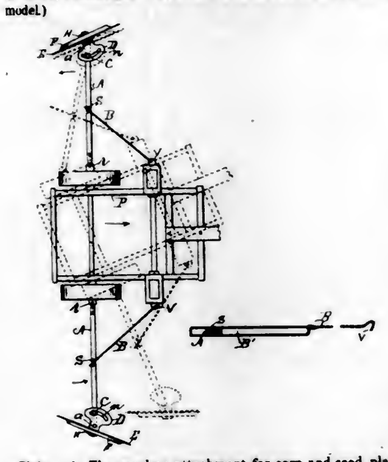


Claim.—1. The combination with the side springs suitably secured to the body of a vehicle, of the lower supporting-leaf having its front end rigidly secured in a socket-piece pivoted to the front bolster, and its rear end adapted to slide loosely in a socket-piece pivoted to the rear bolster, a longitudinal slot provided in said rear end, a bolt secured in the socket-piece and passing through said slot, and a hardened bearing-plate interposed between said spring and the bottom of the socket-piece, substantially as described.

2. The combination with the spring provided with a longitudinal slot in its end, of a socket-piece adapted to receive the same, a bolt secured in said socket-piece and passing through the slot in the said spring, downwardly-projecting ears provided on the sides of said socket-piece, adapted to embrace a head pivotally secured to the vehicle-bolster and secured thereto by a bolt, substantially as described.

3. The combination with the spring provided with a longitudinal slot in its end, of a socket-piece adapted to receive the same, a bolt secured in said socket piece and passing through the slot in the said spring, downwardly-projecting ears provided on the sides of said socket-piece, adapted to embrace a head pivotally secured to the vehicle-bolster and secured thereto by a bolt, and a cut-out portion provided in the front top end of the socket-piece for the purpose set forth.

607,887. **MARKER FOR SEED OR CORN PLANTERS.** CONRAD E. SMITH, Plainfield, Ill. Filed Mar. 28, 1898. Serial No. 675,399. (No model.)



Claim.—1. The marker attachment for corn and seed planters consisting of the combination of the bar A, brace B having the loop B' for receiving said bar, the axle-plate D pivotally attached to the outer end of said bar, and the means for adjusting its angle thereon, the marker-wheel arranged on said axle plate and comprising the metal disk E, wooden disk F and plate G, and the means for detachably connecting said parts to a planter substantially as and for the purpose set forth.

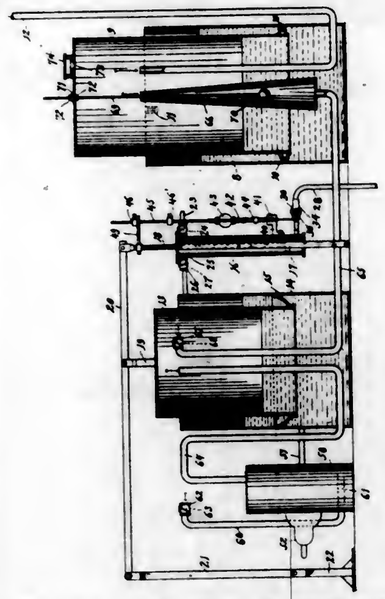
2. In the marker attachment shown and described the combination of the marker-bar A, marker-wheel E, F, G pivotally attached to the outer end of said marker-arm, and the guard-arm L attached to said bar and extending out over said marker-wheel all arranged to operate substantially as and for the purpose set forth.

3. The marker attachment for corn and seed planters consisting of the combination of the bar A, brace B having the loop B' for receiving said bar, the axle-plate D pivotally attached to the outer end of said bar, and the means for adjusting its angle thereon, the marker-wheel arranged on said axle-plate, and the means for detachably connecting said parts to a planter, substantially as and for the purpose set forth.

4. The marker attachment for corn and seed planters consisting of the combination of the bar A, brace B having an elongated loop on its inner end for receiving said bar, the axle-plate pivotally attached to the outer end of said bar, and the means for adjusting its angle thereon, the marker-wheel arranged on the axle of said plate, the guard-arm L, and the means for detachably connecting said parts to a planter, substantially as and for the purpose set forth.

607,888. **CARBURETER.** FRANK A. SMITH, Oconto, Wis. Filed Sept. 27, 1897. Serial No. 653,225. (No model.)

Claim.—1. In an apparatus for making gas, the combination, of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a source of gas-supply, a pipe leading therefrom and into the initial gas-holder, and adapted to permit free flow therethrough into the initial gas-holder on the up movement of said initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas holder to convey gas to the latter, a distributing-pipe leading from the terminal gas-holder, pump mechanism, mechanism between the piston-rod of the pump and the initial gas-holder, whereby the upward movement of the piston operates to produce an up movement of the initial gas-holder, and for causing the initial gas-holder to descend by gravity as the water is discharged beneath the piston and when gas is taken from the distributing gas-holder, the up movement of the initial gas-holder producing a vacuum therein, and a suction from the source of supply into said holder, and the descent of said holder forcing the gas through the pipe leading to the terminal gas-holder.



2. In an apparatus for making gas, the combination, of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a source of gas-supply, a pipe leading therefrom and into the initial gas-holder, and adapted to permit free flow therethrough into the initial gas-holder on the up movement of said initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder to convey gas to the latter, a distributing-pipe leading from the terminal gas-holder, a pump, valve-controlled inlet and outlet pipes leading to and from the pump-cylinder, respectively, mechanism between the projecting end of the piston rod of the pump and the initial gas-holder, whereby, when the piston is raised, said gas-holder is raised therewith, and when the gas-holder descends, the piston is lowered therewith, and mechanism for controlling the valves of the inlet and outlet pipes of the pump, whereby, after the piston of the pump has moved in one direction, a certain distance, the inlet-valve will be closed and the outlet-valve opened, and vice versa, when the piston is moved a certain distance in the opposite direction, the outlet valve will be closed and the inlet-valve opened.

3. In an apparatus for making gas, the combination, of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a source of gas-supply, a pipe leading therefrom and into the initial gas-holder, and adapted to permit free flow therethrough into the initial gas-holder on the up movement of said initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder, a distributing-pipe leading from the terminal gas-holder, a pump, valve-controlled inlet and outlet pipes leading to and from the pump-cylinder, respectively, mechanism between the projecting end of the piston-rod of the pump and the initial gas-holder, whereby, when the piston is raised said gas-holder is raised therewith, and when the gas-holder descends the piston is caused to descend therewith, tumbling-bob mechanism, and mechanism carried by the piston-rod for controlling the tumbling-bob mechanism, whereby, after the piston of the pump has moved in one direction a certain distance, the tumbling-bob will be tilted in one direction so as to close the inlet-valve and open the outlet-valve, and vice versa, when the piston is moved a certain distance in the opposite direction, the tumbling-bob is tilted in a reverse direction to that in which it was first tilted, so as to close the outlet-valve and open the inlet-valve.

4. The combination with the initial and terminal gas-holders of a pump, a contact-arm extending from the projecting end of the piston-rod of the pump, inlet and outlet pipes leading to and from the pump-cylinder, respectively, valves for controlling said pipes, tumbling-bob mechanism, consisting of an arm pivoted to the pump-cylinder, said arm formed or provided with an intersecting cross-arm, a rod connected to one end of the cross-arm, said rod passing freely through the contact-arm of the piston-rod, collars on the rod located, respectively, above and below the contact-arm, rods passing freely through the ends of the cross-arm of the tumbling-bob mechanism, collars mounted on the respective rods above and below the cross-arm, shafts extending into the inlet and outlet pipes, and provided therein, respectively, with opposite cranks to which the valve-rods of the inlet and outlet valves are connected, and crank-arms at the outer ends of said shafts, to which crank arms the ends of the last-referred-to rods are connected.

5. In an apparatus for making gas, the combination of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a source of gas-supply, a pipe leading therefrom and into the initial gas-holder, and adapted to permit free flow therethrough into the initial gas-holder on the up movement of said gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder, a distributing-pipe leading from the terminal gas-holder, pump mechanism, a rocking lever connected to the initial gas-holder, and also pivotally connected at one end to the piston-rod of the pump, and having a pivot connection at its opposite end, connections whereby the upward pressure against the piston causes an up movement of the initial gas-holder, and means for causing the inital gas-holder to descend by gravity as the water is discharged beneath the piston and when gas is taken from the distributing gas-holder, the up movement of the initial gas-holder producing a vacuum therein, and a suction from the source of supply into said holder, and the descent of said holder forcing the gas through the pipe leading to the terminal gas-holder.

6. In an apparatus for making gas, the combination, of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a source of gas-supply, a generator, a pipe connecting the source of supply with the generator, a pipe leading from the generator to the initial gas-holder, and adapted to permit free flow therethrough into the initial gas-holder on the up movement of said initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder, a distributing-pipe leading from the terminal gas-holder, pump mechanism, mechanism between the piston-rod of the pump and the initial gas holder, whereby the upward movement of the piston produces an up movement of the initial gas holder and for causing the initial gas-holder to descend by gravity as the water is discharged beneath the piston and when gas is taken from the distributing gas-holder, the up movement of the initial gas-holder producing a vacuum therein and a suction through the pipe leading from the generator into the initial gas-holder, and the descent of said holder forcing the gas through the pipe leading to the terminal gas-holder.

7. In an apparatus for making gas, the combination of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a source of gas-supply, a generator, a pipe leading from the source of supply to and into the generator, a valve-controlled air-pipe leading from the external atmosphere to the generator, another valve-controlled pipe leading from the generator into the initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder to convey gas to the latter, a distributing-pipe leading from the terminal gas-holder, pump mechanism, mechanism between the piston-rod of the pump and the initial gas-holder for causing an up movement of the initial gas-holder as the piston rises, and means for causing the initial gas-holder to descend by gravity, as the water is discharged beneath the piston and when gas is taken from the distributing gas-holder, the up movement of the initial gas-holder producing a vacuum therein and a suction through the air pipe leading into the generator and through the pipe leading from the generator to the initial gas-holder, and a descent of said holder forcing the gas through the pipe leading to the terminal gas-holder.

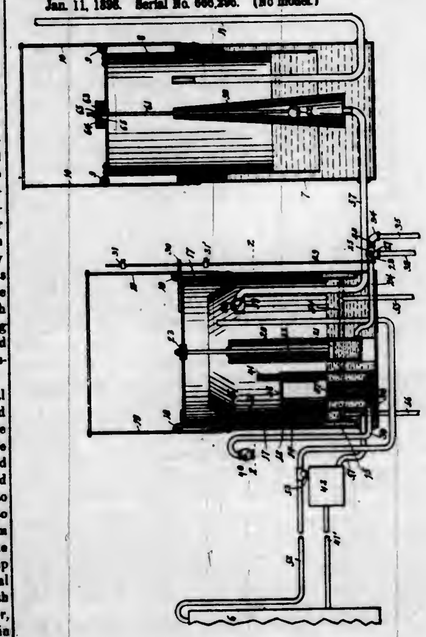
8. In an apparatus for making gas, the combination of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a source of supply, a generator, a pipe leading from the source of supply to the generator, a valve-controlled air-intake pipe leading from the external atmosphere to and into the generator, and formed or provided at its end within the generator with a perforated discharge, a valve-controlled pipe leading from the generator into the initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder, a distributing-pipe leading from the terminal gas-holder, pump mechanism, mechanism between the piston-rod of the pump and the initial gas-holder, for causing an up movement of the initial gas-holder, and means for causing the initial gas-holder to descend by gravity as the water is discharged beneath the piston and when gas is taken from the distributing gas-holder, the up movement of the initial gas-holder producing a vacuum therein and a suction through the air-intake pipe leading to the generator and through the pipe connecting the generator with the initial gas-holder, and the descent of said holder forcing the gas through the pipe leading to the terminal gas-holder.

9. The combination, in an apparatus for making gas of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a fluid-containing storage-tank, a generator, an air-pipe leading to the generator and having an automatically-operated valve, a pipe leading from the storage-tank and extending into the generator, said pipe formed or provided at its end within the generator with a valve-seat, a valve normally against the seat, a pivoted lever provided at one end with a float-ball, and connected at its opposite end to the stem of the valve, a pipe connection between the generator and the initial gas holder, and means for causing an up movement of the initial gas-holder whereby a suction is created through said pipe connection between the generator and initial gas holder.

10. In an apparatus for making gas, the combination, of initial and terminal gas-holders, water-tanks in which said holders are fitted and move, a storage or supply tank, a pipe leading therefrom and communicating with the initial gas-holder, and adapted to permit free flow therethrough into the initial gas-holder on the up movement of said initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder, a distributing-pipe leading from the terminal gas-holder, pump mechanism, mechanism between the piston-rod of the pump and the initial gas-holder, a valve-controlled air-inlet leading to the pump-cylinder, a valve-controlled inlet-pipe leading from the cylinder of the pump to the upper portion of the storage-tank, and means for causing an up movement of the initial gas-holder, and for causing the initial gas holder to descend by gravity as the water is discharged beneath the piston and when gas is taken from the distributing gas-holder, the up movement of the initial gas-holder producing a vacuum therein, and a suction from the source of supply into said holder, and the descent of said holder forcing the gas through the pipe leading to the terminal gas-holder.

11. In an apparatus for making gas, the combination, of a vertically-movable distributing gas-holder, a water-tank in which the same is inverted, a pipe leading from the gas-holder, a pipe extending through the water-tank and up into the gas-holder, said pipe having its discharge end formed into an elongated cone, and a rod extending downwardly from the top of the gas-holder and into the cone, said rod passing through the top of the gas-holder and having its upper end adjustably secured thereto, its end within the cone being formed or provided with a ball-valve.

607,889. **CARBURETER.** FRANK A. SMITH, Oconto, Wis. Filed Jan. 11, 1898. Serial No. 666,296. (No model.)



Claim.—1. In an apparatus for making gas, the combination, of initial and terminal gas-holders, water-tanks into which said holders are inverted and are movable, means for supplying gas to the initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder, a distributing-pipe leading from the terminal gas holder, pump mechanism within the initial water-tank, and having its piston-stem extending up to and connecting directly with the initial gas-holder, means for introducing a pressure agent into the cylinder of the pump mechanism, to cause an up movement of the piston of said pump mechanism by pressure thereagainst, whereby the initial gas-holder is elevated on said up movement of the piston, and means for causing the pressure agent to be discharged from beneath the piston, to permit of the descent of said piston and consequent descent of the initial gas-holder.

2. In an apparatus for making gas, the combination, of initial and terminal gas holders, water-tanks into which said holders are inverted and movable, means for supplying gas to the initial gas-holder, a pipe extending from the initial gas-holder to and into the terminal gas-holder, a distributing-pipe leading from the terminal gas-holder, pump mechanism within the initial water-tank, and having its piston-stem extending up to and connected with the initial gas-holder, a rod for controlling the valve of the actuating medium of the pump-piston, contacts carried by said rod, and an arm projecting from the initial gas-holder, and adapted to engage the stops of the rod on the up and down movements of said holders, whereby a reversal of the valve mechanism is secured.

3. The combination, of a generator, having a suitable discharge and provided interiorly with a chamber formed by a wall of such less dimensions than the generator as to leave a space arouud said inner chamber, the wall forming this chamber secured to and extending upwardly from the bottom of the generator, a pipe located within the generator and arranged around the wall forming the interior chamber, and provided with a discharge opening or openings, and means for conducting air to the pipe for discharge out of the opening or openings thereof.

4. In an apparatus for making gas, the combination, of a water-tank provided with an interior wall, whereby a chamber is formed for the reception of a suitable fluid, a gas-holder inverted into the water-tank and extending into the chamber formed between the two walls of the water-tank, and a packing arranged around and extending from the inner wall of the water-tank and bearing against the gas-holder.

5. In an apparatus for making gas, the combination, of a water-tank and telescoping gas-holder, a storage tank for containing a suitable gas-producing medium, a generator, a pipe extending from the storage-tank, a casing to which said pipe leads, another pipe leading from the casing to the generator, said generator being in communication with the gas-holder, valve mechanism within the casing, and adapted to be automatically opened when the supply of gasolene within the casiug falls below a normal level, and to be automatically closed when the supply of gasolene in the casing is augmented to a certain extent, and a pipe leading from the storage-tank into the water-tank and gas-holder, said pipe provided with a branch pipe leading to the casing for the valve mechanism.

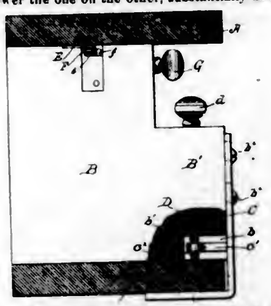
6. In an apparatus for making gas, the combination, of a water-tank and a gas-holder inverted therein, pump mechanism within the water-tank, and having its piston-stem extending to and connected with the gas-holder, means for introducing a pressure agent into the pump mechanism to cause an up movement of the piston of the pump mechanism by a pressure against said piston, whereby the gas-holder is elevated on said up movement of the piston, means for causing the pressure agent to be discharged from beneath the piston to permit of the descent of said piston and consequent descent of the initial gas-holder, a carbureter also located within the water-tank, and adapted for discharging gaseous vapor therefrom into the gas-holder, and means for forcing gas out of the gas-holder and tank, on the down movement of said gas-holder.

607,890. BOOK-SUPPORT. JOEL S. SMITH, New Haven, Conn. Filed Aug. 21, 1897. Serial No. 649,075. (No model.)

Claim.—1. In a book-support, the combination with a frame, having an arm adapted to fit against the book-shelf; of a support adapted to fit against the opposite side of the book-shelf, mounted on said frame and capable of a limited vertical play thereon; and means for holding said support in its adjusted position on said frame; substantially as described.

2. In a book-support, the combination with a frame, having an arm adapted to fit against the book-shelf; of a support adapted to fit against the opposite side of the book-shelf, mounted on said frame and capable of a limited vertical play thereon; and a set-screw engaging said frame and support to lower and raise the one on the other; substantially as described.

3. In a book-support, the combination with a frame, having an arm adapted to fit against the book-shelf and a second arm on the opposite side of the shelf; of a support adapted to fit on said shelf, mounted on said frame and capable of a limited vertical play thereon; and a set-screw engaging with said second arm and said support to raise and lower the one on the other, substantially as described.

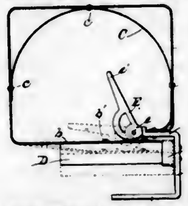


4. In a book-support, the combination with a frame, having an arm adapted to fit against the book-shelf and a second arm on the opposite side of the shelf; of a support mounted on said frame and adapted to fit on said shelf; and a set-screw having a screw connection with said frame so that when properly adjusted thereon the support will be clamped to the shelf; substantially as described.

5. The combination with a shelf having a flanged way; of a book-support provided with an engaging flange; a latch pivoted in said support; and means for swinging said latch on its pivot to hold said engaging flange in engagement with said flanged way, substantially as described.

6. The combination with a book-shelf having a flanged way: of a book-support provided with an engaging flange; a latch pivoted in said support; and a set-screw for swinging said latch on its pivot to hold said engaging flange in engagement with said flanged way; substantially as described.

607,891. SHEET-METAL BOOK-SUPPORT. JOEL S. SMITH, New Haven, Conn. Filed Aug. 21, 1897. Serial No. 649,076. (No model.)



Claim.—1. A book-support formed of a narrow band or strip of sheet metal bent about on itself so that the ends thereof will be in proximity to each other and the lateral edges of the band presented to the books, the width of the support being as great as the width of the band, together with connection between the ends of the band or strip and means for holding said support in position on said shelf, substantially as described.

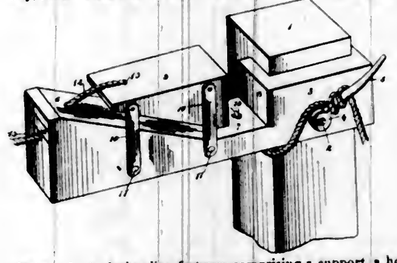
2. A book-support formed of a narrow band or strip of sheet metal bent about on itself so that the ends thereof will be in proximity to each other and the lateral edges of the band presented to the books, the width of the support being as great as the width of the band, and the ends of the band having an adjustable connection with each other; together with means for adjusting said connection and holding the support in position on the shelf substantially as described.

3. The combination with a book-support formed of a band of sheet metal; of a frame to which one end of said support is rigidly secured; and means for raising and lowering the other end of said support in relation to said frame; substantially as described.

4. The combination with a book-support formed of a band of sheet metal; of a frame having an arm adapted to fit against the book-shelf, one end of the support being connected to the frame; a block to which the other end of the support is attached, adapted to fit against the opposite side of the shelf; and means for raising and lowering said block; substantially as described.

5. The combination with a book-support formed of a band of sheet metal; of a frame to which one end of said book-support is secured and having an arm adapted to fit against the book-shelf; a block to which the other end of said support is secured, and which is adapted to fit against the other side of the book-shelf; and a cam pivoted to said frame and adapted to lower said block against the resistance of said support; substantially as described.

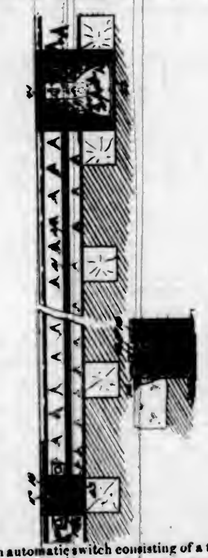
607,892. CLOTHES-LINE TIGHTENER. JOHN T. SMITH, Norway, Iowa. Filed Feb. 19, 1897. Serial No. 624,098. (No model.)



Claim.—1. A clothes-line fastener comprising a support, a horizontal arm secured to the support by a bolt, a securing-nut upon the end of the bolt, an operating-handle upon the nut for moving the same, said operating-handle constituting a reel upon which the free end of the rope can be wound, an inclined surface upon the arm, an inclined block pivoted to the arm, and a rope secured at one end to a supporting object, its opposite end passing through the arm and wedge, extending beneath the inclined surface of the wedge and outward to the rear wall of the same and thence downward through the arm, the parts operating substantially as set forth.

2. A clothes-line fastener comprising a support, a horizontal arm secured thereto, the upper edge of said horizontal arm formed with an inclined surface, a block having its under edge inclined, straps pivoted at their upper ends to each side of the block and at their lower ends to the horizontal arm, and a clothes-line attached at one end to a securing object, its opposite end passing through a perforation in the forward end of the horizontal arm to the top of the block downward to its inclined surface and passing along said surface, through a perforation in the rear wall of the block and thence downward through a perforation in the horizontal arm, the parts operating substantially as set forth.

607,893. AUTOMATIC SWITCH-OPERATING MACHINE. JOHN H. SPANGLER, Pittsburg, Pa. Filed Sept. 25, 1897. Serial No. 653,002. (No model.)

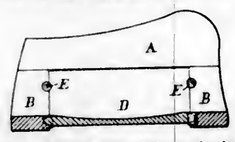


Claim.—1. An automatic switch consisting of a trip-pin journaled in a casing at the side of the main rail, a pulley mounted upon said pin, a casing mounted at the side of the track opposite the switch-tongue, a locking-wheel secured to a shaft journaled in supports within said casing, a ratchet-wheel secured to one end of said shaft, a pawl engaging said ratchet-wheel, a spring for returning said pawl in its normal position, connections between said pawl and pulley, a yoke mounted in said supports and engaging the locking-wheel, connections between said yoke and switch-tongue and means carried by the car for operating the switch, substantially as shown and described.

2. In an automatic switch, the combination with the switch-tongue, a rod connected to said switch-tongue, a casing arranged opposite the switch-tongue, a locking-wheel mounted upon a shaft journaled in supports in said casing, a pawl-and-ratchet mechanism for operating said locking-wheel, a trip-pin, a pulley mounted on said trip-pin connections between said trip-pin and the pawl, means carried by the car whereby said trip is operated to operate the switch-tongue, substantially as shown and described.

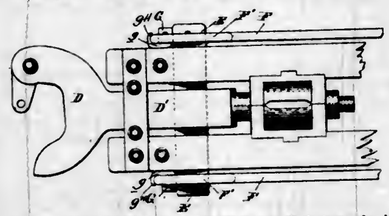
3. A switch-operating mechanism consisting of a locking-wheel, pawl-and-ratchet mechanism for operating said locking-wheel, intermediate connections between said locking-wheel and the switch-tongue, a trip-pin, a pulley mounted upon said trip-pin, connections between said pulley and pawl-and-ratchet mechanism, and means carried by the car whereby the trip-pin is operated to operate the switch-tongue and means whereby said locking-wheel may be operated without operating the switch-tongue, substantially as shown and described.

607,894. CHAIR-SEAT. WILLIAM F. SPANGLER, Mount Union, Pa. Filed Jan. 18, 1898. Serial No. 667,022. (No model.)



Claim.—The combination in a chair-seat having a removable sectional frame adapted to receive a bottom or filling, of a tightening or fastening device consisting of a tongue upon opposite edges of the bottom or filling, a groove upon opposite inside edges of the frame adapted to receive said tongue, and pins or pegs passing vertically through the grooved edges of the frame and the tongued edges of the bottom or filling and retaining the one in position against the other substantially as shown and described.

607,895. SLACK-ADJUSTER. ANDREW G. STEINBRENNER, St. Louis, Mo., assignor to the Western Railway Equipment Company, same place. Filed Dec. 9, 1897. Serial No. 661,276. (No model.)



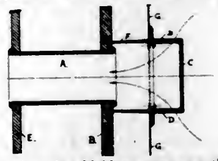
Claim.—1. The combination with the draft-timbers, the looped ends of the draft-rods, and the cross-keys fitting in said looped ends, and slack-adjusting blocks comprising body portions G, interposed between said cross-key and the outer ends of the draft-rod loops, wear-shoes *g* on said lugs or blocks, which are interposed between the loops of the draft-rods and the draft-timbers, and lugs *g''* projecting from the front edges of the wear-shoes, which lugs are adapted to be bent around the ends of the draft-rod loops for securing the adjusting-blocks in position, substantially as described.

2. The herein-described slack-adjusting block, the same comprising the body portion, a flange forming a wear-shoe, the inner corners of said flange being rounded, and a lug *g''* projecting from the front edge of said flange, substantially as described.

607,896. SHIELD FOR AIR-TUBES IN FIRE-BOXES FOR STEAM-BOILERS. GEORGE W. STEVENS, Elyria, Ohio. Filed Jan. 29, 1898. Serial No. 668,381. (No model.)

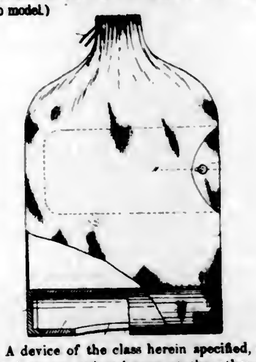
Claim.—1. The combination of the air-tubes used in fire-boxes of steam-boilers with a shield or cover over the outer ends, supported by one or more arms attached to said fire-box or boiler, and holding said shield or cover any desired distance from the outer end of the air-tubes whereby the free admission of air will not be restricted and the direct rays of light emitted through said tubes intercepted, all as above set forth and substantially as described.

2. The combination of air-tubes in a fire-box to a steam-boiler with a shield or cover supported by one or more arms, any suitable distance from the outer ends of said air-tubes whereby the free admission of air into and through said air-tubes will not be restricted and the direct rays of light emitted through said air-tubes from the fire-box be intercepted, all as above set forth and substantially as described.



3. The combination of a shield or cover over the outer ends of the air-tubes of a fire-box to a steam-boiler with said air-tubes, said shield or cover of sufficient size and supported at any suitable distance from the outer ends of said air-tubes whereby the free admission of air will not be restricted, and the direct rays of light from the fire-box emitted through said air-tubes be intercepted, all as above set forth and substantially as described.

607,897. DEVICE FOR HOLDING SEWING MATERIALS, &c. FRANK TASHIRO, New York, N. Y. Filed Dec. 17, 1897. Serial No. 662,299. (No model.)



Claim.—1. A device of the class herein specified, comprising a flexible bag closed at one end and open at the other, a transverse case connected with the closed end of said bag and provided with a slot or opening in one side thereof, said slot or opening being adapted to be closed by the bag when the latter is rolled around said case, substantially as shown and described.

2. A device of the kind specified, comprising a flexible bag having a slotted pocket at its lower end, and a slotted case in said pocket adapted to be closed by the bag when rolled, substantially as set forth.

3. A device of the kind specified, comprising a flexible bag having a slotted pocket at its lower end, said pocket having open and closed ends, and a slotted case in said pocket provided at its end adjacent the open end of the pocket with a removable cover, substantially as set forth.

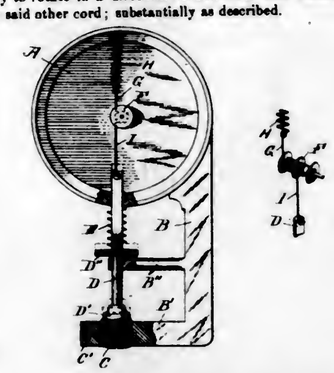
4. A device of the kind specified, comprising a flexible bag having a slotted case at its lower end, and a pad or cushion on one side adapted to close the slot in said case when the bag is rolled on the case, substantially as set forth.

5. A device of the kind specified, comprising a flexible bag having a pad or cushion at one side, a transverse pocket in the rear of said pad or cushion opening through a slit in the side of the bag, a flap for closing said pocket, and a slotted case at the lower end of the bag adapted to be closed by said pad when the bag is rolled on the case, substantially as set forth.

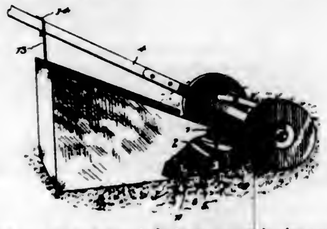
607,898. MICROMETER-GAGE. VERNON C. TODD, St. Louis, Mo., assignor of one-half to Edwin H. Ehrler, same place. Filed Oct. 27, 1897. Serial No. 656,524. (No model.)

Claim.—1. In a micrometer gage, the combination with a fixed member, of a movable member mounted in guides in said fixed member, a spring E for forcing the measuring end of the movable member against the measuring end of the fixed member, a spindle, an indicating device operated by said spindle, a cord or wire I attached to said movable member and wound around said spindle, a cord or wire G likewise wound around said spindle, and a spring H to which the cord or wire G is connected, substantially as described.

2. In a micrometer-gage, the combination with an adjustable member, comprising a screw plug, a set-screw for locking said screw-plug in position, a spring pressed movable member for cooperating with said screw-plug, an indicator, means for operating said indicator, said means comprising a spring, a double pulley, a cord or wire connecting said spring and one section of said pulley, said cord being coiled about said pulley, and a cord or wire connecting the other section of said pulley with the movable member, said cord or wire being so coiled about the pulley that, when pulled upon, it causes the pulley to rotate in a direction reverse from that caused by a pull upon said other cord; substantially as described.



607,899. GRASS-RECEPTACLE FOR LAWN-MOWERS. LA FAYETTE WILDERMUTH, Columbus, Ohio. Filed May 15, 1897. Serial No. 636,606. (No model.)

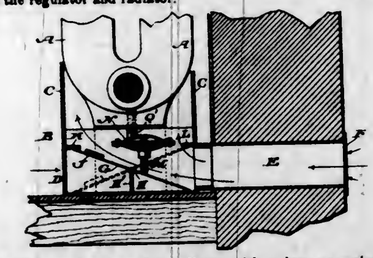


Claim.—A grass-receptacle for lawn-mowers having a wire frame comprising upper and lower looped members having forwardly-extending arms intersecting in the plane of the lower member, and provided with interlocking eyes 5 and 6, the arms of the upper member being extended beyond said interlocking eyes to form inturned engaging studs, and yielding means connecting the sides of the frame at the point of intersection of said loop-arms, said means consisting of oppositely extending loops 10 having their closed extremities engaged with the eyes 5 of the upper frame member, and having their open ends provided with outwardly-turned hooks 12, and an expansion-spring coiled upon the overlapping portions of said loops and engaged at intermediate points by the hooks, which extend between the coils of the spring at points set in from the extremities of the latter, to prevent disengagement of the hooks by the lateral contraction of the frame, substantially as specified.

607,900. AUTOMATIC DAMPER-REGULATOR. CHARLES F. WOOD, Wayne, Pa., assignor to The American Engineering Company, of Virginia. Filed Mar. 5, 1896. Renewed June 9, 1898. Serial No. 683,037. (No model.)

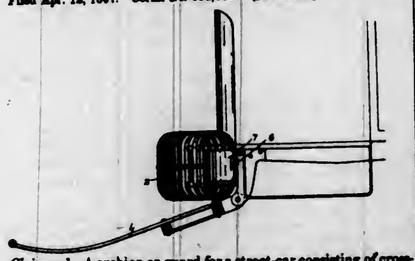
Claim.—1. A radiator having a casing or conduit located adjacent thereto and opening into an apartment, a passage leading from the exterior air into said conduit, a damper located in said conduit and adapted to control said opening and said passage, a chamber having a diaphragm therein, and in communication with the interior of said radiator, a plunger attached to said diaphragm, and adapted to actuate said damper, and stops to limit the movement of the latter.

2. In combination with a radiator, a casing or base located adjacent the lower portion of the latter, a conduit leading thereto from the exterior air, and an opening into said casing from the apartment in which the radiator is located, a counterbalanced damper pivotally mounted in said casing and adapted to control said conduit and said opening, an upright partition in the latter extending from the pivotal point of said damper to the base of said casing, means for limiting the movement of the damper, a regulator mounted adjacent the latter and provided with a plunger having one end adapted to actuate said damper, the other end of said plunger being connected with the diaphragm connected with the radiator, and connections intermediate the regulator and radiator.



3. The combination of a radiator, with a base or casing, an opening in one side of said casing to admit air from the apartment in which the radiator is located, a passage leading from the exterior into said casing, a balanced damper within said casing intermediate said passage and opening and adapted to control the ingress of the exterior air, and means for automatically operating the same by the variations of pressure of the heating medium in the radiator or its connections.

607,901. CAR-FENDER. ALBERT C. WOODWORTH, Providence, R. I., assignor to the Consolidated Car Fender Company, same place. Filed Apr. 12, 1897. Serial No. 631,667. (No model.)



Claim.—1. A cushion or guard for a street-car consisting of cross-bars for engaging the end of the car, a series of resilient strips having their ends secured to said bars, said strips having a substantially straight front portion, and having return curves at the top and bottom, substantially as described.

2. A cushion or guard for a street-car consisting of a series of resilient strips having return curves at the top and bottom and secured to cross-bars, substantially as described.

3. A cushion or guard for a street-car consisting of a series of resilient strips having return curves at the top and bottom and secured to cross-bars, and bars connecting said cross-bars, substantially as described.

4. A cushion or guard for a street-car consisting of a series of resilient strips having return curves at the top and bottom and secured to cross-bars, said bars being curved to conform to the ends of the car, substantially as described.

607,902. VALVE-MOVEMENT FOR PUMPS. CHARLES C. WORTHINGTON, Irvington, N. Y. Filed Feb. 16, 1895. Serial No. 538,633. (No model.)

Brief.—A pump-valve is closed by a fluid pressure applied thereto against and in excess of the pumping pressure or pressure tending to keep the valve open, said fluid-pressure being controlled by a valve mechanism which is operated by a constantly-moving part of the pump. A force and a suction valve are both closed by pressure within a pressure-chamber applicable at the same time to both, the pressure in said chamber being controlled by a valve mechanism, as above.

Claim.—1. The combination with a pump-valve, of means for applying and controlling a pressure applied to said valve against and in excess of the pumping pressure, said means including a column of fluid, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to secure the closing of the valve as the plunger reaches the end of its stroke, substantially as described.

2. The combination with a pump-valve, of a column of fluid having a pressure in excess of the pumping pressure applied to said valve against the pumping pressure, a valve mechanism controlling said valve mechanism, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to apply the pressure of said fluid to the valve as the plunger reaches the end of its stroke and to release the pressure to permit the opening of the valve, substantially as described.



3. The combination with a valve between the plunger and force-main of a pump, of means for applying and controlling a pressure applied to said valve against and in excess of the pumping pressure, said means including a column of fluid, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to secure the closing of the valve as the plunger reaches the end of its stroke, substantially as described.

4. The combination with a valve between the plunger and force-main of a pump, of a column of fluid having a pressure in excess of the pumping pressure applied to said valve against the pumping pressure, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to apply the pressure of said fluid to the valve as the plunger reaches the end of its stroke and to release the pressure to permit the opening of the valve, substantially as described.

5. The combination with a pump-valve of a duplex pump, of means for applying and controlling a pressure applied to said valve against and in excess of the pumping pressure, said means including a column of fluid, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to secure the closing of the valve as the plunger reaches the end of its stroke, substantially as described.

6. The combination with a pump-valve of a duplex pump, of a column of fluid having a pressure in excess of the pumping pressure applied to said valve against the pumping pressure, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to apply the pressure of said fluid to the valve for closing the valve and to release the pressure to permit the opening of the valve, substantially as described.

7. The combination with a valve between the plunger and force-main of a duplex pump, of means for applying and controlling a pressure applied to said valve against and in excess of the pumping pressure, said means including a column of fluid, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to secure the closing of the valve as the plunger reaches the end of its stroke, substantially as described.

8. The combination with a valve between the plunger and force-main of a duplex pump, of a column of fluid having a pressure in excess of the pumping pressure applied to said valve against the pumping pressure, a valve mechanism controlling said fluid, and connec-

tions between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to apply the pressure of said fluid for closing the valve and to release the pressure to permit the opening of the valve, substantially as described.

9. The combination with the force valves of a duplex pump, of means for applying and controlling a pressure applied to said valves against and in excess of the pumping pressure, said means including a column of fluid, valve mechanisms controlling said fluid, and connections between said valve mechanisms and moving parts of the pump, whereby said valve mechanisms are actuated to secure the closing of the valves as the plungers reach the end of their strokes, substantially as described.

10. The combination with the force-valves of a duplex pump, of columns of fluid having a pressure in excess of the pumping pressure applied to said valves against the pumping pressure, valve mechanisms controlling said fluid, and connections between said valve mechanisms and moving parts of the pump, whereby said mechanisms are actuated to apply the pressure of said fluid to the valves for closing the valves and to release the pressure to permit the opening of the valves, substantially as described.

11. The combination with the force and suction valves of a duplex pump, of means for applying and controlling a pressure applied to said valves against and in excess of the pumping pressure, said means including a column of fluid, valve mechanisms controlling said fluid, and connections between said valve mechanisms and moving parts of the pump, whereby said valve mechanisms are actuated to control said fluid to secure the closing of the valves against the pumping pressure as the plungers reach the end of their strokes, substantially as described.

12. The combination with the force and suction valves of a duplex pump, of columns of fluid having a pressure in excess of the pumping pressure, applied to said valves against the pumping pressure, valve mechanisms controlling said fluid, and connections between said valve mechanisms and moving parts of the pump, whereby said mechanisms are actuated to apply the pressure of said fluid to the valves for closing the valves and to release the pressure to permit the opening of the valves, substantially as described.

13. The combination with the motor-piston and plunger of a direct-acting pump, of a valve between the plunger and force-main and means for applying and controlling a pressure applied to said valve against and in excess of the pumping pressure, said means including a column of fluid, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to secure the closing of the valve against the pumping pressure as the plunger reaches the end of its stroke, substantially as described.

14. The combination with the motor-piston and plunger of a direct-acting pump, of a valve between the plunger and force-main, a column of fluid having a pressure in excess of the pumping pressure applied to said valve against the pumping pressure, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to apply the pressure of said fluid to the valve for closing the valve against the pumping pressure as the plunger reaches the end of its stroke and to release said pressure to permit the opening of the valve, substantially as described.

15. The combination with the cushioned motor-piston and plunger of a direct-acting pump, of a valve between the plunger and force-main, and means for applying and controlling a pressure applied to said valve against and in excess of the pumping pressure, said means including a column of fluid, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to secure the closing of the valve against the pumping pressure as the plunger reaches the end of its stroke, substantially as described.

16. The combination with the cushioned motor-piston and plunger of a direct-acting pump, of a valve between the plunger and force-main, a column of fluid having a pressure in excess of the pumping pressure applied to said valve against the pumping pressure, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to apply the pressure of said fluid to the valve for closing the valve against the pumping pressure as the plunger reaches the end of its stroke and to release said pressure to permit the opening of the valve, substantially as described.

17. The combination with the motor-pistons and plungers of a direct acting duplex pump, of valves between the plungers and force-main, and means for applying and controlling a pressure applied to said valves against and in excess of the pumping pressure, said means including a column of fluid, valve mechanisms controlling said fluid, and connections between said valve mechanisms and moving parts of the pump, whereby said mechanisms are actuated to secure the closing of the valves against the pumping pressure as the plungers reach the end of their strokes, substantially as described.

18. The combination with the motor-pistons and plungers of a direct-acting duplex pump, of valves between the plungers and force-mains, columns of fluid having a pressure in excess of the pumping pressure applied to said valves against the pumping pressure, valve mechanisms controlling said fluid, and connections between said valve mechanisms and moving parts of the pump, whereby said mechanisms are actuated to apply the pressure of said fluid to the valves for closing the valves against the pumping pressure as the plungers reach the end of their stroke and to release said pressure to permit the opening of the valves, substantially as described.

19. The combination with the cushioned motor-pistons and plungers of a direct-acting duplex pump, of valves between the plungers and force-main and means for applying and controlling a pressure applied to said valves against and in excess of the pumping pressure, said means including a column of fluid, valve mechanisms controlling said fluid, and connections between said valve mechanisms and moving parts of the pump, whereby said mechanisms are actuated to secure the closing of the valves against the pumping pressure as the plungers reach the end of their strokes, substantially as described.

20. The combination with the motor-cylinder, its main and cut-off valves and the piston and plunger of a direct-acting pump, of a valve between the plunger and force-main, and means for applying and controlling a pressure applied to said valve against and in excess of the pumping pressure, said means including a column of fluid, a valve mechanism controlling said fluid, and connections between said valve mechanism and a moving part of the pump, whereby said mechanism is actuated to secure the closing of the valve against the pumping pressure as the plunger reaches the end of its stroke, substantially as described.

21. The combination with the motor-cylinder, the main and cut-off valves, and the pistons and plungers of a direct-acting duplex pump, of valves between the plungers and force-main, and means for applying and controlling a pressure applied to said valves against and in excess of the pumping pressure, said means including a column of fluid, valve mechanisms controlling said fluid, and connections between said valve mechanisms and moving parts of the pump, whereby said mechanisms are actuated to secure the closing of the valves against the pumping pressure as the plungers reach the end of their strokes, substantially as described.

22. The combination of independently-actuated lifting or similar pump-valves controlling the suction and delivery ports, a pressure-chamber, and a supplemental valve mechanism by which fluid is alternately admitted to and discharged from the pressure-chamber in such a manner as to accelerate the closing of the suction and delivery valves, substantially as described.

23. The combination of a suction and a delivery pump-valve, an actuating-plunger or its equivalent connected to each of said valves, a pressure-chamber, a mechanically-operated supplemental valve and passages by which fluid is alternately admitted to and discharged from the pressure-chamber in such manner as to accelerate the closing of the suction and delivery valves, substantially as described.

24. The combination of lifting or similar pump-valves controlling the suction and delivery ports, a separate actuating piston or plunger formed by the extension of the valve-stem attached to each of said valves, an inclosed body of fluid which exerts a variable pressure upon each of said pistons or plungers, and mechanism operatively connected with the main pump and adapted to vary the fluid-pressure applied to said actuating piston or plunger, whereby the closing of the pump-valves is accelerated, substantially as described.

25. The combination of a pump-valve arranged to be opened as described by the action of the driven fluid, a pressure-chamber, a plunger or equivalent device acting upon said valve and subjected to the pressure of the fluid in said chamber, a supplemental valve mechanism and passages by which the pressure-chamber is put in communication alternately with the bodies of the fluid on the suction and delivery sides of the pump-chamber respectively in such a manner as to accelerate the closing of the pump-valve without interfering with the opening thereof by the driven fluid, substantially as described.

26. The combination of suction and delivery pump-valves, a pressure chamber, independent plungers or their equivalents acting upon the suction and delivery valves respectively and subjected to the pressure of the fluid in the chamber, and a supplemental valve mechanism operated by the pump mechanism by which the fluid-pressure in the said chamber is varied so as to accelerate the closing of the suction and delivery valves without interfering with the opening of the same, substantially as described.

27. The combination of suction and delivery pump-valves, a pressure chamber, independent plungers or equivalent actuating devices acting upon the suction and delivery valves respectively and subjected to the pressure of the fluid in the said chamber, a mechanically-operated supplemental valve and passages by which the pressure-chamber is put in communication with the body of the fluid on the suction and discharge sides of the pump-valves alternately so as to accelerate the closing of the latter, substantially as described.

28. The combination of a suction and a delivery pump-valve, an independent actuating-plunger or its equivalent connected to each of said valves, an inclosed chamber containing a body of fluid which exerts a variable pressure upon each of said plungers or equivalents, and a supplemental valve mechanism whereby the said pressure is varied so as to accelerate the closing movements of the suction and delivery valves in the manner described.

29. The combination of a suction and a delivery pump-valve, both of the lifting or similar type, an inclosed chamber between the said valves, independent pistons or plungers formed by extensions of the valve-stems entering the said chamber, and a supplemental valve mechanism by which the fluid-pressure in the said chamber is so varied as to accelerate the closing of the said suction and delivery valves, substantially as described.

30. The combination of a pump-valve arranged to be opened as described by the pressure of the fluid upon its under or face side, a pressure-chamber, a plunger or equivalent device acting upon said pump-valve and acted upon by the fluid in said pressure-chamber, and a mechanically-operated supplemental valve mechanism and passages by which fluid is alternately admitted to and discharged from the pressure-chamber and the pressure therein varied so as to accelerate the closing of said pump-valve without interfering with its opening movement, substantially as described.

31. The combination with suction and delivery valves of a double-acting pump, of pressure-chambers and pistons therein acting upon said valves, a mechanically-operated supplemental valve mechanism, and pipes connecting said valve mechanism with each of said chambers and with the suction and delivery sides of the pump, said valve mechanism being arranged to vary the pressure in said chambers by alternately connecting the chambers with the suction and force sides of the pump to accelerate the closing of the pump-valves, substantially as described.

32. The combination with pipes 24, 25, 26, 27, of a valve mechanism having crossover ports 6, 7, connecting said pipes in pairs, admission-port 5, and valve *f* controlling said ports, substantially as described.

607,903. GAS-ENGINE. WILLIAM J. WRIGHT, Pittsburg, Pa. Filed Apr. 28, 1897. Serial No. 633,951. (No model.)



Claim.—1. The combination, with the working cylinder and piston, the working agent supply and exploded mixture regular exhaust, of a reversing mechanism comprising means for exploding the charge on the inward movement of the piston, and exhausting the exploded mixture as the piston reaches the limit of its stroke, all being arranged substantially as shown whereby, when the piston has been sufficiently slowed up, such premature explosion will serve to drive the piston back and reverse the motion of the crank-shaft.

2. In a gas-engine, having the usual exhaust and supplemental exhausting valves in the combustion-chamber, shifting devices connected with the supplemental valves, including a member adapted to be projected in the path of the full back stroke of the piston, igniting means, adapted to ignite at different points of the combustion-chamber, and valve devices for such igniting means, of lever mechanism connecting such valve devices and the shifting devices, said lever mechanism including a hand-operated member for setting the lever mechanism, igniting-valve and piston-engaging member in one direction and members adapted to be connected with and operated by the reverse rotation of the drive-shaft to automatically reverse the movement of the several lever mechanisms after the same have been set by hand, all being arranged substantially as shown and for the purposes described.

3. The combination with the cylinder, the piston, the crank-shaft and the exhausting means at the rear end of the cylinder, of a shifting device having a member projected into the end of the cylinder, means for moving such member in position to be engaged by the piston before it reaches the limit of its rear stroke, and igniting-tubes disposed at a point near the front end of the combustion-chamber, having a cut-off valve and means for shifting such valve at a predetermined time, automatically operated by the movement of the crank-shaft, all being arranged substantially as shown and described.

4. In a gas-engine, having a reciprocating piston and supplemental exhaust-valves, of a duplex igniting means, consisting of two igniting-tubes, a cut-off valve mechanism common to both, but arranged when shifted in alternate directions to alternately place such tubes in communication with the cylinder, shifting means connected to the valves and the igniting-tube cut-off, a lever mechanism, connected to the said cut-off valve having a trip device adapted to be automatically moved into a piston engagement with a part of the crank-shaft, said lever devices being hand operated to one position and automatically operated by the movement of the said trip device to another position substantially as shown and for the purposes specified.

5. In a gas-engine, the combination with the cylinder, the igniting devices and the piston-shaft, said cylinder having a pair of exhaust-ports, said ports having reversely-arranged valve-seats, one of such ports being of a larger diameter than the other, of the oppositely-movable valves for engaging the ports the larger valve being movable outward, means for holding such valves to their seats, and a connecting mechanism joining such valves, whereby as the larger valve is moved outward by an abnormal compression of the exploded mixture or by direct piston action, the smaller will be moved inward to open its ports, all being arranged substantially as shown and described.

6. The combination with the cylinder, the exhaust ports and valves, the piston and the shaft, of a double set of igniting devices, one tube of which is in advance of the other and made of a greater height, whereby to retain a greater heat volume, a cut-off for alternately bringing either tube into communication with the combustion-chamber and shifting devices for positively opening the exhaust-valves and for setting either of the igniting devices into communication with the combustion-chamber, as specified.

7. A reversing mechanism for gas-engines, comprising means for positively exhausting the explosion-chamber, and for exploding the new mixture before the piston reaches its full rear stroke, and connections operated by the crank-shaft for effecting a continuation of the reverse movement substantially in the manner and for the purposes described.

8. The combination with a gas-engine having the usual cylinder, piston, air and gas inlets, and means for exhausting the exploded mixture, and a reversing mechanism, comprising means for exploding the mixture on the inward motion of the piston, before its crank-axle reaches its vertical axis, and means for exhausting the prematurely-exploded mixture as it is compressed by the continuation of the impeded forward stroke of the piston, as specified.

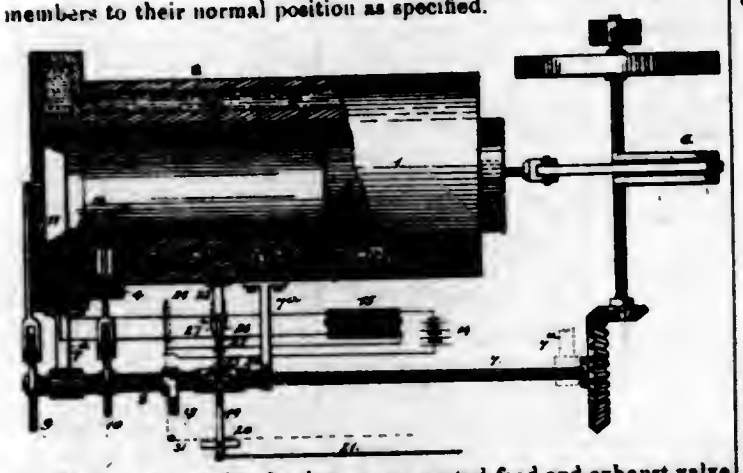
9. A gas-engine provided with shifting devices for setting the exhaust-valves and the igniting devices, whereby to effect a reverse movement of the piston before it reaches the limit of its forward stroke, the said shifting devices including means for holding such valves at intermediate points whereby to close off the igniting devices from the cylinder and maintain a charge within the cylinder, substantially as shown and as for the purposes described.

607,904. GAS-ENGINE. WILLIAM J. WRIGHT, Pittsburg, Pa. Filed May 20, 1897. Serial No. 637,450. (No model.)

Claim.—1. A gas-engine, having cam-operated shifting-valves for feeding and exhausting the combustion-chamber, means for imparting an additional rotary movement to the cam, a contact member movable with the cam, and an electric igniting device rotated by the contact member, all being arranged substantially as shown, whereby the cams and contact member will rotate in advance of their normal action to cause a premature action of their working agent, substantially as shown and described.

2. The combination with an electric igniting device, having cam-operated feed and exhaust devices, and a circuit-closing member, of the drive-shaft for rotating such devices, the cams and contact mem-

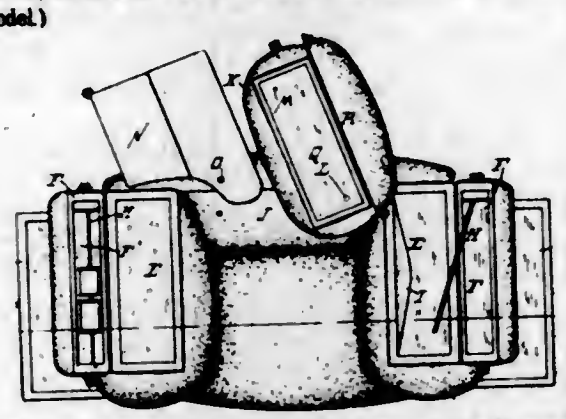
ber held thereon to rotate therewith, said cams and contact member having a partial independent rotation on such shaft, hand-operated means for imparting a rotary movement to the said cam and contact member, in one direction, and automatic means for returning such members to their normal position as specified.



3. In a gas-engine, having cam-operated feed and exhaust valve devices, a shaft and igniting devices operated from the crank-shaft, a sleeve held on such shaft to turn therewith and having a partial independent rotation thereon, cams secured to the sleeve to operate the feed and exhaust valves and the iguiting devices, a clutch member secured to the sleeve to turn same on the shaft when moved endwise on the sleeve, and means governed by the reverse movement of the engine to set the clutch to its central or normal position, as specified.

4. In a gas-engine, the combination with the cylinder, the feed and exhaust valves, the electric igniting devices, and the counter-shaft, said shaft having a diagonal radial groove, the sleeve held therein having a longitudinal slot, the cams and the electric contact member secured to the sleeve, a clutch member movable on the sleeve having pendent shoes to engage the sleeve-slot and the shaft-groove, said clutch member having central and end annular grooves, and diagonal grooves connecting the central and end annular grooves, and the spring-set trip member held to engage the annular and diagonal grooves, all being arranged substantially as shown and described.

607,905. COMBINED SOFA AND CABINET. CHRISTINA V. WYNGAARD, Green Bay, Wis. Filed Nov. 1, 1897. Serial No. 657,036. (No model.)

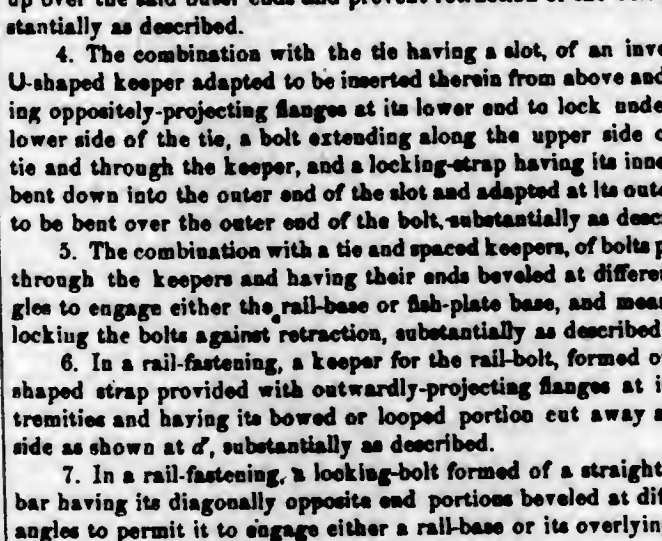


Claim.—1. As a new article of manufacture, a sofa comprising a suitable frame, having compartments in the ends and back covered by lids, and provided with upholstery arranged to conceal the joints, the back being also provided with a movable section and a folding platform interposed between the movable and permanent sections of the back, whereby the platform may be either concealed between the sections, or extended in position for use, when the movable section is swung away from the permanent section, substantially for the purpose set forth.

2. As a new article of manufacture, a sofa comprising a frame having suitable legs and provided with drawers sliding in from the ends, arms having compartments therein covered by recessed lids, a sectional back having a compartment formed in the upper section thereof, and provided with a lid, a folding platform interposed between the sections, and adapted to fit into a recess in the upper section, and a hinge-pin securing said platform to the lower section, together with suitable upholstery concealing the various joints, substantially for the purpose set forth.

3. As a new article of manufacture, a sofa comprising a frame having suitable legs, arms having compartments therein covered by recessed lids, swinging spool-holding pins located in said recessed lids, a sectional back having a compartment formed in the upper section thereof and provided with a lid, a folding platform interposed between the sections, and adapted to fit into the recess in the upper section, and a hinge-pin securing said platform to the lower section, together with suitable upholstery concealing the various joints, substantially for the purpose set forth.

607,906. METALLIC CROSS-TIE AND RAIL-FASTENING. AARON B. ALLEN, Pueblo, Colo. Filed Feb. 8, 1898. Serial No. 669,513. (No model.)



Claim.—1. The combination with a metal tie having longitudinal slots provided with transverse enlargements, of keepers adapted to be interlocked with the slots from above, bolts passing through the keeper above the tie to engage the rails at opposite sides, and locking-straps adapted to be bent over the outer ends of the bolts, substantially as described.

2. The combination with a metal tie having longitudinally-extending cruciform or transversely-enlarged slots near its ends, of keepers inserted from above through the middle portion of the slots and of a size to fill the end portions of the long arms of the slots and interlock therewith; the adjacent edges of each pair of keepers being spaced apart the width of the rail-base and cut away at their opposite edges to form when reversed a wider space to receive the fish-plate flanges, bolts beveled at their ends to fit the rail or fish-plate bases, and locking devices to engage the bolts and prevent their retraction, substantially as described.

3. The combination with a tie and keepers projecting above the tie and spaced apart to receive a rail of bolts passed along the upper side of the tie and through the keepers to engage the opposite sides of a rail, and locking-straps having downwardly-extending ends projecting through openings in the tie and extending thence along the under sides of the bolts and beyond the outer ends thereof to be bent up over the said outer ends and prevent retraction of the bolts, substantially as described.

4. The combination with the tie having a slot, of an inverted-U-shaped keeper adapted to be inserted therein from above and having oppositely-projecting flanges at its lower end to lock under the lower side of the tie, a bolt extending along the upper side of the tie and through the keeper, and a locking-strap having its inner end bent down into the outer end of the slot and adapted at its outer end to be bent over the outer end of the bolt, substantially as described.

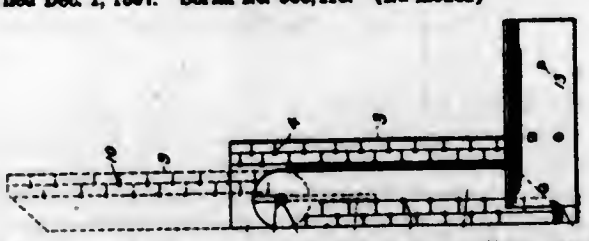
5. The combination with a tie and spaced keepers, of bolts passed through the keepers and having their ends beveled at different angles to engage either the rail-base or fish-plate base, and means for locking the bolts against retraction, substantially as described.

6. In a rail-fastening, a keeper for the rail-bolt, formed of a U-shaped strap provided with outwardly-projecting flanges at its extremities and having its bowed or looped portion cut away at one side as shown at d', substantially as described.

7. In a rail-fastening, a locking-bolt formed of a straight short bar having its diagonally opposite end portions beveled at different angles to permit it to engage either a rail-base or its overlying fish-plate flange, substantially as described.

8. A rail-fastening comprising a pair of keepers having means at their lower ends to interlock with a cross-tie, a pair of bolts passed through the keepers and beveled to engage the rail-base, and locking-straps adapted to be bent over the outer ends of the bolts and bent down at their inner ends to engage a cross-tie, substantially as described.

607,907. COMBINATION-TOOL. JOHN H. ALLEN, Keyser, W. Va. Filed Dec. 1, 1897. Serial No. 660,418. (No model.)



Claim.—In a tool, the combination of a small try-square, the base of which is formed with a recess or groove in which is secured an arm with a graduated scale marked thereon, also having conical-shaped openings therethrough opposite the scales and a long slot in the body thereof, of a folding arm having a graduated scale and conical-shaped openings therethrough opposite the scales, a pin for adjustably securing said folding arm in said long slot, and a rivet or

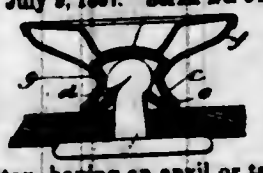
pin through and between the sides of the base across the recess thereof to act as a stop for the folding arm to rest upon to designate in connection with the long slot of the body of the square the different angles and inclines of said arm; the whole forming a small try-square, when the arm is folded, a large try-square when the folding arm is extended, a circle-describing device when the folding arm is free to rotate upon the adjustable securing-pin, and a miter or angle-finding device when the folding arm is resting upon the rivet in the base.

607,908. BRUSH. THOMAS R. ARNOLD, Florence, Ohio, assignor of one-half to C. B. Tozier, Cleveland, Ohio. Filed July 31, 1897. Serial No. 646,670. (No model.)



Claim.—The combination with a brush-head, of a tubular shank forming a reservoir and having its forward end portion bent at an angle to the main body of the shank and secured to the head and opening out in the middle thereof, and a follower working in said shank and having a spiral groove in its periphery, and a lip projecting from the shank into said groove, substantially as described.

607,909. TACK-FASTENED BUTTON. EDWARD L. ASHLEY, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed July 9, 1897. Serial No. 643,996. (No model.)



Claim.—1. A button, having an anvil or tack-point-turning medium, and a hub, shank or spacer provided with an inturned bottom edge, which constitutes a washer, the anvil, hub and washer being constructed as a single piece, and compressed longitudinally and thereby united with the button-head, substantially as described.

2. A button, having a combined anvil and spacer constructed of a single piece, and with the lower edge of the spacer turned inwardly and forming a tack-point passage and the seat or anchorage for the upset or clenched point of the tack, substantially as described.

3. A combined anvil and spacer, hub or shank for buttons, comprising an anvil proper, and a spacer having laterally-flaring edges, and an inturned bottom extending inwardly toward the anvil, and having a central opening which forms the seat or anchorage for the upset end of the fastening, said anvil and spacer being made of one integral piece, substantially as described.

4. A combined anvil and shank for tack-fastened buttons, made of a single piece, having an inturned lower edge which forms a washer to receive the upset end of the tack, substantially as described.

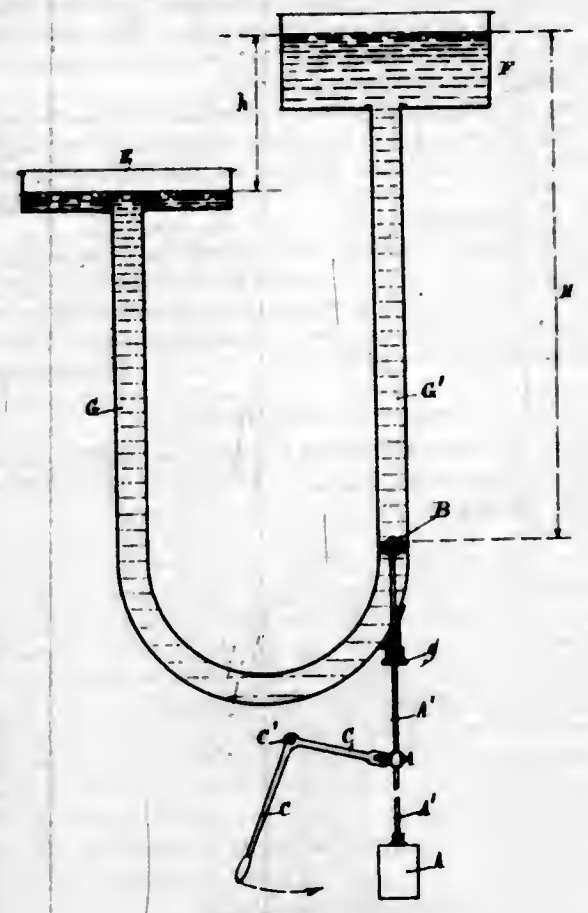
5. A button, provided with a combined anvil and spacer having an open end which extends outside of the back of the button and has its edge turned inwardly, substantially as and for the purpose described.

6. A button, having a single-piece anvil or tack-point-turning device, the lower edge of which is inturned so as to reduce the tack-receiving chamber, said inturned edge forming an anchorage for the clenched or upset point of the tack, substantially as set forth.

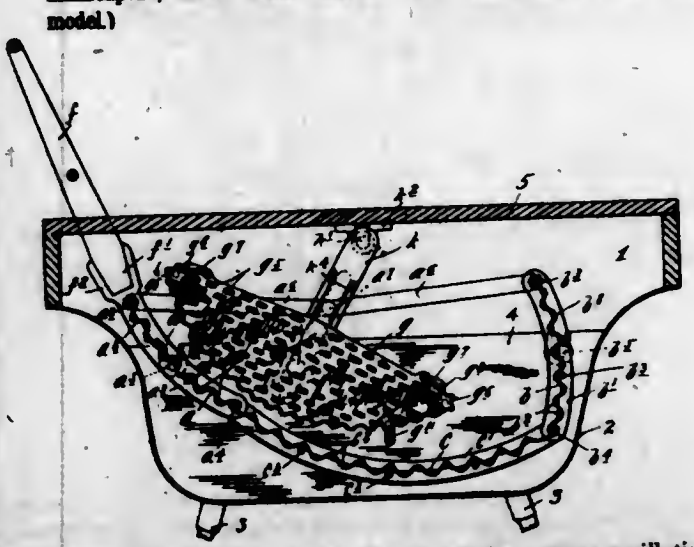
607,910. HYDRAULIC HAMMER OR STAMP. HENRI BEAU, Paris, France. Filed Dec. 27, 1897. Serial No. 663,683. (No model.) Patented in France May 5, 1897, No. 266,871.

Claim.—1. The combination with two columns differing in height and communicating with each other at the base, of a piston or plunger arranged within the longer column, a rod connected with said piston and extending exteriorly of the said column, and means for moving the plunger and rod upwardly, as and for the purpose specified.

2. The combination with two columns differing in height and communicating with each other at the base, and a receptacle at the upper end of each column, of a piston or plunger arranged within the longer column, a rod connected with said piston and extending exteriorly of said column in the axial line thereof, a stamp connected with said rod, and means for moving the plunger, rod and stamp upwardly, as and for the purpose specified.



607,911. WASHING-MACHINE. FREDERICK S. BLACKMAR, Minneapolis, Minn. Filed June 29, 1897. Serial No. 642,786. (No model.)



Claim.—1. The combination with a suds-box, of an oscillating cage or scrubbing-board constructed in pivotally-connected sections, an oscillating part or parts connected to move simultaneously with the sections of said cage or scrubbing-board, and a rubber or head fixed against pivotal movement but free for vertical movement on said oscillating part or parts, substantially as described.

2. The combination with a suds-box and an oscillating cage or scrubbing-board formed with pivotally-connected sections, of one or more tie-bars connecting the upper ends of said pivotally-connected sections, a pair of oscillating levers or arms operated by said tie-bar, and an oscillating rubber or head carried by said levers or arms and connected thereto by joints which permit vertical but prevent pivotal movements of said rubber or head, with respect to said arms, substantially as described.

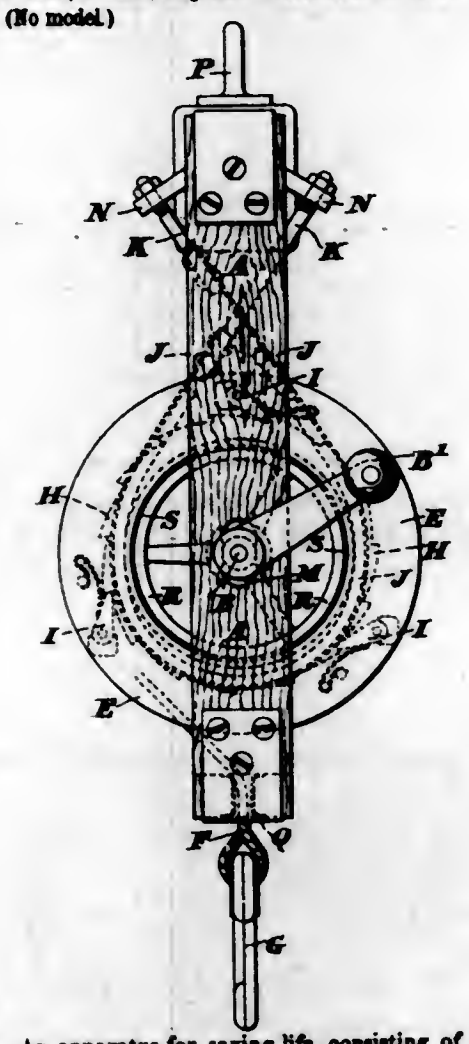
3. The combination with a suds-box and an oscillating cage or scrubbing-board formed with pivotally-connected sections, of a pair of tie-bars connecting the upper ends of the pivoted cage-sections and provided at their intermediate portions with studs or projections a^7, the pair of oscillating levers k with grooved inner faces k^4 and grooved outer faces k^5 engaging said pins a^7, and the rubber or head $g\,g'$ provided with studs g^3 working in said grooves k^4, substantially as described.

4. The combination with a cage or receptacle for the clothes, which cage or receptacle is provided with a bottom, the opposite ends of which are constructed to offer approximately the same resistance to the outward movement of the clothes, of an oscillating rubber or head coöperating with said cage or receptacle, and provided, on the opposite sides of its longitudinal center, with feed devices which act to carry the clothes in their movement toward the center or bottom of said cage or receptacle, but pass over said clothes when reversely moved, substantially as described.

5. The combination with a cage or receptacle for the clothes, of an oscillating rubber or head coöperating therewith and provided on the opposite sides of its longitudinal center with feed-rollers which are free to rotate in one direction but not in the other, substantially as and for the purpose set forth.

6. The combination with a cage or receptacle for the clothes, of an oscillating rubber or head coöperating therewith and provided, on the opposite sides of its longitudinal center, with oscillating rockers provided with downwardly-projecting pins or teeth adapted for engagement with the clothes, substantially as and for the purposes set forth.

607,912. APPARATUS FOR SAVING LIFE FROM FIRES, &c. EDWARD A. BULL, London, England. Filed Feb. 17, 1898. Serial No. 670,675. (No model.)

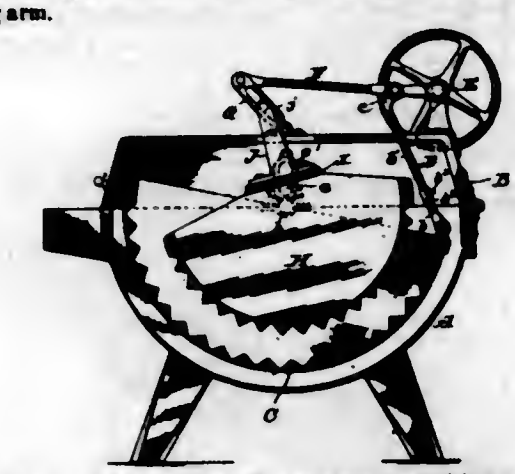


Claim.- An apparatus for saving life, consisting of framework A, axle B arranged in slots M in said framework A, block R, fixed on axle B band S surrounding block R, fixed drum D, and loose drums C, E arranged around band S, teeth H formed on side of drum D, spring-action pawls I on inner sides of drums C E engaging teeth H, adjustable brake-straps J J secured to framework A and encircling drum C E and carrying drums D, C, E and axle B, block R and band S, rope F secured to drum D, substantially as described and as shown on the annexed drawings.

607,913. WASHING-MACHINE. JOHN R. CARTER, Cincinnati, Ohio. Filed Mar. 8, 1898. Serial No. 673,094. (No model.)

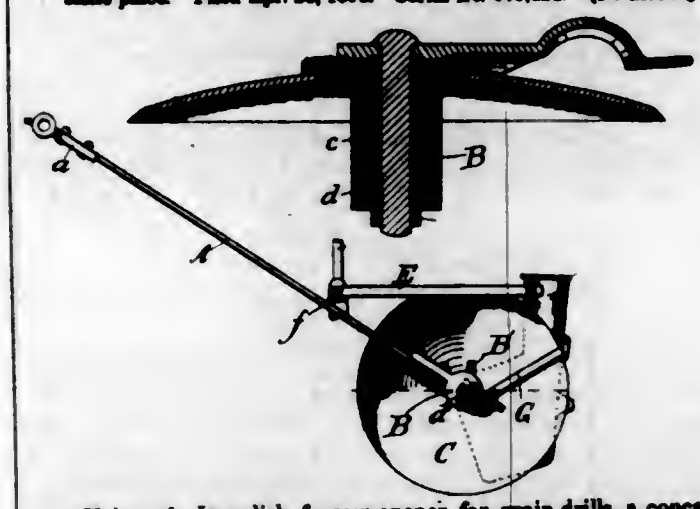
Claim.—1. In a washing-machine the combination with a tub, a lower rubber pivotally mounted in the tub, a top or cover hinged to the tub, and an upper rubber pivotally mounted in elongated bearings in the top or cover, of a crank shaft carried by the top or cover, a pitman pivotally connecting the crank and lower rubber, a slotted rocking arm carried by the cover, a pitman connecting said arm and crank and a standard carried by the upper rubber and having a pintle resting in the slot in the rocking arm, substantially as set forth.

2. In a washing-machine, the combination with a tub, a lower rubber pivotally mounted in the tub, a top or cover hinged to the tub, and an upper rubber pivotally mounted in elongated bearings in the top or cover, of a crank-shaft carried by the cover, a pitman pivotally connecting the crank and lower rubber, a rocking arm mounted on and projecting upwardly above the cover, a pitman connecting said arm and crank and a standard carried by the upper rubber and passing through the top and having a sliding connection with said rocking arm.



3. In a washing-machine, the combination with a tub, a lower rubber pivotally mounted in the tub, a top or cover hinged to the tub, and an upper rubber mounted in elongated bearings in said top or cover, of a two-part pitman, one part connected to the lower rubber and the other part mounted on the crank, means for detachably connecting the adjacent ends of the pitman and means for rocking the upper rubber.

607,914. SEEDING-MACHINE. EDWARD CREESMAN, Louisville, Ky., assignor to the Brennan & Co. Southwestern Agricultural Works, same place. Filed Apr. 26, 1898. Serial No. 679,121. (No model.)



Claim.—1. In a disk furrow-opener for grain-drills, a concavo-convex disk provided with a hollow trunnion extending through an opening in the center of the disk and fitting in a box-hub, the parts held together by an ordinary clamping-bolt provided with a sleeve, substantially as and in the manner described.

2. In a disk furrow-opener for grain-drills, a conduit for guiding the grain into the furrow opened by the disk provided with a shield extending below the axis of the disk, in combination with a supporting arm or brace extending from the conduit to a point on the drag-bar, substantially as and for the purpose described.

3. In a disk furrow-opener for grain-drills, a conduit for guiding the grain, provided with a triangular or three-point support, these points being at the axis of the disk, the upper portion of the conduit, and a point on the drag-bar forward of the disk, substantially as and for the purpose described.

4 A disk furrow-opener for grain-drills provided with a conduit, one portion of which is attached at the axis of the disk, in combination with the supporting-rod E, and the clip or lug on the drag-bar provided with a shoulder *f*, substantially as and for the purpose described.

607,915. PROCESS OF INTAGLIO PRINTING. GEORGE R. CORNWALL, Port Chester, N. Y. Filed Apr. 5, 1897. Serial No. 630,339. (No specimens.)

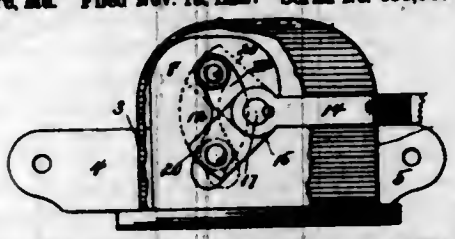
Claim.—1. The process of intaglio printing which consists in producing an intaglio design on a metal plate, applying moisture to the portion of the plate surrounding the design, applying greasy ink to the plate, the same being taken up only by the design, heating the plate during the application of such greasy ink and taking an impression therefrom.

2. The process of intaglio printing, which consists in producing an intaglio design in a metal plate, applying moisture to the uncngraved portion of the plate, applying greasy ink to the plate, the

same being taken up only by the design, and taking an impression from the plate, heat being applied to the plate so that it will be warm while the greasy ink is applied thereto and an impression taken therefrom.

3. The process of intaglio printing which consists in producing an intaglio design on an aluminum plate, applying moisture to the parts of the plate surrounding the design, applying greasy ink to the plate, the same being taken up only by the design, and taking an impression therefrom, the plate being heated so as to be warm while the ink is applied thereto and the impression taken therefrom.

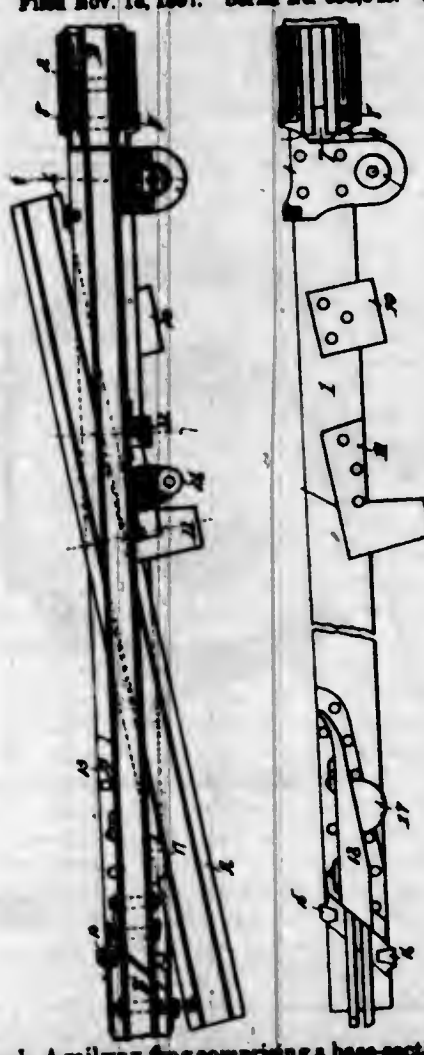
607,916. RAILWAY SWITCH-BOX. EDWARD W. COUGHLIN, Baltimore, Md. Filed Nov. 18, 1897. Serial No. 658,948. (No model.)



Claim.—1. In a switch-box the combination with a housing or casing of movable slides provided with oppositely curved cam-slots, an operating-lever comprising a yoke and a handle, shafts keyed to the arms of said yoke and lying in the same horizontal plane, arms mounted on said shafts in parallel vertical planes, but at different angles from the yoke, and rollers carried by said arms and extending into said cam-slots.

2. In a switch-box, the combination with a housing or casing provided with horizontal guideways, of oppositely-movable slides provided with oppositely-curved cam-slots, and horizontal guide-flanges, an operating-lever comprising a yoke and a handle, shafts keyed to the arms of said yoke and lying in the same horizontal plane, arms mounted on said shafts in parallel vertical planes, but at different angles from the yoke, and rollers carried by said arms and extending into said cam-slots.

607,917. RAILROAD-SWITCH. EDWARD W. COUGHLIN, Baltimore, Md. Filed Nov. 18, 1897. Serial No. 658,949. (No model.)



Claim.—1. A railway-frog comprising a base-section, and a swing-section, the base-section consisting of a base-plate, a seat for supporting the tongue of the switch-section, a hinge-plate, and a raising-plate; and the swing-section consisting of a body portion pivotally secured to the base-section, a tongue adapted to overlap the main rail, and an inclined reinforced stop.

2. The combination with the base-plate provided with a seat, of a swing-section pivotally secured to the base-plate, and comprising a body portion, a tongue, an inclined stop formed by slitting and bending a portion of said body portion, and a fillet for reinforcing said stop.

3. The combination with the base-plate, and its seat and raising-plates, of a hinge-plate projecting beyond the base-plate at one side and provided at its opposite side with a hook and a swing-section comprising a body portion pivotally secured to said hinge-plate, a tongue adapted to overlap the main rail, and an inclined stop.

4. The combination with the base-section of a swing-section pivotally secured thereto and comprising a body portion, a tongue, an inclined stop, a fillet for said stop, and a clamp adapted to extend under the base section.

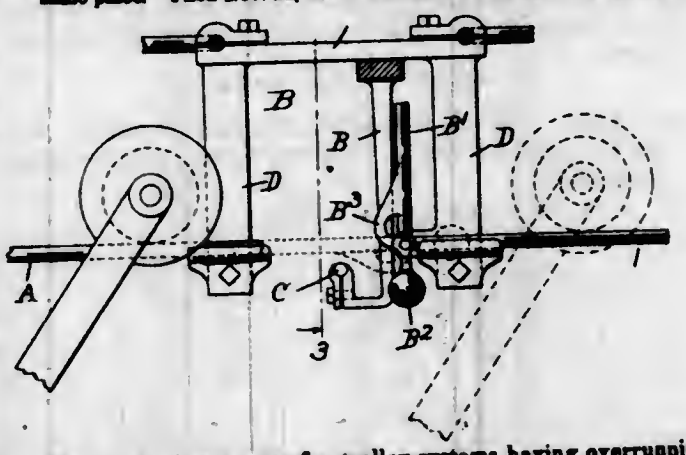
5. A swing-section for a railway-frog comprising a T-rail having a portion of its web and flange removed to form a tongue, and longitudinally slitted and bent to form an inclined stop, and having a portion of one of its flanges longitudinally inclined.

6. A swing-section for a railway-frog comprising a T-rail having a portion of its web and flange removed to form a tongue, and longitudinally slitted and bent to form an inclined stop, and having a portion of one of its flanges longitudinally inclined in combination with a fillet secured to said stop to support the tongue, and a hinge-plate secured to the web of the rail.

7. A swing-section for a railway-frog comprising a T-rail having a portion of its web and flange removed to form a tongue, and longitudinally slitted and bent to form an inclined stop, and having a portion of one of its flanges longitudinally inclined in combination with a fillet secured to said stop, and provided with a rib or lateral projection, a clamp secured to the web of the rail, and a bracket or hinge-plate secured to the web and countersunk on its under side.

8. The combination with the base-section, and swing-section pivotally secured together, of a seat arranged in the base-section and provided with a rib to engage the main rail, a raising-plate undercut at its inner edge to overlap the main rail, a hinge-plate secured to the base-section and provided with a hook to engage the swing-section, and provided with an oppositely-beveled extension having hooks to engage the adjacent rail end.

607,918. CROSSOVER FOR TROLLEY SYSTEMS. CHARLES R. DAVIS, Chicago, Ill., assignor to the Link-Belt Machinery Company, same place. Filed Nov. 21, 1896. Serial No. 612,963. (No model.)



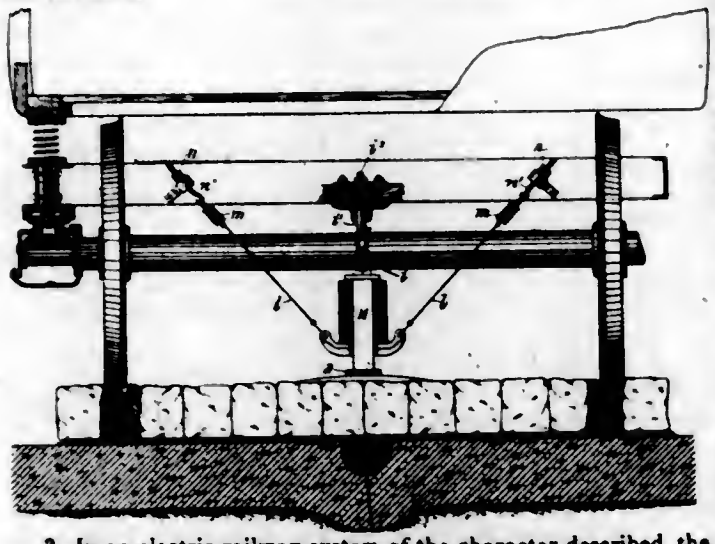
Claim.—1. A crossover for trolley systems having overrunning trolleys comprising a broken trolley-wire, an electrical connection between the two parts, of said wire, a normally open bridge-piece pivotally connected in proximity to one end of said broken trolley-wire, and projecting above the same in the path of the trolley-wheel so as to be moved to bridge the break when engaged thereby, a weight below the trolley-wire connected with said bridge-piece so as to normally hold it open.

2. A crossover for trolley systems comprising a rigid loop to which the ends of the trolley-wire are adapted to be connected so as to leave a space between them, said loop provided with engaging pieces adapted to be connected with supporting-wires, a bridge-piece pivoted to said loop and provided with an actuating device which normally holds it open, said bridge-piece projecting above the trolley-wire in the path of the trolley-wheel so as to be engaged thereby and moved in the plane of the wire so as to connect the two ends of the trolley-wire and form a substantially continuous pathway for the trolley-wheel.

607,919. ELECTRIC TRAMWAY. ALFREDO DIATTO, Turin, Italy. Filed Dec. 1, 1896. Serial No. 614,128. (No model.)

Claim.—1. In an electric-railway system of the character described, the combination with a vehicle, of an electromagnet having a yielding or flexible connection with the vehicle, a magnet-bar made flexible to adapt it to yield to irregularities in the tracks, and means for adjusting said magnet and bar relatively to the ground.

2. In an electric-railway system of the character described, the combination with a vehicle, of an electromagnet, a magnet-bar carried thereby, cords having a connection with the magnet, and springs having connection at one end with the vehicle and at the other end with the cords.

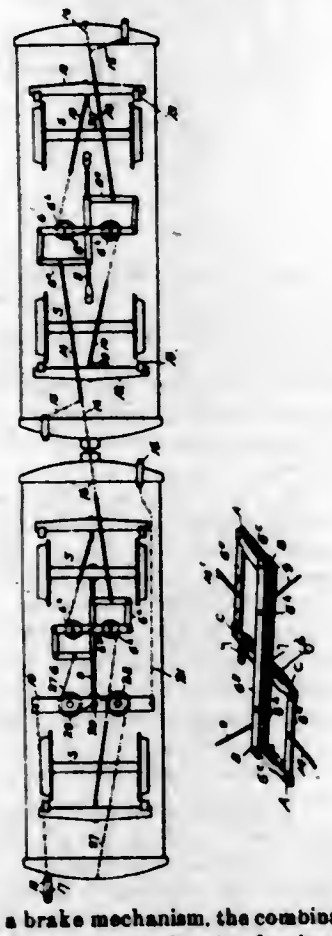


3. In an electric-railway system of the character described, the combination with a vehicle, of an electromagnet, a magnet-bar carried thereby, cords having a connection with the magnet, springs having connection at one end with the cords, hooks having connection with the other end of the cords and being threaded, and nuts screwing upon the threaded parts of the hooks and adapted to adjust the tension of the springs.

4. In an electric-railway system of the character described, the combination with a vehicle, of an electromagnet, a magnet-bar carried thereby, cords having a connection with the magnet, springs having connection at one end with the vehicle and at the other end with the cords, a ring and hook connecting the upper part of the magnet with the vehicle said hook having a threaded portion, and a nut screwing upon the threaded portion of the hook, for the purpose specified.

5. The combination with a box or casing, molded of insulating material, of iron arms embedded in the box and projecting at one end into the cavity of the box to form supports, an iron bridge-piece supported upon the projecting ends of the arms, a mercury-receptacle carried by the bridge-piece, and a movable switch-block within said receptacle.

607,920. BRAKE MECHANISM FOR RAILWAY-CARS. WALTER E. ELLIOTT, Denver, Colo. Filed Sept. 21, 1897. Serial No. 652,444. (No model.)

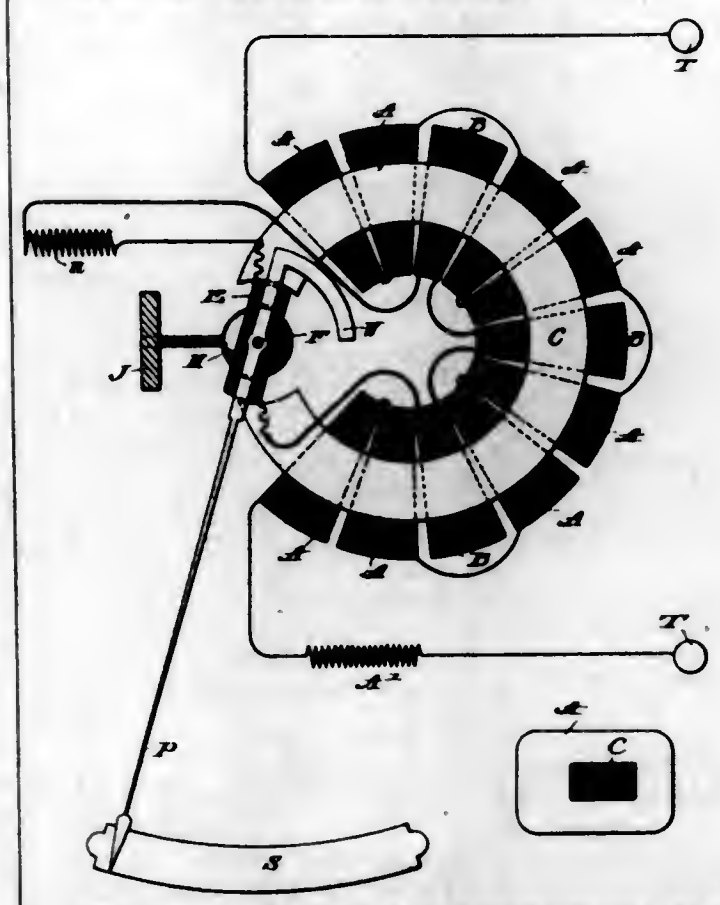


Claim.—1. In a brake mechanism, the combination with suitable devices for engaging the car wheels, of a floating frame located between the car-trucks and adapted to move bodily in the one direction or the other as may be required, said frame being composed of two crossed parts 6^d and 6^g, two parts 6^e and two parts 6^c, the extremities of the part 6^d being respectively pivoted to one extremity of each part 6^e, the said parts 6^e extending in opposite directions from the part 6^d, each of the parts 6^e connecting one extremity of a part 6^c with one extremity of the part 6^g, two pulleys or sheaves mounted on the part 6^g and located on opposite sides of the point where the parts 6^d and 6^g intersect, a suitable connection leading from each part 6^c to a similar connection on the adjoining car, or to a stationary support on the end of the same car as the case may be, a suitable connection leading from the wheel-engaging devices of the trucks and engaging the pulleys or sheaves of the floating frame, a brake-staff, and a suitable connection between the brake-staff and the floating frame for actuating the latter and setting the brakes.

2. In a brake mechanism, the combination with suitable devices for engaging the car-wheels, of a floating frame composed of six members connected on the lazy-tongs principle, said frame being located between the two trucks of the car and adapted to move bodily in either direction as required, two pulleys or sheaves mounted on one of the crossed members of said frame, a suitable connection leading from each of the two oppositely-disposed parts 6^c to corresponding members of the floating frame of the opposite car, or to a support on the end of the same car as the case may be, a suitable connection between the wheel-engaging devices of the two trucks, said connection engaging the sheaves of the floating frame, and suitable means for actuating the floating frame and setting the brakes.

3. In a brake mechanism, the combination with suitable devices for engaging the car-wheels, of a floating frame composed of members connected on the lazy-tongs principle, said frame being located between the two trucks of the car and adapted to move bodily in either direction as required, two pulleys or sheaves mounted on one of the crossed members of said frame, a suitable connection leading from each of the two oppositely-disposed parts to corresponding members of the floating frame of the opposite car or to a support on the end of the same car as the case may be, an intermediate pivoted bar having sheaves engaged by said connection, a suitable connection between the wheel-engaging devices of the two trucks, said connection engaging the sheaves of the floating frame, and suitable means connected with the pivoted sheave-bar for actuating the floating frame and setting the brakes.

607,921. ELECTRICAL MEASURING INSTRUMENT. GEORGE K. ELPHINSTONE, London, and ARTHUR C. HEAP, Penn, England. Filed May 13, 1898. Serial No. 680,566. (No model.)

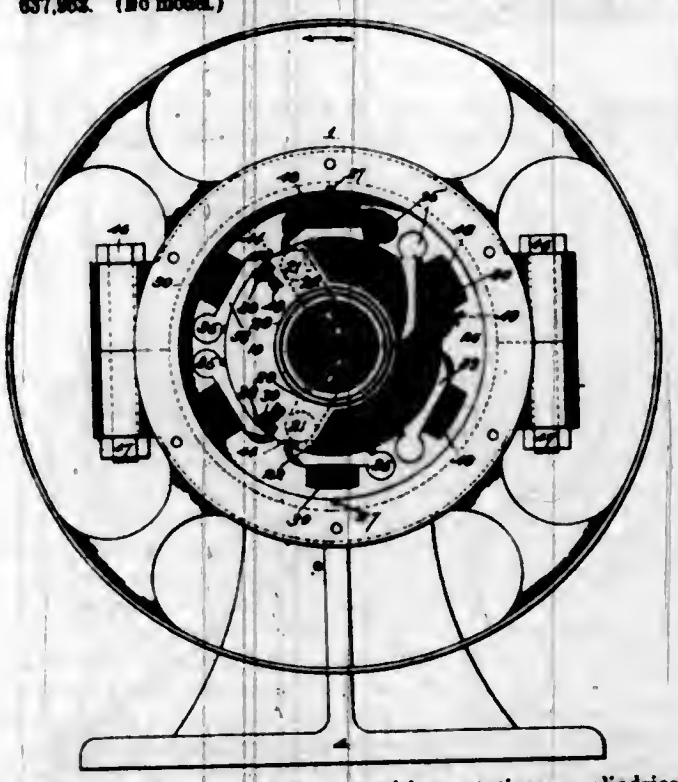


Claim.—1. The combination of the electromagnet-core, the primary windings disposed thereon, the secondary winding, a pivoted or swinging coil mounted between the poles of the core, and included in closed circuit with said secondary winding, and an indicating device operated by the swinging coil.

2. The combination of the electromagnet-core, a series of connected windings disposed at substantially equal intervals thereon, a

secondary series of windings disposed upon the core between the windings of the first series, a pivoted or swinging coil mounted between the poles of the magnet and included in closed circuit with said secondary windings, and an indicating device operated by the swinging coil.

607,922. ROTARY STEAM-ENGINE. CHARLES R. EVANS and ORRIN R. BARNHART, Thayer, Kans. Filed May 24, 1897. Serial No. 637,962. (No model.)



Claim.—1. A rotary engine, comprising a stationary cylindrical center piece cut away at one side to form abutments or shoulders and provided with inlet and outlet ports, a cylinder fitting snugly but rotatably upon the center piece and provided with cavities in its inner sides, having their bottoms sloping inwardly and merging into the plane of the inner sides of the cylinder on a curved line which intersects the curved surface of the center piece, and followers hinged to the cylinder and provided with concaved inner sides, which at times extend concentric to the axis of the cylinder, and at other times coincide and contact with the side walls of the cylinder upon the said curved line representing the junction of said side walls with the inclined bottoms of said cavities, for the purpose set forth.

2. A rotary engine, comprising a stationary cylindrical center piece cut away at one side to form abutments or shoulders and a concentric surface connecting the bases of said abutments or shoulders, and provided with inlet and outlet ports, a cylinder fitting snugly but rotatably upon the center piece and provided with cavities in its inner sides, having their bottoms sloping inwardly and merging into the plane of the inner sides of the cylinder on a curved line which intersects the curved surface of the center piece, and followers hinged to the cylinder and provided with concaved inner sides which at times extend concentric to the axis of the cylinder and at their outer sides contact and form a steam-tight joint with the inner sides of the cylinder, and at other times coincide and contact with the side walls of the cylinder upon the said curved line representing the junction of said side walls with the inclined bottoms of said cavities, for the purpose set forth.

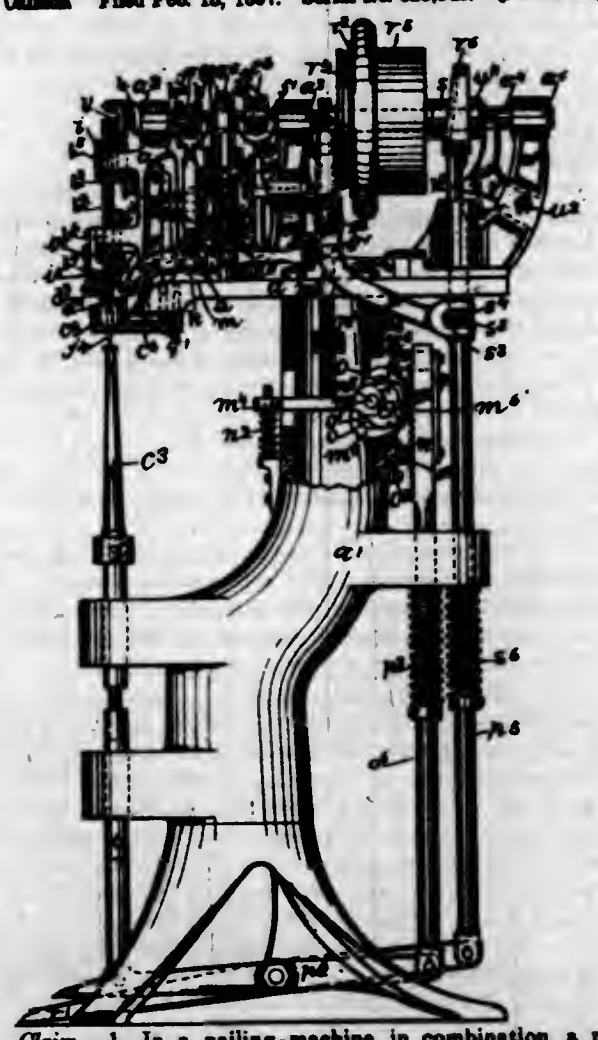
3. A rotary engine, comprising a stationary center piece provided with oppositely-projecting stems, and reduced diametrically to form a pair of abutments or shoulders and a connecting concentric surface, and provided also with inlet and outlet ports opening through said abutment and with passages communicating with said ports, a cylinder mounted rotatably upon said stems and inclosing the center piece and provided with recesses in its inner side, followers pivoted to said cylinder and adapted to swing in and out of said recesses once in each revolution of the cylinder, packing-rings surrounding the center-piece stems, fitting snugly between the cylinder-heads and the center piece, and provided with pins engaging recesses of the cylinder to prevent any independent rotatable movement, means for adjusting said packing-rings inward, packing-rings mounted in the center piece, and springs holding the center-piece packing-rings with a yielding pressure against the inner sides of the first-named packing-rings, substantially as described.

607,928. NON-REFILLABLE BOTTLE. ALFRED FAIRBURST, Lexington, Ky. Filed Dec. 31, 1897. Serial No. 665,096. (No model.)

Claim.—1. A device of the class described, comprising a hollow casing designed to be arranged in the neck of a bottle or analogous receptacle and provided between its top and bottom with an interior chamber having a conical lower portion, the bottom of the casing having a valve opening and the top of the casing being provided with a series of perforations, said casing being provided with grooves formed in the walls of the conical portion of the chamber and extending upward therefrom to the perforations and merging into the same, and a valve arranged in the casing, substantially as described.

2. A device of the class described, comprising a hollow cylindrical casing provided between its top and bottom with an interior chamber having a conical lower portion, the bottom of the casing having a valve-opening and the top of the casing being provided with an annular series of perforations, said casing being provided with grooves formed in the walls of the chamber and extending downward from the perforations to the conical portion of the chamber and terminating near the bottom thereof, and a conical valve provided at its sides with grooves extending from the bottom to the top, substantially as described.

607,924. NAILING-MACHINE. EDWIN T. FREEMAN, Halifax, Canada. Filed Feb. 15, 1897. Serial No. 623,543. (No model.)



Claim.—1. In a nailing-machine, in combination, a movable stock-support automatically adjustable to the varying thicknesses of stock, a nose-plate, and starting and stopping mechanism connected with said nose-plate and operating the nose-plate, for the purpose set forth.

2. In a nailing-machine, a movable nose-plate, starting and stopping mechanism connected with said nose-plate, and a nail-carrier guided by said nose-plate, for the purpose set forth.

3. In a nailing-machine, in combination, a vertically-movable stock-support periodically depressed and adapted to automatically provide for varying thicknesses of stock, a nose-plate, and starting and stopping mechanism by connecting mechanism moving said nose-plate, for the purpose set forth.

4. In a nailing-machine, the combination of a movable nose-plate, a toggle-joint attached to the nose-plate, a lever connected to starting and stopping mechanism, a bar connecting said toggle joint and lever, for operation substantially as described.

5. In a nailing-machine, a revolving cam, a projection on the periphery of said cam, a groove in said projection, another groove in

said cam opposite to said groove, a lever having one part extending on one side of the center of the cam, and another part extending on the opposite side of the center of the cam, one of said parts operated by said projection to move the lever in one direction, and the other part operated by the bottom of the latter groove to move the lever in the opposite direction, for the purpose set forth.

6. In a nailing-machine, in combination, a revolving shaft, a cam g^4 on said shaft, a block carrying cam-rollers f and f^3, one of the cam-rollers carried above the center of the shaft and the other carried below the center of the shaft, arms g^5, k and k' on said block, one arm serving as a guide to the block, levers connected to the other arms for operation thereof, for the purpose set forth.

7. In an adjustable stock-feeding mechanism in a nailing-machine, in combination, a lever having a lateral motion, a longitudinal slot in said lever, a stud having two shank portions, one of the portions extending through said slot and adapted to be adjusted and secured in position in the slot, a sloping part of the frame of the machine, a vertical slot in the sloping part, a stud extending through the vertical slot in the sloping part and adapted to be secured in position and adjusted vertically, a bearing in the latter stud for the other shank portion of the former stud, for operation substantially as described.

8. In a nailing-machine, in combination, a revolving shaft, a cam mounted on said shaft, a lever moved laterally by said cam and having a longitudinal slot, a stud extending through said slot and adapted to be moved in the slot and secured in its position and holding said lever in position, a sloping part of the frame of the machine, a vertical slot in the sloping part, a stud extending through the slot in the sloping part and adapted to be moved in the slot and secured in its position, and the first stud secured to the latter stud, a block having a groove and connected to the lower end of said lever having the longitudinal slot, a lever extending through said groove and moved laterally by said block, a block connected to the latter lever, a cam giving a reciprocating motion to the latter block, an awl carried by the latter lever and thereby given vertical and lateral motions, for the purpose set forth.

9. In a nailing-machine, in combination, a revolving shaft, a cam j^3 on said shaft, a lever j^3 operated by said cam, cam-rollers k' and k^3 carried by said lever, a longitudinal slot k^4 in the lever, a fork u at the lower end of the lever, a sloping part t^2 of the frame, a slot t^3 in the sloping part, adjustable studs k^2 and t^4 secured to each other and kept in position in the slots k^3 and t^3, respectively, a block k having a groove m', a roller u' having its bearings in the block k, the fork u fitting over said roller, a lever g^3 extending through the groove m' and adapted to be moved laterally by the block k, a block g^4 connected to the lever g^3 by an arm k', cam-rollers f and f^3 carried by the block g^4, a cam g^4 mounted on a shaft a^4 and giving a vertical motion to the block g^4, an awl carried by the lever g^3, for the purpose set forth.

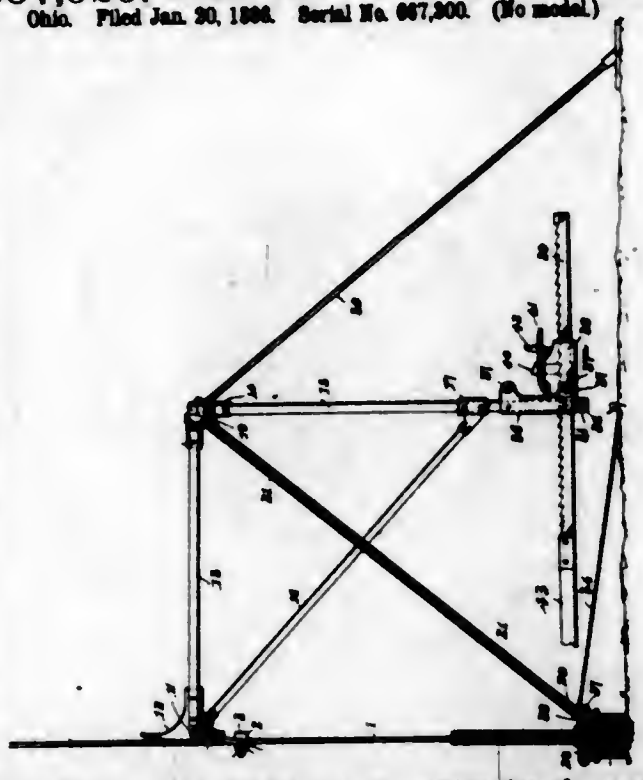
10. In a nailing-machine, in combination, a lever, means to operate said lever, a slot in said lever, a gear, a slot in said gear, a roller in the two said slots, a stock-support, connection between said gear and stock-support, said connection operated by said gear to periodically depress said stock-support, for the purpose set forth.

11. In a nailing-machine, in combination, a lever having one end forked, a stud through the forked end on which the lever is turned, a semicircular slot through the sides of the forked end, means to give a vertical motion to said lever, a gear hung in the forked end of said lever and on said stud, a semicircular slot in said gear in line with the first slot, one side of the first slot and the opposite side of the latter slot eccentric to each other, a roller in said slots periodically locking said lever and gear together and periodically unlocking them, means to adjust the roller to lock and unlock said lever and gear at any desired time of the movement of the lever, a rod provided with a rack having teeth engaging said gear, whereby the rod is moved periodically up and down, a stock-support connected with said rod.

12. In a nailing machine, in combination, a revolving shaft, a cam on said shaft, a rod depressed periodically by said cam, a lever depressed by said rod, means to move said lever upward, one end of said lever forked and hung on a stud, a semicircular slot through the sides of said forked end, a gear hung on said stud and in the forked end of said lever, a semicircular slot in the gear in line with the other slot, one side of the latter slot eccentric to the opposite side of the first said slot, a roller placed in said slots, said roller periodically locking and unlocking the lever and segment-gear, adjustable bolts under said roller, unlocking the roller and upholding it before being locked, a rod provided with a rack having teeth engaged by said gear, a stock-support connected with the rod provided with the rack, for the purpose set forth.

13. In a nailing-machine, in combination, a revolving shaft, a cam m^2 on the shaft, a rod m^3 depressed by said cam, a lever m^4 depressed by said rod, a spring upholding the lever m^4, one end of the lever forked and hung on a stud n^2 and having a slot n^4, a gear m^5 in the forked end of the lever m^4 and hung on the stud n^2, a slot o in said gear having its side o' eccentric to the opposite side o^2 of the slot n^4, a roller m^6 in said slot, said roller locking and unlocking said lever and gear, adjustable bolts o^3 regulating the operation of the roller m^6, springs bearing against the roller, a rod o^4 provided with the rack n, said rack engaged by the gear m^5, a stock-support c^3 connected to the rod o^4 by the treadle p^3, for operation substantially as described.

607,925. PUMPING-JACK. CHARLES P. GANO, Bowling Green, Ohio. Filed Jan. 20, 1896. Serial No. 667,200. (No model.)



Claim.—1. In a pumping-jack, the combination of a pumping-lever or V having lateral trunnions at its fulcrum-point, forwardly and downwardly extending brace-rods provided with bearings in which said trunnions are mounted, a casing-head clamp having a looped rod provided with an intermediate hook to engage a casing-head at one side, and a claw adjustably connected with the arms of said loop and connected with the contiguous lower extremities of said brace-rods, substantially as specified.

2. In a pumping-jack, the combination with a pumping-lever or V and a reciprocatory operating-rod, of a pawl-and-ratchet-bar connection between said lever and rod, substantially as specified.

3. In a pumping-jack, the combination with a pumping lever or V, of a reciprocatory ratchet-bar, a guide carried by the pumping-lever, and a pawl mounted upon the guide for engagement with the teeth of the ratchet-bar, substantially as specified.

4. In a pumping-jack, the combination with a pumping-lever or V, of a reciprocatory ratchet-bar, a ratchet-bar guide mounted upon one arm of the pumping-lever or V for adjustment parallel therewith, and a pawl carried by the guide for engagement with the teeth of the ratchet-bar, substantially as specified.

5. In a pumping-jack, the combination with a pumping-lever or V, of a reciprocatory ratchet-bar, a plurality of bearings carried by an arm of said lever or V, a ratchet-bar guide having trunnions mounted in one of said bearings, and a pawl carried by the guide for engagement with the teeth of the ratchet-bar, substantially as specified.

6. In a pumping-jack, the combination with a pumping-lever or V, of clamps carried by one arm of the pumping-lever and having a plurality of bearings spaced at different intervals from the fulcrum of the lever or V, a reciprocatory ratchet-bar, a ratchet-bar guide having trunnions mounted in alined bearings of said clamps, and a pawl carried by the guide for engagement with the teeth of the ratchet-bar, substantially as specified.

7. In a pumping-jack, the combination with a pumping-lever or V, of a reciprocatory ratchet-bar, a pawl carried by the pumping-lever or V for engagement with the teeth of the ratchet-bar, and locking devices for securing the pumping-lever or V in a fixed position, substantially as specified.
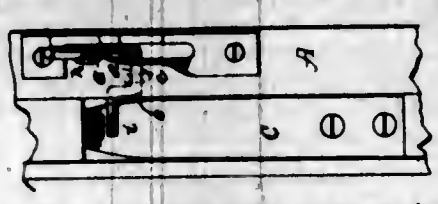
8. In a pumping-jack, the combination with a pumping-lever or V, of a reciprocatory ratchet-bar, a pawl carried by the pumping-lever or V for engagement with the teeth of the ratchet-bar, and a movable holding-rod for engagement with the pumping-lever or V to maintain it temporarily in a fixed position, substantially as specified.

9. In a pumping jack, the combination with a pumping-lever or V, of a reciprocatory ratchet-bar, a pawl carried by the pumping-lever or V for engagement with the teeth of the ratchet-bar, a movable holding-rod for engagement with the pumping-lever or V to

maintain it temporarily in a fixed position, and a trip-lever connected with said pawl to provide for the manual disengagement of the pawl from the ratchet-bar, substantially as specified.

10. In a pumping-jack, the combination with a pumping-lever or V, of a reciprocatory ratchet-bar, a pawl carried by the pumping-lever or V for engagement with the teeth of the ratchet-bar, a pin carried by an arm of the lever or V, a casing-head clamp, and a holding-rod pivotally mounted upon the casing-head clamp and having a hooked extremity for engagement with said pin to maintain the pumping-lever or V temporarily in a fixed position, substantially as specified.

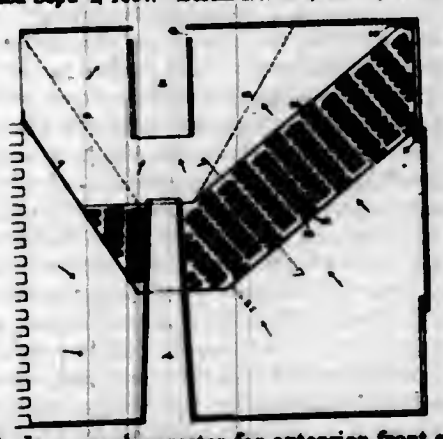
607,926. SASH HOLDER AND LOCK. WILLIAM P. GELABERT, Sweet Springs, Mo. Filed Nov. 5, 1897. Serial No. 657,508. (No model.)



Claim.—1. The combination with a window-casing having a recess in its sash-groove, a spring secured at one end in said recess and adapted at its free end to engage the sash and lock it, and a crank-shaft mounted in the casing, said crank-shaft having a crank-arm to engage the spring and another crank-arm disposed beyond the outer face of the window-casing, of a plate secured to the outer face of the casing and having an integral spring-arm bent at right angles to the plate and having a nose or stop at its free end to be engaged by the outer crank-arm of the shaft, substantially as set forth.

2. The combination with a window-casing having a recess formed in the sash-groove, and a spring-plate secured in the recess and constructed and adapted to engage and lock a window-sash, at its free end, of a crank journaled in the casing with one portion in position to engage the spring to force it out of engagement with the window-sash when the crank is turned in one position, and a plate having a spring-arm bent or twisted at right angles and having a catch or stop thereon.

607,927. SPARK-ARRESTER. ALBERT A. GRAHAM, Topeka, Kans. Filed Sept. 4, 1897. Serial No. 650,694. (No model.)



Claim.—1. In a spark-arrester for extension-front-end railway-locomotives, slotted and perforated metallic sheets or plates placed zigzag and inclined slightly from the perpendicular forward of the deflector-plate, extending from the deflector-plate to the front end of the extension chamber, said sheets being joined together at their top and bottom edges and elevated forward and rearward of the nozzle and inclined laterally on either side of the nozzle toward the center of draft or nozzle, so as to form a funnel-shaped space or chamber, the center or pit of which is directly under the draft-pipe and stack, said slots in said sheets being cut so as to form draft-openings in a direct line or course, or substantially so, from the draft-supply to the exhaust, with lateral perforations in said sheets located between said slots, substantially as, and for the purpose described.

2. In a spark-arrester for extension-front-end railway-locomotives, in combination with the boiler-flues, draft-pipe, nozzle, deflector-plate and extension-front-end chamber, metallic sheets or plates slotted on a direct, or nearly a direct, line with the course of the draft, with lateral perforations in said sheets at right angles, or nearly at right angles, with said slot-openings, and toothed or serrated deflector-plate, substantially as, and for the purpose described.

3. In a spark-arrester for extension-front-end railway-locomotives, metallic sheets placed zigzag and slightly inclined from the perpendicular, with slots or openings therein in a direct line or course, or substantially so, with the course of the draft, said slots being alternated with lateral perforations or openings at right angles, or nearly at right angles, with the course of the draft through said slots, substantially as, and for the purpose described.

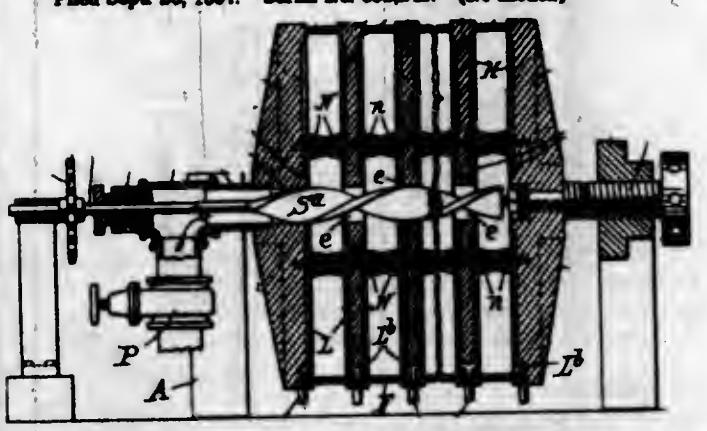
4. In combination with an extension-front-end railway-locomotive and the extension-front-end chamber thereof, slotted and perforated metallic sheets or plates placed zigzag, as herein described, in conjunction with a toothed or serrated deflector-plate, for the purpose described.

607,928. STOVE-LINING. GEORGE C. HICKS, Boston, Mass. Filed Sept. 7, 1897. Serial No. 650,730. (No specimens.)

Claim.—1. As an improved article of manufacture, a mass of plastic stove-lining composition comprising ground refractory material, a polyatomic alcoholic material, and water, protected by an air-excluding envelop or covering.

2. The improved plastic stove-lining composition, comprising fire-clay, fire-brick, glycerin, and water.

607,929. FILTER-PRESS. JOHN H. HINKEN, Louisville, Ky., assignor to the J. E. Turney Drying Machinery Company, Chicago, Ill. Filed Sept. 20, 1897. Serial No. 652,245. (No model.)



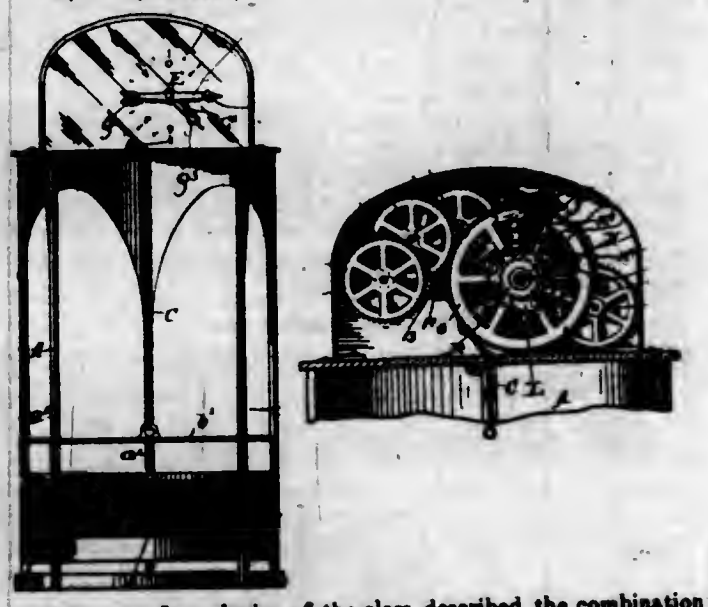
Claim.—1. In a filter-press, in combination with centrally-apertured filter-plates, a clearing-blade penetrating the plates at such apertures, and suitable means for rotating said blade to clear the apertures.

2. In a filter-press, in combination with the centrally-apertured filter-plates and the induction-pipe in line with such central apertures; a clearing-blade extending through the apertures and out through the induction-pipe, said pipe having an angle and the blade having a stem extending out through the angle provided with a suitable stuffing-box, and means beyond the stuffing-box for rotating the blade.

3. In a filter-press, in combination with centrally-apertured filter-plates, a spiral blade extending through such central apertures, and means for rotating the blade.

4. In a filter-press, in combination with the channel filtering-plates, filtering fabric applied to the channel-faces of the plates with the threads of its web oblique to the channels.

607,930. EGG-BOILER. THORVALD HOLMES, Los Angeles, Cal., and LAWRENCE HOLMES, Chicago, Ill. Filed Aug. 27, 1897. Serial No. 649,711. (No model.)



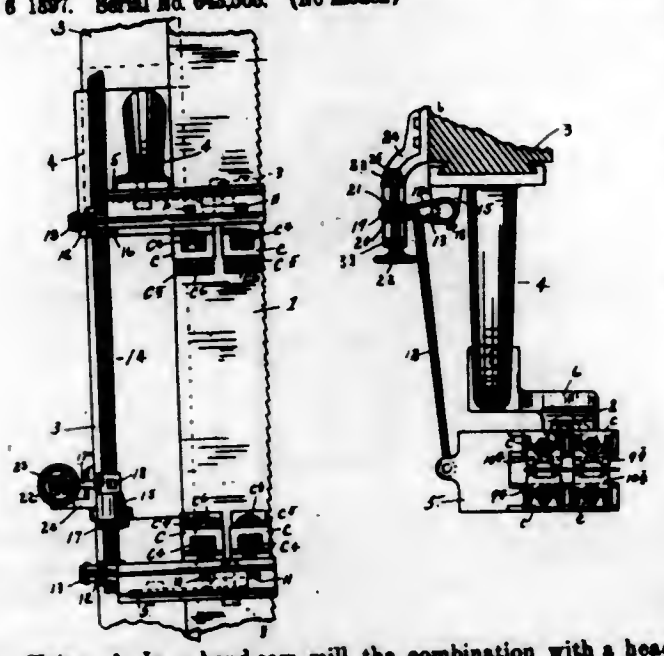
Claim.—1. In a device of the class described the combination with a suitable frame and movable receptacle, of raising mechanism adapted to lift said receptacle out of the water, a time mechanism, a spring secured at one end to the raising mechanism and at the other end to the time mechanism, a stop adapted to hold the raising mechanism in check and means operated by the time mechanism at a pre-

determined time to release said stop and permit the raising mechanism to lift the receptacle from the water; substantially as described.

2. The combination with a working mechanism and a tripping mechanism adapted to put said working mechanism into operation, of a spring, one end of which engages and operates the working mechanism and the other end of which engages and operates the tripping mechanism; substantially as described.

3. The combination with a time mechanism having a handle by which the same is set, which handle, after setting, is returned to the initial point by the time mechanism, of a pointer moved by said handle in setting the same, but not following it in its return movement; substantially as described.

607,931. **BAND-SAW MILL.** RUFUS L. HOYT, Minneapolis, Minn., assignor of one-half to Wilbert H. McMullen, same place. Filed July 6 1897. Serial No. 643,508. (No model.)



Claim.—1. In a band-saw mill, the combination with a head-block, of guide-blocks pivoted to said head-block for pivotal movement crosswise of the saw, with the coöperating members of said guide-blocks in staggered relation to each other crosswise of the saw, substantially as described.

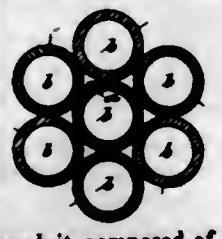
2. In a band-saw mill, the combination with a head-block, of two pairs of guide-blocks pivoted to said head-block for pivotal movement crosswise of the saw, with the coöperating members of each pair in staggered relation to each other crosswise of the saw, substantially as described.

3. In a band-saw mill, the combination with a head block pivoted for angular motion crosswise of the saw, of guide-blocks pivoted to said head-block for pivotal motion crosswise of the saw, with the coöperating members thereof in staggered relation to each other crosswise of the saw, substantially as described.

4. In a band-saw mill, the combination with pivoted head-blocks, of pivoted guide-blocks on said head-blocks coöperating in pairs with the members of each pair of blocks staggered in respect to each other, crosswise of the saw, and the pivotal centers of the head-blocks centrally located in respect to the guide-blocks, substantially as and for the purposes set forth.

5. In a band-saw mill, the combination with upper and lower head-blocks pivoted on a common axis for angular motion crosswise of the saw, of two pairs of guide-blocks on each head-block with the coöperating members of each pair in staggered relation to each other crosswise of the saw, and a common connection to said head-blocks for effecting simultaneous and equal adjustments thereof, substantially as and for the purposes set forth.

607,932. **FLEXIBLE METALLIC TUBE-CONDUIT.** CARL HUSMAN, Osnabrück, Germany, assignor to Felten & Guilleaume, Mülheim-on-Rhine, Germany. Filed Nov. 20, 1897. Serial No. 659,272. (No model.) Patented in Germany Sept. 24, 1895, No. 88,153.



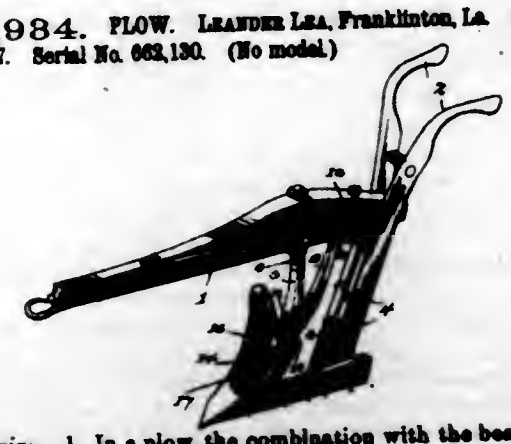
Claim.—A flexible conduit composed of several separate tubes laid up together like the strands of a rope, substantially as herein described.

607,933. **PORTABLE FOLDING TENT.** EDGAR H. LAIRD, El Toro, Cal. Filed July 22, 1897. Serial No. 645,607. (No model.)



Claim.—A portable folding tent or wigwam, comprising the flexible poles 1, 2, 3 and 4, the detachable spreaders 15, arranged in the same horizontal plane, the diagonal spreaders 16, the cross-braces 17 rectangularly arranged in the same horizonal plane and the tent fabric proper, in combination with the detachable top 24, formed with the enlarged seams 25 and the radiating ribs 23 incased within said seams, substantially as shown and described.

607,934. **PLOW.** LEANDER LEA, Franklinton, La. Filed Dec. 16, 1897. Serial No. 662,130. (No model.)

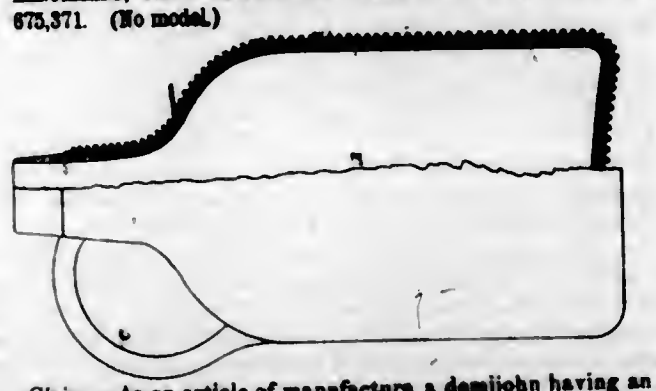


Claim.—1. In a plow, the combination with the beam, of the integral bifurcated stock, formed with the cylindrical screw-threaded upper end of uniform diameter and adapted to be adjustably secured both axially and longitudinally in said beam and having its lower bifurcated members spaced apart and secured in this relation, a moldboard and a bolt extending through the moldboard and the spaced members, and a retaining-nut adapted to adjustably clamp the moldboard in position, substantially as and for the purpose set forth.

2. In a plow, the combination with the beam, of the integral bifurcated stock formed with the cylindrical screw-threaded upper end of uniform diameter and adapted to be adjustably secured both axially and longitudinally in said beam and having its lower bifurcated members spaced apart and secured in this position, a block fitted between said members and formed with lateral flanges at its forward end to engage the forward edge of the two members, a bolt for clamping said block in position, a moldboard formed with a longitudinal rib on its landside edge, and a bolt for clamping said moldboard in position, substantially as and for the purpose set forth.

3. In a plow, the combination with the beam, the handle secured thereto, a bar secured between the lower ends of said handles, a stock secured to the beam, a moldboard secured to the stock, a landside secured to the lower end of the stock and gradually increasing in thickness from its forward to its rear end, which rear end is provided with a countersunk aperture, a screw having a head fitted in said aperture and having a shoulder on the opposite side of the landside, and a nut located between said plate and one of the handles and on said screw, for the purpose of moving said screw laterally and adjusting the landside, substantially as set forth.

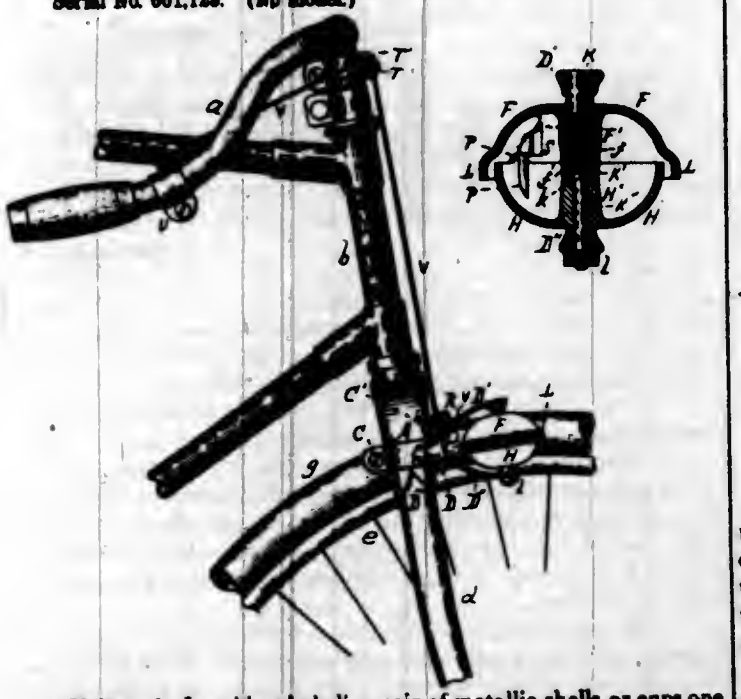
607,935. **SAFETY ATTACHMENT FOR DEMIJOHNS.** JOSEPH LENORMAND, San Francisco, Cal. Filed Mar. 26, 1898. Serial No. 675,371. (No model.)



Claim.—As an article of manufacture, a demijohn having an exterior covering of woven or wicker work, a wire or rod contained

within said covering and extending across the bottom of the demijohn and up along the sides and following the curvature of the neck, and secured around said neck, and a loose ring secured to the wire and extending through the wicker-work covering, and serving as a means for attaching the demijohn to a fixed object.

607,986. BICYCLE-BELL. ALLEN H. LESTER, Bath, Me., assignor to the Torrey Roller Bushing Works, same place. Filed Dec. 8, 1897. Serial No. 661,129. (No model.)



Claim.—1. In a bicycle-bell, a pair of metallic shells or cups one of which is adapted to be rotated by contact with the tire of a bicycle-wheel and the other of which is stationary, said shells or cups being provided on their inner surfaces with projections and being so placed with relation to each other that the rotation of the shell adapted to be actuated by the tire will bring the said projections into contact, and thus sound an alarm, substantially as described.

2. In a bicycle-bell, a pair of metallic shells or cups, one of which is adapted to be rotated by contact with the tire of a bicycle-wheel and the other of which is stationary, said shells or cups being provided on their inner surfaces with projections and being so placed with relation to each other that the rotation of the shell adapted to be actuated by the tire will bring the said projections into contact, the rotative shell being mounted on an axle which allows the shell to slide thereon in order that its projecting portion may slip over the projection on the stationary shell, thus sounding an alarm, substantially as set forth.

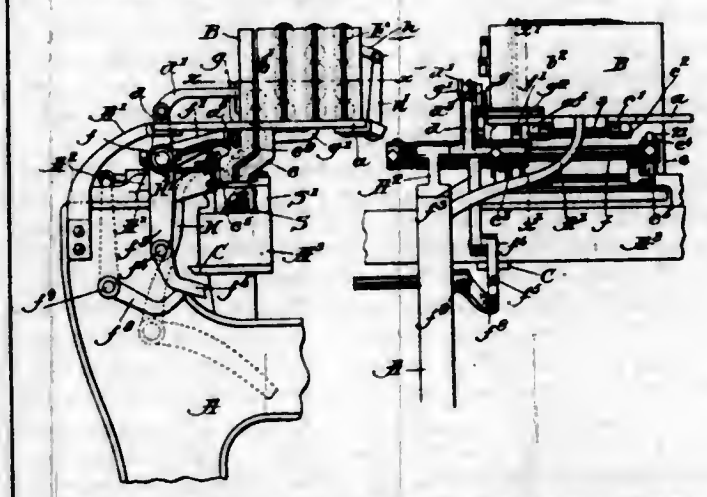
3. In a bicycle-bell, a bolt; the inverted shell or cup H adapted to be rigidly secured on said bolt; the shell or cup F mounted on said bolt and adapted to rotate and slide thereon; projections extending from the inner surfaces of said shells or cups; and a spring disposed between the bolt and the shell F and adapted to hold said shell F sufficiently near the shell H to cause the projection in the shell F to strike a blow upon the projection in the shell H as said shell F rotates, substantially as described.

4. In a bicycle-bell, a bolt; the inverted shell H adapted to be rigidly secured on said bolt; the shell F mounted on said bolt and adapted to slide and rotate thereon; the projection S extending inward from the inner surface of the shell F; the projection P extending upward from the upper edge of the inverted shell H into the path of the projection S; and a spring operating to hold the shell F normally toward the shell H, whereby rotation of the shell F causes the projection S to strike a blow upon and slip over the projection P, substantially as set forth.

5. In a bicycle-bell, a bolt; the inverted shell H rigid on said bolt; the shell F mounted on said bolt and adapted to rotate and slide thereon, the mouth of said shell F overlapping the edge of the mouth of the shell H and provided on its periphery with means whereby the tire of a bicycle wheel may engage and rotate said shell F by friction; a spring holding the shells normally in the said position; and projections on the inner surfaces of said shells adapted to come in contact as the shell F rotates, and thus sound an alarm, substantially as described.

6. In a bicycle-bell, a clamp adapted to be applied to the fork of a bicycle opposite the side of the tire; the arms D′ D″; frame D pivotally secured to the stationary jaw of the clamp and provided with the bolt K, K′, K″ supported by said arms; the inverted shell H provided with the hub H′ and inward projection P adapted to be rigidly secured to said bolt; the shell F provided with the hub F′ and inward projection S adapted to rotate and slide on said bolt; a spring disposed around the bolt and adapted to hold the shell F normally against the shell H; and a spring intermediate of the stationary jaw of the clamp and the supporting-arms adapted to hold the shells normally away from the tire, substantially as set forth.

607,937. LOOM. CHARLES A. LITTLEFIELD, Lowell, Mass., assignor to the Draper Company, Portland, Me. Filed Dec. 3, 1897. Serial No. 660,600. (No model.)



Claim.—1. In a loom, an open-bottom hopper having compartments to receive superposed filling-carriers, a throat into which the carriers pass by gravity from a compartment, a detector to detect the exit of the last carrier from such compartment, and means controlled by the detector to move the hopper and bring a full compartment into delivery position.

2. In a loom, the lay having a shuttle-box, a shuttle open at top and bottom, a movable hopper having compartments for the filling-carriers, and a delivery-throat, combined with a transferrer to transfer a filling-carrier from the throat to the shuttle, and means, operatively connected with the transferrer, to move the hopper intermittently, to bring one compartment after another into position relative to the delivery-throat.

3. In a loom, a lay having a shuttle-box, a movable hopper having compartments open at top and bottom, for the filling-carriers, a fixed hopper-bottom having a discharge-throat, a shuttle open at top and bottom, means to transfer a filling-carrier from the throat to the shuttle, a detector to detect the absence of filling-carriers in the hopper-compartment above the throat, and means controlled by said detector to move the hopper when a compartment has been emptied.

4. In a loom, a movable hopper having open-bottom compartments to receive superposed series of filling-carriers, a supporting-bottom for the hopper, having a delivery-throat, to receive filling-carriers from a hopper-compartment, a transferrer, normally inoperative hopper-moving means actuated at each movement of the transferrer, and a controlling device for said means, said device permitting operative movement of said means upon the exit of all the filling-carriers from a hopper-compartment.

5. A loom containing the following instrumentalities, viz: a lay and its shuttle-box; a shuttle slotted for the passage through it of a filling-carrier; a transferrer; a movable hopper having compartments open at their lower ends and provided with means to engage the heads of and guide a superposed series of filling-carriers in each compartment; a delivery-throat to receive filling-carriers from one compartment after another, and actuating mechanism for the transferrer and hopper, to move the latter intermittingly as one compartment after another is emptied of its filling-carriers, and to actuate the transferrer to transfer the filling carriers singly from the throat to the shuttle.

6. The lay; its shuttle-box, and a transferrer, combined with a movable filling-carrier hopper or feeder, having open-bottom compartments; a delivery-throat; a step-by-step mechanism to move the hopper at the proper time to bring a new compartment above the throat, to discharge its filling-carriers by gravity into said throat, and a detector to govern said step-by-step mechanism, said detector effecting operation of the latter when a hopper-compartment is empty.

7. A movable hopper having upright compartments open at top and bottom, to receive each a series of superposed filling-carriers, and a hopper-support having a discharge-opening and a delivery-throat, said support permitting filling-carriers to pass only from that compartment above the discharge-opening.

8. A movable hopper having upright compartments open at top and bottom, to receive each a series of superposed filling-carriers, one end of each compartment having a vertical slot for the filling end, a hopper-support having a discharge-opening and a depending delivery-throat slotted along one end, and means to move the hopper to bring one compartment after another above the discharge-opening.

9. A movable hopper having compartments open at top and bottom, each to receive a series of superposed filling-carriers, a fixed hopper-support having a discharge-opening, means to move the hopper intermittingly, a controlling device for said means, including a detector extended into said hopper near the bottom thereof, to detect the exit of the last filling-carrier from a compartment and thereupon permit the operation of the means to move the hopper to bring a full compartment into operative position, and a detent to prevent retrograde movement of the hopper.

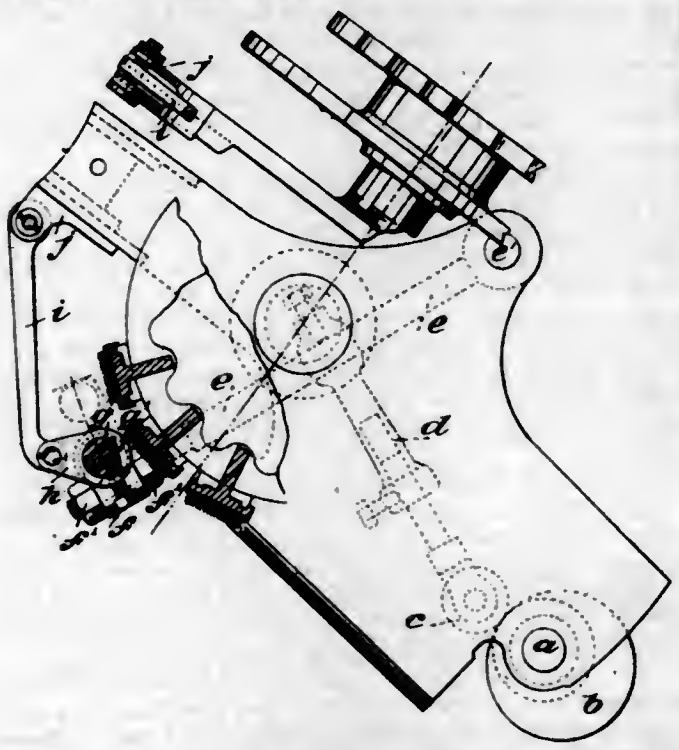
10. A hopper adapted to receive and hold separated series of filling-carriers, a delivery-throat into which the filling-carriers are discharged, means to bring one series of filling-carriers after another into discharging position, and a controlling device for said means, operative upon discharge of an entire series, to thereby permit movement of a fresh series into discharging position.

11. A hopper adapted to receive and hold separated series of filling-carriers, a delivery-throat into which the filling-carriers are discharged, a detent to normally act upon the lowermost filling-carrier and retain it in the throat, and a transferrer to transfer the lowermost filling-carrier past the detent and remove it from the throat, combined with means operated by said transferrer, to present one series of filling-carriers after another to the throat, to be discharged thereinto, and a controlling device for said means, acting upon discharge of an entire series to permit effective operation of said means.

12. In a loom, the lay having a shuttle-box and a shuttle open at top and bottom, a movable hopper having a plurality of open-bottom compartments adapted each to receive a series of filling-carriers, and a stationary support for and to serve as a bottom for the hopper, said support having a discharge-opening, combined with a yielding throat depending from said support below the opening thereof and adapted to register with the shuttle-box when the lay is forward, a transferrer operative upon failure of the filling, to transfer the endmost filling-carrier from the throat to the shuttle, and means to automatically move the hopper to bring one after another of the compartments thereof above the throat, to discharge its filling-carriers therein to by gravity.

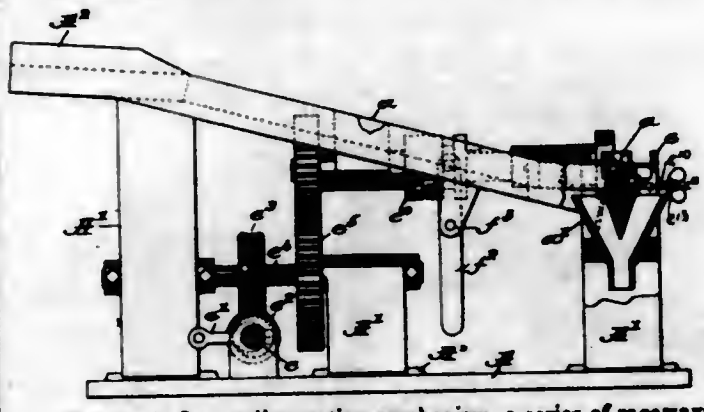
13. In a loom, a hopper, a support therefor having a discharge-opening for the filling-carriers, a depending throat pivotally mounted on said support, and a controlling-spring therefor, a detent at the delivery end of said throat, a transferrer operative upon failure of the filling to transfer the endmost filling-carrier from said throat, and means to return the detent to operative position after the transfer of said filling-carrier.

607,988. STRIPPING-COMB. THOMAS R. MARRIOTT and HENRY WALSH, Oldham, England. Filed Sept. 23, 1897. Serial No. 653,372. (No model.) Patented in England Nov. 21, 1896, No. 26,312.



Claim.—In a stripping-comb apparatus for stripping the revolving flats of carding-engines, the combination with the supporting-arms *c*, with means for operating the same, the carrier-blocks supported thereby, the comb-bar *g* supported by said blocks and having rocking movement thereon, the arm or crank *h* connected to said bar *g*, and the link *i* connecting said arm *h* with a stationary part of the frame, substantially as described.

607,989. NAIL-ASSORTING MECHANISM. BENJAMIN F. MAYO, Salem, Mass., assignor to James W. Brooks, Peterham, and John Brooks, Cambridge, trustees for the McKay-Bigelow Heeling Machine Association, Boston, Mass. Filed Aug. 24, 1897. Serial No. 649,318. (No model.)



Claim.—1. In a nail-assorting mechanism, a series of raceways, adapted to receive upon them and sustain, the entire length of the nails, and pockets arranged at the sides of said raceways, combined with a transferrer adapted to meet the sides of a series of nails and push the same laterally from the said raceways, said nails dropping into said pockets, substantially as described.

2. In a nail-assorting mechanism, a series of raceways, and pockets arranged at the sides of said raceways, combined with a transferrer adapted to meet the sides of a series of nails and push the same laterally from the said raceways, said nails entering said pockets, and a balancing device coöperating with each pocket, substantially as described.

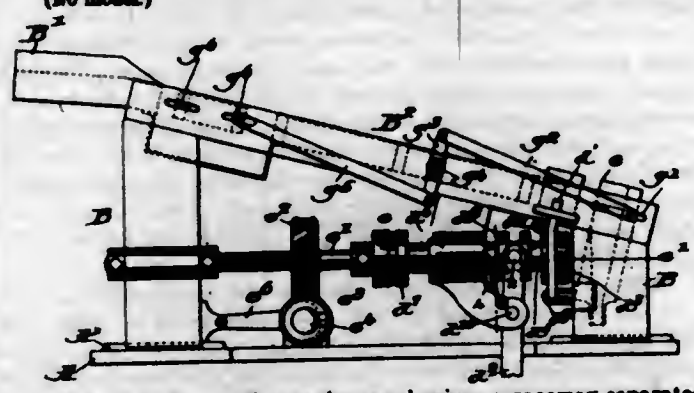
3. In a nail-assorting mechanism, a series of raceways, adapted to receive upon them and sustain, the entire length of the nails, pockets at the sides of said raceways, and a stop for the leading end of the endmost nails on said raceways, combined with a transferrer adapted to meet the sides of a series of nails and push the same laterally from the said raceways, said nails dropping into said pockets, substantially as described.

4. In a nail-assorting mechanism, a series of raceways having extensions of lesser inclination, a series of pockets, and balancing devices, combined with transferring mechanism, to operate, substantially as described.

5. A series of raceways having transverse grooves, a stop at the ends of said raceways to stop the endmost nails, combined with a transferrer entering said grooves, and means to actuate said transferrer to push said nails from said raceways laterally, substantially as described.

6. A series of raceways to receive and guide a series of nails, a series of pockets at the sides of said raceways, combined with a two-armed transferrer having lugs or fingers to contact with the side of each nail to be transferred at two points, substantially as described.

607,940. NAIL-ASSORTING MECHANISM. BENJAMIN F. MAYO, Salem, Mass., assignor to James W. Brooks, Peterham, and John Brooks, Cambridge, trustees for the McKay-Bigelow Heeling Machine Association, Boston, Mass. Filed Aug. 24, 1897. Serial No. 649,230. (No model.)



Claim.—1. In a nail-assorting mechanism, a raceway separated into a plurality of sections adapted to insure the travel of a nail from one into the other section when the individual portions of said sections are in the same vertical plane, and a stop to rest the leading end of the nail, combined with means to effect relative lateral movement of one portion or section of said raceway with relation to the other portion or section thereof, to insure the discharge of nails, substantially as described.

2. In a nail-assorting mechanism, a raceway separated into a plurality of sections adapted to insure the travel of a nail from one into the other section when the individual portions of said sections are in the same vertical plane, a stop located below the endmost section for

the nail resting on said section and coming from the section above, combined with a preliminary stop on the endmost section, to act as a stop for the nail next back of the one to be discharged, and with means to effect relative lateral movement of one portion or section of said raceway with relation to the other portion or section thereof, to insure the discharge of the nails, substantially as described.

3. In a nail-assorting mechanism, a raceway separated into a plurality of sections adapted to insure the travel of a nail from one into the other section when the individual portions of said sections are in the same vertical plane, a stop located below the endmost section for the nail resting on said section and coming from the section above, combined with a preliminary stop on the endmost section, to act as a stop for the nail next back of the one to be discharged, and with means to effect relative lateral movement of one portion or section of said raceway with relation to the other portion or section thereof, a hopper, and a preliminary start located above the uppermost section of said raceway and separated therefrom by a space to insure the discharge of all nails leaving the hopper head foremost, substantially as described.

4. The raceway sections or portions b, combined with a movable actuator upon which is mounted a series of raceway sections or portions b', and suitable preliminary stops b^3, combined with a series of stops for the ends of the nails lying on the raceway-section b', and means to actuate said parts for the discharge of nails, substantially as described.

5. In a nail-assorting mechanism, a raceway separated into a plurality of sections adapted to insure the travel of a nail from one into the other section when the individual portions of said sections are in the same vertical plane, combined with means to affect relative lateral movement of one portion or section of said raceway with relation to the other portion or section thereof, to insure the discharge of nails, and a series of pockets normally out of line with said raceway-sections when the nails are traveling from one to the other section, said pockets receiving the nails from the laterally-movable sections, substantially as described.

6. In a nail-assorting mechanism, a raceway composed of two portions b and b', and preliminary starts; and a series of stops; combined with means connecting said preliminary starts and stops whereby they may be simultaneously adjusted to accommodate the raceway to nails of different lengths, substantially as described.

607,941. NAIL-ASSORTING MECHANISM. BENJAMIN F. MAYO, Salem, Mass., assignor to James W. Brooks, Peterham, and John Brooks, Cambridge, trustees for the McKay-Bigelow Heeling Machine Association, Boston, Mass. Filed Aug. 27, 1897. Serial No. 649,732. (No model.)

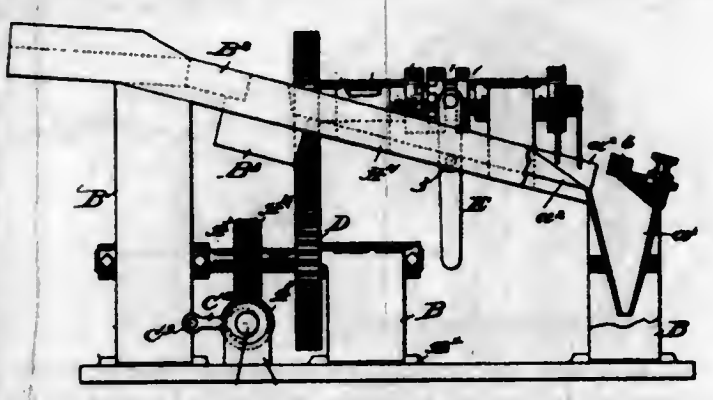


Claim.—In a nail-assorting mechanism, a suitable hopper to receive the nails to be assorted, preliminary starts for the nails, and from which the nails arriving thereon head first drop, raceways to receive from said starts the nails coming thereon point first, a series of pockets arranged at the sides of said raceways, a movable transferrer having fingers to meet said nails laid point first on said raceways and push them laterally into said pockets, combined with an end stop which may be adjusted to make operative either a point or head arrester as it is desired to deliver the nails into the pockets head or point first, the head leading when the point meets an arrester, and vice versa, substantially as described.

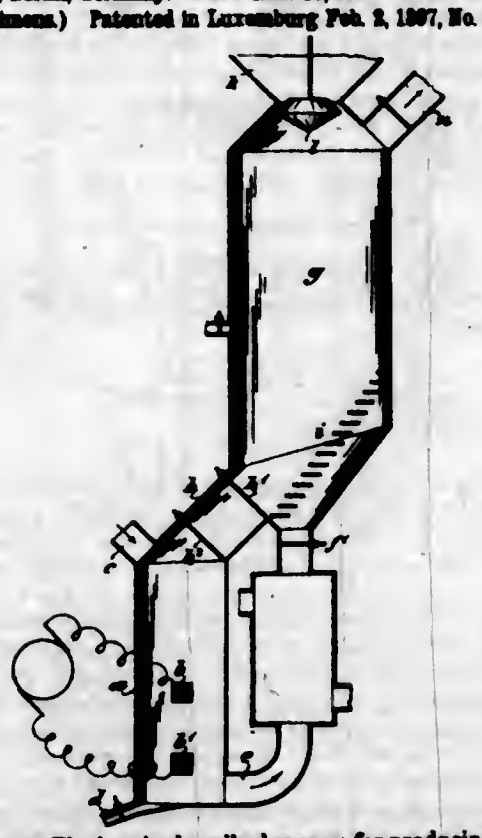
607,942. NAIL-ASSORTING MECHANISM. BENJAMIN F. MAYO, Salem, Mass., assignor to James W. Brooks, Peterham, and John Brooks, Cambridge, trustees for the McKay-Bigelow Heeling Machine Association, Boston, Mass. Filed Aug. 27, 1897. Serial No. 649,733. (No model.)

Claim.—In a nail-assorting mechanism, a series of main raceways; a stop to stop the nails resting at the ends of said main raceways; a series of pockets located at the sides of and beyond the delivery ends of said main raceways, and auxiliary raceways having their delivery ends located in a plane below the said stop, combined with a transferrer to act against the nails on the main raceways and by a lateral movement place them on the auxiliary raceways from the ends of which they are discharged into the pockets, substantially as described.

607,942.



607,948. METHOD OF PRODUCING AMMONIA. HERMANN MEMMEN, Berlin, Germany. Filed Mar. 11, 1897. Serial No. 627,057. (No specimens.) Patented in Luxemburg Feb. 2, 1897, No. 2,748.



Claim.—1. The herein-described process for producing ammonia which consists in exposing a mixture of coal and alkali or alkaline earth-metal carbonate to the heat of an electric furnace while air is caused to pass through the same, allowing the cyanid vapors produced to escape into a receiver, causing them to condense therein upon coal, decomposing the condensed cyanid into ammonia and alkali carbonate by admitting steam into the condenser, and returning the residual mixture of alkali carbonate and coal into the furnace, substantially as and for the purpose stated.

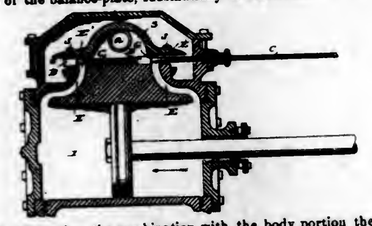
2. The described process for producing ammonia which consists in exposing a mixture of coal and alkali or alkaline earth-metal carbonate to the heat of an electric furnace while air is caused to pass through the same, allowing the cyanid vapors to escape at the zone of the electrodes into a receiver, causing them to condense therein upon coal, decomposing the condensed cyanid into ammonia and alkali or alkaline earth-metal carbonate by admitting steam into the condenser, and returning the resulting mixture of carbonate and coal into the furnace, substantially as and for the purpose stated.

3. The improvement in the production of ammonia consisting in passing air in contact with a heated mixture of coal and alkali or alkaline earth-metal carbonate to produce cyanid vapors, condensing the vapors in contact with coal outside of the furnace, steaming the thus-obtained mixture to decompose the cyanid, and using the thus-alkalinized coal for contact with the fresh body of air for a repetition of the process, substantially as described.

607,944. SLIDE-VALVE. CHARLES MORRIS, Red Canyon, Wyo. Filed Jan. 11, 1898. Serial No. 666,369. (No model.)

Claim.—1. The combination with the cylinder, a steam-chest, and the ports leading from the chest to the cylinder, of a balance-plate located within the chest and secured wholly to the valve-seats, and provided with a recess, a valve for alternately admitting steam at one end of the cylinder, and exhausting it at the other end into the recess of the balance-plate, and the exhaust-pipe extending

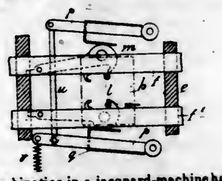
through the sides of the steam-chest and communicating with the recess of the balance-plate, substantially as described.



2. In a valve, the combination with the body portion thereof, having a transverse recess in its ends, packing-strips located in said transverse recesses, and provided with clamping-springs for supporting and exerting an upward pressure on said strips, and clamping-plates bolted to the ends of the valves to close said recesses, substantially as set forth.

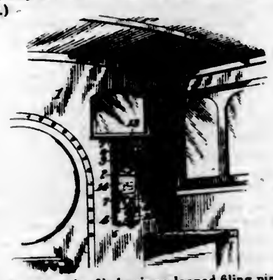
3. A valve having a transverse recess in one of its sides, a packing-strip located in said recess, screws mounted in said recess against rotation, a spring supported by said screws and in turn supporting the packing-strips, nuts for adjusting the tension of the screws, and a clamping-plate secured to the side of the valve to inclose the parts arranged within the recess, substantially as described.

607,945. JACQUARD-MACHINE FOR LOOMS. FRITZ MÜHLENHAUS, Barmen, Germany. Filed Nov. 30, 1897. Serial No. 660,294. (No model.)



Claim.—In combination in a jacquard-machine having two cylinders, one for ground the other for figure binding, the arrangement of slides as *f*, *f'* to carry said cylinders, a carriage as *k*, having bolts as *l*, said bolts engaging stationary hooks *k'* of the slides to push them in one direction and engaging alternately-movable hooks as *m*, *m'* for the contrary movement of the slides, said movable hooks being acted upon by connected levers *p* with spring-blades and a cam-disk *r* and connections therefrom to the sickers of the machine to tare the cam in the described manner as and for the purpose described and as shown in the drawings.

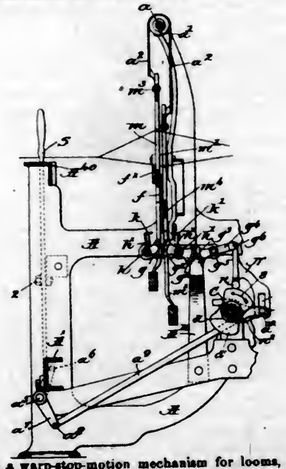
607,946. ORDER-FILE FOR LOCOMOTIVE-ENGINEERS. ANDS MCKANNA, Emporia, Kans. Filed July 30, 1897. Serial No. 646,567. (No model.)



Claim.—A train-order file having a looped filing pin consisting of a shank extended at its lower end to form a loop and a filing-needle, and provided at an interval from said loop with a forwardly-extending holding-arm to close the throat of the loop, and a securing-plate provided with eyes through which said shank is threaded, and being arranged between the planes of said holding-arm and loop, and extending from the former to the latter, to prevent relative displacement of the pin and securing-plate, substantially as specified.

607,947. WARP-STOP-MOTION MECHANISM FOR LOOMS. JAMES H. NORTHROP, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Oct. 8, 1897. Serial No. 654,514. (No model.)

Claim.—1. In a warp-stop-motion mechanism for looms, stop-motion-actuating detectors controlled as to their position by the warp-threads, a vibrating feeler moved by gravity toward and to be stopped by a dropped detector, stopping means for the loom, including a pivotally-supported bunter governed as to its position by the feeler, a rotatable shaft, and a bunter-actuating cam and feeler-controlling cam fast thereon, said controlling-cam effecting the movement of the feeler away from the detectors, substantially as described.



2. In a warp-stop-motion mechanism for looms, a plurality of series of stop-motion-actuating detectors controlled as to their position by the warp-threads, independently-mounted vibratable feelers one for each series, to be engaged and stopped by a dropped detector therein, connections between and to vibrate said feelers in unison, and means to positively rock the feelers away from the detectors, the opposite movement being effected by gravity, said means including a rocking arm, a leg depending therefrom, and a cam to normally engage said leg and rock said arm in one direction, substantially as described.

3. In a warp-stop-motion mechanism for looms, a plurality of series of stop-motion-actuating detectors controlled as to their position by the warp-threads, independently-mounted vibratable feelers one for each series, to be engaged and stopped by a dropped detector therein, connections between and to vibrate said feelers in unison, and means including a rocking arm, a leg depending therefrom, and a cam to normally move the leg to rock said arm in one direction, to positively rock the feelers away from the detectors, the opposite movement being effected by gravity, combined with stopping mechanism for the loom, including a bunter connected with said leg and governed as to its position by the feelers, and an actuator to engage the bunter and stop the loom upon engagement of a dropped detector by its feeler, substantially as described.

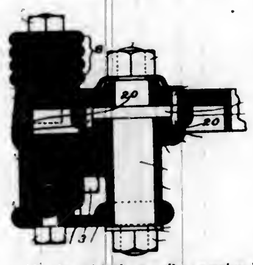
4. In a warp-stop-motion mechanism for looms, a plurality of series of stop-motion-actuating detectors controlled as to their position by the warp-threads, independently-mounted vibratable feelers one for each series, to be engaged and stopped by a dropped detector therein, gearing between said feelers, to effect their vibration in unison, a pivotally-mounted, depending leg connected with said feelers and having a bunter thereon, a cam to lift said leg and rock the feelers in one direction, and an actuator for the bunter, combined with a knock-off arm, and connections between it and the leg, movement of the bunter by its actuator, due to stoppage of a feeler by a dropped detector, operating the knock-off arm to effect stoppage of the loom, substantially as described.

5. In a warp-stop-motion mechanism for looms, including stop-motion actuating detectors and a cooperating vibratable feeler, a rocker-arm, a positive connection between the feeler and rocker-arm, to rock the latter, a bunter pivotally suspended from the rocker-arm, to rise and fall as the feeler vibrates, a tappet-cam adapted to engage and swing the bunter laterally upon stoppage of the feeler by a dropped detector, and stopping mechanism for the loom, connected with and operated by lateral movement of the bunter, substantially as described.

607,948. CARRIAGE-COUPLING. ISAAC OSGOOD, Amesbury, Mass. Filed Dec. 13, 1897. Serial No. 661,615. (No model.)

Claim.—1. The combination with the coupling member having the pipe-box or bearing, of the king-bolt fitting within said pipe-box

or bearing, the other coupling member having the said king-bolt applied thereto, and means of rigidly affixing the king-bolt to the latter coupling member, the king bolt receiving the entire horizontal strain, substantially as described.



2. The combination with the coupling member having the pipe-box or bearing, of the king-bolt fitting within said pipe-box or bearing and having the projecting collar, the other coupling member having the said king-bolt applied thereto, and means of rigidly affixing the king-bolt to the latter coupling member, substantially as described.

3. The combination with the coupling member having the pipe-box or bearing and the oil-cup at the upper end of such pipe-box or bearing, of the king-bolt fitting within said pipe-box or bearing and having the projecting collar located within said oil-cup, the other coupling member having the king-bolt applied thereto, and means of rigidly affixing the king bolt to the latter coupling member, substantially as described.

4. The combination with the coupling member having the pipe-box or bearing, and the stay or brace applied to one end of said pipe-box or bearing and whereby to afford support to the latter against laterally-exerted strain, of the king-bolt fitting within said pipe-box or bearing and having the projecting collar, the other coupling member having the said king-bolt applied thereto, and means of rigidly affixing the king-bolt to the latter coupling member, substantially as described.

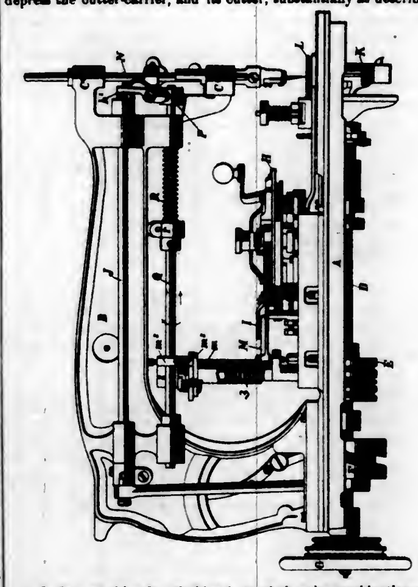
5. The combination with the axle, of the lower coupling member having the pipe-box or bearing and seated upon the upper side of the axle and secured thereto, the said member having a downwardly-projecting portion constructed to engage with the axle and receive the strain and to prevent the axle from drawing out from under the lower coupling member in case of breakage of the securing-bolts, the king-bolt fitting within said pipe-box or bearing and having the projecting collar, the other coupling member having the said king-bolt applied thereto, and means of rigidly affixing the king-bolt to the latter coupling member, substantially as described

6. The combination with the axle, and head-block, of the lower coupling member applied to the axle and having the pipe-box or bearing the upper coupling member having a seat for the head-block and also the upwardly-extending plate or lugs bolted to said head-block, the king-bolt applied to said upper coupling member, fitting within said pipe-box or bearing, and having the projecting collar, and means of rigidly affixing the king-bolt to the upper coupling member, substantially as described.

607,949. YIELDING AUTOMATIC CUTTER MECHANISM FOR SEWING-MACHINES. FREELAND W. OSBORN, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company, same place. Filed June 4, 1897. Serial No. 639,309. (No model.)

Claim.—1. In a machine for stitching buttonholes, the combination with a stitch-forming mechanism; a work-clamp; and mechanism for giving to the work-clamp a vibratory movement and a feed movement; of a cutter; a cutter-carrier; a cutter-depressor; connections between said cutter carrier and depressor; a device governed by the clamp-operating mechanism; connections between said device and depressor; a depressor-releasing device controlled by the stitch-forming mechanism for governing the operation of the depressor; and connections between said releasing device and depressor, substantially as described.

2. In a machine for stitching buttonholes, the combination with a stitch-forming mechanism; a work-clamp; and mechanism for giving to the work-clamp a vibratory movement and a feed movement; of a cutter; a cutter-carrier; a normally inoperative cutter-depressor; connections between said cutter carrier and depressor; a device governed by the clamp-operating mechanism; connections between said device and depressor to render the depressor active or operative; and a depressor-releasing device, one member of which is connected with the stitch-forming mechanism and the other, by connections, with the depressor, whereby upon separation of said members through the operation of the stitch-forming mechanism the depressor is free to depress the cutter-carrier, and its cutter, substantially as described.



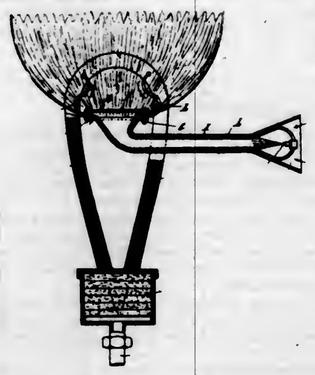
3. In a machine for stitching buttonholes, the combination with a stitch-forming mechanism; a work-clamp: and mechanism for operating the latter; of a cutter; a cutter-carrier; a yielding, self-operating cutter-depressor; connections between said cutter carrier and depressor; a restraining-cam to restrain the depressor from action; a device rotating in unison with the clamp-operating cam; connections between said device and restraining-cam whereby said restraining-cam is released by said device in the rotation of the clamp-operating cam to thereby release the depressor; and a cutter-carrier elevator carried by the needle-bar, substantially as described.

607,950. SHIELD FOR CORNS. EVELYN PIERREPONT, London, England. Filed Aug. 23, 1897. Serial No. 649,234. (No model.)



Claim.—A curative appliance consisting of an imperforate protective shield, and an annular cushion comprising a series of annular concentric projecting ribs secured to the shield surrounding the center for the purposes set forth.

607,951. APPARATUS FOR VAPORIZING MINERAL OILS, &c. RENÉ A. PORTRIOT, Paris, France. Filed May 29, 1896. Serial No. 593,557. (No model.)

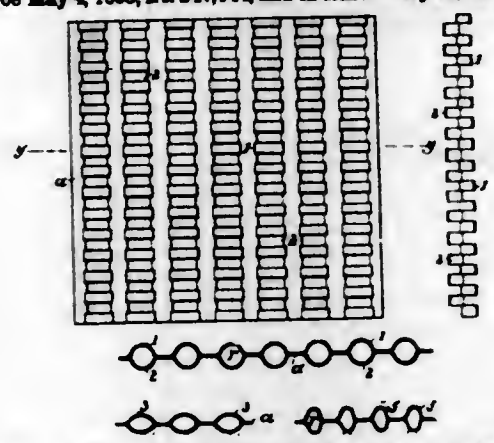


Claim.—The combination in a burner, of an oil-supply pipe, a vaporizing-retort, a burner-tube open at one end and having its opposite end secured to or forming part of the burner, the burner, a jet-nozzle situated in the open end of the burner-tube and a superheating pipe or tube extending between the vaporizing-retort and the jet-nozzle, said superheating pipe or tube being so situated as to be acted upon by the flame and extending within the burner-tube to the jet-nozzle, substantially as specified.

607,952. **FRAME FOR FILTERS.** KAREL PROKE, Prague, Austria Hungary, assignor to the Society Akciova Spolecnost Strojirny Drive Breitfeld, Danek & Spol, Karlin, Austria-Hungary. Filed Dec. 2, 1897. Serial No. 660,522. (No model.)

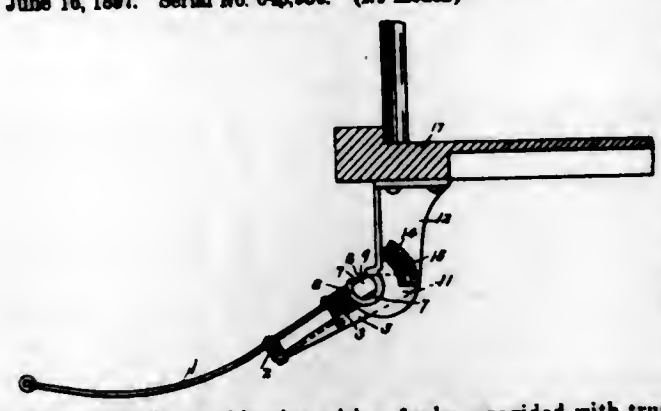
Claim.—The combination, in frames for filters having corrugated or other plates or matwork or the like with an open frame-tube A, the which is provided with two longitudinal flanges or laps *a*, *a* which support the corrugated or other plates or matwork, so as to keep the section of the tube A free, substantially as set forth.

607,958. **TUBULARLY-STRAPPED FILTER PLATE OR SHEET.** KAREL PROKE, Prague, Austria-Hungary, assignor to the Society Akciova Spolecnost Strojirny Drive Breitfeld, Danek & Spol, Karlin, Austria-Hungary. Filed Dec. 30, 1897. Serial No. 664,518. (No model.) Patented in Austria Mar. 30, 1895, No. 45/1,907; in Belgium Apr. 4, 1895, No. 114,917; in Hungary Apr. 23, 1895, No. 2,650; in France May 4, 1895, No. 247,144, and in Russia July 30, 1896, No. 15,605.



Claim.—A filter-plate having parallel tubes *r*, *r'*, formed by cutting strips from the plate and bending them alternately in opposite directions, substantially as described.

607,954. **CAR-FENDER.** JOHN W. RAPER, Providence, R. I., assignor to the Consolidated Car Fender Company, same place. Filed June 16, 1897. Serial No. 640,959. (No model.)



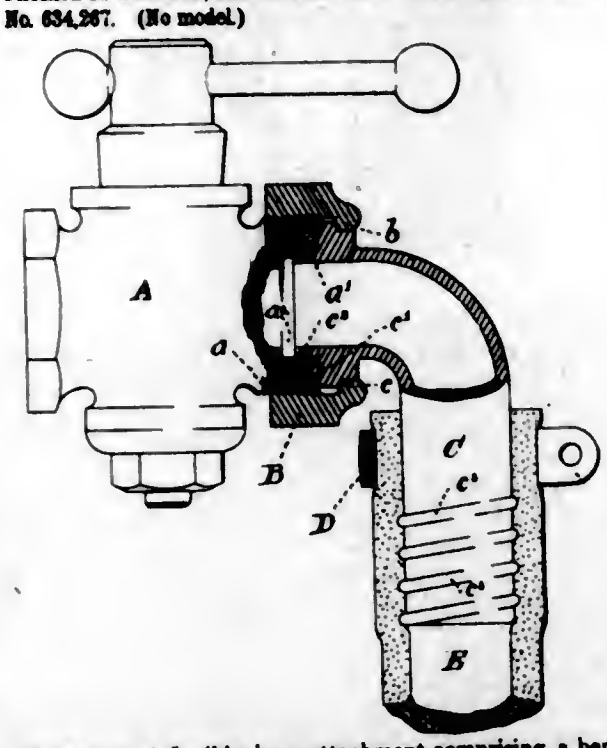
Claim.—1. The combination with a fender provided with trunnions and with a rearwardly-projecting rigid part, of open bearings for supporting said trunnions, and an independent abutment at the rear of said bearings against which said rearwardly-projecting part of the fender bears, substantially as described.

2. The combination with a fender provided with trunnions, and with a rearwardly-projecting rigid part, of open bearings for supporting said trunnions, an adjustable abutment in the rear of said bearings against which said rearwardly-projecting part of the fender bears, substantially as described.

3. A bracket provided with a base-plate for securing the same to the car, an open bearing in said bracket, and a lug adjustably secured to said bracket in the rear of said bearing, substantially as described.

4. A bracket provided with a base-plate for securing the same to the car, an open bearing in said bracket, a slot in said bracket in the rear of said bearing corrugations on the surfaces of said bracket adjacent to said slot, a lug provided with corresponding corrugations, and a bolt passing through said slot for securing said lug to said bracket, substantially as described.

607,955. **HOSE-ATTACHING DEVICE FOR ROCK-DRILLS.** PATRICK H. REARDON, San Francisco, Cal. Filed Apr. 28, 1897. Serial No. 634,267. (No model.)



Claim.—1. A flexible hose attachment comprising a bent stop-cock nozzle provided with non-angular screw-threads and a clamp adapted to secure the hose upon the nozzle adjacent to and beyond the threads.

2. A flexible hose attachment comprising a curved stop-cock nozzle provided with non-angular screw-threads, a clamp adapted to bind the hose upon the nozzle adjacent to the threads, and suitable coupling devices whereby the parts are connected together and in place.

3. A hose-attaching device comprising a stop-cock having a curved rotatable nozzle at one end provided with round non angular screw-threads raised above its surface, a compression-clamp adapted to surround the nozzle adjacent to the threads, whereby a flexible hose is secured thereupon, and means adapted to secure the stop-cock to a drill.

607,956. **LUMBER OR TIMBER RAFT.** HUGH R. ROBERTSON, Alameda Cal. Filed Jan. 6, 1896. Serial No. 575,726. (No model.)

Claim.—1. A lumber or timber raft having a body composed of a suitably-laid-up mass, and fastening devices comprising top and bottom cross tie-timbers, with vertical tie rods or bolts, provided with tightening means, whereby said timbers are connected and tightened on the mass, and chains or cables encircling the mass and having tightening means, whereby the tie rods or bolts are relieved from side strain.

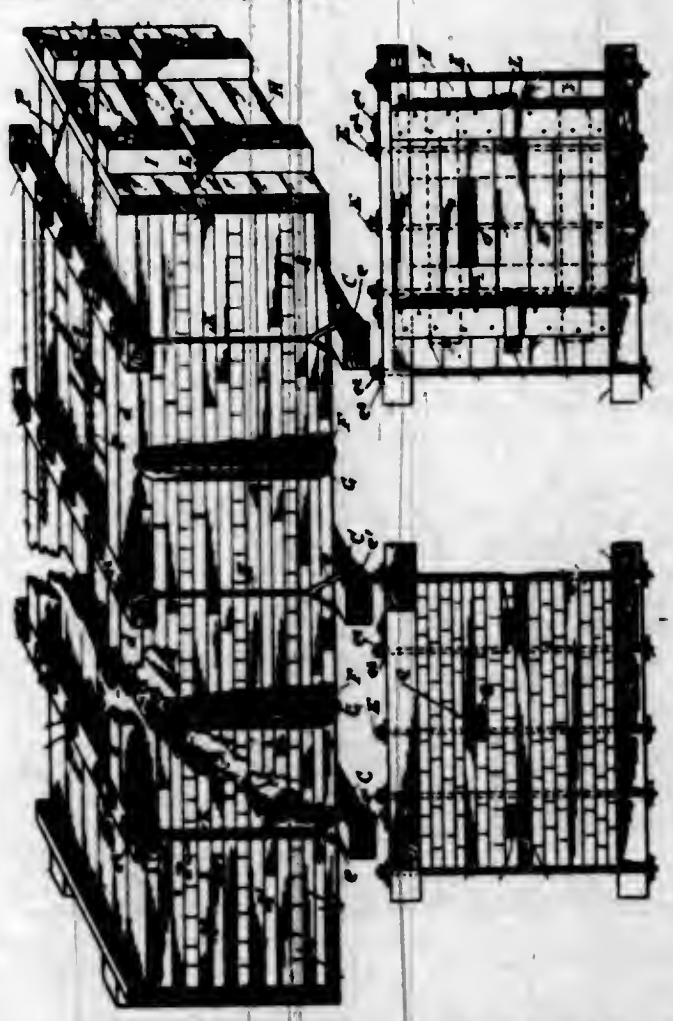
2. A lumber or timber raft having a body composed of a suitably-laid-up mass, and fastening devices comprising top and bottom cross tie-timbers, with vertical tie rods or bolts, provided with tightening means, whereby said timbers are connected and tightened on the mass, and chains or cables encircling the mass and having tightening means, whereby the tie rods or bolts are relieved from side strain, said chains or cables having pillow-blocks on the sides of the raft and in which they are seated.

3. A lumber or timber raft having a body composed of a suitably-laid-up mass, fastened together in a suitable manner, a bulkhead at each end of the raft to resist endwise displacement, and chains or cables passing fore and aft through the raft and connecting the two bulkheads, said chains or cables having a spring or compensating device let into their length, to permit them to yield under the bending strain of the raft.

4. A lumber or timber raft having a body composed of a suitably-laid-up mass, fastened together in a suitable manner, a bulkhead at each end of the raft to resist endwise displacement, and chains or cables passing fore and aft through the raft, and connecting the two bulkheads, said chains or cables having a spring or compensating device let into their length, to permit them to yield under the bending strain of the raft, and provided with devices for tightening them.

5. A lumber or timber raft having a body composed of a suitably-laid-up mass fastened together, and a bulkhead for the end of

the body, comprising a rigid wall covering the end, and vertical and horizontal timbers on the inner face of said wall with which the ends of the component parts of the raft-body engage, whereby displacement of the bulkhead is prevented.



6. A lumber or timber raft having a body composed of a suitably-laid-up mass fastened together, and a bulkhead for each end of the body, comprising a rigid wall covering the end, and vertical and horizontal timbers on the inner face of said wall with which the ends of the component parts of the raft-body engage, whereby displacement of the bulkheads is prevented, and suitable tightening chains or cables passing through the raft and connecting the bulkheads.

7. A lumber or timber raft having a body composed of a suitably-laid-up mass fastened together, and a bulkhead for each end of the body, comprising a rigid wall covering the end, and vertical and horizontal timbers on the inner face of said wall with which the ends of the component parts of the raft-body engage, whereby displacement of the bulkhead is prevented, and suitable tightening chains or cables passing through the raft and connecting the bulkheads, said chains or cables having let into them a compensating or spring device to permit their adjustment under the bending strain of the raft.

8. In a lumber or timber raft having a body composed of a suitably-laid-up and fastened mass, a bulkhead for each end thereof consisting of outer vertical timbers, a plank wall secured to the inner faces thereof and covering the ends of the raft, vertical and horizontal timbers on the inner face of said wall for engaging the ends of the component parts of the raft-body, to prevent displacement of the bulkhead, and tightening, compensating chains or cables, passing through the raft and connecting the two bulkheads.

9. A lumber or timber raft composed of successive tiers or layers in planes at right angles, fastening devices comprising top and bottom cross tie-timbers with vertical tightening bolts or rods, encircling tightening chains or cables, a bulkhead for each end of the raft consisting of outer vertical timbers, a plank wall secured to the inner faces thereof and covering the ends of the raft, vertical and horizontal timbers on the inner face of said wall for engaging the ends of the component parts of the raft-body to prevent displacement of the bulkhead, and tightening, compensating chains or cables, passing through the raft and connecting the two bulkheads.

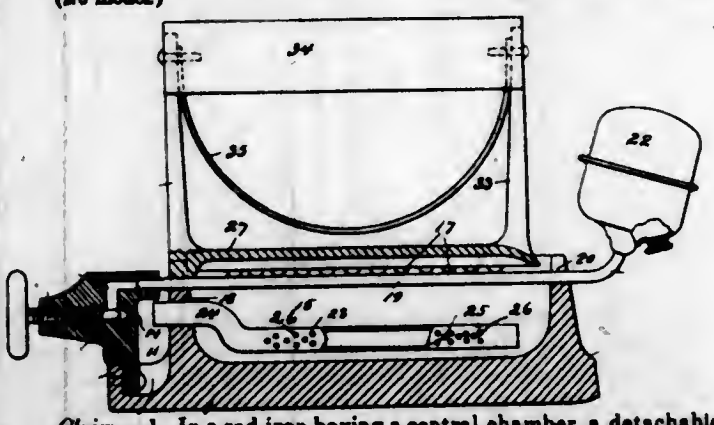
10. In a lumber or timber raft having a body composed of a suitably-laid-up mass, fastening devices comprising top and bottom cross tie-timbers with connecting tie rods or bolts, a tow chain or cable, passing through the raft and fastened at the rear end thereof, and a tightening chain or cable secured at the rear end of the raft and secured to the top cross tie-timbers, said chain or cable having a bight at its forward end through which the tow-chain passes.

11. A lumber or timber raft composed of successive tiers or layers in planes at right angles, top and bottom cross tie-timbers with connecting tie rods or bolts, a bulkhead for each end of the raft, cables or chains connecting the bulkheads, a tow chain or cable secured to the rear bulkhead and passing forwardly through the raft, and a tightening chain or cable encircling the rear end of the raft and thence passing forwardly over and secured to the top cross tie-timbers, said chain or cable having a bight at its forward end through which the tow-chain passes.

12. A lumber or timber raft composed of successive tiers or layers in planes at right angles, top and bottom cross tie-timbers with connecting tie rods or bolts, encircling cables or chains about the raft, a bulkhead for each end of the raft composed of a rigid resisting-wall provided with the vertical and horizontal timbers on its inner face, chains or cables connecting the bulkheads and provided with springs let into them, a tow chain or cable secured to the rear bulkhead and passing forwardly through the raft, and a tightening chain or cable encircling the rear end of the raft and thence passing forwardly over and secured to the top cross tie-timbers, said chain or cable having a bight at its forward end through which the tow-chain passes.

13. In a lumber or timber raft having a body composed of a laid up mass of material, and internal chains or cables passing through it, grooved housings within said body and through which the chains or cables pass, whereby the material is not chafed.

607,957. COMBINATION SAD-IRON AND HEATER. DE LEONARD RUSS, Catskill, N. Y. Filed May 11, 1897. Serial No. 636,069. (No model.)



Claim.—1. In a sad-iron having a central chamber, a detachable plate adapted to close said chamber and means for projecting a flame either against the under side of said plate or the lower wall of said chamber, consisting of an angular projecting burner-tube provided on one side with a plurality of perforations, said tube communicating with an oil-supply pipe provided with means for generating gas and being mounted in a suitable opening, and adapted to turn therein whereby the said tube is brought adjacent to the said detachable plate in one position and adjacent to the bottom of said chamber in the other position, the said perforations being so located that the flame will be projected either upon the said plate or bottom of said chamber respectively when the said burner-tube is adjacent thereto, substantially as and for the purpose described.

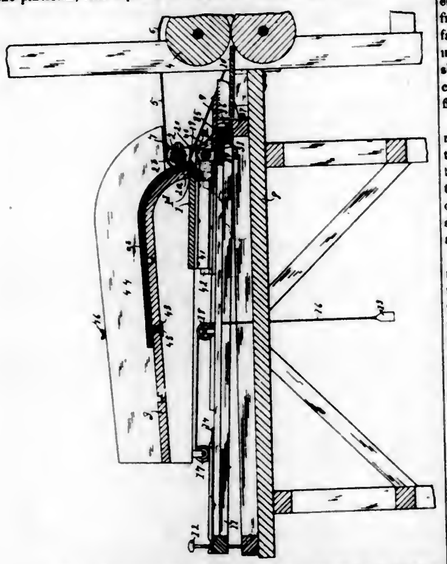
2. The herein-described sad-iron the same being provided with a central chamber, an oil-supply pipe mounted in the upper side thereof and communicating with a reservoir, an angular burner-tube mounted in a suitable opening in the rear wall of said chamber and communicating with said oil-supply pipe, said burner-tube being adapted to turn in the said opening whereby the same is held adjacent to the upper part of said chamber in one position and adjacent to the lower part in the other position, and being provided on one side with a plurality of perforations adapted to project a flame upwardly when in the upper part of the chamber or downwardly against the lower part of said chamber when the said tube is adjacent thereto, and a detachable plate provided with means by which it may be secured to the top of said sad-iron, substantially as and for the purpose described.

607,958. PAPER-FEEDING DEVICE. FRANK SCHILL, Milwaukee, Wis., assignor to Hugo Loewenbach, same place. Filed June 23, 1897. Serial No. 642,578. (No model.)

Claim.—1. The combination of a feed-controlling platform, a friction-roller located in proximity to one edge thereof, means for actuating the roller, and a carriage adapted to engage sheets of paper between it and the roller, with their lower edges in frictional contact with the platform, and with the roller bearing upon the sheets along a line above their lower edges, whereby the carriage cooperates with the platform and with the roller acting at a point above the lower edges of the sheets, to cause the latter to separate at their lower edges and spring away successively from contact with the platform.

2. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, and a carriage adapted to engage sheets of paper between it and the roller, with the upper ends of the

sheets bent over and supported horizontally upon said carriage, and their lower edges in frictional contact with the platform, whereby the sheets are caused to successively spring away from contact with the platform, into a position to be withdrawn by said friction-roller.



3. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, a carriage adapted to engage sheets of paper between it and the roller, with their lower edges in frictional contact with the platform, a detent projecting above the surface of the platform and adapted to retain the sheets thereon, and means for temporarily depressing said detent at regular intervals to successively release the sheets.

4. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, a carriage adapted to engage sheets of paper between it and the roller, with their edges in frictional contact with the platform, a detent-bar located at the front edge of the platform, and means for actuating said bar to raise and lower the same in relation to the surface of the platform.

5. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, a carriage adapted to engage sheets of paper between it and the roller, with their edges in frictional contact with the platform, a detent located at the front edge of the platform, means for automatically raising the same above the platform, and means operated from the friction-roller for depressing the detent at regular intervals to permit the discharge of the paper.

6. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, a carriage adapted to engage sheets of paper between it and the roller, with their edges in frictional contact with the platform, a detent-bar located at the front edge of the platform, and provided with a notched edge fitted to counterpart notches in the edges of the platform, means for automatically raising the notched edge of the bar above the surface of the platform, and means operated from the friction-roller for depressing the notched edge of the bar below the surface of the platform at regular intervals.

7. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, a carriage adapted to engage sheets of paper between it and the roller with their edges in frictional contact with the platform, a bar located at the front edge of the platform, springs for automatically raising one edge of said bar above the edge of the platform, a lever connected with said bar, variable-speed gearing arranged to be actuated from the friction-roller and a striker-pin carried by said gearing for intermittently actuating said lever.

8. The combination of a feed-controlling platform, a friction-roller located in proximity to one edge thereof, a carriage adapted to engage sheets of paper between it and the roller, with the edges of the sheets in frictional contact with the platform, a bar located at the front or discharge end of the platform with one edge above the surface of the latter, means for depressing said bar at intervals to permit the discharge of the sheets, and a shelf for holding up the ends of the sheets as they are discharged from the roller, whereby they are caused to lap over the preceding sheets.

9. The combination of a feed controlling platform, a friction-roller located in proximity to one edge thereof, a carriage adapted to engage sheets of paper between it and the roller, with the edges of the sheets in frictional contact with the platform, and the upper ends bent over and supported upon the carriage, a bar located at the front or discharge end of the platform with one edge above the surface of the latter, means for depressing said bar at intervals to permit the discharge of the sheets, a shelf for holding up the ends of the sheets as they are discharged by the roller, and a second shelf for receiving the discharged sheets, whereby the sheets escaping from the first shelf are lapped over those upon the second shelf.

10. The combination of a feed-controlling platform, a friction-roller located in proximity to one edge thereof, a carriage adapted to engage sheets of paper between it and the roller with the edges of the sheets in frictional contact with the platform, a shelf located at the discharge end of the platform, and a second shelf located in front of and below said first-mentioned shelf and adapted to receive the sheets discharged over the first-mentioned shelf, whereby the sheets are successively lapped over each other at their rear ends.

11. The combination of a feed-controlling platform, a friction-roller located in proximity to one edge thereof, a carriage adapted to engage sheets of paper between it and the roller with the edges of the sheets in frictional contact with the platform, a shelf located at the discharge end of the platform, means for adjusting said shelf with reference to the length of the sheets, and a second shelf located in front of and below said first-mentioned shelf and adapted to receive the sheets discharged over the first-mentioned shelf, whereby said sheets are successively lapped over each other at their rear ends.

12. The combination of a feed controlling platform, a friction-roller located in proximity thereto, means for actuating the roller, a carriage adapted to engage sheets of paper between it and the roller, with their edges in frictional contact with the platform, a vertically-adjustable frame for supporting said carriage and platform, and means for independently adjusting the platform longitudinally.

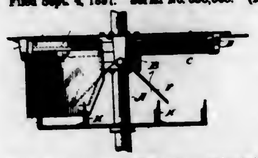
13. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, means for actuating the roller, a carriage located upon an adjustably-inclined track and adapted to engage sheets of paper between it and the roller, with their edges in frictional contact with the platform, an independently-supported right and left screw-threaded shaft running transversely of the track-frame, and screw-blocks located on said shaft and provided with pins engaging in diagonally slotted yokes attached to a vertical surface on the track-frame, whereby the motion of the shaft is adapted to impart a vertical movement to the track-frame.

14. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, means for actuating the roller, a carriage located upon an adjustably-inclined track and adapted to engage sheets of paper between it and the roller, with their edges in frictional contact with the platform, and independently-supported adjusting-shaft and connections for raising the lower end of the track-frame, and a second shaft supported in the track frame and provided with connections for adjusting the feed-platform longitudinally.

15. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, means for actuating the roller, and a carriage adapted to engage sheets of paper between it and the roller with their edges in frictional contact with the platform, an adjusting screw-threaded shaft running underneath said platform, right-and-left screw-blocks located on said shaft, diagonally-slotted guides located on the under side of said platform, and pins projecting from the screw-blocks and engaged in the slots of said guides whereby the movement of said shaft imparts motion the the platform at right angles thereto.

16. The combination of a feed-controlling platform, a friction-roller located in proximity thereto, means for actuating the roller, a carriage adapted to engage sheets of paper between it and the roller with their edges in frictional contact with the platform, an inverted-U-shaped channel-iron attached in a longitudinal position to the under side of the platform, a flange projecting upwardly from the carriage-supporting frame, and engaged in the channel of said bar, and means for adjusting the platform longitudinally of the track-frame.

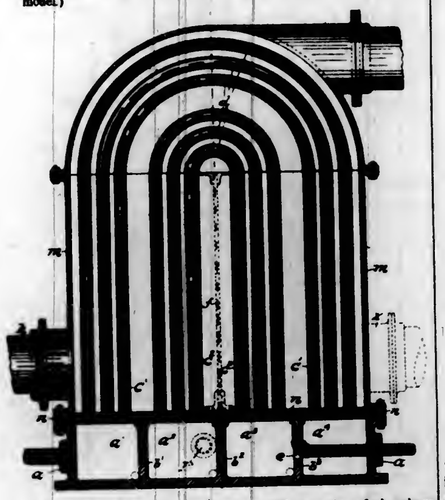
607,959. CURRENT-MOTOR. AUGUSTUS R. SCHLIEDER, Sioux City, Iowa. Filed Sept. 4, 1897. Serial No. 650,665. (No model.)



Claim.—A current-motor consisting of a vertical shaft, horizontal spindles extending through the vertical shaft, said spindles being

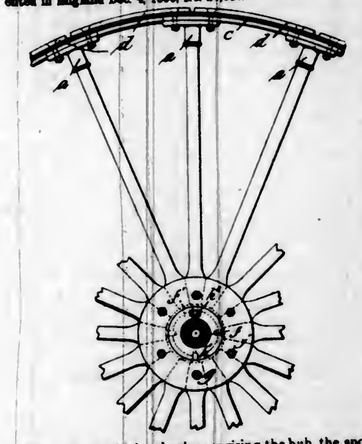
arranged one above the other and set at angles to each other, bearing-disks mounted on the shaft, said disks having grooves cut in their meeting faces whereby bearings are formed embracing the spindles, a ring journaled on the shaft concentric therewith, said ring having downwardly-projecting lugs on the edge thereof in which the outer ends of the spindles are journaled, two wings secured on each spindle, one on either side of the shaft, the wings on the same spindle being set at right angles to each other.

607,960. SECTIONAL FEED-WATER HEATER. JOHN R. SCHLIPPER, Allegheny, Pa. Filed May 11, 1897. Serial No. 636,126. (No model.)



Claim.—A casing *m*, in combination with a series of chambers $a' a^2 a^3 a^4$, the two latter of which are directly in communication with each other, a series of arched pipes c' making communication between chambers a' and a^4, a series of arched pipes c^2 making communication between chambers $a^2 a^3$, and means for supplying steam to the space around the said pipes and a water inlet and outlet arranged to cause the flow of water through all the chambers and series of pipes in succession substantially as and for the purpose set forth.

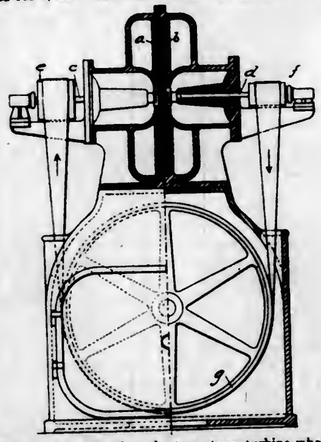
607,961. VEHICLE-WHEEL. GEORGE L. SCOTT, Manchester, England. Filed Dec. 14, 1897. Serial No. 661,891. (No model.) Patented in England Dec. 4, 1896, No. 27,617.



Claim.—1. A vehicle-wheel comprising the hub, the spokes carrying socket-brackets at their outer ends, a continuous metallic band shrunk upon said brackets, a rubber tire or band encircling said metallic band, a plurality of metallic sections applied to the outer surface of said rubber band and having recesses dovetailed in cross-section, dovetailed blocks seated in said recesses, and bolts passing through said sections and the socket-brackets, substantially as described.

2. In a vehicle-wheel, a tire comprising an inner rigid portion, a rubber cushion portion, and an outer rigid portion having a plurality of dovetailed recesses with rubber blocks seated in said recesses, substantially as described.

607,962. POWER-TRANSMITTING ARRANGEMENT FOR COMPOUND STEAM-TURBINES. EBERHARD SÖGER, Stockholm, Sweden. Filed Oct. 8, 1897. Serial No. 654,553. (No model.)



Claim.—In combination, the two steam-turbine wheels running with different speed and placed side by side and on shafts which project in opposite directions from the casing, the pulleys *e*, *f*, with different diameters on said shafts and the two pulleys *g*, *h*, the endless belt passed about said pulleys and also about the pulleys on the shaft ends, and one of the pulleys *g* being supported by the belt, the other being fixed on the shaft *i*, to which the power from the two turbine wheels is to be transmitted, substantially as described.

607,963. HAND OR FINGER MUFF. ANNA T. SINCLAIRE, New York, N. Y. Filed Feb. 23, 1898. Serial No. 671,285. (No model.)



Claim.—1. A finger-muff, comprising a finger-receiving pocket adapted to receive the fingers of the wearer, said pocket being open at the front portion throughout the width thereof, a back connected to said pocket, and means for securing the back to the wrist of the wearer.

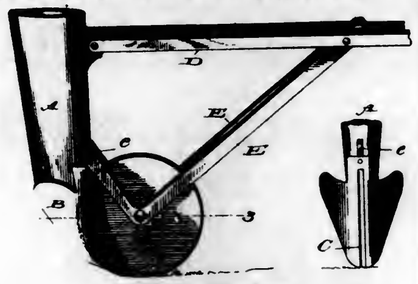
2. A finger-muff, comprising a finger-receiving pocket adapted to receive the fingers of the wearer, said pocket being open at the front portion throughout the width thereof and at a distance from the lower end which corresponds substantially to the length of the fingers of the wearer, a back connected to said pocket, and means for securing the back to the wrist of the wearer.

3. A finger-muff, comprising a finger-receiving pocket adapted to receive the fingers of the wearer, said pocket being open at the front portion throughout the width thereof and at a distance from the lower end which corresponds substantially to the length of the fingers of the wearer, a back connected to said pocket, said back being of sufficient width to cover the back of the hand of the wearer, and a flexible connection for securing the back to the wrist of the wearer.

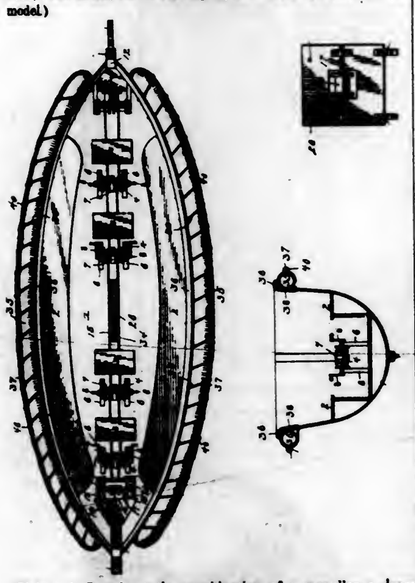
607,964. GRAIN-DRILL. JAMES I. STAMPER, Meade, Kans. Filed May 24, 1898. Serial No. 681,566. (No model.)

Claim.—In a grain-drill, the combination with the drill-tube, the divided shovel secured to its lower end, the drag-bars D pivoted to a lug on the drill-tube, the angle-arms E having their upper ends pivoted between said drag-bars, their lower ends pivoted to a lug adja-

cent to the upwardly-extended slotted portion of the shovel, and the colter pivoted to the angle portion of the arms, and working in the slot C of the shovel, as shown and for the purpose set forth.



607,965. BOAT-PROPELLING MECHANISM. SAMUEL S. STEVENS, Point Arena, Cal. Filed July 10, 1897. Serial No. 644,142. (No model.)



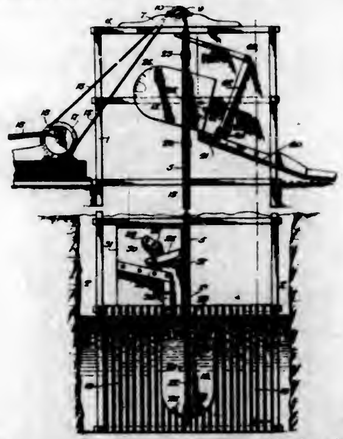
Claim.—1. In a boat, the combination of a propeller, a drum rigid on the propeller-shaft, a series of driving-drums arranged longitudinally of the boat and provided with crank-handles, a pulley adjustably mounted at the bow of the boat, an endless rope passing around the propeller-drum, and the bow-pulley and being reversely wound on the driving-drums, and means to adjust the bow-pulley to regulate the tension of the rope, substantially as described.

2. In a boat, the combination of a propeller, a drum rigid on the propeller-shaft, a series of driving-drums arranged longitudinally of the boat and provided with crank-handles, each of said series of drums having a central dividing-flange, a hinged bracket at the bow of the boat, a pulley journaled in said bracket, an endless rope passing around the propeller-drum, the driving-drums and the bow-pulley, said rope passing on and off the driving-drums at the upper side on one side of the dividing-flange, and on and off the under side of said drums on the other side of said flanges, and means to adjust the hinged bracket, substantially as described.

607,966. WATER-ELEVATOR. WILLIAM H. STRICKLER, Jeannette, Pa. Filed Mar. 4, 1896. Serial No. 672,582. (No model.)

Claim.—1. In a water-elevating apparatus, the combination with a vertically-movable bucket and means for hoisting the same, of a trip mechanism in the path of the bucket on its downward movement for positively inverting said bucket and having a movable member adapted to yield or give in the upward movement of the bucket, substantially as described.

2. In a water-elevating apparatus, the combination of oppositely-traveling buckets arranged in pairs within a suitable frame, hoisting-cables therefor coiled in opposite directions on a single actuating-drum, and independent trip devices interposed in the path of the buckets near the limits of their downward travel and adapted to operatively engage with said buckets to invert the latter prior to their immersion in the water, substantially as described.



3. In a water-elevating apparatus, the combination with a vertical guide, of a frame or bail slidably fitted thereto, a tiltable bucket eccentrically hung within said frame and carrying a suitable detent, and a trip mechanism in the path of the bucket-detent and comprising an irregular guide-track, a pivoted latch and means for sustaining said latch against the weight of the bucket on the downward travel thereof, substantially as described.

4. In a water elevating apparatus, the combination with a suitable guideway, of a slidable frame or bail fitted to said guideway, a bucket hung in said bail or frame, a fixed irregular track at one side of the path of the bucket-detent, a yieldable latch having its heel pivoted or hung adjacent to one part of the irregular guideway and arranged to leave a throat or passage between its heel and said guideway, and a stop-lug in a vertical plane at one side of the irregular guideway and supporting the free end of the latch against the weight of the bucket on the descent of the latter, said stop-lug being out of the path of the bucket-detent and the latch adapted to yield on the upward travel of the bucket, substantially as described.

5. In a water-elevating apparatus, the combination with a vertically-movable bucket and means in the path thereof for tilting said bucket as it reaches the limit of its upward travel, of a two-part chute having its sliding section arranged to fit beneath the bucket when the latter is tilted, and an operating-lever connected with the sliding chute-section and lying in the path of a part of the bucket, substantially as described.

6. In a water-elevating apparatus, the combination with a guideway, of a slidable bail or frame fitted thereto, a bucket hung in said bail or frame and provided with a detent in its upper end, a fixed chute having a sliding section, a stop fixed above said chute and in the path of the bucket-detent, and a bell-crank lever having one end connected with the sliding chute-section and its other end interposed in the path of the bucket bail or frame, substantially as described.

7. In a water-elevating apparatus, the combination of a vertical frame having the side guides and a central guide, independent bucket-carrying bails engaging with the central guide and also engaging individually with the side guides, the buckets hung eccentrically within the respective bails and provided with detents disposed on opposite sides of the vertical axis of said bucket, independent trip mechanisms supported on the frame near the lower limits of travel of said bails and buckets and each trip mechanism having a movable member disposed in the path of one of the bucket-detents, independent chutes having slidable sections, fixed stops above said chutes and in the paths of the upper detents on the buckets, the actuating-levers connected with the sliding chute-sections and lying in the paths of the bucket-bails, and a hoisting-drum having cables connected with the bucket-bails, substantially as described.

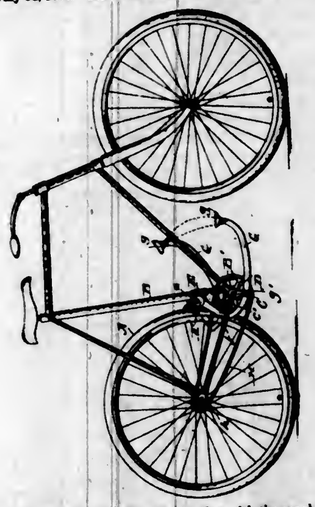
607,967. TRACE-FASTENER. CLARENCE O. SWICKARD, Janesville, Ill. Filed Feb. 23, 1898. Serial No. 671,314. (No model.)

Claim.—1. A fastener for singletrees formed of a blank or strip of spring metal having an end portion doubled providing a stop and having the parts upon opposite sides of the stop extending outwardly therefrom in opposite directions, the one constituting a shank to receive the means whereby the fastener is secured to a singletree, and the other end portion curving outwardly away from the plane of the singletree and having its terminal free and bearing thereon, substantially as described.



2. In combination, a singletree, a fastener therefor consisting of a blank or strip of spring metal secured thereto at its inner end and having a portion doubled upon itself forming a stop, and having the opposite end portion curved outwardly, and its terminal made straight and bearing against the singletree, and having the portion intermediate of the stop and curved part in a plane lower than the shank and entering a recess or depression in the singletree, substantially as shown for the purpose described.

607,968. BICYCLE DRIVING MECHANISM. RICHARD THOMPSON, Buffalo, N. Y., assignor of one-half to John P. Wolgast, same place. Filed July 31, 1897. Serial No. 646,640. (No model.)



Claim.—1. In a bicycle, the combination with the machine frame and the wheels, of a crank-shaft journaled in said frame, means for transmitting motion from the crank-shaft to one of said wheels, a shaft having eccentrics secured thereto and journaled in bearings secured to the frame above said crank-shaft, eccentric-arms secured to and operated by said eccentrics, means for transmitting motion from the crank-shaft to said eccentrics, and foot-levers connected to the outer ends of the crank-shaft and the eccentric-arms, substantially as set forth.

2. The combination with the frame having a crank-hanger formed thereon, of a driving and driven wheel secured in said frame, a sprocket-wheel secured to said driving-wheel, a crank-shaft having two sprocket-wheels secured thereon and journaled in said crank-hanger, an endless chain passing around one of the sprocket-wheels on the shaft and the sprocket-wheel on the driving-wheel, a shaft located above said crank-shaft and having eccentrics and a sprocket-wheel secured thereon, an endless chain passing around the second sprocket-wheel on the crank-shaft and the sprocket-wheel on the eccentric-shaft, arms connected to and operated by said eccentrics, and foot-levers provided with pedals secured to the outer ends of said arms and the crank-arms, substantially as set forth.

3. In a bicycle, the combination with the frame having a crank-hanger secured thereto, of a shaft journaled in bearings located in said hanger, crank-arms secured to each end of said shaft, a sprocket-wheel secured to said shaft intermediate of said crank-arms, a bearing-box secured to the frame above said crank-hanger, a shaft journaled in said bearing-box and having eccentrics secured to each end, a sprocket-wheel secured to said shaft intermediate of said eccentrics, an endless chain passing around said sprocket-wheel and the sprocket-wheel on the crank-shaft, eccentric arms secured to and operated by the eccentrics, and foot-levers connected to the outer ends of the crank-arms and the eccentric arms, substantially as set forth.

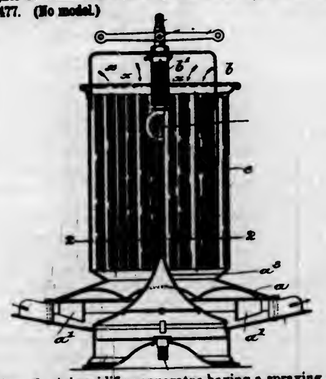
607,969. GRATE-BAR HANGER AND CONNECTIONS. HOWARD A. TINKHAM, Norton, Mass., assignor to the White Warner Company, Taunton, Mass. Filed Nov. 8, 1897. Serial No. 657,747. (No model.)



Claim.—1. A grate-bar hanger consisting of a bar having a middle portion grooved on its upper edge, concave portions at each end of the middle portion forming bearings for the grate-bars, and end portions with pivot-bearings, in combination with a bed-plate having a tongue which fits in the groove of the hanger, and notches complementary to the bearing portions of the hanger, substantially as described.

2. A grate-bar hanger consisting of a bar having a middle portion grooved in its upper edge, a concave portion at each end of the middle portion to receive the grate-bars and divided end portions which form fingers, in combination with a set of grates and a bed-plate having a tongue which fits in the groove of the hanger, curved notches complementary to the curved bearing portions of the hanger, tongues which pass between the fingers of the hanger and have pin-holes therein, and pins which pass through said holes and support the hanger, substantially as described.

607,970. HUMIDIFIER. RICHARD C. ULBRICH, Boston, Mass., assignor to William Firth, same place. Filed Aug. 7, 1897. Serial No. 647,477. (No model.)



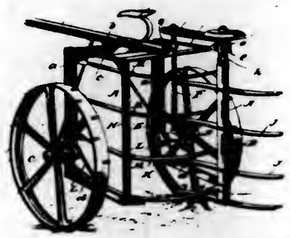
Claim.—1. A humidifier apparatus having a spraying device at its upper end and a spray-outlet at its lower end, combined with a casing between said spraying device and outlet, said casing being vertically corrugated on its inner surface against which the spray may impinge, substantially as described.

2. A humidifier apparatus having a spraying device, a case and an outlet, combined with a surface between said spraying device and outlet against which the spray from the former is driven, said surface presenting to the spray a series of vertical corrugations, formed on a separate plate secured within the case of the apparatus as and for the purpose set forth.

607,971. STALK-CHOPPER. FOY UPSHAW, Van Alstyne, Tex., assignor of one-half to Martin L. Bush, same place. Filed Feb. 17, 1898. Serial No. 670,695. (No model.)

Claim.—1. In a stalk-chopper, the combination, of a frame having its front end arched and extended above its bearing-wheels, axles extending from the sides of said front and provided with bearing-wheels, one of said wheels having a gear-wheel fixed to it, a vertical shaft at one side of said front and provided with a pinion engaged and driven by said gear-wheel, a rotatable shaft at the rear of the machine and provided with cutter-bars, means for rotating said shaft from the first-named shaft and stationary cutter-bars at

the opposite side of the machine, secured at the forward ends to the arched front and having their rear portions standing at an angle, and a vertical bar to which the intermediate portions of the stationary cutter-bars are secured.



2. In a stalk-chopper, the combination, of a frame consisting of a front portion arched and extended above the main wheels and upper and lower bars extended rearwardly to form the sides, a vertical bar connecting the upper and lower bars of one side and a vertical driven shaft connecting the upper and lower bars of the opposite side, stationary cutter-bars secured at their forward ends to the arched front and thence extended rearwardly and inclined inwardly, and secured to said vertical bar, the lowermost of the stationary cutter-bars connected with the lower frame-bar of the opposite side of the machine, to form an inclined brace, cutter-bars on the rotatable shaft and opposing the stationary bars and means for rotating said vertical shaft by power derived from one of the main bearing-wheels.

3. In a stalk-chopper, the main frame with its arched front and bearing-wheels and the vertical bar at the rear of one side of said frame, a rotatable shaft at the opposite side of the machine and provided with cutter-bars, means for rotating said shaft by power derived from one of the main bearing-wheels, and the stationary cutter-bars secured at their forward ends to the arched front and thence extended rearwardly and twisted so that their rear portions lie approximately horizontal, and hook-bolts embracing said bars between opposite ends with their shanks passing through holes in the vertical bar, and nuts engaging said shanks.

4. In a stalk-chopper, the frame with its bearing-wheels and stationary cutter-bars, in combination with a rotatable shaft having a square or approximately square cross-section, and threaded upper portion, cutter-bars having square or approximately square holes to receive said shaft, sleeves on said shaft and spacing the cutter-bars thereof, a nut engaging the threaded portion of the shaft and clamping the bars and sleeves, a balance-wheel on the upper end of the shaft and means for driving said shaft by power derived from one of the main bearing-wheels.

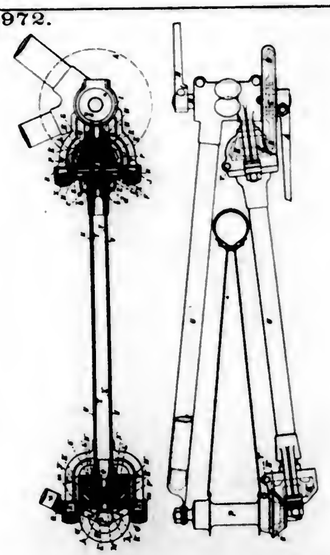
5. An improved stalk-chopper consisting of a frame having an arched front and rearwardly-extending sides, a vertical shaft at the rear of one side of the frame and a vertical bar at the rear of the opposite side of said frame, stationary cutter-bars secured at their forward ends to the front of the machine and thence extended rearwardly with their rear ends inclined inwardly, hook-bolts connecting these bars with the vertical bar, the lowermost of the cutter-bars connecting one rear side of the frame with the other, reversely-curved cutter-bars carried by the vertical shaft and separated from each other by sleeves, a nut on the shaft for tightening the sleeves and bars, and a balance-wheel on said shaft, a second vertical shaft journaled at the front of the machine, having a pinion on its lower end engaging a gear-wheel, on one of the main bearing-wheels, a sprocket-wheel on the upper portion of said second shaft and a chain connecting the same with a pinion on the first-named shaft whereby the latter is rotated.

607,972. DRIVING-GEAR FOR BICYCLES. LEON VIGNAL, Paris, France. Filed Sept. 21, 1897. Serial No. 652,477. (No model.)

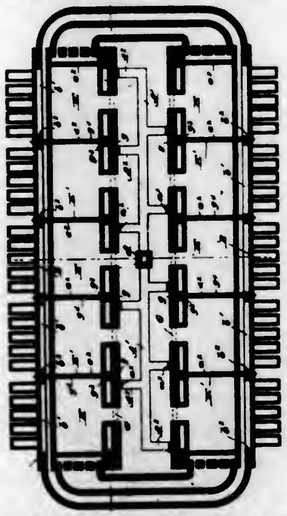
Claim.—1. In combination, the gearing at the pedal-shaft, and rear axle, the shaft Y connecting said gearing, the boxings O and O' carrying the bearings for the gears, and the yokes connected with the frame of the bicycle and having longitudinal ribs or webs engaging corresponding grooves in the boxings O and O' to support the same.

2. In combination the pedal-shaft and the rear axle, the gearing D, E; D', E', the shaft Y extending between them, the box O carrying the bearings for the front gearing the flexible connection between the said front gearing and the shaft Y, the box C and the yoke V supported on the bearing of the pedal-shaft and connected with the boxes O and C for suspending the same, the frame-tube U, the bar *l* at the rear forming a bearing for the rear axle, the yoke V connecting the same with the frame-tube U and the box O' held by the yoke and the bar *l*, substantially as described.

607,972.



607,973. BRICK-KILN. HENRY W. WANAMAKER, Baltimore, Md., assignor of one-half to Joseph R. Wilson, same place. Filed Jan. 20, 1898. Serial No. 667,944. (No model.)



Claim.—1. In a kiln the combination with the outer walls having on one side above the level of the furnaces, flues, ovens forming with the flues heating-chambers each oven having means for establishing communication with the main flue leading to the stack the flues in the side walls establishing communication with the heating-chamber of the adjacent oven for the purpose set forth.

2. In a kiln constructed to provide a series of ovens which are adjacent to each other each oven having independent furnaces and independent connection with a flue leading to the stack, a horizontal wall between the wall of the kiln and the oven-flues above said wall connected by a vertical flue, whereby the products of combustion are caused to pass under and around the oven to the vertical flue and from thence to the heating-chamber of the adjacent oven, substantially as shown and for the purpose set forth.

3. In a kiln, the combination with the main, side, and end walls, of a series of muffle-ovens within said walls, furnaces for each oven, flues connecting with the furnaces and opening into a heating-chamber surrounding the oven-flues for connecting said oven with the oven or ovens adjacent thereto and a flue connecting the heating-chamber with a flue which leads to the stack, substantially as shown and for the purpose set forth.

4. In a kiln the combination with the walls inclosing a series of muffle-ovens, the outer walls having for each oven a plurality of furnaces and a corresponding number of horizontal flues connected with a heating-chamber which surrounds the top and sides of the oven, the side wall of the kiln having vertical flues in communication with horizontal flues which extend from the section of the kiln to the sections or muffles adjacent thereto and a horizontal cut-off interposed between the horizontal connecting-flues, substantially as shown.

5. In a kiln the combination of a horizontal series of muffles or ovens the dividing-walls between the adjacent ovens having apertures therein so that the heat generated in one of the ovens can pass to the adjacent one, substantially as shown.

6. In a brick-kiln having a series of muffles or ovens, of openings in the dividing-walls for establishing communication between the ovens, a flue connecting the end series of ovens with the end series of the ovens of another kiln-section, substantially as shown.

7. In a kiln having a series of ovens arranged longitudinally within separate kiln-sections, flues at the ends of the kiln-sections connecting the ovens, and means for establishing communication between said flues and a flue leading to the stack, substantially as shown.

8. In a kiln a series of ovens each having surrounding heat-chambers, flues connecting said heat-chambers with a flue connected with a stack of a flue for establishing communication between the oven and the stack substantially as shown and for the purpose set forth.

9. In a kiln having a series of ovens arranged within the walls of the kiln so as to provide heating chambers or flues which surround the ovens furnaces communicating with said heating-chambers and with a stack, flues for connecting the ovens with the flue leading to the stack and intersecting dampers for said flues substantially as shown.

10. In a kiln having a series of ovens separated by partition-walls with openings therethrough, heating-chambers surrounding the sides and top of each oven furnaces communicating with said chambers a flue connecting the heat chamber with the heat-chamber of the adjacent oven, flues below the partition-walls of the oven and in communication with said oven and flues for connecting the same with a flue common to each of the ovens and means for establishing communication with said flue and a flue leading to the stack.

11. In a kiln the side wall having flues connecting heating-chambers which surround the ovens of the kiln with each other a series of furnaces and arches extending therefrom to the portion of the heating-chamber farthest from the flue, partition-walls having openings a horizontal flue beneath the partitions, said flue connecting with a flue leading to the stack and dampers which intersect the flues substantially as shown and for the purpose set forth.

607,974. HYDROCARBON INCANDESCENCE LAMP. GEORGE WASHINGTON, New York, N. Y., assignor to the George Washington Lighting Company, Jersey City, N.J. Filed Dec. 17, 1897. Serial No. 662,220. (No model.)



Claim.—1. In a hydrocarbon incandescence lamp, the combination with a burner and a commingling-chamber consisting of a continuous tube communicating with and leading upwardly above and over the burner, with its free end projecting downwardly, of a straight vaporizing-tube located adjacent to the burner and discharging into the free end of the commingling-chamber and a needle-valve passing longitudinally through the vaporizing-tube for opening and closing the vapor-escape orifice in the end of said tube.

2. In a hydrocarbon incandescence lamp, the combination with a burner and a commingling chamber consisting of an inverted-U-shaped tube one member of which is longer than the other, the longer member of said chamber communicating directly with the burner, of a vaporizing-tube secured to the burner and terminating adjacent to the free end of the shorter member of the commingling-chamber so as to discharge the vapor therein, a needle-valve extending lengthwise throughout the vaporizing-chamber and a mantle located between the commingling-chamber and vaporizer and over the burner.

607,975. CUT-OFF VALVE. EDGAR C. WILEY, Lynchburg, Va., assignor of one-half to Henry R. McWane, same place. Filed July 10, 1897. Serial No. 644,140. (No model.)



Claim.—1. The combination with a plug or hydrant, of a valve-shell fixed to said plug or hydrant to have one end protrude therefrom and provided with a stationary pressure-head, a slidable valve, and an external valve-adjusting device independent of the hose-attaching means and operatively connected to the valve to positively adjust the latter in either direction, substantially as described.

2. In a cut-off, the combination of a fixed cylindrical shell, a non-rotatable hollow valve slidably fitted therein, and a right and left threaded adjusting-collar engaging with similar threads on the shell and the valve respectively, for the purposes described, substantially as set forth.

3. In a cut-off, the combination of a shell, having a thread, a hollow valve slidably fitted in the shell and provided with a thread of the opposite hand to the thread of the shell, an adjusting-collar threaded to engage with the shell and valve and adapted to travel on the shell, and means to restrain the hollow valve from rotating in the shell, as and for the purposes described.

4. In a cut-off, the combination of a threaded shell, a hollow threaded valve fitted therein, a threaded adjusting-collar fitted to the shell to travel thereon and engaging with the hollow valve to impart endwise movement thereto, and a longitudinal stem fixed at one end to the shell and slidably engaging with the hollow valve to restrain it from rotating within the shell, as and for the purposes described.

5. In a cut-off, the combination with a shell, of a valve slidably fitted therein, a fixed stem attached to the shell and provided with a head, a lug carried by the valve and loosely embracing the stem and adapted to abut against the head thereon, and means for imparting endwise movement to the valve, as and for the purposes described.

6. In a cut-off, the combination of a shell having the fixed head, a hollow valve carrying a recessed lug, a headed stem attached to the head of the shell and fitted in the lug of the valve to have its head in the path of said lug and to arrest the opening movement of the valve, and means for giving endwise movement to the valve, as and for the purposes described.

7. In a cut-off, the combination of a shell provided in its wall with the ports and at its inner end with an imperforate head, a slidable hollow valve fitted in said shell to move toward or from the head thereof and across the ports therein, a right and left threaded collar engaging with similar threaded portions of the shell and valve, and a stem fixed to the head and loosely connected to the hollow valve to restrain it from rotary movement and to limit its forward movement, as and for the purposes described.

8. In a cut-off, the combination with a nozzle or pipe, of the shell fixed therein and provided at its inner end with an exposed pressure-head and with the inlet-ports in a plane at one side of the pressure-head, a tubular valve open throughout its entire length and provided at its protruding front end with a reduced attaching-nipple, means for limiting the valve to endwise movement within the shell toward or from the pressure-head and across the ports of said shell, and a threaded adjusting-collar engaging respectively with right and left threads on the fixed shell and the slidable valve, the engagement of said adjusting-collar with the valve being within the threaded protruding extremity of the valve, substantially as and for the purposes described.

9. The combination with a stand-pipe, of a fixed valve-shell provided at its inner end with a fixed pressure-head, a non-rotatable tubular valve slidably fitted in said shell, and a rotary adjusting-ring independent of the hose-attaching means and having a threaded

engagement with said valve to positively adjust the same endwise in the shell toward and from the pressure-head, substantially as described.

10. The combination with a stand-pipe, of a laterally-perforated valve-shell fixed to the stand-pipe and having a fixed head arranged within said pipe to be exposed to the pressure of the water therein, a hollow valve fitted in said valve-casing, means for limiting the valve to sliding movement in the valve-casing toward the pressure-head and across the ports or perforations in said shell, and a threaded adjusting-ring independent of the hose-attaching means and fitted to the valve and the valve-casing to rotate and to positively adjust the valve endwise within the valve-shell, substantially as described.

11. The combination of a fixed valve-shell having a pressure-head at its inner end and the radial ports within said head, a non-rotatable valve, a packing fixed to the pressure-head in the path of said valve, and an external valve-adjusting ring independent of the hose-attaching means, said ring being operatively fitted to the shell and having a threaded engagement with the valve for moving the same positively in an endwise direction and forcibly pressing said valve by screw compression against said packing, substantially as described.

607,976. COOKING-STOVE. ALEXANDER M. ANCH, Buffalo, N. Y.

Filed Dec. 13, 1897. Serial No. 661,642. (No model.)



Claim.—1. In a cooking-stove, the combination with the ash-pit, the fireplace and an ascending smoke-flue connected with the fireplace, of a vapor gathering hood overhanging the stove-top, a descending vapor-flue arranged adjacent to said smoke-flue and extending from the rear portion of said hood to the ash-pit, the upper portion of said vapor-flue communicating with the upper portion of the smoke-flue by a connecting-passage, and damper mechanism applied to said vapor-flue and said connecting-passage, whereby said passage may be closed and the vapor-flue left unobstructed, or the vapor-flue closed and said passage left open, substantially as set forth.

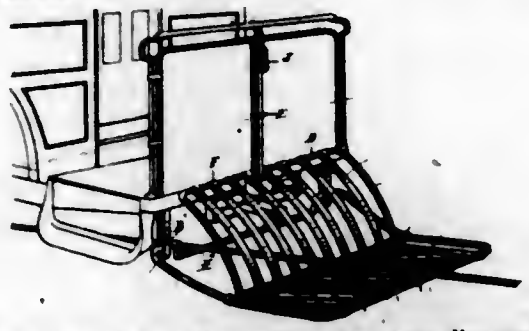
2. The combination with the body of the stove, the fireplace, the ash-pit and a smoke-flue, of a vapor-gathering hood overhanging the stove-top, a descending vapor-flue connecting said gathering-hood with the ash-pit and having an inlet which opens into said hood and an exit which leads into said smoke-flue, and a swinging damper arranged in said vapor-flue and having its lower end pivoted at a point below the level of said vapor inlet, whereby the damper covers said vapor-exit when turned to its upright position and obstructs the vapor-flue below said vapor-inlet, when turned to said horizontal position, substantially as set forth.

3. The combination with the body of the stove, the fireplace and the ash-pit, of a vapor-gathering hood overhanging the stove, a descending vapor-flue connecting said hood with the ash-pit and having a vapor-inlet which opens into said hood, a damper applied to said vapor-inlet, and a movable extension applied to said hood and arranged to operate said damper, substantially as set forth.

4. The combination with the body of the stove, the fireplace and the ash-pit, of a vapor-gathering hood overhanging the stove, a descending vapor-flue connecting said hood with the ash-pit and having a vapor-inlet which opens into said hood, a damper applied to said vapor-inlet and provided with automatic means for opening it, and a folding extension pivoted to said hood and having a cam or wedge which engages with said damper and closes the same when the extension is folded into the hood, substantially as set forth.

607,977. CAR-FENDER. WARREN W. ANDABLE, Grand Rapids, Mich., assignor to the Consolidated Car Fender Company, Providence, R. I. Filed Jan. 10, 1898. Serial No. 666,209. (No model.)

Claim.—1. In a car-fender, the combination of a frame and flexible strips attached thereto, said strips being of such greater length than the distance across said frame that they will be normally convex at the forward side and adapted to yield and pass through the plane of said frame and remain concave upon contact with an obstacle, substantially as described.



2. In a car-fender, a forwardly and downwardly extended pilot-frame pivoted at the rear to the car, an upwardly-extended frame pivoted to the middle of the said pilot-frame, and flexible convex strips on the latter frame, said strips being adapted to shift from convex to concave position, substantially as described.

3. In a car-fender, a pilot member consisting of a frame pivoted at the rear to the car, a cross bar on said frame, strips connecting said cross-bar and the front bar of the frame, transverse rods having lateral bends, and a rope netting engaging the bends in said rods, substantially as described.

4. A car-fender consisting of a pilot-frame pivoted at the rear to the car, a cross-bar near the middle of said frame, strips connecting the said bar and the front of the frame, transverse rods having lateral bends and attached to said strips a rope netting attached to said rods, a frame pivoted to said cross-bar and extending upward, and convex flexible strips on said frame, said strips being adapted to change position from convex to concave, substantially as described.

5. In a car-fender, the combination of a pilot-frame pivoted to the car at the rear, a guard-frame pivoted to the middle of the pilot-frame and supporting the same, a way in which the upper bar of said guard-frame is vertically movable, and a hook to hold said frames in folded position, substantially as described.

6. In a car-fender, in combination with a forwardly-extended frame pivoted to the bottom of a car, an upwardly-extending frame pivoted to said first-named frame, forwardly-curved, flexible strips engaging the sides of said last-named frame and turning freely thereon, and a way engaging the upper side of said last-named frame near its middle, substantially as described.

7. In a car-fender, the combination of a downwardly and forwardly extended frame pivoted to the car, an upwardly-extending frame pivoted to said first-named frame, a way secured to the car and engaging said last-named frame, and flexible strips extending across said frames, substantially as described.

8. In a car-fender, in combination, hangers secured to the bottom of the car, a downwardly and forwardly extending frame engaging said hangers, a frame pivoted to said first-named frame intermediate its ends, flexible strips extending across said frames, and a way secured to the dashboard of the car and engaging said last-named frame, substantially as described.

9. In a car-fender, in combination, U-shaped hangers secured to the bottom of the car, a downwardly and forwardly extended frame pivoted in said hangers, a bar extending across said frame intermediate its ends, a frame pivoted to said bar and engaging near its middle a vertical way secured to the dashboard of the car, flexible strips secured to said frames and bar, a shoe on one of said strips, and a hook on said way, substantially as described.

10. In a car-fender, in combination, a rectangular frame having a lateral bend at its rear end, U-shaped hangers secured to the car and embracing said frame at each side of said bend, a bar extending across said frame intermediate its ends, an upwardly-extended frame having flexible cross-strips of greater length than the distance across said frame, pivoted to said bar and engaged near its middle by a vertical way secured to the front of the car, strips secured to said bar and to the front of said first-named frame, transverse rods having lateral bends, secured to said strips and a rope engaging said bends, substantially as described.

11. In a car-fender, in combination, U-shaped hangers having a series of holes, bolts in said holes, a downwardly-curved and forwardly-extended frame engaging said hangers and bolts, a bar secured to said frame intermediate its ends, a bottom formed of rope, between said bar and front of said frame, a vertical way secured to the car, a forwardly-curved frame engaging said way and pivoted to said bar, and flexible strips having the same forward curvature as said frame, pivoted to the upper side of said frame and to said bar, substantially as described.

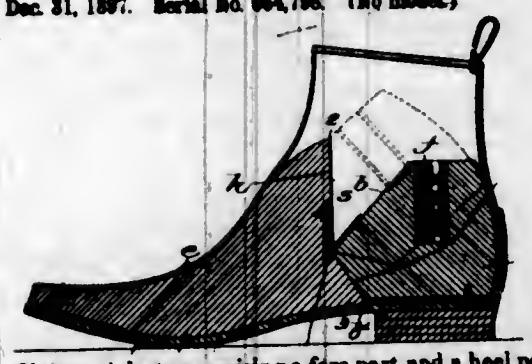
12. In a car-fender, in combination with a downwardly-curved and forwardly-extended frame pivoted to the bottom of a car, and

having a cross-bar and bottom extending from said bar to its front and a frame having flexible cross-strips of greater length than the distance across said frame, pivoted to said bar; a vertical way engaging said last-named frame near its middle and formed of two bars having their upper ends secured to the dashboard of the car and their lower ends forked and embracing the central rib of the car-bumper and secured together by a block and bolt, substantially as described.

13. In a car fender in combination with a frame pivoted to the bottom of a car and adapted to be folded up against the dashboard of the same, and a frame pivoted to said first-named frame and adapted to slide in a way secured to said dashboard; a plate secured to said way by a bolt, a hook having a long arm lying parallel with and at the side of said way and pivoted thereto by said plate, and a short arm at the opposite side of said way and bent at right angles to engage the same and form a stop for said long arm, substantially as described.

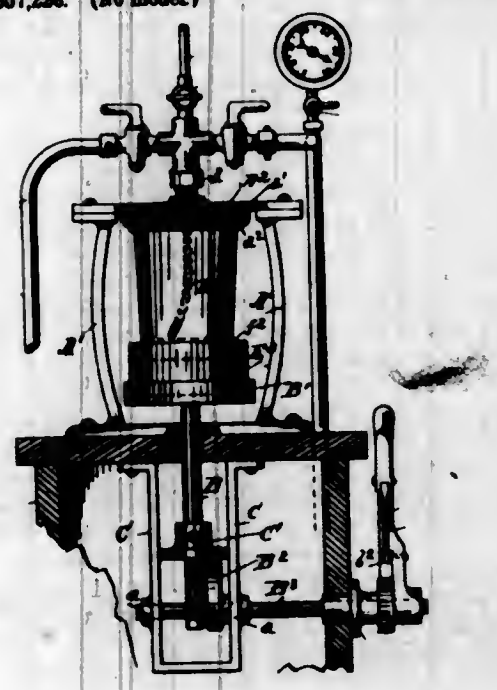
14. In a car-fender in combination with a rectangular frame formed of one piece of iron pipe and having a lateral bend in its rear side, hangers having a series of holes, bolts to engage said holes, collars on said frame engaging said hangers, a cross-bar on said frame, strips connecting said bar and the front side of said frame, transverse rods having lateral bends, secured to said strips, a rope engaging said bends and interwoven between said rods, a shoe on one of said strips, parallel bars forked at their lower ends and forming a vertical way, a frame pivoted to said cross-bar, forwardly-curved flexible strips engaging said last-named frame and said bar and adapted to turn thereon, and a hook secured to said way and having a stop to engage the same, substantially as described.

607,978. LAST. WILLIAM R. ARNOLD, Abington, Mass. Filed Dec. 31, 1897. Serial No. 664,796. (No model.)



Claim.—A last comprising a fore part and a heel part hinged together above the bottom of the last, to enable said parts to have a relative swinging movement for shortening the last, the line of division between the said parts below said hinge and between the latter and the bottom of the last being carried in the rear of and beyond a line erected on and perpendicular to the adjacent portion of the bottom of the last and intersecting the axis of said hinge, whereby a portion of the fore part below said hinge lies beneath a portion of the heel part when the last is in upright position and overlies and receives support from a portion of said heel part when the last is in inverted position, substantially as described.

607,979. PROCESS OR METHOD OF DRAWING BEER OR SIMILAR LIQUIDS. HENRY C. BLACK, Oakland, Cal. Filed Nov. 3, 1897. Serial No. 657,226. (No model.)



Claim.—In a method of drawing beer into glasses consisting in sealing the mouth of the glass, permitting air under pressure to enter the glass, allowing beer under pressure to enter the glass and thereby expel a portion of the compressed air closing off the supply of compressed air just previous to the filling of the glass with the beer and immediately thereafter freely venting the upper portion of the glass to permit the escape of the confined air and finally cutting off the supply of beer.

607,980. SELF-OILING BEARING. CHARLES W. H. BLOOD, Boston, Mass., assignor to The S. A. Woods Machine Company, same place. Filed Apr. 1, 1898. Serial No. 676,033. (No model.)



Claim.—1. The combination with a rotatable shaft and its bearing of an oil-chamber connected to rotate with said shaft, an oil-supply pipe in said bearing, said pipe having a mouth at its lower end opening against the movement of the oil in said chamber and terminating at its upper end short of the upper end of the bearing and adjacent the journal-surface of the shaft, the adjacent surface of the bearing having an annular recess or conduit at the said upper termination of the oil-supply pipe, said annular conduit communicating with a spiral conduit about the shaft extending toward the oil-chamber in the direction of rotation of the shaft, substantially as described.

2. The combination with a bearing and a shaft mounted therein, of an oil-chamber embracing the shaft and fixed thereto, an oil-conduit in the inner bearing-surface of said bearing, said conduit being closed at its upper end and freely open thence downward to the oil-chamber, and an oil-supply passage and pipe connecting said conduit with said chamber and being otherwise closed against the escape of oil, substantially as described.

3. The combination with a bearing, a shaft journaled therein, an oil-chamber embracing the shaft and rotating therewith, a conduit for the passage of oil to lubricate the shaft, said conduit being closed at its upper end and extending spirally about the shaft toward the oil-chamber in the direction of rotation of the shaft, and a supply-pipe connecting with the farther end of said conduit and having a mouth opening against the movement of the oil in said chamber, substantially as described.

4. The combination with a rotatable shaft and its bearing, of an oil-chamber connected to rotate with said shaft, said bearing being provided with an internal channel forming a connecting-passage between the bearing-surface thereof and said chamber, and a supply-pipe having a mouth opening against the movement of the oil in said chamber, and a throttle-pin for regulating the flow of oil in said passage, substantially as described.

5. In a self-oiling bearing for a shaft, a conduit for the oil, an oil-supply, automatic means for driving the oil from said supply through said conduit, and means for regulating the flow of oil as desired, substantially as described.

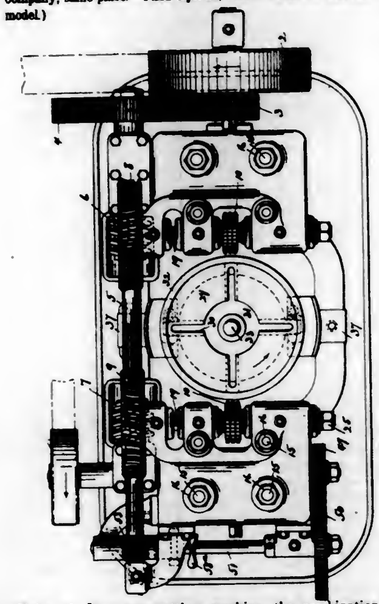
6. A bearing for a shaft, said bearing having at one end a concentric outer surface, an oil chamber having its open end fitted to

said outer surface and rotatable thereon, there being an annular groove in one of said contacting surfaces, and a duct leading from said groove back into the oil-chamber, substantially as described.

607,981. PROCESS OF STERILIZING CORN FOR MAKING DOUGH. EUGENIO BOUGLEUX and ALBERTO BOUGLEUX, Livorno, Italy. Filed Dec. 10, 1897. Serial No. 661,416. (No specimens.) Patented in Italy June 14, 1897, No. 42,312.

Claim.—A system of treating grain for the production of alimentary articles consisting in subjecting the wheat or grain, which has been lightly shelled and cleaned, to a sterilizing-bath of bisulfite of soda; then subjecting it to heat; then grinding it; following this by bolting or sifting and repeating the sterilization by reheating; then finishing the grinding and purification by sifting, thus obtaining sterilized flour; substantially as described.

607,982. GEAR-CUTTING MACHINE. WILLIAM G. BURNHAM, Providence, R. I., assignor to The Brown & Sharpe Manufacturing Company, same place. Filed Apr. 20, 1896. Serial No. 588,216. (No model.)



Claim.—1. In a gear-cutting machine, the combination with guides, of a work support arranged to move on said guides by gravity, one or more cutters, means for revolving said cutters in the direction of the feed of the work, and means regulating the movement of the work-support under the action of gravity and said cutters, substantially as described.

2. In a gear-cutting machine, the combination with guides, of a work-support arranged to move on said guides by gravity, a plurality of cutters arranged at equal distances about said support, means for revolving the active faces of said cutters in the direction of the feed of the work, and means for regulating the movement of the table under the action of said cutters and gravity, substantially as described.

3. In a gear-cutting machine, the combination of a work-support, a plurality of cutters arranged about said support, means for revolving the active faces of said cutters, in the direction of the feed of the work, means for regulating the feeding action of the cutters, and means for automatically indexing the work, substantially as described.

4. In a gear-cutting machine, the combination of a vertically-movable work-support, a cutter, means for revolving the active face of said cutter downwardly, and means for regulating the feeding action of said cutter, substantially as described.

5. In a gear-cutting machine, the combination of a vertically-movable work-support, a plurality of cutters arranged about said work-support, means for revolving the active faces of said cutters downwardly and means for regulating the feeding action of said cutters, substantially as described.

6. In a gear-cutting machine, the combination of a vertically-movable work-support, a plurality of cutters arranged at equal distances about said support, means for revolving the active faces of said cutters downwardly and means for regulating the feeding action of said cutters, substantially as described.

7. In a gear-cutting machine, the combination of a work-support, a plurality of cutters arranged about said support, means for revolving the active faces of said cutters in the direction of the feed of the work, means for regulating the feeding action of the cutters, and means for driving said regulating means in a reverse direction and at an increased speed, substantially as described.

8. In a gear-cutting machine, the combination of a work-support, a cutter, means for revolving the active face of said cutter in the direction of the feed of the work, means located in the line of thrust of said cutter for regulating the feeding action of said cutter, substantially as described.

9. In a gear-cutting machine, the combination of a vertically-moving carriage carrying a work-support, a cutter, means for revolving the active face of said cutter downwardly, a rack secured to said carriage, a pinion engaging said rack, and means for revolving said pinion, substantially as described.

10. In a gear-cutting machine, the combination of a work-support, a plurality of cutters arranged about said support, means for revolving the active faces of said cutters in the direction of the feed of the work, a plurality of devices for regulating the feeding action of the cutters said devices being located in the lines of thrust of said cutters, substantially as described.

11. The combination of a clutch-shifter, a spring-plunger for engaging said shifter, a catch for holding said plunger retracted, and cams for retracting said plunger and releasing said catch, substantially as described.

12. The combination of a clutch-shifter, oppositely-arranged spring-plungers engaging said shifter, catches for holding said plungers retracted, and cams for retracting said plungers and releasing said catches substantially as described.

13. The combination of a clutch-shifter, two arms projecting from said shifter, two oppositely-arranged spring-plungers for engaging said arms, catches for holding said plungers retracted, and cams for retracting said plungers and releasing said catches, substantially as described.

14. In a gear-cutting machine, the combination of a cutter-spindle having a reduced portion forming a shoulder, means for clamping the cutters against said shoulder, a gear, and a coupling for detachably connecting said gear and spindle, substantially as described.

15. In a gear-cutting machine, the combination of a gear provided with projections, a cutter-spindle engaged by said projections, a reduced portion on said spindle forming a shoulder, a sleeve surrounding said reduced portion, and means for forcing said sleeve against the cutters to clamp said cutters against said shoulder, substantially as described.

16. In a gear-cutting machine, the combination of a gear, a cutter-spindle having a sliding connection with said gear, bearings for said spindle, and adjustable sleeves in said bearings for engaging the cutters, whereby the cutter-spindle may be adjusted longitudinally without disconnecting it from said gear, substantially as described.

17. In a gear-cutting machine, the combination of a cutter-spindle, bearings for said spindle, and adjustable sleeves in said bearings for engaging the opposite faces of the cutters, substantially as described.

18. In a gear-cutting machine, the combination of a reciprocating carriage carrying a work-support, a ratchet on said work-support, a pawl-carrier mounted on said carriage, a pawl on said carrier a lever engaging said pawl-carrier, a segment for operating said lever, and a stationary cam for operating said segment, substantially as described

19. In a gear-cutting machine, the combination of a reciprocating carriage a work-support mounted to revolve thereon, means for intermittently revolving said support, a locking-bolt, an abutment for engaging and withdrawing said bolt, to allow the revolution of said work-support, substantially as described.

20. In a gear-cutting machine, the combination of a reciprocating carriage, a rotary work-support mounted on said carriage a locking-bolt, means for drawing said bolt, a catch for holding said bolt withdrawn, and means for releasing said catch, substantially as described.

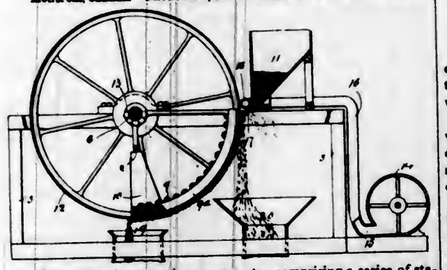
21. In a gear-cutting machine, the combination of a reciprocating carriage, a rotary work-support mounted on said carriage a locking-bolt, an abutment for withdrawing said bolt, a catch for holding said bolt withdrawn, and means for releasing said catch, substantially as described.

607,988. SANITARY TRAP. GEORGE T. COOPER, Natick, Mass., assignor of one-half to Herman F. Jacobs, same place. Filed Aug. 19, 1897. Serial No. 648,789. (No model.)

Claim.—The herein-described trap, comprising an inner portion for the house connection, having a U-shaped bend terminating at its inner end in a horizontal part, and having at the elbow formed by said horizontal part with the adjacent vertical leg of the U-bend a vertical vent connection, and an outer part for the sewer connection, said outer part having a vertical end for union with the outer end of the said U-bend, and a horizontal end for union with the sewer connection, and having a clean-out opening at its elbow in line with both the trap and the sewer connection, the joint of the said inner portion and outer portion being below the water-line of the trap and the said vertical vent of the said inner portion being a considerable radial distance from the said clean-out of the outer portion so that horizontally turning the inner portion on said joint as a center entirely removes the vent connection from possible interference with free access to the sewer through the said clean-out, substantially as described.



607,984. MAGNETIC ORE-SEPARATOR. GERALD J. CREAN, Montreal, Canada. Filed Jan. 7, 1896. Serial No. 665,976. (No model.)



Claim.—1. A magnetic ore-separator comprising a series of stationary magnets arranged in the form of an arc; a hopper located adjacent to said magnets; a rotatable carrier adapted to travel across the surface of and in close proximity to said magnets and intermediate of same and said hopper, and said carrier being adapted to receive movement from the ore particles running from said hopper and adhering to said carrier.

2. A magnetic ore-separator comprising a series of stationary magnets arranged in the form of an arc; a hopper located adjacent to said magnet; a rotatable carrier adapted to receive movement from the ore particles running from said hopper and to travel across the surface of and in close proximity to said magnets and intermediate of same and said hopper; and a blower adapted to direct a current of air between said hopper and carrier, for the purpose set forth.

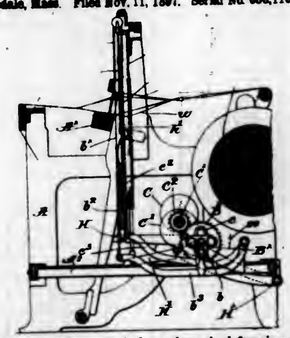
3. A magnetic ore separator comprising a series of stationary magnets arranged in the form of an arc; a hopper located adjacent to said magnets; a rotatable carrier adapted to travel across the surface of and in close proximity to said magnets and intermediate of same and said hopper, said carrier being adapted to receive movement from the ore particles running from said hopper and adhering to said carrier; and a blower adapted to direct a current of air between said hopper and carrier, for the purpose set forth.

4. A magnetic ore-separator comprising a frame; a shaft mounted in said frame; a series of magnets arranged in the form of an arc; means for suspending said magnets from said shaft; a counterpoise mounted at one end of said series of magnets; a carrier consisting of a non-magnetic cylinder mounted upon said shaft and adapted to receive movement from the ore particles running from said hopper and travel around and in close proximity to said series of magnets; and means for feeding the magnetic ore in granular form to said carrier, for the purpose set forth.

5. A magnetic ore-separator comprising a frame; a shaft mounted in said frame; a series of magnets arranged in the form of an arc; means for suspending said magnets from said shaft; a counterpoise mounted at one end of said series of magnets; a carrier consisting of a non-magnetic cylinder mounted upon said shaft and adapted to receive movement from the ore particles running from said hopper and to travel around and in close proximity to said series of magnets; means for feeding the magnetic ore in granular form to said carrier; and a blower adapted to direct a current of air through said ore while being fed to the carrier, for the purpose set forth.

6. A magnetic ore-separator comprising a frame, 5; a shaft, 6; a series of permanent magnets 9; right-angled frame 8; counterpoise 10; cylinder 12 adapted to receive movement form the ore particles running from said hopper; roller-bearings 13; hopper 11; blower 14; discharge-pipe 16; and receptacles 19 and 20; all arranged substantially as described and for the purpose set forth.

607,985. SELVAGE-MOTION FOR LOOMS. WILLIE E CUTLER, Lewiston, Me., assignor to the Draper Company, Portland, Me., and Hopedale, Mass. Filed Nov. 11, 1897. Serial No. 658,110. (No model.)



Claim.—1. In a loom, independent shed-forming mechanism for each selvage, and means to nearly close the shed in one and to cross the selvage-warps of the other mechanism, for the same pick, and vice versa.

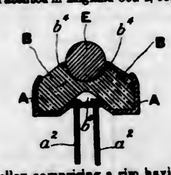
2. In a loom, independent shed-forming mechanism for each selvage, and means to nearly close the shed for two successive picks, cross the warp-threads, and nearly close the shed on the next two successive picks respectively, the crossing of the warps at one selvage occurring while the warps at the other selvage are nearly closed.

3. In a loom, independent shedding mechanism at each selvage, including actuating-treadles, a cam-shaft, controlling-cams for said treadles, arranged in pairs upon the shaft, said cams being substantially heart-shaped and oppositely set for each pair, so that the four cams are set quartering and means to rotate the cam shaft, whereby the shed at one selvage is closed and the warps at the other selvage are crossed, for the same pick, and vice versa.

4. In a loom, independent shed-forming mechanism for each selvage, and controlling means therefor, including a cam-shaft, four like cams thereon set quartering and arranged in pairs, the cams of each pair being set opposite each other, whereby when the shed at one selvage is closed the shed at the other selvage is crossed, at the same pick

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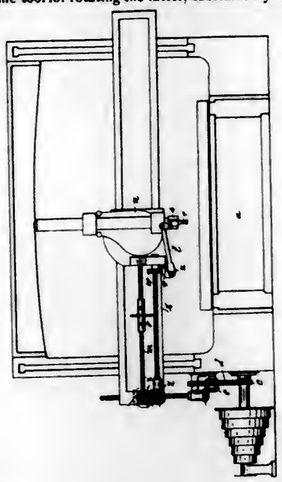
607,986. GRIP-PULLEY. ALFRED DAVY and THEODORE G. S. ROGERS, London, England. Filed Dec. 30, 1896. Serial No. 617,509. (No model.) Patented in England Oct. 1, 1896, No. 21,736.



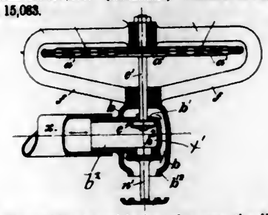
Claim.—A pulley comprising a rim having side channels, and a rubber cushion comprising lateral parts of solid rubber bearing in the channels with a space b^4 between said lateral parts and with a groove for the band, said space b^4 being between the cushion and the rim, substantially as described.

607,987. ELLIPSE-CUTTING MECHANISM FOR PLANERS. EMIL DIEHL, FRIEDRICH RUPPERT, and FRANZ LÖSER, Chemnitz, Germany, assignors to Werkzeug Maschinenfabrik "Union," (vormals Diehl,) same place. Filed Oct. 5, 1897. Serial No. 654,173. (No model.)

Claim.—In a machine for cutting elliptical openings in metal plates, the combination with the rotary work-supporting table, of the horizontal elevated track, the tool-carrier movably carried thereby, the tool rotatably carried by said carrier and having a laterally-extending arm, the driving-disk, the adjustable pitman adjustably connected with said disk and connected also with the carriage and operating also to reciprocate the same a distance equal to the difference between the major and minor axes of the ellipse to be cut, the second driving-disk, and the pitman connecting said second disk with the arm on the tool for rotating the latter, substantially as decribed.

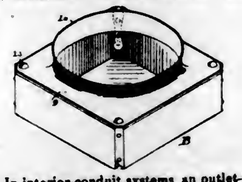


607,988. **FIRE-EXTINGUISHING SPRINKLER.** JOHN H. R. DUNNORE, Liverpool, England, assignor to William Henry Davies, Manchester, and John Edward Lees, Romiley, England. Filed Oct. 26, 1897. Serial No. 656,431. (No model.) Patented in England Aug. 10, 1895, No. 15,083.



Claim.—In combination with the valve case, the diaphragm, the valve with its valve-stem connected therewith, the distributer with its stem arranged axially in line with and below the valve and its stem and a casing *b* having a laterally-extending nozzle with an inwardly-extending portion closed at its end by a wall b^3 so as to leave a space x' between it and the wall of the casing, the openings in the upper and lower parts of said inner extension, the said distributer having a head screwed into the lower opening of said extension, and the valve seated around the opening in the upper wall of the extension, the said openings together with the discharge-opening from the casing being axially in line, substantially as described.

607,989. **INTERIOR CONDUIT.** ERIC E. ERICKSON and FREDERICK W. ERICKSON, Boston, Mass. Filed June 3, 1898. Serial No. 682,457. (No model.)



Claim.—1. In interior-conduit systems, an outlet-box having its bottom and sides formed from a single piece of thin metal sheet or plate, cut at its corners to provide lapping joints; with a metal brace riveted to each of the lapping joints having a screw-thread in its upper end; and a metal cover having a central opening surrounded by an outwardly-projecting flange, as set forth.

2. In interior-conduit systems, an outlet-box having its bottom and sides formed from a single piece of thin metal sheet or plate, cut at its corners to provide a double-rolled edge for the sides, and lapping corner-joints; with a metal brace riveted to each of the lapping joints having a screw-thread in its upper end; and a metal cover having a central opening surrounded by an outwardly-projecting flange, as set forth.

3. In interior-conduit systems, an outlet-box having its bottom and sides formed from a single piece of thin metal sheet or plate, cut at its corners to provide lapping joints; with a metal brace riveted at each corner to the lapping joints by means of lugs integral therewith, the upper part thereof being screw-threaded; and a metal cover having a central opening surrounded by an outwardly-projecting flange, as set forth.

4. In interior-conduit systems, an outlet-insulator consisting of an internally threaded metal member composed of two rings of different lengths and different diameters united by a thin flange or web, and an insulating member fitting over the ends of the rings, and into the channel between them, and extending inward as a lip, as set forth.

5. In interior-conduit systems, an outlet-insulator consisting of an internally-threaded metal member composed of two rings united by a flange or web, and an insulating member fitting over the ends of the rings, and into the channel between them, and extending inwardly from the end of the inner ring, as set forth.

6. In interior-conduit systems, an outlet-insulator consisting of an internally-threaded metal member composed of a disk from one side of which extends two rings of different diameters; and an insulating member fitting over the ends of the rings and into the channel between them, as set forth.

7. In interior conduit systems, an outlet-insulator consisting of an internally-threaded metal member composed of a disk from one side of which extend two rings of different diameters; and an insulating member fitting over the ends of the rings and into the channel between them, and extending inward from the end of the smaller ring, as set forth.

8. In an interior-conduit system, the combination of an outlet-box, and of an outlet insulator consisting of an internally-threaded metal member composed of two rings united by a flange or web, and an insulating member fitting over the ends of the rings and into the channel between them, and extending inwardly from the end of the inner ring; with an interior conduit or pipe having an insulating-lining, as set forth.

9. In an interior-conduit system, the combination of an outlet-box, and of an outlet-insulator consisting of an internally-threaded metal member composed of a disk from one side of which extend two rings of different diameters; and an insulating member fitting over the ends of the rings and into the channel between them; with an interior conduit or pipe, having an insulating-lining, as set forth.

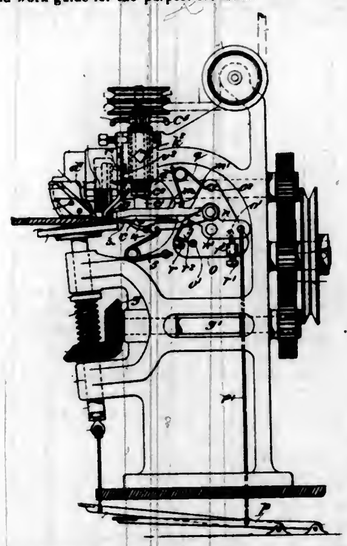
10. In an interior-conduit system, the combination of an outlet-box having its bottom and sides formed from a single piece of thin metal sheet or plate, cut at its corners to provide lapping joints; having a metal brace riveted to each of the joints with a screw-thread in its upper end; and a metal cover having a central opening adapted to be secured to top of the box; and of an outlet-insulator consisting of an internally-threaded metal member composed of a disk from one side of which extend two rings; and an insulating member fitting over the ends of the rings and into the channel between them; with an interior conduit or pipe having an insulating-lining, as set forth.

607,990. **SOLE-CHANNELING MACHINE.** FRANCIS J. FREESE, Lowell, Mass. Filed Mar. 19, 1896. Serial No. 582,421. (No model.)

Claim.—1. A channeler having a stationary cutter and a rotary cutter, the stationary cutter set at an angle to the plane of rotation of the rotary cutter and with the cutting edge thereof curved toward said rotary cutter.

2. A channeler having a yieldingly-adjustable work-support mounted on an axis inclined to the vertical, and feed mechaniam, a work-guide, and a grinder, a stationary cutter and rotary cutter, the stationary cutter set at an angle to the plane of rotation of the rotary cutter and having the cutting end thereof curved toward the edge of said rotary cutter, and means for operating said rotary cutter, for the purpose set forth.

3. A channeler having a stationary cutter and rotary cutter, a vertically-rotatable feed device located above such rotary cutter, a rotary work-support mounted on an axis inclined to the vertical and adjustable in line therewith, an adjustable work-guide, a grinder, the stationary cutter set at an angle to the plane of rotation of the rotary cutter and having the cutting end thereof curved toward the edge of said rotary cutter, and means for operating such rotary cutter, work-support and feed device, and for adjusting such work-support, and work-guide for the purpose set forth.



4. A channeler having a rotary cutter and a work-guide, the latter located in rear of the edge of the cutter and in radial line with and in the same vertical plane as its axis to bear upon the edge of stock being cut.

5. A channeler having a rotary cutter and an adjustable work-guide, the latter located in rear of the edge of the cutter and in radial line with and in the same vertical plane as its axis to bear upon the edge of the stock being cut.

6. A channeler having a work-support mounted on an axis inclined to the vertical and a rotary cutter and a work-guide, the latter located between the work-support and cutter in line with the axis of the latter for the purpose set forth.

7. A channeler having a rotary cutter, mounted rigidly on a rotatable spindle carried loosely in an adjustable sleeve pivotally carried in the frame of the machine, and means for operating such spindle, for the purpose set forth.

8. A channeler having a rotary cutter, mounted rigidly on a rotatable spindle carried loosely in a sleeve externally screw-threaded to take into the screw-threaded interior of a second sleeve, an opening in the frame of the machine in which said second sleeve is pivotally mounted and means for adjusting and operating such spindle, for the purpose set forth.

9. A channeler having a rotary cutter mounted rigidly on a rotatable spindle carried loosely so as to rotate freely in an adjustable sleeve pivotally carried in the frame of the machine, a finger-nut rigidly mounted on said sleeve and graduations on the carrying part for such sleeve with which a portion of such finger-nut registers, and means for operating such spindle, for the purpose set forth.

10. A channeler having a rotary cutter mounted rigidly on a rotatable spindle carried loosely in a sleeve externally screw-threaded to take into the screw-threaded interior of a second sleeve, a finger-nut rigidly mounted on said externally-screw-threaded sleeve and graduations on the carrying part for such sleeve with which a portion of such finger-nut registers, an opening in the frame of the machine in which said second sleeve is pivotally mounted, and means for adjusting and operating such spindle, for the purpose set forth.

11. A channeler having a rotary cutter mounted rigidly on a rotatable spindle carried loosely in an adjustable sleeve pivotally carried in the frame of the machine, a stationary grinder and means for operating such spindle, for the purpose set forth.

12. A channeler having a rotary cutter mounted rigidly on a rotatable spindle carried loosely in a sleeve externally screw-threaded to take into the screw-threaded interior of a second sleeve, an opening in the frame of the machine, in which said second sleeve is pivotally mounted, a stationary grinder and means for adjusting and operating such spindle, for the purpose set forth.

13. A channeler having a rotary cutter mounted rigidly on a rotatable spindle carried loosely in an adjustable sleeve in the frame of the machine, a finger-nut rigidly mounted on said externally-screw-threaded sleeve and graduations on the carrying part for such sleeve with which a portion of such finger-nut registers, a stationary grinder, and means for operating such spindle, for the purpose set forth.

14. A channeler having a rotary cutter, with means for operating same, a work-guide the guiding end of which is located in rear of the edge of the cutter and in radial line with and in the same vertical plane as the axis of same, a bell-crank lever fulcrumed to the frame of the machine and having the other end of the guide pivotally connected to one arm thereof and a treadle connection with the other arm of such bell-crank lever, for the purpose set forth.

15. A channeler having a rotary cutter, with means for operating same, a work-guide, the guiding end of which is located in rear of the edge of the cutter and in radial line with and in the same vertical plane as the axis of same, a bell-crank lever fulcrumed to the frame of the machine and having the other end of the guide pivotally connected to one arm thereof, a treadle connection with the other arm of such bell-crank lever and adjustable limiting stops, for the purpose set forth.

16. A channeler having a rotary cutter, with means for operating same, a work-guide the guiding end of which is located in rear of the edge of the cutter, and in radial line with and in the same vertical plane as the axis of same, a bell-crank lever fulcrumed to the frame of the machine and having the other end of the guide pivotally connected to one arm thereof, means for exerting upon such work-guide a yielding pressure forward and toward such rotary cutter, and a treadle connection with the other arm of such bell-crank lever, for the purpose set forth.

17. In combination with the cutter of a channeler, work-guiding mechanism having a part above the cutter and a part below the cutter to present a guiding-face above and below said cutter, for the purpose set forth.

18. In combination with the cutter of a channeler, a work-guide in the form of an arm with one end located in rear of the edge of the cutter and in radial line with and in the same vertical plane as the axis of same, and the other end pivotally connected to one arm of a bell-crank lever, the other arm of which lever has a treadle connection, and means for limiting the movement of and for exerting a forward and lateral pressure upon such work-guide, for the purpose set forth.

19. In combination with the cutter of a channeler, work-guiding mechanism adapted to present a guiding-face above and below said cutter, said work-guiding mechanism consisting of a guide-arm located above such cutter with one end in rear of the edge of the cutter and in radial line with and in the same vertical plane as the axis of same, and the other end pivotally connected to one arm of a bell-crank lever, the other arm of which lever has a treadle connection and a second guide-arm located below the cutter and having one end in vertical line with the end of the first-mentioned guide-arm and its other end pivotally connected to said first-mentioned arm, and means for exerting a forward and lateral pressure upon such work-guide, for the purpose set forth.

20. In combination with the cutter of a channeler, work-guiding mechanism adapted to present a guiding-face above and below said cutter, said work-guiding mechanism consisting of a guide-arm located above such cutter with one end in rear of the edge of the cutter and in radial line with and in the same vertical plane as the axis of same, and the other end pivotally connected to one arm of a bell-crank lever, the other arm of which lever has a treadle connection, and a second guide-arm located below the cutter and having one end in vertical line with the end of the first-mentioned guide arm and its other end pivotally connected to said first-mentioned arm, and means for limiting the movement of and exerting a forward and lateral pressure upon such work-guide, for the purpose set forth.

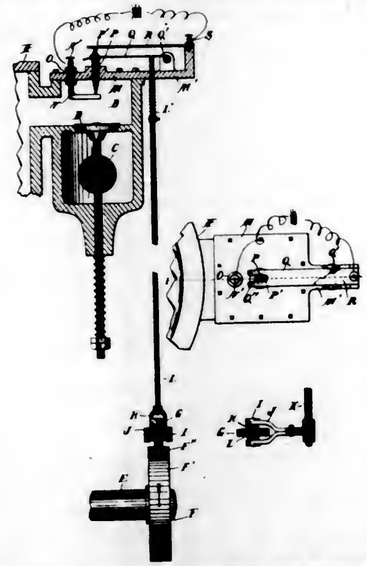
607,991. **APPARATUS FOR MAKING PNEUMATIC TIRES.** THOMAS GUTHRIE and ALEXANDER GUTHRIE, South Shields, England. Filed Apr. 8, 1897. Serial No. 631,290. (No model.) Patented in England July 15, 1896, No. 15,009.



Claim.—1. In apparatus for use in building or constructing tires of the kind described, a wheel or mandrel of wood or suitable material having formed around its periphery two inverted-U-shaped ridges or projections suitably spaced apart and connected by a curve of determined radius forming a central U-shaped recess the sides being somewhat tapered from the inner toward the outer periphery of the wheel, and provided with removable side rings and clips substantially in the manner set forth.

2. A wheel or mandrel of wood for forming tires, having two inverted-U-shaped ridges or projections spaced apart and connected by a curve of a determined radius forming a central U-shaped recess.

607,992. **IGNITER FOR GAS-ENGINES.** RALPH B. HAIN, Grand Rapids, Mich., assignor to the Monitor Vapor Engine and Power Company, same place. Filed Apr. 8, 1896. Serial No. 586,741. (No model.)



Claim.—1. In a combustible-vapor engine, the combination with the electrodes, one of which is fixed and the other movable longitudinally toward and from the same, of a spring, forming part of the electric circuit and bearing at one end upon the outer end of the movable electrode, said spring being secured to a fixed part of the engine and operating to press said movable electrode yieldingly toward the fixed electrode and sliding thereupon, for the purpose specified, an arm pivoted at one extremity to a fixed part of the engine and having its other end secured to said movable electrode, and a longitudinally-movable rod engaging said arm between the pivot thereof and the movable electrode and operating the same to break the circuit, substantially as described.

2. In an igniter for combustible-vapor engines, a fixed electrode, and a movable electrode having a groove near its outer end, a spring engaging the outer end of said electrode, a pivoted arm engaging said groove, a rod engaging said arm, and a cam-wheel and spring operating said rod, substantially as described.

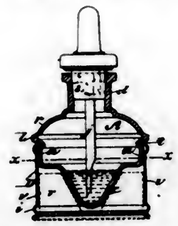
3. In an igniter for combustible-vapor engines, an insulated electrode extending through the cap of the combustion-chamber, a longitudinally-movable electrode extending through said cap, and having an annular groove near its outer end, a pivoted arm, having a forked end engaging said groove, and a spring engaging the end of said movable electrode, and movable laterally to disengage the same, substantially as described.

4. In an igniter for combustible vapor engines, in combination with a combustion-chamber, an intake-passage beneath the same, an intake-valve in the bottom of said chamber, a removable cap on the top of said chamber, a fixed insulated electrode in said cap, a longitudinally-movable electrode in said cap, and a spring engaging the end of said movable electrode and laterally movable to disengage the same, a pivoted arm having a forked end engaging a groove in said electrode, whereby said parts are readily detached, substantially as described.

5. In a combustible vapor engine, a combustion-chamber, an intake-valve in the bottom of the same, a cap closing the top of the same, a fixed insulated electrode passing through said cap, and having a binding-post, a longitudinally-movable electrode passing through said cap, a pivoted arm engaging a groove in the movable electrode, a spring engaging the outer end of said electrode, and slidable thereon, a binding post securing said spring, an electric circuit connected to said posts, a rod engaging the pivoted arm and a cam-wheel to operate said rod, and having a shoulder to suddenly open the circuit, substantially as described.

607,993. **INK STAND OR BOTTLE.** CHARLES M. HIGGINS, New York, N. Y. Filed July 5, 1894. Serial No. 516,683. (No model.)

Claim.—1. A blown-glass bottle formed in the shape of a hollow spinning-top with the depending well or pocket *c*, extending from its bottom, in combination with a supporting stand or holder in which said bottle is socketed, substantially as shown and described.

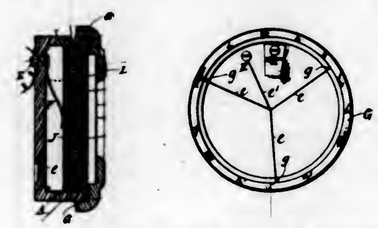


2. The combination with a blown glass bottle having a straight part or body *a a* below the breast and depending well or pocket *c* extending from the bottom, of a supporting-stand tightly embracing the body *a*, *a*, and in which the bottle is socketed up to or near the breast, substantially as shown and described.

3. The combination with a blown-glass bottle having the straight part or body *a a* below the breast, and the depending well or pocket *c* extending from the bottom, of the annular supporting hoop or band D tightly embracing the body *a a*, substantially as and for the purpose set forth.

4. A blown-glass bottle formed with the neck *d*, breast *r*, stop or bead *l*, and straight sides *a a*, depending well or pocket *c*, and supporting band or loop D tightly embracing the sides *a a*, substantially as and for the purpose set forth.

607,994. **MICROPHONE.** THOMAS J. HOWELL, London, England. Filed Jan. 3, 1896. Serial No. 665,490. (No model.)



Claim.—1. In combination in a microphone, a honeycomb disk having a series of cells, the front diaphragm, a screw-down cover to hold the diaphragm in place in front of the honeycomb disk, a rear plate extending across the series of cells in the disk and a conducting-spring for forcing the rear plate with the honeycomb disk forward as a whole, the said cells being filled with carbon granules, substantially as described

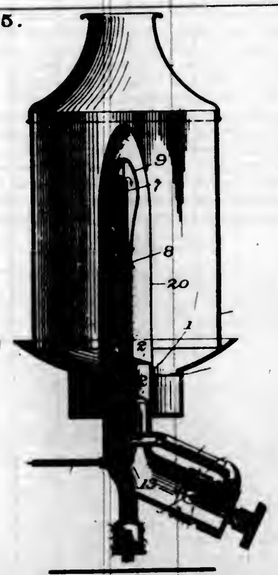
2. In combination in a microphone with the case, the disk therein having the series of cells with carbon granules therein, the metallic ring G on the case and about the edge of the disk, the diaphragm L extending over the front face of the disk with its cells and resting upon the ring G, the electric terminal E and a plurality of wires leading from the terminal E to different points on the ring G, substantially as described.

607,995. **VAPOR-BURNING APPARATUS.** ARTHUR KITSON, Philadelphia, Pa., assignor to the Kitson Hydrocarbon Heating and Incandescent Lighting Company, of West Virginia. Filed Aug. 31, 1897. Serial No. 649,269. (No model.)

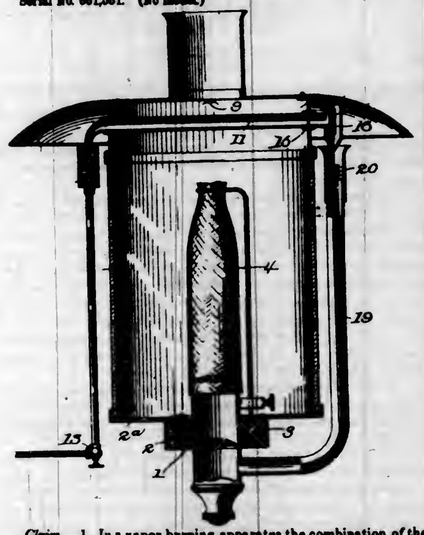
Claim.—1. The combination of the supporting gas-bracket, the vapor-burner and connections supported thereon, and having a connection with the interior of said gas-bracket, the incandescent mantle, and the vaporizing-tube located within the mantle and coinciding with the axis thereof, said axis being a vertical line from the point of attachment to the gas bracket substantially as described.

2. The combination of the supporting gas-bracket, the vapor-burner and connections supported thereon, and having a connection with the interior of said gas-bracket, the incandescent mantle and the vaporizing-tube located within the mantle and coinciding with the axis thereof, said axis being a vertical line from the point of attachment to the gas-bracket and said vaporizing-tube having an enlargement at its upper end, substantially as described.

607,995.



607,996. **VAPOR-BURNING APPARATUS.** ARTHUR KITSON, Philadelphia, Pa., assignor to the Kitson Hydrocarbon Heating and Incandescent Lighting Company, of West Virginia. Filed Dec. 11, 1897. Serial No. 661,581. (No model.)

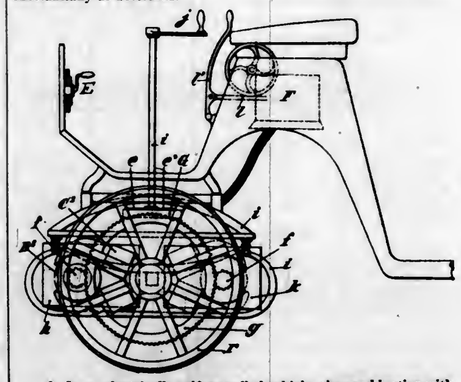


Claim.—1. In a vapor-burning apparatus the combination of the approximately horizontal vaporizing-tube, the nozzle for said tube, and the upwardly-turned end of the vaporizing-tube which delivers vapor into the nozzle, substantially as described.

2. In a vapor-burning apparatus the combination of the burner, the supporting-frame, the mixing-tube having its mouth located at one side of said frame, the vaporizing-tube mounted in the frame, extending through the heating-zone of the burner and discharging into the mixing-tube, said vaporizing-tube being fastened to the frame only at a point near its discharging end, substantially as described.

607,997. **ELECTRICALLY-SELF-PROPELLING VEHICLE.** LOUIS KRIEGER, Paris, France. Filed Mar. 11, 1897. Serial No. 627,009. (No model.) Patented in France Jan. 22, 1895, No. 244,542, and in Germany Feb. 6, 1895, No. 87,401.

Claim.—1. In an electrically-self-propelled vehicle, the combination with the steering-wheels, of an independent armature connected to each wheel, a fixed magnet in conjunction with each armature, a rheostat having independent electric connections to each armature, and a source of electrical energy, the field-magnet windings and the rheostat being connected in series with the source of electrical energy, substantially as described.



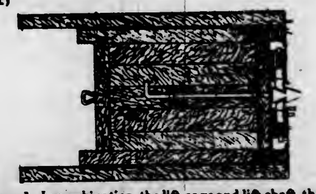
2. In an electrically-self-propelled vehicle, the combination with the steering-wheels of a mechanically-independent motor for operating each wheel, a source of electrical energy, a rheostat comprising the plates d' d^3 and d^2 d^4 electrical connections in parallel from the plate d^5 to the armatures of both motors, electrical connections for connecting the field-magnets and the rheostat in series with the source of electrical energy, and the movable contacts operating in conjunction with the plates to short-circuit either armature for steering the vehicle, substantially as described.

3. In an electrically-propelled vehicle, the combination with the steering-wheels, of a mechanically-independent motor connected with each wheel, a movable rheostat-plate G carrying suitable contact-plates, manually operated, contacts cooperating with said rheostat for varying the speed of either motor for steering the vehicle, and connections from each steering-wheel to said movable rheostat-plate whereby the increase of speed of one wheel will operate to turn said movable plate, substantially as described.

4. In an electrically-self propelled vehicle, the combination with the steering-wheels, of a mechanically-independent motor connected to each wheel, a movable rheostat-plate G carrying suitable contact-plates, manually operated, contacts cooperating with said contact-plates to vary the speed of either motor to steer the vehicle, and means whereby such increased speed will turn the plate G comprising a hollow worm geared to said plate G, an idler-gear within said hollow worm, a pair of independent gears engaging said idler, and operating connections from each of said gears to one of the steering-wheels, substantially as described.

5. In an electrically-self-propelled vehicle, the combination with steering-wheels pivotally journaled upon opposite ends of a stationary axle, an electric motor connected to each wheel, and means for varying the speed of either motor to steer the vehicle, substantially as described.

607,998. **SAFETY DEVICE FOR LIFTS.** HERMANN KURTZIG, Ineowrazlaw, Germany. Filed Apr. 6, 1898. Serial No. 676,899. (No model.)



Claim.—1. In combination, the lift-cage and lift-shaft, the ratchet-bar carried by one of said parts, a pawl carried by the other part adapted to engage said ratchet-bar, and the buffer devices interposed between the bottom of the lift-cage and the bottom of the shaft, substantially as described.

2. In combination, the lift-cage and lift-shaft, the ratchet-bar rotatably connected to one of said parts, a pawl carried by the other part adapted to engage said ratchet bar, means for rotating the

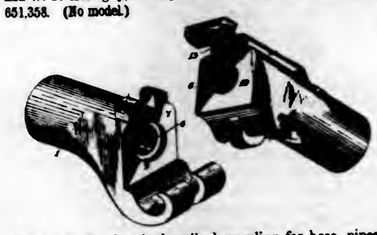
ratchet-bar to disengage the pawl therefrom, substantially as described.

607,999. **EARTH-BORING AND PIPE-LAYING APPARATUS.** GRIFFIN T. LATTA, Ludlow, Ky. Filed Aug. 17, 1896. Serial No. 603,064. (No model.)



Claim.—In earth-boring and pipe-laying apparatus, the combination of the pipe F, a differential windlass therefor, an oscillating handle applied to the pipe, the cutting-head A, and hose connected to the rear end of the pipe, for forcing water therethrough, substantially as described.

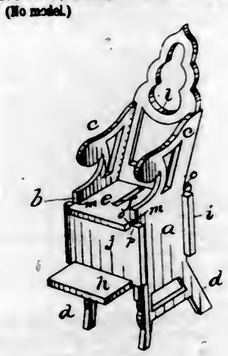
608,000. **PIPE-COUPLING.** FRANKLIN T. LEATHERMAN and JONAS METZLER, Columbia City, Ind., assignors of one-third to H. D. McLallen and W. F. McNagny, same place. Filed Sept. 11, 1897. Serial No. 651,358. (No model.)



Claim.—1. The herein-described coupling for hose, pipes, &c., consisting of the tubular members, one of which is provided upon its under side with a pair of hooks slightly separated from each other, while the opposite member is provided with a receiving-seat to engage said hooks, one of said members being additionally provided upon its upper side with a pair of ears, while the opposite member is provided with a locking-latch designed to engage said ears and a spring cooperating with said latch and designed to hold the same normally downward in engagement with said ears, all operatively combined in the manner and for the purpose set forth.

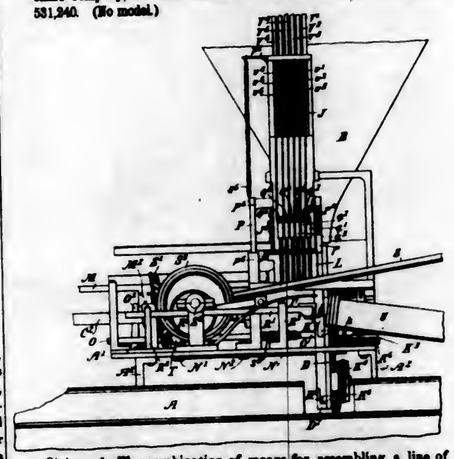
2. The herein-described coupling for hose, pipes, &c., consisting of the tubular members, one of which is provided upon its under side with a pair of hooks, while the opposite member is provided with a receiving-seat to engage said hooks, one of said members being additionally provided upon its upper side with a pair of ears, while the opposite member is provided with a locking-latch designed to engage said ears, suitable means for holding said latch normally downward in engagement with said ears and additional means for retaining a yielding collar of packing between the meeting faces of said tubular members, substantially as specified and for the purpose set forth.

608,001. **COMBINED CHAIR TOY SAVINGS-BANK AND PUZZLE.** CHARLES J. MANNING, Cambridge, Mass., assignor of one-half to William F. Peacock, Boston, Mass. Filed Aug. 30, 1894. Serial No. 521,694. (No model.)



Claim.—A toy savings-bank puzzle consisting of a series of separable pieces, one of which is provided with a coin-receiving slot or aperture, each piece being provided on its inner face with parallel grooves for receiving the edges of adjacent pieces when the parts are assembled to form a bank, two of said pieces located on opposite sides of the box having extensions, *c*, beyond the body thereof, whereby, when the parts are assembled, there is produced a box having two parallel pieces projecting above the upper side of the box proper, each of such projecting portions having a groove formed in its inner face, and a lock or wedge-piece *l* adapted to fit in the last-mentioned grooves to force the ends of the projecting pieces outward and lock the other parts of the box together, whereby a double puzzle in the separation of the pieces is provided, substantially as set forth.

608,002. **MACHINE FOR JUSTIFYING TYPE.** FRANK MCCLINTOCK, Grand Junction, Colo., assignor to the Empire Type Setting Machine Company, of West Virginia. Filed Dec. 8, 1894. Serial No. 531,240. (No model.)



Claim.—1. The combination of means for assembling a line of type; means for introducing justifiers; means for forcing in the justifiers; and means for replacing the temporary justifiers by permanent spaces.

2. The combination of means for inserting temporary spreading spacing devices between types as they are assembled in line; means for causing said spacing devices to occupy greater space in the line while in contact with types on both sides of themselves, whereby said types are driven farther apart and the line is expanded; and means for thereafter replacing said spacing devices with ordinary spaces.

3. The combination of means for inserting temporary spreading spacing devices between types as they are assembled in line; means for causing said spacing devices to simultaneously expand the line; means for limiting the amount of expansion; and means for replacing said spacing devices with ordinary spaces.

4. The combination of means for inserting wedges between types as they are assembled in line; means for driving said wedges farther into said line; and means for thereafter replacing said wedges with ordinary spaces.

5. The combination of means for inserting temporary spreading spacing devices between types as they are assembled in line; means for causing said spacing devices to simultaneously expand the line; means for replacing said spacing devices with space-blanks; and means for delivering the line thus justified.

6. The combination of means for inserting temporary spreading spacing devices in a line of type while being assembled between confining-walls; means for causing said spacing devices, to simultaneously expand the line until its extremities are in contact with said walls; means for replacing said spacing devices with space-blanks; and means for removing the line thus justified from between said confining-walls.

7. The combination of a line-holder adapted to receive a line of type as it is being assembled; means for advancing the line-holder during the operation of assembling the line; temporary spacing devices; and means for replacing said spacing devices with ordinary spaces.

8. The combination of a line-holder, composed of a box, adapted to receive a line of type as it is being assembled and to convey it and limit its length during the operation of justification; temporary tapering or wedge space-bars; and means for introducing the space-bars crosswise into and through the line of type in the line-holder, between the words, during the operation of assembling type therein.

9. The combination of a line-holder composed of a box, adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification, and arranged to travel in a suitable path; space-bars carried by the line-holder, arranged to be inserted therein; and means for inserting the space-bars crosswise into and through the line of type in the line-holder.

10. The combination of a line-holder, arranged to travel upon a suitable path, for holding and limiting the length of a line of type; space-bars carried by the line-holder arranged to be introduced therein; and means for introducing the space-bars successively, crosswise into and through the line of type in the line-holder after each word, during the operation of assembling type therein.

11. The combination of a line-holder, composed of a box having permanent end walls, adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification, and arranged to travel in a suitable path; wedge-shaped space-bars for expanding the line of type contained in the line-holder; and means for driving in the space-bars so as to expand the line to fill out the line-holder.

12. The combination of a line-holder, composed of a box having permanent end walls, adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification, and arranged to travel in a suitable path; wedge-shaped space-bars for expanding the line of type contained in the line-holder; and means for driving in the space-bars simultaneously so as to expand the line to fill out the line-holder.

13. The combination of a temporary spreading spacing device inserted between types in a line; means for causing said spacing device to occupy greater space in the line while in contact with the types on both sides of itself, whereby said types are driven farther apart; and means for thereafter replacing said spacing device with an ordinary space.

14. The combination of temporary spreading spacing devices inserted between types in a line; means for causing said spacing devices to simultaneously spread the line; and means for thereafter replacing said spacing devices with ordinary spaces.

15. The combination of one or more wedges inserted between types in a line of type; means for driving said wedges farther into the line and thereby expanding the line; and means for substituting ordinary spaces for said wedges.

16. The combination of a line-holder, composed of a box adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification; means for introducing wedge-shaped or tapering space-bars into and through the line of type in the line-holder between the words during the operation of assembling the type therein; and means for driving in the space-bars after insertion so as to expand the line to fill out the line-holder.

17. The combination of a line-holder, composed of a box adapted to receive a line of type as it is being assembled, and to carry it and limit its length during the operation of justification; means substantially as described for introducing wedge-shaped or tapering space-bars successively, crosswise into and through the line of type in the line-holder after each word during the operation of assembling type therein; and means for driving in the space-bars after insertion so as to expand the line to fill out the line-holder.

18. The combination of a line-holder, composed of a box adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification; means substantially as described for introducing wedge-shaped or tapering space-bars crosswise into and through the line of type in the line-holder after each word, during the operation of assembling type therein; and means substantially as described for driving in the space-bars simultaneously so as to expand the line to fill out the line-holder.

19. The combination of a line-holder, composed of a box having permanent end walls, adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification; temporary wedge-shaped or tapering space-bars for expanding the line to fill out the line-holder; and means for removing the space-bars and replacing them with ordinary spaces.

20. The combination of a line-holder adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification; space-bars for expanding the line to fill out the line-holder; and means substantially as described for successively removing the space-bars and replacing them with ordinary spaces.

21. The combination of a line-holder adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification; space-bars for expanding the line to the required length; means for successively removing the space-bars; and means for replacing them with ordinary spaces of suitable size, aggregating in thickness the total spacing required in the line.

22. The combination of a line-holder; temporary spacing devices, capable of being caused to spread the line; means for causing said spacing devices to spread the line; and means for thereafter replacing said temporary spacing devices with ordinary spaces.

23. The combination of a line-holder capable of holding a line of type; wedges capable of being inserted between types in said line; means for driving said wedges into said line and thereby expanding the same; and means for thereafter replacing said wedges with ordinary spaces.

24. The combination of a suitable line-holder; temporary wedge-shaped space-bars inserted crosswise therein for expanding the line of type contained therein; means, substantially as described, for driving in the space-bars to expand the line to fill out the line-holder; and means for removing the space-bars and replacing them with ordinary spaces.

25. The combination of a suitable line-holder; wedge-shaped space-bars for expanding the line of type contained therein; means for driving in the space-bars so as to expand the line to fill out the line-holder; and means for removing the space-bars successively, and for replacing each space-bar upon removal with ordinary spaces.

26. The combination of a holder for holding and limiting the length of a line of type; means, whereby wedge-shaped or tapering space-bars, instead of ordinary spaces, are inserted between the words during the operation of assembling the line in the line-holder; means for driving in the space-bars after insertion, so as to expand the line to fill out the line-holder; and means for removing the space-bars and replacing them with ordinary spaces.

27. The combination of a line-holder for holding and limiting the length of a line of type; wedge-shaped space-bars for expanding the line; means for driving in the space-bars simultaneously so as to expand the line to fill out the line-holder; and means for removing the space-bars successively and replacing them with ordinary spaces.

28. The combination of a suitable holder for holding and limiting the length of a line of type; means whereby wedge-shaped or tapering space-bars, instead of ordinary spaces, are inserted between the words during the operation of assembling the line in the line-holder; means for driving in the space-bars simultaneously after insertion, so as to expand the line to fill out the line-holder; and means for removing the space-bars successively and replacing them with ordinary spaces.

29. The combination of a holder for holding and limiting the length of a line of type; means whereby wedge-shaped or tapering space-bars are inserted between the words during the operation of assembling in the line-holder; means for driving in the space-bars so as to expand the line to fill out the line-holder; and means for successively removing and replacing the bars with ordinary spaces of suitable size aggregating in thickness the total spacing required in the line.

30. The combination of one or more temporary spreading spacing devices inserted between types in line, said spacing devices adapted to be moved with reference to the line, whereby the portion of the same which is between the types may be of increased dimensions; and means set in operation by the temporary spacing devices, for selecting the ordinary spaces corresponding to the width of the space occupied by said temporary spacing devices.

31. The combination of one or more temporary spreading spacing devices, inserted between types in a line, said spacing devices being adapted to be moved with reference to the line, whereby the portion of the same which is between the types may be of increased dimensions; means set in operation by the temporary spacing devices for selecting the ordinary spaces corresponding to the width of the space occupied by said temporary spacing devices; and means for substituting said spaces so selected for the spacing devices.

32. The combination of one or more temporary spreading spacing devices inserted between types in a line of type; means for causing said spacing devices to expand the line; and means for thereafter replacing said spacing devices with ordinary spaces the thickness of which is determined by that section of the spacing device which is between the types.

33. The combination of one or more temporary spacing devices inserted between the types in a line; means for moving said devices relatively to the line; and means for determining the corresponding size of the ordinary spaces to be selected according to the distance through the line which said spacing devices have been moved.

34. The combination of a line of type; wedges inserted at desired intervals between types in said line; means for forcing said wedges farther through the line; and means for substituting for said wedges ordinary spaces the size of which is determined by the distance which said wedges project from the line.

35. The combination of a series of temporary spreading spacing devices inserted at desired intervals between types in a line; means for causing said spacing devices to expand the line; means for sub-

stituting ordinary spaces for a part of said spacing devices; and means for causing the spacing devices to again expand the line.

36. The combination of temporary spacing devices inserted in a line; means for moving said spacing devices through the line: means for replacing the spacing devices with ordinary spaces; and means for moving the spacing devices remaining, through the line, after any portion of them have been replaced with ordinary spaces.

37. The combination of temporary spacing devices inserted between types in a line; means for driving said spacing devices farther through the line; means for replacing said spacing devices successively with ordinary spaces; and means for driving farther through the line the spacing devices remaining in the line, after any portion of them have been replaced with ordinary spaces.

38. The combination of a series of temporary spreading spacing devices inserted at desired intervals between types in a line; and means for alternately causing said spacing devices to expand the line and for replacing one of said spacing devices with an ordinary space.

39. The combination of wedge-shaped or tapering space-bars inserted between types in a line; means for driving in the space-bars to expand the line; means for replacing the first space-bar in the line with an ordinary space; means for driving in the remaining space-bars so as to take up and distribute between the remaining line-spaces any looseness resulting; and means for repeating the same operation successively for each space-bar in said line.

40. The combination of a line-holder containing an expanded line of type in which wedge-shaped or tapering space-bars have been inserted and partially replaced with ordinary spaces; and means for further expanding the line, when necessary, by forcing in the remaining space-bars, so as to fill out the line-holder, whenever a space has been inserted of less thickness than the thickness of the space-bar which has been removed, at the point at which the space-bar enters the line.

41. The combination of a line-holder containing an expanded line of type, in which wedge-shaped or tapering space-bars have been inserted and partially replaced with ordinary spaces; means for further expanding the line of type by forcing in the remaining space-bars so as to fill out the line-holder, when necessary to expand the line; and means substantially as described for thereupon inserting appropriate spaces into the line to effect perfect justification.

42. The combination of a suitable line-holder containing an expanded line of type in which wedge-shaped or tapering space-bars have been inserted and partially replaced with ordinary spaces; means for further expanding the line of type, by forcing in the remaining space-bars so as to fill out the line-holder, when necessary to expand the line, after the withdrawal of a space-bar and the insertion of a space in its stead; and means substantially as described for thereupon inserting appropriate spaces into the line to effect perfect justification.

43. The combination of a line-holder containing a line of type in which wedge-shaped space-bars have been inserted; and means acting successively on the space-bars, immediately after the preceding space-bar has been removed and a space inserted, for driving in the remaining bars, so as to take up and apportion between the words of the line contained in the line-holder, any fractional part of the unit of spacing, which may be necessary to properly justify the line.

44. The combination of a line-holder containing a line of type in which wedge-shaped space-bars have been inserted; and means, actuated from the same driving-shaft, and acting successively on the remaining space-bars, after each preceding space-bar has been removed and a space inserted by the space-inserting mechanism, for driving in said space-bar so as take up and apportion between the words held in the line-holder, any fractional part of a unit of spacing which may be necessary to properly justify the line.

45. The combination of a line-holder containing a line of type in which space-bars have been inserted and partially replaced with ordinary spaces: and a reciprocating space-bar driver, arranged to act successively on the remaining space-bars, after the insertion of each space in its proper order into the line-spaces, substantially as described.

46. The combination of a line-holder containing a line of type in which space-bars have been inserted and partially replaced with ordinary spaces; a reciprocating space-bar driver, arranged to act successively on the remaining space-bars, after the insertion of each space as the line-holder moves forward; and means connected with the driving-shaft of the machine for actuating the same.

47. The combination of a line-holder containing a line of type in which wedge-shaped or tapering space-bars have been inserted; means for removing the space-bars successively; means for inserting, instead of each bar as it is removed, ordinary spaces of thickness equal to or next less than that of the removed bar; and means for further expanding the line when necessary, after insertion of a space, by forcing in the remaining space-bars, so as to fill out the line-holder whenever a space has been inserted of less thickness than the removed space-bar, at the point at which it entered the line.

48. The combination of a line holder containing an expanded line of type, in which wedge-shaped or tapering space-bars have been inserted and partially replaced with ordinary spaces; means for further expanding the line of type, by forcing in the remaining space-bars simultaneously so as to fill out the line-holder, when necessary, to expand the line; means, substantially as described, for removing the first space-bar then remaining in the line and replacing it with an appropriate space, and for again driving in the remaining space-bars to take up any fractional space remaining in the line and for repeating the operation until the entire line is justified.

49. The combination of a holder for holding and limiting the length of a line of type; means, whereby wedge-shaped or tapering space-bars are inserted into the line between the words during the operation of assembling in the line-holder; means for driving in the space-bars simultaneously so as to expand the line to fill out the line-holder; means for successively removing the space-bars; means for inserting in the line of type, instead of the space-bars as each is removed, ordinary spaces of thickness equal to or next less than the thickness of the space-bar which has been last removed, at the point where it enters the line; and means for driving in the remaining space bars to expand the line to fill out the line-holder, whenever a space has been inserted of less than the proper thickness.

50. The combination of a line-holder for holding and limiting the length of a line of type; means whereby wedge-shaped or tapering space-bars are inserted into the line between the words during the operation of assembling in the line-holder; means for driving in the space-bars simultaneously, so as to expand the line to fill out the line-holder; means for successively removing the space-bars; means for inserting in the line of type, instead of the space-bars as each is removed, ordinary spaces of thickness equal to or next less than the thickness of the space-bar which has been last removed, at the point where it enters the line; and means for driving in the remaining space-bars to expand the line to again fill out the line-holder, whenever a space has been inserted of less than the proper thickness, and for repeating this operation until the entire line is justified.

51. The combination of a suitable line-holder for holding and limiting the length of a line of type; means whereby wedge-shaped or tapering space-bars are inserted into the line between the words, during the operation of assembling in the line-holder; means for driving in the space-bars simultaneously so as to expand the line to fill out the line-holder; means for successively removing the space-bars; means for inserting in the line of type, instead of the space-bars as each is removed, ordinary spaces equal to or next less in thickness than the thickness of the space-bar which has been last removed, at the point at which it entered the line; means for driving in the remaining space-bars to expand the line to again fill out the line-holder, whenever a space has been inserted of less thickness than the thickness of the removed space-bar at the point at which such space-bar entered the line, and for repeating this operation until the entire line is justified; and means for removing the justified line from the line-holder and delivering it upon a suitable galley.

52. A space-bar, consisting of a wedge having parallel planes at each end, and a uniform taper between said parallel planes.

53. A space-bar consisting of a wedge having parallel planes at each end, and having a uniform taper between said parallel planes, and provided at top and bottom with flanges.

54. A space-bar, consisting of a wedge having parallel planes at either end, a uniform taper between said planes, provided with flanges on which it slides in a suitable way, and notches in the flanges engaging with devices in the way for limiting its longitudinal movement.

55. A space-bar, of less height than the type in which it is to be used, whereby there is left above the space-bar and between the adjacent types, a space into which an ordinary space may be partially inserted before the withdrawal of the space-bar.

56. The combination of a wedge-shaped space-bar; and a hanger supporting the space-bar and in which it slides horizontally backward and forward in suitable ways.

57. The combination of a wedge-shaped space-bar; and a hanger provided with spring-catches arranged to engage with suitable notches in the surface of the space-bar, whereby the movement of the space-bar is limited in either direction.

58. The combination of a line-holder carrying a line of type; temporary spacing devices of less height than the said type inserted therein; means for inserting an ordinary space into that portion of the line which is above the space device; means for thereupon removing the spacing device; and means for then driving the ordinary space the rest of the distance into the line.

59. The combination of a temporary spacing device inserted between types in a line of type, and which is less in height than the said type; means for causing the said spacing device to spread the line; means for thereafter inserting an ordinary space into that portion of the line-space which is above the spacing device; means for thereupon withdrawing the spacing device; and means for then driving the ordinary space the rest of the distance into the line.

60. The combination of a traveling line-holder which successively travels to points where type and temporary spreading spacing devices may be inserted therein and where the spacing devices may be caused to spread the line, where the spacing devices may be replaced with ordinary spaces, and where the line may be removed from the line-holder and then back to the starting-point; and means for performing these several operations.

61. A line-holder for containing a line of type, having a rectangular channel formed on one face and closed by the frame-plate on which it slides, so as to form a rectangular receptacle, and provided with a rectangular opening extending longitudinally through its side wall.

62. A line-holder for containing a line of type, forming with the frame-plate on which it slides, a rectangular receptacle provided with a rectangular opening in its side wall and beveled on its outer surface at one end, so as to permit it to slide upon the projecting and correspondingly-beveled head of a reciprocating banter.

63. A line-holder for containing a line of type, having a longitudinal opening in its side walls; a way or track upon which it slides; and a frame-plate provided with a longitudinal opening to which the way or track is attached, the holder and the frame-plate forming together an inclosed receptacle for the line of type, having a longitudinal opening running through both the holder and the plate.

64. The combination of a line-holder; a longitudinal way or track attached to said line-holder; a hanger sliding on said way or track; and a space-bar sliding in the hanger.

65. The combination of a line-holder; a longitudinal way or track on said line-holder, parallel to its side wall; a hanger sliding on said way or track; and a space-bar sliding horizontally on said hanger.

66. The combination of a line-holder; a way or track attached to said line-holder; a series of hangers sliding longitudinally on said way or track; and a space-bar suspended and sliding crosswise in each hanger.

67. The combination of a line-holder; a longitudinal way or track attached to said line-holder; a series of hangers sliding on said way or track; a space-bar sliding in each hanger; and devices for limiting the movement of each space-bar in each hanger.

68. The combination of a line-holder having a channel in its interior of a given length, in which a line of type is assembled; and one or more wedge-shaped or tapering space-bars, adapted to pass crosswise into and through the line-holder and between the types contained therein.

69. The combination of a line-holder; wedge-shaped or tapering space-bars; hangers upon which the space-bars move in the direction of their length; and a way or track attached to the line-holder, upon which the hangers slide horizontally.

70. The combination of a line-holder; a longitudinal way or track attached thereto, extended out beyond the line-holder at one end and there depressed to a lower level; and hangers sliding on said way or track, each carrying a space-bar.

71. The combination of a traveling line-holder, having fixed end walls adapted to receive a line of type as it is assembled, and limit its length; and means for advancing the line-holder while the type are being assembled.

72. The combination of a line-holder, having fixed end walls, adapted to receive a line of type as it is being assembled and limit its length; a suitable track on which the same travels; and means for feeding each letter as it enters the line-holder forward therein, and for causing the latter to advance along the track at the same time a distance equal to the thickness of the letter inserted.

73. The combination of a line-holder having a channel in its interior of a given length, in which a line of type is assembled; space-bars suspended in suitable hangers; and means whereby the space-bars are inserted between the words in the line-holder as the words are assembled therein.

74. The combination of a line-holder, space-bars suspended in suitable hangers, sliding on a way or track attached to the line-holder; and a sliding rod, provided with a shoulder, engaging with the space-bar of the foremost hanger, which holds the entire row of hangers stationary while the line-holder is being advanced, and forces the space-bar held in the said hanger when the rod is advanced a certain distance into the line-holder.

75. The combination of a line-holder; space-bars suspended in hangers sliding on a way or track on the line-holder; and a sliding rod having a shoulder arranged to engage with the extremity of the space-bar when the rod is advanced.

76. The combination of a line-holder; a way or track attached thereto; hangers beveled at one edge sliding on the way or track on the line-holder; and a sliding inserting-rod beveled at its extremity for separating the two foremost hangers when the inserting-rod is advanced.

77. The combination of a line-holder; a way or track attached thereto; hangers sliding on the way or track on the line-holder; a rod capable of being retracted by the operator for holding the row of hangers at the proper point on the way or track; and means for advancing the entire row of hangers when the rod is retracted.

78. The combination of a line-holder; a way or track attached thereto; hangers sliding on the way or track on the line-holder; a rod capable of being retracted by the operator, which holds the row of hangers at the proper point on the way or track, inserts the space-bar held in the foremost hanger into the line-holder, and separates the two foremost hangers after the insertion of the space-bar; and means for keeping the row of hangers continuously together and in contact with the rod and for advancing the line of hangers on the way or track when the rod is retracted.

79. The combination of a line-holder; a way or track attached thereto; hangers sliding on the way or track on the line-holder and beveled at one edge as shown; a space-bar sliding on each hanger; a sliding inserting-rod beveled at its extremity to enter between the edges of the hangers, and provided with a shoulder for engaging the ends of the space-bars; a spring for causing the rod to be held continuously advanced; and a bell-crank operated by a suitable key-lever for retracting it at will.

80. The combination of a line-holder; a way or track attached thereto; space-bars suspended in hangers sliding on the way or track in the line-holder; an inserting-rod, beveled at the forward end and provided with a shoulder actuated by a bell-crank; a key-lever for actuating the bell-crank; and a spring for forcing the inserting-rod forward until its shoulder engages with the space-bar suspended in the hanger and pushes it into the line-holder.

81. The combination of a line-holder; wedge-shaped or tapering space-bars inserted therein; means for simultaneously forcing forward the several space-bars; and means for successively withdrawing the latter.

82. The combination of a line-holder composed of a frame or box having permanent end walls in which a line of type is assembled letter by letter; temporary wedge-shaped or tapering space-bars inserted in the line of type during the operation of assembling; and a line-justifying bar which simultaneously forces the entire row of space-bars after insertion into the line, and expands the line to fill out the line-holder.

83. The combination of a line-holder; a row of hangers suspended on the way or track on the line-holder each carrying a wedge-shaped or tapering space-bar inserted in the line-holder; and a justifying-bar, against which the foremost of the row of space-bars rests when the space-bar-inserting rod is withdrawn, and which forces the entire row of space-bars, after insertion, simultaneously farther into the line and expands it to fill out the line-holder.

84. The combination of a line-holder containing a line of type; hangers attached thereto; wedge-shaped or tapering space-bars carried in the hangers inserted in the line-holder; and a line-justifying bar sliding in suitable bearings, whereby the space-bars after insertion in the line are forced simultaneously farther into the line of type and the line expanded to fill out the line-holder.

85. The combination of a line-holder; a way or track attached thereto; a row of hangers suspended on the way or track; and means for keeping the row of hangers continuously forced forward on the way, as fast as the space-bars are inserted into the line-holder.

86. The combination of a row of hangers suspended on the way or track on the line-holder; a rod attached to a bar sliding in bearings on the bed-plate of the machine; and a spring connecting the sliding bar with a convenient point on the bed-plate, whereby the rod is continuously forced forward and the hangers, against which it impinges, moved forward as fast as the space bars are inserted into the line-holder.

87. The combination of a line-holder; a way or track attached thereto; hangers carrying space-bars sliding on said way or track; and a sliding arm attached to a suitable spring, whereby the hangers and space-bars are forced forward in a body, until they engage the line-spacing bar.

88. The combination of a line-holder; wedge-shaped or tapering space-bars suspended in hangers sliding upon a way or track on the line-holder; a space-bar-inserting rod, actuated by a suitable key, whereby the space-bars are inserted into the line at the end of each word; and a spring device for advancing or feeding the space bars and hangers forward, after each space-bar is inserted.

89. The combination of a line-holder; a way or track attached thereto; space-bars beveled at one edge in the manner shown, and arranged to slide in suitable hangers, which in turn slide on a track or way on the line-holder; a sliding space-bar-inserting rod, beveled at its forward end to enter between the hangers, and provided on its lower surface with a suitable shoulder; a bell-crank operated by a key for retracting the inserting-rod; and a spring for advancing it; and means, substantially as described, for advancing or feeding the remaining hangers forward on the way as fast as each space-bar is inserted.

90. The combination of a vertical bed-plate; an inclined track thereon, on which the line-holder rests while being filled: a line-

holder provided with a way or track attached thereto; a row of hangers, each carrying a space-bar, sliding on the way or track on the line-holder; and a justifying-bar against which the formost space-bar, not yet inserted in the line-holder, rests.

91. The combination of a traveling line-holder from which the justified line of type has been removed; a way or track attached to said line-holder depressed at one end; hangers on the depressed portion of the way or track attached to the line-holder; means for causing the line-holder to travel along its path; and means, engaging with the hangers when the line-holder has passed a given point, for forcing the hangers back to the raised portion of the way or track, as the line-holder passes under said rod.

92. The combination of a vertical frame-plate; a horizontal way or track attached thereto, inclining upward at one end; a line-holder from which the justified line of type has been removed; a way or track attached to said line-holder, depressed at one end; means for causing the line-holder to travel along said track; and a vertical sliding rod controlled by a spring, engaging with the hangers when the line-holder has passed on to the inclined portion of the track, for forcing the hangers back to the raised portion of the way or track as the line-holder passes under said rod.

93. The combination of a line-holder sliding on a frame-plate; a frame arranged to slide on said frame-plate; and means for causing the sliding frame to engage with the line-holder.

94. The combination of a vertical frame-plate provided with an opening extending the full length of the line of travel of the line-holder; a line-holder sliding upon said frame-plate; and a frame sliding upon a track on the opposite side of said plate, provided with a spring-catch which passes through the opening and engages with the line-holder.

95. The combination of a vertical plate D, provided with the parallel openings, K^1, and, K^4; a track, D′, attached to said plate opposite to the opening, K^1; a track, D^2, attached to said plate opposite to the opening, K^4, and parallel to the plate, D′; a line-holder arranged to slide on said tracks in opposite directions; and means, substantially as described, for moving the line-holder from one track to the other when the end of the line is reached.

96. The combination of a frame-plate; a line-holder sliding upon said plate; a sliding frame retracted by a spring-drum provided with a spring-clutch, traveling upon a track upon the frame-plate; and a treadle connected therewith, whereby the frame is caused to move along the track until the spring-finger, which it carries, engages with the line-holder, whereupon, when the treadle is released, the line-holder is moved along its track by the spring-drum.

97. The combination of a line-holder sliding upon the vertical frame-plate; a sliding frame traveling upon a track on the frame-plate provided with a spring-catch upon the sliding frame, for engaging with the line-holder; and a drum containing a spring to which the frame is attached by a cord, for moving the frame in the other direction.

98. The combination of a line-holder sliding upon the vertical frame-plate; a sliding frame provided with a spring-catch engaging with the line-holder; a track on the frame-plate on which the sliding frame travels; a drum containing a spring connected with the frame for moving it in one direction; and a treadle connected with the frame for moving it in the other direction.

99. The combination of a frame-plate having an opening in it, extending the full length of the path of the line-holder; a line-holder sliding on the frame-plate; a sliding frame provided with a spring-catch extending through the opening and engaging with the line-holder; a track on the frame-plate on which the sliding frame travels; a drum containing a spring connected with the frame for moving it in one direction; and a treadle connected with the frame for moving it in the other direction.

100. The combination of a vertical frame-plate; a traveling line-holder; a track on one side of the frame-plate upon which the line-holder travels in one direction; and a second track on the frame-plate, below and parallel with the first track, upon which the line-holder travels in the opposite direction.

101. The combination of a vertical plate; upper and lower parallel tracks on the same side of the vertical plate; a line-holder arranged to travel thereon; and independent sliding frames for moving the line-holder upon said tracks.

102. The combination of a vertical frame-plate provided with openings extending the full length of the path of the line-holder; a line-holder sliding on said plate, parallel tracks, K', and, K^3, attached to the opposite side of the frame-plate from the line-holder in proximity to the openings therein; frames, K, and, K′, sliding on said tracks, provided each with a spring-catch extending through the opening and engaging with the line-holder; and means for moving the frames independently along the ways, substantially as described.

103. The combination of a vertical plate, D; parallel tracks, K', and, K^3, attached thereto; frames, K, and, K′, sliding on said tracks; means for moving the frame in one direction; and spring-drums for moving the frames in the other direction.

104. The combination of a line-holder arranged to slide upon a vertical frame-plate; frames arranged to slide upon suitable tracks on the frame-plate; independent rotating drums, K^2, and, K^4, attached to the frames and containing springs in their interior for winding up the drums when the frames are released; and cords or wires attached to the frames connected with a suitable treadle, whereby the frames are caused to travel on the tracks a desired distance, and, on releasing the treadle, to assume their original position, by the winding up of the springs within the drums.

105. The combination of a line-holder; a frame arranged to travel on a track on the frame-plate of the machine, and provided with a spring-clutch arranged to engage with the end of the line-holder when filled with type; a cord or chain connection the sliding frame with a drum having a spring in its interior; a second frame arranged to travel on a second similar track on the frame-plate of the machine, provided with a similar spring-clutch engaging the empty line-holder; a cord or chain connection, said second frame with a drum having a spring in its interior; a suitable device for causing the drums to wind up the cords, whereby the line-holder which has been filled is caused by the first frame to travel along the upper track to the space-holder and to the galley, and, after being emptied, is allowed to fall onto the lower track, and, is caused by the second frame to be returned thereon to its original position.

106. The combination of a traveling line-holder containing wedge-shaped space-bars for expanding the line; a movable justifying-bar; means for causing the justifying-bar to be advanced against the ends of the space-bars; and means for advancing the line-holder and contents after the justifying-bar has acted upon the ends of the space-bars.

107. The combination of a traveling line-holder adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification; and means for arresting the former under a space-holder, while each space is being inserted in the line, and for releasing the line-holder after the space has been inserted and permitting it to resume its movement.

108. The combination of a frame-plate; a line-holder adapted to receive a line of type as it is being assembled, and to carry it, and limit its length during the operation of justification, moving on a track on said frame-plate; and means for arresting the line-holder on the track at any convenient point while a space is being inserted, and for releasing it after the space has been inserted.

109. The combination of a line-holder adapted to receive a line of type as it is being assembled and to carry it, and limit its length during the operation of justification; a justifying mechanism; a space-holder; means for advancing the line-holder to present successively the several line-spaces to receive corresponding ordinary spaces; and means for delivering the justified line from the holder.

110. The combination of a line-holder adapted to receive a line of type as it is being assembled, and to carry it, and limit its length during the operation of justification; a justifying mechanism; a space-holder; means for advancing the line-holder to receive corresponding ordinary spaces; and means for delivering ordinary spaces into the line-spaces, as they are successively brought into position to receive the same.

111. The combination of a traveling line-holder, having a supporting-surface for the spacing-wedges; means for successively advancing the line-holder to receive corresponding ordinary spaces; and means for delivering ordinary spaces into the line-spaces as they are successively brought into position to receive the same.

112. The combination of a traveling line-holder; and a space-holder; and wedges carried by said line-holder, and serving to direct said line-holder into suitable presentation to said space-holder, to receive therefrom ordinary spaces corresponding to the line-spaces occupied by said wedges.

113. The combination of line-holding devices; temporary spreading spacing devices adapted to enter line-spaces; means for causing said spacing devices to occupy greater space in the line while in contact with type on both sides of themselves, whereby said type are driven farther apart, and the line is spread; and means for substituting ordinary spaces for said spreading devices.

114. The combination of a line-holder; a series of temporary spreading spacing devices; a space-holder containing ordinary spaces graduated to correspond with the successive cross-sections of said spacing devices; and means for delivering corresponding ordinary spaces into the successive line-spaces.

115. The combination of means for advancing a line of type; means for driving in the space-bars set therein; a space-holder; means for bringing the line-spaces successively into position to receive the corresponding ordinary spaces; means for successively delivering the ordinary spaces into the line-spaces; and means for withdrawing the wedges.

116. The combination of a line-holder; a space-holder having a series of compartments for graduated spaces; means for advancing the line-holder, to bring the spaces in the line of type contained therein, successively into position to receive corresponding ordinary spaces from the space-holder; and means for inserting corresponding ordinary spaces in the line-spaces from the space-holder.

117. The combination of a space-holder containing a graduated series of ordinary spaces; means for advancing the line relatively thereto, whereby each successive space in the line of type contained therein is successively presented to receive the corresponding ordinary space; means alternately actuated crosswise of the line, whereby the space-bars are advanced; means whereby the corresponding ordinary space is discharged into the line-space when presented; and means for withdrawing the space-bars.

118. The combination of a line-holder; a space-holder containing ordinary spaces; a wedge-shaped or tapering space-bar adapted to enter a line-space, and determining by its cross-section the ordinary space to be inserted; and a space-discharging mechanism, whereby the corresponding ordinary space is delivered to the line-space.

119. The combination of a space-holder containing ordinary spaces; a line-carrying mechanism; wedge-shaped or tapering space-bars adapted to enter a space in the line; means for advancing the wedges to spread the line; means for substituting ordinary spaces for said wedges; and means for withdrawing the line from the carrying mechanism.

120. The combination of a moving line-holder; a reciprocating space-holder; and means, substantially as described, for arresting the line-holder under the space-holder, while a space is being inserted therefrom into the line, and for releasing the line-holder after the space has been inserted.

121. The combination of a moving line-holder; a reciprocating space-holder; means for arresting the line-holder under the space-holder while a space is being inserted; and means, set in operation by the space-holder, for releasing the line-holder after a space has been inserted and permitting it to resume its movement.

122. The combination of a moving line-holder; a line-holder brake attached to a sliding bar; a spring which holds the said bar normally against the line-holder; and mechanism operated by a cam upon the main driving-shaft of the machine, whereby when the line-holder is to be released, the spring is compressed and the bar retracted during the throw of the cam.

123. The combination of a traveling line-holder; a horizontal bar sliding in suitable bearings, provided with a knife-edge blade at the end; a spring for holding the bar normally against the line-holder; and a lever engaging therewith, actuated by a lug on the sliding arm actuating the space holder, whereby the spring is compressed and the bar withdrawn from the line-holder when the space-holder moves back after the insertion of a space.

124. The combination of a line-holder adapted to receive a line of type as it is being assembled; means for advancing the line-holder during the operation of assembling the line; means for further advancing the line-holder so as to present successively the several spaces in the line of type contained therein to receive corresponding ordinary spaces; and means for delivering the justified line from the line-holder.

125. The combination of a line-holding mechanism; a space-holder; means for bringing the several spaces in the line of type held therein successively, and the exit for corresponding ordinary spaces into registration; and means for delivering ordinary spaces from said space-holder into the corresponding line-spaces when thus presented.

126. The combination of a trip-lever stop, composed of two connected arms at suitable angles to each other, pivoted to a plate at the point where said arms meet; and devices, substantially as described, for holding the stop in a fixed position until tripped, and then returning it to its original position after tripping.

127. The combination of a bed-plate, provided with a suitable opening; a series of trip-lever stops, each composed of two connected arms at suitable angles to each other, pivoted at the angle to the lower surface of the bed-plate, as shown, and each provided with projections on the extremity of the horizontal arms extending upward through the opening in the bed-plate above its surface; and a spring for holding each lever in position and returning it to its original position after tripping.

128. The combination of a horizontal bed-plate having an opening therein; a reciprocating space-holder; a series of trip-lever stops, substantially as shown, pivoted on a rod to the lower surface of the bed-plate; projections on the horizontal arms of each of the stops extending up through the opening in the bed-plate, and engaging with the space-holder; and the space-bars set in the line-holder, whereby the stops are tripped by contact with the space-bars.

129. The combination of a space-holder, divided into compartments, each containing a single space of the different sizes in use; a horizontal bed-plate, on which said space-holder slides a given distance, provided with an opening above the line of type in the line-holder; a series of independent trip-lever stops pivoted to a rod on the lower face of the bed-plate, each provided with a projection extending upward into the path of the space-holder and limiting its line of travel according to the number of stops that are tripped; and space-bars inserted in the line of type assembled in the line-holder which successively engage with and trip one or more stops, according to the distance which each is inserted in the line, whereby the space-holder is caused to stop at the proper point for the insertion of the appropriate space.

130. The combination of a space-holder, subdivided in its interior into compartments, each containing a single space of the different sizes in use; and a horizontal bed-plate on which it slides, provided with a suitable opening for permitting a space to be ejected from a single compartment of the space-holder into the line of type in the line-holder.

131. The combination of a reciprocating space holder, subdivided in its interior into compartments, each containing a single space of the different sizes in use; a horizontal bed-plate on which it slides, provided with an opening through which a space is ejected into the line-holder; a valve for closing said opening; and means connecting the valve with a cam on the driving-shaft for opening and closing it at the proper time.

132. The combination of a reciprocating space-holder, L; a horizontal bed-plate, A′, upon which it slides, provided with an opening, L^3; a sliding valve, L^5 closing the opening; a rod, L^6; a spring, L^4, actuating the rod, L^6; and a cam, L^7, on the driving-shaft, 8^4, for opening and closing the valve at the proper moment.

133. The combination of a reciprocating space-holder; a plate upon which the same slides above the line-holder, provided with an opening through which the spaces are inserted into the line of type within the line-holder; and a sliding valve for closing the said opening, connected with a reciprocating lever, actuated by cam mechanism on the main driving-shaft of the machine, for opening the valve at the moment when a space is to be inserted into the line of type.

134. The combination of a series of cases containing ordinary spaces, graded in respect to thickness, and arranged with orifices in line with each other; and means, set in operation by the temporary spacing devices contained in the line of type to be justified, for delivering ordinary spaces, to the successive line-spaces, substantially corresponding in thickness to the several line-spaces.

135. The combination of a reciprocating space-holder, subdivided into compartments; a space-ejecting bar sliding vertically in the compartment below it; and means for actuating the bar, substantially as described.

136. The combination of a line-holder, containing a line of type; wedge-shaped space-bars inserted therein for expanding the line of type contained therein; a space-holder provided with suitable compartments; and a space-ejecting rod, whereby the space is ejected from the bottom of the compartment downward.

137. The combination of a line-holder; wedge-shaped space-bars inserted therein; a space-holder divided interiorly into compartments, each containing a space of the different sizes used; a bed-plate on which the space-holder slides, provided with an opening to permit the spaces to pass downward from the compartment into the space in the line of type, before the removal of the space-bar; and a space-ejecting bar, actuated by suitable mechanism, whereby the spaces in the compartment are ejected therefrom and forced down into the space in the line of type.

138. The combination of a line-holder; a reciprocating space-holder; a bed-plate upon which the same slides; ways or tracks upon the bed-plate for guiding the space-holder; mechanism upon the driving-shaft of the machine, whereby a reciprocating motion is imparted to the space-holder; a space-ejector actuated by mechanism on the main driving-shaft; a series of slides or chutes from which different sizes of spaces are supplied; a spring-gate actuated by the space-holder for closing said slide; and devices connected with the various slides, actuated by the space-ejector, for permitting the space to drop down from the corresponding slide and into the space-holder when a space has been ejected from any compartment therein.

139. The combination of a line-holder; space-bars inserted therein; a reciprocating space-holder; and a series of trip-lever stops arranged to select from the space-holder, spaces of appropriate thickness, to properly justify and space out the line of type.

140. The combination of a line-holder, space-bars inserted therein; a reciprocating space-holder; a trip-lever stop arranged to select from the space-holder spaces of appropriate thickness to properly justify and space out the line of type; and a space-bar driver for driving in the space-bars remaining in the line.

141. The combination of a space-holder; a vertically-sliding space-ejector, arranged to slide in the compartment of the space-holder from which the space is to be ejected; and means actuated from the driving-shaft for causing the ejector to act at the proper moment and expel a space and then return to its original position.

142. The combination of a reciprocating space-holder; a vertically-sliding space-ejector, arranged to slide in the compartment of the space-holder from which the space is to be ejected; a horizontal arm attached at one end to a rod sliding vertically in bearings on the

bed-plate and at the other end to the ejector; a spring attached to the end of the rod at one end, and to a fixed point at the other end, for holding the rod normally in a raised position; a lug attached to the rod; and a cam on the driving-shaft engaging with and depressing the lug at the proper moment, whereby the ejector is caused to enter the compartment and eject a space and then resume its original position.

143. The combination of a line-holder; space-bars inserted therein: a reciprocating space-holder; and mechanism for causing the space-holder to move forward a given distance, and after discharging a space into the line of type, to resume its original position.

144. The combination of a line-holder; space-bars inserted therein: a space-holder divided into separate compartments; a horizontal bed-plate on which the same slides; a bar carrying a vertical lug attached to the space-holder and sliding in suitable bearings; a spring for causing the space-holder to be continuously thrown forward; an eccentric cam on the driving-shaft engaging with the lug, for retracting the space-holder at the proper time, whereby a reciprocating movement is imparted thereto; and a trip-lever actuated by the foremost space-bar in the line, for throwing the operating mechaniam in and out of gear.

145. The combination of a line-holder; wedge-shaped space-bars inserted therein; a reciprocating space-holder arranged to deliver spaces to the line-holder; and a series of trip-lever stops arranged to select spaces from the space-holder.

146. The combination of a line-holder; wedge-shaped space-bars inserted therein; a reciprocating space-holder sliding upon a bed-plate; means for actuating it from the main driving-chaft; a series of trip-lever stops mounted upon the bed, the ends of which project upward through an opening in the bed-plate and limit the travel of the space-holder; and a trip-lever engaging with the space-bar for throwing the operating mechanism into and out of gear.

147. The combination of a line-holder; wedge-shaped space-bars inserted therein, traveling upon a track on the vertical frame-plate of the machine; a reciprocating space-holder containing separate compartments for the different sizes of spaces used; a horizontal bed-plate on which the space-holder travels, having an opening therein through which the spaces are admitted into the line of type; and means, substantially as described, whereby the appropriate compartment of the space-holder assumes a vertical position with reference to the opening in the bed-plate and the opening in the line of type.

148. The combination of a space-holder sliding horizontally in tracks upon a suitable bed-plate; a spring for causing the space-holder to move forward; and cam mechanism on the driving-shaft of the machine for causing it to move backward during the throw of the cam, whereby a reciprocating motion is imparted to the space-holder.

149. The combination of a space-holder provided with compartments each containing an appropriate space; a horizontal plate upon which the space-holder slides, provided with a suitable opening for permitting the space in the compartment above the opening to drop into the space in the line of type above the space-bar inserted therein; and a sliding valve for closing said opening.

150. The combination of a reciprocating space-holder; a chute or slide, whereby the space-holder is kept filled with spaces supplied from suitable channels; and a spring-gate at the base of the chute or slide, actuated by a lug upon the space-holder.

151. The combination of a space-holder; slides or chutes containing the proper sizes of spaces: a spring-gate for closing the slides at the bottom actuated by the space-holder; an ejector for ejecting the spaces from the slides; and devices connected with each slide, and actuated by the space-ejecting mechanism, whereby a space is released in the slide and caused to enter the corresponding compartment in the space-holder, as soon as a space is ejected therefrom.

152. The combination of a line-holder; space-bars provided with dovetailed heads, inserted in the line of type contained therein; and a reciprocating space-bar extractor, provided at the end with spring-catches, arranged to engage the heads of each space-bar, as it is brought in front of the extractor, when the latter is set in operation.

153. The combination of a line-holder, composed of a box adapted to receive a line of type as it is being assembled and to carry it and limit its length during the operation of justification; wedge-shaped or tapering space-bars inserted therein; and a reciprocating space-bar extractor for removing the space-bars successively.

154. The combination of a line-holder containing a line of type; movable space-bars inserted therein, arranged to slide upon suitable hangers; and mechanism actuated from the driving-shaft of the machine, whereby the space-bars are extracted one by one from the line of type, and each left suspended in its appropriate hanger when the line-holder reaches a given point on the track.

155. The combination of a line-holder; space-bars inserted therein; a space-bar extractor composed of a sliding frame, provided with two spring-catches at one end, which engage with the extremity of the space-bar and draw the same out of the line-holder; and cam mechanism for actuating said extractor, attached to the main driving-shaft of the machine.

156. The combination of a line-holder; space-bars inserted therein; a space-bar extractor composed of a sliding frame provided with a spring-catch at one end, which engages with the extremity of a space-bar and draws the same out of the line-holder; suitable cam mechanism for actuating said space-ejector, attached to the main driving-shaft of the machine; and a lever-arm engaging with the space-bar to be removed, so as to throw the cam mechanism into operation when the space-bar touches the lever.

157. The combination of a line-holder; space-bars inserted therein; a space-bar extractor composed of a sliding bar provided with two spring-catches at one end, arranged to engage with the extremity of the space-bar and draw the same out of the line-holder; a spring for drawing the space-bar extractor forward to engage with the space-bar; cam mechanism on the main driving-shaft of the machine for actuating the extractor and returning it to its normal position; and a lever-arm engaging with the space-bar to be removed, whereby the cam mechanism is thrown into operation when the space-bar touches the lever.

158. The combination of a line-holder; space-bars inserted therein; a reciprocating space-bar extractor, sliding in bearings on the bed-plate; a spring which draws the extractor continuously forward to engage with a space-bar; a cam rotating on a driving-shaft engaging with an arm on the extractor, whereby the latter is retracted by the rotation of the cam; and a lever arranged to be tripped by the end of the space-bar to be extracted, whereby the driving-shaft carrying the cam, is thrown into gear with the power-shaft by means of suitable sliding gear-wheel connections.

159. The combination of a line-holder; wedge-shaped space-bars inserted therein; a bar sliding on suitable bearings arranged to act upon the ends of the space-bars; a spring which draws the bar forward to act on the space-bars; a cam which retracts said bar, rotating with the driving-shaft carrying the cams which actuate the space-holder; and a space-bar extractor engaging with a lug upon the slide for retracting it, and so arranged with respect to the other cams upon said shaft, that the bar will act upon the space-bars remaining in line immediately after a space has been inserted into the next preceding line-space by the space-ejector.

160. The combination of a traveling line-holder, adapted to receive a line of type as it is being assembled; means for advancing the line-holder during the operation of assembling the line; means for justifying the line while held therein; and means for withdrawing the line of type therefrom and delivering it onto a galley, and returning the line-holder to a point where it is adapted to be again filled with type.

161. The combination of a traveling line-holder, adapted to receive a line of type as it is being assembled; means for advancing the line-holder during the operation of assembling the line; means for arresting the line-holder at a desired point; and means for discharging its contents onto a suitable galley.

162. The combination of a traveling line-holder, adapted to receive a line of type as it is being assembled; means for advancing the line-holder during the operation of assembling the line; and means set in motion by the line-holder, whereby it is arrested and held at the end of its path, and its contents discharged upon a suitable galley.

163. The combination of a traveling line-holder, adapted to receive a line of type as it is being assembled; means for advancing the line-holder during the operation of setting up the line; means set in motion by the line-holder, on reaching a given point, for discharging its contents upon a suitable galley; and means for causing it to be returned to the type-delivery chute of the setting mechanism.

164. The combination of a line-holder, adapted to receive a line of type as it is being assembled, traveling upon a vertical frame-plate on a suitable track; means for advancing the line-holder during the operation of setting up the line; and means for discharging the line-holder on reaching the end of the track upon a suitable galley and then permitting it to fall upon a second track upon which it is returned to the type-delivery chute of the setting mechanism.

165. The combination of a line-holder, adapted to receive a line of type as it is being assembled, traveling on a vertical frame-plate on a suitable track; means for advancing the line-holder during the operation of setting up the line; means for discharging the line-holder onto a suitable galley upon reaching the end of the track and then permitting it to fall upon a second track; and means for returning the line-holder on said second track to the type-delivery chute of the setting mechanism.

166. The combination of a line-holder, adapted to receive a line of type as it is being assembled, traveling on a vertical frame-plate on a suitable track; means for advancing the line-holder during the operation of setting up the line; and means, set in motion by the line-holder, for discharging the line-holder upon a suitable galley on reaching the end of the track, and then permitting it to fall upon a second track upon which it is returned to the type-delivery chute of the setting mechanism.

167. The combination of a line-holder, adapted to receive a line of type as it is being assembled, traveling on a vertical frame-plate on a suitable track; means for advancing the line-holder during the operation of assembling the line; means, set in motion by the line-holder, for discharging the line-holder on reaching the end of the track upon a suitable galley, and then permitting it to fall upon a second track; and means which automatically engage with the line-holder as it drops upon the second track and cause it to be returned thereon to the type-delivery chute of the setting mechanism.

168. The combination of a vertical plate, D; parallel tracks, D′, and, D², a line-holder traveling on said tracks; and a bunter, R, for holding the line-holder, after it passes off of the track D′.

169. The combination of a vertical frame-plate; a line-holder having an opening in its side wall and beveled on its outer face at the forward end sliding along said frame-plate; and a bunter having a projecting head beveled to fit the face of a line-holder, whereby the latter can pass onto and be held upon the projecting head of the former against the vertical plate.

170. The combination of a vertical frame-plate; a line-holder having an opening in its side wall and beveled on its outer face at the forward end, sliding along said frame-plate; a reciprocating bunter having a projecting head beveled to fit the face of the line-holder, whereby the latter can pass onto and be held by the projecting head of the former against the frame-plate; and means for causing the bunter to move forward and to discharge the contents of the line-holder upon a suitable galley.

171. The combination of a vertical frame-plate; a line-holder having an opening in its side wall, and beveled on its outer face at the forward end, sliding along said frame-plate; a reciprocating bunter having a projecting head beveled to fit the face of the line-holder, whereby the latter can pass onto and be held by the projecting head of the former against the frame-plate; and means, set in operation by the line-holder, upon reaching the end of its path, for causing the bunter to move forward automatically and discharge the contents of the line-holder upon a suitable galley and thereupon to be withdrawn from the line-holder.

172. The combination of a line-holder, with a horizontal opening through it; a reciprocating bunter onto which it passes on leaving the track on which it travels, arranged to slide through the opening in the line-holder; a bar sliding in suitable bearings on the bed-plate to which the bunter is attached; an eccentric cam on an auxiliary shaft arranged to engage with a gear-wheel on the main driving-shaft of the machine; a trip-lever tripped by the line-holder for engaging the said shaft with the gear-wheel on the driving-shaft; a spring device for throwing the shafts out of gear when the trip-lever is released; and devices for preventing the spring from releasing the mechanism until the auxiliary shaft has made a complete revolution.

173. The combination of a galley; a line-holder provided with an opening of the character described; a bunter or pusher attached to a bar sliding upon suitable bearings, for removing the type from the line-holder onto the galley after justification, arranged to fit closely in, and slide horizontally through, the opening in the line-holder; an eccentric cam attached to said bar and rotating on an independent driving-shaft; a pivoted lever arranged to be tripped by the line-holder upon reaching the end of its track and to throw the independent driving-shaft into gear with the main driving-shaft by means of sliding gear-wheel connections; and a spring for returning the bunter mechanism to its normal position, after the line-holder has been removed and the pressure on the trip-lever released.

174. The combination of a vertical frame-plate; parallel ways or tracks attached thereto; a line-holder sliding upon said tracks adapted to receive a line of type as it is being assembled; means for advancing the line-holder during the operation of assembling the line; means for moving the line-holder in opposite directions on said tracks; and means for automatically transferring the empty line-holder from the lower track to the upper track, upon being returned for the purpose of refilling.

175. The combination of a vertical frame-plate, D; tracks, D′, and, D², on the frame-plate on which the line-holder, C, travels; a movable section of track, D³, sliding vertically on the frame-plate between the two tracks, for transferring the empty line-holder from the lower track to the upper; means for holding it normally on the level of the upper track; and means actuated by the mechanism for returning the line-holder, for simultaneously lowering the movable section to the lower track to receive the line-holder and then permitting it to return with the line-holder to its original position.

176. The combination of a vertical frame-plate, D; tracks, D′, and, D², on the frame-plate on which the line-holder, C, travels; a movable section of track, D³, sliding vertically on the frame-plate between the tracks, D′, and, D², for transferring the empty line-holder from the lower track to the upper; a spring, D⁴, for normally holding the section, D³, on the level of the upper track; and a cord connecting it with the treadle which draws back the line-holder over the lower track; whereby when the treadle is depressed and the line-holder drawn back, the track, D³, is simultaneously lowered to receive it, and when the treadle is released the line-holder is lifted to the level of the upper track and held there while it is refilled.

177. The combination of a vertical plate, D; tracks or ways, D′, and, D², on the frame-plate; and a vertically-movable track, D³, at the ends of the tracks, D′, and, D², actuated by the spring D⁴, whereby the empty line-holder is raised from the lower track to the upper track for the purpose of refilling it.

178. The combination of a vertical frame-plate provided with a longitudinal opening extending the entire length of the frame-plate; a line-holder; space-bars inserted therein; a track on the frame-plate parallel with the opening therein on which the line-holder travels; means for causing the line-holder to travel on the track; and means for subjecting the line of type in the line-holder, during the line of travel thereof, to the action of justifying devices, which replace the space-bars with ordinary spaces.

179. The combination of a vertical frame-plate, provided with a longitudinal opening extending the entire length of the frame-plate; a line-holder; space-bars inserted therein; a track on the frame-plate, parallel with the opening therein, on which the line-holder travels; means, set in motion by the operator, for causing the line to travel on the track; and means for subjecting the line of type in the holder to the action of devices which justify the line and which replace the space-bars with ordinary spaces.

180. The combination of a vertical frame-plate, provided with a longitudinal opening extending its entire length; a track on said plate on which the line-holder slides; a line-holder sliding on said track; space-bars inserted therein; means for causing the line-holder to travel along the track after the space-bars have been set; and means for arresting the line-holder while the space-bars are being withdrawn and appropriate spaces inserted in their place, and then permitting it to resume its movement after each space is inserted.

181. The combination of a vertical frame-plate, provided with a longitudinal opening extending its entire length; a track on said plate on which the line-holder slides; a line-holder sliding on said track; space-bars inserted therein; means for causing the line-holder to travel along the track after the space-bars have been set; means for arresting the line-holder while the space-bars are being withdrawn and appropriate spaces are inserted; and means for discharging the contents of the line-holder, upon arriving at the end of the track, upon a suitable galley.

182. The combination of a vertical frame-plate provided with a longitudinal opening extending its entire length; a track on said frame-plate on which said line-holder travels; a line-holder sliding in said track; space-bars inserted therein; means for causing the line-holder to travel along the track after the space-bars have been set; means for arresting the line-holder while the space-bars are being withdrawn and appropriate spaces inserted in the line of type; means for discharging the contents of the line-holder, on arriving at the end of the track, upon a suitable galley; and means whereby the empty line-holder, after discharging its contents, is caused to fall to a lower track upon the frame and is returned to the type-delivery chute.

183. The combination of a vertical frame-plate, provided with a longitudinal opening extending the entire length of the frame-plate; a track on said plate on which the line-holder slides; a line-holder sliding on said track; space-bars inserted therein; means, set in operation by the operator, for causing the line-holder to travel continuously along the track after the space-bars have been set; and means, actuated by the space-holder, for arresting the line-holder while the space-bars are being withdrawn and appropriate spaces are being inserted into the line of type contained therein, and then permitting it to resume its path after each space is inserted.

184. The combination of a vertical frame-plate, provided with a longitudinal opening extending the entire length of the frame-plate; a track on said plate on which the line-holder slides; a line-holder sliding on said track; space-bars inserted therein; means for causing the line-holder to travel along the track after the space-bars have been set; and means actuated by the space-holder for arresting the line-holder while the space-bars are being withdrawn and appropriate spaces inserted; and means actuated by the line-holder for discharging the contents of the line-holder upon a suitable galley upon arriving at the end of the track.

185. The combination of a vertical frame-plate, provided with a longitudinal opening extending the entire length of the frame-plate; a track on said frame-plate on which said line-holder travels; a line-holder sliding on said track; space-bars inserted therein; means for causing the line-holder to travel along the track after the space-bars have been set; means actuated by the line-holder for arresting the line-holder while the space-holders are being withdrawn and appropriate spaces inserted in the line of type; means actuated by the line-holder for discharging the contents of the line-holder on arriving at the end of the track upon a suitable galley; and means whereby the

empty line-holder after discharging is caused to fall to a lower track upon the frame-plate, and be automatically returned to its original position for refilling.

186. The combination of a line-holder, having a horizontal opening through it; a reciprocating bunter upon which it passes on leaving the track on which it travels, arranged to slide through the opening in the line-holder; a bearing to which the bunter is attached, which in turn slides in suitable bearings on the bed-plate; an eccentric cam carried on an auxiliary shaft arranged to be thrown into gear with the gear-wheel of the power-shaft of the machine actuating said bearing; a circular disk rotating with the auxiliary shaft containing a suitable indentation on its edge; a plate attached to the bearing of the power-shaft containing a corresponding indentation, in which the disk on the auxiliary shaft rotates; a spring arranged to normally hold the gear-wheel on the power-shaft out of engagement with the gear-wheel on the auxiliary shaft; a trip-lever connected with the sliding bearing arranged to be tripped by the line-holder, whereby when the gears have been engaged they continue to rotate during an entire revolution of the auxiliary shaft and until the indentation in the disk comes opposite the indentation in the plate on the power-shaft bearing, whereupon the power-shaft is released and restored by the spring to its normal position, and the disk and plate interlocked and the gears released.

187. The combination of a line-holder, traveling on a suitable frame plate; space-bars inserted therein; a rotating power-shaft driven from any convenient source of power; a bearing sliding on a horizontal bed-plate in which said shaft rotates; a gear-wheel on said power-shaft; a trip-lever for moving the power-shaft in the bearing arranged to be tripped by the line-holder; a driving-shaft carrying a gear-wheel and arranged to engage with the gear-wheel of the power-shaft when the latter is moved by the tripping of the trip lever; and a series of cams on the driving-shaft for actuating the various members of the spacing mechanism so that the same will act successively on the line-holder in the proper order during a single revolution of the shaft.

188. The combination of a line-holder, traveling on a suitable frame-plate; space-bars inserted therein; a rotating power-shaft driven from any convenient source of power; a sliding bearing in which said shaft rotates; a gear-wheel on said power-shaft; a trip-lever arranged to be tripped by the line-holder for moving the shaft in the bearing; a driving-shaft carrying a gear-wheel and arranged to engage with the gear-wheel of the power-shaft when the latter is moved by tripping the lever; a series of cams upon the driving shaft for actuating the various members of the spacing mechanism successively in their proper order; and means substantially as described for holding the line-holder stationary under the space-holder while each space-bar is being removed and a space is being inserted in its place, and for releasing it and permitting it to move forward after insertion.

189. The combination of a line-holder, traveling on a suitable frame-plate; space-bars inserted therein; a rotating power-shaft driven from any convenient source of power; a sliding bearing in which said shaft rotates; a gear-wheel on said power-shaft; a trip-lever arranged to be tripped by the line-holder for moving the shaft in the bearing arranged to be tripped by the line-holder; a driving-shaft carrying a gear-wheel and arranged to engage with the gear-wheel on the power shaft when the latter is moved by tripping the lever; a cam on the driving-shaft for actuating the space-holder; a second cam on said driving-shaft for actuating the space-bar ejector; a third cam on said shaft for actuating the space-valves; a fourth cam on said shaft for actuating the space-ejector; and a fifth cam on said shaft for actuating the fractional-spacing bar; said cams being so set on the driving-shaft with respect to each other that the various members of the mechanism will act successively on the line-holder in the proper order during a single revolution of the shaft.

190. The combination of a line-holder moving on a suitable frame-plate; space-bars inserted therein; a rotating power-shaft driven from any convenient source of power; a sliding bearing in which said shaft rotates; a gear-wheel on said power-shaft; a driving-shaft carrying cams which actuate the various members of the machine; and a gear-wheel arranged to engage with the gear-wheel of the power-shaft; a circular disk rotating with the driving-shaft containing a suitable indentation on its edge; a plate attached to the bearing of the power-shaft containing a corresponding indentation, in which the disk rotates; a spring arranged to normally hold the gear-wheel on the power-shaft out of engagement with the gear-wheel on the driving shaft; and a trip-lever connected with the sliding bearing and arranged to be tripped by the line-holder, whereby, when the gears have been engaged, they continue to rotate during an entire revolution of the driving-shaft and until the indentation in the disk comes opposite the indentation in the plate on the power-shaft bearing, whereupon the power is released and restored by the spring to its normal position, the disks and plates interlocked and the gears released.

191. The combination of a line-holder, moving on a suitable frame-plate; space-bars inserted therein, a rotating power-shaft driven from any convenient source of power; a sliding bearing capable of sliding in two directions, in which said shaft rotates; a gear-wheel on said shaft; a driving-shaft on one side of the power-shaft carrying cams which actuate the various members of the machine; and a gear-wheel arranged to engage with the gear-wheel of the power-shaft; a series of cams on the driving-shaft for actuating the various members of the mechanism, so that the same will act successively on the line-holder in proper order during a single revolution of the shaft; an auxiliary shaft carrying a gear-wheel arranged to engage with the gear-wheel of the power-shaft; a cam on the auxiliary shaft for actuating the bunter mechanism; and two trip-levers, one tripped by the ends of the foremost space-bar in the line-holder for throwing the power-shaft into gear with the driving-shaft, so that the various members of the space-bar removing and inserting mechanism will act successively on the line-holder, and the other tripped by the line-holder at the end of its line of travel, whereby the line-holder is held and its contents discharged into a suitable galley, and it is then permitted to drop upon the second track upon which it is returned to the type-delivery chute.

192. The combination of a traveling line-holder, containing a line of type in which space-bars have been inserted; a line-holder-arresting mechanism; a space-bar-extracting mechanism; a space-inserting mechanism; and a fractional-spacing mechanism, each acting successively upon the line-holder and operated by the same driving-shaft.

193. The combination of a traveling line-holder, containing a line of type in which wedge-shaped space-bars have been previously inserted; a line-holder-arresting mechanism; a space-bar-extracting mechanism; a space-inserting mechanism; and a fractional-spacing mechanism, each acting successively upon the line-holder, and operated by a single revolution of the same driving-shaft; and devices actuated by the line-holder for causing the driving-shaft to effect a single revolution.

194. The combination of a spacing mechanism; a driving-shaft arranged to engage with the power-shaft; a series of cams on the driving-shaft, connected with and actuating the various parts of the spacing mechanism successively; a line-holder-discharging mechanism; an auxiliary shaft arranged to engage with the power-shaft; a cam on the auxiliary shaft connected with and actuating the discharging mechanism; and a power-shaft arranged to alternately operate the driving-shaft and the auxiliary shaft.

195. The combination of a spacing mechanism; a driving-shaft arranged to engage with the power-shaft; a series of cams on the driving-shaft connected with and actuating various parts of the spacing mechanism successively; a line-holder-discharging mechanism; an auxiliary shaft, arranged to engage with the power-shaft; a cam on the auxiliary shaft connecting with and actuating the discharging mechanism; a power-shaft arranged to alternately operate the driving-shaft and the auxiliary shaft; and trip-levers, actuated by the line-holder, for throwing the power-shaft alternately into gear with the driving-shaft and auxiliary shaft.

196. The combination of a traveling line-holder, containing a line of type in which wedge-shaped space-bars have been previously inserted; a line-holder-arresting mechanism; a space-bar-extracting mechanism; a fractional-spacing mechanism; a driving-shaft, carrying cams, whereby the said mechanisms act successively upon the line-holder during a single revolution of the driving-shaft; the line-holder-discharging mechanism; an auxiliary shaft carrying a cam whereby the discharging mechanism acts upon the line-holder; and a power-shaft arranged to alternately operate the driving-shaft and the auxiliary shaft.

197. The combination of a traveling line-holder, containing a line of type in which wedge-shaped space-bars have been previously inserted; a line-holder-arresting mechanism; a space-bar-extracting mechanism and the fractional-spacing mechanism; a driving-shaft carrying cams whereby the said mechanisms act successively upon the line-holder during a single revolution of the driving-shaft; a line-holder-discharging mechanism; an auxiliary shaft carrying a cam, whereby the discharging mechanism acts upon the line-holder; a power-shaft arranged to alternately operate the driving-shaft and the auxiliary shaft; and trip-levers actuated by the line-holder, for throwing the power-shaft alternately into gear with the driving-shaft and the auxiliary shaft.

198. The combination of a line-holder; a longitudinal way or track on said holder; a hanger sliding on said track or way; and a space-bar of less height than the type held in the line-holder, sliding horizontally in said hanger.

199. The combination of a traveling line-holder; space-bars inserted therein of less height than the types in the line-holder; means for causing the line-holder to travel on its path; and means for subjecting the line of type in the line-holder during the line of travel thereof to the action of justifying devices which replace the space-bars with ordinary spaces

200. The combination of a vertical frame-plate, having a longitudinal opening extending the entire length thereof; a line-holder containing a line of type; space-bars inserted therein of less height than the types in the line-holder; a track on the frame-plate parallel with the opening therein, on which the line-holder travels; means for causing the line-holder to travel on the track; means for subjecting the line of type in the line-holder, during the line of travel thereof, to the action of justifying devices, which replace the space-bars with ordinary spaces; and means for removing the justified line from the line-holder and delivering it upon a suitable galley.

201. The combination of a line-holder, containing a line of type; space-bars inserted therein of less height than the type in the line-holder, and driven in to expand the line; means for inserting successively an ordinary space into the space in the line of type above the space-bar; means for thereupon withdrawing the space-bar; and means for thereupon forcing the space thus inserted a distance equal to its entire length down into the space in the line of type.

608,008. PUMP. GEORGE G. MCLAUGHLIN, Boston, Mass., assignor to John C. Edwards, Brookline, Mass. Filed Apr. 22, 1896. Serial No. 588,600. (Model.)



Claim.—1. A wheel for rotary pumps, comprising a disk having thereon near the periphery a series of blades mounted thereon to form convolute outlet-channels, and spiral extensions at the inner ends of the blades outwardly turned at their extremities, about and in the direction of the axis of the wheel, leaving a free open central space or chamber within said blades and extensions, substantially as described.

2. A rotary-pump wheel comprising a disk, a series of curved blades thereon at right angles thereto and near its periphery, forming curved outlets of substantially uniform cross-section, and spiral extensions at the inner ends of the blades turned outwardly away from said disk and projecting free about and in the direction of the axis of the wheel, substantially as described.

3. A rotary-pump wheel comprising a disk, a series of blades mounted thereon near its periphery, to form convolute outlet-passages, the curved edges of said blades being extended obliquely over to form wings inclined partially over said passages, and having spiral portions deflected about and in the direction of the wheel-axis, said blades and spiral portions being extended in the same general direction, substantially as described.

4. A rotary-pump wheel comprising a disk, a series of blades mounted thereon near its periphery, to form convolute outlet-passages, said blades being bent over along their curved edges to form wings having their outer edges in a plane parallel to the disk, and spiral extensions at the inner ends on and projecting beyond the straight edges of the wings in the direction of the axis of the wheel, substantially as described.

5. A wheel for rotary pumps, comprising a disk, having thereon near its periphery two series of blades, one on each side of the disk, each series mounted thereon to form convolute outlet-channels, and spiral extensions at the inner ends of the blades outwardly turned at their extremities in the direction of the axis of the wheel, leaving a free open central space within said blades and extensions, said two series of blades and their extensions being oppositely disposed to each other, substantially as described.

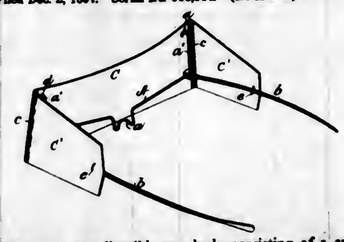
6. In a rotary pump, a wheel-chamber having an inlet-opening, a wheel located within said chamber, said wheel comprising a disk and a series of blades mounted thereon in convolute arrangement near its periphery, to form outlet-passages at the periphery, and spiral extensions at the inner ends of the blades leaving a free central open space between said extensions and the disk, said extensions being extended into the inlet-opening in spiral or screw form to draw liquid into the wheel therefrom, substantially as described.

608,004. BOX-FASTENER. WILLIAM T. PARKER, Philadelphia, Pa. Filed Oct. 14, 1897. Serial No. 655,120. (No model.)

Claim.—A box-fastener consisting of a substantially circular plate of metal the periphery of which is struck up to form a flange and the interior of which is punched out and bent up to form a tang which, together with said flange, is adapted to be driven into the lid of the box, and which is furnished, upon the side opposite the tang, with a hook adapted to engage a staple or catch, the bases of said hook and of said tang being contiguous.



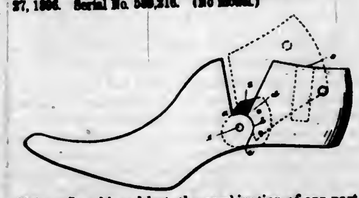
608,005. EYE-SHADE. ESSELINE W. PHILBROOK, Boston, Mass. Filed Dec. 2, 1897. Serial No. 660,514. (No model.)



Claim.—1. A collapsible eye-shade consisting of a supporting-frame composed of a middle section and side bars hinged to the ends of said middle section and adapted to engage over the ears respectively, and a shade proper consisting of a middle section of an opaque material—such as buckram—and of such length as to extend entirely across the forehead of the wearer, and side sections of similar material hinged to the ends of said middle section and secured to the side bars, whereby the side sections and side bars may be folded down against the middle section, substantially as described.

2. An eye-shade consisting of a supporting-frame having a middle section formed with a nose-rest and side bars hinged to the ends of said middle section and adapted to engage over the ears, respectively, and a shade proper consisting of a middle section of an opaque material—such as buckram—and of such length as to extend entirely across the forehead of the wearer, and side sections of similar material hinged to the ends of said middle section and secured to the side bars, whereby the side sections and side bars may be folded down against the middle section, substantially as described.

608,006. LAST. CHARLES F. PYE, Windsor, Canada. Filed Apr. 27, 1896. Serial No. 589,216. (No model.)

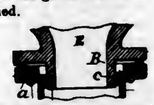


Claim.—In a hinged last, the combination of one part provided with twin knuckles projecting therefrom, said knuckles being separated by a slot that extends to the rear of the knuckles, a second part provided with a recess adapted to receive said knuckles, said recess and knuckles being so constructed as to bind and hold the two parts of the last in their straight condition, and to move freely upon being partially bent, a plate-knuckle secured to said second part and engaged in the slot between said twin knuckles, the pintle of said knuckles being located above the sole and farther removed therefrom than the knuckle radius, whereby there is formed a stop that holds the parts in place when the last is unbroken, substantially as described.

608,007. GAS-TIGHT CONNECTION FOR TRAPS OR PIPES AND WATER-CLOSET BOWLS. ROBERT M. REILLY, Baltimore, Md. Filed June 30, 1897. Serial No. 642,950. (No model.)

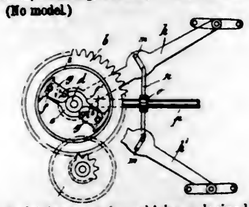
Claim.—1. In combination with a trap or pipe with a flange, and a water-closet bowl having a cylindrical nozzle which is smaller than the interior of the said pipe or trap, a rubber gasket having a central hole which is smaller than the nozzle of the bowl and provided with a circumferential rim on its upper side which is thicker than the re-

maining portion of the gasket, and a securing metallic ring which bears on the portion of the gasket which is within the rim thereof, substantially as specified.



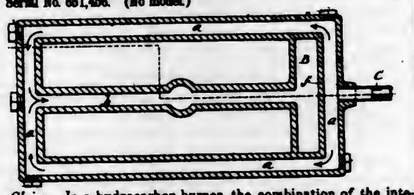
2. In combination with a trap or pipe with a flange and an exterior rim, and a water-closet bowl having a cylindrical nozzle which is smaller than the interior of the said pipe or trap, a rubber gasket having a central hole which is smaller than the nozzle of the bowl and provided with a rim which is thicker than the remaining portion of the gasket, the said gasket being secured on the flange of the pipe or trap by means of a metallic ring, with the edge of the rim projecting above the rim of the flange of the pipe or trap, substantially as specified.

608,008. DRIVING MECHANISM FOR VEHICLES. CARL T. G. SCHEELDEWIND, Hamburg, Germany. Filed May 28, 1897. Serial No. 638,531. (No model.)



Claim.—A driving-gear for vehicles, velocipedes and the like, comprising a wheel having a circular flange and a hub, a piece rotatably mounted with respect to said wheel, a clamp pivoted to said piece and engaging at its outer and inner ends respectively with said flange and said hub, and a driving-lever carrying pins engaging with said clamp, so as to cause it to engage the flange and hub and rotate the wheel when the lever is moved in one direction, and to release the clamp from the wheel when the lever is moved in the other direction.

608,009. OIL-BURNER. AUGUSTUS W. SHANK, Detroit, Mich., assignor of one-half to William Clark, same place. Filed Sept. 13, 1897. Serial No. 651,456. (No model.)



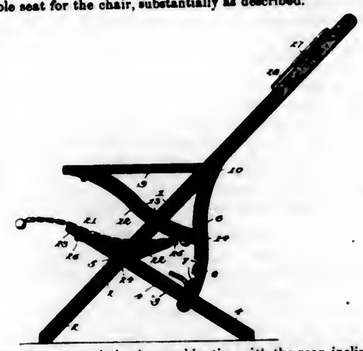
Claim.—In a hydrocarbon-burner, the combination of the integral burner-body having an interior vapor-channel *a* traversing the four sides of said burner, a central interior vapor-channel communicating at one end with said vapor-channel *a*, an interior pressure-equalizing chamber communicating with the opposite end of said central channel, and the oil-supply pipe communicating with the channel *a*.

608,010. CHAIR. ELDRIDGE J. SMITH, Washington, D. C., assignor to the Smith Flexible Chair Manufacturing Company, of Virginia. Filed June 14, 1897. Serial No. 640,630. (No model.)

Claim.—1. In an easy-chair, the combination with the rearwardly and forwardly projecting standards pivoted together, of the notched arms extending downward from said rearward standards, a rocking rod supported by the said forward-projecting standards and adapted to engage either of said notches, and a suitable seat for the chair, substantially as described.

2. In an easy-chair, the combination with the rearwardly and forwardly extending standards pivoted together intermediate their ends, of the notched supporting-arms extending downward from said rearward-extending standards, a rocking rod supported by the said forward-extending standards, a crank-arm at either end of said rod, a spring normally acting to force the rod toward the supporting-arms, and a suitable seat for the chair, substantially as described.

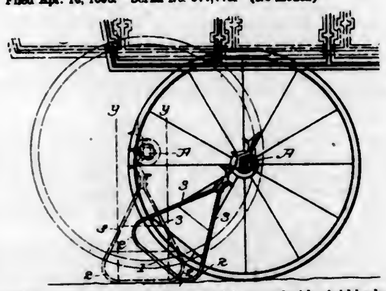
3. In an easy-chair, the combination with the rearwardly and forwardly extending pivoted standards, of the notched arms projecting downward from said rearward-extending standards, a rocking rod supported by one of the standards and adapted to engage either of the said notches, an arm-rest secured to each rearward-extending standard, bracing-pieces secured at their forward ends to the said arm-rests, and having their opposite end portions connected to the said rearward-extending standards and notched arms respectively, and a suitable seat for the chair, substantially as described.



4. In an easy-chair, the combination with the rear, inclined supporting-legs, of a pivoted back-section, notched arms depending from said back-section, a movable rod extending transversely across and resting upon said rear inclined legs, said rod being free to engage either of the notches in said depending arms to support the back-section in various positions of adjustment, swinging brackets loosely connected at one end to the rear inclined legs and having their opposite ends attached to the movable rod, and a suitable seat for the chair.

5. In an easy-chair, the combination with the rearwardly and forwardly extending pivoted standards, of the notched arms depending from said rearwardly-extending standards, a rocking rod supported by the forwardly-extending standards and adapted to engage either of the notches in the depending arms, seat-braces 22, loosely mounted upon the pivotal connection of the standards, a slatted seat secured to said braces and having its front portion normally resting upon the front ends of the forwardly-extending standards, and spring-rods coiled intermediate their ends around the aforesaid pivots of the standards, the rear ends of said spring-rods acting upon the rear under side of the chair-seat, and their front ends bent laterally into engagement with the upper ends of the forward-extending standards.

608,011. WAGON-JACK. JOHN A. STAPLES, Newburg, N. Y. Filed Apr. 16, 1898. Serial No. 677,778. (No model.)



Claim.—1. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions forming continuations of the base, and suitable axle engaging and supporting means arranged upon the rigid body above the base between the perpendiculars to the base at its ends, whereby the jack may be placed in inclined position with either fulcrum portion in engagement with the ground and the axle-engaging means in engagement with the axle and the axle elevated by moving the vehicle toward the jack to cause the jack to rock upon the fulcrum portion until it rests upon the base, substantially as set forth.

2. A wagon jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions forming continuations of the base, and suitable axle engaging and supporting means arranged upon each side of the rigid body above the base between the perpendiculars to the base at its ends, substantially as set forth.

3. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions, either of which may be placed in engagement with the ground, and two series of steps or shoulders arranged upon opposite sides of the rigid body above the base and between the perpendiculars to the base at its ends, substantially as set forth.

4. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions adjacent to the base portion, and a stepped portion secured to the upper end of the body and formed with two series of steps upon its opposite edges or sides which are located between the perpendiculars to the base at its ends, substantially as set forth.

5. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions adjacent to the base portion, and a stepped portion secured to the upper end of the body and formed with two series of steps upon its opposite edges or sides which are located between the perpendiculars to the base at its ends, said steps being arranged alternately at graduated elevations upon the opposite edges, substantially as set forth.

6. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions adjacent to the base, and steps or shoulders upon its opposite sides at its upper end and inwardly-inclined faces adjacent to the steps, the steps or shoulders being located above the base between the perpendiculars to the base at its ends, substantially as set forth.

7. A wagon-jack, comprising a suitable rigid body having an approximately horizontal base portion, two oppositely-curved rounded fulcrum portions adjacent to the base, and a zigzag standard at the upper end of the body having steps or shoulders upon its opposite sides and inwardly-inclined faces adjacent to the steps, the steps being located above the base between the perpendiculars to the base at its ends, substantially as set forth.

8. A wagon-jack, comprising a skeleton frame having an approximately horizontal base portion, an outwardly-curved rounded fulcrum portion, and axle-engaging steps or shoulders arranged above the horizontal base between the perpendiculars to the base at its ends, substantially as set forth.

9. A wagon-jack, comprising a rigid skeleton frame forming an approximately horizontal base portion 1, two oppositely-curved rounded fulcrum portions 2 adjacent to the base, and inwardly-inclined side portions 3, and a stepped or shouldered standard secured to the upper ends of the side portions 3, said standard being located between the perpendiculars to the base at its ends, substantially as set forth.

10. A wagon-jack, comprising a skeleton frame of channel-iron forming an approximately horizontal base portion 1, two oppositely-curved rounded fulcrum portions 2 adjacent to the base, and inwardly-inclined side portions 3, a standard 5 having a tongued lower end 5ª engaging and secured in the socket formed by the upper ends of the channel side portions 3, and steps or shoulders 7, 8 upon the standard, substantially as set forth.

11. A wagon-jack, comprising a rigid frame having approximately horizontal base 1, rounded fulcrum portions 2, side portions 3, extending up from the fulcrum portions, and inclined equally toward the central vertical line of the jack, and suitable steps or shoulders at the upper end of the jack located centrally above the horizontal base, substantially as set forth.

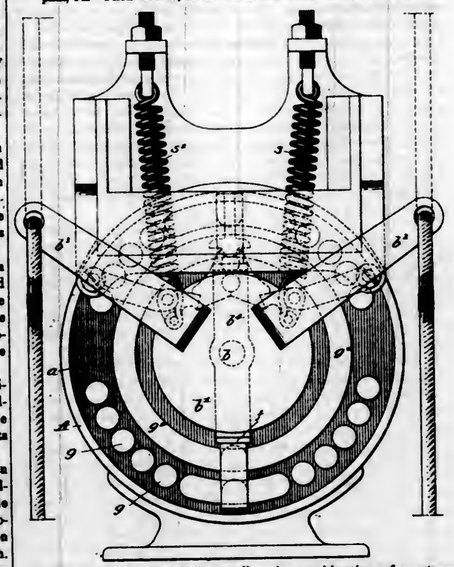
608,012. GRIPPING APPARATUS. ALBERT E. STRICKLER, Northampton, England. Filed Mar. 26, 1898. Serial No. 675,318. (No model.)



Claim.—1. A gripping apparatus comprising a stationary jaw and a movable jaw slidable thereon, a lever-handle hinged or pivoted to the stationary jaw; a blade or bow spring connected at one end to the movable jaw and at its other end to a connection slidable on the stem or shank of the lever-handle; a helical spring bearing at one end on the slidable connection to which the blade-spring is attached, the opposite end of the said helical spring bearing on a shoulder on the shank or stem of the lever-handle the whole being combined so that by the movement of the lever-handle in one direction the combined power of blade or bow spring and the helical spring is exerted on the movable jaw so as to firmly hold an article placed between the stationary and movable jaws substantially as hereinbefore described.

2. A gripping apparatus comprising a stationary jaw and a movable jaw slidable thereon, a lever-handle hinged or pivoted to the stationary jaw; a blade or bow spring connected at one end to the movable jaw and at its other end to a connection slidable on the lever-handle; a helical spring surrounding the stem or shank of the lever-handle and bearing at one end against the slidable connection to which the blade-spring is attached and at its opposite end on a nut screwed onto the shank or stem of the lever-handle, the said nut being capable of being screwed along the said stem or shank so as to compress more or less the helical spring to regulate the power thereof substantially as hereinbefore described.

608,013. REVERSING-RHEOSTAT. IRLE E. STORRY, Philadelphia, Pa. Filed Jan. 29, 1898. Serial No. 668,394. (No model.)



Claim.—1. In a motor-controller the combination of a rotary shaft carrying a crank disk, an abutment on the disk, a toggle-lever bearing at one extremity against the abutment and pivoted at a fixed point at the other and a spring connected to the toggle-joint, substantially as described.

2. In a motor-controller, the combination of a rotary shaft carrying a crank-disk, an abutment on the disk, another abutment or stop, a toggle-lever normally bearing at one extremity against both abutments and pivoted at a fixed point at the other and a spring connected to the joint of the toggle, substantially as described.

3. In a motor controller, the combination of a rotary shaft carrying a crank-disk, an abutment on the disk, another abutment or stop, two toggle-levers normally bearing at one extremity against opposite sides of the two abutments with their other extremities pivoted at a fixed point and springs connected to the joints of the toggles, substantially as described.

4. In a motor-controller, a rotary shaft carrying a crank, a switch-arm with which the crank engages, means for rotating the crank to release the switch-arm from its contacts and simultaneously store the power to move the arm after it is released.

5. In an apparatus of the character described, the combination with a suitable actuator, of a switch-arm adapted to be thrown thereby into and out of contact with the terminals of an electric circuit the said switch-arm carrying thereon movable members affording rigid abutments for said actuator when moving in a direction to throw the switch, and yielding abutments therefor when moving in a direction to release the switch.

6. In apparatus of the character described, the combination with a suitable actuator, of a switch-arm adapted to be thrown thereby into and out of contact with the terminals of an electric circuit, the said switch-arm having movable members thereon serving as rigid abutments for said actuator when moving in a direction to close the switch and having means controlled by the return movement of said actuator whereby said abutments are displaced, as and for the purpose described.

7. In apparatus of the character described, the combination with a suitable actuator, of a switch-arm adapted to be thrown thereby into and out of contact with the terminals of an electric circuit, the said switch-arm having movable members thereon presenting rigid abutments for said actuator when moving in a direction to close the switch, other movable members impinging against said abutments and located in the path of the return movement of said actuator

whereby the said abutments may be displaced to permit the actuator to resume its former position, substantially as described.

8. In apparatus of the character described the combination with a suitable actuator, of a switch-arm adapted to be thrown thereby into and out of contact with the terminals of an electric circuit, the said switch-arm having movable members thereon presenting rigid abutments for said actuator when moving in a direction to close the switch, swinging levers also carried by said switch-arm impinging against said abutments and located in the path of the return movement of said actuator and springs adapted to be put under tension by said levers to move the switch-arm, substantially as described.

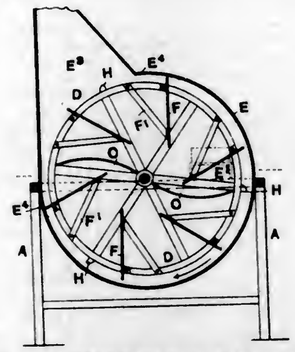
9. In apparatus of the character described, the combination with a suitable actuator, of a switch-arm adapted to be thrown into and out of contact with the terminals of an electric circuit, the said switch-arm carrying abutments normally contacting in opposite sides of said actuator and pivoted on tangent lines with relation to the arc of movement thereof, whereby the initial movement of said actuator serves to throw the switch, pivoted levers also carried by said switch-arm and movable by said actuator against the tension of springs after the switch has been thrown and connection between said abutments and said levers whereby the abutments may be displaced to permit the actuator to resume its normal position.

10. In apparatus of the character described the combination with a suitable actuator, of a switch-arm adapted to be thrown thereby into and out of contact with the terminals of an electric circuit, the said switch-arm having movable abutments contacting on opposite sides of said actuator whereby the switch-arm may be thrown in either direction to effect electric contact with said terminals, means providing for a certain range of movement of said actuator without disturbing the integrity of the switch-contact, levers carried by said switch-arm and located in the path of the return movement of said actuator and movable thereby against the tension of springs whereby power is stored to compel a quick "break," and suitable connection between said levers and said abutments, as and for the purpose described.

11. In apparatus of the character described, the combination with a suitable actuator, of a switch-arm adapted to be thrown into and out of contact with the terminals of an electric circuit the said switch-arm being normally held in locked relation with said actuator by movable abutments contacting on opposite sides thereof, the said abutments affording means whereby the switch-arm may be thrown in either direction to effect electric contact with said terminals by the initial movement of said actuator, and means carried by said switch-arm for displacing said abutments whereby the actuator may resume its former position, and means for reëstablishing the lock.

12. In apparatus of the character described the combination with a rocking shaft carrying a suitable actuator thereon, a switch controlled thereby, springs connected with and tending to hold said shaft in a state of rest at a median line, movable members carried by said switch-arm and normally abutting on opposite sides of said actuator whereby the switch-arm also is held in a state of rest in a median line, substantially as described.

608,014. COMBINED FEED-CUTTER AND BLOWER. DAVID M. THOM, Watford, Canada. Filed Dec. 30, 1897. Serial No. 664,635. (No model.)

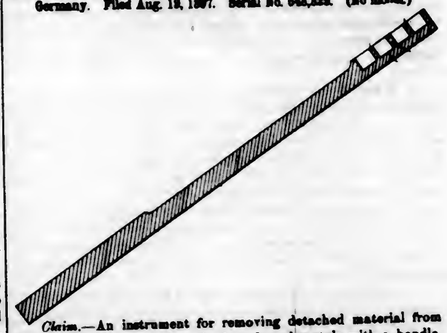


Claim.—1. In a combined feed-cutter and blower, consisting of a fan-wheel having fan-blades and carrying knives revolving in a cage, and having an air-inlet and a delivery-pipe, radial scrapers attached to the periphery of the wheel and running closely within the fan-case, and adapted to cut off the vegetable gum forming thereon as fast as the same is formed, substantially as described.

2. In a combined blower and feed-cutter, the combination of a fan-wheel having fan-blades, the inner faces of which are located in advance of a radial line, an air-inlet and an air-outlet located in the upper portion of the said fan-case, said outlet being funnel-shaped in form in the direction of the plane of the fan-case, a multiplicity of scrapers attached to the periphery of the wheel and adapted to scrape off vegetable gum that may form upon the interior of the casing, substantially as described.

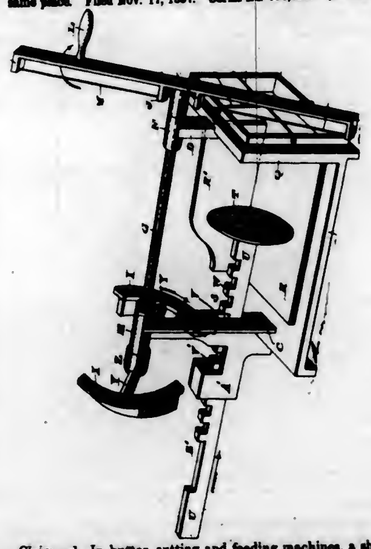
3. In a combined cutter and blower, the combination of adjustable feed-rollers adapted to deliver articles to the cutter and blower casing, a casing having an opening therein to admit the articles operated upon, an adjustable shutter to said opening, and means whereby said shutter is operated by the adjustable roller in such manner as to enable the opening in the casing to substantially conform to the amount of material between the rollers delivered to such opening, substantially as described.

608,015. SECONDARY BATTERY. GEORG WALTER, Strasburg, Germany. Filed Aug. 19, 1897. Serial No. 648,329. (No model.)



Claim.—An instrument for removing detached material from storage batteries, consisting of a box-shaped spatula with a handle, and with ridges extending crosswise of the box, the rear side of the box being closed and the lower end thereof being in the form of a thin flat wall, substantially as and for the purpose described.

608,016. BUTTER CUTTING AND FEEDING MACHINE. JOHN ANDERSON, Philadelphia, Pa., assignor of one-half to Frank Hardart, same place. Filed Nov. 17, 1897. Serial No. 658,230. (No model.)

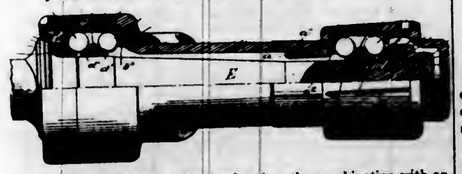


Claim.—1. In butter cutting and feeding machines, a shaft rotatably mounted, an arm carried by said shaft, having the pairs of lugs J and K supported thereupon, wires extending between each pairs of lugs, a frame suitably supported and having wires arranged at an angle to each other and mounted on said frame, curved wings X supported upon said shaft, said wings being separated and offset or helically arranged, a rack movable in suitable guides formed by an upright and an adjacent boss, said rack being adapted to be actuated by said wings, the latter engaging said rack in the space between said boss and upright, a plate mounted on the forward extremity of said rack, and a recess or untoothed portion in the rear extremity thereof.

2. In a butter cutting and feeding machine, a shaft rotatably mounted and carrying arms on which are mounted disconnected, separated offset or helical wings or segments X, the latter being in different planes from each other, a rack adapted to be engaged and propelled by said segments, said rack having an untoothed portion near its outer extremity, an arm mounted on said shaft at the opposite extremity to said wings and at substantially a right angle thereto, pairs of lugs attached to said arm on either side of said shaft, and wires common to each pair of lugs.

3. In a butter cutting and feeding machine, a suitable base, a frame supported upon the front thereof, an upright at the rear portion thereof, said frame having an opening therethrough for the passage of the butter, said opening being bridged by wires located transversely to each other, a front upright mounted upon said frame, a shaft rotatably mounted in said uprights, an ear or boss attached to the rear upright, ways formed in the latter and in said boss in which a feed-rack is supported and guided, said rack having an untoothed portion at its rear end and carrying a plate adapted to contact with the butter or other material to be fed, arms mounted on the rear extremity of said shaft and carrying wings or segments, the latter being separated and offset or helically arranged and adapted to actuate said rack, said wings engaging said rack within the space between said rear upright and the boss attached thereto, a crank-arm attached to the front end of said shaft and extending at a right angle to the arms carried on the rear of said shaft, to which said wings are attached, a pair of lugs located on the inner portions of said crank-arm on either side of its attachment to said shaft and wires bridging said lugs, said crank-arm having a handle attached thereto.

608,017. ANTIFRICTION-BEARING. WALTER C. BAKER, Cleveland, Ohio, assignor to the American Ball Bearing Company, same place. Filed Dec. 3, 1897. Serial No. 660,570. (No model.)



Claim.—1. In an antifriction-bearing, the combination with an axle or journal, of a sleeve or casing provided at its ends with annular chambers, adjustable bearing-rings arranged on the axle or journal within each of said chambers, one of said rings in each chamber having opposite cone-surfaces, balls bearing against said cone-surfaces, means for securing the balls in position, and means for simultaneously adjusting the sleeve, bearing-rings and balls, by a single mechanical action.

2. An antifriction-bearing comprising an axle or journal provided at its front end with an internal-screw-threaded orifice, and suitable cones and balls for forming antifriction-bearings, and a securing and adjusting screw engaging the internal-screw-threaded orifice in the end of the axle or journal, said screw having a recessed head and washers located therein, all operating substantially as shown and described.

3. In an antifriction-bearing, the combination with an axle or journal, of a sleeve or casing surrounding the axle, and provided at its ends with annular chambers, a plurality of bearing-rings adjustably secured upon the axle, within each of said chambers, one bearing-ring in each chamber having opposite cone-surfaces, balls bearing against said rings, and an adjusting device at the outer end of the axle for simultaneously adjusting said sleeve and all of said bearing-rings and balls.

4. In an antifriction-bearing, the combination with an axle or journal, of a sleeve or casing surrounding the axle, and provided at each of its ends with annular bearing-chambers, bearing-rings arranged within each of said chambers, adjustable on said axle and provided on each side with an annular flange or extension, balls in contact with the opposite surfaces of the rings having said flanges, and means for adjusting said sleeve, rings, and balls by a single mechanical action.

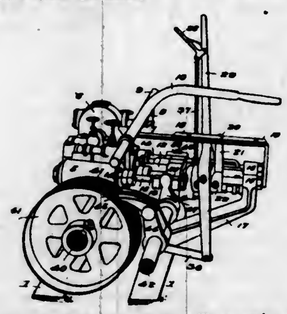
5. In an antifriction-bearing, the combination with an axle or journal, of a sleeve provided on its peripheral surface with a longitudinal key seat or groove, and a screw-key adapted to enter said groove to prevent rotation of the sleeve independently of the hub the threads of said screw-key adapted to engage the wood of the hub.

6. In an antifriction-bearing, the combination with an axle or journal provided at its outer end with a threaded recess, of a sleeve or casing, adjustable cone-rings and antifriction-balls, an adjusting-screw entering the recessed ends of the axle and provided with a flanged head, and yielding washers interposed between the screw-head and the outer end of the axle.

7. In an antifriction-bearing, the combination with the axle and two-part sleeve or casing, provided with a bearing-chamber at each end, of a plurality of adjustable cone-rings on the axle within each of said chambers, antifriction-balls bearing against said rings, one of said rings at each end of the sleeve having annular extensions which support the balls and prevent their dropping out when the wheel is removed from the axle.

8. In an antifriction-bearing, the combination with an axle, a casing or sleeve surrounding the same, bearing-rings and balls, of an adjusting-screw for adjusting said sleeve, bearing-rings, and balls, by a single mechanical action, and means interposed between the outer end of the axle and said adjusting-screw for obtaining a variable adjustment, and at the same time locking the adjusting-screw.

608,018. STEAM SET-WORKS FOR SAWMILLS. RUBEN F. BARKER and MICHAEL COREY, Marinette, Wis. Filed Mar. 8, 1898. Serial No. 673,096. (No model.)



Claim.—The combination, in a sawmill set works, of the steam-cylinder 4, the parallel guide-rods 15 15 having their inner threaded ends fixed to said cylinder, the bracket 2 formed with the integral arm 17 and vertical lugs 16 16 forming a support for the outer ends of said guide-rods, the cross-head 22 adjustably secured on the outer ends of said rods and the adjusting-nuts 38 39 secured on the inner threaded ends of said rods, the piston-rod cross-head 13 mounted on said rods and adapted to have its movement in either direction limited by said adjustable cross-head 22 and nuts 38 39 and means, substantially as described, for transmitting the movement of said piston-rod cross-head to the knees, as and for the purpose set forth.

608,019. PROCESS OF AND APPARATUS FOR MAKING ACETONE. AUGUST RAIKOWITSCHER, Bistrow, Austria-Hungary, assignor to the Roessler & Hasslacher Chemical Company, New York, N. Y. Filed May 9, 1894. Serial No. 510,582. (No model.)

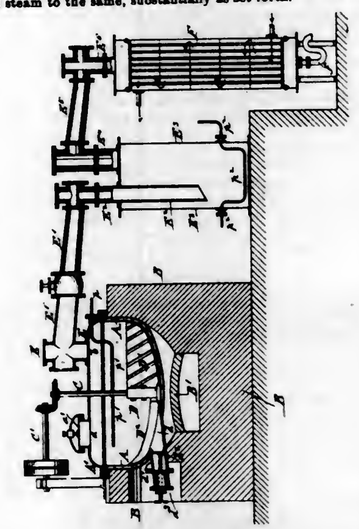
Claim.—1. The process herein described of producing acetone, which consists in subjecting a dry mixture of acetate of lime and calcium hydrate under continuous stirring at a constant temperature to the action of superheated steam so as to separate the acetone vapors; condensing the acetone vapors into crude liquid acetone; and lastly, rectifying the crude acetone, substantially as set forth.

2. The process herein described of producing acetone, which consists of the following steps: first, mixing acetate of lime with calcium hydrate; second, subjecting the dry mixture under continuous stirring to a constant temperature to the action of superheated steam, so as to separate the acetone vapors from the remaining carbonate of lime; third, condensing the acetone vapors into crude liquid acetone; fourth, mixing crude acetone with water in excess, and permitting it to stand so as to separate the tar-oils and other impurities, and lastly, rectifying the so-crude-washed acetone so as to obtain pure acetone, substantially as set forth.

3. In the manufacture of acetone, the process of utilizing the resulting secondary products or acetone oils obtained by the destructive distillation of the acetate and during the rectifying process by mixing them with water under pressure and subjecting the mixture to rectification, so as to obtain pure acetone from the same, substantially as set forth.

4. The apparatus herein described for producing acetone, which

consists in a closed mixing vessel provided with a lead-bath, an agitator in said mixing vessel, a collecting vessel, tubes connecting the mixing vessel with said collecting vessel, a condenser, tubes for connecting said condenser with the collecting vessel, steam-supply pipes and coils in the mixing and collecting vessels for supplying superheated steam to the same, substantially as set forth.



608,020. RAILWAY-TORPEDO. JAMES H. BEVINGTON and HENRY M. FISHER, Akron, Ohio; said Fisher assignor, by mesne assignments, to George C. Nott, Cleveland, Ohio. Filed Dec. 28, 1897. Serial No. 663,872. (No model.)



Claim.—1. A railway-torpedo provided, externally of its explosive-receptacle, with a substance or matter that will leave an impression or mark upon the rail, upon the explosion of the torpedo, substantially as and for the purpose set forth.

2. A railway-torpedo comprising a closed explosive-receptacle provided, upon its under side, with a substance or matter that will leave an impression or mark upon the rail upon the explosion of the torpedo, substantially as and for the purpose set forth.

3. A railway-torpedo comprising an oblong explosive-receiving case long enough to extend from side to side of the head of the rail and provided, upon its under side, with a substance or matter that will leave an impression or mark upon the rail's head upon the explosion of the torpedo, substantially as and for the purpose set forth.

4. A railway-torpedo comprising on explosive-receiving case having upon its under side a recess that is provided with a marker capable of leaving an impression upon the rail when the torpedo is exploded, substantially as set forth.

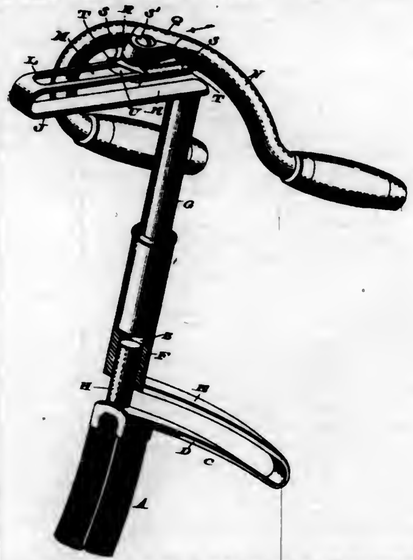
5. A railway-torpedo comprising an oblong explosive-receiving case provided with a marker upon its under side, and comprising an inner receptacle-forming section, and an outer cover-forming section provided with lugs or flanges overlapping the under side of the bottom of the inner section and instrumental in supporting the marker, substantially as set forth.

6. A railway-torpedo comprising an explosive-receiving case provided with spring-jaws supported from opposite ends, respectively, of the case, and composed, respectively, of a single piece of wire suitably bent to form a torsional spring, or springs, acting to hold the respective jaw against the under side of the torpedo, substantially as set forth.

7. A railway-torpedo comprising an explosive-receiving case that consists of an inner receptacle-forming section and an outer cover-forming section having lugs or flanges bent in under the inner section, and two spring-jaws supported from the said flanges or lugs, substantially as set forth.

8. A railway-torpedo having an explosive-receiving case having a non-metallic cover composed of a substance or material that is waterproof and possesses stiffness and elasticity, substantially as and for the purpose set forth.

608,021. BICYCLE HANDLE-BAR. NUMA A. BILLE, Philadelphia, Pa., assignor of one-half to Fritz Müller, same place. Filed Apr. 8, 1897. Serial No. 631,197. (No model.)



Claim.—1. In a bicycle, a handle-bar post, a resilient loop secured to said post and having a slotted member, a clamping device adjustable on said slotted member and a handle-bar held in said clamping device.

2. In a bicycle, a handle-bar post, a resilient loop having one member secured to said post, a clamping device having a body portion and ears with downwardly-extending lips, a block, a screw passing through said body portion and engaging said block so as to clamp thereto a slotted member of said loop, and a handle-bar held in said clamping device.

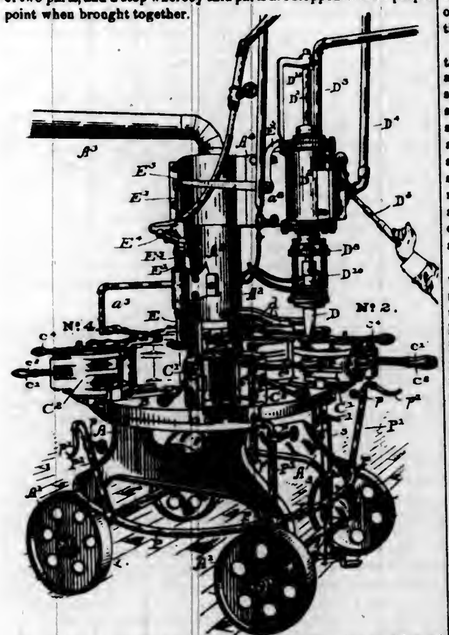
3. In a bicycle, a handle-bar post having the loop J mounted thereon, one member of said loop being provided with a slot, a block U having shoulders thereon movable in said slot a clamping device Q adapted to engage the handle-bars N, ears S on said device Q, and a screw or fastening device common to said ears and block.

608,022. GLASS-BLOWING MACHINE. ALVAN I. BINGHAM, Muncie, Ind., assignor to the Ball Brothers Glass Manufacturing Company, same place. Filed Aug. 26, 1897. Serial No. 649,611. (No model.)

Claim.—1. The combination, in a glass-blowing machine, of a framework having a central upright; a rotary table mounted thereon; a series of molds mounted on said table and arranged radially to the axis on which said table turns, each mold composed of a bottom portion, a main portion in which are larger and smaller recesses or die-cavities forming the principal portions of two different mold-cavities, one behind the other; a top or cover portion mounted on a fixed pivot and embodying a neck form for the article to be formed, said top or cover portion being composed of two parts adapted to move apart and together; and said mold portion being also composed of two parts adapted to be moved apart and together and also adapted to be moved in respect to the top portion, whereby either mold-cavity may be brought into registry with the neck form thereof; a suitable perforator or plunger adapted to operate in connection with the smaller die-cavity and carried by the central upright of the framework; and a suitable blowing-head also carried by the central upright of the framework and adapted to operate in connection with the larger die-cavity, said plunger or perforator and said blowing-head being positioned a distance apart equal to the distance between the various sets of molds on the table, substantially as and for the purposes set forth.

2. The combination, in a glass-blowing machine, of a suitable table, ways or guides thereon, a mold containing two mold-cavities mounted in said ways or guides and adapted to be shifted from one position to another therein, and adjustable stops whereby the movement of said mold may be adjustably limited, substantially as set forth.

3. The combination, in a blowing-machine, of a suitable table, a mold containing two mold-cavities mounted on said table and adapted to be shifted from one position to another, and a cover or top portion for said mold pivoted to a bracket rigid with the table and composed of two parts, and a stop whereby said parts are stopped at their proper point when brought together.



4. The combination, in a mold for a glass-blowing machine, of two main mold portions hinged together and containing two mold-cavities larger and smaller, a bottom to said mold a portion whereof forms the bottom to the larger or finishing mold-cavity, said mold portions and said bottom being movable between stops on said table, and a top portion forming a neck form for said mold composed of two parts pivoted together and to a bracket B^2 rigid with the table structure, and said bracket.

5. The combination, in a mold for glass-blowing machines, with the main portions thereof, of a top or cover portion composed of two parts hinged together and containing a neck form, and handles to said two parts, one of said handles having a sleeve-like outer portion with a latch upon the inner end adapted to engage with the shank of the other handle and thus lock the two parts of said cover together, substantially as shown and described.

6. The combination, in a glass-blowing machine, with an adjustable mold and the table whereon it is mounted, of a flange or ear on the bottom of the mold structure, and two adjustable bolts carried by the table on which the mold structure is mounted, one of which bolts passes through said ear or flange and has a head upon the opposite side, and the other of which is positioned to come against the adjacent side of said ear or flange, whereby the movement of the mold may be accurately adjustably limited in both directions, substantially as set forth.

7. The combination, in a glass-blowing machine, with a mold structure, of a plunger or perforator composed of a hollow main portion, a perforated interior portion mounted therein, the perforations whereof lead to a cavity in the lower end of said hollow main portion, said perforated interior portion being also yieldingly seated, whereby it is enabled to raise under any excess of pressure which may exist in said cavity, and an inlet and an outlet pipe connected to the said perforations, substantially as set forth.

8. The combination, in a glass-blowing machine, with a mold structure, of the plunger D, the perforated interior portion D^{13}, stems d^{11} and d^{12} connecting with the perforations therein, flexible tubes D^{11} and D^{12} connected to said stems, a cavity in said plunger D below the lower end of said interior portion D^{13} into which the perforations lead, a cavity in the main structure above said interior portion D^{13}, and a spring D^{14} situated therein, said several parts being arranged and operating substantially as shown and described.

9. The combination, in a glass-blowing machine, of a framework, a rotating table carrying a series of molds, a plunger or perforator adapted to coöperate with one mold structure, a blowing-head adapted to coöperate with another mold structure, a fluid-operated piston carrying and operating said plunger, a spring-supported reciprocating rod carrying said blowing-head, and a connection between said piston and said reciprocating rod, whereby as the plunger descends into one mold the blowing-head is seated upon another mold, substantially as and for the purposes set forth.

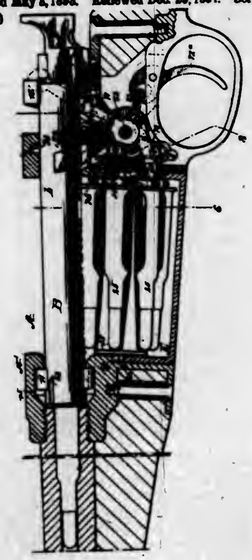
10. The combination, in a glass-blowing machine, of a rotary table or carrier, a plurality of molds carried by said table, a plunger and a blowing-head arranged above said molds and positioned the same distance apart as said molds are, a fluid-operated piston whereby said plunger is carried and operated, a reciprocating rod whereby said blowing-head is carried, means whereby said reciprocating rod and said blowing-head are normally held elevated, means whereby as said piston descends said reciprocating rod is also forced to descend, an air-duct leading to said blowing-head, and means for automatically opening said air-duct when said blowing-head is seated on a mold-top and for closing said duct when said blowing-head is raised out of contact with said mold-top, said several parts being arranged and operating substantially as and for the purposes set forth.

11. The combination, in a glass-blowing machine, of a framework, a rotating table mounted thereon, a series of mold structures mounted on said table, a plunger or perforator situated above said table, a piston and piston-rod for driving said plunger, a blowing-head also situated above said table, a piston-rod carrying said blowing-head, a bell-crank lever pivoted between the said two sets of apparatus, and an arm carried by the piston of the plunger and adapted to engage with and operate said bell-crank lever and through it said blowing-head piston-rod, substantially as shown and described.

12. The combination, in a glass-blowing machine, with a series of molds, of a plunger or perforator situated above the molds, a blowing-head also situated above the molds, a piston whereby the plunger or perforator is driven, an arm carried by said piston having an inclined lower end and a surface parallel with the piston-rod, and a bell-crank lever interposed between said arm and the piston-rod of the blower-head the end whereof is adapted to come in contact with the inclined portion of said arm at the beginning and at the end of the stroke of the plunger-piston and remain in contact with the parallel portion thereof during the remainder of the stroke, substantially as and for the purposes set forth.

13. The combination, with a glass-blowing machine consisting of a framework, a rotary table mounted thereon, and a series of mold structures mounted on said table, of a primary heating apparatus for heating said mold structures before the beginning of work with said machine, consisting of a gas-pipe, a series of branch pipes leading therefrom, valves in said branch pipes, and nozzles beyond said valves which are adapted to be directed into the cavities of the mold structures, substantially as shown and described.

608,028. MAGAZINE BOLT-GUN. JOHN H. BLAKE, New York, N. Y. Filed May 3, 1893. Renewed Dec. 29, 1897. Serial No. 664,448. (No model.)



Claim.—1. In a repeating rifle, the combination with the receiving-section of the breech-casing and a magazine-chamber located adjacent to the said receiving-section, and in communication therewith, the magazine chamber being constructed with an upper fixed section and with a lower drop-section, of a cartridge-carrying packet removably mounted in the magazine-chamber, substantially as described.

2. In a repeating rifle, the combination with the receiving-section of the breech-casing and a magazine-chamber located adjacent to the said receiving-section and in communication therewith, the magazine-chamber being constructed with an upper fixed section and a lower semicylindrical drop-section, the drop-section being hinged at one side to the fixed section, and having a fastening device at the opposite side, of a cartridge-carrying packet removably located in the said magazine-chamber and mounted to rotate therein, substantially as shown and described.

3. In a repeating rifle, the combination, with the receiving-section of the breech-casing, and a magazine-chamber located adjacent to the said section and in communication therewith, the magazine consisting of a fixed and a drop section, of a cartridge-carrying packet removably mounted in the chamber and capable of revolving therein, and a spring located within the chamber and in engagement with the packet, whereby when the drop-section of the chamber is closed the packet will be forced to assume a predetermined position, as and for the purpose specified.

4. In a repeating rifle, the combination with the receiving-section of the breech-casing, and a magazine-chamber located adjacent to the said section and in communication therewith, the magazine-chamber consisting of a fixed section and a drop-section, of a cartridge-carrying packet removably mounted in said magazine-chamber, and means for forcing the packet to assume a predetermined position when the drop-section is closed, as and for the purpose specified.

5. In repeating rifles, the combination with the receiving-section of the breech-casing and a magazine-chamber located adjacent to and in communication with said receiving-section, of a cartridge-carrying packet removably and revolubly mounted in the said chamber, an operating-arm for revolving the said packet, means for moving the said operating-arm to revolve the packet, a cut-off lever adapted to act upon the said operating-arm to throw it into or out of working position, and a stop mechanism adapted to be moved into longitudinal engagement with the said packet when the operating-arm is thrown out of working position, whereby the said packet may be held in reserve or may be brought into action, substantially as described.

6. In a repeating rifle, the combination with the receiving-section of the breech-casing, and a magazine-chamber in communication therewith, of a cartridge-carrying packet having its rear head provided with a ratchet-surface, the said cartridge carrying packet being revolubly and removably mounted within the magazine-chamber, a revolving mechanism connected with the packet and comprising an operating-arm adapted to engage with said ratchet-surface, the said operating-arm having a member extending within the path of the bolt and a cut-off lever connected with the operating-arm, whereby the latter may be brought into action or carried out of action to maintain a cartridge-packet in reserve or in action, as and for the purpose specified.

7. In a repeating rifle, the combination with the receiving-section of the breech-casing, a stop located within the receiving-section, the said stop being adapted to bear against the cartridge to be guided into the barrel and hold it in the path of the bolt and a magazine-chamber in communication with the receiving-section of the breech-casing, of a cartridge-carrying packet revolubly and removably located within the magazine-chamber and provided with a series of apertures in its rear head, a revolving mechanism connected with the packet, a cut-off connected with the revolving mechanism, and a stop operated from the revolving mechanism, and adapted to enter one of the said apertures in the rear head of the packet, as and for the purpose specified.

8. In a repeating rifle, the combination, with the receiving-section of the breech-casing, a magazine-chamber in communication with the said receiving-section, and a bolt having sliding movement in the said section, of a cartridge-carrying packet removably and revolubly located within the magazine-chamber, a revolving mechanism adapted for engagement with the cartridge-packet and operated by the movement of the bolt, a cut-off connected with the revolving mechanism and adapted to carry said mechanism within or without the path of the bolt, and a stop mechanism in engagement with the packet and operated from the revolving mechanism, as and for the purpose set forth.

9. In a repeating rifle, the combination with the receiving-section of the breech-casing, a magazine-chamber in communication with the said receiving-section, and a bolt having sliding movement in the said section, of a cartridge-carrying packet removably and revolubly located within the magazine-chamber, an operating-arm adapted to engage the said packet and revolve the same, the said arm being operated by the movement of the bolt, a cut-off lever connected with the said operating-arm and adapted to carry the said arm within or without the path of the bolt, and a spring-pressed pivoted stop having an upper member in engagement with the packet, and a lower member adapted to be engaged by the operating-arm, the said operating-arm when held without the path of the bolt engaging with the lower member of the said stop and holding said stop in locked engagement with the packet, as and for the purpose set forth.

10. In a repeating rifle, the combination, with the receiving-section of the breech-casing having a stop formed near its rear end, a magazine-chamber in communication with the receiving-section, and a cartridge-packet revolubly and removably located within the chamber, the cartridge-packet being adapted for engagement with the stop in the receiving-section, of a bolt having a sliding movement in the receiving-section of the breech-casing and over the cartridge-packet, a lug formed upon the bolt, a revolving mechanism engaging with the packet and adapted to be acted upon by the lug of the bolt, a cut-off connected with the revolving mechanism, and adapted to carry the revolving mechanism in or out of the path of the bolt-lug, and a trip mechanism carried by the bolt and adapted to engage with the revolving mechanism when the lug is brought into like action, the trip mechanism and the lug acting at different periods of time, as and for the purpose set forth.

11. In a repeating rifle, the combination, with the receiving-section of the breech-casing having a stop-lug formed within it, a bolt having sliding movement in the receiving-section of the breech-casing, a magazine-chamber located beneath the bolt and in communication with the receiving-section of the casing, a cartridge-packet removably and revolubly located within the magazine-chamber, the cartridges being adapted for engagement consecutively with the stop in the receiving-section, of a revolving mechanism in engagement with the packet, lugs formed upon the bolt, adapted for engagement with and to act upon the revolving mechanism, a cut-off connected with the revolving mechanism whereby it may be carried in or out of the path of the bolt-lugs, and a stop mechanism normally in engagement with the packet and operated from the revolving mechanism, as and for the purpose set forth.

12. In a firearm, the combination with a bolt, of an extractor located thereon and comprising a plate having circumferential movement upon the bolt, the said plate being recessed on its upper surface and having shoulders formed on its side margins, one of said shoulders being shorter than the other, and a hook-section removably connected with the said plate and extending forwardly therefrom, the said hook-section having a shank adapted to fit in the said recess in the upper surface of the plate and rest between the shoulders on the side margins of the plate, as and for the purpose set forth.

13. In a firearm, the combination, with a bolt of an extractor located thereon, the said extractor comprising a plate having a circumferential movement upon the bolt, the said plate having its surface recessed, and provided with shoulders on its side margins, and a hook-section extending forwardly of the said plate and having a shank adapted to fit in the said recess and rest between the said shoulders, the said shank being provided with a stud on its under face adapted to engage a slot in the said plate, whereby it is removably connected therewith as and for the purpose set forth.

14. In a firearm, the combination with the breech-casing, of a bolt having sliding movement therein and provided at its forward end with a recess, the said bolt comprising a body having a longitudinal bore, a spring-controlled firing-pin located within the bore, a sleeve having a bearing against the spring of the firing-pin, and loosely mounted upon the shank thereof, a cocking-piece connected with the shank of the firing-pin and having locking engagement with the sleeve, an extractor located exteriorly upon the body of the bolt and provided with a lug on its under side adapted to enter a slot formed in the body of the bolt and also to enter a slot formed in the said sleeve and an ejector located within the breech-casing and adapted to enter the recess in the forward end of the said bolt, as and for the purpose specified.

15. In a firearm, a bolt comprising a body having a longitudinal bore therein, a spring-controlled firing-pin located within the bore, a sleeve having a bearing against the spring of the firing-pin and loosely mounted upon the shank thereof, a cocking-piece connected with the shank of the firing-pin and having locking engagement with the sleeve, an extractor located exteriorly upon the body of the bolt, the said extractor having a lug on its under side which enters a slot formed in the body of the bolt and also enters a slot formed in the said sleeve, as and for the purpose set forth.

16. A bolt for rifles and other firearms, the same consisting of a body-section provided with a bore produced longitudinally therein, open at its rear and closed at the forward end of the bolt with the exception of a small opening for the exit of the firing-pin, the firing-pin having movement in the bore, the shank of which firing-pin extends to the rear portion of the body, a sleeve loosely mounted upon the shank, a spring coiled around the shank of the firing-pin and located between the sleeve and the head of the pin, and a cocking-piece located within the body at the rear and removably connected with the firing-pin shank, the said cocking-piece having sliding and locking engagement with the said sleeve, whereby all parts of the bolt may be separated and any one part replaced without the use of tools, as and for the purpose set forth.

17. In a firearm, a bolt, the same consisting of a body portion having an essentially L-shaped opening therein and a handle connected therewith, a firing-pin having sliding movement in the body, a portion of the pin being flattened, a sleeve loosely mounted upon the shank of the firing-pin, a spring coiled around the shank and intervening the head of the pin and the sleeve, the sleeve being provided with an opening beneath the opening in the body, a cocking-piece located at the rear of the body, having sliding and rotary movement therein, the cocking-piece being provided with a nose adapted for engagement with the cam of the body, the cocking-piece having an interlocking yet sliding engagement with the said sleeve, and an extractor located upon the exterior of the body, the extractor being provided with a lug which enters and moves in the slot of the body and passes into the opening in the sleeve to an engagement with the flat portion of the firing-pin shank, as and for the purpose set forth.

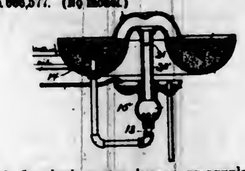
608,024. BROWN AZO DYE. MELCHIOR BÖNIGER, Basle, Switzerland, assignor to Chemische Fabrik, vormals Sandoz, same place. Filed Jan. 18, 1898. Serial No. 667,074. (Specimens.)

Claim.—1. The process of producing substantive brown polyazo coloring-matters, which consists in combining first one molecule of the azo color beta, azo alpha, naphthol beta, beta, disulfonic acid metaphenylen or metatolulen diamin with one molecule of a diazo compound and combining the diazo color thus obtained with one molecule of the intermediate product obtained by combination of one molecule of tetrazo-diphenyl or tetrazo-ditolyl with one molecule of salicylic acid, substantially as hereinbefore described.

2. The process of producing substantive brown polyazo coloring-matters, which consists in combining first one molecule of the azo color beta, azo alpha, naphthol beta, beta, disulfonic acid metaphenylen or metatolulen diamin with one molecule of the intermediate product, obtained by combination of one molecule of tetrazo-diphenyl or tetrazo-ditolyl with one molecule of salicylic acid and finally causing one molecule of a diazo compound to act upon the thus-resulting mixed trisazo dyestuff, substantially as hereinbefore described.

3. As a new article of manufacture the new polyazo coloring-matters derived from beta-azo-alpha-naphthol beta, beta, disulfo-metaphenylendiamin as described, the said dyestuffs forming a brown-black powder, sparingly soluble in ethylic alcohol, easily soluble in hot water with brown color, turning in intense red brown on addition of caustic soda, soluble in concentrated sulfuric acid with blue-violet color, giving a bluish-brown precipitate on addition of water and dyeing unmordanted cotton in yellow-brown to blue-brown tints.

608,025. HYDROCARBON-BURNER. DANIEL W. BOWMAN and EDWIN R. KINNEY, Toledo, Ohio, assignors to said Bowman and Edward W. Kehne, same place. Filed Apr. 9, 1894. Renewed Jan. 13, 1898. Serial No. 666,577. (No model.)

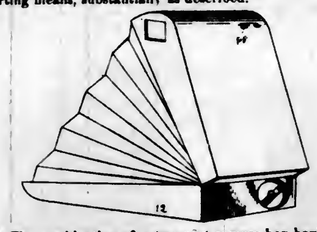


Claim.—1. In a hydrocarbon-burner, an annular generator having a filling of sand or gravel, an oil-pipe leading thereto, an oil-pipe connecting the generator and a burner, said burner comprising a plate or cup the outer edge of which rests upon the inner edge of the generator, and a plate or cup of greater dimensions resting upon the generator, said second plate or cup having a series of orifices in its outer edge, and means for moving the upper cup or plate vertically to increase or diminish the space between the cups or plates and the edge of the movable cup or plate and the generator, whereby the conditions of the burner remain the same for either a large or a small fire.

2. In a hydrocarbon-burner, a generator, an oil-pipe leading therein, a gas-pipe leading therefrom to a burner, the upper section of said burner being provided with lugs which coincide with the stepped recesses in the generator, by which the upper section of the burner is adjusted vertically.

608,026. ROLL-HOLDING CAMERA. HENRY H. BENANT, Boston, Mass. Filed Jan. 13, 1897. Serial No. 619,055. (Model.)

Claim.—1. The combination with an inclosing box formed of two halves or sections hinged together at their rear ends to open and shut, and a light-excluding bellows connecting the sides and front ends of the two box-sections, means located within one box-section for supporting a sensitized surface, and a lens mounted within the free front end of the other section and adapted when the box-sections are swung apart to be brought into proper focal relation to the said supporting means, substantially as described.



2. The combination of, a two-part camera-box having a hinged connection at one end permitting free movement of the parts to open the same, a light-excluding bellows between the parts for excluding light therefrom when opened, mechanism including the platen, 20, and roll-supporting connections, for holding the sensitized film located in the chamber of one of said parts, and a lens for throwing the image upon the sensitized film, said lens being located obliquely in the free end of said other part, whereby when the lens-carrying box-section is swung out the proper distance from the platen-carrying section, the lens will lie in proper focal relation to the platen, substantially as described.

3. The combination of a two-part camera-box having a hinged connection at one end permitting free movements of the parts to open the same, a light-excluding bellows between the parts for excluding light therefrom when opened, mechanism including the platen, 20, and roll-supporting connections for holding the sensitized film, located in the chamber of one of said parts, the adjustable connections permitting displacement of the platen, 20, to make way for an independent plate-holding device, and a lens for throwing the image upon the sensitized material, said lens being located in the free end of said other part; substantially as described.

4. The combination with the inclosing box formed in two sections hinged together at their rear ends, to open and shut, and connected thereby beyond by a light-excluding bellows, of a lens mounted in the front end of one box-section, a platen or holder for the sensitized surface mounted within the other box-section, and a bar pivoted to the inner side of one box-section, and in sliding connection with the other box-section to brace the box-sections apart when the lens reaches its proper focal relation to the said sensitized surface, substantially as described.

5. The combination with the inclosing box formed of two sections hinged together at their rear ends to open and shut and a bellows connecting the sides and front end of the box-sections, of a lens mounted in the front end of one box-section, and a platen mounted within the other section and having parallel end flanges provided with roll-carrying pins or studs, one of said flanges being cut away to form springs and permit the pins or studs carried thereby to be sprung into and out of engagement with the film-rolls, substantially as described.

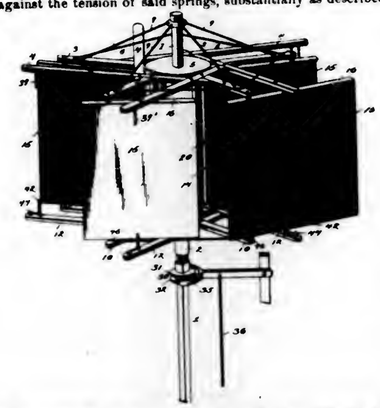
6. In a camera the combination with the platen 20 having parallel end flanges 40, 42, provided with roll-carrying pins or studs, the flange 40 being cut away to form springs for the pins or studs 48, of an auxiliary spring 54 bearing at its ends on the flange-springs, substantially as described.

7. The combination with the inclosing box formed of two sections hinged together at their rear ends to open and shut and a bellows closing the sides and front of the box when open, of a lens mounted in the front end of one box-section, and a platen mounted within the other box-section and having front and rear flanges provided with slots 32, adjusting-screws passed through said slots for raising and lowering the platen, roll-carrying pins or studs, one of which (44) extends through a slot 52 in one of said flanges and means for operating the stud 44 from the exterior of the box, substantially as described.

608,027. WINDMILL. ARON M. CARLSON, Pierre, S. D. Filed June 26, 1897. Serial No. 642,516. (No model.)

Claim.—1. In windmills, the combination of a shaft 1, the upper and lower series of arms 3 10 radiating therefrom, the upper and lower series of guard-braces 4 12 extending parallel with said arms, wind sails or vanes 15 each pivoted adjacent their outer ends to the corresponding pair of upper and lower radial arms, a trigger on the outer end of each upper guard-brace 4 having a pivot loop or eye fulcrumed on a bolt 39, a stop-arm 40 adapted to abut against the

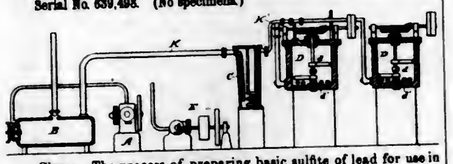
brace and a depending arm 39, adapted to project into the path of the outer end of the sail to limit its movement in one direction, a trigger 41 on the outer end of each lower guard-brace 12 having a pivot-eye fulcrumed to a bolt, a vertical arm 42 and a weighted stop-arm 43 to normally hold the arm 42 in position to limit the outward movement of the sail, while allowing it to swing inward, pivoted levers on the shaft adapted to project into the path of the inner ends of the sails to limit their movement in the reverse direction, springs to normally hold said levers projected, and means for retracting the levers against the tension of said springs, substantially as described.



2. In windmills, the combination of a shaft, arms radiating therefrom, guard-braces extending parallel with said arms, wind sails or vanes pivoted adjacent their outer ends to said radial arms, stop devices on the outer ends of the guard-braces to limit the movement of the sails in one direction, pivoted levers on the shaft adapted to project into the path of the inner ends of the sails to limit their movement in the reverse direction, springs to normally hold said levers projected, cords or cables 26 attached at one end to said levers and passed over pulleys 27 on the shaft, a sleeve on said shaft, rods connecting the opposite ends of said cords or cables and sleeve, and means acting on the said sleeve and rods to retract said levers against the tension of the springs, substantially as described.

3. In windmills, the combination of a shaft, arms radiating therefrom, guard-braces extending parallel with said arms, the vertical braces 14 arranged concentrically about the shaft and carrying guide-braces 24, wind sails or vanes pivoted adjacent their outer ends to said radial arms, stop devices on the outer ends of the guard-braces to limit the movement of the sails in one direction, pivoted levers on the shaft having their free ends operating in said guide-braces 24 and adapted to project into the path of the inner ends of the sails to limit their movement in the reverse direction, springs 25 to normally hold said levers projected, cords or cables 26 attached at one end to said levers and passed over pulleys 27 on the shaft, a grooved sleeve 30 on said shaft, rods 28 connecting the opposite ends of said cords or cables and sleeve, a pivoted lever 35 having a bifurcated end provided with studs 33 34 projecting into the groove of said sleeve, and a pull-rod 36 connected with said lever 35, substantially as described.

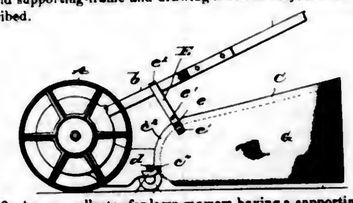
608,028. PROCESS OF MANUFACTURING LEAD SULFITE. ANDREW C. J. CHARLIER, Glasgow, Scotland. Filed June 5, 1897. Serial No. 639,493. (No specimens.)



Claim.—The process of preparing basic sulfite of lead for use in pigments, consisting in passing sulfur-dioxid gas into a paste or mixture of water and oxid of lead.

608,029. GRASS-COLLECTOR FOR LAWN-MOWERS. THOMAS COLDWELL, Newburg, N. Y. Filed Feb. 23, 1898. Serial No. 671,299. (No model.)

Claim.—1. A grass-collector for lawn-mowers, having a supporting-frame, adjacent to its upper edges, provided with bail-engaging arms having hooks for detachably engaging the bail of the mower, said frame having at its forward end, portions extending downwardly and horizontally to form a horizontal nose at each side to engage the under side of a part of the mower structure and side and bottom portions supported by said supporting-frame, whereby said device can be instantly detached from the mower by elevating the rear end of said supporting-frame and drawing it rearwardly, substantially as described.

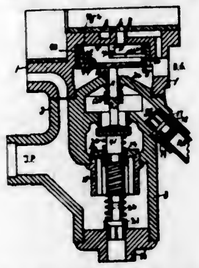


2. A grass-collector for lawn-mowers having a supporting-frame adjacent to its upper edges, consisting of a single bar bent to form the transverse rear portion, and forwardly-extending side pieces the forward ends of said side pieces extending downwardly and horizontally to form a horizontal nose at each side of the device to engage the under side of a part of the mower structure, bail-engaging arms secured to said side pieces, and having hooks for detachably engaging the bail of the mower, and side and bottom portions supported by said supporting-frame, whereby said device can be instantly detached from the mower by elevating the rear end of said supporting-frame, and drawing it rearwardly, substantially as described.

3. A grass-collector for lawn-mowers having a supporting-frame adjacent to its upper edges, consisting of a single bar bent to form the transverse rear portion, and forwardly-extending side pieces, the forward ends of said side pieces extending downwardly and horizontally to form a horizontal nose at each side of the device to engage the under side of a part of the mower structure, bail-engaging arms secured to said side pieces, and having hooks for detachably engaging the bail of the mower, a bottom frame provided with a bottom and a flexible side portion connecting the bottom frame and the said supporting-frame, whereby said bottom is free to move vertically without affecting the engagement of the said bail engaging hooks, or said horizontal nose portions with the mower, substantially as described.

4. A grass-collector for lawn-mowers provided with a supporting-frame composed of a single bar bent to form the transverse rear portion and the forwardly-extending side pieces, the forward ends of said side pieces being bent downwardly and horizontally to form a horizontal nose on each side of the device, to engage the under side of a part of the mower structure, bail-engaging arms secured to the forward portions of said side pieces, in rear of the said mower-engaging portions, the bottom frame provided with a wire-netting bottom, flexible sides secured to the supporting-frame, and having their lower edges secured to the bottom frame and metal strips secured to the bottom frame clamping portions of the bottom and side portions between them and the bottom frame and forming runners to protect the bottom and side portions from wear, substantially as described.

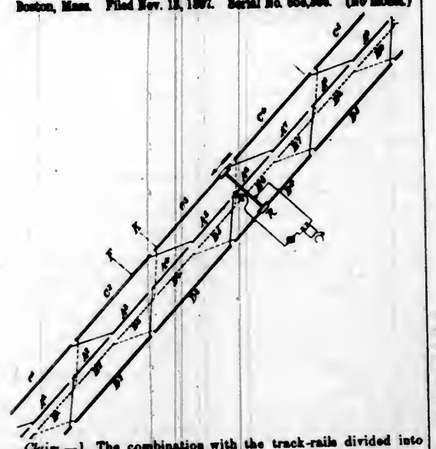
608,080. AIR-BRAKE. MURRAY CORRINGTON, New York, N. Y. Filed Apr. 26, 1898. Serial No. 678,827. (No model.)



Claim.—1. In a quick-action triple valve, the combination of a triple valve, a vertical chamber underneath the triple-valve chamber, an emergency-piston working therein and actuated by pressure from an auxiliary reservoir, upon the second or further traverse of the triple valve, in direction to impart opening movement to an emergency-valve, a service-passage leading from the auxiliary reservoir to the brake-cylinder outside and independent of the emergency-piston chamber, a supplemental-casing section provided with a train-pipe connection and connected directly to the main casing of the triple valve on the under side thereof, an emergency-valve seated in the supplemental-casing section underneath the emergency-piston, opening toward the train-pipe and protected from the pressure which has been admitted to the brake-cylinder, for controlling communication between said supplemental-casing section and a discharge-passage, a closed wall, permanently connected with the supplemental-casing section, between the emergency-piston and the emergency-valve, a stem working through an opening in said wall by which opening movement is imparted to the emergency-valve by the emergency-piston, means for preventing the air from passing through said opening around said stem, and a passage controlled by the triple valve and connecting its chamber with the emergency-piston chamber, which is independent of the service-passage from reservoir to cylinder.

2. In an automatic fluid-pressure brake system, the combination of a triple valve, an emergency-valve, a check-valve opened by train-pipe pressure on the opening of the emergency-valve and a valve, independent of said check-valve but operated thereby, for controlling a vent-port from the train-pipe to the atmosphere.

608,081. RAILWAY SIGNAL SYSTEM. GEORGE T. CUNNINGHAM, Boston, Mass. Filed Nov. 13, 1897. Serial No. 658,366. (No model.)



Claim.—1. The combination with the track-rails divided into sections, of a conductor divided into twice as many sections as there are in each rail and a connection from the respective conductor-sections to the rail-sections on opposite sides of the track alternately.

2. The combination with the track-rails divided into sections, of a conductor divided into twice as many sections as there are in each rail, and a connection from each conductor-section extending along the track to a rail-section in advance of the conductor-section, the several conductor-sections being connected in succession to rail-sections on opposite sides of the track alternately.

3. In a railway signal system the combination of the two track-rails divided at alternate points into insulated sections and a parallel conductor divided into sections shorter than the rail-sections, so that each rail-section may have a conductor-section opposite to it, the said conductor-sections being each connected to a rail-section adjacent to the one to which it lies opposite.

4. In a railway signal system, the combination of the two track-rails divided into sections, and a double parallel conductor divided into sections shorter than the rail-sections, each pair of conductor-sections being connected, one to a rail-section in the rear of, and the other to a rail-section in advance of the rail-section to which it lies opposite.

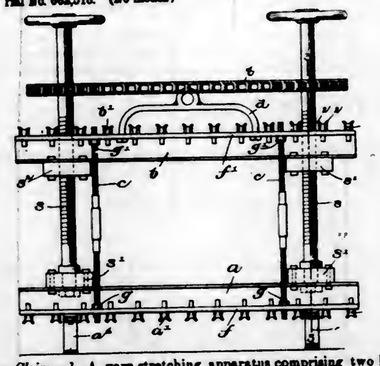
5. In a railway signal system the combination of the two track-rails divided into insulated sections at alternate points and a double parallel conductor divided into sections shorter than the rail-sections, so that each conductor-section may lie opposite a rail-section, the two conductors in each section being connected, one to a rail-section in the rear of, and the other to a rail-section in advance of the one to which the conductor-section lies opposite.

608,082. COVER FOR CHAMBERS, COMMODES, &c. PHILIP H. DEIS, Washington, D. C. Filed Oct. 27, 1897. Serial No. 656,550. (No model.)

Claim.—A cover for chambers, commodes, &c., consisting of a basin, said basin having at its lowest point at integral thickened portion, and a substantially U-shaped duct located in said thickened portion and passing through said basin; one end of said duct being in a lower plane than the other end, both ends of the duct being in a higher plane than an intermediate section of the duct, the lower end of said duct terminating up under the lower side of the basin, said duct forming a liquid seal.



608,083. APPARATUS FOR STRETCHING YARN WHILE MERCERIZING. JOHN R. ECOB, Lawrence, Mass. Filed Dec. 20, 1897. Serial No. 662,513. (No model.)



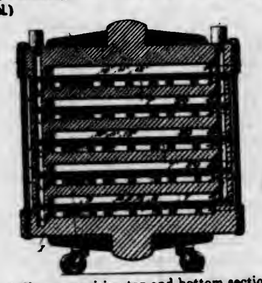
Claim.—1. A yarn-stretching apparatus comprising two heads or frames, each having a series of arms, means for adjusting one frame toward or from the other, and adjustable supports between the outer portions of the two series of arms.

2. A yarn-stretching apparatus comprising two heads or frames, each having a series of arms, means for adjusting one frame toward or from the other, and adjustable supporting-frames bearing on the outer portions of said arms.

3. A yarn-stretching apparatus comprising two heads or frames, each having a series of arms, screw-shafts journaled in bearings on one frame and engaged with nuts on the other frame, and shaft-rotating means acting simultaneously on said screw-shafts.

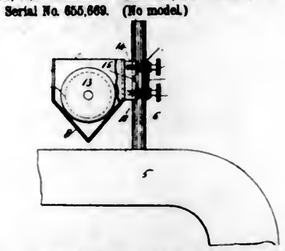
4. A yarn-stretching apparatus comprising two heads or frames, each having a series of journaled arms and each arm having a plurality of yarn-supporting edges, means for adjusting the movable frame toward and from the other, and means for turning the arms in their bearings to move the yarn relatively to said bearing edges.

608,084. FILTER FOR MALT BEVERAGES. WILLIAM H. PERRY, Madelin, N. Y., assignor to the Plattsburgh Filter and Process Company, Plattsburg, N. Y. Filed Nov. 1, 1897. Serial No. 657,023. (No model.)



Claim.—A filter comprising top and bottom sections and a series of intermediate sections having communicating inlet and outlet passages, a foraminous diaphragm interposed between said sections, and filtering-media supported by said diaphragms and consisting of sections of filtering material of different degrees of porosity, substantially as set forth.

608,035. SPOOL-HOLDER ATTACHMENT FOR SEWING-MACHINES, &c. HARRIET C. FIELDING, New York, N. Y. Filed Oct. 19, 1897. Serial No. 655,869. (No model.)



Claim.—1. A spool-holder consisting of a receptacle having an open top, parallel end, and side walls, and a bottom comprising two angular pieces forming continuations of the sides, and a slot in one of the sides, substantially as set forth.

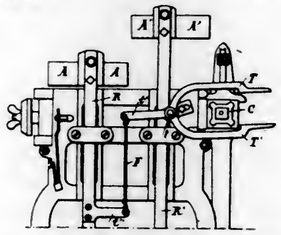
2. A spool-holder consisting of a receptacle having an open top, a slot in one side wall, a block on the other side wall provided with a plurality of angularly-arranged grooves, set-screws upon said block, a plate movably connected with said set-screws, and springs between said plate and block, substantially as set forth.

608,036. HAIR-CURLER. MANFRED FISCHBARER, Philadelphia, Pa. Filed Nov. 4, 1897. Serial No. 657,325. (No model.)



Claim.—Outer and inner limbed resilient members, a cross-bar joining the limbs of the outer member and a coil joining the limbs of the inner member and mounted on said cross-bar, the parts named being combined forming an improvement in curlers.

608,037. JACQUARD-MACHINE FOR LOOMS. HENRY GLORIEUX, Roubaix, France. Filed Nov. 20, 1897. Serial No. 659,297. (No model.) Patented in France July 9, 1897, No. 268,604, and in England Sept. 23, 1897, No. 22,192.



Claim.—1. In a double-lift jacquard-machine, the combination with the griff-lifters, of a pattern-cylinder, means controlled by the pattern-cylinder and operated by the griffs for lifting the warp-threads, a cylinder-fork, and means for connecting said fork with one of the griff-lifters, whereby each card by two successive beats of the cylinder controls the lifting of the warp-threads for interweaving two consecutive picks of figuring-weft, substantially as described.

2. In a jacquard-machine having two lifters, the combination with the cylinder, of a cylinder-fork provided with a tail, and connections between said tail and one of the lifters adapted to operate upon said tail and fork upon a movement of the lifter in one direction only, substantially as described.

3. In a jacquard-machine, having two lifters, the combination with the cylinder, of a cylinder-fork provided with a tail, and flexible connections between said tail and one of the lifters, substantially as described.

4. In a jacquard-machine, the combination with two griff-lifters R R', of a cylinder C, a double hook or cylinder-fork T T', provided with a tail t', a nib t'' on one of said lifters, and a cord F connecting said tail and nib, substantially as described.

608,038. SHUTTLE-BINDER SPRING. ALBERT A. GORDON, Worcester, Mass., assignor to the Crompton & Knowles Loom Works, same place. Filed Jan. 4, 1897. Serial No. 617,868. (No model.)

Claim.—1. The combination, with a shuttle-box, of a shuttle-box-binder spring composed of wire, the said spring presenting two branches, and means to confine said spring on the shuttle-box, substantially as described.



2. A shuttle box-binder spring composed of two branches and a head uniting said branches at one end, substantially as described.

3. In a shuttle-box, a shuttle-binder spring composed of two branches, one end of said spring acting on the binder while the opposite end thereof is retained by a holder, combined with a holder having lips, substantially as described.

608,089. SCRAPER FOR SIEVES. WALTER GRISCOM, Philadelphia, Pa. Filed Nov. 5, 1897. Serial No. 657,474. (No model.)

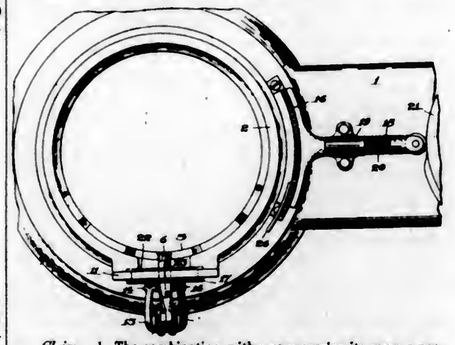


Claim.—1. The combination with a sieve, of a wire helix arranged on the inner surface of the sieve, the ends of said helix being in frictional contact with opposite portions of the sieve-frame, substantially as and for the purpose set forth.

2. An implement for the purpose described, comprising a helix of wire, and a flexible rod secured to said helix in longitudinal relation therewith, substantially as set forth.

3. The combination with a sieve, of a helix of wire, having a flattened side, the arrangement of the parts being such that the flattened side of said helix is caused to scrape the surface of said sieve, by the movement of the sieve, substantially as set forth.

608,040. KNITTING-MACHINE. ANDREW V. GROUPE, Moore, Pa., assignor to James L. Branson, Philadelphia, Pa. Filed Dec. 21, 1897. Serial No. 662,810. (No model.)



Claim.—1. The combination, with a cam-carrier, its cams, a needle-cylinder and its needles, of a single needle-picking device provided with oppositely-disposed needle-engaging portions, and diverging guides with which the said device coacts during the forward and reverse strokes of the carrier.

2. The combination, with a cam-carrier, its cams, a needle-cylinder and its needles, of a single needle-picking device provided with oppositely-disposed needle-engaging portions, and a movable support therefor provided with diverging guides with which the said device coacts, during the forward and reverse strokes of the carrier.

3. The combination, with a cam-carrier, its cams, a needle-cylinder and its needles, of a single needle-picking device provided with oppositely-disposed needle-engaging portions, and a rotary supporting-head therefor provided with diverging openings which afford guides for said device in the forward and reverse strokes of the carrier.

4. The combination, with the cam-carrier and its knitting-cams, including lateral stitch-cams, of a single needle-picking device located intermediate said stitch-cams, and invertible means to guide said device in upwardly-diverging paths to lift the needles, and in downwardly-diverging paths to depress the needles.

5. The combination, with a cam-carrier and its knitting-cams, including lateral stitch-cams, of an invertible supporting and guiding head, and a single needle-picking device thereon located intermediate said stitch-cams and adapted, when the head is in one position, to move two series of needles out of action in alternate succession, and when in another position to move said needles into action in alternate succession.

6. The combination, with a cam-carrier and its cams, of a needle-picker with oppositely-disposed needle-engaging portions, means for guiding said picker in diverging paths, and means for maintaining said picker normally at the junction of said paths.

7. The combination, with a cam-carrier and its cams, of a needle-picker, with oppositely-disposed needle-engaging portions, means for guiding said picker in diverging paths, means for maintaining said picker normally at the junction of said paths, and a movable support for said picker.

8. The combination, with a cam-carrier and its cams, of a needle-picker, with oppositely-disposed needle-engaging portions, means for guiding said picker in two downwardly-diverging paths and in two upwardly-diverging paths, and means whereby the picker may be held yieldingly at the junctions of the respective diverging paths at predetermined intervals.

9. The combination, with a cam-carrier and its cams, of a rotary head, a needle-picker thereon, with oppositely-disposed needle-engaging portions, means for guiding said picker in two diverging paths, and means for maintaining said picker normally at the junction of said paths.

10. The combination, with a cam-carrier and its cams, of a rotary head, a needle-picker thereon, with oppositely-disposed needle-engaging portions, means for guiding said picker in diverging paths, means for maintaining said picker normally at the junction of said paths, and means for rotating said head.

11. The combination, with a cam-carrier and its cams, including a two-part top cam, of a needle-picker, invertible means for guiding said picker in diverging paths intermediate the parts of said top cam, and means to maintain said picker at the junction of said paths.

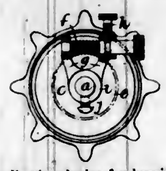
12. The combination, with a cam-carrier and its cams, of a lever jointed exteriorly of the carrier, provided with oppositely-disposed needle-engaging portions, and extended into said carrier, means to guide said lever in diverging paths, and means to maintain said lever at the junction of said paths.

13. The combination, with a cam-carrier and its cams, of a lever extending into said carrier and having a ball-and-socket connection exteriorly thereof so as to swing in diverging paths, means to guide said lever, and means to maintain said lever at the junction of said paths.

14. The combination, with a cam-carrier and its cams, of a rotary head, a needle-picking lever jointed thereon, provided with oppositely-disposed needle-engaging portions, and extended into the carrier, means to guide said lever in diverging paths, and means to maintain said lever at the junction of said paths.

15. The combination, with a cam-carrier and its cams, of a rotary head, means for rotating the same, a needle-picking lever jointed on said head, provided with oppositely-disposed needle-engaging portions, and extended into the carrier, means to guide said lever in diverging paths, and means to maintain said lever at the junction of said paths.

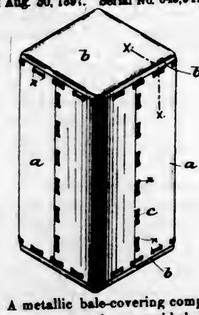
608,041. ADJUSTING DEVICE FOR BALL-BEARINGS. WILLIAM G. HARRIS, Newton Abbot, England, assignor of one-half to Frederick Fortwes, London, England. Filed July 29, 1897. Serial No. 646,266. (No model.)



Claim.—1. An adjusting device for bearings comprising among its members a cone provided with peripheral teeth and an internally-threaded shaft-engaging aperture, a bracket provided with a shaft-engaging aperture, a set-screw and a pair of arms, and a worm supported in said arms in position to engage the teeth of said worm-wheel, substantially as described.

2. An adjusting device for bearings comprising among its members, a cone provided with peripheral teeth and a threaded shaft-engaging aperture, a bracket having a shaft-engaging aperture, a set-screw for securing the bracket to the shaft and a pair of arms provided with apertures therein, a worm-shaft journaled in said arms, and provided with an annular recess and a set-screw in one of said arms engaging said recess to prevent the longitudinal movement of said shaft, substantially as described.

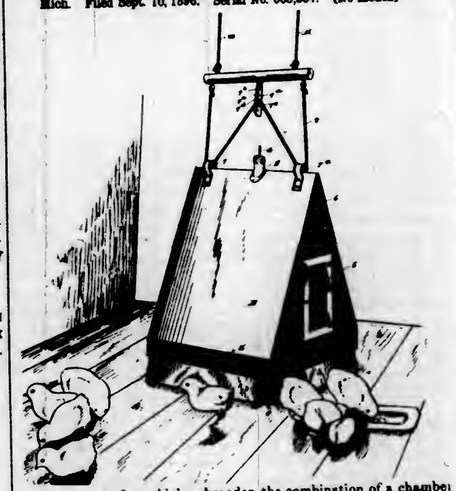
608,042. METALLIC BALE-COVERING. MARK A. HEATH, Providence, R. I., assignor to the American Cotton-Bale Company, same place. Filed Aug. 30, 1897. Serial No. 649,941. (No model.)



Claim.—1. A metallic bale-covering composed of side and end sections having overlapping edges provided with holes registering with each other, metallic lacing-ribbons interlaced through said holes for securing the said sections together, and having one or both of the end sections provided with a guide-flange arranged at the rear of the said ribbon-receiving holes, substantially as hereinbefore described and for the purpose set forth.

2. In a metallic bale-covering, the combination with the side sections having suitably-arranged lacing-holes a formed therein, of an end section or plate having apertured vertical sides arranged with respect to said side sections, the lacing-holes in the side and end sections registering with one another, lacing-ribbons adapted to be inserted in said holes for securing the several sections together, and an inner guide-flange b^4 formed by bending and folding rearwardly the lower portion of the said vertical sides of the end section, or sections, substantially as set forth.

608,043. CHICKEN-BROODER. JOHN H. HERBENER, Northville, Mich. Filed Sept. 10, 1896. Serial No. 605,357. (No model.)



Claim.—1. In a chicken-brooder, the combination of a chamber containing a heat generator and a heat-radiator, a suspension-cord, supports from which the suspension-cord hangs and which engage the cord and from which the chamber is otherwise entirely disengaged, whereby the chamber is adapted to swing freely and to yield in any direction and may be swung entirely to one side leaving the floor of the brooding-chamber uncovered, substantially as described.

2. In a chicken-brooder the combination of a chamber containing a radiating water-tank and means for heating the water therein, suspension-cords arranged to hold the chamber and allow it to swing clear from the floor, a support for the suspension-cord, curtains dropping from the radiating water-tank and inclosing a brooding-chamber beneath the same, and a guarding-partition of cloth hanging free from the radiating-wall beneath the bottom of said tank and adapted to prevent actual contact of the chickens with the bottom of said tank, substantially as described.

3. In combination with a brooding-chamber containing a heat-

radiator and means for heating the same, suspension-cords whereby said radiator may be held from above, and arranged to swing freely, a cross bar held by the main suspension-cords, a second suspension-cord engaging the cross-bar and passing through loops in the brooding-case, a take-up catch provided with a number of hooks either of which is adapted to engage a bight of the second suspension-cord, whereby the elevation of the brooder may be adjusted, substantially as described.

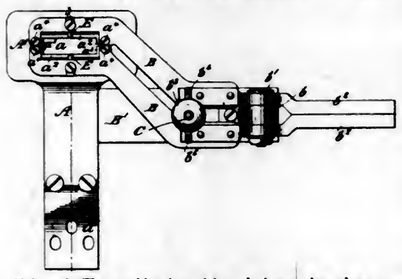
4. In a chicken-brooder, the combination of a radiator, flexible curtains depending from the sides thereof, a guard below the radiator, and flexible suspending means whereby the radiator is swung over a floor from an overhead support and is free to move in all directions.

608,044. **ADHESIVE COMPOUND AND PROCESS OF PRODUCING SAME.** MAX HIRSCHMANN, Munich, Germany. Filed May 24, 1897. Serial No. 637,985. (No specimens.)

Claim.—1. A composition for use in printing on metal leaf consisting of the residue after ignition of a mixture of zinc-white, linseed-oil, gilders' varnish or its described equivalent, yellow wax, asphalt and turpentine, substantially as set forth.

2. The process of making a composition for use in metal-leaf printing, consisting in mixing zinc-white, linseed-oil, gilders' varnish or its described equivalent, yellow wax, asphalt and turpentine and igniting the mixture.

608,045. **CLOTH-CLAMP FOR SEWING-MACHINES.** JAMES T. HOGAN, Jersey City, N. J., assignor to the National Machine Company, Troy, N. Y. Filed Apr. 15, 1895. Serial No. 545,694. (No model.)



Claim.—1. The combination with a cloth-carrying plate, a sectional support fulcrumed to said plate, a presser-foot formed in sections, a suitable connection between said sections and the fulcrumed support whereby they can swing longitudinally to one side of the vertical plane of the connection, means for causing them to be held toward each other, and means in connection with the fulcrumed support for causing the presser-foot to bear upon the cloth and thereby move the sections of the presser-foot away from each other to spread the cloth, substantially as specified.

2. The combination with a cloth-carrying plate, of a presser-foot made in sections, levers pivoted on said plate, a hinged connection between said levers and sections so that the sections can swing downwardly on their pivots in a longitudinal plane on one side of the vertical plane of the hinged connection when pressed upon the cloth, a means for simultaneously causing the levers and foot-sections to press upon the goods for spreading the goods, substantially as described.

3. The combination with a cloth-carrying plate, of a presser-foot made in sections, each of which has a hinged connection with the cloth-carrying plate so that they may spread the goods apart, independent supports for said sections pivoted at a point intermediate their length to permit of different thicknesses of goods under each of said foot-sections, a pressure device operating to exert an equal pressure on said supports for simultaneously causing said foot-sections to press upon and spread the goods operated upon, substantially as specified.

608,046. **DOUBLE-BARREL SINGLE-TRIGGER FIREARM.** HENRY W. HOLLAND and THOMAS WOODWARD, London, England; said Woodward assignor to said Holland. Filed Oct. 16, 1897. Serial No. 655,423. (No model.)

Claim.—1. The combination of a single trigger, two sears, a freely-moving slide unretarded while moving from its position of firing the first barrel to its position while firing the second barrel, means for holding the slide in one extreme position when the gun is cocked and means for moving the slide after the first pull of the trigger and continuing this movement until after the involuntary pull on the trigger which occurs immediately after the first pull and before the second pull which fires the second barrel.

2. The combination of a single trigger, two sears, a slide interposed between the trigger and the sears, a moving part of the lock and a connection interposed between such moving part of the lock and the slide, which multiplies the motion and gives to the slide an increased movement relatively to such moving part of the lock, and means for holding the slide in one extreme position when the gun is cocked, the arrangement being such that after the first pull of the trigger the slide is moved freely forward and continues to move until after the involuntary pull of the trigger, which occurs immediately after the first pull and before the second pull which fires the second barrel.



3. The combination of a single trigger, two sears, a slide interposed between the trigger and the sears operating one sear when in one of its extreme positions and the other sear when in the other, means for holding the slide in one extreme position when the gun is cocked, an arm pivoted at the top of the lock and engaging with the slide and a spring acting on the arm.

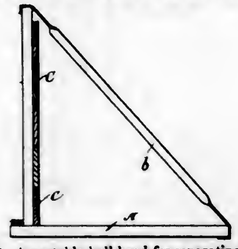
4. The combination of a single trigger, two sears, a slide interposed between the trigger and the sears operating one sear when in one of its extreme positions and the other sear when in the other, means for holding the slide in one extreme position when the gun is cocked, an arm pivoted at the top of the lock and engaging with the slide, a spring acting on the arm, and a safety-bolt adapted to move above the trigger and restrain its movement and carry the arm and slide to one extreme position.

5. The combination of a single trigger, two sears, a slide interposed between the trigger and the sears operating one sear when in one of its extreme positions and the other sear when in the other, a lug on the slide, a blocking-sear engaging with the lug and holding the slide in one extreme position when the gun is cocked, and means tending to carry the slide to the other extreme position, the distance between the two extreme positions being such that the slide cannot pass from the one to the other in the interval between the first pull and the involuntary pull of the trigger.

6. The combination of a single trigger, two sears, a slide interposed between the trigger and the sears operating one sear when in one of its extreme positions and the other sear when in the other, a lug on the slide, a blocking-sear engaging with the lug and holding the slide in one extreme position when the gun is cocked, an arm pivoted at the top of the lock and engaging with the slide and a spring acting on the arm.

7. The combination of a single trigger, two sears, a slide interposed between the trigger and the sears operating one sear when in one of its extreme positions and the other sear when in the other, a lug on the slide, a blocking-sear engaging with the lug and holding the slide in one extreme position when the gun is cocked, an arm pivoted at the top of the lock and engaging with the slide, a spring acting on the arm, and a safety-bolt adapted to move above the trigger and restrain its movement and carry the arm and slide to one extreme position.

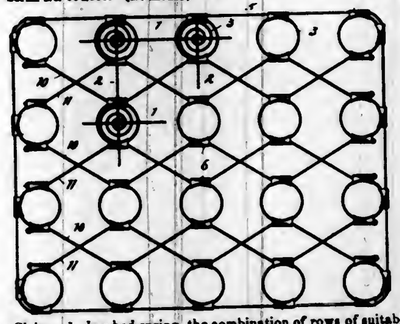
608,047. **BULKHEAD FOR SHIPS, &c.** MARJORY HUNTER, Edinburgh, Scotland, assignor to Robert Russell Cockburn, Leith, Scotland. Filed Nov. 19, 1897. Serial No. 659,068. (No model.)



Claim.—1. A portable bulkhead for separating grain and other material in warehouses, consisting of horizontal sleepers, provided with chocks at one end, vertical stands resting on said horizontal sleepers and against said chocks, tie-bars having bent ends engaging over the ends of the sleepers and vertical standards, and boarding placed against the vertical standards.

2. A portable bulkhead comprising horizontal sleepers provided with chocks and roughened metal sole-pieces, vertical standards resting upon said sleepers and against said chocks, boarding placed against said vertical standards, and the metal tie-bars having bent ends engaging over the ends of the sleepers and vertical standards.

608,048. **SPRING-BED WORK.** JOHN H. JACKSON, Newburg, N.Y., assignor to Staples & Hanford, same place. Filed Dec. 30, 1897. Serial No. 664,695. (No model.)

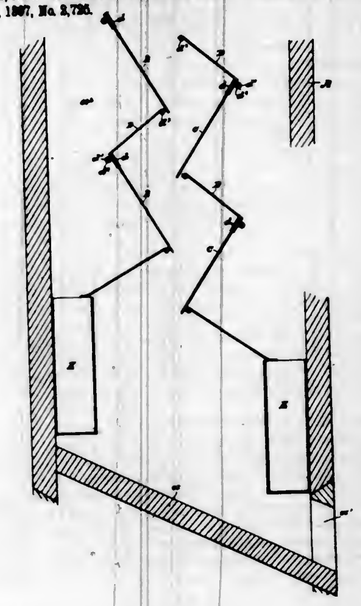


Claim.—1. In a bed-spring, the combination of rows of suitably-supported springs, zigzag connecting and bracing wires connecting the alternate springs of adjacent rows and extending longitudinally through the spring, said zigzag wires having short straight portions contiguous with the top coils of the springs to which they are connected, and sheet-metal clips connecting the short straight portions of the zigzag wires with the contiguous portions of the top coils of the springs, each of said clips having a straight wall engaging the straight portion of the connecting-wire and a curved wall engaging the top coil of the spring, substantially as set forth.

2. A sheet-metal clip for spring-wire work having a straight edge 6^a and a curved edge 6^b with integral flanges or tongues which are adapted to be bent or folded around the parts to be connected, substantially as set forth.

3. A sheet-metal clip for spring-wire work having a straight edge 6^a, a straight flange 6^c and a curved edge 6^b and tongues 6^d, substantially as and for the purpose set forth.

608,049. **SEPARATOR.** ROBERT W. JESUP, San Francisco, Cal., assignor of one-half to Fairfax H. Wheelan, same place. Filed Aug. 26, 1897. Serial No. 649,581. (No model.) Patented in England Feb. 2, 1897, No. 2,736.



Claim.—1. In a separator for grains and small seeds, the opposing series of screens and stop-plates, in combination with the exterior box or casing inclosing said series in such manner as to leave a channel on each side thereof, to receive the material from the stop-plates, said box or casing having a continuous passage at the ends of and separated from said screens and stop-plates, and chute-boxes adapted to be set at different heights within the side channels in position to receive the material from the stop-plates at required points, said boxes communicating with and adapted to deliver said material to the continuous passage.

2. In a separator for grains and small seeds, the combination of a screen, composed of a series of parallel, spaced needles of a springy and pliant character, said needles being fixed at one end in a common head, and thence extending, free and independent, to the other end, means in front of the screen for directing the material to said screen, a stop-plate behind the screen for keeping the separated materials apart, and a hinge connection for said screen whereby it may be swung inwardly, to permit access to the parts in front of it.

3. In a separator for grains and small seeds, the combination of a series of screens, composed of parallel spaced needles of a springy and pliant character, said needles being fixed at one end in a common head, and thence extending, free and independent, to the other end, means in front of the screens for directing the material to them, stop-plates connected with the screen-heads and traversing the spaces between adjacent screens and adapted to keep apart the separated materials, and a hinge connection for the screen-heads, whereby the screens may be swung inwardly, to permit access to the parts in front of it.

4. In a separator for grains and small seeds, the combination of a series of screens, composed of parallel spaced needles of a springy and pliant character, said needles being fixed at one end in a common head, and thence extending, free and independent to the other end, a hinge connection for said screen-heads, whereby the screens may be swung inwardly, to permit access to the parts in front of them, means in front of the screens for directing the material to them, and stop-plates connected with the screen-heads so as to swing therewith, said plates traversing the spaces between adjacent screens and adapted to keep apart the separated materials.

5. In a separator for grains and small seeds, the combination of a series of screens, composed of parallel spaced needles of a springy and pliant character, said needles being fixed at one end in a common head, and thence extending, free and independent to the other end, a hinge connection for said screen-heads, whereby the screens may be swung inwardly, to permit access to the parts in front of them, means in front of the screens for directing the material to them, stop-plates connected with the screen-heads so as to swing therewith, said plates traversing the spaces between adjacent screens and adapted to keep apart the separated materials, and fixed stops against which the stop-plates come in contact, to limit the swinging of the screens and to hold them at the proper angle.

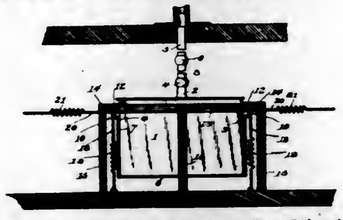
6. In a separator for grains and small seeds, the combination of a double or opposing series of screens each composed of the pliant and springy needles fixed at one end in a common head, said screens being relatively arranged to direct the material back and forth between them, a hinge connection for each screen-head, adapting its screen to be pushed inwardly, to permit access to the opposing screen, and the stop-plates connected with the screen-heads so as to swing therewith.

7. In a separator for grains and small seeds, the combination of a double or opposing series of screens each composed of the pliant and springy needles fixed at one end in a common head, said screens being relatively arranged, to direct the material back and forth between them, a hinge connection for each screen-head, adapting its screen to be pushed inwardly, to permit access to the opposing screen, the stop-plates connected with the screen-heads so as to swing therewith, and fixed stops for the stop-plates, to hold the screens in proper position.

8. In a separator for grains and small seeds, the combination of an exterior casing or box, and a screen composed of parallel, spaced needles of a pliant and springy character, said needles being fixed at one end to a common head and thence extending, free and independent to the other end, said screen being mounted in the exterior casing or box with its end needles in close proximity to the walls thereof, said end needles being stiffened, to render them substantially non-vibrative under the contact and flow of the material.

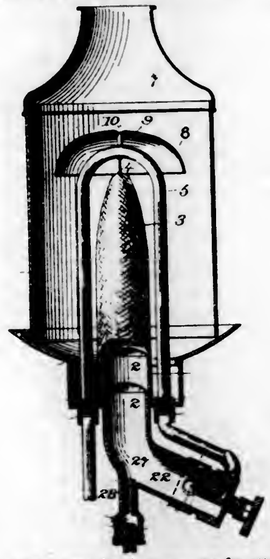
9. In a separator for grains and small seeds, the combination of an exterior casing or box, a series of screens each composed of parallel, spaced needles of a springy and pliant character fixed at one end in a common head and thence extending free and independent to the other end, said screens having their end needles lying in close proximity to the walls of the exterior casing or box, said end needles being stiffened to render them substantially non-vibrative under the contact and flow of the material, and the stop-plates traversing the spaces between the adjacent screens, and adapted to keep apart the separated materials.

608,050. SHIP'S GALLEY. FRANK JOHNSON, Seattle, Wash. Filed Feb. 28, 1898. Serial No. 672,027. (No model.)



Claim.—The combination with a ship's galley, of the pipe-sections connected by a ball-joint, the stirrup 7 formed with the angular brackets 10, 10, the yoke 13 pivotally connected at its ends to said brackets, the fixed standards 15, 16, the trunnions 17, 17, connecting said yoke and standards and the spiral springs 19, 21, connected at right angles to said brackets 10, 10, and having their free ends fixed to the ship's structure, substantially as shown and described.

608,051. VAPOR-BURNING APPARATUS. ARTHUR KITSON, Philadelphia, Pa., assignor to the Kitson Hydrocarbon Heating and Incandescent Lighting Company, of West Virginia. Filed Aug. 21, 1897. Serial No. 649,008. (No model.)



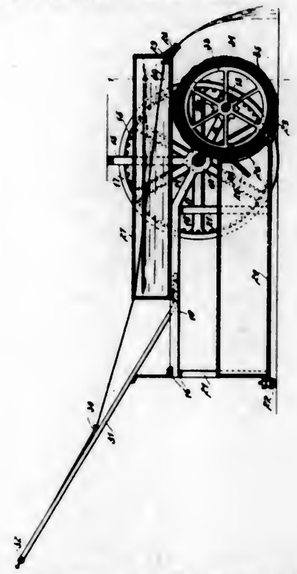
Claim.—1. In a vapor-burning apparatus for attachment to a gas-bracket, the combination of the vapor-burner, the vaporizing-tube and connections, the gas-tip having a passage-way admitting gas beneath said burner, and the surrounding tube having air-inlets admitting air to mix with said gas, substantially as described.

2. A vapor-burning attachment for gas-fixtures, consisting of the combination of a vaporizing-tube supported over said fixture, a mixing-tube extending from a point in front of the end of the vaporizing-tube to the burner, the burner mounted on the gas-fixture, and a passage-way discharging gas into said burner, substantially as described.

3. The combination of the vapor-burner, the gas-bracket on which it is supported, and with which it is in communication, the vaporizing-tube, the short mixing-tube connected to the base of the burner, the nozzle and needle-valve in said tube and connections from the vaporizing-tube to the nozzle, substantially as described.

4. The combination of the vapor-burner, the gas-bracket on which it is supported and with which it is in communication, the vaporizing-tube, the short mixing-tube connected to the base of the burner, and having air-inlets, the nozzle and needle-valve in said tube, and connections from the vaporizing-tube to the nozzle, together with adjustable means for controlling the air-inlets to said mixing-tube, substantially as described.

608,052. SCRUBBING-MACHINE. HATTIE E. LANE, Colfax, Ind. Filed Sept. 9, 1897. Serial No. 651,096. (No model.)



Claim.—1. A scrubbing-machine, comprising a frame, wheels mounted in the frame, a rotary brush also mounted in the frame in front of the wheels and operated from one of the said wheels, a liquid-receptacle on the frame above the brush and extending forwardly beyond the same and provided with an outlet at said forwardly-extending end, means for controlling the outlet, and a receiver suspended from the rear portion of the frame and having its forward end concaved and provided with a lip to engage the floor, said concaved end being apertured and contacting with the brush, substantially as described.

2. A scrubbing-machine, comprising a frame having its side bars at their forward ends inclined downwardly, a brush mounted in the lower inclined ends of the side bars, wheels also mounted in the inclined portion of the side bars, means for operating the brush from one of the said wheels, a liquid-receptacle on the upper part of the frame above the brush and extending forwardly beyond the same and provided with an outlet at said forwardly-extending end, means for controlling said outlet, and a receiver in the lower part of the frame in rear of the brush, and having its forward end concave and contacting with the brush, said concave end being provided with an opening and having its lower portion extended to form a lip, substantially as described.

3. A scrubbing-machine, consisting of a frame having its side bars at their forward ends inclined downwardly, a handle secured to the rear end of the frame, wheels mounted in the inclined ends of the side bars, one of said wheels being provided with internal teeth, a brush mounted in the inclined ends of the side bars in front of the wheels and provided with alternately-arranged brushes and elastic strips, a pinion on the shaft of the brush and meshing with the teeth of the wheel, a receptacle on the frame and having its forward end projecting beyond the brush and provided with a discharge-nozzle, a spring-pressed valve for controlling said nozzle, means connected with the valve for operating it from the handle, a receiver in rear of the brush and having its forward end concaved and provided with an opening therein, the said concaved end contacting with the brush and having its lower portion extended to form a lip and wheels mounted on the rear end of the receiver, substantially as herein shown and described.

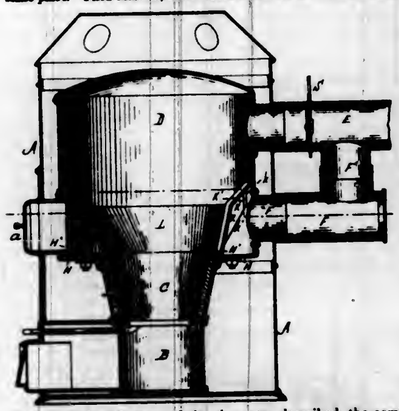
608,053. NURSING-BOTTLE. LOUIS T. LAPAGE, Utica, N. Y., assignor of two-thirds to Edwin D. Gray and William R. Donalty, same place. Filed Aug. 14, 1897. Serial No. 648,286. (No model.)

Claim.—1. A bottle-holder, embodying a wire frame bent to form a lower loop for embracing the base of the bottle, an upper pair of oppositely-located spring-clasps for engaging the bottle-neck on opposite sides, and offsets provided for the reception of a strap wherewith the bottle and frame may be secured to a given object, substantially as described.

2. A bottle-holder, composed of a piece of wire looped and bent to form a lower receptacle for the base of a bottle and comprising upwardly-extending portions which pass along the opposite sides of the bottle and upward to the neck thereof, the wire being bent to form a semicircular portion which extends more than half-way around the neck of the bottle and forms oppositely-located spring-clasps for engagement with the neck, the upwardly-extending portions of the frame at the sides of the bottle being offset to form spaces for the reception of an attachiog-strap, substantially as described.



608,054. FURNACE FOR HEATING BUILDINGS. FRED P. LEONARD, Taunton, Mass., assignor to the Dighton Furnace Company, same place. Filed Mar. 12, 1898. Serial No. 673,619. (No model.)

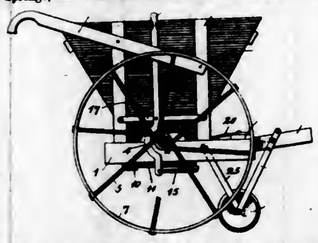


Claim.—1. In a furnace of the character described, the combination with the fire-pot, the vertical walls of the radiator or dome, and the bottom or shoulder H extending horizontally from and around the fire-pot at substantially the upper edge thereof; of the curved removable plates L extending diagonally from the upper surface of said shoulder near the inner edge thereof to and against the inner surface of said walls and resting on the former and against the latter above and around the fire pot, said plates being of substantially the shape shown and described and constituting coal-guards and in connection with said shoulder and walls constituting triangular curved flues above the fire-pot and connecting with the indirect draft, substantially as described.

2. In a furnace of the character described, the combination with the bottom or shoulder H provided at its inner edge with the upturned lip H', and the vertical walls of the radiator or dome; of the curved plates L supported by said shoulder and with their lower edges resting against said lip and their upper edges against the inner surface of the walls of the radiator, said plates extending from points on opposite sides of the feed-door to points on opposite sides of the inner end of the flue constituting the indirect draft; and a structure providing a passage from the rear ends of the said plates to said indirect draft, substantially as set forth.

3. In a furnace of the character described, the combination with the bottom or shoulder H provided at its inner edge with the upturned lip H', and the vertical walls of the radiator or dome; of the curved plates L supported by said shoulder and with their lower edges resting against said lip and their upper edges against the inner surface of the walls of the radiator, said plates extending from points on opposite sides of the feed-door to points on opposite sides of the inner end of the flue constituting the indirect draft; and the intermediate flue consisting of the wall K resting on said shoulder and against the lip, the wall K' extending from the wall K to the inner surface of the dome or radiator above the entrance of the indirect draft F, and the side walls K'' formed with the edges *k* which rest against the inner surface of the radiator on opposite sides of the opening to the indirect draft, and the edges *k'* corresponding and coinciding with the inner ends of the curved plates, substantially as described.

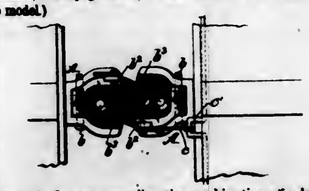
608,055. FERTILIZER-DISTRIBUTER. JOHN M. LINDSEY, Crystal Springs, Ga. Filed Mar. 10, 1897. Serial No. 626,717. (No model.)



Claim.—1. In a wheel for fertilizer-distributers or walking-planters, the combination with a hollow axle having a circumferential series of holes, of the spokes bent at substantially right angles and having inwardly-projecting lugs at the bends and threaded end portions, a metal rim having openings through which the threaded portions of the spokes pass, and nuts turned on the ends of the spokes to tighten the wheel and present traction-points, substantially as shown and described.

2. In a fertilizer-distributer, the combination with the wheel-frame having a hopper mounted thereon and revoluble feeding-fingers or agitators in the bottom of said hopper, levers pivoted to the lower end of the hopper at opposite sides thereon, plates pivoted to the levers on opposite sides of their fulcrums, together with a connecting-rod attached to the projectiug end of one of the levers and an operating-lever pivoted to a spring-bar and bearing at its upper end at the inner side of the handle, in order that the frictional connection of the lever with the handle will hold the plates which form the bottom of the hopper in adjusted position, substantially as shown and for the purpose set forth.

608,056. CAR-COUPLING. HERMENEGILDE LOISELLE and AIMÉ LOISELLE, Winnipeg, Canada. Filed Mar. 7, 1898. Serial No. 672,932. (No model.)



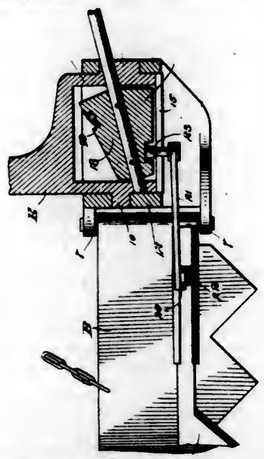
Claim.—1. In a car-coupling the combination of a draw-bar having a hollow coupling-head, open at the top and front end and having a drainage-hole in the bottom, and two coupling-jaws hinged at their rear ends upon horizontal axes and having their front ends made with tapered noses each provided on its inner grappling-face with a central recess having a lip at top and bottom of the same, and also a lug partly closing one end of the recess and having a notch above and below the lug substantially as and for the purpose described.

2. A car-coupling having a pair of jaws pivoted on horizontal axes and having tapered noses and grappling-faces, each face having a central recess with a lip at top and bottom of the same, and a lug partly closing one end of the recess and having a notch at the top and bottom of the lug substantially as and for the purpose described.

608,057. MOWING-MACHINE. GEORGE A. LOVELEY, Groton, Mass. Filed Sept. 13, 1898. Serial No. 690,236. (No model.)

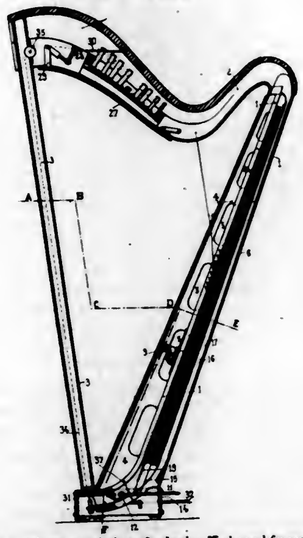
Claim.—1. The combination with the hinged cutting apparatus of a mowing-machine, for actuating the knife-bar thereof, of a peripherally-grooved, cone-shaped cam-wheel, and the inclined shaft to which said cone-wheel is secured, arranged in oblique relation in both a horizontal and a transverse plane, and journaled in a housing for said wheel, the inclination of said shaft being such as to bring its outer end carrying said cam-wheel down substantially in the plane of a pitman actuating the knife-bar with the forward face of the cone-wheel engaging the pitman in a plane parallel therewith, substantially as described.

2. The combination with the hinged cutting apparatus of a mowing-machine, of the obliquely or forwardly and downwardly extending cutter-actuating shaft, a cone-shaped wheel fast on said shaft provided with a peripheral cam-groove, a head or housing for said cam-wheel and in which the inclined shaft is journaled, and inclined guide-bars on the cam-housing for guiding one end of the pitman and holding it in engagement with the cam-wheel on the actuating-shaft, substantially as described.



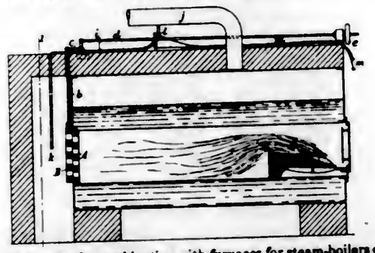
3. In a mowing-machine, the hinged cutting apparatus thereof, in combination with the inclined or obliquely-arranged cutter-actuating shaft, the interposed link or pitman and the grooved, cone-shaped cam-wheel for actuating said pitman, the housing for said cam-wheel, the supporting arm or head carrying said housing and to which the cutting apparatus is hinged, the inclined shaft being journaled at its outer end in said housing and passing through the trunnion at the inner side thereof and on which the shoe is supported, and inclined guides in said supporting arm or head for guiding one end of the pitman or link, substantially as described.

608,058. HARP. GUSTAVE F. LYON, Paris, France. Filed Mar. 27, 1897. Serial No. 629,581. (No model.)



Claim.—A harp, consisting of a duplex T-shaped frame portion 1, a wooden sounding-chamber 4 surrounding said frame portion and having a plurality of openings 5, a series of normally open shutters constructed to close said openings, a pedal and connections for operating the shutters, a hollow metallic top frame portion 2, a series of diapasons located in the said metallic top frame portion to tune the harp, a muffling-plate 27 lying under the said top frame portion, forming a part thereof and lying between the two rows of strings, and a pedal for operating the muffling-plate, substantially as and for the purposes described.

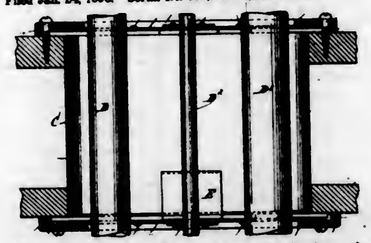
608,059. FURNACE FOR STEAM-BOILERS. WILLIAM S. MACKENZIE, Normanton, and WILLIAM CROSLAND, Milnthorpe, England. Filed Dec. 28, 1897. Serial No. 663,964. (No model.)



Claim.—1. In combination with furnaces for steam-boilers or for other purposes, perforated structures of brick or other material, one situated in the flue or passage by which the products of combustion pass from the furnace to the chimney and the other movably mounted and provided with means for operating it so that it can be caused to obstruct or partially obstruct or leave free the perforations in the first-named structure, whereby the said perforated structures are highly heated and serve to consume the smoke and unconsumed gases as the same pass therethrough, substantially as hereinbefore described.

2. In combination with furnaces for steam-boilers or for other purposes, perforated structures of brick or other material situated in the flue or passage by which the products of combustion pass from the furnace to the chimney and the other movably mounted and provided with means for operating it so that it can be caused to obstruct or partially obstruct or leave free the perforations in the first-named structure, and means for applying steam in proximity to the said structures, whereby the said perforated structures are highly heated and serve to consume the smoke and unconsumed gases as the same pass therethrough, substantially as hereinbefore described.

608,060. PIPE-COLLAR. EDWARD J. MALLEN, New York, N. Y. Filed Jan. 24, 1898. Serial No. 667,798. (No model.)



Claim.—1. In a pipe-collar, a skeleton body-plate, clamping-plates having pipe-receiving openings, each clamping-plate being provided with a cut extending from an edge to the pipe-receiving opening therein, and means, substantially as described, for holding the clamping-plates in the body-plate, as and for the purpose specified.

2. In a pipe-collar, the combination, with a body-plate, of clamping-plates adjustably held in the body-plate, the said body-plate being provided with pipe-receiving openings, and cuts extending from the said openings to the outer edge of the several plates, as and for the purpose specified.

3. The combination, with a body-plate constructed in detachable sections, the said sections being provided with lugs, of clamping-plates held to slide in the body-plate between the said plate and its lugs, the clamping-plates being of a spring material and provided with pipe-receiving openings, and cuts leading from the pipe-receiving openings of the plates to the outer edge thereof, for the purpose specified.

4. A pipe-collar consisting of a body-plate constructed in removable sections, and clamping-plates adjustably and removably held in the body-plate, the clamping-plates being of a spring material, and clamping-plates being mounted to slide in engagement with a central clamping-plate, each clamping plate having a pipe-receiving opening, and each clamping-plate being likewise divided at a portion in its surface, the division extending from the pipe-receiving openings to the outer edges of the said plates, as and for the purpose specified.

608,061. DRILL-CHUCK. WILLARD H. MERRELL, Oneida, N. Y. Filed Dec. 10, 1897. Serial No. 661,398. (No model.)



Claim.—A drill-chuck having a body portion provided with a transverse seat, two jaws slidable toward and from each other in said seat and meeting at the center of the chuck, the jaws having interlocking fingers arranged to hold the drill and the jaws respectively having right and left hand threads at one side, the opposite sides of the jaws being provided with shoulders, a screw-rod having enlarged end portions bearing against shoulders on the body, such end portions being oppositely threaded and engaged respectively with the threads on the jaws, whereby the jaws are advanced and retracted, and two screws working in opposite sides of the body and having heads respectively engaged with the shoulders on the jaws.

608,062. SPRING-BOTTOM FOR CHAIRS AND UPHOLSTERY. WILLIAM H. MILLER, New York, N. Y. Filed Mar. 19, 1898. Serial No. 674,459. (No model.)



Claim.—1. In a spring-seat, the combination with a wire-support having loops thereon, of a spring having its lower convolution made of varying diameters, whereby to permit the free entrance of the loop on the support and then bind and clamp the loop when the spring is turned, substantially as set forth

2. In a spring-seat, the combination with a support composed of spring-wire bent to form loops between its ends, of a spring having its lower convolution so formed as to have varying diameters, whereby to receive a loop on the support freely and then clamp said loop when the spring is turned, the free lower extremity of the spring being bent to form a hook adapted to receive said loop on the support and act as a stop therefor, substantially as set forth.

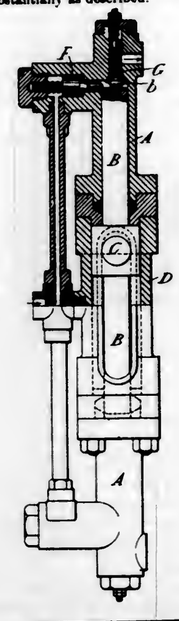
608,063. FISHING-FLOAT. HARRY H. MINTZER, Philadelphia, Pa. Filed Nov. 13, 1897. Serial No. 658,482. (No model.)



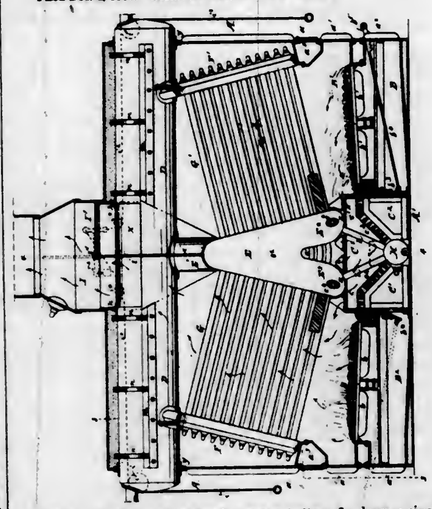
Claim.—The combination with a fishing-line float having a longitudinal recess in its lower end, of a metallic tube fitting in said recess and extending below the lower end of the float, a pin extending transversely through the float and tube, a centrally-apertured cap upon the lower end of said tube, a rod working longitudinally in the tube and forming a line carrier or holder, a head on the inner end of said rod, and a spring coiled around the said rod within the tube between the head of the rod and the cap on the tube, substantially as described.

608,064. VALVE FOR ENGINES. JEAN MOLAS, London, England. Filed Dec. 31, 1897. Serial No. 664,224. (No model.) Patented in England Mar. 21, 1898, No. 6,324, and in France Apr. 22, 1897, No. 266,223.

Claim.—An engine worked by compressed air, or other gaseous fluid, having its inlet or admission valve positively opened by contact with a part of the piston or plunger at the extreme of its instroke, and a positively-closed exhaust-valve opened by a spring when the pressure of the working fluid in the cylinder is sufficiently reduced by expansion, substantially as described.



608,065. STEAM-BOILER. EDWARD J. MOORE, Philadelphia, Pa. Filed Dec. 4, 1897. Serial No. 660,770. (No model.)



Claim.—1. The combination in a steam-boiler, of a drum, a single central header and two end headers suspended from said drum and closed at the bottom, heating-tubes extending from each side of the central header to the end headers, a fire-chamber under each set of heating-tubes, and a passage under the central header communicating with the two fire-chambers, substantially as described.

2. The combination in a steam-boiler, of a drum, a single triangular central header having tube-plates at each side, end headers raked on a line with the tube-plates of the central header and closed at the bottom and inclined tubes extending from the tube-plates of the central header to the end headers, substantially as described.

3. The combination in a steam-boiler, of a drum, a single triangular central header having tube-plates at each side and communi-

casting at the top with the drum and forked at the bottom to form legs, two end headers and inclined tubes extending from the central header to the two end headers, substantially as described.

4. The combination in a steam-boiler, of a drum, a triangular central header, and heating-tubes, a neck connecting the header with the drum, lugs on the drum at each side of the neck-opening, and one or more pivoted stays extending across the drum at the opening and detachably secured to the lugs so that access can be had to the neck, substantially as described.

5. The combination in a steam-boiler, of a drum, a single central header and heating-tubes extending from each side of said header, and a vertically-arranged partition in the lower portion of the header, substantially as described.

6. The combination in a steam-boiler, of a single central header and heating-tubes, said tubes extending from each side of the central header, a fire-chamber under each set of tubes at each side of the central header, and a combustion-chamber directly under the central header and communicating with both fire-chambers, substantially as described.

7. The combination in a steam-boiler, of two fire-chambers, a central combustion-chamber, a central header forked at the bottom to form two legs, and an enlargement of the central combustion-chamber, substantially as described.

8. The combination in a steam-boiler, of a single central header, heating-tubes connected thereto, two fire-chambers, a central combustion-chamber under the central header, and air-ducts opening into the said combustion-chamber, substantially as described.

9. The combination in a steam-boiler, of a single central header, heating-tubes connected thereto, fire-chambers, a central combustion-chamber communicating with the fire-chambers, two air-chambers under the combustion-chamber and communicating therewith, and dampers for each chamber, substantially as described.

10. The combination in a steam-boiler, of a central header, heating-tubes connected thereto, two fire-chambers, a central combustion-chamber communicating with the said fire-chambers, and two air-chambers, one communicating with the ash-pit of one fire-chamber, the other with the ash-pit of the other fire-chamber, and both communicating with the central combustion-chamber, substantially as described.

11. The combination in a steam-boiler, of a central header, heating-tubes connected thereto, a central combustion-chamber, under the said header, a mud-drum at the bottom of the combustion-chamber and tubes connecting the header with the drum, substantially as described.

12. The combination in a steam boiler, of a central header, heating-tubes connected thereto, said header being forked at the base to form two legs, and tubes extending from one leg to the other, substantially as described.

13. A triangular header for steam-boilers, forked at the base to form two legs, the top of the header and the bottom of each leg being rounded, said header having its inclined sides in the form of flat tube-sheets, substantially as described.

14. A triangular header adapted to be suspended from a drum, of a steam-boiler, said header having dished end plates and flat tube-sheets at each side secured to the end plates, said tube-sheets adapted to receive heating-tubes, substantially as described.

15. A triangular header for steam-boilers, forked at the bottom forming two legs, flat tube-sheets and bottom sheets flanged at each end, and end plates secured on the outside to the flanges of the tube-sheets and bottom sheets so that all the flanges will be within the header, substantially as described.

16. The combination in a triangular header for steam-boilers, having flat tube-sheets at each side, and end plates with a series of corner-braces securing the side plates to the end plates in addition to the rivets, substantially as described.

17. The combination in a steam-boiler, of a drum, a central triangular header, inclined end headers, heating-tubes extending from the triangular header to the end headers, a mud-drum below the triangular header and tubes connecting the mud-drum with the base of the header, substantially as described.

18. The combination of a triangular header, and inclined heating-pipes, a mud-drum connected to the header, said mud-drum having a flat base as and for the purpose specified.

19. The combination in a steam-boiler, of two fire-chambers, a drum, a single central header, two end headers heating-tubes extending from the central header to the end headers, a combustion-chamber between the two fireplaces and under the single central header, said combustion-chamber being depressed at the center, air-chambers, and openings in the depressed portion of the combustion-chamber communicating with the air-chamber, substantially as described.

20. The combination in a steam-boiler, of two fire-chambers, a combustion-chamber between the two, said combustion-chamber being depressed, tapered openings in the bottom of said combustion-chamber, and air chambers communicating with said openings, substantially as described.

21. The combination in a steam-boiler, of a drum, a central header, end headers, heating-tubes, two fireplaces, a central combustion-chamber enlarged at the center and narrow passages connecting the said combustion-chamber with the fire-chambers, substantially as described.

22. The combination in a steam-boiler, of a central header and heating-tubes, a central combustion-chamber under the central header, a fire-chamber at each side of the central combustion-chamber, air-chambers communicating with the combustion-chamber, and one air-chamber communicating with the ash-pit of one fire-chamber and the other air-chamber communicating with the ash-pit of the other fire-chamber, and handled dampers for each air-chamber, the handles of said dampers extending to the outside of the furnace, substantially as described.

23. The combination of two fire chambers, a single central header and heating-tubes, a passage under the central header forming a communication between the two fire-chambers, two outlet-passages for the products of combustion, and means for closing one or other of said outlets so that the gases from one fire-chamber will pass under the central header to the other fire-chamber and over the fuel therein, substantially as described.

24. The combination of two fire-chambers, a single central header, heating-tubes in the combustion-chamber of each fire-chamber, a passage under the central header communicating with both fire-chambers above the grates, a single stack, a partition extending above the central header and into the stack so that the gases from one fire-chamber will pass over the fuel in the other fire-chamber to the stack, substantially as described.

25. The combination of a casing of a steam boiler, having a central frame or foundation A', bearing-boxes a^2, and bearings y y, two fire-chambers on each side of the foundation A', a drum resting on the bearings y y, a central header resting on the frame or foundation A', and end headers resting on the boxes a^2 and connected to the central header by heating-tubes, substantially as described.

26. The combination of two fire-chambers, a passage communicating with the two chambers, a drum, a central header and end headers connected to the drum, heating-tubes, with deflectors at each side of the central header, substantially as described.

27. The combination in a steam-boiler, of one or more drums, a series of saddles mounted on the drum or drums, and longitudinal bars at each side of the drum or drums and secured to the saddles for sustaining a suitable covering, substantially as described.

28. The combination in a steam-boiler, a drum, a series of saddles mounted thereon, a longitudinal bar on each side of the drum, each bar having reversely-arranged flanges, the said saddles being secured to one flange, and the side plates of the frame secured to the other flange, substantially as described.

29. The combination in a steam-boiler, of a drum, a single central header connected to the drum, a flue for the products of combustion directly above and extending on each side of the drum and communicating with the two combustion-chambers, a partition-plate extending from the central header up into the flue, substantially as described.

30. The combination in a steam-boiler, of two fire-chambers, a drum, a single central header connected to the said drum, end headers and heating-tubes, and a flue for the products of combustion adapted to straddle the drum and rest upon the central header, substantially as described.

31. The combination in a steam-boiler, of two fire-chambers, a drum, a central header, end headers, and heating-tubes, a flue adapted to straddle the drum and to rest upon the central header, leaving passages on each side of the drum, and a vertical partition extending from the central header up to a point above the drum so as to divide the lower portion of the flue, substantially as described.

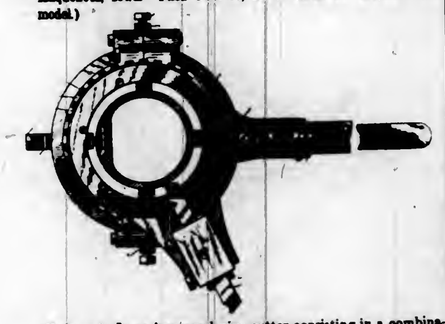
32. The combination in a steam-boiler, of two fire-chambers, a drum, a single central header connected to the drum, heating-tubes, a flue cut away so as to straddle the drum and leave passages at each side thereof, with a saddle-plate extending over the drum within the flue and secured to the flue, substantially as described.

33. The combination of a drum, a central header, and end headers, heating-tubes, a flue extending down on each side of the drum and communicating with the combustion-chambers of the boilers, a central partition-plate extending from the central header up to a point above the drum, with a damper, and means for operating said damper to cut off one or the other passage, substantially as described.

34. The combination of a drum, central header and heating-tubes, a flue circular in cross-section and cut away so as to straddle the drum, said flue being larger in diameter than the drum so as to form passages on each side thereof, said flue also enlarged at the center and having saddles resting on the drum and central header, substantially as described.

35. The combination of a drum, central header and heating-tubes, of a flue, a partition dividing the flue into two parts, a pivoted damper adapted to open both parts of the flue or close one or the other, a lever and weight for keeping the damper normally vertical, and ropes or chains extending over sheaves to a point easy of access to the stokers, substantially as described.

608,066. **PIPE-CUTTER.** GUY O. MORSE and ELIJAH D. RICH, Maquoketa, Iowa. Filed Nov. 10, 1897. Serial No. 658,072. (No model.)



Claim.—1. In an improved pipe-cutter consisting in a combination of parts, of a two-part stock held together by removable bolts passing through the lugs formed thereon, clamping-jaws seated in the said stock having ratchet-teeth upon one side thereof and set-screws mounted longitudinally therein, the said jaws adapted to be operated by the scroll upon the divided ring mounted in the groove upon the stock, the said ring having recesses upon its periphery, adapted to be engaged by a wrench to be operated by the same, substantially as shown and described.

2. In an improved pipe-cutter consisting of a combination of parts, a stock formed in two parts, said parts held together by removable bolts passing through lugs, clamping-jaws seated within the said stock having ratchet-teeth on one side thereof and set-screws journaled longitudinally therein, the said jaws operated by a scroll upon one face of the divided ring mounted in a slot or groove upon the stock, and held together by removable bolts passing through lugs thereon, the said ring having recesses on its periphery adapted to be engaged by a wrench to be operated by the same, a second ring mounted upon the stock, formed in two parts or sections, one section being somewhat enlarged and adapted to receive a detachable handle, a reversible pawl mounted upon the said enlarged portion adapted to be held in adjusted position by a spring and catch, substantially as shown and described.

3. In an improved pipe-cutter the combination of a two-part stock having clamping-jaws seated therein, said jaws provided with ratchet-teeth on one side, and a set-screw journaled longitudinally therein, a divided ring mounted upon the said stock having a scroll on one face adapted to engage the ratchet-teeth upon the jaws, and recesses upon its periphery, a second ring mounted upon the stock comprising two parts or sections, one section being somewhat enlarged and adapted to receive a detachable handle, a reversible pawl adapted to be held in adjusted position by a spring and catch, and a lug mounted upon the said enlarged portion, a flange interposed between the ring operating the jaws, and the ring supporting the handle, a third ring mounted upon the stock, bearing against the handled supporting-ring, and held thereon by a collar, the said ring being divided, and provided upon its periphery with ratchet-teeth adapted to engage the reversible pawl, having one section enlarged, the said enlarged section carrying the stock and feed mechanism, substantially as shown and for the purpose set forth.

608,067. **LINOTYPE-MACHINE.** CARL MUEHLEISEN, Baltimore, Md. Filed Aug. 21, 1897. Serial No. 649,053. (No model.)

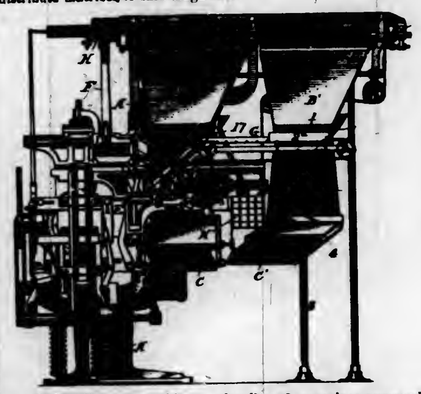
Claim.—1. In a linotype-machine, a plurality of magazines simultaneously operative and each having a plurality of tubes or receptacles, in combination with distributing means in said machine constructed to automatically distribute matrices to all of said magazines.

2. In a linotype-machine, a composing mechanism, in combination with a plurality of magazines simultaneously operative and each having a plurality of tubes or receptacles, and an automatic distributing mechanism common to said magazines.

3. In a linotype-machine, a plurality of magazines arranged in line, or tandem, each magazine having a plurality of tubes or receptacles, in combination with a common distributing mechanism for all of said magazines.

4. In a linotype-machine, the combination of a plurality of magazines, and a keyboard for each magazine, with distributing means in said machine constructed to automatically distribute matrices into said magazines.

5. In a linotype-machine, the combination of a plurality of magazines, a keyboard for each magazine, and a common assembling-belt, with distributing means in said machine constructed to automatically distribute matrices to said magazines.



6. In a linotype-machine, a plurality of magazines arranged in line or tandem, each magazine having a plurality of tubes or receptacles, in combination with a common distributer-rail and feed-screws.

7. In a linotype-machine, a plurality of magazines arranged in line or tandem and each having a plurality of tubes or receptacles, in combination with a common distributer-rail having a like plurality of permuted sections, one for each magazine, substantially as described.

8. In a linotype-machine, a plurality of magazines, in combination with a common distributer-rail, and common feed-screws having intermediate bearings, said bearings having openings to permit matrices to pass, substantially as described.

9. In a linotype-machine, a distributer-rail, in combination with matrix feed-screws provided with end bearings and with intermediate bearings which have openings to permit matrices to pass, the screw-threads being continuous through said intermediate bearings, substantially as described.

10. In a linotype-machine, a plurality of magazines arranged in line, or tandem, each magazine having a plurality of tubes or receptacles, in combination with automatic distributing mechanism in said machine for said magazines, stop mechanism for the distributing mechanism, and a plurality of distributer stop-racks arranged in tandem for operating the stop mechanism, substantially as described.

11. In a linotype-machine, the combination with a distributer-rail having a given number of ribs, and an elevator-rail having a lesser number of ribs, of a series of matrices having V-shaped openings and shoulders corresponding to the distributer-rail, and a series of spaces having smaller V-shaped openings corresponding to the elevator-rail, substantially as described.

12. In a linotype-machine, the combination with a series of matrices having V-shaped openings and a series of spaces having smaller V-shaped openings, of a distributer-rail having a given number of ribs, and an elevator-rail having ribs corresponding to all of the ribs of the distributer-rail excepting the uppermost rib on each side thereof, said uppermost ribs having no counterpart on the elevator-rail, whereby the elevator-rail is adapted for the spaces having smaller V-shaped openings than the matrices, substantially as described.

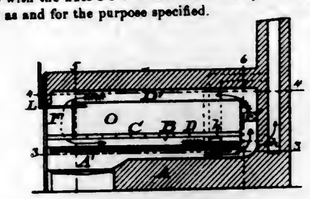
13. In a linotype-machine the combination with a magazine, of a removable matrix-guide channel in which the assembling-belt runs, said channel comprising a bottom and two sides and having its front side hinged, substantially as described.

14. In a linotype-machine, the operating-rods having notches in their lower ends and the key-levers arranged at an angle to said rods and provided with notches in their rear ends, the notches of said rods and levers being adapted to mutually engage each other, substantially as described.

608,068. **BAKER'S OVEN.** WERNER NEUSS, Cleveland, Ohio, assignor of one-half to William H. Krumsey, same place. Filed Aug. 6, 1897. Serial No. 647,374. (No model.)

Claim.—In a baker's oven, a base A of masonry, a fireplace A' at each side of said base with side walls A'', a sheet-metal plate B over said base and fireplaces, a second plate C over said plate B forming a space between said plates, a third plate D supported on cross-bars between the side walls, the chamber between said plates C and D forming the oven proper, a fourth plate D' supported on cross-bars between the side walls and covered with sand, the space

between said plates D D' forming a space over the oven, a door F to the front of the oven, a back end wall, passages E E in said end wall connecting the fireplaces with the space D, front passages G G connecting space D with the space B and the holes *h h h* connecting the space B with the flues I I J J into the chimney, all constructed to operate as and for the purpose specified.



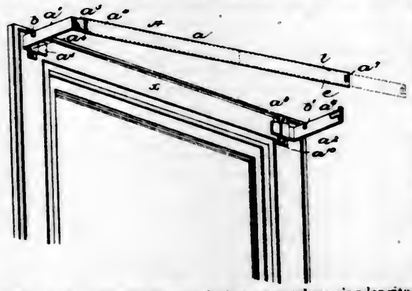
608,069. CYLINDER-LOCK. CARL O. NOACK, Stamford, Conn., assignor to the Eagle Lock Company, Terryville, Conn. Filed July 2, 1897. Serial No. 643,203. (No model.)



Claim.—1. A barrel or plug for cylinder-locks, having a longitudinally-corrugated keyway, in which the intermediate ribs or corrugations are arranged with the inner edges in the center plane of the keyway, while the other corrugations or ribs lie to one side or entirely outside of the center plane of the same, substantially as set forth.

2. A key provided with bittings or notches, said key being constructed in its longitudinal central portion with corrugations, the bottoms of the grooves between which corrugations lie in the longitudinal central plane of the shank of the key, while the upper bitted or notched corrugations of the shank of the key are constructed so that the bottoms of the longitudinal depressions between them are arranged outside of the longitudinal central plane of the key, whereby a broad wear-surface for the tumblers is provided, substantially as set forth.

608,070. CURTAIN-HANGER. CHRISTENNA A. OLIVER, Payne's Corners, Ohio. Filed Aug. 21, 1897. Serial No. 648,993. (No model.)

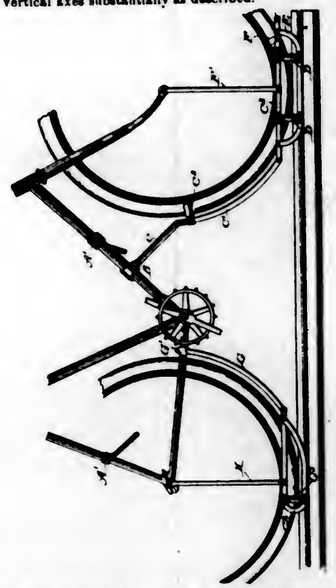


Claim.—1. A hanger composed of an outer telescoping longitudinal bar and right-angular end sections, one of which latter is of spring-like nature and fast with said bar, the outer end of said bar being free and having a slot therein, the other one of said end sections having a hooked end designed to fit in said slot, the spring-like end section serving to hold the free end of said bar normally away from the hooked end of the other section, substantially as set forth.

2. A hanger composed of an outer longitudinal section consisting of a bar bent at right angles to form an end section, a second bar telescoping the former and having a slot in its outer end and a second right-angular end section consisting of a bar having an outer hooked end, substantially as set forth.

608,071. RAILROAD ATTACHMENT FOR BICYCLES. HENRY J. OTTO and ARTHUR H. WIELSCH, Butte, Mont.; said Otto assignor of one-sixth to said Wielsch. Filed Feb. 8, 1898. Serial No. 669,527. (No model.)

Claim.—1. In a bicycle an attachment comprising a forked frame extended alongside the opposite sides of the lower portion of the front wheel and provided in front and rear of the wheel-tread with rollers to bear alongside the railroad-rail such rollers having approximately vertical axes substantially as described.



2. An attachment for bicycles comprising a front frame having branches extended along the lower and up along the rear side of the front wheel and having said branches provided with rollers to bear alongside the railroad-rail and with rollers which bear on opposite sides of the front wheel at the rear of the latter substantially as described.

3. In a bicycle an attachment for use on railroad-rails comprising a forked frame embracing the front wheel and having rollers bearing on opposite sides of the wheel and also rollers to bear alongside the rail the axes of said rollers being approximately at right angles to that of the wheel substantially as described.

4. In a bicycle an attachment having a frame adjacent to the front wheel and provided with a front roller arranged to turn with the said wheel and to bear against the same in guiding and with guide-rollers operating on opposite sides of the rear of said wheel substantially as described.

5. In a bicycle the combination with the front wheel of a frame having branches extended on opposite sides of said wheel and provided on the inner branch with vertically-journaled rollers which engage the inner side of the railroad-rail and on the outer branch with a roller for engagement by the wheel in guiding substantially as described.

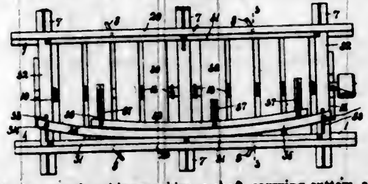
6. A bicycle provided with a lateral frame and a flanged wheel thereon, and the frames extended along the inner side of the bicycle-wheels and provided with rollers which have vertical axes, and are adapted to bear against the inner side of the railroad-rail and act in opposition to the flanged wheel whereby to secure the bicycle on the railroad-rail opposite that occupied by the flanged wheel substantially as described.

7. In a bicycle, a guide and brace for the front wheel comprising a frame having portions extended up along the rear side and forward along the lower edge of said wheel, guide-rollers on the upper portion of the frame and bearing along the opposite sides of the wheel and rollers on the forwardly-extended portion of the frame, said rollers having approximately vertical axes and being arranged to operate alongside the rail, substantially as set forth.

608,072. WOODWORKING-MACHINE. CHARLES F. OVERMYER, Fostoria, Ohio. Filed Sept. 2, 1897. Serial No. 650,371. (No model.)

Claim.—1. In a woodworking-machine, a shaft carrying cutters, an adjustable table, and a work-holder mounted to slide thereon, in combination with a series of clamping-levers connected to a hand-rail having any desired curve to conform to the lateral contour of the work to be clamped, said levers being adjustable on the work-holder to suit the curvature of the hand-rail, substantially as described.

2. In a woodworking-machine, a shaft carrying cutters, an adjustable table, and a work-holder mounted to slide thereon, in combination with a series of clamping-levers connected to a hand-rail having any desired curve to conform to the lateral contour of the work to be clamped, said levers being adjustable on the work-holder to suit the curvature of the hand-rail, and means providing for the individual lateral adjustment of said levers in a line of any desired curvature, substantially as described.

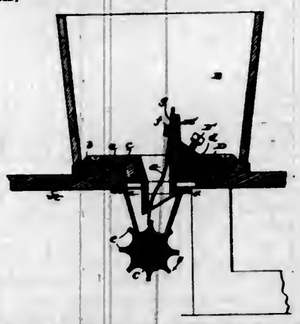


3. In a woodworking-machine, a shaft carrying cutters, an adjustable table, and a work-holder mounted to slide thereon, in combination with a series of L-shaped clamping-levers connected to a hand-rail having any desired curve to conform to the lateral contour of the work to be clamped, said levers being adjustable on the work-holder to suit the curvature of the hand-rail, substantially as described.

4. In a woodworking-machine, a shaft carrying cutters, an adjustable table, and a work-holder mounted to slide thereon, in combination with a series of clamping-levers connected to a hand-rail having any desired curve to conform to the lateral contour of the work to be clamped, slotted plates mounted on the cross-pieces of the frame of the work-holder to receive and permit the lateral individual adjustment of the clamping-levers to suit the curvature of the hand-rail, substantially as described.

5. In a woodworking-machine, a shaft carrying cutters, an adjustable table, and a work-holder mounted to slide thereon, in combination with a guide-rail secured at a point intermediate its ends and having its ends held by fasteners, and a series of clamping-levers connected to a hand-rail having a curvature corresponding to that of the guide-rail, said levers being adjustable on the work-holder to suit the curvature of the hand and guide rails, substantially as described.

608,078. SEED ATTACHMENT FOR GRAIN-DRILLS. HENRY M. PATTERSON, Humboldt, Nebr. Filed Oct. 22, 1897. Serial No. 656,043. (No model.)



Claim.—1. The combination of a seedbox having a discharge-tube for seed, a resilient strip arranged in and suitably connected with one side of the tube and having a free portion impinging against the opposite side of the tube and also having such free portion depending below the tube, and a suitable tappet for engaging and moving the depending free portion of the strip away from the wall of the tube at intervals, substantially as specified.

2. The combination of a seedbox having a discharge-tube for seed, a resilient strip arranged in and adjustably connected with one side of the tube so as to permit of it being adjusted in the direction of its length and having a free portion impinging against the opposite side of the tube and also having such free portion depending below the tube, and a suitable tappet for engaging and moving the free portion of the strip away from the wall of the tube at intervals, substantially as specified.

3. The combination with a seedbox having an opening in its bottom, and a wheel disposed below said box and having peripheral projections; of the attachment connected to the bottom of the seedbox and having the depending tube extending through the opening in said bottom, and a resilient strip arranged in and suitably connected with one side of the tube and having a free portion impinging against the opposite side of the tube and also having such free portion depending below the tube and arranged so as to be engaged by the peripheral projections of the wheel, substantially as specified.

4. The combination with a seedbox having an opening in its bottom, and a wheel disposed below said box and having peripheral projections; of the attachment connected to the bottom of the seedbox and comprising the apertured body-casting having a threaded bore communicating with its aperture, the tube arranged in the aperture of the body-casting, the screw extending through the bore of the casting and impinging against the tube, and a resilient strip arranged in and suitably connected with one side of the tube and having a free portion impinging against the opposite side of the tube and also having such free portion depending below the tube and arranged so as to be engaged by the peripheral projections of the wheel, substantially as specified.

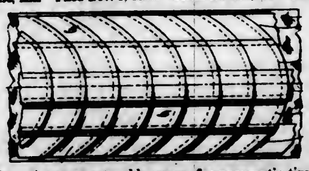
608,074. HARNESS ATTACHMENT. WILLIAM R. PHILLIPS, Pomona, Cal., assignor to himself and George W. Ogle, same place. Filed July 23, 1897. Serial No. 645,697. (No model.)



Claim.—1. A harness attachment, comprising a loop provided at one end with means for securing it to a strap, and having its rear member split or separated to form an opening for the entrance or removal of a line, and provided with lugs for engaging apertures in the strap to which the loop is attached, substantially as described.

2. A harness attachment, comprising a loop provided at one end with an extension for securing it to a strap, said loop having its rear member split or separated to form an opening for the entrance or removal of the line, the ends of the said rear member terminating in outwardly-projecting lugs for engaging apertures in the strap to which the loop is attached, substantially as described.

608,075. ARMOR FOR PNEUMATIC TIRES. EDWIN J. PINE, Mobile, Ala. Filed Nov. 1, 1897. Serial No. 657,002. (No model.)



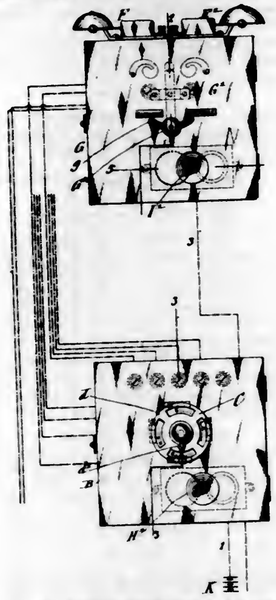
Claim.—A non-puncturable armor for pneumatic tires, comprising a plurality of rows of overlapping scales, each scale being in the form of a dished rhomb, the scales of the central row overlapping each other upon the end thereof coincident to the direction of travel of the tire, the scales of the said rows being arranged in arched segments receding from the direction of travel of the tire, substantially as described.

608,076. ELECTRIC-TELEPHONE SYSTEM FOR HOUSES. LOUIS PLANT, New York, N. Y., assignor of two-thirds to Rhea Koch and Alphonso Koch, same place. Filed Sept. 9, 1897. Serial No. 651,090. (No model.)

Claim.—1. In an electric house-telephone system, the combination of a call-box, provided with contact-plates for a call-bell system and with contact-plates for a telephone system, a fixed telephone transmitter and receiver at said call-box, a combined mouth and ear piece for both of said instruments, means for closing either the call-bell or the telephone circuit, both of said circuits having a single return-wire leading to the source of electricity, one or more receiving-boxes placed in circuit with the call-box and provided with a call-bell for the call-bell circuit, a telephone transmitter and receiver at said receiving-box arranged in the telephone-circuit, a combined mouth and ear piece for the transmitter and receiver of the receiving-box, a manually-operated switch-lever at the receiving-box that is adapted to place the telephone instruments in the latter in circuit with the instruments of the call-box, and means for automatically returning the switch-lever to its normal open position, substantially as set forth.

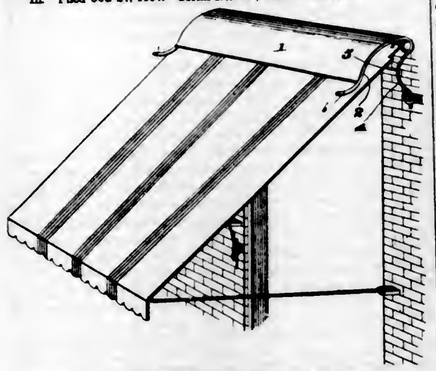
2. In an electric house-telephone system, the combination of several call-boxes provided with contact-plates for a call-bell system and with contact-plates for a telephone system, a fixed telephone transmitter and receiver for each of said call-boxes, a combined mouth and ear piece for both of said instruments of each call-box, means at each of said call-boxes adapted to close either the call-bell or the telephone circuit, one or more receiving-boxes placed in circuit with

the call-boxes, and said receiving-box being provided with several call-bells of different tones, a telephone transmitter and receiver at said receiving-box, a combined mouth and ear piece for its telephone instruments, contact-springs at said receiving-box connected with the circuits of the respective call-boxes, a manually-operated switch-lever that is adapted to place the instruments of the receiving-box in circuit with the instruments of either of the call-boxes, by touching either of said contact-springs, and means for automatically returning the switch-lever to its normal position, so as to cut the receiving-box out of circuit with the call-boxes, substantially as set forth.



3. In an electric house-telephone system, the combination with a call-box provided with contact-plates for the call-bell system, and a cover for said call-box provided with contact-plates for the telephone system, of a spring-actuated push-spindle guided in the cover of the box and provided with two contact-arms adapted respectively to form contact with the contact-plates of the call-bell system in the box and with the plates of the telephone system, on the cover, substantially as set forth.

608,077. AWNING-PROTECTOR. JAMES R. POWELL, Mattoon, Ill. Filed Oct. 27, 1897. Serial No. 656,543. (No model.)



Claim.—1. The herein-described protector for awnings, consisting of a pair of spring-arms supported adjacent to and above the said awning when folded, and a flexible sheet connecting said arms and arranged above the place occupied by the awning when folded, the extremities of the arms being projected in front of said sheet and being upturned, substantially as described.

2. In a protector for awnings, a pair of brackets or hangers having inclined portions as described, and a pair of spring-arms connected to said brackets and extending outward and downward therefrom, in combination with a flexible sheet connected at its ends to said arms and extending over the place occupied by the awning when closed, substantially as described.

608,078. HAIR-CLIPPER. CHARLES H. REDMAN, Jr., Newark, N. J. Filed Nov. 26, 1897. Serial No. 659,743. (No model.)



Claim.—A pair of clippers comprising a screw-plate having a handle and provided with undercut grooves extending inwardly from the ends thereof, friction-balls located in said undercut grooves, screw-plugs flush with the face of the screw-plate for closing the open ends of said grooves, a handle-lever pivoted to the screw-plate, a lower cutting-plate and a top cutting-plate actuated by said handle-lever and bearing against said friction balls, substantially as set forth.

608,079. COOLING-PLATE. WILLIAM ROTTHOFF, Duquesne, Pa. Filed Feb. 3, 1896. Serial No. 577,824. (No model.)



Claim.—1. The combination with a blast-furnace having in its wall an unobstructed open cavity of a hollow metal plate lining the same, and an inner water-cooled plate of smaller cross-section than the outer plate located back of said lining-plate in line therewith and arranged to be moved radially therethrough; substantially as described.

2. The combination with an outer open-ended box-plate, having an unobstructed passage therethrough and arranged to be built permanently into the outer portion of the furnace-wall, of a water-cooling plate of smaller size and arranged to be moved radially in and out through said outer plate; substantially as described.

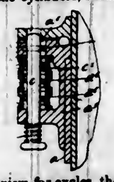
3. The combination with a blast-furnace, of outer hollow open-ended plates built into its outer portions, strengthening-bands covering a portion of the rims of said plates, and inner water-cooled plates in line with the inner open ends of the outer plates; substantially as described.

4. A blast-furnace having built in its wall a series of separated open-ended box-plates with brick partitions between them, and inner water-cooled plates of smaller size located back of said plates and arranged to be moved radially in and out through them; substantially as described.

5. A bosh-cooling plate consisting of a body with an unobstructed interior space or chamber, and a separate nose, the nose and body being so formed or constructed that the nose will pass freely through the body, whereby it may be withdrawn radially from, or inserted in, its position in the bosh-wall without disturbing the body; substantially as described.

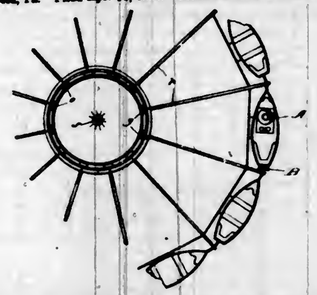
608,080. LOCK FOR CYCLES. CHARLES SANGSTER, Bournbrook, England, assignor to Frank A. Wilmot, Bridgeport, Conn. Filed Dec. 20, 1897. Serial No. 662,651. (No model.) Patented in England Jan. 13, 1893, No. 720, and Nov. 2, 1894, No. 21,076.

Claim.—1. In locking mechanism for cycles, the combination of a bolt longitudinally movable in bearings carried by one of the parts to be locked, and provided with a series of projections, a socket to receive said bolt carried by the other part to be locked, a series of cylinders mounted on said bolt and provided with slots corresponding with the projections on the bolt, and a recess provided in one of said bearings with which one of the projections of the bolt is adapted to engage and in which it may be turned to lock the parts together without manipulation of the cylinders, substantially as described.



2. In locking mechanism for cycles, the combination of bearings carried by one of the parts to be locked, one of said bearings provided with a recess and a pocket, a bolt mounted and longitudinally movable in said bearings and provided with a series of projections, a socket carried by the other part to be locked, a series of cylinders mounted upon said bolt each of which is provided with a slotted diaphragm having chambers on each side of said diaphragm, whereby one of the projections carried by the bolt may engage the recess in said bearing and be turned therein to fasten the parts together without manipulating the cylinders, and whereby said projection on the bolt may enter the pocket in said bearing and be confined from rotation, when the parts are to be locked by manipulation of said cylinders, substantially as described.

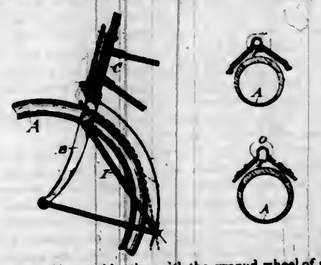
608,081. MARINE MERRY-GO-ROUND. GEORGE W. SEBOLT, Glenfield, Pa. Filed Apr. 10, 1897. Serial No. 631,529. (No model.)



Claim.—1. In a marine merry-go-round, the beams *h*, and the triangular-shaped safety-stays *k* secured to their outer ends, and provided with the heads *l*, combined with the boats *n*, provided with the slotted grooved castings secured to the ends of the boats, and in which the heads *l* are made to catch, whereby the distance that the boats shall sink in the water is regulated, substantially as shown.

2. In a marine merry-go-round, the beam *h*, the V-shaped safety-stays *k*, and suitable means secured to the boats for connecting them with the stays, combined with the vertical rod *w*, and the chain *x* which has one end fastened to the boat, and by means of which the boat is prevented from upsetting, substantially as described.

608,082. BICYCLE-BRAKE. THOMAS B. SLOPER, Devizes, England. Filed Sept. 26, 1896. Serial No. 607,102. (No model.) Patented in England Dec. 3, 1891, No. 21,087.



Claim.—1. The combination with the ground-wheel of a vehicle, of a flexible brake-band supported in proximity to the periphery of the wheel above its point of contact with the ground, the ends of the flexible brake-band being movable with relation to each other longitudinally to the band, whereby the flexure of the band is varied to throw its central portion into or out of contact with the periphery of the wheel, and brake-operating mechanism, substantially as described.

2. The combination with the ground-wheel of a vehicle and a brake-operating mechanism, of brake-supports movable toward and from each other in proximity to the periphery of the wheel and a flexible brake-band having its opposite ends secured to said supports, whereby the intermediate portion of the brake may be thrown into or out of contact with the periphery of the wheel at a point above the ground-level substantially as described.

3. The combination with the ground-wheel of a vehicle, of a substantially rigid stay connected to the frame and extending back over the wheel, a flexible band held at one end by the said stay, and mechanism for moving the opposite end with relation thereto whereby the intermediate portion of the band may be thrown into or out of contact with the periphery of the wheel; substantially as described.

4. The combination with the ground-wheel of a vehicle having a tire substantially semicircular in cross-section, of a brake consisting of two plates set at angle to each other, the springs uniting said plates and means for forcing said plates into contact with the tire; substantially as described.

5. The combination with the ground-wheel of a vehicle having a tire substantially semicircular in cross-section, of the flexible bands set at an angle to each other and connected by springs, one end of said bands being connected to the frame of the vehicle, and means for moving the ends of the bands with relation to each other longitudinally of the band, whereby the intermediate portion of the bands may be brought into and out of contact with the tire of the wheel; substantiallly as described.

6. The combination with the ground-wheel of a vehicle having a tire semicircular in cross-section of a substantially rigid stay connected to the frame of the vehicle and extending back over the wheel, of two flexible bands connected at one end to said stay, and mechanism for moving the ends of the band with relation to each other longitudinally of the bands, whereby the intermediate portion of the bands may be brought into and out of contact with the wheel; substantially as described.

608,088. OBSTETRICAL APPARATUS. CHARLES S. SMITH, Providence, R. I. Filed Dec. 6, 1897. Serial No. 660,853. (No model.)



Claim.—1. The combination of a frame, made of a number of detachable strips, with means of fastening the same together, one of which strips has an opening, a rubber pan having a flexible discharge-pipe passing therefrom through said opening, and provided with upturned edges, which surround said frame, on the outside thereof, a groove around said frame on its outer surface, an elastic cord adapted to force the sides of said rubber pan into said groove, and straps connected to said frame and provided with means to secure them to proper supports to hold the apparatus in position, relatively to the patient and bed, substantially as described.

2. In an obstetrical apparatus, the combination of a rubber pan, a number of strips adapted to stiffen the sides of said pan and provided with means to connect said pan and strips together, a hinged flap on each of said strips adapted to lie in close contact with the strip, when the apparatus is not in use, but attachable, when turned at an angle thereto, to engage with a fastening device from the adjacent strip for the purpose of constituting said strips a rigid frame to support said pan, substantially as described.

3. In an obstetrical apparatus, a combination of a rubber pan, a number of strips adapted to stiffen the sides of said pan and provided with means to connect said pan and strips together, a piece projecting at or near the end of each strip at an angle thereto and adapted to engage with the adjacent strip by a suitable fastening device for the purpose of constituting said strips a rigid frame to support said pan, substantially as specified.

4. In an obstetrical apparatus, a combination of a rubber pan, a number of strips adapted to stiffen the sides of said pan and provided with means to connect said sides and pan together, a hinged flap on each of said strips adapted to lie in close contact with the

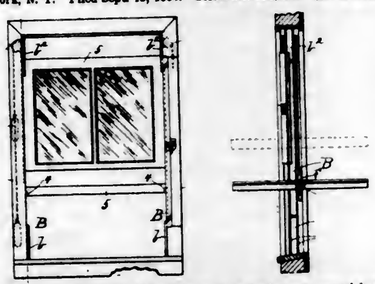
stripe, when the apparatus is not in use, but attachable, when turned at an angle thereto, to engage with a fastening device from the adjacent strip for the purpose of constituting said stripe a rigid frame to support said pan and straps connected with said stripe and adapted to be attached to proper supports to hold said apparatus in position, relatively to the patient and bed, substantially as described.

5. In an obstetrical apparatus, the combination of a rubber pan, a number of stripe adapted to stiffen the sides of said pan and provided with means to connect said pan and stripe together, a piece projecting at or near the end of each strip, at an angle thereto, and adapted to engage with the adjacent strip by a suitable fastening device for the purpose of constituting said stripe a rigid frame to support said pan, and straps connected with said stripe and adapted to be attached to proper supports to hold said apparatus in position, relatively to the patient and bed, substantially as shown.

6. In an obstetrical apparatus, having a rubber pan and stripe to stiffen the same, a flange upon the top of one of said stripe having a curved edge to conform to the portion of the patient's body with which it is intended to lie in contact, substantially as set forth.

7. The improved obstetrical apparatus herein described, consisting of a rubber pan with flexible sides, four detachable strips, each having hinged flaps and a fastening device arranged so that the flap of each strip is engageable with the fastening device of the adjacent strip, strap-holders on three of said strips, a flange with a curved edge and projection on the top of one of said strips, and straps upon said strap-holders with means of attachment to the bed and the body of the patient, and buckles to fasten said straps in position, substantially as specified.

608,084. WINDOW FRAME AND SASH. HENRY STAIB, New York, N. Y. Filed Sept. 13, 1897. Serial No. 651,423. (No model.)



Claim.—1. A window-frame having vertical stops comprising respectively, three sections, the upper and lower sections being stationary and the central section being movable in a rearward direction, and having fixed thereto suitable guide-plates, and means for maintaining the central section in its outward position, substantially as shown and described.

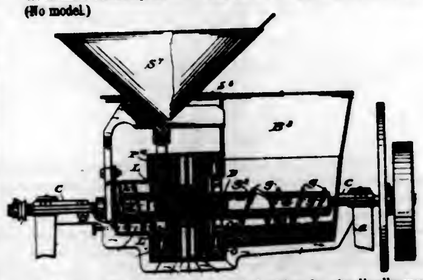
2. A window-frame, having its vertical stops composed of three sections, the said sections being maintained in normal vertical alinement with each other and having continuous beads formed thereon for engagement with grooves in the window-sash, and a spring-actuated means for maintaining the central section of the stop in normal alinement with the upper and lower sections, the central section being adapted to slide on suitable plates fixed thereto, substantially as shown and described.

3. The combination, with a window-frame, of sectional stops having guide-plates fixed thereto, said stops comprising respectively stationary upper and lower sections and a movable central section, the said central section being maintained in normal alinement with the stationary sections, by means of a spring, substantially as shown and described.

4. In a window-frame, the combination of sectional stops comprising upper and lower stationary sections and a central movable section provided with guide-plates, and a hanger supporting the movable section, said hanger pivoted to the stationary upright of the window-frame and having projections extended therefrom for engagement with the movable section of the said stop, and a spring for maintaining the hanger in its outward position, substantially as shown and described.

5. The combination, with a window-sash, of sectional stops engaging said sash, the window-sash being supplied with grooves and the sectional stops with beads for engagement therewith, the said sectional stops comprising respectively an upper and lower stationary section and a central movable section, and a spring-actuated hanger for supporting the central movable section of the stop, said hanger having projections extended laterally therefrom for engagement with a suspended slide for supporting the sash, whereby the slide in its vertical movement will operate the hanger and throw the movable sectional stop in a rearward direction, substantially as shown and described.

608,085. DOUBLE EQUALIZING GRINDING-MILL. AMBROSE W. STRAUB, Philadelphia, Pa. Filed Nov. 30, 1896. Serial No. 613,944. (No model.)



Claim.—1. A grinding-mill provided with a longitudinally-movable spindle, oppositely-facing non-rotating disks, and rotating disks carried by said spindle, whereby the pressure of the coarse material in the first mill will cause the second mill to grind finer.

2. A grinding-mill provided with a longitudinally movable spindle, oppositely-facing non-rotating disks, rotating disks and means for conveying the coarsely-ground material from the first to the second mill, where it is reground finer by reason of the pressure of the coarse material in the first mill.

3. A grinding-mill provided with a longitudinally-movable spindle, non-rotating disks, rotating disks rigidly mounted upon said spindle, a screw conveyer arranged parallel with said spindle and in juxtaposition to said mills, adapted to directly receive the coarsely-ground material forced upwardly thereinto from the first mill and discharge all of said coarsely-ground material into the second mill where it is reground finer, whereby the automatic adjustment of the runners is effected by the relative quantities of the feed passing through the two mills.

4. A grinding-mill provided with a longitudinally-movable spindle, non-rotating disks, rotating disks rigidly mounted upon said spindle and a screw conveyer journaled in an extension of the mill-casing having a segmental spout to receive the coarsely-ground material from the first mill, said conveyer discharging said material adjacent to the second mill, where it is reground finer by the counterbalancing construction of the mills.

5. A grinding-mill provided with a two-part frame having suitable supports, a spindle mounted in said frame, a toothed sleeve on the spindle in the crushing-chamber, grinding-disks mounted on said spindle, a dam between the grinding-mills, a running head carried by the spindle and revolving within said dam forming a partition between the mills, non-rotating grinding-disks with which said rotating disks operate, a drive-wheel and fly-wheel mounted on one end of said spindle, means for transferring material from the crushing-chamber to the grinding-disks next adjacent thereto, a screw conveyer for conveying the material from the first to the second mill, and means for revolving said drive-wheel.

6. A vertical-disk grinding-mill provided with an outer casing, a spindle journaled therein, a rotating disk a non-rotating disk, a case detachably mounted within said casing and having a central tubular portion surrounding said spindle and forming the eye of the mill, and a peripheral flange or rim, said case being adapted to receive one of said non-rotating disks and prevent leakage of meal into the eye and means for operating the spindle.

7. A vertical-disk grinding-mill provided with an outer casing, a spindle journaled therein a rotating disk, a non-rotating disk, a case mounted within said casing having a central tubular portion surrounding said spindle and forming the eye of the mill, and a peripheral flange or rim, a back tramming-ring movably supported in said case, a bridge-tree adjustably supported between said case and ring on regulating-screws passing through said case and a grinding-disk carried by said ring, whereby the position of said disk can be adjusted and will automatically tram.

8. A grinding-mill provided with a casing, a longitudinally-movable spindle journaled therein, non-rotating disks mounted upon automatically-adjustable supports within said casing, rotating disks mounted upon said spindle, whereby the grinding pressure in the first mill will automatically cause the second mill to grind the ground material finer, means for conveying the ground material from the first to the second mill and means for operating the spindle.

9. A vertical-disk grinding-mill provided with independent grinding-mills, a two-part dam or partition formed integral with the mill-casing and separating said mills, a longitudinally-movable spindle carrying the rotating disks of said mills, the first mill being adapted to grind the material coarse and the second mill to regrind the same material finer by reason of the grinding pressure in the first mill, and a screw conveyer arranged parallel with said spindle to convey the ground material from the first to the second mill.

10. A grinding-mill provided with a longitudinally-movable spindle, rotating disks carried by said spindle, movably-mounted non-rotating disks, whereby the pressure in the first mill will automatically force the disks of the second mill nearer together and cause the latter to grind the coarsely-ground material finer, and a screw conveyer having a segmental receiving-spout extending over the first mill adapted to receive the ground material forced thereinto from said mill and discharge it to the second mill.

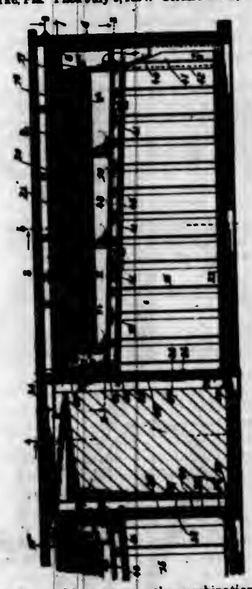
11. A grinding-mill provided with a casing, a case mounted therein having a central tubular portion forming the eye of the mill, and a concentric rim or flange, said case carrying means to engage said casing and prevent the rotation of the case and a bridge-tree supported within said case.

12. A grinding-mill provided with a longitudinally-movable spindle, a running head rigidly mounted thereon, and having two disks carrying oppositely-facing revolving grinding-disks and non-rotating disks with which the rotary disks operate.

13. A grinding-mill consisting of a casing, a longitudinally-movable spindle journaled therein, a cob-crushing sleeve carried by said spindle, a running head rigidly mounted upon said spindle, oppositely-facing, revolving disks carried by said running head, a back feed-screw also carried by said spindle, and non-rotating disks within said casing.

14. A grinding-mill provided with a casing having a feeding-chamber at the opposite ends thereof, two grinding-cases mounted therein, a longitudinally-movable spindle journaled in said casing, a right and left hand feeding-screw upon said spindle within said chambers, the feed-screw in the first chamber forcing the material into the first mill and that in the second chamber forcing the coarsely-ground material into the second mill where it is reground finer, means for conveying the ground material from the first to the second mill and means for operating the parts.

608,086. REFRIGERATOR-CAR. JOSEPH THOMAS and JACOB M. TRUBY, Starke, Fla. Filed July 9, 1897. Serial No. 643,972. (No model.)



Claim.—1. In a refrigerator-car, the combination with a car, of the removable side and end linings, the central longitudinal partition having a movable lower portion and dividing the car into compartments, ice-pans or receptacles supported in the upper portions of the compartments, and the detachable transverse partition provided with doors communicating with the ice pans or receptacles and with the lower portions of the compartments, substantially as described.

2. In a refrigerator-car, the combination with a car, of the side and end linings, a longitudinal partition dividing the car into compartments and composed of a fixed upper portion and a removable lower portion adapted to be arranged adjacent to one side of the car, and the bottom platform arranged at opposite sides of the partition and supporting the bottom thereof when the same is arranged centrally of the car or at one side, substantially as described.

3. In a refrigerator-car, the combination with a car, of the removable side and end linings, horizontal beams connecting the side linings and forming a support, a longitudinal partition having a fixed upper portion and a movable lower portion, top linings or covers supported by the said linings and the partition, and a removable transverse partition, substantially as described.

4. In a refrigerator-car, the combination with a car, of side and end linings arranged within the car, a transverse partition provided with doors, a removable longitudinal partition, platforms detachably arranged on the bottom of the car and supporting the partition, and the covers or linings, substantially as described.

5. In a refrigerator-car, the combination with a car, of the side and end linings, horizontal beams connecting the side linings, a longitudinal partition having a fixed upper portion and removable lower portions, a transverse partition provided with doors, ice pans or receptacles mounted upon the transverse beams, and the longitudinal tie-frame extending from one end of the car to the transverse partition and provided with diverging side rods, said tie-frame being passed through the end of the car and the partition and provided with nuts, substantially as described.

6. In a refrigerator-car, the combination with a car, of a longitudinal partition, a transverse partition provided with doors 28 hinged at their outer edges, a vertical strip 32 secured to the longitudinal partition, arranged to be engaged by the free edges of the doors and having its ends interlocked with the transverse partition to secure the same to the longitudinal partition, and the vertical bars arranged at the side edges of the transverse partition and adjustably connected with the same, substantially as described.

7. In a refrigerator-car, the combination with a car, of the side and end linings, a longitudinal partition, a transverse partition abutting against the ends of the linings and the longitudinal partition and provided at its ends with adjustable bars arranged vertically and bearing against the sides of the car, a tie-frame connecting the upper end of the transverse partition with the adjacent end of the car, and a cleat secured to the bottom of the car and abutting against the lower edge of the transverse partition, substantially as described.

8. In a refrigerator-car, the combination with a car provided with compartments, and ice pans or receptacles arranged within the compartments and provided with openings, cut-offs arranged in pairs beneath the said openings and sliding in suitable ways, rock-shafts journaled in suitable bearings and provided with arms, and connections between the cut-offs and the arms of the rock-shafts, whereby the cut-offs will be simultaneously reciprocated, substantially as and for the purpose described.

9. In a refrigerator-car, the combination with a car provided with a compartment, and an ice pan or receptacle mounted therein and provided with an opening, a pair of sliding cut-offs mounted in suitable ways, a rock-shaft having an arm, links 46 and 47 connected to the arm, the link 46 being directly connected with the adjacent cut-off, and a pair of levers fulcrumed between their ends and connected with the other link and the other cut-off, substantially as described.

608,087. BARREL-TAP. JOHN WATKINS, Hereford, England. Filed Feb. 21, 1898. Serial No. 671,166. (No model.)



Claim.—A tap for a cask comprising a casing fixed on the end of the cask, a taper-sleeve of cork fitted with a taper-plug, a draw-off pipe passed through the hoop and stave near the end of the cask into a lateral hole of the sleeve, a cover fixed on the casing, and a forked key, substantially as and for the purpose set forth.

608,088. INSULATED RAIL-JOINT. GEORGE A. WEBER, New York, N. Y. Filed Nov. 6, 1897. Serial No. 657,585. (No model.)

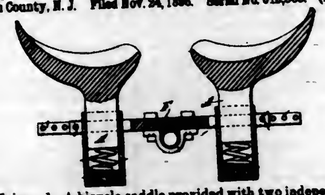
Claim.—1. An insulated rail-joint, comprising a rail-chair for supporting the contiguous ends of rail-sections having a bolt-supporting plate at one edge thereof, insulating material between the ends and said plate, said insulation extending to or near the top of the bolt-supporting plate and conforming to the angle of the rail-chair, insu-

lated blocks on each side of the rail-sections, a bolt or bolts extending through the insulating-blocks, rail, insulation and bolt-supporting plate, and an insulation for the end of the bolt passing through the bolt-supporting plate, substantially as described.



2. An insulated rail-joint, comprising a rail-chair for supporting the contiguous ends of rail-sections, having a bolt-supporting plate at one edge thereof, insulating material between the ends and said plate, said insulation extending to or near the top of the bolt-supporting plate and conforming to the angle of the rail-chair, insulated blocks on each side of the rail-sections, a bolt or bolts extending through the insulating-blocks, rail, insulation and bolt-supporting plate, and an insulation for the end of the bolt passing through the bolt-supporting plate consisting of a metal flanged thimble, a bushing or insulation between the thimble and bolt and an insulation-washer on said bushing between the nut and flange of the metal thimble, substantially as described.

608,089. BICYCLE-SADDLE. LOUIS P. WELLHAUS, Union, Hudson County, N. J. Filed Nov. 24, 1896. Serial No. 613,308. (No model.)



Claim.—1. A bicycle-saddle provided with two independent seat portions each having in its upper face a depression of irregular shape adapted to fit the under surface of the thigh and buttock and a stem integral with each seat portion, the said seat portion and stem being composed entirely of rubber, whereby the seat portion will yield to the weight of the rider and bend as a whole with respect to the stem to conform to the position of the thigh, as and for the purpose set forth.

2. A bicycle saddle, comprising a saddle-bar provided with socket portions rigidly held thereon, but adjustable to and from the center of said bar, and right and left seat portions each formed with an integral stem arranged to be received in said socket, the seat portions and stems being composed entirely of rubber, whereby the seat portion will yield to the weight of the rider and bend as a whole with respect to the stem to conform to the position of the rider's thigh, as and for the purpose set forth.

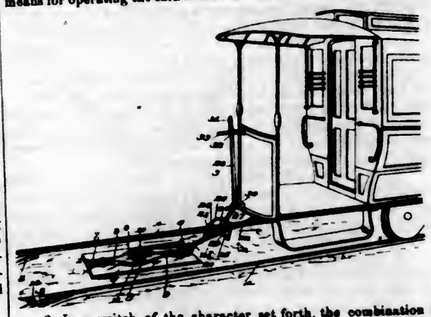
3. A bicycle-saddle, comprising the supporting-bar arranged for connection with the seat-post of the bicycle and having bifurcated ends formed with a plurality of bolt-holes, cylinders received in said bifurcated ends and provided with lugs arranged to rest on the top of said bar and an apertured lug arranged to receive a bolt passed through corresponding bolt-holes in the said bifurcated ends of the bar, whereby said cylinders may be adjustably held by said bar, and right and left seat portions formed of rubber or similar flexible material and provided with stems received in said cylinders, substantially as described.

4. A bicycle-saddle provided with a supporting-bar arranged for connection with the seat-post of a bicycle, the ends of said bar being bifurcated and formed with a plurality of alining bolt-holes and seat-holding sockets held in said bifurcated ends and provided with an apertured lug arranged to receive a bolt passed through corresponding bolt-holes in the bifurcated ends of said bar, as and for the purpose set forth.

5. A bicycle-saddle, comprising the supporting-bar provided with sockets rigidly held thereon, but adjustable to and from its center, springs received in said sockets, and right and left independent seat portions formed with stems arranged to rest upon the springs in said sockets and composed of flexible or yielding material, whereby the said stems will bend to conform the seat portion to the position of the rider's thigh, as and for the purpose described.

608,090. TRAMWAY-SWITCH. ARTHUR W. WELLS, Boston, Mass., assignor of one-half to Jane E. Bishop, same place. Filed Jan. 27, 1896. Serial No. 668,194. (No model.)

Claim.—1. In a switch of the character set forth, the combination of a grooved bed, a throw mounted in said bed, a depending shaft connected to said throw, a switch-point located at a distance from the throw and also having a depending shaft, segmental sprockets on the said shafts, sectional chain belts engaging the said sprockets, means for adjusting said sectional chain belts, track-rails, and means for operating the said switch-throw, substantially as described.



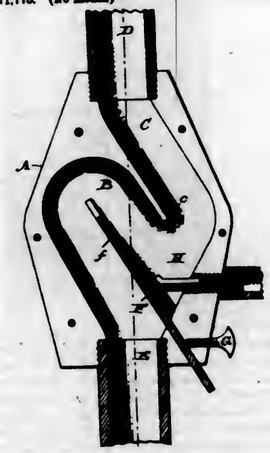
2. In a switch of the character set forth, the combination of track-rails, a bed mounted between a part of said rails, an elongated longitudinally-arranged switch-throw movably located in said bed, a switch-point at a distance from said bed, depending angular shafts connected to the throw and switch-point, segmental sprockets on the said shafts, sectional chain belts engaging the said sprockets, rods attached to the ends of said sectional chain belts, turnbuckles adjustably connecting the said rods, and means for operating the throw, substantially as described.

3. In combination with a tram-car, of a laterally and vertically movable arm, a shipping-roller carried at the outer free end of said arm, a lever carrying a spring-actuated roller engaging said arm, and a throw adapted to be operated by the shipping-roller, substantially as described.

4. In combination with a tram-car, of a vertically and laterally adjustable arm connected thereto having a shipping roller or wheel in the outer free end thereof, a guide mounted on the said arm, a lever pivoted to the end of the car having a lower angularly-extending end carrying a yoke in which a rod is supported, a roller movably mounted on the said rod and located in the said guide, springs on the said rod bearing against opposite sides of said roller, means for sustaining the adjustment of the said lever, and a switch-throw adapted to be engaged by the said shipping roller, substantially as described.

5. In combination with a tram-car, of a laterally and vertically adjustable arm having a shipping-roller at the outer free end thereof, a lever pivotally mounted at the end of the car and provided with a laterally-movable spring-actuated roller in connection with said arm, means for sustaining the adjustment of said roller, and a switch-throw adapted to be engaged by said shipping-roller, substantially as described.

608,091. SAND-DISTRIBUTER FOR LOCOMOTIVES. JOSEPH H. WELLS, Jr., and FRANK A. WELLS, Aurora, Ill. Filed Feb. 26, 1896. Serial No. 671,775. (No model.)

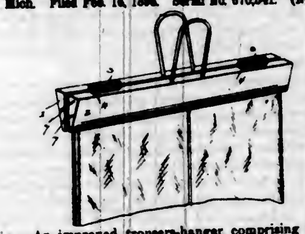


Claim.—1. A sand-distributing device for locomotives and the like, comprising a box or casing having a cavity or chamber therein, a sand-supply passage or conduit communicating with the said cavity or chamber below the top thereof, an adjustable slide extending into the said cavity or chamber to a point above the mouth of the said passage or conduit, a sand-distributing pipe or conduit leading from the bottom of the said cavity or chamber, and an air-pipe communicating with the said cavity or chamber above or behind the said slide, substantially as specified.

2. In a sand-distributer for locomotives and the like, the combination with a sand-containing chamber, and means for supplying the same with sand, of a slide extending obliquely upwardly into and partially across the said chamber to a point above the point where the sand enters said chamber, and an air-discharge pipe extending into the said chamber at a point above or behind the lower portion of the said slide, substantially as specified.

3. A sand-distributer for locomotives and the like, having an adjustable slide extending diagonally across its sand-containing chamber in a position to intercept the direct passage of sand through the said chamber to the distributing-pipe, means for securing the adjustment of the said slide, and an air-discharge pipe or nozzle extending into the said chamber above or behind the lower portion of the said slide, substantially as specified.

608,092. TROUSERS-HANGER. GEORGE G. WILLIAMS, Charlevoix, Mich. Filed Feb. 16, 1898. Serial No. 670,541. (No model.)



Claim.—As improved trousers-hanger comprising the parallel jaws 1 and 2 formed with contiguous parallel plane faces, the spring-hinges 3 3 connecting the upper edges of the outer ends of said jaws, and the independent diverging looped handles secured to the upper edges of the jaws and means whereby said jaws will travel to and from each other in parallel planes, substantially as and for the purpose set forth.

608,098. DRAFT-EQUALIZER. HERMAN WEISSENBORN, Borna, Germany, assignor to Hermann Leonhardt, Hamburg, Germany. Filed Dec. 8, 1897. Serial No. 661,147. (No model.) Patented in Germany Mar. 22, 1892, No. 65,711, and in England July 21, 1892, No. 13,206.

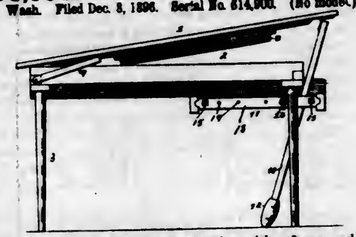


Claim.—1. In a draft cushioning or equalizing device, the combination of a bar connected to the object to be drawn, a pair of similar levers pivoted on the ends of said bar, and a single contractile spring interposed between and having its opposite ends directly connected to the rear ends of said levers, the draft devices being applied to the outer ends of said levers, whereby the spring is elongated when draft is applied, for the purpose and substantially as described.

2. The combination of the bar *d*, the two levers pivoted respectively to the opposite ends of said bar, the spring *a* connecting the rear ends of said levers and the two link-rods *f* connected respectively to the rear ends of said levers and engaging the one within the other, and adapted to prevent undue elongation of the spring, all substantially as and for the purpose described.

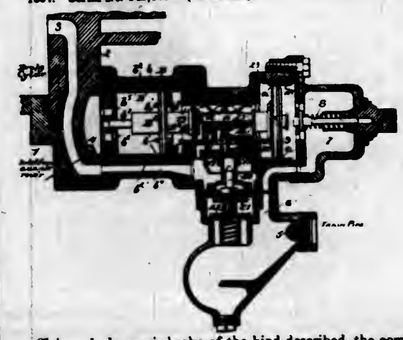
3. The herein-described draft cushioning and equalizing device consisting of the bar *d*, the opposite levers *c*, *c*, pivoted on the ends thereof, the expansible and retractable spring *a* connected at its opposite extremities to the rear ends of said levers, and the singletrees connected to the front ends of said levers, with the link-rods *f* respectively connected to the rear end of said levers and having interlocking loops *f'* on their inner ends and adapted to limit the expansion of the spring, all substantially as and for the purpose set forth.

608,094. ADJUSTABLE TABLE. JOHN J. ANDERSON, Ellensburg, Wash. Filed Dec. 8, 1896. Serial No. 614,900. (No model.)



Claim.—In a table, the combination with a frame and movable top piece, of a clamp mounted upon said frame and consisting of a stationary member and a spring-pressed movable member, means for moving said movable member against the action of the spring, and an operating-lever pivoted to said top piece and situated between the members of said clamp.

608,095. AIR-BRAKE. CHARLES I. ASHLEY, Atlanta, Ga., assignor of one-fourth to Charles G. Arthur, same place. Filed Aug. 28, 1897. Serial No. 649,575. (No model.)



Claim.—1. In an air-brake of the kind described, the combination with the air-braking cylinder, the auxiliary air-reservoir, and the triple valve, of means for passing the air around the main piston of the triple valve when in the position of brakes applied, and an automatic pneumatic retaining device for holding the piston in this position to restore air-pressure in the auxiliary air-reservoir before discharging the brake-cylinder, said retaining device being made in the form of a casing, and a piston both sides of which are exposed to the auxiliary pressure of the air-reservoir in both of the positions of said piston, and said piston having its opposite sides exposed to unequal areas of pressure when in position of brakes applied and to equal areas when in position of brakes released, substantially as described.

2. In an air-brake of the kind described, the combination with the air-brake cylinder, the auxiliary air-reservoir, and the triple valve, of means for passing the air around the main piston of the triple valve when in the position of brakes applied, and a device for automatically retaining the triple-valve piston in its said position, said device comprising a casing and a piston, the piston having both its sides exposed to the air-reservoir pressure and to unequal areas of pressure when in position of brakes applied, and both sides exposed to the air-reservoir pressure and to an equal area of pressure when the brakes are released, substantially as and for the purpose described.

3. In an air-brake the combination with the brake-cylinder, the auxiliary reservoir, a triple valve and main piston, of means for passing the air around the main piston of the triple valve, and a retaining device between the triple valve and said reservoir, said retainer consisting of a chamber provided with a partition having a central opening and passages communicating with said triple valve and reservoir, an automatic differentially-acting piston within said chamber engaging said partition when the brakes are applied and adapted to contact directly with the main piston through said opening, whereby when the brakes are applied, said main piston is held in position to recharge said reservoir, substantially as described.

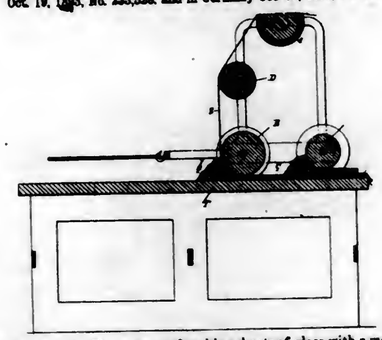
4. In an air-brake the combination with the air-brake cylinder, the auxiliary air-reservoir and the main-valve-operating piston, of retaining means for recharging the auxiliary reservoir and not the brake-cylinder, when in position of "brakes applied," said means consisting of a casing, fixed between the brake-cylinder and the triple-

valve casing, a bushing within said casing provided with an annular air passage-way between the bushing and the casing, a cup-shaped collar fixed at one end of said bushing and having a central opening, a differentially-acting piston the stem of which extends through said opening and adapted to engage directly with the main piston, said bushing and collar provided with pressure-communicating passages to the auxiliary reservoir and brake-cylinder, substantially as described.

5. A retaining device for the triple-valve piston consisting of a piston, a piston-cylinder having a peripheral chamber b^3 with holes b' and b^2 and channel b, and the differentiating collar B^4 located between holes b' b^2 covering a portion of the area of the piston when adjusted against the same, substantially as and for the purpose described.

6. The combination of the casing B having openings b^2 and passage-way b^4, the bushing B' having peripheral chamber b^3, holes b' and b^2 communicating therewith, and channel b, the fixed differentiating collar B^4, and the piston B^2, with the stem B^3, substantially as and for the purpose described.

608,096. MANUFACTURE OF GLASS WITH METALLIC NETTING EMBEDDED THEREIN. LEON APPERT, Paris, France. Filed Apr. 27, 1894. Serial No. 509,344. (No model.) Patented in France Oct. 19, 1893, No. 233,528, and in Germany Oct. 30, 1893, No. 81,436.



Claim.—1. The process of making sheets of glass with a metallic trellis embedded therein, said process consisting in pouring and rolling out a layer of glass simultaneously applying the trellis to the surface thereof, pouring a second layer of glass upon the trellis and rolling the same, the operation being carried on progressively, substantially as described.

2. The described appapatus for manufacture of glass sheets with an embedded network, said apparatus comprising pressure devices or rollers one behind the other for simultaneously acting upon several superposed layers of glass, the rollers being separated a sufficient distance to form a pouring-space, and a spool for the netting and devices for feeding the same under the first pressure device or roller, the table and pressure devices being movable one relatively to the other, substantially as described.

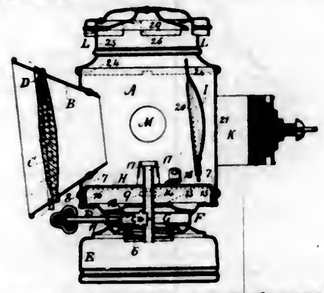
3. The combination with the table upon which the sheet of glass is to be formed, of pressure-rollers for forming simultaneouly several layers of glass, the periphery of the second pressure-roller being supported at a greater distance from the surface of the table than that of the first roller, a spool for the wire-netting, and means for conducting the same under the first pressure-roller, so that the latter while rolling out the first layer incorporates the netting therewith, substantially as described.

4. The combination of the table, the pressure-rollers supported at different distances above the surface of the table, the spool and devices for feeding the wire-netting under the first roller as the latter moves over the surface of the glass, and means for applying tension to the wire-netting, substantially as described.

5. The combination with the table, the pressure-rollers supported at different distances from the table for simultaneouly forming several superposed layers of glass and uniting them into a single sheet, the means for unwinding a spool of wire-netting as the rolling proceeds and passing it around the pressure-roller that compresses the first layer, and a supplemental roller or shield acting upon the molten glass in front of said pressure-roller, substantially as and for the purpose described.

608,097. BICYCLE-LAMP. LEWIS J. ATWOOD, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. Filed Dec. 7, 1896. Serial No. 614,748. (No model.)

Claim.—1. The combination with the lamp-body and the glass, of a conical reflector receiving and supporting the glass and having an annular groove or bead around the same, a circular wire for holding the glass in position and having one end bent outward to pass through a hole in the conical reflector, and the other end bent inwardly to facilitate the insertion or removal of the wire for holding the glass, substantially as set forth.



2. The combination with the lamp-body, of a reservoir and a burner-base to which the reservoir is attached and having a cylindrical outer edge and means for connecting the same with the lower end of the lamp-body and a removable draft-plate resting at its edge upon the burner-base, there being numerous small perforations in the draft-plate and perforations around the burner-base for the passage of air, substantially as set forth.

3. The combination with the lamp-body, of a reservoir and a burner-base to which the reservoir is attached and having a cylindrical outer edge and means for connecting the same with the lower end of the lamp-body and a removable draft-plate resting at its edge upon the burner-base, there being numerous small perforations in the draft-plate and perforations around the burner-base for the passage of air, and a deflector attached to the removable draft-plate and rising at opposite sides of the wick-tube, substantially as set forth.

4. The combination in a lamp for cycles, with the reservoir and burner-base, of a wick-tube projecting above the burner-base and having a straight upper edge with notches at the ends, and a deflector having straight edges at the sides of and rising above the wick-tube, substantially as set forth.

5. The combination with the wick-tube, shaft and pointed wick-raisers, acting directly upon the wick, in a lamp for vehicles, of a block having a hole through which the cylindrical wick-raiser shaft passes freely, and a screw-threaded hole at substantially right angles to the shaft and a clamping-screw passing into said hole and acting directly against the shaft to clamp and hold the same without any risk of bending the shaft, substantially as set forth.

6. The combination with the lamp-body and reservoir, of a burner-base to which the reservoir is attached such base having a cylindrical edge and means for connecting the same to the lower part of the lamp-body, a removable perforated draft-plate setting within the burner-base, and means for holding down such removable draft-plate, substantially as set forth.

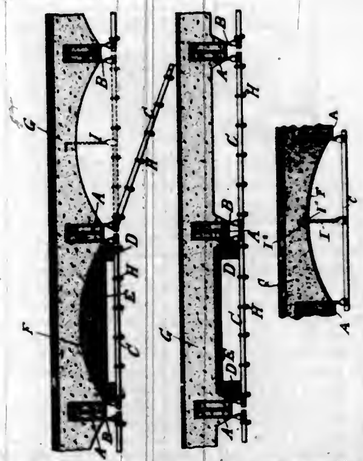
7. The combination with the lamp-body and reservoir in a bicycle-lamp, of a burner-base attached to the reservoir and extending upward and outward and terminating as a cylindrical rim, and means for securing the same to the lamp-body, a removable draft-plate supported by the burner-base and springs for holding such removable draft-plate to the burner-base, substantially as set forth.

8. The combination with the cylindrical lamp-body, of a removable top connected at its lower edge with the top end of the cylindrical lamp-body and contracted to form a cylinder having tongues extending above the upper end, a perforated cap fastened to the upper ends of these tongues and having a downward-projecting flange outside of and surrounding the top of the cylinder and the openings between the tongues, and a deflector fastened at the central portion to the under side of the perforated cap and smaller than the cylinder of the cap, there being a free passage for air between such perforated cap and the deflector, substantially as set forth.

608,098. CONSTRUCTION OF FIREPROOF FLOORS. THOMAS L. BAKER, London, England. Filed Dec. 24, 1897. Serial No. 663,333. (No model.) Patented in England Mar. 17, 1894, No. 5,636.

Claim.—1. In the construction of fireproof floors with removable centering, metal bars for supporting such centering suspended from the joists in a detachable manner, which bars are adapted to be refixed after the removal of the centering and serve as the supports for the ceiling, substantially as described.

2. In combination with the detachable ceiling-bars intermediate suspension straps or rods having their upper ends secured either to the concrete filling of the floor or to arched sheet metal carried by the joists, substantially as described.



3. In the construction of fireproof floors with removable centering, the combination with the supporting-joists A of the metal strips B supported by said joists and having their lower ends depending below the latter and metal bars C detachably connected to the lower ends of the strips, said bars serving as supports for the centering during the construction of the floor, and as supports for the ceiling after the centering has been removed.

608,099. VEHICLE-HUB. WILLIAM H. BENTLEY and JOHN E. ROBERTS, Jamestown, N. Y. Filed July 19, 1897. Serial No. 645,123. (No model.)



Claim.—1. A vehicle-hub having a shoulder, and a hollow spoke-connecting ring detachably secured on said hub by a force fit only, the inner diameter of the outer edge of said ring being less than that of the other edge, thereby forming an inwardly-projecting flange abutting against the shoulder on the hub, substantially as described.

2. A spoke-connecting ring having around one edge an inwardly-projecting flange whose inner diameter is less than that of the other edge, in combination with a shell, having a shoulder against which said flange abuts, both edges of said ring having a force fit on the shell, substantially as described.

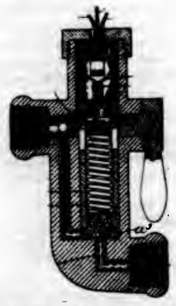
3. A vehicle hub comprising a shell having a collar near each end, a reduced portion beyond the collar having a shoulder, and a spoke-connecting ring adapted to pass over said reduced portion to fit upon said collar, with a flange on the ring abutting against the shoulder, substantially as described.

4. A bicycle-hub, comprising a shell having a collar and a reduced screw-threaded portion beyond said collar, a spoke-connecting ring fitting the collar and having a flange abutting against the outer edge of said collar, and a sprocket-wheel screwed upon the shell and clamping said flange against the collar, substantially as described.

5. A vehicle-hub, comprising a shell threaded at one end, hollow rings secured on the periphery of the shell near either end, one of said rings being adjacent to said threaded portion, and a sprocket-wheel fitting the threaded end of the shell and screwing against the ring which is adjacent to the threaded portion, substantially as described.

608,100. ANNUNCIATOR GAS-FIXTURE. JOHN L. BIXBY, Arlington, Mass., assignor to Nathaniel Comant, Brookline, Mass. Filed Nov. 26, 1897. Serial No. 660,764. (No model.)

Claim.—1. In combination a cock for permitting and preventing the flow of a fluid; an annunciator with means for automatically breaking the circuit; electrodes controlled by the cock to make the circuit when the cock is opened; and electric conductors connecting the electrodes of the annunciator with electrodes of the cock, substantially as described.



2. A cock having a passage connecting its inlet and outlet; a valve controlling that passage; a spring-plunger controlling that valve; and a cam to move the plunger and automatically hold the plunger when in its elevated position, against the force of its spring, all substantially as and for the purpose specified.

3. In combination a cock with a passage controlled by a spring-plunger and a cam to move the plunger against the force of its spring: an electrode carried by the plunger; a second electrode which is in contact with the plunger-electrode when the valve is closed; a third electrode which is in contact with the plunger-electrode when the valve is open; conductors for the three electrodes; and an annunciator connected by the three conductors with the three electrodes, all substantially as described.

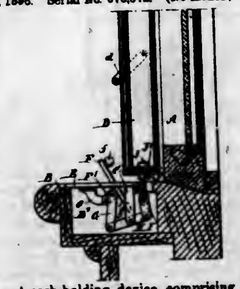
608,101. CURTAIN-POLE. ANNA E. BOWERS, Wilkinsburg, Pa. Filed Jan. 20, 1898. Serial No. 667,195. (No model.)



Claim.—1. A curtain pole, which is provided with a cut-away portion comprising one-quarter of the pole extending throughout the length thereof, and the two right-angled faces, which are thus formed in the pole being provided with grooves also extending throughout the length of the pole, a quarter-round strip which is provided on its right-angled faces with ribs adapted to match with the grooves in the pole, and securing-sleeves adapted to engage the ends of the pole, and provided with cut-away portions whereby the quarter-round strip may be removed or placed in its position on the pole, substantially as shown and described.

2. In combination, a curtain-pole which is provided throughout its length with a cut-away portion, a strip adapted to fit within the said cut-away portion, sleeves engaging the ends of the pole, and provided with cut-away portions which permit the insertion of the strip in the cut-away portion, of the pole, and spring-plates secured to the rear face of the pole and adapted to engage the aforesaid sleeves and prevent the same becoming accidentally turned, substantially as shown and described.

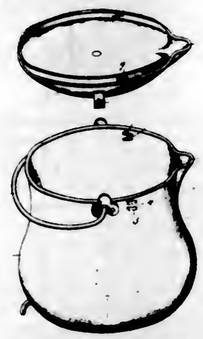
608,102. SASH-FASTENER. LEWIS H. BOWMAN, Walla Walla, Wash., assignor of one-fourth to Richard McGahey, same place. Filed Feb. 16, 1898. Serial No. 670,572. (No model.)



Claim.—A sash-holding device, comprising a vertically-moving sash-locking member, a horizontal, pivoted lever beneath the win-

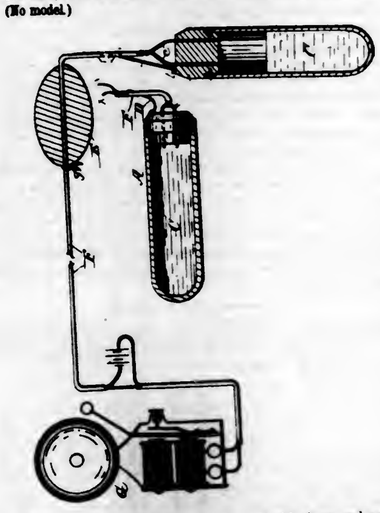
dow-sill, connections from one end of said lever to the sash-locking member, a bent hand-lever pivoted by one end beneath the sill and having an arm lying flush with the sill when the window is locked, and a link connecting said lever near its bend with the other end of the first-named lever, the pivots on the hand-lever and its connected link being nearly in line when in the locked position, the center pivot being sufficiently at one side of the center line to hold the parts locked, substantially as described.

608,108. DEVICE FOR KEEPING LIDS ON BOILERS. MARY R. BROWN, Swedesborough N. J. Filed Sept. 4, 1897. Serial No. 650,636. (No model.)



Claim.—A cooking utensil having guides on each side thereof near its top, and a pouring-lip, the guides on one side converging and those on the opposite side diverging in the direction of the lip, in combination with a lid or cover having a covering-lip and carrying lugs, said lugs conforming in contour and adapted to engage said guides when the lid or cover is rotated.

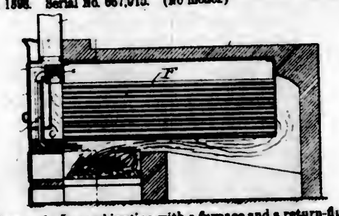
608,104. ELECTRIC SOUNDING DEVICE FOR SHIPS. JOHN P. BUCKLEY, New Orleans, La. Filed Dec. 11, 1897. Serial No. 661,469. (No model.)



Claim.—1. The combination with a suitable float, and an alarm device, of a shell or casing containing a liquid contact-maker, electric wires attached to the float, the casing, and the alarm device, to suspend the casing without giving an alarm, and to give an alarm when the casing is not suspended, or partially so, as set forth.

2. The combination with the sounder adapted to be projected in advance of a ship, and an alarm device on the ship, of the electric wires connecting the sounder with the alarm device, and a float adjustable on said wires, as set forth.

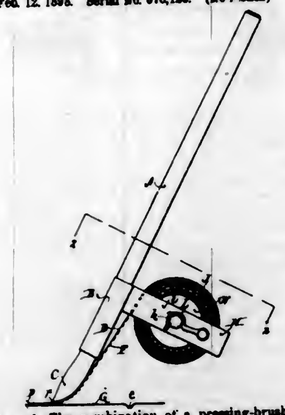
608,105. FURNACE. DENNIS H. BURNS, Chicago, Ill. Filed Jan. 17, 1898. Serial No. 667,015. (No model.)



Claim.—1. In combination with a furnace and a return-flue boiler therein, of a hood consisting of connected top and inner and outer side walls, located between the front wall of the furnace and the front flue-sheet of the boiler, above the uppermost line of flues of said boiler, said hood being of such size as to be entirely contained within the circumference of the front end of the boiler, and arranged with its open side or mouth directed downwardly, two return-pipes opening into the hood through the outer wall thereof, and leading downwardly into the combustion-chamber, and directed rearwardly at their lower ends substantially in line with the lower side of the boiler, and a pipe leading from the boiler provided with laterally-separated nozzles adapted to deliver steam under pressure to the interior of the hood adjacent to the upper ends of said return-pipes.

2. In combination with a furnace and a return-flue boiler therein of a hood located between the front wall of the furnace and the front flue-sheet of the boiler, and above the uppermost line of flues of said boiler said hood consisting of a connected inner and outer side and top walls, the lower sides of said walls of the hood being horizontal, and located at such distance apart as to provide a relatively wide downwardly-opening mouth for said hood, two return-pipes opening into the interior of the hood through the outer wall thereof and above the level of the uppermost line of flues of the boiler, and leading downwardly and directed at their extreme lower ends rearwardly into the combustion-chamber, and a pipe leading from the boiler provided with laterally-separated nozzles adapted to deliver steam under pressure to the interior of the hood adjacent to the upper ends of said return-pipes.

608,106. GILDING-TOOL. WALTER H. COE, Providence, R. I. Filed Feb. 12, 1898. Serial No. 670,129. (No model.)

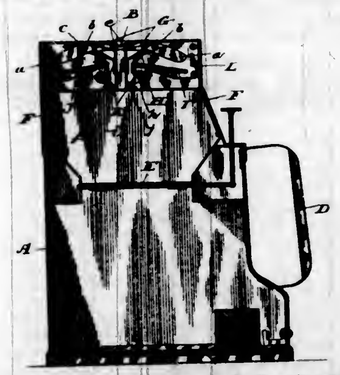


Claim.—1. The combination of a pressing-brush with holding means for the package-roll of paper and metallic leaf whereby upon the movement of the brush over the surface upon which the metallic leaf is to be deposited, the said paper and metallic leaf may be suitably unwound from the roll, and pressed against the said surface, substantially as described.

2. The combination of a brush having its face formed to correspond with the cross-section of the surface over which it is to be moved, with holding means for the package-roll of paper and metallic leaf, substantially as described.

608,107. FARE-BOX. JOSEPH H. COLEMAN, Tottenham, Canada, assignor of one-half to James Steel, Montreal, Canada. Filed Sept. 29, 1897. Serial No. 653,451. (No model.)

Claim.—1. A fare-box having a passage-way for fares, in combination with one or more pivoted needles having their points normally out of the path of fares placed in the box; a pivoted lock-plate; and a spring adapted to counterbalance the weight of the lock-plate so that the plate will press the points of the needles into the passage-way for fares when the box is turned from its normal position, substantially as and for the purpose specified.



2. A fare-box having a passage-way for fares, in combination with two series of pivoted needles located one on each side of the passage-way with the needle-points normally out of the path of the fares placed in the box; a pivoted lock-plate for each series of needles; and a spring adapted to counterbalance the weight of each lock-plate so that the plate will press the points of the needles into the passage-way for fares when the box is turned from its normal position, substantially as and for the purpose specified.

3. A fare-box having a passage-way for fares, in combination with one or more needles with weighted tails adapted to normally retain the points of the needles in the path of fares placed in the box; a pivoted lock-plate; and a spring adapted to counterbalance the weight of the lock-plate so that the plate will maintain the points of the needles in their usual place when the box is turned from its normal position, substantially as and for the purpose specified.

4. A fare-box having a passage-way for fares, in combination with two series of pivoted needles located one on each side of the passage-way and provided with weighted tails adapted to normally retain the points of the needles in the path of fares placed in the box; a pivoted lock-plate for each series of needles, and a spring adapted to counterbalance the weight of each lock-plate so that the plates will maintain the points of the needles in their usual place when the box is turned from its normal position, substantially as and for the purpose specified.

5. A fare-box having a passage way for fares, in combination with one or more pivoted needles having their points normally out of the path of fares placed in the box; one or more pivoted needles with weighted tails adapted to normally retain the points of the needles in the path of fares placed in the box; a pivoted lock-plate and a spring adapted to counterbalance the weight of the lock-plate, substantially as and for the purpose specified.

6. A fare-box having a passage-way for fares, in combination with one or more pivoted needles having their points normally out of the path of fares placed in the box; one or more pivoted needles with weighted tails adapted to normally retain the points of the needles in the path of fares placed in the box; one or more pivoted needles so placed that they will close the passage-way for fares and prevent the fares in the box from reaching the before-mentioned needles when the box is inverted, a pivoted lock-plate and a spring adapted to counterbalance the weight of the lock-plate, substantially as and for the purpose specified.

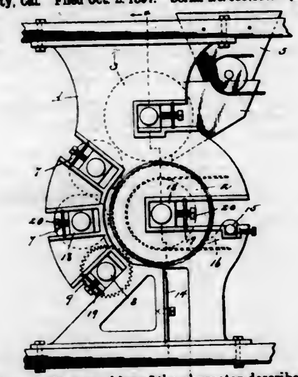
7. A fare-box having a passage-way for fares, in combination with two series of pivoted needles located one on each side of the passage-way with the needle-points normally out of the path of the fares placed in the box; two series of pivoted needles with weighted tails adapted to normally retain the points of the needles in the path of fares placed in the box; two series of pivoted needles located one on each side of the passage-way with the needle-points normally out of the path of fares placed in the box; a pivoted lock-plate for each double series of needles and a spring adapted to counterbalance the weight of each lock-plate, substantially as and for the purpose specified.

8. In a fare-box, a passage-way for fares, in combination with the needles G, pivoted on the spindles *b*, and provided with the weighted tails *a*; the needles H, similarly pivoted; the pivoted lock-plates I; the springs J; the bars *e*, and *f*, and the vertical bars *j*, forming slots for the needle-points, substantially as and for the purpose specified.

9. In a fare-box, a passage-way for fares, in combination with the needles H, suitably journaled upon the spindles *b*; the pivoted lock-plates I; the springs J; the bars *e* and *f*, and the vertical bars *j* forming slots for the needle-points, substantially as and for the purpose specified.

10. In a fare-box, a passage-way for fares, in combination with the needles H, suitably journaled upon the spindles *b*; the pivoted lock-plates I; the springs J; the bars *e* and *f*; the vertical bars *j* forming slots for the needle-points; and the needles K and bars *i*, substantially as and for the purpose specified.

608,108. RAISIN-SEEDER. CARY S. COX, Fresno, Cal., assignor of one-half to the Phœnix Raisin Seeding and Packing Company, Fresno County, Cal. Filed Oct. 2, 1897. Serial No. 653,889. (No model.)



Claim.—1. In a machine of the character described, the combination of an impaling or perforating roll, adjustable rolls coacting therewith, a seed-loosener comprising a shaft supporting a series of independently-movable serrated disks, a knife in advance of said seed-loosener, and stationary strippers for removing the pulp from the impaling or perforating roll, substantially as described.

2. In a machine of the character described, the combination of an impaling or perforating roll having peripheral projections, a hopper with a feed-roll, a chute leading from said hopper to the impaling or perforating roll, a roll above the impaling or perforating roll and coacting therewith, adjustable side rolls also coacting with the impaling or perforating rolls, a seed-loosener consisting of a shaft supporting a series of serrated disks having independent movement on said shaft, a spring engaging said disks and having an adjusting-nut bearing thereon for regulating the movement of the disks, a knife in advance of said seed-loosener, and strippers to engage the impaling or perforating roll, substantially as described.

608,109. ELECTRIC LIGHT FOR SURGICAL PURPOSES. WILLARD E. DOW, Braintree, Mass. Filed Mar. 26, 1897. Serial No. 629,341. (No model.)



Claim.—1. The combination with a head-band, of a reflector carried thereby, a condensing-lens supported in front of said reflector, a lamp mounted between them, and means to adjust said lamp forward or backward relatively to the reflector, substantially as described.

2. In an electric device for surgical purposes, a band to secure the apparatus to the surgeon's head, a support secured to said band to be above and between the eyes of the operator, a reflector projecting from said support, an electric lamp within said reflector, said re-

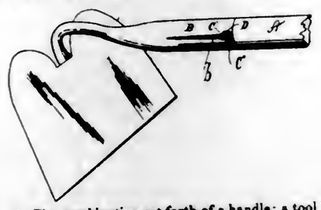
flector having its apex toward the operator, and having its sides divergent at a small acute angle and terminating short of the lines of vision of the operator converging on the object under investigation, and said lamp being adjustable forward and backward along the axis of said conical reflector, substantially as described.

3. A reflector, having a central hollow shank extending axially at its rear, an electric lamp and carrier-rod therefor movable within said shank forward and backward relatively to the focus of the reflector, and means to clamp them in adjustment, substantially as described.

4. A reflector, having a central hollow shank extending centrally rearward from its center, and a lens at its front end, an electric lamp and carrier-rod therefor movable within said shank, and means to clamp them in adjustment, substantially as described.

5. In an instrument for surgical purposes, a tubular shank, an electric lamp, and its carrier-rod removably carried in said shank, the latter being of insulating material substantially fitting said shank and having two hollow conductors embedded within it to receive the circuit-terminals, and the lamp having no transverse section larger than said rod, whereby said carrier-rod and lamp may be inserted and removed together at pleasure, substantially as described.

608,110. DEVICE FOR ATTACHING IMPLEMENTS TO HANDLES. GEORGE H. DUNLOP, Hollywood, Cal. Filed Feb. 17, 1898. Serial No. 670,691. (No model.)



Claim.—1. The combination set forth of a handle; a tool having a shank provided with a socket to receive the handle, such socket being tapered and the shank-socket being slotted only at its open end; and means for clamping the slotted end of the shank upon the handle.

2. The combination set forth of a handle; a ferrule slotted along a portion of its length and adapted to fit upon the handle, and provided with outwardly-projecting lugs or ears; and means for drawing the lugs or ears together to clamp the ferrule upon the handle.

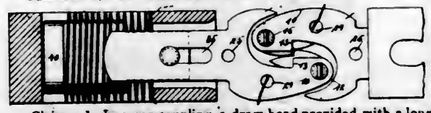
3. The combination set forth of a handle tapered at its end; a tapering ferrule adapted to seat upon the handle, and having a portion of its length, at its larger end, slotted, the inside of the slotted end being provided with projections to take into the wood of the handle; and means for clamping the slotted end of the ferrule upon the handle to cause the projections to bite into the wood.

608,111. BALL-CASTER. LEONARD F. EATON, Sullivan, Ind. assignor of one-half to Thomas B. Eaton, same place. Filed Feb. 25, 1898. Serial No. 671,588. (No model.)



Claim.—A caster comprising a straight tube or barrel adapted to be inserted into a furniture-leg the whole length of the tube, an inwardly-turned lip at each end of the barrel, the plug and the balls held in the barrel by the said lips, with one of said balls protruding from the barrel, as set forth.

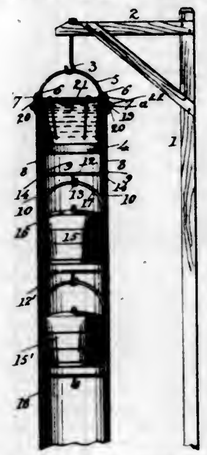
608,112. CAR-COUPLING. VALENTINE ERBACH, Scranton, Pa. Filed Oct. 14, 1897. Serial No. 655,144. (No model.)



Claim.—1. In a car-coupling, a draw-head provided with a long and short horn at opposite sides, the long horn being chambered and provided with a shoulder between its ends, at the inner side, a knuckle pivoted to swing in the chamber of the horn and having a vertical shoulder in line with the shoulder formed in the long horn, and a releasing device carried by the knuckle, substantially as specified.

2. In a car-coupling, a draw-head provided with a long and a short horn at opposite sides, the long horn being chambered and having a shoulder formed between its ends, on the inner side, a knuckle mounted to swing in the chamber of the long horn and having a vertical shoulder in line with the shoulder formed in the long horn, the said knuckle at its pivot-point having its lower surface inclined and engaging a correspondingly-inclined surface on the draw-head, and a release-lever pivoted to the knuckle, substantially as specified.

608,113. MILK-COOLER. RHODES ESTELLE, Lexington, Tex. Filed Aug. 5, 1897. Serial No. 647,226. (No model.)



Claim.—The combination with the water-pail 1 and the milk-pails 15 15', of the textile envelop 18, the annular ring 19 fixed to said envelop and the suspension-hooks 20 fixed to said ring and adapted to engage the rim of the water-pail, whereby the weight of said envelop will be borne by said ring, so that its upper portion 21 will hang loosely within said water-pail, substantially as shown and described.

608,114. SECTIONAL SASH-WEIGHT. MONT R. FARRAR, Greensborough, N. C. Filed Jan. 29, 1898. Serial No. 668,408. (No model.)



Claim.—1. The herein-described sash-weight section provided at its opposite ends with duplicate hooks, the ends of which are reduced in thickness, and extend toward the body of the section leaving an opening too limited for the lateral passage of a hook of a connected section.

2. The herein-described sash-weight section provided at its opposite ends with duplicate hooks projecting in diametrically opposite directions, the ends of which are reduced in thickness and extend toward the body of the section leaving an opening too limited for the lateral passage of a hook of a connected section.

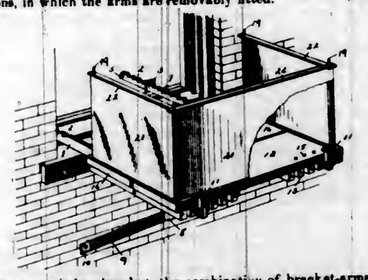
3. A sectional sash-weight composed of two or more connected sections each of which is provided at its opposite ends with diametrically opposite projecting duplicate hooks, whereby said sections are interchangeable with respect to their connecting ends, substantially as described.

4. A sectional sash-weight composed of two or more connected sections each of which is provided with diametrically opposite projecting duplicate hooks at its ends, the ends of said hooks being reduced in thickness and extending toward the body of the section leaving an opening too limited for the lateral passage of a hook of a connected section, whereby said sections are interchangeable with respect to their connecting ends and are inseparable except when disposed at substantially a right angle, substantially as described

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608,115. FOLDING WINDOW-BRACKET. HANS FRAHM, Omaha, Nebr. Filed July 3, 1897. Serial No. 643,389. (No model.)

Claim.—1. In a window-bracket, the combination of bracket-arms having hooks adjustably mounted thereon, braces hinged to said arms, and removable floor-sections having transverse strips running parallel with said arms and forming grooves on the under side of said sections, in which the arms are removably fitted.

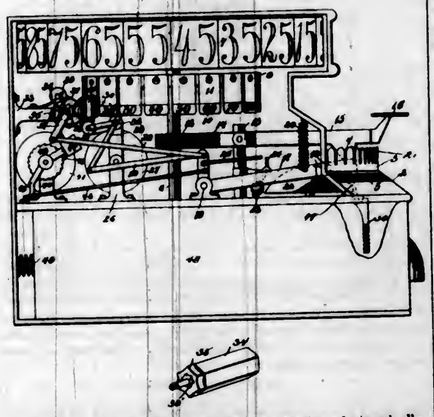


2. In a window-bracket, the combination of bracket-arms, and a removable floor-section having transverse strips thereon forming grooves on the under side thereof parallel with and receiving said bracket-arms.

3. In a window-bracket, the combination of bracket-arms having notches or recesses therein, keepers on the outer ends of said arms, hooks engaging the notches or recesses on the arms, braces movably attached to and depending at an angle from the outer portions of the arms, a plurality of floor-sections extending across from one arm to the other and having on the under side thereof opposite series of transversely-arranged strips forming grooves parallel with and receiving said arms, said strips being arranged in series on each floor-section and the several series alining with each other when several floor-sections are adjacently mounted, posts removably mounted in the floor-sections and having top rails, and strips of canvas or analogous material held by said posts and rails.

4. In a window-bracket, the combination of bracket-arms, a series of floor-sections removably mounted thereon, having transverse strips arranged on opposite sides and forming grooves which are adapted to aline when several of the floor-sections are placed adjacent to each other to removably and adjustably receive the said bracket-arms, and an inclosure removably supported by the said floor-sections, substantially as described.

608,116. CASH-REGISTER. EUGENE X. GENOUD, Jersey City, N. J. Filed July 17, 1897. Serial No. 644,936. (No model.)



Claim.—1. In a cash-register, the combination of a vertically-disposed rotatable shaft having an indicator-wheel on the upper portion thereof and a type-wheel below the said indicator-wheel and rotatable equally with the latter, a platen in rear of the said type-wheel, paper-feeding devices carrying a paper strip movable over the said platen, a single key-lever shiftable in a horizontal plane in lateral directions and also depressible, and another lever below the said key-lever and operated by the latter, the said second lever having the rear thereof connected to the platen and paper-feeding devices.

2. In a cash-register, the combination of a vertically-disposed shaft having a horizontally-disposed indicator-wheel fixed to the upper portion thereof and rotatable therewith, a type-wheel on the said shaft below the indicator-wheel having a series of yielding type-plates arranged vertically, a platen in rear of the said type-wheel, paper-feeding devices for controlling the movement of a paper strip over the said platen, a hammer to engage the inner side of the said type-plates and press them toward the platen, operating-gears for the said shaft, a single key-lever shiftable in a horizontal plane in opposite lateral directions and also depressible, a second lever below the said key-lever, and connecting devices between the rear end of the said second lever and the paper-feeding devices, platen and hammer, whereby said latter parts are operated at proper times.

3. In a cash-register, the combination of a vertical shaft having a horizontally-disposed indicator-wheel fixed on the upper portion thereof and rotatable therewith, a type-wheel on the said shaft below the indicator-wheel having a series of depending yielding type-plates, a platen in rear of the said type-wheel having straight faces, paper-feeding devices to control the movement of a strip of paper over the said platen, a hammer to engage the inner side of the type-plates and press them toward the platen, an inking roller at one side of the platen, gearing for operating the said shaft, a single key-lever shiftable in opposite lateral directions in a horizontal plane and also depressible, a front band having a series of notches therein alining with indications, the key-lever being movable into said notches, a second lever below the key-lever having a rear angular end, and connecting devices attached to the rear angular end of said second lever at varying elevations for operating the platen, hammer, paper-feeding devices and inking-roller simultaneously with the depression of the said key-lever.

4. In a cash-register, the combination with a central shaft having an indicator and type wheels carried thereon, a pinion fixed on said shaft, a segmental gear mounted in front of said shaft and meshing with said pinion, a single key-lever having its rear end attached to said segmental gear, said key-lever being shiftable in opposite lateral directions in a horizontal plane and also depressible, paper-feeding, inking and pressure devices, and a platen coacting with the said type-wheel, a second lever below the said key-lever having an outer extended segmental bearing-bar and a lower projection, connections between the rear end of the said second lever and the paper-feeding, inking, and pressure devices and platen, a cash-drawer having locking mechanism which is operated by the lower projection of the second lever, and a front band with notches therein alining with lower indications.

5. In a cash-register, the combination with a vertical shaft having an indicator-wheel horizontally disposed on the upper portion thereof, of a type-wheel on said shaft immediately below the indicator-wheel and in a like plane, said type-wheel having a series of pendent spring type-plates, means for pressing the type-plates outwardly for giving the impression therefrom, a single key-lever for operating the said devices movable in a horizontal plane for actuating the indicator and type wheels and also made depressible, and a second lever provided with a segmental arm underlying said key-lever to be operated by the depression thereof, and paper-feeding and printing devices operatively connected with said second lever, for the purpose and substantially as described.

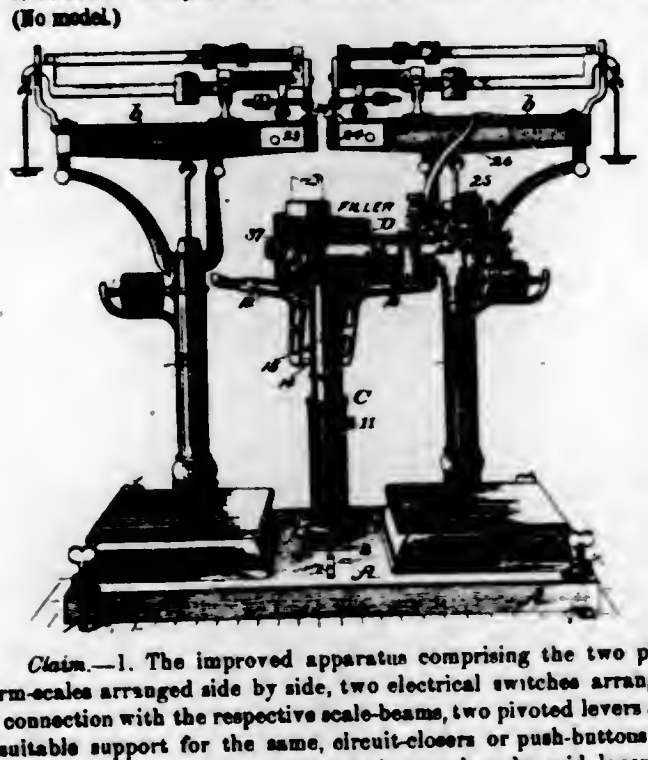
6. In a cash-register, the combination with a vertical shaft, of an indicator-wheel secured on the upper portion thereof and disposed in a horizontal plane, a type-wheel also mounted on the said shaft below the indicator-wheel and arranged in a like plane with the latter, the said type-wheel having a series of depending yielding type-plates, a revoluble polygonal platen in rear of the type-wheel over which a paper strip has movement, a pressure device to engage the inner sides of said type-plates for moving them toward the platen, a single key-lever movable in a horizontal plane for rotating the indicator and type wheels and also made movable in a vertical plane, a second lever underlying said key-lever to be operated by the depression thereof, and connections between said second lever, revoluble platen and type-pressure device for operating them, substantially as described.

7. In a cash-register, the combination of a vertical shaft, a horizontally-disposed indicator-wheel fixed on the upper portion of said shaft, a similarly-disposed type-wheel on the said shaft below the indicator-wheel having depending yielding type-plates, a pinion on the shaft, a segmental gear engaging said pinion and mounted in advance of the shaft, a single key-lever attached to said pinion and shiftable in a horizontal plane in lateral directions and also depressible, a second lever below the said key-lever having a rear angularly-disposed end, a platen in rear of the said type-wheel, paper-feeding devices controlling the movement of a strip of paper over the said platen, an inking-roller, a hammer to engage the inner portions of the depending type-plates and move them toward the platen, a series of connecting devices extending from the rear angularly-disposed end of the second lever to the platen, inking-roller, hammer, and paper-feeding devices, a cash-drawer having a catch released by the pressure of the second lever, a gong and movable hammer therefor, an arm projecting forwardly from the rear angularly-disposed end of the second lever to operate the hammer of the gong, and a vertically-disposed

band at the front of the machine having a series of notches therein alining with indications and into which the said key-lever is depressed.

8. In a cash-register, the combination with a casing, of a central vertical shaft carried therein, an indicator-wheel having a series of numerals impressed upon the periphery thereof carried upon said vertical shaft, a printing-wheel carried upon said vertical shaft, a series of springs depending from said printing-wheel, a series of type carried upon the lower ends of said springs, an inking-roller held to ink said type adjacent to said wheel, a gear carried upon said shaft, a counter-shaft, a segmental gear supported thereon meshing with the first-mentioned gear, a key-lever attached to said segmental gear in such manner that it is adapted to have a vertical movement with reference to the plane of said segmental gear and is adapted to rotate said segmental gear on said counter-shaft, a key held upon said key-lever, a toothed bar provided with a series of slots corresponding in number to the number of different type upon said type-wheel, a series of indicators corresponding to the type upon said type-wheel held upon said bar, a lever fulcrumed in said casing provided with a segmental end, a downwardly-projecting portion upon the first-mentioned lever adapted to rest on said segmental end, springs normally holding said second lever in a raised position, a cash-drawer, a spring normally urging said cash-drawer outward, a latch adapted to lock said cash-drawer when in its inward position, a projection upon the second lever adapted to relieve said latch and permit the cash-drawer to open, a bell, a hammer held to strike said bell, a rod held upon said second lever adapted to actuate said hammer, standards, a paper-roll supported thereon, a third lever supported upon said standards, a hammer adapted to press said type outward carried upon said third lever, a rod connecting said second and third levers, a polygonal platen held adjacent to said type, a lever carried upon the shaft of said platen, a ratchet formed upon said platen, a pawl held upon said lever to coact with said ratchet, a second bar extending from said platen-lever to said second lever, a star-wheel formed upon the end of said platen, a spring-pressed pawl adapted to engage the depressions of said star-wheel, a second pair of standards, a paper-roll held thereon adapted to receive the paper after it has passed said platen, a ratchet-wheel held upon said second paper-roll, a lever held thereon, a pawl carried upon said lever, a weight held upon said lever, a rod connecting said lever with the second lever before mentioned, and a roller hung from the first-mentioned standards under which said paper is adapted to pass in its course from said first-mentioned paper-roll to said platen, substantially as and for the purpose described.

608,117. WEIGHING AND FILLING APPARATUS. JOSEPH E. J. GOODLETT, Memphis, Tenn. Filed Sept. 9, 1897. Serial No. 651,100. (No model.)



Claim.—1. The improved apparatus comprising the two platform-scales arranged side by side, two electrical switches arranged in connection with the respective scale-beams, two pivoted levers and a suitable support for the same, circuit-closers or push-buttons arranged on such support in position to be acted on by said levers, a device for holding the levers out of simultaneous contact with the push-buttons, two electrical circuits each including a switch and push-button, the filler proper which includes a gooseneck, cut-off valve and trip mechanism for the latter, an armature attached to said mechanism, and the electromagnets which are arranged in contiguity to such mechanism for acting on the armature, and included in a general circuit with the main switch and push-buttons, as shown and described.

2. The combination, with a weighing-scale, having a pivoted scale-beam, of a filler composed of a conductor or gooseneck which is pivoted and adapted to swing vertically and horizontally, a cut-off valve therein, and mechanism for setting and tripping said valve, the electromagnets arranged contiguous to one of the levers composing said trip mechanism, an electrical switch-lever which is connected with the scale-beam and held elevated thereby until the scale-beam is tilted by the accumulated weight of liquid on the scale, a pivoted lever which supports the gooseneck, a circuit-closer whereon such lever rests, and other circuit connections between such circuit-closer, magnets, and switch, as shown and described.

3. The combination with a weighing-scale, a filler composed of a gooseneck, a cut-off valve, and valve setting and tripping mechanism, electromagnets arranged contiguous to a movable part of said mechanism, an electrical switch operatively connected with the scale, electrical connections, a switch or button arranged in the circuit, and a movable rest for the filler, which rest presses on the said button and closes the circuit when the filler is placed thereon, substantially as shown and described.

4. The combination with a weighing-scale, a filler composed of a gooseneck, a cut-off valve, and valve setting and tripping mechanism, electromagnets arranged contiguous to a movable part of said mechanism, an electrical switch operatively connected with the scale, electrical circuit connections, two devices movably attached to a fixed support, and serving alternately as rests for the shiftable filler, two circuit-closers arranged on said support in due position for contact with said devices, and a rod arranged between the latter and serving to hold them apart a distance greater than that between the circuit-closers, as shown and described, for the purpose specified.

5. The combination with the filler-tube or gooseneck, of a rigid arm attached to the free end of the same and curved backward over it, electromagnets attached to said arm, a cut-off valve arranged in the tube, a valve-lever, a trip-lever, an armature forming a part of the latter and arranged beneath the magnets, a pivoted trip device which such levers engage, an electrical circuit including said magnets, a switch in such circuit, and means for actuating the switch when the required volume of liquid has been discharged from the filler as shown and described.

6. The adjustable rest for the filler, the same comprising the hollow post having a vertically-slidable part, and means for locking the latter in any adjustment, one or more movable arms for supporting the filler, which arms are attached to said slidable part, push-buttons arranged on the latter contiguous to said arms and in the plane of movement of the latter and suitable circuit connections, as shown and described.

608,118. NON-REFILLABLE BOTTLE. EDWARD H. GOBE, Newburg, N. Y. Filed Jan. 20, 1898. Serial No. 667,296. (No model.)



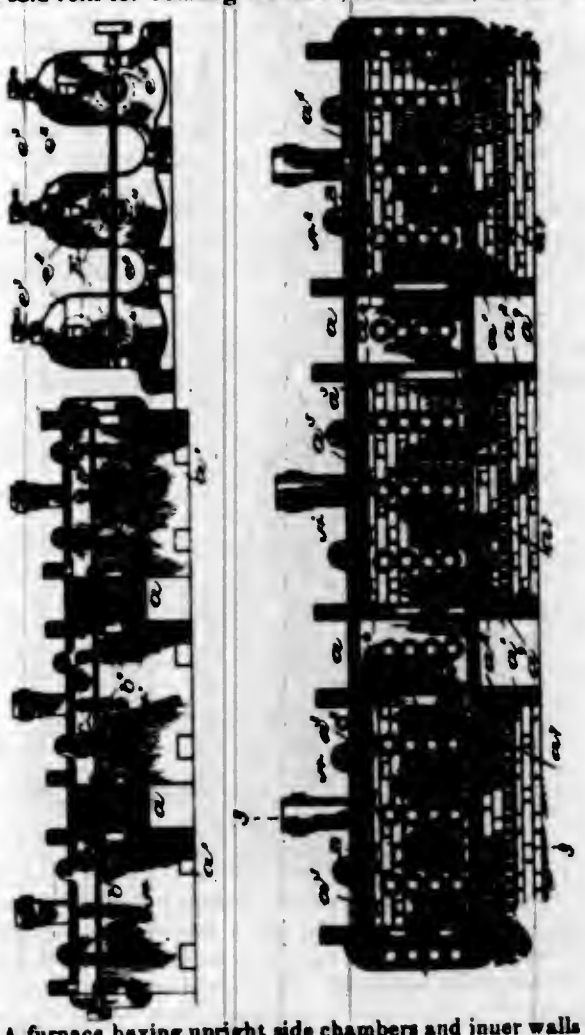
Claim.—The combination with a bottle having a neck portion proper, and a supplemental neck portion enlarged both externally and internally, the inner wall of said supplemental neck portion being formed with an internal screw-thread, and below said thread beveled or contracted inwardly to meet the orifice of the neck portion proper, an outer threaded stopper seated in the threaded portion of said supplemental neck, and secured therein, and an inner stopper of elastic material seated in the neck proper and having an enlarged head portion which extends up into the beveled or contracted portion thereof, the lateral wall of said supplemental neck portion being weakened, substantially as specified.

608,119. APPARATUS FOR TREATING SHEET-IRON AND TIN-PLATE. WILLIAM H. HARRIS, Niles, Ohio. Filed May 22, 1897. Serial No. 637,773. (No model.)

Claim.—1. The combination with a series of furnaces, means for heating each furnace to a different degree and a tunnel between each two of successive furnaces, of a series of rolling and stretching rolls and means for conducting sheets of iron through the furnace and tunnel series to the series of rolling and stretching rolls, as and for the purpose set forth.

2. An annealing apparatus consisting of a series of three communicating furnaces, means for separately heating each furnace so that the first or receiving furnace is heated to an annealing temperature and the third or discharge furnace to a "black heat," and the

second or middle furnace to a heat intermediate of that of the receiving and discharging furnaces, rolls arranged transversely in said furnaces and extending through the sides thereof for conveying sheets or plates therethrough, and means outside of said furnaces engaging said rolls for rotating the same, substantially as set forth.



3. A furnace having upright side chambers and inner walls with openings therein, a series of rolls arranged transversely in said furnace and extending through said walls, and means for rotating said rolls, substantially as set forth.

4. The combination with the series of connecting furnaces having side chambers and walls with openings therein, and lower grate-bars, of a series of rolls arranged transversely in said furnaces above said grate-bars and extending through said walls, and means for rotating all of said rolls, substantially as set forth.

5. An annealing-furnace having a muffle extending longitudinally therethrough above the fire-bed, rolls, arranged in pairs, at the ends of said muffle, a series of rolls extending transversely through said muffle, and means for rotating said rolls, substantially as set forth.

608,120. NUT-WRENCH. WILLIAM HEFFNER, Benton Harbor, Mich. Filed Aug. 12, 1897. Serial No. 648,022. (No model.)



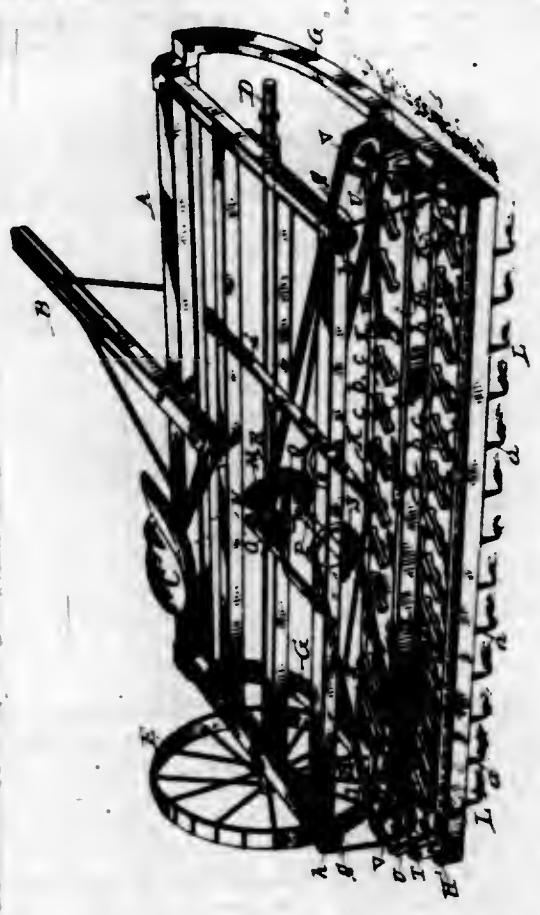
Claim.—1. In a wrench, the combination with a body portion provided with a rigid jaw, a longitudinal passage and a transverse passage, of a sliding jaw mounted on said body portion, a handle also mounted on said body portion and provided with a screw-threaded bolt adapted to enter the longitudinal passage, a nut mounted on the end of said bolt for preventing the same from moving longitudinally in said passage, and another nut mounted on said bolt and adapted to engage the sliding jaw whereby the latter is moved upon the rotation of the bolt, substantially as described.

2. In a wrench, the combination with a body portion provided with a rigid jaw, a longitudinal passage, a transverse passage and a cylindrical shank, of a sliding jaw mounted on said body portion and provided with side apertures, a hollow handle mounted on the cylindrical shank, a screw-bolt connected to said hollow handle and extending through the longitudinal passage, a nut on the end of said screw-bolt for preventing the same from moving longitudinally in said passage, and another nut mounted upon said bolt and projecting through the transverse passage of the body portion to engage the apertures of the sliding jaw to move the latter upon the rotation of the bolt, substantially as described.

3. In a wrench, the combination with a body portion provided with a rigid jaw, a longitudinal passage and a transverse passage, of a sliding jaw mounted on said body portion, a handle also mounted on said body portion, a screw-threaded bolt adapted to enter the longitudinal passage, a nut mounted on said bolt and engaging the sliding jaw, and another nut mounted on the end of said bolt and adapted to be engaged or disengaged from the handle at will, whereby the bolt may be rotated either by the handle or the nut, substantially as described.

4. In a wrench, the combination with a body portion provided with a rigid jaw, a longitudinal passage and a transverse passage, of a sliding jaw mounted on said body portion, a handle also mounted on said body portion, a screw-threaded bolt mounted in the longitudinal passage, a nut mounted on said bolt and engaging said sliding jaw, and another nut mounted on the end of said bolt and provided with movable plugs adapted to engage apertures in the end of the handle, whereby said latter nut may be connected or disconnected from the handle at will, substantially as described.

608,121. HARROW. GEORGE HERR, WILLIAM CUNNINGHAM, and FRANK HERR, Atwater, Minn. Filed Jan. 17, 1898. Serial No. 666,975. (No model.)



Claim.—1. In a harrow, the combination of a main frame; an axle and driving-wheels; a secondary frame hinged to the main frame; sliding bars mounted in said hinged frame; teeth mounted in said bars; cranked axles mounted on the secondary frame; pitmen connecting said axles with the bars; and connections between the main axle and said cranked axles for imparting motion thereto.

2. In a harrow, the combination of a main frame; an axle and driving-wheels; a secondary frame hinged to the main frame; reciprocating bars mounted in said secondary frame; adjustable teeth mounted in said bars; cranked axles mounted on said secondary frame; pitmen connecting the bars and cranked axles; a shaft P carried by the main frame and provided with sprocket-wheels R and S; driving connections between said shaft and the main axle; and driving-belts extending from sprockets R and S to the cranked axles.

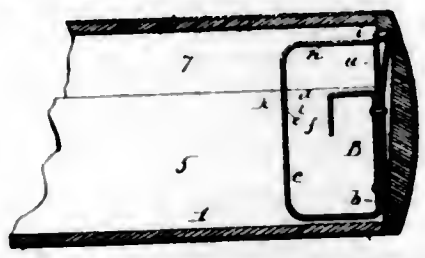
3. In combination with a reciprocating bar; a U-shaped tooth mounted therein; and means for adjusting the tooth up and down therein.

4. A tooth for harrows and the like comprising two arms connected at one end by a cross-head; and attaching and adjusting means mounted in said head.

5. In combination with a bar as H, provided with openings; a tooth L mounted therein, comprising two arms or members *a* connected by a cross-head *b*; and an adjusting-screw mounted in said head and connected to the bar, substantially as described.

6. In a harrow, the combination of a frame, provided with transverse bars I I and J; a slide H mounted thereon; means for retaining said slide in place; and a series of adjustable teeth mounted in said slide, substantially as described.

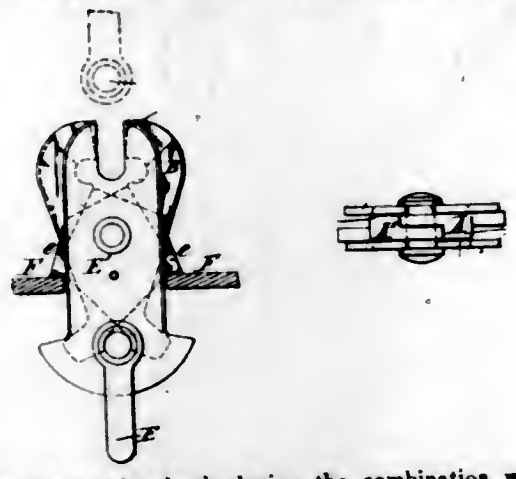
608,122. BILL-FILE. PHILIP H. HOLMES, Gardiner, Me. Filed May 14, 1897. Serial No. 636,500. (No model.)



Claim.—1. In a bill-file the combination with a box or holder comprising a back and a top and bottom hinged to the back, of hook devices one connected with the bottom and the other with the back and the two detachable from each other for securing the back at an angle of inclination to the bottom, substantially as set forth.

2. In a bill-file, the combination with a base-plate and a flat metal strip secured to the base-plate, one end of said strip being bent outward and upward and terminating in a point, while the other end is bent outward and downward to form a gage or stop, of a hinged keeper mounted in a slot formed in the base-plate, said keeper being formed with outwardly-projecting shoulders which rest within bearings formed in the rear face of the base-plate, and a spring secured to the base-plate and engaging the head on the keeper, substantially as set forth.

608,123. SELF-DETATCHING HOOK FOR WINDING PURPOSES. STEPHEN HUMBLE, London, England. Filed Dec. 15, 1897. Serial No. 661,947. (No model.) Patented in England Jan. 9, 1897, No. 661.



Claim.—In a safety-hook device, the combination with side plates provided at their lower ends with means for supporting a load and having their upper ends slotted to receive a shackle pin, of hooks pivoted to and located between said side plates, the neck of each of the jaws of said hooks being provided at one side only with a lateral cheek adapted to abut against the end of the jaw of the other hook when closed such thickened jaw being confined between and guided by the side plates, substantially as set forth.

608,124. ROPE-COUPLING. CHARLES W. HUNT, New York, N. Y. Filed Dec. 29, 1897. Serial No. 664,406. (No model.)

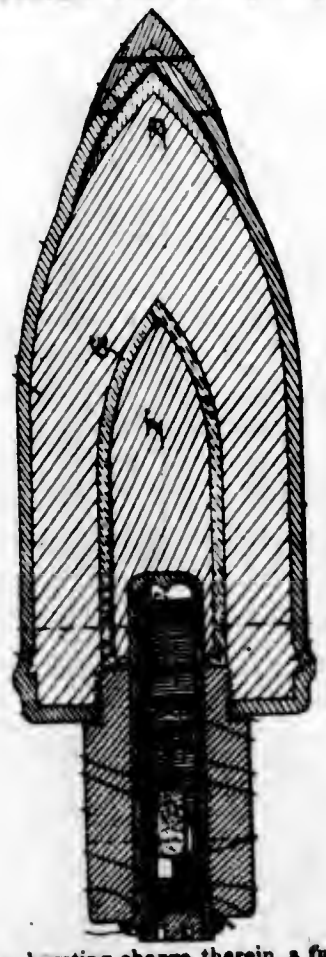


Claim.—1. The combination with the two-part metallic rope-coupling recessed adjacent to the ends that come together, of a ring of vulcanized fiber, leather, or similar material having an exterior diameter larger than the metallic coupling and of the same diameter as the rope or nearly so and held within the recesses of the metallic coupling, substantially as and for the purposes set forth.

2. The combination with the two-part metallic rope-coupling having openings for the rope-strands and recesses adjacent to such openings, of a two-part ring of yielding material adapted to be received between the two parts of the coupling and having lateral projections within the recesses that are adjacent to the openings for the rope-strands, substantially as set forth.

608,125. HIGH-EXPLOSIVE SHELL AND FUSE THEREFOR. HARRIS P. HURST, Summit, Miss. Filed Apr. 28, 1897. Serial No. 634,236. (No model.)

Claim.—1. In a shell, a bursting charge, a fuseway, a detonator adapted to move therein and a barrier effectually closing the fuseway, whereby, upon the accidental or premature explosion of the detonator the fuseway is blocked thereby preventing the passage of the gases from the detonator to the bursting charge.



2. In a shell, a bursting charge therein, a fuseway, a detonator adapted to move in the fuseway and a barrier positively engaging and closing said fuseway, so as to confine the gases from the detonator in case of the accidental or premature explosion of the detonator, and means to move said barrier when the shell is propelled from the gun.

3. A shell carrying therein a chilled or frozen explosive and a chilled or frozen fluid in operative relation therewith.

4. A projectile having a chilled or frozen explosive therein surrounded by a chilled or frozen fluid, as set forth.

5. A projectile having a chilled or frozen explosive therein, a chilled or frozen fluid interposed between said explosive and the walls of the shell-cavity, and means to detonate said explosive, as set forth.

6. A high-explosive shell carrying a detonator and a fluid in operative relation thereto, and means to move said fluid out of the way of said detonator, as set forth.

7. A high-explosive shell carrying a detonator, means for isolating said detonator consisting of a fluid barrier, and means to move the location of said barrier, as set forth.

8. A shell having an explosive charge therein, a detonator carried by said shell and an interposed fluid between said charge and said detonator, as set forth.

9. In a shell the bursting charge therein, a detonator therefor, and means to saturate said charge on the accidental or premature bursting of said detonator, as set forth.

10. In a high-explosive shell, the bursting charge therefor, a detonator carried by said shell, and an isolating fluid for said detonator, as set forth.

11. In a shell, a bursting charge, a fuseway, a detonator adapted to move therein, and a barrier or block arranged to close the fuseway and constructed to be moved by the rotary motion of the shell when propelled by the gun, as set forth.

12. A projectile having an explosive therein, a detonator carried by said projectile, and an interposed fluid between said detonator and said explosive, and a delayed-action fuse, all combined, as set forth.

13. A high-explosive shell having a detonator, a fluid interposed between the detonator and the explosive charge, and an empty space or cavity adapted to receive the fluid after firing the shell and before detonation of the high explosive, as set forth.

14. A shell having a fuse-container, a fuse-tube carried thereby having a removable plug securing in said tube a detonator and a fluid, as set forth.

15. For use in on explosive shell, a closed fuse-tube having its walls reduced or weakened at or near its front end to enable the detonator-gases to rupture the same and fire the shell charge, with a detonator in its rear end and a block or barrier secured in said fuse-tube between the detonator and the weakened portion of the same

to prevent the gases from the detonator reaching the weakened portion of the fuse-tube and firing the shell charge in case of an accidental or premature explosion of the detonator.

16. A shell, a fuseway connected thereto, a detonator carried by a thimble having venting grooves or channels therein, said thimble adapted to move in the fuseway, as set forth.

17. In a shell, an internally-grooved fuseway, a detonator adapted to move in said fuseway, said fuseway being grooved in reverse direction of the rifling of the gun, as set forth.

18. A shell having an explosive charge, a detonator carried thereby and a fluid-tank therein, said tank provided with means to explode said detonator, as set forth.

19. A shell having a detonator carried by a thimble fitted in a fuse-tube, a spring bearing upon said detonator and seated upon a roller-bearing plate or disk, as set forth.

608,126. **WATERPROOF TROUSERS.** FRANCIS A. ISAACSON, Omaha, Nebr. Filed Nov. 9, 1896. Serial No. 611,547. (No model.)

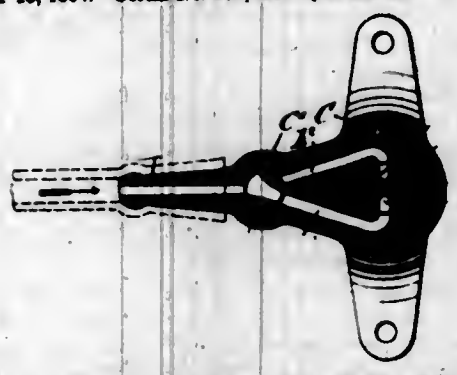


Claim.—1. In a waterproof garment, the combination with a pair of trousers, of a fold or hem formed on the lower end of each leg thereof, and means secured in said fold for contracting and expanding the bottom of the trousers-leg, substantially as set forth.

2. In a waterproof garment, the combination with a pair of trousers having a hem or fold at the lower end of each leg thereof, of a sectional clamping-band secured within the fold of each leg, and means for expanding and contracting the said band and thereby the bottom of the trousers-leg, substantially as set forth.

3. In a waterproof garment, the combination with a pair of trousers formed with an inward fold or hem at the bottom of each leg thereof, of a sectional clamping-band irremovably secured within said fold, each section having a tapered end which is overlapped by the butt-end of its adjacent section, and means for expanding and contracting the said sectional band, and thereby the bottom of the trousers-leg, substantially as set forth.

608,127. **FILTER.** JENS P. JELEV-PETERSEN, New York, N. Y. Filed Sept. 13, 1897. Serial No. 651,488. (No model.)



Claim.—1. A filter, composed of a pivoted reversible vessel provided with discharge-openings and nozzles at the ends, screens arranged near said discharge-openings, a mass of filtering material arranged between the screens without filling the entire space of the same so as to permit the shifting of the filtering material when reversing the filtering vessel, channels for supplying the water through a trunnion of the vessel to either end thereof, and means for controlling either channel, substantially as set forth.

2. A filter composed of a reversible filtering vessel provided with discharge-openings and nozzles at the ends, screens arranged near said discharge-openings, and a mass of filtering material composed of two or more substances respectively having different specific gravities, said filtering material being of such quantity as not to fill the entire space between the screens, for permitting the shifting of the filtering material, substantially as set forth.

3. The combination of a filtering vessel provided with central trunnions, means for supporting said trunnions for permitting the reversing of the filtering vessel, discharge-nozzles at the opposite ends of the filtering vessel, screens arranged near said discharge-nozzles, channels extending through one of the trunnions of the vessel and at the interior of the vessel, in opposite directions, to and through the screens, a two-way cock arranged in the supporting-socket of the channeled trunnion, channels in said socket that connects with the channels in the trunnion, and a supply-nipple connecting with the two-way cock, substantially as set forth.

4. A filter, consisting of a reversible filtering vessel provided with a filtering medium and channels for conducting the liquid to be filtered to said filtering medium, necks projecting from the ends of the vessel and provided with discharge-openings, and movable discharge-nozzles fitted to said necks for opening or closing the discharge-openings, substantially as set forth.

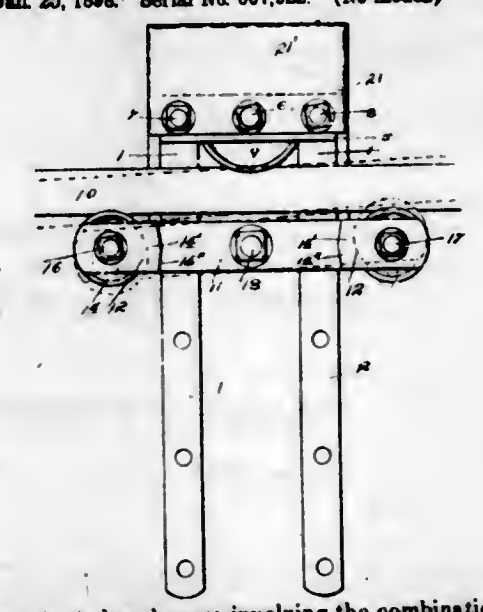
608,128. **CAR-COUPLING.** JEFFERSON JEFFERY, New Castle, Pa. Filed Dec. 11, 1897. Serial No. 661,520. (No model.)



Claim.—1. In a car-coupler, the combination of the draw-head with a gravity-block arranged therein, of a coupling link and pin, said pin carrying a sleeve having an inclined end, lugs formed on said pin a chain connected to said sleeve, a cross-rod operating in keepers secured to the end of the car and having an arm to which the aforesaid chain is attached, one of said keepers being provided with a cut-away portion for locking the rod when the pin is in the elevated position, substantially as shown and described.

2. In a car-coupler, the combination with a draw-head and coupling pin and link, of a sleeve attached to said pin having an inclined end adapted to come in engagement with the lug provided on the coupling-pin, a chain connected to said sleeve, a cross-rod operating in keepers secured to the end of the car, said cross-rod carrying an arm to which the aforesaid chain is attached, substantially as shown and described.

608,129. **DOOR-HANGER.** PETER JOHNSON, Downer's Grove, Ill. Filed Jan. 25, 1898. Serial No. 667,922. (No model.)



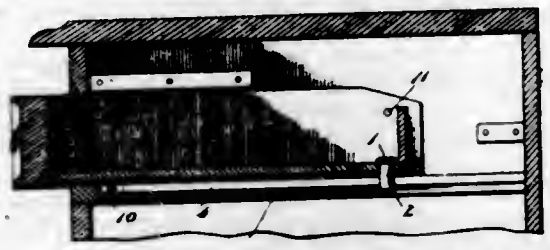
Claim.—1. A door-hanger involving the combination of a door-suspending frame, a hanger-roller to run on top of the track mounted in said frame, a compensator-bar pivoted to the frame, retaining-rollers carried by the bar for automatic adjustment to irregularities in the under face of the track, substantially as described.

2. In a door-hanger, the combination with a door-suspending frame, of a hanger-roller carried thereby adapted to run on the top of the track and a compensator comprising a bar pivoted to the frame intermediate its ends and provided with shoulders adapted to abut on the frame and limit the oscillation of said bar, and retaining and compensating rollers carried by the ends of the bar and adapted to bear against the under side of the track.

3. In a door-hanger, the combination with a track, of a door-

suspending frame having suspending-bars, a bar pivoted to said frame and having bifurcated heads at its ends which have shoulders provided with faces diverging from the suspending-bars and adapted to bind thereon when the bar oscillates, and rollers journaled in the heads and adapted to bear against the track.

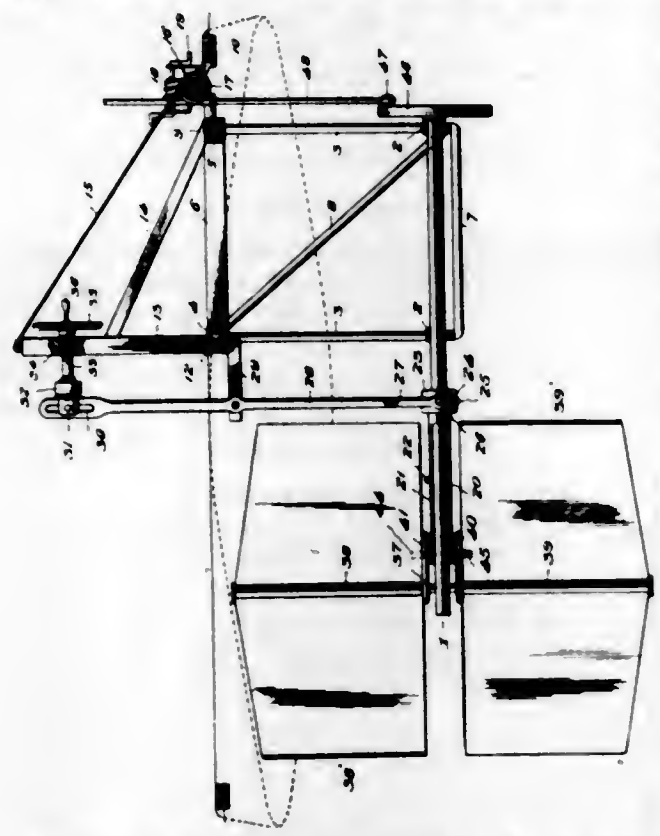
608,180. DRAWER ATTACHMENT. FURMAN M. KANDLE, Philadelphia, Pa. Filed Feb. 9, 1898. Serial No. 669,660. (No model.)



Claim.—1. The combination with a drawer and underlying rail, of a drawer attachment consisting of a plate, pendent arms thereon spaced apart and located at short distances from the ends of said plate and having inturned lips at their lower ends, and independent rollers located intermediate the lips and plate and journaled on horizontal axes upon the inner surfaces of the pendent arms, whereby the attachment is made self-retaining in both an upward and downward direction when in its applied position, substantially as described.

2. The combination with a drawer having a pair of openings in the bottom thereof spaced a short distance apart, of an attachment consisting of a plate designed to rest upon the upper surface of the drawer-bottom, pendent arms on said plate adapted to be inserted through the openings in the drawer-bottom, retaining-lips at the lower ends of said arms, and a supporting-rail extending longitudinally beneath the drawer and having side flanges beneath which said lips engage, substantially as described.

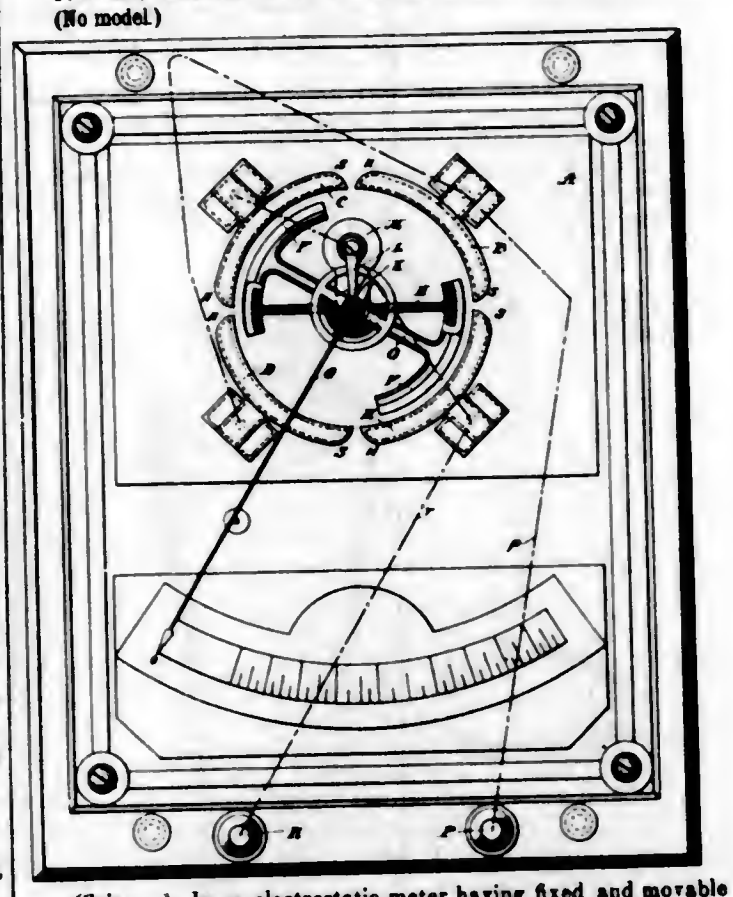
608,131. CURRENT-MOTOR. HENRY C. KEELER, Waterville, Wash. Filed Oct. 19, 1897. Serial No. 655,724. (No model.)



Claim.—1. A current-motor, comprising a shaft 1 provided with a radial stud 22, a sleeve 20 encompassing said shaft and provided with a longitudinal slot 21 engaging said stud, and with the tangential studs 44, 45 and the rod 37, fixed in said shaft 1, in combination with the sleeves 38, 39 encompassing the ends of said rod, the propeller-blades 38′, 39′ fixed on said sleeves and the slotted arms 40, 41, engaging said studs 44, 45, substantially as shown and described.

2. A current-motor, comprising a pivoted frame, the shaft 1 journaled in brackets fixed to said frame and provided with the radial stud 22, and the rod 37, the sleeve 20 encompassing said shaft and provided with the longitudinal slot 21, to receive said stud, the grooved collar 23 fixed on said sleeve, and the lever 28 operatively connected to said sleeve, in combination with the propeller-blades 38′, 39′ pivoted on the rod 37, and the slotted arms 40, 41, fixed to said blades and operatively connected to said sleeves 20, substantially as and for the purpose set forth.

608,132. ELECTROSTATIC MEASURING INSTRUMENT. JOHN F. KELLY, Pittsfield, Mass. Filed Apr. 14, 1898. Serial No. 677,556. (No model.)



Claim.—1. In an electrostatic meter having fixed and movable vanes, a vane electrically connected to a conductor carrying electrical energy, and embedded in a dielectric to prevent creeping of the charge.

2. In an electrostatic measuring instrument in combination, a plurality of sets of relatively-fixed vanes each vane being embedded in a separate mass of insulating dielectric, and an indicating-needle having a vane movable within the inductive influence of said fixed vanes.

3. In an electrostatic measuring instrument in combination, a system of magnetic material consisting on the one part of fixed vanes and the other of a bar partially bridging portions of said fixed vanes, one of said parts being a permanent magnet a vane, movable under the influence of the inductive action of said fixed vanes, and cutting the magnetic flux of said permanent magnet.

4. In a static measuring instrument in combination, a system of magnetic vanes having consequent poles, and means to aid in directing the magnetic flux between said poles, the vanes of said system being adapted to be electrically connected to an electric circuit, and a vane within the inductive action of said magnetic vanes and movable within said magnetic flux, substantially as described.

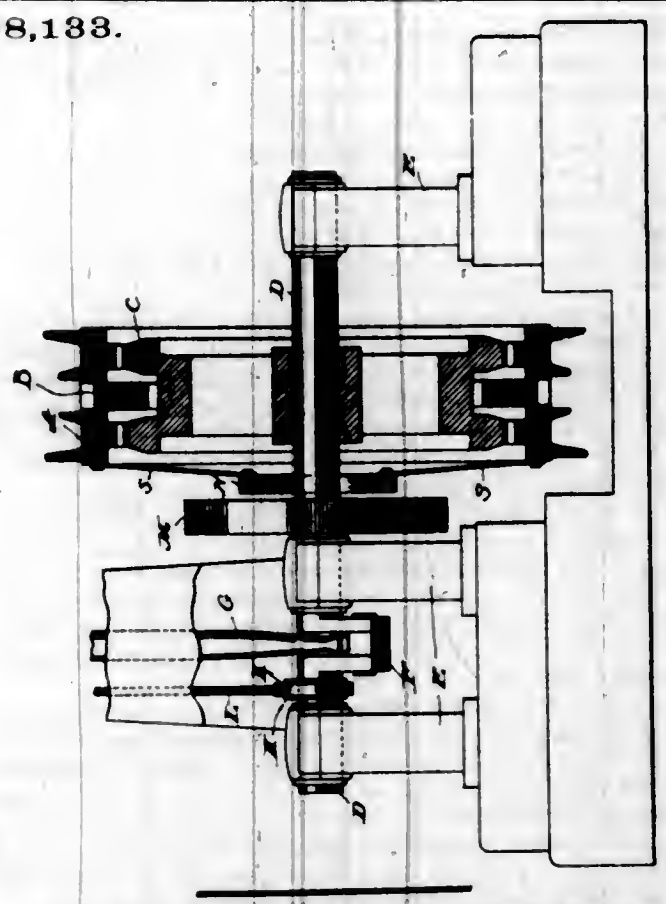
5. In a static measuring instrument in combination, a system of magnetic quadrants so arranged as to have consequent poles, and adapted to be electrically connected with a source of electrical energy and substantially embedded in a dielectric to prevent creeping of the charge, and a relatively-movable vane moving within the magnetic field between said consequent poles.

608,188. MEANS FOR PREVENTING STRAY MAGNETISM IN DYNAMO-ELECTRIC MACHINES. JOHN F. KELLY, Pittsfield, Mass., assignor to the Stanley Electric Manufacturing Company, of Massachusetts. Filed May 27, 1898. Serial No. 681,940. (No model.)

Claim.—1. A dynamo-electric machine having an energizing-coil and a magnetic part within the influence of said coil, in which said coil sets up a magnetomotive force, in combination with a coil surrounding said part and adapted to produce therein a magnetomotive force which neutralizes and prevents the passage through said part of the magnetic flux produced by said first force.

2. A dynamo-electric machine having an inductor mounted upon, and rotating with, a shaft, and an energizing-coil surrounding said shaft, magnetizing said inductor, and setting up a magnetomotive force in said shaft, and an engine directly connected to said shaft, in combination with a protecting-coil, between said engine and machine, surrounding said shaft and setting up in said shaft a magnetomotive force which, at a point therein, neutralizes and prevents the passage through said shaft of the magnetic flux produced by said first force.

608,133.



2. A brush-holder having adjacent brushes rigidly clamped against conducting pieces or blocks which permit them to abut against each other, leaving the sides thereof clear, in combination with means for imparting a parallel motion thereto, substantially as shown and described.

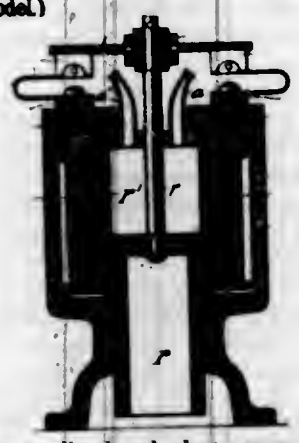
3. A brush-holder having adjacent brushes rigidly clamped against conducting pieces or blocks in such manner as to permit them to abut against each other laterally and provided with means for imparting a parallel motion thereto without the use of sliding contacts, substantially as described.

4. A brush-holder consisting of an arm or stud adjustably secured to a rocker-arm, in combination with a pair of brushes located side by side and resting against each other, together with a pair of brush-supporting springs secured at one end to the aforesaid arm or stud and at the other to contact-blocks to which the aforesaid brushes are clamped, and adjustable means connecting said springs with the aforesaid arm or stud, the arrangement being such that the brushes always bear against each other laterally and maintain a parallelism of movement during their entire life, substantially as described.

5. A brush-holder consisting of an arm or stud provided with means for giving it parallel adjustment with relation to the rocker-arm of a dynamo-electric machine, in combination with brush-supporting springs secured thereto; contact-plates secured to the free ends of said springs and adapted to grip or hold the brush by its opposite faces only and in such manner that all the other faces are left free or exposed, together with means for varying the pressure of the brush upon the commutator, substantially as described.

6. A commutator-brush of substantially rectangular form provided with an opening or slot through the body thereof and clamps on its front and rear faces, in combination with a screw or bolt extending through said slot so as to firmly secure the brush between the clamps, one of said clamps being connected by flexible means to a stud or arm which in turn is provided with means for giving it parallel adjustment with relation to the rocker-arm of a motor or dynamo-electric machine, substantially as described.

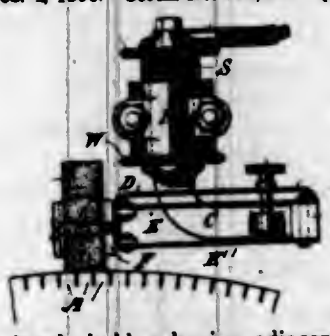
608,134. ELECTRICAL-CIRCUIT CONTROLLER. ROBERT LUNDELL, New York, N. Y., assignor of two-thirds to the Interior Conduit and Insulation Company, same place. Filed Feb. 1, 1898. Serial No. 668,703. (No model.)



Claim.—1. A normally-closed electromagnetic circuit-breaker in combination with a current-changing device and a translating device such as an electric motor, said circuit-breaker being arranged to momentarily interrupt the current-supply for the purpose of preventing arcing at the current-changing device, substantially as described.

2. A circuit-breaker consisting of electromagnetic means for interrupting an electric circuit, in combination with means controlled by the movable part of the circuit-breaker and adapted to force or eject a blast of air around the circuit-breaking contacts thereof, substantially as described.

608,135. COMMUTATOR-BRUSH HOLDER FOR DYNAMO-ELECTRIC MACHINES. ROBERT LUNDELL, New York, N. Y., assignor of two-thirds to the Interior Conduit and Insulation Company, same place. Filed Feb. 4, 1898. Serial No. 669,132. (No model.)



Claim.—1. A brush-holder having adjacent brushes rigidly clamped against conducting pieces or blocks which permit them to abut against each other, said conducting-blocks in turn being securely fastened to an arm or stud by means of flexible springs, substantially as described.

608,186. BRAKE. WILLIAM H. SAUVAGE, Silverton, Colo. Filed May 14, 1897. Serial No. 636,492. (No model.)



Claim.—1. A brake comprising a shoe adapted to bear on the surface of a wheel or like article, an inclined rack formed on the rear side of the shoe and integral therewith, and means engaging said rack for forcing the shoe into operative engagement with the wheel with a wedging action, the incline of the rack serving to cause the entire bearing-surface of the shoe to contact with the wheel.

2. A brake comprising a brake-shoe, an inclined rack formed on the rear side of the shoe, a pinion engaging said rack, and means for operating said pinion to force the shoe into operative position, the rear side of the shoe and the edges of the pinion being formed with plane surfaces, whereby binding of the pinion in the rack when operating the shoe is prevented.

3. A brake comprising a brake-shoe formed with an inclined rack on its rear side, a hood adapted to cover and support the shoe, a pinion working within the hood to operate the shoe, and means for operating the pinion, the pinion being formed with a plane surface adapted to bear on similar surfaces on the shoe and hood, as and for the purposes stated.

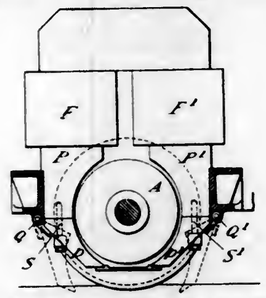
4. A brake for the purposes described, comprising a brake-shoe adapted to engage the front and rear wheels, one of said shoes being provided at its rear side with rack-teeth, a pinion engaging said teeth and mounted upon a shaft supported in adjustable hangers, said hangers being connected by means of a rod having an adjusting-nut thereon to adjust the shoes to compensate for wear, and means to rotate the pinion to raise and lower the brake-shoes, substantially as described.

5. The combination, with two or more cars, of brakes therefor, each of said brakes comprising a brake-shoe having an inclined rack on its rear side and means engaging said rack to operate the shoe, a draw-bar connecting the brakes on one car with the car ahead, and mechanism carried by the car for automatically moving the brakes on that car into operative position, the draw-bar being so connected to the car as to release the brakes on the car behind, whereby when the car in front moves forward the brakes on every other car in the train are released and when the car in front slackens speed the brakes on every other car are automatically moved into operative position.

6. A brake for the purposes described, comprising a brake-shoe adapted to engage the tread and flange of the wheel, the rear side of said shoe being provided with rack-teeth, a pinion supported in movable hangers adapted to engage the teeth of the brake-shoe, a

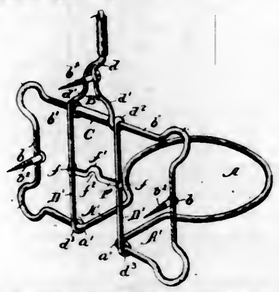
spool secured to said shaft, a chain and spring connected to said spool, the former being secured to a sliding draw-bar so that by a pull upon said draw-bar the spool will rotate to move the brake-shoe out of engagement with the wheel, and a release of said pull upon the draw-bar serving to revolve the spool in an opposite direction through the action of the spring, to apply the brakes, substantially as described.

608,187. ELECTROMOTOR FOR ELECTRICALLY-PROPELLED VEHICLES. ALEXANDER SIEMENS, London, England, assignor to Siemens Brothers & Co., Limited, same place. Filed Nov. 13, 1897. Serial No. 658,969. (No model.) Patented in England Jan. 27, 1892, No. 1,641.



Claim.—In an electromotor for propelling a vehicle, the combination with the axle having an armature secured thereon and rotating therewith, of field-magnets located above said armature, pole-pieces depending from said field-magnets and partly surrounding the armature and extending in a plane at right angles thereto, said pole-pieces being formed in two parts having a hinged connection, whereby the lower portions thereof may be swung back to permit the body of the vehicle, with the magnets, to be raised off of the armature, and means for securing the two parts of the pole-pieces in fixed relation to each other, substantially as described.

608,188. LAMP-BRACKET. JOHN B. TIMBERLAKE, Jackson, Mich. Filed Dec. 14, 1895. Serial No. 572,194. (No model.) Patented in Canada Jan. 23, 1897, No. 54,748.



Claim.—1. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, U-shaped lateral extensions, upright legs forming a carrier, an inverted-V-shaped seat above the legs to engage with a wall projection, a vertical reflector-support above said seat, and an angular offset between the V-shaped seat and the reflector-support, the legs, the seat, the offset and the reflector-support being all formed of the same piece of wire, substantially as set forth.

2. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, arms projecting rearward from the clasp, U-shaped lateral extensions or loops at the rear ends of said arms, upward and inward disposed carrier-legs, an inverted-V-shaped seat above the legs to engage with a wall projection, a vertical reflector-support above said seat, and an angular offset between the V-shaped seat and the reflector-support, said support being substantially in the horizontal plane of the flame of the lamp, the legs, the seat, the offset and the reflector-support being all formed of the same piece of wire, substantially as set forth.

3. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, arms projecting rearward from the clasp, U-shaped lateral extensions or loops projecting laterally from the arms and downward below the adjacent bottom part of the fount, upward and inward disposed carrier-legs which reinforce the grip of the ring-like clasp upon the fount, a seat for a wall projection, and a reflector-support which is above the seat and is in substantially the horizontal plane of the flame of the lamp, substantially as set forth.

4. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, U-shaped lateral extensions, upright legs forming a carrier, an inverted-V-shaped seat above the legs to engage with a wall projection, and a reflector support above the seat, the legs, the seat, and the reflector-support being all formed of a continuous piece of wire, substantially as set forth.

5. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, U-shaped lateral extensions, upright legs forming a carrier, an inverted-V-shaped seat above the legs to engage with a wall projection, and a reflector-support above said seat, the legs, the seat and the reflector-support all being formed of a continuous piece of wire other than the wire of which the ring-like clasp is made, substantially as set forth.

6. A lamp-bracket having in combination a ring-like clasp adapted to grip the fount, U-shaped lateral extensions connected with the clasp by horizontal arms, upright legs, these parts being formed of one piece of wire, an inverted-V-shaped seat adapted to engage with a wall projection, and downward-projecting legs connecting said seat with the ring-like clasp but made of a separate piece of wire, substantially as set forth.

7. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, arms projecting rearward and outward, forming angles, *a'*, *a'*, U-shaped lateral extensions connected to the arms, upright legs rising from the angles, *a'*, *a'* and an inverted-V-shaped seat adapted to engage with a wall projection, the seat and legs being formed of a continuous piece of wire other than the wire of which the ring-like clasp is made, and a clamp mounted on the legs to resist the expanding of said clasp, substantially as set forth.

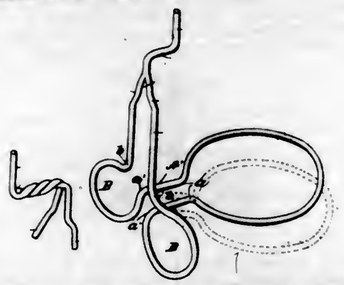
8. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, upright legs connected at their lower ends to said clasp and formed at their upper ends into an inverted-V-shaped seat adapted to engage with a wall projection, and a vertically-sliding clamp mounted on the legs to resist the expanding of said clasp, substantially as set forth.

9. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, upright legs connected at their lower ends to said clasp and formed at their upper ends into an inverted-V-shaped seat adapted to engage with a wall projection, a vertically-sliding clamp mounted on the legs to resist the expanding of said clasp, and a fulcrum below said seat adapted to increase the resistance of the clamp to the expanding of said clasp, substantially as set forth.

10. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, upright legs connected at their lower ends to the clasp and formed at their upper ends into an inverted-V-shaped seat adapted to engage with a wall projection, and a movable tie connecting the legs and provided with a seat to engage with a wall projection, substantially as set forth.

11. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, U-shaped lateral extensions and upright legs with inwardly-extending arms connecting the upper ends of the said legs, an inner pair of legs which encircle said arms and are connected at their lower ends to the clasp, a clamp mounted on the inner legs, and a sleeve uniting said encircled arms and serving as a fulcrum adapted to increase the resistance of the clamp to the expanding of said clasp, substantially as set forth.

608,189. LAMP-BRACKET. JOHN B. TIMBERLAKE, Jackson, Mich. Filed Mar. 27, 1897. Serial No. 629,596. (No model.) Patented in Canada Jan. 23, 1897, No. 54,748.



Claim.—1. A lamp-bracket having in combination, a ring-like clasp adapted to grasp the fount, U-shaped lateral extensions, upright legs forming a carrier, a seat for a wall projection, and a support for a reflector formed of the upper ends of the legs, the said upper ends of the legs being welded together, whereby the above-referred-to parts are formed of an integral piece of metal, substantially as set forth.

2. A lamp-bracket having in combination, a ring-like clasp adapted to grasp the fount, an upright carrier comprising two gripping-legs which are spaced, and are thereby adapted to be grasped by the hand and to suspend the lamp, and a support for a reflector, all formed of an integral and practically homogeneous piece of metal, substantially as set forth.

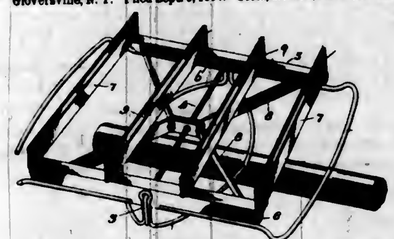
3. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, U-shaped lateral extensions, upright legs forming a carrier, an inverted-V-shaped seat above the legs to engage with a wall projection, and a reflector-support above said seat, the U-shaped lateral extensions, the legs, the seat, and the reflector-support being all formed of a continuous piece of wire, substantially as set forth.

4. A lamp-bracket having in combination, a ring-like clasp adapted to grip the fount, arms projecting rearward from the clasp, U-shaped lateral extensions or loops projecting outward from the arms and thence upward and inward to form legs adapted to serve as a carrier, a seat for a wall projection, and a reflector-support which is disposed above the seat and is approximately in the horizontal plane of the flame of the lamp, substantially as set forth.

5. A lamp-bracket having in combination, a ring-like clasp adapted to grasp a fount, said clasp being closed in front, horizontal arms projecting rearward from the rear side of the clasp, U-shaped lateral extensions disposed in a vertical plane at the rear ends of said arms, upright legs connected at their lower ends to the U-shaped extensions and united at their upper ends to form an inverted-V-shaped seat for a wall projection, and a support for a reflector, substantially as set forth.

6. A lamp-bracket having in combination, a ring-like clasp adapted to grasp the fount, said clasp being closed in front, horizontal arms projecting rearward from the rear side of the clasp, U-shaped lateral extensions disposed in a vertical plane at the rear ends of said arms and bent downward, outward, and thence upward from rear ends of the arms, legs projecting upward from the inner upper parts of said extensions and continuous therewith and disposed at a short distance apart and thereby adapted to be grasped by the hand for carrying the lamp, but joined at their upper ends to form an inverted-V-shaped seat for a wall projection, and to resist the spreading of the legs, the horizontal arms, and the adjacent part of the clasp-ring, whereby the resiliency of the wire serves to grip the fount, substantially as set forth.

608,140. WINDOW-CLEANER. HENRY CASE and IDA C. YOUNG, Gloversville, N. Y. Filed Sept. 9, 1897. Serial No. 651,015. (No model.)

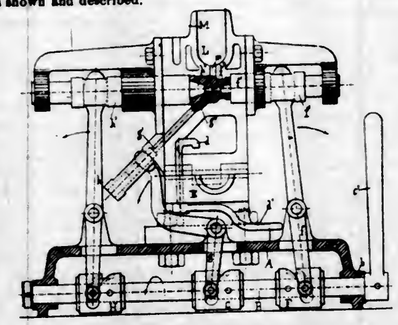


Claim.—1. The combination with a handle, of a yoke secured to one side of the handle and provided with parallel fingers extending in a direction opposite the handle, a pivot-bar extending between said fingers, a cleaner-frame comprising side pieces and diagonal braces through which the pivot-bar passes, transverse clamps upon the cleaner-frame, and frictional cleaning-ribs carried by the clamps, substantially as specified.

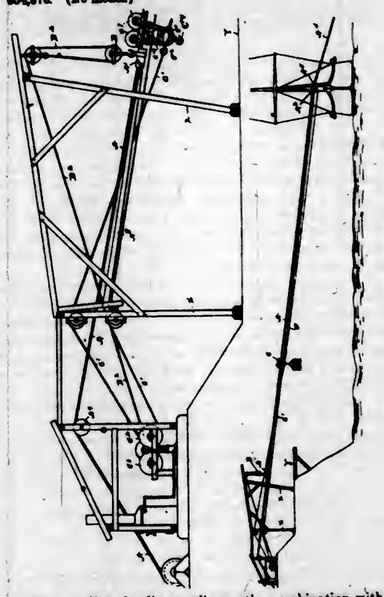
2. The combination with a handle, of a yoke secured to one side of the handle and provided with parallel fingers extending in a direction opposite the handle, a pivot-bar extending between said fingers, a cleaner-frame comprising side pieces and diagonal braces through which the pivot-bar passes, transverse clamps upon the cleaner-frame, frictional cleaning-ribs carried by the clamps, and loops projecting from the opposite ends of the cleaner-frame, and a cloth adapted to be held in place by said loops, substantially as specified.

608,141. AUTOMATIC MOLD FOR PIECES IN GLASS, &c. PIERRE DELORME, Jr., Paris, France. Filed May 29, 1897. Serial No. 638,784. (No model.) Patented in France Jan. 29, 1897, No. 263,577; in Belgium Apr. 23, 1897, No. 127,908; in Austria Apr. 29, 1897, No. 2,909; in England Apr. 29, 1897, No. 10,691; in Switzerland May 1, 1897, No. 14,533, and in Italy May 5, 1897, No. 44,632.

Claim.—In a machine for molding molten material, a shaft, cam-slotted collars fixed thereon, levers actuated by said collars, forms operated by said levers, a jointed mold hinged together, and means for locking the parts of said mold securely together, substantially as shown and described.



608,142. LOADING APPLIANCE. STEPHEN B. KENFIELD and CHARLES ELVIDGE, San Francisco, Cal. Filed Oct. 11, 1897. Serial No. 654,876. (No model.)



Claim.—1. In a loading appliance, the combination with a carrying-cable extended from the shore out into the sea and anchored at both ends, and provided with suitable attachments whereby it may be raised at the points of anchorage of the vessel to be loaded, to extend across the deck of the said vessel; of a carriage adapted to run upon the said cable with a suspended load; a continuous propelling-line the ends of which are secured to both sides of the said carriage, and the one extension of which is supported upon a pulley at the vessel; and a driving mechanism provided with a drum upon which the said propelling-line is wound, substantially as described.

2. In a loading appliance, the combination with the carrying-cable extended from the shore outward to a vessel lying at anchor; of a cable provided with an anchor and adapted to be connected with the end of the said carrying-cable and to be hoisted therewith above the deck of the said vessel, and a carriage adapted to run upon the said cable with a suspended load: a continuous propelling-line the ends of which are secured to the said carriage: a pulley secured to the said vessel to receive the said propelling-line beyond the said carriage; and a driving mechanism provided with a drum upon which the said propelling-line is wound to compel the two extensions of the said propelling-line to travel alternately inward and outward, substantially as described.

3. In a loading appliance, the combination with a carrying-cable extended from the shore and anchored out at sea, and provided with suitable attachments whereby it may be raised at an intermediate point to extend across the deck of a vessel; of a carriage adapted to run upon the said cable with a suspended load; and a continuous propelling-line the ends of which are secured to the said carriage; a pulley attached at the delivery end to the said cable to carry the one extension of the said propelling-line; a driving mechanism provided with twin drums adapted to receive the wrappings of the propelling-line, substantially as described.

4. In a loading appliance, the combination with a carrying-cable extended from the shore and anchored, and provided with a suitable attachment whereby it may be raised at an intermediate point to extend across the deck of a vessel; a carriage adapted to run upon the said cable with a suspended load; a continuous propelling-line the ends of which are secured to the said carriage; a pulley attached to the said cable at the delivery end to carry the one extension of the said propelling-line; a driving mechanism provided with a driving-drum adapted to receive the wrappings of the said propelling-line to wind and unwind the same in alternately opposite directions; and an undriven drum adapted to receive part of the wrappings of the said propelling-line and to cooperate with the said driving-drum to receive the said propelling-line constantly at one point while delivering it constantly at another point, substantially as described.

5. In a loading appliance, the combination with a carrying-cable extended from the shore and anchored, and provided with a suitable attachment whereby it may be raised at an intermediate point to extend across the deck of a vessel; a carriage adapted to run upon the said cable with a suspended load; a continuous propelling-line the ends of which are secured to the said carriage; a pulley attached to the said cable at the delivery end to carry the one extension of the said propelling-line; a driving mechanism provided with a driving-drum having on its surface a series of parallel grooves to receive and separate the wrappings of the propelling-line and adapted to wind and unwind the same in alternately opposite directions; and an undriven drum the surface of which is provided with a series of parallel grooves similar to those on the said driving-drum, and being located in line with the driving-drum so that the ridges between the grooves of the undriven drum are opposite the center of the grooves in the driving-drum, substantially as described, whereby the propelling-line may be wound alternately upon the two drums to change the direction of the travel of the said line, without changing its point of entrance or exit from the said driving-drum, substantially as described.

6. In a loading appliance, the combination with a carrying-cable extended from the shore outward to a vessel lying at anchor; of a cable provided with an anchor beyond the said vessel and adapted to be connected with the end of the said carrying-cable and to be hoisted therewith above the deck of the said vessel; an anchored rotary drum adapted to draw the said carrying-cable and wind the same upon itself; substantially as described.

7. In a loading appliance, the combination with the carrying-cable extended from the shore outward to a vessel lying at anchor; of a cable anchored beyond the said vessel and adapted to be connected with the end of the said carrying-cable and be hoisted therewith, above the deck of the said vessel; a carriage adapted to run upon the said cable with a suspended load; a continuous propelling-line the ends of which are secured to the said carriage and the one extension of which is supported upon a pulley at the vessel; a driving mechanism provided with a drum upon which the said propelling-line is wound and adapted to wind and unwind the said propelling-line in alternately opposite directions; and a hoisting mechanism engaging the said carrying-cable over the loading-point adapted to raise and lower the same to allow the said carriage to be secured to the load prior to hoisting the same, substantially as described.

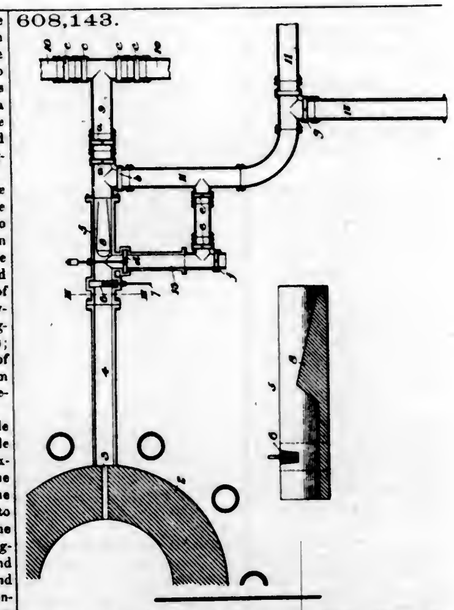
608,143. BLAST-FURNACE CASTING APPARATUS. MICHAEL KILLEEN, Braddock, Pa. Filed Oct. 19, 1897. Serial No. 655,681. (No model.)

Claim.—1. A blast-furnace skimmer-trough having a skimming-barrier, and a dam below the barrier and projecting upwardly above that portion of the trough-bottom which is beneath the barrier, said trough having above the dam, a draining-opening for the metal backed up by the dam.

2. A metal skimming-trough having a skimming barrier, and a dam below the barrier, said trough having a draining-opening in its side at a point between the dam and the barrier.

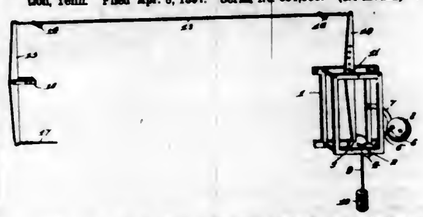
3. The combination with a blast-furnace, of a metal skimmer-trough leading therefrom, said trough being provided with a skimming-barrier, said barrier with a dam below the same and extending up above the general level of the trough-bottom and arranged to back up the metal in the skimmer-trough and said trough having a draining-opening for the metal at a point above the dam.

608,144. EGG-BROILER. DANIEL R. PORTER, Chelsea, Mass. Filed Oct. 24, 1896. Serial No. 609,963. (No model.)



Claim.—An egg-cooking utensil comprising a shallow pan formed to enter a stove-hole, and comprising a flat bottom *b* having a series of depressions *m*, a circular rim *c* rising from the edge of the bottom and of less diameter than the stove-hole and formed to receive the overflow of fat from said depressions, said rim having an outwardly-projecting flange *d* adapted to rest on the stove-top, whereby the bottom of the pan and the rim *c* are supported below said stove-top, and a cover formed to bear on the flange *d* to prevent the spattering of liquid fat from the flat bottom *b*, substantially as and for the purposes set forth.

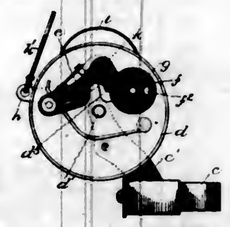
608,145. BURGLAR-ALARM. WILLIAM L. RAWLS, Jones' Station, Tenn. Filed Apr. 8, 1897. Serial No. 631,333. (No model.)



Claim.—In an alarm, the combination of the frame, a shaft revolubly mounted in the same, the lever 19 and winding-drum rigidly secured to said shaft, a striking-pin also rigidly secured to the shaft, of a support located outside of the frame, an arm pivoted to said support and extending backward into the frame and adapted to engage the striking-pin, a spring connected to said arm and frame, and an adjustable lever 12 pivoted in the frame one end adapted to engage the lever 19 and operating means connected to the other end of said lever.

608,146. BICYCLE-BELL. WILLIAM H. BARKER, Hartford, Conn., assignor to the Bevin Brothers Manufacturing Company, East Hampton, Conn. Filed May 3, 1898. Serial No. 679,567. (No model.)

Claim.—1. In a bell-striking mechanism including a gear, a swinging lever, a pinion mounted on the lever, a friction-disk operatively connected with the pinion, means for rotating the friction-disk, and means for swinging the lever to cause engagement of the pinion and gear and friction-disk with driving means.



2. In a bell-striking mechanism including a gear, a swinging lever, a pinion mounted on the lever and adapted to be swung past a point at the periphery of the gear and on a radial line thereof with the teeth of the gear and pinion engaging, a friction-disk connected with the pinion, means for rotating the friction-disk, and means for swinging the lever to cause the pinion and gear and the friction-disk and driving means to engage.

3. In combination in a bell-striking mechanism including a gear, a swinging lever, a pinion mounted on the lever in position to engage the gear on a tangent to the pitch-line thereof, a friction-disk connected with the pinion, means for driving the friction-disk, and means for swinging the lever to cause the gear and pinion and the friction-disk and driving means to engage.

4. A support, a hammer mounted on the support, a disk operatively mounted in connection with the hammer, a gong, a gear connected with the disk, a swinging lever, a pinion mounted on the lever, a friction-disk operatively connected with the pinion, means for driving the friction-disk, and means for swinging the lever to cause the pinion to engage the gear and the disk to engage the driving means.

608,147. PHOTOGRAPHIC DEVELOPER. ALFRED BOGISCH, Feuerbach, Germany, assignor to The Firm of J. Hauff, same place. Filed Dec. 24, 1896. Serial No. 616,923. (No specimens.) Patented in England Dec. 7, 1896, No. 29,931; in France Dec. 7, 1896, No. 261,967, and in Germany Mar. 30, 1897, No. 97,596.

Claim.—1. The process herein described of developing photographic negatives, which consists in subjecting them to the action of an alkaline solution of a substituted orthoamidophenol and hydroquinone, substantially as set forth.

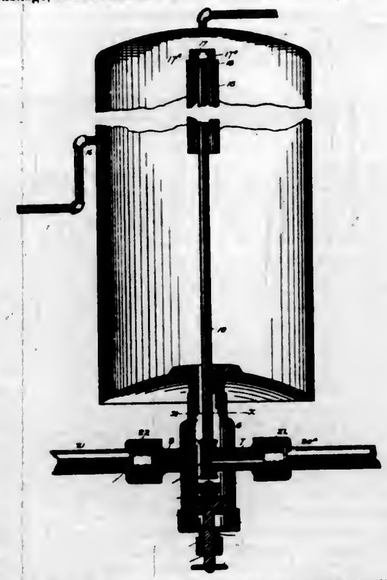
2. The process herein described of developing photographic negatives, which consists in subjecting them to the action of an alkaline solution of a molecular combination of mono or carboxy alkylized orthoamidophenol and hydroquinone, substantially as set forth.

3. A developing solution for photographic negatives, composed of an alkaline, aqueous solution of a mono or carboxy alkylized orthoamidophenol and hydroquinone, substantially as set forth.

608,148. HOT-WATER CYLINDER AND VALVE MECHANISM AND CONNECTIONS THEREFOR. ROBERT A. BROOKS, Chicago, Ill. Filed Sept. 14, 1897. Serial No. 651,699. (No model.)

Claim.—1. The combination with a hot-water cylinder and a conduit leading from the heater to the boiler, of a casing attached to the bottom of the cylinder and communicating therewith, said casing being provided with an inlet for the cold water from the service-pipe, and an exit to allow the water to pass to the range or heater, a device located within said casing and having three openings, one of which registers with the cold-water inlet, a valve normally closing another opening of said device, a pipe communicating with the third opening of said device and passing upwardly into the cylinder to a point in suitable proximity to the top thereof, and a conduit communicating with the top of the said pipe and leading downwardly to a point below the hot-water entrance to the cylinder, the upper part of the pipe being vented to prevent siphonage.

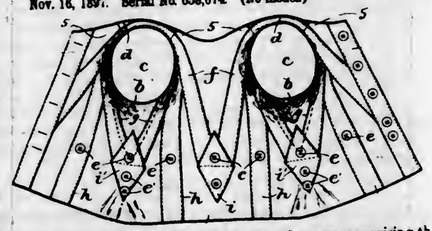
2. The combination with a hot-water cylinder and a conduit leading from the heater to the boiler, of a casing attached to the bottom of the cylinder and communicating therewith, said casing also having an inlet for the cold water from the service-pipe, and an outlet to allow the water to pass to the range or heater, a device located within the said casing and having three openings, one of which registers with the opening in the casing for the entrance of the cold water, a valve located in the casing for closing another of said openings, a pipe communicating with the third opening of said device and passing upwardly into the cylinder to a point in suitable proximity to the top thereof, an outer pipe surrounding the first-named pipe and extending downwardly to a point below the hot-water entrance to the cylinder, the said outer pipe communicating with the upper extremity of the inner pipe, the said pipes being vented to prevent siphonage, and suitable means for connecting the two pipes.



3. The combination with the cylinder and a conduit leading from the heater thereto, of a casing having an opening communicating with the cylinder, an inlet-pipe for the cold water from the service-pipe, an exit-pipe to allow the water to pass to the range or heater, a device located within said casing and having three openings, one of which registers with the cold-water-inlet pipe of the casing, a valve adapted to close another opening of said device, and a cold-water pipe leading upward into the cylinder and communicating with the third opening in the casing.

4. The combination with a hot-water cylinder, of a casing having an opening adapted to communicate with the cylinder, and an inlet-opening for the cold water from the service-pipe, a device located within said casing and having three openings, one of which registers with the casing-inlet, a valve for controlling another opening of said device, and a cold-water pipe leading upward into the cylinder and communicating with the third opening of the casing.

608,149. CHILD'S WAIST. GEORGE J. BURNS, Ayer, Mass. Filed Nov. 16, 1897. Serial No. 658,674. (No model.)



Claim.—1. The herein-described waist, the same comprising the body portion having shoulder-strap bases 5 each side of each armhole and terminating short of each other above the armhole, gore-pieces secured to the body portion under the armholes, and reinforcing-strips extending down each side of the armhole and extending across the space between the ends of the shoulder-strap bases 5 and connecting said bases.

2. The herein-described waist, the same comprising a main foundation-piece, the lower edge of which is continuous and longer than the waist-encircling portion and having a shoulder extension arising from each side, the under-arm pieces being gores secured to the body portion and having reinforcing-strips stitched to the shoulder extensions and forming the upper sides of the armholes, the said reinforcing-strips constituting a part of the garment, supporting-strips arranged in lines extending from the shoulder-covering portions of the

garment, and pieces arranged at the sides and back or front of the garment and covering the ends of certain of said strips.

608,150. **DENTAL PLUGGER.** ALDEN BURR, Elyria, Ohio. Filed Nov. 11, 1896. Serial No. 611,754. (No model.)



Claim.—1. In a dental plugger, in combination, a tubular casing having near one end an offset forming an internal annular shoulder *a*, a plunger working through said end having on its inner end, first, an annular shoulder *b* and, second, a row of cam-teeth, a plug secured in and closing the other end of said casing and forming an internal annular bearing c^3, a rotatable hammer in said casing having, first, a reduced end which extends out through said plug and, second, an annular row of cam-teeth on its inner end and, third, an annular external flange c^4 above its inner end, and a coil-spring surrounding the inner end of said hammer and thrusting against said flange and the inner end of the plunger, said hammer and plunger having on their proximate ends, respectively, a striking-pin and a surface with which it engages, substantially as and for the purpose specified.

2. In a dental plugger, the combination of the casing having an offset near one end forming an internal annular shoulder *a*, a plug secured in and closing the other end of said casing and forming an annular bearing c^3, a longitudinally-movable tool-holding plunger which projects through the first-named end of the casing and has an annular flange *b* above said shoulder, and an annular row of cam-teeth on its inner end, with a rotatable hammer adapted to be driven by a projection extending through the plug, said hammer having inside the casing an annular shoulder c^4, and having teeth on its inner end, and a coiled spring surrounding the hammer and bearing against the flange *b* and the shoulder c^4 and thereby tending to separate the plunger and hammer, said plug receiving the thrust caused by an inward pressure on the tool, substantially as described.

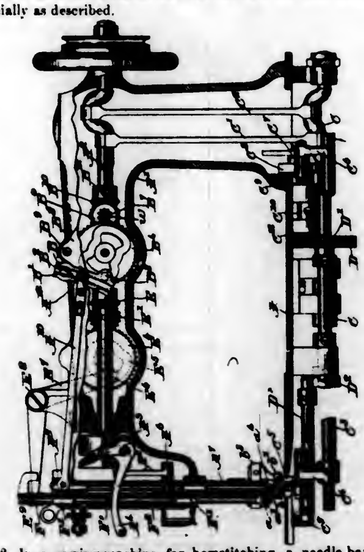
3. In a dental plugger, the combination of a casing having an offset forming an internal shoulder, and a plug which closes the other end; a longitudinally-movable tool-holding plunger which projects through one end of the casing and has a flange which lies above said shoulder, a rotatable hammer which is mounted in said casing and has a reduced stem which projects through said plug, a set of balls confined within the casing around said stem and between the thrust-bearing plug and end of the hammer, cam-surfaces on the adjacent ends of said hammer and plunger, and a spring exerting its force to move the hammer upward against said balls, and the plunger downward, substantially as and for the purpose specified.

4. In a dental plugger, the combination of a casing A, a tool-holding plunger B longitudinally movable through one end of the casing, a case E which screws in the opposite end of said casing, which case is adapted to receive the handpiece of a dental engine, means for holding said handpiece therein, a rotatable hammer C mounted in casing A, having a reduced stem which projects into case E, a ball-raceway in casing A between the hammer and end of case E, balls therein, cams on the adjacent faces of the hammer and plunger and a spring *d* exerting its force to separate the adjacent faces of said hammer and plunger, substantially as and for the purpose specified.

5. In a dental plugger, the combination of a casing A, a tool-holding plunger B having on its inner end an annular row of cam-teeth, a rotatable hammer C mounted in the casing and having on its inner end a pin *c* and an annular row of cam-teeth, and a spring *d*, which exerts its force to move the hammer and plunger in opposite directions, and thereby separate the two annular rows of cam-teeth, substantially as and for the purpose specified.

608,151. **MACHINE FOR SEWING WITH HEM OR OPEN-WORK STITCH.** GEORGE H. DIMOND and WILBUR F. DIAL, Bridgeport, Conn., assignors to The Wheeler & Wilson Manufacturing Company, same place. Filed Sept. 14, 1897. Serial No. 651,671. (No model.)

Claim.—1. In a sewing-machine for hemstitch or open-work stitching, the following instrumentalities, viz: a needle-bar gate, means to move it laterally; a needle-bar having an eye-pointed needle and mounted in said gate; means to reciprocate said needle-bar in said gate; a piercer-carrying bar having an attached grooved piercer; suitable bearings for said piercer-carrying bar; a path-cam, means to actuate it; devices intermediate said cam and said piercer-carrying bar to reciprocate it, that said piercer may penetrate the material of single thickness off the edge of the hem and remain in the material while the needle-bar is moving to cause its needle to descend through the said material in the groove of the piercer, then rise, move laterally, and descend through the hem at one side of the piercer, then rise and move back laterally into position over the material of single thickness, and descend again through the said material of single thickness in the groove of the piercer yet in the said material, and then together with the piercer rise from the material; and feeding mechanism to move the material between one and the next stitch, substantially as described.



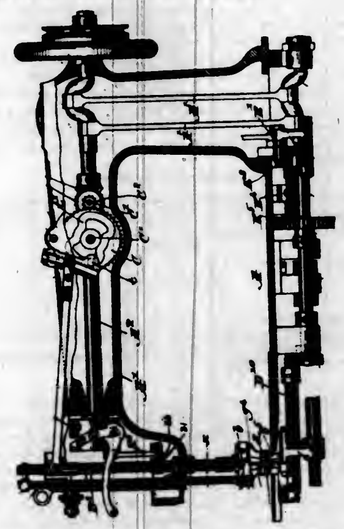
2. In a sewing-machine for hemstitching, a needle-bar gate, means to move it laterally; a needle-bar in said gate, said needle-bar being provided with an eye-pointed needle; means to move said needle-bar vertically; a piercer-carrying bar provided with a piercer; means to positively actuate said piercer-carrying bar independently of the needle-bar, to cause said piercer to penetrate the material in advance of the descent of the needle and to remain in the said material, holding it in place and distending the hole therein while the needle and its bar make its descents and ascents to complete the hemstitch figure, one of said descents being in the hem and the other of said descents being in the material of single thickness off the hem and in the hole distended by the piercer, the piercer being thereafter automatically raised and removed from the material after the needle has descended a plurality of times in the same hole off the edge of the hem, substantially as described.

3. In a sewing-machine for hemstitching, a needle-bar gate, a needle-bar in said gate, a needle carried by said bar, a rotatable shaft, connections between it and said needle-bar to reciprocate it uniformly; a gate-cam, means to actuate it, and intermediate devices between said gate-cam and said gate to move the gate laterally; holding it in one position while the needle-bar makes two full strokes, and then in another position while the needle-bar makes one full stroke; combined with a piercer-carrying bar, an attached piercer, an independent piercer-bar cam, means to actuate it, means between said piercer-bar cam and said piercer-carrying bar to actuate the same and cause said piercer to enter the material and enlarge a hole for the passage of a needle, substantially as described.

4. In a sewing-machine for hemstitching, a needle-bar gate, a needle-bar in said gate, a needle carried by said bar, a rotatable shaft, connections between it and said needle-bar to reciprocate it uniformly; a gate-cam, means to actuate it, and intermediate devices between said gate-cam and said gate to move the gate laterally, holding it in one position while the needle-bar makes two full strokes, and then in another position while the needle-bar makes one full stroke; combined with a piercer-carrying bar, an attached piercer, an independent piercer-bar cam, means to actuate it, means between said piercer-bar cam and said piercer-carrying bar to actuate the same and cause said piercer to enter the material and enlarge a hole for the passage of a needle, said piercer remaining in said material throughout three complete downstrokes of the needle-bar; and feeding mechanism acting only to feed the material in a forward direction after each stitch, substantially as described.

5. In a machine for hemstitching, a piercer-carrying bar having a piercer-groove at one side, a piercer-bar cam, means to actuate it, and devices between said cam and piercer-carrying bar to move said piercer-carrying bar a less number of times than the needle-bar, combined with a needle-bar having an eye-pointed needle, means to reciprocate said needle-bar and to move it laterally, that the needle may penetrate the material at the hem, and off the hem, said needle in its descents to penetrate the material off the hem entering the groove of said piercer and being guided thereby in its approach to and while passing through the material, substantially as described.

608,152. **HEMSTITCH OR OPEN-WORK SEWING-MACHINE.** GEORGE H. DIMOND and WILBUR F. DIAL, Bridgeport, Conn., assignors to The Wheeler & Wilson Manufacturing Company, same place. Filed Sept. 16, 1897. Serial No. 651,825. (No model.)



Claim.—1. In a sewing-machine for hemstitching, the following instrumentalities, viz: a four-motion transverse-feed bar, means to actuate it to move the material only in a forward direction; a needle-bar provided with an eye-pointed thread-carrying needle, a needle-bar gate to contain said needle-bar; means to move said gate laterally transverse to the feed movement of the material; means to move said needle-bar vertically in said gate; a piercer-carrying bar located at one side of said needle-bar in the direction of the lateral movement of said bar, an arm connected to said bar and projecting therefrom in a line transverse to the direction of the feed movement, a piercer attached to said arm, fixed guides for said piercer-carrying bar; and means to reciprocate said piercer-carrying bar and said needle-bar in unison, said piercer making an opening in the material in advance of the needle in the line of the seam, substantially as described.

2. A needle-bar having an eye-pointed needle; a needle-bar gate; means to hold said needle-bar gate in position to enable the needle to descend in the material off the hem, and then to move said gate to enable the needle to descend through the material off the hem, and then to move said gate to enable the needle to again enter the material off the hem in the same hole previously made by the needle; feeding mechanism to feed the material for one stitch only in the direction of the length of the seam between the two descents of the needle in the same vertical plane; a piercer-carrying bar, an arm extended therefrom horizontally transverse to the feed, and adjustably connected to said piercer-carrying bar, a piercer attached to said arm, and means to reciprocate said piercer-carrying bar and said needle-bar in unison, said piercer making an opening in the material in advance of the needle in the direction of the length of the seam for the reception of the needle in making a succeeding stitch, substantially as described.

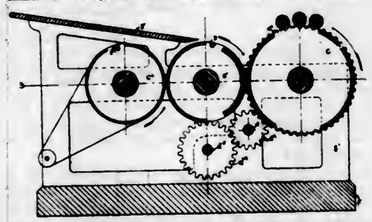
3. In a sewing-machine, a head having fixed bearings; a piercer-carrying bar fitted to slide in said bearings, a piercer, a horizontally-extended arm to which said piercer is attached, and means to connect said arm adjustably with said piercer-carrying bar, whereby the arm and piercer may be adjusted not only transversely but axially on said piercer-carrying bar, to thereby control the exact relative positions between the said piercer and needle when penetrating the material off the hem, substantially as described.

4. In a sewing-machine, a needle-bar gate, means to move it laterally, a needle-bar therein having a needle; means to reciprocate said needle-bar, a piercer-carrying bar movable in bearings connected with the head of the machine, a piercer, a horizontally-extended arm to which said piercer is attached, and means to connect said arm adjustably with said piercer-carrying bar, whereby the arm and piercer may be adjusted not only transversely but axially on said piercer-carrying bar, to thereby control the exact relative positions between the said piercer and needle when penetrating the material off the hem, substantially as described.

5. In a sewing-machine, a needle-bar gate, means to move it laterally, a needle-bar provided with a needle and mounted in said gate, means to move said needle-bar vertically in said gate, a piercer-carrying bar occupying a position parallel to said needle-bar and having its bearings in the head of the sewing-machine, an arm connected to said piercer-carrying bar, and provided with a piercer, combined with a stud on one of said bars entering a hole in the other of said bars, said stud being adjustable axially around or with relation to the bar carrying it to permit the adjustment of said bars axially as required, substantially as described.

6. In a sewing-machine, a needle-bar gate, means to move it laterally, a needle-bar mounted in said gate, and provided with a needle, means to move said needle-bar vertically in said gate, a piercer-carrying bar having attached to its lower end an arm provided with a piercer, bearings for said piercer-carrying bar, said bearings being in the head of the sewing-machine, a stud having at one end an orifice to surround one of said bars, the stud entering a hole in the other of said bars, and a set-screw to fix said stud in adjusted position on one of said bars, both of said bars occupying a position side by side in a plane transverse to the direction of the feed, the loosening of the set-screw holding said stud in position enabling the said piercer-carrying bar to be turned axially to place the piercer more or less close to the side of the needle carried by the needle-bar, substantially as described.

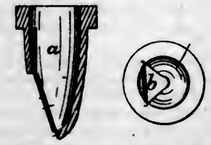
608,153. **PRINTING-MACHINE.** BERTHOLD HUBER, Taunton, Mass. Filed Sept. 25, 1897. Serial No. 652,971. (No model.)



Claim.—1. In a rotary printing-press, a form-carrying cylinder rotated at a uniform speed during each complete revolution of the press; an impression-cylinder rotated in unison with the said form-carrying cylinder during the period of printing and at a varying speed during the balance of each revolution of the press, to enable the sheet to be taken by the grippers, carried by the impression-cylinder, when said cylinder is moving at a slower speed than the uniform speed of the form-carrying cylinder, for the purpose specified.

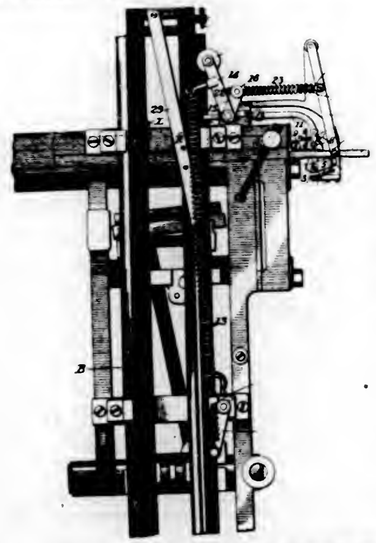
2. In a rotary printing-press, the following instrumentalities, viz: the form-carrying cylinder C with the gear d^3 and segment d^5 mounted thereon, the impression-cylinder C' with the gear d^4 and cam-shaped segment *e* mounted thereon, the pinion d^3, the gear d^4 and the eccentrically-mounted pinion d^6, arranged substantially as shown for the purpose specified.

608,154. **DEVICE FOR FACILITATING LIGHTING OF CYCLE OR OTHER LAMPS.** HERBERT R. JACKSON and JOHN A. ANDERSON, Barrow-in-Furness, England, assignors to William H. Jackson, Bradford, England. Filed Dec. 3, 1897. Serial No. 660,672. (No model.) Patented in England Oct. 16, 1897. No. 23,579.



Claim.—An igniting device, comprising a hollow cone circular in cross-section and having a blunt-pointed end portion provided with an opening on one side, the sides of the cone being formed on curves which are sharper at the said end portion than at the body of the cone and which constrain the match to project centrally of the cone, and a spring-controlled friction-plate normally covering the said opening, substantially as set forth.

608,155. LINE-CLOSING ATTACHMENT FOR LINOTYPE-MACHINES. CARL MUEHLEISEN, Baltimore, Md. Filed Oct. 9, 1897. Serial No. 654,677. (No model.)



Claim.—1. In a linotype machine, automatic mechanism, including a movable right-hand vise-jaw, for closing a short line of matrices during the casting operation, and means for throwing said mechanism into and out of use, substantially as described.

2. In a linotype-machine, a right-hand vise-jaw, and means for rendering said jaw either stationary in normal position when assembling full lines of matrices or automatically movable to close short lines, substantially as described.

3. In a linotype-machine, means for closing a short line of matrices during the casting operation comprising an automatically-movable right-hand vise-jaw, and automatic devices for locking the same when closed upon a short line of matrices, substantially as described.

4. In a linotype-machine, means for closing a short line of matrices during the casting operation comprising an automatically-movable right-hand vise-jaw and automatic devices for locking said jaw during the justifying operation, whereby the justifying-wedges are prevented from spreading the line unduly, substantially as described.

5. In a linotype-machine, means for closing a short line of matrices during the casting operation comprising a movable right-hand vise jaw, and automatic devices for moving the jaw inward against a short line of matrices, for locking it in position against said matrices while the justifier is being operated, and for moving it outward into normal position after the line is cast, substantially as described.

6. In a linotype-machine, a movable right-hand vise-jaw, in combination with means for holding said jaw normally in a right hand position, means for moving said jaw to the left to engage a short line of matrices, means for locking the jaw against movement to the right while the justifier is operated, and means for holding said jaw against further movement to the left as the line leaves the vise, substantially as described.

7. In a linotype-machine, a movable right-hand vise-jaw, a detent for normally holding said jaw in the right-hand position, a motor for moving said jaw automatically to the left when released from the detent, means for releasing said detent, and means for throwing the said motor into and out of operative relation to the jaw, substantially as described.

8. In a linotype-machine, the combination with a movable right-hand vise jaw, of the ratchets connected with said vise-jaw, the holding-pawls cooperating with said ratchets, and means for bringing said pawls alternately into action, substantially as described.

9. In a linotype-machine, the combination with a movable right-hand vise-jaw, ratchets connected with said jaw, pawls cooperating with the ratchets, and means for engaging pawls with one ratchet and disengaging them from the other as the elevator carries a line into the vise, substantially as described.

10. In a linotype-machine, the combination with a movable right-hand vise-jaw, ratchets connected with said jaw, pawls cooperating with the ratchets, the lever controlling the pawls, and means for tripping the lever as the elevator carries a line into the vise, substantially as described.

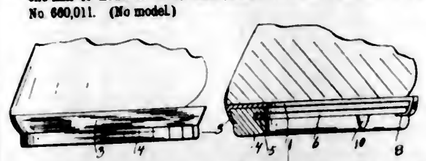
11. In a linotype-machine, the combination with a movable right-hand vise-jaw, of a mainspring tending to move said jaw to the left, means for locking said jaw in normal position, and means for throwing the mainspring into and out of action, substantially as described.

12. In a linotype-machine, the combination with a movable right-hand vise-jaw, and means for moving said jaw to the left, of an incline or cam upon the elevator arranged to move the jaw to the right as the elevator rises, substantially as described.

13. In a linotype-machine, the combination with a movable right-hand vise-jaw, of a spring tending to draw said jaw to the left, a cam operating to return the jaw and a yielding connection between said cam and jaw, substantially as described.

14. In a linotype-machine, the combination with a movable right-hand vise-jaw, of the two-faced ratchet-bar connected to said jaw, a pair of independent pawls adapted to engage with each face of said ratchet-bar, pins loosely fitted in openings in said pawls, a link connecting said pins, and means for moving the link to throw the pawls alternately into engagement with the ratchet-bar, substantially as described.

608,156. HORSESHOE. HENRY PAAR, Canton, Ohio, assignor of one-half to Louis D. Paar, same place. Filed Nov. 27, 1897. Serial No. 660,011. (No model.)



Claim.—1. The combination of the body 1, provided with nail-apertures and the flange 3, the tread 4, provided with the groove 5, the spring retaining-bar 6, normally located in the groove and provided with the lateral lugs 7, and the flanges 8, formed upon the heel ends of the body 1, substantially as and for the purpose specified.

2. The combination of the body 1, provided with a flange and nail-apertures, the tread 4, provided with a groove upon its inner portion, cut-out portions 10, formed in the tread, a spring retaining-bar normally located in the groove, of the tread, and lateral lugs located at the heel ends of the spring retaining-bar, and flanges 8, formed upon the body 1, substantially as and for the purpose specified.

608,157. BOTTLE-SEALING DEVICE. WILLIAM PAINTER, Baltimore, Md., assignor to the Crown Cork and Seal Company, same place. Filed Feb. 9, 1893. Serial No. 461,807. (No model.)



Claim.—1. A metallic bottle-sealing cap, having a flange, provided with outwardly-projecting lugs, located remotely from the edge of the cap, substantially as described.

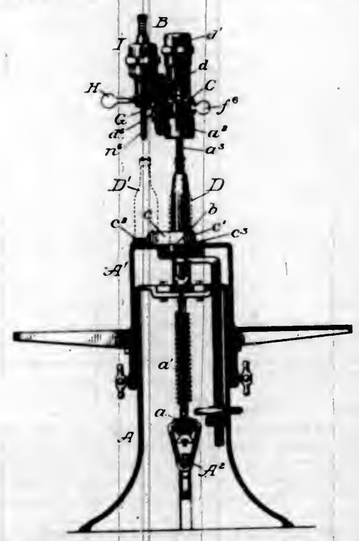
2. The combination of a bottle having on its head an annular locking-shoulder, and a metallic sealing-cap containing a sealing-disk under compression, and having a flange provided with outwardly-projecting detaching-lugs, and also having its edge below said lugs, in reliable locking contact with the annular locking-shoulder, substantially as described.

608,158. BOTTLING-MACHINE. WILLIAM PAINTER, Baltimore, Md., assignor to the Crown Cork and Seal Company, same place. Filed Jan. 12, 1895. Serial No. 534,651. (No model.)

Claim.—1. In a bottling-machine, the combination substantially as hereinbefore described, of a reciprocative filling-head adapted to receive the head of a bottle, and a syrup-chamber, mounted on said head, and provided with a separate pendent nozzle, and a suitable cock, whereby, during the filling of each bottle at the filling-chamber of the head, a second bottle may be internally occupied by the pendent nozzle and charged with syrup or other flavoring.

2. In a bottling-machine, the combination substantially as hereinbefore described, of a filling-chamber; a separate chamber for syrup provided with a pendent delivery-nozzle, and a suitable cock; a bottle-supporting table, and a two-bottle gage on said table, provided with separate gaging-contacts for alining two bottles, one with the filling-chamber, and the other, with the pendent nozzle.

3. In a bottling-machine, the combination of a filling-chamber provided with a suitable gasket; a syrup-chamber provided with a pendent nozzle, and a suitable cock; a valve for controlling the passage of liquid to the filling-chamber; means for operating said cock and valve; a table; a bottle-gage on said table, provided with separate gaging-contacts for accurately alining one bottle with the filling-chamber, and another bottle with said nozzle; and means for simultaneously causing the head of one bottle to engage with the gasket in packing contact, and the nozzle to be located within another bottle, substantially as described.



4. In a bottling-machine, the combination substantially as hereinbefore described, of a filling-chamber, an independent chamber for receiving and delivering syrup or other flavoring to a bottle, an independent discharge therefrom, a valve for controlling the passage of liquid to the filling-chamber, a cock for controlling the delivery of the flavoring, and an operating-lever common to said cock and valve.

5. In a bottling-machine, the combination substantially as hereinbefore described, of a filling-chamber; separate valves for controlling the delivery of liquid to said chamber, and the snifting of air or gas therefrom; a chamber for syrup or other flavoring, a cock for controlling the delivery of the flavoring, and a reciprocative operating-lever common to said cock, and to both of said valves.

6. In a syrup or flavoring gage, of a bottling-machine, the combination of a suitable chamber; a flexible weighted diaphragm within said chamber; a stop for limiting the filling movement of said diaphragm; a two-way cock, for controlling the induction of syrup from a suitable source of supply, and also the discharge of the contents of said chamber through a suitable pendent nozzle, substantially as described.

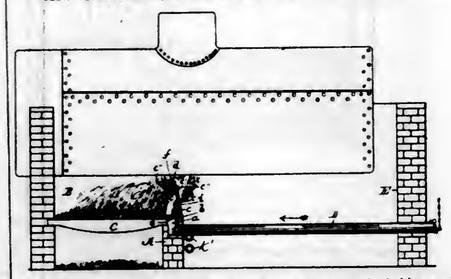
7. In the syrup or flavoring gage of a bottling-machine, the combination with a receiving-chamber, of a flexible diaphragm in said chamber, serving as a variable wall therein, and an adjustable stop, for variably limiting the movement of the diaphragm, and thereby varying the receiving capacity of the chamber, substantially as described.

8. In a bottling-machine the combination substantially as hereinbefore described, of a pendent filling-chamber containing means for setting metallic sealing-caps on bottles; an annular compressible gasket at the mouth of said chamber; a compressing device for said gasket, and a rocking cam-lever for operating the compressing device.

9. In a bottling-machine, the combination hereinbefore described, of a pendent filling-chamber containing means for setting metallic sealing-caps on bottles; a flat annular gasket at the mouth of said chamber; a slidable sleeve outside of said chamber, and underlying the gasket, and a rocking cam-lever for lifting said sleeve and heavily compressing the gasket, the latter having an area of opening normally larger than the diameter of the head of an appropriate bottle, and when compressed, adapted to initially engage in packing contact with a bottle-head below its lip and to progressively engage in shifting contact with the largest portion of the head, and then to maintain packing contact with the neck of the bottle below its head.

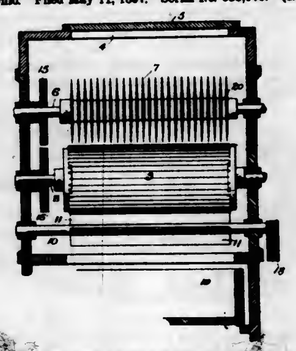
10. In a bottling-machine, the combination with means for setting metallic sealing-caps on bottles, of a bottle-supporting pad or cushion, composed of elastic rubber compound and an interior perforated plate, substantially as described, whereby after one surface of the pad has been rendered inoperative, because of the heavy pressures involved in sealing, the other surface will be kept intact, and be ready for use upon reversing the pad.

608,159. SMOKE-CONSUMER. JOSEPH SHACKLETON, Dayton, Ohio. Filed Nov. 15, 1897. Serial No. 658,563. (No model.)



Claim.—In a smoke-consumer, the combination of a bridge-wall having an air-chamber therein opening through the upper longitudinal surface thereof, an air-pipe communicating with the rear side of said chamber, an oven mounted on said bridge-wall, the said oven having a longitudinal row of orifices in its rear side, and a longitudinal recess in its upper side, a wall of fire-slabs mounted in said recess, and a hydrocarbon-burner inclosed in said oven and adapted to eject a wall of flame through the rear side of the oven, and across the space above the fire-slabs, substantially as and for the purposes specified.

608,160. ROLLER STEAK-HACKER. JESSE R. SHELLING, Newark, Ohio. Filed May 11, 1897. Serial No. 635,979. (No model.)

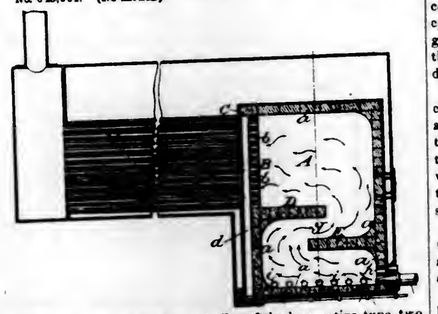


Claim.—1. A meat-tendering machine, comprising two gangs of circular cutters arranged to cut part way through the meat, but not to sever it into strips, two cylindrical gangs of longitudinal blades below the circular cutters, and also arranged to cut part way through the meat without severing it into strips, gearing for driving the circular blades, and longitudinal blades toward the center of the machine to feed the meat inwardly and downwardly between them, two shafts below the longitudinal blades and carrying guidieg and cleaning blades geared to rotate in a direction opposite to the corresponding longitudinal blades above them, and to direct the meat inwardly and clear the longitudinal blades from meat adhering thereto, and mechanism for driving the cutters and blades in the proper direction.

2. A meat-tendering machine, comprising two gangs of circular cutters arranged to cut part way through the meat, but not to sever it into strips, two cylindrical gangs of longitudinal blades below the circular cutters, and also arranged to cut part way through the meat without severing it into strips, gearing for driving the circular blades, and longitudinal blades toward the center of the machine to feed the meat inwardly and downwardly between them, two shafts below the longitudinal blades and carrying guiding and cleaning blades geared to rotate in a direction opposite to the corresponding longitudinal blades above them, and to direct the meat inwardly and clear the longitudinal blades from meat adhering thereto, mechanism for driving the cutters and blades in the proper direction, and adjustable plates at

opposite ends of the machine, carrying bearings for the shafts of the cutters and guiding and cleaning blades.

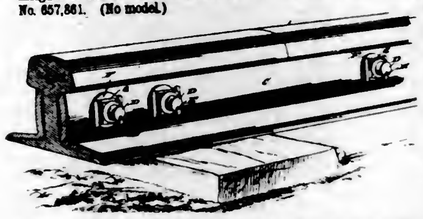
608,161. FURNACE FOR BOILERS OF LOCOMOTIVE TYPE. TOMAS E. DE SOTOLONGO, New York, N. Y. Filed July 9, 1897. Serial No. 643,961. (No model.)



Claim.—1. In a furnace for a boiler of the locomotive type, two arches arranged across the fire-chamber at different levels below the boiler-tubes, one of said arches being closed to the fire-chamber at the rear of the latter but open toward the front thereof and the other of said arches being closed to the fire-chamber at the front of the latter but open toward the rear thereof, a blast-conduit entering the fire-chamber under the lower arch for the introduction thereinto of air and fuel together, air-openings through the sides of the fire-chamber below the said arches and means for closing said openings, substantially as herein described.

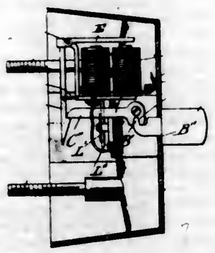
2. In a furnace for a boiler of the locomotive type, a shield of refractory material perforated to correspond with the tube-openings in the tube-sheet and arranged across the fire-chamber at a distance from the tube-sheet with an opening at the bottom of the space between the said shield and tube-sheet, and a valve for controlling said opening, substantially as herein described.

608,162. NUT-LOCK. CHARLES M. SWISHER, Medaryville, Ind., assignor to Samuel N. Gerber, same place. Filed Nov. 8, 1897. Serial No. 657,861. (No model.)



Claim.—In a nut-lock, the combination with the bolt provided with a splineway and a nut, of a washer having a feather adapted to engage the splineway, and locking-arms extending tangentially from the washer and adapted to be bent backward thereon and extend on opposite edges of the nut to prevent turning of the latter, substantially as set forth.

608,168. BICYCLE-LOCK. FRANK V. WALSTROM and JOHN ERICKSON, Chicago, Ill. Filed May 13, 1897. Serial No. 636,302. (No model.)



Claim.—1. In a bicycle-lock, the combination of a rack or holder to receive some portion of the bicycle, a movable hasp to secure the bicycle in place in said rack, a latch to engage the same, a tumbler engaging said latch, and an electromagnet for actuating the tumbler, electrically connected with a contact device for changing the electrical condition of the circuit, substantially as described.

2. In a bicycle-lock, the combination of a rack or holder to receive some portion of the bicycle, a movable hasp to secure the bicycle in place in said rack, a latch to engage the same, a tumbler engaging said latch, and an electromagnet for actuating the tumbler, the magnet being connected by a normally open circuit to a contact device for closing the same, substantially as described.

3. In a bicycle-lock, the combination of a casing adapted to receive some portion of the bicycle and serve as a rack therefor, a movable hasp to secure the bicycle in place in said rack, a latch to engage the same, a tumbler engaging said latch, and an electromagnet for actuating the tumbler, the latch, tumbler and magnet being located within the casing, and the magnet electrically connected with a contact device for changing the electrical condition of the circuit, substantially as described.

4. In a bicycle-lock, the combination of a locking mechanism, an alarm separate from said lock but electrically connected therewith, and a contact device at the lock adapted to be operated by the bicycle upon its insertion or removal, substantially as described.

5. In a bicycle-lock, the combination of an electrically-actuated locking mechanism, an alarm separate from said lock but electrically connected therewith, and a contact device at the lock adapted to be operated by the bicycle upon insertion or removal, substantially as described.

6. In a bicycle-lock, the combination of a locking mechanism, an alarm separate from said lock but electrically connected therewith, and a contact device in the alarm-circuit also separated from the lock and adapted to be operated by the insertion or removal of a check to be given to the person securing the bicycle in the lock, substantially as described.

7. In a bicycle-lock, the combination of a locking mechanism, an alarm separate from said lock but electrically connected therewith, a contact device at the lock adapted to be operated by the bicycle upon its insertion or removal to open or close the alarm-circuit, and a second contact device in said circuit, substantially as described.

8. In a bicycle-lock, the combination of an electrically-acuated locking mechanism, a key or button to control the same, an alarm electrically connected with said lock, and a contact device in the alarm-circuit and situated in proximity to the controlling-key, substantially as described.

9. In a bicycle-lock, the combination of an electrically-actuated locking mechanism, an alarm electrically connected with said lock, and a contact device at the lock adapted to be operated by the bicycle upon its insertion or removal, substantially as described.

10. In a bicycle-lock, the combination of an electrically-actuated locking mechanism, a key or button to control the same, an alarm electrically connected with said lock, a contact device in the alarm-circuit at the lock, and a second contact device in said circuit and situated in proximity to the controlling-key, substantially as described.

11. In a bicycle-lock, the combination of a locking mechanism, an alarm separate from the said lock but electrically connected therewith, and a contact device at the lock, the movable projection or button of which is adapted to be engaged by the portion of the bicycle within the lock to open the circuit, substantially as described.

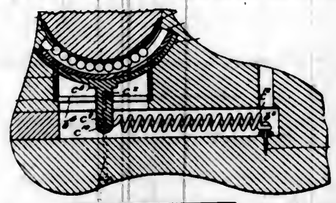
12. In a bicycle-lock, the combination of a locking mechanism, an alarm separate from said lock but electrically connected therewith, and a contact device in the alarm-circuit also separated from the lock and adapted to be closed by the removal of a check to be given to the person securing the bicycle in the lock, substantially as described.

13. In a bicycle-lock, the combination of an electrically actuated locking mechanism, a key or button to control the same, an alarm electrically connected with said lock, a contact device in the alarm-circuit adapted to open the same when the bicycle is in place in the lock, and a second contact device in the same circuit adapted to be closed by the removal of a check to be given to the person securing the bicycle in the lock, substantially as described.

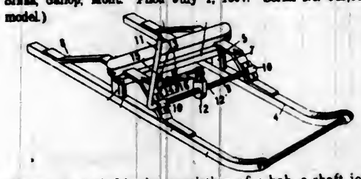
608,164. ANKLE-JOINT. ALBERT C. WRIGHT, Britt, Iowa, assignor of one-half to Clayton A. Stubbins, same place. Filed Feb. 23, 1898. Serial No. 671,373. (No model.)

Claim.—1. In an artificial limb, the combination with a foot-section and a leg-section, a concave plate secured to the foot-section, and a convex plate secured to the leg-section, balls interposed between said plate, a strap secured to the plate of the leg-section and embracing the plate of the foot-section, an arm secured to the strap, and a spring having one end secured to the arm and the other end secured to the foot-section, substantially as set forth.

2. In an artificial limb, the combination with a foot-section and a leg-section, said foot-section provided with a chamber communicating with a longitudinal horizontal channel, said chamber being provided with an offset or shoulder, a convex plate secured to the leg-section and provided with a groove, a convex plate having a depending band or collar located within the chamber and seated upon the shoulder, and provided with a groove, balls arranged in said groove, a band secured to the convex plate and embracing the concave plate, an arm secured to the band, and a coiled spring, one end of which is connected to the free end of the arm and has its other end projecting into the longitudinal channel and secured therein, substantially as set forth.



608,165. SLED-BRAKE. GEORGE C. HOPKINS and HENRY M. STIMS, Gallop, Mont. Filed July 1, 1897. Serial No. 643,095. (No model.)



Claim.—1. A sled-brake consisting of a bob, a shaft journaled to the braces thereof, a scraper consisting of arms pivoted to the bolster of said bob and depending therefrom, said arms having a common plate at their lower ends, and the link for lowering said scraper as said shaft is operated, substantially as described.

2. A sled-brake and bob consisting of runners, posts, bolsters, &c., the shaft journaled upon said braces, said shaft having an operating angled portion, the block and tongue secured to said shaft, the arms depending from a pivotal connection with said bolster, the plate and rand secured to said arms, the link connecting said rand with the aforesaid tongue, and means for operating said angled portion of the shaft, all substantially as and for the purpose set forth.

REISSUES.

11,682. ERASER. WILLIAM A. BARR, Washington, D. C. Filed Nov. 5, 1897. Serial No. 657,582. Original No. 578,190, dated Mar. 2, 1897.



Claim.—1. An eraser, adapted to be used when worn on the finger, comprising a ring provided with a holder, and having a piece of erasive material secured therein and projecting laterally therefrom, substantially as hereinbefore set forth.

2. An eraser, adapted to be used when worn on the finger, comprising a ring provided with a holder, and having a piece of erasive material, differing from the material of the ring, secured therein and projecting laterally therefrom, substantially as hereinbefore set forth.

3. An eraser, adapted to be used when worn on the finger, comprising a ring provided with a holder, and having a piece of erasive material secured therein by detachable fastenings and projecting laterally therefrom, substantially as hereinbefore set forth.

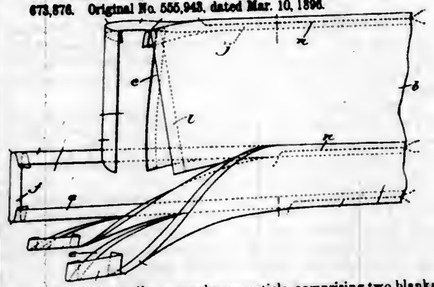
4. An eraser, adapted to be used when worn on the finger, comprising a ring provided with a holder, interlocking or overlapping devices on the ring and holder, and a piece of erasive material secured therein and projecting laterally therefrom, substantially as hereinbefore set forth.

5. An eraser, adapted to be used when worn on the finger, comprising a piece of erasive material, its holder having a loop, and a ring the free ends of which are adapted to engage said loop, substantially as hereinbefore set forth.

6. An eraser, adapted to be used when worn on the finger, comprising a piece of erasive material, its holder having a loop, and a ring provided with shoulders and overlapping ends; said ends being adapted to engage the loop on the holder, and one of these ends being provided with a flange adapted to engage the shoulder on the opposite end, substantially as hereinbefore set forth.

7. An eraser, adapted to be used when worn on the finger, comprising an eraser-holder having upturned sides, a piece of erasive material secured therein, a loop on the holder, and a ring the ends of which are adapted to engage said loop, substantially as hereinbefore set forth.

11,688. COLLAR, &c. ALBERT D. FENWICK, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Fenwick Collar and Cuff Machine Company, same place. Filed Mar. 5, 1898. Serial No. 673,876. Original No. 555,943, dated Mar. 10, 1896.

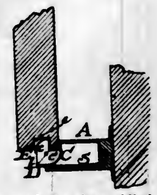


Claim.—1. A collar or analogous article, comprising two blanks, the longitudinal edges and ends of said blanks being infolded one toward the other and interlocked at the corners formed by the junctions of said edges and ends, said interlocked corners being each formed by having a longitudinal folded edge of one blank folded onto the adjacent end fold thereof and in the other blank the corresponding end fold folded onto the longitudinal folded edge thereof, and the said longitudinal folded edge of said former blank interlapped or tucked under the said end fold of the last-mentioned blank, said blanks being stitched together, substantially as described.

2. A collar or analogous article comprising body-blanks and neck-band-blanks having infolded edges laid next each other, the corners being severally formed by having the corner of one blank of the longitudinal folded edge folded onto the end folded edge thereof, and in the adjacent blank the end folded edge folded onto the longitudinal folded edge thereof and interlapped; the bottom unfolded edges of the body-blanks being inserted between the top infolded edges of the neck-band-blanks, and the whole united together only by stitches which pass from outside to outside of the article and through the infolded edges, substantially as described.

3. A collar or analogous article consisting of a body, and a band, the body and band each containing two plies the edges and ends of the said plies being infolded one toward the other and interlocked at the junctions of the edges and ends, and stitched together, substantially as described.

11,684. CHECK FOR DOORS, &c. JOHN L. ZEIGER, Cleveland, Ohio. Filed Apr. 30, 1898. Serial No. 679,400. Original No. 582,449, dated May 11, 1897.



Claim.—A check or catch for doors, blinds, &c., the casing A having the notch or shoulder B, the rotative or swinging L-shaped member or catch C, having heel D, and centrally pivoted in the forward or outward end of said casing, a spring S fixed in said casing and bearing alternately against the sides of said catch, C, and a keeper-plate E to cooperate with said catch C, constructed, combined and adapted to operate substantially as and for the purpose set forth.

11,685. BOTTLE-STOPPER. WILLIAM PAINTER, Baltimore, Md., assignor to the Crown Cork and Seal Company, same place. Filed Dec. 26, 1896. Serial No. 573,419. Original No. 540,072, dated May 28, 1895.

Claim.—1. The combination of a receptacle having a groove in the inside of its mouth and a shoulder projecting inward beyond the wall of the mouth above the groove, and a cup-shaped disk or plate of material having permanent flexion, all operating as set forth.

2. The combination of a receptacle having a groove in the inside of its mouth and a shoulder projecting inward beyond the wall of the mouth above the groove, and a cup-shaped disk or plate of material having permanent flexion and formed with a hole, all operating as set forth.



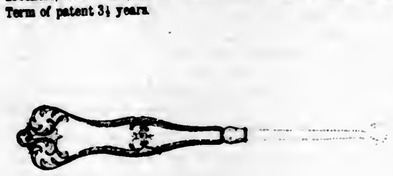
3. The combination of a receptacle having a groove in the inside of its mouth and a shoulder projecting inward beyond the wall of the mouth above the groove, and a cup-shaped disk or plate of material having permanent flexion arranged with its primarily-concave side downward, all operating as set forth.

4. The combination of a receptacle having a groove in the inside of its mouth and a shoulder projecting inward beyond the wall of the mouth of the groove, a cup-shaped disk or plate of material having permanent flexion, and a packing or stopper beneath and retained by the disk or plate, all operating as set forth.

5. The combination substantially as hereinbefore described, of a bottle having an interior groove in its mouth, a packing or gasket in said groove and a disk or plate of material having permanent flexion, which confines the packing in said groove, and maintains it in tight contact with the adjacent surface of the groove.

DESIGNS.

29,088. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. WILLIAM BERG, Providence, R. I., assignor to Wiener Brothers, New York, N. Y. Filed July 1, 1898. Serial No. 684,993. Term of patent 3½ years.



Claim.—The design for the handle of button-hooks and similar articles herein shown and described.

29,089. CIGAR. HENRY HEITMANN, Miamisburg, Ohio. Filed June 17, 1898. Serial No. 683,758. Term of patent 7 years.



Claim.—The design for a cigar as herein shown and described.

29,090. CIGAR. HENRY HEITMANN, Miamisburg, Ohio. Filed June 17, 1898. Serial No. 683,759. Term of patent 7 years.



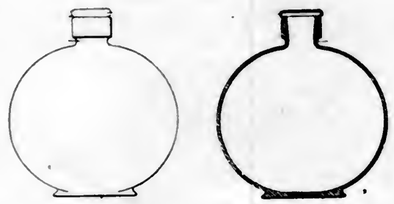
Claim.—The design for a cigar as herein shown and described.

29,091. MATCH-BOX. JOHN M. RIEDEL and FERDINAND F. METZGER, Philadelphia, Pa. Filed June 28, 1898. Serial No. 684,695. Term of patent 7 years.



Claim.—The design for a match-box, substantially as shown and described.

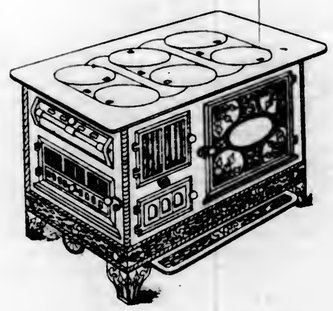
29,092. BOTTLE. HERBERT HUGH FREEMAN, Pierre, S. D. Filed Dec. 19, 1896. Serial No. 616,347. Term of patent 7 years.





Claim.—The design for a bottle substantially as herein shown and described.

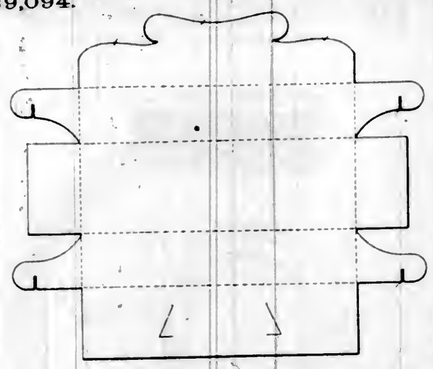
29,093. PAPER BOX. PHINEAS B. MYERS, New York, N. Y. Filed June 30, 1898. Serial No. 684,882. Term of patent 14 years.



Claim.—The design for a paper box, substantially as herein shown and described.

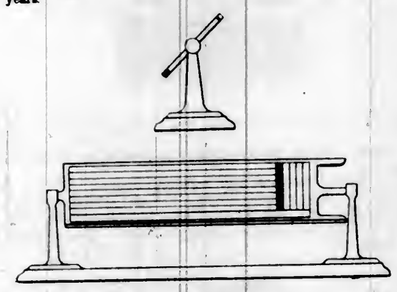
29,094. CARTON-BLANK. ROBERT J. BARKLEY, Chanute, Kans. Filed July 2, 1898. Serial No. 685,056. Term of patent 14 years.

29,094.



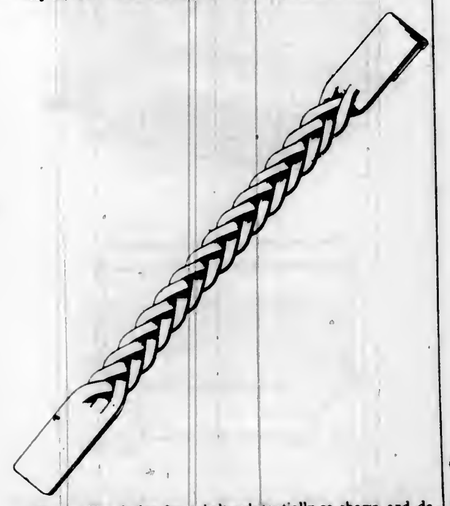
Claim.—The design for a carton-blank, substantially as herein shown and described.

29,095. PRICE-INDICATING CHART. ORANGE O. OLIAS, Dayton, Ohio. Filed June 20, 1898. Serial No. 684,007. Term of patent 3½ years.



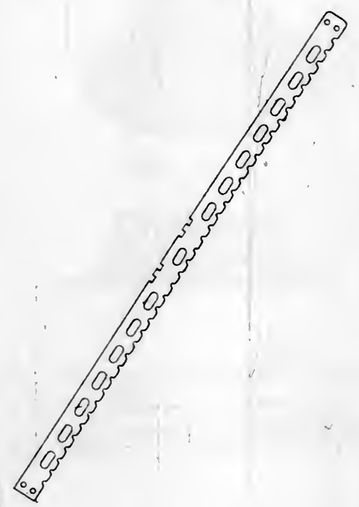
Claim.—The design for a price-indicating chart, substantially as herein shown and described.

29,096. BELT. JOHN F. ROSS-SOLEY, San Francisco, Cal. Filed July 16, 1897. Serial No. 644,847. Term of patent 14 years.



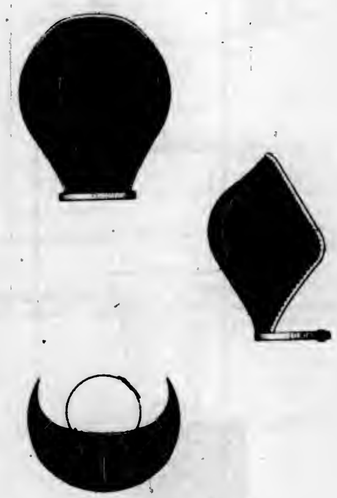
Claim.—The design for a belt substantially as shown and described.

29,097. BODY FOR WAIST-BELTS. ANNA E. DUNBAR, Albany, N. Y. Filed June 27, 1898. Serial No. 684,645. Term of patent 7 years.



Claim.—The design for a body of a waist-belt, as herein shown and described.

29,098. WAIST-FRONT DISTENDER. ROSE SAHLIN, Chicago, Ill. Filed May 14, 1898. Serial No. 680,750. Term of patent 3½ years.



Claim.—The design for a waist-front distender herein shown and described.

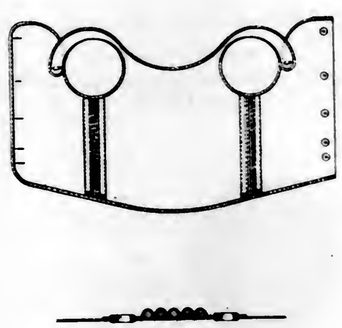
29,099. HAT. SAMUEL C. TOWNSEND, Baltimore, Md. Filed Mar. 17, 1898. Serial No. 674,267. Term of patent 3½ years.

29,099.



Claim.—The design for a hat, as herein shown and described.

29,100. UNDERWAIST. CHARLES R. DE BEVOISE, New York, N. Y. Filed June 29, 1898. Serial No. 684,758. Term of patent 7 years.



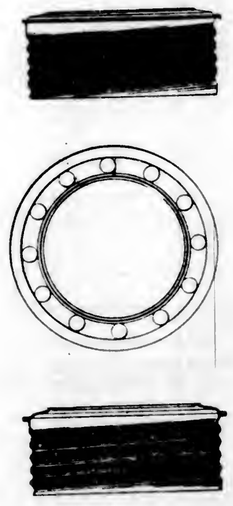
Claim.—The design for an underwaist substantially as herein shown and described.

29,101. SKIRT-PROTECTOR. HENRY A. SCHAEFER, Rochester, N. Y., assignor to Schaefer & Schlegel, same place. Filed July 2, 1898. Serial No. 685,067. Term of patent 14 years.



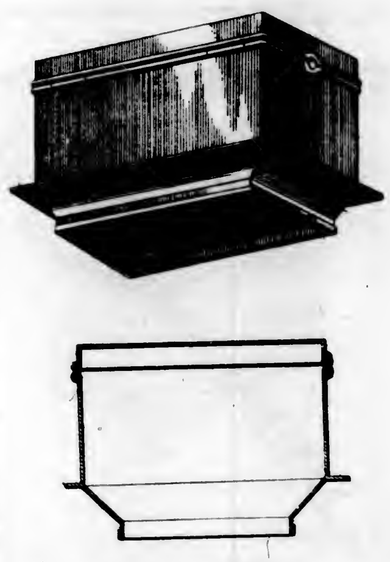
Claim.—The design for a skirt-protector, substantially as shown and described.

29,102. STOVEPIPE-THIMBLE. HUGH DAVID WALKER, Preston, Canada. Filed Apr. 21, 1898. Serial No. 678,400. Term of patent 7 years.



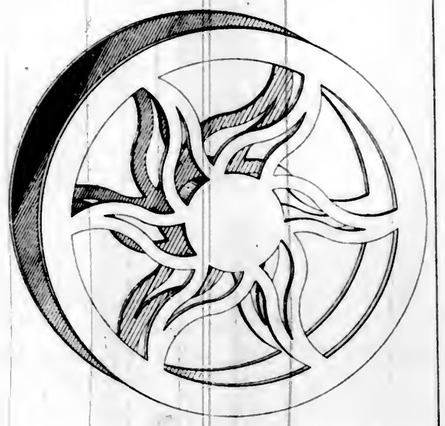
Claim.—The design for a stovepipe-thimble herein shown and described.

29,103. BOX FOR ASH-SIFTERS. LILLIAN WORMSER, Trenton, N. J. Filed June 14, 1898. Serial No. 683,441. Term of patent 3½ years.



Claim.—The design for the box of an ash-sifter, substantially as shown and described.

29,104. HOSE-REEL SPOOL. HARRY E. DONNELL, New York, N. Y., assignor to the S. F. Hayward & Company, same place. Filed June 30, 1898. Serial No. 684,853. Term of patent 14 years.



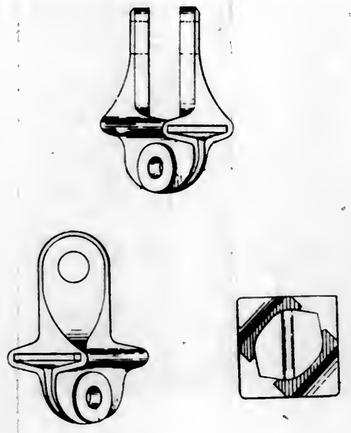
Claim.—The design for a hose-reel spool, as herein shown and described.

29,105. RAIL-CHAIR. WARREN C. PATTERSON, Tamaqua, Pa. Filed June 30, 1898. Serial No. 684,888. Term of patent 14 years.



Claim.—The design for a rail-chair herein shown and described.

29,106. FULCRUM-JAW FOR BRAKE-BEAMS. THOMAS H. SIMPSON and PHILIP T. HANDIGES, Detroit, Mich., assignors to the Monarch Brake-Beam Company, Limited, same place. Filed June 20, 1898. Serial No. 684,006. Term of patent 7 years.



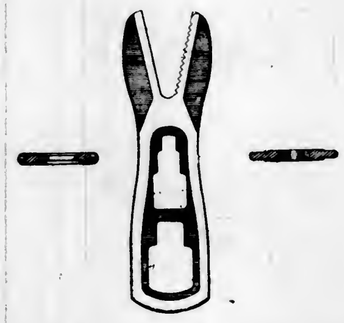
Claim.—The design for a fulcrum-jaw for brake-beams, as herein shown and described.

29,107. HOG-RING. WILLIAM D. LINTON and HIRAM W. FARMER, Patoka, Ill. Filed June 23, 1898. Serial No. 684,304. Term of patent 7 years.



Claim.—The design for a hog-ring as herein shown and described.

29,108. WRENCH. SANFORD S. VAUGHAN and LEHUEL M. BUSHNELL, Chicago, Ill., assignors to the Vaughan & Bushnell Manufacturing Company, same place. Filed Dec. 6, 1897. Serial No. 660,979. Term of patent 14 years.



Claim.—The design for a wrench herein shown and described.

29,109. WRENCH. LEMUEL M. BUSHNELL and SANFORD S. VAUGHAN, Chicago, Ill., assignors to the Vaughan & Bushnell Manufacturing Company, same place. Filed Dec 8, 1897. Serial No. 661,206. Term of patent 14 years.



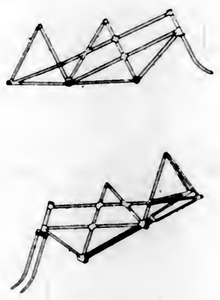
Claim.—The design for a wrench herein shown and described.

29,110. PACKAGE-SUPPORTING CLIP FOR BICYCLES. KATIE R. STONE, Saundersville, Mass. Filed Apr. 29, 1898. Serial No. 679,249. Term of patent 7 years.



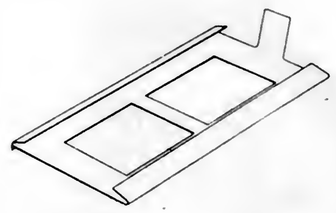
Claim.—The design for a package-supporting clip for bicycles, substantially as herein shown and described.

29,111. TANDEM-VELOCIPEDE FRAME. GEORGE DOUGLAS LEECHMAN, Coventry, England. Filed July 31, 1897. Serial No. 646,712. Term of patent 7 years. Registered in England Dec. 23, 1896, No. 290,727.



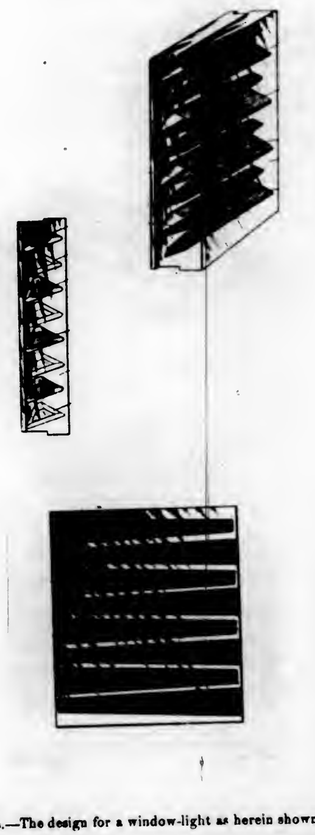
Claim.—The design for a tandem-velocipede frame herein shown and described.

29,112. FILM-HOLDER. EDWARD G. THOMAS, Boston, Mass. Filed Apr. 25, 1898. Serial No. 678,805. Term of patent 7 years.



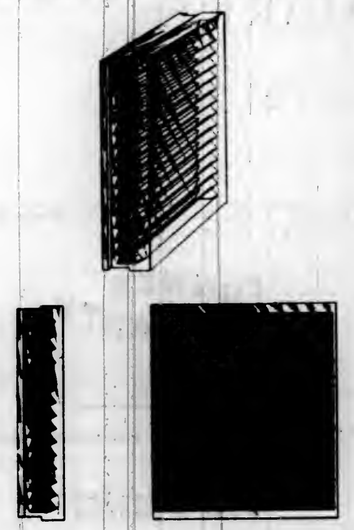
Claim.—The design for a film-holder as herein shown and described.

29,113. WINDOW-LIGHT. OSWALD E. WINGER, Joliet, Ill. Filed June 16, 1898. Serial No. 683,630. Term of patent 7 years.



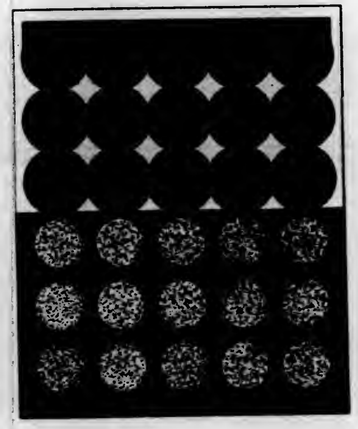
Claim.—The design for a window-light as herein shown and described.

29,114. WINDOW-LIGHT. OSWALD E. WINGER, Joliet, Ill. Filed June 16, 1898. Serial No. 683,631. Term of patent 7 years.



Claim.—The design for a window-light as herein shown and described.

29,115. GAME-BOARD. WILLIAM R. GILES, New York, N. Y. Filed June 16, 1898. Serial No. 683,622. Term of patent 3½ years.



Claim.—The design for a game-board, substantially as herein shown and described.

TRADE-MARKS

REGISTERED JULY 26, 1898.

31,822. PERFUME FOR THE BATH. William Horace Carlier Burnett, Detroit, Mich. Filed May 23, 1898.

Bathlets

Essential feature.—The word "Bathlets." Used since March 26, 1898.

31,823. CERTAIN NAMED TEAS. Edward A. Willard, New York, N. Y. Filed Apr. 19, 1898.



Essential feature.—The expression "5 O'Clock Tea" combined with the representation of a clock face or dial on which are depicted the hour and minute hands in such position as to indicate the hour of five o'clock. Used since January 1, 1897.

31,824. FRUITS AND VEGETABLES. Erie Preserving Company, Buffalo, N. Y. Filed Mar. 30, 1898.

DINNER PARTY

Essential feature.—The words "Dinner Party." Used since January 1, 1898.

31,825. MEDICINAL WINE. Alexandre Choffe, Levallois-Perret, France. Filed May 28, 1898.

Vin Désiles

Essential feature.—The title "Vin Désiles." Used since December, 1893.

31,826. REFRIGERATORS. Maine Manufacturing Co., Nashua, N. H. Filed Sept. 9, 1897.

KLONDIKE

Essential feature.—The word "Klondike." Used since September 1, 1897.

31,827. BICYCLES. Arnold, Schwinn & Company, Chicago, Ill. Filed Dec. 9, 1897.

THE WORLD

Essential feature.—The words "The World." Used since January 15, 1896.

THE NORRIS PETERS CO.

REPORT OF THE COMMISSIONER OF PATENTS

FOR THE FISCAL YEAR 1897-1898.

Department of the Interior,
United States Patent Office,
Washington, D. C., July 15, 1898.

Sir: Complying with the request contained in your letter of the 13th, I have the honor to submit the following report of the business of the United States Patent Office for the fiscal year ended June 30, 1898:

Applications and Caveats received.

Applications for letters patent	40,196
Applications for design patents	1,831
Applications for reissue patents	93
Applications for registration of trade-marks	1,891
Applications for registration of labels	175
Applications for registration of prints	30
Caveats	1,928
Total	46,144

Patents granted and Trade-Marks, Labels, and Prints registered.

Letters patent granted (including reissues and designs)	22,731
Trade-marks registered	1,455
Labels registered	71
Prints registered	18
Total	24,275

Patents withheld and Patents expired.

Letters patent withheld for non-payment of final fees	4,754
Letters patent expired	14,167

Expenditures.

	Expended.	Estimated liabilities.	Total.
Salaries	$688,727 50	.....	$688,727 50
Scientific library	2,260 01	$739 99	3,000 00
Transportation of publications to foreign countries	163 05	(Not accessible.)	163 05
Stationery	8,903 07	.....	8,903 07
Postage on foreign matter	1,928 00	.....	1,928 00
Furniture	1,916 83	.....	1,916 83
Carpets	1,780 45	.....	1,780 45
Ice	391 71	.....	391 71
Telephones	120 00	.....	120 00
Washing towels	88 65	.....	88 65
Sundries	11,217 92	.....	11,217 92
Official Gazette, illustrations, paid contractor	39,749 40	.....	39,749 40
Photolithographing, paid contractor	58,183 74	.....	58,183 74
Printing and Binding.			
Paid Public Printer:			
Official Gazette, 1897-8	58,089 72	.....	58,089 72
Official Gazette indexes, 1897-8	.....	4,961 64	4,961 64
Producing Official Gazette indexes for 1896 and indexes Vols. 78 and 79 of 1897	6,651 97	.....	6,651 97
Printing specifications	168,991 93	5,370 00	174,361 93
Miscellaneous work	10,286 96	2,878 73	13,165 69
Miscellaneous work done at branch office	8,273 52	.....	8,273 52
Total	1,067,983 43	13,950 36	1,081,633 79

Receipts and Expenditures.

Receipts from all sources	$1,253,948 44
Expenditures (including total in all appropriations)	1,081,633 79
Surplus	172,314 65

Applications awaiting action.

Number of applications awaiting action on the part of the Office on July 1, 1898	12,187

Comparative statement.

	Receipts.	Expenditures.
June 30, 1890	$1,347,208 21	$1,081,173 56
June 30, 1891	1,302,794 59	1,145,502 90
June 30, 1892	1,268,727 35	1,114,134 23
June 30, 1893	1,288,809 07	1,111,441 22
June 30, 1894	1,183,523 18	1,053,962 38
June 30, 1895	1,195,557 07	1,028,166 08
June 30, 1896	1,307,090 30	1,067,398 85
June 30, 1897	1,343,779 44	*1,088,473 16
June 30, 1898	1,253,948 44	1,081,633 79

Applications for Patents, including Reissues, Designs, Trade-Marks, Labels, and Prints.

June 30, 1890	43,810
June 30, 1891	43,616
June 30, 1892	43,544
June 30, 1893	43,589
June 30, 1894	39,206
June 30, 1895	41,014
June 30, 1896	45,645
June 30, 1897	47,747
June 30, 1898	44,116

Applications awaiting action on the part of the Office.

June 30, 1890	6,585
June 30, 1891	8,911
June 30, 1892	9,447
June 30, 1893	8,283
June 30, 1894	7,076
June 30, 1895	4,927
June 30, 1896	8,943
June 30, 1897	12,241
June 30, 1898	12,187

Summarizing these tables, there were received in the last fiscal year 40,196 applications for mechanical patents, 1,831 applications for designs, 93 applications for reissues, 1,928 caveats, 1,891 applications for trade-marks, 175 applications for labels, and 30 applications for prints. There were 22,731 patents granted, including reissues and designs; 1,455 trade-marks, 71 labels, and 18 prints registered. The number of patents which expired was 14,167. The number of allowed applications which were by operation of law forfeited for non-payment of the final fees was 4,754. The total receipts of the Office were $1,253,948.44, the total expenditures were $1,081,633.79, and the surplus of receipts over expenditures, being the amount turned into the Treasury, was $172,314.65.

CURRENT WORK.

On the 28th of June, 1898, one Examiner had his new work between one and two months from date of filing; nine Examiners were between two and three months, ten between three and four months, seven between four and five months, three between five and six months, two between six and seven months, and three between seven and eight months. The amended work was well in hand. Only 2,339 such cases were awaiting Office action on June 28, 1898. Six of the Examiners had their amended work within ten days of date, twenty-one within fifteen days, four within twenty days, three within twenty-two days, and only one was in arrears forty days.

INCREASE OF FORCE.

The legislative bill approved March 15, 1898, gave this Office from July 1, 1898, an addition of ten to the examining corps and three additional messen-

*Corrected as per statement rendered by the Department on July 14, 1898, showing that the expenditures during the year 1897 on account of printing and binding were $275,357.47 instead of $213,536.72, the amount furnished this Office by the Department on August 26, 1897.

ger boys. By act of June 10, 1898, commonly known as the "classification bill," eighteen additional Examiners were provided, while the clerical, messenger, and laboring force was increased twenty-six. These increases were, in my opinion, absolutely essential to the successful conduct of the affairs of this Office. This just, though somewhat tardy, action by Congress will enable us not only to bring up the arrears of work, but also to keep it well in hand, unless there is a heavy increase in the number of applications received. The gain should be such as to enable me at the end of the present calendar year to report every new case receiving examination within six weeks after its receipt and every amended case within ten days after its receipt. It will also enable a practical advance to be made in the classification of all Letters Patent and printed publications in this Office by the establishment of a classification division, which, in connection with and amplification of the present system of classification, will I believe greatly improve the methods and means now employed in the examination of applications as to the novelty of invention. The result of this cannot fail to be extremely beneficial not only to inventors and those directly interested in the manufacture of patented inventions, but to the general public, interested, as every one is, in the early issue of valid rather than worthless patents. The attention of the Office is now directed to formulating the best possible plan for remedying the defects in the present system of classification and making such changes and additions as may be determined to be the most practicable and efficacious for correcting the imperfections in the present system.

While referring to this subject I wish to express to you not only my own satisfaction, but also the gratification felt by the friends of the American patent system for the intelligent, prompt, and cordial assistance you have given to the efforts made by us to secure an adequate working force. It will be a unique experience for the Commissioner of Patents in submitting the estimates of appropriations for the next fiscal year not to be obliged to ask for an increase in force. For years such appeals have been made in vain. This year they will not have to be made at all.

COPYISTS AT $720.

I shall, however, in submitting the estimates recommend that our seventy-six copyists, now receiving $720, be paid $900, the same salary paid in other Departments and Bureaus. This will not only be an act of common justice, but is necessary if we are to retain a permanent force of skilled stenographers and type-writers, such as is essential for our needs. Many of our best assistants in this line are transferred to other offices, to the distinct detriment of this. The amount required to equalize these salaries will be $13,680.

RESIGNATIONS.

During the past six months thirteen members of the examining corps have resigned. These resignations cripple the force, as it is a long time before new and inexperienced men can render equally efficient service. These frequent changes in the force of this Office are an evil of no small magnitude. While a majority of these have resigned for the purpose of going into business, some, actuated by the spirit of patriotism and a sense of duty, have tendered their services to their country and are now rendering efficient aid at the front. Such will be welcomed back at the successful termination of the present war.

Respectfully yours,

C. H. DUELL,
Commissioner.

The SECRETARY OF THE INTERIOR.

DECISIONS OF THE COMMISSIONER OF PATENTS
AND OF
UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE HARTMAN.

Decided July 6, 1898.

1. DESIGNS—REQUISITES OF OATH—CONSTRUCTION OF STATUTE AS AMENDED MARCH 3, 1897.

The act of Congress, approved March 3, 1897, amending sections 4886 and 4887, Revised Statutes, so that an invention which has been described in a patent or printed publication more than two years prior to the application for a patent or which has been patented in a foreign country on an application filed in the foreign country more than seven months prior to filing the application in this country cannot be patented apply to design inventions, and an oath to a design application must comply with the statute as amended.

2. SAME—LIMITING THE APPLICATION TO DESIGN PRODUCED.

The Examiner required applicant to limit the title of the invention and the description and claims to a design for a rug or carpet instead of to a design for a mat or rug. It was not apparent from the drawing what was intended to be shown. The claims, however, were drawn to cover a design for a mat or carpet. *Held* that applicant should limit his case to the particular thing on which the design has been produced, whether this thing be a mat, a rug, or a carpet, leaving the courts to decide whether these things are equivalents or whether a design applied to one would be infringed by a design applied to either one of the other two.

3. SAME—LIMITING APPLICATION TO THE DESIGN PRODUCED—PATTERN OR ORNAMENTATION—SHAPE OR CONFIGURATION.

Where applicant's design was a pattern or ornamentation applied to an article of manufacture and was not a shape or configuration of the article, *Held* that the description should be limited to and set up in relation to the design produced.

ON petition.

DESIGN FOR CARPET.

Application of Henry W. Hartman filed April 19, 1898, No. 678,190.

Mr. Harold Binney for the applicant.

DUELL, *Commissioner:*

This is a petition from the action of the Examiner requiring—

1. That the oath must be amended so as to comply with the statutes 4886 and 4887 relating to inventions in machines, arts, manufactures, or compositions of matter;
2. That design for a portion of "mat or carpet" must be changed to "rug or carpet," and that applicant must set up his invention as a "pattern" and not as a "configuration."

1. Section 4929 of the Revised Statutes provides that any person who has invented and produced any new and original design—

the same not having been known or used by others before his invention or production thereof, or patented or described in any printed publication, may, upon payment of the fee prescribed, and other due proceedings had the same as in cases of inventions or discoveries, obtain a patent therefor.

Section 4933 provides that—

all regulations and provisions which apply to obtaining or protecting patents for inventions or discoveries not inconsistent with the provisions of this title, shall apply to patents for designs.

It is seen that neither one of these sections of the design statutes refers to the question of two years' public use or sale of the invention prior to the application; but it has been the uniform practice of the courts and of this Office to construe the statutes as providing that all regulations and provisions applicable to the obtaining or prohibition of patents for inventions or discoveries not inconsistent with the design act apply to patents for designs, without modifications or variations, and under this construction it has been held that two years public use or sale of a design invention prior to the application for the patent would bar the patent, and it has been required that the oath should state that the invention has not been in public use or on sale for more than two years. (*Burton* v. *Town of Greenville*, 18 O. G., 411; *Miller* v. *Smith*, 18 O. G., 1047; *Theberath* v. *The Harness Trimming Co.*, 23 O. G., 1121, and *Anderson* v. *Eiler*, 57 O. G., 410.) It has also been construed that sections 4887 and 4892, relating to foreign patents and citizenship of an inventor, also apply to design patents.

The act of Congress approved March 3, 1897, which took effect January 1, 1898, amended section 4886, Revised Statutes, so as to bar a patent on an invention which had been described in a patent or printed publication for more than two years prior to the application for a patent, and section 4887, Revised Statutes, was also amended to bar a patent for an invention which had been patented in a foreign country more than seven months prior to the application in this country.

The Examiner required the applicant here to furnish an oath to comply with the amended statutes, holding that the statutes as amended apply to design inventions as well as to mechanical inventions or discoveries. It is the petitioner's contention, however, that as the amendments to these sections of the statutes related only to mechanical inventions and there was no mention of design inventions the statutes could not be construed as applying to designs, especially as the statutes as amended limit the applicant's right to apply for a patent instead of enlarging it, and that statutes limiting a right should be strictly construed and not construed by implication.

It seems to me that it was the intention of the legislators in amending the patent statutes to make the amendments apply to all kinds of inventions, although no mention is made of designs, and in view of section 4933, which provides that the regulations which apply to obtaining patents for inventions not inconsistent with the design statute shall apply to patents for designs, this is not an unreasonable construction. It is true, as petitioner states, that in amending the rules to comply with the amended statutes the design rules were not changed; but there was no necessity for such change, as the rule that "all proceedings in applications for patents for designs are substantially the same as in applications for other patents" applies as well now as it did before the statutes were amended. The Examiner's requirement as to the oath is reasonable and should be complied with.

2. As to the requirement that applicant limit his title, description, and claims to a design for a rug or carpet instead of for a mat or carpet—the design described and shown in the drawing—I find on inspection of the drawing that it is not apparent what the illustration is intended to cover. Applicant's claims, however, are drawn to cover a mat or carpet or a portion of a mat or carpet. It is presumed that applicant has invented and produced his design on either a mat or carpet, and he should limit his case to the particular thing on which it has been produced, whether this thing be a mat, a rug, or a carpet, leaving it to the courts to decide whether these articles are equivalents and whether a design covering one would be infringed by a design applied to either one of the other two.

3. From what can be gathered from the drawing and description applicant's design is a pattern or an ornamentation applied to an article of manufacture and is not a shape or configuration of such article. The description should therefore be limited to the design produced, and the Examiner's requirement that the design be set up in relation to ornamentation or pattern and not to shape or configuration is correct.

This petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

MEYER *et al. v.* ROTHE.

Decided June 7, 1898.

1. INTERFERENCES—OBJECTION TO DEPOSITION FOR IRREGULARITY AFTER HEARING COMES TOO LATE.

The rule that if a deposition is in any respect open to irregularities the objection must be taken before the cause goes to hearing is as salutary and as necessary in interference proceedings in the Patent Office as it is in the ordinary courts of justice.

2. SAME—DEPOSITION—WITNESS TESTIFYING IN FOREIGN LANGUAGE—SWEARING NOTARY PUBLIC AS INTERPRETER.

Rothe, who is a German, was not conversant with the English language. The notary public before whom Rothe's testimony was adduced acted as commissioner and took down the

answers of Rothe in the English language, after having interpreted the interrogatories to him in German, without being sworn as an interpreter. *Held* that the deposition so taken was admissible and that it was not necessary to swear the notary as interpreter.

3. SAME—SAME—SAME—SAME.

The uniform tenor of the decisions is to the effect that when an interpreter is required he shall be sworn as a witness, but that no interpreter is required when the officer taking the deposition is himself conversant with the language of the witness, and when no interpreter is required there can be no requirement of an oath to interpret faithfully. Unless error or unfairness is affirmatively shown the official character of the officer taking the deposition and his official certificate thereto conformably with the requirements of law are sufficient guarantee that the duty imposed upon him by law has been faithfully performed.

4. SAME—SAME—SAME—SAME.

While there may be cases where it would be proper that the officer should be specially sworn as an interpreter, yet a deposition should not be rejected merely because it does not appear affirmatively that the officer has been sworn to report correctly the answers of a witness given in a foreign language with which the officer is himself familiar.

5. SAME—SAME—SAME—WITNESS SIGNING DEPOSITION.

Our depositions are required to be in the English language, and in that language alone is the officer required to take them down and return them. There can be no objection to a deposition signed by a witness not conversant with the English language. Such a deposition is not different in principle from one signed by a witness who cannot read or write and who signs by mark.

6. SAME—IDENTIFYING INVENTION—PRIORITY.

Held that the position taken by Meyer *et al.*, that the testimony on behalf of Rothe does not sufficiently identify the invention in issue, is not well founded, and the decision of the Acting Commissioner awarding priority to Rothe affirmed.

Mr. Julian C. Dowell for the appellants.

Messrs. Whitaker & Prevost for the appellee.

MORRIS, *J.*:

In an interference proceeding in the Patent Office wherein the matter of controversy was an improvement in apparatus for oxidizing hosiery all the tribunals of the Patent Office awarded judgment of priority of invention in favor of the appellee, Rothe, and there would seem to be but little ground to question the justice and propriety of the decision were it not that a somewhat novel question has been raised in regard to the admissibility of a certain deposition used in the case and upon which it is claimed the decision depends.

The appellants, Robert Meyer and William C. Foulds, were the first to file their application in the Patent Office, which they did on February 16, 1895. The application of the appellee, Oswald Rothe, was filed on March 28, 1895. Placed in interference and called upon to make their preliminary statements, Rothe filed his statement, in which he claimed to have conceived the invention in issue about May 20, 1894, and to have reduced it to practice about August 23, 1894, while the appellants, Meyer and Foulds, in their statement claimed to have conceived the invention in 1887, to have made a model of it in 1890, and to have used the invention to some extent since the fall of 1894.

The burden of proof was upon Rothe as the junior applicant, and he assumed it. Notice that he would proceed to take his testimony was duly served upon the attorney for the appellants; but no attention seems to have been paid to it by the latter. On the day specified no counsel appeared on behalf of the appellants, nor did either of the appellants appear. After some delay to await such appearance the taking of testimony on behalf of the appellee was proceeded with and was concluded in two days, and the testimony was duly returned to the Patent Office. The appellants took no testimony and seem to have made no movement whatever until after the decision of the Examiner of Interferences in March, 1897, although the testimony for the appellee had been filed in December of 1896 and the case had been pending before the Examiner for several months. It appears that they then filed a motion to reopen the judgment, for permission to take testimony, and for the extension of the time for appeal. This motion the Examiner denied, and the appellants thereupon appealed to the Commissioner, who affirmed his ruling. They then appealed from the decision of the Examiner of Interferences upon the issue of interference to the Board of Examiners-in-Chief, notwithstanding that the time limited for appeal had expired. The Board affirmed the decision of the Examiner, and upon appeal from the Board to the Commissioner of Patents the Acting Commissioner affirmed the decision of the Board. All awarded priority of invention to the appellee, Rothe. Upon further appeal the cause now comes to this court.

The questions raised upon the appeal, and which were likewise raised before the Board of Examiners-in-Chief and before the Acting Commissioner of Patents, are substantially two: First, whether the deposition of the appellee was properly taken, and, second, whether the testimony on behalf of the appellee was sufficient to support his claim.

First. With reference to the first of these two questions the facts disclosed by the record are that the appellee, Rothe, to whose deposition objection is taken, is a German and seems not to have been fully conversant with the English language; that the notary public before whom the testimony was adduced and who acted as the commissioner for taking it seems also to have been a German or of German origin and to have been conversant both with the English and the German language, and that he took down the answers of the witness in the English language after having interpreted the interrogatories to him in German. It is argued on behalf of the appellants that the deposition so taken is inadmissible on the ground that the notary was not sworn as an interpreter.

But there are several plain answers to this argument. In the first place, the objection comes too late. It is undoubtedly the proper practice that for technical defects objection must be taken to depositions before the cause goes to hearing. This is only the dictate of justice, because then the party on whose behalf the deposition is introduced may have an opportunity to remedy the supposed defect, and it is the rule maintained by all the authorities. (*Shutte* v. *Thomson*, 15 Wall., 151; *Doane* v. *Glenn*, 21 Wall., 33; *Howard* v. *Stillwell, etc., Co.*, 139 U. S., 199; *Bibb* v. *Allen*, 149 U. S., 481.) In the last-cited case it was said by the Supreme Court of the United States, through Mr. Justice Jackson:

> If the deposition was in any respect open to irregularities, the motion to suppress it, under the circumstances, came too late. Such motions should be made before the case is called for trial, so as to afford opportunity to retake the testimony or correct defects in the taking of the deposition.

And this rule is as salutary and as necessary in interference proceedings in the Patent Office as it is in the ordinary courts of justice.

In the second place, it seems to be a mere inference or assumption from the record that the notary was not sworn as interpreter. The deposition itself and the notary's certificate thereto are silent on the subject, and whatever may be the rule before the hearing we cannot at this stage of the proceedings assume the existence of irregularities unless they are plainly shown by the record; but, in the last place, we are of opinion that there was no such irregularity in this case as is claimed on behalf of the appellants.

Testimony for use in interference cases in the Patent Office is almost of necessity adduced by way of deposition. Section 4905 of the Revised Statutes of the United States has prescribed that—

> the Commissioner of Patents may establish rules for taking affidavits and depositions required in cases pending in the Patent Office, and such affidavits and depositions may be taken before any officer authorized by law to take depositions to be used in the courts of the United States, or of the State where the officer resides.

In accordance with this provision of law the rules promulgated by the Patent Office have provided, among other things, quite minutely and specifically for the taking of the depositions to be used before it, and one of those rules, (Rule 154,) after providing for notice to opposing parties, prescribes as follows:

> Each witness before testifying shall be duly sworn according to law by the officer before whom his deposition shall be taken. The deposition shall be carefully read over by the witness, or by the officer to him, and shall then be subscribed by the witness in the presence of the officer. The officer shall annex to the deposition his certificate showing, first, the due administration of the oath by the officer to the witness before the commencement of his testimony; second, the name of the person by whom the testimony was written out, and the fact that, if not written by the officer, it was written in his presence; third, the presence or absence of the adverse party; fourth, the place, day, and hour of commencing and taking the deposition; fifth, the reading by or to each witness of his deposition before he signs the same, and, sixth, the fact that the officer was not connected by blood or marriage with either of the parties, nor interested, directly or indirectly, in the matter in controversy. * * *

Among the officers authorized by the law of the United States to take depositions to be used in the courts of the United States, and therefore competent under section 4905 of the Revised Statutes, above cited, and under Rule 154 of the Patent Office, is the notary public. Section 863 of the Revised Statutes says:

> The deposition may be taken before any judge of any court of the United States, or any commissioner of a circuit court, or any clerk of a district or circuit court, or any chancellor, justice, or judge of a supreme or superior court, or mayor or chief magistrate of a city, judge of a county court or court of common pleas of any of the United States, or any notary public, not being of counsel or attorney to either of the parties, nor interested in the event of the cause.

And inasmuch as there is no further qualification required of the officer who acts than the commission by and under which he has received his appointment to his office no special oath or other obligation to perform the duty faithfully is prescribed by the statute or by the rules of the Patent Office. It has resulted as matter of convenience that testimony for use in the Patent Office has very generally, if not invariably, been taken by and before notaries public, and the commissions issued to these officers by the proper authorities of their respective States are sufficient warrant to them, without other preliminary qualification by special oath or otherwise, to take and return the depositions required for the determination of causes in the Patent Office.

The execution of the statute and of the rule in the case where witnesses are presented who are not conversant with the English language and cannot testify in it presents, of course, a difficulty, but not greater than is encountered in the courts of law. Testimony with us is necessarily required to be in the English language, and the testimony of a witness unacquainted with our language or unable to testify in it must be translated into the English language before it can become testimony competent to be used for the adjudication of our legal controversies. This is accomplished in our courts of common law by the aid of interpreters, who are themselves sworn as witnesses for the purpose, and the rule is not dissimilar in equity or other tribunals in which testimony is required to be adduced by way of deposition; but where the officer who takes the deposition is himself conversant not only with the English language, in which he takes it, but likewise with the language of the witness an interpreter is unnecessary. Indeed, it is very plain that there is in that case a greater guaranty of accuracy than when a third person is interposed as interpreter, for the officer then knows himself what the witness says and is not required to take it at second hand from a person who gives his understanding of it.

This we understand to be admitted, at least not to be denied, by the appellants; but the argument is that when the officer acts in the dual capacity of a commissioner to take the testimony and of an interpreter to translate the interrogatories to the witness and to translate his answers into the English of the deposition he should be sworn specially in this latter capacity. Neither upon reason nor upon authority do we regard the argument as well founded.

By his office and his appointment the officer who takes a deposition is charged with the duty of taking it truly and faithfully. He is not required, as we have already stated, to be specially sworn for that purpose. If a witness produced before him can only testify in a foreign language and the officer fully understands that foreign language, it is not apparent why there should be any greater obligation upon him to report the answers of such witness faithfully than there would be to report those of a witness speaking in the English language. The sole purpose of an interpreter is to enable the officer taking the deposition to set down the words of the witness correctly in the English language according to their true tenor and import in the language of the witness; but if the officer fully understands the witness in his own language and can himself speak that language and translate it into English he is in greatly better position

to report the witness correctly than if he were compelled to use the services of a third person as an interpreter for the purpose. It is the interpreter or intermediary that is required to be sworn, because he becomes a witness; but the officer does not become a witness because he understands a foreign language and can set down in English what a witness unacquainted with English testifies in such foreign language.

This is the dictate of reason and common sense, and it does not seem to require the authorities of adjudicated cases to support it. But such authority is not wanting. (See *Christman* v. *Ray*, 42 Ill. App., 111; *State* v. *Cardinas*, 47 Tex., 251; *McKinney* v. *O'Connor*, 26 Tex., 5; *Munk* v. *Weidner*, 29 S. W. Rep., 409; *Davis* v. *Migliavaca*, 41 S. W. Rep., 91; *City Fire Ins. Co.* v. *Carrugi*, 41 Ga., 660; *Leetch* v. *Atlantic Mutual Insurance Co.*, 4 Daly, N. Y., 518.) The uniform tenor of all these decisions is to the effect that when an interpreter is required he shall be sworn as a witness, but that no interpreter is required when the officer taking the deposition is himself conversant with the language of the witness, and when no interpreter is required of course there can be no requirement of an oath to interpret faithfully. Unless error or unfairness is affirmatively shown the official character of the officer taking the deposition and his official certificate thereto conformably with the requirements of law are sufficient guarantee that the duty imposed upon him by law has been faithfully performed.

It is very true, as argued by counsel for the appellants, that the cases cited have all arisen under State statutes and local rules or codes of practice and that the manner of taking testimony in the present and other similar cases is to be governed by the laws of the United States; but this argument affords him no assistance, for the laws of the United States are entirely silent on the subject and leave it to the operation of the general principles governing legal procedure, and those general principles, as we have remarked, do not necessarily require that an officer taking a deposition should be sworn to take down correctly the testimony that is adduced before him any more when that testimony is primarily given in a foreign language than when it is given in the English language, when he understands both languages sufficiently well to translate the answers and the interrogatories from one language into the other. We do not mean to say that there may not be cases where it would be proper that the officer should be specially sworn as an interpreter; but we do say that a deposition should not be rejected merely because it does not appear affirmatively that the officer has been sworn to report correctly the answers of a witness given in a foreign language with which the officer is himself familiar.

Nor is it any objection to the proceeding that the witness is required to sign his deposition and that he cannot be presumed to understand and therefore cannot be presumed to sign intelligently a deposition taken in the English language when he is not conversant with our language; but we know nothing in our procedure of depositions taken in a foreign language. Our depositions are required to be in the English language, and in that language alone is the officer required to take them down and return them. The case of a witness who testifies primarily in a foreign language and signs his deposition in the English language is no different in principle from that of a witness who cannot read or write and who signs by mark. In either case the deposition is read to him, and he signs it upon the faith that it is read to him correctly. It is true that writings in a foreign language, when they are required in legal proceedings, must be introduced in the original, to be accompanied with a translation, and that a translation without the original would not suffice; but this is not an analogous case. A writing in a foreign language is a fact to be dealt with like any other fact.

We are satisfied that the tribunals of the Patent Office were entirely right in their ruling upon the deposition in question.

Second. The second question raised by the appellants on this appeal is that the testimony on behalf of Rothe does not sufficiently identify the invention in issue so as to justify the award of priority to him; but we do not regard this position as well taken.

Meyer and Foulds, although they filed a preliminary statement in which they claim to have conceived the invention in issue in the year 1887 and to have made a model of it in the year 1890 and to have used it to some extent since the fall of 1894, took no testimony in support of their claim and are therefore confined to the record date of the filing of their application, February 16, 1895, as that of their conception and constructive reduction to practice. The appellee, Rothe, proves conception by him in May, 1894, and actual reduction to practice in the beginning of August, 1894. If the proof is sufficient, he is therefore clearly entitled to priority, and we have no doubt that the proof is amply sufficient and no doubt that the application of the appellants was an unjustifiable attempt on their part to appropriate to themselves the invention of the appellee.

Rothe testifies distinctly and positively that he had the invention prior to his going to work for the appellants in July, 1894; that he was employed by them with the view of introducing his invention in their works near Philadelphia; that while in their factory he constructed a full-sized model in August, 1894, and that thereafter the machine was in full and successful operation in that factory, and this latter statement the appellants themselves substantiate in their preliminary statement, and the whole testimony is fully sustained and corroborated by three unimpeached witnesses. If there is anything indeterminate in this testimony, which is not apparent, or if it could have been shaken upon cross-examination, the appellants have only themselves to blame for the condition in which the testimony leaves the case. The inference is warranted that they had no just case and that they abandoned the proceeding deliberately and with full knowledge of the weakness of their claim.

We concur with the tribunals of the Patent Office that the appellee has fully and sufficiently proved his case and that he is entitled to judgment of priority of invention.

The decision of the Commissioner of Patents will therefore be affirmed, and the clerk of this court will certify this decision and the proceedings in this court to the Commissioner, to be entered of record in his Office, according to law, and it is so ordered.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 84—No. 5. TUESDAY, AUGUST 2, 1898. PRICE—$5 per year.

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War Revenue—Stamp Tax.

Certificate of Officer Before Whom Depositions are Taken in Interference Proceedings.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 23, 1898.

Under the provisions of the war revenue act approved June 13, 1898, certificates which are required by law must have a stamp of the value of ten cents affixed thereto and canceled. A certificate of an officer before whom depositions are taken to be used in interference proceedings in the Patent Office is such a certificate as requires a revenue stamp, and until the proper revenue stamp is affixed and canceled in accordance with said act such depositions will not be entered or considered in interference proceedings.

A. P. GREELEY,
Acting Commissioner.

Notice of Interference—Loosley v. Decker.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 14, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

An interference having been declared by this Office between the application of Ernest A. Loosley, deceased, of Birmingham, Ala., and an application of William Lloyd Decker, of Worcester, Mass., whose attorney of record is Rufus B. Fowler, of same place; and the notices of said declaration, mailed by the Patent Office in the usual manner to the said heirs, executor, or administrator of Ernest A. Loosley, deceased, having elicited no response, notice is hereby given to such heirs, executor, or administrator that if it is desired to contest this interference communication with the Commissioner of Patents should be immediately established, in order that the above-mentioned notices may be duly forwarded at once.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

C. H. DUELL,
Commissioner.

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 15, 1898.

SIR: The Secretary of the Interior has ordered that Mrs. Emma Jordan, of Leavenworth, Kans., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 15, 1898.

SIR: The Secretary of the Interior has ordered that A. C. Harding, of Leavenworth, Kans., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 2, 1898.

Labels.

6,630.—Title: "EAU DE FRANGIPANNI." (For Toilet Water.) *The Court Perfumery Company*, New York, N. Y. Application filed June 29, 1898.

6,631.—Title: "EAU DE TOILETTE VIOLETTE." (For Toilet Water.) *The Court Perfumery Company*, New York, N. Y. Application filed June 29, 1898.

6,632.—Title: "EAU DE COLOGNE DE LA COUR." (For Toilet Water.) *The Court Perfumery Company*, New York, N. Y. Application filed June 29, 1898.

6,633.—Title: "CYCLE BEER." (For Beer.) *Commonwealth Brewing Company*, Philadelphia, Pa. Application filed June 29, 1898.

6,634.—Title: "DR. GREBE'S XXX CHICKEN SARSAPARILLA AND CHOLERA CURE." (For a Medical Compound.) *Jacob E. Grebe*, Jansen, Nebr. Application filed May 23, 1898.

6,635.—Title: "CARRARA." (For Paint.) *Carrara Paint Company*, Barberton, Ohio. Application filed July 7, 1898.

he is not conversant with our language, but we ordered

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business July 26, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Between one and two months.			
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	June 16	July 18	161
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	May 27	July 12	153
88	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	June 6	July 11	191
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 2	July 5	129
	Between two and three months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	May 2	July 18	327
102	XIX. Stoves and Furnaces	May 16	July 16	207
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	May 5	July 12	179
255	XII. Mechanical Engineering Store-Service, etc.	May 5	July 12	206
158	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	May 2	July 12	169
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	May 25	June 29	169
	Between three and four months.			
248	XVIII. Steam-Engineering, etc	Mar. 31	July 14	302
261	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Apr. 25	July 13	240
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Apr. 15	July 13	310
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Apr. 5	July 12	336
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Apr. 5	July 12	387
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Apr. 1	July 12	478
240	VII. Velocipedes	Apr. 1	July 12	575
258	X. Carriages and Wagons	Apr. 16	June 29	212
	Between four and five months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Mar. 14	July 18	378
246	I. Tillage and Fences	Mar. 24	July 14	226
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Mar. 16	July 12	134
120	IX. Hydraulics, Fire-Extinguishers, etc.	Mar. 12	July 11	267
106	II. Farm Stock, Products, etc.	Mar. 9	July 11	523
138	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Mar. 2	July 11	157
98	XXI. Textiles, etc	Mar. 25	July 6	276
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Mar. 21	July 5	412
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Mar. 5	June 29	384
	Between five and six months.			
217	XXXIII. *Trade-Marks, etc., †Designs. Drafting, and Optics.	Jan. 27	July 12	296
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Feb. 10	July 9	398
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Feb. 15	July 1	777
	Between six and seven months.			
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Jan. 17	July 14	512
96	XXX. Paper Manufactures. Lamps, and Gas-Fittings.	Dec. 27	July 13	283
	Between seven and eight months.			
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Dec. 1	July 16	471
215	XVII. Printing, Type-Writing Machines, and Linotyping.	Dec. 20	July 12	484

Applications Under Examination—Continued.

221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	Dec. 2	July 12	295
	Between eight and nine months.			
261	XXXVI. Weighing and Measuring Devices and Driers.	Nov. 18	July 12	289

Total number of applications awaiting action 11,230

Under one month.			
†Designs	July 22	July 25	33
*Trade-Marks	July 5	July 18	123

ISSUE OF AUGUST 2, 1898.

Patents	390	No. 608,166 to No. 608,564, inclusive.
Designs	49	No. 29,116 to No. 29,164, inclusive.
Trade-Marks	19	No. 31,828 to No. 31,846, inclusive.
Labels	6	No. 6,630 to No. 6,635, inclusive.
Prints	None.	
Reissues	1	No. 11,686.
Total issue	474	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	New Hampshire	2	.....
Arizona Territory	.....	.....	New Jersey	13	1
Arkansas	1	.....	New Mexico Territ'y	.....	.....
California	12	.....	New York	78	10
Colorado	5	.....	North Carolina	1	.....
Connecticut	15	3	North Dakota	2	.....
Delaware	2	.....	Ohio	26	2
District of Columbia	1	.....	Oklahoma Territory	.....	.....
Florida	.....	.....	Oregon	2	.....
Georgia	5	.....	Pennsylvania	37	1
Idaho	2	.....	Rhode Island	6	.....
Illinois	32	1	South Carolina	.....	.....
Indian Territory	.....	.....	South Dakota	.....	.....
Indiana	17	1	Tennessee	.....	.....
Iowa	12	.....	Texas	6	2
Kansas	6	.....	Utah	.....	.....
Kentucky	10	.....	Vermont	.....	.....
Louisiana	1	.....	Virginia	4	1
Maine	5	.....	Washington	2	.....
Maryland	5	.....	West Virginia	1	.....
Massachusetts	32	1	Wisconsin	10	.....
Michigan	17	.....	Wyoming	.....	.....
Minnesota	6	.....	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	14	.....			
Montana	.....	.....	Total to citizens of the United States	394	24
Nebraska	2	1			
Nevada	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Italy	.....	.....
Australia	.....	.....	Mexico	.....	.....
Austria-Hungary	2	.....	Netherlands	1	.....
Belgium	.....	.....	Newfoundland	.....	.....
Bermuda	.....	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
Canada	7	.....	Norway	.....	.....
Cape Colony	.....	.....	Portugal	.....	.....
Chile, Republic of	.....	.....	Queensland	.....	.....
China	.....	.....	Russia	1	.....
Colombia	.....	.....	Scotland	3	.....
Cuba	.....	.....	South African Republic	.....	.....
Denmark	.....	.....	South Australia	.....	.....
Egypt	.....	.....	Spain	.....	.....
England	22	1	Sweden	.....	.....
Finland	.....	.....	Switzerland	1	.....
France	7	.....	Turkey	.....	.....
Germany	8	.....	Victoria	1	.....
Guatemala	.....	.....			
Hawaii	.....	.....	Total to citizens of foreign countries	54	1
India	.....	.....			
Ireland	1	.....			

PATENTS

GRANTED AUGUST 2, 1898.

608,166. PUNCTURE-BAND FOR PNEUMATIC TIRES. JOHN V. ALLEN, Philadelphia, Pa. Filed Aug. 23, 1897. Serial No. 649,799. (No model.)



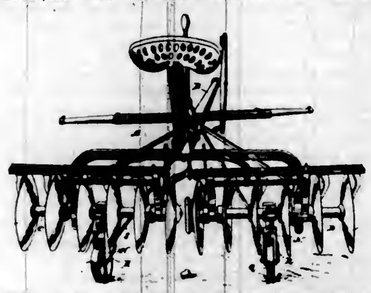
Claim.—1. In a puncture-band, an endless web of elastic material forming a two-ply band, and two clips mounted in the respective end bights of said band, substantially as set forth.

2. In a puncture-band, an endless web of elastic material forming a two-ply band, and two detachable clips adapted for insertion in the respective end bights of said band, substantially as set forth.

3. In a puncture-band, an endless web of elastic material forming a two-ply band, two detachable clips adapted for insertion in the respective end bights of said band, and members upon the respective clips adapted for interengagement, substantially as set forth.

4. In a puncture-band, an endless web of elastic material forming a two-ply band, and two identical clips mounted in the respective end bights of said band, and adapted for interengagement, substantially as set forth.

608,167. DISK-HARROW TRUCK. FRANKLIN E ALSHOUSE, Marlie, Ind. Filed June 21, 1897. Serial No. 641,707. (No model.)



Claim.—1. In a disk-harrow attachment, the combination of a hanger consisting of an upper and lower clamp-plate adapted to be secured about the disk-harrow shaft, the lower clamp-plate being provided with a downwardly-projecting cylinder, with a forked wheel-support carrying a wheel at its lower end and provided with a cylindrical stem projecting up into said cylinder, and a set-screw for securing it adjustably therein, substantially as set forth.

2. In a disk harrow, the combination with the tongue and th disk-shaft, of a hanger consisting of an upper and lower clamp plat secured about the shaft, the lower clamp-plate having a downwardly-projecting cylinder, a forked wheel-support provided with a cylindrical stem projecting upward into said cylinder, a set-screw for securing it therein, a shaft mounted in the forks of the wheel-support and projecting laterally therefrom, a wheel mounted on said shaft between the forks, a clevis pivotally secured on the outer ends of said shaft, and a brace connecting the clevis with the tongue of the harrow, substantially as described.

608,168. WATER-METER. GEORGE B. BASSETT, Buffalo, N. Y. Filed Dec. 30, 1896. Serial No. 617,497. (No model.)

Claim.—1. In a disk water-meter, the combination with a disk-chamber having its end or ends provided with a multiplicity of recesses with rigid or unyielding walls, of a disk having its surface also provided with a multiplicity of recesses with rigid or unyielding walls, the recesses in the disk and in the disk-chamber being adapted to coincide or come opposite each other when the disk is in contact or nearly in contact with the end walls of the disk-chamber.



2. In a disk water-meter, the combination with a disk-chamber having its end or ends provided with radial or nearly radial rigid or unyielding ribs, of a disk having its surface also provided with radial or nearly radial rigid or unyielding ribs, the ribs on the disk and on the disk-chamber being adapted to coincide or come opposite and in contact or nearly in contact with each other at their outer surface.

3. In a disk water-meter, the combination with a disk-chamber the end or ends of which have an unyielding irregular surface, of a disk having an unyielding irregular surface on both sides, the depressions in one side of said disk coinciding with or coming opposite of the projections on the other side of said disk.

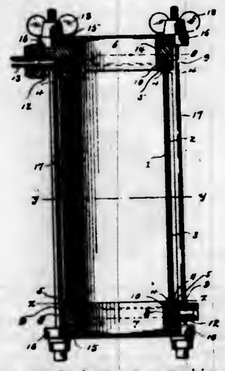
4. In a disk water-meter, a disk having an unyielding irregular surface, and a peripheral rib or flange.

5. In a disk water-meter a disk having a peripheral rib or flange and an unyielding irregular surface on both sides, the depressions on one side coinciding with the projections on the other side of said disk.

6. In a nutating-piston water-meter, the combination of a disk-chamber and a disk the end or ends of the chamber and the faces of the disk having recesses and radial ribs, the disk having its edges full and not cut away by said recesses.

7. In a disk water-meter, the combination of a disk-chamber and a disk, the end or ends of the chamber and the disk having radial recesses and ribs, and the disk having peripheral ribs.

608,169. COOLER FOR BEVERAGES. LEOPOLD BAUMEISTER, Bridgeport, Conn., assignor of one-half to John F. Seifert, same place. Filed May 17, 1897. Serial No. 636,848. (No model.)



Claim.—1. A cooler for beverages comprising separable inner and outer concentric cylinders 1 and 2 having a space between them and provided with enlargements or thickened ends 4, ring-shaped or open heads having grooves to receive the thickened ends of said cylinders, packing-washers in the bottom of said grooves and against

which the thickened ends of the cylinders rest, means for connecting receiving and delivering pipes with the cooler for sending a current of liquid through the space between the cylinders, and clamping connections outside of the outer cylinder for holding the heads and cylinders together.

2. A cooler for beverages comprising separable inner and outer cylinders having a space between them, ring-shaped or open heads having connecting-grooves 5 and 8 and shoulders 9, packing-washers having openings 11 lying between the ends of the cylinders and the shoulders, hubs which communicate with grooves 8 for the attachment of receiving and delivering pipes and means for retaining the parts in position.

3. A cooler for beverages comprising separable inner and outer cylinders having a space between them, ring-shaped or open heads having connecting-grooves 5 and 8, shoulders 9 and recesses 14, packing-washers having openings 11 lying between the ends of the cylinders and the shoulders, hubs which communicate with grooves 8 for the attachment of receiving and delivering pipes and rings 15 lying in recesses 14 and provided with outwardly-projecting ears to receive bolts by which the parts are held together.

4. A cooler for beverages comprising separable inner and outer cylinders having a space between them and enlargements 4 at their ends, ring-shaped or open heads having connecting-grooves 5 and 8, and shoulders 9, packing-washers having openings 11 lying between the enlargements at the ends of the cylinders and the shoulders, hubs which communicate with grooves 8 for the attachment of receiving and delivering pipes and means for retaining the parts in position.

608,170. CIGAR-HOLDER AND TOBACCO-PIPE. JOHN BICKLOW, Minneapolis, Minn. Filed Nov. 6, 1897. Serial No. 657,607. (No model.)



Claim.—1. A pipe or holder having a stem provided with two independent ducts one through which the smoke is drawn into the mouth and the other through which the smoke is exhaled only, from the mouth of the smoker, the second duct having an outlet-opening near the outer end of the pipe or holder, substantially as described.

2. A pipe or holder the stem of which has two independent ducts one through which the smoke is drawn into the smoker's mouth and the other through which the smoke is discharged or exhaled and the second of said ducts adapted to be closed by the tongue, substantially as described.

3. In a device of the class described the bowl and the stem, the latter provided with independent inlet and outlet ducts both opening through the mouth piece or part of said stem and one opening from said bowl and the other laterally through the side of said stem substantially as described.

4. The combination of the bowl and stem provided with independent inlet and outlet ducts, opening respectively from said bowl and through the side of the stem and an automatic valve provided in the opening of said outlet-duct to prevent the entrance of air therethrough, substantially as described.

5. The pipe or holder having independent inlet and outlet ducts having their inner ends opening respectively through the end and side of the mouthpiece, substantially as and for the purpose specified.

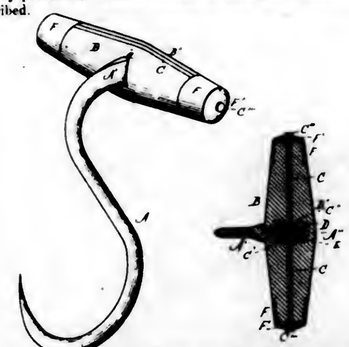
608,171. WOOD-FINISHING DEVICE. CHARLES BIRELY, Shelbyville, Ind. Filed Apr. 11, 1898. Serial No. 677,135. (No model.)



Claim.—In a wood-finishing device, the combination, substantially as set forth, of an arbor, clamping-collars thereon, and a cylinder formed of sandpaper laminæ clamped between said collars, said sandpaper laminæ having independent wings with peripheries concentric with the arbor.

608,172. BALE OR BOX HOOK. DMITRO M. BOTULINSKI, Boston, Mass. Filed May 17, 1898. Serial No. 680,921. (No model.)

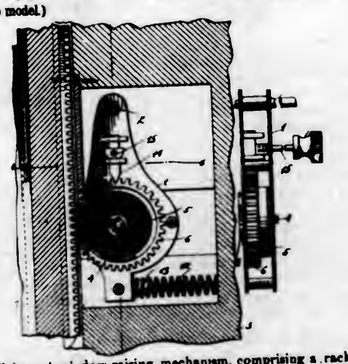
Claim.—1. In a hook of the character described for handling merchandise, the handle longitudinally divided into two parts B, B'; a plate placed between said parts and separating the same for substantially their entire length; a hook whose shank extends through one of the said parts of the handle and through the plate and whose inner end is secured within the other part of the handle beyond the plate; and means for connecting the two said parts of the handle and thereby preventing relative rotation of said parts, substantially as described.



2. In a hook of the character described for handling merchandise, the handle longitudinally divided into the two parts B, B'; the plate C placed longitudinally between and separating the said parts of the handle and provided with the interiorly-non-circular socket C' extending into the part B and with the externally-screw-threaded socket or tube C'' extending into and engaging with the part B'; the hook provided with a shank whose portion A'' fits into and corresponds in shape with said socket C' and whose extreme inner end extends through said socket C'' and is adapted to be secured within the part B' beyond the socket C''; and means for preventing the relative movement of the two said parts of the handle, substantially as set forth.

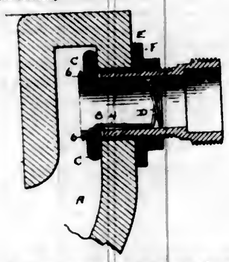
3. In a hook of the character described for handling merchandise, the handle longitudinally divided into the two parts B, B'; the plate C placed longitudinally between and separating the said parts of the handle and provided with the interiorly-non-circular socket C' extending into the part B and with the externally-screw-threaded socket or tube C'' extending into and engaging with the part B'; the hook provided with a shank whose portion A'' fits into and corresponds in shape with said socket C' and whose extreme inner end extends through said socket C'' and is adapted to be secured within the part B' beyond the socket C''; the externally-screw-threaded extensions C''' formed on the opposite ends of the plate C; and the sockets F, F' adapted to be screwed upon said extensions and fit over the opposite ends of the handle and thereby prevent relative rotation of the parts B, B' thereof, substantially as described.

608,173. WINDOW RAISING AND LOCKING DEVICE. FRANK BRUSO, New York, N. Y. Filed July 30, 1897. Serial No. 646,473. (No model.)



Claim.—A window-raising mechanism, comprising a rack on a window-sash, a spring-operated gear-wheel for engaging with said rack, a frame in which said wheel is mounted and a pivot extended across a mortise in the window-casing, the said pivot passing through a hole at the upper portion of the casing arranged in the mortise and whereby the lower portion of the frame may be swung wholly out of the mortise as and for the purpose specified.

608,174. REPAIR CONNECTION FOR WATER-CLOSET BOWLS. WILLIAM E. BYRNES, Cleveland, Ohio. Filed Nov. 9, 1897. Serial No. 657,963. (No model.)



Claim.—1. A repair connection for water-closet bowls, comprising a coupling to extend through the wall of the bowl, in combination with bolts through the inner end of said coupling to engage against the inside of the bowl and prevent the withdrawal of the coupling, and spring mechanism in said coupling to force said bolts into engaging position, said spring mechanism being removable to leave an unobstructed waterway through said coupling, substantially as described.

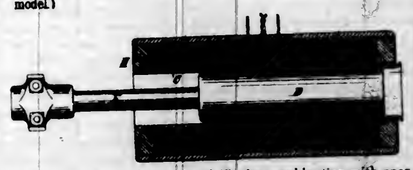
2. In repair connections for water-closet bowls, a coupling to enter the bowl, bolts having their axes at right angles to the coupling and engaged through the same within the wall of the bowl, and a spring to press said bolts to locking position, said bolts having stops to prevent their return when the spring is withdrawn, substantially as described.

3. The connection substantially as described, consisting of an exteriorly-threaded coupling having holes through its inner ends and a nut and packing to bear against the outside of the bowl, in combination with locking-bolts through said holes in the coupling to bear against the inside of the bowl, said bolts each having a projection to engage on each side of the coupling and hold the bolt in locking position.

4. A coupling for water-closet bowls, in combination with straight locking-bolts set at right angles through the inner end of said coupling, and a detachable and removable spring in the coupling having arms bearing against the ends of said bolts to pass them into engaging position, substantially as described.

5. The coupling and the bolts through the inner end thereof having shoulders to prevent their withdrawal from the coupling, and lateral projections on their inner ends to prevent them from passing through the coupling when pressed to engaging position, substantially as described.

608,175. RECIPROCATING ELECTRIC DRILL. HERMAN CASLER, Canastota, N. Y. Filed Mar. 18, 1898. Serial No. 674,359. (No model.)



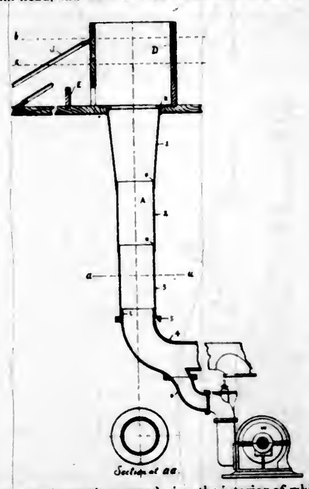
Claim.—1. In a reciprocating drill, the combination with energizing-coils and a magnetic core within the same, of a casing for the coils composed of an exterior shell, heads or ends and an interior lining-tube all of iron or steel, and united by water-tight joints, as set forth.

2. In a reciprocating drill, the combination with energizing-coils and a magnetic core within the same, of a casing for the coils composed of an exterior shell, heads or ends and an interior lining-tube, all of iron or steel, the lining-tube and heads being brazed together, as set forth.

608,176. PENSTOCK AND SUPPLY-PIPE. FRANCIS M. F. CAHEN, Hoboken, N. J. Filed May 26, 1897. Serial No. 638,947. (No model.)

Claim.—1. A penstock, supply or stand pipe, the interior of which, in the direction of its length, presents approximately the curve or taper representing the natural contraction of a column of water which has the same head and the same area at the top of the column.

2. A penstock, supply or stand pipe, the interior of which, in the direction of its length, presents approximately the curve or taper representing the natural contraction of a column of falling water which has a certain head, and definite areas of entrance and ejection apertures.



3. A penstock, supply or stand pipe, the interior of which, in the direction of its length, presents approximately the curve or taper representing the natural contraction of a column of falling water which has the same head and the same area at the top of the column, a space being left, however, between the inner walls of the pipe and the area representing the true curve or taper.

4. A penstock, supply or stand pipe, the interior of which, in the direction of its length, presents approximately the curve or taper representing the natural contraction of a column of falling water which has the same head and the same area at the top of the column, the inner wall of the said penstock or pipe being shouldered, as shown, so as to cause outer sheets or films of the water to be held comparatively motionless and so to form a lubricator for that part of the water having the natural fall or descent

5. An inclined supply or stand pipe, having descending and ascending portions, all below the main head, the interior of the said stand-pipe, from end to end, presenting approximately, in its descending portion or portions, the curve or taper representing the natural contraction of a column of falling water, and, in its ascending portion or portions a broadening curve or taper, representing the larger volume of falling water nearer the main head.

6. In a stand-pipe apparatus, a flume or sluiceway terminating at the top of the said stand-pipe, in a suitable head-box, a frame or shed extending from the front of the said head-box into the path of the entering liquid, an opening in the said shed or frame, the said opening being covered by a suitable screen, as and for the purposes set forth.

7. In a stand-pipe apparatus, a sluiceway terminating at the top of the said stand-pipe, in a suitable head-box, and a screen standing in the path of the liquid as it enters the head-box.

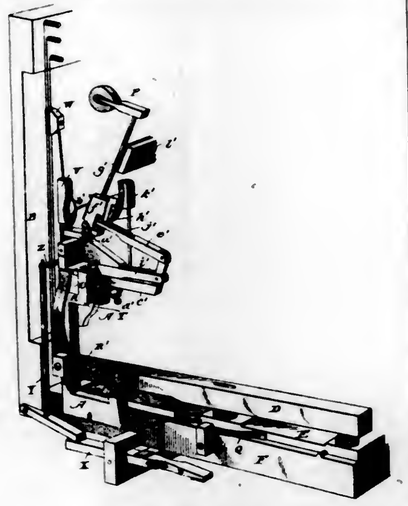
8. In a stand-pipe apparatus, a sluiceway terminating at the top of the said stand-pipe in a suitable head-box, a screen entering the said sluiceway in the path of the water, and a solid cross-piece at the bottom of the sluiceway for stopping the heavy material, as and for the purposes set forth.

9. A penstock, or supply-pipe, the interior of which, in the direction of its length, presents approximately the curve or taper representing the natural contraction of a body of falling water under gravity, the said penstock, head-pipe or stand-pipe having a suitable ejection aperture or apertures leading to one or more water-wheels, and being provided with one or more automatic valves as set forth.

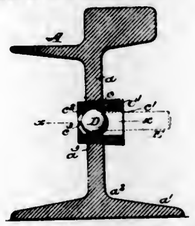
10. An inclined supply-pipe having descending and ascending portions, all below the main head, the interior of the said pipe, from end to end, presenting approximately, in its descending portion or portions, the curve or taper representing the natural contraction of a column of falling water, and, in its ascending portion or portions, a broadening curve or taper, representing the larger volume of falling water nearer the main head, an automatic valve being placed at the summit of each ascending portion, as set forth.

608,177. PIANO-ACTION. RUBIC R. COBB, Hephzibah, Ga., assignor of one-half to C. H. S. Jackson, same place. Filed May 29, 1897. Serial No. 638,935. (No model.)

Claim.—A pedal-lever, and a mechanism connected therewith, combined with a laterally-movable keyboard, the means for returning it to position when left free to move: and a laterally-movable piano-action, and independent means for returning it to position, the keyboard and action being moved simultaneously, and the same distance, by the mechanism connected with the pedal-lever, substantially as shown and described

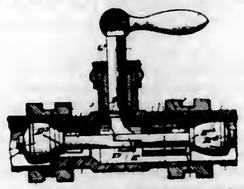


608,178. ELECTRICAL RAIL-BOND AND METHOD OF SECURING SAME IN PLACE. WILLIAM R. COCK, Plainfield, N. J. Filed Dec. 7, 1897. Serial No. 661,013. (No model.)



Claim.—The method of securing a hollow, preferably slightly-conical, electric bond-terminal in place in a rail, which consists, in first forcing the terminal into a perforation in the rail and then expanding it and clenching it against the edge of the perforation in the rail by progressively expanding the hollow bond-terminal by means contacting and acting at one time only on a narrow annular section of the bond-terminal but successively on all portions of the bond to be expanded.

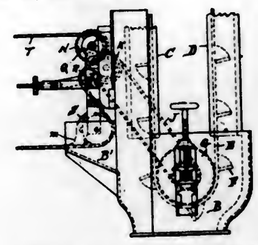
608,179. STOP-COCK AND WASTE. JOHN F. COFFEY, Omaha, Nebr. Filed Sept. 21, 1897. Serial No. 652,438. (No model.)



Claim.—1. The combination of the valve-casing provided with a central chamber and two reduced chambers on opposite sides and in line therewith, a valve-seat in the outer end of each reduced chamber, two valves connected together to move simultaneously and alternately engage the respective valve-seats, and a channel surrounding the outlet-valve seat and chamber and leading outward from the central chamber of the casing, substantially as described.

2. The combination of the valve-casing provided with a central chamber and two reduced chambers on opposite sides and in line therewith, a valve-seat in the outer end of each reduced chamber, two valves connected together to move simultaneously and alternately engage the respective valve-seats, a channel surrounding the outlet-valve seat and chamber and leading outward from the central chamber of the casing, a waste-spout leading from the casing, and a waste-duct leading from the outlet-valve seat to the spout, substantially as described.

608,180. GRAIN FEEDER AND CONVEYER. BOSTON S. CONSTANT, Bloomington, Ill. Filed May 11, 1896. Renewed Jan. 28, 1898. Serial No. 668,351. (No model.)



Claim.—1. In a grain feeder and conveyer, the combination, with the sink or boot having the shaft mounted therein and the upright frame attached thereto, of the wheel I on said shaft; the shafts M and O mounted upon the frame; the wheel K having the clutch-lugs and secured to said shaft M; the gear-wheel L revoluble on said shaft M and having the clutch-lugs *i* and groove *h*; the lever P mounted on the frame and engaging said groove: the gear-wheel N secured to said shaft O and and engaging said wheel L; the wheel Q secured to said shaft O; the yokes *d e* having the adjusting-screw *g* and nut *f* and mounted on said upright frame; the wheel R supported in said yoke *e*; the wheel S supported by said frame: the bin A, the wheels U and V mounted therein, and the feed-chain running therein, substantially as shown and described, for the purposes set forth.

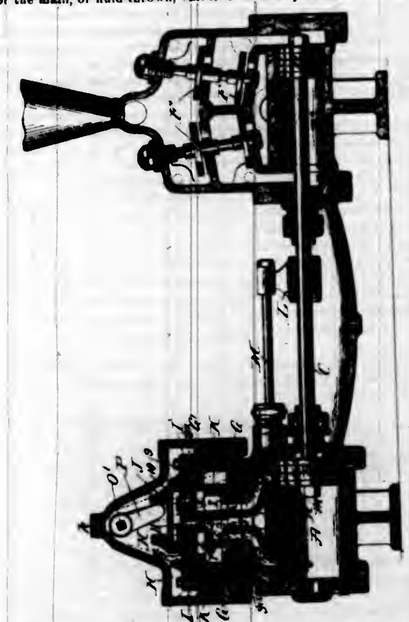
2. In a grain feeder and conveyer, the combination with the bin and the upright frame, of the shafts mounted on said frame, the sprocket-wheel mounted on the upper one of said shafts; the sprocket-wheel mounted at the lower part of said frame, the deflector mounted to protect the front of said last-mentioned sprocket-wheel and deflect grain therefrom, the yokes and the sprocket-wheel mounted therein, substantially as shown and described.

3. In a grain feeder and conveyer, the combination of the boot or sink, the adjustable shaft mounted therein and carrying the wheel G, the sprocket-wheel I secured at the end of said shaft, the upright frame, the shafts M and O mounted on said frame, the wheel K having the clutch-lugs and secured to said shaft M, the gear-wheel L revoluble on said shaft M and having the clutch-lugs i and groove *h*, the lever P mounted on said frame and adapted to control said clutch to engage and disengage it, the gear-wheel N secured to said shaft O and engaging said gear-wheel L, the sprocket-wheel Q secured to said shaft O, the bin A having the sprocket-wheels U and V mounted as shown, the sprocket-wheel S mounted above the chute B', the slack-adjuster mounted on the said frame and a suitable feeding-chain running over said sprocket-wheels, substantially as shown and described.

4. In a grain feeder and conveyer, the combination of the boot or sink, the upright frame thereon, the shafts and sprocket-wheels thereon, the bin A adjoining said boot, the V-shaped bottom provided with the iron center strip *c* and side strips *b*, the sprocket-wheel V mounted at the inner lower end of said bin, the sprocket-wheel U mounted at the inner upper end of said bin, the chainway Y at the end of said bin, the chainway W having the sloping top *r* supported at the top of said bin, and the feeding-chain running over said sprocket-wheels, substantially as shown and described.

608,181. VALVE FOR STEAM-PUMPS. WILLIAM W. COREY, Jr., St. Louis, Mo. Filed Jan. 17, 1898. Serial No. 666,850. (No model.)

Claim.—1. The combination with a valve-seat, of a semicylindrical fluid-thrown valve arranged therein, a valve-block arranged upon said valve-seat, and coöperating with the flat face of said fluid-thrown valve, said valve-block containing all the auxiliary ports for operating said fluid-thrown valve, and a mechanically-operated slide-valve operating on said valve-block, to control said auxiliary ports for the main, or fluid-thrown, valve, substantially as described.



2. The combination with a valve-seat, of a semicylindrical fluid-thrown valve arranged therein and formed with passages to supply steam to the cylinder, a valve-block formed with passages for supplying steam to the steam-passages in the main valve, the ends of said valve-block covering the ends of said fluid-thrown valve, said valve-block also containing the admission and exhaust ports leading to and from the ends of said fluid-thrown valve, and a mechanically-operated slide-valve coöperating with said ports to admit and exhaust pressure to and from the ends of said fluid-thrown valve, substantially as described.

3. The combination with a valve-seat, of plugs in each end thereof, a semicylindrical valve operating in said seat, a valve-block mounted upon said plugs and coöperating with the flat face of said valve, said valve-block containing the admission and exhaust ports leading to and from the ends of said fluid-thrown valve, and a slide-valve operating upon said valve-block for controlling said ports, substantially as described.

4. The combination with a valve-seat, of plugs in each end thereof, a semicylindrical fluid-thrown valve mounted in said seat, a valve-block having a flat lower face for coöperating with said valve-seat, plugs and the flat face of said fluid-thrown valve, whereby, when any of said parts are worn, the flat faces thereof may be ground or scraped and refitted, and a mechanically-operated slide-valve mounted upon the valve-block, for controlling the ports in said valve-block leading to and from the ends of the semicylindrical fluid-thrown valve, substantially as described.

5. The combination with a valve-seat, of a semicylindrical fluid-thrown valve arranged therein, a valve-block containing ports for operating said valve, said valve-block being reduced at its sides and formed with spaces *i* in its under face which spaces open to the steam-pressure, and a mechanically-operated valve coöperating with said valve-block to control the ports therein, substantially as described.

6. The combination with a main valve, of a valve-block containing ports 8, 8ª, 9, 9ª, and 11, said valve-block being reduced at its sides, and formed with spaces *i* on its under side, and a slide-valve J having a reduced side to coöperate with the ports 8 and 8ª of said valve-block, and a port 10 having suitable openings adapted to coöperate with ports 9, 9ª, and 11 of said valve-block, substantially as described.

7. The combination with a cylinder, of main inlet and exhaust passages leading thereinto and near the ends thereof, auxiliary passages leading into the extremities of said cylinder, a valve provided with suitable openings or chambers which are adapted to register with said passages, said valve being, also, provided with a blind side adapted to close the auxiliary passage when the pressure is exhausting from that end to which said auxiliary passage leads, substantially as described.

8. The combination with a slide-valve, of a tappet for throwing the same, a plug upon which said tappet is mounted, a socketed spindle for receiving one end of said plug, and an adjustable bearing or thimble for receiving the other end of said plug, substantially as described.

9. The combination with a slide-valve, of a tappet for throwing the same, a plug upon which said tappet is mounted, a socketed spindle for receiving one end of said plug, an adjustable bearing or thimble for receiving the other end of said plug, and means for locking said adjustable bearing or thimble in an adjusted position, substantially as described.

10. The combination with a slide-valve, of a tappet for throwing the same, a plug upon which said tappet is mounted, a socketed spindle for receiving one end of said plug, said spindle having a cone-bearing in the side wall of a steam-chest, whereby a tight joint may be made, an adjustable bearing for the other end of said plug, and a lever located outside the steam-chest and mounted upon said socketed spindle for actuating the same, substantially as described.

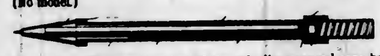
11. The combination with a steam-chest, of a socketed spindle having a cone-bearing therein, a lever mounted on the outer end of said spindle, a plug which is received in the socket in the inner end of said spindle, a tappet mounted on said plug, a bearing for the other end of said plug, which bearing is threaded in the wall of the steam-chest, and a jam-nut which is secured on the outer end of said adjustable bearing, substantially as described.

12. The combination with a steam-chest, of a spindle passing therethrough, a cone-bearing for said spindle, and a tappet arranged in the steam-chest, which tappet is operated by said spindle, said cone-bearing being kept ground to its seat by the pressure of steam in the steam-chest, substantially as described.

13. The combination with an engine-cylinder and steam-chest, of a housing formed to one side thereof and integral with said parts, said housing receiving the exhaust of the engine, and a valve-operating mechanism arranged within said housing, substantially as described.

14. In a steam-pump, the combination with the engine-cylinder and its piston, of a steam-chest, a slide-valve arranged in said steam-chest, a housing arranged to one side of said steam-chest and cylinder, a tappet arranged within the steam-chest for operating said slide-valve, an arm arranged within said housing and connected to said tappet, a rod for operating said arm, and a cross head connection between said rod and the piston-rod of the engine, substantially as described.

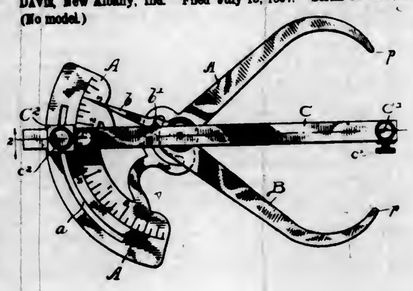
608,182. PENCIL HOLDER AND SHARPENER. CONSTANT K. COOBY, New York, N. Y. Filed Sept. 11, 1897. Serial No. 651,313. (No model.)



Claim.—1. The combination of the spirally-grooved case having a longitudinal slot, the sharpener swiveled to the front end of the case, the pencil-holder or socket movable in the case and having a projection extending through the slot, and a nut screwing on the case and engaging the projecting portion of the pencil-holder, substantially as described.

2. The combination of a spirally-grooved case having a longitudinal slot therein, a socket capable of holding a pencil and movable in the case, a ring encircling the case, a web connecting the ring and socket, and a nut working on the groove of the case and bearing against the ring to advance the ring and the parts connected therewith.

608,183. CENTER-FINDING REGISTER-CALIPERS. GREER W. DAVIS, New Albany, Ind. Filed July 15, 1897. Serial No. 644,714. (No model.)



Claim.—1. In a center-finding register caliper, the combination, of the usual caliper-arms, pivoted together at a point between their ends, the caliper contact-points being on one side of said pivot, and one of said arms having a scale and the other an index-finger on the other side of said pivot, which index-finger is adapted to move over said scale, and a bar mounted to swing and also slide on the head of said pivot and extending from between the caliper contact-points on one side of said pivot to over the scale on the other, and an index-finger connected to said bar adjacent to said scale, whereby its position in relation thereto may be determinately adjusted, substantially as set forth.

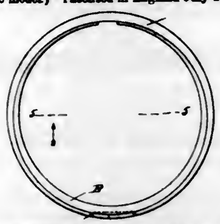
2. The combination, in a center-finding register-caliper, of the two caliper-arms pivoted together, one bearing a scale and the other an index-finger or pointer, and a bar slidably mounted on the pivot by which said caliper-arms are united, and provided with a centering-point at one end and an index-point at the other end, whereby it may be first adjusted to find a center and then moved longitudinally to mark such center, substantially as set forth.

3. The combination, in a center-finding register-caliper, of the usual caliper-arms pivoted together, one bearing a scale or index and the other a finger or pointer, a bar slidably mounted on the pivot which unites said arms, and a yoke through which one end of said bar passes, said yoke being provided with two fastening or set screws, by one of which it can be secured rigidly to the scale end of the caliper-arm, and by the other of which said bar may be secured to a longitudinally-adjusted position, substantially as set forth.

4. The combination, in a register-caliper, with the caliper-arms, the pivot connecting them formed with a head which projects above said arms and is formed with an annular groove or neck, a scale carried on one of said arms on the opposite side of the pivot from the caliper contact-points, and a hollow bar formed with a slot in its under side and an aperture to receive said pivot-head, the edges of which slot engage with said groove or neck therein, whereby said bar is held in position thereon and permitted both a longitudinal and a swinging movement over said scale, substantially as set forth.

5. The combination, in a register-caliper, of the caliper-arms A B, the pivot uniting them provided with the head *l*, the bar C mounted on said pivot-head and provided with the center-finding point C', a yoke C^2 on the other end provided with a fastening or set screw A' whereby it may be secured to the scale end of the arm A and prevented from rotary movement, and with a set-screw c^3 by which the bar may be clamped and prevented from longitudinal movement, all substantially as set forth.

608,184. PISTON-PACKING. JOHN DERBYSHIRE and REUBEN DERBYSHIRE, Loughton, England. Filed Nov. 18, 1897. Serial No. 659,108. (No model.) Patented in England July 21, 1897, No. 17,214.

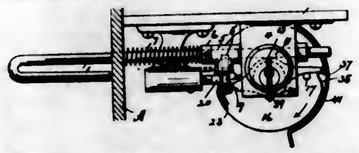


Claim.—1. An improved packing of the class described for pistons, comprising the two tapering rings placed one within the other, the relative construction and arrangement being such that the outer and inner peripheries of the compound ring are concentric and the intervening joint between the rings is eccentric, the inner ring being cut or open at its thinnest part and provided upon its opposite thicker part with an exteriorly-projecting tongue or key centrally or intermediately arranged between the top and bottom edges of the ring and extending in a longitudinal plane with respect to the periphery of the ring, and the outer ring being cut or open at its thinnest part at an angle forming a diagonal joint at each side of which and intermediately between the top and bottom edges of the ring is provided a transverse slot receiving the end portions of the projecting tongue or key upon the inner ring, substantially as and for the purpose set forth.

2. An improved packing of the class described for pistons, comprising the two tapering rings placed one within the other, the relative construction and arrangement being such that the outer and inner peripheries of the compound ring are concentric and the intermediate joint between the rings is eccentric, the adjoining inner eccentric faces of said rings being correspondingly beveled to form a transverse angle-joint, the inner ring being cut or open at its thinnest part and provided upon its opposite thicker part with an exteriorly-projecting tongue or key centrally or intermediately arranged between the top and bottom edges of the ring and extending in a longitudinal plane with respect to the periphery of the ring, and the outer ring being cut or open at its thinnest part at an angle forming a diagonal joint at each side of which and centrally or intermediately between the top and bottom edges of the ring is provided a transverse slot receiving the end portions of the projecting tongue or key upon the inner ring, substantially as and for the purpose set forth.

3. An improved packing of the class described for pistons, comprising the two tapering rings placed one within the other, the relative construction and arrangement being such that the outer and inner peripheries of the compound ring are concentric and the intervening joint between the rings is eccentric, said rings being cut or open at their thinnest parts, and devices centrally or intermediately arranged between the top and bottom edges of the inner ring and projecting from the inner ring and through or into engagement with the outer ring for retaining said rings in their relative position, whereby said connecting projecting devices are firmly braced and have a bearing at both their sides with respect to the outer ring, the outer ring having a slidable or movable connection with said connecting devices upon the inner ring, substantially as and for the purpose set forth.

608,185. LOCKING DEVICE. JOHN E. DOLDT, Providence, R. I. Filed June 16, 1896. Serial No. 595,813. (No model.)



Claim.—1. The combination with means for engaging and securing an article in place, of a device for locking said securing means, and means made operative by the insertion of a coin for moving said locking device into operative position, substantially as described.

2. The combination with means for engaging and securing an article in place, of means for locking said securing means, and coin-controlled means for governing both the locking and the unlocking of said securing device, substantially as described.

3. The combination with a securing device, of means for locking said securing device, means for operating said locking means embodying two disconnected parts, and means whereby the insertion of a coin connects said parts, substantially as described.

4. The combination with a securing device, of a device for locking said securing device, means comprising a coin-receiver for moving said locking device into operative position, substantially as described.

5. The combination with a securing device, of means for locking said securing device, and means comprising a two-part coin-receiver for moving said locking means into operative position, substantially as described.

6. The combination with a securing device, of a device for locking said securing device, and means comprising a two-part coin-receiver for moving said locking means into operative position, one of said parts being connected with said locking device, substantially as described.

7. The combination with a securing device, of means for locking said securing device, means for preventing the operation of said locking means, and coin-controlled means for operating said locking means, substantially as described.

8. The combination with a securing device, of means for locking said securing device, means for preventing the operation of said locking means, and means comprising a coin-receiver for operating said locking means, substantially as described.

9. The combination with a securing device, of a device for engaging and locking said securing device, means made operative by the insertion of a coin for moving said engaging device into engagement with said securing device, substantially as described.

10. The combination with means for engaging and securing an article in place, of a device for engaging said securing means, means for moving said engaging device into engagement with said securing means, and coin-controlled means for governing said moving means, substantially as described.

11. The combination with means for engaging and securing an article in place, of a device for engaging said securing means, means normally inoperative for moving said engaging device into engagement with said securing means, and coin-controlled means for rendering said moving means operative, substantially as described.

12. The combination with a securing device, of a device for engaging said securing device, means for operating said engaging device, means for preventing the operation of said means, and coin-controlled means for operating said preventing means, substantially as described.

13. The combination with a securing device, of a device for engaging said securing device, means for operating said engaging device comprising a movable member, a stop for preventing the operation of said movable member, a cam for operating said stop, and a two-part coin-receiver one part being connected with said cam and the other part being connected with said movable member, substantially as described.

14. The combination with a locking-bolt, of a disk, means intermediate said bolt and disk for operating said bolt by the movement of said disk, a stop for preventing the operation of said disk, a cam for operating said stop, and means whereby the insertion of a coin connects said cam and disk, substantially as described.

15. The combination with a locking device, of means for controlling the operation of said locking device comprising a movable coin-receiver, and a stop for limiting the movement of coin-receiver, said stop being operated by the movement of the coin-receiver when a coin is inserted therein, substantially as described.

16. The combination with a device for engaging and securing an article in place, of key-controlled means for locking said securing device, and coin-controlled means for limiting the movement of said key, substantially as described.

17. The combination with a securing device, of means moved into operative position by a key for locking said securing device, and coin-controlled means for governing the removal of the key, substantially as described.

18. The combination with a securing device, of means moved into operative position by a key for locking said securing device, and coin-controlled means for governing the operation of said locking means and the removal of the key, substantially as described.

19. The combination with a key-controlled locking device, of a coin-receiver operated by the key and a stop for limiting the movement of the key, said stop being rendered inoperative by the insertion of a coin in the coin-receiver, substantially as described.

20. The combination with a key-controlled locking device, of a rotary coin-receiver operated by the key, and a stop for limiting the movement of the key, said stop being rendered inoperative by the insertion of a coin in the coin-receiver, substantially as described.

21. The combination with a key-controlled locking device, a disk provided with a coin-receiver operated by said key, and a coin-controlled stop for preventing the rotation of the key, substantially as described.

22. The combination with means for engaging and securing an article in place, of key-controlled means for locking said securing means, means for preventing the removal of the key, and coin-controlled means for operating said preventing means, substantially as described.

23. The combination with a securing device, of means for locking said device, and coin-controlled means for preventing the operation of the key controlling the locking means, substantially as described.

24. The combination with a securing device, of means for locking said device controlled by a key, and coin-controlled means for preventing the operation of said key in locking said securing device, substantially as described.

25. The combination with a securing device, of means for locking said device controlled by a key, and coin-controlled means for preventing the operation of said key in both locking and unlocking said securing device, substantially as described.

26. The combination with a securing device, of means for locking said securing device controlled by a key, means for preventing the operation of said key, means for operating said preventing means comprising a two-part coin-receiver, one part of which is connected with the key, substantially as described.

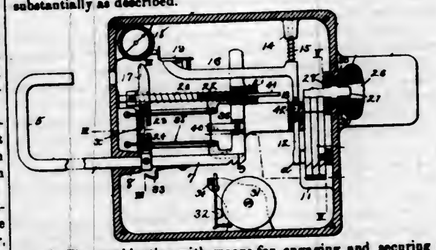
27. The combination with a movable member operated by a key, of a stop for limiting the movement of said member, a cam for operating said stop, a coin-receiver connected with said cam and said movable member, and a locking device operated by said movable member, substantially as described.

28. The combination with a disk provided with a hub, shoulders on said disk, a stop for engaging said shoulders to limit the movement of said disk, a ring mounted on said hub and provided with a cam engaging said stop, a slot in said ring, and a recess in said hub registering with said slot, substantially as described.

608,186. LOCKING DEVICE FOR VEHICLES, &c. JOHN E. DOLDT, East Orange, N. J. Filed July 31, 1895. Renewed Aug. 3, 1897. Serial No. 647,001. (No model.)

Claim.—1. The combination with means for engaging and securing an article in place, of means made operative by the insertion of a coin for locking said securing means, substantially as described.

2. The combination with means for engaging and securing an article in place, of means for locking said securing means, and coin-controlled means for preventing the operation of said locking means, substantially as described.



3. The combination with means for engaging and securing an article in place, of means for locking said securing means, and coin-controlled means for rendering said locking means operative, substantially as described.

4. The combination with a securing device, of means for locking said securing device, means for governing the action of said locking means embodying two disconnected parts, and means whereby the insertion of a coin connects said parts, substantially as described.

5. The combination with means for engaging and securing an article in place, of means for locking said securing means, and means comprising a coin-receiver for rendering said locking means operative, substantially as described.

6. The combination with means for engaging and securing an article in place, of means for locking said securing means, and means comprising a two-part coin-receiver for controlling the operation of said locking means, substantially as described.

7. The combination with a securing device, of means for locking said securing device in operative position, and means comprising a two-part coin-receiver for controlling the operation of said locking means, one of said parts being connected with said locking means, substantially as described.

8. The combination with means for engaging and securing an article in place, of means for locking said securing means, means for preventing the operation of said locking means, and coin-controlled means for rendering said locking means operative, substantially as described.

9. The combination with means for engaging and securing an article in place, of means for locking said securing means, means for preventing the operation of said locking means, and means comprising a coin-receiver for rendering said locking means operative, substantially as described.

10. The combination with means for engaging and securing an article in place, of means for locking said securing means, means for preventing the operation of said locking means, and means comprising a two-part coin-receiver for rendering said locking means operative, substantially as described.

11. The combination with a securing device, of means for locking said securing device, means for preventing the operation of said locking means, and means comprising a two-part coin-receiver for rendering said locking means operative, one of said parts being connected with said locking means, substantially as described.

12. The combination with means for engaging and securing an article in place, of a device for engaging said securing means, and coin-controlled means for rendering said engaging device operative for locking said securing means, substantially as described.

13. The combination with a securing device, of means for locking the same, a stop for preventing the operation of said locking means, and a coin-controlled means through which said stop may be operated, substantially as described.

14. The combination with a securing device, of means for locking the same, a stop for preventing the operation of said means, and a coin-controlled cam for operating said stop, substantially as described.

15. The combination with a securing device, of means for locking the same, a stop for preventing the operation of said means, a cam for operating said stop, and a coin-receiver connected with said locking means and said cam, substantially as described.

16. The combination with means for engaging and securing an article in place, of key-controlled means for locking said securing means, and coin controlled means for governing the removal of the key, substantially as described.

17. The combination with means for engaging and securing an article in place, of key-controlled means for locking said securing means, and coin-controlled means for governing the operation of the locking means and the removal of the key, substantially as described.

18. In a locking device for vehicles and other purposes the combination of a locking-bar adapted to engage the vehicle or article,

a post or support for said bar, mechanism for locking and releasing said bar having a two-part coin-receiver, one of which parts is carried by the bar, the said parts being adapted to be connected by the coin, substantially as set forth.

19. The conbination of a locking-bar, a support for the same, means for engaging and locking said bar, mechanism for preventing and permitting the locking means to come into position, and a coin-receiver having one member connected with the bar and the other member connected with said mechanism, substantially as set forth.

20. The combination of a locking-bar, a support for the same, means for engaging and locking the bar, a transverse slide for stopping or controlling the locking means, a longitudinal slide adapted to engage and actuate the transverse slide, and a coin-receiver having one member connected with the locking-bar, substantially as set forth.

21. The combination of a locking-bar, means for engaging and locking the same, a coin-receiver adapted to be actuated by the locking-bar, and a stop or controlling device connected with and operated by said receiver for permitting or preventing the locking operation, substantially as set forth.

22. The combination of a locking-bar, a support for the same, means for engaging and locking said bar, mechanism for stopping or controlling the locking operatioo connected with the locking-bar and comprising a coin-receiver, and a register connected with said mechanism.

23. The combination of a locking-bar, a support for the same, mechanism for locking and releasing said bar, a stop which prevents the locking operation, a coin-controlled mechanism through which said stop may be operated, and an alarm adapted to be operated upon the movement of the locking-bar, substantially as set forth.

24. In a locking device for vehicles and other purposes the combination of a locking-bar, means released by a key for engaging and locking the same, means for delivering said key, and a coin-controlled mechanism governing both said locking and delivering means, substantially as set forth.

25. The combination of a locking-bar, means operated by a key for engaging and locking the same, a movable part for holding said key in an inaccessible position and engaging the same to operate it, a key-ejector, and a coin-controlled mechanism governing said ejector, substantially as set forth.

26. The combination of a locking-bar, means operated by a key for locking the same, a rotary key holding and operating device, and means for ejecting the key.

27. The combination of a locking-bar, means operated by a key for engaging the same to lock it, a stop or controlling device for preventing or permitting the locking operation, a coin-receiver connected with said bar and with the said controlling device, a movable part holding said key in an inaccessible position, and means for ejecting the key operated by said receiver, substantially as set forth.

28. The combination of a locking-bar, locking means for the same released by a key, a holder for the key, an ejector for the latter, and means for controlling the ejector operated by the locking-bar, substantially as set forth.

29. In a locking apparatus for vehicles and other purposes the combination of a locking device released by a key, means for locking the same, means for delivering said key, and a coin-controlled mechanism governing said delivering means, substantially as set forth.

30. The combination of a locking bar, tumblers engaging the same, the rotary knob 25 provided with means for holding a key, and a coin-controlled mechanism governing the accessibility of the key.

608,187. **PNEUMATIC TIRE.** HENRY J. DOUGHTY, Providence, R. I., assignor to the Atlantic Rubber Company, of Maine. Filed Jan. 11, 1897. Renewed Jan. 4, 1898. Serial No. 665,599. (No model.)



Claim.—1. A pneumatic-tire cover consisting of a continuous strip, flexible throughout, with a continuous non-stretchable hoop at a distance from one edge leaving a flexible edge portion adapted to overlap the body of the cover within the wheel-rim and the loop disposed wholly without the rim, substantially as described.

2. An annular flexible covering or protecting strip for pneumatic tires provided at a distance from one edge with a non-stretchable securing-hoop, at or near its opposite edge with an enlargement and intermediate said edges with a longitudinal shoulder, substantially as described.

3. In a pneumatic tire, the combination with an inner inflatable air-tube, of a flexible protecting or covering strip therefor, provided intermediate its width with a longitudinal shoulder, and at a distance from one edge with a non-stretchable securing-ring, said edge being adapted to engage said shoulder, while at or near its opposite edge, said strip is provided with an enlargement, substantially as described.

4. In a pneumatic tire, the combination with a wheel-rim having a concave face, of an inner inflatable air-tube, a protecting or covering strip therefor provided at a distance from one edge with a non-stretchable securing-ring, said strip being normally adapted to extend spirally around the inner tube whereby one edge of the strip is brought to lie intermediate the air-tube and the inner face of the strip while the opposite edge lies within the concave portion of the wheel-rim intermediate said rim and the outer face of the covering-strip to bring the securing-ring without the wheel-rim and parallel to one edge thereof, substantially as described.

5. In a pneumatic tire, the combination with a wheel-rim having a concave face, of an inner inflatable air-tube, a protecting or covering strip therefor, flexible throughout, adapted normally to extend spirally around the air-tube, and a non-stretchable securing-ring at a distance from one edge of said protecting-strip, substantially as described.

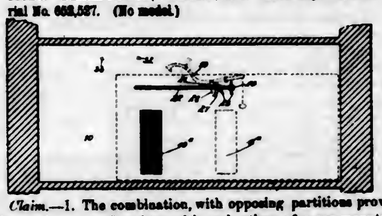
6. In a pneumatic tire, the combination with a wheel-rim having a concave face, of an inner inflatable air-tube, a protecting or covering strip flexible throughout adapted normally to extend spirally around the air-tube, and a non-stretchable securing-ring at a distance from one edge of the protecting-strip, said ring lying within the concave face of the wheel-rim, while the extreme edge of the protecting-strip lies intermediate said face and the body of the covering-strip, substantially as described.

608,188. **PNEUMATIC TIRE.** HENRY J. DOUGHTY, Providence, R. I., assignor to the Atlantic Rubber Company, of Maine. Filed Feb. 4, 1897. Renewed Jan. 4, 1898. Serial No. 665,600. (No model.)



Claim.—A flexible pneumatic-tire cover, having parallel non-extensible hoops and inside of each hoop a flexible strip, the strips being adapted to be disposed within the wheel-rim, and the non-extensible hoops disposed wholly without said rim, substantially as described.

608,189. **PASSAGE-WAY FOR BULKHEADS AND PARTITIONS.** DALLAS DU BOIS, Montclair, N. J. Filed Sept. 22, 1897. Serial No. 652,587. (No model.)



Claim.—1. The combination, with opposing partitions provided with openings out of registry with each other, of a car mounted to travel between the partitions and provided with opposing openings, for the purpose set forth.

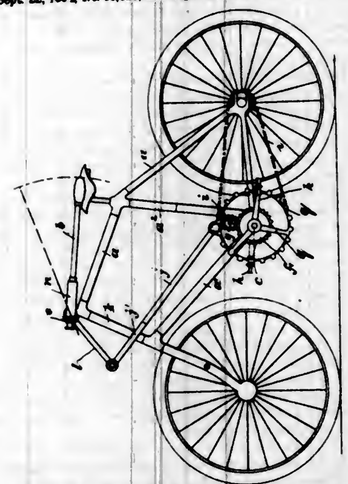
2. The combination, with partitions having a space between them, the partitions being provided with openings out of transverse registry, of a car mounted to travel in the space between the partitions, the car having opposite openings, and means for shifting the car, substantially as described.

3. The combination, with opposing partitions having openings in opposite sides diagonally arranged in relation to each other, of a car mounted to travel between the partitions, the car being provided with opposing openings, means, substantially as described, for operating the car, and a locking device for the car, substantially as described.

4. The combination, with opposing partitions, each having an opening, the openings in the partitions being in diagonal arrangement with relation to each other, of a car held to travel between the partitions, lock-latches pivoted to the said car, facing in opposite directions, spring-controlled shafts arranged to raise or lower the said lock-latches, and keepers carried by the partitions, adapted for engagement with the said lock-latches, for the purpose specified.

5. The combination, with opposing partitions having openings therein, the openings in the partitions being in diagonal arrangement in relation to each other and the said partitions being provided with longitudinal slots, of a car held to travel between the partitions, said car being provided with oppositely-located openings, shafts carried by the said car and extending outward through the openings in the partitions, lock-latches located at opposite sides of the car, facing in opposite directions, crank-arms projected from the shafts, and link connections between the crank-arms and the lock-latches, and keepers located upon the partitions, arranged for engagement with the lock-latches, the keepers being upon the inner faces of the partitions and located at diagonally opposite ends, as and for the purpose specified.

608,190. **MANU-PEDAL AND HAND-STEERING VELOCIPEDE OR OTHER VEHICLE.** ROBERT EDGAR, Jr., Glasgow, Scotland. Filed Jan. 28, 1897. Serial No. 621,008. (No model.) Patented in England Sept. 22, 1894, No. 18,021, and Sept. 21, 1895, No. 17,649.



Claim.—1. In a vehicle such as described, the combination with the driving-shaft, of a gear secured to said shaft, a pinion of less diameter than said gear engaging with the same, a crank-shaft provided with a crank, and to which said pinion is secured, a radially-movable lever, and connections between the same and the crank, whereby the action of said lever in each direction will cause the pinion and gear and the pedal-shaft to revolve, and to drive the machine irrespective of the position of the pedals, and said lever adapted to be in its most efficient operative position, when the pedals are in their least efficient operative positions, substantially as set forth.

2. In a vehicle such as described, the combination with the pedals and pedal mechanism, of two horizontal hand-levers adapted to be moved up and down radially and simultaneously, means connecting said levers with the pedal mechanism, whereby the action of the hand-levers in each direction will operate the pedal to drive the machine irrespective of the positions of the pedals and adapted to make two movements to one movement of the pedals, substantially all as set forth.

3. In a vehicle such as described, the combination with the driving mechanism, a radially-movable lever having a horizontal shaft, and provided with two parallel sleeves extending laterally from said shaft, two handle-bars extending through said sleeves and rotatable therein, and said sleeves and bars having a radial movement, and means connecting said lever with the driving mechanism for operating the same, the steering device supported on the vehicle-frame, connected with the two handle-bars and adapted to be operated by the turning of said bars in their sleeves, substantially as set forth.

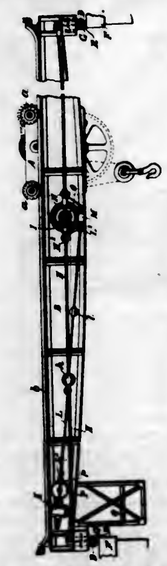
4. In combination, the frame of the machine, the pedal-shaft, alternately-acting pedals on the shaft, a gear-wheel *f* on the pedal-shaft, a driving-wheel on the pedal-shaft, a crank-shaft *i*, a pinion *g* on the crank-shaft meshing with the teeth of the gear-wheel *f*, a connecting-rod *j*, an arm *l*, a shaft *m*, sleeves *n* secured to the shaft and hand-levers *b* passed through the sleeves and capable of a longitudinal movement therein, substantially as set forth.

5. In combination, the frame of the machine, the pedal-shaft, alternately-acting pedals on the shaft, a gear-wheel *f* on the pedal-shaft, a driving-wheel on the pedal-shaft, a crank-shaft *i*, a pinion *g* on the crank-shaft meshing with the teeth of the gear-wheel *f*, a connecting-rod *j*, an arm *l*, a shaft *m*, sleeves *n* secured to the shaft and hand-levers *b* passed through the sleeves and capable of a longitudinal and rotary movement therein, and means connecting the handles with the steering device, whereby the turning of the handles will steer the machine, substantially as set forth.

6. In combination, the frame of the machine, the pedal-shaft, alternately-acting pedals on the shaft, a gear-wheel *f* on the pedal-shaft, a driving-wheel on the pedal-shaft, a crank-shaft *i*, a pinion *g* on the crank-shaft meshing with the teeth of the gear-wheel *f*, a connecting-rod *j*, an arm *l*, a shaft *m*, sleeves *n* secured to the shaft, hand-levers *b* passed through the sleeves and provided with pulleys *o*, chains passed round the pulleys and connected to a steering-quadrant *p'* secured to the fork of the steering-wheel, substantially as set forth.

7. In combination, the frame of the machine, the pedal-shaft, alternately-acting pedals on the shaft, a gear-wheel *f* on the pedal-shaft, a driving-wheel on the pedal-shaft, a crank-shaft *i*, a pinion *g* on the crank-shaft meshing with the teeth of the gear-wheel *f*, a connecting-rod *j*, an arm *l*, a shaft *m* split at its ends, sleeves *n* provided with laterally-movable arms *s* which fit telescopically into the split ends of the said shaft, hand-levers fitted in the sleeves *n*, and means for locking the arms *s* to the shaft *m*, substantially as set forth.

608,191. **APPARATUS FOR PRODUCING TRAVERSING MOTION OF OVERHEAD TRAVELING CRANES.** JOHN G. FIDGEON and EDWARD G. FIDGEON, Bedford, England. Filed Dec. 24, 1897. Serial No. 663,292. (No model.) Patented in England Dec. 12, 1896 No. 28,436.



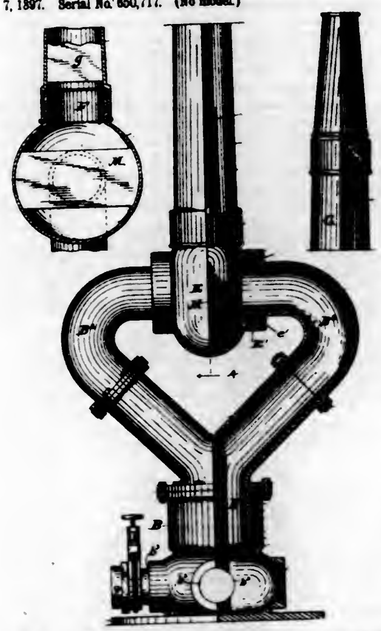
Claim.—1. In apparatus for producing the traversing motion of an electric overhead traveling crane, the combination of an electric motor fixed on the crane-girder, a high-speed shaft conveying power from said motor to reduction-gear situated at approximately the middle of the crane-girder, the said reduction-gear, and a cross-shaft receiving motion from said reduction-gear and coupled to the traveling wheels at both ends of the crane, substantially as hereinbefore described.

2. In apparatus for producing the traversing motion of an electric overhead traveling crane and having a cross-shaft coupled to the traveling wheels at both ends of the crane and having a high-speed shaft driving said cross-shaft through intermediate reduction-gear as hereinbefore described, the combination with said cross-shaft and said high-speed shaft of flexible couplings and swiveling bearings whereby liability of the "seizing" of said shafts owing to deflection of the main girder is obviated, substantially as set forth.

3. In apparatus for producing the traversing motion of an electric overhead traveling crane, the combination of an electric motor fixed at approximately one end of one of the main girders, a high-speed shaft conveying power from said motor, reduction-gear situated at approximately the middle of said girder and receiving motion from said high-speed shaft, and a cross-shaft receiving motion from said reduction-gear and coupled to the traveling wheels at both ends of the crane, whereby the gearing for operating the traversing motion can be placed close up to the web of said girder and the usual twist on the girder and consequent vibration are reduced, substantially as hereinbefore described.

608,192. UNIVERSAL NOZZLE FOR FIRES, LAWNS, &c.

John T. Glazier and Peter F. Glazier, Indianapolis, Ind. Filed Sept. 7, 1897. Serial No. 650,717. (No model.)



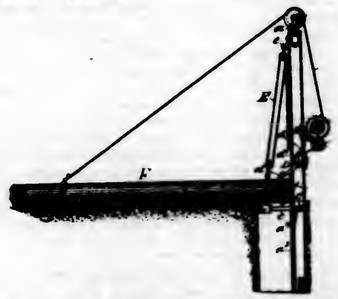
Claim.—1. The combination, with a pipe in two rotary adjustable sections, the lower of said sections having connection with a water-supply and the upper section being bifurcated and having outside separable bands at their ends, of a nozzle mounted between the bifurcated ends of the upper section of the pipe having rotative adjustment on said ends and internal communication therewith and having a wall or partition between the two supply-openings, threaded coupling-rings on the threaded ends of the nozzle, enveloping the flanged ends of the bifurcated pipe, and a compressible packing between each coupling-ring and flange, all substantially as described and for the purposes specified.

2. In a stand-pipe joint, an outside section of said pipe having an inside shoulder, an inner section of said pipe resting on said inside shoulder, an outside ring or flange secured to the end of the inner section of pipe, a ring above the flange having ball-bearings on said flange, a second ring above the flange separated therefrom by a compressible packing, the sides of both rings adjacent to the packing being beveled inwardly, a compressible packing, a third ring from the flange having ball-bearings on the second ring therefrom and means for holding the outer ring at a predetermined maximum distance from said shoulder, all substantially as described and for the purposes specified.

3. The combination, with a pipe in two rotary, adjustable sections having double ball-bearings in the joint between the two sections and a compressible packing in said joint which expands by the pressure of the water in the pipe, the lower of said pipe sections having connection with a water-supply and the upper section being bifurcated, of a nozzle mounted between the bifurcated ends of the upper section of the pipe and having rotative adjustment on said ends and having internal communication therewith, all substantially as described and for the purposes specified.

608,193. DERRICK FOR RAISING OR LOWERING TELEGRAPH-POLES.

Mifthorne T. Gordon, New York, N. Y., assignor of one-half to John L. Feeny, same place. Filed Feb. 17, 1898. Serial No. 670,607. (No model.)



Claim.—1. The combination, with a mast or post adapted to enter the hole designed for the telegraph or other pole, and devices for engagment with the interior of such hole for holding the mast or post in an upright position, of a winch, and a cord or chain for cooperating therewith whereby to raise or lower a telegraph or other pole, substantially as described.

2. The combination, with a mast or post adapted to enter a pole-hole, a bearing-plate at its lower end, a sheave at its upper end, and devices for engagement with the interior of such hole for holding the mast or post in an upright position, of a winch secured to such mast or post, and a cord or chain cooperating with said winch and sheave whereby to raise and lower a telegraph or other pole, substantially as described.

3. The combination, with a mast or post adapted to enter the hole designed for the telegraph or other pole, and provided with a sheave at its upper end, and devices for engagement with the interior of such hole for holding the mast or post in an upright position, of a winch secured to such mast or post, a cord or chain for cooperating with said winch and sheave for raising or lowering a telegraph or other pole, and a block and tackle, substantially as described.

4. The combination, with a mast or post adapted to enter a pole or other hole, and provided with both a sheave at its upper end and a longitudinal flange extending outward from the lower portion of its face, of devices for engagement with the interior of said hole for holding the mast or post in an upright position, a winch secured to said mast or post, a cord or chain for cooperation with the winch and sheave for raising or lowering a telegraph or other pole, and a block and tackle, substantially as described.

5. The combination, with a mast or post adapted to enter a pole or other hole, a sheave at its upper end, and devices for engagement with the interior of such hole for holding the mast or post in an upright position, of a winch secured to said mast or post, a cord or chain for cooperation with such winch and sheave for raising or lowering a telegraph or other pole, and a dog for engagement with the lower end of the pole to prevent it from lifting during the time that a pole is being either raised from a recumbent to a vertical position, or lowered from a vertical to a recumbent position, substantially as described.

6. The combination with a mast or post, adapted to enter a pole or other hole, a sheave at its upper end, a winch secured thereto, and a cord or chain for cooperation with such winch and sheave, of arms or struts extending outward from said mast or post, and provided with plates on their ends for engagement with the side of said hole whereby to hold the mast or post in an upright position during the raising or lowering of a pole, substantially as described.

7. The combination, with a mast or post adapted to enter a pole or other hole, of arms or struts jointed thereto and extending outward laterally therefrom, and plates hinged to the extremities of these arms or struts for engagement with the interior of said hole to hold the mast or post in a vertical position against lateral strain, substantially as described.

8. The combination, with a mast or post, adapted to enter a pole or other hole, a sleeve adapted to slide longitudinally thereon, and a screw for holding it in adjusted position, of arms or struts pivoted to such sleeve, and provided at their ends with curvilinear plates hinged thereon whereby the said arms or struts may be swung down into a horizontal position or upward beside the mast or post, substantially as described.

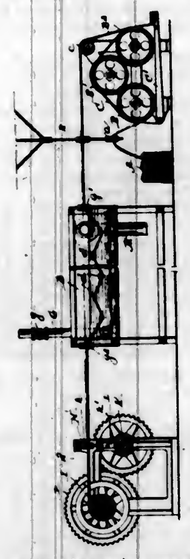
9. The combination, with a mast or post, and arms or struts jointed thereto and extending outward laterally therefrom, of curvilinear plates hinged to the extremities of such arms or struts, and provided with inwardly-extending flanges at their inner contiguous ends, and a bolt for passing through such flanges to secure the plates together, substantially as described.

10. The combination, with a mast or post, and a bracket for supporting the drum and the drum-operating shaft of the winch, gibbed to the mast or post so as to be adjustable upwardly and downwardly thereon, of a binding-screw for holding such bracket in adjusted position, substantially as described.

11. The combination, with a mast or post, and a sleeve adapted to slide up and down thereon, of a dog pivoted to said sleeve, and a binding-screw for holding this sleeve in adjusted position on the mast or post, substantially as described.

608,194. MERCERIZING APPARATUS.

John T. Greenwood, Philadelphia, Pa., assignor to himself, Daniel R. Greenwood, Horace T. Greenwood, and William Boult, same place. Filed Oct. 18, 1897. Serial No. 655,552. (No model.)



Claim.—1. In a machine for treating warp or yarn after treatment with alkali, in combination, a roller or spool, a tension device, a tank provided with water between the tension device and roller or spool, and suitable guides adapted to lead the warp or yarn over the tension device, through the tank, and onto the roller or spool, the warp or yarn being moved by the roller through the tank and wound upon itself against the action of the tension device.

2. In a machine for treating warp or yarn after treatment with alkali, in combination, a roller or spool, a tension device, a washing-tank between the tension device and the roller or spool, rods submerged in said tank, and suitable guides adapted to lead the warp or yarn over the tension device, through the washing-tank, and onto the roller or spool, said warp or yarn being interlaced with the rods, the warp or yarn being moved by the roller through the tank and wound upon itself against the action of the tension device.

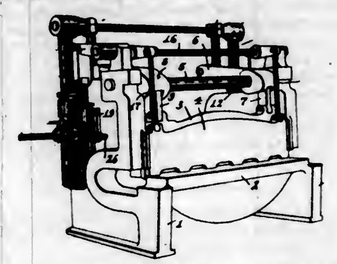
3. In a machine for treating warp or yarn after treatment with alkali, in combination, a roller or spool, a tank adapted to contain water through which the warp or yarn is adapted to pass, said warp or yarn being adapted to be wound on the roller or spool, and a tension device adapted to maintain the warp or yarn under tension while passing through the tank and being wound on the roller or spool.

4. In a machine for treating warp or yarn after treatment with alkali, in combination, a roller or spool, a tank adapted to contain water through which the warp or yarn is adapted to pass, said warp or yarn being adapted to be wound on the roller or spool, and a tension device adapted constantly to maintain the warp or yarn under tension while passing through the tank and upon the spool or roller.

5. In a machine for treating warp or yarn after treatment with alkali, in combination, a roller, or spool, a tank adapted to contain water, through which the warp or yarn is adapted to pass, said warp or yarn being adapted to be wound on the roller or spool, and a tension device adapted to maintain a constant tension upon the warp or yarn while passing through the tank and on the roller or spool.

608,195. HYDRAULIC SHEARING-MACHINE.

George Guild, Cambridge City, Ind., assignor to Bertsch & Co., same place. Filed Dec. 4, 1897. Serial No. 660,754. (No model.)



Claim.—1. In a hydraulic shearing-machine, the combination, substantially as set forth, with housings, a shear-gate, and a rock-shaft journaled in the housings over the shear-gate, of power-levers on the rock-shaft and having forwardly and rearwardly extending arms, connections between the forward arms of said power-levers and the shear-gate, a wrist-bar linked to the rear arms of both said power-levers, and a power-cylinder having its bar connected with one end of said wrist-bar.

2. In a hydraulic shearing-machine, the combination, substantially as set forth, with housings, a shear-gate, and a rock-shaft journaled in the housings over the shear-gate, of power-levers on the rock-shaft and having forwardly and rearwardly extending arms, connections between the forward arms of said power-levers and the shear-gate, a wrist-bar linked to the rear arms of both said power-levers, and a pair of power-cylinders each having an arm connected with one end of said wrist-bar.

3. In a hydraulic shearing-machine, the combination, substantially as set forth, with housings, a shear-gate, and a holddown-gate, of a holddown-cylinder having its ram mechanically connected with said holddown-gate, a power-cylinder having its ram mechanically connected with said shear-gate, a pipe leading from said holddown-cylinder to said power-cylinder, and a supply-pipe and exhaust-pipe connected with said holddown-cylinder whereby the water operating the power cylinder must enter and exhaust through the holddown-cylinder.

4. In a hydraulic shearing-machine, the combination, substantially as set forth, with housings, a shear-gate, and a holddown-gate, of a holddown-cylinder having its ram mechanically connected with said holddown-gate, a pair of power-cylinders having their rams mechanically connected with said shear-gate, pipes leading from said holddown-cylinder to each of said power-cylinders, and a supply-pipe and exhaust-pipe connected with said holddown-cylinder, whereby the water operating both said power-cylinders must enter and exhaust through the holddown-cylinder.

5. In a hydraulic shearing-machine, the combination, substantially as set forth, with housings, a shear-gate and a power-cylinder having an inlet-opening near its base, of a ram working in said power-cylinder and mechanically connected with said shear-gate and having its lower end arranged to overrun said inlet opening and having longitudinal grooves at its lower end.

608,196. TAP-HOLE BUSHING.

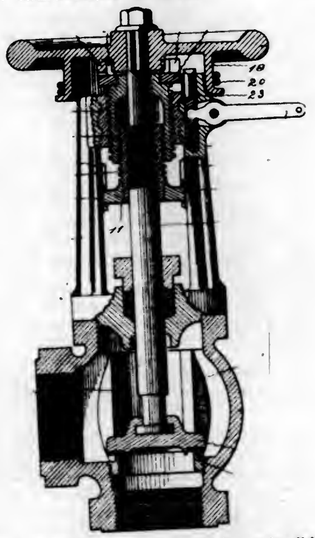
Conrad Hanner, Buffalo, N. Y. Filed Oct. 18, 1897. Serial No. 655,529. (No model.)



Claim.—A tap-hole device comprising a bushing, adapted to receive a bung of elastic material, and to be seated in the opening in the barrel, or keg, and provided with a screw-threaded upper opening terminating in a comparatively short central circular opening of reduced circumference which in turn terminates at its lower extreme in a groove having its upper edge extending at substantially a right angle to said opening, and its lower edge inclining diagonally downward from the upper edge, said groove terminating in a lower circular opening of slightly-larger circumference than the upper opening, a middle portion also provided with an upper central screw-

threaded opening, merging in a circular opening of smaller diameter and an exterior screw-threaded portion adapted to screw into the screw-threaded opening in the bushing, a rubber packing interposed between the top of the bushing and the middle portion, an upper portion also provided with a central opening and an exterior screw-thread adapted to screw into the screw-threaded opening in the middle portion, a vent provided with a one-way valve attached to said middle portion, and a hollow contractile ring between the middle portion and the upper portion forming an air-cushion and adapted to have the circumference of its interior contracted by screwing down the upper portion, and adapted to be contracted around the tap to insure a tight joint without interfering with its easy insertion by hand, as set forth.

608,197. **THROTTLE-VALVE.** WILLIAM F. HARRISON, Hartford, Conn., assignor to the Pratt & Cady Company, same place. Filed Sept. 30, 1897. Serial No. 653,582. (No model.)



Claim.—1. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, a sleeve with a thread fitting a thread on the spindle whereby longitudinal movement is imparted to the spindle when the spindle is rotated, and a connection between the spindle and the sleeve whereby the sleeve is also given a longitudinal movement when the spindle is rotated, substantially as specified.

2. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, an inner sleeve with a thread fitting a thread on the spindle whereby longitudinal movement is imparted to the spindle when the spindle is rotated, an outer sleeve connected with the inner sleeve, and a connection between the spindle and the outer sleeve whereby the inner sleeve is also given a longitudinal movement when the spindle is rotated, substantially as specified.

3. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, an inner sleeve with a thread fitting a thread on the spindle, an outer sleeve connected with the inner sleeve, and means for rotating and also for moving longitudinally the outer sleeve when the spindle is rotated, substantially as specified.

4. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, an inner sleeve with a thread fitting a thread on the spindle, an outer sleeve with a thread fitting a thread on the inner sleeve, and means for rotating and moving longitudinally the outer sleeve when the spindle is rotated, substantially as specified.

5. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, an inner sleeve with a thread fitting a thread on the spindle, an outer sleeve with a thread fitting a thread on the inner sleeve, means for rotating and moving longitudinally the outer sleeve, and a trip device for automatically restraining the rotation of the outer sleeve, substantially as specified.

6. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, an inner sleeve with a thread fitting a thread on the spindle, an outer sleeve with a thread fitting a thread on the inner sleeve, a hand-wheel connected with the spindle, and lugs connected with the hand-wheel and with the outer sleeve arranged to engage when the hand-wheel is rotated, substantially as specified.

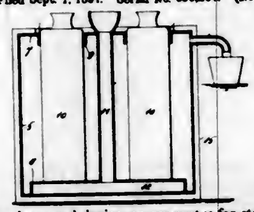
7. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, an inner sleeve with a thread fitting a thread on the spindle, an outer sleeve with a thread fitting a thread on the inner sleeve, a hand-wheel connected with the spindle, lugs connected with the hand-wheel and with the outer sleeve arranged to engage when the hand-wheel is rotated, and a catch connected with the frame and arranged to temporarily engage a lug connected with the outer sleeve, substantially as specified.

8. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, an inner sleeve with a thread fitting a thread on the spindle, an outer sleeve with a thread fitting a thread on the inner sleeve, a hand-wheel connected with the spindle, lugs connected with the hand-wheel and with the outer sleeve arranged to engage when the hand-wheel is rotated, a catch connected with the frame and arranged to temporarily engage a lug connected with the outer sleeve, and a lever for tripping the catch, substantially as specified.

9. A throttle-valve having a body, a valve-disk within the body, a spindle connected with the disk, an inner sleeve with a thread fitting a thread on the spindle, an outer sleeve with a thread fitting a thread on the inner sleeve, a hand-wheel connected with the spindle, lugs projecting from the hand-wheel and from a part connected with the outer sleeve and arranged to engage when the hand-wheel is rotated, a drum connected with the hand-wheel, means for rotating the drum, and a catch for temporarily holding the drum against rotation, substantially as specified.

10. A throttle-valve having a body, a main valve-disk within the body, a supplemental valve-disk mounted upon the main valve-disk and adapted to have a small motion independently thereof, a spindle connected with the supplemental disk, a sleeve with a thread fitting a thread on the spindle whereby longitudinal movement is imparted to the spindle when the spindle is rotated, and a connection between the spiodle and the sleeve whereby the sleeve is also given a longitudinal movement when the spindle is rotated, substantially as specified.

608,198. **MILK-STERILIZER.** RICHARD T. HEWLETT, London, England. Filed Sept. 1, 1897. Serial No. 650,267. (No model.)



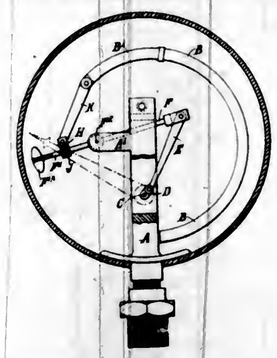
Claim.—An improved device or apparatus for sterilizing milk and for analogous purposes, comprising a closed vessel or receptacle having openings in its top through which corresponding bottles or similar vessels are adapted to be inserted, said vessel or receptacle being interiorly provided with a raised bottom forming a supplementary base-chamber and having a perforated top arranged with relation to the openings in the top of the vessel or receptacle and adapted to form a support for the bottles or similar vessels when the latter are inserted into position within the sterilizing device, a tube being arranged to extend between said supplementary base-chamber and the top of the vessel or receptacle and having an outlet through the closed top of the latter, and an overflow pipe or outlet being arranged to extend from the top portion of the vessel or receptacle, substantially as and for the purpose set forth.

608,199. **PRESSURE AND VACUUM GAGE.** JOHN JACKSON, London, England, assignor of one-half to Ambrose Stevens Vose, Boston, Mass. Filed Apr. 1, 1897. Serial No. 630,264. (No model.)

Claim.—1. In a pressure or vacuum gage, the combination with the curved tube or tubular chamber and with the arbor that carries the index or pointer, of a double-armed pivoted lever having one arm longer than the other, a link positively connecting the short arm of said lever to said tube or chamber, a crank-arm on said arbor, another link positively connecting said crank-arm with the long arm of said lever, and a counterweight for the long arm of the lever mounted on the short arm of said lever, substantially as and for the purpose specified.

2. In a pressure or vacuum gage, the combination of a curved tube or chamber, an arm extending from the free end of said tube

or chamber, a double-armed lever turning about a fixed pivot or axis, an adjustable block or piece on one arm of said lever, a link connecting said block or piece with said arm or extension of the tube or chamber, the arbor for the index or pointer, a crank-arm fixed on said arbor and another link connecting said crank-arm with the other arm of said lever, substantially as, and for the purposes, above specified.



608,200. **TOY CANNON.** JOHN R. JESTER, Church Creek, Md. Filed July 21, 1897. Serial No. 645,417. (No model.)

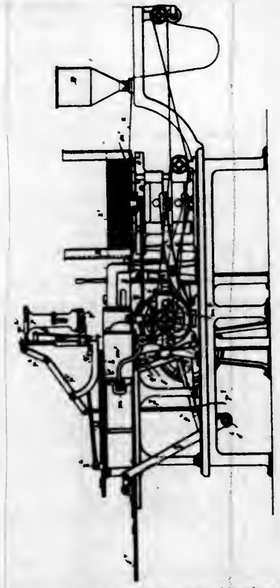


Claim.—1. In a toy of the character described, the combination with a suitable frame or carriage having an inclined rear portion provided with notches, a cannon pivotally secured to said frame or carriage and formed of a stationary forward portion and a rear or movable breech portion, a plunger secured to said movable portion and extending into the bore of the cannon and provided at its forward end with a cup adapted to receive the ball or missile, elastic bands connecting the movable portion with the frame or carriage, a spring secured to the under side of the cannon and having an arm extending upwardly between the stationary and movable portions of the cannon, the upper end of said arm being adapted to enter a notch in the plunger to maintain the same in position for firing, a cross-bar adapted to rest in the notches in the rear portion of the carriage to maintain the cannon at any desired elevation, substantially as and for the purpose set forth.

2. In a toy of the character described, the combination with a suitable frame or carriage provided with an inclined rear portion provided with notches, a cannon pivoted in said frame or carriage and comprising a pivoted forward portion, a rearwardly-movable breech portion, a plunger secured to said breech portion and extending into the bore of the forward portion, eyes formed on the ends of the trunnions, and eyes upon the breech portion of the cannon, elastic bands connecting the eyes upon the trunnions and the eyes upon the breech portion, a spring secured to the under side of said cannon provided with a vertical arm adapted to enter a notch or notches in the plunger for the purpose described, a cross-bar adapted to rest in the notches in the rear portion of the carriage, whereby the cannon is maintained at any desired angle, a key adapted to be inserted between the upper portion of the spring and the under side of the cannon and be partially turned to disengage the spring from said notch and fire the cannon, an elastic disk or washer interposed between the pivoted portion and the breech portion of the cannon, substantially as and for the purpose described.

608,201. **BOX-MAKING MACHINE.** EVERARD KEUNEN, Eindhoven, Netherlands, and RICHARD HÖPFELDT, Dusseldorf, Germany. Filed Mar. 11, 1897. Serial No. 626,951. (No model.) Patented in Germany July 30, 1895, No. 90,155; in France Aug. 5, 1895, No. 249,402; in England Aug. 6, 1895, No. 15,063, and in Belgium Aug. 10, 1895, No. 116,951.

Claim.—1. A box-making machine composed of means for attaching a paper band to a strip of cardboard or other material, means for carrying the strip to a fixed former, means for bending the strip around the former, means for feeding and holding a box-head to the former, and means for turning down the projecting ends of the paper band to complete the box, substantially as specified.



2. In a box-making machine, the combination of tongue *f*, for feeding the blank, with slide *m*, for feeding the box-head, a former *g*, grippers *k*, *l*, for bending the blank around the former, means for turning down the projecting ends of the paper covering and attaching them to the box sides and head, and a stripper for stripping the box off the former, substantially as specified.

3. In a box-making machine, the combination of a blank-magazine having a sliding bottom, with a vertically-movable table for supporting the paper covering and the superposed box-blank, a shelf above said table, a vertically-movable bar for turning up the projecting end of the paper covering, and a roller for pressing such end upon the surface of the blank, substantially as specified.

4. In a box-making machine, the combination of a fixed former with a pair of slides f^4, f^5, engaging one another and of which one is positively driven, and a tongue pivotally connected to both of the slides, all being so constructed that the tongue will open to engage the blank, and will close to draw it under the former, substantially as specified.

5. In a box-making machine, the combination of a pivoted knife having a depending projection with a table upon which the projection is adapted to slide on its return stroke, and a pivoted inclined plane above the table on which the projection is adapted to slide on its forward stroke, substantially as specified.

6. In a box-making machine, the combination of a former with a pivoted slide *m*, for feeding the box-head, a reciprocating slide m^2, for actuating the slide *m*, and a rod *n*, having a spring-nose that holds the box-head against the former, substantially as specified.

7. In a box-making machine, the combination of a former with a pair of lateral grippers *k*, for laying the blank around the sides of the former, a pivoted upper gripper *l*, for laying the blank around the top of the former, and means for throwing the upper gripper outwardly while advancing and inwardly while receding, substantially as specified.

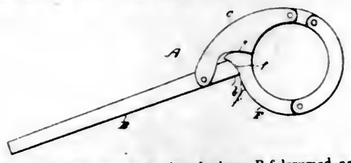
8. In a box-making machine, the combination of a former with a lower plate *u'*, upper gripper *p*, lateral gripper *p'*, and interlocked spring-arms *o*, for folding the paper strip against the sides and head of the box, substantially as specified.

9. In a box-making machine, the combination of a notched former with a slide *s*, engaging the same, and with arms *r*, having plate *r'*, for folding the paper strip into the box, substantially as specified.

10. A box-making machine composed of means for attaching a paper band to a strip of cardboard or other material, means for carrying the strip to a fixed former, means for bending the strip around

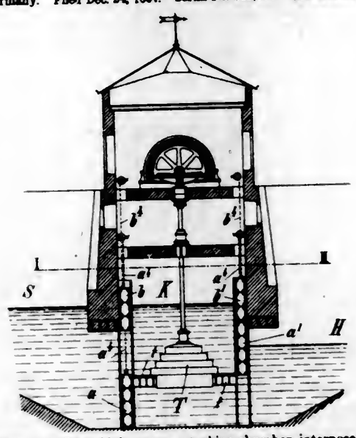
the former, means for feeding and holding a box-head to the former, means for turning down the projecting ends of the paper band to complete the box, and a stripper embracing the former and adapted to push the box off the same, substantially as specified.

608,202. PIPE-WRENCH. ADAPH M. KLECKNER, Findlay, Ohio. Filed Sept. 30, 1896. Serial No. 607,384. (No model.)



Claim.—A link wrench having the lever B fulcrumed near the end of one terminal link and provided with an end cam which works in a cavity *f* of another end link, the lever being thus allowed to be turned beyond a right angle to the pipe as and for the purpose set forth.

608,203. TIDAL MOTOR. JOHANN F. R. KNOBLOCH, Hamburg, Germany. Filed Dec. 24, 1897. Serial No. 663,391. (No model.)



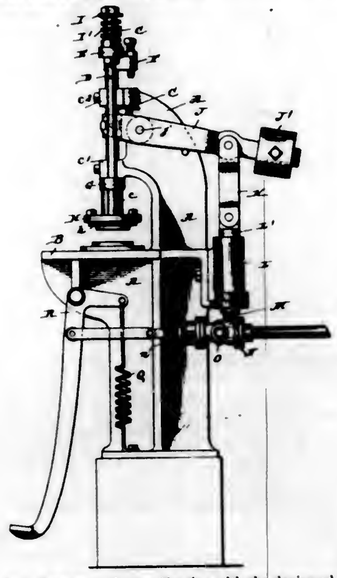
Claim.—1. In a tidal motor, a turbine-chamber interposed between the sea and a reservoir on land, a turbine revoluble in fixed bearings in said chamber, a chamber below the turbine and communicating therewith, said turbine-chamber and the chamber below it being provided with waterways facing the sea, and reservoir, respectively, and a gate for each two of said waterways adapted to close or more or less close one and open or more or less open the other of said two waterways, for the purpose set forth.

2. In a tidal motor, a turbine-chamber interposed between the sea and a reservoir on land, a turbine revoluble in fixed bearings in said chamber, a chamber below the turbine and communicating therewith, said turbine-chamber and the chamber below it being provided with waterways facing the sea and reservoir, respectively, and a gate for each two of said waterways adapted to close or more or less close one, and open or more or less open the other of said two waterways, in combination with regulating devices for regulating the difference in the level of the water on opposite sides of the turbine-chamber, for the purpose set forth.

3. In a tidal motor, a turbine-chamber interposed between the sea and a reservoir on land, a turbine revoluble in fixed bearings in said chamber, a chamber below the turbine and communicating therewith, said turbine-chamber and the chamber below it being provided with waterways facing the sea and reservoir, respectively, and a gate for each two of said waterways adapted to close or more or less close one, and open or more or less open the other of said two waterways, in combination with auxiliary gates adapted to close or more or less close the waterways in the turbine-chamber, for the purpose set forth.

608,204. GLASS-PRESS. GEORGE B. LAMB, Waterbury, Conn., assignor to the Hero Fruit Jar Company, Philadelphia, Pa. Filed Dec. 6, 1897. Serial No. 660,833. (No model.)

Claim.—1. In a glass-press, the combination with the device adapted to support the movable part of the mold and reciprocate it toward and from the fixed part of the mold of a lever connected to said moving part and normally tending to hold the movable part in its retracted position, a piston connected to said lever, a cylinder for said piston and connection between the pressure-supply and said cylinder at one side of said piston whereby the movement of the piston by pressure medium operates upon said lever to move the movable part of the mold into operative position.



2. In a glass-press, the combination with the device adapted to support the movable part of the mold and reciprocate it toward and from the fixed part of the mold, of a lever connected to said moving part and normally tending to hold the movable part in its retracted position, a piston connected to said lever, a cylinder for said piston and connection between the pressure supply and said cylinder at one side of said piston whereby the movement of the piston by pressure medium operates upon said lever to move the movable part of the mold into operative position, and an exhaust for said cylinder at the same side of said piston.

3. In a glass-press, the combination with the device adapted to support the movable part of the mold and reciprocate it toward and form the fixed part of the mold, of a lever connected to said moving part and normally tending to hold the movable part in its retracted position, a piston connected to said lever, a cylinder for said piston and connection between the pressure-supply and said cylinder at one side of said piston whereby the movement of the piston by pressure medium operates upon said lever to move the movable part of the mold into operative position, and an exhaust for said cylinder at the same side of said piston, and a valve adapted in its movement to open the connection from pressure-supply to said cylinder and close the exhaust, and to open the exhaust and close the connection to the pressure-supply.

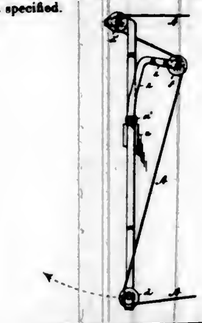
608,205. CLOTHES-LINE HANGER. REINHOLD LUCKNER and NIKOLAUS LUCKNER, New York, N. Y. Filed Jan. 31, 1898. Serial No. 668,572. (No model.)

Claim.—1. A clothes-line hanger composed of a lever, pulleys at the ends of the same, a fixed arm extending forwardly from the lever-fulcrum, and a pulley carried by such arm, substantially as specified.

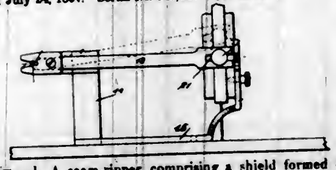
2. A clothes-line hanger composed of a lever having arms of unequal length, pulleys at the ends of the same, a bar for pivotally supporting the lever, a fixed arm projecting upwardly and forwardly from such bar, and a pulley carried by the outer end of the arm substantially as specified.

3. A clothes line hanger composed of a lever, pulleys at the ends of the same, a bar for pivotally supporting the lever, a fixed arm projecting forwardly from such bar, a pulley carried by the outer end of the arm, and a spring-latch for locking the lever in its terminal positions, substantially as specified.

4. A clothes-line hanger composed of a lever, pulleys at the ends of the same, a divided bar for pivotally supporting the lever, and having a pair of interlocking jaws, a fixed arm projecting forwardly from such bar, and a pulley carried by the outer end of the arm, substantially as specified.



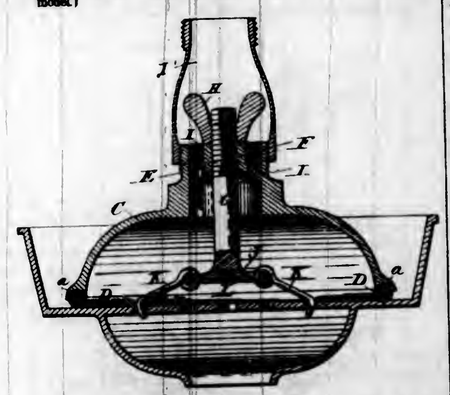
608,206. SEAM-RIPPER. LEMUEL MERRILL, Melrose, Mass. Filed July 24, 1897. Serial No. 645,847. (No model.)



Claim.—1. A seam-ripper, comprising a shield formed of two opposing plate members slightly separated in the body thereof and tapering to a contact at one edge, said plates having a tapering notch in this edge terminating in a circular enlargement, and the cutter-blade having a rounded sharpened end and pivoted between said members to reciprocate across said notch.

2. A seam-ripper, comprising a shield formed of a plate bent upon itself, the halves in the main being parallel and slightly separated but tapering to a sharp edge at the bend, said shield having a saw-toothed notch formed therein across the apex of the bend and terminating in an enlargement, a base supporting the same and adapted to be secured to a sewing machine table, a cutter-blade having a sharpened end extending into the apex of the shield and pivoted between the two parts thereof to reciprocate across the notch therein and a rearward extension to said blade adapted to be secured to a reciprocating member of a sewing-machine.

608,207. WASTE OR SINK PIPE CLEANER. GEORGE W. MERRITT, Millbrook, N. Y. Filed May 13, 1898. Serial No. 681,420. (No model.)



Claim.—1. The combination with a metallic pressure-cup having an annular channel at its lower edge and a gasket seated therein, terminating at its upper end in an exteriorly-threaded tubular portion, of a spider extending from said tubular portion and having a boss, a spindle passed through said boss, a wing-nut upon the upper end of said spindle, said spider being provided with openings, a disk-like projection on the lower end of the spindle, and hooks pivotally mounted on said disk-like portion, substantially as described.

2. The combination with a metallic pressure-cup having an annular channel at its lower edge and a gasket seated therein, terminating at its upper end in an exteriorly-threaded tubular portion, of a spider extending from said tubular portion and having a boss, a spindle passed through said boss, a wing-nut upon the upper end of said spindle, said spider being provided with openings, a disk-like projection on the lower end of the spindle, and hooks pivotally mounted on said disk-like portion, the lower end of said spindle being provided with a screw-threaded socket, and a detachable screw engaged therewith, substantially as described.

3. The combination with a bell terminating at its upper end in an exteriorly-threaded tubular portion, of a spider extending from said tubular portion and having a boss, a spindle passed through said boss, a nut upon the upper end of said spindle, said spider being provided with openings, a head on the lower end of the spindle, and hooks pivotally mounted on said head.

608,208. RAIL-JOINT. WILLIAM H. MILLS, Westfield, N. Y. Filed Mar. 28, 1898. Serial No. 675,452. (No model.)



Claim.—1. The combination with a chair having an upwardly-projecting portion provided with a groove in its side face, of a bar disposed in said groove, keys engaging said upwardly-projecting portion of the chair and said bar, and plates adapted to be disposed between said bar and the rail-sections on the chair, substantially as set forth.

2. The combination with a chair having an upwardly-projecting portion provided with a groove in its inner face, of grooved plates adapted to bear against abutting rail-sections, one plate for each rail-section, a bar disposed in said grooved plates and in the groove in the upwardly-projecting portion of the chair, and keys engaging said upwardly-projecting portion of the chair and said bar, substantially as set forth.

3. The combination with a chair having an upwardly-projecting portion adapted to extend beyond the abutting ends of two rail-sections, said upwardly-projecting portion of the chair having a longitudinal groove and transverse notches in its inner face, of a grooved plate adapted to rest against each rail-section and having transverse notches, a bar extending from end to end of the chair and disposed in the longitudinal groove therein and in the grooved plates, said bar having transverse notches, and keys passing through the transverse notches in the extension on the chair, the grooved plates and the bar, substantially as set forth.

4. The combination with a chair having an upward extension, rail-sections seated on the chair and having transverse holes in their webs and curved plates adapted to rest against the sides of the respective rail-sections, of pins projecting from said plates and passing through the holes in the webs of the rail-sections, a bar disposed between the curved plates and the extension on the chair, and transverse keys engaging said extension on the chair and said bar, substantially as set forth.

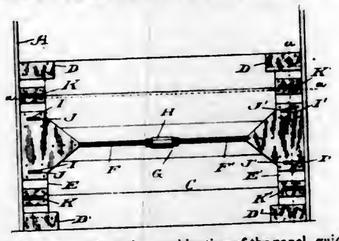
5. The combination with a chair having an upward extension and rail-sections seated on said chair, of plates adapted to bear against the rail-sections, a bar having bearings at its respective sides in said plates and said upward extension on the chair and keys passing through the chair and said plates and bar, substantially as set forth.

6. The combination with a chair having an upward extension provided with notches, and rail-sections seated on said chair, of plates adapted to bear against said rail-sections, a bar disposed in said plates and upward extension on the chair, keys passing through the chair and bar, and a head on each key adapted to be seated in the notches in said upward extension of the chair, substantially as set forth.

608,209. GANGWAY-DOOR FOR BOX-CARS OR STEAMBOATS. JAMES MCALLISTER, Owen Sound, Canada. Filed Feb. 23, 1898. Serial No. 671,228. (No model.)

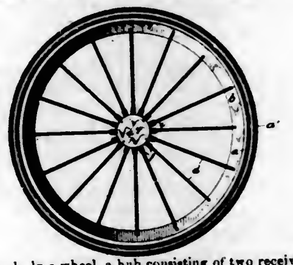
Claim.—1. A gangway-door embracing in its construction a panel, two bolt-carrying-plates, one located at each side of the panel, guides connected to the panel to slidably hold the bolt-carrying plates, a screw-threaded shank extending rearwardly from each of the bolt-carrying plates, a turnbuckle coupling the ends of the screw-threaded shanks, bolts connected to the bolt-carrying plates, an L-shaped plate connected to each side of the doorway or gangway, one flange of which is

connected to the frame, and the other flange of which stands at right angles thereto, sockets or holes formed in the flanges to receive the bolts when the panel is placed in position, substantially as specified.



2. In a gangway-door the combination of the panel, guides connected to the panel, bolt-carrying plates sliding in the guides, oppositely-threaded shanks extending rearwardly from the bolt-carrying plates, a turnbuckle coupling the ends of the screw-threaded shanks, slots formed in each of the bolt-carrying plates, pins connected to the panel extending through the slots, bolts carried by each of the bolt-carrying plates with the door-frame, L-shaped plates connected to the door-frame, and located one at each side of the doorway, one flange of each plate extending inwardly parallel with the opening, bolt holes or sockets formed in each flange to receive the bolts carried by the bolt-carrying plates, substantially as specified.

608,210. VEHICLE-WHEEL. CHARLES H. MCCOY, Dehaven, Pa. Filed June 15, 1897. Serial No. 640,809. (No model.)

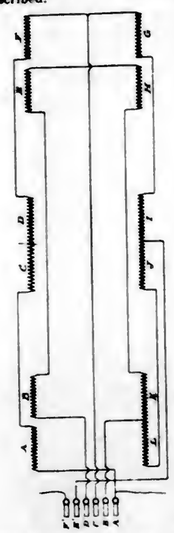


Claim.—1. In a wheel, a hub consisting of two receiving-boxes, an intermediate portion of less diameter than said receiving-boxes, and formed integral therewith, screw-threaded bearing-blocks engaging the ends of said receiving-boxes, and provided with V-shaped grooves, recesses formed in the rear of said receiving-boxes, nipples engaging said recesses, each of said nipples being provided with a shank, a head formed on the end of the shank, a resilient gasket engaging said shank and operating against the inside of said receiving-boxes, a sectional washer secured to said receiving-box, whereby said nipples are secured in the recesses, screw-threaded spokes engaging the nipples, the opposite ends of said spokes being provided with hooked ends, engaging an inwardly-projecting flange formed integral with the rim, substantially as shown and described.

2. In a wheel, a hub consisting of the two boxes *h*, an intermediate portion of less diameter than said boxes *h*, and formed integral therewith, recesses formed in the rear portion of said boxes, nipples engaging said recesses, said nipples being formed with a shank *f'* and a head *f*[3] formed on the end thereof, a resilient gasket engaging said shank and operating against the inner face of the box *h*, spokes secured in the nipples, the opposite ends of said spokes engaging an inwardly-projecting flange formed integral with the rim, a screw-threaded bearing-block engaging the ends of said box *h* and provided with a V-shaped groove, and suitable bearings for the axle engaging said groove, substantially as shown and described.

608,211. SYSTEM FOR HEATING BY ELECTRICITY. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed Nov. 16, 1892. Serial No. 452,136. (No model.)

Claim.—1. In an electric-heating system, the combination and arrangement of a plurality of heaters, consisting respectively of a plurality of heating-sections, some of said sections in said heaters so connected that they may be supplied in one circuit and the remaining sections in said heaters in another circuit, whereby different sections in the same heater may be connected in different circuits, with an electric switch, by means of which the connections may be varied, substantially as described.

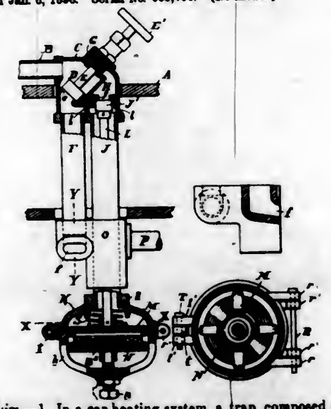


2. In an electric heating system, the combination and arrangement of a plurality of heaters, consisting respectivaly of a plurality of heating sections, with single heaters consisting of but one heating-section, so connected that the single heaters may be placed in either circuit in which the heating-sections in the heaters containing a plurality of heating-sections may be placed, with means for varying the connections, substantially as described.

3. In a electric-heating system, the combination and arrangement of a plurality of heaters, consisting respectively of a plurality of heating-sections, sections in each heater being connected with sections in the other heaters in such a manner that one section in one heater is connected with a section in another heater, so that the sections in the same heater will be separately arranged in separate circuits, with means for varyiug the connections, substantially as described and for the purposes set forth.

4. In an electric-heating system, a plurality of heaters, each made up of a multiplicity of heater sections, each of the heater-sections arranged to be connected up in separate circuits, with means for varying the connections substantially as described.

608,212. CAR-HEATING SYSTEM. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed Jan. 6, 1898. Serial No. 665,796. (No model.)



Claim.—1. In a car-heating system, a trap, composed of a casing provided with two chambers, communicating with each other through a perforated fitting and also communicating with the discharge connection of said car-heating system, a blow-out pipe communicating with one of said chambers, a valve adapted to close the opening between said blow-out pipe and the chamber with which it communicates, the other of said chambers communicating with a fitting carrying a thermostatic cell, a spider-plate arranged in contact with the diaphragm of said thermostatic cell, a valve-stem connected with said spider-plate, a valve on said valve-stem arranged to close the communication between one of said chambers and the fitting carrying the thermostatic cell or to open the same, depending upon the action of said diaphragm, and a hot metallic connection between the blow-out pipe and the fitting carrying said thermostatic cell and the receptacle containing the hot steam of the car-heating system, substantially as described.

2. In a car-heating system, a trap consisting of a casing provided with two chambers, communicating with each other through a perforated fitting, and also communicating with the discharge connection of said car-heating system, a blow-out pipe communicating with one of said chambers, a valve adapted to close the opening between said blow-out pipe and the chamber with which it communicates, a tube connecting the other of said chambers with a fitting containing a thermostatic cell, a valve adapted to close the opening between said tube and said chamber, a valve-stem connecting said valve with a spider-plate, said spider-plate arranged to rest upon the diaphragm of said thermostatic cell, guides placed in said tube, arranged to direct said valve to its seat, a fitting carrying said thermostatic cell composed of two parts hinged together, an adjustable plate in said fitting adapted to hold said thermostatic cell in position, a hot metallic connection between said blow-out pipe and said tube connected with a pipe communicating with the trale-pipe, all substantially as described.

3. In a thermostatic trap, a receptable for holding a diaphragm, consisting of two members hinged together, with a means for locking the same in position, spiders for holding the diaphragm in position, said diaphragm constructed of spring metal, a means for adjusting said spiders in connection with said diaphragm, said receptacle provided with openings therethrough allowing for the circulation of air, a valve-stem operated by said diaphragm, so arranged that the receptacle may be opened and the spiders, diaphragm and valve-stem removed or placed in position, substantially as described.

4. In a trap, a casing containing a sediment-basin, a valve for blowing out dirt from the sediment-basin, a perforated fitting placed in the overflow of said sediment-basin, and so arranged that said fitting can be removed for cleaning by taking out the bonnet of the valve and without disconnecting the trap, combined with an overflow-basin and a valve at the discharge end of said overflow-basin controlled by a thermostatic cell, substantially as described.

5. A trap composed of a casing provided with a port connecting to a heating system, an overflow-basin, a sediment-basin located in the line of flow from the heating system to the overflow-basin, a perforated fitting between said sediment-basin and said overflow-basin, a blow-out pipe controlled by a valve communicating with the sediment-basin, the overflow-basin provided with a valve controlled by a thermostatic cell, substantially as described.

6. In a car-heating system, a trap communicating with the discharge end of said system, said trap composed of a casing provided with a sediment-basin placed in the floor of the car, a blow-out pipe connected to the bottom of said sediment-basin, a partition separating the sediment-basin from an overflow-basin, the upper part of said partition perforated, said overflow provided at its bottom with a valve controlled by a thermostatic cell, substantially as described.

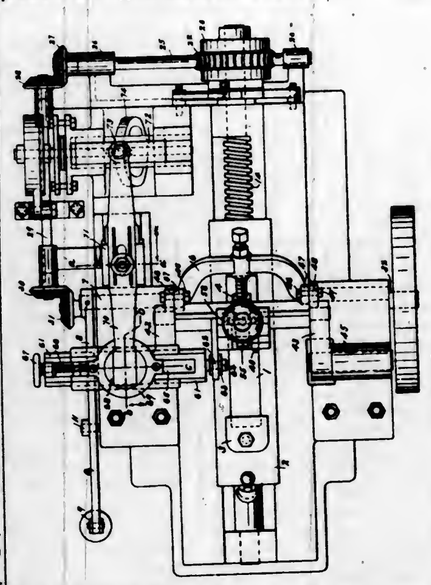
7. In a car-heating system, a steam-supply pipe, a trap connected with the discharge end of said heating system, said trap consisting of a casing provided with a sediment-basin having a blow-out pipe controlled by a valve, an overflow-basin provided with a valve controlled by a thermostatic cell, a discharge-pipe communicating with the valve in said overflow-basin, a fitting provided with a steam-port communicating with the steam-supply pipe, said fitting also having a portion which surrounds or forms part of said discharge-pipe, substantially as described.

8. In a car-heating system, a steam-supply pipe, a system of circulating-pipes within the car, a thermostatic trap connected to the discharge end of said circulating system, said trap in hot metallic connection with the steam-supply pipe in such a manner that the casing of said trap shall be maintained at a temperature above the freezing of the circulating fluid but below the temperature at which the thermostatic trap operates, substantially as described.

608,218. RASP-MACHINE. JAMES A. MCHARDY, Providence, R. I., assignor to the Nicholson File Company, same place. Filed Oct. 4, 1897. Serial No. 653,982. (No model.)

Claim.—1. In a rasp-machine, the combination of a pivoted support, a head rigidly mounted on said support, means for mounting a cutter upon said head, and means whereby said head may be adjusted on said support to vary the angle at which the cutter enters the blank, substantially as described.

2. In a rasp-machine, the combination of a pivoted support, a head adjustably pivoted on said support, means for mounting a cutter on said head, and means for securing said head in its adjusted position on said support, substantially as described.



3. In a rasp-machine, the combination with a pivoted support, of a head pivoted on said support and provided with a slotted ear, a bolt passing through said slotted ear for securing said head to said support, and means for mounting a cutter on said head, substantially as described.

4. In a rasp-machine, the combination with a pivoted support, of a head pivoted on said support, means for securing said head to said support, a cutter-carriage mounted on said head, and means for moving said carriage on said head, substantially as described.

5. In a rasp-machine, the combination with two arms having their pivots in line, of a head pivoted between said arms, means for securing said head to said arms, means for mounting a cutter on said head, and means for rocking said arms on their pivots, substantially as described.

6. In a rasp-machine, the combination with two arms having their pivots in line, of a head connecting said arms, a cutter-carriage mounted on said head, means for moving said carriage on said head, and means for rocking said arms, substantially as described.

7. In a rasp-machine, the combination with a pivoted support, a head rigidly secured thereto and extending laterally therefrom substantially parallel to the axis of said support, and means for mounting a cutter upon said head, substantially as described.

8. In a rasp-machine, the combination with a pivoted support, a head extending therefrom substantially parallel to the axis of said support, a cutter-carriage mounted on said head and means for moving said carriage laterally on said head, substantially as described.

9. In a rasp-machine, the combination with a pivoted support, a head rigidly secured thereto and extending therefrom substantially parallel to the axis of said support, means for mounting a cutter on said head, one or more arms depending from said support, and means for oscillating said arm or arms, substantially as described.

10. In a rasp-machine, the combination with a lever and means for rocking said lever on its pivot, of a head rigidly secured thereto and extending from said lever substantially parallel to its axis, and means for mounting a cutter on said head, substantially as described.

11. In a rasp-machine, the combination with two pivoted arms having their pivots in line, and means for rocking said arms on their pivots, of a head connecting said arms, and means for mounting a cutter on said head, substantially as described.

12. The combination with two rotary members, of a spring connecting said members, means for rotating one of said members, and means for restraining and releasing the other member, substantially as described

13. The combination with a rotary member, of a spring for rotating said member, automatic mechanism for energizing said spring,

and means for restraining and releasing said spring, substantially as described.

14. The combination with a rotary member, of a spring connected to rotate said member, automatic mechanism for energizing said spring, and means for restraining and releasing said shaft, substantially as described.

15. The combination with two rotary members, of a spring connecting said members, means for continuously rotating one of said members, and means for restraining and releasing the other member, substantially as described.

16. The combination with two rotary members, of a spring connecting said members, means for rotating one of said members, ratchet-teeth connected with the other member, pawls for alternately engaging said teeth, and means for alternately operating said pawls, substantially as described.

17. The combination with two rotary members, of a spring connecting said members, means for rotating one of said members, ratchet-teeth connected with the other member, two pawls one of which engages a tooth when the other is half-way between two teeth, and means for operating said pawls, substantially as described.

18. The combination with two rotary members, of a spring connecting said members, a ratchet-wheel secured to one of said members, pawls arranged to alternately engage the teeth of said ratchet-wheel, and cams carried by the other member for operating said pawls, substantially as described.

19. The combination with a shaft, of a gear on said shaft, a spring connecting said gear and shaft, a ratchet-wheel secured to said shaft, two pawls one of which engages a tooth when the other is half-way between two teeth, and a series of cams secured to said gear for engaging said pawls, substantially as described.

20. The combination with a carriage, of a shaft for feeding the same, a spring for rotating said shaft, mechanism for energizing said spring, and means for restraining and releasing said spring, substantially as described.

21. The combination with a carriage, of a shaft for feeding the same, a rotary member, a spring connecting said shaft, and member, mechanism for rotating said member, and means for restraining and releasing said shaft, substantially as described.

22. The combination with a carriage, of a nut on said carriage, a shaft provided with a screw-thread engaging said nut, a spring for rotating said shaft, mechanism for energizing said spring, and means for restraining and releasing said spring, substantially as described.

23. The combination with a carriage, of a shaft for feeding the same, rotary member, a spring connecting said shaft and member, means for rotating said member, a ratchet-wheel on said shaft, pawls for alternately engaging the teeth of said wheel, and means for operating said pawls, substantially as described.

24. In a rasp-machine, the combination with a head, of a cutter-carriage mounted thereon, a slide connected with said carriage, a lever, a pivot connecting said slide and lever, a pivot for said lever, a second slide, a pivot connecting said slide and lever, means for reciprocating said second slide, and a sliding connection between said lever and two of said pivots, substantially as described.

25. In a rasp-machine, the combination with a head, of a cutter-carriage mounted thereon, a slide connected with said carriage, a lever, a pivot connecting said slide and lever an adjustable pivot for said lever, a second slide, a pivot connecting said slide and lever, means for reciprocating said second slide, and a sliding connection between said lever and two of said pivots, substantially as described.

26. In a rasp-machine, the combination with a head, of a cutter-carriage mounted thereon, a slide connected with said carriage, a lever, a pivot connecting said slide and lever, a pivot for said lever, a second slide, a pivot connecting said slide and lever, a cam for operating said second slide and a sliding connection between said lever and two of said pivots, substantially as described.

27. In a rasp-machine the combination with a head, of a cutter-carriage mounted thereon, a slide connected to said carriage, a pivot on said slide, a lever having a sliding connection with said pivot, an adjustable pivot with which said lever has a sliding connection, a second slide to which said lever is pivoted, and a cam for operating said second slide, substantially as described.

28. In a rasp-machine, the combination with a head, of a cutter-carriage mounted thereon, a slide connected to said carriage, a second slide mounted on said former slide, means for adjusting said slides with relation to each other, and means connected to said second slide for reciprocating said slides, substantially as described.

29. In a rasp-machine, the combination with a head, a cutter rigidly mounted on said head, means for operating said head to carry the point of the cutter through a definite path, a support on which said head is mounted, and means whereby said head may be adjusted on said support to vary the angle at which the cutter enters the blank, substantially as described.

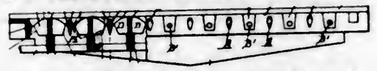
30. In a rasp-machine, the combination with a cutter, of a head on which said cutter is mounted, a pivot for said head so arranged that the point of the cutter is carried downward and with an inward sweep toward a plane passing through said pivot perpendicular to the blank, means for oscillating said head, and means for adjusting said cutter on said head to vary the depth to which the cutter enters the blank, substantially as described.

608,214. EYEGLASS-STUD. JOSEPH H. MASON, Somerville, Mass. Filed Sept. 4, 1896. Serial No. 604,874. (No model.)



Claim.—The improved eyeglass-stud above described comprising the shank *a*, arms *a' a'* attached to shank *a* and spring *b* held between arms *a' a'* and between the shank *a* and the lens of the eyeglass substantially as shown and described.

608,215. GRATE. DANIEL MORTON and SPENCER MERRIS, Troy, N. Y. Filed June 19, 1897. Serial No. 641,431. (No model.)

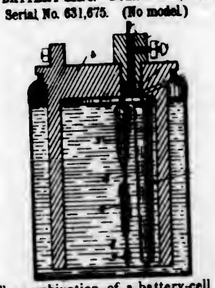


Claim.—1. In a grate, the combination with a series of rocking bars, of a corresponding series of resistance-bars, with the individual members of one series alternating with those of the other series and parallel therewith, and the axes of the rocking bars in approximately the same plane with the resistance-bars, a series of teeth projecting laterally from each of the two opposite sides of the several rocking bars almost to the neighboring resistance-bars and having their upper surfaces in a plane higher than the plane occupied by the upper surfaces of the resistance-bars and curved downwardly toward the resistance-bars, and means for rocking the toothed bars whereby the points of the teeth can be moved toward, from and along the side of a resistance-bar without being projected above the general level of the upper grate-surface, substantially as described.

2. In a grate, the combination with a resistance-bar tapered transversely on its upper side surfaces and beveled transversely on its lower side surfaces, of a rocking bar having its axis of movement in approximately the same horizontal plane with the resistance-bar, a series of teeth projecting from the rocking bar approximately to the resistance-bar, having the upper surface of the several teeth curved and the projecting end surfaces undercut or beveled, and means for rocking the toothed bar, whereby a cutting edge formed at the junction of the curved and beveled surfaces of a tooth is adapted to cooperate with a resisting edge at the junction of the upper and lower beveled surfaces on the resistance-bar, substantially as described.

3. In a grate, the combination with a pair of rocking bars provided each with a row of teeth projecting horizontally toward the other bar, having the teeth severally curved on their upper surfaces, of a resistance-bar beveled or tapered transversely on its upper side surfaces and cooperatingly interposed between the rocking bars but with its uppermost surface on a lower plane than the uppermost surface of the teeth, whereby a clinker-receiving channel is formed on the opposite sides of the interposed bar between the tapered bar and the curved teeth of the rocking bars, substantially as described.

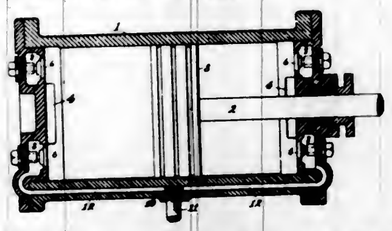
608,216. BATTERY-ZINC. DORA ODDEN, Columbus, Ind. Filed Apr. 12, 1897. Serial No. 631,675. (No model.)



Claim.—1. The combination of a battery-cell having a cover provided with an opening therethrough for the introduction of one of the electrodes, two or more electrodes with stems, a plug mounted in the cover and having an opening receiving the two or more stems, and means for securing said stems within said opening whereby the said electrodes may be suspended in the cell.

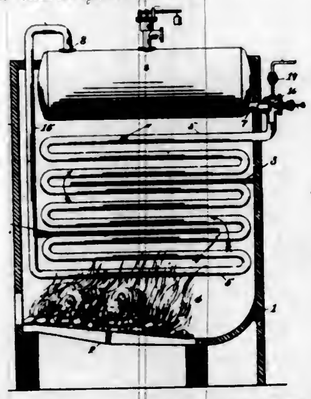
2. The combination of a battery-cell having a cover provided with an opening therethrough for the introduction of the electrodes, two or more electrodes with stems, and means for securing said stems within said opening whereby the said electrodes may be suspended within the cell.

608,217. RELIEF-VALVE. JOHN C. PARKER, San Francisco, Cal., assignor to the Parker Engine Company, same place. Filed June 10, 1897. Serial No. 640,137. (No model.)



Claim.—In a steam-engine, a relief valve or valves opening outward from the steam-cylinder or a passage therefrom and operated solely by fluid-pressure therein, in combination with a chamber in the rear of said valve, and a downwardly-extending passage communicating directly with the valve-box, steam-boiler or other source of initial pressure, whereby water entrapped in the cylinder will be returned to the steam-boiler or other vessel in communication therewith by superior pressure in said cylinder, substantially as specified.

608,218. STEAM-GENERATOR. JOHN C. PARKER, San Francisco, Cal., assignor to the Parker Engine Company, same place. Filed Aug. 20, 1897. Serial No. 648,906. (No model.)

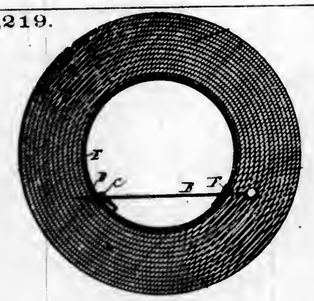


Claim.—In a steam-generator of the water-tube type, a steam-drum 6, a tubular passage-way 5 connected with the water-space of the said steam-drum, located in the fire-space, leading continuously downward from the coolest to the hottest portion of the said fire-space, and thence by direct connection 15 to the steam-space of the steam-drum, in combination with a check-valve in said tubular passage-way 5 opening outward from the steam-drum, whereby the water is compelled to circulate in one direction only, and always from the cooler toward the hotter portions of the fire as it leaves the water-space of the steam-drum, substantially as specified.

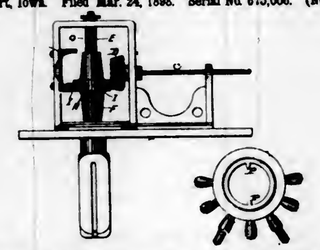
608,219. HAT OR BONNET PIN GUIDE AND PROTECTOR. KIMBER J. PERRY, Boston, Mass. Filed Aug. 13, 1895. Serial No. 559,167. (No model.)

Claim.—The hat and bonnet pin guide and protector herein described, the same comprising a plate provided with means for its attachment to a bonnet or hat having a surface of considerable extent in which is a hole for the reception of the pointed end of a hat or bonnet pin, and also having guiding-walls extending to said hole for guiding the pin-point to said hole by the contact of said wall with the side of the pin near its point, as and for the purposes set forth.

608,219.



608,220. MECHANICAL MOVEMENT. ADOLPH PLAGMAN, Davenport, Iowa. Filed Mar. 24, 1898. Serial No. 675,006. (No model.)



Claim.—1. A shaft which revolves continuously in one direction, and is provided upon its inner end with a gear or pinion, combined with a vertically-moving cylinder provided with pins or projections between its ends, and which pins or projections mesh with the teeth of the pinion or gear, a vertical shaft upon which the cylinder is splined, and stop-guides with which two of the teeth upon the cylinder engage, substantially as shown.

2. A suitable frame, a horizontal driving-shaft journaled therein, provided with a pinion or gear at its inner end, a vertical shaft provided with a suitable device at its lower end, and a cylinder having a rising-and-falling movement upon its upper portion, and which cylinder is provided with teeth of unequal lengths, combined with suitable stop-guides with which the long teeth upon the cylinder engage, and which cylinder has a vertical rotary reciprocating motion with the vertical shaft, substantially as described.

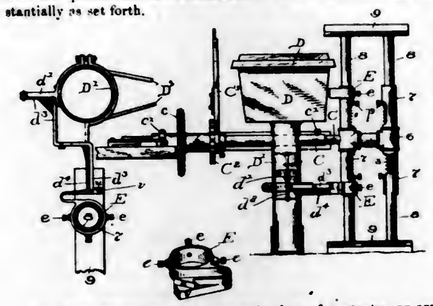
3. A mechanical movement composed of a suitable framework, two shafts placed at right angles to each other, the driving-shaft being provided with a gear or pinion upon its inner end, and a vertically-moving cylinder splined upon the vertical shaft, and which cylinder is provided with teeth or projections of unequal length, combined with a stop-guide, having two curved surfaces which extend in opposite directions, and with which curved surfaces the pins upon the cylinder engage, the cylinder being raised and lowered and made to reverse its rotary movement by the teeth of the pinion catching under the pins or projections upon the cylinder, while first raising the cylinder and then lowering it, substantially as set forth.

608,221. CORN-PLANTER. ELMER PRICE, Kirklin, Ind., assignor of one-half to Charles W. Miller, same place. Filed Aug. 9, 1897. Serial No. 647,625. (No model.)

Claim.—1. The combination, in a corn-planter, of a marking mechanism composed of a shaft, a loosely-mounted driving-wheel thereon, a rigidly-mounted wheel or disk alongside said loosely-mounted wheel, clutch-faces on the hubs of said wheels respectively, means for throwing said clutch-faces into and out of engagement, a ratchet-lever engaging with the rigidly-mounted wheel or disk, whereby the same and the shaft may be independently rotated and thus adjusted in relation to the driving mechanism, and markers consisting of double sleeves mounted on the ends of said shaft, the heads 9 each having the two rods 8 which enter said sleeves 7 and rest against the springs *s*, a head being mounted in each end of said sleeves 7, and means for limiting the movement of said rods in said sleeves, all substantially as set forth.

2. The combination, in a planter, of the seedboxes, spouts leading therefrom, seed-dropping valves located in said spouts, a revolving marker located near said boxes and spouts, an arm extending out from the valve mechanism, and the U-shaped spring-catch E mounted on one side of the marker and adapted to come in contact with said

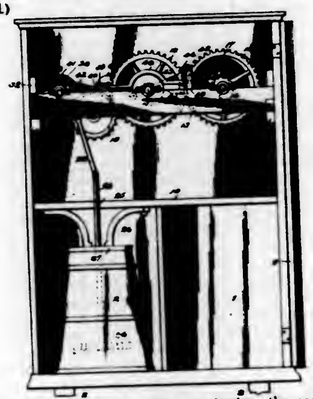
arm and operate said valve mechanism as the marker revolves, substantially as set forth.



3. The combination, with the seed-valves of a planter, an arm extending out therefrom, a projection extending out from a rigid part near said arm, a revolving part near said valve mechanism, and a seed-dropper-operating device having a hook or catch portion *u* adapted to engage with the arm of the dropper mechanism, and an inclined or cam portion *v* adapted to come in contact with the projection alongside said arm, whereby as the motion is continued a disengagement of the parts is effected, substantially as set forth.

4. The combination, in a seed dropper mechanism with the dropping-valves, of a seed-dropper-operating device E having a spring-arm one portion of the face whereof is in the form of a catch adapted to engage with a projection on the dropping mechanism, and the other portion of the face whereof is a cam adapted to effect a disengagement between said parts substantially as shown and described.

608,222. OPERATING MECHANISM FOR CHURNS. LINCOLN REED, Tabor, Iowa. Filed June 12, 1897. Serial No. 640,487. (No model.)

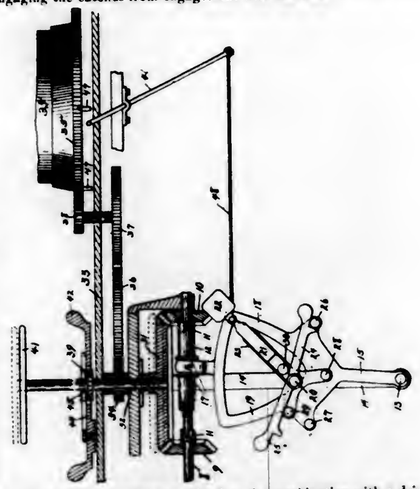


Claim.—1. In a churn-operating mechanism, the combination with a suitable casing, of a spring-actuated power mechanism mounted therein, a plunger-rod connected to said mechanism, a bell mounted in said casing, a spring-actuated shaft carrying a fast clutch-wheel and a loose clutch-wheel, pins mounted on the loose clutch-wheel, a bell-clapper adapted to be struck by said pins, a pawl for engaging the fast clutch-wheel, and a trip adapted to be engaged by the spring of the power mechanism to release the pawl, substantially as described.

2. In a churn-operating mechanism, the combination with a suitable containing-casing, of a spring-actuated mechanism mounted therein, a pitman connected to said mechanism, a plunger-rod connected to said pitman, a churn-dasher on the lower end of said plunger-rod, a bell, a spring-actuated shaft, a clapper adapted to engage projections upon said shaft, a ratchet-wheel mounted on said shaft, a pawl for engaging said ratchet-wheel, and a trip adapted to be engaged by the spring of the power mechanism to operate said pawl and release the bell-operating shaft, substantially as described.

608,228. AUTOMATIC OSCILLATING MECHANISM FOR STACKERS. MARSHAL T. REEVES and JOHN H. KAILOR, Columbus, Ind., assignors to Reeves & Co., same place. Filed Jan. 21, 1896. Serial No. 667,394. (No model.)

Claim.—1. In a gear-reversing mechanism, the combination with a driving-shaft, of a pair of gears mounted thereon, a third gear, means for bringing said gears separately into operative engagement with said third gear, an arm engaging said means, a trip-lever engaging said arm, a pair of catches arranged to alternately engage the arm, means for swinging the trip-lever, and means for alternately disengaging the catches from engagement with the arm.



2. In a gear-reversing mechanism, the combination with a driving-shaft, of a pair of gears mounted thereon, a third gear, means for bringing said gear separately into operative engagement with said third gear, a swinging arm engaging said means, a weighted trip-lever engaging said swinging arm, and means for swinging the trip-lever, the arrangement being such that, as the trip-lever passes its medial position, its weight will cause the swinging arm to swing suddenly upon its pivot, substantially as and for the purpose set forth.

3. In a gear-reversing mechanism, the combination with a driving-shaft, of a pair of gears mounted upon said shaft, a third gear, means for bringing said gears into operative engagement with said third gear, an arm engaging said means, a trip-lever engaging said arm, a pair of catches pivoted upon the pivot of the trip-lever, means carried by the trip-lever for alternately disengaging the catches from the arm, and means for swinging the trip-lever.

4. In a gear-reversing mechanism, the combination with a driving-shaft, of a pair of gears mounted thereon, a third gear, means for bringing said gears separately into operative engagement with said third gear, an arm engaging said means, a trip-lever engaging said arm, a pair of catches pivoted upon the pivot of the trip-lever, a pair of pins carried by the arm and arranged to be alternately engaged by the catches, a pair of pins carried by the trip-lever and arranged to alternately engage the catches and lift them from engagement with the pins carried by the arm, and a pin carried by the trip-lever above the catches in position to hold either of said catches in engagement with the pins carried by the arm.

5. In a gear-reversing mechanism, the combination with a driving-shaft, of a pair of gears mounted thereon, a third gear, means for bringing said gears separately into operative engagement with said third gear, an arm arranged to engage said means and provided with a pair of separated fingers, a trip-lever provided with means for alternately engaging said fingers, a pair of catches pivoted upon the pivot of the trip-lever, means carried by said arm to be engaged alternately by said catches, means carried by the trip-lever for alternately engaging the catches and lifting them from engagement with the arm, and means for swinging the trip-lever.

6. In an oscillating mechanism for stackers, a driving-shaft, a gear mounted thereon, a second gear adapted to normally mesh with said first gear, a shaft connected with said second gear, the said shaft being longitudinally movable, so as to throw the second gear out of engagement with the first gear, and means for maintaining said shaft in either position.

7. In an oscillating mechanism for stackers, a driving-shaft, a gear mounted thereon, a second gear adapted to normally mesh with said first gear, a shaft connected with said second gear, means for lifting said shaft and thereby lifting the second gear from engagement with the first, and a lever for engaging the said shaft and holding it in either of its positions.

8. In an oscillating mechanism for stackers, a driving-shaft, a gear mounted thereon, a second gear adapted to normally mesh with said first gear, a shaft connected with said second gear, means for lifting the said shaft and gear, and a lever, provided with means for engaging the said shaft and thereby holding the second gear in engagement with the first, and for holding the second gear out of engagement with the first, and also provided with means for engaging the said shaft and preventing it from being rotated, substantially as and for the purpose set forth.

9. In an oscillating mechanism for stackers, a driving-shaft, a gear mounted thereon, a second gear adapted to normally mesh with the first gear, a shaft connected with said second gear, a collar 39 carried by said shaft, and a lever 42 provided with arms 43 and 44 arranged to engage said collar, said shaft being adapted to be lifted so as to lift the second gear out of engagement with the first gear, substantially as described.

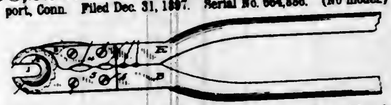
10. In an oscillating mechanism for stackers, a driving-shaft, a gear mounted thereon, a second gear adapted to normally mesh with the first gear, a shaft connected with said second gear, a collar 39, provided with teeth 40, carried by said shaft, a lever 42 provided with arms 43 and 44 arranged to engage the collar, and a lug 45 mounted upon the arm 44, all combined and arranged to cooperate substantially as and for the purpose set forth.

608,224. ORNAMENTING SURFACES. JOSÉ M. RIBERT, Lancaster, Pa., assignor of one-half to Albert Rosenstein, same place. Filed Sept. 13, 1897. Serial No. 651,458. (No model.)



Claim.—As a new article of manufacture, a rigid handle of the character described, and a sheet of flexible metal having openings therein and closely fitted to the handle, the edges of said sheet being joined together, the shape or configuration of the handle being such as to prevent the shifting of the sheet after the edges thereof are joined together.

608,225. WIRE-TWISTING TOOL. GUSTAV K. RUTHER, Bridgeport, Conn. Filed Dec. 31, 1897. Serial No. 664,886. (No model.)



Claim.—1. In a wire-twisting tool, the combination with a hub having a wire-receiving slot or socket formed therein, a head or carrier within which said hub is completely housed, projections on said hub which form pivots or bearings for said carrier, said carrier having a slot formed therein which registers with the slot in the hub in a certain position, means for locking said hub and carrier so that they will move together in one direction and operate independently during movement in the opposite direction, and means for throwing said locking mechanism out of action.

2. The combination, in a wire-twisting tool, of a slotted hub having ratchet-teeth formed on its periphery, pivots or bearings on said hub, a head or carrier mounted on said hub, and completely housing the latter, a spring-pawl engaging the ratcheted hub so as to lock the latter to the carrier when the latter is moved in one direction and leave it free when the carrier is moved in the opposite direction, and means for throwing the said pawl out of operative position.

3. In a wire-twisting tool, the combination with a pair of gripping-jaws, pivoted together at their forward ends, of a wire-twisting hub at the forward end of said gripping-jaws.

4. In a wire-twisting tool, the combination with a pair of gripping-jaws pivoted together at their forward ends, of a wire-twisting hub rotatably mounted at the forward end of said gripping-jaws.

5. In a wire-twisting tool, the combination with a pair of gripping-jaws, of a wire-twisting hub at the forward end of said jaws, said hub serving as a pivotal bearing for said gripping-jaws.

6. In a wire-twisting tool, the combination with a pair of gripping-jaws having a wire-receiving slot in their forward ends, of a slotted hub adapted to register with and serve as a pivotal bearing for the said slotted jaws.

7. In a wire-twisting tool, the combination with a pair of gripping-jaws pivoted together at their forward ends, of a wire-twisting hub rotatably mounted at the forward end of said tool, and means for locking said hub to said gripping-jaws.

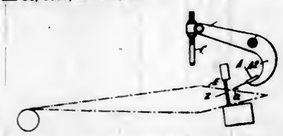
8. In a wire-twisting tool, the combination with a pair of gripping-jaws pivoted together at their forward ends, of a wire-twisting hub rotatably mounted at the forward end of said tool, and means for automatically locking said hub to said tool when the tool is moved in one direction.

9. In a wire-twisting tool, the combination with a pair of gripping-jaws having a wire-receiving slot formed in their forward ends, a slotted hub rotatably mounted between said gripping-jaws at their forward ends, said slotted hub forming the pivotal bearing for said gripping-jaws, and a spring locking-pawl pivoted to one of said jaws to lock said hub to the jaws during movement of the jaws in one direction.

10. In a wire-twisting tool, the combination with a pair of gripping-jaws slotted at their forward ends, of a slotted hub rotatably mounted between the forward ends of said jaws so as to form a pivotal bearing for said jaws, said hub being completely housed within the forward ends of said jaws, and a spring-pawl pivoted to one of said jaws and engaging ratchet-teeth on the said hub so as to lock said hub and gripping-jaws together when the said jaws are moved in one direction.

11. A wire-twisting tool comprising two gripping-jaws and a pivot pin or bearing securing said jaws together at their forward ends, said pivot-pin being slotted to serve as a wire-twisting device.

608,226. LOOM FOR WEAVING LOOPED PILE FABRICS. GEORGE H. SARGENT, RICHARD H. COUPE, and BENJAMIN WALKER, Bingley, England. Filed Sept. 3, 1896. Serial No. 604,694. (No model.) Patented in France Jan. 30, 1896, No. 253,563, and in Belgium Jan. 30, 1896, No. 119,591.



Claim.—1. In a loom the combination with the reed, of an oscillatory shaft capable of being moved longitudinally, a comb mounted on arms rigidly connected with said shaft, means for oscillating said shaft to move the comb toward and from the reed, and means for imparting longitudinal movements to the shaft and to the comb supported thereby.

2. The combination with a reed, a rock-shaft, arms thereon, and a hooked comb supported by said arms, of a shaft C^4, a crank thereon, a rod connected to the latter and one of said arms, a segment-wheel having sets of teeth, and a spur-wheel on shaft C^4 engaged alternately by said sets of teeth, an eccentric on the shaft C^4, an arm in engagement with said rock-shaft, and connections between said arm and said eccentric, all as and for the purpose specified.

3. The combination with a reed, a rock-shaft, arms thereon, and a hooked comb supported by said arms, of a shaft C^4, a crank thereon, a rod connected to the latter and one of said arms, a segment-wheel having sets of teeth, a spur-wheel on shaft C^4 engaged alternately by said sets of teeth, a grooved collar on the rock-shaft, a vibrating fork engaging said groove in the collar, a second rock-shaft carrying the fork, a cam on the shaft C^4, an arm *f*, connected with the second rock-shaft and a roller on arm *f*, engaged by the cam.

608,227. CRANE. HARRY SAWYER, Muskegon, Mich. Filed Apr. 1, 1897. Renewed Feb. 16, 1898. Serial No. 670,591. (No model.)



Claim.—1. A built-up girder, having a distributing member secured to the under face of its upper plate and extending longitudi-

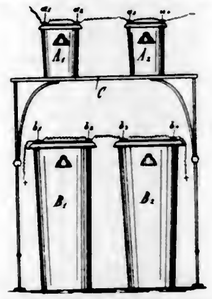
nally thereof, its lower edge terminating some distance above the bottom plate.

2. A box-girder having a distributing member secured to the under face of its upper plate and extending longitudinally thereof, the attaching-flange of said member being wholly within the space between the vertical side plates of the girder and its lower edge being out of contact with the bottom plate of the girder, substantially as shown.

3. In combination with a built-up or box girder, a rail secured to the upper face of its top plate and extending lengthwise thereof, and a longitudinal structural member secured to the lower face of said top plate, but terminating above and out of contact with the bottom plate, to distribute the wheel-pressure brought upon the rail, substantially as described and shown.

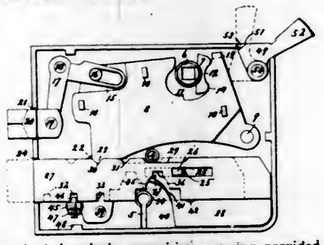
4. The herein-described girder, comprising wrought-metal plates E, F, and G, G; angle-plates H riveted to and connecting the main plates; and distributing member J secured to the lower face of plate E, substantially as and for the purpose set forth.

608,228. GALVANIC BATH. CARL E SCHEER, Carlsbad, Austria-Hungary. Filed Sept. 14, 1897. Serial No. 651,594. (No model.)



Claim.—A galvanic bathing apparatus composed of upper and lower tubs, insulating-bases for supporting the same, a pair of electrodes projecting into each of the tubs, wires connecting the upper tubs and leading to the negative pole, and wires connecting the lower tubs and leading to the positive pole of a source of electric energy, substantially as specified.

608,229. LOCK. GUSTAV H. SCHWEDLER, Kansas City, Mo., assignor of one-half to George W. Loring, same place. Filed Aug. 2, 1897. Serial No. 646,838. (No model.)

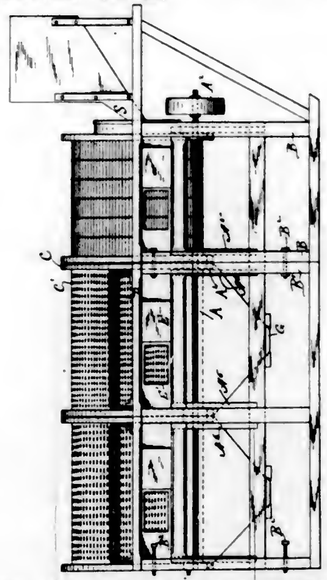


Claim.—1. A door-lock, comprising a casing, provided with a keyhole, a sliding bolt therein provided with a key-receiving notch and two other notches, and a tumbler pivoted within the casing and provided with a segmental recess registering with the key-receiving recess of the bolt and arranged eccentrically of the axis of the keyhole, and with an adjustable pin for engaging one of said other notches of the bolt, substantially as described.

2. A door-lock, comprising a casing, provided with a keyhole-opening, a sliding bolt provided with a key-receiving opening or notch registering with the keyhole-opening and with two other openings, a tumbler pivoted within the casing, provided with a segmental recess extending eccentrically of the keyhole-opening and registering with the same and the key-receiving opening of the bolt, and at the opposite or front side of its pivot with an arm, and a pin adjustably mounted in said arm and engaging one of said other openings of the bolt, substantially as described.

3. A door-lock comprising a casing, a sliding bolt therein provided with a key opening or notch, and two pairs of other notches; one pair of V shape, a tumbler provided with a V-shaped lug to engage said V-shaped notches alternately, a sliding latch connected to said tumbler, a tumbler provided with a pin adapted to engage alternately the other pair of notches and with a key-receiving opening eccentric of, but registering with the keyhole and key-opening of the bolt, and a dog engaging the first-named tumbler and thereby securing the last-named tumbler from disengagement with the bolt, substantially as described.

608,230. PEA-SEPARATING MACHINE. ROBERT P. SCOTT, Cadiz, Ohio, and JOHN A. CHISHOLM, Oakville, Canada. Filed Mar. 11, 1897. Serial No. 627,029. (No model.)



Claim.—1. A pea-separating machine comprising the combination of a pair of parallel rotary shafts, and a series of independently-movable disconnected screening-cylinder sections mounted in juxtaposition on the shafts, the arrangement being such that each drum is separately movable and removable, substantially as described.

2. A pea-separating machine comprising the combination of a pair of parallel rotary shafts, and a series of independently-movable disconnected screening-cylinder sections mounted in juxtaposition on the shafts and rotated thereby, each cylinder-section consisting solely of two annular heads and a screening-cylinder connecting them substantially as described.

3. A pea-separating machine comprising the combination of a pair of parallel rotary shafts, a series of independently-movable disconnected screening-cylinder sections mounted thereon, a series of chutes below the cylinder-sections and a series of rollers on the outside of the sections for pushing back entangled peas substantially as described.

4. A pea-separating machine comprising the combination of a pair of parallel rotary shafts made in sections, a series of independently-movable disconnected screening-cylinder sections mounted thereon, a sectional frame in which the shaft-sections are mounted and connecting devices for uniting the shaft sections substantially as described.

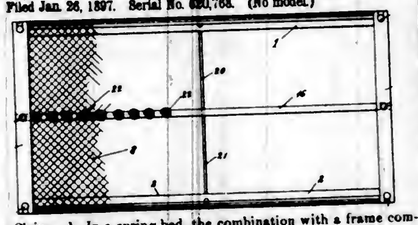
5. A pea-separating machine comprising the combination of a pair of parallel rotary shafts provided with rollers, a series of movable disconnected screening-cylinder sections mounted in juxtaposition on the rollers, the arrangement being such that each drum is separately movable and removable, substantially as described.

608,231. MORDANT FROM SULFITE-CELLULOSE LYES. HEINRICH SEIDEL, Vienna, Austria-Hungary. Filed Sept. 10, 1897. Serial No. 651,245. (No specimens.) Patented in Austria Mar. 5, 1897, No. 47/744.

Claim.—1. A mordanting bath consisting of a solution of a salt of a metal of the alkalies or alkaline earths and of the described sulfo derivate of lignin, substantially as set forth.

2. A mordanting bath consisting of a solution of a salt of a metal of the alkalies or alkaline earths of a mineral acid, and of the described sulfo derivate of lignin, substantially as set forth.

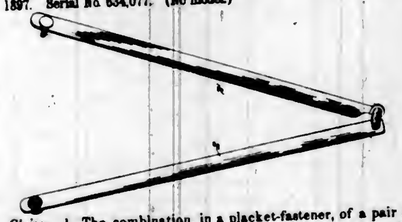
608,232. SPRING-BED. NATHANIEL J. SHIELDS, Stevenson, N. D. Filed Jan. 26, 1897. Serial No. 620,768. (No model.)



Claim.—1. In a spring-bed, the combination with a frame composed of side and end rails relatively adjustable, of a flexible bed-bottom connected to said frame, a center rail extending longitudinally of the bed below the bed-bottom, braces secured to said center rail and to the side rails of the frame, and means for adjusting said center rail vertically, and maintaining the same in adjusted position whereby the tension of the bed-bottom can be regulated.

2. In a spring-bed, the combination with side and end rails relatively adjustable and a flexible bed-bottom connected to the side rails, of a center rail, bolts depending from the end rails and passing through the center rail, nuts on said bolts, springs interposed between the bed-bottom and the center rail, and braces connected to the center rail and the side rails.

608,233. PLACKET-CLOSER. FRANK R. SIMKIN, Hartford, Conn., assignor of one-half to William A. Canty, same place. Filed Apr. 27, 1897. Serial No. 634,077. (No model.)



Claim.—1. The combination, in a placket-fastener, of a pair of strips and a universal connection between the ends of said strips, for permitting edgewise and flatwise movements of the same relatively to each other.

2. The combination, in a placket-fastener, of a pair of strips and an elbow connector pivoted at its opposite ends, respectively, to the ends of said strips, for permitting edgewise and flatwise movements of the latter.

3. The combination, in a placket-closer, of a pair of strips and a tubular elbow-stud pivoted at its opposite ends, respectively, to the ends of said strips, for permitting edgewise and flatwise movements of the latter, and having tubular rivets at its ends for holding said strips in position.

4. The combination, in a placket-closer, of a pair of strips, one of which has an ear at the lower end thereof and transverse to the body portion of such strip; and an elbow-stud pivoted at its opposite ends, respectively, to said ear and to the lower end of the other strip, for permitting edgewise and flatwise movements of the strips.

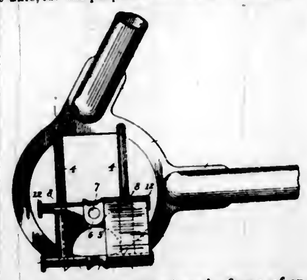
608,284. INSULATING-CASTER AND ELECTRIC SWITCH COMBINED. AUGUSTUS W. SLATTON, Tecumseh, Mich. Filed May 18, 1898. Serial No. 681,031. (No model.)



Claim.—An insulating-caster, the wheel of which is made of glass combined with a metallic contact arm pivotally secured to the metallic frame or support of the caster and adapted to form an electric connection with the floor.

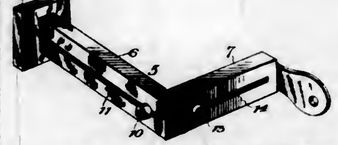
608,285. BICYCLE ATTACHMENT. WILLIAM R. SPENCER, Chicago, Ill. Filed Feb. 10, 1897. Serial No. 624,196. (No model.)

Claim.—1. In a bicycle, the combination with an annular carrier provided with vertical guide-bars, of a horizontal arm 9 united rigidly and centrally to said carrier at the lower edge thereof and having a flat upper side, a rounded lower side, and headed projecting ends; a cross-head fitted slidably to said guide-bars to rest upon the flat upper side of the arm 9 and provided with the horizontal arms 8 which are disposed parallel to each other on opposite sides of the guide-bars and said arm 9, the headed ends of the arms 8 projecting from the cross-head to be free from the same and the annular carrier, and looped band-springs fitted around the extended ends of the arm 9 and having their loops or bights fitted on the extended ends of the arms 8, said band-springs being each arranged wholly on one side of the axle, for the purposes described, substantially as set forth.



2. The combination with an axle and a frame, of an arched carrier provided with vertical central guides and united to said frame to be movable vertically therewith, a cross-head receiving the axle and fitted slidably to the guides, spaced horizontal upper arms rigid with the cross-head and projecting from both sides thereof and arranged on opposite sides of the guides; a lower arm rigid with the carrier and lying in a plane between the upper arms, and looped elastic bands arranged on opposite sides of the axle and connected to the cross-head arms and to the carrier-arms to have each individual spring lie wholly on one side of the axle, substantially as and for the purposes described.

608,286. WINDOW-SHADE BRACKET. EDMUND C. SWITZER, Grayson, Ky. Filed Oct. 29, 1897. Serial No. 656,817. (No model.)



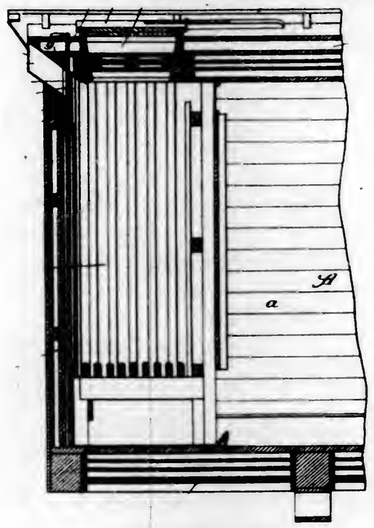
Claim.—A device of the class described comprising the plate 17 provided with a vertical dovetailed recess tapering toward the bottom and forming a socket, the L-shaped body portion having hollow or tubular inner and outer arms provided with longitudinal slots, the inner slide telescoping within the inner tubular arm and provided with a tapering plate 16 arranged wholly within the recess of the plate 17 and having its outer face flush with the same, said plate 16 being beveled at its edges to interlock with the dovetailed recess, the outer slide telescoping within the outer tubular arm and provided at its outer end with an ear or bearing adapted to receive one end of a curtain-roller, and clamping-screws passing through the slots of the L-shaped body portion and securing the slides at the desired adjustment, substantially as described.

608,287. COMBINED VENTILATING AND REFRIGERATOR CAR. FRANK THOMPSON, Chicago, Ill., assignor to the Common Sense Bolster Company, same place. Filed Nov. 4, 1897. Serial No. 657,321. (No model.)

Claim.—1. In a combined ventilating and refrigerating car, the combination of a car-body provided with an ice-tank at each end thereof, an ice opening or openings in the roof of the car provided with hatch-doors and a ventilator-opening in the end plate of the car located adjacent to the roof portion, a funnel leading from the ventilating-opening to a point adjacent to the edge of the roof and provided with a screen, and a vertical movable plug or door for covering and uncovering the ventilating-opening, substantially as described.

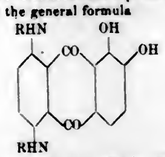
2. In a combined ventilating and refrigerating car, the combi-

nation of a car-body provided with an ice-tank at each end thereof and with ice-openings and hatch-doors on the roof of the car over the ice-tanks, a ventilating opening or openings in the end of the car and in the end plate thereof adjacent to the roof, a funnel in such openings provided with a screen and leading to a point adjacent to the edge of the roof, a vertical movable plug arranged adjacent to and for the purpose of covering and uncovering the ventilator-opening, and a jointed rod for operating such doors so that the projecting end of the rod may be laid on the roof, substantially as described.



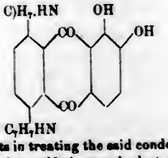
608,238. **GREEN ALIZARIN DYE.** KARL THUN, Barmen, Germany, assignor to the Farbenfabriken of Elberfeld Company, of New York. Filed Dec. 9, 1897. Serial No. 661,329 (Specimens.) Patented in Germany Oct. 14, 1894, No. 84,509; in France Dec. 3, 1894, No. 243,316; in England Dec. 8, 1894, No. 23,927, and in Italy Dec. 31, 1894, XXIX, 37,890, LXXIV, 206.

Claim.—1. The process for producing new dyestuffs being sulfo-acids of the condensation products obtainable from one molecule of alizarin bordeaux and two molecules of a primary aromatic amin and having most probably the general formula



in which formula R represents an aromatic radical, such as phenyl, which process consists in sulfonating the said condensation products substantially as hereinbefore described.

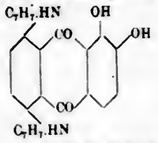
2. The process for producing a new dyestuff being a sulfo-acid of the condensation product obtainable from one molecule of alizarin bordeaux and two molecules of paratoluidin and having most probably the formula:



which process consists in treating the said condensation product with sulfonating agents such as sulfuric monohydrate substantially as hereinbefore described.

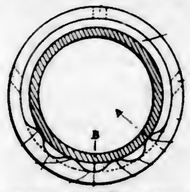
3. As new articles of manufacture the new alizarin dyestuffs obtainable by sulfonation of the products of condensation from one molecule alizarin bordeaux and two molecules of a primary aromatic amin, representing when dry and pulverized dark powders dissolving in water with a green color, yielding leuco alizarin bordeaux if they are reduced by means of zinc-dust and diluted acetic acid and if the reduction products are heated with dilute sulfuric acid, dyeing unmordanted and chrome-mordanted wool green shades, yielding on chrome mordanted cotton beautiful green shades fast to light substantially as described.

4. As a new article of manufacture the specific dyestuff, being a sulfo-acid of the alizarin derivative having most probably the formula:



representing when dry and pulverized a dark-green powder dissolving in water with a green color, which changes into yellow on acidulating and adding zinc-dust, the filtered solution separating leuco alizarin bordeaux after heating with a small quantity of sulfuric acid, dyeing unmordanted and chrome-mordanted wool green shades fast to light, yielding on chrome-mordanted cotton green shades which are distinguished by their brightness and fastness against the action of light substantially as described.

608,239. **SANITARY OR OTHER PIPE.** ARTHUR WAKEFIELD, London, England. Filed Oct. 18, 1897. Serial No. 655,591. (No model.)



Claim.—1. In earthenware and like sanitary pipes a horizontally and internally corrugated (or partially-corrugated) socket having the ridges of such corrugations furrowed centrally or thereabout in the transverse or circumferential direction of the socket substantially as set forth in the foregoing specification.

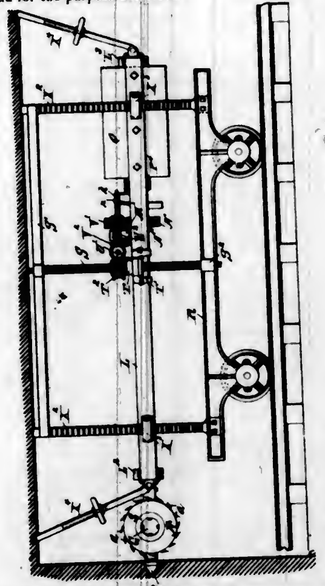
2. A sanitary or other like pipe having a horizontally-corrugated or partially-corrugated socket furrowed transversely or circumferentially and provided with three holes namely one at the crown and one at each side for pouring in cement substantially as hereinbefore set forth.

608,240. **COAL CUTTING OR MINING MACHINE.** ISAAC WANTLING and JAMES T. JOHNSON, Peoria, Ill. Filed Mar. 5, 1897. Serial No. 626,059. (No model.)

Claim.—1. In a coal cutting or mining machine, the combination with a disk or plate mounted upon a vertically-movable cutter-frame, a revoluble cutter-head suitably journaled on said plate and provided with a gear mechanism suitably arranged on its inner surface, a forwardly-projecting contracted portion arranged longitudinally on said plate, a shaft journaled in said contracted portion and provided with a bit or auger carried in advance of the cutter-head and suitably mounted on said shaft, means for elevating the said cutter-head and for operating the said cutter-head and bit, and of means for adjusting the cutter-head and plate at any angle desired for cutting, all substantially as and for the purpose described.

2. In a coal cutting or mining machine, the combination with a disk or plate provided with a forwardly and rearwardly extended contracted portion, a revoluble shaft suitably carried in said contracted portion and suitably mounted upon a vertically-movable cutter-frame, of the revoluble cutter-head suitably journaled to said plate or disk and provided with a gear mechanism suitably arranged on its inner surface, a bit or auger supported on said shaft adapted to travel and cut an opening in advance of the cutter-head, of means for supporting and conjointly actuating the said cutter-head and bit simultaneously and for adjusting the same to cut at any angle desired, all substantially as and for the purpose described.

3. In a coal cutting or mining machine, the combination with a disk or plate provided with a forwardly and rearwardly projecting contracted portion and suitably supported on a revoluble shaft and adjusted thereon, of a revoluble cutter-head journaled to said plate and provided with a gear mechanism on one of its sides, a bit or auger supported on said shaft and carried in advance of the cutter-head, a gear-wheel mounted on said shaft purposed for engaging the gear mechanism on the cutter-head, of means for elevating said cutter-head and bit and for advancing the same into the coal, all substantially as and for the purpose described.



4. In a coal cutting or mining machine, the combination with a vertically-movable frame part, of a disk or plate suitably journaled on a shaft mounted on said frame, a revoluble cutter-head provided with suitable cutting-tools and journaled upon said plate, a bit or auger suitably secured on said shaft and in advance of the cutter-head, of an expanded portion from said plate and extending in front and at the rear thereof adapted to follow the bit into the opening and acting as a support therefor, suitable set-screws at the rear of the expanded portion adapted for the purpose of setting the cutter-head to cut at any angle desired, a gearing mechanism suitably inclosed between said plate and cutter-head, consisting of the bevel-wheel on the shaft and the matching gear-teeth arranged within said cutter-head adapting the said cutter-head to be advanced into the opening cut thereby and adapted by means of said inclosure to permit the said cutter-head to be operated at any point of contact within the opening without clogging the mechanism, of means for elevating the said cutter-head and bit and for advancing the same to its work, all substantially as and for the purpose described.

5. In a coal cutting or mining machine, the combination with suitable frame parts, a plate or disk adapted to support a revoluble cutter-head, a shaft suitably carried within said frame part and suitably journaled in said plate, the disk or plate provided with an expanded frame portion extending some distance in front and at the rear thereof, provided with suitable set-screws adapting the cutter-head to be adjusted on said shaft to cut into the coal at any desired angle, a bit or auger carried on said shaft in advance of the cutter-head and plate, means for simultaneously operating the said cutter-head and bit, consisting of the gear-wheel carried on said shaft and arranged within a suitable depression adapted for engaging the gearing mechanism arranged on one side of the cutter-head, of means for elevating the said cutter-head and bit and for advancing the same horizontally to its work, all substantially as and for the purpose described.

6. In a coal cutting or mining machine the combination of a revoluble cutting-head, a bit adapted to be carried and operated in advance of the cutting-head and a supporting plate and guide for the said cutting-head, provided with a supplemental plate having a width somewhat less than the width of the bit and extending forwardly in advance of the cutting-head, and provided with a small roller in the face thereof, adapted to follow the bit into the opening made thereby and to guide the cutting-head to form a straight-line opening substantially as and for the purposes described.

7. In a coal cutting or mining machine the combination with the plate C, provided with the supplemental plate D, integral therewith and forming a raised ridge on the back thereof, of the cutting-head A provided with the cutting-tools, *a*, *a*, and with the cog-plate F, and the bit B, supported on a shaft B', which carries the beveled cog-wheel E, meshing with the cog-plate F, on the cutting-head, and means for turning shaft B' to cause the cutter-head and the bit to be turned and means for advancing the cutter-head and bit and the plate supporting them, substantially as and for the purpose described.

8. In a coal cutting or mining machine, the combination with the circular plate C, provided with the auxiliary narrow plate D', extending forwardly and rearwardly from the edge of plate C and the forwardly-extending part provided with the roller, *d*, of the cutter-head A suitably journaled in connection with plate C, the shaft D, journaled in the auxiliary plate D, and carrying the bit B at its forward end, the sleeve I, secured to the rearward extension of the auxiliary plate and secured to the movable cross-head M, the sleeve J having a spline-and-groove connection with shaft D', means for turning the said sleeve J for the purpose of turning shaft D', and means for moving the cross-head forwardly and rearwardly substantially as and for the purposes described.

9. In a coal cutting or mining machine, the combination with the circular plate C, provided with the auxiliary narrow plate D, extending forwardly and rearwardly from the edge of plate C and the forwardly-extending part provided with the roller *d*, of the cutter-head A suitably journaled in connection with plate C, the shaft D', journaled in the auxiliary plate D, and carrying the bit B at its forward end, the sleeve I, secured to the rearward extension of the auxiliary plate and secured to the movable cross-head M, the sleeve J having a spline-and-groove connection with shaft D' the means for turning the sleeve J consisting of the cog-wheel N, having a spline-and-groove connection with said shaft and adapted to move back and forth thereon and to be thrown in and out of mesh with a driving cog-wheel suitably connected with the power, substantially as and for the purposes described.

10. In a coal cutting or mining machine, the combination with the circular plate C, provided with the auxiliary narrow plate D extending forwardly and rearwardly from the edge of plate C and the forwardly extending part provided with the roller *d*, of the cutter-head A suitably journaled in connection with plate C, the shaft D', journaled in the auxiliary plate D, and carrying the bit B at its forward end, the sleeve I, secured to the rearward extension of the auxiliary plate secured to the movable cross-head M, the sleeve J having a spline-and-groove connection with shaft D' the means for feeding the cross-head M forwardly and rearwardly consisting of the thread-bars O, O', the cog-wheels N^2 and N^3 meshing with cog-wheel N, and suitably connected with the driving power to operate them conjointly, the threaded boxes, *m* and *m'*, carried upon the pivoted arm m^2, and adapted one of them at a time to engage the thread-bars or one of them, so that by such engagement the said cross head may be fed forwardly and by the other engagement it may be fed rearwardly and means for turning sleeve J for the purpose of operating the cutter-head and the bit substantially as and for the purpose described.

11. In a coal cutting and mining machine, the combination, with a revoluble cutting-head and a bit suitably supported and driven and suitably carried in connection with the driving mechanism adapting same to cut an opening into the coal at any angle desired, a framework for supporting the driving mechanism, of a means for raising and lowering the framework L, consisting of the thread-bars S, S, fixed in a suitable frame-support, the threaded sleeves T, carried upon the thread-bars and journaled in the yokes T', T', connected with frame L, and having secured thereto the worm-wheels T^2, T^3, the worm-screws U', U^2, meshing therewith and carried upon shaft U, the adjustable sleeve W, provided with gear-wheels w', w^2, and with the collar w, the bevel cog-wheel V^2, adapted to mesh with bevel cog-wheel w', or bevel cog-wheel w^2, or to be disengaged from both, means for shifting said sleeve to cause said engagement and means for driving bevel cog-wheel V^2, substantially as and for the purpose described.

12. In a coal cutting and mining machine, the combination with a revoluble cutting-head and a bit suitably supported and driven and with a framework for supporting the driving mechanism, of a means for raising and lowering the framework L consisting of the thread-bars S, S, fixed in a suitable frame-support, the threaded sleeves T, carried upon the thread-bars and journaled in the yokes T', T', connected with the frame L, and having secured thereto the worm-wheels T^2, T^3, the worm-screws U', U^2, meshing therewith and carried upon shaft U, the adjustable sleeve W, the bevel cog-wheel V^2, adapted to mesh with bevel cog-wheel w' or bevel cog-wheel w^2, or to be disengaged from both, means for shifting said sleeve to cause said engagement and means for driving bevel cog-wheel V^2, means for fixing and assisting in maintaining the framework in a desired position consisting of the cog-racks X^2, and the hinged plates X^3, secured to frame L and provided with a cog or cogs adapted to engage the cogs of the cog-racks and provided with a set-screw for securing them in position, substantially as and for the purpose described.

13. In a coal cutting and mining machine, the combination with the plate C and with the auxiliary plate D, the plate C provided with

the outwardly-projecting ring G', and the detachable plate G, of the cutting-head A, provided with cutting-tools *a*, suitably secured thereto, and with the cog-plate F, set into the body of the cutter-head, the shaft D' suitably journaled in the auxiliary plate and carrying the bit B and having the beveled cog-wheel E, fixed thereon and adapted to mesh with cog-plate F, means for turning the said shaft and means for moving the cutter-head the bit and the supporting-plates forwardly and rearwardly substantially as and for the purpose described.

14. In a coal cutting and mining machine, the combination with a revoluble cutter-head suitably connected with movable frame parts adapting the same to be adjusted to cut at any angle desired, of a plate adapted to support the said head provided with the forwardly-extended contracted portion, a shaft journaled in said plate provided with a gear-wheel for engaging gear mechanism on the cutter-head and a bit carried on the end of the shaft in advance of the forwardly-projecting portion of the plate and in advance of the cutting-head, such carrying of the gearing mechanism or operating parts, adapting the cutter-head and plate to be advanced within the opening cut thereby and to be operated at any point of contact with the coal when the same is advanced therein by means of the gearing being housed substantially as shown.

15. In a coal cutting or mining machine, the combination with a plate adapted to support a cutting-head, and a shaft carrying a bit in advance of the cutting-head, of a forwardly-extending projection from said plate, adapted to follow the bit into the opening cut thereby in advance of the cutter-head and provided with a small roller on its surface purposed to contact with the wall of the opening, substantially as and for the purpose described.

16. In a coal cutting or mining machine, the combination of a revoluble cutter-head suitably mounted upon a vertically-movable frame part, a bit carried in advance of the cutter-head, a shaft supporting said bit provided with a gear-wheel matching with a gear mechanism on the cutter-head, a plate supporting the said cutter-head and provided with a forwardly and rearwardly projecting contracted part adapted to follow the bit into the opening cut thereby and in advance of the cutter-head and at the rear of the bit, of means provided at the rear of the contracted portion of the plate for adjusting the cutter-head and plate adapting the same to cut at any angle desired, means for operating the cutter-head and bit simultaneously and for feeding them forwardly at the same time, all substantially as and for the purpose described.

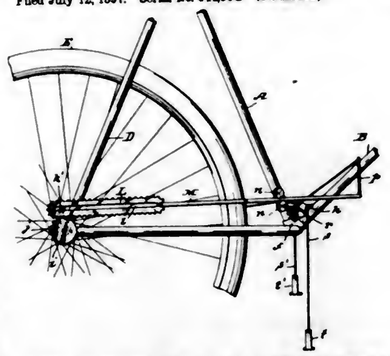
17. In a coal cutting or mining machine, the combination with a circular plate having a depending portion on which is mounted a revoluble cutter-head, and a shaft carrying a bit, in advance of the cutting-head, of a longitudinal frame across the axis of said cutter-head and integral with said plate, and projecting some distance in front and at the rear of said plate and cutter-head, and adapted to follow the bit into the opening cut thereby, means for raising or lowering the said operating parts and for adjusting the cutter-head and plate at any angle desired for cutting, and means for operating and advancing the said bit and cutter-head to their work, all substantially as and for the purpose described.

18. In a coal cutting or mining machine, a revoluble cutting head mounted on a vertically-movable cutter-frame and adapted to cut at any angle desired, suitable gear mechanism carried on one of its sides, of a shaft adapted to bear between said plate and cutter-head provided with a gear-wheel for engaging the gear mechanism on the cutter-head, of a bit carried on the forward end of said shaft adapted to bear in front of said plate and cutter-head and to travel in advance thereof, and a forwardly-extending contracted part secured to said plate adapted to follow the bit into the opening cut thereby in advance of the cutting-head and to form a guide for the cutting-head, all substantially as and for the purpose described.

19. In a coal cutting or mining machine, the combination with the plate C, having the centrally-disposed projecting ring G', the revoluble cutter-head A, having suitable cutting-tools arranged around its periphery, the plate G, adapted to match with and to be secured to the ring G', and provided with the flange *g*, adapted to hold the cutter-head A, upon the journal, a shaft suitably supported in the plate C, and provided with a bit or auger carried in advance of the plate and cutter-head and suitably mounted on said shaft, also provided with a beveled gear-wheel adapted to mesh with a gear-wheel on the revoluble disk, all substantially as and for the purpose described.

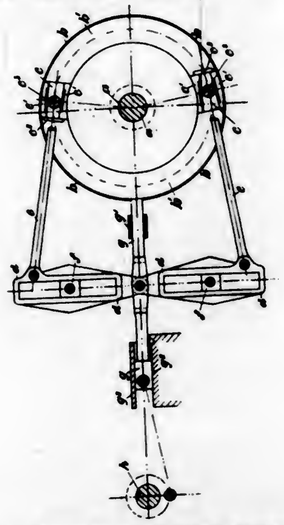
20. In a coal cutting or mining machine, the combination with a revoluble cutter-head suitably mounted upon a disk or plate, of a rotatable shaft journaled in said plate and suitably mounted to be actuated on a vertically-movable frame part, a bit or auger carried on said shaft in advance of the cutter-head and plate and rotatable therewith, an expanded portion integral with said plate and arranged longitudinally with said shaft and adapted to follow the said bit or auger into the opening cut thereby and for steadying the same when at work, a gearing mechanism suitably arranged between said shaft and cutter-head adapting the cutter-head and bit to be actuated simultaneously, of means for elevating said operating parts, and for advancing the same into the coal, and of means for adjusting said cutter-head and plate upon the shaft adapting the same to advance into the coal at any angle desired for cutting, all substantially as and for the purpose described.

608,241. BICYCLE-GEAR. HUGH WILBURN, Ritzville, Wash. Filed July 12, 1897. Serial No. 644,364. (No model.)



Claim.—In gearing for bicycles, the combination with the frame and drive-wheel, of guide-pulleys on one of the diagonal down-tubes of said frame, a cross-shaft carrying pulleys, a pinion on the axle of the rear wheel, a rack meshing with said pinion and having a longitudinal slot, a crank-arm on the axle provided with a wrist-pin fitted in said slot, a rod attached to the rack and fitted to move in said guide-pulleys and provided with a lateral arm projecting over to the opposite side of the frame, a strap connected with the rod and passed over one of the pulleys on the cross-shaft and carrying a stirrup, and a second strap connected with the lateral arm, passed over the other pulley on the cross-shaft and also carrying a stirrup, substantially as described.

608,242. MOTOR. HENRY WILDER, Liverpool, England. Filed Mar. 4, 1898. Serial No. 672,572. (No model.)



Claim.—1. In combination, the disk having the channel *b'* therein and the means for rotating the disk comprising the two sets of wedge-blocks each set comprising three wedge-blocks *c*, *c'*, *c''*, the said blocks *c* being arranged between the said wedge-blocks *c' c''* and the latter bearing against the walls of the channel *b'*, with means for limiting the movement of the block *c* in relation to the other blocks and means for moving the two sets of blocks, substantially as described.

2. In combination, the disk, the gripping devices, one on each side of the disk, the rods, connected to the gripping devices, the pivoted links *d*, *d*, connected to the rods the reciprocating rod *g* connected to the adjacent ends of the said links, the fulcrums for the links intermediate of the ends of the links, and means for moving the rod *g*, substantially as described.

3. In combination, the disk having the groove in its lateral face, the gripping devices therein each comprising the plurality of wedge-blocks, the reciprocating rods for operating the said blocks with means for giving a movement to one block of each set in relation to the other block of that set, said means comprising links pivotally connected with one of the blocks of each set, substantially as described.

4. In combination, the disk, the gripping devices comprising the wedge-blocks, the reciprocating rods for operating the wedge-blocks, and the links between the rods and said wedge-blocks, said links being pivotally connected to the rods and also to the wedge-blocks, substantially as described.

5. In combination, the disk, the gripping devices comprising the wedge-blocks, the reciprocating rods for operating the wedge-blocks, and the adjustable link between the rods and said wedge-blocks whereby the movement may be reversed, said links being pivoted to the rods and to the wedge-blocks, substantially as described.

608,243. OIL-HOLE COVER OR CAP. FRANK D. WINKLEY, Madison, Wis. Filed Sept. 13, 1897. Serial No. 651,506. (No model.)



Claim.—1. In an oil-hole cover or cap, the combination of a hollow stem or post provided with an opening in its upper end; a stud upon the upper end of the post; and a cap rotatably mounted upon the upper end of the post and provided with an opening, said cap being capable of rotation so as to bring its opening into alinement with the stud or with the opening formed in the post.

2. In an oil-hole cover or cap, the combination of a hollow stem or post provided with an opening in its upper end, and an oppositely-disposed stud rising therefrom; a cap mounted on said post and provided with an opening to one side of its center, said cap being rotatable whereby its opening may be brought into alinement with the opening in the post or with the stud thereon; and means for drawing said cap down upon the post when the stud and opening in the cap are in alinement.

3. In an oil-hole cover or cap, the combination of a hollow stem or post provided with an opening at its upper end, and an upwardly-extending eccentric stud; a cap fitting over the upper end of the post also provided with an opening said opening being to one side of the center of the cap; and means for holding the cap upon said stem allowing longitudinal and rotary motion thereof relative to the post.

4. In an oil hole cover or cap, the combination of a hollow post or stem provided with an opening at its upper end to one side of its center; a stud extending upwardly from said upper end at a point approximately opposite said opening; and a cap formed with an opening to one side of its center, rotatably mounted upon said post, said cap also being capable of endwise movement, the stud upon the post being designed to enter the opening in the cap when said opening and the opening in the post are out of alinement.

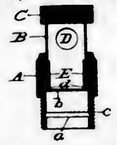
5. In an oil-hole cover or cap, the combination of a hollow stem or post provided with an upwardly-extending stud, and with an opening in its upper end; there being a groove F formed around the post below the opening; a spring H; and a cap designed to be fitted over the upper end of the post, said cap having formed therein an annular groove or channel N designed when the parts are assembled to receive the ends of the spring and to permit a rotary and endwise movement of the cap, substantially as shown and described.

6. In an oil-hole cover or cap, the combination of a hollow stem or post provided with an opening at its upper end and with an upwardly-extending stud; a channel F formed around said post below the opening; diametrically opposite openings G; a spring H mounted in said openings the free ends of which extend downwardly and around said post; and a cap designed to fit over the upper end of the post, said cap having an internal annular groove N formed therein designed to receive the ends of the spring whereby a longitudinal and rotary motion may be given to the cap.

7. In an oil-hole cover or cap, the combination of a hollow stem or post provided with an opening at its upper end to one side of the center thereof and an upwardly-extending stud E; a groove or channel F formed around the post at a point immediately below the top; a spring H the free ends of which extend downwardly and around the post; and a cap designed to fit over the upper end of the post, said cap being provided with an opening M and an internal channel or groove N to receive the free ends of the spring, substantially as and for the purpose set forth.

8. In an oil-hole cover or cap, the combination of a hollow stem or post provided with an opening at its upper end and with an upwardly-extending stud; oppositely-disposed spring-arms extending around said post below the opening; a cap designed to fit over the upper end of the post, said cap being provided with an internal annular groove designed to receive the spring-arms, substantially as and for the purpose set forth; and an opening formed in the upper face of the cap.

608,244. OIL-HOLE COVER OR CAP. FRANK D. WINKLEY, Madison, Wis. Filed Sept. 18, 1897. Serial No. 652,141. (No model.)



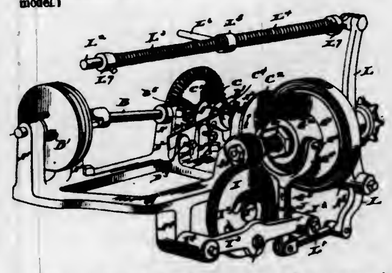
Claim.—1. In an oil-hole cover or cap, the combination of two telescopic members designed to slide one within the other and to contact with each other substantially throughout their length; and means for holding said members either in their closed or extended position and acting to prevent their separation.

2. In an oil-hole cover or cap, the combination of two telescopic members designed to slide one within the other; two annular grooves formed in the inner face of the outer member; and spring mechanism carried by the inner member coacting with said grooves to hold said inner member in its elevated or closed position and acting to prevent their separation, substantially as described.

3. In an oil-hole cover or cap, the combination of a cylindrical member A provided with two annular internal grooves; a second shell or member B closed at its upper end and fitting within said member A; and spring-arms formed upon member B engaging the grooves to hold said member B in its elevated or closed position.

4. In an oil-hole cover or cap, the combination of a cylindrical member A provided with grooves *a* and *b*; and a shell or member B provided with cap C, lateral opening D, and spring-arm E having outwardly-projecting lips *d* designed to enter the grooves, substantially as described.

608,245. GOVERNOR FOR WATER-WHEELS. ELMER E. WOODWARD, Rockford, Ill. Filed July 3, 1897. Serial No. 643,420. (No model.)



Claim.—1. In a compensating attachment for governors, in combination, a power-valve, a speed-regulator, a connection between the power-valve and the speed-regulator for limiting the action of the speed-regulator upon the power-valve, and means for varying the said limiting action inversely to the opening and closing of the power-valve, substantially as and for the purpose specified.

2. In a compensating attachment for governors, in combination, a power-valve, a speed-regulator for operating the power-valve, a screw-threaded shaft, a friction-wheel having a threaded hub loosely mounted on the threaded shaft, a friction-disk for the friction-wheel, means for rotating the friction-disk, means for revolving the screw-threaded shaft and a connection between the friction-wheel and the speed regulator for limiting the action of the regulator, substantially as and for the purpose specified.

3. In a compensating attachment for governors, in combination, a power-valve, a speed-regulator for operating the power-valve, a screw-threaded shaft, a friction-wheel having a threaded hub loosely mounted on the threaded shaft, a friction-disk for the friction-wheel, means for rotating the friction-disk, means for revolving the screw-threaded shaft and an arm for limiting the action of the speed-regulator, substantially as and for the purpose specified.

4. In a compensating attachment for governors, in combination, a power-valve, a speed-governor for operating the power-valve, an arm for limiting the action of the governor, and means for varying the limiting force of the arm upon the governor inversely to the load, substantially as and for the purpose specified.

5. In a compensating attachment for governors, in combination, a power-valve, a centrifugal governor for operating the power-valve, a screw-threaded shaft, a friction-wheel having a threaded hub loosely mounted on the threaded shaft, a friction-disk for the friction-wheel, means for rotating the friction-disk, means for revolving the screw-threaded shaft, an arm operated by the friction-wheel, for limiting the action of the centrifugal governor and means for regulating the limiting effect of the arm upon the governor inversely to the load, substantially as and for the purpose specified.

6. In a compensating attachment for governors, in combination, a power-valve, a centrifugal governor for operating the power-valve, a screw-threaded shaft, a friction-wheel having a threaded hub mounted on the threaded shaft, a friction-disk for the friction-wheel, means for rotating the friction-disk, means for revolving the screw-threaded shaft, and a yielding connection between the friction-wheel and the centrifugal governor, substantially as and for the purpose specified.

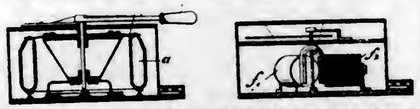
7. In a compensating attachment for governors, in combination, a power-valve, a centrifugal governor for operating the power-valve, a screw-threaded shaft, a friction-wheel having a threaded hub mounted on the threaded shaft, a friction-disk for the friction-wheel, means for rotating the friction-disk, a valve operating wheel, a connection between the valve-wheel and the screw-threaded shaft for rotating the shaft when the valve is operated, and a yielding connection between the friction-wheel and the centrifugal governor, substantially as and for the purpose specified.

8. In a compensating attachment for governors, in combination, a power-valve, a centrifugal governor for operating the power-valve, a screw-threaded shaft, a friction-wheel having a threaded hub loosely mounted on the screw-threaded shaft, a friction-disk for the friction-wheel, means for rotating the friction-disk, means for revolving the screw-threaded shaft, accordingly as the power-valve is actuated, a yielding connection between the friction-wheel and the centrifugal governor, substantially as and for the purpose specified.

9. In a compensating attachment for governors, in combination, a power-valve, a centrifugal governor for operating the power-valve, a screw-threaded shaft, a friction-wheel having a threaded hub mounted on the screw-threaded shaft, a friction-disk for the friction-wheel, means for rotating the friction-disk, means for revolving the screw-threaded shaft accordingly as the power-valve is actuated, and a connection between the friction-wheel and the centrifugal governor, substantially as and for the purpose specified.

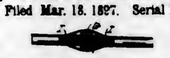
10. In a compensating attachment for governors, in combination, a power-valve, a centrifugal governor for operating the power-valve, a screw-threaded shaft, a friction-wheel having a threaded hub loosely mounted on the screw-threaded shaft, a friction-disk for the friction-wheel, means for rotating the friction-disk, a valve-operating wheel, a connection between the valve-wheel and the screw-threaded shaft for revolving the shaft accordingly as the valve is operated, a worm-wheel, a worm for the worm-wheel fixed on the screw-threaded shaft, a cam-groove in the worm-wheel, a pivoted arm, a stud on the arm engaging the cam-groove in the worm-wheel, a fulcrum-sleeve pivotally mounted in the arm, an arm extending through the fulcrum-sleeve having a connection with the hub of the friction-wheel, an arm having a yielding connection with the centrifugal governor, and a link connection between the free ends of the two last-mentioned arms, substantially as and for the purpose specified.

608,246. ELECTRICAL SIGNALING APPARATUS FOR TRANSMITTING COMMANDS. CONRAD ARLDT, Berlin, Germany. Filed Dec. 29, 1897. Serial No. 664,453. (No model.) Patented in England May 7, 1897, No. 11,413, and in France May 7, 1897, No. 254,366.



Claim.— In an electrically-actuated signaling apparatus, the combination of a transmitting instrument comprising a closed wire coil, two diametrically opposite rotatable contacts supplying current thereto, three leads connected to the coil at points one hundred and twenty degrees apart and a receiver consisting of three coils connected to the leads and acting upon a central rotatable magnet having a pointer whereby variation of resistance in the transmitter caused by the change of position of its rotatable contacts will effect the movement of the pointer in the receiver to the corresponding position quite independent of any variations in the tension of the current supplied, substantially as described.

608,247. SLATE-FRAME CUSHION. GUSTAV M. BEYER, Milwaukee, Wis. Filed Mar. 18, 1897. Serial No. 628,127. (No model.)

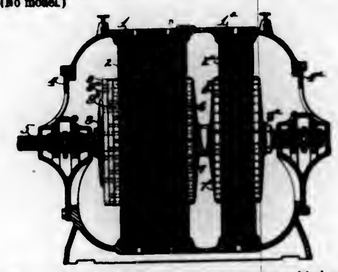


Claim.—An elastic cushion for slates comprising a cylindrical plug, G extending through an aperture in the corner of the slate or its frame, and a band of rubber or leather extending across the corner and over the ends of the plug, and engaged in notches or recesses on each side of the corner, whereby the band serves to hold the plug in place and the latter distends the band to form a projecting cushion, substantially as described.

608,248. METHOD OF MANUFACTURING PRINTING-BLOCKS IN COPPER, NICKEL, &c. LOUIS BOUDREAUX, Paris, France. Filed July 15, 1895. Serial No. 556,076. (No specimens.) Patented in France Mar. 9, 1895, No. 245,674.

Claim.—The herein-described method of forming molds for use in obtaining galvanoplastic reproductions for printing purposes, which consists in applying a solvent to the surface of the plastic block, sprinkling or coating said surface while in a soft state with metallic powder, removing superfluous powder when dry, and pressing the metallized block upon the etching or object to be reproduced.

608,249. ALTERNATING-CURRENT INDUCTION-MOTOR. CHARLES S. BRADLEY, Avon, N. Y., assignor to the General Electric Company, of New York. Filed Oct. 22, 1895. Serial No. 566,453. (No model.)



Claim.—1. An alternating-current motor provided with two independent field-magnets wound to develop rotary magnetic fields, and two armatures of relatively high and low resistance cooperating with said fields.

2. An alternating-current motor provided with two independent field-magnets wound to develop rotary magnetic fields of different magnetic densities, and armatures cooperating with the respective fields.

3. An alternating-current motor provided with two armatures of relatively high and low resistance, independent cooperating field-magnets wound to develop a denser magnetic field about the high-resistance armature, and a switch for cutting out the coils corresponding to the denser field, when desired.

4. An alternating-current motor provided with two armatures of relatively high and low resistance, and independent field-magnets wound to develop rotary magnetic fields of different densities cooperating therewith.

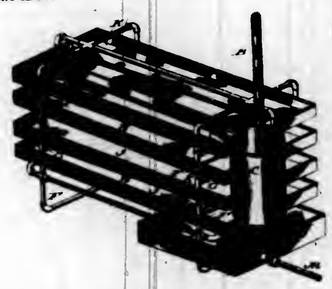
5. An alternating-current induction-motor provided with an armature having a squirrel-cage winding connecting with a common conductor at one end, and separate conductors for the different current phases at the other end.

6. An alternating-current induction-motor provided with an armature having a squirrel-cage winding having a plurality of end plates to afford different paths for currents generated in conductors in different phase relations to the field-magnet poles.

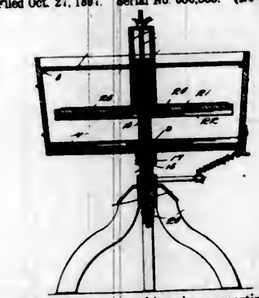
7. An induction-motor secondary of the squirrel-cage type, the conductors of which are electrically connected at one end and at the other are divided into a number of sets or series, the conductors in each set having a common connection.

608,250. DEVICE FOR PURIFYING FEED-WATER. JAMES S. CALKINS, Hastings, Mich., assignor of one-half to Thomas S. Price, same place. Filed Sept. 3, 1897. Serial No. 650,457. (No model.)

Claim.—The combination with a steam-boiler, of an open frame supported therein above the flues, a series of trays supported in the said frame one above another, each of said trays having a series of longitudinal partitions, a sediment-pan secured in the open frame below the lowermost tray, a blow-off pipe leading from the sediment-pan, a feed-pipe entering the boiler adjacent to one end of the frame, a receiver secured to and supported by the lower end of the feed-pipe and provided with a spout projecting over the uppermost tray, and a rose or discharge formed on the feed-pipe just above the lower end of the same.



608,251. WASHING-MACHINE. ALONZO A. CARLER, Little Falls, N. Y. Filed Oct. 27, 1897. Serial No. 656,535. (No model.)



Claim.—1. In a washing-machine the supporting-legs, the stem rising therefrom, the tub or receptacle provided with rubbing-ribs and having the central tube mounted upon said stem, the cap having the kerfs or recesses, and the upper rubber having the central opening fitting over the tube and having the frame extending upward therefrom and formed with ribs engaging said kerfs or recesses.

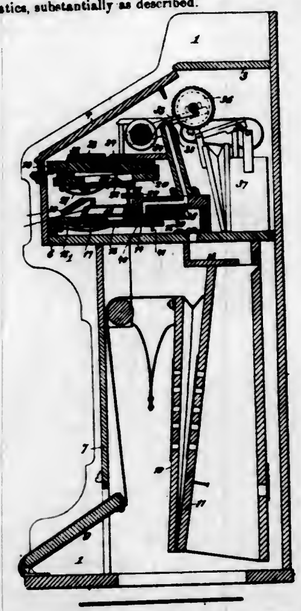
2. In a washing-machine the supporting-legs, the tub adapted to rotate thereon, the arm connected with the supporting-legs and formed with the slotted portion, and the spring having one end connected to the tub and the other end working in the slot.

3. In a washing-machine, the supporting legs, the tub adapted to rotate thereon, the slotted plate secured to the lower edge of the tub, the bent rod having its ends pivoted to the supporting-legs, the eccentric or cam lever fulcrumed in the bent rod and provided with a lug and stop forming a lock in connection with the plate, an arm connected with the supporting-legs and formed with a slotted portion, and the spring having one end connected to the slotted plate and the other end working in the slotted portion of said arm.

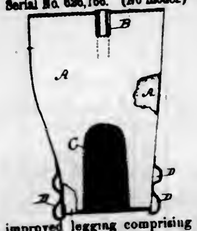
608,252. SELF-PLAYING ORGAN. JOSEPH H. CHASE, Meriden, Conn. Filed Feb. 5, 1897. Serial No. 622,211. (No model.)

Claim.—1. In a pneumatic musical instrument adapted to be operated either manually or by a note-sheet, the combination with the manual-keys, of a plurality of subkeys hinged at one end and arranged directly below said manual-keys so as to be acted upon thereby, an exhaust-chamber located below the keyboard, reed-valves within the exhaust-chamber, a pin carried by the free end of each subkey, said pins being arranged to act upon the free ends of the reed-valves, a tracker-range located behind the aforesaid keys and having its lower end directed forward and then downward so as to open into said exhaust-chamber at a point near the free end of the reed valves, pneumatics located within the exhaust-chamber below the tracker-range and controlled by the passage of air through the latter, the free ends of said pneumatics being arranged directly above and overhanging the free ends of the said reed-valves whereby the expansion of the pneumatics operates directly upon the free ends of said valves, substantially as described.

2. In a pneumatic musical instrument adapted to be operated upon either manually or through a note-sheet, the combination with the manual-keys, of a plurality of subkeys arranged below the said manual-keys and actuated thereby, an exhaust-chamber, reed-valves located in said exhaust-chamber, reeds above the reed-valves, pins carried by said subkeys and acting to open the said valves, a tracker-range having its lower end directed forward and then downward so as to open in said exhaust-chamber adjacent to the ends of the reed-valves, pneumatics located within the exhaust-chamber directly below the tracker-openings, the free ends of said pneumatics being arranged directly above and overhanging the free ends of the reed-valves so as to make direct contact therewith when expanded, and regulating-screws carried by the reed-valves below the lower face of the pneumatics, substantially as described.

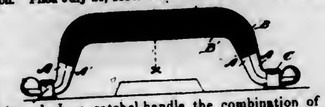


608,253. LEGGING. GILES H. COOK, Des Moines, Iowa. Filed Mar. 5, 1897. Serial No. 626,166. (No model.)



Claim.—An improved legging comprising an open-ended main part conforming in shape with a boot-leg and provided with elastic gores in the lower end portions of its parallel sides, straps or finger-holds fixed to the lower end portion and front of the legging and straps or finger-holds fixed to the lower end portion and rear of the legging, for the purposes stated.

608,254. SATCHEL-HANDLE. RICHARD EISENMANN, Detroit, Mich. Filed July 29, 1897. Serial No. 646,315. (No model.)

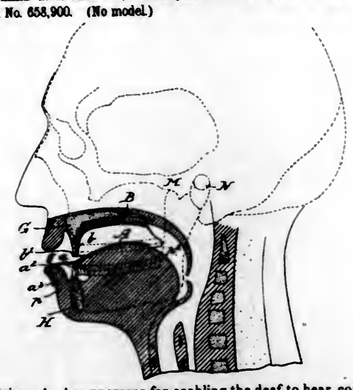


Claim.—1. In a satchel-handle the combination of the body formed of the two parts A and A′ and the covering material B and B′ having the edges *b b′* turned in to lie between the parts A and A′ with means whereby the parts are held together substantially as described.

2. In a valise-handle, the combination of the body consisting of the parts A and A' and the leather covering surrounding the body with its four edges brought together and secured on the lines of juncture of the body parts and flush with the general surface of the body with means whereby the parts are held together substantially as described.

3. In a satchel-handle, the combination of a body formed of two parts, and a covering having edges turned in to lie between the body parts with means whereby the parts are held together, substantially as described.

608,255. **APPLIANCE FOR ENABLING THE DEAF TO HEAR.** RICHARD R. G. GARDNER, Philadelphia, Pa. Filed Nov. 18, 1897. Serial No. 658,900. (No model.)

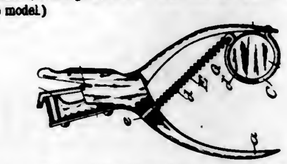


Claim.—1. An apparatus for enabling the deaf to hear, comprising tympans or plates adapted to be placed in the mouth so as to contour with the teeth leading to the superior and inferior maxillary bones to convey sound-waves to and by the temporal bones to the auditory nerve within the field of the internal ear and one of said tympans or plates extended and contracted so as to fit over one of the lips, substantially as and for the purposes described.

2. An appliance of the character described, comprising a flanged tympan or plate recessed in the rear thereof and adapted to contour with the teeth of the mouth and also to contour with the lip and extend onto the face or chin, substantially as and for the purposes described.

3. An appliance of the character described, comprising a tympan or plate flanged and adapted to contour with the teeth of the lower jaw and provided with an arched lug adapted to span the lip and engage the chin and recessed in the back thereof, a second tympan or plate adapted to contour with the teeth of the upper jaw and recessed in the rear of the same, and means for connecting said tympans or plates with each other, substantially as and for the purposes described

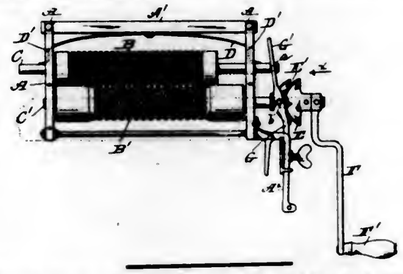
608,256. **ATTACHMENT FOR PUNCHES.** WARREN P. GOLDTHWAITE, Burlington, Iowa. Filed June 25, 1897. Serial No. 642,344. (No model.)



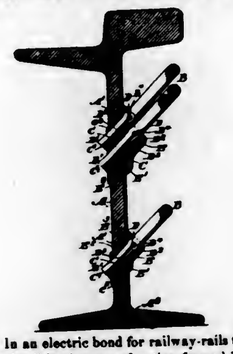
Claim.—The combination with a punch, of a stem bent upon itself at its rear portion to provide a divided loop or eye and secured at the rear side of the eye to the adjacent handle, said stem having a straight diagonal portion extending across the punch to the other handle and slidably connected with the same, a lens arranged within the loop or eye, and a coiled spring mounted on the straight diagonal portion of the stem and interposed between the eye or loop and the opposite handle, whereby the handles are held normally separated and the lens is also clamped within the said loop or eye, substantially as described.

608,257. **CLOTHES-WASHING MACHINE.** OLAF HANNABERSON, Worcester, Mass. Filed Nov. 15, 1897. Serial No. 658,518. (No model.)

Claim.—In a machine for washing clothes the combination of frame A, top roll shaft C, its roll B bottom-roll shaft C', its roll B' and cam E mounted on said bottom-roll shaft, with the downwardly-projecting clamping-arm A^3 on frame A whereby the machine may be clamped to the edge of the washtub, swinging lever G pivoted at its lower end to arm A^3, adapted to engage at its upper end with the end of the top-roll shaft and having a laterally-projecting boss or friction-roll between said points adapted to engage with the cam on the bottom-roll shaft, and means for turning said bottom-roll shaft substantially as set forth.



608,258. **ELECTRIC BOND FOR RAILWAY-RAILS.** SAMUEL H. HARRINGTON, New York, N. Y. Filed Dec. 10, 1896. Serial No. 615,086. (No model.)



Claim.—1. In an electric bond for railway-rails the combination of an iron or steel rail having a perforation formed in it at an acute angle to the plane of the web of the rail with a bond formed of metal having greater conductivity than the metal of the rail, said bond being inserted in and brought into close contact with the sides of the perforation in the rail, all substantially as specified and so as to provide an enlarged contact-surface between the rail and bond.

2. In an electric bond for railway-rails the combination of an iron or steel rail having a perforation formed in its web at an acute angle to the plane of the web with a bond formed of metal having greater conductivity than the metal of the rail, said bond being inserted in and brought into close contact with the sides of the perforation in the rail-web, all substantially as specified and so as to provide an enlarged contact-surface between the rail and bond.

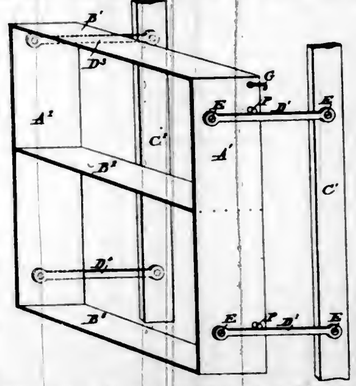
3. In an electric bond for railway-rails the combination of an iron or steel rail having a perforation formed in it at an acute angle to the plane of the web of the rail with a bond-ferrule formed of metal having greater conductivity than the metal of the rail, said bond-ferrule being inserted in and brought into close contact with the sides of the perforation in the rail, and a bond-body also formed of metal of greater conductivity than that of the rail, said bond-body being inserted in the ferrule.

4. In an electric bond for railway-rails the combination of an iron or steel rail having a perforation formed in its web at an acute angle to the plane of the web with a bond-ferrule formed of metal having greater conductivity than the metal of the rail, said bond-ferrule being inserted in and brought into close contact with the sides of the perforation in the rail-web, and a bond-body also formed of metal of greater conductivity than that of the rail, said bond-body being inserted in the ferrule.

5. The combination with a bond-ferrule adapted to enter and fit in a rail-perforation with a bond-body passing through and movable in said ferrule said bond-body having its extreme end spread into substantially conical form so as to make a tight wedging contact with the ferrule when retracted into it said bond-body end having also a transverse perforation as B^4 arranged at the part which lies at or near the inner end of the ferrule and a pin as D adapted to enter said perforation and spread the metal of the bond-body.

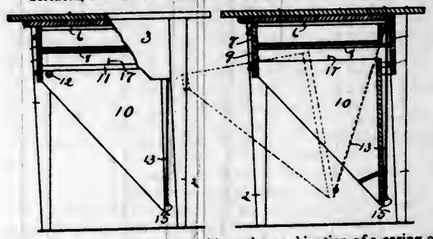
6. The combination with a bond-ferrule adapted to enter and fit in a rail-perforation with a bond-body passing through and movable in said ferrule, said bond-body having its extreme end slotted as at B^3 and a wedge, as C C', arranged to lie in said slot and spread the end of the bond-body.

608,259. **WINDOW-SHELF.** EDWARD H. HEVERLY, Centre Point, Iowa. Filed June 30, 1897. Serial No. 642,926. (No model.)



Claim.—The combination of a set of shelves with two or more pivoted arms on each side, whereby they may be attached to a window-casing, hooks for securing them in their uppermost position, and pins whereby they are prevented from falling below a certain point, all substantially as described.

608,260. **KITCHEN-CABINET TABLE.** JACOB L. HUBBTH, Stockton, Cal. Filed Nov. 2, 1897. Serial No. 657,147. (No model.)

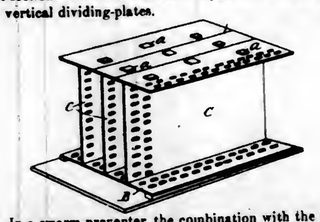


Claim.—1. In a kitchen-cabinet, the combination of a casing or frame having an opening, a bin arranged therein, coacting projections on the bin and side walls of the casing-opening whereby the bin is supported in the casing and is free to slide inwardly and outwardly, and a swinging hanger pivotally connected to the casing or frame and the bin whereby the bin is adapted to both slide and swing, substantially as specified.

2. In a kitchen-cabinet, the combination of a casing or frame having an opening for the reception of a bin and also having anti-friction-rollers on the side walls of the opening adjacent to the front of the casing or frame, the bin having projections, on its opposite sides at its upper end, bearing and adapted to move in and out on the antifriction-rollers, and a hanger pivotally connected to the rear of the bin at the lower end thereof and also pivotally connected to the casing or frame above the bin whereby said bin is adapted to both slide and swing, substantially as specified.

608,261. **SWARM-PREVENTER FOR BEEHIVES.** JOHN KOOPMAN, Falmouth, Mich. Filed Nov. 6, 1897. Serial No. 657,603. (No model.)

Claim.—1. In a swarm-preventer, the combination with the hive, of the upper and lower horizontal perforated plates located therein forming the top and bottom of the brood-chamber respectively, the vertical perforated dividing-plates resting on the lower perforated plate and forming independent compartments within the brood-chamber, the upper horizontal perforated plate being composed of independent sections which are secured independently to the upper edges of said vertical dividing-plates.



2. In a swarm-preventer, the combination with the hive, of the upper and lower perforated plates forming the top and bottom of the brood-chamber respectively, the perforated dividing-plates located therein forming compartments within the brood-chamber and having tongues extending from their upper edges, the upper horizontal perforated plate consisting of independent sections having openings which receive the tongues of said divided plates, which tongues enter said openings and are bent over therein, whereby said sections are secured to said dividing-plates, enabling each section and its attached dividing-plate to be removed independently of the other sections.

608,262. **BICYCLE ATTACHMENT.** JOHN S. LORD, Des Moines, Iowa. Filed July 15, 1895. Serial No. 556,020. (No model.)



Claim.—1. An attachment for bicycles comprising a curved sheet-metal plate adapted to serve as an axle-support and dress-guard, means for securing it to the side of a bicycle-frame, an axle mounted thereon, a wheel on the outer end of the axle, a seat mounted on the axle, a brace attached to the outer end of the axle and adapted to be connected with the steering-head of a bicycle, and a foot-rest supported by said brace and plate, for the purposes stated.

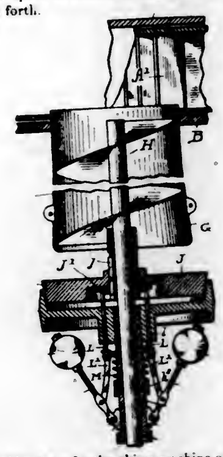
2. In an attachment for bicycles, an axle-bearing and dress-guard consisting of the bent plate B adapted to be fixed to a bicycle-frame to support an axle in a plane above the axle of the bicycle-wheel, clamping devices B' and B^3, a wheel on the end of the said attachment-axle having a larger diameter than the bicycle-wheel to apply in the manner set forth for the purposes stated

608,268. **DRIVING MECHANISM FOR GRAIN-CONVEYERS.** JOHN O. MORGAN, Indianapolis, Ind., assignor to The Pneumatic Elevator and Weigher Company, same place. Filed Oct. 4, 1897. Serial No. 654,059. (No model.)

Claim.—1. The combination of a threshing-machine or separator, a grain-elevator connected thereto, a grain-conveyer adapted to receive grain from the separator and convey the same to the elevator-foot, a clutch connected to the shaft of said conveyer, and mechanism operated by centrifugal force adapted to throw said clutch into operative position when the machine is running at is normal or high speed, and to release said clutch when the machine is running at a slow speed, whereby said conveyer is caused to discharge into said elevator only when the machine is running at the predetermined speed.

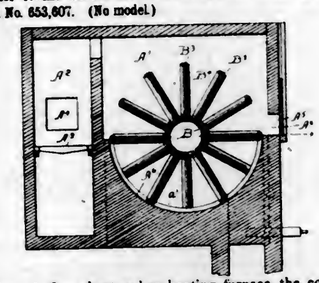
2. The combination of a threshing-machine, a grain-elevator, a conveyer connected to said threshing-machine and adapted to receive the grain therefrom and discharge into the foot of the elevator, a sleeve on the shaft to said conveyer, a pulley on said sleeve and forming or carrying a clutch part, a second clutch part mounted on said shaft, and mechanism also mounted on said sleeve and adapted to draw said clutch part into contact with the clutch part on said pulley, said mechanism embodying centrifugally-operated weights, and a reversely-operating spring, whereby the clutch-faces are thrown into

contact when the machine is running at a high speed and thrown out of contact as the speed decreases or ceases, substantially as and for the purposes set forth.



3. The combination of a threshing-machine or separator, a pneumatic elevator attached thereto, a conveyer discharging into said pneumatic elevator, said conveyer-shaft being continued through and projecting upon the opposite side of the separator, a sleeve mounted upon the projecting end of said shaft and adapted to revolve thereon but held from longitudinal motion in respect thereto, a pulley embodying or carrying a clutch-face and mounted on said sleeve, a second clutch part mounted on the shaft and adapted to move longitudinally thereof but provided with means for preventing rotary motion thereon, connecting-rods connected to said clutch part and extending through said pulley, pivoted levers carried by said sleeve, and links connecting said pivoted levers to said rods, said levers being adapted to be thrown apart by centrifugal motion, and a spring acting oppositely to said levers, said several parts being arranged and operating substantially as shown and described.

608,264. HEATING-FURNACE. EDWIN NORTON, Maywood, Ill., assignor to the Norton Brothers, Chicago, Ill. Filed Sept. 30, 1897. Serial No. 653,607. (No model.)



Claim.—1. In a sheet or bar heating furnace, the combination with the heating-chamber of a rotary rack having a horizontal shaft and rotating vertically in said chamber and provided with a series of rigid radial receptacles for receiving and holding the sheets or bars and conveying them in a complete circuit about the axis of said rotary rack and thus causing them to receive the heating action of the furnace in different radial planes and first with one side and edge uppermost and then with the other side and edge uppermost, and means for keeping the sheets or bars in position in said radial receptacles while being conveyed through the lower half-circle of their orbit, substantially as specified.

2. In a sheet or bar heating furnace, the combination with the heating chamber of the furnace provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary rack or holder in said chamber for receiving and holding the sheets or bars and conveying them in a complete circuit about the axis of said rotary rack from said door back again to the same and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one of their edges uppermost and part of the time with their opposite edges uppermost, and comprising a horizontal shaft provided with a series of sets or rows of radial arms projecting therefrom and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified

3. In a sheet or bar heating furnace, the combination with the heating-chamber of the furnace, of a rotary rack or holder in said chamber for receiving and holding the sheets or bars, and comprising a shaft provided with a series of sets or rows of radial arms projecting therefrom, said heating-chamber having a curved bottom to hold or keep the sheets or bars in position between the sets or rows of radial arms, substantially as specified.

4. In a sheet or bar heating furnace, the combination with the heating-chamber of the furnace provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary rack or holder in said chamber for receiving and holding the sheets or bars and conveying them in a complete circuit about the axis of said rotary rack from said door back again to the same and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one of their edges uppermost and part of the time with their opposite edges uppermost, and comprising a horizontal shaft provided with a series of sets or rows of radial arms projecting therefrom, and mechanism for imparting a step-by-step rotary movement to said shaft and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

5. In a sheet or bar heating furnace, the combination with the heating-chamber of the furnace provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary rack or holder in said chamber for receiving and holding the sheets or bars and conveying them in a complete circuit about the axis of said rotary rack from said door back again to the same and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one of their edges uppermost and part of the time with their opposite edges uppermost, and comprising a horizontal shaft provided with a series of sets or rows of radial arms projecting therefrom, and mechanism for imparting a step-by-step movement to said shaft, said mechanism comprising a worm-gear, worm and a clutch provided with devices for automatically disengaging its members and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

6. In a sheet or bar heating furnace, the combination with the heating-chamber of the furnace, of a rotary rack or holder in said chamber for receiving and holding the sheets or bars, and comprising a shaft provided with a series of sets or rows of radial arms projecting therefrom, said heating-chamber having a curved bottom to hold or keep the sheets or bars in position between the sets or rows of radial arms, and mechanism for imparting a step-by-step rotary movement to said shaft, substantially as specified.

7. In a sheet or bar heating furnace, the combination with the heating-chamber of the furnace provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary rack or holder in said chamber for receiving and holding the sheets or bars and conveying them in a complete circuit about the axis of said rotary rack from said door back again to the same and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one of their edges uppermost and part of the time with their opposite edges uppermost, and comprising a horizontal shaft provided with a series of sets or rows of radial arms projecting therefrom, said shaft and radial arms being hollow and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

8. In a sheet or bar heating furnace, the combination with the heating-chamber of the furnace provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary rack or holder in said chamber for receiving and holding the sheets or bars and conveying them in a complete circuit about the axis of said rotary rack from said door back again to the same and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one of their edges uppermost and part of the time with their opposite edges uppermost, and comprising a horizontal shaft provided with a series of sets or rows of radial arms projecting therefrom, said radial arms having covering-tubes of refractory or non-heat-conducting material and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

9. The combination with the heating-chamber of a furnace provided with a door-opening through which sheets or bars may be removed from or delivered into said chamber, of a rotary sheet or bar holder or rack mounted in said chamber and provided with a series of radial receptacles for sheets or bars and conveying them in a complete circuit about the axis of said rotary rack from said door back again to the same and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one of their edges uppermost and part of the time with their opposite edges uppermost and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

10. The combination with the heating-chamber of a furnace provided with a door-opening through which sheets or bars may be removed from or delivered into said chamber, of a rotary sheet or bar holder or rack mounted in said chamber and rotating in a vertical plane on a horizontal shaft and provided with a series of radial receptacles for sheets or bars and conveying them in a complete circuit about the axis of said rotary rack from said door back again to the same and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one of their edges uppermost and part of the time with their opposite edges uppermost, and mechanism for turning said rotary rack or holder to bring each of said radial receptacles opposite said door or opening, to permit the heated sheets or bars to be removed from the rack or holder and fresh ones put in and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

11. The combination with a furnace heating-chamber provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary rack or holder mounted therein and comprising a horizontal shaft and a series of double sets or rows of radial arms, for receiving holding and conveying sheets or bars in a complete circuit about the axis of said rotary rack and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one edge uppermost and part of the time with the opposite edge uppermost and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

12. The combination with a furnace heating-chamber, of a rotary rack or holder mounted therein and comprising a shaft and a series of double sets or rows of radial arms, said chamber having curved ribs in its bottom to hold or keep the sheets or bars in position between the sets or rows of radial arms, substantially as specified.

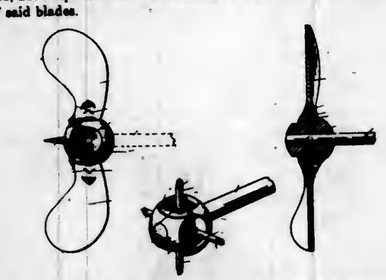
13. The combination with a furnace heating-chamber provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary rack or holder mounted therein, and comprising a hollow horizontal shaft, and a series of hollow radial arms projecting therefrom in a series of rows arranged in different radial planes for receiving holding and conveying sheets or bars in a complete circuit about the axis of said rotary rack and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one edge uppermost and part of the time with the opposite edge uppermost, and said shaft being provided with stuffing-boxes to connect the same with water-supply pipes and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

14. The combination with a furnace heating-chamber provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary rack or holder mounted therein, and comprising a hollow horizontal shaft, and a series of hollow radial arms projecting therefrom in a series of rows arranged in different radial planes for receiving holding and conveying sheets or bars in a complete circuit about the the axis of said rotary rack and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one edge uppermost and part of the time with the opposite edge uppermost, and said shaft being provided with stuffing-boxes to connect the same with water-supply pipes, and tubes or coverings of refractory material surrounding said radial arms and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

15. The combination with a furnace heating-chamber provided with a door at one side for putting the sheets or bars in and taking them out, of a rotary bed for holding the sheets and conveying them in a complete circuit about the axis of said rotary rack from said door back again to the same and thus cause them to receive the heating action of the furnace in different radial planes and part of the time with one of their edges uppermost and part of the time with their opposite edges uppermost, having a hollow horizontal shaft connected with a water-supply pipe and means for keeping the sheets or bars in position in said rotary rack while being conveyed through the lower half of their circular orbit, substantially as specified.

608,265. AUTOMATIC FEATHERING-BLADE PROPELLER. CHARLES R. OLSEN, Bowery Beach, Mo. Filed Mar. 20, 1897. Serial No. 628,448. (Model.)

Claim.—1. In a propeller, the combination with a hub having pivot or bearing pins projecting therefrom, blades having axial openings by which said blades are placed in pivotal engagement with the hub, and stops for said hubs adapted to limit the pivotal movement of said blades.



2. In a propeller for the purpose set forth, the combination with a hub having pivot or bearing pins projecting therefrom, blades having axial openings by which said blades are placed in free pivotal engagement with the hub, stops formed on the hub, and lugs projecting from the blades to engage said stops, substantially as shown and for the purpose set forth.

3. In a propeller, the combination with a head having sockets in the sides thereof and extensions on the socket forming shoulders, of blades seated within the sockets and provided with lugs that engage the shoulders formed by the extensions of the socket, and means for holding the blades in free pivotal engagement with the hub, substantially as shown and for the purpose set forth.

4. In a propeller of the character described, the combination with the hub having sockets therein and pivot-pins projecting from the center of the sockets, blades freely pivoted upon the pins, means for holding the blades in engagement with the pins, and stops for limiting the throw of the blades, substantially as shown and for the purpose set forth.

5. In a propeller of the character described, the combination with a hub having sockets and pivot or bearing pins projecting centrally therefrom, of the blades seated within the sockets upon the pivot-pins, said blades having a greater contact-surface on one side of the axis, means for connecting the blades to the pivot-pins, lugs projecting from the inner ends of the blades and engaging shoulders or stops formed on the hub, substantially as shown and for the purpose set forth.

6. In a propeller of the character described, the combination with the hub having sockets with pivot or bearing pins projecting centrally therefrom, blades seated on the bearing-pins and having lugs or projections adapted to engage shoulders or stops on the hub, antifriction-bearings between the parts, the blades having a greater surface to one side of their axis, and transverse openings communicating with the pivot-pins, removable bearings passed into said openings to engage the pivot-pins, the parts being constructed and organized substantially as shown and described.

608,266. DRESS-SKIRT HANGER. THERESA R. O'NEILL, Baltimore, Md. Filed Jan. 18, 1898. Serial No. 667,061. (No model.)

Claim.—1. A dress-skirt hanger having a shank and radially-disposed longitudinal and transverse arms extending in alined directions from the shank and provided with upturned studs, substantially as specified.

2. A dress-skirt hanger having a suspending-shank and radially-disposed longitudinal and transverse arms terminating in upturned studs, each arm being of looped construction, substantially as specified.

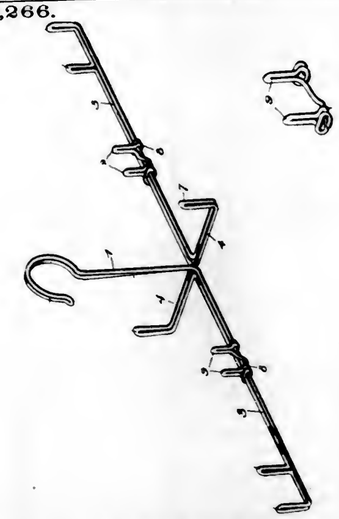
3. A dress-skirt hanger constructed of a single blank of wire and consisting of a suspending-shank terminating in a hook, and longitudinal and transverse arms radiating from said shank, each of said parts consisting of a loop, with the closed end of the loop forming the extremity of the member, substantially as specified.

4. A dress-skirt hanger, having a suspending-shank and radially-disposed longitudinal and transverse arms terminating in upturned studs, the longitudinal arms having intermediate upturned studs, substantially as specified.

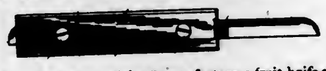
5. A dress-skirt hanger having a suspending-shank and radially-disposed longitudinal and transverse arms terminating in upturned studs, and slides mounted for adjustment upon the longitudinal arms and provided with upturned studs, substantially as specified.

6. A dress-skirt hanger having a stationary shank and radially-disposed longitudinal and transverse arms, each longitudinal arm being provided with a plurality of upstanding stationary and movable studs, substantially as specified.

608,266.

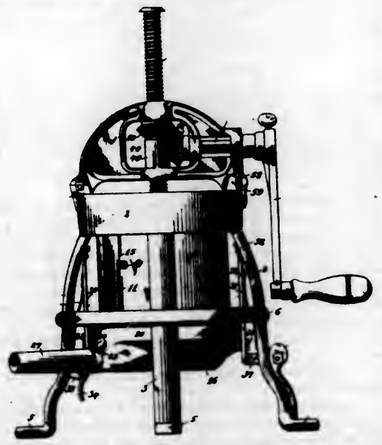


608,267. FRUIT-KNIFE. ANDREW PARTRIDGE, Springfield, Mass. Filed Sept. 1, 1897. Serial No. 650,231. (No model.)



Claim.—As a new article of manufacture, a fruit-knife consisting of a plate having its longitudinal edges inturned to produce flanges, guards formed at the ends of the plate and projecting outwardly on either side thereof, said guards being slotted on one side along the edge of the plate, a second plate of such dimensions as to fit between the flanges and guards of the first-named, a blade fitted between the plates and projecting through the slots in the guards at each end, said blade being slotted and screws passed through one plate into the other through the slots in the blade, as and for the purpose set forth.

608,268. DOMESTIC PRESS. GEORGE W. PELTON, Muscatine, Iowa. Filed May 8, 1897. Serial No. 635,734. (No model.)



Claim.—1. In a press, an upright supporting-stand, a press-cylinder open at both ends and detachably suspended at its upper edge within the stand, a gearing-bracket mounted on the stand and arranged to be secured over the top edge of the cylinder at its point of suspension, to prevent upward displacement of the latter, a removable bottom basin arranged over the lower open end of the cylinder and adapted to be dropped below the plane of the latter, oppositely-located hangers fixedly positioned within the stand and having a detachable catch engagement with the basin, and a follower arranged to work within the cylinder, substantially as set forth.

2. In a press, a supporting-stand essentially comprising a plurality of legs and a frame-ring fitted to the upper ends of said legs and provided with an inner annular rest-shoulder, a press-cylinder open at both ends and provided at its upper end with an annular bead forming a flange detachably resting on said rest-shoulder, a bottom basin arranged over the lower open end of the cylinder, and the follower, substantially as set forth.

3. In a press, a supporting-stand, a press-cylinder arranged within the stand, the follower, a removable bottom basin adapted to be arranged over the lower end of the cylinder, oppositely-located hangers fixedly positioned within the stand and having a detachable catch engagement with diametrically opposite sides of the basin, and means for releasing said hangers from the basin, substantially as set forth.

4. In a press, a supporting-stand, a press-cylinder arranged within the stand, the follower, a removable bottom basin adapted to be arranged over the lower open end of the cylinder, movable hangers arranged at opposite points within the stand and adapted to have a detachable engagement with the basin at diametrically opposite points thereof, and a lever connection with one of said hangers to provide for moving the same outward out of engagement with the basin, substantially as set forth.

5. In a press, a supporting-stand, a press-cylinder arranged within the stand, the follower, a removable bottom basin for the cylinder provided at diametrically opposite points with offstanding lugs, oppositely-located hanger-straps fitted at their upper ends to diametrically opposite points within the stand and provided with catch-openings adapted to engage over the lugs of said basin, one of said hanger-straps being provided below its opening with a finger portion, and the other of said straps being provided with an outturned arm extending through an opening in the adjacent portion of the stand, a lever having a bifurcated cam-head pivotally mounted on the outer extremity of said outturned arm, and springs arranged to normally move said hanger-straps in an inward direction, substantially as set forth.

6. In a press, a supporting-stand, a press-cylinder removably fitted within the stand, a bottom basin removably supported independently of the cylinder, over and in contact with the lower end of the latter, said basin being provided with a side discharge-neck, an annular grain-gutter arranged to surround the lower end of the cylinder to receive any matter that may be forced under the bottom edge thereof, and a drain-port piercing the basin near one edge and providing direct communication between said annular gutter and the discharge-neck, and the follower, substantially as set forth.

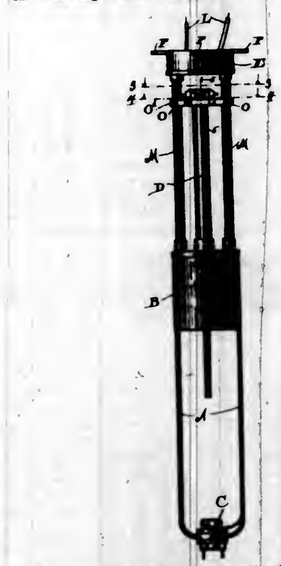
7. In a press, the supporting-stand, a press-cylinder arranged within the stand and provided with an exterior longitudinally-disposed drain-tube and a longitudinal series of drain-openings communicating with said tube, a bottom basin arranged over the lower open end of the cylinder and provided with a perforate false bottom or strainer-plate, and with a discharge-neck disposed below the plane of said false bottom or strainer-plate, and an annular drain-gutter surrounding the lower end of the cylinder above the plane of said false bottom or strainer-plate and having communication with said discharge-neck, and the follower, substantially as set forth.

8. In a press, the supporting-stand, a press-cylinder arranged within the stand and provided with an exterior longitudinally-disposed drain-tube open at both ends, and a series of drain-openings providing communication between the cylinder and the tube, a sliding cut-off plate mounted within the tube against the outer side of the cylinder and provided with a longitudinal series of openings, said cut-off plate being further provided at a point intermediate its ends with lateral finger-buttons projected through slots in the edges of the drain-tube, a bottom basin provided with an annular gutter surrounding the cylinder below the plane of the lower end of said tube, and communicating with a drain-port, and the follower, substantially as set forth.

9. In a press, a supporting-stand, a press-cylinder removably fitted within the stand, a bottom basin removably supported independently of the cylinder over the lower open end thereof, said bottom basin being provided with an interior annular shoulder, a central brace projection, and a lateral discharge-neck, a perforate strainer-plate fitted within the interior shoulder of the basin and resting on the brace projection thereof under the bottom edge of the cylinder, the follower, and a discharge-spout having a detachable connection at its inner end with said discharge-neck of the basin, substantially as set forth.

10. In a press, the supporting-stand provided at the top with a frame-ring, having oppositely-located pairs of ears, a press-cylinder removably supported within the stand, a gearing-bracket hinged at one end between one pair of ears, a detachable fastening for securing the unhinged end of said bracket between the opposite pair of ears, a screw-stem mounted to slide through opposite alined guide-openings formed in said bracket, a nut mounted for fixed rotation within the bracket and receiving said screw-stem, said nut carrying a beveled gear-pinion, a plunger working within the cylinder and detachably fitted to one end of said screw-stem, and a crank-operated shaft journaled in bearings formed in the bracket and carrying at its inner end a beveled gear-pinion meshing with the similar pinion of said nut, substantially as set forth.

608,269. ELECTRIC-ARC LAMP. CHARLES A. PFLUGER, Chicago, Ill. Filed Aug. 7, 1895. Serial No. 558,564. (No model.)



Claim.—1. In an arc-lamp the combination of a lamp having an upwardly-projecting portion provided with an enlarged end with a fixed hanger, having downwardly-projecting tubes and means for interlocking said tubes, each at its extremity to its opposed part and a fixed part associated with said tubes and provided with a recess or aperture of such size as to receive the upwardly-projecting portion of the lamp, but not to permit the passage of the enlarged end, the lamp being supported by the engagement of such enlarged end with said fixed part.

2. In an arc-lamp the combination of the lamp proper with an upwardly-projecting carbon-rod tube, a fixed upper portion, downwardly-projecting conductor-carrying tubes, and apertures in the top of the lamp proper to receive the conductors projecting from such carrier-tubes, and devices connected with the fixed portion to receive and removably hold the upper end of the carbon-rod tube so as to support and hold the lamp in place.

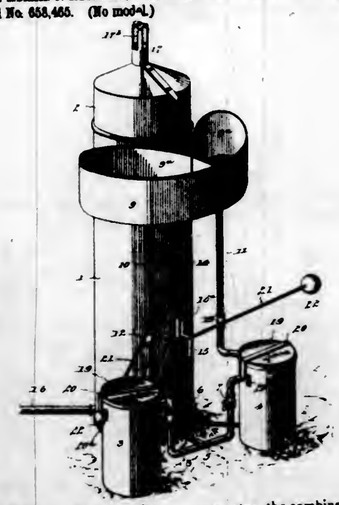
3. In an arc-lamp hanger the combination of a fixed box or case with current-controlling devices therein, tubes downwardly projecting therefrom and carrying each one conductor, and means associated with such fixed box and adapted to engage the carbon-rod tube of the lamp so as to hold such lamp in position.

4. In an arc-lamp hanger the combination of a fixed box or case with current-controlling devices therein, tubes downwardly projecting therefrom and carrying each one conductor, and means associated with said tubes which engage the carbon-rod tube so as to support and hold the lamp in operative relation to said current-controlling devices, and apertures in the top of the lamp to receive such projecting conductors.

5. In an arc-lamp hanger, the combination of a lamp with an upwardly-projecting carbon-rod tube, a fixed portion with downwardly-projecting tubes having opposed parts on the top of the lamp which are engaged thereby, a recessed part thereon of such size as to receive the carbon-rod tube but not to permit the passage of its head, and a hinged stirrup associated with said fixed portion, said hinged stirrup so constructed that it is lifted by engagement with said carbon-rod tube so as to allow the carbon-rod tube to enter the recess in said fixed portion and then drops down from said tube when in position and prevents its removal.

6. In an arc-lamp hanger the combination of a fixed portion with a recessed or apertured part thereon of such size as to receive the carbon-rod tube but not to permit the passage of its head, and a hinged stirrup to surround the head and hold the parts in position, said fixed portion having downwardly-projecting tubes containing the conductors, said tubes adapted to engage opposed parts on the lamp when said lamp is in position, said opposed parts provided with holes in which the conductors extend substantially as described.

608,270. ACETYLENE-GAS GENERATOR. WALTER S. POWERS and ADRAIN J. REYNOLDS, Nashville, Mich. Filed Nov. 13, 1897. Serial No. 658,465. (No model.)



Claim.—1. In an acetylene-gas apparatus, the combination with a gasometer, and a water-tank, of the independent generators, the water-supply pipes between the water-tank and said generators, the independent water-valves in said pipes and provided with the weighted operating-levers which extend into the space between said water-pipes, a trip-rod arranged between the water-pipes contiguous to the free ends of said weighted levers and attached to the gasometer-bell for movement therewith, and a manually-operative trip rotatably fitted to said trip-rod and having a clamping device and a projecting arm, said trip adapted to be turned by hand to bring its arm into position to engage with either valve-operating lever to open and close one water-valve on the vertical play of the gasometer-bell and also adapted to engage operatively with the lever of the other water-valve, substantially as described.

2. In an acetylene-gas apparatus, the combination with a gasometer, and a water-tank, of the independent generators, a gas-pipe spanning the space between and connected to said generators and having a pipe which discharges to the gasometer and the independent cocks, 6, 7, situated between the generators and the gasometer-pipe, the water-pipes connecting the generators separately with the water-tank, a trip-rod arranged between the water-pipes and connected to the gasometer-bell to travel therewith, the independent water-valves in said water-pipes, the weighted levers attached to the water-valves and having their free ends extended toward the trip-rod, and a reversible trip mounted for rotary adjustment on the trip-rod and having a clamping device and an extended arm adapted to engage with one or the other of the valve-levers, whereby the trip may be adjusted to engage with one valve-lever to operate the valve on the vertical travel of the rod and the trip may also be engaged with the other valve-lever to actuate the valve thereof in like manner, substantially as described.

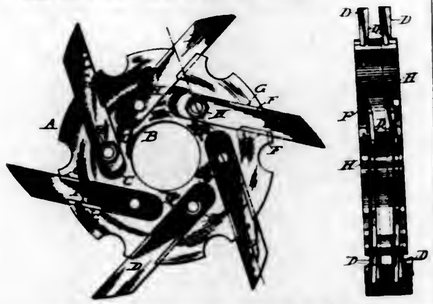
608,271. VALVE-STOPPER FOR BOTTLES. EDGAR M. RAIGUEL, Philadelphia, Pa. Filed Oct. 8, 1897. Serial No. 654,543. (No model.)

Claim.—1. A stopper for bottles consisting of a hollow metal cap, threaded internally at its lower end, a packing filling the interior of the cap beyond the screw-threaded portion, and a hollow tapered plug run transversely through the packing and cap, said plug having openings in one side thereof registering with vertical passages in the packing, as and for the purpose set forth.

2. A stopper consisting of a hollow, metal cap threaded internally at its lower end, a cork threaded to said cap, a packing interposed between the end of the cork and top of the cap, said packing being adapted to be compressed by the threading of the cap downwardly whereby the wear thereon will be compensated for, a hollow, tapered plug passed transversely through the cap and packing, said plug having openings in one side thereof registering with vertical passages in the packing and cork, as and for the purpose set forth.



608,272. CUTTER-HEAD. JOHN W. SCHLEICHER, Louisville, Ky. Filed Mar. 9, 1896. Serial No. 673,214. (No model.)



Claim.—1. In a cutter-head the combination of a body portion provided with a series of seats upon its opposite faces, arranged tangentially to a circle concentric with the axial line of the cutter; and blades mounted in said seats, the blades of succeeding pairs being inclined in reverse direction relative to a plane perpendicular to the axis of the cutter-head.

2. In a cutter-head, the combination of a body portion provided with a series of seats arranged in pairs upon its opposite faces, and formed tangentially to a circle concentric with the axial line of the cutter, said seats inclining in the direction of their length and also inclined edgewise with relation to the plane of rotation of the head; and blades mounted in said seats.

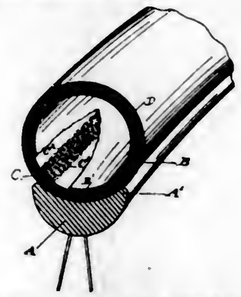
3. In a cutter-head, the combination of a body portion provided with a series of seats arranged in pairs upon its opposite faces and occupying a position tangential to a circle concentric with the axial center of the body, said seats inclining in the direction of their length, but so arranged as to be parallel to each other, and also inclined in the direction of their width with relation to the plane of rotation of the head; and blades mounted in said seats.

4. In a cutter-head, the combination of a body portion, provided with a series of seats arranged in pairs upon its opposite faces, with each alternate pair having the same formation with regard to direction of inclination, said seats being inclined in the direction of their length and also inclined from the plane of rotation as regards their width, and each seat of each pair being parallel to the other throughout its length; and blades mounted in the seats.

5. In a cutter-head, the combination of a body portion provided with a series of seats C arranged upon opposite sides in pairs substantially as described, elongated openings E passing through the body portion and opening into said seats; ears F extending into said seats, and blades D mounted in said seats, substantially as described.

608,273. PNEUMATIC TIRE. CHARLES S. SCOTT, Cadiz, Ohio, assignor of three-fourths to Robert P. Scott and Herman A. Rogers, same place. Filed Feb. 18, 1897. Serial No. 624,013. (No model.)

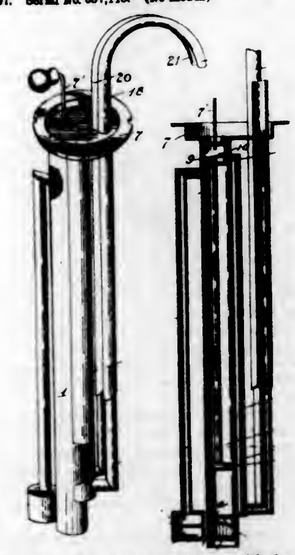
Claim.—1. An automatically-attachable pneumatic tire having primarily-flexible bands of diagonally-woven wire fabric secured in its sides, the inflation of the tire causing a distortion and consequent rigidity of the bands substantially as described.



2. The combination of a grooved wheel-rim and an automatically-attachable pneumatic tire having primarily-flexible metal bands secured in its sides, the edges of the bands being respectively above and below the rim edges and the inflation of the tire causing a distortion and consequent rigidity of the bands substantially as described.

3. The combination of a wheel-rim and an automatically-attachable pneumatic tire having a pair of primarily-flexible bands of diagonally-woven wire fabric in its sides, the inflation of the tire causing a distortion and consequent rigidity of the bands substantially as described.

608,274. OIL-PUMP. FRED C. SMITH, Delavan, Wis. Filed May 15, 1897. Serial No. 637,113. (No model.)



Claim.—In an oil-pump the combination with the pump-barrel, the partitions in the lower end of said barrel formed with openings, the valve located between said partitions, the valve-casing secured to said pump-barrel having an opening in the lower end, the valve, the pipe connected with said casing and communicating with the upper end of the pump-barrel, the apertured partition, the plunger-rod, the plunger, the top or cover and the movable valve on the plunger-rod, of the curved plate forming a chamber at one side of the pump-barrel and communicating with the upper end of said barrel, the upwardly-extending pipe connected with the lower end of said chamber and provided with a curved nozzle, and the pipe connected with the lower end of the pump-barrel, provided with a curved nozzle, substantially as described.

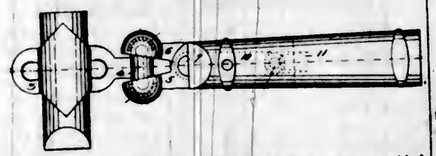
608,275. WEATHER-STRIP. ELMER H STEINER, Knightstown, Ind., assignor of one-half to Levi Morton Edwards, same place. Filed Nov. 30, 1897. Serial No. 660,245. (No model.)

Claim.—1. The combination with a channeled sill, of the series of independently-adjustable supports secured in said sill to lie within the channel thereof and having seats in their upper ends, and a tiltable metallic plate provided on its lower side with central bearing-lugs fitted in said seats of the supports and said plate arranged within the sill-channel to house and conceal the supports which lie centrally within the side edges of said plate, substantially as described



2. The combination with a sill having threshold-strips arranged to form a channel, of the threaded supports secured in series to the sill centrally within the channel thereof and provided with curved seats in their upper ends, and a tiltable metallic plate arranged horizontally within said channel and provided with the central depending bearing-lugs which fit loosely in the seats of the supports to make the plate have a central line of bearing thereon, said supports being adjustable independently in the sill to raise the plate in proper relation to the lower edge of a door and said plate further provided with a flange adapted to impinge against a door, substantially as described.

608,276. THILL-COUPLING. EDWARD STORR, Poughkeepsie, N. Y. Filed Jan. 27, 1898. Serial No. 668,161. (No model.)



Claim.—1. In combination, a clip and pivoted levers provided with coacting lugs and sleeves, one of said levers being provided with a spring-plate and a locking-stud, and the other with a seat or socket for receiving the locking-lug, substantially as set forth.

2. In combination, a clip and pivoted levers provided with coacting lugs and bushed sleeves, said sleeves open at both ends, and a spring, one end of which is provided with a finger-push, a locking-lever projecting through the lower pivoted member of said shear-levers and engaging the upper member of said shear-levers for locking said sleeves to the lugs, substantially as set forth.

3. In combination, a clip-plate and a lever, the one being provided with a lug and the other with a bearing-sleeve for the lug, a spring, one end of which is secured in place by a bolt, the other end being provided with a finger-push, a locking-stud projecting through the lower pivoted member of the shear-levers, and engaged with the upper member of said shear-levers, substantially as set forth.

4. In combination, a clip-plate, and the shear-levers provided with coacting lugs, and sleeves, said levers being pivoted together intermediate of their length, a spring one end of which is secured in place by a bolt, the other end being provided with a finger-push, a locking-stud projecting through the lower pivoted member of said shear-levers and engaged with the upper member of said shear-levers, substantially as set forth.

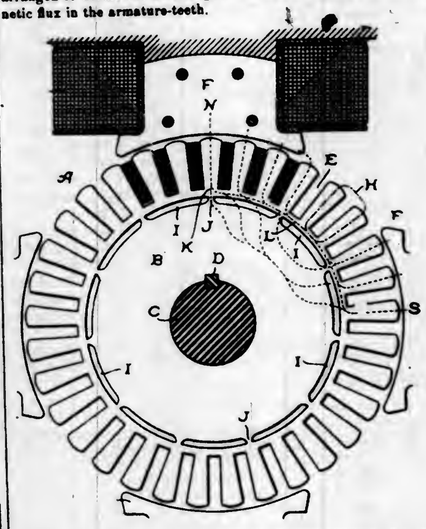
608,277. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. EDWARD H. ANDERSON and DAVID P. THOMSON, Schenectady, N. Y., assignors to the General Electric Company, of New York. Filed Jan. 3, 1898. Serial No. 666,016. (No model.)

Claim.—1. An armature for a dynamo-electric machine, provided with two main paths for the field-flux, as distinguished from the several paths through the armature-teeth, which have practically the same magnetic reluctance, but which with a given field excitation work at different densities.

2. In a dynamo-electric machine, the combination of a field-magnet, an armature, and a core for the armature provided with a number of paths for the field-flux, which differ in their magnetic density, but have approximately the same reluctance when working in a given magnetic field.

3. In a dynamo-electric machine, the combination of a field-magnet with an armature having a toothed laminated core provided with two paths through which substantially all of the field-flux passes, the two paths having substantially the same magnetic reluctance, but varying in their cross-section.

4. In a dynamo-electric machine, the combination of a field-magnet, a toothed armature separated from the field-magnet at all points by an air-gap, and an air-gap in the body of the armature arranged to divide the field-magnet flux and reduce the local magnetic flux in the armature-teeth.



5. In a dynamo-electric machine, the combination of a field-magnet, an armature, a toothed core therefor separated from the field-magnet by an air-gap, and air-gaps in the armature-core arranged to divide the field-flux into two parts.

6. In a dynamo-electric machine, the combination of, a field-magnet, an armature, a toothed core therefor separated from the field-magnet by an air-gap, air-gaps in the body of the core, and two main paths for the flux of each pair of poles, one of which includes the air-gaps in the core.

7. In a dynamo-electric machine, the combination of a field-magnet, an armature movable with respect thereto, a toothed armature-core, and openings in the core between the teeth and the main body of the core for limiting the cross-section of iron at this point.

8. In a dynamo-electric machine, the combination of a field-magnet, a toothed armature separated therefrom by an air-gap, and auxiliary air-gaps situated between the teeth and the main body of the core, the air-gaps being of greater length than the width of a single tooth.

9. In a dynamo-electric machine, the combination of a laminated armature-core having slots with parallel sides and a solid body with air-gaps made in the laminæ directly under the teeth and slots, the air-gaps being of greater length than depth.

10. In a dynamo-electric machine, the combination of a field-magnet, an armature separated therefrom by an air-gap, and an auxiliary air-gap in the body of the armature for decreasing the local magnetic flux which is created when a coil passes the point of commutation.

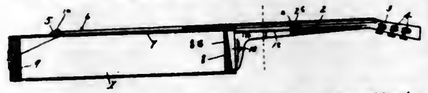
608,278. CAPO TASTO. PETER BENSON, Minneapolis, Minn. Filed May 23, 1897. Serial No. 638,512. (No model.)



Claim.—1. The combination with the body and string engaging bar, of the presser-foot 9 provided with the pronged extension 13 straddling said body, the screw-threaded stem 10 rigidly secured to said foot 9 and working through a seat in said body, and the nut 6 working on said screw-threaded stem 10 and fixed against endwise movement on one end of said clamp-body, substantially as described.

2. The combination with a clamp-body 1 provided with a suitable bar at one end, and at its other end bifurcated at 4 to form the prongs 5, which prongs are coiled, of the nut 6 with hubs 7 held by said coiled prongs 5, and the presser-foot provided with a screw-threaded stem which works with screw-threaded engagement through said nut 6 and the hubs 7 thereof, substantially as described.

608,279. GUITAR. PETER BERGEN, Minneapolis, Minn. Filed May 28, 1897. Serial No. 638,513. (No model.)



Claim.—1. In a guitar or similar instrument, the combination with the neck thereof formed with a longitudinal groove in its upper face, and provided with a finger-board securable over said groove, of a metallic reinforcing-strip which is channel-shaped or hollowed out in cross-section, and is adapted to be held in the longitudinal groove of said neck, by said finger-board, substantially as described.

2. In a guitar or similar instrument, a neck provided with a suitable longitudinal seat or groove, and the reinforcing-strip 11 12 seated in said neck, substantially as and for the purposes set forth.

3. A guitar or similar instrument having its strings anchored at its tail or lower end, passed into the interior of the body of the same and outward through its top, substantially as and for the purposes set forth.

4. A guitar provided with the bridge 5, perforations 13, anchor-plate 14 and perforations 15, through which the strings 6 are passed, substantially as and for the purposes set forth.

608,280. RAILROAD-SIGNAL. THOMAS H. CAMPBELL, Ashland, Va. Filed Jan. 28, 1898. Serial No. 668,293. (No model.)



Claim.—1 The combination with a signal-staff, and means under constant tension for actuating the same, of a locking device, and a trip mechanism arranged in operative relation with the locking device and having a plunger mounted in a casing in the path of water liable to rise above a normal level, substantially as specified.

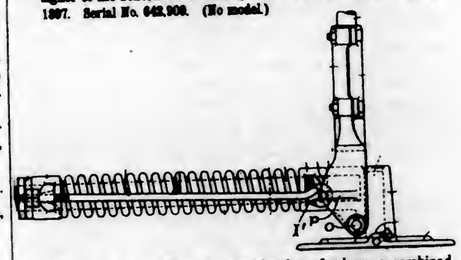
2. The combination with a signal-staff, and means, under constant tension, for actuating the same to expose a danger signal, of a casing, a locking device inclosed in the casing for maintaining the signal-staff in its set position, and trip mechanism also inclosed in the casing and arranged in operative relation with the locking device, the same having a plunger arranged in the path of water liable to rise above a normal level, substantially as specified.

3. The combination with a signal staff or spindle mounted for rotary movement, and means under constant tension for actuating the same, of a locking-lever yieldingly held in its set position with an arm in the path of a projection on said staff or spindle, to maintain the latter in its set position, and a plunger arranged in the path of water liable to rise above its normal level, and operatively connected with said locking-lever, for actuating the same when the plunger is moved by contact of the water, substantially as specified.

4. The combination with a signal staff or spindle having a lateral arm and an actuating-weight flexibly connected with said arm, of a locking-lever normally arranged in the path of a second arm on the staff or spindle, a plunger arranged in the path of water liable to rise above its normal level, and operatively connected with said locking-lever, and a casing inclosing said actuating-weight, locking-lever, and plunger, substantially as specified.

5. The combination with a signal staff or spindle, and yielding means under constant tension for actuating the same, of a locking-lever normally arranged in the path of an arm on said staff or spindle, a cylindrical casing inclosing said lever and extending below the plane thereof, an open-work guard closing the lower end of the casing, and a plunger, consisting of a float mounted in the casing and having a stem in the path of which said locking-lever is arranged, said plunger being located above the normal level of water liable to rise, substantially as specified.

608,281. TROLLEY. FRANK R. CARR, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed June 30, 1897. Serial No. 642,909. (No model.)



Claim.—1. In a trolley, the combination of a base, a combined lifting and buffer spring extending in one direction only from the base, and a pole-socket pivoted to the base at a point below the center line of the spring.

2. In a trolley, the combination of a base, a single pipe or equivalent frame-piece secured to the base and extending outwardly therefrom, a sliding cross-head mounted upon the pipe, a combined lifting and buffer spring, a pole-socket pivotally secured to the base at a point below the center of the spring, and connecting-links between the cross-head and the pole-socket.

3. In a trolley, the combination of a base, a pipe secured to the base, a sliding cross-head mounted on the outer end of the pipe, a sliding collar mounted on the inner end of the pipe, a combined lifting and buffer spring located between the cross-head and the collar, and adapted to be compressed from each end, a pole-socket pivotally secured to the base at a point below the center of the spring, and means on the socket for engaging with the sliding collar when the pole rises to a predetermined height.

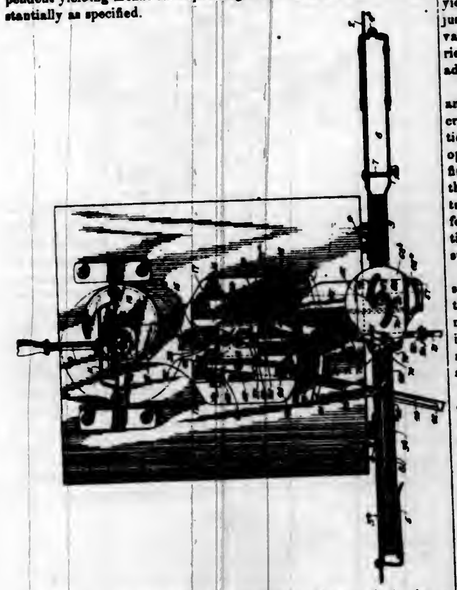
4. In a trolley, the combination of a base, a casting swiveled thereon, a pipe, a cross-head on the outer end of the pipe, a sliding collar provided with lugs also mounted on the pipe, a combined lifting and buffer spring surrounding the pipe and located between the collar and head, and stops for limiting the outward movement of the head, a forked pole-socket pivoted to the base at a point below the center of the spring, and projections on the arms of the fork arranged to strike the lugs on the collar when the trolley is at or near its vertical position.

5. In a trolley, the combination of a casting swiveled upon the base, a pipe mounted in a lug on the casting and extending outward therefrom, a cross-head mounted upon the pipe at the outer end, a sliding collar having outwardly-extending lugs mounted upon the pipe at the inner end, a combined lifting and buffer spring between the collar and head and stops limiting the outward movement of the head, a pole-socket pivoted to the casting at a point below the center of the spring, lugs on the head and pole-socket in which are mounted connecting-rods, and devices on the pole-socket engaging the lugs on the sliding collar when the trolley is at or near its vertical position.

6. In a trolley, the combination of a base, a vertically-extending stud mounted thereon, a casting supported by said stud, a single support extending outward from the casting, a combined lifting and buffer spring mounted on the support, a pole-socket provided with a fork extension on its lower side, the arms of which straddle the casting, and a transverse shaft forming the center of motion of the trolley-pole and socket situated below the center line of the spring.

608,282. SAW-FILING MACHINE. HENRY B. DAVIS, Brunner, Tex., assignor of one-half to William J. Rohde, Houston, Tex. Filed Nov. 22, 1897. Serial No. 659,460. (No model.)

Claim.—1. In a machine of the class described, a file-carrier having a reciprocatory member mounted in guides for linear movement, flexibly-connected toe and heel supports for the file, one of which is movably mounted upon said reciprocatory member, and the other of which is movably mounted upon the first-named support, and independent yielding means for depressing the toe and heel supports, substantially as specified.



2. In a machine of the class described, a file-carrier having a heel-socket, a toe-socket, and a supporting-arm for the toe-socket fulcrumed upon the heel-socket, and independent yielding means for depressing the toe and heel sockets, substantially as specified.

3. In a machine of the class described, a file-carrier having a heel-socket, a toe-socket, and a pivotal supporting-arm for the toe-socket, and means for yieldingly depressing the heel-socket and elevating the rear end of said supporting-arm, substantially as specified.

4. In a machine of the class described, a file-carrier having a heel-socket, a toe-socket, and a pivotal supporting-arm for the toe-socket, means for yieldingly depressing the heel-socket and elevating the rear end of said supporting-arm, and tension-adjusting devices for varying the yielding pressure upon the supporting-arm, substantially as specified.

5. In a machine of the class described, a file-carrier having a heel-socket, a toe-socket, and a supporting-arm fulcrumed upon the heel-socket and carrying the toe-socket, a heel-socket-depressing spring, a toe-socket-depressing spring, and an adjustable rest on the supporting-arm for the toe-socket-depressing spring, to vary the tension thereof, substantially as specified.

6. In a machine of the class described, a file-carrier having a pivotal heel-socket, including a revolubly-adjustable file-seat and means for locking the same at the desired adjustment, a toe-socket, and a supporting-arm for the toe-socket, fulcrumed upon said adjustable member of the heel-socket by means of a yoke, and independent yielding means for depressing said heel and toe sockets, substantially as specified.

7. In a machine of the class described, a file-carrier having a heel-socket, a supporting-arm fulcrumed upon the heel-socket, a toe-socket adjustably mounted upon, for movement parallel with, the supporting-arm, and means for yieldingly depressing the toe and heel sockets, substantially as specified.

8. In a machine of the class described, a file-carrier having a heel-socket including a pivotal member, and a tubular member or file-seat fitted for axial and revoluble adjustment upon the pivotal member, means for securing said tubular member or seat at the desired axial and rotary adjustment, a supporting-arm fulcrumed upon the heel-socket, a toe-socket supported by said arm, and means for yieldingly depressing the toe and heel sockets, substantially as specified.

9. In a machine of the class described, a reciprocable cross-head and means for operating the same, a file-carrier mounted upon the cross-head for pivotal movement, toward and from its operative positions, yielding means for normally maintaining the file-carrier in its operative position, a tripping device having one of its members consisting of a trip-finger projecting rearwardly from the file-carrier and the other member consisting of a trip arranged in the path of the first-named member, and adapted, when engaged therewith, to tilt the file-carrier from its operative position in opposition to said yielding means, one of the members of the tripping device being adjustable in a direction parallel with the path of the cross-head, to vary the extent and initial point of the tilting movement of the carrier, and means for securing the adjustable member at the desired adjustment, substantially as specified.

10. In a machine of the class described, a reciprocable cross-head and means for operating the same, a file-carrier mounted upon the cross-head for tilting movement toward and from its operative position, yielding means for normally maintaining the file-carrier in its operative position, said carrier having a rearwardly-extending trip-finger, projecting in the opposite direction from a file supported by the carrier, an adjustable inclined trip arranged in the path of said trip-finger for depressing the latter to tilt the file-carrier, and means for securing the trip at the desired adjustment, to vary the extent of tilting movement of the file-carrier, and the point at which it is tilted, substantially as specified.

11. In a machine of the class described, a pair of cooperating setting-levers, and means for oscillating the same in opposite directions to bear against opposite sides of contiguous saw-teeth, yielding means for pressing one of said levers toward the other, and an adjusting device carried by one lever and bearing against the other for varying the interval therebetween, in opposition to said yielding means, substantially as specified.

12. In a machine of the class described, a setting device having coaxially-mounted setting-levers, means for oscillating said levers in opposite directions, yielding means for holding the levers with their adjacent faces contiguous to each other, and a set-screw mounted upon one of the levers and bearing terminally against the contiguous face of the other lever to vary the interval therebetween, in opposition to said yielding means, substantially as specified.

13. In a machine of the class described, a setting device having coaxially-mounted setting-levers, one of which is axially movable toward and from the other, means for reciprocating said levers in opposite directions, yielding means for maintaining the axially-movable lever contiguous to the cooperating lever, and a set-screw mounted upon one of said levers and bearing against the surface of the other to vary the interval therebetween, in opposition to said yielding means, substantially as specified.

14. In a machine of the class described, a setting device having pivotally-mounted setting-levers, one of which is axially movable toward and from the other, means for operating said levers, adjusting devices for varying the interval between the levers, and a gage carried by one of the levers for traversing a fixed pointer, substantially as specified.

15. In a machine of the class described, a setting device having cooperating pivotal setting-levers, and operating devices for reciprocating the same, one of said levers being mounted for axial movement, yielding means for maintaining the axially-movable lever contiguous to the cooperating lever, adjusting devices for varying the interval between said levers in opposition to said yielding means, and a gage carried by the axially-movable lever for traversing a fixed pointer, substantially as specified.

16. In a machine of the class described, a setting device having oscillatory setting-levers and means for operating the same, holding-plates terminally arranged upon opposite sides of the plane of a saw-blade, and adjustably mounted for movement toward and from and perpendicular to the plane of the same, and means for securing said plates at the desired adjustment, substantially as specified.

17. In a machine of the class described, a setting device having oscillatory setting-levers, a pivotal cam-plate having cam connections with said levers, and means for oscillating the cam-plate, substantially as specified.

18. In a machine of the class described, a setting device having oscillatory setting-levers, a pivotal cam-plate having slots through which the extremities of said setting-levers project, and means for oscillating the cam-plate, substantially as specified.

19. In a machine of the class described, a setting device having oscillatory setting-levers, a pivotal cam-plate of sectional construction including a main oscillatory member, and an adjustable member mounted for angular adjustment upon said main member, and provided with cam-slots through which the extremities of said setting-levers project, and locking devices for securing the auxiliary member at the desired adjustment upon the main member, substantially as specified.

20. In a machine of the class described, a setting device including oscillatory levers, an oscillatory cam-plate operatively connected with said levers and having an angularly-adjustable member provided with the means for communicating motion to said levers, a reciprocatory cross-head and operating devices, and an extensible pitman connecting the cross-head with the cam-plate and comprising relatively-adjustable members, and means for securing the same at the desired adjustment, substantially as specified.

21. In a machine of the class described, the combination with a

base and a saw-clamp, of a supporting-plate for saw-setting devices mounted for adjustment toward and from the saw-clamp, setting devices mounted upon the supporting-plate, locking devices for securing the supporting-plate at the desired adjustment, and means for operating the setting devices, substantially as specified.

22. In a machine of the class described the combination with a base and a saw-clamp, of a supporting-plate for saw-setting devices, mounted for adjustment toward and from the saw-clamp, setting devices mounted upon said supporting-plate, locking devices for securing the supporting-plate at the desired adjustment, operating means for the saw-setting devices, holding-plates mounted upon the supporting-plate for adjustment perpendicular to the plane of a saw-blade, and means for securing said holding-plates at the desired adjustment, substantially as specified.

23. In a machine of the class described, a base, a flat guide-bar supported by the same, a saw-carriage mounted for linear movement upon the guide-bar and provided with a saw clamp, having travelers 4 to engage opposite edges of the guide-bar, saw filing and feeding devices, and means for communicating motion thereto, substantially as specified.

24. In a machine of the class described, a base, a flat guide-bar on the base, a saw-carriage mounted for linear movement upon the base and having a sectional saw-clamp comprising a fixed member, provided with travelers fitted on said guide-bar, and a movable member hingedly connected with the fixed member, and locking devices for securing the free end of the movable member in its operative position, an angularly-adjustable bed-plate, and saw filing and feeding mechanisms carried by the bed-plate, substantially as specified.

25. In a machine of the class described, a base, a saw-carriage mounted for linear movement upon the base and having a saw-clamp comprising a fixed member, a movable member hingedly mounted upon the fixed member, said fixed and movable members being provided with offset portions to form a handle-seat, and a swinging latch mounted upon the fixed member for engaging and locking the movable member in its operative position, and saw filing and feeding mechanisms, substantially as specified.

26. In a machine of the class described, a base, saw clamping and holding devices carried by the base, a driving-shaft mounted upon and perpendicular to the base, a bed-plate fulcrumed concentrically with and upon the driving shaft, means for locking the bed-plate at the desired adjustment, and saw-filing mechanism mounted upon the bed-plate and operatively connected with said driving-shaft, the adjustment of said bed-plate being adapted to vary the angular position of the file with relation to the saw-clamp, substantially as specified.

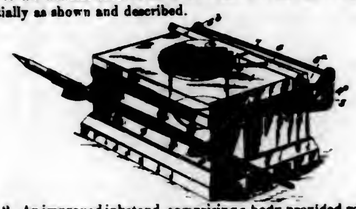
27. In a machine of the class described, the combination with saw-filing mechanism, including a reciprocatory member, of a pivotal feed-arm mounted for swinging movement parallel with the plane of the reciprocatory member, a throw-plate adjustably mounted upon the feed-arm in the path of the reciprocatory member, and means for adjusting the throw-plate to vary the amplitude of vibration imparted by the reciprocatory member to the feed-arm, substantially as specified.

28. In a machine of the class described, the combination with saw-filing mechanism including a reciprocatory member, of a feed-arm mounted for swinging movement parallel with the plane of the reciprocatory member, a pivotal throw-plate mounted upon the feed-arm in the path of the reciprocatory member and capable of adjustment to vary the throw imparted by said member to the feed arm, and set-screw for adjusting the throw-plate, substantially as specified.

29. In a machine of the class described, the combination with saw-filing mechanism including a reciprocatory member, of a feed-arm mounted for swinging movement parallel with the reciprocatory member, a throw-plate adjustably mounted upon the feed-arm in the path of the reciprocatory member, an adjusting device for the throw-plate including a screw having a pointer, and a gage-plate traversed by said pointer to indicate the adjustment of the throw-plate, substantially as specified.

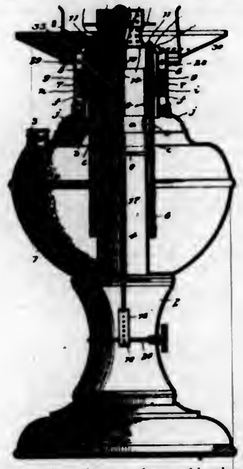
608,283. INKSTAND. RALPH G. DORRANCE, Chicago, Ill. Filed Oct. 25, 1897. Serial No. 656,355. (No model.)

Claim.—1. An improved attachment for ink-wells, comprising a supporting-frame having a clamp portion adapted to encircle the front and sides of the ink well or body and having side arms arranged to project beyond the rear edge of the said body, a combined lock and pivot-rod, secured in such projecting side members, swing-arms fulcrumed on the said side arms of the said supporting-frame in such a manner that their rear-ends will normally swing down by gravity, the front ends of such arms forming a pen-rest, the rear ends having annular extensions 4^a, the cover 8, the cover-carrying frame consisting of a single member having cover-holding ears 6^a and their ends bent at right angles to form bell-cranks 6^b, said cranks being fulcrumed at their apex on the rod 3 and pivotally joined at their other ends to the annular extensions of the arms 4, all being arranged substantially as shown and described.



2. An improved inkstand, comprising a body provided with horizontal grooves in its end, a supporting-frame consisting of a ⊏-shaped band, the side arms of which fit the grooves in the end of the stand and project beyond the rear edge thereof, the bar 3 engaging the said projecting ends of the frame, said bar forming a locking means for holding such arm to its seat on the stand and serving as a pivot-bar, swinging arms 4, fulcrumed on the side members of the supporting-frame and projecting at one end beyond the front of the stand to form pen-rests, their other ends projecting beyond the rear edge of the stand and terminating in angle members, the cover 8, the cover-carrying frame 6, having crank members fulcrumed at their apex on the bar 3, and having their front ends pivotally connected to the angle members of the side members 4, all being arranged substantially as shown and for the purposes described.

608,284. LAMP-BURNER. JOSEPH GREGORY, New York, N. Y. Filed May 29, 1897. Serial No. 638,752. (No model.)



Claim.—1. In a lamp-burner, the combination of an inner and an outer casing forming between them a wick-space, the inner casing terminating below the outer casing, and a spreader and wick-lifter working together, the wick-lifter operating in the wick-space and the spreader having its sides perforated to the line of separation between the spreader and wick-lifter to supply an equal amount of air to the burning end of the wick at all adjusted positions, substantially as set forth.

2. In a lamp-burner, the combination of an inner and an outer casing inclosing a wick-space, the upper end of the inner casing terminating a distance below the plane of the upper end of the outer casing, and a spreader and wick-lifter moving together, the wick-lifter operating in the wick-space and embracing the inner casing and forming a continuation thereof and the spreader being perforated from its upper end down to the end of the wick, substantially as set forth for the purpose described.

3. In a lamp-burner, the combination of an inner and an outer casing forming a wick-space, the inner casing having its upper end terminating a distance from the plane of the upper end of the outer casing, and the casings being of such relative proportions as to provide a passage between the outer casing and the wick, and a spreader and wick-lifter constructed to move together, the wick-lifter operating in the wick-space and forming a continuation of the inner casing, substantially as set forth for the purpose described.

4. In a lamp-burner, the combination with a wick-tube, and

means for raising and lowering the wick, of an arrester normally held out of engagement with the wick and constructed to engage therewith and limit its downward movement when lowered to a predetermined point, substantially as set forth.

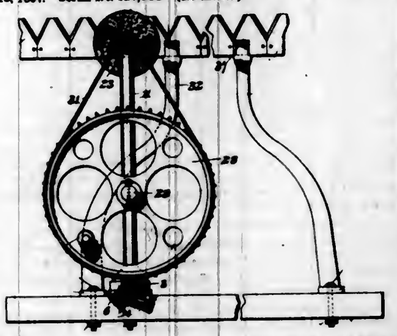
5. In a central-draft burner, the combination of a wick-lifter provided at its upper edge with vertically-disposed hooks having deflected ends extending outwardly across the wick-space to engage with the wick, a spreader having its lower end fitting within the space inclosed by the said hooks, and means for holding the spreader and wick-lifter together, substantially as set forth.

6. In a central-draft burner, the combination of a wick-tube having its inner casing terminating below the upper end of the outer casing, a wick-lifter slidably mounted upon the inner casing within the wick-space and having its upper end forming a continuation thereof, and having portions cut from its lower portion, forming teeth, and having the upper parts of the teeth curving inwardly and adapted to be projected by engaging with the inner casing of the wick-tube, and means for raising and lowering the wick-lifter, substantially as set forth.

7. In a central-draft burner, the combination with the wick tube, and a wick-lifter operating in the wick-space, of an arrester located in the wick-space and having teeth curving at their upper ends and normally held out of the path of the wick, and caused to engage with the latter by the wick-lifter coming in contact with the curved ends of the said teeth, substantially as set forth.

8. In a central-draft burner, the combination with the wick-tube having an annular depression, and a wick-lifter operating in the wick-space, of a wick-arrester having spring-teeth formed with carved ends normally resting within the annular depression and projected by contact therewith of the wick-lifter, substantially in the manner set forth for the purpose described.

608,285. GRINDING-MACHINE. JAMES R. HARVEY, Readfield, Me., assignor of one-half to Frank L. Brande, Starks, Me. Filed Mar. 13, 1897. Serial No. 627,344. (No model.)



Claim.—1. In a grinding machine, the combination with the base and the grinding apparatus adjustably supported thereon, of supports for the article to be ground consisting of bars bent to ogee form to bring their ends out of vertical alinement, each bar having a foot to rest on said base, and means to adjust the supports longitudinally and transversely of the bar, substantially as described.

2. In a grinding-machine, a standard connected to the base of the machine by a universal joint, and having spaced arms at its upper ends, combined with a shaft having two portions of different diameters, the smaller end of said shaft being journaled in one of said arms, and the larger end fitting loosely within a sleeve journaled in the other arm, a connection between the shaft and sleeve whereby they rotate together and the sleeve may move longitudinally on the shaft, a grinding-wheel carried on the outer end of the sleeve, a spring fitted between the arms and engaging the inner end of the sleeve, a device to lock the shaft against longitudinal movement, and means to rotate the shaft and sleeve, substantially as described.

3. In a grinding machine, a standard connected to the base of the machine by a universal joint, and having spaced arms on its upper ends, combined with a sleeve journaled in one of the arms and carrying a grinding-wheel at its outer end, a shaft fitting loosely in said sleeve and having a shouldered and reduced portion journaled in the other arm with the shoulder bearing against the inner face of the said arm, a slot and-pin connection between the shaft and sleeve, a sprocket-wheel on the outer end of the reduced portion of the shaft and engaging the outer face of the arm, a locking-pin passing through the hub of the sprocket-wheel and the shaft, a large sprocket-wheel journaled on a stub-shaft projecting from the standard and provided with a handle, and a chain running over said sprocket-wheels, substantially as described.

4. In a grinding-machine, the combination with the base and a plate adjustably secured thereto, of a washer supported on said plate and having a concave recess, a standard having a rounded end seated in said recess, said lower end being also provided with an interior concave recess, a semispherical washer seated in the recess in the standard, a bolt passing through the said washers and plate with its head supported on the flat face of the washer within the standard, a nut on the bolt to engage the lower face of the plate, and grinding apparatus carried by the standard, substantially as described.

5. In a grinding-machine, a support having spaced jaws at its upper ends, one of said jaws having a head overhanging the space between the jaws and projecting at each end beyond the jaws, the support being also widened below the jaws to form side recesses, combined with a bracket having spaced ears at one end adapted to be removably fitted into the said side recesses and having their ends upturned to engage the rear face of the said head, said bracket also having a downwardly-extending flange to engage the front face of the support, substantially as described.

608,286. NOTE-BOOK. CHARLES H. HASTINGS, Chicago, Ill. Filed Aug. 14, 1897. Serial No. 648,195. (No model.)



Claim.—1. As an article of manufacture, a binding-cord having one of its ends enlarged and apertured, and a metal tag at its other end, such tag being apertured intermediate of its ends to receive the cord end, and split from one end to such aperture and then compressed upon the cord.

2. As an article of manufacture, a binding-cord having a metal tag attached to one of its ends, such tag being apertured intermediate of its ends to receive the cord end, and split from one end to such aperture and then compressed upon the cord.

3. As an article of manufacture, a binding device comprising a cord having one of its ends enlarged and eyeleted, and a metal tag at its other end, such tag being apertured intermediate of its ends to receive the cord end, and split from one end to such aperture and then compressed upon the cord.

4. As an article of manufacture, a binding device comprising a cord having one of its ends enlarged and eyeleted, and a bifurcated metal tag at the other end, the cord being clamped between the arms of the tag intermediate of its ends, and secured by means of a slide-ring upon the tag.

608,287. AUTOMATIC SHEET-METAL-ROLLING MILL. JOHN G. HENDRON, Maywood, Ill., assignor to the Morton Bros., Chicago, Ill. Filed Aug. 2, 1897. Serial No. 646,745. (No model.)

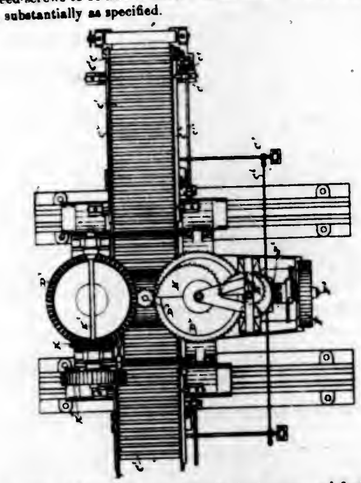
Claim.—1. In an automatic sheet-metal-rolling mill, the combination with the rolls, feed-tables and feed-screws for setting the rolls closer together, of a pair of involute gears for turning the feed-screws by diminishing increments after each reduction or pass of the metal between the rolls to set them for the next pass, substantially as specified.

2. In an automatic sheet-metal-rolling mill, the combination with the rolls, feed-tables and feed screws for setting the rolls closer together, of a pair of involute gears for toroing the feed-screws by diminishing increments after each reduction or pass of the metal between the rolls to set them for the next pass, and means for automatically turning the shaft of one of said intermeshing involute gears after each successive pass, substantially as specified.

3. In an automatic sheet-metal-rolling mill, the combination with the rolls of a pair of feed-screws, one at each end of the rolls, geared together for setting the rolls together, and involute gears for turning the feed-screws by diminishing increments after successive passes, substantially as specified.

4. The combination with the rolls, feed-screws and feed-tables, of a driving pulley or shaft for the feed-screws, a clutch and connecting-gearing for communicating motion to said feed-screws, mechanism for automatically operating said clutch at each reversal of the mill, said connecting-gearing having a pair of involute gears to cause

the feed-screws to be turned a less and less extent at each successive turn, substantially as specified.



5. The combination with the rolls, feed-screws and feed-tables, of a driving pulley or shaft for the feed-screws, a clutch and connecting-gearing for communicating motion to said feed-screws, mechanism for automatically operating said clutch at each reversal of the mill, said connecting-gearing having a pair of involute gears to cause the feed-screws to be turned a less and less extent at each successive turn, and mechanism for automatically running back the feed-screws after a predetermined number of passes have been made, substantially as specified.

6. The combination with the rolls and feed-screws for setting the rolls closer together, a driving pulley or shaft for the feed-screws, gearing connecting said driving pulley or shaft with the feed-screws, a clutch for connecting and disconnecting said gearing with said driving pulley, a friction cam or arm on the shaft of one of the rolls, and connecting mechanism between said cam or arm and the clutch for operating the clutch at each reversal of the motion of the rolls, said connecting-gearing between the feed-screws and their driving pulley or shaft having a pair of involute gears to cause the feed-screws to be turned a diminishing amount, substantially as specified.

7. The combination with the rolls and feed-screws for setting the rolls closer together, a driving pulley or shaft for the feed-screws, gearing connecting said driving pulley or shaft with the feed-screws, a clutch for connecting and disconnecting said gearing with said driving-pulley, a friction cam or arm on the shaft of ope of the rolls, and connecting mechanism between said cam or arm and the clutch for operating the clutch at each reversal of the motion of the rolls, said connecting-gearing between the feed-screws and their driving pulley or shaft having a pair of involute gears to cause the feed-screws to be turned a diminishing amount, and mechanism for automatically running back or returning the feed-screws to position after a predetermined number of passes have been made, substantially as specified.

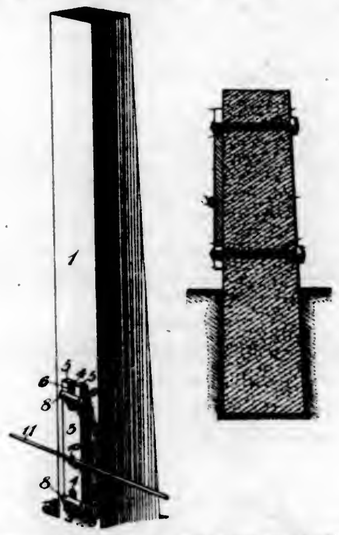
8. In a sheet-metal-rolling mill, the combination with the feed-table and rolls, of movable gages at the opposite edges of the feed-table for automatically truing and centering the bars or sheets on the feed-table, and mechanism for automatically opening and closing the gages at each reversal of the motion of the mill comprising a rack and gear, connecting links and levers, and a friction-arm on the shaft of one of the rolls, substantially as specified.

9. In a sheet-metal-rolling mill, the combination with the feed-table and rolls, of movable gages at the opposite edges of the feed-table for automatically truing and centering the bars or sheets on the feed-table, and mechanism for automatically opening and closing the gages at each reversal of the motion of the mill, said mechanism consisting in a friction cam or arm and connections connecting said friction cam or arm with said movable gages, substantially as specified.

10. The combination with the rolls, feed-table and centering-gages and the engine-shaft of a jack or mechanism for reversing the direction of rotation of the rolls comprising two gears fixed to the engine-shaft one of which meshes directly with a loose gear on the roll-shaft, the other meshing with a gear on a counter-shaft which meshes with a second loose gear on the roll-shaft and a clutch upon the roll-shaft to engage either of the loose gears on that shaft at the will of the workman in charge, the feed-screws, and mechanism for automatically turning the feed-screws at each reversal of the direction of rotation of the rolls to set or adjust the rolls for the next succeeding pass, substantially as specified.

11. The combination with the rolls and feed-screws, each having a squared end, of a worm-gear fitting on the squared end of the feed-screw, a gear loose on the hub of the worm for communicating motion to the feed-screw, and a worm journaled on said gear and engaging said worm-gear, substantially as specified.

608,288. **FENCE-POST.** SCHOOLER C. HORN, Bladensburg, Ohio. Filed June 14, 1898. Serial No. 683,418. (No model.)

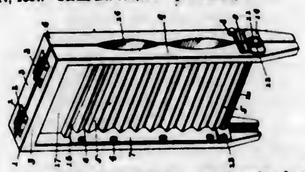


Claim.—1. The combination with a fence post, of a block carried by the post, and longitudinally adjustable thereon, and means provided upon the block for carrying the fencing, substantially as and for the purpose set forth.

2. The combination with a fence-post, of a block having longitudinal slots therein and means for carrying the fencing, and bolts or screws provided upon the post and extending through the said slots, whereby the fencing may be adjusted vertically upon the post, substantially as shown and described.

3. The combination with a fence-post, of a block having a longitudinal slot or bifurcation at each end thereof, and means for carrying the fencing, bolts extending through the post, each bolt having a nut provided upon the rear end thereof and bearing against the rear face of the post, and a transverse head having inwardly-turned flanges formed at each end thereof, the shanks of the respective bolts extending through the slots and the heads thereof embracing the front face and sides of the block, whereby the latter is slidably mounted upon the post, substantially as and for the purpose set forth.

608,289. **WASHBOARD.** AMALON S. IRMON, Kelly, Va. Filed Sept. 17, 1897. Serial No. 652,016. (No model.)



Claim.—1. A washboard comprising two clamping frames hinged together at one end of the washboard and provided at the inner longitudinal edges of their sides with recesses, the separable plates secured to the inner faces of the sides of the clamping-frames, projecting over the said recesses and provided at their inner opposite edges with angular notches, said plates being adapted to swing apart with the clamping-frames, the removable and reversible transverse bars or slats arranged in said notches and clamped by the plates, and means for holding the free ends of the frames together, substantially as described.

2. A washboard comprising two clamping-frames hinged together at the top of the board, and provided at the inner edges of their sides with notches, means for holding the free ends of the frames together, the reversible and removable transverse bars or slats arranged in said notches forming rubbing-surfaces, a transverse rod extending across the washboard and having its terminals arranged between the sides of the clamping-frames, inner and outer plates mounted on the ends of the rod, and nuts on the end of the rod engaging the outer plates and adapted to force the sides of the frames inward, substantially as described.

3. A washboard comprising two clamping-frames hinged together at the top and provided at their sides with longitudinal recesses and having recesses 16 forming side openings, means for holding the free ends of the frames together, notched plates secured to the inner faces of the sides of the clamping-frames, transverse bars or slats forming rubbing-surfaces clamped in the notches of the plates, means for connecting the frames, the board or partition 17 arranged between the upper portions of the clamping-frames and the transverse board 18 detachably secured between the clamping-frames at the bottom of the board 17 and combining with the latter to form opposite soap-receptacles, substantially as described.

608,290. **HYDROCARBON-BURNER.** JONATHAN JOHNSTON, Morgan Park, Ill., assignor to Herbert O. Bennett, Chicago, Ill. Filed Dec. 28, 1896. Serial No. 617,146. (No model.)



Claim.—1. A hydrocarbon-burner having in combination an injector, the elevated plate 2 having the depressed combustion-chamber 4 provided with an upwardly-curved wall at its rear side arranged opposite said injector, and a second plate and retort supported over said combustion-chamber and overlapping said first plate, said retort being connected with said injector, substantially as set forth.

2. A hydrocarbon-burner having in combination an injector, the elevated plate 2 having the depressed combustion-chamber 4 provided with an upwardly-curved wall arranged opposite said injector, a funnel formed on the bottom of said plate 2 and projected toward said curved wall of the combustion-chamber, a retort supported over said combustion-chamber and extending over said funnel, there being a space for the passage of the products of combustion between the upper side of said funnel and said retort, and a connection between said retort and injector, substantially as set forth.

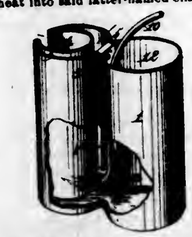
3. A hydrocarbon-burner having in combination a combustion-chamber, a plate 2, a plate 11 supported upon and at a distance above plate 2 over said combustion-chamber and being provided with a central opening, a retort constituting a continuous passage and having its inlet and outlet located on the same side, supported in and filling said opening and an injector connected with the outlet of said retort and discharging into the combustion-chamber, substantially as set forth.

4. The combination with a fire pot or box, of the plate 2 supported therein and having the funnel 5 and combustion-chamber 4 arranged thereunder, the diaphragm 26 supported around said plate 2, a retort supported over said combustion-chamber and an injector arranged at the mouth of said fennel and connected with said retort, substantially as set forth.

5. The combination with a fire-box or fire-pot, of the plate 2 having the upwardly-extending surrounding lip 14, the depending combustion-chamber 4 provided with an upwardly-curved rear wall formed with the spreader 9, the funnel 5 formed under said plate and communicating with said combustion-chamber, the legs 3 secured to said plate and having flanges 25, the diaphragm 26 supported upon said flanges 25 and extending across said fire-pot, a plate 11 having the upwardly-extending lip 15, arranged at a distance above said plate 2, the legs 12 supported upon plate 2, a retort supported by said plate 11, and an injector connected with said retort and discharging into said funnel, substantially as set forth.

608,291. **WATER-HEATER.** CLARENCE M. KEMP, Baltimore, Md. Filed Sept. 15, 1897. Serial No. 651,812. (No model.)

Claim.—1. As a new article of manufacture, a water-heater consisting of an open-top vessel having one end formed into a plurality of diverging hot-air channels with partially surrounding and intervening water-spaces, a vertically-sliding partition arranged transversely between the side walls of the vessel to provide an air-inlet channel opposite the said diverging channels, suitable guides or supports for the partition, an air-supply passage opening through the lower part of the partition to feed fresh air to the said diverging channels, and a suitable burner carried by the partition and arranged to discharge its heat into said latter-named channels.



2. As a new article of manufacture, a water-heater consisting of an open-top vessel having its side walls formed from a single piece of sheet metal, the edges of which are joined at the rear end of the vessel, said sheet metal being bent to provide a central contracted portion with two diverging channels on one side forming a central water-space, a vertically-sliding partition arranged transversely between the contracted walls of the vessel to form an air-inlet channel opposite the two diverging channels, said partition extending to near the bottom of the vessel but removed therefrom sufficiently to form a communicating passage between the channels, and a suitable burner carried by the said partition and arranged to discharge its heat into the two diverging channels.

3. As a new article of manufacture, a water-heater consisting of an open-top vessel the opposite side walls of which are contracted intermediate their ends to form guideways, a vertically-moving partition sliding between said guideways and extending to near the bottom thereof to divide the vessel into two communicating channels, the communicating passage being below the said partition, and a suitable burner carried by the partition and arranged to discharge the flame into one of the channels.

4. As a new article of manufacture, a water-heater comprising an open-top vessel having oppositely-disposed guideways upon the interior side walls thereof, a vertically-sliding partition moving between and supported by said guideways and extending near the bottom of the vessel to divide the same into two communicating channels or compartments, the communicating passage being below the partition, and a suitable burner secured to and carried by the partition and arranged to direct its heat to the bottom and lower part of one of said compartments.

5. As a new article of manufacture, a submerged water-heater consisting of an open-top vessel having its walls formed from a single piece of sheet metal, and the sides of said vessel being shaped to provide guideways, a vertically-movable partition supported by the guideways and arranged when in position to divide the vessel into two chambers or compartments allowing communication beneath the lower end of the partition, and a burner carried by the partition and arranged to impart heat to the bottom and lower part of one of the compartments, substantially as described.

608,292. **WHEEL.** GUSTAVE KIVERLMAN, Chicago, Ill. Filed Aug. 12, 1897. Serial No. 647,965. (No model.)



Claim.—1. A wheel having a sectional hub and provided in the meeting edges of its sections with an antifriction-bearing roller seat, and spokes having means for engaging and holding the hub-sections in operative relation, substantially as specified.

2. A wheel having a sectional hub divided in a plane transverse to its axis, the hub-sections being provided in their meeting edges with an antifriction-bearing-roller seat, and spokes arranged at their

inner ends to span the joint between the hub-sections and engaging the contiguous extremities thereof, substantially as specified.

3. A wheel having a sectional hub divided in a plane perpendicular to its axis and provided with a circumferential cross-sectionally V-shaped enlargement contiguous to said joint, the hub-sections having in their meeting ends a bearing-roller seat, and spokes provided at their inner ends with notches to engage the circumferential enlargement of the hub, substantially as specified.

4. A wheel having its hub provided in the plane of the spokes with an annular series of bearing-rollers, and upon opposite sides of the plane of its spokes with annular series of auxiliary bearing-rollers of less diameter than the seats in which they are fitted, to allow a limited rocking movement of the hub in the plane of its axis, substantially as specified.

5. A wheel provided in the plane of its spokes with a series of main bearing-rollers and upon opposite sides of the plane of its spokes with series of auxiliary or steadying rollers of smaller diameter than the bearing-rollers, said auxiliary rollers being fitted loosely in seats which are of greater diameter than the rollers whereby the main or intermediate bearing-rollers, only, are in operation when the wheel is in its upright or normal position, substantially as specified.

6. The combination of a tubular axle-skein provided at its inner end with a cap, a hub provided at its extremities with antifriction-roller seats, the seat at the inner end of the hub being closed by said inner cap, an outer cap closing the seat at the outer end of the hub, and a screw or bolt extending through the bore of the skein and engaging the extremity of the axle, substantially as specified.

7. An axle-skein provided at its inner end with a clamp for engaging an axle, and means for securing the same to the axle, the skein being provided with an axial bore, a wheel having its hub mounted upon said skein, a removable cap covering the outer ends of the hub and skein and a screw or bolt extending through the cap and the bore of the skein and engaging a socket in the contiguous extremity of the axle to secure the cap in place and steady the skein, substantially as specified.

608,293. PIPE-WRENCH. OWEN LARSON, Lee, Mass., assignor of one-half to R. W. Ely, same place. Filed Nov. 16, 1896. Serial No. 612,359. (No model.)



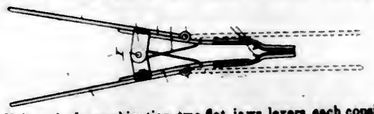
Claim.—In a pipe-wrench, the combination with the handle-bar 1 whose forward portion is bifurcated longitudinally at 3 and upturned in rigid jaws 4, the upper edge of the bifurcation and inner edges of said jaws forming two smooth bearing-surfaces standing at an acute angle to each other and in duplicate; of a movable jaw 7 whose outer end is downturned into an arm 6 with rounded extremity 6' pivoted between the upper ends of said rigid jaws, whose straight body is serrated at 8 on its inner edge adjacent said bearing-surfaces, and whose inner end is adapted to pass loosely through said bifurcation, as and for the purpose set forth.

608,294. BOWLING-ALLEY PIN. HENRY H. LUKE, Fredonia, N. Y. Filed May 19, 1898. Serial No. 682,158. (No model.)

Claim.—A bowling-alley pin, provided with a flat base having a central circular recess the walls of which are perpendicular to the base, and a bottom-protector consisting of a disk of rawhide, indurated fiber or analogous material applied to the base of the pin and secured thereto, said protector having a central reinforcing boss or projection filling the recess in the base of the pin, and the outer edge of the protector lying flush with the outer surface of the pin, and fastening devices passing through the disk near its edge into the pin, substantially as described.



608,295. TROUSERS-STRETCHER. MICHAEL F. MAHONEY, Philadelphia, Pa. Filed Nov. 16, 1897. Serial No. 658,727. (No model.)



Claim.—1. In combination, two flat jaws, levers, each consisting of an inner and outer section, each of said inner sections being formed of a single piece of wire bent into U shape, the ends of each of said inner sections being secured to one of the jaws, the arms of said inner sections being coiled centrally to produce eyes, said outer sections being also U-shaped, having their ends bent outwardly and inserted in said eyes, ears on the inner sections, and a pintle run through said ears, as and for the purpose described.

2. In combination two jaws, each having one longitudinal half offset and a recess formed at right angles to said offset portion near the center of the jaw whereby when the jaws are placed face to face a space is formed for the accommodation of the seams of the trousers, and levers secured to the offset portions of the jaws, said levers being pivoted together, as and for the purpose set forth.

608,296. STOPPER FOR BOTTLES, &c. CHARLES J. MULDOON, Rochester, N. Y. Filed Feb. 29, 1896. Serial No. 581,393. (No model.)



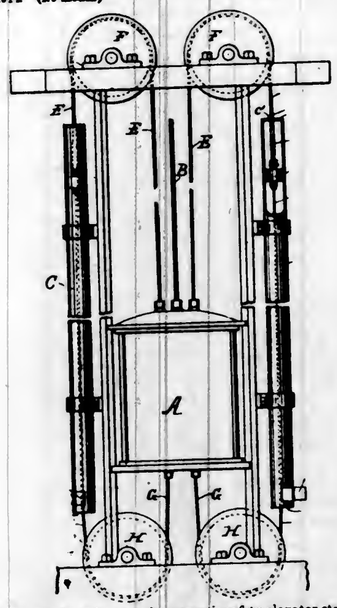
Claim.—1. A bottle-stopper having a central induction-passage at the bottom of the stopper, a central discharge-passage at the top of the stopper, a valve-seat above said induction-passage, the whole consisting of two longitudinal sections, each formed with an arched partition and longitudinal recesses whereby, when the sections are placed together, a central valve-retaining cavity and longitudinal passages will be produced in the stopper, said passages connecting the induction and discharge passages, and a valve in said valve-seat.

2. A bottle-stopper having a central induction-passage at the bottom of said stopper, a central discharge-passage at the top of the stopper, a valve-seat above said induction-passage, the whole consisting of two longitudinal sections, each formed with a partition extending from the face thereof and said two partitions constituting a single partition intersecting every straight line connecting the discharge and induction passages and each section having longitudinal recesses passing around said partition whereby, when the sections are placed together, a central valve-retaining cavity and longitudinal passages will be produced in the stopper, said passages connecting the induction and discharge passages, and a valve in said valve-seat.

3. A bottle-stopper having a central induction-passage at the bottom of the stopper, a central discharge-passage at the top of the stopper, a circular valve-seat above said induction-passage, the whole consisting of two longitudinal sections, each formed with an arched partition, and longitudinal lateral recesses whereby, when the sections are placed together, a central spherical, valve-retaining cavity and longitudinal, lateral passages are produced in the stopper, said passages connecting the induction and discharge passages, and said arched partitions together constituting a single partition intersecting all straight lines connecting the discharge and induction passages, and a spherical valve in said valve-seat.

4. A bottle-stopper having a central induction-passage at the bottom of the stopper, a central discharge-passage at the top of the stopper, a circular valve-seat above said induction-passage, the whole consisting of two longitudinal sections, each formed with an arched partition, and longitudinal lateral recesses whereby, when the sections are placed together, a central, spherical, valve-retaining cavity and longitudinal, lateral passages are produced in the stopper, said passages connecting the induction and discharge passages, and said arched partitions together constituting a single partition intersecting all straight lines between the discharge and induction passages, and projections on one of said sections and depressions on the other thereof for causing said sections to register with each other.

608,297. SAFETY STOP OR BRAKE FOR ELEVATORS. WILLIAM G. MOSER, Wilmington, Del. Filed Sept. 16, 1897. Serial No. 651,914. (No model.)

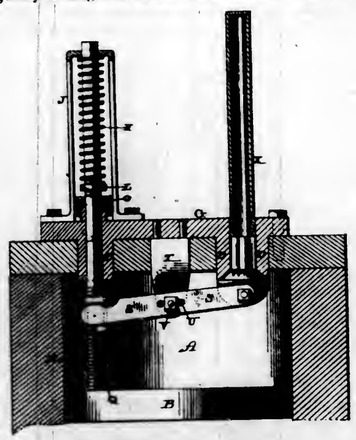


Claim.—1. In an improved pneumatic safety elevator-stop mechanism, comprising a compressed-air cylinder having an opening in its head and carrying a piston, the combination therewith of a rope or cable having a tapered end and extending from said piston through the opening and to the elevator-car, the size of the escape-opening with relation to the diameter of the end of said cable operating to regulate the escape of the compressed air in the cylinder with respect to the speed of the car, substantially as and for the purpose set forth.

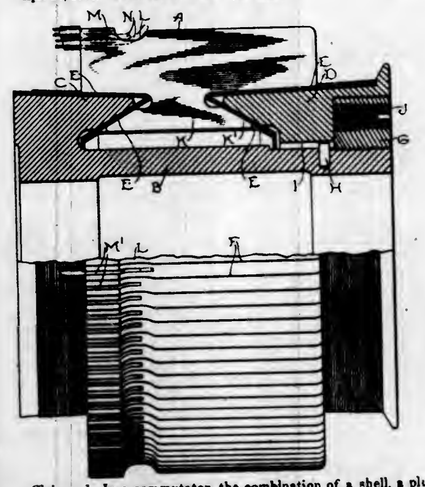
2. The herein-described improved pneumatic safety elevator-stop mechanism, comprising the vertical compressed-air cylinders arranged at the sides of the elevator-shaft and having an open bottom and a closed top in which is formed an air-escape opening, pistons operating said cylinders, the guide wheels or pulleys at the top of the elevator-shaft, the guide wheels or pulleys at the bottom of the elevator-shaft, weights or cables extending from the pistons around the bottom pulleys and to the elevator-car, and the upper ropes or cables extending from the pistons through the top air-escape openings over the top pulleys and to the top of the elevator-car, said upper ropes or cables being in their main portion of less diameter than said escape-openings and having a tapering enlargement adapted to gradually close the latter, substantially as and for the purpose set forth.

608,298. GAS-ENGINE. JOHN J. OHRT, Burlington, Iowa. Filed Mar. 5, 1897. Renewed June 22, 1898. Serial No. 684,184. (No model.)

Claim.—In a gas-engine, a spring-actuated rod or plunger, which extends through the head of the cylinder, and an adjustable nut placed thereon, for making connection with one end of the lever, combined with a lever pivoted in the cylinder, and a valve for controlling the passage-way to an ignition-chamber, substantially as specified.



608,299. COMMUTATOR. WILLIAM R. POTTER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 27, 1896. Serial No. 590,943. (No model.)



Claim.—1. In a commutator, the combination of a shell, a plurality of segments mounted thereon and insulated from each other and the shell, each segment being substantially straight across the outer or face side, slots in each segment for the reception of an armature-lead, and a groove near one end of the commutator extending circumferentially, into which the slots for the leads extend.

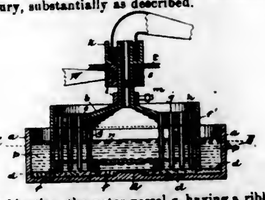
2. In a commutator, the combination of a plurality of segments separated from each other by a layer of insulating material, each segment being substantially straight across the outer or face side, and provided with an armature-lead slot and a lug for securing it to a support, and a circumferential groove into which the lead-slots extend at a point below the wearing-surface of the commutator.

3. As an article of manufacture, a commutator-segment, having a substantially straight side which forms the outer or face side of the commutator when assembled, a lead-slot M', a groove L into which the slot extends, and a securing-lug K.

608,300. ELECTROLYTIC APPARATUS. JOHN G. A. RHODIN, Eccles, England. Filed Aug. 11, 1897. Serial No. 647,914. (No model.) Patented in England Sept. 29, 1896, No. 21,509.

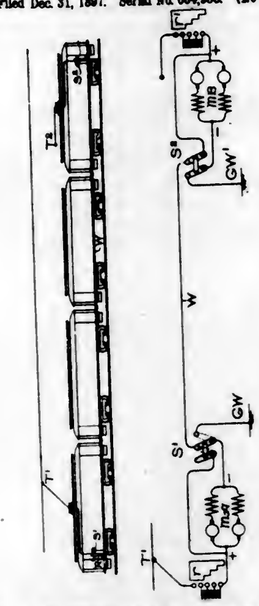
Claim.—1. An apparatus for the electrolysis of solutions of salts

comprising a vessel *a* having a corrugated or ribbed bottom and containing a mercury cathode, a rotating vessel *b* arranged within said vessel *a*, a plurality of tubular projections depending from the lower side of said vessel *b*, and projecting into the layer of mercury contained in the outer vessel and a series of anodes extending down into the tubular projections but without coming into contact with the layer of mercury, substantially as described.



2. In combination, the outer vessel *a*, having a ribbed or corrugated bottom, the rotating vessel *b* within the same, a plurality of tubular projections depending from the bottom of said inner receptacle and dipping into a mercury cathode, a series of anodes extending through the upper transverse wall of the vessel *b* with their lower ends depending into the tubular projections, and a suitable conducting substance encircling the upper ends of the anodes above the said transverse wall, substantially as described.

608,301. SYSTEM OF TRAIN CONTROL. EDWIN W. RICE, Jr., Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Dec. 31, 1897. Serial No. 664,950. (No model.)



Claim.—1. The combination of motor-cars each equipped with a motor or motors, a controller and trolley, with means for controlling the different motor equipments from a single point when the cars are joined in a train, said means comprising a cable for connecting the different motor equipments, switches or switch-contacts in the trolley-circuits of the different cars, and other switches or switch-contacts for opening or closing the ground-circuits of the different cars, and coupling up the motor equipments in series or parallel.

2. The combination of motor-cars at different positions of a train, a single conductor connecting said cars, and a switch on one of the motor-cars for coupling the motor equipments of the different cars in series or parallel, as set forth.

3. The combination of motor-cars, with a single cable extending from one car to another, and switches by which the positive terminals of the motor equipments of said cars may be connected by said cable and the motor equipments run in parallel, or for establishing a connection through the same cable between the negative terminal of the motor equipment of one car and the positive terminal of the motor equipment of a second car, and thereby connecting the motor equipments in series, as set forth.

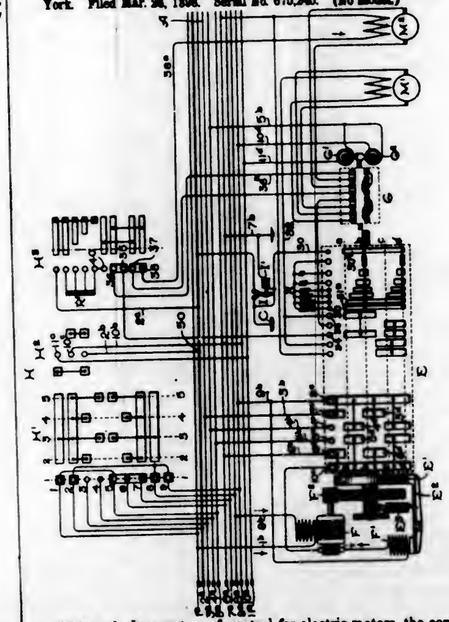
4. The combination of motor-cars, a switch on one of said cars by which the different motor equipments may be coupled in series or in parallel, and a switch or controller for further regulating all of the motors from a single point on the train, when said motor equipments are connected up in either order.

5. The combination of motor-cars, a ground connection for the motor equipments of each car, a cable extending from one motor equipment to another, and switches for breaking the ground connection of one car and connecting the different equipments in series between the trolley-circuit of one car and the ground connection of a second car, or for grounding each motor equipment independently and connecting the different equipments in parallel.

6. The combination of motor-cars, each equipped with proper complement of motors, controlling devices, and circuits, with switches on the cars by which the complete motor equipments may be coupled in series or parallel, as desired.

7. The combination, with motor-cars coupled in a train, having a proper equipment of motors and controlling devices such that each motor-car may, if desired, be independently operated, of switches by which the complete motor equipments may be thrown in series or parallel with each other, and simultaneously regulated when in either connection by one of the motor-controllers.

608,302. SYSTEM OF TRAIN CONTROL. EDWIN W. RICE, Jr., Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Mar. 26, 1896. Serial No. 675,245. (No model.)



Claim.—1. In a system of control for electric motors, the combination of a motor-controller, a pilot-motor for driving the motor-controller, a set of contacts for regulating the pilot-motor, which are so arranged that the circuit of the armature of the pilot-motor is automatically interrupted only after it has made a predetermined number of revolutions, and a second set of contacts which are brought into operative relation as soon as the circuit of the first set of contacts is interrupted.

2. In a system of control for electric motors, the combination of a motor-controller, a pilot-motor for actuating the motor-controller, a master-controller for regulating the pilot-motor, a set of contacts on the motor-controller for completing the circuit of the pilot-motor, and a second set of contacts also mounted on the motor-controller, which are employed to complete the circuit of the pilot-motor, the arrangement of contacts being such that when the first set of contacts is energized, the second set is inactive, the two sets being arranged to come successively and alternately into action.

3. In a system of control for electric motors, the combination of a motor-controller, a pilot-motor for moving the motor-controller in a step-by-step manner, and two sets of contacts which are employed to complete the motor-circuits, one set being in service while the controller advances a step, and the second set while the controller advances a second step, the two sets being arranged to come successively and alternately into action.

4. In a system of electric-motor control, the combination of a controller for regulating the motor, and means actuated by the motor when acting as a generator for operating the controller.

5. In a system of electric-motor control, the combination of a controller for regulating the motor, and means actuated by the motor when acting as a generator for moving the controller to a predetermined position.

6. In a system of electric-motor control, the combination of a controller for regulating the motor, and electromagnetic means receiving current from the propelling-motor when acting as a generator for returning the controller to the off position.

7. In a system of electric-motor control, the combination of a motor-regulating controller, a pilot-motor which is geared to the controller, and means for supplying the pilot-motor with current from the main motor when it is acting as a generator to return the controller to the off position after the failure of the main-line current.

8. In a system of control for electric motors, the combination of a controller for regulating the propelling-motors, electromagnetic means for actuating the motor-controller, and a switch arranged to convert one or more of the propelling-motors into generators and to supply the current thus received to the electromagnetic means for actuating the controller.

9. In a system of control for electric motors, the combination of a controller for regulating the propelling-motors, a pilot-motor which is geared to the motor-controller, a switch for controlling the action of the pilot-motor under normal conditions, and a second switch for converting the propelling-motor into a generator, and supplying the current thus generated to the pilot-motor.

10. In a system of control for electric motors, the combination of a controller for regulating the propelling-motors, electromagnetic means for actuating the controller, a master-controller for regulating the action of the motor-controller, and a switch for converting the propelling-motor into a generator, supplying the current thus produced to the electromagnetic means, and regulating the current flowing in said means.

11. In a system of train control, the combination of a plurality of cars united to form a train, one or more dynamo-electric machines on certain of the cars for propelling the train, controllers for regulating the dynamo-electric machines, a master-controller for regulating the action of the said controllers, and means actuated by the dynamo-electric machines for driving the first-mentioned controllers.

12. In a system of train control, the combination of a plurality of motor-cars united to form a train or a portion of a train, controllers for regulating the propelling-motors of various cars, on each car, electromagnetic means for actuating the motor-controllers, a master-controller for regulating the said means, and a switch for converting one or more of the propelling-motors into generators and supplying the current to the electromagnetic means for actuating the motor-controller.

13. In a system of train control, the combination of a plurality of motor-cars united to form a train, controllers for regulating the propelling-motors of various cars, a pilot-motor for driving each motor-controller, a master-controller located at any selected point for regulating the action of the pilot-motors, and a switch for converting one or more of the propelling-motors into generators, supplying the current thus generated to the pilot-motors, and regulating the current flowing therein.

14. In a system of electric-motor control, the combination of a motor-regulating controller, electromagnetic means for actuating the controller in a step-by-step manner, and a switch for interrupting the circuit of the electromagnetic means, at a plurality of points after the completion of each step.

15. In a system of electric-motor control, the combination of a motor-regulating controller, a pilot-motor for actuating the controller in a step-by-step manner, and a switch for interrupting the circuit of the pilot-motor at a plurality of points each time the motor-controller advances a definite amount.

16. In a system of electric-motor control, the combination of a motor-regulating controller, a pilot-motor for driving the controller both forward and back, and a plurality of contacts carried by the motor-controller, for simultaneously interrupting the circuit of the pilot-motor at a number of points each time the motor-controller advances a step.

17. In a system of electric-motor control, the combination of a motor-regulating controller, a pilot-motor for driving the controller, a magnetically-controlled brake for stopping the motor-controller at the various steps, and a coil for actuating the brake included in the circuit of the pilot-motor, the whole being so arranged as to stop the motor-controller only at the off position or at a definite running position.

18. In a system of train control, the combination of a number of motor-cars united to form a train, one or more motor-controllers each driven by a pilot-motor, a master-controller for regulating the operation of the motor controller or controllers, a collecting device for each motor-car, and a train-wire extending through the train, to which all of the contact devices of the motor-cars are connected in multiple.

19. In a system of control for electric motors, the combination of a motor-controller, electromagnetic means for actuating the same, and a master-controller for regulating its action, provided with a double set of contacts, one set being arranged to produce rotation of the motor-controller in a clockwise direction, and the second set to produce rotation in an anticlockwise direction.

20. In a system of control for electric motors, the combination of a motor-controller, electromagnetic means for actuating the same, and a master-controller for regulating its action, and a double set of contacts on the master-controller, one set being arranged to produce a step-by-step rotation of the motor-controller in a forward direction, and the second set to produce a continuous movement of the motor-controller toward its off position.

21. The combination with a master-controller, of a motor-controller, a pilot-motor driving the motor-controller, and electrical means, controlled by the master-controller, for interrupting the supply of current to the pilot-motor in such a way that the motor-controller can stop only in the off position or in some definite running position.

22. The combination in a train system, of a plurality of motor-cars each equipped with a motor or motors, a motor-controller therefor, and a pilot-motor for driving the motor-controller, one or more motor-controllers situated upon the train, and electrical means controllable by each master-controller for interrupting the supply of current to the pilot-motors in such a way that the motor-controllers can stop only in the off position, or on some definite running position, and with the segments and fingers in good contact.

608,308. CORN-HUSKING IMPLEMENT. LEWIS F. RIFE, Mount Sterling, Ohio. Filed Aug. 11, 1897. Serial No. 647,865. (No model.)



Claim.—As a new article of manufacture, the corn-husking implement comprising a pliable handpiece provided at one edge with the enlargement 3 and with the curved slot forming a thumb-protecting tongue, 9, the narrow longitudinally-curved shaping-plate secured rigidly to the handpiece substantially at right angles to a straight edge thereof, adjacent to the thumb-slot therein, and giving to said handpiece a permanent transverse curvature at the ball of the thumb, and a narrow hooked plate with its shank overlapping the shaping-plate and united rigidly thereto, said shaping-plate and hooked plate lying in close relation to the handpiece, substantially as and for the purposes described.

608,804. BUCKET. HIRAM F. RICE, Russellville, Pa. Filed Oct. 29, 1897. Serial No. 656,826. (No model.)



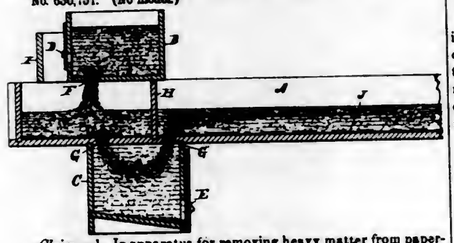
Claim.—1. An open-work bucket, comprising a body formed of a series of vertical wire rods and a series of horizontal connecting-wires woven through the wire rods, a sheet-metal band to which the upper ends of the vertical rods are secured, said band being provided with a flange located above the upper ends of the rods, a sheet-metal bottom against which the lower ends of the vertical rods abut, said

bottom having a vertical annular flange to which the rods are secured, and the concentric bands arranged at the upper band and the flange of the bottom and having crimps forming pockets for the vertical rods, substantially as described.

2. An open-work bucket, comprising a body of woven wire, a band secured to the top of the body at the inner face thereof, and provided with an outwardly-extending flange located above the upper ends of the wires, a bottom having an upwardly-extending flange secured to the lower ends of the wires at the outer face of the body, and the concentric bands arranged respectively on the outer face of said band and the inner face of the flange of the bottom and provided with crimps forming pockets to receive the ends of the wires, substantially as described.

3. A bucket comprising a body of woven wire, a band secured to the top of the body, a bottom provided with an upwardly-extending flange arranged on the outer face of the body, a concentric band arranged on the inner face of the flange and provided with crimps forming pockets to receive the lower ends of the wires, and the rim fitted over and secured to the exterior face of the flange of the bottom and projecting below the latter and forming a support for the bucket, substantially as and for the purpose described.

608,305. MEANS FOR REMOVING FOREIGN SUBSTANCES FROM PAPER-PULP. SAMUEL W. SIMPSON, Otsego, Mich., assignor to the Bardeen Paper Company, same place. Filed Apr. 5, 1897. Serial No. 630,751. (No model.)



Claim.—1. In apparatus for removing heavy matter from paper-pulp the combination, of a box or chute A, with a transverse partition H, across the same; a mixing-box delivering into one end of the chute; a settling-box C, secured to the under side of the chute and extending each side of the partition H, with suitable openings G, G', connecting the box or chute with the settling-box on each side of the partition H, to compel circulation of the pulp down into the settling-box and up into the box or chute to permit of the settling of particles of metal or other heavy material therefrom for the purpose specified.

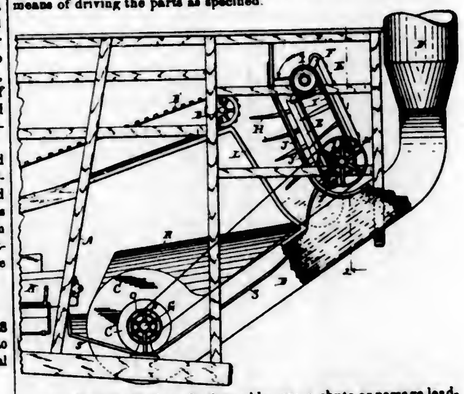
2. In apparatus for removing heavy matter from paper-pulp, the combination of a box or chute A, with a transverse partition H, across the same; a settling-box C, secured to the under side of the chute and extending each side of the partition H, with suitable openings G, G', connecting the box or chute with the settling-box on each side of the partition H, and means to deliver the pulp to the box or chute so that it shall descend into the top of the settling-box on one side of the partition and flow up and out on the opposite side through the box or chute for the purpose specified.

3. In apparatus for removing foreign material from paper-pulp the combination of a settling-box with passages leading into and out of the top thereof and means of circulating the pulp through the same for the purpose specified.

608,306. PNEUMATIC STACKER. ARTHUR W. SIMON, Battle Creek, Mich. Filed Nov. 8, 1897. Serial No. 657,898. (No model.)

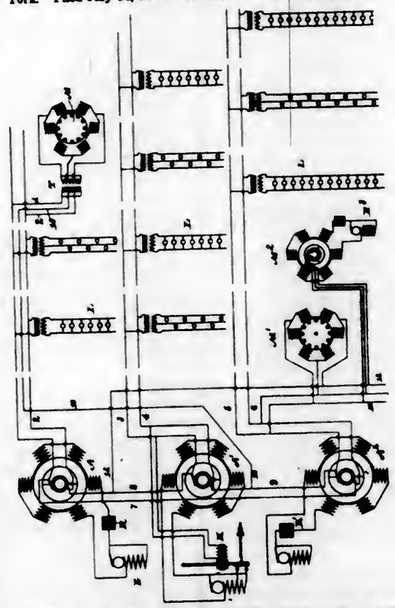
Claim.—1. The combination of the fan or blower C, the upwardly-projecting chute D, leading therefrom with an opening in its upper side; the carrier B' from the thresher delivering above said opening; a suitable casing from the said carrier B' to the opening in the chute having a front L, and back J, said casing containing vertical slots, parallel shafts coupled together transverse to the machine and in the rear of the passage from the carrier to the chute, each having oppositely-projecting cranks between its ends; tooth-bars E, E, journaled on said cranks and connecting the same together; teeth H, on said tooth-bars adapted to project through the slots in the casing J, and guards and strippers J' J' each side of the slots to remove the straw from the teeth all coacting together substantially as described for the purpose specified.

2. The combination of a fan or blower supported in the lower rear part of the machine; a chute or passage leading upwardly or rearwardly therefrom having an opening on its upper side; a casing surrounding said opening and projecting upwardly to receive the straw, said casing containing vertical slots on one side parallel shafts connected together and having cranks; bars connecting said cranks together; teeth or tines on said bars, the bottom ones of which project downwardly and enter the chute in operation; and suitable means of driving the parts as specified.



3. The combination of a fan or blower; a chute or passage leading therefrom having an opening in its wall; a casing around said opening and extending upwardly therefrom for the reception of straw; tines or teeth adapted to project into the casing and chute; and means for actuating said tines or teeth to press the straw into the chute and withdraw them therefrom to release the straw in the chute and allow it to be carried away by the blast.

608,307. ELECTRICAL DISTRIBUTION. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed July 14, 1894. Serial No. 517,553. (No model.)



Claim.—1. The method of supplying polyphase current from a plurality of windings, whose phase relation is otherwise undetermined, which consists in so connecting the windings that their mutual reactions will establish and maintain a polyphase relation between the electromotive forces generated therein, and carrying current from a plurality of said windings to feed a polyphase translating device.

2. The method of generating polyphase currents, which consists in running the main windings of a plurality of single-phase alternating-current dynamo-electric machines, of which one at least is a generator, on a closed circuit, causing the reactions between the machines to displace the phases of the different electromotive forces, and delivering current from a plurality of said machines to a translating device.

3. The method of obtaining polyphase currents, which consists in generating a plurality of single-phase electromotive forces by sources each of which is free to arrange itself in any desired phasal relation with the other sources, causing the mutual reactions of the sources, by reason of their electrical interconnection, to maintain a polyphase relation between the said electromotive forces, and conveying current from said sources to a distribution system.

4. The method of maintaining a desired phase relation between a plurality of single-phase alternating-current dynamo-electric machines, otherwise free to arrange themselves in any phase relation whatever, which consists in causing the counter electromotive force of an alternating-current motor to react upon a closed circuit containing said machines, in such a way as to control their phasal relations.

5. The herein-described method of obtaining three-phase currents, which consists in connecting in series three single-phase alternating generators, and deriving three-phase currents from mains taken from points between said generators.

6. The combination with a plurality of sources of alternating electromotive force connected in series, of one or more branch circuits, each containing a source of alternating electromotive force, connected across intermediate points of the circuit joining said first-named sources, so as to divide the polygon of electromotive forces into triangles of electromotive forces, and to fix the phase relations.

7. The combination of a plurality of independently-driven single-phase alternating generators, connected in closed circuit, mains leading from connections between said generators, and polyphase translating devices supplied by said mains.

8. The combination of a plurality of independently-driven single-phase alternating generators, connections interlinking said generators in closed circuit, and determining the relative phases of the same, mains leading from said connections, and polyphase translating devices supplied by said mains.

9. The combination of a plurality of sources of single-phase alternating electromotive force, connected in closed circuit, mains connected to said sources, and polyphase translating devices connected to three or more of said mains.

10. The combination of a plurality of alternating-current dynamo-electric machines, greater in number than two, connected in a closed circuit, one at least of such machines being a generator of electrical energy, and polyphase mains connected to the junctions of said machines.

11. The combination of three alternating-current dynamo-electric machines connected in closed circuit, one at least of such machines being a generator of electrical energy, and polyphase mains connected to the junctions of such machines.

12. The combination of three single-phase alternating generators, connected in closed circuit, mains and translating devices supplied by one or more of such machines acting individually, and polyphase translating devices supplied by all of such machines acting collectively.

13. The combination of sources of a plurality of alternating electromotive forces free to arrange themselves in relative phasal relation, and electrical connections interlinking such sources in a closed circuit, and polyphase mains leading from said circuit to a distribution system, the number of the electromotive forces and the manner in which they are interlinked being such that said electromotive forces can combine only in a fixed and stable phasal relation, and preserve a desired polyphase relation between the electromotive forces at different positions of the connecting closed circuit.

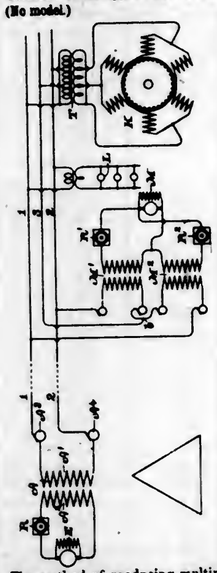
14. The combination of a plurality of single-phase alternating generators, mains leading from the terminals of one or more of said generators, translating devices between such mains, connections between such generators interlinking them in closed circuit, mains leading from such connections, and polyphase translating devices between mains leading from three or more different portions of said closed circuit.

15. The combination of a plurality of alternating-current dynamo-machines, capable of running independently, greater in number than two, and connected in a closed circuit, and leads from a plurality of intermediate points of said circuit to a translating device.

16. The combination of three or more dynamo-electric machines of the alternating-current type, capable of running independently, and connected in a closed circuit in such a way that their mutual reactions cause their electromotive forces to combine in a fixed and stable phasal relation, and to preserve a desired polyphase relation between different points of the closed circuit, and connections leading from intermediate points to a multiphase distribution system.

17. The combination with four or more sources of alternating electromotive force connected in a closed circuit, of one or more additional sources of alternating electromotive force connected across said circuit at such points that each two of the original sources is in series with one of the additional sources, whereby the polygon of electromotive force formed by the original sources is divided into triangles of electromotive force.

608,308. SYSTEM OF ELECTRICAL DISTRIBUTION. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to the General Electric Company, of New York. Original application filed July 14, 1894, Serial No. 517,553. Divided and this application filed May 22, 1897. Serial No. 637,658. (No model.)



Claim.—1. The method of producing multiphase electromotive forces which consists in generating single-phase current, transmitting it to a distant point, and generating by the action of said current two separate electromotive forces in machines free to adjust themselves to any desired phase relation with the original current, and maintaining by the mutual reactions of the said machines upon each other and upon the original current a polyphase relation between the electromotive forces of the system.

2. The method of producing polyphase currents which consists in generating single-phase current, driving by said single-phase current a plurality of alternating motors in series, and maintaining by the mutual reactions of the machines a polyphase relation between the electromotive forces of the system.

3. The method of producing polyphase currents which consists in generating single-phase current, driving by said single-phase current at a distant point a plurality of alternating motors in series, and maintaining by the mutual reactions of the machines a polyphase relation between the electromotive forces of the system.

4. The combination with a source of alternating electromotive force, of mains leading therefrom to a distant point, a plurality of sources of dephased alternating electromotive force in series across the mains, and connections from the junctions to a multiphase translating device.

5. The combination of a single phase generator, mains extending therefrom, and two synchronous motors supplied by said mains in series, the electromotive forces of the motors being so adjusted that the reactions of the machines will maintain a polyphase relation between the alternating potential difference across the mains and the counter electromotive forces of the motors.

6. The combination of a source of single-phase electromotive force, a plurality of synchronous motors connected in series with each other and with the said source, the motors being free to arrange themselves in such a way that their electromotive forces will bear a polyphase relation with the electromotive force of the source, and connections from the junctions to polyphase translating devices.

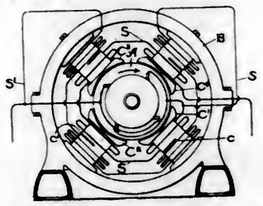
7. The combination of a single-phase alternating generator, a step-up transformer connected thereto, transmission-leads connected to said step-up transformer, and a substation comprising a step down transformer fed from said leads, and having two synchronous motors connected in series across its secondary, and leads from the junctions to a multiphase distribution system.

8. The method of increasing the number of phases of the current from a source of alternating electromotive force, which consists in combining the electromotive force from said source, in the conductors of a multiphase system, with the dephased electromotive forces of a plurality of synchronous motors, and simultaneously taking off current due to the resultant electromotive forces thus produced, and supplying the said current to multiphase translating devices.

9. The combination with a single-phase alternating-current system of distribution, of a plurality of synchronous motors, means for causing said motors to produce, by a combination of their electromotive forces with the electromotive force of the system, a system of polyphase electromotive forces, and means for supplying current due to said polyphase electromotive forces to translating devices.

10. The combination with a single-phase alternating-current system of distribution, of two synchronous motors connected in series across said system, and connections from said system and from the intermediate points between the two motors to a multiphase translating device.

608,309. **REGULATING DYNAMO-ELECTRIC MACHINES.** CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 23, 1898. Serial No. 678,554. (No model.)



Claim.—1. The method of operating a dynamo-electric machine which consists in causing the saturation curve of the machine to bend at a flux value lower than that at which the bend would normally occur, and operating the machine on that part of the curve above the bend.

2. The method of adjusting the stable working range of dynamo-electric machines which consists in varying the reluctance of the magnetic circuit by a definite amount and at a predetermined flux.

3. The method of securing a straight compounding curve in a dynamo-electric machine which consists in operatively introducing an air-gap into the magnetic circuit at a predetermined flux.

4. The method of compounding dynamo-electric machines, which consists in creating a magnetic flux by the action of two magnetomotive forces one of which is substantially constant and the other of which varies with the load, and artificially causing a bend in the saturation curve of the magnetic circuit in which said magnetomotive forces operate, at a point below that of normal operation.

5. The method of extending the stable working range of dynamo-electric machines which consists in artificially increasing the reluctance of the magnetic circuit at a predetermined flux.

6. In a dynamo-electric machine, a magnetic circuit having an auxiliary air-gap effective only above a predetermined flux.

7. In a dynamo-electric machine, a magnetic circuit having an auxiliary air-gap effective only above a predetermined flux, and means for adjusting the length of said air-gap.

8. In a dynamo-electric machine, a magnetic circuit having an auxiliary air-gap effective only above a predetermined flux, and means for simultaneously adjusting the length of said air-gap and determining the flux at which it becomes effective.

9. A dynamo-electric machine or motor, having an armature and field-poles, one or more of the field-poles having a hole cut through them acting as an additional air-gap, with a block of magnetic material filling part of the hole, and serving by its position and size to adjust the shape of the characteristic curve of the machine.

608,310. **HAY-RACK.** BENJAMIN TANNER, Sturgis, Mich. Filed Nov. 12, 1897. Serial No. 658,342. (No model.)

Claim.—In a hay-rack, a pair of main bed-timbers, the front and rear rack-sections, each comprising a pair of longitudinally-disposed side bars 4 arranged flat against the inner sides of the bed-timbers, inner and outer cross-bars 5 lying above the bed-timbers and side bars and connecting the opposite ends of the latter, corresponding inner and outer brace-bars 6 lying in the vertical planes of said cross-bars beneath the latter, and inner and outer bolts 10 and 11 passing through the contiguous end portions of the cross and brace bars respectively at opposite sides of the bed-timbers, the inner bolts 10 also passing through the side bars 4, a slidable connection between the two rack-sections, and locking-pins carried by one of the rack-sections and adapted to engage the bed-timbers to detachably lock said section thereto, substantially as set forth.



608,311. **CREAM-SEPARATOR.** JULIUS W. TRAYER, Milton, Iowa, assignor of two-thirds to Harry H. Cooper and Isaac W. Cooper, same place. Filed Dec. 16, 1897. Serial No. 662,219. (No model.)



Claim.—1. A cream-separator having a receptacle provided with a bottom of which the side portions are inclined downwardly and inwardly to the longitudinal center thereof, said longitudinal center being inclined downwardly from the rear toward the front wall of the receptacle, a faucet communicating with the receptacle at the most depressed point of its bottom, and an inlet-tube having an exposed inlet end, and an extension 9 arranged within the receptacle upon the inclined longitudinal center of its bottom, with its outlet end located contiguous to the said most depressed portion of the bottom of the receptacle, substantially as specified.

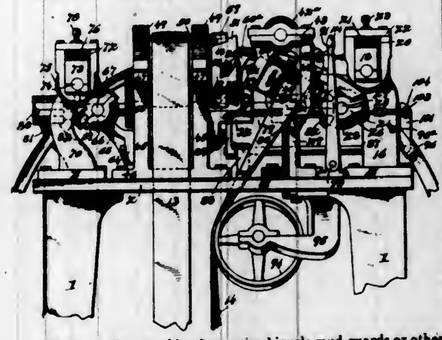
2. A cream-separator having a receptacle of which the bottom is inclined laterally from the side walls toward a central longitudinal line, this longitudinal center being inclined downwardly from the rear toward the front wall, a removable cover fitted upon the receptacle and provided with a ventilating-opening fitted with a gauze screen, a faucet communicating with the interior of the receptacle at the lowest point of its bottom, a vertical sight-pane through which the contents of the receptacle may be observed, and an inlet-tube having an exposed inlet end, and arranged at its outlet end contiguous to said depressed point of the bottom, an intermediate portion of the inlet-tube extending through the receptacle, substantially as specified.

608,312. **BINDER.** THEODORE WRIGHT, London, England. Filed Oct. 15, 1897. Serial No. 655,339. (No model.)



Claim.—A sheet or book binder consisting of bars; perforated plates secured to said bars at one end, wires passing through the perforations and connecting the plates together; other plates having apertures and being attached to the said bars at the other end and projections on said plates adapted to pass through the sheets to be bound, apertures in said projections and wires for passing through said apertures for securing the leaves upon the plates.

608,313. **MACHINE FOR MAKING MUD-GUARDS FOR BICYCLES.** GEORGE L. ALLEN, Bradford, Pa. Filed June 17, 1897. Serial No. 641,165. (No model.)



Claim.—1. In a machine for cutting bicycle mud-guards or other like articles, the combination of two rotating cutters arranged to operate successively on opposite sides of the blank to cut the wood transversely of the direction of the feed, one of said cutters rotating on an axis substantially parallel with the grain of the blank and forming a concave face on the blank and the other cutter being tubular and forming a convex face on the blank, and devices to support the blank and feed it to the cutters, substantially as described.

2. In a machine for cutting bicycle mud-guards or other like articles, the combination of two rotating cutters one of which is tubular, said cutters being arranged to operate successively on opposite sides of the blank with their cutting edges obliquely disposed to cut the wood transversely of the grain of the blank with a draw cut, one of said cutters forming a concave and the other a convex face on the blank, and devices to support the blank and feed it to the cutters, substantially as described.

3. In a machine for cutting bicycle mud-guards or other like articles, the combination of two rotating cutters mounted one in advance of the other and adapted to operate successively on opposite sides of the blank, the first cutter rotating on an axis substantially parallel with the grain of the blank and forming the inner concave face, and the second cutter being tubular and forming the outer convex face, and both cutters cutting transversely and obliquely of the grain of the wood, and devices to support the blank and feed it to the cutter, substantially as described.

4. A cutter-head having opposite bearing-faces for the knives and means to secure the knives to the head, combined with a pulley formed integral with the head, a conical journal at the outer end of the head, and a conical journal at the outer end of the pulley, said journals being integral with the head and pulley, respectively, and bearing-blocks pivotally supported on an axis at a right angle to the axis of the said journals and having conical openings to receive said journals, substantially as described.

5. In a machine for cutting bicycle mud-guards or other like articles, a rotating tubular cutter-head, knives mounted in said head to cut the blank transversely of the grain, to form the outer convex face on the blank, and a longitudinally-curved plate extending through the cutter to support the blank within the cutter, and devices to feed it therethrough to be operated on by the cutter-knives, substantially as described.

6. In a machine for forming a longitudinally-curved blank into cross-sectionally concavo-convex shape, a rotating tubular cutter through which the blank is fed, and which forms the convex face, a longitudinally-curved plate extending through the said cutter to support the blank, and a cutter rotating on an axis substantially parallel with the grain of the blank, to form the opposite convex face, the cutting edges being disposed to cut transversely of the grain of the blank, substantially as described.

7. In a machine for making bicycle mud-guards, or other like articles, a rotating tubular cutter to form the outer convex face on the blank, said cutter having a hollow cutter-head, a hollow pulley integral therewith, and annular recesses at each end of the pulley which form journals to fit in the bearings for the cutter, combined with a longitudinally-curved plate extending through the cutter to support the blank, substantially as described.

8. In a machine for making bicycle mud-guards, or other like articles, a hollow rotating cutter to form the outer convex face on the blank, said cutter having a head provided with a central bore the inner portion of which is straight and the outer portion outwardly flaring, a series of knives supported in the head to project into the straight portion of the bore, and a series of knives supported in the head to project into the flaring portion of the bore, combined with a longitudinally-curved plate extending through the cutter to support the blank, substantially as described.

9. In a machine for making bicycle mud-guards, or other like articles, a hollow rotating cutter to form the outer convex face on the blank, said cutter having a head provided with a central bore the inner portion of which is straight and the outer portion outwardly flaring, a series of knives supported in the head to project into the straight portion of the bore on a line oblique to the axial line of the cutter, and a series of knives supported in the head to project into the flaring portion of the bore also obliquely to the axis of the cutter, combined with a longitudinally-curved plate extending through the cutter to support the blank, substantially as described.

10. In a machine for making bicycle mud-guards, or other like articles, the combination with a hollow rotating cutter to form the outer convex face on the blank, of a longitudinally-curved supporting-plate extending through said hollow cutter to support the blank in a position to be operated upon by the cutter, substantially as described.

11. In a machine for forming bicycle mud-guards or other like articles from longitudinally-curved blanks, a rotating cutter supported immediately beneath the line of feed of the blank and rotating in a plane transversely across said line of feed, the cutting edges being disposed obliquely to cut with a draw cut and form a concave face in the work, combined with a curved supporting-plate in advance of the cutter, and a presser-roll disposed on the vertical plane of the cutter-head and coacting with said cutter-head and with the supporting-plate to present the work in proper relation to the cutter-head, substantially as described.

12. In a machine for making bicycle mud-guards, or other like articles, the combination with a rotating cutter mounted below the blank to cut the concave face on the blank, of a hollow rotating cutter in advance of the first cutter to cut the outer convex face on the blank, and a longitudinally-curved support extending through the hollow cutter to support the blank to be operated upon by the hollow cutter, the bearing-face of said support being convex in cross-section to correspond with the concave face of the blank formed by the first cutter, substantially as described.

13. In a machine for making bicycle mud-guards, or other like articles, the combination with a rotating cutter mounted below the blank to cut the concave face on the blank, of a hollow rotating cutter in advance of the first cutter to cut the outer convex face on the blank, and a longitudinally-curved support extending through the hollow cutter to support the blank to be operated upon by the hollow cutter, the bearing-face of said support being convex in cross-section to correspond with the concave face of the blank formed by the first cutter and having upwardly-extending side flanges, substantially as described.

14. In a machine for making bicycle mud-guards, or other like articles, the combination with a rotating cutter to form the under concave face on the blank, of a hollow rotating cutter, through which the blank passes, to form the outer convex face on the blank, the rear portion of the bore of said cutter being of the same diameter as that of the circle on which the convex face is formed, and a longitudinally-curved support for the blank extending through the hollow cutter, the curvature of the support being the same as the longitudinal curvature of the article being made, substantially as described.

15. In a machine for making bicycle mud-guards, or other like articles, the combination of two rotating cutters one of which is tubular, arranged to operate successively on the blank to form the concave and convex faces thereon, of a longitudinally-curved supporting-plate, feed-rolls at both ends of the machine, and gearing connecting the feed-rolls to drive them simultaneously and uniformly, substantially as described.

16. In a machine for making bicycle mud-guards, or other like articles, the combination of two rotating cutters, one of which is tubular, arranged to operate successively on the blank to form the concave and convex faces thereon, of a positively-driven cylindrical

feed-roll, having a roughened periphery, at the feed end of the machine, a positively-driven roll having a convex periphery at the discharge end of the machine, a roll journaled in spring-actuated bearings at each end of the machine cooperating with the feed-rolls, the one at the discharge end of the machine having a concave periphery, and a longitudinally and transversely curved support for the blank, extending through the tubular cutter, substantially as described.

17. In a machine for making bicycle mud-guards, or other like articles, the combination with a work-guide and two rotating cutters arranged one in advance of the other to operate respectively on the lower and upper faces of the blank, the first cutter being supported obliquely with respect to the work-guide, and each cutter having a pulley integral therewith, of two driving-pulleys mounted side by side on a common shaft, belts connecting the driving-pulleys respectively with the pulleys on the cutters, the driving-pulley for the second cutter being in vertical alinement with its cutter-pulley, and that for the first cutter being out of vertical alinement with its cutter-pulley, and guide-pulleys to twist and guide the driving-belt of the first cutter between the driving-pulley and the cutter-pulley, substantially as described.

18. In a machine for making mud-guards or other like articles the combination of a rotating cutter arranged below, and obliquely to, the line of feed of the work and driven in a direction transversely across the face of the blank when presented to said cutter, devices for supporting the cutter-shaft in proper relation to the blank, a longitudinally-curved work-trough supported at one end upon the cutter-supporting devices and provided with slots, through one of which protrude the knives of the cutter, a corrugated feed-roll in advance of the cutter and having corrugated fingers protruding through slots in the feed-trough, a presser-roll coacting with the feed-roll, and adjustable stop devices engaging with the forward end of the feed-trough to restrain the latter against vibration laterally to the line of feed of the work, substantially as described.

19. In a machine for making bicycle mud-guards and other like articles, the combination with a rotating cutter, and feed-rolls in advance thereof, of a longitudinally-curved trough in fixed relation to said cutter and feed-rolls, and the spring guide-plates suspended within the trough independently of the same and of its supporting devices, said suspended guide-plates arranged longitudinally of the trough and in substantially parallel relation to each other to lie on opposite sides of the work-blank and to have lateral engagement therewith, substantially as described.

20. In a machine for making bicycle mud-guards and other like articles, the combination with a rotating cutter, and feed-rolls in advance thereof, of a longitudinally-curved work-trough in operative relation to said cutter and feed-rolls, spring guide-plates arranged longitudinally within the trough and parallel to each other to engage with the side edges of the work-blank as it is fed through the trough, and devices for suspending said spring guide-plates within the trough, substantially as described.

21. In a machine for making bicycle mud-guards and other like articles, the combination with a cutter rotating in a plane transversely across the line of work feed, of the supporting-bearings arranged obliquely to the line of feed and hung on pivotal devices which lie at right angles to the axis of the cutter-head, substantially as described.

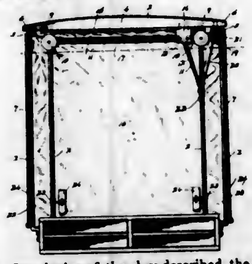
22. In a machine for making bicycle mud-guards and other like articles, the combination with work supporting and feeding devices, of a cutter rotating in a plane transversely across the line of feed of the work, cutter-supporting devices arranged with their axes oblique to the line of feed and each supporting device hung on pivots which lie at right angles to the axis of said cutter, and bearing-blocks adjustable in the supporting devices in the direction of the axis of said cutter, said bearing-blocks receiving the cutter-journals, substantially as described.

23. In a machine for making bicycle mud-guards and other like articles, two rotating cutters arranged one in advance of the other and in different horizontal planes to operate successively and on opposite sides of the blank, the first cutter arranged in a position oblique to the line of work-feed, rotating in a plane transversely across the face of the work, and having its knives or blades disposed obliquely to the face of the work to operate thereon with a draw or shear cut, and the other cutter being tubular with its blades or knives arranged oblique to the face of the work and said cutter also rotating in a plane transversely to the line of work-feed, in combination with means for guiding the work from the first cutter to and through the tubular cutter, and positively-driven feed mechanism on opposite sides of the two cutters, substantially as described.

24. In a machine for making bicycle mud-guards and other like articles, the combination of cutters arranged in different planes to operate successively on the work and driven in planes transversely across the line of feed of the work, a set of feed-rolls in advance of one cutter, another set of feed-rolls in rear of the other cutter, a counter-shaft geared to one roll of each set of feed-rolls, and a clutch-controlled mechanism mounted on the machine-bed and operatively connected with said shaft, substantially as described.

25. In a machine for making mud-guards and analogous articles, the combination of a tubular cutter rotating in a plane transversely across the line of feed of the work and provided at one end with a head, knives or blades fixed to said head obliquely to the axis of the cutter, and a fixed longitudinally-curved work-plate extending through the tubular cutter on a line oblique to the cutter-axis and lying within the path of said knives or blades in the cutter-head, substantially as described.

608,314. DEVICE FOR RAISING OR LOWERING VEHICLE-CURTAINS. EDWARD E. ATKINSON, Ada, Ohio, assignor of one-third to Harvey W. Shaw, same place. Filed Nov. 26, 1897. Serial No. 659,841. (No model.)



Claim.—1. In a device of the class described, the combination of a vehicle-top provided with side bars, horizontal rods located beneath and spaced from the side bars of the top to form guide-openings and having their front ends bent upward and secured to the said side bars, posts secured to the horizontal rods, curtains passing through the guide-openings and supported by the horizontal rods, and rollers mounted in hangers or brackets carried by the vehicle-top, substantially as described.

2. In a device of the class described, the combination of a vehicle-top having side bars, posts supporting the vehicle-top, horizontal rods located beneath and spaced from the side bars of the vehicle-top to form guide-openings the side curtains passing through the guide-openings and provided with longitudinal rollers located at the inner sides of the said rods, drums mounted on the front ends of the rollers, a pair of guide-pulleys 13 arranged at the front of the vehicle-top and located between the said drums, and transverse operating-cords wound around the drums and passing over and between the guide-pulleys, substantially as described.

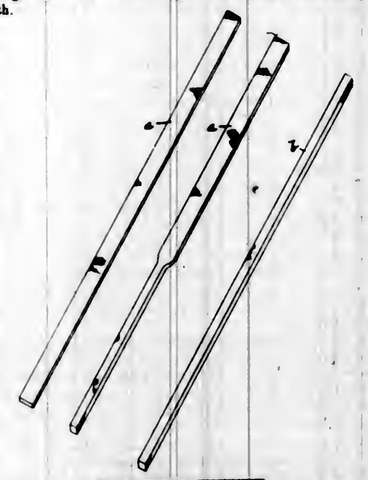
3. In a device of the class described, the combination of a vehicle-top provided at opposite sides with guide-openings, curtains passing through the guide-openings and provided with longitudinal rollers and arranged at the front ends thereof, a pair of guide-pulleys located between the drums, and transverse operating cords wound around the drums and passing over and between the guide-pulleys, substantially as specified.

4. In a device of the class described, the combination of a vehicle top, posts supporting the same, horizontal rods spaced from the vehicle-top and arranged at the front and back of the same to form guide-openings, side curtains passing through the said guide-openings and having longitudinal rollers, a back curtain passing through the rear guide-opening and having a transverse roller, a pair of guide-pulleys 13 arranged between the front ends of the longitudinal rollers, transverse operating-cords connected with the longitudinal rollers and passing over and between the guide-pulleys, a guide-pulley 19 arranged at the front of the vehicle-top, and a longitudinal operating-cord passing over the guide-pulley 19 and connected with the transverse roller of the rear curtain, substantially as described.

5. In a device of the class described, the combination of a post or support, a vertically-movable curtain provided with an eyelet or opening, and a substantially L-shaped horizontal arm permanently mounted on the post or support and arranged out of the path of the curtain, said arm being provided with a head adapted to engage the eyelet or opening of the curtain, substantially as described.

608,315. PROCESS OF TREATING RAWHIDE FOR USE IN MANUFACTURING WHIPS. CHARLES G. BROKER and MARTIN OSBORN, Westfield, Mass. Filed Dec. 31, 1895. Serial No. 573,899. (No specimens.)

Claim.—The method of treating rawhide for forming whip-centers, &c., herein described, the same consisting in first moistening a strip of rawhide, and then subjecting the same, while in a moist condition, to heavy pressure parallel to its grain or at a right angle to the thickness of the rawhide, and thereby decreasing its width and increasing its thickness in about equal proportions, substantially as set forth.



608,316. EXPLOSIVE AND METHOD OF MAKING SAME. GEORGE REUKEL, Southport, England. Filed Dec. 24, 1897. Serial No. 663,433. (No specimens.)

Claim.—1. The process of manufacture of explosive compounds in which ammonium nitrate, resin, an oxidizing material (such as alkaline chromate) and an alkaline carbonate, are employed, which consists in incorporating the alkaline carbonate and the oxidizing material with the resin when the latter is in a liquid state, then allowing the thereby-obtained mixture to cool, then reducing it to powder, and then incorporating it with the ammonium nitrate.

2. The process of manufacture of explosive compounds in which ammonium nitrate, resin and an alkaline carbonate are employed, which consists in incorporating the alkaline carbonate with the resin when the latter is in a liquid state, then allowing the thereby-obtained mixture to cool, then reducing it to powder and then incorporating it with the ammonium nitrate.

3. An explosive compound consisting of the following substances incorporated together in approximately the proportions stated, namely ammonium nitrate, a resin, an oxidizing material and an alkaline carbonate.

4. An explosive compound consisting of the following substances incorporated together in approximately the proportions stated, namely ammonium nitrate, a resin and an alkaline carbonate.

608,317. SEWING-MACHINE. STORRTON BORTON, New York, N. Y., assignor to the Willcox & Gibbs Sewing Machine Company, same place. Filed Aug. 10, 1895. Serial No. 558,847. (No model.)

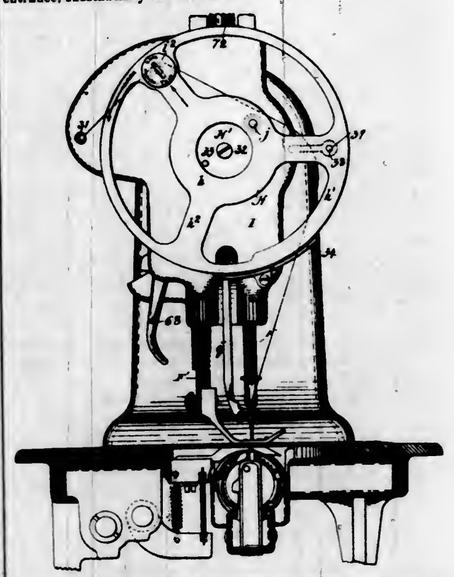
Claim.—1. In a sewing-machine a rotary take-up comprising revolving plates, a crank-pin attached to said plates and adapted to act upon the thread, and means for adjusting the position of said pin to vary the distance of its acting surface from the center of the take-up, substantially as described.

2. In a sewing-machine, a rotary take-up having a crank-pin journaled therein so as to be turned to different positions, that part of the pin which acts upon the thread being eccentric to its axis so that the distance of its acting surface from the axis of the take-up may be varied to suit the thickness of the work, substantially as described.

3. In a sewing-machine, a rotary take-up comprising two plates connected together by a pin crossing the space between them and journaled at its ends in said plates, that portion of the pin between the plates being an eccentric, so that by turning the pin the distance of the acting surface of the eccentric from the axis of the take-up may be varied, substantially as described.

4. The combination with the two take-up plates attached together and separated a suitable distance to form between them a thread-space, and a take-up pin journaled so as to be turned to different positions and having an eccentric portion between them, said pin being provided with a slotted head on the face of the take-up, substantially as described.

5. The combination with the rotary take-up, comprising two plates forming between them a thread-space and crank-pin crossing said space, of a thread-guard having an elongated slot in the same plane as said thread-space, one wall of the slot being thrown to one side of the adjacent plate and having in its projecting part a thread-entrance, substantially as described.



6. The combination with the needle and looping devices, of the rotatory take-up having a take-up pin acting on the thread at proper intervals to draw up and tighten the stitch, a thread-controller coming into action when the take-up ceases to pull on the thread and keeping the latter taut until the needle draws upon it, and means for operating said controller positively, substantially as described.

7. The combination with the needle and looping device, the rotary take-up comprising take-up plates and a crank-pin the periphery of which acts upon the thread to draw up the loop, and a thread-controller carried by and rotating with said take-up plates, and comprising an abutment projecting into the path of the thread and engaging the latter when the take-up pin ceases to act upon it, the controller being constructed and arranged as specified so that the thread may slip past it when drawn upon by the needle, substantially as described.

8. The combination with the needle, looper, and rotary take-up, of a thread-controller carried by said take-up and having a yielding or spring-acting thread-detainer, for releasing the thread when the needle draws upon it, substantially as described.

9. The combination with the needle and looper, of the rotary take-up comprising two plates connected by a take-up pin, and a thread-controller in the space between the two plates acting positively on the thread for keeping it taut after the take-up has ceased to act, said controller being so constructed as to permit the thread to pass when drawn by the needle, substantially as described.

10. The combination with the rotary take-up, of a thread-controller rotating therewith, and comprising a projection for engaging the thread, and a spring cooperating with said projection to detain the thread, but adapted to yield and permit the thread to pass when the needle draws upon it, substantially as described.

11. The combination with the arm of a sewing-machine, of a head in the form of a hollow casting detachably secured to said arm and having an opening in the face for attachment of the take-up, a main shaft extending into the interior of the head, a crank and crank-head connected with said shaft, a rotary take-up outside of the face of the hollow head and detachably connected with said crank-head, and a presser-bar, needle-bar and actuating mechanism assembled in said head, said actuating mechanism being detachably connected with said main shaft, whereby the head with the needle-bar and foot-bar may be detached from the arm of the machine, substantially as described.

12. In a sewing-machine the combination with the take-up of a thread-controller comprising a pin for engaging and acting upon the thread, and a check-spring bearing lightly on said pin for detaining the thread and means for giving the thread-controller a positive motion, substantially as described.

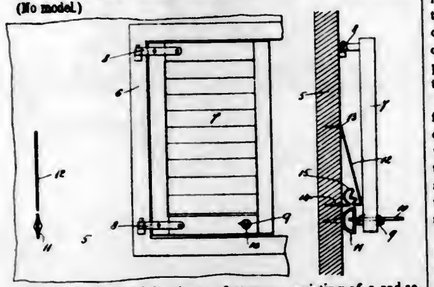
13. The combination with the take-up plates, of a rotary take-up, of a thread-controller comprising a pin carried by one of said plates and a check-spring carried by the other plate and bearing lightly upon the head of said pin, substantially as described.

14. The combination with the arm of a sewing-machine, and with the main shaft, a hollow head attached thereto, and a rotary take-up on the face of the head, the latter being provided with a hole for the passage of the take-up support or crank-head countersunk from the inside, substantially as and for the purpose described.

15. In a sewing-machine the combination with the arm of the machine, of a hollow casting forming the head thereof and attached to the arm, the head being provided with a rib or oil guard around the rear edge, adjacent to the arm, and with an oil depression or recess in the bottom thereof, and with a connected oil-cup outside the same, substantially as described.

16. In a sewing-machine, the combination of the hollow head the presser-bar within the same, having a cross-pin extending through a slot in the head, a lifter-rod having bearings in the head and underlying said cross-pin, said rod having also an oil-recess around its upper end to collect oil that may issue through said slot, said recess being connected with the interior of the head by an overflow-passage, substantially as described.

608,818. GUARD FOR SHUTTER-FASTENERS. WILLIAM R. BRALEY, Fall River, Mass. Filed Sept. 13, 1897. Serial No. 651,500. (No model.)

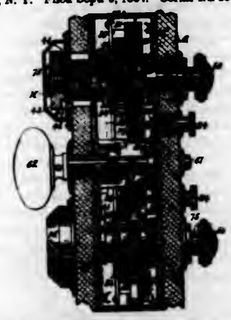


Claim.—1. A guard for shutter-fasteners consisting of a rod secured above said fastener and provided with a downwardly and outwardly inclined extension arranged vertically over said fastener, substantially as described.

2. A guard for shutter-fasteners, consisting of an inclined rod provided upon its upper end with a prong whereby the device is attached to the building and at its lower end with an inwardly-extending portion arranged vertically above the shutter-fastener, substantially as described.

3. A device for preventing birds from roosting on shutter-hooks which consists of a guard or inclined rod 12, having its lower end formed into an extension 14 with an intermediate loop 15, and provided on its upper end with a prong 13, whereby the device is of itself attachable to the building, and adapted to aline vertically with the shutter-hook, substantially as shown and described.

608,819. ELECTROMECHANICAL LOCK. HENRY G. CARLETON, New York, N. Y. Filed Sept. 9, 1897. Serial No. 651,016. (No model.)



Claim.—1. The combination with the boltwork of the lock and cooperating keeper, an electromagnet for operating said keeper, a battery supplying the current and conductors for conveying it, of a combination mechanism within the lock for making the circuit between the battery and magnet hand-operated from the outside, and an exterior push-button for completing the circuit, substantially as described.

2. The combination with the boltwork of the lock and cooperating keeper, an electromagnet for operating said keeper, a battery supplying the current and conductors for conveying it, of a combination mechanism within the lock for making the circuit between the battery and magnet hand-operated from the outside, an exterior push button for completing the circuit, an alarm-bell, magnet and wires connecting the battery with the combination mechanism and its conductors, leading to battery, whereby when the said combination mechanism is improperly set and the circuit is made, said alarm-bell will be rung, substantially as described.

3. In an electrically-operated lock, the combination mechanism for switching the current-conductors consisting of a rotative disk provided with a conductive bar, contact-plates cooperating therewith, means for setting the disk for contact with said plates, countersunk index-points on said disk and a reciprocating feeling-pin cooperating from the outside with said index-points to determine when in the rotation of said disk its operative position has been reached, substantially as described.

4. In an electrically-operated lock, the combination mechanism for switching the current-conductors consisting of a rotative disk provided with a conductive bar, contact-plates cooperating therewith, means for setting the disk for contact with said plates, countersunk index-points on said disk, a reciprocating feeling-pin cooperating from the outside with said index-points to determine when in the rotation of said disk its operative position has been reached, an electrically-operated alarm apparatus connected therewith through contact-plates, and an insulating-plug in said disk to cut out said alarm when the correct combination adjustment exists, substantially as described.

5. In an electrically-operated lock, the combination mechanism for switching the current-conductors consisting of two rotative disks each provided with a conductive bar, contact-plates cooperating therewith, means for setting the disks for contact with said plates, countersunk index-points on said disks, reciprocating feeling-pins cooperating from the outside with said index-points to determine when in the rotation of said disks their operative positions are attained, substantially as described.

6. In an electrically-operated lock, the combination mechanism for switching the current-conductors consisting of two rotative disks each provided with a conductive bar, contact-plates cooperating therewith, means for setting the disks for contact with said plates, countersunk index-points on said disks, reciprocating feeling-pins cooperating thereon outside with said index-points to determine when in the rotation of said disks their operative positions are attained, an electrically-operated alarm apparatus connected therewith through contact-plates, and insulating-plugs in the peripheries of said disks to cut out or insulate said alarm apparatus when the correct combination exists, substantially as described.

7. The combination with a door-lock and an electric circuit for operating the same, of a hand-operated combination mechanism in said circuit comprising a movable member provided with means for indicating the position of the combination mechanism, and an indicating finger-piece on the outer side of the door yieldingly coacting with said member, substantially as described.

8. The combination with a door-lock and an electric circuit for operating the same, of a hand-operated combination mechanism in said circuit comprising a rotative disk provided with means for indicating the position of the combination mechanism, and an indicating finger-piece on the outer side of the door yieldingly coacting with said disk, substantially as described.

9. The combination with a door-lock and an electric circuit for operating the same, of a hand-operated combination mechanism in said circuit comprising a movable member provided with means for indicating the position of the combination mechanism, an indicating finger-piece on the outer side of the door yieldingly coacting with said member, and a circuit-closer hand-operated from the outer side of the door, substantially as described.

10. The combination with a door-lock and an electric circuit for operating the same, of a hand-operated combination mechanism in said circuit comprising a rotative disk provided with means for indicating the position of the combination mechanism, an indicating finger-piece on the outer side of the door yieldingly coacting with said disk, and a circuit-closer hand-operated from the outer side of the door, substantially as described.

11. The combination with a door-lock and an electric circuit for operating the same, of a hand-operated combination mechanism in said circuit comprising a movable member provided with means for indicating the position of the combination mechanism, an indicating finger-piece on the outer side of the door yieldingly coacting with said member, a circuit-closer for said circuit hand-operated from the outer side of the door, a branch circuit closed thereby when the combination mechanism is improperly set, and an alarm mechanism in said branch circuit, substantially as described.

12. The combination with a door-lock and an electric circuit for operating the same, of a hand-operated combination mechanism in said circuit comprising a rotative disk provided with means for indicating the position of the combination mechanism, an indicating finger-piece on the outer side of the door yieldingly coacting with said member, a circuit-closer for said circuit hand-operated from the outer side of the door, a branch circuit closed thereby when the combination mechanism is improperly set, and an alarm mechanism in said branch circuit, substantially as described.

13. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism in said circuit comprising a plurality of independently-rotative disks each bearing contact portions controlling said circuit, hand-operated means adapted to extend outside the door for rotating the disks to close the circuit, and an alarm-circuit also controlled by said disks and closed when the combination is improperly set through any disk, substantially as described.

14. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism in said circuit comprising a plurality of independently-rotative disks each bearing contact portions controlling said circuit, hand-operated means adapted to extend outside the door for rotating the disks to close the circuit, an alarm-circuit also controlled by said disks and closed when the combination is improperly set through any disk, and an additional circuit-closer, hand-operated outside the door, for said circuits, substantially as described.

15. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism in said circuit comprising a plurality of rotative disks each bearing contact portions controlling said circuit, hand-operated means adapted to extend outside the door for rotating the disks to close the circuit, an alarm-circuit also controlled by said disks and closed when the combination is improperly set through any disk, means for retaining each disk in the position to which it is moved to close the circuit and means for returning it to normal position when released, substantially as described.

16. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism in said circuit comprising a plurality of rotative disks each bearing contact portions controlling said circuit, hand-operated means adapted to extend outside the door for rotating the disks to close the circuit, an alarm-circuit also controlled by said disks and closed when the combination is improperly set through any disk, an additional hand-operated circuit-closer also adapted to extend outside the door, means for retaining each disk in the position to which it is moved to close the circuit and means for returning it to normal position when released, substantially as described.

17. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism in said circuit comprising a plurality of rotative disks each bearing contact portions controlling said circuit, hand-operated means adapted to extend outside the door for rotating the disks to close the circuit, an alarm-circuit also controlled by said disks and closed thereby when the combination is improperly set through any disk, means for retaining each disk in the position to which it is moved to close the circuit, hand-operated means adapted to extend outside the door on opposite sides thereof for releasing the disk, and means for returning it to normal position when released, substantially as described.

18. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism in said circuit comprising a plurality of rotative disks each bearing contact portions controlling said circuit, hand-operated means adapted to extend outside the door for rotating the disks to close the circuit, an alarm-circuit also controlled by said disks and closed when the combination is improperly set through any disk, an additional circuit-closer, hand-operated outside the door, for said circuits, means for retaining each disk in the position to which it is moved to close the circuit, hand-operated means adapted to extend outside the door on opposite sides thereof for releasing the disk, and means for returning it to normal position when released, substantially as described.

19. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism in said circuit comprising a plurality of independently-rotative disks each bearing contact portions controlling said circuit, hand-operated means adapted to extend outside the door for rotating the disks to close the circuit, an alarm-circuit also controlled by said disks and closed when the combination is improperly set through any disk, and adjustable means for each disk determining its initial position, substantially as described.

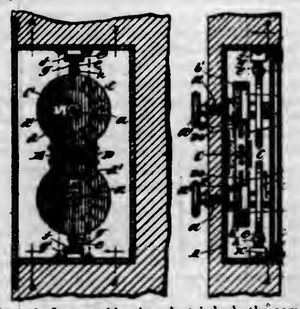
20. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism comprising a rotative switch controlling said circuit, hand-operated means adapted to extend outside the door for rotating the switch in one direction to close the circuit, a spring for returning it to its initial position, and adjustable means determining the initial position of the switch, substantially as described.

21. The combination with the boltwork of a door-lock and an electric circuit for operating the same, of a combination mechanism comprising a rotative switch controlling said circuit, hand-operated means adapted to extend outside the door for rotating the switch in one direction to close the circuit, a spring for returning it to its initial position, and an adjustable stop determining the initial position of the switch, substantially as described.

22. The combination with a door-lock and an electric circuit for operating the same, of a hand-operated combination mechanism in said circuit comprising a movable member inside the door and a member coacting therewith inside the door, one member yieldingly engaging the other so as to resist step by step the movement of the movable member and thus indicate the position of the combination mechanism, substantially as described.

23. The combination with a door-lock and an electric circuit for operating the same, of a hand-operated combination mechanism in said circuit comprising a rotative disk inside the door, and a member yieldingly coacting with said disk so as to resist step by step its movement and thus indicate the position of the combination mechanism, substantially as described.

608,820. ELECTRIC COMBINATION-LOCK. HENRY G. CARLETON, New York, N. Y. Filed Apr. 4, 1898. Serial No. 676,303. (No model.)



Claim.—1. In a combination electric lock, the combination with a lock mechanism and a suitable circuit through which it is operated, of a combination mechanism for controlling the circuit including a disk carrying indicating devices, a suitable member cooperating with the indicating devices of the disk to indicate to the touch both the starting-point of the combination mechanism and each successive position thereof, substantially as described.

2. In a combination electric lock the combination with a lock mechanism and with a suitable circuit through which it is operated, of a combination mechanism for controlling the circuit, the said combination mechanism including a nicked disk and a suitable cooperating device for indicating to the touch both the starting-point of the combination mechanism and each successive position thereof, substantially as described.

3. In a combination electric lock the combination with a lock mechanism and with a suitable circuit through which it is operated, of an alarm-circuit, an alarm in said circuit, a combination mechanism for controlling said circuits including a nicked disk and a suitable device cooperating therewith to indicate to the touch both the starting-point of the combination mechanism and each successive position thereof, and a circuit-closing device, all substantially as described.

4. In a combination electric lock, the combination with a lock mechanism and with a suitable circuit through which it is operated, of a combination mechanism for controlling the circuit, said mechanism including a circuit-controller, suitable contacts cooperating therewith, means for producing a movement of one of these devices with respect to the other, a nicked disk, and a suitable device cooperating with the disk to indicate to the touch both the starting-point of the combination mechanism and each successive position thereof, substantially as described.

5. In a combination electric lock the combination with a lock mechanism and with a suitable circuit through which it is operated, of a combination mechanism for controlling the circuit, the said mechanism including a revoluble circuit-controller and nicked disk, and a suitable device cooperating with the disk to indicate to the touch both the starting-point of the combination mechanism and each successive position thereof, all substantially as described.

6. In a combination electric lock, the combination with a lock mechanism and with a suitable circuit through which it is operated, of a combination mechanism for controlling the circuit, the said combination mechanism including a revoluble circuit-controller and nicked disk, one of the nicks being deeper than the others to determine the starting-point of the combination, and a suitably-mounted detent engaging with the nicked disk to determine the position of the combination, all substantially as described.

7. In a combination electric lock the combination with a lock mechanism and alarm mechanism, of suitable circuits through which these mechanisms are operated, a combination mechanism for controlling the circuits, the said combination mechanism including a revoluble circuit-controller and nicked disk, one of the nicks thereof being deeper than the others to determine the starting-point of the combination, a suitably-mounted detent for engaging the nicked disk, and a circuit-closing device, all substantially as described.

8. In a combination electric lock and in combination with the lock mechanism and the circuit for controlling it, a plurality of revoluble circuit-controllers, a plurality of disks having nicked edges and a suitable device cooperating with each disk to indicate to the touch both the starting-point of the combination mechanism and each successive position thereof and means for giving the disks a movement corresponding to that of the controllers, all substantially as described.

9. In a combination electric lock and in combination with the lock mechanism, a plurality of revoluble circuit-controllers, a plurality of disks having nicked edges and a suitable device cooperating with each disk to indicate to the touch both the starting-point of the combination mechanism and each successive position thereof, means for giving the disks a movement corresponding to that of the controllers, an alarm mechanism, suitably-arranged circuits including the bolt-drawing mechanism and the alarm mechanism, and a circuit-closing device, all substantially as described.

10. In a combination electric lock and in combination with the lock mechanism, a plurality of revolable circuit-controllers, a plurality of disks having nicked edges, one of the nicks being made deeper than the others to indicate the starting-point of the combination, means for giving the disks a movement corresponding to that of the controllers, means cooperating with the nicks to indicate to the operator the amount each controller has been moved and a circuit including the bolt-drawing mechanism, all substantially as described.

11. In a combination electric lock and in combination with the lock mechanism, a plurality of revoluble circuit-controllers, a plurality of disks having nicked edges one of the nicks being deeper than the others to indicate the starting-point of the combination, means for giving the disks a movement corresponding to that of the controllers, detents engaging the nicks, an alarm mechanism, suitably-arranged circuits including the alarm mechanism and the locking mechanism, and a circuit-closing device, all substantially as described.

12. In a combination electric lock the combination with a movable magnet, connections between it and one of the operative parts of the lock, the connections being so constructed that when the magnet is energized the lock will be operated and when it is deënergized the magnet will move without operating the lock, devices for moving the magnet, a circuit in which the magnet is included and a combination mechanism for controlling the circuit, substantially as described.

13. In a combination electric lock the combination with a movable magnet, connections between it and one of the operative parts of the lock, the connections being so constructed when the magnet is energized that the lock will be operated and when it is deënergized the magnet will move without operating the lock, devices for moving the magnet, a circuit including the magnet, an alarm mechanism, a suitable circuit therefor, a combination mechanism controlling the said circuits, and a circuit-closing device, all substantially as described.

14. In a combination electric lock the combination with a movable bolt, of a movable magnet, the bolt and magnet being so constructed and arranged that when the magnet is energized the bolt will move therewith and when it is deënergized the magnet will move without operating the bolt, devices for moving the magnet, and a combination mechanism for making the circuit through the magnet, all substantially as described.

15. In a combination electric lock the combination with a movable bolt, of a movable magnet, the bolt and magnet being so constructed and arranged that when the magnet is energized the bolt will move with the magnet and when it is deënergized the magnet may move without operating the bolt, suitable devices for moving the magnet, an alarm mechanism, suitable circuits including the magnet and the alarm mechanism, a combination mechanism controlling said circuits, and a suitable circuit-closing device, all substantially as described.

16. In a circuit-controlling mechanism for electric combination-locks the combination of a spindle, a nicked disk mounted on the spindle, a device cooperating with the disk to indicate to the touch the starting-point of the combination and the amount of movement therein, and suitable circuit-controlling disks, all substantially as described.

17. In a circuit-controlling mechanism for electric combination-locks the combination of a spindle, a nicked disk adjustably connected to said spindle, a device cooperating with the disk to indicate to the touch the starting-point of the combination mechanism and each successive position thereof, and a suitable circuit-controller also mounted on the spindle, all substantially as described.

18. In a circuit-controlling mechanism for electric combination-locks the combination of a spindle, an arm mounted on the spindle, a nicked disk also mounted on the spindle and provided with a device for indicating the starting-point of the combination, a series of holes in the disk, a pin for adjustably connecting the arm and the disk through the medium of one of the holes referred to and a suitable circuit controller also mounted on the spindle, all substantially as described.

19. A circuit-controller consisting of a conducting-disk having a hub or boss thereon and a part of its circumference cut away, an insulating-disk mounted on said boss and having a portion which extends into the cut away portion of the conducting-disk, all substantially as described.

20. A circuit-controlling mechanism for electric combination-locks consisting of a spindle, a nicked disk mounted on the spindle, one of the nicks being deeper than the others to indicate the starting-point of the combination and the said disk being provided with a series of holes one corresponding to each nick, an arm also mounted on the spindle and a pin by which the disk is adjustably connected to the arm through the medium of one of the holes referred to, and a circuit-controller also mounted on the spindle, the said controller consisting of a disk of conducting material having part of its circumference cut away and a disk of insulating material a portion of which lies in the cut-away portion of the conducting-disk, the said insulating-disk having a connecting bar or wire therein, all substantially as described.

21. In an electric combination lock, the combination with the lock mechanism, of a plurality of circuit-controlling devices, each circuit-controlling device consisting of a spindle carrying a nicked disk adjustably mounted thereon and having a suitable device for indicating the starting-point of the combination, a device engaging with each disk to indicate the amount each disk has been turned, a circuit-controller also carried on the spindle, contacts engaging the controllers, an alarm mechanism, suitable circuits including the alarm mechanism and the lock mechanism, and a suitable circuit-closing device, all substantially as described.

22. In a protective device for combination-locks the combination with one of the plates of the casing of the lock, of a protective plate, insulating material between the plates, a holding device for securing the plates together, the said holding device passing through perforations in each and having a reduced portion, the said reduced portion lying in the perforation in one of the plates, and the main portion being long enough to span the distance between the plates, insulating material between the holding device and that plate which surrounds the reduced portion, the two plates being connected to a suitable source of electrical energy, and an alarm in said connections, substantially as described.

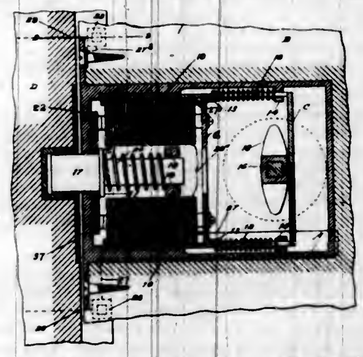
23. In a protective device for combination-locks the combination with one of the plates of the lock-casing, of a protective plate, insulation between the plates, a screw holding the plates together, said screw having a tapped portion and a reduced portion, the tapped portion engaging one of the plates and being long enough to span the distance between the plates and a recessed portion lying in the perforation of the other plate when the screw is home, an insulating-washer between the head of the screw and the plate, the plate and the casing being connected to a suitable source of electrical energy, and an alarm in said connections, all substantially as described.

608,321. ELECTRIC LOCK. HENRY G. CARLETON, New York, N. Y. Filed May 24, 1898. Serial No. 681,586. (No model.)

Claim.—1. In an electrically-controlled lock, the combination with a movable magnet, of one of the engaging parts of the lock, such as the latch or keeper, the attractive force of the magnet being made effective upon the said engaging part whereby a movement of the magnet will cause a corresponding movement of the latch or keeper, substantially as described.

2. In an electrically-controlled lock, the combination with a movable magnet, and its armature, of one of the engaging parts of the lock such as the latch or keeper, the parts being so constructed and arranged that when the magnet attracts the armature the magnet armature and the engaging part will move together, substantially as described.

3. In a electrically-controlled lock, the combination with a movable magnet, of engaging parts such as a latch and keeper, and an armature for moving one of the parts, the parts being so constructed and arranged that when the magnet attracts the armature the said armature and the part of the lock which it moves will move with the magnet and at other times the magnet may move without disturbing the relation of the parts, substantially as described.



4. In an electrically-controlled lock, the combination with one of the engaging parts of the lock, such as the latch and keeper, of a magnet and its armature, one of these devices being movable with respect to the other when the magnet is not attracting its armature and the two being movable together when the magnet is attracting its armature, connections between one of these devices and the engaging part of the lock, whereby when the magnet and armature move together the parts of the lock may be released from engagement and when they do not move together the parts of the lock will remain in engagement, substantially as described.

5. In an electrically-controlled lock, the combination with a movable magnet, of one of the engaging parts such as the latch or keeper, an armature embracing one of the engaging parts, said armature lying in close proximity to the poles of the magnet, a circuit for energizing the magnet, and means for moving the magnet, the parts being so arranged that when the magnet is attracting its armature a movement of the magnet will release the engaging parts, and when the magnet is not attracting its armature the engagement between such parts will be undisturbed, substantially as described.

6. In an electrically-controlled lock, the combination with one of the engaging parts, such as the latch or keeper, of a magnet and its armature, a moving frame in which one of these parts is mounted, connections between the said engaging part and the part mounted on the moving frame, and means for operating the moving frame, substantially as described.

7. In an electrically-controlled lock, the combination with one of the engaging parts, such as the latch or keeper, of a magnet and its armature, a moving frame for operating one of these devices, connections between the other device and one of the engaging parts, and means for operating the moving frame, substantially as described.

8. In an electrically-controlled lock, the combination with one of the engaging parts, such as the latch or keeper, of a magnet and its armature, connections between the armature and one of the engaging parts, a sliding frame in which the magnet is mounted, means for operating the sliding frame in one direction, and automatic means for returning the frame, substantially as described.

9. In an electric lock, the combination with a sliding spring-controlled latch, of an armature mounted on the latch, a sliding frame, a magnet mounted on the sliding frame, a tumbler-cam for operating the frame in one direction, and a spring for returning the frame, substantially as described.

10. In an electric lock, the combination with a moving frame, and means for operating it, of an electromagnet mounted on the frame, a latch having its stem located between the poles of the magnet and sliding in suitable guides, a spring for controlling the bolt, an armature embracing the bolt and having its ends in proximity to the poles of the magnet, substantially as described.

11. In an electric lock, the combination with a door, of a movable magnet, engaging parts, such as the latch and keeper, the attractive force of the magnet being made effective upon one of said engaging parts, and means for moving the magnet whereby when the magnet is exercising its attractive force the said part will move with the magnet and at other times the magnet may move without disturbing the relation of the parts, a circuit for energizing the magnet, a circuit-closer for establishing a current through the magnet, and suitable means for breaking the circuit when the lock is operated, substantially as described.

12. In an electrically-controlled lock, the combination with a door of a movable magnet, engaging parts, such as a latch and keeper, the attractive force of the magnet being made effective upon one of the engaging parts, and means for moving the magnet whereby when the magnet is exercising its attractive force the said part will move with the magnet and at other times the magnet may move without disturbing the relation of the parts, a circuit for energizing the magnet, and means operated by the opening of the door whereby the circuit is broken when the door is opened, substantially as described.

13. In an electrically-controlled lock, the combination with a door, of a movable magnet, engaging parts, such as a latch and keeper, the attractive force of the magnet being made effective upon one of the engaging parts, and means for moving the magnet whereby when the magnet is exercising its attractive force the said part will move with the magnet and at other times the magnet may move without disturbing the relation of the parts, a circuit for energizing the magnet, a circuit-closer, means whereby the circuit may be broken, and an alarm in the said circuit, substantially as described.

14. In an electrically-controlled lock the combination with a door, of a movable magnet, engaging parts, such as the latch and keeper, the attractive force of the magnet being made effective upon one of the engaging parts, and means for moving the magnet whereby when the magnet is exercising its attractive force the part will move with it and at other times the magnet may move without disturbing the relation of the parts, a circuit for energizing the magnet, a circuit-closer, means operated by the opening of the door whereby the circuit is broken, and an alarm in said circuit, substantially as described.

15. In an electrically-controlled lock, the combination with a movable magnet, of one of the engaging parts, such as the latch or keeper, the attractive force of the magnet being made effective upon the said engaging part, and means for moving the magnet whereby when the magnet is exercising its attractive force the said part will move with the magnet and at other times the magnet may move without disturbing the relation of the parts, a circuit for energizing the magnet, a circuit-breaking device located in proximity to the lock, a circuit-closing device located at a distance therefrom, an alarm located in proximity to the lock, and a second alarm located near the circuit-closing device, both alarms being operated from the magnet-circuit, substantially as described.

16. In an electrically-controlled lock, the combination with one of the engaging parts such as the latch or keeper, of stationary magnet coils, pole-pieces reciprocating through said coils, an armature connected with the engaging part, means for establishing a circuit in the magnet, and means for reciprocating the pole-pieces, substantially as described.

17. In an electrically-controlled lock, the combination with one of the engaging parts of the lock, such as the latch or keeper, of stationary magnet-coils, an armature connected to the engaging part, pole-pieces reciprocating through the stationary magnet coils, a frame with which the pole-pieces are connected, and means for reciprocating the frame, substantially as described.

18. In an electrically-controlled lock, the combination with one of the engaging parts, such as the latch or keeper, of an armature connected with said part, stationary magnet-coils, a frame, pole-pieces connected to said frame and reciprocating through the magnet-coils, a tumbler-cam for reciprocating said frame in one direction, and means for returning it, substantially as described.

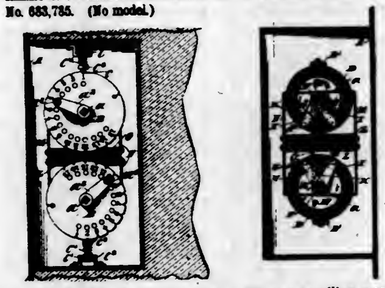
19. The combination with a lock-casing, of one of the engaging parts of the lock, such as the latch or keeper, of guide-rods extending through the casing, an armature connected to said engaging part and mounted on said guide-rods, a frame also mounted on said guide-rods, pole-pieces connected to the frame, a tumbler-cam for operating the frame in one direction, and means for returning it, substantially as described.

20. In an electrically-controlled lock, the combination with the controlling devices for the lock, the same including a suitable magnet, of an alarm located near the lock and connected in multiple with the magnet thereof, a circuit-closing device located at a distance from the lock, an alarm located near the circuit-closing device, and a resistance connected in multiple with the alarm, substantially as described.

21. The combination with a door, of an electrically-controlled lock, controlling devices for said lock including a suitable magnet, a circuit for the magnet of the lock, an alarm located near the lock and connected in multiple with the magnet, a circuit-closing device located at a distance from the lock, an alarm located near the circuit-closer, a resistance connected in multiple with the alarm, and means for breaking the circuit, substantially as described.

22. The combination with a door, of an electrically-controlled lock, controlling devices for said lock including a suitable magnet, a circuit for the magnet of the lock, an alarm located near the lock and connected in multiple with the magnet, a circuit-closing device located at a distance from the lock, an alarm located near the circuit-closer, a resistance connected in multiple with the alarm, and circuit-breaking devices operated by the movement of the door, substantially as described.

608,822. COMBINATION MECHANISM FOR ELECTRIC LOCKS. HENRY G. CARLETON, New York, N. Y. Filed June 18, 1898. Serial No. 683,785. (No model.)



Claim.—1. The combination with a circuit-controlling mechanism, of a disk carrying a series of indicating devices suitably spaced apart for indicating successive positions of the circuit-controlling mechanism, that one of the series which indicates the initial position of the circuit-controlling mechanism being farther from the adjacent indicating devices than the other devices of the series are from each other, and suitable means cooperating with said devices to indicate the position of the circuit-controlling mechanism, substantially as described.

2. The combination with a circuit-controlling mechanism, of a disk provided with a series of nicks to indicate successive positions of the controlling mechanism, the nick which indicates the starting-point of the combination being arranged with a wider space between it and the adjacent nicks than the spaces between the other nicks of the series, and a suitable device operating in connection with said nicks to indicate the position of the combination, substantially as described.

3. In a combination electric lock, the combination with a revoluble circuit-controller, of a disk provided with a series of indicating devices suitably spaced apart for indicating successive positions of the controller, that one of the series which indicates the initial position of the circuit-controlling mechanism being farther from the adjacent indicating devices than the other devices of the series are from each other, suitable means cooperating with said devices to indicate the position of the circuit-controller, a lock mechanism, and a circuit between the controller and the lock, substantially as described.

4. In a combination electric lock, the combination with a revoluble circuit-controller, of a disk provided with a series of indicating devices suitably spaced apart for indicating successive positions of the controller, that one of the series which indicates the initial position of the circuit-controlling mechanism being farther from the adjacent indicating devices than the other devices of the series are from each other, suitable means cooperating with said devices to indicate the position of the circuit-controller, a lock mechanism, a circuit between the controller and the lock mechanism, and a circuit-closing device operated by a movement of the lock mechanism, substantially as described.

5. In a combination electric lock, the combination with a revoluble circuit-controller, of a disk provided with a series of indicating devices suitably spaced apart for indicating successive positions of the controller that one of the series which indicates the initial position of the circuit-controlling mechanism being farther from the adjacent indicating devices than the other devices of the series are from each other, suitable means cooperating with said devices to indicate the position of the circuit-controller, a lock mechanism, a circuit between the controller and the lock mechanism, a circuit-closing device, and an alarm, substantially as described.

6. In a combination electric lock, the combination with a revoluble circuit-controller, of a disk provided with a series of indicating devices suitably spaced apart for indicating successive positions of the controller that one of the series which indicates the initial position of the circuit-controlling mechanism being farther from the adjacent indicating devices than the other devices of the series are from each other, suitable means cooperating with said devices to indicate the position of the circuit-controller, a lock mechanism, a circuit between the lock mechanism and the circuit-controller, a branch circuit including an alarm, and a circuit-closing device operated by a movement of the lock mechanism to close either the lock-operating circuit or the alarm-circuit, substantially as described.

7. The combination with a spindle, of a circuit-controller mounted on the spindle and turning therewith, a disk carried on the spindle, devices carried by the disk to indicate the position of the circuit-controller, that one of the devices which indicates the initial position of the circuit-controller being farther from the adjacent devices than the other devices of the series are from each other, and means cooperating with said devices to determine the position of the controller, substantially as described.

8. The combination with a rotary spindle, of a pair of brushes mounted thereon and insulated from each other and the spindle, a stationary device which at a given position of the brushes operates to electrically connect them, an indicating device, part of which is carried by the spindle to indicate the position of the brushes, a circuit of which the brushes and their electrical connections form a part, a lock mechanism in said circuit, and means for closing the circuit, substantially as described.

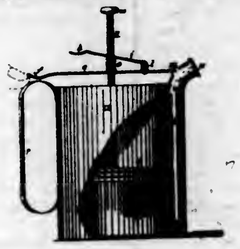
9. The combination with a spindle, of a pair of brushes mounted thereon and insulated from each other and the spindle, a stationary device which at a given position of the brushes operates to electrically connect them, an indicating device, part of which is carried by the spindle to indicate the position of the brushes, a suitable circuit of which the brushes and their electrical connections form a part, a lock mechanism in said circuit, and means for closing the circuit operated by a movement of the lock mechanism, substantially as described.

10. The combination with a pair of spindles, of a pair of brushes carried by each spindle, stationary means for electrically connecting each pair of brushes when the spindles are in a given position, means for indicating the position of each spindle, an electric circuit of which the brushes form a part and which is established when each pair of brushes is electrically connected, a lock mechanism in said circuit, an additional brush on each spindle, a conductor with which said brush is in contact at all times except when the pair of brushes before referred to are electrically connected, a circuit which is established when either single brush is in contact with its conductor, an alarm mechanism in said circuit, and means operated by movement of the lock mechanism for closing either of said circuits, substantially as described.

11. The combination with a pair of spindles, of a pair of brushes carried by each spindle, stationary means for electrically connecting each pair of brushes when the spindles are in a given position, means for indicating the position of each spindle, said means including a disk bearing a series of indicating devices, the one which indicates the initial position of the brushes being farther from the adjacent devices than said devices are from each other, an electric circuit of which the brushes form a part and which is established when each pair of brushes is electrically connected, a lock mechanism in said circuit, an additional brush on each spindle, a conductor with which said brush is in contact at all times except when the pair of brushes before referred to are electrically connected, a circuit which is established when either single brush is touching its conductor, an alarm mechanism in said circuit, and means operated by movement of the lock mechanism for closing either of said circuits, substantially as described.

12. The combination with a pair of spindles, of a nicked disk carried by each spindle, one of the nicks being farther from the adjacent nicks than the remainder of the nicks are from each other, a spring detent cooperating with said nicks, a pair of brushes mounted on each spindle and insulated from it and each other, a disk mounted on each spindle and carrying a conducting-section and which serves when the brushes are in proper position to electrically connect them, an electric circuit including the brushes, a lock mechanism in said circuit, a single brush carried by each spindle and insulated therefrom, a conducting-disk with which each brush is in contact at all times except when the pairs of brushes before referred to are electrically connected, a circuit of which said single brush and conductor form a part, an alarm mechanism in said circuit, and a circuit-closing device operated by movement of the lock for closing either the alarm-circuit or the lock-circuit according to the position of the several brushes, substantially as described.

608,823. CONDENSED-MILK CUP. ALBERT D. CYPHER, New York, N. Y., assignor of one-half to S. Lothrop Fowler, Peekskill, N. Y. Filed Oct. 18, 1895. Serial No. 566,096. (No model.)



Claim.—1. A cup with spout and handle, a piston to traverse the interior of the cup, a piston-stem levers hinged together and to the cup, and an intervening spring whereby end of the levers is caused to grip the piston-stem for forcing the piston downward, combined to operate substantially as shown and described.

2. In combination with a cup having a smooth interior, a piston *c* having a stem *d*, lever *e* pivoted to one side of the cup, lever *i* hinged to lever *e*, and spring *o*, the said piston-stem passing through said levers and spring, all operating together substantially as shown and described.

3. In combination with a cup provided with a piston having a stem projecting therefrom, lever *e* pivoted to the side of the cup, lever *i* hinged to lever *e*, and spring *o*, substantially as and for the purpose described.

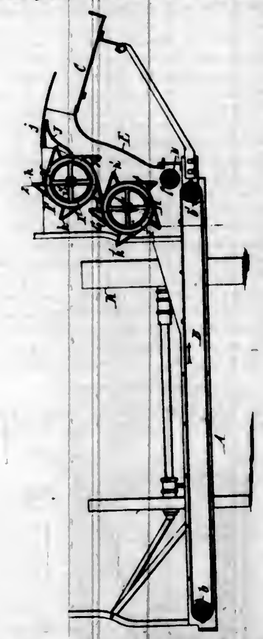
4. The combination substantially as shown, of the cup *a* provided with a spout and handle, piston *c*, piston-stem *d* with knob *w*, lever *e* pivoted to the spout *b* and reaching across the cup to the handle *r*, links *l*, lever *i*, and spring *o*.

608,824. CAR-REPLACER. CHARLES E. DAILEY, East Liverpool, Ohio, assignor of one-half to Edgar I. Baxter, same place. Filed May 13, 1896. Serial No. 690,544. (No model.)



Claim.—A curved and laterally-beveled car-replacer provided with a cross-groove which stops the wheel and allows it to be carried down by gravity upon the rail substantially as shown and described.

608,825. GRAIN-HARVESTER. GEORGE A. FARRALL and EDWARD PRIDMORE, Batavia, N. Y., assignors to the Johnston Harvester Company, same place. Filed Oct. 16, 1897. Serial No. 655,200. (No model.)

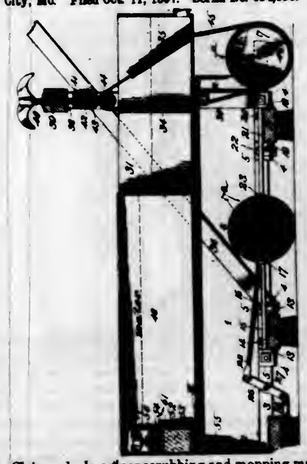


Claim.—1. The combination with the platform-apron, the elevated binder-deck, and the throat-plate between the same, of a grain-elevating mechanism containing a lower and an upper rotary feed-drum, one of said drums being provided with single elevating-teeth and the other with pairs of elevating-teeth which straddle the single teeth of the other drum and operate as strippers for the same, substantially as set forth.

2. The combination with the platform-apron, the elevated binder-deck, and the throat-plate between the same, of an elevating mechanism containing a lower and an upper rotary feed-drum rotating in the same direction and each provided with elevating-teeth which have inclined front sides, substantially as set forth.

3. The combination with the platform-apron, the elevated binder-deck, and the throat plate between the same, of a starting-roller arranged over the delivery portion of the apron, a lower rotary feed-drum arranged above the starting-roller and provided with single elevating-teeth, an upper feed-drum provided with elevating-teeth in pairs which straddle the single teeth of the lower drum, and stripping devices which engage between the teeth of the upper feed-drum, substantially as set forth.

608,826. SCRUBBING-MACHINE. LOCHEN B. FIELDS, Kansas City, Mo. Filed Oct. 11, 1897. Serial No. 654,538. (No model.)



Claim.—1. In a floor scrubbing and mopping machine, a wheeled frame, a series of scrubbing-brushes mounted therein and in contact with the floor, a tank supported upon said frame and provided with guide-tubes extending upwardly thereof, a wringer above said tank, a guide-drum, an endless mop extending through said guide-tubes, said wringer, and around said drum, and means to synchronously operate said brushes and said mop, substantially as described.

2. In a floor scrubbing and mopping machine, a wheeled frame, scrubbing-brushes mounted therein and in contact with the floor, means for operating said brushes, a water-supply tank upon said frame and provided with grooves and perforations in its base, a vertically-adjustable water-regulating device, having a compressible base, and means for applying more or less pressure upon said device, substantially as and for the purpose described.

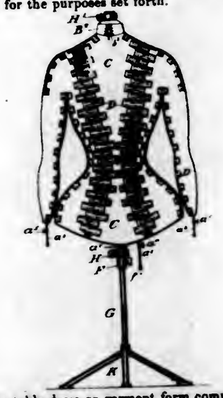
3. In a floor scrubbing and mopping machine, a wheeled frame, a wringer supported thereby, a tank carried below the wringer and provided with guide-tubes, an endless mop extending through said tubes and said wringers and in continuous contact with the floor, and means to operate said mop, substantially as described.

4. In a floor scrubbing and mopping machine, the combination of a wheeled frame, standards projecting upwardly therefrom, bars secured to said frame and embracing externally said standards near their upper ends and connected by a handle, a water-distributing tank mounted upon the frame between said oblique bars and provided with a depending portion fitting snugly between the side walls and against the front wall of the frame, a water-receiving tank upon the frame at the rear side of the distributing-tank and externally embraced by the oblique bars and the standards, scrubbing-brushes geared to one set of the supporting-wheels of the frame, a drum geared to the other set of supporting-wheels, a wringer mounted in said standards above the receiving-tank, and an endless mop extending through said wringer and around said drum, substantially as shown and described.

608,827. DRESS OR GARMENT FORM. AUGUSTA B. FRIEL, Los Angeles, Cal. Filed Dec. 15, 1896. Serial No. 615,770. (No model.)

Claim.—1. A dress or garment form comprising an inner flexible, inflatable bag, surrounded by an outer adjusting covering or jacket of complete construction composed of flexible material to which is attached on the exterior surface of the jacket series of regularly-arranged adjusting-straps permanently secured at one end to the material thereof, the other end being adapted to engage with series of fastenings regularly arranged to correspond with the adjusting-straps and permanently secured to the outer surface of the jacket; the dimensions of the form being reduced by shortening the connecting lengths of the straps and enlarged by lengthening the same substantially as and for the purpose set forth.

2. A dress or garment form comprising in combination an inner compressible body and an outer flexible adjustable covering or jacket therefor, said covering or jacket provided with series of adjusting-straps permanently attached at one end to the outer surface of the jacket; and fastenings permanently attached to the outer surface of the jacket, and adapted to engage and connect with the straps, substantially as and for the purposes set forth.



3. An adjustable dress or garment form comprising in combination, an interior flexible inflatable bag, a surrounding flexible covering or jacket therefor, series of adjusting-straps and fastenings permanently secured to the outer surface of the jacket and located along those parts of the form the dimensions of which are to be varied, namely, the bust, back, shoulders and arms, the straps being placed lengthwise, parallel to the circumference to be changed, each strap being graduated to its proper proportional part of the form at that place and adapted for enlarging or reducing the form by engaging with the fastening corresponding thereto at definite locations on the straps and holding the same to required dimensions substantially as and for the purposes set forth.

4. In an adjustable dress or garment form comprising in combination an inner inflatable bag and an outer covering or jacket therefor; the graduated adjusting-straps permanently secured to the outer surface of the jacket; the exterior permanently-attached fastenings to engage with the straps; and the auxiliary lacings b^3 and c' attached to the outer covering or jacket at the neck and rump portion of the form, substantially as shown and set forth.

5. In an adjustable dress or garment form the combination of an interior inflatable bag, an outer adjustable jacket provided on its exterior surface with attached graduated adjusting-straps and fastenings and an intermediate flexible wadded jacket interposed between the outer adjustable jacket and the inflatable bag, substantially as set forth.

6. A flexible dress or garment form consisting of an interior inflatable bag, an exterior adjustable jacket and an intermediate wadded jacket, said exterior jacket being provided with suitably-arranged attached straps and fastenings for adjusting the form to different sizes and dimensions, and having beneath said exterior jacket at the back of the form braces or stiffenings B' and I secured to the wadded jacket for preserving the proper shape of the back substantially as shown and described.

7. In an adjustable dress or garment form the combination of an interior inflatable bag, an outer covering or jacket provided on its exterior surface with attached straps and fastenings for varying the dimensions of the form, an intermediate wadded jacket interposed between the inner inflatable bag and the outer jacket, and the interior supporting-standard to which the form is fastened at its extremities by the clamps H and H' substantially as shown and described.

8. In a dress or garment form the combination of the following parts: an interior inflatable bag provided with admission-tubes a^3 a^2 a^3 having stop-cocks a^4 a^1 a^4; an outer covering or jacket having attached to its exterior surface series of adjusting-straps provided with perforations; fastenings to engage with the perforations of the straps, and the lacings c' b^3 located as shown; an intermediate wadded jacket interposed between the inflatable bag and the outer covering or jacket; the back braces or stiffenings B' and I; the supporting-stand K, the standard G and the tube F adjustable thereon all as shown and described.

9. A dress or garment form comprising, in combination, an inner compressible body and an outer flexible, adjustable jacket therefor, said covering or jacket provided with series of graduated adjusting-straps permanently attached at one end to the outer surface of the jacket, and being provided along their lengths with rows of definitely spaced and numbered eyelets; and of fastenings permanently attached to the outer surface of the jacket and adapted to engage with the eyelets of the straps substantially as shown and described.

608,328. GATE FOR WIRE FENCES. PATRICK O. GORMAN, Jerseyville, Ill. Filed Apr. 29, 1898. Serial No. 679,205. (No model.)



Claim.—1. In a device of the class described, the combination of a post or support provided with upper and lower keepers, wires, an end bar connecting the wires, and a locking-lever connected with the end bar near one end thereof and detachably engaging and fulcrumed on the adjacent keeper and having its other end detachably interlocked with the other keeper, substantially as described.

2. In a device of the class described, the combination with a post or support, of a wire gate having an end bar, an upper keeper mounted on the post or support and extending away from the gate, a lower keeper mounted on the post or support and disposed toward the gate, and a locking-lever connected with the upper portion of the end bar of the gate and detachably arranged in and fulcrumed on the upper keeper, the lower end of the locking-lever being detachably interlocked with the lower keeper, substantially as described.

3. In a device of the class described, the combination of a post or support having upper and lower keepers, a wire gate having an end bar, and a locking-lever connected with the upper portion of the gate and detachably arranged in and fulcrumed on the upper keeper, the lower portion of the lever being detachably interlocked with the lower keeper and overlapping and forming a stop for the end bar of the gate, substantially as described.

4. In a device of the class described, the combination of a post or support, an upper keeper having an L-shaped portion, a lower keeper consisting of an L-shaped outer portion, a shank and an arm connecting the shank with the L-shaped outer portion, a wire gate, and the locking-lever connected with the upper portion of the wire gate, detachably arranged in and fulcrumed on the upper keeper and interlocked with the lower keeper, substantially as described.

5. In a device of the class described, the combination of a post or support having upper and lower keepers, an end bar, wires adjustably connected with the end bar, a forked hook adjustably secured to the end bar near one end thereof, a locking-lever detachably engaging the keepers, and an adjusting device having an eye to receive the hook and mounted on the locking-lever, substantially as described.

608,329. CAR-AXLE LUBRICATOR. EDDIE W. HANCOCK, Epping, Ga. Filed Nov. 13, 1897. Serial No. 658,428. (No model.)



Claim.—1. A car-axle lubricator comprising a roller adapted to come in contact with the axle, a casing containing said roller, a spring-support for said casing, said casing having a suitable oil-inlet, a straining device located over said inlet, a means for regulating the flow of the oil through said inlet.

2. A car-axle lubricator comprising a roller, a casing containing said roller, a spring-support for said casing, said casing having a suitable oil-inlet, a straining device located over the inlet, a device adapted to regulate the flow of the oil through the inlet, said device being also adapted to maintain the straining device in its proper position.

3. A car-axle lubricator comprising a roller, a casing containing said roller, said casing having a suitable oil-inlet, a supporting mechanism for the casing, said mechanism consisting of a spring-rod having outwardly-curved ends, said ends merging into perpendicular sections, the said sections merging into coil-springs, said springs merging into a central section, the central section coming in contact with the casing and supporting the same.

4. A car-axle lubricator comprising a roller, a casing containing said roller, said casing having a suitable oil-inlet, a pocket formed at the end of said casing, a supporting mechanism consisting of a spring-rod having outwardly-extending ends, said ends merging into the perpendicular sections, said sections merging into coil-springs, said springs merging into a central section, the said central section being adapted to enter the pocket formed on the casing and supporting the casing.

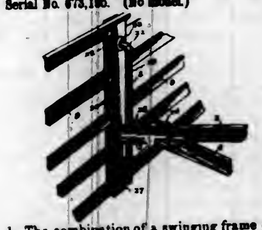
5. A car-axle lubricator comprising a roller adapted to come in contact with the axle, said roller having an axle provided with extended ends, a casing adapted to contain said roller, said casing having a suitable oil-inlet, said casing being suitably supported, perpendicular guides located in the interior of said casing, said guides being adapted to receive the extended axle ends of the roller.

6. A car-axle lubricator comprising a roller adapted to come in contact with the axle, a casing containing said roller, a suitable support for said casing, said casing having an oil-inlet, perpendicular guides located on the outside of the casing and on opposite sides of the oil-inlet, a straining mechanism having suitable flanges adapted to enter said guides, and a screen located on the straining mechanism.

7. A car-axle lubricator comprising a roller adapted to come in contact with the axle, a casing for said roller, said casing having a suitable oil-inlet, a suitable support for said casing, guides located on the outside of the casing and on opposite sides of the oil-inlet, a straining mechanism having flanges adapted to enter said guides, a screen located on the straining mechanism, a movable pin carried by said straining mechanism, said pin having its end pointed and being adapted to enter the oil-inlet of the casing.

8. A car-axle lubricator comprising a roller, a casing containing said roller, a suitable support for said casing, said casing having an oil-inlet, guides located on the outside of the casing and on opposite sides of the oil-inlet, a straining mechanism having flanges adapted to enter said guides, a screen located on said straining mechanism, a perforated section having an internal thread located on the straining mechanism, a threaded pin adapted to enter said perforation, said pin being pointed at its inner end, the point of said pin being adapted to enter the oil-inlet of the casing.

608,330. GATE. EDWIN J. HICKS, Falls City, Nebr. Filed Mar. 9, 1896. Serial No. 673,195. (No model.)

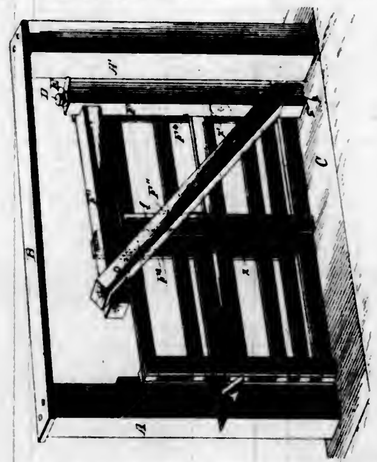


Claim.—1. The combination of a swinging frame or hanger provided at its outer end with a vertical opening, a gate, a vertically-adjustable rod arranged in the opening of the hanger, disposed parallel with the gate and provided with a horizontal pivot or pintle supporting the gate and permitting the same to tilt on it, a block mounted on the gate and interposed between it and the lower end of the rod, and means for securing the rod at the desired adjustment, substantially as described.

2. The combination of a swinging frame or hanger, a gate, a pawl or dog mounted on the swinging frame or hanger, and a vertically-adjustable rod journaled on the swinging frame or hanger and provided with a horizontal pivot receiving and supporting the gate, said rod being provided at intervals with annular shoulders adapted to be engaged by the pawl or dog, whereby the rod may be partially rotated without disengaging the pawl or dog, substantially as described.

3. The combination of a swinging frame or hanger, a gate, a vertically-adjustable rod mounted on the swinging frame or hanger, an L-shaped coupling connected with the upper end of the rod, a horizontal pivot or pintle extending from the coupling and receiving the gate, a fastening device mounted on the outer end of the horizontal rod or pivot and retaining the gate thereon, a block mounted on the gate and interposed between the same and the lower end of the rod, and a dog carried by the frame or hanger and engaging the rod to support the gate at the desired elevation, substantially as described.

608,331. GATE. ANDREW HINES, Dublin, Ky. Filed Apr. 14, 1897. Serial No. 632,192. (No model.)



Claim.—The combination of a base provided with a bearing-socket; a post mounted upon the base; a swinging hanger comprising a vertical bar F, provided at its lower end with a depending pivot detachably arranged in said socket, a horizontal top bar extending outward from the upper end of the vertical bar F, and inclined braces connecting the vertical and horizontal bars and secured to the same at one side of the hanger; the horizontal eyebolt E extending diagonally from one corner of the post and having its eye arranged at one end of the vertical bar F; the pivot D passing vertically through the eyebolt and embedded in the upper end of the vertical bar F, and provided at its upper end with a head, said pivot being detachable and adapted to permit the gate and hanger to be removed to afford a wide passage-way; the parallel bars F^3 spaced apart and depending from the outer end of the horizontal bar of the hanger and extending downward to a point near the bottom of the latter; the bar F^4 mounted on and spaced from the vertical bar F; the sliding gate operating in the spaces between the bars F^3 and the bar F^4 and the hanger, and the rollers x and x' mounted in said spaces, supporting the gate and arranged below the center thereof, substantially as described.

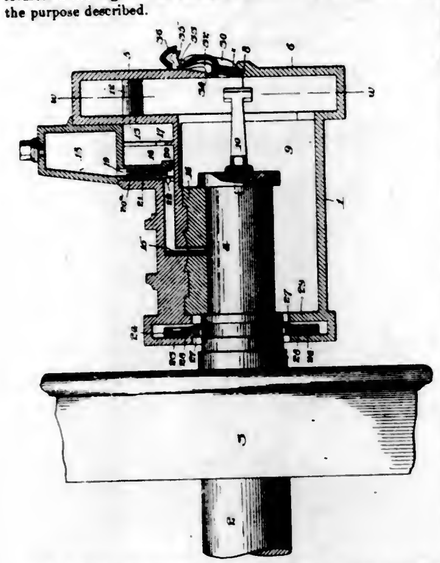
608,332. JOURNAL-BOX FOR RAILWAY-CARS. FERDINAND HOSTEL, Philadelphia, Pa. Filed Feb. 9, 1898. Serial No. 669,622. (No model.)

Claim.—1. In a journal-box the combination of the oil-reservoir 9, having therein the trough or troughs 12, the oil-chamber 14, a partition 17 dividing said chamber into two compartments, the said chamber communicating with the trough 12, and the duct 15, passing through the bearing-block 16, with the journal 4, having on the end thereof the arm or arms 10, provided with the spoon-like depressions 11, said spoon-like depressions being adapted to dip into the oil and throw it into the troughs as the axle revolves, substantially as shown and for the purpose described.

2. In a journal-box the combination of the oil-reservoir 9, having therein the trough or troughs 12, the oil-chamber 14, having therein the low partition 17, dividing said chamber into two compartments, the forward one of which forming a settling-chamber for the oils passing therethrough and communicating with the duct 15, passing through the bearing-block 16, with the journal 4, extending into the oil-reservoir and having thereon the arm or arms 10, provided with the opposite-disposed spoon-like depressions adapted to convey the oil from the oil-reservoir to the troughs 12, as the said journal revolves, substantially as shown and for the purpose described.

3. In a journal-box, the combination of the upper section 5, having thereon the lugs 37, and the lower section 6, having thereon the lugs 38, with the segmental headed bolts 7, fitting into the lug 38, and provided with the spring-washer 46, the nut 41, fitting on the end of the bolt 7, and the locking-pieces 43, fitting around the nut 41, the free ends of said locking-pieces adapted to pass under offsets

formed in the lugs 37, all arranged substantially as shown and for the purpose described.



4. A device for securing together the upper and lower sections of a journal-box having thereon extending lugs provided with openings that register, consisting of a screw-threaded bolt, a nut fitting on the screw-threaded end and a locking-piece fitting around said nut, the free end of said locking-piece adapted to project under an undercut recess in the lug on the top section, and the lower end of said bolt having thereon an irregular-shaped head that fits into a corresponding depression on the under side of the lug in the lower section and a spring-washer interposed between the head of the bolt and the under side of the lug, substantially as shown and described.

5. In a journal-box the combination of the upper section 5 having thereon lugs 37, and the lower section having thereon lugs 38 with the bolts 7 fitting into the lugs 38, and provided with the yielding washers 46 the nut on the end of said bolt, the locking-piece 43 fitting around said nut in the lug 37, and the offsets formed in said lug 37 adapted to receive and hold the said bolt and nut in positive and locked position, all arranged substantially as, and for the purpose set forth.

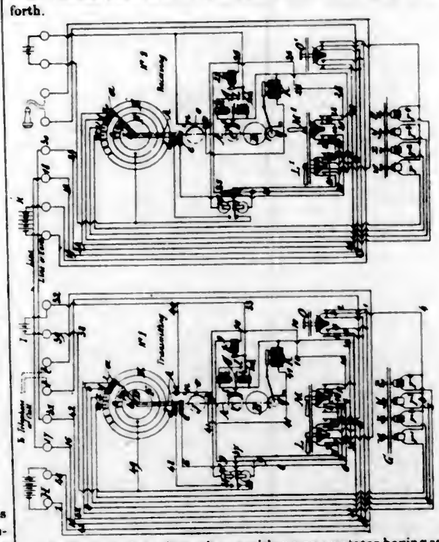
6. In a two-part journal-box the sections thereof provided with projecting lugs adapted to receive and hold locking-bolts; in combination with bolts, yielding washers therefor, nuts thereon, suitable locking-pieces, and means for locking and holding said locking-pieces securely in the lugs of one of said sections, as set forth.

7. In a journal-box for railway or other cars, a suitable slide fitting in ways 30 on said journal-box, and a pivoted latch 32 in the upper part of said slide adapted to have its inner end automatically engage the wall of the journal-box to hold said slide in locked position.

8. A journal-box for railway or other cars, provided with means adapted to close an opening in said journal-box, consisting of a slide set in ways 30 on said journal-box, there being an opening in said slide near the top thereof, and a pivoted latch 35 adapted to automatically engage a wall of said journal-box to hold the said slide in locked position, and a hood 36 at the top of said slide, adapted to protect the handle of the latch 35, and also to afford a means whereby the slide may be raised, as set forth.

608,333. TELEGRAPHIC TRANSMITTING AND RECEIVING APPARATUS. BERNHARD HOFFMANN, Paris, France, assignor to Société the International Telescriptor Syndicat, Limited, London, England. Filed May 5, 1897. Serial No. 635,107. (No model.) Patented in Luxemburg Mar. 20, 1897, No. 2,789.

Claim.—1. In a printing-telegraph comprising an escapement mechanism controlled by an electromagnet, circuit-closing means for alternately closing and breaking a circuit to operate such magnet and escapement, transmitting-keys, and a line-battery, means for synchronizing the transmitting and receiving instruments consisting of a pole-changer for reversing the current of said line-battery, polarized magnets or relays at both stations, a local circuit at each instrument controlled by said polarized relay, and means for breaking the local circuit to stop the instruments, consisting of a revolving brush and sector, included in said local circuit, the sector having a break at the synchronizing or starting position adapted when the brush reaches said break to open said circuit, substantially as set forth.



2. In a printing-telegraph comprising a commutator having segments connected to keys which are alternately grounded and open-circuited, and each adapted to establish the reverse position when depressed, a revolving brush traversing said segments, a polarized electromagnet, and a connection from said brush normally through said polarized magnet to line, the improved synchronizing means consisting of a pole-changer for reversing the current from the line-battery, and a local circuit divided into two branches controlled respectively by said polarized magnet, one of said branches closed with a current of normal direction, and the other closed when the current is reversed, with a commutator brush and sector connected in the latter branch, and the sector having a break corresponding to the synchronizing position, whereby when the current is reversed on reaching the synchronizing position, the local circuit is broken, and the instrument stops until by the manipulation of said pole-changer the current of normal direction is restored, substantially as set forth.

3. In a printing-telegraph, the combination with transmitting and receiving instruments having rotary spindles turning in unison, of a pole-changer at the transmitting-station and a polarized magnet in connection with each instrument and means controlled thereby for stopping the instruments at a given point in the rotation of their spindles when the normal current is reversed to enable synchronism to be effected, of means for suppressing such stoppage except at wider intervals than once to each revolution, comprising a short circuit in connection with the synchronizing-circuit, a circuit-breaker in said short circuit, and means for operating said circuit-breaker geared to the printing instrument at such ratio of speed as to establish the synchronizing condition of said circuit at intervals less frequent than once to each revolution, substantially as hereinbefore set forth.

4. In a printing-telegraph comprising transmitting and receiving instruments each having a type-wheel rotated intermittently through an escapement, which in turn is controlled by an electromagnet in connection with a line-circuit, a synchronizing means consisting of a pole-changer for reversing the direction of the current from the line-battery, a polarized magnet at each instrument, a local circuit operating the escapement-magnet thereof, and divided into branches controlled by said polarized magnet, a revolving brush and sector included in a synchronizing branch of said circuit, said sector interrupted by an insulated segment at the synchronizing position for breaking said circuit and stopping the instrument, and means for connecting said insulated segment in said branch circuit except at predetermined intervals, substantially in the manner set forth.

5. In a printing-telegraph instrument, the type-wheel of which carries a double series of characters disposed in alternate order around its periphery, and capable of displacement upon its spindle to an extent equal to half the advance of the spindle at each movement, mechanism for shifting and locking the type-wheel, consisting of the combination with the type-wheel and spindle of two spring-catches adapted to lock the type-wheel and spindle together, in their two respective positions, the type-wheel formed with engaging surfaces in positions corresponding to shifting blanks or spaces, and the printing-lever having a projection adapted in either of said positions to disengage the spring-catch, thereby unlocking the type-wheel, and having a projection adapted thereupon to engage the corresponding engaging surface on the type-wheel to displace the latter to its other position, whereupon the other spring-catch engages and again locks the type-wheel and spindle together.

6. In a printing-telegraph instrument, the type-wheel of which carries a double series of characters disposed in alternate order around its periphery, and capable of displacement upon its spindle to an extent equal to half the advance of the spindle at each movement, mechanism for shifting and locking the type-wheel, consisting of the combination with the type-wheel and spindle of two spring-catches adapted to lock the type-wheel and spindle together, in their two respective positions, inclines carried on the type-wheel in two positions corresponding to shifting blanks or spaces, and the printing-lever having a bevel adapted in either of said positions to disengage the spring-catch, thereby unlocking the type-wheel, and having a nose adapted thereupon to engage the inclines upon the type-wheel and turn the latter to its other position, whereupon the other spring-catch engages and again locks the type-wheel and spindle together, substantially as hereinbefore set forth.

7. In a printing-telegraph instrument the type-wheel of which carries a double series of characters disposed in alternate order around its periphery, and capable of displacement upon its spindle to an extent equal to half the advance of the spindle at each movement, mechanism for shifting and locking the type-wheel consisting of the combination with the type-wheel and spindle, of a spring-catch consisting of a spring attached to the spindle and movable in direction perpendicular to the type-wheel in locking or unlocking, an incline carried on the type-wheel in a shifting position, and the printing-lever having a bevel adapted in said shifting position to displace said spring-catch, and having a nose adapted thereupon to engage the incline upon the type-wheel and displace the latter, substantially as hereinbefore set forth.

608,334. COMBINED HINGE AND DOOR-CHECK. FRANCIS KELL and HENRY F. KELL, New York, N. Y. Filed Sept. 24, 1895. Serial No. 563,458. (No model.)



Claim.—1. The combination with a hinge of a fluid cylinder or barrel within the knuckle thereof and pressure-equalizing check mechanism contained in said cylinder or barrel substantially as set forth.

2. In a combined hinge and door-check, the combination of a tubular pintle adapted to contain a fluid with pressure-equalizing check mechanism contained in said pintle as described.

3. In a hinge, the combination of a cylinder or chamber located within the knuckle thereof, a valved partition therein, a piston loosely fitted in said cylinder or chamber, whereby a restricted passage is formed between the cylinder and piston substantially as and for the purpose set forth.

4. The combination with the hinge-leaves of a tubular pintle adapted to contain a fluid, a partition provided with a valve in said pintle, of a piston fitted loosely within the pintle whereby a restricted passage for the fluid is formed between the piston and pintle and suitable connections between the piston and one leaf of the hinge and the pintle and the other half substantially as set forth.

5. The combination of a hinge having a tubular pintle and a valved partition in said pintle with an oscillating piston extending through the entire length of said pintle and fitted loosely therein whereby a space is formed between the inner wall of the pintle and the piston, the ends of said piston extending over said partition, as set forth.

6. The combination with a hinge provided with a fluid cylinder or barrel in the knuckle thereof and a valved partition in said cylinder and fixed thereto, a piston fitting loosely within said cylinder and movable from one side to the other of said partition, tips or heads connected respectively to the cylinder and piston and connections between said tips and the leaves of the hinge as set forth.

7. The combination with the knuckle of a hinge, of a tubular pintle extending through the knuckles and having closed ends to form a fluid-tight cylinder and having the valved partition, the axially-supported loose-fitting piston extending the entire length of the pintle, and connections between the pintle and one leaf of the hinge and the piston and the other hinge-leaf as set forth.

8. The combination with the hinge-knuckle of a tubular pintle extending through the knuckle having the partition 8 provided with valved passages; the tip 20 secured to one end of the said pintle and connected to one leaf of the hinge, and the loosely-fitted piston having the tip 18 secured to one end thereof, and connections between said tip 18 and the other hinge-leaf as specified.

9. The combination of hinge-leaves connected by a tubular pintle, a partition extending inwardly from the inner wall of said pintle, and provided with valved passages, an oscillating piston fitting loosely within the pintle and seated in the inner edge of the partition, said piston having its ends projecting over the ends of the partition, as set forth.

10. The combination with the leaves of a hinge, of a fluid-chamber, a partition therein, a piston fitted loosely in said chamber whereby a restricted passage is formed between the inner wall of the chamber and the piston to permit the restricted flow of the liquid, a valved port for permitting the free passage of the liquid in one direction, connections between one leaf of the hinge and piston and between the fluid-chamber and the other leaf of the hinge as set forth.

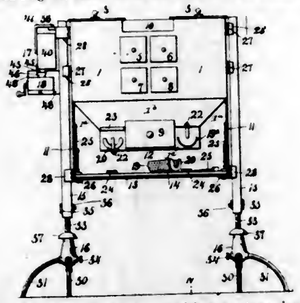
608,335. FOLDING CAR-STEP. THOMAS KENDRICK, Glenwood Springs, Colo. Filed Dec. 16, 1897. Serial No. 662,213. (No model.)



Claim.—1. In a device of the class described, the combination with rigid car-steps, of the riser-bars 2 provided at their upper ends with outwardly-extending arms pivoted at a point beneath the lowermost step at their outer ends and inwardly offsetting the riser-bars to enable the upper ends of the same to engage the lower face of the lowermost car-step and leave the upper face of the latter entirely free, a handle extending rearward from the upper end of one of the riser-bars in a direction opposite to that of the adjacent arm, whereby it is located beneath the car-steps when the riser-bars depend therefrom and is arranged in convenient position for use when the riser-bars are folded upon the car-step, and a folding step pivotally mounted between the lower ends of the riser-bars, substantially as described.

2. In a device of the class described, the combination with rigid car-steps having a lower step 3 provided at its outer edge with recesses, of the riser-bars 2 provided at their upper ends with outwardly-extending arms pivoted at a point below the step 3, and offsetting the riser-bars rearwardly to permit the same to engage the lower face of the step 3 in rear of the recesses, said arms being arranged to swing into the recesses to enable the riser-bars to lie on the upper face of the step 3, a folding step pivotally mounted between the lower ends of the riser-bars, and a handle extending rearward from the upper end of one of the riser-bars at the angle formed by the arm thereof, whereby the handle will be arranged beneath the step 3 when the folding step is in operative position, and will extend upward from the step 3, when the folding step is arranged thereon, substantially as and for the purpose described.

608,336. KITCHEN-CABINET. WILLIAM LACKEY, Sherwood, Tex. Filed Aug. 19, 1897. Serial No. 648,827. (No model.)



Claim.—1. A kitchen cabinet comprising a rectangular body having converging sides and front and lower rectangular portion, and providing two bins having independent hoppers and a central space extending into the lower rectangular portion between the bins and hoppers, the upper well above the central space, the back, sides, bottom and table providing a lower well beneath the converging sides, front and lower rectangular portion of the hopper, the upper drawers beneath the upper well, the lower drawer within the lower rectangular portion between the hoppers, the brackets secured to the sides of the cabinet having laterally-presented sockets, and the channel-bar standards on which the cabinet is adjustably supported; substantially as described.

2. A kitchen-cabinet comprising a rectangular body having converging sides and front and lower rectangular portion, formed with U-shaped openings and providing two bins having independent hoppers and a central space extending into the lower rectangular portion between the hoppers, the U-shaped removable sieves each having a correspondingly U-shaped front plate, closing the sieve-openings, and the rotary stirrers having cranks for holding the sieves in place when in normal position; substantially as described.

608,337. BREAD-CUTTING KNIFE. WILLIAM MERKLE, Oakland, Cal. Filed Jan. 21, 1898. Serial No. 667,392. (No model.)



Claim.—1. A device for cutting bread and cake consisting of a plurality of knives having polygonal shanks, a handle, a transverse bar to which the handle is centrally secured, said bar having polygonal openings adapted to receive the shanks of the knives and hold them at any desired angle with relation to the bar, and means whereby the blades are secured to the bar.

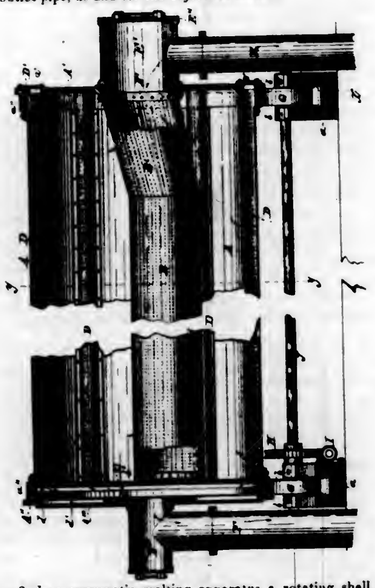
2. A device for cutting bread consisting of a transverse bar having a centrally-located handle, polygonal openings made in said bar at either side of the handle with open connecting-slots, a plurality of blades having a portion of the shank made polygonal to fit and lock within the polygonal openings of the bar, and the outer portion of smaller diameter and screw-threaded, and locking-nuts fitting thereon whereby the blades may be locked to the bar at any desired angle and transferred from one polygonal opening to the other by loosening the nuts sufficiently to disengage the polygonal shank from the opening.

3. The combination with a handle-bar having a series of polygonal holes made through it, of knives having polygonal shanks to fit the holes, screw-threaded extensions of smaller diameter projecting behind the bar and nuts by which the knives are adjustably secured to the bar.

608,338. PNEUMATIC MALTING APPARATUS. GEORGE J. MEYER, Buffalo, N. Y. Filed Jan. 13, 1897. Serial No. 619,119. (No model.)

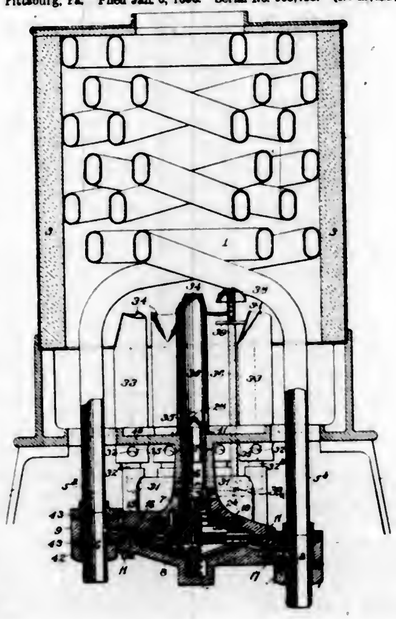
Claim.—1. In a pneumatic malting-drum, an inner perforated tube having at one end an inclined extension the end of which is in the center of the drum axially, said tube having its axial line parallel with but not coinciding with the axial line of the drum, as specified.

2. In a pneumatic malting-drum, the combination, with the shell of the heads, the diaphragm located near one of the said heads, a perforated tube in said shell one end of which is secured to the diaphragm and the other end to the front head, the center line of said tube being parallel with but not coinciding with the center line of said shell, suitable air-conduits in the said shell, the ingress-pipe and the outlet-pipe, as and for the object set forth.



3. In a pneumatic malting apparatus a rotating shell, having located therein a perforated ventilating-tube the center line of said tube being parallel with, but not coinciding with, the center line of said shell whereby the grain is agitated and turned in the manner as and for the object set forth.

608,339. AUTOMATIC WATER-HEATER. WILLIAM L. MILLER, Pittsburg, Pa. Filed Jan. 6, 1898. Serial No. 665,735. (No model.)



Claim.—1. In an automatic water-heater, the combination, with a receptacle for water to be heated having an inlet and an outlet pipe, of a heat-regulator comprising an abutment or diaphragm whose movement controls the supply of heat, a restricted passage for the admission of water from the inlet-pipe to the chamber on one side of the abutment, and a comparatively free passage through which the chamber on the other side of the abutment communicates with the outlet-pipe, or passage, substantially as set forth.

2. In an automatic water-heater, the combination, with a heating-coil, of a movable abutment for controlling the supply of heat thereto, one side of which is exposed to pressure from the inlet to the coil by means of a restricted passage for preventing sudden variations of pressure on that side of the abutment by variations of the pressure or flow in the inlet passage or coil, and the other side of the abutment being exposed to the pressure in the outlet, substantially as set forth.

3. In an automatic water-heater, the combination, with the water-receptacle having an inlet and an outlet pipe, a heat-regulator comprising a movable abutment adapted to be operated by variation of pressure in the outlet, said regulator having passages communicating with the inlet and outlet pipes, the passage in immediate communication with the regulator from the inlet being much smaller than the corresponding passage from the outlet, substantially as set forth.

4. In an automatic water-heater, the combination, with the water-receptacle having an inlet and an outlet pipe, a heat-regulator adapted to be operated by variation of pressure in the outlet, said regulator connected with the inlet and outlet pipes, an abutment or diaphragm dividing the interior of the regulator into an upper and a lower water-chamber, passages communicating with the two chambers from the inlet and outlet pipes, the passage from the inlet in immediate communication with the upper water-chamber being much smaller than the corresponding passage from the outlet to the lower chamber, substantially as set forth.

5. In an automatic water-heater, the combination, with a water-receptacle having inlet and outlet passages of a heat-regulator, a movable abutment dividing the interior of the regulator into an upper and a lower water-chamber respectively communicating with the inlet and outlet passages, a fuel-passage in the regulator-casing above the upper water-chamber and separated therefrom by a diaphragm, a fuel-distributing chamber in the regulator above the fuel-passage, a valve for controlling the admission of fuel to the distributing-chamber operated by the movable abutment, substantially as set forth.

6. In an automatic water-heater, the combination, with the water-receptacle having inlet and outlet pipes, of a heat-regulator in communication with the inlet and outlet pipes, a movable abutment within the regulator-casing, a fuel-supply passage and a fuel-distributing chamber in the regulator, a series of independent burners attached to the regulator, passages through the regulator connecting the distributing-chamber with the burners, and a valve for controlling the supply of fuel to the distributing-chamber and operated by the movable abutment, substantially as set forth.

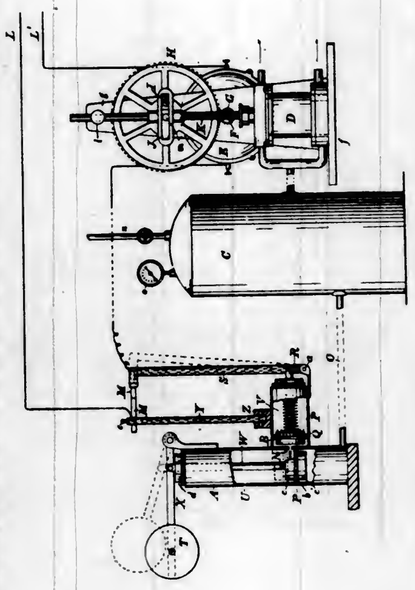
7. In an automatic water-heater, the combination, with the water-receptacle having inlet and outlet pipes, of a heat-regulator, an abutment or diaphragm dividing the interior of the regulator into an upper and a lower water-chamber, a second diaphragm connected to the first so as to form a differential pressure device, passages communicating with the two chambers from the inlet and outlet pipes, a fuel-passage in the regulator-casing communicating with a fuel-distributing chamber, a valve for controlling the supply of fuel to the distributing-chamber, and means connecting the diaphragms or abutments and the valve, substantially as set forth.

8. In an automatic water-heater, the combination, with a water-receptacle having inlet and outlet passages, a heat-regulator, a fuel-passage and a fuel-distributing chamber in said regulator, a valve between the fuel-passage and the distributing-chamber, a movable abutment within the regulator-casing controlled by variations of pressure in the outlet-passage, a stem connecting the valve and the movable abutment whereby the movement of the abutment governs the movement of the valve, burners, and means of communication between the fuel-distributing chamber and the burners, substantially as set forth.

608,340. AUTOMATIC SWITCH FOR REGULATING ELECTRIC AIR-COMPRESSORS. MOSS MOSELEY and PHILIPP FUNCK, Rochester, N. Y.; said Funk assignor to said Moseley. Filed Nov. 15, 1897. Serial No. 658,605. (No model.)

Claim.—1. The combination with an electric motor and compression-pump of the automatic switch for controlling the motor-circuit, consisting of two communicating cylinders provided with pistons, suitable insulated contacts, one of which is movable, and operated by the movement of one piston produced by the admission of air to its cylinder by the movement of the other piston, substantially as described.

2. The combination with the cylinder A having piston P of the cylinder B and its piston Q, the passage N between the cylinders, the contact M and its insulating-support Y, the movable contact M' and its insulating-lever S, substantially as described.



3. The combination with the cylinder A having piston P, of the cylinder B abutting against the side of cylinder A and provided with piston Q, the passage N between the cylinders, and insulated electric contacts, one of which is movable, and suitable connections whereby the movement of one piston admits air under pressure to the other, and thereby opens the electric circuit, substantially as described.

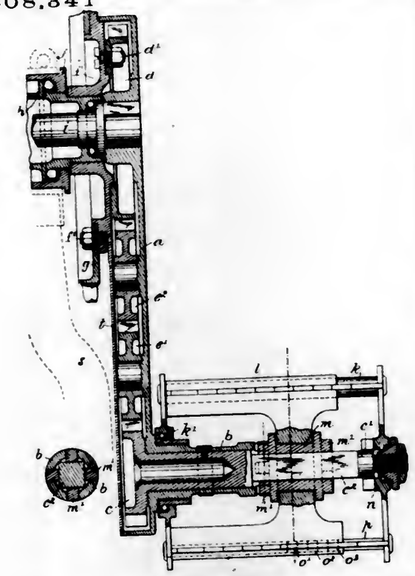
4. The combination with the cylinder A having piston P consisting of a washer of suitable elastic material clamped between collars, of the cylinder B provided with a suitable piston, and the passage N between the cylinders, consisting of a row of perforations through the side wall of cylinder A opening into cylinder B, substantially as described.

5. The combination of the cylinder A having piston P, the cylinder B arranged at an angle with cylinder A and provided with piston Q, the passage N communicating between the cylinders, weight T and lever X, the contact M and insulating-support Y, movable contact M', lever S, rod R and spring V, substantially as described.

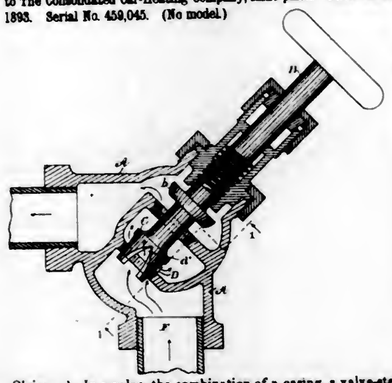
608,341. DRIVING MECHANISM FOR VELOCIPEDES. KENNETH S. MURRAY, London, England, assignor of one-half to Thomas Noble Hester, same place. Filed Apr. 11, 1898. Serial No. 677,220. (No model.)

Claim.—In driving mechanism for velocipedes, the combination with an ordinary crank motion, of a sun-and-planet motion, the sun-and-planet gears being inclosed in a hollow crank; a sleeve on the outer end of the crank, a stem or shank on the planet-wheel fitted to turn in the said sleeve, a square portion on the said stem or shank, a slidable collar on the square portion of the stem or shank, teeth or projections on the ends of the slidable collar to engage with recesses in the end of the sleeve on the crank or in recesses in the pedal-frame, and a sliding foot-rest on the pedal for moving the collar along the shank of the planet-wheel so as to cause it to engage either with the sleeve or with the pedal-frame to alter the speed of the velocipede as required, said foot-rest having teeth thereon adapted to engage corresponding teeth on the pedal and being mounted on the pedal so as to tilt thereon, whereby said teeth may be disengaged when it is desired to slide the foot-rest on the pedal, substantially as described.

608,341



608,342. VALVE. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed Jan. 21, 1893. Serial No. 459,045. (No model.)



Claim.—1. In a valve, the combination of a casing, a valve-stem and means for operating the same, two valves arranged to be operated thereby in series, one designed to shut off absolutely, the other designed to give a constant but graduated flow, substantially as described and for the purpose set forth.

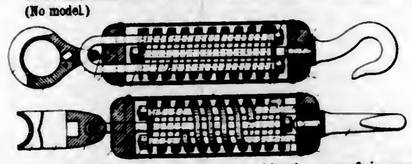
2. In a compound valve, the combination of a casing, a valve-stem working therein, a valve-disk operated thereby designed to open and close absolutely, a cylindrical valve adapted to be simultaneously operated by the same stem and capable of movement in a corresponding aperture in said casing and being provided with ports through its sides so arranged that fluid is throttled gradually, but not entirely shut off, and passage-ways leading to and from said casing, so arranged that the valves operate in series, substantially as described and for the purpose set forth.

608,343. ELECTRIC HEATER. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed Apr. 6, 1895. Serial No. 544,727. (No model.)

Claim.—In an electric heater, the combination of a central core-piece carrying radial arms at either end, an encircling spring placed about said arms, insulating-bars placed upon said encircling springs and extending longitudinally parallel with the core-piece, a resistance wound upon said insulating-bars and straining the encircling springs against the tension of the wire, substantially as described.



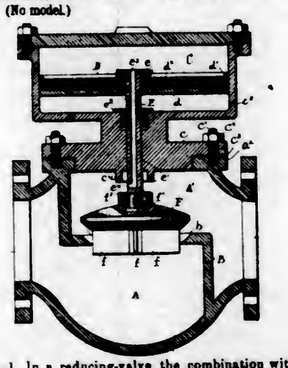
608,344. SURGE-RELIEVER. FREDERICK P. HERRITH, Portland, Me., assignor of two-thirds to Melville W. Trefethen and Charles N. Trefethen, South Portland, Me. Filed Sept. 4, 1897. Serial No. 650,566. (No model.)



Claim.—1. In a surge-reliever, in combination, a confining-case, a compressible spring within said confining-case, a hook swiveled in one end of said confining-case, a staple with a snap-hook on one end running through said spring and provided with a keeper and suitable nuts on the other end thereof, rods rigidly attached to the other end of said casing and running through said spring, the said rods being provided with a keeper and means for holding said keepers in position, substantially as and for the purposes set forth.

2. In a surge-reliever, in combination, a confining-case, a compressible spring within said confining-case, caps in the ends of said case, a hook swiveled in one cap, rods running from said cap within the confining-case and through the spring, a staple, with a snap-hook thereon, running through the other cap within the confining-case and through the spring, the free ends of said staple and said rods being provided with keepers and means for holding said keepers against the free ends of the spring, substantially as and for the purposes set forth.

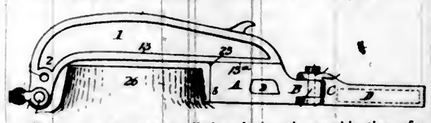
608,345. REDUCING-VALVE. CHARLES E. RETTEW and WILLIAM R. JOHNSON, Carbondale, Pa. Filed July 7, 1897. Serial No. 643,783. (No model.)



Claim.—1. In a reducing-valve, the combination with a valve-chamber having inlet and outlet orifices and a valve-seat in said chamber between said orifices, of a cylinder removably secured to said valve-casing, a piston in said cylinder, a valve of smaller area than the piston, connected to said piston and engaging the valve-seat, the pressure on the inlet side tending to normally unseat the said valve, the valve-stem having a contracted passage through the same connecting the outlet side of the valve-chamber and the interior of said cylinder above the piston, whereby the pressure on the outlet side tends to seat the valve, substantially as set forth.

2. In a reducing-valve, the combination with a valve-chamber having inlet and outlet orifices and a valve-seat between said orifices, of a cylinder removably secured to said valve-chamber, a piston in said cylinder, a valve-stem connected to said piston, a valve connected to said valve-stem and engaging said valve-seat, the valve-stem having a passage-way e^4 therein extending from the outlet side of the valve chamber to the interior of said cylinder above the piston, and stops e^5 for limiting the upward movement of the valve, substantially as set forth.

608,346. STUMP-SPLITTING DEVICE. JOHN C. SHARP, Delavan, Wis. Filed Sept. 7, 1897. Serial No. 650,861. (No model.)



Claim.—1. In a stump-splitting device, the combination of a horizontal draft-bar with a downwardly-projecting part with a wedge-point on it, and a part of said wedge projecting rearwardly from said downwardly-projecting part of said draft-bar, and said wedge adapted to pull through and split open a stump when suitable power is applied to said draft-bar, all substantially as shown and described and for the purpose set forth.

2. In a stump-splitting device, the combination of a horizontal draft-bar with a downwardly-projecting part with a wedge-point on it, a laterally-projecting flange on the wedge part to strengthen said wedge and aid in holding it down when being pulled through a stump, and said wedge adapted to split the stump open, all substantially as shown and described and for the purpose set forth.

3. In a stump-splitting device, the combination of a horizontal draft-bar with a downwardly-projecting part with a wedge-point on it, and a part of said wedge projecting rearwardly from said downwardly-projecting part of said draft-bar, said wedge made in two sections detachably connected, and said wedge adapted to pull through and split open a stump when suitable power is applied to the front end of said draft-bar, all substantially as shown and described and for the purpose set forth.

4. In a stump-splitting device, the combination of a horizontal draft-bar with a downwardly-projecting part with a wedge-point on it, and a part of said wedge projecting rearwardly from said downwardly-projecting part of said draft-bar, said wedge made hollow or with an opening in it to render it lighter than if made in solid form, and said wedge adapted to pull through and split open a stump when suitable power is applied to the front end of said draft-bar, all substantially as shown and described and for the purpose set forth.

5. In a stump-splitting device, the combination of a horizontal draft-bar with a downwardly-projecting part with a wedge-point on it and a part of said wedge projecting rearwardly from said downwardly-projecting part of said draft-bar, said wedge made in two sections detachably connected, and one of said sections made hollow or with an opening in it to render it lighter to handle than if made in solid form, and said wedge adapted to pull through and split open a stump when suitable power is applied to the front end of said draft-bar, all substantially as shown and described and for the purpose set forth.

6. In a stump-splitting device, the combination of a horizontal draft-bar with a wedge part detachably connected thereto by means of a slidable joint, and said wedge adapted to pull through and split open a stump when suitable power is applied to the front end of said draft-bar, all substantially as shown and described and for the purpose set forth.

7. In a stump-splitting device, the combination of a horizontal draft-bar with a part projecting downwardly from its front, and means for connecting the lower end of said downwardly-projecting part to a draft-cable, and at the rear end of said draft-bar a part projecting downwardly therefrom with a wedge-point on it, and said wedge part adapted to pull through and split open a stump when suitable power is applied, all substantially as shown and described and for the purpose set forth.

8. In a stump-splitting device, the combination with a horizontal draft-bar of a part projecting downwardly from its front, and means for connecting the lower end of said downwardly-projecting part to a draft-cable, and at the other end of said draft-bar, a part projecting downwardly therefrom with a wedge-point on it, a part of said wedge projecting rearwardly from said latter downwardly-projecting part of the draft-bar, and said wedge adapted to pull through and split open a stump when suitable power is applied to the draft-bar all substantially as shown and described for the purpose set forth.

9. In a stump-splitting device, the combination of a horizontal draft-bar with a part at its front projecting downwardly therefrom and means for connecting the lower end of said downwardly-projecting part to a draft-cable, and at the rear end of said draft-bar a part projecting downwardly therefrom and with a wedge-point on it, said wedge part projecting rearwardly from said latter downwardly-projecting part, and said wedge part made with an opening in it or hollowed out so as to lighten it, and said wedge adapted to pull through and split open a stump when suitable power is applied to said draft-bar all substantially as shown and described and for the purpose set forth.

10. In a stump-splitting device, the combination of a horizontal draft-bar with a part at its front projecting downwardly therefrom and means for connecting the lower end of said downwardly-projecting part to a draft-cable, and at the rear end of said draft-bar, a downwardly-projecting part with a wedge-point on it, said wedge made in two sections detachably connected, and said wedge adapted to pull through and split open a stump when suitable power is applied to said draft-bar, all substantially as shown and described and for the purpose set forth.

11. In a stump-splitting device, the combination of a horizontal draft-bar with a part at its front projecting downwardly therefrom and means for connecting its lower end to a draft-cable, said downwardly-projecting part detachably connected to said draft-bar by means of a slidable joint, and at the rear end of said draft-bar, a part projecting downwardly therefrom with a wedge-point on it, and said wedge adapted to pull through and split open a stump when suitable power is applied to said draft-bar, all substantially as shown and described and for the purpose set forth.

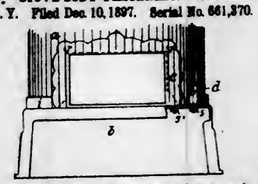
12. In a stump-splitting device, the combination of a horizontal draft-bar with a part projecting downwardly therefrom with a wedge-point on it, a stiffening-rib or thickened part 13^a, on said draft-bar above said wedge part, and said wedge adapted to pull through and split open a stump when suitable power is applied to the front end of said draft-bar, all substantially as shown and described and for the purpose set forth.

13. In a stump-splitting device, the combination of a horizontal draft-bar with a part projecting downwardly from the rear end of said draft-bar with a wedge-point on it, a stiffening-rib or thickened part 13^a, on said draft-bar above said wedge part, a part projecting downwardly from the front of said draft-bar, means for connecting said latter downwardly-projecting part of said draft-bar to a draft-cable, and said wedge part adapted to pull through and split open a stump when suitable power is applied to said draft-bar, all substantially as shown and described and for the purpose set forth.

14. In a device to aid in the removal of stumps, the combination of a horizontal draft-bar with a part projecting downwardly from its front end, an eye or means on the lower end of said downwardly-projecting part for connecting the draft-cable of a stump-extracting machine thereto, a part projecting downwardly from the rear end of said horizontal draft-bar, with a point made on the lower end of said latter downwardly-projecting part, and of a stop or suitable means on said point to prevent it from pulling through the stump, when so desired, substantially as and for the purpose set forth.

15. In a stump-splitting device, the combination of a horizontal draft-bar with a part projecting downwardly from the front end thereof, and means for connecting the lower end of said downwardly-projecting part to a draft-cable, a part projecting downwardly from the rear end of said horizontal draft-bar with a wedge part formed on the lower end of said latter downwardly-projecting part, and said downwardly-projecting part connected at its upper end both slidably and pivotally to said draft-bar, all substantially as, and for the purpose set forth.

608,347. STOVE-BODY FASTENING. WILLIAM D. SOUTHARD, Peekskill, N. Y. Filed Dec. 10, 1897. Serial No. 661,370. (No model.)



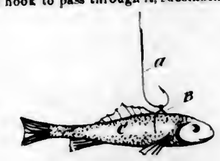
Claim.—In a stove the combination of the stove-base provided with a vertical rim or flange, the stove body or cylinder provided with a rectangular opening and the clamping device comprising a shank and a plate arranged parallel to but out of alinement with each other and connected together by a shoulder, the shank being adapted to pass through the opening of the cylinder, and means for drawing and securing the clamp to the base whereby the cylinder and base are firmly united together.

608,348. FISH-HOOK. JOHN M. STADEL, Wilmington, Del. Filed July 9, 1897. Serial No. 643,956. (No model.)

Claim.—1. A fish-hook, having combined therewith a holder having an eye receiving the body of the hook between the barb and the upper end thereof, and capable of moving freely thereon and having two arms each provided with a short inwardly-projecting point, substantially as described.

2. A fish-hook having combined therewith a holder composed of spring metal bent to form an eye, which eye receives the body of the hook and having two arms diverging from the eye, each arm being provided at its end with a short inwardly-projecting point, the eye

being of a size to receive the body of the hook and to allow the latter to move freely thereon, and being too small to allow the barb and upper end of the hook to pass through it, substantially as described.



608,349. CAPSULE OR CONTAINER FOR CONTAINING COMPRESSED OR LIQUEFIED GASES. EMILE STERNE, Paris, France. Filed Mar. 31, 1898. Serial No. 675,959. (No model.)



Claim.—1. A capsule or container for containing compressed or liquefied gases having a small hole in the body or closing means thereof which before charging the same with gas is closed by means of any suitable soluble or decomposable body capable of being dissolved or transformed by contact with the medium in which the capsule or container is placed, thereby automatically discharging the contents thereof, substantially as herein described.

2. A capsule or container for containing compressed or liquefied gases having any suitable soluble or decomposable and compressible body placed within the filling-orifice which after charging is compressed and closes the capsules and which body is capable of being dissolved or transformed by contact with the medium in which the capsule or container is placed thereby automatically discharging the contents thereof substantially as herein described.

608,350. BICYCLE. CHARLES E. STOCKFORD, Sulphur Creek, Cal. Filed May 21, 1897. Serial No. 637,531. (No model.)



Claim.—1. In a bicycle, an adjustable propelling mechanism consisting of a clutch mechanism fixed to the sprocket-wheel shaft, arms extending from the clutch-casings and provided with sockets, other arms entering the sockets of the first-named arms and means for adjustably securing them therein, substantially parallel levers fulcrumed to the frame and having their upper ends connected with a handle-bar, links connecting the lower portions of said levers with the outer ends of the adjustable arms and means whereby the handle-bar may be detachably connected with the steering-post and thereby be used for steering the machine.

2. A bicycle attachment consisting of a hand propelling mechanism and a foot steering mechanism consisting of many-sided pins projecting from the front fork, levers adjustably fitted to said pins, pedal-pins projecting from the lower ends of the levers and foot-pieces turnable on said pedal-pins and having a rocking motion from side to side.

3. A bicycle attachment consisting of friction-clutches adapted to engage and rotate the sprocket-wheel shaft, said clutches having adjustable levers fixed to them, links connecting the levers with the lower ends of vertically-disposed parallel levers fulcrumed to the lower frame-bar and extending above and upon each side of the steering-post, a handle-bar turnably connected with the upper ends of said levers having lugs projecting from the central portion and a steering-post having the upper end flattened and adapted to fit between the handle-bar lugs when the latter is turned to so engage them.

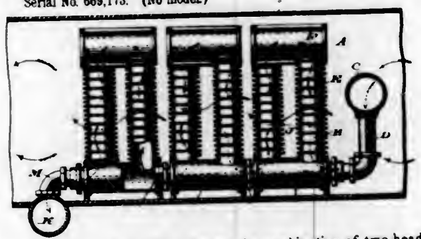
608,351. CONVERTIBLE GARMENT AND TENT. FRANK TERRAMORSE, San Francisco, Cal. Filed Dec. 13, 1897. Serial No. 661,682. (No model.)



Claim.—1. A convertible garment and tent consisting of an approximately rectangular body portion having triangular projecting end flaps, a central opening having a hood or head-piece connecting therewith, a flap adapted to hang upon the back when used as a garment and to fold over to cover the opening and head-piece when used as a tent.

2. A convertible garment and tent consisting of an approximately rectangular body portion having a centrally-disposed opening and head-piece and a foldable covering-flap therefor, triangular end pieces projecting from the body portions, fastenings by which said end pieces may be folded inwardly and secured when the device is used as a garment, and means for fastening the edges together to form a closure for the ends when the device is used as a tent.

608,352. RADIATOR FOR HEATING AIR. WILLIAM P. THOMPSON and ROBERT P. THOMPSON, Philadelphia, Pa. Filed Feb. 5, 1898. Serial No. 669,173. (No model.)

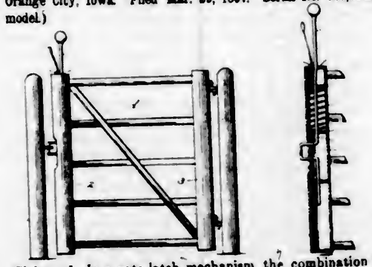


Claim.—1. In a heating system, the combination of two headers, one for distributing steam to a radiator and the other for receiving the water of condensation therefrom, a radiator comprising a series of sections connected together longitudinally of each other and each consisting of two headers arranged one above the other and connected together by radiating-tubes, the tubes being arranged on opposite sides of the longitudinal axis of said series of sections, and a casing surrounding the radiator.

2. In a radiator for heating air, the combination of upper and lower headers, upright tubes common to said headers, the latter being arranged longitudinally but out of alinement with each other, whereby certain of said tubes are arranged in staggered order, front and rear manifolds having connections therefrom to the front and rear headers and an inclosing casing.

3. In a radiator for heating air, the combination of upper and lower headers, upright tubes common to said headers, the latter being arranged longitudinally but out of alinement with each other, whereby certain of said tubes are arranged in staggered order, nipples connecting said lower headers and engaging openings suitably prepared at angles to the vertical plane thereof, front and rear manifolds having connections therefrom to the front and rear headers and an inclosing casing.

608,353. GATE LATCH MECHANISM. LAMBERT VAN OLST, Orange City, Iowa. Filed Mar. 29, 1897. Serial No. 629,694. (No model.)



Claim.—1. In a gate latch mechanism, the combination with a gate, and a latch-post equipped with a keeper, of a movable latch-bar adapted for engagement with the keeper, and a releasable locking device which normally locks the latch-bar against manipulation when the latter is in engagement with the keeper or in position for engagement therewith.

2. In a gate latch mechanism, the combination with a gate, and a latch-post equipped with a keeper, of a movable latch-bar, a spring coacting with the latch-bar and normally maintaining it in position for engagement with the keeper, and a spring-actuated releasable locking device normally locking the latch-bar against manipulation when said latch-bar is engaged with the keeper or in position for engagement therewith.

3. In a gate latch mechanism, the combination with a gate, and a latch-post equipped with a keeper, of a vertically-movable latch-bar adapted for engagement with the keeper, and a normally-acting locking device located at the upper portion of the latch-bar which locks the latch-bar when the latter is engaged with the keeper or in position for engagement therewith.

4. In a gate latch mechanism, the combination with a gate, and a latch-post equipped with a keeper, of an upright tubular member connected to the gate and provided with a vertical slot in its side, a vertically-movable latch-bar located within the tubular member and carrying a latch which projects through and is adapted to travel in the slot, a spring which holds the latch-bar raised so that its latch is normally in position for engagement with the keeper, and an automatically-acting releasable locking device which normally prevents depression of the latch-bar.

5. In a gate latch mechanism, the combination with a gate, and a latch-post having a keeper, of a vertically-disposed, depressible latch-bar adapted to yield or give laterally when engaging the keeper and which works in guideways on the gate, means for automatically holding the latch-bar normally in position for engagement with the keeper, and automatically-acting locking mechanism normally securing the latch-bar against depression.

6. In a gate latch mechanism, the combination of a gate hinged to the hinge-post of a gateway and provided with a tubular latch-post having a slot, a latch-bar movable in guideways in the post and provided with a bail-shaped latch adapted to engage with a keeper on the latch-post of the gateway, said latch-bar having its upper end projecting through a slot in the top of the post, and a spring connected with said bar and provided with a lug adapted to rest on the top of the post and prevent the bar from being forced down to disengage the latch, substantially as described.

7. In a gate latch mechanism, the combination of a gate hinged to the hinge-post of a gateway and provided with a tubular latch-post having a slot formed therein, a latch-bar movable in guide-openings in plates or washers in said tubular post and provided with the bail-shaped latch projecting through said slot to engage a keeper on the latch-post of the gateway, and the upper end of said latch-bar projecting through a slot in the top of the post, a spiral spring inclosing the latch-bar between one of said plates or washers and a plate or washer secured to the latch-bar and serving to normally hold the latch engaged with its keeper and a leaf-spring connected with the said latch-bar and provided with a lug or projection adapted to bear on the upper end of the post and prevent the latch-bar from being pressed downward until said leaf-spring is drawn toward it in order to permit the lug to clear the slot, substantially as described.

608,354. PROCESS OF MAKING VIOLET DYES. HENRI R. VIDAL, Paris, France. Filed Dec. 23, 1897. Serial No. 664,064. (No specimens.) Patented in France Mar. 10, 1897, No. 264,897, and in England Mar. 13, 1897, No. 6,004.

Claim.—The process of making violet coloring-matters by heating parasulfanilic acid with diamins one to four of benzene and naphthalene, substantially as described.

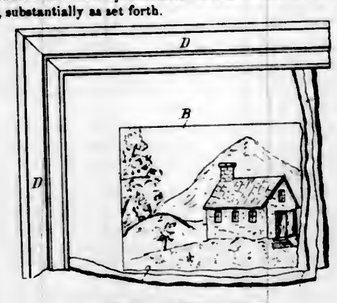
608,355. BROWN-BLACK SULFUR DYE. HENRI R. VIDAL, Paris, France. Filed Dec. 23, 1897. Serial No. 664,065. (No specimens.) Patented in France Mar. 11, 1897, No. 264,900, and in England Mar. 16, 1897, No. 6,913.

Claim.—1. The process of obtaining coloring-matters, consisting in heating with sulfur a condensation product of the amidobenzene sulfonic acids with a derivative of phenol or a diamin, such as the condensation product of the parasulfanilic acid and orthoamidophenol, substantially as described.

2. The specified coloring-matters being sulfonated condensation products of sulfanilic acid and a specified amidophenol (as orthoamidophenol) being a dark mass, soluble in alkalies, insoluble in acid and having the property of directly dyeing unmordanted cotton a brown black, substantially as described.

608,356. COMBINED PICTURE AND MIRROR. WILLIAM WELLSTOOD, Jr., and ANDREW B. WELLSTOOD, New York, N. Y. Filed Nov. 22, 1897. Serial No. 659,412. (No model.)

Claim.—As a new article of manufacture, a combined picture and mirror consisting of metal foil with a picture printed on the surface and caused to adhere by a suitable varnish to the back of a plate of glass, substantially as set forth.



608,357. BADGE. ALMA H. ADAMS, Irvington, N. J. Filed Nov. 8, 1897. Serial No. 657,728. (No model.)



Claim.—1. In a badge, a shell having a marginal rim or bead forming a chamber in the back thereof, a pin-bar having a holding portion arranged beneath said rim or bead, and means in separable spring contact with said bar to form a support for the pin-bar within said chamber, and adapted to be detached from said pin-bar when pressed into said chamber, substantially as and for the purposes set forth.

2. In a badge, a shell having a marginal rim or bead forming a chamber in the back thereof, a pin-bar, a holding portion on said bar arranged beneath said rim or bead, and an arm on said holding portion, at a right angle to said pin-bar, or approximately so, said arm and bar being arranged in separable spring contact and said arm forming a support for said pin-bar, and adapted to be detached from said pin-bar when pressed into said chamber, substantially as and for the purposes set forth.

3. In a badge, a shell having a marginal rim or bead forming a chamber in the back thereof, a pin-bar, a holding portion on said bar arranged beneath said rim or bead, an arm on said holding portion, at a right angle to said pin-bar, or approximately so, said arm and bar being arranged in separable spring contact and said arm forming a support for said pin-bar, and adapted to be detached from said pin-bar when pressed into said chamber, and a tongue or jaw on the free end of said arm, substantially as and for the purposes set forth.

4. In a badge, a shell having a marginal rim or bead, forming a chamber in the back thereof, a pin-bar, a holding portion on said bar arranged beneath said rim or bead, an arm on said holding portion, at a right angle to said pin-bar, or approximately so, said arm and bar being arranged in separable spring contact and said arm forming a support for said pin-bar and adapted to be detached from said pin-bar when pressed into said chamber, and an upwardly extending and inclining tongue or jaw on the free end of said arm, substantially as and for the purposes set forth.

5. In a badge, a shell having a marginal rim or bead, forming a chamber in the back thereof, a covering over said shell, having its edges turned down over said marginal rim or bead, a ring or collet beneath said marginal rim or bead, a pin-bar, a holding portion on said bar arranged between said rim or bead and said ring or collet, and means in separable spring contact with said bar to form a support for the pin-bar within said chamber, and adapted to be detached from said pin-bar when pressed into said chamber, substantially as and for the purposes set forth.

6. In a badge, a shell having a marginal rim or bead, forming a chamber in the back thereof, a covering over said shell, having its edges turned down over said marginal rim or bead, a ring or collet beneath said marginal rim or bead, a pin-bar, a holding portion on said bar arranged between said rim or bead and said ring or collet, and an arm on said holding portion, at a right angle to said pin-bar, or approximately so, said arm and bar being arranged in separable spring contact and said arm forming a support for said pin-bar, and adapted to be detached from said pin-bar when pressed into said chamber, substantially as and for the purposes set forth.

7. In a badge, a shell having a marginal rim or bead, forming a

chamber in the back thereof, a covering over said shell, having its edges turned down over said marginal rim or bead, a ring or collet beneath said marginal rim or bead, a pin-bar, a holding portion on said bar arranged between said rim or bead and said ring or collet, an arm on said holding portion, at a right angle to said pin-bar, or approximately so, said arm and bar being arranged in separable spring contact and said arm forming a support for said pin-bar, and adapted to be detached from said pin-bar when pressed into said chamber, and a tongue or jaw on the free end of said arm, substantially as and for the purposes set forth.

8. In a badge, a shell having a marginal rim or bead, forming a chamber in the back thereof, a covering over said shell, having its edges turned down over said marginal rim or bead, a ring or collet beneath said marginal rim or bead, a pin-bar, a holding portion on said bar arranged between said rim or bead and said ring or collet, an arm on said holding portion, at a right angle to said pin-bar, or approximately so, and adapted to be detached from said pin-bar when pressed into said chamber, and an upwardly and outwardly inclining tongue or jaw on the free end of said arm, substantially as and for the purposes set forth.

9. In a badge, a shell or casing having a marginal rim or bead forming an open chamber in the back thereof, a pin-bar made from a continuous piece of wire bent to form holding portions adapted to be secured beneath said rim or bead and held thereby, a supporting-arm made integral with said holding portions and bent to lie in a plane above the plane of the rim or bead of the shell or casing and at right angles to said pin-bar, or approximately so, said arm lying beneath said pin-bar and in normal spring contact with said bar and forming a support for said pin-bar, and said arm, pin-bar and holding portions being adjustable with relation to said shell or casing, substantially as and for the purposes set forth.

10. In a badge, a shell or casing having a marginal rim or bead forming an open chamber in the back thereof, in combination, with a continuous piece of wire bent to form curved portions d^3 and d^4, and holding portions d', d', an arm d^5, and a pin-bar d, said holding portions being adapted to be secured beneath said rim or bead and held thereby, and said arm d^5 forming a support for the pin-bar d which is in normal spring contact with said arm d^5, said arm, pin-bar and holding portions all being adjustable in relation to the shell or casing, substantially as and for the purposes set forth.

608,358. WRENCH. ARTEMON AMORATI, New York, N. Y. Filed Jan. 7, 1897. Serial No. 618,285. (No model.)



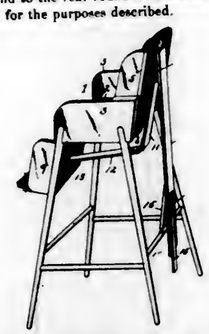
Claim.—1. A wrench comprising a fixed jaw provided with a shank and handle, a movable jaw provided with a shank and handle and having a socket for the reception of the shank of the fixed jaw, the shank of the fixed jaw being roughened along its back, and the movable jaw being provided with an extended bearing for engaging the roughened back of the shank of the fixed jaw, the said movable jaw being arranged to be thrown toward the fixed jaw when the handles are pressed toward one another, substantially as set forth.

2 A wrench comprising a fixed jaw with a shank and handle, a movable jaw with a shank and handle and having a socket for the reception of the shank of the fixed jaw, a clamping-plate having a sliding engagement with the movable jaw and held therein by the engagement of one end with the shank of the fixed jaw and a gripping-plate having a sliding engagement with the fixed jaw and provided with a spring-clamp for removably engaging it with the opposite sides of the fixed jaw, substantially as set forth.

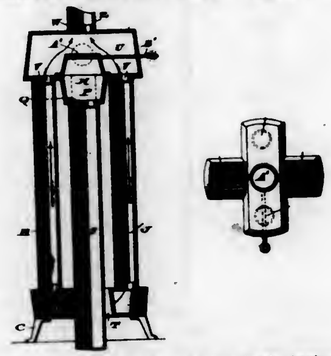
608,359. RECLINING HIGH-CHAIR. CARRIE E. BROWER and DANIEL W. BROWER, Paterson, N. J. Filed Sept. 22, 1897. Serial No. 652,567. (No model.)

Claim.—1. In a chair the combination with the seat or bottom section and the legs supporting the same, of a back section hinged to the rear of the bottom section, a foot-rest hinged to the front of the bottom section, an arm rigidly secured to the back section and downwardly extending therefrom, an arm hinged with its ends to the free end of the rigid arm and to the foot-rest respectively, a leg hinged to the back section and downwardly extending therefrom and provided in its lower portion with an elongated recess, and an extensible leg slidingly and adjustably arranged in said recess and held therein—by friction—in its adjusted positions, substantially as and for the purposes described.

2. In a chair the combination with the seat or bottom section and the legs supporting the same, of a back section hinged to the rear of the bottom section, a foot-rest hinged to the front of the bottom section, an arm rigidly secured to the back section and downwardly extending therefrom, an arm hinged with its ends to the free end of the rigid arm and to the foot-rest respectively, a leg hinged to the back section and downwardly extending therefrom and provided in its lower portion with an elongated recess, an extensible leg slidingly and adjustably arranged in said recess and held therein—by friction—in its adjusted positions, and a rod pivotally connected to the hinged leg and to the rear round of the chair respectively, substantially as and for the purposes described.



608,360. HOT-AIR RADIATOR. EARL V. COULSTON, Royersford, Pa. Filed Feb. 11, 1898. Serial No. 669,891. (No model.)

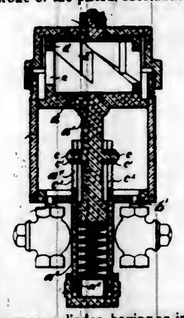


Claim.—1. In a hot-air radiator, a lower header having a substantially central opening therethrough, an upper header consisting of upper and lower chambers, arranged at an angle to each other, a pipe extending through the opening in said lower header but spaced from the sides of said opening, thereby providing a passage for the ingress of air, said pipe communicating with the lower chamber of said upper header, a damper located between the chambers of said upper header, and a series of pipes common to said lower header, and to the upper and lower chambers of said upper header.

2. In a hot-air radiator, a lower header, an upper header consisting of upper and lower chambers, arranged at an angle to each other, means for causing the products of combustion to pass over said lower chamber prior to their exit from said upper chamber, a damper located between the chambers of said upper header, a substantially central opening in said lower header, a pipe passing through said opening and leading to the lower chamber of said upper header, said pipe being spaced from the sides of said opening for permitting the ingress of air, which latter flows in proximity to said pipe before being deflected downwardly by said upper header, pipes leading from the lower chamber of said upper header, downwardly to said lower header, and a second series of pipes leading from said lower header, upwardly into the upper chamber of said upper header, the latter having an outlet-flue leading therefrom.

608,361. PUMP. DAVID CRAIG, Melrose, Mass. Filed Mar. 15, 1897. Serial No. 627,471. (No model.)

Claim.—1. In a pump, a pump-cylinder, having an inlet and an outlet, a spring-pressed piston working therein and a revoluble actuator therefor, crown ratchet-teeth on the adjacent face of one of said parts located short distances apart to thereby provide spaces between the end of one tooth and the beginning of the next tooth, and projections on the other part which engage said ratchet-teeth to move the piston one way and which enter and bottom in said spaces to permit full return stroke of the piston, substantially as described.



2. In a pump, a pump-cylinder, having an inlet and an outlet, an actuator and a spring-pressed piston, the adjacent faces of said parts provided with projections, a tube in which the piston works, an adjustable nut on the lower end of said tube, and a short tube in the tube containing the piston adapted to control the pressure of the spring against the piston by adjustment of the nut, whereby the piston is reciprocated and its action controlled, substantially as described.

3. In a pump, a pump-cylinder, having an inlet and an outlet, a spring-pressed piston working therein provided on one face with a series of crown ratchet-teeth located short distances apart to thereby provide spaces between the end of each tooth and the beginning of the next tooth, a revoluble actuator provided on one face with projections which engage the ratchet-teeth of the piston to move it one way and which enter and bottom in the spaces between said ratchet-teeth to permit full return stroke of the piston, and means for restraining the piston from rotation, substantially as described.

4. In a pump, a pump-cylinder, having an inlet and an outlet, a spring-pressed piston working therein, crown ratchet-teeth on the adjacent face of one of said parts located short distances apart to thereby provide spaces between the end of one tooth and the beginning of the next tooth, and crown ratchet-teeth on the other part which engage said ratchet-teeth to move the piston one way and which enter and bottom in said spaces to permit full return stroke of the piston, substantially as described.

5. In a pump, a pump cylinder, having an inlet and an outlet, a spring-pressed piston working therein provided on one face with a series of crown ratchet-teeth located short distances apart to thereby provide spaces between the end of each tooth and the beginning of the next tooth, means for restraining it from rotation consisting of a socket on said cylinder having vertical slots through its walls and a rod on said piston having projections, the piston adapted to reciprocate in the socket and the projections to slide in the slots, substantially as described.

6. In a pump, an adjustable operating-lever for rotating the actuator of said pump, a projection formed at one end, a handle portion hinged to the other end and a longitudinal slot formed in said operating-lever to adjustably connect it to the actuator, whereby, when said operating-lever is extended to operate the pump said projection will engage the cap of the pump-cylinder and raise and frictionally hold said operating-lever in its extended position and when not in use said operating-lever may be moved and lowered to occupy a position out of the way, substantially as described.

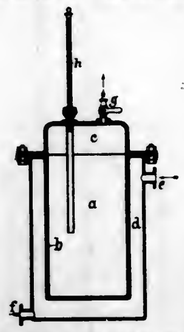
608,362. GEM-SETTING. GEORGE W. DOVER, Providence, R. I. Filed Nov. 23, 1897. Serial No. 659,578. (No model.)



Claim.—1. A gem-setting comprising a plurality of prongs provided respectively with an angular recess and a concave curve at the opposite sides of their extremities whereby, when the point is bent over the gem the latter will be retained in the angular recesses and the curvature of the edges of the prongs will disappear, substantially as specified.

2. A gem-setting comprising a series of prongs, the extremities of which are arranged at an angle with respect to each other, each of said prongs being provided at the opposite sides of its extremity with an angular recess and a concave-curved edge, the body of the setting being provided with a series of substantially radial openings extending approximately in alinement with the front faces of the prongs and at an angle with respect to their rear faces, substantially as specified.

608,363. PROCESS OF MAKING ADHESIVES. GEORG RICHELRAUH, Königsberg, Germany, assignor to Friedrich Hornig, Tauche, Germany. Filed Dec. 23, 1897. Serial No. 663,234. (No specimens.)



Claim.—The process of manufacturing an adhesive or glutinous substance from lixiviated beet-root chips consisting in treating the chips under pressure with hot watery sulfurous acid or a watery solution of the bisulfites of the alkalies or earth alkalies, whereby the insoluble pektin body contained in the chips is converted into soluble arabin acid, substantially as described.

608,364. HUB-ATTACHING DEVICE. GEORGE W. EMERICK, Montandon, Pa. Filed Mar. 4, 1898. Serial No. 672,545. (No model.)



Claim.—The combination with the journal adapted to receive an axle and hub, and recessed at the outer end, substantially as shown, of a washer resting upon the key-shank and locking with the end of the journal, and a key turning independently of said washer, as set forth.

608,365. BRUSH. FRIDOLIN GOEHRING, Union, Hudson County, N. J. Filed Oct. 5, 1897. Serial No. 654,125. (No model.)



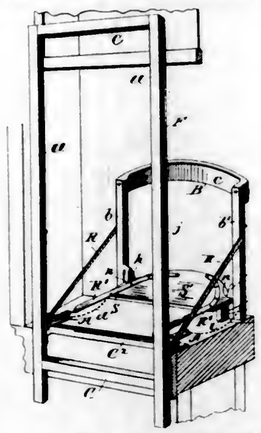
Claim.—The combination, in a brush for cleaning beer-coolers, of a body provided with two oppositely-inclined concave faces merging into a central rib, series of body-bristles, mounted in said concave faces and along said rib, at right angles to the back of the brush in transverse section, and inclining from the center of the brush toward either end, for scouring the pipes and combs of the cooler by longitudinal movement, and fan-shaped series of end bristles extending outwardly and downwardly from each end of the brush for cleaning the headers of said coolers, substantially as described.

608,366. WINDOW-SEAT. JOHN GOELDS, New York, N. Y. Filed Apr. 12, 1898. Serial No. 677,902. (No model.)

Claim.—1. The combination in a window-seat of a frame adapted to reach across a window-opening and be sustained therein, an upright back pivoted thereto and provided with an engaging device and a seat also pivoted to said frame and provided with an engaging device, adapted to engage the device of the back, all substantially as set forth.

2. The combination in a window-seat of a frame adapted to reach across a window-opening and be sustained therein, a back pivoted thereto by rods the inner ends of which are secured to the frame at or near the sill-level and the outer ends of which are secured to said back at points above said inner points of pivoting and a seat arranged substantially as set forth, all substantially as set forth.

3. In a window-seat, a frame adapted to reach across a window-opening, a support secured to said frame and adapted to rest upon the sill, an upright back, rods pivoted to said back and to said frame, a seat pivoted to swing inside the back and within the frame, an engaging device upon the seat, an engaging device upon the back adapted to be engaged by that upon the seat, and a seat-support secured to the back, all combined substantially as set forth.



4. In a window-seat, a frame adapted to reach across a window-opening, a support secured to said frame and adapted to rest upon the sill, an upright back, rods pivoted to said back and to said frame, a seat pivoted to swing inside the back and within the frame, an engaging device upon the seat, an engaging device upon the back adapted to be engaged by that upon the seat, and a seat-support secured to the back, and a controlling-finger adapted to insure proper relative movement of the back and seat, all combined substantially as set forth.

5. In a window-seat, a frame adapted to reach across a window-opening, a support secured to said frame and adapted to rest upon the sill, an upright back, rods pivoted to said back and to said frame, a seat pivoted to swing inside the back and within the frame, notches in the seat and lugs upon the back adapted to engage each other, and a seat-support secured to the back, all combined substantially as set forth.

6. In a window-seat, a frame adapted to reach across a window-opening, a support secured to said frame and adapted to rest upon the sill, an upright back, rods pivoted to said back and to said frame, the inner pivots being below the level of the outer pivots as described, a seat pivoted to swing inside the back and within the frame, an engaging device upon the seat, an engaging device upon the back adapted to be engaged by that upon the seat, and a seat-support secured to the back, all combined substantially as set forth.

7. The combination in a window-seat of a frame adapted to reach across a window-opening and be sustained therein, an upright back pivoted thereto and provided with an engaging device and a seat also pivoted to said frame and provided with an engaging device, adapted to engage the device of the back, and a catch adapted to hold them in engagement, all substantially as set forth.

608,367. **FARM-GATE.** BENJAMIN J. HUCKEY, Gorin, Mo. Filed Mar. 7, 1898. Serial No. 672,995. (No model.)

Claim.—1. The combination of a gate provided with horizontal wires permanently attached to its front end, hinges provided with parallel sides and arranged at the top and bottom of the gate, a rod connected with the rear ends of the wires and arranged between the sides of the hinges, and means for securing the ends of the rod to the hinges at the desired adjustment, substantially as described.

2. The combination with a hinge-post provided with pintles, of a gate provided with wires permanently secured at their front ends to the gate, eyes receiving the pintles and consisting of strips of metal doubled between their ends to form sides and secured to the rear portion of the gate, said sides being provided with perforations, a rod connected with the rear ends of the wires and having its ends arranged between the sides of said strips, and fastening devices passing through perforations of the strips and securing the rod at the desired adjustment, substantially as described.

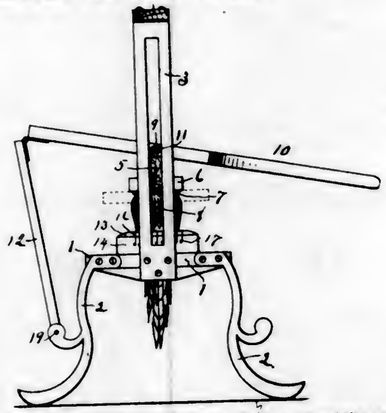
3. The combination of a hinge-post provided with pintles, a gate provided with fence-wires secured at their froot ends to the gate, the eyes receiving the pintles and consisting of strips of metal doubled to form sides, each side being L-shaped, said sides embracing the top and bottom of the gate and the rear end thereof, and a rod adjustably secured between the sides of the eyes and connected with the wires, substantially as described.



4. The combination of a swinging gate provided with a reciprocating latch, a bell-crank lever fulcrumed at its angle on the gate and having one end connected with the latch, a rock-shaft having a short arm 17, link-rods connecting the short arm 17 with the bell-crank lever, and connections between the rock-shaft and the gate, substantially as described.

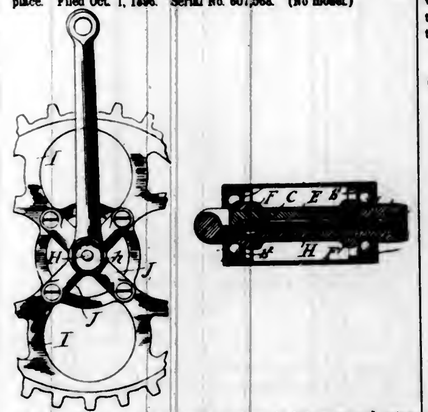
5. The combination of a swinging gate provided with a latch, a bell-crank lever fulcrumed on the gate and having one arm connected with the latch, a rock-shaft having a short arm 17, connections between the arm 17 and the bell-crank lever, a weight suspended from one arm of the latter, and means for connecting the rock-shaft with the gate, substantially as described.

608,368. **VEGETABLE-SLICER.** CHARLES R. LAWSON, Stockton, Cal., assignor of one-half to Charles Finkbohner, same place. Filed Oct. 23, 1897. Serial No. 656,164. (No model.)



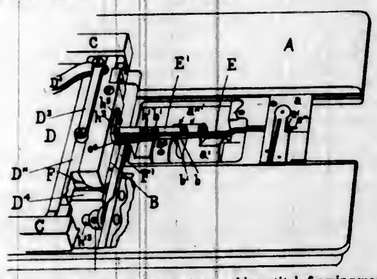
Claim.—The herein-described vegetable cutter consisting essentially of the following elements in combination, viz: a support having a flat top with a central opening therein, upright guides connected to opposite sides of the support, the cross-head arranged in said guides and having journals on its upper side, the plate connected to the under side of the cross-head and having a cushion 7 at its under side and vegetable-holding brads 8 depending below the cushion, the frame 13 placed on the flat top of the support over the opening therein and having an opening and cutting-wires extending across the same, said frame being removable to permit of it being readily cleaned, the hand-lever arranged between the journals on the cross-head and having trunnions journaled in the same, and the standard 12 flexibly connected to one end of the hand-lever and pivotally connected with the support, substantially as specified.

608,369. **BICYCLE CRANK-SHAFT.** AXEL LEVEDAHL, Aurora, Ill., assignor to the Aurora Automatic Machinery Company, same place. Filed Oct. 1, 1896. Serial No. 607,568. (No model.)



Claim.—The combination with a crank-shaft hanger and external, inwardly-facing bearing-rings adjustably secured thereto, of a crank-shaft consisting of two sections each provided with an integral crank-arm and having tapered overlapping ends, one of the said sections being tubular, a sleeve having a smooth cylindric interior surface, surrounding the overlapping parts of the shaft and having at its ends outwardly-facing permanently-attached bearing-cones within which the said overlapping parts of the shaft extend and a rod or stem which passes through the tubular section and is secured in the other section, said rod or stem being provided with a clamping-nut acting against the outer end of the tubular section and by which the tapered parts may be forced together and tightened within the sleeve which surrounds the same.

608,370. **SEPARATOR FOR BUTTONHOLE-SEWING MACHINES.** FREELAND W. OSTRON, Bridgeport, Conn., assignor to The Wheeler & Wilson Manufacturing Company, same place. Filed Aug. 12, 1897. Serial No. 647,975. (No model.)



Claim.—1. In a buttonhole-sewing machine, stitch-forming mechanism; a cloth-clamp; mechanism for changing the relative position of the cloth-clamp and the stitch-forming mechanism; and a throat-plate; combined with a separator offset from the needle, parallel with the line of feed movement, and vertically movable relatively to the cloth-clamp; said separator partaking of the relative movement between the cloth-clamp and the stitch-forming mechanism in so far as such movement is required to change such relative position in stitching the two sides of the buttonhole, substantially as described.

2. In a buttonhole-sewing machine, stitch-forming mechanism; a cloth-clamp; mechanism for changing the relative position of the cloth-clamp and stitch-forming mechanism, a separator to separate the cut edges of the material to be overseamed, said separator being in operative connection with the mechanism and partaking of its relative movements in changing the relative position of the cloth-clamp and stitch-forming mechanism, combined with devices to temporarily depress said separator, substantially as and for the purposes set forth.

3. In a buttonhole-sewing machine, stitch-forming mechanism; a cloth-clamp; mechanism for changing the relative position of the cloth-clamp and the stitch-forming mechanism; a separator in operative relationship with said mechanism and partaking of its movements in changing the relative position of the cloth-clamp and stitch-forming mechanism to stitch both sides of the buttonhole; combined with a separator-depressor in operative relationship with and controlled by the mechanism for giving lengthwise feed movement to the material to be overseamed, substantially as described.

608,371. **CABINET-SIFTER.** WILLIAM H. CURTICE, Louisville, Ky. Filed Apr. 18, 1898. Serial No. 677,956. (No model.)



Claim.—In combination, the base and the rectangular section D, formed with the transverse slot, the cover *i* hinged to said section D so as to leave one end of the said slot exposed when said cover is down, the conical section 5 mounted above said section D, the sieve G, fixed in said conical section, the grate H rotatably mounted above said sieve, the oscillating handle K' having its inner end operatively connected to said grate and having its outer end extending through said transverse slot, and formed at one side with a notch or recess *m* adapted to engage the end wall of said transverse slot when the cover *i* is down substantially as shown and described.

608,372. **ASPHALTUM AND METHOD OF MANUFACTURING SAME.** JESSE A. DUBBS, Pittsburg, Pa., assignor of one-half to James H. White, same place. Filed Sept. 17, 1896. Serial No. 606,142. (No specimens.)

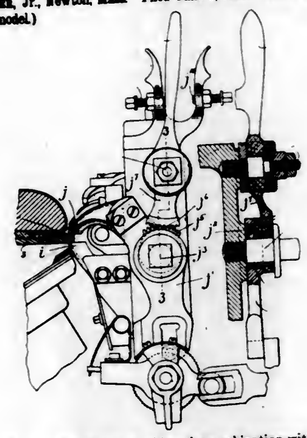
Claim.—1. The herein-described method of manufacturing asphaltum, which consists in mixing maltha, or mineral tar, and sulfur in about the proportions stated, and subjecting the mixture to sufficient heat to effect a combination of the sulfur and hydrogen, and driving off the sulfureted hydrogen, substantially as set forth.

2. The method of manufacturing asphaltum, which consists in subjecting maltha or mineral tar to sufficient heat to drive off a portion of its volitile constituents, adding sulfur in about the proportions stated and subjecting the mingled materials to sufficient heat to effect a combination of the sulfur and hydrogen and driving off the sulfureted hydrogen, substantially as set forth.

3. An asphaltum substantially as described, produced from maltha and having the distinguishing characteristics that it is brilliantly black,

that it can at 60° or 70° Fahrenheit be pulled out to a stringy condition without fractures, and that it has the peculiar odor of maltha or mineral tar.

608,873. GUIDE FOR SHOE-SEWING MACHINES. ANDREW EPPLER, Jr., Newton, Mass. Filed June 8, 1895. Serial No. 552,063. (No model.)



Claim.—1. In a sewing-machine, the combination with the work-support, the work-guide and its carrier, and the needle: of a laterally-adjustable center upon which the guide-carrier oscillates, and means for adjusting said center to vary the distance between the guide and the needle.

2. In a sewing-machine, the combination with the work-support, the work-guide and its carrier, and the needle: of an eccentric mounted to turn on a fixed stud and engaged with said carrier, said eccentric having gear-teeth, and an operating-lever having gear-teeth meshing with the teeth on the eccentric.

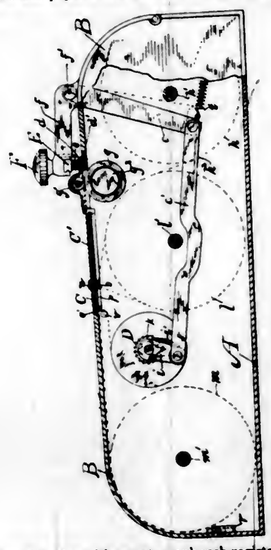
3. In a machine for sewing the outer sole of a boot or shoe to the welt thereof, while such boot or shoe is on the last, the combination with stitch-forming mechanism, of a rest for externally supporting the shoe, and upon which the sole or the welt may be placed, and a guide for continuously and externally engaging and guiding the boot or shoe, said guide being movable during the operation of the stitch-forming mechanism, whereby to vary and control the position of said boot or shoe with relation to the stitch-forming mechanism, and means for giving the said rest and guide complemental movements of translation to alternately grasp and release the work.

608,874. AUTOGRAPH CASH-REGISTER. JOHN A. HOFF, Chicago, Ill. Filed Feb. 14, 1898. Serial No. 670,291. (No model.)

Claim.—1. In an autograph cash-register, the combination with the case of rolls journaled therein for carrying the supplies of cashier's-voucher, record and customer's-bill paper, a table in the cover having a wider section and a narrower section separated by an intermediate slot forming the common passage for the cashier's-voucher strip and record-strip through which they are extended from their supply respectively in opposite directions across the wider and narrower table-sections, a slot at the end of the narrower table-section forming the common passage for the customer's-bill strip extended from its supply-roll across both said table-sections and the return of the record-strip into the case, and means for feeding said strips across the table, substantially as and for the purpose set forth.

2. In an autograph cash-register, the combination with the case of a narrower and a wider table supported in an opening in the cover with a separating-slot between them and a slot between an edge of the narrower table and the adjacent edge of said opening, a roll journaled in the case carrying the supply of customer's-bill paper leading from within the case through one of said slots across both tables, a roll journaled in the case carrying the supply of record-paper leading from within the case through one slot across the narrower table below said customer's-bill paper and returning into the case through the other slot, and a roll journaled in the case carrying the supply of cashier's-voucher paper leading from within the case through said separating-slot across the wider table below said customer's-bill paper, substantially as and for the purpose set forth.

3. In combination with an autograph cash-register having paper-supplies extended one over the other along the cover, a character-puncturing device in the path of the papers, operating, by actuating it, to puncture said papers when brought beneath it, substantially as described.



4. In combination with an autograph cash-register having paper-supplies extended one over the other along the cover, a character-puncturing device in the path of the papers and provided with one or more puncturing characters, substantially as and for the purpose set forth.

5. In combination with an autograph cash-register having paper-supplies extended one over the other along the cover, a character-puncturing stamping device in the path of the papers, provided with one or more puncturing characters and carrying a cutter, a knife-edge to cooperate with said cutter and a friction-feed for said paper-supplies, substantially as and for the purpose set forth.

6. In combination with an autograph cash-register containing the supply-roll *m* of customer's-bill paper, the supply-roll *l* of record-paper, the record-receiving roll D and the supply-roll *k* of cashier's-voucher paper and provided with tables C and C' in an opening in its cover, a manual feed for the paper from rolls *m* and *k*, a character-puncturing device in the path of the paper extended over both said tables, and a connection between said device and the roll D for actuating it by operating said puncturing device, the whole being constructed and arranged to operate substantially as described.

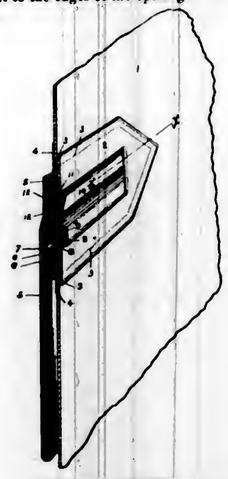
608,875. POCKET FOR GARMENTS. MAX L. HOLTZ, Rochester, N. Y., assignor to Louis Holtz & Sons, same place. Filed Feb. 25, 1897. Serial No. 625,029. (No model.)

Claim.—1. The combination with a garment having the pocket-aperture, of the pocket, the binding-strip 7 of heavy material as leather secured to the inner side of the lower edge of the pocket extending through the aperture in the garment and having its edge doubled under and secured to the face of the garment, the upper binding 10 secured to the upper edge of the pocket, extending through the aperture and having its edge doubled under and secured to the face of the garment, substantially as described.

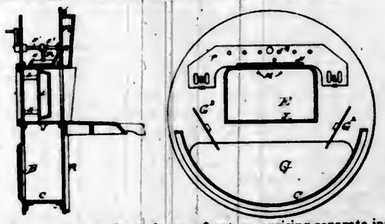
2. The combination with a garment having the pocket-aperture and the reinforce 2 around it, of the pocket, the binding-strips 7 and 10 having the doubled portions on the exterior extending over the edges of the aperture, stitching 6 connecting the edge of the pocket with the binding, and other lines of stitching, as 12 and 9, passing through the upper and lower binding-strips respectively and the edge of the garment and the pocket, substantially as described.

3. The combination with the garment having the aperture and the reinforce, of the leather pocket 5, the bindings 7 and 10 covering the edges of the aperture on the garment, the inner edges folded and stitched at 8 and 11, the lower binding being stitched to the pocket at 6, 6 and through the garment at 9, 9, and the upper binding pocket and garment being stitched together at 12, substantially as described.

4. A garment provided with a pocket-opening, a pocket and a reinforce, the latter being secured to the upper and lower edges of the pocket and extending through the said opening in the garment and having its edges doubled under and secured to the face of the garment adjacent to the edges of the opening.



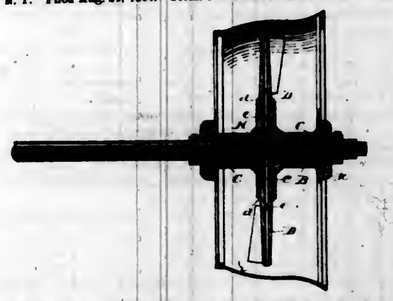
608,876. FURNACE-FRONT FOR STEAM-BOILERS. JAMES HOWDEN, Glasgow, Scotland. Filed June 20, 1897. Serial No. 642,357. (No model.) Patented in England Mar. 16, 1896, No. 5,806.



Claim.—1. A built-up furnace-front, comprising separate inner and outer disk-like plates, a segmental shell-like plate C connecting the disk-like plates at the lower part and a shell connecting the upright plates toward their upper part to form the fire-door passage, and means for securing the said parts together, substantially as described.

2. A built-up furnace-front, comprising separate inner and outer disk-like plates, a segmental shell-like plate C connecting the disk-like plates at the lower part and a shell connecting the upright plates toward their upper part to form the fire-door passage, means for securing the said parts together, and valves at the opposite sides of the fire-door shell to admit hot air to the ash-pit.

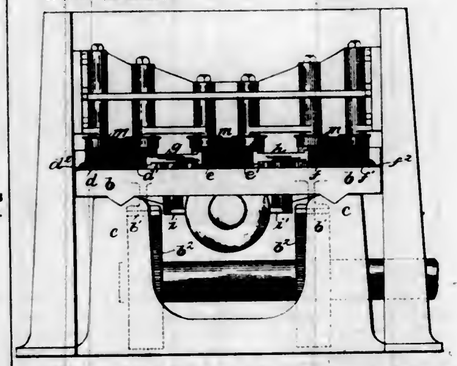
608,877. ROTARY BLOWER. NEIL W. MCINTOSH, New York, N. Y. Filed Aug. 21, 1897. Serial No. 649,058. (No model.)



Claim.—1. In a blower, the combination with the tubular shaft held against rotation and having an exit-port at one side thereof, of a hub journaled on said shaft and inclosing the exit-port, a series of radial propelling-vanes mounted on said hub and passages having rearward discharges arranged longitudinally of said arms and passing through the hub into position to register with the port in the tubular shaft when brought into line therewith by the rotation of the hub, whereby the discharge through each of the radial passages in the vanes is limited to a portion of the revolution of the hub; substantially as described.

2. In a blower the combination with the fixed shaft, hub mounted thereon, motive-fluid passages through said shaft and hub with means for cutting off the supply of motive fluid on one side of the shaft, of radial arms mounted in said hub and having passages registering with the passages in the hub and backwardly direct the discharge-openings and propeller vanes or blades mounted on said radial arms in front of the discharge-openings; substantially as described.

608,878. MACHINE FOR RENEWING OLD STEEL RAILS. EDWARD W. MCKENNA, Milwaukee, Wis., assignor to the McKenna Steel Working Company, same place. Filed Oct. 12, 1893. Serial No. 487,975. (No model.)



Claim.—1. In a machine for rolling rails, the combination with means for maintaining practically intact the web and flange portions of the rail, of means for reducing the width of the rail-head without constraining the flow of metal toward the top of the head, and means for decreasing the height of said head and for limiting the transverse flow of the metal of the head, substantially as described.

2. The combination in a machine for rolling rails, with means for maintaining practically intact the web and flange portions of the rail, of means for constraining said rail from warping or bending approximately throughout the entire length thereof, means for reducing the width of the rail-head without retarding the flow of metal toward the top of the head, and means for decreasing the height of said head and for limiting the transverse flow of the metal of the head, substantially as described.

3. In a machine for renewing rails, the combination with means for maintaining practically intact the web and flange portions of the rail, of rolls disposed to bear upon the sides of the rail-head and adapted to reduce the width thereof without constraining the flow of metal toward the top of the head, and a roll or rolls bearing upon the top of the head adapted to reduce the height of said head and constrain the lateral flow of the metal thereof, substantially as described.

4. In a machine for renewing old steel rails, the combination with rolls adapted to act successively upon the sides and the top of the head of the rail, of a traveling carriage provided with jaws adapted to grasp the web and flange of the rail and maintain the same intact, substantially as described.

5. In a machine for renewing old steel rails, the combination with a traveling carriage provided with jaws adapted to grasp the rail, of vertically-journaled rolls adapted to act upon the sides of the head of the rail, and horizontally-journaled rolls adapted to act upon the top of the head of the rail, substantially as described.

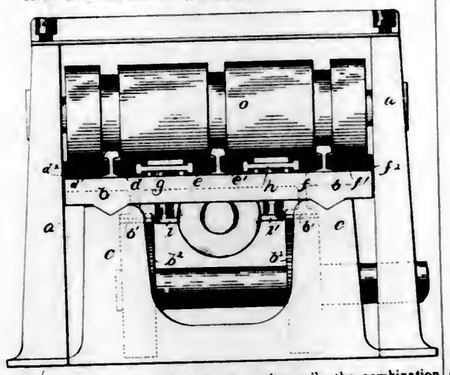
6. In a machine for renewing old steel rails, the combination of a traveling carriage provided with jaws adapted to grasp the rail, of rolls adapted to act upon the sides of the head of the rail, and a series of horizontally-journaled rolls provided with peripheral channels, said channels being of successively-diminishing depth, substantially as described.

7. In a machine for renewing old steel rails, the combination with means for advancing the rail, of rolls adapted to act upon the sides of the head of the rail, the peripheries of said rolls being at a distance apart less than the desired width of the completed rail, a

series of rolls adapted to successively act upon and diminish the height of the head of the rail, and means for limiting the transverse flow of the metal of the head, substantially as described.

8. In a machine for renewing old steel rails, the combination with the traveling carriage *b* provided with jaws *d d'*, *e e'*, *f f'*, adapted to clamp the rails, of the series of cams *g h* adapted to cause the approach of the members of the respective pairs of jaws to clamp the rails, the rolls *m m* adapted to act upon the sides of the heads of the rails, and the rolls *n n' n²* adapted to complete the process of renewal, substantially as described.

608,379. METHOD OF AND MACHINE FOR RENEWING OLD STEEL RAILS. EDWARD W. MCKENNA, Milwaukee, Wis., assignor to the McKenna Steel Working Company, same place. Filed Oct. 12, 1893. Serial No. 487,976. (No model.)



Claim.—1. In a machine for renewing rails, the combination with means for flowing together the head and a portion of the web of the rail operated upon, of means for maintaining the flange portion of the rail practically intact, means for imparting to the head a less width and a greater height than the dimensions of the head of the completed rail, and means acting upon the tread of the rail in the direction of the line of work for bringing the head of the rail to the desired shape, substantially as described.

2. In a machine for renewing old steel rails, the combination with a traveling carriage provided with jaws adapted to grasp the flange and lower portion of the web, of rolls adapted to flow together the head and a portion of the web, and impart to the rail the desired shape, substantially as described.

3. In a machine for renewing old steel rails, the combination with a traveling carriage provided with jaws adapted to grasp the flange and lower portions of the web, of horizontally-journaled rolls provided with peripheral channels of successively-decreasing depths, adapted to flow together the head and a portion of the web of the rail, substantially as described.

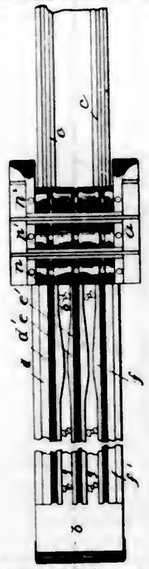
4. In a machine for renewing old steel rails, the combination with a traveling carriage, provided with jaws adapted to grasp the flange and a portion of the web of the rail, of horizontally-journaled rolls *o o'* adapted to flow together the head and a portion of the web, vertically-journaled rolls *m m* situated at a less distance apart than the dimension of the width of the completed rail, and the horizontally-journaled rolls *n n'* adapted to reduce the height of the rail and give it the desired shape, substantially as described.

5. In a machine for adapting old steel rails for further use for their original purpose, the combination with means for flowing together the head and a portion of the web of the rail, of rolls adapted to act upon the metal thus flowed together to produce a head of the desired shape, and means for advancing the rail and maintaining the flange thereof practically intact, substantially as described.

6. In a machine for adapting old steel rails to further use for their original purpose, the combination with means for advancing the rail, of rolls adapted to act upon and reduce the cross-section of only the head and web of the rail, substantially as described.

7. The process of adapting old steel rails to further use for their original purpose, which consists in heating the rails to a temperature below that at which the carbon contained therein would be materially affected, flowing together the head and a portion of the web of the rail, maintaining the flange practically intact, imparting to the head a less width and a greater height than the dimensions of the completed rail, and then bringing the head to the desired shape by pressure applied in the direction of the line of work, substantially as described.

608,380. METHOD OF AND MACHINE FOR ROLLING STEEL RAILS. EDWARD W. MCKENNA, Milwaukee, Wis. Filed Oct. 11, 1893. Renewed Dec. 24, 1894. Serial No. 532,890. (No model.)



Claim.—1. The herein-described process of forming rails, which consists in heating the metal, rolling the web and flange portions of the rails to practically the dimensions desired in the completed rail while forming the head with a cross-section of greater height and less width than is desired in said completed rail, and thereafter bringing the head to its final shape while cooling by pressure applied in the direction of the line of work, thus altering the vertical and horizontal dimensions of the head and constraining the metal of said head from lateral flow upon either side of and at the point at which said pressure is applied.

2. The process of forming rails, which consists in heating the metal, rolling the web and flange portions to practically the sizes desired in the completed rail while forming the head of less width and greater height than the desired dimensions of said completed rail, constraining the web and flange of the rail substantially throughout its length while maintaining the said parts practically intact, and rolling the head portion while cooling in the direction of the line of work to alter both its vertical and horizontal dimensions, thereby bringing said head to the desired shape, substantially as described.

3. The process of rolling rails, which consists in heating the metal, rolling the web and flange portions to practically the sizes desired in the completed rail, while giving the head a truncated form of less width and greater height than the desired dimensions of said completed rail, then bringing the head to the desired shape while cooling by pressure applied thereto in the direction of the line of work, meanwhile maintaining the web and flange portions of the rail practically intact and constraining said rail against warping or bending approximately throughout the length thereof, substantially as described.

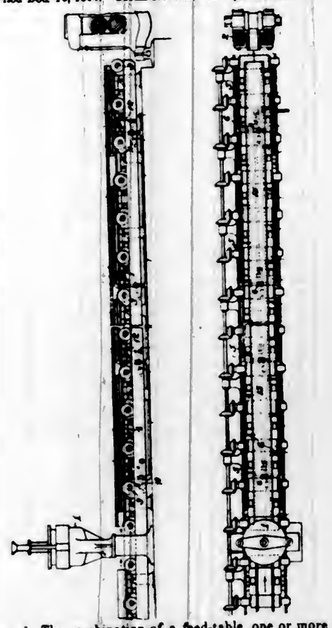
4. In a machine for operating upon rolled metal, the combination with rolls adapted to act upon one section of the metal, of a traveling carriage provided with jaws adapted to grasp the metal and maintain the remaining section or sections practically intact during the rolling of said first-mentioned section, substantially as described.

5. In a machine for rolling rails, the combination with means for applying pressure to the head of the rail, of a traveling carriage provided with jaws adapted to grasp the rail and maintain the remaining sections practically intact during the rolling of said first-mentioned section, substantially as described.

6. In a machine for rolling rails, the combination with means for applying pressure to the head of the rail adapted to shape the said head, of a traveling carriage provided with jaws adapted to clamp the lower portion of the rail, said jaws being provided with faces adapted to conform to the outlines of the web, flange and under surface of the rail-head, substantially as described.

7. In a machine for rolling steel rails, the combination with means for advancing the rail, of rolls adapted to act upon the top of the head of the rail, and means for imposing against the sides of the rail-head plane surfaces extending for a distance to the front and to the rear of the line of contact of the roll to constrain the lateral flow of the metal of the head, substantially as described.

608,381. ROLLING-MILL. GEORGE G. MCMURTRY, Allegheny, Pa. Filed Dec. 16, 1897. Serial No. 662,144. (No model.)



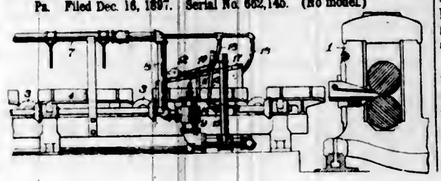
Claim.—1. The combination of a feed-table, one or more pipes provided with discharge openings or nipples arranged in such relation to the table as to direct a fluid flowing from the discharge-opening toward or against an article passing along the table, a valve for regulating or controlling the flow of fluid to such pipes and means operated by the article as it moves along the table for shifting said valve, substantially as set forth.

2. The combination of a feed-table, one or more pipes provided with discharge openings or nipples and arranged in such relation to the table as to direct a fluid flowing from the discharge-openings toward or against an article passing along the table, a valve controlling the flow of fluid to such pipe or pipes, means operative by the article as it passes along the table for opening the valve and means for automatically closing the valve after the passage of the article, substantially as set forth.

3. The combination of a feed-table and hood or box on said table, one or more lines of pipe provided with discharge-nipples projecting into the box or hood, a valve for regulating the flow of fluid to such lines of pipe and means operated by the article as it moves through the hood or box for shifting said valve, substantially as set forth.

4. The combination of a feed-table, two or more sections of pipe provided with discharge-nipples and arranged in such relation to the table as to direct the fluid flowing through the sections of pipe toward or against an article on said table, valves controlling the flow of fluid through the pipe-sections, and means operated by the article as it passes along the table for shifting the valve, substantially as set forth.

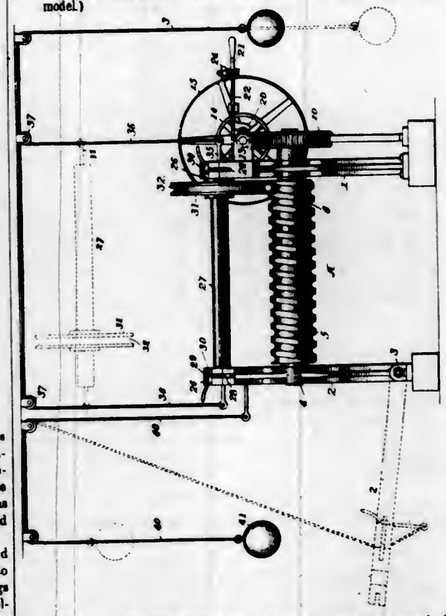
608,382. ROLLING-MILL. GEORGE G. MCMURTRY, Allegheny, Pa. Filed Dec. 16, 1897. Serial No. 662,145. (No model.)



Claim.—1. The combination of a feed-table, one portion of which is adapted to be used for the storage of bars or rods, a movable stop at the end of the feed-table, one or more lines of pipe arranged in such relation to the table that streams of cooling fluid will be directed on the bars or rods on the table, and means controlled by the bars or rods for controlling the flow of fluid through such pipes, substantially as set forth.

2. The combination of a feed-table, transfer mechanism for laterally shifting articles on the feed-tables, two lines of pipe arranged respectively on opposite sides of the table and provided with discharge openings or nipples, an automatically-closing valve for controlling the flow of such fluid through the pipes and means operative by the article as it is being moved on the table for opening the valve, substantially as set forth.

608,388. PIPE-BENDING MACHINE. BARTON J. PARKER and FRANK G. CROSS, San Francisco, Cal.; said Parker assignor to George X. Wendling, same place. Filed Mar. 9, 1898. Serial No. 673,212. (No model.)



Claim.—1. In a coiling-machine, the combination of a mandrel provided with a spiral groove, means for rotating the mandrel, and a grooved forming-wheel normally free to move longitudinally relative to the mandrel parallel to the face thereof, substantially as described.

2. In a coiling-machine, the combination of a mandrel provided with a spiral groove, means for rotating the mandrel, a shaft arranged parallel to the face of the mandrel, and a grooved forming-wheel upon said shaft normally free to move upon the shaft longitudinally relative to the mandrel, substantially as described.

3. In a coiling-machine, the combination of the frame, a mandrel provided with a spiral groove, means for rotating the mandrel, a grooved forming-wheel adapted to move longitudinally of the mandrel and a support for the forming-wheel movable with relation to the frame to carry the forming-wheel into and out of operative position, substantially as described.

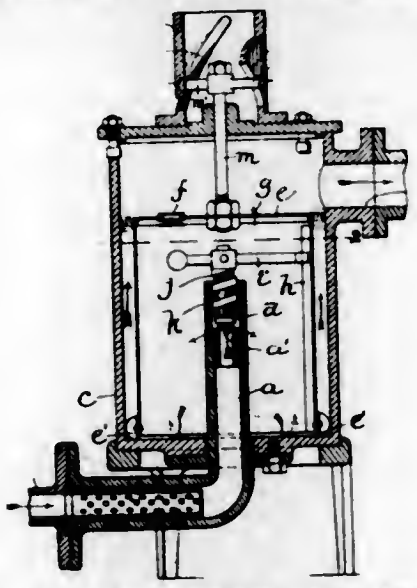
4. In a machine for coiling pipe, the combination of a mandrel provided with a spiral groove, means for rotating the mandrel in opposite directions, reversing devices controlling said means and a grooved forming-wheel adapted to move longitudinally of and parallel to the face of the mandrel, substantially as described.

5. In a coiling-machine, the combination of a mandrel provided with a spiral groove, a stationary support for one end of the mandrel, a removable support for the opposite end thereof, means for rotating the mandrel, and a grooved forming-wheel normally free to move longitudinally relative to the mandrel, substantially as described.

6. In a coiling-machine, the combination of a mandrel having a spiral groove and mounted to rotate in fixed bearings, means for ro-

tating the mandrel, a grooved forming-wheel, and a shaft journaled in fixed bearings upon which said wheel is supported, the forming-wheel being free to move longitudinally relative to the mandrel, substantially as described.

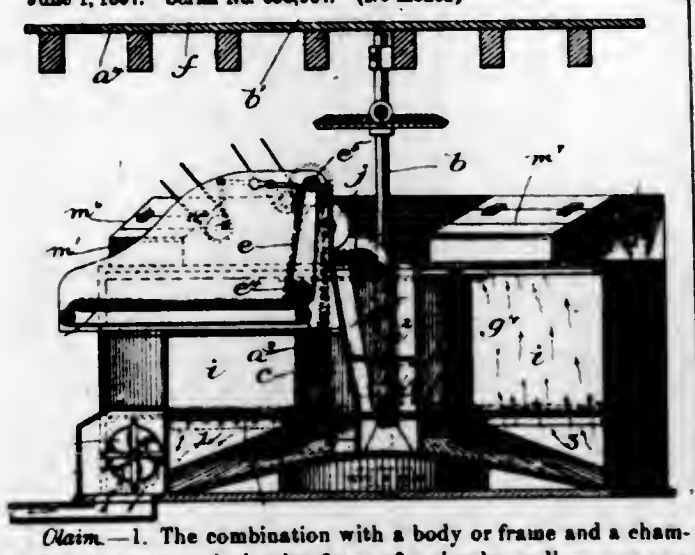
608,384. STEAM-TRAP. VICTOR A. PROST, Mayenmoutier, France, assignor to John William Nasmith, Manchester, England. Filed Dec. 30, 1897. Serial No. 664,698. (No model.) Patented in France Apr. 16, 1890, No. 205,074; in England Nov. 5, 1890, No. 17,819; in Germany June 1, 1891, No 57,012, and in Switzerland June 20, 1891, No. 3,648.



Claim.—1. A steam-trap comprising a water-receptacle, a conduit for steam and water entering said receptacle and having an outlet therein, a float having a vertical movement in the receptacle and inclosing said outlet, a screw, a fixed nut, and a valve connected with the screw, all located within said float, the valve being adapted to open and close the outlet, and devices which cooperate with the float to rotate the screw and operate the valve when the float rises and falls.

2. A steam-trap comprising a water-receptacle, a conduit for steam and water entering said receptacle and having an outlet therein, a float having a vertical movement in the receptacle and inclosing said outlet, a screw, a fixed nut, and a valve connected with the screw, all located within said float, the valve being adapted to open and close the outlet, means for imparting a rotary movement to the float when it rises and falls, and connections between the float and screw whereby the latter is caused to rotate with the float.

608,885. WOOL-DRYING APPARATUS. GEORGE STONE, North Andover, Mass., assignor to M. T. Stevens & Sons, same place. Filed June 1, 1897. Serial No. 638,967. (No model.)



Claim.—1. The combination with a body or frame and a chamber therein of general circular form, of a circular endless conveyer constantly traveling in the chamber, fans for circulating and forcing air downwardly through the conveyer, and means for heating the air during each complete circuit.

2. An apparatus of the character specified, comprising a horizontal rotary foraminous annular table, means for rotating it, a casing having two air-chambers, one located above and the other below the table, the upper chamber being segmental and having ends extending across the table at one side of its axis, and forming a discharge passage or outlet above and extending across the table, means for forcing air from one chamber to another through the table, and means for feeding the material to be dried into one end of the segmental chamber, the other end of said chamber having provision for permitting the exit of the dried material from the chamber into the discharge-passage.

3. An apparatus of the character specified, comprising a horizontal rotary foraminous annular table, means for rotating it, a casing having two air-chambers, one located above and the other below the table, the upper chamber being segmental and having ends extending across the table at one side of its axis, and forming a discharge passage or outlet above and extending across the table, means for forcing air from one chamber to another through the table, means for feeding the material to be dried into one end of the segmental chamber, the other end of said chamber having provision for permitting the exit of the dried material from the chamber into the discharge-passage, and means for forcing the dried material across the table through said passage.

4. An apparatus of the character specified, comprising an annular rotary foraminous table, means for rotating it, an annular casing having two air-chambers, one located above and the other below said table, means for forcing air from one chamber to another through said table, an air box or conduit communicating with both chambers and extending across one edge of the table, means for forcing air through said conduit, the chambers, and the table, an air-heater located in said conduit, the conduit having an air-inlet adjacent to said heater, and a movable valve or cover adapted to open or close said inlet and thereby regulate the temperature of the circulated air.

5. An apparatus of the character specified, comprising a horizontal rotary foraminous table, means for rotating it, a casing having a plurality of air-chambers at one side of the table, and a single air-chamber at the opposite side of the table, a plurality of conduits connecting the chambers at one side of the table independently with the single chamber, air-heaters in said conduits, air-forcing devices to maintain currents of heated air through said conduits, chambers, and table and means for independently regulating the temperature of the said currents.

6. An apparatus of the character specified, comprising a horizontal rotary foraminous table, means for rotating it, a casing inclosing said table and having an inclosed upper air-chamber above the table and a discharge passage or outlet between the ends of said upper chamber, means for maintaining a circulation of air through said chamber and table, and a blower arranged to discharge a blast of air through said discharge-passage.

7. An apparatus of the character specified, comprising a horizontal rotary foraminous table, means for rotating it, a casing inclosing said table and having an inclosed upper air-chamber above the table and a discharge passage or outlet between the ends of said upper chamber, means for maintaining a circulation of air through said chamber and table, and a feeding device arranged to deposit material to be dried on the table at one end of said chamber.

8. An apparatus of the character specified, comprising a circular casing having a circular track or flange on its inner surface, a vertical shaft within said casing, a spider affixed to said shaft, a series of perforated plates affixed at their inner ends to said spider and radiating therefrom to form an annular perforated table the outer edge of which is above said track, and means for forcing air through the table, said plates being elastic and adapted to normally spring upwardly from said track at their outer ends.

9. An apparatus of the character specified, comprising a casing, a horizontal foraminous table in said casing, means for rotating the table, means for forcing air through the table, and a feeding device having provisions for depositing the material to be dried in greater quantity upon the outer than upon the inner portion of the table.

10. An apparatus of the character specified, comprising a casing, a rotary perforated table therein, means for depositing the material upon said table to be dried, and a blower for ejecting the material after it has been dried.

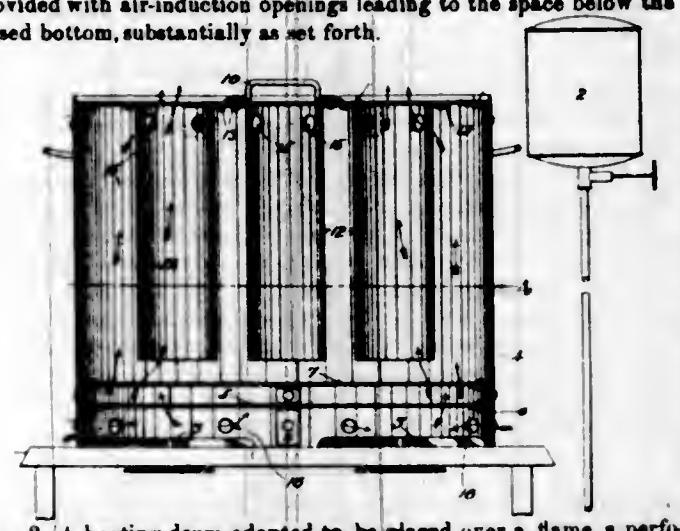
11. An apparatus of the character specified, comprising a rotary perforated table, and a traveling spiked apron for delivering the material to said table, the apron being arranged transversely of the table and having spikes on its carrying-face for taking up the material, the said spikes being arranged in increasing density toward the outer edge of the table, so as to take up and deliver more material at the outer portions of said table than at the inner portions thereof.

12. An apparatus of the character specified, comprising a casing, a horizontal rotary perforated table or carrier, means for depositing the material upon said table, means for causing a heated current or currents of air to pass through the table and the material thereon, and means for ejecting the material from the table and the casing.

608,386. HEATING-DRUM. CHARLES B. TOURVILLE, St. Louis, Mo., assignor of one-half to Michael Tully, same place. Filed Dec. 20, 1897. Serial No. 662,628. (No model.)

Claim.—1. A heating-drum adapted to be placed over a flame,

and having a perforated bottom normally raised a suitable distance above the lower edge of the vertical walls of the drum, a cover for the drum, a series of tubes depending from the cover and having the lower free ends raised a suitable distance above the bottom, a series of openings being formed in the cover and in communication with the discharge ends of the tubes, the vertical walls of the drum being provided with air-induction openings leading to the space below the raised bottom, substantially as set forth.

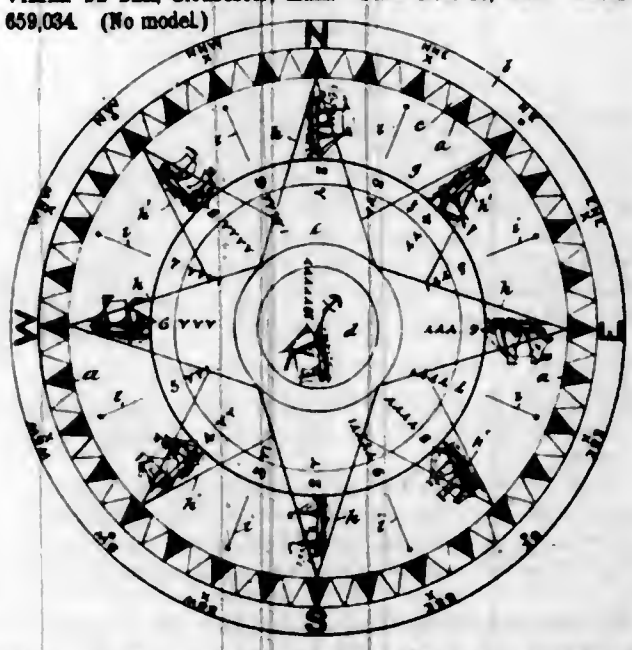


2. A heating-drum adapted to be placed over a flame, a perforated bottom forming a part of the drum and normally raised a suitable distance above the lower edge of the vertical walls of the drum, a perforated intercepting-plate located a suitable distance above the bottom, the perforations of the latter being out of alinement with those of the plate, a cover-plate for the drum provided with perforations, tubes communicating with the perforations depending from the inner surface of the cover-plate and reaching to within a suitable distance of the intercepting-plate, a series of openings being formed in the peripheral walls of the tubes adjacent to the cover-plate, the walls of the drum having a series of air-induction openings, leading to the space below the raised bottom, substantially as set forth.

3. In a heating-drum, a drum proper, a perforated bottom raised above the lower edge of the peripheral walls thereof, a perforated cover-plate for the drum, and a series of tubes depending from the cover and establishing communication between the interior of the drum and the outer air through the perforations of the cover, the lower ends of the tubes being removed a suitable distance above the bottom, substantially as set forth.

4. In a heating-drum, a drum proper, a bottom raised above the lower edge of the same, the said bottom having a solid portion against which the flames are adapted to impinge, a series of openings formed adjacent to the outer edge of the bottom, and a series of tubes alining with said openings, the tubes communicating with openings formed in the top of the drum, substantially as set forth.

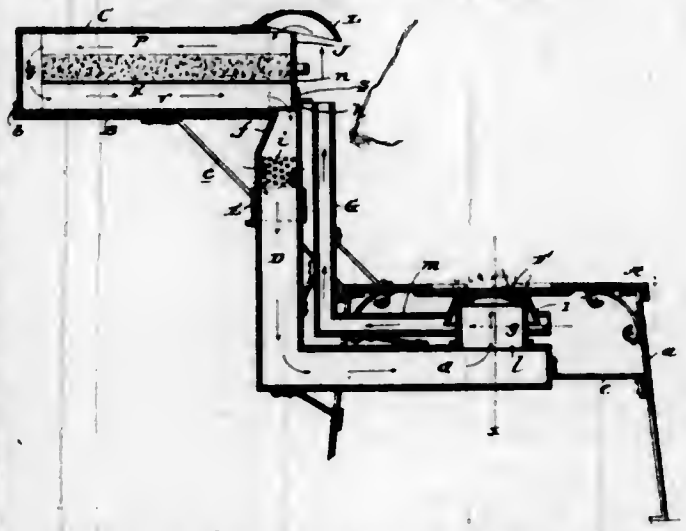
608,387. METHOD OF SIGNALING AT SEA. FRANCISCO VIEIRA DE BEM, Gloucester, Mass. Filed Nov. 18, 1897. Serial No. 659,034. (No model.)



Claim.—1. The herein-described signaling-code, consisting, essentially, of a series of sound-signals, each composed of systematically-arranged long duplicate plain blasts or a combination of duplicate long plain blasts followed as sequence by a single short plain blast, sounded with intervals of rest as described, the said duplicate long plain blasts or combinations thereof forming the basic part of the signal and representing cardinal points and principal intermediate rhumb-points, and the single short blast forming the terminal of the signal and representing minor intermediate points between the cardinals, substantially as described.

2. The herein-described improved method of marine sound-signaling, consisting of long duplicate plain blasts or a combination of long duplicate plain blasts representing cardinal points and principal intermediate points followed by a terminal short blast representing minor intermediate points, the north and south signals consisting of two long plain blasts: the north northeast and south southwest signals of two long plain blasts followed by one short plain blast; the northeast and southwest signals of four long plain blasts; the east northeast and west southwest signals of four long plain blasts and one short plain blast; the east and west signals of six long plain blasts; the east southeast and west northwest signals of six long plain blasts and one short plain blast; the southeast and northwest signals of eight long plain blasts; the south southeast and north northwest signals of eight long plain blasts and one short plain blast; and that of an anchored vessel ten long plain blasts, produced with intervals of rest between each blast, substantially as described.

608,388. GASOLENE-STOVE. WALTER BROWN, Cresco, Iowa. Filed Aug. 20, 1897. Serial No. 648,967. (No model.)



Claim.—1. In a gas or vapor stove, the combination of a vaporizing-chamber, a burner, a gas-feed tube connecting the vaporizing-chamber and the burner, and a slidable absorbent-holder arranged in the vaporizing-chamber and controlling communication between the said chamber and the gas-feed tube and consequently the quantity of gas supplied to the burner, substantially as specified.

2. The combination with a suitable burner and a vaporizing-chamber; of a gas-feed tube having the upper end of its rear wall directed inwardly and its front and side walls carried above the rear wall, and a slidable absorbent-holder adapted to move over the mouth of the feed-tube so as to regulate the feed, substantially as specified.

3. In a gas or vapor stove, the combination of a vaporizing-chamber, a burner, a gas-feed tube connecting the vaporizing-chamber and the burner, and a slidable absorbent-holder arranged in the vaporizing-chamber and controlling communication between the said chamber and the gas-feed tube and consequently the quantity of gas supplied to the burner; the said absorbent-holder being provided with a portion adapted to close the feed-tube to the atmosphere when communication between the said tube and the vaporizing-chamber is partially closed and also adapted, when the feed-tube is entirely closed to the vaporizing-chamber, to assume such a position as to establish communication between the feed-tube and the atmosphere, substantially as specified.

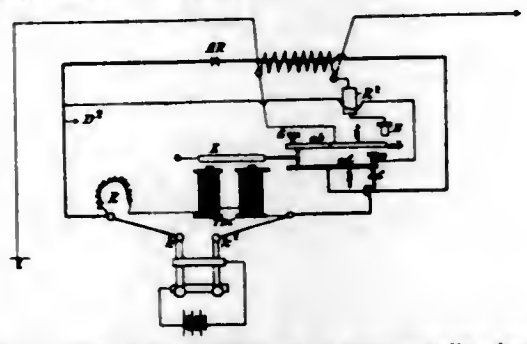
4. The combination with a suitable burner; of a vaporizing-chamber open to the atmosphere, a gas-feed tube, a hot-air tube open at both ends to the atmosphere, and a hood adapted to direct the hot-air currents into the vaporizing-chamber, substantially as specified.

5. In a gas or vapor stove, the combination of a vaporizing-chamber open at one end to the atmosphere and provided above such open end with a deflector, a burner, a gas-feed tube connecting the vaporizing-chamber and the burner, an air-tube arranged to receive the heat of radiation from the burner and discharge the same against the deflector, and a removable, slidable absorbent-holder arranged in the vaporizing-chamber and controlling communication between the said chamber and the gas-feed tube; said absorbent-holder being provided with a portion adapted to close the feed-tube to the atmosphere when communication between the said tube and the vaporizing-chamber is partially closed and also adapted, when the feed-tube is entirely closed to the vaporizing-chamber, to assume such a position as to establish communication between the feed-tube and the atmosphere, substantially as specified.

6. In a gas-stove, the combination with the gas-feed tube; of the vaporizing-chamber, the slidable absorbent-holder having the strip on its front wall sliding in contact with the upper end of the gas-feed tube so as to regulate the opening between the gas-feed tube and the vaporizing-chamber, and a suitable means for admitting air to said chamber, substantially as specified.

7. In a gas-stove, the combination with a burner; of the gas-feed tube having its vertical branch perforated and a slidable collar thereon, a drum leading from said tube to the burner, the vaporizing-chamber having the hinged door or deflector and connected with the gas-feed tube, the absorbent-holder arranged in said chamber so as to allow a passage around the absorbent, the hot-air tube having its vertical branch adapted to discharge against the deflector or hood of the vaporizing-chamber, and the ring extending from the head of the burner into the horizontal branch of the air-tube so as to conduct the heat therein, substantially as specified.

608,889. **RAPID TELEGRAPHIC TRANSMISSION ON CABLE-LINES.** CHARLES L. DAVIES, London, England. Filed June 25, 1896. Serial No. 596,927. (No model.)



Claim.—1. The combination with a telegraph-line including in its circuit the secondary winding of an induction-coil, the primary winding of which is included in circuit with a transmitting-key and source of electromotive force, of an electromagnetic time-break containing in its circuit an adjustable resistance or retardation adapted to control the time of vitalization of the armature of the magnet, a shunt to the secondary winding and its contacts controlled by said armature, whereby the key-circuit may be automatically opened independent of the opening of the transmitting-key, and the secondary winding of the induction-coil may be shunted, substantially as and for the purpose specified.

2. The combination with a telegraph-line including in its circuit the secondary winding of an induction-coil, the primary winding of which is included in circuit with a transmitting-key and source of electromotive force, of an electromagnetic time-break containing in its circuit an adjustable resistance or retardation adapted to control the time of vitalization of the armature of the magnet, a shunt to the secondary winding and a shunt to the primary winding both having contacts that may be controlled by said armature, whereby the key-circuit may be automatically opened independent of the opening of the transmitting-key, and one or both of the coils of the induction-coil may be shunted, substantially as and for the purpose specified.

3. The combination with a key, a source of electromotive force and a line, of a circuit connection containing normally-closed separable contacts through which the line is connected with the source of electromotive force on the closing of the key, and a time-break electromagnet, controlling the separable contacts, whose vitalization is controlled by the closing of the key and on the vitalization of which the normally-closed contacts are separated to disconnect the line from the source of electromotive force upon the lapse of a predetermined interval after the source of electromotive force is connected to the line.

4. The combination with a key, a source of electromotive force and a line, of a circuit connection containing normally-closed separable contacts through which the line is connected with the source of electromotive force on the closing of the key, a time-break electromagnet, controlling the separable contacts, whose vitalization is controlled by the closing of the key and on the vitalization of which the normally-closed contacts are separated to disconnect the line from the source of electromotive force upon the lapse of a predetermined interval after the source of electromotive force is connected to the line, and an earth-connected contact to which the line is connected after the separation of said normally-closed contacts.

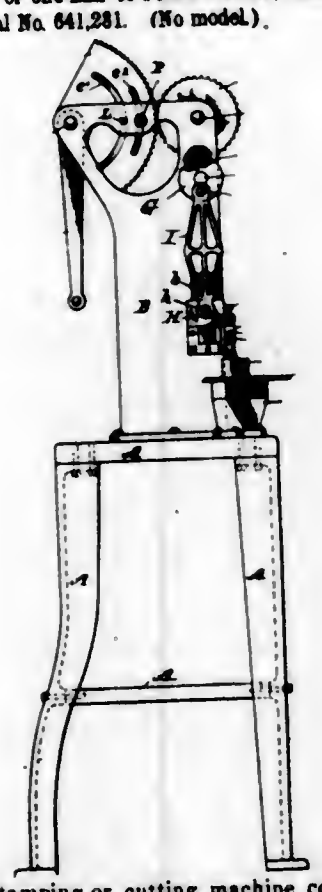
5. The combination with a key and a source of electromotive force for transmitting telegraphic signals over a line or cable circuit, of an electromagnet actuated following the closing of the key to disconnect the line from the source of electromotive force before the current from said source has risen in the line to its effective maximum.

6. The combination with a key and a source of electromotive force for transmitting telegraphic signals over a line or cable circuit, of an electromagnet actuated following the closing of the key to disconnect the line from the source of electromotive force before the current from said source has risen in the line to its effective maximum, and means for then connecting the line to earth.

7. The combination consisting of a main circuit, a key, and an electromotive source, separable contacts normally closed in the main circuit, a shunt on the main circuit, and a time-break magnet in the shunt and in operative connection with the separable contacts, the whole so arranged that when the key is closed the electric current at once passes in the main circuit as well as in the shunt and continues to do so until the time-break magnet operates to open the separable contacts.

8. The combination consisting of a main circuit, a key, and an electromotive source, separable contacts normally closed in the main circuit, a shunt on the main circuit, and a time-break magnet in the shunt and in operative connection with the separable contacts, and a grounded contact against which one of the separable contacts bears when said contacts are separated, the whole so arranged that when the key is closed the electric current at once passes in the main circuit as well as in the shunt and continues to do so until the time-break magnet operates to open the separable contacts, first to open the line-circuit and then to put the line-circuit to earth.

608,890. **SCALLOPING-MACHINE.** CHARLES A. GILMAN, Weare, N. H., assignor of one-half to Frank Tucker, same place. Filed June 18, 1897. Serial No. 641,281. (No model.)



Claim.—A stamping or cutting machine consisting of a frame supporting a bed-block and a standard carrying a reciprocal cutter, two spur-gears, and a gear-segment meshing with one of said spur-gears and provided with one or more grooves, a stop pin or pins arranged in said standard and adapted to engage the grooves in said segment, a driving-bar connecting the cutter with a pin on a crank or disk secured to the shaft of one of said spur-gears, and means for rotating the gear-segment, all substantially for the purpose set forth.

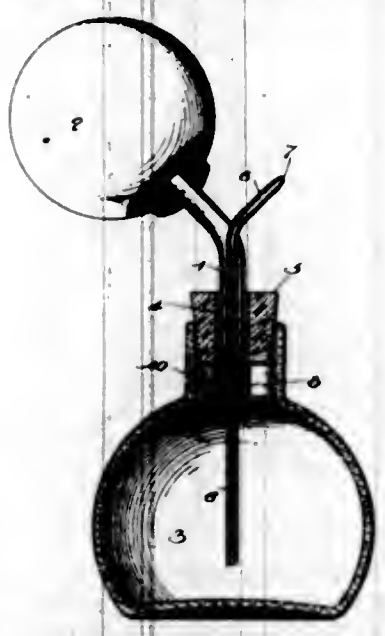
608,891. **SPRAYER.** FRANK M. GROPLEY and EDWARD H. PETERS, Cincinnati, Ohio. Filed Mar. 11, 1898. Serial No. 673,507. (No model.)

Claim.—1. A sprayer having an air-tube in communication with a compressible bulb, and provided in its inclosed portion with a lateral feed-opening, and a contractile sleeve fitted upon said tube and having a flap-valve to control the feed-opening, substantially as specified.

2. A sprayer having an air-tube in communication with a compressible bulb, and provided with a closed inner end and, at an intermediate point, with means for attachment to a stopper, said tube, between its inner end and the stopper-engaging device, being provided with a lateral feed-opening, and a contractile sleeve fitted upon said tube and having a flap-valve to control the feed-opening, substantially as specified.

3. A sprayer having an air-tube in communication with a com-

pressible bulb, and provided at an intermediate point with a threaded enlargement for engagement with a stopper, and also provided in its side wall, between said threaded enlargement and its inner end, with a valve-controlled feed-opening, substantially as specified.



4. A sprayer having an air-tube in communication with a compressible bulb, and provided at an intermediate point with a threaded enlargement, and a spray or discharge tube of smaller diameter than and extending through the air-tube, and in communication at its outer end with a spray-nozzle, said air-tube being provided below said threaded enlargement with a lateral valve-controlled feed-opening, substantially as specified.

5. A sprayer having an air-tube in communication with a compressible bulb, a discharge-tube in communication with a discharge-nozzle carried by the air-tube, said air-tube having a lateral feed-opening, and a sleeve removably fitted upon the inclosed portion of the air-tube and provided with a flap forming a valve for controlling said feed-opening, substantially as specified.

6. A sprayer having an air-tube in communication with a compressible bulb, and provided in its inclosed portion with a lateral feed-opening, a discharge-tube in communication with a spray-nozzle carried by the air-tube, and a contractile sleeve fitted upon the inclosed portion of the air-tube and provided with a flap forming a valve for controlling said feed-opening, substantially as specified.

608,892. BRAKE-ROD. BRODERICK HASKELL, Grand Rapids, Mich. Filed Mar. 4, 1898. Serial No. 672,517. (No model.)



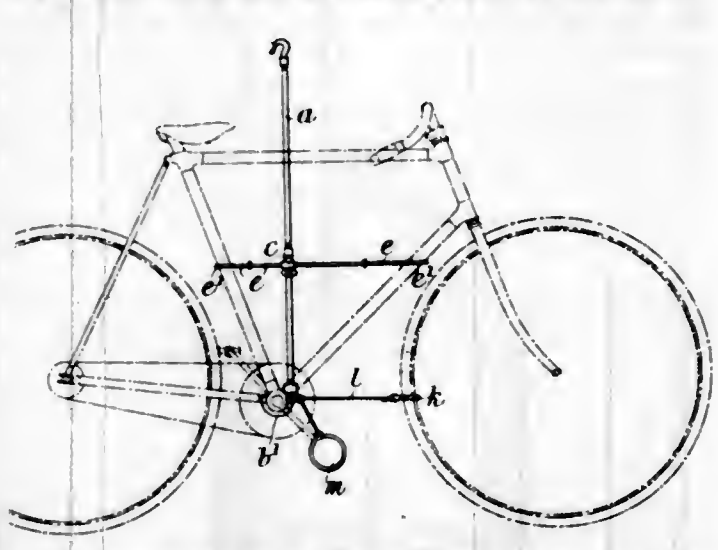
Claim.—1. As an article of manufacture, brake-rod jaws, consisting of a metallic body having parallel jaws provided with transverse openings for a coupling-pin, and an integral neck having parallel openings and a seat between said openings convex in the plane of the axes of said openings, and concave at right angles thereto substantially as described.

2. The combination of parallel jaws having transverse openings for a coupling-pin, a neck connecting said jaws, and having a longitudinal opening with its axis substantially in line with said openings and a second opening parallel thereto, and a seat between said openings convex in the plane of the axes of said openings and concave at right angles thereto, and a rod inserted in said openings and having a semicircular bend engaging said seat and bent or riveted at one end substantially as described.

3. The combination of jaws having parallel sides and a downwardly-elongated neck having an upper and lower parallel openings, and a seat between said openings convex in its vertical plane and concave in its horizontal plane, and a rod having a semicircular bend engaging said seat, and parallel portions within said openings and having its extreme end bent or riveted, substantially as described.

608,893. BICYCLE-SUPPORT. ALBERT E. JACKSON and PERCY J. BRITTEN, London, England. Filed Oct. 2, 1897. Serial No. 653,854. (No model.)

Claim.—1. A support for a bicycle comprising among its members a vertical bar provided at its upper end with a suspension device and adjacent to its lower end with an outwardly-extending horizontal arm provided with a support for engaging the crank-hanger, said vertical bar being provided above said crank-hanger-supporting arm with an outwardly-extending arm provided with a pair of longitudinally-disposed, independently-adjustable arms, for engaging the bicycle-frame bars, said crank-hanger support and said adjustable arms being located at a distance from the vertical rod sufficient to enable the pedal on the side toward said vertical rod to clear it, whereby said support may be hung upon a wall to support a bicycle and will hold the bicycle away from the wall, substantially as described.



2. A support for a bicycle comprising among its members, a vertical bar provided at its upper end with a suspension device and adjacent to its lower end with an outwardly-extending horizontal arm having a portion to receive and support the crank-hanger, said bar being provided intermediate its ends with a horizontal outwardly-extending arm having an adjustable clamp at its outer end and a pair of longitudinally-adjustable rods engaging said clamp and disposed perpendicularly to said arm, said rods having on opposite ends hook portions for engaging the frame-bars of the bicycle above the crank-hanger, whereby the bicycle will be supported at a distance from said vertical bar, substantially as described.

3. A support for a bicycle comprising among its members, a vertical bar provided at its upper end with a suspension device and adjacent to its lower end with an outwardly-extending horizontal arm having a portion to receive and support the crank-hanger, said bar being provided intermediate its ends with a horizontal outwardly-extending arm, having an adjustable clamp at its outer end and a pair of longitudinally-adjustable rods engaging said clamp and disposed perpendicularly to said arm, said rods having on opposite ends hook portions for engaging the frame-bars of the bicycle above the crank-hanger, whereby the bicycle will be supported at a distance from said vertical bar, a securing device for engaging the front wheel, an elastic connection between said device and the vertical bar, and a device for engaging one of the pedals, secured to said vertical bar, substantially as described.

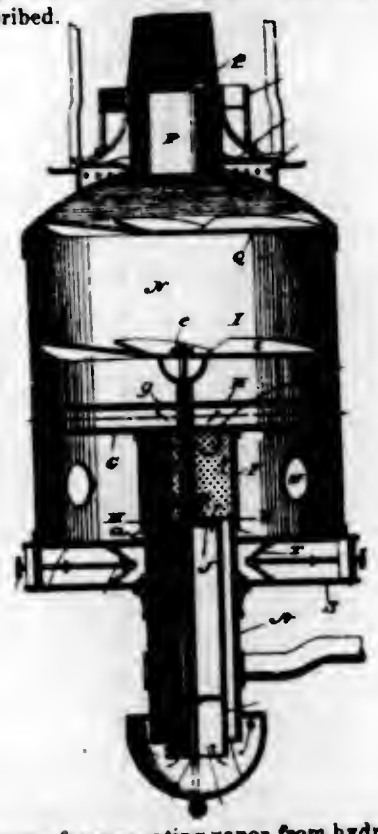
4. A bicycle-support comprising among its members, a vertical bar provided adjacent to its lower end with a horizontal arm having at its outer end a device for engaging and supporting the crank-hanger, a horizontal arm secured to said vertical bar above the hanger-supporting arm, and provided at its outer end with a clamping device, and a pair of horizontal rods engaging said clamp, each of said rods having its inner end provided with a guide engaging the other rod and provided on its outer end with a hook for engaging a portion of the bicycle-frame, substantially as described.

608,894. PROCESS OF GENERATING GAS FROM KEROSENE, &c., BY MEANS OF WICKS. JASPER H. MOSS, Topeka, Kans., assignor of forty-nine one-hundredths to Channing J. Brown, same place. Filed Oct. 12, 1897. Serial No. 655,004. (No model.)

Claim.—1. An apparatus for burning hydrocarbon oils, comprising a distinct generating-chamber, and a distinct mixing-chamber, a burner in the generating-chamber for partially consuming the oil and generating a vapor, means located in the mixing-chamber in the path of the vapor for mixing the vapor and air and a burner communicating with the mixing-chamber for finally burning the mixed vapor and air.

2. An apparatus for generating gas or vapor from hydrocarbon oils, comprising a wick-tube, a distinct gas or vapor generating chamber inclosing the burner end of said tube, means for admitting air to said chamber so as to sustain a low or partial combustion only of the oil at the wick and generate vapor or gas, a distinct mixing or commingling chamber, and means located in said mixing-chamber in the path of the vapor constructed to automatically effect a thorough commingling of the vapor and air during its passage through the commingling-chamber.

3. An apparatus for generating vapor from hydrocarbon oils, comprising a wick-tube, a vapor-generating chamber inclosing said tube at the burner, means for admitting air to said chamber so as to sustain a low or partial combustion only of the oil and generate vapor, a mixing or commingling chamber distinct from said generating-chamber arranged to receive the main body of vapor therefrom, means located within the commingling-chamber in the path of the vapor for automatically effecting a thorough commingling of the vapor and air during the passage thereof through said commingling-chamber, a vapor-burner communicating with said mixing-chamber, and means for preventing ignition of the vapor in the commingling-chamber whereby a principal flame is maintained remote from the vapor-generating flame for consuming said main body of vapor, substantially as described.



4. An aparatus for generating vapor from hydrocarbon oils and commingliug the same with air for consumption by a principal flame, comprising a distinct generating-chamber and means for supplying air thereto so as to maintain a low or partial combustion of the oil and generate vapor, a mixing or commingling chamber arranged over said generating-chamber and distinct therefrom; the latter chamber being provided with a vapor exit and burner, and devices located in the path of the vapor passing through said commingling-chamber constructed to effect a thorough commingling of the vapor and air in passing to the burner, substantially as described.

5. A gas or vapor generator and burner comprising a wick-tube, a preliminary combustion and gas-generating chamber inclosing said wick-tube at the burner end thereof, means for admitting air to said generating-chamber so as to sustain a low or partial combustion only of the gas generated therein by the flame at the wick, a mixing or commingling chamber arranged to receive the main body of gas generated in said preliminary chamber, devices arranged within said commingling-chamber constructed to set up a rotary or whirling motion of the gases in passing through the commingling-chamber, a burner for consuming the gases passing from the latter chamber, and means for preventing ignition of the gases within the commingling-chamber; whereby the gases generated quickly pass from the generating-chamber andrush through the commingling-chamber with a rotary or whirling motion to supply the main flame of the burner and maintain a brilliant light or intense heat at that point, substantially as described.

6. An apparatus for generating gas from hydrocarbon oils and burning the same so as to produce a brilliant light or intense heat therefrom, comprising a wick-tube, a gas-generating chamber, means for admitting air to said chamber so as to sustain a low or partial combustion only of the gas generated therein by the flame at the wick, a mixing or commingling chamber arranged to receive the unconsumed gases and waste products of combustion issuing from said preliminary combustion and gas-generating chamber, and means for maintaining a principal flame for consuming the gases passing from the commingling-chamber, together with means interposed between the preliminary and main burners constructed to effect a rotary or whirling motion of the gases in their passage through the commingling-chamber; whereby the unconsumed gases are drawn off from the generating-chamber and rushed through the commingling-chamber with a rotary or whirling motion, and thoroughly commingled and pass into the principal flame where the main body of the gas is consumed, substantially as described.

7. An apparatus for generating vapor from hydrocarbon oils and commingling the same for consumption by a burner adapted to produce a brilliant light, comprising a vapor-generating chamber, a wick-tube having its burner end inclosed in said chamber, means for feeding air to said chamber, a distinct mixing-chamber, a principal burner located over said mixing-chamber, and devices arranged in the path of the vapor between said generating-chamber and principal burner constructed to spread and thoroughly commingle the upward current of vapor and air and to produce a rotary or whirling motion thereof, so as to increase the draft and effect a more perfect combustion of the vapor and gaseous products of combustion fed to the principal flame, substantially as described.

8. In a vapor-burner a wick-tube, a vapor-generating chamber inclosing said tube at the burner end thereof, means for admitting air to said chamber, a perforated plate or diaphragm having a non-perforated portion partially closing the upper part of said chamber and projecting inwardly to arrest and deflect the current of air and vapor, and an air-spreader adjacent to the burner end of the wick-tube, together with a mixing-chamber over the generating-chamber whereby the air entering said generating-chamber is deflected against the sides and top thereof so as to form an eddy therein to prevent the flame from igniting the vapor in the mixing-chamber, substantially as described.

9. In a vapor-burner, the combination with a principal burner and a mixing-chamber for supplying commingled vapor and air thereto, of a vapor-generating chamber communicating with the mixing-chamber and a wick-tube constructed to maintain a low or partial combustion only at the wick and generate vapor, a plate or diaphragm arranged over said generating-chamber for regulating the flow of vapor and air, and deflecting the same, and a fan-wheel above said diaphragm, whereby the vapor and air are spread, commingled and given a rotary or whirling motion in passing to the principal burner so as to increase the draft and insure a perfect combustion of the inflammable gases at the principal burner, substantially as described.

10. In a vapor generator and burner, the combination with the mixing-chamber of devices located therein constructed to thoroughly mix and impart a whirling motion to the vapor and air rising therethrough, a burner over said mixing-chamber, a distinct vapor-generating chamber located within the mixing-chamber, and means for feeding air to the latter chamber in such quantity as to sustain a low or partial combustion only, while permitting the main body of vapor generated to pass into the mixing-chamber to feed the principal flame, substantially as described.

11. In a vapor generator and burner, the combination with a principal burner, of a vapor and air receiving chamber and devices located therein for mixing the vapor and air in its passage therethrough to the burner, a wick-tube, a distinct vapor-generating chamber inclosing the burner end of said wick-tube, a partition or movable bottom for the latter chamber constructed to admit air therethrough, and means for shifting said bottom and the walls of the generating-chamber to permit the wick to be lighted.

12. In combination with the mixing-chamber having a vapor-burner at its top, a distinct generating-chamber, devices interposed between said generating-chamber and burner constructed to spread and mix the vapor and air passing through the mixing-chamber and to produce a rotary or whirling motion thereof, together with a wick-tube and means for admitting sufficient air to the vapor-generating chamber to sustain a low flame or partial combustion therein and to generate vapor the main body of which is commingled with air and fed to the principal flame.

13. In a vapor generator and burner, a mixing-chamber, an annular wick-tube, a concentric air-tube, a spreader at the top of said air-tube, and a vapor-generating chamber inclosing the upper end of the wick-tube, and having an inwardly-projecting flange or cover at its upper part constructed to deflect the air and vapor passing therefrom so as to form an eddy therein to prevent the flame at the wick from igniting the vapor in the mixing-chamber.

14. In a vapor generator and burner, a vapor-generating chamber, a mixing-chamber communicating therewith, a wick-tube, an air-tube and an air spreader or deflector at the top of said air-tube; said generating-chamber having the upper part thereof formed or provided with an inwardly-projecting plate or flange constructed to deflect the air and vapor passing therefrom so as to form an eddy therein to prevent the flame at the wick from igniting the vapor in the mixing-chamber.

15. In combination with the mixing-chamber and principal burner a vapor-generating chamber, inclosed in said mixing-chamber, having its upper end partially closed and its sides perforated, a wick-tube having its burner end inclosed in said generating-chamber, a guide-rod supporting said generating-chamber, and guides for said rod, a perforated plate encircling the upper end of said wick-tube

and forming a movable bottom for said mixing-chamber, and means for shifting said movable bottom and therewith said generating-chamber, to permit the wick to be lighted, substantially as described.

16. In combination with the mixing-chamber provided with a vapor exit and burner, and with devices located therein for mixing the vapor and air passing therethrough, a distinct vapor-generating chamber below said burner and mixing devices having a perforated outer wall and a partially-closed top, a perforated deflecting-diaphragm having a solid part arranged directly over said generating-chamber so as to deflect the upward current of vapor and air and aid in mixing the same, and a fan-wheel arranged over said deflector for imparting a rotary or whirling motion to the air; said generating-chamber, deflector and fan-wheel being secured to a vertically-movable rod working in suitable guides to permit said devices to be raised and lowered, and means for raising said chamber, deflector and fan-wheel together.

17. In combination with the mixing-chamber having a movable perforated bottom, and a burner, the wick-tube, the gas-generating chamber, means for sustaining the walls of said generating-chamber in the plane of the wick-tube, and a push-rod and toggle-links arranged to raise said movable bottom and thereby raise said generating-chamber to permit the wick to be lighted, substantially as described.

18. In a heating or lighting apparatus, a primary burner for generating gas from a hydrocarbon by a flame confined to the inner circumference of the wick, a distinct generating-chamber inclosing said burner, means for introducing air to maintain a low or partial combustion of the oil at the point of ignition and generate a vapor, and means for introducing additional air in such generating-chamber to lighten and purify such vapor before its issuance into the mixing-chamber proper, in combination with a mixing-chamber for receiving the vapor issuing from said generating-chamber, and a main burner located at a distance from said primary burner and communicating with the mixing-chamber for burning the mixed vapor and air.

19. The improved process of generating gas from liquid hydrocarbon and burning the same, which consists in maintaining a low or imperfect combustion at the end *of* a wick which supplies the liquid, thus evolving vapor, copiously commingling air with such vapor at a location distinct from that where the latter is evolved, imparting a whirling motion to the resultant gas, and conducting the same to a suitable burner, substantially as described

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608,395. **BURNER AND CHIMNEY-HOLDER.** JASPER H. MOSS, Topeka, Kans., assignor of forty-nine one-hundredths to Channing J. Brown, same place. Filed Oct. 20, 1897. Serial No. 656,915. (No model.)



Claim.—1. In a gas or vapor burner, a horizontal base-plate having a circular series of air-inlet openings and inclined deflectors above said openings to direct the incoming currents of air obliquely and produce a whirling motion thereof, substantially as described.

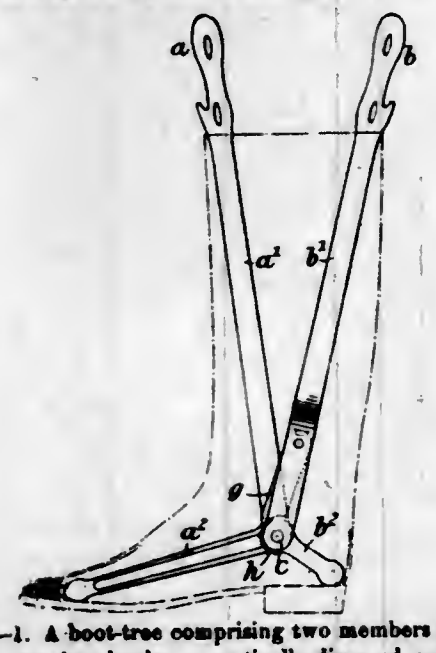
2. A gas or vapor burner comprising a centrally-apertured horizontal base-plate with a circular series of openings and inclined deflectors above said openings, a dome rising from said plate around its central aperture and having a perforated top or cap, and an imperforate ring surrounding the dome with a space of limited area between it and the same, said ring being elevated from the base-plate and standing directly over the deflectors, substantially as and for the purpose described.

3. In a burner, a chimney-holder comprising resilient standards rising from the burner and adapted to bear at their upper ends against the chimney and having guards springing from their outer or back edges and extending upwardly along the same, their ends lying in close proximity thereto but being separated therefrom; and an encircling band confined by said guards and removable over the ends of the standards.

4. In a burner, a chimney-holder comprising resilient standards rising from the base of the burner, curved resilient arms on the inner edges of said standards and adapted to bear against the lower part of the chimney, said standards also adapted to bear at their upper ends against the latter, and a band encircling the standards at their upper ends, substantially as and for the purpose described.

5. In a burner, the combination with a base comprising a ring and a plate; of a chimney-holder comprising standards extending upward through the said plate and having enlarged lower ends fitting the corners formed by the intersection of the plate and ring and provided with projections passing through and upset upon the latter.

608,396. **BOOT TREE OR STRETCHER.** PHILIP J. PARMITER, Ansty, England. Filed Nov. 8, 1897. Serial No. 657,864. (No model.) Patented in England May 14, 1896, No. 10,367.



Claim.—1. A boot-tree comprising two members pivotally connected, each member having a vertically-disposed arm and a horizontally-disposed arm substantially at right angles to the vertical arm, the arms of each member extending on the same side of a vertical line passing through their pivotal connection whereby, by drawing the vertical arms together, the said pivotal connection will be brought substantially into the horizontal plane of the ends of said horizontal arms, substantially as described.

2. A boot-tree comprising two members pivotally connected together, each member having a vertically-disposed arm and a horizontally-disposed arm, the arms of each member extending on the same side of a vertical line passing through the said pivotal connection, the arms of one of said members being formed separate from each other and adjustably connected together, substantially as described.

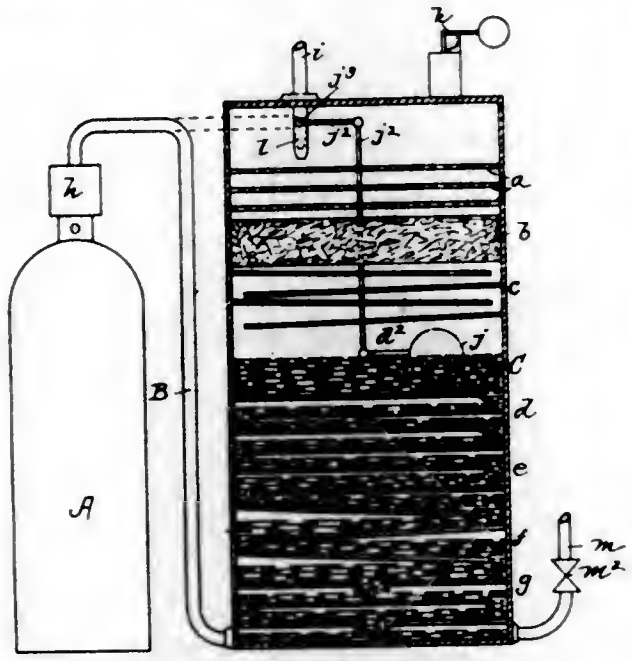
3. A boot-tree comprising two members pivotally connected together, each member being provided with a vertically-disposed arm and a horizontally-disposed arm, the arms of each member extending on the same side of a vertical line passing through said pivotal connection, the arms of one member being formed separately, one of said arms being provided with a ratchet portion and the other with a pawl for engaging said ratchet portion, substantially as described.

608,397. **METHOD OF AND APPARATUS FOR CHARGING LIQUIDS WITH GAS.** JOHN SCHWARTZ, Jr., London, England, assignor to Henry Carmichael, Malden, Mass. Filed Dec. 20, 1897. Serial No. 662,537. (No model.) Patented in England Apr. 28, 1894, No. 8,434.

Claim.—1. An apparatus for charging liquids with gas, which consists of a closed vessel provided with a liquid-inlet pipe having a valve automatically controlled by the level of the liquid in said chamber, so as to leave a gas-chamber in the upper part of said vessel, a gas-inlet pipe discharging into said vessel near the bottom thereof, a liquid-outlet pipe for said vessel, a vertically-arranged series of traps for the gas located in the lower part of said vessel above the gas-inlet pipe and immersed in the liquid to form layers of gas in contact with layers of liquid forming part of the body of liquid in the said chamber, and a distributer for the liquid located in the gas-chamber or upper part of said vessel, substantially as described.

2. An apparatus for charging liquids with gas, which consists of

a closed vessel provided with a liquid-inlet and with a liquid-outlet pipe, a series of superimposed traps in said vessel immersed in a continuous body of liquid in said vessel to form independent layers of gas in said body of liquid and provided with passages from one trap to an adjacent trap, a gas-inlet pipe for said vessel to admit gas therein below said traps, and a distributer for the water located in the upper part of said vessel above the level of the liquid therein, substantially as described.



3. An apparatus for charging liquids with gas, which consists of a closed vessel C provided with a water-inlet pipe having a valve automatically controlled by the level of the water in said vessel, and with a water-outlet pipe, a series of superimposed traps in the lower part of said vessel immersed in a body of liquid therein and provided with one or more passages in their bottom having their walls extended into said traps, and a gas-inlet pipe communicating with said chamber below said traps, substantially as and for the purpose specified.

4. An improvement in the method of charging liquids with gas, which consists in admitting gas and liquid into a closed vessel at opposite ends thereof, and retarding the flow of gas up through said vessel so as to form a vertical series of alternate layers of gas and liquid with the gas layers in a substantially static condition immersed in a single or continuous body of liquid, and distributing the liquid admitted into the vessel through a volume of gas in the upper part of said vessel, substantially as described.

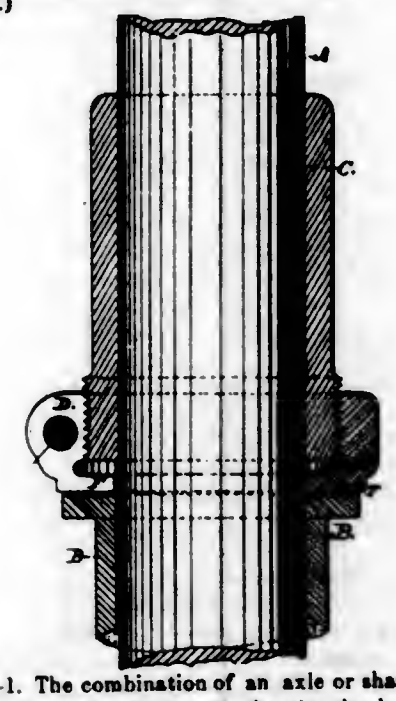
5. A closed vessel containing in its lower part a body of liquid and in its upper part a body or volume of gas capable of absorption in said liquid, a liquid-inlet at top of said vessel, means for spreading liquid as it passes through the volume of gas, a gas-inlet discharging into said vessel at its bottom and means immersed in the body of liquid for statically spreading the gas in said body of liquid, substantially as described.

6. A closed vessel containing in its lower part a body of liquid and in its upper part a body or volume of gas capable of absorption in said liquid, a liquid-inlet at top of said vessel, means for spreading liquid as it passes through the volume of gas, a gas-inlet discharging into said vessel at its bottom, and means immersed in the body of liquid for statically spreading the gas in said body of liquid, a valve to control the supply of liquid, a float in said vessel and means connecting said float to said valve, substantially as described.

7. In an apparatus for charging liquids with gas, the combination with a closed absorption vessel provided with a liquid-inlet at its top, and with a vertically-arranged series of traps in its lower part, which are immersed in the liquid in said vessel, of a charging vessel containing gas under pressure and provided with a pipe connected to the absorption vessel at its bottom below said traps, and a gas-regulator in said outlet for the charging vessel, substantially as described.

8. In an apparatus for making aerated liquors or beverages, the combination of the following instrumentalities, viz: a vessel for containing compressed carbonic-acid gas provided with a gas-outlet pipe, a mixing-vessel or chamber into which the said gas-outlet discharges the gas near the bottom thereof, a liquid-inlet at the top of said mixing chamber or vessel, the said gas being admitted into said mixing vessel at a pressure not greater than that at which the liquid is admitted, and a series of superimposed traps in said vessel immersed in a continuous body of liquid in said vessel to form layers of gas in said body of liquid, substantially as described.

608,898. ADJUSTABLE COLLAR FOR SHAFTS. WILLIAM S. G. BAKER, Baltimore, Md. Filed May 6, 1898. Serial No. 679,877. (No model.)

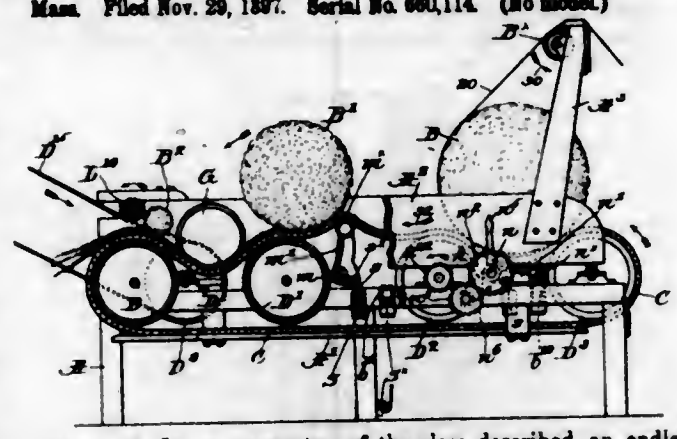


Claim.—1. The combination of an axle or shaft, a fixed collar, a loose collar thereon, and means whereby the loose collar can be adjusted, and when adjusted held in place against lateral movement, substantially as described.

2. The combination of an axle or shaft with a fixed collar having one end threaded, a loose collar threaded on said fixed collar, the loose collar being split, and a bolt and nut, by means of which the loose collar can be clamped on the fixed collar for purpose specified.

3. The combination of an axle or shaft, fixed collar, loose collar thereon, loose collar having a flange at one end, said flange depending toward axle or shaft, that a full bearing of face of loose collar may be imposed against the bearing upon axle or shaft, and means for tightening the loose collar.

608,899. APPARATUS FOR UNWINDING CYLINDRICAL COTTON-BALES. ANADORE R. BOSCA and ERNEST W. BENNER, Lowell, Mass. Filed Nov. 29, 1897. Serial No. 660,114. (No model.)



Claim.—1. In an apparatus of the class described, an endless traveling carrier, rotatable supports for and between which the upper run of the carrier is depressed, to receive and support the bale to be unwound, means to rotate the supports, a detent located near the delivery end of the carrier, and means to positively rotate the detent oppositely to the rotation of the bale, on the carrier, to thereby effect the final unwinding of said bale upon the carrier.

2. In an apparatus of the class described, an endless carrier, supports for and between which the upper run of the carrier is depressed, to receive and support the bale, means to effect rotation of said supports and longitudinal movement of the carrier, a rotating detent located above and adjacent the delivery end of the latter, and means to positively rotate the detent in a direction opposite to the rotation of the bale on the carrier, to act upon and effect the final unwinding of the bat upon the carrier.

3. In an apparatus of the class described, an endless traveling carrier, end and intermediate supports for and between which the upper run of the carrier is depressed, to receive and support in each depression a bale to be unwound, means to rotate said supports, means to prevent lateral movement of the bales and bats as unwound therefrom, and a detent located above and adjacent the delivery end of the carrier, and means to rotate it oppositely to the rotation of the bales, to act upon and effect the final unwinding of a bale when brought in contact therewith by the travel of the carrier.

4. In an apparatus of the class described, an endless traveling carrier having a sinuous upper run to present a plurality of depressions each adapted to receive and support bales to be unwound, means to temporarily lift one of said depressed portions of the carrier to transfer the bale supported thereby to the next adjacent depression ahead, and a rotating detent to effect final unwinding of the leading bale.

5. In an apparatus of the class described, an endless traveling carrier, supports for and between which the upper run of the carrier is depressed to receive and support the bale to be unwound, independent means to maintain the carrier depressed as the weight of the bale decreases, and a detent rotated above the unwound bat as delivered, to act upon and complete the unwinding of the bale upon the carrier.

6. In an apparatus of the class described, an endless traveling carrier having a sinuous upper run to present a plurality of depressions each adapted to receive and support bales to be unwound, independent means to maintain the final depression as the weight of the bale supported thereby decreases, an adjacent rotating detent located above the carrier, to act upon and complete the unwinding of the bale upon the carrier, and means to temporarily lift the next adjacent rear depression of the upper run to transfer the bale supported thereby to the final depression.

7. In an apparatus of the class described, an endless traveling carrier having a sinuous upper run to present a plurality of depressions each adapted to receive and support bales to be unwound, means to temporarily lift one of said depressed portions of the carrier to transfer the bale supported thereby to the next adjacent depression ahead, a rotating detent located at the delivery end of the carrier to effect final unwinding of the leading bale, and a revolving delinter at the receiving end of the apparatus, to act upon the inner face of the bale-cover and remove the staple therefrom.

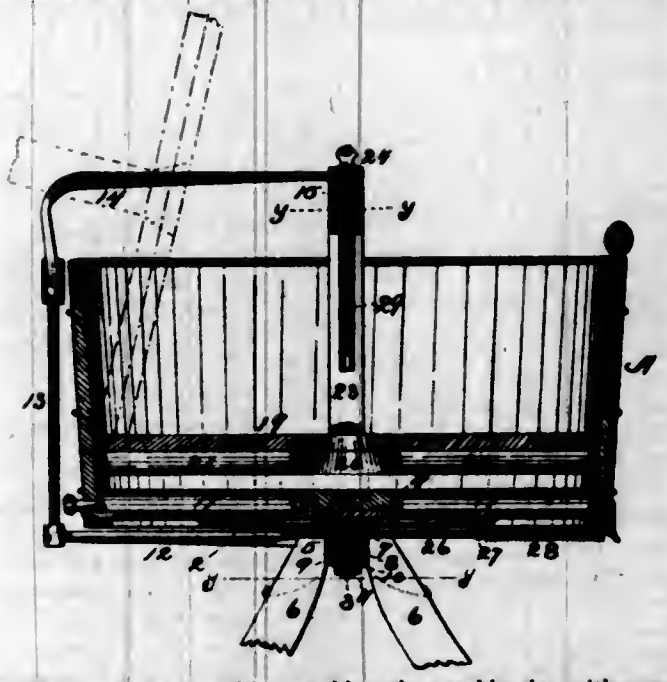
8. In an apparatus of the class described, an endless traveling carrier, a continuously-rotating shaft having attached pinions, a bale-support normally in position to receive a bale to be unwound, racks attached to said support and normally disengaged from said pinions, and means to bring said racks and pinions into engagement, whereby the bale-support is lifted by the rotative movement of the pinions to bring the bale on the support into position to be transferred to the carrier.

9. A bale-lifting device, comprising a yoke having movable fulcra and adapted to support a bale at its free end, continuously-toothed racks rigidly secured to said yoke, rotating pinions mounted in fixed bearings, and means to bring said racks and pinions into engagement, whereby the yoke is lifted, and thereafter returned to normal position, disengaging the racks and pinions.

10. A bale-lifting device comprising a pivotally-mounted yoke adapted to support a bale at its free end, castings thereon having rack-bars, and hoods at their upper ends, a rotating shaft having pinions fast thereon, and adapted at times to engage the racks, to raise and lower the yoke, the ends of the shafts normally extending into the hoods, to sustain the yoke, and means to control the engagement of the racks and pinions

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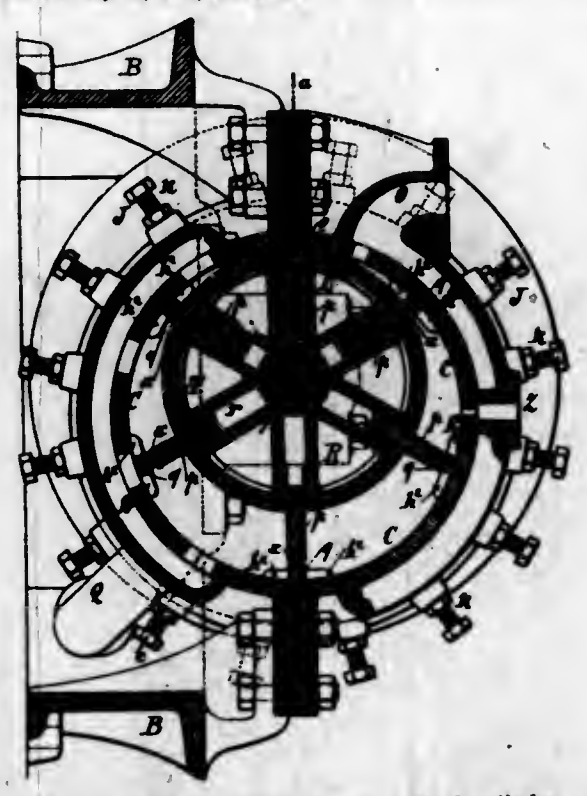
608,400. WASHING-MACHINE. ALONZO A. CASLER, Binghamton, N. Y. Filed Oct. 28, 1897. Serial No. 656,614. (No model.)



Claim.—1. In a washing-machine, the combination with a support, a tub centrally pivoted thereon, and a rubber within said tub, of an upright upon said support exterior to said tub, an arm projecting over the tub from said upright, a sleeve upon said arm, parallel uprights upon said rubber, provided with ways for part of their length, with which said sleeve engages, whereby when said rubber is raised and said sleeve disengaged from said ways, said rubber can be tilted and moved laterally and outwardly upon said arm to the side of the tub.

2. In a washing-machine, the combination with a tub, and a rubber within it, of parallel uprights secured to said rubber, ways upon said uprights for part of their length, a sleeve grooved to engage with said ways, and means to support said sleeve over the center of said tub and rubber whereby said ways can be disengaged from said sleeve and said rubber tilted.

608,401. ROTARY ENGINE. JAMES T. F. CONTI, Paris, France. Filed Dec. 16, 1897. Serial No. 662,155. (No model.) Patented in France May 19, 1897, No. 267,061.



Claim.—1. A rotary engine having a fixed cylinder, a motor-shaft eccentric to the cylinder, two cylinder-heads fixed on the shaft and provided with radial grooves, open at their outer ends to the atmosphere, a slotted drum on the motor-shaft and connecting said cylinder-heads, radial pistons in the slots in said drum with their lateral edges engaging the radial grooves in the heads, and stuffing-boxes on the outer corners of each piston and fitting in the radial grooves in the cylinder-heads, substantially as set forth.

2. A rotary engine having a fixed cylinder, a motor-shaft eccentric to the cylinder, two cylinder-heads fixed on the shaft and provided with radial grooves, open at their outer ends to the atmosphere, a slotted drum on the motor-shaft and connecting said cylinder-heads, radial pistons in the slots in said drum with their lateral edges engaging the radial grooves in the heads, and stuffing-boxes on the pistons and fitting in the grooves in the cylinder-heads, said stuffing-boxes having each a yielding packing material and means for expanding said material laterally, substantially as set forth.

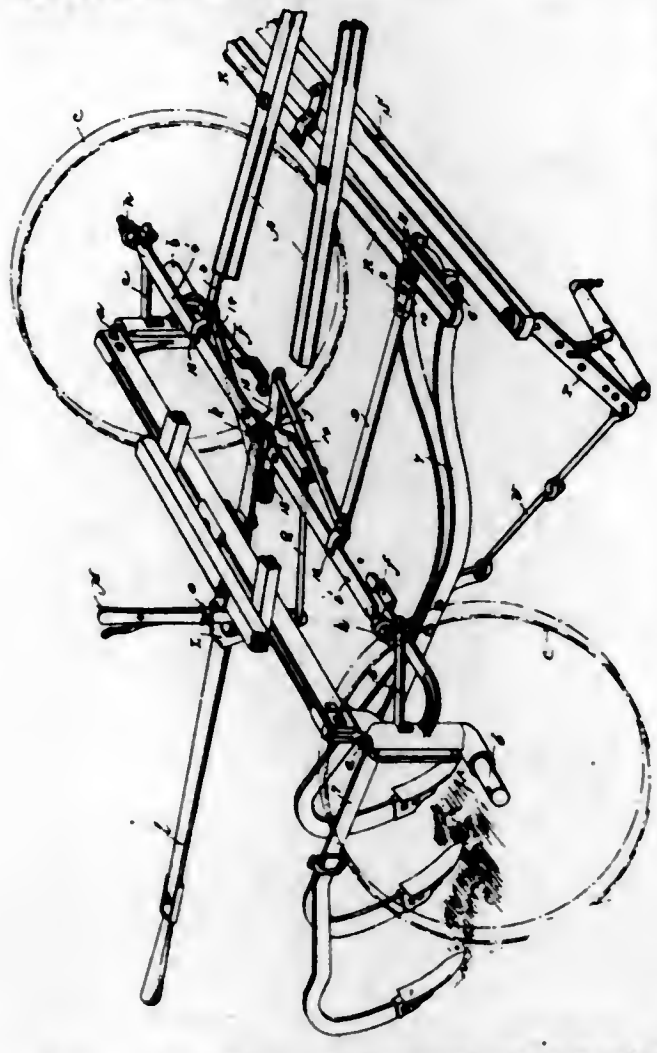
3. In a rotary engine, the combination with the fixed cylinder, the rotative motor-shaft, the radially-slotted heads fixed on the shaft, the slotted drum fixed on the shaft and connecting said heads, and the pistons occupying the slots in said drum and the grooves in the heads, of the stuffing-boxes carried by the several pistons, each of said boxes comprising a plate *m*, the screw-rods *l* fixed in the piston and extending out through said plate, the case *n*, of yielding packing material embracing the plate *m* and fitting into the radial groove in the cylinder-head, a box E fitting on said case *n* and embracing the screw-rods *l*, and means for pressing said box upon the packing in order to expand it in the slot, substantially as set forth.

4. The combination with the fixed engine-cylinder, having annular channels D in its ends, the motor-shaft, and the cylinder-heads J fixed thereon, of the devices for packing the joints between the respective ends of the cylinder and the said heads, said devices comprising each a metal ring *h*, in the channel D and bearing on the cylinder-head, a ring *i*, of yielding material behind the ring *h*, a beveled or coned metal ring *j*, behind the cushion-ring *i*, and a screw *k*, driven through the outer wall of the channel D, radially to the ring *j*, said screw having a conical tip bearing on the beveled face of the ring *j*, substantially as set forth.

5. The combination with the fixed engine-cylinder having cir-

cumferential channels D at its respective ends, the motor-shaft, the grooved cylinder-heads J, fixed on the shaft, the slotted drum connecting said cylinder-heads, the radial pistons, the packing-rings *h i* and *j*, in each channel D, and means for forcing said rings up to the cylinder-head, of the stuffing-boxes carried by the pistons and occupying the radial grooves in said cylinder-heads, said stuffing-boxes each having a casing *n* of soft packing material and a plate *o*, of metal set in that face of the said casing which is adjacent to the ring *h*, substantially as set forth.

608,402. CULTIVATOR. HARRY R. DODSON, Springfield, Ohio, assignor to the P. P. Mast & Company, same place. Filed Jan. 8, 1897. Serial No. 618,425. (No model.)



Claim.—1. In a cultivator, the combination with the main frame and its wheels swiveled thereto, arms connected to the wheel-spindles and a cross-bar interconnecting said arms, cultivator-beams pivoted to the frame, and levers or tillers on vertical pivots and connected to the beams at one end so as to turn them laterally on such pivots and to said cross-bar at the other, and manual means to laterally shift said cross-bar.

2. In a cultivator, the combination with a general frame, of wheels swiveled thereto, a cross-bar and arms connecting their spindles, cultivating beams pivoted on vertical axes, levers or tillers on such axes and connected to said beams and to said cross-bar, and a hand-lever connected to said cross-bar to deflect the wheels, and to laterally shift the beams through said levers or tillers.

3. In a cultivator, the combination with the general frame, of wheels swiveled thereto, a cross-bar and arms connecting their spindles, cultivating-beams pivoted on vertical axes, levers or tillers on such axes and connected to said beams and to said cross-bar, and foot-bars connected to said wheel-spindles, to deflect the wheels, and to laterally shift the cultivating-beams through said levers or tillers, arms and cross-bar and intermediate connections.

4. In a cultivator, the combination with the main frame and its wheels swiveled thereto, arms connected to the spindles and a cross-bar interconnecting the arms, a lever connected to the cross-bar, tillers on vertical pivots and connected to said lever and cultivating-beams pivoted to the frame on such pivots and connected with said tillers, and manual means to shift said cross-bar and its attached lever laterally.

5. In a cultivator, the combination with the frame and its swiveled wheels, arms connected to the spindles, a cross-bar interconnecting said arms, a lever pivoted to the cross-bar, links connected to said lever, vertically-pivoted tillers connected to said links, vertically-pivoted cultivating-beams connected to said tillers, and a hand-lever pivoted to the frame and to the cross-bar.

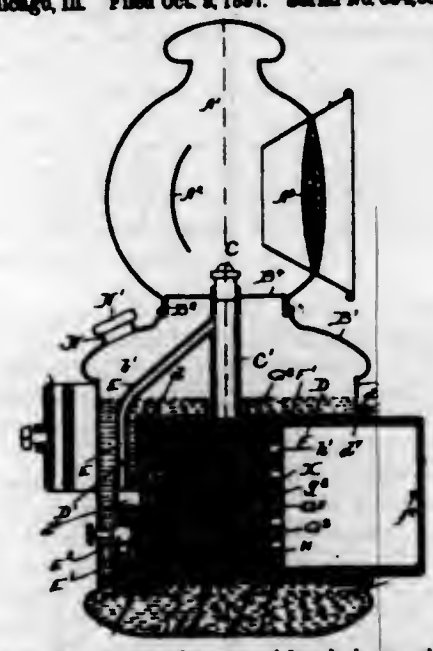
6. In a cultivator, the combination with the frame and its wheels swiveled thereto, arms connected to the spindles, a cross-bar interconnecting said arms, a lever pivoted to the cross-bar, links pivoted to the lever, tillers vertically pivoted to the links and embracing the cross-bar, cultivating-beams connected to brackets vertically pivoted to the frame and connected to said tillers, and a hand-lever pivoted to the frame and connected to the cross-bar.

7. In a cultivator, the combination with the frame, of cultivating-beams vertically pivoted thereto and tillers connected to the beams and adapted to vibrate laterally, and means connected to said tillers to vibrate them.

8. In a cultivator, the combination with the frame and castings secured thereto, of a bracket vertically pivoted to each casting, and a cultivating-beam and a tiller connected to each bracket, and pivoting on such pivot a cross-bar, a hand-lever and another lever pivoted thereto, and links connecting said other lever with said tillers.

9. In a cultivator, the combination with the frame, its wheels swiveled thereto, arms connected to the spindles, a cross-bar interconnecting the arms, a T-lever pivoted to the cross-bar, a locking-lever connected to one arm of the T-lever, and means to lock said locking-lever, tillers connected at one end to the T-lever and at the other to the cultivating-beams, and a vertical pivot connecting each beam with the frame and tiller, and means to shift the cross-bar laterally when the T-lever is disengaged from the locking-lever.

608,403. ACETYLENE BICYCLE-LAMP. FREDERICK W. HEDELAND, Chicago, Ill. Filed Oct. 9, 1897. Serial No. 654,651. (No model.)



Claim.—1. In an acetylene-gas bicycle-lamp, the combination with a lamp-body or vessel having a small closed equalizing-chamber at its lower end and a water-chamber above said equalizing-chamber, and a connecting tube or passage between said chambers, of a horizontal cartridge-holder open at both ends provided with a cartridge, a gas-holder shell in said water-chamber and surrounding said cartridge-holder, and a water feed or supply pipe or tube leading from said equalizing-chamber and communicating with the cartridge at one end thereof through an opening in the head or end of said gas-holder or shell, substantially as specified.

2. In an acetylene-gas bicycle-lamp, the combination with a lamp-body or vessel having a small closed equalizing-chamber at its lower end and a water-chamber above said equalizing-chamber, and a connecting tube or passage between said chambers, of a horizontal cartridge-holder open at both ends provided with a cartridge, a gas-holder shell in said water-chamber and surrounding said cartridge-holder, a water feed or supply pipe or tube leading from said equalizing-chamber and communicating with the cartridge at one end thereof through an opening in the head or end of said gas-holder or shell, and an equalizing pipe or tube communicating at one end with the gas-supply and at the other end with the water feed or supply pipe, substantially as specified.

3. In an acetylene-lamp, the combination with the burner and gas-burner tube, of a horizontal cylindrical gas-holder or shell having a removable cap, a horizontal cartridge holder in said shell, a water-feed tube or passage at one end of said shell, a lamp-body or vessel having a water-chamber, and an equalizing-chamber below communicating with the water-chamber and with said water-feed tube or passage, and an equalizing-pipe communicating with the gas-supply and with said water-feed passage at or near its entrance to the cartridge, substantially as specified.

4. In an acetylene-lamp, the combination with the lamp-body or vessel having a water-chamber and an equalizing-chamber below, a small water-passage connecting said equalizing-chamber and water-chamber, a generator-chamber located above the equalizing-chamber and having a carbid-holder, and a small water-feed tube or pipe leading upwardly from said equalizing-chamber and communicating with said generator-chamber above its bottom, substantially as specified.

5. In an acetylene-lamp, the combination with a gas-holder shell, of a cartridge-holder shell screw-threaded thereto, a cartridge having a telescopic section, and a follower-disk, substantially as specified.

6. In an acetylene-lamp, the combination with the lamp body or vessel, of a gas holder shell projecting horizontally into the lamp-body and having an open outer end, a removable screw-threaded cap closing the outer end of said shell, a cartridge-holder shell fitting inside said gas-holder shell, and a cartridge having a telescopic section, and a follower-disk provided with a spring friction-ring fitting inside said cartridge-holder shell, substantially as specified.

7. The combination with the burner and generator of an acetylene-lamp, of a horizontal passage opening into the generator and serving as a means of admitting water to the carbid, and a gas-passage admitting gas to said water-feed passage at its junction with the generator, whereby the gas is enabled when its pressure becomes preponderating to force all the water away from the carbid, substantially as specified.

8. In an acetylene-lamp, a generating-chamber having an opening above its bottom whereby water may be fed to the side of the carbid, an equalizing-chamber communicating with the water-supply of the lamp and located in a plane lower than the plane of said water-opening in the generating-chamber, an upward passage for the water connecting the equalizing-chamber to said water-opening, and a passage or duct conducting the gas to said connecting-passage in immediate proximity to said opening into the generating-chamber, whereby all the water in said connecting-passage is quickly forced back from the carbid when the pressure becomes excessive, substantially as specified.

9. In an acetylene-lamp, the combination with the generating-chamber containing the carbid, of an equalizing-chamber connected to a source of water-supply, an upward water-feed passage from the equalizing-chamber to the generating-chamber, and a second passage connected to the gas-holding parts of the lamp and communicating with said water-passage at its junction with the generating-chamber, whereby the gas is enabled to quickly force the water away from the carbid, substantially as specified.

10. In an acetylene-gas-generating lamp, the combination with the carbid-holding shell or chamber, having an opening in its end for the admission of water to the carbid, and the equalizing-chamber below the generating-chamber, of the tube E E' open to the gas at its upper end and to the water in the equalizing-chamber at its lower end, and having an opening in its side wall whereby it communicates with the carbid-holding shell or chamber, substantially as specified.

11. In an acetylene-gas-generating lamp, the combination with the carbid-holding shell or chamber having an opening in its end for the admission of water to the carbid, and the equalizing-chamber below the generating-chamber, of the tube E E' open to the gas at its upper end and to the water in the equalizing-chamber at its lower end, and having an opening in its side wall whereby it communicates with the carbid-holding shell or chamber, said tube being provided with a valve located between said side opening and the equalizing-chamber, substantially as specified.

12. The combination in a generating gas-lamp with the gas-feed passage leading to the burner, the carbid-holding chamber or shell, and the equalizing-chamber, the latter being in communication with a water-reservoir, of a single tube E E' establishing communication between said passage and said chambers, substantially as specified.

13. In an acetylene-lamp, the combination with the generator and the burner, of a short horizontal passage or chamber opening into the generator through the side wall of the latter, said passage receiving water from below and also receiving gas under pressure above the water, whereby the gas is enabled to quickly force the water back from the carbid without being itself imprisoned between the water-supply and the carbid, substantially as specified.

14. In an acetylene-lamp, the combination with the generator and the burner, of a short horizontal passage or chamber opening into the generator through the side wall of the latter, said passage receiving water through an opening in its bottom, and also receiving gas under pressure through an opening in its top, substantially as specified.

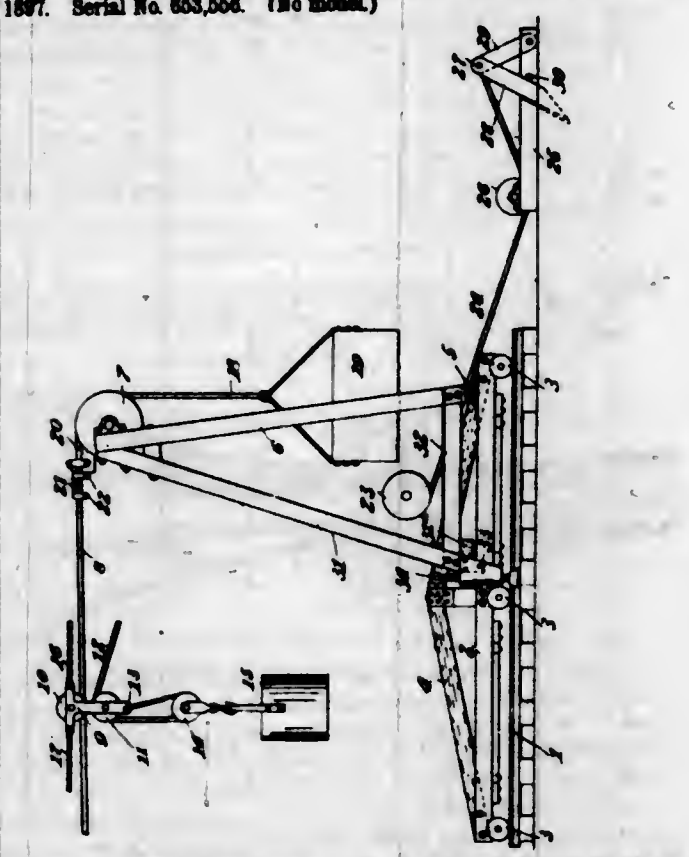
608,404. CHURN. NORMAN ISAGHSON, Marion, Idaho. Filed June 25, 1896. Serial No. 596,914. (No model.)

Claim.—In a churn, a receptacle, a cover and a tube or guard extending through said cover having a reduced lower end and an enlarged upper end and a dasher-rod passing through said guard, substantially as described.

608,404.



608,405. HOISTING AND CONVEYING APPARATUS FOR EXCAVATING, &c. PETER H. JOYCE, Cincinnati, Ohio. Filed Sept. 30, 1897. Serial No. 653,556. (No model.)



Claim.—1. The combination of a cable or track way, a platform at one end thereof and capable of movement in a direction lengthwise of the cable or track way, a rocking support carried on said platform and adapted to support the end of the cable or track way, and a bracing device to hold said rocking support in position, said bracing device having at its end means to engage the ground adjacent to said platform, substantially as set forth.

2. The combination of a cable or track way, a platform at one end thereof and capable of movement in a direction lengthwise of the cable or track way, a rocking support on said platform to support the end of the cable or track way, and a bracing device to hold said rocking support in position, said bracing device comprising a jack-screw adapted for engagement with the ground and a connection between said jack-screw and the support, substantially as set forth.

3. The combination of a cable or track way adapted for the passage of a load-carrying device, supports having pulleys over which the end portions of the cable or track way pass, a compensating connection between the cable or track way and each end support, and stops to limit the movement of the cable over the pulleys, substantially as set forth.

4. The combination of a cable or track way adapted for the passage of a load-carrying device, a platform at one end thereof and

capable of movement in a direction lengthwise of the cable or track way, a rocking support carried on said platform to support the end of the cable or track way, a bracing device for holding said support in position, and a compensating connection between the end of the cable and the rocking support to relieve the strains on the cable, substantially as set forth.

5. The combination of a cable or track way, supports for the ends thereof, movable carriages whereon the supports are mounted to rock, weights connected to the ends of the cable to hold the same under tension, and bracing devices for said supports, said bracing devices being adapted for frictional engagement with the ground to hold said supports in position, substantially as set forth.

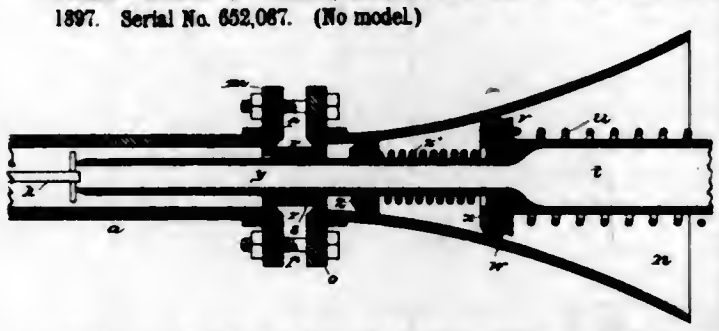
6. The combination of a cable or track way adapted for the passage of a load-carrying device, a carriage at one end of the cable or track way and adapted for movement in the direction of the length thereof, a support for the end of the cable mounted to tilt upon the carriage, a connection between the support and the end of the cable, said support being adapted to rest upon the carriage when the same is being moved and means, having engagement with the ground adjacent to the carriage, for tilting the support into operative position when the carriage is in place for use, substantially as set forth.

7. The combination of a cable or track way adapted for the passage of a load-carrying device, a carriage at one end of the cable or track way and adapted for movement in the direction of the length thereof, a support for the end of the cable or track way mounted on the carriage and an anchoring device comprising a frame having a plunger adapted to be driven into the ground, substantially as set forth.

8. The combination of a cable or track way adapted for the passage of a load-carrying device, a carriage at one end of the cable or track way and adapted for movement in the direction of the length thereof, a support for the end of the cable or track way mounted on the carriage, an anchoring device comprising a frame having a sheave and a movable plunger adapted to be driven into the earth, and a cable or rope connected at one end to the carriage and at its other end to the frame of the anchoring device, said rope or cable being engaged with the sheave and plunger of the anchoring device, and being adapted, when placed under tension, to force the plunger into the earth, substantially as set forth.

608,406. AUTOMATIC FLEXIBLE COUPLING FOR TRAIN-PIPES.

SAMUEL B. KITCHIN, Scotland Neck, N. C. Filed Sept. 18, 1897. Serial No. 652,087. (No model.)



Claim.—1. In a train-pipe coupling, the combination of the pipe *a*, the swivel-collar *b* through which said pipe passes, and having the pivots *c*, whereby the pipe *a* is adapted to play longitudinally and to swing freely at its ends, and the spring *e* connected to the inner end of the pipe, for the purpose set forth, substantially as described.

2. The combination, in a train-pipe coupling, of the pipe *a*, the swivel-collar *b* through which said pipe passes, the latter having the flange *d*; and the spring *s'* on said pipe and bearing against said flange *d*, substantially as described.

3. In a train-pipe coupling, the combination with the pipe *a* having the bell-shaped member *n*, the throat-packing *r*, and the valve *i*; of the pipe *t*, having the head *v*, the nozzle *y*, forming an extension of the pipe, and adapted to pass through the throat-packing and operate the valve *i*, the piston-packing *z* on said nozzle, and the spring *z'* connected to said piston-packing, substantially as described.

4. In a train-pipe coupling, the combination with the pipe having the bell-shaped member, of the pipe *t* having the head *v*, and the extending nozzle *y*, the piston-packing *z* movable on said nozzle, and the spring *z'* bearing against said piston-packing, for the purpose set forth, substantially as described.

5. In a train-pipe-coupling system, the pipes *a* and *t* forming the opposing members of the coupling, the flexible pipe *b'* connecting said pair of pipes, the air, gas, steam or fluid pipe B of the air-brake, heating, or lighting system, the flexible pipe *f* connecting said pipes *a*, B, the pipe D connected to pipe B and the cocks E and F, all combined and arranged substantially as and for the purposes set forth.

6. In automatic train-pipe-coupling systems, the pipes *a* and *t* arranged in pairs, and forming the opposing members of the couplings, the pivot-supports *b* for said pipes, and in which the latter are free to play longitudinally and to swing at their ends, and the springs *e* at the inner ends of said pipes, for the purpose set forth, substantially as described:

7. In a train-pipe coupling, the combination of the pipe *a* having the flange-head *m*, the bell-shaped member having the flange-head *o*, said flange-heads having the annular opening formed between them, the packing-ring in said opening, and the bolts *p*, for the purpose set forth, substantially as described.

8. In an automatic train-pipe-coupling system, the pipes *a* and *t* forming the opposing members of the coupling, arranged in pairs, the flexible pipe connecting each pair of said pipes *a* and *t*, and the flexible pipe *f* connecting the pipe *a* with the air, gas, steam or fluid pipe B of the air-brake, heating or lighting system, substantially as described.

608,407. STOPPER FOR BOTTLES OR OTHER RECEPTACLES.

GUSTAVE KOCH, New York, N. Y., assignor to Harry C. Blye, same place. Filed Jan. 10, 1898. Serial No. 666,161. (No model.)



Claim.—1. The stopper consisting of the hollow ductile plug closed at its lower end and being intermediate its ends of greater normal or initial cross-section than the neck of the bottle or receptacle to receive it, whereby said stopper requires the application of force for its insertion into said neck, and has its side walls thereby brought into sealing contact with the said neck and made to conform to the usual plain though at times somewhat irregular surfaces of the same, the lower end of said stopper being dish-shaped and so proportioned to said neck that on being flattened it will move the lower portions of the sides of the stopper into intimate binding and sealing contact with said neck and operate as a fixed wedge to lock the stopper in position; substantially as set forth.

2. The stopper consisting of the hollow ductile plug closed and dish-shaped at its lower end and having the upwardly-diverging sides forming extended virtically continuous sealing-surfaces for direct contact with the walls of the neck of the bottle or receptacle to receive the stopper, the said stopper being above its lower end, of greater normal or initial cross-section than said neck, whereby said stopper requires the application of force for its insertion into said neck and has its side walls thereby contracted and brought into sealing contact with the said neck and made to conform to the usual plain though at times somewhat irregular surfaces of the same, and the said dish-shaped lower end of said stopper being so proportioned to said neck that on being flattened it will move the lower portions of the sides of the stopper into intimate binding and sealing contact with said neck and operate as a fixed wedge to lock the stopper in position; substantially as set forth.

3. In combination with a bottle or receptacle the inner walls of whose neck present the usual plain surfaces, the hollow ductile plug having the sides and a dished end and so proportioned with respect to said neck as to, upon direct insertion, tightly fit said walls and be locked into fixed sealing contact therewith simply by flattening said dished end; substantially as set forth.

4. In combination with a bottle or receptacle the inner walls of whose neck present the usual plain surfaces, the hollow ductile plug having the upwardly-diverging sides and closed lower end and so proportioned with respect to said neck as to, upon direct insertion, have said sides contracted and conformed to the surfaces of said walls and brought into fixed sealing contact throughout their length therewith; substantially as set forth.

5. As a new article of manufacture, the hollow ductile stopper having the closed lower end and the sides which diverge upward and outward to the extreme upper external edge of the metal, whereby upon the driving of the stopper into the mouth to be sealed by direct force applied to said external edge, the latter may by the one operation of applying the stopper be curved annularly to lap upon the edge of said mouth; substantially as shown and set forth.

608,408. STOPPER FOR BOTTLES OR OTHER RECEPTACLES.

GUSTAVE KOCH, New York, N. Y., assignor to Harry C. Blye, same place. Filed Mar. 9, 1898. Serial No. 673,196. (No model.)

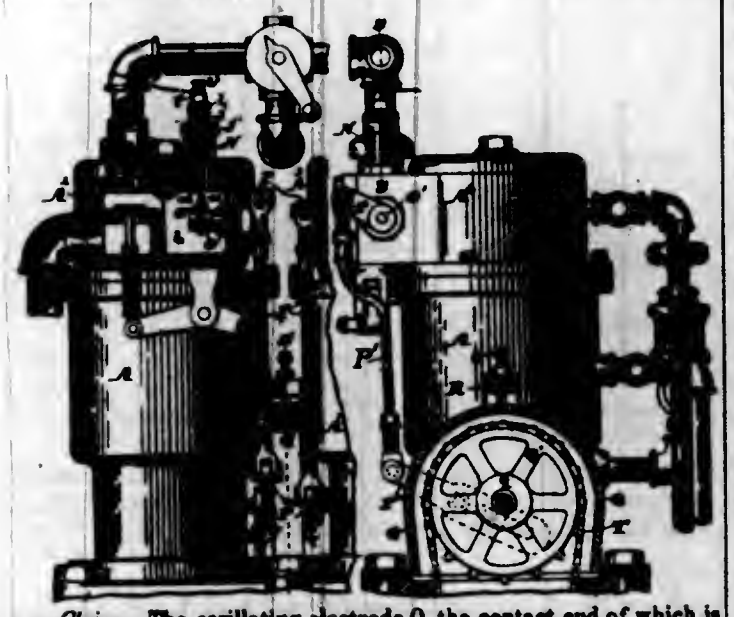


Claim.—1. The stopper comprising the hollow ductile plug having the concavo-convex upper end portion and adapted to the diameter

of the mouth or neck of the receptacle so that force is required in applying the stopper within said neck, and said concavo-convex upper end portion being capable of being flattened to move the adjacent portions of the sides of the stopper outward laterally and thereby more securely bind and lock the sides of the stopper against the walls of said mouth or neck; substantially as set forth.

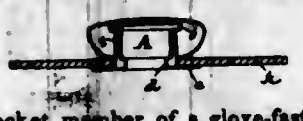
2. The stopper for bottles or other receptacles, consisting of the hollow metallic plug open at its lower end and closed at its upper end by a concavo-convex-shaped top, the diameter of said stopper being normally greater than the mouth or neck to receive it, and the concavo-convex-shaped top being adapted to be flattened to thereby more securely bind and lock the sides of the stopper against the walls of said mouth or neck; substantially as set forth.

608,409. IGNITING MECHANISM FOR EXPLOSIVE-ENGINES. JOSEPH LEMOTTE, Quincy, Mass., assignor of one-half to Mellen H. Bray, Boston, Mass. Original application filed June 28, 1897, Serial No. 642,569. Divided and this application filed Nov. 17, 1897. Serial No. 658,800. (No model.)



Claim.—The oscillating electrode O, the contact end of which is composed of the portion n integral with the main body of shank, the metal plate n', the insulating material n^2, the metal washer n^3 and the screw n^4 insulated from the plate n', in combination with a normally stationary but yieldable electrode arranged to be intermittently contacted by said electrode O; and means for imparting an oscillating motion to said electrode O.

608,410. TWO-PART SEPARABLE BUTTON. ORRIN L. MASON, Baltimore, Md., assignor to the American Fastener Company of Baltimore City. Filed Oct. 30, 1897. Serial No. 656,963. (No model.)

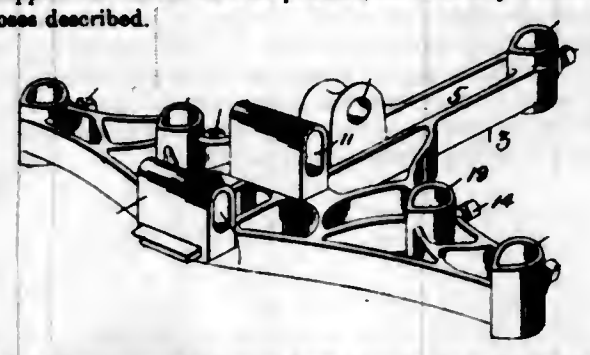


Claim.—1. A socket member of a glove-fastener comprising a cap having a slightly-concaved interior surface, an outer circular wall, and an internal sleeve projecting toward said concaved interior surface; and a socket-eyelet projecting into said internal sleeve and having a flange, *c*, a contracted entrance, *d*, and a flattened closed end which is bulged or expanded, as at, *j*, over the edge of the sleeve, as set forth.

2. A socket member of a glove-fastener comprising a cap having a slightly-concaved interior surface, *e*, and continuing down and forming an outer circular wall, *g*, then continuing and forming an inturned annular bearing surface, *h*, and ending in an internal sleeve, *i*, projecting toward the said concaved interior surface, but leaving a space between the edge of said sleeve and said interior surface, these parts being free of seams or joints, in combination with a socket-eyelet projecting into said internal sleeve and having a flange, *c*, a contracted entrance, *d*, and a flattened closed end which is bulged or expanded, as at, *j*, over the edge of the sleeve, as set forth.

608,411. CULTIVATOR. DAVID M. MOTHERWELL, Chicago, Ill., assignor to the Whitman & Barnes Manufacturing Company, Akron, Ohio. Filed Sept. 22, 1897. Serial No. 652,605. (No model.)

Claim.—1. In a cultivator the two plow-sections having shares turning in opposite directions adapted to brace each other laterally and form a double plow, the shanks adapted to support them alternately in said position or in position for covering with their shares facing inward, and the main frame having sockets adapted to clamp and support the shanks in each position, substantially as and for the purposes described.



2. In a cultivator the main frame having lateral wings containing inner and outer sockets for the reception of the stems of tool-shanks, a rearward projection for the reception of the handle-supporting strut, having also a socket for the reception of the stem of a tool-shank, a central lug for the handle attachment, and slotted lugs for the support and adjustment of the wheel-fork, in combination with the handles, wheel-fork and shanks of working tools adapted to fit said sockets, substantially as and for the purposes described.

3. In a garden-cultivator a main tool-frame having two slotted lugs in which the wheel-forks are adapted to be fastened and adjusted, another lug to which the tool-handles are adapted to be pivoted, a slot adapted to receive a strut for the tool-handles and to allow said strut or base to be moved back or forward and fastened in different positions, a series of sockets substantially perpendicular to the plane of the tool-frame adapted to receive the stem of working tools, and means for fastening said tool-stems in said sockets, substantially as described.

4. In a garden-cultivator the combination of a tool-frame and handles pivoted thereto, a slot in said tool-frame adapted to receive a brace or strut for said handles and to allow said strut to be moved back or forward, means for fastening said strut in said slot, a slot in the upper end of said strut and a bolt passing through said slot and through the handles adapted to move up and down in said slot and fasten said handle-frame to said strut whereby the angle of said handle-frame to said tool-frame is adjusted, substantially as described.

5 In a garden-cultivator a tool-frame having a series of sockets having an angle and a set-screw opposite said angle, said sockets being substantially perpendicular to the frame equal distances apart, in combination with a right and left handled plow having stems adapted to fit in two of said sockets forming a double-faced plow and also adapted to be removed and fit in two other sockets and when so arranged cover the furrow made by said double-faced plow, substantially as described.

6. In a garden-cultivator the combination of a tool-frame having slotted lugs for the support and adjustment of the wheel-fork, another lug to which handles are pivoted, means for adjusting the angle of said tool-frame to said handle-frame, a wheel attached to said tool-frame, means for adjusting said wheel relative to said tool-frame, a series of sockets in said tool-frame adapted to receive the stems of various garden-tools and means for securing said tool-stems in said sockets, substantially as described.

608,412. JOINT FOR ELECTRIC CONDUCTORS. HERBERT S. PATTEN, Montclair, and WILLIAM MAVER, Jr., Jersey City, N. J., assignors to themselves, and Charles L. Heins, New York, N. Y. Filed Dec. 31, 1897. Serial No. 664,627. (No model.)

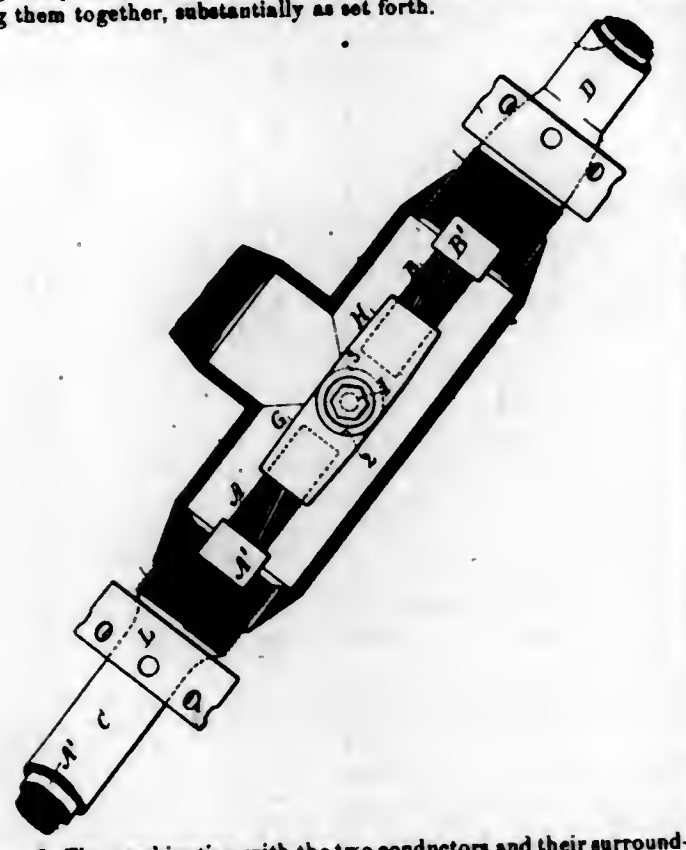
Claim.—1. The combination with the tubes and the insulated conductors within the tubes and connections for the conductors, of a two-part case adapted to set together around the joint and having tapering or conical ends and screw-rings around the ends of the inclosing tubes and receiving and clamping together the parts of the divided case, substantially as set forth.

2. The combination with the conductors and their couplings or connections, of tubes surrounding the conductors and having screw-threaded ends, a two-part case having tapering ends and screw-rings upon the ends of the tubes passing over the conical ends of the divided case and holding the same in position, substantially as set forth.

3. The combination with the conductors and their couplings or connections, of tubes surrounding the conductors and having screw-threaded ends, a two-part case having tapering ends and screw-threaded to fit the ends of the tubes, and screw-rings upon the ends of the tubes passing over the conical ends of the divided case and holding the same in position, substantially as set forth.

4. The combination with the conductors and their couplings or connections, of tubes surrounding the conductors and having screw-threaded ends, a two-part case having tapering ends and screw-threaded to fit the ends of the tubes and interlocking grooved edges and screw-rings upon the ends of the tubes passing over the conical ends of the divided case and holding the same in position, substantially as set forth.

5. The combination with the conductors and their insulating-coverings, of couplings to which the ends of the conductors are soldered or otherwise permanently connected, such couplings having lapping ends with closely-fitting surfaces, a bar between the two parts of the couplings and a branch conductor therewith connected, and a clamping-bolt passing through such couplings and through the bar and holding them together, substantially as set forth.



6. The combination with the two conductors and their surrounding tubes and insulating material, of a branch conductor and a coupling connecting the conductors, a case divided in two parts and adapted to setting between the ends of the respective inclosing tubes and screw-rings upon the respective tubes acting to confine the parts of the divided case and to connect them with the respective tubes, substantially as set forth.

7. The combination with the conductors and their insulating-coverings, of couplings to which the ends of the conductors are soldered or otherwise permanently connected, such couplings having lapping ends with closely-fitting surfaces, and a clamping device for holding them together, substantially as set forth.

608,413. ILLUSION APPARATUS. ATTILIO PORTERLA, New York, N. Y. Filed June 11, 1897. Serial No. 640,395. (No model.)

Claim.—1. In an illusion apparatus, moving scenery consisting of a plurality of movable sections or strips projecting one above the other and extending in the same direction, said strips converging toward the center of the apparatus, substantially as described.

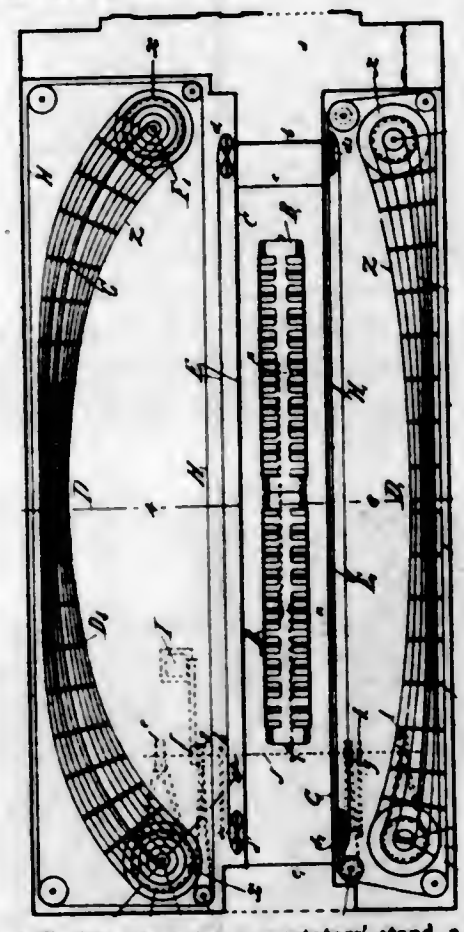
2. An illusion apparatus, comprising a suitable stand for the spectators, moving scenery consisting of a plurality of sections or strips projecting one above the other and arranged at different distances from said stand, said strips converging at their central portions, and means for moving said strips at different rates of speed, substantially as described.

3. An illusion apparatus, comprising scenery sections or strips whose adjacent runs are adapted to travel in the same direction, and supports for keeping the central portions of adjacent runs of different strips closer together than the outer portions of the same strips, substantially as described.

4. In an illusion apparatus, moving scenery consisting of a plurality of sections or strips, supporting pulleys or disks of different diameters over which pass the said strips, intermediate supports for the strips said supports having their supporting-points for adjacent runs of different strips closer together than the peripheries of the supporting-disks engaging such strips, causing the adjacent runs of different strips to diverge from the intermediate supports toward said disks, and means for imparting a traveling motion to the strips, substantially as described.

5. The combination of the scenery sections or strips, concentric pulleys or disks of different diameters over which pass said strips, intermediate supports having individual supporting devices for the central portions of the said strips, and means for moving the strips, substantially as described.

6. The combination of the scenery sections or strips, concentric pulleys or disks of different diameters over which pass said strips, intermediate supports having a double set of individual supporting devices, one set for each run of the said strips, and means for moving the strips, substantially as described.



7. In an illusion apparatus, a spectators' stand, a shaft located adjacent thereto and a series of springs arranged to rotate with said shaft and to engage the stand, substantially as described.

608,414. FLOOR-FRAME FOR RAILWAY-CARS. CHARLES C. WENTWORTH, Roanoke, Va., assignor of one-half to J. R. M. Hancock, same place. Filed Aug. 25, 1897. Serial No. 649,518. (No model.)



Claim.—1. In floor-frames for cars, the combination with the end and side sills, of a longitudinally-extending central box-girder, comprising side channel-beams having their webs facing outwardly, and top and bottom plates, and cross tie-braces each consisting of a web-plate and an upper and lower pair of angle-beams having their ends connected with the webs of the side sills and channel-beams of the central box-girder, substantially as described.

2. In floor-frames for cars, the combination with the end and side sills, of a longitudinally-extending central box-girder 2 comprising side channel-beams 3 having their webs facing outwardly and top and bottom plates 4 5, cross tie-braces 13 connecting the central girder and side sills, each consisting of a web-plate and upper and lower pairs of connected angle-beams 14, the lower pair having their outer ends resting upon the lower web of the side sill, and tie or attaching plates 16 17 connecting the outer ends of the upper pair and inner ends of both pairs of cross tie-beams to the side sills and central girder, substantially as described.

3. In floor-frames for cars, the combination with the end and side sills, of a longitudinally-extending central box-girder, comprising side channel-beams having their webs facing outwardly, and top and bottom plates, cross tie-braces each consisting of a web-plate and an upper and lower pair of angle-beams having their ends connected with the webs of the side sills and channel-beams of the central box-girder, and distance-plates between the channel-beams of the central girder and the junction of the said cross tie-braces, substantially as described.

4. In floor-frames for cars, the combination with the end and side sills, of a longitudinally-extending central box-girder 2 comprising side channel-beams 3 having their webs facing outwardly and top and bottom plates 4 5, cross tie-braces 13 connecting the central girder and side sills, each consisting of a web-plate and upper and lower pairs of connected angle-beams 14, the lower pair having their outer ends resting upon the lower web of the side sill, tie or attaching plates 16 17 connecting the outer ends of the upper pair and inner ends of both pairs of cross tie-beams to the side sills and central girder, and the vertical angle-braces 7 20 fitted in the recess of the side sills and channel-beams of the central girder and attached thereto, substantially as described.

5. In metallic floor-frames for cars, the combination with the end sills, of a plate on the inner side of each end sill, a longitudinally-extending central box-girder, tie or attaching plates connecting the end-sill plates and ends of the girder, buffer-blocks connected to the end sills directly in line with the side beams of the girder, draw-bar guides inclosed in each end of the girder and bolted to the said side beams thereof, and draw-bars projecting through the ends of the girder on a line between said buffer-blocks and having followers movable in said guides, substantially as described.

6. In metallic floor-frames for cars, the combination with the end and side sills, of plates secured to the inner sides of said end sills, a longitudinally-extending central girder, end tie-plates connecting the ends of the girder to the sill-plates; cross tie-braces connecting the girder and side sills, and end tie-braces extending diagonally from the outer ends of the cross tie-braces to the ends of said end tie-plates, substantially as described.

7. In metallic floor-frames for cars, the combination with the end and side sills, of a plate on the inner side of each end sill, a longitudinally-extending central girder, end attaching or tie plates connecting the ends of the girder to the plates on the end sills, cross tie-braces, tie-plates attaching the ends of said cross tie-braces to the central girder and side sills, and end diagonal tie-braces connecting between the said end tie-plates and side-sill tie-plates of the adjoining cross tie-braces, substantially as described.

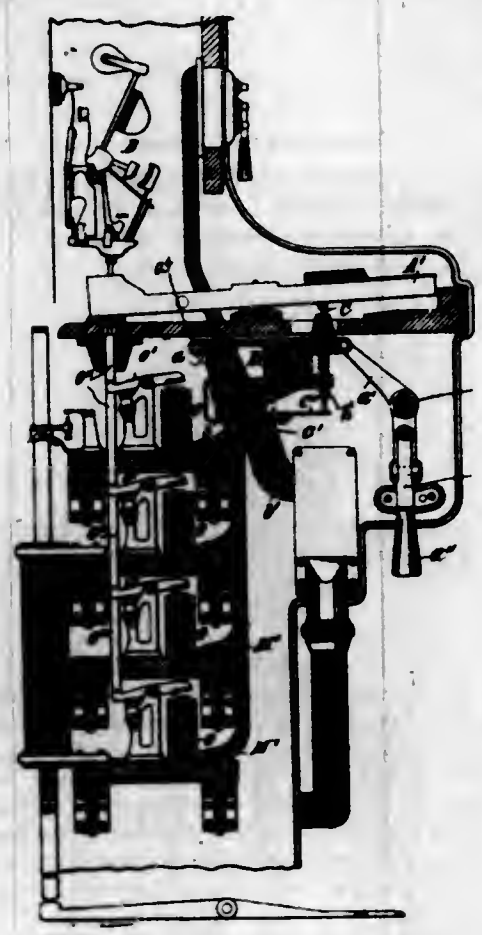
8. In floor-frames for cars, the combination with the end and side sills, of a longitudinally-extending central box-girder comprising side channel-beams and top and bottom plates, buffer-blocks connected with the end sills directly in line with said channel-beams, cross tie-braces consisting of an upper and lower series of angle-beams having their abutting webs connected and their ends attached to the webs of the side sills and central girder, and diagonal tie-braces extending from the side sills to the channel-beams of the central girder, substantially as described.

608,415. DEVICE FOR RECORDING AND REPRODUCING MUSIC. ERNEST K. ADAMS, New York, N. Y. Filed Mar. 26, 1897. Serial No. 629,239. (No model.)

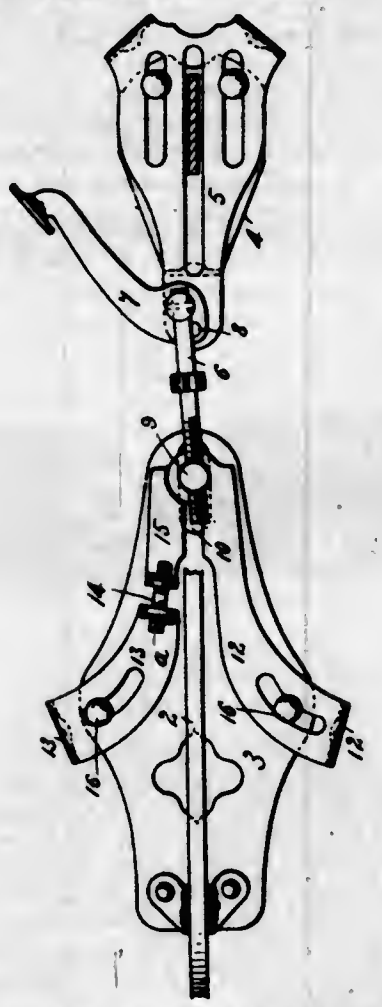
Claim.—1. In a paper-slotting mechanism, the combination with means for supporting a traveling band of paper, of a series of pivoted levers, a circular saw or cutter carried by each, means for transmitting power to and rotating the saws, and means for shifting the levers to bring the saws while rotating into the plane of the paper, whereby slots will be cut in the same by the cutters while so shifted, as set forth.

2. In a paper-slotting mechanism, the combination with means for supporting a traveling band of paper, of a series of pivoted armature-levers, a circular saw or cutter carried by each, means for transmitting power to and rotating the saws, and electromagnets for shifting the levers to bring the saws while rotating into the plane of the paper, whereby slots will be cut in the same by the cutters while so shifted, as set forth.

3. The combination with a frame, of two or more shafts supported therein about a central line, levers turning on said shafts and occupying intermediate positions to each other, a circular saw carried by each lever gearing from the shafts of the saws, electromagnets for shifting the said levers, and a guide for a traveling paper band or sheet in the center of the group of shafts, whereby any of the saws may be interposed in the plane of the paper and caused to cut slots therein, as set forth.



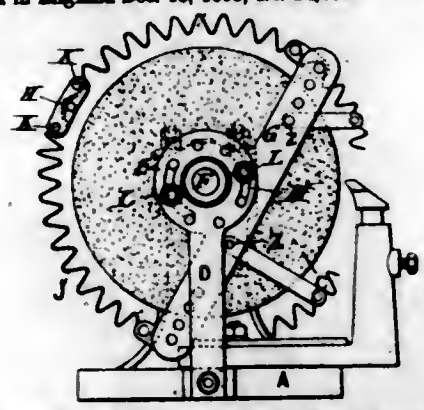
608,416. SKATE. EVERETT H. BARNEY, Springfield, Mass. Filed Dec. 17, 1897. Serial No. 662,256. (No model.)



Claim.—In a skate, the sole-plate thereof having a longitudinal slot therein near its rear end, a pivot-stud supported on said plate and projecting through said slot, an integrally-constructed sole-clamp

hung for movement on the under side of said plate having a perforated rear end through which said stud extends, a second sole-clamp comprising the sole-engaging part thereof hung for movement on the under side of said plate, a separate rear section having a perforated rear end through which said stud passes, and a screw connecting said sole-engaging part and said rear section, whereby the said sole-engaging part may be adjusted to move inwardly against a shoe-sole from predetermined and different positions beyond the outer edge of the sole-plate, and means for imparting a longitudinal movement to said stud within said slot whereby operative movements are imparted to said clamps, substantially as described.

608,417. **PROTECTIVE COVER FOR EMERY-WHEELS.** Georg Benicke, Offenbach-on-the-Main, Germany. Filed Feb. 6, 1896. Serial No. 578,206. (No model.) Patented in Germany July 6, 1895, No. 85,898, and in England Dec. 18, 1895, No. 24,284.



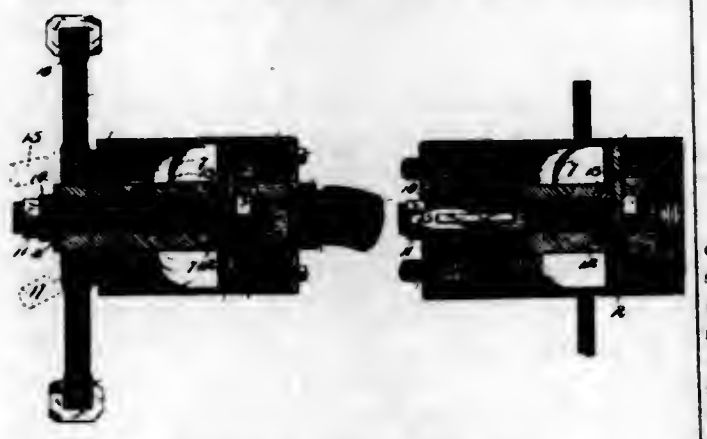
Claim.—1. A protective cover or hood for emery-wheels consisting of strips of corrugated sheet metal adjustably connected to each other, and side bars to which such strips are adjustably connected.

2. A protective cover or hood for emery-wheels, comprising strips of corrugated sheet metal, means for adjustably connecting said strips together, swinging side bars mounted on the frame of the emery-wheel, and means for adjustably connecting the corrugated strips to the said side bars; in combination substantially as and for the purpose set forth.

3. In a protective cover or hood for emery-wheels the combination with the cover proper, of swinging side bars carrying said cover and means for setting said side bars at any desired angle substantially as and for the purpose set forth.

4. A protective cover or hood for emery-wheels, comprising: strips of corrugated sheet metal J; perforated plates and pins H, K, connecting said strips end to end; side bars G mounted in supports D and provided with perforations and pins Z for connecting the strips J to the side bars G; and means for setting the side bars at any desired angle; in combination, substantially as described.

608,418. **BOILER-TUBE CLEANER.** Francis W. Bradley, Sharpsburg, Pa. Filed Jan. 8, 1898. Serial No. 666,022. (No model.)

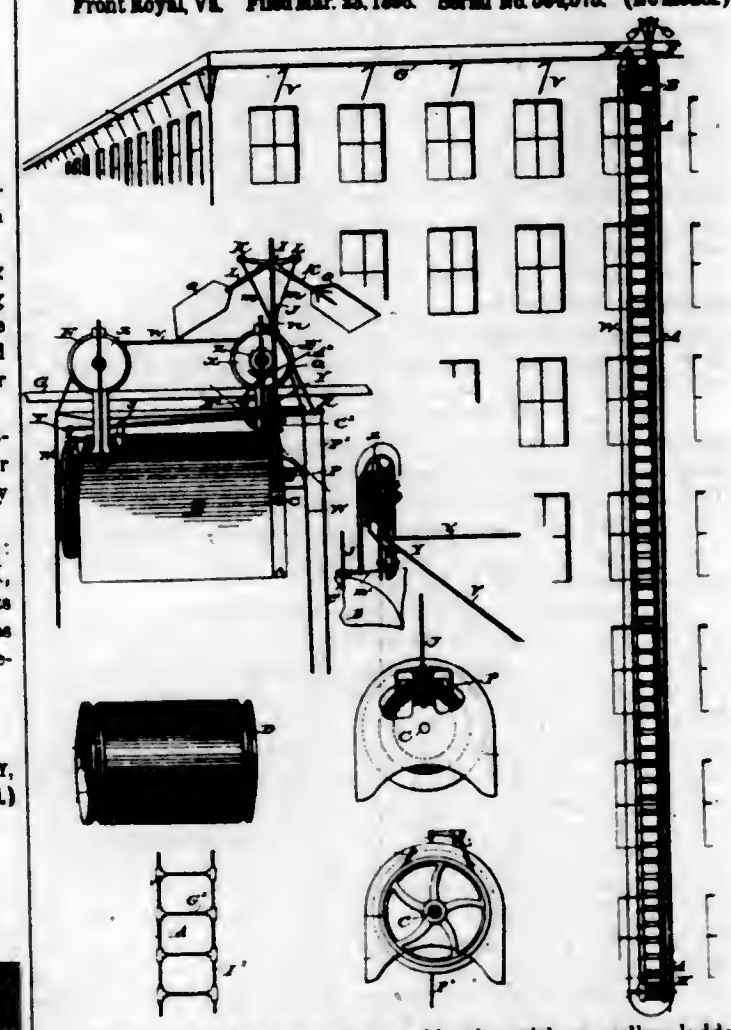


Claim.—1. A flue cleaner comprising a cylinder having a series of removable studs or supports arranged on its periphery, a plate secured at one end having inclined apertures, a cap secured to said plate forming a water-chamber, a water-pipe connection with said water-chamber, a turbine arranged in said cylinder and operated by water passing through the water-pipe connection and perforated plate, a series of pivoted arms carrying cutters which are forced into engagement with the inner face of the flue or tube by centrifugal force attained through the operation of the turbine, substantially as herein shown and described.

2. A flue-cleaner comprising a cylinder having a series of removable studs or supports mounted on its periphery, a plate secured at one end having inclined apertures, a cap secured to said plate forming a water-chamber, a water-pipe connection with said water-chamber, a shaft arranged in said cylinder, a sleeve or hub mounted upon said shaft, said sleeve or hub having a turbine formed integral therewith and operated by water passing through the water-pipe connection, a series of pivoted arms carrying cutters or knives which are forced into engagement with the inner face of the flue or tube by centrifugal force attained by the operation of the turbine, substantially as herein shown and described.

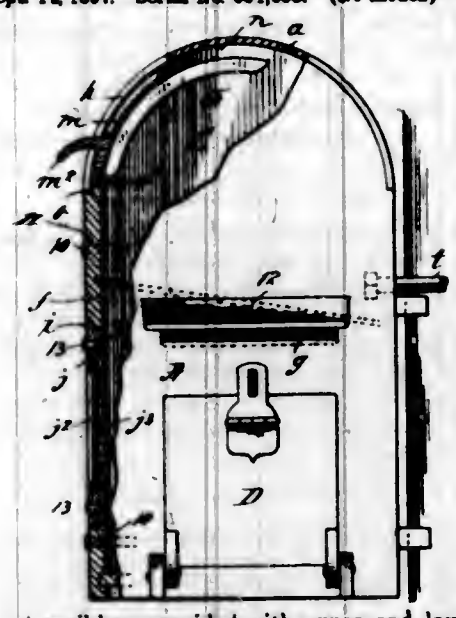
3. A flue-cleaner comprising a cylinder having a series of removable studs or supports mounted on its periphery, a plate secured at one end having inclined apertures, a cap secured to said plate forming a water-chamber, a water-pipe connection with said water-chamber, a shaft arranged in said cylinder having bearings thereon, a sleeve or hub mounted upon said shaft, the ends of said sleeve or hub abutting against the bearings of said shaft, suitable bearings between the ends of said sleeve or hub and the bearing of said shaft, a turbine formed integral with said sleeve or hub, a series of arms carrying serrated or beveled knives or cutters said arms being pivotally secured to flanges formed integral with said sleeve or hub, substantially as herein shown and described.

608,419. **FIRE-ESCAPE.** Sterling P. Buck and Charles L. Meaker, Abilene, Tex.; said Meaker assignor to William R. Buck, Front Royal, Va. Filed Mar. 23, 1896. Serial No. 584,575. (No model.)



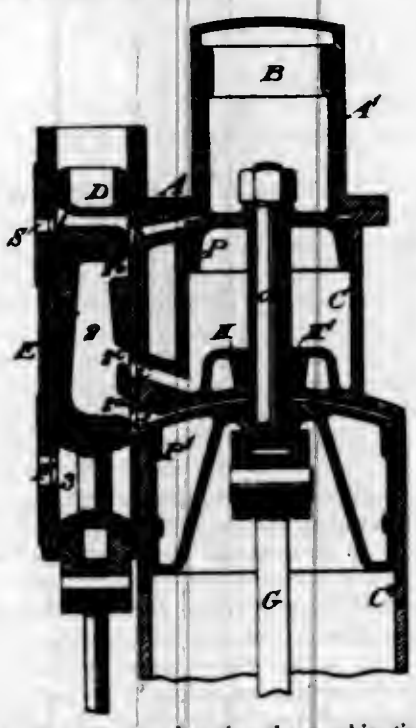
Claim.—In a fire-escape the combination with an endless ladder, of an upper cylinder supporting said ladder, a lower cylinder being supported by said ladder, a hanger supporting said upper cylinder, (said hanger also being a weather-shield) two grooved track-wheels supporting said hanger and weather-shield, a track attached to the wall of a building by connecting arms or brackets and arranged for said grooved track-wheels to travel thereon, an endless cable and two grooved pulleys combined for conveying the said track-wheels along the said track, of a large bevel-gear on one end of said top cylinder, a small bevel-gear actuated by said large bevel-gear, a governor-rod through the center of said small bevel-gear, a governor arranged at the top of said governor-rod said governor having fans set at an angle to the axis of said governor-rod, of a brake-wheel on the shaft of upper cylinder opposite to said large bevel-gear, a brake-band encircling said brake-wheel, a brake-lever (one end of which is attached to said brake-band and the other connected to the said governor), of a bell attached to one of the arms of said hanger, a clapper actuated by the escapement-wheel on said governor-rod to strike said bell, another clapper actuated by the escapement-wheel on one of the said grooved track-wheels to strike said bell, all substantially as specified for the purposes stated.

608,420. MAIL-BOX. MATTHEW F. CHEEVERS, Holyoke, Mass. Filed Sept. 14, 1897. Serial No. 651,653. (No model.)



Claim.—A mail-box provided with upper and lower compartments, the upper one having a rounded top provided with the opening *k*, in its front, and having end walls provided upon their inner sides with the ribs 15, 15, below and near the top whereby the ways *n* are produced; the arc-shaped cover *m*, having its outer end beveled so as to catch over beveled surfaces a^2 upon the front of the box for the purpose of forming a tight joint, the partition *b* placed in grooves made in the inner side of the box, the front of which is made removable, and secured in position by means of rivets, said movable front being grooved so as to receive the front edge of the partition, substantially as shown and described.

608,421. STEAM-ENGINE. THOMAS G. CLAYTON, Normanton, England, assignor to James Clayton, New York, N. Y. Filed Aug. 24, 1897. Serial No. 649,358. (No model.)

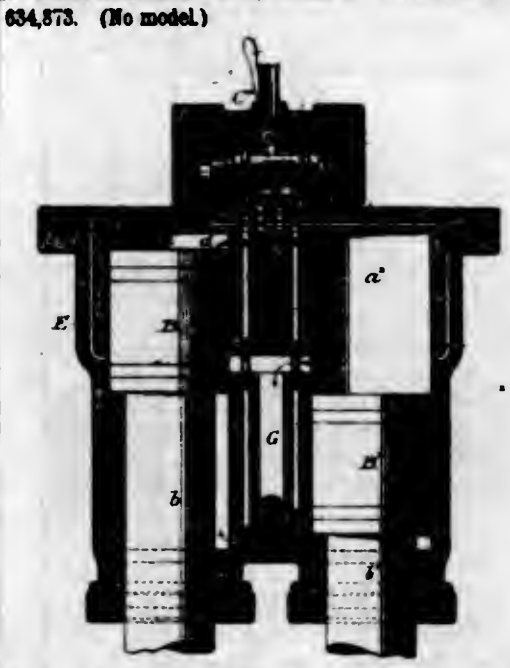


Claim.—1. In a compound engine, the combination of two cylinders of different area arranged in line with each other the smaller one having ports at each end and the larger one a port at the end adjacent to the smaller one two connected pistons working in said cylinders respectively the smaller of said pistons having its faces of unequal area, and a valve for controlling the said ports for the passage of steam first to that end of the smaller cylinder toward which the smaller area of its piston is presented thence to the opposite end of said cylinder thence to the larger cylinder and for the exhaust of the steam from the latter cylinder, whereby there is a double action in the smaller cylinder and a single action in the larger one, substantially as herein described.

2. In a compound engine, the combination with two cylinders of different area arranged in line with each other the smaller one having ports at each end and the larger one a port near the adjacent end of the smaller one and two connected pistons working in said cylinders respectively the smaller one having its faces of unequal area, of a valve having in it three passages, viz., one for the admission of steam to one end of the smaller cylinder, another for the exhaust from the larger cylinder and an intermediate three-ported passage for controlling the passage of the steam from one to the other end of the smaller cylinder and from the smaller cylinder to the larger one, substantially as herein described.

3. In a compound engine, the combination of two cylinders of different area arranged in line with each other the outer head of the smaller one having a projecting casing, two connected pistons working in said cylinders respectively and the smaller one having a trunk of smaller diameter than itself working in and guided by said casing, ports at opposite ends of the smaller cylinder and a port at the adjacent end of the larger one, and a valve for the control of the passage of steam to the outer end of the smaller cylinder thence to the end thereof next the larger cylinder thence to the larger cylinder and thence to an exhaust-outlet, substantially as herein described.

608,422. STEAM ORE-STAMP. DAVID COLE, Chicago, Ill., assignor to the Gates Iron Works, of Illinois. Filed May 3, 1897. Serial No. 634,873. (No model.)



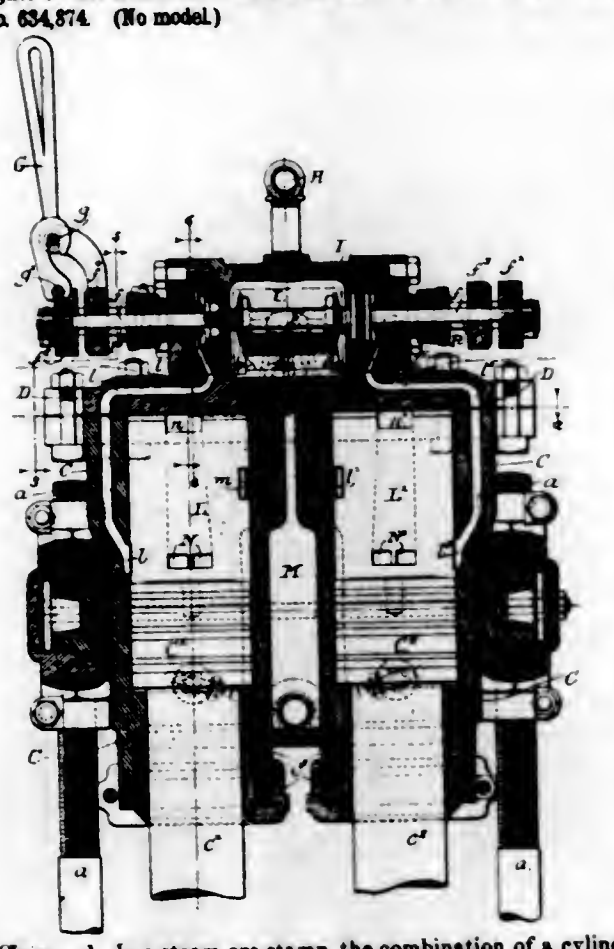
Claim.—1. In a steam ore-stamp, the combination of a cylinder provided with a reciprocating stamp-piston, the cylinder having passages leading to points above and below the stamp-piston, a controlling-valve arranged to connect and disconnect the above-named ports and passages in the cylinder so as to admit high pressure below the stamp-piston and low pressure above the same, and a port or passage in the cylinder communicating with the upper portion of the cylindrical chamber which forms the low-pressure chamber and so arranged as to be covered by the piston during the larger portion of its upward stroke and uncovered as the piston nears the lower limit of its stroke to exhaust the pressure at low pressure, substantially as described.

2. In a steam ore-stamp, the combination of a cylinder provided with a reciprocating stamp-piston and inlet and outlet passages, the outlet of fluid being controlled by the movements of the reciprocating piston, and a controlling-valve arranged to cover and uncover the passages so that high fluid-pressure is admitted below the stamp-piston and low pressure above the stamp-piston to reciprocate the same, a valve-rod provided with piston mechanism for moving the controlling-valve, the cylinder being provided with passages leading from the cylinder-chamber to such piston mechanism and adapted to be covered and uncovered by such piston mechanism, so that the movements of the stamp-piston causes the overbalancing of the valve-piston mechanism and shifts the valve from one position to the other, substantially as described.

3. In a steam ore-stamp, the combination of a casing having at least two cylindrical chambers, a stamp-piston in each of such chambers, a valve-chest having passages connecting with each cylinder above and below the stamp-pistons, a controlling-valve adapted to cover and uncover connect and disconnect such passages so as to admit high pressure below the stamp-pistons and expansively above the same to reciprocate the parts, the cylinder-casing having an exhaust-passage that connects each of the cylinder-chambers with the outer air, the exhaust of fluid through the same being controlled by the movements of the reciprocating pistons, a valve piston-rod provided with two pistons—one located at each end portion thereof and having longitudinal openings which connect the high-pressue portion of the valve-chest with a space between such piston-heads and the valve-chest to admit a limited supply of fluid-pressure in connection with passages in the valve-chest and casing which connect with the cylinder-chambers and are adapted to be covered and uncovered by

the stamp-pistons and which act to overbalance the pressure on such valve-rod pistons and shift the valve-rod from one side to the other to reciprocate the stamp-pistons alternately, substantially as described.

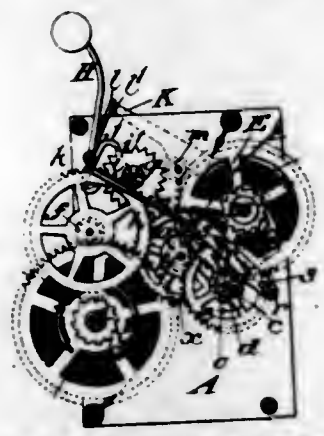
608,423. STEAM ORE-STAMP. DAVID COLE, Chicago, Ill., assignor to the Gates Iron Works, of Illinois. Filed May 3, 1897. Serial No. 634,874. (No model.)



Claim.—1. In a steam ore-stamp, the combination of a cylinder, provided with a reciprocating piston, a reciprocating controlling-valve for admitting and exhausting steam into and out of the cylinder to operate the piston, and provided with a valve-stem projecting out of the valve-casing at each end, a cushion buffer-collar on each end of the valve-rod, and stop mechanism arranged on a rigid portion of the machine between the valve-casing and the cushion-collars, substantially as described.

2. In a steam ore-stamp, the combination of a cylinder provided with a reciprocating stamp-piston provided with a plurality of longitudinal slots or grooves arranged in alinement and parallel with the motions of the piston, a key removably secured to a rigid or immovable portion of the machine and adapted to enter one slot at a time, the whole so arranged that the lateral position of the stamp-stem with its top parts may be changed by shifting the same and engaging the key with another groove, substantially as described.

608,424. REPEATING ALARM-CLOCK. WALTER D. DAVIES, New York, N. Y., assignor to the Ansonia Clock Company, Ansonia, Conn., and New York, N. Y. Filed May 10, 1898. Serial No. 680,246. (No model.)



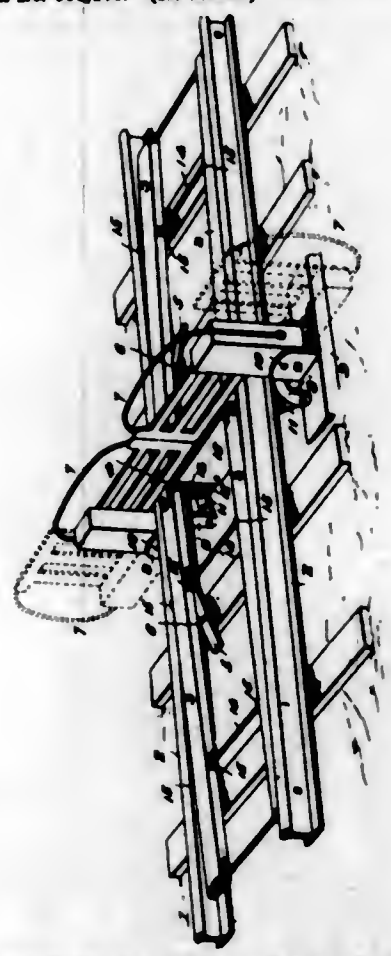
Claim.—1. In an alarm-clock, the combination with a time-train and an alarm-train, of a striking-escapement in the alarm-train, a longitudinally-moving bolt for engaging with the verge of said escapement, and a toothed wheel in the time-train engaging with said bolt for withdrawing it from the verge, substantially as and for the purpose herein described.

2. In an alarm-clock, the combination with a time-train and an alarm-train, of a striking-escapement in the alarm-train, a toothed wheel in the time-train, a sliding bolt having lateral projections one of which is capable of engagement with the verge of said escapement and another of which engages with said toothed wheel for withdrawing the bolt from engagement with the verge and a spring applied to said bolt for replacing it in engagement with the verge, substantially as herein described.

608,425. PRESERVING FRUIT-JUICES. CONRAD GRAF, Banning, Cal. Filed Dec. 29, 1896. Serial No. 617,294. (No specimens.)

Claim.—The improved process of preserving fruit-juices which consists in subjecting the juice to a temperature of 145° Fahrenheit, to prevent fermentation and promote sterilization, cooling and filtering the same *in vacuo*, to remove the sediment and prevent access of air, then subjecting the same to a temperature as above to insure final sterilization and hermetically sealing the same, substantially as and for the purpose set forth.

608,426. CATTLE-GUARD. PETER H. HAHN, Salem, Ark., assignor of one-half to R. H. Castleberry, same place. Filed Jan. 27, 1898. Serial No. 668,170. (No model.)

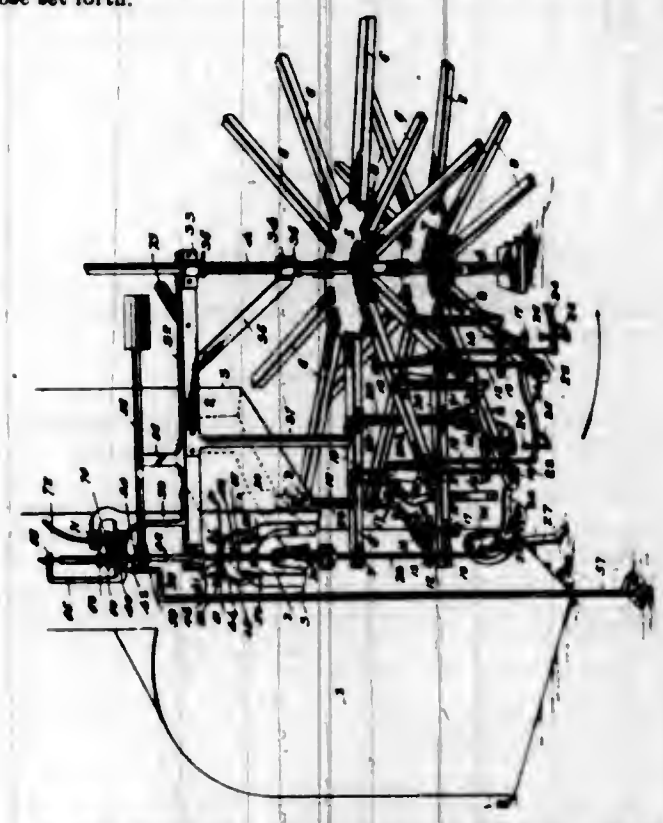


Claim.—In combination with the railroad-rails, trip-rails pivoted thereto at their outer ends, and each consisting of jointed sections connected together by tie-rods, bow-strings arranged beneath the jointed rails and having their ends projecting through and having a sliding engagement with staples secured to the ties, said bow-springs serving to hold the jointed rails normally in position to be engaged by the wheels of a car, pivoted gates adapted normally to lie across the track, pivoted levers, links connected to the outer ends of said levers, and having a slotted end that projects through slits in the posts of the gates, a pivot passing through said post and the slotted ends of said links whereby the links will have a movement independent of said gates, and short links connected to the inner ends of said levers and extending upwardly and connected by the pivot forming the joints of said trip-rails, said short links having a lateral swinging movement corresponding to the throw of the inner ends of said levers, substantially as set forth.

608,427. REHEATING AND FINISHING MACHINE FOR GLASS ARTICLES. WILLIAM KAY and JOHN C. ADAMS, Jonesborough, Ind. Filed Jan. 11, 1898. Serial No. 666,353. (No model.)

Claim.—1. The combination of a vertical driving-shaft provided with a series of radial arms arranged in pairs in the same vertical plane, a vertical former-shaft journaled in the outer ends of said arms, a vertically-reciprocating former carried by said shaft, and independent arm 32 mounted on said driving-shaft, a sleeve 42 journaled in

the outer end of said arm, a series of buffer-blocks carried by said sleeve, means for continuously rotating said sleeve, as and for the purpose set forth.



2. The combination with the vertical driving-shaft, 4, the radial arms 6 and 8 carried thereby, the former-shaft 12 journaled in the outer ends thereof, means for intermittently rotating said former-shaft, a former or plug encompassing said shaft, and means for imparting a reciprocating movement to said former at predetermined intervals, of the radial arm 32 independently mounted on said driving-shaft and adapted to have a limited concentric movement therewith, the sleeve 42 journaled in the outer end of said arm and in the same vertical alinement with the former-shaft 12, the spider 44 fixed on the lower end of said sleeve and the buffer-blocks 53 carried by said spider, the shaft 43 journaled within said sleeve, the follower fixed on the lower end of said shaft and the spiral spring encompassing said shaft between the follower and the spider, as and for the purpose set forth.

3. The combination with the former-shaft 12, screw-threaded at its upper end, the horizontal disk 19 removably secured on the threaded end of said shaft, of the hub 21 encompassing said shaft, the former or plug 20 encompassing said shaft and removably secured to said hub, and means for imparting an intermittent reciprocating movement to said former, as and for the purpose set forth.

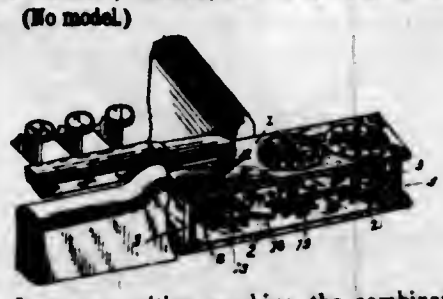
4. The combination with the driving-shaft 4, the disks 5 and 7 fixed to said shaft, the parallel arms 6, 8, fixed to said disks and the vertical shaft 12 journaled in the outer ends of said arms, and adapted to rotate in its own plane concentric with said driving-shaft, and means for intermittently rotating it on its own axis, of the disk 19 removably secured to the upper end of said shaft 12, the hub 21 encompassing said shaft and provided with radial pins, the vertical rod 23, formed with parallel jaws on its upper end provided with orifices which engage said pins, the lever 24, having its free end pivoted to the lower end of said rod, the former-plug 20 detachably secured to said hub 21, and the fixed raised rail 27 projecting into the path of said lever, as and for the purpose set forth.

5. The combination with the driving-shaft 4, the disks 5 and 7 fixed to said shaft, the parallel arms 6, 8 fixed to said disks, and the shaft 12 journaled in the outer ends of said arms and adapted to rotate in a horizontal plane concentric with said driving-shaft, of the pinion 13 fixed to said shaft 12, the counter-shaft 15 journaled in the arm 8, the gear-wheel 14 and pinion 17 fixed to said counter-shaft, the former in mesh with said pinion 13, and the segmental rack 18 fixed in the path of said pinion 17, so as to impart a rotary motion to said shaft 12, while it is rotating in its own plane, as and for the purpose set forth.

6. The combination with the driving-shaft, 4, the arms 6 and 8 carried by said shaft, the bar 28 having a vertical movement in said arms and the fixed rail 31 projecting into the path of the lower end of said bar, of the radial arm 32, independently mounted on said driving-shaft and the depending bar 37 fixed to said arm and having its lower end projecting into the path of said vertically-reciprocating bar 28, as and for the purpose set forth.
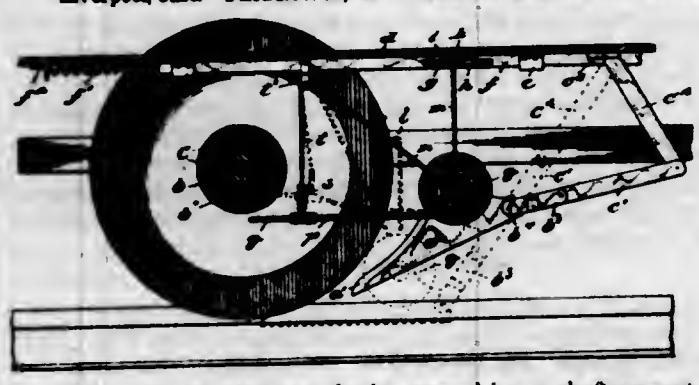
7. The combination with the driving-shaft 4, the radial arm 32 loosely mounted on said shaft, the bracket 39 fixed to the outer end of said arm, the sleeve 42 journaled in said bracket and arm, so as to permit of a reciprocating and a rotary motion, the spider 44 fixed to the lower end of said sleeve, the spring-actuated buffer-levers 48 fulcrumed in said spider, the shoes 50 formed with a dovetail groove and pivoted to the lower ends of said levers, and the buffer-blocks 53 removably secured in said grooves, of the cylindrical shaft 43 extending vertically through said sleeve, the follower 60 fixed on the lower end of said shaft, and the spiral spring 61 encompassing said shaft between the spider 44 and the follower 61, as and for the purpose set forth.

608,428. **WORD-COUNTER FOR TYPE-WRITING MACHINES.** MARION S. MOSELEY, Franklin, Tex. Filed Sept. 9, 1897. Serial No. 651,105. (No model.)



Claim.—In a type-writing machine, the combination with the gear-supporting frame, comprising top and bottom plates secured in positions parallel to each other by corner-posts 3, and provided with seats for the reception of the parallel shafts carrying their respective spur gear-wheels, of the shorter post 6 fixed in the bottom plate 2 and provided with the horizontal arm 7 carrying a spur-wheel 8 having ten teeth 9, the spur-wheel 13 journaled on the fixed post 6, the three-fingered spring 14 mounted on the post 6 between the shoulder 15 and the upper face of the spur-wheel 13, one finger of the spring 14, being in engagement with an orifice 17 in the face of the spur-wheel shafts 4 and 5 provided with spur-wheels 19 and 21, the radial extension-arms 18 and 20 and the space-bar of the writing-machine provided with the plunger 12 having the spring-pawl 10 at its lower end normally in engagement with the teeth of the spur-wheel 8, substantially as specified.

608,429. **AUTOMATIC CAR-BRAKE.** FREDERICK A. PERRY, East Liverpool, Ohio. Filed Nov. 10, 1897. Serial No. 658,006. (No model.)



Claim.—1. An emergency-brake, comprising a shaft supported from the car-body, a movable brake-shoe, and a brake-shoe loosely mounted upon said shaft, and means for drawing the brake-shoes into engagement with the wheels when the same are lowered to the rails, substantially as shown and described.

2. In an emergency-brake, a shaft supported from the car-body, brake-shoes mounted on said shaft, a chain attached centrally to the shaft, and a cord connected to said chain and shaft, in combination with the car-axle having a series of hooks mounted thereon to engage said chain and wind the same on the car-axle when the brake-shoes are lowered into engagement with the rails, substantially as shown and described.

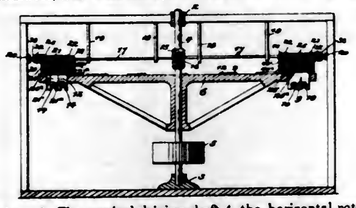
3. In combination with a car-axle having a sleeve mounted thereon, which carries a series of hooks, a shaft carrying near each end a movable brake-shoe, and a brake-shoe loosely mounted thereon, means for supporting said shaft, a chain attached thereto, said chain carrying a clevis, means for drawing the same into contact with the hooks on the car-axle when the shaft is lowered, and an operating-bar to release the brake-shoes and permit the same to fall into engagement with the track, substantially as shown and described.

4. An emergency-brake, comprising a shaft having a movable shoe and a shoe loosely mounted thereon near each end, supporting means for suspending said shaft and shoes from the car-body, means for releasing said support to permit the shoes to engage the rails, and means whereby the movable shoes are drawn toward the shoe loosely mounted on the shaft when in engagement with the rails, substantially as shown and described.

5. In an emergency-brake, a shaft supported from the car-body, a movable shoe and a shoe loosely mounted on said shaft near each

end; a chain secured to said shaft and carrying a clevis, hooks secured to the car-axle, means for drawing said chain into contact with the hooks, connections between the brake-shoes and the car-body, screw-threads formed on the ends of the shaft whereby the movable shoe is drawn toward the shoe loosely mounted on said shaft, substantially as shown and described.

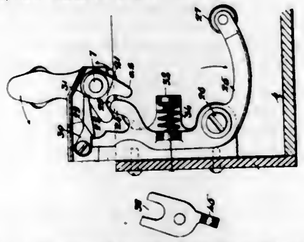
608,430. ROTARY EXCELSIOR-MACHINE. JOSEPH ROLLINS, Birnamwood, Wis. Filed Mar. 8, 1898. Serial No. 673,114. (No model.)



Claim.—1. The vertical driving-shaft 4, the horizontal rotating cutter-head or table 6, fixed to said shaft and the cutters 9 and 12, carried by said table and a worm-screw 15 fixed to said shaft, in combination with the horizontal shaft 17, the worm-wheel 16 fixed on the inner end of said shaft, the feed-roller 21 and bevel-gear 32, fixed on the parallel plates 22, 23, encompassing the outer end of said shaft 17, the horizontal shaft 34 journaled in bearings fixed to the plate 23 and the bevel-gear 33 fixed on one end of said shaft and in mesh with the bevel-gear 32, the bevel-gear 36 longitudinally adjustable on the opposite end of said shaft 34, the spring-actuated feed-rolled journaled in the opposite ends of said plates, the bevel-gear 37 fixed on one end of said feed-roller, and means for holding said gear 36 in mesh with the gear 37, irrespective of its position on its shaft, as and for the purpose set forth.

2. A bolt-feeding device for excelsior-machines comprising the parallel plates 22, 23, the feed-rollers 21, 21′, 21², journaled in the same vertical plane in the same ends of said plates, and means for simultaneously rotating said feed-rollers in the same direction, the bevel-gear 32 carried by the feed-roller 21, the shaft 34 formed with a longitudinal key at one end and the bevel-gear 33 fixed on the opposite end of said shaft and in mesh with the gear 32, and the bevel-gear 36 longitudinally adjustable on the keyed end of the shaft 34, the spring-actuated feed-rollers 26, 26′ and 26², adjustably mounted in the opposite ends of said plates 22, 23, and means for simultaneously rotating said feed-rollers in the same direction, the bevel-gear 37 carried by said feed-roller 26 and means for automatically adjusting said bevel-gear 36, longitudinally on its shaft, to compensate for the adjustment of the feed-roller 26, substantially as shown nd described.

608,431. WHIP-SOCKET. OLIVER E. SEYMOUR, Jefferson City, Mo., assignor of one-half to James H. Shepard, Dallas, Tex. Filed Nov. 26, 1897. Serial No. 659,852. (No model.)



Claim.—1. A whip-socket comprising a suitable frame, a socket movably carried by the same, means for oscillating the said socket, and a lock, for locking the socket in its normal or vertical position substantially as described.

2. A whip socket comprising a suitable frame adapted to be secured to a vehicle-body, an oscillating shaft loosely mounted in the same, a socket fixed to said shaft and oscillated thereby, a spring for operating the shaft in one direction, intermediate mechanism between said lever and shaft, and an automatic lock for holding the socket in a vertical position substantially as described.

3. A whip-socket comprising a suitable frame, an oscillating shaft mounted in the same, a whip-socket hinged to one end of the shaft and capable of adjustment, and means for oscillating said shaft substantially as described.

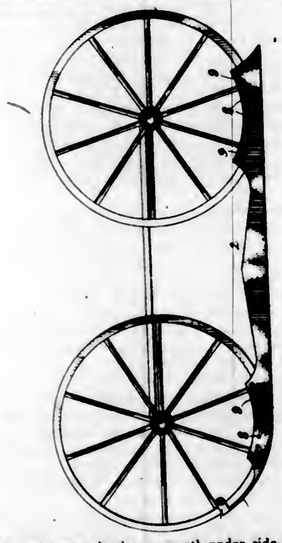
4. A whip-socket, comprising a suitable frame, an oscillating shaft mounted in the same, a socket fixed to one end of the shaft, a fork fixed to the opposite end of the shaft, a lever pivoted to the frame and adapted to be depressed by the foot, an arm forming a part of the lever and cooperating with said fork, a lock hinged to the frame and provided with a shoulder, an extension also forming a part of the lever and cooperating with said shoulder for elevating the lock, a shoulder formed on the fork against which the free end of the lock comes in contact and a spring interposed between the frame and the lever for operating the latter in one direction substantially as described.

5. A whip-socket, comprising a suitable frame, a socket movably carried by the same, means for oscillating said socket, and an automatic gravity-lock for locking the socket against movement when in its normal position, substantially as described.

608,432. PROCESS OF FINISHING SHEET IRON AND STEEL PLATES. WILLIAM M. THEOBALD, McKeesport, Pa. Filed Nov. 8, 1897. Serial No. 657,813. (No specimens.)

Claim.—The process herein described, of preparing metal sheets or plates, which consists in subjecting said sheets or plates to an annealing degree of heat for about six hours without contact with atmospheric air, then cooling said sheets or plates under the same conditions for about twenty-five minutes to a temperature of from 900° to 1,400° Fahrenheit, then exposing said sheets or plates to the action of the atmosphere until they have attained the proper degree of oxidation and finally passing said oxidized plates at a temperature of about from 300° to 900° Fahrenheit, between polished rolls, substantially as and for the purpose set forth.

608,433. RUNNER FOR VEHICLES. JACOB THUNBORG, Coeur d'Alene, Idaho. Filed July 15, 1897. Serial No. 644,708. (No model.)



Claim.—A runner having a smooth under side and side flanges extending continuously and uninterruptedly from the rear end of the runner to approximately its forward end to form guides to receive and embrace both wheels at the side of a vehicle, said flanges at their rear ends having their inner sides beveled outwardly to form flaring wheel entrance for the purpose of affording the wheels easy admission to the runners, and bolts for locking the wheels to the runners, substantially as set forth.

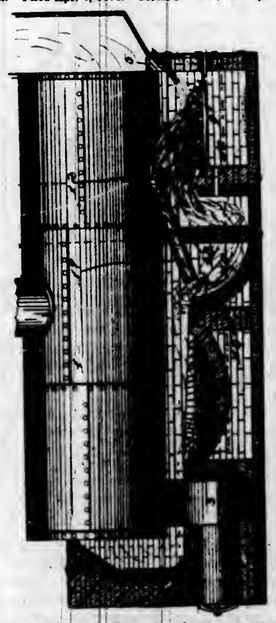
608,434. BOXING-GLOVE. WILLIAM G. WOOD, San Francisco, Cal. Filed Sept. 22, 1897. Serial No. 652,641. (No model.)

Claim.—1. A boxing-glove comprising in its structure a padded web or closure uniting the side of the forefinger with the back, said closure being formed integrally with the back of the glove but unattached to the palm along the lower edge, and adapted to admit the thumb under it, and a thumb stall or covering composed of a padded main portion and an unpadded tip, as described.

2. A boxing-glove having a stall or covering for the thumb composed of a padded main portion joining the body and palm of the glove and an unpadded tip to receive the end of the thumb, and a pocket or receptable within the body of the glove between the padding of the back and the finger-receptacles, adapted to admit the said unpadded covering and allow the thumb to lie across the fingers in a bent position, as described.



608,435. SMOKE-CONSUMING FURNACE. SVEN O. BERG, St Louis, Mo. Filed Apr. 7, 1898. Serial No. 676,838. (No model.)



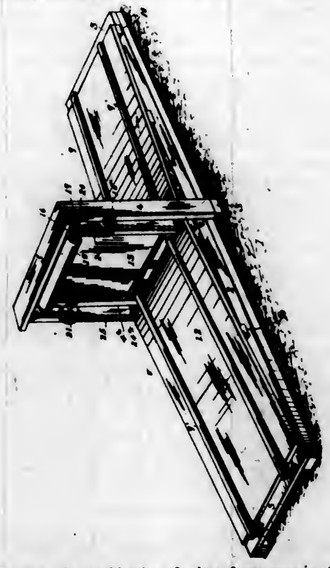
Claim.—1. In a smoke-consuming furnace constructed with a fire-box and having the combustion-chamber constructed at a point beneath the center of the boiler, a plurality of tubes leading from the fire-box into said combustion-chamber, and a plurality of transverse walls supporting said tubes, in which walls are formed openings beneath said tubes, substantially as specified.

2. In a smoke-consuming furnace, a fire-box formed beneath one end of the boiler and there being a combustion-chamber formed beneath the center of said boiler, a plurality of flame-conveying tubes leading from the fire-box into the combustion-chamber and air-inlet tubes located in the front furnace-wall, substantially as specified.

3. In a smoke-consuming furnace, constructed with a fire-box and a combustion-chamber, the combination with flame-conveying tubes leading from the fire-box into the combustion-chamber, of air-inlet tubes located in the front furnace-wall and discharging downwardly into the fire box, substantially as specified.

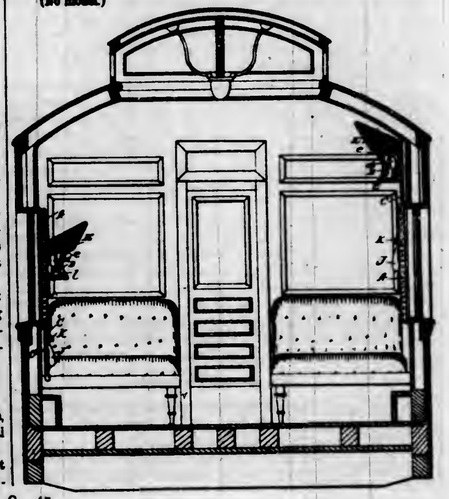
608,436. MINE-GATE. NEWTON K. BOWMAN, Lawrence, Ohio, assignor to Alvin Hurford, Canton, Ohio. Filed Aug. 30, 1897. Serial No. 650,014. (No model.)

Claim.—1. In a mine-gate, the combination with a base support or frame, of the spaced, parallel posts 4 4ª rising therefrom, two inclined depressible platforms, a roller 18 mounted in bearings on said posts 4ª and carrying sprocket-pinions 20, winding-shafts 16 mounted in bearings on the posts 4 4ª and each carrying two sprockets 22 23, chains 24 connecting the sprockets 22 20, chains 25 connecting the sprockets 23 and one of said platforms, a gravity-closing gate-curtain connected with said roller, and means auxiliary to the gate, for restoring the platforms to their normal position and assisting in effecting the closing of the gate, substantially as described.



2. In gates, the combination of a base-frame carrying the posts 4 4ª, two inclined depressible platforms 8 9, a roller 18 mounted in bearings on said posts 4ª and carrying sprocket-pinions 20, winding-shafts 16 mounted in bearings on the posts 4 4ª and each carrying a grooved pulley 21 and two sprockets 22 23, chains 24 connecting the sprockets 22 20, chains 25 connecting the sprockets 23 and one of said platforms, counterbalancing-weights suspended from the pulleys 21 and provided with flanges traversing guide-grooves in said posts, and a gate-curtain connected with said roller, substantially as described.

608,437. ADJUSTABLE RACK FOR RAILWAY-CARS. MICHAEL BUTLER, Dallas, Tex. Filed Jan. 24, 1898. Serial No. 667,839. (No model.)



Claim.—1. An adjustable rack adapted for railway-cars for holding and supporting articles, in combination with a back or holder for retaining said rack in any desired elevated position, substantially as described.

2. An adjustable rack adapted for railway-cars for holding and supporting articles, in combination with a back or holder which is provided with lugs for engagement with suitable catches for retaining said adjustable rack in any desired position, substantially as described.

3. An adjustable rack for holding and supporting articles and held in a balanced position through the medium of a weight, in combination with a back or holder for supporting said rack in any desired position, substantially as described.

4. An adjustable rack adapted for railway-cars for holding and supporting articles and held in a balanced position when unloaded through the medium of a weight, in combination with a back or holder which is provided with lugs for engagement with suitable catches for retaining said adjustable rack in any desired position loaded, substantially as specified.

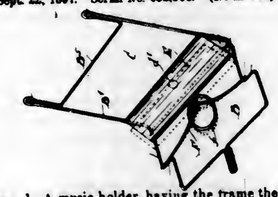
5. An adjustable rack adapted for railway-cars for holding and supporting articles, which is provided with a hinged basket or receptacle and held in position through the medium of a spring, in combination with a back or holder for retaining said rack in an elevated position, substantially as specified.

6. An adjustable rack, consisting of a slide, a box secured to said slide, hooks for holding articles secured to said box and surmounted by a hinged basket and supported by a back or holder through the medium of spring-actuated catches, and lugs on said back, for the purpose as specified.

7. An adjustable rack adapted for railway-cars for holding and supporting articles, in combination with a back or holder for supporting said rack in an elevated position and spring-actuated catches, substantially as described.

8 An adjustable rack adapted for railway-cars and secured to the same for holding articles in a position adjacent to a car-roof, in combination with a back or holder for retaining said rack in an elevated position, substantially as described.

608,438. MUSIC-HOLDER. OLAVES I. BYE, Hillsborough, N. D. Filed Sept. 22, 1897. Serial No. 652,508. (No model.)



Claim.—1. A music-holder, having the frame thereof formed of a single wire bent to outline the frame, having back and base sections which are substantially rectangular and at right angles to each other, said wire centrally of the outer side edge of the base-section, or at that side farthest from the back section being bent downward and under to form a hook, a slide mounted upon the side wires of the base-section to slide toward and from the back, and a spring normally holding the slide toward the back.

2. A music-holder made of wire bent to outline a frame having back and base sections substantially at right angles to each other, said wires of the base-section having an offset bend therein, and at the outer side edge or that farthest from the back being bent downward and under to form a hook, a slide mounted upon the base, and a spring engaging said slide and the offset bend in the side wires and serving to clamp the music between said slide and the back, substantially as described.

3. A music-holder made of wire bent to outline a frame having back and base sections substantially at right angles to each other, the side wires of the base-section having an offset bend therein, and at the outer side edge or that farthest from the back being bent downward and under to form a hook, a slide mounted upon the base, and a spring consisting of a wire coiled at its center and secured at its point to the slide and having its ends engaging the offset bend in the said wires, whereby the slide is held against the back section and the music clamped thersbetween, substantially as described.

608,439. SCREW-WRENCH. FREDERICK L. COES, Worcester, Mass., assignor to the Coes Wrench Company, same place. Filed Sept. 23, 1897. Serial No. 652,701. (No model.)

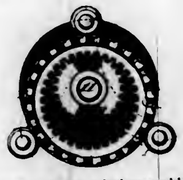
Claim.—1. In a wrench-handle, in combination with the flat bar-shank, the ferrule adapted to slip over said shank and fitting upon the bar-shank neck, the tip-piece, and the side scales, of a ferrule-supporting reinforce extending from the ferrule to the tip-piece, its outer edge conforming to the outline shape of the handle, its inner edge matching the edge of the bar-shank, and its width filling the space between the side scales; said reinforce applied to and supported in connection with the edge of the bar-shank, its ends respectively engaging or abutting on the tip-piece and on the ferrule, in the manner set forth.



2. In a screw-wrench provided with the bar and fixed jaw, the movable jaw, and jaw-adjusting screw; a wrench-handle having in combination with the screw-supporting ferrule and bar, a pair of oppositely-applied reinforce-pieces conforming to the space between the bar-shank and handle outline, and countermatching the edges of said bar-shank from the ferrule to the tip, said reinforce-pieces attached to the edges of said bar-shank below and in a manner for supporting the ferrule.

3. In combination with the wrench-bar having the flat bar-shank adapted to pass through the ferrule-eye; and the ferrule fitted upon the neck of said bar-shank; the reinforce-pieces fitted upon the edges of bar-shank with their ends abutting against the ferrule, and permanently attached to said bar-shank by brazing together the adjacent surfaces along the junction-line, substantially as and for the purpose set forth.

608,440. TYPE-WRITING OR PRINTING MACHINE. OLIVER H. CONVERSE, St. Louis, Mo. Filed June 12, 1897. Serial No. 640,493. (No model.)



Claim.—1. In a type-writer or printing-machine, a shaft, a platen rigidly and concentrically mounted on said shaft, a pinion rigidly and concentrically mounted on said shaft, an internally-toothed gear-wheel of materially-greater diameter than the pinion and surrounding and intermeshing with said pinion, which gear-wheel is mounted eccentrically of the pinion and its shaft, means for supporting said gear-wheel for rotation and step-by-step mechanism for rotating the internal gear.

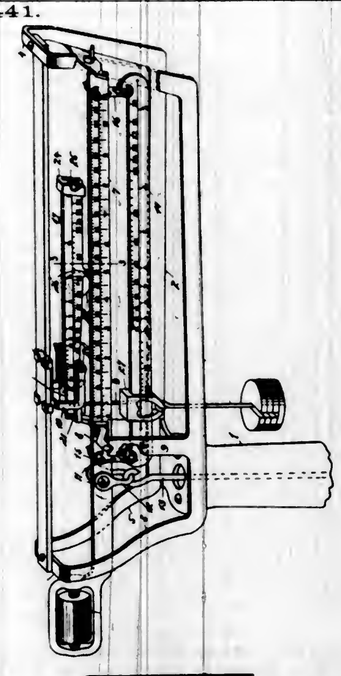
2. In a type-writing or printing machine, the combination of the shaft of a platen or cylinder, disk rollers, an annular internal gear-wheel provided with a grooved periphery engaged and supported by said disk rollers, and a pinion mounted on the said shaft, the gear-wheel being eccentric to the pinion and meshing therewith, and means for operating said annular internal gear.

608,441. COMPUTING-SCALE. CLARK CORBIN, Carbon Cliff, Ill. Filed June 16, 1897. Serial No. 640,995. (No model.)

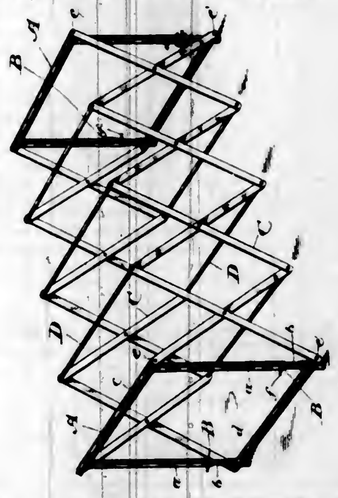
Claim.—1. A computing-scale, comprising a frame, a beam fulcrumed in said frame and connected with the balancing mechanism of the scale, the said beam having a weight-scale at its lower portion and a value-scale at its upper portion, a price-beam suspended loosely at its ends from the weight and value beam, a weight mounted to slide on said price-beam, the said price beam having a scale indicating prices, a price-beam for fractions of a dollar arranged above the weight and value beam, a roller journaled in said beam for fractions of a dollar, the said roller engaging in a longitudinal channel formed in the top of the weight and value beam, a carriage movable longitudinally of a bar supported on the frame, a hanger depending from the carriage and to which the beam is fulcrumed, and two weights mounted to slide on said last-named beam, substantially as specified.

2. A weighing and computing scale, comprising a frame, a beam fulcrumed on said frame and connected with the balancing mechanism of the scale, the said beam having a weight-scale at its lower portion and a value-scale at its upper portion, a price-beam suspended loosely at its ends from the said weight and value beam, a weight mounted to slide on said price-beam, an adjustable price-weight comprising a beam and two price-weights arranged above the weight and value beam and movable along the top edge thereof, a carriage movable on a bar supported on the frame, and a hanger on the carriage and to which the adjustable weight is connected, substantially as specified.

608,441.



608,442. CASKET-STAND. GEORGE CROSMILLER, Welland, Canada. Filed Feb. 5, 1898. Serial No. 669,577. (No model.)



Claim.—1. As a casket-stand, two sets of lazy-tong levers, an end frame at each end of said levers and connecting them together, the said end frames being formed of two parts telescoped one within the other, substantially as described.

2. As a casket-stand, two sets of lazy-tong levers, an end frame at each end of said levers and connecting them together, the said end frames being formed of two parts telescoped one within the other, one of said telescopic parts having a collar adjustable thereon and controlling the position of the other, substantially as described.

3. As a casket-stand, two end frames A, each comprising cross-bars *c* and *d* and the telescoped vertical members *a* and *b*, in combination with the lazy-tong levers C, connected by the cross-bars D, and pivoted on the frames A, at *e e'*, substantially as and for the purpose specified.

4. As a casket-stand, two end frames A, each comprising the cross-bars *c* and *d*, the telescoped vertical members *a* and *b* and the adjustable collars B, upon the members *b* in combination with the lazy-tong levers C, pivoted on the frames A, at *e e'*, substantially as and for the purpose specified.

5. As a casket-stand, two end frames A, each comprising the cross-bars *c* and *d*, the telescoped vertical members *a* and *b* and the adjustable collars B, upon the members *b*, in combination with the lazy-tong levers C, connected by the cross-bars D, and pivoted on the frames A, at *e e'*, substantially as and for the purpose specified.

608,443. SADDLE FOR VELOCIPEDES. MILLER M. DREN, Reading, Pa., assignor of one-half to the P. & F. Manufacturing Co., same place. Filed July 17, 1897. Serial No. 644,906. (No model.)



Claim.—1. In a saddle for velocipedes, the combination with a base-plate, of a cushion upon the pommel portion of said plate consisting of a resilient shell open on its lower side and having its edges resting upon the plate and suitably secured thereto, substantially as described.

2. In a saddle for velocipedes, the combination with a base-plate, of a cushion upon the pommel portion of said plate consisting of a resilient shell open on its lower side and having its edges resting upon the plate, and a covering extending over the shell and securing it to the plate, substantially as described.

3. In a saddle for velocipedes, the combination with a base-plate having a pommel portion, of a cushion upon said portion consisting of an elongated resilient shell arched in cross-section and having end walls 6 and 7 and a covering extending over said shell and securing it to the plate, substantially as described.

4. In a saddle for velocipedes, the combination with a base-plate having a pommel portion, the edges of which are downwardly and outwardly inclined, of a resilient shell substantially U-shaped in cross-section, the edges of said shell being beveled and resting upon the inclined edges of the base-plate, and a cover extending over and closely surrounding said shell, substantially as described.

608,444. TRUSS. DECATUR D. DENNIS, St. Louis, Mo. Filed Jan. 10, 1898. Serial No. 666,126. (No model.)



Claim.—1. A truss comprising a belt, a ring connected to said belt, a hollow inflated elastic ring, located on the inner side of said belt-receiving ring, and providing a pneumatic cushion, an elastic diaphragm arranged over said elastic belt, buckles carried by said belt-receiving ring, and means for securing said buckles in different positions with relation to the said belt-receiving ring, substantially as described.

2. A truss comprising a belt, a ring connected to said belt, a secondary diaphragm applied to one side of said belt-receiving ring and secured to the periphery of the latter, a hollow inflated elastic ring seated on said secondary diaphragm against said belt-receiving ring, and providing a pneumatic cushion, and a primary diaphragm arranged over said elastic ring and also secured to the periphery of said belt-receiving ring, substantially as described.

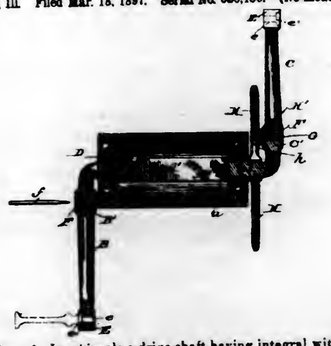
3. In a truss, the combination with a belt, of a ring adapted to be connected to said belt, a secondary diaphragm applied to one side of said belt-receiving ring, an elastic ring seated on said secondary diaphragm, an elastic diaphragm arranged over said elastic ring and a retaining-ring applied over said diaphragms at the periphery of said belt-receiving ring, substantially as described.

4. In a truss, the combination of a belt, a ring, ears upon said ring, buckles having arms provided with teeth adapted to engage the said ears, and a diaphragm carried by said ring, substantially as described.

5. In a truss, the combination with a belt, of a ring adapted to be connected to said belt, ears upon said ring, buckles through means of which said belt is connected to said ring; said buckles having arms provided with teeth on their inner faces adapted to engage the

ears of said belt-receiving ring, set-screws for connecting said buckle-arms and ring-carried ears, and a diaphragm carried by said belt-receiving ring, substantially as described.

608,445. **BICYCLE CRANK-SHAFT.** SAMUEL A. DOSHELLY, Chicago, Ill. Filed Mar. 18, 1897. Serial No. 628,150. (No model.)

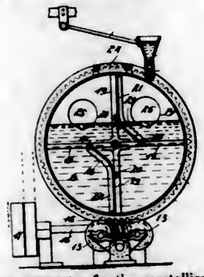


Claim.—1. In a bicycle a drive-shaft having integral with it opposite end cranks and having seats for the cones and a back-stop between said cones of greater width or thickness than said cone-seats and cones with one or more recesses or wings such recesses or wings permitting said cones to pass from their seats over the wide back-stop and all exterior parts substantially as shown and described.

2. In a bicycle the combination of the drive-shaft having the opposite integral end cranks and provided with cone-seats having depressions for the keys and a portion between said seats of greater width or breadth than the said seats, and the cones having openings to fit the seats and provided with wings or recesses whereby to permit the passage of the cone over the wider portion of the shaft, and the keys fitted to the depressions in the cone-seats and the wings or recesses of the cone-openings substantially as shown and described.

3. The combination in a bicycle of the shaft having a cone-seat and adjacent thereto a wider or thicker portion forming a radial projection beyond said cone-seat, the cone having an opening fitted to said seat and recessed whereby it may pass over the wider portion of the shaft when properly registered therewith and the key by which the cone is held on the seat in position out of such register, the cone-seat having, out of register with the said radial projection, a recess for the said key substantially as shown and described.

608,446. **SUGAR-CRYSTALLIZER.** EDWARD P. EASTWICK, Jr., New Orleans, La. Filed Apr. 16, 1897. Serial No. 632,460. (No model.)



Claim.—1. In an apparatus for the crystallization of sugar, a revoluble cylinder, and one or more plates supported within the cylinder and adapted to turn therewith, the said plates extending from end to end of the cylinder and from the sides of the cylinder toward the center, the inner portions of the said plates being curved in outward directions and toward the side walls of the cylinder, the inner ends of the plates terminating at a point between the center of the cylinder and the side walls so as to form pockets or buckets, whereby masse-cuite contained in the cylinder may be mixed by being continuously carried from the bottom and discharged at the top as the apparatus revolves, substantially as set forth.

2. In an apparatus for the crystallization of sugar in motion, a revoluble cylinder, transverse braces extending from the center of the cylinder to the side walls and arranged at angles to each other, and curved plates forming pockets and extending from end to end of the cylinder, the said plates being supported by said braces and extending from the junction of one set of said braces with the side walls of the cylinder to the braces arranged at angles to the first-mentioned braces and terminating at a point on the braces between the center of the cylinder and the side wall, as and for the purpose set forth.

3. In an apparatus for the crystallization of sugar in motion, a revoluble cylinder, a shaft extending longitudinally through the center of the cylinder, transverse braces secured to opposite sides of the shaft and to the inner side wall of the cylinder, longitudinally-extending bars connecting the transverse braces of each series, and plates attached to opposite sides of diametrically-opposed braces and their connecting-bars, the said plates extending from end to end of said cylinder and from the peripheral surface to a point near the center, the ends of the plates adjacent to the center being curved in opposite directions and resting upon the longitudinal bars connecting the other transverse braces, substantially as shown and described.

4. In an apparatus for the crystallization of sugar in motion, a revoluble cylinder, plates forming shelves rigidly secured in said cylinder and extending from end to end of the same, the said plates extending from the side surface of the cylinder to the center thereof, the inner portions of said plates being curved in opposite directions and toward the side walls of the cylinder, and means for cooling the cylinder, substantially as described.

5. In an apparatus for the crystallization of sugar in motion, a revoluble cylinder, plates forming shelves stationarily held in the said cylinder at each side of the center, the outer portion of the plates being straight and the inner portion being curved in opposite directions and extending to a point near the center of the cylinder, and a water-distributing device, supported adjacent to the periphery of the cylinder, as and for the purposes specified.

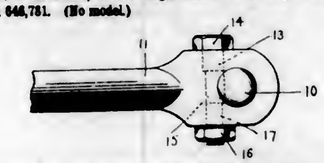
6. In an apparatus for the crystallization of sugar in motion, a revoluble cylinder having its peripheral surface corrugated forming a series of longitudinally-extending pockets, means for revolving said cylinder, and means for distributing water to the periphery of the cylinder to cool the same, substantially as specified.

608,447. **WRINGER-HOLDING DEVICE.** JOHN FARRELL and PATRICK J. HOAR, Freedom, Pa. Filed Apr. 5, 1897. Serial No. 630,794. (No model.)



Claim.—A wringer attachment consisting of a rod having a screw-threaded upper end, and a hook on its lower end, said rod engaging a plate, having upwardly and outwardly extending arms, adapted to receive bolts for fastening to the wringer-standards, a fastening-block on said bolts to engage the outer face of the tub-rim, and a winged nut on said rod to tighten or loosen the hook on the lower end of the rod, substantially as shown and described.

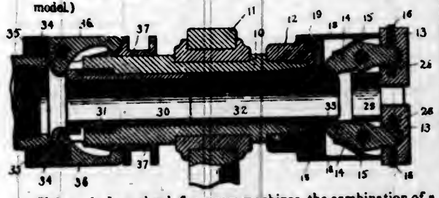
608,448. **FASTENING DEVICE FOR BICYCLE-CRANKS.** ERNEST V. GAUTHIER, Westborough, Mass. Filed Aug. 2, 1897. Serial No. 646,751. (No model.)



Claim.—1. In a bicycle, the combination of a crank-axle, a crank, said crank having a transverse socket, and said axle having a corresponding notch, and a bolt having a cammed section for clamping said parts together, substantially as described.

2. In a bicycle, the combination of a crank-axle 10, a crank 11, said crank having a transverse socket, and said axle having a corresponding notch 12, a bolt 13 having a cammed section 15 for clamping said parts together, and a head 14 for receiving a wrench, and a nut 16 threaded onto the bolt 13 for holding the same in place, substantially as described.

608,449. **SCREW-MACHINE CHUCK.** ERNEST V. GAUTHIER, Westborough, Mass. Filed Aug. 14, 1897. Serial No. 648,223. (No model.)

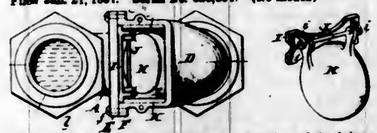


Claim.—1. In a chuck for screw-machines, the combination of a hollow spindle or extension, jaws movable radially with respect to said spindle, an operating sleeve or piece for clamping the jaws into engagement with the work mounted inside of the spindle, and means for shifting said sleeve without stopping the operation of the machine, substantially as described.

2. In a chuck for screw-machines, the combination of a hollow spindle or extension, radially-movable jaws, springs for normally opening the jaws, clamping devices comprising levers engaging said jaws, an actuating sleeve or piece movably mounted inside of the spindle and having a cam-section engaging said levers, and means for shifting the actuating-sleeve without stopping the operation of the machine in connection with which the chuck is employed, substantially as described.

3. In a chuck for screw-machines, the combination of a body portion 12, jaws 13 movable radially therein, levers 14 pivotally mounted on pins 15 and engaging with jaws 13, springs 18 engaging said levers to normally open the jaws, an operating-piece having a cam-section engaging the levers 14, a longitudinally-movable sleeve engaging the actuating-piece, a spring tending to move the sleeve in one direction, pivoted bell-crank levers engaging said sleeve, and means for actuating the bell-crank levers to move the sleeve against the tension of its spring without stopping the operation of the machine in connection with which the chuck is used, substantially as described.

608,450. **SEWER-TRAP.** WILLIAM GODFREY, New York, N. Y. Filed Jan. 21, 1897. Serial No. 620,051. (No model.)



Claim.—1. In a drain-valve, the combination of the inlet-section having a tubular valve-seat of non-oxidizable metal permanently secured thereto formed with an oblique seating-rim and having its interior surface downwardly sloping and continuous with the interior surface of the inlet-section, a discharge-section secured to the inlet-section by a joint which incloses the juncture of the valve-seat with the inlet-section and receiving the valve-seat so as to leave a clearance-space about its seating-rim interposed between said rim and walls of the discharge-section, and a pivoted valve within the discharge-section loosely supported at the top independent of the valve-seat and normally held in an oblique position and seating itself upon the valve-seat by virtue of its weight.

2. In a drain-valve, the combination of the inlet-section having a tubular valve-seat of non-oxidizable metal permanently secured thereto and having its interior surface continuous with the interior surface of the inlet-section, a discharge-section secured to the inlet-section independent of the valve-seat and by a joint which incloses the juncture of the valve-seat and inlet-section and receiving the valve-seat within its body without contact therewith, and a pivoted valve loosely supported within the discharge-section seating itself upon the valve-seat.

3. In a drain-valve, the combination of the inlet-section having a tubular valve-seat of non-oxidizable metal secured thereto by having the inlet-section cast thereon and having its interior surface continuous with the interior surface of the inlet-section, a discharge-section detachably secured to the inlet-section by a single transverse joint independently of the valve-seat and inclosing the joint between the valve-seat and inlet-chamber, a pivoted valve within the discharge-section seating itself upon the valve-seat, a removable support detachably connected within the discharge-chamber, and a loose pivot connection between the valve and said support.

4. A sewer-valve consisting of an inlet section having a downward aperture or fall having capacity for holding water to submerge the valve-seat, and a tubular valve-seat of non-oxidizable metal secured thereto by having one end cast therein and having its inner surface directed obliquely downward and continuous with the interior of the inlet-section, in combination with a discharge-section secured directly to the inlet-section by a joint inclosing the juncture of the inlet-section and valve-seat, and a heavy pivoted gravity-actuated valve loosely hung in the discharge-section and resting upon the valve-seat so as to normally sustain a column of water in the inlet-section sufficient to submerge the valve-seat.

5. In a drain-valve, the combination of the inlet-section having a valve-seat and a transverse flat flange at a distance from the seating edge of the valve-seat, a discharge-section also having a transverse flange secured to the inlet-section and receiving the valve-seat, bolts reuniting the flanges, a pivoted valve within the discharge-section seating itself upon the valve-seat, a removable support detachably arranged within the discharge-chamber for sustaining the valve and held in position within the discharge-chamber by the flange of the inlet-section and extensions or lugs on the discharge-section, and a removable cover or plate overlapping the inlet and discharge sections to retain the support against rising.

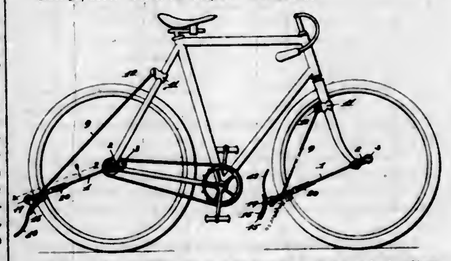
6. In a drain-valve, the combination of the inlet-section having a long tubular valve-seat of non-oxidizable metal cast therein, a discharge-section bolted to the inlet-section so as to inclose the union of the valve-seat with the inlet-section and receiving the valve-seat and further provided with a water seal or trap, a pivoted valve within the discharge-section seating itself upon the valve-seat, a removable support detachably supported above the tubular seat within the discharge-chamber and held between the inlet and discharge chambers for sustaining the valve in position, a removable cover or plate overlapping the inlet and discharge sections to retain the removable support against rising and sealing it, and a loose pivot connection between the valve and seat-support whereby the valve may readily adjust itself upon the valve-seat.

7. In a drain-valve, the combination of an inlet-section having a tubular discharge-opening and a discharge-section detachably bolted together, a laterally-extending tubular valve-seat of non-oxidizable metal having an oblique seating edge arranged within the discharge-section but secured directly to the inlet-section so that its joint is inclosed within the joint uniting the inlet and discharge chambers and further having an internal diameter corresponding to the diameter of the tubular discharge-opening of the inlet-section to form a continuous or smooth surface over the joint, and a pivoted valve in the discharge-chamber movable to or from the valve-seat and normally resting thereon under the action of the valve-body itself.

8. In a sewer or drain valve, the combination of an inlet-section having cast therein a rigid metallic tubular valve-seat of less thickness directed obliquely downward but of an internal diameter corresponding with the internal diameter of the inlet-section, with a discharge-section inclosing the tubular valve-seat and having a considerable clearance or relief space below the lower seating edge of the valve-seat partly made up of the space secured by reducing the thickness of the valve-seat, a joint uniting the inlet and discharge sections and inclosing the juncture of the inlet-section and valve-seat, a weighted and detachably-supported valve in the discharge-section adapted to operate in connection with the valve-seat, and a normally-sealed hand-hole in the discharge-section.

9. In a drain-valve, the combination of the inlet-section A having the tubular valve-seat B cast therein at *b* and also provided with a flange E', the discharge-chamber D having a flange F bolted to the flange E' inclosing the valve-seat B and having a hand-hole E at the top, a removable support I held in place between the inlet-chamber and discharge-chamber, a valve H loosely pivoted to the support J, and a cap or cover *c* for the hand-hole adapted to hold the support J against rising.

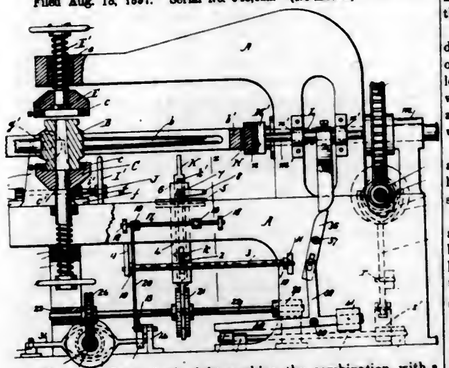
608,451. **MUD-GUARD.** CHARLES GOEBGEN, St. Louis, Mo. Filed Nov. 30, 1897. Serial No. 660,323. (No model.)



Claim.—The combination, with a bicycle, of the rods 1 adjustably located upon the bicycle-axle, the slotted sleeves 4 sliding upon the lower ends of said rods, the retractile coil-springs 20 located upon said rods and connected to said sleeves, the stay-rods 9 adjustably held upon the bicycle-frame and connected to the outer ends of the

first-mentioned rods, the deflecting-plate 13 pivotally connected to the outer ends of the sleeves, in which plate is formed a semicircular recess, a section of rubber located upon the under side of said plate and bounding said recess, and a strap 16 for holding said section of rubber in position, substantially as herein specified.

608,452. WHEELWRIGHT-MACHINE. LATHAM W. GREENLEAF, Terre Haute, Ind., assignor of one-half to James C. Couper, same place. Filed Aug. 18, 1897. Serial No. 648,622. (No model.)



Claim.—1. In a wheelwright-machine, the combination, with a frame, and a support for the wheel-hub carried thereby; of a press for forcing on the rim-segments, tools for chamfering and trimming the spoke-tenons, devices for springing the spokes, and driving mechanisms for operating all the said tools, said tools being arranged to operate successively as the wheel is revolved, substantially as set forth.

2. In a wheelwright-machine, the combination, with a frame, and a support for the wheel-hub carried thereby; of a press for forcing on the rim-segments, a circular saw for trimming the tenons, a bit for chamfering the tenons, a bit for boring the dowel-pin holes, devices for springing the spokes, and driving mechanisms for operating all the said tools, said press and bits being arranged in substantially the same horizontal plane and operating successively on the parts of the wheel as the said wheel is revolved, substantially as set forth.

3. The combination, with a tubular driving-shaft carrying a bit, and a slidable shaft splined in the tubular shaft and also carrying a bit; of locking mechanism connecting the two said shafts, and a bracket supporting the said shafts and slidable longitudinally with them so that both shafts are moved simultaneously by the bracket, the internal shaft being slidable in the tubular shaft when unlocked, substantially as set forth.

4. The combination, with a frame provided with a gnide, and a bracket slidable in the guide; of a tubular driving-shaft journaled in the said bracket and provided with a bit, a slidable shaft splined in the said tubular shaft and also provided with a bit, an operating-lever for sliding the internal shaft, said lever being pivoted to the said bracket and provided with a locking device, and means for sliding the said bracket in its guide, substantially as set forth.

5. The combination, with a frame, a slidable bracket supported by the frame, and means for sliding the said bracket back and forth; of a tubular driving-shaft journaled in the said bracket and provided with a chamfering-bit, a slidable shaft splined to the said tubular shaft and provided with a boring-bit, means for sliding the said slidable shaft back and forth in the said tubular shaft, and locking devices carried by the said bracket and securing the said slidable shaft relatively of the said tubular shaft, substantially as set forth.

6. The combination, with a main frame, and a support for the wheel-hub carried by the said frame; of a frame slidable horizontally in the main frame and radially of the said support, and mechanism for springing the wheel-spokes carried by the said slidable frame, substantially as set forth.

7. The combination, with a support for the wheel-hub and spokes, of two pivoted levers engaging with two adjacent spokes, and means for moving the said levers simultaneously in opposite directions, whereby the said spokes are sprung toward each other, substantially as set forth.

8. The combination, with a support for the wheel-hub and spokes, of two levers, fulcrums for the said levers, means for sliding the said levers longitudinally into and out of engagement with two adjacent spokes, and means for moving the said levers upon their fulcrums simultaneously in opposite directions, whereby the said spokes are sprung toward each other, substantially as set forth.

9. The combination, with a main frame, and a driving-shaft; of a frame slidable horizontally in the said main frame, levers pivotally supported in the slidable frame and operating to spring the spokes, and a revoluble double cam splined on the said shaft and working between the lower end portions of the said levers, substantially as set forth.

10. The combination, with levers for springing the spokes, and means for operating the said levers; of a vertically-movable support for the said levers, means for raising the said support, and clutch mechanism operating to place in action the said means for operating the levers when the said levers are raised, substantially as set forth.

11. The combination, with levers for springing the spokes, a driving-shaft, and a double cam mounted thereon and arranged to operate the said levers; of a vertically-movable support for the said levers, operating mechanism for raising the said support, driving devices, and clutch mechanism actuated by the said operating mechanism and coupling the said driving-shaft to the said driving devices when the said levers are raised, substantially as set forth.

12. The combination, with levers for springing the spokes, and a support for the said levers; of slidable fulcrum-blocks for the said levers to bear against, and means for adjusting the positions of the said blocks, substantially as set forth.

13. The combination, with levers for springing the spokes, and a support for the said levers; of slidable fulcrum-blocks for the said levers to bear against, and a revoluble shaft provided with right and left hand screw-threads which engage with the respective fulcrum-blocks and afford a means for adjusting them simultaneously, substantially as set forth.

14. The combination, with levers for springing the spokes provided with slots, of a cross-bar passing through the said slots and pivotally supporting the said levers, and means for raising and lowering the said cross-bar, substantially as set forth.

15. The combination, with levers for springing the spokes, and a laterally-slidable support for the said levers; of carrier-bars arranged under the said support, and means for raising and lowering the said carrier-bars, substantially as set forth.

16. The combination, with levers for springing the spokes, and a support for the said levers; of fulcrum-blocks for the upper parts of the said levers to bear against, a double cam arranged between the lower parts of the said levers, and springs pressing the said levers against the said fulcrum-blocks and cam, substantially as set forth.

17. The combination, with pivoted arms provided with prolongations, and carrier-bars supported by the said arms; of levers for springing the spokes, a support for the said levers slidable laterally on the said carrier-bars, a pivoted operating-lever, and connecting-rods coupling the free end portions of the said prolongations with the said operating-lever, substantially as set forth.

18. The combination, with levers for springing the spokes, a cam and a driving-shaft for operating the said levers, and means for raising the said levers; of driving devices, clutch mechanism for coupling the said driving devices to the said shaft, a pivoted bell-crank lever having one of its arms connected to the said means for raising the levers, a hand-lever and intermediate connections for operating the said bell-crank lever, and means for operating the said clutch mechanism connected to the other arm of the said bell-crank lever, substantially as set forth.

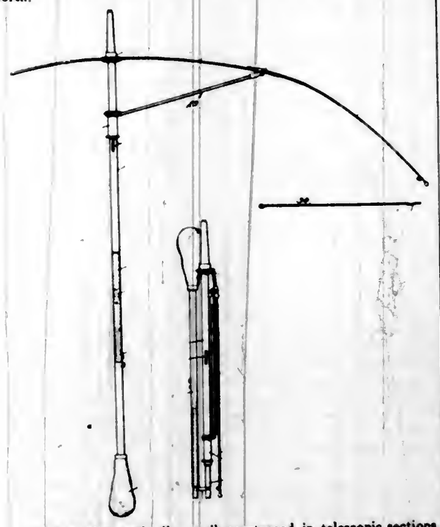
19. In a wheelwright-machine, the combination, with a support for the wheel-hub, and a press; of means for springing the spokes arranged between the said support and press, substantially as set forth.

608,453. FOLDING UMBRELLA. FRANK G. GROVE and FRANK E. STOVER, Luray, Va. Filed Dec. 14, 1897. Serial No. 661,836. (No model.)

Claim.—1. In a folding umbrella, a rib constructed in telescopic sections, the end portion of one section being provided with a concaved upper surface and convexed lower surface, the convexed lower surface constituting cam-surfaces with which the pivots of the braces engage, for the purpose specified.

2. In a folding umbrella, a rib constructed in telescopic sections, the lower section being mounted to slide upon the upper section, the lower end portion of the upper section being upwardly curved, producing cam-surfaces at the under edges of the said upper section, a lap attached to the lower section of the rib near its upper end and extending downwardly below the under edges of the upper section, and a pivot-pin adapted to receive a stretcher located in the said lap and adapted for engagement with the under cam edges of the upper section of the rib, for the purpose set forth.

3. In folding umbrellas, the combination, with a paragon rib constructed in telescopic sections, the lower section being mounted to slide upon the upper section, the upper section near its lower end being provided with a concaved upper surface and convexed under edges, the extreme end of said upper section being in a plane with the body back of its curved portion, of a lap secured to the upper portion of the lower rib-section, extending downward at the sides of the upper rib-section and below the under edges thereof, and a pivot-pin mounted in the said lap below the under edges of the upper rib-section and arranged for engagement with said edges, the pivot-pin being adapted to support an end of a stretcher, for the purpose set forth.



4. In folding umbrellas, a rib constructed in telescopic sections, one mounted to slide over the other, the inner sections being provided with an under cam-surface near its outer end, and a pin carried by the outer section, arranged for engagement with the cam portion of the under section, the said pin acting to force the two sections together when brought in engagement with the cam portion of the said under portion, as specified.

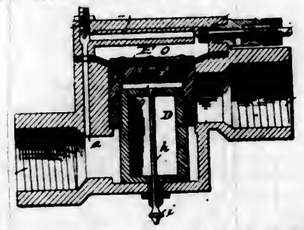
5. In a folding umbrella, the combination of telescoping ribs, the inner section being provided on its under face near its outer end with a cam-surface, and the outer section provided at its inner end with ears, and a brace pivoted to the ears of the outer section, the pivot of the brace being adapted to engage the cam-surface of the inner section, substantially as and for the purpose set forth.

6. In a telescopic rib, the combination, with an upper section provided with under cam-surfaces, of a lower section, a lap fixed to the lower section at a point forward of its upper end, and a pin carried by the lap, arranged for engagement with the said cam-surface, whereby the two sections of the rib may be held firmly together and a back bearing is obtained for the lower rib-section against the upper rib-section, as specified.

7. In a folding umbrella, a stick comprising an upper section having a reduced lower end, an intermediate section of the same diameter as the reduced portion of the upper section and having a link connection therewith, the lower portion of the intermediate section being tubular and provided with opposing slots, one of which extends through to the bottom of the intermediate section, the other terminating near the bottom, forming a cross-bar, and a tubular handle-section held to slide over the intermediate section and the reduced portion of the upper section of the stick, and a spring fulcrumed in the handle-section of the stick, one end of the said spring passing over the cross-bar in the intermediate section into a socket in the handle-section, the outwardly-extending end of the spring being provided with a recess adapted to receive the cross-bar of the intermediate section, for the purpose set forth.

8. In an umbrella, the combination, with a folding stick, the said stick consisting of an upper section having a reduced lower end, an intermediate section of the same diameter as the reduced portion of the upper section and having a link connection therewith, the lower end of the intermediate section being tubular and provided with opposing slots, the lower end of one slot being crossed by the bar, and a handle-section held to slide in the intermediate section and the reduced portion of the upper section of the stick, of a curved spring located mainly within the handle-section and having a bearing against the wall of the said handle-section, the upper portion of the spring being attached to the handle-section at a point opposite its bearing, the upper portion of the spring likewise extending over the lower bar of the intermediate section, the tail end of the said spring being loosely passed out through an opening in the handle-section, the said tail end of the spring being provided with a recess to receive the said bar on the intermediate section, as and for the purpose specified.

608,454. VALVE. CHARLES GULLAND, Pittsburg, Pa. Filed Dec. 29, 1897. Serial No. 664,218. (No model.)

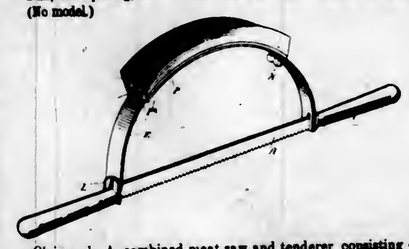


Claim.—1. In a valve, an inlet-passage and an outlet-passage, a piston arranged intermediate of the openings, a cylindrical cap surrounding the upper end of the piston, a diaphragm secured to said cap, a pressure-chamber above the diaphragm and means for controlling the pressure to said chamber, substantially as described.

2. In a valve, a stationary piston, a cylindrical cap surrounding the upper end thereof, the diaphragm secured thereto, a pressure-chamber above the diaphragm an inlet to said chamber, an outlet from said chamber and a valve controlling the inlet and outlet ports, substantially as described.

3. In a valve, a piston located intermediate of the inlet and outlet ports, a cylindrical cap closing the passage around the piston, a diaphragm secured to the cap and an air-chamber between the cap and piston, substantially as described.

608,455. COMBINED MEAT SAW, TENDERER, AND CHOPPER. WILLIAM H. GWIENER, Easton, Pa., assignor of one-fourth to Calvin J. Dull, Phillipsburg, N. J. Filed Aug. 20, 1897. Serial No. 648,944. (No model.)



Claim.—1. A combined meat saw and tenderer consisting of a blade, handles at each end thereof, plates secured around the blade bearing against the inner ends of the handles and provided with projecting teeth and a bolt-hole, a semicircular supporting and stretching frame having slots in the ends to pass over the saw and being provided with notches and a bolt-hole to coincide with the teeth and the bolt-hole of the plates, and a curved tendering device secured on the outside of the semicircular frame, substantially as described.

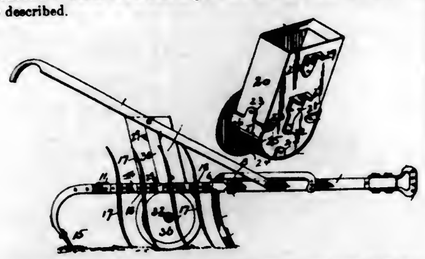
2. The combination with a saw-blade provided with notches at each end, of plates upon the saw-blade having flat outer surfaces to engage the inner ends of the handles and a bolt-hole, teeth upon the inner face of said plates, and a semicircular supporting and stretching frame provided with a slot in each end to pass over the saw and a bolt-hole in each end to register with the bolt-holes in the plate to receive securing pins or screws, said frame being provided in the outer surfaces of its ends with notches to engage the teeth on the inneraide of the plates, substantially as described.

3. A meat tenderer or chopper consisting of a pair of handles mounted upon the opposite ends of a saw-blade or other strip of metal, in combination with a semicircular, elastic plate, secured at its ends upon the connecting-blade and held against outward movement or straightening by the handles, said curved plate being provided on its outer surface with meat tendering or chopping devices, substantially as described.

608,456. COTTON-PLANTER. DAVID H. HUSTER, La Grange, Ga. Filed Feb. 8, 1898. Serial No. 669,571. (No model.)

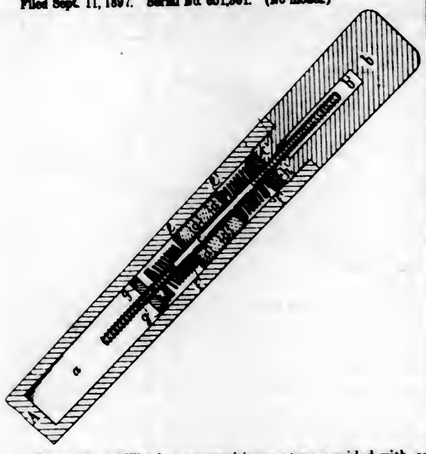
Claim.—1. In a cotton-planter, the combination with the two-part beam having the inner ends bent outwardly and formed with slots, the cross-plates secured to said beam formed with a number of

holes, the side bars, the pins passing therethrough and through said slots and the front ends of said bars connected with said cross-plates and the overlapping bars at the rear ends of said side bars provided with a number of holes, and the bolts passing therethrough, of the seedbox and means for connecting it with said side bars, substantially as described.



2. In a cotton-planter, the combination with the beam, the cross-plates secured thereto provided with a number of holes, the adjustable side bars connected therewith, the inwardly-extending bars at the rear ends thereof provided with a number of holes, the bolt passing therethrough, the handles secured to the beams and the bars having their upper ends bent at angles and secured thereto, and the lower ends secured to said side bars, of the vertically-movable seedbox, the curved bottom formed with a slot or opening, the axle, the ground-wheel at the outer end thereof, the toothed wheel and arms and the lugs on the seedbox embracing said bent bars, and the lower lugs extended to form bearings for the axle, substantially as described.

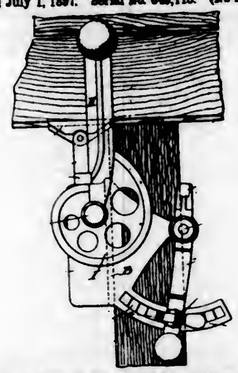
608,457. BILLIARD-CUE. BENEDICT HUTHEL, New York, N. Y. Filed Sept. 11, 1897. Serial No. 651,361. (No model.)



Claim.—1. A billiard-cue comprising a stem provided with an open bore screw-threaded on its lower end, a butt, having a screw-threaded shoulder screwed into the bore of the stem, and a bore concentrical with the bore of the stem and screw-threaded at its mouth, a screw-threaded rod screwed in the bore of the butt and projecting into the bore of the stem, a lock-nut screwed on the rod adjoining the shouldered end of the butt and securing the rod in its position, a screw-threaded stop-nut fitted into the bore of the stem and provided with frictional packing, set-nuts and washers set on the rod between the nuts, recoil-springs set between the washers and the set-nuts and tending to press the washers together, and perforated weights slid on the rod between the washers and held together and also in adjusted position by the pressure of the springs.

2. The combination with a billiard-cue composed of two or more parts, one having a bore provided with a screw-thread in its lower end and the other a screw-threaded shoulder adapted to be screwed into the bore of the preceding part, of a screw-threaded rod secured in the shouldered part concentrically with the bore, a nut fixed in the bore and screwed on the opposite end of the rod, recoil-springs set between the nut and the base of the screw, washers slid on the rod between the springs, and weights set between the washers and held in position by the springs.

608,458. FLOOR-CLAMP. ERWIN C. INGERSOLL, Philadelphia, Pa. Filed July 1, 1897. Serial No. 643,115. (No model.)



Claim.—1. A floor-clamp comprising a frame having a downwardly-extending flange toothed at one face and adapted to engage one side of a joist or like support, a lever fulcrumed on the frame and carrying a depending jaw at one end, the said jaw being adapted to engage the opposite side of the joist at a point opposite the forward end of the said toothed flange, the said lever carrying a spring-pawl near the other end, a segment forming an integral lateral extension of the said frame and provided with teeth on its upper face for engaging the said pawl, the said lever being provided on its under face with a guide engaging a segmental recess on the under side of the toothed segment whereby the lever is held against up-and-down movement, the said frame being provided with a guideway and a bar carrying a presser-foot and adapted to slide in said guideway, the said guideway being located at the outer side of the toothed flange and parallel therewith, whereby the presser-foot engages the board to be nailed at one side of the joist, as and for the purpose set forth.

2. A floor-clamp comprising a frame having a downwardly-extending offset member, a lever fulcrumed on the frame and provided at one end with a jaw projecting into the plane of the offset member to coact with the latter in clamping the device in place, a spring-pressed pawl carried by the opposite or handle end of the lever, the said frame being provided with a laterally-extending segment provided with teeth on its upper face adapted to be engaged by the said pawl, the said toothed segment being provided with a guideway formed on its under face and adapted to be engaged by a guide on the said lever, and means carried by the frame for exerting pressure on the flooring-boards, substantially as described.

608,459. MIRROR-HINGE. CHARLES W. JUDSON, Terryville, Conn., assignor to the Eagle Lock Company, same place. Filed Nov. 15, 1897. Serial No. 658,516. (No model.)

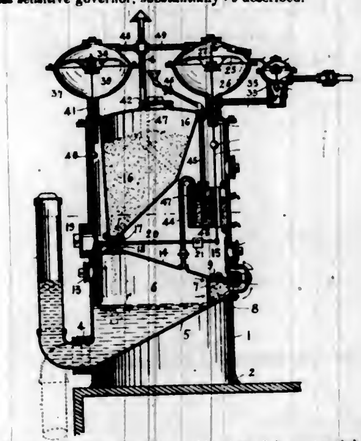


Claim.—1. A friction-hinge for mirrors, having a sheet-metal strap, each leaf of which is formed with a single screw-hole and the outer leaf of which is made longer than the inner leaf and turned inward to form a flange, which prevents the two leaves from being unduly drawn together by the screw passing through the single screw-holes of the respective leaves, and the said flange being also formed with teeth which enter the wood and hold the strap against swiveling upon the screw which passes through said screw-holes.

2. A friction-hinge for mirrors, having a sheet-metal strap of which one leaf is longer than the other, each leaf being formed with a single screw-hole and the longer leaf being bent at or substantially at a right angle to form a flange which prevents the two leaves from being unduly drawn together by the screw passing through the single screw-holes of the respective leaves, and one leaf of the said strap being also adapted to enter the wood and hold the strap against swiveling upon the single screw which passes through the said screw-holes.

608,460. ACETYLENE-GAS GENERATOR. ALEXANDER KEITH and JAMES H. BYRNE, Toronto, Canada. Filed May 6, 1897. Serial No. 635,287. (No model.)

Claim.—1. In a gas-generator, the combination of the water-tight generating-tank, the magazine for pulverized or granulated materials so arranged that said magazine discharges into the generating-tank above the water-level, a system of two pressure-governors, each consisting of a variable chamber through which the gas passes on its way to the service system, a valve controlling the admission of gas from the generator to each of said chambers, and means whereby the expansion of the walls of said chamber closes said valve, the governor nearest the generator being less sensitive than the other, together with means for regulating the admission of the pulverized or granulated material to the generating-tank controlled by the expansion of the less sensitive governor, substantially as described.



2. In a gas-generator, the combination of the water tight tank, the magazine for pulverized or granulated materials, so arranged that said magazine discharges into the generating-tank above the water-level, a system of two pressure-governors, each consisting of a variable chamber through which the gas passes on its way to the service system, a valve controlling the admission of gas from the generator to each of said chambers, and means whereby the expansion of the walls of said chamber closes said valve, the governor nearest the generator being less sensitive than the other, together with means for regulating the admission of the pulverized or granulated material to the generating-tank controlled by the expansion of the less sensitive governor, a blow-off pipe which leads from the generating-chamber to the open air, and a governing device connected therewith arranged to discharge only above a predetermined pressure, substantially as described.

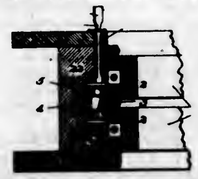
3. In a gas-generator, the combination of the water-tight generating-tank, the magazine for pulverized or granulated material above the same, the valve controlling the flow of material from the magazine to the gas-generating chamber, the governor which has a movable diaphragm which is acted upon by the gas-pressure in the generator, and connections whereby the valve is controlled by the movements of the diaphragm, together with a valve in the service system, the second governor controlling the same, and into and through which second governor the gas passes from the first governor, said second governor operating under less variations of pressure than does the first governor, substantially as described.

4. In a gas-generator, the combination of the generating apparatus and means whereby the rate of generation is controlled, the governor operated by pressure from within the generator to control said means, and the expansible surplus storage-chamber, with means controlling the inflow of gas thereto, which means are also controlled by the gas-pressure within the generator, but graduated to operate only at greater variations of pressure than are necessary to affect the governor, substantially as described.

5. In a gas-generator, the combination of the generating-chamber, the storage-chamber, the connection between the two and the condensing-chamber located in the line of said connection and a strainer in said condensing-chamber, together with the water seal and the pipe leading directly from the generating-chamber to the water seal, substantially as described.

6. In a gas-generator, the combination of the generating apparatus, the two governors connected to the service system, operating-valves therein, and operated by flexible diaphragms actuated by the gas passing through said service system, the governor nearest the generator being the less sensitive of the two, together with the means for controlling the rate of gas generation, said means being operated by said less sensitive governor, substantially as described.

608,461. SASH-FASTENER. HENRY B. LEACH, Bedford, Ohio. Filed Aug. 14, 1897. Serial No. 648,282. (No model.)



Claim.—1. In sash-locks, a pair of toothed dogs having teeth faced in opposite directions and set in different vertical planes, a shaft supporting one of said dogs and a pinion on said shaft meshing with the other dog, whereby said dogs are geared together and the movement of one dog causes a corresponding movement in the other, a single casing inclosing said dogs, and a spring engaging one of the dogs to force it forward, in combination with the sashes of a window having oppositely-arranged teeth engaged by said dogs, substantially as described.

2. The lock substantially as described, consisting of two oppositely-faced toothed dogs in different vertical planes, an operating-shaft carrying one of said dogs and a pinion on said shaft meshing with the other dog, in combination with a casing supporting said shaft and a bearing for one of said dogs in said casing separate for said shaft and the upper and lower sashes of a window engaged each by one of said dogs, substantially as described.

3. In sash-locks, a pair of dogs set in different vertical planes and having teeth faced in opposite directions, in combination with a single case, a shaft supported in said case carrying one of said dogs and a separate bearing for the other dog and a pinion on said shaft meshing with the said dog having a separate bearing, a key to engage said shaft and turn the dogs back out of locking position, and means to hold said key from turning, whereby the dogs may be held back out of engagement and the sashes left free to be raised and lowered at will, substantially as described.

4. The combination with a pair of sliding sashes, having oppositely-faced teeth at their edges, of a pair of oppositely-facing dogs geared together, and each engaging one of said sashes, a spring for normally pressing one of said dogs outward, a key removably applied to the shaft of one dog and having its shank reduced at one point and a plate provided with an opening through which the key passes, the said plate and key being constructed to lock the key against turning when desired, substantially as described.

608,462. DOOR-CHECK. PETER J. LENHART, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed Feb. 20, 1897. Serial No. 624,473. (No model.)



Claim.—1. In a door-check, the combination of a spindle, a casing in which said spindle is mounted, provided with an annular piston-chamber formed of two parts, divided on a plane at right angles to the axis of rotation of the spindle, and having a suitable by-pass, and a piston connected with the spindle and working in the piston-chamber; substantially as set forth.

2. In a door-check, the combination of a spindle provided with a piston and a casing in which said spindle is mounted, formed with an annular chamber in which said piston works; said chamber being concentric with said spindle and having approaching inner walls separated by a restricted opening which is closed by the spindle, but which affords a way for travel of the connection between the piston and spindle and a suitable by-pass for said chamber, substantially as explained.

3. In a door-check, the combination of the shell formed with an annular chamber having a restricted circular opening in its inner periphery, a spindle journaled in the casing concentrically with the annular chamber, an enlargement providing a bearing for the spindle and closing the circular opening and a suitable passage communicat-

ing with said chamber and permitting escape of fluid from in front of the piston; substantially as set forth.

4. In a door-check, the combination of a spindle having a piston, and a casing in which said piston is mounted formed with an annular piston-chamber concentric with the spindle approximately circular in radial section, divided transversely to the spindle into an upper half which carries a radially-arranged dividing-wall, and a bottom or lower half which is fitted to said upper half a suitable by-pass being provided which permits the escape of fluid from in front of the piston; substantially as described.

5. In combination with a door-check; a spindle provided at one end with an enlargement and an adjustable cup-bearing in which the enlargement of said spindle turns, and by which it is automatically centered and readily adjusted to take up wear; substantially as described.

6. In a door-check, the combination of a shell having a partition formed with the upper half of an annular piston-chamber, approximately circular in radial section, a bottom formed with the lower half of the piston-chamber, the operating-spindle working through the partition and formed with a ball providing an inner wall to the piston-chamber, and the approximately circular piston secured radially to the ball of the shaft and working in the piston-chamber and suitable means for allowing restricted passage of fluid from one side to the other of the piston during the advance movement of said piston and the free passage of said fluid during the return movement of the piston; substantially as described.

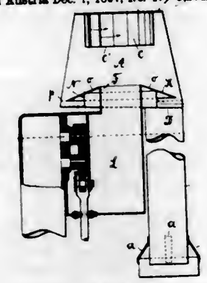
7. In a door-check, the combination of a shell having a partition formed with the upper half of an annular piston-chamber approximately circular in radial section, and with a radially-arranged dividing-wall formed wholly and integrally with said upper half dividing the piston-chamber, a bottom formed with the lower half of the piston-chamber, the operating-spindle working through the partition, formed with a ball providing an inner wall to the piston-chamber, and the approximately circular piston secured to the ball of the shaft and working in the piston-chamber a suitable by-pass being provided which permits the escape of fluid from in front of the piston; substantially as described.

8. In a door-check, the combination of a shell having a partition formed with a central bearing, and with the upper half of an annular piston-chamber, approximately circular in radial section, the adjustable bottom formed with a central step, and with the lower half of the piston-chamber, and the operating-spindle formed with a ball fitting between the central bearing and the central step; substantially as described.

9. In a door-check, the combination of a shell having a partition formed with a central threaded neck, with a central bearing and with the upper half of an annular piston-chamber, the adjustable bottom formed with a central step and with the lower half of the piston-chamber, the operating-spindle formed with a ball fitting between the central bearing and the step bearing, the packing and spring located within the neck, and the cap adjustable on the neck; substantially as described.

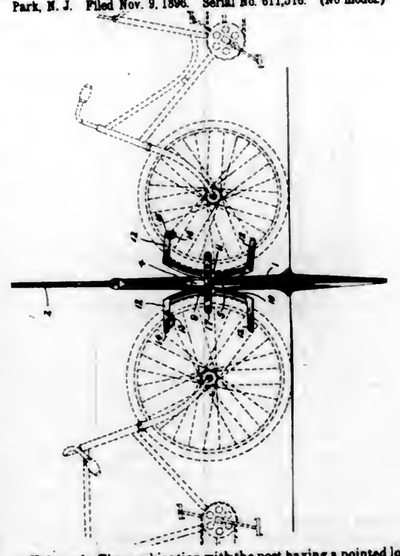
10. In a door-check, the combination of a shell having a spring-chamber, a key-opening extending into the spring-chamber, and a partition formed with the upper half of an annular piston-chamber, and with a dividing-wall having a vertical by-pass and dividing the piston-chamber, the rotating cylindrical valve located in the by-pass and having its stem extending into the spring-chamber in rear of the key-opening, and the bottom formed with the lower half of the piston-chamber; substantially as described.

608,463. CENTRIFUGAL STEAM AND WATER SEPARATOR. EDUARD LEPPIK, Warsaw, Russia. Filed June 15, 1897. Serial No. 640,876. (No model.) Patented in France Dec. 18, 1896, No. 262,812; in Belgium Dec. 18, 1896, No. 125,247; in England Dec. 20, 1896, No. 29,339, and in Austria Dec. 7, 1897, No. 47/5,274.



Claim.—A separator of water particles from steam consisting of a drum arranged within the boiler, said drum being closed partially above by an annular ring carrying a fixed turbine open above and closed below, said drum being further provided with a helical bottom adapted to drain the water separated toward a drain-orifice therein, and a drain-pipe open at both ends and extending into the water of the boiler and provided at its lowest extremity with a vessel adapted to retard as much as possible the entrance of bubbles into the drain-pipe, and of an eduction-pipe extending into the said drum and provided at its upper end with a conical cap pierced with holes adapted to allow for the escape of any ascending steam-bubbles, and of a vertical circular partition inclosing the holes aforesaid and cutting the said drain-orifice, substantially as described.

608,464. BICYCLE-SUPPORT. ABRAHAM W. LEWIS, Asbury Park, N. J. Filed Nov. 9, 1896. Serial No. 611,516. (No model.)



Claim.—1. The combination with the post having a pointed lower end, and a central slot as specified, of a bar arranged and secured horizontally in such slot, and projecting from the post laterally, and a series of wheel-holders proper pivoted on the said bar and composed of a curved bar having bifurcated ends for embracing wheel-rims as shown and described.

2. The improved bicycle-wheel holder proper composed of the curved bar, arranged vertically and pivoted to a fixed support at the middle of its length, so as to rock and be capable of adjustment as specified, a pair of clamping-springs arranged at the middle, and bifurcated lugs at the ends of said bar, for embracing and holding a wheel-rim as specified.

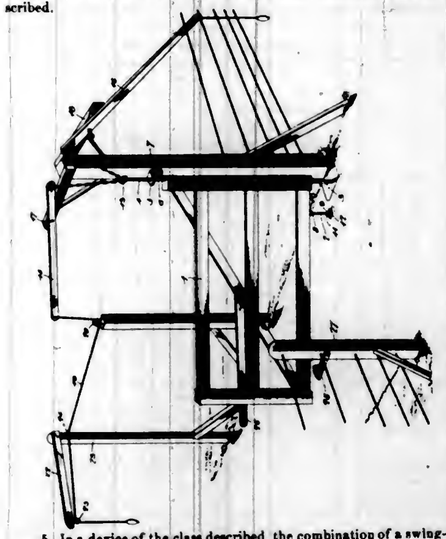
608,465. GATE. MILES K. LEWIS, Albany, Oreg. Filed Mar. 30, 1898. Serial No. 675,732. (No model.)

Claim.—1. A device of the class described comprising a swinging gate capable of a limited vertical movement, and an oscillating link connected with the gate and fulcrumed at a point in line with the center of the swing of the gate, whereby when the gate is lifted, the link will cause it to swing, substantially as described.

2. A device of the class described comprising a swinging gate, capable of a limited vertical movement, and a link located beneath the gate and hinged at one end to the same, said link being fulcrumed in line with the center of the swing of the gate whereby it is adapted to cause the gate to swing when the same is lifted, substantially as described.

3. A device of the class described comprising a swinging gate, capable of a limited vertical movement, a link connected with the gate and adapted to cause the same to swing when lifted, and levers fulcrumed between their ends, above the gate and connected at their inner ends with the same, substantially as described.

4. In a device of the class described, a swinging gate capable of a limited vertical movement, means for causing the gate to swing when the same is lifted, levers located above the gate, fulcrumed between their ends and connected at their inner ends with the gate, a post 21 provided with a pulley 20 and located beneath one of the levers, a support 23 having an arm and provided at the inner and outer ends of the same with pulleys, and a flexible connection extending over the said pulleys and attached to the adjacent lever, substantially as described.

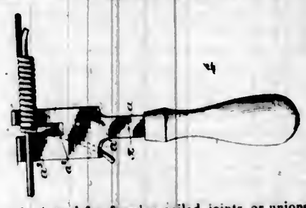


5. In a device of the class described, the combination of a swinging gate capable of a limited vertical movement, and an oscillating link connected with the gate and arranged to cause the gate to swing when the same is raised and lowered, substantially as described.

608,466. COMPOSITION FOR SHEEP-DIPPING. ROBERT MACKILL, Glasgow, Scotland. Filed July 27, 1897. Serial No. 646,125. (No specimens.)

Claim.—An improved composition for sheep-dipping and analogous purposes and formed by combining cresylic acid or cresol with nicotine from which the other constituents of tobacco have been separated as completely as possible.

608,467. TOOL FOR SPLICING WIRES. HOWARD L. MAITLAND, Nantucket, Mass. Filed Dec. 5, 1896. Serial No. 614,530. (No model.)

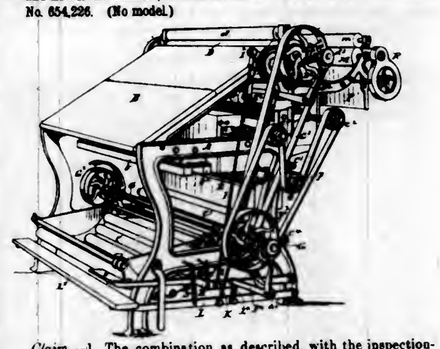


Claim.—1. A tool for forming coiled joints or unions between the ends of wires, said tool comprising a supporting and guiding hook, a supporting and smoothing hook, and a bending or coiling device located between said hooks, said hooks having substantially parallel shanks and bills the supporting and guiding hook arranged to support and guide the tool in advance of the coil being formed, and the supporting and smoothing hook arranged to act upon the coil as said coil is formed, substantially as described.

2. A tool for forming coiled joints or unions in the meeting ends of wires, said tool comprising relatively large and small hooks arranged side by side with their shanks and bills parallel to each other, and a coiling-wheel located between said hooks, substantially as described.

3. A tool for forming coiled joints or unions, said tool comprising a plate having a bifurcated end, said bifurcated end being bent to form a supporting and guiding hook, and a supporting and smoothing hook, said hooks being of different diameters, and a bending or guiding wheel journaled between said hooks, substantially as described.

608,468. CLOTH-INSPECTING MACHINE. EDWIN T. MARBLE and EDWIN H. MARBLE, Worcester, Mass. Filed Oct. 6, 1897. Serial No. 654,226. (No model.)



Claim.—1. The combination as described, with the inspection-table, the draft-rolls at the rear edge of said table, the draft-roll pulley and its clutch mounted on the shaft of said roll, the revolving brushes, and the brush-pulleys; of a frictional draft-roll-reversing mechanism operated from said draft-roll pulley, the driver-shaft provided with the draft-roll-operating pulley fixed thereon, and the brush-operating loose pulley and its clutch mounted thereon, the belts running on the respective pulleys, the primary treadle and treadle connections for actuating the two pulley-clutches, and the secondary treadle and connections for shifting said draft-roll-reversing mechanism into and out of engagement, all substantially as and for the purposes set forth.

2. In a cloth-inspecting machine, the combination, of an inspecting-table, draft-roll, draft-roll-operating mechanism, revolving brushes, and brush-operating mechanism; mechanism for reversing the draft-roll action, and a treadle-actuated means for controlling said draft-roll-reversing mechanism for operation independently of the brush-operating mechanism, for the purpose set forth.

3. In a cloth-inspecting machine, the combination, as described, of the tension-bars, the primary oppositely-acting rotary brushes, the guide-rolls C', C^2, the inspection-table over which the cloth passes normally in receding direction, the draft-rolls adjacent to the rear edge of said table, the secondary brush following said draft-rolls, the guide-rolls C^3, C^4, the delivery-feed rolls, means for operating said draft and feed rolls in forward and reverse directions, mechanism for effecting rotation of the brushes, and a controlling-treadle and connections whereby said brushes are controlled for action in unison with the forward action of the draft-rolls, for the purposes set forth.

4. The combination, as described, with the draft mechanism and the brush mechanism in a cloth-inspecting machine; of the draft-roll pulley D' on the draft-roll shaft, the brush-operating pulley F' and its clutch on the driver-shaft G, the clutch-actuating angle-levers D and F^4, the driver-shaft G carrying the pulley F', and having the pulley G' fixed thereon, the belts G^3 and F arranged on said pulleys, the treadle-lever L and clutch-lever connections K and L^3, for the purposes set forth.

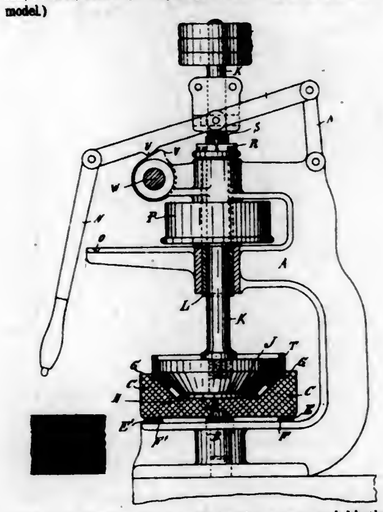
608,469. SKIRT. BERTHA R. MARTIN, Asbury Park, N. J. Filed Aug. 25, 1897. Serial No. 649,481. (No model.)



Claim.—A skirt having a front portion and a rear portion, each provided with a central vertical opening extending from the waist to the crotch, leg portions joined together at the crotch, plaits extending downwardly from the waist at each side of said openings to the bottom of the skirt, the end of one plait at its upper portion being extended across the adjacent opening to close the same, and lines of stitching

extending through the skirt portions and through the upper portions of the plaits longitudinally of the said openings and closely adjacent thereto, the lower or leg portions of the plaits, from the crotch downward, being loose, substantially as described.

608,470. MACHINE FOR WORKING BALLS. HEINRICH MELTZER, Ratibor, Germany. Filed Apr. 8, 1897. Serial No. 631,228. (No model.)



Claim.—1. The combination of a bowl, a stamp revoluble therein, an axially-movable spindle to which the stamp is attached, a lever in connection with the spindle, and a cam coacting with the lever.

2. The combination with a frame, of a bowl, a stamp coacting therewith, a spindle attached to the stamp, the spindle being slidable and revoluble, a lever in connection with the spindle, a cam engaging the lever, and an arm pivoted to the lever and capable of holding the lever raised out of engagement with the cam.

3. The combination of a bowl, a stamp coacting therewith, continuously-operative means for continuously revolving the stamp within the bowl and continuously-operative means for periodically lifting and dropping the stamp.

4. The combination with a frame, of a bowl capable of partial revolution on a vertical axis, and a revoluble stamp coacting with the bowl to work balls between the two.

5. The combination of a bowl, a stamp revoluble within the bowl, the stamp and bowl being arranged to receive balls between their adjacent faces, and a ring capable of bearing down on the balls to prevent the expulsion of the balls from the bowl.

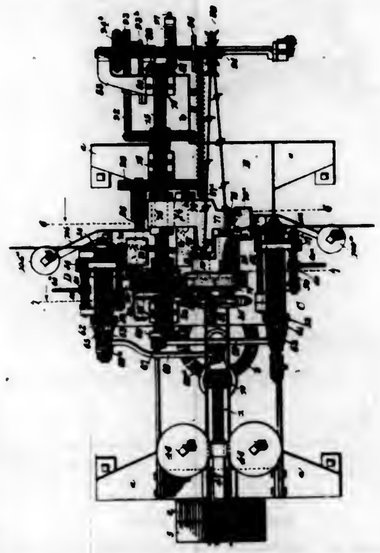
6. The combination of a bowl having outwardly-flaring walls, a revoluble stamp working in the bowl and conforming therewith whereby balls received between the stamp and bowl will be thrown upward and outward, and a ring capable of bearing down on the balls to hold them in place.

7. The combination of a bowl, a continuously-revoluble stamp working therein, a continuously-revoluble shaft, and means including a cam, such means being driven by the shaft and serving periodically to lift and drop the stamp toward and from the bowl.

608,471. BARBED-WIRE MACHINE. BENJAMIN M. MILLER, Crawfordsville, Ind. Filed Dec. 23, 1897. Serial No. 663,197. (No model.)

Claim.—1. In a barbed-wire machine, the oppositely-rotating strand-carrying shells arranged with their working ends out of alinement one with the other, and each having an inner reciprocating member carrying a barb-coiling finger slidably fitted to the outer shell member, in combination with a driving-shaft from which the two strand-carrying shells are driven, means operatively connected with the inner members of said strand-carrying shells for imparting reciprocating play thereto, independent feed mechanisms for the respective strand-carrying shells, and cutter devices in operative relation to the disalined working ends of said strand-carrying shells, substantially as described.

2. In a barbed-wire machine, the combination of a barb-coiling mechanism having coiling-fingers arranged in different vertical planes and situated one in advance of the other to be out of alinement transversely across the machine, mechanism for rotating said coiling-fingers simultaneously, intermittent feed mechanisms arranged on opposite sides of the barb-coiling mechanism and having their respective pairs of feed-rollers arranged substantially in alinement with the disalined coiling-fingers of the coiling mechanism, and a movable cutter mechanism embracing independent sets of knives arranged between the feed mechanisms and adjacent to the working ends of the coiling mechanism, substantially as and for the purposes described.



3. In a barbed-wire machine, a coiling mechanism comprising long and short strand-carrying shells having their working ends terminating in different vertical and transverse planes, each shell consisting of an outer member limited to rotation on its axis and an inner member capable of rotary and reciprocating play within said outer member, in combination with means for intermittently imparting reciprocating play to the inner members of said strand-carrying shells, independent feed mechanisms to deliver barb-forming wires to the working ends of said disalined shells, and a cutter mechanism, substantially as and for the purposes described.

4. In a barbed-wire machine, a barb-coiling mechanism comprising long and short shells having their working ends terminating in different planes transversely across the machine, and each shell consisting of an outer member and an inner member arranged to reciprocate within said outer member and to rotate therewith, in combination with mechanism for imparting rotary motion simultaneously to both strand-carrying shells, mechanism for reciprocating the inner members of said strand-carrying shells, independent feed mechanisms to deliver barb-forming wires to the working ends of the disalined strand-carrying shells, and a cutter mechanism, substantially as and for the purposes described.

5. In a barbed-wire machine, a barb-coiling mechanism comprising long and short strand-carrying shells, each shell consisting of an outer member provided with a gear-pinion, an inner member carrying a coiling-finger which passes through a face-plate on the outer member and has its rear end projected beyond said outer member, a pivoted spring-controlled frame adjacent to the projecting ends of the inner members of said shells and shipper-forks carried by said pivoted frame, in combination with a cam to vibrate the pivoted frame, means for rotating the strand-carrying shells in opposite directions simultaneously, independent feed mechanisms, and a cutter mechanism, substantially as and for the purposes described.

6. In a barbed-wire machine, a duplex barb-coiling mechanism comprising long and short outer shells having their working ends arranged out of alinement one with the other, and each provided with an inner reciprocating member which carries a barb-coiling finger that is slidably fitted in the working end of the outer shell to remain normally in engagement therewith, means operatively connected with the inner members of the two shells for giving reciprocating play simultaneously thereto within the outer shells to retract and extend the barb-coiling fingers, and gearing directly connecting the outer shells to rotate the latter in opposite directions simultaneously, in combination with independent feed devices to direct the barb-forming wires to the disalined ends of the outer shells, and cutter devices in operative relation to said disalined ends of the outer shells, substantially as described.

7. In a barbed-wire machine, the combination with a duplex coiling mechanism and a cutter mechanism adjacent to the working ends of said coiling mechanism, of independent feed mechanisms situated on opposite sides of the coiling mechanism and having the feed-rollers arranged to deliver to the disalined working ends of the coiling mechanism, and a driving device common to both feed mechanisms to impart uniform peripheral speed to the feed-rollers thereof, substantially as and for the purposes described.

8. In a barbed-wire machine, the combination with a barb-coiling mechanism and a cutter mechanism, of independent feed mechanisms situated on opposite sides of the coiling mechanism and having their feed-roll shafts provided with ratchets, a driving-shaft, and pawl-carrying links or arms actuated by said driving-shaft and arranged in relation to the feed-roll shafts for the pawls thereon to engage with the ratchets, substantially as and for the purposes described.

9. In a barbed-wire machine, the combination with a coiling mechanism, and a cutter mechanism, of a driving-shaft provided with a crank-disk, independent feed mechanisms situated on opposite sides of the coiling mechanism and each having one of its feed-roll shafts provided with a ratchet, swinging arms adjacent to the ratchets of said feed mechanisms and provided with pawls which engage with said ratchets, a driven link attached to one swinging arm and to the crank-disk, and a driven link pivoted to the other swinging arm and to the driven link at a point intermediate of its length, substantially as and for the purposes described.

10. In a barbed-wire machine, the combination of a coiling mechanism having the working ends of its rotary members arranged out of alinement with each other, and independent feed mechanisms by which barb-forming wires are supplied to said disalined working ends of the coiling mechanism, of a driving-shaft having a knife-actuating cam 76, an irregularly-shaped knife-carrier pivotally mounted to present its knives adjacent to the disalined ends of the coiling mechanism and having a fork which embraces said cam 76 to be actuated thereby, movable knives mounted on said reciprocating knife-block, and stationary knives in operative relation to the working ends of the coiling mechanism and the movable knives, substantially as described.

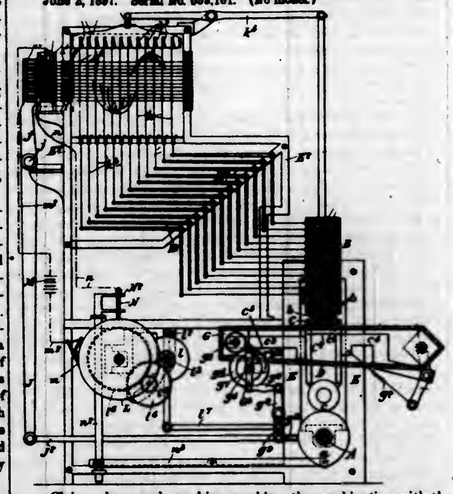
11. In a barbed-wire machine, a coiling mechanism comprising long and short strand-carrying shells having their working ends arranged one in rear of the other and each shell provided with an inner member which is arranged to reciprocate within the outer rotary member thereof, in combination with mechanism for imparting simultaneous and reciprocating motion to the inner members of said strand-carrying shells, a reciprocating knife-carrier arranged adjacent to the disalined working ends of the strand-carrying shells and provided with movable knives, fixed knives in operative relation to the movable knives of said knife-carrier, mechanism for positively reciprocating the knife-carrier, and independent feed mechanisms arranged in alinement with the disalined working ends of the strand-carrying shells and with the respective sets of knives of the cutter mechanism, substantially as and for the purposes described.

608,472. CARRIER FOR UMBRELLAS OR THE LIKE. CHAS. H. MCCORMACK, Towners, N. Y., assignor of one-half to Charles H. Lee, same place. Filed Apr. 10, 1897. Serial No. 631,584. (No model.)



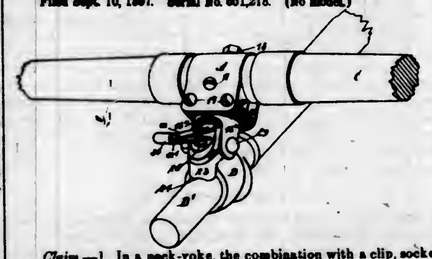
Claim.—A device for carrying umbrellas and parasols consisting of a bar or rod, clasps carried at the ends thereof and adapted to receive and hold the umbrella, and a chain or cord secured at its ends to the respective clasps and by means of which the parasol or umbrella is suspended from the person of the wearer, substantially as described.

608,473. APPARATUS FOR PREPARING CARDS FOR USE IN JACQUARD-MACHINES. ROBERT G. MCCRUM, Armagh, Ireland. Filed June 2, 1897. Serial No. 639,161. (No model.)



Claim.—In a card-punching machine, the combination with the punches, a griff, means for reciprocating the griff vertically, and a series of hooks in operative connection with the griff and punches, of a series of stationary solenoids, a core formed in two parts movable in each of the solenoids, a needle connecting one of the core parts of each solenoid with one of the hooks, a pivoted frame carrying the second part of the same core, means for swinging the frame in relation to the solenoids, a source of electricity, a movable electrically-conductive pattern-surface and conductors connecting the solenoids, source of electricity and pattern-surface, substantially as set forth.

608,474. NECK-YOKE. SAMUEL J. MCDONALD, Gallatin, Mo. Filed Sept. 10, 1897. Serial No. 651,218. (No model.)



Claim.—1. In a neck-yoke, the combination with a clip, socket-blocks located within the said clip and adjustable toward each other, said blocks being provided with a tapering opening, and a tapering head swiveled in the opening in the said socket-blocks, the head being provided with a flange at its bottom and extensions from the flange, of a center ring or loop pivoted in the extensions from the swivel-head, the said eye or ring or loop being provided with a slotted head, and an elastic gripping jaw or block secured in the slotted portion of the head, a member of the said jaw or gripping-block extending downwardly and forwardly at the front portion of the said center ring or loop, as and for the purpose specified.

2. In a neck-yoke, the combination with a clip, socket-blocks adjustably secured in the said clip, said blocks being provided with a tapering opening, and being also provided with a bottom recess, of a head swiveled in the tapering opening in the said blocks, the head being provided with a flange extending into the lower recess of the blocks, a washer interposed between the blocks and the flange of the head, a center ring or loop pivotally connected with the said swiveled head, and a spring bearing upon the cross-pole and ring and acting to swing the lower edge of the ring backward, as and for the purpose specified.

3. In a neck-yoke, the combination with a clip, socket-blocks adjustably secured in the said clip, said blocks being provided with a tapering opening and being also provided with a bottom recess, of a head swiveled in the tapering opening in the said blocks, the head

being provided with a flange extending into the lower recess of the blocks, a washer interposed between the blocks and the flange of the head, a center ring or loop pivotally connected with the said swivel-head, a bolt passed through the said swivel-head and adapted to strengthen the same, and an elastic jaw or gripping-block of angular construction, one member whereof is secured at the upper portion of the center ring or loop, the other member extending downwardly and forwardly at the upper portion of the said ring or loop, for the purpose set forth.

4. In a neck-yoke, the combination with a clip, a head swiveled in the said clip, and a center ring or loop pivoted to the said head, of a spring adapted to act as an antirattler, the said spring comprising two members, one member whereof is longer than the other, the longer member being provided with a curved extremity adapted for engagement with the curved upper portion of the center ring or loop and for engagement with the swivel-head, the shorter member of the spring engaging with the center ring or loop in advance of the point of engagement of the longer member, for the purpose set forth.

5. A neck-yoke connection, comprising a plate adapted to embrace the cross-pole, independent socket-blocks between the ends of said plate the socket-blocks being inwardly concaved and forming a central socket between them when in place, bolts passing through said blocks and the ends of the plate, and pivot-blocks occupying the socket between said blocks and having a pole-ring attached.

6. A neck-yoke connection, comprising a plate adapted to embrace the cross-pole and forming a clip, independent socket-blocks between the ends of said clip the socket-blocks being inwardly concaved and forming a central socket between them, bolts passing through said blocks and the ends of the clip, a pivot-block within the socket between said blocks and having ears projecting from opposite sides thereof, and a pole-ring pivoted between said ears.

7. A neck-yoke having a pole-ring pivoted thereon to swing to the front and rear, a spring between the cross-pole and ring acting to swing the lower edge of the ring backward.

8. A neck-yoke having a pole-ring pivoted thereon to swing to the front and rear, and also to swivel, and a spring between the ring and its support, and adapted to swing the lower edge of the ring to the rear.

9. A neck-yoke connection, comprising a clip engaging the cross-pole, a pole-ring pivoted thereon to swing to the front and rear, the upper forward edge of the ring being adapted to engage and bite the pole when swung into contact therewith, and a flat doubled spring interposed between the clip and ring and engaging the forward edge of said ring.

10. A pole-ring for neck-yokes, comprising a ring adapted for a pivotal suspension and having a slot in its upper forward part, a ledge above said slot and projecting forward therefrom, and a block of rubber in said slot extending downward to engagement with the pole.

11. A pole-ring for neck-yokes, comprising a ring having a hook or arm extending upward and forward from the upper rear edge thereof and forming a slot between the same and the body of the ring, the bottom of said slot forming a pivot-bearing, a block or rubber within said slot and extending downward to contact with the pole, and a bolt passing through the end of the arm and rubber block and screwing into the body of the ring.

608,475. JAR-CLOSURE. FRANKLIN P. MCELFRESH, Anderson, Ind. Filed Feb. 12, 1898. Serial No. 670,092. (No model.)

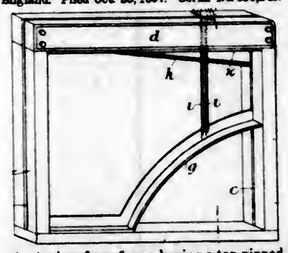


Claim.—1. The combination, with the bail, of the cap or cover having upon its top surface arched lugs, two of which are in the same line and out of the central line of the cap, and one of which is out of the plane of the said two lugs and in the central line of the cap, all of said lugs adapted to be engaged by the bail, as set forth.

2. The combination, with the bail, of the cap or cover, two lugs on the cap in the same line and out of the central line of the cap, and a lug on the cap offset from the said two lugs in the central line of the cap, all of said lugs adapted to be engaged by the bail, as set forth.

3. The combination with the cap or cover having V-shaped arched lugs, one of which is out of the line of the others, and the small or contracted portion of each lug being nearest the edge of said cap, of the bail having loops to engage said contracted portions, arms to engage the sides of each lug, wings engaging the cap edge, and depending fingers from the said wings as set forth.

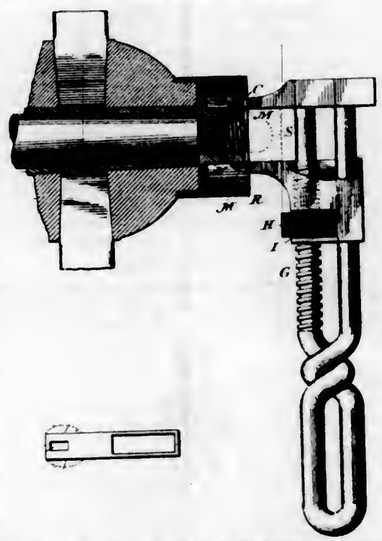
608,476. PIANOFORTE. JOHN NOBLE and FREDERICK R. BENNETT, London, England. Filed Oct. 23, 1897. Serial No. 656,945. (No model.)



Claim.—1. A pianoforte-frame having a top-pinned wrest-plank and centrally-strung wires which latter after leaving the bridge diverge and take their bearing upon the top surface of the wrest-plank, on their way to the wrest-pins, some upon the right and others upon the left hand side of the longitudinal center line of the frame, whereby an equal tension on both sides of the frame and a resulting central strain are obtained, substantially as described.

2. A pianoforte-frame having a top-pinned wrest-plank having side portions or sections arranged parallel to one another on either side of the longitudinal center line of the frame and having centrally-strung wires which latter after leaving the bridge diverge and are carried up the space between the parts of the wrest-plank, some over the top surface of one part to the wrest-pins thereof and others over the top surface of the other part of the wrest-pins thereof, substantially as described and for the purpose set forth.

608,477. WRENCH. ROB R. PARRISH, Independence, Oreg. Filed June 7, 1897. Serial No. 639,777. (No model.)



Claim.—1. As a new article of manufacture, a vehicle-wrench provided with a stationary jaw located at right angles to its operating-handle, and having a rearward projection, and a movable jaw sliding upon said handle, and controlled by a rotary collar operating on said handle, one jaw having a square-like front point, a knob-hole having four corners piercing said point, said hole being separated from the handle-hole of said jaw, the nut-bearing surfaces of said jaws being continuously parallel to each other, but at right angles to their operating-handle, the front points of said jaws being formed to be passed between the hub-band of a vehicle and a knob located near the middle of the front edge of a nut on the spindle located in the hub bearing said hub-band, said jaws being adapted to clamp said nut and said hole adapted to encircle said knob to prevent the undesirable separation of said nut and wrench, substantially as and for the purposes set forth.

2. The combination in a vehicle-wrench, of a stationary jaw located at right angles to its operating-handle, and having a rearward projection, and a movable jaw sliding upon said handle, controlled by a rotary collar operating on said handle, one jaw having a square-like front point, and a knob-hole having four corners piercing said point, said hole being separated from the handle-hole of said jaw, said jaw having a side widening and strengthening enlargement extending by said hole, the nut-bearing surfaces of said jaws being continuously parallel to each other, but at right angles to their operating-handle, the front points of said jaws being formed to be passed between the hub-band of a vehicle and a knob located near the middle of the front edge of a nut on the spindle located in the hub bearing said hub-band, said jaws being adapted to clamp said nut and said hole adapted to encircle said knob to prevent the undesirable separation of said nut and wrench, substantially as and for the purposes herein set forth.

3. The combination in a vehicle-wrench, of a stationary jaw located at right angles to its operating-handle, having a rearward projection, and a square like front point, and a knob-hole having four corners piercing said point, said hole being separated from the handle-hole of said jaw, said jaw having a widening and strengthening enlargement extending by said hole, and a movable jaw sliding upon said handle, and controlled by a rotary collar operating on said handle, the nut-bearing surfaces of said jaws being continuously parallel to each other but at right angles to their operating-handle, the front points of said jaws being formed to be passed between the hub-band of a vehicle and a knob located near the middle of the front edge of a nut on the spindle located in the hub bearing said hub-band, said jaws being adapted to clamp said nut, and said hole adapted to encircle said knob to prevent the undesirable separation of said nut and wrench, substantially as and for the purposes herein set forth.

4. The combination in a vehicle-wrench, of a stationary jaw located at right angles to its operating-handle, and having a rearward projection, and a front point, and a movable jaw sliding upon said handle, and controlled by a rotary collar operating on said handle, said jaw having a square-like front point, and a knob hole having four corners piercing said point, said hole being separated from the handle-hole of said jaw, said jaw having a widening and strengthening enlargement extending by said hole, the nut-bearing surfaces of said jaws being continuously parallel to each other but at right angles to their operating-handle, the front points of said jaws being formed to be passed between the hub-band of a vehicle and a knob located near the middle of the front edge of a nut on the spindle located in the hub bearing said hub-band, said jaws being adapted to clamp said nut, and said hole adapted to encircle said knob to prevent the undesirable separation of said nut and wrench, substantially as and for the purposes herein set forth.

5. The combination in a vehicle-wrench, of a stationary jaw located at right angles to its operating-handle, and having a rearward projection, and a movable jaw sliding upon said handle, said jaw being controlled by a rotary collar operating on said handle, the nut-bearing surfaces of said jaws being continuously parallel to each other but at right angles to their operating-handle, the front points of said jaws being square-like, each front point being pierced by a knob-hole having four corners, widening and strengthening enlargement extending by each hole, said points being formed to be passed between the hub band of a vehicle and two knobs located on opposite sides of and near the middle of the front edge of a nut on the spindle located in the hub bearing said hub-band, said jaws being adapted to clamp said nut and said holes adapted to encircle said knobs to prevent the undesirable separation of said nut and wrench, substantially as and for the purposes herein set forth.

608,478. BICYCLE-BELL. HERBERT S. PULLMAN, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed Oct. 25, 1897. Serial No. 656,243. (No model.)



Claim.—1. In a portable bell, the combination with a sheet-metal carrier adapted to be rotated and provided with striker-lug slots, of flat, slug-like strikers mounted upon the ends of the said carrier, and having integral oblong lugs depending below their lower faces for entrance into the said slots, sheet-metal straps made independently of and mounted in the ends of the carrier for embracing the said lugs, and a friction-spring, the ends of which are entered into the said straps and engaged with the upper faces of the strikers.

2. In a portable bell, the combination with a sheet-metal carrier adapted to be rotated, and formed with longitudinally-arranged striker-lug slots, of flat, slug-like strikers upset to form integral depending oblong lugs entering the said slots, two straps made independently of and applied to the respective ends of the carrier and embracing the said strikers, and a friction-spring engaging with the upper faces of the strikers, entered into the upper ends of the said straps, and having its said ends cut to form a plurality of spring-fingers which are reversely bent for bearing upon the straps and strikers.

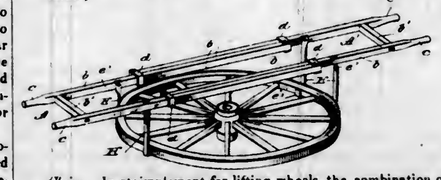
3. In a portable bell, one or more sheet-metal strikers formed with depending longitudinally-arranged integral oblong lugs produced by a partial shearing of the centers of the striker-blanks, whereby recesses exactly corresponding in dimensions to the said lugs are formed in the upper faces of the strikers.

4. In a portable bell, the combination with an operating-lever formed with a segmental rack, of a pinion into which the said rack meshes, a spring connected with the said lever for operating it in one direction, and an antirattling lever pivotally mounted upon the operating-lever, and adapted to be engaged with a fixed point so as to be thrown outward to interlock with the pinion when the operating-lever is brought into its normal position, the antirattling lever being held in its locking position by the tension of the said spring.

5. In a portable bell, the combination with an operating lever, an operating-spring therefor, and an antirattling lever pivotally mounted upon the said operating-lever and held in its operating position by the tension of the operating-spring when the operating-lever is in its normal position.

6. In a portable bell, the combination with the gong-post thereof, of an operating-lever formed with a segmental rack, an operating-spring connected with the said lever, and an antirattling lever pivotally mounted upon the operating-lever and formed with an operating-finger and a stop-finger which coacts with the gong-stud, the said antirattling lever being engaged with a member of the bell for locking the same against rattling when the bell is in its normal adjustment.

608,479. IMPLEMENT FOR CARRYING WHEELS. JOSEPH M. RHODES, Covington, Ind. Filed Oct. 15, 1897. Serial No. 655,263. (No model.)



Claim.—In an implement for lifting wheels, the combination of a pair of bars each pair of bars being transversely connected by a cross-bar and in sliding engagement with the bars of the adjacent frame by means of loops *d*, of hooks rigidly secured to the bars, the upper portion thereof having bends *c'* the lower portions of the hooks being bent horizontally as shown at c^2 and thence upwardly to provide a vertical member c^3 the end portion of which is beveled, substantially as shown and for the purpose set forth.

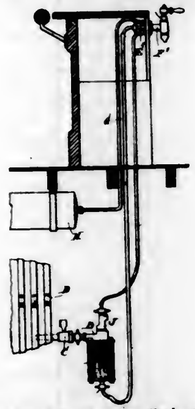
608,480. APPARATUS FOR DRAWING LIQUIDS. ALEXANDRE RITTER, Basle, Switzerland. Filed Dec. 29, 1897. Serial No. 664,276. (No model.) Patented in Switzerland May 19, 1897, No. 14,327.

Claim.—1. A receptacle having a liquid-inlet, a liquid-outlet, an inlet for compressed air or the like, and a valve having two seats, one in the air-inlet and the other in the liquid-inlet, one inlet being closed when the other is open.

2. A receptacle having a liquid-inlet, a liquid-outlet, an air-inlet, a valve controlling both the air-inlet and the liquid-inlet, one inlet being closed when the other is open, a faucet having an outlet, connections to the liquid-outlet and air-inlet of the receptacle, and an air-supply connection, and a plug controlling the several connections.

3. An apparatus of the class described, provided with a receiving-receptacle having a valved liquid-inlet for connection with a barrel containing the liquid to be drawn, and an air-pressure inlet pipe opening into the valved liquid-inlet, to close the valve therein to interrupt the communication between the barrel and the receptacle, and to permit the air to flow into the receptacle to force the liquid therein to the faucet, substantially as shown and described.

4. An apparatus of the class described, provided with a receiving-receptacle having a valved inlet for connection with a barrel containing the liquid to be drawn, an air-pressure inlet-pipe opening into the valved inlet, to close the valve therein to interrupt the communication between the barrel and the receptacle, and to permit the air to flow into the receptacle, to force the liquid therein to the faucet, and a faucet having a connection with an air-pressure supply, with the air-pressure pipe and with the lower end of the said receptacle, to connect the air-pressure supply with the air-inlet pipe at the time the faucet is open, so that the air-pressure forces the liquid from the receptacle to and through the faucet, substantially as shown and described.



5. An apparatus of the class described, provided with a receiving-receptacle having a valved inlet for connection with a barrel containing the liquid to be drawn, an air-pressure inlet-pipe opening into the valved inlet, to close the valve therein to interrupt the communication between the barrel and the receptacle, to force the liquid therein to the faucet, and a faucet having a connection with an air-pressure supply, with the air-pressure pipe and with the lower end of the said receptacle, to connect the air-pressure with the air-inlet pipe at the time the faucet is open, so that the air-pressure forces the liquid from the receptacle to and through the faucet, the said valve when closed cutting off the air-supply to the receptacle, and venting the air-inlet pipe to the outside, to allow a refilling of the receptacle, substantially as shown and described.

6. A receptacle having a liquid-inlet, a liquid-outlet, and an air-inlet, in combination with a faucet having an outlet, connections to the liquid-outlet and air-inlet of the receptacle, and an air-supply connection, and a plug capable of two positions and having channels effecting the following connections: first position, faucet-outlet with liquid-outlet of receptacle, air-supply connection with connection to air-inlet of receptacle; second position, faucet-outlet with air-inlet of receptacle.

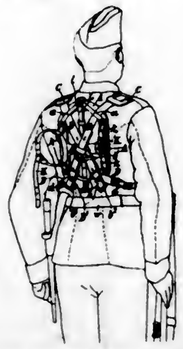
7. A receptacle having a liquid-inlet, a liquid-outlet, an air-inlet, a valve controlling both the liquid-inlet and the air-inlet and closing the one when it opens the other, a vent connecting the receptacle with that portion of the air-inlet which is exteriorly of the valve, and an outwardly-opening check-valve in said vent.

8. A receptacle having a liquid-inlet, a liquid-outlet, an air-inlet, a valve having two seats, one in the air-inlet and the other in the liquid-inlet, one inlet being closed when the other is open, a faucet having an outlet, a connection to the liquid-outlet of the receptacle, a second connection to the air-inlet of the receptacle, and a third connection for supplying compressed air, and a plug controlling the several connections.

9. A receptacle having a liquid-inlet, a liquid-outlet, an inlet for compressed air or the like, said air-inlet and liquid-inlet having their inner end portions in common, and a double-seat valve located in said common end portion of the two inlets and arranged to close one inlet when the other is open.

608,481. MILITARY EQUIPMENT. HENRY J. ROSE, Hythe, and WILLIAM GILBERT-COOPER, Dover, England. Filed Dec. 21, 1897. Serial No. 662,573. (No model.) Patented in England Apr. 30, 1896, No. 9,140.

Claim.—1. In an equipment for military and other purposes, the combination with a back frame adapted to carry the knapsack, valise or other article, and braces fastened to the back frame, passing over the shoulders down in front of the body and thence to the back where they are made fast, of a stay-strap adjustably connecting the braces across the front of the body below the chest, the said stay-strap serving to keep the braces clear of the armpits, assisting in supporting and distributing the weight carried, and maintaining the whole equipment in position without the assistance of the usual waist-belt, as specified.



2. In the herein-described improved equipment, the combination with the braces attached at their rear ends to a back frame and adapted to be detachably connected by their other ends either to said frame or to a knapsack or valise suspended therefrom, of a stay-strap arranged to pass transversely across the front of the body below the chest and loops to which the stay-strap is adjustably secured, the said braces passing through the said loops, said stray-strap connecting the braces at the front so as to keep them clear of the armpits and adapted not only to maintain the braces and the equipment generally in position without the aid of the ordinary waist-belt, but also to support pouches or other requisites, substantially as specified.

3. In the herein-described eqeipment, the combination with the back frame, braces attached thereto and a stay-strap adjustably connecting the braces at the front and arranged to extend transversely across the body below the chest, of a knapsack or valise suspended from the lower part of the back frame and steadied laterally by the front members of the braces, substantially as specified.

4. In the herein-described equipment, the combination with the back frame having top and bottom members, straight side members and a middle cross-bar, of the braces crossing said back frame diagonally, the brace extensions pivoted to the lower member of the frame, and to which the said braces are secured, reversible loops pivoted on the back frame near the top and bottom of each side member of the frame, sling-straps attached to said loops, and a strap attached to the middle cross-bar of the frame and detachably connected with the top member of the frame, substantially as specified.

5. In the herein-described equipment the combination with the back frame having straight side members, top and bottom members, and a middle cross-bar connecting the side members, of the braces crossing the said back frame diagonally, the brace extensions pivoted to the lower member of the back frame and extending below the frame, the lower ends of said pivoted brace extensions being arranged for connection with a knapsack or valise, the said braces being connected at their rear ends with the upper ends of the brace extensions and provided at their other ends with attaching means, a strap attached to the middle cross-bar and adapted to be secured to the top member of the frame, and a stay-strap connecting the braces at the front and arranged to extend across the front of the body below the chest substantially as specified.

608,482. CREAMER. FRANK R. SARGENT, Chicago, Ill. Filed Jan. 15, 1896. Serial No. 666,801. (No model.)

Claim.—1. In a creamer the combination with a cylindrical tube having an inwardly-tapering aperture at one end, of a plug-valve for such aperture, and a stem for such valve leading through the tube.

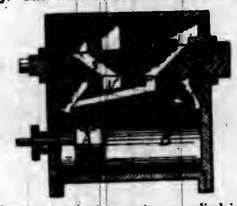
2. In a creamer the combination with a cylindrical tube open at both ends and having a series of circumferentially-arranged lateral apertures, of a valve for closing one end of the tube, and a stem for controlling the valve and leading through the tube.

3. In a creamer the combination with a cylindrical tube having an aperture at one end of less diameter than the caliber of the tube and a flaring mouth beyond such aperture, and having a series of circumferentially-arranged lateral apertures intermediate of its ends, of a plug-valve for closing such end aperture, and a lift-stem for the valve and leading through the tube.

608,482.

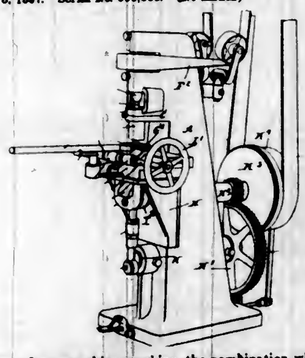


608,483. ENGINE-VALVE. MATTHEW B. SELLERS, Carter County, Ky. Filed June 14, 1897. Serial No. 640,790. (No model.)



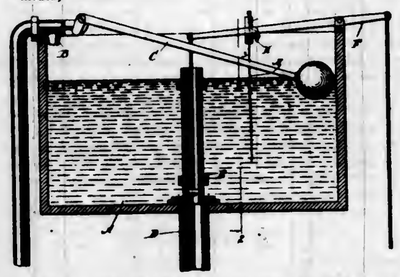
Claim.—In a reciprocating engine, a cylindrical valve, with diagonal ports, passing diametrically through it; together with a valve-casing, having corresponding passages and steam and exhaust chests, so arranged, that the valve, by revolving, shall connect the ends of the cylinder, alternately, with the supply and exhaust chambers as herein described.

608,484. PUNCHING-MACHINE. CHARLES SEYMOUR, Defiance, Ohio, assignor to the Defiance Machine Works, same place. Filed Dec. 3, 1897. Serial No. 660,886. (No model.)



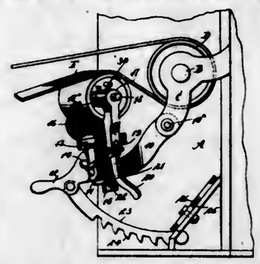
Claim.—In a punching-machine, the combination with a frame and the punching-tool carried thereon, of a bracket-shaped slide mounted to move vertically on the frame and having a horizontal portion provided with an opening, a chute attached to the bottom of the horizontal portion of the slide and surrounding the opening to conduct the chips therefrom, a U-shaped projection straddling the chute and attached to the horizontal portion of the slide, means in connection with the projection by which to impart reciprocal movement to the slide, a holder mounted on the horizontal portion of the slide and having a centrally-located opening registering with the opening in the slide, the holder also having a horizontal guideway in its top face, plates mounted to slide toward and from each other in said guideway, clamping-jaws respectively attached to the plates so as to hold the work between them, and means carried by the table for moving the plates toward and from each other to grasp and release the work.

608,485. LOCK FOR FLUSHING-VALVES. CHARLES H. SHEPHERD, New York, N. Y. Filed Feb. 12, 1898. Serial No. 670,127. (No model.)



Claim.—A lock for flushing-valves, comprising a lever-arm arranged to connection with a flushing-valve lever, a shaft carrying the said arm, a toothed wheel on the said shaft, and a spring-pressed lever-pawl for engaging the said wheel and locking the latter against rotation in one direction, the said lever-pawl being adapted to be actuated from the float-lever of the flushing-tank to unlock the wheel and the lever-arm, substantially as shown and described.

608,486. BELT-REGULATOR. OSCAR K. SLETTO, Fergus Falls, Minn. Filed Mar. 31, 1898. Serial No. 675,888. (No model.)



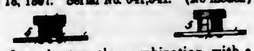
Claim.—1. A belt-regulator, comprising an adjustable hanger, the said hanger being provided with a series of teeth, a guide-pulley, a support therefor mounted to turn on the said hanger, and a latch carried by the guide-pulley support and adapted for engagement with the teeth of the hanger, substantially as specified.

2. A belt-regulator comprising a hanger, the hanger being provided with a tubular section having exterior teeth, a frame mounted to revolve upon the tubular section of the hanger, a pawl carried by the frame and arranged for engagement with the teeth of the hanger, a guide-pulley mounted upon the said frame, and means for vertically adjusting the hanger, for the purpose specified.

3. In a belt-regulator, the combination, with a hanger, the hanger being provided with a tubular section and a handle between the ends of the tubular section, the said tubular section of the hanger being provided with exterior teeth and a set-screw, of a frame provided with a stem, the stem extending within the tubular section of the hanger, a guide-pulley carried by the said frame, a pivoted toothed segmental bar attached to the hanger, a keeper for the said bar, and a latch carried by the said keeper, for the purpose specified.

4. The combination, with a pulley, its bearing and a hanger pivoted adjacent to the pulley, the said hanger being provided with a tubular section having angularly-arranged exterior teeth, of a frame provided with a stem, extending within and being arranged to turn in the tubular section of the hanger, a pawl carried by the said frame, arranged for engagement with the teeth of the hanger, a set-screw extending within the tubular section of the hanger to an engagement with the said stem, a guide pulley carried by the said frame, a keeper, a segmental toothed bar pivoted to the hanger and extending within the said keeper, and a lock-latch carried by the keeper and arranged for engagement with the said toothed bar, as and for the purpose specified.

608,487. BUTTON. CHARLES W. STIMSON, New York, N. Y. Filed June 18, 1897. Serial No. 641,341. (No model.)



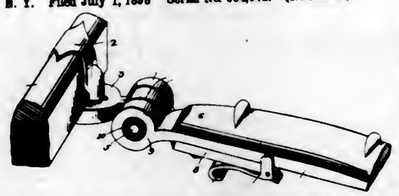
Claim.—1. In a button, the combination, with a base-plate, of washers of elastic material forming the neck and the head of the button, and means for securing the neck and head of the button to the base-plate including a connecting-piece clasped about the neck and secured to the base-plate, substantially as described.

2. In a button, the combination, with a base-plate, of washers of elastic material forming the neck and the head of the button, and means for connecting the neck and head of the button to the base-plate including a connecting-piece clasped about the neck and fitting into recesses in the side thereof, and secured to the base-plate, substantially as described.

3. In a button, the combination, with a base-plate, of washers of elastic material forming the neck and the head of the button, a connecting-piece clasped about the neck, and serving to secure the same to the base-plate, and means for connecting the head to said connecting-piece, whereby the head is united to the neck and to the base-plate, substantially as described.

4. In a button, the combination, with a base-plate, of a plurality of washers of elastic material forming the neck of the button, and having in their sides notches, a washer of similar material forming the head, a connecting-piece clasped about the neck-washers and secured to the base-plate, and fitting into the said notches in the sides of the neck-washers, and a rivet connecting the washer which forms the head to the said connecting-piece, whereby the head is united to the neck and to the base-plate, substantially as described.

608,488. THILL-COUPLING. EDWARD STORM, Poughkeepsie, N. Y. Filed July 1, 1898. Serial No. 684,972. (No model.)



Claim.—1. In combination, a clip-plate and pivoted shear members, the one being provided with studs and the other being provided with coacting bearing-lugs, a yoke pivoted to one of the members and adapted to be moved into engagement with the other member and thereby lock the two members against movement, and means for holding the yoke in locked position, substantially as specified.

2. In combination, a clip-plate and pivoted shear members, the one being provided with studs and the other being provided with coacting bearing-lugs, a yoke pivoted to one of the shear members and adapted to be swung into engagement with the other member and lock said members against movement, said yoke being provided with a handle that lies underneath one of the shear members, and a spring for locking said yoke in closed position, substantially as set forth.

3. In combination, a clip-plate and pivoted shear members, the one being provided with studs and the other being provided with coacting bearing-lugs, a yoke pivoted to one of the shear members and adapted to be swung into engagement with the other member and lock said members against movement, said yoke being provided with a handle, said handle formed with a longitudinal opening, and a flat spring secured to one of said members and projecting through the opening in the handle and engaging the cross-piece of the yoke, substantially as set forth.

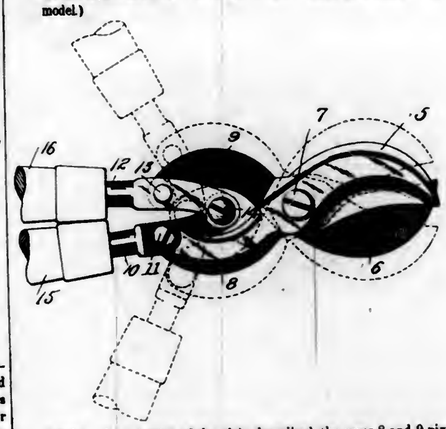
608,489. LATCH-OPERATING MECHANISM. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed July 24, 1897. Serial No. 645,854. (No model.)



Claim.—1. In a latch-operating mechanism, the combination of a latch, a lock-hub having a latch-operating arm, a single pivoted latch-lever having its free end projecting on one side of and in engagement with said latch-operating arm and in engagement with the latch, a second lever projecting on the other side of and in engagement with said latch-operating arm, and a connection between the second lever and the latch-lever which transmits from the second lever to the latch-lever, the same movement which is imparted to said latch-lever, by the latch-operating arm, substantially as explained.

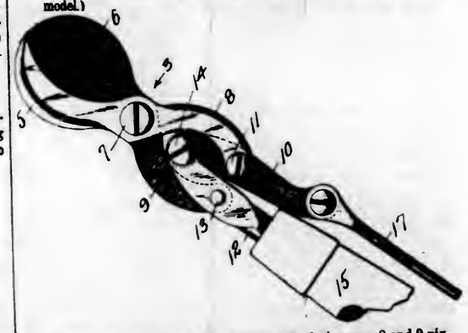
2. In a latch-operating mechanism, the combination with a latch, a lock-hub having a latch operating arm, a pivoted latch-lever having its free end impinged by one side of said latch-operating arm and in engagement with the latch, and a second lever impinged by the opposite side of said latch-operating arm; said latch-operating lever and second lever being in the form of bell-crank levers separately pivoted and provided with engaging teeth on their ends distant from their ends impinged by the latch-operating arm, and said levers being proportioned to transmit to the latch, the same movement through the second lever and latch-lever when said second lever is engaged by said latch-operating arm as is imparted directly to said latch by impingement of the latch-operating arm on the latch-lever, substantially as herein set forth.

608,490. HANDLE FOR PRUNING-SHEARS. ROBERT J. THOMPSON, Grandin, Mo. Filed Sept. 7, 1897. Serial No. 650,848. (No model.)



Claim.—In a device of the class described, the arms 8 and 9 pivotally connected and having cutting-jaws 5 and 6 respectively formed thereon, the lever 10 pivotally connected to the free end of the arm 8, the lever 12 pivotally connected to the free end of the arm 9 so there is a short end entirely free from said arms 8 and 9 on each of the said levers 10 and 12, and a pivotal connection between the short free ends of said levers 10 and 12 at a point between the arms 8 and 9 and between the pivot connecting the arms and the pivots connecting the levers 10 and 12 to the arms 8 and 9, substantially as specified.

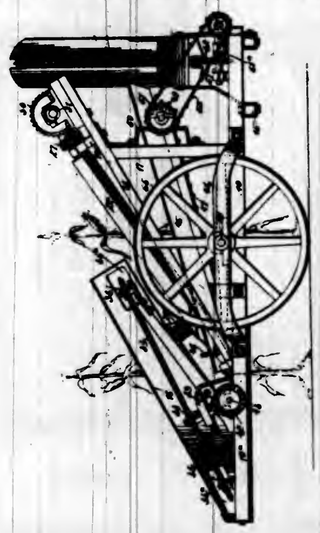
608,491. HANDLE FOR PRUNING-SHEARS. ROBERT J. THOMPSON, Grandin, Mo. Filed Sept. 7, 1897. Serial No. 650,849. (No model.)



Claim.—In a device of the class described, the arms 8 and 9 pivotally connected, and having cutting-jaws 5 and 6 respectively formed

thereon, the lever 10 pivotally connected to the free end of the arm 8, the lever 12 pivotally connected to the free end of the arm 9, a pivotal connection between said levers 10 and 12 at a point between the arms 8 and 9 and the pivotal connections between said levers and said arms, a handle attached to the long end of the arm 12, a second handle pivotally connected to the first-mentioned handle at a point intermediate of its ends, and a connecting-rod connecting the said second handle to the free end of the lever 10, substantially as specified.

608,492. CORN HARVESTER AND HUSKER. JOHN TJOSSEM, Paullina, Iowa. Filed Sept. 1, 1897. Serial No. 650,275. (No model.)



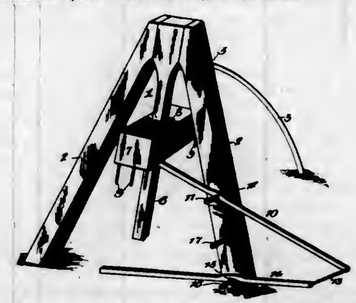
Claim.—1. In a corn harvester and husker, the combination with a supporting-frame, and inclined snapping and husking rollers mounted in the frame in rear of the forward ends of the longitudinal beams, of shields in the form of plates set edgewise secured to the forward ends of the said beams and inclined upwardly and rearwardly and toward each other over the forward ends of the rollers, spring arms secured to the inner faces of the shields and extending over the forward ends of the rollers, and feed-belts traveling along the inner faces of the shields, substantially as described.

2. In a corn harvester and husker, the combination with a supporting-frame, of inclined snapping and husking rollers mounted in the frame and having spirally-grooved forward ends, converging shields extending over the forward ends of the rollers, and provided with guide-fingers and spring-arms on their inner faces, feed-belts traveling along the inner faces of the shields, a trough on each side of the feed-rollers, conveyer-belts in the bottoms of the troughs, a hopper into which the troughs empty and an elevator leading from the hopper, substantially as described.

3. In a corn harvester and husker, the combination, with a wheel-supported frame, one of the wheels of the frame being a driving-wheel, directing-shields extending from the front of the machine rearwardly and upwardly over the body portion of the machine, the shields diverging at their forward ends and converging at their rear ends, and downwardly and forwardly inclined snapping and husking rollers held to revolve in near relation to each other, the lower ends of the snapping and husking rollers being conical, the said snapping and husking rollers being provided with spiral grooves near their conical portions, said rollers being located one under the rear end of each of the said shields, of spring-arms carried over the said rollers at angles to one another and extending from the shields, feed-belts held to travel longitudinally at the inner or opposing faces of the shields, spurs carried by the said feed-belts, a conveyer-trough located at each side of the said snapping and husking rollers and below the same, and an elevator into which the conveyer-troughs empty, and means, substantially as described, for driving the snapping and husking rollers the feed-belts and the conveyer-belts for the troughs and the elevator, from the combined driving and supporting wheel, for the purpose set forth.

4. In a corn harvester and husker, the combination, with direct-ing-shields having their forward ends diverging and their rear ends converging, feed-belts held to travel longitudinally along the inner or opposing faces of the said shields, and snapping and husking rollers placed in close relation and having a downward and forward inclination, their lower portions being beneath the said shields, their lower ends being conical and the said rollers being provided with gripping-grooves near their conical portions and spring-arms placed at angles to one another, extending from the shields and being carried across the space between the said rollers, of a trough located at each side of the snapping and husking rollers, an elevator into which the said troughs empty, the elevator being provided with a conveying-belt and each of the troughs being also provided with a conveying-belt, supporting-wheels for the machine, one of which is a driving-wheel as well, a shaft driven from the said driving-wheel, a driving-shaft for the conveyer-belts for the troughs, driven from the shaft operated from the driving-wheel, a counter-shaft arranged to drive the husking-rollers, being driven from the shaft operated from the driving and supporting wheel of the machine, driving-shafts for the elevator conveying-belt, a driving connection between said shafts and a line shaft operated from the said shaft driven from the supporting and driving wheel, a line-shaft driven by the conveying-belts of the troughs, and a driving connection between this line-shaft and the feed-belts, for the purpose specified.

608,493. ANIMAL-TRAP. THOMAS R. TROUTT, Hopewell, Mo. Filed Feb. 9, 1898. Serial No. 669,672. (No model.)



Claim.—1. An animal-trap, comprising a frame composed of oppositely-inclined sides connected at their upper ends, a depending guide-bar secured at its upper end between the upper terminals of the sides, and a rearwardly-extending brace hinged at its upper end between one side of the frame and the guide-bar, a vertically-movable block having impaling means, pins or projections mounted on the frame at one side thereof, a lever loosely fulcrumed on one of the pins or projections and having its inner portion supporting the block, a trigger provided with a shoulder for engaging a pin or projection of the frame, and a flexible connection between the outer ends of the trigger and the lever, substantially as described.

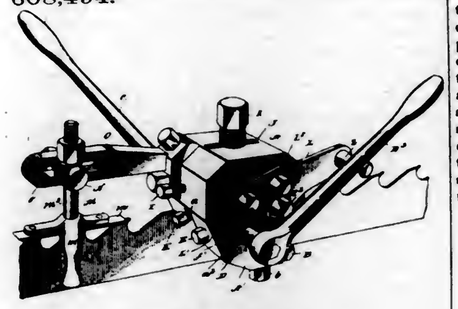
2. An animal-trap, comprising a frame provided with the pins 11 and 16, and the pin 17 disposed at a point between the said pins, a vertically-movable block having impaling means, a trigger provided with a shoulder adapted to engage the pin 16 at the upper side and the pin 17 at the lower side, a lever fulcrumed on the pin 11 and having its inner portion supporting the block, and a flexible connection between the outer ends of the trigger and the lever, said flexible connections being adapted to permit the trigger to be turned to bring its shoulder in engagement with either of the pins 16 or 17, substantially as described.

3. An animal-trap comprising a frame provided with pins or projections, a vertically-movable block having impaling means, a lever loosely fulcrumed on one of the pins or projections and having its inner portion supporting the block, a trigger provided with a shoulder for engaging a pin or projection of the frame, and a flexible connection between the outer ends of the trigger and the lever, substantially as described.

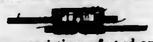
608,494. SAW-SWAGE. THOMAS WALKER, Sidnaw, Mich. Filed Mar. 18, 1896. Renewed Jan. 8, 1898. Serial No. 666,100. (No model.)

Claim.—In a saw-swage, the combination of a slotted body, with an anvil therein, a double ended reversible shaft having an eccentric portion, and an annular groove near each end flush with the side of the body, a reversible bushing adapted to surround the shaft and flush at each end with the side of the body, a locking-plate secured to the body and adapted to engage in either of the annular grooves of said shaft, so as to lock it and the bushing against endwise displacement, all substantially as set forth.

608,494.



608,495. FASTENER. CHARLES V. WALTER, New York, N. Y. Filed Oct. 8, 1897. Serial No. 654,537. (No model.)



Claim.—1. A fastener, consisting of stud and socket members, the socket member comprising a plate having its edges flanged or curved inward and under, and a plate having a series of rectangular apertures disposed along the line of strain, and having projections on the body thereof at opposite side edges of the apertures and bent over so as to clasp and hold the stock and the inwardly-flanged edges of the other plate, and the stud member having a side projecting portion adapted to enter said apertures substantially as described.

2. A fastener, consisting of stud and socket members, the socket member comprising a plate having its edges flanged or curved inward and under, and provided with binding-notches, and a plate having a series of rectangular apertures arranged in the line of strain, and having projections on the body thereof at opposite side edges of the apertures and bent over so as to clasp and hold the fabric and the inwardly-flanged edges of the other plate, said projections registering with and entering the notches in said flange, and the stud member having a side projecting portion adapted to enter said apertures, substantially as described.

3. A fastener, consisting of stud and socket members, the socket member comprising a plate having its edges flanged or curved inward and under, and a plate having a series of rectangular apertures arranged in the line of strain and having fastening projections on the body thereof at opposite side edges of the apertures and bent over so as to clasp and hold the fabric and the inwardly-flanged edges of the other plate, and the stud member comprising a plate having a narrow slot or elongated aperture therein, and the stud consisting of a plate bent centrally upon itself so as to form a bulb at the bend, the ends of the plate being inserted through said slot and the material, and then bent outwardly and down upon the material, substantially as described.

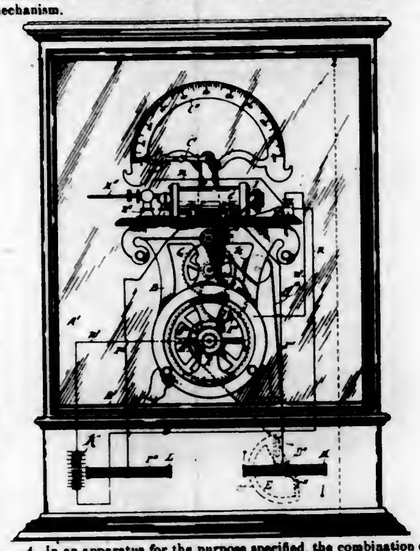
4. The socket member of a stud-and-socket fastener, comprising a plate having its edges flanged or curved inward and under, and a plate having a series of apertures disposed along the line of strain, and having tongues attached to the body of the plate at opposite sides of the apertures, said tongues being bent over so as to clasp and hold the fabric and the inwardly-flanged edges of the other plates.

608,496. COIN-CONTROLLED MEDICAL BATTERY. NELSON M. WATSON, Detroit, Mich. Filed Dec. 27, 1897. Serial No. 663,533. (No model.)

Claim.—1. In an apparatus for the purpose specified, the combination with the power-driven mechanism, of an electromagnet, an electric circuit including said magnet and a source of electricity, two spring-contacts at independent points in said circuit, means operated by said mechanism for opening and closing the circuit at each of said contacts, two independently-movable parts one of which is connected with the driving power of said mechanism, said movable parts being adapted to be connected by the insertion of a coin so as to impart movement from one to the other, and means for moving said part not connected with the driving power.

2. In an apparatus for the purpose specified, the combination with the power-driven mechanism, of an electromagnet, an electric circuit including said electromagnet and a source of electricity, said circuit also including two spring-contacts at independent points therein, means for independently opening and closing said circuit at said spring-contacts, a movable slotted arm connected with the power that drives the mechanism, a movable part standing adjacent to said slotted arm and adapted to be locked thereto by a coin in the slot thereof.

3. The combination of the spring-driven mechanism, the electromagnet, the electric circuit including said magnet and a source of electricity, two spring-contacts also included in said circuit at independent points therein, each of said contacts being adapted to be independently actuated by said mechanism to open and close the circuit thereat, a rotary shaft connected with the driving-spring of said mechanism, said shaft carrying a slotted arm adapted to receive a coin, a second shaft having means of rotation and carrying a segmental wheel standing adjacent to said slotted arm and carrying a projection adapted to be engaged by a coin inserted in said slot whereby by a rotation of said second shaft movement is imparted through the coin and slotted arm to the first-mentioned shaft to wind the spring of said mechanism.



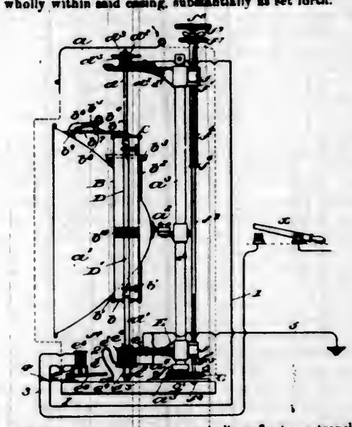
4. In an apparatus for the purpose specified, the combination of the spring-driven mechanism, an electromagnet, an electric circuit including said magnet and a source of electricity, said circuit also including two spring-contacts located at independent points therein, each of said contacts being adapted to be actuated by said mechanism to open and close the circuit thereat, a secondary circuit leading from said magnet terminating in the electrodes of two handles adapted to be grasped by the operator, a rotary shaft mounted on one of said handles carrying a radial arm or wheel having a projecting part, a second shaft carrying a slotted arm adapted to receive a coin which projects into the path of the movable arm of said first-mentioned shaft, means connecting said second shaft with the driving-spring of said mechanism whereby said spring may be wound by the rotation of the handle of the first-mentioned shaft.

5. The combination with the electromagnet and spring-driven mechanism, a shaft connected with said driving-spring and carrying a slotted arm adapted to receive a coin, a second shaft carrying a segmental wheel which stands adjacent to said slotted arm and is provided on its web with an angle-piece whose vertical face stands in line with the side of the slot in said arm and whose horizontal portion crosses said slot and is adapted to support the coin which it engaged by the vertical face of said angle-piece, the handle for turning said second shaft, said shafts turning upon separate centers whereby by a rotation of said second shaft said first shaft is turned through the medium of the coin in its slotted arm and said coin is discharged from said slot.

6. In a device for the purpose set forth, the combination of the power-driven mechanism, the electromagnet, the graduated scale and indicating hand connected by the rack-bar and the interposed lever and link with the movable sleeve of said magnet, a coin receiving and discharging mechanism, the rotary shaft carrying one of the handles of the apparatus and connected with the coin receiving and discharging mechanism, means connecting said shaft with the movable sleeve of the magnet, and the rack-bar also connected with said shaft and said indicating-hand.

608,497. ELECTRIC HEADLIGHT-LAMP. HARLAN P. WELLMAN, Ashland, Ky. Filed Dec. 10, 1897. Serial No. 661,396. (No model.)

Claim.—1. An electric lamp having a parabolic reflector, a translucent elongated cylindrical casing projected at its ends through said reflector, closures over the ends of said casing, a support for said casing outside of said reflector, carbon-carrying rods extended through said closures, and carbons secured to the inner ends of said rods and located wholly within said casing, substantially as set forth.



2. An electric lamp having a parabolic reflector, a translucent casing projected at its ends through said reflector a greater portion of said casing extending above said reflector than below the latter, closures of insulating material over the ends of said casing, carbon-carrying rods extended through said closures, and carbons secured to the inner ends of said rods, the opposed ends of said carbons being on the line of the focal center of said reflector, said casing having an opal or ground-glass encircling ring on said line, substantially as set forth.

3. The combination with the lamp-frame, and the upright bar therein, of a parabolic reflector secured to said bar, the translucent casing projected through said reflector, supports therefor outside of said reflector, closures over the ends of said casing, and the carbons secured to the inner ends of said rods, substantially as set forth.

4. The combination with the lamp-frame, and the reflector, of a casing projected transversely through the latter, closures over the ends of said casing, a spring-held movable clamp bearing on the upper closure, and the carbons located in said casing, substantially as set forth.

5. The combination with the lamp-frame, of the reflector having opposite upper and lower openings and a tubular portion in line with said lower opening, an insulating-cushion supported by said lower tubular portion, a casing extended through said openings and resting on said cushion, a cap over the upper end of said casing, and a spring-held movable clamp bearing on said cap, and the carbons located in said casing, substantially as set forth.

6. The combination with the lamp-frame, of the reflector having opposite upper and lower tubular portions, an insulating-cushion supported by said lower tubular portion, a casing fitted in said tubular portions resting on said cushions, a second cushion supported by said upper tubular portion, a cap over the upper end of said casing, a spring-held movable clamp bearing on said cap, carbons within said casing, and rods therefor extended through said cap and lower cushion, substantially as set forth.

7. The combination with the lamp-frame, an upright bar, and the reflector, of upper and lower carbon-carrying rods, brackets movable on said bar supporting said rods and having parallel ears projecting therefrom, threaded nuts located between said ears, an adjusting-rod extended through said ears and having a lower threaded portion engaging the nut of the lower bracket, an exteriorly-threaded sleeve on the upper portion of said rod having a flanged end, said sleeve engaging the nut of the upper bracket, and means for binding said sleeve on said rod, substantially as set forth.

8. The combination with the lamp-frame, an upright bar, and the reflector, of upper and lower carbon-carrying rods, brackets movable on said bar supporting said rods and having parallel ears projecting therefrom, threaded nuts located between said ears, an adjusting-rod extended through said ears and having a lower threaded portion engaging the nut of the lower bracket, an exteriorly-threaded sleeve on the upper portion of said rod having its upper end flanged, said sleeve engaging the nut of the upper bracket, and a thumb-nut on said rod for binding said sleeve thereon, substantially as set forth.

9. The combination with the carbon-carrying rods, of the upper and lower brackets, the bar forming a guide for the latter, a rod having right and left hand threads engaging threaded nuts of said brackets, a wheel on said rod having notches in its periphery, and a spring-held pawl engaging said wheel, substantially as set forth.

10. In an electric lamp having upper and lower carbon rods, brackets supporting said rods, one of said brackets having overhanging portions and an electric terminal, an insulating-disk with which one of said rods engages, and arms on said disk for engaging said overhanging portions and terminal, substantially as set forth.

11. In an electric lamp having upper and lower carbon rods, brackets supporting said rods, one of said brackets having an electric terminal, and overhanging ears, an insulating-disk with which one of said rods engages having an arm for contacting with said terminal and also arms for engaging said ears, substantially as set forth.

12. In an electric lamp having upper and lower carbon rods, brackets supporting said rods, one of said brackets having an electric terminal, an insulating-disk having an arm for contacting with said terminal, a housing on said disk, and a spring therein, one of said rods being extended through said disk into said housing and having a shoulder against which said spring bears, substantially as set forth.

13. In an electric lamp having upper and lower carbon rods, brackets supporting said rods, one of said brackets having an electric terminal, a cut-out circular portion and overhanging ears, an insulating-disk fitted in said cut-out having arms engaging said ears and terminal, a housing extending up from said disk into which the upper rod projects, a spring in said housing bearing on said rod, and arms extended from said housing, substantially as set forth.

608,498. GARMENT-HOLDER. EUGENE S. WEST, Marinette, Wis. Filed May 7, 1897. Serial No. 635,466. (No model.)



Claim.—The combination of a suitable support, a box or case attached thereto, a hat-supporting loop and coat and umbrella holder all attached to said support, an arm having the prongs for contacting with the articles on said support to hold them in place, said arm being pivoted in the box or case and having its lower end provided with serrations or teeth, and a lever in said box or case pivoted between its two ends so that one end will be the heaviest and fall by gravity causing the other end to engage the serrations of the arm, said lever being adapted to be disengaged by the insertion of a key in the manner shown substantially as set forth.

608,499. BICYCLE-BELL. EUGENE H. WHITE, New Haven, Conn. Filed Mar. 7, 1898. Serial No. 672,960. (No model.)



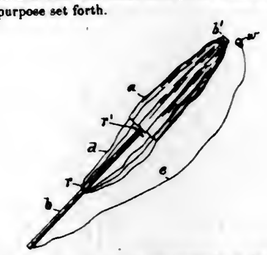
Claim.—1. The herein-described bicycle-bell, comprising a central post, a horizontally-arranged striker-carrier mounted thereon and means for revolving the same, slots in the opposite ends of said carrier, a spring beneath said carrier, the ends of which extend upward through said slots, and strikers mounted on the carrier for transverse movement over the ends of said springs substantially as described.

2. The herein-described bicycle-bell, comprising a central post, a horizontally-arranged striker-carrier mounted thereon and means for revolving the same, slots in the opposite ends of said carrier, and stops at the outer ends of said carrier, a spring beneath said carrier, the ends of which extend upward through said slots, and strikers mounted on the carrier for transverse movement over the ends of said springs substantially as described.

608,500. AERIAL TOY. VOLNEY M. WILSON, Jr., Providence, R. I., assignor of one-half to Charles H. Kittredge, same place. Filed Aug. 17, 1897. Serial No. 648,555. (No model.)

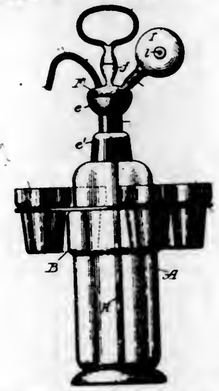
Claim.—1. The combination, in a toy parachute, of a stick or rod member *b* extending through the top of the flexible umbrella-like portion, a seat formed in the upper end of said stick, and a weight member connected by a cord to the lower part of the stick adapted to be

loosely mounted in said seat, substantially as hereinbefore described and for the purpose set forth.



2. In a foldable toy parachute substantially as described having a downwardly-extending central stick or rod member secured to its upper part, a flexible connection *c* attached to the lower end of said stick, a weight member *w* secured to the free end of said connection, and a seat located in the top end of the parachute adapted to contain said weight while the device is being shot upwardly into the air.

608,501. VESSEL FOR DISPENSING LIQUIDS. ERNST WOLF, New York, N. Y., assignor to Minnie Wolf, same place. Filed Feb. 15, 1898. Serial No. 670,394. (No model.)



Claim.—1. In a device for dispensing liquids, the combination of a portable vessel, a glass-holder rotatably mounted thereon, a discharge-tube extending into the vessel and having a downwardly-extending nozzle under which glasses in the holder may be brought, and pneumatic means for forcing the liquid from the vessel through said discharge-tube, substantially as described.

2. In a device for dispensing liquids, the combination of a bottle having an external shoulder, a glass-holder rotatably supported on said shoulder, a discharge-tube extending into the bottle and having a nozzle extending downwardly, so as to discharge the liquid from the bottle into a glass on the holder, and an air-bulb in communication with the bottle above the surface of the liquid, substantially as described.

3. The combination with the bottle, of a neck having an upwardly-extending lip adapted to act as a funnel, and a downwardly-extending flange attached to the bottle, a chambered top provided with an extension for a handle having a screw-threaded engagement with the neck and seated in the funnel, a discharge-tube extending through said top into the bottle, and an air-bulb communicating with the internal chamber of said top, substantially as described.

4. The combination of the bottle, a neck having a downward extension secured to the neck of the bottle, an outwardly-flaring upward extension forming a funnel, a top having an outer contour conforming to said funnel and having a downwardly-extending screw-threaded nipple in engagement with the supporting-neck, a chamber in said top in communication with the bottle, a discharge-tube extending through said top into the bottle and having a downwardly-extending nozzle at its upper end, and an air-bulb in communication with the chamber in the top, substantially as described.

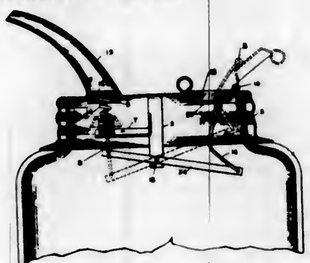
5. The combination with the bottle, of a metallic neck secured thereto, a chambered top having screw-threaded engagement with said neck and provided with an extension for a handle, a discharge-tube extending through said top into the bottle and having a downwardly-extending nozzle, and a perforated nipple extending from said top, with an air-bulb attached thereto, substantially as described.

6. The combination with a bottle, of a metallic neck having a downwardly-extending flange secured to the neck of the bottle, and an upwardly-extending and outwardly-flaring flange or funnel, a chambered top having an outer contour conforming to the funnel and having a screw-threaded nipple adapted to engage the neck, and a washer of flexible material consisting of a cylindrical body confined between the nipple on the top and the supporting-neck, and a laterally-flanged portion confined between the funnel and the exterior of the top, and a discharge-tube passing through the top into the bottle, and an air-bulb in communication with the top, substantially as described.

7. In combination with a bottle provided with a shoulder thereon, a rotatable glass-holder mounted on said shoulder and adapted to hold a plurality of glasses, a metallic neck having a downwardly-extending flange secured to the neck of the bottle and an upwardly-extending flange adapted to act as a funnel, a top having an internal chamber and a downwardly-projecting nipple in screw-threaded engagement with the neck, a discharge-tube having its upward end curved downwardly forming a nozzle and extending through the chambered top into the bottle, a perforated nipple on top in communication with the chamber therein, and an air-bulb supported by said nipple, substantially as described.

8. The combination with the bottle, of a metallic neck having an upwardly-extending and outwardly-flaring flange forming a funnel and a downwardly-extending flange secured to the bottle-neck, a chambered top having an outer contour conforming to the funnel and having an external flange overlapping the upper edge of the funnel, a nipple in engagement with the metallic neck, a flanged flexible washer confined between the top and the funnel, and having a body portion confined between the upper part of the nipple and the said neck, a discharge-tube extending through the top into the bottle, and an air-bulb in communication with said bottle, substantially as described.

608,502. STOPPER OR CLOSURE. LESLIE H. ABBEE, STEPHEN A. SEWALL, and AUREL J. BENEWITZ, Denver, Colo. Filed Sept. 15, 1897. Serial No. 651,773. (No model.)

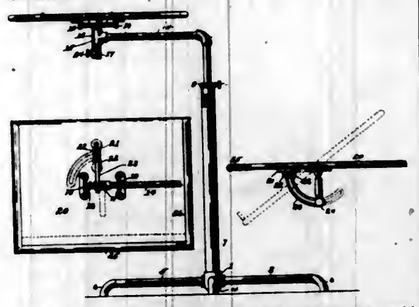


Claim.—1. The combination with a receptacle cap or top provided with inlet and escape openings, of a valve adapted to close the escape-opening from the inside, a cover adapted to close the inlet-opening from the outside, and suitable mechanism connected with the valve and cover, whereby the opening of the cover unseats the valve, said mechanism consisting of a stem to which the valve is attached, a coil-spring surrounding the stem and engaging the valve, a stop mounted on the cap and engaged by the opposite extremity of the spring, said stop having an opening through which the stem passes, a lever fulcrumed on a hanger attached to the cap, one extremity of the lever being connected with the valve-stem, and a link connecting the opposite extremity of the lever with the inlet-cover.

2. The combination with a receptacle cap or top provided with inlet and escape openings, of a valve adapted to close the escape-opening from the inside, a hinged cover adapted to close the inlet-opening from the outside, and suitable means for connecting the valve and cover whereby the opening of the cover unseats the valve, said means consisting of a stem to which the valve is attached, a coil-spring surrounding the stem and engaging the valve, a stop mounted on the cap and engaged by the opposite extremity of the spring, said stop having an opening through which the stem passes, a lever fulcrumed on a hanger attached to the cap, one extremity of the lever being connected with the valve-stem, and a link connecting the opposite extremity of the lever with the inlet-cover, the arrangement being such that when the cover is open, the points where the link extremities are respectively connected with the lever and cover are out of line with the center of the cover hinge-pin whereby the parts are automatically held in the open position.

3. The combination with a vessel top or cap having an opening, of a hinged cover adapted to close said opening, a lever fulcrumed on the cap, a link connecting one arm of the lever with the said cover, a stem connected with the opposite arm of the lever and passing through a stop mounted on the cap, a coil-spring surrounding the stem and engaging the stop at one extremity, the opposite extremity of the spring bearing against a stop with which the stem is provided, the arrangement being such that when the cover is open, the points where the link extremities are respectively connected with the lever and cover are out of line with the center of the cover hinge-pin, whereby the cover is held open automatically.

608,503. COMBINED READING STAND AND TABLE. DAVID H. ALLEN, Miamisburg, Ohio. Filed Aug. 18, 1897. Serial No. 648,671. (No model.)



Claim.—1. In an adjustable reading stand and table, the combination of the supporting-standard composed of the telescopic sections, the removable legs connected therewith, the swinging arm having on its outer end a removable T-shaped coupling, a table having depending lugs, and a T-shaped table-support having at its cross-head end pivotal bearing in said lugs and its standard having pivotal bearing in the T-shaped coupling on the swinging arm, whereby said table has both vertical and horizontal pivotal connection with said arm, substantially as described.

2. In an adjustable reading stand and table, the combination of a supporting-standard composed of telescoping sections, a socket-piece therefor and removable legs having screw-threaded connection with said socket-piece, a removable horizontal arm having a swiveling connection with said standard, a T-shaped standard pivoted in said swiveling arm, the table pivotally connected to said T-piece, a segmental plate pivoted to the table and adjustably connected to said T-piece and means for holding said segment and with it the table at any desired adjustment, substantially as described.

3. In an adjustable reading stand and table, the combination with the table and the swiveling arm and telescopic standard on which said table is mounted, of the T-piece having its cross-head pivoted to the table and its standard journaled in a sleeve on the swiveling supporting-arm, to permit its ready removal, and the segmental plate pivoted to the table and adjustably connected with the swiveling T-piece, whereby said T-piece and segment are adapted to be folded against the table when not in use, substantially as described.

608,504. TELEPHONE-TRANSMITTER ARM AND ITS ATTACHMENT. WILLIAM J. BARR, Ashtabula, Ohio. Filed Oct. 30, 1897. Serial No. 656,899. (No model.)

Claim.—1. The combination, with a base having a slot or mouth, and one or more trunnions arranged within and on the side or sides of such mouth, the transmitter-arm whose inner end is adapted to fit and work on such trunnion or trunnions, and a fastening device which is in the nature of a cap adapted to be secured to the arm and completing the bearing, substantially as shown and described.

2. The combination, with the base having its apex provided with a vertical slot or mouth, and trunnions which are formed integrally therewith and project horizontally from opposite side of such mouth, of the transmitter-arm whose inner end is adapted to fit loosely in such mouth and on the aforesaid trunnions, and the cap or fastening device adapted to fit on the opposite side of said trunnions, and secured to the arm, substantially as specified.

3. The combination, with the slotted base having one or more trunnions as specified, and the transmitter-arm having a shoulder and screw-socket, of the cap or bearing-piece adapted to fit on the trunnions, and for engagement with the said shoulder, and a screw for securing the free end of the cap, substantially as shown and described.

4. The combination, with the base having a mouth and trunnions, the transmitter-arm and a bearing-cap, of a spring secured between said cap and arm, and bearing on the trunnions, substantially as shown and described.



5. The combination, with the base having a mouth provided with trunnions, and a hollow transmitter-arm fitted and adapted to swing on said trunnions, of a fastening device or journal-cap having an opening, and a conductor passing through such cap, and between the trunnions, and through the arm, substantially as shown and described.

6. A base for a transmitter-arm having a slotted apex or open mouth, and provided with trunnions for such arm which are arranged interiorly and oppositely in said mouth and have enlarged heads or circumferential flanges, as shown and described.

7. The combination, with the base, having an open slot or mouth provided interiorly with opposite trunnions whose heads are enlarged as specified, of the transmitter-arm having its inner end cut out or grooved transversely to fit on said trunnions, and a cap or fastening device applied on the inner side of the trunnions, as shown and described.

608,505. MEANS FOR PREVENTING VIBRATION IN VEHICLES. CHARLES R. BINNEY, London, England, assignor to William M. Amory, New York, N. Y. Filed Nov. 16, 1897. Serial No. 658,716. (No model.) Patented in England June 8, 1898, No. 11,364.



Claim.—1. In means for preventing vibrations in vehicles, a bearing-plate, a supporting-plate and a hollow distendable air-cushion unconfined between them so placed that the air-pressure at right angles to the line of shock may be free to cause the walls of said cushion to stretch and thus render the tensional resilience of said walls available.

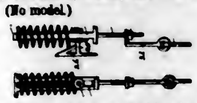
2. In means for preventing vibrations in vehicles, a sliding standard, a guide therefor, a bearing-plate and a supporting-plate respectively secured to such standard and guide, and an unconfined hollow distendable air-cushion surrounding said standard between said plates and so placed that the air-pressure at right angles to the line of shock may be free to cause the walls of said cushion to stretch and thus render the tensional resilience of said walls available.

3. In means for preventing vibrations in vehicles, a lower member connected to the running-gear, and an upper member connected to the carrying part of the vehicle, said members being telescoped one within the other; in combination with a plate attached to each member and a distendable air-cushion surrounding one member and so placed that the air-pressure at right angles to the line of shock may be free to cause the walls of said cushion to stretch and thus render the tensional resilience of said walls available as described.

4. In a bicycle having the usual diagonal tubing, a saddle provided with a post or standard adapted to slide within said tubing, a bearing-plate secured to said post, a supporting-plate secured to said diago-

nal tube, and a distendable air-cushion surrounding said post and so placed that the air-pressure at right angles to the line of shock may be free to cause the walls of said cushion to stretch, and thus render the tensional resilience of said walls available.

608,506. MINE-GATE. NEWTON K. BOWMAN, Lawrence, Ohio, assignor to Alvin Hurford, Canton, Ohio. Filed Nov. 20, 1897. Serial No. 659,311. (No model.)



Claim.—1. In mine-gates, the combination with a tilting platform, and a gate adapted to be operated thereby, of an adjustable platform-supporting device comprising a slotted bar, a bracket on the gate-post having an arm fitted in the slot of the bar and forming a guide therefor, a spiral spring encompassing said bar and bearing against the bracket-arm, an eyebolt connected with the platform, and an adjusting-bolt connecting said bar and eyebolt and adapted to be adjusted to vary the tension of the spring, substantially as described.

2. In mine-gates, the combination of a tilting platform, a folding gate-curtain, and a connection between the platform and curtain whereby the tilting of said platform will cause the curtain to fold, substantially as described.

3. In mine-gates, the combination of a tilting platform, a folding gate-curtain, and a pivoted lever connected with the lower end of the curtain and platform, and adapted to be operated by the tilting of said platform to cause the curtain to fold and open the gateway, substantially as described.

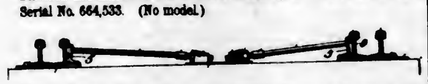
4. In mine-gates, the combination of a tilting platform, a gate-curtain, a spring-actuated tension device supporting the platform and adjustable to vary its resistance to the downward tilting thereof, and a connection between the platform and curtain whereby the tilting of said platform will cause the curtain to rise and open, substantially as described.

5. In mine-gates, the combination of tilting platforms, a folding, gravity-closing gate-curtain, a pair of pivoted levers, cords or cables connecting the lower end of the curtain and free ends of the levers, and a connection between the said levers and platform, substantially as described.

6. In mine-gates, the combination of a frame carrying gate-posts, tilting-platform sections mounted on said frame, a folding gravity-closing gate-curtain secured at its upper end to said posts and provided with stiffening-rods having eyes, a pair of pivoted levers, cords or cables connecting the lower end of the curtain and free ends of the levers and extending through said eyes, and a connection between each lever and one of said tilting-platform sections, substantially as described.

7. In mine-gates, the combination of a frame carrying standards, gate-posts arranged parallel with said standards and formed with guide-slots, two tilting-platform sections mounted on said frame, a folding gate-curtain made fast at its upper end and carrying at its lower end a gravity-bar, stiffening-rods secured to said curtain and formed at their ends with eyes, a pair of quadrant-levers pivoted between the posts and standards and having arms, cords or cables connecting the gravity-bar at the lower end of the curtain with the free ends of said lever-arms and extending through the eyes of the stiffening-rods, and a chain connecting each quadrant-lever with one of the platform-sections, substantially as described.

608,507. RAIL-BRACE FOR RAILWAY-TRACKS. WESLEY R. BRUNSON and HARTWELL L. BRUNSON, Fleming, Ga. Filed Dec. 30, 1897. Serial No. 664,533. (No model.)



Claim.—1. In a rail-brace, the combination with the rail, and a chair having an upward-extended portion at the inner side of the rail, of an abutment or center piece secured to a cross-tie at the center of the track, and an inclined brace-rod having one end adjustably connected with said abutment and its other end loosely engaged with the upward-extended portion of the chair at the inner side of the rail and near its top, substantially as described.

2. In a rail-brace, the combination with the rail, and a chair having an upward-extended portion at the inner side of the rail, of an abutment or center piece secured to the cross-tie at the center of the track and provided with an inclined screw-threaded aperture, an inclined brace-rod having one end screw-threaded and adjustably engaged in the abutment-aperture, the other end of said brace-rod being loosely engaged with the upward-extended portion of the chair at the inner side of the rail and near its top, and a jam-nut on the screw-threaded portion of said brace-rod, substantially as described.

3. In a rail-brace, the combination of the rails, the chairs having upward-extended portions at the inner sides of the rails, a plate secured to a cross-tie at the center of the track and provided with two spaced-apart abutments each having a screw-threaded aperture, the inclined brace-rods each having its outer end loosely engaged with a chair at the inner side of a rail and near its top, the inner ends of said brace-rods being screw-threaded and adjustably engaged in the screw-threaded apertures of said abutments, and jam-nuts for said brace-rods, substantially as described.

4. In a brace for the guard-rails of railway-tracks, the combination of the main rails, the guard-rails, chairs for said rails, the inclined braces loosely engaged with said chairs at the inner sides of the guard-rails and near their tops, and a center piece secured to a cross-tie at the center of the track and provided with two spaced-apart abutments with which the inner ends of said brace-rods are adjustably engaged independent of each other, substantially as described.

608,508. INCUBATOR. MERIN E. BUKOUTS, Lamotte, Ill. Filed Feb. 6, 1897. Serial No. 622,275. (No model.)



Claim.—1. An incubator consisting of a casing provided with a tank and means for heating the same, a series of cross pieces or slats above the tank forming ledges, and a series of horizontally-disposed trays mounted on said ledges and consisting of two frames hinged together and pivotally mounted in said casing at opposite ends adjacent to one edge, the body of the casing being as much longer than the combined series of trays, as the width of one of said trays, whereby the said trays may be turned easily over to bring their opposite sides against the ledges, substantially as described.

2. An incubator, consisting of a casing provided with a tank and means for heating the same, a series of cross pieces or slats above the tank forming ledges, a series of trays disposed on said ledges and consisting of two flat frames hinged together and provided with screen-coverings by means of which they may be fastened when closed, one of the frames having pivots projecting from opposite ends thereof near one edge, the said casing being as much longer than the combined series of trays as the width of one of said trays, a handle connected to one pivot of each of the trays, and a rod connected to the handles, by means of which all of said trays may be turned simultaneously, substantially as described.

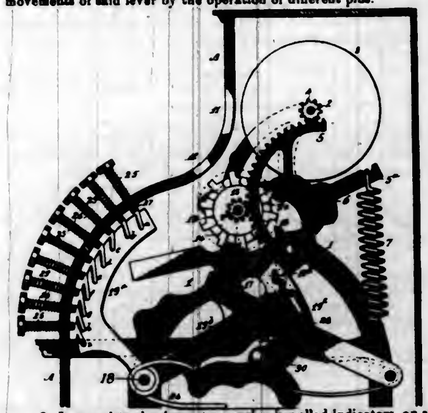
608,509. CASH REGISTER AND INDICATOR. LEE S. BURRIDGE, New York, N. Y. Filed Feb. 8, 1897. Serial No. 622,572. (No model.)

Claim.—1. In a register of the character described, the combination of a spring-impelled indicator-wheel, an escapement for controlling the movements thereof, a push-pin, mechanism operated thereby for vibrating the escapement, and a connection between the push-pin and the escapement-operating mechanism for positively limiting the movement of the latter to prevent overthrow.

2. In a register having rotary indicators, a spring-actuating mechanism for driving the same, an escapement operating to effect step-by-step movements of the indicators, a series of longitudinally-movable pins or finger-keys representing different values, means actuated by said pins or keys to operate the escapement, and means for engaging the finger-keys with the escapement-operating mechanism to prevent movement of the latter beyond the range of movement of the operated key.

3. In a register having rotary indicators, an escapement for controlling the movements of the indicators, longitudinally-movable finger-keys representing different values, a pivoted lever adapted to be operated by said keys, connections between said lever and escapement for operating the latter, and means for coupling the finger-keys with the escapement-operating lever to limit the movement of the latter.

4. In a register having rotary indicators, the combination of a spring-actuated driving mechanism, an escapement to control the movements of the indicators, a series of longitudinally-movable finger-keys representing different values, a lever having operative connection with the escapement, and means for varying and limiting the movements of said lever by the operation of different pins.



5. In a register having rotary spring-impelled indicators, an escapement for controlling the movements of the same, a lever provided with cams for operating the escapement to permit movement of the indicators, and a series of finger-keys representing different values and adapted respectively to move the lever different distances, and to interlock with the same to prevent overthrow.

6. The combination of a spring-impelled indicator-wheel, an escapement operating therewith to control the movement thereof, an arm on said escapement having a lateral projection, a lever having a series of cams adapted to operate on said projection and vibrate the escapement, and a series of longitudinally-movable finger-keys representing different values and adapted to move said lever to bring the cams thereon into action, and to engage and hold the same at the limit of their movement to prevent overthrow.

7. The combination of a spring-impelled wheel, an escapement to control the movements thereof, the said escapement having an arm with a lateral projection thereon, a lever-arm having a sinuous groove or channel into which the said projection extends, and a series of finger-keys representing different values and adapted, respectively to move the said lever-arm different distances, as and for the purposes described.

8. The combination with the spring-actuated register and indicator wheels, and with the escapement for controlling the movements thereof, of a lever operatively connected with the escapement to actuate the same, and a longitudinally-movable finger-key for operating said lever, the said key being adapted to engage the lever and positively limit the movement thereof to prevent overthrow.

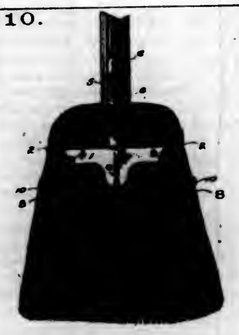
9. The combination with the spring-actuated register and indicator wheels, and with the escapements for controlling the movements thereof, of a lever connected with the escapement to operate the same, said lever having a series of open slots *a*, *b*, &c., and a series of longitudinally-movable finger-keys for operating said lever, said keys having projections adapted to enter said slots and serving as positive stops to limit the movement of the lever.

10. The combination with the register and indicator wheels and with the escapement for controlling the movements thereof, of an angular lever having one arm operatively connected with the escapement to actuate the same, and having in the other arm a series of open slots *a*, *b*, &c., and longitudinally-movable finger-keys adapted to engage said slotted arm and operate the lever, said finger-keys having projections adapted to enter said slots and serving as positive stops to limit the movements of the lever.

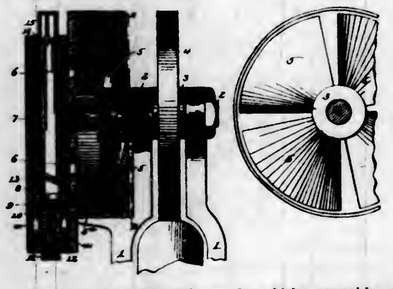
608,510. BROOM-CLASP. WILLIAM H. CASEY, Remaker, Ky. Filed June 1, 1897. Serial No. 638,863. (No model.)

Claim.—As an improved article of manufacture the herein-described broom-clasp the same consisting of two metallic plates having the ends of their body portions overlapped and secured together and having extending centrally therefrom the upwardly-extending securing-arms with openings, and, in vertical line therewith, the downwardly-projecting portions with openings, the fastenings passed through the openings in the downwardly-projecting portions the wire clamping-loops having their ends passed through said plates near their ends and their depending movable portions bent outwardly and downwardly, and fastenings for connecting the outer portions of the clamping-loops at their bends, all substantially as shown and described.

608,510.



608,511. SPEED-SIGNAL FOR BICYCLES. GUSTAVE DITTMAR, Washington, D. C. Filed Aug. 9, 1897. Serial No. 647,563. (No model.)



Claim.—1. A signal attachment for vehicles, comprising means for compressing air, a pressure-chamber, a signal and means for regulating the pressure in said chamber and sounding the signal at a predetermined speed of the vehicle.

2. A signal attachment for vehicles, comprising means for compressing air, a pressure-chamber, a signal and means for regulating the pressure in said chamber proportionate to a predetermined speed of the vehicle and sounding the signal at such predetermined speed.

3. A speed-signal for vehicles comprising means for transferring motion from revolving vehicle parts upon an air-compressor, said air-compressor working in a closed chamber, and means for regulating the pressure in said chamber in combination with a signal adapted to sound at a given pressure, *i. e.* at a predetermined speed.

4. A speed-signal for vehicles, comprising means for transferring motion from revolving vehicle parts upon an air-compressor, said air-compressor working in a closed chamber, said chamber being provided with an adjustable outlet or leak to regulate the pressure in combination with a signal adapted to sound at a given pressure, *i. e.* at a predetermined speed, substantially as described.

5. A speed-signal for vehicles comprising means for transferring motion from revolving vehicle parts upon an air-compressor, said air-compressor working in a closed chamber, said chamber having an adjustable outlet or leak and an adjustable valve to allow air to escape when the pressure surpasses a given limit, in combination with a signal, adapted to sound in a current of air, located in the path of the escaping air substantially as described.

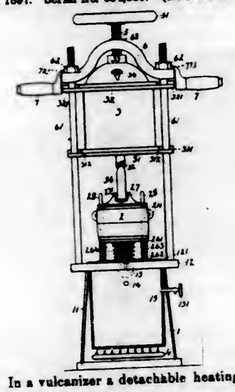
6. In speed-signals for bicycles and the like, supporting-arms, a chamber or casing mounted on one of said arms, said support adapted to afford suitable bearings for a shaft passing through the casing, a fan fixed to the shaft in said casing, a wheel keyed to said shaft and adapted to contact with the bicycle wheel, said chamber or casing having an adjustable outlet or leak and an adjustable valve to permit the escape of surplus air, when the pressure produced by the rotation of the fan exceeds a certain point, in combination with a reed located in the path of the escaping air, substantially as described.

7. In speed-signals for bicycles and the like, a support, an upright on said support, a lever pivoted at one end to said upright, a wheel mounted on a pin in said support and adapted to contact with a revoluble part of the bicycle, a cylinder secured to said support, a piston working up and down in said cylinder, a link pivoted at one end to the piston and at the other end to said lever, said lever being actuated by an arm or cam fixed to the hub of the wheel, and being held

in tension by a spring at the end of the support, a yoke on the farther end of said cylinder and a screw-plug for regulating the pressure of air in said cylinder, said cylinder having a fixed head provided with an upwardly-swinging flap adapted to cover an opening in said head, a tube integral with the wall of the cylinder, an aperture opening into said tube, a valve adjustable in said tube and normally closing said aperture, said valve adapted to permit the escape of surplus air when the pressure produced by the motion of the piston exceeds a certain point, said air escaping through a slot in the wall of the tube or valve casing, in combination with a reed adapted to cover said slot and to emit a sound when vibrated by the escaping air, substantially as described.

8. A speed-signal for vehicles comprising a piston deriving motion from a vehicle, and a cylinder in which said piston reciprocates, said cylinder being provided with an opening or outlet adjustable in size by a plug, and with an opening covered by a reed adapted to sound in the current of escaping air, substantially as described.

608,512. CELLULOID-PRESS AND VULCANIZER. JOHN C. DIXON, Montreal, Canada, assignor to Philip Sheridan, same place. Filed May 3, 1897. Serial No. 634,869. (No model.)



Claim.—1. In a vulcanizer a detachable heating-chamber combined with a heat-generator.

2. In a vulcanizer, a heat-generator combined with a movable heating-chamber adapted to be moved without altering the position of the flask.

3. In a vulcanizer the combination of a heat-generator with a movable heating-chamber and means of connecting the two together.

4. In a vulcanizer, the combination of a heat-generator with a movable heating-chamber and a frame to guide the movements of the said chamber.

5. In a vulcanizer, the combination of a heat-generator, with a movable heating-chamber, a frame to guide the movements of the said chamber and means of raising and lowering the chamber.

6. In a vulcanizer or celluloid-press, the combination of a heat-generator with a movable heating-chamber, a flask within the chamber, a frame to guide the movements of the said chamber and a threaded spindle adapted to supply pressure on the flask contained in the heating-chamber.

7. In a vulcanizer, the combination of a heat-generator with a movable heating-chamber, a frame to guide its movements, a threaded spindle to supply pressure to the flask and a spring flask-supporting chair.

8. In a vulcanizer, the combination of a heat-generator with a movable heating-chamber, a frame to guide its movements, a threaded pressure-spindle, a spring flask-supporting chair and flask-guide pins.

9. In a vulcanizer or celluloid-press, the combination of a heat-generator with a movable heating-chamber, a frame to guide its movements, a threaded pressure-spindle and a cap to close neck of chamber.

10. In a vulcanizer or celluloid-press, the combination of a heat-generator with a movable heating-chamber, a frame to guide its movements, a threaded pressure-spindle, an adjustable plug, a spring flask-supporting chair and flask-guide pins.

11. In a vulcanizer, a movable heating-chamber having a guide-frame, the neck provided with a packing-ring and the lower side grooved to receive a flanged ring on the base, and a threaded pressure-spindle adapted to pass through said packing-ring for the purposes set forth.

12. In a vulcanizing-flask the combination of two side sections, one of which has projecting lugs the other having slotted sides to fit the lugs, and corner pin-holes in top, bottom and sides adapted to fit on pins of the flask-chair.

13. In a vulcanizing-flask the combination of two side sections one of which has projecting lugs, the other having slotted sides to fit the lugs conically-bored ears to the lugs and to parts adjacent to slots, conical pins to lock such sections, and corner pin-holes in top, bottom and sides, and a flask-chair having pins adapted to fit in such holes.

14. In a vulcanizer, a movable heating-chamber vertical guide-bars and spring-catch handles adapted to raise and lower chamber and to retain it in position when raised.

15. In a vulcanizer the combination of the cross-head, a spring-catch handle, consisting of a spindle, a hooked sleeve sliding thereon between a collar and a spiral spring retained by a cap adapted to press the sleeve toward the collar and a movable heating-chamber.

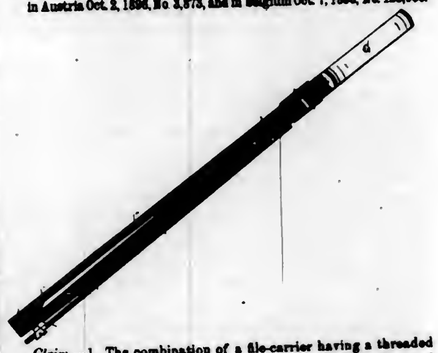
16. In a vulcanizer or celluloid-press, the combination of a steam-generator, a flanged plate supporting a guide-frame and spring flask-chair, a chamber moving vertically in such frame and pressure-spindle adapted to operate in the center thereof.

17. In a vulcanizer, the combination of a steam-generator, a plate supporting the guide-frame and spring flask-chair, movable chamber, spring-catch handles thereto, and a central pressure spindle.

18. In a vulcanizer, the combination of a pressure-spindle, a flask and a spring flask-chair adapted to close the flask automatically.

19. In a vulcanizer, the combination of a pressure-spindle, a flask, a spring-chair and a movable heating-chamber.

608,513. CARRIER FOR ABRASIVE HAND-TOOLS, FILES, &c. HANS FOCKE, Radeberg, Germany. Filed Nov. 10, 1897. Serial No. 658,077. (No model.) Patented in France Aug. 31, 1896, No. 259,310; in Austria Oct. 2, 1896, No. 3,873, and in Belgium Oct. 7, 1896, No. 122,900.



Claim.—1. The combination of a file-carrier having a threaded screw-hole at one of its ends, a file provided at its corresponding end with a plain screw-hole having a conical recess to enlarge the same, a screw having a conical head to secure the file to the carrier at the said end, and means for securing the file at its opposite end, said screw-hole in the carrier being more distant from the point of attachment of the opposite end than the said conical recess, substantially as and for the purposes hereinbefore set forth.

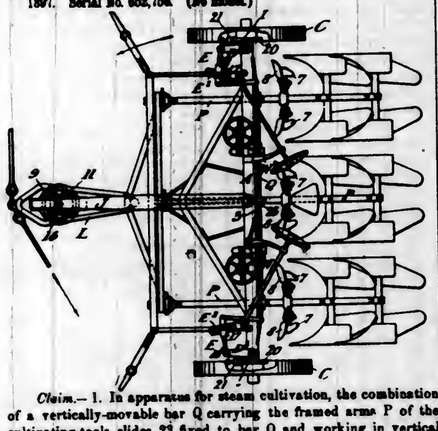
2. The combination of a file-carrier provided with means for giving the file the proper curvature and elasticity, said file-carrier having a threaded screw-hole at one of its ends, a file provided at its corresponding end with a plain screw-hole having a conical recess to enlarge the same, a screw having a conical head to secure the file to the carrier at the said end, and means for securing the file at its opposite end, said screw-hole in the carrier being more distant from the point of attachment of the opposite end than the said conical recess, substantially as and for the purposes hereinbefore set forth.

3. The combination of a file-carrier having an inwardly-sloping shoulder and a threaded screw-hole at one of its ends, a movable bar one end of which is in contact with said sloping shoulder, a file provided at its corresponding end with a plain screw-hole having a conical recess to enlarge the same, a screw having a conical head to secure the file to the carrier at said end, and means for securing the file at its opposite end, substantially as and for the purposes hereinbefore set forth.

4. The combination of a file-carrier having a sloping shoulder and a threaded screw-hole at one end, a movable bar having a sloping shoulder adapted to contact with the first-mentioned sloping shoulder, a file having at its corresponding end a plain screw-hole having a conical recess to enlarge the same, a screw having a conical head to secure the file to the carrier at said end, and means for securing the file at its opposite end, substantially as and for the purposes hereinbefore set forth.

5. The combination of a file-carrier, having a sloping shoulder and a threaded screw-hole at one end, a movable bar having a sloping shoulder adapted to contact with said first-named sloping shoulder, a file having at its corresponding end a plain screw-hole having a conical recess to enlarge the same, strips or layers intermediate of the movable bar and the file proper, a screw having a conical head to secure the file to the carrier at said end, and means for securing the file at its opposite end, substantially as and for the purposes hereinbefore set forth.

608,514. APPARATUS FOR STEAM CULTIVATION. ROBERT H. FOWLER and THOMAS BERESTAB, Leeds, England. Filed Sept. 23, 1897. Serial No. 652,754. (No model.)



Claim.—1. In apparatus for steam cultivation, the combination of a vertically-movable bar Q carrying the framed arms P of the cultivating-tools, slides 23 fixed to bar Q and working in vertical guides 3 carried by the main frame A and skids W swiveling on standards 1 adjustably secured to bar Q, substantially as described.

2. In apparatus for steam cultivation, the combination of framed arms P carrying the cultivating-tools, colters 8 fixed on said arms P and having skimmers 7 adjustably attached thereto, a bar Q on which the framed arms are pivotally mounted, slides 23 fixed to said bar Q and working in vertical guides 3 on the main frame A, and slotted brackets 5 fixed to the framing in which the pivot-pins 8' of the arms P are vertically adjustable by means of screws 6, substantially as described.

3. In apparatus for steam cultivation such as is herein referred to a caster for the fore carriage consisting of a caster-wheel and bracket combined with a ring or disk 11 with peripheral groove, mounted within a grooved ring 9 on the fore carriage and supported by balls 13 running in the grooves of the rings 9 and 11, substantially as described.

4. In apparatus for steam cultivation such as is herein referred to, the combination with the lever D^2 on the pivot of the axle of the rear wheel C of a divided link 17, 18, adjustable in length, connecting the said lever to the nut on the screw-spindle E^2 substantially as and for the purpose set forth.

5. In apparatus for steam cultivation such as is herein referred to, a pawl-catch for preventing the backward rotation of the wheel C constructed of two parts, of which the block 19 that engages with the ratchet-wheel of the wheel C is free to slide within adjustable limits upon the second part or stem 21 pivoted to the framing, for the purpose of permitting a certain amount of backward motion to the wheel C before it is locked, substantially as described.

608,515. BOOK-SUPPORT. WALTER F. FRASER, Fruit Hill, Ohio. Filed Sept. 24, 1897. Serial No. 653,575. (No model.)



Claim.—1. A device of the character described, comprising a suitable plate having arms pivoted to one side near the top and bottom thereof, said arms being crossed and having shoes pivoted to their free ends adapted to engage the upper side of one shelf and the under side of the shelf immediately above, means for keeping said shoes normally in engagement with the shelves, substantially as and for the purpose set forth.

2. A device of the character described, comprising a suitable plate adapted to engage the last book in an incomplete row, arms pivoted to said plate and crossing each other, said arms being provided with grooves, sliding arms in said grooves having shoes pivoted to their outer ends, said shoes being adapted to engage the upper side of one shelf and the under side of the shelf immediately above, means for securing the shoe-carrying arms in adjustable position, means for keeping said shoes in close contact with the shelves when the device is in position to support the books, substantially as and for the purpose set forth.

3. A device of the character described, comprising a suitable plate adapted to engage the last book in an incompleted row, arms pivoted to said plate and having grooves therein, extensible arms in said grooves provided at their outer ends with pivoted shoes, and suitable keepers spanning said grooves and having set-screws therein adapted to engage the extensible arms to secure the same in any adjustable position, rings connected with the plate and having connections with the first-mentioned pivoted arms whereby said arms are rocked on their pivots toward the plate and the shoes are held in close contact with the shelves when the device is in position for use, substantially as and for the purpose set forth.

608,516. SALT-SHAKER. DORA A. GRANT, Patten, Me. Filed Dec. 31, 1897. Serial No. 664,576. (No model.)



Claim.—1. The combination of a salt-shaker provided at its top with a projection or lug and having an opening, and an agitator positively pivoted to the projection or lug and carried by the cover, said agitator consisting of a lever extending through the opening of the cover, the upper portion of the lever constituting a handle and adapted to be oscillated, and the lower portion being arranged to swing through the contents of the salt-shaker, substantially as described.

2. The combination of a salt-shaker provided at its top with a lug or projection and having openings at the opposite sides of the same, and an agitator consisting of a lever provided at the top with a handle and having sides or stems straddling the lug or projection, pivoted to the same and extending through the openings into the salt-shaker, substantially as described.

608,517. TRACTION-ENGINE. STEPHEN B. GRAY, Jacksonville, Ill. Filed Feb. 8, 1897. Serial No. 622,533. (No model.)

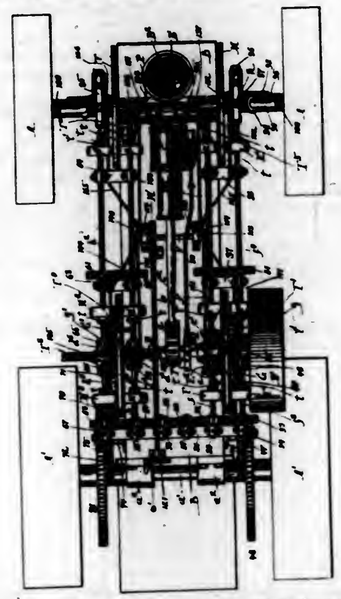
Claim.—1. In a traction-engine, the combination with the front axle of a trunnion-sleeve mounted thereon, a pedestal pivotally connected to said trunnion-sleeve and having an inclined annular track, a turn-table pivotally connected to said pedestal and also having an inclined annular track and conical rolls interposed between the turn-table and the pedestal, substantially as described.

2. In a traction-engine, the combination with a pair of steering-wheels, of variable individual gear mechanism for said wheels and whereby said wheels may be caused to rotate at different relative speeds, the individual gear mechanism for each of said wheels comprising a disk or wheel suitably connected with its corresponding steering-wheel and a pair of rolls or gears located upon opposite faces of said disk or wheel and suitable connections between said rolls or gears and the source of power, substantially as described.

3. In a traction-engine, the combination with a pair of steering-wheels, of variable individual gear mechanism for said wheels, the gear mechanism for each of said wheels comprising a friction disk or wheel connected with its corresponding drive-wheel and a pair of friction drive-rolls located upon opposite sides of said friction disk or wheel, and suitable connections between the pair of friction drive-rolls at each side of the machine, substantially as described.

4. In a traction-engine, the combination with a pair of steering-wheels, one located on each side of the engine and connected in a manner permitting their plane of rotation to be shifted with respect to the engine, of variable individual gear mechanism for said wheels and whereby said wheels may be caused to rotate at different relative speeds, said individual gear mechanism for each of the steering-wheels comprising a friction-disk suitably connected therewith, friction drive-rolls arranged upon opposite sides of said friction-disk,

shafts whereon said friction drive-rolls are longitudinally adjustable and suitable lever mechanism for shifting said friction drive-rolls, and suitable connections between the shafts of said friction drive-rolls and the source of power, substantially as described.



5. In a traction-engine, the combination with the front and rear wheels, of differentially-operative driving mechanism and a common source of power whereby both said front and rear wheels are driven, said differentially-operative driving mechanism serving to impart different relative speeds to the pairs of front and rear wheels, whereby the pair of front wheels may be caused to travel faster than the corresponding rear wheels, substantially as described.

6. The combination with the front and rear wheels, of variable gear mechanism for each of said wheels and whereby the pair of front wheels may be caused to travel faster than the corresponding rear wheels and a common source of power with which said gear mechanism is suitably connected, substantially as described.

7. The combination with the front and rear traction-wheels, of variable gear mechanism for each of said wheels, and whereby the pair of front wheels may be caused to travel faster than the corresponding rear wheels, shifting mechanism whereby the speed of said gear mechanism is varied and a common source of power with which said gear mechanism is suitably connected, substantially as described.

8. The combination with the front and rear traction-wheels, of variable gear mechanism for each of said wheels, and whereby the pair of front wheels may be caused to travel faster than the corresponding rear wheels, shifting mechanism whereby the speed of the gear mechanism of the front and rear wheels may be differentially varied and a common source of power with which said gear mechanism is suitably connected, substantially as described.

9. The combination with front and rear traction-wheels, of variable gear mechanism for each of said wheels and whereby the pair of front wheels may be caused to travel faster than the corresponding rear wheels comprising wheels or disks and drive gears or rolls movable radially with respect to said wheels or disks and means for shifting said drive gears or rolls radially with respect to said wheels or disks, substantially as described.

10. The combination with the front and rear traction-wheels, of variable gear mechanism for each of said wheels comprising a friction-wheel, positively-driven rolls for imparting movement to each wheel and means for shifting said drive-rolls radially with respect to said friction-wheels, substantially as described.

11. The combination with the front and rear traction-wheels, of variable gear mechanism for each of said wheels, comprising wheels or disks and positively-driven gears or rolls for imparting movement thereto and shifting mechanism whereby the speed of the individual gear mechanism is varied, said shifting mechanism comprising suitable rods and levers and a common shaft whereby said rods and levers may be simultaneously operated, substantially as described.

12. The combination with the front and rear traction-wheels, of variable gear mechanism for each of said wheels and whereby the pair of front wheels may be caused to travel faster than the corresponding rear wheels, the gear mechanism of the front wheels of the machine being suitably geared together, substantially as described.

13. In a traction-engine, the combination with the front wheels, of a vertical shaft for each of said front wheels and suitably geared thereto, a suitable block through which each of said vertical shafts passes, a frame connected with said block and carrying gear-pinions, a common source of power and suitable gear mechanism connecting said pinions with the source of power, substantially as described.

14. In a traction-engine, the combination with the front traction-wheels, of individual vertical shafts for each of said wheels, gear mechanism connecting said shafts at their lower ends with the traction-wheels, suitable blocks through which said individual shafts pass, a shaft extending between said blocks, suitable frames pivoted to said blocks and through which frames the individual vertical shafts pass, suitable gear-pinions carried by said frame and gear mechanism connecting said pinions with the source of power, substantially as described.

15. In a traction-engine the combination with the front axle, of sleeves swiveled thereon adjacent the ends of the axle, individual yokes pivoted to said sleeves, said yokes provided with bearings, and shafts mounted in said bearings and connected by suitable gearing with the traction-wheels, said sleeves allowing for the front and rearward movement and said yokes allowing for the lateral movement of the parts.

608,518. SPRING-SCALE. JOHN G. GRIENEL, Chicago, Ill. Filed July 2, 1897. Serial No. 642,305. (No model.)



Claim.—1. In a spring-balance, the combination of a slide, a spring connected with said slide, a movable plate through which said slide passes, auxiliary springs attached to said plate, a pin or key for coupling the plate and auxiliary springs with the slide, and means for manually operating the pin or key, substantially as described.

2. In a spring-balance, the combination of a spring-actuated slide having recesses in the opposite edges of the lower end thereof, and a suspending device having a slot therein of the same length as the width of the side and adapted to have its side walls engage the said recesses, the said suspending device having depending hooks at the opposite angles thereof.

3. In a spring-balance, the combination of a spring actuated slide having recesses on the opposite edges of the lower end thereof, and a suspending device formed with a central slot to fit over the said slide and to engage the said recesses, said suspending device having depending hooks thereon.
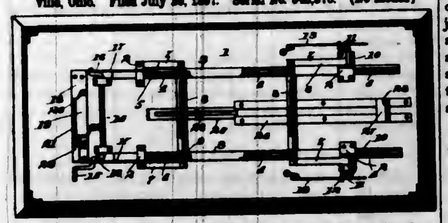
4. In a spring-balance, the combination of a slide having a stem with rack-teeth thereon, a pinion engaging said rack-teeth, having a shaft or spindle projecting from opposite sides thereof, auxiliary springs attached at their upper ends, a movable plate to which the lower ends of said auxiliary springs are also connected and having an opening therein for the free movement of the stem of the slide, scale-plates on opposite sides of the said slide which have a pair of concentric scales thereon reversely arranged on opposite plates, a pin for detachably connecting the auxiliary springs to the slide, hands or indicators connected to the projecting ends of the shaft or spindle of the pinion, and means for operating the said pin.

5. In a spring-balance, the combination of a shaft or spindle, a stepped arm mounted thereon having a screw-threaded aperture therein, a stepped hand or indicator having a segmental slot therein concentric with the projecting end of the said shaft or spindle, a set-screw for securing the adjustment of the said hand or indicator relatively to the said arm and scale-plate, over which the said hand or indicator is adapted to move.

6. In a spring balance, the combination of a slide, a spring connected to said slide, a movable plate through which said slide is adapted to have free operation, auxiliary springs attached to said plate, a detachable pin for connecting the said plate and the auxiliary springs to the slide, a slotted retaining-guide carried by the said slide, a pin movable in the said slotted retaining-guide and adapted to connect the auxiliary springs to the said slide, and a spring-actuated operating handle or extension pivotally connected to the outer end of the said pin and having a pulling device attached to the free end thereof.

7. A scale having a scale-plate with a hand or indicator movable thereover, and a spring-actuated slide with cross-marks thereon to attain an indication relatively to the rotation of the hand or indicator from one to three times and also to ascertain the weight of material placed upon a scale-pan attached to the said slide.

608,519. HEARSE ATTACHMENT. MILTON M. GUILEY, Hartville, Ohio. Filed July 30, 1897. Serial No. 646,370. (No model.)



Claim.—1. The combination with the floor of a hearse, of casket-clamps secured thereto, casket-rollers extending transversely across the floor of the hearse and having movement toward and away from said floor, parallel arms pivotally connected to the floor and carrying said rollers slides having wedge-blocks adapted for raising and lowering said rollers, and means for moving the slides.

2. The combination with the floor of a hearse, of a swinging frame connected thereto adapted to be depressed forwardly or rearwardly and having a casket-roller, a second frame having a casket-roller which is movable toward and away from the said floor, and means for simultaneously raising said frames in relation to the floor and casket-clamps.

3. The combination with the floor of a hearse, of a swinging frame connected thereto adapted to be depressed forwardly or rearwardly and having a casket-roller, a second frame having a casket-roller which is movable toward and away from the said floor, slidable bars or rods having wedges arranged in sets adapted to engage with the frames and raise the same, means for moving said rods, and head and foot casket-clamps.

4. The combination with the floor of the hearse, of casket-rollers movable toward and away therefrom, arms carrying said rollers and provided with cranks, spring bars secured to the floor and bearing upon said cranks adapted to keep said rollers normally urged toward the floor, means for raising the rollers, and casket-clamps.

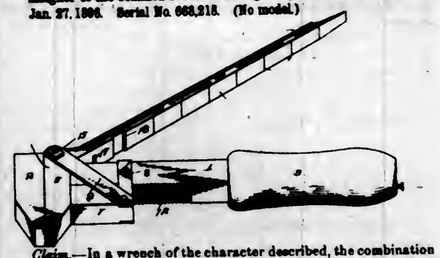
5. The combination with the floor of a hearse, of a foot-frame journaled thereto and adapted to swing forwardly and rearwardly, said frame having cranks and a casket-roller, springs bearing on the cranks and adapted to hold the frame and roller normally adjacent the floor, a head-frame having inherently-resilient arms connected to the floor, and a casket-roller journaled in said arms, and means for raising said frames, and casket-clamps.

6. The combination with the floor of a hearse, of a foot frame journaled thereto and adapted to swing forwardly and rearwardly, said frame having cranks and a casket-roller, springs bearing on the cranks and adapted to hold the frame and rollers normally adjacent the floor, a head-frame having inherently-resilient arms connected to the floor, a casket-roller journaled in said arms, and slide-rods having wedges adapted to engage with the frames to simultaneously raise the same, a crank-shaft and connecting-rods extending from the same to the slide-rods.

7. The combination with the floor of a hearse, of a head casket-clamp secured thereto, a foot casket-clamp independently adjustable toward and away from the head-clamp, and means for securing the foot-clamp independently of the head-clamp at any point.

8. The combination with the floor of a hearse, of a foot casket-clamp adjustable longitudinally thereof, a swinging head casket-clamp, and a spring-catch for securing said head casket-clamp.

608,520. MONKEY-WRENCH. JOSEPH A. HEBBLER, Akron, Colo., assignor to the Common Sense Patenting Company, same place. Filed Jan. 27, 1896. Serial No. 668,218. (No model.)



Claim.—In a wrench of the character described, the combination with a shank provided at one end with a fixed jaw and a countersunk screw-threaded socket, at the other end with a handle grooved on one side and having a covered casing on the other side, of a movable jaw, cooperating teeth on the contiguous faces of the movable jaw and shank, obliquely-arranged braces connecting the movable jaw with its shank, a guiding-loop on the end of said shank extending around the shank of the fixed jaw, a locking cam-lever pivotally connected with the movable jaw on the opposite side of the fixed-jaw shank from said movable jaw provided with a tapering end and arranged to lie normally in the groove in the handle, and a tooth and depressions on the contiguous faces of the locking-lever and shank of the fixed jaw, said lever being grooved transversely to stride the guiding-loop on the shank of the movable jaw, all substantially as described.

608,521. METALLIC COIN-WRAPPER. HARRY H. HIPWELL and THOMAS S. HIPWELL, Allegheny, Pa. Filed Mar. 31, 1898. Serial No. 675,989. (No model.)



Claim.—The herein-described metallic wrapper for coins, comprising an oblong blank having a series of side flaps spaced apart and bent inwardly forming end flanges to engage with the extreme coins and hold them in place, and having a series of transverse slots, some of the slots being in line with the spaces formed between the contiguous ends of adjacent flanges to increase the flexibility of the wrapper in the manner set forth, said wrapper having a tongue at one end to pass through the slot at the opposite end and be bent back upon itself, substantially as and for the purpose set forth.

608,522. DRAFT-RIGGING FOR RAILROAD-CARS. DE WITT LOCKE, Detroit, Mich. Filed Mar. 29, 1898. Serial No. 675,630. (No model.)

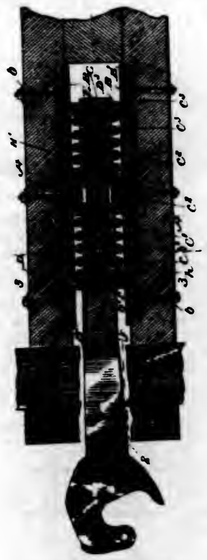
Claim.—1. In combination with a draw-bar and yoke and four follower-plates and two groups of springs; a rod having an enlarged portion; the enlarged portion being located between the two middle follower-plates and the smaller portions thereof extending therefrom and transfixing the follower-plates and springs, said rod being disconnected from both the draw-bar and yoke, substantially as and for the purpose described.

2. The combination in a draft-rigging, of the opposite guide-plates with four followers supported thereon, said plates being provided with stops to limit the movement of each follower; the springs interposed between the first and second and third and fourth followers, and a rod arranged centrally of the springs and transfixing the followers, said rod being disconnected from both the draw-bar and yoke; with the draw-bar and the yoke attached to said draw-bar and loosely inclosing all the followers, springs and rod, substantially as and for the purpose described.

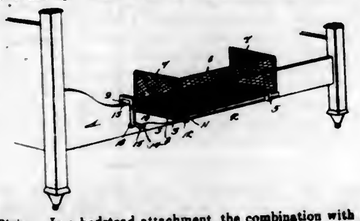
3. In a draft-rigging for cars, the combination of the guide-plates provided with a series of stops, the movable followers supported by the guide-plates and each arranged between the proper stops, the sets of springs interposed between the first and second, the third and fourth followers; and a rod transfixing the followers and upon which the springs are supported, said rod having a collar intermediate the second and third followers; with a draw-bar and a yoke attached thereto surrounding the followers, springs and rod, said rod being disconnected from both the draw-bar and yoke, substantially as described.

4. In a draft-rigging for cars, the combination of the timbers, the opposite guide-plates B let therein and provided with vertically-disposed stops $C e$, $C' C^3$, c^2, C^2, c^3, and the followers D, D', D^2, D^3, arranged between said stops, substantially as described; and the rod loosely transfixing all said followers and having a central collar or pin be-

tween the followers D', D²; with the draw-bar, and the yoke E attached thereto surrounding said followers, springs and rod, said rod being disconnected from both draw-bar and yoke, substantially as described.



608,523. CRIB ATTACHMENT FOR BEDS. MATTIE C. LUCAS, Louisville, Ky. Filed Oct. 27, 1897. Serial No. 656,523. (No model.)



Claim.—In a bedstead attachment, the combination with a plurality of supporting-brackets each comprising a horizontal supporting portion, a hook portion, a pendent brace portion, and an adjustable roller-carrying slide mounted on said brace portion, of a mattress-supporting frame mounted on said brackets, substantially as described.

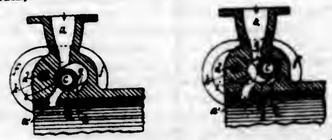
608,524. ANTIRATTLING THILL-COUPLING. JAMES MORGAN, Timboon, Victoria, assignor of four-fifths to Julius Scherber, Carl Scherber, Albert Ernest Alfred Scherber, and Frederick Scherber, same place. Filed Mar. 14, 1898. Serial No. 673,812. (No model.)



Claim.—1. A thill-coupling comprising in combination a thill A having a pin D and rounded end M, a clip B having hooks C with projections F and screwed ends J, and a spring E L G having elongated slots K, all substantially as and for the purposes described and as illustrated.

2. In a thill-coupling, the combination with a clip for engaging the axle, and a pair of hooks formed rigidly upon one side of said clip and spaced a short distance apart, and provided with a pair of lugs at their bottom extending into said space and partially obstructing the lower portion thereof; of a thill-iron having a cylindrical pin projectiug from opposite sides thereof, and having a rounded extension at its rear end, the said extension adapted to enter the space between said hooks and strike said lugs when the thill is raised, and the said pin adapted to engage said hooks; and a bent spring attached to said clip and passing between said hooks and engaging the said rounded extension upon the thill, substantially as described.

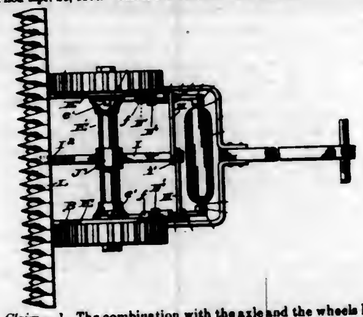
608,525. VALVE FOR STEAM-ENGINES. HUGO MÜLLER, Aachen, Germany. Filed Jan. 6, 1898. Serial No. 665,890. (No model.)



Claim.—1. A chamber having an inlet and an outlet channel, a valve or cylinder for closing one of said channels, and an actuator or eccentric for moving the valve clear of the last-named channel, said chamber having its walls provided with a guide or way for the valve in its movement from and to the last-named channel substantially as described.

2. A chamber having an inlet and an outlet channel, a valve or cylinder for closing one of said channels, and an actuator or eccentric for moving the valve clear of the last-uamed channel, said channel having concave seats at its mouth fitted to receive the valve for closing said channel substantially as described.

608,526. LAWN-MOWER. PATRICK MCLAUGHLIN, Dover, N. H. Filed Apr. 29, 1896. Serial No. 689,521. (No model.)



Claim.—1. The combination with the axle and the wheels loosely mounted thereon, with their inner faces flanged and the hub of each extended within the chamber formed by said flange, ratchet-disks on said hubs, cog-wheels mounted to revolve within said chambers, pivoted double paws on the cog-wheels engaging said ratchets, a sleeve surrounding the axle, disks fast upon said sleeve, flange-strips on the upper faces of and extending partially around said disks, a bearing on each of said disks, shafts mounted to revolve in said bearings at right angles to the axle, cog-wheels on said shafts meshing with the cog-wheels on the axle, a crank carried by each of said shafts, connecting-rods attached to said cranks, and an oscillating bar pivotally suspended beneath the axle connected at its rear end to the adjacent ends of said connecting-rods and at its forward end to the reciprocating knife-bar, substantially as described.

2. The combination with the axle and the wheels loosely mounted thereon, with their inner faces flanged and the hub extended within the chamber formed by the flange, a ratchet on said hub, cog-wheels mounted to revolve within said chamber, a pivoted double pawl on the cog-wheel engaging said ratchet, a sleeve surrounding the axle, plates fast upon said sleeve stripe on the upper faces of the plates, extending partially around the same, a bearing on each of said disks, a shaft mounted to revolve in said bearing at right angles to the axle, a cog-wheel on said shaft meshing with the cog-wheel on the axle, a disk fast on the sleeve surrounding the axle, said disk covering the toothed face of said cog-wheel, and a crank carried thereby, a connecting-rod extending from said crank, a hanger loosely supported from said sleeve, a pin depending from said hanger, and an oscillating bar pivotally mounted on said pin and connected with the knife-bar and said connecting-rod, substantially as described.

608,527. DOOR FOR CLOSING STEAM-RETORTS. DAVID ROSS, Vancouver, Canada. Filed Sept. 1, 1897. Serial No. 650,248. (No model.)



Claim.—1. In a door for hermetically sealing a steam-reservoir, the combination of a slidable door having rubber packing stripe arranged around near its outer edge on an even plane, a rabbeted seat within the outer end of a suitable frame to receive the said packing on an even plane, a recessed cap-piece 15 substantially secured to the top of said door, a packing-strip 17 arranged on the under side around and near the outer edge to effectively close the opening through which the door is thrust, substantially as specified.

2. In a door for hermetically closing a steam reservoir or retort, a slidable door, a seat of even plane for the edges of the said door formed in the end of the reservoir and an opening in the upper side for the same to enter, packing arranged around the edges of the said door to intervene between the same and its seat, a metal cap-piece secured to the top of the said door having packing arranged around its under side to effectively close the said opening and means for securing the said door immovable before the pressure is turned on, substantially as set forth.

3. As an improvement in slidable doors for retorts, the combination with the steam box or retort, the opening of which has grooves to receive the sliding door, of a door vertically slidable in such grooves, a cap-piece adapted to fit over the upper edge of the door when in position, said cap-piece having a rabbet to receive the upper edge of the door and a lock mechanism adapted to engage such cap-piece to force the door outward against the die-groove and to hold it down to the locked position, substantially as shown and for the purposes described.

608,528. AXLE SETTING AND STRAIGHTENING TOOL. BENJAMIN F. SMITH, Wichita, Kans., assignor of one-half to James A. Shields, same place. Filed May 24, 1897. Serial No. 637,882. (No model.)



Claim.—In an axle straightener and setter the combination of a solid bar provided with a screw-threaded hole at each end, a spindle-loop having a screw end adapted to fit in one of said screw-threaded holes, a block having a screw end adapted to fit in the other of said threaded holes, a solid loop or stirrup with one end larger than the other, the smaller end having a screw-threaded hole, a screw adapted to fit in said screw-threaded hole, and a handle-bar for turning said screw.

608,529. HAT-FASTENER. JOHN J. SOLDAN, New York, N. Y. Filed Nov. 26, 1897. Serial No. 658,930. (No model.)



Claim.—1. A hat-fastener comprising a flat spring bent into loop or U shape, and provided at the center of its length with means for engaging the hat, and intermediate said center and the free ends of the spring with transversely-arranged pin-holder sleeves arranged out of alinement, and pins provided each intermediate its ends with means for engaging one of said sleeves, for the purpose and substantially as described.

2. A hat-fastener comprising a flat spring bent into loop or U shape, and provided at the center of its length with means for engaging the hat, and intermediate said center and the free ends of the spring with screw-threaded pin-holders arranged out of alinement, in combination with removable pins provided at or near the center of their length each with a screw-threaded portion for engaging said holders, substantially as described.

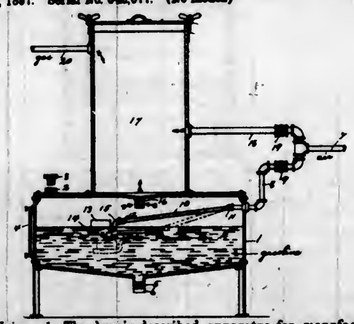
608,530. SPROCKET-CHAIN. HARRY E. STAHL, Trenton, N. J. Filed Feb. 27, 1897. Serial No. 626,265. (No model.)



Claim.—1. The herein-described latch or key for use on sprocket-chains for the purpose described, and comprising an elongated thin metallic plate of spring character and formed with a reduced central portion and with end enlargements, one of said enlargements having therein an open slot, and the other of said enlargements having therein a closed slot with an arm or bar extending diametrically across it, said slot and bar being adapted to engage the projecting end portion of a chain pin or rivet of complementary form, substantially as specified.

2. A locking device for use on sprocket-chains, consisting of a plate of thin metal having an opening whereby it may be connected with a stud and an opening adapted to receive the head of another stud, with a bar extending across the opening, substantially as specified.

608,531. CARBURETER. JOHN R. STEPHENSON, Wichita Kans., assignor, by direct and mesne assignments, of three-fourths to Luis Lampl, Herman Benschoidt, and W. T. Russell, same place. Filed June 28, 1897. Serial No. 642,677. (No model.)



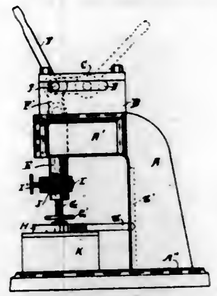
Claim.—1. The herein described apparatus for manufacturing gas from gasolene, consisting of the combination of a tank adapted to hold a supply of gasolene, a gas-receiving chamber having a sloping bottom for the purpose specified, and a removable top, said gas-tank secured to said gasolene-tank, pipes leading from an air-pump or an air-condenser through which air can be forced into and through said gasolene in said tank, an air-pipe leading from said air pump or condenser, so that air can be forced into said gas-chamber independent from said gasolene-chamber, and pipes leading from said gas-chamber to the point of consumption.

2. An apparatus for manufacturing gas from gasolene, consisting of the combination of a gasolene receptacle, a gas-receptacle secured to said gasolene-receptacle, having an opening, in and a sloping bottom for the purpose specified, an air-pipe leading from an air-condenser or an air-pump into said gasolene-chamber, said pipe having one end adapted to swing vertically, and an adjustable float secured to said free end of said pipe for holding said pipe under the surface of said gasolene, for the purpose specified, an air-pipe leading into said gas-chamber from said air-pump independent from said pipe leading into said gasolene-chamber, and an air-pipe leading from said gas-chamber to the point of consumption.

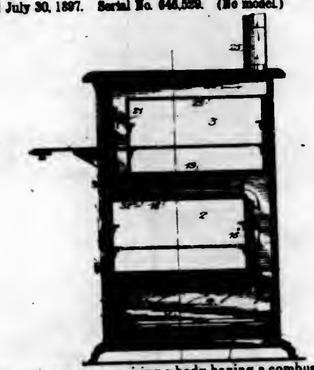
608,532. TOBACCO-PRESS. JULIUS TESCH and EMIL TESCH, Grand Rapids, Mich. Filed Dec. 11, 1897. Serial No. 661,574. (No model.)

Claim.—In a press, a vertically-reciprocating shaft, and a standard for supporting said shaft, said standard provided with slots to form adjustable bearings for the lever-fulcrum, a lever fulcrumed in said slots with sliding trunnions, one end of said lever being pivotally attached to the top of the shaft, the other end being free to actuate the shaft first by direct lever motion and finally by eccentric motion caused by the sliding of the trunnions in the slot as it is drawn for-

ward to force the shaft down, substantially as and for the purpose set forth.

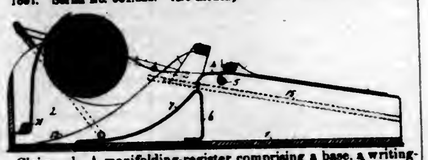


608,583. COOK-STOVE. JOHN B. TURRENTINE, Dublin, Tex. Filed July 30, 1897. Serial No. 646,529. (No model.)



Claim.—A stove, comprising a body having a combustion-chamber with an opening at one side thereof, and provided at opposite sides of the opening with vertical flanges having horizontal notches, the horizontal bars 9' arranged within the stove upon the bottom thereof and having their upper edges recessed at their inner sides and located in a plane below the notches, said bars 9' forming opposite walls of an ash-pit and located at opposite sides of the combustion-chamber, and the upper and lower grate-sections adapted to be introduced into the body of the stove through the said notches and having their side edges arranged within the recesses of the bars 9' and provided with slots or openings, the front end of the lower section abutting against the vertical flanges and held against longitudinal movement, and the front end of the upper section terminating short of the flanges, whereby the said upper section is adapted to be reciprocated, substantially as and for the purpose described.

608,534. MANIFOLDING-REGISTER. FREDERICK M. TURCK, New York, N. Y., assignor to Philip Hano, same place. Filed Dec. 7, 1897. Serial No. 661,059. (No model.)



Claim.—1. A manifolding-register comprising a base, a writing-plate, a fixed carbon-sheet holder or bridge carrying a carbon-sheet, a movable carbon-sheet holder or bridge carrying a carbon-sheet, and a writing-paper supply arranged to feed the writing-sheet over the movable and under the fixed bridge substantially as described.

2. A manifolding-register comprising a base, a writing-plate, a carbon-sheet holder or bridge fixed to the plate, a movable carbon-sheet holder or bridge carrying a carbon-sheet, and a writing-paper supply arranged to feed the writing-sheet over the movable and under the fixed bridge substantially as described.

3. A manifolding-register comprising a base, a hinged or swinging writing plate or lid, a carbon-sheet holder or bridge fixed to the plate, a movable carbon-sheet holder or bridge carrying a carbon-sheet, and a writing-paper supply made to feed the writing sheet over the movable and under the fixed bridge substantially as described.

4. A manifolding-register comprising a writing-plate, a fixed carbon-sheet holder or bridge, a movable carbon-sheet holder or bridge, and a writing-paper supply, said movable bridge being made to carry its carbon-sheet bodily over the fixed carbon-sheet substantially as described.

5. A manifolding-register, comprising a base, a writing-plate, a fixed carbon-bridge, a movable bridge having a carbon sheet attached thereto at one end and movable bodily therewith, and a writing-paper supply carrying a writing-sheet, said movable bridge being arranged to engage with and fold the writing-sheet over the fixed bridge and to carry said sheet forward over the said plate to form a plurality of superposed sheets or writing-surfaces with interposed carbon-sheets, substantially as described.

6. A manifolding-register comprising a base, a writing-plate, a fixed carbon-sheet holder or bridge, a movable bridge bodily carrying a carbon-sheet, and a writing-paper supply, said movable bridge being made to fold or double the writing-paper over the fixed bridge substantially as described.

7. A manifolding-register comprising a base, a writing-plate, a fixed bridge, a movable bridge, a writing-paper supply, and a lever for actuating the movable bridge substantially as described.

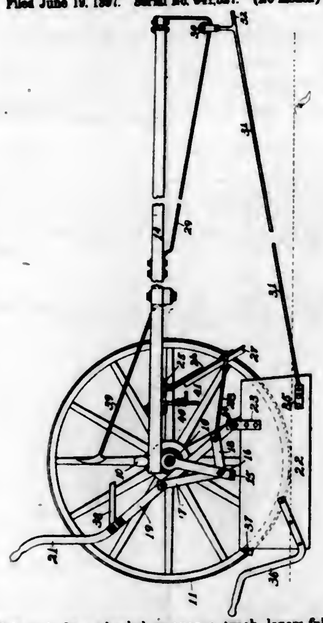
8. A manifolding-register comprising a base, a writing-plate, a fixed bridge, a movable bridge, a writing-paper supply, a lever fulcrumed to the base, and a connection or links between the movable bridge and lever substantially as described.

9. A manifolding-register comprising a base, a writing-plate, a fixed bridge, a movable bridge, a writing-paper supply and tracks or ways for the movable bridge substantially as described.

10. A manifolding-register comprising a base, a writing-plate, a fixed bridge, a movable bridge, a writing-paper roll or supply, and oppositely-located parallel tracks on the base for keeping the movable bridge squarely in position substantially as described.

11. A manifolding-register comprising a base, a writing-plate, a fixed bridge, a movable bridge, and a writing-paper supply carrying a writing-sheet divided into connected sections, the play of the movable bridge being regulated to correspond to the length of said sections substantially as described.

608,535. WHEELED SCRAPER. RICHARD H. VILLARD, Atlanta, Ga. Filed June 19, 1897. Serial No. 641,537. (No model.)



Claim.—1. In a wheeled scraper, a truck, levers fulcrumed on pendent bars, near each end of the axle thereof, a shovel pivotally secured to the forward end of said levers, and adapted to be raised and lowered thereby, a gate pendent from the thills in a position opposite said shovel when elevated, and means for swinging said gate forward on the depression of the shovel and backwardly into contact with the open end thereof when elevated.

2. In a wheeled scraper, a truck, levers fulcrumed on pendent bars near each end of the axle thereof, a shovel pivotally secured to the forward ends of said levers and adapted to be raised and lowered thereby, a gate pendent from the thills in a position opposite the mouth of the said shovel when elevated and means for swinging said gate forward on the depression of the shovel and backwardly in contact with the open end thereof when elevated, consisting of two pitmen connecting said gate to said lever.

3. In a wheeled scraper, a truck, with a shovel movably suspended under said truck and on pendent bars near each end of the axle thereof; thills attached to the axle; guide-rods suspended at one end from the forward ends of said thills, and inclined upwardly toward the rear thereof and secured thereto; and draft-rods connected to the front end of said shovel and suspended from said inclined guide-rods, substantially as described.

4. In a wheeled scraper, a truck, a shovel suspended beneath said truck; means for raising and lowering said shovel; thills attached to the axle of said truck; guide rods suspended from the forward ends of said thills, and inclined upwardly toward the rear thereof and secured thereto; draft-rods connected to the front end of the said shovel; and links attached to said draft-rods and inclosing said guide-rods and movable longitudinally thereon, substantially as described.

5. In a wheel-scraper, a truck, a shovel suspended thereunder and means for elevating and depressing same, and a bifurcated bracket adapted to straddle and position the upper edge of said shovel, for the purpose specified.

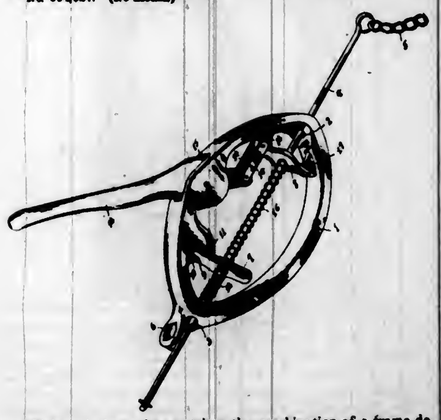
6 In a wheel-scraper, a truck, pendent bars near each end of the axle thereof, a lever fulcrumed on each of said bars upon a downwardly-projected fulcrumed portion, and a shovel suspended from the ends of said levers, substantially as and for the purpose specified.

7. In a wheel-scraper, a truck, bars pendent from the axle thereof, two divergent bars pivotally secured to the lower end of each of said pendent arms and a lever secured to the upper ends of each pair of said divergent bars, and a shovel suspended pivotally from the forward ends of said levers substantially as specified.

8. In a wheel-scraper, a truck, bars pendent from the axle thereof, two divergent bars pivotally secured to the lower end of each of said pendent arms and a lever secured to the upper ends of each pair of said divergent bars, a shovel suspended pivotally from the forward ends of said levers, and a lug on the inner side of each of said pendent arms forming a motion-limiting stop for said shovel, substantially as specified.

9. In a wheeled scraper a truck consisting of wheels and axle, scraper elements suspended on pendent bars near each end of the axle and an axle-collar secured to each end of said axle in a position for the abutment of the inner end of the hub and within the hub-band or counterbore, each having its side opposite each hub beveled thinner at the top with its face at the thicker portion projecting out of said hub-band.

608,536. WIRE-STRETCHER. PERRY WARNE, Morenci, Mich., assignor to Frank H. Warne, same place. Filed Dec. 31, 1897. Serial No. 664,927. (No model.)



Claim.—1. In a wire-stretcher, the combination of a frame designed to be connected with a fence-wire, a rod slidingly connected with the frame and adapted to be attached to a fence-post, a holding-clutch having one end bearing against the frame and provided with an opening receiving the rod, a spring interposed between the clutch and the frame, an actuating-clutch having an opening receiving the rod, a lever fulcrumed on the frame and connected with the actuating-clutch, a spring interposed between the clutches, and a stop mounted on the frame and arranged to be engaged by the actuating-clutch, substantially as described.

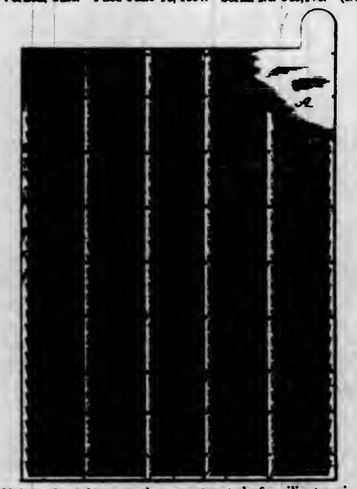
2. In a wire-stretcher, the combination of a frame, a rod slidingly connected with the frame, a holding-clutch having an opening to receive the rod and having one end interlocked with the frame, an actuating-clutch having an opening receiving the rod, springs interposed between the clutches and between the holding-clutch and the frame, and a pair of stops mounted on the frame at opposite sides thereof, and adapted to receive and hold the actuating-clutch out of engagement with the rod, substantially as described.

3. In a wire-stretcher, the combination of a substantially diamond-shaped frame provided with openings, a rod arranged in said openings, holding and actuating clutches having openings receiving the rod, springs interposed between the clutches and between the holding-clutch and the frame, an operating-lever fulcrumed on the frame at one side thereof and connected at its inner end to one end of the actuating-clutch, substantially as described.

4. In a wire-stretcher, the combination of a frame provided at one side with a stop and having a web or flange adjacent to the stop, a rod, a holding-clutch engaging the rod and provided at one end with a notch receiving the web or flange, a spring engaging the clutch and holding the same against said stop, and an actuating-clutch, substantially as described.

5. In a wire-stretcher, the combination of a rod, a frame slidingly connected with the rod, provided at one end with opposite stops 17 and 18 and having near its other end a stop and a flange, a holding-clutch interlocked with the flange and bearing against the adjacent stop, an actuating-clutch arranged to bear against the stops 17 and 18 and engaging the rod, springs bearing against the clutches, and an operating-lever fulcrumed on one side of the frame and connected with the actuating-clutch, substantially as described.

608,587. BATTERY-ELECTRODE. HENRY R. WILKINSON, Mount Vernon, Ohio. Filed June 10, 1897. Serial No. 640,176. (No model.)



Claim.—1. A battery-plate constructed of resilient spring metal and provided with a pocket having a front side sloping inward toward its bottom, and ends which converge in a downward direction and are at angles to the sloping front side substantially as described.

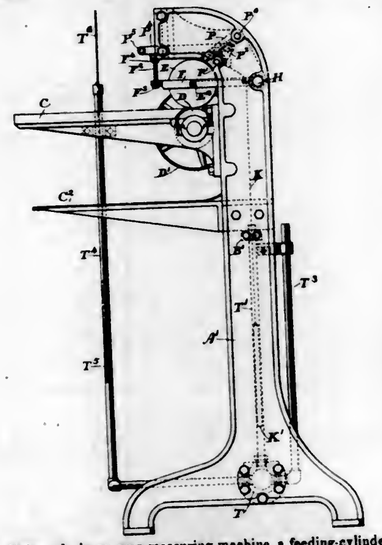
2. A grid composed of the main or central plate and the pocket-plate secured thereto and having pockets formed with front sides which slope inwardly toward its bottom and with ends arranged at angles to said front sides and which converge in a downward direction substantially as described.

3. A grid having pockets formed in plate-sections said sections being secured side by side vertically to a supporting-plate substantially as described.

4. A grid comprising the central plate and the pocket-plate secured thereto and having pockets and bent in between said pockets forming seats for the rivets by which the pocket-plate is held to the central plate substantially as described.

5. The improved grid herein described consisting of the central plate and the pocket-plates arranged in sections vertically upon the opposite sides of the central plate, such sections being provided with pockets, open at the top and having their ends converging and their fronts sloping inwardly toward their lower ends substantially as described.

608,538. LEATHER-MEASURING MACHINE. ALBERT E AYER, Boston, Mass., assignor, by mesne assignments, to the Justice Leather Measuring Machine Company, of Maine. Filed Nov. 4, 1895. Serial No. 568,156. (No model.) Patented in England July 29, 1895, No. 14,347.

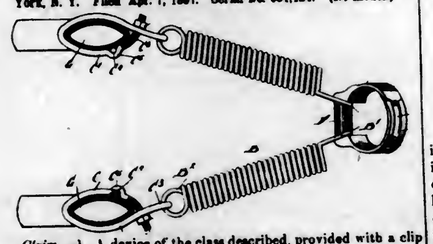


Claim.—1. In an area-measuring machine a feeding-cylinder, a series of measuring-wheels adapted to operate as described, in combination with a series of weights, mechanically connected to the said measuring-wheels and moved by them, and partially immersed in a liquid and adapted by their movements to raise or lower the surface of the said liquid; and means for measuring the height of the said liquid substantially as and for the purpose set forth.

2. In an area-measuring machine the combination of a feeding-cylinder and a series of measuring-wheels as described; with a series of weights the movements of which are governed by the movements of the said measuring-wheels, said weights by their movements causing a change of level in a liquid, in which they are partially immersed, and a device for measuring the said change of level of the said liquid substantially as and for the purpose set forth.

3. In an area-measuring machine the combination of a feeding-cylinder D a series of measuring-wheels E E weights connected to said wheels and operated by them—tubes T' T' tank T, branch tube T^4 float T^5 and graduated stem T^6 all adapted to operate together substantially as and for the purpose set forth.

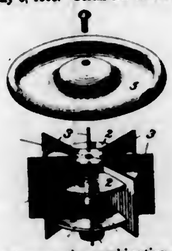
608,539. BICYCLE-STEADYING DEVICE. FRANK BARTO, New York, N. Y. Filed Apr. 7, 1897. Serial No. 631,121. (No model.)



Claim.—1. A device of the class described, provided with a clip formed of a single piece of metal bent upon itself to form at one end a connection for a spring, and having its other end threaded and engaging the doubled-up portion, and a nut screwing on the said threaded end and abutting against the doubled-up portion, substantially as shown and described.

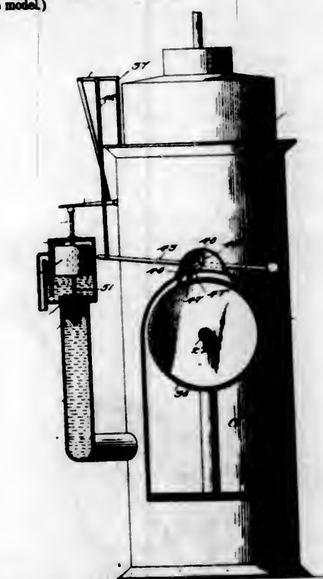
2. A bicycle steadying device, provided with a clip formed of a length of wire bent intermediately to produce a loop, one end of the wire being threaded and passed through the loop, and a nut working on said end of the wire, the threaded end of the wire having a hook formed therein which receives and holds the remaining end of the wire.

608,540. GAS-BURNER. ADOLF BELER, Allegheny, Pa., assignor to the Monarch Water Heater Company, Pittsburg, Pa. Filed Mar. 27, 1897. Renewed May 6, 1898. Serial No. 680,064. (No model.)



Claim.—In a gas-burner, the combination of a central tube, a series of two or more flanges formed integral with the tube and arranged intermediate of the ends of the tube, a cap secured on the upper end of the tube and projecting beyond the flanges, a series of wings independent of the tube and projecting between the flanges and the cap and passages connecting the interior of the tube with the pockets formed by the flanges, cap and wings, substantially as set forth.

608,541. ACETYLENE-GAS GENERATOR. HAROLD J. BELL, Niagara, Canada, assignor to himself, and Elmer E. Almy and William H. Almy, Rochester, N. Y. Filed Mar. 5, 1896. Serial No. 672,732. (No model.)



Claim.—1. In a device for generating and holding acetylene gas, in combination, a gas-holder, a tank, a vertically-movable arm held in guides within the tank, a link pivoted at its upper end upon the outwardly-turned end of the vertically-movable arm and having its lower end in contact with and adjustable upon a lever pivoted to the outside of the wall of the tank, and a lever pivoted at its inner end to the outside of the tank-wall and its outer end resting upon the top of a float-valve stem connected with a floating valve to downwardly actuate the floating valve, as and for the purpose set forth.

2. In a device for generating acetylene gas, in combination, a generator-case, a carbid-holder within the generator, a tank, a gas-holder within the tank, a vertically-movable arm in guides attached to the inner side of the tank-wall, a link connecting the outwardly-bent end of the vertically-movable arm with a weighted lever, a weighted lever connected at its unweighted end to a link and attached between its extremities to a trunnion, a trunnion carrying a stud, a pawl attached to the stud located upon the trunnion, a ratchet integral with a carbid-holder, and a carbid-holder, substantially as and for the purposes set forth.

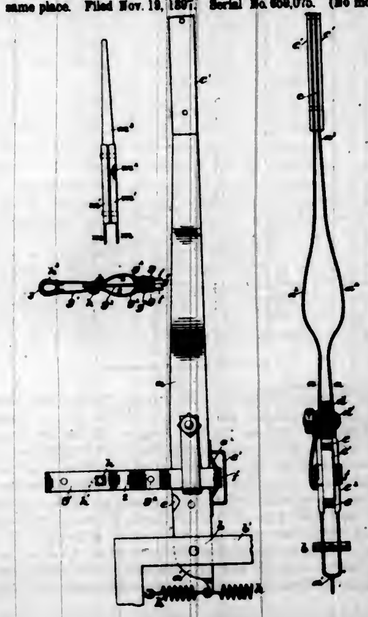
3. In a device for generating and holding acetylene gas, in combination, a generator-case, a carbid-holder within the generator, a tank, a gas-holder within the tank, a vertically-movable arm in guides attached to the inner side of the tank-wall, a link connecting the outwardly-bent end of the vertically-movable arm with a weighted lever, a weighted lever connected at its movable end to a link and attached beteen its extremities to a trunnion, a trunnion carrying a stud, a pawl attached to the stud located upon the trunnion, stops pivoted upon the trunnion to engage the teeth of the ratchet, a ratchet integral with a carbid-holder, and a carbid-holder, substantially as and for the purpose set forth.

4. In a device for generating and storing acetylene gas, in combination, a generator-case, a carbid-holder within the generator, a tank, a gas-holder within the tank, a vertically-movable arm in guides attached to the inner side of the tank-wall, a link, a lever pivoted at one end to the outside of the tank-wall, the opposite end resting on a floating-valve stem, a floating valve having stems for guides in a water-chamber, a water-chamber of predetermined capacity connected with the tank, a siphon leading from the tank, and a connecting water-pipe leading to the carbid-holder, as and for the purposes set forth.

5. In a device for generating acetylene gas, in combination, a generator, a tank, a gas-holder within the tank, a pipe leading from the generator to the gas-holder through the tank, and a check-valve consisting of an inverted floating cup on a guide-rod in guides attached to the pipe, and a pipe through the inverted cup having its lower end beveled, as and for the purposes set forth.

6. In a device for generating and holding acetylene gas, in combination, a condensing-chamber below the tank and separated from the tank by a septum, means of charging the condensing-chamber with water, a pipe for the escape of water from the condensing-chamber, inflow and outflow gas-receiving chambers open at the bottoms thereof into the condenser-chamber, and a gas escape pipe leading from the condenser-chamber to the atmospheric air, as and for the purposes set forth.

608,542. PICKER-STAFF FOR LOOMS. JOSEPH F. BENOIT, Sanford, Me., assignor of one-half to George B. Goodall and Herbert J. Hope, same place. Filed Nov. 19, 1897. Serial No. 659,075. (No model.)



Claim.—1. A picker-staff composed of a plurality of separate, independent thin metallic blades connected together and provided at their upper ends with non-metallic material to contact with the tip or point of the shuttle, substantially as described.

2. A picker-staff composed of a plurality of thin metallic blades connected together and bulged outwardly between the ends of the staff to constitute a yielding or spring portion, substantially as described.

3. A picker-staff composed of sheet-metal blades having between them a non-metallic block, as d, combined with a loop, as e', and a spring-bridge e^4 against which the picker-staff strap works, substantially as described.

4. The herein-described picker-staff strap composed of a metallic loop g', a yielding or leather strap f, a link g^4 lying inside the metallic loop and united at one end to the said two loops, and having a slot at its other end to receive a pin or stud extended through the loop g', substantially as described.

608,543. BICYCLE-SUPPORT. OSCAR P. BREITBUT, Williamsport, Pa., assignor of one-half to Max J. Reinhold, same place. Filed Oct. 23, 1897. Serial No. 656,681. (No model.)

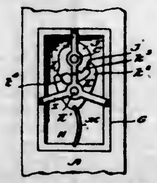


Claim.—1. The combination with a leg or rod, and a clamp for connecting said leg or rod to a bicycle, of a pivoted clasp mounted on the leg independently of the clamp and adapted to embrace a front wheel of a bicycle, and a tension-spring for holding said clasp in position and permitting the clasp to adjust itself to the inclination of the leg or rod without disconnecting the same from the wheel, substantially as and for the purpose described.

2. The combination with an attaching-clamp, of a leg or rod, a wheel-engaging clasp connected by a horizontal pivot to the leg or rod and adapted to turn on the rod to an angular position when the latter is moved sidewise out of the plane of the bicycle-frame, a tension-spring seated against the leg or rod and connected with the clasp, and the universal joint between the rod or leg and the attaching-clamp to permit the leg to have endwise and lateral adjustment of a bicycle-frame, substantially as described.

3. The combination with a leg or rod, of a clamp doubled upon itself to form a loop and provided with a slot through said loop, a pivot fitted in the loop of the slot, a hanger pivoted to the leg and attached to the pivot confined in the loop, and a clasp carried by the leg, for the purposes described, substantially as set forth.

608,544. TRANSOM FASTENER AND PIVOT. CHARLES M. BRIGHT and WILLIAM O. BALLARD, Fancy Farm, Ky.; said Bright assignor to said Ballard. Filed Aug. 26, 1897. Serial No. 649,591. (No model.)



Claim.—1. In combination with a pivoted sash and a collar carrying a series of ratchet-teeth j on one side and a tooth k on the other, an escapement-pawl provided with pallets arranged to engage respectively the said teeth j and k and a spring arranged to hold either one of the said pallets in engagement according to position substantially as set forth.

2. In combination with a pivoted sash, a collar turning with the gudgeon thereof and provided with a series of ratchet-teeth on the other side and a cam below the said series, and an escapement-pawl provided with two pallets and held in alternate engagement with the said teeth and series of teeth, the pallets being arranged and constructed with respect to the said cam so as to be shifted from one position to the other and back again by the action of the said cam on them successively and the movement of the sash substantially as set forth.

3. In combination with a pivoted sash and means for closing it

automatically, a series of ratchet-teeth turning with the said sash, an escapement provided with a pair of pawls one of which engages the said teeth, a cam arranged to strike the said pallet for freeing it from the said teeth as well as to similarly act on the other pallet in reverse motion, and a device turning with the said sash and engaged by the latter pallet the same cam freeing it substantially as set forth.

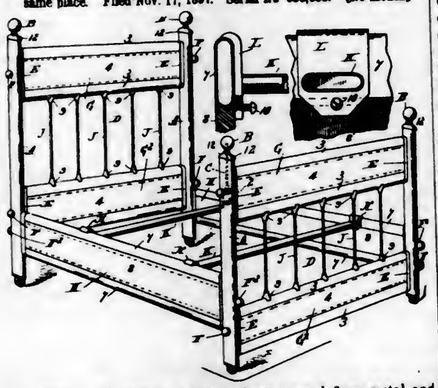
4. The combination with a pivoted sash, and a ratchet carried thereby, of a double-armed pallet arranged to engage in the ratchet in one position of the pallet, and a cam movable with the ratchet and playing between the arms of the pallet to strike either arm thereof, whereby the cam is adapted to free the pallet from the ratchet when the sash is opened to substantially its full limit and to restore the pallet to its initial position as the sash is closed, substantially as described.

5. The combination with a pivoted sash, of a ratchet-formed cam movable with said sash, a constantly-active pawl engaging with said cam to hold the latter and the sash in either of several positions and coacting with said cam to limit the movement of the sash in one direction, and means operated on a reverse movement of said sash to return the pawl to its normal position in locking engagement with said sash, substantially as described.

6. The combination with a pivoted sash, of a ratchet-formed cam movable with said sash and having a stop-plug, a double-armed constantly-active pawl having one arm thereof normally engaged with the cam to hold the latter and sash in different positions and adapted to have its other arm thrown into the path of the stop-lug on said cam to arrest the continued turning movement of the sash in one direction, said cam being adapted when turned in a reverse direction to act on the last named arm of the pawl and restore the latter to its normal position, substantially as described.

7. The combination with a sash, of a collar provided with a cam between ratchet-teeth and a stop lug, and a constantly-active pawl arranged to be acted on by said cam during the back-and-forth movements of the collar and sash, substantially as described.

608,545. **BEDSTEAD.** LEMUEL COBURN, Holyoke, Mass., assignor to the Coburn Metallic Bed and Pneumatic Tube Mattress Company, same place. Filed Nov. 17, 1897. Serial No. 658,855. (No model.)



Claim.—1. A composite bedstead constructed from metal and wood having metallic posts, several panel-frames uniting said posts, each of which frames consists of two metallic end brackets, and two metallic bars secured by their ends between said brackets in separated relations, thereby forming an open metallic frame, a panel of wood inserted in each of said frames and engaging the borders of said bars, and screw-bolts passing through said posts and engaging said brackets, whereby said posts and panel-frames are firmly united, substantially as set forth.

2. In a composite bedstead made from metal and wood, head and foot portions therefor, each of which comprises two metallic posts, two panel-frames uniting said posts, each of which frames consists of two metallic end brackets and two metallic bars secured by their ends between said brackets in separated relations, thereby forming an open metallic frame, a panel of wood inserted in each of said frames and engaging the borders of said bars, thereby forming panel-frames of wood and metal, two like panel-frames constituting the sides of the bedstead extending between said head and foot portions, and bolts passing through said posts and engaging said brackets, thereby firmly uniting said posts and panel-frames, substantially as set forth.

3. In a composite bedstead made from metal and wood, head and foot portions therefor, each of which comprises two metallic posts, two panel-frames uniting said posts, each of which frames consists of two metallic end brackets and two metallic bars secured by their ends between said brackets in separated relations, thereby forming an open metallic frame, a panel of wood inserted in each of said frames and engaging the borders of said bars, thereby forming panel-frames of wood and metal, a series of vertical end bars each screw-connected to two saddles, secured between the upper and lower panels of said head and foot portions, two like panel-frames constituting the sides of the bedstead extending between said head and foot portions, bolts passing through said posts and engaging said brackets, thereby firmly uniting said posts and panel-frames, and matress-sustaining bars extending between certain of said panels and engaging the same, substantially as set forth.

4. A composite bedstead constructed from metal and wood having tubular metallic posts, several panel-frames uniting said posts, each of which frames consists of two metallic end brackets and two tubular metallic bars secured by their ends between said brackets in separated relations, thereby forming an open metallic frame, a panel of wood inserted in each of said frames and engaging the borders of said bars, and screw-bolts passing through said posts and engaging said brackets, whereby said posts and panel-frames are firmly united, substantially as set forth.

5. A composite bedstead constructed from metal and wood having tubular metallic posts, several panel-frames uniting said posts, each of which frames consists of two metallic end brackets, and two tubular metallic bars secured by their ends between said brackets in separated relations, thereby forming an open metallic frame, a panel of wood inserted in each of said frames and engaging the borders of said bars, screw-bolts passing through said posts and engaging said brackets and the ends of said wood panels, and knobs on the upper extremity of said posts, and an eyebolt within each post whose eye engages one of said bolts to the upper extremity of which eyebolt said knob is screwed, substantially as set forth.

6. In a composite bedstead made from metal and wood, head and foot portions therefor, each of which comprises two metallic posts, two panel-frames uniting said posts, each of which frames consists of two metallic end brackets and two metallic bars secured by their ends between said brackets in separated relations, thereby forming an open metallic frame, a panel of wood inserted in each of said frames and engaging the borders of said bars, thereby forming panel-frames of wood and metal, a series of vertical end bars each screw-connected to two saddles, secured between the upper and lower panels of said head and foot portions, two like panel-frames constituting the sides of the bedstead extending between said head and foot portions, bolts passing through said posts and engaging said brackets, thereby firmly uniting said posts and panel-frames, and matress-sustaining bars extending between certain of said panels and engaging the same, substantially as set forth.

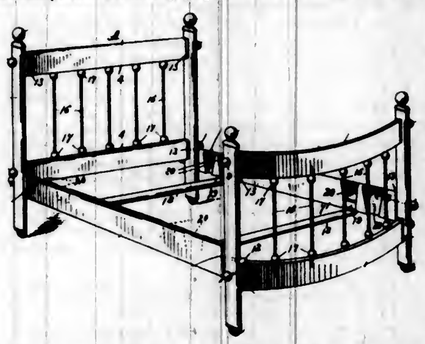
7. In a composite bedstead made from metal and wood, head and foot portions therefor, each of which comprises two metallic posts, two panel-frames uniting said posts, each of which frames consists of two metallic end brackets and two metallic bars secured by their ends between said brackets in separated relations, thereby forming an open metallic frame, a panel of wood inserted in each of said frames and engaging the borders of said bars thereby forming panel-frames of wood and metal, two like panel-frames constituting the sides of the bedstead extending between said head and foot portions, the mattress-sustaining cross-bars K, having the brackets L, secured to their ends for engagement with the said side panel-frames, and means for securing said brackets on said frames, substantially as set forth.

8. In a composite bedstead made from metal and wood, head and foot portions therefor each of which comprises two tubular metallic posts A, A, two panel-frames G, G^2, uniting said posts, each of which frames consists of two metallic end brackets E, E, each having the arms 5, 5, thereon, and the concave border 6, for engagement with said posts, two tubular metallic bars 3, 3, the ends of which receive, and are secured to, said arms, thereby forming an open metallic frame, a panel 4, of wood having grooved borders for engagement with said bars inserted therebetween in said frame, side panel-frames H, H, for said bedstead of like construction to the above-described ones, and screw-bolts F, and F^3, passing through said posts and engaging said brackets and the ends of said wood panels, substantially as set forth.

608,546. **BEDSTEAD.** LEMUEL COBURN, Holyoke, Mass., assignor to the Coburn Metallic Bed and Pneumatic Tube Mattress Company, same place. Filed Nov. 17, 1897. Serial No. 658,856. (No model.)

Claim.—1. A composite bedstead comprising tubular metal posts, several side and end rails of wood extending between said posts, a metallic cap secured against the ends of each of said rails for engagement against the surface of said posts, means in said cap for engaging a screw-bolt therewith and a screw-bolt passing transversely through the post and engaging said cap, substantially as set forth.

2. A composite bedstead made from metal and wood having metallic posts, several side and end rails of wood extending between said posts, and means for connecting the ends of each rail with said posts consisting of a perforated metallic cap receiving each rail end and firmly secured thereon, a nut held within said cap opposite said perforation, and a screw-bolt passing transversely through the post and said perforation, and engaging said nut, substantially as set forth.

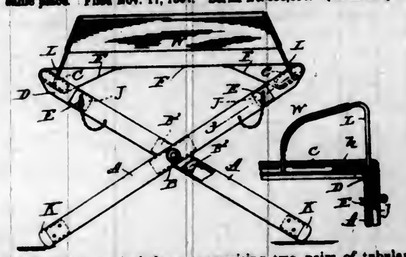


3. A composite bedstead comprising a head-frame consisting of two metallic posts, two separated rails of wood extending in right lines between said posts, a foot frame consisting of two metallic posts, two separated rails of wood extending in curved lines between said posts, two side rails of wood extending between the posts of said head and foot frames, and means for connecting the ends of each rail with said posts consisting of a metallic cap receiving each rail end and firmly secured thereto, means in said cap for engaging a screw-bolt, and a screw-bolt passing transversely through the post and engaging said cap, and drawing the same firmly against the post, substantially as set forth.

4. A composite bedstead comprising a head-frame consisting of two metallic posts, two separated rails of wood extending in right lines between said posts, the vertical rods 16, having the spheres 17, thereon, fixed between said rails, a foot-frame consisting of two metallic posts, two separated rails of wood extending in curved lines between said posts, the vertical rods 16 having the spheres 17 thereon fixed between said rails, two side rails of wood extending between the posts of said head and foot frames, and means for connecting the ends of each rail with said posts consisting of a metallic cap receiving each rail end and firmly secured thereto, means in said cap for engaging a screw-bolt, and a screw-bolt passing transversely through the post and engaging said cap, and drawing the same firmly against the post, substantially as set forth.

5. A composite bedstead comprising tubular metal posts, several side and end rails of wood extending between said posts, vertical grooves, of dovetail form on the inner opposite sides of said side rails, mattress-sustaining tubular metallic bars extending between said side rails having dovetail-shaped legs on the ends thereof for engagement with said grooves, a metallic cap secured against the ends of each of said rails for engagement against the surface of said posts, means in said cap for engaging a screw-bolt therewith, and a screw-bolt passing transversely through the post and engaging said cap, substantially as set forth.

608,547. **COT-BED.** LEMUEL COBURN, Holyoke, Mass., assignor to the Coburn Metallic Bed and Pneumatic Tube Mattress Company, same place. Filed Nov. 17, 1897. Serial No. 658,857. (No model.)



Claim.—1. A cot bed frame comprising two pairs of tubular metallic folding legs, two tubular metallic side bars extending between the upper extremities of said legs, a side-bar and leg connection of elbow form permanently secured by one arm to the ends of each of said bars, each of which connections has an area for entrance into the upper end of one of said legs, and means for temporarily attaching said elbow-arm to said leg end, substantially as set forth.

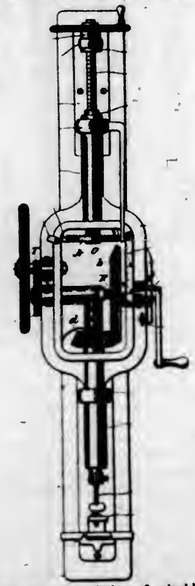
2. A cot-bed frame comprising two pairs of tubular metallic folding legs, two tubular metallic side bars extending between the upper extremities of said legs, a side-bar and leg connection of elbow form fixed on the extremities of each of said bars, and each having an arm entering the upper end of a leg and a removable pin temporarily uniting said connections with the upper extremities of said legs, substantially as set forth.

3. A cot-bed frame comprising two pairs of tubular metallic folding legs, two tubular metallic side bars extending between the upper extremities of said legs, a side-bar and leg connection fixed on the extremities of each of said bars, means for temporarily uniting said connections with the upper extremities of said legs, and a pillow-support for said bed comprising two removable metallic frames of substantially inverted-U shape having the extremities of their legs entering perforations in said connections and side rails, and a strip of cloth-like material secured by its ends to said frames and extending across and over one end of the bed-frame, substantially as set forth.

4. A cot-bed frame comprising two pairs of tubular metallic folding legs, two tubular metallic side bars extending between the upper extremities of said legs, said tubular legs and side bars having parallel flat sides and curved edges, a side-bar and leg connection fixed on the extremities of each of said bars, and means for temporarily uniting said connections with the upper extremities of said legs, substantially as set forth.

5. A cot-bed frame comprising two pairs of tubular metallic folding legs, two tubular metallic side bars extending between the upper extremities of said legs, detachable side-bar and leg connections interposed between each extremity of said bars and the upper extremity of each leg, said tubular legs and side bars having parallel flat sides and curved edges, substantially as set forth.

608,548. **DRILL.** CHARLES COLUMBUS and CHARLES R. HEMMELTIER, Creston, Wash. Filed Oct. 26, 1897. Serial No. 656,205. (No model.)



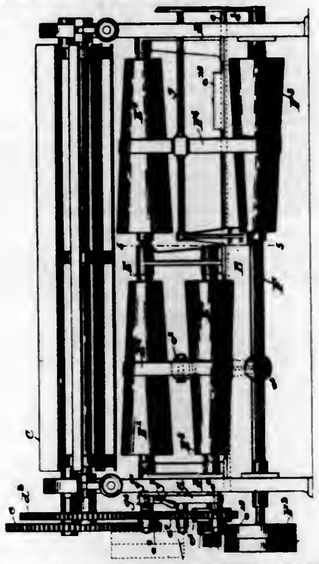
Claim.—1. A drill-press consisting of suitable bracket-arms for the support of the operating parts of the device, a yoke-frame arranged in these arms so as to be raised or lowered, a feed-screw journaled within the yoke-frame so as to freely revolve, a bushing threaded upon said screw and journaled within one of the bracket-arms, a hand-wheel secured upon the bushing, a ratchet-wheel secured upon the lower end of the feed-screw, a drill-spindle also journaled in the yoke-frame, means for revolving said spindle, and means for feeding the yoke-frame downward in unison with the rotation of the drill-spindle, as specified.

2. In combination, a suitable drill-frame, a yoke-frame guided therein so as to have a vertical movement, a feed-screw journaled in the yoke-frame, a bushing threaded upon the feed-screw and journaled within the drill-frame, a hand-wheel secured upon the bushing, a ratchet-wheel secured upon the lower end of the feed-screw, a latch for holding said ratchet against rotation, a shaft journaled in the yoke-

frame, a beveled gear secured upon said shaft, a pinion meshing with said gear, a drill-spindle journaled in the yoke-frame and having secured thereon the last-named pinion, an eccentric secured upon the shaft, a pawl-lever pivoted to the yoke-frame and adapted to be actuated by the eccentric, a pawl carried by the upper end of the pawl-lever for actuating the ratchet-wheel, and means for imparting motion to the operating parts of the device, as specified.

3. In combination, brackets, a frame slidably supported thereby, a feed-screw journaled in the frame, a bushing threaded on the screw having a reduced extension run through one of the brackets, a hand-wheel secured on the extension, a drill-spindle carried by the frame and means for rotating the spindle and feed-screw, substantially as described.

608,549. PAPER-CUTTER. PETER DILLON, Lawrence, Mass., assignor of one-half to Henry C. King, same place. Filed June 9, 1897. Serial No. 639,967. (No model.)



Claim.—1. In a paper cutter, the combination with feeding mechanism for the paper, cutting mechanism, and a main driving-shaft having unvarying speed, of means permanently mounted and journaled in the organized machine to vary at will the speed of said cutting mechanism, and of said feeding mechanism independently of each other, substantially as described.

2. A paper-cutter, having in combination, feeding mechanism adapted to receive and feed a plurality of superimposed thicknesses of paper of different weights or grades, severing devices to which said thicknesses of paper are simultaneously fed to be cut, and operating mechanism, including an intermediate cone-and-belt device, for driving said severing devices and feeding mechanism with relative speeds required for producing the uniform lengths of sheets desired, said operating mechanism including means to accurately change the frictional engagement of said belt as, and according to, the different resistances offered by the different thicknesses and different weights or grades of paper being cut, and means to vary the relative speed of the severing devices for cutting sheets of different lengths, substantially as described.

3. The combination in a paper-cutter, with the feed-rolls for feeding the paper, and severing devices for cutting the paper of a cone-and-belt speed-changer geared between and with said feed-rolls and severing devices, and means to maintain friction in said cone-and-belt device varying in proportion to the varying loads, a second cone-and-belt speed-changer mounted adjacent and driving said first-mentioned cone and-belt mechanism, whereby the speed of said severing devices and of said feed-rolls may be varied at will either together or independently of each other as desired, substantially as described.

4. A paper-cutter having, in combination, paper-severing mechanism, feed-rolls to feed the paper thereto, and a pair of cooperating cone-pulleys between said feeding and severing mechanisms and driving the latter, a belt passed about said cone-pulleys, a pivoted lever having a friction-roll at one end between two ears, said ears embracing said belt, and said roll resting against the latter, and at its other end having a laterally-projecting rod on which is mounted a weight, and means to adjust said weight on said rod, whereby the tension of said belt may be varied according to the paper being fed and cut by the machine, substantially as described.

5. The combination, in a paper cutter, with the paper-severing devices, feed-rolls to deliver the paper thereto, and driving mechanism for said parts, said driving mechanism including a power-shaft and gear driven thereby, of a shifting plate permanently mounted on the frame of the machine and carrying a train of gear-wheels, said train meshing at one end with the said driven gear, said train and said driven gear being one permanently provided with a plurality of different-sized gear-wheels, and the other being adapted to mesh with any one of said different-sized gear-wheels, and one being freely movable laterally relatively to the other, said train meshing at its opposite end with the mechanism driven thereby for operating said paper-severing devices, and means to move said plate concentrically with the gear-wheel at said last-mentioned end of said train, in order to operate the train through any one of said different-sized gear-wheels, substantially as described.

6. The combination in a paper-cutter, with the feeding mechanism for feeding the paper, and severing devices for cutting the paper, of operating mechanism geared between and with said feeding mechanism and severing devices, said operating mechanism including a main driving-shaft, a cone-and-belt speed-changer, and gear driven thereby, means to maintain friction in said cone-and-belt device varying in proportion to the varying amounts or kinds of paper being fed, a shifting plate mounted on the frame of the machine and carrying a train of gear-wheels, said train meshing at one end with the said driven gear, said train and said driven gear being one permanently provided with a plurality of different-sized gear-wheels, and the other being adapted to mesh with any one of said different-sized gear-wheels and one being freely movable laterally relatively to the other, said train meshing at its opposite end with the mechanism driven thereby, and means for moving said plate concentrically with the gear-wheel at said last-mentioned end of said train, substantially as described.

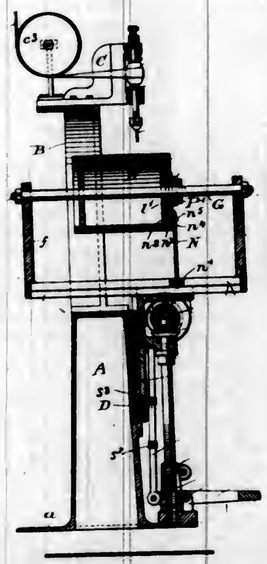
7. The combination, in a paper-cutter, with the paper-severing devices, feed-rolls to deliver the paper thereto, and driving mechanism for said parts, said driving mechanism including a power-shaft and gear driven thereby, of a shifting plate mounted on the frame of the machine and carrying a train of gear-wheels, said train meshing at one end with the said driven gear, said train and said driven gear being one provided with a plurality of different-sized gear-wheels, and the other being adapted to mesh with any one of said different-sized gear-wheels, and one being freely movable laterally relatively to the other, and one having side flanges c^{10} to prevent accidental shifting out of mesh, said train meshing at its opposite end with the mechanism driven thereby, and means to move said plate concentrically with the gear-wheel at said last-mentioned end of said train, in order to operate the train through any one of said different-sized gear-wheels, substantially as described.

8. The combination, in a paper-cutter, with feed-rolls to feed the paper, and severing devices to cut the paper, of a frictional speed-changer capable of a long range of delicate variations, means to vary said friction in proportion to the varying resistance of the paper fed, said friction being maintained always sufficient to prevent slip, said speed-changer comprising a pair of cooperating cone-pulleys, a belt passed about them, a combined belt shifter and tightener in engagement with said belt, an adjustable tension device thereon to vary the frictional engagement thereof with the belt, a threaded shifting rod on which said shifter and tightener is mounted, said rod extending in the organized machine parallel to said pulleys and having a portion thereof, beyond the range of movement of said shifter and tightener, provided with finer threads than the shifting-threads thereof, an indicator mounted on said fine-threaded portion, and a gage fixed on the machine and over which said indicator is caused to travel by the fine threads, whereby an indicator is provided within the compass of the machine for and in connection with a long range of movement of said shifter and tightener, substantially as described.

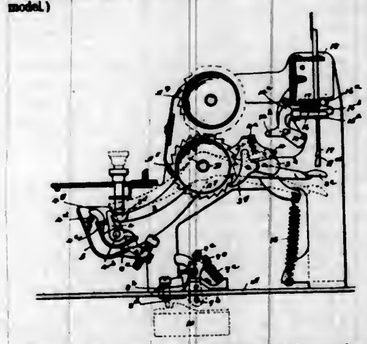
608,550. ROUTING-MACHINE FOR ELECTROTYPE-PLATES. JAMES H. FERGUSON, New York, N. Y., assignor to the Lovejoy Company, same place. Filed Nov. 12, 1896. Serial No. 611,796. (No model.)

Claim.—1. A routing-machine, comprising a tool-holder, means for operating it, a work-supporting cylinder, a supporting-frame for said cylinder including a shaft on which said cylinder is mounted to rotate and along which it is adapted to slide, means for raising and lowering said supporting-frame to move the work-holding cylinder toward and away from the tool-holder and means for rotating and sliding the work-supporting cylinder at pleasure independent of the means for moving it toward and away from the tool-holder, substantially as set forth.

2. The combination with the support for the work-holder and the vertically-sliding bracket which carries said support, of a shaft for raising and lowering said sliding bracket, one portion of the shaft being provided with gear for rotating the shaft and another portion of the shaft having a screw-threaded engagement with a fixed socket piece, a treadle for raising and lowering said sliding bracket independently of the said shaft, a sectional connecting-rod between the treadle and sliding bracket and means for clamping the sections of said connecting-rod in different longitudinal adjustments, substantially as set forth.



608,551. CASH-REGISTER. JULIUS G. HOFFMAN and WILLIAM B. HORTON, Detroit, Mich., assignors to the American Cash Register Company, same place. Filed June 11, 1897. Serial No. 640,291. (No model.)



Claim.—1. In a cash-register employing indicators, in combination with a primary actuating-lever entirely inclosed within the case adapted to engage the tablet-rods, a means for producing a limited initial movement of said lever, a secondary lever having a common fulcrum with the primary lever, and means for coupling the primary and secondary levers together, substantially as described.

2. In a cash-register employing indicators, the combination of a plurality of primary actuating-levers each of which is adapted to engage its own tablet-rod, a secondary lever having a common fulcrum with the primary levers, and means for coupling any one of the primary levers to the secondary lever, substantially as described.

3. In a cash-register employing indicators, the combination of a plurality of primary actuating-levers each of which is adapted to engage its own tablet-rod, means for producing an initial movement of each lever, a secondary actuating-lever having a common fulcrum with the primary levers and independent means for coupling each primary lever to the secondary lever, substantially as described.

4. In a cash-register employing tablet-indicators, the combination of a primary lever, means for producing an initial movement of the primary lever, a secondary lever having a common fulcrum with the primary lever, means for coupling the primary and secondary levers, and means for automatically releasing the coupling, substantially as described.

5. In a cash-register employing tablet-indicators, the combination of a plurality of primary levers, means for giving to any one of the actuating-levers an initial movement, a secondary lever having a common fulcrum with the primary levers, means for independently coupling any of the primary levers to the secondary lever, and means whereby the coupling between the levers is disengaged, substantially as described.

6. In a cash-register in combination, a primary actuating-lever, a secondary lever, a pivoted catch pinned to one of said levers and adapted to engage the other, a pivoted cradle pinned to the other of said levers and arranged to actuate the pivoted catch in both directions whereby it operates to both engage and disengage the said catch, substantially as described.

7. In a cash-register, a plurality of primary actuating-levers and a secondary lever which must be actuated in order that the primary levers may actuate the tablet-rods, a plurality of catches carried by the secondary lever and adapted to couple the primary levers thereto, a cradle carried by the secondary lever and adapted to be rocked with respect thereto and to engage the catches and uncouple the two levers, substantially as described.

8. In combination with a pair of levers on a common fulcrum and adapted to be coupled together, one of said levers being entirely inclosed and arranged to receive a sufficient initial impulse to effect the coupling but not sufficient to display the tablet rod, and the second of which is adapted to have a complete throw but is not adapted to actuate the tablet-rod unless the first is coupled to it, substantially as described.

9. In a cash-register, the combination of two levers on a common fulcrum one of which is adapted to actuate the tablet-rod when coupled to, and itself actuated by the second lever, means for uncoupling the first from the second, and means whereby the relative time of the uncoupling with respect to the throw of the second lever may be adjusted, substantially as described.

10. In combination with a pair of levers mounted on a common fulcrum, a means whereby a short initial movement can be given to one of said levers, an angled pivoted hook pinned to the other of said levers and adapted to engage the first and couple the levers together, a cradle swung on the hook-pivot having spring contact with the hook on one side of the pivot and adapted to have direct contact with the hook at the other side of the pivot, substantially as described.

11. In a cash-register in combination with the cash-drawer, a lever employed to actuate and lift the tablet-rods, a pivoted locking-lever provided with two adjustable arms, one of which extends into the path of some part of the drawer, and the other of which is arranged to regulate the throw of the pivoted locking-lever, substantially as described.

12. In a cash-register employing indicating-tablets, a pair of levers, one of which is located entirely within the case and is adapted to have an initial movement when actuated by a detached finger-key, and the other of which is adapted to have a full movement, and both of which must be coupled before the tablet can be fully actuated thereby, means for coupling the two levers together, a complete-throw mechanism adapted to engage said levers, means for releasing the coupling of the two levers after the engagement between the levers and the complete-throw mechanism is effected and after the exposure of the tablet has been produced, but before the complete throw of the levers has been finished, substantially as described.

13. In a cash-register employing indicating-tablets and provided with a drawer, the combination of a lever entirely inclosed and a second lever partly inclosed, and which must be coupled to the first to enable the first to actuate the tablet-rods, a catch adapted to engage one of said levers and to be itself thrown out of its position of engagement with said lever by the closing of the cash-drawer, substantially as described.

14. In a cash-register employing tablets, a pair of levers one of which is adapted to engage and actuate the tablet, and the other of which is adapted to be coupled to and actuate the first, means adapted to uncouple the two levers and a drawer-lock adapted to be subsequently actuated by the second of the two levers, substantially as described.

15. In a cash-register, the combination of two levers one of which is entirely inclosed in the case and is adapted to actuate a register-wheel when coupled to and itself actuated by the second lever, means for uncoupling the first from the second before the end of the throw of the secondary lever and means whereby the relative time of the uncoupling with respect to the throw of the second lever may be adjusted, substantially as described.

16. In a cash-register, the combination of a pair of levers adapted to be coupled together, a register-wheel journaled on the fulcrum-shaft common to both said levers, one of said levers being adapted to receive a sufficient initial impulse to effect the coupling but not sufficient to actuate the register-wheel pertaining to said lever, and the second of said levers being adapted to have a complete throw but not being adapted to actuate the register-wheel unless the first is coupled to it, substantially as described.

17. In a cash-register, the combination of a plurality of primary actuating-levers entirely inclosed in the case, each of which is adapted to actuate a register-wheel proper to itself, means projecting through the casing for producing an initial movement of each primary lever, a secondary actuating-lever, and independent means for coupling each primary lever to the secondary lever, substantially as described.

18. In a cash-register, the combination of a plurality of primary actuating-levers entirely inclosed in the case, a plurality of register-wheels, a pawl coupling each actuating-lever to its proper register-wheel, a secondary lever, means projecting through the case for producing a limited initial movement of each primary lever, and independent means for coupling any one of the primary levers to the secondary lever, substantially as described.

19. In a cash-register, the combination of a primary actuating-lever, a registering-wheel and a secondary lever on a common journal, a ratchet connection between the registering-wheel and the primary lever, means projecting through the case for producing a limited initial movement of said primary lever, and means for coupling the primary and secondary levers together, substantially as described.

20. In a cash-register, in combination with actuating-levers and a complete-throw mechanism, a cut-out mechanism adapted to hold the complete-throw mechanism in position to prevent its engaging the actuating-levers, substantially as described.

21. In a cash-register, in combination with a complete-throw mechanism provided with a hook and adapted to interlock with the drawer to prevent the withdrawal of the drawer from its pocket, a rod arranged to lift the locking part of said complete-throw mechanism and hold it out of interlocking position, substantially as described.

22. In a cash-register, tablet-rods, means adapted to expose them, a foot-plate, a push-plate, a bar independent of the push-plate and adapted to engage with pressure behind the tablet-rods, and means independent of the pressure-bar actuated by the tablet-actuating mechanism adapted to relieve the tablet-rods from the pressure of the bar and to push the rods off the foot-plate, substantially as described.

23. In a cash-register employing tablet-indicators, the combination of tablet-rods, means for lifting the same, a foot-plate adapted to engage under a spur on each tablet-rod, a spring-pressed bar engaging the rods on the side opposite said spur and adapted to press the rods forward with the spurs engaging over the foot-plate, a push-bar adapted to engage said tablet-rods and the said pressure-bar, and means for actuating the push-bar, substantially as described.

24. In a cash-register, a tablet-rod provided with a projecting spur, a foot-plate adapted to engage under the spur, a pressure-bar adapted to engage behind the tablet-rod, a push-bar adapted to engage the pressure-bar and also to engage the body of the tablet-rod, the spacing between the push-bar and the pressure-bar being greater than the thickness of the tablet-rod, substantially as described.

25. As a means for engaging a printed band to the periphery of a registering-wheel, the combination of a slot in the wheel adapted to receive the ends of said band, and a spring adapted to engage the shaft and wheel for resetting purposes and provided with a projecting end adapted to engage the band and prevent it from moving on the longitudinal axis of the wheel, substantially as described.

26. In a cash-register, in combination with a common lever adapted to be coupled to any one of the several tablet-actuating levers, a locking-bolt attached to the register-frame adapted to interlock with said common lever, a projection on the drawer adapted to actuate the locking-bolt and release the lever substantially as described.

27. In a cash-register in combination with a registering-wheel provided with a slotted periphery, a printed band bent around the periphery of the wheel and with its ends extending through said slot, a piece extending radially outside the periphery of said wheel adapted to engage the band and prevent it from moving along the horizontal axis of the wheel, substantially as described.

28. In a cash-register, in combination with a register-wheel of lower order a grooved shaft and a register-wheel of higher order, a strip of sheet metal extending radially across the wheel, one end engaging in the groove of the shaft and the other extending through the periphery of the wheel of lower order and adapted to engage as a tooth with the wheel of higher order, substantially as described.

608,552. BOBBIN-CASE RETAINER FOR SEWING-MACHINES.

WILLIAM A. MACK, Cleveland, Ohio, assignor to the Standard Sewing Machine Company, same place. Filed Dec. 28, 1896. Serial No. 617,169. (No model.)



Claim.—1. The combination, with a sewing-machine shuttle having a pin provided with a rim or projection adjacent to its outer end, of a bobbin-case provided with a single latch or lever pivotally supported thereby with one end extending, when in locking position, directly into engagement with the projection on the shuttle-pin, and its opposite end being movable in a direction outwardly from the face of the bobbin-case to disengage its locking end from the shuttle-pin and afford a handle for the bobbin-case.

2. The combination, with a sewing-machine shuttle having a pin provided with a rim or projection adjacent to its outer end, of a bobbin-case provided with a single latch or lever pivotally supported thereby with one end extending, when in locking position, directly into engagement with the projection on the shuttle-pin, and its opposite end being movable in a direction outwardly from the face of the bobbin-case to disengage its locking end from the shuttle-pin and afford a handle for the bobbin-case, said latch having a lip or projection on its face side as a means to engage and lift the same.

3. The combination, with a sewing-machine shuttle having a pin provided with a rim or projection adjacent to its outer end, of a bobbin-case provided with a single latch or lever pivotally supported thereby with one end extending, when in locking position, directly into engagement with the projection on the shuttle-pin, and its opposite end being movable in a direction outwardly from the face of the bobbin-case to disengage its locking end from the shuttle-pin and afford a handle for the bobbin-case, and means for engaging with said latch to hold the same in a closed locking position.

4. In a sewing-machine, the combination with a shuttle having a pin provided with a rim or projection adjacent to its outer end, of a bobbin-case provided with a single latch or lever pivotally supported thereby with one end extending, when in locking position, directly into engagement with the projection on the shuttle-pin, and its opposite end extending, when the latch is in its said looking position, into engagement with the stationary part of the machine to hold the bobbin-case from rotary movement, substantially as and for the purpose set forth.

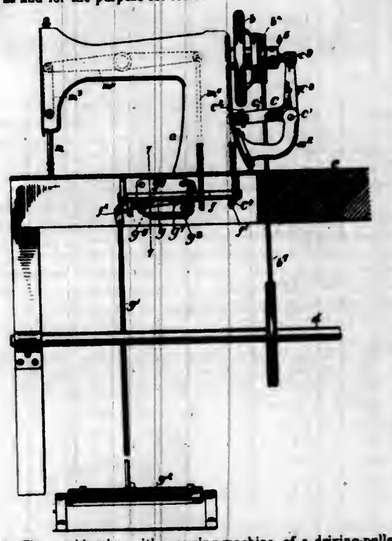
5. The combination, with a sewing-machine shuttle having a pin provided with a rim or projection adjacent to its outer end, of a bobbin-case provided in its face wall with a slot and a recess respectively, a single latch or lever pivotally supported in said slot in the bobbin-case with one end extending, when in locking position, directly into engagement with the projection on said pin, and its opposite operating end being movable in a direction outwardly from the face of the bobbin-case to disengage its locking end from the shuttle-pin, and having a notch in one side thereof, and a spring-catch seated in said recess in the bobbin-case to engage with the latch within the said notch therein and hold the same in a closed position.

6. The combination, with a sewing-machine shuttle having a pin provided with a rim or projection adjacent to its outer end, of a bobbin-case provided with a slot in its face wall, a single latch or lever pivotally supported in said slot in the bobbin-case with one end extending, when in locking position, into engagement with the projection on said pin, and its opposite end being movable in a direction outwardly from the face of the bobbin-case and having a notch in one side thereof, a spring-catch for engaging with the latch within the said notch therein, and having a part thereof connecting with said latch to pivotally support the same in connection with the bobbin case, and means for detachably holding such combined spring-catch and latch-supporter in connection with the bobbin-case.

608,553. SEWING-MACHINE. WILLIAM A. MACK, Cleveland, Ohio, assignor to the Standard Sewing Machine Company, same place. Filed Dec. 28, 1896. Serial No. 617,170. (No model.)

Claim.—1. The combination with a sewing-machine, having driving and driven pulleys supported thereby, a lever supported by the frame of the machine for moving one of said pulleys into operative engagement with the other, and connections, for operating said lever, extending below the bed-plate of the machine, of a table or support upon which the said machine is adapted to be removably supported, provided with a lever supported thereby in a position for engaging with the said lever connections of the machine but being independent of connection therewith, and means for operating the said lever on the table, substantially as and for the purpose set forth.

2. The combination with a sewing-machine, having driving and driven pulleys supported thereby, an elbow-lever supported by the framework of the machine with one arm thereof extending into a position whereby it may be operated to force one of said pulleys into operative engagement with the other, and its other arm being provided with a brake for contact with the driven pulley, means for movably holding said lever in a normal position to release the said pulleys from contact with each other and with the brake in contact with the driven pulley, and connections for operating the said lever extending below the bed-plate of the machine, of a table or support for the machine, provided with a treadle-connected lever pivotally supported thereon for operating the said lever connections of the machine, but being independent of connection therewith, substantially as and for the purpose set forth.



3. The combination with a sewing-machine, of a driving-pulley for transmitting motion to said machine, supported upon a hub or bearing carried by the latter, a lever pivotally supported upon the frame of the machine for forcing the said driving-pulley into operative position to transmit motion to the machine, the said lever being provided with a hinged joint therein whereby its pulley-engaging end may be moved relative to the driving-pulley to permit of the latter being removed from its supporting-hub, and means for movably holding the said pulley-engaging end of the lever in a normal position for engaging with the pulley, substantially as and for the purpose set forth.

4. The combination with a sewing-machine having driving and driven pulleys supported thereby, the said driving pulley being loosely supported upon a hub or bearing carried by the machine, of a lever pivotally supported upon the frame of the machine in a position for engaging with the said driving-pulley to hold the same in position upon its supporting-hub and adapted for forcing the same into operative contact with the driven pulley, the said lever being provided with a hinged joint therein whereby its pulley-engaging end may be moved relative to the driving-pulley to permit of the latter being removed from its bearing, one section of said hinged lever having a part thereof extended over the other and provided with a spring-pressed plunger seated therein, the yielding projecting end of which is adapted to extend within a recess in the other section to movably hold the pulley-engaging section in its normal position for engaging with the driving-pulley, substantially as and for the purpose set forth.

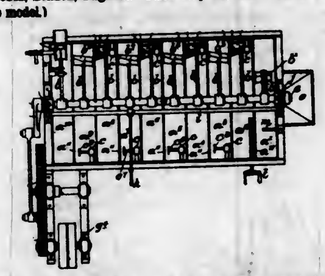
5. The combination with a sewing-machine having driving and driven pulleys supported thereby, an elbow-lever pivotally supported upon the frame of the machine, with one arm thereof extending into a position for engaging with the driving-pulley to force the same into contact with the driven pulley, and its other arm being provided with a brake for engaging with the said driven pulley, means for movably holding said lever in a normal position to release the driving-pulley from contact with the driven pulley and with the brake in contact with said driven pulley, and means for supporting said brake in an adjustable position relative to the driven pulley whereby wear of the brake may be taken up and the position of the pulley-engaging end or arm of the lever be regulated relative to the driving-pulley, substantially as and for the purpose set forth.

6. The combination with a sewing-machine provided with driving and driven pulleys supported thereby, a lever supported by the frame of the machine adapted for forcing the driving-pulley into operative contact with the driven pulley, and connections extending from said lever to a point below the bed-plate of the machine, of a supporting stand or table for said machine, provided with a lever pivotally supported thereby for engaging with an arm or part of said lever connections, means for movably holding said pivoted lever in a normal operative position, relative to said connections, and means for operating said lever on the table, substantially as and for the purpose set forth.

7. The combination with a sewing-machine, provided with driving and driven pulleys, a lever pivotally supported upon the frame of the machine for forcing said driving-pulley into operative engagement with the driven pulley, connections extending from said lever to a point below the bed-plate of the machine, a presser-bar, and connections extending from said presser-bar to a point below the bed-plate of the machine, of a stand or table for said machine, provided with a pivotally-supported rocking lever for engaging with said lever connections and presser-bar connections, the said rocking lever being provided with a spring pressed pin carried thereby with one end yieldingly projecting the surface of the same, which end is adapted to movably extend into a recess in a stationary part and movably hold the lever in a normal operative position relative to the said lever and presser-bar connections, substantially as and for the purpose set forth.

8. The combination with a sewing-machine table or stand having the usual machine opening therein, a centrally-pivoted rocking lever supported upon said table at one edge of the opening therein, and a treadle having connection with said lever, of a sewing-machine provided with driving and driven pulleys supported thereby, a lever supported upon the frame of the machine for forcing the driving-pulley into operative engagement with the driven pulley, a presser-bar, and connections extending from said pulley-engaging lever and said presser-bar respectively, to a point below the bed-plate and in position to be engaged by the opposite ends of the said pivoted rocking lever on the table, substantially as and for the purpose set forth.

608,554. WASHING OR LEACHING APPARATUS. ROBERT MOODIE, London, England. Filed May 16, 1898. Serial No. 680,853. (No model.)



Claim.—1. A leaching or washing apparatus consisting of a series of cells, an oscillating shaft extending longitudinally of said series of cells, individual arms on said shaft extending into the individual cells, and scoops on said arms, whereby the oscillations of the shaft serve to stir or move the material being treated and convey and discharge it from cell to cell, substantially as described.

2. A washing, or leaching, apparatus consisting of or comprising adjoining cells, and scoops, provided with means for oscillating them in the said cells, so as to stir, or move, the material being treated, and convey and discharge it from cell to cell, and scrapers located to act on the material when the scoops are in discharge position, substantially as described.

3 In an apparatus for washing or leaching, a series of cells, one of which is a dry cell and the others of which contain washing or leaching liquid, means for introducing the material to be washed into the dry cell, an oscillating shaft extending longitudinally of the series of cells, means operated by said shaft to tranfer the material from the dry cell to the washing-cell next in series, arms attached to the oscillating shaft and extending one into each washing cell and scoops on said arms, substantially as described.

608,555. MAGNETIC TACK-DRIVER. JOHN HAHN, Philadelphia, Pa., assignor to George W. Burton and J. Harvey Burton, same place. Filed Dec. 20, 1897. Serial No. 664,127. (No model.)

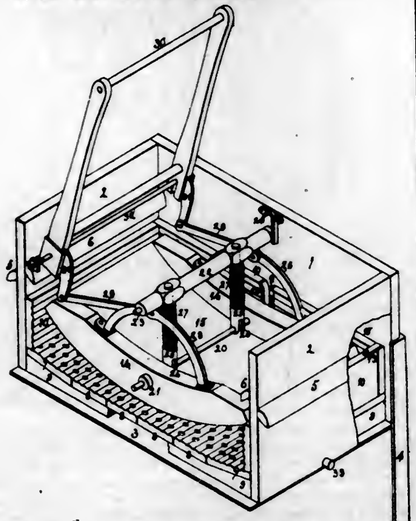
Claim.—1. In combination a hollow handle open at one end, a magnetic driver projecting from the open end of the handle and extending through the hollow interior thereof, and a non-magnetic te-

bular sleeve movably fitted to the driver and afforded range of movement within the hollow portion of the handle, substantially as described.



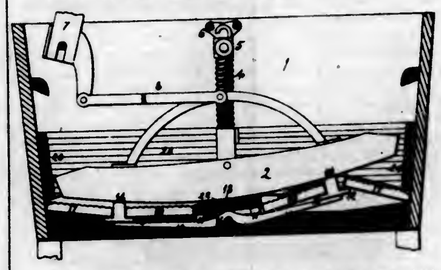
2. In combination a hollow handle open at one end, a magnetic driver projecting from the open end of the handle and supported by the other end thereof, a non-magnetic tubular sleeve movably fitted to the driver and provided with a shoulder, and a collar surrounding the sleeve and applied to the open end of the handle, substantially as described.

608,556. WASHING-MACHINE. THOMAS V. HOBBS, Rockford, Ill., assignor of one-half to Charles T. Olander, same place. Filed Dec 30, 1897. Serial No. 664,791. (No model.)



Claim.—In a washing-machine, the combination of a body portion of rectangular form having corrugated sides and a corrugated and perforated false bottom, the sides of the body portion provided with vertical guideways, and with hooked catches, a rocker having its under face provided with air-chambers, a rod secured to the rocker and its ends guided in the vertical guideways, arched bars secured to the rocker, an operating-lever, links connecting the operating-lever and arched bars, a bar having an engagement with the hooked catches and springs interposed between the bar and rod.

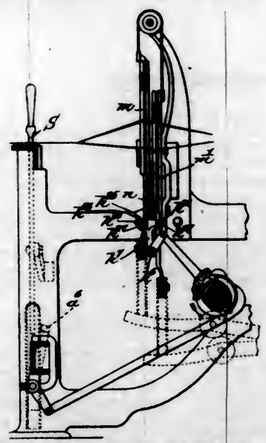
608,557. WASHING-MACHINE. THOMAS V. HOBBS, Rockford, Ill., assignor of one-half to Charles T. Olander, same place. Filed Feb. 18, 1898. Serial No. 670,789. (No model.)



Claim.—1. In a washing-machine, the combination of a body portion, a false bottom composed of sections, a rocker-frame located below the sections, a pivoted rocker located over the false bottom imparting a rocking movement to the rocker-frame and through it to the sections, and side strips located over the sections provided with projections located between two of the sections.

2. In a washing-machine, the combination of a body portion, a false bottom composed of sections, a rocker-frame located below the sections consisting of two side rods and connecting end bars, one edge of each of four sections supported by the end bars of the rocking frame, and a rocker located over the sections by the rocking movement of which a rocking movement is imparted to the rocker-frame and through it to the sections.

608,558. WARP STOP-MOTION FOR LOOMS. JAMES H. HOUSTOUN, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Feb. 25, 1898. Serial No. 671,562. (No model.)



Claim.—1. In a loom, a series of warp-stop-motion-actuating detectors movable into operative position by breakage or undue slackness of the warp-threads, a coöperating vibrator comprising a strip of yielding material, and a holder of rigid material having two opposed walls between which the yielding material is held and beyond the edges of which it projects, to engage a dropped detector, and stopping mechanism for the loom, operated by or through stoppage of the movement of the vibrator.

2. In a warp-stop-motion mechanism for looms, a series of actuating-detectors movable into operative position by failure or undue slackness of the warp-threads, and a coöperating vibrator comprising a substantially U-shaped holder and a strip of yielding material held therein and projecting from between its edges, to engage a dropped detector.

608,559. OPERATING SIGNAL-CURTAINS ON LOCOMOTIVE-HEADLIGHTS. WILLIAM J. PUSH, Chicago, Ill., assignor of two-thirds to Francis Xavier Busch and Arthur Clauss, same place. Filed Dec 10, 1897. Serial No. 661,694. (No model.)

Claim.—1. In a curtain-operating headlight for locomotives, the combination of the headlight, a spring-roller mounted therein, and a curtain attached to said roller, a cord having one end attached to and wrapped around said roller and the other end attached to a fixed point, with a cylinder, piston and piston-rod, and a roller on said rod, around which the cord is looped so that when the piston-rod is moved inward, the cord is unwrapped and caused to rotate the spring-roller so as to tension the spring and unwind the curtain, and means for admitting an actuating fluid into and releasing it from said cylinder, said means controllable from the cab substantially as and for the purpose set forth.



2. In a curtain-operating headlight for locomotives, the combination of the headlight, a spring-controlled roller mounted therein and a curtain attached to said roller; the cord having one end attached to and wrapped upon a reduced portion of said roller and the other end attached to a fixed point; with a cylinder, piston and piston-rod, and a roller connected to and actuated by said rod adapted to loop said cord and thereby cause the latter to rotate the spring-roller so as to tension the spring and unwind the curtain, and means for admitting air into and releasing it from said cylinder, whereby the curtain is positively unwound by the action of the piston and wound up by the spring which also returns the piston and roller to normal position through the medium of the cord, substantially as described.

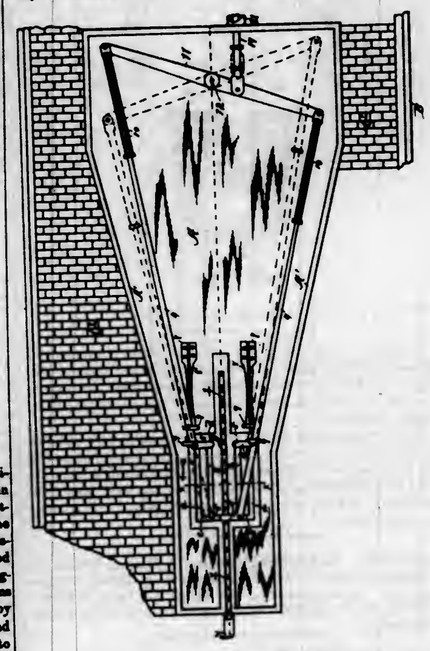
3. The combination of a spring-actuated curtain-roller having a spool or reduced portion on one end, a cord secured at one end to and wrapped upon said spool and at the other end to a fixed point, an idler-roller above said fixed point, and a curtain attached to said roller; with a cylinder in rear of said idler-roller, the piston and piston-rod, and a roller on the end of said piston-rod adapted to loop the cord between the fixed point and said idler-roller when the piston is moved in one direction by compressed air, and means for admitting compressed air to, or permitting it to escape from the cylinder whereby the curtain is positively unwound by the movement of the piston in one direction, and is rolled up by the action of the spring which returns the piston to its normal position through the medium of the cord, all substantially as and for the purpose described.

608,560. AUTOMATIC SWITCH FOR STREET-RAILWAYS. GEORGE D. ROLLMAN, Dayton, Ohio. Filed Jan. 21, 1898. Serial No. 667,441. (No model.)

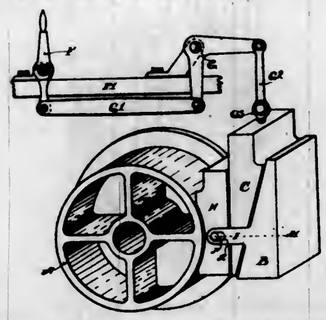
Claim.—1. In mechanism for automatically shifting a street-railway switch, the combination with a case having a plurality of guide-slots therein, of reciprocating rods adapted to have their ends alternately projected across the central one of said slots, a lever connected to the other ends of said rods, mechanism between said lever and the switch-tongue, and means for actuating said reciprocating rods, substantially as and for the purposes specified.

2. In mechanism for automatically shifting a street-railway switch, the combination with a casing having two rectangular guide-slots and an intervening straight slot, of two reciprocating rods having their disconnected ends projecting inwardly and governed in their movements by said rectangular slots, a lever to which the other ends of said rods are connected, a bell-crank lever having a connection with the switch-tongue, and a reach or connecting-rod between said bell-crank lever and the lever to which the reciprocating rods are connected, substantially as described.

3. In mechanism for automatically shifting street-railway switches, the combination with a trip-arm, of a case having two rectangular guide-slots, and an intervening straight slot in which said trip-arm is adapted to move, two reciprocating rods which are guided in their movements by said rectangular slots, the said rods having their disconnected ends turned inwardly to project across the path of the trip-arm at predetermined times, and mechanism between the switch-tongue and the lever to which the reciprocating rods are connected, whereby movement is imparted to said tongue, substantially as described.



608,561. BRAKE. WILLIAM H. SAUVAGE, Denver, Colo. Filed Sept. 16, 1897. Serial No. 651,884. (No model.)

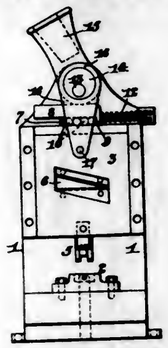


Claim.—1. In a brake, the combination, with a fixed base having an inclined face, of a brake-shoe movably supported in operative position relative to the base and the wheel or other article on which it is to act, a wedge interposed loosely between the inclined face of the base and the shoe, and means positively attached to the wedge for moving the latter into and out of wedging contact with the shoe.

2. In a brake, the combination, with a fixed base provided on its sides with forwardly-projecting arms carrying inwardly-projecting studs, of a brake-shoe located between said arms and formed with slots for the reception of said studs, a wedge interposed loosely between the base and shoe, and means for moving the wedge into and out of wedging contact with the shoe.

3. A brake mechanism comprising a fixed base having an inclined face and provided with forwardly-projecting arms carrying inwardly-projecting studs, a brake-shoe located between said arms and formed with slots for receiving said studs, a wedge interposed loosely between the inclined face of the base and the shoe, and lever mechanism for moving the wedge into and out of wedging contact with the shoe.

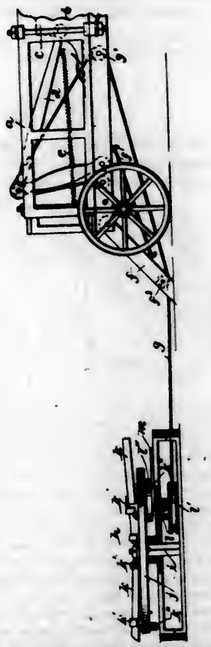
608,562. PUNCH AND SHEAR MACHINE. CHARLES F. THURBER, Olean, N. Y., assignor of three-fourths to Oliver F. Carley, Frederick L. Gleason, William M. Abrams, Jr., and Lorina J. Abrams, same place. Filed Mar. 22, 1897. Serial No. 628,718. (No model.)



Claim.—1. In a punching and cutting or shearing machine, the combination with the frame, and the vertically-movable gate or slide having a lip on its upper end, of the laterally-movable plate having a lip at one end, the loose antifriction-rollers, and the eccentric, substantially as described.

2. In a punching and cutting or shearing machine, the combination with the frame, the vertically-movable gate or slide having a lip at the upper end, of the laterally-movable plate having a lip at one end, the loose antifriction-rollers, the coiled spring, the eccentric, the eccentric-strap and the pins on the front of the gate or slide, substantially as described.

608,563. RAILING-PRESS. NORMAN R. WILDER, Lyndon, Ill., assignor of one-half to H. R. Paddock and W. F. Millikan, Prophetstown, Ill. Original application filed Mar. 26, 1897, Serial No. 629,403. Divided and this application filed July 28, 1897. Serial No. 646,206. (No model.)

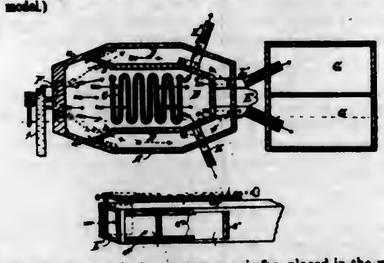


Claim.—1. In combination, the horizontally-disposed main frame composed of rigidly-secured upper and lower portions and intermediate cross-beams, the vertical rigid shaft mounted approximately at the center of the frame with the journal extending above the same, the large rotary driving-frame turning horizontally on said journal and provided with one or more actuating-sweeps, and the projections depending from its outer portion and spaced equally from each other and from the axis of the rotary frame, the vertical winding-shaft extending from the bottom of the frame up through and journaled in the top thereof beneath said rotary frame and to one side of the longitudinal center line of the main frame, the cable-sheave rigid on the lower portion of the winding-shaft and the lateral trip-arm rigid on the upper end of said shaft and between the main frame and rotary frame, whereby the projections engage said trip in succession and swing the same partially around and release the trip which rebounds and engages the next succeeding projection thereby automatically limiting the rebound of the trip and operating the same rapidly a number of times during a single comparatively slow rotation of the large rotary frame, and the actuating-cable passing centrally into the end of the main frame and secured on the sheave, substantially as described.

2. In combination, the main frame comprising the upper and lower rigidly-secured portions, the central vertical shaft having the rotary frame thereon, said frame having the three projections depending from its outer portion and spaced equally from each other and from the axis of the rotary frame and the several series of radially-alined loops or sockets on its upper face, sweeps removably fitted in said loops and above the upper face of the rotary frame, the winding-shaft mounted in the main frame with the lateral trip-arm between the top of the main frame and the rotary frame and normally in the circular path of said projections, the segmental track on the main frame beneath said trip-arm, the sheave secured to the winding shaft within said main frame, and the actuating-cable passing through the end of the main frame to said sheave, substantially as described.

3. In combination, a horizontally-disposed main frame, the vertical shaft mounted approximately at the central portion thereof, the rotary driving-frame above said main frame and on the upper end of said shaft and provided with one or more actuating-sweeps and with the projections depending from its outer portion and spaced equally from each other and from the axis of said rotary frame, the vertical winding-shaft within the frame and extending above the same beneath the rotary frame between the axis and outer edge thereof, the cable-sheave rigid on the lower portion of the winding-shaft, the lateral trip-arm rigid on the upper end of said shaft and between the top of the main frame and said rotary frame, whereby the projections engage said trip in succession and swing the same partially around and release the trip which rebounds and engages the next succeeding projection thereby automatically limiting the rebound of the trip and operating the same rapidly a number of strokes during a single comparatively slow rotation of the rotary frame, and the actuating-cable passing approximately centrally into the end of the main frame and secured on the sheave, substantially as described.

608,564. HEATING AND DRYING SYSTEM. CHARLES C. BARBOUR, Grand Rapids, Mich., assignor of one-fourth to Nathan R. Staples, Cadillac, Mich. Filed May 21, 1897. Serial No. 637,698. (No model.)

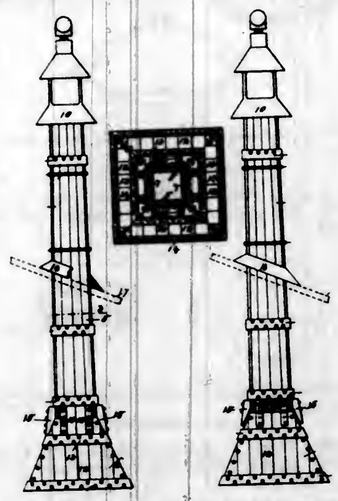


Claim.—1. In a drying system, an air-fan placed in the wall of an air-chamber or room, an air-chamber back of said fan, a heating-coil back of said air-chamber, a hot-air chamber back of said coil, cold-air chambers adjacent to said hot-air chamber and coil, gates to open or close between the cold-air chamber and the chamber back of the fan; air-pipes passing from the hot-air chamber through the cold-air chamber and to the drying-rooms, a gate opening from each pipe to the hot-air chamber and one to the cold-air chamber arranged to be opened and closed simultaneously or alternately and to any degree desired, substantially as and for the purpose set forth.

2. In a heating and drying system, the combination of a cold-air chamber, a hot-air chamber arranged within the cold-air chamber, said chambers having a common air-inlet, a steam-coil situated within the hot-air chamber, air-distributing pipes communicating with both of the air-chambers, means for controlling the flow of air from each of the air-chambers to the distributing-pipes, and means for causing the flow of air through the apparatus, substantially as described.

REISSUES.

11,686. SMOKE-STACK. CHARLES PICKERING, Richmond, Canada, assignor to the Lappin Brake Shoe Company, Bloomfield, N. J. Filed Oct. 5, 1897. Serial No. 654,190. Original No. 570,144, dated Oct. 27, 1896.



Claim.—1. A smoke-stack or chimney having its inside face coated with sand, for the purpose set forth.

2. A smoke stack or chimney formed of a combustible material presenting an approximately smooth inside surface and such surface coated with a petrifiable material, for the purpose set forth.

3. A smoke-stack or chimney formed of wood presenting an approximately smooth inside surface and such surface coated with a petrifiable material for the purpose set forth.

4. A smoke-stack or chimney formed of a combustible material and coated on its inside surface with sand, for the purpose set forth.

5. A smoke-stack or chimney formed of wood and coated on its inside surface with sand, for the purpose set forth.

6. A smoke stack or chimney formed of wood and coated on its inside surface with paint and sand, for the purpose set forth.

7. A smoke stack or chimney formed of a combustible material fireproofed on its inside surface and provided with means for adjustment to any desired height.

8. A smoke-stack or chimney formed of a combustible material coated with a fire and acid proof substance on its inside surface and provided with means for adjustment to any desired height.

9. A smoke-stack or chimney formed of wood, fireproofed on its inside surface and provided with means for adjustment at any desired height.

10. A smoke-stack or chimney rectangular in cross-section and formed of a number of parallel wood boards with transverse straps holding same together, and coated on its inner surface with petrifiable material, for the purpose set forth.

11. A wood smoke-stack comprising a body-section, top section and flared bottom section with its inside surface fireproofed, for the purpose set forth.

12. A wood smoke-stack rectangular in cross-section and comprising a body-section, top section and flared bottom section with its inside surface fireproofed, for the purpose set forth.

13. A wood smoke-stack rectangular in cross-section comprising a body-section, top section and flared bottom section with strips 15 for connecting the last-named sections together, for the purpose set forth.

14. A wood smoke-stack rectangular in cross-section comprising a body-section, top section and flared bottom section formed of a number of parallel wood boards with transverse straps holding same together, the top section overlapping the body-section and strips 15 for connecting the body and bottom sections together, for the purpose set forth.

DESIGNS.

29,116. BADGE. ELMER E. KERR, Bradford, Pa. Filed June 13, 1898. Serial No. 683,368. Term of patent 3½ years.



Claim.—The design for a badge substantially as shown and described.

29,117. BADGE. BETTIE J. MACKOY, Rosedale, Kans. Filed June 21, 1898. Serial No. 684,106. Term of patent 3½ years.



Claim.—The design for a badge as herein shown and described.

29,118. BADGE. EDWIN RIDGOLD, Cincinnati, Ohio, assignor to Neuhaus, Trounstine & Co., same place. Filed July 11, 1898. Serial No. 686,710. Term of patent 3½ years.



Claim.—The design for a badge or other similar article as herein shown and described.

29,119. PIN OR SIMILAR ARTICLE. JANE B. MOORE, Covington, Ky. Filed Apr. 14, 1898. Serial No. 678,061. Term of patent 7 years.



Claim.—The design for a pin, or similar article, substantially as herein shown and described.

29,120. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. HENRY L. WALLACE, Wallingford, Conn., assignor to the R. Wallace & Sons Manufacturing Company, same place. Filed July 11, 1898. Serial No. 685,707. Term of patent 7 years.



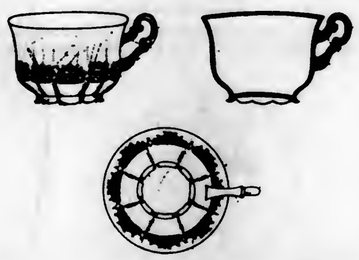
Claim.—The design for a handle for spoons, forks and similar articles, as herein shown and described.

29,121. BACK FOR BRUSHES OR SIMILAR ARTICLES. CONRAD BEAR, Boston, Mass., assignor to the James R. Blake & Company, Attleborough, Mass. Filed June 28, 1898. Serial No. 684,894. Term of patent 7 years.



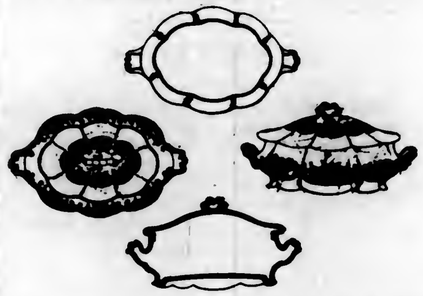
Claim.—The design for the back of a brush or similar article substantially as herein shown and described.

29,122. CUP. CHARLES J. ARRENFELDT, New York, N. Y. Filed Feb. 9, 1898. Serial No. 669,723. Term of patent 7 years.



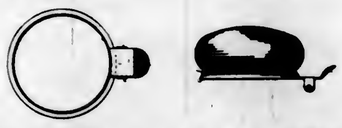
Claim.—The design for a cup herein shown and described.

29,123. COVERED DISH. CHARLES J. ARRENFELDT, New York, N. Y. Filed Feb. 9, 1898. Serial No. 669,725. Term of patent 7 years.



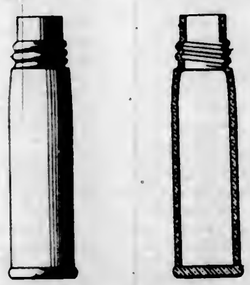
Claim.—The design for a covered dish herein shown and described.

29,124. SYRUP-CUP COVER. EDGAR A. RUSSELL, Wallingford, Conn. Filed June 27, 1898. Serial No. 684,637. Term of patent 7 years.



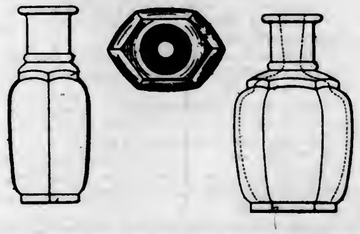
Claim.—The design for a syrup-cup cover substantially as shown and described.

29,125. BOTTLE. HERMAN TAPPAN, New York, N. Y. Filed May 3, 1898. Serial No. 679,633. Term of patent 7 years.



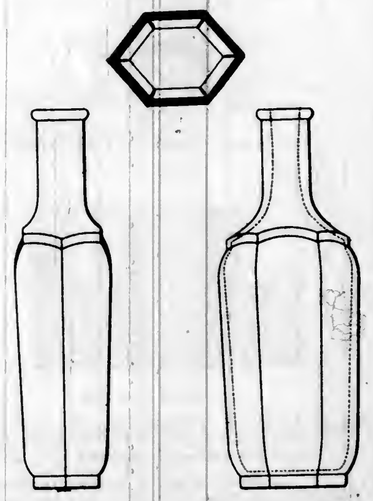
Claim.—The design for a bottle, as herein shown and described.

29,126. BOTTLE. ALEXANDER BARRIE, New York, N. Y., assignor to the Court Perfumery Company, same place. Filed July 6, 1898. Serial No. 685,284. Term of patent 7 years.



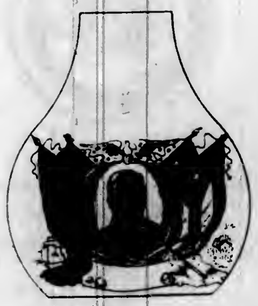
Claim.—The design for a bottle, substantially as herein shown and described.

29,127. BOTTLE. ALEXANDER BARRIE, New York, N. Y., assignor to the Court Perfumery Company, same place. Filed July 6, 1898. Serial No. 685,285. Term of patent 7 years.



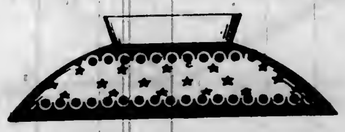
Claim.—The design for a bottle, substantially as herein shown and described.

29,128. GLOBE OR SIMILAR ARTICLE. ANDREW HOWARD, Wilkinsburg, Pa. Filed June 29, 1898. Serial No. 684,306. Term of patent 3½ years.



Claim.—The design for a globe, or similar article, herein shown and described.

29,129. SHADE. FRANK J. HEIDBRINK, Bridgewater, Pa., assignor to the Phœnix Glass Company, Pittsburg, Pa. Filed Apr. 23, 1898. Serial No. 678,672. Term of patent 14 years.



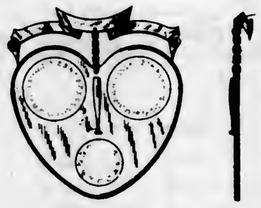
Claim.—The design for a shade or similar article as shown and described.

29,130. SHADE. EDWARD KAYE, Mount Pa., assignor to the Phœnix Glass Company, Pittsburg, Pa. Filed Apr. 23, 1898. Serial No. 678,673. Term of patent 14 years.



Claim.—The design for a shade herein shown and described.

29,131. CASING FOR BASE-BALL TALLIES. JOSEPH K. RITCHEY, Roaring Spring, Pa. Filed June 8, 1897. Serial No. 638,988. Term of patent 7 years.



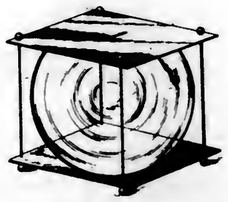
Claim.—The design for a casing for a base-ball tally as herein shown and described.

29,132. PUZZLE-BOARD. HENRY C. FINCKE, New York, N. Y. Filed June 25, 1898. Serial No. 684,507. Term of patent 3½ years.



Claim.—The design for a puzzle-board, as herein shown and described.

29,183. SAVINGS-BANK. RALPH E. BROWNELL, Chicago, Ill., assignor to William H. Dietz, same place. Filed Mar. 25, 1898. Serial No. 675,194. Term of patent 3½ years.



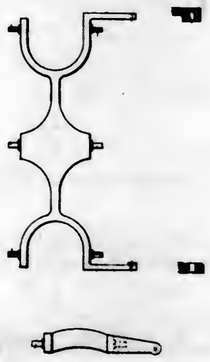
Claim.—The design for a savings-bank as herein shown and described.

29,184. DRESSMAKER'S RULE. LEMIE A. RINES, Minneapolis, Minn. Filed June 11, 1898. Serial No. 683,239. Term of patent 7 years.



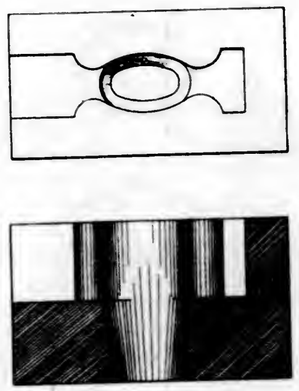
Claim.—The herein-described design for a dressmaker's rule, substantially as shown and described.

29,185. SCALE-LEVER. ORANGE O. CHIAS, Dayton, Ohio, assignor to the Computing Scale Company, same place. Filed Sept. 20, 1897. Serial No. 653,385. Term of patent 7 years.



Claim.—The design for a scale-lever as shown and described.

29,186. DIE-BLOCK. BYRAN ROGERS, Bulleton, N. Y. Filed July 11, 1898. Serial No. 685,708. Term of patent 14 years.



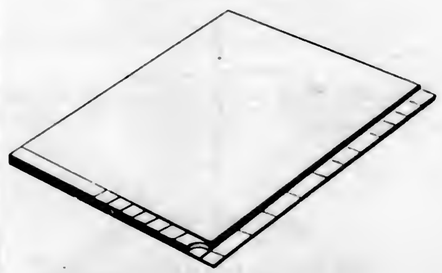
Claim.—The design for a die-block herein shown and described.

29,187. CALENDAR-CASING. NICHOLAS HAYDEN and CHARLES FREDERICK CLIFTON WURST, St. Paul, Minn. Filed July 21, 1897. Serial No. 645,473. Term of patent 14 years.



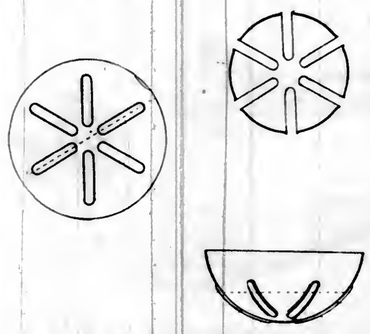
Claim.—The design for a calendar-casing, substantially as shown and described.

29,188. INDEX-BOOK. CYRILLE LEVESQUE, Toronto, Canada. Filed May 7, 1898. Serial No. 680,089. Term of patent 7 years.



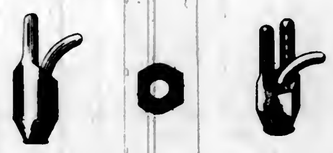
Claim.—The design for an index-book herein shown and described.

29,139. EGG-SEPARATOR. HERBERT S. PULLMAN, Meriden, Conn. Filed June 8, 1898. Serial No. 682,950. Term of patent 7 years.



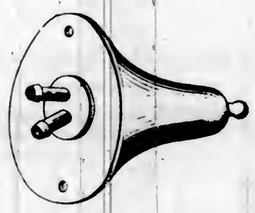
Claim.—The design for an egg-separator as herein shown and described.

29,140. MEDICATED AIR-HEAD. ROSS MORRIS, Clarksburg, W. Va., assignor of one-half to Alfred A. Scott, same place. Filed June 27, 1898. Serial No. 684,636. Term of patent 14 years.



Claim.—The design for a medicated air head, as herein shown and described.

29,141. VAGINAL SYRINGE. WALTER R. DEWEY, Philadelphia, Pa. Filed Apr. 5, 1897. Serial No. 630,860. Term of patent 3½ years.

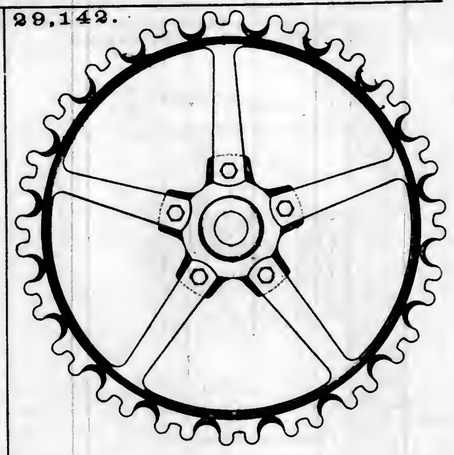


Claim.—The design for a vaginal syringe substantially as shown and described.

29,142. SPROCKET-WHEEL. CLAUDE A. DUER, Denver, Colo. Filed July 1, 1897. Serial No. 643,160. Term of patent 7 years.



29,142.



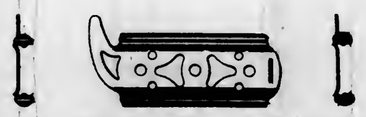
Claim.—The design for a sprocket-wheel, substantially as herein shown and described.

29,148. BICYCLE-CRANK. HENRY A. GUSTIN, Cambridge, Mass. Filed Aug. 19, 1897. Serial No. 648,532. Term of patent 3½ years.



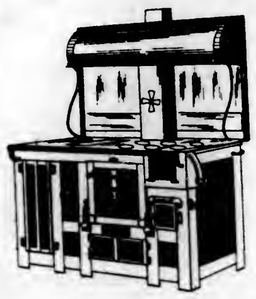
Claim.—The design for a bicycle-crank, substantially as shown and described.

29,144. SIDE BAR FOR BICYCLE-PEDALS. GEORGE W. HADLEY, Chicopee, Mass., assignor to the Lamb Manufacturing Company, Chicopee Falls, Mass. Filed July 7, 1898. Serial No. 685,349. Term of patent 7 years.



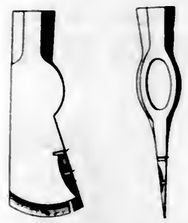
Claim.—The design for a side bar for bicycle-pedals as herein both shown and described.

29,145. COOKING-RANGE. ANTONIO ALITTO, Chicago, Ill. Filed June 23, 1898. Serial No. 684,306. Term of patent 7 years.



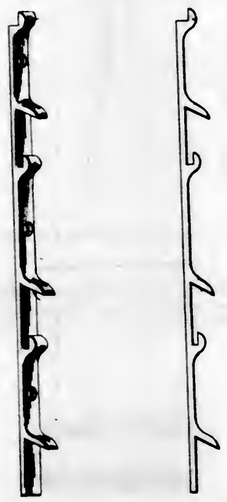
Claim.—The design for a cooking-range as herein shown and described.

29,146. HATCHET. PHILIP ORT, New York, N. Y. Filed Apr. 1, 1898. Serial No. 676,143. Term of patent 14 years.



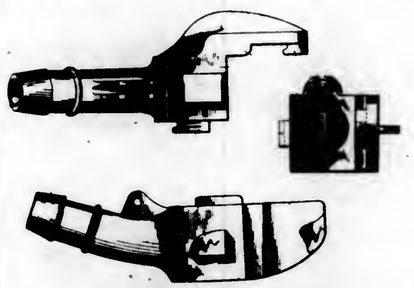
Claim.—The design for a hatchet substantially as shown and described.

29,147. RACK-BAR FOR SASH-LOCKS. WILLIAM W. DAMPEER, Wesson, Miss. Filed July 11, 1898. Serial No. 685,709. Term of patent 7 years.



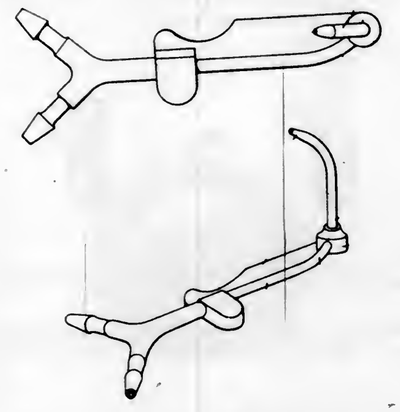
Claim.—The design for a rack bar for sash-locks, herein shown and described.

29,148. HOSE-COUPLING MEMBER. ROBERT MUIR DIXON, East Orange, N. J. Filed Jan. 27, 1898. Serial No. 668,226. Term of patent 14 years.



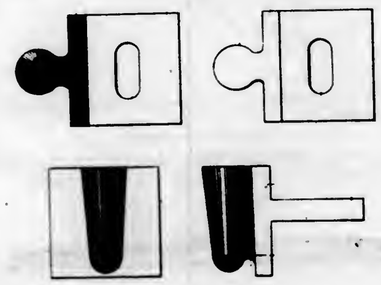
Claim.—The design for a hose-coupling member as herein described and shown.

29,149. JET FOR LIME-LIGHTS. JOHN A. MAFFI, Jersey City, N. J. Filed July 21, 1897. Serial No. 645,475. Term of patent 7 years.



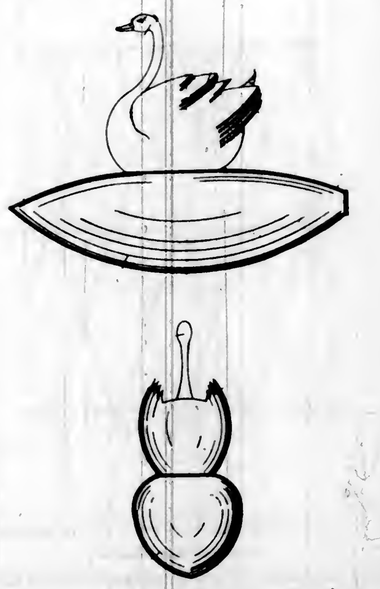
Claim.—The design for a jet for lime-lights herein shown and described.

29,150. CORNER-PIECE. WILLIAM H. FLEISCHMAN, Buffalo, N. Y. Filed June 20, 1898. Serial No. 684,009. Term of patent 3½ years.



Claim.—The design for a corner-piece substantially as herein shown and described.

29,151. MOTOR-FLOAT. THOMAS GILBERT BOWICK, London, England. Filed Dec. 20, 1897. Serial No. 664,480. Term of patent 14 years.



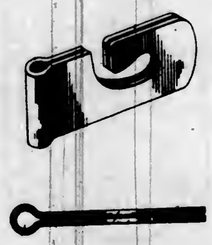
Claim.—The design for a motor-float herein shown and described.

29,152. HOOK. BURTON B. MORTON, Revere, Mass. Filed July 5, 1898. Serial No. 685,194. Term of patent 7 years.



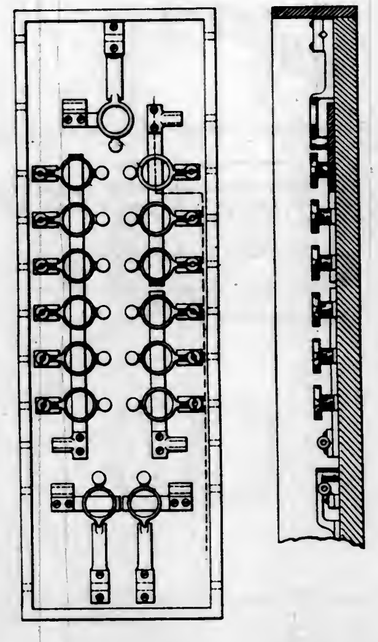
Claim.—The design for a hook, as herein shown and described.

29,153. HAME-HOOK. MILLER H. MCMAHON and ALEXANDER H. POWERS, Waterloo, Ala. Filed May 17, 1897. Serial No. 636,999. Term of patent 7 years.



Claim.—The design for a hame-hook, substantially as herein shown and described.

29,154. CUT-OUT CABINET. CHARLES J. KLEIN, New York, N. Y., assignor to the General Incandescent Arc Light Company, of New York. Filed June 16, 1898. Serial No. 683,621. Term of patent 3½ years.



Claim.—The design for a cut-out cabinet for an electrical distributing system, substantially as herein shown and described.

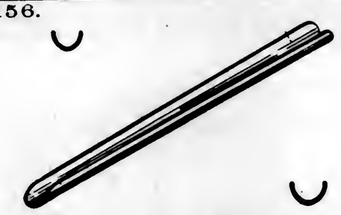
29,155. FRAME FOR ROCK AND ORE CRUSHERS. PHILETUS WARREN GATES, Chicago, Ill. Filed Apr. 30, 1897. Serial No. 634,646. Term of patent 14 years.



Claim.—The design for a frame for rock and ore crushers, substantially as herein shown and described.

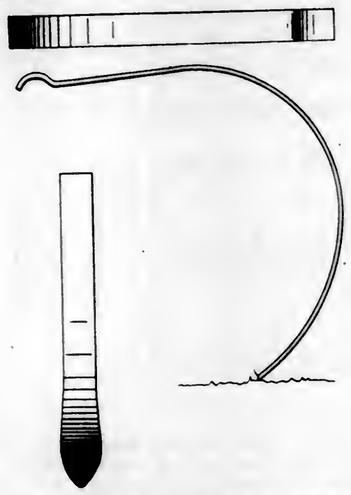
29,156. BUGGY-TOP SUPPORT. HENRY W. CALDWELL, Pulaski, N. Y. Filed June 10, 1898. Serial No. 683,135. Term of patent 14 years.

29,156.



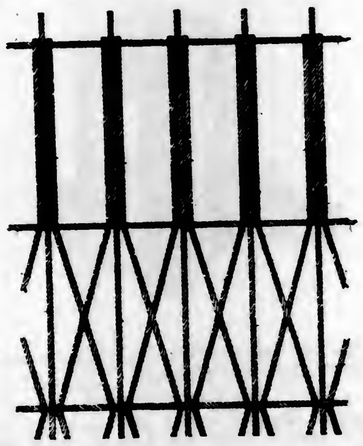
Claim.—The design for a buggy-top support, as herein described and shown.

29,157. CURVED SPRING HARROW-TOOTH. EFFINGER R. WHIPPLE, Utica, N. Y. Filed June 27, 1898. Serial No. 684,634. Term of patent 14 years.



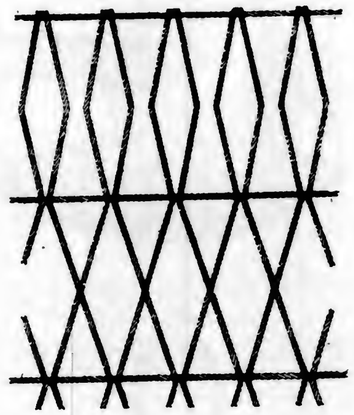
Claim.—The design for the curved spring harrow-tooth as herein shown and described.

29,158. WIRE FENCE. ALVA L. KITSELMAN, Ridgeville, Ind. Filed Jan. 26, 1898. Serial No. 668,078. Term of patent 7 years.



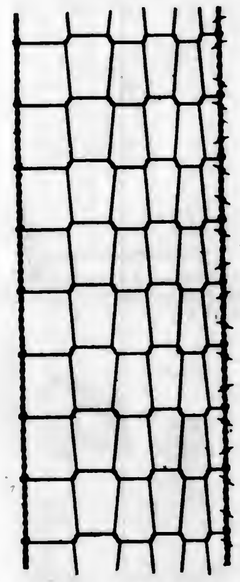
Claim.—The design for a wire fence, herein shown and described.

29,159. WIRE FENCE. ALVA L. KITSELMAN, Ridgeville, Ind. Filed Jan. 26, 1898. Serial No. 668,079. Term of patent 7 years.



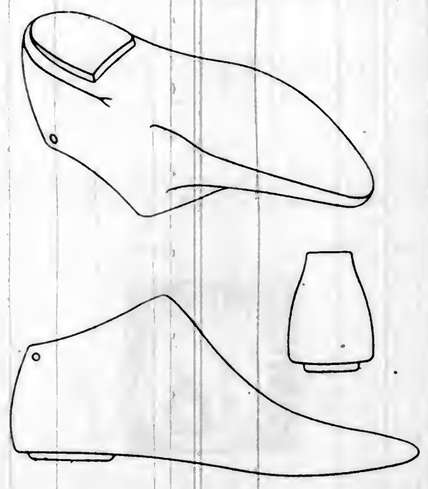
Claim.—The design for a wire fence herein shown and described.

29,160. WIRE FENCE. ALBERT HENLEY, Lawrence, Kans. Filed June 27, 1898. Serial No. 684,626. Term of patent 14 years.



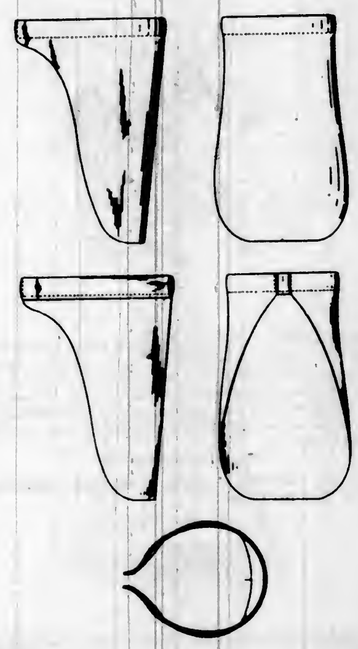
Claim.—The design for a wire fence as herein shown and described.

29,161. LAST. JOSEPH W. BOWEN, Philadelphia, Pa. Filed July 6, 1898. Serial No. 686,174. Term of patent 14 years.



Claim.—The design for a last for boots or shoes, substantially as described and as shown in the accompanying drawings.

29,162. TROUSERS-PROTECTOR. ELMER P. BURNS, Santa Ana, Cal. Filed Apr. 27, 1898. Serial No. 678,041. Term of patent 14 years.



Claim.—The design for a trousers-protector substantially as herein shown and described.

29,163. ABDOMINAL SUPPORTER. JESSIE G. MOSLEY, Buffalo, N. Y. Filed Dec. 9, 1897. Serial No. 661,338. Term of patent 14 years.



Claim.—The design for an abdominal supporter, substantially as herein shown and described.

29,164. WOVEN FABRIC. WILLIAM T. SMITH, Philadelphia, Pa. Filed June 16, 1898. Serial No. 683,649. Term of patent 3½ years.



Claim.—The design for a woven fabric, as shown and described.

TRADE-MARKS

REGISTERED AUGUST 2, 1898.

81,828. PINCE-NEZ EYEGLASSES. GEORGE CULVER, LIMITED, London, England, and Sydney, New South Wales. Filed May 9, 1898.

"REVLUC"

Essential feature.—The word "REVLUC." Used since May 31, 1897.

81,829. CORSETS. EMIL SCHWEISSING, New York, N. Y. Filed June 22, 1898.

"LEONA"

Essential feature.—The word "LEONA." Used since June 13, 1898.

81,830. CORNMEAL. BYRD G. POLLARD, Norfolk, Va. Filed May 16, 1898.

SUNNY SOUTH

Essential feature.—The words "SUNNY SOUTH." Used since June 1, 1895.

81,831. OLIVE-OIL, ESSENTIAL OILS, SALAD-OILS, AND SEED-OIL. GEORGE LUEDERS & Co., New York, N. Y., and Chicago, Ill. Filed June 1, 1898.

de Luxe

Essential feature.—The words "DE LUXE." Used since May, 1895.

81,832. TEA, COFFEE, SPICES, AND CANNED GOODS. WILLIAM EDWARD SEELEY, Freeport, Ill. Filed Mar. 26, 1898.

EMPEROR

Essential feature.—The word "EMPEROR." Used since January 31, 1898.

81,833. FLAVORING COMPOUND FOR SYRUP FOR SODA-WATER. BAYLOR WILSON, Navasota, Tex. Filed Apr. 20, 1898.



Essential feature.—The representation of the sun, with a panel in the corner thereof containing the photograph of the registrant. Used since February 1, 1898.

81,834. CERTAIN NAMED MEDICINAL MINERAL WATER. MATCHLESS MINERAL WATER COMPANY, Dallas, Tex. Filed Mar. 12, 1898.



Essential feature.—The figure of Samson standing erect, clad in the skin of a leopard, wearing sandals on his feet, and holding at arm's-length with his left hand a lion, which stands upon its hind legs, its head thrown backward and its fore paws in close proximity to the left shoulder of Samson, and a lioness in substantially the same attitude on the right side of the figure of Samson. Used since August 15, 1896.

81,835. MEDICAL PLASTERS. HUBERT TERRY, West Hoboken, N. J. Filed May 31, 1898.

CÉLYNOTIS

Essential feature.—The word "CÉLYNOTIS." Used since April 15, 1898.

81,836. SEDATIVE. FARBENFABRIKEN OF ELBERFELD COMPANY, New York, N. Y. Filed June 15, 1898.

HEROIN.

Essential feature.—The word "HEROIN." Used since April 15, 1898.

81,837. ANTISEPTICS. FARBENFABRIKEN OF ELBERFELD COMPANY, New York, N. Y. Filed June 15, 1898.

ADALIN.

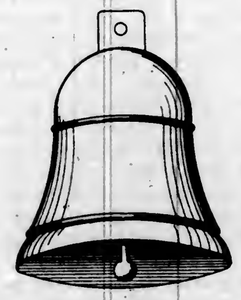
Essential feature.—The word "ADALIN." Used since April 15, 1898.

81,838. EMBALMING FLUID. THE MAX HUSCKE CHEMICAL COMPANY, Bridgeport, Conn., and New York, N. Y. Filed Apr. 11, 1898.

FALCON.

Essential feature.—The word "FALCON." Used since October 1, 1897.

81,839. TOYS, DOLLS, AND GAMES. THE FIRM OF F. A. O. SCHWARZ, New York, N. Y. Filed June 4, 1898.



Essential feature.—The representation of a bell. Used since September 1, 1881.

81,840. TOYS, DOLLS, AND GAMES. THE FIRM OF F. A. O. SCHWARZ, New York, N. Y. Filed June 4, 1898.



Essential feature.—The representation of Santa Claus bearing a Christmas tree. Used since October 1, 1870.

81,841. CHIMNEYS, LANTERN-GLOBES, AND REFLECTORS. GILL BROTHERS & Co., Steubenville, Ohio. Filed Dec. 1, 1897.



Essential feature.—The word "MONARCH." Used since March 3, 1897.

81,842. SHEET-METAL TUBES. THE WILMOT & HOBBS MANUFACTURING COMPANY, Bridgeport, Conn. Filed June 10, 1898.

CLINCHER

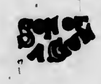
Essential feature.—The word "CLINCHER." Used since February 1, 1896.

81,843. LOCKS. THE YALE & TOWNE MANUFACTURING COMPANY, Stamford, Conn. Filed June 6, 1898.

JUNIOR"

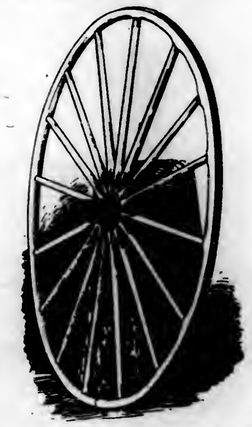
Essential feature.—The word "JUNIOR." Used since August, 1897.

81,844. PISTOLS. RUSSELL FARNER, New York, N. Y. Filed June 11, 1898.



Essential feature.—The clause "SON OF A GUN." Used since October 20, 1897.

81,845. VEHICLE-WHEELS OF ALL SIZES FOR LIGHT BUGGIES OR HEAVY TRUCKS AND THEIR PARTS. THE MUNCIE WHEEL CO. Muncie, Ind. Filed Mar. 17, 1898.



Essential feature.—The representation of the butt or stump of a hickory-tree with a carriage-wheel, known as "Sarven wheel," leaning or standing by its side. Used since January 1, 1892.

81,846. SHEATHING-PAPER. NEWTON PAPER COMPANY, Holyoke, Mass. Filed May 19, 1898.



ELEPHANT

Essential feature.—The representation of an elephant or the word "ELEPHANT." Used since July, 1897.

THE NORRIS PETERS CO.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE VELVRIL COMPANY, LIMITED.

Decided July 7, 1898.

1. TRADE-MARK—"VELVRIL"—NAME OF PATENTED ARTICLE.

The word "Velvril" refused registration as a trade-mark for a nitrocellulose compound, as it is the name of a patented compound which will become public property at the expiration of the patent.

2. SAME—REGISTERING MARKS THAT BECOME PUBLIC PROPERTY BEFORE EXPIRATION OF TIME FOR WHICH THEY ARE REGISTERED.

In view of the fact that under the trade-mark act of 1881 a certificate of registry remains in force for thirty years from its date, (with certain exceptions,) *Held* that the Patent Office should not register trade-marks which, though lawful trade-marks at the date when registry is sought, will become public property before the expiration of the thirty years.

ON petition.

TRADE-MARK FOR MERCHANDISE.

Application for registration filed December 20, 1897, No. 54,767.

Messrs. Baldwin, Davidson & Wight for the applicant.

DUELL, *Commissioner:*

The petitioner, the Velvril Company, Limited, of London, England, files this petition to review the action of the Examiner of Trade-Marks in refusing to register the word "Velvril" as a trade-mark for a nitrocellulose compound.

The word "Velvril" is the essential feature of the name of the petitioner corporation, and the refusal of the Examiner to register the claimed word is based upon that ground. The provision of the trade-mark act brought in question by this action is found in section 3, where it is provided that no alleged trade-mark shall be registered which is merely the name of the applicant. It is contended on behalf of petitioner that the word "Velvril" is not the *mere* name (or a portion thereof) of the corporation, but "is a fancy name applied to a new product," and that the corporate name "is taken from the fancy name given to the product, and the name of the product is not taken from the name of the company."

The petitioner relies upon the case of *Celluloid Mfg. Co.* v. *Read*, (47 Fed. Rep., 712,) contending that as the word "Celluloid," which was the salient part of the name of the company, was there recognized as a valid trade-mark the word "Velvril" should be registered.

In that case the court adopted without question the decision of Mr. Justice Bradley in *Celluloid Mfg. Co.* v. *Cellonite Mfg. Co.*, (41 O. G., 693; 32 Fed. Rep., 94.) The learned justice there said:

The complainant's assignors, the Hyatts, coined and adopted the word when it was unknown, and made it their trade-mark, and the complainant is assignee of all the rights of the Hyatts. When the word was coined and adopted it was clearly a good trade-mark. The question is whether the subsequent use of it by the public, as a common appellative of the substance manufactured, can take away the complainant's right. It seems to me that it cannot.

Were it not for the later ruling of the Supreme Court in *Singer Mfg. Co.* v. *June Mfg. Co.* (75 O. G., 1703; 163 U. S., 169) I should feel constrained to waive the question raised by the Examiner that the word was not registrable as being the salient feature of petitioner's name and overrule his refusal to grant registration. The case last referred to overrules the *Celluloid Company Case*, upon which petitioner relies, and in view of the conclusion arrived at by the Supreme Court I do not think that this Office would be justified in registering the word, in view of the facts of the present case.

The statement forming a part of the application for the trade-mark in question states that the Velvril Company, Limited, "has adopted for its use a trade-mark for a nitrocellulose compound for insulating, waterproofing, painting, and for treating leather and machine-belting," and that the particular description of goods comprised in the class of merchandise on which it is used "is a nitrocellulose compound," etc. The records of this Office disclose the fact that the patent for the compound to which applicant has applied the word "Velvril" was granted on October 6, 1896, No. 568,877. The rule applicable to the case under discussion, as laid down in the *Singer Case*, is as follows:

Where, during the life of a monopoly created by a patent, a name, whether it be *arbitrary* or be that of the inventor, has become, by his consent, either express or tacit, the identifying and generic name of the thing patented, this name passes to the public with the cessation of the monopoly which the patent created.

In the *Singer Case* the Court, speaking by Mr. Justice White, cites many authorities sustaining this proposition, and it may be instructive to refer to a few of them and to some of the other cases I have been able to find in which the question at issue has been passed upon.

In *Wheeler & Wilson Mfg. Co.* v. *Shakespear* (39 L. J. Ch., 36) Vice-Chancellor James said:

It seems to me that the name "Wheeler & Wilson machine" has come to signify the thing manufactured according to the principle of that patent. That being so, I cannot restrain anybody, after the expiration of the patent, from representing his

article as being the article which was so patented. A man cannot prolong his monopoly by saying "I have got a trade-mark in the name of a thing which was the subject of the patent," and, therefore, to that extent I think the plaintiffs are not entitled to the relief they ask.

In *Linoleum Mfg. Co.* v. *Nairn* (7 Ch. Div., 834) an attempt was made to retain the exclusive use of the word "Linoleum" after the expiration of patents for the substance to which that name was attached, and the Court said:

In the first place, the plaintiffs have alleged, and Mr. Walton has sworn, that having invented a new substance, namely, the solidified or oxidized oil, he gave to it the name of "Linoleum," and it does not appear that any other name has ever been given to this substance. It appears that the defendants are now minded to make, as it is admitted they may make, that substance. I want to know what they are to call it. That is a question I have asked, but I have received no answer; and for this simple reason, that no answer could be given, except that they must invent a new name. I do not take that to be the law. I think that if "Linoleum" means a substance which may be made by the defendants, the defendants may sell it by the name which that substance bears. * * *

In my opinion it would be extremely difficult for a person who has been by right of some monopoly the sole manufacturer of a new article, and has given a new name to the new article, meaning that new article and nothing more, to claim that the name is to be attributed to his manufacture alone after his competitors are at liberty to make the same article.

The decision also refers to the rulings of the French courts, one of which is thus set forth:

That when an invention falls into the public domain, it enters with the name which the inventor has given it, and he cannot prevent a person from employing this designation; thus, the inventor of the "harmonium" was not allowed after the expiration of his patent to prevent others from making this instrument and selling it under the name which had been given to it. (Paris, 30th December, 1859, Pattaille, 1859, 414.)

Our own courts have time after time enunciated the same doctrine. For example, in *Gally* v. *Colt's Patent Firearms Mfg. Co.* (30 Fed. Rep., 118) Judge Shipman held that the name "Universal," applied by a patentee to his patented printing-press, upon the expiration of the patent could not be appropriated by the inventor as a trade-mark.

In *Filley* v. *Child* (16 Blatch., 376) Judge Blatchford held that where stoves made under a patent had been named "Charter Oak" the public had the right, after the expiration of the patent, not only to place the stoves upon the market, but to give to them the name "Charter Oak."

In *The Tucker Mfg. Co.* v. *Boyington* (9 O. G., 455) Judge Blodgett held that the words imprinted upon a patented article of manufacture are common property from the date of the expiration of the patent and refused to enjoin the defendant, who manufactured the Tucker spring-bed, from designating it as the "Tucker Spring Bed."

It may be claimed that the authorities cited are not controlling in the present case for the reason that the patent for the compound designated "Velvril" has not expired. This I consider without force, however, for the reason that in this and similar cases where registration is sought the question is not as to the right to the trade-mark, but the right to have it *registered*. That this is so was decided by the Supreme Court in *The United States, ex rel. The State of South Carolina*, v. *Seymour, Commissioner of Patents*, (67 O. G., 1191; 153 U. S., 353,) where Mr. Justice Gray, delivering the opinion of the Court, said:

The matter in dispute in this case is not the right to the trade-mark, but the right to have it registered; the registration is only *prima facie* evidence of ownership.

By a refusal to register the mark the petitioner is not deprived of its common-law right. It can enforce any claimed right to the trade-mark in any court of competent jurisdiction as fully as though the mark were registered. In this particular case petitioner, being a foreign corporation, can bring any such suit in a Federal court.

In view of the fact that under the trade-mark act of 1881 a certificate of registry remains in force for thirty years from its date, (with certain exceptions unnecessary to be here considered,) I do not think that this Office should register trade-marks which though lawful trade-marks at the date when registry is sought will become public property before the expiration of the thirty years. By so doing the Patent Office would be placed in the light of attempting to aid in prolonging a monopoly, which manifestly, under the decisions of the courts, is unwarranted. To thus attempt to give the petitioner a monopoly for many years longer than is given by the patent "would be a fraud upon the public." (*Consolidated Fruit Jar Co.*, 14 O. G., 269.)

It has been held that the Commissioner of Patents in discharging the duties imposed upon him by the trade-mark act of March 3, 1881, is required to exercise judgment and discretion and that his duties are not ministerial. (*United States, ex rel. State of South Carolina*, v. *Seymour, Commissioner of Patents*, 66 O. G., 1167.)

Irrespective, therefore, of the question whether or not the word "Velvril" is merely the name of the applicant or the salient feature thereof I believe that registration should be refused, for by such refusal the monopoly created by the patent would not be prolonged. The monopoly created by a patent cannot and ought not to be prolonged by the registry of a name given to the material covered by the patent.

The petition is therefore denied and registration refused.

EX PARTE VIDAL.

Decided July 14, 1898.

DIVISIONAL APPLICATION, FILING DATE OF—CONSTRUCTION OF ACT OF MARCH 3, 1897.

A divisional application takes the benefit of the filing date of its original. An application filed on and after January 1, 1898, as a division of an application filed prior to said date should take the date of the original application and be governed by the statute under which said original application was filed.

ON petition.

COLORING-MATTER.

Application of Henri R. Vidal filed January 11, 1898, No. 666,351.

Messrs. Pollok & Mauro for the applicant.

DUELL, *Commissioner:*

On March 3, 1897, an act revising and amending the statutes relating to patents was approved. Under this act section 4887 of the Revised Statutes was amended to read:

Sec. 4887. No person otherwise entitled thereto shall be debarred from receiving a patent for his invention or discovery, nor shall any patent be declared invalid, by reason of its having been first patented or caused to be patented by the inventor or his legal representatives or assigns in a foreign country, unless the application for said foreign patent was filed more than seven months prior to the filing of the application in this country, in which case no patent shall be granted in this country.

Section 8 of this act provides that this act shall take effect January 1, 1898, and that section 3 amending section 4887 of the Revised Statutes shall not apply to any application filed prior to said date.

The application under consideration was filed January 11, 1898. In the preamble of the specification and in the oath applicant states that he has obtained patents in Great Britain, No. 5,535, dated March 2, 1897, and in France, No. 264,384, dated February 24, 1897. He also states in his specification that this application is a division and continuation of his application filed July 24, 1897, Serial No. 645,859.

When the Examiner considered this application, he informed the applicant that—

this application having been filed complete since January 1, 1898, is subject to the act of Congress taking effect on that date which provides that no patent shall be allowed where foreign patents have been obtained on applications filed more than seven months prior to the filing of the application in this country.

Foreign patents having been obtained for the subject-matter of this application upon application filed more than seven months prior to the filing here, a patent must be refused in accordance with the act of Congress aforesaid.

The applicant replied to this by calling the Examiner's attention to the fact "that this application is a division of an application filed July 24, 1897," and requested action on the merits.

The Examiner's reply was:

The fact that an application is a divisional application does not relieve it from statutory requirements, and this application is again rejected because patents for the same invention have been allowed on applications filed more than seven months before the filing of this application.

From this action petition is taken, the applicant contending that as the application under consideration is a division of the application filed before January 1, 1898, it relates back to the date of filing the original application, and requesting the Commissioner to—

instruct the Primary Examiner to the effect that the rights of an inventor in respect of a divisional application are determined according to the law prevailing at the date of the original application.

While the action of the Examiner has been put in the form of a rejection, yet the question involved is such a one as may be passed upon by the Commissioner on petition, and I have deemed it advisable to do so.

It has been the uniform practice of the courts and of this Office, so far as I am aware, to hold that when an applicant divides his application he does not lose the benefit of the original filing date, and that a divisional application takes the date of the original application. The statutes prohibit the granting of a patent on an application filed more than two years after the invention has been in public use or on sale, but a defense of two years public use or sale must relate back to the first or original application and not to the second application filed as a division thereof. (*Sterling Co.* v. *St. Louis Brewing Association*, 79 Fed. Rep., 80, and cases therein cited.)

Although the statutes as amended by the act of March 3, 1897, prohibit the grant of a patent on an application filed after the first day of January, 1898, where the applicant has obtained a foreign patent on an application filed more than seven months prior to the filing of the application in this country, yet I am of the opinion that, following the rulings in public-use and other cases, an application filed on and after January 1, 1898, as a division of an application filed prior to said date should take the date of the original application and be governed by the statute under which said original application was filed. As the petitioner's original application was filed prior to the date when the amendment to section 4887 of the Revised Statutes went into effect, the action of the Examiner is overruled.

The petition is granted.

BREUL *v.* SMITH.

Decided May 13, 1898.

1. APPEAL.

It is well settled that an appeal must be from a decision and not from the grounds thereof.

2. SUSPENDING INTERFERENCE—MOTION TO TAKE ACTION ON SUGGESTION OF EXAMINERS-IN-CHIEF.

Hearing on an appeal in an interference will not be suspended to permit a contestant to be heard on a motion to compel his opponent to take prompt action upon a recommendation of the Examiners-in-Chief.

ON motion.

WIRE CHAIN.

Application of Richard A. Breul filed April 5, 1897, No. 630,784. Application of Friend W. Smith, Jr., filed April 3, 1897, No. 630,494.

Messrs. Baldwin, Davidson & Wight for Breul.

Messrs. Gifford & Bull and *Mr. W. G. Henderson* for Smith.

GREELEY, *Assistant Commissioner:*

This case comes before me on two motions, one by Breul and one by Smith. It seems that the Examiners-in-Chief affirmed a motion to dissolve on an appeal brought by Smith. In their decision in this case they took occasion to mention a claim which, in their opinion, Smith had a right to make. Thereupon Breul, the successful party, brought an appeal to the Commissioner, and he also brought a petition to the Commissioner in which he asked, after reciting the history of the case, and particularly the fact of the appeal above mentioned, that he be heard upon the questions raised by his motion to dissolve the interference, asserting that the decision has virtually allowed Smith a claim which differs in no respect from the issue, in order that a decision may be reached as to whether he shall be forced into a second interference with Smith upon the same invention, and also that he may have a decision upon whether or not the questions raised by the present interference are *res adjudicata* as between the parties by reason of the former interference, and also several other questions. He has moved that the hearing upon the petition and appeal be suspended and also for an order on Smith requiring him to take prompt action before the Primary Examiner upon the recommendation of the Examiners-in-Chief and directing that such proceedings be *inter partes*. Smith has moved to dismiss both the appeal and the petition on the ground that said appeal and petition are not brought in accordance with the statutes and rules.

Breul practically admits that his course in bringing the appeal and petition is anomalous, but states that he was unable to discover any better way to obtain what he believed were his rights and bring the whole matter before the Commissioner.

It is too well settled to need further comment that an appeal should be from a decision and not from the grounds upon which the decision was based, and that consequently no party can bring an appeal from any decision favorable to him. It is also clear that the matters now brought to my attention are not properly reviewable by me in the present stage of the proceedings.

The interference having been dissolved the files should be returned to the Primary Examiner. Should both parties make the claim suggested by the Examiners-in-Chief, a new interference with that claim as the issue will be declared, and on the declaration of such interference the respective parties will be entitled to make and have determined any and all motions for dissolution provided for by the rules, precisely as if the present interference had not been declared.

Breul's appeal, his motion to suspend, and his motion for an order upon Smith to take prompt action are each dismissed, it being understood that such dismissal does not in any way prejudice Breul's right to make such motions as are permitted by the rules in any interference which may hereafter be declared between these parties.

WEBB v. LEVEDAHL.

Decided May 20, 1898.

1. AMENDING PRELIMINARY STATEMENTS AFTER TAKING TESTIMONY.
   A motion for leave to amend a preliminary statement brought by the senior party after testimony-in-chief has been taken may be granted when notice of such intended motion has been given and when any statements in the testimony may be met by rebuttal testimony.
2. AMENDING PRELIMINARY STATEMENT—NOTICE.
   Notice of intention to move for amended statement given at the beginning of testimony-in-chief is sufficient notice.

APPEAL on motion.

BICYCLE.

Application of George S. Webb filed December 16, 1895, No. 572,315. Application of Axel Levedahl filed July 22, 1895, No. 556,720.

Messrs. Gridley & Hopkins for Webb.
Messrs. Poole & Brown for Levedahl.

GREELEY, *Assistant Commissioner:*

This case comes before me on Webb's appeal from the decision of the Examiner of Interferences granting a motion by Levedahl for permission to amend his preliminary statement and in effect denying a motion by Webb to strike from the record a previous amended statement filed by Levedahl.

Both parties have already filed amended statements. Webb has taken his testimony-in-chief and Levedahl has taken his testimony. Testimony in rebuttal has not been taken. Notice of the filing of Levedahl's present motion was given during the taking of his testimony (page 31) and was to the effect that any facts testified to by the witnesses and which might tend to show a date of conception earlier than that already set up by Levedahl came to light no earlier than a few days previous and that a motion would be made, in case they proved material or important, to change the date of the preliminary statement accordingly. In his brief on the present appeal Levedahl states that the admission of Levedahl's second amended statement is needed only by reason of a technical rule of the Patent Office and will not affect the general result for the reason that while such statement seeks to advance the date of his disclosure somewhere from one to six months it does not change the chronological sequence of dates of disclosure already set up, since the date already set up for Levedahl's conception is several months in advance of that of Webb.

In his brief Levedahl points out that Webb had notice of his intention to make the present motion soon after his testimony began and that the motion was brought before the conclusion of the testimony; that it was made with all due diligence under the circumstances; that Webb's rights are in no way affected, because the intent was promptly avowed and the relative positions of the parties not changed, and, finally, that the decision of the Commissioner in *Kasson* v. *Hetherington* (63 MS. Dec., 403) exactly supports the decision of the Examiner of Interferences.

Webb asserts that Levedahl was not diligent; that the facts were known to Levedahl prior to the time of taking his testimony, as is shown by the affidavit of one Hopkins; that the notice given in Levedahl's behalf is based upon facts which were developed before the taking of any testimony was begun, and cites the decision of *Smith and Thomas* v. *Cowles* (30 O. G., 343) in his behalf.

His motion to strike from the record Levedahl's amended preliminary statement is based upon the ground that as to the time when and the manner in which the alleged errors in the original preliminary statement were discovered, the affidavit of Levedahl accompanying the motion for leave to file such statement is false, as disclosed by the facts of the testimony. He seeks to support this proposition by quotations from the testimony.

On behalf of Levedahl, with reference to Webb's motion, it is contended that the affidavit of Levedahl referred to established beyond question that said Levedahl made an earnest effort to ascertain the facts before he filed his original statement and that his failure was due to no lack of effort or intelligence, though possibly of experience.

It seems with reference to Levedahl's motion that his adversary had sufficient notice and, furthermore, that he will yet have an opportunity by rebuttal testimony to meet the facts set up in Levedahl's testimony. The grant of this motion is in accordance with the general court practice and with the decision in *Kasson* v. *Hetherington*, above. Webb's motion brings up facts which can be more fully and properly reviewed on final hearing.

The decision of the Examiner of Interferences granting Levedahl's motion to amend his preliminary statement and denying Webb's motion to dismiss is affirmed.

EX PARTE WOODWORTH.

Decided May 26, 1898.

1. POWER OF ATTORNEY, REVOCATION OF—DEATH OF APPLICANT.
   The death of an applicant acts as a revocation of the power of attorney given by him.
2. SAME—SAME—NOTICE TO REPRESENTATIVE OF DECEASED INVENTOR.
   Legal notice not having been given to representative of a deceased inventor and such representative not having waived notice, he is not bound by interference proceedings or by an adverse decision on the question of priority.

ON petition.

TEMPORARY BINDER.

Application of James E. Woodworth filed March 28, 1896, No. 585,176.

Messrs. Munday, Evarts & Adcock and *Mr. H. N. Low* for the assignee.

GREELEY, *Assistant Commissioner:*

A little more than a month after the filing of this application—to wit, on May 6, 1896—the applicant, Woodworth, died. An interference was declared on or about May 29, 1896, between this application and the application of one Heinn. At the date of the declaration of this interference the Office was not aware of the death of the applicant, Woodworth. The notice of the declaration of interference was sent to the attorney of record. On the 18th of June, 1896, the Office received from the attorney notice of the inventor's death and a suggestion that proceedings be suspended until an administrator should be appointed. The interference was suspended for a time, and later, upon a second suggestion from the same attorney, it was again suspended, although the other party protested against such second suspension. The second suspension extended to October 1, 1896. The widow of the applicant, Woodworth, Hattie B. Woodworth, was appointed administratrix July 8, 1896. She did not file letters of administration in the case, and it does not appear that any notice of the declaration of interference or of any proceedings thereunder was given to her. A copy of the letters of administration was filed in this Office September 14, 1896. It appears that such copy was not filed by the administratrix, nor was its filing authorized by her or known to her. Under such circumstances it is clear that the filing of this copy of letters of administration cannot be construed as an appearance in the case by the administratrix.

The death of the applicant, Woodworth, necessarily operated as a revocation of the power of attorney originally given by him. There was no one in the case at the time the interference was declared to whom notice of the declaration could be sent. The decision in the case of *Decker* v. *Loosley* (77 O. G., 2140) indicates the manner in which, in case of the death of an inventor, legal notice may be given of interference proceedings. No such notice was in fact given in this case. The legal representative of the deceased inventor not having received legal notice of the proceedings is not bound by them. The administratrix could no doubt legalize the proceedings in the interference by waiving notice. As she does not waive notice, but insists that by reason of lack of notice to her the proceedings are null and void, they must be so declared.

The decision awarding priority to Heinn in the interference and the subsequent rejection of the claims of Woodworth's application must be and are hereby set aside.

The petition is granted.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Third Circuit.

MORGAN ENVELOPE COMPANY v. WALTON *et al.*

Decided April 1, 1898.

1. TRADE-MARK—SIMILARITY OF LABEL.
   The appellant adopted for its packages a label bearing as a central figure a symbolical representation of Columbia, having the word "Columbia" on its pedestal and surrounded by a rectangular border or framing having a star at each corner and bearing at each side edge of the package the word "Columbia" in fanciful design and at each end of the package the words "Pure Tissue." The appellees adopted for their packages a label having printed in large letters diagonally across the face the word "Columbia," surrounded by a rectangular border, within which are fanciful corner designs, a peculiar design near the middle of the left-hand side, a conspicuous figure of a stork in the lower part of the right-hand side, the printed words "Medicated Toilet Paper," and the figures and words "1000 sheets—Wire Looped." *Held* that save in the common use of the word "Columbia," which is open to both parties, the labels are wholly unlike. (81 O. G., 1615, reversed.)
2. SAME—"COLUMBIA"—GEOGRAPHICAL TERM.
   Following the decision of the Supreme Court in *Columbia* v. *Alcorn*, (65 O. G., 1916; 150 U. S., 460,) that a word in common use as designating a locality or section of country cannot be appropriated by any one as his exclusive trade-mark, *Held* that the appellees' claim or right to the exclusive use of the word "Columbia" as a designation of tissue or toilet paper cannot be maintained.

APPEAL from the Circuit Court of the United States for the District of New Jersey.

Before ACHESON, DALLAS, and BRADFORD, Judges.

Mr. Melville Church and *Mr. J. B. Church* for the appellant.

Mr. Walter D. Edmonds for the appellees.

ACHESON, *J.:*

This is an appeal from an interlocutory order or decree upon cross-application for preliminary injunction. The material facts, as they appear from the original bill and answer, the cross-bill, exhibit, and affidavits, are as follows:

In the year 1885 the Morgan Envelope Company, (the appellant,) a manufacturer and vender of tissue or toilet paper, devised and adopted for its packages of paper a wrapper or label bearing as a central figure a symbolical or allegorical representation of Columbia, having the word "Columbia" on its pedestal, and surrounded by a rectangular border or framing having a star at each corner and bearing at each side edge of the package the word "Columbia" in fanciful design and at each end of the package the words "Pure Tissue." This wrapper or label the appellant continuously applied to its packages of toilet-paper from its adoption in

1885 until the entry of the injunction order in this case.

In the year 1883 David S. Walton and George West, trading under the firm-name of D. S. Walton & Co., (the appellees,) manufacturers and venders of tissue or toilet paper, devised and adopted for their packages of toilet-paper a wrapper or label having printed in large letters diagonally across the face the word "Columbia," surrounded by a narrow rectangular border, within which are fanciful corner designs, a peculiar design near the middle of the left-hand side, a conspicuous figure of a stork in the lower part of the right-hand side, the printed words "Medicated Toilet Paper," and the figures and words "1000 sheets—Wire Looped." This wrapper or label the appellees have applied to paper packages continuously from its adoption by them in 1883.

Except in the common use of the word "Columbia" these two wrappers or labels are entirely dissimilar. Both in details and in general effect they are unmistakably different. No purchaser using the slightest attention could mistake the one for the other.

Until after this litigation began neither of these parties had any knowledge or information of the existence or use of the wrapper or label of the other.

The original bill was filed on February 24, 1897, by the Morgan Envelope Company against D. S. Walton & Co. and charged the defendants with the then use upon their packages of toilet-paper of a wrapper or label which was a counterfeit of the plaintiff's wrapper or label. In their answer the defendants admitted that they were then so using and intended to continue to so use a wrapper or label which was substantially identical with that of the plaintiff, and they justified their use thereof on the ground that they were the original appropriators and users of the word "Columbia" as a trade-mark applied to tissue or toilet paper, and they set forth that before the plaintiff had adopted its said wrapper or label they, the defendants, had adopted and used and thereafter continuously used upon packages of toilet-paper their wrapper or label, (above described,) a copy of which they attached to their answer. D. S. Walton & Co. then filed a cross-bill against the Morgan Envelope Company. The cause having been heard upon the pleadings, exhibits, and affidavits, on cross-motions for preliminary relief, the court refused to grant a preliminary injunction against D. S. Walton & Co. under the prayer of the original bill, but under the prayer of the cross-bill granted against the Morgan Envelope Company a preliminary injunction which restrains that company from applying its said wrapper or label to tissue or toilet paper and from making any use of the word "Columbia" upon any wrapper or label applied to such paper.

Upon careful consideration of the facts we find ourselves unable to concur in the conclusions which the court below reached. In *Columbia Mill Company* v. *Alcorn*, (65 O. G., 1916; 150 U. S., 460, 466,) which involved the complainant's right to the exclusive use of the word "Columbia" as a trade-mark for flour of its manufacture, the Supreme Court of the United States decided that the general rule that a word in common use as designating locality or section of a country cannot be appropriated by any one as his exclusive trade-mark applies to the word "Columbia." The Court there declared:

> The appellant was no more entitled to the exclusive use of the word "Columbia" as a trade-mark than he would have been to the use of the word "America," or "United States," or "Minnesota," or "Minneapolis." These merely geographical names cannot be appropriated and made the subject of an exclusive property. They do not, in and of themselves, indicate anything in the nature of origin, manufacture or ownership; and in the present case the word "Columbia" gives no information on the subject of origin, production, or ownership.

All this is strictly applicable here, and the ruling, we think, is decisive against the appellees' claim of right to the exclusive use of the word "Columbia" as a designation of tissue or toilet paper.

Nor can the injunction against the Morgan Envelope Company be sustained on the ground of unfair competition. Certainly the appellant is not justly chargeable under the proofs with bad faith or wrongful purpose. It has been guilty of no intentional unfairness. It has not employed imitative devices to draw trade from the appellees to itself. The appellant devised and adopted its label without knowledge of the appellees' label. For more than ten years the appellant had continuously used its label in the course of trade without any information that the other label existed. Then there is no misleading similarity here. Save in the common use of the word "Columbia," which, as we have seen, is open to both parties, the appellant's label and the appellees' original label are wholly unlike.

Apart from the mere use of the word "Columbia" the appellees' original label, by reason of its characteristic arrangement, designs, and figures, no doubt constitutes a lawful trade-mark. So, likewise, the appellant's label involves a valid trade-mark, and by the admissions contained in their answer the appellees are infringers thereof. It follows, therefore, that the interlocutory order or decree must be wholly reversed.

The interlocutory order or decree of the court below is reversed, and the injunction against the Morgan Envelope Company is dissolved, and the cause is remanded to the circuit court with direction to grant a preliminary injunction against the firm of D. S. Walton & Co. in accordance with the views expressed in the foregoing opinion.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 84.—No. 6. TUESDAY, AUGUST 9, 1898. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 19, 1898.

SIR: The Secretary of the Interior has ordered that M. L. Butler, of Whitesville, N. Y., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
WM. H. DE LACY,
Acting Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 19, 1898.

SIR: The Secretary of the Interior has ordered that Benjamin E. Dry, of Reading, Pa., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
WM. H. DE LACY,
Acting Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 19, 1898.

SIR: The Secretary of the Interior has ordered that Morris Loenshal, of Toledo, Ohio, be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
WM. H. DE LACY,
Acting Chief Clerk.

The Commissioner of Patents.

Notice of Interference—Loosley v. Decker.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 11, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

An interference having been declared by this Office between the application of Ernest A. Loosley, deceased, of Birmingham, Ala., and an application of William Lloyd Decker, of Worcester, Mass., whose attorney of record is Rufus B. Fowler, of same place; and the notices of said declaration, mailed by the Patent Office in the usual manner to the said heirs, executor, or administrator of Ernest A. Loosley, deceased, having elicited no response, notice is hereby given to such heirs, executor, or administrator that if it is desired to contest this interference communication with the Commissioner of Patents should be immediately established, in order that the above-mentioned notices may be duly forwarded at once.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

C. H. DUELL,
Commissioner.

War Revenue—Stamp Tax.

Certificate of Officer Before Whom Depositions are Taken in Interference Proceedings.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 28, 1898.

Under the provisions of the war revenue act approved June 13, 1898, certificates which are required by law must have a stamp of the value of ten cents affixed thereto and canceled. A certificate of an officer before whom depositions are taken to be used in interference proceedings in the Patent Office is such a certificate as requires a revenue stamp, and until the proper revenue stamp is affixed and canceled in accordance with said act such depositions will not be entered or considered in interference proceedings.

A. P. GREELEY,
Acting Commissioner.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 9, 1898.

Labels.

6,686.—Title: "CUPID'S GAME." (For Cigars.) *American Lithographic Company*, New York, N. Y. Application filed July 12, 1898.

6,687.—Title: "HAMILTON MEDICAL CO'S REMEDIES." (For Medicine.) *The Hamilton Medicine Company*, Cincinnati, Ohio. Application filed July 2, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 2, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Between one and two months.			
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	June 20	July 25	169
102	XIX. Stoves and Furnaces	June 3	July 23	195
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	June 20	July 18	144
38	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	June 6	July 18	177
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	June 8	July 12	172
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 6	July 12	143
	Between two and three months.			
260	VIII. Furniture, Beds, Store Furniture, etc.	May 13	July 25	324
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	May 5	July 20	179
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	May 9	July 18	174
255	XII. Mechanical Engineering Store-Service, etc.	May 14	July 16	190
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	May 2	July 16	237
89	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	May 9	July 13	348
	Between three and four months.			
240	VII. Velocipedes	Apr. 14	July 19	525
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Apr. 12	July 19	385
128	XXIV. Sewing-Machines, Apparel, and Toilet.	Apr. 11	July 19	319
248	XVIII. Steam-Engineering, etc	Apr. 9	July 19	316
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Apr. 8	July 18	497
93	XXI. Textiles, etc	Apr. 2	July 10	284
258	X. Carriages and Wagons	Apr. 27	July 8	193
	Between four and five months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Mar. 28	July 25	354
128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Mar 17	July 25	141
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Mar. 29	July 19	126
120	IX. Hydraulics, Fire-Extinguishers, etc.	Mar. 12	July 19	282
246	I. Tillage and Fences	Mar. 22	July 18	220
106	II. Farm Stock, Products, etc.	Mar. 15	July 18	539
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Mar. 26	July 12	376
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Mar. 5	July 5	373
	Between five and six months.			
217	XXXIII. *Trade-Marks, etc., †Designs. Drafting, and Optics.	Feb. 2	July 21	225
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Feb. 21	July 19	422
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Feb. 14	July 5	787
	Between six and seven months.			
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Jan. 28	July 20	480
	Between seven and eight months.			
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Dec. 6	July 21	475
215	XVII. Printing, Type-Writing Machines, and Linotyping.	Dec. 28	July 19	458
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	Dec. 3	July 19	276
96	XXX. Paper Manufactures. Lamps, and Gas-Fittings.	Dec. 27	July 18	283
	Between eight and nine months.			
261	XXXVI. Weighing and Measuring Devices and Driers.	Nov. 18	June 22	322

Total number of applications awaiting action 11,110

Under one month.			
Designs	July 22	July 25	92
Trade-Marks	July 23	July 22	79

ISSUE OF AUGUST 9, 1898.

Patents	433	No. 608,505 to No. 608,907, inclusive.
Designs	47	No. 29,165 to No. 29,211, inclusive.
Trade-Marks	20	No. 31,847 to No. 31,866, inclusive.
Labels	2	No. 6,636 to No. 6,637, inclusive.
Prints	None.	
Reissues	None.	
Total issue	502	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3		New Hampshire		
Arizona Territory			New Jersey	26	
Arkansas	5		New Mexico Territ'y		
California	11		New York	65	2
Colorado	2		North Carolina	2	
Connecticut	20	1	North Dakota		
Delaware	1		Ohio	32	4
District of Columbia			Oklahoma Territory	1	
Florida	3		Oregon	5	
Georgia	2		Pennsylvania	40	1
Idaho			Rhode Island	1	
Illinois	35		South Carolina		
Indian Territory	2		South Dakota	2	
Indiana	11		Tennessee	4	
Iowa	15	1	Texas	11	
Kansas	5		Utah	1	
Kentucky	2		Vermont		
Louisiana	4	1	Virginia	1	
Maine	3	1	Washington	1	
Maryland	3	1	West Virginia	3	1
Massachusetts	47	5	Wisconsin	10	1
Michigan	8		Wyoming	1	
Minnesota	5		U. S. Army		
Mississippi			U. S. Navy		
Missouri	17		Total to citizens of the United States	420	19
Montana	5				
Nebraska	5				
Nevada					

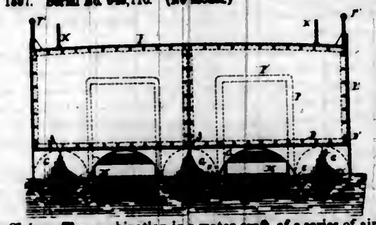
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Italy	1	
Australia			Mexico		
Austria-Hungary	4		Netherlands		
Belgium	4		Newfoundland		
Bermuda			New South Wales		
Brazil			New Zealand	2	
Canada	1		Norway		
Cape Colony			Portugal		
Chile, Republic of			Queensland		
China			Russia	1	
Colombia			Scotland	3	
Cuba			South African Republic		
Denmark			South Australia		
Egypt			Spain		
England	27	1	Sweden	1	
Finland			Switzerland	2	
France	4		Turkey		
Germany	10	2	Victoria		
Guatemala					
Hawaii			Total to citizens of foreign countries	60	3
India					
Ireland					

PATENTS

GRANTED AUGUST 9, 1898.

608,565. BOAT. DENIS ARDEN, New York, N. Y. Filed Aug. 23, 1897. Serial No. 649,110. (No model.)



Claim.—The combination in a water-craft, of a series of air-tight metallic cylinders, each having a plurality of transverse partitions *a* forming separate air-compartments, a manhole and air-tight cover for each compartment, a hand-hole and suitable cover for each manhole-cover, curved plates C riveted to and holding said cylinders parallel to each other, a horizontal deck D covering said cylinders and suitably secured thereto and to the curved plates, an upper deck supported upon and above the deck first mentioned, shaft or shafts carrying propellers or paddle-wheels operatively mounted upon the lower deck, and separately-formed prow and stern portions suitably secured to the body portion of the craft, the stern portion being provided with rudders and operating-gearing therefor, substantially as herein shown and specified.

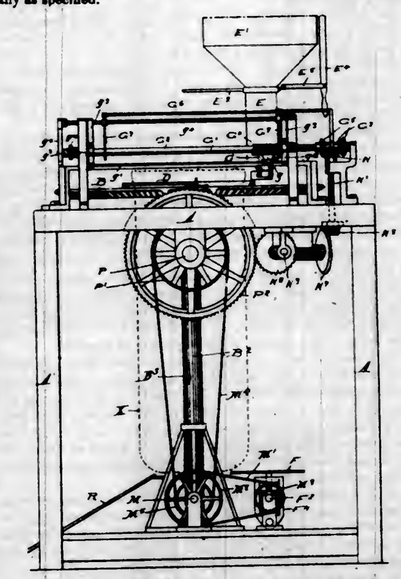
608,566. BICYCLE-HANDLE. EDWARD ANDERSON, Elgin, Ill. Filed Dec. 22, 1896. Serial No. 616,751. (No model.)



Claim.—In a device of the class described, the combination of a headed lug having a slot and provided with toothed flanges located at opposite sides of the slot, a handle-bar mounted to turn in said lug, a screw connected with the handle-bar and passing through the slot, a lock-nut slidably mounted upon the clamping-screw and having oppositely-disposed cogs to interlock with the toothed flanges, a tongue detachably mounted on the lock-nut at one side thereof and arranged in the space between the flanges to form a guide, said tongue being adapted to operate in advance or in rear of the screw, whereby the lock-nut may be reversed to permit the screw to be arranged at the extreme ends of the slot, and a clamping-nut engaging the screw and having a threaded connection with the lock-nut, substantially as described.

308,567. AUTOMATIC SACK FILLING AND SEWING MACHINE. NICHOLAS F. BRADLEY, Cincinnati, Ohio, assignor to Charles Dickinson, Chicago, Ill. Filed Mar. 1, 1897. Serial No. 625,954. (No model.)

Claim.—1. In a sack filling and sewing machine the combination with a series of opening and closing sack-holders, of an intermittently-movable carrier upon which said holders are mounted, a traveling sewing-carriage provided with a sewing device or mechanism mounted thereon, a sack-filling device, a shaker, means for opening and closing the holders, means for locking the holders open and closed, means for intermittently moving and locking the holder-carrier in position, means for operating the sewing device on said traveling sewing-carriage, and means for operating the shaker, substantially as specified.



2. The combination with a series of opening and closing sack-holders for holding the sack open while being filled and closed while being sewed, of an intermittently-movable carrier upon which said holders are mounted, and a traveling sewing-carriage provided with a sewing mechanism, substantially as specified.

3. The combination with an intermittently-movable sack-holder carrier for holding the sack open while being filled and closed while being sewed, of a sack-holder mounted on said carrier, and a traveling sewing device, substantially as specified.

4. The combination with a series of opening and closing sack-holders for holding the sack open while being filled and closed while being sewed, of an intermittently-movable carrier upon which said holders are mounted, a traveling sewing-carriage provided with a sewing mechanism, and a sack-filling device, substantially as specified.

5. The combination with a series of opening and closing sack-holders for holding the sack open while being filled and closed while being sewed, of an intermittently-movable carrier upon which said holders are mounted, a traveling sewing-carriage provided with a sewing mechanism, a sack-filling device, and a shaker, substantially as specified.

6. The combination with a sack-filling device, of a series of movable sack-holders for holding the sack open while being filled and closed while being sewed, and a traveling sewing device, substantially as specified.

7. The combination with a sack-filling device, of a series of movable sack-holders for holding the sac.. open while being filled and closed while being sewed, a traveling sewing device, and a carrier

for intermittently moving the holders successively from the filling device to the sewing device, substantially as specified.

8. The combination with a sack-filling device, of a series of movable sack-holders for holding the sack open while being filled and closed while being sewed, a traveling sewing device, a carrier for intermittently moving the holders successively from the filling device to the sewing device, and a sack-shaking device, substantially as specified.

9. The combination with an intermittently-rotating sack-holder carrier, of a series of opening and closing sack-holders mounted thereon, locking devices on said carrier for automatically locking the holders in their open and closed positions, and means for automatically operating or releasing said locking devices as the carrier rotates, substantially as specified.

10. The combination with an intermittently-rotating sack-holder carrier, of a series of opening and closing sack-holders mounted thereon, means for automatically opening and closing the holders, and locking devices on said carrier for automatically locking the holders in their open and closed positions, and means for automatically operating or releasing said locking devices as the carrier rotates, substantially as specified.

11. The combination with an intermittently-rotating sack-holder carrier, of a series of opening and closing sack-holders mounted thereon, means for automatically opening and closing the holders, locking devices on said carrier for automatically locking the holders in their open and closed positions, means for automatically operating or releasing said locking devices as the carrier rotates, and a sack-filling device, substantially as specified.

12. The combination with an intermittently-rotating sack-holder carrier, of a series of opening and closing sack-holders mounted thereon, means for automatically opening and closing the holders, locking devices on said carrier for automatically locking the holders in their open and closed positions, and means for automatically operating or releasing said locking devices as the carrier rotates, a sack-filling device, and a traveling sack-sewing mechanism, substantially as specified.

13. The combination of a revolving sack-holder carrier, provided with guides for an opening and closing sack-holder, with an opening and closing sack-holder moving in or on said guides in opening and closing, the guides on the carrier at two of the pivots of the holder being guideways or channels, and at the other two pivots of the holder being reciprocating slides, substantially as specified.

14. The combination of a revolving sack-holder carrier, provided with guides for an opening and closing sack-holder, with an opening and closing sack-holder moving in or on said guides in opening and closing, the guides on the carrier at two of the pivots of the holder being guideways or channels, and at the other two pivots of the holder being reciprocating slides, and pawls or latches on the carrier engaging said guide-slides for locking the holder in its open and closed positions, substantially as specified.

15. The combination with a revolving sack-holder carrier of an opening and closing sack-holder mounted thereon, reciprocating guide-slides on the carrier and connected to the holder, said guide-slides being provided with notches and pawls or latches on the carrier engaging said guide-slides, substantially as specified.

16. The combination with a revolving sack-holder carrier of an opening and closing sack-holder mounted thereon, reciprocating guide-slides on the carrier and connected to the holder, said guide-slides being provided with notches and pawls or latches on the carrier engaging said guide-slides, and stationary cams or projections for operating said pawls or latches as the carrier revolves, substantially as specified.

17. The combination with a revolving sack-holder carrier of an opening and closing sack-holder mounted thereon and provided with cams or inclines d^5 d^6 on two of its hinged bars, and stationary projections engaging said cams or inclines on said holder to close the same as the carrier revolves, substantially as specified.

18. The combination with a revolving sack-holder carrier of an opening and closing sack-holder mounted thereon and provided with cams or inclines d^5 d^6 on two of its hinged bars, stationary projections engaging said cams or inclines on said holder to close the same as the carrier revolves, guide-slides on the carriers and connected to the holder, and pawls or latches on the carrier engaging said guide-slides to lock said holder closed, substantially as specified.

19. The combination with an intermittently-movable sack-holder carrier, of a sack-holder mounted thereon, a traveling sewing-carriage, a screw for reciprocating said carriage, a reciprocating needle and looper operating slide mounted on said sewing-carriage, a needle operated by said slide, a vibrating looper mounted in said sewing-carriage, and connecting mechanism for vibrating said looper by the reciprocation of said slide, substantially as specified.

20. The combination with an intermittently-movable sack-holder carrier, of a sack-holder mounted thereon, a traveling sewing-carriage, a screw for reciprocating said carriage, a reciprocating needle and looper operating slide mounted on said sewing-carriage, a needle operated by said slide, a vibrating looper mounted in said sewing-carriage, connecting mechanism for vibrating said looper by the reciprocation of said slide, and connecting mechanism for operating said slide from or by the revolution of said screw, substantially as specified.

21. The combination with a reciprocating slide of a needle connected therewith, a vibrating looper, a looper-operating rock-shaft provided with a spiral groove or cam a reciprocating sleeve provided with a pin or projection engaging said spiral groove or cam and connected with said reciprocating slide, substantially as specified.

22. The combination with a traveling sewing-carriage G of guides G′ therefor, nut G^4, screw G^3, transversely-reciprocating needle and looper operating slide g provided with pins or projections g^8, rock-shaft g^4 having arms g^6 furnished with vibrating bar g' engaging said projections g^8, slotted arms g^5 on said rock-shaft, sliding block g^7, crank g^9 journaled loosely on said screw and passing through said sliding block, and pawl g^{11} and ratchet g^{10} for locking said crank to said screw-shaft, when it revolves in one direction but not in the other, substantially as specified.

23. The combination with a traveling sewing-carriage G of guides G′ therefor, nut G^4, screw G^3, transversely-reciprocating needle and looper operating slide g provided with pins or projections g^8, rock-shaft g^4 having arms g^6 furnished with vibrating bar g' engaging said projections g^8, slotted arm g^5 on said rock-shaft, sliding block g^7, crank g^9 on said screw-shaft and passing through said sliding block, substantially as specified.

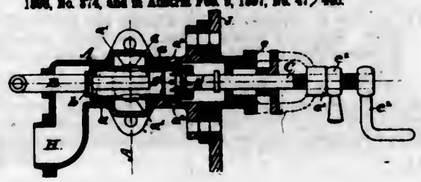
24. The combination with a traveling sewing-carriage G of guides G′ therefor, nut G^4, screw G^3, transversely-reciprocating needle and looper operating slide g provided with pins or projections g^8, rock-shaft g^4 having arms g^6 furnished with vibrating bar g' engaging said projections g^8, slotted arm g^5 on said rock-shaft, sliding block g^7, crank g^9 journaled loosely on said screw and passing through said sliding block, and pawl g^{11} and ratchet g^{10} for locking said crank to said screw-shaft, when it revolves in one direction but not in the other, a driving-gear N, and sliding sleeve G^2 on said screw-shaft G^3 furnished with gears G^2 G^2 adapted to alternately engage the driving-gear and reverse the motion of the screw-shaft, substantially as specified.

25. The combination of an intermittently-movable sack-holder carrier and an opening and closing sack-holder mounted thereon, with a traveling sewing-carriage, a screw for reciprocating said sewing-carriage, a transversely-reciprocating needle-operating slide mounted on said carriage, and connecting mechanism between the screw and said needle-slide to operate the needle-slide from or by the screw, substantially as specified.

26. The combination of an intermittently-movable sack-holder carrier and an opening and closing sack-holder mounted thereon, with a traveling sewing-carriage, a screw for reciprocating said sewing-carriage, a transversely-reciprocating needle-operating slide mounted on said carriage, connecting mechanism between the screw and said needle-slide to operate the needle-slide from or by the screw, a vibrating looper, and connecting mechanism for operating the looper from or by said needle-slide, substantially as specified.

27. The combination with a traveling sewing-carriage G of guides G′ therefor, nut G^4, screw G^3, transversely-reciprocating needle and looper operating slide g provided with pins or projections g^8, rock-shaft g^4 having arms g^6 furnished with vibrating bar g' engaging said projections g^8, slotted arm g^5 on said rock-shaft, sliding block g^7, crank g^9 journaled loosely on said screw and passing through said sliding block, and pawl g^{11} and ratchet g^{10} for locking said crank to said screw-shaft, where it revolves in one direction but not in the other, a driving-gear N, and sliding sleeve G^2 on said screw-shaft G^3 furnished with gears G^2 G^2 adapted to alternately engage the driving-gear and reverse the motion of the screw-shaft, and a slide G^2 connected to said sliding sleeve G^2 and adapted to be engaged by said carriage G to reverse the motion of said screw-shaft, substantially as specified.

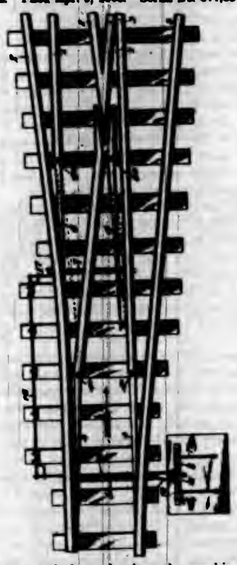
608,568. FEED-WATER REGULATOR FOR BOILERS. ALFRED RICHARDSON, Barrow-in-Furness, England. Filed May 16, 1896. Serial No. 591,619. (No model.) Patented in England June 8, 1896, No. 11,368; in Germany Apr. 12, 1896, No. 91,188; in France Apr. 17, 1896, No. 255,614; in Italy June 30, 1896, No. 31/291; in Denmark Dec. 11, 1896, No. 874, and in Austria Feb. 6, 1897, No. 47/440.



Claim.—1. In apparatus for regulating the inflow of feed-water to a boiler the combination of a valve b operated by a float D on the surface of the water in said boiler, with a valve-seating a which is capable of longitudinal adjustment relatively to said valve by means of a screwed rod C working in a gland c and screwed bracket c' on the shell J of said boiler, as herein described.

2. In apparatus for regulating the inflow of feed-water to a boiler, the combination of a valve b operated by a float D on the surface of the water in said boiler, with a valve-seating a which is capable of longitudinal adjustment relatively to said valve, said seating being provided with a port a^2 by which a free inflow of feed-water may take place when the seating a is withdrawn sufficiently to uncover it, the valve b being prevented from following the seating a by the stops B′, as described.

608,569. RAILROAD-SWITCH. BERTRAND L. BONNELL, Donnellson, Iowa. Filed Apr. 9, 1898. Serial No. 677,051. (No model.)



Claim.—1. In a switch mechanism, the combination with separate pairs of switch-rails, of an operating shaft or spindle carrying cranks, and independent means of connection between each crank and one pair of switch-rails, substantially as specified.

2. In a switch mechanism, the combination with separate pairs of switch-rails located at remote points, of an operating shaft or spindle having cranks respectively connected by independent means with said pairs of switch-rails, said cranks being set upon the quarter to give an amplitude of movement to one pair of rails in excess of the other pair, substantially as specified.

3. In a switch mechanism, the combination with separate pairs of main and auxiliary switch-rails, the latter having an amplitude of movement in excess of the former, of an operating shaft or spindle having cranks respectively connected by independent means with said pairs of switch-rails, and capable of movement through an arc approximating a semicircle, the diameters of the arcs described by said crank-arms being respectively perpendicular to and parallel with the direction of movement imparted to the connections of the main and auxiliary switch-rails, substantially as specified.

4. In a switch mechanism, the combination with separate pairs of switch-rails, of an operating shaft or spindle having perpendicularly-disposed cranks each capable of movement through an arc approximating a semicircle, and connections between each crank and one pair of switch-rails, the connections for one pair of switch-rails including a horizontally-disposed connecting crank-shaft, substantially as specified.

5. In a switch mechanism, the combination with pairs of main and auxiliary switch-rails located at remote points, the auxiliary switch-rails having an amplitude of movement which exceeds that of the main switch-rails, of an operating shaft or spindle having cranks respectively connected with said pairs of switch-rails, and each capable of movement through an arc approximating a semicircle, and the amplitude of movement imparted by the cranks to the respective connected switch-rails being of different extents, substantially as specified.

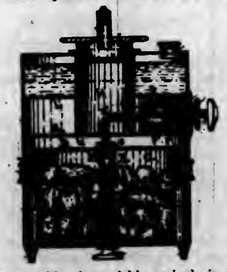
608,570. PLASTER-BOARD. MICHAEL G. F. BUCKLEY, New York, N. Y., assignor of one-half to Benjamin F. Schwartz, same place. Filed Oct. 19, 1897. Serial No. 655,730. (No model.)



Claim.—1. A plaster-board composed of a series of spaced slabs and of a common backing upon which the slabs are mounted and which is exposed between the slabs to form key-grooves, substantially as specified.

2. A plaster-board composed of a series of spaced parallel slabs, having laterally-projecting arms, and of a common wire backing upon which the armed slabs are mounted and which is exposed between the slabs to form wired key-grooves, substantially as specified.

608,571. ACETYLENE-GAS GENERATOR. FRANK E. BUNDY, Elmira, N. Y. Filed Apr. 5, 1897. Serial No. 630,842. (No model.)



Claim.—1. The combination, within an inclosing case, of a generating-chamber in the lower part of the case, a diaphragm in the upper part of the case, a secondary gas-chamber above the diaphragm and in direct communication with the generating-chamber through a restricted orifice in the diaphragm, a gas-outlet from the secondary chamber, a liquid-receptacle in the upper part of the case surrounding the secondary gas-chamber, a perforate stand-pipe in the generating-chamber, a passage leading from the liquid-receptacle to said stand-pipe, and a hand-operated valve in said passage whereby the liquid-delivery is positively adjusted or shut off substantially as described.

2. In a gas-generator, the combination, within a generating-chamber, of a solid-receptacle smaller than said chamber, a cover for the solid-receptacle provided with a restricted orifice through which the generated gas rises into the chamber above the receptacle, a gas-outlet leading from the generating-chamber outside of the covered receptacle, and means for feeding liquid to the solid in the receptacle, substantially as described.

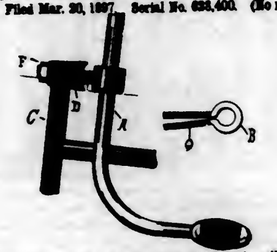
3. In a gas-generator, the combination, within an inclosing case, of a generating-chamber in the lower part of the case, a solid-receptacle within the generating-chamber, a cover for said receptacle provided with a restricted orifice through which the generated gas rises into said chamber above the receptacle, a secondary gas-chamber in the upper part of the inclosing case into which the gas passes through a second restricted orifice, a liquid-receptacle also in the upper part of the case, a valve-controlled passage leading from the liquid-receptacle to the solid in the solid receptacle, and a gas-outlet from the secondary gas-chamber, substantially as described.

4. In a gas-generator, the combination of a generating-chamber,

a solid-receptacle within the generating-chamber, a perforated stand-pipe in said receptacle, a cover for the receptacle provided with an opening which forms a restricted orifice around the top of the stand-pipe through which orifice the generated gas rises into the generating-chamber above the receptacle, a gas-outlet from said chamber, a source of liquid-supply, and a valve-controlled passage leading from the source of supply to the top of the stand-pipe, substantially as described.

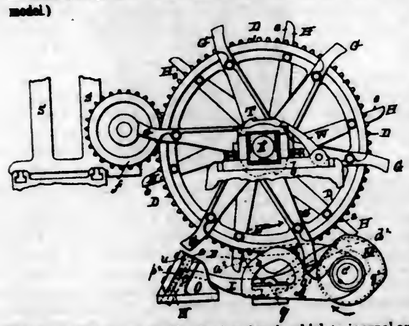
5. In a gas-generator, the combination with a solid-receptacle and a liquid-receptacle of a valve in the line of communication between the two, said valve comprising a valve-chamber having communication with the two receptacles, a screw-plug at one end of the valve-chamber, a valve-stem screwed through the plug, and a set-nut on the stem inside the plug, substantially as described.

608,572. BICYCLE HANDLE-BAR. GEORGE J. BUNDAY, Paterson, N. J. Filed Mar. 20, 1897. Serial No. 628,400. (No model.)



Claim.—In a bicycle, the combination with the handle-bar A, of the clamp B having the bifurcated screw-threaded bolt portion Q, the post C, the head D secured on the post C and at right angles thereto adapted to receive the screw-threaded portion of the clamp and to partially surround the portion of the clamp that encircles the handle-bar, the convex carved portion of the head D to help hold the clamp B in its required adjusted position, and the securing-nut F, substantially as shown and described and for the purposes specified.

608,578. MECHANISM FOR CONVERTING CONTINUOUS ROTARY MOTION INTO INTERMITTENT ROTARY MOTION. JAMES A. BURDEN, Troy, N. Y. Filed Dec. 16, 1897. Serial No. 662,141. (No model.)



Claim.—1. A gear-wheel having bearings in which to journal and provided with a spur-wheel into which it meshes; radially-arranged arms constructed upon one of the gear-wheel sides; a driving-shaft adapted to be rotated continuously; a cam on said driving-shaft, constructed to engage in sequence with each of said arms to move it, and the gear-wheel part of a turn, at each revolution of said driving-shaft; and a spring stop-pin operated by said driving-shaft to engage with one of said arms to arrest and limit the measure of movement made by said gear-wheel, and then to disengage therefrom, substantially as shown and described.

2. The combination with a gear-wheel provided with bearings in which to journal, and having a spur-wheel into which it meshes; of radially-arranged arms constructed upon one side of said gear-wheel; a driving-shaft adapted to be rotated continuously; a cam on said driving-shaft, constructed to engage in sequence with each one of said arms to move it, and the gear-wheel part of a turn at each revolution of said driving-shaft; a spring stop-pin operated by said driving-shaft to arrest and limit the measure of each of the movements made by the arm and gear-wheel; and a ratchet-wheel arranged on the gear-wheel hub, and provided with a pawl whereby the detention of the gear-wheel at each period of rest may be positive, substantially as and for the purposes set forth.

3. In a mechanism for converting continuous rotary motion into intermittent rotary motion, the combination with a gear-wheel having bearings in which to journal, and a spur-wheel into which it meshes; of radially-arranged arms on each side of said gear-wheel; a driving-shaft adapted to turn with continuous rotation, and provided with two cams, one of the latter adapted to engage with one of said arms to move it, and said gear-wheel a part of a turn at each revolution of said shaft; and the other cam to make a sliding contact with one of the radial arms upon the other side of the gear-wheel to act as a brake; a spring stop-pin operated by said shaft to arrest and limit each movement of the gear-wheel; and a ratchet-wheel arranged on the hub of the latter, and provided with a pawl adapted to detain the wheel as arrested in movement by the spring stop-pin, substantially as shown and described.

4. The combination with a gear-wheel having bearings in which to journal, and a spur-wheel into which it meshes; of radially-arranged arms constructed upon each side of said gear-wheel, substantially as described; a driving-shaft adapted to be rotated continuously; two cams each provided with the same curvature of cam-surface; but mounted oppositely on said driving-shaft, with one of said cams so positioned by its cam-surface as to engage with one of said arms to move it, and the gear-wheel, part of a rotation at each revolution of said driving shaft; and the other cam by means of the reverse position of its carved surface making a sliding engagement with one of the arms upon the other side of the gear-wheel, and thus acting as a brake to prevent the gear-wheel from acquiring momentum, substantially as shown and described.

5. The combination with the gear-wheel D, having the spur-wheel *f* into which it meshes, and constructed with the radially-arranged arms G, upon one of its sides; of the driving-shaft C, adapted to be rotated continuously; the cam A, mounted upon said driving-shaft and constructed substantially as described; the incline O, the stop-pin N, mounted in the latter; the lever L, and the cam-groove wheel M, mounted upon the driving-shaft, constructed and arranged to be operated substantially in the manner as and for the purposes set forth.

6. The combination with the gear-wheel D, having the spur-wheel *f*, into which it meshes, and constructed with the radially-arranged arms G, upon one of its sides, of the driving-shaft C, adapted to be rotated continuously; the cam A, mounted upon said driving-shaft and constructed substantially as described; the incline O; the stop-pin N, mounted in the latter; the lever L, the cam-groove wheel M, mounted on said shaft, and the ratchet T, and pawl W, constructed and arranged to be operated substantially in the manner as and for the purposes set forth.

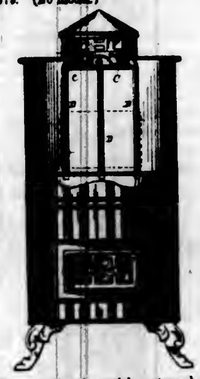
7. The combination with the shaft C, arranged to be actuated with continuous rotation; of the cams A and B, mounted thereon relatively constructed and positioned, substantially as described; the gear-wheel D, having the spur-wheel *f*, into which it meshes, and provided with the radially-arranged arms G, mounted upon one of its sides, and the radially-arranged arms H, upon the other side; the incline O, and the stop-pin N, mounted in the latter, constructed and arranged to be operated substantially in the manner as and for the purposes set forth.

8. The combination with the shaft C, arranged to be actuated with continuous rotation; of the cams A and B, mounted thereon and relatively positioned and constructed, substantially as described; the gear-wheel D, having the spur-wheel *f*, into which it meshes, and provided with the radially-arranged arms G, mounted upon one of its sides, and the radially-arranged arms H, upon the other side, and the ratchet-wheel T, arranged on the gear-wheel hub, and provided with a pawl, the incline O, and the stop-pin N, arranged in the latter, constructed and arranged to operate, substantially in the manner as and for the purposes set forth.

9. The combination with the continuously-moving shaft C, having mounted thereon the cams A and B, each constructed and positioned thereon relatively to each other substantially as described; of the gear-wheel D, meshing into the spur-wheel *f*, and having mounted upon one of its sides the radially-arranged arms G, and upon the other side, the radially-arranged arms H; the incline O, the stop-pin N, mounted to slide in the latter; the lever L, and the cam-groove wheel M, mounted on the driving-shaft, constructed and arranged to operate substantially in the manner as and for the purposes set forth.

10. The combination with the continuously-moving shaft C, having mounted thereon the cams A, and B, each constructed and positioned thereon relatively to each other, substantially as described; of the gear-wheel D, meshing into the spur-wheel *f*, and having mounted upon one of its sides the radially-arranged arms G, and upon the other side the radially-arranged arms H; the incline O, the stop-pin N, mounted to slide in the latter; the lever L, and the cam-groove wheel M, mounted on the driving-shaft, and the ratchet-wheel T, mounted upon the gear-wheel hub, and provided with the pawl W, constructed and arranged to operate, substantially in the manner as and for the purposes set forth.

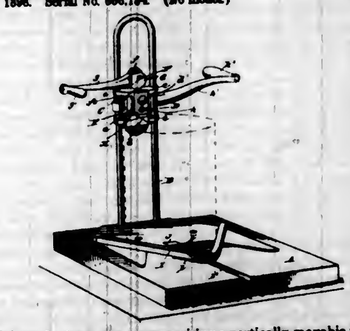
608,574. HEATING-STOVE. JOHN R. CARTER, Cincinnati, Ohio, assignor to Ernst H. Huenefeld, same place. Filed Mar. 7, 1898. Serial No. 672,979. (No model.)



Claim.—1. The combination with a stove having a fuel-opening through its top, a removable hood for closing said fuel-opening and a collar seated within said opening, of a draft-pipe carried by said collar and projecting downwardly into the fire-pot, a removable lid located within the collar and below the draft-opening therein and a damper above said draft-opening in the collar.

2. The combination with a stove having a fuel-opening through its top, a removable hood for closing said fuel-opening and a collar having an outwardly-turned flange at its upper end and an inwardly-turned flange at its lower end, the upper flange of said collar resting on the top of the stove, of a draft-flue outside the collar but secured to and depending from the same, a removable lid seated on the lower flange of the collar and a damper-plate closing the upper end of the collar.

608,575. CAN-OPENER. MATTHEW F. CONNETT, San Antonio, Tex., assignor to Layton Y. Hancock, Bexar County, Tex. Filed Jan. 10, 1898. Serial No. 666,134. (No model.)



Claim.—1. A can-opener comprising a vertically-movable frame, a blade or cutter on the frame, supports on which the frame is mounted, and a clamp for forcing the frame downward and retaining it in any desired position composed of an arm having an opening receiving one of the supports and an eccentric pivoted to the arm and bearing on the top of the frame, substantially as described.

2. A can-opener comprising a blade or cutter, a vertically-movable frame on which said cutter is mounted, a wheel or roller having a serrated periphery and mounted on the frame, supports on which the frame is capable of moving, and a clamp composed of an arm having an opening receiving one of the supports, and an eccentric pivoted to the arm and bearing on the top of the frame, substantially as described.

3. A can-opener comprising a blade or cutter adapted to move vertically, a support for the cutter, an adjustable holder for retaining a can in position adjacent to the cutter consisting of the angular bar arranged on the base of the device, the rod connected thereto, and the friction catch, and means for moving the can against the cutter, substantially as described.

4. A can-opener comprising a blade or cutter having an oblique and beveled cutting edge, a vertically-adjustable frame on which the cutter is mounted, supports on which the frame is arranged, means for retaining the frame at any desired position on the supports, and means for retaining the lower end of a can comprising the angle-bar, the rod connected to the bar, and the friction-catch, and means for rotating the can and for moving it against the cutter, substantially as described.

608,576. CONVEYING APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Apr. 25, 1895. Serial No. 547,067. (No model.)



Claim.—1. In a conveying apparatus, a track, a propelling-cable, a carrier adapted to travel on said track, a gripping mechanism attached to said carrier for engaging with said cable, guide-rods supported above said track for directing said carrier, a lever pivoted at an end and having its free end extending above said track to engage with said cable to support the latter in its proper position relative to the path traveled by said gripping mechanism, means for normally holding said lever in engagement with said cable, and means operated by said carriage for moving said lever out of engagement with the cable.

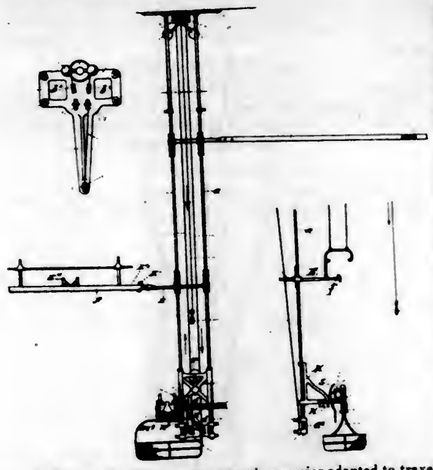
2. In a conveying apparatus, a track, a propelling-cable, a carrier adapted to travel on said track, a gripping mechanism attached to said carrier for engaging with said cable, guide-rods supported above said track for directing said carrier, a lever pivoted at an end and having its free end extending above said track to engage with said cable and to support the latter in its proper position relative to the path traveled by said gripping mechanism, a spring normally holding said lever in engagement with the cable, and a cam-plate mounted on said carrier for engaging said lever to move the latter out of engagement with the cable.

3. In a conveying apparatus, a track, a propelling-cable, a carrier adapted to travel on said track, a gripping mechanism attached to said carrier for engaging with said cable, guide-rods supported above said track for directing said carrier, a lever pivoted at an end and having its free end extending above said track to engage with said cable to support the latter in its proper position relative to the path traveled by said gripping mechanism, a spring normally holding said lever in engagement with the cable, a friction-roller carried by said lever, and a cam-plate mounted on said carrier for engaging with said friction-roller to move said lever out of engagement with the cable.

608,577. CONVEYING APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Oct. 5, 1896. Serial No. 607,822. (No model.)

Claim.—1. In a conveying apparatus, a track, a carrier adapted to travel on said track, a series of elevators each having a track-section adapted to be brought into alinement with said track, stopping

mechanism located at relatively different points on the several elevator-track sections, and stopping mechanism on the carrier adapted to be adjusted to engage with any one of said stopping mechanisms on the said elevator-track sections.



2. In a conveying apparatus, a track, a carrier adapted to travel on said track, a series of elevators each having a track-section adapted to be brought into alinement with said track, means for holding the elevator track section in alinement with said track and adapted to be released by the carrier passing onto the elevator-track section, stopping mechanism located at relatively different points on the several elevator-track sections, and stopping mechanism on each carrier adapted to be adjusted to engage with any one of said stopping mechanisms on said elevator-track sections.

3. In a conveying apparatus, a track having a removable-track section normally in line with said track, a carrier adapted to travel on said track, a series of elevators each having a track-section adapted to be brought into alinement with said track, means for holding the elevator-track section in alinement with said track and adapted to be released by the carrier passing onto the elevator-track section, stopping mechanism located at a different point on each elevator-track section, stopping mechanism on each carrier adapted to be adjusted to engage with any of said stopping mechanisms on said elevator-track sections, and a graduated back-stop adapted when said removable-track section is in alinement with said track to allow the passage of carriers belonging to stations beyond and to stop the carrier intended for the station at which said back-stop is located by engaging with said adjustable stopping mechanism on the carrier.

4. In a conveying apparatus, a track having a removable-track section normally in line with said track, a carrier adapted to travel on said track, a series of elevators each having a track-section adapted to be brought into alinement with said track, means for removing said removable-track section from alinement with said track to permit the alinement of said elevator-track section with said track, and a graduated back-stop adapted when said removable-track section is in alinement with said track to allow the passage of carriers belonging to stations beyond and to stop the carrier intended for the station at which said back-stop is located.

608,578. CONVEYING APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Nov. 10, 1896. Serial No. 611,585. (No model.)

Claim.—1. In a conveying apparatus, the combination of the tracks and propelling-cable with a terminal station into which said tracks enter, carriers adapted to travel on said tracks and each provided with a gripping mechanism for engaging the cable, and mechanism on each track at said terminal station for operating the gripping mechanism of the carriers to bring said gripping mechanism into position to grip the cable, mechanism for causing said gripping mechanism to grip the cable, the gripping mechanism of the carriers belonging to a certain track and the said grip-operating mechanism of said track being provided with registering parts whereby only carriers belonging to a certain track can grip the cable of said track and be propelled thereon.

2. In a conveying apparatus, the combination of the tracks and propelling-cable with a terminal station into which said tracks enter, carriers adapted to travel on said tracks and each provided with a gripping mechanism for engaging the cable, a lever connected to said gripping mechanism and adapted to operate the same, and a cam on each track at said terminal station for operating said lever to operate the gripping mechanism of the carriers to bring said gripping mechanism into position to grip the cable, mechanism for causing said gripping mechanism to grip the cable, the said lever of the gripping mechanism on the carriers belonging to a certain track and the cam of said track being provided with registering parts whereby only carriers belonging to a certain track can grip the cable of said track and be propelled thereon.

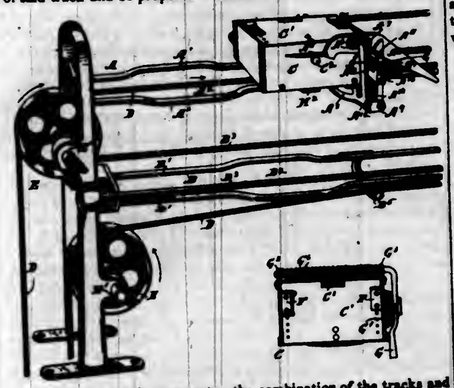


3. In a conveying apparatus, the combination of the tracks and propelling-cable with a terminal station into which said tracks enter, carriers adapted to travel on said tracks and each provided with a gripping mechanism for engaging the cable, a lever connected to said gripping mechanism and adapted to operate the same and provided with a projecting pin, and a cam on each track at the said terminal station for operating said lever to actuate the gripping mechanism of the carriers to bring said gripping mechanism into position to grip the cable and provided with slots through which said actuating-lever and pin pass to cause the engagement of the gripping mechanism and cable, mechanism located on the carriers for causing said gripping mechanism to grip the cable, the said lever and pin on the carriers belonging to a certain track being adapted to register with the slots of the cam of said track whereby only carriers belonging to a certain track can grip the cable of said track and be propelled thereon.

4. In a conveying apparatus, the combination of the tracks and propelling-cable with a terminal station into which said tracks enter, carriers adapted to travel on said tracks and each provided with a gripping mechanism for engaging the cable, a lever connected to said gripping mechanism and adapted to operate the same and provided with a projecting pin, a cam on each track at the said terminal station for operating said lever to actuate the gripping mechanism of the carriers to bring said gripping mechanism into position to grip the cable and provided with slots through which said actuating-lever and pin pass to cause the engagement of the gripping mechanism and cable, and a spring located on and acting on said lever to cause the gripping mechanism to grip the cable, the said lever and pin of the carriers belonging to a certain track being adapted to register with the slots of the cam of said track whereby only carriers belonging to a certain track can grip the cable of said track and be propelled thereon.

608,579. CONVEYING APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Feb. 17, 1896. Serial No. 670,631. (No model.)

Claim.—1. In a conveying apparatus, the combination of the tracks and propelling-cable with a terminal station into which said tracks enter, carriers adapted to travel on said tracks each provided with a gripping mechanism for engaging the cable, and grip-operating mechanism on the return-track at said terminal station, the gripping mechanism of the carriers belonging to a certain track and the said grip-operating mechanism being provided with registering parts whereby only carriers belonging to a certain track can grip the cable of said track and be propelled thereon.



2. In a conveying apparatus, the combination of the tracks and propelling-cable with a terminal station into which the tracks enter, carriers adapted to travel on said track and each provided with gripping-jaws for engaging the cable, a lever connected to said gripping-jaws and adapted to operate the same, a grip-operating mechanism consisting of a cam on the return-track at said terminal station for operating said lever, and a device for normally retaining said cam in its operative position, the said lever connected to the gripping-jaws on the carriers belonging to a certain track and the said retaining device being provided with registering parts whereby only carriers belonging to a certain track can grip the cable of said track and be propelled thereon.

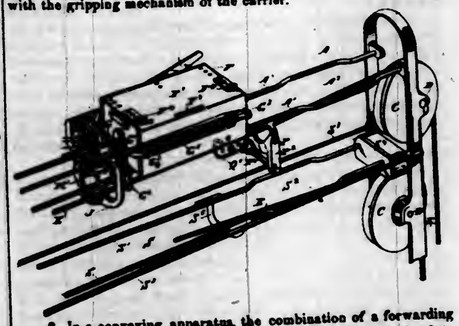
3. In a conveying apparatus, the combination of the tracks and propelling-cable with the terminal station into which the tracks enter, carriers adapted to travel on said track and each provided with gripping-jaws for engaging the cable, a lever connected to said gripping-jaws and adapted to operate the same, a grip-operating mechanism consisting of a cam on the return-track at said terminal station for operating said lever, and a latch for normally holding said cam in its operative position, the said lever connected to the gripping-jaws on the carriers belonging to a certain track and the said latch being provided with registering parts whereby only carriers belonging to a certain track can grip the cable of said track and be propelled thereon.

4. In conveying apparatus, the combination of the tracks and propelling-cable with a terminal station into which the tracks enter, carriers adapted to travel on said track and each provided with gripping-jaws for engaging the cable, a lever connected to the gripping-jaws and adapted to operate the same to actuate the gripping-jaws of the carriers to bring said gripping-jaws into position to grip the cable and provided with a projecting pin, a grip-operating mechanism consisting of a cam on the return-track at said terminal for operating said lever, a latch for normally holding said cam in its operating position and provided with a slot through which the said pin passes to cause the engagement of the gripping-jaws and the cable, and mechanism located on the carriers for causing the said gripping-jaws to grip the cable, the said pin on the carriers belonging to a certain track being adapted to register with the slot of the latch of said track, whereby only the carriers belonging to a certain track can grip the cable of said track and be propelled thereon.

5. In a conveying apparatus, the combination of the tracks and propelling-cable with a terminal station into which said tracks enter, carriers adapted to travel on said tracks each provided with a gripping mechanism for engaging the cable, grip-operating mechanism on the return-track at said terminal station, and means on each return-track for holding said grip-operating mechanism in position to operate said gripping mechanism on the carriers and adapted when actuated by the movement of a carrier placed on the wrong return-track to release said grip-operating mechanism and thereby prevent the engagement of the gripping mechanism on the carrier with the propelling-cable of said track.

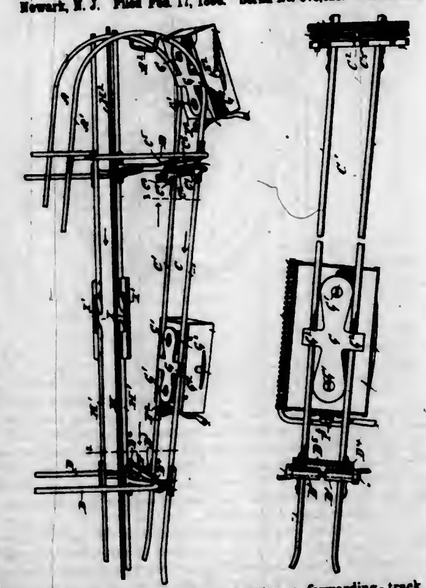
608,580. CONVEYING APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Feb. 17, 1896. Serial No. 670,632. (No model.)

Claim.—1. In a conveying apparatus, the combination of a forwarding and a return track and propelling-cable with a terminal station into which the tracks enter, carriers adapted to travel on said tracks each provided with a gripping mechanism for engaging the cable, grip-operating mechanism on the return-track at said terminal station, and mechanism at said terminal station adapted when actuated by the movement of a carrier placed on the wrong return-track to engage and remove the propelling-cable away from engagement with the gripping mechanism of the carrier.



2. In a conveying apparatus, the combination of a forwarding and a return track and propelling-cable with a terminal station into which the tracks enter, carriers adapted to travel on said tracks each provided with a gripping mechanism for engaging the cable, grip-operating mechanism on the return-track at said terminal station, and mechanism at said terminal station in position to engage the cable, the gripping mechanism on the carrier belonging to a certain track and the said cable-engaging mechanism of said track being provided with registering parts whereby only carriers belonging to a certain track can grip the cable of said track and be propelled thereon.

608,581. CONVEYING APPARATUS. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Feb. 17, 1896. Serial No. 670,633. (No model.)



Claim.—1. In a conveying apparatus, a forwarding-track, a branch return-track, a track-section normally in alinement with said branch return-track and adapted to receive the diverted carriers and having its end nearest the branch return-track adapted to be moved from its alinement to permit the removal of the carriers therefrom, and yielding means connected to said track-section for gradually checking the momentum of the carrier traveling along said track-section.

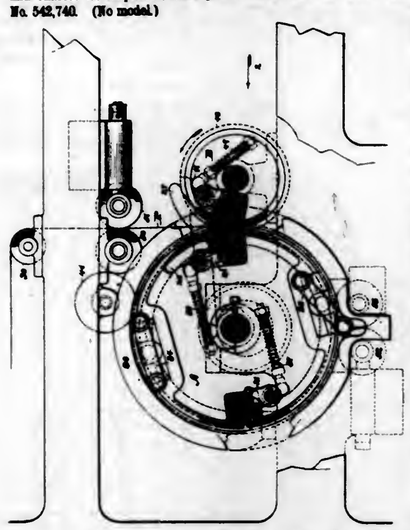
2. In a conveying apparatus, a forwarding-track, a branch re-

turn-track, a track-section normally in alinement with said branch return-track and adapted to receive the diverted carriers and having its end nearest the branch return-track adapted to be moved from its alinement to permit the removal of the carriers therefrom, yielding means connected to said track-section for gradually checking the momentum of a carrier traveling along said track-section, and means for returning said track-section to alinement with said branch return-track.

3. In a conveying apparatus, a forwarding-track, a branch return-track composed of two opposite rails, a track-section composed of two opposite rails normally in alinement with the opposite rails of the branch return-track and adapted to receive the diverted carriers and having its end nearest the branch return-track adapted to be moved from said alinement to permit the removal of the carriers therefrom, and a spring connected to said opposite rails of said track-section and adapted to yield and gradually check the momentum of a carrier traveling along said track-section.

4. In a conveying apparatus, a forwarding-track, a branch return-track composed of two opposite rails, a track-section composed of two opposite rails normally in alinement with the opposite rails of the branch return-track and adapted to receive the diverted carriers and having its end nearest the branch return-track adapted to be moved from said alinement to permit the removal of the carriers therefrom, a spring connected to said opposite rails of said track-section and adapted to yield and gradually check the momentum of a carrier traveling along said track-section, and means for returning said track-section to alinement with said branch return-track.

608,582. **CUTTING AND DELIVERY MECHANISM.** LUTHER C. CROWELL, New York, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, same place. Filed Mar. 22, 1895. Serial No. 542,740. (No model.)



Claim.—1. In a delivery mechanism, the combination with a rotating carrier provided with one member of a cutting mechanism and nipping-jaws, of a companion rotating carrier provided with a member of the cutting mechanism and a tucking-blade cooperating with said jaws, said jaws and blade being respectively adjacent to the cutting mechanism, whereby a web of material is severed transversely and the severed end is seized and carried onward by said jaws for delivery, substantially as described.

2. In a delivery mechanism, the combination with a rotating carrier provided with one member of a cutting mechanism and nipping-jaws, and with a companion rotating carrier provided with a member of the cutting mechanism and a tucking-blade cooperating with said jaws, of means for reciprocating said blade whereby a web of material is severed transversely and the leading end of the web is seized and carried onward by said jaws for delivery, substantially as described.

3. In a delivery mechanism, the combination with a rotating carrier provided with one member of a cutting mechanism and nipping-jaws, and with a companion rotating carrier provided with a member of the cutting mechanism and a tucking-blade cooperating with said jaws, of means for reciprocating said blade and means for causing said jaws to nip the sheet, whereby a web of material is severed transversely and the leading end of the sheet is seized and carried onward by said jaws for delivery, substantially as described.

4. The combination with a rotating carrier provided with nipping-jaws, one member of a cutting mechanism, and a tucking-blade operating between said jaws, of a companion rotating carrier provided with a member of the cutting mechanism, nipping-jaws and a tucking-blade operating between them, the whole cooperating to sever a web of material transversely, cause the severed end to be seized by the jaws of the one carrier to be carried around thereby for association with the web, the tucking-blade of the last-named carrier operating on a repeated revolution of its carrier to deliver the ends of the associated material to the nipping-jaws of the companion carrier and the latter to carry the same onward for delivery, substantially as described.

5. The combination with a rotating carrier provided with nipping-jaws and a tucking-blade operating between said jaws, of a companion rotating carrier provided with nipping-jaws and a tucking-blade operating between them, whereby a sheet is retained by one carrier, and delivered with the succeeding sheet to the other carrier, and the pair are associated for delivery, substantially as described.

6. A mechanism for severing a web into sheets and seizing and carrying onward the leading end of each sheet, consisting of two carriers provided with cutting mechanisms and adjacent thereto a reciprocating blade movable in one carrier, and spring-jaws in the companion carrier whereby the end of the sheet is tucked into the embrace of said jaws to be carried onward thereby, substantially as described.

7. The combination with a rotating carrier provided with one member of a cutting mechanism and nipping-jaws, of a companion rotating carrier provided with a member of the cutting mechanism, and a tucking-blade cooperating with said jaws, the carrier provided with the jaws having associated with it folding devices whereby a web of material is severed transversely, its severed end is seized and carried onward by said jaws, and said sheet is folded transversely, substantially as described.

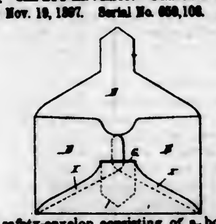
8. The combination with a rotating carrier provided with nipping-jaws, one member of a cutting mechanism and a tucking-blade operating between said jaws, of a companion rotating carrier provided with a member of the cutting mechanism, nipping-jaws and a tucking-blade operating between them, one of said carriers being also provided with folding mechanisms, the whole cooperating to sever a web of material transversely, cause the severed end to be seized by the jaws of one carrier and carried onward thereby for association with the web and the tucking-blade of the last-named carrier operating on the repeated revolution of its carrier to deliver the ends of the associated material to the nipping-jaws of the companion carrier, and the latter operating to fold the associated sheets transversely, substantially as described.

9. The combination with a rotating carrier provided with nipping-jaws and a tucking-blade operating between said jaws, of a companion rotating carrier provided with nipping-jaws and a tucking-blade operating between them, one of said carriers also being provided with folding devices whereby sheets successively fed to said carriers are associated in pairs and the pairs are folded transversely, substantially as described.

10. The combination with the carriers A, B, of the nipping-jaws 3, 5, interposed tucking-blade 7, nipping-jaws 6, 9, and interposed tucking-blade 8, substantially as described.

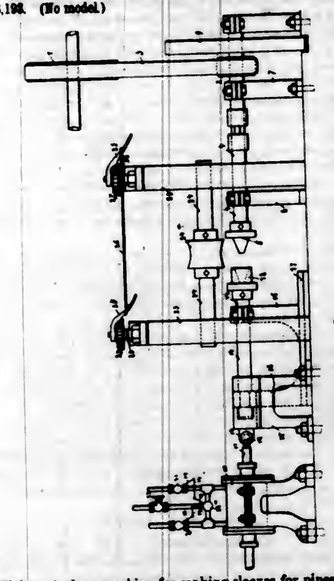
11. The combination with the carriers A, B, of opposed jaws 3, 5, and 6, 9, tucking-blades 7, 8, and means for operating said blades so as to deliver the material first to one pair of jaws and then to the other pair of jaws, substantially as described.

608,583. **SAFETY-ENVELOP.** FREDERICK C. CROCKER, Malone, N. Y. Filed Nov. 19, 1897. Serial No. 659,108. (No model.)



Claim.—A safety-envelop consisting of a body, two end flaps having slits therein adapted to register when folded, a bottom flap having a tongue formed therewith adapted to pass through said slits and turn backward and downward upon itself, gum being applied to the outer surface thereof prior to its insertion through said slits, and a closing-flap also having a tongue formed therewith adapted to pass through said slits and beneath the first-named tongue, so that when moistened prior to its insertion will cause an adhesion between the two tongues, as and for the purpose set forth.

608,584. **COLLAR-AND-SOCKET MACHINE.** CHARLES D. DE FOREST, Pittsburg, Pa., assignor, by direct and mesne assignments, of five-eighths to John T. Keana, same place, and John H. Roney, Allegheny, Pa. Filed June 5, 1896. Renewed Oct. 23, 1897. Serial No. 656,193. (No model.)



Claim.—1. In a machine for making sleeves for pipes, the combination of the steam-cylinder and its piston, the endwise-movable shaft coupled to said piston and provided with a shaper, the reversing valve mechanism arranged in connection with said steam-cylinder and adapted to provide for the reversing of the movement of said shaft, with its shaper, the rotatable plunger opposed to said shaper and the finishing-roll arranged contiguously to and above said longitudinally-movable shaper and rotatable plunger, substantially as set forth.

2. In a machine for making sleeves for pipes, the combination of the cylinder and its piston, the endwise-movable shaft provided with a shaper and coupled to said piston, the reversing valve mechanism comprising a series of valves arranged in pipes connecting with the ends of said cylinder and in a pipe connecting with the aforesaid pipes and interacting levers between said valves, a rotary plunger opposed to said shaper, and a finishing-roll arranged contiguously to said shaper and plunger, substantially as specified.

3. In a machine for making sleeves for pipes, the combination of the cylinder and its piston, the endwise-movable shaft coupled to said piston and provided with a shaper, the reversing mechanism for said piston and shaft with its shaper, a rotary plunger opposed to said shaper, the finishing-roll arranged in juxtaposition with said shaper and plunger, and the mechanism for effecting the vertical adjustment of said finishing-roll comprising the vertical screw-threaded shafts engaging the bearings of the shaft carrying said finishing-roll, and provided with the miter or ratchet wheels and the connected lever-pawls adapted to engage said ratchet-wheels, substantially as described.

4. In a device of the character described, a series of two or more rotatable rolls, means for rotating one or more of them, means for imparting to one of said rolls a longitudinal movement independently of the rotation-causing devices, and a stripper, substantially as set forth.

5. In a device of the character described, a series of two or more rotatable rolls, means for rotating one or more thereof, means for imparting to one of said rolls a longitudinal movement independently of the rotation-causing devices, and a stripper extending around and concentric with one of the rolls, for discharging the welded metal, substantially as set forth.

6. In a mechanism of the character described, the combination of a pressing or welding roll, a holding or forming roll, a rotary abutment contacting with the holding or forming roll to relieve it of thrust, and means for imparting longitudinal motion to the holding or forming roll, substantially as set forth.

7. In a mechanism of the character described, the combination of a pressing or welding roll having a groove or flanges, and a holding or forming roll having one or more flanges, and means for moving the holding or forming roll longitudinally, one of the aforesaid flanges around the rolls being adapted to serve as a stripper, substantially as set forth.

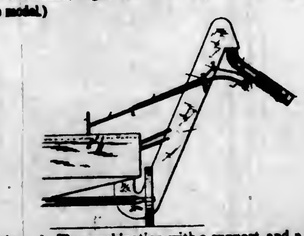
8. In a mechanism of the character described, the combination of a longitudinal movable holding or forming roll having radially-extending flanges and a metal-supporting surface extending continuously from one flange to the other, whereby said roll is adapted to carry the welded metal bodily when it moves longitudinally, an opposing pressing or welding roll, and a stripper for removing the welded metal from the carrying-surface on the longitudinally-moving roll, substantially as set forth.

9. In a machine of the class described, the combination of a welding-roll, a supporting-roll arranged below the welding-roll, and having a continuous supporting-surface extending from one side of the welding-roll to the opposite side thereof, and means for moving longitudinally the last said roll for positively forcing the welded metal therefrom, substantially as set forth.

10. In a machine of the character described, the combination of a metal-supporting roll comprising two sections, each provided with an annular flange or abatment, and one adapted to have its body portion completely surrounded by the body portion of the other section, a welding-roll arranged above said supporting-roll, means for moving the outer section of said supporting-roll longitudinally of its axis, and means for preventing the metal moving with said adjustable section of the supporting-roll, substantially as set forth.

11. In a machine of the character described, the combination of a metal-supporting roll having an annular flange or abatment around each end, a welding-roll mounted above said supporting-roll, means for rotating one or more of said rolls, means for moving one of the flanges around the supporting-roll longitudinally of the axis thereof, and means for positively forcing the metal from said supporting-roll, substantially as set forth.

608,585. **ADJUSTING MEANS FOR DELIVERY SPOUTS.** WESLEY C. DENTLER, Eagle, Nebr. Filed Sept. 21, 1897. Serial No. 652,475. (No model.)



Claim.—1. The combination with a support, and a spout loosely connected therewith, of a rotatable adjusting device pivotally connected to the spout, and extending rearwardly therefrom and having its outer end offset, a bracket supporting the device, and means for securing the device in its adjusted positions.

2. The combination with a loosely-supported spout, of an adjusting device therefor comprising a rod having an offset outer end pivotally connected to the spout, a support for the rod in which the same is slidingly held, and means for securing the rod in adjusted positions, substantially as described.

3. The combination with a loosely-supported spout, of an offset adjusting-rod, a swiveled connection between the offset end of the rod and the spout, means for supporting the rod, a handle on the rod, and a locking-plate with which the handle engages, substantially as described.

4. The combination with the spout and elevator-trunk, of a rod having a curved end pivotally secured to the spout to have a universal movement, a bracket supporting the rod, a cross-piece or handle on the end of the rod, and a perforated plate with which the ends of the handle engage, for locking the rod in place, substantially as described.

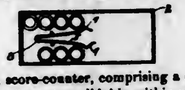
5. The combination with a laterally-adjustable delivery-spout, of an adjustable extension on the end thereof, means for adjusting the extension and a cut-off for the spout actuated upon the adjustment of the extension, substantially as described.

6. The combination with an adjustable delivery-spout, of an adjustable extension thereon, a valve or cut-off for the spout, and means for adjusting the extension and for simultaneously actuating the cut-off, substantially as described.

7. The combination with an adjustable delivery-spout, of a slid-

able extension thereon at its delivery end, a cut-off in the spout, a cord attached to the cut-off, a stop on the cord and means on the extension with which the stop engages whereby the movement of the cord acts to actuate the cut-off and moves the extension, substantially as described.

608,586. SCORE-COUNTER. HARRY DE WALLACE, St. Paul, Minn., assignor to Hiram Walker & Sons, Limited, Walkerville, Canada. Filed Aug. 14, 1897. Serial No. 648,201. (No model.)

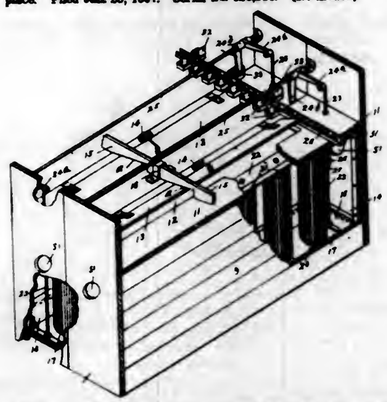


Claim.—1. A score-counter, comprising a case 2, having slots 7 in its top, a series of counters slidable within said slots, the spring 5 arranged between said slots within said case, and having oppositely-turned V-shaped ends 9, the apexes of said V-shaped parts projecting partially across the respective slots into the path of said slidable counters, for the purpose set forth.

2. A score-counter, comprising a case 2, having a top and bottom and provided in its top with slots or guides 7, the counters arranged within said case and projecting up through said slots or guides and freely movable therein, the spring 5 arranged within said case between said guides, the pins 8 whereto said spring is secured, said spring having the oppositely-turned V-shaped ends 9, the apexes of said V-shaped ends projecting into the paths of said counters at a point midway between the ends of said guides substantially as described.

3. In a score-counter, the combination, with a case or box, provided with a slot or guide, of a series of buttons or counters grouped therein, and a snap-spring arranged substantially midway in said guide and projecting into the path of said buttons, and adapted to shoot the buttons along said guide as they are pressed past said spring.

608,587. DUST-COLLECTOR. EMIL R. DRAVER, Stillwater, Minn., assignor, by mesne assignments, of one-half to Marie L. Draver, same place. Filed Jan. 25, 1897. Serial No. 620,583. (No model.)



Claim.—1. In a dust-collector, the combination with a series of cells, of dust-collecting media in said cells, a series of hinged cut-off gates one in the head of each cell, normally held in their open positions, an endless traveler provided with projecting cam lugs or blocks which engage and positively close said cut-off gates, and a fixed skid or guide, under and over which said endless carrier runs, substantially as described.

2. In a dust-collector, the combination with a collecting medium and means for producing a forced circulation therethrough, of a device or devices for cutting off the forced circulation through said collecting media, and a relief port or ports which compensate for leakage and relieve said collecting media from forced currents of air, while the cut-off devices are closed, substantially as described.

3. In a dust-collector, the combination with a collecting medium and means for producing a forced circulation of air therethrough, of a device or devices for cutting off the forced circulation of the air through said medium, relief-ports which compensate for leakage and relieve said collecting medium from forced currents of air, while said cut-off devices are closed, and a valve for each of said relief-ports, normally closed but automatically opened when said cut-off device is closed, substantially as described.

4. In a dust-collector, the combination with a suction-fan a series of cells and dust-collecting media therein, of cut-off devices for closing the outlets of said cells, and relief-ports to compensate for leakage and relieve said collecting media from forced drafts, when said cut-off devices are in their closed positions, substantially as described.

5. In a dust-collector, the combination with a suction-fan, a series of cells and dust-collecting media therein, of cut-off devices for closing the outlets of said cells, relief-ports to compensate for leakage, and automatically-operated valves opening and closing said relief-ports, substantially as and for the purpose set forth.

6. In a dust-collector, the combination with a suction-fan, a series of cells and dust-collecting media therein, of cut-off devices for closing the outlets of said cells, relief-ports to compensate for leakage, valves opening and closing said relief-ports, and an endless traveler operative to open and close said cut-off devices and said relief-port valves, in reverse order, substantially as and for the purposes set forth.

7. In a dust-collector, the combination with a suction-fan, a series of cells, a series of collecting tubes or pockets in said cells, and corresponding series of tube shaking or rapping devices, of independently-hinged cut-off gates in the heads of said cells, relief-ports to compensate for leakage, valves in said relief-ports, and an endless traveler, operative to open and close said cut-off gates and said port-valves, in reverse order, and to operate said shaking or rapping devices while the corresponding cut-off gates are closed, substantially as described.

8. The combination with a cell and a dust-collecting medium therein, of a cut-off device or gate in one end of the same, under yielding strain to remain open, and an adjustable stop for variably intercepting the opening movement of said cut-off device or gate, substantially as described.

9. The combination with a series of cells and dust-collecting media, of individual cut-off devices or gates in the heads of said cells, under yielding strain to remain open, and an adjustable stop device for simultaneously varying the normal open positions of a series of said cut-off devices or gates, substantially as described.

10. The combination with the series of cells and dust-collecting media therein, of the hinged cut-off gates in the heads of said cells, under strain to normally open, and the longitudinally-adjustable stop-bar provided with cam or inclined surfaces which serve to variably intercept the opening movements of said cut-off gates, substantially as described.

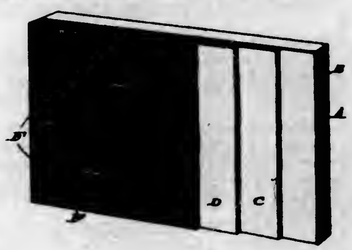
608,588. BUTTON-FASTENING DEVICE. JOHN F. DOBE, New York, N. Y. Filed Mar. 20, 1897. Serial No. 628,420. (No model.)



Claim.—1. A fastening device, for buttons having a shank provided with an opening, composed of two parts substantially U-shaped in contour and movably secured one upon the other, said parts being adapted to be inserted in the opening of the shank so as to have their curved portions fitting therein and to have their ends extend in opposite directions, substantially as described.

2. A fastening for buttons or other securing devices which have a shank provided with an opening, composed of two U-shaped parts movably pivoted one upon the other and each provided with a recess or cut-out in its curved portion, said recess or cut-out in each of the curved parts being adapted when the device is in locked position to be within the shank and engaging it, and to have their ends extending in opposite directions, substantially as described.

608,589. PAINTING. HIRAM M. EVANS, Philadelphia, Pa. Filed Feb. 18, 1896. Serial No. 670,784. (No specimens.)

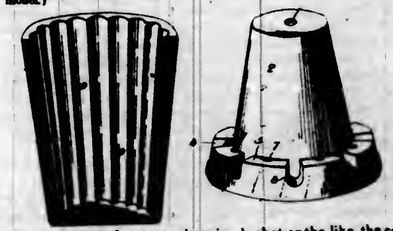


Claim.—1. The method of producing an onyx-tile effect which consists in applying a coat of paint to a plate or body of suitable material, applying to said coat a layer of distemper colors, coating said distemper colors with a varnish, drying or baking the article thus produced, next providing grooves therein, thereby simulating a plurality of tiles and lastly applying to said grooves paint or a mixture of different paints.

2. The method of producing an onyx-tile effect which consists in applying a coat of paint to a plate or body of suitable material, applying to said coat a layer of distemper colors containing no sizing or glue, coating said distemper colors with a varnish, drying or baking the article thus produced, next providing grooves therein, thereby simulating a plurality of tiles, and lastly applying to said grooves paint or a mixture of different paints.

3. As an article of manufacture, the herein-described device simulating a plurality of tiles, the same consisting of a suitable bed or body having first applied thereto a coat of paint, next a layer of distemper colors, and lastly a coating of varnish, said device being afterward dried or baked, and provided with grooves having paint applied thereto.

608,590. FLOWER-POT AND HANGING BASKET. GUSTAVE A. FREUND, Hermann, Mo. Filed Dec. 24, 1897. Serial No. 663,397. (No model.)



Claim.—1. In a flower-pot, hanging basket or the like, the combination of inner and outer receptacles having a space between them, and having a rim projecting from one of the receptacles over the said space, and formed with openings and lateral passages, substantially as set forth.

2. In a flower-pot, hanging basket or the like, the combination of an outer receptacle, an inner receptacle having a space between it and the outer receptacle, and having a rim at its upper end extending over the space between the two receptacles and formed with a vertical flange at its outer edge, and a series of openings inside of the vertical flange in communication with the space formed between the two receptacles, substantially as and for the purpose described.

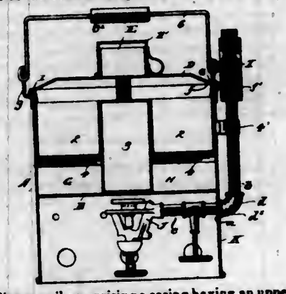
3. In a flower-pot, hanging basket, or the like, the combination of an outer receptacle, an inner receptacle having a space between it and the outer receptacle, and a rim formed with the inner receptacle extending over the space between the two receptacles and resting upon the top edge of the outer receptacle, said rim having a substantially vertical series of openings, and grooves or channels in its lower side forming air-passages, substantially as set forth.

4. A flower-pot or hanging basket comprising an outer receptacle, and an inner receptacle having a drain-opening in its bottom, an outer rim at its upper end, and a vertical flange at the outer edge of the said rim, substantially vertical openings in the rim communicating with the space formed between the two receptacles, and a series of grooves or channels in the lower face of the rim forming air-passages, substantially as and for the purpose described.

5. In a flower-pot, hanging basket or the like, the combination of an outer receptacle having its inner side corrugated or ribbed, an inner receptacle, a rim at the upper edge of the inner receptacle, overlapping the top edge of the outer receptacle, a series of openings extending vertically through the rim, and a series of grooves or channels forming passages in the lower side of the said rim, substantially as described.

608,591. DINNER-PAIL. GEORGE GARTH, Greenfield, Ohio. Filed July 11, 1896. Serial No. 598,856. (No model.)

Claim.—1. An improved dinner pail comprising a casing having a fixed diaphragm dividing said casing into an upper and a lower compartment, a burner situated centrally in the lower compartment with the flame therefrom impinging upon the diaphragm, horizontally-extending parallel flanges on the side walls of the casing within the upper compartment, said flanges extending from the respective ends of the casing to a point adjacent the center thereof, but terminating short of each other to form a central opening, a receptacle removably positioned in said central opening and seated upon the diaphragm, and receptacles positioned upon the flanges on each side of the central receptacle and in direct contact therewith, said receptacles and diaphragm forming dead-air chambers beneath said receptacles and on each side of the central receptacle, substantially as described.



2. A dinner-pail comprising a casing having an upper and a lower compartment, the latter having an opening in one of its end walls, an oil-receptacle on the exterior of the casing provided with a delivery-pipe having a vertical section *b* extending parallel with the end wall of the casing and a horizontal section *c* projecting through said opening and carrying a burner which is accessible through the opening, a hinged strap encompassing the vertical section of the delivery-pipe and securing the same to the casing, means for securing the free end of the strap, a bracket-arm *e* having a slot for the reception of the horizontal section of the delivery-pipe, and an elbow *d* uniting the vertical and horizontal sections of said delivery-pipe and having a collar *d'* abutting against the outer surface of said bracket-arm, whereby the pipe is held supported in proper position, substantially as described.

608,592. LOCK. NICHOLAS GIBBENS and JACOB H. WEITZ, Buffalo, N. Y. Filed Mar. 4, 1898. Serial No. 672,513. (No model.)



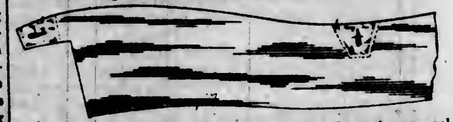
Claim.—1. In a lock, the combination with a trapping-tumbler, of an ordinary key adapted to be trapped thereby and a releasing-key for releasing said ordinary key, said releasing-key having a pivoted bit portion adapted to enter the trap of the tumbler and release itself therefrom by the movement of the pivoted bit portion.

2. In a lock, the combination with the tumblers having trapping-slots for trapping and preventing the withdrawal of an ordinary key, of a key having a pivoted bit portion adapted to enter the trapping-slots and operate the lock and also to release itself therefrom by the turning of the bit portion upon its pivot.

3. In a lock, the combination with the operating mechanism having devices for trapping an ordinary key, of a key similar in form to the ordinary key and having a pivoted bit portion which turns on its pivot to one side only, and is adapted to enter the trapping devices and operate the tumblers to retract the bolt upon the rotation of the key, said key being released from the trapping devices upon its rotation in the reverse direction by the pivotal movement of its bit portion.

4. A key having a portion of its bit hinged to the remainder and adapted to turn or swing sidewise thereon, a shoulder for preventing its side movement in one direction, and a spring for normally retaining said hinged portion in proper position for operating a lock.

608,593. BUTTONHOLE-CASING. GEORGE J. GOUGH, London, England. Filed Oct. 11, 1897. Serial No. 654,708. (No model.) Patented in England May 20, 1897, No. 12,987.

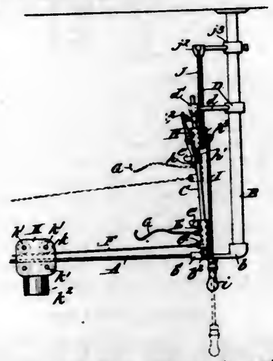


Claim.—1. A collar, cuff, or other article of wearing-apparel provided with buttonhole or other attaching portions and having a body portion designed to be stiffened by starching composed of an outer layer or layers of textile material and an inner lining of textile

material, the lining for the buttonhole or other attaching portions consisting of a filling of non-starchable material, substantially as described.

2. A collar, cuff, or other article of wearing-apparel provided with buttonhole or other attaching portions and having a body portion designed to be stiffened by starching composed of an outer layer or layers of textile material and an inner lining of textile material the lining for the buttonhole or other attaching portions consisting of a filling of flannel or like material, substantially as described.

608,594. **STORE-SERVICE APPARATUS.** JOHN H. GOODFELLOW, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, of New Jersey. Filed May 12, 1898. Serial No. 681,307. (No model.)



Claim.—1. In a store-service apparatus, the combination of a way, a propelling-wire, a carrier adapted to engage said way and said wire and to be propelled by the separation of the same, a separating-block connected with said wire, a coupling mechanism for engaging with said block, and means for moving said coupling mechanism.

2. In a store-service apparatus, the combination of a way, a propelling-wire, a carrier adapted to engage said way and said wire and to be propelled by the separation of the same, a separating-block connected with said wire, a spring-pressed coupling mechanism for engaging with said block, and means for moving said coupling mechanism.

3. In a store service apparatus, the combination of a way, a propelling-wire, a carrier adapted to engage said way and said wire and to be propelled by the separation of the same, a separating-block connected with said wire, a latch-body, a latch for coupling said body and said block, and means for moving said body.

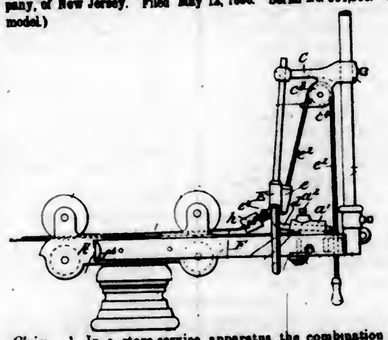
4. In a store-service apparatus, the combination of a way, a propelling-wire, a carrier adapted to engage said way and said wire and to be propelled by the separation of the same, a separating-block connected with said wire, a sliding latch-body, a latch for coupling said body with said block, a spring normally holding said body away from said block, and means for moving said body against the action of said spring.

5. In a store-service apparatus, the combination of a way, a propelling-wire, a carrier adapted to engage said way and said wire and to be propelled by the separation of the same, a separating-block connected with said wire, a coupling mechanism for engaging with said block, means for moving said coupling mechanism into engagement with said block, and a tripping mechanism for disengaging said coupling mechanism and said block.

6. In a store-service apparatus, the combination of a way, a propelling-wire, a carrier adapted to engage said way and said wire and to be propelled by the separation of the same, a guide, a separating-block movably mounted on said guide and connected with said wire, a coupling mechanism movably mounted on said guide for engaging with said block, a spring normally holding said coupling mechanism away from said separating-block, means for moving said coupling mechanism against the action of said spring to engage with said block, and an adjustable tripping mechanism for disengaging said coupling mechanism from said block.

7. In a store service apparatus, the combination of a way, a propelling-wire, a carrier adapted to engage said way and said wire and to be propelled by the separation of the same, a guide, a separating-block movably mounted on said guide and connected with said wire, a latch-body movably mounted on said guide, a latch carried by said body and adapted to connect the same with said block, means for moving said latch-body, and a trip adjustably mounted on said guide and adapted to operate said latch to release said block.

608,595. **STORE-SERVICE APPARATUS.** JOHN H. GOODFELLOW, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, of New Jersey. Filed May 12, 1898. Serial No. 681,308. (No model.)



Claim.—1. In a store-service apparatus, the combination of a way, a propelling-wire, means for separating said wire and said way, a carriage adapted to engage with said way and said wire, hinged jaws for engaging with said carriage, and a movable yoke for engaging with said jaws to hold the same closed.

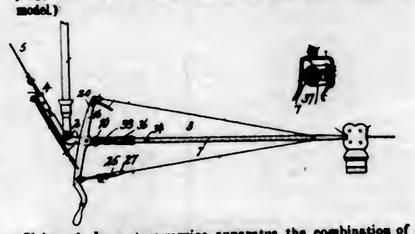
2. In a store-service apparatus, the combination of a way, a propelling-wire, means for separating said way and said wire, a carriage adapted to engage with said way and said wire, hinged jaws for engaging with said carriage, a spring pressing said jaws apart, and a movable yoke for engaging with said jaws to hold the same together against the action of said spring.

3. In a store-service apparatus, the combination of a way, a propelling-wire, means for separating said way and said wire, a carriage adapted to engage with said way and said wire, hinged jaws for engaging with said carriage, a sliding block, and a yoke carried by said block for engaging with said jaws to hold the same closed.

4. In a store-service apparatus, the combinations of a way, a propelling-wire, means for separating said way and said wire, a carriage adapted to engage with said way and said wire, hinged jaws for engaging with said carriage, an adjustable guide-rod, a block movably mounted on said rod, and a yoke carried by said block for engaging with said jaws to hold the same closed.

5. In a store-service apparatus, the combination of a standard, a step carried by the said standard, a way attached at one end to said step, a bracket mounted on said standard, a guide-rod carried by said step and said bracket, a sliding block mounted on said rod, means for moving said block, a propelling-wire connected at an end with said block, a carriage adapted to engage with said way and said wire, jaws hinged to said step for engaging with said carriage, and a yoke carried by said block for engaging with said jaws to hold the same closed.

608,596. **STORE-SERVICE APPARATUS.** JOHN H. GOODFELLOW, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, of New Jersey. Filed May 12, 1898. Serial No. 681,309. (No model.)



Claim.—1. In a store-service apparatus, the combination of a way, a looped propelling-wire connected with said way, and a pivoted lever connected with the ends of the said wire for separating the same.

2. In a store-service apparatus, the combination of a way, a lever pivoted intermediate of its ends to said way, and a propelling-wire attached at its ends to said lever on opposite sides of its pivot and looped to extend with said way.

3. In a store-service apparatus, the combination of a way having an enlarged track-section, a pulley journaled in said track-section, a propelling-wire looped over said wire and running with said way, a carrier traveling on said way and adapted to engage said track-section and said wire, and means for separating said wire from said way.

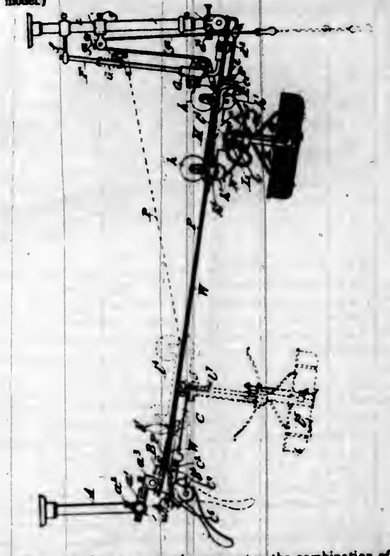
4. In a store-service apparatus, the combination of a way, a looped propelling-wire connected with said way, a pivoted lever connected with the ends of the said wire for separating the same, and a tension-adjusting device connected with said wire.

5. In a store-service apparatus, the combination of a way, a propelling-wire, a carrier traveling on said way and adapted to engage with said wire, an operating-lever connected with said wire, a catch mounted on said way and adapted to engage with said carrier, and mechanism carried by said lever for releasing the carrier from the catch on the movement of the lever to propel the carrier.

6. In a store service apparatus, the combination of a way, a lever pivoted intermediate of its ends to said way, a pulley mounted on said way, a propelling-wire looped over said pulley and connected at its ends with the ends of said lever, and means for normally holding said lever in such a position as to bring the propelling-wire substantially parallel with said way.

7. In a store-service apparatus, the combination of a way, a lever pivoted intermediate of its ends to said way, a pulley carried by said way in advance of said lever, and a propelling-wire looped over said pulley and attached at its ends to the ends of the said lever.

608,597. **STORE-SERVICE APPARATUS.** JOHN H. GOODFELLOW, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, of New Jersey. Filed May 12, 1898. Serial No. 681,310. (No model.)



Claim.—1. In a store-service apparatus, the combination of the pivoted jaws, a way adjacent to said jaws, a rack-bar movably mounted adjacent to said way, a rotatable gear engaging with said rack-bar, and adapted to turn said jaws on their pivots and a carriage adapted to travel on said way and to pass between the outer ends of said jaws and to impinge on said rack-bar.

2. In a store-service apparatus, the combination of the jaws pivoted intermediate of their ends, a way adjacent to said jaws, a rack-bar movably mounted adjacent to said way, a rotatable gear engaging with said rack-bar and having inclined sides bearing on the inner ends of the said jaws, and a carriage adapted to travel on said way and to pass between the outer ends of said jaws and to impinge on said rack-bar.

3. In a store-service apparatus, the combination of the jaws pivoted intermediate of their ends, a spring interposed between the outer ends of said jaws to force the same apart, a way adjacent to said jaws, a rack-bar movably mounted between said jaws, a rotatable gear engaging with said rack-bar and having its sides inclined and bearing on the inner ends of the said jaws, and a carriage adapted to travel on said way and to pass between the outer ends of said jaws and to impinge on said rack-bar.

4. In a store-service apparatus, the combination of the jaws pivoted intermediate of their ends, a spring interposed between the outer ends of said jaws to force the same apart, a way adjacent to said jaws, a rack-bar movably mounted between said jaws, hooks carried by said rack-bar and engaging with said way, a buffer attached to the end of said rack-bar, a rotatable gear engaging with said rack-bar having its sides inclined and bearing on the inner ends of said jaws, an operating-lever carried by said gear, and a carriage adapted to travel on said way and to pass between the outer ends of said jaws and to move said rack-bar by impinging on said buffer.

5. In a store-service apparatus, the combination of a hanger, a foot adjustably mounted on said hanger, a way connected with said foot, frictional guides hinged to said foot on opposite sides of said way, a carriage adapted to travel on said way, and friction-rollers for engaging with said guides.

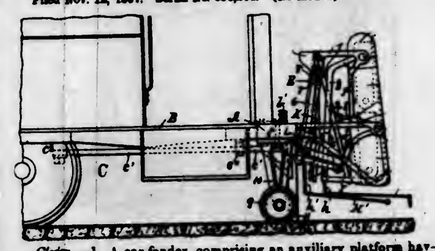
6. In a store-service apparatus, the combination of a way, frictional guides mounted on opposite sides of said way, an arm pivoted to one of said guides for supporting the way between said guides, and a carriage adapted to travel on said way, and friction-rollers carried by said carriage for engaging with said frictional guides.

7. In a store-service apparatus, the combination of a carriage, a yoke attached to said carriage, a lever pivoted to said yoke, a saddle having a sliding connection with said yoke, a catch mounted on said saddle for engaging with said lever, a lever pivoted to said saddle for disengaging the first-mentioned lever from said catch, an operating-rod connected with the lever pivoted to the saddle, and a parcel-receptacle attached to said saddle.

8. In a store-service apparatus, the combination of a carriage, a yoke attached to said carriage, rods carried by said yoke, sleeves movably mounted on said rods, a saddle connected with said sleeves, and a parcel-receptacle attached to said sleeves.

9. In a store-service apparatus, the combination of a carriage, a yoke attached to said carriage, rods carried by said yoke, sleeves movably mounted on said rods, a saddle connecting said sleeves, means for limiting the movement of said sleeves on said rods, a mechanism for coupling said saddle to said yoke, and a parcel-receptacle attached to said sleeves.

608,598. **CAR-FENDER.** DOMENICO GUARINO, New York, N. Y. Filed Nov. 12, 1897. Serial No. 658,231. (No model.)



Claim.—1. A car-fender, comprising an auxiliary platform having a tilting framework connected thereto, the said tilting framework carrying a swinging cushioned fender and hinged doors, the said doors being supplied with folding arms and being connected to the said swinging cushioned fender, whereby they may be automatically operated for the purpose of folding over a body, substantially as shown and described.

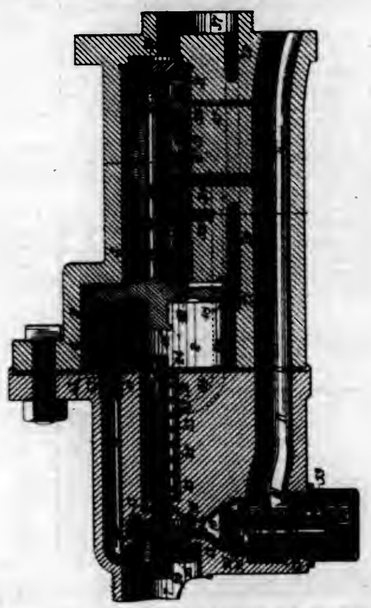
2. In a car-fender, the combination of an auxiliary platform and means for connecting the same to the platform of a car, and a tilting framework pivotally attached to hangers projected from the said platform, and a swinging cushioned fender connected to the said tilting framework, and a swinging auxiliary framework carrying swinging plates for engagement with the road-bed, and a latch for setting the tilting framework in an upright position and with doors hinged to the tilting framework and connected to the swinging fender by flexible connections, the said hinged doors having spring-actuated folding arms connected thereto, substantially as shown and described.

3. In a car-fender, the combination with a tilting framework and hinged doors connected thereto, the said doors having spring-actuated folding arms forming part thereof and the said tilting framework having flanges extended therefrom for engagement with the folding arms to maintain them in a folded position, and a swinging auxiliary framework carrying a hinged plate adapted for contact with the road-bed, and a swinging cushioned fender having lateral projections extended from the lower end thereof, the said fender being mounted upon each side of the frames of the said swinging framework, and a latch adapted for maintaining the said parts in an upright position, whereby when the swinging auxiliary framework or the swinging fender is struck, the latch will be released and the device automatically thrown into operative position, substantially as shown and described.

4. The combination of a tilting framework having a swinging plate secured thereto for engagement with a road-bed, and a swinging fender comprising a back cushioned section and a forward-projected cushioned section, and swinging doors hinged to the said tilt-

ing framework and connected to the cushioned fender by means of flexible connections, the said doors having spring-actuated folding arms connected thereto, and an auxiliary swinging framework having a plate hinged thereto for engagement with the road-bed and a latch for maintaining the device in a vertical position, said auxiliary framework adapted to swing the latch; with an auxiliary platform connected to a framework fulcrumed beneath the car, and means for supporting the said auxiliary platform upon the rails, substantially as shown and described.

608,599. AIR-BRAKE. FRANÇOIS L. GUILLEMET, San Francisco, Cal., assignor to the Westinghouse Air Brake Company, Wilmerding, Pa. Filed June 3, 1896. Serial No. 594,092. (No model.)



Claim.—1. The combination, in a triple-valve device, of a piston exposed on its opposite sides to fluid under pressure, a valve operated by the piston for releasing fluid under pressure from the auxiliary reservoir to the brake-cylinder and controlling a passage, or passages, through which fluid under pressure is released from one side of the piston to effect an emergency application of the brakes, substantially as set forth.

2. The combination, in a triple-valve device, of a piston, a valve operated by the piston for releasing fluid under pressure from the auxiliary reservoir to the brake-cylinder and controlling a passage, or passages, through which fluid under pressure is released from the train-pipe side of the piston to effect an emergency application of the brakes, substantially as set forth.

3. The combination in a triple-valve device, of a piston, a main valve operated thereby for releasing fluid under pressure from the auxiliary reservoir to the brake-cylinder, a local exhaust-valve operated by movement of the piston, and a passage, or passages, controlled by the main valve, and through which fluid under pressure is released from one side of the piston to effect opening movement of the local exhaust-valve, substantially as set forth.

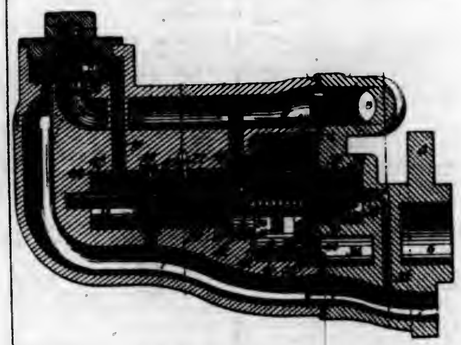
4. The combination, in a triple valve device, of a piston exposed on one side to train-pipe pressure, a valve operated by the piston for applying the brakes in service applications, means for limiting the capacity of the passage by which the piston-chamber communicates with the train-pipe, a passage, or passages, controlled by the valve for releasing fluid under pressure from the train-pipe side of the piston, and a local exhaust-valve operated by the piston to release fluid under pressure from the train-pipe, substantially as set forth.

5. The combination, in a triple-valve device, of a piston, a valve operated thereby for releasing fluid under pressure from the auxiliary reservoir to the brake-cylinder by a partial movement of the piston, and to release fluid under pressure from the train-pipe side of the piston by a further movement of the piston, and a local exhaust-valve operated by a final movement of the piston, substantially as set forth.

6. The combination, in an automatic fluid-pressure brake apparatus, of a local exhaust-valve controlling the release of fluid under pressure from the train-pipe to the brake-cylinder, a check-valve in the passage between the train-pipe and the brake-cylinder, and a spring adapted to hold the check-valve partially open, to permit a return flow of fluid from the brake-cylinder to the train-pipe, and to permit the closing of the valve on an excessive reduction of pressure in the train-pipe, substantially as set forth.

7. The combination, in an automatic fluid-pressure brake apparatus, of a local exhaust-valve for releasing fluid under pressure from the train-pipe to the brake-cylinder, a check-valve in the passage between the train-pipe and the brake-cylinder, a spring tending to close the check-valve and a spring tending to hold the check-valve partially open, substantially as set forth.

608,600. AIR-BRAKE. FRANÇOIS L. GUILLEMET, San Francisco, Cal., assignor to the Westinghouse Air Brake Company, Wilmerding, Pa. Filed June 3, 1896. Serial No. 594,093. (No model.)



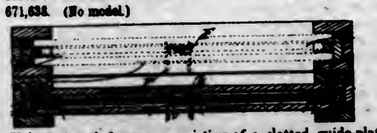
Claim.—1. The combination, in a triple-valve device, of a piston, a valve on the reservoir side of the piston which is operated by the piston and controls the passage of fluid under pressure from the auxiliary reservoir to the brake-cylinder, and an exhaust-valve located on the train-pipe side of the piston and controlling the passage of fluid from the brake-cylinder to the atmosphere, substantially as set forth.

2. The combination, in a triple-valve device, of a piston exposed on one side to train-pipe pressure and on the other side to auxiliary-reservoir pressure, a valve on the reservoir side of the piston controlling a port through which fluid is released from the auxiliary reservoir to the brake-cylinder, and a valve on the train-pipe side of the piston controlling the exhaust of fluid from the brake-cylinder to the atmosphere, substantially as set forth.

3. The combination, in a triple-valve device, of a triple-valve piston, a release-valve for exhausting fluid under pressure from the train-pipe and which is exposed to fluid under pressure on its opposite sides, and a valve on the train-pipe side of the piston, which is operated by the piston, and controls the exhaust of fluid from the brake-cylinder to the atmosphere and also the admission to and exhaust of fluid from one side of the release-valve, substantially as set forth.

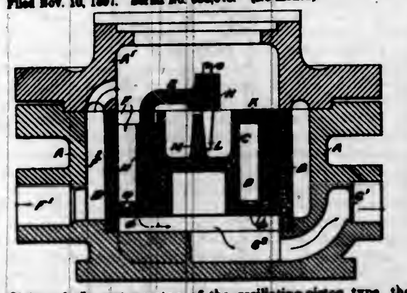
4. The combination, in a triple-valve device, of a piston, a valve connected to the piston and operated thereby for releasing fluid under pressure from the auxiliary reservoir to the brake-cylinder, a spring tending to hold the valve to its seat and which bears at one end on the valve and at the other end on a stationary part, and means whereby the spring is compressed and the valve unseated by the movement of the piston on a reduction of train-pipe pressure, substantially as set forth.

608,601. SASH-FASTENER. GUSTAV HEMMERDE and FREDERICK BERGHAHN, New York, N. Y. Filed Feb. 25, 1898. Serial No. 671,638. (No model.)



Claim.—A sash-fastener, consisting of a slotted guide-plate attached to the sash, bolts located in a bore formed in the bottom rail of the sash and adapted to project therefrom at opposite sides thereof, transverse handle-pieces attached to the inner ends of the bolts and extended through said slotted guide-plate, a dividing-partition in said bore between the inner ends of said bolts, springs located between said partition and the handle-pieces for actuating the bolts, and racks arranged on the jambs of the window-casing, substantially as set forth.

608,602. WATER-METER. JOHN K. HILL, London, England. Filed Nov. 10, 1897. Serial No. 658,073. (No model.)

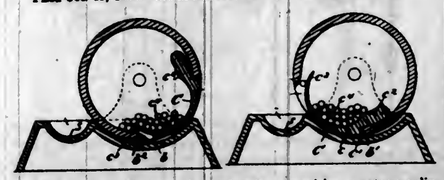


Claim.—1. In water-meters of the oscillating-piston type, the screw adjusting and controlling pin fixed centrally upon the piston having a conical end riding upon an inverted-cone piece fixed to the casing of the meter externally to the measuring-chambers; so that by adjusting the screw-cone the wear on the oscillating piston may be readily taken up and by the external arrangement of these parts the leaking surface reduced all substantially as described.

2. In water-meters of the oscillating-piston type the screw adjusting and controlling pin fixed centrally upon the piston having a conical end riding upon an inverted-cone piece fixed to the casing of the meter externally to the measuring-chambers in combination with an arm projecting from either inlet or outlet port toward the center of the piston to fix or attach centrally thereto the said conical adjusting-pin all as a means of rendering the meter positive in its action by obviating leakage substantially as described.

3. In water meters of the oscillating-piston type in combination, the screw adjusting and controlling pin fixed centrally upon the piston having a conical end riding upon an inverted cone arranged external to the measuring-chambers, an arm projecting through either the inlet or outlet port toward the center of the piston and carrying the said conical adjusting-pin, a ring-piston placed in an annular chamber formed between two cylinders and working upon a dividing-partition of the depth of the annulus by means of a transverse slot in the ring, and inlet and outlet ports leading respectively to opposite sides of the annulus, all substantially as described.

608,603. MATCH-SAFE. WILLIAM H. HOOKER, Arlington, N. J. Filed Oct. 15, 1897. Serial No. 655,339. (No model.)



Claim.—1. An improved match-safe, comprising a rotary cylinder having an opening in its wall, one edge of which opening forms a shoulder, and a segmental jaw fulcrumed in said opening and provided with a shoulder adapted to bear against the shoulder edge of the latter, said jaw having a weighted end in rear of its fulcrum and a lip at its front end adapted to bear with relation to the front edge of the cylinder-opening, substantially as and for the purpose set forth.

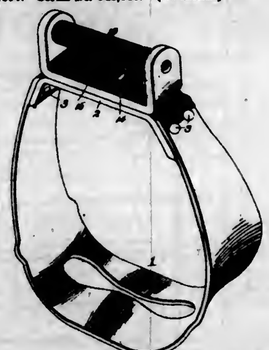
2. An improved match-safe, comprising a rotary cylinder provided with an opening in its wall, one edge of said opening forming a limiting-shoulder and the other edge being curved or beveled, and a segmental lever-jaw fulcrumed in said opening and corresponding in area thereto, said lever-jaw being provided with the shoulder in rear of its fulcrum adapted to bear against the limiting-shoulder of the opening and with the weighted end interiorly projecting from said shoulder within the cylinder and having at its segmental portion in front of its fulcrum a lip adapted to bear with relation to the beveled edge of the cylinder-opening, substantially as and for the purpose set forth.

608,604. GRATING-MACHINE. AMOS B. HOSTETTER, Lancaster, Pa. Filed July 1, 1897. Serial No. 643,052. (No model.)



Claim.—In a grating or shredding machine, a semicircular holder provided with a bridge or bracket having a lug d^4, and in the bottom with a channel or guideway, a disk having a series of slits therein, the edges of which on the front face of the disk are inwardly beveled, a series of projecting teeth arranged on the rear face along one edge of each slit of the series of said disk and projecting in the plane of the bevel on the front face of the same, and a semicircular feeding device provided with a rear d^4, in front and with a rear operating-handle, substantially as and for the purposes described.

608,605. STIRRUP. JAMES T. HOUSE, Tahlequah, Ind. Ter. Filed Aug. 3, 1897. Serial No. 646,909. (No model.)



Claim.—1. A stirrup, comprising the lower or foot-receiving member, provided with a rigid stop-pin, and an upper member to which the stirrup-strap is attached, swiveled or pivoted to the lower member, and provided with a semicircular slot or recess engaging said pin, and extending concentrically around the swivel or pivotal point, to permit the lower member to rotate freely in a horizontal plane until said stop-pin reaches one end or the other of said slot, substantially as described.

2. A stirrup, comprising a lower member, to receive the rider's foot, a pin carried thereby and provided with a cylindrical neck and a circular head having shoulders 14 15, an upper member provided with a circular hole embracing the neck of the pin, and a recess embracing the head of said pin, and a rigid pin 16, projecting into said recess and limiting the rotatable movement of the lower member by contact with shoulder 14 or 15 of the head of the pivot or swivel pin; substantially as described.

608,606. SASH-FASTENER. ROBERT B. HOUGHTON, Hartford, Conn. Filed Apr. 6, 1898. Serial No. 676,805. (No model.)

Claim.—1. In a sash-fastener employing a face-plate and rear shell with an opening through same, and side of same, and face-plate

in combination with body of fastener secured and working in the shell-opening, having a fastening-tongue working in and through the opening in the face-plate for same, spring and bearing disk, and bearing-surfaces corresponding with surfaces in opening and on the shell as bearings and provided with a spring, and operated through a handle, substantially as, and for the purposes set forth.



2. In a sash-fastener having a face-plate and rear shell, with opening extending through same and plate, in which are confined a fastening-tongue, body of fastener, and spring, operated through a handle, in combination with a spring holding-disk provided with a side flange, substantially as, and for the purposes set forth.

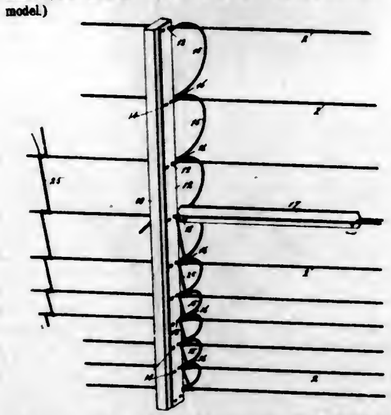
3. In combination with the upper sash of a window, a fastener provided with a tongue engaging the lower end of one edge of the sash, a spring pressure-plate H secured to the upper end of the window-frame and adapted to engage the upper opposite edge of the sash when the latter is raised to its normal closed position, whereby sagging of the sash is prevented, as specified.

608,607. NUT-LOCK. JAMES O. KAFADER and CHARLES D. KAFADER, Fort Bidwell, Cal. Filed June 10, 1897. Serial No. 640,231. (No model.)



Claim.—The combination with a bolt, of a nut having a ratchet-wheel and a locking-ring encircling the ratchet-wheel, which ring is formed of a single piece of resilient material having separated ends, and having an inwardly-projecting catch adapted to engage with said wheel and also provided with outwardly-extending ears or catches on its end portions adapted for the reception of a tool to expand said ring.

608,608. WIRE-FENCE-BUILDING APPLIANCE. GEORGE KEITCH, Stilwell, Kans. Filed Aug. 26, 1897. Serial No. 649,671. (No model.)

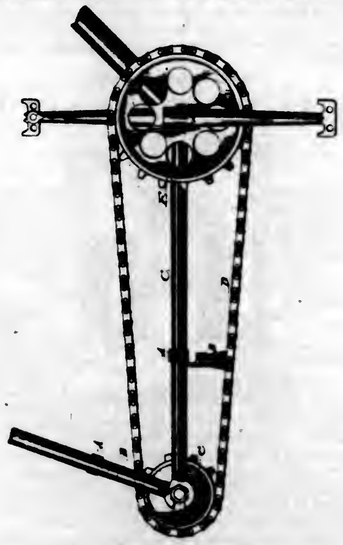


Claim.—1. A device for twisting stay wires on the strand or horizontal wires of a fence, comprising a bar having a tapering or attenuated end, a hole in such end, and a lug or hook adjacent to said hole, substantially as described.

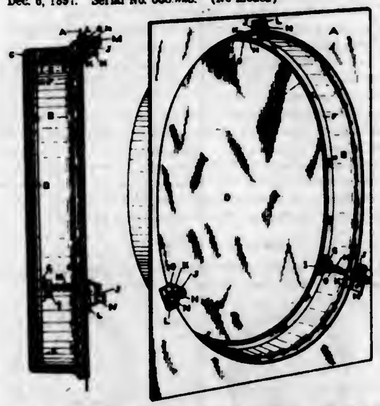
2. A wire-fence building appliance comprising a gage consisting of a recessed bar, a looped wire projecting into the recesses of the gage, a metallic plate secured to the bar and bridging said recesses, and pins projecting through said loops and securing the looped wire in position, substantially as described.

608,609. BRUSH ATTACHMENT FOR BICYCLE-CHAINS. FREDERICK G. KIENARD, Paterson, N. J. Filed June 18, 1897. Serial No. 641,230. (No model.)

Claim.—A brush attachment for bicycles consisting of a piece of metal, one end of which is folded over to secure the bristles constituting a brush, the other end of the metal forming a spring-clip for securing the brush to the frame of a bicycle, constructed substantially as shown and described and for the purposes specified.



608,610. GLASS-HOLDER. JOHN KIRBY, Jr., Dayton, Ohio, assignor to the United States Head-Light Company, Utica, N. Y. Filed Dec. 6, 1897. Serial No. 660,993. (No model.)



Claim.—1. A resilient glass-holder consisting of a ring, a plurality of bolts or rods attached thereto, arms through which said bolts or rods operate, springs adapted to exert pressure against said ring and to force the same forward from said arms, in combination with means for securing said arms to suitable supports substantially as and for the purpose set forth.

2. A resilient glass-holder consisting of a ring, a plurality of bolts or rods attached thereto, plates adapted to be secured to a lamp-case, arms through which said bolts or rods operate, springs adapted to exert pressure against said ring and to force the same forward from said arms, in combination with means for securing said arms to said plates, substantially as described and for the purpose set forth.

3. In a locomotive or other headlight or lamp, the combination with the front wall of the case thereof, of an extension-rim attached thereto and having an annular flange at the outer end thereof, a glass disk contained within said extension-rim, a ring of metal or other suitable material around the edge of the said glass disk on the inside thereof, a plurality of bolts or rods connected with said ring and extending toward the rear of said extension-rim, arms through which said bolts or rods operate, plates secured to said case, means for securing said arms to said plates, and springs surrounding said bolts or rods, whereby pressure is exerted against said ring and thereby transmitted to said glass disk to press the same against said annular flange, substantially as described and for the purpose set forth.

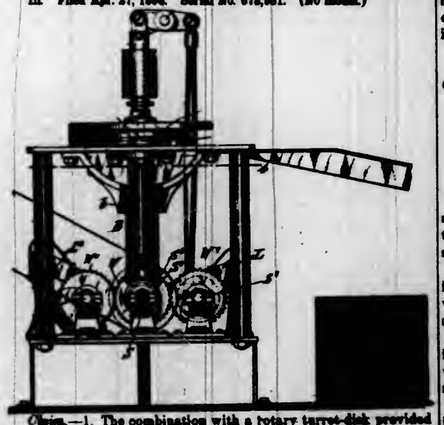
4. In a locomotive or other headlight or lamp, the combination with the front wall of the case thereof, of an extension-rim attached thereto and having an annular flange at the outer end thereof, a glass disk contained within said extension-rim and having a bearing against said annular flange, a ring of metal or other suitable material around the edge of said glass disk on the inside thereof, a plurality of bolts or rods loosely connected with said ring and extending toward the rear of said extension-rim, bifurcated arms through which said bolts or rods operate, plates secured to said case, means for securing said arms to said plates, and springs surrounding said bolts or rods, whereby pressure is exerted against said ring and thereby transmitted to said glass disk to press the same against said annular flange, substantially as described and for the purpose set forth.

5. In a locomotive or other headlight or lamp, the combination with the front wall of the case thereof, of an extension-rim attached thereto and having an annular flange at the outer end thereof, a glass disk contained within said extension-rim and having an elastic binding around the edge thereof, a follower-ring located behind the said glass disk, a plurality of bolts or rods connected with said ring and projecting toward the rear of said extension-rim, arms through which said bolts or rods operate, means for securing said arms in a detachable manner to said case, and springs surrounding said bolts or rods, whereby pressure is exerted against said ring and thereby transmitted to said glass disk to press the same against said annular flange, substantially as described and for the purpose set forth.

6. The combination with the case of a locomotive or other headlight or lamp, of the extension-rim B, having the annular flange C, glass disk D, ring F provided with the bridge-pieces G, bolts or rods H, nuts I, bifurcated arms J provided with perforations through which the said bolts or rods operate, plates L having posts M projecting therefrom, binding-nuts N, and springs O, all arranged to operate substantially as set forth.

7. The combination with the case of a locomotive or other headlight or lamp, of the extension-rim B having the annular flange C, glass disk D, the rubber or other elastic binding E, ring F provided with the bridge-pieces G, bolts or rods H, nuts I, bifurcated arms J provided with perforations through which said bolts or rods operate, plates L having posts M projecting therefrom, binding-nuts N, and springs O, all arranged to operate substantially as set forth.

608,611. MACHINE FOR ASSEMBLING BALL-RETAINERS FOR BALL-BEARINGS. EMIL KLAUS, West Hoboken, N. J., assignor to the Manufacturers and Merchants Warehouse Company, Chicago, Ill. Filed Apr. 27, 1896. Serial No. 673,921. (No model.)



Claim.—1. The combination with a rotary turret-disk provided with a series of openings, each for receiving a retainer for ball-bearings, and means for intermittently rotating the turret-disk, of a charging-barrel, stickers guided therein, a plunger, and means for reciprocating the barrel, stickers and plunger, whereby a set of balls is applied to the retainer moved in line with them, substantially as set forth.

2. The combination with a rotary turret-disk provided with means for supporting a number of retainers for ball-bearings, and means for intermittently rotating the turret-disk, of a charging-barrel, stickers guided therein, said barrel and stickers being arranged on one side of said turret-disk, a plunger arranged on the opposite side, and means for reciprocating the barrel, stickers and plunger, whereby a set of balls is applied to the retainer moved in line with them, substantially as set forth.

3. The combination with a rotary turret-disk provided with a series of openings, each for receiving a retainer for ball-bearings, and means for intermittently rotating the turret-disk, of a charging-barrel, stickers guided therein, a plunger provided with a conical operative end, and means for reciprocating the barrel, stickers and plungers, whereby a set of balls is applied to the retainer moved in line with them, substantially as set forth.

4. The combination with a rotary turret-disk provided with means for supporting a number of retainers for ball-bearings, and means for intermittently rotating the turret-disk, of a charging-barrel, a hopper or tray into which the barrel is guided, stickers guided in the barrel, a plunger, and means for reciprocating the barrel, stickers and plunger, whereby a set of balls is applied to the retainer moved in line with them, substantially as set forth.

5. The combination with a rotary turret-disk provided with means for supporting a number of retainers for ball-bearings, and means for intermittently rotating the turret-disk, of a charging-barrel provided with a conical upper end, a hopper or tray into which the said conical end works, stickers guided in the barrel, a plunger, and means for reciprocating the barrel, stickers and plunger, whereby a set of balls is applied to the retainer moved in line with them, substantially as set forth.

6. The combination with a rotary turret-disk provided with means for supporting a number of retainers for ball-bearings, and means for intermittently rotating the turret-disk, of a hopper or tray for containing a quantity of balls, a reciprocating plunger, and means for transferring a set of balls from the said hopper or tray, to the retainer, said plunger coacting with said means of transfer, substantially as set forth.

7. The combination with a rotary turret-disk provided with means for supporting a number of retainers for ball-bearings, and means for intermittently rotating the turret-disk, of a charging-barrel, having a hollow or tubular lower end, stickers guided in the upper part of the barrel, a pusher guided in the lower part of the barrel, and acting on said stickers, a plunger, and means for reciprocating said barrel, pusher and plunger, substantially as set forth.

8. The combination with a rotary turret-disk provided with means for supporting a number of retainers for ball-bearings, means for intermittently rotating the turret-disk, and an arc-shaped guide coacting with said turret-disk for holding the retainers in proper position, of means for inserting balls in said retainers held in said turret-disk, substantially as set forth.

9. The combination with a rotary turret-disk provided with a series of openings for receiving a number of retainers for ball-bearings, means for intermittently rotating said turret-disk, and an arc-shaped guide, under said openings, concentric with said turret-disk, of means for inserting balls in the retainers arranged in the openings in said turret disk, substantially as set forth.

608,612. OINTMENT BASE AND METHOD OF MAKING SAME. FRIEDRICH W. KLEVER, Cologne, Germany, assignor to Edward Theodore Pearson, Hamburg, Germany. Filed Dec. 13, 1897. Serial No. 661,712. (No specimens.) Patented in England June 24, 1893, No. 12,445, and Feb. 26, 1897, No. 5,256; in Belgium June 26, 1893, No. 105,580; in Austria-Hungary Mar. 3, 1894, No. 80,260 and No. 79,928, and in Italy Aug. 10, 1896, No. 13,688.

Claim.—1. A process for preparing solutions in mineral oils of substances insoluble therein, which consists in mixing an alkali with the mineral oil, oxidizing the mixture and adding thereto the substance to be dissolved.

2. A process for preparing solutions in mineral oils of substances insoluble therein, which consists in mixing a fatty body and an alkali with the mineral oil, oxidizing the mixture, and adding thereto the substance to be dissolved.

3. A process for preparing solutions in mineral oils of substances insoluble therein, which consists in mixing a fatty acid and an alkali with the mineral oil, oxidizing the mixture and adding thereto the substance to be dissolved.

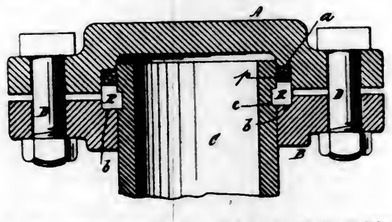
4. A process for preparing solutions in mineral oils of substances insoluble therein, which consists in mixing an alkali with a heavy mineral oil (vaseline-oil) oxidizing the mixture, and adding thereto the substance to be dissolved.

5. As a new article of manufacture, a composition of matter consisting of an oxidized mineral oil and a remedial agent normally insoluble in said oil, held in solution therein, substantially as and for the purpose set forth.

608,618. PIPE JOINT AND CONNECTION. FRANK A. LEECH, New York, N. Y. Filed Feb. 17, 1896. Serial No. 670,694. (No model.)

Claim.—1. In a joint substantially such as described the combi-

nation of the pipe C, formed with a peripheral recess, the split ring R, engaging with said peripheral recess, the head A, formed with a packing-recess *c*, the packing *p*, the follower B, and means for forcibly securing the head A, and follower B, together, substantially in the manner and for the purpose described.



2. The combination of the pipe C, formed with the peripheral recess *c*, the split ring R, fitting in said recess, the head or flange A, formed with a packing, the groove *a*, the packing *p*, the follower B, formed with the face groove *b*, for the reception of the split ring R, and means for forcibly securing the head or flange A, and the follower B, together, substantially in the manner and for the purpose described.

3. The combination of the pipe C, formed with the peripheral recess *c*, the split ring R, formed with the flange *r*, the head or flange A, formed with the packing-groove *a*, the follower B, and means for forcibly securing the head or flange A, and the follower B, together, substantially in the manner and for the purpose described.

608,614. PLATE FOR SECONDARY GALVANIC BATTERIES AND COMPOSITION FOR PRODUCING SAME. CARL MARSCHNER, Berlin, Germany. Filed Sept. 30, 1896. Serial No. 607,488. (No model.)

Claim.—1. A plate for secondary batteries, composed of an exterior perforated containing-frame of lead, and a filling of an active material such as lead oxid, and a binding medium composed of a solution of a fossil gum, substantially as set forth.

2. A filling composition for the plates of secondary batteries, consisting of an active material such as lead oxid, and a binding medium composed of a solution of a fossil gum, substantially as set forth.

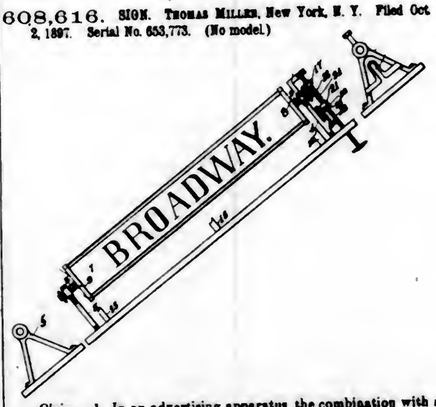
3. A filling composition for the plates of secondary batteries, composed of an active material such as lead oxid, and a binding medium composed of a solution of amber incorporated therewith, substantially as set forth.

608,615. LAMP-CHIMNEY HOLDER. LEWIS MERTZ, Geneseo, Ill. Filed Apr. 20, 1898. Serial No. 678,272. (No model.)



Claim.—A lamp-chimney holder comprising a resilient elliptical loop constructed of resilient material provided at its terminals with eyes located at one end of the loop, the latter being arranged to engage a lamp-chimney at the center of its sides and adapted to project outward beyond the lamp-chimney, and the rods 3 and 4 provided at their lower ends with means for engaging a burner and having eyes at their upper ends engaging the ends of the loop at points beyond the lamp-chimney, the eye of the rod 4 being linked into the eyes of the loop, substantially as described.

608,616. SIGN. THOMAS MILLER, New York, N. Y. Filed Oct. 2, 1897. Serial No. 653,773. (No model.)



Claim.—1. In an advertising apparatus, the combination with a base and two upright supports, of a revoluble sign journaled at its ends in said supports and provided with inscriptions on its faces, the one of said supports being provided with a guide-slot, a staff arranged contiguous to said last-named support, intermeshing bevel-gears the one of which is carried by the sign and the other of which is carried by the staff, coacting annuli arranged on said staff in contact with each other and having coincident projections and recesses on their adjoining faces, the upper one of said annuli being reciprocatorily arranged on said staff and provided with a projection extending into said guide-slot in the adjoining support and the other of said annuli being fixed on said staff, and a spring disposed between the upper annulus and the bevel-gear on said staff, substantially as described.

2. In an advertising apparatus for a street-car, the combination with a base and two upright supports the one of which is provided with a horizontal arm and with a vertical guide-slot, of a revoluble horizontally-arranged sign provided with inscriptions on its faces, trunnions secured to the ends of said sign and journaled in said support, a vertical staff projecting through the car-roof, journaled at its upper end in said arm and provided with a handle at its lower end, intermeshing bevel-gears the one of which is carried by the staff and the other of which is carried by the adjacent trunnion, coacting annuli arranged on said staff in contact with each other and having coincident projections and recesses, the latter corresponding in number to the number of faces of said sign, the upper one of said annuli being reciprocatorily arranged on said staff and provided with a projection extending into said guide-slot and the other of said annuli being fixed on said staff, and a spiral spring surrounding, and arranged between the upper annulus and the bevel-gear on, said staff, substantially as described.

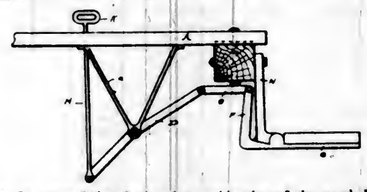
3. In an advertising apparatus, the combination of a revoluble block or frame, flanged plates arranged upon two opposing ends of said block, the flanges of said plates surrounding and being spaced from the block and one of said plates comprising removable sections, securing means for said sections, and sign-boards detachably secured to said block by said flanged plates, substantially as described.

4. In an advertising apparatus, the combination of a revoluble block or frame, flanged plates arranged upon two opposing ends of said block, the flanges of said plates surrounding and being spaced from the block and one of said plates being diagonally divided to form two removable sections, securing means for said sections, and sign-boards detachably secured to said block by said flanged plates, substantially as described.

608,617. CAR-STEP LIFTER. THOMAS MILLER, New York, N. Y. Filed Mar. 1, 1898. Serial No. 672,158. (No model.)

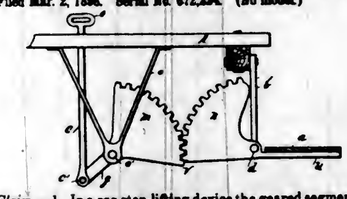
Claim.—1. A step-lifting device consisting of the crank D, trunnioned to a suitable hanger as *c*, crank D linked to the vertical arm F of the hinged step-rest *e*, substantially as described.

2. A step-lifting device consisting of the hinged step-rest *e*, hinged to the hanger N, and provided with a vertical arm F and adapted to be drawn downward by suitable means as crank D linked to the arm F, thereby folding the step up against the hanger N, substantially as described.



3. In a step-lifting device the combination of the crank D, lift-arm H and hanger *c* with the link G and hinged step-rest *e*, provided with the vertical arm F, and hinged to the hanger N and arranged to operate substantially as described.

608,618. CAR-STEP LIFTER. THOMAS MILLER, New York, N. Y. Filed Mar. 2, 1896. Serial No. 672,294. (No model.)

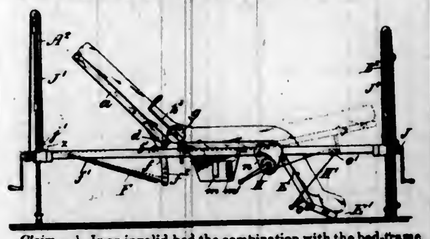


Claim.—1. In a car-step-lifting device the geared segments *n* provided with the arm *u* upon which the step rests, suitably trunnioned to the step-hanger *b* in combination with the geared segment *m* carrying the extended arm *g*, the lift *c* suitably trunnioned thereto, substantially as and for the purpose specified.

2. In a car-step-lifting device the geared segment *m* provided with the extended arm *g* and trunnioned to the hanger *c* in combination with a geared segment *n* trunnioned to the step-hanger *b* and provided with the arm *u* upon which the step *a* rests, all as and for the purpose specified.

3. In a car-step-lifting device the geared segment *n* provided with the projecting arm *u* and step *a*, said segment being trunnioned to the step-hanger *b*, in combination with the geared segment *m* trunnioned to the hanger *c* and provided with the extended arm *g* engaging with the lift *c*, and suitable device as hook *p* provided on the dashboard of the car for holding the same, all substantially as and for the purpose specified.

608,619. INVALID-BED. ALEXANDER MCKNIGHT, New York, N. Y. Filed Oct. 8, 1896. Serial No. 608,217. (No model.)



Claim.—1. In an invalid-bed the combination with the bed-frame, of a windlass supported by the bed and provided with a single continuous cord having its two ends adapted for engagement with the part to be shifted, the cord being loosely connected with the windlass so as to automatically adjust itself to its work, substantially as set forth.

2. In an invalid-bed, the combination with the bed-frame, of a windlass supported by the bed and provided with a single continuous cord having its two ends adapted for engagement with the part to be shifted, the cord passing freely through an eye in the windlass so as to automatically adjust itself to its work, substantially as set forth.

3. In an invalid-bed, the combination with the bed-frame and bed-bottom, of a hammock or stretcher comprising a folding frame having upwardly-breaking one-way joints and a bottom composed of a plurality of separate and independent strips or bands removably connected with the side rails of the frame, and means connected near the corners of the frame for hoisting the hammock above the bed-bottom, substantially as set forth.

4. A bed-bottom comprising a frame consisting of rigid side rails and jointed end rails, and a flexible spring-bottom removably connected with the side rails and consisting of springs connected to the side rails and of separate and independent strips or bands having their ends connected to said springs, substantially as set forth.

5. In an invalid-bed, the combination with a bed-frame, of hoisting-legs in addition to the legs of the bed-frame supported in position by the bed-frame, and hoisting mechanism connecting the said legs and bed-frame whereby the bed-frame may be lifted on said hoisting-legs, substantially as set forth.

6. In an invalid-bed, the combination with a bed-frame, of hoisting-legs in addition to the legs of the bed-frame supported in position by the bed-frame and hoisting mechanism supported on the bed-frame connecting the said legs and bed-frame whereby the bed-frame may be lifted on said hoisting-legs, substantially as set forth

7. In an invalid-bed, the combination with the bed-frame, of a pair of hoisting-legs for each end of the bed in addition to the legs of the bed-frame and supported in position by the bed-frame, and two independent hoisting mechanisms, one for each end of the bed, each of said hoisting mechanisms connecting a pair of hoisting-legs with the bed-frame whereby either end or both ends of the bed-frame may be lifted on said hoisting-legs, substantially as set forth.

8. In an invalid-bed, the combination with the bed-frame, of a pair of hoisting-legs in addition to the legs of the bed-frame and supported in position by the bed-frame at one end thereof, a windlass supported at the end of the bed, a cord or cords connecting with the windlass and having the free ends adapted for connection with the hoisting-legs above the bed-frame, said cord or cords passing around guide-pulleys or their equivalent fixed to the bed-frame one on each side of the windlass, substantially as set forth.

9. In an invalid-bed, the combination with the bed-frame, of a pivoted leg-section pivotally supported by the bed-frame and having downwardly-projecting arms, a windlass supported by the bed-frame having a cord or cords connecting with the said arms of the pivoted section, and supporting-guides on the bed-frame over which the cord or cords pass to the said arms from the windlass whereby the said leg-section may be elevated and inclined above the bed-frame, substantially as set forth.

10. In an invalid-bed, the combination with the bed-frame of a leg-section pivotally supported by the bed-frame and having at its outer end a folding foot-section, said leg-section adapted to be depressed below and elevated and inclined above the bed-frame and means for operating the leg-section, substantially as set forth.

11. In an invalid-bed, the combination with the bed-frame of an end section pivotally supported by the bed-frame, a windlass removably supported in bearing-brackets on the bed-frame and having a cord or cords secured thereto and removably connected with the end section, one of the windlass-brackets having a notch therein through which the cord may be withdrawn when the windlass is removed, substantially as set forth.

12. In an invalid-bed the combination with the bed-frame, of a leg-section pivotally supported by the bed-frame and having downwardly-projecting arms, a windlass supported by the bed-frame, a single continuous cord having its ends secured to the windlass and engaging the said arms of the end section to adjust the same, and supporting-guides on the bed-frame over which the cord passes from the windlass to the end section, substantially as set forth.

13. In an invalid-bed, the combination with the bed-frame having posts, of a table having arms, and supports for said arms pivoted to the posts, the table-arms adjustable in the supports substantially as set forth.

14. In an invalid-bed, the combination with the bed-frame having posts, of a table having arms, tubular supports in which said arms are adjustably supported, said tubular supports being pivoted to the bed-posts, and means for holding the tubular supports in place, substantially as set forth.

15. In an invalid-bed, the combination with the bed-frame having posts at the foot, of a table supported by the posts and horizontally and vertically adjustable and adapted to fold up against the said posts, substantially as set forth.

16. In an invalid-bed, the combination with the bed-bottom comprising side rails, depressed end rails and a bottom fabric secured to the side rails only and having transversely-yielding springs, of a commode-frame supported by the bed-bottom fabric, said commode-seat comprising a supporting commode-frame connected with the bottom fabric, and a seat-frame, substantially as set forth.

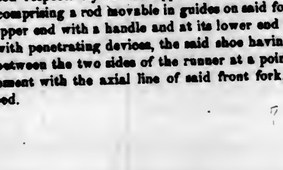
17. In an invalid-bed, the combination with the bottom fabric, of a removable commode-pan supported underneath an opening in said fabric, the commode-pan being cut away on one side, and a piece carried on the under side of the bottom fabric at said opening adapted to close the commode-pan at its cut-away portion when the pan is in place, substantially as and for the purpose set forth.

18. In an invalid-bed the combination with the bottom fabric, of a removable commode-pan supported underneath an opening in said fabric, the commode-pan being provided with an overflow-duct, substantially as and for the purpose set forth.

19. A mattress for a bed, having an opening all the way through the same larger at the top than at the bottom and an inflated cushion larger at the top than at the bottom, and fitting said opening and flush with the upper surface of the mattress, substantially as set forth.

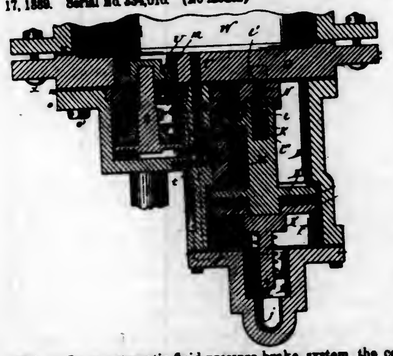
20. In an invalid-bed, the combination of a bed-bottom consisting of a middle section and pivoted leg and head sections, a commode-frame carried by and forming part of the bottom of the middle section, a commode adapted to be removably supported by and underneath the commode-frame, a commode-seat supported on and carried by the commode-frame, a mattress covering the bed-bottom and seat-frame, and having a removable section directly over the seat-frame, whereby an occupant of the bed is enabled to sit in a natural upright position upon the seat-frame and beneath the level of the mattress when the said removable section of the mattress is removed, substantially as set forth.

608,620. TOE-CLIP FOR BICYCLE-PEDALS. CHARLES O. NELSON, Chicago, Ill., assignor of one-half to A. H. Peirce, same place. Filed Mar. 8, 1897. Serial No. 626,432. (No model.)



Claim.—The combination with a pedal having a central sleeve or bearing for the pedal-crank, of a toe-clip, comprising a toe-receiving part, a foot-bearing plate resting upon the foot-bearing surface of the pedal, and having a backwardly-projecting part forming an angle with said plate and clamps for engaging said sleeve, said clamps comprising sections stamped from said plate and left unsevered at one portion, as set forth.

608,621. AIR-BRAKE. HARVEY S. PARK, Chicago, Ill., assignor to the Westinghouse Air Brake Company, Pittsburg, Pa. Filed Dec. 17, 1889. Serial No. 334,010. (No model.)

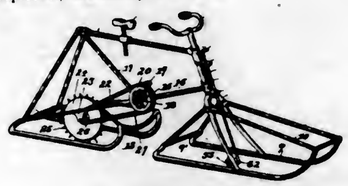


Claim.—In an automatic fluid-pressure brake system, the combination, with the main-valve chamber of a triple valve, of a port or passage in the casing of the chamber which communicates with the train-pipe and with the main-valve chamber, a main valve in the chamber, a port through the valve adapted to register with the port in the casing, and a non-return valve controlling the port through the main valve, whereby the main-valve chamber and the auxiliary reservoir may be charged from the train-pipe through the main valve, substantially as set forth.

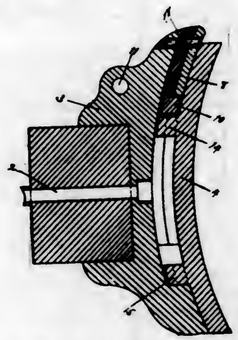
608,622. ICE-VELOCIPEDE. JULES C. PEASE, Northeast Carry, Me. Filed May 21, 1897. Serial No. 637,547. (No model.)

Claim.—1. In an ice-velocipede, the combination of a frame provided with drive mechanism, a front runner comprising two spaced sides, a front fork carrying handles and having its lower fork-arms connected respectively to the opposite sides of the runner, and a brake comprising a rod movable in guides on said fork and provided at its upper end with a handle and at its lower end with a shoe provided with penetrating devices, the said shoe having position in the space between the two sides of the runner at a point approximately in alinement with the axial line of said front fork, substantially as described.

2. In an ice-velocipede, the combination of a frame having an upper run and rear fork and a front fork provided with handles, two sled-runners each having two spaced sides with an open space between them and connected respectively with the fork-arms of the front and rear forks, a crank-hanger supported by braces from the front and rear forks, sprocket drive mechanism connected with the crank-hanger, a sprocket-wheel having position between the two spaced sides of the rear runner, two lower runs connecting between the crank-hanger and the heel end of the rear runner and provided with bearing-boxes in which the shaft ends of the spur-wheel are journaled, and drive mechanism between the said spur-wheel and drive-sprocket, substantially as described.



608,623. SHOE BRAKE AND HEAD. WILLIAM H. PHELPS, Fort Wayne, Ind. Filed Aug. 23, 1897. Serial No. 649,138. (No model.)



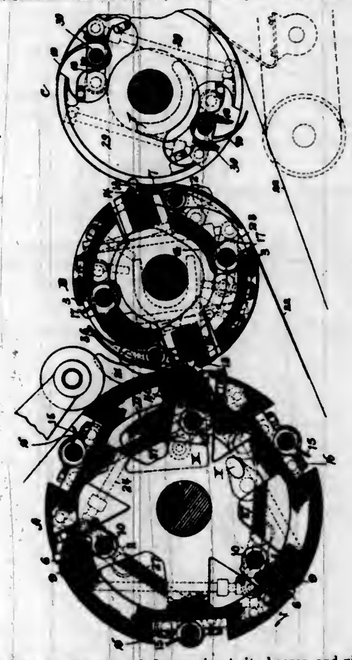
Claim.—1. A brake-shoe having lugs as described, in combination with a brake-head provided with longitudinal and transverse intersecting slots, adapted to receive and engage said brake-shoe lugs, and also provided with a slot 12 constructed as described; a key 8 pivotally mounted in said slot 12, and having upon its outer edge a lug 10 and upon its lower edge a forwardly-projecting flange adapted when the key is seated to project into the upper transverse slot, and prevent the upward riding of the shoe; all arranged substantially as described.

2. A brake-shoe having T-headed lugs upon its inner face with their outer edges serrated, combined with a brake-head having a face conforming to the inner face of the shoe, and provided with transverse grooves or slots, and intersecting a longitudinal slot, adapted to receive and engage said lugs as described, and also provided at its upper part with a slot 12; a key 8 and secured therein by bolt 18, and having upon its outer edge a lug 10 and upon its lower edge a forwardly-projecting flange serrated upon its lower edge, and adapted when the key is seated to project into the upper transverse slot of the brake-head and detachably engage with the adjacent serrated edge of the upper lug; all arranged as described and shown.

608,624. WEB-CUTTING MECHANISM. GEORGE F. READ, New York, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, same place. Filed Apr. 21, 1896. Serial No. 588,444. (No model.)

Claim.—1. The combination with a rotative carrier provided with a cutting-blade and adjacent thereto with fingers having means for projecting them into contact with the end of the web to clamp the same against a bearing in the opposite carrier, of a companion rotative carrier provided with vibrating grippers operating to bear upon and hold said inwardly-projecting web end within the periphery of the carrier, substantially as described.

2. The combination with two carriers, of cutting mechanism, one member of which is carried by each carrier, fingers normally carried within the periphery of one of the carriers and projected therefrom to bend the leading end of the sheet or web immediately after the same has been severed by the cutting mechanism within the periphery of the other carrier and lap the same upon a supporting-surface therein, and grippers sweeping within the peripheral line of said latter carrier and operating to clamp said sheet or web onto said surface and carry it onward with the carrier, substantially as described.



3. The combination of the carrier A, its bearer and vibrating grippers coacting with said bearer and hung and vibrated so that their extremities swing within the peripheral line of the carrier, cutting mechanism, one member of which is carried by the carrier A, and carrier B carrying the other member of the cutting mechanism and having fingers normally carried within its periphery, and means for vibrating the same to lay the sheet end onto said bearer within said carrier A, substantially as described.

4. The combination with the carrier A having a cutting member, an inclined bearer and vibrating grippers hung and vibrated so that their extremities swing within the peripheral line of the carrier, of the carrier B, its cutting-blade and vibrating fingers the latter coöperating with said bearer in the carrier A to clamp the leading end of the sheet immediately behind the cutting-blade against the bearer, substantially as described.

5. The combination with the carriers A and B, the grippers 6 and the vibrating presser-fingers 7, of the block 14 having recesses 5, substantially as described.

6. The combination with the carriers A and B, the grippers 6 and the presser-fingers 7, of the inclined bearer 9 and its recess 2 and a cutting-blade coöperating with said recess, substantially as described.

7. The combination with the carriers A and B, the fingers 7 and cutting-blade 13, of the grippers 6 and block 9 having the recess 2 for coöperation with said blade, substantially as described.

608,625. UNIVERSAL JOINT. FRANCIS H. RICHARDS, Hartford, Conn. Filed Nov. 20, 1897. Serial No. 660,116. (No model.)



Claim.—1. In a universal joint, the combination, with a coupling-head having a divided bearing member, of a journal coater having a meridian groove the back wall of which forms a journal-surface and is defined by a circle of greater diameter than the width of the opening at the divided end of the bearing member, said journal-coater having a recess in such journal-surface of a depth sufficient to permit the insertion of the journal-center between the divided ends of the bearing member.

2. In a universal joint, the combination, with a coupling-head having a divided bearing member, of a journal-center having a meridian groove the back wall of which forms a journal-surface and is defined by a circle of greater diameter than the width of the opening at the divided end of the bearing member, said journal-center having one concavity only in such journal-surface and of a depth sufficient to permit the insertion of the journal member between the divided ends of the bearing member.

3. A universal joint comprising a pair of coupling-heads each having a divided bearing member, and a spherical center having meridian grooves crossing on its polar centers, each of said meridian grooves having a back wall forming a journal-surface defined by a circle of greater diameter than the width of the opening at the divided end of its respective bearing member, said spherical center also having a pair of diametrically opposite concave grooves disposed transversely to each other and located, respectively, in such back walls of said respective meridian grooves, and each of a depth sufficient to permit the insertion of the spherical center in the divided end of the corresponding bearing member.

608,626. MACHINE FOR UNITING KNIT FABRICS. JACOB H. SMOOT, St. Joseph, Mich. Filed Sept. 15, 1897. Serial No. 651,738. (No model.)



Claim.—1. In a machine for sewing the seams of knit or looped fabrics, the combination with impaling-pins, a thread-needle, and a looper, of movable looping-pins, mounted respectively adjacent to the impaling-pins for extension at an angle to the plane thereof, and actuating devices for the looping-pins, substantially as specified.

2. In a machine of the class described, the combination with impaling-pins, a thread-needle, and a looper for coöperating with the thread-needle, of looping-pins movably mounted in guides perpendicular to the plane of the impaling-pins, and means for actuating the same to cause their upper extremities to project above the plane of the impaling-pins, substantially as specified.

3. In a machine of the class described, the combination with impaling-pins, a thread-needle, and a looper for coöperating with the thread-needle, of looping-pins mounted for movement perpendicular to the plane of the impaling-pins, and adapted to project at their upper ends above the plane thereof, said looping-pins having tips deflected toward the thread-needle and means for actuating the looping-pins, substantially as specified.

4. In a machine of the class described, the combination with impaling-pins, a thread-needle, and a looper for coöperating with the thread-needle, of looping-pins mounted for reciprocatory movement perpendicular to the plane of the impaling-pins and adapted to project above the plane thereof, said looping-pins having tapered upper portions, and adjustable actuating means for varying the projection of said looping-pins above the plane of the impaliug-pins, substantially as specified.

5. In a machine of the class described, the combination with impaling-pins, a thread-needle, and a looper for coöperating with the thread-needle, of looping-pins mounted in guides arranged perpendicular to the plane of the impaling-pins, and respectively in alinement with the intervals therebetween, and means for successively actuating the looping-pins to arrange their upper extremities above the plane of the impaling-pins, substantially as specified.

6. In a machine of the class described, the combination with impaling-pins, a thread-needle, and a looper for coöperating with the thread-needle, of looping-pins mounted in open-sided guides arranged perpendicular to the plane of the impaling-pins, and respectively in alinement with the intervals therebetween, a yielding band seated transversely to said guides, and means for actuating the looping-pins to cause their successive projection above the plane of the impaling-pins, substantially as specified.

7. In a machine of the class described, the combination with a

thread-needle and a looper, of a rotary disk carrying a peripheral series of outwardly-projecting impaling-pins and provided in alinement, respectively, with the intervals between said impaling-pins with perpendicularly-disposed seats, looping-pins fitted respectively in said seats, and a stationary guide having an irregular guide-groove engaging projections on the looping-pins, and adapted to successively advance the same to cause the projection of their upper extremities above the plane of the impaling-pins, substantially as specified.

8. In a machine of the class described, the combination with a thread-needle and a looper, of a rotary disk carrying a peripheral series of outwardly-extending impaling-pins, looping-pins fitted in seats arranged in alinement, respectively, with the intervals between the impaling-pins, a stationary guide-ring having a groove in engagement with enlargements of the looping-pins, and a cam-block arranged contiguous to the plane of the thread-needle for advancing the looping-pins to cause the projection thereof above the plane of the impaling-pins, substantially as specified.

9. In a machine of the class described, the combination with a thread-needle and a looper, of a rotary disk carrying impaling-pins, looping-pins mounted in guides alined with the intervals between the impaling-pins, and provided with enlarged heads, a stationary guide-ring having a circumferential groove to receive the heads of the looping-pins, an adjustable cam-block arranged on the guide-ring in the path of the heads of the looping-pins, and means for adjusting said cam-block, substantially as specified.

10. In a machine of the class described, the combination with a thread-needle and a looper, of a rotary disk carrying impaling-pins, looping-pins mounted in seats respectively in alinement with the intervals between the impaling-pins, a movable cam-block arranged in the paths of the extremities of the looping-pins to actuate the same successively, a slide having a beveled extremity to coöperate with the cam-block, a pivotal index-plate terminally traversing a gage or scale, and a set-screw carried by said index plate and attached to the slide, substantially as specified.

11. In a machine of the class described, the combination with a thread-needle and a looper, of a rotary disk carrying impaling-pins, looping-pins mounted in seats respectively in alinement with the intervals between the impaling-pins and having their lower extremities enlarged to form heads, a stationary guide-ring provided with a guide-groove to receive said heads, and also provided with means for successively advancing the looping-pins contiguous to the plane of the thread-needle, and shunting devices consisting of a shunting-cam mounted in a recess in the guide-ring and adapted to be terminally arranged in the path of the heads of the looping-pins to deflect the same from the guide-groove, and means for securing the shunting-cam at the desired adjustment, substantially as specified.

12. In a machine of the class described, the combination with work-holding devices, a looper, a needle-bar, and operating mechanism, of a thread-clamp, and means for actuating the same to clamp the thread at an intermediate point of the stroke of the needle-bar and means including a shifting arm, a trip-arm adjustable relatively to the shifting arm, and a stop in the path of the trip-arm, substantially as specified.

13. In a machine of the class described, the combination with work-holding devices, a looper, a needle-bar, and operating mechanism, of a thread-clamp, and operating devices including a swinging trip-arm carried by the needle-bar, and a fixed stop arranged in the path of the trip-arm, whereby the thread is clamped at an intermediate point of the stroke of the needle-bar, substantially as specified.

14. In a machine of the class described, the combination with work-holding devices, a looper, a needle-bar, and operating mechanism, of a thread-clamp and operating devices including an adjustable trip-arm, a stop arranged in the path of the trip-arm, and means for securing the trip-arm at the desired adjustment with relation to the other member of the operating devices whereby the point in the stroke of the needle-bar at which the trip-arm strikes the stop may be varied, substantially as specified.

15. In a machine of the class described, the combination with work-holding devices, a looper, a needle-bar, and operating mechanism, of a thread-clamp including a plunger, a shifting lever operatively connected with the plunger and having a trip-arm, yielding means for maintaining the shifting lever in its normal position, and a stop arranged in the path of the trip-arm and adapted to actuate the shifting lever to cause the operative movement of the plunger at an intermediate point of the stroke of the needle-bar, substantially as specified.

16. In a machine of the class described, the combination with work-holding devices, a looper, a needle-bar, and operating mechanism, of a thread-clamp having a sleeve provided with a thread-notch, a spring-actuated plunger fitted to slide in the sleeve in operative relation with a fixed stop, a shifting lever provided with a cam-face in operative relation with a collar on the plunger, and having a trip-arm, and a stop arranged in the path of the trip-arm, substantially as specified.

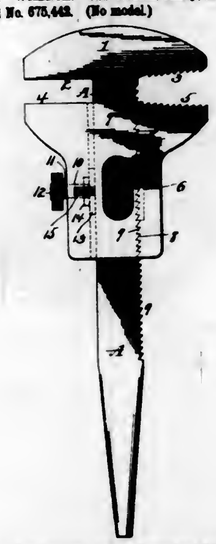
17. In a machine of the class described, the combination with work-holding devices, and a needle-bar and operating mechanism, of a looper-arm, operating mechanism for the looper-arm, an adjustable stop arranged in the path of the looper-arm and having a stop-arm, and an adjustable stop-pin threaded in the stop-arm and having its extremity arranged for engagement by the looper-arm, and means for securing the stop-arm in its adjusted positions, substantially as specified.

18. In a machine of the class described, the combination with work-holding devices, and a needle-bar and operating mechanism, of a looper-arm, operating mechanism for imparting lateral swinging movement to the looper-arm, a stop having a slotted plate and an upstanding stop-arm, a clamping-screw engaging the slotted plate to secure the stop at the desired adjustment, and an adjustable stop-pin mounted upon said stop-arm and arranged terminally in the path of the looper-arm, substantially as specified.

608,627. COMPOUND FOR TREATING SEEDS. GUSTAV THIELE, Sand Town, Tex. Filed Apr. 15, 1898. Serial No. 678,068. (No specimens.)

Claim.—The herein-described composition of matter, consisting of kerosene-oil, oil of turpentine, tincture of iodin and sulfur, in the proportions described as and for the purpose specified.

608,628. WRENCH. OLE WESTIL, Canby, Minn. Filed Mar. 24, 1898. Serial No. 675,442. (No model.)



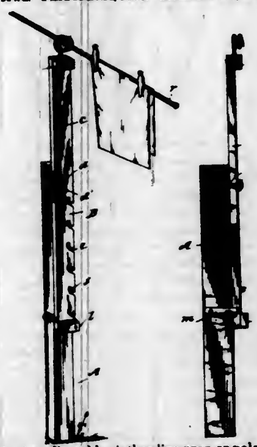
Claim.—1. In a wrench, the combination with a shank and a fixed jaw thereon, of a yoke mounted on the shank and having a jaw, the relative diameters of the shank and the opening through the yoke being such as to permit a lateral movement of the yoke on the shank, a cross-head adapted to be disposed between the shank of the wrench and the inner wall of the yoke, a shank on said cross-head and provided at its free end with a button or thumb-piece whereby to permit the cross-head to be turned and enter a recess in the yoke, substantially as set forth.

2. In a wrench, the combination with a shank having ratchet-teeth on one side and a fixed jaw on said shank, of a yoke having a jaw and mounted on the shank and provided internally with ratchet-teeth to engage the ratchet-teeth on the shank, a cross-head adapted to be disposed between the shank and the inner wall of the yoke whereby to retain the ratchet-teeth in mesh, said inner wall of the yoke being made with a recess to receive said cross-head when the latter is turned, whereby to permit the disengagement of the ratchet-teeth, and a button or thumb-piece connected with said cross-head whereby to turn it, substantially as set forth.

3. In a wrench, the combination with a shank having ratchet-teeth on one side and a fixed jaw on said shank, of a yoke mounted on said shank and provided with ratchet teeth to engage the ratchet-teeth on the shank, a jaw on said yoke, the relative diameters of the shank and the opening through the yoke being such as to permit the disengagement of the ratchet-teeth, a cross-head adapted to be disposed between the shank and the inner wall of the yoke whereby to maintain the ratchet-teeth normally in mesh, the said inner wall of the yoke being provided with a recess to receive said cross-head when the latter is turned, a shank on said cross-head, said last-mentioned shank being mounted in the yoke and provided with a button, and a spring adapted to force the cross-head into said recess when turned and retain it in such position when the yoke and the jaw thereon are to be adjusted relatively to the fixed jaw, substantially as set forth.

4. The combination with a shank, of a head thereon, said head forming a smooth jaw and a serrated jaw at opposite sides of the shank, a yoke mounted on the shank and having two jaws, one plain and the other serrated to coöperate respectively with the plain and serrated fixed jaws, intermeshing teeth on the shank and in the yoke, a cross-head adapted to be disposed between the shank and the inner wall of the yoke, whereby to retain the ratchet-teeth in mesh, and means for removing said cross-head from its position between the inner wall of the yoke and the shank, whereby to permit the adjustment of the jaws on the movable yoke, substantially as set forth.

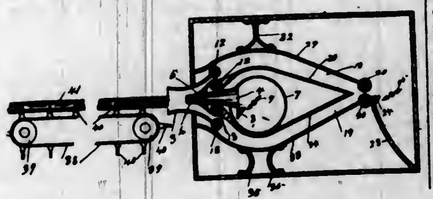
608,629. EXTENSIBLE CLOTHES-LINE PROP. JOHN W. WOOD, Hawarden, Iowa. Filed Mar. 24, 1898. Serial No. 675,084. (No model.)



Claim.—1. An adjustable clothes-line prop or pole, comprising in its construction a fixed member carrying a guide-pin and a locking-pin, an adjustable member having a line-support and provided with a longitudinal guide-slot through which said guide-pin projects and with a series of locking-slots adapted to engage said locking-pin, and a latch device on the fixed member adapted to engage said movable member, substantially as described.

2. An extensible clothes-line prop or pole, comprising in its construction a fixed member carrying adjacent to its upper end a guide-pin and below the same a locking-pin, an adjustable member having at its upper end a loop or guide for the line and provided at one side with a longitudinal guide-slot through which said guide-pin projects, whereby the adjustable member is adapted to swing laterally and slide longitudinally on said pin, and a series of locking-slots in its opposite side edge adapted to engage the said locking-pin, and a turn-button on the fixed member adapted to be brought into the path of movement of the adjustable member to hold the slot of the latter in engagement with the locking-pin, substantially as described.

608,680. MEANS FOR EXTRACTING PITH OR CELLULOSE FROM CORNSTALKS. FRANCIS T. WRIGHT, Edinburg, Ind. Filed Jan. 29, 1898. Serial No. 668,440. (No model.)



Claim.—1. In a machine for extracting and separating the pith of cornstalks from the shell thereof a plurality of tubular feeding-hoppers in horizontal alinement; a transverse divider arranged in said hoppers as shown, and adapted to split or divide the stalk-shell longitudinally in approximately equal sections and direct such sections in diverging directions to feeding-rollers therefor respectively; a plurality of pith-receiving tubes mounted in said divider as shown and arranged in concentric relation to said hoppers, having a knife-edge on their forward end and adapted to separate the pith from its containing-shell; and a plurality of feeding-rollers in close proximity to and in coöperative relation with said divider and pith-tubes, adapted to assist in continuously feeding said stalks to said divider and pith-tubes.

2. In a machine of the class specified, the combination of the feeding-hoppers in horizontal alinement; a transverse divider fixed in the rear end of said hoppers as shown and adapted to longitudinally sever the cornstalk-shell into two sections and to direct such sections in diverging directions to adjacent feed-rollers; a plurality of knife-edged tubes concentrically arranged in said hoppers, and rigidly mounted in said divider as shown, with their cutting-edge slightly advanced, and adapted to separate the pith from its containing-sheath which is simultaneously split by the said divider; feeding-rollers adapted to engage said sheath-sections and thereby continuously feed the stalks to the divider and pith-tubes; a pith-drum into which the said pith-tubes discharge; and means for continuously severing the discharging pith into short segments into said drum.

3. The combination in a cellulose-extracting device of a fixed transverse divider or cutter-bar passing diametrically through a plurality of feeding hoppers, and adapted to sever the cornstalk-shell longitudinally and direct its sections to proper feeding-rollers; a series of pith-tubes having their forward cutting ends fixed in said divider-bar in concentric relation to said feeding-hoppers and having their rear ends mounted in suitable openings in the pith-drum, adapted to receive and separate the pith from its containing-sheath as it is continuously fed forward to said tubes and longitudinally severed by said divider; feeding-rollers in coöperative relation with said divider and adapted by an actuating engagement with said sheath-sections, to assist in continuously feeding the said cornstalks; a pith drum or receptacle adapted to receive the pith as it is discharged from said tubes; means for dividing the pith into small segments in said receptacle; converging chutes for the said sheath-sections leading from the feeding-rollers to the discharge-rollers; a pair of discharge-rollers at the meeting ends of said chutes and a suitable cutter in close proximity to said discharge-rollers adapted to finely divide said discharge sheath-sections for the purpose specified, all substantially as described.

4. In an apparatus of the class described, the combination of a fixed divider having a knife-edge to cleave or sever the cornstalk shell or sheath, and adjacent flaring sides to direct the sheath-sections in divergent directions to proper feeding-rollers; and provided with a series of lateral openings for the pith-tubes; a series of pith-extracting tubes mounted in said openings having an annular knife-edge upon their forward end which is slightly in advance of the cutting edge of the divider, and having their inner discharge end arranged in suitable openings in a proper pith-receptacle; and means for continuously feeding the cornstalks to said divider.

608,681. NET-LIFTING MACHINE. WILLIAM F. ARBARB, Two Rivers, Wis., assignor of one-half to Peter Gagnon, same place. Filed Nov. 8, 1897. Serial No. 657,783. (No model.)

Claim.—1. A net lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, reciprocative net-gripping plungers operative in conjunction with the guards, and automatic pushers operative to insure disengagement of the net from said guards.

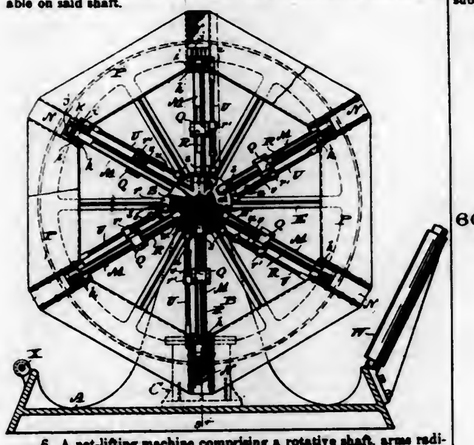
2. A net lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, troughs connecting the guards, and reciprocative net-gripping plungers operative in conjunction with said guards.

3. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, troughs connecting the guards, reciprocative net-gripping plungers operative in conjunction with said guards, and automatic pushers operative to insure disengagement of the net from the aforesaid guards.

4. A net-lifting machine comprising a shaft mounted in bearings, arms radiating from the shaft, net-guards carried by the arms, troughs connecting the guards, reciprocative net-gripping plungers operative in conjunction with said guards, automatic pushers operative to insure disengagement of the net from the aforesaid guards, and a drive mechanism having clutch connection with said shaft.

5. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, levers fulcrumed to said arms, net-gripping plungers extending from the levers to op-

erate in conjunction with the guards, and a lever-rocking cam adjustable on said shaft.



6. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, levers fulcrumed to said arms, net-gripping plungers extending from the levers to operate in conjunction with the guards, pushers in guide connection with the aforesaid arms to disengage the net from said guards, and a lever-rocking pusher-actuating cam adjustable on said shaft.

7. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, trough-connected net-guards carried by the arms, levers fulcrumed to said arms, net-gripping plungers extending from the levers to operate in conjunction with the guards, pushers in guide connection with the aforesaid arms, and a lever-rocking pusher-actuating cam adjustable on said shaft.

8. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, levers fulcrumed to said arms, net-gripping plungers extending from the levers to operate in conjunction with the guards, a lever-actuating cam provided with a peripheral nose, and spring-controlled pushers having cranked ends impinging the periphery of the cam, these pushers being in guide connection with the aforesaid arms and operative to force the net out of said guards subsequent to retraction of the plungers.

9. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the shaft, and reciprocative net-gripping plungers having corrugated working ends opposed to corrugated surfaces of the guards with which they cooperate.

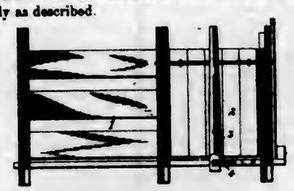
10. A net-lifting machine comprising a shaft mounted in bearings, arms radiating from the shaft, trough-connected net-guards carried by the arms, reciprocative net-gripping plungers operative in conjunction with the guards, a spur-wheel loose on the shaft, a clutch for the spur-wheel and shaft, and a motor-driven pinion in mesh with said spur-wheel.

11. A net-lifting machine comprising a shaft mounted in bearings, arms radiating from the shaft, trough-connected net-guards carried by the arms, levers fulcrumed to said arms, plungers extending from the levers to operate in conjunction with the guards, pushers in guide connection with the aforesaid arms, a lever-rocking pusher-actuating cam, a spur-wheel loose on the shaft, a clutch for the spur-wheel and shaft, and a motor-driven pinion in mesh with said spur-wheel.

12. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, levers fulcrumed to said arms, net-gripping plungers extending from the levers to operate in conjunction with the guards, a lever-rocking cam in loose sleeve connection with said shaft, lugs on a shaft-bearing and cam-adjusting screws having their bearings in said lugs.

608,682. DEVICE FOR HOLDING HOGS. PETER AUTHIER, Jefferson, S. D. Filed June 23, 1897. Serial No. 641,960. (No model.)

Claim.—The combination with a runway, of a laterally-opening door pivotally suspended from its upper edge, a keeper located below the bottom or swinging edge of the door, and a catch extending vertically and secured to the outer side of the door, the lower end of said catch being designed to engage with the keeper, and the upper end thereof being extended above the top edge of the door where it may be grasped and used as a lever for opening the door, the said upper end of the catch being adapted to be swung laterally and engaged beneath a transverse horizontal bar at the end of the runway, substantially as described.



608,688. COAT AND VEST HOLDER. DAVID W. AXENE, Kansas City, Mo. Filed Nov. 20, 1897. Serial No. 659,260. (No model.)



Claim.—1. A hanger for coats and vests, comprising two front sections, and two back sections, said sections being shaped substantially like the front and back sections of a vest, the two back sections being hinged together and to the front sections, whereby the sections are adapted to fold upon one another, and fastening devices for connecting the free edges of the front sections and for connecting the adjacent upper edges of the front and rear sections to hold the sections in operative position, substantially as described.

2. A hanger for coats and vests, comprising two front and two back sections shaped like the front and back sections of a vest, and hinged together at the sides and back of the hanger, whereby the sections are adapted to fold upon one another, the upper edges of the front sections and the free edge of one of the front sections being provided with slots, and hooks mounted on the free edge of the other front section and on the upper edges of the back sections for engaging the slots to hold the sections in operative position, substantially as described.

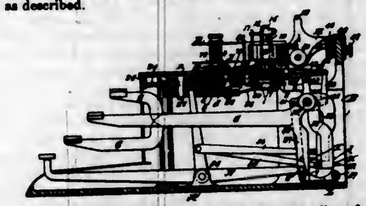
3. A foldable hanger for coats and vests, comprising two front and two back sections of flexible material, shaped substantially like the front and back sections of a vest, the two back sections being hinged together at their opposing edges by a strip of textile fabric extending substantially half-way their length, said edges above the hinge inclining away from each other to form a gore, and the front sections being hinged to the respective back sections by strips of textile fabric and the free edges of the front sections, the shoulder edges of adjacent front and rear sections, and the opposite edges of the said gore being respectively provided with devices to detachably lock them together, substantially as described.

4. A foldable hanger for coats and vests, comprising two back and two front sections of flexible material shaped substantially like the front and back sections of a vest, the two back sections being hinged together and to the front sections by strips of textile fabric, and a strip of flexible material being secured at one edge to one section at each hinge-joint and extending across said joint to loosely engage the other section, and the free vertical edges of the front sections and the shoulder edges of adjacent front and back sections being respectively reinforced by strips of textile fabric and provided with devices to detachably lock them together, substantially as described.

608,684. TYPE-WRITING MACHINE. STEPHEN M. BALLEN, New York, N. Y., assignor of one-half to William H. Humphrey, Norfolk, Conn. Filed Apr. 5, 1893. Serial No. 469,234. (No model.)

Claim.—1. The combination with a type-carrier, of a plurality of series of keys, a positioning member having a pivotal connection with the type-carrier, connections between said positioning member and keys for moving said type-carrier in different directions by the different series of keys to position the type-carrier, and stopping mechanism controlled by all the series of keys whereby the type-carrier is stopped and held in position, substantially as described.

2. The combination with a type-carrier and movable carrier-frame, of a plurality of series of keys, a positioning member having a pivotal connection with the type-carrier, connections between said positioning member and keys for moving said type-carrier in different directions by the different series of keys to position the type-carrier, and stopping mechanism controlled by all the series of keys whereby the type-carrier is stopped and held in position, said positioning member and stopping mechanism having a further movement after the type-carrier is positioned whereby the frame is moved to carry the type-carrier against the paper for the impression, substantially as described.



3. The combination with a type-carrier, of a plurality of series of keys, a positioning member having a pivotal connection with the type-carrier, connections between said positioning member and the keys for moving said type-carrier in different directions by the different series of keys to position the type-carrier, a stopping member having a pivotal connection with said type-carrier and connections between said stopping member and the keys whereby the stopping member is controlled by all the series of keys to stop the type-carrier and hold it in position, substantially as described.

4. The combination with a type-carrier, of a plurality of series of keys, a positioning member having a pivotal connection with the type-carrier, connections between said positioning member and the keys for moving said type-carrier in different directions by the different series of keys to position the type-carrier, a stopping member having a pivotal connection with said type-carrier, and connections between said stopping member and the keys whereby the stopping member is controlled by all the series of keys to stop the type-carrier and hold it in position, said positioning and stopping members having a further movement after the type-carrier is positioned whereby the frame is moved to carry the type-carrier against the paper for the impression, substantially as described.

5. The combination with a type-carrier, of a plurality of series of keys, a positioning member having a pivotal connection with the type-carrier, bails and connections for actuating the positioning member to move the type-carrier in different directions by the different series of keys to position the type-carrier and a stopping member including a bail actuated by all the series of keys, whereby the type-carrier is stopped when positioned by one of the other bails, substantially as described.

6. The combination with a type-carrier, of a plurality of series of keys, a positioning member having a pivotal connection with the type carrier, bails and connections for actuating the positioning member to move the type-carrier in different directions by the different series of keys to position the type-carrier, a stopping member, and a bail and connections actuated by all the series of keys whereby the stopping member is controlled to stop the type-carrier when positioned by any one of the other bails, substantially as described.

7. The combination with a type-carrier, of a plurality of series of keys, a positioning member having a pivotal connection with the type-carrier, bails and connections for actuating the positioning member to move the type-carrier in different directions by the different series of keys to position the type-carrier, a stopping member having a pivotal connection with said type-carrier, and a bail and connections actuated by all the series of keys whereby the stopping member is controlled to stop the type-carrier when positioned by any one of the other bails, said bails and members having a further movement after the type-carrier is positioned and stopped whereby the frame is moved to carry the type-carrier against the paper for the impression substantially as described.

8. The combination with a type-carrier, of a positioning member and a stopping member having a pivotal connection with the type-carrier, keys and connections for actuating said positioning member to position the type-carrier, and connections between the keys and stopping member, whereby the latter is controlled to stop and hold the type-carrier in position, substantially as described.

9. The combination with a type-carrier, of a positioning member and a stopping member having a pivotal connection with the type-carrier with provision for lost motion between the type-carrier and stopping member, keys and connections for actuating said positioning member to position the type-carrier, and connections between the keys and stopping member, whereby the latter is controlled to stop and hold the type-carrier in position, substantially as described.

10. The combination with a type-carrier, of a positioning member and a stopping member having a pivotal connection with the type-carrier with provision for lost motion between the type-carrier and stopping member, keys and connections for actuating said positioning member in different directions to position the type-carrier, and connections between the keys and stopping member, whereby the latter is controlled to stop and hold the type-carrier in position, substantially as described.

11. The combination with a rotary type-carrier, of a positioning member and a stopping member having a pivotal connection with said type-carrier at opposite sides of the axis, keys and connections for actuating said positioning member to rotate the type-carrier, and connections between the keys and stopping member whereby the latter is controlled to stop and hold the type-carrier in position, substantially as described.

12. The combination with a rotary type-carrier of a positioning member and a stopping member pivotally connected to said type-carrier at opposite sides of the axis, keys and connections for actuating said positioning member to rotate the type-carrier in either direction, and connections between the keys and stopping member whereby the latter is controlled to stop and hold the type-carrier in position, substantially as described.

13. The combination with a rotary type-carrier and movable carrier-frame, of a positioning member and a stopping member having a pivotal connection with said type-carrier at opposite sides of the axis, keys and connections for actuating the positioning member to rotate the type-carrier in either direction, and connections between the keys and stopping member whereby the latter is controlled to stop and hold the type-carrier in position, said positioning and stopping members having a further movement after the type-carrier is positioned to move the carrier-frame for the impression, substantially as described.

14. The combination with a rotary type-carrier, and a carrier-frame pivoted to swing in a horizontal plane, of a positioning member and a stopping member having a pivotal connection with said type-carrier at opposite sides of the axis, keys and connections for actuating the positioning member to rotate the type-carrier in either direction, and connections between the keys and stopping member whereby the latter is controlled to stop and hold the type-carrier in position, said positioning and stopping members having a further movement after the type-carrier is positioned to swing the carrier-frame for the impression, substantially as described.

15. The combination with a rotary type-carrier, of movable members connected to said type-carrier at opposite sides of the axis, said type-carrier being normally at dead-center with the line of bodily movement of said movable members, and keys and connections for actuating said members to throw said type-carrier off the dead-center and position and lock the type-carrier by said movable members, substantially as described.

16. The combination with a rotary type-carrier, of a rocking and bodily-movable lever connected to said type-carrier, said type-carrier being normally at dead-center with the line of bodily movement of said lever, and keys and connections for rocking said lever in either direction to throw the type-carrier off the dead-center and move said lever bodily to rotate the type-carrier further, substantially as described.

17. The combination with a rotary type-carrier, of a rocking and bodily-moving lever connected to said type-carrier on one side of the axis, a member connected to the type-carrier on the opposite side of the axis, said type-carrier being normally at dead-center with the line of bodily movement of said lever and member, and keys and connections for rocking said lever in either direction to throw the type-carrier off the dead-center, and moving said lever and member to position and lock the type-carrier, substantially as described.

18. The combination with a rotary type-carrier, of a rocking lever pivotally connected to said type-carrier on one side of the axis, a link having a slotted connection to said type carrier on the opposite side of the axis, and keys and connections for rocking said lever in either direction and moving said lever and link endwise, to position and lock the type-carrier, substantially as described.

19. The combination with a rotary type-carrier, of a rocking lever pivotally connected to said type-carrier on one side of the axis, arms on opposite sides of said lever, a link having a slotted connection to said type-carrier on the opposite side of the axis, sliding bars carrying said lever and link, sliding bars carrying members adapted to engage the opposite arms of said lever, series of keys and connections for actuating said bars to rock the lever and rotate the type-carrier in opposite directions, and connections between both series of keys and the sliding bar carrying the link, whereby the type-carrier is locked in position, substantially as described.

20. The combination with a rotary type-carrier and movable carrier-frame, of a rocking lever pivotally connected to said type-carrier on one side of the axis, a link having a slotted connection to said type-carrier on the opposite side of the axis, and keys and connections for rocking said lever in either direction and moving said lever and link endwise, to position and lock the type-carrier and move the carrier-frame for the impression, substantially as described.

21. The combination with a rotary type-carrier and movable carrier-frame, of a rocking lever pivotally connected to said type-carrier on one side of the axis, arms on opposite sides of said lever, a link having a slotted connection to said type-carrier on the opposite side of the axis from said lever, sliding bars carrying said lever and link, sliding bars carrying members adapted to engage the opposite arms of said lever, series of keys and connections for actuating said bars to rock the lever and rotate the type-carrier in opposite directions, and connections between both series of keys and the sliding bar carrying the link, whereby the type-carrier is first locked in position and then the carrier-frame moved for the impression, substantially as described.

22. The combination with the type-carrier and keys of a type-writing machine, of mechanism including a positioning member having a pivotal connection with said type-carrier for positioning the type-carrier by the movement of the keys and moving the type-carrier against the paper for the impression, and locking mechanism positively holding the type-carrier frame against movement during the carrier-positioning operation and released for the impression movement, substantially as described.

23. The combination with the type-carrier and keys of a type-writing machine, of mechanism for positioning the type-carrier by the movement of the keys and moving the type-carrier against the paper for the impression, and a locking-bar connected to the carrier-frame and extending transversely to the keys, and means for holding said locking-bar in position to lock the frame against movement during the carrier-positioning operation, substantially as described.

24. The combination with a type-carrier, of lever-keys, mechanism for positioning the type-carrier by the movement of the keys and moving the type-carrier against the paper for the impression, and a locking-bar connected to the carrier-frame and engaged and held in position by the keys to lock the frame against movement during the carrier-positioning movement of the keys and released for the impression movement, substantially as described.

25. The combination with a type-carrier, of lever-keys having arms extending at an angle to the keys, mechanism for positioning the type-carrier by the movement of the keys and moving the type-carrier against the paper for the impression, and a locking-bar connected to the carrier-frame and engaged and held in position by the arms during the carrier-positioning movement of the keys to hold the frame against movement and released for the impression movement, substantially as described.

26. The combination with a type-carrier, of lever-keys provided with surfaces curved substantially concentrically with the path of movement of said keys, mechanism for positioning the type-carrier by the movement of the keys and moving the type-carrier against the paper for the impression, and a locking-bar connected to the carrier-frame and engaged and held in position by the curved surfaces on the keys during the carrier-positioning movement and released by the curved surfaces for the impression movement, substantially as described.

27. The combination with the keys, type-carrier and movable carrier-frame, of mechanism for positioning the type-carrier by the movement of a key and moving the carrier-frame for the impression, and locking mechanism brought into action by the movement of the key and locking the key, carrier-frame and positioning mechanism together during the impression movement of the frame, substantially as described.

28. The combination with the keys, type-carrier and movable carrier-frame, of mechanism for positioning the type-carrier by the movement of a key and moving the carrier-frame for the impression, and locking mechanism actuated by the impression movement of the frame and locking the key, carrier-frame and positioning mechanism together, substantially as described.

29. The combination with the keys, type-carrier and movable carrier-frame, of mechanism for positioning the type-carrier by the movement of a key and moving the carrier-frame for the impression, a locking-bar normally just outside the path of the key, and connections between said locking-bar and carrier-frame whereby the bar is brought into and held in engagement with the key by the movement of the frame and the key, carrier-frame and positioning mechanism are locked together during the impression movement, substantially as described.

30. The combination with a type-carrier and movable carrier-frame, of lever-keys provided with surfaces curved substantially concentrically with the path of movement of said keys, and with surfaces curved or inclined on a different radius or angle, mechanism for positioning the type-carrier by the movement of the keys and moving the type-carrier frame for the impression, a locking-bar engaged and held in position by the concentrically-curved surfaces during the positioning movement, and connections between said bar and carrier-frame, whereby the carrier-frame is locked in position by the bar during its engagement by the concentrically curved surfaces of the keys and the bar held pressed against the other curved or inclined surfaces of the keys during the impression movement of the carrier, substantially as described.

31. The combination with a type carrier, of lever-keys, mechanism for positioning the type-carrier by the movement of the keys and moving the type-carrier against the paper for the impression, a locking-bar engaged and held in position by the keys during the carrier-positioning movement of the keys and released for the impression movement, and connections between the locking-bar and carrier-frame whereby the bar is moved by the frame during the impression movement, said bar being mounted in position to be brought by said movement into the path of the keys, whereby the keys not actuated are locked in their normal position, substantially as described.

32. The combination with the type-carrier and keys of a type-writing machine, of mechanism for positioning the type-carrier by the movement of the keys and moving the type-carrier against the paper for the impression, and locking mechanism positively holding the type-carrier frame against movement during the positioning operation and released for the impression movement and locking the other keys on the movement of one key until the return of the parts to their normal position, substantially as described.

33. The combination with the type-carrier and keys of a type-writing machine, of mechanism for positioning the type-carrier by the movement of the keys and moving the type carrier against the paper for the impression, and mechanism actuated by the impression movement of the type-carrier locking the keys in their normal position during the impression movement of the carrier, substantially as described.

34. The combination with rotary type-carrier F, of keys G, bails I I', and connections including a member having a pivotal connection with said type-carrier for rotating said carrier in opposite directions to position the carrier, and bail K and connections for stopping and locking said carrier in position, substantially as described.

35. The combination with rotary type-carrier F, and a movable carrier-frame, of keys G, bails I, I' and connections including a member having a pivotal connection with said carrier for rotating said carrier in opposite directions to position the carrier, and bail K and connections for stopping and locking said carrier in position, said bails having a further movement after the type-carrier is positioned to move the carrier-frame for the impression, substantially as described.

36. The combination with rotary type-carrier F, and a movable carrier-frame, of keys G having arms 19 provided with curved surfaces 8, bails I, I' and connections for rotating said carrier in opposite directions to position the carrier, bail K and connections for stopping and locking said carrier in position, said bails having a further movement after the type-carrier is positioned to move the carrier-frame for the impression, and locking-bar L connected to the carrier-frame locked by engagement of the keys, substantially as described.

37. The combination with rotary type-carrier F, and a movable carrier-frame, of keys G having arms 19 provided with curved surfaces 8 and carved or inclined surfaces 8', bails I, I' and connections for rotating said carrier in opposite directions to position the carrier, bail K and connections for stopping and locking said carrier in position, said bails having a further movement after the type-carrier is positioned to move the carrier-frame for the impression, and locking-bar L connected to the carrier-frame and engaged by the curved surfaces, substantially as described.

38. The combination with rotary type-carrier F, and a movable carrier-frame, of keys G having arms 19 provided with curved surfaces 8 and curved or inclined surfaces 8', bails I, I' and connections for rotating said carrier in opposite directions to position the carrier, bail K and connections for stopping and locking said carrier in position, said bails having a further movement after the type-carrier is positioned to move the carrier-frame for the impression, and locking-bar L connected to the carrier-frame and engaged by the curved surfaces, said bar and arms 19 being so constructed and located relatively to each other that the bar is brought by the impression movement into the path of the keys not actuated and the keys locked in normal position, substantially as described.

39. The combination with rotary type-carrier F, and a movable carrier-frame, of keys G having arms 19 provided with curved surfaces 8 and curved or inclined surfaces 8', bails I, I' and connections for rotating said carrier in opposite directions to position the carrier, bail K and connections for stopping and locking said carrier in position, said bails having a further movement after the type-carrier is positioned to move the carrier-frame for the impression, locking-bar L, link 40 and lever n having arms connected to the link and carrier-frame, substantially as described.

40. The combination with rotary type-carrier F, of lever a having arm 20 connected to said carrier on one side of the axis of the carrier, and arms 21, 22 on opposite sides of the pivot of said lever, and keys and connections for rocking said lever by either of its arms 21, 22 and then moving it bodily, substantially as described.

41. The combination with rotary type-carrier F, of lever a having arm 20 connected to the carrier on one side of its axis, and arms 21, 22 on opposite sides of the pivot of said lever, link 26 connected to the type-carrier by a slotted pivotal connection on the opposite side of the axis from the arm 20, said lever and link lying in different planes so as to pass each other, and keys and connections for rocking said lever a by either of its arms 21, 22, and moving the lever and link longitudinally, substantially as described.

42. The combination with rotary type-carrier F and movable carrier-frame, of lever a having arm 20 connected to the carrier on one side of its axis, and arms 21, 22, on opposite sides of the pivot of said lever, link 26 connected to the type-carrier by a slotted pivotal connection on the opposite side of the axis from the arm 20, said lever and link lying in different planes so as to pass each other, and keys and connections for rocking said lever a by either of its arms 21, 22, and moving the lever and link longitudinally, substantially as described.

43. The combination with rotary type-carrier F, of lever a having arm 20 connected to the carrier on one side of its axis, and arms 21, 22, on opposite sides of the pivot of said lever, link 26 connected to the type-carrier by a slotted pivotal connection on the opposite side of the axis from the arm 20, said lever and link lying in different planes so as to pass each other, sliding rods c, b on which said lever and link are pivotally mounted, a spring for holding the rod c in its normal position, sliding rods d, e carrying members lying in different planes so as to pass each other, and engaging respectively first one of arms 21, 22 and on their further movement engaging also lever a in line with the axis, and keys and connections for moving said rods to rock the lever a by either of its arms 21, 22, and move the lever and link longitudinally, substantially as described.

44. The combination with rotary type-carrier F, having cross-piece 19 on its shaft, of lever a having arm 20 pivoted loosely to the cross-piece on one side of the axis, and arms 21, 22 on opposite sides of the pivot of said lever provided with pins 3, 4, said lever and link lying in different planes so as to pass each other, sliding spring-pressed rod c on which the lever is pivoted by pin 5, sliding rod b on which the link is pivotally mounted, and sliding rods d, e carrying plates 27, 28, lying in different planes and each cut away opposite the center of lever a so as to first engage one of the pins 3, 4, substantially as described.

45. The combination with the carriage-spring and step feeding devices of a type-writer, and a ratchet for holding said spring under tension, of a double-pawl holding device for the ratchet forming a step-by-step releasing device therefor, substantially as described.

46. The combination with the carriage-spring and step feeding devices of a type-writer, of a pulley connected to the carriage, and within which the spring is coiled, a ratchet-wheel having a hub within said pulley, said carriage-spring being connected to the pulley and hub, and a finger-piece carrying a double-pawl holding device for the ratchet forming a step-by-step releasing device therefor, substantially as described.

47. The combination with the pulley o, of the spring p, ratchet-wheel q having finger-piece r and hub 56 to which the spring is connected, and finger-lever s having pawls 58, substantially as described.

48 The combination with the type-carrier and reciprocating carrier-frame of a type-writer, of a member connected to and moving with said type-carrier frame, ribbon-spools having ratchets, and a pawl-carrier carried by said member and adjustable into position to engage either of said ratchets, substantially as described.

49. The combination with a type-carrier and reciprocating carrier-frame, of ribbon-spools mounted in front of said carrier and provided with ratchets, plate 70, pawl-carrier 71 on said carrier having pawls t, and movable on said plate into position to actuate either of said spools, substantially as described.

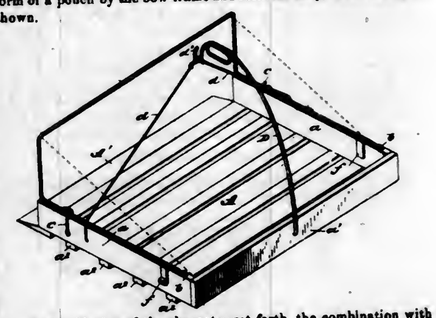
50. The combination with ribbon-spools R, R' and ratchets 69, of sliding plate 70, pawl-carrier 71 pivoted on said plate, and carrying pawls t, and holding-spring 72, substantially as described.

51. The combination with the adjustable screws l, of pressure-plate 37, and pressure-screws 38, substantially as described.

608,685. DUST RECEPTACLE OR POUCH. WILLIAM A. BARTHOLOMEW, Quincy, Ill. Filed Feb. 11, 1898. Serial No. 669,951. (No model.)

Claim.—1. In combination with a frame comprising side pieces, a front cross-bar having a beveled edge, transverse slats forming the bottom portion of the frame, of a bow pivoted to the rear upper edges of the side pieces, means for holding the bow in engagement therewith the forward portion of the bow extending upward across the frame, a handle or supporting means consisting of wires or bails attached to the side and end cross-pieces of the frame, said bails being adapted to be placed in engagement with each other at their upper ends, substantially as shown and for the purpose set forth.

2. In a dust pouch or receptacle, the combination with a frame having side pieces and a front cross-bar, of a wire bow bent substantially as shown and pivotally attached to the rear portion of the frame so as to be swung upward and rearward thereof, a resilient strip which is adapted to engage with the front cross-bar of the frame and a rectangular piece of fabric or paper adapted to be held in the form of a pouch by the bow-frame and resilient strip, substantially as shown.



3. In a device of the character set forth, the combination with a body or frame having a slatted bottom and a forward-projecting cross-piece, of a wire bow attached to the upper edges of the side pieces of the frame adjacent to the rear ends thereof and adapted to lie over said side pieces, the bow extending upward and over the front of the frame, hooks carried by the side pieces for engagement with the bow, and a piece of fabric or paper carried in the form of a pouch by the frame and bow, substantially as shown.

4. In a device of the character set forth, the combination of a frame having carrying means attached thereto, a bow attached to the rear ends of the side pieces of the frame by staples, hooks carried by said side pieces for engagement with the parallel members of the bow, detachable clips f, and a resilient plate for engagement with the front cross-bar of the frame, for the purpose set forth.

608,686. LATHE-CHUCK FOR WOODWORKING MACHINERY. CHARLES H. BARTLETT, New Portland, Me. Filed Sept. 27, 1897. Serial No. 653,113. (No model.)



Claim.—1. In a lathe-chuck, the combination with a hollow cylindrical sleeve provided at its forward end with a conical opening the wall of which is threaded, of a collar loosely surrounding said sleeve, and adapted to be moved back and forth thereon, a plunger of less length than the bore of the sleeve, loosely arranged within the latter and adapted to be brought forward therein for the purpose specified, a pin connecting said collar and plunger and a knocker-arm adapted to make contact with the collar to drive the plunger forward, substantially as described.

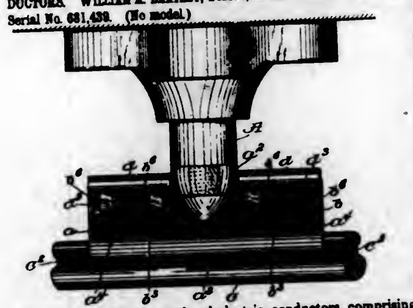
2. In a lathe-chuck, the combination with a hollow cylindrical sleeve provided at its forward end with a conical opening the wall of which is threaded, of a collar loosely surrounding said sleeve and adapted to be moved back and forth thereon, a plunger of less length than the bore of the sleeve loosely arranged within the latter and adapted to be brought forward therein to remove stock from the same, a pin connecting said collar and plunger, a rocking shaft journaled in brackets adjacent to the chuck, a knocker-arm secured to said shaft and adapted to make contact with the collar to operate the plunger, and a hand-lever secured to one end of said shaft, substantially as described.

3. In a lathe-chuck, the combination with a hollow cylindrical sleeve provided with stock-gripping means at its forward end, of a collar loosely surrounding said sleeve and adapted to be moved thereon, a plunger loosely arranged within the sleeve and adapted to be brought forward thereon to remove stock from the same, a pin connecting said collar and plunger, a shaft journaled in brackets adjacent to the chuck, a knocker-arm secured to said shaft and adapted to make contact with the collar to operate the plunger, a lever for

operating the shaft, and a spring acting upon the shaft to normally hold the knocker-arm out of contact with the collar.

4. In a lathe-chuck, the combination with a hollow cylindrical sleeve provided with a conical threaded bore at its forward end, of a collar loosely surrounding said sleeve, a plunger freely mounted within the sleeve and adapted to reciprocate therein for the purpose described, a connection between said collar and plunger, a bracket, 10, secured adjacent to the sleeve and provided with arms, 12, a shaft journaled in said arms, a knocker-arm, 15, secured to said shaft, and adapted to make contact with the collar, a hand-lever fixed to one end of the shaft, and a spring having its opposite ends secured to the lever and one of said arms respectively, said spring acting to normally hold the knocker-arm out of contact with the collar.

608,637. SUPPORTING-CLIP FOR OVERHEAD ELECTRIC CONDUCTORS. WILLIAM A. BARTLEY, Boston, Mass. Filed May 23, 1896. Serial No. 681,432. (No model.)

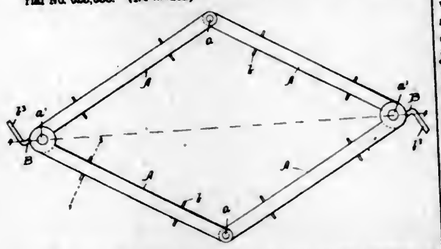


Claim.—1. A clip for overhead electric conductors, comprising two interlocking members provided respectively with fingers to engage opposite sides of the conductor, body portions diagonally opposite said fingers, a sliding clamp adapted to be forced into engagement with the outer surfaces of said body portions, and means for retaining said clamp after it has been forced into operative position, substantially as described.

2. A clip for overhead conductors, comprising interlocking members having body portions adapted to lie adjacent to each other and fingers offset with relation to said body portions and arranged to cross each other so that a movement of the body portions toward each other will cause said fingers to correspondingly move toward each other, the side edges of said body portions diverging from their ends, and clamps adapted to be driven on said body portions to fasten the same together with a wedging action, substantially as described.

3. A clip for overhead electric conductors, comprising the members *a* and *b* provided with the offset fingers a^2 and b^2 arranged to cross each other and engage opposite sides of the conductor, said members having their edges diverging from each other, the clamps *d* adapted to be forced into engagement with said members and provided with fingers d^2, and the lugs a^3 and b^3 to coöperate with said fingers, substantially as described.

608,638. BAG-HOLDER. NICHOLAS F. BECKER, Cincinnati, Ohio, assignor to Charles Dickinson, Chicago, Ill. Filed Mar. 1, 1897. Serial No. 625,655. (No model.)



Claim.—1. In a sack-holder, the combination with a number of opening and closing holder-bars hinged together at their meeting ends, of rotatable hook-carrying rods or shafts connected together by a gimbal joint or coupling at one of the hinges of said bars to cause said rods or shafts to rotate one with and by the other and enable said bars to turn on said hinge, substantially as specified.

2. In a sack-holder, the combiuation with a number of opening and closing holder-bars hinged together at their meeting ends, of rotatable hook-carrying rods or shafts connected together by a gimbal joint or coupling at one of the hinges of said bars to cause said rods or shafts to rotate one with and by the other and enable said bars to turn on said hinge, one of said bars or shafts being provided with means for rotating it, substantially as specified.

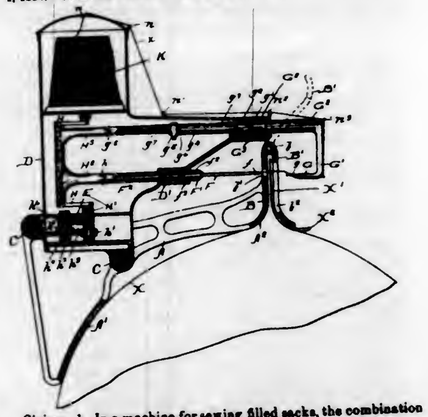
3. In a sack-holder, the combination with a number of opening and closing holder-bars hinged together at their meeting ends, of rotatable hook-carrying rods or shafts connected together by a gimbal joint or coupling at one of the hinges of said bars to cause said rods to rotate one with and by the other and enable said bars to turn on said hinge, the hooks on said rods or shafts being curved, and said bars having holes or recesses to receive the free ends or points of said hooks when closed to prevent disengagement of the sack therefrom, substantially as specified.

4. In a sack-holder having opening and closing hinged bars, the combination with one of said bars, of a rotatable shaft or rod mounted thereon and provided with a curved hook, the free end or point of which is adapted to close in or against the bar to prevent disengagement of the sack therefrom, said bar having transverse recesses to accommodate the hooks, and a longitudinal recess to receive said rod or shaft, substantially as specified.

5. In a sack holder, the combination with hinged bars A, of rotatable shafts or rods B B' connected together at their meeting ends by a gimbal-joint, the hinge-pivot of said bars at said gimbal-joint being divided into an upper and lower section so that the pivot of the bars will not interfere with the rotation of said gimbal-joint, substantially as specified.

6. In a sack-holder, the combination with hinged bars A, A, A, A, of rotary rods or shafts B B', B, B' connected together in pairs by gimbals at their meeting ends, and provided with sack-holding hooks, substantially as specified.

608,639. SACK-SEWING MACHINE. NICHOLAS F. BECKER, Cincinnati, Ohio, assignor to Charles Dickinson, Chicago, Ill. Filed Mar. 1, 1897. Serial No. 625,656. (No model.)



Claim—1. In a machine for sewing filled sacks, the combination with a two-part holder or clamp comprising a stationary and a movable jaw, of a support or frame carried by the stationary jaw and extending ontwardly and downwardly below the lower edge of said jaw and adapted to rest upon the filled sack, and a reciprocating sewing-carriage furnished with a sewing mechanism, said support or frame being provided with an actuating rack or device for operating the sewing mechanism from and by the sliding movement of said carriage on said support or frame, substantially as specified.

2. In a machine for sewing filled sacks, the combination with a two-part holder or clamp comprising a stationary and a movable jaw, of a support or frame carried by the stationary jaw and extending outwardly and downwardly below the lower edge of the jaw and adapted to rest upon the filled sack, and a reciprocating sewing-carriage furnished with a sewing mechanism, said support or frame being provided with an actuating rack or device for operating the sewing mechanism from and by the sliding movement of said carriage on said support or frame, said sewing-carriage having means for grasping it by the hand, substantially as specified.

3. In a machine for sewing filled sacks, the combination with a light movable frame adapted to rest upon and be supported by the filled sack, of an opening and closing holder or clamp on said frame for holding the mouth of the sack closed in position for sewing and anchoring or holding said frame in position upon the sack, and a reciprocating sewing-carriage furnished with a sewing mechanism, said frame being provided with an actuating rack or device for operating the sewing mechanism from and by the sliding movement of said carriage on said frame, said sack holder or clamp comprising a slotted jaw fixed to said frame and a slotted movable jaw hinged at its upper edge to said fixed jaw, substantially as specified.

4. The combination with a movable frame A adapted to be applied by hand to and rest upon a filled sack, of a sack-holder jaw B fixed to said frame, and a movable jaw B' hinged to said jaw B, a rack on said frame, guides on said frame, a sewing-carriage reciprocating on said guides, a crank-shaft journaled on said carriage, connecting-gearing between said crank-shaft and rack, a needle, a reciprocating needle-holder slide, and a free or yielding needle-holder, unconnected to the frame, and pivotally connected to the outer end of said needle-holder slide, a connection between said needle-holder slide and crank-shaft, a looper and looper arm and shaft and connections between said looper-shaft and crank-shaft, substantially as specified.

5. The combination with a movable frame A adapted to be applied by hand to and rest upon a filled sack, of a sack-holder jaw B fixed to said frame, and a movable jaw B' hinged to said jaw B, a rack on said frame, guides on said frame, a sewing-carriage reciprocating on said guides, a crank-shaft journaled on said carriage, connecting-gearing between said crank-shaft and rack, a needle, a reciprocating needle-holder slide, and a free or yielding needle-holder, unconnected to the frame, and pivotally connected to the outer end of said needle-holder slide, a connection between said needle-holder slide and crank-shaft, a looper and looper arm and shaft and connections between said looper-shaft and crank-shaft, and a pawl and ratchet for causing said crank-shaft to be operated when said carriage is moved in one direction but not when moved in the other, substantially as specified.

6. The combination with frame A of holder-jaw B fixed thereon and having slot *b'*, hinged holder-jaw B' having slot or opening b^3, needle F and needle-holder F', looper G and looper-arm G', said slot or opening b^3 permitting said holder-jaw B' to swing up or open without engaging said looper, substantially as specified.

608,640. EYEGLASS-CASE. HARRY E. BERIS, York, Pa., assignor to the Castelberg National Jewelry Company, Baltimore, Md. Filed Jan. 20, 1896. Serial No. 576,105. (No model.)



Claim.—1. A spectacle or eyeglass case comprising two parts, a spring-actuated lever carried by one of said parts and adapted to exert a clamping action on the bow of the glass to hold the latter to place

2. A spectacle or eyeglass case comprising two parts, a spring-actuated clamping-lever carried by one of said parts and adapted to exert a clamping action on the bow of the glass, and guards at the edge of said part for the lenses, substantially as described.

608,641. ATTACHMENT FOR TOPS OF VESSELS USED IN MAKING TEA OR COFFEE, &c. ANDREW J. BLACKWOOD, Sterling, Kans. Filed Dec. 18, 1897. Serial No. 662,444. (No model.)



Claim.—1. An attachment for tea and coffee pots, consisting essentially of an insertible vessel with suitable supporting device, said insertible vessel having an inclined bottom, a tube extending through said bottom, and a filter supported by an elastic ring near the bottom of said tube, and removable through the mouth of the tube by compressing said ring, substantially as described

2. The attachment for tea and coffee pots, consisting essentially of an insertible vessel with inclined bottom, an interior tube passing through said bottom and provided with a side valve, covering an opening from the tube to the inclined-bottom vessel, and a filter removably connected to said tube so as to be removable therethrough, substantially as described.

3. In a teapot attachment, the insertible inclined-bottom vessel, the tube extending through such bottom, the spring-ring having a handle connected thereto, the filter connected to said spring-ring, and the strainer connected to the handle of the said spring-ring, all combined substantially as described.

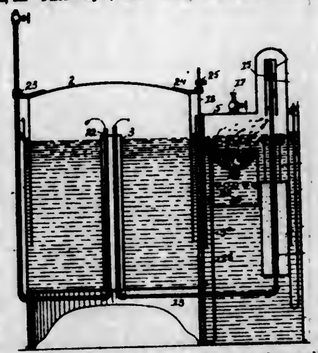
608,642. STAMP AND ENVELOP MOISTENER. ELIZABETH BOSEN, Philadelphia, Pa. Filed May 5, 1897. Serial No. 635,199. (No model.)



Claim.—1. In stamp and envelop moisteners, the combination of an interiorly-threaded case or receptacle, and exteriorly-threaded clamping-ring movable up and down therein, a sheathing or cover of chamois or fabric attached to the said clamping-ring, and absorbent material filling said covering or sheathing, substantially as described.

2. An envelop and stamp moistener, comprising an interiorly-threaded case or receptacle, a clamping-ring adjustable up and down therein and provided on the interior thereof with spring-pressed clamps, a sheathing or covering of chamois or fabric attached to the said ring, and absorbent material filling said sheathing or covering and retained in position by the said spring-pressed clamps, substantially as described.

608,648. ACETYLENE-GAS-GENERATING APPARATUS. JOHN BOLAND, Decatur, Ill., assignor of one-half to Charles E. Peebles, Raymond, Ill. Filed July 3, 1897. Serial No. 643,368. (No model.)



Claim.—1. In a generator for acetylene gas, the combination of a generator-tank, a discharge-pipe in the tank terminating downward, an automatically-rising water-can adapted to seal the discharge-pipe, a rod connected with the water-can and extended outside the tank, and a catch on the tank to hold the rod and the can in a lowered position, substantially as set forth.

2. In a generator for acetylene gas, the combination of a generator-tank, a discharge-pipe in the tank terminating downward, a water-can adapted to seal the discharge-pipe, a float to raise the water-can, a rod connected with the water-can and extended outside the tank, and a catch on the tank to hold the rod and the can in a lowered position, substantially as set forth.

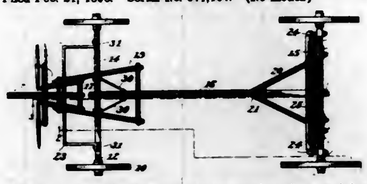
3. In a generator for acetylene gas, the combination of a generator-tank having a dome raised above the general level of its cover, a discharge-pipe terminating downward in the dome, a water-can adapted to seal the discharge-pipe, a float to raise the water-can, a

rod connected with the water-can and extended outside the tank, and a catch on the tank to hold the rod and the can in a lowered position, substantially as set forth.

4. In a generator for acetylene gas, the combination of a generator-tank, a downward-discharging outlet-pipe having a downward-extended receiving end, a water-can under the receiving end of the discharge-pipe, a rod connecting with the water-can and extending outward and upward to one side of the cover of the generator-tank, a catch on the tank and a button on the rod adapted to engage the catch on the tank, substantially as set forth.

5. In a generator for acetylene gas, the combination of a tank, a water-seal cover for the tank having an upward-projecting dome, an outlet-pipe extended upward into the dome of the cover, and having a downward-extended receiving end, a water-can below the receiving end of the outlet-pipe, a rod connected with the water-can and extended outside the tank to one side of the cover, a lip on the cover, a catch on the tank and a button on the rod adapted to engage the lip and the catch, substantially as set forth.

608,644. LUMBER-WAGON. Walker J. Bond, Atoka, Ind. Ter. Filed Feb. 21, 1898. Serial No. 671,107. (No model.)



Claim.—1. In a lumber-wagon, comprising the usual front and rear wheels, axles and bolsters, the combination therewith of a coupling-pole, pivotally connected to the front bolster and slidably connected to the rear bolster, a cage, mounted upon the front bolster to receive the forward end of the load of lumber, and a roller, mounted parallel with the rear bolster upon bearings projecting therefrom and having its upper surface slightly higher than the upper surface of the bolster, substantially as described.

2. The combination in a lumber-wagon, of the usual front and rear wheels, axles and bolsters, a coupling-pole, pivotally connected to the front bolster, rear hounds, projecting from the rear axle forward and provided at their forward meeting ends with a sleeve, through which the coupling-pole passes, and a pin in the coupling-pole, in the rear of the rear bolster, substantially as described.

3. The combination in a lumber-wagon, of the rear bolster, the roller mounted in bearings thereon, parallel with the bolster and having its upper surface slightly higher than the upper surface of the bolster, and a cross-bar, hinged to the bolster, parallel with the roller and having its upper surface slightly higher than the upper surface of the roller, substantially as described.

4. The combination in a lumber-wagon, of the rear bolster, the roller mounted in bearings thereon parallel with the bolster and having its upper surface slightly higher than the upper surface of the bolster, a cross-bar, hinged to the bolster, parallel with the roller and having its upper surface slightly higher than the upper surface of the roller, the normal position of the cross-bar being upon the top of the bolster, and a vertically-sliding bolt, mounted on the hinged bar and engaging the rear surface of the bolster to hold the hinged bar in its normal position, substantially as described.

608,645. MINE-GATE. Newton K. Bowman, Lawrence, Ohio, assignor to Alvin Hurford, Canton, Ohio. Filed July 26, 1897. Serial No. 646,015. (No model.)

Claim.—1. In gates, the combination of the two inclined depressible platforms, gate-posts, a gate or door a connection between the gate and platforms, a vertical slide on said gate, and a counterbalancing-weight adjustably mounted on said slide, substantially as described.

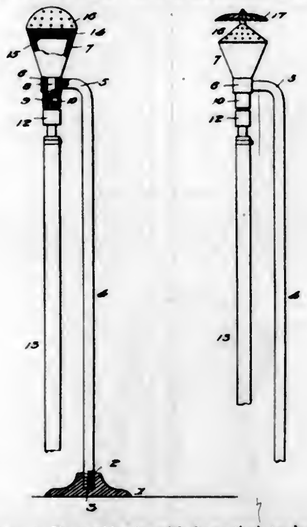
2. In gates of the class described, the combination with a base-frame, of two tilting platforms mounted thereon each consisting of a rectangular frame, metallic cross-tie plates 10 connecting the said bars of said frame and provided with the integral chairs or seats 11, the inner tie-plate 10^a on one platform being formed with the integral lateral arms 10^a extending under the other platform, track-rails fitted in said chairs or seats a platform supported on said cross-ties, posts rising from the base-frame, a vertically-swinging gate mounted thereon, and a connection between said platforms and gate, substantially as described.

3. In gates, the combination of the two inclined depressible platforms, gate-posts at the point of junction of said platforms, a gate, a rock-shaft to which said gate is hung provided at the center with a downwardly-projecting offset extending to near the lower end of the gate and at each end with an eccentric-head, and chains connected with one of said platforms and adjustably connected with said eccentric-heads, substantially as described.



4. In gates, the combination of the two inclined depressible platforms, gate-posts at the point of junction of said platforms, a vertically-tilting gate, a connection between the gate and platforms, a vertical rod on said gate, and a counterbalancing-weight sliding on said rod, said weight provided with an eccentric-head having a link connection with said rod and adapted to bind thereon, a slot in line with said head, and a handle or thumb-piece, substantially as described.

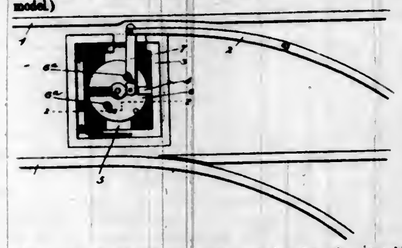
608,646. LAWN-SPRINKLER. William P. Brown, Maquoketa, Iowa. Filed Feb. 2, 1898. Serial No. 668,832. (No model.)



Claim.—1. The combination with the vertical standard 4 formed with the horizontal collar 6, of the sprinkler-head 7 formed with the tube 8 and the female coupling 10 the male coupling 12, the hose-pipe 13 and the foraminous cap 15, substantially as shown and described.

2. A lawn-sprinkler comprising the standard 4 formed with the horizontal collar 6 in combination with the sprinkler-head 7 provided with the threaded flange 14, the removable foraminous cap 16 and the fan 17, and the tube 8 mounted in the collar 6, the female coupling 10 mounted on the lower end of said tube 8 and the male coupling 12, substantially as shown and described.

608,647. Automatic Switch for Railways. Justin L. Calame, St. Louis, Mo. Filed Feb. 15, 1897. Serial No. 623,401. (No model.)



Claim.—1. The combination with a switch-point, of a rotatable disk, a lever pivoted at one end eccentrically to said disk and at the other end to said switch-point, rotatable pins having flattened upper ends upon the upper side of said disk, a casing in which said disk is located having slots in the top or cover thereof in which the ends of said pins play, and means on a car for engaging one or the other of said pins, as and for the purpose set forth.

2. The combination with a switch-point, of a casing whose cover is provided with elongated slots, a rotatable disk in said casing, a lever pivoted at one end eccentrically to said disk and at its other end to the said switch-point, rotatable pins upon the upper side of said disk having flattened ends and extending through slots in said disk, and presser-bars carried by the car and adapted to engage one or the other of said pins, as and for the purpose set forth.

3. The combination with a switch-point, of a casing whose cover is provided with elongated slots, a rotatable disk within said casing, a lever pivoted at one end eccentrically to said disk and connected at its opposite end to a depending arm on the switch-point, rotatable pins upon the upper side of said disk having flattened ends engaging slots in the disk, and guide-rails on the cover of said casing located upon opposite sides of the slots therein and extended upwardly near the rear ends of said slots, together with presser-bars carried by the car and cross-bars formed upon the lower ends of the presser-bars, as and for the purpose set forth.

4. In an automatic switch for railways, the combination with the pivoted switch-point having a depending arm, of a box located at an intermediate point between the rails and provided with cross-bars or bearing-plates 4 and 5, a disk 6 mounted between said bearing-plates, a lever 7 pivoted to the disk at one side of its center and to the end of the switch-point, said lever having a recess in one side of the same, pins or studs rotatably mounted in transverse slots in the disk and flattened at their upper ends, a pin 16 projecting from the disk to limit its movement in one direction, the opposite movement being limited by the lever or connecting-rod, and a cover for the box having longitudinal slots and guide-rails located at opposite sides of the slots, said guide-rails being extended upward at or near the rear ends of the slots; together with operating-levers or presser-bars carried by the car, each lever or presser-bar having a depending foot and a cross-bar above the same, the parts being constructed and organized substantially as shown and for the purpose set forth.

608,648. Railway-Tie. Elsworth G. Carter, Coal Bluff, Ind. Filed Apr. 16, 1898. Serial No. 677,862. (No model.)



Claim.—In a railway-tie, in combination with the centrally-channeled blocks, a metallic cross-tie supported on said blocks and having its outer ends bent in and clenched to said blocks within said channels and having central struck-in portions between the blocks bent into the inner ends of the channels of each block and there clenched, whereby the tie is held on the block independently of other means of fastening and each block embraced between an end and a central fastening device of the tie, substantially as described.

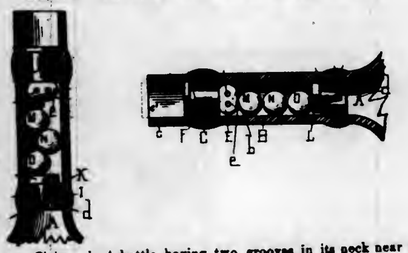
608,649. Tumbler, Jug, or Similar Vessel. Ludwig Christiansen, Seaside, Oreg. Filed Apr. 29, 1897. Serial No. 634,331. (No model.)



Claim.—1. A vessel having a chamber beneath the bottom thereof provided with an opening at one point and closed at all other points.

2. A vessel having a chamber located beneath the bottom thereof, and a trough upon the outside of said vessel above said chamber, the said chamber having an opening leading thereinto from the trough at the rear and closed at all other points.

608,650. Non-Refillable Bottle. Edward A. Clair, Camden, N. J. Filed Oct. 31, 1896. Serial No. 610,646. (No model.)



Claim.—1. A bottle having two grooves in its neck near the upper and lower ends thereof respectively and having its intervening surface ungrooved, in combination with packing-rings which fit into said grooves, a valve supported by the lower packing-ring, a pouring-tube supported by the upper packing-ring and having a concavity in its lower end and a series of balls which are arranged to pack in a straight line between the edge of the said concavity and the top of the valve when the bottle is in a horizontal position substantially as set forth.

2. In combination with a bottle having a valve supported in the lower end of its neck and a pouring-tube supported in the upper end thereof and having a concavity at its lower extremity, an intervening series of balls adapted to occupy any one of three positions, in the first, resting with their weight on the valve when the bottle is vertical, in the second, extending in a straight line from the edge of the concavity to the said valve and locking the latter in closed position when the bottle is horizontal, and in the third wedging between the said concavity and the valve so as to prevent the latter from wholly leaving its seat while allowing it to open sufficiently for pouring out the contents, substantially as set forth.

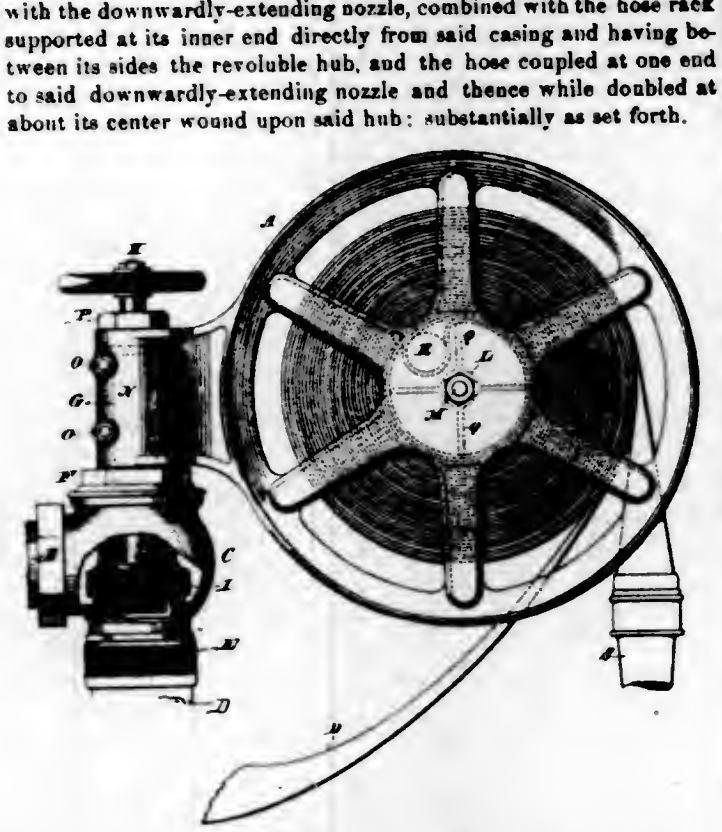
608,651. Hose-Rack. Edward Cliff, Newark, N. J. Filed Feb. 8, 1896. Serial No. 669,589. (No model.)

Claim.—1. The water-supply apparatus having the valve-casing provided with the downwardly-extending outlet-nozzle and vertical post, combined with the hose-rack pivotally mounted at its inner end on said post, and the hose coupled at one end to said nozzle and thence supported on said rack; substantially as set forth.

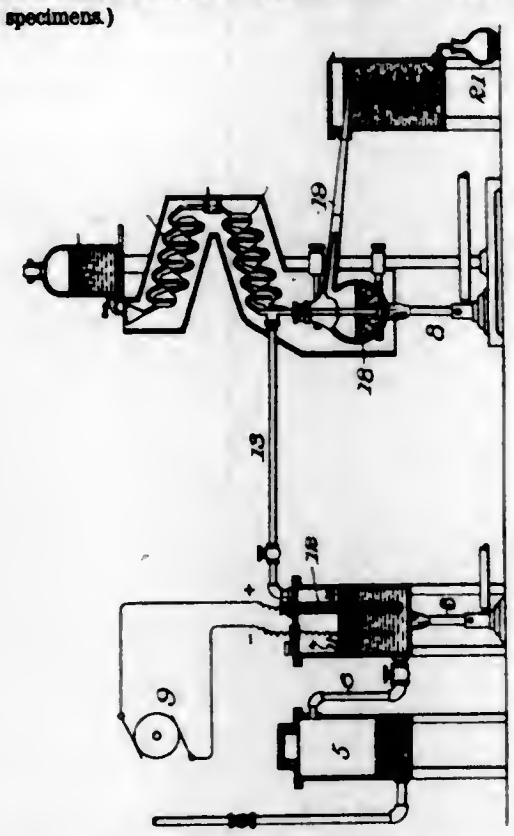
2. The water-supply apparatus having the valve-casing provided with the outlet-nozzle and vertical tubular post through which the valve-stem passes, combined with the hose-rack having a sleeve on its inner end engaging said post, and the hose coupled at one end to said nozzle and thence supported on said rack; substantially as set forth.

3. The water-supply apparatus having the valve-casing provided with the outlet nozzle and vertical post, combined with the hose-rack in two longitudinal parts bolted together and forming at their inner end the vertical sleeve engaging said post, and the hose coupled at one end to said nozzle and thence supported on said rack; substantially as set forth.

4. The water-supply apparatus having the valve-casing provided with the downwardly-extending nozzle, combined with the hose rack supported at its inner end directly from said casing and having between its sides the revoluble hub, and the hose coupled at one end to said downwardly-extending nozzle and thence while doubled at about its center wound upon said hub; substantially as set forth.



608,652. PROCESS OF MANUFACTURING ETHYLIC ALCOHOL. FREDERIC R. COUDERT, Jr., New York, N. Y., administrator of Aime Mathieu Villon, deceased. Filed Mar. 11, 1897. Serial No. 626,987. (No specimens.)



Claim.—1. A step in the process for manufacturing ethylic alcohol, which consists in subjecting acetylene to the action of an agent of the character, which will transform acetylene into ethylene and be itself regenerated by the action of nascent hydrogen.

2. A step in the process for manufacturing ethylic alcohol, which consists in subjecting the reducing agent employed to transform acetylene into ethylene, to the action of nascent hydrogen.

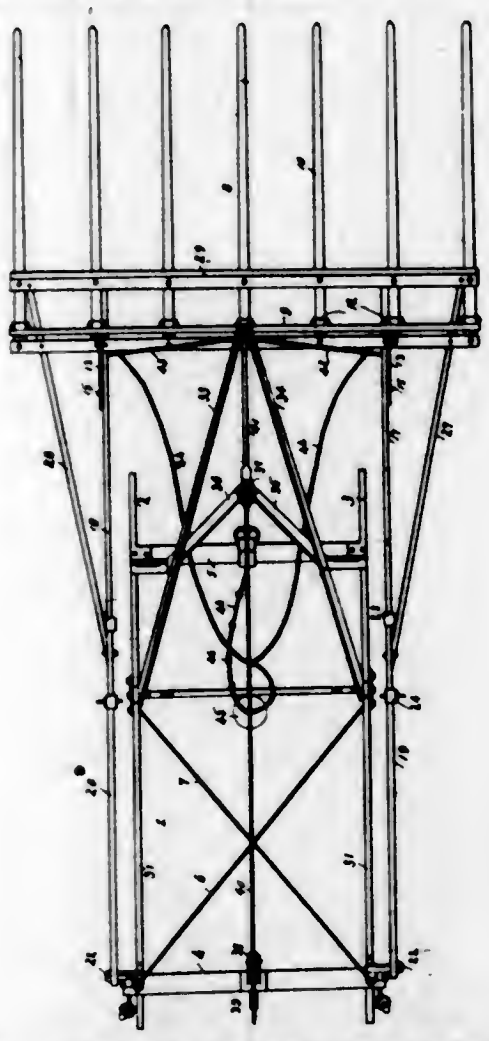
3. A process for manufacturing alcohol, which consists in subjecting acetylene to the action of a reducing agent of the character which will transform acetylene into ethylene and be itself regenerated by the action of nascent hydrogen, absorbing the ethylene by sulfuric acid, and finally subjecting a solution of water and hydrogen-ethyl sulfate to the temperature necessary to effect production and distillation of ethyl alcohol.

4. A continuous process for manufacturing ethylic alcohol, which consists of the following steps: first, subjecting acetylene to the action of a reducing agent of the character described; second, absorbing the evolved ethylene by sulfuric acid; third, adding water to the solution of hydrogen-ethyl sulfate thus formed; fourth, subjecting said solution to the action of a sufficient heat to effect the production and distillation of ethyl alcohol; fifth, subjecting the reducing agent to the action of nascent hydrogen.

5. The herein-described process for manufacturing ethylic alcohol, which consists in decomposing calcium carbid by water to form acetylene, then subjecting acetylene to the action of a reducing agent of the character which will reduce acetylene to ethylene and be itself regenerated by the action of nascent hydrogen, then absorbing the ethylene by sulfuric acid, and finally subjecting a solution of water and hydrogen-ethyl sulfate to the temperature necessary to effect distillation of the alcohol.

6. The herein-described process of manufacturing ethylic alcohol, which consists in decomposing calcium carbid by water to form acetylene, then subjecting the acetylene to the action of a double salt of ammonium and chromium sulfates, to form ethylene, then absorbing the ethylene by sulfuric acid, then subjecting the solution of water and hydrogen-ethyl sulfate to the temperature necessary to effect distillation of the alcohol, and finally either intermittingly or continuously subjecting the solution of the reducing agent to the action of an electric current.

608,658. HAY-STACKER. JOSEPH DAIN, Jr., Carrollton, Mo., assignor to the Dain Manufacturing Company, same place. Filed Apr. 10, 1893. Serial No. 469,834. (No model.)



Claim.—1. The combination with supporting devices, a carrying-frame, and pivoted supports therefor, of pivoted lifting-levers connected to each other at their upper ends, one of said levers being connected to the carrying-frame, and mechanism for operating said levers to lift the carrying-frame, substantially as described.

2. The combination with supporting devices, a carrying-frame, and pivoted supports therefor, of lifting-levers arranged at an angle to each other, the upper ends of said levers being connected, the upper end of one of said levers being connected to the carrying-frame, and mechanism for operating said lifting-levers, substantially as described.

3. The combination with supporting devices, a carrying frame, and pivoted supports therefor, of lifting-levers pivoted at different heights and arranged at an angle to each other, the upper ends of said levers being connected, the upper end of one of said levers being connected to the carrying-frame, and mechanism for operating said lifting-levers, substantially as described.

4. The combination with supporting devices, a carrying-frame, and pivoted supports therefor, of a pivoted lifting-lever 33 34, the

upper end of which is connected to said carrying-frame, lifting-lever 35 36 pivoted at its lower end forward of the pivot of said lever 33 34, devices connecting the upper ends of said levers, and rope-and-pulley mechanism for operating said levers to lift the carrying-frame, substantially as described.

5. The combination with a frame 1, a carrying-frame pivotally supported thereby and adapted to be raised in the arc of a circle, of a lifting-lever, consisting of two bars 33 34, pivotally supported by the frame 1, devices connecting the upper end of said lifting-lever to the carrying-frame, a second lifting-lever, consisting of bars 35 36 pivotally supported by the frame 1, devices connecting the upper ends of said two lifting-levers, and rope-and-pulley mechanism for operating said levers to lift the carrying-frame, substantially as described.

6. The combination with supporting devices, of an extensible and pivotally-supported carrier-frame adapted to be lifted in the arc of a circle, and lever mechanism connected with the carrier-frame and adapted for the application of lifting power to the said carrier-frame at an angle thereto, substantially as described.

7. The combination with a supporting-frame, of a carrier-frame provided with pivoted supports and having the bars 17, 18 the bars 19, 20 pivoted to the supporting-frame, devices for adjustably connecting the bars 17, 18 with the bars 19, 20, respectively, and lever mechanism for lifting the said carrier-frame in the arc of a circle, substantially as described.

8. The combination with a supporting-frame, and a pivotally-supported carrier-frame, of the adjustably-connected bars 17, 18, and 19, 20, attached to said frames, respectively, and lever mechanism for lifting the carrier-frame in the arc of a circle, substantially as described.

9. The combination with runners 2, 3 of standards 30 thereon, braces 31, 32 connected to said standards and to said runners, thereby forming a truss-frame, a carrier-frame pivotally supported on the runners, and lever mechanism supported by said truss-frame and runners and adapted for elevating and lowering the carrier-frame, substantially as described.

10. The combination with supporting devices, and a truss-frame thereon, of a carrier-frame pivoted to said supporting devices, and lever mechanism pivotally connected with the truss-frame and with the supporting devices respectively and adapted for elevating and lowering the carrier-frame, substantially as described.

11. The combination with the runners provided with standards and braces, a carrier-frame, and pivoted supports therefor, of lifting-levers arranged at an angle to each other and connected at their upper ends, means for connecting the upper end of one of said levers to the carrying-frame, and operating mechanism for said lifting-levers, substantially as described.

12. The combination with a runner-frame, and an extensible and pivotally-supported carrier-frame, of lifting-levers pivotally supported by the runner-frame and connected together at their upper ends, devices connecting the upper end of one of said lifting-levers to the carrier-frame, and rope-and-pulley mechanism for operating said lifting-levers to raise the carrier-frame in the arc of a circle, substantially as described.

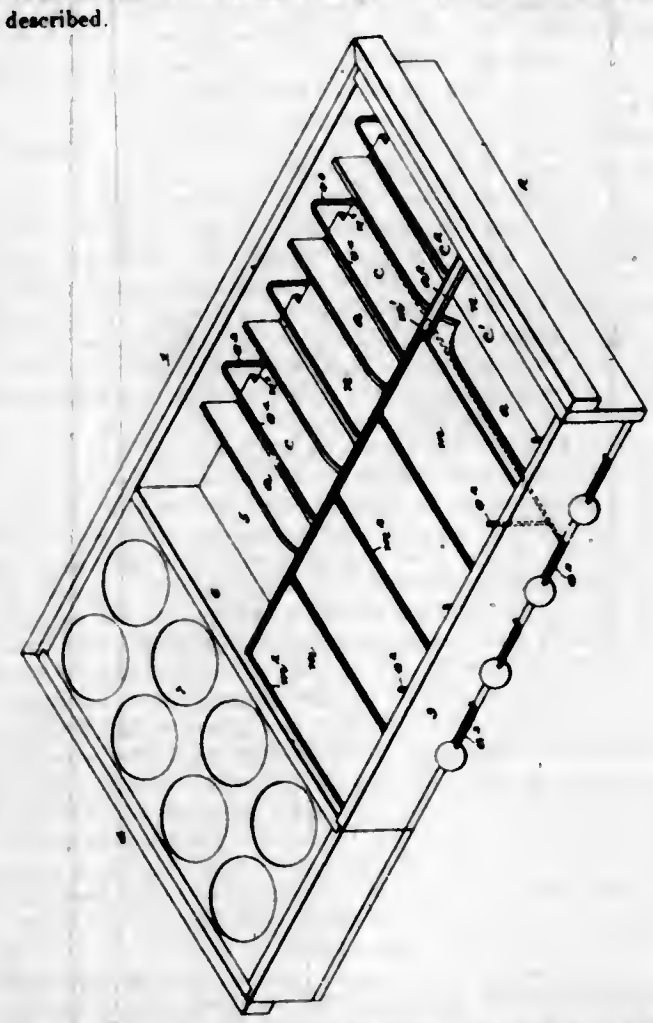
608,654. CASH-HOLDER. MICHAEL R. DALEY, Fall River, Mass. Filed Sept. 16, 1897. Serial No. 651,922. (No model.)

Claim.—1. In a device of the character indicated, a series of deposit-receptacles, a series of change-receptacles separate from the deposit-receptacles, guards for said change-receptacles, and means whereby when a piece of money of a given denomination is to be deposited in its proper deposit-receptacle the change-receptacles for money of a denomination equal to or greater than that of the money received will be guarded while the change-receptacles for pieces of money of less denomination than the piece received will be unguarded; substantially as described.

2. In a device of the character indicated, a series of deposit-receptacles, guard members for said receptacles, a series of change-receptacles separate from the deposit-receptacles, guards for said change-receptacles, and means whereby when a guard member is removed from a deposit-receptacle of a given denomination, the guards of the change-receptacles of less denomination are placed out of guarding position while the guards of the other change-receptacles are in guarding position; substantially as described

3. In a device of the character indicated, a series of deposit-receptacles, guard members for said deposit-receptacles, a series of change-receptacles separate from the deposit-receptacles, guards above said change-receptacles, and means whereby when a guard member is moved from its deposit-receptacle the guards of the change-receptacles of lower denomination are thrown out of guarding position; substantially as described.

4. In a device of the character indicated, a series of deposit-receptacles, guard members for said deposit-receptacles, a series of change-receptacles separate from the deposit-receptacles, guards above said change-receptacles, said guards having pivotal connection with the body of the device, and means whereby when a guard member is moved from its receptacle the guards of the change-receptacles of lower denomination are turned out of guarding position; substantially as described.



5. In a device of the character indicated, a series of deposit-receptacles, guard members for said deposit-receptacles, a series of change-receptacles, rods pivoted in the change-receptacles, guards upon said rods, said guards lying above the change-receptacles, and means whereby when a guard member is removed from its receptacle, the rods in the change-receptacles of lower denomination are turned and their guards carried out of operative position; substantially as described.

6. In a device of the character indicated, a series of deposit-receptacles, guard members for said deposit-receptacles, a series of change-receptacles, rods pivoted upon the bottoms of said change-receptacles, upright members upon said rods, guard fingers upon said upright members, each of said guard-fingers lying above its change-receptacle, and means whereby when a guard member is removed to expose its deposit-receptacle, the rods of the change-receptacles of lower denomination are turned to throw their guard-fingers out of operative position; substantially as described.

7. In a device of the character indicated, a series of deposit-receptacles, guard members for said deposit-receptacles, a series of change-receptacles, rods pivoted in the change-receptacles, guards upon said rods, each guard extending above its change-receptacle, and a finger upon each rod in the path of movement of the guard members for the deposit-receptacles; substantially as described.

8. In a device of the character indicated, a series of deposit-receptacles, laterally-slidable guard members for said deposit-receptacles, a series of change-receptacles, rods pivoted in the change-receptacles, guards upon said rods, each guard extending above its change-receptacle, and a finger upon each rod in the path of movement of the guard members for the deposit-receptacles; substantially as described.

9. In a device of the character indicated, a series of deposit-receptacles, guideways above said deposit-receptacles, guard members for the deposit-receptacles laterally slidable on said guideways, a series of change-receptacles, rods pivoted in the change-receptacles, guards upon said rods, each guard extending above its change-receptacle, and a finger upon each rod in the path of movement of the guard members for the deposit receptacles; substantially as described.

10. In a device of the character indicated, a series of deposit-receptacles, guideways above said deposit-receptacles, guard members for the deposit-receptacles laterally slidable on said guideways, a series of change-receptacles, rods pivoted in the change-receptacles, guards upon said rods, each guard extending above its change-receptacle, and a finger upon each rod in the path of movement of the

guard members for the deposit-receptacles, the guard members being, on the side opposite toward that to which the fingers swing to carry the change-guards into inoperative position, provided with slots to receive the fingers; substantially as described.

11. In a device of the character indicated, a series of compartments having deposit-receptacles and change-receptacles therein, rods pivoted in said compartments across both receptacles, guards upon said rods, each guard lying above its change-receptacle, a finger upon each of said rods in the deposit-receptacles, and guard members for the deposit-receptacles, the before-mentioned fingers in the deposit-receptacles lying in the path of movement of the guard members in exposing a deposit-receptacle; substantially as described.

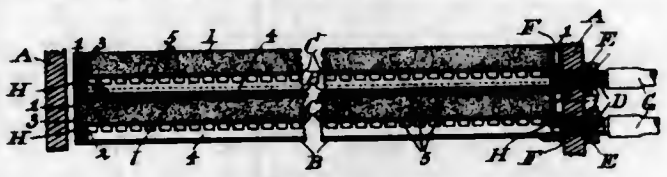
12. In a device of the character indicated, a series of compartments having deposit-receptacles and change-receptacles therein, rods pivoted in said compartments across both receptacles, guards upon said rods, each guard lying above its change-receptacle, a finger upon each of said rods in the deposit receptacles, guard members for the deposit-receptacles, the before-mentioned fingers in the deposit-receptacles lying in the path of movement of the guard members in exposing a deposit-receptacle, and false bottoms in the compartments above the rods; substantially as described.

13. In a device of the character indicated, a series of deposit-receptacles, guard members for said deposit-receptacles, a series of change-receptacles, guards normally above said change-receptacles, means whereby when a guard member is moved to expose a deposit-receptacle of a given denomination the guards of change-receptacles of lower denomination are thrown out of operative position, and means whereby when a guard member is moved to uncover a deposit-receptacle of a given denomination the change-guard of the corresponding denomination is returned to its operative position if it had previously been in inoperative position; substantially as described.

14. In a device of the character indicated, a series of deposit-receptacles, guard members for said deposit-receptacles, a series of change-receptacles separate from the deposit-receptacles, rods pivoted in said change-receptacles, guards upon said rods, weighted arms upon said rods whereby the guards are normally held in operative position, and means whereby when a guard member is moved to expose its deposit-receptacle the rods in the change-receptacles of lower denomination are turned to carry the guards out of operative position; substantially as described.

15. In a device of the character indicated, a series of compartments having each an entrance and an exit opening, guard members for the entrance-openings, guards for the exit-openings, and means whereby when a guard is moved to expose an entrance-opening for money of a given denomination the guards for the exit-openings for money of a denomination equal to or greater than that of the entrance-opening exposed will be in guarding position while the guards for the exit-openings for money of a denomination less than of the entrance-opening exposed will be out of guarding position; substantially as described.

608,655. FILTERING APPARATUS. ROBERT DOUGLAS, Ravena, N. Y. Filed Aug. 24, 1897. Serial No. 649,293. (No model.)



Claim.— 1. A filtering apparatus, consisting of a containing-casing and a series of filtering-pans arranged—one on top of another—to leave a space between adjacent pans that will afford a free flow of liquid into each of said pans; each of the latter being provided with a filtering-bed supported by a cloth, netting, or foraminated material, and each having an independent outlet through which the filtered liquid will be discharged, as herein specified.

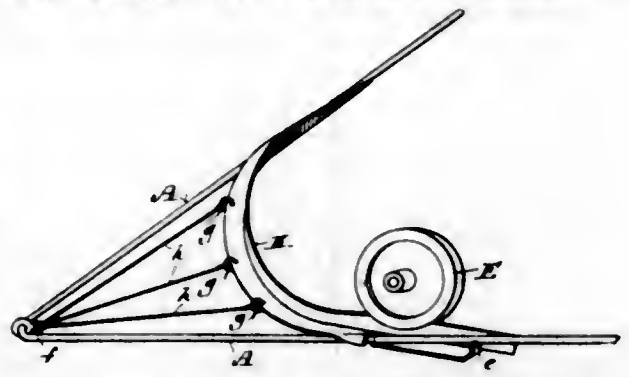
2. A filtering-pan provided with a series of drainage-grooves arranged at oppositely-inclined angles in respect to a diametrical line and leading into a diametrically-arranged gutter or channel which communicates with an independent outlet for the discharge of the filtered liquid at one side of said pan, as herein specified.

3. The combination, with a casing, A, or other receptacle for unfiltered liquid, of a series of filtering-pans, B, superimposed one upon another, and each provided with an independent discharge-pipe, D', leading through the side of said casing, and means—substantially as set forth—for forming water-tight joints for said discharge-pipes with said casing, as herein specified.

4. In a filtering apparatus, the combination, with a filtering-pan, B, provided with a diametrically-arranged gutter, 4, a series of lateral grooves, 5, openly communicating with said gutter, and an annular groove, 3, which surrounds said gutter and grooves, of a supporting-cloth, C, or other material that will permit percolation, arranged to cover said gutter and grooves, and means—substantially as set forth—for securing said cloth to said pan, as herein specified.

5. In a filtering apparatus, the combination of an open-top casing, A, and a series of removable filtering-pans, B, contained in said casing and means—substantially as set forth—for securing said filtering-pans to one side of the casing; said filtering apparatus being adapted to operate by the force of gravity alone, as herein specified.

608,656. ELEVATED CARRIER. HERBERT H. DREW, Waterloo, Wis. Filed Sept. 1, 1897. Serial No. 650,254. (No model.)

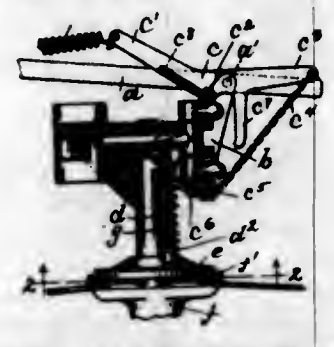


Claim.—1. An elevated carrier having a track comprising diverging stretches of wire and a curved switch made from a rail of ⅃-iron having its horizontal portion notched and shaped to fit up the wire stretches, this portion of the rail being of less length than the vertical portion of the same and turned up to form lips upon which said wire stretches have bearing.

2. A suitable track, a traveler comprising a horizontal bar having a longitudinally-grooved upper face, a plate rising from the bar and bent over at its upper end to form a housing provided with vertical side slots, axles engaging the slots and trolley-wheels on the axles having grooved peripheries engaged with the track, a bail that detachably engages the grooved traveler-bar, a box having pivotal dump connection with the bail, and suitable means for holding the box in position for loading.

3. A track comprising diverging stretches of wire and a curved switch-rail having connection with the wire stretches within the angle formed by the same, a traveler comprising vertical-play trolley-wheels engaged with the track, a pivotal dump-box hung from the traveler, and suitable means for holding the box in position for loading.

608,657. WINDMILL. ROBERT M. DYER and LA VERNE W. NOYES, Chicago, Ill., assignors to the Aermotor Company, same place. Filed Aug. 5, 1897. Serial No. 647,151. (No model.)



Claim.—1. A hinged tail for a windmill, and a furl-lever pivoted upon the frame or turn-table and connected with the tail and arranged to interlock therewith when the mill is out of the wind, substantially as described.

2. A hinged tail for a windmill and a furl-lever pivoted eccentric thereto and connected with said tail and arranged to interlock therewith when the mill is out of the wind, substantially as described.

3. A hinged tail for a windmill and a furl-lever pivoted eccentric thereto and carrying a lug arranged to engage a notch upon the tail when the mill is out of the wind, substantially as described.

4. A hinged tail for a windmill, a furl-lever pivoted upon the frame or turn-table and connected therewith, and means, as a spring, for resiliently pressing said furl-lever in a direction to start the tail out of the wind, substantially as described.

5. A hinged tail for a windmill, a furl-lever pivoted upon the frame or turn-table and connected therewith, a resilient connection, as a coiled spring, between the furl-lever and the tail, and means as a spring for resiliently pressing said furl-lever in a direction to start the tail out of the wind, substantially as described.

6. A hinged tail for a windmill, a resiliently-pressed furl-lever, a resilient connection, as a coiled spring, between the furl-lever and the

tail, said furl-lever being arranged to start the tail out of the wind, and an interlocking device arranged to interlock the furl-lever and the tail when the tail is out of the wind, substantially as described.

7. A hinged tail for a windmill and a resiliently-pressed furl-lever pivoted eccentric thereto, connected therewith and arranged to start the same out of the wind and arranged to interlock with the tail when the mill is out of the wind, substantially as described.

8. A hinged tail for a windmill, and a resiliently-pressed furl-lever pivoted eccentric thereto, connected therewith and having a lug engaging and moving along the tail and arranged to enter a notch or recess on the tail to lock the same when the mill is out of the wind, substantially as described.

9. A hinged tail for a windmill, a resiliently-pressed furl-lever pivoted eccentric thereto and having a lug engaging and moving along the tail and arranged to enter a notch or recess on the tail when the mill is out of the wind and a coiled spring between the furl-lever and the tail, substantially as described

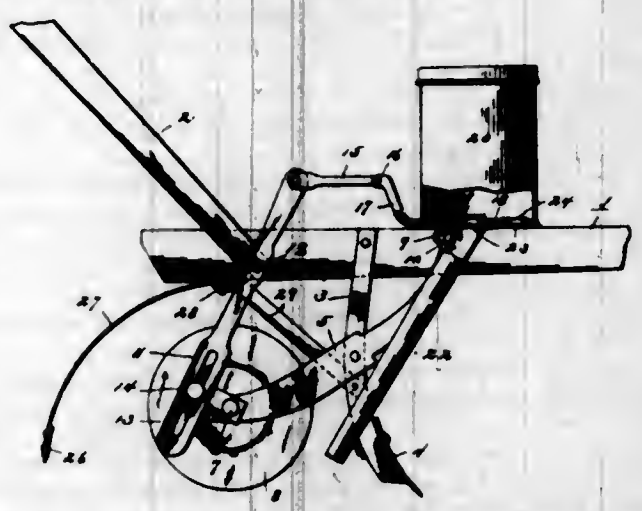
10. The hinged tail, the furl-lever pivoted eccentric thereto, having the arm c' resiliently connected with the tail and carrying the lug c^2 arranged to enter the notch a^2, the operating-arm c^3 and the arm c^7, and the spring-pressed rod d adapted to be engaged by said arm c^7, substantially as described.

11. The hinged tail, the furl-lever pivoted eccentric thereto, having the arm c' resiliently connected with the tail, and carrying the lug c^2 arranged to enter the notch a^2, the operating-arm c^3 and the arm c^7, the spring-pressed rod d adapted to be engaged by said arm c^7 and the brake-shoe connected to said rod, substantially as described.

12. The combination with a brake-shoe, of a spring to move the same to brake the wheel, a pivoted tail and a pivoted furl-lever for swinging said tail and connected with said brake-shoe to retract the same against the tension of said spring when the mill is swung into the wind, substantially as described.

13. The combination with the brake-shoe and the rod connected therewith, of a spring surrounding said rod to press the shoe to brake the wheel, a pivoted tail and a pivoted furl-lever for swinging said tail and having an arm arranged to engage said rod to retract the brake-shoe against the tension of the spring when the mill is swung into the wind, substantially as described.

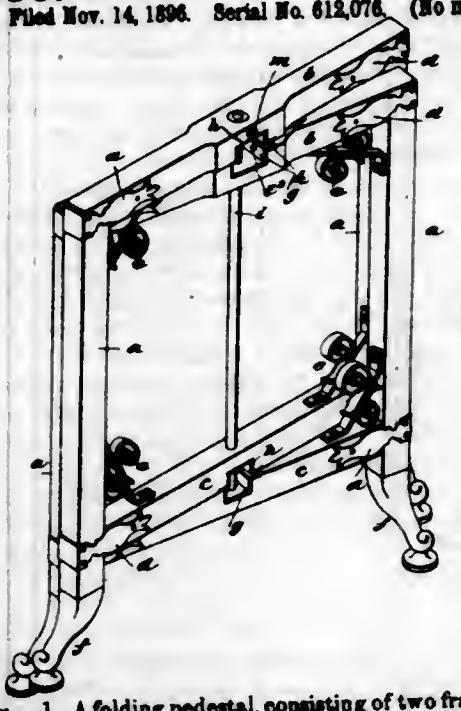
608,658. CORN-PLANTER. WILLIAM W. ELLIS, Edgewood, Tex. Filed Dec. 21, 1897. Serial No. 663,778. (No model.)



Claim.—1. A corn-planter involving the combination of a plow, a pair of arms pivoted to the plow-stock, each provided with a slot, a bolt passing through the plow-beam and engaging the slots, a wheel carried by a shaft journaled in the lower ends of the slotted arms, a lever supported by the beam provided with a depending spout, an apertured slide movable within the hopper to control the discharge through the spout, a crank secured at one end of the wheel-shaft, and a vibratory lever provided with an elongated slot operatively connected with the crank and the slide, substantially as specified.

2. The combination with a plow, of a pair of pivoted arms carried by the plow-stock and provided adjacent to their upper ends with curved slots, a bolt passing through the plow-beam and engaging the slots, a wheel carried by a shaft journaled in the lower ends of the pivoted supporting-arms, a crank at one end of the shaft, a vibratory lever pivoted to the beam and provided with an elongated slot in its lower end for the reception of the crank, a hopper supported upon the beam and provided with a depending discharge-spout, a slide designed to control the discharge through said spout provided with a plurality of apertures, and auxiliary slides controlling said apertures, a pitman pivotally connected with the upper end of the lever and with the slide, and a scraper or coverer adjustably carried in the rear of the wheel by a pair of spring-supports, substantially as specified.

608,659. FOLDING PEDESTAL. JAMES L. ERWIN, Burlington, N. C. Filed Nov. 14, 1896. Serial No. 612,076. (No model.)



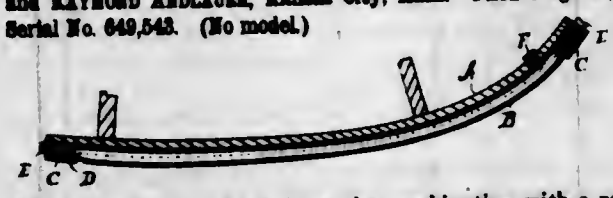
Claim.—1. A folding pedestal, consisting of two frames each composed of uprights and cross-bars connecting the said uprights at tops and near their bottoms, the said cross-bars being provided with matching gains or mortises, and a central rod passed through the several cross-bars of the two frames, pivotally connecting them and of greater length than the distance between the said cross-bars, so as to permit the said frames to be lifted one out of the other for folding purposes, substantially as described.

2. A folding pedestal, consisting of two frames, each composed of uprights, and cross-bars connecting the said uprights at their tops and near their bottoms, the cross-bars having interlocking gains or mortises, and a central connecting-rod, combined with an additional and positively-acting locking device for engaging the interlocked frames and securing them against accidental displacement, substantially as described.

3. A folding pedestal, consisting of similar frames composed of uprights and pairs of cross-bars connecting them at their upper and near their lower ends, a central rod pivotally connecting the said frames through their cross-bars, the said cross-bars having interlocking gains or mortises, and an auxiliary locking device operating automatically to permit the engagement of the gains or mortises of the respective cross-bars and to positively lock the said cross-bars and consequently the frames when the gains or mortises are so engaged, substantially as described.

4. A folding pedestal, consisting of two similar frames, each composed of uprights, and cross-bars connecting each uprights at their tops and near their bottoms, and provided with matching gains or mortises, the said frames being pivotally united and adapted to be separated for folding purposes, and to be interlocked by means of the gains or mortises for purposes of use, combined with an auxiliary locking device arranged in the cross-bar of one of the frames and positively engaging the cross-bar of the other frame, substantially as described.

608,660. ROCKER-CUSHION. JOSEPH H. FISK, Kansas City, Mo., and RAYMOND ANDLAUER, Kansas City, Kans. Filed Aug. 25, 1897. Serial No. 649,543. (No model.)



Claim.—1. In a rocker-cushion, the combination with a rocker of the kind described, of an inflatable tube of resilient material having its ends closed disposed lengthwise upon the under side thereof and having one end secured to one end of the rocker, a cap provided with a screw-threaded opening upon the other end of the tube, an adjusting-screw rotatably secured, and a support therefor secured to the adjacent end of the rocker and having its screw-threaded end engaging the screw-threaded opening of the cap, substantially as described.

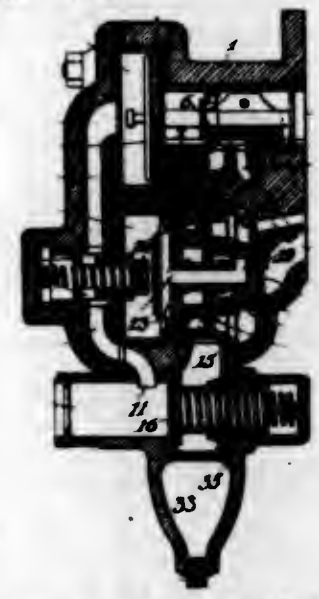
2. In a rocker-cushion, the combination with a rocker of the kind described, of the caps D secured to the ends thereof, a yielding cushion disposed lengthwise upon the under side of the rocker, the caps C upon the ends of the said cushion, and the adjusting-screws E connecting the caps C adjacent to the caps D, substantially as described.

3. In a rocker-cushion, the combination with a rocker provided with a longitudinal groove in its under side, of two caps secured one to each end of the rocker, an adjusting-screw rotatably supported in each cap, a resilient cylinder located in the said groove, and means provided by which the ends of the cylinder are united by screw-thread connection with the two adjusting-screws respectively, substantially as described.

4. In a rocker-cushion, the combination with a rocker of the kind described, of an inflatable tube secured to the under side thereof at one end of the rocker, a cap provided with a screw-threaded opening upon the other end of the tube, a support on the adjacent end of the rocker, an adjusting-screw mounted in the said support and engaging the cap, and a valve through which air may be introduced into the tube, substantially as described.

5. In a rocker-cushion, the combination with a rocker of the kind described, of an inflatable tube located upon the under side thereof and secured at one end to one end of the rocker, a pipe extending from the inflatable tube through the rocker for the introduction of air into the inflatable tube, a valve in said pipe, a support at the other end of the rocker, an adjusting-screw mounted in said support, and means for uniting the adjacent end of the inflatable tube with the adjusting-screw, substantially as described.

608,661. DEVICE FOR ACTUATING FLUID-PRESSURE BRAKES. RICHARD FITZGERALD, Chicago, Ill. Filed July 28, 1897. Serial No. 646,204. (No model.)



Claim.—1. In a device for actuating fluid-pressure brakes, the combination of a casing having a single passage for the admission of auxiliary-reservoir air and train-pipe air to a brake-cylinder, means for releasing the brake-cylinder and an emergency-valve and a service-valve separate from each other and controlling such passage, such valves being independent of the brake-release.

2. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber in communication with a brake-cylinder through a single passage, means for releasing the brake-cylinder and an emergency and service valve therein for controlling such passage for the admission of auxiliary-reservoir air and train-pipe air to the brake-cylinder, one of such valves operating within the other, and both valves being independent of the brake-release.

3. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber with ports in communication with an auxiliary reservoir, brake-cylinder and train-pipe respectively, two valves seated upon and controlling the port to the brake-cylinder, and brake-release mechanism separate and independent of the said valve.

4. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, a slide-valve working in one of such chambers for controlling the brake-release, means for actuating the slide-valve, a single passage leading from the second chamber to a brake-cylinder for the passage of auxiliary-reservoir air in service action and of both auxiliary-reservoir air and train-pipe air in emergency action, a service-valve governing such single passage in service action, and an emergency-valve governing the same in emergency action and admitting both auxiliary-reservoir pressure and train-pipe pressure to the brake-cylinder.

5. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, a slide-valve working in one of such chambers for controlling the brake-release, a piston for operating the slide valve, and a piston-actuated service and an emergency valve working in the other chamber but independent of each other, said valves being located on the same side of their piston.

6. In a device for actuating fluid-pressure brakes, a valve for admitting auxiliary-reservoir air to a brake-cylinder in service action only, acting in combination with a valve for admitting both train-pipe air and auxiliary-reservoir air to the brake-cylinder in emergency action, and brake-release mechanism separate and independent of said valves.

7. In a device for actuating fluid-pressure brakes, the combination of a release-valve for controlling the release of a brake-cylinder and feeding an auxiliary reservoir, a service-valve separate and independent of the release-valve, and an emergency-valve independent in operation from the other two valves.

8. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, a release-valve working alone in one of such chambers and governing the brake-release, and for controlling the feed to the auxiliary reservoir and a service and an emergency valve working together in the other chamber but independent of each other.

9. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, a brake-cylinder release-valve working in one of such chambers, and a service and an emergency valve working together in the other chamber, the latter chamber having communication with a brake-cylinder, auxiliary reservoir, and with a train pipe through two ports, one a supply port or passage and the other an emergency-passage, the service-valve admitting reservoir pressure to the brake-cylinder in service action and the emergency-valve admitting both reservoir-pressure and train-pipe pressure to the brake-cylinder in emergency action, the brake-release valve being independent of the other valves.

10. In a device for actuating fluid-pressure brakes, the combination of a piston-actuated slide-valve for controlling the brake-release and for controlling the feed to the auxiliary reservoir and piston-actuated valves for controlling the fluid-pressure in service and emergency action and independent of the brake-release.

11. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, a piston-actuated valve in one of the chambers for controlling the brake-release and for controlling the feed to the auxiliary reservoir and a piston-actuated service-valve in the other chamber controlling the admission of auxiliary-reservoir air to a brake-cylinder, the service-valve being separate and independent in action from the brake-release.

12. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, a slide-valve and its actuating mechanism located in one of such chambers for controlling the brake-release and for feeding the auxiliary reservoir, and valve mechanism operating in the other chamber to control the admission of air to a brake-cylinder in emergency and service applications of the brakes, such valve mechanism being separate and independent from the brake-release mechanism.

13. In a device for actuating fluid-pressure brakes, the combination of a slide-valve controlling communication between a brake-cylinder and the atmosphere, a piston operating the slide-valve and controlling communication between a train-pipe and an auxiliary reservoir and a valve controlling admission of air from the auxiliary reservoir to the brake-cylinder, the latter being separate and independent in action from the slide-valve.

14. In a device for actuating fluid piston-brakes, the combination of brake-release mechanism, a chamber having communication with a train-pipe, auxiliary reservoir and brake-cylinder, a piston traveling in such chamber, an emergency-valve within the piston and actuated by it, and a service-valve movable within the emergency-valve and actuated by the piston.

15. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, mechanism located in one of the chambers for releasing the brakes and feeding up an auxiliary reservoir, the other chamber having ports communicating with an auxiliary reservoir, a brake-cylinder and a train-pipe respectively, a piston operating in such second chamber and having a central bore or opening and two independent valves concentrically arranged within the bore of the piston and controlling the port to the brake-cylinder.

16. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber in communication with an auxiliary reservoir, train-pipe and brake-cylinder respectively, and an emergency and a service valve separate from each other but acting together to close the passage to the brake-cylinder, means for operating the valves, brake-cylinder-release mechanism separate and independent of the valves and their said operating means.

17. In a device for actuating fluid pressure brakes, the combination of a casing having two chambers, the first chamber being in communication respectively with a train-pipe and auxiliary reservoir, a piston traveling in such first chamber, means of feeding the auxiliary reservoir, a slide-valve actuated by the piston for controlling the brake-release, and an emergency-valve and a service-valve in the second chamber for controlling a passage to the brake-cylinder from such second chamber.

18. In a device for actuating fluid-pressure brakes, the combination of a chamber having a port or passage to a brake-cylinder, a valve seated upon such port and closing a portion thereof and a second valve having its end seated upon the first valve and closing that portion of the port left open by the first valve.

19. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber provided with ports communicating with an auxiliary reservoir, brake-cylinder and train-pipe respectively, a valve having a hole or opening through its end and seated upon the port to the brake-cylinder to close the same except for such opening and a second valve movable within the first valve and having its end normally seated upon the opening through the same to close it.

20. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber therein with ports communicating with a train-pipe, auxiliary reservoir and brake-cylinder respectively, a piston traveling in the chamber, a service and an emergency valve together fully closing the port to the brake-cylinder and actuated by the piston, and independent mechanism for releasing the brakes and feeding the auxiliary reservoir.

21. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber therein with ports communicating with a train-pipe, auxiliary reservoir and brake-cylinder respectively, a piston in the chamber, a service and an emergency valve separate from each other and adapted together to fully close the port to the brake-cylinder, the piston actuating the service-valve to partially open the port to the brake-cylinder upon a reduction of pressure for service action and actuating the emergency-valve to fully open the port to the brake-cylinder upon a reduction of pressure for emergency action, and brake-release mechanism independent of such valves.

22. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber therein with ports communicating with a train-pipe, auxiliary reservoir and brake-cylinder respectively, a piston traveling in the chamber and closing the train-pipe port except in emergency action, and a valve actuated by the piston to govern the brake-cylinder port from such chamber, and means for releasing the brake-cylinder.

23. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber therein, a piston in the chamber, a train-pipe port entering the chamber behind the piston, an emergency passage or port from the train-pipe and entering the chamber but closed by the piston except in emergency action when it opens in front of the piston, a port or passage from the auxiliary reservoir, a port or passage from the chamber to the brake-cylinder, both latter ports being located in the chamber in front of the piston, and two lift-valves actuated by the piston and together closing the brake-cylinder port, a service reduction of train-pipe pressure causing one of the valves to lift to partially open the brake-cylinder port to admit auxiliary-reservoir pressure to the brake-cylinder, and an emergency reduction of train-pipe pressure causing the piston to open the emergency-passage and causing the other valve to lift to fully open the brake-cylinder port and admit auxiliary-reservoir air and train-pipe air to the brake-cylinder.

24. In a device for actuating fluid-pressure brakes, a casing having a brake-cylinder release-valve chamber and an operating-valve chamber service action mechanism in such latter chamber in combination with means for producing a greater reduction of train-pipe pressure in the release-valve chamber than in the operating-valve chamber in setting the brakes.

25. In a device for actuating fluid-pressure brakes, a brake-cylinder release-valve chamber and an operating-valve chamber in combination with means for producing a greater reduction of pressure in the release-valve chamber than in the operating valve chamber in setting the brakes, and for producing a greater train-pipe pressure in the operating-valve chamber than in the release-valve chamber upon a restoration of train-pipe pressure.

26. In a device for actuating fluid pressure brakes, the combination of a casing having two chambers both normally in communication with a train-pipe, a brake-release device in one of the chambers, valve mechanism in the other chamber for controlling the admission of air to a brake-cylinder and means for cutting off the supply of train-pipe air to the brake-release chamber.

27. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, a brake-cylinder-release device in one chamber and valve mechanism in the other chamber for admitting fluid-pressure to a brake-cylinder, a supply pipe or passage from the train-pipe and communicating with the chambers respectively and a valve device movable across the passage for cutting off the supply to the release-chamber.

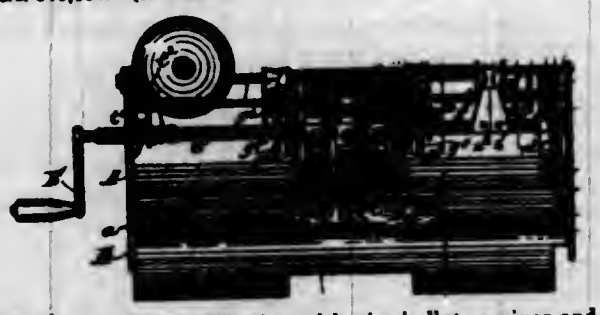
28. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber, a piston therein, a valve mechanism actuated by the piston for admitting fluid-pressure to a brake-cylinder from both the auxiliary reservoir and train-pipe and an emergency release-passage for releasing the fluid-pressure behind the piston and into the brake-cylinder in emergency action only.

29. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber, a piston therein with auxiliary-reservoir air on one side and train-pipe air on the other, a service-valve operated by the piston and movable therein, such valve controlling the admission of auxiliary-reservoir air to the brake-cylinder in service action and having a normally-closed passage for venting the train-pipe air from the chamber behind the piston and into the brake-cylinder in emergency action.

30. In a device for actuating fluid-pressure brakes, the combination of a casing having a single passage for the admission of fluid-pressure to a brake-cylinder and an emergency-valve and a service-valve acting together in running position to close such passage with their combined ends, the service-valve being adapted to lift to partially open the passage in service action and forming direct communication from the auxiliary reservoir to the brake-cylinder, and the emergency-valve opening the passage fully in emergency action.

31. In a device for actuating fluid-pressure brakes, the combination of a casing having a chamber with an always-open passage from an auxiliary reservoir and with a normally-closed passage therefrom to a brake-cylinder and mechanism in such chamber adapted to open the brake-cylinder passage in the application of the brakes and for admitting train-pipe air into the chamber and thence into the brake-cylinder through said brake-cylinder passage in emergency action and independent brake-release mechanism.

608,662. BALLOT-BOX. LUCIAN M. FOSTER, Boston, Mass., assignor to Benjamin Poole, Topsfield, Mass. Filed Feb. 19, 1896. Serial No. 579,867. (No model.)



Claim.—1. The combination with the ballot-receiver and movable ballot-support constituting the bottom thereof, of the main shaft provided with a ballot-feed wheel, a counting mechanism, and ballot-detector adapted to be operated by a ballot carried by the movable ballot-supporting bottom of the ballot-receiver, and means operated by said ballot-detector for engaging the counting mechanism with the main shaft, substantially as and for the purpose described.

2. The combination of the ballot-receiver and ballot-feeding mechanism, with a movable flap or cover for said ballot-receiver, and connecting mechanism between the same and main actuating-shaft of the feed mechanism, whereby said flap is moved to close the receiver by the first portion of the rotation of said shaft and is opened during the completion of the rotation of the said shaft, substantially as described.

3. The combination of the ballot-receiver and movable ballot-support constituting the bottom thereof, with the main shaft and ballot-feeding mechanism actuated thereby, and a movable flap or cover for the ballot-receiver, and connecting mechanism between the main shaft and said movable bottom and flap whereby said movable bottom is raised and the flap moved to close the receiver during the early part of the ballot-feeding operation, and restored to their normal position at the completion of said operation, substantially as described.

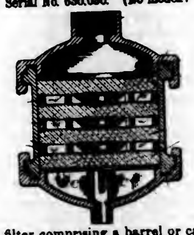
4. The combination of the ballot-feeding mechanism and an actuating-shaft therefor, with counting mechanism comprising a series of number-wheels loosely journaled on said shaft; a shiftable prime actuator for said number-wheels; a ballot-feeler, and a shifting device operated thereby controlling the operative engagement between the prime actuator of the counting mechanism and the actuating-shaft of the ballot-feed mechanism, substantially as described.

5. The combination of the ballot-feeding mechanism, of the counting mechanism and two independently-movable ballot-feelers and a two-part shifting device having its parts operated by said ballot-feelers respectively and adapted by their conjoint movement only to operatively engage the ballot-feeding mechanism and counting mechanism, substantially as described.

6. The combination of the main actuating-shaft and ballot-feed wheels thereon, with a counting mechanism, a shiftable prime actuator therefor, a ballot-feeler and a shifting device operated thereby controlling the operative engagement between the prime actuator of the counting mechanism and the actuating-shaft of the ballot-feed mechanism, and means whereby the said prime actuator is positively disengaged from said actuating-shaft at the completion of each rotation thereof, substantially as described.

7. The ballot-receiver provided with a movable bottom and ballot-detector rolls supported thereon, combined with companion detector-rolls, and an independently-movable support therefor, and means for raising said movable bottom to carry the periphery of its detector-rolls beyond the periphery of the companion detector-rolls when in normal position, substantially as described.

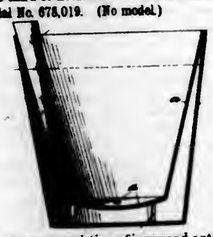
608,663. **FILTER.** WILLIAM M. FOWLER, Stamford, Conn. Filed Mar. 31, 1897. Serial No. 630,090. (No model.)



Claim.—1. A filter comprising a barrel or casing, a plurality of filtering-laminas within the casing, skeleton separating-disks interposed between the said laminas and serving to space the filtering-laminas apart, the said skeleton separating-disks and laminas being free to be slid consecutively into one end of the barrel and out of the opposite end of the barrel and movable inlet and outlet caps for opening and closing the opposite ends of the barrel at pleasure, substantially as set forth.

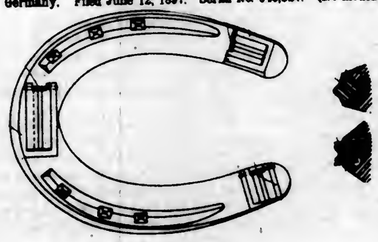
2. A filter comprising a barrel or casing, a disk of filtering material fitted to the interior of the barrel or casing and a skeleton disk provided with a rim having its edge spaced from the interior wall of the barrel or casing and adapted to impinge against the yielding disk of filtering material at a short distance from its outer edge, whereby, when pressure is applied to the disk of the yielding material, its periphery will be forced against the inner wall of the barrel by the edge of the rim of the skeleton disk to prevent the flow of liquid past the periphery of the yielding disk, and caps for closing the opposite ends of the barrel or casing, substantially as set forth.

608,664. **FLOWER-POT.** ALLISON H. FREE, Milwaukee, Wis., assignor of one-third to Louis R. Hinnemann, same place. Filed Apr. 16, 1898. Serial No. 678,019. (No model.)



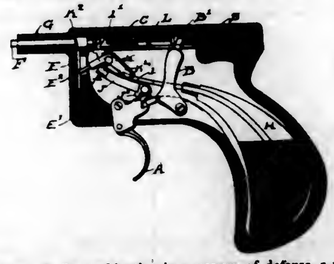
Claim.—A flower-pot consisting of inner and outer tapering shells, the inner shell having a greater taper than the outer shell and having its upper edge connected to the upper edge of the outer shell and provided at its lower end with apertures, and with supporting-feet that rest on the bottom of the outer shell, said inner shell being bulged laterally and having an upward extension that projects beyond the upper edge of the outer shell, thus forming an elliptical feed-opening, substantially as set forth.

608,665. **REVERSIBLE CALK.** KARL J. GAITZSCH, Knauthain, Germany. Filed June 12, 1897. Serial No. 640,527. (No model.)



Claim.—A reversible calk having a number of working edges and a socket fast on the shoe to receive the said calk, the edges of said calk being arranged so that whichever edge is in the operative position, the edges of the socket shall be covered by other edges of the calk, substantially as described.

608,666. **WEAPON OF DEFENSE.** FRANK GARRETT, Shipston-on-Stour, England. Filed May 13, 1897. Serial No. 636,389. (No model.) Patented in England July 29, 1896, No. 16,780.



Claim.—1. In combination in a weapon of defense, a reservoir, a piston, a cylinder in which the same moves, a means of communication between the cylinder and reservoir and the trigger and releasing mechanism connected with the piston to control the same, substantially as described.

2. In combination in a weapon of defense, the reservoir, the piston and cylinder, the latter communicating with the reservoir means for controlling the supply of liquid to the cylinder from the reservoir, and the trigger and releasing mechanism connected with the piston for controlling the same and arranged to act on the supply-controlling means, substantially as described.

3. In combination in a weapon of defense, the reservoir, the piston and cylinder, the compressible tube between the cylinder and reservoir, the trigger and releasing mechanism connected to the piston and the means for compressing or releasing the tube connection arranged to be actuated by the trigger, substantially as described.

4. In combination in a weapon of defense, a reservoir, a cylinder, a piston, a tube forming a communication between the reservoir and cylinder and retracting and releasing mechanism therefor including a trigger, said piston being arranged to suck in a charge from the reservoir and to eject the same from the arm, substantially as described.

5. In combination in a fluid-ejecting arm, a cylinder, an ejecting-piston therein, a gate closing the outlet of the cylinder, and trigger and releasing mechanism, said mechanism being in connection with the gate and piston to withdraw the gate and to project the piston forwardly, substantially as described.

6. In combination, in a fluid-ejecting arm, the reservoir, the cylinder and piston, the compressible tube connecting the reservoir and cylinder, the gate E, the lever K controlling the same, the lever J acting in conjunction with the lever K for controlling the supply-tube, the lever B connected with the piston, and the trigger for operating the levers J and B, substantially as described.

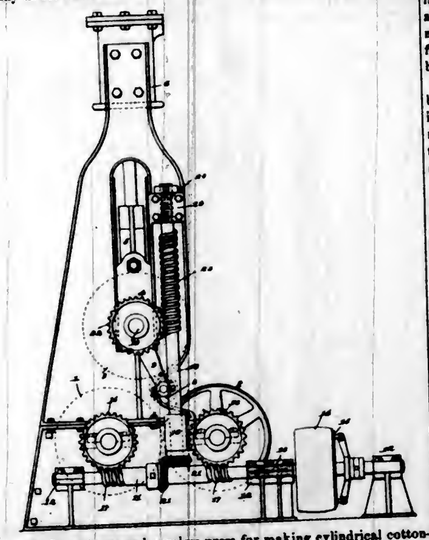
7. In combination in a fluid-ejecting arm, the reservoir, the cylinder and piston, the compressible tube connecting the reservoir and cylinder, the gate E, the lever K, controlling the same, the lever J acting in conjunction with the lever K for controlling the supply-tube, the lever B connected with the piston, the exterior stud M acting upon the internal mechanism to open the parts for the inlet of the fluid, and the trigger for operating the levers J and B, substantially as described.

608,667. **COTTON-PRESS.** JOHN W. GRAVES, Little Rock, Ark., assignor to the American Cotton Company, New York, N. Y. Filed Feb. 24, 1898. Serial No. 671,676. (No model.)

Claim.—1. In an improved coreless press for making cylindrical cotton-bales, the combination of a plurality of relatively large baling-rolls and a relatively small auxiliary roll cooperating therewith for forming a contracted space or pocket in which the nucleus of the bale will be produced, substantially as set forth.

2. In an improved coreless press for making cylindrical cotton-bales, the combination of a plurality of relatively large baling-rolls and a relatively small auxiliary roll cooperating therewith for forming a contracted space or pocket in which the nucleus of the bale will be produced, said auxiliary roll being movable away from the baling-rolls, substantially as set forth.

3. In an improved coreless press for making cylindrical cotton-bales, the combination of a plurality of relatively large baling-rolls, a relatively small auxiliary roll cooperating therewith for forming a contracted space or pocket in which the nucleus of the bale will be produced, and means for positively driving all of said rolls, substantially as set forth.



4. In an improved coreless press for making cylindrical cotton-bales, the combination of a plurality of baling-rolls and an auxiliary roll carried in swinging arms and cooperatiug with said bailing-rolls for forming a contracted space or pocket in which the nucleus of the bale will be produced, substantially as set forth.

5. In an improved coreless press for making cylindrical cotton-bales, the combination of a plurality of baling-rolls and an auxiliary roll carried in swinging arms and serving by its weight to effect compression of the bale at the start of its formation, said auxiliary roll cooperating with said baling-rolls for forming a contracted space or pocket in which the nucleus of the bale will be produced, substantially as set forth.

6. In an improved coreless press for making cylindrical cotton-bales, the combination with three relatively large baling-rolls and a relatively small auxiliary roll cooperating with two of said baling-rolls for forming a contracted space or pocket in which the nucleus of the bale will be produced, substantially as set forth.

7. In an improved coreless press for making cylindrical cotton-bales, the combination with three relatively large baling-rolls and a relatively small auxiliary roll cooperating with two of said baling-rolls for forming a contracted space or pocket in which the nucleus of the bale will be produced, and means for positively driving all of said baling-rolls, substantially as set forth.

8. In an improved coreless press for making cylindrical cotton-bales, the combination with three relatively large baling-rolls and a relatively small auxiliary roll for forming a contracted space or pocket in which the nucleus of the bale will be produced, said auxiliary roll serving by its weight to compress the bale during the preliminary stages of its formation, substantially as set forth.

9. In an improved coreless press for making cylindrical cotton-bales, the combination of two relatively large baling-rolls mounted in stationary bearings, a relatively small auxiliary roll cooperating with said baling-rolls for forming a contracted space or pocket in which the nucleus of the bale will be produced, and a relatively large third baling-roll cooperating with the first-mentioned baling-rolls, substantially as set forth.

10. In an improved coreless press for making cylindrical cotton-bales, the combination of two baling-rolls mounted in stationary bearings, an auxiliary roll cooperating with said baling-rolls for forming a contracted space or pocket in which the nucleus of the bale will be produced, a third baling-roll cooperating with the first-mentioned baling-rolls, and a pressure device applied to said third baling-roll, substantially as set forth.

11. In an improved coreless press for making cylindrical cotton-bales, the combination of two relatively large baling-rolls mounted in stationary bearings, a relatively large movable baling-roll cooperating with said stationary baling-rolls, and a relatively small auxiliary roll movable with said movable baling-roll and cooperating with the stationary baling-rolls for forming a contracted space or pocket in which the nucleus of the bale will be produced, substantially as set forth.

12. In an improved coreless press for making cylindrical cotton bales, the combination of two baling-rolls mounted in stationary bearings, a third baling-roll cooperating with said stationary baling-rolls, and an auxiliary roll carried in swinging arms from the shaft of the movable baling-roll and cooperating with the stationary baling-rolls for forming a contracted space or pocket in which the nucleus of the bale will be produced, substantially as set forth.

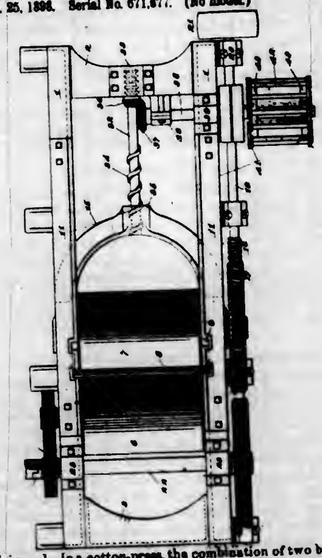
13. In an improved coreless press for making cylindrical cotton-bales, the combination of two relatively large baling-rolls mounted in the same horizontal plane, a relatively large movable baling-roll movable in a vertical plane toward and away from the first-mentioned baling-rolls, and a relatively small auxiliary roll movable with said movable baling-roll, substantially as set forth.

14. In an improved cotton-press, the combination of two baling-rolls mounted in the same horizontal plane, worm-gears carried by the shafts of the said baling-rolls, a horizontal main driving-shaft adjacent to said baling-rolls, worms on said main driving-shaft engaging said worm-gears for driving said baling-rolls, a movable baling-roll movable in a vertical plane toward and away from the first-mentioned baling-rolls, an auxiliary driving-shaft arranged vertically and deriving motion from said main shaft, connections between said auxiliary shaft and the movable baling-roll and a relatively small auxiliary roll movable with said movable baling-roll, substantially as set forth.

15. In an improved cotton-press, the combination of two baling-rolls mounted in the same horizontal plane, a main driving-shaft arranged horizontally, connections between said main driving-shaft and said baling-rolls, a movable baling-roll movable in a vertical plane toward and away from the first-mentioned baling-rolls, an auxiliary shaft arranged vertically and driven from said main shaft, connections between said auxiliary shaft and the movable baling-roll and a relatively small auxiliary roll movable with said movable baling-roll, substantially as set forth.

16. In an improved cotton-press, the combination of two baling-rolls mounted in the same horizontal plane, a main driving-shaft, connections between said main driving-shaft and said baling-rolls, a movable baling-roll movable in a vertical plane toward and away from the first-mentioned baling-rolls, an auxiliary shaft arranged vertically, connections between said auxiliary shaft and the main shaft, a worm-gear carried by the shaft of the movable baling-roll, an elongated worm on the auxiliary shaft with which said worm-gear engages and a relatively small auxiliary roll movable with said movable baling-roll, substantially as set forth.

608,668. **COTTON-PRESS.** JOHN W. GRAVES, Little Rock, Ark., assignor to the American Cotton Company, New York, N. Y. Filed Feb. 25, 1898. Serial No. 671,677. (No model.)



Claim.—1. In a cotton-press, the combination of two baling-rolls, a main driving-shaft, a right-hand worm and a left-hand worm carried by said shaft, a worm-gear connected to and driving one of said

baling-rolls and engaging one of said worms, a counter-shaft, connections between said counter-shaft and the other baling-roll, and a worm-gear on said counter-shaft engaging the other of said worms, substantially as set forth.

2. In a cotton-press, the combination of two baling-rolls, a main driving-shaft, a right-hand worm and a left-hand worm carried by said shaft, a worm-gear connected to and driving one of said baling-rolls and engaging one of said worms, a counter-shaft, connections between said counter-shaft and the other baling-roll, a worm-gear on said counter-shaft engaging the other of said worms, and a core between said baling-rolls on which the bale is formed.

3. In a cotton-press, the combination of two baling-rolls, a main driving-shaft, a right-hand worm and a left-hand worm carried by said shaft, a worm-gear carried by one baling-roll and engaging one of said worms, a counter-shaft, connections between said counter-shaft and the other baling-roll, and a worm-gear on said counter-shaft engaging the other of said worms, substantially as set forth.

4. In a cotton-press, the combination of two baling-rolls, a driving-shaft, two oppositely-disposed worms on said shaft, a worm-gear carried directly by one of said baling-rolls and engaging one of said worms, a counter-shaft, a worm-gear carried by said counter-shaft and engaging the other of said worms, and a pair of gears between said counter-shaft and the other of said baling-rolls, whereby the last-mentioned baling-roll will be driven in a direction opposite to the counter-shaft, substantially as set forth.

5. In a cotton-press, the combination with a movable baling-roll, of a pressure-producing shaft, connections between said baling-roll and said shaft for rotating the latter, and means for gradually increasing the resistance to rotation of said shaft, substantially as set forth.

6. In a cotton-press, the combination with a movable baling-roll, of a pressure-producing shaft, connections between said baling-roll and said shaft for rotating the latter, means for gradually increasing the resistance to rotation of said shaft, and a thrust-bearing for receiving the longitudinal thrust of said shaft, substantially as set forth.

7. In a cotton-press, the combination with a movable baling-roll, of a pressure-producing shaft arranged parallel to the longitudinal movement of said roll, connections between said shaft and said baling-roll for rotating the former, and means for gradually increasing the resistance to rotation of said shaft, substantially as set forth.

8. In a cotton-press, the combination with a movable baling-roll, of a threaded pressure-producing shaft, a nut carried by said baling-roll and engaging said shaft, a thrust-bearing for receiving the longitudinal thrust of said shaft, and means for gradually increasing the resistance to rotation of said shaft, substantially as set forth.

9. In a cotton-press, the combination with a movable baling-roll, of a threaded pressure-producing shaft, a nut carried by said baling-roll and engaging said shaft, a thrust-bearing for receiving the longitudinal thrust of said shaft, and an endless chain driven by said shaft for resisting the rotation of the same, substantially as set forth.

10. In a cotton-press, the combination with a movable baling-roll, of a threaded pressure-producing shaft, a nut carried by said baling-roll and engaging said shaft, a thrust-bearing for receiving the longitudinal thrust of said shaft, and an endless chain carrying graduated weights driven by said shaft for gradually increasing the resistance to rotation of the same, substantially as set forth.

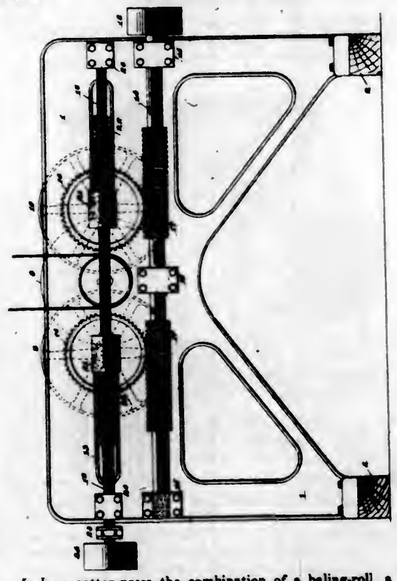
608,669. COTTON-PRESS. JOHN W. GRAVES, Little Rock, Ark., assignor to the American Cotton Company, New York, N. Y. Filed Feb. 25, 1898. Serial No. 671,679. (No model.)

Claim.—1. In a cotton-press, the combination of a core mounted in stationary boxes, two baling-rolls oppositely disposed with relation to said core and mounted in movable bearing-blocks, a worm-gear carried by the shaft of each of said baling-rolls, a main driving-shaft located in line with said worm-gears, and two elongated worms on said shaft with which said worm-gears coöperate, substantially as set forth.

2. In a cotton-press, the combination of a baling-roll, a core mounted adjacent to said baling-roll, a second baling-roll coöperating with said core and mounted on the other side thereof in movable bearing-boxes, a nut loosely mounted on each end of the shaft of the second baling-roll, and tension-producing shafts having screws thereon with which said nuts coöperate, substantially as set forth.

3. In a cotton-press, the combination of a baling-roll, a core mounted adjacent to said baling-roll, a second baling-roll coöperating with said core and mounted on the other side thereof in movable bearing-boxes, a nut loosely mounted on each end of the shaft of the second baling-roll, tension-producing shafts having screws thereon with which said nuts coöperate, and means for causing said tension-producing shafts to rotate simultaneously, substantially as set forth.

4. In a cotton-press, the combination of a baling-roll, a core mounted adjacent to said baling-roll, a second baling-roll coöperating with said core and mounted on the other side thereof in movable bearing-boxes, a nut loosely mounted on each end of the shaft of the second baling-roll, tension-producing shafts having screws thereon with which said nuts coöperate, and a sprocket-chain connecting said shafts, whereby the same will rotate simultaneously, substantially as set forth.



5. In a cotton-press, the combination of a baling-roll, a core mounted adjacent to said baling-roll, a second baling-roll coöperating with said core and mounted on the other side thereof in movable bearing-boxes, a nut loosely mounted on each end of the shaft of the second baling-roll, tension-producing shafts having screws thereon with which said nuts coöperate, and means for reversely rotating said shafts, substantially as set forth.

6. In a cotton-press, the combination of a baling-roll, a core mounted adjacent to said baling-roll, a second baling-roll coöperating with said core and mounted on the other side thereof in movable bearing-boxes, a nut loosely mounted on each end of the shaft of the second baling-roll, tension-producing shafts having screws thereon with which said nuts coöperate, means for causing said tension-producing shafts to rotate simultaneously, and a pulley-wheel connected to one of said shafts for reversely rotating the same, substantially as set forth.

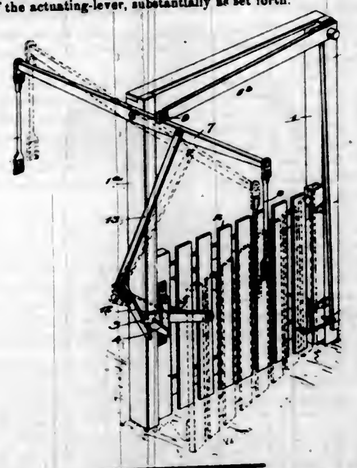
7. In a cotton-press, the combination with a core mounted in stationary bearing-boxes, of two baling-rolls coöperating with said core and mounted in movable bearing-boxes, a nut loosely mounted on each end of the shaft of each of said baling-rolls, two tension-producing shafts, and screws on said tension-producing shafts with which said nuts coöperate, substantially as set forth.

8. In a cotton-press, the combination with a core mounted in stationary bearing-boxes, of two baling-rolls coöperating with said core and mounted in movable bearing-boxes, a nut loosely mounted on each end of the shaft of each of said baling-rolls, two tension-producing shafts, screws on said tension-producing shafts with which said nuts coöperate, and means for causing said tension-producing shafts to rotate simultaneously, substantially as set forth.

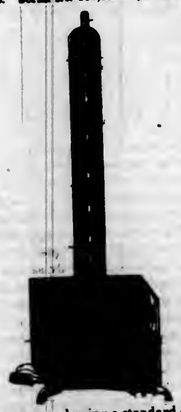
9. In a cotton-press, the combination with a core mounted in stationary bearing-blocks, of two baling-rolls coöperating with said core and mounted in movable bearing-blocks, a nut loosely mounted on each end of the shaft of each of said baling-rolls, two tension-producing shafts, screws on said tension-producing shafts with which said nuts coöperate, and a sprocket-chain connecting said tension-producing shafts, whereby they will be simultaneously rotated, substantially as set forth.

608,670. GATE. REMEMBER GRIST, Spielerville, Ark. Filed May 6, 1898. Serial No. 679,927. (No model.)

Claim.—The combination with the gate-posts, a gate hinged to one of said posts, a latch pivoted to said gate, a catch secured to one of said posts and adapted to be engaged by said latch, a bell-crank lever pivoted at the upper end of one of said posts, a loose connection between the gate and the lower end of the bell crank lever, a lever pivoted to the opposite post, a loose connection between said lever and the other member of the bell-crank lever, a latch-trip pivoted to the post and adapted to engage the pivoted latch, a link connecting the trip with the actuating-lever, and handles connected to the free ends of the actuating-lever, substantially as set forth.



608,671. BROOM-CASE. GEORGE HACKER, Connellsburg, Pa. Filed Jan. 28, 1898. Serial No. 667,882. (No model.)



Claim.—1. A broom-case having a standard extending upwardly therefrom and provided with a clamp to detachably hold the broom-handle, said case having a spring-actuated door, a latch and catch to hold the door closed, a foot-lever pivotally connected to the case, and a device operated by the lever to release the latch, substantially as described.

2. A broom-case having a standard extending upwardly therefrom and provided with a spring-clamp to detachably hold the broom-handle, said case having a spring-actuated door, a latch and catch to hold the door closed, a foot-lever pivoted intermediate its ends to the case below the bottom thereof, a rod connected to the end of the lever adjacent to the latch and extending up through the bottom of the case, the upper end of the rod being bent to extend below the latch when the door is closed, and a spring interposed between the case and the lever to normally hold the rod in its lowest position, all substantially as and for the purposes specified.

608,672. SAFETY-BRIDLE. JOHN HAMMOND, Buena Vista, Ohio. Filed Apr. 26, 1897. Serial No. 633,966. (No model.)

Claim.—1. In a safety-bridle, the combination with the parts of the bridle, of plates attached thereto, a bit connected to said plates, arms pivotally mounted on said plates and having fingers in connection therewith to engage the nostils of an animal, springs interposed between the opposite ends of the bit and the said arms, a throat-latch or choke-strap in connection with said arms, and reins attached to the lower ends of said arms, substantially as and for the purposes specified.



2. In a safety-bridle, the combination of a bit, movable nostril-closers, means for connecting said nostril-closers to the bit, driving-reins attached to said means, a choke-strap, and a center strap attached to the said nostril-closers and also connected to the choke-strap, substantially as described.

3. In a safety-bridle, the combination of a bit, a pair of arms movably attached to said bit, nostril-closers in connection with said arms, a center strap attached to said nostril-closers, an upper lever to which said center strap is also attached, a choke-strap connected to said lever, and driving-reins secured to said arms, substantially as described.

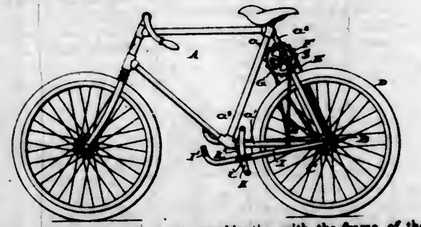
608,673. WIRE ROPE OR HAWSER. ROBERT A. HAMMOND, Sandwich, Mass. Filed Oct. 7, 1897. Serial No. 654,428. (No model.)



Claim.—1. A wire rope or hawser, composed of a series of wire strands laid or twisted together, each strand being composed of a plurality of wires twisted tightly together, and said wire strands being each provided with a twisted strand of hemp or other fibrous material "served" around the same in substantially transverse coils to form an outer elastic covering or cushion therefor, substantially as described.

2. The combination in a wire rope or hawser, of a series of wire strands laid or twisted together, each strand being composed of a plurality of wires twisted tightly together in direct contact with each other, and said wire strands being each provided with an outside wrapping composed of a twisted strand of tarred hemp or other fibrous material "served" spirally around the same in substantially transverse coils to form an elastic covering or cushion which also forms the outer surface of the rope or hawser, substantially as described.

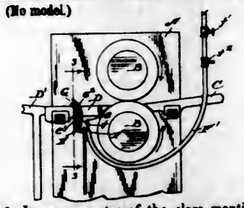
608,674. BICYCLE-GEAR. DARIUS L. HAMMER, Etna Green, Ind. Filed Apr. 12, 1897. Serial No. 631,730. (No model.)



Claim.—1. In a bicycle, in combination with the frame, of the rear wheel and axle, a sprocket-wheel upon the axle, a crank-shaft journaled in suitable bearings carried by the frame, a sprocket-wheel thereon, a sprocket-chain connecting said sprocket-wheels, pedal-levers pivotally secured to the rear axle, rods connecting the cranks of the crank-shaft and the pedal-levers, straps i carried by the pedals, guide-strips K supported by and located upon each side of the frame which are embraced by the straps i whereby the pedal-arms are guided, said guide-strips forming the sides of a rectangular frame, a vertical plate A^2 connecting the upper and lower members thereof, an orifice in the plate A^2 and a screw passing through the orifice and into a hub projection upon the frame of the bicycle, substantially as described.

2. In a bicycle-bearing, the combination with the pedal-levers of bracket-plates, secured to the end thereof, having V-shaped bearing edges, a pedal-plate having end bearings correspondingly recessed and sloped to rest upon said V-shaped bearing, and links connecting the said bearings and the ends of the bracket-plates, substantially as described.

608,675. APPARATUS FOR APPLYING GREASE TO SHEET-ZINC. HERMAN HEDDLER, La Salle, Ill. Filed Jan. 8, 1896. Serial No. 574,067. (No model.)



Claim.—1. In an apparatus of the class mentioned, the combination with the rolls, of a grease-reservoir arranged at the delivery side of the rolls and provided with a series of open-ended tubes, an air-tube provided with a series of nozzles arranged in connection with the open-ended tubes to form a series of atomizers and means for supplying and controlling compressed air in connection therewith substantially as specified.

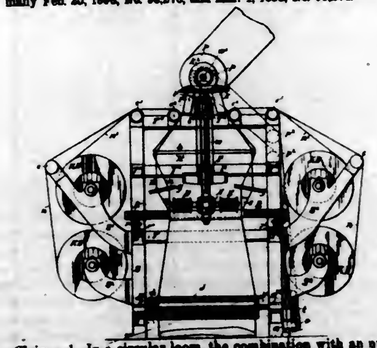
2. In an apparatus of the class mentioned, the combination with the rolls, of a grease-reservoir provided with atomizers and means for supplying and controlling compressed air in connection therewith the rolls and grease-reservoir having the relative arrangement specified.

3. In an apparatus of the class mentioned, the combination with the rolls, of a grease-reservoir provided with atomizers, arranged as shown with relation to the rolls, and an air-tight grease-tank placed at a higher level than the grease-reservoir and having pipe connections for the grease-supply and for ventilation substantially as specified.

4. An apparatus of the class specified comprising a pair of rolls, a reservoir provided with a row of atomizers arranged as shown with relation to the rolls, means for supplying and controlling compressed air in connection with the atomizers, and an elevated supply-tank for the reservoir having pipe connections for the supply and for ventilation substantially as specified.

5. In an apparatus for applying grease to zinc sheets, a grease-reservoir provided with a row of atomizers, means for supplying and controlling compressed air in connection with the atomizers, and means for propelling the zinc sheets at a uniform speed over the atomizers, substantially as specified.

608,676. CIRCULAR LOOM. JOSEF HEROLD and CARL HEROLD, Brunn, Austria-Hungary, assignors to Rundwebstuhlfabrik, Herold & Richards, same place. Filed May 6, 1897. Serial No. 635,434. (No model.) Patented in Austria Jan. 2, 1897, No. 47/3, and Mar. 24, 1897, No. 47/1,006; in Luxemburg Mar. 4, 1897, No. 2,771; in Belgium Mar. 15, 1897, No. 126,586; in England May 6, 1897, No. 5,323; in France June 2, 1897, No. 264,360; in Italy June 9, 1897, XXXIII, 44,408, and LXXXVII, 23; in Switzerland Sept. 15, 1897, No. 13,974; in Hungary Oct. 5, 1897, No. 9,695; in Canada Nov. 22, 1897, No. 58,189, and in Germany Feb. 25, 1898, No. 96,270, and Mar. 1, 1898, No. 96,271.



Claim.—1. In a circular loom, the combination with an upright shaft, of one or more electromagnets carried thereon, an upright stationary casing concentric with said shaft, and surrounding said magnets, shuttles bearing against the outside of the casing, and levers for beating up the weft and serving as a track for supporting said shuttles, substantially as described.

2. In a circular loom, the combination with an upright shaft, of one or more electromagnets carried thereon, an upright metallic casing concentric with said shaft, and surrounding said magnets, weft-beating levers radial to the shaft and arranged near the bottom of the casing, and shuttles having horizontal rollers to bear against the casing and vertical rollers to rest and roll on the levers, substantially as described.

3. In a circular loom, the combination with an upright shaft, of one or more electromagnets carried thereon, a stationary casing within which said magnets rotate, radial weft-beating levers, adjacent to the lower end of said casing, magnetic shuttles bearing against the outside of the casing and resting on the levers, radial heddles above said levers, and annular cams rotating synchronously with the electromagnets and engaging with the ends of the heddles, substantially as described.

4. In a circular loom, the combination with an upright shaft, of a ring mounted to rotate concentric with said shaft, and having peripheral teeth, a second shaft carrying a pinion meshing with said teeth, a main horizontal shaft carrying means for driving both of said shafts, annular grooved cams carried on said ring, radial heddles and weft-beating levers engaging with the grooves in said cams, electromagnets carried by the central shaft, and shuttles adapted to be propelled thereby, said shuttles resting on said weft-beating levers, substantially as described.

5. In a circular loom, the combination with means for propelling the shuttles, of two concentric series of stationary upright reeds, rings passing through said reeds, rollers on said rings, between said reeds, and a series of radial heddles passing between said reeds and supported by said rings and rollers, substantially as described.

6. In a circular loom, the combination with means for propelling the shuttles, of two concentric series of stationary upright reeds, spring-rings passing through said reeds, rollers on said rings separating said reeds, and a series of radial heddles arranged in two sets, upper and lower, each heddle passing between two reeds, substantially as described.

7. In a circular loom, the combination with an upright shaft, of electromagnets carried thereon, two sets of stationary reeds concentric with each other and with the shaft, heddles movable radially between said reeds, a stationary casing inclosing said electromagnets and supported from the inner set of reeds, and magnetic shuttles resting against the outside of said casing, substantially as described.

8. In a circular loom, the combination with an upright shaft, of electromagnets carried thereon, two sets of stationary reeds concentric with each other and with the shaft, heddles movable radially between said reeds, a stationary casing inclosing said electromagnets and supported from the inner set of reeds, an annular temple attached to the bottom of the casing, and magnetic shuttles resting against the outside of said casing, substantially as described.

9. In a circular loom, the combination with a series of weft-beating levers radially arranged, of an annular temple located adjacent to the ends of said levers, an insulated contact-ring carried by said temple, and an electrically-controlled stop-motion having its terminals connected respectively with said levers and with said ring, substantially as described.

10. In a circular loom, the combination with a series of radial weft-beating levers, of an annular temple having a groove in its upper surface, and arranged beneath the ends of said levers, an insulated ring carried in said groove, and an electrically-controlled stop-motion having its terminals connected respectively with said levers and with said ring, substantially as described.

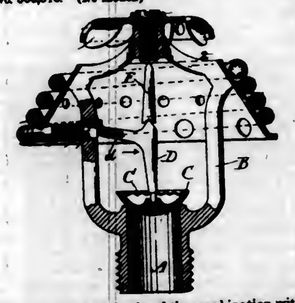
11. In a circular loom, the combination with a radial series of weft-bearing levers, of a contact-ring arranged adjacent to the ends of said levers, a spring-actuated lever serving as a belt-shifter, a plate having a slot in which the said lever can move, an angular latch having one end projecting across said slot, an electromagnetic solenoid into which projects a core attached to said latch, and electrical connections between the solenoid, the radial levers and the contact-ring, whereby when a weft-thread breaks one of the levers will come in contact with the ring and thereby close the circuit through the solenoid, causing the latch to be withdrawn and allowing the belt-shifter to operate, substantially as described.

12. In a circular loom, radially-arranged weft-beating levers each consisting of an elbow-lever, a bent lever pivoted to one arm of the elbow-lever, one end of the bent lever being adapted to enter between the warp-threads, means for vibrating the elbow-lever to carry the bent lever back and forth radially, and means for vibrating the bent lever up and down, substantially as set forth.

13. In a circular loom, the combination with a set of radially-arranged levers b^1 and b^{1a} mounted on stationary supports D^1 and having rollers e^1, e^3, of the rings xb^1, xb^3, xb^4, whose adjacent edges

form cam-grooves engaging with said rollers, and means for revolving said rings concentric with the levers, substantially as described.

608,677. SPRINKLER-HEAD FOR AUTOMATIC FIRE-EXTINGUISHERS. GEORGE R. HIBBARD, Chicago, Ill. Filed Oct. 21, 1895. Serial No. 566,310. (No model.)



Claim.—1. In a sprinkler-head the combination with the closure and means including a strut for holding it in normal position, of a releasing device consisting of a thermostatic element made of materials of different expansibility, said element being so arranged with relation to the strut that when subjected to a predetermined degree of heat its expansion causes the displacement of the strut, substantially as set forth.

2. In a sprinkler-head the combination with the closure, of a releasing device consisting of a thermostatic element made of a tube and a core fitting within the tube and having embedded in it a coil of wire, the tube and core being of materials of different expansibility and so arranged with relation to the other parts that when subjected to a predetermined degree of heat their differential expansion will cause the closure to be released, substantially as set forth.

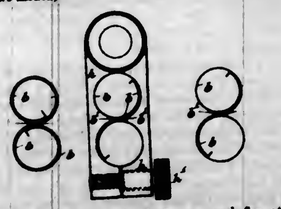
3. In a sprinkler-head the combination with the closure and means by which it is held normally closed, of a releasing device consisting of a thermostatic element made of a tube and a core within the tube, the tube and core being of materials of different expansibility, and means for anchoring the tube, the thermostatic element being coiled and having one of its ends arranged in operative proximity to the holding means aforesaid, substantially as set forth.

4. In a sprinkler-head the combination with the closure and means for holding it normally closed, of a releasing device consisting of a thermostatic element made of a tube and a core within the tube, the tube and core being of materials of different expansibility, means for anchoring the tube and an adjustable plug arranged in the tube at the end of the core and in operative proximity to the holding means aforesaid, substantially as set forth.

5. In a sprinkler-head, the combination of a nozzle, a cap closing it, a strut engaging the cap, and a diaphragm engaging the cap and strut, the diaphragm being provided with an opening through which the strut engages the cap, substantially as set forth.

6. In a sprinkler-head the combination of a nozzle, a cap having a socket, a strut having a reduced end fitted in said socket, and a diaphragm secured to the cap and having a perforation through which the strut passes, said diaphragm having concentric corrugations and arranged to bear against the shoulder resulting from the reduced end of the strut, substantially as set forth.

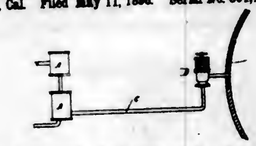
608,678. MANUFACTURE OF VELOCIPEDE-FRAMES. WILLIAM HILLMAN, Coventry, England. Filed Dec. 6, 1897. Serial No. 660,968. (No model.)



Claim.—1. Tubing, for velocipede-frames and for other uses, made of sheet metal coiled or rolled upon itself from opposite sides and in opposite directions into the form of two tubes closely adjoining each other, thereby forming two or more thicknesses at the junction of said tubes, substantially as described.

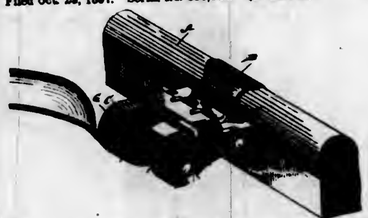
2. Tubing, for velocipede-frames and for other uses, made of sheet metal coiled or rolled upon itself from opposite sides and in opposite directions into the form of two tubes closely adjoining each other, and thereby forming two or more thicknesses at the junction of said tubes, and secured by solder at said junction, substantially as described.

608,679. ENGINE FEED-WATER SUPPLY. EDWARD S. HOUGH, Oakland, Cal. Filed May 11, 1896. Serial No. 591,161. (No model.)



Claim.—In an engine feed-water supply such as described, the combination with a reciprocating pump to supply water to the boiler against the pressure thereof, of a supply-pipe connecting the said pump and boiler, and a valve mounted on the said pipe outside and near the boiler, and provided with a spring to seat it, substantially as described.

608,680. THILL-COUPLING. JOHN W. HOWELL, Johnstown, Pa. Filed Oct. 29, 1897. Serial No. 656,833. (No model.)



Claim.—1. A thill-coupler comprising an axle-clip having forwardly-extending arms thereon, with rearwardly-extending slots adapted to receive the trunnions of the thill-iron, a retaining-frame pivoted to the said arms having forwardly-extending arms provided with open-ended slots adapted to engage the trunnions of the thill-iron, a connecting-bar for said retaining-frame adapted to limit the movement of the same and by means of which it is raised, and a coiled spring surrounding the pivotal shaft of the retaining-frame, one end of which is adapted to bear against the axle-clip and the other end against the retaining-frame, substantially as described and for the purpose stated.

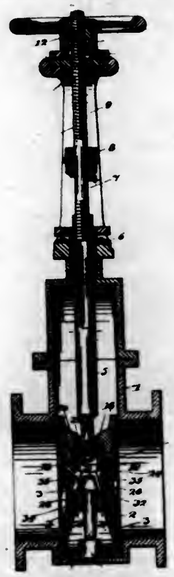
2. A thill-coupler comprising an axle-clip having forwardly-extending arms provided with rearwardly-extending slots adapted to receive the trunnions of the thill-iron, shouldered recesses provided in the outer sides of said forwardly-extending arms, a retaining-frame adapted to fit in said recesses having slots formed therein disposed at a different angle from those of the clip-arms, a bolt for pivotally connecting said frame to the clip-arms, a connecting-bar for said retaining-frame for limiting its movement and by means of which it is raised, a spring coiled around the said pivotal bolt, one end of which is adapted to bear against the axle-clip and the other end upon the connecting-bar for holding said retaining-frame normally downward and closing the open-ended slots of the clip-arms, substantially as described.

608,681. GATE-VALVE. ALFRED I. HYDE, Newark, N. J. Filed Sept. 27, 1897. Serial No. 653,211. (No model.)

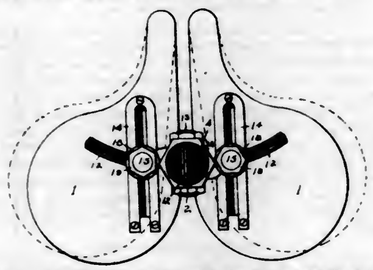
Claim.—1. The combination with a valve, of a hollow stem operatively connected therewith and provided with internal screw-threads, a rod fitting within said stem provided with oppositely-screw-threaded ends and with a longitudinal groove, a stationary nut through which said rod passes, a handle, bushing secured to said handle and surrounding said rod, and a key carried by said bushing and fitting within said groove, as and for the purpose set forth.

2. The combination with oppositely-located valve-seats, of the oppositely-facing valves, the longitudinally-movable valve-stem provided at its lower end with a coupling having upwardly and downwardly extending lateral flanges, inwardly-extending webs at the upper end of said coupling, seokets in the outer faces of said downwardly-extending flanges, overhanging hooks upon the rear faces of said valves provided with downwardly-extending lugs to embrace said webs of the coupling, and an upwardly-facing ledge or projection upon each of the valves to receive the laterally-depending flanges of said coupling, substantially as described.

3. The combination with the oppositely-facing valve-seats, of oppositely-facing valves connected with a longitudinally-movable valve-stem, a curved bearing-face on the rear side of each of said valves, guide-plates on opposite sides of said bearing-faces, an upwardly-facing ledge below said bearing-faces, guide-plates below said ledge, a wedge having a tapered head, downwardly-facing shoulders to rest upon the ledge of the valves, a depending stem provided with lateral fins to be guided by said guide-plates, wedge-blocks between said tapered head and the bearing-faces of the valves, and a projection upon the valve-casing to encounter the lower end of said stem as the valve approaches the lower limit of its movement, substantially as described.



608,682. CYCLE-SADDLE. Robert W. Jamieson, Rochester, N. Y. Filed May 22, 1896. Serial No. 592,521. (No model.)



Claim.—1. The combination with a support, the laterally-extending arms pivoted thereon, and clamping devices for securing them, of the saddle-sections adjustable around the arms, and securing devices for clamping the sections to the arms, substantially as described.

2. The combination with a support, the laterally-extending arms pivoted thereon, and clamping devices for securing them, of the saddle-sections supported on the arms, and adjustable around them, and also adjustable laterally of the arms, and securing devices for locking the saddle-sections rigidly to the arms, substantially as described.

3. The combination with a support, the laterally-extending curved arms pivoted thereon and clamping devices for securing them, of the saddle-sections, supported on the arms and adjustable longitudinally thereof, and clamping devices for holding the saddle-sections rigidly to the arms, substantially as described.

4 The combination with the support and the laterally-extending rounded and curved arms thereon, of the saddle-sections having the slots, the bolts having the heads engaging the slots, the washers engaging the arms, and the nuts on the bolts, whereby the sections may be independently and universally adjusted and secured, substantially as described.

5. The combination with the support and the laterally-extending curved arms pivoted thereon, of the saddle-sections having the slots, and the bolts, one for each section, operating in the slots and connecting said section with the arm whereby the sections may be adjusted independently of the bolts and also upon the arms, substantially as described.

6. The combination with a cycle-saddle, of an attaching device thereon embodying the tapering tubular portion exteriorly threaded and having the slots at the sides, the V-shaped clip having the lugs at the ends, and the nut adapted to screw on the tubular portion, whereby the saddle is adapted for attachment either to straight or horizontal saddle-posts, substantially as described.

7. The combination with the support, and the laterally-extending arms thereon provided with longitudinal serrations, of the saddle-sections having the slots, the headed and laterally-perforated bolts, the washers having serrations, and the securing-nuts, substantially as described.

8. In a cycle saddle, the combination with the support of the two laterally-extending supporting-arms pivoted thereto, their outer ends being adjustable in a vertical plane, and the independent saddle-sections secured to the arms, whereby the upper surfaces of the sections may be independently tilted, substantially as described.

9. The combination with the support having the laterally-extending forwardly-curved arms, of the two independent saddle-sections mounted on the arms, and adjustable longitudinally thereof and also adjustable around the arms, and a single clamp for each saddle-section for holding it in such adjusted positions.

10. A bicycle-saddle consisting of the curved cylindrical supporting-arms, two clamps surrounding said support and capable of a rotary and longitudinal adjustment thereon, and two seat-sections having a longitudinal adjustment on said clamps.

11. A bicycle-saddle consisting of the curved cylindrical supporting-arms, clamps having transverse openings to fit the arms and rotarily adjustable thereon, and seat-sections having the supporting-plates longitudinally adjustable on the clamps, whereby the seat-sections may be adjusted laterally, longitudinally, and at various inclinations and may be spread at the rear and closed at the front without moving the support.

12. A bicycle-saddle consisting of curved transverse supporting-arms, clamps mounted on said arms and arranged to be rotarily and laterally adjusted thereon, and two seat-sections carried by and supported upon said clamps.

13. A bicycle-saddle consisting of a support having curved supporting-arms adapted to be connected to a machine, clamps surrounding and carried by the arms and capable of being inclined or tilted and of lateral adjustments on said arms, and seat-sections mounted on the clamps and capable of adjustment thereon.

608,683. SLIP-HOOK. James Johnson, Birmingham, England. Filed Nov. 6, 1897. Serial No. 657,647. (No model.) Patented in England Aug. 27, 1897, No. 19,750.



Claim.—1. A slip-hook having a breech in one side thereof the extremity of the hook on either side of the said breech being fashioned into a hook and eye respectively the said eye bearing a hand-lever hinged or pivoted thereto and a ring loosely threaded through a hole in the said lever adapted to be passed over and engage the hooked end on the opposite side of the breech in the side of the slip-hook as described and set forth.

2. A slip-hook having its free extremities fashioned into a hook and eye respectively a locking-lever pivoted or hinged to the said eye and a ring or link loosely threaded through a hole in the said lever and adapted to pass over the opposite free extremity of the slip-hook and be tightened or locked across the breech by the said lever in such manner that the axis of the said ring or link lies below the hinge-pin or pivot of the lever as described and set forth.

3. The combination with a slip-hook of a locking-lever pivoted or hinged to one of the free extremities of the hook and bearing a loose locking ring or link adapted to be passed over and engage with the opposite free extremity of the slip-hook and be tightened or locked across the breech so that its axis falls below the center of the hinge-pin or pivot of the locking-lever.

4. The combination with a slip-hook, consisting of the main hook with a breech, the free extremity on either side of the breech being a hook and eye respectively the said eye bearing a lever pivoted or hinged thereto and the said lever bearing a loose ring or link adapted to pass over and engage with the opposite free extremity of the slip-hook and be tightened or locked across the breech in such manner that its axis falls below the center of the hinge-pin of the locking-lever, of a swivel or shackle or divided link as described and set forth.

608,684. HEAT-RETAINER. Felix Kahn New York, N. Y. Filed May 3, 1898. Serial No. 679,562. (No model.)



Claim.—1. An apparatus for the purposes specified, comprising an outer shell, a cover therefor, a lining of non-conducting material, arranged therein, a corrugated partition arranged within said shell adjacent to its vertical side, an annular shelf disposed within said shell, adjacent to its upper edge, a pouch, means for securing the same at its upper edge to said annular shelf, a filling of non-conducting fibrous material interposed between said pouch and the outer shell, a receptacle disposed within said pouch, a cover therefor, and a filling of non-conducting material interposed between the top of the inner receptacle, and shelf surrounding the same, and the under side of the cover of the outer shell, substantially as specified.

2. An apparatus for the purposes specified, comprising an outer shell or receptacle, a cover therefor, and means for securing said cover to said outer shell or receptacle, a lining of asbestos arranged within said outer shell or receptacle, adjacent to its base, side and cover, a circular corrugated partition arranged within said outer shell or receptacle, adjacent to the inner vertical side thereof, and extending almost to the top of said outer shell or receptacle, an annular shelf disposed within said outer shell or receptacle adjacent to its top, hook members provided thereon upon its upper surface, a pouch composed of felt provided along its upper edge with loops adapted to engage the hooks on the annular shelf, a filling of loose non-conducting fibrous material interposed within the outer shell between the pouch and the base and side of the outer shell or receptacle, a receptacle disposed within said pouch, a cover for said receptacle, and a pad of non-conducting material interposed between the cover of the last-mentioned receptacle and the shelf surrounding the same, and the under side of the cover of the receptacle first mentioned, said pad being secured to the under side of the cover of the receptacle first mentioned, substantially as specified.

608,685. LIGHTNING-ARRESTER. John F. Kelly, Pittsfield, Mass., assignor of one-half to Cummings C. Chesney, same place. Filed Dec. 16, 1895. Serial No. 572,226. (No model.)



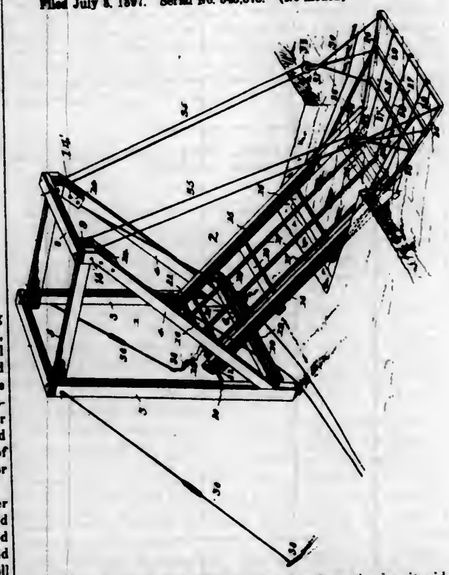
Claim.—1. A lightning-arrester consisting of a column of conducting or semiconducting bodies in bad contact with one another, as a whole practically non-conducting under ordinary electric stress, but under high stresses conducting, in combination with suitable terminals for the line, in contact with the column respectively, substantially as described.

2. A lightning-arrester consisting of a non-conducting containing vessel, in combination with a column of conducting or semiconducting bodies in bad contact with one another, within said vessel, and suitable terminals in contact with the ends of the column respectively, substantially as described.

3. A lightning-arrester consisting of a column of fusible conducting or semiconducting bodies held in position in bad contact with one another, in combination with suitable terminals in contact with the ends of the column respectively, substantially as described.

4. A lightning-arrester consisting of a column of pieces of fusible metal partially oxidized, held in position in combination with suitable terminals in contact with the ends of the column respectively, substantially as described.

608,686. ICE-LOADER. John A. Koontz, Centreville, Iowa. Filed July 8, 1897. Serial No. 643,875. (No model.)



Claim.—1. In an ice-loader, a supporting-frame having its side posts and inclined bars united rigidly together, a pair of spaced cross-bars united to the inclined bars near the points where the latter are united to said posts, and guide-rollers journaled between said spaced bars, combined with a carrier hinged to the frame above said bars and rollers, another pair of rollers, 14, journaled on the diagonal bars, a spoon attached to the carrier and provided with guide-rollers, and haulage-cables attached to the inclined bars and arranged through said rollers to raise or lower the carrier and spoon, as and for the purposes described.

2. In an ice-loader, the combination of an upright overhanging frame, a swinging carrier and spoon continuous one with the other and said spoon arranged in angular relation to said carrier, means for pivotally supporting the inner end of said carrier on the frame, guide devices on the base and overhanging ends of said frame, and a haulage-cable attached to the spoon and passed through said guide devices, substantially as described, for the purposes set forth.

3. In an ice-loader, the combination with an upright frame, of a single carrier provided at its outer free end with an angular spoon which is united rigidly to said carrier to maintain the same relation thereto and to swing vertically with the same, means for pivotally attaching the inner delivery end of the carrier to the upright frame, and the haulage-cables attached to the upper part of the upright frame and guided on the spoon and said frame to raise or lower the carrier and its spoon, substantially as described.

4. In an ice-loader, the combination with an upright frame, of a carrier hinged at its delivery end to said frame, an angular spoon carried at the free end of the carrier to be substantially continuous therewith and having an unobstructed outer end, slide-rails which extend continuously of the carrier and the spoon and furnishing continuous supports for the travel of ice when the carrier and spoon are raised to assume inclined positions downwardly toward the frame, and means for adjusting the spoon and carrier, substantially as described.

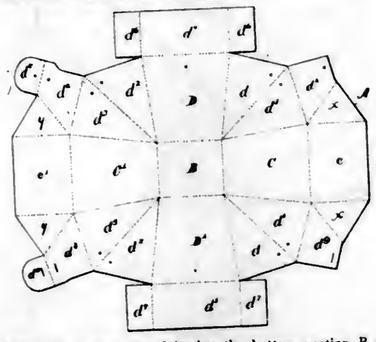
5. In an ice-loader, the combination with an open upright frame, of a carrier hinged at its delivery end to said frame to discharge through the same, an angular spoon rigid and continuous with the free end of the carrier and movable therewith in its vertical adjustments, slide-rails extending continuously of the carrier and spoon and furnishing supports for the travel of ice along the spoon and carrier

when they are inclined toward the hinged delivery end of said carrier, guide devices supported on the upright frame, and a haulage-cable attached to said spoon and passing through said guide devices, substantially as described.

6. In an ice-loader, the combination with a supporting-frame, and a hinged carrier, of a flared metallic spoon comprising diverging longitudinal bars united rigidly to the carrier, braces fastened to the carrier and to the spoon and serving to strengthen the rigid joint between the spoon and carrier, and adjusting means attached to the spoon and said frame, substantially as described.

7. In an ice-loader, the combination with an upright overhanging frame, of a carrier pivoted at its delivery end to said frame, an angular spoon rigid with the other end of said carrier, continuous slide-rails on the carrier and its angular spoon, guide-rollers mounted in the spoon, the overhanging end of said frame, and in the lower part of the frame below the carrier, and haulage-cables attached to said frame and passed around the guide-rollers, substantially as described.

608,687. **PAPER VESSEL.** JOSEPH J. LANZIT, Chicago, Ill. Filed Feb. 9, 1898. Serial No. 669,648. (No model.)



Claim.—1. A paper vessel having the bottom portion, B, side portions, C, C', end portions, D, D', corner folds, d, d', d^2, d^3, side extensions, c, c', the extensions, d^5, d^5, d^4, d^5, upon the respective folds, d', d^3, connecting portions x, y, and flaps, d^6, d^6, upon the extensions, d^5, d^5, bent inward and downward and secured upon the inside of the extensions, d^5, d^5, substantially as described.

2. In a paper vessel having the bottom portion, B, side portions, C, C', with extensions, c, c', end portions, D, D', corner folds, d, d', d^3, d^3, extensions, d^5, d^5, d^4, d^5, upon the folds, d', d^3, respectively, connecting portions, x, y, and the extensions, d^4, d^5, upon the end pieces free from the other extensions and adapted to fold in and form part of the cover; substantially as described.

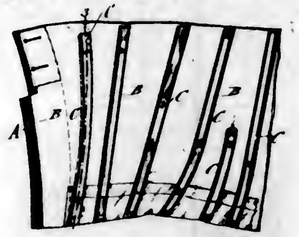
3. A paper vessel of the class described having the bottom, B, sides, C, C', ends, D, D', corner folds, d, d', d^3, d^3, side extensions, c, c', extensions, d^5, d^5, d^4, d^5, connected to the corner folds and also to intermediate portions x, y, themselves connected to the side extensions and the end extensions, d^4, d^5, having the lateral flaps, d^6, d^7, said flaps being adapted to fold inward and said extensions to fold inward and downward over the interior of the vessel to form the inner portion of the cover of the same; substantially as described.

4. A paper vessel having the bottom, B, the side and end portions, C, C', D, D', connected with the bottom and united by the corner folds, d, d', d^3, d^3, the extensions, d^4, d^5, upon the end pieces, D, D', the flaps, d^6, d^7, upon the extensions, d^4, d^5; the extensions, c, c', upon the side pieces, the extensions, d^5, d^5, d^4, d^5, upon the corner folds connected to the extensions, c, c', by the intermediate portions, x, y, and the flaps d^6, d^6, upon the extensions, d^4, d^5, said flaps being bent downward and inward over the upper edges of the extensions, d^4, d^5, and secured upon the inside thereof; substantially as described.

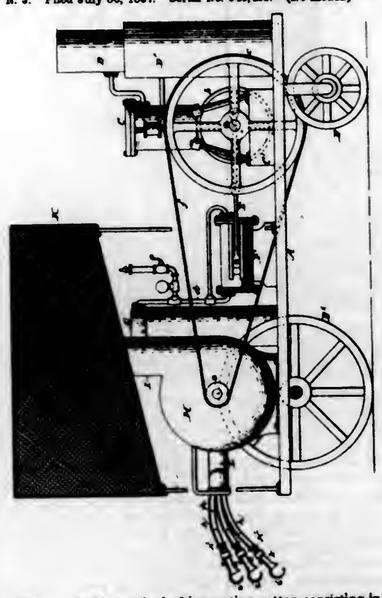
5. A fastener for paper vessels and the like consisting of a button, G, and a perforated plate, f, having the tongues, f^2, f^3, said plate being thrust through the walls of the bucket bent down upon itself and the tongues, f^2, f^3, bent around and clenched upon the adjacent portion of the plate; substantially as described.

608,688. **LADY'S WAIST.** MARIE-ELISE DE LATOUR, New York, N. Y. Filed Feb. 3, 1898. Serial No. 668,928. (No model.)

Claim.—A lady's waist, consisting of a covering composed of stitch-connected pieces, a lining also composed of stitch-connected pieces of the same size and pattern as the pieces of the covering, pockets secured over the seams of the lining, stays contained in said pockets and stitches passing through the seams of the covering and lining whereby the said stitches are caused to sink into the seams of the covering, so that the covering will assume the exact shape given to the lining by the stays, substantially as set forth.



608,689. **COTTON-HARVESTER.** GEORGE S. LEE, Hawthorne, N. J. Filed July 30, 1897. Serial No. 646,485. (No model.)



Claim.—1. The method of harvesting cotton consisting in separating the cotton from the plant by intermittent blasts of compressed air and conveying it to a receptacle by suction as set forth.

2. The method of harvesting cotton consisting in separating the cotton from the plant and conveying it to a receptacle by suddenly-applied intermittent blasts of compressed air and a constantly-exerted suctional force, substantially as described.

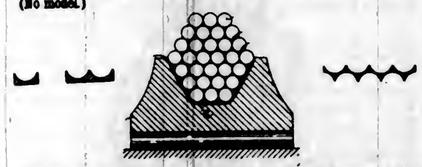
3. In a cotton-harvester, the combination of a suction-fan, a flexible tube connected directly thereto, a hole in the side of said tube communicating with the open air, a manually-operable valve adapted to close said hole and divert the entire suctional force of the fan to the mouth of the tube when the tube is presented to the cotton, substantially as described.

4. In a cotton-harvester, the combination with a fan, a suction-tube connected therewith, and a valve arranged to close an opening in the side of said tube thereby diverting the suction to the mouth of the tube and connected to a movable part adapted to embrace the cotton and draw it toward the mouth of the suction-tube when said valve is operated to close the opening in the side of the tube, substantially as described.

5. In a cotton-harvester, the combination of a motor or engine, a fan connected to and operated thereby and suction-tubes connected to said fan, of an air-compressor, a reservoir for compressed air and pipes connected to said reservoir, leading to the mouths of said suction-tubes and extending beyond the same a sufficient distance to admit of the introduction of the cotton in the boll between the discharge ends of the air-tubes and the mouths of the suction-tubes, and discharging thereinto, substantially as described.

6. In a cotton-harvester, the combination of a motor, a fan, suction-tubes connected to said fan, an air-compressor, a reservoir for compressed air, pipes leading from said reservoir to the mouths of said suction-tubes with movable nozzles on said compressed-air pipes discharging into said suction-tubes and adapted to force the cotton toward the tubes and valves on said air-pipes whereby a blast of compressed air may be discharged into the suction-tubes simultaneously with the movement of the nozzles, substantially as described.

608,690. **CONSTRUCTION OF TENSION MEMBERS FOR BRIDGES, &c.** GUSTAV LINDENTHAL, New York, N. Y., assignor to Otis H. Cutler, same place. Filed June 21, 1897. Serial No. 641,647. (No model.)



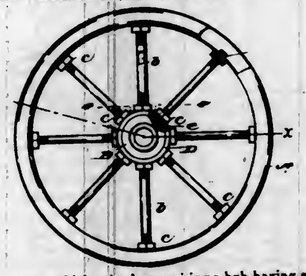
Claim.—1. Bearing-strips for cables, links, &c. composed of straight, longitudinally-arranged wires or strands, corresponding in shape and size to the shape and size of the spaces between the adjoining wires or strands of the cable, link, &c. and inserted therein to increase the bearing-surfaces of the wires or strands.

2. Bearing-strips for wire links, used in construction of bridges and similar structures, adapted to be inserted between the wire rope or cable of which the link is composed, and between the bearing-surface of its shoe or saddle, these bearing-strips having grooves corresponding in shape and size to the shape and size of the rope or wire cable and also to the shape and size of the strands comprising the rope or wire cable and having their base conformed to the shape of the bearing-surface of the shoe or saddle.

3. A wire cable or wire link composed of straight, longitudinally-arranged wires or strands and of bearing-strips corresponding in shape and size to the shape and size of the spaces between the adjoining wires or strands and inserted between but not interlocking with them to increase their bearing-surfaces.

4. Tension members for suspension-bridges and similar structures constructed of parallel wires and of bearing-strips, having grooves corresponding in size and shape to the size and shape of the wires, inserted between the rows or strands of the wires, and also between the wire cable and the bearing-surface upon which it rests.

608,691. **VEHICLE-WHEEL.** JAMES LLOYD, Blandon, Pa. Filed Nov. 2, 1897. Serial No. 657,183. (No model.)

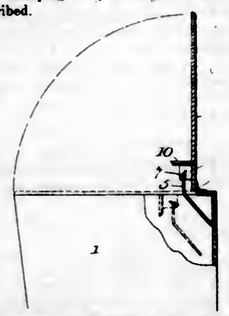


Claim.—1. A vehicle-wheel comprising a hub having semicircular openings or recesses in its periphery, tubular spokes having their inner ends inserted in said openings, a tubular rim having openings into which the outer ends of said spokes are secured, a collar designed to fit over said hub and close said openings or recesses, and means for securing said collar in position substantially as set forth.

2. A vehicle-wheel comprising a hub having a peripheral shoulder provided with semicircular openings or recesses, tubular spokes having their ends screw-threaded, the inner ends of said spokes being inserted in said semicircular openings or recesses, a tubular rim having openings into which the outer ends of said spokes are also projected, a collar adapted to fit over said hub and also having semicircular recesses formed therein and designed to coincide with the recesses or openings of said hub, and threaded nuts working on the ends of said spokes, substantially as set forth.

608,692. **LID-SUPPORT.** ADOLF LOEWE, New York, N. Y. Filed Apr. 1, 1898. Serial No. 676,081. (No model.)

Claim.—1. The combination of the receptacle, the hinged lid therefor, the bracket attached to the lid near the hinge, the brace pivoted to said bracket and extending downward into the receptacle, and means for clamping the pivoted brace to the bracket, substantially as described.

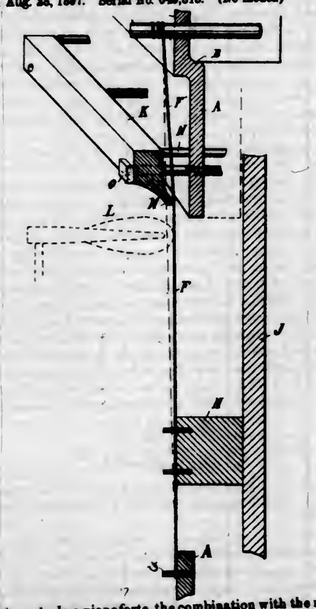


2. The combination of the receptacle, the hinged lid therefor, the bracket attached to the lid near the hinge, the brace pivoted to said bracket and extending downward into the receptacle, and means for clamping the pivoted brace to the bracket, together with means continuously pressing the lower end of the brace against the side of the receptacle, substantially as described.

3. The combination of the receptacle, the hinged lid therefor, the bracket attached to the lid near the hinge, the brace pivoted to said bracket and extending downward into the receptacle, and means for clamping the pivoted brace to the bracket, together with a counterweight for said pivoted brace which tends to rotate the brace on its pivot and press its lower end against the interior of the receptacle, substantially as described.

4. The combination of the receptacle, the hinged lid therefor, the bracket attached to the lid near the hinge, the brace pivoted to said bracket and extending downward into the receptacle, and means for clamping the pivoted brace to the bracket, consisting of a threaded bolt and thumb-nut and interlocking corrugations on the opposing faces of bracket and brace, substantially as described.

608,693. **PIANOFORTE.** JOHN H. LUDWIG, New York, N. Y. Filed Aug. 28, 1897. Serial No. 649,813. (No model.)



Claim.—1. In a pianoforte, the combination with the metal frame and sounding-board and the usual wooden bridge on the sounding-board, of pins and tuning-pins, of strings secured to the said pins and resting on the bridge only and on no other support between their at-

tachments to the pins, and an adjustable scale-bridge bar resting on the strings between the tuning-pins and the wooden bridge, and means for adjusting the pressure of said bridge-bar on the strings, substantially as herein shown and described.

2. In a pianoforte, the combination with a wrest-plank, of a metal frame having a shoulder and an extension beyond said shoulder, the shoulder resting against one edge of the plank and the extension on the adjacent face of the plank, tuning-pins passed through said extension into the plank, strings attached to said tuning-pins, and an adjustable bridge-bar extending across and resting on said strings, substantially as herein shown and described.

608,694. FOLDING UMBRELLA OR PARASOL. ERNEST E. MALLORY, West Unity, Ohio. Filed May 12, 1897. Serial No. 636,176. (No model.)



Claim.—1. In an umbrella, the combination of a staff having a swell which protrudes circumferentially from the cylindrical part of the staff and is situated below the crown-piece, a runner formed of flexible members which constitute the inner surface of the runner and are adapted to ride upon and be pressed outwardly by contact with the staff-swell, and stretchers attached to the flexible members of said runner, as and for the purposes described.

2. The combination of a staff having an annular swell or enlargement at the point where the runner is arrested when the umbrella is opened, a runner provided with a series of yieldable fingers forming, in part, the inner surface of the runner and adapted to ride upon the swell or enlargement of the staff, a series of jointed ribs, and stretchers pivoted to the ribs and to said fingers of the runner, the whole arranged and combined for service, substantially as described and for the purposes set forth.

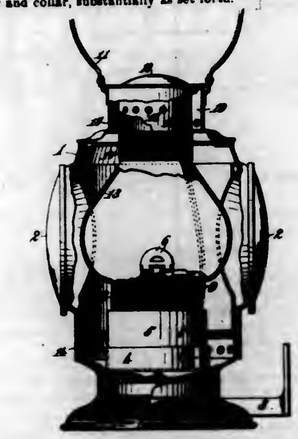
3. In an umbrella, the combination of a staff having a swell or enlargement intermediary of its length, a hollow notch secured to said staff a prescribed distance from or above said swell, a runner having a portion of its length adapted to yield or spread outward by the action of said swell or enlargement at a certain point in the upward movement of said runner, ribs connected or pivoted to said notch, and stretchers connected to said ribs and to the yielding portion of said runner, to enable said stretchers and runners to lie closely to the staff as the runner is moved past said swell, substantially as set forth.

4. In an umbrella, the combination of the staff having a swell or enlargement at a point intermediary of its length, a runner having its upper portion formed or provided with flexible fingers adapted to yield or spread outward under the action of said swell at a certain point in the upward movement of said runner, the ribs, the stretchers connected to said flexible fingers and adapted to move radially as said flexible fingers are acted upon by said swell, to exert pressure upon said ribs, and a sliding locking band or ring adapted to act upon said fingers, substantially as described.

608,695. SIGNAL-LAMP FOR RAILWAYS, &c. EDWARD S. MANNING, Des Moines, Iowa. Filed June 13, 1896. Serial No. 595,484. (No model.)

Claim.—1. In a signal-lantern, the combination with a casing having lens-openings therein and a lamp-receiving socket in its base said casing being provided with vent-openings at or near the bottom thereof, of a movable cover having vent-openings therein, a lamp adapted to rest in said socket, a globe for said lamp, and means for retaining said globe in position between said lamp and casing-cover and for admitting air thereto at top and bottom, substantially as set forth.

2. In a signal-lantern, the combination with a casing having lens-openings therein and a lamp-receiving socket in its base said casing being provided with vent-openings at or near the bottom thereof, of a movable cover having vent-openings therein, a depending apertured collar on the cover projecting into the casing, a lamp, an apertured cylinder thereon, and a globe supported and held in position by said cylinder and collar, substantially as set forth.



608,696. GANG-PLOW. WALTER C. MATTHEW, Stockton, Cal. Filed Feb. 15, 1898. Serial No. 670,398. (No model.)



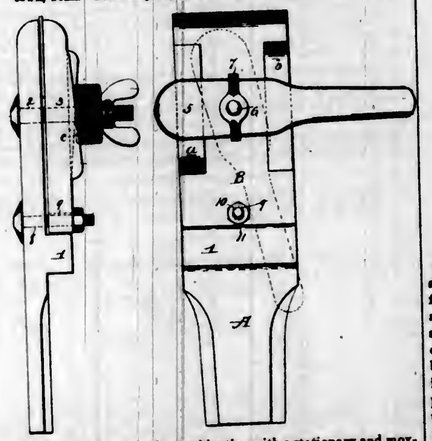
Claim.—1. In a gang-plow, the combination of a main frame, hangers journaled in said frame and provided with cranks, guide-wheels carried by said hangers, hand-levers fulcrumed at a common point on the main frame, a connection between one lever and the crank of one hanger, a connection between the other lever and the crank of the other hanger, and suitable means for normally holding said levers against casual movement, substantially as specified.

2. In a gang-plow, the combination of a main frame, a front guide-wheel, a hanger carrying said front guide-wheel and journaled in the frame and provided with a crank, a sleeve journaled in the main frame and provided with a crank, a rear guide-wheel, a hanger carrying said rear guide-wheel and keyed on the sleeve whereby said sleeve is enabled to turn with the hanger and move up and down on the same, a head connected in a swiveled manner with the hanger, suitable mechanism, for adjustably fixing the main frame at various elevations on the hanger, connected with said head, hand-levers fulcrumed at a common point on the main frame, a connection between one lever and the crank of the hanger carrying the front guide-wheel, a connection between the other lever and the crank of the hanger carrying the rear guide-wheel, a suitable means for normally holding said levers against casual movement, substantially as specified.

3. In a gang-plow, the combination of a main frame, a sleeve journaled in said frame and provided with a crank, a wheel, a hanger carrying said wheel and keyed in the sleeve whereby said sleeve is enabled to turn with the hanger and move up and down on the same, a hand-lever fulcrumed on the main frame and connected with the crank of the sleeve and hanger, a head connected in a swiveled manner with the hanger, suitable mechanism, for adjustably fixing the main frame at various elevations on the hanger, connected with said head, substantially as specified.

4. In a gang-plow, the combination of a main frame, a sleeve journaled in said frame and provided with a crank, a wheel, a hanger carrying said wheel and keyed in the sleeve whereby said sleeve is enabled to turn with the hanger and move up and down on the same, a hand-lever fulcrumed on the main frame and connected with the crank of the sleeve and hanger, a head connected in a swiveled manner with the hanger, a segmental rack fixed on the frame, an upright lever having a detent adapted to engage said rack, and a link connecting the lower end of said lever and the head on the hanger, substantially as specified.

608,697. VISE. JAMES R. MOORE and JAMES M. YOUNG, Watertown, Tenn. Filed May 28, 1898. Serial No. 682,014. (No model.)



Claim.—1. In a vise, the combination with a stationary and movable jaw, of a shoulder on said stationary jaw adapted to support the movable jaw, bolts connecting said jaws, wedges on the movable jaw and an arm or lever adapted to bear against said wedges and move the jaw, substantially as set forth.

2. In a vise, the combination with a stationary and movable jaw, of a shoulder on said stationary jaw adapted to engage said movable jaw, bolts passing through said jaws, a nut screwed on the lower bolt, a thumb-nut screwed on the other bolt, wedges on the movable jaw, and an arm or lever provided with a hole through which the last-mentioned bolt is adapted to pass, said arm or lever adapted to engage said wedges and force the movable jaw toward the stationary jaw and securely hold the same in its adjusted position.

3. In a vise, the combination with a stationary and a movable jaw, of a shoulder or projection on the stationary jaw adapted to support the movable jaw, wedges on the movable jaw and an arm or lever adapted to engage said wedges and move the jaw.

608,698. BEARING FOR VEHICLE-WHEELS. WILLIAM MEEKER, Dayton, Ohio. Filed Apr. 1, 1898. Serial No. 676,068. (No model.)

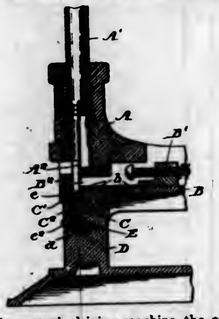


Claim.—1. In a vehicle-axle, the combination with a spindle having a collar thereon provided with peripheral screw-threads, of a sleeve the inner end of which is provided with interior screw-threads by which said end may be screwed over said collar to inclose the inner side thereof, whereby means are provided for keeping dust from the spindle, and for preventing said sleeve from leaving the spindle, substantially as described.

2. In a vehicle-axle, the combination with a spindle having a collar thereon provided with peripheral screw-threads, and a portion of said spindle on the inside of said collar continuing in the rounded form of the spindle as described, of a sleeve the inner end of which is provided with interior screw-threads adapting said end to be screwed over the collar, whereby means are provided for keeping the inclosed portion of the spindle free from dust, and for preventing said sleeve from leaving the spindle.

3. In a vehicle-axle, the combination with a spindle having a collar thereon provided with peripheral screw-threads, and the portion of said spindle adjacent to the inner side of said collar being continued in rounded form as described, of a sleeve of greater length than the distance from the outer end of the spindle and the collar, the inner end of said sleeve being provided with interior screw-threads that adapt it to be screwed over the collar and to occupy a position on the inner side of said collar, substantially as and for the purposes specified.

608,699. STAPLE-DRIVING MACHINE. ELWOOD H. MCHENRY, Philadelphia, Pa., assignor to Acme Staple Co., Limited, same place. Filed July 23, 1897. Serial No. 646,183. (No model.)



Claim.—1. In a staple-driving machine, the combination with staple-driving mechanism of the character described, comprising feeding, delivery and driving mechanism operating to feed, deliver, and drive staples singly and successively on each full reciprocating stroke of the driver-blade, of means, consisting essentially of a spring-controlled arm, normally closing the delivery-channel in position to be straddled by the staple and to support the same by pressure against its crown portion only, said arm being arranged to maintain such pressure until the staple-legs have been driven through the paper and the clenching thereof is about to be completed, substantially as specified.

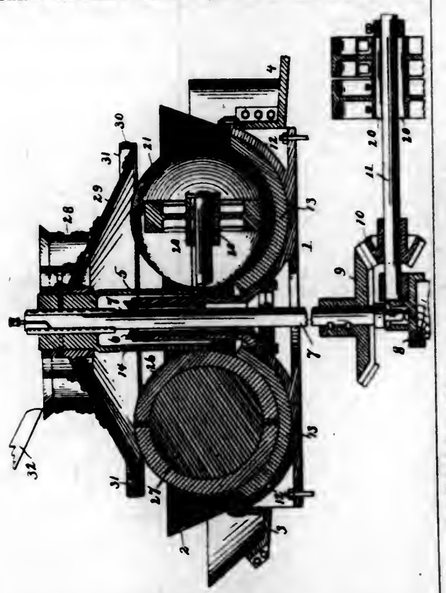
2. The combination with the driving and delivery members of staple-driving machines of the character described, of a spring of less width than the staple to be driven, and mounted in the staple-channel of the delivery member in position to be straddled by the staple, and operating to support the same by upward pressure against its crown portion during the downward pressure thereon of the driver-blade and to maintain such pressure until the legs of the staple have been driven through the paper, substantially as specified.

3. The combination in machines of the character described, with a delivery-channel plate C' having its inner channel-wall C^8 recessed, of a spring-arm E mounted in said channel and fast thereto at its upper end at e, and with its lower spring end projecting into the staple-delivery channel, and with means, such as set-screw e^3, to adjust the same; substantially as described.

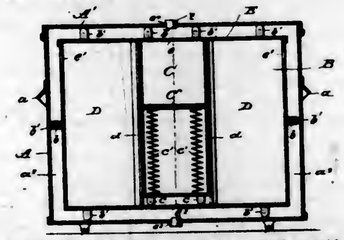
608,700. ORE GRANULATOR AND PULVERIZER. JOHN M. MONTGOMERY, Butte, Mont. Filed July 28, 1897. Serial No. 646,247. (No model.)

Claim.—In combination with the frame or casing 1, the vertical shaft 7, centrally journaled therein, the removable shoe 13 located in said frame concentric with said vertical shaft, the annular screen-frame 2, and the annular water-trough 3 encompassing said screen-frame, the vertical driving-sleeve 14 fixed to the upper end of said shaft 7 and provided with the oppositely-disposed horizontal arms 15 and 16, the shafts 18 18 fixed in the outer ends of said arms, the pushing-wheels 19 journaled on the outer ends of said shafts, the crushing-spheres 21 located in the path of said wheels, a spring-actuated scraper 23 fixed to the arm 15 and projecting into the path of

the spheres, a scraper 22 also fixed to the arm 15 and having its free end projecting into and adapted to travel in the groove in said shoe 13, and the rotating hopper 28 fixed to the upper end of said driving-sleeve, and provided with a conical bottom 29 from which the material to be operated upon shall be discharged by gravity into the annular screen-frame 2, substantially as and for the purpose set forth.



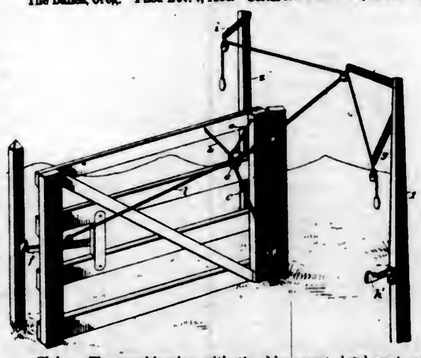
608,701. **REFRIGERATOR SHIPPING-CASE.** FRANK W. MOORE, St. Joseph, Mo. Filed Oct. 1, 1896. Renewed Apr. 5, 1898. Serial No. 676,563. (No model.)



Claim.—1. In a refrigerator shipping-case, the combination of the inclosing case A, having a cover with a central opening c^4, an inner receptacle B, having openings c' near its upper end, and a cover with an opening c'', projections or pins covered by rubber tips carried by the receptacle and cover which bear against the case to provide spaces a^3 by locating the receptacle centrally therein, vertical strips or guides d secured to the inner side of the side pieces of the receptacle B, a removable ice-box C, placed within the receptacle B, to bear at its ends against the guides or strips d and provide two compartments D, D: together with helical springs resting upon the bottom of the ice-box C, and a plate or false bottom C' mounted on said springs, the bottom of the inclosing case having a central opening c^5 said opening and the opening c^4 being normally closed by stoppers, substantially as shown.

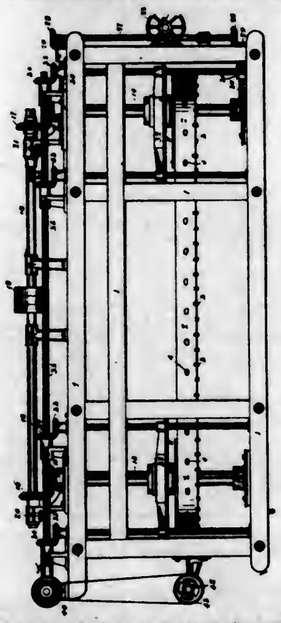
2. In a refrigerator shipping-case, the combination of an outer casing with legs or supports, the same having in the top and bottom openings, of an inner receptacle with projections to hold the same away from the inner walls of the outer case, said inner receptacle having vertical strips, central openings in the top and bottom of said receptacle, so disposed as to be on a line with the openings in the top and bottom of the outer casing, and openings near the upper edges of the side walls, together with a central ice-receptacle which engages with the vertical strips, the bottom of the ice-receptacle having legs or projections to engage the bottom of the inner receptacle, and a spring-supported tray carried by the ice-receptacle substantially as shown.

608,702. **OPENING OR CLOSING GATES.** WILLIAM J. MOORE, The Dalles, Oreg. Filed Nov. 7, 1896. Serial No. 611,434. (No model.)



Claim.—The combination with the hinge-post, latch-post and auxiliary posts on opposite sides of the hinge-post, said auxiliary posts having pulleys g h i at their outer ends, of the swinging gate connected by hinges to the hinge-post and provided with a lift-latch at its forward end adapted to engage a keeper on the latch-post, an open ring connected by brace rods or wires to the rear vertical bar of the gate and to the top rail or bar of said gate, a latch-rod connected at its front end to the lift-latch passed back through the supporting-loop and connected with an eye with which the opening and closing wires are connected to lift the gate-latch and swing the gate to the opened and closed positions, substantially as specified.

608,708. **STONE-SAWING MACHINE.** WILLIAM MURPHY, New York, N. Y. Filed Feb. 27, 1896. Serial No. 581,051. (No model.)



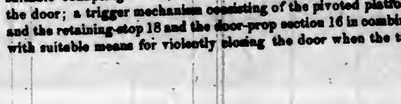
Claim.—1. The combination in a stone-sawing machine with an endless perforated cutting-blade of two or more positively and uniformly driven band-wheels, each having in its periphery disappearing sprocket-pins adapted when in normal position to engage the perforations of the blade, of outwardly-projecting flanges, secured to the upper edge of each of said positively-driven band-wheels, substantially as and for the purposes set forth.

2. The combination in a stone-sawing machine of an endless blade with a cutting-tooth attached thereto along one line only substantially at right angles to the cutting edge of said blade, having that surface of the tooth which is in contact with the side of the blade rounded, or beveled toward the lateral edges of said tooth, as and for the purposes described.

3. In a stone-sawing machine the combination of the drums 10, 10, whereon the endless cutting-blade 2 is driven, the shafts 13 and 14, the gears 15, 15 and 16, 17, and the shaft 18, whereby said two drums are positively driven at the same rate and impart uniform motion to said blade, substantially as and for the purposes described.

4. The combination in a stone-sawing machine with the endless cutting-blade 2, and the two positively-driven power-drums 10, 10 on their respective shafts 13, 14, operated synchronously by gears 15, 15 and 16, 17, and shaft 18, of the flanges 11, 11, whereby the said cutting-blade uniformly driven is held in constant position against the stone, substantially as and for the purposes described.

608,704. **PIPE-ORGAN FOOT.** FREDERICK MCCOLLUM, Mansfield, Conn. Filed Jan. 20, 1896. Serial No. 576,247. (No model.)

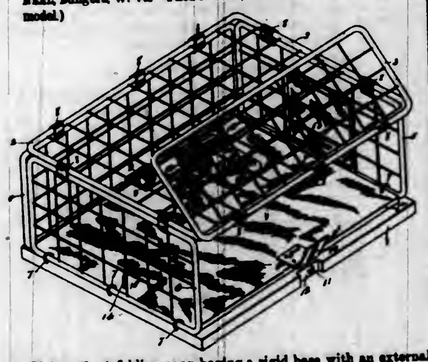


Claim.—1. As an article of manufacture, an organ pipe-foot comprising a wooden body portion, and a separate soft-metal toe cast around the lower end of said body portion and thereby firmly secured to said body.

2. As an article of manufacture, an organ pipe-foot comprising a wooden body portion, having at its lower end a locking member, and a separate soft-metal toe cast around the locking member and thereby firmly secured to said body.

3. As an article of manufacture, an organ pipe-foot comprising a wooden body portion and a separate soft-metal toe cast around the lower end of said body portion and thereby firmly secured to said body, and having walls of decreasing thickness from the butt to the point of the toe, and also having an opening in the point of the toe.

608,705. **COMBINED FOLDING COOP AND TRAP.** WILLIAM A. NEAL, Bungers, W. Va. Filed Nov. 17, 1897. Serial No. 658,863. (No model.)



Claim.—1. A folding coop having a rigid base with an external recess around its edge, end sections pivotally secured in the recess, a top having sides pivotally secured thereto, the lower edges of the latter resting in said recess, and means to lock the same in position, consisting of a hinged plate secured to the base and having a perforated part extending over the recess and a securing-pin entering said perforation, all combined and arranged as set forth.

2. The herein-described combined folding coop and trap consisting of a folding coop proper, substantially as specified; a trigger secured to the floor of said trap; a door-sustaining rod in cooperation with said trigger and a retraction-spring so connected to said door that it will be violently closed when the trigger mechanism is actuated, substantially as specified and for the purpose set forth.

3. In a combined folding coop and trap, the combination with a suitable collapsing frame, of a sustaining-rod for engagement with the door; a trigger mechanism consisting of the pivoted platform 17 and the retaining-stop 18 and the door-prop section 16 in combination with suitable means for violently closing the door when the trigger mechanism is released, substantially as specified and for the purpose set forth.

4. The herein-described combined coop and trap consisting of the rigid base provided with a recess around its outer edge; end sections pivotally secured to said base; a top section pivotally attached to the upper sides of said end sections; side sections pivoted to the outer edge of said top section; a brace or prop designed for holding one of said side sections in an open position; a trigger mechanism designed to receive the lower end of said prop consisting of a platform pivotally secured near one end in supporting ears or bearings, the shorter end of said platform being curved upward to engage said prop, and a spring connecting said open section and an adjacent part of the trap whereby said open section will be violently closed when said trigger mechanism releases said prop, all operatively combined in the manner and for the purpose set forth.

608,706. **APPARATUS FOR BENDING FORM-PLATES FOR PRINTING.** JOHN W. OSBORNE, San José, Cal. Filed Mar. 19, 1897. Serial No. 628,232. (No model.)



Claim.—1. In a form-plate-bending machine; a web of flexible material supported at the ends and adapted to carry a form-plate face down, in combination with a depressor crossing the web and adapted to lie upon and successively depress lines across the back of the interposed plate; substantially as described.

2. In a form-plate-bending machine, a web of flexible material supported by adjustable straining apparatus at the ends and adapted to receive and carry the plate face down; in combination with a depressor crossing the web and adapted to lie upon and successively depress the metal along lines of contact at the back of the interposed plate; substantially as described.

3. In a form-plate-bending machine, a web of flexible material supported at the ends to receive and carry the plate face down; in combination with a depressor of adjustable weight crossing the web and adapted to lie upon and successively depress the interposed plate along the shifting line of contact; substantially as described.

4. In a catenary plate-bending machine, a rotary depressing-cylinder, to flex the plate from the back or smooth side, with means for increasing the weight of said cylinder; in combination with an adjustable catenary web held in opposition to the depressing-cylinder and adapted to support and press the plate continuously against the same; substantially as described.

5. In a form-plate-bending machine, a web of flexible material supported only at the ends so as to be capable of flexure in numerous curving lines, in combination with a depressing-cylinder crossing said web, so as to rest on the back of a plate supported by said web, and means for rolling the cylinder back and forth in the direction of the length of the web, whereby the plate may be gradually curved, substantially as described.

6. In a catenary plate-bending machine, a rotary depressing-cylinder of adjustable weight adapted to force and flex the plate from the back; in combination with a hollow shell of larger diameter encircling the depressing-cylinder and in contact with its lower surface; and an adjustable catenary web held in opposition to the depressing-cylinder and adapted to support the plate continuously and elastically against the same and the interposed shell; substantially as described.

7. In a catenary plate-bending machine, a pair of parallel rollers in the same horizontal plane running in bearings and separated from each other by a distance in excess of the length of the plate to be bent; in combination with a web of flexible material passing over the rollers and sagging between them to a curve which is flatter than that to which the plate is to be bent, a depressing-cylinder of diameter less than that of the curve the plate is to receive, and with means for rolling the depressing-cylinder to and fro over the plate; substantially as described.

8. In a catenary plate-bending machine, a pair of parallel rollers running in bearings in the same horizontal plane and separated from each other by a distance exceeding the length of the plate to be bent; in combination with a web of flexible material passing over and around each roller and fastened thereto; with means for rotating the rollers simultaneously and each equally in the same direction to and fro; and with a depressing-cylinder placed oppositely and rotating upon an axis across the web and having an upward and downward movement; whereby the depressing-cylinder can follow the web and plate at all times; substantially as described.

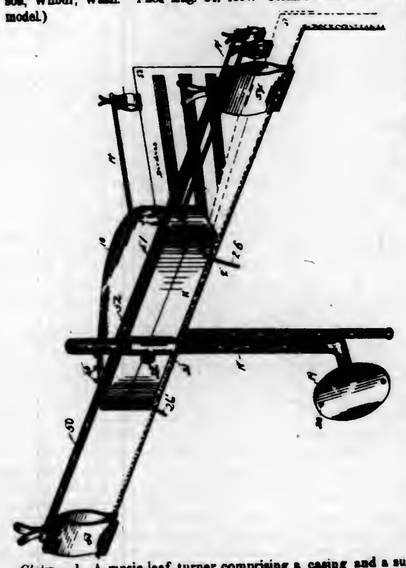
9. In a catenary plate-bending machine, a pair of parallel rollers of a diameter equal to about the length of the largest plate to be bent, running in bearings in the same horizontal plane and separated from each other by a distance exceeding the length of the plate; in combination with a web of flexible material passing over and around each roller and fastened thereto; with means for clamping each roller relatively to the other in any angular position, thereby adjusting the sag of the web between them; with chain or other gearing for rotating the rollers simultaneously and each equally in the same direction to and fro, and with a depressing-cylinder appositely placed above and across the web and adapted to traverse the back of the plate lying thereon; substantially as described.

10. In a catenary plate-bending machine, a pair of parallel rollers of a diameter equal to about the length of the largest plate to be bent, running in bearings in the same horizontal plane and separated from each other by a distance exceeding the length of the plate; in combination with a web of flexible material passing over and around each roller and fastened thereto; with means for clamping each roller relatively to the other in any angular position, thereby adjusting the sag of the belt between them; with chain or other gearing for rotating the rollers simultaneously and each equally in the same direction to and fro; with a depressing-cylinder appositely placed above and across the web, to traverse the back of the reciprocating plate; and with a compressed spring to operate said cylinder downward; substantially as described.

11. Means for gradually curving printing-plates consisting of a suspended flexible yielding support for the face of such form-plate, and a relatively-movable yielding presser by which lines of pressure may be applied to the back of such form-plate, substantially as described.

12. Means for gradually curving printing-plates consisting of a yielding support suspended at its ends, on which the plate may rest, and a yielding presser traveling back and forth over the plate, whereby the plate and support may yield in movable lines under the presser, in combination substantially as described.

608,707. MUSIC HOLDER AND TURNER. ABRAM A. PATTERSON, Wilbur, Wash. Filed Aug. 31, 1897. Serial No. 650,190. (No model.)



Claim.—1. A music-leaf turner comprising a casing and a support therefor, a plurality of arms pivoted within the casing and projecting therefrom, pivoted supports for the arms adapted to project them successively forward, clips carried by the arms, a carriage movable within the casing and adapted to successively engage the arms, and means for moving said carriage.

2. A device of the class described comprising a casing having a suitable support, a plurality of arms provided with clips pivoted within the casing and extending therefrom, pivoted supports for the arms adapted to project them forward, a carriage movable within the casing adapted to successively engage the arms and move them from one limit of their motion to the other and a second carriage movable within the casing and adapted to successively return the said arms.

3. A music leaf-turner comprising a casing formed in two parts, a groove extending into the casing, a plurality of arms provided with clips pivoted within the casing and extending outwardly through the groove, pivoted supports for the arms adapted to project them forward, a carriage located in one part of the casing and adapted to engage the arms and move them, means for operating said carriage and a second carriage in the second part of the casing adapted to successively engage the arms and return them to their normal positions and means for operating the second carriage.

4. In a device of the class described, a casing having arms pivoted therein and extending therefrom, pivoted supports for the arms adapted to project them forward, clips carried by the arms, grooves in the casing, a carriage in each groove, a finger carried by each carriage adapted to engage the arms successively, a flexible connection with each carriage lying within the groove and adapted to move the carriages each in one direction, a second cord attached to each carriage and lying within the groove and a spring-actuated drum having connection with the second cord of each carriage and adapted to return its carriage when the first-named cords are released.

5. In a music-leaf turner, the combination with a casing and a support therefor, of a plurality of arms pivoted within the casing and projecting therefrom, clips carried by the arms, grooves within the casing, a carriage within each groove having a finger adapted to engage the arms successively, pivoted supports for the arms adapted to deliver the arms successively to the fingers of the carriages, and means for moving the carriages.

6. In a music-leaf turner, the combination with a casing and a support therefor, of a plurality of arms pivoted within the casing and projecting therefrom, grooves within the casing, a carriage in each groove, one of said carriages being inverted, a spring-pressed finger in each carriage adapted to engage the arms successively, pivoted supports for the arms adapted to deliver the arms to be engaged by the fingers of their respective carriages, and means for operating the carriages.

7. In a music-leaf turner, the combination with a casing and a support therefor, of a plurality of arms pivoted within the casing and projecting therefrom, grooves in the casing, a carriage in each groove, a spring-pressed finger in each carriage, adapted to engage the arms successively, a cam pivoted within the casing at each end of the arc of movement of the arms, recesses in each cam adapted to receive their respective arms and move them forwardly as the cam is rotated on its pivot, to be engaged by a finger of a carriage, means for moving each carriage in one direction and a spring-operated drum having connections with each carriage, said drums being adapted to return their respective carriages and hold them normally at opposite ends of the arc of movement of the arms.

608,708. CAR-COUPLING. JOSEPH P. PAULSEEN, Kankakee, Ill. Filed Feb. 19, 1897. Serial No. 624,265. (No model.)



Claim.—The combination with the draw-head, of the pivotal jaw having a rear rib or flange, the pawl to engage the jaw, the pin projecting from the rear of the pawl, the bail, pivotally secured to the draw-head and having an opening through which said pin passes, and the spring coiled around the pin and bearing on the outside of the pawl and the inside of the bail, substantially as described.

608,709. ROLLER-BEARING. ROBERT G. PETWAY, Nashville, Tenn. Filed Aug. 7, 1896. Serial No. 602,062. (No model.)

Claim.—1. A threaded axle, and cones adjustable thereon, in combination with a hub, flanges thereon, a rim at the periphery of each flange, stud-axles projecting from said flanges, cones thereon, balls on the cones, and a series of antifriction-rollers on said balls and traveling around in contact with the cones on the main axle, substantially as described.

2. In an antifriction-bearing, an axle, sets of cones thereon, one of each set being adjustable, in combination with a hub, flanges thereon, a rim at the periphery of each flange, stud-axles connected to said flanges, rollers thereon and traveling around in contact with said cones, and caps fitted to the rims and adapted to receive and aid in supporting said stud-axles, substantially as described.



3. In an antifriction-bearing, an axle, and cones thereon, in combination with a hub, flanges thereon and detachable caps forming inner and outer walls, stud-axles supported in said walls, and antifriction-rollers on said stud-axles and traveling around in contact with the cones on the main axle, substantially as described.

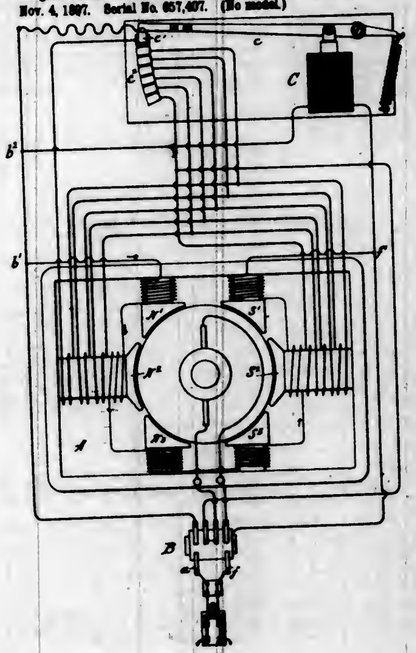
4. In an antifriction-bearing, an axle, and cones thereon, in combination with a hub, rigidly-attached flanges thereon, a rim at the periphery of each flange, stud-axles projecting from said flanges, antifriction-rollers on said axles and traveling around in contact with said cones, caps fitted to said flanges and having openings to receive said stud-axles, and securing means for holding said caps in place, substantially as described.

608,710. HAT-HOLDING DEVICE. RUDOLF PIMMERMANN, Berlin, Germany. Filed Nov. 18, 1897. Serial No. 658,956. (No model.)



Claim.—The fastening device, consisting of a buckle-piece, A, in the form of a plate having an opening *b*, curving somewhat in the vicinity thereof, and having a second opening *c*, transverse bar *f*, and a stop or stay *b'*, which extends across the opening *b*, whereby a double hair-pin may be inserted through the openings *b* and *c*, and be stopped by the stop or stay *b'*, substantially as set forth.

608,711. ELECTRIC MOTOR. WILLIAM H. POWELL, Erie, Pa., assignor to the Keystone Electric Company, of Pennsylvania. Filed Nov. 4, 1897. Serial No. 657,407. (No model.)
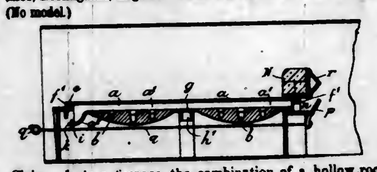


Claim.—1. A compound-wound electric motor having each of its poles divided into three or more parts, the end parts carrying shunt-windings and the middle parts the series windings, for the purpose set forth.

2. A compound-wound electric motor having each of its poles divided into three or more parts, the end parts carrying shunt-winding and the middle parts carrying the series winding, and also shunt-winding, for the purpose set forth.

3. A compound-wound electric motor having each of its poles divided into three or more parts, the end parts carrying shunt-winding and the middle parts carrying the series coils which are wound in sections, in combination with means for varying the number of series sections in circuit with armature, for the purpose set forth.

4. A compound-wound electric motor having each of its poles divided into three or more parts, the end parts carrying shunt-winding and the middle parts carrying shunt-winding and also the series coils, which are wound in sections, in combination with means for varying the number of series sections in circuit with armature, for the purpose set forth.

608,712. ROCKING FIRE-BAR FOR FURNACES. ANDREW PILLATT, Nottingham, England. Filed Oct. 22, 1896. Serial No. 609,775. (No model.)



Claim.—1. In a furnace, the combination of a hollow rocking fire-bar having lateral teeth or projections, a bridge having an opening into which said bar extends, a depending mouth to said bar serving as an air-inlet and also as a crank, and a connecting-rod acting upon the depending mouth so as to rock the bar, substantially as described.

2. In a furnace, the combination of a series of hollow rocking fire-bars, an opening in the fire-bridge into which said bars extend, a damper at the rear of the opening, an operating-rod for said damper arranged beneath the bars, and a dust-guard above said damper, substantially as described.

3. In a furnace, the combination of a hollow rocking fire-bar having solid or tubular pivot-pins at the ends thereof, bearer-bars to receive said pins, a connecting-rod extending along the front of the furnace, a lever for working said connecting-rod, a depending mouth on the end of the fire-bar, and a pin connecting the mouth with the said rod, substantially as described.

4. In a furnace, the combination of a hollow rocking fire-bar, means for supporting the same, a depending mouth on said bar provided with a pin, a connecting-rod with which said pin engages, a slotted lever engaging a pin on the connecting-rod for the purpose of operating the same, a bracket carrying the fulcrum of said lever, and a square on the end of said fulcrum to receive a detachable handle, substantially as described.

5. A rocking fire-bar for furnaces, having a main passage extending along it, air-inlets in the web or rib of said bar, teeth or projections at the sides thereof, and pivot-pins at the ends of said bar, substantially as described.

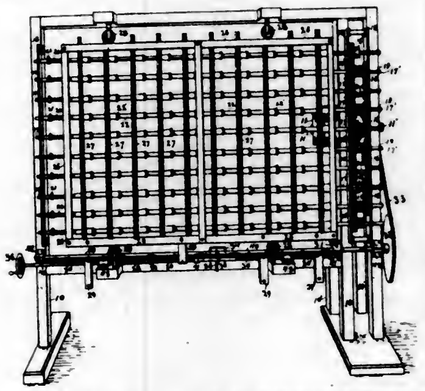
6. In a hollow rocking fire-bar, the combination of lateral air-inlets, a depending mouth, and teeth or projections with openings therein serving to admit air to the main passage of said bar, substantially as described.

608,718. SPOOLING-MACHINE. JOHN RAINSTRICK, Jamestown, N. Y. Filed Nov. 15, 1897. Serial No. 658,557. (No model.)

Claim.—1. In a spooling-machine, a shaft, a cam secured near one end thereof, the shaft being horizontally mounted on the frame of the machine, means for turning the shaft, a rod mounted on the frame parallel to the shaft, screw-threads of different pitches on the rod, arms having screw-threaded sockets engaging the threads on the rod, a movable guide-frame, means for attaching the arms to said guide-frame, a spring around said rod to hold the rod against the cam on the shaft to receive a reciprocating motion therefrom, pins on said rod and a staple on said shaft engaged by said pins to impart a rotary motion to said rod, substantially as shown and described.

2. In a spooling-machine, a frame, a shaft mounted thereon, means for turning said shaft, a cam secured to said shaft, a rod mounted on the frame parallel to said shaft, a staple on said shaft and pins on said rod engaged by said staple to impart a rotary motion to said rod, a spring to hold said rod against the cam on the shaft to receive a reciprocating motion therefrom, a movable guide-frame, rollers for mounting said guide-frame, arms for attaching said guide-frame to

said rod to receive a reciprocating motion therefrom, as shown and described.



3. In a spooling-machine, a frame, sprocket-wheels mounted on said frame to turn spindles, means for turning said sprocket-wheels, spindle-holders attached to said sprocket-wheels having locking-pins for the spindles, spindles having one end mounted on the frame and the other locked in the holders and turned thereby, a set-block and spring on each spindle to adjust the frictional bearing between the spools and hold the locking-pin, a movable frame to guide the thread and means for giving a reciprocating motion to said guide-frame, substantially as shown and described.

4. In a spooling-machine, an upright frame, sprocket-wheels 15 15 and chains 16 16 to turn spindle-holders and mounted on the frame, means for turning the sprocket-wheels, spindle-holders 17 17 having locking-pins 19 19, spindles 17 for receiving bobbins 22 22, spring 20 and set-block 21 for regulating the amount of friction between the bobbins, sprocket-wheels 32 37 mounted on shafts 11 and 40 and connected by chain 33, shaft 40 mounted in boxes 42 42, cam 31 secured to said shaft, rod 41 mounted in boxes 43 43, spring 38 to hold the rod against the cam, screw-threads of different pitches 30 30 30 30 cut on said rod, hand-wheel 36 to return rod to beginning of screw-thread after spooling, staple 34 on the shaft and pins 35 35 on the rod engaged by said staple to impart a rotary motion to said rod, guide-frame 26 mounted on rollers 28 28 28 28, arms 29 29 for attaching the rod to the guide-frame, substantially as described.

608,714. STORAGE BATTERY. JOHN D. RIVELY, Pittsburg, Pa. Filed June 9, 1897. Serial No. 639,936. (No model.)



Claim.—1. A storage battery, consisting of a series of layers of fiber, oxid of lead, and plates of conducting material, said plates terminating in the positive and negative poles, and a series of perforated boxes between said layers, said boxes having perforated pipes extending through the same, substantially as shown and described.

2. A storage battery consisting of a series of perforated boxes, and of layers of fiber, oxid of lead, and plates of conducting material, said plates terminating in positive and negative poles, substantially as shown and described.

3. In a storage battery a suitable casing, having therein a series of layers of fiber, oxid of lead, and plates composed of conducting material and a series of perforated boxes between the plates of conducting material, substantially as shown and described.

608,715. JOINTING FOR TUBES. REINHARD I. ROMAN, London, England. Filed Dec. 20, 1897. Serial No. 662,535. (No model.) Patented in England Aug. 20, 1897, No. 19,272, and in Belgium Sept. 16, 1897, No. 130,697.



Claim.—1. A means for jointing or fixing a tube to a socket, comprising in combination with the tube and socket, an expansible ring having a longitudinal tapered slit, and a tapered key entering said slit and adapted when driven home to expand the ring within the tube and thereby to forcibly enlarge the tube into intimate contact with the socket.

2. The combination with a tube and a part G to which it is to be fixed, having a socket into which the tube closely fits, of an expansible ring A having a longitudinal tapered slit, with the edges of the slit turned inward, and a tapered key D entering said slit and having longitudinal grooves at the sides for receiving said turned-in edges, and adapted when driven home to expand the ring within the tube and thereby to forcibly enlarge the tube into intimate contact with the socket.

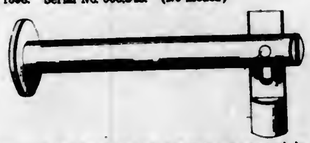
608,716. MINER'S PICK. BARNET RUBENSTEIN, Chicago, Ill. Filed Oct. 2, 1897. Serial No. 653,870. (No model.)



Claim.—1. In a tool of the class described, a jointed handle having a clamping-rod extending through the same, said rod being composed of sections not coincident with those of the handle; substantially as described.

2. In a tool of the class described, a handle composed of sections connected by joints adapted to prevent rotation of one section upon the other and a clamping-rod extending through the same and made up of the sections not coincident with those in the handle; substantially as described.

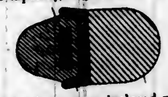
608,717. BOLT. THOMAS P. RUSSELL, Marquand, Mo. Filed Jan. 28, 1898. Serial No. 668,348. (No model.)



Claim.—A bolt formed with a mortise at one end, in combination with a locking-key having a tang and a head on the outer end of the tang, the tang being pivotally secured in the mortise by a pivot-pin passed through a slot in the tang, and the head being adapted to bear normally against the ends of the mortise-walls, the tang being shorter than the walls of the mortise, and the slot in the tang being of such length that its ends will not contact with the pivot-pin in the normal position of the key, substantially as described.

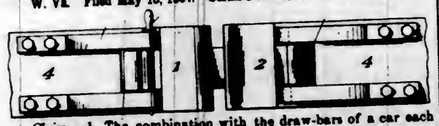
608,718. RUBBER TIRE. PAUL C. SACHER, St. Louis, Mo., assignor to T. W. Booth, same place. Filed Apr. 3, 1896. Serial No. 676,838. (No model.)

Claim.—1. A rubber tire having a core inclosed within it, the adjacent surfaces of the free ends of the core having cut therefrom suitable notches by means of which the ends of the core may interlock, the exterior of each notch being limited by a shoulder substantially in line with the radius of the wheel, and the interior by a wall inclined to said shoulder, the free edge of each overlapping end of the core being tapered to conform to the inclination of the inner limiting-wall of the notch, the free ends of the tire being adapted to freely ride over such tapering edges, substantially as set forth.



2. A rubber tire having a core inclosed within it, the adjacent surfaces of the free ends of the core having cut therefrom suitable notches by means of which the ends of the core may interlock, the exterior of each notch being limited by a shoulder substantially in line with the radius of the wheel, and the interior by a wall inclined to said shoulder, the free edge of each overlapping end of the core bearing against the inclined wall of the notch of the adjacent end, and a rivet for additionally securing the overlapping ends together, substantially as set forth.

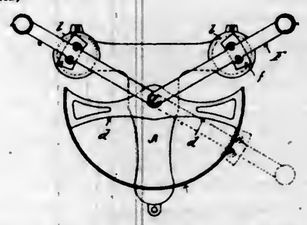
608,719. CAR-COUPLING. WELLER SHANKLIN, Sweet Springs, W. Va. Filed May 15, 1897. Serial No. 636,750. (No model.)



Claim.—1. The combination with the draw-bars of a car each having rigidly secured to the sides thereof laterally-yielding springs with apertures in the free ends thereof, said draw-bars having transverse openings, movable coupling-pins carried by the springs and an arrow-headed coupling-link, substantially as shown and for the purpose set forth.

2. The combination with the draw-bars of a car each having lateral openings therethrough and spring-bars arranged in pairs one above the other, the bars being rigidly attached at their rear ends to the draw-bars the free ends of the springs opposite the openings carrying removable coupling-pins and a coupling-link having beveled ends and recesses the body portion of the link occupying the major portion of the interior of the draw-head in advance of the transverse openings therethrough, substantially as shown.

608,720. COLLAR TURNING AND IRONING MACHINE. WILLIAM C. SHAW, Erie, Pa. Filed Dec. 17, 1896. Serial No. 572,449. (No model.)



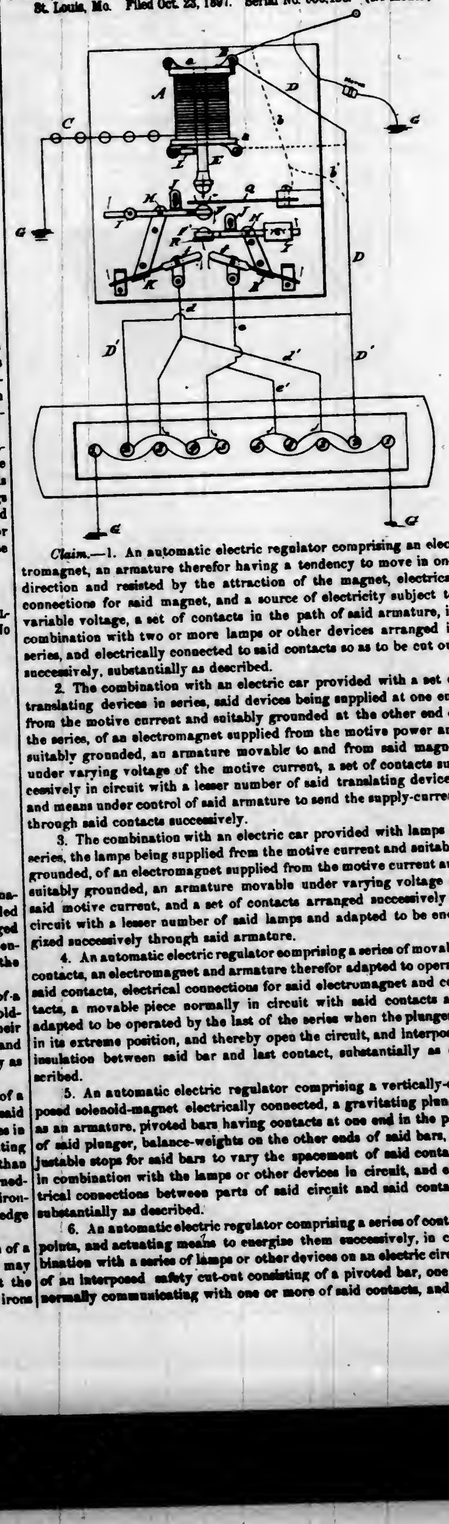
Claim.—1. In a collar turning and ironing machine, the combination of a curved flange-shaped former, over which the collar is folded and curved into proper shape for wear, a grooved iron arranged opposite the former, and means for moving the grooved iron into engagement with the former and for moving one of said parts upon the other, substantially as set forth.

2. In a collar turning and ironing machine, the combination of a curved ironing-bed adapted to support a collar at its bend or fold-line, radially-operating levers carrying irons with grooves in their faces wider than the collar-supporting edge of such ironing-bed, and adapted to engage the fold-line of the collar thereon, substantially as and for the purpose set forth.

3. In a collar turning and ironing machine, the combination of a base, a central standard on said base, radially-operating levers on said standard, irons on the free ends of said levers and having grooves in their bottom faces, heaters on said base for supporting and heating said irons, and an ironing-bed having a curved edge narrower than the grooves in the irons, and adapted to support a collar at the turned-over edge, so that when the irons are brought around over said ironing-bed, the grooves in such irons will operate over the beaded edge of the collar, substantially as and for the purpose set forth.

4. In a collar turning and ironing machine, the combination of a base, a vertical semicircular plate or former over which a collar may be turned, supported by said base, a standard on said base at the center of said semicircular plate, levers pivoted on said standard, irons secured to said levers so as to be moved around over the upper edge of said plate or former, and heaters secured to said base at the rear of the ends of said semicircular plate or former, substantially as and for the purpose set forth.

608,721. AUTOMATIC ELECTRIC REGULATOR. ROBERT SKEEN, St. Louis, Mo. Filed Oct. 23, 1897. Serial No. 656,138. (No model.)



Claim.—1. An automatic electric regulator comprising an electromagnet, an armature therefor having a tendency to move in one direction and resisted by the attraction of the magnet, electrical connections for said magnet, and a source of electricity subject to variable voltage, a set of contacts in the path of said armature, in combination with two or more lamps or other devices arranged in series, and electrically connected to said contacts so as to be cut out successively, substantially as described.

2. The combination with an electric car provided with a set of translating devices in series, said devices being supplied at one end from the motive current and suitably grounded at the other end of the series, of an electromagnet supplied from the motive power and suitably grounded, an armature movable to and from said magnet under varying voltage of the motive current, a set of contacts successively in circuit with a lesser number of said translating devices, and means under control of said armature to send the supply-current through said contacts successively.

3. The combination with an electric car provided with lamps in series, the lamps being supplied from the motive current and suitably grounded, of an electromagnet supplied from the motive current and suitably grounded, an armature movable under varying voltage of said motive current, and a set of contacts arranged successively in circuit with a lesser number of said lamps and adapted to be energized successively through said armature.

4. An automatic electric regulator comprising a series of movable contacts, an electromagnet and armature therefor adapted to operate said contacts, electrical connections for said electromagnet and contacts, a movable piece normally in circuit with said contacts and adapted to be operated by the last of the series when the plunger is in its extreme position, and thereby open the circuit, and interposed insulation between said bar and last contact, substantially as described.

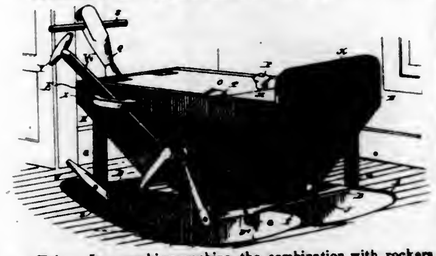
5. An automatic electric regulator comprising a vertically-disposed solenoid-magnet electrically connected, a gravitating plunger as an armature, pivoted bars having contacts at one end in the path of said plunger, balance-weights on the other ends of said bars, adjustable stops for said bars to vary the spacement of said contacts, in combination with the lamps or other devices in circuit, and electrical connections between parts of said circuit and said contacts, substantially as described.

6. An automatic electric regulator comprising a series of contact-points, and actuating means to energize them successively, in combination with a series of lamps or other devices on an electric circuit, of an interposed safety cut-out consisting of a pivoted bar, one end normally communicating with one or more of said contacts, and the

other end adapted to be operated in the extreme position of said actuating means and insulation interposed between the contact-points of said means and pivoted bar.

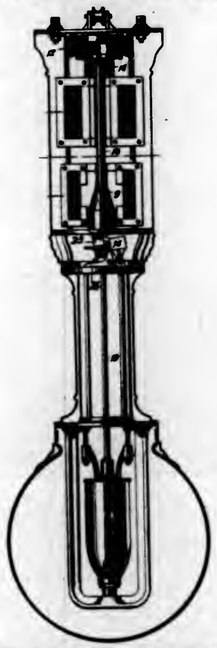
7. The combination with a vertical solenoid-magnet A, wired to a source of variable supply at one end, and grounded at the other end, a gravitating plunger E, pivotally mounted and balanced contacts F F' in the path of said plunger, safety-bars *f f'* insulated at one end and communicating with their respective contacts, and adapted to open the said contacts in the extreme position of the plunger, of a series of lamps or other electrical devices on an electric circuit, and electrical connections between said devices and said contacts through said safety-bars.

608,722. **WASHING-MACHINE.** GABRIEL F. SNIDER, Abingdon, Iowa, assignor of one-half to David Koons and Henry Koons, same place. Filed Dec. 28, 1897. Serial No. 664,038. (No model.)



Claim.—In a washing-machine, the combination with rockers, of a body supported thereon, legs intermediately pivoted to the rockers and adapted to engage the floor, links pivoted to the inner end of said legs, and pivotally connected to each other, and an operating-lever pivotally connected at its lower end to one of said links and movable in a guide carried by the body, substantially as set forth.

608,723. **ELECTRIC-ARC LAMP.** THOMAS SPENCER, Philadelphia, Pa. Filed Sept. 29, 1897. Serial No. 653,436. (No model.)



Claim.—1. The method of operating an alternating-current arc-lamp consisting in automatically reducing the inductance of the arc-circuit when the lamp is starting into action.

2. An alternating-current arc-lamp provided with two paths for current to the electrodes, one of said paths including a cut-out actuated when the arc is sprung, whereby a starting-current of abnormal strength is admitted to the electrodes.

3. An alternating-current arc-lamp provided with a regulating-coil and a cut-out actuated when the arc is sprung to cut down the current strength, whereby a starting-current of abnormal strength is admitted to the electrodes.

4. An alternating-current arc-lamp provided with a regulating-coil, an independent branch circuit leading to the arc, an inductance in said branch circuit, and a cut-out controlled by the lamp mechanism to open the branch when the arc is started.

5. An alternating-current arc-lamp provided with a transformer of variable voltage having its primary and secondary circuits wound to raise the voltage at the lamp-terminals above that of the mains.

6. An alternating-current arc-lamp provided with a transformer wound to deliver a voltage sufficient to maintain the arc with a current of small amperage, and means for automatically raising the current strength when the arc is being started.

7. An alternating-current arc-lamp provided with an arc-regulating coil adjustable relatively to the core, whereby the starting inductance of the coil may be adjusted.

8. An arc-lamp provided with a regulating-magnet comprising a plurality of bundles of iron lamine embracing the coil, having an air-gap on the side facing the core and brackets for spacing the bundles and holding them rigidly together.

9. An alternating-current arc-lamp provided with a transformer and arc-regulating coil housed within the lamp and supported on a plurality of vertical rods, and means for adjusting the regulating-coil on said rods so as to shift it with relation to its core.

10. An alternating-current arc-lamp containing two branch circuits both common to the arc-circuit one including the regulating-coil and the other a tilting cut-out to close or open when the carbons are in or out of engagement and thereby alter the inductance and permit a heavy current to flow when the lamp starts, for the purpose described.

11. A feed-regulator for an arc-lamp comprising a carbon-holder provided with teeth, a dog cooperating with the teeth, and a friction-clutch controlled by the regulating-coil to feed the carbon-holder, said clutch cooperating with the dog to set the latter after a definite range of movement of the clutch.

12. A feed-regulator for an arc-lamp comprising a dog 24 engaging one side of the carbon-holder, said dog having an extension adapted to engage a fixed part of the lamp to release the holder, and a clutch-shoe 28 impelled into engagement with the other side of the carbon-holder, said clutch-shoe being released after and through the agency of said dog.

13. A feed-regulator for an arc-lamp comprising a dog 24 engaging a rack on one corner of the carbon-holder, said dog having an extension 26 adapted to engage a fixed part of the lamp, and a clutch-shoe adapted to engage the opposing corner of the carbon-holder, said clutch-shoe being controlled by the dog.

14. A feed-regulator for an alternating-current arc-lamp comprising regulating-coil 7, core 9, a clutch movable therewith comprising dog 24 engaging one corner of rack 19, link 27, clutch-shoe 27* engaging an opposite corner of the rack, and projection 26 cooperating with a fixed part of the lamp to release the dog and clutch-shoe when the core descends a determinate distance.

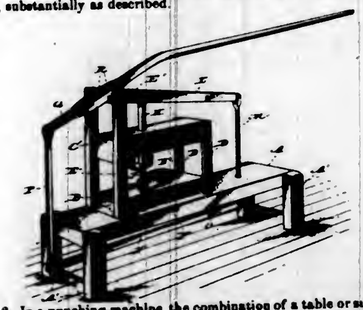
608,724. **SWEAT-BAND FOR HATS.** CHRISTIAN STADER, San Francisco, Cal. Filed Dec. 6, 1897. Serial No. 660,964. (No model.)



Claim.—In a hat or the like, a foraminous sweat-band, a non-absorbent strip between said band and the hat-body, and a pad adapted to receive a medicament between the sweat-band and the strip, said pad being of less width than the non-absorbent strip; substantially as described.

608,725. **PUNCHING-MACHINE.** JOHN P. STARK, Iconium, Mo. Filed Mar. 30, 1896. Serial No. 675,698. (No model.)

Claim.—1. In a punching-machine, the combination with a die-block and a plunger-block connected by corner-uprights, of which those at one end project above the plunger-block, of a plunger arranged to reciprocate vertically in the plunger-block, a stripper-stirrup depending from the under side of the plunger-block, a plunger-lever pivoted on a cross-bolt between the extended uprights and pivotally connected to the upper end of the plunger, a branched handle-lever straddling the plunger-lever at its pivoted end and pivotally supported on the same bolt, and suitable connecting means between the short arm of the handle-lever and the long arm of the plunger-lever, substantially as described.



2. In a punching-machine, the combination of a table or support, a die-block resting thereon, a plunger-block above the die-block, corner-posts connecting the die-block and plunger-block, two of which project above the plunger-block, a bolt connecting the long uprights near their upper ends, a plunger adapted to reciprocate in the plunger-block, a plunger-lever pivotally mounted on the cross-bolt between the uprights and pivotally connected at its upper end to the plunger, a vertical rod passing through the table pivotally connected at its upper end to the long arm of the plunger-lever, a lever below the table pivotally mounted in a depending bracket and pivotally connected at its short arm to the vertical rod, its long arm extending beyond the opposite end of the table, a second vertical rod pivotally connected at its lower end to the long arm of said lever, and a handle-lever divided into branches for a part of its length which straddles the pivoted end of the plunger-lever and is mounted on the same bolt, the short arm of the handle-lever being pivotally connected to the upper end of the last-named vertical rod, substantially as described.

608,726. **PYROXYLIN COMPOUND.** JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, New York N. Y., a Corporation of New Jersey. Filed Apr. 1, 1896. Serial No. 676,056. (No specimens.)

Claim.—1. A new composition of matter consisting of pyroxylin and a lead salt of a volatile monatomic fatty acid.

2. A new composition of matter consisting of pyroxylin, a solvent of the same, and a lead salt of a volatile monatomic fatty acid.

3. A new transparent composition of matter containing pyroxylin and acetate of lead.

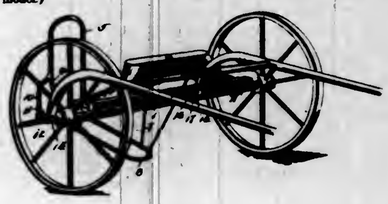
608,727. **PYROXYLIN COMPOUND.** JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 6, 1896. Serial No. 676,639. (No specimens.)

Claim.—1. A new composition of matter consisting of pyroxylin and lactamid.

2. A new composition of matter consisting of pyroxylin and a solvent of the same associated with lactamid.

3. A new transparent composition of matter containing pyroxylin and lactamid.

608,728. **DRAFT ATTACHMENT FOR VEHICLES.** MERTON J. STROUD, Paton, Iowa. Filed May 28, 1897. Serial No. 638,606. (No model.)

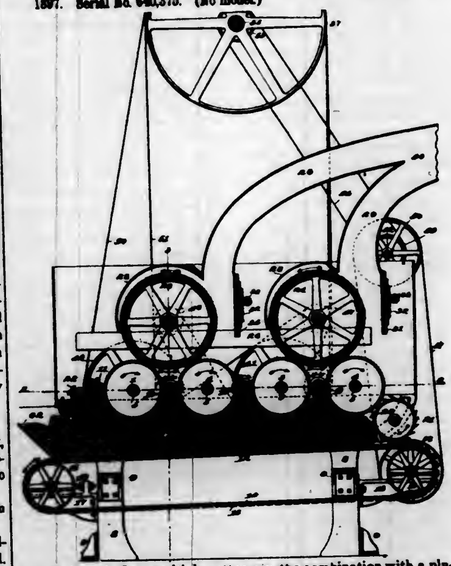


Claim.—1. In a device of the character set forth, the combination of a support adapted to be attached to the running-gear of a vehicle, arches adjustably carried by said support and arranged in different planes, and thills attached to a portion of said support and the said arches, substantially as and for the purposes specified.

2. In a draft attachment of the character set forth, the combination of a support, arches carried by said support and arranged at different angles of inclination, a pair of thills attached to said support and a portion of the arches, and braces secured to the several parts, substantially as and for the purposes specified.

3. An attachment for vehicles comprising a straight bar having loops on its rear side, an elongated arm slidingly connected with the bar by means of guides or bearings fixed to the bar, a vertically-positioned arch on the end of the elongated arm, a second arch fixed to the straight bar to extend horizontally forward and means for connecting one thill-iron with the lower portion of the vertically-projecting arch and a mating thill-iron to the central portion of the straight bar, arranged and combined as and for the purposes stated.

608,729. **COTTON-GIN.** MAGNUS SWENSON, Chicago, Ill., assignor to the American Cotton Company, New York, N. Y. Filed June 11, 1897. Serial No. 640,375. (No model.)



Claim.—1. In a multiple cotton-gin, the combination with a plurality of gangs of saws mounted in substantially the same plane, and a device cooperating with each gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the seeds, of feeding mechanism cooperating with the saws, and forming, with the saws, a continuous ginning-chamber between the saws and feeding mechanism, substantially as and for the purposes set forth.

2. In a multiple cotton-gin, the combination with a plurality of gangs of saws mounted in substantially the same horizontal plane, and a device cooperating with each gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the seeds, of feeding mechanism cooperating with the saws, and forming, with the saws, a continuous ginning-chamber between the saws and feeding mechanism, substantially as and for the purposes set forth.

3. In a multiple cotton-gin, the combination with a plurality of gangs of saws mounted in substantially the same plane, and a device cooperating with each gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the seeds, of feeding mechanism cooperating with the saws, forming, with the saws, a continuous ginning-chamber between the saws and feeding mechanism, and means for carrying off from the cotton, during the process of ginning, the seeds and foreign substances, substantially as and for the purposes set forth.

4. In a multiple cotton-gin, the combination with a plurality of gangs of saws mounted in substantially the same plane, and a device cooperating with each gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the

seeds, of a feeding belt or apron coöperating with said saws and mounted in substantially a parallel plane, and forming, with the saws, a continuous ginning-chamber between the saws and said feeding-belt, substantially as and for the purposes set forth.

5. In a multiple cotton-gin, the combination with a plurality of gangs of saws mounted in substantially the same horizontal plane, and a device coöperating with each gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the seeds, of a feeding belt or apron coöperating with said saws and mounted in substantially a parallel plane, and forming, with the saws, a continuous ginning-chamber between the saws and said feeding-belt, substantially as and for the purposes set forth.

6. In a multiple cotton-gin, the combination with a plurality of gangs of saws mounted in substantially the same horizontal plane, and a device coöperating with each gang of saws and having a series of contracted slots in whichthe saws work and which prevent the passage of the seeds, of a feeding belt or apron coöperating with said saws and mounted in substantially a parallel plane, and forming, with the saws, a continuous ginning-chamber between the saws and said feeding-belt, and means for removing from the cotton, during the process of ginning, the seeds and foreign substances, substantially as set forth.

7. In a multiple cotton-gin, the combination with a plurality of gangs of saws mounted in substantially the same horizontal plane, of a slotted feeding-belt coöperating with said saws and mounted in a substantially parallel plane, substantially as set forth.

8. In a multiple cotton-gin, the combination of a plurality of gangs of saws, a grooved roller coöperating with each of said gangs of saws, and a feeding-apron coöperating with said saws and mounted in substantially a parallel plane therewith, substantially as set forth.

9. In a cotton-gin, the combination with a gang of saws, and a device coöperating with said gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the seeds, of a feeding-belt for feeding cotton into contact with said saws, and forming, with the saws, a ginning-chamber between the saws and said feeding-belt, a roller coöperating with said feeding-belt and engaging the cotton carried thereby, and means for rotating said roller whereby its periphery will be moved in a direction opposite to that of the belt, substantially as set forth.

10. In a cotton gin, the combination with a gang of saws, and a device coöperating with said gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the seeds, of a feeding-belt for feeding cotton into contact with said saws, and forming, with the saws, a ginning-chamber between the saws and said feeding-belt, a spiked roller coöperating with said feeding-belt and engaging the cotton carried thereby, and means for rotating said roller whereby its periphery will be moved in a direction opposite to that of the belt, substantially as set forth.

11. In a cotton-gin, the combination with a gang of saws, and a device coöperating with said gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the seeds, of a feeding-belt for feeding cotton into contact with said saws, and forming, with the saws, a ginning-chamber between the saws and said feeding-belt, a roller mounted between said saws and said belt coöperating with said belt and engaging the cotton carried thereby, and means for rotating said roller whereby its periphery will be moved in a direction opposite to that of the belt, substantially as set forth.

12. In a cotton-gin, the combination with a gang of saws, and a device coöperating with said gang of saws and having a series of contracted slots in which the saws work and which prevent the passage of the seeds, of a feeding-belt for feeding cotton into contact with said saws, and forming, with the saws, a ginning-chamber between the saws and said feeding-belt, a spiked roller mounted between said saws and said belt coöperating with said belt and engaging the cotton carried thereby, and means for rotating said roller whereby its periphery will be moved in a direction opposite to that of the belt, substantially as set forth.

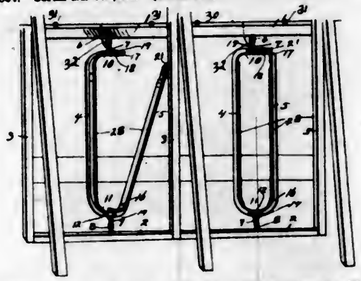
13. In a multiple cotton-gin, the combination of a plurality of gangs of saws, a grooved roller between said gangs of saws and cooperating with the same, feeding mechanism coöperating with the saws, and forming, with the saws, a continuous ginning-chamber between the saws and feeding mechanism, substantially as set forth.

14. In a multiple cotton-gin, the combination of a plurality of gangs of saws, a brush for expelling the motes from said saws out of the gin, and a second brush expelling motes onto the first-mentioned brush, substantially as set forth.

15. In a multiple cotton-gin, the combination of a plurality of gangs of saws, a brush for expelling the motes from said saws out of the gin, a second brush expelling motes onto the first-mentioned brush, and adjustable plates for said brushes, substantially as set forth.

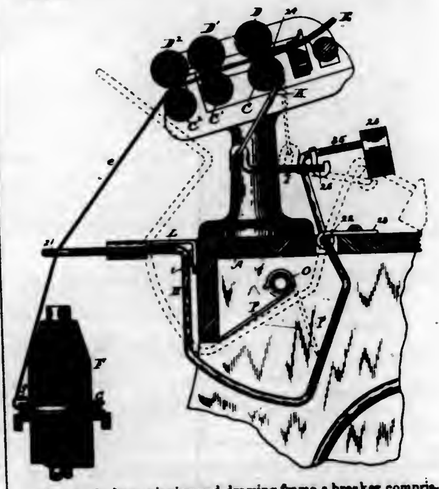
16. In a multiple cotton-gin, the combination of four gangs of saws, having a ginning-chamber adjacent to the same, a grooved roller coöperating with each gang of saws, two brushes each removing cotton from two gangs of saws, pulleys on the shafts of said saws, rollers and brushes, and two driving-belts at each side of the machine, one for driving two of the grooved rollers and the other for driving two gangs of saws, the said belts passing over the pulleys for driving the brushes and whereby said brushes will be driven from each side of the machine, substantially as set forth.

608,780. CATTLE-STANCHION. HIRAM TAYLOR, Salem, Ohio, assignor of one-half to John F. Teacher, same place. Filed Nov. 13, 1897. Serial No. 658,281. (No model.)



Claim.—The combination of the bar 4 and the bar 5, said bar 5 hinged to the bar 4 and each of said bars bent or curved at their bottom or lower ends, and provided with the wood strips 28, means for suspending and holding the bars 4 and 5, the catch-bar 17 secured to the lateral arm or part 10 and provided with the ears 18, the catch 19 located upon the bar 17, the catch bolt or bar 21 attached to the top or upper end of the bar 5, the spring 23, the wire or cord 30 located above the stanchion proper and the wires or cords 32 located and arranged as described, substantially as and for the purpose specified.

608,781. SPINNING-FRAME. JAMES P. TOLMAN, Newton, and HENRY D. MARTIN, Shirley, Mass., assignors to the Samson Cordage Works, Boston, Mass. Filed Jan. 18, 1897. Serial No. 619,568. (No model.)



Claim.—1. In a spinning and drawing frame a breaker comprising hooks or hangers X, and a cross-plate X' attached to said hangers or hooks and having the breaking or operative edge 24, the said hooks or hangers affording means by which the breaker is suspended upon a roll and removable from it, and also narrow bearing-sections which are adapted to rest upon the roll and act to hold the cross-plate from contact with it, as and for the purposes described.

2. In a drawing and spinning frame, the combination of a pair of rolls, one of which is provided with a boss and is continuously rotated, and the other of which is turned by contact with the first, a breaker suspended or hung upon the continuously-rotated roll by hooks or hangers arranged upon each side of the boss, having a gripping edge 24 which is held from contact at all times with the said boss and is adapted upon the breaking of the thread to be moved toward or against the upper or driven roll to clamp and hold the sliver or roving against it, and one or more pairs of drawing-rolls beyond the first-named pair, which act when the said roving or sliver is thus clamped to break or part it beyond the said gripping edge of the said breaker, as and for the purposes described.

3. In a drawing and spinning frame, the combination of a pair of rolls, one of which is continuously rotated and the other of which is turned by contact with the first, with a breaker comprising two hangers or hooks X, and a cross-plate having the edge 24, the hangers or hooks acting to suspend the breaker upon the continuously-rotated roll, to furnish narrow bearing-surfaces for the cross-plate, and to hold the cross-plate from contact with the continuously-rotated roll, means for holding and moving the said breaker as specified, and one or more pairs of drawing-rolls beyond the first-named pair, as and for the purposes set forth.

4. In a drawing and spinning frame, the combination of a pair of rolls, one of which is continuously rotated and the other of which is turned by contact with the first, a thread-guide lever, a movable breaker suspended on one of said rolls, held from action by the thread, having a gripping edge which is held from contact at all times with the driving-roll and adapted upon the breaking of the thread to be moved toward or against the driven roll to clamp or hold the silver or roving against it, an extension from said breaker in the nature of a depending arm or lever, an adjustable connection between said arm or lever, and the thread guide-lever, and one or more pairs of drawing-rolls beyond the first-named pair, as and for the purposes set forth.

5. The combination in a drawing-frame of the roll C, the breaker suspended thereon, the thread-guide lever, its end 25, the weight 23 and the hanger or holder both adjustable on said end 25, and means connecting said hanger or holder with the breaker, as and for the purposes set forth.

6. In a drawing and spinning frame, a movable shield having a gripping-surface, a pair of hangers, one at each end of said gripping-surface for suspending the shield upon one of a pair of drawing-rolls, the said hangers extending along the outer edges of the shield to reinforce and strengthen the same and also serving to hold the gripping edge from contact with the driving-roll of the pair.

7. A breaking tongue or shield for a spinning and drawing frame comprising the wire frame X bent to form a loop and also attaching-hooks, and a piece of sheet metal X' attached to said wire frame and having the operating edge 24.

8. In a drawing and spinning frame the combination of a pair of drawing-rolls, one of which is continuously rotated and the other of which is turned by contact with the first, a movable shield supported or carried upon one of said rolls having a gripping edge adapted upon the breaking of the thread, to be moved toward or against the driven roll and also having a suspended loop with a thread-guide lever operated as specified, and a connection between the thread-guide lever and shield-loop comprising a link having at one end a hook to engage the loop and at the other end by an adjustable supporting hanger or nut mounted upon the thread-guide lever.

9. In a spinning and drawing frame a device for governing the lowest position of the thread-guide in relation to the spindle, comprising a metal shelf having a depression from its upper surface to receive, guide and hold the forward end of the thread-guide lever and having the downward-extending ears at its rear by which it is attached to and adjusted upon the front face of the roller-beam or other support.

10. In a spinning and drawing frame the bracket-shelf having the thread-lever registering-guide and the downward-extending rear ears having slots 31 and fastening-screws 30 which extend through said slots.

11. In a spinning and drawing frame the bracket-shelf having a thread-lever registering-guide fastened to the front face of the roller-beam in a manner to bring the upper surface of said shelf in line with or slightly below the upper surface of said roller-beam.

12. In a spinning and drawing frame a bracket-shelf L attached to the roller-beam having a registering device in its upper surface and a slot or hole through which the thread-guide lever extends.

13. In a spinning and drawing frame the guide shelf or bracket L having a depressed registering-seat for the thread-guide lever and downwardly-extending ears at the rear end having adjusting-slots provided with downwardly-extending openings which are adapted to be connected with previously-placed locking-screws in the roller-beam or other support, as and for the purposes set forth.

14. In a spinning and drawing frame, the combination of a turning rod or shaft, thread-guide-lever depressor-dogs each comprising a wire bent to form a lower end or bar to engage the thread-guide lever, parallel sides and curved upper ends to clamp upon the rod or shaft, and the thread-guide levers.

15. In a spinning and drawing frame, the combination of the depressor-dogs P having grasping ends to extend about the shaft O as specified, and adapted upon the turning of the shaft and the contact of the dog with the levers H to be tightened upon said shaft and the said levers H, as and for the purposes described.

16. The combination in a spinning and drawing frame of the drawing-rolls, a roving or sliver breaker, a movable thread-guide lever connected therewith, a latch carried by said lever and held in engagement with a catch by the tension of the thread when the thread-guide is in normal operative relation with the bobbin and which latch is automatically released upon the removal of said tension, and means for lifting the thread-guide and operating the breaker upon the release of said latch.

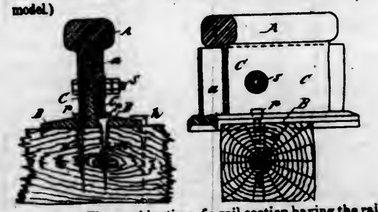
17. The combination of the thread-guide lever adapted to be moved upward, a latch carried by said thread-guide lever adapted to hold the thread-guide lever depressed and in operative relation to the bobbin, the said latch being actuated by the tension of the thread and the release of said tension, as and for the purposes set forth.

18. The combination in a drawing and spinning frame of the thread-guide lever, a thread-guide supported by said thread-guide lever and movable lengthwise it, the inner end of which forms a latch, a stationary catch with which said latch is adapted to engage, and with which it is held by the tension of the thread which passes through the eye, and a spring for disengaging the latch from the catch.

19. The combination in a spinning and drawing frame of the breaker, the breaker-lever, a movable thread-guide mounted on said breaker-lever, a latch adapted to be actuated by said thread-guide, a spring to act against the said latch to move it outward, a catch with which said latch is adapted to engage and a casing inclosing and protecting the spring and connecting the braker-lever and thread-guide.

20. In a spinning-machine the combination with the drawing-rolls of hooks supported on one of said rolls, a roving-stop normally supported by said hooks out of contact with said supporting-roll and means for operating said stop.

608,782. RAIL AND RAILWAY-TRACK. KARL G. A. UHLIG, Lattelshain, Germany. Filed Dec. 30, 1897. Serial No. 664,776. (No model.)



Claim.—1. The combination of a rail-section having the rail-head and downwardly-extending longitudinal flanges, a foot-section having upwardly-extending longitudinal rib, means for securing the parts together as specified, and spikes to penetrate said foot-section, said spikes having their heads lying partly underneath the lower edges of the head-rail flanges substantially as described.

2. The combination of a rail having a head-section and a foot-section and means for combining the two sections as specified, spikes to penetrate said foot-section having their heads partly cut away and lying underneath the downwardly-extending head-rail, the remainder of said spike-head projecting upwardly at the side of said rail substantially as described.

608,783. COMBINED PAD-MOISTENER AND LETTER-PRESS. WILLIAM A. VONGABON, Indianapolis, Ind. Filed Oct. 19, 1897. Serial No. 655,678. (No model.)



Claim.—A combined pad-moistener and letter-press, consisting of a base containing a receptacle for absorbent material, a cover therefor provided with absorbent material on its under side, thus forming the pad-moistener, said base being composed of wood covered with sheet metal which metal extends out and up to form a

back for the device, the top clamping-plate hinged at its top rear corner to said metal back, tie-bars hinged to several sides of the base and formed to be adjusted as to their length, cam-levers pivoted to the tops of said bars, projecting arms on the top clamping-plate arranged to correspond with the arrangement of said tie-bars, the cam-levers on which engage with said arms, the whole being arranged and operating substantially as shown and described.

608,734. VAMP-STAY FOR SHOES. JOSEPH WALDEN, Orange, N. J. Filed Nov. 11, 1897. Serial No. 658,126. (No model.)

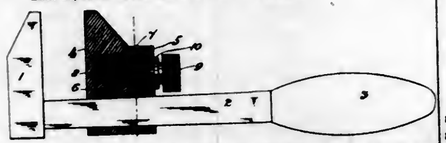


Claim.—1. As an article of manufacture, a sinuous strip B, of suitable material, folded on both edges, and consisting of uniform undulations, said strip being adapted to be cut, along the line *b b*, so that each of said undulations, when cut, forms, and can be used as, a vamp-stay for shoes, substantially as shown and described.

2. As an article of manufacture, a sinuous strip B, of suitable material, of salvaged edge, and consisting of uniform undulations, said strip being adapted to be cut, along the line *b b*, so that each undulation when cut, forms a vamp-stay for shoes, substantially as shown and described.

3. As an article of manufacture, a sinuous strip B, of compressed tubular woven material, and consisting of uniform undulations, said strip being adapted to be cut, along the line *b b*, so that each undulation, when cut, forms a vamp-stay for shoes, substantially as shown and described.

608,735. WRENCH. WILLIAM J. WALKER, St. Louis, Mo. Filed Mar. 14, 1898. Serial No. 673,806. (No model.)



Claim.—1. A wrench comprising a stationary jaw, a shank carried thereby and having one face inclined to its opposite face, the shank tapering toward the stationary jaw along said face, a movable jaw sliding along said shank, gripping-blocks carried within the sliding jaw on the side of the inclined face, and means for forcing the gripping-blocks apart and respectively against the inclined face of the shank and the upper wall of the housing, substantially as set forth.

2. A wrench comprising a stationary jaw, a shank carried thereby having the lower face disposed at right angles to the stationary jaw, and an upper face inclined thereto, a sliding jaw mounted on the shank, a housing formed in the sliding jaw, gripping-blocks confined within the housing and having faces adapted to be forced respectively against the inclined face of the shank and against the upper wall of the housing, screw-threaded depressions formed along the adjacent faces of the blocks, a screw carried by the front vertical wall of the housing and adapted to be forced between the screw-threaded depressions of the blocks, a head carried by the outer projecting end of the screw, and a limiting-collar located adjacent to the head, the parts operating substantially and as for the purpose set forth.

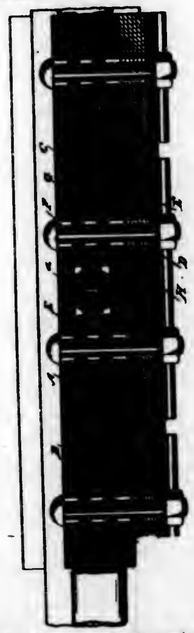
3. In a wrench, a stationary jaw, a shank for the same having one face inclined toward said jaw, a movable jaw, a housing in the same, gripping-blocks carried within the housing to one side of the inclined face, one block having an inclined face parallel to the inclined face of the shank, and adapted to be forced against the same, and a second block having a face parallel to the upper wall of the housing and adapted to be forced against said wall, and a tapering screw carried by the housing and adapted to force the blocks apart, substantially as set forth.

608,736. BOND FOR RAILS. GEORGE A. WEBER, New York, N. Y. Filed Feb. 7, 1898. Serial No. 669,345. (No model.)

Claim.—1. A bond formed with end portions and a thickened or enlarged part intermediate its ends.

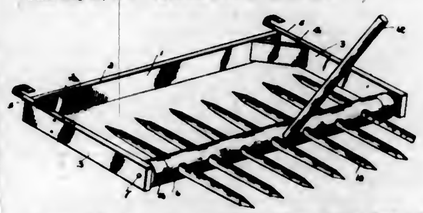
2. The combination with the meeting ends of adjacent rails, a bond therefor formed with the end portions extending along the web of each rail, and with a thickened or enlarged portion intermediate its ends and placed at the joint formed by the said rail ends, substantially as described.

3. The combination with the meeting ends of adjacent rails, fish-plates therefor, a bond on both sides of the web of each rail and extending along the same across the joint formed by the said rail ends, and an elastic packing intermediate each bond and adjacent fish-plate, substantially as specified.



4. The combination with the meeting ends of adjacent rails, an angle-chair for supporting the said ends, fish-plates for said rail ends, a bond extending on each side of the web of each rail and across the joint formed by said ends, an elastic packing intermediate each bond and adjacent fish-plate, an elastic packing intermediate the fish-plate and bolt-supporting flange of the angle-chair and fastening-bolts for uniting the several parts, substantially as described.

608,737. RAKE. WYATT W. WENTWORTH, Waterproof, La. Filed July 29, 1897. Serial No. 646,356. (No model.)

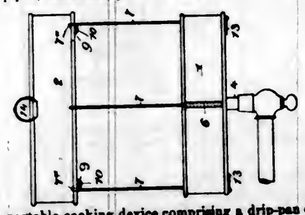


Claim.—The herein-described rake comprising the frame, the tooth-bar rotatably mounted in said frame and having a series of transverse passages for the rake-teeth, and an opening extending transversely through the said bar but at an angle to the passages for the rake-teeth, teeth held in said passages and extending upon both sides of the bar, and a handle having a reduced end for removable engagement in said opening, all substantially as and for the purpose specified.

608,738. PORTABLE COOKING UTENSIL. AUGUSTA WERTHEIMER, New York, N. Y. Filed Mar. 1, 1898. Serial No. 672,142. (No model.)

Claim.—1. A portable cooking device comprising a pan or holder 1, uprights, means for detachably securing the said uprights to said holder, the uprights being of a length to fit withiu said holder, and a cook-pan 2 adapted to be supported upon said uprights and to form a cover for said holder 1, substantially as described.

2. A portable cooking device comprising a drip-pan or holder 1, having an aperture adapted to fit upon a gas-burner or the like, uprights, means for detachably securing the uprights to the drip-pan, the uprights being of a length to fit into the drip-pan, and a cook-pan adapted to be supported upon said uprights and to form a cover for the drip-pan, substantially as described.



3. A portable cooking device comprising a drip-pan or holder 1 having an aperture and a tube or ferrule projecting inwardly from the holder, uprights, means for detachably securing the uprights to said holder, and a cook-pan 2 adapted to be supported upon said uprights and to form a cover for the said holder, substantially as described.

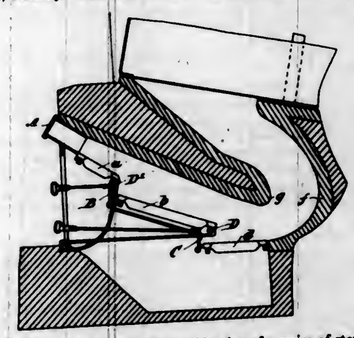
4. A portable cooking device comprising a holding or carrying receptacle 1, uprights 7 of a length to fit in the holder and having extensions 9, sockets 6 in the holder 1 to receive the ends of said uprights, and a receptacle or support adapted to be placed upon said extensions, and to form a cover for the holder 1, substantially as described.

5. A portable cooking device comprising a drip-pan or holder 1, uprights 7 of a length to fit in the holder and having extensions 9 provided with recesses 10, sockets 6 in the holder to receive the ends of said uprights, and a gridiron adapted to be hung upon said extensions and within said recesses and of a size to fit into said holder, substantially as described.

6. A portable cooking device comprising a pan 1 having exterior sockets 6, uprights of a size to fit in the pan 1, a cook-pan 2 adapted to receive the pan 1, the uprights comprising the rods 7 having upper bent ends to receive the pan 2, their lower ends fitting in the sockets 6, substantially as described.

7. A portable cooking device comprising two receptacles one adapted to fit within the other, uprights, means for detachably connecting them with one of the receptacles, and a gridiron adapted to fit within said receptacles, and means for supporting said gridiron and one of the receptacles upon said uprights, substantially as described.

608,739. SMOKE-CONSUMING FURNACE. JULIUS WEBEL, Leipsic, Germany. Filed Nov. 22, 1897. Serial No. 659,455. (No model.)



Claim.—1. In a furnace the combination of a series of stepwise-arranged inclined grates, having doors interposed between the steps, a water-pipe system extending around and between the steps, peep-holes and orifices through which to insert the fire-irons and means for preventing the fire-irons from being inserted too far into or between the steps, substantially as described.

2. In a furnace the combination of a series of stepwise-arranged inclined grates, having doors interposed between the steps, a water-pipe system extending around and between the steps peep-holes and orifices through which to insert the fire-iron and a fire-iron having fast thereon a collar for the purpose substantially as described.

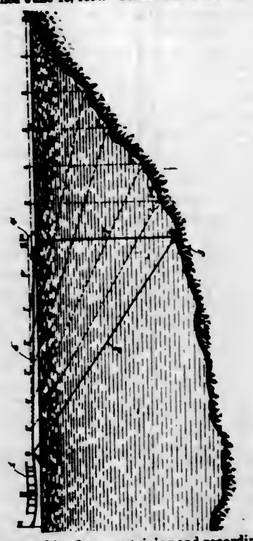
608,740. STEAM-VALVE WHEEL. BENJAMIN G. WIEDER, Seigfried's Bridge, Pa. Filed May 14, 1897. Serial No. 636,508. (No model.)

Claim.—1. A hand-wheel consisting of a rim provided with notches, a spider having legs provided with feet at their outer ends, an outwardly-facing shoulder between said legs and feet, and layers of material that is a poor conductor of heat situated between said feet and the walls of said notches.



2. A hand-wheel consisting of a rim and spiders secured thereto by means of screws, washers surrounding the heads of said screws, and layers of material that is a poor conductor of heat situated between said washers and the openings and the legs of the spiders and between the legs of said spider and rim.

608,741. SOUNDING-MACHINE. CHARLES W. WOOD, New Orleans, La. Filed June 10, 1897. Serial No. 640,233. (No model.)



Claim.—1. A machine for ascertaining and recording the depths of soundings comprising a drag-line having a weight, a tow-line, a float, and a suspending-line, the said tow-line and suspending-line being automatically maintained in a constant relative position to each other.

2. A machine for ascertaining and recording the depths of soundings, comprising a drum or spool carried in suitable bearings, a line arranged to wind and unwind upon said drum and spool and adapted to descend to the bottom of the river, a float arranged to carry said drum, a drag-line secured at one end to a suitable propelling-power, and at its other end to a weight, a drum arranged upon said float having a line leading therefrom to the said propelling-power, and means to operate with said drum through the winding and unwinding of the lines thereon to record the soundings, substantially as described.

3. A machine for ascertaining and recording the depths of soundings, comprising a drum or spool carried in suitable bearings, a line arranged to wind and unwind on and from the said spool and provided with a weight adapted to descend to the bed of a river or other body of water, a disk rotatably carried in suitable bearings and designed to be rotated through the winding and unwinding of the line on and from the drum, said disk having graduations thereon, a stationary finger arranged adjacent to said graduations, a float supporting the said mechanism, a drag-line secured at one end to a suitable propelling-power and at its other end to a weight, a drum arranged upon said float having a line leading therefrom and connected to said propelling-power, and means to operate said disk as the lines upon the drums are wound and unwound to record the depths of soundings.

4. A machine for ascertaining and recording the depths of soundings, comprising a drum or spool mounted on a shaft carried in suitable bearings, one end of said shaft being screw-threaded to receive a nut having extensions thereon to which are secured guide-rods

adapted to move in openings in said bearings, a slotted plate secured to the said rods at one end thereof, a graduated disk having a pin therein adapted to engage to move in said slot, a line arranged to wind and unwind the said drum or spool and adapted to descend to the bed of the river, a drag-line secured at one end to a suitable propelling-power and at its other end to a weight, to which latter the line secured to the drum is also attached, and a second drum arranged upon a float, on which the sounding mechanism is arranged, connected to the propelling-power by a line leading therefrom and passing over said drum, a pinion arranged upon the shaft carrying said drum and meshing with a gear-wheel arranged to rotate through a movement of the disk as the sounding-line is wound and unwound upon its drum, substantially as described.

5. A machine for ascertaining and recording depths of soundings, comprising a drum or spool having a sounding-line arranged thereon and adapted to descend to the bottom of the river, said drum being mounted on a shaft carried in suitable bearings, one end of said shaft being screw-threaded to receive a nut adapted to move back and forth thereon as the line is wound or unwound upon the drum, rods arranged to move in bearings, said rods being secured to extensions formed on the nut and being provided at one end with a slotted plate, a graduated disk having a pin projecting therefrom and engaging said slotted plate, a finger adjacent to the graduations on said disk and adapted to indicate the depths of soundings through the movement back and forth of the nut as the sounding-line rises and falls, a second drum arranged upon a shaft mounted in suitable bearings, said shaft being provided at one end with screw-threads to receive the threaded opening of an arm, to the free end of which arm is fastened a rod having at one end sheaves or pulleys, the said shaft at its other end being provided with a pinion, a gear-wheel arranged upon a shaft and meshing with said pinion, a rack moving in suitable bearings, the teeth of which are adapted to engage with the teeth of a pinion mounted on the shaft which carries the gear-wheel, a slotted plate arranged at one end of said rack, and a pin secured to the disk and adapted to engage said plate, a line wound upon said drum and passing between said sheaves or pulleys, the other end of said line being secured to a suitable propelling-power, substantially as described.

6. A machine for ascertaining and recording the depths of soundings, comprising a drum or spool carried on a shaft mounted in suitable bearings, one end of said shaft being provided with a pinion adapted to mesh with a gear-wheel, a spring secured to said gear-wheel, and the other end of said shaft being provided with screw-threads, a nut engaging said threads and having extensions thereon secured to the rods adapted to move in suitable guideways, said rods being provided at one end with a slotted plate, and one of the extensions of said nut being provided with a pen, a graduated disk rotatively held in suitable uprights and provided with a pin adapted to engage the slotted plate referred to, a stationary finger adjacent to the graduations on the disk, a line arranged to wind and unwind upon said drum or spool, and adapted to descend to the bed of the river, through the rise and fall of which the disk and nut are moved to record the depths of the sounding, a second drum mounted upon a shaft, one end of which is provided with screw-threads adapted to engage the threaded opening of an arm, the outer free end of which arm is secured to a rod having pulleys or sheaves at one end thereof, a rack adapted to slide in bars the teeth of which mesh with the teeth of a pinion mounted in a shaft carrying a gear-wheel adapted to mesh with a pinion located on the end of the shaft carrying the drum, a slotted plate secured to one end to engage with a pin secured to the disk, and a line adapted to pass over said drum, between the sheaves or pulleys, and connected at its free end to a suitable propelling-power, a drag-line secured to said propelling-power and provided at its other end with a weight to which weight the free end of the sounding-line is secured, the rise or fall of the latter serving to rotate the drum in one direction or the other to record the soundings, substantially as described.

7. A machine for ascertaining and recording the depth of soundings, comprising a float, a tow-line, a drag-line attached to a weight, a suspending-line also attached to said weight, drums upon which the said tow and suspending lines are wound and unwound, and an interposed disk automatically equalizing the operative relation of the said drums.

8. A machine for ascertaining and recording the depths of soundings, comprising a tow-line, a suspending-line attached to a weight, a drag-line also attached to said weight, and mechanism for automatically maintaining a constant position of the tow and suspending lines relatively to each other.

9. A machine for ascertaining and recording the depths of soundings, comprising a tow-line, a drag-line attached to a weight, a suspending-line attached to said weight, a float to which the tow and suspending lines run, drums on the float situated at right angles to each other, interposed mechanism between the drums for equalizing the movement thereof, and means for automatically recording the soundings as taken.

608,742. SAFETY ATTACHMENT FOR GUN-LOCKS. PETER M. WOOD, Ivy Lea, Canada. Filed Apr. 15, 1897. Serial No. 632,314. (No model.)

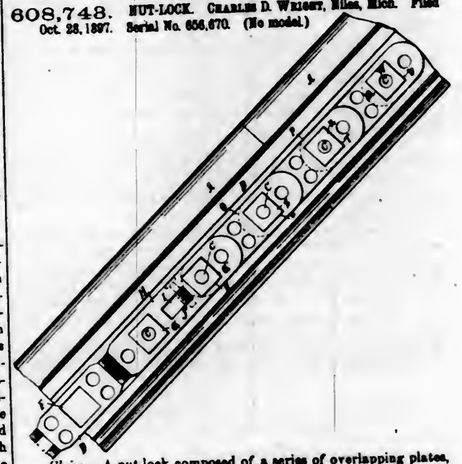


Claim.—1. A safety attachment for guns, consisting of an arm movably attached to the side of a hammer, and adapted to be turned inwardly in front of the latter, to limit its movement, substantially as and for the purpose described.

2. The combination with the hammer of a gun, of a safety attachment consisting of a hinge-plate with a loop at one end thereof, an axle or turn-rod having arms on opposite ends thereof, adapted to be reversed and to be turned in front of the said hammer, substantially as and for the purpose described.

3. The combination with a gun-hammer, of an axle removably attached thereto and having arms on opposite sides thereof whereby said arms may be reversed and used in either a right or left position to intercept the fall of the hammer, substantially as described.

608,748. NUT-LOCK. CHARLES D. WRIGHT, Niles, Mich. Filed Oct. 28, 1897. Serial No. 656,670. (No model.)



Claim.—A nut-lock composed of a series of overlapping plates, the end of each succeeding plate being made to catch behind the end of the preceding one; the bolts, and the nuts placed upon the bolts, combined with the plate D which is hinged to the end plate of the series, and which plate is adapted to close over the nut upon the bolt which passes through the next succeeding plate, and which plate has its free end adapted to be locked in position after the plates which form the nut-lock have been secured in position, substantially as set forth.

608,744. PROCESS OF AND APPARATUS FOR GASING BEER OR SIMILAR LIQUIDS. JOHN L. ALLERDICE, Buffalo, N. Y. Filed Jan. 3, 1898. Serial No. 457,203. (No model.)

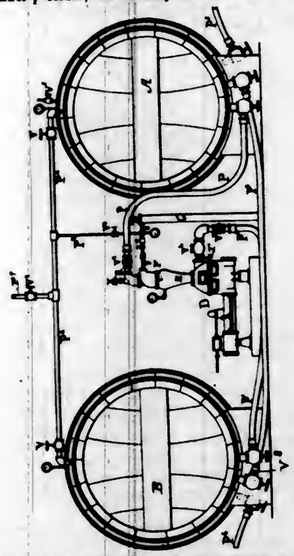
Claim.—1. The process of gasing beer and similar liquids, which consists in mixing the gas with the beer while the latter is in a state of fine division, withdrawing the mixture from the mixer during the mixing process at such a speed as to preserve a mixing-space within the mixer above the level of the body of gased liquid, and compressing the mixture, substantially as described.

2. The process of gasing beer and similar liquids, which consists in spraying the beer into a mixer in the presence of the gas, and withdrawing the mixture from the mixer during the mixing process at such a speed as to preserve a mixing-space within the mixer between the beer-inlet and the body of gased liquid, and compressing the mixture, substantially as described.

3. The process of gasing beer or similar liquids, which consists in spraying the beer into a mixer connected with the suction of a pump and in the presence of the gas, withdrawing the mixture from the mixer at such a speed as to preserve a mixing-space within the mixer between the beer-inlet and the body of gased liquid and compressing the mixture by the pump, substantially as described.

4. The process of gasing beer or similar liquids, which consists in spraying the beer into a mixer connected with the suction of a pump

and in the presence of the gas, withdrawing the mixture from the mixer at such a speed as to preserve a mixing-space within the mixer between the beer-inlet and the body of the liquid and compressing the mixture by the pump, and flowing the compressed mixture into a receiver under pressure, substantially as described.



5. The process of gasing beer and similar liquids, which consists in spraying the beer into a mixer in the presence of the gas, partially compressing the mixture in the mixer, withdrawing the mixture from the mixer, and increasing the pressure on the mixture, substantially as described.

6. The process of gasing beer and similar liquids, which consists in spraying the beer into a mixer in the presence of the gas, partially compressing the mixture in the mixer, and completing the compression of the mixture by pumping it from the mixer and forcing the compressed mixture into a receiver under pressure, substantially as described.

7. The process of gasing beer and similar liquids, which consists in mixing the gas with the beer while the latter is in a state of fine division and under a partial vacuum, compressing the mixture, and flowing off the gased liquid during the mixing process, substantially as described.

8. The process of gasing beer and similar liquids, which consists in spraying the beer into a mixer connected with the suction of a pump, in the presence of the gas and under a partial vacuum, and withdrawing and compressing the mixture by the pump, and flowing the compressed mixture into a receiver under pressure, substantially as described.

9. The process of gasing beer and similar liquids, which consists in subjecting the beer in the supply-tank to pressure from the receiver, spraying the beer under said pressure into a mixer connected with the suction of a pump, in the presence of the gas and under a pressure below the receiver-pressure, and, continuously withdrawing and compressing the mixture by the pump, and flowing the compressed mixture into the receiver, substantially as described.

10. The continuous process of gasing beer and similar liquids which consists in supplying the supply-tank with liquid continuously against the pressure of air or gas in said tank received from the receiver, spraying the beer from the supply-tank under said pressure into a mixer connected with the suction of a pump, in the presence of the gas and under a pressure below the receiver-pressure, continuously withdrawing and compressing the mixture by the pump, flowing the compressed mixture into the receiver, and withdrawing the gased beer from the receiver, substantially as described.

11. In a gasing apparatus, the combination with a conical mixer, of connections for supplying gas to the mixer, a spray-pipe in said mixer delivering the liquid to be gased into the larger end of said mixer, and means for withdrawing the gased liquid from the smaller end of the mixer, substantially as described.

12. In a gasing apparatus, the combination with a suitable supply, of a conical mixer, a spray-pipe in said mixer connected to the supply and delivering the liquid to be gased into the larger end of said mixer, connections for supplying gas to the smaller end of the mixer, and a pump with the suction of which the mixer is connected, substantially as described.

13. The combination with a suitable supply and receiver, of pump D, conical mixer E having its smaller end connected with the suction of the pump D, spray-pipe F in said mixer connected to the supply and delivering into the larger end of the mixer, connections for supplying gas to the mixer, and a delivery-pipe connecting the pump D with the receiver, substantially as described.

14. The combination with the supply and receiving tanks A, B, of pump D, mixer E connected with the suction of the pump D, spray-pipe F in said mixer connected with the supply-tank A, connections for supplying gas to said mixer, delivery-pipe P' connecting the pump and receiving-tank, and equalizing-pipe P^3 connecting the tops of the tanks A, B, substantially as described.

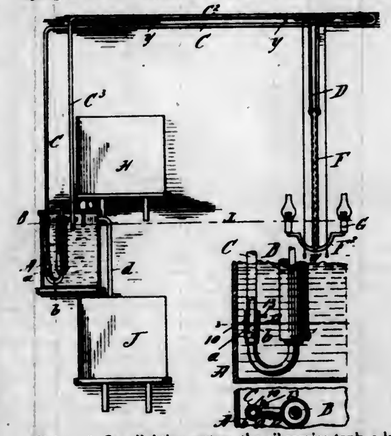
15. The combination with the supply and receiving tanks A, B, of pump D, conical mixer E having its smaller end connected with the suction of the pump D, spray-pipe F in said mixer connected with the supply-tank A and delivering into the larger end of the mixer, connections for supplying gas to said mixer, delivery-pipe P' connecting the pump and receiving-tank, and restraining-valve V^1 on said pipe, substantially as described.

16. The combination with supply and receiving tanks A, B, of pump D, mixer E connected with the suction of the pump D, nozzle F in said mixer connected with the supply-tank A, connections for supplying gas to said mixer, delivery-pipe P' connecting the pump and receiving-tank, equalizing-pipe P^3 connecting the tops of the tanks A, B, and controlled by valves V, V', and connections between said pipe or tanks and the gas-supply, substantially as described.

17. The combination with supply and receiving tanks A, B, of pump D, mixer E connected with the suction of the pump D, nozzle F in said mixer connected with the supply-tank A, connections for supplying gas to said mixer, delivery-pipe P' connecting the pump and receiving-tank, equalizing-pipe P^3 connecting the tops of the tanks A, B, and pipe P^5 connecting the lower parts of the tanks, substantially as described.

18. The combination with supply and receiving tanks A, B, of pump D, mixer E connected with the suction of the pump D, nozzle F in said mixer connected with the supply-tank A, connections for supplying gas to said mixer, delivery-pipe P' connecting the pump and receiving-tank, equalizing-pipe P^3 connecting the tops of the tanks A, B, and supply and delivery pipes P^3, P^4 for the tanks A, B, substantially as described.

608,745. ILLUMINATING APPARATUS. LESLIE R. ALLEN, Springfield, Mass. Filed Feb. 3, 1896. Serial No. 577,955. (No model.)



Claim.—1. In a lighting system, the oil-service tank, a lamp, an oil-feed pipe running continuously from the tank upwardly, then horizontally over and beyond the lamp, having a return-bend and a continuation therefrom back to and terminating within the tank, a depending branch pipe, between the said return-bend and the tank, which connects the feed-pipe with the lamp, and a pump connected to the feed-pipe for causing at pleasure a flow of oil from the tank through said feed-pipe back to the tank for expelling air accumulations in said pipe, the oil for the lamp being taken directly from the oil-service tank through the pipes C, C', D, substantially as described.

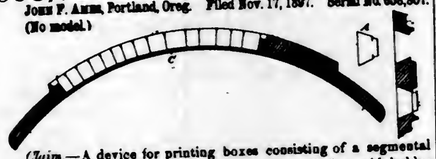
2. In a lighting system, the oil-service tank, a lamp, an oil-feed pipe running continuously from the tank upwardly, then horizontally over and beyond the lamp, having a return-bend and a continuation

therefrom back to and terminating within the tank, a depending branch pipe between the said return-bend and the tank which connects the feed-pipe with the lamp, and provided with a valve for cutting off the connection between the feed-pipe and lamp, and a pump connected to the feed-pipe for causing a flow of oil from the tank through said feed-pipe back to the tank, for expelling air accumulations in said pipe, the oil for the lamps being taken directly from the oil-service tank through the pipes C, C', D, for the purpose set forth.

3. In an oil-supplying device, in combination an oil-tank, an oil-fount, a siphon adapted to carry oil by siphonic action from said tank to said fount, a pump adapted to create a flow of oil through said siphon, and an oil-carrying return-pipe connecting the outer end of the substantially horizontal portion of said siphon beyond its outer leg with said tank, substantially as described.

608,746. TYPE AND TYPE-HOLDER FOR BOX-PRINTING.

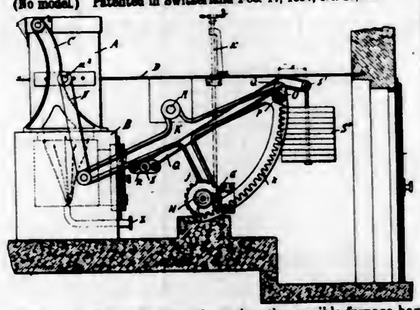
JOHN F. ARMS, Portland, Oreg. Filed Nov. 17, 1897. Serial No. 658,807. (No model.)



Claim.—A device for printing boxes consisting of a segmental holder adapted to be fixed upon a revolving cylinder, said holder having channels made entirely through it, the ends of the channels made radial from the center of curvature of the holder and the sides of said channels beveled and converging from the concaved rear toward the front, type having convex printing-faces and concaved rear surfaces, and having beveled ends and radial converging sides whereby they are fitted from the rear into the channels in the holder, and a smooth, curved metallic plate, of uniform thickness, placed back of the type and holder and fitting the concaved rear face of said holder and the corresponding concaved rear faces of the type whereby the type are removably held in place.

608,747. SELF-HEATING CRUCIBLE-FURNACE.

RUDOLF BAUMANN, Oerlikon, Switzerland. Filed Dec. 31, 1897. Serial No. 665,050. (No model.) Patented in Switzerland Feb. 17, 1897, No. 13,540.



Claim.—1. In combination, the casing, the crucible-furnace having a spout near its upper end, and pivots suitably journaled in the casing on a line with said spout, a pair of rocking beams located in the casing, links connecting said beams with the furnace and means for operating said beams to tilt the furnace, substantially as described.

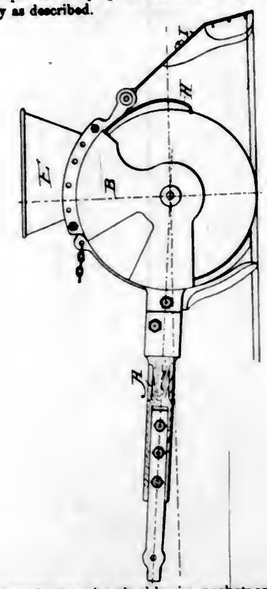
2. In combination, the casing, the crucible-furnace having a spout near its upper end, and pivots suitably journaled in the casing on a line with said spout, a pair of rocking beams located in the casing, links connecting said beams with the furnace, a toothed segment connected with said beams, a spur-wheel engaging said toothed segment, a worm-wheel and worm for operating said spur-wheel, substantially as described.

3. In combination, a tilting crucible furnace, the rocking arms having link connections to the crucible-furnace for tilting the same, and the levers having stationary pivots at one end and weights at the other, and having a sliding bearing connection with said arms, substantially as described.

608,748. RIDGE-DRILL.

VICTOR BENDORAT, Havay, Belgium. Filed July 16, 1897. Serial No. 644,865. (No model.) Patented in Belgium Aug. 31, 1896, No. 123,294; in France Nov. 2, 1896, No. 260,922; in Hungary Nov. 6, 1896, No. 7,933; in Austria Dec. 3, 1896, No. 46/4,267, and in Germany Sept. 24, 1897, No. 93,677.

Claim.—1. In combination, the wheel having pockets and adapted to act both as the carrying-wheel for the machine and as the seed-distributing wheel, the hopper under which the wheel passes to present the open pockets, the plungers in the said pockets with means for forcing the plungers out when the pockets approach the ground, and the scraper for keeping the seed-wheel free from loose earth, substantially as described.



2. In combination, the wheel having pockets and adapted to act both as the carrying-wheel for the machine and as the seed-distributing wheel, the hopper under which the wheel passes to present the open pockets, the plungers in the said pockets with means for forcing the plungers out when the pockets approach the ground, substantially as described.

608,749. BICYCLE-SUPPORT.

JOHN BOOTH, Terre Haute, Ind. Filed June 3, 1897. Serial No. 639,276. (No model.)

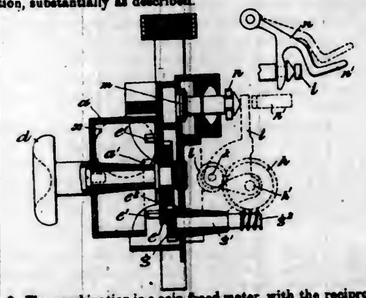


Claim.—The combination with a bicycle of the slotted brackets 1 and 2 fixed to the rear axle and formed with the vertical shoulders 7, the triangular frame comprising the yoke 10 and the converging arms 4 and 5 formed with the toes 6 and transversely hinged to said brackets, the springs 8 8 having their free ends connected to said arms and brackets and adapted to sustain said frame in a horizontal position and the loop 9 flexibly connected to said yoke, substantially as shown and described.

608,750. COIN-FREED APPARATUS.

ALFRED R. BOX, Egremont, England. Filed Dec. 28, 1897. Serial No. 663,990. (No model.) Patented in Germany Jan. 13, 1898, No. 95,711.

Claim.—1. In a coin-freed apparatus, the combination with the freeing and stopping part and the registering part, of a vibrating arm adapted to operate said freeing part, a gear-wheel loosely mounted on the axis of said vibrating arm, coin-controlled mechanism having connections to said gear-wheel for operating the same, a gyratory shaft journaled at one end in said vibrating arm and having a gear meshing with said gear-wheel, a transmitting-wheel at the opposite end of said gyratory shaft, a universal-joint connection between said transmitting-wheel and gyratory shaft and operating connections between said transmitting-wheel and the registering part whereby the movement of the apparatus restores the vibrating arm to its initial position, substantially as described.



2. The combination in a coin-freed meter, with the reciprocating freeing and stopping parts, of the hinged vibrating arm *i*, the coin-carrier *c*; the disk *e*, worm g^4, operated thereby, worm-wheel *k* meshing with and driven by g^3, and having its axis coincident with that of the arm, and toothed wheel *l* mounted on the arm *i*, and meshing with *k*, and connected with and operated from the operative parts of the meter in passing or supplying goods; substantially as set forth.

3. In a coin-freed meter, the combination with the reciprocating opening and closing part thereof, of the vibrating hinged arm or lever *i*, and the hinged lever *n*, with a jaw at its end connected with said opening and closing part, operated by the lever *n* and the lever *i*, and the coin-controlled mechanism for operating lever *i*; substantially as set forth.

4. In a coin-freed apparatus, the combination with the cylindrical rotary coin-carrier *c* operated by hand, of a disk *e*, with parts thereon adapted to be acted upon by the coin when introduced into the carrier, the pawl f' adapted to engage with notches *f* in the said disk, the said coin-carrier rim being cut away at one part to allow the part to be raised out of its engagement with said disk, and extended at another part over the path of said pawl, to prevent it being disengaged from the disk; substantially as set forth.

5. In a coin-freed apparatus the combination of the rotary cylindrical coin-carrier *c*, with coin-holding slot *b*, and cut-away portion *c'*, the disk *e* on the inner end of the axis of *c* with inward projections *e'*, and recesses *f*, and pawl f' the end of which is disposed under the cylinder *c*, and operate in connection with the disk *e* and recesses *f*; substantially as set forth.

6. In a coin-freed apparatus, the combination of the rotary cylindrical coin-carrier *c*, with slot *b*; disk *e* with projections *e'*, adapted to be acted upon by the coins in *b*, and teeth e^3; the pinion *g* meshing with e^3; worm g^3 connected with and driven by *g*; worm-wheel *k* meshing with and driven from g^3; arm *i* for freeing and stopping the apparatus, pinion *l* supported on arm *i*, operated and controlled by parts of apparatus used in passing or delivering goods, and meshing with *k*; substantially as set forth.

7. In a coin-freed apparatus, the combination with a reciprocating part, adapted to free and stop the apparatus, of the hinged vibrating arm *i*, and the hinged vibrating arm *n*, engaging said freeing and stopping reciprocating part, and provided with a fork at its end, and an outwardly-extended part *n'*, within which fork the free end of said arm *i* is disposed and works, and coin-controlled mechanism for operating said arm *i*; substantially as set forth.

608,751. SAFETY-BRIDGE FOR CARS.

HOLLIDAY H. BURKHART, Tuscumbia, Ala. Filed May 28, 1897. Serial No. 638,049. (No model.)

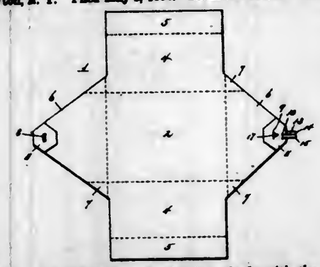


Claim.—1. The combination with the upper part of the end of a car, of compressible spring-actuated rods carried thereby and arranged horizontally, and a netting having rings at the ends thereof mounted upon the said rods, the outermost ring at each end being secured to the rods, the remaining rings being freely movable upon the said rods, substantially as described.

2. The combination of casings secured to the car on its opposite sides and adjacent its ends, rods movable within said casings and having their inner ends reduced and screw-threaded, said screw-threaded ends projecting through the end walls of the casings, adjusting-nuts upon the screw-threaded ends, springs coiled about reduced portions of said rods and bearing against the shoulders formed thereon, buffers carried by the outer ends of said rods, and a netting or feeder attached at its ends to the rods on the respective sides of the car, substantially as set forth.

608,752. REVERSIBLE ENVELOP.

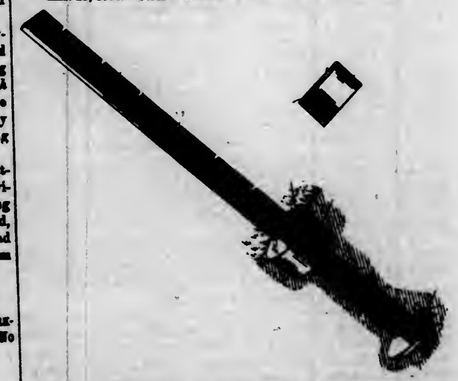
EDWARD A. BURLINGAME, Clayton, N. Y. Filed May 6, 1897. Serial No. 635,327. (No model.)



Claim.—A reversible envelop having a body with the return address printed on one side and a sending address applied to the opposite side together with the sender's name and residence, and formed with integral side flaps having outer folding portions adapted to interlock with each other when the said side flaps are turned over the body, end flaps connected to the said body and the side flaps by triangular corner-folds which are bent upon each other and in part lie over the side flaps when the latter are closed against the body, one of the end folds by its outer end being slotted and a fastener carried by the opposite end fold having a pair of legs adapted to alternately engage the slot in the opposite end fold when the parts of the envelop are reversed, substantially as described.

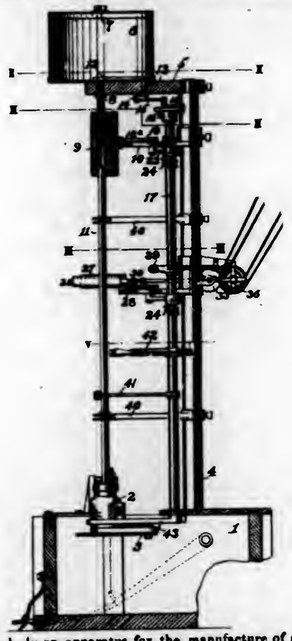
608,753. FENCE-POST.

WILLIAM P. CARR, Nevada, Ohio. Filed Mar. 26, 1898. Serial No. 674,895. (No model.)



Claim.—A fence-post consisting of a strip of metal of uniform length, breadth and thickness, said strip having its two sides bent at an angle to each other, the apex of the angle extending along the longitudinal axis of the post, an anchor having an angular perforation, said perforation receiving the post, said anchor being permanently fixed to the post at or near its lower end, said anchor having its upper and lower surface plain and extending substantially at right angles to the post, a guide having an angular perforation, said perforation adapted to receive the post, said guide being loosely mounted on the post and being located at or near the surface of the ground, said guide having a downwardly-extending annular flange, said flange surrounding the post, said anchor adapted to move perpendicularly independent of the post, said guide forming a lateral bearing for the post.

608,754. APPARATUS FOR MANUFACTURING GLASSWARE. THOMAS COLEMAN, Jr., and CHARLES RUNYON, Rochester, and FRANK ZAHN, Freedom, Pa. Filed Feb. 10, 1898. Serial No. 669,787. (No model.)



Claim.—1. In an apparatus for the manufacture of glassware, the combination of a mold, a blowpipe, a nozzle connected with a source of air under pressure, and means for simultaneously closing the mold around the blowpipe and connecting blowpipe with nozzle, substantially as set forth.

2. In an apparatus for the manufacture of glassware, the combination of a mold, a blowpipe, a nozzle connected with a source of air under pressure, and means for simultaneously closing the mold, connecting blowpipe with nozzle and opening a valve controlling flow of air through nozzle, substantially as set forth.

3. In an apparatus for the manufacture of glassware, the combination of a mold, a blowpipe, a nozzle, mechanism for rotating blowpipe and means for simultaneously closing mold, connecting blowpipe to nozzle and shifting rotating mechanism to operative position with relation to blowpipe, substantially as set forth.

4. In an apparatus for the manufacture of glassware, the combination of a mold, a blowpipe, supports or bearings for blowpipe, mechanism for rotating blowpipe and adapted to hold the blowpipe in its supports or bearings, and means for closing the mold and shifting the rotating mechanism into operative position with relation to the blowpipe, substantially as set forth.

5. In an apparatus for the manufacture of glassware, the combination of a mold, a blowpipe, supports or bearings for blowpipe and means for simultaneously closing mold and clamping blowpipe in its supports or bearings, substantially as set forth.

6. In an apparatus for the manufacture of glassware, the combination of a mold, a blowpipe, a movable block adapted to bear against the blowpipe and impart a rotary motion thereto, means for simultaneously closing the mold and shifting the block to bear against the blowpipe and means for reciprocating the block, substantially as set forth.

7. In an apparatus for the manufacture of glassware, the combination of a mold, a blowpipe, a reservoir located above the blowpipe, a valve controlling the flow of air from the reservoir to the blowpipe, mechanism controlling the movement of said valve and means for closing the mold and connecting the blowpipe with the reservoir and simultaneously shifting the valve to admit air to the blowpipe, substantially as set forth.

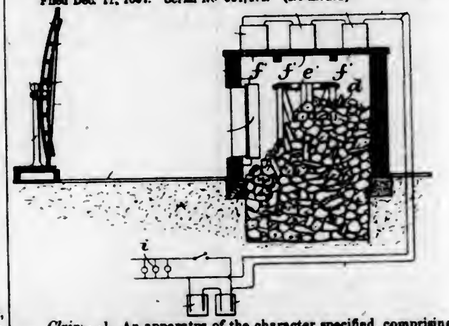
8. In an apparatus for the manufacture of glassware, the combination of a mold, a blowpipe, a divided socket adapted to connect the blowpipe with a source of air under pressure and means for simultaneously closing the mold and closing the socket around the blowpipe, substantially as set forth.

9. In an apparatus for the manufacture of glassware the combination of a mold, a blowpipe, movable blocks adapted to bear against the blowpipe and impart a rotary motion thereto, means for simultaneously closing the mold and shifting the blocks to bear against the blowpipe and means for reciprocating the blocks, substantially as set forth.

10. In an apparatus for the manufacture of glassware the combination of a mold, a blowpipe, movable blocks adapted to bear against the blowpipe and impart a rotary means for closing the mold and shifting the blocks to bear against the blowpipe and means for imparting a variable reciprocating motion to the blocks, substantially as set forth.

11. In an apparatus for the manufacture of glassware the combination of a mold, a blowpipe, supports or bearings for blowpipe, a finger or hook adapted to hold the blowpipe in its bearings and means for simultaneously closing the mold and shifting the finger or hook into operative position with relation to the blowpipe, substantially as set forth.

608,755. APPARATUS FOR STORING AND USING SOLAR HEAT. HENRY F. COTTLE, Boston, Mass., assignor of two-thirds to William Calver, Washington, D. C., and John J. Pratt, Revere, Mass. Filed Dec. 11, 1897. Serial No 661,471. (No model.)



Claim.—1. An apparatus of the character specified, comprising a body of heat-retaining material, a heat-insulating device or covering therefor, means for heating said body of material, a thermo-electric generator adapted and arranged to convert the energy of heat from said body into energy of electricity, and means for utilizing the electric energy.

2. An apparatus of the character specified, comprising a condenser for concentrating the sun's rays, a reservoir such as a body of stones adapted to be heated by the concentrated rays, a heat-insulating housing for said reservoir, and a thermo-electric generator adapted and arranged to convert the energy of heat from said reservoir into energy of electricity.

3. An apparatus of the character specified, comprising a body of heat-retaining solid material in a divided state, means for concentrating the sun's rays upon said body to heat the same, and a thermo-electric generator adapted and arranged to convert the energy of heat from said body into energy of electricity.

4. An apparatus of the character specified, comprising means for concentrating the sun's rays, a body of heat-retaining material adapted to be heated by the concentrated rays, a housing for said body, a door in said housing adapted to be open to allow the concentrated rays to fall directly upon the body, and a thermo-electric generator adapted and arranged to convert the energy of heat from the body into energy of electricity.

5. An apparatus of the character specified, comprising means for concentrating the sun's rays, a body of heat-retaining material adapted to be heated by the concentrated rays, a housing for said body, and a thermo-electric generator occupying an aperture in said housing and adapted to convert the energy of heat from the body into energy of electricity.

6. An apparatus of the character specified, comprising a body of heat-retaining material, a heat-insulating housing therefor, and a condenser for concentrating the sun's rays upon the body of material, the said condenser being mounted upon a movable support and adapted to act upon the body from different directions.

7. An apparatus of the character specified, comprising a body of heat-retaining material, a heat-insulating housing constructed with a plurality of apertures and provided with doors for said apertures, and a condenser mounted upon a movable support and adapted to concentrate the sun's rays upon the body of material through the several apertures in succession.

8. An apparatus of the character specified, comprising a body of heat-retaining material occupying an excavation or recess in the ground, means for heating the body of material, and means for converting the energy of heat from said material into energy of electricity.

608,756. ARTIFICIAL STONE. WILLIAM COURTENAY, New York, N. Y. Filed Oct. 21, 1897. Serial No. 655,922. (No model.)



Claim.—1. The composite building-block described having the appearance of granite, the main body of the block being of granite, clay, and a minimum of flux, and the face being of different proportions of the material with an excess of flux, said face being solidified by fusion of the flux, substantially as described.

2. The building-block having its main body composed of granite, clay, and a flux, and its ornamental face composed of granite, clay in less proportions, and flux in greater proportion, the flux in the face portion only being in a solidified condition due to fusion, substantially as described.

3. The building-block composed as to its body of granite, clay, and a minimum of flux, its face of granite, less clay and a maximum of flux, said face compacted by fusion, and having a glazing over said face.

4. The method of producing building-blocks of granite appearance, which consists in pulverizing granite, mixing the fine granite with clay and a flux, forming the body of the block of the said ingredients with a minimum of the flux, and the face of the said ingredients with a maximum of the flux, and burning the block until the face is fused and the body left unfused, substantially as described.

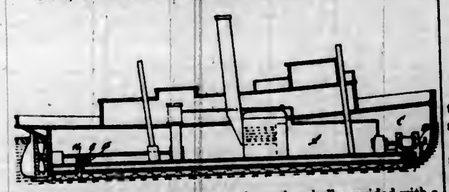
5. The method of producing building-blocks which consists in pulverizing granite, mixing the fine granite with clay and a flux, forming the body of the block of the said material with a minimum of the flux and the face of the said materials with a maximum of the flux, glazing the face, and burning to first fuse the glazing and then the face composition, leaving the body unfused, but baked or burned, substantially as described.

6. The method of forming artificial granite blocks, with ornamental faces, which consists in molding the body of the block of a compound of granite, clay, and a flux, and molding the face thereon of like materials, but in differing proportions, so that the face contains an excess of the flux, protecting the face by a non-combustible covering, and firing to the extent that the facing, under the covering, is fused, the body of the block remaining unfused, substantially as described.

7. The method of forming artificial granite blocks; which consists in molding the block of a compound of pulverized granite, clay, and a flux, and the facing of like materials, but with an excess of the flux, and coating the facing with a glazing compound, firing the blocks, whereby a glazing is first formed, and continuing the firing until the flux in the facing is fused while the body remains unfused, substantially as described.

8. The method of producing artificial granite blocks, which consists in molding the body of a compound of granite, clay, and a flux, molding the face of a compound of granite, clay, and an excess of flux, covering the face with a glazing composition, burning to first form the glaze and then to fuse the flux in the facing, and afterward cooling and removing the glaze, substantially as described.

608,757. PNEUMATIC PROPELLING MEANS FOR VESSELS. ANDREW J. CULBERTSON, San Andreas, Cal., assignor to John W. Strough, same place, and Edward L. Burns, Corcoran-Gargadennes, Cal. Filed Oct. 9, 1897. Serial No. 654,871. (No model.)

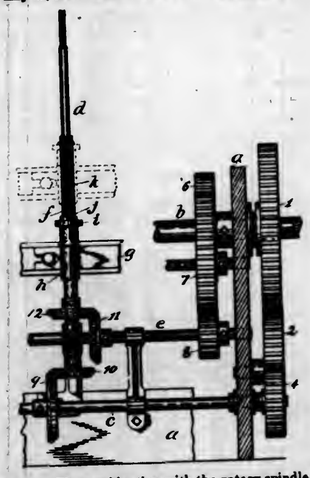


Claim.—1. In the construction of vessels, a hull provided with a series of cleats arranged longitudinally and forming a series of channels open at the bottom and at the stern, means, substantially as described, for forcing a buoyant material through said channels, and also for directing the buoyant material against the water below the cleats to assist in steering, substantially as described.

2. In the construction of vessels, a hull provided with a series of cleats arranged longitudinally, forming a series of channels open at the bottom and at the stern, air-compressors located above the channels, and pipes leading from the air-compressors into the said channels at the bow portion of the boat, the said pipes being outlet-pipes for the compressors and constructed in sections, the lower sections of the outlet-pipes being capable of vertical and lateral movement, as and for the purpose set forth.

3. In the construction of vessels, a hull provided with a series of longitudinal cleats in parallel arrangement, forming a series of parallel chambers or channels open at the bottom and at the rear, air-pumps connected with said chambers or channels at their forward ends, and a series of auxiliary rudders forming a continuation of each of said ribs, the rudders being at the rear, and means for connecting the said auxiliary rudders, whereby they may be simultaneously moved in direction of the port or the starboard side of the vessel, as and for the purpose specified.

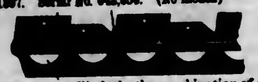
608,758. ROVING-FRAME. JOHN T. CUNNEEN, Fall River, Mass. Filed May 15, 1897. Serial No. 636,611. (No model.)



Claim.—1. The combination with the rotary spindle, of a sleeve surrounding the spindle and provided with a vertical slot, a gear fixed on said sleeve, and a gear to engage the sleeve-gear and drive the sleeve, the single bolster-rail and means for reciprocating it, the bolster fixed to the rail, the bobbin, and the collar resting on the bolster and having a rib adapted to engage the bobbin and the slot in the sleeve.

2. The combination with the rotary spindle *d*, of the sleeve *f* fitted to rotate thereon and having a slot *k*, the single bolster-rail *g* having the bolster *h* secured thereto, said rail and bolster being adapted to be reciprocated vertically and steady the sleeve and spindle, the collar *i* resting on the bolster and having a radial rib *j* one end of which enters the slot *k* in the sleeve and the other end of which is adapted to engage the base of a bobbin, and means for rotating the spindle and sleeve.

608,759. METALLIC LATHING. ROBERT R. DANIELS, Youngstown, Ohio, assignor of one-half to Hosea Huffstot, same place. Filed Aug. 18, 1897. Serial No. 648,656. (No model.)

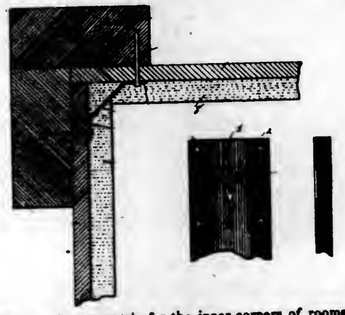


Claim.—1. In a metallic lath, the combination of a corner-piece, the holes therein, the alternate wings thereof, and the stiffening-bead, substantially as and for the purpose described.

2. In a metallic corner-strip, the alternating wings adapted to straddle the corner, and the continuous embossed bead adapted to stiffen the strip, substantially as described.

3. A blank for corner-strips, comprising the metal strip the embossed bead extending the full length thereof, and the series of holes upon both sides of the said bead, substantially as and for the purpose described.

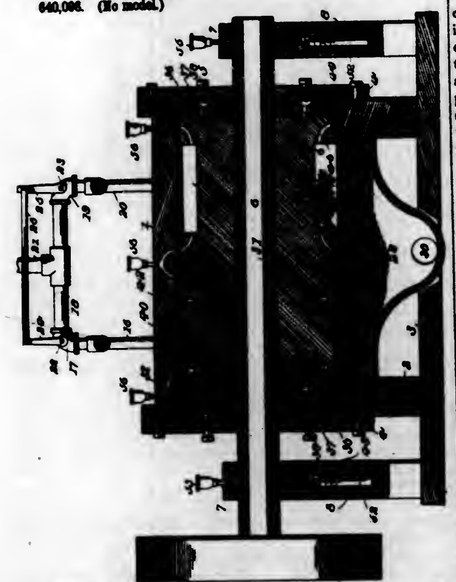
608,760. METALLIC LATHING. ROBERT R DANIELS, Youngstown, Ohio, assignor of one-half to Hosea Huffstot, same place. Filed Aug. 18, 1897. Serial No. 648,660. (No model.)



Claim.—1. A corner-strip for the inner corners of rooms, comprising a strip with edge flanges at an angle of about one hundred and thirty-five degrees thereto, openings of the strip for keying plaster thereto, and nail-holes in the flanges, as and for the purpose described.

2. A corner-strip for the inner corners of rooms, adapted to prevent spreading at the said corners, comprising the strip, the flanges at each edge thereof bent at an angle and adapted to be nailed to the corners of the room, and the openings in the strip for keying plaster thereto, as and in the manner described.

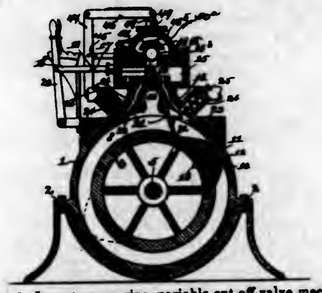
608,761. ROTARY ENGINE. CHARLES DAVIDSON and RICHARD D. STAGEY, New Hagerstown, Ohio. Filed June 9, 1897. Serial No. 640,096. (No model.)



Claim.—1. A reversible rotary steam-engine, comprising a cylinder 1, provided with the alined live-steam ports, 12 and 13, and the alined intermediate exhaust-port 27, the removable cylinder-heads 4 4, the branch steam-inlet pipe 16, having its opposite ends terminating in said ports 12 and 13 and an intermediate valve fixed in said branch pipe and adapted to simultaneously control the admission of steam to both ports 12 and 13, in combination with the rotary piston 37, provided with the annular series of rectangular steam-pockets 43, the radial walls 45 of which are arranged at a right angle to said live-steam ports, annular packing-recesses 33 and 32 and longitudinal packing-grooves 39 intersecting said recesses and a series of diagonal steam passage-ways 46 and 47 connecting said pockets with said packing-recesses and intersecting grooves, the packing-rings 34 and 35 arranged in said recesses, and the semi-elliptical springs 40 and the packing-bars 42 arranged in said grooves, substantially as shown and described.

2. In rotary engines, a fixed cylinder provided on opposite sides with steam-chests having two sets of duplicate live-steam ports and an exhaust-port for each set, in combination with a rotary piston provided with the annular series of rectangular steam-pockets 43, the radial walls 45 of which are arranged at a right angle to said live-steam ports, annular packing-recesses 32 and 33 and longitudinal packing-grooves 39 intersecting said recesses and a series of diagonal steam passage-ways 46 and 47 connecting said pockets with said packing-recesses and intersecting grooves, the packing-rings 34 and 35 arranged in said recesses, the semi-elliptical springs 40, and the packing-bars 42 arranged in said grooves, substantially as described.

608,762. ROTARY ENGINE. MILLARD F. DEAN and TAYLOR MCCOY, Poca, W. Va. Filed Aug. 24, 1897. Serial No. 649,234. (No model.)



Claim.—1. In a steam-engine, variable cut-off-valve mechanism comprising a reciprocatory rod operatively connected with the steam-inlet valve, and a reciprocatory endless cam and automatic switch in engagement with said rod and adapted to produce reciprocations thereof substantially at right angles to the reciprocations of the cam and switch, the latter parts being operatively connected with the piston of the engine for reciprocation thereby and the cam with its switch being adjustable in the plane of reciprocation of the rod to vary the movements thereof and consequently of the valve, substantially as described.

2. In a steam-engine, variable cut-off-valve mechanism comprising a reciprocatory rod operatively connected with the steam-inlet valve, a reciprocatory cam engaged therewith, its acting face being substantially diamond-shaped in general outline, and a spring-pressed pivotal switch in the cam, the latter together with said switch being adjustable to different degrees of angularity to vary the period of admission of steam, substantially as described.

3. In a steam-engine, a variable cut-off-valve mechanism comprising a reciprocatory rod operatively connected with the steam-inlet valve of the engine, an endless cam engaged with said rod, an automatic switch in said cam, and a sliding support for said cam operatively connected with the piston of the engine, with provision for angular adjustment determining the period of admission of steam, substantially as described.

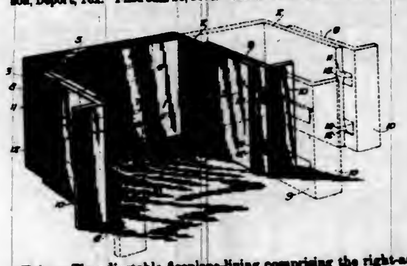
4. In a steam-engine, variable cut-off-valve mechanism comprising a reciprocatory rod operatively connected with the steam-inlet valve, and a reciprocatory endless cam and automatic switch in engagement with said rod and adapted to produce reciprocations thereof substantially at right angles to the reciprocations of the cam and switch, the latter parts being operatively connected with the piston of the engine for reciprocation thereby and the cam with its switch being adjustable in the plane of reciprocation of the rod to vary the movements thereof and consequently of the valve, their center of movement in such adjustment coinciding with the point of engagement of the rod with the cam when the latter is at the end of its movement in one direction.

5. In a steam-engine, a variable cut-off-valve mechanism comprising a reciprocatory roller-equipped rod operatively connected with the steam-inlet valve, a camway embracing the roller on said rod, a pivotal spring-actuated switch in said camway, and a reciprocatory support for the latter operatively connected with the piston of the engine with provision for adjustment about a pivot coincident with the axis of the rod-roller when the support is at the end of its movement in one direction, substantially as and for the purpose described.

6. In a steam-engine, a variable cut-off-valve mechanism comprising a reciprocating rod operatively connected with the steam-inlet valve, a pivoted guideway, means for setting the same at different adjustments, a slide in said guideway and operatively connected with the piston, and a camway and switch on the slide and engaging the rod, substantially as and for the purpose described.

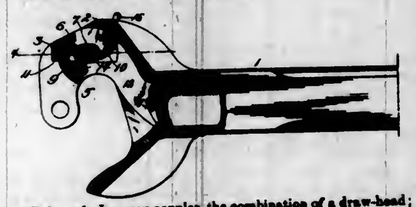
7. In a rotary steam-engine, the combination of a cylinder having inlet and exhaust ports, a piston-shell having a peripheral steam-channel and a wing projecting across the same for impact of steam, a flap-valve pivoted to the cylinder and adapted to occupy said channel, the said valve being hollow to contain a lubricant and having porous strips at opposite sides, substantially as and for the purpose described.

608,768. RACK OR LINING FOR FIREPLACES. JOHN A. DICKSON, Deport, Tex. Filed Jan. 26, 1898. Serial No. 668,085. (No model.)



Claim.—The adjustable fireplace-lining comprising the right-angular sections, 2, 3, lapping each other at their inner ends, the upwardly-inclined ribs, 4, 11, arranged at the back and end of the sections, 2, and the end of the section, 3, above the horizontal center of the lining, the downwardly-inclined ribs, 5, 12, on the back and end of section, 2, and at the end of section, 3, below the horizontal center of said lining, the inclined grooves in the lapped face of the section, 3, to loosely receive the ribs, 4, 5, and the flanged jambs, 10, overlapping the ends of the sections, 2, 3, and having grooves which receive the ribs, 11, 12, of said sections; all the parts of the lining being slidably united by joints which expand in opposite directions uniformly from the horizontal central line of the lining, substantially as described.

608,764. CAR-COUPLING. ROBERT H. DOWLING, Newark, Ohio, assignor of one-half to William H. Snyder, same place. Filed Dec. 15, 1897. Serial No. 662,044. (No model.)



Claim.—1. In a car-coupler, the combination of a draw-head; a knuckle having a limited movement backward and forward therein to carry it into and out of locking engagement with the draw-head; and a pivot-pin connecting said parts and of different cross-section in different portions of its length; whereby said pivot-pin when dropped to normal position is caused to lock the knuckle against outward movement, but when raised a proper distance will permit such outward movement.

2. In combination with a draw-head; a knuckle pivoted therein and adapted to move a limited distance backward and forward therein, and thereby to carry its inner arm into and out of locking engagement with the walls of the draw-head.

3. In combination with a draw-head having forwardly-projecting arms provided with elongated openings; a knuckle pivotally supported between said arms and likewise provided with an elongated opening; and a pivot-pin passing through the openings of the draw-head arms and the knuckle, of different cross-section in different portions of its length, substantially as described, whereby it may be caused to fill the elongated openings of the draw-head arms, or moved longitudinally to bring its reduced portions in alinement with said arms preparatory to a lateral movement of the pin and outward movement of the knuckle.

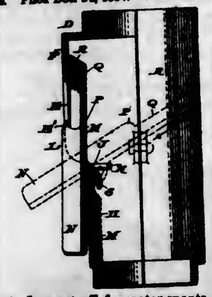
4. In combination with a hollow draw-head 1, having arms 4 provided with elongated openings 6; knuckle 5 provided with elongated openings 8 and with arm 12; and pivot-pin 7 having cylindrical portions 14 and elliptical portions 15, substantially as and for the purpose set forth.

5. In combination with a draw-head provided with lugs 3; a knuckle 5 having shoulders 11 and adapted to move backward and forward in the direction of the length of the draw-head, and also to swing about its pivot; and a pivot-pin connecting said parts and of different cross-section at different portions of its length, whereby it is adapted when in one position to hold the knuckle against movement lengthwise of the draw-head and to retain the shoulders 11 in engagement with the lugs 3, and when in another position to permit such movement and consequent disengagement of the shoulders and lugs.

6. In combination with draw-head 1 having arms 4 provided with shoulders 2, lugs 3, and elongated openings 6; knuckle 5 provided with elongated opening 8, shoulders 9, 10 and 11, and arm 12; and pivot-pin 7 provided with reduced portions 14 and enlarged portions 15, substantially as described and shown.

7. In combination with draw-head 1 having arms 4 provided with elongated openings 6, and having also a hook or lug 18; knuckle 5 provided with arm 12 and elongated opening 8; pivot-pin 7 of varying section in different portions of its length; and lever 16 connected with said pin, all substantially as described and shown.

608,765. CUT-OFF FOR WATER-SPOUTS OR OTHER CONDUITS. HERMAN EPPLE, Belleville, Ill., assignor of one-half to Peter Stander, same place. Filed Dec. 31, 1897. Serial No. 662,826. (No model.)



Claim.—1. In a cut-off for water-spouts and other conduits, an offset portion or chamber having an opening in the side thereof, an upwardly-extending wall of said chamber below said opening and out of alinement therewith, a cut-off pivoted in said opening and having a rearwardly-extending lip projecting therefrom, the upper edge of said wall being adapted to serve as a support for said lip and stops for limiting the movement of said cut-off in either direction.

2. In a cut-off for water-spouts, an offset portion or chamber D having a wall F provided with an opening E therein, said opening being widened at the points E', the lower wall H, lugs K attached to the sides of said offset portion, above the upper edge of said wall H, the cut-off or deflector L having a body portion M, provided with a rearwardly-extending lip S, said lip having the recessed portions T at its edges, which are located in proximity to said lugs K, when the parts are assembled, and stops for limiting the movement of said cut-off in either direction.

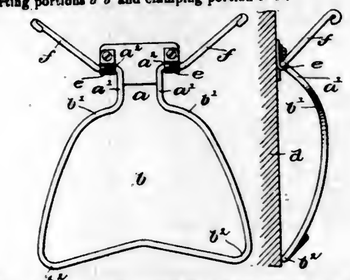
3. In a cut-off for water-spouts, the chamber D, having the front wall F provided with the opening E, said opening being widened at the points E' and extending downwardly, the side walls of said offset portion extending rearwardly at G and joining the upright wall H, a cut-off mounted in said opening and having a rearwardly-extending lip adapted to rest upon the upper edge of said wall H, said lip having the recessed portions T near the extremities thereof, lugs K located upon the side walls of said chamber above the upper edge of said wall H, the latter being moved inwardly out of alinement with the wall F and locking devices for said cut-off, the latter being provided with the walls N, which have certain portions Q of reduced height.

4. In a cut-off for water-spouts and other conduits, a chamber having an opening in the side thereof, and a wall located below said opening in combination with a cut-off arranged in said opening and having a projecting lip, the upper edge of said wall being adapted to serve as a support for said lip and a portion of said cut-off being outside of said chamber.

608,766. GARMENT-HANGER. EDWARD H. FOOTE, Somerville, Mass. Filed Jan. 26, 1898. Serial No. 667,992. (No model.)

Claim.—1. A garment-hanger comprising a neck having a hinge member arranged to cooperate with a fixed hinge member, and a yoke supported by said neck and adapted to swing therewith, said yoke having coat-supporting portions below the said connection, and coat-clamping portions below the said supporting portions and offset from the latter.

2. A garment-hanger comprising a neck having means for a swinging or hinged connection with a fixed support or holder, hat-holding arms formed on and projecting above the neck, and a coat-engaging yoke formed on and projecting below the neck and having supporting portions b' b' and clamping portion b^2 b^2.



3. A garment-hanger comprising a hinge member adapted to be affixed to a wall or support, and a yoke having a neck provided with a movable hinge member engaged with the first-mentioned hinge member, said yoke comprising coat-supporting portions below the movable hinge member, and coat-clamping portions below the said supporting portions.

608,767. **WRENCH.** LOTT FREDERICK and GEORGE H. DUGAN, North Summit, Pa.; said Dugan assignor to said Frederick. Filed Oct. 30, 1897. Serial No. 656,886. (No model.)



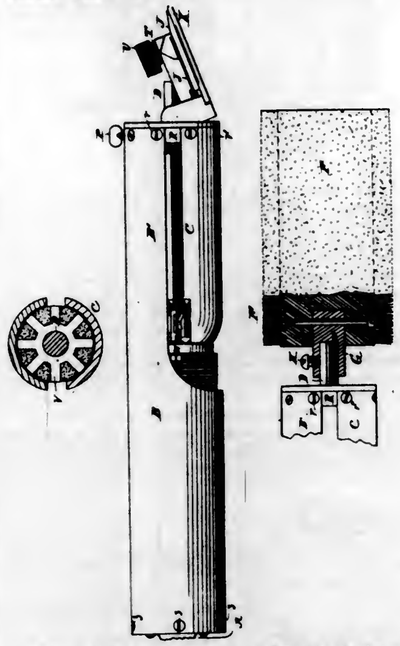
Claim.—1. In a wrench, a post having a fixed jaw and partial screw-guides in the opposite edges in combination with a movable jaw having a rearwardly-extending sleeve provided with an external groove, and a controller-sleeve having partial threads fitting said guides and a thread on its inner end engaging said external groove and means to lock the parts in position, all arranged as set forth.

2. In a wrench, a post having a fixed jaw and mutilated screw-threads in combination a movable jaw having a rearwardly-extending tubular flange provided with an external groove, and a controller-sleeve having partial threads fitting said screw-threads and having an interiorly-reduced end provided with a thread taking into said external groove, and means to lock the parts in position, all arranged as set forth.

3. In a wrench, the combination with a post having a fixed jaw with mutilated screw-threads, of a movable jaw having a rearwardly-extended tubular flange provided with an external groove, and a controller having an interiorly-reduced end provided with a thread engaging said external groove, and means to lock the same consisting of a recess in the tubular flange and a spring-actuated pin in the controller fitting the recess, all arranged as set forth.

4. In a wrench, the combination with a post having mutilated screw-threads and a fixed jaw, of a movable jaw having a rearwardly-extended sleeve, a controller having partial screw-threads fitting said mutilated threads, and also having interiorly-reduced ends, a closing-collar fitting the rear reduced end, said sleeve fitting the forward reduced end, and means to lock the sleeve, the controller and the closing-collar, all in position, as set forth.

608,768. **ELECTRODYNAMIC APPARATUS FOR OPERATING CLIPPING, BRUSHING, OR OTHER MECHANISMS.** WARREN P. FREEMAN, New York, N. Y., assignor to Robert J. Campbell, same place, and Francis Larkin, Jr., Sing Sing, N. Y. Filed Aug. 12, 1897. Serial No. 647,939. (No model.)



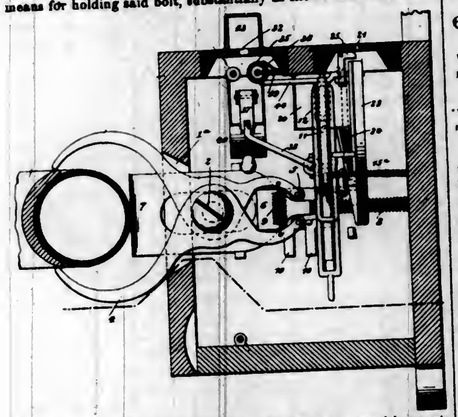
Claim.—1. The electrically-actuated clipping mechanism, combining the armature and shaft, the pole-pieces forming in part a protective casing for the said armature, a non-magnetic disk or plate secured to the ends of the pole-pieces and supporting the armature-shaft, the stationary parts of the said clipping mechanism secured to said non-magnetic disk or plate, an eccentrically-placed pin upon said shaft and a pitman connecting said pin with the reciprocating parts of said clipping mechanism, substantially as set forth.

2. The portable electric motor, the field-magnet of which forms a casing within which the operating parts are contained, and from which the rotary end of the shaft projects, a clipping mechanism, means for attaching the stationary parts of the said mechanism to the stationary parts of the said motor, the cutters of said mechanism sliding in guides upon the said stationary parts, and a pitman pivoted eccentrically at one end to said shaft and pivoted at its other to the said cutters, substantially as set forth.

3. In combination in a combined electric motor and instrument-handle, the field-magnet coil X, the core C upon which the said coil is wound, the pole-piece C magnetically connected with one end of the said core, the magnetic casing and second pole-piece magnetically connected with the other end of the said core and surrounding the said coil, and armature, commutator, brushes, and projecting armature-shaft; whereby a brush, clipper or other instrument may be conveniently mounted upon and actuated by the said motor, substantially as set forth.

608,769. **DEVICE FOR LOCKING OR SECURING BICYCLES.** TAZEWELL GILMER, New York, N. Y. Filed July 24, 1896. Serial No. 600,338. (No model.)

Claim.—1. A device for holding bicycles and the like, comprising pivoted movable parts to engage the bicycle, a slide to engage said parts, a bolt to engage and lock said slide, and coin-controlled means for holding said bolt, substantially as shown and described.



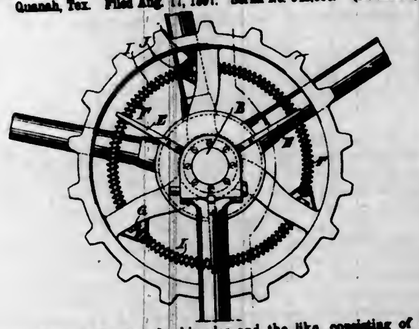
2. A device for holding bicycles and the like, comprising parts to engage the bicycle, said parts being pivotally connected inside the casing, a slide controlling said parts, a bolt to hold said slide and means to lock the bolt, substantially as shown and described.

3. A device for holding bicycles and the like, comprising parts to engage the bicycle, a slide-plate controlling said parts, a bolt controlled by the slide-plate and arranged to hold the same against movement, and coin-controlled means to hold the bolt, substantially as shown and described.

4. A device for holding bicycles and the like, comprising parts to engage the bicycle, coin-controlled means for locking the parts, a holder for the key, and means actuated by the parts when locked to operate the key-holder to discharge the key, substantially as shown and described.

5. A device for holding bicycles and the like, comprising a casing, jaws to engage the bicycle, a slide-plate operatively connected to the jaws, a bolt to engage the slide-plate, means actuated by the slide-plate to hold the bolt against operation, coin-controlled means to hold the bolt against operation, a spur-wheel to engage a key having notches therein, a spring to actuate the spur-wheel, a holder to receive the key, a discharge-chute, and means to prevent the discharge of the key from its holder while it is raised, substantially as shown and described.

608,770. **GEARING FOR BICYCLES.** ERNEST H. GODFREY, Quanah, Tex. Filed Aug. 17, 1897. Serial No. 648,600. (No model.)



Claim.—1. Gearing for bicycles and the like, consisting of a sprocket-rim, curved rods concentric with the rim, arms arranged on the rods intermediate of the ends thereof, springs coiled on said rods on each side of the arms, whereby when said arms are moved in either direction said springs will be compressed, a shaft to which said arms are secured, and means for holding said sprocket-rim concentric with the shaft and also from longitudinal movement thereon, as and for the purpose set forth.

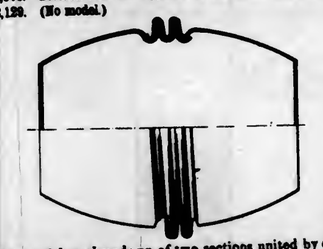
2. In combination with a bicycle, webs loosely mounted in grooves of the shaft, a sprocket-rim held between said webs, arms rigidly secured to the shaft on that part inclosed by the webs, curved rods secured to supports on the inner edge of the rim and run through holes in the arms, and springs coiled on said rods and interposed between the supports and the arms, substantially as described.

608,771. **MUSICAL NOTATION.** CHARLES C. GUILFORD, Boston, Mass. Filed June 8, 1897. Serial No. 639,795. (No model.)

Claim.—1. The herein-described notation, comprising a Roman numeral; a series of Arabic numerals arranged in a horizontal line; heavy and light lines dividing said numerals into groups; punctuation-marks for the subdivision of said groups of numerals; and an asterisk to denote silence; as a means for expressing musical composition.

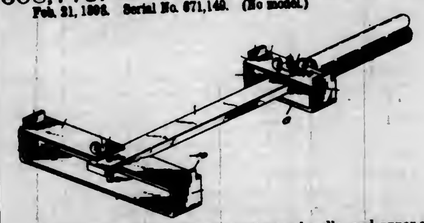
2. A musical notation comprising index-numerals corresponding to the several octaves or tone series, a series of numerals corresponding to the respective tones or degrees of the chromatic scale, each degree being expressed by a distinctive numeral, vertical dividing-lines arranged in proper order to denote accent, and punctuation-marks for subdividing the accents.

608,772. **METAL BARREL.** JOHANN HARMATTA, Szepesvaralja, Austria-Hungary. Original application filed July 30, 1897, Serial No. 642,976. Divided and this application filed Mar. 1, 1898. Serial No. 672,129. (No model.)



Claim.—A barrel made up of two sections united by deep screw-threads forming corrugations, said corrugations being compressed laterally or in a direction longitudinally of the barrel, substantially as described.

608,773. **BROOM-CLAMP.** JOHN HIETT, Highland, Tenn. Filed Feb. 21, 1898. Serial No. 671,149. (No model.)



Claim.—1. The combination of a broom-handle, and upper and lower spaced clamp members, each having relatively-adjustable side plates, and common means for adjustably connecting said plates and securing the same to an extension of said broom-handle, substantially as specified.

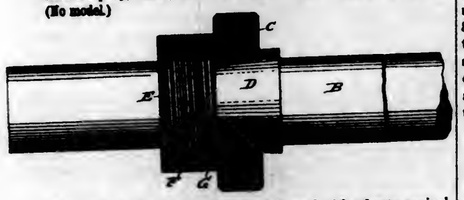
2. The combination of a broom-handle provided with upper and lower spaced transverse openings, and clamp members each having parallel side plates, and adjusting devices consisting of bolts extending through the transverse openings of the handle and registering openings in said side plates, and fitted with adjusting-nuts, substantially as specified.

3. The combination of a broom-handle having upper and lower spaced transverse openings, and upper and lower clamp members each consisting of a side plate provided with terminal upturned arms having guides, and a removable side plate terminally bifurcated to fit said guides, adjusting-bolts extending through said openings in the handle and registering openings in the side plates, and adjusting-nuts fitted upon said bolts, substantially as specified.

4. A broom having a handle provided with a transversely-flattened extension or tongue provided with spaced upper and lower transverse openings, upper and lower clamp members, each consisting

of a side plate having terminal upturned arms, a removable side plate terminally guided upon the arms of the first-named side plate, and an adjusting-bolt extending through one of the openings in the transversely-flattened extension of the handle and through registering openings in said side plates, and fitted with a wing-nut, and broom-corn arranged between the side plates of the clamp members, with the butts of the broom-corn stalks engaged by the upper clamp member, substantially as specified.

608,774. ROLL FOR SAW-STRETCHING MACHINES. GEORGE M. HEWLETT, Milwaukee, Wis., assignor of one-half to The Edward P. Allis Company, same place. Filed June 17, 1897. Serial No. 641,176. (No model.)



Claim.—In combination with a shaft formed with a frusto-conical seat; a roll provided with a taper-bore designed to fit thereon; a threaded section on the shaft contiguous to the smaller end of the conical seat; and a nut formed with a recess as G in its side face designed to be screwed upon the shaft and to bear against the roller, substantially as and for the purpose described.

608,775. HEATING AND EVAPORATING LIQUIDS. ADOLPH G. HOFFMANN, Berlin, Germany, assignor of one-half to August Schwarz, same place. Filed Dec. 28, 1897. Serial No. 663,955. (No model.)



Claim.—1. In an apparatus for heating and evaporating liquids, heating vapors and gases, the combination of a tube or tubes acted upon by the heating agent, with a number of independent perforated plates forming small cells communicating with each other, and so combined relatively to the tubes, that one of the circumferences of each of the perforated plates is in direct contact with the tube, so that the heat taken up by the tube is positively conducted by the plates to the liquid or vapor contained in the cells formed by such plates, substantially as described.

2. In an apparatus for heating and evaporating liquids, heating vapors and gases, the combination of a tubular vessel A acted upon by the heating agent, with perforated plates *a* having turned-up edges or borders *b* and apertures *c*, *d*, and so combined relatively to the tubes A, that the edges of the plates are in direct contact with the tubes, the said edges serving to space the plates a proper distance apart essentially as set forth.

3. In an apparatus for heating and evaporating liquids, heating vapors and gases, the combination of a tubular vessel A acted upon by the heating agent, with perforated plates *a* of conical shape having edges or borders *b* and apertures *c*, *d*, and so combined relatively to the tubes A, that the edges of the plates are in direct contact with the tubes, essentially as set forth.

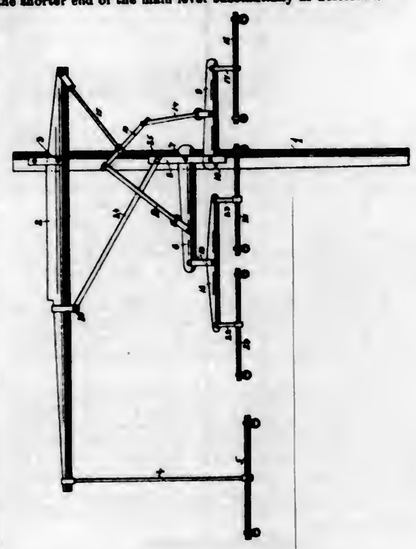
4. In combination, the vessel A and the series of separate plates inserted therein, each having a perforation and having also turned-up edges to space the plates apart, substantially as described.

5. In combination, the vessel A and the series of plates extending across the same having the central perforations and the perforations near the borders of the plates, substantially as described.

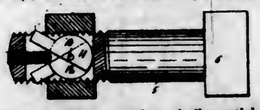
6. In an apparatus for heating and evaporating liquids, heating vapors and gases, the combination of a tubular vessel A acted upon by the heating agent, with perforated plates *a* forming small cells communicating with each other and so combined relatively to the tubes, that one of the circumferences of each of the perforated plates is in direct contact with the tube, means being provided to press said plates together and against the surface of the tube, essentially as described.

608,776. DRAFT-EQUALIZER. GODFREY S. HOFFMAN, Minneapolis, Kans. Filed May 23, 1897. Serial No. 636,591. (No model.)

Claim.—In a draft-equalizer, the combination with the pole and a bar 8 pivoted near its center on said pole, of a main lever pivoted near one of its ends to said pole, a singletree 5 pivotally connected to the long end of said main lever, a set of singletrees and doubletrees carried by the pole and connected to the shorter end of the main lever and consisting of oppositely-projecting levers 9 and 6, the one of which is fulcrumed at its inner end in one end of said bar 8, and the other of which is fulcrumed at its inner end on the pivot of said bar 8, and the former of which is shorter than the latter, the lever 13 mounted on a movable fulcrum on the rod 15, pivoted to the shorter end of the main lever 2, a doubletree carrying singletrees connected to the free end of the longer of said levers and a singletree connected to the free end of the shorter of said levers, a rod connecting the long end of the main lever with the free end of the bar 8 and an intermediate means adapted to equalize the forces applied to the levers 9 and 6 and also completing the connection between the singletree 5 and the set of singletrees and doubletrees and consisting of a toggle-lever connected at each of its ends to one of said levers 9 and 18 between the ends thereof and connected between its ends to the shorter end of the main lever substantially as described.



608,777. NUT-LOCK. WILLIAM A. JACKSON, Elizabeth, N. J. Filed Apr. 23, 1898. Serial No. 678,634. (No model.)



Claim.—1. In a nut-lock, a bolt or similar article provided with a screw-threaded end in which is formed a central longitudinal slot, a screw-threaded plug which is passed through the end of the bolt into said slot, and two jaws pivotally mounted in said slot and the ends of which project outwardly, substantially as shown and described.

2. The combination with a screw-threaded bolt provided with a longitudinal slot in the screw-threaded end thereof, the outer end of which is closed, and a screw-threaded plug which is passed through said closed end into said slot, of two pivotally-connected jaws pivotally mounted in said slot and the ends of which project outwardly, and a nut which is adapted to be screwed onto said bolt, substantially as shown and described.

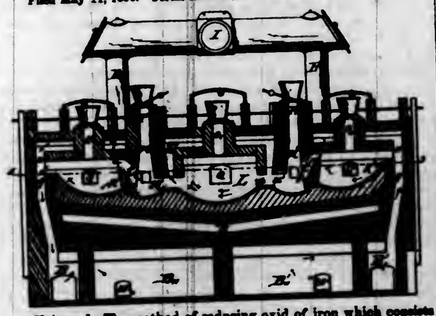
608,778. CHANGE-DELIVERING DEVICE. JOHN S. JOHNSTON, Anniston, Ala., assignor of seven-twelfths to Robert G. Green and Frank P. Murphey, Chicago, Ill. Filed Dec. 30, 1897. Serial No. 664,540. (No model.)

Claim.—1. A change-delivering device comprising a hollow base having an extended bearing-face at its top and constituting the sole support for a tray, and a tray hinged to said base and normally bearing on said extended bearing-face and closing the hollow base, one end of said tray projecting beyond its hinged connection with the base, substantially as set forth.



2. As a new article of manufacture, a change-delivering device comprising a base, a tray hinged to one edge of said base and adapted to be supported on said base and returned thereto by gravity, said tray having a portion projecting beyond said hinged connection, a plate of transparent material in said tray and advertising material between said transparent plate and the bottom of the tray, substantially as set forth.

608,779. METHOD OF AND APPARATUS FOR REDUCING OXID OF IRON. ALEXANDER KARTSCHEFF, St. Petersburg, Russia. Filed May 11, 1896. Serial No. 591,099. (No model.)

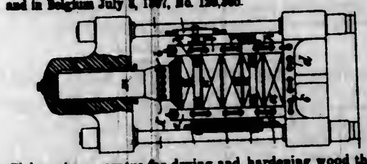


Claim.—1. The method of reducing oxid of iron which consists in dissolving it in a suitable molten slag and bringing this solution into contact with a reducing agent consisting of carbon dissolved in a molten metal, thereby directly producing iron in a molten state, substantially as described.

2. In combination the central chamber, the side chambers, the carbon-chambers interposed between said central and side chambers, all of said chambers having continuous or communicating bottoms, the flues for the combustion-gases communicating with the two side chambers with means for reversing the flow of gases, vaulted roofs over said central and side chambers and air-spaces over said roofs, substantially as described.

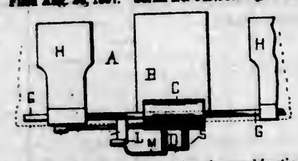
3. In combination the central and side chambers, the interposed carbon-chambers, gas-generators, the air-and-gas regenerators, flues connecting said parts, the reversing-valves in said flues and the oxygen-generating retorts located within the air-regenerators, substantially as described.

608,780. APPARATUS FOR DRYING AND HARDENING WOOD. GEORGE F. LEDESMA, Paris, France. Filed Dec. 29, 1897. Serial No. 664,326. (No model.) Patented in France Nov. 14, 1896, No. 261,304, and in Belgium July 6, 1897, No. 120,986.



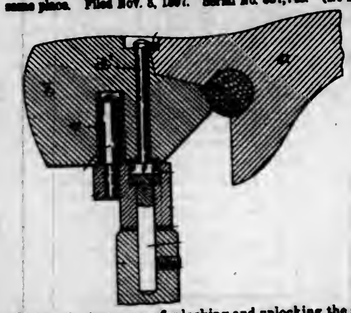
Claim.—In apparatus for drying and hardening wood the combination of a heated press-table, plates resting on said table and mutually adjustable by means of gearing, screw-spindle and hand-wheels, and an upper press-plate connected with metallic pistons, which exert a strong pressure on the wood substantially as hereinbefore described.

608,781. EMBROIDERING-MACHINE. RUDOLF LOEB, Camden, N. J. Filed Aug. 26, 1897. Serial No. 649,583. (No model.)



Claim.—In an embroidering-machine, the combination of a thread-cylinder, a thread-holding device, and means for operating the latter whereby the thread is clamped between the thread-cylinder and the thread-holding device, an embroidering-needle, and means whereby the needle may be given a rotary motion while the thread is clamped in order to break the same.

608,782. MEANS FOR LOCKING OR UNLOCKING HINGED LASTS. DON C. LOUD, Brockton, Mass., assignor to Oliver A. Miller, same place. Filed Nov. 8, 1897. Serial No. 657,748. (No model.)



Claim.—1. As a means for locking and unlocking the sections of a transversely-divided last, a standard or support having a fixed jaw or member formed to engage a locking device on the last, and a last-engaging member rotatable about said fixed jaw.

2. As a means for locking and unlocking the sections of a transversely-divided last, a standard or support having a fixed jaw or member formed to engage a locking device on the last, and a spindle or projection rotatable about said fixed jaw and adapted to enter a socket or recess in the last.

608,788. TIDAL POWER. ERNST MARKMANN, Philadelphia, Pa. Filed Jan. 26, 1897. Renewed Feb. 25, 1898. Serial No. 671,068. (No model.)

Claim.—1. In a tide-power, a plurality of basins, a chamber, a passage thereto, a float in said chamber, turbines on said float, a chute adjacent said turbines and mounted on said float, a communication between said basins, separate communications from said chamber to each basin, a communication from one of said basins to said passage, and means for permitting access to said chamber.

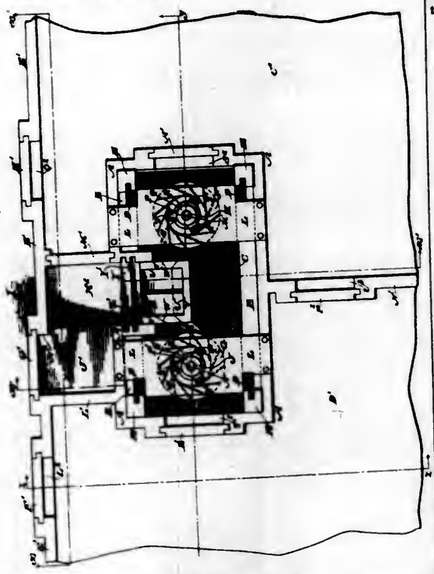
2. In a tide-power, a plurality of basins having openings in the walls thereof, means for closing said openings, a chamber, a communication between said chamber and said basins turbines in said chamber, a chute having a plurality of openings so as to direct the water to either turbine, and means for conducting the water to one basin or the other.

3. In a tide-power, a plurality of basins, a chamber adjacent thereto, a float in said chamber, turbines on said float, shafts connected with said turbines, grooves in said shafts, pulleys having tongues which enter said grooves, and a chute on said float adapted to move therewith, and having openings for directing the water to either turbine.

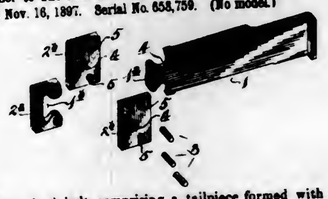
4. In a tide-power, a plurality of basins, a chamber, a float therein, strips on said float, guides for said float, turbines on said float, shafts connected with said turbines, guides for said shafts, a chute on said float adapted to move with said float and having a plurality of openings for directing the water to either turbine, and means for controlling the flow of water into said chute.

5. In a tide-power, basins C, D', a gate F' closing a passage between said basins, a chamber B, a passage J leading thereto, a float C, turbines F and G, a chute U, gates Y and Z, gates A' and B' in the walls of said chamber, gates F', G' and H', an inclosure K', a gate M', and means for allowing water to flow from said chamber.

6. In a tide-power, a plurality of reservoirs, a chamber adjacent thereto, a passage to said chamber, a float in said chamber, a chute, turbines located near said chute, gates between said passage and said chute, measurers attached to said gates, and means for allowing said float to rise and fall, so that when a small amount of water is entering the device, the fall thereof will be greater than when a larger amount of water is entering.



608,784. BOLT FOR LOCKS. FRANK W. MIX, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Nov. 16, 1897. Serial No. 658,759. (No model.)



Claim.—1. A bolt comprising a tailpiece formed with a tenon and a separately-formed head secured thereto and consisting of a series of plates or laminæ, one of which is partly cut away to receive the tenon formed on the end of the tailpiece whereby the head and the tailpiece engage together, as explained.

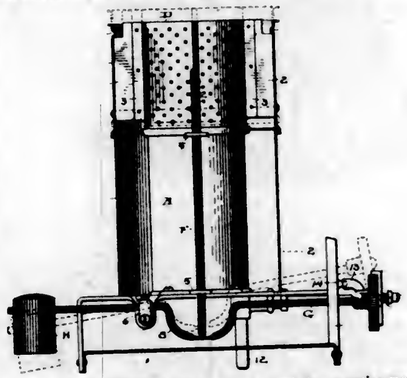
2. A bolt formed of a tailpiece, a head-forming plate engaging said tailpiece, a lateral head-forming plate covering the joint between the two parts first named, and rivets passing through the outer plate and the tailpiece and through the head-forming plates, substantially as set forth.

3. A bolt comprising a tailpiece and a built-up or laminated head secured thereto; the end of the tailpiece and one of the plates or laminæ of the head being constructed to interlock by a substantially dovetailed joint, whereby lateral and longitudinal displacement are prevented, as explained.

4. A bolt consisting of a steel or hard-metal tailpiece and a soft-metal or ornamental head composed of plates or laminæ of which the inner plate or lamina and the end of the tailpiece are correspondingly recessed to form a tenoned joint, while the outer plates or laminæ are arranged to obscure said joint, and all of said parts being secured together by rivets or pins passing through them, substantially as and for the purposes set forth.

608,785. HYDROCARBON-BURNER. ORVILLE P. MOON and HERMAN L. MARRAGH, Lorain, Ohio. Filed Aug. 16, 1897. Serial No. 648,340. (No model.)

Claim.—1. The combination of an annular wick-tube, a mixing-chamber situated thereabove, one of the walls of said mixing-chamber being adapted to be raised and lowered, and means situated outside said wick-tube and adapted to lift the movable wall, said means comprising a wick-spindle, and a counterbalanced rod for lifting the mixing-chamber having their extremities separate but in proximity to each other, whereby when the operator turns the wick-spindle his hand normally bridges the intervening space and releases said counterbalanced rod, substantially as described.



2. The combination of the wick-tubes, and the operating mechanism for the wick, a mixing-chamber situated thereabove having one of its walls adapted to be raised and lowered, and means to lift the said movable wall comprising a counterbalanced member mechanically independent of the wick-operating mechanism and constructed to be separately operated, and handles for operating said separate lines of mechanism located side by side, whereby when desired one hand normally actuates both handles, substantially as described.

3. The wick-tubes and the wick-spindle and its handle, in combination with the mixing-tubes, a counterbalanced mechanism to raise said mixing-tubes, and a device for releasing said counterbalanced mechanism located in proximity to said wick-spindle handle but mechanically independent thereof, whereby when the wick-spindle is rotated the said counterbalanced mechanism is normally released by the same hand that operates said spindle, substantially as described.

4. The wick-tubes and the mixing-tubes, lifting-rods for the mixing-tubes fixed on the outside thereof, and guides for said rods on the outside of the wick-tubes, in combination with a counterbalanced rod engaging one of said lifting-rods, a wick raising spindle substantially parallel to said counterbalanced rod, and hand-engaging portions on said spindle and rod in such relation that when the operator rotates said spindle his hand normally releases said counterbalanced mechanism for the wick-tubes, substantially as described.

5. The wick-tubes and the spindle and handle therefor, in combination with the mixing-tubes and lifting mechanism for said tubes having a counterbalanced rod, and a head on said rod in close proximity to the handle of the wick-spindle, whereby the same hand which operates the wick-spindle normally releases the mechanism for raising the combustion-tubes, substantially as described.

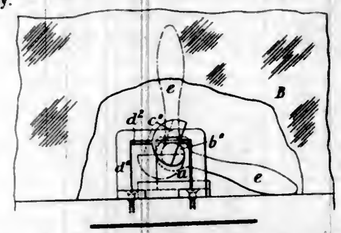
6. The wick-tubes and the mixing-tubes, the spindle and its handle to operate the wick, and a counterweighted rod to raise the mixing-tubes, a catch to engage and hold down said counterbalanced rod and a handle on the extremity of said rod in proximity to the handle on the wick-spindle whereby the same hand of the operator at the same time contacts with and operates both said handles, substantially as described.

7. The outer and the inner mixing-tubes, the said outer tubes having outwardly-extending vertical flanges and vanes fixed to said flanges and connecting said tubes, substantially as described.

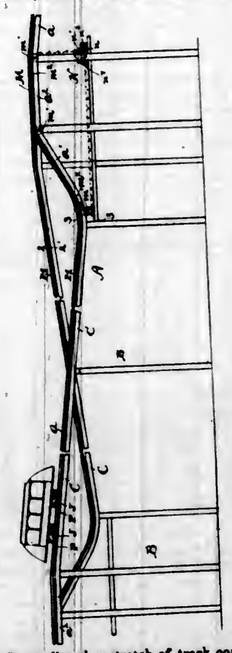
8. The two mixing-tubes and the vertical vanes projecting laterally therefrom at intervals, in combination with the drum removably supported on said vanes, substantially as described.

608,786. SASH-FASTENER. EDWIN J. MORGAN, Norwich, England. Filed Oct. 2, 1897. Serial No. 653,857. (No model.)

Claim.—In combination, the staple having an inclined edge and secured to one sash, the rock-shaft, the bearing therefor, said rock-shaft being adapted to pass through the said bearing longitudinally and independent of its rotation, the hook on the said rock-shaft adapted to pass through the staple and having an inclined end to work against the staple whereby the sashes will be drawn together vertically, the said shaft having also a cut-away or cam portion for bearing upon the under side of the staple to draw the sashes together vertically.



608,787. GRAVITY-RAILROAD. JASPER MURRAY, Cleveland, Ohio. Filed Mar. 8, 1897. Serial No. 626,373. (No model.)



Claim.—1. In a railroad, a stretch of track composed of a pair of flangeless supporting-rails, a car on said track, said car having at least four flangeless wheels resting two on one rail and two on the other, said wheels supporting the car, in combination with guide-rails longitudinally parallel with the track, said car having also guide-wheels independent of the supporting-wheels, the surfaces of said guide-rails against which said guide wheels bear being transversely inclined to the plane of the track, and thereby adapted to receive from the guide-wheels both a horizontal thrust crosswise of the track caused by a tendency of the car to move laterally, and a vertical thrust caused by a tendency of the car to leave the track, said guide-wheels not supporting the car and said supporting-wheels not guiding it, substantially as described.

2. In a railroad, in combination, a stretch of track, guide-rails longitudinally parallel with the track, a car on said track, beveled guide-wheels carried by said car on substantially vertical axes, said guide-rails being inclined to the plane of the track, their upper edges being nearer to the axes of the bevel-wheels than their lower, whereby said guide rails and wheels guide the car laterally and confine it to the track, substantially as described.

3. In a railway, a stretch of track consisting of a pair of flangeless supporting-rails and a pair of guide-rails longitudinally parallel with the track and laterally inclined thereto, in combination with a car supported on the track by flangeless wheels, and carrying guide-wheels on substantially vertical axes, said guide-wheels having their peripheral surface beveled, the incline of said guide-rails being substantially parallel with such beveled surface, and such beveled surface being adapted to engage with said guide-rails, substantially as described.

4. In a railway, a stretch of track consisting of a pair of flangeless supporting-rails and a separate pair of guide-rails supported above the plane of the track in a position longitudinally parallel with the track and laterally inclined thereto so as to resist a thrust upward, in combination with a car supported on the track by flangeless wheels and having guide-wheels depending between said guide-rails, said guide-wheels being journaled on axes at an angle to that of the supporting-wheels and having their peripheral surface beveled, the incline of the bevel being such as to be substantially parallel with the surface of the guide-rails with which they are adapted to engage, substantially as described.

5. In a railway, a stretch of track consisting of a pair of flangeless supporting-rails held in rigid position with respect to each other and a pair of guide-rails located above the plane of the track and outside of the lines of tread thereof in a position longitudinally parallel with the track and laterally inclined so that their upper edges are nearer together than their lower, in combination with a car supported on the track by flangeless wheels and having guide-wheels carried on the under side of the car between said guide-rails, said guide-wheels having their outer sides adapted to contact with said guide-rails, said guide-wheels being beveled at an incline to correspond with the guide-rails, substantially as described.

6. In a railway, a stretch of track consisting of flangeless supporting-rails and a pair of guide-rails, located outside and above the track, said guide-rails being longitudinally parallel with the track and inclined inward upwardly, in combination with a car supported on the track by flangeless wheels and having guide-wheels, the rolling surfaces of which are adapted to engage with the inner faces of said guide-rails, there being play between said guide-wheels and guide-rails, said parts cooperating to produce the following effect, namely, that said supporting rails and wheels do not prevent the car shifting laterally, and said guide rails and wheels are adapted to guide the car laterally, and also prevent it from leaving the track vertically upward, while said car is adapted under certain conditions to run with its guide-wheels out of contact with the guide-rails and thus be relieved of guiding friction, substantially as described.

7. In a railroad, a pair of parallel rails, and guide-rails longitudinally parallel therewith, in combination with a car supported on the rails by castered wheels, the pivot of which to the car is out of line with the journal of the wheel, said car having guide-wheels adapted to contact with the guide-rails, there being play between the guide wheels and rails whereby the car may, to some extent, shift laterally, which shifting owing to the pivoting of the supporting-wheels does not necessitate said wheels sliding laterally, substantially as described.

8. In a railroad, a stretch of track composed of a pair of parallel rails, a car, arms pivotally carried by said car, and wheels adapted to rest on said rails and journaled in said arms on substantially horizontal journals, the axial lines of which do not intersect with the axial lines of the pivots of the arms whereby in the movement of the car the wheels track on the rails, said car having independent guide-wheels in combination with guide-rails longitudinally parallel with the track, and with which said guide-wheels are adapted to contact, substantially as described.

9. A railway-track consisting of a pair of flangeless rails C C' held in rigid position with respect to each other, brackets G secured to the outside of said rails and projecting upward above and outside of the tread of said rails and inclined guide-rails H supported by said brackets in an inclined position with their upper edges nearer together then their lower, substantially as described.

10. The combination of a railway-car, a pair of studs p^2 carried thereby, springs p^3 on said studs, a pawl P having swiveled to it the sleeves p' which surround the studs p^2 and means for preventing said sleeves coming off said studs, substantially as described.

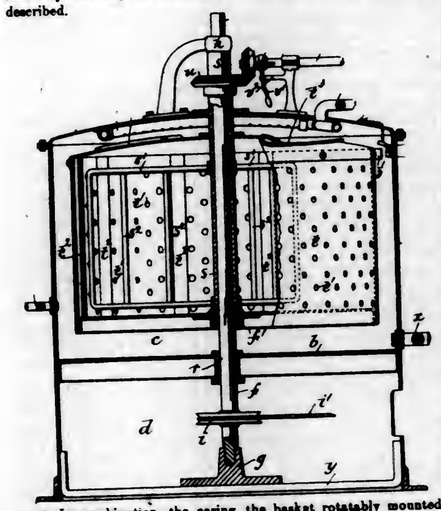
608,788. WASHING-MACHINE. JAMES MCALLISTER, Glasgow, Scotland. Filed Jan. 4, 1898. Serial No. 665,574. (No model.)

Claim.—1. A washing-machine comprising a stationary casing, a rotary basket journaled therein, means for rotating said basket, agitating-arms rotatably mounted within the basket, and means for rotating said agitating-arms independently of the basket, substantially as described.

2. In combination, the stationary casing, the basket rotatably mounted therein, means for rotating said basket, means for locking the basket against movement, agitating-arms rotatably mounted within the basket, and means for rotating said arms independently of the basket, substantially as described.

3. In combination, the stationary casing, the basket journaled therein with means for rotating it, agitating-arms journaled in said basket, means for rotating said arms independently of the basket, and means controlling said operating means for the arms for auto-

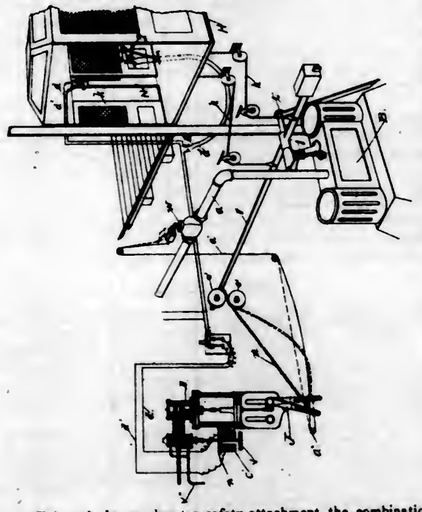
matically reversing the direction of rotation thereof, substantially as described.



4. In combination, the casing, the basket rotatably mounted therein, means for rotating the same, locking means carried by the casing adapted to engage the basket to hold it against movement when the rotating means is at rest, an agitator rotatably mounted within the basket and means for rotating the agitator when the basket is held against movement, substantially as described.

5. In combination, the stationary casing having a transverse partition forming an upper and a lower compartment, a vertical shaft extending through both compartments, a pulley carried by the shaft in the lower compartment for driving the same, a basket carried by said shaft in the upper compartment, a sleeve rotatably mounted upon the shaft in the upper compartment, agitating-arms carried by said sleeve and means for rotating said sleeve independently of the shaft, substantially as described.

608,789. ELEVATOR. CHARLES H. NEWHALL, Providence, R. I., assignor of one-half to James A. McCoart, same place. Filed Dec. 9, 1896. Serial No. 614,997. (No model.)

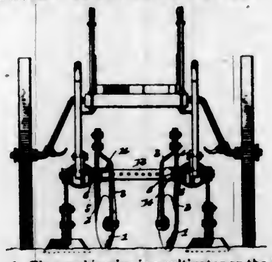


Claim.—1. In an elevator safety attachment, the combination of: a lever, as F, to operate the valve of the prime motor, an operating device on the car, a connection between said lever and said operating device, an auxiliary motor, a knee-lever as J having one leg connected with the piston of said auxiliary motor and the other leg of the lever connected with said lever F, a balanced valve to admit the water to either end of the cylinder of the auxiliary motor, an electromagnet to draw the valve in one direction and a spring to move it back, a circuit for an electric current to charge said electromagnet by closing the door of the elevator-well, substantially as described.

2. In an elevator safety attachment, the combination of: a lever, as F, to operate the valve of the prime motor, an operating device on the car, a connection between said lever and said operating device an auxiliary motor, a knee-lever as J having one leg connected with the piston of said auxiliary motor and the other leg of the lever connected with the said lever F, a balanced valve to admit the water to either end of the cylinder of the auxiliary motor, an electromagnet to draw the valve in one direction and a spring to move it back, a circuit for an electric current to charge said electromagnet by closing the door of the elevator-well, a circuit-breaker connected with said circuit and attached to the car in position to be operated by the operating device substantially as described.

3. In an elevator safety attachment, the combination of: a lever, as F, to operate the valve of the prime motor, an operating device on the car, a connection between said lever and said operating device an auxiliary motor, a knee-lever as J having one leg connected with the piston of said auxiliary motor, and the other leg of the lever connected with the lever F, a balanced valve for said auxiliary motor an electromagnet to draw the valve in one direction and a spring to move it back, a circuit for an electric current to charge said electromagnet to be operated by closing the door of the elevator-well, a cord as a' attached at one end to said knee-lever and the other end attached to the shut-off valve in the supply-pipe of the prime motor, substantially as described.

608,790. CULTIVATOR. HENRY OTTENHOUSE, McKinney, Tex. Filed Oct. 29, 1897. Serial No. 656,826. (No model.)



Claim.—1. The combination in a cultivator or the like, of frame-beams, a coupling securing said beams together, said coupling having a vertical aperture therethrough, a standard extending through said aperture and having a disk cutter journaled thereon, and means for adjustably securing the standard to the coupling; substantially as described.

2. The combination in a cultivator or the like, of frame-beams, a coupling securing said beams together, said coupling having a vertical aperture therethrough and having an end wall, a standard passing through said aperture and located on the inner side of the end wall, said standard having a vertical series of openings therein and the end wall of the coupling having an opening corresponding to the openings in the standard, and a bolt passing through the opening in the end wall and a suitable opening in the standard, whereby the standard is adjustably secured upon the coupling; substantially as described.

608,791. ARTIFICIAL LIMB. JAMES A. PACKER, Wellington, New Zealand. Filed May 14, 1897. Serial No. 636,562. (No model.)



Claim.—In combination, the upper socket *a*, the foot-section, the leg-section with means for pivotally connecting the same with both the upper socket and the foot-section, said leg-section having separable parts with the screw d^3 for holding them together and the steady-pins, said upper socket and the foot-section being pivotally connected with the leg-section, substantially as described.

608,792. APPARATUS FOR CHEMICAL CLEANING. ALFRED F. PLATT, Cleveland, Ohio. Filed Mar. 19, 1897. Serial No. 628,242. (No model.)



Claim.—1. In a chemical cleaning apparatus, the combination of a receptacle adapted to contain the cleaning liquid and provided at its bottom with a settling-basin, means adapted to render the liquid in said basin substantially independent of longitudinal and transverse currents in the upper portion of the receptacle and means located in said upper portion of the receptacle, adapted to support the object or material to be cleaned, substantially as set forth.

2. In a chemical cleaning apparatus, the combination of a receptacle adapted to contain the cleaning liquid and provided at its bottom with a settling-basin, means adapted to render the liquid in said basin substantially independent of currents in the upper portion of the receptacle, a perforated plate or sieve located in said upper portion, and means located in said upper portion and above said plate or sieve, adapted to support the object or material to be cleaned, substantially as set forth.

3. In a chemical cleaning apparatus, the combination of a receptacle adapted to contain the cleaning liquid, and formed at its bottom with a settling-basin, means adapted to render the liquid in said basin substantially independent of currents in the liquid in the upper portion of the receptacle, and a roller journaled in said upper portion and adapted to support the object or material to be cleaned, substantially as set forth.

4. In a chemical cleaning apparatus, the combination of a receptacle adapted to contain the cleaning liquid and formed at its bottom with a settling-basin, deflection-plates interposed between said basin and the upper portion of said receptacle adapted to prevent currents in the liquid in the said upper portion from communicating with the liquid in said basin, and a roller journaled in said upper portion and adapted to support the object or material to be cleaned, substantially as set forth.

608,798. AUTOMATIC SEED-PLANTER. GUSTAF VON POST, Sadjestrom, Sweden. Filed May 2, 1896. Serial No. 679,452. (No model.)



Claim.—1. An improved automatic seed-planter consisting of a ring or guiding-cylinder *g*, adapted to be attached under the foot, and a cylinder *f* movable in the former and depressed by a spring, said cylinder containing a chamber *l* which is in communication with a seed-magazine and embraces a stud *m* projecting through its bottom and provided with a vertical slit in which are located one or more arms *n* fulcrumed at their upper ends and acting to discharge the seed from in front of them when the movable cylinder *f* rises through contact with the ground.

2. A seed-planter comprising a guiding-cylinder *g*, a movable cylinder *f* having a chamber *l* with a lid *k* having an aperture therein, a cover for said aperture having an opening opposite a seed-inlet opening in the wall of the guiding-cylinder and a supply-pipe leading to the inlet-opening in the guiding-cylinder, the movement of the cylinder *f* serving to open and close communication between the supply-pipe and the chamber *f*, substantially as described.

3. A seed-planter comprising an outer cylinder with a supply-pipe leading thereto from an opening in the wall thereof and an inner cylinder having a chamber with a discharge-opening leading therefrom, the said inner cylinder being movably supported in relation to the outer cylinder and being adapted by its vertical movement to control the seed-supply, substantially as described.

608,794. MECHANICAL TOY. JEREMIAH F. OSBUN, Grand Rapids, Mich. Filed July 19, 1897. Serial No. 645,154. (No model.)

Claim.—1. In a mechanical toy, an artificial shell divided to open for the egress of an artificial head, the parts secured together by an easily-melted cement, an artificial chicken's head within the shell, a spring for actuating said head to force it out of the shell, shields for regulating the action of the spring and head, substantially as and for the purpose set forth.



2. In a mechanical toy, an artificial shell broken apart to allow of the protrusion of an image, the broken portions of the shell secured together by an easily-melted cement, an image within the shell, a spring for actuating the image to force it against and out of the broken portion of the shell, a shield around said spring, a second shield secured at one end to the image and at the other end to the shell, substantially as and for the purpose set forth.

608,795. THREAD-CONTROLLING MEANS FOR SEWING-MACHINES. HUBERT P. RICHARDS, New Britain, Conn. Filed Aug. 15, 1896. Renewed Jan. 12, 1898. Serial No. 666,478. (No model.)



Claim.—1. A thread-controller for a sewing-machine, consisting of a bracket formed of an integral plate and provided with a thread-guide at each end thereof, said bracket being shaped at its forward end to fit the contour of a needle-bar and being perforated to receive an attaching-screw; an inclined cut-away flange constituting a part of the bracket and serving as a seat for the thread; and a swinging spring-actuated thread-controller provided with a rounded end which bears upon the thread between the thread-guides and serves to prevent retractive movement of the same.

2. Thread-controlling means consisting of a bracket having an inclined face or bed, said bed being provided with a thread-guide adjacent to each end thereof, the lower thread-guide embodying a projecting flange having its lower end terminating adjacent to the lower end of the needle-bar, and said guide having inclined walls so that the distance between said walls is less at its upper portion than at the bottom of the guide.

3. Thread-controlling means comprising a bracket secured to the needle-bar and provided with an upright wall and with an inclined thread-guide disposed at an angle thereto; a queri with a rounded inner surface at the upper end of said thread-guide; and an inclined flange or projection at the lower end of said bracket, said flange or projection being located at a point adjacent to the needle so that the thread is guided in a line substantially parallel thereto.

4. The combination, with a needle-bar, of a thread-guide secured to the lower end thereof and embodying a right-angular plate provided with a queri at its upper end and with an inclined thread-guide at its lower end, located adjacent to the needle and below the surface of the needle-bar; and a pivoted spring-controlled thread-controller having a rounded bearing-surface disposed on the thread-guide, for the purpose specified.

5. The combination with a sewing-machine needle-bar carrying a needle, of thread-controlling means comprising a bracket secured to the lower end of said needle-bar and having an inclined face or bed for the thread and provided at each end thereof with a thread-guide, the lower thread-guide being bent inwardly beneath the lower end of the needle-bar, whereby its lower end will be adjacent to the needle; and a thread-controller intermediate said thread-guides and adapted to engage the thread on its passage over said face or bed to prevent the premature retraction thereof.

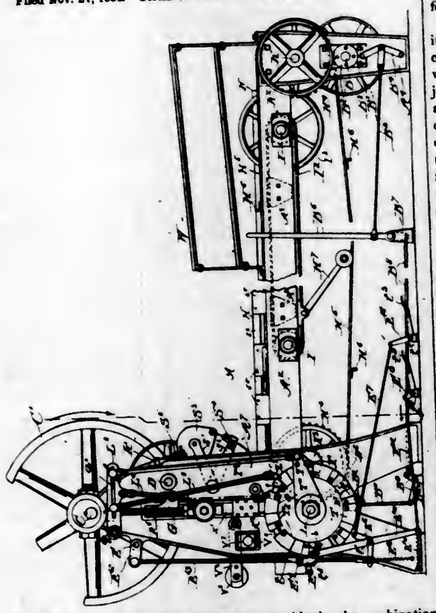
6. The combination with a sewing-machine needle-bar carrying a needle, of thread-controlling means comprising a bracket having a side wall having one end curved to fit the lower end of said needle-bar and having an inclined face or bed for the thread and provided with a thread-guide at its upper end and with an inwardly-bent thread-guide at its lower end and embodying an upwardly-bent flange or projection, the free end of said lower thread-guide terminating adjacent to the under side of the needle-bar and in close proximity to the needle; and a thread-controller secured in position interme-

diate said thread-guides and adapted to prevent the premature retraction of the thread, and spring-actuated in one direction.

7. The combination with a sewing-machine needle-bar carrying a needle, of thread-controlling means secured to the lower end of said needle-bar and comprising a bracket having a side wall and an inclined face or bed for the thread and provided with a spiral thread-guide at its upper end, and with an inwardly-bent thread-guide at its lower end, the side walls of which guides are contracted above the normal path of the thread to form inclined faces to thereby prevent the displacement of said thread, and said lower thread-guide being bent inwardly whereby its lower end terminates adjacent to the under side of the needle-bar and in close proximity to the needle; a thread-controller comprising a swinging clamp-plate adapted to engage the thread to prevent the premature retraction thereof; and a spring for actuating said controller in one direction.

8. The combination with a sewing-machine needle-bar carrying a needle, of thread-controlling means secured to the lower end of said needle-bar and comprising a bracket having a side wall and an inclined face or bed for the thread and provided with a spiral thread-guide at its upper end and with an inwardly-bent thread-guide at its lower end embodying an upwardly-bent flange or projection, and the side walls of which guide are contracted above the normal path of the thread to form inclined faces whereby the displacement of said thread is prevented and said lower thread-guide is bent inwardly whereby its lower end terminates adjacent to the under side of the needle-bar and in close proximity to the needle; a headed stud carried by the side wall of the bracket; a clamp-plate journaled thereon and adapted to engage the thread to prevent the premature retraction thereof; and a spiral spring carried by said stud and having one end fixedly secured to the bracket and its other end engaging said clamp-plate.

608,796. MACHINE FOR MAKING BOX-BLANKS. FREDERICK P. ROSBACK, Chicago, Ill., assignor to William P. Healy, same place. Filed Nov. 27, 1896. Serial No. 613,574. (No model.)



Claim.—1. In a machine for forming box-blanks, the combination with sheet and cleat guides and tacking devices, of intermittent feed mechanism for the sheets and cleats geared with relation to the tacking devices to advance the sheet and cleats intermittingly while the tacking devices are in operation, preliminary-feed-operating mechanism comprising gear mechanism which may be thrown at will into operative engagement with the said intermittent feed mechanism to advance the sheet and cleats in their guides to the tacking devices, and preliminary-feed-disengaging mechanism actuated by the advance of the blank material to the tacking devices to stop the preliminary feed, substantially as and for the purpose set forth.

2. In a machine for forming box-blanks, the combination with sheet and cleat guides and tacking devices, of feed-belts at the guides for the sheet and cleats, geared with relation to the tacking devices to advance the sheet and cleats intermittingly while the tacking devices are in operation, preliminary-feed-operating mechanism comprising gear mechanism which may be thrown at will into operative engagement with the feed-belts to advance the sheet and cleats in their guides to the tacking devices, and preliminary-feed-disengaging mechanism actuated by the advance of the blank material to the tacking devices to stop the preliminary feed, substantially as and for the purpose set forth.

3. In a machine for forming box-blanks, the combination with feed and cleat guides and tacking devices, of feed-wheels toward opposite ends of said guides, endless belts on said wheels provided with sheet and cleat engaging projections, a gearing between said wheels and the tacking devices operating when the tacking devices are actuated to advance the belts with the sheet and cleats intermittingly, preliminary-feed-operating mechanism comprising gear mechanism which may be thrown at will into operative engagement with the wheels to move the feed-belts and advance the sheet and cleats in their guides to the tacking devices, and preliminary-feed-disengaging mechanism extending into the path of the blank material at the tacking devices, substantially as and for the purpose set forth.

4. In a machine for forming box-blanks, the combination with sheet and cleat guides and tacking devices, of shafts toward opposite ends of said guides, carrying belt-wheels, endless belts extending around said wheels, along the guides and carrying sheet and cleat engaging projections, a gearing between the tacking devices and belt-wheel shafts operating when the tacking devices are actuated to turn said shafts intermittingly, an independent drive-shaft, lever mechanism movable at will to throw said drive-shaft into operative engagement with the belt-wheel shafts to advance the sheet and cleats in their guides to the tacking devices, and a said lever-mechanism-releasing stop in the path of the blank material to be engaged thereby and actuated to cause said lever mechanism to release engagement between the drive-shaft and belt-wheel shafts when the material reaches the tacking devices, substantially as and for the purpose set forth.

5. In a machine for forming box-blanks, the combination with intermittent feed mechanism for the blank material, of a drive-shaft, cross-heads operatively geared to the drive shaft at different angles with relation to said shaft, a staple forming and driving device, adjacent to the path of the blank material having a staple-forming bar and a staple-driver cooperating with the forming-bar and geared to one said cross-head, the staple-forming bar being actuated from the other said cross-head to be moved thereby during a part only of the movement of the cross-head, whereby when the staple is formed the forming-bar will remain in one position while the staple-driver is moved to discharge the staple therefrom, a staple-wire feeder adjacent to the forming-bar, and means for guiding a strengthening-wire, substantially as and for the purpose set forth.

6. In a machine for forming box-blanks, the combination of a drive-shaft, cross-heads operatively geared to the drive-shaft, a staple forming and driving device, adjacent to the path of the blank material having a staple-forming bar operatively geared to one said cross head, and a staple-driver cooperating with the forming-bar and geared to the other said cross-head, a staple-wire feeder adjacent to the forming-bar, a staple-wire cutter actuated in the rise of the forming-bar, a movable mandrel across which staple-wire is fed and over which the forming-bar descends to form the staples, the said mandrel being normally in the path of the staple-driver, means for moving the mandrel out of the path of a staple-driver in the descent thereof, means for guiding a strengthening-wire adjacent to the staple forming and driving device, and intermittent feed mechanism for the blank material operatively geared to the said drive-shaft, substantially as and for the purpose set forth.

7. In a machine for forming box-blanks, the combination with feed mechanism for the blank material, of a drive-shaft, cross-heads operatively geared to the drive-shaft, a staple forming and driving device adjacent to the path of the blank material, having a staple-forming bar operatively geared to one of said cross-heads, and a staple-driving device cooperating with the forming-bar and geared to the other said cross-head, a staple-wire feeder adjacent to the forming-bar, a guide for a strengthening-wire, adjacent to the staple forming and driving device through which the strengthening-wire is drawn by movement of the blank when fastened to the blank, strengthening-wire feeding and severing mechanisms, and means for operating the same only when the end of the blank passes from beneath the staple forming and driving device, substantially as and for the purpose set forth.

8. In a machine for forming box-blanks, the combination of a drive-shaft, a staple forming and driving device adjacent to the path of the blank material operatively geared to the drive-shaft, intermittent feed mechanism for the blank material having a ratchet-wheel and a reciprocating pawl actuated from the drive-shaft to turn the ratchet-wheel once with each reciprocation, and skipper mechanism comprising segmental plates upon the ratchet-wheel projecting beyond the ratchet-teeth, a reciprocating pawl actuated from the drive-shaft and riding normally upon said plates and engaging the ratchet-wheel between the ends of said plates only, all constructed to operate substantially as and for the purpose set forth.

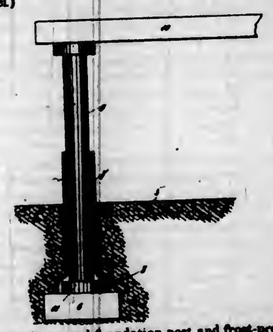
9. In a machine for forming box-blanks, the combination of the main drive-shaft, a constantly-rotating pulley upon said shaft, clutch mechanism between the shaft and pulley, clutch-operating mechanism, an operating-lever for said clutch-operating mechanism movable to produce engagement between the clutch members to cause the shaft to be rotated by the pulley, tacking devices geared to said main shaft, a second drive-shaft, feed mechanism for the blank material, an operating-lever movable to throw the feed mechanism into engagement with said second drive-shaft to move the blank material to the tacking devices, means for disengaging the feed mechanism from the said second drive-shaft in the path of the blank material and operating to produce such disengagement when the material arrives at the tacking devices, intermittent feed mechanism for the blank material having a ratchet-wheel and a driving-pawl for said ratchet-wheel reciprocated from the main drive-shaft, and a stop movable with the ratchet-wheel to engage the said clutch-operating mechanism and release the clutch members at the main drive-shaft, substantially as and for the purpose set forth.

10. In a machine for forming box-blanks, the combination with the main drive-shaft C, a tacking device and pawl and ratchet-wheel intermittent feed mechanism for the blank material actuated from the drive-shaft, of a shaft D, rotating means for said shaft normally out of engagement therewith, a guide for a strengthening-wire at said tacking device, strengthening-wire feed and severing mechanisms adjacent to said guide and operatively geared to the shaft D, a stop movable with the ratchet-wheel, and clutch mechanism between the shaft D and its rotating means, projecting into the path of said stop, whereby in each rotation of the ratchet-wheel the shaft D is actuated to actuate the strengthening-wire feed and severing mechanisms, substantially as and for the purpose set forth.

11. In a machine for forming box-blanks, the combination with intermittent feed mechanism for the sheet and cleats and the staple forming and driving devices, of an anvil beneath each said device to take the impact against a cleat, and a removable staple-clencher with means for securing it to one of said anvils, substantially as and for the purpose set forth.

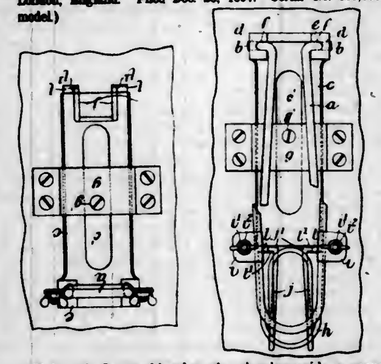
12. In a machine for forming box-blanks, the combination with intermittent feed mechanism for the blank material, of a drive-shaft, a staple forming and driving device geared to said drive-shaft, comprising a staple-forming bar, a staple-driving bar and means for feeding the staple-wire, of a cutter-block adjacent to the path of the forming-bar, a guide-opening through said cutter-block at an angle to the face of said block, a cutter-knife working across said face, a movable mandrel in the path of the driving-bar, and means for guiding the wire from the cutter-block across the mandrel and beneath the forming-bar comprising a yielding block *i*, provided with a guide-opening i^4, movable with the cutter-knife, substantially as and for the purpose set forth.

608,797. SUPPORT FOR VERANDAS, PORCHES, &c. WALTER G. RUNYON, Elizabeth, N. J. Filed Mar. 16, 1897. Serial No. 627,235. (No model.)



Claim.—An improved foundation-post and frost-protector therefor, comprising the foundation block or base set within the ground below the frost or freezing line a supporting post or column mounted on said foundation block or base and extending upwardly above the ground-surface, and the tubular casing set upon the foundation block or base and extending upwardly therefrom through the ground to a point above the ground-surface and inclosing or surrounding the lower portion of the supporting-post, said tubular casing being of greater diameter than the inclosed portion of the post so that a free open space is provided between the post and casing, and the latter can contract and expand in an independent movement without affecting the normal position of the post, and the casing being provided with an enlarged portion extending laterally with respect to the exterior or circumference and forming an exterior ridge or shoulder above and against which the packed ground or earth is seated, whereby the casing is locked against an upward sliding movement from the foundation or base during the "heaving" movement of the surrounding earth, substantially as and for the purpose set forth.

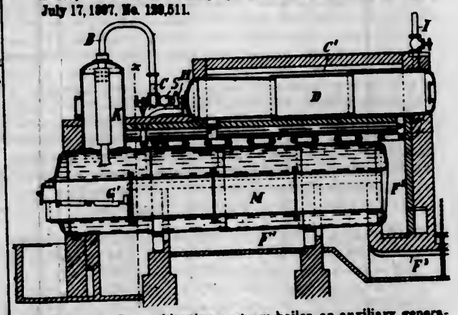
608,798. DEVICE FOR SUPPORTING BICYCLES. EDWIN ROSS, London, England. Filed Dec. 28, 1897. Serial No. 663,888. (No model.)



Claim.—1. In combination, the clasping-guide *g*, secured to a wall, a vertically-slotted bracket *c*, embraced by such guide and adjustable up or down within it and held to its adjusted position by a screw passed through the guide and slot, the bracket having a projecting head *e*, as shown, with holes therein, and with recesses *f*, made therein as described for holding the loop-clip *a* in its horizontal position.

2. In combination with the described fixed guide *g*, and the vertically-adjustable bracket *c*, held therein and thereby as set forth, and with the loop-clip *a*, applied to the projecting head *e*, of the bracket as shown and described, the spring-clip *j*, hinged to the bottom of the bracket, all as and for the purposes set forth.

608,799. STEAM-GENERATOR. HERMANN SKIFFERT, Halle-on-the Saale, Germany. Filed Dec. 16, 1897. Serial No. 662,468. (No model.) Patented in Germany Apr. 23, 1896, No. 85,208, and in Belgium July 17, 1897, No. 130,511.



Claim.—1. In combination, a steam-boiler, an auxiliary generator, forcing appliances connected with the steam and water spaces of said boiler and with the auxiliary generator, which is otherwise disconnected from the boiler, said forcing devices organized to force water from the boiler and spray it into the auxiliary generator under the pressure of the steam in said boiler, and means for maintaining the pressure in the auxiliary generator below the boiler-pressure, for the purpose set forth.

2. In combination, a steam-boiler, an auxiliary generator, forcing appliances connected with the steam and water spaces of said boiler and with said auxiliary generator which is otherwise disconnected from the boiler, said forcing devices organized to force water from the boiler and spray it into the auxiliary generator by the pressure of the steam in said boiler, a steam-collector connected with the

auxiliary generator, and means for heating said auxiliary generator and steam-collector, for the purpose set forth.

3. In combination, a steam-boiler, an auxiliary generator, forcing appliances connected with the steam and water spaces of said boiler and with said auxiliary generator, which is otherwise disconnected from the boiler, said forcing devices organized to force water from the boiler and spray it into the auxiliary generator by the pressure of the steam in said boiler, a steam-collector, a superheater connecting the auxiliary generator with said collector, and means for heating the said auxiliary generator, superheater, and steam-collector, for the purpose set forth.

4. The combination with a horizontal steam-boiler, its housing or setting provided with a heating-chamber above its roof or crown, means for causing the furnace-gases to flow through said chamber, and an auxiliary generator and a steam-collector connected therewith, located in said chamber, of forcing appliances connected with the steam and water spaces of the boiler, and with said auxiliary generator, said appliances organized to force water from the boiler and spray it into the generator under pressure of the steam in said boiler, for the purpose set forth.

5. The combination with a horizontal steam-boiler, its housing or setting provided with a heating-chamber above its roof or crown, means for causing the furnace-gases to flow through said chamber, and an auxiliary generator and a steam-collector connected therewith located in said chamber; of forcing appliances connected with the steam and water spaces of the boiler and with said auxiliary generator, said appliances organized to force water from the boiler and spray it into the generator under pressure of the steam in said boiler, and a superheater within the boiler-setting connected with the auxiliary generator and collector, for the purpose set forth.

6. A horizontal flue-boiler, a chamber in which said boiler is set to form a rear vertical flue, an upper return and a lower escape flue the said return and escape flues parallel with the longitudinal axis of such boiler, a chamber above said return-flue, a generator and a steam-collector arranged in the last-named chamber, flues leading therefrom into the return-flue, and a superheating-coil in said return-flue having its terminals respectively connected with the rear and forward ends of said generator and collector; in combination with appliances operated by the pressure of steam generated in the boiler to force such steam together with the boiler-water into the aforesaid generator, substantially as and for the purpose set forth.

7. The combination with the boiler and its steam-dome, and an auxiliary generator, of a feed-pipe extending from a point within the steam-dome to said generator, a spraying device interposed in said pipe near its outlet into the generator, a suction-pipe connected with said feed-pipe and extending into the boiler, an injector-nozzle at the point of junction of said pipes, said nozzle projecting into the feed pipe and having inlet-ports *c*, and the concentric pipe *a* extending from the inlet-ports of the injector near to the head of the steam-dome, said pipe closed at both ends and provided at its upper end with peripheral steam-inlet ports *l*, substantially as and for the purpose set forth.

8. The combination with a steam-boiler and an auxiliary generator, of forcing appliances comprising a force-pipe connected with said auxiliary generator and extending through the steam-dome into the water-space of the boiler, and an injector located within said pipe and in communication with said steam-dome, for the purpose set forth.

9. The combination with a steam-boiler, an auxiliary generator and steam-collector; of forcing appliances comprising a force-pipe connected with the auxiliary generator and extending through the steam-dome into the water-space of the boiler, and an injector located in said pipe and in communication with said steam-dome, and a superheating-coil connecting the auxiliary generator with the steam-collector, for the purpose set forth.

608,800. EMPLOYEE'S TIME-RECORDER. FRANK H. SELLS, Columbus, Ohio, assignor of one-half to R. J. Swerer, same place. Filed Jan. 6, 1896. Serial No. 665,332. (No model.)

Claim.—1. A time-recorder having a removable recording medium superficially divided to form spaces designated by characters representing divisions of time, an inscribing medium having impression-producing characters representing divisions of time of a different denomination, chronometer-controlled means for operating said inscribing and recording mediums, and actuating devices whereby the recording and inscribing mediums may be brought into operative relation to produce an impression upon the former, substantially as specified.

2. A time-recorder having a recording medium superficially divided to form spaces designated by characters representing divisions of time, chronometer-controlled means for imparting a step-by-step advance movement to the recording medium, an inscribing medium provided with impression-producing characters representing divisions of time of a different denomination, chronometer-controlled means for imparting advance movement to the inscribing medium, and actuating devices whereby the recording and inscribing mediums may be brought into operative relation, substantially as specified.



3. A time-recorder having a recording medium provided with an impression-receiving surface divided into spaces arranged in hour-columns, and provided with employee-designating characters, chronometer-controlled means for imparting a step-by-step advance movement to the recording medium, an inscribing medium provided with printing characters representing fractional divisions of time, chronometer-controlled means for imparting advance movement to the inscribing medium to bring its characters successively to the printing-point, and actuating devices for bringing the inscribing and recording mediums into operative relation, with the inscribing medium in the plane of the selected employee-designating character, substantially as specified.

4. A time-recorder having a recording medium provided on its impression-receiving surface with longitudinal hour-columns divided to form employee-designating spaces, chronometer-controlled means for imparting step-by-step movement to the recording medium in a direction transverse to the hour-columns, an inscribing medium having printing characters representing minor divisions of time, chronometer-controlled means for bringing the different printing characters of the inscribing medium successively to the printing-point, employee-designating means for adjusting the inscribing medium parallel with the hour-columns of the recording medium, and actuating devices for bringing the recording and inscribing mediums into operative relation, substantially as specified.

5. A time-recorder having a recording medium provided on its impression-receiving surface with longitudinal hour-columns divided to form employee-designating spaces, chronometer-controlled means for imparting step-by-step movement to the recording medium in a direction transverse to the hour-columns, an inscribing medium having printing characters representing minor divisions of time, chronometer-controlled means for bringing the different printing characters of the inscribing medium successively to the printing-point, employee-designating means for adjusting the inscribing medium parallel with the hour-columns of the recording medium, adjusting devices for moving the recording medium in a direction parallel with its hour columns, and actuating devices for bringing the recording and inscribing mediums into operative relation, substantially as specified.

6. A time-recorder having an inscribing medium provided with impression-producing characters representing minor divisions of time, chronometer-controlled means for actuating the inscribing medium, a record-cylinder having superficial spaces representing major divisions of time and mounted for movement toward and from the inscribing medium, actuating devices for moving the record-cylinder into operative relation with the inscribing medium, chronometer-controlled means for imparting advance movement to the record-cylinder to bring different portions of its surface successively into the printing-plane, and flexible connections between said chronometer-controlled means and the record-cylinder, substantially as specified.

7. A time-recorder having an inscribing medium provided with impression-producing characters representing minor divisions of time, chronometer-controlled means for actuating the inscribing medium, a record-cylinder having superficial spaces representing major divisions of time and mounted for movement toward and from the inscribing medium, actuating devices for moving the record-cylinder into operative relation with the inscribing medium, chronometer-controlled means for imparting advance movement to the record-cylinder to bring different portions of its surface successively into the printing-plane, and flexible connections between said chronometer-controlled means and the record-cylinder, said connections consisting of a coiled spring, substantially as specified.

8. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder adapted for movement toward and from the inscribing medium, a carrier upon which the record-cylinder is mounted, actuating devices for moving the carrier, and chronometer-controlled means for advancing the record-cylinder to bring different portions of its surface into the printing-plane, substantially as specified.

9. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder adapted for movement toward and from the inscribing medium, a swinging carrier upon which the record-cylinder is mounted, actuating devices connected with the carrier for moving the record-cylinder into operative relation with the inscribing medium, and chronometer-controlled means for advancing the record-cylinder to bring different portions of its surface into the printing-plane, substantially as specified.

10. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder adapted for movement toward and from the inscribing medium, resilient cushioning devices for normally maintaining the surface of the record-cylinder at an interval from the inscribing medium, actuating devices for bringing the record-cylinder into operative relation with the inscribing medium in opposition to said cushioning devices, and chronometer-controlled means for advancing the record-cylinder to bring different portions of its surface into the printing-plane, substantially as specified.

11. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder mounted for movement toward and from the inscribing medium, yielding means for normally maintaining the record-cylinder contiguous to its impression-receiving position and yieldingly resisting movement from said position, actuating devices for withdrawing the record-cylinder from its normal position in opposition to said yielding means, and chronometer-controlled means for advancing the record-cylinder to bring different portions of its surface into the printing-plane, substantially as specified.

12. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder mounted for movement toward and from the inscribing medium, yielding means for normally maintaining the record-cylinder contiguous to its impression-receiving position and yieldingly resisting movement from said position, actuating devices for withdrawing the record-cylinder from its normal position in opposition to said yielding means, cushioning devices for yieldingly resisting the movement of the record-cylinder toward the inscribing medium, and for normally holding the same out of its printing position, and chronometer-controlled means for advancing the record-cylinder to bring different portions of its surface into the printing-plane, substantially as specified.

13. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder adapted for movement toward and from the inscribing medium, a spring-actuated carrier-frame for the record-cylinder, means for swinging the frame in opposition to its actuating-spring to withdraw the record-cylinder from the inscribing medium, and chronometer-controlled means for advancing the record-cylinder to bring different portions of its surface into the printing-plane, substantially as specified.

14. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder adapted for movement toward and from the inscribing medium, a spring-actuated carrier-frame for the record-cylinder, a releasing-clutch for swinging the carrier-frame in opposition to its actuating-spring to move the record-cylinder from the inscribing medium, operating means for actuating said clutch, and chronometer-controlled means for advancing the record-cylinder to bring different portions of its surface into the printing-plane, substantially as specified.

15. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder adapted for movement toward and from the inscribing medium, a spring-actuated carrier-frame for the record-cylinder, a releasing-clutch having a swinging arm and a clutch-pawl for engaging a clutch-arm on the carrier-frame, to swing the latter in opposition to its actuating-spring and move the record-cylinder from the inscribing medium, an operating-lever for actuating said clutch, and chronometer-controlled means for advancing the record-cylinder to bring different portions of its surface into the printing-plane, substantially as specified.

16. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder mounted for movement toward and from the inscribing medium, manually-operated means for causing the movement of the record-cylinder to its printing position, a spindle operatively connected with the record-cylinder for imparting rotary motion thereto, operating devices at a constant tension for imparting rotary motion to said spindle, and chronometer-controlled trip mechanism for releasing the spindle at intervals, substantially as specified.

17. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder mounted for movement toward and from the inscribing medium, manually-operated means for causing the movement of the record-cylinder to its printing position, a spindle operatively connected with the record-cylinder for imparting rotary motion thereto, operating devices at a constant tension for imparting rotary motion to said spindle, and chronometer-controlled trip mechanism for releasing the spindle at intervals, the same including an escapement wheel and lever, and a trip-wheel arranged in operative relation with the escapement-lever, substantially as specified.

18. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder mounted for movement toward and from the inscribing medium, manually-operated means for causing the movement of the record-cylinder to its printing position, a spindle operatively connected with the record-cylinder for imparting rotary motion thereto, operating devices at a constant tension for imparting rotary motion to said spindle, an escapement device including an escapement wheel and lever, the lever being provided with a trip-arm, and a continuously-operated chronometer-controlled trip-wheel having a finger adapted for periodical engagement with said trip-arm, substantially as specified.

19. A time-recorder having an inscribing medium, provided with printing characters representing minor divisions of time, chronometer-controlled actuating devices for bringing different printing characters of the inscribing medium to the printing-point, a record-cylinder mounted for movement toward and from the inscribing medium, manually-operated means for causing the movement of the record-cylinder to its printing position, a spindle operatively connected with the record-cylinder for imparting rotary motion thereto, a weight-cord under a constant tension connected with a spool on said spindle for imparting rotary motion thereto, and chronometer-controlled trip mechanism for releasing the spindle at intervals, substantially as specified.

20. A time-recorder having a record-cylinder mounted for axial and rotary movement, chronometer-controlled means for imparting rotary motion to the cylinder, cylinder-supporting devices mounted for movement parallel with the axis of the cylinder, an exposed index mounted for movement to occupy either of a plurality of stations, operating connections between said index and the cylinder-supporting devices for varying the axial position of the cylinder, an inscribing medium provided with printing characters, chronometer-controlled means for actuating the inscribing medium, and manually-controlled means for bringing the inscribing and recording mediums into operative relation, substantially as specified.

21. A time-recorder having a record-cylinder mounted for axial and rotary movement, chronometer-controlled means for imparting rotary motion to the cylinder, cylinder-supporting devices mounted for movement parallel with the axis of the cylinder, a cam arranged in operative relation with said cylinder-supporting devices, an exposed index mounted for movement to occupy either of a plurality of stations, operating connections between said index and the cam

for varying the axial position of the cylinder, an inscribing medium provided with printing characters, chronometer-controlled means for actuating the inscribing medium, and manually-controlled means for bringing the inscribing and recording mediums into operative relation, substantially as specified.

22. A time-recorder having recording and inscribing mediums provided respectively with an impression-receiving surface and impression-producing type-faces, the former being designated by, and the latter forming, characters respectively representing divisions of time of different denominations, chronometer-controlled means for advancing the recording and inscribing mediums, an inking-ribbon interposed between the inscribing and recording mediums, and manually-controlled operating devices for moving said mediums into contact with the opposite surfaces of the inking-ribbon, substantially as specified.

23. A time-recorder having recording and inscribing mediums, provided respectively with an impression-receiving surface and impression-producing type-faces, the former being designated by, and the latter forming, characters respectively representing divisions of time of different denominations, chronometer-controlled means for advancing the recording and inscribing mediums, an inking-ribbon interposed between the inscribing and recording mediums, movable supporting devices for the inking-ribbon, manually-controlled operating devices for bringing said mediums into contact with the opposite surfaces of the inking-ribbon, and operating connections between the ribbon supporting devices and said actuating devices for the inscribing and recording mediums, substantially as specified.

24. A time-recorder having recording and inscribing mediums provided respectively with an impression-receiving surface having characters representing divisions of time, and impression-producing characters representing divisions of time of a different denomination, chronometer-controlled means for advancing the recording and inscribing mediums, an inking-ribbon interposed between the inscribing and recording mediums, manually-controlled operating devices for bringing said mediums into contact with the opposite surfaces of the inking-ribbon, and including a reciprocable rod, adjustable carriers for the inking-ribbon, and ratchet mechanism for advancing the ribbon-carrying devices and including a feeding-lever operatively connected with said reciprocable rod, substantially as specified.

25. A time-recorder having a rotary record-cylinder having characters representing divisions of time, chronometer-controlled means for rotating said cylinder, a rotary inscribing medium having peripheral printing characters representing divisions of time of a different denomination, and mounted for axial movement parallel with the surface of the record-cylinder, employee-designating devices operatively connected with the inscribing medium to impart axial movement thereto, chronometer-controlled means for imparting rotary motion to the inscribing medium, and actuating devices for bringing the record-cylinder into printing relation with the inscribing medium, substantially as specified.

26. A time-recorder having a rotary record-cylinder having characters representing divisions of time, chronometer-controlled means for imparting rotary motion to the record-cylinder, an inscribing medium peripherally provided with printing characters representing divisions of time of a different denomination, for impressing the surface of the record-cylinder, and having a spindle upon which it is mounted for axial movement parallel with the surface of the record-cylinder, chronometer-controlled means for imparting rotary motion to the spindle of the inscribing medium, a designating device having a movable member operatively connected with the inscribing medium for imparting axial movement thereto, and actuating devices for bringing the record-cylinder into operative relation with the inscribing medium, substantially as specified.

27. A time-recorder having a rotary record-cylinder having characters representing divisions of time, chronometer-controlled means for imparting rotary motion to the record cylinder, an inscribing medium peripherally provided with printing characters representing divisions of time of a different denomination, for impressing the surface of the record cylinder, and having a spindle upon which it is mounted for axial movement parallel with the surface of the record-cylinder, chronometer-controlled means for imparting rotary motion to the spindle of the inscribing medium, a supporting-arm for the inscribing medium mounted for linear movement parallel with the spindle of said inscribing medium, a designating device having a member operatively connected with said supporting-arm, and actuating devices for moving the record-cylinder into operative relation with the inscribing medium, substantially as specified.

28. A time-recorder having a rotary record-cylioder having characters representing divisions of time, chronometer controlled means for imparting rotary motion to the record-cylinder, an inscribing medium peripherally provided with printing characters representing divisions of time of a different denomination, for impressing the surface of the record-cylinder, and having a spindle upon which it is mounted for axial movement parallel with the surface of the record-cylinder, chronometer-controlled means for imparting rotary motion to the spindle of the inscribing medium, chronometer-controlled actuating devices yieldingly connected with the spindle of the inscribing medium, actuating devices for bringing the record-cylinder into operative relation with the inscribing medium, and holding devices for locking the spindle of the inscribing medium in a fixed position during the printing operation substantially as specified.

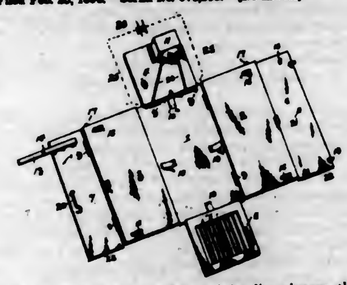
29. A time-recorder having a rotary record-cylinder having characters representing divisions of time, chronometer-controlled means for imparting rotary motion to the record-cylinder, an inscribing medium peripherally provided with printing characters representing divisions of time of a different denomination, for impressing the surface of the record-cylinder, and having a spindle upon which it is mounted for axial movement parallel with the surface of the record-cylinder, chronometer-controlled means for imparting rotary motion to the spindle of the inscribing medium, chronometer-controlled actuating devices yieldingly connected with the spindle of the inscribing medium, actuating devices for bringing the record-cylinder into operative relation with the inscribing medium, and holding devices operatively connected with said record-cylinder-actuating devices, for locking the spindle of the inscribing medium in a fixed position during the printing operation, substantially as specified.

30. A time-recorder having a rotary record-cylinder having characters representing divisions of time, chronometer-controlled means for imparting rotary motion to the record-cylinder, an inscribing medium peripherally provided with printing characters representing divisions of time of a different denomination, for impressing the surface of the record-cylinder, and having a spindle upon which it is mounted for axial movement parallel with the surface of the record-cylinder, chronometer-controlled means for imparting rotary motion to the spindle of the inscribing medium, said chronometer-controlled means being flexibly connected with the spindle, a toothed holding-wheel carried by the spindle, a holding pawl for engaging the teeth of said holding-wheel, and actuating devices operatively connected with the holding-pawl for bringing the record-cylinder into operative relation with the inscribing medium, substantially as specified.

31. A time-recorder having a rotary record-cylinder having characters representing divisions of time, chronometer-controlled means for imparting rotary motion to the record-cylinder, an inscribing medium peripherally provided with printing characters representing divisions of time of a different denomination, for impressing the surface of the record-cylinder, and having a spindle upon which it is mounted for axial movement parallel with the surface of the record-cylinder, chronometer-controlled means for imparting rotary motion to the spindle of the inscribing medium, said chronometer-controlled means being flexibly connected with the spindle by means of a torsionally-yielding spring, a toothed holding-wheel carried by the spindle, a holding-pawl for engaging the teeth of said holding-wheel, and actuating devices operatively connected with the holding-pawl for bringing the record-cylinder into operative relation with the inscribing medium, substantially as specified.

32. A time-recorder having rotary recording and inscribing mediums, common means, consisting of a weight-cord, terminally reeled upon spools on the spindles respectively of said mediums, for imparting rotary motion thereto, chronometer-controlled governing devices for each of said spindles, and actuating devices for bringing the recording and inscribing mediums into operative relation, substantially as specified.

608,801. **PIGEON-TRAP.** LEWIS W. SLACK, Williamsport, Pa. Filed Feb. 25, 1898. Serial No. 671,898. (No model.)



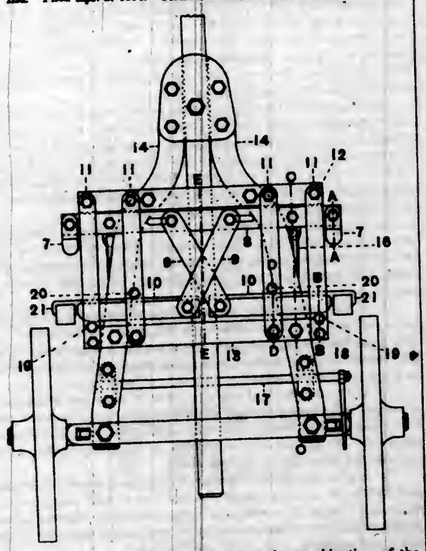
Claim.—1. In a box-trap for confining live pigeons, the base of the trap having hinged sides, ends, and top, a metallic armature connected to one of the folding pieces and engaging a catch on another piece to hold the trap closed, and an electromagnet carried by another of the hinged pieces, and in position to act on the armature to release it from the catch, whereby the box is permitted to open when the magnet acts to release the armature from the catch, all combined substantially as described.

2. In a box or trap for confining live pigeons, the base and hinged sides, the ends, the top in sections connected to the hinged sides, an electromagnet on one of the hinged parts connected by metallic connections through the hinges to a battery outside the trap, and an armature on another of the hinged parts in position to hold the trap closed, but to release the same under the influence of the magnet, all combined substantially as described.

3. In a box-trap for live pigeons, the bottom having hinged sides, and the sides having hinged top sections connected thereto, the ends hinged to the bottom and held closed by catches on the sides and top, the opening or expanding springs, and a detachable catch on one of the cover-sections, all combined substantially as described.

4. In a box for live pigeons, the bottom, sides, ends, and cover hinged together substantially as described, the magnet carried by one of the ends and having metallic strips extending therefrom to the hinges, binding-posts in the bottom connected by metallic connection to the hinges, an external battery and wires connecting to said binding-posts, and a spring-armature connected to one of the hinged pieces, in proximity to the magnet, and engaging a catch on one of the hinged parts, all combined substantially as described.

608,802. **FOLDING WAGON-BRAKE.** JAMES SHOCK, Spencer, Ind. Filed Apr. 2, 1898. Serial No. 676,175. (No model.)



Claim.—1. In a folding wagon-brake, the combination of the shoes 7, the sliding beam 8, the folding plates 9, the sliding brake-beams 10 and the brake-shoes 21 substantially as described.

2. In a folding wagon-brake the combination of the shoes 7, the sliding beam 8, the connecting-rod 16, the bar 17, and the lever 18, substantially as described.

3. A folding wagon-brake having the two brake-beams 10, connected by the folding plates 9 and secured to the sliding beam 8, substantially as shown and described.

4. A folding wagon-brake having toe brake-beam in two pieces and so arranged that it will slide under the wagon when not in use substantially as shown and described.

608,803. **ELASTIC TIRE FOR WHEELS.** JAMES A. SNYDER, Trenton, N. J. Filed Dec. 13, 1897. Serial No. 661,602. (No model.)



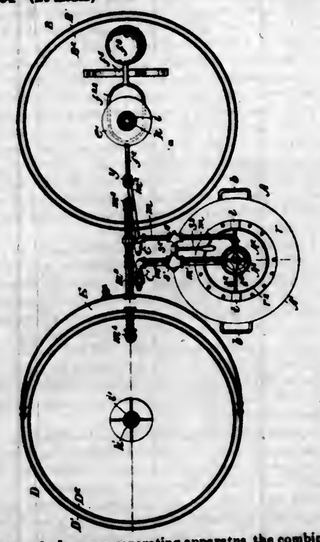
Claim.—1. In a wheel, the combination with an inner rigid rim having a groove in its outer surface, of an outer rigid rim having an internal longitudinal rib entering said groove, and means for elastically retaining said rims in a normally concentric position, substantially as described.

2. In a wheel, the combination with an inner rigid rim having a groove in its outer surface, of an outer rigid rim having an internal rib entering said groove, and an elastic cover enveloping both rims and secured to the inner one, substantially as described.

3. In a wheel, the combination with an inner rigid rim having a groove in its outer surface, of an outer rigid rim having an internal longitudinal rib entering said groove, and a U-shaped elastic cover enveloping said rims, with its edges secured to said inner rim, substantially as described.

4. In a wheel, the combination with an inner rigid rim having a groove in its outer surface, of an outer rigid rim having a rib entering said groove, said rib being cut away at intervals, elastic cushions secured to the outer rim in said cut-away places and projecting into said groove, and means for retaining the rims in normally concentric relation, substantially as described.

608,804. **APPARATUS FOR GENERATING ACETYLENE GAS.** ALEX. A. STROUS, Austin, Ill., assignor, by mesne assignments, to the Walmsley & Company, Chicago, Ill. Filed June 14, 1897. Serial No. 640,734. (No model.)



Claim.—1. In a gas-generating apparatus, the combination with a gas-holder of a carbid-holder or generator proper provided with a detachable cover, a gas and water pipe connection between said gas-holder and generator having fixed connection with and leading through the cover, and a flexible joint in said connection affording a hinge for the cover whereby the latter may be detached from the generator and supported by the pipe connection, substantially as and for the purposes set forth.

2. In a gas-generating apparatus, the combination with a gas-holder of a carbid-holder or generator proper, and gas and water pipes containing shut-off valves on a common stem provided with a handle, said pipes leading respectively to and from said gas-holder and through the cover of the generator and having flexibly-jointed sections adapting them to be swung to remove and replace the cover, substantially as described.

3. In a gas-generating apparatus, the combination with a gas-holder of a carbid-holder or generator proper having a cover comprising an annular lid and a hollow chambered head seating therein, fastening means for the cover, and gas and water pipes leading respectively to and from said gas-holder into the chambers in said head and having flexibly-jointed sections adapting them to be swung to lift and lower said head, and a nozzle extending from a chamber in said head to enter said carbid-holder, substantially as described.

4. In a gas-generating apparatus, the combination with a gas-holder, of a carbid-holder or generator proper, a gas-pipe leading from said holder and connected with the generator, a water-trap extension connected with the gas-pipe and extending above the water-level in the said holder, and a water-supply pipe for the generator connected with said extension, substantially as described.

5. In a gas-generating apparatus, the combination with a gas-holder of a carbid-holder or generator proper, and gas and water pipes leading respectively to and from said gas-holder and through

the cover of the generator and having flexibly-jointed sections adapting them to be swung to remove and replace the cover and a rising extension of the water-pipe without the gas-holder reaching above the water-level therein and having a return-bend with which the flexible junction of the water-pipe section is made, substantially as and for the purpose set forth.

6. In a gas-generating apparatus, the combination with a gas-holder of a portable carbid-holder or generator proper supported extraneously of said gas-holder and provided with a cover comprising an annular lid and a hollow head seating therein and containing water and gas chambers, a nozzle extending from the water-chamber in said head to enter the carbid-holder, gas and water pipes connecting said gas-holder respectively with said gas and water chambers and having flexibly-jointed sections adapting them to be swung to lift and lower said head, and shut-off valves in said pipes, substantially as described.

7. In a gas-generating apparatus, the combination of a carbid-holder or generator proper and a water-containing gas-holder formed of the stationary and movable telescoping sections, and having a pipe connection with said generator for supplying water thereto a valv. in said pipe connection, an operating-lever therefor carrying a float, a weight loosely supported on said lever and a stop carried by the movable section and adapted in the movement of the latter to cooperate with the weight and thereby permit of the controlling of the valve by the lever, substantially as and for the purpose described.

8. In a gas-generating apparatus, the combination of a carbid-holder or generator proper and a water-containing gas-holder intercommunicating through a gas-pipe, a water-pipe connecting said generator with said gas-holder and containing a valve controlling the supply of water to the generator for promoting the generation of gas therein, a lever connected with said valve and carrying a float, a telescoping guide extending between the fixed and movable sections of said gas-holder, a weight on said guide above said lever and a lifter on the movable portion of said guide below the weight, substantially as and for the purpose set forth.

9. In a gas-generating apparatus, the combination of a carbid-holder or generator proper and a water-containing gas-holder intercommunicating through a gas-pipe, a water-pipe connecting said generator with said gas-holder and containing a valve controlling the supply of water to the generator for promoting the generation of gas therein, a lever connected with said valve and carrying a float, a telescoping guide extending between the fixed and movable sections of said gas-holder, a weight on said guide above said lever, a lifter on the movable portion of said guide below the weight, and a stop below the lever for limiting its downward throw, substantially as and for the purpose set forth.

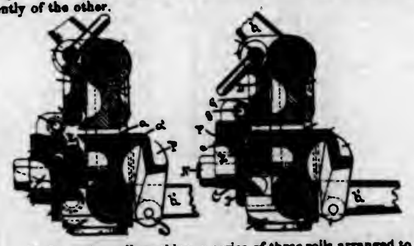
10. In a gas-generating apparatus, the combination with a carbid-holder or generator proper, of two gas-holders each comprising a fixed section and a movable section, the movable sections being differentially weighted, said holders having gas communication with each other and with said generator and the lesser-weighted gas-holder having a water-pipe connection with said generator controlled by a valve actuated by the rise and fall of the movable gas-holder section to regulate the supply of water to the generator for promoting the generation of gas therein, and an outlet in the heavier-weighted holder for leading therefrom the gas to the point of consumption, substantially as and for the purpose set forth.

11. In a gas-generating apparatus, the combination with a carbid-holder or generator proper, of two gas-holders each comprising a fixed section and a movable section, the movable sections being differentially weighted, a condenser on the holder having the heavier-weighted section provided with an outlet-pipe d and communicating through a pipe m^4 with the interior of said holder, a gas-pipe connection between the gas-holder having the lesser-weighted section, the said condenser and said generator and a water-pipe connecting said last-named gas-holder with the generator and containing a valve actuated by the rise and fall of the movable section of said gas-holder to regulate the supply of water to the generator for promoting the generation of gas therein, substantially as described.

12. A gas-generating apparatus comprising, in combination, a generator A, a gas-holder D provided with a condenser E having an outlet d and a pipe connection m^4 with the interior of the holder, a weight A' on the movable section of said holder, a gas-holder B carrying a weight A on its movable section of lesser gravity than that on the holder D, a gas-pipe m^2 connecting the holder B with the condenser E, a valve-controlled water-pipe m^3 leading from said holder B, and valve-controlled pipe-sections m and m' flexibly jointed, respectively, to the pipes m^3 and m^2 and leading into said generator through its cover, the whole being constructed and arranged to operate substantially as described.

608,805. WIRE-COIL MACHINE. JOSEPH H. TEMPLIN, Birdsborough, Pa., assignor to the Diamond-Drill and Machine Company, Incorporated, same place. Filed Feb. 21, 1898. Serial No. 671,085. (No model.)

Claim.—1. A wire-coil machine having a series of rolls arranged to close upon and rotate an interposed wire coil, clamping-jaws operating in connection therewith, mechanism for simultaneously closing said rolls and jaws, and mechanism for operating one independently of the other.



2. In a wire-coil machine, a series of three rolls arranged to engage an interposed wire coil and geared together to rotate in the same direction, two of said rolls and the two intermeshing idlers being in relatively-fixed positions and the third roll having a limited movement toward or away from said relatively-fixed rolls while remaining in gear with the latter.

3. In a wire-coil machine, the combination with a series of rolls arranged to close upon and rotate an interposed wire coil, of clamping-jaws having their meeting faces in the same horizontal plane with said interposed coil, the lower member thereof forming also one member of a second clamping device, and a third jaw forming the other member of the latter, said second clamping device operating substantially at right angles to the first.

4. In a wire-coil machine, a series of rolls arranged to close upon an interposed coil, and circular grooves to engage the convolutions of said coil, the pitch of said grooves at the receiving end of the rolls corresponding with the pitch of the coil so as to freely admit the latter, and the pitch on the main portion of the rolls being different from that at the end so as to give additional stiffness to the coil as it is being rotated and traversed by the rolls.

5. A wire-coil machine having a series of three rolls triangularly arranged and adapted to close upon and rotate an interposed wire coil, clamping-jaws having their meeting faces in the same horizontal plane with one of said rolls, and means for sliding said roll out of said plane.

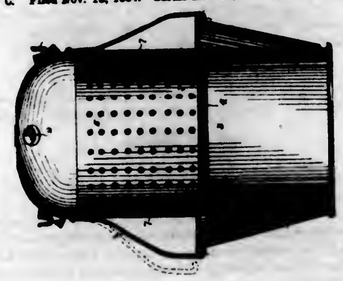
6. A wire-coil machine having a series of three rolls triangularly arranged and adapted to close upon and rotate an interposed wire coil, clamping-jaws having their meeting faces in a horizontal plane between the top and bottom rolls, and separate means for adjusting said top and bottom rolls.

7. A wire-coil machine having a series of three rolls triangularly arranged and adapted to close upon and rotate an interposed wire coil, clamping-jaws having their meeting faces in the same horizontal plane with one of said rolls, and means for vertically adjusting said roll and the lower one of the two rolls.

8. A wire-coil machine having clamping-jaws adapted to engage and flatten the convolutions of the coil, one of said jaws having a separately-formed face with a swinging connection whereby a positively-parallel transverse movement of said face is produced by the closing of the jaws.

9. A wire coil machine having clamping-jaws adapted to engage and flatten the convolutions of the coil, one of said jaws having a separately-formed face with a swinging connection whereby a positively-parallel transverse movement of said face is produced by the closing of the jaws, a spring to return the same, and a stop.

608,806. STEAM-COOKER. WILLIAM J. THOMPSON, Haw River, N. C. Filed Nov. 18, 1897. Serial No. 658,975. (No model.)



Claim.—A steam cooker and canner, comprising a boiler or generator having its sides upwardly flaring, a hollow stand removably fitted within the boiler or generator and provided with imperforate vertical sides resting upon the bottom thereof, said stand having a perforated top arranged in a plane near the upper edges of the boiler or generator and adapted to receive the food, or receptacle containing the food, to be steamed or cooked, a cover inclosing the stand and vessel and resting upon the bottom of the boiler or generator, the oppositely-disposed spring-hooks secured to the cover and extending downward and engaging the boiler or generator at the upper edge thereof, and a bail connected with the cover and serving as a handle for carrying the same and also the entire device, substantially as described.

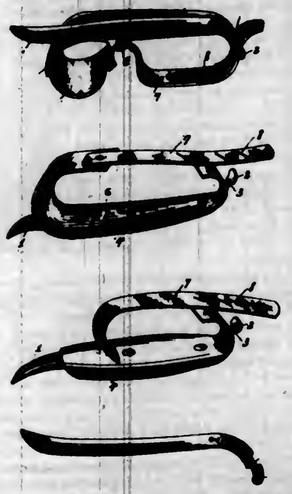
608,807. FRUIT OR FLOWER STEM CUTTER AND HOLDING ATTACHMENT. DOUGLAS TILDEN, Oakland, Cal. Filed Sept. 13, 1897. Serial No. 651,457. (No model.)



Claim.—1. A new article of manufacture consisting of a pair of separable metal plates the body portions of which are provided with corresponding holes adapted to receive the single pivoting-bolt of a pair of shears, said plates having projecting portions extending approximately at right angles from the forward ends of the body portions and thence continued parallel with the jaws of the shears and returned upon themselves to form resilient fingers adapted to hold the article to be cut.

2. The combination with a pair of shears, of a pair of metal plates each having a body portion adapted to be fitted against one of the sides of the shears and each having a hole through which the pivoting-bolt of the shears is passed, to secure the jaws of the shears and the plates, each of said plates extending at approximately a right angle from the forward end of its body portion and thence extending forwardly parallel with the jaws of the shears and returned in converging lines.

608,808. HUSKING-PIN. WILLIAM H. TYLER, David City, Nebr.; Charles O. Crosthwait, administrator of said Tyler, deceased. Filed Apr. 5, 1897. Serial No. 630,733. (No model.)

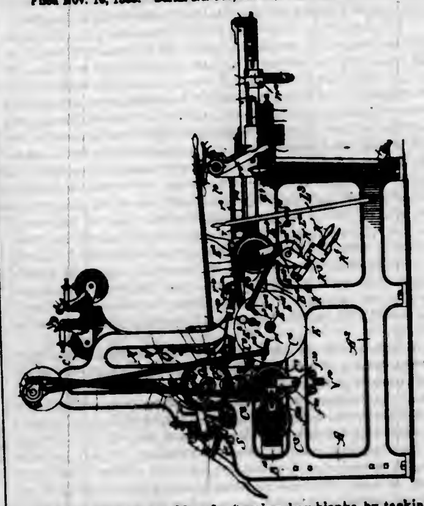


Claim.—1. In a corn-husking implement, the combination of a husking-pin having one end pointed and its opposite end curved to engage with the little finger and terminating in a T-head, and a strap secured to the husking-pin and to its curved end and adapted to encircle the hand, and having its loose end formed with a series of obliquely-disposed slits to make adjustable connection with the said T-head and overlap the end portion of the strap conforming to the curved end of the husking-pin, substantially as specified.

2. In a corn-husking implement, the combination of a husking-pin pointed at one end and provided at its opposite end with a T-head, a strap secured to the husking-pin and having a loop near its rear end to receive the T-head and provided with a second loop at a point between its ends, and a fastening strap applied to the first-mentioned strap and formed with a series of slits to make connection with the T-head of the husking-pin, substantially as described.

3. In a corn-husking implement, a husking-pin pointed at one end and having its rear end curved to engage with the little finger and provided with a T-head, and a strap secured to the pin and having a loop near its rear end to receive the neck portion of the T-head, and having its opposite end terminating in a fastening-strap provided with a series of slits to make adjustable connection with the aforesaid T-head, substantially as and for the purpose set forth.

608,809. MACHINE FOR MAKING BOX-BLANKS. JACOB UHRI, Chicago, Ill., assignor to the Wire Bound Box Company, same place. Filed Nov. 16, 1895. Serial No. 569,157. (No model.)



Claim.—1. In a machine for forming box-blanks by tacking a sheet and strengthening-wires to reinforcing-cleats, the combination of guides for the cleats, intermittent feed mechanism for advancing the cleats longitudinally in their guides and with a sheet through the machine, an intermittingly-acting tacking device adjacent to the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet, by successive operations, to the cleat, means for guiding strengthening-wires with the cleats and sheet across the tacking devices, and relative skipping means actuated by the said feed mechanism, and operating, at predetermined intervals, in the passage of the sheets and cleats through the machine, to accelerate the feed during a single intermittent movement and thereby produce an increase of the distance between points of tacking, substantially as described.

2. In a machine for forming box-blanks by tacking a sheet and strengthening-wires to reinforcing-cleats, the combination of guides for the cleats, intermittent feed mechanism for advancing the cleats longitudinally in their guides, and with a sheet through the machine, comprising primary and secondary feed-rollers rotating normally at the same rate of speed, an intermittingly-acting tacking device adjacent to the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet, by successive operations, to the cleat, means for guiding strengthening-wires with the cleats and sheet across the tacking devices, and relative skipping means actuated by the said secondary feed-rollers, at predetermined intervals, in the passage of the sheets and cleats through the machine, to accelerate the feed and thereby produce an increase of the distance between points of tacking, substantially as described.

3. In a machine for forming box-blanks by fastening a sheet and strengthening-wires to reinforcing-cleats, the combination of a drive-shaft, guides for the cleats, intermittent feed mechanism, comprising feed-rollers, a ratchet-wheel geared to the feed-rollers, and a primary ratchet wheel-engaging pawl actuated from the drive-shaft to turn the said ratchet-wheel and feed-rollers intermittingly to advance the

cleats longitudinally in their guides and with the sheet through the machine, an intermittingly-actuated tacking device adjacent to the path of each cleat, alternating in its action with said feed mechanism to fasten the sheet, by successive operations, to the cleat, means for guiding strengthening-wires with the cleats and sheet across the tacking devices, and relative skipping means, comprising a secondary ratchet-wheel-engaging pawl actuated from the said drive-shaft and normally out of engagement with the said ratchet-wheel, and pawl-engaging means actuated, at predetermined intervals, in the passage of the sheet and cleats through the machine, to move the said secondary pawl into engagement with the ratchet-wheel and thereby accelerate the feed to produce an increase of the distance between points of tacking, substantially as described.

4. In a machine for forming blanks by fastening a sheet to cleats, the combination with intermittingly-actuated tacking devices and with feed mechanism alternating in its action with the tacking devices to feed the sheet and cleats intermittingly across the said devices, of skipper mechanism at the said feed mechanism, operating, at intervals in the passage of the sheet and cleats through the machine, to accelerate the feed and thereby produce an increase of the distance between points of tacking, the said skipper mechanism being adjustable to regulate the said intervals, substantially as described.

5. In a machine for forming blanks by fastening a sheet to cleats, the combination of a drive-shaft, guides for the cleats, feed mechanism, comprising feed-rollers, a ratchet-wheel geared to said feed-rollers, and primary pawl at the said ratchet-wheel actuated from the drive-shaft for moving the feed-rollers intermittingly to advance the cleats longitudinally in their guides and with the sheet through the machine, an intermittingly-actuated tacking device adjacent to the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet, by successive operations, to the cleat, and skipper mechanism comprising a secondary pawl actuated from the said drive-shaft and adjacent to but normally out of engagement with said ratchet-wheel, a tripping device movable under the influence of the feed-rollers, a stop in the path of said tripping device, and a connection between said tripping device and secondary pawl, whereby in the engagement of the tripping device with the said stop the said secondary pawl is moved to engage the said ratchet-wheel and thereby increase the movement of the feed-rollers and thus produce an increase of the distance between points of tacking, substantially as described.

6. In a machine for forming blanks by fastening a sheet to cleats, the combination of a drive-shaft, guides for the cleats, feed mechanism comprising feed-rollers, a ratchet-wheel geared to said feed-rollers, and a primary pawl at the said ratchet-wheel actuated from the drive-shaft for moving the feed-rollers intermittingly to advance the cleats longitudinally in their guides and with the sheet through the machine, an intermittingly-actuated tacking device adjacent to the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet, by successive operations, to the cleat, and skipper mechanism comprising a secondary pawl actuated from the said drive-shaft and adjacent to but normally out of engagement with said ratchet-wheel, a tripping device movable under the influence of the feed-rollers, a scale along which said tripping device moves, a stop adjustable along the said scale and in the path of said tripping device, and a connection between the said tripping device and secondary pawl, whereby in the engagement of the tripping device with the said stop the said secondary pawl is moved to engage the said ratchet-wheel and thereby increase the movement of the feed-rollers and produce an increase of the distance between points of tacking, substantially as described.

7. In a machine for forming box-blanks by fastening a sheet and strengthening-wires to cleats, the combination of a drive-pulley provided with a clutch member, a drive-shaft provided with a clutch member, shipping mechanism for said clutch members operating to throw them into and out of engagement to throw the drive-shaft into and out of engagement with its driving-pulley, guides for the cleats, intermittent feed mechanism, actuated from the said drive-shaft for advancing the cleats longitudinally in their guides and with the sheet through the machine, a tacking device adjacent to the path of each cleat and operated intermittingly from the said drive-shaft to alternate in its action with said feed mechanism and fasten the sheet, by successive operations, to the cleats, relative skipping means actuated by the said feed mechanism, at predetermined intervals, to accelerate the feed and thereby produce an increase of the distance between points of tacking in a single intermittent movement of the feed, and means actuated by the said feed mechanism for moving the said clutch-shipping mechanism to stop the machine, substantially as and for the purpose set forth.

8. In a machine for forming box-blanks by fastening sheets and strengthening-wires to reinforcing-cleats, the combination of guides for the cleats, intermittent feed mechanism for advancing the cleats longitudinally in their guides and with a sheet through the machine, an intermittingly-actuated staple-driver adjacent to the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet and strengthening-wires, by successive operations, to the cleats, means for guiding the strengthening-wires with the sheet across the staple drivers, and relative skipping means operating, at predetermined intervals, in the passage of the sheet and cleats through the machine, to accelerate the feed and thereby produce an increase of the distance between the points at which the staples are driven in a single intermittent movement of the feed, substantially as described.

9. In a machine for forming box-blanks by fastening sheets and strengthening-wires to reinforcing-cleats, the combination of guides for the cleats, intermittent feed mechanism for advancing the cleats longitudinally in their guides and with a sheet through the machine, an intermittingly-actuated staple-driver adjacent to the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet and strengthening-wires, by successive operations, to the cleats, means for guiding the strengthening-wires with the sheet across the staple-drivers, relative skipping means actuated by the said feed mechanism at predetermined intervals, in the passage of the sheet and cleats through the machine, to accelerate the feed and thereby produce an increase of the distance between the points at which the staples are driven in a single intermittent of the feed, and strengthening-wire-severing mechanism actuated from the said feed mechanism, to sever the strengthening-wires when the sheet and cleats have passed the staple-drivers, substantially as described.

10. In a machine for forming box-blanks by fastening sheets and strengthening-wires to reinforcing-cleats, the combination of a drive-shaft and driver therefor, clutch mechanism between the said driver and shaft, clutch-shipping mechanism, guides for the cleats, intermittent feed mechanism actuated from the said drive-shaft for advancing the cleats longitudinally in their guides and with a sheet through the machine, an intermittingly-actuated staple-driver adjacent to the path of each cleat, operated from the said drive-shaft and alternating in its action with said feed mechanism to fasten the sheet and strengthening-wires, by successive operations, to the cleats at intervals in the direction longitudinally of the cleat, means for guiding strengthening-wires with the sheet across the staple-drivers, relative skipping means actuated by the said feed mechanism at predetermined intervals in the passage of the sheet and cleats through the machine, to accelerate the feed and thereby produce an increase of the distance between points at which staples are driven in a single intermittent movement of the feed, and means, actuated from the said feed mechanism, for moving the said clutch-shipping mechanism to stop the machine when the cleats and sheet have passed the staple-drivers, substantially as described.

11. In a machine for forming blanks by fastening a sheet to cleats, the combination of guides for the cleats, intermittent feed mechanism, for advancing the cleats longitudinally in their guides and with the sheet through the machine, comprising primary and secondary feed-rollers rotating normally at the same rate of speed, an intermittingly-actuated tacking device adjacent to the path of each cleat, alternating in its action with said feed mechanism to fasten the sheet, by successive operations, to the cleats, and means for increasing the movement of the primary feed-rollers to hasten the movement of the sheet and cleats toward the tacking devices, substantially as described.

12. In a machine for forming blanks by fastening a sheet to cleats, the combination of laterally-adjustable guides for the cleats, intermittent feed mechanism, for advancing the cleats longitudinally in their guides and with the sheet through the machine, the said feed mechanism being formed with feed-rollers extending crosswise of the machine in the plane above the said guides and feed-wheels journaled in the said guides, an intermittingly-actuated tacking device supported adjacent to the path of each cleat and laterally adjustable on its support and alternating in its action with the said feed mechanism to fasten the sheet, by successive operations, to the cleats, substantially as described.

13. In a machine for forming blanks by fastening a sheet to cleats, the combination of a main drive-shaft, guides for the cleats, intermittent feed mechanism, for advancing the cleats longitudinally in their guides, and with the sheet through the machine, comprising primary and secondary feed-rollers rotating normally at the same rate of speed, an intermittingly-actuated tacking device adjacent to the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet, by successive operations, to the cleats, a secondary drive-shaft actuated from the main drive-shaft and to which the primary feed-rollers are geared, and means for increasing the movement of the primary feed-rollers, to hasten the movement of the sheet and cleats toward the tacking devices, comprising speed-gear mechanism actuated from the main drive-shaft and with which the said secondary drive-shaft may be thrown into and out of engagement at will, substantially as described.

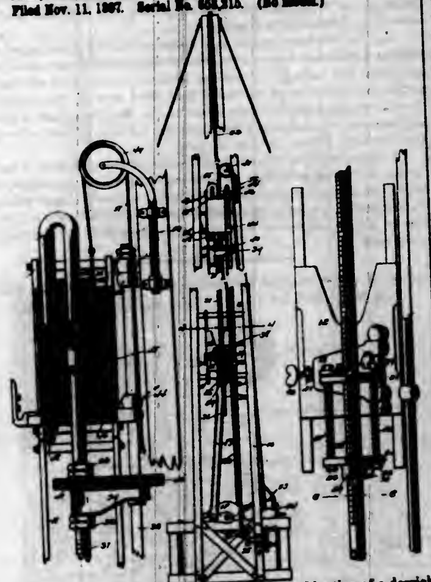
14. In a machine for forming blanks by fastening a sheet to cleats, the combination of a main drive-shaft, guides for the cleats, intermittent feed mechanism, for advancing the cleats longitudinally in their guides, and with the sheet through the machine, comprising primary and secondary feed-rollers rotating normally at the same rate of speed, an intermittingly-actuated tacking device adjacent to the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet, by successive operations, to the cleats, a secondary drive-shaft actuated from the main drive-shaft and to which the primary feed-rollers are geared, and means for rotating the said secondary drive-shaft independently of the main drive-shaft, comprising pawl-and-ratchet mechanism at the secondary drive-shaft, and an operating-handle therefor, substantially as and for the purpose set forth.

15. In a machine for forming blanks by fastening a sheet to cleats, the combination with the guides for the cleats and intermittent tacking devices at said guides, of intermittent feed mechanism for advancing the cleats longitudinally in their guides and with the sheet through the machine, comprising a series of upper and lower feed-rollers, between the forward end of the guides and tacking devices and lever mechanism operative at will to raise the first upper feed-roller and the upper feed-roller adjacent to said tacking devices, substantially as and for the purpose set forth.

16. In a machine for forming blanks by fastening a sheet to cleats, the combination with intermittingly-actuated tacking devices, of outer and intermediate guides for the cleats, yielding guides for the edges of the sheet on the said outer cleat-guides, and intermittingly-actuated feed mechanism for advancing the sheet and cleats in their guides longitudinally across the said tacking devices, the said feed mechanism alternating in its action with the said tacking devices, substantially as described.

17. In a machine for forming blanks by fastening a sheet to cleats, the combination with intermittingly-actuated tacking devices, of guides for the cleats, yielding guides for the edges of the sheet, overlapping guides for the edge portions of the sheet and feed mechanism for advancing the sheet and cleats in their guides longitudinally across the said tacking devices, the said feed mechanism alternating in its action with the said tacking devices, substantially as described.

608,810. WELL-DRILLING MACHINE. IRA A. WEAVER, Oskaloosa, Iowa, assignor of one-fourth to Richard M. Roper, Tracy, Iowa. Filed Nov. 11, 1897. Serial No. 658,215. (No model.)



Claim.—1. In a drilling apparatus, the combination of a derrick or mast, tracks on said derrick or mast, a frame mounted on said tracks for vertical reciprocation, a device hinged to said frame to swing laterally, an arm projecting outwardly from said device, two disks having a central opening to admit the drill-rod secured to said arm, two bolts extending through the said laterally-projecting arm and through the said disks, a two-part nut designed to admit the drill-rod and positioned below the lower one of said disks, two bolts passed through the said disks and through the said nuts, yielding pressure devices interposed between the said disks, and means for connecting the parts of the nuts, all arranged and combined substantially in the manner set forth.

2. In a well-drilling apparatus, the combination with a hollow drill-rod having a downwardly-curved section at the top means for feeding the rod downwardly by a rotation of the rod, means for forcing the cuttings upwardly through the rod as it is reciprocated, a bucket having a central sleeve extending through it for the passage of the drill-rod, an outlet-pipe in the bucket, a curved rod pivoted to the derrick capable of swinging in a horizontal plane, a sheave mounted in its top, a rope fixed to the bucket and passed over said sheave, a drum mounted near the base of the derrick to receive the said rope, and a crank attached to the drum, a track upon which the bucket may slide a section at the top of the track hinged to swing laterally with the bucket, a gravity-latch for normally holding a hinged track-section to its normal position, and a projection on the bucket to engage said latch when the bucket is elevated and throw the latch out of engagement with the track-section so that the entire bucket and hinged track-section may be swung laterally, substantially as and for the purposes stated.

3. In a well-drilling apparatus, the combination with a drill-rod, of a cylinder interposed between the lower end of the drill-rod and the drill, a drill fixed thereto, a piston connected with the drill-rod and slidingly but non-rotatably mounted in the said cylinder, and means whereby a liquid within the cylinder may slowly pass the piston when a greater downward pressure is applied to the drill-rod than the upward pressure of the cylinder caused by the impact of the drill.

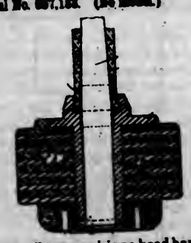
4. In a well-drilling apparatus, the combination of a cylinder closed at its bottom and having a small central opening at its top, a drill fixed to the lower end of the cylinder a piston within the cylinder, a rod connected with the drill-rod passed through the opening in the top of the cylinder and fixed to the said piston said piston being of such a size with relation to the interior of the cylinder that a liquid may slowly pass from the lower to the upper end of the cylinder around the piston, and said rod being of such size with relation to the opening in the top of the cylinder that a liquid may slowly pass from the upper end of the cylinder around said rod, and means for admitting liquid into the lower end of the cylinder.

5. In a well-drilling apparatus, a combination of a cylinder provided with lateral openings at its lower end, a sinker-bar screwed into its lower end and having a transverse slot therein, a block at its top having a central opening, and a series of annular grooves in said central opening, a rod connecting with the drill-rod of a smaller diameter than the opening in the said block and passed through said block, a cylindrical piston closed at its top and open at its bottom and secured to the said rod, and of a diameter somewhat smaller than the interior of the cylinder, and having a series of annular grooves on its outer surface, a flat bar having its lower end mounted in the slot in the sinker-bar and projected upwardly into the interior of the piston, and guiding devices on the interior of the piston to engage the sides of the said flat bar, and one-way valves in the openings in the lower end of the cylinder, all arranged and combined substantially in the manner set forth and for the purposes stated.

6. In a well-drilling apparatus, the combination of a derrick or a mast, a frame mounted thereon for vertical reciprocation, an arm hinged to said frame and capable of swinging in a horizontal plane, a drill-rod section externally screw-threaded, a two-part nut designed to be detachably secured to the drill-rod and a cushioning device interposed between the said arm and the two-part nut to operate in the manner set forth and for the purposes stated.

7. In a well-drilling apparatus, the combination, of a hollow drill-rod of the class in which the cuttings are forced upwardly through it by a reciprocal motion imparted to the said drill-rod, means for feeding the drill-rod downwardly by a rotation thereof, and a bucket having a sleeve in its center to admit the passage of the drill-rod, an outlet-pipe at its bottom, and an arched pipe having one end fixed to the top of the drill-rod and its other end extended to a point within the bucket, substantially as and for the purposes stated.

608,811. MALLET. GEORGE A. WEB, Boston, Mass. Filed Nov. 2, 1897. Serial No. 657,163. (No model.)



Claim.—1. A mallet comprising a head having an undercut socket at one side, a handle-core engaged at one end with the head and pro-

jecting through said socket, and a handle-cover inclosing the projecting portion of the handle and having an enlarged inner end engaged with said socket.

2. A mallet comprising a head, a stud or hub within the head, an undercut socket member secured to the head by said stud, a handle-core extending from the stud through the socket, and a handle-cover inclosing said core and having an enlarged inner end interlocked with the said socket.

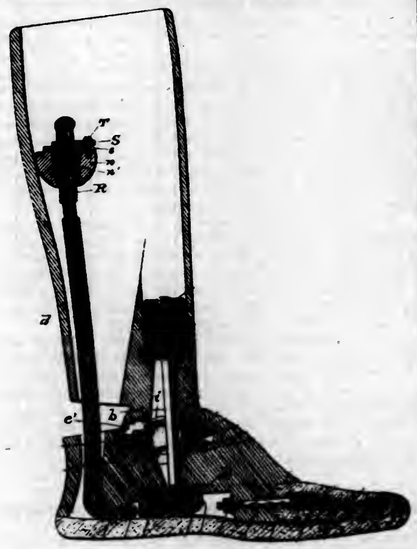
3. A mallet comprising a head having an undercut socket at one side, a handle-core engaged at one end with the head and projecting through said socket, a ferrule surrounding the portion of the core that is surrounded by the socket, and a handle-cover inclosing the projecting portion of the handle and having an enlarged inner end engaged with said socket.

4. A mallet comprising a head, two clamping-collars at opposite sides of the head, one having an undercut recess or socket, a stud extending through the head and engaged with the said collars, a handle-core extending from said stud through the socket, and a handle cover inclosing said core and having an enlarged inner end interlocked with the said socket.

5. A mallet having a head, two clamping collars at opposite sides of the head, one collar having a tapering socket, a stud passing through the head and engaged with said collars, a tapered handle-core formed to project from the stud through said socket, and a handle-cover formed at its inner end to enter the said socket and to be spread therein by the tapered core.

6. A mallet comprising a head, a stud within the head, a collar engaged with said stud at the outer side of the head, a handle-core extending from said stud and projecting from the inner side of the head, a handle-cover inclosing the projecting portion of the core and having an enlarged inner end, and a collar engaged with said stud at the inner side of the head and provided with an undercut socket which is engaged with the enlarged end of the handle-cover.

608,812. ARTIFICIAL LEG. HENRY I. WELLER, Columbus, Ohio. Filed Mar. 29, 1898. Serial No. 675,543. (No model.)



Claim.—1. In an artificial ankle-joint, the combination of a leg A provided in its lower end with a socket and bushing; a foot B provided with a socket and bushing, said sockets being opposite to each other and adapted to receive a hollow metallic ball having a substantially rectangular slot in its upper surface and a similar slot in its lower surface, the longest dimension of the first being in the direction of the length of the foot and that of the latter being at right angles to that direction; a steel rod adapted to receive a nut at each end, and extending from a point in the leg through the aforesaid slots and through a rubber spring in the bottom of the foot—said spring being one-fourth of an inch in front of the aforesaid bushing in the foot, substantially as set forth and described.

2. In an artificial leg, the combination of a foot-section, a leg-section, a ball fitted in sockets formed in said foot-section and leg-section, and a rod extending through said ball and having one end connected to the leg member and its other end connected to the foot member, substantially as set forth.

3. In an artificial leg, the combination of a foot-section, a leg-section, an elastic or yielding connection between the rear portion of the foot-section and the leg-section, a rod connecting said foot-section and leg-section, and a ball-and-socket joint connecting said sections in advance of the said yielding connection, the ball of said joint being fitted loosely about said rod, substantially as set forth.

4. In an artificial leg, the combination of a foot-section, a leg-section, a ball arranged between said leg-section and foot-section, a stiff rod extending loosely through a passage in said ball and having one end connected to the leg-section and its other end connected to the foot-section, a yielding connection between the rear portion of the foot section and the leg-section, and means for positively limiting the motion of the foot-section laterally of the leg-section, substantially as set forth.

5. In an artificial leg, the combination of a foot-section, a leg-section, a bushing secured in a socket in the foot-section, a bushing secured in a socket in the leg-section, a ball provided with laterally-projecting trunnions engaging bearings formed in both said bushings, a rod extending through said ball and having one end secured in the leg-section and its other end secured in the foot-section, and a yielding connection, supplemental to said rod, between the foot-section and the leg-section, substantially as set forth.

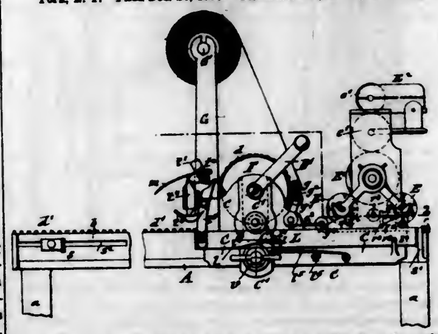
6. In an artificial leg, the combination of a foot-section, a leg-section, connected to the foot-section by a ball-and-socket joint, and a rod extending through said joint and having one end connected to the leg-section and its other end connected to the foot-section, the point of connection of said rod with the foot-section being in a vertical plane in advance of the vertical plane of the connection of said rod with the leg-section when the parts are in their normal position, substantially as set forth.

7. In an artificial leg, the combination of a foot-section, a leg-section, a ball-and-socket joint connecting said sections, and a rod having one end secured in the leg-section and its other end secured in the foot-section, said rod extending forwardly from its upper to its lower end, and both ends of said rod lying within the vertical planes of the ball-and-socket joint connecting said foot-section and leg-section, substantially as set forth.

8. In an artificial leg the combination with a foot-section, of a yielding toe-section formed of a piece of felt or similar material bent upon itself and having its closed end inserted in a socket in the foot-section, a bolt having an expanded head fitted between the sections of said toe-piece and its body connected to the foot-section, and a supplemental wearing-strip placed between the head of said bolt and said toe-piece, substantially as set forth.

9. In an artificial leg, the combination of a foot-section, a leg-section, a yielding or flexible cord having its lower end connected to the foot-section and its upper end connected to a sleeve-support within the leg section, a nut for adjusting said sleeve vertically, and a lock-arm for rigidly connecting said nut to the leg-section, substantially as set forth.

608,813. PRINTER'S PROOF-PRESS. FERDINAND WEBB, New York, N. Y. Filed Dec. 27, 1895. Serial No. 573,456. (No model.)



Claim.—1. In a printer's proof-press, the combination of a reciprocating carriage, sliding cams arranged at the sides of said carriage, means for shifting said sliding cams when the carriage arrives at either end of its motion, and a gripping device adapted to grip and retain the end of the paper during the return motion and release it during the forward motion of the carriage, substantially as set forth.

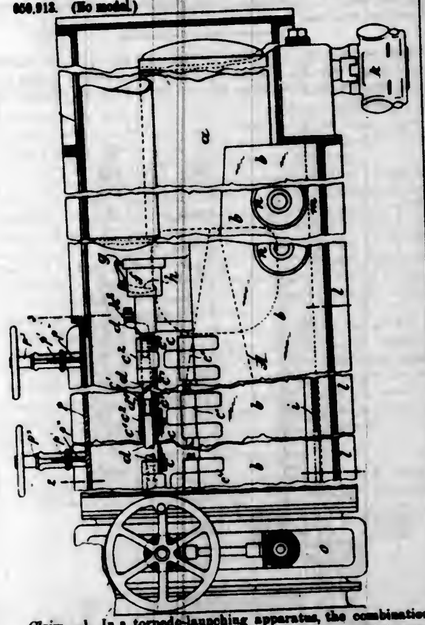
2. In a printer's proof-press, the combination of a reciprocating carriage, sliding cams at the sides of said carriage, means for shifting said sliding cams when the carriage arrives at either end of its motion, means for gripping the end of the web so as to retain the same during the return motion of the carriage, and means for releasing the gripping device from the web when the carriage arrives at the end of its return motion, substantially as set forth.

3. In a printer's proof-press, the combination of a reciprocating carriage, sliding cams arranged at the sides of the carriage, means for shifting said sliding cams when the carriage arrives at either end of its motion, a spring-actuated and oscillating cutting-blade, spring-actuated gripping-fingers applied to a spring-actuated shaft, and means for operating the gripping-fingers so as to grip and retain the web of paper during the return motion and release it during the forward motion of the carriage, substantially as set forth.

4. In a printer's proof-press, the combination of a reciprocating carriage moving over said bed-plate, sliding cams arranged on the sides of the carriage, means for shifting said sliding cams when arriving at either end of its motion, a spring-actuated bar, a cutting-blade applied to said bar, a spring-actuated shaft, gripping-fingers applied to said shaft, an elbow-piece on the bar of the cutting-blade, a short arm and a cam on the shaft of the gripping-fingers, a slide-piece between the elbow-piece and the arm on said shaft, and an oscillating lever fulcrumed to the bar of the cutting-blade and connected at the lower end with one of the sliding cams, its upper end being adapted to engage the cam on the shaft of the gripping-fingers so that the said fingers, in connection with the cutting-blade, grip or release the web of paper, substantially as set forth.

5. In a printer's proof-press, the combination, with paper feeding and printing mechanisms, of a supporting-shaft for the rolls of paper, provided with a fixed core and an adjustable core, and an independent sleeve on said shaft, also provided with a fixed core and an adjustable core, so as to support several rolls of paper of various widths, on the same shaft, substantially as set forth.

608,814. TORPEDO-LAUNCHING APPARATUS. JOHN WHITEHEAD, Fiume, Austria-Hungary. Filed Nov. 26, 1897. Serial No. 659,913. (No model.)



Claim.—1. In a torpedo-launching apparatus, the combination with an impulse-tube, of a forwardly-extending shield secured thereto, the said shield being open on one side and provided with swinging doors on the side opposite from the said open side, substantially as described.

2. In a torpedo-launching apparatus, the combination with a casing communicating with the water, of an impulse-tube carried within the said casing; a shield having one side constantly open, the said shield forming an extension of and being rigidly connected with said impulse-tube; doors arranged at the back of said shield; means for locking said doors in closed position, and means for unlocking the same, substantially as described.

3. In a torpedo-launching apparatus, the combination with a casing communicating with the water, of an impulse-tube carried within said casing; a shield having one side constantly open, the said shield forming an extension of and being connected with said impulse-tube; doors arranged at the back of said shield; means for locking said doors and means for automatically unlocking said doors when the torpedo has passed fully into the shield and without the said casing, substantially as described.

4. In a torpedo-launching apparatus, the combination with a casing adapted to communicate with the water, of an impulse-tube carried within said casing; a shield having one side constantly open, the said shield forming an extension of and secured to said impulse-tube; hinged doors composing the back of said shield; eyes secured at intervals near the edge of one of the said doors; a bar carried by such door and adapted to slide to and fro in said eyes, parts of said bar being reduced in diameter; slotted eyes secured to the other door and adapted to come in line with the first-mentioned eyes and opposite the reduced portions of the said bar, and means for moving said bar to and fro longitudinally, substantially as described.

5. In a torpedo-launching apparatus, the combination with a casing adapted to communicate with the water, of an impulse-tube carried within said casing; a shield having one side constantly open, the said shield forming an extension of and secured to said impulse-tube; hinged doors extending along the length of said shield and forming the back thereof; eyes secured at intervals near the edge of one of the said doors; a bar carried by such door and adapted to slide to and fro in said eyes, parts of said bar being reduced in diameter; slotted eyes secured to the other door and adapted to come in line with the first-mentioned eyes and opposite the reduced portions of the said bar, the slots in the said slotted eyes being smaller than the full portions of said rod and large enough to let the reduced portions of said rod pass through them, and means for moving said bar to and fro longitudinally, substantially as described.

6. In a torpedo-launching apparatus, the combination with a casing adapted to communicate with the water, of an impulse-tube carried within said casing; a shield having one side constantly open, the said shield forming an extension of and secured to said impulse-tube; hinged doors extending along the length of said shield and forming the back thereof; eyes secured at intervals near the edge of one of the said doors; a bar carried by such door and adapted to slide to and fro in said eyes, parts of said bar being reduced in diameter; slotted eyes secured to the other door and adapted to come in line with the first-mentioned eyes and opposite the reduced portions of the said bar, the slots in the said slotted eyes being smaller than the full portions of said rod and large enough to let the reduced portions of said rod pass through them; means for moving said bar to and fro longitudinally and means for moving the shield together with the impulse-tube within said casing until the shield extends approximately its whole length into the water, substantially as described.

7. In a torpedo-launching apparatus, the combination with a casing adapted to communicate with the water, of an impulse-tube carried within said casing; a shield having one side constantly open, said shield being connected with said impulse-tube and extending forward in line therewith; hinged doors forming the back of said shield; means for locking said shield; a cylinder and a piston working therein; means whereby the said piston is caused to unlock the said doors when the torpedo has passed wholly into the shield on being launched, substantially as described.

8. In a torpedo-launching apparatus, the combination with a casing adapted to communicate with the water, of an impulse-tube carried within said casing; a shield having one side constantly open, said shield being connected with said impulse-tube and extending forward in line therewith; hinged doors forming the back of said shield; a locking-rod extending longitudinally of said shield and adapted to lock said doors in the closed position; a cylinder and a piston working therein; a lever adapted to connect the said locking-rod with the said piston, and means for causing the piston to shift the said locking-rod and thereby unlock the said shield-doors as the torpedo passes wholly into the said shield, substantially as described.

9. In a torpedo-launching apparatus, the combination with a casing adapted to communicate with the water, of an impulse-tube carried within said casing; a shield having one side constantly open, said shield being connected with said impulse-tube and extending forward in line therewith; hinged doors forming the back of said shield; a locking-rod extending longitudinally of said shield and adapted to lock said doors in the closed position; a cylinder and a piston working therein; a lever adapted to connect the said locking-rod with said piston; a second lever for controlling the pressure on said piston, said lever adapted to be engaged by the rear end of the torpedo as it passes the lever and thus to put said piston in motion and unlock the said doors, substantially as described.

10. In an apparatus for launching torpedoes, the combination with a casing adapted to communicate at one end with the water, of

a sluice-valve adapted to close that end of the said casing; an impulse-tube carried within said casing; a shield secured to and forming a forward extension of said tube; hinged doors forming the back of said shield; means for locking and unlocking said doors; running-gear mounted in said casing and secured to said shield; means for imparting travel to said running-gear and longitudinal motion to said tube and shield, substantially as described.

11. In an apparatus for launching torpedoes, the combination with a casing adapted to communicate at one end with the water, of a sluice-valve adapted to close that end of the said casing; an impulse-tube carried within said casing; a shield secured to and forming a forward extension of said tube; hinged doors forming the back of said shield; means for locking and unlocking said doors, running-gear mounted in said casing and secured to said shield; a horizontal screw journaled in said casing; a nut mounted on said screw and secured to said shield and means for rotating said screw, thus imparting motion to the said tube and shield, substantially as described.

12. In an apparatus for launching torpedoes, the combination with a casing adapted to communicate at one end with the water, of a sluice-valve adapted to close that end of the said casing; a water-tight door at one side of said casing for the admission of the torpedo; an impulse-tube carried within said casing; a shield secured to and forming a forward extension of said tube; hinged doors forming the back of said shield; means for locking said doors in the closed position; means for shifting the shield together with the impulse-tube within said casing until the shield has entirely entered the water and means for automatically unlocking said doors when the torpedo has wholly entered the shield, substantially as described.

13. In a torpedo-launching apparatus, the combination of a casing leading into the water, of a sluice-valve adapted to close the outer end of such casing and of an impulse-tube within such casing with a shield substantially U-shaped in cross-section adapted to have its open side exposed to the pressure of the moving water and forming an extension of and being rigidly connected with the impulse-tube; doors arranged at the opposite side of the said shield and extending along its whole length and pivoted on axes on the top and bottom of such shield parallel to the longitudinal axis of the latter; means for closing such doors; means for locking such doors in their closed position and for unlocking the same; means for moving the shield together with the impulse-tube within the casing until the shield has entirely entered into the water, substantially as described.

14. In a torpedo-launching apparatus, the combination with a casing leading into the water, a sluice-valve adapted to close the outer end of such casing and an impulse-tube within such casing, of a shield substantially U-shaped in cross-section adapted to have its open side exposed to the pressure of the moving water and forming an extension of and being rigidly connected with the impulse-tube; doors arranged at the opposite side of the said shield from the open side and extending along its whole length and pivoted on axes on the top and bottom of such shield parallel to the longitudinal axis of the latter; means for closing such doors; eyes secured at intervals to the edge of one of the doors; a bar carried by such door and adapted to slide to and fro in the said eyes, parts of the said bar being reduced in diameter; slotted eyes secured to the edge of the other door and adapted to come in line with the first-mentioned eyes and opposite the reduced portions of the said bar, the slots in the slotted eyes being smaller than the full portions of the bar and just large enough to let pass through the reduced portions of such bar; means for moving the said bar to and fro longitudinally and means for moving the shield together with the impulse-tube within the casing until the shield has entirely entered into the water, substantially as described.

15. In a torpedo-launching apparatus, the combination with a casing leading into water, a sluice-valve adapted to close the outer end of such casing and an impulse-tube within such casing, of a shield substantially U-shaped in cross-section adapted to have its open side exposed to the pressure of moving water and forming an extension of and being rigidly connected with the impulse-tube; doors arranged at the opposite side of said shield from said open side and extending along its whole length and pivoted on axes on the top and bottom of such shield parallel to the longitudinal axis of the same; means for closing such doors; a bar carried by such eyes and adapted to slide to and fro longitudinally therein and having some of its parts reduced in diameter; slotted eyes secured to the edge of the other door and adapted to come in line with the first-mentioned eyes and opposite the reduced portions of the said bar, the slots in the latter eyes being smaller than the full portions of the bar but large enough to let pass through the reduced portions of such bar; a cylinder; a piston in the said cylinder; a lever adapted to connect the piston with the said bar; means for admitting pressure on one side of the piston and relieving the same; a lever secured with such means, said lever being actuated by the moving torpedo; means for moving the shield together with the impulse-tube within the casing until the shield has entirely entered into water, substantially as described.

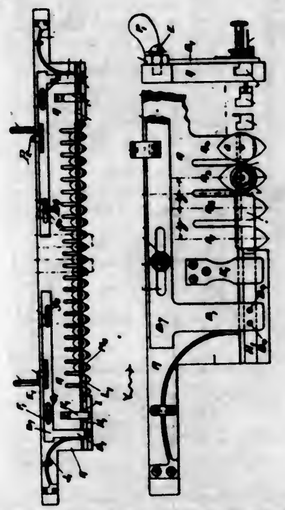
16. In a torpedo-launching apparatus, the combination with a casing leading into water, a sluice-valve adapted to close the outer end of such casing, and an impulse-tube within such casing, of a shield substantially U-shaped in cross-section adapted to have its open side exposed to the pressure of moving water and forming an extension of and being rigidly connected with the impulse-tube; doors arranged at the opposite side of the said shield and extending along its whole length and pivoted on axes on the top and bottom of such shield parallel to the longitudinal axis of the latter; means for closing such doors; means for locking such doors in their closed position and for unlocking the same; means for moving the shield together with the impulse-tube within the casing until the shield has entirely entered the water, substantially as described.

608,815. WAGON-POLE COUPLING. LEWIS C. WILCOX, Way Cross, Ga. Filed May 27, 1897. Serial No. 638,417. (No model.)



Claim.—The combination with the front axle of a vehicle, having a bearing-plate secured thereto and the king-bolt extending therethrough, and the reach, of a rectangular coupling-block having an opening therein through which the king-bolt passes, and having recesses or grooves in the front and side edges thereof, the said grooves communicating with each other, a U-shaped strap of metal or other unyielding material fitting within said groove and secured to said block, the parallel arms of said strap straddling said pole and secured thereto, and a securing band or clamp embracing the parallel arms of said strap for preventing the separation thereof, as and for the purpose described.

608,816. SWIVEL BATTEN AND SHUTTLE FOR LOOMS. RALPH WHITLEY, Paterson, N. J., assignor of one-half to Joseph Fairhurst, same place. Filed Mar. 12, 1897. Serial No. 627,257. (No model.)



Claim.—1. A batten having a series of loose, mutually contacting and coacting shuttles, linearly arranged with regard to each other, suitably supported in said batten, and means operating on the end shuttles of the series for the purposes as set forth.

2. A series of loose, mutually contacting and coacting shuttles, linearly arranged with regard to each other, a batten furnished with a series of teeth having guiding-grooves supporting the shuttles, a shuttle-shifting bar, springs acting on said bar and means to move the bar to shift the shuttles.

3. A series of loose, mutually contacting and coacting shuttles,

linearly arranged with regard to each other, a batten furnished with a series of teeth having guiding-grooves supporting the shuttles, a shuttle-shifting bar, secured to the batten, means to move the same, springs controlling said shifting-bar and spacing means interposed between the shifting-bar and the shuttles for the purposes as set forth.

4. A series of loose, mutually contacting and coacting shuttles, linearly arranged with regard to each other, a batten having thread gathering and confining spaces cut out in the lower edge thereof, and a guiding-groove supporting the shuttles, a shuttle-shifting bar secured to the batten, a right and left arm depending from said shifting-bar, a buffer-spring acting on each of said arms, a spacing-bar secured to each shuttle-shifting-bar arm, springs controlling said spacing-bars, spacing-blocks moving in the batten-groove lying between the spacing-bars and the end shuttles, for the purposes as set forth, substantially as described.

5. The combination in a loom of a swivel-batten having downward-projecting parts terminating in a smooth, pointed apex, thread gathering and confining spaces furnished between each two projections, a guiding-groove for the swivel-shuttles running throughout the length of the batten-beam, said guiding-groove having an upper guide, a swivel-shuttle-operating bar secured to the swivel-batten, means to move it, contacting swivel-shuttles adapted to move in the guiding-groove of the swivel-batten, bobbins suitably supported on each shuttle, for the purposes as set forth, substantially as illustrated and described.

608,817. CLOTH-WINDING MACHINE. JOHN B. WIEDLE, Worcester, Mass. Filed July 26, 1897. Serial No. 646,909. (No model.)

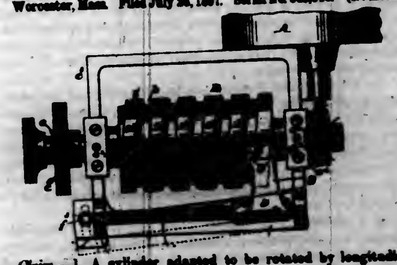


Claim.—1. A cloth-winding machine, having oppositely axially-aligned journals separated to hold a winding-board, one of said journals being mounted free to slide longitudinally, and yielding means independent of said sliding journal for locking and unlocking it in holding position without moving it longitudinally and without interfering with its rotation, said sliding journal when unlocked being free to be slid back by hand, substantially as described.

2. In a machine of the class described, a cloth-board-holding rotatable and endwise-moving journal, a sleeve surrounding the said journal, a follower in said sleeve controlling the movement of the outer end of said journal, a shaft, disks fast on said shaft, crank-pins thereon, a bar, bent links connected with said crank-pins and to said bar, the partial rotation of said shaft in one direction, putting the crank-pins, to which the links are connected, to one side of the center of the said shaft, to thereby lock the journal and follower in their operative position, substantially as described.

3. In a machine of the class described, a rotatable toothed wheel, a journal carried by said wheel and free to slide therein longitudinally, a sleeve, a follower carried by said sleeve, a shaft, and means operated thereby to move said follower and cause it to press the said journal closely against the board to be held by it, said follower being partially cut away to receive said shaft and adapted to be restrained from rotation by the said shaft, substantially as described.

608,818. CLOTH-MEASURING MACHINE. JOHN B. WIEDLE, Worcester, Mass. Filed July 26, 1897. Serial No. 646,910. (No model.)



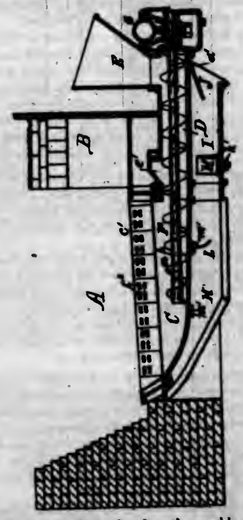
Claim.—1. A cylinder adapted to be rotated by longitudinal movement of the web of material to be measured, an interior shaft, gearing between the shaft of the said cylinder and said interior shaft by which to rotate the latter shaft, a hollow shaft surrounding said interior shaft and provided with a flange, a measuring-cylinder fixed on said hollow shaft and provided with a spiral groove and a spirally-arranged series of figures, and means cooperating with said flange to quickly move one of said shafts longitudinally and thereby couple or uncouple said hollow and interior shafts as desired, combined with an indicating-finger moved by said spiral groove and cooperating with said figures, substantially as described.

2. A rotatable measuring-cylinder having a spiral groove and a spirally-arranged series of figures, combined with an indicating-finger having a suitable stud to cooperate with said groove, a guide-rod on which said finger slides, and means to move said guide-rod to adjust the path of movement of the finger and provide for accurate measurement, substantially as described.

3. A rotatable measuring-cylinder having a spirally-arranged series of figures thereon, combined with an indicator to cooperate therewith, a guide on which said indicator is movable in the direction of the length of the cylinder, means to offset movement of the indicator as the cylinder rotates, and means to adjust the guide angularly and thereby vary the path of the indicator, to provide for accurate measurement, substantially as described.

4. In a cloth-handling machine, the combination with a cylinder over which the cloth passes to be wound, of a measuring apparatus, comprising a worm fixed on the shaft of said cylinder, a second shaft journaled adjacent said cloth-cylinder shaft, a worm wheel fixed on said second shaft, at one end, and a set-nut movable longitudinally on the other end thereof, a hollow shaft surrounding said second shaft and extending between and bearing against said worm and said set-nut for being locked thereby to rotate with the inclosed second shaft, a cylinder carried by said hollow shaft, a spirally-arranged scale on said cylinder, an indicating-finger arranged to follow said scale, means to move said finger longitudinally of the cylinder as the latter rotates, and means to vary the path of said longitudinal movement angularly relatively to the axis of the cylinder, as and for the purpose set forth.

608,819. UNDERFEED STOKER. WILFRED R. WEBB, Dayton, Ohio, assignor to the American Stoker Company, same place. Filed Apr. 20, 1897. Serial No. 634,462. (No model.)



Claim.—1. In an underfeed stoker, the combination of a retort or magazine, a series of twyer-openings on both sides, said openings being directed across the magazine, a second series of twyer-openings above the floor of the fire-chamber directed away from the magazine, and means for forcing air through said twyer-openings, substantially as described.

2. In an underfeed stoker, the combination of a retort or magazine, a series of openings in the upper part of said magazine discharging toward the interior thereof and additional openings above the floor of the fire-chamber directed away from said magazine, and means for forcing air through said openings, substantially as described.

3. In an underfeed stoker, the combination of a retort or magazine provided with a series of twyer-openings at or near its top, a wind-conduit communicating with the twyer-openings, and a deflector in said wind-conduit, substantially as described.

4. In an underfeed stoker, the combination of a retort or magazine provided with a series of twyer-openings at or near its top, a wind-conduit communicating with the twyer-openings, and an adjustable deflector in said wind-conduit, substantially as described.

5. In an underfeed stoker, the combination of a retort or magazine provided with a series of twyer-openings at or near its top, a jacket entirely surrounding said magazine to form a wind-box and communicating with the twyer-openings, a wind-trunk communicating with said wind-box, and a deflector, substantially as described.

6. In an underfeed stoker, the combination of a retort or magazine, a jacket surrounding the same to form a wind-box, provided with openings, and a series of twyer-blocks seated thereon and provided with openings communicating with the openings in the wind-box, substantially as described.

7. In an underfeed stoker, a fuel-magazine having one or more sets of lugs arranged transversely around the same with the metal of the body of the magazine between the lugs made thinner to afford a line of fracture, and clamping-bolts uniting said lugs substantially as described.

8. In an underfeed stoker, the combination of a magazine having a conduit leading into the same, twyer-blocks arranged at the top of said magazine and communicating with said conduit, and an air-trunk partly surrounding said conduit and communicating with said magazine, substantially as described.

9. In an underfeed stoker, the combination of a magazine, a jacket to form an air-chamber around said magazine, twyer-blocks communicating with said air-chamber and bolts adapted to engage in recessed openings in the abutting ends of said twyer-blocks, substantially as described.

10. In an underfeed stoker, the combination of a magazine, a laterally-projecting flange therefrom, an air-chamber surrounding said magazine, twyer-blocks mounted thereon, and bolts extending through said flange and having heads adapted to engage oppositely-arranged recessed openings in adjacent ends of said twyer-blocks, substantially as described.

11. In an underfeed stoker, the combination of an air-chamber a fuel-magazine, an air-trunk, and a fuel-conduit, said air-chamber surrounding said magazine and said air-trunk partly surrounding said conduit, of a pocket in said conduit and an air-pipe leading from said air-trunk to said pocket, substantially as described.

12. In an underfeed stoker, the combination of a fuel-magazine having an air-chamber completely surrounding the same, a laterally-projecting flange connecting the tops of both and adapted to form a top for said air-chamber with openings in said flange having tapered sides, and twyer-blocks having correspondingly-tapered flanges to fit in said openings, said twyer-blocks being formed with openings on the faces thereof, and adapted to fit together to form a continuous extension for the top of said magazine, substantially as described.

13. In an underfeed stoker, the ball-bearing mechanism for the screw conveyer consisting of the recessed plate *c*, annularly-grooved rings *d* in said recess, balls *e* in said grooves between the rings, and the shouldered sleeve *g* fast on the conveyer-shaft and having in said plate *c* substantially as described.

14. In the motor mechanism of an underfeed stoker, the combination of a screw conveyer, a ratchet for operating the same, a vibrating dog-carrier with means for vibrating the same, and a double-nosed dog having two pivotal bearings connected by a slot pivoted to said carrier and adapted to be shifted so that either nose may engage the ratchet to control the direction of revolution of the screw conveyer, substantially as described.

15. In the motor mechanism of an underfeed stoker, the combination of a screw conveyer, a ratchet for operating the same, a vibrating dog-carrier with means for vibrating the same, a double-nosed dog having two pivotal bearings connected by a slot pivoted to said carrier and adapted to be shifted so that either nose may engage the ratchet to control the direction of revolution of the screw conveyer, and a stop-dog for said ratchet adapted to be shifted to either side thereof substantially as described.

16. In the motor mechanism of an underfeed stoker, the combination of a screw conveyer, a ratchet for operating the same, a vibrating dog-carrier with means for vibrating the same, a double-nosed dog pivoted to said carrier and adapted to be shifted so that either nose may engage the ratchet to control the direction of revolution of the screw conveyer, and a two-part stop-dog, of unequal lengths, for said ratchet adapted to be shifted to either side thereof, substantially as described.

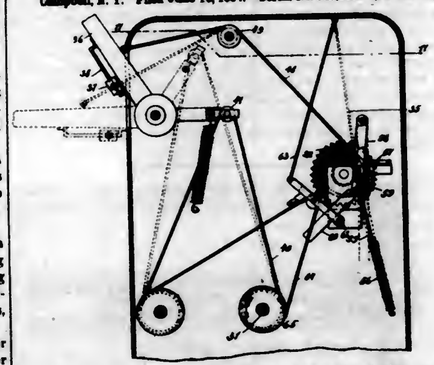
17. In the motor mechanism of an underfeed stoker, the combination of a screw conveyer, mechanism for actuating the same, a casing for said mechanism provided with an opening in front, and an eccentrically-set indicator revolving with the conveyer-shaft adjacent to the opening in the casing, whereby the attendant can observe the rotation of the screw conveyer, substantially as described.

18. In the motor mechanism of an underfeed stoker, the combination of the screw-conveyer ratchet *j* and its vibrating dog-carrier *k* of the double-nosed dog *n* having two pivotal bearings *q r* connected by a slot *s*, substantially as described.

19. In an underfeed stoker, the combination of a fuel-magazine, a fuel-conduit leading therefrom, a fuel-hopper for said conduit, and a screw conveyer in said conduit and magazine and journaled through the front wall of said conduit and having a removable bearing-plate within the conduit at its rear end, substantially as described.

20. In an underfeed stoker a fuel-magazine having one or more portions of less thickness than the body thereof combined with a bridge or bridges spanning the same, whereby the parts are held together in case of fracture.

608,820. RAILWAY-CROSSING GATE. CHARLES R. WOODWARD, Campbell, N. Y. Filed June 16, 1897. Serial No. 640,923. (No model.)



Claim.—1. A railway-crossing gate and operating devices, comprising a swinging gate, a longitudinally-movable bar at a point distant from the crossing, adapted to be shifted by a tappet carried by a locomotive, means for lifting said tappet from connection with the shifting-bar, a weight for moving the bar in the opposite direction, a connection between said bar and the gate, a longitudinally-movable locking-bar in said connection, a boxing in which said locking-bar is movable having a projection to engage in a notch in said bar, and a fulcrum-block adapted to be engaged by the tappet on the locomotive to move the boxing out of locking engagement with the bar, substantially as specified.

2. A railway-crossing gate and operating devices, comprising a swinging gate, a longitudinally-movable bar having an upwardly-extended lug, adapted to be operated by a tappet carried by a locomotive, an inclined plane for lifting the tappet out of engagement with the lug, a shaft rearward of the shifting-bar, a wheel on said shaft, a cable extended from the shifting-bar over said wheel, another wheel on said shaft, a cable on said other wheel, a weight on said cable, a tube in which said weight is movable, a retarding-lever operated by the upward movement of said weight for retarding the lever, a third wheel on said shaft, and connections between said third wheel and the gate, substantially as specified.

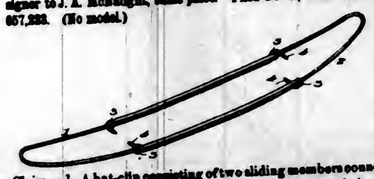
3. A railway-crossing gate and operating devices, comprising a swinging gate, a shifting-bar operated by a train, connections between said shifting-bar and the gate, a locking and releasing device in said connection, comprising a longitudinally-movable locking-bar having a notch in its under side, a spring-pressed boxing in which said locking-bar is movable, the said boxing having an upward extension to engage in a notch in the bar, means operated by a train for moving the boxing out of engagement with the locking-bar, a shaft, a wheel on said shaft from which a cable extends to the locking-bar, and another wheel on said shaft from which a cable extends to a weight, substantially as specified.

4. A railway-crossing gate and operating devices, comprising a swinging gate having its fulcrum-point within a casing at the side of the track, a shaft mounted in said casing, a cable connection between the gate and a wheel on said shaft, a ratchet-wheel on said shaft, a dog movable into engagement with the ratchet-wheel, and a weight-lever released upon a downward movement of the gate to hold said dog yieldingly in engagement with the ratchet-wheel, substantially as specified.

5. A railway-crossing gate and operating devices, comprising a vertically-swinging gate-bar, a casing in which said gate-bar is pivotally mounted, a shaft in said casing, a pulley on said shaft, a cable extended from said pulley around a pulley mounted on an inward extension of the gate, means actuated by a train for controlling the rotation of said shaft, and a retarding means for the gate arranged within the casing, substantially as specified.

6. A railway-crossing gate and operating devices, comprising a vertically-swinging gate-bar, a casing in which said gate-bar is pivoted, a block operated by the shaft of said gate-bars, mean operated at a distance from the crossing for swinging said gate-bar, a ratchet-wheel, a shaft on which said ratchet-wheel is mounted, a grooved wheel on said shaft, a cable connection between said grooved wheel and the gate, a dog for engaging the said ratchet-wheel, a swinging weight-bar for holding said dog in yielding engagement with the ratchet-wheel, a swinging connection on the lower end of said bar, a yoke with which said swinging connection engages, a swinging rod to which said yoke is attached, and means for releasing said yoke to allow the weight-bar to move into engagement with an arm of the dog, substantially as specified.

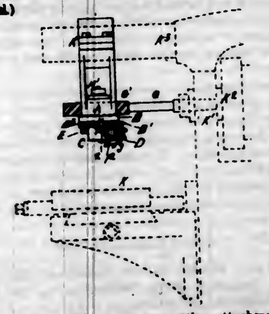
608,821. HAT-CLIP. EDWARD ANDERSON, Sundance, Wyo., assignor to J. A. McNaught, same place. Filed Nov. 2, 1897. Serial No. 657,232. (No model.)



Claim.—1. A hat-clip consisting of two sliding members connected together and having a sliding adjustment, said members being provided with opposing embedding-prongs, substantially as set forth.

2. A hat-clip consisting of two bails, the ends of which are provided with eyes and prongs, the eyes of one bail engaging the sides of the other bail, substantially as set forth.

608,822. MILLING AND GEAR-CUTTING ATTACHMENT. JOHN F. ARTHUR, New York, N. Y. Filed Dec. 7, 1897. Serial No. 661,081. (No model.)



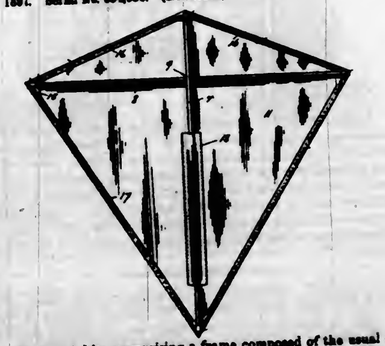
Claim.—1. In a milling and gear-cutting attachment for milling and other machines, the combination of the machine-arbor provided with a spiral gear, a cutting-tool arbor provided with a spiral gear, and adapted to be set in different angular positions relative to the machine-arbor and in a horizontal plane that is parallel to the axis of the machine-arbor, a spiral gear meshing into the gear-teeth of the machine-arbor and the cutting-tool arbor and communicating motion from the machine-arbor to the cutting-tool arbor in all of its positions, a main detachable frame or arm of the machine and a frame having bearings for the machine-arbor, the cutting-tool arbor and the communicating spiral gear adapted to be attached to the main frame or arm of the machine.

2. In a milling and gear-cutting attachment for milling and other machines, the combination of the machine-arbor, a cutting-tool arbor adapted to be set in different angular positions relative to the machine-arbor and in a horizontal plane that is parallel to the axis of the machine-arbor, means for communicating motion from the machine-arbor to the cutting-tool arbor, and a two-part frame, one part of which is adapted to be attached to a fixed part of the machine-frame and held stationary and provided with bearings for the machine-arbor and for the motion-communicating device, the other part provided with bearings in which is carried the cutting-tool arbor rotatably attached to the stationary part, and clamping-bolts which pass through a circular slot in a flange on the rotating part and enter tapped holes in a flange on the stationary part of the frame.

3. In a milling and gear-cutting attachment for milling and other machines, the combination of the machine-arbor, a cutting-tool arbor adapted to be set in different angular positions relative to the machine-arbor and in a horizontal plane that is parallel to the axis of the machine-arbor, means for communicating motion from the machine-arbor to the cutting-tool arbor, and a detachable two-part frame, one part of which is held stationary by attachment to a fixed part of the main frame of the machine and provided with bearings for the machine-arbor and for the motion-communicating device, the other part provided with bearings in which is carried the cutting-tool arbor and rotatably attached to the stationary part, circular flanges on the two parts at their junctare having an angle scale and index marked thereon, and clamping means for locking the two parts of the frame together.

4. In a milling and gear-cutting attachment for milling and other machines, the combination of the main frame or arm of the machine, the machine-arbor provided with an elongated spiral gear, a communicating spiral gear meshing into the gear of this arbor, a cutting-tool arbor having a spiral gear meshing into the communicating spiral gear, a two-part frame in one of which the cutting-tool gear has its bearing and which is rotatably attached to the other part, said other part having bearings for the machine-arbor and the communicating spiral gear and held stationary at any part of the elongated spiral gear of the machine-arbor over which it may be set by attachment to the main frame or arm of the machine.

608,823. KITE. WALTER S. BAKER, Newark, N. J. Filed Oct. 12, 1897. Serial No. 654,956. (No model.)



Claim.—A kite, comprising a frame composed of the usual central longitudinal and cross sticks, said sticks being detachably connected and said sticks being also provided at their ends with detachable sockets or tips which are provided on their opposite sides with eyes or rings, and a body portion or covering for said frame, the sides of which are provided with cords, said cords being provided at their ends with hooks which are adapted to be connected with said rings or eyes, and the body portion or covering being also provided with a longitudinal pocket through which the central longitudinal stick is passed, said sticks being also provided at the point where they are connected with rings or eyes which are pivotally secured to one of said sticks on the opposite sides of said connection and adapted to swing into alinement over the other stick, substantially as described.

608,824. DEMIJOHN. GIOVANNI BECCARO, Acqui, Italy. Filed May 12, 1897. Serial No. 636,164. (No model.) Patented in Italy Apr. 29, 1891, No. 29,641, LVIII, 76; in Germany Oct. 9, 1894, No. 82,376; in France Mar. 11, 1895, No. 245,707, and in Spain Apr. 1, 1895, No. 17,282.



Claim.—1. As a new article of manufacture, a demijohn combined with a wickerware covering provided with a wooden bottom with which the wickerware is united, the uprights of said wickerware being forced through holes in the bottom, small end first, so as to cause the large end to be tightly gripped in the hole, substantially as described.

2. A demijohn having a wickerware covering, with a wooden bottom to which the wickerware is united, wickerware handles united with the cover and concealing wire reinforcements fastened to the

wooden bottom, so as to cause the weight of the demijohn to be sustained by said wires.

3. A demijohn having a wickerware covering with a wooden bottom and cross-bands secured at the ends to the wickerware so as to sustain the demijohn at a distance from the said bottom, substantially as described.

4. A demijohn provided with wickerware covering and having a movable emptying-cock adapted to be inclosed within, or to be projected out of, the wicker covering.

5. A demijohn provided with a wickerware covering having an automatic emptying-cock movably secured to the bottom of the covering, and flexible means for attaching said cock to the demijohn, substantially as described.

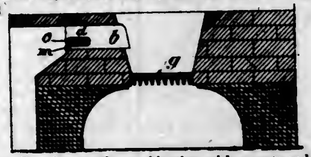
6. A demijohn having a wickerware covering and an emptying-cock, a door in the wickerware in front of said cock, and means for automatically causing said cock to protrude from the casing when the door is opened, substantially as described.

608,825. BICYCLE. GEORGE G. BURNS, Philipsburg, Mont. Filed Feb. 11, 1898. Serial No. 669,917. (No model.)



Claim.—In a bicycle, the combination with the usual driving mechanism of a gear sleeved upon the handle-shaft and connected therewith by a pawl-and-ratchet mechanism, a tubular pinion sleeved upon the main fork and in mesh with said gear, a combined gear and sprocket wheel mounted on an adjustable shaft clamped about the main fork and in mesh with said tubular pinion a supplemental sprocket-wheel mounted upon the pedal-shaft and a drive-chain connecting the said sprocket wheels, substantially as and for the purpose set forth.

608,826. FURNACE. PIERRE BONNARD, Paris, France. Filed Nov. 24, 1896. Serial No. 613,260. (No model.) Patented in France Sept. 18, 1895, No. 250,637; in England Dec. 11, 1895, No. 23,778; in Belgium Dec. 11, 1895, No. 118,816, and in Germany Nov. 29, 1896, No. 94,443.



Claim.—In a furnace the combination, with a grate and fire-box above the grate, of a fuel-distillation chamber *b* in the wall of the furnace wholly above and at one side of the grate the bottom of said chamber being horizontal so that coal will rest thereon without falling into the combustion-chamber, and there being an unobstructed opening between chamber *b* and the combustion-chamber, whereby fuel can be pushed horizontally into the combustion chamber.

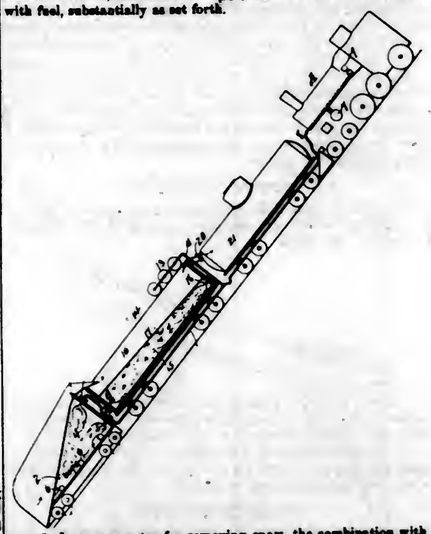
608,827. APPARATUS FOR REMOVING SNOW. DAVID BOOMAN, ALBERT P. SHARP, and JOHN O'NEIL, Altoona, Pa. Filed Nov. 2, 1897. Serial No. 657,224. (No model.)

Claim.—1. In an apparatus for removing snow, the combination with a wedge, burners for heating the same and a vehicle, of oil-receptacles carried by the vehicle and communicating with said burners and means also carried by the vehicle for supplying air to the burner, substantially as set forth.

2. In an apparatus for removing snow, the combination with a wedge and means for keeping its upper sloping surface heated, of a receptacle in rear of said wedge and into which said wedge is adapted to discharge and means for heating said receptacle, substantially as set forth.

3. In an apparatus for removing snow, the combination with a wedge, of a receptacle in rear of said wedge and into which said wedge discharges, means for heating said receptacle and a receptacle for water communicating with said heated receptacle, substantially as set forth.

4. In an apparatus for removing snow, the combination with a wedge, of a receptacle in rear of said wedge, said receptacle being divided into an upper and a lower compartment, a spout on said wedge and discharging into the upper compartment, said lower compartment forming a combustion-chamber, and means for supplying said combustion-chamber with fuel, substantially as set forth.



5. In an apparatus for removing snow, the combination with a wedge, of a receptacle in rear of said wedge, said receptacle being divided into two compartments by an inclined plate, said wedge being adapted to communicate with the upper compartment of said receptacle, means for supplying the lower compartment with fuel, and a water-receptacle communicating with said upper compartment, substantially as set forth.

6. In an apparatus for removing snow, the combination with a locomotive, of a water-receptacle in front of the said locomotive, a tank in front of the water-receptacle and having a combustion-chamber therein, the upper portion of said tank communicating with said water-receptacle, a wedge in front of the tank and communicating therewith, a combustion-chamber in said wedge, oil-receptacles, burners communicating with the combustion-chambers of the tank and wedge and with said oil-receptacles, and means for forcing oil to said burners, substantially as set forth.

608,828. APPARATUS FOR MAKING ARTICLES OF GLASSWARE. CHARLES M. BRADY, Washington, Pa. Filed June 1, 1897. Serial No. 638,963. (No model.)

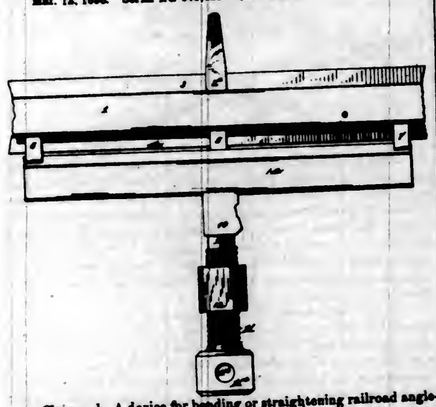


Claim.—1. An improved apparatus for making glass articles, consisting of a perforated mold, an air-tight casing surrounding the same and connected therewith, and a vacuum-pipe connected with said casing, substantially as set forth.

2. An improved apparatus for making glass articles, consisting of a divided perforated mold, an air-tight casing surrounding the same and connected therewith, and a vacuum-pipe connected with said casing, substantially as set forth.

3. An improved apparatus for making glass articles, consisting of the divided, perforated mold A, and a divided air-tight casing B, surrounding the same and connected therewith, and a pipe *f*, connected with a source of vacuum, substantially as set forth.

608,829. DEVICE FOR BENDING ANGLE-BARS. DENNIS BRESNAN, JOHN R. WIRLEY, and EVERETT GOLDTHWAIT, Hikhart, Ind. Filed Mar. 12, 1898. Serial No. 673,622. (No model.)



Claim.—1. A device for bending or straightening railroad angle-plates comprising the clamp adapted to engage the rail, bearing-blocks adapted to abut against the rail and having bearing-faces to sustain the angle-plates, and means for applying pressure to the unsustained portion of said angle-plates, substantially as described.

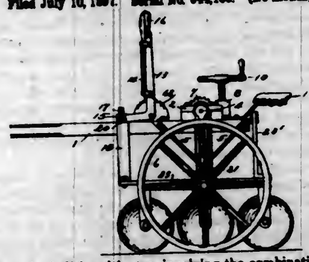
2. A device for bending or straightening angle bars or plates comprising the clamp adapted to engage the rail, the connected bearing-blocks adapted to rest against the rail and having surfaces designed to sustain the angle-plate, and means for applying pressure to the unsustained portion of said angle-plate, substantially as described.

3. A device for straightening or bending angle-plates comprising the clamp adapted to engage the rail, the bearing-blocks adapted to abut against the rail and having a plurality of sustaining-surfaces adapted to sustain the angle-plate in a plurality of positions, and means for applying pressure to the unsustained portion of said angle-plate, substantially as described.

4. A device for straightening or bending angle-plates comprising the clamp adapted to engage the rail, the central and end blocks adapted to abut against the rail, bearing-surfaces on said end blocks adapted to sustain the ends of the angle-plates, an incline on said central block designed to contact with the under edge or face of the plate being straightened, and means for applying pressure to the central portion of the angle-plate, substantially as described.

5. A device for straightening or bending angle-plates comprising a clamp adapted to engage the rail, bearing-blocks adapted to abut against the rail and having a plurality of faces designed to sustain the angle-plate in a plurality of positions, a pressure-screw carried by said clamp, and a pressure-block adapted to be interposed between the screw and angle plate and having also a plurality of bearing-surfaces conforming in shape to the various positions of the angle plate, substantially as described.

608,830. DISK CULTIVATOR. ANDREW L. BROOK, Lockhart, Tex. Filed July 10, 1897. Serial No. 644,102. (No model.)

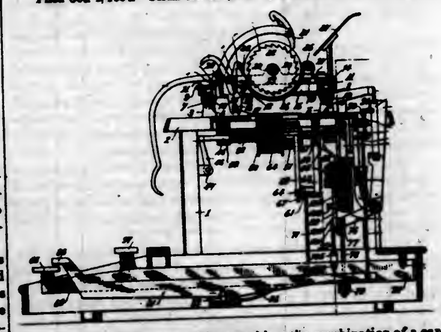


Claim.—1. A disk cultivator, involving the combination of cultivator or plow beams, an arch with which said beams are adjustably connected, a second arch adjustable for width, and cultivator-disks adapted to be adjusted to any desired angle with the beams.

2. In a disk cultivator, the combination with an arch having laterally-extended portions provided with a series of holes therein, a second arch adjustable for width, beams connected to the ends of said second arch and to one of the openings in each of said laterally-extended portions of the first-mentioned arch, and cultivator-disks adjustably mounted upon said beams, substantially as described.

3. In a disk cultivator, the combination with an arch having laterally-extended portions provided with a series of holes therein, a second arch adjustable for width, beams connected to the ends of said second arch and to one of the openings in each of said laterally-extended portions of the first-mentioned arch, a series of radially-corrugated lugs formed upon said beams provided with ratchet-teeth thereon, a series of forks held upon said lugs provided with similar teeth adapted to coact with said ratchet-teeth, and a series of cultivator-disks held in said forks, substantially as described.

608,831. TYPE-WRITING MACHINE. BYRON A. BROOKS, New York, N. Y., assignor to the Union Typewriter Company, same place. Filed Oct. 1, 1894. Serial No. 524,584. (No model.)



Claim.—1. In a type-writing machine, the combination of a carriage-frame having a pivoted platen-carrier, a platen arranged to rotate therein and having its axis coincident with the axis of motion of the platen-carrier, a feed-roller and paper-guide mounted upon the platen-carrier, a platen ratchet-wheel, a holdfast dog or tooth bearing against the same, and a line-spacing lever pivoted in said carriage-frame and provided with a driving-pawl which stands normally out of engagement with said ratchet-wheel, but which, when said line-space lever is actuated, is capable of turning the same and the platen to which it is connected.

2. In a type-writing machine, the combination of a non-lifting carriage adapted to travel upon guides or ways, a non-lifting frame connected to said carriage, a platen-carrier mounted in said frame, relatively fixed pivots and a revolubie platen mounted in said platen-carrier.

3. In a type-writing machine, the combination of a non-lifting carriage adapted to travel upon guides or ways, a vibrating frame mounted upon said carriage, a shifter-bar for vibrating said frame, a platen-carrier pivotally mounted in said frame, and a platen rotatively mounted in said platen-carrier.

4. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, a series of rotatory cams, a pair of slidable ribbon-spool shafts connected together and adapted to be moved in one direction by each of said cams, and a spring for moving the same in the opposite direction.

5. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon spools, a pair of slidable ribbon-spool shafts connected together by a pair of rocker-arms and a rock-shaft, a series of rotatory cams for moving the spool-shafts, spools and ribbon in one direction, and a spring for moving the same in the opposite direction.

6. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, a pair of slidable spool-shafts connected together, a pair of elongated ratchet-wheels, a pair of driving-pawls, a series of rotatory cams adapted to move the shafts, ratchet-wheels, spools, and inking-ribbon in one direction, and a spring for moving the same in the opposite direction.

7. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, a pair of elongated ribbon-spool ratchet-wheels, a pair of ribbon-spool slidable shafts connected together by rocker-arms and a rack-shaft, a series of rotatory cams, a spring arranged on one of said shafts and acting against said cams, and a pair of driving-pawls.

8. In a type-writing machine, the combination with a carriage, a spring driving-drum therefor, a series of rotatory cams connected to said driving-drum, a carriage-spacing mechanism, an inking-ribbon, a pair of reciprocatory spool-shafts adapted to be acted upon by said cams and by a spring, whereby the ribbon is moved transversely, and a ratchet mechanism connected to said spools and to a space-key of

the spacing mechanism, whereby the ribbon is moved lengthwise at each spacing operation.

9. In a type-writing machine, the combination with a carriage, a spring driving-drum therefor, a series of rotatory cams connected to the latter, a carriage-spacing mechanism, a pair of connected slidable spool-shafts, an inking-ribbon, a pair of ribbon-spools, a pair of ratchet-wheels, a spring to act against the series of cams, a pair of driving-pawls mounted upon a rocking lever, and a connection between said lever and the space-key of the spacing mechanism.

10. In a type-writing machine, the combination of a power-driven carriage, a feed-rack, a holding-dog, a feeding-dog having a lateral vibratory movement, a pivoted stop having steps or projections, a lever adapted to contact with said steps or projections and hold said stop in either of two positions to limit the lateral movement of the feeding-dog to a distance of either one or two notches on the rack, and a key connected to said lever arranged at the keyboard of the machine in a position to be actuated simultaneously with one of the character or printing keys of the machine.

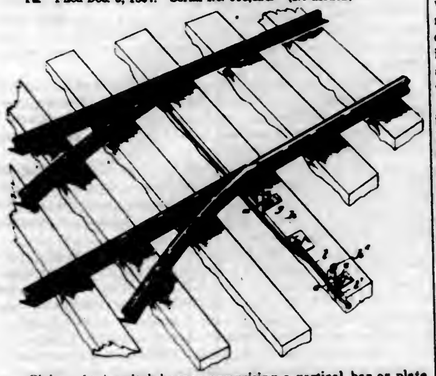
11. In a type-writing machine, the combination with a carriage-driving drum having a pin or projection, a series of key-levers for actuating the type-bars, a universal bar adapted to be depressed by said key-levers, a spacing-bar connected to said universal bar, escapement-dogs and feed-rack, a stop mounted upon said spacing-bar and adapted to contact with said pin or projection and prevent the depression of the universal bar, and the key-levers, when said pin or projection and said stop come into vertical alinement.

12. In a type-writing machine, the combination of a circularly-movable pin or projection, and a vertical reciprocatory stop attached to the spacing-bar of the carriage-feeding mechanism, and adapted to contact with said pin or stop and lock the feeding and printing mechanisms.

13. In a type-writing machine, the combination of a carriage-driving drum having a pin or projection, a reciprocatory stop carried by the spacing mechanism, whereby the spacing and printing mechanisms may be locked, a key-lever, and a connection from said key-lever to said stop for moving the same away from said pin or projection, whereby the feeding and printing mechanisms may be unlocked and one or more additional characters printed.

14. In a type-writing machine, the combination of a carriage-driving drum having a pin or projection, a bent lever having a hook and attached to the spacing-bar, a key-lever having its finger-piece arranged at the keyboard, and a connecting means between said key-lever and said bent lever.

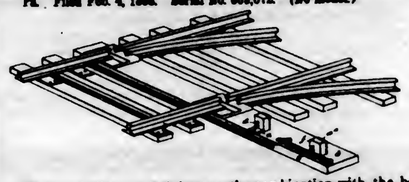
608,832. SWITCH-KEEPER. GEORGE W. BUSH, Turtle Creek, Pa. Filed Dec. 3, 1897. Serial No. 660,628. (No model.)



Claim.—1. A switch-keeper comprising a vertical bar or plate having a horizontal bed-plate formed integral therewith said vertical bar being provided on its one face with a recess within which is pivoted a dog or pawl, a rod connected to the inner end of said pawl, and a foot-lever pivotally supported on the bed-plate and engaging the lower end of the rod to operate the pawl or dog and draw the same within the vertical plate, substantially as shown and described.

2. In a switch-keeper, the combination with a switch-lever provided with a slot, of a keeper comprising a vertical and horizontal plate attached to the cross-tie, said vertical plate having a pivoted pawl or dog arranged therein, with its one end projecting normally beyond the edge of the vertical plate, a rod connected to said plate and the foot-lever pivotally supported on the horizontal plate and engaging the lower end of the rod to operate the pivoted pawl or dog, substantially as shown and described.

608,833. SWITCH-LEVER LOCK. ROBERT S. BUSH, Greensburg, Pa. Filed Feb. 4, 1898. Serial No. 669,072. (No model.)



Claim.—1. In a switch-keeper the combination with the bed-plate which is provided with an upwardly-extending lug forming a stop, a block on said plate, said block being provided with a recess in which is pivotally hung a locking-plate which normally protrudes through the recess in the block and engages the stop on the plate, a treadle-lever connected to said locking-plate for withdrawing the same within the recess of the block, and a locking bolt or bar for engagement with the upper end of the locking-plate, substantially as shown and described.

2. In a switch-keeper, the combination of the bed-plate which is provided with an upwardly-extending lug forming a stop, a block upon said plate, said block being provided with a recess within which is pivotally hung a locking-plate which normally protrudes through the recess of the block and engages the stop of the plate, a foot or treadle lever pivotally hung within the block and connected by a pivoted lever to the locking-plate for operating the same, a locking bolt or bar arranged within the block and means for operating the same to engage with or disengage from the locking-plate, substantially as shown and described.

608,834. SAMPLING-MACHINE. OWEN BYRNES, Granite Butte, Mont. Filed Jan. 28, 1898. Serial No. 668,475. (No model.)



Claim.—1. A sampling-machine, provided with a cone-shaped wheel having ribs terminating in the apex of the cone, so that the material or liquid to be sampled and discharged upon the apex is equally divided by the said ribs and flows down the sides of the cone in eqal quantities between adjacent ribs, and a sample outlet or spout attached to the wheel and leading out from between one pair of ribs thereon, substantially as described.

2. A sampling-machine, provided with a cone-shaped wheel having ribs terminating in the apex of the cone, so that the material or liquid to be sampled and discharged upon the apex is equally divided by the said ribs and flows down the sides of the cone in equal quantities between adjacent ribs, a sample outlet or spout attached to the wheel and leading out from between one pair of ribs, and a sample-receiver into which discharges the sample-spout, the receiver being out of the line of discharge of the remaining base portion of the wheel, substantially as shown and described.

3. A sampling-machine, provided with a cone-shaped wheel having ribs terminating in the apex of the cone, so that the material or liquid to be sampled and discharged upon the apex is equally divided by the said ribs and flows down the sides of the cone in equal quantities between adjacent ribs, a sample outlet or spout attached to the wheel and leading out from between one pair of ribs, a sample-receiver into which discharges the sample-spout, the receiver being out of line of discharge of the remaining base portion of the wheel, and means for regulating the size of the inlet-opening of the said sample-receiver, substantially as shown and described.

4. A sampling-machine, provided with a cone-shaped wheel mounted to rotate and formed on its sides with spiral chambers terminating in the apex of the cone, a spout arranged centrally over the apex of the cone, and a sample-chute carried by the wheel and leading out from one of the spiral chambers, substantially as shown and described.

5. A sampling-machine having a conical wheel, provided on its upper face with a series of spiral chambers, and a sampling-chute attached to and turning with the wheel and leading outwardly from one of said chambers.

6. In a sampling-machine the combination of a casing, a conical wheel mounted to turn in the casing and having a series of spiral chambers formed on its upper face, a sampling-chute carried by the wheel and leading outward from one of said chambers, and a sample-receiver carried by the casing, and into which receiver the sample-chute discharges.

608,835. TOY. ALBERT S. CARR, Canton, Ohio. Filed May 15, 1896. Serial No. 591,723. (No model.)

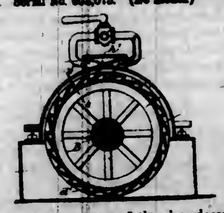


Claim.—1. The combination of a traveling vehicle, having a tongue provided at its forward end with a pivoted extension, carrying a wheel, a crank-shaft having journaled thereto pitmen, L-levers connected to said pitmen, and fixed to the bodies, the yoke 23 supported by the tongue, the bodies pivotally attached to the upper portions of the yoke, the wires 25 and 27 attached to the fixed yoke and connected to the levers 20 and 21, substantially as and for the purpose set forth.

2. The combination of a traveling vehicle, the body 53 supported upon the vehicle in substantially an upright position, the arms 55 and 56 pivoted to the upright body and provided with the extensions 61 and 62, the wheel 52 located within the upright body and provided with tappet-pins, the pivoted leg 64 provided with a weighted foot or block, a gong located below the foot, and means for elevating the foot, substantially as and for the purpose specified.

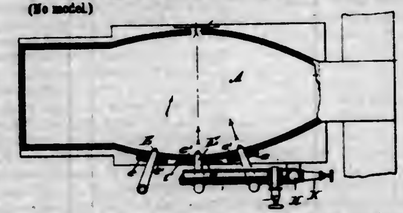
3. The combination of the body of a quadruped, pivotally attached to a fixed support, legs pivotally connected to the body by means of suitable rivets or cross-bolts, levers 20, and 21, having connected thereto wires 26, and 27, the inner ends of said wires fixed to the rigid support upon which the body is pivoted, and means for imparting an oscillating movement to the body, substantially as and for the purpose specified.

608,836. MOTOR. LAUGHLAN W. CARSON, Elma, Iowa. Filed Sept. 17, 1897. Serial No. 652,073. (No model.)



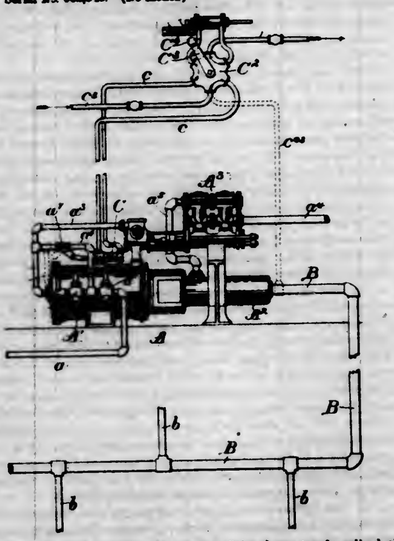
Claim.—In an engine or motor of the class described, the combination with the hollow base, and the wheel journaled thereon, and formed with peripheral flanges, and with two series of oppositely-directed buckets lying between the said flanges, of the arched casing-plate secured to said base and extending over the exposed portion of said wheel, said plate having flanges which interfit with those of the wheel, a steam-chest supported on said casing-plate at its upper central portion and divided into two parts having open bottoms and oppositely-inclined upper walls, means whereby steam or the like may be admitted to either port of said chest, and exhaust-openings leading outwardly from the lower portions of said casing, substantially as specified.

608,837. REVERBERATORY SMELTING-FURNACE. HENRY L. CHARLES, Butte, Mont. Filed June 26, 1896. Serial No. 597,059. (No model.)



Claim.—A revarberatory smelting-furnace, having an elongated hearth, one of its side walls having a centrally-located slag-discharge orifice, and the other of said side walls having a plurality of twyer-openings, and a series of twyers respectively projected through said twyer-openings, the twyers being disposed angularly to each other and each radially from the slag-discharge orifice, so that the blast from the twyers is directed to and concentrated at the slag-discharge orifice.

608,838. HYDRAULIC SYSTEM FOR OPERATING RECIPROCATING MECHANISM. WILLIAM R. COWLES, Cleveland, Ohio, assignor to the "Long Arm" System Company, same place. Filed Dec. 17, 1897. Serial No. 662,349. (No model.)



Claim.—1. In a hydraulic system of the character described, the combination with a receptacle adapted to contain a body of fluid under pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and means for connecting the pipe from one end of said cylinder to the fluid-pressure pipe and from the other end of the cylinder to the exhaust-pipe, or vice versa, means for varying the pressure of the fluid in said receptacle controlled by the fluid in said pipes, and emergency mechanism operated by the change of pressure of the fluid in said receptacle, substantially as described

2. In a hydraulic system of the character described, the combination with a receptacle adapted to contain a body of fluid under pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and means for connecting the pipe from one end of said cylinder to the fluid-pressure pipe and from the other end of the cylinder to the ex-

haust pipe, or vice versa, a fluid-pressure main connected to said receptacle, branch pipes leading from said main, mechanism operated by the fluid in said branch pipes, means operated by the piston in the emergency-cylinder for varying the fluid pressure in said receptacle and in said fluid-pressure main, and emergency mechanism connected to the branch pipes and operated by the change of pressure in said fluid pressure main, substantially as described.

3. In a hydraulic system of the character described, the combination with a receptacle adapted to contain a body of fluid under pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and means for connecting the pipe from one end of said cylinder to the fluid-pressure pipe and from the other end of the cylinder to the exhaust pipe, or vice versa, a fluid-pressure main connected to said receptacle, branch pipes leading from said main, mechanism operated by the fluid in said branch pipes, a releasing-valve mechanism connected to each of said branch pipes and adapted to control the flow of fluid through said branch pipe and thus to control the mechanism operated thereby, means operated by the piston in the emergency-cylinder for varying the fluid-pressure in said receptacle and in said fluid-pressure main, and emergency mechanism connected to the branch pipes and operated by the change of pressure in said fluid-pressure main, substantially as described.

4. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure, and a fluid-pressure main leading therefrom and a steam-cylinder for exerting pressure upon said fluid, with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and means for connecting the pipe from one end of said emergency-cylinder to the fluid-pressure pipe and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa, means operated by the piston in the emergency-cylinder for increasing the pressure of the steam in the steam-cylinder, and emergency mechanism operated by the increased pressure in the ram-cylinder, substantially as described.

5. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure, and a steam-cylinder for exerting pressure upon said fluid, with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and means for connecting the pipe from one end of said emergency-cylinder to the fluid-pressure pipe and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa means operated by the piston in the emergency-cylinder for increasing the pressure of the steam in the steam-cylinder, and emergency mechanism operated by the increased pressure in the ram-cylinder, substantially as described.

6. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure, and a steam-cylinder for exerting pressure upon said fluid, with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and a six-way valve for connecting the pipe from one end of said emergency-cylinder to the fluid-pressure pipe and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa, means operated by the piston in the emergency-cylinder for increasing the pressure of the steam in the steam-cylinder, and emergency mechanism operated by the increased pressure in the ram-cylinder, substantially as described.

7. In a hydraulic system of the character described, the combination with a receptacle adapted to contain a body of fluid under pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and a six-way valve for connecting the pipe from one end of said cylinder to the fluid-pressure pipe and from the other end of the cylinder to the exhaust-pipe, or vice versa, means for varying the pressure of the fluid in said receptacle controlled by the fluid in said pipes, and emergency mechanism operated by the change of pressure of the fluid in said receptacle, substantially as described.

8. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure, and a steam-cylinder for exerting pressure upon said fluid, with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid pressure pipe and an exhaust-pipe, and means for connecting the pipe from one end of said emergency-cylinder to the fluid-pressure pipe, and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa, a fluid-pressure main leading from the ram-cylinder, branch pipes leading from said main, mechanism operated by the fluid in said branch pipes and mechanism operated by the piston in the emergency-cylinder for regulating the pressure in the steam-cylinder and so controlling the pressure in all of said branch pipes, substantially as described.

9. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure, and a steam-cylinder for exerting pressure upon said fluid, with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe connected to said ram-cylinder and an exhaust-pipe, and a six-way valve for connecting the pipe from one end of said emergency-cylinder to the fluid-pressure pipe and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa, a fluid-pressure main, leading from the ram-cylinder, branch pipes leading from said main, mechanism operated by the fluid in said branch pipes, and mechanism operated by the piston in the emergency-cylinder for regulating the pressure in the steam-cylinder and so controlling the pressure in all of said branch pipes, substantially as described.

10. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure and a steam-cylinder for exerting pressure upon said fluid, with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe connected to said ram-cylinder and an exhaust-pipe, and means for connecting the pipe from one end of the emergency-cylinder to the fluid-pressure pipe and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa, a fluid-pressure main leading from the ram-cylinder, branch pipes leading from said main, reciprocating mechanism operated by the fluid in said branch pipes and mechanism operated by the piston in the emergency-cylinder for controlling the pressure in the ram-cylinder and so all of said branch pipes, substantially as described.

11. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure, and a steam-cylinder for exerting pressure upon said fluid, with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, means for connecting the pipe from one end of said emergency-cylinder to the fluid-pressure pipe and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa, a fluid-pressure main leading from the ram-cylinder, branch pipes leading from said main, reciprocating mechanism operated by the fluid in said branch pipes and mechanism operated by the piston in the emergency-cylinder for controlling the pressure in all of said branch pipes, and emergency mechanism connected to each of said branch pipes and operated by increase of pressure in the branch pipe, substantially as described.

12. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure, and a steam-cylinder for exerting pressure upon said fluid, with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and means for connecting the pipe from one end of said emergency-cylinder to the fluid-pressure pipe and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa, a fluid-pressure main connected to said ram-cylinder, branch pipes leading from said main, mechanism operated by the fluid in said branch pipes, mechanism operated by the piston in the emergency-cylinder for controlling the pressure in said fluid-pressure main and in all of said branch pipes, and emergency mechanism connected to each of said branch pipes and operated by increase of pressure in the fluid-pressure main, substantially as described.

13. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain fluid under pressure and itself operated by fluid from the source of fluid-pressure, means for regulating the pressure of the fluid in the accumulator, a fluid-pressure main leading from the accumulator, branch pipes from said main, reciprocating mechanism operated by the fluid in said branch pipes, and releasing-valve mechanisms located in each of said branch pipes and separately operated by hand at low pressures and simultaneously automatically operated at high pressures, substantially as described.

14. In a hydraulic system of the character described, the combination with a ram-cylinder adapted to contain a body of fluid under pressure, and a steam-cylinder for exerting pressure upon said fluid,

with valves for regulating the said pressure, of an emergency-cylinder, with piston therein, pipes respectively connected to each end of said emergency-cylinder and adapted to contain fluid under pressure, a fluid-pressure pipe and an exhaust-pipe, and means for connecting the pipe from one end of said emergency-cylinder to the fluid-pressure pipe and from the other end of the emergency-cylinder to the exhaust-pipe, or vice versa, a fluid-pressure main connected to said ram-cylinder, branch pipes leading from said main, devices to be operated provided with cylinders operated by the fluid in said branch pipes, a valve operated by the piston in the emergency-cylinder for controlling the pressure in the steam-cylinder and thus regulating the pressure in the ram-cylinder and in all of said branch pipes, and a hand-operated releasing-valve connected to each of said branch pipes and adapted to control the flow of fluid through said branch pipe and to control the mechanism operated thereby, substantially as described.

15. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain fluid under pressure and itself operated by fluid from the source of fluid-pressure, means for regulating the pressure of the fluid in the accumulator, a fluid-pressure main leading from the accumulator, a branch pipe from said main, mechanism operated by the fluid in said branch pipe, and releasing-valve mechanism located in said branch pipe and operated by hand at low pressures and automatically operated at high pressures, substantially as described.

16. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a plurality of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, means for operating said valve, and mechanism operated by the fluid-pressure from the accumulator, substantially as described.

17. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a plurality of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, means for operating said valve, a fluid-pressure main connected to said accumulator, branch pipes connected to said main, and mechanism operated by the fluid-pressure in said branch pipes, substantially as described.

18. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a plurality of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, means for operating said valve a fluid-pressure main connected to said accumulator, branch pipes connected to said main, and reciprocating mechanism operated by the fluid-pressure in said branch pipes, substantially as described.

19. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a plurality of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, means for operating said valve, a fluid-pressure main connected to said accumulator, branch pipes connected to said main, and a hand-operated releasing-valve in each of said branch pipes, substantially as described.

20. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a plurality of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, means for operating said valve, a fluid-pressure main connected to said accumulator, branch pipes connected to said main, reciprocating mechanism operated by the fluid-pressure in said branch pipes, and a hand-operated releasing-valve in each of said branch pipes, substantially as described.

21. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a fluid under pressure and itself operated by fluid from the source of fluid-pressure, a plurality of reducing-valves interposed between the source of fluid-pressure and the accumulator, with a by-pass from between said valves to the accumulator with a valve controlling said by-pass, for regulating the pressure of the fluid in the accumulator, a fluid-pressure main leading from the accumulator, a branch pipe from said main, mechanism operated by the fluid in said branch pipe, and releasing-valve mechanism located in said branch pipe and operated by hand at low pressures and automatically operated at high pressures, substantially as described.

22. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain fluid under pressure and itself operated by fluid from the source of fluid-pressure, a plurality of reducing-valves interposed between the source of fluid-pressure and the accumulator, with a by-pass from between said valves to the accumulator with a valve controlling said by-pass, for regulating the pressure of the fluid in the accumulator, a fluid-pressure main leading from the accumulator, a branch pipe from said main, reciprocating mechanism operated by the fluid in said branch pipe, and releasing-valve mechanism located in said branch pipe and operated by hand at low pressures and automatically operated at high pressures, substantially as described.

23. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain fluid under pressure and itself operated by fluid from the source of fluid-pressure, a plurality of reducing-valves interposed between the source of fluid-pressure and the accumulator, with a by-pass from between said valves to the accumulator with a valve controlling said by-pass, for regulating the pressure of the fluid in the accumulator, a fluid-pressure main leading from the accumulator, a branch pipe from said main, a reciprocating device to be operated, a cylinder and piston one of which is fast to the reciprocating device and the other to the framework surrounding the same, and the movable part being operated by the fluid in said branch pipe, and releasing-valve mechanism located in said branch pipe and operated by hand at low pressures and automatically operated at high pressures, substantially as described.

24. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain fluid under pressure and itself operated by fluid from the source of fluid-pressure, means for regulating the pressure of the fluid in the accumulator, a fluid pressure main leading from the accumulator, a branch pipe from said main, reciprocating mechanism operated by the fluid in said branch pipe, and releasing-valve mechanism located in said branch pipe and operated by hand at low pressures and automatically operated at high pressures, substantially as described.

25. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain fluid under pressure and itself operated by fluid from the source of fluid-pressure, means for regulating the pressure of the fluid in the accumulator, a fluid-pressure main leading from the accumulator, branch pipes from said main, mechanism operated by the fluid in said branch pipes, and releasing-valve mechanisms located in each of said branch pipes and separately operated by hand at low pressures and simultaneously automatically operated at high pressures, substantially as described.

26. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain fluid under pressure and itself operated by fluid from the source of fluid-pressure, a plurality of reducing-valves interposed between the source of fluid-pressure and the accumulator, with a by-pass from between said valves to the accumulator with a valve controlling said by-pass for regulating the pressure of the fluid in the accumulator, a fluid-pressure main leading from the accumulator, branch pipes from said main, mechanism operated by the fluid in said branch pipes, and releasing-valve mechanisms located in each of said branch pipes and separately operated by hand at low pressures and simultaneously automatically operated at high pressures, substantially as described.

27. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a plurality of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, means for operating said valve, and reciprocating mechanism operated by the fluid-pressure from the accumulator, substantially as described.

28. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a plurality of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, a hydraulic system for operating said valve, and reciprocating mechanism operated by the fluid-pressure from the accumulator substantially as described.

29. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a pair of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, a hydraulic system operated by pressure from the accumulator for oper-

ating said valve, a fluid-pressure main connected to said accumulator, branch pipes connected to said main, and mechanism operated by the fluid-pressure in said branch pipes, substantially as described.

30. In a hydraulic system of the character described, the combination with a source of fluid-pressure, of an accumulator adapted to contain a body of fluid under pressure, a plurality of reducing-valves for regulating the admission of fluid-pressure from said source to said accumulator, a by-pass opening from between said reducing-valves into said accumulator, a valve controlling said by-pass, a hydraulic system operated by pressure from the accumulator for operating said valve, a fluid-pressure main connected to said accumulator, branch pipes connected to said main, and reciprocatiag mechanism operated by the fluid-pressure in said branch pipes, substantially as described.

31. In a hydraulic system of the character described, the combination with a fluid-pressure main and a branch pipe leading therefrom, and means for raising and lowering the pressure in said main, of mechanism operated by the pressure in said branch pipe, and releasing-valve mechanism located in said branch pipe, and adapted to be operated by hand at all pressures and to be operated automatically at high pressures only substantially as described.

32. In a hydraulic system of the character described, the combination with a fluid-pressure main and a branch pipe leading therefrom, and means for raising and lowering the pressure in said main, of reciprocating mechanism operated by the pressure in said branch pipe, and a releasing-valve mechanism located in said branch pipe, and adapted to be operated by hand at all pressures and to be operated automatically at high pressures only, substantially as described.

33. A releasing-valve, for use in apparatus of the character described, comprising a valve-casing with two passages therethrough crossing at right angles, and a perforated plug at the intersection of said passages, the said passages being also provided with lateral ports or openings, spriug-operated valves closing said lateral ports against normal pressures but yielding to high pressures, passages and pipes leading from the rear of said spring-operated valves to the mechanism to be operated, and pipes leading from the valve-casing to the source of pressure and to the exhaust, substantially as described.

34. In a hydraulic system of the character described, the combination with a closed receptacle adapted to contain a body of fluid under pressure, an emergency cylinder and piston with mechanism operated by said piston for increasing the pressure of the fluid in said receptacle, and emergency mechanism operated by the increase of said fluid-pressure, substantially as described.

35. In a hydraulic system for operating reciprocating mechanism, the combination with a supply-pipe from the source of fluid-pressure, and an exhaust-pipe, of a fixed hollow piston-rod with separate passages, therethrough to the upper and lower sides of the piston, respectively, a cylinder secured to the mechanism to be operated, double pipes connecting the passages in the piston-rod to the supply-pipe, and a four-way valve for connecting one of the passages in the piston-rod to the supply-pipe, and the other to the exhaust, or vice versa, with means for operating this valve by hand at all pressures, with auxiliary means for admitting fluid-pressure operated automatically at high pressnres only, substantially as described.

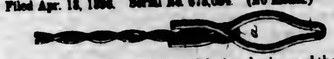
608,839. BICYCLE-TIRE SHIELD. JOHN P. DALY, Savannah, Ga. Filed Mar. 13, 1897. Serial No. 627,260. (No model.)



Claim.—1. In a bicycle attachment, the combination with the curved plate and supporting-arms, of the sweep device, the guides and sleeves carried by the curved plate, connecting-rods having collars, and the coiled spring arranged within the sleeves and bearing upon the collars, all arranged and adapted to operate substantially as shown and described.

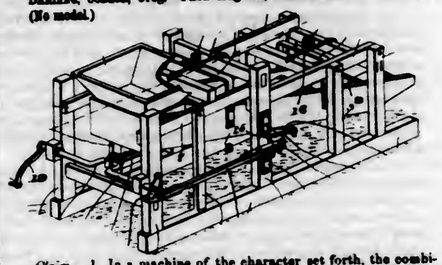
2. In a bicycle attachment, the combination with the curved plate and supporting-arms, of the sweep device, the guides and sleeves carried by the curved plate, connecting-rods having collars, and the coiled spring arranged within the sleeves and bearing upon the collars, and the pilot carried upon the forward face of the sweep device, all arranged and adapted to operate substantially as shown and described.

608,840. BALE-TIE. FRED H. DANIELS, Worcester, Mass. Filed Apr. 18, 1898. Serial No. 678,094. (No model.)



Claim.—A bale-tie consisting of the band-wire, and the clasp made of larger wire than the band and having its legs or free ends crossed, the band-wire being "eyed" or looped around the legs of the clasp at their point of crossing, and the legs beyond this point being extended alongside of the band-wire which is received between them, substantially as and for the purposes hereinbefore set forth.

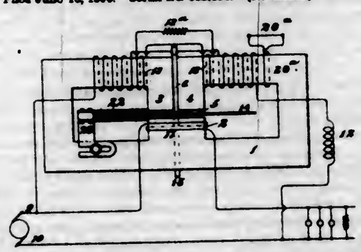
608,841. MACHINE FOR SEPARATING GOLD. WILLIAM A. DARLING, Condon, Oreg. Filed Aug. 18, 1897. Serial No. 648,658. (No model.)



Claim.—1. In a machine of the character set forth, the combination of a supporting-frame, an inclined pan-box suspended in said frame on centrally-arranged longitudinal rods, and comprising a series of stepped pans, an angle-plate attached to the bottom of the pan-box, a crank-shaft at one end of the frame, a longitudinally-disposed pitman, a transverse pitman attached to the other arm of said angle-plate, a bell-crank lever at one side of the machine having one arm connected with said transverse pitman, its other arm being connected with the crank-shaft at the end of the frame, whereby said pan is given a rotary swinging motion, substantially as described.

2. In a machine of the character set forth, the combination with the supporting-frame, of a pan-box mounted in said frame and having a series of stepped pans therein, looped-shaped straps secured to the ends of said pan-box and carrying centrally-located grooved rollers, centrally-arranged longitudinal rods in the upper portion of the frame and on which said rollers move, said rods being arranged in different horizontal planes for giving the desired angle of inclination to the pan-box, a crank-shaft at one end of the frame, an angle-plate secured to the bottom of the pan-box, and connections between said angle-plate and crank-shaft for giving both a longitudinal and a lateral swinging movement to the pan-box, substantially as described.

608,842. ELECTRIC METER AND MOTOR. HARRY P. DAVIS, Pittsburg, and FRANK CONRAD, Wilkinsburg, Pa., assignors to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed June 18, 1896. Serial No. 693,839. (No model.)



Claim.—1. In an induction alternating-current motor, a primary member comprising a divided core, a coil or coils having a large number of turns and wound to produce magnetic fluxes of opposite sign in the poles formed by the division of the core, a coil or coils having a small number of turns and wound to produce magnetic fluxes of the same sign in said poles and means for supplying currents to said coils or sets of coils which differ in phase, in combination with a secondary member in position to be traversed by the resultant magnetic flux or fluxes.

2. In a wattmeter for alternating-current electric circuits, the combination with a laminated core having a transverse air-gap, of a shunt-connected coil or coils for producing magnetic fluxes of opposite sign in the poles adjacent to said air-gap, a series-connected coil or coils for producing a magnetic flux or fluxes of the same sign in said poles, a movable closed-circuit conductor adjacent to said poles, means for retarding and means for registering or indicating its movement.

3. A meter for measuring the energy in alternating-current electric circuits comprising a core containing an air-gap forming adjacent poles and having an intermediate pole, shunt-connected coils for oppositely magnetizing said adjacent poles, a series-connected coil or coils for magnetizing the intermediate pole, a movable closed conductor projecting between the pair of poles and the intermediate pole, means for retarding and means for registering or indicating the movement of said conductor and means for lagging the current traversing said shunt-connected coils.

4. A meter for measuring the true energy in alternating-current circuits comprising a core having a pair of separated polar projections and a polar projection opposite the same, shunt-connected coils for oppositely magnetizing said pair of projections, a series-connected coil or coils for imparting magnetism of the same sign to said pair of poles, means for securing a quadrature relation between the current in said shunt-connected coil or coils and the impressed electromotive force, a rotatable secondary member actuated by the shifting magnetic field thus produced, means for retarding and means for registering or indicating the movement of the same.

5. A meter for measuring the energy in alternating-current circuits comprising a core having separated poles, a shunt-connected coil or coils having a large number of turns for oppositely magnetizing said poles, a series-connected coil or coils having a small number of turns for alternately reinforcing and opposing the magnetism of said poles, a movable, closed conductor in inductive relation to the resultant flux produced by the currents in said coils, means for retarding and means for registering or indicating the movement of said conductor and means for lagging the current traversing said shunt-connected coils.

6. An electrical measuring instrument comprising a laminated core having an inwardly-projecting pole-piece 2 at one side and a pair of inwardly-projecting pole-pieces 3 and 4 at the opposite side the faces of which are substantially parallel and opposite to the face of pole-piece 2, a series-connected coil on pole-piece 2, shunt-connected coils surrounding the core and respectively adjacent to pole-pieces 3 and 4, a closed-circuit armature projecting between the opposing pole-faces and a damping-magnet between the poles of which said armature projects, all combined and operating substantially as described.

7. In an alternating-current wattmeter, a disk-armature, and a laminated core having a pole-piece located adjacent to one face of said armature, and having a pair of pole-pieces located adjacent to the opposite face of the armature, in combination with a series coil of comparatively few turns at one side of the armature and a pair of shunt-coils having a large number of turns at the other side of the armature so wound as to oppositely magnetize the pole-pieces at that side whereby the necessary resultant flux is secured and the desired relation between the shunt-current and the impressed electromotive force is maintained.

8. In an alternating-current electric motor, the combination with a plurality of coils or sets of coils traversed by out-of-phase currents, of an inductively-actuated armature located between said coils or sets of coils, and a core for said coils or sets of coils having a gap disposed across the normal path for the magnetic flux of one phase and in but not across the normal path for the magnetic flux of the other phase whereby a small portion of the first-named flux is caused to act directly upon the armature, and whereby the other flux is caused to act as a whole directly upon the armature and also to thread the coils corresponding to the other flux.

9. In a wattmeter for alternating-current circuits, a laminated core having two air-gaps substantially at right angles to each other, in combination with a closed-circuit armature located partially in one of said air-gaps, shunt-coils constructed and arranged to produce a strong magnetic flux across the other air-gap and a relatively weak flux through the armature, and a series coil arranged to produce a magnetic flux through the armature and through one or both of the shunt-coils whereby a shifting field is produced and the desired relation between the shunt-current and the impressed electromotive force is maintained.

10. An alternating-current motor having a rotatable closed-circuit secondary member and a primary member comprising a shunt-winding at one side of the secondary member, a series winding at the other side, and a core for said windings, said core and windings being so constructed and arranged that only a portion of the shunt-flux passes through the secondary member and the entire series flux passes through said member and threads all or a part of the shunt-winding.

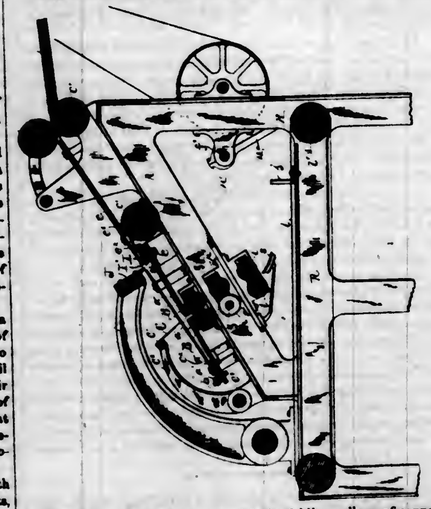
11. The combination, in an electric meter, of a main actuating means for propelling the meter-armature, and an auxiliary actuating means exercising an independent propelling force that varies as the work-current varies, substantially as described.

12. The combination, in an electric meter, of a main actuating means having an approximately constant law of operation, a retarding device having a suitable law of operation to correspond to the actuating means and an auxiliary actuating means exercising a propelling force that varies as the work-current varies, as set forth.

13. In an electric meter, the combination with a primary member having shunt and series connected coils for producing a resultant shifting magnetic field, of a rotatable secondary member located partially in said field and means for distorting a series field so as to impart a propelling force to the secondary member that varies as the work-current varies.

14. In an electric meter, the combination with a primary member having shunt and series connected coils for producing a resultant shifting magnetic field, of a rotatable secondary member located partially in said field and an auxiliary actuating device consisting of a segmental magnetic shield or shields located adjacent to said secondary member in such position as to distort the series field and thus impart a propelling force to the rotatable member that varies as the work-current varies.

608,848. PAPER-FOLDING MACHINE. TALBOT C. DEXTER, Pearl River, N. Y., assignor to the Dexter Folder Company, New York, N. Y. Filed Mar. 17, 1897. Serial No. 627,948. (No model.)



Claim.—1. The combination with the folding-rollers, of conveyers depositing the sheet over said rollers, a cutter severing the sheet on a line parallel with and remote from the rollers, means for shifting the remote severed section of the sheet upon the section lying over the rollers, and a blade tucking said sections jointly into the bite of the folding-rollers as set forth.

2. The combination with the folding-rollers, paper-supports in front and rear of said rollers, and conveyers delivering the paper upon said supports, of a gage and a cutter disposed parallel at opposite sides of and equidistant from the folding-rollers, and means for shifting the rear severed section of the sheet upon the top of the front section thereof, substantially as set forth.

3. In a paper-folding machine the combination with the folding-rollers, folding-blade, sheet arresting and alining gage, and paper-supports at opposite sides of the folding-rollers, conveyers delivering the sheet to the gage and disposed in a higher plane than the aforesaid sheet-supports, a cutter severing the sheet at the junction of said delivering-conveyers and sheet-supports, and means for shifting the rear severed section of the sheet from the said conveyers onto the top of the section lying upon the aforesaid supports.

4. In a paper-folding machine the combination with the folding-rollers, folding-blade, sheet-supports in front and rear of said rollers and sheet arresting and alining gage, of sheet-conveyers dallvering the sheet to the aforesaid gage and disposed in a higher plane than said sheet-supports, a stationary cutter extending across the machine at the junction of the sheet conveyers and sheet-supports and in the same plane with said conveyers, and a shearing-blade over the stationary cutter to sever the delivered sheet, as set forth and shown.

5. In combination with the folding-rollers and folding-blade, sheet-supporting bars at the rear and front of said rollers and inclined, respectively, to and from the rollers, a stationary cutter extending across the upper ends of the rear supporting-bars and elevated therefrom, sheet-delivering conveyers extending rearward from and inclined to said cutter, and a shearing-blade over the stationary cutter and severing the sheet thereat and in its downward movement dropping the lower severed section of the sheet from the cutter, and in its elevated position allowing the upper section of the sheet to slide down upon the top of the lower section preparatory to folding one within the other, as set forth.

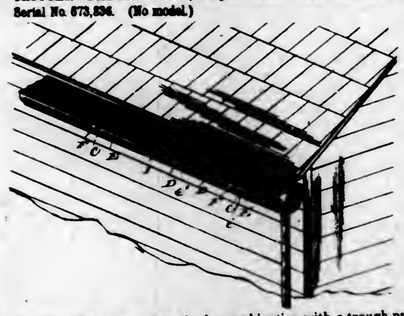
6. In combination with the folding-rollers, folding-blade and sheet-supports in front and rear of said rollers, a cutter severing the sheet on a line parallel with the folding-rollers while lying at rest across said rollers, means for shifting one of the severed sections of the sheet onto the top of the other section, and a cutter severing the jointly-folded sections of the sheet on a line at right angles to the folding-rollers, as set forth.

7. In combination with the folding-rollers, folding-blade, sheet-supports in front and rear of said rollers and inclined in one direction and in lines at right angles to the folding-rollers, a sheet-arresting gage on the lower ends of said supports, sheet-delivering conveyers at the upper ends of the sheet-supports, a cutter interposed between said conveyers and supports severing the sheet on a line parallel with the folding-rollers, means for shifting the severed upper section of the sheet onto the top of the lower section, and cutters severing the jointly-folded sections of the sheet on lines at right angles to the folding-rollers, as set forth.

8. In combination with the folding-rollers and folding-blade, sheet-supports in front and rear of said rollers, a cutter severing the sheet at the receiving end of said supports and on a line parallel with the folding-rollers, means for shifting one of the severed sections of the sheet onto the top of the other section, cutters beneath the folding-rollers slitting the jointly-folded sections on lines at right angles to the folding-rollers, compressing-rollers receiving the slitted sheets between them, and a longitudinally-movable carrier gathering the sheets delivered from said compressing-rollers.

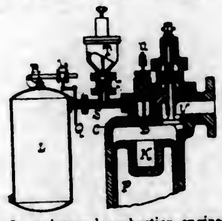
9. In combination with the folding-rollers and folding-blade, sheet-supporting bars in front and rear of said rollers and inclined in one direction at right angles to the folding-rollers, a sheet-arresting gage on the lower ends of said bars, sheet-delivering conveyers at the upper ends of said bars and in a higher plane, a stationary cutter extending across the delivery end of said conveyers and in the same plane therewith, a shearing-cutter over said stationary cutter and severing the sheet, rotary cutters beneath the folding-rollers slitting the jointly-folded sections of the sheet on lines at right angles to the folding-rollers, sheet-compressing rollers receiving between them the slitted sheets, two parallel horizontal rollers disposed in a plane beneath the compressing-rollers, endless belts running on said rollers, a chute conducting the slitted sheets to said belts, a detent over the belts controlling the position of the sheets thereon, and mechanism imparting to said belts an intermittent longitudinal movement from the sheet-arresting side of the detent, substantially as described and shown.

608,844. HANGER AND SCREEN ATTACHMENT FOR EAVES-TROUGHS. FRANKLIN P. DICK, Bucyrus, Ohio. Filed Mar. 14, 1896. Serial No. 673,836. (No model.)



Claim.—In an eaves-trough, the combination with a trough provided at the outer edge thereof with a bead, of a screen closing the mouth of the trough, a pair of main hangers serving as supports on which the screen rests, said hangers being provided at their outer ends with hooks engaging the bead of the trough and each bent on opposite sides of its center to form loops projecting upwardly through the meshes of the screen, and an auxiliary hanger also provided at its outer end with a hook to engage the bead of the trough and arranged between said main hangers and bearing upon the upper surface of the screen, substantially as described.

608,845. INTERNAL-COMBUSTION ENGINE. RUDOLF DIESEL, Berlin, Germany, assignor, by mesne assignments, to the Diesel Motor Company of America, of New York. Filed July 15, 1895. Serial No. 556,068. (No model.) Patented in Spain Dec. 3, 1894, No. 16,654; in France Dec. 10, 1894, No. 243,531; in Belgium Dec. 10, 1894, No 113,139; in Luxemburg Dec. 10, 1894, No. 2,193; in Italy Feb. 21, 1895, LXXV, 133; in England Feb. 27, 1895, No. 4,243; in Switzerland Mar. 5, 1895, Nos. 10,134 and 10,135; in Germany Mar. 30, 1895, No. 86,633; in Hungary Nov. 23, 1895, No. 4,539, and Mar. 20, 1897, No. 7,876; in Austria Jan. 15, 1896, No. 46/203, and May 22, 1896, No. 46/2,033, and in Denmark Feb. 12, 1896, No 393.



Claim.—1. In an internal-combustion engine, the combination of a cylinder and piston constructed and arranged to compress air to a degree producing a temperature above the igniting-point of the fuel, a supply for compressed air or gas; a fuel-supply; a distributing-valve for fuel, a passage from the air-supply to the cylinder in communication with the fuel-distributing valve, an inlet to the cylinder in communication with the air-supply and with the fuel-valve, and a cut-off, substantially as described.

2. In an internal-combustion engine, the combination of a cylinder and piston constructed and arranged to compress air to a degree producing a temperature above the igniting-point of the fuel; a distributing-valve for fuel; a cut-off for varying the time and duration of the supply of fuel, and a burner placed in the combustion-space and constructed for slow and perfect combustion of the gradually-introduced stream of fuel, substantially as shown and described.

3. In an internal-combustion engine, the combination of a cylinder and piston constructed and arranged to compress air to a degree producing a temperature above the igniting-point of the fuel, a supply for compressed air or gas, a hopper, a distributing-valve for pulverulent fuel, a passage from the air-supply to the cylinder in communication with the fuel-distributing valve, an inlet-valve to the cylinder in communication with the air-supply and with the valve for pulverulent fuel, and a cut-off for the fuel-supply, substantially as shown and described.

4. In an internal slow-combustion engine, the combination of a cylinder and piston constructed and arranged to compress air to a degree producing a temperature above the igniting-point of the fuel, a supply for compressed air, a hopper and distributing-valve for pulverulent fuel, a supply-pipe for liquid fuel, a valve or valves leading to the cylinder and communicating with the pulverulent-fuel-distributing valve and the liquid-fuel-supply pipe, and a cut-off for the fuel-supply, substantially as specified.

5. In an internal-combustion engine, the combination of a supply for compressed air, a feed for pulverulent fuel placed in communication with the air-supply and with the cylinder, and an auxiliary feed for liquid fuel communicating with the cylinder, substantially as specified.

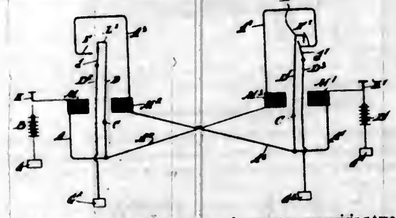
6. In an internal-combustion engine, the combination of a cylinder and piston, a supply for compressed air, a distributing-valve communicating with the air-supply and with a fuel-supply for gradually introducing a unitary, or mixed fuel, into the combustion-space, a valve placed between the air-supply and the cylinder, and a reversing-gear in cooperation with said valve for starting the motor with the compressed air from the air-supply, substantially as described.

7. In an internal-combustion engine, the combination with a cylinder and a piston constructed to compress air to a degree producing a temperature above the igniting-point of the fuel, of a fuel feed, and a valve mechanism adapted to open the fuel-feed somewhat in advance of the end of the compression stroke of the piston and to keep it open during part of the working stroke, substantially as and for the purpose specified.

8. In an internal-combustion engine, the combination of a cylinder and piston constructed to compress air or a mixture of air and neutral gas, a storage-reservoir in communication with the combustion-space of the cylinder, a valve controlling this communication and opening to admit compressed air from the cylinder to the reservoir, and a fuel-feed in communication with said reservoir for the introduction of fuel to the combustion-space under the pressure of the compressed air or gas in the reservoir, substantially as described.

9. In an internal-combustion engine, the combination of a cylinder and piston constructed and arranged to compress air to a degree producing a temperature above the igniting-point of the fuel, a distributing-valve for fuel, and a cut-off for varying the time and duration of the supply of fuel by said valve, substantially as described.

608,846. TELEGRAPH-REPEATER. HENRY P. DONNELLY, Cincinnati, Ohio. Filed June 23, 1897. Serial No. 641,571. (No model.)



Claim.—1. An automatic telegraph-repeater comprising two relays, each having a main and an auxiliary magnet, an armature-lever pivoted between the magnets, a spring-controlled ground connection for one end of the armature-lever, a fixed line connection which transfers said ground connection from the lever to itself when the main magnet is energized, a telegraph-circuit which is broken intermediate its terminals and includes in each half the main magnet of one relay and the auxiliary magnet of the other relay, and a connection from each half of the circuit between its included magnets to the armature-lever of the relay containing its main magnet, substantially as described.

2. A relay having two opposing electromagnets included in different circuits, an armature located between said electromagnets and electrically connected with one of said circuits, and a movable contact device carried by the armature and permanently connected to the ground, said movable contact engaging the armature in one position so as to connect said armature to the ground directly, while in the other position of the armature said contact is electrically connected with the other circuit, and out of connection with the armature-circuit, substantially as described.

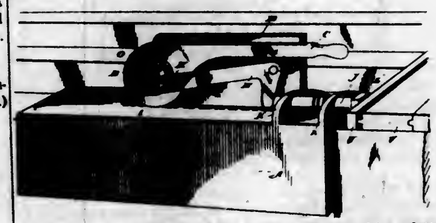
3. A relay having two opposing electromagnets, one of which is included in the circuit of one station and the other in the circuit of the next station, an armature located between said electromagnets and electrically connected with one of said circuits, a contact-arm carried by the armature and movable relatively thereto, a permanent ground connection for said contact-arm, the contact-arm being adapted for conducting engagement with the armature in one position thereof, and a conducting-stop included in the other circuit and adapted for conducting engagement with said contact-arm to remove it from electrical connection with the armature, substantially as described.

4. A telegraph repeater, comprising two relays, each having a main and an auxiliary magnet, an armature located between the magnets of each relay, a contact-arm carried by the armature, and permanently connected to the ground, one armature being permanently connected to its main magnet and the other to its auxiliary magnet, each armature being temporarily connected to its contact-arm in one position thereof, a telegraph-circuit which is broken between its terminals and includes in each half the main magnet of one relay and the auxiliary magnet of the other relay, and contacts adapted to be engaged by said contact-arm and electrically connected to that magnet of the same relay which has no permanent electrical connection with the armature of the same relay, substantially as described.

608,847. FLOOR-LAYING MACHINE. JOHN C. DUKES, Hinton, Iowa. Filed Oct. 18, 1897. Serial No. 655,321. (No model.)

Claim.—1. In a floor-laying machine, the combination of the body, adapted to straddle the joist, a central, longitudinal flange thereon, a lever pivoted to said flange to oscillate in a vertical plane, a concentric slot in said lever, provided with inclined surrounding walls, a headed bolt passing through said slot and the flange, and a hinged clamp-section on the opposite side of the machine, adapted to be connected with and operated by the movement of said bolt, substantially as described.

2. In a floor-laying machine, a body adapted to straddle the joist, a vertical flange raised thereon, a hand-lever pivoted to said flange and provided with a crank-pin, a pressure-lever, elbow-shaped, pivoted to said flange, the long arm thereof lying horizontally and the short arm vertically, and the long arm being provided with a longitudinal slot to receive said crank-pin, a pressure-bar passing longitudinally through the transverse lugs, and a spring for holding said pressure-bar normally in contact with the short arm of the elbow pressure-lever, substantially as described.



3. In a floor-laying machine, the combination with a slotted pressure-lever, the pressure-bar, and the clamp-section, of a hand-lever, provided with a crank-pin engaging in the slot of the pressure-lever and a concentric slot with inclined walls, and a bolt passing through the concentric slot and engaging the clamp section, whereby, by the single movement of the hand-lever, the clamp-section is operated to clamp the machine in place upon the joist, and the pressure-lever actuated to force the pressure-bar against the flooring, substantially as described.

608,848. ICE-TONGS. ISAAC L. EDWARDS, Aurora, Ill. Filed Mar. 21, 1898. Serial No. 674,696. (No model.)

Claim.—1. The combination of a pair of jaws pivoted together, having each an extension, a handle-bar, pivotal connections between the latter and each jaw extension, a spring-latch on one of the jaws, and a part connected to the handle to cooperate with the latch, substantially as and for the purpose specified.

2. The combination of a pair of jaws pivoted together, having each an extension, a handle-bar, pivotal connections between the latter and each jaw extension, a spring-latch on a jaw, and a bar attached to the handle, having a lateral extension to be engaged by the latch, substantially as and for the purpose described.

3. The combination of a pair of jaws pivoted together, having each an extension, a handle-bar, pivotal connections between the latter and each jaw extension, a spring-latch on one of the jaws, a bar attached to the handle having a lateral extension, to be engaged by the latch, a like lateral extension on the latch-carrying jaw, and lugs on said bar to engage the outer sides of the two jaw extensions, substantially as and for the purpose described.

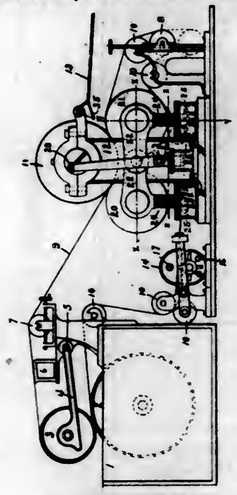
608,849. PAPER-MACHINE. BERNARD EILERS, Rochester, N. Y., assignor of one-half to William A. Murphy, same place. Filed Jan. 4, 1897. Serial No. 617,906. (No model.)

Claim.—1. In a paper-machine, the combination with the main frame, and the pulp-receiving roller journaled therein, and the apron, of two pressing-rollers arranged below and at the sides of the receiving-roller and cooperating therewith, a pair of pivoted supporting-arms for each of the lower rollers, a cylinder, and a piston operating therein, cooperating with each arm, pipe connections between the cylinders operating on the same rollers, and means for supplying fluid under pressure to the cylinders.

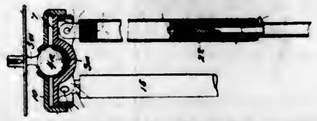
2. In a paper-machine, the combination with the pulp-apron 9, of the main frame, the pulp-receiving roller 11 journaled in the upper portion thereof, the arms 22 pivoted on the frame, and the pressing-rollers 20 at the free ends of the arms cooperating with the roller 11, the pump mounted on the main frame, the piston thereof connected to a wrist-pin on the shaft of the roller 11, hydraulic pressing devices operating on the arms 22 connected with the pulp-cylinder, and adjusting-valves for regulating the pressure.

3. In a paper-machine the combination with the main frame, the pulp-apron 9, the receiving-roller 11, the pressing-rollers 20 and 21, hydraulic cylinders operating to press the rollers 20 and 21 to-

ward the receiving-roller, a single supply-pump for said cylinder, and separate pipe connections between the pump and the cylinders of the two movable pressing-rollers, and means for independently regulating the pressure on the cylinder of each pressing-roll, substantially as described.



608,850. TRIPOD. WILLIAM F. FOLMER, New York, N. Y. Filed Aug. 20, 1897. Serial No. 648,908. (No model.)



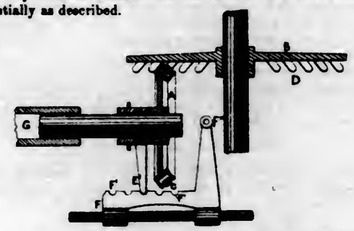
Claim.—1. A tripod consisting of a head, a support connected therewith, and legs pivotally connected with said head, said legs being composed of pivoted and telescopic sections, and the telescopic sections with the extension of the lower section being each provided at its lower end with an inwardly-directed flange or rim, plugs secured in said telescopic section and provided with circular heads at their upper ends, and packing-rings secured in the bottom of each of said sections except the bottom section, and springs secured to said plugs, the lower ends of which project below said sections, and are provided with outwardly-directed pins, each of said sections being provided with holes through which said pins pass, substantially as described.

2. A tripod provided with legs composed of tubular pivoted and telescopic sections, said telescopic sections with the exception of the lower section being each provided at its lower end with an inwardly-directed flange or rim, and each telescopic section being provided with a tube which is secured therein, a plug secured in said tube, a circular head secured to the end of said plug, a spring secured to said plug and provided at its lower with a pin or projection, and a hole in the side of the section through which said pin passes, substantially as shown and described.

3. A tripod consisting of a head provided with a depending flange exteriorly screw-threaded and having a curved socket formed in its upper surface, legs pivotally connected with said head, a cap having an interiorly-threaded depending flange whereby it is adjustably secured to said head and provided with a curved socket formed in its under surface, a support provided with a ball at one end adapted to be received by the sockets of said head and cap forming a ball-and-socket joint and a disk or plate carried by said support, substantially as shown and described.

608,851. ROLLER-TOOTH VARIABLE GEAR. THOMAS FOSTER, Dunedin, New Zealand. Filed Oct. 28, 1897. Serial No. 656,668. (No model.)

Claim.—1. In combination, the crown-wheel having the series of rows of teeth, and a shifting wheel A having a housing and the teeth with springs between the end of the teeth and the housing to keep the teeth centrally thereof, while allowing the teeth to slide laterally when in contact with the teeth of the crown-wheel, substantially as described.



2. In combination in a variable-speed gearing, a wheel A carrying the shrouding and the rollers forming the teeth of the said wheel, said rollers being arranged to shift laterally of the wheel with the springs for holding the roller in position, substantially as described.

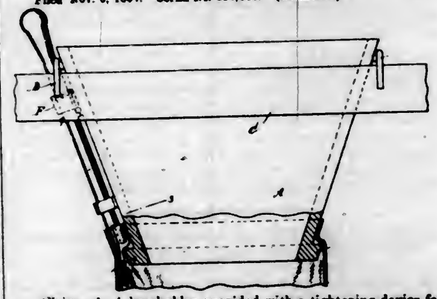
608,852. RIGHT-ANGLE SWIVEL CONNECTION. JOHN H. GOSS, Waterbury, Conn. assignor to The Scovill Manufacturing Company, same place. Filed Jan. 24, 1898. Serial No. 667,717. (No model.)



Claim.—1. A right-angle swivel connection having a coupling-head furnished with a shank, and having a diametric passage formed in it at a right angle to the said shank, a coupling-nut formed with a stem which extends through the said passage, and projects beyond the said head, an operating-nut mounted upon the projecting end of the stem which is threaded for the purpose, and a washer rigidly secured to the extreme outer end of the stem and coacting with the said operating-nut.

2. A right-angle swivel connection comprising a coupling-head having a shank, and formed with a diametric passage arranged at a right angle to the said shank, and terminating at its ends in packing-receiving recesses located in the opposite sides of the said head, an operating-nut formed with an inwardly-projecting, annular shoulder extending into one of the said recesses, and with a stem which extends through the passage in the head and projects beyond the other end thereof, an operating-nut mounted upon the projecting end of the stem which is threaded for the purpose and provided with an inwardly-projecting annular shoulder which extends into the other packing-receiving recess, packing-washers located in the bottoms of the said recesses, and confined and placed under pressure by the said shoulders, and a washer secured to the extreme outer end of the said stem, and preventing the operating-nut from being detached therefrom.

608,853. BAG-HOLDER. WILLIAM D. GRAVES, St. Ansgar, Iowa. Filed Nov. 6, 1897. Serial No. 657,606. (No model.)



Claim.—1. A bag-holder provided with a tightening device for drawing the mouth of a bag firmly in place on the bag-support, the said device consisting of a pin formed at one end with a slot for engaging the edge of the bag material at the mouth of the bag, and bearings in which the pin is mounted to be turned, one of the bearings being provided with ratchet-teeth for engagement by a locking pin or pawl on the said pin, substantially as shown and described.

2. The combination of a hopper or spout, forming a support for a bag, the hopper or spout having an open lower end around which the mouth of the bag may extend, bearings attached to the hopper or spout, and a vertically-extending pin mounted to turn in said bearings and having its lower end extended into proximity with the mouth of the hopper or spout, the lower end of the pin being provided with a slot capable of receiving the bag at the edge of the mouth thereof, so that upon turning the pin the bag is twisted around the pin and contracted over the lower end of the hopper or spout.

608,854. BALL-BEARING. LEWIS B. HARPER and CARL L. GROSSMANN, Hartford, Conn., assignor to The Pratt & Whitney Company, same place. Filed Oct. 26, 1897. Serial No. 656,677. (No model.)

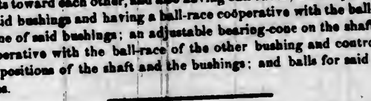


Claim.—1. In a ball-bearing, the combination with a bearing member and with a rotary member, of a ball-separating retaining-ring having ball-separating fingers projecting outwardly from one end thereof and inwardly relatively to the inner face of said ring, and having ball-sockets between said ball-separating fingers, and a plurality of balls seated in said sockets.

2. A ball-separating retaining-ring having a plurality of ball-separating fingers projecting outwardly from one end thereof and inwardly relatively to the inner face of said ring, and having ball-sockets between said ball-separating fingers.

3. The combination, with a pair of fixed bearings, forming at their outer ends stops for bushings of oppositely-disposed bushings in said bearings, said bushings having stop-shoulders for limiting their movements toward each other, and also having ball-races; a shaft journaled in said bushings and having a ball-race cooperative with the ball-race of one of said bushings; an adjustable bearing-cone on the shaft and cooperative with the ball-race of the other bushing and controlling the positions of the shaft and the bushings; and balls for said ball-races.

608,855. ADVERTISING DEVICE. JEFFERSON D. HENLEY, Cameron, Tex. Filed Sept. 9, 1897. Serial No. 651,116. (No model.)



Claim.—The combination with a trundle-hoop, consisting of the metallic ring formed with a peripheral rib, an internal groove and two side flanges, of the disk for receiving advertisements having its edge seated in said groove, substantially as described.

608,856. HEAD FOR STRINGED INSTRUMENTS. GEORGE HEINEMAN, New York, N. Y. Filed Nov. 15, 1897. Serial No. 658,613. (No model.)



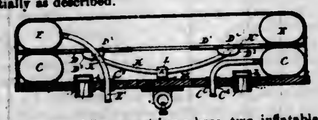
Claim.—1. The combination in a tuning-head, of a plate having two intersecting apertures therein of different sizes, a tuning-pin provided with a neck contained within the smaller aperture, the body of the pin being capable of insertion through the larger aperture, and a worm-shaft actuating the pin and located adjacent to the larger aperture and preventing the movement of the pin therein, substantially as described.

2. The combination in a tuning-head, of a plate having two intersecting apertures therein of different sizes, a tuning-pin formed of a single piece and having a worm-wheel and a body portion separated by a grooved neck, contained within the smaller aperture, the body portion of the pin being capable of insertion through the larger aperture, and a worm-shaft actuating the pin and located adjacent to the larger aperture and preventing the movement of the pin therein, substantially as described.

608,857. BICYCLE-SADDLE. LE ROY M. HILDRETH, New Haven, Conn. Filed Oct. 18, 1897. Serial No. 655,804. (No model.)

Claim.—1. A bicycle-saddle comprising a base and two inflatable tubes superposed thereon, and one above the other, of semiring-shaped blocks arranged between the adjacent surfaces of said tubes at the sides of the saddle, and a covering inclosing said tubes and blocks, substantially as described.

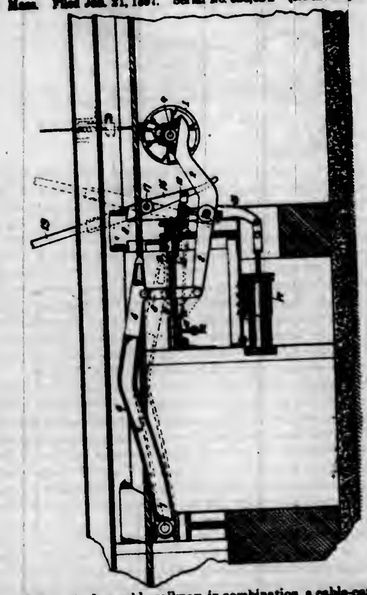
2. A bicycle-saddle comprising a base provided with an inlet-valve, two inflatable tubes superposed upon said base and one above the other, semiring-shaped blocks located between said tubes at the sides of said saddles, and a covering inclosing said tubes and blocks, substantially as described.



3. A bicycle-saddle comprising a base, two inflatable tubes superposed upon said base and one above the other, semiring-shaped blocks located between said tubes at the sides of said saddles, and an equalizing-lever fulcrumed on said base and extending upward for engagement with the respective ends of said blocks, substantially as described.

4. A bicycle saddle comprising a base and two inflatable tubes superposed thereon, and one above the other, of semiring-shaped blocks arranged between the adjacent surfaces of said tubes at the sides of the saddle, said tubes formed with flaps at their edges whereby they may be secured to the base and blocks, and a covering inclosing said tubes and blocks, substantially as described.

608,858. MECHANISM FOR AUTOMATICALLY PLACING CABLES IN CABLE-RAILWAY GRIPS. LOUIS J. HISS, Brookline, Mass. Filed Jan. 21, 1897. Serial No. 620,094. (No model.)



Claim.—1. In a cable-railway, in combination, a cable-carrier arranged and adapted to elevate the cable vertically in position alongside of the grip-jaw; an actuator mechanism connected with the carrier, situated in the path of the grip on the car and arranged to be operated by the latter; and other mechanism adapted to insert the cable in the jaws of the grip, substantially as described.

2. In a cable-railway, in combination with the track structure, a cable-carrier arranged and adapted to elevate the cable vertically in position to be gripped; an actuator mechanism connected with the cable-carrier, situated in the path of the grip on the cable-car and arranged to be operated by the latter; other mechanism, situated at the side of the cable and adapted to be operated by the actuator mechanism and push the cable sidewise into the grip, whereby the carrier is brought into engagement with the cable and elevates the latter and places it between the grip-jaws, as the car passes along the track, substantially as described.

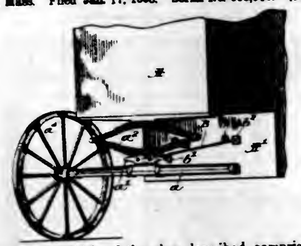
3. In a cable-railway, in combination with the track structure, a cable-carrier arranged and adapted to elevate the cable vertically in position to be gripped; an actuator mechanism connected with the cable-carrier, situated in the path of grip on the cable-car, and arranged to be operated by the latter; other mechanism situated at

the side of the cable and adapted to be operated by the actuator mechanism and push the cable sidewise into the grip, whereby the carrier is brought into engagement with the cable and elevates the latter and places it between the grip-jaws as the car passes along the track; and mechanism connected with the actuator mechanism by which the latter can be withdrawn from contact with the car-grip and rendered inoperative, substantially as described.

4. In mechanism for cable-railroads, in combination, a cable-carrier adapted to elevate the cable vertically; mechanism connected with the cable-carrier and situated in the path of the grip on the car; and mechanism situated at the side of the cable adapted to push the latter into the grip, whereby the grip depresses the mechanism in its path, elevates the cable and places it in the jaws of the grip, substantially as described.

5. In a cable-railway, in combination, the cable-carrier 2, arranged and adapted to elevate the cable vertically in position to be gripped; the lever 6, connected to the carrier, and adapted to be depressed by the grip, whereby the carrier is raised; and the arm 8, arranged to push the cable sidewise into the grip, and adapted to be operated by the lever 6, substantially as described.

608,859. VEHICLE RUNNING-GEAR. ALBERT A. HOLT, Fitchburg, Mass. Filed Jan. 17, 1898. Serial No. 666,919. (No model.)



Claim.—1. A vehicle of the class described, comprising a low-down body and front and rear running-gear, each provided with supporting-springs for carrying the load; said front running-gear having separated spring-rods extending continuously therefrom to the low-down portion of the vehicle-body and secured at their rear ends to the vehicle-body, and at their forward ends to the head-block of the running-gear; and said rear running-gear being provided with an elliptical draft-spring having its top and bottom members connected respectively to the rear end of the vehicle-body and to the axle, and having its forward end connected to the low-down portion of the vehicle-body, the bottom member of said draft-spring being in substantially a horizontal line extending from said axle to its said point of connection with the vehicle-body, substantially as described.

2. In a vehicle of the class described, the combination with the low-down body and the front running-gear, of a continuous spring extending between said running-gear and body, said spring having free resilient movement in all directions, substantially as described.

3. In a vehicle of the class described, the combination with the low-down body and the front running-gear, of a continuous spring extending between said running-gear and body, said spring having an upturned coil adjacent its rear end, and a downturned coil adjacent its forward end, substantially as described.

4. The combination with a low-down body and the front running-gear, of two spring rods or members capable of universal yielding movement and extending divergently from the head-block of the running-gear to the low-down portion of the vehicle-body and secured thereto, substantially as described.

5. The combination with a low-down body and the rear running-gear, of a draft device including divergent spring members and secured together at their forward ends to the low-down portion of the vehicle-body, and being divergently secured respectively to the axle and to the body above the axle, substantially as described.

6. In a vehicle of the class described, a low-down body, a rear axle, supporting-springs between said axle and body for carrying the load, and a draft-spring secured at its forward end to the vehicle-body and having divergent members secured respectively to the axle and the rear part of the vehicle-body over the axle, substantially as described.

7. In a vehicle of the class described, a low-down body, a rear axle, supporting-springs between said axle and body for carrying the load, and a draft-spring secured at its forward end to the vehicle-body and having divergent members secured respectively to the axle and the rear part of the vehicle-body over the axle, said members being extended to the rear of said axle and body in convergent lines and being connected together at their meeting ends, substantially as described.

8. In a vehicle of the class described, a low-down body, a rear axle, supporting-springs between said axle and body for carrying the load, and a draft-spring secured at its forward end to the vehicle-body and having divergent members secured respectively to the axle and the rear part of the vehicle-body over the axle, said members being extended to the rear of said axle and body in convergent lines and being connected at their meeting ends by a pivoted link, substantially as described.

9. A vehicle having a low-down body, provided with front running-gear, and an elliptical front supporting-spring, rear running-gear, and an elliptical rear supporting-spring, and side elliptical springs, connected at their forward convergent ends to the sides of the low-down body, and at their divergent portions connected to the rear axle and to the rear end of the body above the axle, substantially as described.

10. A vehicle having a low-down body, provided with front running-gear, and an elliptical front supporting-spring, rear running-gear, and side elliptical springs, connected together at their forward convergent ends to the sides of the low-down body, and at their divergent portions connected to the rear axle and to the rear end of the body above the axle, substantially as described.

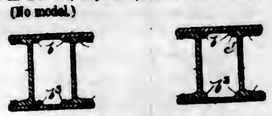
11. The combination with a low-down body and the rear running-gear, of a draft device including divergent spring members and secured together at their forward ends to the low-down portion of the vehicle-body, said members extending divergently rearward and secured respectively to the axle and to the body above the axle, the point of securing said members to the said low-down portion being below the median horizontal line between the top and bottom points of union of said members to said axle and body, substantially as described.

608,860. BUBBLE-BLOWER. PETER D. HORTON, Oakland, Cal., assignor, by direct and mesne assignments, to Emma L. Sullivan, Wm. M. Madden, and Charles M. Wilson, San Francisco, Cal. Filed June 18, 1897. Serial No. 641,373. (No model.)



Claim.—A bubble-blower consisting of a hollow stem or tube having a fixed head in one end; a conical tube fixed in said stem in upright position near the closed end, said upright tube having a flaring head with a shallow cavity in the center; an aperture in the upper side of the stem in proximity to the upright tube; and an adjustable valve for regulating the size of said aperture, as set forth.

608,861. METAL BOX-BEAM, BOX-GIRDER, AND BOX-POST. CHARLES M. HORTON, Superior, Wis. Filed Apr. 2, 1898. Serial No. 676,239. (No model.)



Claim.—1. A metallic box-girder comprising beams having flanges, plates provided with flanges forming channels, the said flanges being turned over and secured upon the flanges of the beams on each side thereof to space the component beams and hold the structure firmly together, substantially as described.

2. A metallic box-beam comprising beams having flanges formed upon their edges, plates having exteriorly and interiorly arranged flanges forming channels for receiving the flanges of the beams, one of said channel-plates having its exterior and interior flanges turned over upon the flanges of the said beams to space them apart, substantially as described.

3. A metallic box-beam girder, comprising beams provided with one or more flanges, plates for binding them together, and flanges formed upon the said plates upon one of their surfaces for forming channels, the construction being such that the flanges are turned over and secured upon the flanges of the beams for securing the said beams in separate channels, substantially as described.

4. A metallic box-girder, comprising beams having flanges upon their edges, plates for binding the beams together, ribs or flanges forming separate channels upon the inner faces of the said plates for receiving the flanges of the beams, the construction being such that when the said ribs of the channel-plates are heated and turned over upon the flanges of the beams, the parts will be held firmly and rigidly together without the use of rivets or other puncturing means, substantially as described.

5. The combination with beams, of a plate provided upon its interior face with integral exterior and interior channel-walls adapted to receive the beams with their top flanges in the alternate spaces, respectively, and a second plate forming the fourth side of the structure provided upon its interior face with integral exterior and interior channel-walls forming spaces, the foot-flanges of the beams being set in the alternate spaces thus formed, the exterior and interior channel-walls of the first-named plate being turned over and upon the flanges of the said beams contiguous to them, respectively, the exterior channel-walls of the second plate being turned upon the foot-flanges of the beams, and the interior channel-walls of the said second plate separating the said foot-flanges of the beams and preventing lateral movement thereof, substantially as described.

608,862. SMOKE-CONSUMING FURNACE. JOHN IHLDE and SAMUEL SPRING, Allegheny, Pa. Filed Jan. 22, 1898. Serial No. 667,650. (No model.)



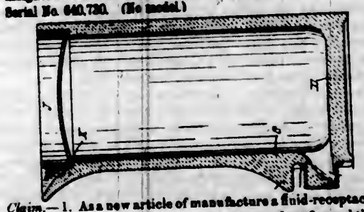
Claim.—A boiler or similar furnace, having two bridge-walls located one just back of the grate, and the other near the rear of the boiler and forming between them a combustion-chamber, said bridge-walls being formed of fire-brick loosely piled so as to leave passages between successive bricks in a row, and extending upward almost into contact with the boiler, the openings in the forward bridge-wall being of a uniform size and the passages through the rear bridge-wall being of a larger area than those through the front bridge-wall, and the lower course of bricks in the rear bridge-wall being on edge and with their length extending longitudinally of the boiler, the next course above being laid flat and extending across the boiler with their ends upon the bricks beneath, thus forming a series of enlarged openings at the opening of the chamber, whereby the cooler gases at the bottom of the chamber are discharged most rapidly.

608,863. FEEDING-TROUGH. ALONZO A. INFIN, Milroy, Ind. Filed Dec. 31, 1897. Serial No. 664,955. (No model.)



Claim.—In an animal-feeding device, the housing or casing having stalls and a feed hopper or receptacle, having the hinged valves at its delivery end, provided with screw rods or projections extending through curved or arcuate slots in the sides of said housing or casing, and nuts applied to the outer screw-threaded ends of said rods or projections, substantially as set forth.

608,864. FLUID-RECEPTACLE. JULES JAQUET, Milwaukee, Wis., assignor of one-half to Harry Hooker, same place. Filed June 14, 1897. Serial No. 640,730. (No model.)

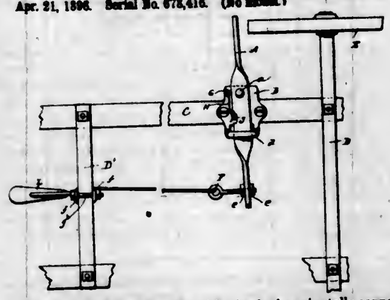


Claim.—1. As a new article of manufacture a fluid-receptacle having at its lower extremity a downward discharge-duct formed through a screw-threaded horizontal projection located outside of the vertical walls of such receptacle provided with a screw-threaded fluid-retaining cap or cover, adapted to close said discharge-duct and to be turned back and said duct to be wholly or partially opened without removing said cap or cover, whereby the discharge of the contents of said receptacle may be regulated and controlled, substantially as and for the purpose specified.

2. As a new article of manufacture a fluid-receptacle having at its lower extremity a downward discharge-duct, formed through a screw-threaded horizontal projection located outside of the vertical walls of such receptacle, provided with a screw-threaded fluid-retaining cap or cover, adapted to close said discharge-duct and to be turned back and said duct to be wholly or partially open without removing said cap or cover whereby the discharge of the contents of the receptacle may be regulated, said receptacle being provided at its upper end with an annular flange for the reception of an inclosing cover substantially as and for the purpose specified.

3. As a new article of manufacture a fluid-receptacle having at its lower extremity a downward discharge-duct formed through a screw-threaded horizontal projection located outside of the vertical walls of said receptacle provided with a screw-threaded fluid-retaining cap or cover adapted to close said discharge-duct and to be turned back and said duct to be wholly or partially opened without removing said cap or cover, whereby the discharge of the contents of the receptacle may be regulated, said receptacle being provided with an annular flange at its upper end for the reception of an inclosing cover; an outward-projecting flange or bearing located above and adapted to serve as a shield to said discharge-duct and an outward projection at the opposite end of said receptacle adapted to serve as a pouring-spout when the cover of said receptacle is removed, all substantially as and for the purpose specified.

608,865. VEHICLE-BRAKE. CHARLES B. JONES, New Haven, Conn., assignor of one-half to Frederick L. Cowles, same place. Filed Apr. 21, 1896. Serial No. 678,416. (No model.)



Claim.—1. The combination with a brake bar pivotally connected to a plate secured to one of the handle-bars so as to project in line with the rim of one of the wheels, a spring secured to said plate tending to throw the outer end of the bar away from the rim of the wheel, a plate mounted on the rear axle and formed with an upwardly-extending lug, a lever pivoted to said plate and formed with a hub projecting into line with the said lug, and a link secured in said hub and extending into connection with the inner end of said brake-bar, substantially as described.

2. The combination with a brake-bar pivotally secured to a plate, said plate formed at its inner edge with a transverse bar in a plane below the plane of said plate and with a downwardly-extending lug, a spring secured to said lug and bearing against one edge of said bar, a plate adapted to be secured to the rear axle and formed with an upwardly-extending lug, a lever pivotally secured to said plate, and a link connecting said lever with the inner end of the brake-bar, substantially as described.

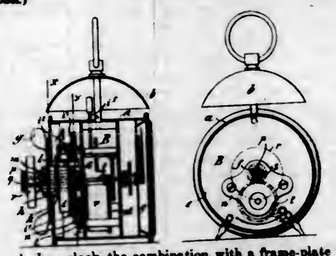
608,866. WRENCH. JOSEPH L. JONES, Roseburg, Fla. Filed Sept. 24, 1897. Serial No. 653,795. (No model.)



Claim.—In a wrench, the combination with a handle having at one end opposing and separated plates, one of which is removable,

and both of which have circular openings, of a ratchet-wheel mounted between said plates and having a square opening therein, two rows of reversely-facing and radially-projecting teeth on the periphery of said wheel, a circumferential flange or rib located between the two rows of teeth and projecting radially beyond the extreme outer edges thereof, pawls arranged in different planes and on opposite sides of said circumferential flange for alternately engaging said ratchet-wheel, a cam for alternately throwing said pawls into and out of engagement with said wheel, and a bushing having a nut-receiving recess and removably fitted in said wheel, substantially as described.

608,867. ALARM-CLOCK. ARTHUR JUNGHANS and CARL A. HERTA, Schramberg, Germany. Filed Dec 10, 1897. Serial No. 661,400. (No model.)



Claim.—1. In a clock, the combination, with a frame-plate provided with a stationary projecting sleeve, of a tubular shaft journaled in the said sleeve and projecting laterally through the said frame-plate, a toothed wheel secured on the said shaft behind the frame-plate and connected to the clock-winding mechanism, and a revoluble shaft connected to the clock-setting mechanism and arranged inside the said tubular shaft, substantially as set forth.

2. In a clock, the combination, with two frame-plates *e* and *n*, of which the plate *n* has a stationary projecting sleeve; of a tubular shaft journaled in the said sleeve and in the plate *e*, a toothed wheel secured on the said shaft between the said plates and connected to the clock-winding mechanism, and a revoluble shaft connected to the clock-setting mechanism and arranged inside the said tubular shaft.

3. In an alarm-clock, the combination, with a frame provided with a stationary projecting sleeve *m*, of a tubular shaft *p* journaled in the said sleeve and connected to the clock-winding mechanism, a sleeve *h* journaled on the said sleeve *m* and connected to the alarm-winding mechanism, a shaft *f* passing through the tubular shaft *p* and connected to the clock-setting mechanism, and means for turning the said shafts *p* and *f* and the sleeve *h*, substantially as set forth.

608,868. COOKING UTENSIL. SOPHIE KAUFMANN, Jeannette, Pa. Filed Sept. 30, 1897. Serial No. 653,623. (No model.)



Claim.—1. A cooking utensil comprising in combination, an outer vessel having an upward-extending supporting-stud on its bottom, an inner vessel supported on said stud and having an upward-extending tubular portion in its bottom, a center piece removably secured to said tubular portion, and means for maintaining the inner vessel in fixed relation with said stud, substantially as described.

2. A cooking utensil comprising, in combination, an outer vessel having stops or projections on its inner sides provided with semicircular grooves, an inner vessel supported therein, and means for locking said inner vessel in position comprising a locking-bar engaging in its middle portion the top of said inner vessel and at its ends the grooves in the stops or projections on the outer vessel, substantially as described.

3. A cooking utensil comprising in combination, an outer vessel having stops or projections on its inner sides provided with semicircular grooves, an inner vessel supported therein, a lid for said inner vessel having on its upper surface a keeper, and means for locking said inner vessel in position comprising a locking-bar engaging said keeper, in its middle portion, and at its ends the grooves in said stops or projections, substantially as described.

4. A cooking utensil comprising, in combination, an outer vessel, an inner vessel supported therein having a lid, and means for locking said inner vessel in position comprising a keeper on the lid having an opening therein, projections on the inner opposite sides of the outer vessel having semicircular grooves therein, and a locking-bar engaging at its ends said grooves and in its central portion said keeper, substantially as described.

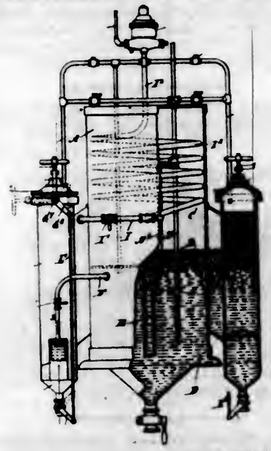
5. A cooking utensil comprising, in combination, an outer vessel, an inner vessel supported therein having a lid, and means for locking said inner vessel in position comprising a keeper on the lid having an opening therein, projections on the inner opposite sides of said outer vessel having semicircular grooves therein, and a locking-bar having its end portions shaped semicircular in cross-section to engage the grooves in the projections and its middle portion flat to engage the keeper through its opening, substantially as described.

6. A cooking utensil consisting of an outer vessel having in its bottom an upward-extending stud provided with a shoulder, an inner vessel supported on said shoulder and having an upward-extending, screw-threaded tubular portion adapted to receive said stud, a center piece having screw-threaded engagement with said tubular portion, a lid for said inner vessel having on its upper surface a keeper, and means engaging in its central portion said keeper and at its ends the inner sides of the outer vessel, whereby to maintain the inner vessel in fixed relation with said stud, substantially as described.

7. The locking mechanism herein described for maintaining an inner cooking vessel in fixed relation with an outer containing vessel, comprising lock-pieces having semicircular grooves therein and a locking-bar having its ends shaped semicircular in cross-section to engage with said grooves, substantially as described.

8. The locking mechanism herein described for maintaining an inner cooking vessel in fixed relation with an outer containing vessel, comprising lock-pieces having semicircular grooves therein, one end of said grooves being closed, and a locking bar having its ends shaped semicircular in cross-section to engage with said grooves, substantially as described.

608,869. ACETYLENE-GAS GENERATOR. CHARLES KELLY, Passaic, N. J., assignor to the Read Holliday & Sons, Limited, New York, N. Y. Filed Feb. 15, 1898. Serial No. 670,416. (No model.)



Claim.—1. An acetylene-gas apparatus, provided with a generator for containing the calcium carbid and having an inclined bottom, a settling-chamber below the said generator, and a water-inlet chamber connected with a water-supply and opening into the said generator directly above the inclined bottom thereof and into the said settling-chamber, substantially as shown and described.

2. In an acetylene-gas apparatus, a generator having a bottom inclined to one side, a settling-chamber below the inclined bottom of the generator, and a water-chamber arranged at one side of the generating and settling chambers and having its outer wall inclined downwardly, said water-chamber being connected with a water-supply and opening into the generating-chamber directly above the inclined bottom thereof and into the settling-chamber, substantially as and for the purpose set forth.

3. An acetylene-gas apparatus, provided with a generator for containing the calcium carbid and having an inclined bottom, a settling-chamber for the hydrate of lime and into which discharges said inclined bottom, an outlet-valve for the said settling-chamber, a removable cover for the said generator, and means for connecting the said cover with the said outlet-valve, to automatically open the latter upon opening the said cover to drain the water from the generator, substantially as shown and described.

4. An acetylene-gas apparatus, provided with a generator for containing the calcium carbid, an outlet-valve for the hydrate of lime, and a cover for closing the generator and connected with the said outlet-valve for opening the latter automatically upon removing the said cover, substantially as shown and described.

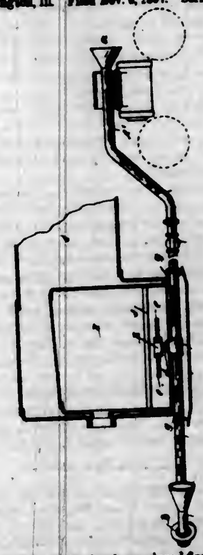
5. An acetylene-gas apparatus, provided with a generator for containing the calcium carbid, an outlet-valve for the hydrate of lime, a cover for closing the generator, and mounted on a pivoted yoke, and a connection between the said yoke and the said outlet for opening the latter automatically upon swinging the yoke over and removing the cover from the generator, substantially as shown and described.

6. An acetylene-gas apparatus, provided with a generator adapted to receive the calcium carbid, a cover for the said generator, a screw-rod carrying the said cover, a pivoted yoke in which screws the said screw-rod, an outlet-valve for the hydrate of lime for the said generator, and a connection between the said yoke and the said valve for opening the latter upon swinging the yoke over and removing the cover, and for closing the valve upon closing the generator with the cover, substantially as shown and described.

7. In an acetylene-gas apparatus, a generator having an inclined bottom, a settling-chamber below the generator and receiving the hydrate of lime therefrom, an outlet-valve in the bottom of the settling-chamber and having an arm on its stem, a pivoted yoke at the top of the generator, and provided with an arm at one side, a screw carried by the yoke, a cover carried by the screw, and a link connecting the said arms, substantially as herein shown and described.

8. An acetylene-gas apparatus, provided with a water-tank having a diaphragm for forming two compartments in the tank, a water-pipe extending from the diaphragm downward into the lower compartment, a vent-pipe extending into the lower compartment, the lower end of said pipe being above the lower end of said diaphragm-pipe, and a water-relief pipe leading from the said vent-pipe into the upper compartment, for discharging water contained in the vent-pipe back into the tank to free the vent-pipe for the passage of air or gas, substantially as shown and described.

608,870. DRAFT DEVICE FOR LOCOMOTIVES. MICHAEL KELLY, Bloomington, Ill. Filed Nov. 6, 1897. Serial No. 657,671. (No model.)

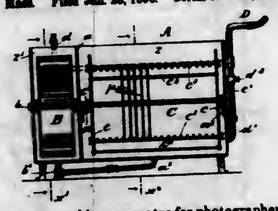


Claim.—1. A locomotive having a closed fire-box and an air-supplying apparatus, comprising a pipe leading from the ash-pan forward to the end of the locomotive and terminating in an open funnel, a pipe leading from the rear end of the ash-pan and branching to each side, each branch terminating in forwardly-extending funnels located outside of the engine parts, and a common connection of each pipe with the ash-pan, whereby the air is discharged beneath the grate, substantially as described.

2. A locomotive, having a closed fire-box and a draft apparatus, comprising pipes leading from the ash-pan forward and to the rear, the pipe at the rear branching to each side and carving forward, the ends of said pipes being supplied with funnels opening forward and located outside of the engine-body, where the air will have free access thereto, a common receiver for the air from said pipes, located beneath the grates and discharging the air upward therefrom, and dampers in said pipes between their outer ends and their junctions, substantially as described.

3. A locomotive, having a closed fire-box and a draft apparatus, comprising a pipe leading from the ash-pan forward to the end of the locomotive and terminating in an open funnel, a pipe leading from the rear end of the ash-pan and branching to each side and terminating in forwardly-extending funnels located outside of the engine-body, a T receiving the forwardly-extending and rearwardly-extending pipes a pipe extending upward from said T, and a head attached thereto having radial pipes connected to it and perforated upon their upper sides, whereby the draft is discharged beneath the grates, substantially as described.

608,871. PHOTOGRAPHIC-PLATE WASHER. JOHN KIRKWOOD, Lenox, Mass. Filed Jan. 28, 1898. Serial No. 668,281. (No model.)



Claim.—1. A washing apparatus for photographers' plates, consisting essentially of a tank having in it two separate compartments, *z* and *z'*, a water-wheel mounted rotatively in the compartment *z'*, a pipe for supplying water to the water-wheel, a pipe for supplying water to the lower part of the compartment *z*, and a plate-holder C, rotatively mounted in the compartment *z'*, said plate-holder being axially aligned with the water-wheel and coupled to the shaft thereof for driving and having adjustable rack-bars for holding the plates, the said compartments having outlets for the waste water, substantially as set forth.

2. A washing apparatus for photographers' plates, consisting of a tank having in it two compartments, *z* and *z'*, arranged side by side, an open plate-holder C, provided with rack-bars and rotatively mounted in and readily removable from the compartment *z*, a water-wheel rotatively mounted in the compartment *z'* and axially aligned with the plate-holder, the journals of said water-wheel and plate-holder being separably coupled together for driving, a pipe which supplies water to the water-wheel, and a pipe which supplies water to the compartment *z* at its lower part, said compartment *z* having an overflow for the waste water and said compartment *z'*, an outlet at its lower part for the waste water, substantially as set forth.

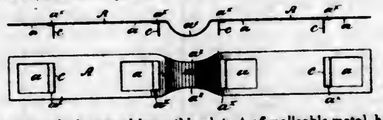
3. A washing apparatus for photographers' plates, consisting essentially of a tank having in it two separate compartments, a water-wheel mounted rotatively in one of said compartments and its shaft projecting into the other compartment, an open removable, plate-holder, provided with rack-bars for the plates, mounted rotatively in the other compartment and having its axis aligned with that of the water-wheel, a separable coupling connecting the shafts of the water-wheel and plate-holder, whereby the latter may be readily removed independently of the water-wheel, a pipe to admit water to the water-wheel, and a pipe to admit water to the compartment containing the plate-holder, said compartments having outlets for the waste water, substantially as set forth.

4. In an apparatus for washing photographers' plates the combination, with the tank and the water-wheel for driving the plate-holder, of the said holder mounted rotatively in the tank and consisting of the two heads or end pieces *c*, *c*, the tie-rods or bars c^2, which connect the heads, the rack-bars c^3, mounted adjustably in radially-arranged guides in the heads, and means for securing said bars in place when they have been adjusted, substantially as set forth.

608,872. NUT-LOCK. JOHN KIRKWOOD, Lenox, Mass. Filed Mar. 2, 1898. Serial No. 672,262. (No model.)

Claim.—1. A nut-lock comprising a thin plate of malleable sheet metal, having in it a series of apertures *a*, for the nuts to pass through,

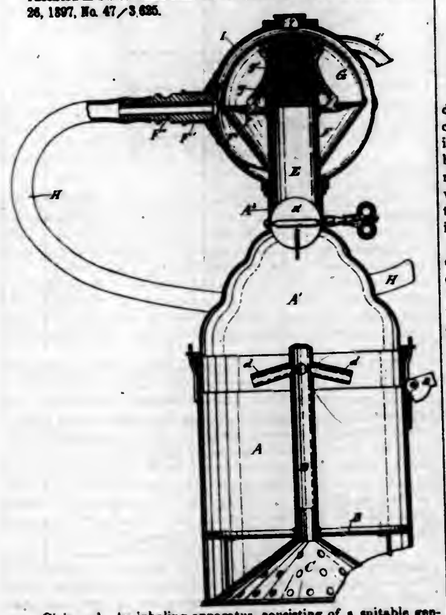
with thin margins $a^{\times}$ to wedge themselves under the nuts, and said plate having a bend a', at its middle and locking-flanges c on its outer face, substantially as set forth.



2. A nut-lock comprising a thin plate A of malleable metal, having in it a central bend a' and four equally-spaced apertures a, two at each side of said bend, the said apertures having thin wedging margins $a^{\times}$ to take under the respective nuts, and said plate having on its outer face adjacent to each of the margins $a^{\times}$, a locking-flange c, adapted to be driven up to the face of the nut by the elongation of the plate A, substantially as set forth.

3. A nut-lock comprising a thin plate of malleable metal, having in it apertures a for the passage of the nuts, a bend a' at its middle, which is to be flattened for elongating the plate, and integral locking-flanges c, formed from the metal of the apertures a, the margins $a^{\times}$ being formed of a fold in the metal, substantially as set forth.

608,873. INHALING APPARATUS. VALENTIN KOCH, Geneva, Switzerland. Filed Dec. 24, 1897. Serial No. 663,392. (No model.) Patented in Switzerland Mar. 20, 1897, No. 14,043, and in Austria Sept. 26, 1897, No. 47/3,635.



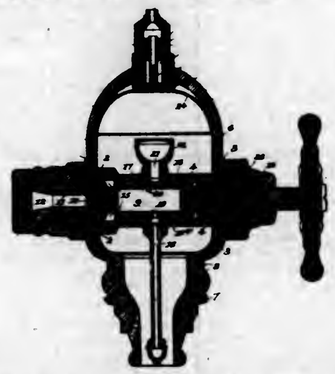
Claim.—1. An inhaling apparatus, consisting of a suitable generating vessel, a perforated false bottom in said vessel, a jacketed cooling-chamber attached to the upper part of said vessel, and an inhaling-tube attached to said cooling-chamber, substantially as set forth.

2. An inhaling apparatus, consisting of a suitable generating vessel, a perforated cone located in the lower portion of said vessel, a vertical tube extending upwardly from said cone, discharge-tubes at the upper end of said vertical tube for discharging the steam within said vessel, a perforated false bottom above said cone, a jacketed cooling-chamber, and an inhaling-tube connected with said chamber, substantially as set forth.

3. An inhaling apparatus, consisting of a suitable generating vessel, a cooling-chamber attached to said vessel, an inhaling-tube connected at one end to said cooling-chamber, and a valve-box and mouthpiece at the opposite end of said inhaling-tube, said valve-box being provided with a nipple for attachment to said inhaling-tube, an interior check-valve closing the mouth of said nipple, an opening in the upper part of said valve-box and an exterior, outwardly-opening valve closing said opening, and a perforated guard-casing inclosing said valve, substantially as set forth.

4. In an inhaling apparatus, a jacketed cooling-chamber consisting of a tubular portion or neck, a cooling-chamber, screens within said cooling-chamber at the end of said tubular portion, a spherical jacket inclosing said cooling-chamber, and means for connecting said cooling-chamber with an inhaling-tube, substantially as set forth.

608,874. DRAFT-COCK. BARTOLOMAY KRALL, Boston, Mass. Filed Oct. 28, 1897. Serial No. 656,634. (No model.)



Claim.—1. In a draft-cock, a supply-pipe, a discharge-chamber directly secured thereto and provided with a discharge-valve and its controlling-stem, a shell, enveloping the discharge-chamber and forming a space around the same, the said shell secured to the supply-pipe by a connection external to the discharge-chamber connection and removable therefrom independently of the discharge-chamber, the valve-stem being secured in its relationship to the valve by connections through the discharge-chamber independently of the surrounding shell, substantially as described.

2. In a draft-cock, the combination with a supply-pipe, of a discharge chamber and valve, the discharge-chamber provided with outlet apertures a shell enveloping the discharge-chamber provided with a dome on one side of the discharge-chamber and a nozzle on the other, one of the outlet apertures from the discharge-chamber directed to the shell-nozzle, the other directed to the dome.

3. In a draft-cock, the combination with a supply-pipe of discharge-outlets and a controlling-valve therefor, a shell enveloping the discharge devices of the pipe and forming a chamber around said discharge devices, said shell provided with a nozzle at its lower end and with a normally open air-passage at its upper end, substantially as described and for the purposes set forth.

4. In a draft-cock, the combination with a supply-pipe of a discharge chamber and valve, a shell enveloping the discharge-chamber, said shell being provided with a liquid-nozzle and an air-passage, and a valve in said air-passage adapted to close in response to fluid-pressure from within the shell.

5. In a draft-cock, a valve-chamber, an inlet-passage communicating therewith, a hollow valve-carriage movable therein, outlets in the valve-chamber and corresponding outlet-valve openings in the valve-carriage, an inlet-valve on the valve-carriage adapted to close the inlet-passage, channels wherethrough liquid from the inlet finds way to the interior of the valve-carriage on the opening of the inlet-valve, and means whereby the inlet-valve and outlet-openings are successively opened, substantially as described.

6. In a draft-cock, a valve-chamber of cylindrical interior provided with lateral discharge-openings a hollow valve-carriage therein having a cylindrical valve-surface fitting the interior of the valve-chamber, and an end valve adapted to close the inlet-passage of the draft-cock, channels wherethrough the interior of the valve-carriage communicates with the inlet passage when the latter is opened, and means whereby the valve-carriage is moved so as to open the inlet-valve and the outlet-valves, substantially as described.

608,875. PHOTOGRAPHIC SHUTTER. GEORGE C. O. LANGE, Cresskill, N. J., assignor to the Manhattan Optical Company, New York, N. Y. Filed Dec. 20, 1897. Serial No. 662,788. (No model.)

Claim.—1. The combination with a camera-shutter and its actuating mechanism, of a lever having stops engaging with such mechanism so as to control same, a movable and adjustable support for the pivot of said lever, whereby the relation of its stops to the shutter-actuating mechanism may be varied and means substantially as described for retaining such movable support in the different positions to which it may be shifted.



2. In a shutter mechanism for cameras, the combination with a movable shutter, mechanism for operating said shutter, an arm engaging with said mechanism to actuate the shutter, actuating means for said arm, a lever carrying stops engaging with said arm, means for shifting the pivot of said lever in a direction transverse to the motion of said arm, and means for operating the free end of said lever in a direction transverse to the motion of said arm, whereby the lever may control the operation of the said arm, and the manner of its control may be varied by shifting the position of its pivot.

3. In a shutter mechanism for cameras, the combination with a shutter, of a movable controlling device operating the shutter, and a lever having a plurality of stops capable of engaging with said controlling device, and means for shifting the fulcrum of said lever.

4. In a shutter mechanism for cameras, the combination with a shutter device, of an arm controlling and operating same, and having a detent, a support shiftable transversely to the motion of said arm, and a releasing-lever pivoted to said support and having three stops, one capable of engaging with the aforesaid detent, in all positions of the shiftable support, and the other stops removed from engaging relation with the releasing-lever when the shiftable support is in one extreme position, but brought successively into engaging relation therewith as the shiftable support is moved toward its other extreme position.

5. In a shutter mechanism for cameras, the combination with a shutter device, of an arm controlling and operating same, and having a detent, a support shiftable transversely to the motion of said arm, and a releasing-lever pivoted to said support, and having three stops arranged in succession thereon, the first stop being wide enough to be in engaging relation to the detent in all positions of the shiftable support and the second and third stops being differently offset in a direction transverse to the motion of the detent, so that when the detent is released from the first stop it will pass the other stop or will engage with one or both of same according to the position of the shiftable support.

6. In a shutter mechanism for cameras, the combination with the shutter, and its operating device, of an actuating-lever and a spring for actuating same, and a rotary trip device having operative connection with the operating device and having peripheral portions engaging with the actuating-lever during the motion thereof in one direction, so as to cause rotation of said trip device without operation of the shutter, and peripheral portions engaging with the said lever during its motion in the opposite direction to cause operation of the shutter.

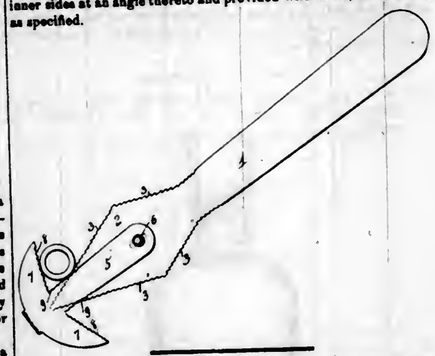
7 In a shutter mechanism for cameras, the combination with the shutter, and its operating-lever, of a star-wheel pivoted to said lever and having peripheral notches and cam-surfaces, an actuating-spring and a lever actuated thereby and engaging with said notches when moving in one direction and with said cam-surfaces when moving in the other direction, and a spring engaging with said star-wheel to bring it to proper angular position for engagement with the actuating-lever.

8. In a shutter mechanism for cameras, the combination with a shutter and an actuating device therefor, of a releasing-lever for said device having a series of stops arranged in succession thereon, to engage successively with said actuating device, and a shiftable support for said lever, consisting of a pivoted adjustable arm and a link pivoted to said arm and to said lever.

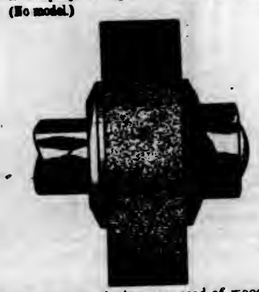
608,876. WRENCH. HENRY LABUS, Galion, Ohio. Filed Mar. 19, 1898. Serial No. 674,309. (No model.)

Claim.—1. In a wrench of the character described, the combination with the handle and its arrow or diamond shaped head formed with teeth on all four of its edges, of the shank pivotally connected with said head and having oppositely-extending jaws integral therewith and formed with their inner sides at an angle thereto, the adjacent sides of the shank and jaw being provided with teeth, substantially as specified.

2. In a wrench of the character described, the combination with the handle, and the arrow-shaped head provided with teeth and formed with a slot, of the shank consisting of two parallel arms, formed with teeth and pivotally connected with said head and the oppositely-extending jaws formed integral with said arms with their inner sides at an angle thereto and provided with teeth, substantially as specified.

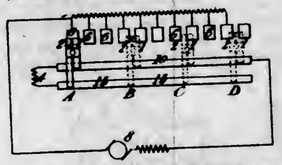


608,877. ABRADING-WHEEL. DANIEL J. LATTIMORE, St. Louis, Mo., assignor, by direct and mesne assignments, to the Greenlee Brothers & Company, Chicago, Ill. Filed Oct. 6, 1897. Serial No. 654,270. (No model.)



Claim.—An abrading device composed of wood-pulp, an abrasive substance, an adhesive substance, and salt as a toughening substance, substantially as described.

608,878. SWITCH FOR VARYING ELECTRICAL RESISTANCE. EDUARD F. H. H. LABOUCHERE, London, England, assignor to Siemens Brothers & Co., Limited, same place. Filed Nov. 29, 1897. Serial No. 660,147. (No model.) Patented in England May 2, 1895, No. 6,727.



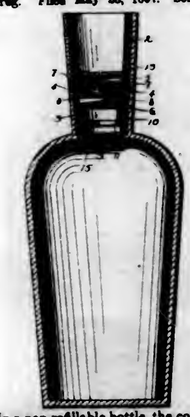
Claim.—1. In a switch for varying electrical resistance, the combination with a series of conducting-segments connected by successive resistances, of two or more brushes connected to move together but insulated from each other and electrically connected through a resistance, and designed to be moved over said conducting-segments and in contact therewith, one or more of said brushes being of a width to lie over the interval between two segments and out of contact with either, substantially as described.

2. In a switch for varying electrical resistance, the combination with a series of conducting-segments connected by successive resistances, of two or more conducting-bars connected by resistances, and two or more brushes connected to but insulated from each other and bearing respectively on said conducting-bars, said brushes being designed to be moved over said conducting-segments and in contact therewith and one or more of said brushes being of a width to lie over the interval between two segments and out of contact with either, substantially as described.

3. In a switch for varying electrical resistance, the combination with a series of conducting-segments connected by successive resistances, of two or more conducting-bars connected by resistances, one or more of said bars being formed in two parts connected by a resistance, and two or more brushes connected to but insulated from each

other and bearing respectively on said conducting-bars, said brushes being designed to be moved over said conducting-segments and in contact therewith and one or more of said brushes being of a width to lie over the interval between two segments and out of contact with either, substantially as described.

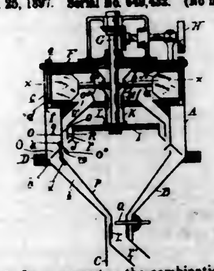
608,879. NON-REFILLABLE BOTTLE. ANTON M. LEGRAND, Milwaukee, Oreg. Filed May 28, 1897. Serial No. 638,615. (No model.)



Claim.—1. In a non-refillable bottle, the combination with a bottle-neck having inner recesses or pockets and an annular ledge or shoulder below said pocket of a locking-stopper comprising a body or casing of less size than the neck, spring-actuated catch-pins carried by said casing and adapted for reception in the pockets, an upper perforated interfering-disk secured to the casing, a lower ring having side openings therethrough, said ring and disk being adapted to fit the neck of the bottle, and a disk valve located between said ring and the annular ledge in the neck of the bottle, substantially as described.

2. In a non-refillable bottle, the combination with a bottle-neck provided with inner pockets or recesses, of a locking-stopper comprising a body or casing of less size than the neck, spring-actuated catch-pins carried by said casing and adapted to engage with said pockets, a perforated interfering-disk secured to said casing, legs depending from the casing, a ring secured to said legs and provided with notches in its periphery, the aforesaid interfering-disk and ring fitting the neck of the bottle, and a disk valve seated on a shoulder in the neck and whose movement is limited by the aforesaid ring.

608,880. SEPARATOR AND PURIFIER. WILLIAM H. LIKINS, Jackson, Mich., assignor of one-half to Louis Blessing, same place. Filed Aug. 25, 1897. Serial No. 649,432. (No model.)



Claim.—1. In a separator, the combination of an outer casing closed on top, a horizontal partition dividing said casing into a fan-chamber, above, and a separating-chamber below, a receiving-hopper leading to the separating-chamber, a horizontally-revolving fan in said fan-chamber, a series of wing-valves surrounding the fan and forming between the valves and the outer casing an annular wind-chamber, said horizontal partition having an annular port below the wind-chamber and an annular port below the fan-chamber whereby communication is established respectively between the annular wind-chamber and separating-chamber and between the separating-chamber and the fan-chamber in rear of the fan-blades, and a circular partition O in the separating-chamber between said annular ports.

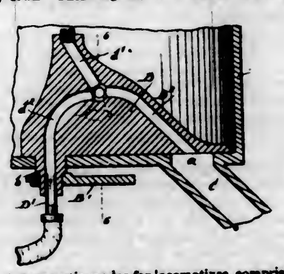
2. In a separator, the combination of the outer casing closed on top, the fan in the top of said casing, the series of wing-valves surrounding the fan pivotally secured at one end and adjustably secured at the opposite end, the wind-chamber formed between the wing-valves and the outer casing, the horizontal partition M below the fan having the annular ports f and o^3, and the downwardly-extending partition between said ports dividing the space below the horizontal partition into the separating-chamber g and aspirating-chamber O o' connecting said ports.

3. In a separator, the combination of an outer casing closed on top, a horizontally-revolving fan in the top of said casing, a circular series of segmental valves surrounding said fan and dividing the casing into a fan-chamber and an annular discharge-chamber surrounding the fan-chamber, a horizontal partition in the casing below the fan, a separating-chamber below the wind-chamber and communicating therewith, an aspirating-chamber below the fan-chamber and communicating therewith, an inner casing dividing the separating and aspirating chambers concentrically with the outer casing, and a receiver vertically adjustably supported in position below said inner casing and controlling the communications between the separating and aspirating chambers.

4. In a separator, the combination of an outer casing closed on top, a horizontally-revolving fan in the top of said casing, a series of segmental circular valves surrounding said fan and provided with adjusting devices, a wind-chamber between said valves and the outer casing, a horizontal partition below the fan, an inner casing below said partition concentric within the outer casing and forming therewith an annular separating-chamber communicating with the wind-chamber, an annular aspirating-chamber within said inner casing and communicating with a fan, a receiver below said inner casing, an opening between said receiver and casing through which the separating and aspirating chambers communicate, inclined deflecting-flanges projecting inwardly and outwardly over said opening.

5. In a separator and purifier, the combination of an outer casing comprising a cylindrical upper portion closed on top and a conical, lower portion terminating in a discharge-spout, a fan in the top of the casing, an annular wind chamber surrounding the fan and communicating therewith through a series of adjustable wind-valves, an inner casing below the fan concentric within the outer casing and forming between it and the outer casing an annular separating-chamber below the wind-chamber and communicating therewith, an aspirating-chamber within said inner casing and communicating with the fan and with the lower end of the separating-chamber, feed devices for discharging the material through the aspirating-chamber, a conical receiver vertically, adjustably supported below the inner casing and forming an adjustable opening therewith connecting the separating and aspirating chambers, a lower separating-chamber formed between said receiver and the lower part of the outer casing and an inclined deflecting-flange between the two separating-chambers and extending below the opening into the aspirating-chamber.

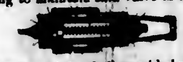
608,881. TRACK-SANDING APPARATUS. ALVA A. LINDLEY, Oskaloosa, Iowa. Filed Aug. 11, 1897. Serial No. 647,998. (No model.)



Claim.—A pneumatic sander for locomotives, comprising a valve pivoted upon the bottom and within the sand-box, and adapted to cover the discharge-opening, a hollow journal on the valve, extending through the bottom of the sand-box and having air connections thereto, means connected to said journal for operating the valve, said valve having a passage therein connecting the discharge-opening with the sand-box interior, and connections from the hollow journal into said passage, substantially as described.

608,882. VALVE. ALEXANDER F. LITTLE, Philadelphia, Pa., assignor of one-half to Andrew Armstrong, Dennis McBrearty, Francis McBrearty, Michael F. Reilly, and John J. Reilly, same place. Filed Jan. 10, 1898. Serial No. 666,172. (No model.)

Claim.—1. The combination of the shell provided with an internal shoulder, a vertically-movable non-rotatable barrel therein provided with a gasket resting upon said shoulder, means for vertically adjusting said barrel, a valve bearing normally against said gasket, and a spring acting to maintain said valve in normal position.



2. The combination of the shell provided with an internal shoulder, a barrel therein provided with a gasket resting against said shoulder, means for longitudinally guiding said barrel and preventing its rotation, means for longitudinally adjusting said barrel, and a valve coacting with said gasket.

3. The combination of the slotted shell, the vertically-movable barrel therein provided with a valve-seat and with studs or projections fitted to the slots in said shell, a collar on the shell coacting with said studs or projections, and a valve coacting with said seat.

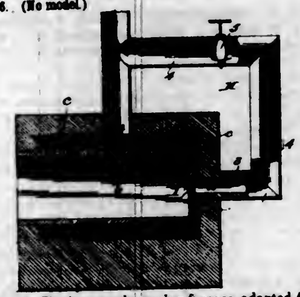
4. The combination of the shell, a vertically-movable non-rotatable barrel therein provided with a nipple and a valve-seat, means for vertically adjusting said barrel, a valve bearing normally against said seat, and a spring acting to maintain said valve in normal position.

5. The combination of the shell, the barrel therein provided with a perforated nipple, a gasket on said nipple, a valve, and means to maintain the same seated against the gasket.

6. The combination of the laterally-slotted shell, the barrel therein, the valve and its coacting parts, the vertically-movable cap fitted to said shell, and means for vertically adjusting said cap.

7. The combination of the laterally-slotted shell, the cap with depending arms fitted to the slots in said shell, said arms having lateral projections, and a screw-collar on the shell engaging said projections.

608,883. ASSAYER'S FURNACE. JOHN J. LONERGAN and ALBERT C. CALKINS, Los Angeles, Cal. Filed Jan. 12, 1898. Serial No. 666,436. (No model.)



Claim.—1. The improved assaying-furnace, adapted for burning gasolene or other hydrocarbon, the same comprising the body or casing a, having the rear horizontal passage 2, the muffle having a rear opening registering with such passage, the rear tubular extension or boss 3, the main flue attached to top of the furnace, and the oxidizing attachment, consisting of the exterior pipe 4, connecting the aforesaid boss and main flue, and provided with a damper, as shown and described.

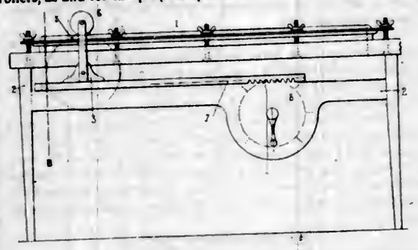
2. The improved assaying-furnace, comprising the body a having the rear passage 2, the muffle arranged with its inner end provided with an opening and separated from the rear wall of said body, save where the passage and opening coincide, the main flue, and the oxidizing attachment consisting of an exterior pipe which connects the aforesaid passage and main flue, as shown and described.

608,884. CHROMATIC TIMBAL. GUSTAVE F. LYON, Paris, France. Filed Dec. 23, 1897. Serial No. 663,225. (No model.) Patented in France Dec. 1, 1897, No. 264,409.

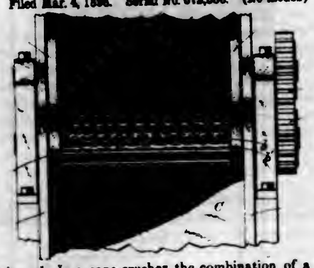
Claim.—1. A chromatic timbal or kettledrum comprising in its construction, two elements, first, a suitable frame carrying a vibratory diaphragm, and second, a pair of surfaces normally in contact with the opposite faces of said diaphragm, and means for shifting the position of one of said elements with respect to the other to vary the surface area of the diaphragm.

2. A chromatic timbal or kettledrum comprising a suitable frame carrying a vibratory diaphragm, a pair of cylinders mounted, respectively, above and below the said diaphragm and in contact with the opposite surfaces thereof, and means for moving said cylinders over the surface of the diaphragm to vary its area without altering its degree of tension, as and for the purpose set forth.

3. A chromatic timbal or kettledrum comprising a rectangular frame carrying a vibratory diaphragm, a pair of rollers mounted, respectively, above and below the said diaphragm and in contact with the opposite faces thereof, a movable frame in which said rollers are mounted, a toothed rack on said frame, and a gear-wheel meshing with said rack and adapted when rotated, to move the frame and rollers, as and for the purpose specified.



608,885. CANE-CRUSHER. ALBERT L. MARSHALL, New Orleans, La. Filed Mar. 4, 1898. Serial No. 672,588. (No model.)



Claim.—1. In a cane-crusher the combination of a roughened roll and a roll provided with small convex portions running the whole length of the roll and provided with ribs thereon, substantially as described.

2. In a cane-crusher, the combination of a roughened roll, provided with circular enlargements at its ends and a roll provided with small convex portions running the whole length of the roll and parallel to the axis thereof and also provided with zigzag ribs about said roll, substantially as described.

3. In a cane-crusher, the combination of a roughened roll and a roll provided with small convex portions parallel to the axis of the roll and with zigzag ribs running about said roll and located on said convex portions, substantially as described.

608,886. ROPE-COUPLING. THEODORE L. MARVEL, Taunton, Mass. Filed Dec. 28, 1897. Serial No. 663,822. (No model.)



Claim.—1. The metal couplings for uniting the rope ends, each coupling having a recessed end for the reception of the folded end of the rope-strand, and an opening across through the metal coupling for the reception of serving composed of a cord passed over the folded strand and through the transverse opening in the metal coupling, substantially as set forth.

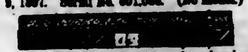
2. In combination with the rope ends having the strands folded upon themselves and spliced, of metallic coupling ends having transverse openings and a serving across the folded strands and through the openings in the metal coupling, substantially as set forth.

3. The combination with the rope, of a metal coupling of less diameter than the rope, a closely-fitted sleeve of yielding material around the metal coupling and supported by the same and of a diameter at the ends corresponding or nearly so to that of the rope, substantially as set forth.

4. The combination with the rope, of a metal coupling of less diameter than the rope, a sleeve around the metal coupling composed of yielding material and of a diameter at the ends corresponding or nearly so to that of the rope, the ends of the sleeve being flaring for the ends of the rope, substantially as set forth.

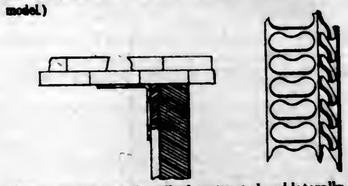
5. The combination with the rope, of a metal coupling, a sleeve around the metal coupling composed of yielding material and of a diameter at the ends corresponding or nearly so to that of the rope, the middle portion of the sleeve being of less diameter than the end portions so as to conform or nearly so to the surface of the sheave or pulley around which the rope and coupling pass, substantially as set forth.

608,887. INKING-PAD. JONATHAN H. MELVER, St. Louis, Mo. Filed Sept. 9, 1897. Serial No. 651,068. (No model.)



Claim.—An inking-pad, comprising a box having an upwardly extended threaded collar attached to its bottom, a block surrounding said collar within the box and provided with ink-reservoirs in its upper surface, a collar fixed in the block surrounding the threaded collar and extending to the top of the ink-reservoirs, a spiral spring in the annular space between the two collars, a screen covering said block, an absorbent pad above the screen, and a closure for the threaded collar, substantially as described.

608,888. PLASTERER'S STEEL ANGLE-TIE. GEORGE W. MERSEREAU, Boston, Mass. Filed July 13, 1897. Serial No. 644,456. (No model.)

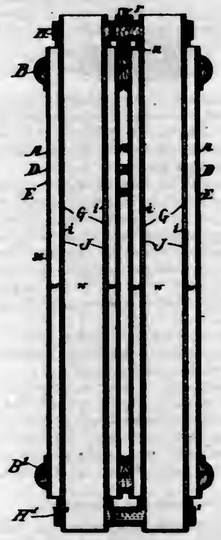


Claim.—The herein described perforated and laterally bent steel corner-plate, made to conform to the outline of a reëntrant angle in combination with a brick wall and a wooden partition or ceiling, to which one wing of said plate is secured, substantially as described.

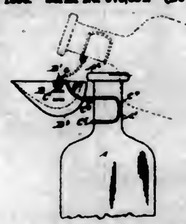
608,889. RADIATOR. JAMES A. MILLER, New Haven, Conn. Filed Sept. 17, 1896. Serial No. 606,101. (No model.)

Claim.—1. In a radiator or heating apparatus the combination of a primary series of exterior and interior tubes secured in shells, with intervening annular spaces or chambers, and a secondary series of exterior and interior tubes secured in shells, with intervening annular spaces or chambers, and arranged within the inner tube of the primary series, to form annular air-channels between the inner tubes of the primary series and outer tubes of the secondary series, the tubes of the primary series being connected with a common receptacle or shell at one end, and the tubes of the secondary series being connected to a common receptacle or shell at their corresponding ends, and both the primary and secondary series of tubes being connected into a common receptacle or shell at the opposite end, whereby the heating medium is caused to circulate through one set of annular channels in one direction and through the opposite set of annular spaces in the opposite direction, substantially as and for the purpose specified.

2. In a radiator or heating apparatus, the combination of the shells B and B' the exterior tubes A secured in the said shells, the interior tubes D arranged within the outer tubes and secured in the opposite sides of the said shells, the shell H', the secondary series of tubes G and i secured at the bottom into the shell H' and arranged within the primary series of tubes A, D, and forming the air-channels 65, the cap-shells H secured upon the upper ends of the secondary tubes, the pipe-nipples connecting the cap-shell with the shell B, the cap-shells having the apertures for the insertion of said nipples, and adapted to be afterward sealed or plugged and the shells B' H' having inlet and outlet apertures respectively, for the distributing-pipes of the heating apparatus, substantially as and for the purpose specified.



608,890. MEDICINE-SPOON. BENJAMIN F. MOSHIMMAR, New York, N. Y., assignor to himself and Frederick Rendt, same place. Filed Apr. 6, 1898. Serial No. 676,681. (No model.)



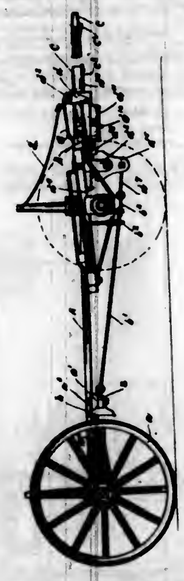
Claim.—1. A pair of brackets extending outwardly from the bottle-neck, and a receptacle suspended above its center of gravity between such brackets with liberty to turn therein and adapted automatically to maintain a horizontal position by its gravity as the bottle is inclined, the said receptacle mounted in such relation to the bottle-mouth as to receive liquid therefrom when the bottle is inclined in the act of pouring, all combined and arranged to serve substantially as and for the purposes herein specified.

2. An attachment for bottles consisting of a spring-clasp adapted to receive and be held upon a bottle-neck, brackets extending outwardly from said clasp, and a receptacle pivotally mounted between said brackets above its center of gravity with liberty to turn on a horizontal axis and adapted automatically to maintain its level by its gravity, all combined and adapted to serve with a bottle substantially as and for the purposes herein specified.

3. The support C formed of a single piece of wire and consisting of the brackets C^3, eyes C', and wings C^2, in combination with a weighted receptacle B, and trunnions B' thereon received in said eyes, the said receptacle adapted to maintain automatically a horizontal position by its gravity, all arranged to serve with a bottle, substantially as and for the purposes herein set forth.

608,891. VEHICLE-BRAKE. MYRON C. MCINNESS, Stockholm, N. Y. Filed Jan. 7, 1897. Serial No. 618,294. (No model.)

Claim.—1. In braking mechanism for vehicles, the combination of pivoted levers mounted upon the frame, and carrying brake-shoes, a sleeve slidingly mounted upon the forward end of the pole, a slide upon the rear end of the pole having cog-teeth, a sliding rod connecting said slide and sleeve, a pivoted lever having a segmental face provided with cog-teeth adapted to engage the teeth on the slide, and connections between said lever and the levers carrying the brake-shoes, as and for the purpose set forth.



2. In a braking mechanism, the combination with the running-gear proper, of levers pivotally mounted upon the frame of the same and carrying brake-shoes, a slide mounted at the rear of the pole, a supporting-roller connected to said slide and adapted to rest upon the top of the pole, rack-teeth formed on said slide, a rod connected to said slide and extending to the forward end of the pole for attachment to the harness, a pivoted lever having rack-teeth adapted to engage the teeth of the slide, and means connecting said lever with the pivoted brake-shoe levers, substantially as described.

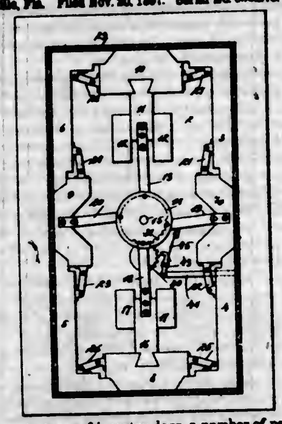
3. In a braking mechanism, the combination with the running-gear proper, of levers pivotally mounted upon the frame of the same and carrying brake-shoes, a sliding sleeve mounted upon the forward end of the pole, a slide having rack-teeth mounted upon the rear of the pole, a hinged doubletree-supporting frame mounted on said slide, a rod connecting said slide with the sleeve at the forward end of the pole, a doubletree mounted in the hinged supporting-frame, a pivoted lever having rack-teeth adapted to engage the teeth of the slide, and means connecting said lever with the pivoted brake-shoe levers, substantially as described.

608,892. END-GATE LOCK. NICHOLAS C. MURRAY, Kingston, Tex. Filed July 17, 1897. Serial No. 644,868. (No model.)



Claim.—The combination with the end-gate having a cavity formed in its end, a U-shaped plate having its legs adapted to extend on each side of the gate and provided with a screw-threaded opening in its end which is adapted to register with the cavity of the gate and also with a passage formed in the side of the wagon, a plate secured upon the outer side of the wagon and apertured in line with the passage formed in said wagon side, the aperture of said plate being enlarged on its inner side so as to be of like same size as said passage, a bolt having its inner end enlarged and screw-threaded, said enlarged end moving in the passage in the wagon side and in the enlarged aperture of the plate and adapted to engage the screw-threaded opening in the U-shaped plate, said bolt entering the cavity of the end-gate with the reduced portion thereof passing through the apertures of the plate and extending to the interior thereof, and an operating-knob upon the outer end of said bolt whereby it may be rotated, substantially as set forth.

608,893. REFRIGERATOR-DOOR. ANDREW J. MCARTHUR, Gainesville, Fla. Filed Nov. 20, 1897. Serial No. 658,575. (No model.)



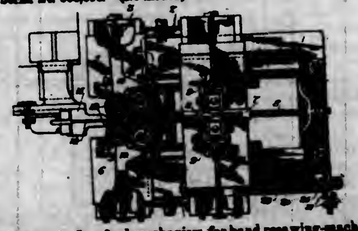
Claim.—1. In a refrigerator-door, a number of packing-bars arranged around the edge thereof, each bar having a vertical and a horizontal portion, expanding blocks engaging with beveled ends of the packing-bars, link connections between said blocks and the packing-bars, a disk, links extended from said disk to the packing-bars, a lever for imparting a rotary motion to said disk, and an automatic stop to prevent a rotation of said disk and an expanding of the packing-bars when the door is open, substantially as specified.

2. In a refrigerator-door, a number of packing-bars arranged around the edge thereof, expanding blocks engaging with the beveled ends of said bars, a disk on the inner side of the door, links extending from said disk to the expanding blocks, a segment-rack on said disk, a segment-gear engaging with said rack, means for rotating the segment-gear, a dog for engaging the said segment-gear, a spring for forcing the dog into engagement with the door, and means for moving the dog out of engagement with the gear and holding it out of said engagement when the door is closed, substantially as specified.

3. In a door, a number of packing-bars arranged around the edge thereof, means for moving said packing-bars, the said means comprising a disk, a segment-rack on said disk, a segment-gear engaging said rack, means for rotating the segment-gear, a dog pivoted on the inner side of the door and adapted for engagement with said gear, a spring for forcing the dog into engagement with the gear, and a rod extending from said dog outward through the edge of the door and adapted to engage with the jamb of the casing, to force the rod in a direction to move the dog out of engagement with the segment-gear, substantially as specified.

4. In a door, a latch pivoted on the door and adapted to engage with a keeper on the door-casing, a lever, a link connection between said lever and the latch, a disk mounted to rotate on the door and having its edge normally in connection with a downwardly-extended lug on the lever, when the door is locked, the said disk being provided with a notch into which said lug may pass when the latch is lifted out of its keeper, and a lever for rotating the disk, substantially as specified.

608,894. FEED MECHANISM FOR BAND RESAWING-MACHINES. FRANK MCDONOUGH, Eau Claire, Wis. Filed Feb. 1, 1898. Serial No. 668,606. (No model.)



Claim.—1. In a feed mechanism for band resawing-machines, the combination with a saw, and a carrier base having a timber-rest and a feed mechanism mounted thereon, of a flat horizontal subbase arranged wholly below the carrier-base to avoid interfering with the adjustment of said carrier-base and the operating devices thereon, means for slidably connecting the carrier-base to the subbase for move-

ment of the former and all its devices in a plane at right angles to the saw-line, and manually-operative adjusting devices mounted on the subbase and operatively connected to the carrier-base for moving the latter and the devices thereon to variable positions in relation to the plane of the saw, substantially as described.

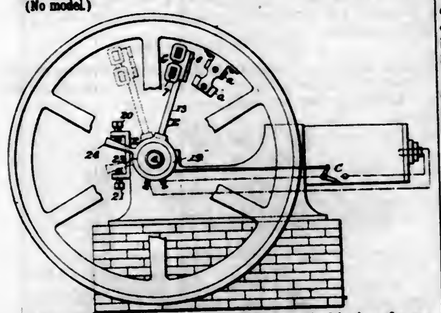
2. In a feed mechanism for band resawing-machines, the combination with a saw, of a flat stationary subbase, an adjustable base slidably fitted to said subbase for movement in a plane at right angles to the saw-line and having a timber-rest, work-carriage and feed mechanism mounted thereon on a horizontal plane above the subbase for adjustment and service without hindrance from said subbase, a rock-shaft journaled on the subbase at one side of the path of the carrier-base and said shaft operatively connected to said carrier-base to adjust the latter and its devices to variable positions relatively to the saw, and means for holding the rock-shaft and carrier-base, with all the devices on the latter, firmly in their adjusted positions, substantially as described.

3. In a feed mechanism for band resawing-machines, the combination with a saw, and a carrier-base which supports a timber-rest, work-carriage and a feed mechanism in a horizontal plane for presentation in operative relation to the saw, of a stationary flat subbase lying below the carrier-base and the devices thereon and having said carrier-base slidably fitted to said subbase for movement in a plane at right angles to the saw, a rock-shaft journaled on said subbase at one side of the adjustable carrier-base and linked thereto for adjusting the carrier-base and its devices to variable positions relatively to the saw, an adjusting-lever attached to said rock-shaft, and locking devices supported on the subbase out of the path of the carrier-base and coacting with the lever to hold the latter, the rock-shaft, and the carrier-base firmly in place, substantially as described.

4. In a feed mechanism for band resawing-machines, the flat subbase having guideways arranged at right angles to the plane of a saw, a rock-shaft journaled on said base, a segment fixed to the base and forming one of the journals for the rock-shaft, a series of adjustable dogs mounted in said segment, and a lever attached to the rock-shaft and having means for engaging with said dogs, in combination with a saw, and a carrier-base slidably fitted to the guideways of the subbase, linked to the rock-shaft, and supporting a timber-rest, work-carriage and feed mechanism, all of which are mounted upon the carrier-base above the plane of the subbase and are operative without hindrance from the adjusting devices for the carrier-base, substantially as described.

5. In a feed mechanism for band resawing-machines, a flat stationary subbase having guideways arranged at right angles to the plane of a saw, an upright holding-segment fixed to said subbase and provided with a segmental slot, the holding-stems clamped adjustably in the slotted segment and provided with the notched heads, a rock-shaft journaled on the base and in the segment, and a lever fixed to the rock-shaft in close relation to the segment and having a detent for engaging with the recessed headed stems, in combination with a saw, and a carrier-base slidably fitted to the subbase and supporting a timber-rest and a feed mechanism in a horizontal plane above the subbase, substantially as described.

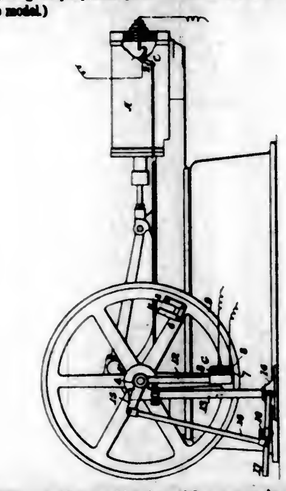
608,895. GENERATOR FOR ELECTRICAL IGNITERS. BENJAMIN MCINNERNEY, Omaha, Nebr., assignor to the McInnerney Manufacturing Company, same place. Filed Mar. 30, 1898. Serial No. 675,775. (No model.)



Claim.—1. An electrical generator for electrical igniters for gas-engines consisting of a permanent magnet, and a wire-wound core arranged in proximity, an adjustable support therefor, means for adjusting said support during the operation of the engine and keepers attached to a moving part of the engine, substantially as described.

2. The combination with the shaft, fly-wheel and electrical igniter of a gas-engine, of a yoke swinging upon a bearing, arms extending from the yoke, a permanent magnet and core carried by one of the arms, stop devices limiting the movement of the other arm, and keepers carried by the fly-wheel, substantially as described.

608,896. GENERATOR FOR ELECTRICAL IGNITERS. BENJAMIN MCINNERNEY, Omaha, Nebr., assignor to the McInnerney Manufacturing Company, same place. Filed Mar. 30, 1898. Serial No. 675,776. (No model.)



Claim.—1. The combination with a gas-engine and with the igniter thereof, of a two-part generator provided with a core and generator-coils in circuit with the igniter, one of said parts connected to a moving part of the engine, and the other having an adjustable support to which it is fixedly connected, and means for shifting the support, substantially as set forth.

2. The combination with a gas-engine and its electrical igniter, of a two-part generator, one carried by a moving part of the engine, and the other by an adjustable support, the same relatively arranged so that one portion of the movable part will approach the adjustable part in advance of the other, substantially as set forth.

3. The combination of a gas-engine, its electrical igniter, a two-part generator, one part carried by a moving part of the engine, and means for varying the relative distance of the two parts at the time that one passes the other, substantially as set forth.

4. The combination with a gas-engine and its igniter, of a generator comprising two parts, one secured to a moving part of the engine, and an adjustable support for the other part, means for regulating the movement of the adjustable support, substantially as set forth.

5. The combination with a gas-engine and with the igniter thereof, of a two-part generator provided with a core and generator-coils in circuit with the igniter, one of said parts connected to a moving part of the engine, and the other having an adjustable support to which it is fixedly connected, means for shifting the support, and a circuit-breaker, substantially as set forth.

6. A generator for electrical igniters composed of two parts, one carried by a moving part of the engine, the other relatively stationary and means for adjusting the relation of one part to the other during the operation of the engine, substantially as described.

608,897. BALL-COCK VALVE. JAMES H. MCFARLAND, Houlton, Me. Filed Feb. 26, 1898. Serial No. 671,726. (No model.)

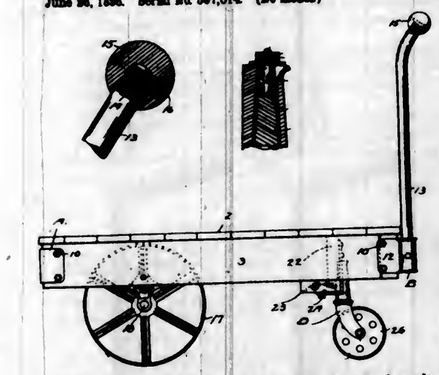


Claim.—1. A ball-cock valve comprising a fluid-conveying pipe formed at its end with a valve-seat, a tubular valve-casing fitted to slide exteriorly on the said pipe and having an outlet in its side, and a valve-plug screwing in the said valve-casing, and adapted to be seated on the said seat, substantially as shown and described.

2. A ball-cock valve comprising a float-controlled valve-casing fitted to slide on a fluid-conveying pipe, the casing having a side opening leading to a downwardly-extending spout, and a valve-plug screwing in the said casing and adapted to be seated on the seat of the conveying-pipe, substantially as shown and described.

3. A ball-cock valve comprising a float-controlled valve-casing fitted to slide on a fluid-conveying pipe, the casing having a side opening leading to a downwardly-extending spout, a valve-plug screwing in the said casing and adapted to be seated on the seat of the conveying-pipe, and means for securing the said plug in position after proper adjustment is made, substantially as shown and described.

608,898. TRUCK. ELIJAH G. NUTTING, Faribault, Minn. Filed June 26, 1896. Serial No. 597,014. (No model.)



Claim.—1. A knockdown truck of the class described, made up of the platform, the removable axle, the detachable, inset carrying-wheels adjustable thereon, the intermediate rail upon the bottom of the platform, the casters detachably secured thereto, the corner-irons upon said platform having cylindrical, open-end sockets, the tubular standards removably and adjustably fitted to said sockets, and the hand-rail screw-threaded upon the tops of said standards.

2. In a truck of the class described, the combination with the platform, of the intermediate rail on the under side thereof, and the caster-bracket and caster adjustably secured thereto by means of securing-bolts, and a rib upon said bracket engaging a groove in said rail extending in the line of adjustment.

3. In a truck of the class described, the combination with its platform and sills of the transverse rails secured to said sills, and the casters near the ends of the rail and secured thereto by means of wings bolted to the under side of the rail, whereby strains upon the casters are sustained by both the sills.

4. In a truck of the class described, the combination with the platform, of the inset, adjustable carrying-wheels, the rail underneath said platform having a longitudinal groove, and the inset casters having angle-iron brackets secured upon said rail, and provided with ribs engaging said groove.

5. In a truck of the class described, the combination with the platform, of the inset carrying-wheels adjacent the side rails, the intermediate or inset cross-bar, the angle-iron brackets and their casters, fitted to said cross-bar, and the engaging means between said brackets and cross-bar, consisting of projections upon one entering corresponding depressions in the other.

6. In a truck of the class described, the combination with its platform, of the angle-irons secured to the corners thereof, and having ribs engaging channels in said frame, and formed with open-end cylindrical sockets, the securing-bolts and tie-rods, the tubular standards adjustably and removably secured in said sockets, and the handle-bar screw-threaded upon the tops of said standards.

7. The combination with the truck, of the cross-bar upon the under side thereof, the channel in the under face of said cross-bar, the angle-iron fitted to said cross-bar, and having a rib engaging said channel, the securing-bolts, the conical socket formed integral with said angle-iron, the caster fitting in said socket, its axial bolt, and the nut threaded upon the end of said bolt.

8. The combination with the truck and the transverse bar secured to the bottom of the rails thereof, of the angle-iron caster-socket secured upon said cross-bar and rail, the rib upon one part of said angle-bar engaging a channel in said cross-bar, permitting adjustment of said angle-iron along said channel, and the caster fitted to said socket.

9. A truck-caster, comprising in combination the conical socket, the right-angled wings formed integral therewith, the rib upon one of said wings adapted to engage a channel in the frame to which it is attached, the conical spindle fitted to said socket, and having an annular groove to receive the lower end of the socket, the axial bolt arranged in said spindle, and the means secured to the projecting end of the bolt to secure the spindle in the socket.

10. The combination with a truck of the class described, of the handle-bar, the standards screw-threaded therein, the open-end sockets to receive said standards, said sockets being chambered or cored out intermediate of their ends, and the set-screws for adjustably and removably securing the standards therein.

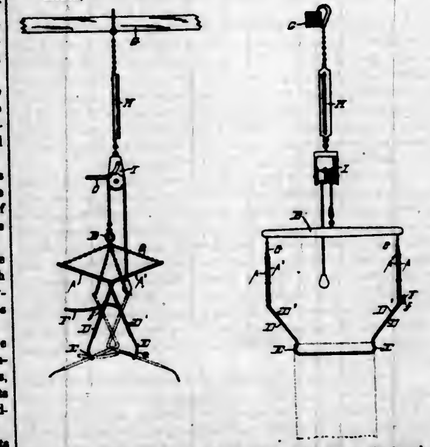
11. A knockdown truck comprising in combination the platform, the detachable axle, the carrying-wheels removably mounted thereon, the intermediate or inset rail upon the bottom of the platform, the casters detachably secured thereto, the sockets upon the edge of the platform, the standards adjustably and removably secured therein, and the hand-rail detachably secured upon the tops of said standards.

608,899. OIL-WELL-CASING HEAD. WILLIAM F. OTTNEY, Gibsonburg, Ohio. Filed June 28, 1897. Serial No. 642,648. (No model.)



Claim.—An oil-well-casing head, comprising a body provided at its lower portion with screw-threads, an upper enlarged portion provided with a recess, the upper wall of which is provided with serrations on its under side, a gate provided on its upper side with serrations adapted to engage with said serrations in the head, and a pin to further secure the said gate in position, substantially as shown and described.

608,900. COMBINED BAG-HOLDER AND WEIGHER. JOHN R. OTTO, Rush Lake, Wis. Filed May 14, 1897. Serial No. 636,601. (No model.)

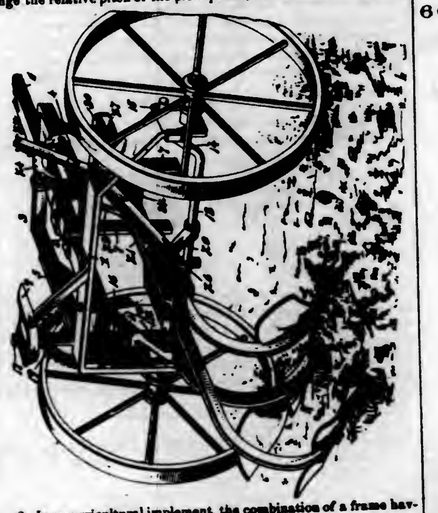


Claim.—1. In a combined bag-holder and weigher, the bag-holding tongs comprising the members D and D', each formed of a pair of side bars having offset bag-supporting cross-bars, a locking-hook for temporarily holding said members together, a cross-head, and upwardly-extending arms for actuating said bag-holding members connected to the cross-head by flexible connections, said cross-head being suspended from suitable scales, with intervening pulley-and-tackle mechanism, whereby the same may be raised or lowered, substantially as described.

2. In a combined bag-holder and weigher, the bag-holding tongs, comprising the members D and D', each formed of a pair of side bars having offset bag-supporting cross-bars, a locking-hook for temporarily holding said members together, a cross-head, and upwardly-extending arms for actuating said bag-holding members, connected to the cross-head by flexible connections, substantially as described.

608,901. LAND REDDER AND CULTIVATOR. MIDDLETON H. PARKER, Bolton, Tex., assignor of one-half to J. L. Mitchell, Georgetown, Tex. Filed Aug. 30, 1897. Serial No. 649,998. (No model.)

Claim.—1. In an agricultural implement, the combination of a frame mounted upon ground-wheels, a rod having cranks at its ends journaled to the frame independently of the ground-wheels, one of the bearings for a crank being fixed and the other bearing movable vertically, a gang of soil-working devices mounted upon the horizontal portion of the rod intermediate of the crank, means for turning said rod upon its cranks to raise or lower the plow-points, and independent means for vertically adjusting the said movable bearing to change the relative pitch of the plow-points, substantially as set forth.



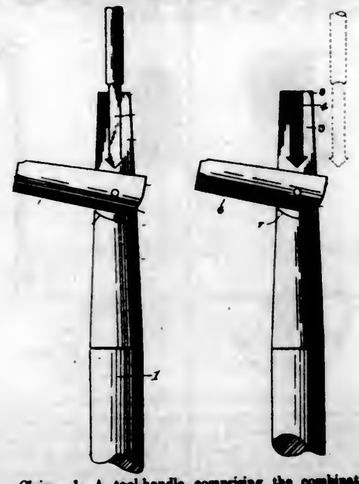
2. In an agricultural implement, the combination of a frame having pendent portions provided with fixed spindles upon which are mounted ground-wheels, a rod having cranks at its ends obtaining bearings in the pendent portions of the frame, one of the bearings being relatively fixed and the other movable vertically, a gang of soil-working devices mounted upon the horizontal portion of the rod intermediate of the cranks, means for turning the rod upon its cranks to raise and lower the plow-points, and means for raising and lowering the said movable bearing, substantially as set forth.

3. In an agricultural implement, the combination with the frame comprising an arch having one of its vertical members formed with a vertical slot, and ground-wheels mounted upon spindles applied to the end portions of the arch, of a rod having cranks at its ends journaled to the pendent ends of the aforesaid arch, one of the cranks having its arm extending through the aforedescribed vertical slot, and the other crank having its bearing relatively fixed, means for raising and lowering the bearing of the crank in the vertical slot and holding it in an adjusted position, and a gang of soil-working devices, mounted upon the horizontal portion of the rod intermediate of the cranks and adapted to be turned so as to raise and lower the shovels, substantially as set forth.

4. In an agricultural implement, the combination with the frame comprising an arch having a vertical guide at one end and a relatively fixed bearing at the opposite end, a hanger at the front end of the frame, ground-wheels mounted upon spindles applied to the end portions of the arch, a rod having crank-terminals, one of the cranks being journaled in the said fixed bearing and the other crank passing through and operating in the vertical guide, means for raising and lowering the adjustable crank-terminal and holding it in an adjusted position, means for turning the rod upon its crank-terminals, a gang of soil-working devices mounted upon the said rod intermediate of its crank-terminals and having its front portion passing between the vertical members of the hanger, and a rod having adjustable connection with the members of the aforedescribed hanger and forming a support for the forward end of the aforesaid gang, substantially as set forth.

5. In combination, an arched frame provided at its ends with spindles bearing ground-wheels and having a vertical slot at one end, forming a guide, an approximately U-shaped frame extending horizontally from the arched frame, a pole or tongue secured to the horizontal portions of the said frames, a hanger applied to the pole and provided with a vertically-adjustable pin or bolt, a rod or bar having crank-terminals, the one operating in the aforesaid guide and the other journaled in a bearing at the opposite end of the arched frame, a lever having a link receiving the said crank operating in the vertical guide, a second lever having connection with the rod or bar for turning it in its bearings, means for holding the two levers in an adjusted position, and a gang of soil-working devices mounted upon the intermediate portion of the rod or bar and having its front end supported by the pin or bolt of the aforementioned hanger, said gang being composed of beams of unequal length and bearing shovels or plow-points of desired pattern, substantially as and for the purpose set forth.

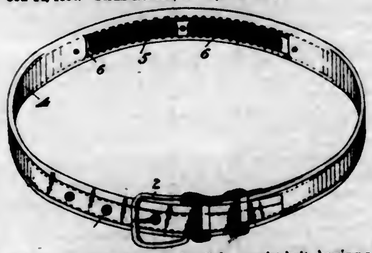
608,902. TOOL-HANDLE. FRED PEDERSEN, Childress, Tex. Filed July 8, 1897. Serial No. 643,864. (No model.)



Claim.—1. A tool-handle comprising the combination of a wooden shaft or handle part, a metallic socket part secured to the handle, the socket part being provided with a recess or seat for the tool-shank, and a pivoted keeper adapted to swing over and press the side of the tool-shank, substantially as described.

2. A tool-handle comprising the combination of a wooden shaft, a metallic socket part provided with a recess or seat for a tool-shank, a vibrating or swinging keeper for holding the tool in its seat, and shoulders or abutments to limit and regulate the extent of the closing movement, substantially as described.

608,908. WAIST-BELT. JOHN PRIEDBERGER, Chicago, Ill. Filed Oct. 14, 1897. Serial No. 655,203. (No model.)

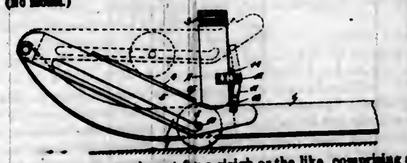


Claim.—1. As an improved article a waist-belt, having secured to the inner side thereof, a strip of flexible material provided with a number of fine closely-arranged yielding metal prongs passing therethrough and projecting beyond the outer side thereof, substantially as described.

2. As an improved article, a waist-belt comprising the strap having suitable fastening devices at the ends, and the flexible strip secured to said strap by turning down the edges of the latter and stitching to said strip and said strip provided with a large number of fine, closely-arranged yielding metal prongs, substantially as described.

3. As an improved article, a waist-belt comprising the strap, and the flexible strip secured to the inner side thereof and provided with a large number of closely-arranged yielding metal prongs passing therethrough the outer ends of which are bent upwardly at an angle, substantially as described.

608,904. ROLLER ATTACHMENT FOR SLEIGHS. JAMES C. PERKINS, Inwood, Iowa. Filed Feb. 17, 1898. Serial No. 670,851. (No model.)



Claim.—1. An attachment for a sleigh or the like, comprising a hanger having longitudinally-slotted side portions, a plate attached to the top of the side portions, and a roller in the hanger, substantially as specified.

2. An attachment for a sleigh or the like, comprising a longitudinally-slotted, vertically-swinging hanger, a roller having its trunnions extended into the slot, and means for holding the hanger in its adjusted positions, substantially as specified.

3. An attachment for a sleigh or the like, comprising a hanger pivoted to the runner, and consisting of two longitudinally-slotted side portions, a roller between the side portions and having its trunnions extended into the slots, and a swinging keeper for holding the hanger in both its operative and inoperative positions, substantially as specified.

608,905. PRODUCTION OF CORRUGATED SHEET-GLASS AND APPARATUS THEREFOR. WILLIAM L. PILKINGTON, St. Helen's, England. Filed Aug. 27, 1895. Serial No. 560,655. (No model.) Patented in England Aug. 30, 1894, No. 15,703; in France Mar. 18, 1895, No. 245,334, and in Belgium Mar. 19, 1896, No. 114,683.



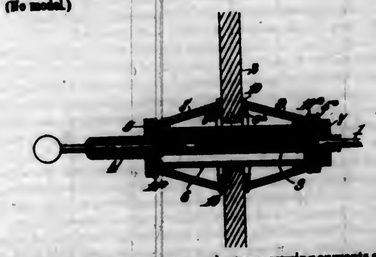
Claim.—1. The method of corrugating sheet-glass, consisting in laying a heated sheet of glass upon a corrugated die or table, forcing a portion of the sheet into some of the corrugations in the die or table, and successively drawing the free portion of the sheet into the remaining corrugations one at a time in a step-by-step manner; substantially as described.

2. The method of corrugating sheet-glass, consisting of laying a sheet of heated glass upon a corrugated die or table, forcing a portion of the sheet into some of the corrugations in the die or table by acting upon the glass successively along the length of the corrugations, and successively drawing the free portion of the sheet into the other corrugations one at a time by successive action along the length of each corrugation; substantially as described.

3. In apparatus for corrugating sheet-glass, the combination with a corrugated table, of a corrugated presser of much less width than the table, this presser being also much shorter than the length of the corrugations and being arranged to act upon the successive portions of the glass along the length of the corrugations; substantially as described.

4. In apparatus for corrugating sheet-glass, the combination with a corrugated table, of a corrugated presser of much less width than the table, the hollows of the corrugations being wider than the projections so as to leave a space between them for the glass; substantially as described.

608,906. INSULATION OF ELECTRIC WIRES. JOSEPH A. PECOT, New Orleans, La. Filed June 22, 1896. Serial No. 594,155. (No model.)



Claim.—1. An insulator for conductors carrying currents of high potential, consisting of a surrounding insulating-sleeve and two inclosing glass cones, retained by a collar at one end and a nut at the other; substantially as described.

2. An insulator for high-potential circuits, composed of a surrounding tube, or tubes, two truncated glass cones inclosing the same, a collar and nut to press and hold said cones together, and rubber gaskets secured at the bases of said cones, substantially as described.
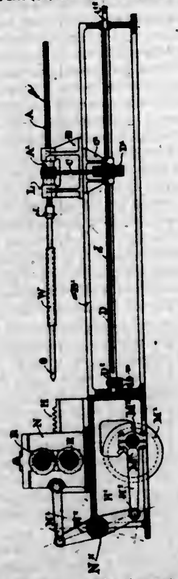
3. An insulation for high-potential circuits, consisting of an insulating-tube surrounding the wire and passing through a wall or partition, a collar at one end and a nut at the other, and two truncated glass cones placed one on each side of the wall and provided with elastic gaskets in their bases, pressed against the wall by the nut to form an air and water tight connection, substantially as described.

608,907. SKIRT-SUPPORTING BELT AND BELT-HOLDER. PETER H. PUTZ, Kingston, N. Y. Filed Sept. 20, 1897. Serial No. 652,582. (No model.)



Claim.—The combination of a belt adapted to be secured about the waist of the wearer provided with a stiff portion A, slotted as at G, and an outer belt-holder E comprising a hook F adapted to engage such outer belt, a plate adapted to slide in the said slotted part of the plate A, and a hook adapted to engage with the part A of the belt to hold the belt-holder against accidental vertical movement, substantially as set forth.

608,908. TUBE-ROLLING MILL. BENJAMIN PRICE, CHARLES W. H. MARSH, and RICHARD LAYBOURNE, Newport, England. Filed Dec. 13, 1897. Serial No. 661,704. (No model.)



Claim.—1. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a supporting-base; a reciprocating roll-housing mounted thereon; a rocking beam pivotally connected at one end to said reciprocating roll-housing; means for imparting a rocking motion to said beam; swaging-rolls rotatably mounted in said housing; pinions fixed upon the axes of said rolls; and toothed racks fixed upon the supporting-base with which said pinions engage and thereby cause the rotation of said rolls as said housing is reciprocated; of a mandrel for holding the ingot; a support for said mandrel; and means for intermittently advancing and turning said mandrel, substantially as described.

2. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a supporting-base; a reciprocating roll-housing mounted thereon; a rocking beam pivotally connected to said reciprocating roll-housing; means for imparting a rocking mo-

tion to said rocking beam; a transverse shaft journaled in said supporting-base; means for rotating said shaft; and a cam-disk mounted upon said shaft to rotate therewith; of a mandrel for holding the ingots; a support for said mandrel; and devices for intermittently rotating and intermittently advancing said mandrel operated by said cam-disk, substantially as described.

3. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a supporting-base; a reciprocating roll-housing mounted thereon; a rocking beam pivotally mounted upon said supporting-base and pivotally connected to said reciprocating roll-housing; means for imparting a rocking motion to said beam; swaging-rolls rotatably mounted in said housing; pinions fixed upon the axes of said roll; and toothed racks fixed upon said supporting-base and meshing with said pinions; of a transverse shaft journaled in said supporting-base; means for rotating said shaft; a cam-disk mounted upon said shaft to rotate therewith; a mandrel for holding the ingot; a support for said mandrel; and devices for intermittently rotating and intermittently advancing said mandrel operated by said cam-disk, substantially as described.

4. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a supporting-base; a reciprocating roll-housing mounted thereon; a rocking beam pivotally mounted upon said supporting-base and pivotally connected to said reciprocating roll-housing; means for imparting a rocking motion to said beam; swaging-rolls rotatably mounted in said housing; pinions fixed upon the axes of said rolls; and toothed racks rigidly mounted upon said supporting-base and meshing with said pinions; of a mandrel for holding the ingots; a support for said mandrel, a rotary shaft mounted transversely in said supporting-base; a disk having a cam-groove in its periphery mounted upon said shaft; a link, and a pin connected thereto adapted to follow the cam groove in said disk; mechanism connected with said mandrel for imparting an intermittent partial rotary movement thereto operated by said link and pin actuated by said cam-disk, and means for intermittently advancing said mandrel, substantially as described.
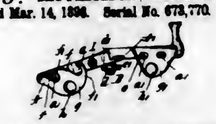
5. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a supporting-base; a reciprocating roll-housing mounted thereon; a rocking beam pivotally mounted upon said supporting-base and pivotally connected to said reciprocating roll-housing; a driving-shaft mounted transverse of said supporting-base and having a crank thereon connected to said rocking beam; a counter-shaft driven from said driving-shaft and having a cam-disk mounted thereon to rotate therewith; swaging-rolls rotatably mounted in said housing; pinions fixed upon the axes of said rolls; and toothed racks rigidly mounted upon said supporting-base and meshing with said pinions; of a mandrel for holding the ingot; a support for said mandrel; mechanism connected with said mandrel and operated by the rotation of said cam-disk, for imparting an intermittent partial rotary motion to said mandrel; and mechanism also operated by the rotation of said cam-disk for intermittently advancing said mandrel, substantially as described.

6. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a supporting-base; a reciprocating roll-housing mounted thereon; a rocking beam pivotally mounted upon said supporting-base and pivotally connected to said reciprocating roll-housing; means for imparting a rocking motion to said beam; swaging-rolls rotatably mounted in said housing; pinions fixed upon the axes of said rolls; and toothed racks rigidly mounted upon said supporting-base and meshing with said pinions; of a mandrel for holding the ingots; a support for said mandrel; a rotary shaft mounted transversely in said supporting-base; a disk having peripheral and facial cam-grooves therein mounted upon said shaft to rotate therewith; devices arranged to follow one of the grooves in said disk, and mechanism operated thereby for imparting an intermittent movement to said mandrel; and devices arranged to follow the other groove in said disk, and mechanism operated thereby for intermittently advancing the mandrel, substantially as described.

7. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a supporting-base; a roll-housing mounted thereon; and means for causing the rotation of said rolls in said housing; of a mandrel for holding the ingots while being operated upon by said rolls; a support for said mandrel; means for intermittently rotating said mandrel in said support; and a device for intermittently advancing the mandrel, arranged to seize and to release the mandrel at predetermined intervals as the latter is advanced, substantially as described.

8. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a mandrel for holding the ingots; and means for intermittently rotating said mandrel; of a sleeve for inclosing the mandrel; pivoted jaws mounted within said sleeve, and arranged to grip the mandrel when said sleeve is moved in one direction and to release the mandrel when moved in the opposite direction; and means for imparting a reciprocating movement to said sleeve, substantially as described.

608,909. RAG-FASTENER. ALBERT H. PROPPER, New York, N. Y. Filed Mar. 14, 1898. Serial No. 673,770. (No model.)



Claim.—1. An improved bag-fastener, comprising segmental arms pivotally connected or hinged at one end and adapted to swing both vertically and laterally on their pivotal connection, the free ends of said arms being flattened and enlarged and adapted to overlap, the flattened and enlarged end of one of said arms being provided in the top edge thereof with notches or recesses which open backwardly and form hooks, and the enlarged and flattened free end of the other arm being provided with projecting pins or studs adapted to enter said notches or recesses, substantially as shown and described.

2. An improved bag-fastener, comprising segmental arms pivotally connected or hinged at one ead and adapted to swing both vertically and laterally on their pivotal connection, the free ends of said arms being flattened and enlarged, and adapted to overlap, the flattened and enlarged end of one of said arms being provided in the top edge thereof with notches or recesses which open backwardly and form hooks, and the enlarged and flattened free end of the other arm being provided with projecting pins or studs adapted to enter said notches or recesses, said free ends being also each provided with an eye or opening through which a cord may be passed, substantially as shown and described.

3. An improved bag-fastener, comprising segmental arms pivotally connected or hinged at one end, and the free ends of which are adapted to overlap, the free end of one arm being provided in its upper edge with notches or recesses which open backwardly and upwardly and the free end of the other arm being provided with pins or studs which are adapted to enter said notches or recesses and said free ends of said arms being also each provided with an eye or opening, substantially as shown and described.

4. An improved bag-fastener, comprising segmental arms pivotally connected or hinged at one end, and the free ends of which are adapted to overlap, the free end of one arm being provided in its upper edge with notches or recesses which open backwardly and upwardly and the free end of the other arm being provided with pins or studs which are adapted to enter said notches or recesses and said free end of each arm being also provided with an eye or opening, said segmental arms being also loosely connected in such manner that they are free to swing vertically as well as laterally, substantially as shown and described.

5. An improved bag-fastener, comprising two segmental arms which are hinged together at one end, and the free ends of which are adapted to swing laterally and also to move vertically, the free ends of said arms being widened and adapted to overlap and said free end of one of said arms being provided in the upper edge thereof with notches or recesses which open backwardly and upwardly, and the free end of the other arm being provided with projecting pins or studs adapted to enter said notches or recesses, and one of said arms being also provided with a handle, substantially as shown and described.

6. An improved bag-fastener, comprising two segmental arms which are hinged together at one end, and the free ends of which are adapted to swing laterally and also to move vertically, the free ends of said arms being widened and adapted to overlap, and the free end of one of said arms being provided in the upper edge thereof with notches or recesses which open backwardly and upwardly, and the free end of the other arm being provided with projecting pins or studs adapted to enter said notches or recesses, and one of said arms being also provided with a handle, and the free end of each of said arms being provided with an eye or opening through which a cord may be passed, substantially as shown and described.

7. An improved bag-fastener, comprising two segmental arms hinged together at one end and adapted to swing both vertically and laterally, the free ends of said arms being flattened and adapted to overlap, one of said arms being provided in its upper surface with notches or recesses which open upwardly and backwardly and the top and bottom walls of which are inclined backwardly and upwardly, and the end of the other arm being provided with pins or projections which are adapted to enter said notches or recesses, and the said end being inclined upwardly and in the direction of the opposite arm, said inclined end being adapted to abut against an inclined shoulder formed on the other arm, substantially as shown and described.

8. An improved bag-fastener, comprising two segmental arms hinged together at one end and adapted to swing both vertically and laterally, and the free ends of said arms being flattened and adapted to overlap, one of said arms being provided in its upper surface with notches or recesses which open upwardly and backwardly, and the end of the other arm being provided with pins or projections which

are adapted to enter said notches or recesses, and said end being inclined upwardly and in the direction of the opposite arm, said inclined end being adapted to abut against an inclined shoulder formed on the other arm, and one of said arms being also provided with a handle, substantially as shown and described.

9. An improved bag-fastener, comprising two segmental arms hinged together at one end and adapted to swing both vertically and laterally, the free ends of said arms being flattened and adapted to overlap, one of said arms being provided in its upper surface with notches or recesses which open upwardly and backwardly and the top and bottom walls of which are inclined backwardly and upwardly, and the end of the other arm being provided with pins or projections which are adapted to enter said notches or recesses, and the end thereof being inclined upwardly and in the direction of the opposite arm, said inclined end being adapted to abut against an inclined shoulder formed on the other arm, and one of said arms being also provided with a handle, and the ends of both of said arms being provided with an eye or opening through which a cord or similar device may be passed, substantially as shown and described.

10. An improved bag-fastener, comprising two segmental arms which are hinged together at one end, and adapted to swing both laterally and vertically on their hinged connection, the free ends of one of said arms being widened and provided with notches or recesses which open upwardly and backwardly whereby hooks are formed, the end of the other arm being provided with pins or projections adapted to enter said notches or recesses, substantially as shown and described.

11. An improved bag-fastener, comprising two segmental arms which are hinged together at one end, and adapted to swing both laterally and vertically on their hinged connection, the free ends of one of said arms being widened and provided with notches or recesses which open upwardly and backwardly whereby hooks are formed, the end of the other arm being provided with pins or projections adapted to enter said notches or recesses, and the ends of both of said arms being provided with an eye or opening through which a cord or similar article may be passed, substantially as shown and described.

12. An improved bag-fastener, comprising two segmental arms which are hinged together at one end and which are adapted to swing vertically and laterally on their hinged connection, one of said arms being provided at its free end with notches or recesses which open upwardly and backwardly whereby hooks are formed and the free end of the other arm being provided with corresponding pins or projections which are adapted to enter said notches or recesses and to be held therein by said hooks, substantially as shown and described.

13. An improved bag-fastener, comprising two segmental arms which are hinged together at one end and which are adapted to swing vertically and laterally on their hinged connection, one of said arms being provided at its free end with notches or recesses which open upwardly and backwardly whereby hooks are formed and the free end of the other arm being provided with corresponding pins or projections which are adapted to enter said notches or recesses and to be held therein by said hooks, the free ends of each of said arms being also provided with an eye or opening, substantially as shown and described.

14. An improved bag-fastener, comprising two segmental arms which are hinged together at one end and which are adapted to swing vertically and laterally on their hinged connection, one of said arms being provided at its free end with notches or recesses which open upwardly and backwardly whereby hooks are formed and the free end of the other arm being provided with corresponding pins or projections which are adapted to enter said notches or recesses and to be held therein by said hooks, the free ends of each of said arms being also provided with an eye or opening, and one of said arms being also provided with a handle, substantially as shown and described.

15. An improved bag-fastener, comprising arms connected at one end by a pivotal or hinge joint and having overlapping free end portions, one of said arms being provided at its free end portion with hooks or catches in its top edge and the other arm being provided with projecting pins or studs adapted to engage over said hooks or catches, the free end portions of said arms being extended below said catch devices and said extended overlapping portions being provided with registering eyes or openings adapted to receive a sealing-cord, substantially as and for the purpose set forth.

16. An improved bag-fastener, comprising segmental arms connected at one end by a pivotal or hinge joint and having overlapping free end portions, one of said arms being provided at its free end portion with hooks or catches at its top edge and the other arm being provided with laterally-projecting pins or studs adapted to be engaged over said hooks or catches and with a projecting knob or handle by which it may be moved to and from the first arm, the overlapping free end portions of both arms being provided with registering eyes or openings, substantially as and for the purpose set forth.

17. An improved bag-fastener, comprising two segmental arms hinged or pivotally connected at one end and adapted to swing laterally and vertically on their hinged or pivotal connection, and said arms being provided at their free ends with interlocking devices by which they may be connected, and each of said arms being also provided at its free end with an eye or opening, said eyes or openings being adapted to register when the free ends of said arms are connected, substantially as shown and described.

18. An improved bag-fastener, comprising two segmental arms hinged or pivotally connected at one end and adapted to swing laterally and vertically on their hinged or pivotal connection, and said arms being provided at their free ends with interlocking devices by which they may be connected, and each of said arms being also provided at its free end with an eye or opening, said eyes or openings being adapted to register when the free ends of said arms are connected, and one of said arms being also provided with a handle, substantially as shown and described.

19. An improved bag-fastener, comprising two segmental arms hinged or pivotally connected at one end and adapted to swing laterally or vertically on their hinged or pivotal connection, said arms being also flattened at their free ends and the flattened end portion of one of said arms being provided in its upper edge with notches or recesses which open upwardly and backwardly and the flattened end of the other arm being provided with pins or projections which are adapted to enter said notches or recesses, one of said end portions being also inclined and adapted to abut against an inclined shoulder or projection on the other end portion, and said end portions being also each provided with an eye or opening which are adapted to register when the free ends of said arms are connected, substantially as shown and described.

20. An improved bag-fastener, comprising arms having hook or catch engaging devices at their free end portions, the other end of one of said arms being provided with an eye or opening and the corresponding end of the other arm being provided with a projecting pintle of less diameter than said eye or opening and secured in position within the same, whereby a loose pivotal or hinge joint is provided between the arms, substantially as and for the purpose set forth.

21. An improved bag-fastener, comprising arms having hook or catch engaging devices at their free end portions, the other end of one of said arms being provided with an eye or opening and the corresponding end of the other arm being provided with a projecting pintle received by said eye or opening, and a securing member provided upon said pintle at a point some distance from the arm having the eye or opening, whereby a loose pivotal or hinge joint is provided between the arms, substantially as and for the purpose set forth.

22. An improved bag-fastener, comprising arms having hook or catch engaging devices at their free end portions, one of said arms being provided at its free end with an extension or flange in which is formed an eye or opening and which forms a segmental shoulder at the inner end of said flange or extension, the corresponding end of the other arm being adapted to rest upon said flange or extension and having a pintle passing downwardly through the eye or opening therein, the end of said pintled arm being adapted to bear against said segmental shoulder, whereby said arms are relatively braced in their movement upon the pintle, substantially as and for the purpose set forth.

23. An improved bag-fastener, comprising arms provided with hook or catch engaging devices at their free end portions, one of said arms being provided at its opposite end with an eye or opening and the other arm being provided in its corresponding end with an extended projecting pintle passing through said eye or opening, and a projecting securing device carried by said pintle, the length of the pintle between its carrying-arm and said projecting securing device being greater than the thickness or diameter of the portion of the other arm having the eye or opening, substantially as and for the purpose set forth.

24. An improved bag-fastener, comprising arms having hook or catch engaging devices at their free end portions, the other end of one of said arms being provided with a flange or extension in which is formed an eye or opening, and the other arm being connected with the first arm by means of a pintle projecting through said eye or opening and adapted to slide vertically therein, substantially as and for the purpose set forth.

25. An improved bag-fastener, comprising segmental arms having overlapping free end portions in which are respectively formed edge hooks or catches and laterally-projecting pins or studs adapted to be engaged over the same, the other end of one of said arms being provided with an eye or opening and the corresponding end of the other arm being provided with an extended pintle projecting downwardly through said eye or opening and provided with a securing projecting portion, the length of said pintle between its carrying-arm and said securing projecting portion being greater than the thickness of the portion of the other arm having the eye or opening, substantially as and for the purpose set forth.

26. In a bag-fastening device of the class described, comprising two pivotally connected or hinged clamping-arms, the herein-described

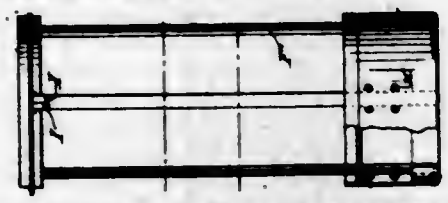
inwardly-projecting spur carried by said arms and embodying a cylindrical projection having its outer end provided with V-shaped recesses at right angles to each other, substantially as and for the purpose set forth.

27. An improved bag-fastener, comprising the segmental arms having the overlapping end portions respectively provided with the inclined or diagonally-extending recesses forming the hooks or projections and the laterally-projecting pins or studs adapted to be engaged over the latter, the other ends of said arms being respectively provided with an eye or opening and with a pintle received by said eye or opening and having a vertical movement therein, and the knob or handle projecting upwardly from one of said arms and adapted to be operated to carry the arms to or from each other, substantially as and for the purpose set forth.

28. An improved bag-fastener, comprising the segmental arms having the overlapping free end portions extended downwardly and provided with registering eyes or openings, said overlapping free end portions being respectively provided with the diagonal or inclined recesses forming the hooks or catches and with the laterally-projecting pins or studs adapted to be engaged over the latter, the other ends of said arms being respectively provided with an eye or opening and with a pintle received by said eye or opening and having a vertical sliding movement therein, substantially as and for the purpose set forth.

29. The herein-described improved bag-fastener, comprising the segmental arms having inwardly-projecting spurs and embodying the overlapping free end portions, said free end portions being provided with registering eyes or openings and respectively with the diagonal or inclined recesses forming the hooks or catches in the top edge and with the laterally-projecting pins or studs adapted to be engaged over said hooks or catches, the other ends of said arms being respectively provided with an eye or opening and with a pintle received by said eye or opening and extended with relation thereto, said pintle being provided with a securing projection or portion at its extended end and being adapted to slide within the eye or opening, and a knob or handle projecting from one of the arms, substantially as and for the purpose set forth.

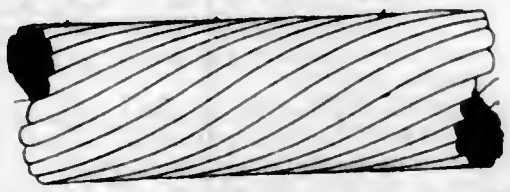
608,910. LAMP-CHIMNEY. Thomas Redman, Bolton, England. Filed Dec. 29, 1897. Serial No. 664,249. (No model.) Patented in England Aug. 2, 1895, No. 14,699.



Claim.—1. An open work cylindrical lamp-chimney frame composed of a top ring, a bottom ring internally provided with means for supporting separately-removable sheets of mica or other transparent material, the said top and bottom rings being of the same diameter, and vertical connecting-ribs having central longitudinal flanges on their inner sides to hold the separately-removable sheets of transparent material from lateral displacement, substantially as described.

2. A lamp-chimney frame composed of one or more stamped open-work metal sheets comprising a top ring, a bottom ring provided with inward projections for supporting separately-removable sheets of mica or other transparent material, and longitudinally-flanged connecting-ribs integral with said top and bottom rings and provided with a joint at one side of said frame, substantially as described.

608,911. ELECTRIC CABLE. Henry A. Reed, Newark, N. J. Filed Oct. 24, 1896. Serial No. 609,904. (No model.)



Claim.—1. In an electric cable, the combination with the conductor and the insulating covering therefor, of a sheathing or armor for said cable consisting of spirally-laid wires of non-magnetic metal.

2. A sheathing or armor for electric cables consisting of spirally-laid wires of copper or other non-magnetic metal.

3. In an electric cable, the combination with a conductor and the insulating covering therefor, of a sheathing or armor for said cable consisting of non-magnetic metal wires laid spirally around said cable and completely covering same.

608,912. VEHICLE-WHEEL. Mathew M. Reed, Louisville, Ky. Filed Dec. 9, 1897. Serial No. 661,264. (No model.)



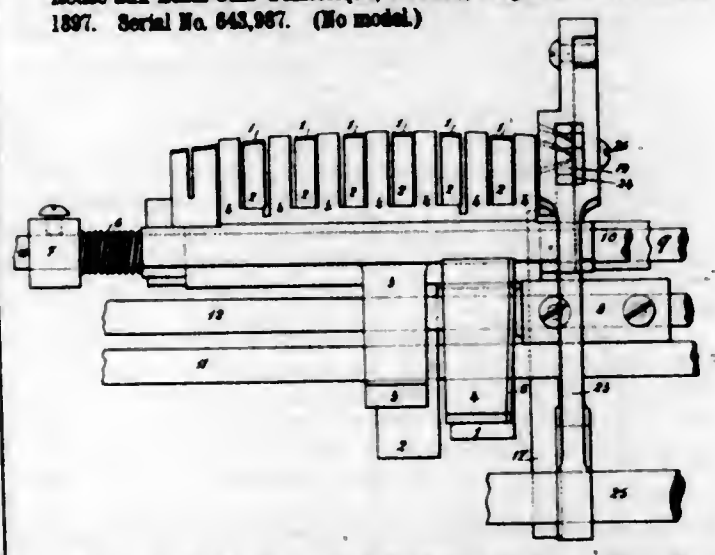
Claim.—1. A vehicle-wheel, comprising a casing, two series of yielding supports in the casing, the supports of one series alternating with the supports of the other series and extending in the opposite direction, a longitudinally-sinuate spring-plate extended through each series of supports, and a tie-band extended through all the supports of each series, substantially as specified.

2. A vehicle-wheel, comprising a yielding casing, two series of supports of yielding material in the casing, the supports of one series alternating with the supports of the other series and extending in opposite directions, a longitudinally-sinuate spring-plate extended through the supports of each series, and a spring tie-band extended through all the supports of both series, substantially as specified.

3. A vehicle-wheel, comprising a yielding casing, two series of supporting-blocks removably placed in said casing, the supporting-blocks of one series alternating with the supporting-blocks of the other series and extending in the opposite direction, a longitudinally-sinuate spring-plate extended through one series of supports, and a spring-band extending through all the supports, substantially as specified.

4. In a vehicle-wheel, a tubular casing of yielding material, two series of supporting-blocks loosely arranged therein, the blocks of one series alternating with the blocks of the other series and extending in the opposite direction, a longitudinally-sinuate plate extended through one series of supports and having lateral wings between supports, a longitudinally-sinuate spring-plate extended through the other series of supports and having lateral wings between supports, and a tie-band extended through all the supports, substantially as specified.

608,913. CIGAR-MAKING MACHINE. Jean Reuse, Enghien, Belgium, assignor to the Société Anonyme d'Exploitation des Brevets Reuse aux Etats-Unis d'Amerique, Brussels, Belgium. Filed July 9, 1897. Serial No. 643,967. (No model.)



Claim.—1. In a cigar-making machine, two pairs of jaws having intermeshing teeth or fingers with a cigar-shaped recess between said fingers, means for opening and closing said jaws, and means for moving one pair of the jaws slightly in lengthwise direction relatively to the other pair, all combined substantially as described.

2. In a cigar-machine, the combination of two pairs of jaws having intermeshing teeth or fingers with a cigar-shaped recess therein, means for opening and closing said jaws alternately, a positively-actuated mechanism whereby one pair of jaws is moved slightly lengthwise, and a spring acting to move the jaws in reverse direction, substantially as described.

3. In a cigar-machine, two pairs of jaws having intermeshing fingers recessed as described, the spaces between fingers of one pair of jaws being greater than the width of the fingers of the other pair, means for opening and closing the jaws, and means for moving one pair of jaws lengthwise relatively to the other while the fingers are so intermeshing, all combined substantially as described.

4. In a cigar-machine, two pairs of recessed manipulator-jaws and means for opening and closing them substantially as described, there being an inclined bearing on the edge of one of the jaws and a traveling piece moving against said incline to press the jaw length-

wise in one direction, and a spring bearing against said jaw to press it in the other direction, all combined substantially as described.

5. In a cigar-machine, a cigar-tip former fixed against longitudinal movement, a pair of manipulator-jaws pivoted together and means for opening and closing them, and means for imparting a longitudinal movement to the said manipulator-jaws relatively to the tip-former, all combined substantially as described.

6. In a cigar-machine, a pair of manipulator-jaws and means for opening and closing them, and a tip-former having two parts pivoted to each other and which open and close toward each other, the tip-former having its parts pivoted in line with the pivot of said manipulator-jaws, all combined.

7. In a cigar-machine, two pairs of manipulator-jaws having intermeshing fingers, one of said pairs of jaws having a longitudinal movement relatively to the other pair, and a tip-former in alinement with the cigar-holding space between the jaws, all combined substantially as described.

8. In a cigar-machine, two pairs of manipulator-jaws having intermeshing fingers, a sectional tip-former having its sections pivoted in line with the pivot of one pair of jaws, means for opening and closing the jaws and the tip-former, and means for imparting a longitudinal movement to one pair of the jaws, all combined substantially as described.

9. In a cigar-machine, two pairs of manipulator-jaws having intermeshing fingers, means for opening and closing said jaws, means for oscillating the pairs of jaws slightly about the axis toward which the fingers close, and a tip-former having an oscillation about the same axis of closure and means for oscillating said tip-former, all combined substantially as described.

10. In a cigar-machine, two pairs of jaws having intermeshing fingers, means for opening and closing the said jaws and means for rocking the pairs slightly and successively about their axis of closure, a separable tip-former having its pivot in line with one pair of jaws and oscillating therewith, means for oscillating the tip-former and means for oscillating the other pair of jaws in reverse direction, all combined substantially as described.

11. In a cigar-machine, means for grasping and rotating the cigar, the tip-former having separable sections, means for opening and closing said sections, and a tip-cutter operatively connected to one of the sections of the tip-former, all combined.

12. In a cigar-machine, the combination with means for grasping and rotating a cigar, of the tip-former of separable sections and means for opening and closing said sections, a rigid lever connected to one of the tip-sections, a second lever pivoted to said lever and having its fulcrum on a suitable support, and a tip-cutter carried by said second lever, all substantially as described.

13. In a cigar-machine, the combination of two pairs of manipulator-jaws, two traveling spindles operating to open and close said jaws, a tip-former in sections pivoted in line with the pivot of one of the pairs of jaws, and a lever rigid with one of the tip-former sections, and in operative engagement with one of the traveling spindles to open and close said tip-former, all substantially as described.

14. In a cigar-machine, the combination of manipulator-jaws, a separable tip-former closing in alinement with the axis of closure of the jaws, a traveling spindle acting on a pair of the jaws and on the tip-former to close the same, and a spring acting on the tip-former in reverse direction to open the same, all combined substantially as described.

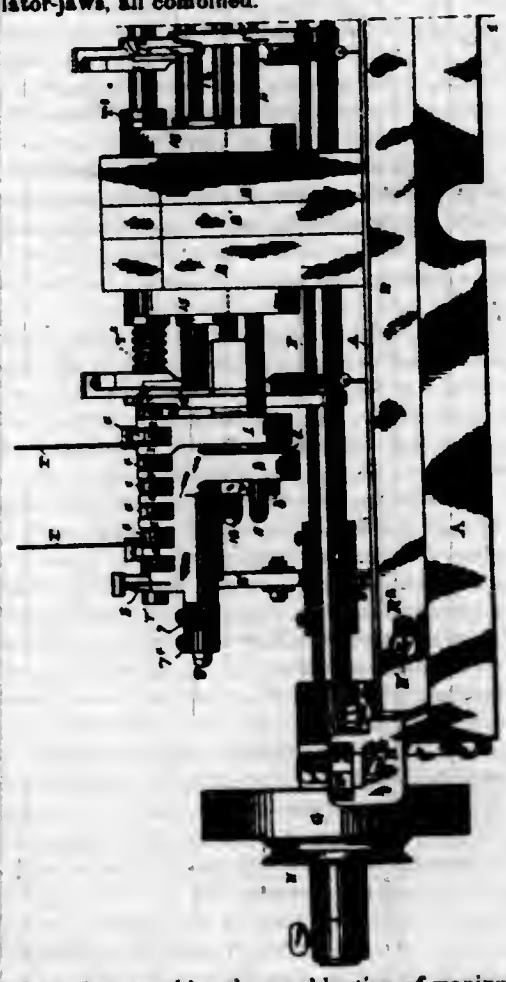
608,914. **CIGAR-MAKING MACHINE.** JEAN RENOU, Enghien, Belgium, assignor to the Société Anonyme d'Exploitation des Brevets Renou aux Etats-Unis d'Amerique, Brussels, Belgium. Filed July 24, 1897. Serial No. 645,822. (No model.)

Claim.—1. In a cigar-machine the driving means and set of manipulators having intermeshing fingers with spaces between the fingers of one jaw of a width greater than the width of the fingers of the other jaw resting in said spaces, and a spring bearing one of the jaws in the direction of the length of the other jaw, all combined substantially as described.

2. In a cigar-machine the driving means, a set of manipulators consisting of two pairs of jaws with intermeshing fingers of one pair resting in spaces between fingers of the other pair, said spaces being wider than said fingers, and a yielding presser bearing one pair of the jaws in the direction of the length of the other pair, all combined.

3. In a cigar-machine, a pair of manipulator-jaws one jaw having fingers of less width than the spaces between fingers of the other jaw, a tip-former at each end of the pair of jaws, and a spring bearing one of the jaws toward the tip-former, all combined.

4. In a cigar-machine, a supporting-spindle and a driving-spindle and means for driving said spindles substantially as described so as to leave their ends free, a pair of manipulator-jaws adjustable to working position on said spindles, and a collar attachable to the supporting-spindle and sustaining a spring which bears on one of the manipulator-jaws, all combined.



5. In a cigar-machine the combination of manipulator-jaws and the rotating driving mechanism thereof, a rock-shaft operated by a handle and having a cam connected thereto, a slide-bar operated by said cam, and a lever mounted on the frame and shifted by the slide-bar into position to act as a brake to the rotating drive mechanism, substantially as described.

6. In a cigar-machine, the manipulator-jaws and the driving mechanism therefor, the brake to such driving mechanism controlled by a rock-shaft operated by a handle, the knife-driving shaft connected with said first-mentioned by a gear operating with a lost motion, and the swinging knife operated by the knife-shaft, all combined.

7. In a cigar-machine, the frame and supports, the driving-shaft and jaw-driving mechanism extending lengthwise of the frame, the crank-shaft extending transversely of the machine with its crank-handle at the front, and the knife and delivery mechanism connected to a shaft extending lengthwise at the rear of the machine and actuated by said crank-handle, all combined substantially as described.

8. In a cigar-machine, the manipulator-jaws and the driving mechanism therefor having a rotary driving-shaft and drive-wheel, a swing-lever pivoted on the frame with a brake projection in position to swing in the path of movement of the drive-wheel and stop the same, a slide-bar connected to said swing-lever, and a crank-shaft having a cam in a fork in said bar, and operating by its movement to shift said bar and so actuate the brake in either direction, all combined substantially as described.

9. In a cigar-machine, manipulator-jaws and the driving-gear therefor, a rock-shaft having an operating-crank and means connected thereto to operate as a brake on the driving-gear, a loose bevel-pinion on said rock-shaft and a projection on the shaft engaging the pinion to drive it after a partial rotation of the rock-shaft, and a knife-actuating shaft and connections driven from such bevel-pinion, all combined.

10. The knife mounted on a curved lever pivoted to the frame, a cushion on the frame against which the heel of the knife-lever rests normally, a spring connected to the knife-lever to hold it elevated, a push rod or lever pivoted to the knife-lever, and a hand-propelled cam acting on the said push-rod to depress the knife, all combined.

11. In a cigar-machine, the curved knife-lever and knife carried thereby, the lever-supporting spring and the cushion under the heel of the knife, the push-bar connected to said lever having a projection in position for engagement with an operating cam, and the set-screw in position to engage such cam and thus limit the action of said cam on the push-bar and knife-lever, all combined substantially as described.

12. In a cigar-machine, manipulator-jaws and means to drive and stop them, a cigar-cutting knife and actuating mechanism therefor driven by a hand-propelled shaft, and an adjustable connection between the knife-driver and the knife-support, whereby the knife

movement may be terminated at a predetermined distance, all combined substantially as described.

13. In a cigar-machine, two pairs of manipulator-jaws intermeshing as described, means for driving said jaws and for stopping the driving mechanism, and a hand-controlled mechanism by which one of the pairs of jaws can be opened when the driving-mechanism is stopped, all combined substantially as described.

14. In a cigar-machine, two pairs of manipulator-jaws with intermeshing fingers, driving-spindles for said jaws and means under control of the operator for stopping such driving-spindles, and a hand-controlled device by which one set of the driving-spindles may be opened when the power mechanism is at rest, all combined substantially as described.

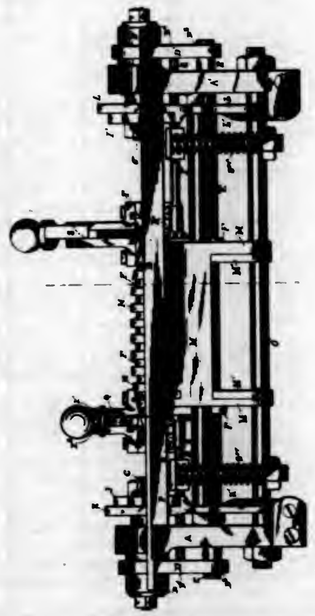
15. In a cigar-machine, the manipulator-jaws and their driving and starting mechanism, the pivoted cheeks sustaining one of the driving-gears, and the driving-spindle operating on one pair of the jaws, the spring tending to rock said cheeks and thus open the jaws, and the hand-controlled mechanism acting to release said cheeks and render the spring operative, all in combination.

16. In a cigar-machine, the manipulator-jaws and their driving-spindles, one of said spindles supported by pivoted cheek-pieces, a spring connected to said cheek-pieces to swing the same, a locking-pawl by which the cheek-pieces are held against movement, and a cam under control of the operator in position to release said pawl and permit the spring and connections to move the spindle and thus open a pair of jaws, all in combination substantially as described.

17. In a cigar-machine, the manipulator-jaws, the delivery-levers, a belt connected to said levers leading to a hub on a rock-shaft, and hand mechanism whereby the rock-shaft may be rocked to actuate the delivery-levers, all combined substantially as described.

18. In a cigar-machine, the manipulator-jaws, the delivery-levers, a spring acting to hold the levers in the jaws, a belt connected to the delivery-levers and to a hub on the hand-operated rock-shaft whereby the levers are lifted, a clutch engaging said hub, and an automatic clutch-detaching device whereby the rock mechanism is released and the delivery-levers permitted to return under the influence of the spring, all the specified elements combined.

608,915. **CIGAR-MACHINE.** JEAN REUSE, Enghien, Belgium, assignor to the Société Anonyme d'Exploitation des Brevets Reuse aux Etats-Unis d'Amerique, Brussels, Belgium. Filed Dec. 24, 1897. Serial No. 663,285. (No model.) Patented in Germany Feb. 21, 1890, No. 53,165.



Claim.—1. In a machine for making cigars, the table having slots therein, the knives supported by the table in line with said slots, compressing-jaws located between said knives, and means for rocking the jaws about a cigar within the jaws, all in combination.

2. In a machine for making cigars, the forming-jaws provided with fingers having the form of a cigar between them, mechanical means for opening and closing said jaws, and for rocking them about an inclosed cigar, and a cutter in proximity to the end of said jaws, all combined substantially as described.

3. In a machine for making cigars, a pair of forming-jaws provided with fingers having spaces between said fingers, and a recess in the face of said fingers approximating the shape of half a cigar, means for opening and closing said jaws, and means for rotating a cigar within said jaws, substantially as described.

4. In a machine for making cigars, the combination with suitable pivotal supports, of two pairs of forming-jaws, each having fingers, the fingers of one jaw passing between the fingers of the adjacent jaw of the other pair, and means for opening and closing said pairs of jaws alternately, substantially as described.

5. The combination of two pairs of jaws having interdentated fingers and having a recess of the shape of a cigar between the fingers, means for opening and closing the pairs of jaws alternately, and means for rocking one pair of jaws about the said recess, substantially as described.

6. In a cigar-machine, a pair of jaws pivotally supported, operating-levers connected to said jaws, a rotating cam engaging said levers to swing them and open the jaws, and springs tending to restore said levers and close the jaws, all in combination substantially as described.

7. In a cigar-machine, a pair of pivoted jaws, means for opening and closing said jaws, and means for swinging the jaws about the axis of closure, in combination substantially as described.

8. In a cigar-machine, the plurality of pairs of jaws, the jaws of one pair having fingers passing between fingers on the other pair of jaws, means for opening and closing said pairs of jaws alternately, and means for moving one of the pairs about their center of closure, all combined substantially as described.

9. In a cigar-machine, two pairs of jaws provided with interdentated fingers, one jaw of a pair having an extension past the base-line of closure of the jaws, means for opening and closing said jaws, and means for moving one pair of jaws about the axis of closure.

10. In a cigar-machine, a pair of jaws pivotally supported to open and close toward a common center, and having a cigar-shaped recess between the jaws, fingers on one jaw extending past the base of the other jaw in open or closed position, and means to open and close the jaws, the parts in combination substantially as described.

11. In a cigar-machine, two pairs of jaws opening and closing about a common center in which the cigar is formed, and means for swinging one of the pairs of jaws about said center.

12. In a cigar-machine, a pair of jaws closing on the cigar-body, a cigar-holder independent of such jaws, and means for rotating the cigar while contained in said jaws and holder, to wind the wrapper on the body of the cigar, substantially as described.

13. In a cigar-machine, the combination of a cigar-holder, a pair of separable jaws, and means for rocking the jaws about their axis of closure while the cigar is in said jaws, substantially as described.

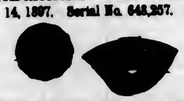
14. In a cigar-machine a pair of jaws opening and closing on the cigar-body and swinging about the center of closure, mechanical means for moving the jaws in one direction as to opening or closing, and springs effecting the movement in the other direction, all combined.

15. In a cigar-machine, a pair of jaws opening and closing on the body of a cigar, means connected to said jaws for rocking them about their center of closure, and a power driving mechanism by which said operations are effected.

16. In a cigar-machine, two pairs of interdentated opening and closing jaws, the jaw-pivot to the inner pair connected to rock about the center of closure, means for rocking said pivot, and driving mechanism by which the device is operated, all combined.

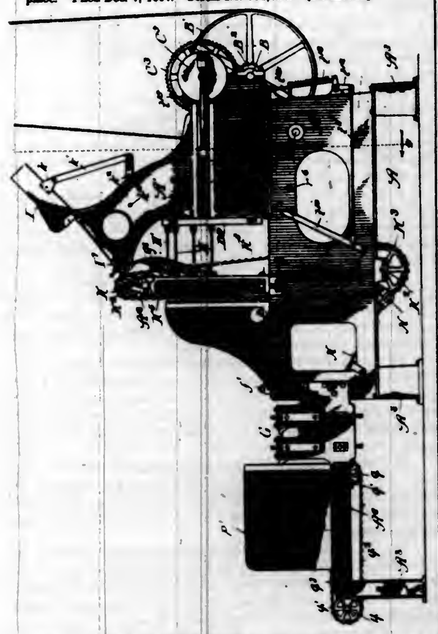
17. In a cigar-machine, a pair of jaws having an opening and closing and a rocking movement substantially as described, a holder retaining the cigar in the jaws when open, and a cutter in position to cut the wrapper-tip while the cigar-body is in the jaws, all in combination.

608,916. **ANTIFRICTION-BEARING.** EDWARD RIVETT, Boston, Mass. Filed Aug. 14, 1897. Serial No. 648,257. (No model.)



Claim.—An antifriction-bearing consisting of a cylinder provided with numerous small apertures, and wooden pegs set into said apertures and projecting therefrom to afford raised bearing-points, substantially as described.

608,917. **BOX NAILING AND PRINTING MACHINE.** FREDERICK P. ROSBACK, Chicago, Ill., assignor to William P. Healy, same place. Filed Dec. 7, 1897. Serial No. 661,081. (No model.)



Claim.—1. In a box-nailing machine, the combination of a reciprocating ram, parallel series of nail-drivers mounted upon the ram, nail feeding and positioning devices, supported to coöperate with the nail-drivers, an anvil device having side faces against which the parts of the box are assembled and over which they are formed into the box shape, and having anvil-faces in line with the nail-drivers against which the corner edges of the box abut when the nails are driven, substantially as and for the purpose set forth.

2. In a box-nailing machine, the combination of a reciprocating ram, two parallel series and a cross series of nail-drivers mounted upon the ram, nail feeding and positioning devices supported to coöperate with the nail-drivers, an anvil device having side faces against which the parts of the box are assembled and over which they are formed into the box shape, and having anvil-faces, in line with the said parallel and cross series of nail-drivers, against which the corner edges of the box abut when the nails are driven, substantially as and for the purpose set forth.

3. In a box-nailing machine, the combination of a reciprocating ram, series of nail-drivers carried by the ram and relatively adjustable thereon to conform to and operate simultaneously against a plurality of box edges, nail feeding and positioning devices supported to coöperate with the said nail-drivers, an anvil device having side faces against which the parts of the box are assembled and over which they are formed into the box shape, and having anvil-faces, in line with the nail-drivers, against which the corner edges of the box abut when the nails are driven, substantially as and for the purpose set forth.

4. In a box-nailing machine, the combination of a reciprocating ram, series of nail-drivers carried by the ram and relatively adjustable thereon to conform to and operate simultaneously against a plurality of box edges, nail feeding and positioning devices, a support upon which said devices are mounted and upon which they are relatively adjustable to position them with relation to the nail-drivers, an anvil device formed of relatively-adjustable members having side faces against which the parts of the box are assembled and over which they are formed into the box shape, and having anvil-faces, in line with the nail-drivers, against which the corner edges of the box abut when the nails are driven, substantially as and for the purpose set forth.

5. In a box-nailing machine, the combination of a reciprocating ram, series of nail-drivers carried by the ram and relatively adjustable thereon to conform to and operate simultaneously against a plurality of box edges, nail feeding and positioning devices, a support upon which said devices are mounted and upon which they are relatively adjustable to position them with relation to the nail-drivers, an anvil device formed of relatively-adjustable members provided with serrated nail-clenching impact-faces, and forming a support having side faces against which the parts of the box are assembled and over which they are formed into the box shape, said impact-faces being in line with the nail-drivers and forming a support against which the corner edges of the box abut when the nails are driven, substantially as and for the purpose set forth.

6. In a box nailing machine, the combination with the drive-shaft, of a ram operatively connected with the drive-shaft to be reciprocated thereby, nail-drivers carried by the ram, nail feeding and positioning devices supported to coöperate with the nail-drivers, an anvil device having side faces against which the parts of the box are assembled and over which they are formed into the box shape, and having anvil-faces, in line with the nail-drivers, against which the corner edges of the box abut when the nails are driven, means for positioning the box ends against the anvil device, comprising an endless carrier operatively geared to the said drive-shaft and provided with box-end engagers, and means for feeding the box ends to the carrier, substantially as and for the purpose set forth.

7. In a box-nailing machine, the combination with the drive-shaft, of a ram operatively connected with the drive-shaft to be reciprocated thereby, nail-drivers carried by the ram, nail feeding and positioning devices, a support upon which said devices are mounted and adjustable to position them with relation to the nail-drivers, an anvil device, positioning mechanism for box ends between the nail-position devices and the anvil device, comprising an endless carrier operatively geared to the said drive-shaft and provided with box-end-engaging means, and means for feeding box ends to the said carrier comprising an oscillating fly-frame actuated from the drive-shaft, substantially as and for the purpose set forth.

8. In a box nailing and printing machine, the combination with the drive-shaft, of a reciprocating ram operatively connected with the drive-shaft, nail-drivers carried by the ram, nail feeding and positioning devices supported to coöperate with the nail-drivers, an anvil device having side faces against which the parts of the box are assembled and over which they are formed into the box shape, and having anvil-faces, in line with the nail-drivers, against which the corner edges of the box abut when the nails are driven, movable box-end engaging and positioning mechanism between the nail-positioning devices and the anvil device, a box-end-printing device, means for feeding the box ends to the printing device, and box-end-transferring mechanism movable between the printing device and the said box-end-positioning mechanism, all actuated from the said drive-shaft, substantially as and for the purpose set forth.

9. In a box nailing and printing machine, the combination with the drive-shaft, of a reciprocating ram operatively connected with the drive-shaft, nail-drivers carried by the ram, nail feeding and positioning devices, a support upon which said devices are mounted and positioned with relation to the nail-drivers, an anvil device, movable box-end engaging and positioning mechanism between the nail-positioning devices and the anvil device, a box-end-printing device comprising a printing-cylinder, means for feeding box ends to and through the printing device, and a fly-frame between the printing device and the said box-end-positioning mechanism, all operatively connected with the drive-shaft, to operate substantially as and for the purpose set forth.

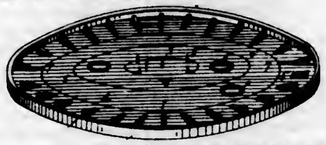
10. In a box nailing and printing machine, the combination with the drive-shaft, of a reciprocating ram operatively connected with the drive-shaft, nail-drivers carried by the ram, nail feeding and positioning devices, a support upon which said devices are mounted and positioned with relation to the nail-drivers, an anvil device, movable box-end engaging and positioning mechanism between the nail-positioning devices and the anvil device, a box-end-printing device comprising cylinders actuated from the drive-shaft through which the box ends pass, a support for box ends, an endless carrier at said support actuated from the drive-shaft to feed the box ends one at a time from the support to the printing device, and a fly-frame actuated from the drive-shaft to receive the box ends from the printing device and move them to the said positioning mechanism, substantially as and for the purpose set forth.

11. In a box-nailing machine, the combination with the nail-drivers and nail feeding and positioning devices supported to coöperate with the nail-drivers, of an anvil device having side faces against which the parts of the box are assembled and over which they are formed into the box shape, and having anvil-faces, in line with the nail-drivers, against which the corner edges of the box abut when the nails are driven, a box-end elevating and feeding carrier operating to move the box ends to the anvil device and discharge the box from the anvil device, and a resilient stop adjacent to the anvil upon which the box end rests in the nailing operation, substantially as and for the purpose set forth.

12. In a box-nailing machine, the combination with the main frame and constantly-rotating drive-shaft, of a normally stationary

counter-shaft parallel with the drive-shaft, a ram eccentrically geared to said counter-shaft, a gear-wheel normally loose upon the counter-shaft in mesh with a gear upon the drive-shaft to rotate constantly, clutch mechanism between the counter-shaft and the rotating gear thereon, a second counter-shaft, a gear-wheel normally loose upon said second counter-shaft and rotated constantly from the drive-shaft, clutch mechanism between the second counter-shaft and its gear, box-end feeding and positioning mechanism operatively connected with the said second counter-shaft, means for operating the clutch upon the first counter-shaft to cause said shaft to be rotated and released by the gear-wheel thereon, and trip mechanism in the path of the ram and operatively connected with the clutch upon the second counter-shaft to make and release engagement between the second counter-shaft and its gear-wheel, all arranged to operate substantially as and for the purpose set forth.

608,918. GAME-BOARD. LEON J. SCOVELL, Poynette, Wis. Filed Nov. 20, 1897. Serial No. 659,361. (No model.)



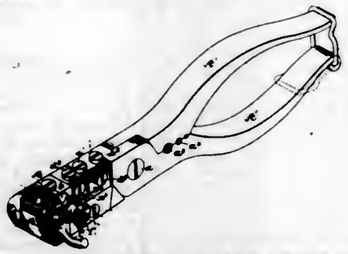
Claim.—1. A game-board, the face of which is provided with concentric spaces, a series of pins at the center of the board, a series of stops near the periphery, and an overhanging bead or flange adjacent to said stops, substantially as set forth.

2. A game-board, the face of which is provided with annular spaces, the outer space being subdivided by radial lines, a series of pins within the inner space, a series of stops near the periphery, and an overhanging bead or flange adjacent to the stops, substantially as set forth.

3. In a game-board, the combination with a base, of a board yieldingly secured thereto by a universal joint, the face of the board being provided with a series of pins at the center, and a series of inclined blocks near the periphery, the points of said blocks being toward the center, and an overhanging bead or flange adjacent to said stops, substantially as set forth.

4. In a game-board, the combination, with a base, of a coiled spring projecting therefrom, a board secured at its center to said spring, the face of said board being provided with concentric spaces, a series of pins within the inner space, a series of inclined stops adjacent to the periphery, and an overhanging bead or flange adjacent to said stops, substantially as set forth.

608,919. WIRE-STRIPPING TOOL. LEROY A. SELL, Philadelphia, Pa., assignor of one-half to Meredith O. Sullivan, same place. Filed July 8, 1896. Renewed Jan. 26, 1898. Serial No. 668,082. (No model.)



Claim.—1. In a tool of the character described, a wire-support, and a knife for cutting the insulation on the wire as the wire or support are moved longitudinally in relation to one another.

2. In a tool of the character described, a wire-support, and a knife for cutting the insulation on the same, said wire-support and knife being mounted on carriers movable from and toward each other, substantially as described.

3. In a tool of the character described, a wire-support and a knife for cutting the insulation on the wire, said wire-support and knife being carried by opposite members hinged together.

4. In a tool of the character described, a wire-support and a knife for cutting the insulation on the wire, said knife being centrally disposed with regard to the guide so as to cut through the center of the insulation, substantially as described.

5. In a tool of the character described, the combination of the wire-support, the knife for cutting the insulation longitudinally and a knife for cutting the insulation transversely, substantially as described.

6. The combination in a tool of the character described, of the wire-support, the knife for cutting the insulation longitudinally, the knife for cutting the insulation transversely, and nippers for removing the cut insulation from the wire.

7. In a tool of the character described, the combination of the upper and lower jaws hinged together, the upper jaw carrying a knife for cutting through the insulation on the wire, and the lower jaw carrying a guide for said wire while it is being cut, said knife being centrally disposed with regard to the guide so as to cut through the insulation at the center of the same.

8. In a tool of the character described, a wire-support and a knife for cutting the insulation on the wire mounted upon members hinged together, said knife being adjustable from and toward the member carrying the same, so as to accommodate wires of different diameter.

9. In a tool of the character described, a wire-support, and a knife for cutting through the insulation on the wire mounted upon members hinged together, said knife and said wire-support being adjustable from and toward the members carrying the same so as to accommodate wires of different diameter.

10. In a tool of the character described, a wire-support, and a device for cutting the insulation upon the wire consisting of a circular knife formed integral with and disposed in the center of a concaved roller or drum which forms an additional guide for the wire and insures the cutting of the insulation through the center of the same.

11. The combination in a tool of the character described, of the upper and lower jaws pivotally connected together, means for cutting the insulation longitudinally, and a series of knives carried by the jaws whereby the insulation may be cut transversely, substantially as described.

12. The combination in a tool of the character described, of the upper and lower jaws pivotally connected together, a reduced portion on said jaws beyond their pivotal connection, and a series of knives adapted to said reduced portion for cutting the insulation transversely, substantially as described.

13. The combination in a tool of the character described, of the upper jaw carrying a vertically-adjustable ripping-knife, and the lower jaw carrying a fixed guide for the wire.

14. In a tool of the character described, a device for cutting through the insulation on the wire and guiding the wire at the same time, consisting of a combined knife and concaved roller made in one piece, said knife and roller being mounted on a spindle adjustably secured in the upper jaw of the tool.

15. In a tool of the character described, means for cutting through the insulation on the wire, consisting of a combined knife and roller, and a spindle carrying the same whereby it may be mounted in the jaw of the tool, said spindle having an enlarged portion adapted to a depression in the roller whereby said roller may be held on the spindle without lateral movement, said roller having an enlarged end into which the end of the spindle may be upset so as to loosely confine the roller against the shoulder.

16. The combination in a tool of the character described, of the upper and lower jaws of the same, a reduced portion on said jaws, a pair of knives carried by the reduced portion of the upper jaw, one of said knives being adjustable from and toward the other, and a fixed knife carried by the reduced portion of the lower jaw, said knives adapted to cut the insulation transversely.

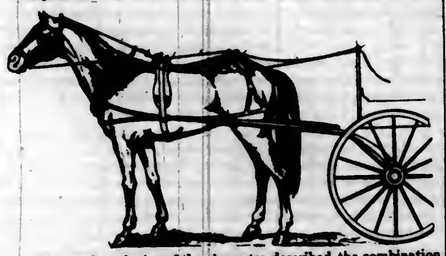
17. The combination in a tool of the character described, of the upper and lower jaws of the same, a reduced portion on said jaws, and a series of knives adapted to said reduced portion, said knives being held in place by suitable set-screws, and provided with shoulders bearing against the reduced portion of the jaws whereby the strain in cutting is taken off of the set-screws, substantially as described.

18. The combination of the jaws of the tool, handles connected to said jaws, and a link hung to one of said handles and free to swing over the other to hold them together, said link having side legs with lateral bends whereby it can be caused to engage with and be retained in inoperative position upon the handle to which it is pivoted, substantially as described.

19. In wire-nippers and analogous devices, a pair of pincers having laterally-projecting jaws whereby they are adapted to grasp a wire running parallel with and alongside of the nipping-levers.

20. The combination in a tool of the character described, of the upper and lower jaws of the same, lips or jaws projecting laterally from the sides of the upper and lower jaws of the same, and grooves formed in said laterally-projecting jaws whereby the wire may be gripped, substantially as described.

608,920. CHECKING DEVICE. WILLIAM M. SHUTT, North Washington, Pa. Filed Aug. 14, 1897. Serial No. 648,369. (No model.)



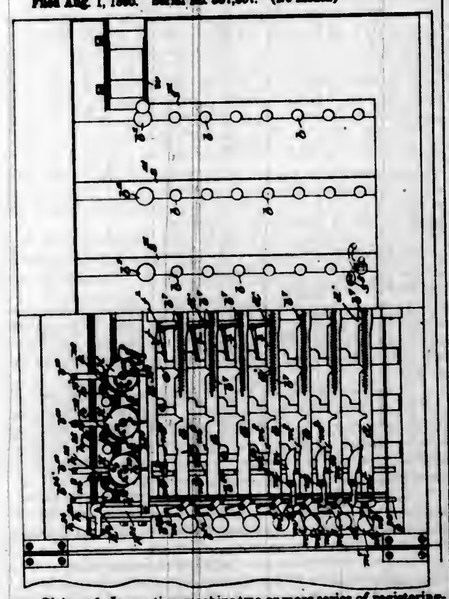
Claim.—In a device of the character described, the combination with a base-plate, an upwardly-extending rigid terminal plate slotted and provided above the slot with an upwardly and rearwardly extending fixed hook and a slotted guide adjacent to the opposite end of the base-plate located behind the extremity of the hook and extending parallel to the terminal plate, of a checkrein, a supplemental checkrein secured at one end to the checkrein, passing through the slot in the terminal plate and located below the hook and provided with a series of apertures and a check-hook located in the rear of said saddle-hook comprising a base-plate, a strap-loop at its front end, and an upwardly and rearwardly extending hook rigidly secured to the base-plate behind the strap-loop, and designed to engage the apertures in the supplemental checkrein, substantially as specified.

608,921. SURGICAL OR OTHER DRESSING AND PAD. LAZARUS SILVERMAN, Chicago, Ill. Filed May 4, 1897. Serial No. 635,102. (No model.)



Claim.—A pad for surgical or other purposes having a covering of loosely-woven or absorbent fabric, and containing comminuted pith of cornstalks from which the fiber is removed, substantially as described.

608,922. VOTING-MACHINE. ALBERT SPENCER, Hartford, Conn. Filed Aug. 1, 1895. Serial No. 557,807. (No model.)



Claim.—1. In a voting-machine two or more series of registering-keys, arranged in different lines and comprising all the registering-keys in the machine, a single series of interlocking devices and separators connected respectively with and actuated by the said keys to separate said interlocking devices to prevent simultaneous operation of the separators of any two or more keys in the same or different series, means to automatically withdraw said separators from between said interlocking devices after each operation of their respective keys, counters for the respective keys, a resetting mechanism, and means to prevent a plurality of operations of said counters by their keys between any two succeeding operations of said resetting mechanism, substantially as described.

2. In a voting-machine; a plurality of series of registering-keys; a slide-bar for each of said series, the same adapted to be reciprocated by a full inward and return movement of any one of the said keys in each series; a locking device cooperating with and to prevent successive reciprocations of any one of said slide-bars between successive operations of the resetting mechanism, means to prevent simultaneous operation of two or more slide-bars and the resetting mechanism connected with and to release the locking device, substantially as described.

3. In a voting-machine; a series of registering-keys; one or more straight-ticket keys operable without operation of said registering-keys; a slide-bar adapted to be moved by operation of any of the registering-keys; a locking device therefor; a cooperating holding device for the said locking device; and means cooperating with said locking and holding devices to prevent operation of the said straight-ticket keys subsequent to operation of any of said registering-keys, and a resetting mechanism, substantially as described.

4. In a voting-machine, two or more series of registering-keys one or more straight-ticket keys, a slide-bar for each series of registering keys adapted to be moved by operation of any of the registering-keys in its respective series, locking devices for the respective bars, cooperating holding devices and means cooperating with said locking and holding devices to prevent operation of a straight-ticket key subsequent to operation of any registering-key, and a resetting mechanism, substantially as described.

5. In a voting-machine, the combination with a plurality of registering-keys and separate counters for said keys, of a visual indicator for and adapted to be moved by operation of each of said keys to indicate proper operative movement of the said keys and also to indicate to the voter, at any time, the candidate for whom he has voted, substantially as described.

6. In a voting-machine, the combination with one or more registering-keys separate counters for said keys, visual indicators for the respective registering-keys and adapted to be moved by operation of the said keys to indicate to the voter, at a glance, the particular candidate for whom he has voted, and a resetting mechanism connected with and adapted on operation to return said visual indicators to their original positions, substantially as described.

7. In a voting-machine, the combination with one or more series of registering-keys, of an independent-voting device containing an independent-ballot receiver; a number-indicating device and means operated by movement of the registering key or keys to cause movement of the said number-indicating device to indicate the number of candidates for whom the voter is entitled to cast his vote by means of said independent ballot, substantially as described.

8. In a voting-machine, the combination with one or more series of registering-keys, of an independent-voting device containing a ballot-receiver, a printing device operated by movement of the said registering-keys, and means to impart to the said printing device and ballot-receiver a relative movement to cause the former to print upon the independent ballot in the said receiver a character indicating the number of independent votes any voter is entitled to cast, substantially as described.

9. In a voting-machine, the combination with two or more series of registering-keys, said series being arranged and operating in different planes, of a single movable bar, connecting devices interposed between the same and the respective keys whereby operation of any single key acts to move said bar from normal into abnormal position, said bar by its return to normal position acting to return said key to its normal position, whereby said bar is successively moved by successive operation of the keys from normal into abnormal position and each time acts to return the key which moved it, to its normal position, substantially as described.

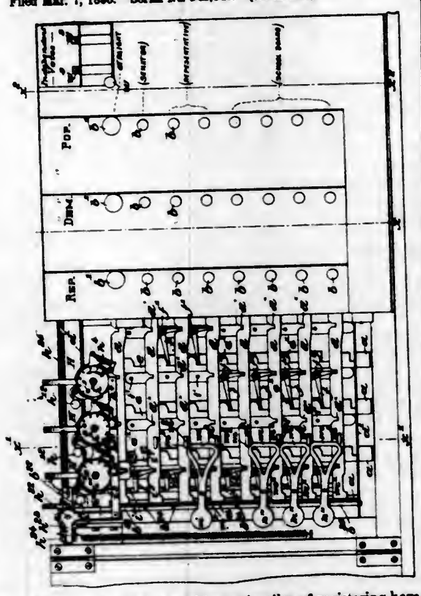
10. In a voting-machine, the combination with a series of registering-keys and a movable bar adapted to be moved from normal into abnormal position by any one of a plurality of said keys, an independent-voting device, a number-indicating device cooperating therewith, and connections between said movable bar and number-indicating device whereby successive movements of the said bar automatically move said number-indicating device into position to indicate upon the ballot the number of independent votes previously registered by any single voter, substantially as described.

11. In a voting-machine, two or more series of registering-keys, counters therefor, means to automatically return said keys to their normal positions after each operation; a single interlocking mechanism to prevent simultaneous operation of any two or more keys in the same or different series, a straight-ticket key also cooperating

with said interlocking mechanism and interlocked thereby with all the series of registering-keys, and adapted when operated to remain in the position into which it is moved, to thereby, through said interlocking mechanism, prevent subsequent operation of the remaining registering keys, and a resetting device to operate, substantially as described.

12. In a voting machine, the combination with a plurality of registering-keys and separate counters for said keys, of a normally-concealed visual indicator, and means operated by movement of said keys to expose the respective indicators to indicate, visually, proper operative movement of said keys, and also to indicate to the voter at any time the candidate or candidates for whom he has voted, substantially as described.

608,928. VOTING-MACHINE. ALBERT SHORER, Hartford, Conn. Filed Mar. 7, 1895. Serial No. 540,849. (No model.)



Claim.—1. In a voting-machine a plurality of registering-keys; interlocking devices and separators actuated by the respective keys to separate said interlocking devices and thereby prevent simultaneous operation of said separators; means to automatically withdraw said separators from between said interlocking devices after each operation of the respective keys; counters for and actuated by the respective registering-keys; a resetting device, and means to prevent a plurality of operations of said counters by their respective keys between any two succeeding operations of said resetting device, substantially as described.

2. In a voting machine, two or more series of registering-keys, means to prevent simultaneous operation of any two or more keys in the same or different series, a single grouping device and means to connect the same with and to be operated by the keys of either one or a plurality of series to limit the total number of keys operated by any single voter, and a single independent-voting device for the machine interlocked with said registering-keys, substantially as described.

3. In a voting-machine, a plurality of registering-keys arranged in series and capable of repeated operation between two operations of the resetting mechanism, mechanism to automatically return said keys to their normal positions after each operation, means to prevent simultaneous operation of any two or more keys in the same series, a grouping device adapted to be connected with and operated by said keys, counters for the respective keys, resetting mechanism, means for preventing repeated operation of any counter by repeated operation of its key between two succeeding complete operations of said resetting mechanism, and a single independent-voting device for the machine interlocked with said registering-keys, to operate substantially as described.

4. In a voting-machine, a resetting mechanism, a group containing two or more series of registering-keys constructed to be operated and automatically returned to their normal positions between two complete operations of said resetting mechanism, one or more grouping devices adapted to be connected with and to control the number of said registering-keys to be operated means for preventing simultaneous operation of two or more keys connected with the same grouping device, counters for the respective registering-keys, means for preventing a plurality of operations of any of said counters by their respective keys between succeeding complete operations of said resetting mechanism, and a single independent-voting device for the machine interlocked with said registering-keys, substantially as described.

5. In a voting-machine, a series of registering-keys, counters operated by the respective keys, a resetting mechanism, locking mechanism for simultaneously locking against operation all the remaining keys of said series upon operation of one of said keys, said locking mechanism comprising a plurality of interlocking devices, separators therefor connected with and to be operated by the respective keys to separate said interlocking devices and thereby prevent simultaneous operation of said separators, and means operating independently of operation of said resetting mechanism to automatically withdraw said separators and thereby release said locking mechanism after operation of a key to permit operation of any of the remaining keys, substantially as described.

6. In a voting-machine, two or more series of individual-registering keys; counters for and operated by respective keys; and a separate series of straight-ticket keys operable independently of said individual keys, and adapted to be connected with and to operate said counters, substantially as described.

7. In a voting-machine, two or more series of individual-registering keys; counters for and operated by respective keys; and a separate series of straight-ticket keys operable independently of said individual keys, each connected with and to operate a plurality of said counters, substantially as described.

8. In a voting-machine, two or more series of registering-keys; two or more grouping devices; and means for connecting any of said series of keys with any of said grouping devices, substantially as described.

9. In a voting-machine, a plurality of registering-keys, a sliding member adapted to be moved by any one of said keys, a plurality of grouping devices, and means to connect any of the same with said sliding member, substantially as described.

10. In a voting-machine, two or more series of registering-keys, sliding members for and operated by keys of the respective series, two or more grouping devices, grouping members controlling operation of the same and arranged crossing the lines of movement of said sliding members, and means to connect any of said sliding members with any of said grouping members, substantially as described.

11. In a voting-machine, a plurality of registering-keys adapted respectively to be operated and again returned to their original positions previous to operation of the resetting mechanism; counters for and having actuators adapted to be moved by the respective keys; and a resetting mechanism for the machine, connected with and to reset said counter-actuators independently of the return movement of the keys which operated them, substantially as described.

12. In a voting-machine, a series of registering-keys; a plurality of step-by-step movable grouping devices, and a reciprocating sliding member reciprocated by and at each operation of the respective keys of said series, and means for connecting at will the said sliding member with and to impart step-by-step movement to either of said grouping devices, substantially as described.

13. In a voting-machine, the combination with two or more series of individual-registering keys, of a single independent-voting device for the machine, the same interlocked with all the individual keys, substantially as described.

14. In a voting-machine, the combination with two or more series of individual-registering keys, and a series of straight-ticket keys, of a single independent-voting device for the machine interlocked with said individual and straight-ticket keys, substantially as described.

15. In a voting-machine, the combination with two or more series of individual-registering keys of a single independent-voting device interlocked with all the said individual keys and containing a ballot-receiver, an ejector, and means to operate said ejector to discharge the independent ballot from said receiver, substantially as described.

16. In a voting-machine, an independent-voting device containing a movable ballot-receiver; means to move it from accessible into inaccessible position; an ejector, and means to operate it, substantially as described.

17. In a voting-machine, an independent-voting device containing a ballot-receiving device movably connected with the machine and through which the independent ballot is inserted, and means to move the said ballot-receiving device from accessible into inaccessible position after the insertion or casting of said ballot, substantially as described.

18. The combination with a voting-machine, of a booth for and having a movable part or parts connected with and controlling the operation of said voting-machine, or a part thereof, said booth having a self-closing entrance-door; a movable booth-floor, and automatic locking mechanism for said door rendered operative by depression of said floor, substantially as described.

19. The combination with a voting-machine, of a booth therefor having entrance and exit doors, and a vertically-movable floor; connection between said floor and exit-door, whereby raising of the floor is possible only when the door is nearly or quite closed; and resetting mechanism for said voting-machine connected with and moved by movement of said floor, substantially as described.

20. The combination with a voting-machine, of a booth for and having one or more movable parts connected with and to control the operation of said voting-machine, or a part thereof, said booth having entrance and exit doors, and a vertically-movable floor; resetting mechanism connected with and moved by said floor; means to prevent raising of said floor except when said exit-door is nearly or quite closed; and locking devices to prevent opening of said exit-doors when once closed sufficiently to enable said floor to rise; and releasing mechanism for said locking device operable only from the interior of the booth substantially as described.

21. The combination with a voting-machine, of a booth for and having one or more movable parts connected with and controlling the operation of said voting-machine or a part thereof, said booth having entrance and exit doors, and a vertically-movable floor; resetting mechanism connected with and moved by said floor; a spring to open said entrance-door; and a closing spring, and means operated by depression of said floor to render said closing-spring operative for closing said entrance-door, substantially as described.

22. The combination with a voting machine, of a booth therefor having entrance and exit doors, and a vertically-movable floor; a resetting mechanism connected with and moved by said floor, and means operable from the exterior of the booth to lock said floor against vertical movement, substantially as described.

23. The combination with a voting-machine, of a booth therefor having one or more movable parts connected with and to govern the operation of said voting-machine or a part thereof, said booth containing one or more panels of reflecting-slats arranged and constructed to present horizontal outer edges and reflecting portions, and upwardly-inclined inner or screening portions joined thereto, forming convex slats with the convex portion of one slat intercepting the line of sight from one to another of the highest points of the concave surface of the next adjacent slat in the same panel, to thereby obstruct observation from the outside to the interior of the booth without interfering with the reflection of light from the outside to illuminate the interior of the said booth, substantially as described.

24. The combination with a voting-machine, and a booth therefor containing one or more moving parts connected with and to govern the operation of said voting-machine, or a part thereof, of a normally-concealed visual indicator, time mechanism to expose the same at the end of a predetermined interval provided the voter be in the booth at the end of such interval, and means connected with a movable part of the booth and operated by the exit of the voter therefrom within said predetermined time to prevent exposure of said indicator, substantially as described.

25. The combination with a voting-machine, and a booth therefor containing one or more movable parts connected with and to govern the operation of said voting-machine, or a part thereof, of an audible alarm, means to sound the same at the end of a predetermined interval provided the voter be in the booth, and means connected with a movable part of the booth and operated by or at the exit of the voter therefrom within said predetermined time to prevent sounding of said audible alarm, substantially as described.

26. The combination with a voting-machine, and a booth therefor provided with one or more movable parts connected with and to govern the operation of said voting-machine, or a part thereof, of a visual indicator, an audible alarm, time mechanism to expose said indicator and sound said alarm at the end of a predetermined interval, provided the voter be still within the booth, and means connected with a movable part of the booth and operated by or at the exit of the voter therefrom within said predetermined time to prevent exposure of said visual indicator and sounding of said audible alarm, substantially as described.

27. The combination with a voting-machine, of a booth therefor provided with one or more movable parts connected with and to govern the operation of said voting-machine, or a part thereof, said booth comprising a back, two sides hinged thereto, doors hinged to and having a swinging movement independent of the said hinged sides, and a front, substantially as described.

28. The combination with a voting-machine, of a booth therefor provided with one or more movable parts connected with and to govern the operation of said voting-machine, or a part thereof, said booth comprising a back, hinged sides, doors independent of and hinged to said sides, and a detachable front and means to secure the same to the said sides when extended, substantially as described.

29. The combination with a voting-machine, of a booth therefor having one or more movable parts connected with and to govern the operation of the voting-machine, or a part thereof, said booth containing a booth-back, to which the voting-machine is secured, and sides for the booth hinged to the said back and adapted to swing back toward and in front of and concealing the said voting-machine, doors independent of and hinged to the respective hinged sides, and in front, substantially as described.

30. The combination with a voting-machine, of a booth therefor containing one or more movable parts connected with and to govern the operation of said voting-machine, or a part thereof, said booth comprising a back, a floor hinged thereto and adapted to swing upwardly; two sides hinged to the said back and adapted to swing inwardly, doors independent of and hinged to said hinged sides, and a front, substantially as described.

31. A voting-machine, containing one or more series of registering-keys, counters for the respective keys, provided each with a resetting-arbor, a single shield device for a plurality of said counters and adapted to be moved into and out of position concealing the resetting-arbors of said counters, substantially as described.

32. A voting-machine containing a series of registering-keys, counters for the same provided each with one or more resetting-arbors, shields for the counters provided with openings adapted when in one position to register with and admit access to the said arbors, and when in another position, to be offset from and concealing the said arbors, and locking mechanism to retain the said shields normally in their offset positions concealing the said arbors, substantially as described.

33. A voting-machine containing one or more series of registering-keys, and counters for the respective keys, provided each with one or more resetting-arbors; a single shield for each series of counters; and a locking device to retain the same in position concealing the arbors of all the counters, substantially as described.

34. A voting-machine containing two or more series of registering-keys, sliding bars for and actuated by the keys of the respective series, interlocking devices between the said bars, and counterbalances for the said interlocking devices, substantially as described.

35. In a voting-machine, two or more series of keys, interlocking devices between keys of different series, and counterbalances for the said interlocking devices, substantially as described.

36. In a voting-machine, two or more series of individual-registering keys, and one or more grouping devices adapted to be connected with said series of registering-keys and containing each a rotatable member provided with a notch, a separate series of independently-operated straight-ticket keys, a shaft adapted to be rotated by operation of any of said straight-ticket keys, one or more arms on the said shaft for the respective grouping devices and adapted upon operation of any straight-ticket key in advance of a registering-key to enter the notch in one of said rotatable members to thereby lock the grouping device of which said member is a part and all registering-keys connected therewith against operation, prior operation of any of the said registering-keys moving the rotatable member of its grouping device to carry said notch out of its normal position and preventing entrance of its coöperating arm on said shaft and thereby prevent subsequent operation of said straight-ticket keys, substantially as described.

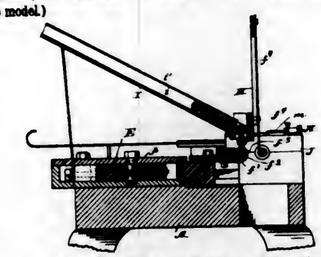
37. In a voting-machine, two or more series of individual-registering keys, a separate series of independently-operated straight-ticket keys, a shaft rotated by operation of any straight-ticket key and a slide-bar reciprocated by said shaft, sliding members adapted to be moved by operation of any of the keys of the respective series of registering-keys, and projections on the said slide-bar coöperating with the said sliding members whereby prior operation of any sliding member prevents subsequent operation of said slide-bar and straight-ticket keys, and vice versa, operation of a straight-ticket key and slide-bar prevents subsequent operation of said sliding members, and a resetting mechanism, substantially as described.

38. In a voting-machine, two or more series of individual-registering keys, and a separate series of independently-operated straight-ticket keys, sliding members for and operated by the keys of the respective series of registering-keys, one or more grouping devices connected with some of said slide-bars and their respective series of registering-keys and not with others, a rotatable shaft connected with and rotated by operation of any of the said straight-ticket keys, and means to prevent operation of the said grouping device or devices after operation of said shaft, a slide-bar adapted to be reciprocated by rotation of said shaft, and projections thereon coöperating with said sliding members to operate, substantially as described.

39. The combination with a voting-machine containing a plurality of counters and registering-keys for the same, of a booth having entrance and exit doors, a vertically-movable floor, means whereby said floor in its elevated position locks said counters against movement or manipulation, and locking devices for and to lock said movable floor, substantially as described.

40. The combination with a voting-machine, of a booth therefor having one or more moving parts connected with and to govern the operation of said voting-machine, or a part thereof, said booth being provided with independent entrance and exit doors, and locking devices therefor rendered operative by the presence of a voter in the booth, and inaccessible from the exterior of the booth to automatically lock both said doors against opening from the exterior during the presence of a voter within the booth, substantially as described.

608,924. DOWEL-PIN-POINTING MACHINE. CLARENCE F. STEWART, Norwalk, Ohio. Filed Dec. 10, 1896. Serial No. 615,099. (No model.)



Claim.—1. In a machine for pointing dowel-pins, the combination with a reciprocating feeding device, of reciprocating pointing-dies, and means for forcing said dies toward and away from each other.

2. In a machine for pointing dowel-pins, the combination with a hopper, of a reciprocating feeder, a pair of pointing-dies, means for moving said dies toward and away from each other, and means for guiding and supporting the dowel-pin while being pointed.

3. In a machine for pointing dowel-pins, the combination with a hopper, of a reciprocating feeder provided with a concave finger, and a spring secured to said finger, means for guiding and supporting the dowel-pin while being fed to the dies, a pair of reciprocating pointing-dies, and means for moving said dies.

4. In a machine for pointing dowel-pins, the combination with a hopper and reciprocating feeder, of a pair of pointing-dies, means for moving said dies toward and from each other, a device for guiding and supporting the dowel-pin while it is being fed to the dies and a reciprocating device adapted to strike the dowel-pin after the pointing dies separate.

5. In a machine for pointing dowel-pins, the combination with a hopper, of a reciprocating feeder arranged below the hopper and adapted to receive the pins therefrom singly, a pair of pointing-dies adapted to act simultaneously on both ends of the pin, means for moving said dies toward and from each other, a spring device for supporting the pin while it is being pointed and a vertically-reciprocating striking device for releasing the pin after the pointing-dies separate.

6. In a machine for pointing dowel-pins, the combination with a hopper, of a feeding device, a sliding block for reciprocating said feeding device, a pair of pointing-dies adapted to operate simultaneously on both ends of the pin, a spring arranged adjacent to the end of said feeding device to support the dowel-pin, means for operating said dies, and a vertically-reciprocating striking device for releasing the pin after it is pointed.

608,925. FOLDING UMBRELLA. MILTON R. STUDABE, Bridgeton, N. J. Filed Oct. 8, 1897. Serial No. 654,531. (No model.)



Claim.—1. In a folding umbrella, a stick formed of telescoping sections adapted to be locked together when extended, the upper section being provided with a runner spring retaining-catch, and the lower section of the stick being longitudinally slotted to receive the said runner-retaining spring-catch of the upper section, substantially as described.

2. In a folding umbrella, a stick formed of three telescoping sections, the upper section being provided with a runner spring retaining-catch, and the lower and intermediate sections being provided with longitudinal slots, vertical grooves in their inner faces, and openings with which the upper ends of the said grooves connect, and spring-latches carried by the upper and intermediate sections, substantially as described.

3. A folding umbrella, comprising a stick formed of three telescoping sections, the upper section being provided with a runner-catch and the intermediate and lower stick-sections being each provided with a longitudinal slot, a vertical groove in its inner face and an opening at the upper end of the groove, spring-latches carried by the upper and intermediate sections, a crown-piece on the upper section, sectional and hinged ribs pivoted to the crown-piece, a runner on the upper section, and braces pivoted to the runner and to the inner rib-sections, substantially as described.

4. A folding umbrella, comprising a stick formed of telescoping sections, the upper section being provided with a runner-catch and the intermediate and lower sections being each longitudinally slotted and provided with openings, spring-latches carried by the upper and intermediate sections of the stick, a crown-piece secured to the upper stick-section and provided with a chamber in its under face, a runner on the upper section of the stick and adapted to enter the chamber of the crown when the umbrella is folded, said runner being of a diameter to receive the intermediate stick-section to permit the umbrella to be closed in the ordinary way, ribs formed of hinged sections and pivoted to the crown-piece, and braces pivoted to the inner rib-sections and to the runner, substantially as described.

5. A folding umbrella, consisting of a stick formed of three telescoping sections, the upper section being provided with a runner-catch and the intermediate and lower sections being each provided with a longitudinal slot, a vertical groove in its inner face, and an opening at the upper end of the groove, spring-latches carried by the upper and intermediate stick-sections, a crown-piece on the upper stick-section and having a chamber in its under face, sectional and hinged ribs pivoted to the crown-piece, a runner on the upper stick-section, braces pivoted to the runner and to the inner rib sections, and a cover secured to the crown-piece and to the ribs, substantially as herein shown and described.

608,926. SEWING-AWL. GEORGE F. SUMMERS, Pleasanton, Kans. Filed Oct. 7, 1897. Serial No. 654,452. (No model.)



Claim.—1. A sewing-awl comprising a tapered handle provided with a chamber and with a transverse thread-passage, a closure-plug fitted to the enlarged butt-end of the handle to close the open rear end of the chamber therein, an end piece fixed to the reduced end of said handle and provided with an axial needle-socket, an eye-formed needle fixed in said needle-socket on the end piece and having a longitudinal groove arranged in the plane of the thread-passage lengthwise of the awl, a fixed spindle within the chambered handle, a bobbin loosely mounted on the spindle, and a pressure-spring housed in the chambered handle and bearing against the bobbin, substantially as described.

2. A sewing-awl comprising a chambered handle having a transverse thread-passage, an end piece secured to one extremity of the handle and provided with a needle-socket, and a diagonal thread-passage which opens into the needle-socket and through the end piece to lie in the plane of the thread-passage in the handle, an eye-formed needle secured in the socket of the end piece and having a longitudinal groove which alines with the diagonal passage of said end piece, and a bobbin mounted in the chamber of the handle, substantially as described.

608,927. PONCHO-HOLDER. JOHN H TABLER, Lanham's, Md. Filed July 12, 1898. Serial No. 686,796. (No model.)

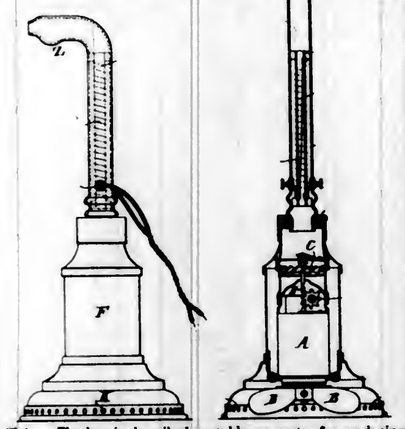


Claim.—1. A sling or carrier for a soldier's poncho and the like, the same consisting of a pair of adjustable straps adapted to be applied to the poncho-roll near the ends of the latter, a ring applied to one of said straps, an intermediary strap connected to the opposite

of said straps and a snap-hook at the free end of the intermediary strap adapted to snap into the aforesaid ring.

2. A sling or carrier for a soldier's poncho-roll, the same consisting of the opposite straps provided with buckles and adapted to be adjusted about the poncho-roll near its ends, keepers located on each of said straps, rings loosely connected to the keepers, and an intermediary strap connected to one of said rings and removably attached to the other.

608,928. APPARATUS FOR HEATING AIR FOR THERAPEUTIC OR OTHER PURPOSES. WILLIAM TAYLOR, Edinburgh, Scotland. Filed Dec. 21, 1897. Serial No. 662,835. (No model.)



Claim.—The herein-described portable apparatus for producing a heated current of air or gas for therapeutic or other purposes, comprising a casing, a directing-tube mounted upon and carried by the said casing, a tube of non-conducting material concentrically within said directing-tube, an exposed resistance-coil mounted upon the said concentric tube and forming part of an electric circuit, and means within the casing for forcing a continuous current of air or gas through the directing and concentric tubes, whereby air or gas passing through the concentric tube and between the outer walls of said tube and the inner walls of the directing-tube is heated thereby, substantially as specified.

608,929. COMBINED EXTENSION AND STEP LADDER. LEONARD C. TIRPH, Rochester, N. Y., assignor of one-half to Germain Mattimo, same place. Filed Apr. 26, 1898. Serial No. 678,797. (No model.)



Claim.—1. A combined step and extension ladder comprising a front section, a yoke pivotally secured to the upper end of said section, a rear section slidingly passed through said yoke and having rungs the ends of which project beyond the side rails, rests on the rear face of the rails of the front section to receive said projecting ends of the rungs, all substantially as and for the purpose specified.

2. A step and extension ladder consisting of a front section having an angular yoke crossing near its upper end and pivotally connected therewith, and a rear section held by and confined within said yoke and adapted to slide longitudinally through it, the rear section having it rungs projected at its sides and adapted to bear against the front section when the two sections are spread, said projections together with the yoke, serving to hold the rear section in position, substantially as shown and described.

608,930. COMPARTMENT BAKING-PAN. LYDIA A. TUELL, Chicago, Ill. Filed July 17, 1897. Serial No. 644,900. (No model.)

Claim.—1. In a baking-pan, the combination of the body portion comprising the sides and ends, the removable bottom and the removable top, clamps whereby said bottom and said top are secured so as to permit the pan to be placed either bottom down or top down while baking, removable connected partitions extending from bottom to top within said body and so formed and permanently attached together as to provide compartments having heat-passages between, said partitions being provided with turned ends forming feet or braces against the side of said body, substantially as shown and described.

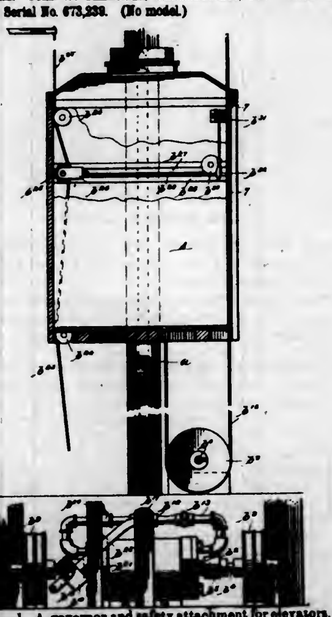


2. The combination of the body portion, the clamps pivotally secured thereto, the removable bottom and the removable top secured by said clamps, removable partitions within said body and so situated relatively to each other as to provide circulating-spaces for heat between them, and suitable means by which said partitions are secured to each other, substantially as shown and described.

3. In a baking-pan, the combination of the body, the removable bottom and removable top each having a flange turned down over said body, the removable partitions formed of like pieces part of which are reversed, and all secured together to form a practically single piece, but slightly separated so as to provide air-passages between said pieces, and the clamps by which said top and bottom are secured to said body, substantially as shown and described.

4. In a baking-pan, the combination with a body having a suitable bottom, of the removable partitions B provided with the feet *c d* and having the space I between the several parts thereof, substantially as shown and described.

608,931. GOVERNOR AND SAFETY ATTACHMENT FOR ELEVATORS. JOHN W. TRAMMELL, Chattahoochee, Fla. Filed Mar. 9, 1898. Serial No. 673,239. (No model.)



Claim.—1. A governor and safety attachment for elevators, comprising a liquid-containing cylinder, a follower therein, a driven screw-shaft for reciprocating the follower, a passage-way connecting the ends of the cylinder, a valve in the passage-way, and a weighted lever adapted, upon being raised, to move the valve to establish communication between the ends of the cylinder, and, when dropped, automatically to cut off such communication, substantially as described.

2. A governor and safety attachment for elevators, comprising a liquid-containing cylinder, a follower therein, a driven screw-shaft for reciprocating the follower, a passage-way connecting the ends of the cylinder, a valve in the passage-way, a weighted lever adapted, upon being raised, to move the valve to establish communication between the ends of the cylinder, and, when dropped, automatically to cut off such communication, and means for limiting the arc of movement of the lever, thereby to regulate the speed of the car, substantially as described.

3. A governor and safety attachment for elevators, comprising a liquid-containing cylinder, a follower therein, a driven screw-shaft for reciprocating the follower, a passage-way connecting the ends of the cylinder, a valve in the passage-way, a weighted lever, a slotted standard in which the lever works, said standard being provided with a plurality of openings, and a pin adapted to be inserted in alined pairs of the openings, substantially as described.

4. A governor and safety attachment for elevators, comprising a liquid-containing cylinder, a follower therein, a driven screw-shaft for reciprocating the follower, a passage-way connecting the ends of the cylinder, a valve in the passage-way, a weighted lever operatively connected with the valve, a drum secured on each end of the screw-shaft, and a rope wound upon each drum and held from slipping thereon, one end of each of the ropes being secured to the bottom of an elevator-car, and the other end to the top of the car, substantially as described.

5. A governor and safety attachment for elevators, comprising a liquid-containing cylinder, a follower therein, a driven screw-shaft for reciprocating the follower, a passage-way connecting the ends of the cylinder, a valve in the passage-way, a weighted lever operatively connected with the valve, a drum secured on each end of the screw-shaft, said drums being each provided with side flanges and a center flange, the latter being provided with a transverse opening, and a rope wound upon each drum and held from slipping thereon by being secured in the said transverse opening, one end of each of the ropes being secured to the bottom of an elevator-car, and the other end to the top of the car, whereby, as the car ascends and descends, the rope will be wound off of one half of the drum and onto the other half, and vice versa, substantially as and for the purpose specified.

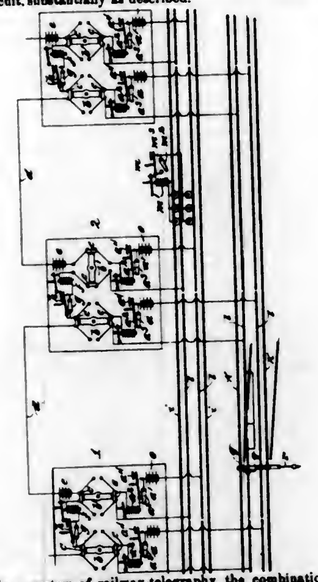
6. A governor and safety attachment for elevators, comprising a liquid-containing cylinder, a follower therein, a driven screw-shaft for reciprocating the follower, a passage-way connecting the ends of the cylinder, a valve in the passage-way, a weighted lever operatively connected with the valve, a drum secured on each end of the screw-shaft, a rope wound upon each drum and held from slipping thereon, one end of the rope being secured to the bottom of an elevator-car, and the other end to the top of the car, a valve-operating rope connected at one end with the lever, and at the other end to a part of the elevator-shaft, grooved sheaves carried by the car, against which the valve-operating rope bears, a block mounted for sliding movement within the car and having a grooved sheave, around which the valve-operating rope passes, and means for moving the block, whereby to lift the lever and thus open the valve, substantially as described.

608,932. TELEGRAPHY. GEORGE V. TROTT, Chicago, Ill., assignor of one-half to Ella M. Cosens, same place. Filed Aug. 13, 1897. Serial No. 648,134. (No model.)

Claim.—1. In a system of telegraphy, the combination with a main telegraph-line connecting the telegraph instruments at a plurality of telegraph-stations, a second set of instruments at each telegraph-station, trolley-conductors in circuit with the second set of telegraph instruments at each station, a railway-vehicle, trolley contact mechanism carried thereby and engaging the trolley-conductors, a set of telegraph instruments carried upon the moving vehicle and adapted to be included in circuit with the telegraph instruments at the telegraph-stations through the medium of the trolley contact mechanism and trolley-conductors engaging the same, and a switch at each station adapted in one position to preserve independently the continuity of the main telegraph-line and the circuit including the trolley-conductors and the instruments connected therewith and in another position to include the main telegraph-line or a portion thereof with its instruments in series with the trolley-circuit and the instruments included therein, substantially as described.

2. The combination with a centrally-pivoted switch-arm, of contact-plates carried thereby upon each side of its pivot, two circuits, contacts forming terminals thereof which are adapted to be closed by the contact-plates carried by the switch when the switch occupies one position, whereby two independent circuits are completed, and a second set of contacts adapted when the switch occupies another position to engage the contact-plates carried by the switch, whereby the independent circuits are opened and formed into one complete circuit, the conductors of each circuit being thereby included in series, substantially as described.

3. In a system of railway-telegraphy, the combination with a main telegraph-line, telegraph instruments at a plurality of telegraph-stations connected or adapted to be connected by the telegraph-line, a second telegraph instrument at one telegraph-station, trolley-conductors connected or adapted to be connected with the said second telegraph instrument at one station, a railway-vehicle, trolley contact mechanism carried thereby and engaging the trolley-conductors, a telegraph instrument upon the moving vehicle adapted to be connected with the trolley-conductors by the trolley contact mechanism, and means for completing circuits independently through the main telegraph-line and one set of telegraph instruments at each station; through the trolley-conductors, the instrument upon the vehicle, the trolley contact mechanism upon the vehicle and the aforesaid second telegraph instrument at one station; and also for including the main telegraph-line with its instruments in series with the trolley-circuit, substantially as described.



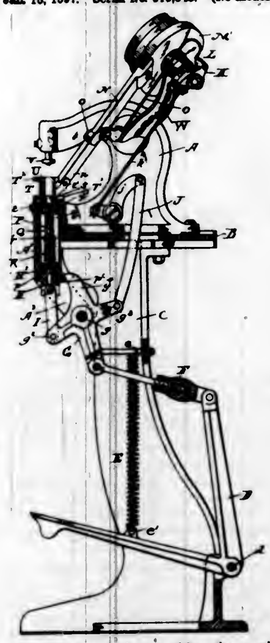
4. In a system of railway-telegraphy, the combination with a plurality of trolley-circuits arranged in succession along the line of travel, of a plurality of telegraph instruments located at stations, each of said trolley-circuits normally being or adapted to be connected with one of said instruments, a telegraph instrument carried by a vehicle, trolley contact mechanism carried by said vehicle adapted to connect the telegraph instrument upon the vehicle successively with the trolley-circuits and the telegraph instruments at said stations, and suitable switching apparatus and circuit connections for temporarily connecting the telegraph instruments at said stations in series with each other and the telegraph instrument upon the vehicle, substantially as described.

5. In a system of railway-telegraphy, the combination with a trolley-circuit, of a telegraph instrument carried by a vehicle, trolley contact mechanism carried by said vehicle adapted to connect the said telegraph instrument with said trolley-circuit, a main telegraph-line connecting or adapted to connect the telegraph instruments at a plurality of telegraph-stations, and suitable switching apparatus and circuit connections adapted in one condition of use to complete circuit through said main telegraph-line and to exclude the telegraph instrument upon the vehicle from circuit with the said main telegraph-line, and in another condition of use to connect the main telegraph-line with its telegraph instruments in series with the said trolley-circuit and the instrument upon the vehicle connected with said trolley-circuit, substantially as described.

6. In a system of railway-telegraphy, the combination with a plurality of normally open trolley-circuits arranged in succession along the line of travel, of a plurality of telegraph instruments located at stations, each of said trolley-circuits being or adapted to be connected with one of said instruments, a telegraph instrument carried by a vehicle, trolley contact mechanism carried by said vehicle adapted to connect the telegraph instrument upon the vehicle successively in the trolley-circuits and the telegraph instruments at said stations, a main telegraph-line connecting or adapted to connect the telegraph

instruments at a plurality of telegraph-stations, and suitable switching apparatus and circuit connections adapted in one condition of use to complete circuit through said main telegraph-line and to exclude the telegraph instrument upon the vehicle from circuit with the said main telegraph-line, and in another condition of use to connect the main telegraph-line with its telegraph instruments in series with the said trolley-circuit and the instrument upon the vehicle connected with said trolley-circuit, substantially as described.

608,933. BUTTON-SETTING MACHINE. SAMUEL UPTON, Somerville, Mass., assignor to the Consolidated Fastener Company, Portland, Me. Filed Jan. 18, 1897. Serial No. 619,543. (No model.)



Claim.—1. In a button-setting machine, the combination of a button-holding die, a delivery-chute, a separator for feeding a single tack or rivet from the string of tacks in the chute, a plunger with a sleeve at its upper end forming a cup for receiving the tack, a receiving-head above the plunger and a spring-treadle and connected mechanism for operating the plunger and distributing, separating and upsetting the tacks, substantially as described.

2. In a button-setting machine, the combination of a foot-treadle provided with a four-arm bell-crank lever, with a button-setting plunger, a feeding mechanism and a stop connected respectively with the arms of the said bell-crank lever, substantially as described.

3. In a button-setting machine, a four-armed bell-crank lever, a treadle for operating the same, tack distributing, separating, and upsetting mechanism, and connecting-levers, in combination with button-holding mechanism, substantially as described.

4. In a button-setting machine, a delivery-reservoir provided with a supporting-arm, pivoted at each end, and a delivery-chute and button-holding head, whereby the said reservoir is adjustably secured to the head at two points, substantially as described.

5. In a button-setting machine, a four-armed bell-crank lever, one arm connected adjustably with the treadle, one connected to the plunger, one connected by intermediate levers to the hopper and separator, and the fourth arm forming a brake, in combination with a plunger, button-holding head, and tack holding, feeding and delivering mechanism, substantially as described.

6. In a button-setting machine, a receiving-head T having at its upper end a tack or rivet receiving aperture t^3, and a lug t' forming a continuation of the chute, substantially as shown and described.

608,934. PROCESS OF PRODUCING PHOTOGRAPHS IN COLORS. VALENTIN VAUCAMPS, Paris, France. Filed Nov. 5, 1896. Serial No. 611,168. (No specimens.) Patented in France Dec. 5, 1895, No. 252,207.

Claim.—The process of producing photographic prints exhibiting a plurality of colors, visible by transparency as well as by reflection, which consists in applying to a backing, a series of sensitized or sensitizable layers of different colors, exposing the layers to light under a negative to render portions of the layers insoluble, washing the picture with an appropriate solvent so as to produce a relief on its front or exposed face, pressing said exposed face against a plane or smooth support so as to destroy the relief on the front face and bring it out on the back, and removing the projecting portions on the back, substantially as described.

608,935. HEATING-DRUM. CHARLES P. VERNIER, Butler, Ind. Filed Aug. 26, 1897. Serial No. 649,606. (No model.)



Claim.—1. In a heating-drum, the combination with the drum proper, of air-heating tubes extending through the same and opening laterally through said drum at top and bottom, and vertical radial partitions in said drum, arranged one on each side of each tube and having openings alternately at top and bottom for causing the products of combustion to follow a tortuous passage, substantially as described.

2. In a heating-drum, the combination with the drum proper, of air-tubes extending through the same and opening laterally at each end through said drum, radiating vertical partitions in said drum cut away alternately at top and bottom to form passages whereby the products of combustion pass up into a chamber between two of said partitions, as 7 and 8, over 8 and down through an adjoining chamber between the last-named and the adjoining partition and under the latter, whereby the heat and products of combustion are brought into contact with the air-tubes in said chambers, and dampers arranged to control the passage of the products of combustion, substantially as described.

3. In a heating-drum, the combination with the drum proper, of air-tubes mounted in the same and opening laterally at top and bottom through said drum, a plurality of radiating vertical partitions within said drum arranged to embrace an air-tube between each pair, and formed to cause the smoke and products of combustion to follow a tortuous passage through the chambers formed by said radial partitions, and pivoted dampers above and below said partitions arranged to close each a portion of the chambers formed by said partitions, substantially as described.

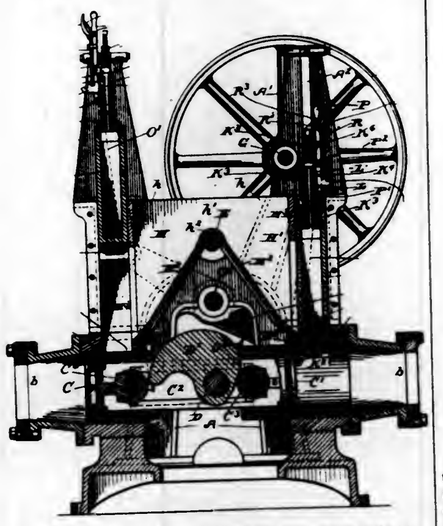
608,936. BICYCLE. FRANK J. WADMAN, Onondaga, N. Y. Filed Dec. 27, 1897. Serial No. 663,509. (No model.)



Claim.—The combination with the frame and driving wheel of a bicycle, of a pinion secured to said wheel, a gear mounted on the frame and meshing with said pinion, a single wrist-pin on the gear-wheel, a pedal-shaft journaled in the frame, a pedal-crank fast on one end of the shaft, a pedal-crank loosely mounted on the other end of the shaft, a lever rigidly connected to the loosely-mounted pedal-crank, a second lever rigidly connected to the shaft adjacent to the

loosely-mounted pedal-crank, said levers extending divergently from each other, and a pair of links both pivoted at one end to the wrist-pin and at their other ends respectively to the outer ends of the respective levers, substantially as described.

608,937. MACHINE FOR MAKING CLAY PRODUCTS. WILLIAM W. WALLACE, Willoughby, Ohio, assignor to the American Clay Working Machinery Company, Bucyrus, Ohio. Filed Aug. 9, 1897. Serial No. 647,534. (No model.)

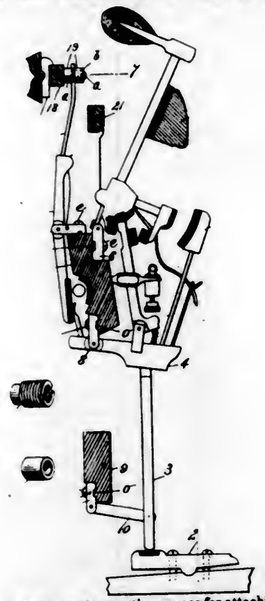


Claim.—1. In a brick-machine, the combination with a feed-hopper having an outlet at its lower end; a plunger movable up and down over said outlet, and provided, at its upper end, with an upwardly-extending stem that has a lateral hole, and a suitably-actuated and suitably-guided vertically-reciprocating cross-head or slide above the plunger; of a lever fulcrumed to said slide and provided with an arm arranged to extend into the aforesaid hole, and thereby establish operative connection between the plunger and cross-head, and the said lever being tiltable in the direction required to disengage the said arm and hole, and means for retaining the said lever in its locking or operative position, substantially as and for the purpose set forth.

2. In a brick-machine, the combination with an upright hopper having an outlet at its lower end; a plunger arranged to move up and down over the said outlet, and provided, at its upper end, with an upwardly-extending stem that has a lateral hole, and a suitably-actuated and suitably-guided cross-head or slide having a notched arm; of a lever supported from the said slide and provided with an arm arranged to extend into the aforesaid hole and thereby establish operative connection between the slide and plunger; a bolt or latch extending along the aforesaid lever and engaging, in its operative position, the notch in the aforesaid slide-arm, and a spring acting to retain the said latch or bolt in its operative position, substantially as shown, for the purpose specified.

3. In a brick-machine, two cases arranged horizontally and in line endwise, and provided with discharge-openings at their outer ends; dies arranged at the said openings in position to operate upon the clay or material forced through the openings; two plungers arranged to operate within and endwise of the different cases, respectively; means for simultaneously actuating the said plungers in opposite directions, respectively; two hoppers arranged above the different cases, respectively, and each of the said hoppers having an outlet connected with the chamber of the case below; two plungers movable up and down over the inlets of the different cases, respectively; suitably-guided vertically-reciprocating cross-heads or slides; means for establishing operative connection between each of the vertically-reciprocating plungers and one of the said slides; two corresponding walking-beams or tilting levers arranged at opposite sides, respectively, of the machine; means for operating the said levers in unison, and links establishing operative connection between the said levers and the aforesaid slides, all arranged and operating substantially as shown, for the purpose specified.

608,938. PIANOFORTE-ACTION. WILLIAM W. WALLACE, Springfield, Mass. Filed Sept. 20, 1897. Serial No. 652,345. (No model.)



Claim.—1. In a pianoforte-action, means for attaching the flanges thereof to a fixed part or parts of said action, comprising an internally-screw-threaded metallic socket-lining secured in said fixed part, combined with a flange of said action, a metallic bushing passing transversely therethrough, one end of which abuts the outer end of said lining, and a screw passing freely through said bushing having no screw engagement therewith, and by its head engaging the outer end of said bushing, substantially as set forth.

2. In a pianoforte-action, means for attaching the flanges thereof to a part or parts of said action, comprising an internally and externally screw-threaded metallic socket-lining having an inner extremity of the diameter of the base of its external screw-thread, fixed in said socket, combined with a flange of said action having a metallic bushing having no internal screw-thread, passing transversely therethrough, for abutment against the end of said socket-lining, and a screw passing freely through said bushing having its head engaging the outer end of said bushing and the surrounding part of said flange, substantially as set forth.

3. In a pianoforte-action, means for uniting the damper-wire and the damper-head thereof, comprising a screw engaging with the block of said head having an outer screwed extremity and an enlargement midway between its extremities, and a transverse perforation therethrough adjoining said enlargement, combined with the damper-wire entering said perforation, and a nut compressing said wire between the same and said enlargement, substantially as set forth.

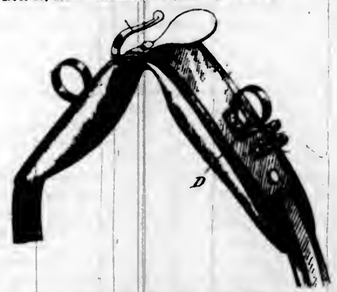
4. In a pianoforte-action, means for uniting the damper-wire and the damper-head thereof, comprising a screw engaging with the block of said head having an outer screwed extremity and an enlargement midway between its extremities, and a transverse perforation therethrough adjoining the outer end of said enlargement and forming a half-round groove in said outer end, combined with the damper-wire extending through said perforation and engaging said groove, and a nut compressing said wire between the same and said enlargement, and forcing said wire into said groove, substantially as set forth.

608,939. GASKET PACKING. RICHARD WALSH, Philadelphia, Pa. Filed Sept. 4, 1897. Serial No. 650,615. (No model.)



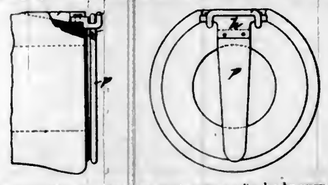
Claim.—A new and useful article of manufacture, consisting of a gasket having a soft body served or wrapped helically with an open woven ductile wire tape adapted when compressed to permit the soft material of the body to pass through the interstices of the tape and susceptible of application to the joints of vessels for retaining fluids under pressure, as set forth.

608,940. REIN-CLASP. CHARLES S. WATKINS, Bloomington, Ill. Filed Nov. 11, 1897. Serial No. 658,179. (No model.)



Claim.—In combination with a harness-saddle, a spring driving-line holder provided with a perforated attaching portion, and a substantially U-shaped portion having an inwardly and downwardly turned extension on one member and a spring-tongue in the other member between which the lines may be frictionally held, substantially as described.

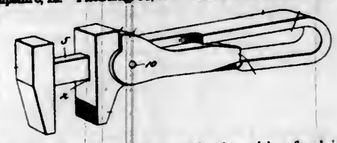
608,941. APPLIANCE FOR PRODUCING CASE-SHOT-LIKE ACTION OF EXPLOSIVE PROJECTILES. ADOLF WIESNER, Vienna, Austria-Hungary. Filed Nov. 6, 1897. Serial No. 657,695. (No model.)



Claim.—1. The combination with a gun, of a body suspended in front of its muzzle and adapted to be moved out of the path of and simultaneously therewith explode a projectile fired from said gun by the impact of said projectile with said body, substantially as and for the purpose set forth.

2. The combination with a gun, of a tapering plate of less width than the bore of the gun and adapted to be suspended in front of the muzzle in the plane of the axis of its bore, said plate sufficiently heavy to explode a projectile striking it on leaving the gun, for the purpose set forth.

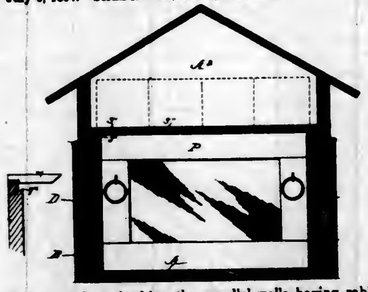
608,942. WRENCH. GEORGE H. WELLS and HOMER A. GLEASON, Hampshire, Ill. Filed Aug. 31, 1897. Serial No. 650,124. (No model.)



Claim.—1. In a wrench, the combination with a fixed jaw and handle, of a movable jaw and shank longitudinally movable within the handle and provided upon its side face with transverse teeth, and a locking-lever pivoted to the side of the wrench and provided upon its inner face with transverse teeth designed to engage the teeth upon the wrench, and with a plier-nose designed to coöperate with the contiguous face of the fixed jaw, substantially as specified.

2. In a wrench, the combination with a fixed jaw and handle, of a movable jaw and a toothed shank designed to move longitudinally within the handle, a locking-lever pivoted to the side of the wrench and provided with a laterally-projecting plier-nose and having its end sharpened to constitute a screw-driver, and coöperating mechanism carried upon the contiguous faces of the shank and locking-lever, substantially as described.

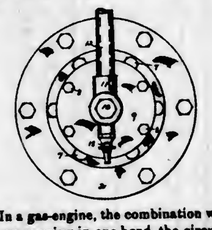
608,948. BEEHIVE. JOHN F. WIESEL, Kellogg, Iowa. Filed July 6, 1897. Serial No. 643,658. (No model.)



Claim.—1. In a beehive, the parallel walls having rabbets at their inner top edges, movable comb-frames supported by rabbeted walls and sections of a honey-board hinged to the said walls and a movable honey-board section fitted between the hinged sections, arranged and combined as and for the purposes stated.

2. An improved beehive comprising two parallel walls having rabbets at their top edges, sections of a honey-board hinged to the tops of said walls, a front wall having a bee-passage, a movable rear wall, a movable partition, movable frames, a removable section of a honey-board fitted between the said hinged sections and a removable top, arranged and combined as and for the purposes stated.

608,944. ATTACHMENT FOR GAS-ENGINES. JOSEPH H. WIESEL, Zelienople, Pa., assignor of one-third to Wm. M. C. Jones, Pittsburg, Pa. Filed Apr. 21, 1897. Serial No. 633,093. (No model.)



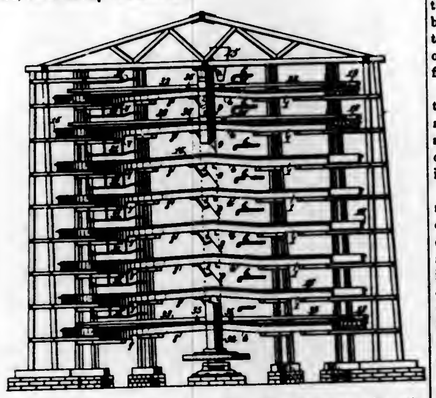
Claim.—1. In a gas-engine, the combination with the gas-engine cylinder, having an opening in one head, the circular flanged check-plate having a central opening and a circular flanged extension or boss fitting in said opening, the air-cylinder secured to said check-plate formed with an air-inlet opening, the water-cylinder secured to said air-cylinder, the water-supply pipe and the shouldered nut closing the end of said water-chamber, of the hollow piston-rod, provided with double pistons, with radial openings between the same, the enlarged portion passing through the opening in said flanged check-plate, the spraying-nozzle, the check-valve located in said piston, formed with wings and the spiral spring located in said air-cylinder, substantially as shown and described.

2. The combination with a gas-engine cylinder, having an opening in one head, the air-cylinder formed with an air-inlet opening, and the water-chamber, of the hollow piston, the ends of which are located in the said water-chamber and engine-cylinder, the heads formed therewith and said piston formed with radial holes between said heads, the spraying-nozzle at one end formed with a flaring opening of said piston, the thimble at the opposite end, the wing-valve located in said piston and the spring located in said air-cylinder, substantially as described.

608,945. LIXIVIATION APPARATUS. HERBERT H. WILLIAMS, Castle Gate, Utah. Filed Jan. 11, 1898. Serial No. 666,355. (No model.)

Claim.—1. An apparatus for continuous lixiviation of ores or other substances, comprising a vertical series of annular tanks located one above another and each provided with an exit through which the material that has traversed one tank is delivered to the tank beneath, the bottom of each tank being provided with an ascending incline to one side of said exit and a descending incline at the other side thereof, whereby the exit is raised above the level of the main portion of the tank-bottom to confine the leaching solution, a filter in each tank, and mechanism for drawing the ore or other material around through the solution in each annular tank, substantially as described.

2. An apparatus for continuous lixiviation of ores or other substances, comprising a vertical series of annular tanks located one above another and each provided with an exit through which the material that has traversed one of said tanks is delivered to the tank beneath, the several tank-exits being in the same vertical plane one above another and the bottom of each tank being provided with an ascending incline leading to one side of said exit and a descending incline leading from its other side, an inclined apron located beneath each of said exits to deflect material falling through the same onto the descending incline of the tank below, a filter in each tank, and mechanism for gradually moving the ore around through each annular tank, substantially as described.



3. An apparatus for continuous lixiviation of ores or other substances, comprising a vertical series of annular tanks located one above another and each provided with an exit through which the material that has traversed one of said tanks is delivered to the tank beneath, the bottom of each tank being provided with an ascending incline leading to one side of said exit and a descending incline at the other side thereof, whereby the exit is raised above the level of the main portion of the tank-bottom to confine the leaching solution, a filter located at the foot of the ascending incline in each tank and sunk below the level of the tank-bottom, and mechanism for moving the ore around through the solution in each tank, substantially as described.

4. An apparatus for continuous lixiviation of ores or other substances, comprising a vertical series of annular tanks located one above another and each provided with an exit through which the material that has traversed one of said tanks is delivered to the tank beneath, the bottom of each tank being provided with an ascending incline leading to one side of said exit and a descending incline at the other side thereof, a filter sunk in the bottom of the main portion of each tank at the foot of said ascending incline and provided with a layer of sand or filtering material level with the bottom of the main portion of the tank, and mechanism for moving the ore around through the solution in each tank, substantially as described.

5. In a lixiviation apparatus, the combination with an annular tank provided with an ore exit, and a filter located in said tank, of a scraper-carriage mounted on wheels arranged to travel on track-rails at the sides of the tank, a series of scrapers supported by said carriage and each provided with a vertical arm having a crank on its upper end, a slide-bar engaged with said cranks, a screw for adjusting said slide-bar to vary the inclination of the scrapers, and mechanism for moving said carriage around the tank, substantially as described.

6. In a lixiviation apparatus, the combination with an annular tank provided with an ore-exit, and a filter located in said tank, of a scraper-carriage mounted on wheels arranged to travel on track-rails at the sides of the tank, a series of adjustable scrapers supported by said carriage, a rocking rake mounted on the scraper-carriage and provided with a lever, a spring to normally hold the rake-teeth away from the tank-bottom, a presser-rail to act on the rake-lever for forcing the rake-teeth down into the sand of the filter to loosen and break up any packed ore on the filter-surface, and mechanism for moving said carriage around the tank, substantially as described.

7. In a lixiviation apparatus, the combination of a vertical series of annular tanks arranged one above another and each provided with an exit through which ore or other substances may be discharged into the tank beneath, filters located in the several annular tanks, a number of wheeled carriages arranged to be moved in succession around each tank, scraper and rake mechanism mounted in each carriage to stir the ore contained in each tank and cause it to be moved along through the solution therein, and a central vertical shaft having radial arms connected with the several carriages and adapted to be slowly revolved to draw said carriages gradually along the annular tanks, substantially as described.

8. In a lixiviation apparatus, the combination of a vertical series of annular tanks arranged one above another and each provided with an exit through which ore or other substances may be discharged into the tank beneath, each tank-bottom being provided with an ascending incline leading to one side of the tank-exit and having a descending incline on the other side, means for feeding ore into the topmost tank, pipes for conveying leaching solution into the several tanks separately, the feed of the ore to be continuous and the feed of the solution to be continuous or intermittent, filters located in the several annular tanks, and automatic scraping and stirring mechanism to cause the ore and solution to be moved around each annular tank and over the filter therein, substantially as described.
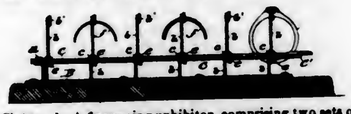
9 In a lixiviation apparatus, the combination with an annular tank, and a filter therein, of a traveling carriage adapted to be moved around said tank, a series of scrapers depending into the tank from said carriage, and means for adjusting the scraper-blades to any required angle to vary the speed with which the ore is moved around in the annular tank, substantially as described.

10. In a lixiviation apparatus, the combination of a series of annular tanks located one above another and each provided with an exit through which ore may be discharged into the tank beneath, each tank-bottom being provided on one side of the tank-exit with a descending incline and on the other side a lengthened ascending incline, a filter in each tank-bottom, and automatic mechanism for drawing the ore around the annular tanks and up the ascending inclines thereof to the tank-exits, whereby on said ascending inclines the ore is drained of the leaching solution and exposed while still wet with said solution to the oxygen of the air before falling through the ore-exit into the tank below, substantially as described.

11. In a lixiviation apparatus, the combination with a series of annular tanks arranged one above another and each provided with an ore-exit through which the ore is discharged to a tank beneath, of a filter located in the bottom of each annular tank and provided with a frame carrying a filter-cloth and a layer of sand supported thereon to about the level of the tank-bottom, means for supplying leaching solution to the separate tanks, and automatic mechanism for moving ore around through the several annular tanks and over the filters therein, substantially as described.

12. In a lixiviation apparatus, the combination of a series of annular tanks arranged one above another and each provided with an exit for discharge of ore into the tank beneath, the ore to be fed into the topmost tank, pipes for separately supplying said tanks with leaching solution, a filter sunk into the bottom of each tank and having a sand layer level with the main portion of the tank-bottom, and automatic scraper and rake mechanism adapted to be moved around in each annular tank to agitate the ore and move it along the tank and to prevent packing of the ore on the filter-surface, substantially as described.

608,946. **FINGER-RING EXHIBITOR.** MARCELLUS ADAMS, West Plains, Mo., assignor of one-half to Joseph C. Dias, Kansas City, Mo. Filed Mar. 10, 1896. Serial No. 573,378. (No model.)



Claim.—1. A finger-ring exhibitor, comprising two sets of hook-shaped arms for fitting inside and holding the rings, a spring-actuated rock-shaft carrying one set of arms, and a suitable base or support substantially as and for the purpose described.

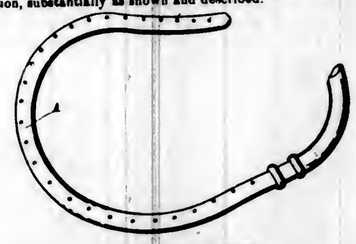
2. A finger-ring exhibitor consisting of an upper set of hooked arms, a horizontal rock-shaft with a corresponding set of hooked arms, a suitable base or support, a key or handle for rocking the shaft, and a spring substantially as shown and described.

3. A finger-ring exhibitor, consisting of a base-plate with upright stems having bearings in their lower portions formed by coils of wire and horizontal hooked arms at their upper ends, a horizontal shaft arranged in the coils of the stems, and having horizontal hook-shaped arms, a rocking key and a spring substantially as and for the purpose described.

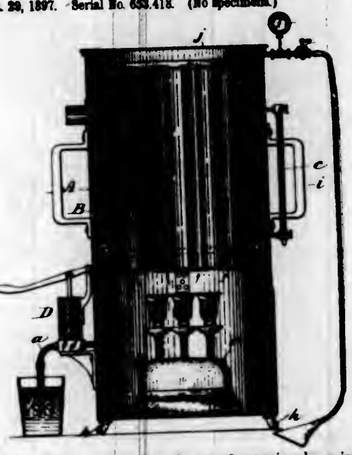
608,947. **SHOWER-BATH APPARATUS.** WILLIAM R. BAKER, Watertown, N. Y., assignor to the Hitchcock Lamp Company, same place. Filed Nov. 13, 1897. Serial No. 658,269. (No model.)

Claim.—A shower-bath apparatus consisting of a U-shaped tube

A, having one of its prongs longer than the other and provided with means for attaching the hose thereto, and which is provided with a series of perforations on its under side, and which tube has its two ends curved downward so as to rest upon the chest of the person using it, and whereby the tube is made to automatically adjust itself in position, substantially as shown and described.



608,948. **PROCESS OF REMOVING PAINT AND VARNISH.** ARTHUR W. BARNARD and WILLIAM E. BUTLER, New York, N. Y. Filed Sept. 29, 1897. Serial No. 653,418. (No specimens.)



Claim.—The improvement in the art of removing dry paint and the like with hot vapor of water and ammonia, which consists in heating a mixture of water and ammonia, while inclosed, until steam is generated and gaseous pressure on surface of the liquid is produced, and then maintaining the heat while the mixed vapors are gradually drawn off for use, to an extent sufficient to generate the vapors as fast as used and to maintain the pressure on the surface of the liquid, and finally forcing the vapors onto the surface from which the paint or the like is to be removed, substantially as set forth.

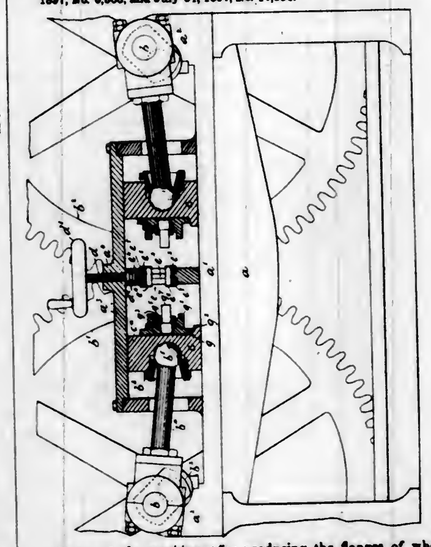
608,949. **SINGLETREE.** HENRY C. BRATTON, Lafayette, Tenn. Filed May 20, 1897. Serial No. 637,340. (No model.)



Claim.—1. The combination of a singletree formed of sections hinged together and pivoted to the cross-bar of the shafts, a bar pivoted to one of said sections and adapted to extend to the opposite section, a clasp upon the end of said bar, an eccentric shaft journaled in the other section and adapted to be engaged by the clasp of the bar, a trigger upon the end of said shaft, a tripping-lever pivoted to said section and adapted to engage the trigger for operating the shaft to disengage the clasp of the bar therefrom, and means for accomplishing the movement of said lever, substantially as set forth.

2. The combination of a singletree formed of sections hinged together and pivoted to the cross-bar of the shafts, a plate upon the upper side of said cross-bar having curved slot, a clevis pivoted to the bar, a pin secured at its upper end to the upper arm of the clevis and its lower end having a head movable in said slot, a bar pivoted to one of said sections and adapted to extend to the opposite section, a clasp upon the end of said bar, an eccentric shaft journaled in the other section and adapted to be engaged by the clasp of the bar, a trigger upon the end of said shaft, a tripping-lever pivoted to said section and adapted to engage the trigger for operating the shaft to disengage the clasp of the bar therefrom, and means for accomplishing the movement of said lever, substantially as set forth.

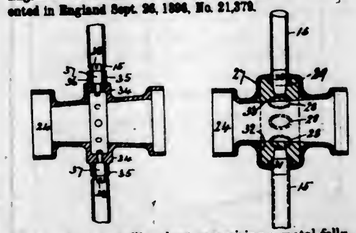
608,950. **MANUFACTURE OF WHEEL-HUBS AND MACHINERY THEREFOR.** HENRY J. BROOKES, Cape Hill, and ALFRED R. DAVIS, Winson Green, England. Filed Dec. 24, 1897. Serial No. 663,345. (No model.) Patented in England Aug. 1, 1896, No. 17,070, Mar. 16, 1897, No. 6,806, and July 31, 1897, No. 17,950.



Claim.—1. In machinery for producing the flanges of wheel-hubs by simultaneously collapsing previously-formed annular bulgings of a tubular blank, the combination with a sectional blank-holding die, of two advancing and retiring plungers having concentric mandrels to enter and support the tubular blank, and annular shoulders for acting with the ends of the blank-holding die to collapse the bulgings of the blank, substantially as described.

2. In machinery for producing the flanges of wheel-hubs by simultaneously operating upon and collapsing previously-formed annular bulgings of a tubular blank, the combination with a split or sectional blank-holding die, and advancing and retiring plungers, having acting shoulders or equivalents surrounding mandrels or internal supports for the blank, of slippers or reciprocating carriers, carrying the said plungers and traversing, and being guided on a suitable bed, and with motion communicated to the same from shafts driven in opposite directions by gear, substantially as described and set forth.

608,951. **METALLIC WHEEL.** ARTHUR W. CALVERT, Leeds, England. Filed Mar. 2, 1897. Serial No. 625,708. (No model.) Patented in England Sept. 26, 1896, No. 21,378.



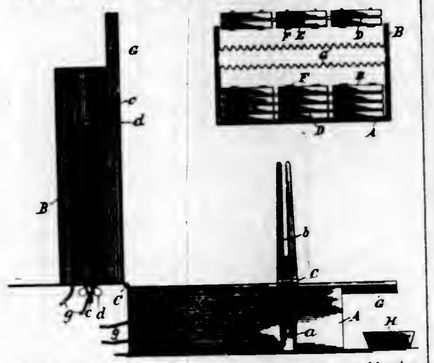
Claim.—1. A metallic wheel comprising a metal felly, a hollow metal hub or nave provided with a circumferential series of holes or

recesses, hollow metal spokes secured to the said felly and inserted in the said holes or recesses, wedges inserted in the hub ends of the said spokes so as to tighten them against the said hub and a mass of cast metal inserted in the said hub or nave and adapted to secure the hub and the spokes together.

2. The combination of a hub having circumferential depressions, spokes having tubular inner ends fitting the depressions, and plugs extending partially within and expanding the tubular spoke ends, the inner ends of the plugs beyond the spoke extremities being detachably secured to the hub, substantially as shown and described.

3. The combination of a circumferentially-depressed hollow hub, tubular spokes fitting the depressions, plugs partially within and expanding the spokes to cause them to tightly fit the hub depressions, the inner ends of the plugs extending into the hub hollow, and a mass of cast metal within the hub and formed about the plugs, substantially as shown and described.

608,952. ELECTRICAL COOKING APPARATUS. JOHN R. CARY, Baltimore, Md., assignor of one-half to Marie Clothilde Delavy, same place. Filed Mar. 14, 1898. Serial No. 673,755. (No model.)



Claim.—1. In an electrical cooking apparatus, the combination of two boxes each one having therein heating-wires and a corrugated tray situated over the wires, and strap-hinges one member of the same being adjustably attached to a box whereby the boxes may be separated and held in a separated position, substantially as specified.

2. In an electrical cooking apparatus, the combination of two boxes having therein heating appliances, substantially as described, and a connecting-hinge one member of which is permanently secured to the lower box, and the other member adjustably attached to the upper box, whereby the said boxes may be separated and held in a separated position, substantially as specified.

3. In an electrical cooking apparatus, the combination of two boxes having therein heating appliances substantially as described, a connecting-hinge one member of which is permanently secured to one box and the other member adjustably attached to the other box, and a shield which is placed between the separated boxes to confine the heated air around the article being cooked, substantially as specified.

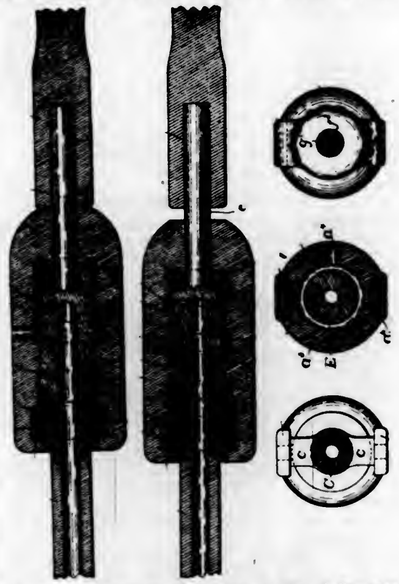
608,953. PNEUMATIC TOOL. JOHN G. CARLISLE, Philadelphia, Pa. Filed Feb. 24, 1898. Serial No. 671,527. (No model.)

Claim.—1. In a pneumatic tool, the combination of a cutter a stem connected to said cutter, a reciprocating casing which acts as a hammer supported on said stem, said casing being provided with enlarged chambers and an exhaust-port, and said stem having a hollow extending for a part of its length through it and ports, substantially as described.

2. In a pneumatic tool, the combination of a hollow handle, a stem with an enlarged hollow central portion and provided with ports, a cutter secured to said stem, and a casing mounted on said stem and adapted to reciprocate thereon and to act as a hammer, substantially as described.

3. In a pneumatic tool, the combination of a hollow handle, a stem provided with an enlarged hollow central portion and with a plurality of inlet and exhaust ports, a cutter secured to said stem, a reciprocating casing mounted on said stem and acting as a hammer, said casing being provided with enlarged chambers into which the motive fluid is delivered to actuate the casing, and an enlarged exhaust-chamber provided with a port and means for closing the rear end of the chamber, substantially as described.

4. In a pneumatic tool, the combination of a hollow handle, a stem hollow for a part of its length and having a hollow central enlarged portion provided with two inlet-ports and two outlet-ports, a cutter secured to said stem, a reciprocating casing mounted on said stem and acting as a hammer, said casing being provided with four enlarged chambers, one for the reception of packing, two for the reception of the motive fluid located near the ends of said casing and one centrally-located exhaust-chamber, provided with an exhaust-port, and packing in one of said chambers, substantially as described.



5. In a pneumatic tool, the combination with a hollow supporting-stem provided with an enlarged portion in which are located inlet and outlet ports; of a casing of a cylindrical form hollowed out the greater portion of its length and provided with a plurality of interior enlarged chambers and an exhaust-port; the said casing inclosing the enlarged portion of said stem and arranged to reciprocate thereon, and to act as a hammer; and a tool-holder for holding the tool while being operated upon by said casing, substantially as described.

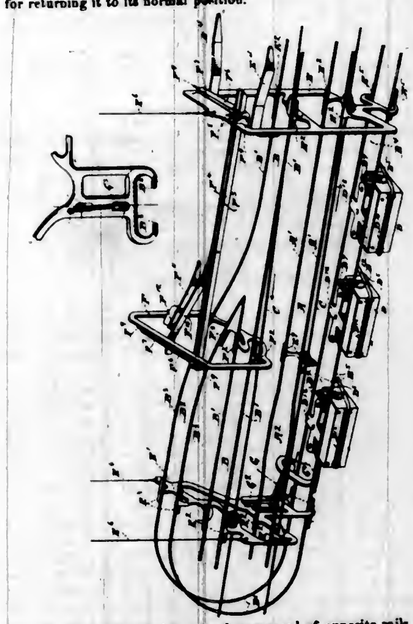
6. In a pneumatic tool, the combination with a supporting-stem hollow for a portion of its length and provided with a hollow enlarged portion in which are located ports arranged radially and axially thereof; of a cylindrical casing hollowed out the greater portion of its length leaving a thickened portion at its forward end, and provided with a plurality of enlarged interior chambers and a central exhaust-port; the said casing inclosing the enlarged portion of said stem and arranged to reciprocate thereon and to act as a hammer; and a tool-holder, substantially as described.

608,954. CABLE CARRIER. JAMES T. COWLEY, Lowell, Mass., assignor to the Lamson Consolidated Store Service Company, Newark, N. J. Filed Aug. 20, 1896. Renewed July 12, 1898. Serial No. 685,768. (No model.)

Claim.—1. In a cable carrier, a forwarding-track, a return-track, a branch track adapted to receive carriers switched from the return-track, and a track-section normally in alinement with said branch track and adapted to receive the diverted carriers and having its end nearest the branch track adapted to be moved from said alinement to permit the removal of carriers therefrom.

2. In a cable carrier, a forwarding-track, a return-track, a branch track adapted to receive carriers switched from the return-track, a track-section normally in alinement with said branch track and adapted to receive the diverted carriers and having its end nearest the branch track adapted to be moved from said alinement to permit the removal of carriers therefrom, and means for returning said track-section to its normal position.

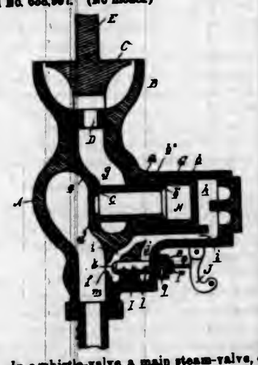
3. In a cable carrier, a forwarding-track, a return-track, a branch track adapted to receive carriers switched from the return-track, a track-section normally in alinement with said branch track and adapted to receive the diverted carriers and having its end nearest the branch track adapted to be moved from said alinement to permit the removal of carriers therefrom, and a spring connected to said track-section for returning it to its normal position.



4. In a cable carrier, a track composed of opposite rails, a carrier adapted to travel on said track and provided with a plate secured to the bottom of the carrier for holding said carrier on said track, and rollers located between the bottom of the carrier and the said plate to bear against said rails in the travel of the carrier.

5. In a cable carrier, a track composed of opposite rails, a carrier adapted to travel on said track and provided with a plate secured to the bottom of the carrier for holding said carrier on said track, rollers located between the bottom of the carrier and the said plate to bear against said rails in the travel of the carrier, and a spring bearing on said rollers for the purpose set forth.

608,955. STEAM-WHISTLE. FORREST A. DAVEY, Detroit, Mich., assignor of one-half to John G. Patterson, same place. Filed June 1, 1897. Serial No. 638,997. (No model.)



Claim.—1. In a whistle-valve, a main steam-valve, comprising a freely-sliding piston, heads thereon of different area, seats around each head, seats in the casing against which the seats on the pistons respectively bear, the main steam-passage to the whistle leading to and controlled by the smaller head, and an auxiliary valve-controlled passage leading to the larger head, having an exhaust therein.

2. In a whistle-valve, a main steam-valve comprising a freely-sliding piston, heads thereon of different area, seats around each head, seats in the casing against which the seats on the piston respectively bear, the main steam-passage to the whistle controlled by the smaller head, an auxiliary passage from the steam-supply pipe to the larger head, an exhaust port therein, and a valve for controlling the supply and exhaust port to the larger piston, said valve consisting of a freely-sliding stem having oppositely-arranged seats thereon at opposite ends and corresponding seats around the ports leading from the main steam-supply to the auxiliary passage and from the auxiliary passage, and means for actuating said valves in both directions.

3. The combination with a main whistle-valve of the kind described, of the controlling-valve for the supply and exhaust to the large piston, consisting of the valve I having inclined seats at opposite ends controlling respectively the supply and exhaust ports, the cap *p* having the exhaust-port therethrough and a seat on its inner end against which the valve I is adapted to engage, an actuating-stem for the valve passing freely through the cap, said cap being detachable to permit of the removal of the valve I.

4. The combination with the whistle, the valve and pipe of an electromagnet secured to said pipe and comprising a cylindrical body having the end heads *r* provided with the upwardly-projecting pole-pieces *s* and the rearwardly-extending lugs *t*, the connecting non-magnetic cross-bar *u* secured to the pipe and the hinged armature M, and a connection between said magnet and valve consisting of an upwardly-projecting arm on the armature, a lever on the valve and a link connecting said arm and lever.

608,956. COMPOSITION OF MATTER FOR CLOSING PUNCTURES IN TIRES. HERBERT DU CANE, Darwen, England. Filed Mar. 14, 1898. Serial No. 673,808. (No specimens.)

Claim.—1. The herein-described composition of matter consisting of sugar, starch, water, a granular insoluble substance such as plaster-of-paris, and a coloring-matter, substantially as described, and for the purpose specified.

2. The herein-described composition of matter for automatically closing punctures in pneumatic tires, consisting of sugar two hundred and seven parts, starch nine and a quarter parts, water ninety-two parts, and a coloring-matter in sufficient quantity, substantially as described.

608,957. NON-REFILLABLE BOTTLE. SHILOH W. DURHAM, Bushnell, Ill. Filed Apr. 21, 1897. Serial No. 633,139. (No model.)



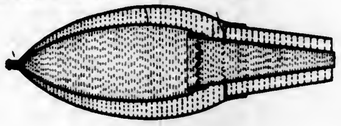
Claim.—In a device of the class described, the combination of a receptacle provided at its neck with an exterior frangible projection having an interior recess, said recess being provided with an inclined outer wall, and having an upper shoulder, a stopper fitting in the neck and provided with a recess forming a lower shoulder located near the lower end of the recess of the neck, and a locking-spring arranged within the recess of the neck and provided at its top with a spring-band to engage the upper shoulder, and composed of an inner side bearing against the stopper and an outer side arranged against the inclined wall of the recess of the neck and having its lower terminals engaging the shoulder of the stopper, said locking-spring having its greater portion located within the recess of the neck beyond the plane of the inner face of the latter, whereby when the frangible projection is broken, the locking-spring is adapted to be removed through the opening produced by such breakage to release the stopper, substantially as described.

608,958. DEVICE FOR ORNAMENTING CAKES, &c. LOUIS FERRAIOLI, New York, N. Y. Filed Jan. 22, 1898. Serial No. 667,807. (No model.)

Claim.—1. A nozzle comprising concentric tubes or passages, and independent compressible bags placed one inside the other and secured respectively to said tubes substantially as described.

2. A nozzle comprising concentric tubes or passages, independent compressible bags placed one inside the other and secured respectively to said tubes, and a common cord or closure for the bags substantially as described.

3. A nozzle comprising concentric tubes or passages secured to one another and having their outer ends extended one beyond the other, and the inner end of the inner tube projected beyond the inner end of the outer tube substantially as described.



608,959. GATE. ALBERT FLESHER and JOSEPH L. CRIBLER, Alert, Okla. Filed Mar. 14, 1898. Serial No. 673,844. (No model.)



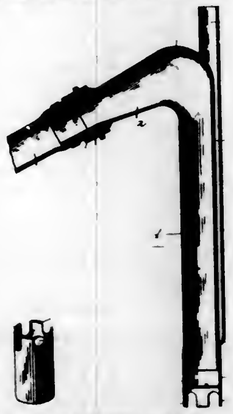
Claim.—1. The combination in a gate with the end uprights thereof, of the longitudinal bar pivotally connected with said end uprights, and the extensible thrust-brace interposed between the pivoted upright and the longitudinal bar.

2. The combination with the end uprights of the gate, of the longitudinal bar pivoted to said uprights, the divided and extensible brace connecting the hinged upright with said longitudinal bar, and the spring interposed between the parts of said extensible brace, substantially as described.

3. The combination with the end uprights of the gate, of the horizontal bar pivotally connected with said uprights, the extensible obliquely-arranged brace pivoted at its lower end to the lower end of the hinged gate-upright, and at its outer and upper end to the longitudinal bar at or near the center of the length of the latter, said brace consisting of a tubular portion, a plunger-rod operating in said tubular portion, and a spring contained in said tubular portion and against which said plunger abuts, for the purpose and substantially as described.

4. The combination in a gate with the end uprights thereof, of the longitudinal bar pivotally connected with said uprights, the obliquely-arranged extensible brace connected at one end to the lower end of the hinged upright and at its outer end with the longitudinal gate-bar, wires connecting said uprights above and below said longitudinal bar, and means for adjusting the tension of said wires, substantially as described.

608,960. SIPHON. HENRY FOULOIS, Washington Depot, Conn. Filed Nov. 6, 1897. Serial No. 657,630. (No model.)

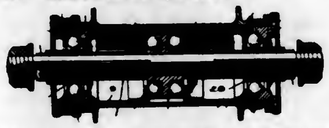


Claim.—1. A siphon comprising two legs, an eccentrically-pivoted valve in the receiving-leg, a stop for said valve, and a blow-tube communicating with the receiving-leg above the valve.

2. A siphon, comprising two legs, an unbalanced flap-valve in the receiving-leg, a stop for said valve, and a blow-tube communicating with the receiving-leg immediately above the valve.

3. A siphon, comprising tubular receiving and delivery legs in communication, a removable cap fitted on the end of the receiving-leg, an unbalanced flap-valve in said cap, a stop in the cap adapted to engage the flap-valve, and a blow-tube communicating with the receiving-leg above the valve.

608,961. BICYCLE-BEARING. WILLIAM R. FOX, Grand Rapids, Mich., assignor to the Fox Machine Company, same place. Filed Mar. 24, 1897. Serial No. 628,958. (No model.)



Claim.—1. A ball-bearing comprising the shell and axle, the load-supporting bearings, the thrust-supporting bearings, and means for simultaneously effecting the adjustment of all of said bearings from one end, substantially as described.

2. A ball-bearing comprising a shell, two-part bearing-cups located in the ends of said shell, bearing-rings intermediate of said cups, spacing means interposed between said rings and cups, said rings and cups being longitudinally movable within the shell, the axle, bearing members and balls in line with the two-part cups, a central bearing member carried by said axle, balls located between the central bearing member and the bearing-rings, and means for adjusting the bearings, substantially as described.

3. A ball-bearing comprising the shell, two-part bearing-cups located in the ends thereof, bearing-rings near the center of the shell, spacing means located between the cups and rings, said parts being movable longitudinally of the shell, the axle, bearing members carried thereby in line with the bearing-cups, balls located between the members and cups, the thrust-sustaining member carried by the axle, and balls located upon each side of said member between it and the bearing-rings, and means for adjusting said bearings, substantially as described.

4. In combination with the shell having the side bearing-cups and the central thrust rings, the axle having a central thrust-bearing member rigidly carried thereby, side bearing members loosely mounted on said axle, the space-pieces located between said movable and immovable members, and the balls and means for adjusting said bearings, substantially as described.

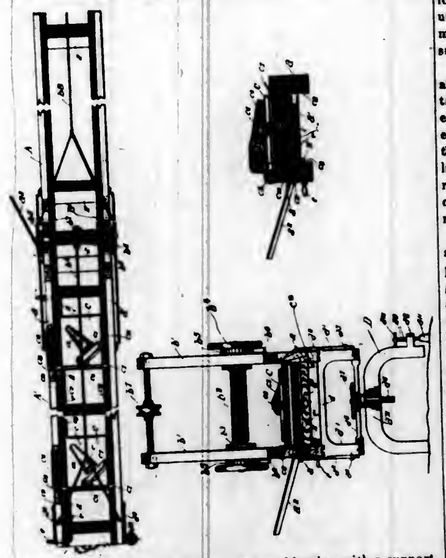
5. In combination, the shell, the two-part cups, the central bearing rings, the spacing-rings interposed between the rings and inner parts of the cups, said parts being movable, in relation to the shell, the holding and adjusting caps carried by the shell and bearing against the outer parts of the caps, the axle, the thrust member rigidly connected centrally thereof, balls between said thrust member and the bearing-rings of the shell, the removable bearing members concentric with the bearing-cups, spacing-pieces between said removable members and the central rigid member, the balls located between the said movable members and cups, substantially as described.

6. In combination with the shell and axle, the two-part bearing-cups movably carried by one of said parts, the bearing-rings also movably carried by said part, spacing means between said rings and cups, the bearing members having plain surfaces carried by the other part, the thrust-sustaining member rigidly carried by said other part, balls interposed between said bearing parts and means for simultaneously adjusting all the bearings from one end, substantially as described.

608,962. RAILWAY-TIE DISTRIBUTER. CALEB C. GATES, Forsyth, Mont., assignor of one-half to James Skinner Hopkins and William Wallace McDonald, same place. Filed Feb. 19, 1897. Serial No. 624,069. (No model.)

Claim.—1. In a railway-tie distributer, the combination with a suitable supporting-frame adapted to be mounted upon the tie-distributing device proper, of transverse supporting-rollers journaled in said frame, longitudinally-extending discharge-rollers journaled at predetermined intervals upon said frame, and a plurality of tripping devices arranged in proximity to the longitudinal rollers to divert the ties at these points, and cause them to be discharged from the supporting-frame, substantially as described.

2. In a railway-tie distributer, the combination with a supporting-frame adapted to be secured to the tie-distributer proper, of a plurality of supporting-rollers journaled in said frame, a plurality of longitudinally-extending rollers journaled at predetermined intervals in said frame, and a plurality of tripping or diverting devices also mounted in said frame and each comprising a pivoted plate, an inclined guide and a support for said plate, the construction and operation being such that after a trip has once been operated it falls out of the line of travel of the ties and permits the same to pass readily over it, substantially as described.



3. In a railway-tie distributer, the combination with a supporting-frame adapted to be secured to the tie-distributer proper, of a plurality of transverse rollers journaled on said frame, a plurality of longitudinally-extending rollers also journaled on said frame, a plurality of tripping devices arranged in proximity to said rollers and adapted to divert the ties to said longitudinal rollers so as to be discharged from the frame and means for adjustably supporting the forward end of said frame, substantially as described.

4. In a tie-distributer, the combination with a frame adapted to be secured to the tie-distributer proper, of a plurality of transverse supporting-rollers mounted in said frame, a plurality of longitudinally-extending discharge-rollers also mounted in said frame, a plurality of trips mounted in proximity to the longitudinal rollers for diverting the ties so that they will be discharged from said longitudinal rollers, and means connecting said longitudinal rollers and said trips, whereby upon the rotation of the former the latter will be lowered out of the path of the ties passing over the lateral rollers, substantially as described.

5. In a tie-distributer, the combination with a supporting-frame comprising two hinged sections adapted to be secured to the tie-distributer proper, means for adjustably supporting said hinged frames, transverse supporting-rollers mounted in said frames, longitudinally-extending discharge-rollers also mounted in said frames, and tripping devices mounted in proximity to said longitudinal rollers and adapted to divert the ties on the latter to be discharged laterally from the apparatus, substantially as described.

6. In a tie-distributing apparatus, the combination with a construction-car, and tie-distributer proper, of a supporting-frame mounted thereon and projecting forward therefrom, a truss carrying a windlass, ropes connecting said windlass and truss to the forward-projecting end of the frame, transverse supporting-rollers mounted in said frame, and trips mounted in proximity to said rollers and adapted to divert the ties so that they will be discharged laterally from the apparatus, substantially as described.

7. In a tie distributing apparatus, the combination with a suitable frame adapted to be secured to the tie-distributer proper and comprising two hinged sections, of a truss carrying a windlass and mounted on one section, ropes connecting said windlass and truss with the outer end of the other section, whereby the same may be raised and lowered at will, transverse rollers mounted on the supporting-frame, longitudinally-extending discharge-rollers also mounted on said frame and a plurality of trips mounted in proximity to said longitudinal rollers and adapted to divert the ties so that they will be discharged laterally from the apparatus, substantially as described.

8. In a tie-distributing apparatus, the combination with a supporting-frame adapted to be mounted upon the tie-distributer proper, of a plurality of transverse supporting-rollers mounted on said frame, longitudinally-extending discharge-rollers also mounted on said frame, trips mounted in proximity to said longitudinal rollers adapted to divert the ties on the same, so that they will be discharged laterally from the apparatus, a hinged supporting-frame mounted upon the forward end of the frame proper and capable of being doubled back under the said lateral frame, and an adjustable supporting-yoke mounted on said hinged frame and adapted to engage the road-bed, substantially as described.

9. In a tie-distributing apparatus, the combination with a suitable frame adapted to be secured to the tie-distributer proper, of transverse supporting-rollers mounted on said frame, longitudinally-extending supporting-rollers also mounted on said frame, trips mounted in proximity to said longitudinal rollers and adapted to divert the ties onto said longitudinal rollers, so that they will be discharged laterally from the machine, means for connecting the longitudinal rollers and said trips, whereby the latter are lowered out of the path of the ties by the revolution of the former, and resetting devices for replacing the trips in their normal positions, substantially as described.

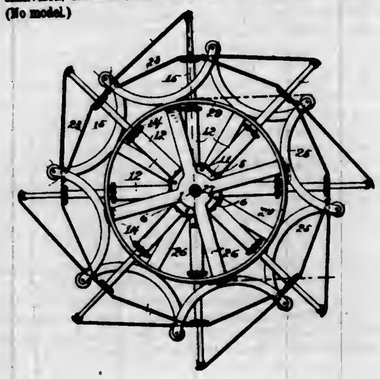
10. In a tie distributing apparatus, the combination with a suitable supporting-frame adapted to be secured to a tie-distributer proper, of transverse supporting-rollers mounted on said frame, longitudinally-supported supporting-rollers also mounted on said frame and each provided with a worm, inclined supporting-pieces mounted upon the side bars of said frame, trips mounted in proximity to the longitudinal rollers and each comprising a pivoted plate, an inclined roller journaled therein, an inclined guide and pivoted lever, the latter being adapted to normally support said trip, but to be actuated by the worm upon its respective longitudinal roller to cause it to slide down the inclined guides mounted upon the frame, substantially as described.

11. In a railway-tie distributer, the combination with a longitudinal conveyer, of a plurality of tripping devices mounted at intervals upon said conveyer and adapted to divert the ties and discharge them laterally from said conveyer, substantially as described.

608,968. SIGN. WILLIAM HERREN, Pittsburg, Pa. Filed Dec. 30, 1896. Serial No. 573,721. (No model.)

Claim.—The process of forming imitation signs, badges and the like, comprising the following steps, to wit: first, punching or otherwise cutting through the sign-plate the particular design intended; second, positioning upon said apertured sign-plate a celluloid wafer; third, placing upon said wafer a yielding anvil-die; fourth, placing a highly-polished block to the face of the sign-plate, and applying heat to said block whereby said celluloid wafer is rendered pliable, then applying pressure to the back of the yielding anvil-die and forcing the pliable celluloid into said apertures until the same is brought into contact with the heated block, thereby producing a highly-polished face on the celluloid filling of said apertures, substantially as shown and described.

608,964. AIR-COMPRESSOR. FRANK R. HESTON and ROBERT R. HARVISON, Rushland, Pa. Filed Dec. 10, 1897. Serial No. 661,383. (No model.)



Claim.—1. An air-compressor having in combination a series of cylinders having pistons and secured to and in communication with a fixed hollow shaft, side wheels loosely mounted on said shaft and having a driving-pulley, track-levers engaging the piston-rods, rollers carried by the wheels to depress the rods, and a spiral spring for returning the rods, as set forth.

2. The combination with the fixed hollow shaft having air-holes, the hub fixed to the shaft and having a chamber in communication with said shaft, of the cylinders secured to the said hub and having suitable pistons operated by piston-rods, valves in the hub opened and closed by the operation of the pistons, the wheels loosely mounted upon the shaft, and means connecting the wheels to the piston-rods to operate the pistons, as set forth.

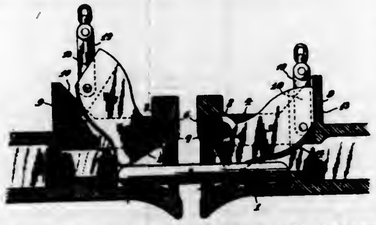
3. The combination with the wheels, the fixed hollow shaft upon which the wheels are loosely mounted, the cylinders fixed to the shaft and having pistons and rods, the sleeves secured to the cylinders and connected together, and a valved communication between the shaft and the cylinder, of the track-levers, the rollers carried by the wheels to depress the levers and contract the piston-rods, and the spiral springs for extending the said rods, as set forth.

4. In an air-compressor, the combination with the fixed hollow shaft, and the cylinder secured thereto and having pistons and spring-controlled piston-rods, of means for operating the said rods comprising the wheels loosely mounted on the shaft, the rollers journaled to and between the wheels, and the track-levers, as set forth.

5. In an air-compressor, the combination of the fixed hollow shaft, cylinders having pistons and rods, the chambered hub joining the cylinders with the shaft, the plugs fitted in the hub, and the valves operated in the plugs by the pistons, of the wheels loosely mounted on the shaft and having forked arms or spokes, the rollers journaled in and between the forks, the rollers on the ends of the piston-rods, the track-levers adapted to be operated by the forked rollers to contract the pistons, and the springs for extending the pistons, as set forth.

6. The combination with the hub having an integral air-chamber and peripheral cavities, of the valve-plugs fitted in said cavities, and having flanges secured to the outside of the hub, as set forth.

608,965. CAR-COUPLING. ARTHUR L. HUMPHREY, Colorado City, Colo. Filed Nov. 16, 1897. Serial No. 658,694. (No model.)

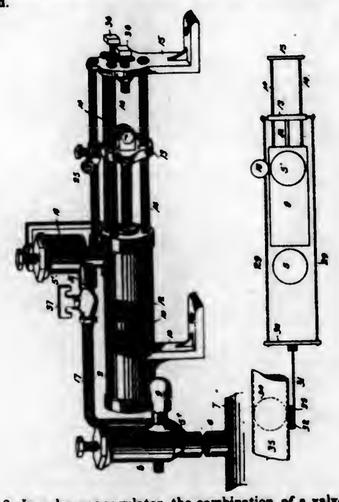


Claim.—1. In a car-coupling, the draw-head provided in its upper side with a longitudinal slot having its rear wall extended into a vertical flange projecting above the upper side of the draw-head, and a gravity-catch having a pivotal engagement with the draw-head at the front end of the slot and extending the entire length of the latter to form a longitudinal brace for the draw-head, said catch normally being disposed obliquely within the slot and provided with a link-engaging nose disposed out of contact with the bottom of the draw-head and with a straight vertical rear edge abutting flat against said flange extension, substantially as set forth.

2 In a car-coupling, a draw-head having a longitudinal slot in its upper side formed with a flat vertical rear wall, and an obliquely-arranged swinging catch provided at its front upper corner with a rounded pivot portion pivotally registering with a recess at the front end of the slot, said catch being further provided with a straight inclined front edge terminating at its lower end in a rounded link-engaging nose disposed out of contact with the bottom of the draw-head, with a straight vertical rear edge abutting against the flat rear wall of the slot, and with a convexedly curved or swelled lower edge projecting within the draw-head over the inner end of the link for holding the latter in position, substantially as set forth.

608,966. DAMPER-REGULATOR. EPHRAIM K. HUTCHINSON, Denver, Colo. Filed Nov. 15, 1897. Serial No. 658,619. (No model.)

Claim.—1. In a damper-regulator, the combination of a valve mechanism whose casing is connected with a boiler, a spring-held valve adapted to be opened by the steam from the boiler, the mechanism being provided with an exhaust-passage above the valve when the latter is closed, said passage being closed when the valve is open, the casing having an escape-passage for the steam when the valve is open, and a passage connecting said escape-port with the casing-chamber above the port, the bottom of the casing being provided with an opening through which the valve-stem protrudes into the casing-chamber, the upper extremity of the said stem being provided with a plate which the spring engages, a separate chamber communicating with the escape-passage of the valve-casing, a piston located in said chamber, a cross-head connected with the piston, and a suitable connection between said cross-head and the damper to be controlled.



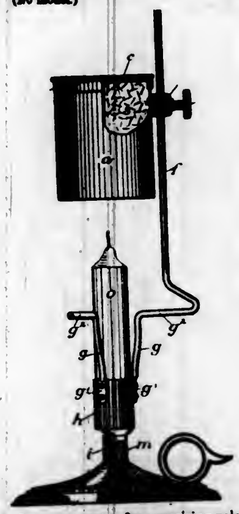
2. In a damper-regulator, the combination of a valve mechanism whose casing is connected with the boiler, a valve adapted to be opened by the steam from the boiler, the mechanism being provided with an exhaust-passage above the valve when the latter is closed, said passage being closed when the valve is open, the casing having an escape-passage for the steam when the valve is open, and a port leading from said last-named passage to the casing-chamber above the valve, an apertured disk closing the chamber above the valve whose stem protrudes through the opening in said disk, a disk attached to the protruding extremity of the valve-stem and located in the casing-chamber above the first named disk, a spring engaging the disk attached to the valve-stem, suitable means engaging the opposite extremity of the spring for regulating the tension of the latter, a separate chamber communicating with the escape-passage of the valve-casing, a piston located in said chamber, a cross-head connected with the piston, and a suitable connection between said cross-head and the damper to be controlled.

3. In a damper-regulator, the combination of a valve mechanism 5 comprising a casing and a spring-held valve, the casing being connected with the boiler at a point below the valve, and provided with an exhaust-passage above the valve when the latter is closed, an exit-passage A for the steam when the valve is open, a separate chamber connected with the said steam-exit passage, the piston located in said chamber, a cross-head connected with said piston, a suitable connection between the cross-head and the damper to be regulated, and suitable means operated by the steam from the boiler for limiting the return movement of the cross-head when it is not desired to allow the damper to open wide, comprising a valve mechanism 5′ consisting of a casing and a spring-held valve, the casing being provided with an escape-port A, a conduit connecting ports formed in the two valve-casings below the valves, a chamber connected with the port A of mechanism 5′, a spring-held piston located in said chamber above the port where the steam enters, a stem connected with said piston and protruding through the top of the chamber-casing, a yoke connected with said stem, a crank-arm connected with said yoke, a rod to which said crank-arm is attached, and a dog adjustably mounted on said rod.

4. In a damper-regulator, the combination of a valve mechanism 5 comprising a casing and a spring-held valve, the casing being connected with the boiler at a point below the valve, and provided with an exhaust-passage above the valve when the latter is closed, an exit-passage A for the steam when the valve is open, a separate chamber connected with the said steam-exit passage, a piston located in said chamber, a cross-head connected with said piston, a suitable

connection between the cross-head and the damper to be regulated, and suitable means operated by the steam from the boiler for limiting the return movement of the cross-head when it is not desired to allow the damper to open wide, comprising a valve mechanism 5′ consisting of a casing and a spring-held valve, the casing being provided with an escape-port A, a conduit connecting ports formed in the two valve-casings below the valves, a chamber connected with the port A of mechanism 5′, a spring-held piston located in said chamber above the port where the steam enters, a stem connected with said piston and protruding through the top of the chamber-casing, a yoke connected with said stem, a crank-arm connected with said yoke, a rod to which the said crank-arm is attached, a sleeve adjustable on said rod by means of a set-screw, a stud carried by the sleeve and provided with a shoulder, a dog mounted on the stud and having a lug engaging the stop on the stud, whereby the dog when in the path of the cross-head allows the latter to travel past in one direction, but limits its movement in the opposite direction.

608,967. VAPORIZER. JOSEPH H. KASTLE, MICHAEL L. RAVITCH, and ARTHUR B LOWENHARZ, Lexington, Ky. Filed Nov. 1, 1897. Serial No. 657,094. (No model.)



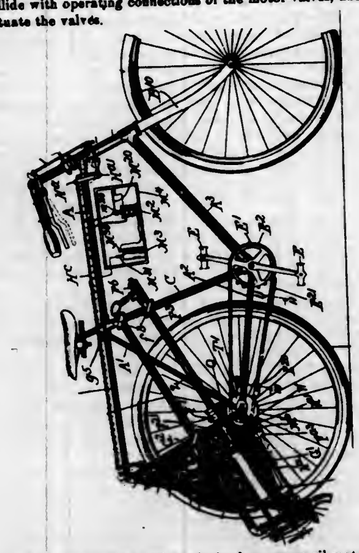
Claim.—1. In an apparatus for vaporizing volatile disinfectants, the combination with a vessel for holding the disinfectant, and means for adjustably supporting said vessel upon an upright; of a hollow cylindrical candle-holder having a smaller cylindrical collar rigidly connected thereto; and a plurality of uprights having outwardly-extending upper ends, rigidly attached to said candle-holder, and the outer end of one of such uprights being continued vertically upward and forming a support for said vessel, substantially as described.

2. In an apparatus for heating liquids, the combination with a vessel for holding the liquid, and means for supporting said vessel upon an upright; of a hollow cylindrical collar; a plurality of uprights rigidly attached to said collar; each of said uprights being bent horizontally a short distance above said collar, and one of said uprights being continued upwardly after being bent outwardly, and forming an upright support for said vessel, substantially as described.

3. In an apparatus for vaporizing volatile disinfectants, the combination with a vessel loosely packed on its interior with asbestos, and adapted to receive the disinfectant; a foraminous diaphragm fitted in the head of said vessel; a perforated lug on said vessel; and a clamping-screw engaging said perforated lug; of a cylindrical collar adapted to hold an ordinary candle; a smaller cylindrical collar connected rigidly to the lower end of said candle-holder; a plurality of stout wires rigidly connected to said candle-holder, and extending upwardly therefrom, the said uprights being bent outwardly a short distance above said candle-holder, and one of said uprights being continued upwardly after being bent outwardly and adapted to pass through said perforated lug and constitute a support for said vessel, substantially as described.

608,968. GAS OR OIL MOTOR FOR BICYCLES. WENZEL MORAVA, Chicago, Ill. Filed Mar. 22, 1897. Serial No. 628,573. (No model.)

Claim.—1. In combination with a velocipede, a gas or oil motor operatively connected with the driving-wheel of the velocipede; the velocipede drive-chain having cams which in the travel of the chain collide with operating connections of the motor-valves, and thereby actuate the valves.



2. In combination with a velocipede, a gas or oil motor mounted on the velocipede-frame; electric igniting devices pertaining to said motor; the circuit which energizes the same; a switch in said circuit whereat it is adapted to be opened or closed, and a cam on the velocipede driving-chain adapted to operate said switch to open and close the circuit, and thereby to cause ignition in the explosion-chamber to the motor.

3. In combination with a velocipede, a gas or oil motor and devices which actuate the controlling-valves thereof, connections adapted to be operated by the rider at the vicinity of the handle-bar for dislocating the valve-actuating devices to prevent at will the action of said valves.

4. In combination with a velocipede, a rotatable clutch on the driving-shaft thereof, adapted to be reciprocatingly rotated exteriorly and to communicate rotation to the shaft continuously in one direction, a spring through which such rotary motion is communicated from the clutch to the shaft and a gas or oil motor mounted on the velocipede-frame and having its piston connected to the exterior member of the rotatable clutch to reciprocatingly rotate the latter as the piston reciprocates.

5. In combination with a velocipede, a clutch mounted on the driving-shaft thereof having its exterior member adapted to be reciprocatingly rotated and to communicate rotation continuously in one direction to the shaft; a spring through which such rotation is communicated to the shaft, a gas or oil motor mounted on the velocipede-frame and having its piston operatively connected to said outer member of the clutch to reciprocatingly rotate said member as the piston reciprocates; and a spring which is put under tension by the rotation of the clutch in the driving direction when the piston is traveling outward and which reacts to reverse the rotation of said clutch member, whereby such spring operates to retract the piston.

6 In combination with the cylinder of the motor, the piston having a tubular stem, a tubular guideway adapted to be fixed with respect to the cylinder and adapted to be telescoped with the tubular stem of the piston as the latter reciprocates; a duct of which said tubular guideway forms a part; an explosion-chamber back of the piston to which such duct leads; a valve adapted to be mechanically operated to control communication of the duct with the explosion-chamber, and a check-valve in the duct antecedent to the first-mentioned valve adapted to hold the air which is forced past it by the outward travel of the piston under tension between said valves; and suitable means for operating the first-mentioned valve to admit the compressed air to the explosion-chamber.

7. In combination with a chain-driven velocipede, a gas or oil motor mounted thereon having a combustion-chamber and electric igniting devices associated therewith; a circuit which energizes the same containing a switch at which the circuit is normally open and which is adapted to be operated to close the circuit; the controlling-

valves of said motor having mechanical operating connections; cams on the driving-chain of the velocipede adapted to collide with said connections to operate said valves and adapted also to collide with said switch to operate the same to cause ignition.

8. In combination with a chain-driven velocipede, a gas or oil motor mounted thereon having a combustion chamber and sparking electrodes therein, an electric induction-coil and a battery which energizes the same having its secondary circuit extending to said electrodes, the primary circuit including the frame and an insulated contact-piece; a cam on the driving-chain of the velocipede adapted to collide with said contact-piece as the velocipede is driven.

9. In combination with a chain-driven velocipede and a gas or oil motor mounted thereon the cylinder of the motor having an explosion-chamber communicating therewith behind the piston; the compressed-air duct in which the air is compressed by the outward travel of the piston; a valve which controls the communication of said duct with the explosion chamber; an exhaust-port and a valve which controls the same, the stems of said valves being extended outside the cylinder and terminating in the vicinity of the path of the drive-chain of the velocipede; and cams on said drive-chain adapted to collide with said stems respectively.

10. In combination with a chain-driven velocipede, a gas or oil motor mounted thereon having the stems of its inlet and exhaust valves extended outside the cylinder and terminating in the vicinity of the drive-chain; cams on said chain adapted to collide with said stems to operate the valves, said stems being jointed and adapted to be flexed at such joints to carry their terminals out of the path of the cams; a finger-lever at the handle-bar, and mechanical connections therefrom to the stem, whereby at will they may be flexed at their joints respectively to carry their terminals out of the paths of said cams respectively.

11. In combination with a chain-driven velocipede, a gas and oil motor mounted thereon having the stems of the inlet and exhaust valves extended outside the cylinder and provided with flexible joints and having terminals which are adapted to stand in the vicinity of the drive-chain; the electric igniting devices and the circuit in which they are energized containing an insulated contact-piece at which the circuit may be closed to cause ignition; the drive-chain and cams thereon adapted as the chain travels to collide with the terminals of the valve-stem and with the contact-piece to operate said valves and close the circuit; a movable arm on which said contact-piece is mounted adapted to be moved to carry the contact-piece out of the path of the cam, and mechanical connections from said valve-stems and from said movable arm extending to the vicinity of the handle and there adapted to be operated at will, whereby the operator may at will dislocate the valve-stem terminals and contact-piece to interrupt the operation of the motor.

12. In combination with the cylinder, the piston having a tubular stem and a central chamber with which said piston communicates, and an annular chamber forwardly open encompassing said central chamber and a valve which controls communication between said chambers adapted to open from the annular into the central chamber, and a fixed tubular guide about which the tubular stem of the piston telescopes as the piston reciprocates, and a check-valve which prevents air from entering, and permits it to escape from said tubular guide whereby the retreat of the piston causes it to draw in exterior air through the annular chamber and pass the same into the central chamber and tubular stem, and the return of such air when the piston advances is prevented.

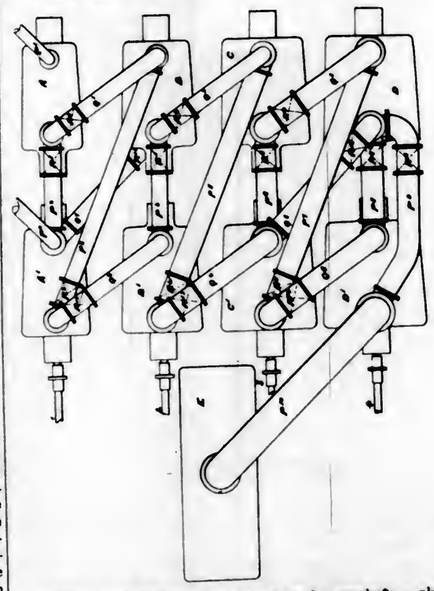
13. In combination with a cylinder, the piston having a forwardly-open chamber and a second chamber communicating therewith; a tubular stem communicating with said second chamber, and the valve controlling communication between said chambers adapted to open into the stem-connected chamber; a tubular guide with which said tubular stem telescopes; a duct of which said tubular guide constitutes a part, and a check-valve in said tubular duct whereby the retreat of the piston draws in atmospheric air through the forwardly-open chamber, and its advance compresses such air beyond the check-valve.

14. In combination with a cylinder, the piston having a forwardly-open chamber and a second chamber communicating therewith: a tubular stem communicating with said second chamber, and the valve controlling communication between said chambers adapted to open into the stem-connected chamber; a tubular guide with which said tubular stem telescopes a duct of which said tubular guide constitutes a part, and a check-valve in said duct at a point somewhat remote from the inlet end thereof adapted to seat toward the piston, whereby outward travel of the piston compresses air in said duct, and the portion thereof which is not forced past the check valve operates elastically to start the piston back.

15. In combination with an explosive-motor and a shaft which it is designed to rotate, a clutch on such shaft having its exterior member adapted to be reciprocatingly rotated, and an interior member which is actuated in one direction by the outer member; suitable means for locking said interior member against rotation in the other direction; and a spring connecting said interior member with the shaft and adapted to be put under tension by the rotation of said interior member, whereby the recoil or reaction of such spring rotates the shaft in the direction in which the inner member of the clutch is rotated by the outer member, but independently of the time of such rotation.

16. In a velocipede, in combination with pedal-operated driving mechanism, an explosive-motor mounted on the velocipede-frame and operatively connected to a driving-shaft of the velocipede; cams on a moving part of said pedal-operated driving-train, the controlling-valves of such motor having their stems provided with terminals adapted to stand in the path of such cams and to be moved out of such paths; mechanical connections extending to the vicinity of the handle-bar and adapted to be operated at will to move said terminals into and out of the path of the cams, whereby pedal-operated mechanism of the velocipede may at the will of the rider be caused to control the motor.

608,969. MARINE STEAM-TURBINE. CHARLES A. PARSONS, Newcastle-upon-Tyne, England. Filed Mar. 4, 1896. Serial No. 672,594. (No model.)



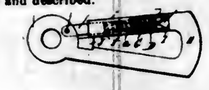
Claim.—1. In combination, a plurality of screw-shafts, a plurality of turbines and the pipes and valves forming the connection between the turbines to couple them in series in simple parallel or in compound parallel, substantially as described.

2. In combination, a plurality of screw-shafts, plurality of turbines on the separate shafts, pipe connections between the turbines with valves to connect them in series or in compound parallel, and a reversing-turbine on the shaft of one of the first-mentioned turbines with pipe-and-valve connections thereto, the said reversing-turbine running in vacuum while the first-mentioned turbines are running, substantially as described.

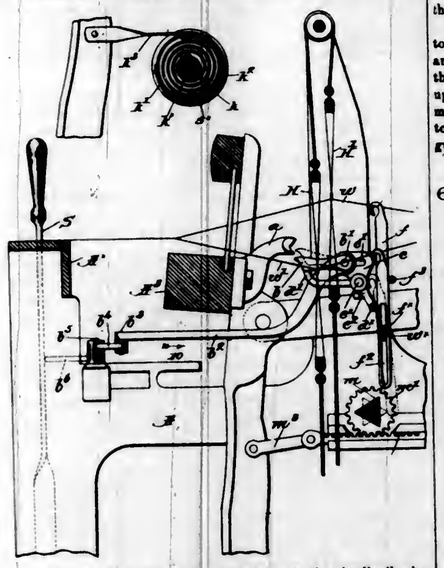
3. In combination, the plurality of shafts, the plurality of turbines with pipe connections and a reversing-turbine connected with one of the shafts and running in vacuum when the first-mentioned turbines are running, substantially as described.

608,970. LINK FOR POLES, TRACES, &c. ALFRED WOOD, Folkestone, England. Filed July 20, 1895. Serial No. 556,643. (No model.)

Claim.—A spring-hook, substantially as herein shown and described, consisting of the eye C, the arm A hinged thereto, the sliding tube F mounted on said arm said arm being reduced adjacent to the pivot end, and provided with a shoulder at one end thereof, and with a perforated partition at its outer end, which is fixed in the tube, a spring G mounted on said arm and adapted to bear against said shoulder and partition, the hook being provided with a round or beveled projection I, against which the tube F is firmly held and a stop J formed on said hook on the arm A, which is adapted to limit the inward movement thereof, all constructed and adapted to operate as herein set forth and described.



608,971. WARP STOP-MOTION FOR LOOMS. WILLIAM R. ALLEN, Salem, Mass., assignor to the Draper Company, Portland, Me., and Hopedale, Mass. Filed Nov. 23, 1897. Serial No. 659,621. (No model.)



Claim.—1. In a warp stop-motion for looms, longitudinally-slotted stop-motion-actuating detectors positioned abnormally by failure or undue slackness of the warp-threads, said detectors being applied to the latter, a fixed guide extended through the slots of and relatively to which the detectors are movable, a stationary bar extended back of the rear edges of the detectors, a feeler to engage and move an abnormally-positioned detector on the guide, and stopping means for the loom, including a swinging bar extended across the front edges of the detectors, operated by feeler-induced movement of a detector, the fixed and swinging bars assisting the guide to prevent displacement of the detectors when the loom is running properly.

2. In a warp stop-motion for looms, stop motion-actuating detectors positioned abnormally by failure or undue slackness of the warp-threads, said detectors being suspended by the latter and having each a longitudinal slot, a fixed guide-bar extended through the slots of the detectors, and acting to limit the detecting movement of a detector, a feeler to engage and swing an abnormally-positioned detector on said guide as a fulcrum, and stopping means for the loom, including a dog, and a controlling device therefor operated by the detector when swung by the feeler, to move the dog into operative position.

3. In a warp stop-motion for looms, stop-motion-actuating detectors vertically movable by the warp-threads when the loom is running properly, a guide for said detectors, a feeler to engage and move an abnormally-positioned detector, stopping mechanism for the loom, including a normally inoperative dog, a bunter, and a controlling device for the dog, operated by the feeler-induced movement of a detector.

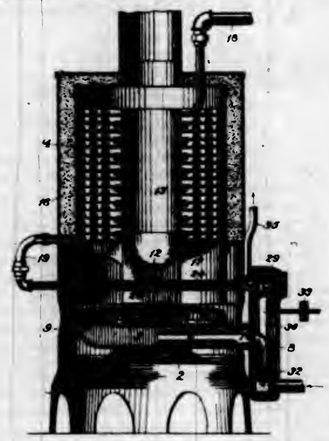
4. In a warp stop-motion for looms, a series of stop-motion-actuating detectors normally supported by the warp-threads, a shipper, controlling means therefor, including a transverse bar to be engaged and swung by feeler-induced movement of an abnormally-positioned detector, a finger movable with said bar, and a dog controlled as to its position by said finger, and a feeler to engage and effect movement of a detector in abnormal position due to breakage or undue slackening of its warp-thread.

5. In a warp stop-motion for looms, a series of stop-motion-actuating detectors normally supported by the warp-threads, and a feeler adapted to engage and move an abnormally-positioned detector, combined with the lay, a bunter movable therewith, a shipper, controlling means therefor, including a dog, and a finger operated by the feeler-induced movement of a detector, to move the dog into position to be engaged by the bunter upon breakage on undue slackening of a warp-thread.

6. In a loom, the lay, a bunter movable therewith, a shipper, controlling means therefor, including a normally-inoperative dog, a finger to position the dog, and a transverse actuating-rod connected with the finger, combined with a series of stop-motion-actuating detectors moved into abnormal position by breakage or slackening of a warp-thread and arranged adjacent said actuating-rod, and a feeler to engage an abnormally-positioned detector and move it, to effect the operation of the actuating-rod.

7. In a warp stop-motion for looms, a series of actuating-detectors hung on the warp-threads and longitudinally slotted, a fixed guide and fulcrum extended through the detector-slots, said guide limiting the abnormal movement of a detector, a feeler to engage and rock upon the guide an abnormally-positioned detector, and stopping means for the loom, including an actuating-rod adjacent the detectors and operated by the feeler-induced movement of a detector, the guide being located between the actuating-rod and the feeler.

608,972. WATER-HEATER. JOHN C. BECKFIELD, Pittsburg, Pa., assignor to the Monarch Water Heater Company, same place. Filed Feb. 18, 1897. Serial No. 623,991. (No model.)



Claim.—1. In a water-heater, the combination of a burner, a heating-coil arranged in the combustion-chamber of said burner, an auxiliary or pilot burner having a constant supply of gas and a thermostatic device for operating the valve controlling the flow of gas to said main burner and arranged in the path of flow of water from the heating-coil, and so located as to be constantly subjected to the heat of the auxiliary or pilot burner, substantially as set forth.

2. In a water-heater, the combination of an annular burner arranged in a correspondingly-shaped combustion-chamber, a heating-coil arranged in said chamber, an auxiliary or pilot burner arranged within the main burner and having a constant supply of gas, a thermostatic device for operating the valve controlling the flow of gas to the main burner, said thermostat being located in a chamber forming a part of the outlet from the heating-coil, said chamber being so arranged as to be subjected to the heat from the main and auxiliary burners, substantially as set forth.

3. In a water-heater, the combination of an annular burner arranged in a correspondingly-shaped combustion-chamber, a heating-coil arranged in said chamber, an auxiliary or pilot burner arranged within the annular burner and within a combustion-chamber communicating at its ends with the main combustion-chamber, a thermostat arranged within a chamber located in part at least in the auxiliary combustion-chamber and forming a part of the outlet from the heating-coil, said thermostat being adapted to operate the valve controlling the flow of gas to the main burner, substantially as set forth.

4. The combination of a main burner, an auxiliary burner, constantly-open ports connecting the said burners to a common supply-chamber, a tube having gas and air inlets and having its discharge end located in the common supply chamber in such proximity to the

port leading to the auxiliary burner that the gas and air will flow primarily to the auxiliary burner, substantially as set forth.

5. The combination of an annular burner, an auxiliary burner arranged within the annular burner, constantly-open ports connecting said burners to a common supply-chamber, a tube having gas and air inlets and having its discharge end located in such proximity to the port leading to the auxiliary burner that the gas and air will flow primarily to the auxiliary burner, substantially as set forth.

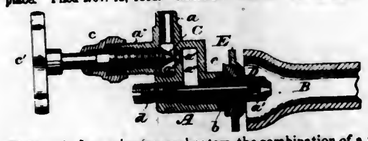
608,973. SOLDERING-FLUX. WILLIAM BURNLEY, Miamisburg, Ohio, assignor to James A. Burnley, Cottonwood Falls, Kans. Filed June 3, 1895. Serial No. 551,515. (No specimens.)

Claim.—1. The herein-described composition of matter as a flux or soldering-paste for use in joining bodies of metal with solder, the same consisting of a fat or grease that is plastic or pasty at ordinary temperatures, and a saturated solution of zinc chlorid, in or about the proportions specified.

2. The herein-described composition of matter as a flux or soldering-paste for use in joining bodies of metal with solder, the same consisting of petrolatum or vaseline, and a saturated solution of zinc chlorid, in or about the proportions specified.

3. A plastic flux or soldering-paste for use in joining bodies of metal with solder, the same consisting of a flux in solution mixed with a fat or grease that is pasty at ordinary temperatures, substantially as described.

608,974. VALVE FOR GAS-HEATERS. ALFRED R. DETWILER, Milwaukee, Wis., assignor to the Milwaukee Gas Stove Company, same place. Filed Nov. 13, 1893. Serial No. 490,741. (No model.)



Claim.—1. In a valve for gas-heaters, the combination of a valve-case formed with two intercommunicating chambers, each of which has an outlet, and suitable valves for controlling such outlets, substantially as and for the purposes described.

2. In a valve for gas-heaters, the combination of an adjustable feed-regulating valve, formed with a concave tapering end, a valve-case formed with a reduced opening corresponding to the concave tapering end of said valve, to receive the valve, and a gas and air mixing chamber located at the end of the reduced opening in the valve-case, substantially as and for the purposes described.

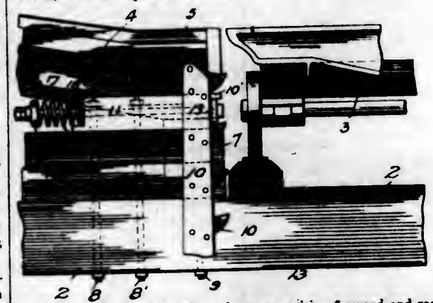
3. In a valve for gas-heaters, the valve-case formed with the parallel hollow necks a' and a^3, the chambers a^3 and a^4 communicating with each other and intersecting the necks a' and a^2, and the hollow neck a for attachment of the gas-supply and in communication with the chamber a^3, in combination with adjustable valves in the necks a' and a^2, and an air and gas mixer at the end of the hollow neck a', substantially as and for the purposes described.

4. In a valve for gas-heaters, the valve-case formed with longitudinally-bored necks a, a', a^2, and the communicating valve-chambers a^3, a^4, and provided with the controlling-cock having a threaded stem engaging threads in the neck a^2 and controlling the opening between the two valve-chambers, and the regulating-valve fitting in the neck a', said regulating-valve projecting through the valve-case and threaded therein, substantially as and for the purposes described.

5. A valve for gas-heaters, consisting of the valve-case formed with a neck for a controlling-cock, a neck for a regulating-valve parallel thereto, two communicating valve-chambers, one of which intersects the bore of the controlling-cock neck and the other the bore of the regulating-valve neck, a gas-supply neck at an angle to the other necks and communicating with one of the valve-chambers, a screw-threaded controlling cock fitting screw-threads in the controlling-neck and controlling the communication between the two valve-chambers, a regulating-valve fitting in its neck and projecting through the valve-case in which it is threaded, an air and gas mixing chamber into one end of which the end of the regulating-valve neck projects, and an air-regulating-valve disk threaded upon the neck of the regulating-valve between the valve-case and the adjacent end of the mixing-chamber, substantially as and for the purposes described.

608,975. CUSHION-STOP FOR NIGGER-BARS. HERMANN G. DITTENHEBER, Minneapolis, Minn., assignor to Henry H. Smith, same place. Filed Oct. 26, 1897. Serial No. 656,411. (No model.)

Claim.—1. A cushion-stop for nigger-bars, comprising forward and rear stops between which the bar travels, and a single yielding device connected with said stops whereby said device is compressed by a blow of the bar when near the limit of its stroke in either direction, substantially as described.



2. A cushion-stop for nigger-bars, comprising forward and rear stops between which the bar travels, yielding mechanism provided at one end of the device and connected with said stops and whereby said mechanism is compressed by a blow of the bar when near the limit of its stroke in either direction, substantially as described.

3. A cushion-stop for nigger-bars, comprising the forward and rear stops, the yielding mechanism provided at one end of the device and adapted to be compressed by a blow of the bar when near the limit of its stroke in either direction, and said forward stops being interchangeable, for the purpose set forth.

4. In a device of the class described, the combination, with the fixed parts or guides, the rear stop connecting said guides, the forward stops, means connecting said forward and rear stops, and the yielding mechanism arranged to take up the force of the blow of the bar upon said stops at both the forward and backward limit of its stroke, substantially as described.

5. In a device of the class described, the combination, with the guides, of the forward and rear stops supported thereby and comprising the plates 13 and 18, the yielding mechanism arranged near said plate 18, means supporting said yielding mechanism and connecting said plates 13 and 18, and means for loosely connecting the outer ends of said plates to said guides, for the purpose set forth.

6. The combination, in a device of the class described, of the guides 6 having the longitudinal walls 11 and 12, and the lateral projections 10′, the plates 13 forming the forward stops, means for loosely securing the outer ends of the same to said guides, the rear stop connecting said guides, the bolts 17, the springs carried thereby, and the holes in said plates 13 to receive said bolts, being considerably larger than the diameter of the same, substantially as described.

7. In a device of the class described, the combination, with the guides, having the parallel walls 11 and 12, the stops arranged at the opposite ends of said walls, the bolts connecting said stops, and passing between said walls, the springs carried by said bolts, and arranged to bear upon the outer surface of said rear stop, and means for securing said springs upon said bolts, substantially as described.

8. The combination, in a device of the class described, of the guides 6, having the walls 11 and 12, the plates 13 and 18 forming the forward and rear stops, the bolts connecting the same, the yielding mechanism carried thereby, the projections 10′, forming guides for said plates 13, and the forward ends of said walls 11 and 12, being beveled, for the purpose set forth.

9. A cushion-stop for nigger-bars, comprising adjustable forward stops projecting into the path of the bar, a rear stop between which and said forward stops the bar travels, yielding mechanism connected with said stops to be compressed by a blow of said bar upon the rear stop and to be similarly compressed in the opposite direction by a blow upon said forward stops, substantially as described.

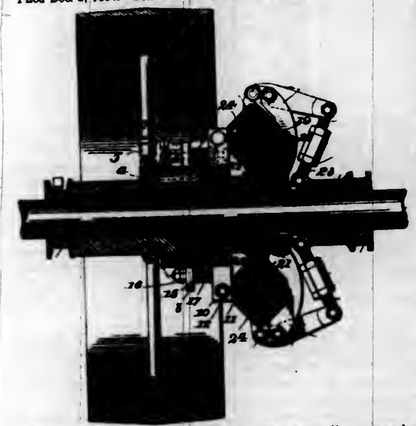
608,976. SPINDLE-BEARING. GEORGE O. DRAPER, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed May 22, 1897. Serial No. 637,706. (No model.)

Claim.—A bolster-case, a bolster located therein and tapered internally, said bolster being provided at its lower end with a screw-thread and a notch, means to restrain the free rotation of said bolster in said bolster-case yet permitting said bolster to be withdrawn and turned partially around to compensate when desired for wear of the bolster, combined with a step having a screw-thread engaging loosely the screw-thread at the lower end of the bolster, and a spring interposed between a collar at the lower end of said step and the lower end of said bolster, said spring engaging at its opposite ends the said collar and said bolster, such construction enabling the same bolster and step to be used with a spindle turning either right or left, substantially as described.

608,976.



608,977. FRICTION-CLUTCH. WILLIAM J. ELLIOTT, Wilmington, Del., assignor of one-half to V. C. Walker and R. T. Elliott, same place. Filed Dec. 3, 1897. Serial No. 660,702. (No model.)



Claim.—1. In combination with a shaft and a pulley, a number of arms pivotally mounted on the pulley, a spring engaging each arm, quadrant extensions located on each arm, blocks carried by said extensions, a collar attached to the shaft, said collar having a circumferential friction-surface, levers fulcrumed to said collar, said levers having at their ends friction-surfaces, a suitable means for operating the levers and causing the friction-surfaces located thereon to impinge the blocks against the friction-surface of the collar.

2. In combination with a pulley and a shaft, a friction-clutch consisting of arms pivotally attached to the pulley, said arms having shanks extending at an angle, springs bearing at one end against the shanks and at the opposite end against a stationary point, quadrant extensions located on said arms, blocks carried by said extensions, a collar fixed to the shaft, said collar having a circumferential friction-surface, levers fulcrumed to said collar, said levers having at their ends friction-surfaces, a suitable means for operating said levers and causing the friction-surfaces thereof to impinge the blocks against the circumferential friction-surface of the collar.

3. In combination with a pulley and a shaft, a friction-clutch consisting of a collar attached to the hub of the pulley, arms pivotally connected to said collar, springs bearing against said arms and retaining them in their normal positions, quadrant extensions located on said arms, blocks carried by said extensions, a collar fixed to the shaft, said collar having a circumferential friction-surface, levers fulcrumed to said collar, said levers having at their ends friction-surfaces, a suitable means for operating the said levers and causing the friction-surfaces thereof to impinge the blocks against the circumferential friction-surface of the collar attached to the shaft.

4. In combination with a pulley and a shaft, a friction-clutch consisting of a collar adapted to be secured to the hub of the pulley, a means for laterally adjusting the position of said collar, arms pivotally attached to said collar, springs bearing against said arms and retaining them in their normal positions, quadrant extensions located on said arms, friction-blocks carried by said extensions, a collar fixed to the shaft, said collar having a circumferential friction-surface, levers fulcrumed to said collar, said levers having at their ends friction-surfaces, means for operating the levers and causing the friction-surfaces carried thereby to impinge the blocks against the circumferential friction-surface of the collar attached to the shaft.

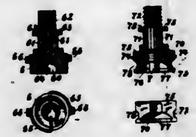
5. In combination with a pulley and a shaft, a friction-clutch consisting of a collar attached to the hub of the pulley, arms pivotally attached to said collar, pins passing through perforations of the arms and through perforations located on the hub, coil-springs surrounding said pins and bearing at one end against a stationary point and at the other end against the arms, quadrant extensions carried by said arms, blocks carried by said extensions, a collar fixed to the shaft, said collar having a circumferential friction-surface, levers fulcrumed to said collar, said levers having friction-surfaces, a suitable means for operating the levers and causing the friction-surfaces carried thereby to impinge the blocks against the circumferential friction-surface of the collar attached to the shaft.

6. In combination with a shaft and a pulley, a friction-clutch consisting of a collar attached to the hub of the pulley, arms pivotally attached to said collar, pins passing through perforations of said arms and through perforated lugs supported by the hub, nuts located behind said lugs and adapted to regulate the length of the pins, coil-springs surrounding the pins and bearing at one end against the arms and at the other end against a stationary point, quadrant extensions located on said arms, blocks carried by said extensions, a collar fixed to the shaft, said collar having a circumferential friction-surface, levers pivoted to said collar, having friction-surfaces, a suitable means for operating the levers and adapted to cause the friction-surfaces carried thereby to impinge the blocks against the circumferential friction surface of the collar attached to the shaft.

7. In combination with a shaft and a pulley, a friction-clutch consisting of arms attached to the pulley, friction-blocks carried by said arms, said friction-blocks being substantially V-shaped at their upper and lower ends a collar fixed to the shaft, said collar having a circumferential V-shaped friction-surface, levers fulcrumed to said collar, said levers having V-shaped friction-surfaces, a suitable means for operating the levers and causing the friction-surfaces thereof to impinge the blocks against the circumferential friction-surface of the fixed collar.

8. In combination with a shaft and a pulley, a friction-clutch consisting of arms attached to the pulley, friction-blocks located on said arms, a collar fixed to the shaft, said collar having a circumferential friction-surface, and an annular perpendicular wall, levers fulcrumed to said collar, said levers having friction-surfaces, said friction-surfaces extending to the inner face of the wall of the fixed collar, a suitable means for operating the levers and causing the friction-surfaces carried thereby to impinge the blocks against the circumferential friction-surface of the fixed collar.

608,978. MACHINE FOR ATTACHING GLOVE-FASTENERS TO GARMENTS. ELISHA FLAGG, New York, N. Y., assignor to the Flagg Brothers Company, same place. Filed Apr. 14, 1897. Serial No. 632,054. (No model.)



Claim.—1. In a machine for attaching fasteners to garments, a holding device comprising a head 6, and springs 65, the head containing a cavity 60 and holes 64, and the springs extending through the holes 64 into the cavity 60, substantially as described.

2. In a machine for attaching fasteners to garments, a holding device composed of the head 6, and springs 65, and a stem having the flat faces 61 and screw-threaded section 62 and shoulder 63, the head having in it the cavity 60 and holes 64, and the springs being fastened to the exterior of the head and extending through the holes 64 into the cavity 60, substantially as described.

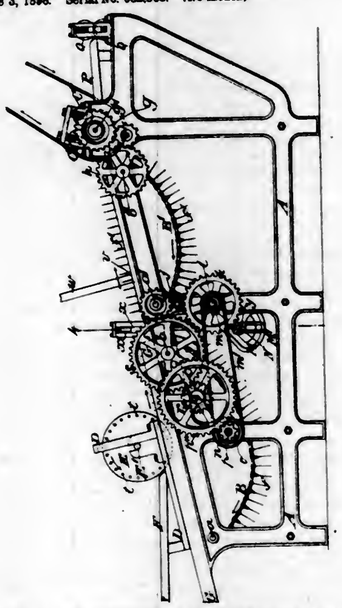
3. In a machine for attaching fasteners to garments, a holding device comprising the driver 7, blocks 75, and a spring, the blocks being mounted on the driver, and the cavities 76 of the blocks forming a chamber whose wall conforms to the face of a socket member of a fastener, and a part of the driver being within the chamber, and

of a proper size and length to enter the socket and make contact with the head of the rivet or back of the socket, and the spring acting on the blocks and tending to force them toward each other, substantially as described.

4. In a machine for attaching fasteners to garments, a holding device comprising the driver 7, the pin 74, the blocks 75, and a spring, the blocks being on the pin 74 and containing cavities 76, and the spring being adapted to force the blocks toward each other, substantially as described.

5. In a machine for attaching fasteners to garments, a holding device comprising the driver 7, section 70, pin 74, blocks 75, spring 79, and the stem having the flat faces 71 and screw-threaded section 72 and shoulder 73, the blocks being on the pin and in contact with the section 70 and containing cavities 76, substantially as described.

608,979. HACKLING-MACHINE. JOHN GOOD, New York, N. Y., assignor to Julia E. Good, same place. Filed Nov. 17, 1896. Renewed June 3, 1898. Serial No. 682,503. (No model.)



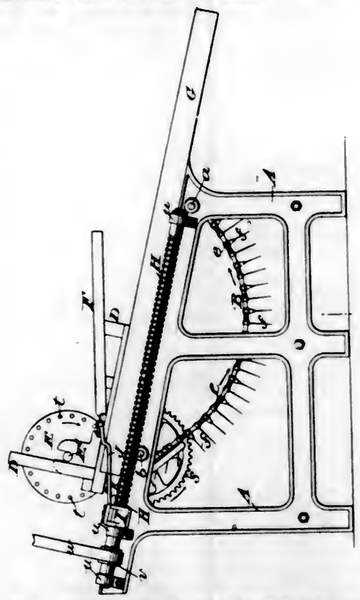
Claim.—1. The combination of two tables arranged one before the other and each comprising bars armed with pins, means for moving the said tables both in one direction but at different speeds, a feed-board arranged over the slower-moving table, and means for moving the said feed-board back and forth over the latter table for depositing fibers downward upon the pins of the slower-moving table, substantially as herein described.

2. The combination of two tables arranged one before the other and each comprising bars armed with pins, means for moving the said tables both in one direction but at different speeds, a fiber-feeding carriage and means for moving the said carriage back and forth over the slower-moving table toward and from the faster-moving table at a speed greater than that of the slower-moving table but less than that of the faster-moving table, substantially as herein described.

3. The combination of two tables arranged one before the other and each comprising bars armed with pins, means for moving the said tables both in one direction but at different speeds, a beating-bar arranged over the space between said tables, and means for giving a reciprocating motion to said bar for the purpose of pressing down the fibers on their way from one of said tables to the other, substantially as herein described.

4. The combination of two tables arranged one before the other and each comprising bars armed with pins, means for moving the said tables both in one direction but at different speeds, a fiber-feeding carriage, means for moving the said carriage back and forth over the slower-moving table toward and from the faster moving table at a speed greater than that of the slower-moving table but less than that of the faster-moving table, and a beating-bar arranged and operating between the said tables, substantially as herein described.

608,980. HACKLING-MACHINE. JOHN GOOD, New York, N. Y., assignor to Julia E. Good, same place. Filed Nov. 17, 1896. Renewed June 3, 1898. Serial No. 682,504. (No model.)



Claim.—1. The combination of a table comprising bars armed with pins, a fiber-feeding carriage, means for moving the said table in one direction, and means for moving the said carriage back and forth over said table substantially as described for the purpose of producing a downward deposit of fibers on said table.

2. The combination of a table comprising bars armed with pins, means for moving the said table in one direction, a fiber-feeding carriage, and means for moving said carriage back and forth over said table parallel with the movement of the latter at a speed greater than that of the movement of the table for depositing the fibers in lapping layers one layer upon another on said table, substantially as herein set forth.

3. The combination of a table comprising bars armed with pins and means for moving the said table in one direction, a carriage and means for moving the same back and forth over said table parallel with the movement of the latter, and a feed-board and a reel on said carriage, substantially as herein described.

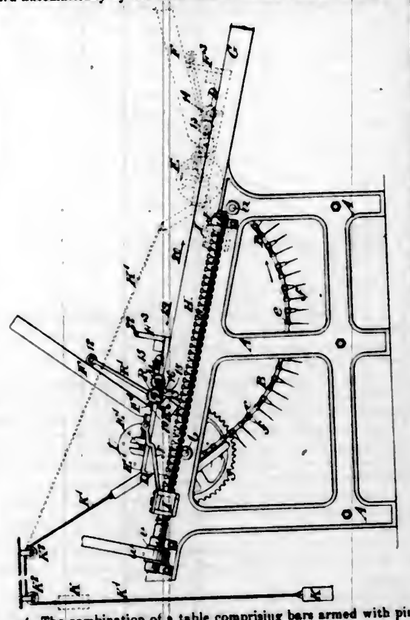
4. The combination of a table comprising bars armed with pins and means for moving the said table in one direction, a fiber-feeding carriage and means for moving the same back and forth over said table parallel therewith, stationary ways for the support and guidance of said carriage, a right and left hand threaded endless screw arranged parallel with said ways and means for producing the rotation of said screw, a switch-nut on said screw, and a connection between said nut and said carriage, substantially as herein described.

608,981. FEEDING APPARATUS FOR MACHINERY FOR PREPARING FIBROUS MATERIALS. JOHN GOOD, New York, N. Y., assignor to Julia E. Good, same place. Filed Jan. 19, 1897. Renewed June 3, 1898. Serial No. 682,505. (No model.)

Claim.—1. The combination of a table comprising bars armed with pins, means for moving said table in one direction, a carriage and means for moving the same back and forth over said table, a tilting feed-board on said carriage, and means for tilting said feed-board, substantially as herein described.

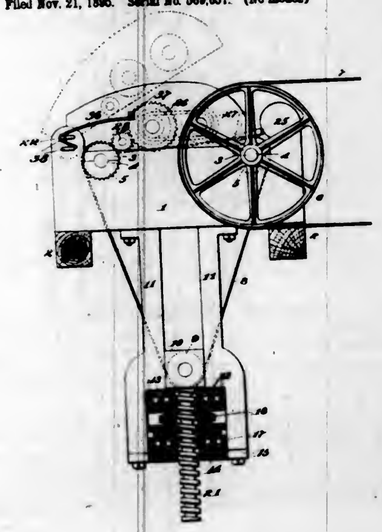
2. The combination of a table comprising bars armed with pins, means for moving said table in one direction, a carriage and means for moving the same back and forth over said table, a reel on said carriage, a tilting feed-board on said carriage in rear of said reel, and means for tilting said feed-board, substantially as herein described.

3. The combination substantially as herein set forth of a table comprising bars armed with pins, means for moving said table in one direction, a carriage and means for moving the same back and forth over said table, a tilting feed-board pivoted at its front end to said carriage, and means substantially as herein described for tilting said board automatically by the backward movement of the carriage.



4. The combination of a table comprising bars armed with pins and means for moving the said table in one direction, a carriage and means for moving the same back and forth over said table, a tilting feed-board pivoted at its front end to said carriage, a rock-shaft on said carriage for tilting the rear end of said feed-board, a gear on said rock-shaft, a stud on said carriage, a loose gear on said stud gearing with said gear on the rock-shaft, a loose swinging tappet on said stud for turning said loose gear in one direction, and a fixed stop for actuating said tappet to produce the tilting of the feed-board during the backward movement only of the carriage, all substantially as herein described.

608,982. COTTON-PRESS. JOHN W. GRAVES, Little Rock, Ark. Filed Nov. 21, 1895. Serial No. 569,657. (No model.)



Claim.—1. In a cotton-press, the combination of two baling-rolls arranged close together, a belt a portion of which is in contact or nearly so with one of said baling-rolls but is out of contact with the other baling-roll, whereby cotton in the shape of a continuous sheet or bat may be passed beneath the latter baling-roll into the space formed between said baling-rolls and belt for the accumulation thereof into a bale, said belt being movable away from said baling-rolls as the bale enlarges, and means for supporting the belt so that a bight may be formed, substantially as set forth.

2. In a cotton-press, the combination of a base, two rollers mounted in said base, an endless belt passing over said rollers, a tension-roller in said belt, means for resisting the movement upward of said tension-roller, and two or more baling-rolls arranged normally adjacent to and above said belt but movable away from the same, substantially as set forth.

3. In a cotton-press, the combination of a base, two rollers mounted in said base, an endless belt passing over said rollers, a swinging frame mounted over said base, two baling-rolls carried in said swinging frame and adjacent to said belt, and a compression-roller mounted in said frame adjacent to said baling-rolls and normally forcing said belt against one of said rollers and away from one of said baling-rolls, whereby when said frame is swung upward to release the pressure on the bale, the said compression-roller will be withdrawn from contact with the belt, substantially as set forth.

4. In a cotton-press, the combination of a base, two rollers mounted in said base, an endless belt passing over said rollers, two baling-rolls mounted adjacent to and above said belt, and a compression-roller adjacent to said baling-rolls for forcing said belt against one of said rollers and away from one of said baling-rolls, substantially as set forth.

5. In a cotton-press, the combination of a base, two rollers mounted in said base, an endless belt passing over said rollers, two baling-rolls mounted adjacent to and above said belt, a compression-roller adjacent to said baling-rolls for forcing said belt against one of said rollers and away from one of said baling rolls, means for driving said belt, connections between said belt and said compression-roller for driving the latter, and connections between said compression-roller and said baling-rolls for driving said baling-rolls, substantially as set forth.

6. In a cotton-press, the combination of means for winding a continuous sheet or bat of cotton into a cylindrical bale, and a pressure device cooperating therewith for applying pressure to said bale, comprising a nut and a screw engaging said nut for revolving the latter, substantially as set forth.

7. In a cotton-press, the combination of means for winding a continuous sheet or bat of cotton into a cylindrical bale, and a pressure device cooperating therewith for applying pressure to said bale, comprising a nut, a screw engaging said nut for revolving the latter, and means for resisting the revolution of said nut, substantially as set forth.

8. In a cotton-press, the combination of means for winding a continuous sheet or bat of cotton into a cylindrical bale, and a pressure device cooperating therewith for applying pressure to said bale, comprising a nut, a screw engaging said nut for revolving the latter, and a friction-brake for resisting the revolution of said nut, substantially as set forth.

9. In a cotton-press, the combination of means for winding a continuous sheet or bat of cotton into a cylindrical bale, and a pressure device cooperating therewith for applying pressure to said bail, comprising a nut, a series of balls forming a bearing for the same, and a screw engaging said nut for revolving the latter, substantially as set forth.

10. In a cotton-press, the combination of means for winding a continuous sheet or bat or cotton into a cylindrical bale, and a pressure device cooperating therewith for applying pressure to said bail, comprising two stationary plates, a nut revolubly mounted between said plates, balls between said nut and said plates, and a screw engaging said nut for revolving the latter, substantially as set forth.

11. In a cotton-press, the combination of means for winding a continuous sheet or bat of cotton into a cylindrical bale, and a pressure device cooperating therewith for applying pressure to said bale comprising a plurality of nuts connected together and operating simultaneously, and screws engaging said nuts for revolving the same, substantially as set forth.

12. In a cotton-press, the combination of means for winding a continuous sheet or bat of cotton into a cylindrical bale, a pressure device cooperating therewith for applying pressure to said bale comprising a nut and a screw engaging said nut for revolving the nut, and independent means for reversing the rotation of said nut for releasing the pressure, substantially as set forth.

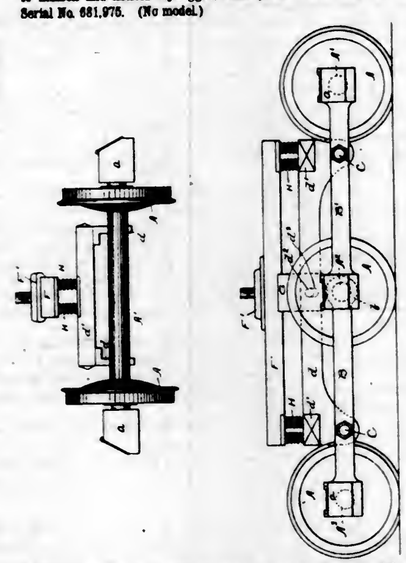
13. In a cotton-press, the combination of a base, two rollers mounted in said base, an endless belt passing over said rollers for effecting pressure on the bale, a tension-roller in said belt carried in movable bearing-blocks, a screw connected rigidly with each bearing-

block, and a nut on said screw for resisting the upward movement of said tension-roller, substantially as set forth.

14. In a cotton-press, the combination of a base, two rollers mounted in said base, an endless belt passing over said rollers for effecting pressure on the bale, a tension-roller in said belt carried in movable bearing-blocks, a screw connected rigidly with each bearing-block, a nut on said screw for resisting the upward movement of said tension-roller, and means for reversing the rotation of said nuts for ejecting the finished bale, substantially as set forth.

15. In a cotton-press, the combination of a base, two rollers mounted in said base, an endless belt passing over said rollers for effecting pressure on the bale, a tension-roller in said belt carried in movable bearing-blocks, a screw connected rigidly with each bearing-block, nuts on said screws for resisting the upward movement of said tension-roller, and connections between said nuts for revolving them simultaneously, substantially as set forth.

608,983. **CAR-TRUCK.** WILLIAM HARDER, Chicago, Ill., assignor to himself and Arnold Nydegger, same place. Filed May 28, 1898. Serial No. 681,975. (No model.)



Claim.—1. In a six-wheel car-truck, the combination with the three axles with side frames or bars hinged or jointed together at the middle axle, and a supplemental frame resting upon the pairs of jointed side bars, substantially as specified.

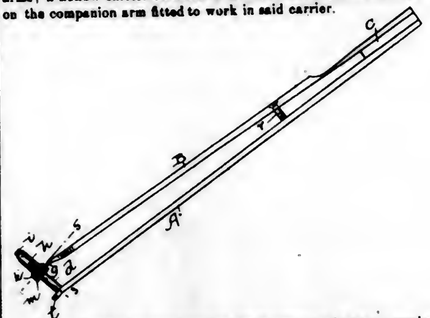
2. In a six-wheel car-truck, the combination with the three axles with side frames or bars hinged or jointed together at the middle axle, a supplemental frame resting upon the pairs of jointed side bars, a center bar resting on the supplemental frame, and springs interposed between the center bar and said supplemental frame, substantially as specified.

3. In a six-wheel car-truck, the combination with the three axles with side frames or bars hinged or jointed together at the middle axle, a supplemental frame resting upon the pairs of jointed side bars, a center bar resting on the supplemental frame, springs interposed between the center bar and said supplemental frame, and a center block attached to said center bar and connected to the supplemental frame by a slotted connection to permit the supplemental frame to move up and down independent of the center bar and the car-body or load resting thereon, substantially as specified.

4. The combination in a six-wheel car-truck, of the three axles with side bars B B' B B' having a pivotal connection with the middle axle, cross-bars C C connecting the side bars B B and B' B', a supplemental frame D having side bars *d d* fitting inside the wheels, and cross-bars *d' d'*, center bar F, center block G, and springs H, substantially as specified.

608,984. **DENTAL PLUGGER.** WINFIELD R. HARRON, Boston, Mass., assignor of one-half to Otis M. Shaw, same place. Filed Oct. 26, 1897. Serial No. 656,630. (No model.)

Claim.—1. A dental tool comprising two arms movable in relation to each other; a way formed on the free end of one of said arms; a hollow carrier mounted to move on said way, and a plugger on the companion arm fitted to work in said carrier.



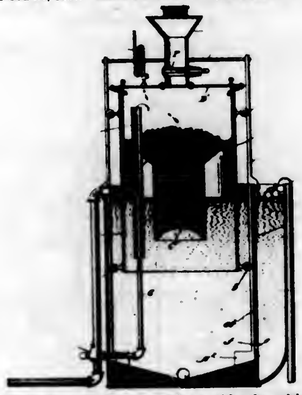
2. A dental tool comprising two spring-separated arms; a carrier on one side of said arms; and a plugger on the companion arm, said plugger being grooved adjacent its free end to form a head, and fitted to work in said carrier.

3. In a dental tool the combination of two spring-separated arms; a carrier for the filling; a way on the free end of one of said arms on which said carrier is fitted to traverse and vibrate; a plugger rigid on the companion arm, and fitted to work in said carrier, said plugger having a head adapted to be projected beyond the mouth of the carrier when said arms are compressed, and a stop limiting the spring-actuated movement of said arms substantially as described.

4. In a dental tool the spring-separated arms, A, B, provided respectively with the offset portions, *f*, *g*, at their free ends in combination with a hollow carrier fitted to move laterally on the offset portion of one arm, and a plugger mounted on the offset portion of the companion arm and fitted to work in said carrier substantially as described.

5. In a dental tool the spring-tensioned arms, A, B, provided respectively with the offset portions, *f*, *g*, the portion, *g*, being slotted to form a way, in combination with the cylindrical carrier, *h*, mounted to slide in the arms of said way; the plugger, *d*, rigidly mounted on the offset, *f*, and fitted to work in and project from said carrier; and the adjustable stop, *r*, limiting the movement of said arms in one direction all being arranged to operate substantially as specified.

608,985. **APPARATUS FOR PRODUCING ACETYLENE GAS.** THOMAS HENNESSY, Excelsior Springs, Mo. Filed Sept. 25, 1896. Renewed Oct. 27, 1897. Serial No. 656,581. (No model.)



Claim.—1. In a gas apparatus, the combination with a main liquid-containing chamber having a supply-tank connected thereto to automatically supply the same with water, of a float-valve automatically controlling the supply of water to said tank, a vertically-movable gas-holder moving on guides within the water chamber, a perforated receptacle or basket having its upper part adapted to fit snugly in the gas-holder while its lower part is contracted and provided with inclined lateral walls through which the generated gas passes, a hopper located on the gas-holder and controlled by a slide-valve, a vertical pipe rigidly connected to the perforated receptacle, an outlet-pipe telescoping the vertical pipe, and landing-stones at the base of the main receptacle upon which the vertically-movable gas-holder rests when the device is inoperative.

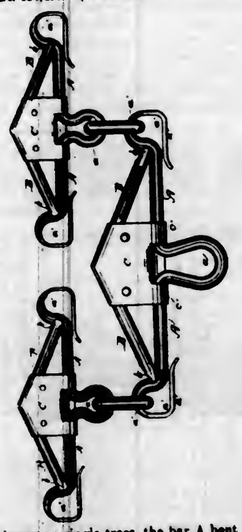
2. In a gas apparatus, the combination with a main liquid-containing chamber having a supply-tank connected thereto to automatically supply the same with water, of a float-valve automatically controlling the supply of water to the said tank, a vertically-movable gas-holder moving on guides within the water-chamber, a perforated receptacle or basket located in the gas-chamber, said basket being provided with inclined lateral walls through which the generated gas passes, a hopper located on the gas-holder for charging the basket, a vertical pipe rigidly connected to the perforated receptacle, an outlet-pipe telescoping the vertical pipe, a scrubber, and a purifying-chamber connected with said scrubber.

608,986. **DUPLEX CLOTHES-PIN.** JACOB R. HOFF, Des Moines, Iowa, assignor to the Hoff Specialty Company, same place. Filed May 19, 1897. Serial No. 637,274. (No model.)



Claim.—A duplex clothes-pin, consisting of a single length of wire bent to form a loop 10 of a single convolution at its center and branches 11, 12 tangential to said loop and extending in opposite directions, which branches are spaced apart at the point of tangency, the wire being kinked or offset at 13, 14 to parallel the lines of direction of the branches from the central loop, thus positioning the said loop obliquely relative to the branches, whereby the completed pin is free to oscillate on a plane transversely of the line on which it is used and removable and replaceable relative thereto, and spiral clamps of a plurality of convolutions formed at the ends of the branches, the loop 10 normally being out of line with the spiral clamps, the clamps being spread between the convolutions thereof.

608,987. **WHIFFLETREE.** JOHN W. HYDE, Bankston, Ala., assignor of one-half to William F. Lawley, same place. Filed May 21, 1897. Serial No. 637,493. (No model.)

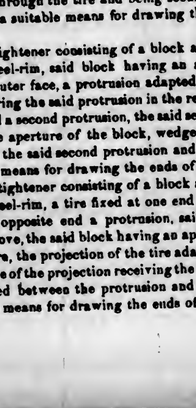


Claim.—In breast or single trees, the bar A bent rearwardly at the middle to form the clevis *a* and forwardly bent at the ends to form the trace-hooks *a'*, the said hooks being elongated, made elastic and carried back to rest on or nearly on the said bar A, as shown and described.

608,988. **FILLING-CARRIER OR COP-SKEWER FOR LOOM-SHUTTLES.** CHARLES A. LITTLEFIELD, Lowell, Mass., assignor to the Draper Company, Portland, Me., and Hopedale, Mass. Filed Mar. 7, 1898. Serial No. 672,899. (No model.)

Claim.—1. A filling-carrier having a head provided with resilient metallic arms, and annular ribs surrounding and supported by the arms.

2. A filling-carrier having a head provided with resilient transversely concaved and notched metallic arms, and surrounding annular ribs seated in said notches.



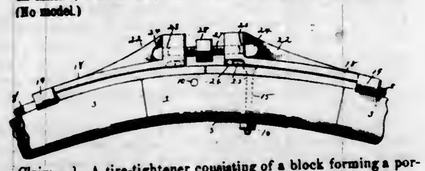
3. A filling-carrier having a head provided with resilient metallic arms having seats therein, and split rings surrounding said arms and held in the seats thereof.

4. A filling-carrier comprising a blade, a head having one or more attaching projections, resilient metallic arms forming a part of the head, and ribs supported by the arms.

5. A filling-carrier comprising a blade, a sheet-metal head apertured to receive the blade and provided with adjustable attaching lips or projections, integral resilient arms, and annular metallic ribs surrounding and supported by the arms.

6. A sheet-metal head for filling-carriers, having an apertured base provided with one or more attaching projections, bent resilient arms at the edge of the base and annular ribs supported by the arms.

608,989. **DEVICE FOR TIGHTENING TIRES.** LEONARDO M. MARSH, Warrensburg, Mo. Filed Jan. 3, 1898. Serial No. 665,408. (No model.)



Claim.—1. A tire-tightener consisting of a block forming a portion of the wheel-rim, a tire fixed at one end to said block, said block having an aperture, the opposite end of the tire having a projection adapted to enter said aperture, wedges adapted to be interposed between said projection and a wall of the aperture, and a suitable means for drawing the ends of the tire together.

2. A tire-tightener consisting of a block adapted to form a portion of the wheel-rim, said block having an aperture, a tire fixed at one end to the said block, the said tire having at its opposite end a protrusion adapted to enter the aperture of the block, wedges adapted to be interposed between said protrusion and a wall of the aperture, a bolt passing through the tire and being secured at its inner end to the block, and a suitable means for drawing the ends of the tire together.

3. A tire-tightener consisting of a block adapted to form a portion of the wheel-rim, said block having an aperture, and a recess located in its outer face, a protrusion adapted to enter said recess, a means for securing the said protrusion in the recess, the tire having at its opposite end a second protrusion, the said second protrusion adapted to enter the aperture of the block, wedges adapted to be interposed between the said second protrusion and a wall of the aperture and a suitable means for drawing the ends of the tire together.

4. A tire-tightener consisting of a block adapted to form a portion of the wheel-rim, a tire fixed at one end to said block, said tire having at its opposite end a protrusion, said protrusion having a horizontal groove, the said block having an aperture, a flange located in said aperture, the projection of the tire adapted to enter said aperture, the groove of the projection receiving the flange, wedges adapted to be interposed between the protrusion and a wall of the aperture and a suitable means for drawing the ends of the tire together.

5. A device for tightening tires consisting of a block having an aperture, a tire fixed at one end to said block, the opposite end of the tire having a protrusion, adapted to enter the aperture of the block, said protrusion having a horizontal groove, a flange located in the aperture of the block, said flange extending nearly the entire length of the aperture, the groove of the protrusion adapted to receive the said flange, wedges adapted to be interposed between the protrusion and a wall of the aperture and a suitable means for drawing the ends of the tire together..

6. A device for tightening tires consisting of a block adapted to form a portion of the wheel-rim, said block having an aperture, a tire fixed at one end to said block and having at its opposite end a projection, said projection adapted to enter the aperture of the block, wedges adapted to be interposed between the said projection and a wall of the aperture, a removable perforated plate closing one end of the aperture, a bolt passing through the tire and through the perforation in said plate and being secured at its inner end to said plate, and a suitable means for drawing the ends of the tire together.

7. A device for tightening tires consisting of a block adapted to form a portion of the wheel-rim, said block having an aperture, a tire fixed at one end to said block, and having at its opposite end a protrusion adapted to enter said aperture, wedges adapted to be interposed between said protrusion and a wall of the aperture, a removable plate having an elongated perforation, said plate adapted to close one end of the aperture, a bolt passing through the tire and through the elongated perforation of the plate, said bolt being secured at its inner end to the plate and a suitable means for drawing the ends of the tire together.

8. A device for tightening tires consisting of a block adapted to form a portion of the wheel-rim, said block having an aperture, a tire fixed at one end to said block and having at its opposite end a protrusion adapted to enter the aperture of the block, the said protrusion having a horizontal groove, a horizontal flange located in the aperture and adapted to enter the groove of the protrusion, wedges adapted to be interposed between the protrusion and a wall of the aperture, said wedges having at their lower ends cut-out sections and thus adapted to pass beyond the flange located in the aperture and a suitable means for drawing the ends of the tire together.

9. A device for tightening tires consisting of a block forming a portion of the wheel-rim, a tire attached at its ends to said block, a means for drawing the ends of the tire together, consisting of clamps, each said clamp having a lug adapted to come in contact with one edge of the tire and an eccentric adapted to come in contact with the opposite edge of the tire and a suitable means for drawing said clamps together.

10. A device for tightening tires consisting of a block forming a portion of the wheel-rim, a tire attached at its ends to said block, means for drawing the ends of the tire together consisting of clamps adapted to grasp the tire, said clamps having at their ends threaded perforations, a threaded bolt adapted to enter said perforations and a suitable means for turning said bolt and thus drawing the clamps together.

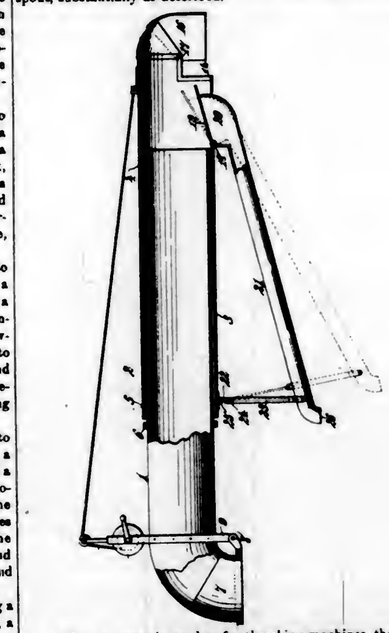
11. A device for tightening tires consisting of a block adapted to form a portion of the wheel-rim, a tire attached at its ends to said block, a means for drawing the ends of the tire together consisting of clamps adapted to grasp the tire, said clamps having at their ends threaded perforations, perpendicular webs extending longitudinally of the clamps, a threaded bolt adapted to enter the threaded perforations of the clamps and a suitable means for turning said bolt and thus bringing the clamps together.

12. A device for tightening tires consisting of a block adapted to form a portion of the wheel-rim, a tire attached at its ends to said block, a means for drawing the ends of the tire together consisting of clamps adapted to grasp the tire, said clamps having at their ends internally-threaded perforations, perpendicular webs extending longitudinally of the clamps, said webs having behind the perforations openings, a threaded bolt adapted to enter the threaded perforations of the clamps and a means for turning said bolt and thus bringing the ends of the clamps together.

13. A device for tightening tires consisting of a block adapted to form a portion of the wheel-rim, the tire attached at its ends to said block, a means for drawing the ends of the tire together, said means consisting of clamps adapted to grasp the tire, antifrictional devices interposed between the tire and the clamps and a suitable means for drawing the clamps together.

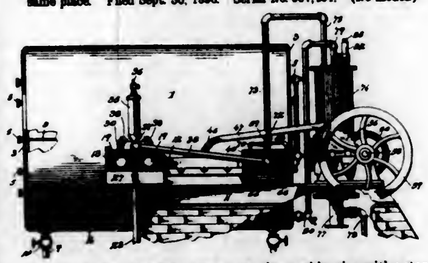
608,990. ATTACHMENT FOR PNEUMATIC STACKERS. JOHN B. MCCUTCHEON, Battle Creek, Mich. Filed Dec. 23, 1896. Renewed June 29, 1898. Serial No. 684,759. (No model.)

Claim.—1. In a pneumatic stacker for threshing machines, the combination with a straw-chute having an outlet in the under side of its outer end, of an adjustable grain-spout having an enlarged inlet end in communication with the said chute outlet and hinged to the rear side thereof, and a series of fingers hinged at the same point as the adjustable grain-spout and extended across the inlet to the said spout, substantially as described.



2. In a pneumatic stacker for threshing-machines, the combination of a telescopic straw-chute having an outlet in the under side of its outer end, an adjustable grain-spout having its inlet end in communication with the chute-outlet and hinged thereto, a series of fingers hinged at the same point as the grain-spout and extended across its inlet, and adjustable connections between the rear portions of the straw-chute and said grain-spout, substantially as described.

608,991. PUMPING APPARATUS FOR WATER-DISTRIBUTING SYSTEMS. ELIJAH NEFF, Milford, Ind., assignor to Edwin W. Higbee, same place. Filed Sept. 30, 1896. Serial No. 607,461. (No model.)



Claim.—1. In a pumping apparatus, the combination with a storage-tank, of a water-cylinder having valved water inlet and outlet connections therewith, an air-cylinder arranged in alinement with the water-cylinder and having an interior annular distributing-chamber, delivery-pipe connections between said delivery-chamber and the storage-tank, a water-discharge connection between the water-cylinder and said distributing-chamber of the air-cylinder, a suitably-operated piston rod carrying at its opposite ends piston-heads respectively working in the two cylinders, and suitable air-supply-pipe connections between the air-cylinder and said water-discharge pipe, substantially as set forth.

2. In a pumping apparatus, the combination with a storage-tank, of a water-cylinder having valved water inlet and outlet connections therewith, an air-cylinder arranged in alinement with the water-cylinder and having interior separated air and distributing chambers, a water-discharge-pipe connection between the water-cylinder and the distributing-chamber of the air-cylinder, a delivery-pipe connection with the delivery-chamber of the air-cylinder, a suitably operated piston rod carrying at its opposite ends piston-heads respectively working in the two cylinders, and air-supply-pipe connections between the interior air-chamber of the air-cylinder and the water-discharge pipe, substantially as set forth.

3. In a pumping apparatus, the combination with a storage-tank, of a water-pumping cylinder having water inlet and discharge pipe connections therewith, an air-cylinder having interior separated air and distributing chambers, the latter of which is in communication with the discharge-pipe of the water-cylinder, a delivery-pipe connection with the delivery-chamber of the air-cylinder, a reciprocating piston-rod carrying oppositely-located piston-heads respectively working in the two cylinders, and valved air-supply-pipe connections between the interior air-chamber of the air-cylinder and the water-discharge pipe, substantially as set forth.

4. In a pumping apparatus, the combination with a storage-tank, of a water-pumping cylinder having water inlet and discharge pipe connections therewith, an air-cylinder having interior separated air and distributing chambers, the latter of which is in communication with the discharge-pipe of the water-cylinder, a delivery-pipe connection with the delivery-chamber of the air-cylinder, a reciprocating piston-rod carrying oppositely-located piston-heads respectively working in the two cylinders and having a sliding cross-head connection between the cylinders, suitably-arranged power-gearing having a pitman connection with the cross-head connection of the piston-rod, and valved air-supply-pipe connections between the interior air-chamber of the air-cylinder and the water-discharge pipe, substantially as set forth.

5. In a pumping apparatus, the combination with the water-discharge pipe of a water-pumping device, of an air-pump comprising an inner air-cylinder having air inlets and outlets, a piston working in said cylinder, and a combined water and air distributing chamber jacketing or surrounding the inner cylinder and in communication with said water-discharge pipe, a main delivery-pipe communicating with said distributing-chamber at a point opposite the connection of said water-discharge pipe therewith, and means for delivering air from the inner air-cylinder into the said distributing-chamber, substantially as set forth.

6. In a pumping apparatus, the combination with a storage-tank, of an air-cylinder having a separate inner smaller auxiliary cylinder closed at its ends and spaced from the sides of the air-cylinder to form an annular distributing-chamber between the two cylinders, a water-pumping device having a discharge-pipe connection with the distributing-chamber of the air-cylinder, a delivery-pipe connection with said distributing-chamber, the piston-head reciprocating within the auxiliary cylinder, and valved air-supply-pipe connections between the inner auxiliary cylinder and the discharge-pipe of the water-pumping device, substantially as set forth.

7. In a pumping apparatus, the combination with a storage-tank, of an air-cylinder having a separate inner auxiliary cylinder extending the entire length thereof and closed at its ends, said air-cylinder being further provided with oppositely-located air-inlet oil-cups communicating with the interior of the auxiliary cylinder at opposite ends thereof, the piston-head reciprocating within the auxiliary cylinder, a water-pumping device having a discharge-pipe connection with the space between the two cylinders, a delivery-pipe connection for the discharge from the air-cylinder, a single air-delivery pipe provided with a stop-cock and having a connection at one end with the water-discharge pipe of the water-pumping device, air-conducting pipes having check-valve connections with the air-cylinder near its opposite ends and communicating with the inner auxiliary cylinder, said air-conducting pipes also being connected with one end of the single air-delivery pipe, and an air-vent cock fitted to the connection between the air conducting and delivery pipes, substantially as set forth..

8. In an apparatus of the class described, the combination with the water and air pumping devices, and the storage-tank, of an upright filter-tank provided at its lower end with a depending filtered-water-trap extension having a pipe connection therewith, a pair of oppositely-located perforate filter-diaphragms fitted in the tank respectively near its upper and lower ends, a delivery-pipe leading from the pumping devices into the upper end of the filter-tank, and a tank-supply pipe leading to the storage-tank and arranged centrally in the filter-tank with its lower end disposed in said water-trap extension, substantially as set forth.

608,992. SPINDLE AND BEARING. LUDGER A. O. NICOL and EUGENE AYOTTE, Lowell Mass., assignors to the Draper Company, Portland, Me., and Hopedale, Mass. Filed Dec. 28, 1897. Serial No. 663,890 (No model.)

Claim.—1. A bolster-case, a cam located at the upper end thereof, a bolster freely suspended from and supported by the cam, relative partial rotation of the cam and bolster effecting vertical adjustment of the bolster, and means to normally prevent such relative rotation.



2. A bolster-case provided at its upper end with an inclined, serrated bolster-support, and a bolster having a lateral projection to engage the bolster-support and be sustained thereby in vertically-adjusted position.

3. A bolster-case and a vertically-movable bolster therein, and a concentric bolster-support having a cam to control the vertical adjustment of and from which the bolster is suspended.

4. A bolster case longitudinally slotted at its upper end, a surrounding bolster-support having an inclined upper end to control the vertical adjustment of the bolster, and a bolster provided with a lateral projection to extend through the slot in the case and rest upon the upper end of the bolster support.

5. A bolster-case and a vertically-adjustable bolster therein, and a rotatably-movable tubular bolster-support surrounding the bolster-case and having a cam-surface adapted to engage a projecting portion of and sustain the bolster at its upper end, to control the vertical adjustment thereof.

608,993. TREEING-SUPPORT. CHARLES H. POPE, Brockton, Mass., assignor to William R. Arnold, Abington, Mass. Filed Oct. 20, 1897. Serial No. 655,769. (No model.)



Claim.—1. A treeing-support, adapted to cooperate with and hold a multipart last, said support having heel-holding means for rigidly supporting the heel of said last while leaving the toe portion of the last freely movable, substantially as described.

2. A treeing-support, adapted to cooperate with and hold a

multipart last, said support having a holding device for rigidly supporting one of the parts of the last while leaving another of the parts thereof freely movable, substantially as described.

3. The combination with a treeing-support and a last, of holding means for rigidly securing the treeing-support to the heel of the last, said means being confined in its operation to the heel part of the last, and cooperating means on the abutting parts of the heel and the leg portion of said support for preventing relative rotation of the last and support, substantially as described.

4. A treeing-support, provided with an expansible clamp adapted to be inserted in a socket in one end of a last, means moving inwardly toward the treeing-support to expand said clamp into clamping position and an operating device for pulling said expanding means into clamping position, substantially as described

5. A treeing-support, provided with an expansible clamp adapted to be inserted in a socket in one end of a last, a wedging device having its smaller end extending toward the treeing-support to wedge said clamp into clamping position, and means to operate said device, substantially as described.

6. A treeing-support, provided with an expansible clamp adapted to be inserted in a socket in one end of a last, an expanding device to expand said clamp, and operating mechanism for said expanding device, said operating mechanism including compensating means to accommodate the mechanism to varying requirements of the expansible clamp, substantially as described.

7. A treeing-support, provided with a holding device adapted to engage and hold a last, and operating mechanism for said holding device, said operating mechanism including a compensator intermediate its ends, substantially as described.

8. A treeing-support, provided with an expansible clamp, a reciprocating rod for expanding said clamp, an operating member therefor, and a yielding connection between said rod and member, substantially as described.

9. A treeing-support, provided with a holding device to engage the heel of a last, and means to actuate said device to clamp the last to the support, said means comprising a reciprocating rod, provided with a head, an operating member inclosing said rod, and a spring on said rod held under tension by said head and said operating member, substantially as described.

10. A treeing-support, provided with a holding device to engage the heel of the last, and means to actuate said device to clamp the last to the support, said means comprising a reciprocating rod, provided with a head, an operating member inclosing said rod, and a spring on said rod held under tension by said head and said operating member, said member being retained in a recess provided in the leg of the support, and a spring normally holding said member inwardly within said recess, substantially as described.

11. A treeing-support, provided at the end of its leg portion with a holding device adapted to be inserted in a recess provided therefor in the heel of a last, means to clamp said heel rigidly to the support, and automatic means normally tending to release said parts from clamping position, substantially as described.

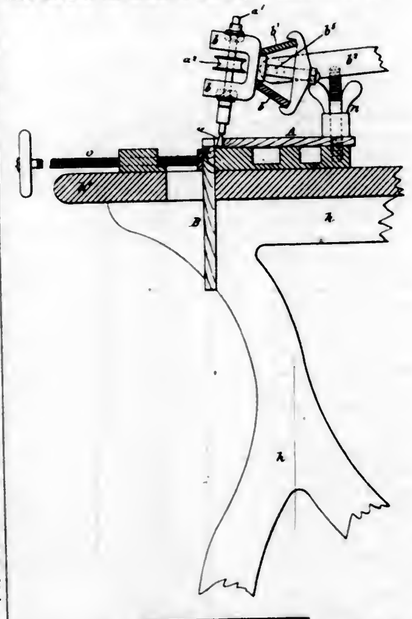
12. A treeing-support provided at the end of its leg portion with a holding device adapted to engage and hold a last, and operating mechanism for said holding device including a rod reciprocable in said support, said support having an oblique end to hold the last in an oblique direction, and said rod extending a portion of its length in the general direction of the support and the rest of its length substantially perpendicular to the last, substantially as described.

13. A treeing-support provided with a holding device adapted to engage and hold a last, and an operating rod for said holding device reciprocable in said support, said rod being hinged intermediate its length within said support, substantially as described.

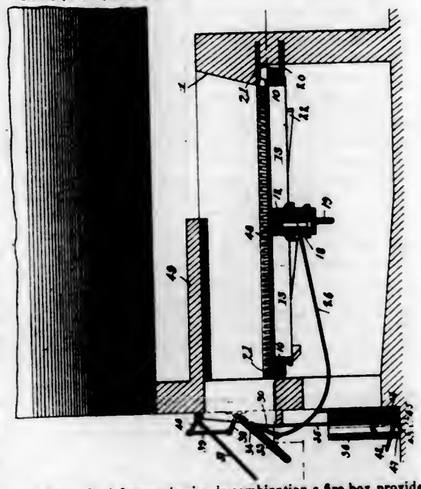
608,994. DOVETAILING-MACHINE. THOMAS J. RYLAND, London, England, assignor of one-half to Earle Bird, Robertsbridge, England. Filed July 22, 1897. Serial No. 645,585. (No model.)

Claim.—1. In a miter-dovetailing machine, the combination with means for clamping boards in two directions at right angles to one another, of an outwardly-flaring cutting-tool, means for supporting said tool and moving it longitudinally of the work comprising adjusting devices whereby the tool may be angularly adjusted to bring one of its edges in parallelism with the edge of one of the boards, and means for rotating the cutting-tool, substantially as and for the purpose set forth.

2. In a dovetailing-machine, the combination of a rotary cutter of shape to form a dovetail notch, a spindle for said cutter, a movable bar on which said spindle is mounted at an angle to the work, a pulley on the cutter-spindle, a band passing round such pulley, guide-pulleys and tension-pulleys over which such band passes, a drum for driving such band, cross-slides carrying the cutter-carrying bar, a dividing plate and a finger acting therewith to regulate the distance of travel sidewise of the cutter, and a stop to limit the inward travel of the cutter, substantially as herein set forth.



608,995. FURNACE. HENRY R. WALLIS, Chicago, Ill., assignor of one-half to William R. Niles, same place. Filed Dec. 5, 1896. Serial No. 614,540. (No model.)

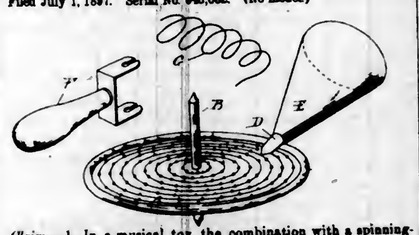


Claim.—1. A furnace having in combination a fire-box provided with a door; a rotatable grate; means connected with said door and having operative relation to said grate whereby the movement of the door will effect the movement of the grate; a foot-piece; and means having operative relation to said foot-piece and door whereby the movement of the foot-piece simultaneously effects the movement of the door and grate, substantially as set forth.

2. A furnace having in combination a fire-box provided in its vertical side with a stoking-aperture, a gravitating door closing said aperture, a rotatable grate having teeth or notches, a pivoted dog or pawl engaging with said teeth or notches, and being connected with said door whereby the gravitation of the door will move said dog in one direction an engine having a piston and piston-rod connected with said door for raising it, a valve for admitting pressure to said engine, a foot-piece for moving said valve in one direction and causing said engine to raise said door and means for automatically moving said valve in the other direction for permitting the door to close, substantially as set forth.

3. A furnace having in combination a fire-box provided with a stoking-aperture, a door closing said aperture; a rotary grate composed of independently-dumping sections; ratchet-teeth having operative relation to said grate; a pawl arranged to engage with said teeth for rotating said grate, and a connection between said pawl and door whereby the opening of the door will rotate the grate, said ratchet-teeth being so disposed and the stroke of the pawl so proportioned with relation to the position of the stoking-aperture and the movement of the door that each time the door is opened the grate will be rotated the distance of one section and each section will be successively brought completely opposite the door whereby the fuel thrown in will lodge substantially upon only the section opposite the door, substantially as and for the purposes set forth.

608,996. MUSICAL TOY. FRANK A. WORDEN, Ypsilanti, Mich. Filed July 1, 1897. Serial No. 643,062. (No model.)

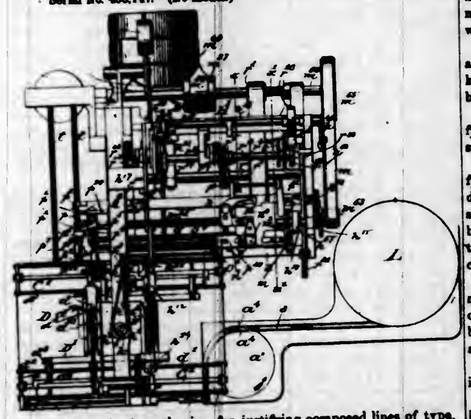


Claim.—1. In a musical toy, the combination with a spinning-top having on the upper surface thereof a series of concentric rows of predeterminedly-positioned interruptions uniformly spaced in each row and relatively varying in different rows, of a vibrating reed adapted to be brought into the path of any of said rows of interruptions.

2. In a musical toy, a spinning-top provided on the top thereof with a series of concentric rows of predeterminedly-positioned projections uniformly spaced in each row and relatively varying in the different rows, for the purpose set forth.

3. A spinning-top, provided on the top thereof with a series of concentric rows of predeterminedly-positioned interruptions spaced apart.

608,997. TYPE SETTING AND JUSTIFYING MACHINE. PATRICK H. MCGRATH, Randolph, Mass., assignor, by mesne assignments, to the Johnson Typesetter Company, Portland, Me. Filed Oct. 8, 1891. Serial No. 408,147. (No model.)



Claim.—1. A mechanism for justifying composed lines of type, comprising means for forming justifying-spaces and means for inserting them in the lines.

2. A mechanism for justifying composed lines of type, comprising means for forming justifying-spaces and means for parting the lines between words and inserting the justifying-spaces.

3. A mechanism for justifying lines of type composed with temporary spaces, comprising means for removing the temporary spaces, and means for forming justifying-spaces and inserting them in lieu of the temporary spaces.

4. A mechanism for justifying lines of type composed with temporary spaces, comprising means for parting the lines at the temporary spaces, means for forming justifying-spaces, and means for inserting the justifying-spaces in the lines in lieu of the temporary spaces.

5. The combination with means for assembling type into lines and means for justifying, of a plurality of sticks arranged to circulate between the assembling means and the justifying means.

6. The combination with means for assembling type into lines and means for justifying, of a plurality of sticks arranged to circulate between the assembling means and the justifying means, and a separate series of space-blanks for each stick.

7. The combination with means for assembling type into lines and means for justifying the lines, of a plurality of sticks arranged to circulate between the assembling means and the justifying means, the said assembling and justifying means being operative simultaneously and independently, whereby one line may be justified while the succeeding line is being assembled.

8. The combination with a movable table and a plurality of sticks mounted on said table, of independent means for assembling and justifying lines of type in the sticks, said table being movable to carry each stick from the assembling means to the justifying means and to return it to the assembling means.

9. A mechanism for justifying composed lines of type comprising a device for measuring the unjustified line, and means controlled by said measuring device for forming justifying-spaces.

10. A mechanism for justifying a composed line of type comprising a device for measuring an unjustified line to ascertain the total shortage and devices for dividing the said shortage by the number of word-spaces in the line.

11. A mechanism for justifying a composed line of type comprising devices for measuring an unjustified line, devices for dividing the shortage in the line by the number of word-spaces, and means controlled by said devices for forming justifying-spaces adapted to justify the line.

12. A mechanism for justifying a composed line of type comprising an adjustable space-mold, a melting-pot, devices for measuring an unjustified line, devices for dividing the shortage in the line by the number of word-spaces, and connections whereby the mold is adjusted once for each line by the said devices.

13. In a justifying mechanism a device for measuring an unjustified line, and a lever and cooperating devices constructed to divide the shortage of the unjustified line by the number of word-spaces in the line.

14. In a mechanism for justifying composed lines of type, a justifying-lever, a device in connection with said lever for measuring an unjustified line, and a second device movable relatively to the lever in proportion to the number of spaces in the line.

15. In a mechanism for justifying lines of type, devices for measuring an unjustified line, in combination with a lever operatively connected to said devices, and a part cooperating with said lever and means for adjusting said part relatively to the lever in accordance with the number of word-spaces in the line.

16. In a justifying mechanism, a justifying-lever, a space-key, and a part cooperating with said lever and adjustable from the said key, its relation to the lever for each line depending upon the number of spaces in the line.

17. In mechanism for justifying composed lines of type, a justifying-lever, a measuring device, a word-space key, and an adjustable space-determining device, all cooperating.

18. In mechanism for justifying composed lines of type, a justifying-lever, connections between said lever and a movable part which determines the width of justifying-spaces, a slide for moving the lever, said slide being movable in proportion to the shortage of the assembled line, an adjustable connection between the justifying-lever and the slide, and means controlled by the space-key for adjusting said connection.

19. In a mechanism for justifying, a justifying-lever, devices connected with the lever for measuring the composed line, a connection of said lever adjustable from the space-key in proportion to the number of spaces in the line, a weight for operating the lever and a cam arranged to regulate the movement of the weight.

20. A mechanism for justifying composed lines of type, comprising means for casting justifying-spaces and inserting them in the lines.

21. A mechanism for justifying composed lines of type, comprising means for parting the lines between words, and means for casting and inserting justifying-spaces.

22. A mechanism for justifying lines of type composed with temporary spaces, comprising means for removing the temporary spaces, and means for casting justifying-spaces and inserting them in lieu of the temporary spaces.

23. A mechanism for casting justifying-spaces and inserting them in a composed line of type, comprising a mold, a melting-pot, a pump, means for parting the line, means for operating the pump when the line is parted, and devices for transferring the resulting cast space to the line.

24. In mechanism for justifying composed lines of type, a space-forming device, a movable carriage upon which said device is mounted, means for moving the carriage along the composed line and stopping said movement at proper points, and means for forming and inserting a justifying-space each time the carriage stops between words of a line.

25. In a machine for assembling and justifying type, mechanism to assemble the type in lines with space-blanks between the words, a space-mold, means for adjusting the mold to cast justifying-spaces for each line, and means for substituting said spaces for the space-blanks in the line.

26. In a machine for assembling and justifying type, mechanism for assembling the type in lines, a space-mold, and mechanism for moving the line of type and the mold relatively to each other and for successively molding justifying-spaces and inserting them in the line.

27. In a machine for justifying lines of type composed with temporary space-blanks, means for lengthening the device within which the line is confined for measurement in proportion to the number of space-blanks in the line, in combination with a measuring device constructed to measure the shortage in the line required to be filled by justification, and means for substituting justifying-spaces for said space-blanks.

28. The combination with mechanism for assembling a line of type and space-blanks upon a stick, of a movable part forming one end of the stick and means for retreating said part to lengthen the stick each time a space-blank is assembled, said part remaining immovable when character-type are assembled.

29. The combination with mechanism for assembling a line of type and space-blanks upon a stick, of a movable part forming one end of the stick, a ratchet and pawl for operating said part, a space-key, and means controlled by the space-key for moving said part each time said space-key is operated.

30. In a machine for assembling and justifying type, the combination with a stick, of means for assembling type and space-blanks upon the stick, a part upon said stick for gaging the length of line, and means for moving said part each time a space-blank is assembled an amount less than the width of such space-blank, said part remaining immovable when character-type are assembled.

31. A stick to receive the type, a plate c^4 closing the end thereof and having a hook c^{13}, and a yielding block c^7, combined with a type-assembling arm to place the type in the stick in front of said yielding block, and having a projection to engage and lift said hook and its plate c^4.

32. A stick to receive the type, combined with a type-assembling arm b, and a yielding guard carried thereby and having ears to hold the type.

33. The combination of a guideway closed at one end; a moving carrier to convey the type along the guideway in succession; a type-assembling arm to pick the leading type from the guideway and insert it in a stick; and a retaining device operated in conjunction with the type-assembling arm and adapted to retain the next succeeding type while the arm is depositing a type in the stick.

34. The combination of a revolving disk, the guideway, the spring-pressed brake, the pivoted type-setting arm, and the stick, said arm operating to release the brake at intervals to permit the type to advance.

35. A movable stick to receive the type, combined with a type-assembling arm, and means controlled by movement of the stick to control the operation of the said arm.

36. A movable table, and a stick thereon, and a table-operating mechanism, combined with a type-assembling arm, and mechanism to move said type-assembling arm adapted to be rendered inoperative by movement of the table-operating mechanism.

37. In a machine for assembling and justifying type, a stick to receive the type and space-blanks; a measuring device movable between the end of the stick and the end of the line; and mechanism regulated by movement of said measuring device and adapted to supply spaces of the proper size for and in place of the space-blanks in the line.

38. In a machine for assembling and justifying type, a stick to receive the type and space-blanks; and a yielding block in said stick to keep the type pressed toward the end of the stick, combined with a measuring device also arranged in said stick and adapted to compress and measure the assembled line for justification.

39. In a machine for assembling and justifying type, a stick to receive the type and space-blanks; a yielding block to keep the type and space-blanks pressed together and toward the end of the stick, combined with a measuring device also arranged in said stick and adapted to be moved farther away from the entrance to the stick whenever a space-blank is inserted in the stick.

40. A stick to receive the type and space-blanks, combined with the measuring member c^{16}, means tending to move said member away from the entrance end of the stick, the pawl c^{24}, ratchet-toothed bar c^{25}, and means controlled by the space-blank-inserting mechanism to release said pawl and permit the member c^{16} to move back one tooth as each space-blank is inserted.

41. A stick to receive the type and space blanks, combined with the measuring-device member c^{16}, means to move it away from the entrance end of the stick, the pawl c^{24}, ratchet-toothed bar c^{25}, and the notched pivoted plate c^{28}.

42. A stick to receive the type and space-blanks, and mechanism for inserting type in the said stick, combined with a series of space-blanks permanently associated with the stick, and mechanism to assemble them successively in the stick.

43. A stick to receive the type and space-blanks, and mechanism for inserting type in the said stick, combined with a series of space-blanks permanently associated with the stick, and mechanism to push them in front of said stick into position to be pushed into the stick by the type-assembling mechanism.

44. In a machine for setting and justifying type, a revolving table carrying two sticks to receive the type and space-blanks as they are assembled, a type-assembling mechanism arranged to assemble type and space-blanks in the sticks at one side of the table, a space-molding device arranged at the opposite side of the table, and mechanism to withdraw the space-blanks, and to mold and insert spaces in place thereof.

45. In a type assembling and justifying machine, a stick, and a type-assembling mechanism therefor, combined with a series of space-blanks E, carriers e, and guides therefor.

46. In a type assembling and justifying machine, a stick, and a type-setting mechanism therefor, combined with a series of space-blanks E, carriers e, and means to release said carriers one at a time as the space-blanks are inserted in the line.

47. In a type assembling and justifying machine, a stick, a type-assembling mechanism therefor, a series of space-blanks and mechanism to insert them one at a time in the stick, combined with automatic means to return the space-blanks to their normal position when the line is justified.

48. In a type-justifying machine, a revolving table carrying two sticks to receive the type and space-blanks, a carriage carrying a space-mold, means for moving the carriage along the line of type, means to withdraw the space-blanks and insert the molded spaces in place thereof, and mechanism actuated by rotation of the table to start the carriage in its movement.

49. In a type-justifying machine, a stick to receive the type and space-blanks, and a continuously-rotating shaft, combined with a carriage carrying a space-mold, and mechanism actuated by and connected with the said continuously-rotating shaft to operate the mold and to cause the carriage to move down along the line of the type.

50. In a type-justifying machine, a stick to hold a line of type and space-blanks, a continuously-rotating shaft having a worm splined thereto, combined with a carriage carrying a space-mold, mechanism connected with said worm through a clutch to operate said mold, forward and return feed mechanisms also connected with said worm through clutches, and suitable controlling devices for said clutches.

51. In a type-justifying machine, a stick to hold a line of type and space-blanks, and a continuously-rotating shaft having a worm splined thereto, combined with a carriage carrying a space-mold, mechanism to operate said mold, feed mechanisms to feed the carriage in both directions, and a clutch device operated by said worm when in one position to set in motion the mold-operating mechanism and when in another position to set in motion the forward feed mechanism.

52. In a type-justifying machine, a stick to hold a line of type, a series of space-blanks one of which is inserted between each two words in the line, each space-blank having a portion projecting beyond the face of the type, combined with a movable carriage carrying a space-mold, and mechanisms to move the said carriage forward in front of the line of type, to stop it on striking against the projecting portions of the space-blanks, and to withdraw the same in succession and to insert molded spaces in lieu of said space-blanks.

53. In a type-justifying machine, a movable stick to receive the type and space-blanks as they are assembled; a measuring device movable against the end of the line of type; a space-mold, a pivoted lever connected to a movable part of said mold; a connection between the measuring device and said lever, made operative by movement of the stick, and means whereby the point of attachment of said connection to said lever is varied by the mechanism for assembling the space-blanks.

54. In a type-justifying machine, a stick to receive the type and space-blanks; a carriage carrying a space-mold, mechanism controlled by the shortage in the line and the number of space-blanks to adjust said mold, a detachable connection between that portion of the mechanism on the carriage and that portion on the machine-frame, and a brake device to hold the parts on the frame fixedly in position while the carriage is moving.

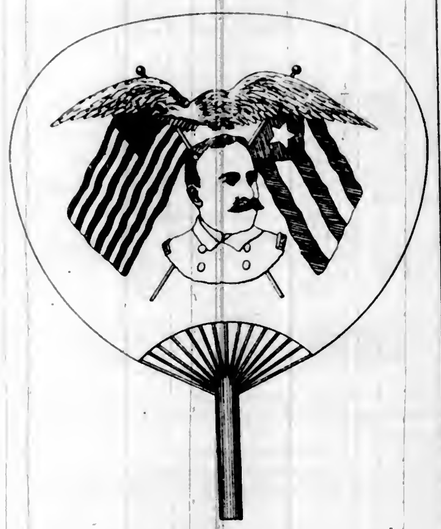
55. A stick to receive type and space-blanks as they are assembled in line, combined with a carriage adapted to move along the line of type, a space-mold thereon, and mechanisms upon the carriage to cast spaces, to eject them from the mold, and to insert them in the line of type in lieu of the space-blanks.

56. The frame, a stick thereon to receive the type and space-blanks as they are assembled in line, a carriage adapted to move along the line of type, a space-mold and mechanisms thereon to cast spaces and insert them in the line of type in place of the space-blanks, and mechanism on the frame controlled from the carriage to withdraw each space-blank previous to the insertion of a space.

57. In a machine for assembling and justifying lines of type, a magazine of space-blanks, means for inserting said space-blanks in assembling lines of type, an automatic justifying mechanism constructed and arranged to insert justifying-spaces in lieu of the space-blanks, and means for automatically removing said space-blanks from the lines and returning them to their magazine.

DESIGNS.

29,165. FAN. CHARLOTTE GRACE HULSE, Newark, N. J. Filed July 6, 1898. Serial No. 685,291. Term of patent 3½ years.



Claim.—The design for a fan as herein shown and described.

29,166. CHARM. JAMES FORSHAW PRICE, Boston, Mass. Filed June 16, 1898. Serial No. 683,620. Term of patent 3½ years.



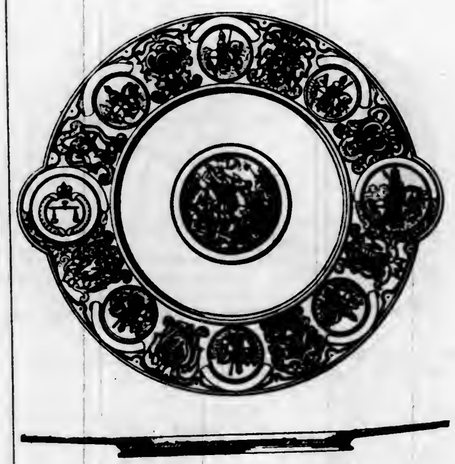
Claim.—The design for the charm herein shown and described.

29,167. BRUSH-BACK. ROBERT BARNES SHEPHERD, New York, N. Y. Filed May 12, 1898. Serial No. 680,517. Term of patent 14 years.



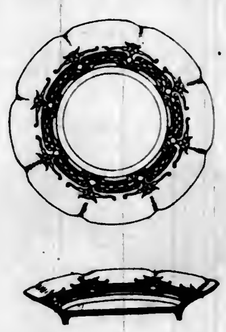
Claim.—The design for a brush-back as herein shown and described.

29,168. DISH. AUGUST NETHERLAND, New York, N. Y. Filed May 23, 1898. Serial No. 681,518. Term of patent 14 years.



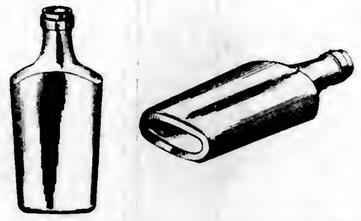
Claim.—The design for a dish, substantially as shown and described.

29,169. PLATE. CHARLES J. AHRENFELDT, New York, N. Y. Filed Feb. 9, 1898. Serial No. 669,724. Term of patent 7 years.



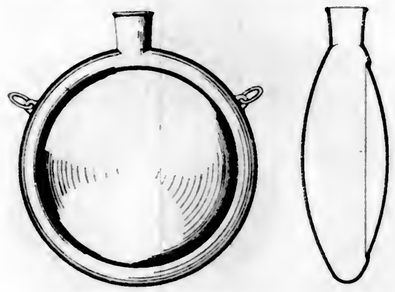
Claim.—The design for a plate herein shown and described.

29,170. BOTTLE. ROBERT H. LEVIS, Alton, Ill., assignor to the Illinois Glass Company, of Illinois. Filed July 18, 1898. Serial No. 686,294. Term of patent 14 years.



Claim.—The design for a bottle, as herein shown and described.

29,171. BOTTLE. ELDRIDGE PACKHAM, Jr., Baltimore, Md. Filed Apr. 20, 1898. Serial No. 678,312. Term of patent 3½ years.



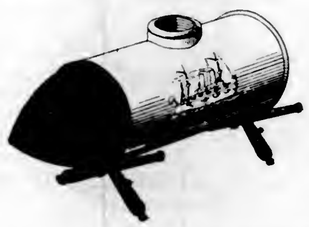
Claim.—The design for a bottle, as herein shown and described.

29,172. BOX-LID. GUSTAV A. BISLER, Philadelphia, Pa. Filed May 9, 1898. Serial No. 680,225. Term of patent 3½ years.



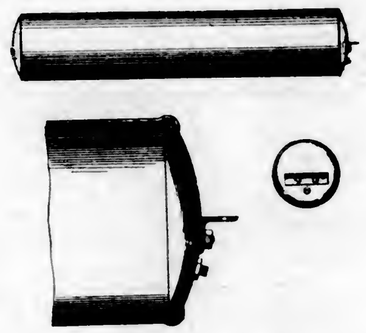
Claim.—The design for the lid of a box, substantially as described and shown.

29,173. LAMP-BASE. ALBERT L. BARON, New York, N. Y. Filed June 13, 1898. Serial No. 683,362. Term of patent 3½ years.



Claim.—The design for a lamp-base herein shown and described.

29,174. GAS-RECEIVER. ROBERT MUIR DIXON, East Orange, N. J., assignor to the Safety Car Heating and Lighting Company of New York. Filed June 10, 1896. Serial No. 595,082. Term of patent 3½ years.



Claim.—The design for a gas cylinder, holder, or receiver, substantially as herein shown and described.

29,175. CASE FOR REGISTERS. CURTIS HUBBY VEEDER, Hartford, Conn. Filed July 5, 1898. Serial No. 685,179. Term of patent 14 years.



Claim.—The design for a case for registers, substantially as shown and described.

29,176. CASE FOR REGISTERS. CURTIS HUBBY VEEDER, Hartford, Conn. Filed July 5, 1898. Serial No. 685,180. Term of patent 14 years.



Claim.—The design for a case for registers, substantially as shown and described.

29,177. CASE FOR REGISTERS. CURTIS HUBBY VEEDER, Hartford, Conn. Filed July 5, 1898. Serial No. 685,181. Term of patent 14 years.



Claim.—The design for a case for registers, substantially as shown and described.

29,178. CASE FOR REGISTERS. CURTIS HUBBY VEEDER, Hartford, Conn. Filed July 5, 1898. Serial No. 685,182. Term of patent 14 years.



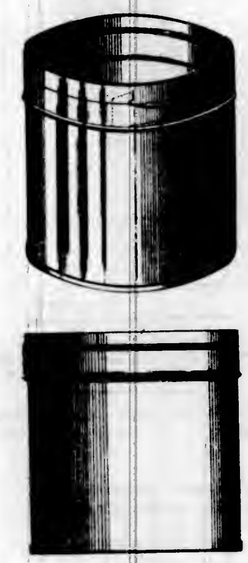
Claim.—The design for a case for registers, substantially as shown and described.

29,179. CASE FOR REGISTERS. CURTIS HUBBY VEEDER, Hartford, Conn. Filed July 5, 1898. Serial No. 685,183. Term of patent 14 years.



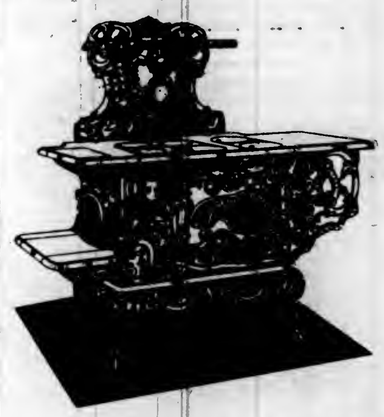
Claim.—The design for a case for registers, substantially as shown and described.

29,180. SHEET-METAL CAN. CONRAD DIEHL, Chicago, Ill. Filed Dec. 27, 1897. Serial No. 663,773. Term of patent 14 years.



Claim.—The design for a sheet-metal can, substantially as herein shown and described.

29,181. STOVE OR RANGE. RUDOLPH THIEM, Hamilton, Ohio. Filed July 16, 1898. Serial No. 686,156. Term of patent 7 years.



Claim.—1. In a design for a stove or range, the design for the leg-base, substantially as herein shown and described.

2. In a design for a stove or range, the design for the oven-door, substantially as herein shown and described.

3. In a design for a stove or range, the design for the reservoir, substantially as herein shown and described.

4. In a design for a stove or range, the design for the fire-door, substantially as herein shown and described.

5. In a design for a stove or range, the design for the ash-cup, substantially as herein shown and described.

6. In a design for a stove or range, the design for the oven-shelf, substantially as herein shown and described.

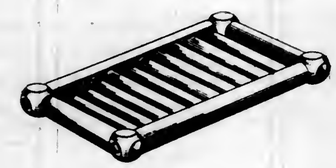
7. In a design for a stove or range, the design for the front draft-door, substantially as herein shown and described.

8. In a design for a stove or range, the design for the smoke-pipe section, substantially as herein shown and described.

9. In a design for a stove or range, the design for the mantel-back, substantially as herein shown and described.

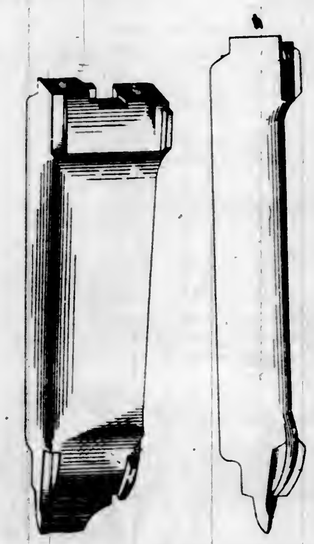
10. The design for a stove or range substantially as herein shown and described.

29,182. RADIATOR. ARTHUR H. FOWLER, Philadelphia, Pa., assignor to the Fowler & Wolfe Manufacturing Company, of Pennsylvania. Filed June 30, 1898. Serial No. 684,884. Term of patent 14 years.



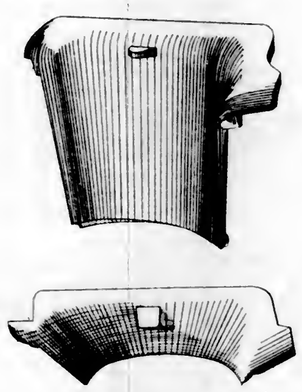
Claim.—The design for a radiator substantially as herein described and shown.

29,183. WATER-FRONT FOR STOVES. JOHN W. KENNEDY, Rochester, N. Y., assignor to the Sill Stove Works, same place. Filed July 13, 1898. Serial No. 686,290. Term of patent 14 years.



Claim.—The design for a water-front for stoves and ranges, substantially as shown and described.

29,184. FIRE-POT LINING. JOHN W. KENNEDY, Rochester, N. Y., assignor to the Sill Stove Works, same place. Filed July 18, 1898. Serial No. 686,291. Term of patent 14 years.



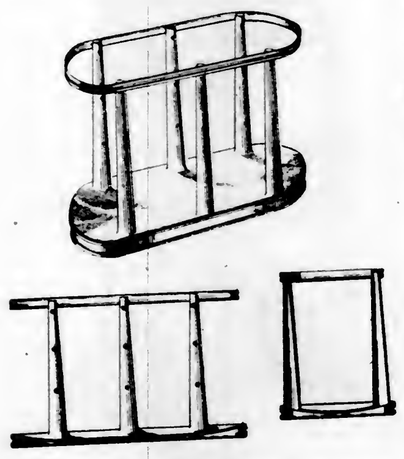
Claim.—The design for a fire-pot lining, substantially as shown and described.

29,185. REVERSIBLE CUTTER FOR STONE-DRESSING. JOHN DOBBIE, Leith, Scotland. Filed Apr. 23, 1898. Serial No. 678,670. Term of patent 14 years.



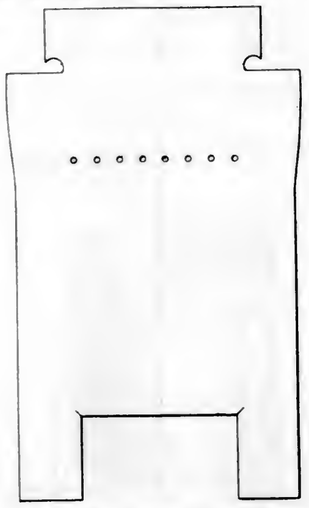
Claim.—The design for a reversible cutter for stone-dressing tools, substantially as herein shown and described.

29,186. SPRAYER ATTACHMENT FOR WASHING-MACHINES. JAMES V. RAKESTRAW, Wellington, Kans. Filed July 11, 1898. Serial No. 685,706. Term of patent 3½ years.



Claim.—The design for a sprayer attachment for washing-machines, herein shown and described.

29,187. BLANK OR PATTERN FOR STAMPED WASHBOARDS. EDDINGTON N. GILLILAN, Chicago, Ill. Filed Mar. 30, 1898. Serial No. 675,805. Term of patent 7 years.



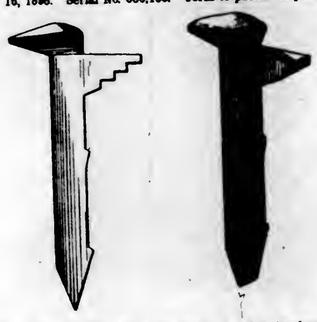
Claim.—The new and original design or useful shape for a blank or pattern for stamped washboards, substantially as herein shown and described.

29,188. BEDSTEAD END BOARD. OSCAR R. A. WIEBUSCH, New York, N. Y. Filed Dec. 24, 1897. Serial No. 663,436. Term of patent 7 years.



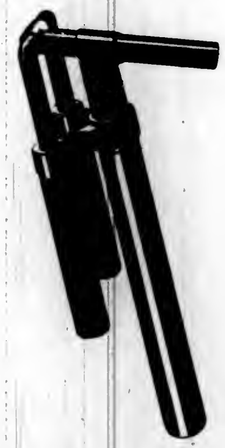
Claim.—The design for a bedstead end board substantially as herein shown and described.

29,189. RAILROAD-SPIKE. DENNIS BUTLER, Custer, S. D. Filed July 16, 1898. Serial No. 686,160. Term of patent 14 years.



Claim.—The design for a railroad-spike herein shown and described.

29,190. SEAT-POST FOR BICYCLES. WILLIAM J. SHEDD and BENJAMIN F. FIELD, Chicago, Ill. Filed July 8, 1898. Serial No. 685,442. Term of patent 14 years.



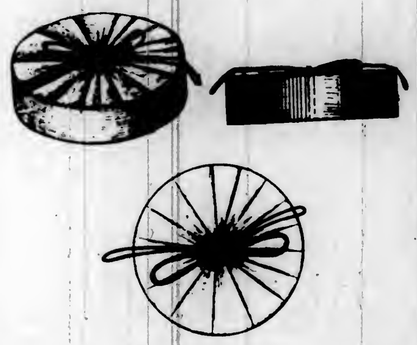
Claim.—The design for a seat-post for cycle-saddles, substantially as herein shown and described.

29,191. PIPE-CLEANER. JAMES PILKINGTON, Liverpool, England. Filed May 13, 1898. Serial No. 680,645. Term of patent 7 years.



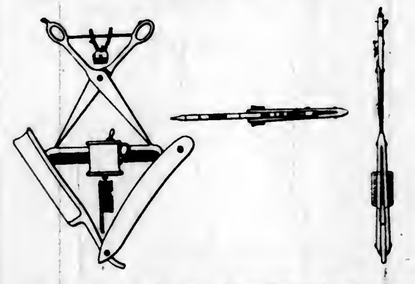
Claim.—The design of pipe-cleaner substantially as herein shown and described.

29,192. TOBACCO-PACKAGE. GUSTAVUS MILLHISER, Richmond, Va., assignor to the Millhiser Manufacturing Company, same place. Filed July 13, 1898. Serial No. 686,872. Term of patent 14 years.



Claim.—The design for a tobacco-package substantially as herein shown and described.

29,193. SIGN. GEORGE A. R. BARNES, Depew, N. Y. Filed Sept. 7, 1897. Serial No. 650,855. Term of patent 3½ years.



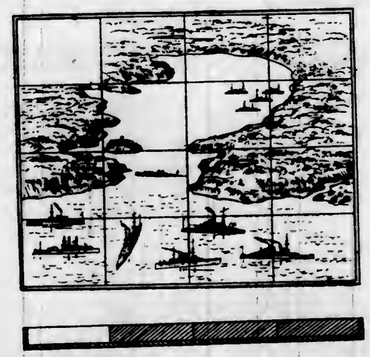
Claim.—The design for a sign, substantially as herein shown and described.

29,194. FLAGSTAFF. THOMAS J. WHITNEY and IGNATIUS HAAS, Philadelphia, Pa. Filed June 25, 1898. Serial No. 684,698. Term of patent 7 years.



Claim.—The design for a flagstaff, substantially as described and shown.

29,195. GAME DEVICE. AMOS W. STANDING, St. Louis, Mo. Filed June 14, 1898. Serial No. 683,859. Term of patent 3½ years.



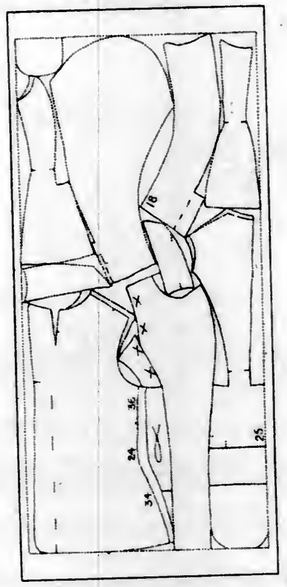
Claim.—The design for a game device substantially as herein shown and described.

29,196. GAME-BOARD. ROBERT M. RILEY, New York, N. Y., and JOSEPH H. FISHER, Millville, Ohio. Filed July 1, 1898. Serial No. 684,964. Term of patent 3½ years.



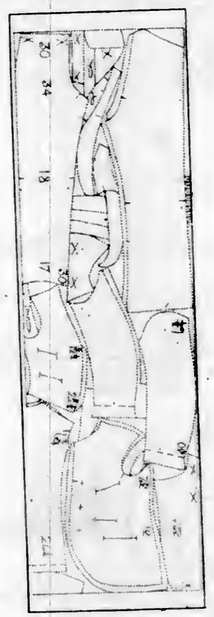
Claim.—The design for a game-board substantially as herein shown and described.

29,197. PATTERN-CHART. JAMES MARSDEN, Wigan, England. Filed June 8, 1898. Serial No. 682,954. Term of patent 14 years.



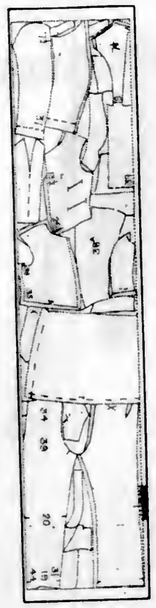
Claim.—The design for a pattern-chart substantially as herein shown and described.

29,198. PATTERN-CHART. JAMES MARSDEN, Wigan, England. Filed June 8, 1898. Serial No. 682,955. Term of patent 14 years.



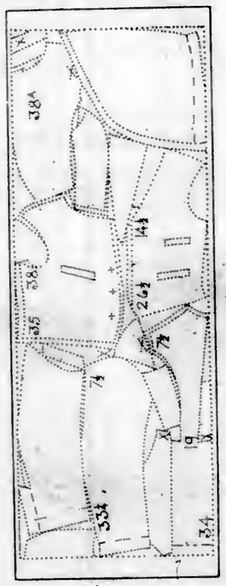
Claim.—The design for a pattern-chart substantially as herein shown and described.

29,199. PATTERN-CHART. JAMES MARSDEN, Wigan, England. Filed June 8, 1898. Serial No. 682,956. Term of patent 14 years.



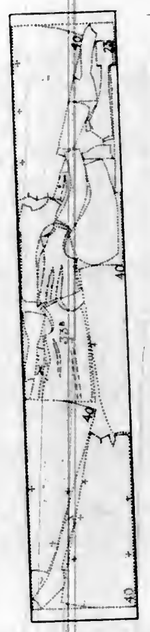
Claim.—The design for a pattern-chart substantially as herein shown and described.

29,200. PATTERN-CHART. JAMES MARSDEN, Wigan, England. Filed June 8, 1898. Serial No. 682,957. Term of patent 14 years.



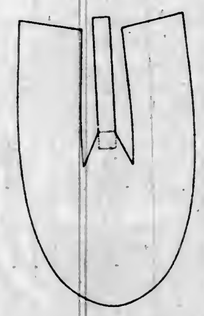
Claim.—The design for a pattern-chart substantially as herein shown and described.

29,201. PATTERN-CHART. JAMES MARSDEN, Wigan, England. Filed June 8, 1898. Serial No. 682,958. Term of patent 14 years.



Claim.—The design for a pattern-chart substantially as herein shown and described.

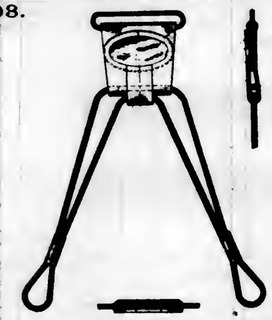
29,202. SHOE-UPPER BLANK. WILLIAM C. BENKERT, Philadelphia, Pa. Filed Mar. 28, 1898. Serial No. 675,507. Term of patent 7 years.



Claim.—The design for a shoe-upper blank substantially as herein shown and described.

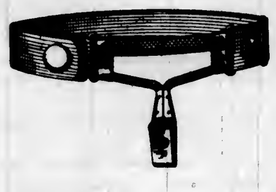
29,208. SUSPENDER-END. JAMES ARTHUR HEWES, Melrose, Mass. Filed Dec. 10, 1896. Serial No. 615,315. Term of patent 3½ years.

29,208.



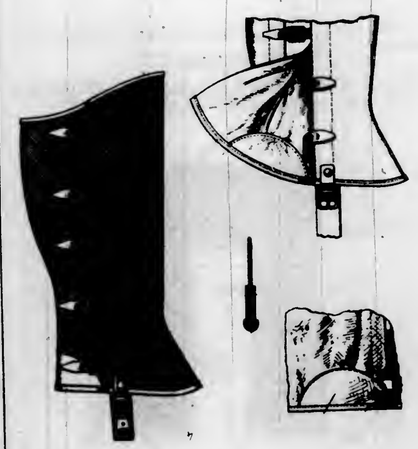
Claim.—The design for a suspender-end substantially as shown and described.

29,204. GARTER. GILBERT H. BLAKESLEY, Bristol, Conn. Filed Aug. 13, 1897. Serial No. 648,176. Term of patent 14 years.



Claim.—The design for a garter substantially as herein shown and described.

29,205. LEGGING. ARTHUR S. HUNTINGTON, Omaha, Nebr. Filed Mar. 2, 1898. Serial No. 672,332. Term of patent 7 years.



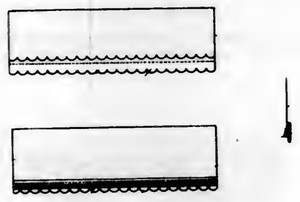
Claim.—The design for a legging, as herein shown and described.

29,206. SKIRT OR GARMENT BINDING. GEORGE H. STEDWELL, Hackensack, N. J. Filed July 7, 1898. Serial No. 685,351. Term of patent 14 years.



Claim.—The design for a skirt or garment binding, substantially as herein shown and described.

29,207. SKIRT OR GARMENT BINDING. GEORGE H. STEDWELL, Hackensack, N. J. Filed July 7, 1898. Serial No. 685,352. Term of patent 14 years.



Claim.—The design for a skirt or garment binding, substantially as herein shown and described.

29,208. TRIMMING-BRAID. HUGO MAHL, Rahway, N. J. Filed July 15, 1898. Serial No. 686,040. Term of patent 7 years.



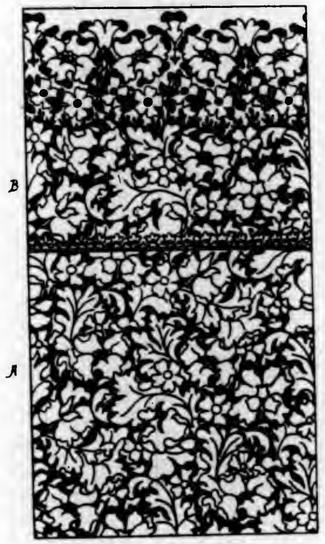
Claim.—The design for a trimming-braid, as herein shown and described.

29,209. PORTIÈRE. MORRIS BERNHARD, Buffalo, N. Y. Filed July 5, 1898. Serial No. 685,208. Term of patent 7 years.



Claim.—The design for a cord portière, substantially as herein shown and described.

29,210. CARPETING. FREDRIC M. PARKER, Worcester, Mass., assignor to William James Hogg & Son, same place. Filed June 6, 1898. Serial No. 682,783. Term of patent 3½ years.



Claim.—1. In a design for carpeting, the body A, substantially as shown and described.

2. In a design for carpeting, the border B, substantially as shown and described.

3. The design for carpeting, consisting of the body A and the border B, substantially as shown and described.

29,211. WOVEN FABRIC. WILLIAM T. SMITH, Philadelphia, Pa. Filed July 2, 1898. Serial No. 685,059. Term of patent 3½ years.



Claim.—The design for a woven fabric, as shown and described.

TRADE-MARKS

REGISTERED AUGUST 9, 1898.

31,847. STAY-TAPE. REVERSIBLE COLLAR COMPANY, Boston and Cambridge, Mass. Filed May 31, 1898.

ANCHOR

Essential feature.—The word "ANCHOR" or the representation of an anchor. Used since April 1, 1898.

31,848. LEATHER BOOTS AND SHOES. EUGENE H. TILTON, Boston, Mass. Filed June 9, 1898.

RUSCO

Essential feature.—The word "RUSCO." Used since November 1, 1897.

31,849. SOLES AND OTHER LEATHER PARTS OF BOOTS AND SHOES. PFISTER & VOGEL LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 11, 1898.

V

Essential feature.—The letter "V" inscribed within or upon a triangle. Used since February 15, 1898.

31,850. CIGARS. HANNAN BROS., Wheeling, W. Va. Filed Feb. 19, 1898.



Essential feature.—The representation of a tray or ash-receiver with a lighted cigar thereon, open boxes at the sides containing cigars, the words "HANNAN BROS.," and the words "LITTLE HAVANAS." Used since May 28, 1892.

31,851. MILK MEASURING AND REGISTERING APPARATUS AND CHARTS THEREFOR. OTTOCAR LIEBMANN, Wernigerode, Germany. Filed Feb. 19, 1898.

31,851.



Essential feature.—A representation of the interior of a cow-stable with rows of cows in stalls and the compound word "KUH-KONTROLLEUR" above the same. Used since October 30, 1897.

31,852. BUTTER, MILK, CHEESE, AND CREAM. JAMES L. HUMPHREY, Jr., New Bedford, Mass. Filed May 23, 1898.

OLD COLONY.

Essential feature.—The words "OLD COLONY." Used since June 16, 1891.

31,853. YEAST-CAKES. CRESCENT MACARONI COMPANY, Davenport, Iowa. Filed May 31, 1898.

SEA-FROTH

Essential feature.—The compound word "SEA-FROTH." Used since January 1, 1898.

31,854. CERTAIN NAMED CANNED GOODS. H. C. BAXTER & BRO., Brunswick, Me. Filed June 6, 1898.

LILAC

Essential feature.—The word "LILAC." Used since March, 1898.

31,855. CANDY. FREDERICK H. GRUNEBERG, New Orleans, La. Filed July 7, 1898.

NUTTY
JIM DANDY

Essential feature.—The words "NUTTY JIM DANDY." Used since June 1, 1898.

31,856. CERTAIN NAMED MEDICINAL CONFECTIONS, BEVERAGES, AND PREPARATIONS. OBERHAEUSER & LANDAUER, Würzburg, Germany. Filed Apr. 16, 1898.



Essential feature.—The facsimile of the portrait and signature of Father or Pastor Sebastian Kneipp. Used since April 28, 1896.

31,857. LINIMENT. CHARLES R. ROSWELL, Cleveland, Ohio. Filed Mar. 21, 1898.



Essential feature.—The portrait of the registrant. Used since December 1, 1895.

31,858. OINTMENTS. CASSIUS H. BELCHER, Jersey Shore, Pa. Filed June 9, 1898.

LIS-TER-SAV

Essential feature.—The hyphenated word "LIS-TER-SAV." Used since June 5, 1895.

31,859. ANTISEPTIC TABLETS AND POWDER FOR CERTAIN NAMED PURPOSES. BORALINE CHEMICAL CO., Baltimore, Md. Filed Apr. 21, 1898.

BORALINE

Essential feature.—The word "BORALINE." Used since May 25, 1897.

31,860. FLOOR AND WOOD FINISH. THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio. Filed June 6, 1898.

JAP-A-LAC

Essential feature.—The compound word "JAP-A-LAC." Used since January 1, 1898.

31,861. LUBRICATING-OILS. VACUUM OIL COMPANY, Rochester, N. Y. Filed July 5, 1898.

HECLA

Essential feature.—The word "HECLA." Used since February, 1898.

31,862. BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass., New York, N. Y., and Chicago, Ill. Filed June 16, 1898.

RATIONAL

Essential feature.—The word "RATIONAL." Used since January 1, 1898.

31,868. HOOKS AND EYES. THE AMERICAN PIN COMPANY, Waterbury, Conn. Filed July 5, 1898.

COLONIAL

Essential feature.—The word "COLONIAL." Used since June 1, 1898.

31,864. LAMPS AND CANDLES. CLARKE'S PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England. Filed July 7, 1898.

CRICKLITE

Essential feature.—The word "CRICKLITE." Used since January, 1894.

31,865. SEWING-MACHINES. JAMES M. RICHARDSON, Cleveland, Ohio. Filed June 27, 1898.

MAJESTIC

Essential feature.—The word "MAJESTIC." Used since April 1, 1898.

31,866. BICYCLES. WILLIAM M. HOLAHAN, Cambridge, Mass. Filed May 2, 1898.

Fenway

Essential feature.—The word "FENWAY." Used since January 1, 1896.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE HORSTICK.

Decided February 24, 1898.

1. COURTESY REQUIRED OF EXAMINERS.

Examiners should observe toward attorneys the same courtesy that is required of attorneys in the prosecution of cases before the Office.

2. AMENDMENT AFTER FINAL REJECTION.

Where an amendment is filed in good faith after second rejection and for the purpose of securing what the attorney believes to be the inventor's rights, an Examiner may be justified in admitting and considering such amendment.

3. SAME—REOPENING CASE—ADDITIONAL REFERENCE.

An additional reference cited after final rejection in effect reopens a case.

ON petition.

METTING-RAILS OF WINDOWS.

Application of Adison M. Horstick filed March 5, 1897, No. 626,035.

Messrs. C. A. Snow & Co. for the applicant.

GREELEY, *Assistant Commissioner:*

This applicant prosecuted his case himself until final rejection. He then appointed an attorney, who offered a substitute specification and drawing. These the Examiner refused to admit upon the ground that no reason appeared for "reopening in view of * * * which fully anticipates the subject-matter of the proposed amendment." Another substitute specification was subsequently offered. This the Examiner refused to admit upon the same ground, and further made the statement that the second substitute specification was "supererogatory and in the nature of an imposition upon the Office." To this the attorney replied by an argument and a request for final action, so that "an appeal to the Commissioner may be taken in order to determine if the language of the Examiner's letter is such as is contemplated by the rules." To this the Examiner replied that his mere liberality in citing additional references could not be regarded as reopening the case.

The criticism of the Examiner upon the attorney's action is clearly unwarranted and improper. Such criticism has no place in the record of an application. The same courtesy toward attorneys will be required of Examiners that is required of attorneys in their conduct of cases before the Office. The objectionable matter will be expunged from the file.

The substitute specifications filed by the attorney seem to have been presented in good faith and for the purpose of securing for the inventor that to which the attorney believed him entitled. Under the circumstances the Examiner would have been warranted in receiving them, notwithstanding that the application, up to that time prosecuted by the inventor in person, was under second rejection. Further, by his action in citing an additional reference the Examiner clearly in effect reopened the case.

The Examiner is directed to enter and consider the substitute specifications offered.

To the extent above noted the petition is granted.

EX PARTE SCHULZE.

Decided June 4, 1898.

PETITION TAKEN FROM AN ACTION WHICH HAS NOT BEEN REPEATED PREMATURE.

Petition asking that the Examiner be directed to allow an application without further delay or else reject the claims on the prior state of the art or on some statutory ground and that he be advised that certain amendments required by him be not insisted on dismissed, it appearing that the question involved is one of new matter and it further appearing that as the Examiner has neither twice acted nor twice refused to act the petition is premature.

ON petition.

ROLLER BALING-PRESS.

Application of Andrew Schulze filed May 14, 1895, No. 549,273.

Messrs. Fowler & Fowler for the applicant.

GREELEY, *Assistant Commissioner:*

This is a petition asking that the Examiner be directed to allow the claims and application without further delay or else reject said claims upon the prior state of the art or upon some other statutory ground or ground set forth in the rules and that the Examiner be advised that certain amendments required by him and suggestions made by him be not insisted upon.

The petitioner avers that the novelty of the claims in question is apparently conceded by the Examiner, who does not hold that the claims do not set forth the invention; that he has tried to comply with the Examiner's suggestions without unduly limiting his claims; that the Examiner has required him to restrict his claims in a way not made necessary by the prior state of the art, and that the Examiner in his final communication has not rejected the said claims or the application or questioned the novelty or patentability of the in-

vention, but has merely suggested that certain changes be made for which no reason appears.

It seems from the Examiner's statement that he regards the claims now under consideration as substantially the same as those of a previous group which were rejected on January 12, 1898, upon the ground of new matter. This view was not made clear by the Examiner's last action, however, which simply advised certain changes which would have rendered the claims in the Examiner's opinion patentable. Of this action, if it can be called by that name, no reconsideration was requested, and it was not repeated. The Examiner states that he had no intention of making the suggestion in the last Office letter a final formal requirement and suggests that the applicant withdraw his petition and ask for action upon the merits. He states that the claims in question will then be rejected. He further suggests that if the petition be not withdrawn it should be dismissed as prematurely and unnecessarily taken.

In his brief the applicant insists that the Examiner's suggestions in his last letter, if followed, would lead to an unnecessary limitation upon the invention and would restrict it in a way not necessary under the prior art. With regard to the question of new matter he asserts that he does not understand the Examiner's position, but believes that he has reference to matter requiring a supplemental oath. He says that the record shows that substantially the same claims have been repeatedly presented to the Examiner and substantially the same objections have always been made and that if the Examiner's contention that the petition is prematurely taken be upheld the case might go on indefinitely. This is somewhat inconsistent with the averment in the petition that no reason is assigned or appears for making the changes suggested in the last letter and that the said claims are in no wise objected to. The applicant asserts that the error of the Examiner in respect to the question of new matter is flagrant, so much so that it is demurrably apparent that he is wrong and that he should be corrected at once without compelling the applicant to appeal to the Examiners-in-Chief, a course which he seems to recognize as ordinarily the proper one. He says that the issue in this case is squarely presented as to whether the Examiner has a right to enforce limitations upon claims when it is admitted that the state of the art does not require such limitation.

It seems that there is, properly speaking, no question before me. The Examiner has neither twice acted nor twice refused to act, and consequently the petition is premature. There seems, however, to be a fairly good understanding of the Examiner's position by the applicant. The Examiner is of the opinion that the claims in question are for new matter. The applicant denies this. This is a question which is not now properly before me, except to the extent that the applicant has not established his contention of "demurrable" error in respect to this question.

The Examiner should have made a clear and definite action upon the claims in his last letter. I think it best to send the case back to him with the instruction to take such action upon the claims. If the applicant should then request reconsideration, he may repeat his action if he sees fit, and if the action be appealable, appeal may then be regularly proceeded with.

The present petition is dismissed as being premature.

STUPAKOFF *v.* JOHNSON.

Decided June 4, 1898.

1. JOINT AND SOLE APPLICATION—NO PRESUMPTION AGAINST SOLE APPLICATION WHEN FILED PROMPTLY AND JOINT APPLICATION ABANDONED.

   No presumption arises against a sole applicant by reason of his having previously made application as joint inventor with another for the same invention, the joint application having been abandoned and the sole application filed promptly upon ascertaining that the invention was in fact sole.

2. STATUTORY BAR—SUGGESTION BY EXAMINERS-IN-CHIEF—APPEAL.

   The question of apparent grounds for refusing Letters Patent to a party in interference is not directly a part of the question of priority, and failure on the part of the Examiners-in-Chief to call attention to such grounds is not reviewable by the Commissioner.

3. CONSIDERATION OF REFERENCE—AFFIRMATIVE HOLDING UNDER RULE 124 NOT REVIEWABLE.

   It is not to be presumed that an Examiner failed to consider a reference cited by a previous Examiner. By such consideration and the subsequent declaration of an interference the second Examiner practically decided the issue patentable in view of the reference, and his decision on this point is not reviewable under Rule 124.

APPEAL from Examiners-in-Chief.

GUIDE FOR SWITCH AND SIGNAL RODS.

Application of Simon H. Stupakoff filed July 6, 1896, No. 598,200. Application of Henry Johnson filed January 13, 1896, No. 575,228.

Mr. D. S. Wolcott and *Mr. Marshall A. Christy* for Stupakoff.

Messrs. Brown & Seward for Johnson.

GREELEY, *Assistant Commissioner:*

The invention in issue is defined in the following count:

A post or standard for guides for rods provided with a bearing for the supporting-roller and with the open-sided bearing or support at its upper end adapted to form supports for the journals or spindles of adjacent retaining-rollers, in combination with means for holding the journals in position.

Proofs were regularly taken by both parties, and hearings have been had before the Examiner of Interferences and the Board of Examiners-in-Chief, both resulting favorably to Stupakoff. From the decision of the Board of Examiners-in-Chief the party Johnson has appealed.

The invention has for its object a construction of post or standard forming a part or member of a signal-rod-supporting device whereby any post or standard of the series or any of the parts supported by two adjacent posts or standards may be removed without at the same time disturbing any other standards or parts supported thereby.

By the invention as defined in the issue each standard is provided at its upper end with two bearings for the contiguous ends of the journals or spindles of adjacent retaining-rollers. These bearings are so constructed as to permit of the removal of the journals or spindles of any retaining-roller without interfering with other retaining-rollers, and each retaining-roller has its own journals or spindle in lieu of a spindle or shaft common to all the retaining-rollers.

Stupakoff has established conception and disclosure in April and May, 1895. He is limited by his preliminary statement to July 31, 1895, for reduction to practice, although as a matter of fact this was probably accomplished earlier.

No attempt is made by Johnson to go back of July 27, 1895, and as no question has been raised as to Stupakoff's diligence priority clearly was properly awarded to Stupakoff.

In his appeal, however, Johnson has raised the following questions:

That the Board of Examiners-in-Chief erred in holding that Stupakoff was entitled to priority on the issue on the ground that he had first invented the open-topped standard. That the Board of Examiners-in-Chief erred in holding that Stupakoff was sole inventor of the issue. That the honorable Board of Examiners-in-Chief erred in not holding that there was ground for calling attention to the question of Stupakoff's right to the issue in view of the English patent set up in Johnson's testimony.

The first of these has been considered and practically disposed of already.

Prior to the filing of this application Stupakoff had with one Schreuder filed a joint application for substantially the invention in controversy. This joint application was put in interference with Johnson's present application. Stupakoff and Schreuder did not file a preliminary statement in that interference. Before the time within which preliminary statements were required to be filed had expired and necessarily before the file of Johnson's application was open to his inspection Stupakoff filed his present sole application. Subsequently the joint application was abandoned.

Now Johnson contends that from the fact that Stupakoff and Schreuder made oath that they were joint inventors a presumption arises which is not overcome by Stupakoff's oath to his sole application. It is further contended that Stupakoff is not shown to be in fact the sole inventor.

The abandonment of the joint application disposes of the presumption which would arise by reason of the oath in that application. The question whether an invention is in fact the joint invention of two persons or the sole invention of one of them is a question not always easily decided. There is nothing to show that Stupakoff was not acting in good faith in filing the sole application. The presumption is that he did so act, particularly in view of the fact that he did so before taking testimony or even presenting a preliminary statement in the interference promptly on ascertaining that the invention was not in fact joint.

Stupakoff is under the circumstances entitled to the same presumption in his favor that he would have been entitled to had the joint application never been filed.

The contention that Stupakoff was not in fact the sole inventor is not borne out by the evidence and exhibits in the case.

It does not appear that there was error on the part of the Examiners-in-Chief in failing to find that there was ground for calling attention to Stupakoff's right to the issue in view of a certain English patent. It may well be doubted whether this is a matter which is reviewable by the Commissioner on appeal. The question of apparent grounds for refusing Letters Patent not involved in the appeal may no doubt be raised before the Commissioner in an interference, as in *ex parte* cases, under Rule 139 (*d*), but as the question is not directly a part of the question of priority it would seem that failure on the part of the Examiners-in-Chief to call attention to such grounds is not error. The question is, however, here considered. The British patent referred to, No. 21,949 of 1892, was cited in the Examiner's first letter in Johnson's application. It is thus of record, and although the interference was declared by a different Examiner it is not to be presumed that the latter failed to consider a reference clearly cited in a comparatively small record. By such consideration and the subsequent declaration of interference the Examiner practically decided the issue patentable in view of this reference, and his decision on this point is not reviewable under Rule 124.

The decision of the Examiners-in-Chief is affirmed.

MCGUIRE *v.* HILL.

Decided June 2, 1898.

1. INTERFERENCE—APPEAL DISMISSED—JUDGMENT ON THE RECORD—AN ADJUDICATION ON THE MERITS—APPEAL LIES TO EXAMINERS-IN-CHIEF.

   Appeal from the decision of the Examiner of Interferences granting a motion for judgment on the record dismissed for the reason that such decision was an adjudication on the merits of the controversy and appeal lies to the Examiners-in-Chief and not to the Commissioner. Otherwise there would be no right of appeal to the Court of Appeals under *Westinghouse* v. *Duncan*, (66 O. G., 1009.)

2. RECORD—ABANDONED APPLICATION, WHEN OF RECORD.

   The abandoned application of Hill having been specifically mentioned by him in a motion to shift the burden of proof, which motion was decided, is a part of the record and necessarily open to his opponent's inspection.

3. INTERFERENCE—NOT TO BE CONTINUED AFTER PRIORITY IS DETERMINED—AUTHORITY OF COMMISSIONER.

   The Commissioner has authority under the statute to institute interference proceedings to determine the question of priority of invention; but he has no authority, when that question is determined, to continue the proceedings for any other purpose. The Commissioner would not be justified in arbitrarily putting a party who in his judgment is entitled to priority to the trouble and expense of taking testimony on the mere possibility that some other tribunal might disagree with him and thus render the taking of testimony necessary. It is not to be presumed that the Commissioner's decision will be overruled on appeal.

APPEAL on motion.

GRAIN-CAR DOOR.

Application of William A. McGuire filed January 3, 1896, No. 574,268. Application of Edward A. Hill filed April 2, 1896, No. 585,857.

Messrs. Bond, Adams, Pickard & Jackson and *Mr. J. L. Norris* for McGuire.

Messrs. Raymond & Omohundro for Hill.

GREELEY, *Assistant Commissioner:*

This is an appeal by McGuire from the decision

of the Examiner of Interferences granting Hill's motion for judgment on the record.

This decision of the Examiner of Interferences was not a ruling on a preliminary or interlocutory matter, but was an adjudication of the merits of the controversy, and therefore an appeal from his decision lies properly to the Examiners-in-Chief and not to the Commissioner. McGuire himself states that he has the right of appeal to the Court of Appeals if the decision of the Office is against him, and thus recognizes the fact that the decision involves the merits of the controversy and not merely an interlocutory ruling. In regard to appeals from the Commissioner the Court of Appeals of the District of Columbia said in *Westinghouse* v. *Duncan*, (66 O. G., 1009:)

The ultimate determination in such cases by the Commissioner of Patents is of the question of priority of invention, and that is the only decision from which an appeal will lie to this court in such cases. * * * An appealable decision of that officer can only be made after the finding of the Primary Examiner and the determination of the Board of Examiners-in-Chief upon appeal and thence upon appeal to the Commissioner of Patents.

It is apparent, therefore, that the appellant has mistaken his remedy in filing this appeal instead of appealing to the Examiners-in-Chief.

Certain questions of practice have, however, been raised which it may be well to consider at this time. It is alleged that the abandoned application of Hill has not been made a part of the record in this case and was therefore not open to the inspection of McGuire; but this allegation is not well founded, since the motion by Hill to shift the burden of proof specifically mentioned that application and the decisions on that motion placed the application of record and gave McGuire the right to inspect it. It was, furthermore, formally made a part of the record by the Primary Examiner's letter of February 19, 1898.

The third reason of appeal raises a question of practice applicable to all cases in which it has been the practice to render judgment on the record, and if granted would prevent such judgment being rendered in any cases in future. It is stated as follows:

Third. The Examiner of Interferences erred in not giving weight to the consideration advanced in opposition to the motion that should the Court of Appeals of the District of Columbia reverse the decision of the Acting Commissioner on the question of continuity of Hill's application, it would be necessary to present proofs on the merits of the case and that due and orderly procedure of the Patent Office requires that all proofs of the parties be given before final decision in order that the entire case may be considered by all tribunals having jurisdiction thereof.

The statute gives the Commissioner authority to institute interference proceedings in order to determine the question of priority of invention, and when he is satisfied as to that question it does not give him authority to continue the proceedings for any other purpose. He would not be justified in arbitrarily putting a party who in his judgment is entitled to an award of priority to the trouble and expense of taking testimony merely on the possibility that some other tribunal may disagree with him and thus render the taking of testimony necessary in future. He is bound to decide cases before him in accordance with his own judgment, and it is not to be presumed in advance that his decision will be overruled upon appeal.

This appeal is dismissed; but since the appellant has mistaken his remedy in this appeal and since the limit within which an appeal to the Examiners-in-Chief could have been taken has as a consequence expired the Examiner of Interferences is directed to extend such limit of appeal.

O'ROURKE v. GILLESPIE.

Decided June 15, 1898.

1. INTERFERENCE—RULE 126—REMANDING TO PRIMARY EXAMINER.

While under Rule 126 the Commissioner may before judgment on the question of priority suspend the interference and remand the case to the Primary Examiner for consideration of any matter to which his attention is called by the Examiners-in-Chief as establishing the fact that no interference in fact exists, neither the rule nor the practice contemplates such action unless the ground therefor is entirely clear.

2. SAME—PRACTICE UNDER HAMMOND v. HART DECISION—DISSOLUTION NOT JUSTIFIABLE WHEN BOTH PARTIES HAVE ACCEPTED THE ISSUE AND PRIORITY HAS BEEN DECIDED BY EXAMINERS-IN-CHIEF.

While, notwithstanding that under the present practice as defined in *Hammond* v. *Hart* (83 O. G., 743) the interference should not have been declared upon the present invention until both parties directly and definitely claimed the precise subject-matter, the issue has been accepted by the parties, no motion to dissolve having been made and no question as to interference in fact raised before the Examiner of Interferences or the Examiners-in-Chief, it not being clear that the issue does not fairly well define the invention intended by each of the parties, and dissolution would necessarily be followed by declaration of a new interference better defined, perhaps, but yet in real subject-matter substantially the issue on which testimony was taken, the dissolution is not necessary or justifiable.

ON petition.

AIR-LOCK FOR CAISSONS.

Application of John F. O'Rourke filed December 30, 1896, No. 617,437. Application of Richard S. Gillespie filed July 29, 1896, No. 600,942.

Mr. W. B. Hutchinson, *Messrs. Hutchinson & Criswell*, and *Messrs. Davis & Davis* for O'Rourke.

Mr. James L. Norris for Gillespie.

GREELEY, *Assistant Commissioner:*

This is a petition by O'Rourke to remand this interference back to the Primary Examiner to determine whether an interference in fact exists.

In their recent decision on priority a majority of the Examiners-in-Chief stated that obviously the claims stated to be involved do not interfere, although there may be a common unclaimed novelty in the species of the two applications. This statement is made the ground of the present petition.

Rule 126 provides that the Commissioner may before judgment on the question of priority suspend the interference and remand the case to the Primary Examiner for consideration of any matter to which his attention has been called which establishes the fact that no interference exists. The rule provides that the Examiners-in-Chief may specifically direct the attention of the Commissioner to such matter if they find it in the case. Neither the rule nor the practice contemplates such action on the part of the Commissioner unless the ground of his action is entirely clear. In *Hicks* v. *Keating* v. *Purvis and Bilgram* (40 O. G., 343) Mr. Commissioner Hall said, in speaking of the consideration of statutory bars in cases of this kind:

In almost every case the interest of the public will be conserved by letting the case take its regular course to final hearing and award of priority. The taking of the evidence discloses the state of the parties, public use, and abandonment, and enables the Office to consider and determine more satisfactorily any question of statutory bar called to attention in the decision of the Examiner of Interferences. * * *

So long as there is an interference a party to the issue, after it is formally declared, is entitled to a determination, and he should not be denied this by suspension or dissolution of interference unless a clear and satisfactory case is presented under Rule 120 and for urgent and proper reasons.

The remarks of Mr. Hall in that case apply directly to the present case. This is the practice followed also in *Thomson and Unbehend* v. *Hisley*, (66 O. G., 1596.) In this connection attention may also be called to the following extract from the decision in *Schmertz* v. *Appert*, (83 O. G., 1511:)

I am of the opinion, however, that the issue is and has been understood by the parties to the interference, and as both parties have accepted the issue as drawn by the Primary Examiner and as neither has presented a motion to dissolve it is not necessary to consider these matters (interference in fact) here, but the interference will be determined on the issue as made and accepted.

In the present case no motion to dissolve on the ground of no interference in fact was made at the proper time, and it does not appear that the question was raised before the Examiner of Interferences or in the presentation of the case before the Examiners-in-Chief. The issue appears to have been accepted by the parties up to the bringing of this motion, and priority on this issue should be determined notwithstanding the fact that under the present practice, as defined in *Hammond* v. *Hart*, (83 O. G., 743.) the interference should not have been declared upon the present issue unless both parties directly and definitely claimed the precise subject-matter.

It is not in the present case clear that the issue does not fairly well define the invention intended to be covered by each of the parties. One of the Examiners-in-Chief does not concur in the statement that the claims stated to be involved in the interference do not in fact interfere. It further appears that the respective parties were in fact inventors of the same invention which is substantially the invention of the issue. To take action looking toward the dissolution of this interference when its dissolution would necessarily be followed by declaration of a new interference with an issue better defined, perhaps, but yet in real subject-matter substantially the issue upon which the testimony of the respective parties has been taken is not necessary or, in my opinion, justifiable.

The petition is denied.

VALLEY v. WURTS.

Decided May 10, 1898.

1. INTERFERENCE—ADMISSIBILITY OF EVIDENCE—MOTION TO STRIKE OUT TESTIMONY.

While each tribunal must decide for itself what of the evidence presented to it is pertinent and admissible, decision on a motion to strike out certain testimony, coupled with a motion for leave to introduce evidence in reply should such testimony be held pertinent and admissible, should be rendered at such period in the proceedings that neither party shall be deprived of rights which justly belong to him.

2. SAME—DECISION ON ADMISSIBILITY AND PERTINENCY OF EVIDENCE.

As the effect of refusing to decide upon the pertinency and admissibility of evidence prior to final hearing would deprive the party who moves to strike out testimony taken by his opponent of the right to offer evidence in reply practically without a hearing and without possibility of appeal, the Examiner of Interferences is directed to determine the question before final hearing.

3. SAME—REBUTTAL EVIDENCE.

It is a matter of grave doubt whether a junior party having before him at the time of taking his testimony-in-chief the application file of his opponent is not bound, if he is to attack this in any way, to attack it at such period of the proceedings that his opponent may have an opportunity to reply When the senior party relied on his application file and introduced no additional evidence after the closing of the testimony-in-chief of the junior party, it is difficult to see what there was for the junior party to rebut.

APPEAL on motion.

ELECTRIC CONTROLLER.

Application of Gustaf Valley filed January 7, 1897, No. 618,248. Application of Alexander J. Wurts filed January 31, 1895, No. 536,824.

Mr. Richard Eyre for Valley.

Mr. Wesley G. Carr for Wurts.

GREELEY, *Assistant Commissioner:*

It appears that the preliminary statements in this interference were duly filed and opened. Thereupon the application file of each of the respective parties was open to inspection by his opponent.

In the notice setting time for taking testimony it was stated that—

rebutting testimony, but no other, may be taken by parties on whom rests the burden of proof after the closing of the testimony of the party who first filed his application.

For reasons appearing of record it became necessary to reset the times for taking testimony, and they were set as follows: Valley to close in chief September 16, 1897. Wurts to close October 6, 1897. Valley to close in rebuttal October 21, 1897. Hearing November 12, 1897.

Under this order Valley proceeded to take his testimony. At the time of taking his testimony his opponent's application file was open to his inspection.

Wurts took no testimony, relying on his application file.

Valley on October 13, 1897, within the time set for his rebuttal testimony, took certain testimony tending to show that certain experiments made by Wurts or under his direction in 1894 or 1895 were unsatisfactory and were abandoned.

Wurts was not represented at the taking of this testimony, but reserved the right to object to such testimony on the ground that Valley had no right to offer evidence of any kind, inasmuch as his time for taking testimony-in-chief had expired and he (Wurts) had taken no testimony. Wurts thereafter brought a motion to strike out the testimony so taken by Valley, and further moved that if such testimony be held pertinent and admissible he be afforded an opportunity to introduce evidence in reply.

The Examiner in deciding the motion held as follows:

To determine the question presented by the motion would involve the reading of the entire record, or at least, the testimony

complained of. The Examiner is not disposed to do this at the present time, and he will only do so when the case is considered on its merits. If he finds at that time that the rebuttal testimony is not warranted, it will not be considered, and in his decision he will so indicate. If, on the other hand, he deems it proper rebuttal, it will be given due consideration.

While the motion asks that in case the rebuttal testimony is deemed pertinent and admissible, opportunity be afforded for taking surrebuttal testimony, the Examiner is of opinion that the showing is insufficient to warrant a favorable action. This branch of the motion is therefore denied. As to the portion of it which prays for a suppression of Valley's rebuttal testimony, action is deferred until the case is finally heard upon its merits.

From this decision this appeal is taken.

As each tribunal must decide for itself in the first instance what of the evidence presented to it is pertinent and admissible, it is not necessary to here decide the question of the pertinency or admissibility of the testimony in question. This should, however, be decided by the tribunal having jurisdiction of the matter at such period in the proceedings that neither of the parties shall be deprived of rights which justly belong to him.

The effect of the refusal of the Examiner of Interferences to decide upon the pertinency and admissibility of the evidence prior to final hearing is to deprive Wurts of the right to take testimony in reply practically without a hearing and without possibility of appeal from an adverse decision. The Examiner of Interferences will therefore from inspection of the testimony in question determine before final hearing whether or not such testimony is proper rebuttal and whether or not it is pertinent and admissible.

In the decision of the Examiner of Interferences the following language is used:

> The mere fact that a senior party to an interference refrains from taking testimony within the time given him, and elects to stand upon his record date, does not preclude a junior party from attacking such record. As soon as the senior party's time expires, without in the meantime having taken testimony, his case rests upon his application, and the constructive reduction to practice incident to it, and such application becomes his only testimony in the case.
>
> Certainly a junior party has as much right to rebut this testimony as he has to attack any other testimony presented by his opponent.

As the question whether or not the testimony in question is proper rebuttal is not decided by the Examiner of Interferences, the language quoted must be considered as *obiter dictum*. It may, however, be said that it is a matter of grave doubt whether a junior party having before him at the time of taking his testimony-in-chief the application file of his opponent is not bound, if he is to attack this in any way, to attack it at such period of the proceedings that his opponent may have an opportunity to reply. The junior party in this case had ample opportunity to attack the sufficiency of the application file of the senior party in his testimony-in-chief. The senior party introduced no additional testimony. Nothing was introduced after the closing of the testimony-in-chief of the junior party with which he was not entirely familiar before the first word of his testimony was taken. It is difficult to see what there was for the junior party to rebut.

The case is remanded to the Examiner of Interferences for decision of the question of the pertinency and admissibility of the testimony in question.

VALLEY *v.* WURTS.

Decided July 30, 1898.

INTERFERENCE—MOTION TO STRIKE OUT TESTIMONY—APPEAL DISMISSED.

Appeal from decision of Examiner of Interferences denying motion to strike out testimony dismissed, the moving party having been given opportunity to introduce evidence in reply, the question having been decided prior to final hearing only because if deferred until such hearing the moving party would then be unable to offer evidence in reply. It being necessary to the independent judgment of each tribunal that it should determine such questions for itself, its decision is not reviewable in advance of final hearing.

ON motion.

ELECTRIC CONTROLLER.

Application of Gustaf Valley filed January 7, 1897, No. 618,248. Application of Alexander J. Wurts filed January 31, 1895, No. 536,824.

Mr. Richard Eyre for Valley.
Mr. Wesley G. Carr for Wurts.

GREELEY, *Acting Commissioner:*

In accordance with my decision of May 10, 1898, on an appeal from the decision of the Examiner of Interferences, deferring until final hearing action upon Wurts's motion to strike out certain testimony taken by Valley and denying his motion for leave to introduce evidence in reply, the Examiner of Interferences on June 29 ordered that the testimony in question should be permitted to stand and that Wurts be given time to introduce evidence in reply, should he so desire.

From so much of this decision as held that the testimony in question should be permitted to stand Wurts has taken appeal. Valley moves to dismiss this appeal.

The question of the pertinency and admissibility of any testimony offered in the case should ordinarily be left to be considered on final hearing. If the question had been left until final hearing in this case, Wurts would have been unable to offer evidence in reply, and for this reason, and this reason only, I held that the question should in this case be decided before final hearing. If upon final hearing the Examiner of Interferences should decide adversely to Wurts upon the question of priority and it should appear that the evidence in question was material in determining the question of priority, the question of pertinency and admissibility of this evidence may be again considered on appeal.

To entertain this appeal would be, in effect, to hold that the Commissioner may, in advance of final hearing, instruct the Examiner of Interferences as to the decision to be rendered by him upon the question of priority. It is necessary to the independent judgment of each tribunal that it should have the right to determine for itself all such questions as that from the decision of which this appeal is taken, and its decision on such questions should not be reviewable in advance of the final hearing.

The motion to dismiss Wurts's appeal is granted.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 10, 1898.

SIR: The Secretary of the Interior has ordered that E. G. Wetmore, of Toledo, Ohio, be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 10, 1898.

SIR: The Secretary of the Interior has ordered that A. D. Thompson, of York, Pa., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 11, 1898.

SIR: The Secretary of the Interior has ordered that George L. Pryor, of Norfolk, Va., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

Notice of Interference—Loosley v. Decker.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 14, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

An interference having been declared by this Office between the application of Ernest A. Loosley, deceased, of Birmingham, Ala., and an application of William Lloyd Decker, of Worcester, Mass., whose attorney of record is Rufus B. Fowler, of same place; and the notices of said declaration, mailed by the Patent Office in the usual manner to the said heirs, executor, or administrator of Ernest A. Loosley, deceased, having elicited no response, notice is hereby given to such heirs, executor, or administrator that if it is desired to contest this interference communication with the Commissioner of Patents should be immediately established, in order that the above-mentioned notices may be duly forwarded at once.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

C. H. DUELL,
Commissioner.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 16, 1898.

Labels.

6,638.—Title: "UNCLE SAM'S MAINE PUZZLE." *William P. Berrien*, Montclair, N. J., and *Alfred W. Smith*, New York, N. Y. Application filed May 12, 1898.

6,639.—Title: "CHELSEA TRIMMING." (For Fancy Dry Goods.) *The Kursheedt Manufacturing Company*, New York, N. Y. Application filed July 25, 1898.

6,640.—Title: "PICKWICK PAPER." (For Toilet-Paper.) *J. George Cramer*, Rochester, N. Y. Application filed July 9, 1898.

6,641.—Title: "BARE'S DYSPEPSIA REMEDY AND TISSUE BUILDER." (For a Medicine.) *J. B. Bare*, Baltimore, Md. Application filed June 27, 1898.

6,642.—Title: "FORD'S REMEDIES." (For Medical Compounds.) *Frederic G. Ford*, Philadelphia, Pa. Application filed July 9, 1898.

6,643.—Title: "DR. DUNLOP'S MARVOLINE (ORIENTAL OIL)." (For Rheumatism, Neuralgia, &c.) *Clark W. Dunlop*, New York, N. Y. Application filed July 27, 1898.

6,644.—Title: "HOOSIER WHOLE WHEAT PANCAKE FLOUR." (For Pancakes.) *Hygiene Milling Company*, Seymour, Ind. Application filed March 24, 1898.

Prints.

73.—Title: "GONE TO THE FRONT." (For Plug-Tobacco.) *Seiter & Kappes*, New York, N. Y. Application filed July 8, 1898.

74.—Title: "AMERICAN-CUBAN." (For Playing-Cards.) *The New York Consolidated Card Company*, New York, N. Y. Application filed July 25, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 9, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears—Between one and two months.			
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	June 20	Aug. 1	151
102	XIX. Stoves and Furnaces	June 13	July 30	189
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	June 25	July 26	106
88	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	June 9	July 26	148
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	June 24	July 25	126
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	June 11	July 20	127
	Between two and three months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	May 27	Aug. 2	302
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	May 25	July 25	183
253	X. Carriages and Wagons	May 10	July 22	187
158	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	May 10	July 21	183
255	XII. Mechanical Engineering Store-Service, etc.	May 24	July 20	194
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	May 9	July 19	236
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	May 9	July 15	329
	Between three and four months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Apr. 11	Aug. 1	346
240	VII. Velocipedes	May 2	July 26	495
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Apr. 15	July 26	473
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Apr. 12	July 26	388
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Apr. 14	July 25	280
248	XVIII. Steam-Engineering, etc	Apr. 13	July 20	307
93	XXI. Textiles, etc	Apr. 10	July 18	289
	Between four and five months.			
246	I. Tillage and Fences	Mar. 22	July 26	244
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Mar. 30	July 25	375
128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Mar. 25	July 25	144
120	IX. Hydraulics, Fire-Extinguishers, etc.	Mar. 17	July 25	263
106	II. Farm Stock, Products, etc.	Mar. 15	July 25	521
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Apr. 1	July 19	132
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Mar. 12	July 11	378
	Between five and six months.			
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Feb. 9	July 29	479
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Feb. 25	July 21	447
106	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Feb. 14	July 13	776
	Between six and seven months.			
217	XXXIII. *Trade-Marks, etc., †Designs, Drafting, and Optics.	Feb. 2	July 28	224
	Between seven and eight months.			
221	XXIII. Registers, Fluid-Meters, and Accustics, etc.	Dec. 27	Aug. 1	245
215	XVII. Printing, Type-Writing Machines, and Linotyping.	Dec. 29	July 20	448
95	XXX. Paper Manufactures. Lamps, and Gas-Fittings.	Jan. 4	July 26	259

Applications Under Examination—Continued.

91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Dec. 31	July 26	466
	Between eight and nine months.			
261	XXXVI. Weighing and Measuring Devices and Driers.	Nov. 18	July 22	293

Total number of applications awaiting action 10,733

Under one month.			
Designs	Aug. 1	Aug. 1	72
Trade-Marks	July 30	July 29	76

ISSUE OF AUGUST 16, 1898.

Patents	398	No. 608,998 to No. 609,395, inclusive.
Designs	44	No. 29,212 to No. 29,255, inclusive.
Trade-Marks	21	No. 31,867 to No. 31,887, inclusive.
Labels	7	No. 6,638 to No. 6,644, inclusive.
Prints	2	No. 73 to No. 74, inclusive.
Reissues	1	No. 11,687.
Total issue	473	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	....	New Hampshire	....	....
Arizona Territory	....	....	New Jersey	30	1
Arkansas	3	....	New Mexico Territ'y	....	....
California	12	....	New York	73	10
Colorado	6	....	North Carolina	1	....
Connecticut	13	....	North Dakota	....	....
Delaware	1	....	Ohio	37	3
District of Columbia	2	....	Oklahoma Territory	....	....
Florida	....	....	Oregon	3	....
Georgia	3	....	Pennsylvania	35	1
Idaho	1	....	Rhode Island	5	1
Illinois	34	2	South Carolina	1	....
Indian Territory	....	....	South Dakota	....	....
Indiana	9	1	Tennessee	3	....
Iowa	5	....	Texas	6	....
Kansas	3	....	Utah	1	....
Kentucky	2	....	Vermont	2	....
Louisiana	3	....	Virginia	2	....
Maine	5	1	Washington	2	....
Maryland	4	2	West Virginia	3	....
Massachusetts	38	2	Wisconsin	6	1
Michigan	10	1	Wyoming	....	....
Minnesota	17	1	U. S. Army	....	....
Mississippi	2	....	U. S. Navy	....	....
Missouri	10	1	Total to citizens of the United States	390	28
Montana	1	....			
Nebraska	4	....			
Nevada	....	....			

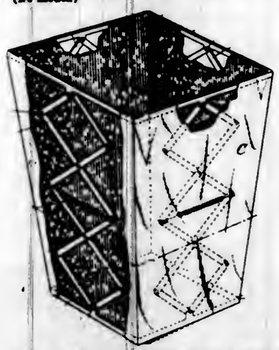
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	....	....	Italy	....	....
Australia	....	....	Mexico	....	....
Austria-Hungary	2	....	Netherlands	....	....
Belgium	....	....	Newfoundland	....	....
Bermuda	....	....	New South Wales	2	....
Brazil	1	....	New Zealand	....	....
Canada	2	....	Norway	....	....
Cape Colony	....	....	Portugal	....	....
Chile, Republic of	....	....	Queensland	....	....
China	....	....	Russia	....	....
Colombia	....	....	Scotland	....	....
Cuba	....	....	South African Republic	....	....
Denmark	2	....	South Australia	....	....
Egypt	....	....	Spain	....	....
England	28	2	Sweden	....	....
Finland	....	....	Switzerland	....	....
France	5	....	Tasmania	1	....
Germany	8	....	Victoria	....	....
Guatemala	....	....	Total to citizens of foreign countries	52	2
Hawaii	....	....			
India	....	....			
Ireland	1	....			

PATENTS

GRANTED AUGUST 16, 1898.

608,998. COLLAPSIBLE CLOTHES AND WASTE RECEPTACLE. Octavie L. Apthorp, Boston, Mass. Filed Mar. 26, 1898. Serial No. 675,346. (No model.)



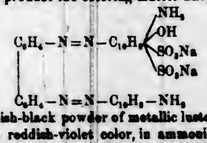
Claim.—1. In a clothes, waste or other analogous receptacle, the combination of a bottom forming and shaping frame; a top forming and shaping frame; and a plurality of lazy-tongs which connect said frames and are arranged at an angle, one to the other.

2. In a clothes, waste or other analogous receptacle, the combination of a bottom forming and shaping frame; a top forming and shaping frame; a plurality of lazy-tongs which connect said frames and are arranged at an angle, one to the other; and a flexible covering for said frames and lazy-tongs.

608,999. BLUE-BLACK AZO DYE. Johann Baumann and Moritz Ulrich, Elberfeld, Germany, assignors to the Farbenfabriken, formals Fr. Bayer & Co., same place. Filed Jan. 31, 1898. Serial No. 668,066. (Specimens.) Patented in England Aug. 26, 1890, No. 13,443; in Austria-Hungary Nov. 28, 1890, No. 36,494 and No. 53,417; in France Dec. 6, 1890, No. 210,083, and in Italy Apr. 27, 1891, XXV, 29,631, LVIII, 100.

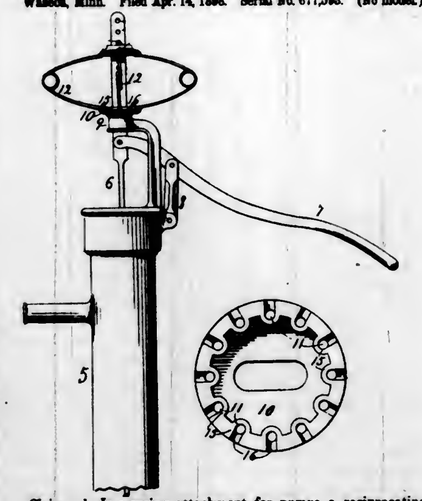
Claim.—1. The process of producing a new coloring-matter by combining equimolecular proportions of a tetraso-diphenyl salt with 1.8 amidonaphthol-beta-disulfo-acid and alpha-naphthylamin, substantially as described.

2. As a new product the coloring-matter having the formula



forming a brownish-black powder of metallic luster, soluble in water and alcohol with reddish-violet color, in ammonia with bright reddish violet, slightly redder than the aqueous solution; little soluble in sodium carbonate at ordinary temperature, more on heating, with a dull reddish-violet color, from which solution brownish-black flakes separate on cooling; scarcely soluble in soda-lye at ordinary temperature, more on heating, with a dull violet color; almost insoluble in dilute hydrochloric and sulfuric acid, even on heating; soluble in concentrated sulfuric acid, with greenish-blue color, assuming on addition of ice-water first, a pure blue, then a reddish-blue color, and finally separating a fine blue precipitate; dyeing unmordanted cotton in an alkaline bath violet-black shades which, after treatment with nitrous acid and subsequent combination with an alkaline solution of beta-naphthol, change into black, and having the qualities substantially as described.

609,000. SPRING ATTACHMENT FOR PUMPS. James O. Bane, Waseca, Minn. Filed Apr. 14, 1898. Serial No. 677,593. (No model.)



Claim.—1. In a spring attachment for pumps, a reciprocating piston-rod; a bearing for the rod; a plate mounted upon the said bearing around the rod and having in it a series of steps; a collar adjustably secured upon the piston-rod and having steps registering with the steps in the said plate, and springs adapted to be stepped in the said plate and collar, substantially as described.

2. In spring attachments for pumps, a reciprocating piston-rod; a bearing for the rod; a plate mounted upon the said bearing around the rod and having in it a series of steps; a collar removably secured upon the piston-rod and having steps registering with the steps in the said plate, and springs fitted to be stepped in the said plate and collar; there being raised bosses around the said steps, and a radial notch in each boss to receive the shank of a spring, substantially as described.

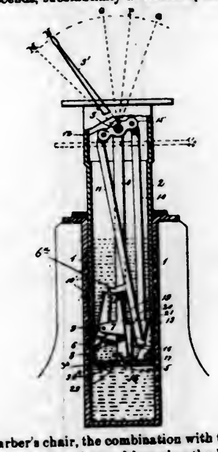
609,001. CONSTRUCTION OF METAL BRIDGES. Walter Beer, London, England. Filed Sept. 23, 1897. Serial No. 652,601. (No model.) Patented in England Nov. 12, 1896, No. 25,421.



Claim.—A bridge having a pair of double or balanced cantilivers, and an arch located above the plane of the roadway and occupying the space between the ends of the cantilivers, the ends of the arch abutting against the ends of the cantilivers, substantially as described.

609,002. BARBER'S CHAIR. Eugene Berringhaus, Cincinnati, Ohio. Filed Apr. 3, 1897. Serial No. 630,571. (No model.)

Claim.—1. In a barber's chair, the herein-described outer cylinder attached to the base of the chair and provided with a series of annular recesses; a hollow rotatable cylinder or riser adapted to move within the outer cylinder and having the chair-seat attached to its top; a transverse rock-shaft journaled near the upper end of the riser and the oscillatory hand-lever; a rock-arm secured to the said shaft having a depending pawl-arm and a locking-arm respectively attached to its extremities, the locking-arm, a locking-shoe adapted to be pressed by said locking-arm against the interior wall of the outer cylinder, the pawl-arm adapted to hoist the chair by successive steps; the dragging pawl the central stock to which said pawl is pivoted having its lower end secured to the bottom of the riser and its upper end to the rock-shaft; the said lifting pawl-arm having its lower engaging portion bifurcated and formed with an inclined surface adapted to engage a corresponding inclined face of the locking-arm at a certain position of the operating-lever, thereby causing the lifting-pawl to retire from the annular recesses, and releasing the dragging pawl, allowing the superimposed weight to be upheld by the oil in the outer cylinder, said oil being allowed to pass upwardly through an aperture as the chair descends, substantially as herein specified.



2. In a barber's chair, the combination with the cylinder and the riser, and means for elevating and lowering the latter, of the curved arm pivoted to the upper portion of the riser, the spring connected with said arm and riser, the projection on said arm, the rock-shaft, the cam secured thereto, and the apron-bar passing through an aperture in said curved arm, substantially as described.

609,003. PROJECTILE. PETER BORELLI, Wapinitia, Oreg. Filed Sept. 4, 1897. Serial No. 650,598. (No model.)



Claim.—1. The combination with a projectile provided with a butt-socket, of a securing-pin passed axially through the projectile, and barbs secured to the pin within the butt-socket, substantially as described.

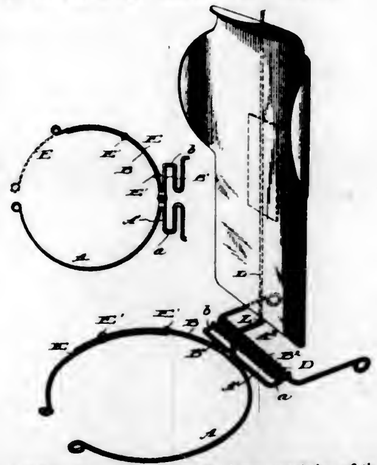
2. The combination with a projectile provided with a butt-socket and having an axially-disposed securing-pin, of resilient strips secured medially to the extremity of the securing-pin within the butt-socket and having their extremities retained in divergent relation to the edges of the butt-socket, substantially as described.

3. The combination of a projectile provided at its butt with a series of resilient barbs or fliers constructed of metal and secured directly to the projectile, said barbs or fliers being adapted to be compressed, and the shell 10 receiving and compressing the resilient barbs or fliers and concealing the same, the barbs or fliers being capable of expanding when the projectile leaves the shell, substantially as described.

4. The combination of a projectile provided at its butt with a tapering socket forming inclined walls, and resilient arms or fliers secured within the socket and bearing against the inclined walls thereof, whereby they are supported in a divergent position, substantially as described.

5. A device of the class described comprising a shell, a bullet or projectile fitting within the shell and forming an ordinary cartridge, and expansible barbs or fliers connected with the bullet or projectile and compressed and concealed within the shell, said barbs or fliers being capable of positively expanding when the projectile or bullet leaves the shell, substantially as described.

609,004. REFLECTOR-HOLDER. GEORGE B. BLOOD, Pittsburg, Pa. Filed Feb. 16, 1898. Serial No. 670,496. (No model.)



Claim.—1. A reflector-holder for lamps, consisting of the two arms A and B pivoted together, portions of the said arms being bent upon themselves to form lugs, and a coiled spring having its ends seated over said bent portions, combined with the reflector-supporting rod, as set forth.

2. In a reflector-holder for lamps, the combination with the curved arms pivoted together, the sliding wire E having eyes and mounted to slide on one of the arms of the clamp, and the reflector-holding rod bent at an angle and forming a pivot for the clamping-arms, as shown and described.

609,005. BICYCLE. JOSEPH W. BRANWELL, Philadelphia, Pa. Filed Aug. 12, 1897. Serial No. 647,947. (No model.)

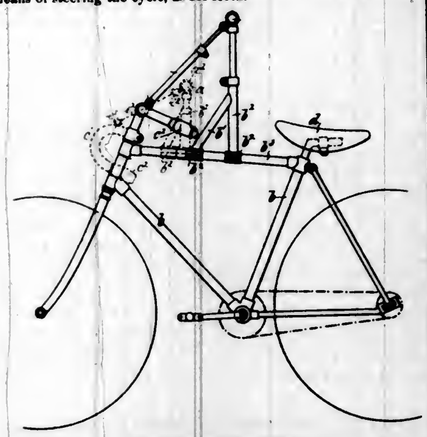


Claim.—1. In a sectional fork, a crown with horizontally-arranged gudgeons thereon, limbs with vertically-arranged split collars thereon and screws respectively in the separate ends or eyes of said split collars.

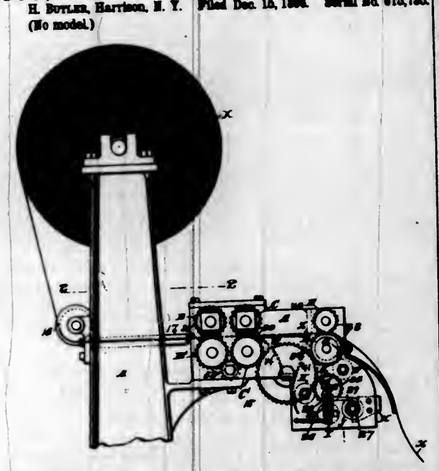
2. In a sectional fork, a crown with horizontally-arranged gudgeons thereon, limbs with vertically-arranged split collars thereon and screws in the separate ends or eyes of said split collars, in combination with studs which are passed through said collars and freely enter segmental slots in said gudgeons.

609,006. BICYCLE. THOMAS H. BRIGG, Bradford, England. Filed Jan. 6, 1897. Serial No. 618,112. (No model.)

Claim.—The combination with a cycle-frame having a front steering handle-bar *c*, and pedal driving-gear, of a handled forearm-bar *a*, and supporting-stem *b'*, arranged intermediate of the handle-bar *c*, and the cycle-saddle, the stem being adjustable in relation to its distance from the handle-bar and the saddle, and the forearm-bar being adjustable in height in relation to the handle-bar and saddle, and having facility of turning about the axis of its supporting-stem, and being adjustably connected to the handle-bar in such relation thereto as to enable the cyclist, while having hold of the handle-bar, and without interfering with his control of the steering-gear, by taking a forward or an upward bearing against the forearm-bar, to increase his normal driving or retarding power as occasion may require, and also as to serve to support his forearms and rest his body if required while traveling under ordinary circumstances, and as an auxiliary means of steering the cycle, as set forth.



609,007. CUTTING AND PRINTING MECHANISM. WILLIAM H. BUTLER, Harrison, N. Y. Filed Dec. 15, 1896. Serial No. 615,735. (No model.)



Claim.—1. The combination with devices for cutting portions from a strip of material, of feeding devices for advancing the strip of material, a guide for directing the portions cut from the strip away from the strip, and means between said cutting devices and said guide for separating the leading ends of successive cut portions from the strip and moving them transversely to the strip to the proper side of the guide to secure their proper guidance, substantially as described.

2. The combination with devices for cutting portions from a strip of material, of feeding devices acting upon the strip of material and portions cut therefrom, a guide for directing the portions cut from the strip away from the strip, and means in connection with said feeding devices for separating the leading ends of successive cut portions from the strip and moving them transversely to the strip to the proper side of the guide to secure their proper guidance, substantially as described.

3. The combination with devices for cutting portions from a strip of material, of a guide for directing said portions away from the strip, and feeding-rolls between said cutting devices and said guide having feeding-surfaces engaging the strip and one of said rolls having a projecting segmental portion whereby successive portions cut from the strip are separated from the strip and moved transversely to the strip to the proper side of the guide to secure their proper guidance, substantially as described.

4. The combination with devices for cutting portions from a strip of material, of a guide for directing said portions away from the strip, and feeding-rolls between said cutting devices and said guide having feeding-surfaces engaging the strip and having one a projecting segmental portion and the other a coacting feeding-surface whereby successive portions cut from the strip are separated from the strip and moved transversely to the strip to the proper side of the guide to secure their proper guidance, substantially as described.

5. The feeding-rolls C, C' having feeding-surfaces 10, 11, said roll C having feeding-segment 12 projecting above feeding-surface 10 and coacting with feeding-surface 13 on roll C' below feeding-surface 11, in combination with a guide on opposite sides of which material is fed by the feeding-surfaces, substantially as described.

6. Feeding-rolls C, C' having feeding-surfaces 10, 11, said roll C having feeding-segment 12 projecting above feeding-surface 10 and coacting with feeding-surface 13 on roll C' below feeding-surface 11, substantially as described.

7. The combination with the cutting-rolls B, B', of the feeding-rolls C, C' having feeding-surfaces 10, 11 engaging the strip, said roll C having a segment 12 projecting above feeding-surface 10, substantially as described.

8. The combination with the cutting-rolls B, B', of the feeding-rolls C, C' having feeding-surfaces 10, 11 engaging the strip, said roll C having a segment 12 projecting above feeding-surface 10, and a guide on opposite sides of which the strip and portions cut therefrom are fed, substantially as described.

9. The combination with the cutting-rolls B, B', of the feeding-rolls C, C', having feeding-surfaces 10, 11 engaging the strip, said roll C having feeding-segment 12 projecting above feeding-surface 10 and coacting with feeding-surface 13 on roll C' below feeding-surface 11, and a guide on opposite sides of which the strip and portions cut therefrom are fed, substantially as described.

10. The combination with the cutting-rolls B, B', of the feeding-rolls C, C' having feeding-surfaces 10, 11 engaging the strip, said roll C having feeding-segment 12 projecting above feeding-surface 10 and coacting with feeding-surface 13 on roll C' below feeding-surface 11, guide 14 between the strip and portions cut therefrom, support 15 for the strip having opening 2, and guards 40, 41 above and below the strip, substantially as described.

11. The combination with the supply-roll G, and arm 25 rotating therewith, of lever 23, sliding block 22 supported in the frame and engaged by the lever, ductor-roll I mounted in the block, fountain-roll J, a ratchet on the fountain-roll, and a pawl carried by the block for rotating said fountain-roll, and means for returning the lever, substantially as described.

12. The combination with the supply-roll G, and arm 25 rotating therewith, of lever 23, sliding block 22 supported in the frame and engaged by the lever, and ductor-roll I mounted in the block, substantially as described.

13. The combination with supply-roll G, its shaft 8 and means for moving the roll longitudinally on its shaft, of ductor-roll I, and fountain-roll J, sliding block 22 supported in the frame and carrying the ductor-roll, lever 23 engaging said block, arm 25 on shaft 8 actuating the lever, and means for returning the lever, substantially as described.

609,008. DEVICE FOR APPLYING WALL-PAPER. THOMAS CARTER, Pittsburg, Pa. Filed May 20, 1897. Serial No. 637,382. (No model.)

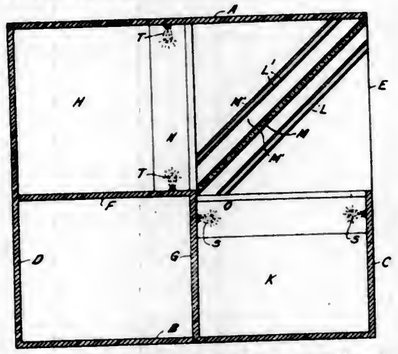


Claim.—A device for applying wall-paper comprising a handle, a blade, secured fixedly thereto, a cooperating blade hinged to the fixed blade and projecting beyond the edge thereof, and springs secured to the blades and adapted to hold them normally in contact, substantially as described.

609,009. OPTICAL-ILLUSION CABINET. ALBERT B. CARRINGTON, New York, N. Y.; Elizabeth Carrington administratrix of said Albert B. Carrington, deceased. Filed Nov. 24, 1896. Serial No. 613,336. (No model.)

Claim.—1. In an optical-illusion cabinet, two chambers in different horizontal planes, one of which is concealed from view, and the other being in the rear thereof, whereby a space is left in said cabinet which is equal in size to either of said chambers, and which is in the line of vision; a plate-glass mounted diagonally of said space, and held in position by moldings secured to the walls forming the sides of said cabinet; and a plurality of strips of moldings arranged on said walls parallel with said glass and on both sides thereof, and

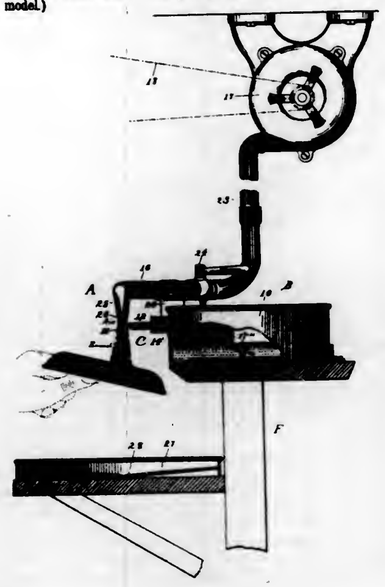
means to transform said glass into a reflector, substantially as and for the purpose described.



2. In an optical-illusion cabinet, two chambers in different horizontal planes, one of which is concealed from view, and the other being in the rear thereof, whereby a space is left in said cabinet which is equal in size to either of said chambers, and which is in the line of vision; a plate-glass mounted diagonally of said space, and held in position by moldings secured to the walls forming the sides of said cabinet; a plurality of strips of moldings arranged on said walls parallel with said glass, and on both sides thereof; shields mounted in each of said chambers at an angle of forty-five degrees to said glass, and a plurality of lights behind each of said shields, substantially as and for the purpose described.

3. The herein-described optical-illusion cabinet, comprising a top A, bottom B, front C, and back D, said front being open at E; a floor F, connected with the bottom B, by a partition G, whereby two similar compartments H, and K, and a space, are formed, said space being provided with a plate-glass M, which is held at an angle of forty-five degrees to a horizontal plane, said cabinet being provided with shields N, and O, which form similar angles with the said plate-glass, and moldings L and L', which are parallel with said glass, and a plurality of lights S, and T, which are placed in the rear of said shields, substantially as and for the purpose described.

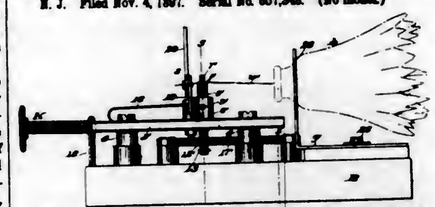
609,010. APPARATUS FOR DISTRIBUTING COLOR. CHESTER COMSTOCK, New York, N. Y., assignor to the Ironclad Manufacturing Company, same place. Filed Apr. 27, 1897. Serial No. 634,090. (No model.)



Claim.—1. In an ornamenting apparatus, the combination of a receptacle for holding ornamenting material; a fluid-conduit; a removable ornamenting-material conduit in position to convey material from said receptacle; the discharge end thereof having a concaved or curved under face thereby to prevent the ornamenting material from working its way rearwardly and forming in drops on the under side of said conduit; said conduits being in such position, relatively to each other, that the fluid from the fluid-conduit will draw the ornamenting material from said receptacle and completely envelop and surround such ornamenting material and distribute it in the form of a spray on the surface to be treated, substantially as described.

2. In an ornamenting apparatus, the combination of a receptacle adapted to hold ornamenting material; an adjustable fluid-conduit removably carried by said receptacle, and having its discharge end diverging therefrom and provided with a depending spout having a relatively large discharge-orifice for the discharge of a relatively large volume of fluid; a material-conduit adjustably and removably carried directly by said receptacle, and having its discharge end curved downwardly in the direction of the depending spout, and provided with an orifice of relatively small diameter as compared with the orifice of the fluid-conduit, and in position below and underneath the discharge-orifice of said spout, whereby the volume of fluid will cross the material-discharge orifice and pass over and around the same, thereby to draw the ornamenting material through its conduit and completely envelop and force the same in a direction at right angles to the normal level of said ornamenting material in said receptacle and in the form of a spray on the article to be treated.

609,011. WIRE-COILING MACHINE. JOHN R. CRIGGAL, Newark, N. J. Filed Nov. 4, 1897. Serial No. 657,343. (No model.)



Claim.—1. In a wire-coiling machine, the combination, with a wire-holding coiling device embodying a bearing and a rotary former reciprocatory in said bearing longitudinally of its axis of rotation, of an actuating device for rotating said former, one of said devices being reciprocatory for effecting such rotation of the former.

2. In a wire-coiling machine, the combination, with a wire-holding coiling device embodying a bearing, a rotary member, and a former rotatable in unison with the rotary member and reciprocatory longitudinally of its axis of rotation, of an actuating device for rotating said former, one of said devices being reciprocatory for effecting such rotation of the former.

3. In a wire-coiling machine, the combination, with a slide, of a pair of bearings on said slide; simultaneously-rotative formers mounted for reciprocation in said bearings; and a resistance-driver for rotating said formers on the reciprocation of the slide.

4. In a wire-coiling machine, the combination, with a wire-holding coiling device embodying a bearing, a rotary former reciprocatory in said bearing, and a spring for normally holding said former in position for coiling wire thereon, of an actuating device for rotating said former, one of said devices being reciprocatory for effecting such rotation of the former.

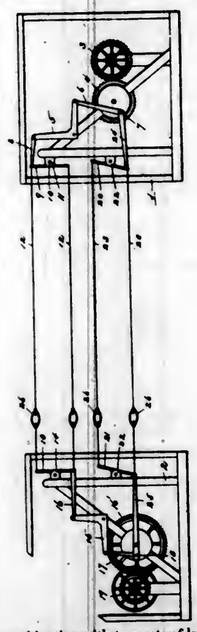
5. In a wire-coiling machine, the combination, with a slide, of a pair of bearings on said slide; simultaneously-rotative formers mounted in said bearings and connected for reciprocation in unison; a spring for normally holding said formers in position for coiling wires thereon; and a resistance-driver for rotating said formers on the reciprocation of the slide.

6. In a wire-coiling machine, the combination, with a slide, of a rotary former mounted for rotation on said slide; a resistance-driver for rotating said former on the reciprocation of the slide; and shearing means for determining the length of the wire to be coiled.

7. In a wire-coiling machine, the combination, with a slide, of a rotary former mounted for rotation on said slide; a resistance-driver for rotating said former on the reciprocation of the slide; shearing means; and a gage cooperative with said shearing means for determining the length of the wire to be coiled.

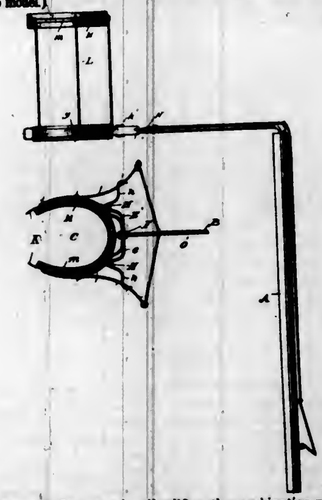
8. In a wire-coiling machine, the combination, with a slide, of a rotary former mounted for rotation on said slide; a resistance-driver for rotating said former on the reciprocation of the slide; shearing means; and an adjustable gage cooperative with said shearing means for determining the length of the wire to be coiled.

609,012. MEANS FOR TRANSMITTING POWER. THOMAS DAGLEY, Agee, Tenn. Filed Mar. 17, 1897. Serial No. 627,908. (No model.)



Claim.—The combination with two sets of levers located at distant points and fulcrumed intermediate their ends, of connections between the ends of said levers, elbow-levers arranged at distant points, links connecting the first-named levers with the elbow-levers, wheels located at said distant points interposed connecting-rods between said elbow-levers and wheels, and other connecting-rods interposed between said wheels and one of the sets of levers, whereby the two sets of levers are operated out of unison, substantially as described.

609,013. MERCHANDISE-LIFTER. JAMES DOWLES and NIELS MICHAELSEN, Oceanic, N. J. Filed Apr. 15, 1898. Serial No. 678,199. (No model.)



Claim.—1. In a merchandise-lifter, the combination with a handle, of an arm secured thereon, a head on the arm comprising a yoke, a substantially U-shaped pad connected to the yoke, arms connected to the ends of the yoke and to the pad, springs interposed between the arms and yoke and a connection between the yoke and the handle-arm, substantially as described.

2. In a merchandise-lifter, the combination with a handle, of a lifting-head secured thereon comprising a substantially U-shaped pad, a supporting-yoke to which the pad is secured having an offset or rearwardly-projecting portion, means for connecting the rearwardly-projecting portion with the handle, arms secured to the yoke and projecting beyond the ends of the same, springs interposed between the arms and yoke and a flexible actuating device connected to the rear ends of the arms and extending to the handle, substantially as described.

3. In a merchandise-lifter, the combination with a handle, of a lifting-head comprising a substantially U-shaped pad, standards extending from the pad and having at their ends a suitable support, spring-actuated arms secured to the pad, a yoke for supporting the pad, springs interposed between the yoke and arms, means connected with the inner ends of the arms for compressing the springs and opening the pad and a connection between the head and handle.

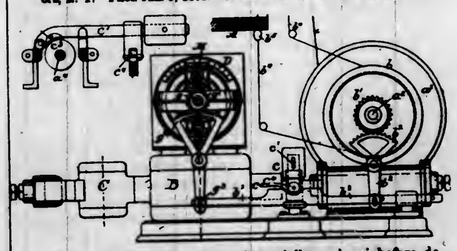
4. The combination with the handle, of an arm extending out therefrom, a yoke having a rearwardly-extending central portion, a supplemental yoke on the said other yoke, a connection between the yokes and the arm, arms secured to the end of the main yoke extending beyond the same in opposite directions, a pad secured to the main yoke and arms, springs for normally compressing the ends of the pads and means for moving the outer ends of the arms outwardly against the tension of the springs, substantially as described.

609,014. ANVIL ATTACHMENT FOR REPAIRING HORSE-SHOE-CALKS. WILLIAM DUFFY, East Hartford, Conn. Filed Jan. 28, 1898. Serial No. 668,262. (No model.)



Claim.—The frame composed of the parts b, b', b^3, b^3, b^4, b^5, b^6, adapted to temporarily hook upon the anvil and carrying midway of its size the upright adapted to hold the horseshoe against the anvil, all substantially as described and for the purposes set forth.

609,015. ELECTRIC ELEVATOR. RUDOLF EICKEMEYER, Yonkers, N. Y. Filed Jan. 5, 1891. Serial No. 376,740. (No model.)



Claim.—1. The combination substantially as hereinbefore described, of an elevator, and its hoisting mechanism, a reversible electric motor coupled thereto, and provided with a system of field-coils, and one or more governing-coils, and means for supplying said governing-coils, with independent electric currents opposite in direction to those carried by the field-coils, and means for furnishing to said governing-coils, currents which are effective only when the motor, and elevator, are moving too rapidly.

2. The combination substantially as hereinbefore described, of an elevator, and its hoisting mechanism; an electric motor coupled thereto, and a dynamo-electric governor mechanically driven by said motor, for generating electricity, and distributing it in the magnetic field of the motor, and weakening said field, in proportion to any increase of speed in the elevator, beyond its desired, or predetermined rate.

3. The combination substantially as hereinbefore described, of

an elevator and its hoisting mechanism; an electric motor coupled thereto, and provided with field-coils, and a governing-coil; a dynamo-electric governor, mechanically driven by said motor, for supplying counteracting currents to said governing-coil, and means for appropriately reversing currents in the operative circuit of the motor, and also in said governing-coil, and maintaining a non-reversed current in the field-coil of the governor.

4. The combination substantially as hereinbefore described, of an elevator and its hoisting and braking mechanism; an electric motor coupled thereto, and having a non-reversible armature-circuit; a reversible field-coil circuit; and a reversible governing-coil circuit; automatic means for varying the current in the governing-circuit, in proportion to the speed of the motor, and a current controlling device, mechanically connected with the braking mechanism, and operated by a controlling-line, accessible within the elevator-car, for appropriately controlling the several electric circuits, and the braking mechanism.

5. The combination substantially as hereinbefore described, of an elevator and its hoisting mechanism; an electric motor coupled thereto; a dynamo-electric governor mechanically driven by said motor; separate motor-circuits, and governor-circuits, and a mechanically-operated switching device, for appropriately controlling both of said circuits, and a controlling-line, accessible within the elevator-car, and operatively connected with said switching device.

6. The combination substantially as hereinbefore described, of an elevator and its hoisting mechanism, and an electric motor coupled thereto, provided with field-coils, adapted to reversals of current, for reversely driving the motor, and also provided with a governing-coil, fed with currents for neutralizing the magnetization of the field-coils, in proportion to undue speed of the motor, whereby should the motor be operated above its normal speed after said governing-coil has balanced the field-coils, the motor will then operate as a generator and develop in its field-coils, a counteracting current, and enable the motor to then operate with self-braking effect, in retarding the speed of the motor-armature, and of the elevator mechanism directly coupled thereto.

609,016. **ELECTRIC ELEVATOR.** RUDOLF BICKENBEYER, Yonkers, N. Y. Filed May 3, 1892. Serial No. 431,658. (No model.)



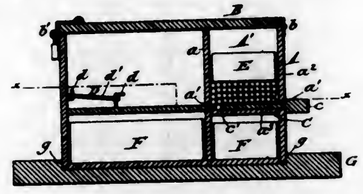
Claim.—1. In elevator machinery, the combination with the traveling car-body or platform, of a compound motor, a resistance in shunt relation to the series coil of said motor, and a solenoid automatically controlling the magnetizing power of said series field-coil by gradually short-circuiting said resistance.

2. In elevator machinery, the combination with the platform or car, of a compound motor, a resistance in the armature-circuit, a solenoid automatically controlling the armature-circuit and the magnetizing power of the series field by first gradually cutting out the resistance in the armature-circuit, then shunting the series field by this same resistance, then gradually short-circuiting said resistance.

3. In elevating mechanism the combination with the moving car or platform, of an electric motor, a reversing-switch connected substantially as described, for reversing the appropriate current in the motor, and so short-circuiting that current that the short circuit is operative during such reversal, and inoperative during the operation of stopping the motor.

609,017. **AUTOMATIC MATCH-BOX.** WILLIAM J. FOSS, Jersey City, N. J. Filed Apr. 12, 1897. Serial No. 631,818. (No model.)

Claim.—As a new article of manufacture, a match-safe comprising the body A provided with the cover B, said body having a vertical partition *a* forming a match-receptacle A', the slide C mounted in transverse horizontal slots in the partition *a* and front wall a^2 of the box, said slide provided with a head *c* projecting in front of the box, a spring mechanism D connecting the inner end of slide with the box, said spring mechanism embodying hooks *d d* projecting from the slide and rear ends of box respectively, and an elastic band *d'* engaging said hooks, a slot *c'* in the bottom of the slide to receive a match and a horizontal partition a^3 arranged under the slot to retain a match in the slot during movement of the slide, and a weighted block E resting upon the matches in the box A to retain them in position for feeding into the slot, substantially as and for the purpose set forth.



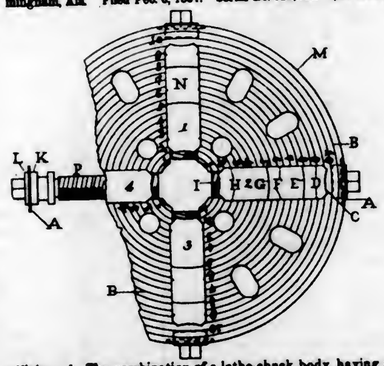
609,018. **MILK-CAN.** HOLLAND V. FRINK, Carthage, N. Y. Filed Mar. 26, 1897. Serial No. 629,115. (No model.)



Claim.—1. In a device of the character set forth, the combination with the body part, of a band of sheet metal surrounding the same and soldered thereto, the said band having oppositely-disposed enlarged portions thereon, and handles having a plurality of substantially radially-extending arms riveted or otherwise secured to the enlarged portions of said band.

2. In a device of the character set forth, the combination with the body part, of a band of sheet metal surrounding the same and soldered thereto, the said band having oppositely-disposed enlarged portions thereon, and handles having a plurality of substantially radially-extending arms riveted or otherwise secured to the enlarged portions of said band, said handles being provided with slots or openings for the reception of a bail.

609,019. **LATHE-CHUCK.** EDWARD FITZ-GERALD GIBBS, Birmingham, Ala. Filed Feb. 6, 1897. Serial No. 622,344. (No model.)



Claim.—1. The combination of a lathe-chuck body, having a series of graduated lines upon its face; with holding-jaws, two or more of which carry vernier graduations which are adapted to and cooperate with the said graduated lines, all substantially as set forth.

2. The combination of a lathe-chuck body having a series of graduated lines upon its face; with holding-jaws, two or more of which carry each a plurality of bites provided with respective indicators which constitute in whole or in part the graduations of a compound vernier, adapted to and cooperating with the graduated lines upon the face of the chuck; all substantially as and for the purposes set forth.

3. The combination of a lathe-chuck body having a series of graduated lines upon its face, and two or more holding-jaws provided with vernier graduations adapted to and cooperating with the said graduated lines upon the face of the chuck; with the jaw's driving-screws, each carrying a graduated dial near its outer end, to the end that the degrees registered by the said vernier are accurately subdivided into degrees of smaller denomination; all substantially as set forth.

4. The combination of a lathe-chuck body, having a series of graduated lines upon its face, spaced and numbered with reference to their function of indicating diameters, jaws having indicators which refer to respective bites adapted to register with said graduated lines; and graduated dials carried by screws, whereby the divisions of the chuck-face graduations are subdivided, to the end that diameters of work may be provided for and determined quickly and with minute accuracy; all substantially as set forth.

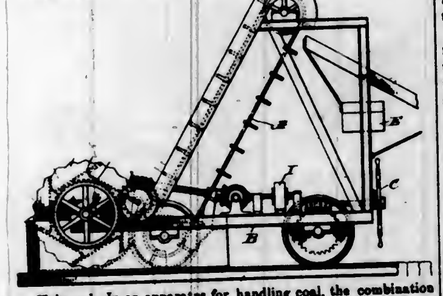
5. In a lathe-chuck, the combination of the chuck-body, a holding-jaw movable thereon, a driving-screw arranged to move the jaw, a graduated dial mounted on the screw near its outer end, and a collar on the driving-screw between the dial and body, substantially as set forth.

6. In a lathe-chuck, the combination of the chuck-body, a holding-jaw movable thereon, a driving-screw arranged to move the jaw, a graduated dial mounted on the screw near its outer end, and a lock-nut arranged on the screw outside the dial to reinforce, lock and protect the dial in adjustable position, substantially as set forth.

7. In a lathe-chuck, the combination of the chuck-body, holding-jaws movable thereon, driving-screws arranged to move the jaws, graduated dials mounted on said screws near their outer ends, and means carried by screws to hold and protect said dials in adjustable position, said means comprising two supports between which the dial is held, substantially as set forth.

8. The combination of a lathe-chuck body having an equalizing-table adapted to the pitch of the threads of the jaw's driving-screw and to the graduations of the graduated dial carried by the said screw; with the said driving-screw and graduated dial; all substantially as set forth and for the purpose indicated.

609,020. **APPARATUS FOR HANDLING COAL.** ROBERT C. GREENEBD, Boston, Mass. Filed Feb. 15, 1897. Serial No. 623,381. (No model.)



Claim.—1. In an apparatus for handling coal, the combination with a conveyer, of a shoe extending forwardly therefrom, and means to reciprocate the entering edge of said shoe backward and forward relatively to said conveyer, to facilitate the entrance thereof into the coal, substantially as described.

2. In an apparatus for handling coal, the combination with a conveyer, of a shoe extending forwardly therefrom, said shoe being provided at its front edge with a plurality of movable members extending longitudinally of the shoe, and means to reciprocate certain of said members lengthwise, relatively to the conveyer, substantially as described.

3. In an apparatus for handling coal, the combination with a conveyer, of a shoe extending forwardly therefrom, said shoe being provided at its front edge with a plurality of movable members extending longitudinally of the shoe, and means to reciprocate said members lengthwise reversely in sets, substantially as described.

4. A shoe provided on one side with longitudinal ribs, and having movable bars extending forwardly between said ribs to constitute an entering edge, and means to move said bars, substantially as described.

5. In a coal-handling apparatus, a shoe provided with a plurality of movable members mounted thereon lengthwise thereof at its front edge, and means to rock said members axially, whereby the coal is loosened next the edge of said shoe and said shoe is enabled to readily enter the coal, substantially as described.

6. In a coal-handling apparatus, a shoe having thereon a plurality of movable members lengthwise thereof at its front edge, said members having flattened front ends, and means to move said members axially, whereby the coal is loosened immediately in front of said front edge and said shoe is thereby enabled to readily enter the coal, substantially as described.

7. In a coal handling apparatus, a shoe provided with a plurality of movable members lengthwise thereof at its front edge and means to move said members axially and reversely in sets, whereby the coal is loosened and said shoe is enabled to readily enter the coal, substantially as described.

8. In a coal-handling apparatus, a shoe provided with a plurality of movable members lengthwise thereof at its front edge, said members being individually movable longitudinally and also axially to loosen the coal along the front edge of said shoe, means to move said members longitudinally, and means to move them axially, substantially as described.

9. In an apparatus for handling coal, the combination with a conveyer, of a shoe extending forwardly therefrom, a feeder above said shoe and back of the front edge thereof, and a deflecting-plate extending along said shoe and beneath said feeder and said conveyer, said plate being intermediately bent upwardly between said feeder and conveyer into close proximity to each of them, said bent portion terminating at a height to permit the coal from said feeder to fall by gravity into said conveyer, as and for the purpose set forth.

10. An apparatus for handling coal, comprising a power-shaft or other driving mechanism, and a rotary feeder positively driven thereby, said feeder being provided about its periphery with a number of lifting and carrying pockets, each pocket being open to dig into the coal and having a closed bottom and back and closed ends, the bottom extending tangentially forward in the direction of rotation of the feeder, the latter being rotated slowly by said driving mechanism to carry up the coal and deliver it by gravity, substantially as described.

11. In an apparatus for handling coal, a rotary feeder, and driving mechanism connected therewith to positively rotate said feeder and cause the latter to dig into the coal and lift it as desired, said feeder having coal-lifting pockets about its periphery, each pocket being provided with a relatively long tangential bottom and a short back meeting in an acute angle, and each bottom lapping onto and terminating even with the back of the next preceding pocket for the delivery of the coal, said pockets having closed ends and being rotated slowly to carry up the coal and deliver it by gravity, substantially as described.

12. In a coal-handling apparatus, a rotary feeder having a plurality of peripheral pockets, said pockets being provided with tangential bottoms extending forwardly in the direction of rotation of the feeder, said bottoms being pivotally mounted, substantially as described.

13. In a coal-handling apparatus, a rotary feeder having a plurality of peripheral pockets, said pockets being provided with tangential bottoms extending forward in the direction of rotation of the feeder, said bottoms being pivotally mounted, forward of their middle lines, substantially as described.

14. In a coal-handling apparatus, a rotary feeder having a plurality of peripheral pockets, said pockets being provided with tangential bottoms extending forward in the direction of rotation of the feeder, said bottoms being pivotally mounted, and means to tip said bottoms for dumping purposes, substantially as described.

15. In a coal-handling apparatus, a rotary feeder having a plurality of peripheral pockets, said pockets being provided with tangential bottoms extending forward in the direction of rotation of the feeder, said bottoms being pivotally mounted, and means to lock said bottoms in their coal-retaining position, releasing means therefor, and means to tip said bottoms for dumping purposes, substantially as described.

16. A rotary feeder and its supporting-frame, said feeder having a plurality of peripheral pockets, and said pockets having pivoted bottom plates, combined with a stop on said frame to engage the pivoted bottom plates and thereby dump the pockets, locking devices normally locking said bottom plates against movement, and a releasing device to unlock said bottom plates to permit the pockets to be dumped, substantially as described.

609,021. **LOCK FOR DUMPING-CAR DOORS.** JOSEPH HAMM, Crystal Falls, Mich., assignor of three-fourths to John Ham, Charles E. Richards, and James S. Harbour, same place. Filed Nov. 2, 1897. Serial No. 657,216. (No model.)

Claim.—1. In a dumping-car, in combination, a trap-door having angled extensions, sockets in the car-frame to receive such extensions, and ball-locks, and means for moving such ball-locks into en-

gagement with the said angle extensions of the door substantially as shown and described.



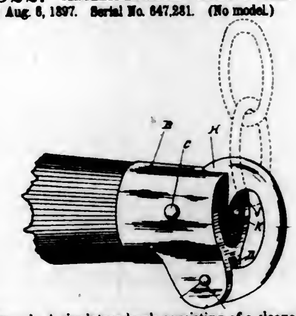
2. As an improvement in dumping-cars, the combination with the chute-frame, the barrel-castings secured thereto, a rocker-bolt held therein, having a recess, said casting having channels and transverse pockets connecting such channels and the bolt-aperture, of the trap-door having side members adapted to enter the aforesaid channels, said side members having seats, and balls movable in the pockets between the channel and bolt-openings adapted to be moved into engagement with the side-arm seats when the bolts are turned, substantially in the manner and for the purposes described.

3. As an improvement in dumping-cars, the combination with the chute-frame, and the gravity-hung trap-door, said door having projecting side arms at the lower end, of lock devices secured to the chute-frame, comprising castings having channels to receive the door side arms, lock members secured in such castings adapted to be moved into a locked engagement with such side arms, a rotary shaft for operating the lock members, and detent devices for holding the shaft to its locking position as specified.

4. As an improvement in dumping-cars, the combination with the chute-frame, and the trap-doors, said doors having angle members provided with seats, of barrel-castings secured to such chute-frame, rocker-bolts movable therein, having recesses, balls movable in the said castings adapted to seat in the recesses of the bolts when same is turned to an unlocked position and to be moved by the turning of such bolts to engage the seat in the door angle members, and means for turning the bolts, all being arranged substantially as shown and for the purposes described.

5. The combination with the chute-frame, and the trap-doors hinged at their upper ends, and having their lower ends provided with angle members provided with seats or recesses, of the castings 5, having barrel portions, transverse apertures 5^a, bisecting such barrel portions, and channels 5^a arranged parallel with the barrel portions, communicating with the apertures 5^a, balls held in such apertures, and the bolts held to rock in the barrel portions, said bolts each having a recess, and means for rocking the bolts all being arranged substantially as shown and for the purposes described.

609,022. **SINGLETREE-HOOK.** GEORGE B. HART, Paducah, Ky. Filed Aug. 6, 1897. Serial No. 647,281. (No model.)



Claim.—1. A singletree-hook consisting of a sleeve having ears on its sides, a curved tongue pivoted in said ears and normally extending longitudinally from said sleeve and having its free end abutting against the opposite side of said sleeve from said ears, substantially as described.

2. In a singletree-hook, the combination of a tree, a sleeve mounted on the end thereof, ears on said sleeve, an arm movably mounted between said ears, a tongue on the free end of said arm, a shank also on the free end of said arm and extending substantially at right angles thereto, said arm being adapted when suitably connected with a tug to continually engage and retain in its correct position the said sleeve, substantially as described.

3. In a singletree-hook, the combination of a tree, a sleeve mounted on the end thereof, ears on said sleeve and lying in approximately horizontal and parallel planes, an arm mounted therebetween and adapted when suitably connected with a tug to engage with its free end and continuously retain in its proper position thereby the said sleeve, a tongue on the free end of said arm, a shank also thereon and substantially at right angles to said tongue, and a foot on said shank engaging the exposed end of said tree, substantially as described.

609,023. **SKIRT.** ZIPPORAH G. HARA, Bayonne, N. J. Filed June 23, 1897. Serial No. 642,005. (No model.)



Claim.—A skirt having a placket leading down from its top opening, said skirt comprising two portions, the major portion forming substantially the complete circumference at the top, the minor portion being in the form of a flap secured to the skirt below the placket the said major portion having a series of fastening devices on opposite sides of the placket and the minor portion or flap having complemental fastenings thereon whereby the entire circumference of the opening at the top of the garment is adjustably completed substantially as shown and described.

609,024. **RAILROAD-RAIL.** GEORGE V. HARIMAN, Denison, Tex., assignor of one-third to Ollie P. W. Michael, Gainesville, Tex. Filed June 19, 1897. Serial No. 641,436. (No model.)



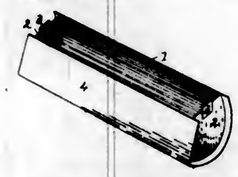
Claim.—1. A railroad-rail comprising a flange having a longitudinal groove centrally arranged in the upper surface thereof, a web formed on one side of said groove, and a head provided with a web extending downwardly from the longitudinal center thereof and having a groove on the under side of the head at each side of the web, whereby the head portion may be reversed and its web, in either position, inserted in the groove in the flange, the upper edge of the web of the flange portion being adapted to engage into either of the grooves in the bottom of the head, substantially as described.

2. A railroad-rail consisting of a flange or base having a central longitudinal groove and a web extending upward on one side thereof, in combination with a reversible head provided with a single web depending therefrom and having longitudinal grooves in its under surface on each side of said web, the webs being provided with suitable bolt-holes, and bolts engaging through the bolt-holes of both webs to secure them together, the head, by virtue of the provision of the single web with a groove on each side, being adapted to be engaged with the base and its web when turned with either side out, substantially as described.

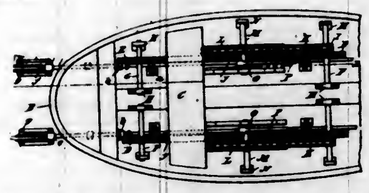
609,025. **MOLD FOR ICE-CREAM, CONFECTIONS, &c.** ZERA W. HARRIS, Champaign, Ill. Filed Aug. 16, 1897. Serial No. 648,490. (No model.)

Claim.—1. A mold for ice-cream, confections and the like, comprising a plurality of sector-formed sections conjointly forming a hollow receptacle with closed ends, substantially as described.

2. A mold for ice-cream, confections and the like, comprising a plurality of sector-formed sections conjointly forming a hollow receptacle with closed ends, and end caps adapted to hold the sections conjoined, substantially as described.



609,026. **PROPELLING MECHANISM FOR BOATS.** JOHN HEWSON, Waldwick, N. J. Filed June 26, 1897. Serial No. 643,266. (No model.)



Claim.—1. In a propelling mechanism for boats the combination with a reciprocating shaft, of a folding propeller secured to the outer end thereof, sprocket-wheels arranged as described, an endless chain passing around said wheels and connected to said reciprocating shaft, a larger sprocket-wheel having a lever secured to the shaft thereof, a smaller sprocket-wheel mounted on the shaft of one of said first-mentioned wheels, and an endless chain passing around the said larger and smaller sprocket-wheels, substantially as described.

2. In a propelling mechanism for boats, the combination with a pair of sprocket-wheels, of an endless chain passing around the same, reciprocating shafts, provided on their ends with folding propellers, one of which is connected with the lower portion of said chain, and the other with the upper portion of said chain, a second pair of sprockets, one of which is mounted on the shaft of one of the first-mentioned sprockets, an endless chain passing around said second pair of sprockets, and a lever secured to the shaft of one of said last-mentioned sprockets, substantially as described.

3. In a propelling mechanism for boats, the combination with a pair of sprocket-wheels, of an endless chain passing around the same, a second pair of sprockets, one of which is larger than the other and having a lever secured to its shaft, the smaller of said sprockets being mounted upon the shaft of one of the first-mentioned sprockets, an endless chain passing around said larger and smaller sprockets, a reciprocating shaft connected with the upper portion of the first-mentioned chain, and a folding propeller secured to the outer end of said shaft, and consisting of semicircular blades hinged to a rod secured to the shaft, and having rods pivoted to said blades and to a collar sliding on said shaft, substantially as described.

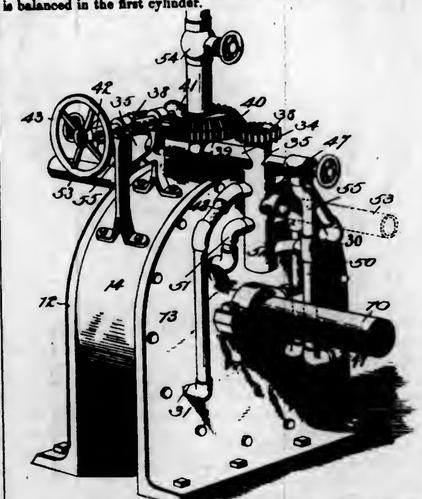
609,027. **COMPOUND ROTARY ENGINE.** ARTHUR S. HILTON and JAMES H. WALLACE, Fort Fairfield, Me. Filed May 24, 1897. Serial No. 637,896. (No model.)

Claim.—1. In rotary engines, a piston mounted to rotate on a shaft and having two concentric grooves in each end, the walls of each groove constituting the outer and inner sides and one end of a steam-cylinder; a cylinder-head fitting against each end of the piston, the piston being in rotary contact with the said cylinder-heads; the said heads each provided with abutments projecting into the cylinder-grooves; and independent wings for the inner pair of cylinders and for the outer pair of cylinders, fitted to reciprocate longitudinally from one cylinder of a pair to the other, substantially as described.

2. In rotary engines, a live-steam cylinder, and an expansion-cylinder mounted to rotate on one shaft, steam entrance, exit and exhaust ports for the first cylinder; steam entrance and exhaust ports for the second cylinder; piston-wings for both cylinders; a three-chambered reversible stop-cock, and pipe connections, substantially as described.

3. In rotary engines, a cylindrical piston mounted to rotate on a shaft and having annular concentric channels mated in its ends; cylinder-heads at the ends of the piston, segmental abutments projecting into the said channels, and wings fitted to reciprocate longitudinally through the piston, substantially as described.

4. In rotary engines, two cylinders upon a shaft; a piston to rotate with wings extending into the cylinders; abutments in pairs in the cylinders, leaving a steam-channel between each pair of abutments; an entry-port near one end, an exhaust-port near the other end, and an exit-port midway of the first cylinder-channel; an entry and an exhaust port for the second cylinder; communication between the exit-port of the first cylinder and the entry-port of the second cylinder, and the wings of the first cylinder being located in the piston at a less distance apart than the distance between either an entry or exhaust port and the midway exit-port, substantially as described, whereby back pressure from the second cylinder to the first cylinder is balanced in the first cylinder.



5. In rotary engines, a live-steam chamber, and an expansion-chamber, each having entrance and exhaust ports at their ends, and the live-steam chamber having an exit-port midway, connected with the entrance-port of the expansion-chamber, and piston-wings fitted to rotate through the chambers, the wings in the live-steam chamber being nearer together than one-half the length of the said chamber, substantially as described.

6. In rotary engines, a piston having flanges which constitute sides of the steam-cylinder; wings fitted in the piston across the cylinder-space between flanges; the inner edge of a flange being chamfered nearly to the wings; a cylinder-casing inclosing the space between flanges, and ports in the casing in the circle of the said chamfered edge, substantially as described.

609,028. **ROTARY STEAM-ENGINE.** MILTON I. JONES, Troy, N. C., assignor of one-half to Robert N. Page, Biscoe, N. C. Filed Feb. 3, 1896. Serial No. 668,971. (No model.)

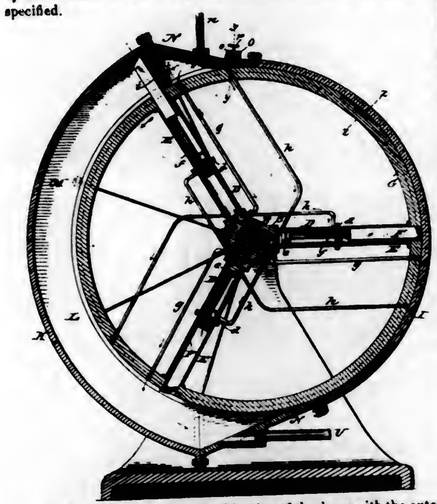
Claim.—1. In a rotary steam-engine, the combination of the main cylinder, the rotary drums carrying the sliding pistons, and cylinders with pistons in said cylinders connected to the sliding pistons, and ports at each end of the cylinders connected to the periphery of the drum and made to connect with the main cylinder during the rotation of the drum to admit and exhaust the steam to the cylinders to operate the sliding pistons, substantially as and for the purpose set forth.

2. In a rotary steam-engine, the combination of the main shaft with a hub secured thereto, cylinders secured to the hub, a drum secured to the cylinders, the main cylinder on the drum, the sliding piston carried by the drum, and pistons in the cylinder connected to the sliding pistons, and ports in said cylinders connected with the main cylinder during the rotation of the drum for admitting and exhausting steam for operating the sliding pistons, substantially as and for the purpose described.

3. In a rotary steam-engine, the combination of a rotary drum with sliding pistons, the pistons for operating the same, cylinders for the pistons, the ports of the outer ends of the cylinders leading through the drum back of the following piston, and the ports for the inner end of the cylinders leading out through the drum back of its own piston, substantially as and for the purpose specified.

4. In a rotary steam-engine, the combination of a rotary drum with sliding pistons, pistons for operating the same, and passages periodically connecting with the main cylinder for controlling the admission and discharge of steam to each side of the latter pistons,

by the rotation of the drum, substantially as and for the purpose specified.



5. In a rotary engine, the combination of the drum with the outer sections of the casing, the adjustable rods connected thereto and to the collars placed loosely on the shaft, substantially as and for the purpose specified.

6. In a rotary engine, the combination of the drum with the outer sections of the casing, the rods adjustably connected thereto and connected to collars loosely supported on the shaft, and collars rigid to the shaft to prevent lateral movement, substantially as and for the purpose set forth.

7. In a rotary engine, the combination of the rotary drum with the stationary casing, packing-strips between the drum and casing, and adjustable rods for the casing connected to a loose collar on the shaft, substantially as and for the purpose described.

609,029. **FORMING-DIE.** WILLIAM E. KARNS, Parker's Landing, Pa. Filed Sept. 2, 1897. Serial No. 650,334. (No model.)



Claim.—A die for compressing plastic material into a flexible base of fabric, to form pump packing-rings, said die comprising a female die member having a cylindrical wall, a flat bottom and a rounded corner between said wall and bottom, and a male die member having a downwardly-tapered side surface, which recedes downwardly from the cylindrical wall of the female member to said rounded corner thereof, a flat lower end, to occupy a position close to the bottom of the female member, and an outwardly bulged or swelled upper edge, to limit the insertion of the male member into the female member, and bite an overhanging portion of a base of fabric, projecting upwardly from the cavity of the female member, to prevent overflowing of the plastic material, substantially as specified.

609,030. **PIPE-COUPLING.** DAVID K. KELLER, Montgomery Ohio. Filed June 26, 1897. Serial No. 642,440. (No model.)



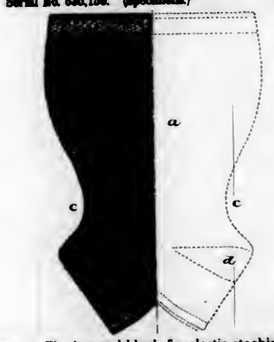
Claim.—1. The combination of a pipe-coupling having a bevel or flare on its rear inner end, and a pipe having a shoulder formed exteriorly on it, the coupling being passed upon said pipe, and its flare fitting upon said shoulder, and the forward portion of the said pipe being connected to the coupling so as to prevent the retraction of the pipe, from the coupling, substantially as and for the purpose specified.

2. The combination of a pipe-coupling, having a bevel or flare on its rear inner end, and a pipe whose end portion is within said coupling, and is provided with an exterior shoulder fitting within said flare, and whose forward end is crimped over an abutment on the forward portion of the coupling, substantially as and for the purpose specified.

3. The combination of a thin pipe having a shoulder, the pipe in front of the shoulder being spun or formed of less diameter than the remainder of the pipe, and a coupling having at its rear end a flare, and receiving the pipe within and the pipe-shoulder against the flare, and a means near or at the forward end of the pipe and coupling for preventing the separation of the pipe from the coupling, substantially as and for the purpose specified.

4. The combination of a coupling having a rear-edge flare and a longitudinal interior channel, and a thin seamed pipe whose forward end is within said coupling, and whose seam is received in said channel, and which pipe is provided with an exteriorly-raised inclined shoulder engaging with said flare, and means for enabling the pipe and coupling to hold firmly together and prevent the retraction of the pipe from the coupling, substantially as and for the purpose specified.

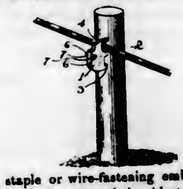
609,031. **ELASTIC STOCKING.** ARTHUR B. KENDRICK, Philadelphia, Pa., assignor to James B. Kendrick, same place. Filed May 5, 1897. Serial No. 636,150. (Specimens.)



Claim.—1. The integral blank for elastic stockings of the class recited, comprised of the leg and ankle portions having the transverse parallel rubber weft-threads, substantially at right angles to the axis of the blank; the opposite triangular or gored portions at the heel part, wherein the weft-threads are parallel with each other but at an angle to those of the said other parts, and the instep portions wherein the weft-threads are at an angle to those of the said gored portions and also at an angle to those of the ankle and leg portions of the blank, substantially as shown and described.

2. An elastic stocking of the class recited, having in the heel portion thereof a gore, the rubber weft-threads of which are parallel with each other, but at an angle to the weft-threads of the other parts of the stocking, and having also the instep portion whose weft-threads are at an angle to those of said gore, and at an angle to those of the said other parts, whereby the draw on said weft-threads throughout the stocking is always practically in a plane at right angles to the axis of the particular part of the foot or leg which they embrace, substantially as and for the purpose specified.

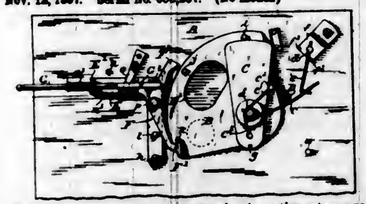
609,032. **STAPLE.** ALFRED LEIGH, Cognac, Kans. Filed Aug. 12, 1897. Serial No. 648,049. (No model.)



Claim.—1. A staple or wire-fastening embracing a head, two pointed wedge-shaped tines having their widest faces at right angles with each other, and a hook for grasping the wire, substantially as described.

2. A staple or wire-fastener embracing a head, two wedge-shaped tines having their widest faces arranged at right angles with each other, and a pointed hook, substantially as described.

609,033. **PHOTOGRAPHIC SHUTTER.** HARVEY W. LOCKE, Rochester, N. Y., assignor to William F. Carlton, same place. Filed Nov. 12, 1897. Serial No. 658,287. (No model.)



Claim.—1. A photographic shutter having a time-stop, a retaining-stop, and an exposing-stop intermediate between said time-stop and retaining-stop; a motor for operating said shutter; and a pivoted swinging carrier having two operative positions in which the shutter is adapted to make time and instantaneous exposures respectively, in combination with an escapement-lever centrally pivoted to said carrier and having at one end a locking-detent near the carrier-pivot, and at its other end a time-detent remote from said carrier-pivot: said locking-detent cooperating only with said retaining and exposing stops, being operative when the carrier occupies both its instantaneous and time positions, being normally in the path of said retaining and exposing stops, and being movable out of said path; and said time-detent cooperating only with said time stop, being operative only when the carrier occupies its time position, being normally out of the path of said time-stop, and being movable into the path of said time-stop when said locking-detent is moved out of the path of said locking and exposing stops; a single actuator mounted on said carrier and connected with said lever, said actuator when moved laterally swinging said carrier on its pivot, and when moved longitudinally inwardly swinging said lever to move the locking-detent out of the path of said retaining and exposing stops, and to move the time-detent into the path of said time-stop; and a spring for moving said actuator outwardly, substantially as set forth.

2. A photographic shutter having a time-stop, a retaining-stop, and an exposing-stop; a motor for operating said shutter; and a movable carrier having two operative positions in which the shutter is adapted to make time and instantaneous exposures respectively, in combination with a lever pivoted to said carrier and having a locking-detent and a time-detent; said locking-detent cooperating only with said retaining and exposing stops, being operative when the carrier occupies both its instantaneous and time positions, being normally in the path of said retaining and exposing stops, and being movable out of said path; and said time-detent cooperating only with said time-stop, being operative only when the carrier occupies its time position, being normally out of the path of said time-stop, and being movable into the path of said time-stop when said locking-detent is moved out of the path of said locking and exposing teeth; and a single actuator mounted on said carrier and connected with said lever, said actuator when moved laterally moving said carrier, and when moved longitudinally moving said lever, substantially as set forth.

3. A photographic shutter having a time-stop and a retaining-stop, and a swinging carrier having two operative positions in which the shutter is adapted to make time and instantaneous exposures respectively, in combination with an escapement-lever centrally pivoted to said carrier and having time and locking detents adapted to engage said time-stop and retaining-stop respectively, said locking-detent being operative when the carrier occupies both its instantaneous and time positions and being movable into and out of the path of said retaining-stop, and said time-detent being operative only when the carrier occupies its time position, and being then movable into and out of the path of said time-stop, and a single actuator mounted on said carrier and connected with said lever, said actuator when moved laterally moving said carrier and when moved longitudinally moving said escapement-lever, substantially as set forth.

4. A photographic shutter having a time-stop and a retaining-stop, and a movable carrier having two operative positions in which the shutter is adapted to make time and instantaneous exposures respectively, in combination with time and locking detents adapted to engage said time-stop and retaining-stop respectively, said detents being carried by and movable on said carrier, said locking-detent being alone operative when the carrier occupies its instantaneous position, and both of which are alternately operative when the carrier occupies its time position, and a single actuator for moving both said carrier and said detents on said carrier, substantially as set forth.

5. A photographic shutter having a time-stop and a retaining-stop, and a movable carrier having two operative positions in which the shutter is adapted to make time and instantaneous exposures respectively, in combination with time and locking detents adapted to engage said time-stop and retaining-stop respectively, said detents being carried by and movable on said carrier, said locking-detent being alone operative when the carrier occupies its instantaneous position, and both of which are alternately operative when the carrier occupies its time position, substantially as set forth.

6. A photographic shutter adapted for use in making both time and instantaneous exposures, having a retaining-stop, a time-stop, and an exposing-stop, said stops consisting of studs projecting from the face of said shutter, said exposing-stop being intermediate between the other two, in combination with an escapement-lever having a time-detent and a locking-detent at its opposite ends, which are alternately brought into and out of the paths of said stops, the time-detent cooperating solely with said time-stop, and the locking-detents cooperating with the retaining-stop and with the exposing-stop in alternation, and means for moving said lever, substantially as set forth.

7. A photographic shutter adapted for use in making both time and instantaneous exposures, having a retaining-stop, a time-stop, and an exposing-stop intermediate between the other two stops, in combination with an escapement-lever having a time-detent and a locking-detent at its opposite ends, which are alternately brought into and out of the paths of said stops, the time-detent cooperating solely with said time-stop, and the locking-detent cooperating with the retaining-stop and with the exposing-stop in alternation, and means for moving said lever, substantially as set forth.

8. A photographic shutter, and a movable carrier having two operative positions in which the shutter is adapted to make instantaneous and time exposures respectively, in combination with two detents adapted to engage said shutter, said detents being carried by and movable with and on said carrier, one of said detents being alone operative when the carrier occupies its instantaneous position, and both of which are alternately operative when the carrier occupies its time position, and a single actuator for moving both said carrier and said detents on said carrier, substantially as set forth.

9. A photographic shutter, and a carrier having two operative positions in which the shutter is adapted to make instantaneous and time exposures respectively, in combination with two detents adapted to engage said shutter, said detents being carried by and movable with and on said carrier, one of said detents being alone operative when the carrier occupies its instantaneous position, and both of which are alternately operative when the carrier occupies its time position, substantially as set forth.

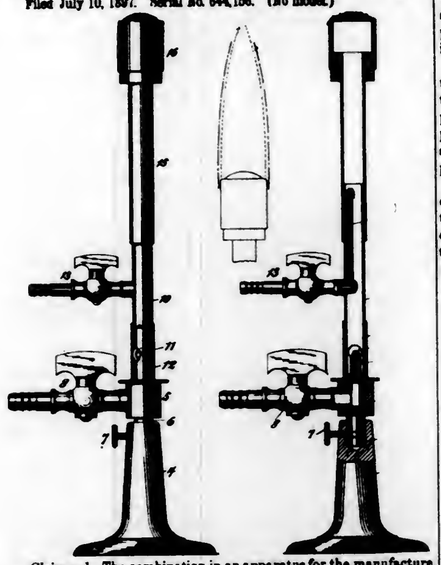
10. A photographic shutter, in combination with a movable carrier having two operative positions, one an instantaneous position and the other a time position, a lever pivoted to said carrier and having two detents adapted to engage said shutter depending upon the position of the carrier and of the lever upon the carrier, and an actuator for moving said carrier from one position to the other and for moving said lever on said carrier, substantially as set forth.

11. A photographic shutter, an arbor to which said shutter is rigidly attached, a locking-detent for holding said shutter in its set position, a motor-spring for moving said shutter in its forward direction, and means for manipulating said arbor to restore said shutter, in combination with a screen loosely turning on said arbor and having a catch on its rear end, means on said shutter whereby said screen is movable with said shutter in its forward direction, a spring-latch independent of said shutter-locking detent for engaging said catch and locking said screen in its forward position, said latch being automatically released upon the contact therewith of said shutter on its backward movement, and a motor-spring for automatically moving said screen backwardly and restoring it to its normal position, substantially as set forth.

12. A photographic shutter, an arbor to which said shutter is rigidly attached, a locking-detent for holding said shutter in its set position, a motor-spring for moving said shutter in its forward direction, and means for manipulating said arbor to restore said shutter, in combination with a screen loosely turning on said arbor, means on said shutter whereby said screen is movable with said shutter in its forward direction, a spring-latch independent of said shutter-holding detent for engaging and locking said screen in its forward position, said latch being automatically released upon the contact therewith of said shutter on its backward movement, and a motor-spring for automatically moving said screen backwardly and restoring it to its normal position, substantially as set forth.

13. A photographic shutter, and a motor-spring therefor operatively connected at one end to the shutter, in combination with a tension regulator comprising a rock-shaft having a crank-arm with a loop through which the other end of said spring extends, and a friction-plate bearing against said arm to maintain the same in its adjusted position and having stops to limit the movement of said arm in both directions, substantially as set forth.

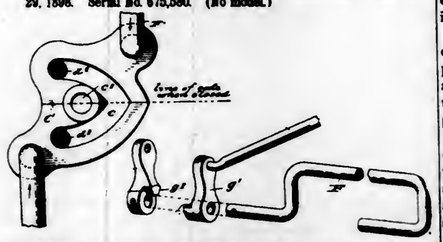
609,034. APPARATUS FOR FORMING AND BAKING INCANDESCENT-LIGHT MANTLES. WILLIAM MAHLER, New York, N. Y. Filed July 10, 1897. Serial No. 644,156. (No model.)



Claim.—1. The combination in an apparatus for the manufacture of mantles for incandescent lighting of a gas-inlet, an inlet for air at atmospheric pressure, a burner-head having perforations through which the gas passes prior to ignition, a compressed-air inlet having a contracted nozzle and a mixing-chamber, the nozzle of said compressed-air inlet being located in the mixing-chamber between said first-mentioned air-inlet and the said burner-head, substantially as specified.

2. The combination in an apparatus for use in the manufacture of mantles for incandescent lighting of a gas-inlet, an inlet for air at atmospheric pressure, a regulator for said air-inlet, a burner-head having perforations through which the gas passes prior to ignition, a compressed-air inlet having a contracted nozzle, and a mixing-chamber, the nozzle of said first-mentioned air-inlet and the said burner-head, substantially as specified.

609,035. GATE. JOSEPH L. MANLOVE, Milton, Ind. Filed Mar. 29, 1898. Serial No. 675,580. (No model.)



Claim.—1. A trip mechanism for swinging gates, comprising an oscillating trip, an arm rigidly attached thereto, a second arm in pivotal engagement with the trip, a bar connected to the latter arm and a spring carried by the bar to hold the trip normally in a vertical position, the arms having lugs which engage when the trip is inclined, for the purpose set forth.

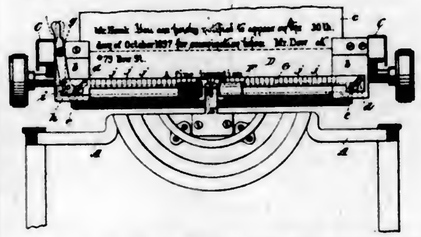
2. A trip mechanism for swinging gates, comprising oscillating trips, each having an arm rigidly attached thereto and a second arm in pivotal engagement with the trip, said arms having interlocking faces which engage when the arms are out of line with each other, rods extending from the arms which are loosely mounted on the trips to a cam-plate, and springs connected to the arms which are rigidly attached to the trip so as to exert an upward pressure thereon and hold the trips normally in a vertical position, substantially as shown and for the purpose set forth.

3. In a gate, the combination with a cam or slotted plate mounted so as to oscillate in a horizontal plane, gate-operating bars connected with trips and with the slotted plate, on opposite sides of its pivotal support, a fixture attached to the gate and provided with depending pins which engage with the slot and a hinge connecting the gate with its post, substantially as shown and for the purpose set forth.

4. In a gate, the combination of a pivoted cam or slotted plate the slot therein being on opposite sides and in front of its pivotal or turning point, a fixture attached to the gate having two depending pins positioned out of line with the hinge or gate-support above, said pins entering the slot in the pivoted cam, bars connected to opposite sides of the cam and with trips, substantially as shown and for the purpose set forth.

5. In a gate-operating mechanism, a pivotally supported or fulcrumed plate having therethrough a slot *c* positioned on each side of the fulcrum of the plate, rods connected to trips and to the plate on opposite sides of its fulcrum, a fixture attached to the gate, said fixture having depending pins which engage the slot in the plate, so that when either of the trips and rods connected thereto are moved toward the gate the plate will be turned on its fulcrum in the same direction, substantially as set forth.

609,036. INDICATING MECHANISM FOR TYPE-WRITERS. EDWARD J. MANNING, New York, N. Y., assignor to the Wagner Typewriter Company, same place. Filed Nov. 3, 1897. Serial No. 657,736. (No model.)



Claim.—1. In a type-writer, the combination of a reciprocating paper-carriage, a platen-carriage which is vertically movable to bring the printing-point into the path of the upper or lower case characters, an indicating-bar carried by said platen-carriage and means for moving the indicating-bar to and away from the printing-point when the platen is in either the lowered or elevated position.

2. In a type-writer, the combination of a reciprocating paper-carriage, a platen-carriage which is vertically movable to bring the printing-point into the path of the upper or lower case characters and which is independent of but is carried by said paper-carriage, a scale carried by said platen-carriage and means for moving said scale to and away from the printing-line when the platen is in either the lowered or elevated position, the indices on said scale being equably spaced and each index being adapted to be brought into register with the printing-points.

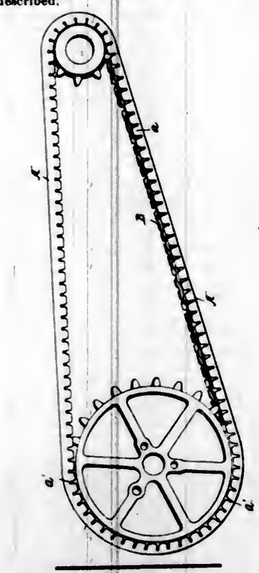
3. In a type-writer, the combination of a reciprocating paper-carriage, a platen-carriage which is vertically movable to bring the printing-point into the path of the upper or lower case characters, an indicating-bar carried by said platen-carriage and being adapted to be moved to and away from the printing-point in a perpendicular plane when the platen is in either the lowered or elevated position.

4. In a type-writer, the combination of a reciprocating paper-carriage, a platen-carriage which is vertically movable to bring the printing-point into the path of the upper or lower case characters and which is independent of but is carried by said paper-carriage, a scale carried by said platen-carriage and means for moving said scale in a perpendicular plane to and away from the printing-line when the platen is in either the lowered or elevated position, the indices on said scale being equally spaced and each index being adapted to be brought into register with the printing-points.

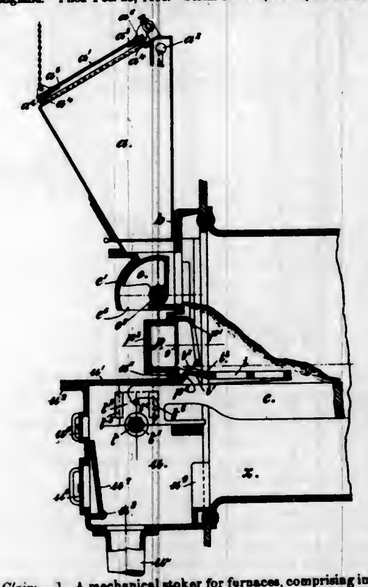
609,037. DRIVING-CHAIN COVER. WALTER R. F. MARCHAL, St. Mandé, France. Filed Oct. 12, 1897. Serial No. 654,986. (No model.) Patented in France Sept. 20, 1897, No. 270,668; in Belgium Sept. 20, 1897, No. 130,733; in Germany Sept. 21, 1897, No. 96,780, and in England Sept. 23, 1897, No. 21,806.

Claim.—1. A flexible chain-cover formed with a channel and in its inner side edges with separated slots, said cover being adapted to embrace the sides and outer face of a driving-chain, substantially as described.

2. An endless, channeled chain-cover formed of elastic material and having separated slots in its inner side edges, said cover being adapted to embrace the sides and outer face of a driving-chain, substantially as described.



609,038. MECHANICAL STOKER. JAMES J. MELDRUM, THOMAS F. MELDRUM, JOHN W. MELDRUM, and FRED CLAYTON, Manchester, England. Filed Feb. 23, 1898. Serial No. 671,333. (No model.)



Claim.—1. A mechanical stoker for furnaces, comprising in combination, a fuel-feeding device at the upper part of the furnace, adapted to supply the fuel onto the front end of the grate; a grate having moving bars operated from the front of the furnace; a box on, and projecting in front of the furnace-front, inclosing the front of the ash-pit below the fire-bars, and the ends of the fire-bars; and air-blowing means connected with the said box, by which air is introduced into the box and ash-pit, and maintained therein at a pressure above that of the atmosphere; substantially as set forth.

2. A mechanical stoker for furnaces, comprising in combination, a grate having longitudinally-movable grate-bars; a fuel-supply device for feeding fuel onto the front end of said grate; a box inclosing the front end of, and communicating directly with the ash-pit, and also inclosing the ends of said fire-bars, disposed upon the furnace directly in front of said ash-pit; and a shaft passing laterally through said box, with operating means thereon for actuating the fire-bars within the box; and means connected with said box for forcing air into it; substantially as set forth.

3. In a mechanical stoker for furnaces, in which the fuel is coked at the front end, a fuel-feeding device at the upper part of the furnace-front, adapted to feed fuel onto the front end of the furnace; a box below, inclosing the mouth of the ash-pit, and to which air is supplied under pressure; and conduits connecting this box, with the front of the furnace above it, by which some of the air supplied to said box is delivered into the pile of fuel at the front of the furnace, whereby the fuel at this part is rapidly coked, and its combustion assisted; substantially as set forth.

4. In a mechanical stoker for furnaces, a device for feeding the fuel into the furnace, above the bars at the upper part of the front of the apparatus, a box in front of the furnace inclosing the front of the ash-pit, and communicating directly therewith; and inverted steam-jet blowers *w*, directly connected with the under side of said box, by which air under pressure above that of the atmosphere is supplied to said box, and the ash-pit; substantially as described.

5. In a mechanical stoker for furnaces, a device for feeding the fuel into the furnace above the bars at the upper part of the apparatus; a box in front of the furnace inclosing the front of the ash-pit, and communicating directly therewith; and steam-jet blowers *w*, directly connected with the under side of said box, by which air under pressure above that of the atmosphere is supplied to said box and the ash-pit; the said blowers being inverted with their bases connected to the bottom of the box, and their heads and steam-nozzles inclosed in a chamber below; substantially as set forth.

6. In a mechanical stoker for furnaces worked under forced draft, a box fixed upon the front of the furnace, connecting with, and in front of the ash-pit; air-blowing means connected with said box for supplying air under pressure greater than that of the atmosphere; a fuel-feeding device on the furnace-front, by which fuel is fed to the furnace above the grate; a closed or air-tight hopper for containing the fuel, having a close-fitting lid or cover; and a conduit connecting the hopper at a point above the fuel, with a part in which air under pressure, supplied by air-forcing means exists, whereby air under pressure is maintained in the hopper above the fuel; for the purposes specified.

7. In a mechanical stoker for furnaces, the fuel-feeding device on the front and upper part of the furnace, adapted to supply fuel onto the grate; a box in front of the furnace, inclosing the front of, and communicating with the ash-pit; air-forcing means connected with said box, for delivering air to it and the ash-pit, at a pressure above that of the atmosphere; a grate having moving bars; and a plate or frame at the rear end of the grate, inclosing the ash-pit at this end, having a doorway with an inclined face, inclined forward from the top, and a door, hinged at its upper part, resting normally thereon, and an operating connection between the door and the box, connected with and operated upon the axle of the door; substantially as set forth.

8. In a mechanical stoker for furnaces, the combination with the front of the furnace, of the air-box *u*, connected with the furnace-front, and communicating directly with the ash-pit, a shaft *t* operating the grate-bars, extending through said box; a detachable cover u' at the upper part of the box; and filling-pieces t^3 fitting in gaps in the sides of the box above the shaft *t*; substantially as set forth.

9. In a mechanical stoker for furnaces, the combination with the front of the furnace of the box *u* connected with the furnace-front, and communicating directly with the ash-pit, a shaft *t* operating the grate-bars, extending through said box; and inverted steam-jet air-blowers, the discharge ends of the bodies of which are secured onto the bottom of the box *u*; substantially as set forth.

10. In a mechanical stoker for furnaces, the combination with the front of the furnace, of the air-box *u*, connected with the furnace-front, and communicating directly with the ash-pit, and a shaft *t* for operating the grate-bars, extending through said box; the inverted steam-jet blowers *w*, having the mouths of their bodies secured to the under side of the box *u*; and the flap u^6 in the interior of *u*, adapted to fold up or lie down over said blower-mouths; substantially as set forth.

11. In a mechanical stoker for steam-generator furnaces, in which air under pressure above that of the atmosphere is supplied to the ash-pit; the box *u* inclosing the ash-pit on the front of the furnace, in combination with steam-jet blowers directly connected therewith, and supplying air thereto, and having the angular plate u^9 on the bottom of the box, and fitting over the edge of the plate against which the lower part of the box fits.

12. In mechanical stokers for furnaces, the box *u* and shaft *t*, filling-strip t^3 fitting in gaps in the side of the box, a cover u', flanges t^5 on t^3, and bridge-bar t^4, and fastening-bolt t^6; substantially as set forth.

13. In a mechanical stoker for furnaces, the combination of a front furnace-plate *b*, inclosing the front of the furnace; internal detachable shield-plates *d*, and a feeding device on the upper part of the plate *b*, through which the fuel is supplied to the furnace; substantially as set forth.

14. In a mechanical stoker of the coking type for furnaces, the combination of a front furnace-plate *b* inclosing the front of the furnace; a fuel-feeding device *c* on the upper part and center of said plate: internal detachable side shield-plates *d* secured on the inside of *b*; a box *u* on the lower part of the furnace, and closing, and communicating directly with the ash-pit; conduits *e* making communication between the upper part of the box *u* and the furnace-front, and plates *d*, through which air is supplied from the box *u* to the fuel being coked on the inside of the side plates *d*; substantially as set forth.

15. In a mechanical coking-stoker, the combination of front furnace-plate *b*, a box *u* at the lower part of the furnace, inclosing and communicating with the ash-pit; a feeding device *c* above the box *u*, and air-supply conduits *h*, communicating with the sides of the box *u*, and carried up through the plate *b* above *c*, and having openings on the inside at the top, through which air is supplied to the furnace above the fuel; substantially as set forth.

16. In a mechanical stoker for furnaces, the combination with the front of the furnace, of the front plate *b* covering the upper part of the furnace; the box *u* connected with said front, and communicating directly with the ash-pit; a lid u' on the top of said box; a doorway-opening *o* in the lower part of said plate *b*, open at the lower side; an upwardly-projecting ledge u'' on the lid u', fitting in the open part of the bottom of *o*; and inclosing said opening; and a door *p* fitting over the opening *o* and making joint with the edges of the plate, and the edge of the rib u'', forming this opening; substantially as set forth.

17. In a mechanical stoker of the coking type for furnaces, the combination with the front plate *b*, of hollow box-door *p* hinged on *b*, and provided internally with a protruding perforate plate p^1, projecting through the plate *b*, and into the furnace, and into the space within said plate, air is admitted from below, through an opening; substantially as set forth.

18. In a mechanical stoker for furnaces, of the coking type, the combination with the front plate *b* of a fuel-feeding device on said plate at the upper part; a coking-plate *i* below, onto which the fuel is fed; a perforate inwardly-protruding plate p', directly above the front end of *i*; a valve i^2 under the open lower end of p'; and a fire-door *p* adapted, when closed, to open the valve i^2 when the door *p* is shut, and to admit air into the space behind the plate p'; substantially as set forth.

19. In a mechanical stoker of the coking type for furnaces, the combination with the front furnace-plate *b*, of the fuel-feeding device at the upper part of same; the coking-plate *i*, having a hinged valve i^2 in the front end of same; the fire-door *p* with the inwardly-projecting perforate plate p' upon it, open below directly above the valve i^2, and an inclined projecting part p^2 on the door *p*, adapted to act on the valve i^2 when the door is closed, and to raise and open it, and to admit air from below into the space behind and within the plate p'; substantially as set forth.

20. In a mechanical stoker of the coking type, for furnaces, the combination of a grate having moving fire-bars; a fuel-feeding device at the front of the furnace and above the grate, and of less width than the grate; and a plate on the grate at the front end, and below the fuel-feeder extending farther along the grate at the center, than at the sides, whereby an equal distribution of fuel onto the grate, laterally, is effected.

21. In a mechanical stoker of the coking type, the combination of a furnace-front plate *b*; a fuel-feeding device at the upper part of same, of substantially less width than the width of grate, at the upper part of same; a grate with moving-bars; a perforate coking plate *i*, under the fuel-feeding device, onto which the fuel falls, discharged from the fuel-feeder, being relatively long in the center, and narrow toward the edges of the furnace; substantially as set forth.

22. In a mechanical stoker of the coking type for furnaces, the combination of front furnace-plate *b*; air-supply box *u*, inclosing the front of the ash-pit; air-supply device *c* comprising a box having an opening below, and sitting on the top of the box *u*, and its face resting on the plate *b*, with apertures *c'* in the back of same; and the plate *d* fitting up against the plate *b* and having apertures d^4, whereby the air from the box *u* is conducted into the interior of *c*, and passes therefrom through the slots or conduits c^3, d^4, into the fuel being coked against the plate *d*; substantially as set forth.

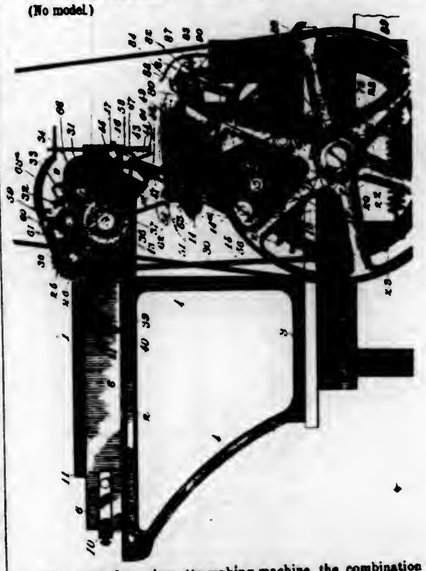
23. In a mechanical stoker for furnaces, the combination of a front plate *b*, and a feeding device on the outside of said plate, and secured and supported thereon by wedge-lugs c^5, and catches c^6 on either side; substantially as set forth.

24. In a mechanical stoker for duplex furnaces, having movable bars operated on a transverse shaft across the front of the furnace, the combination of duplex prismatic shafts *t t'*, having at their outer ends sleeves fitting over the outer ends of said shafts, and being externally cylindrical outside; bearings *s* in which said sleeves revolve; a central sleeve s^3 fitting over the adjacent ends of the shaft *t*, and secured by a diagonal pin at one end to one shaft, and having a loose collar at the other end, and a pin passing through said collar, sleeve, and the end of the other shaft, the sleeve being cylindrical externally, and serving both as a coupling and journal for said shaft; and a single central bearing *s'* in which said sleeve s^3 revolves; substantially as set forth.

25. In a mechanical stoker for furnaces, having longitudinally-moving grate-bars, the combination at the sides of the furnace, of side fixed bars *k*; internal bars *l* supported by *k*, and having projections *l'*; and bars *m* with slots in them, in which the projecting parts *l'* work, and fitting up against the sides of the furnace; substantially as set forth.

26. In a mechanical stoker for furnaces, having longitudinally-moving grate-bars, the combination at the sides of the furnace, of side fixed bars *k*; with supporting parts *k'* at their outer side; bars *l* next the bars *k*, having the tongues *l'*, and supported from the parts *k'*; the bars *m* with lateral slots through them, in which the tongues *a* fit and work; in a longitudinal groove on their outer edges; and filling-pieces *n* fitting in and supported by the slots *m'*; substantially as set forth.

609,089. CIGARETTE-MACHINE. EMIL MOCKELIN, New York, N. Y. Filed Feb. 8, 1896. Renewed Jan. 14, 1898. Serial No. 666,715. (No model.)



Claim.—1. In a cigarette-making machine, the combination of the cigarette-forming devices, suitable tobacco-feeding mechanism, operating mechanism for the forming devices, and means for automatically throwing the feeding mechanism into and out of gear with the said operating mechanism of the forming devices to operate and arrest the feed with proper relation to the movement of the forming devices, substantially as set forth.

2. In a cigarette-making machine, the combination of the cigarette-forming devices, suitable tobacco-feeding mechanism, a feed-chute constructed to receive the tobacco from the feeding mechanism, operating mechanism for the forming devices, means for automatically throwing the feeding mechanism into and out of gear with the said operating mechanism, and means for automatically discharging the contents of the feed-chute to the forming devices, substantially as set forth.

3. In a cigarette-making machine, the combination of the forming mechanism, with a reciprocating carriage supporting suitable feeding devices, and gearing between the forming mechanism and feeding devices adapted to be thrown into and out of gear by the movement of the carriage, substantially as set forth.

4. In a cigarette-making machine, the combination of the forming mechanism with the reciprocating carriage supporting suitable feeding devices, a feed-chute adapted to receive the tobacco from the feeding devices, gearing between the forming mechanism and feeding devices adapted to be thrown into and out of gear by the movement of the carriage and means operated by the movement of the carriage for discharging the tobacco from the feed-chute, substantially as set forth.

5. In a cigarette-making machine, the combination of suitable forming mechanism, with a reciprocating feeder-carriage feed-rolls and an endless feed-belt carried by the carriage, and suitable operating-gearing between the forming mechanism and feeding devices thrown into and out of gear by the movement of the carriage, substantially as set forth.

6. In a cigarette-making machine, the combination of suitable forming mechanism, operating means, a constantly-operating gear-wheel 25 driven from the operating means, a reciprocating feeder-carriage movable toward and away from the point of deposit, an endless feed-belt supported in the carriage, feed-rolls journaled in the carriage, and a gear 24 journaled upon the carriage and geared to the feed rolls and belt and adapted to be thrown into and out of gear with the gear 25 by the movement of the carriage, substantially as set forth.

7. In a cigarette-machine, the combination of suitable forming mechanism, means for operating the forming mechanism, a continuously-rotating gear-wheel 25 driven therefrom, a reciprocating feeder-carriage movable toward and away from the point of deposit to the forming mechanism, rollers 5 journaled in the carriage, an endless belt 7 supported upon the rollers 5, the worm-wheel 36 and gear 37 on shaft of one roller 5, the smooth feed-roll 8 also journaled in the feed-carriage and provided with a gear 38 meshing with the gear 37, a feed-roll 9 journaled in the carriage and provided with a worm 31 which gears with a worm-wheel 32 carried by an inclined shaft 33 journaled in brackets 34, a worm 35 also carried by said shaft 33 and gearing with the worm-gear 36, and a gear-wheel 24 on the shaft of roll 9 which is adapted to be brought into and out of mesh with the continuously-rotating gear-wheel 25, substantially as and for the purpose set forth.

8. In a cigarette-making machine, the combination with a reciprocating feeder-carriage, feeder mechanism supported upon the carriage and comprising an endless carrier, an evener-roll and a picking-cylinder supported adjacent to the discharge end of the feeder-carriage in working relation to the endless carrier, and gearing for imparting an intermittent motion to the feeding mechanism, as specified.

9. In a cigarette-making machine, the combination with the forming-apron, and the reciprocating feed-carriage, and means for operating it, of a tamper mounted upon the movable carriage and designed to compress the filler within the pocket of the forming-apron, and means for operating the tamper, as specified.

10. In a cigarette-making machine, the combination of a reciprocating feeder, means for operating the feeder, a tamping device carried by the feeder, means for operating the tamping device, a forming-apron, and a forming and wrapper-applying roller, as specified.

11. In a cigarette-machine, the combination of a feeding device an arched rolling-table, an apron supported above the table and having one end secured to one end of the table, the rock-arms 55 keyed to shaft 56 and supporting the other end of the apron, the rock-arms 70, the apron-roller 68 journaled in the rock-arms 70 above the table and beneath the apron, the rock-arm 76 also keyed to shaft 56, the arm 75 carried by arms 70, and suitable means for operating rock-arms 70, substantially as set forth.

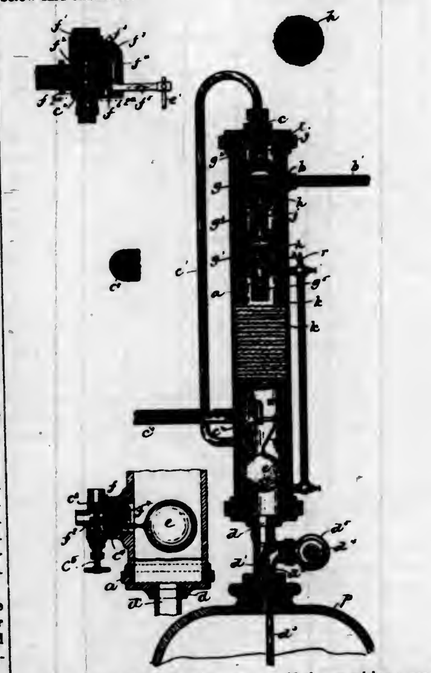
609,040. CARBONATING APPARATUS. EDWARD B. MURPHY, Boston, Mass., assignor to the New Era Process Company, of West Virginia. Filed Aug. 12, 1896. Renewed Nov. 26, 1897. Serial No. 659,851. (No model.)

Claim.—1. An apparatus of the character specified, comprising a reservoir or casing having a gas-inlet and a liquid-inlet, a chamber arranged in said casing and connected with the liquid-inlet by a perforated nozzle whereby gas is drawn into said chamber by the liquid, and means in said chamber between the outlet therefrom and the nozzle for subdividing and mechanically combining the gas and liquid.

2. An apparatus of the character specified, comprising a reservoir or casing having a gas-inlet, a liquid-inlet, a gas and liquid receiving chamber within the casing communicating with the liquid-inlet and provided at its upper portion with a gas-inducing liquid-supply nozzle, and below said nozzle with means for subdividing the gas and liquid, and additional subdividing means extending across the casing below the outlet of said chamber.

3. An apparatus of the character specified, comprising a reservoir or casing having a gas-inlet, a liquid-inlet, a chamber in said casing having a tubular neck connected with the liquid-inlet, said neck having gas-supply openings, a gas-inducing liquid-supply nozzle in said neck, and means within the chamber for mechanically combining the gas and liquid.

4. An apparatus of the character specified, comprising a reservoir or casing, a gas-inlet, a liquid-inlet, a series of communicating chambers in said casing, each having a receiving-neck at its upper end, the lower chamber having also a perforated distributing-nozzle, gas-inducing liquid-supply nozzles in said necks, gas and liquid subdividing fillings in the chambers, and a similar filling in the casing below said chambers.



5. An apparatus of the character specified, comprising a reservoir or casing having a gas-inlet and a liquid-inlet in its upper portion and a space for the accumulation of carbonated liquid in its lower portion, means for mechanically combining gas and liquid above said space, and an outlet for the carbonated liquid having two passages d' d^3, the latter having a downwardly-extending tube d^4 and a valved delivery-tube d^5.

6. An apparatus of the character specified, comprising a reservoir or casing having a gas-inlet and a liquid-inlet in its upper portion and a space for the accumulation of carbonated liquid in its lower portion, means for mechanically combining gas and liquid above said space, a valve-casing detachably connected with the reservoir and having a threaded portion projecting into the reservoir, a main valve and an auxiliary valve in said casing, and a float within the reservoir arranged to act on the auxiliary valve.

7. An apparatus of the character specified, comprising a carbonating-chamber, a casing in the upper portion of the chamber having provisions for mechanically mixing gas and liquid and for discharging the mixture, and a wire sponge in the lower portion of the carbonating-chamber, which receives the said mixture, the chamber having an outlet below said wire sponge, through which the carbonated liquid passes.

8. In an apparatus of the character specified, comprising a reservoir or casing, a chamber arranged in said casing and communicating therewith, independent inlets for the liquid and gas, means for bringing the liquid and gas into the presence of each other in said chamber, and a wire sponge through which the liquid and gas subsequently pass located within said chamber for subdividing and mechanically combining the gas and liquid.

9. An apparatus of the character specified, comprising a reservoir or casing for holding the carbonated liquid and having a gas-supply inlet, a chamber communicating with said reservoir or casing and arranged therein, gas-supply openings in said chamber, a liquid-supply inlet independent of said gas-supply inlet and communicating with said chamber by a perforated nozzle whereby gas is drawn directly from said reservoir through said openings into said chamber by the liquid from said nozzle, and means located adjacent to said nozzle for retarding the flow of the liquid and gas and through which

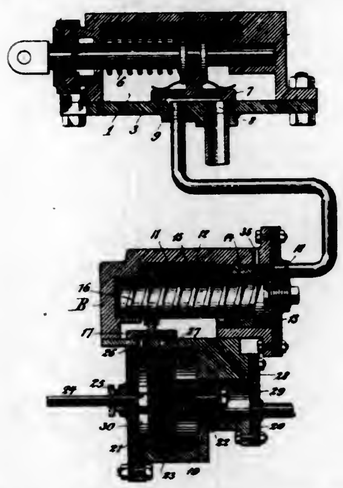
the liquid and gas are forced under pressure for subdividing and mechanically combining the same.

10. An apparatus of the character specified, comprising a reservoir or casing for holding the carbonated liquid and having a gas-supply inlet, a chamber communicating with said reservoir or casing and arranged therein, gas-supply openings in said chamber, a liquid-supply inlet independent of said gas-supply inlet and communicating with said chamber by a perforated nozzle whereby gas is drawn directly from said reservoir through said openings into said chamber by the liquid from said nozzle, and a wire sponge located adjacent to said nozzle for retarding the flow of the liquid and gas and through which the liquid and gas are forced under pressure for subdividing and mechanically combining the same.

11. In an apparatus of the character specified, a reservoir or casing having a gas-inlet supply, a chamber communicating with said reservoir or casing and arranged therein and having a tubular neck provided with gas-supply openings and connected with a liquid-supply inlet independent of said gas-supply inlet, a gas-inducing liquid-supply nozzle connected to said liquid-inlet and located in said neck to draw gas directly from said reservoir through said openings, and means for retarding the flow of the liquid and gas and through which said liquid and gas are forced under pressure for subdividing and mechanically combining the same.

12. In an apparatus of the character specified, a reservoir or casing having a gas-inlet supply, a chamber communicating with said reservoir or casing and arranged therein and having a tubular neck provided with gas-supply openings and connected with a liquid-supply inlet independent of said gas-supply inlet, a gas-inducing supply-nozzle connected to said liquid-inlet and located in said neck to draw gas directly from said reservoir through said openings, and foraminous means for retarding the flow of the liquid and gas and through which said liquid and gas are forced under pressure for subdividing and mechanically combining the same.

609,041. AIR-BRAKE. John J. Hay, New York, N. Y. Filed July 31, 1897. Serial No. 646,578. (No model.)



Claim.—1. In an air-brake system the combination with an air-reservoir, a pump and pump-operating mechanism, a pump-governor and brake-cylinder of a service-valve through which the brake-cylinder is controlled, and means for throwing the pump into operation by the exhaust from the brake-cylinder when the brakes are released, substantially as described.

2. In an air-brake system the combination with an air-reservoir, a pump and pump-operating mechanism, a pump-governor and brake-cylinder of a service-valve through which the brake-cylinder is controlled, and means for throwing the pump into operation by the exhaust from the brake-cylinder when the brakes are released, and means for automatically throwing the pump out of operation by the pressure of air in the reservoir, substantially as described.

3. In an air-brake system the combination with an air-reservoir, a pump and pump-operating mechanism, a pump-governor and brake-cylinder of a service-valve, and means whereby upon the movement of the service-valve in one direction air may be admitted to the brake-cylinder and means whereby upon the movement of the service-valve in the opposite direction the air may be exhausted from said brake-cylinder to the governor and cause the same to throw the pump into operation, substantially as described.

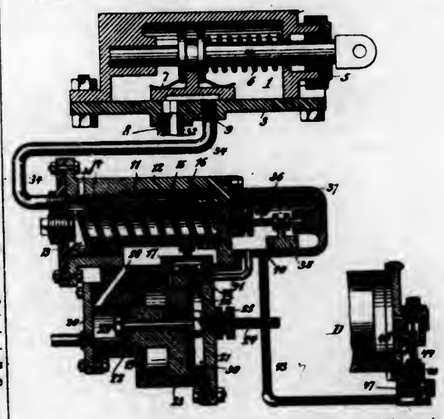
4. In an air-brake system the combination with an air-reservoir, a pump and pump-operating mechanism, a pump-governor and brake-cylinder of a service-valve communicating with said air-reservoir, a port leading from said service-valve to the brake-cylinder, an exhaust-port leading from said service-valve to the pump-governor through which air may be exhausted from said brake-cylinder to said pump-governor and cause the same to throw the pump into operation, substantially as described.

5. In an air-brake system the combination with an air-reservoir, a brake-cylinder, a pump and pump-operating mechanism, an automatic governor having a valve, said valve being impelled in one direction by air under pressure and in the opposite direction by a spring, of a service-valve communicating with said air-reservoir having a port leading to the brake-cylinder, an exhaust-port leading to the valve-chamber of the governor, and a valve arranged within the service-valve chamber adapted upon its movement in one direction to admit air to the brake-cylinder, and in its opposite direction to exhaust such air from the brake-cylinder to the valve-chamber of the pump-governor whereby the air-pressure opposing the spring in said valve-chamber is counterbalanced and the action of the spring is permitted to operate the valve in said valve-chamber, substantially as described.

6. In an air-brake system the combination with an air-reservoir, a brake-cylinder, a pump and pump-operating mechanism, an automatic governor having a valve, said valve being impelled in one direction by air under pressure and in the opposite direction by a spring, of a service-valve communicating with said air-reservoir and having a port leading to the brake-cylinder, an exhaust-port leading to the valve-chamber of the governor, and a valve arranged within the service-valve chamber adapted upon its movement in one direction to admit air to the brake-cylinder and in its opposite direction to exhaust such air from the brake-cylinder to the valve-chamber of the pump-governor whereby the air-pressure opposing the spring in said valve-chamber is counterbalanced and the action of the spring is permitted to operate the valve in said valve-chamber and at the same time open an exhaust-port and permit the air from the brake-cylinder to exhaust to the atmosphere, substantially as described.

7. In an air-brake system the combination with an air-reservoir, a pump and pump-operating mechanism, a brake-cylinder and service-valve controlling said brake-cylinder of an automatic pump-governor having a piston adapted to throw the pump into and out of operation and connections with said brake-cylinder through which air is exhausted from said brake-cylinder to actuate said piston to throw the pump into operation, and mechanism for automatically actuating said piston to throw the pump out of action when the pressure in the reservoir has reached a predetermined point, substantially as described.

609,042. AIR-BRAKE. John J. Hay, New York, N. Y. Filed Aug. 23, 1897. Serial No. 649,145. (No model.)



Claim.—1. In an air-brake system the combination with an air-reservoir a pump and its operating mechanism a pump-governor connecting and disconnecting said pump-operating mechanism and the pump of means whereby the compression-chamber of the pump is opened to the atmosphere while said pump-operating mechanism is being connected with said pump, substantially as described.

2. In an air-brake system the combination with an air-reservoir, a pump and its operating mechanism, a pump-governor connecting and disconnecting said pump-operating mechanism and said pump of means whereby the suction-valve of said pump may be controlled by the operation of said pump-governor substantially as described.

3. In an air-brake system the combination with an air-reservoir, a pump and its operating mechanism a pump governor connecting and disconnecting said pump-operating mechanism and the pump of an auxiliary chamber and means whereby when the pump is stopped said auxiliary chamber is supplied with air under pressure, and the pump is started said air-supply is shut off and the air in said auxiliary chamber is caused to actuate a valve on the pump to open communication between the compression-chamber of the pump and the atmosphere.

4. In an air-brake system the combination with an air-reservoir, a pump and its operating mechanism, a pump-governor connecting and disconnecting said pump-operating mechanism and said pump of an auxiliary air-chamber having communication with the valve-chamber of said pump-governor under the control of the valve therein, mechanism whereby the suction-valve of said pump may be controlled and a communication between said auxiliary air-chamber and said suction-valve-controlling mechanism, substantially as described.

5. In an air-brake system the combination with an air-reservoir, a pump and its operating mechanism, a pump-governor connecting and disconnecting said pump-operating mechanism and said pump of an auxiliary air-chamber having communication with the valve-chamber of said pump-governor under the control of the valve therein, mechanism whereby the suction-valve of said pump may be controlled, and an auxiliary valve in said auxiliary air-chamber substantially as described.

6. In an air-brake system the combination with an air-reservoir, a pump and its operating mechanism, a pump-governor connecting and disconnecting said pump-operating mechanism and the pump of an auxiliary chamber, a communication from said auxiliary chamber to a port in the valve-chamber of the pump-governor, said communication being operated by the movement of the valve in the valve-chamber which throws the pump out of action and closed by the reverse movement, a communication between the auxiliary chamber and the suction-valve of the pump a valve in said auxiliary chamber connected to and moved with the valve in the valve-chamber, whereby when the valve in the valve-chamber is moved to start the pump the valve in the auxiliary chamber opens communication between the auxiliary chamber and the said suction-valve of the pump causing said suction-valve to open and whereby a movement of the valve in the valve-chamber of the pump-governor in the opposite direction closes said port in said auxiliary chamber.

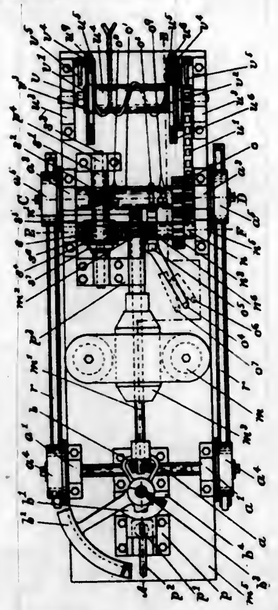
609,048. MOTOR-CAR. Charles O Palmer, Cleveland, Ohio. Filed Apr. 15, 1894. Renewed Jan. 20, 1898. Serial No. 667,983. (No model.)

Claim.—1. The combination of the car-frame mounted on wheels and supporting a motor thereon, a driving-wheel in operative connection with the motor, a frictionally-connected driving-train from the motor to the car-wheels, together with a conductor from the motor to the dynamo, or other source of energy, and a flexible-band connection from the driving-wheel to the mining-machine, substantially as described.

2. The combination of a car-frame mounted on wheels and supporting a motor thereon, a driving-train consisting of the worm m^3 on the motor-shaft m', worm-wheel n' and worm n^3 on shaft n, worm-wheel s and worm s^3 on shaft s', worm-wheel o^3 on axle a^3, clutch c^3 and sleeve o', splined to said axle, a driving-wheel b^3, gear-wheel b' on said horizontal driving-wheel and engaging with motor-gear b, and a flexible band connecting the driving-wheel with the driven wheel on the mining-machine, substantially as and for the purpose described.

3. A motor-car frame supported on wheels, a motor mounted on said frame and driving a pulley-wheel, a worm on the motor-shaft, a worm-wheel on the intermediate shaft and in engagement with said motor-shaft worm, a worm on said intermediate shaft engaging with the worm-wheel on the friction-shaft, a friction-clutch associated with said friction-shaft, a worm on the friction-shaft engaging with a worm on the car-axle, all combined and operated substantially as described.

4. The combination of a car-frame supported on wheels and having a motor mounted thereon, a sprocket-wheel on one of the wheel-axles, a reel-shaft journaled in bearings on said car-frame, a sprocket-wheel fixed on said reel-shaft, a reel journaled on said reel-shaft, a friction-clutch on the side of said reel in train from said reel-shaft to the reel, a sprocket-chain connecting said sprocket-wheels, a flexible conductor wound on said reel and conductor connections from the reel to the motor, substantially as shown.



5. The combination of a car-platform supported on wheels and having a motor and reel attached thereto, a flexible conductor wound on said reel, conductor connections from the reel to the motor, and a friction-controlled driving connection from a car-axle to the reel substantially as and for the purpose set forth.

6. The combination of a car, a motor, a driving-wheel driven by said motor, a friction-controlled driving connection from said motor to the car-axle, a reel and a flexible conductor wound on said reel and connected with both the motor and a dynamo, engine, or other source of energy, together with a mining-machine, a horizontal pulley on said mining-machine, and a flexible-band connection between the mining-machine pulley and the motor-pulley, substantially as described.

7. A car-truck with a motor mounted thereon, a reel on one end of the truck, a worm on the motor-shaft engaging a worm-wheel on the intermediate shaft, a gear on said intermediate shaft engaging with a gear-wheel on a wheel-axle, a sleeve splined to the said wheel-axle in driving engagement with said axle-gear, means for engaging and disengaging said sleeve, a conductor-reel, a conductor wound on said reel and in connection with a dynamo, engine, or other source of energy, and the motor on the car-truck, combined substantially as described.

8. In a motor-car, a car-frame mounted on wheels and supporting an electric motor, a worm m^3 on the motor-shaft engaging worm-wheel n' on the intermediate shaft n, a train of gearing consisting of pinion n^3 and gear o, a train of gearing consisting of worm n^3 worm-wheel s, worm s^3 and worm-wheel o^3, and a double clutch for engaging either gear o or the worm-wheel o^3 with the car-wheel, combined substantially as and for the purpose described.

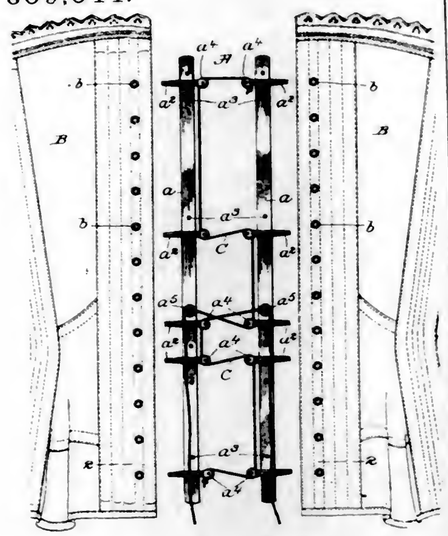
609,044. FITTING ATTACHMENT FOR CORSETS. Eugene Pearl, New York, N. Y. Filed July 8, 1897. Serial No. 643,900. (No model.)

Claim.—1. A fitting attachment for corsets, comprising resilient side members, each provided with devices for engaging the corset, and also with lacing means for adjusting said members toward and from each other, as specified.

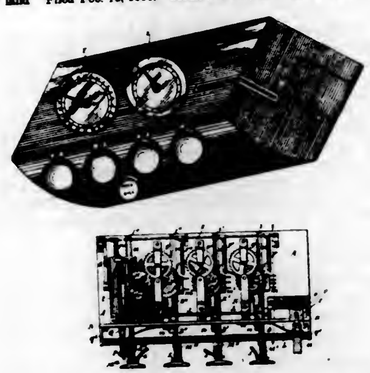
2. A fitting attachment for corsets, comprising resilient side members, each provided with devices vertically adjustable thereon for engaging the corset, and also with lacing means for adjusting said members toward and from each other, as specified.

3. A fitting attachment for corsets, comprising side members, each provided at its outer edge with means for engaging the corset, and at its inner edge with lacing means consisting of pulleys and cords for adjusting said members toward and from each other, as specified.

609,044.



609,045. CHECKING APPARATUS FOR REGISTERING PAYMENTS ON VEHICLES, &c. FREDERICK W. PHILLIPS, London, England. Filed Feb. 18, 1898. Serial No. 670,769. (No model.)



Claim.—1. In checking apparatus for registering payments on vehicles and similar commercial transactions the combination of a rack *b* with striking-pins *m*, check-lever K, fly-train and spring-box D with a rocking spindle L operating a punch *o* and register feed-bar Q and register-punch 11 substantially as set forth.

2. In checking apparatus for registering payments on vehicles and similar commercial transactions, the combination of a rack *b* with a fly-wheel train of gearing meshing with said rack, a stop-pin engaging a part of the said gearing, a crank-shaft for moving the said pin into and out of locking position, means whereby the said shaft is actuated by the depression of the said rack for preventing any return action until the completion of the stroke, and a bell-striking device operating on the return action, substantially as herein described with reference to the appended drawings.

3. In checking apparatus for registering payments on vehicles and similar commercial transactions, means for registering the payments on a continuous slip in direct lines representing the value of each payment, a blank-box T with a plane surface over which said slip is stretched to be marked, a punch V, operated independently of the said registering apparatus and arranged to mark said slip at the end or any part of the journey, an audible signal operated in combination with said punch V, and a dial-indicator, substantially as described and shown.

609,046. KNIFE OR SCISSORS SHARPENER. ROBERT H. POINDEXTER, Indianapolis, Ind. Filed Apr. 30, 1898. Serial No. 678,243. (No model.)



Claim.—1. In a knife or scissors sharpener, a body portion having means for affixing it to a support and having a flat file removably secured thereto and a guide against which the blade to be sharpened will be held, said guide being opposite the cutting-face of the file and being removably and adjustably secured to the body whereby it can be changed in its position to bring different portions of the file into use, substantially as described and for the purposes specified.

2. The combination, with the body having means for securing it to a support, and files removably secured to the body, of plates with expanded beveled ends, said ends being opposite the files and said plates being adjustably secured to the body to permit longitudinal adjustment of the plates, as and for the purposes specified.

3. In a sharpener for the purposes specified, a fixed body portion having one or more flat cutting-surfaces and as many guides as there are cutting-surfaces secured to the body portion by threaded bolts and said guides having ribs on each side of the bolt between the guide and the body, substantially as described and for the purposes specified.

4. In a sharpener the body portion having means for fastening it to a substantial support and having an upper thickened end, grooved substantially as described, to form file-seats and having screw-holes and a longitudinal slot, files mounted in the seats, a pair of plates bolted at their lower ends to the body and having ribs on each side of the bolt and having upper, sloping flat-surfaced ends opposite the files and longitudinal slots intermediate of the ends of the plates and bolts substantially as shown and described to fasten the plates to the body and to regulate the distance of the heads from the files.

609,047. PAINT-DISTRIBUTER. WILLIAM QUINN, Fall River, Mass. Filed Oct. 7, 1897. Serial No. 654,333. (No model.)



Claim.—1. The combination with a paint-distributing device provided with a pointed spoon-shaped pigment-receptacle, and a reciprocating needle mounted therein of a jewel mounted in the point of the spoon shaped receptacle through which said needle passes, substantially as shown and described.

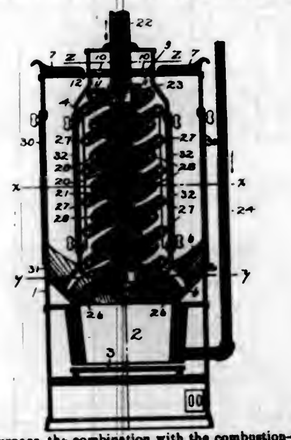
2. The combination with a pointed spoon-shaped pigment-receptacle as 5 and a reciprocating needle as 9 mounted therein, of a jewel which is mounted in the point of said receptacle and through which the needle passes, substantially as shown and described.

609,048. FURNACE. FREDERICK ROESSE, Rochester, N. Y. Filed Feb. 15, 1898. Serial No. 670,404. (No model.)

Claim.—1. In a furnace, the combination with the outer casing, an inner concentric casing separated from the former on all sides constituting a combustion-chamber or passage for the smoke and products and connecting at its upper end with the smoke-pipe, the entire space between the two casings forming a fuel-reservoir above the fire-pot, and the fire-pot arranged beneath the inner casing.

2. In a furnace, the combination with the outer casing, an inner concentric casing separated from the former on all sides constituting a combustion-chamber or passage for products and connected with the smoke-pipe, the space between the two casings constituting a fuel-reservoir above the fire-pot, the fire-pot arranged beneath the inner casing, and a water-heating column arranged within the inner casing.

3. In a furnace, the combination with the outer casing, an inner casing separated from the former on all sides constituting a combustion-chamber or passage for products and connected with the smoke-pipe, said inner casing having the legs at the bottom, and the entire space between the casings constituting a fuel-reservoir above the fire-pot, of the hollow fire-pot beneath the casing, a water-heating column arranged within the inner casing, and the water-pipes connecting the fire-pot with the column passing beneath and protected by the legs.



4. In a furnace, the combination with the combustion-chamber, the water-column arranged in said chamber and the supply and delivery pipes connected to said column at opposite ends, of an auxiliary water-pipe extending alongside the column and connected to it at opposite ends.

5. In a furnace, the combination with the combustion-chamber, the water-column arranged within it having the flattened portions near opposite ends, and the supply and delivery pipes connected to said column at opposite ends, of a coiled pipe extending around the column and connected to the flattened portions thereof.

6. In a furnace, the combination with the combustion-chamber, the water-column arranged within it, and the supply and delivery pipes connected to said column near opposite ends, of the two pipes concentrically and spirally coiled around the column and connected at opposite ends to it.

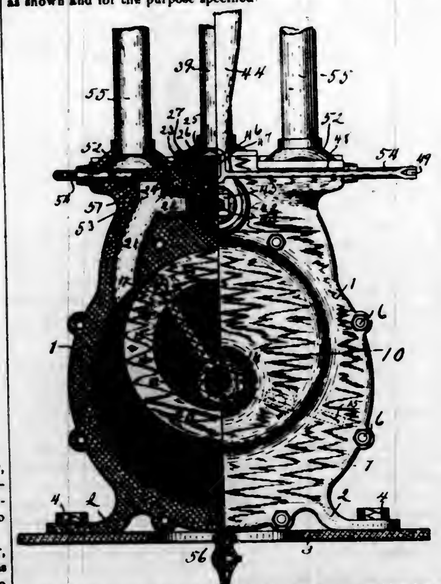
7. In a furnace, the combination with the plate arranged between the combustion-chamber and the smoke-pipe having the apertures for smoke and products, of the horizontal rotary perforated direct-draft damper, the pivoted check-damper controlling the admission of air to the smoke-pipe engaging and operated by the direct-draft damper.

8. The combination with the horizontal rotary perforated direct-draft damper having the inclined lug thereon, of the check-damper hinged at its upper end engaged by the lug on the first-mentioned damper and opened when the latter is closed and vice versa.

9. The combination with the furnace-casing having the chamber at the top connected with the smoke-pipe and the vertical apertures therein, and the pipe passing vertically through said chamber, of the gravitating check-damper controlling an opening between the chamber and the external air, the rotary direct damper on the casing having apertures corresponding to those in the casing and encircling the vertical pipe, and the inclined lug on said damper engaging the check-damper and operating to open the latter as the direct damper closes the openings in the casing and vice versa.

609,049. ROTARY ENGINE. SAMUEL S. ROSE, Amador City, Cal. Filed Sept. 2, 1897. Serial No. 650,349. (No model.)

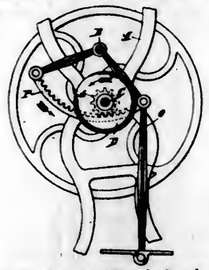
Claim.—1. In a rotary engine of the class described the combination with a circular steam-cylinder suitably mounted on and attached to a rigid foundation, of a revolving piston fitted closely against the top wall of said cylinder, such piston having a driving-shaft and suitable pulley rigidly attached thereto, the wrist-pin rigidly attached to the side of the cylinder and extending within the piston, the fans pivotally mounted on the wrist-pin and extending through oscillating bearings in opposite sides of the piston, the steam-ports 21, on either side of the said pistons, which are connected by the passage 22, the exhaust-ports 53 adapted to communicate with the steam-ports 21 and provided with the valves 51, the angle-valve 23 inserted transversely in the passage 22, such valve 23 having the slot 24 therein and the lever 44 rigidly attached to one end, the steam-chamber 25 and fan-shaped way 26, the pin 46 in the lever 44, the connecting-rod 48 having the slot 47 therein, such slot engaging with the pin 46, the levers 49 flexibly attached at either end of the rod 48 and fulcrumed near their centers on the brackets 50, such levers being flexibly attached to the outer ends of valve-stems 54, which are rigidly attached to the valves 51, and suitable means for supplying steam and disposing of the same, all arranged and operating substantially as shown and for the purpose specified.



2. In a rotary engine of the class described, the combination of a circular steam-cylinder rigidly secured to a suitable foundation, a revolving piston arranged eccentrically within such cylinder, a series of fans provided with bushings in the ends thereof and journaled in the center of the cylinder and eccentrically with relation to the piston such fans extending through oscillating bearings in the sides of the piston aforesaid, such oscillating bearings journaled in the ends of the piston and having the bushings engaging with, interchangeable steam and exhaust ports arranged above, on either side, and communicating with the cylinder, a connecting-passage having a double operating angle-valve arranged transversely therein, such valve having the angular passage therein communicating with a steam-chest located thereon, an operating-lever rigidly attached to one end of the operating-valve, a pin on the lever aforesaid adapted to engage a slot in a connecting-rod 48, arranged horizontally in front of the said lever, such connecting-rod pivotally attached at either end to one of the levers 49, such levers 49 fulcrumed on the side of the cylinder and pivotally attached to the outer ends of valve-stems 54, such valve-stems 54 inserted in the sides of valve-chambers and rigidly attached to exhaust-valves arranged over the exhaust-ports 53, the driving-shaft rigidly attached to the piston, a cam-wheel rigidly attached to said driving-shaft, such cam-wheel provided with an endless zigzag flange or tongue on the periphery of the same, an oscillating lever adjustably fulcrumed on the side of the cylinder, the lower end of which is adapted to engage with the flange or tongue of the cam-wheel, a valve-stem flexibly attached to the upper end of the said oscillating lever and inserted horizontally in the steam-chest above the operating-valve aforesaid, a valve rigidly attached to the inner end of the said valve-stem and suitable means for introducing steam and conducting the same from the cylinder, all arranged and operating substantially as shown and for the purposes specified.

3. In a rotary engine of the class described the combination with a suitable cylinder and piston of a cut-off valve located in the steam-chest a suitable stem rigidly attached thereto, the oscillating lever 29 flexibly attached at its top end to such valve-stem and its lower end adapted to engage the tongue of a cam-wheel by means of the rollers 30, such cam-wheel 32 rigidly attached to the main driving-shaft and provided with the tongue 31 on the periphery of the same, the sleeve 37 inserted on the lever 29 and held in position by the adjusting-nuts 38, the bracket 33 adapted to engage the sleeve 37 at its outer end, such bracket being inserted over the lug 35 by means of the slot 34, the lock-nut 36 inserted in the lug 35 and adapted to engage with the bracket 33, the valve 23, steam-ports 21, and suitable reversing mechanism, all arranged and operating substantially as shown and for the purposes specified.

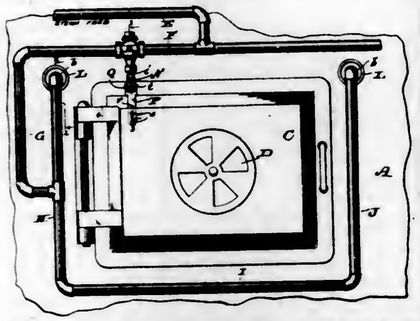
609,050. DEVICE FOR TRANSMITTING POWER. ISRAEL RUDERKY, New York, N. Y. Filed Feb. 8, 1898. Serial No. 669,482. (No model.)



Claim.—1. In a power-transmitting device, the combination with a shaft, of a disk or plate secured thereto and provided on its edge with a flange *d*, a second plate or disk loosely mounted on said shaft and having a pinion formed thereon, a ratchet secured to the shaft between said plates, a spring-actuated pawl pivoted to said second plate and engaging with the said ratchet, and bearing against the inner surface of said flange, and a rack-bar for engaging with said pinion, substantially as described.

2. In a power-transmitting device, the combination with a shaft, of a plate D secured thereto, and provided with a flange *d*, a disk F mounted on said shaft and provided with a pinion, a ratchet secured to said shaft between said plates, a spring-actuated pawl pivoted to said plate F and provided with a roller traveling on the inner surface of said flange and holding said pawl in engagement with the ratchet, and a rack-bar for engaging with said pinion, substantially as described.

609,051. SMOKE-CONSUMING FURNACE. GEORGE W. SANNUBER, Milwaukee, Wis. Filed Sept. 7, 1897. Serial No. 650,745. (No model.)

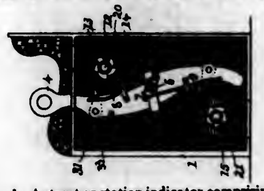


Claim.—1. In a smoke-consuming furnace, the combination with the front wall thereof, and a fuel-door hinged to the outer front of said wall, of a series of pipes leading from the source of steam-supply and extending horizontally above said door and thence passing transversely through the said front wall, a valve located in said horizontal portion of said pipes above said door and adjacent to the hinged end thereof, a lever linked to the casing and valve-stem of said valve and projecting outwardly over said door for engagement therewith, whereby when the door is closed, the lever will be raised by said door and the valve raised from its seat and the steam-passage in the pipes opened, and when the door is opened the said lever will fall, or be forced downward, and the valve be thereby permitted to close, shutting off the steam-passage in said pipes.

2. In a smoke-consuming furnace, the combination with the front wall thereof, and a fuel-door hinged to the outer front of said wall, of a series of pipes leading from the source of steam-supply and extending horizontally above said door and thence passing transversely through the said front wall, a valve located in said horizontal portion of said pipes above said door and adjacent to the hinged end thereof, a depending link pivoted to the valve-casing, a lever pivoted to said link and to the valve-stem and projecting outwardly over said door, a slotted vertical standard adjustably secured to said door, and a roller carried by said standard and adapted to engage with and lift said lever when the said door is closed.

3. In a smoke-consuming furnace, the combination with the front wall and fuel-door thereof, of a steam pipe connected to the source of steam-supply and arranged horizontally above said door and thence passing transversely through the said front wall, a valve located in said horizontal portion of said pipe above said door and adjacent to the hinged end thereof and having a downward-projecting valve-stem terminating in a rounded lower end, a lug projecting from the rear of the valve-casing and having a rounded socket in its under side, a link having a rounded head fitting in said socket, and a like rounded socket in its lower end, and a lever having a rounded head fitting in the said link-socket, and a like rounded socket in its upper side for the reception of the rounded end of the valve-stem, said lever projecting outwardly above the said door and adapted to engage with and be raised thereby, when said door is closed, to open the said valve, and to be lowered by gravity and the force of the valve-spring, closing said valve, when the door is opened and freed from contact with said lever.

609,052. STATION-INDICATOR. MANFORD SAVAGE, Champaign, Ill. Filed Feb. 1, 1898. Serial No. 668,714. (No model.)



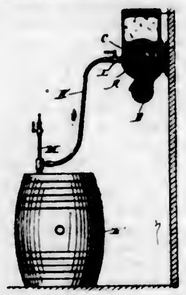
Claim.—1. A street or station indicator comprising a casing having an exposure-opening, a pair of rollers, a name-bearing band mounted on the rollers and traversing the opening, ratchet-wheels connected one with each roller, a lever having pawls adapted to engage the ratchet-wheels, and a connection between the pawls whereby when one is in operative position the other is idle.

2. A street or station indicator comprising a casing having an exposure-opening, a pair of rollers, a name-bearing band mounted on the rollers and traversing the opening, ratchet-wheels connected with the rollers, and having their teeth presented in opposite directions, a lever pivoted between the ratchet-wheels, pawls on the lever adapted to engage the ratchet-wheels, an arm pivoted concentric with the pivot of the lever and connections between the arm and the lever whereby rocking of the arm will throw one pawl out of operation and permit the other to engage its ratchet-wheel.

3. In a street or station indicator, the combination of a casing having an exposure-opening, a pair of rollers, a name-bearing band mounted on the rollers and traversing the opening, a ratchet-wheel connected with each roller, a lever pivoted between the ratchet-wheels, pawls on the lever adapted to engage the ratchet-wheels, an arm pivoted concentric with the lever and having a prismatic key-hole, a rod extending from one end of the arm to one pawl and another rod extending from the other end of the arm to the other pawl substantially as set forth whereby the arm may be turned by a key and the pawls be thrown one into and the other out of operation.

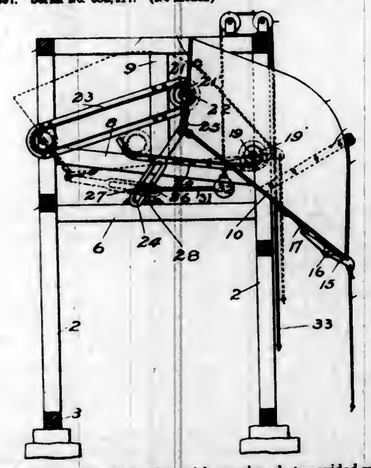
4. In mechanism for shifting the band of a street or station indicator, the combination of rollers 22 and 23, ratchet-wheel and disk 12 and 13 on the shaft of one roller, ratchet-wheel and disk 15 and 16 on the shaft of the other roller, spring-brakes 14 and 17 for the disks on the roller-shafts, lever 4 pivoted between the ratchet-wheels, spring 33 tending to hold the lever in normal position, pawls 10 and 11 on the lever and a shifter to hold one or the other of the pawls out of operation.

609,053. COOLING APPARATUS FOR AIR-TANKS. EDWARD SHERIDAN, Philadelphia, Pa. Filed Sept. 24, 1897. Serial No. 652,821. (No model.)



Claim.—In combination with the cylindrical air-tank of the character described, an elongated bottomless receptacle having the ends thereof curved to conform to the contour of the air-tank, and the sides thereof scalloped along their edges, doors to the receptacle, a piece of sheet metal secured to one side of the receptacle, curved around the tank and deepened at the lowermost point thereof forming a trough, said trough being on an incline, and a drain-pipe leading from the lowest point of the trough, as and for the purpose described.

609,054. COAL-POCKET. JOHN SIMPSON, Minneapolis, Minn., assignor of one-half to Dighton A. Robinson, same place. Filed Sept. 21, 1897. Serial No. 652,417. (No model.)



Claim.—1. The combination, with a coal-pocket provided with a suitable door at its forward end, and with one set of wheels or trucks located at or near the rear end of said pocket, and a second set of wheels or trucks located near the longitudinal center of said pocket, of separate tracks upon which said wheels or trucks rest and are adapted to move, the tracks for the rear wheels being backwardly inclined, whereby when the pocket is filled with material it tends to move forward upon said tracks and when the pocket is empty or when the material has been partially discharged therefrom it tends to move back upon said tracks, for the purpose set forth.

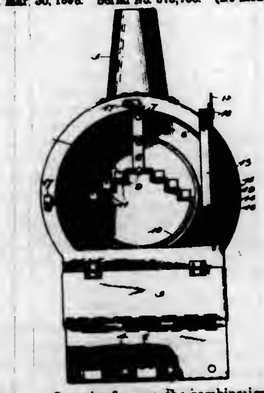
2. The combination, with a coal-pocket provided with a suitable door at its forward end, and with one set of wheels or trucks located at or near the rear end of said pocket, and a second set of wheels or trucks located near the longitudinal center of said pocket, of separate tracks upon which said wheels or trucks rest and are adapted to move, the tracks for the rear wheels being backwardly inclined, whereby when the pocket is filled with material it tends to move forward upon said tracks and when the pocket is empty or when the material has been partially discharged therefrom it tends to move back upon said tracks, and a locking mechanism arranged to hold said pocket at either limit of its movement, for the purpose set forth.

3. The combination, with a coal-pocket provided with a suitable door at its forward end, of means for supporting said pocket, and permitting a limited forward and backward movement thereto, the rear portion of the pocket being heavier than the forward portion and the forward portion being of greater capacity than the rear portion, whereby when the pocket is filled with material it tends to move to the limit of its forward movement, and when the pocket is empty or the material has been partially discharged therefrom, it tends to move to the limit of its backward movement, for the purpose set forth.

4. The combination, with a coal-pocket provided with a suitable door at its forward end, of means for supporting said pocket and permitting a limited forward and backward movement thereto, the rear portion of the pocket being heavier than the forward portion and the forward portion having a greater capacity than the rear portion, whereby when the pocket is filled with material it tends to move to the limit of its forward movement and when the pocket is empty or the material has been partially discharged therefrom it tends to move to the limit of its backward movement, and locking means for holding said pocket at either limit of its movement, for the purpose set forth.

5. The combination, with the dumping-pocket, and the trucks therefor, of the guides or tracks supporting said trucks, the frame whereto said guides are secured, a slotted arm at the rear of said pocket, a shaft to enter said slot, a friction device upon said shaft to engage said arm, and means for rotating said shaft, substantially as described.

609,055. TIRE-FURNACE. JOSEPH SANFORD, Elysian, Minn. Filed Mar. 30, 1898. Serial No. 675,780. (No model.)



Claim.—1. In a tire-furnace, the combination with a drum having inclosed tire-supporting devices, of a spreader or distributer removably suspended in the drum, and provided at its upper side with seats for fuel-saturated absorbent blocks, substantially as specified.

2. In a tire-furnace, the combination with a drum and inclosed tire-supporting devices, of a spreader or distributer suspended within the drum and provided at its upper side with a plurality of stepped seats for absorbent bricks, substantially as specified.

3. In a tire-furnace, the combination of a fire-box, a drum rising from the longitudinal center of the fire-box and communicating interiorly therewith, said drum being provided at its top with an outlet-flue, fuel-doors at opposite sides of the plane of the drum, and a tire and spreader or distributer supporting bracket arranged in the drum, the latter being provided in its front wall with a hinged door, and a spider mounted centrally upon said drum-door and provided with a plurality of radial arms fitting in guides on the door for engagement with stationary catches on the drum, said spider having a central grip or handhold, substantially as specified.

609,056. REACH-COUPLING FOR VEHICLES. FRED SIMON, Paris, Ill., assignor of one-half to J. W. Cummins, same place. Filed Apr. 8, 1896. Serial No. 676,946. (No model.)



Claim.—1. A coupling for vehicles comprising a body provided with an opening extending inward from one side and adapted to receive a king-bolt, and a reciprocating catch extending across the entrance of the opening and adapted to confine the king-bolt therein, substantially as described.

2. A coupling for vehicles comprising a body portion provided with an opening extending inward from one edge of the body and adapted to receive a king-bolt, a reciprocating catch extending across the entrance of the opening and adapted to confine a king-bolt therein, and a resilient locking device mounted on the catch and engaging the body portion of the coupling, whereby the catch is held against accidental movement, substantially as described.

3. A coupling for vehicles comprising a body portion having an opening extending transversely of it, said body portion being provided in rear of the opening with a longitudinal recess, a reciprocating catch mounted in the recess and extending across the opening, a pro-

jection or stud mounted on the body in advance of the opening, and a spring secured to the catch and projecting in advance of the same and adapted to engage the stud or projection, substantially as described.

4. A coupling for vehicles comprising a body having a transverse opening and provided with a longitudinal recess extending from one side of the opening, a catch mounted in the recess and extending across the opening, a spring secured to the catch and extending beyond the ends of the same, the front end of the spring being provided with a perforation and the rear portion of the spring having a longitudinal slot, and projections or studs mounted on the body, one of the projections or studs being arranged to engage the perforation of the front end of the spring, and the other projection or stud fitting in the slot of the rear portion of the spring, substantially as described.

5. A coupling for vehicles comprising a body adapted to be secured to a coupling-pole or reach and having a transverse opening and provided at one edge with a longitudinal recess, a sliding catch mounted in the recess and extending across the transverse opening, a spring carried by the catch and extending in advance and in rear of the same, one end of the spring being slidingly connected with the body portion and the other end of the spring detachably engaging the same when the coupling is closed, and a casing arranged on the body portion at the recessed edge thereof, and confining the catch in the recess, substantially as described.

609,057. CATTLE-FOOD AND PROCESS OF MAKING SAME.

SÖREN P. SÖRENSEN, Valle, Denmark, assignor of one-half to Philip W. Heyman, Copenhagen, Denmark. Filed Dec. 14, 1896. Serial No. 615,694. (No specimens.)

Claim.—The process of treating blood for making food which consists in a preliminary heating of the blood and dilution thereof by about ten per cent. to twenty-five per cent. of water, passing the blood thus heated and diluted through a filter to strain out foreign substances, then raising the temperature of the liquid to about 75° centigrade, adding an alkaline solution during said heating, adding acetic acid to the mixture and raising the temperature to about 100° centigrade, precipitating and separating the solid particles of the blood, and incorporating therewith molasses and ground cereal food, as set forth.

609,058. HAT-HANGER.

DENIS SPELMAN, National Home, Wis. Filed Apr. 28, 1897. Serial No. 634,905. (No model.)



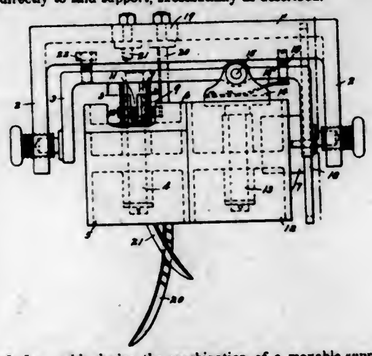
Claim.—1. A hat-hanger comprising a clamp formed of a doubled strip of spring sheet metal bent to form clamping-jaws at the end, and having integral bent tongues projecting from said strip, and an angularly-bent locking-lever pivoted to said tongues, in combination with a suspension device formed of a single strip of spring-wire, doubled and bent into a horseshoe shape with the ends of said wire formed into hooks and interlocked within the doubled upper end of the said clamp, substantially as set forth.

2. A hat-hanger comprising a clamp formed of a doubled strip of spring sheet metal, with a locking-lever pivoted thereto, in combination with a curved rivet uniting the opposite parts of said doubled strip adjacent to the upper end thereof, and a suspension device formed of a doubled strip of spring wire bent into a horseshoe shape and having its ends interlocked within the said upper end of the clamp above the said rivet, whereby the clamp can be sprung within the suspension device and held locked in a closed position, substantially as set forth.

609,059. GUIDING DEVICE.

HENRY A. TILLINGHAST, Providence, R. I. Filed July 21, 1897. Serial No. 645,354. (No model.)

Claim.—1. In a guide device, the combination of a movable support, a guide-roll upon said support, an engaging surface adjacent said roll and connected to said support, to transmit the pull of the web directly to said support, substantially as described.



2. In a guide device, the combination of a movable support, a guide-roll upon said support, an engaging surface adjacent said roll, and a shoulder carried with said surface and arranged to engage said support, to transmit the pull of the web directly to said support, substantially as described.

3. In a guide device, the combination of a pivoted support, a guide-roll upon said support, an engaging surface adjacent said roll, a shoulder secured to said surface and arranged to engage said support, and means for yieldingly holding said shoulder out of engagement with said support, substantially as described.

4. In a guide device, the combination of a pivoted support, a guide-roll upon said support, a disk adjacent said roll and connected to said support, to transmit the pull of the web directly to said support, substantially as described.

5. In a guide device, the combination of a pivoted support, a stud projecting from said support, a guide-roll on said stud, a disk on said stud adjacent to said roll and a shoulder said disk for engaging said support, substantially as described.

6. In a guide device, the combination of a pivoted support, a stud projecting from said support, a guide-roll mounted on said stud, a disk on said stud adjacent said roll, a shoulder on said disk for engaging said support, and a spring connected to said support and disk, substantially as described.

7. In a guide device, the combination of a pivoted support, a stud projecting from said support, a guide-roll on said stud, a disk on said stud adjacent said roll, a shoulder on said disk for engaging said support, and a pressure-roll mounted on said support, substantially as described.

8. In a guide device, the combination of a pivoted support, a stud projecting from said support, a guide-roll on said stud, a disk on said stud adjacent said roll, means for connecting said disk and support, a pressure-roll bearing upon said roll and disk, and a weight for holding said support in its normal position, substantially as described.

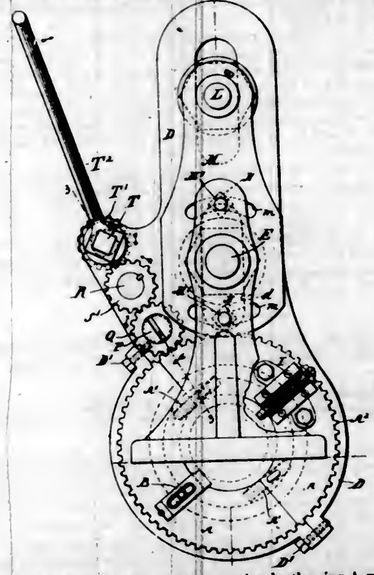
609,060. PIN-TURNING MACHINE.

WILLIAM M. WALLACE, Marshalltown, Iowa, assignor to the Fisher Governor Company, same place. Filed Jan. 26, 1898. Serial No. 667,863. (No model.)

Claim.—1. In a machine for treating cross-heads, the ring A made in separable parts, with rigid connecting means, and with the tool B carried therein, in combination with the yoke D also made in separable parts embracing such ring and with provisions for moving the yoke with its connections to effect the feeding of the tool, and with provisions for carrying the tool on one of the faces of the ring allowing for finishing quite to the end of the pin by reversing the ring, and means as the shaft S, gears S', S^2, and changeable gear T, for communicating motion to the ring in either position, all arranged for joint operation substantially as herein specified.

2. In a machine for treating cross-heads, the ring A made in separable parts, with rigid connecting means and the tool B carried therein, in combination with the yoke D, also made in separable parts embracing such ring and with provisions for moving the yoke with its connections to effect the feeding of the tool, and means as the slots d, d', and bolts therein for adjusting the yoke and ring vertically, all arranged for joint operation substantially as herein specified.

3. In a machine for treating cross-heads, the ring A made in separable parts, with rigid connecting means, and the tool B carried therein, in combination with the yoke D also made in separable parts embracing such ring, and with provisions for moving the yoke with its connections to effect the feeding of the tool, and means as the adjustable extensions M, holding means M', and curved slots m for adjusting the ring horizontally, all arranged for joint operation substantially as herein specified.

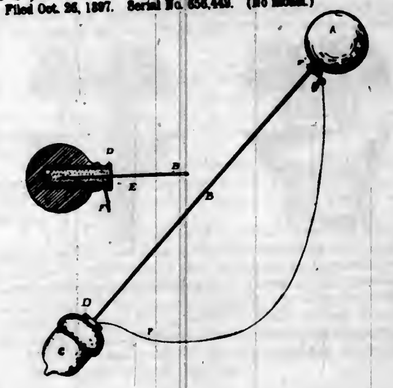


4. In a machine for treating cross-heads, the ring A made in separable parts with rigid connecting devices and the tool B carried therein, in combination with the yoke D also made in separable parts embracing such ring and with provisions for moving the yoke with its connections to effect the feeding of the tool, means as the slots d d', and bolts therein for adjusting the yoke and ring vertically, and means as the adjustable extensions M, holding devices M' and curved slots m, for adjusting the ring horizontally, all arranged for joint operation substantially as herein specified.

5. In a machine for treating cross-heads and analogous pieces of mechanism, having the supporting-yoke D and ring A, each made in separable parts, mechanism for revolving the latter, means as the slots d d', and bolts therein for adjusting the yoke and ring vertically and means as the adjustable extensions M, holding devices M' and curved slots m for adjusting the yoke and ring horizontally, the combination therewith of the housing I, the slide V, and provisions for holding the cutting-tool V' therein and for feeding the slide and its tool radially, adapted to finish the inner faces of the cross-head adjacent to the ends of the pin, and also of carrying a tool and feeding it across, adapted for finishing the pin, all substantially as herein specified.

609,061. HAT-PIN.

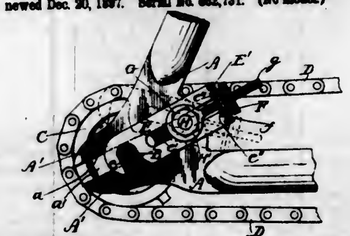
MARTHA J. WAYMACK, Manchester, Va. Filed Oct. 26, 1897. Serial No. 656,449. (No model.)



Claim.—An ornamental protector for a hat-pin consisting of a suitably-fashioned body C having a hole therein extending part way through the body only; yielding material E seated within the hole and adapted to be penetrated by the point of the pin; a tube also seated within the hole; and a cord with one end held in place within the hole by the yielding material and the other end attached to the pin; in substance as set forth.

609,062. CHAIN ADJUSTMENT FOR BICYCLES OR OTHER MACHINES.

GEORGE S. WEBB, Aurora, Ill. Filed May 5, 1898. Renewed Dec. 20, 1897. Serial No. 662,731. (No model.)



Claim.—1. In a bicycle or other vehicle, the combination of a sprocket-chain, a sprocket-wheel embraced by the chain, an axle upon which the sprocket-wheel is mounted, a frame having a seat disposed in the general direction of the two laps of the sprocket-chain upon which the axle is adjustable for the purpose of adjusting the tension of the chain, and a gage for determining the relative positions of the frame and axle, said gage being pivoted to one of the last-named parts, the pivotal axis of the gage being parallel with the axle so that the gage may be moved in a plane which is transverse to the axle to a position which will permit the axle to be moved forward upon its seat for the purpose of slacking the chain, substantially as set forth.

2. In a bicycle or other vehicle, the combination of a sprocket-chain, a sprocket-wheel embraced by the chain, an axle upon which the sprocket-wheel is mounted, a frame having a seat disposed in the general direction of the two laps of the sprocket-chain, upon which the axle is adjustable for the purpose of adjusting the tension of the chain and an adjustable gage for determining the relative positions of the frame and axle, said gage being pivoted to one of the last-named parts, and its pivotal axis being parallel with the axle so that the gage may be moved in a plane which is transverse to the axle to a position which will permit the axle to be removed from its seat without disturbing the adjustment of the gage, substantially as set forth.

3. In a bicycle or other vehicle, the combination of a sprocket-chain, a sprocket-wheel embraced by the chain, an axle upon which the sprocket-wheel is mounted, a frame having a seat disposed in the general direction of the two laps of the sprocket-chain, upon which the axle is adjustable for the purpose of adjusting the tension of the chain and an adjustable gage for determining the relative positions of the frame and axle, said gage being pivoted to the frame and having a gaging-seat adapted to engage the axle, the pivotal axis of the gage being parallel with the axle so that the gage may be moved in a plane which is transverse to the axle to a position which will permit the axle to be removed from its seat without disturbing the adjustment of the gage, substantially as set forth.

4. In an adjustment substantially as described, a gage having in combination a part provided with a gaging-seat, a ring or washer for receiving a pivot about which the gage may be moved, and means for adjustably securing said ring or washer to the part aforesaid, substantially as set forth.

5. In an adjustment substantially as described, a gage having in combination a part provided with a gaging-seat and having a slot for the passage of a pivot, a ring or washer adapted to receive said pivot and means for adjusting the position of the ring or washer with relation to the part aforesaid, substantially as set forth.

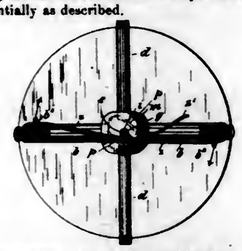
6. In an adjustment substantially as described, a gage having in combination a part provided with a gaging-seat consisting of a hook, a ring or washer adapted to receive a pivot, and means for adjusting the position of the ring or washer with relation to the part aforesaid, substantially as set forth.

609,063. PYROTECHNIC DEVICE.

HERMANN WEIPPERSHAUS, Munich-Schwabing, Germany. Filed Dec. 6, 1897. Serial No. 660,980. (No model.)

Claim.—1. In a pyrotechnic device, the combination with a hub, of a pair of tubes containing motive charges, connected to the hub and provided with downward-opening holes, and with lateral holes facing in opposite directions, and means for igniting the motive charges, substantially simultaneously.

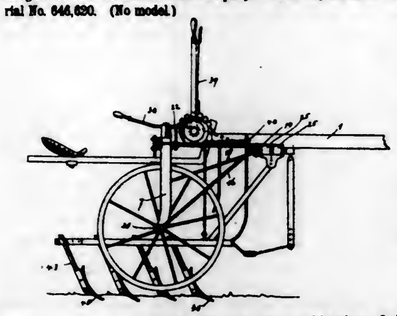
2. In a pyrotechnic device, the combination with a handle and a hub removably located and arranged to rotate freely on said handle, of means provided with a pyrotechnic charge for rotating the hub and lifting the same from the handle upon the ignition of said charge, substantially as described.



3. In a pyrotechnic device, the combination, with a handle, a shield connected to the handle and a hub removably located on said handle and arranged to rotate freely thereon, of means, provided with a pyrotechnic charge, for rotating said hub and lifting the same from the handle, substantially as described.

4. In a pyrotechnic device, the combination, with a hub, and means containing a pyrotechnic charge for rotating and lifting said hub, of means for holding a detonating charge secured to said hub, substantially as described.

609,064. **CULTIVATOR.** EPHRAIM R. WHIPPLE, Utica, N. Y., assignor to the Standard Harrow Company. Filed July 31, 1897. Serial No. 646,620. (No model.)



Claim.—1. In a two-wheel cultivator, the combination of the wheels mounted in turnable wheel-supports; a shifting-bar; three braces connected to each turnable wheel-support, substantially as specified and extending into the same pivotal connection with the shifting-bar, for the purposes stated.

2. In a two-wheel cultivator the combination of the wheels mounted in turnable wheel-supports, boxes in which the wheel-supports can be mounted adjustably in or out on the frame, shifting-bar, three braces connected substantially as stated to each wheel-support, and each set of braces extending into the same adjustable connection with the shifting-bar, for the purposes specified.

3. The combination of the bifurcated turnable wheel-supports carrying wheels, the supports being made adjustable in or out on the axletree; the three connecting-rods arranged substantially as set forth united at their front ends on the same pivotal point on the shifting-bar and made adjustable in or out on the shifting-bar, and the shifting-bar, substantially as set forth.

4. In an adjustable wheel-cultivator of the character described, the combination of the three connecting-rods pivoted to the shifting-bar at substantially the same point at their front ends, the outer rod connected to the end of the wheel-fulcrum and the inner rod connected to the arm and the center rod connected to the frame between the outer and inner rod, substantially as set forth, for the purposes stated.

5. In a wheel-cultivator having turnable wheels; the combination therewith of the arm extending inwardly from the inner bifurcated wheel-support having a ratchet-face on the inner end and a step having a ratchet-face with means for holding the same in adjustable contact, substantially as set forth.

6. In a cultivator, a tooth-bar having a curved or crescent-shaped depression on its side running at an angle from its vertical cross-section in combination with the strip of metal provided with a curved or crescent depression formed in the same line of the depression on the main bar, in combination with the round tooth-shank with means for clamping the two into contact with the tooth-shank, substantially as set forth.

7. In a cultivator having wheels, the combination of the U-shaped bar with perforated deflected ends, in combination with the hook connected with the axletree and a washer located back of the deflected ends of the bars, and the seat made adjustable thereon, substantially as set forth.

8. In a wheel cultivator provided with turnable wheels, the combination of the connecting-bars 16, 17 and 18 pivoted at the same point on the shifting-bar, the outer and inner bars extending backward and outward from the center bar, the two outside bars connected to the bifurcated wheel-support upon the opposite side of the wheel and the center bar connected at its rear to the frame, whereby the wheels may be adjusted to run at an angle from the line of draft, substantially as set forth.

9. In a cultivator having independent tooth-bars in combination with cross-bars C rigidly secured to the inner tooth-bars and extending horizontally above the remaining tooth-bars, for the purposes stated.

10. In a cultivator having independent tooth-bars, the combination therewith of vertical adjustable cross-bar C, for preventing the remaining independent tooth bars from moving upward beyond the limit of the cross-bar, substantially as set forth.

609,065. **TWO-HORSE EVENER.** JAMES H. WILSON, Minneapolis, Minn. Filed Sept. 13, 1897. Serial No. 652,080. (No model.)



Claim.—1. In a draft-equalizing device, an equalizing-beam formed of a pair of vertically-spaced bars, whiffletrees formed of vertically-spaced bars, certain of which bars are adapted to spring, and springs applied to press the bars of said beam and said whiffletrees into engagement, to avoid rattling, substantially as described.

2. In a draft-equalizing device, an equalizing-beam formed of a pair of vertically-spaced metallic bars, and whiffletrees formed of vertically-spaced metallic spring-bars, which whiffletrees are under spring-tension to spread at their centers to avoid rattling of the parts, substantially as described.

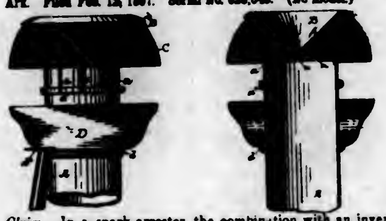
3. In a draft-equalizing device, an equalizing-beam formed by vertically-spaced metallic bars, whiffletrees formed by vertically-spaced spring-metal bars that are of themselves under spring-tension to spread, to avoid rattling, and springs applied to reinforce the spreading action of said whiffletrees, substantially as described.

4. In a draft-equalizing device, an equalizing-beam formed by vertically-spaced metallic bars, whiffletrees formed by vertically-spaced metallic spring-bars provided with cone-bearings at their centers, cone-bearing sockets secured against rotation with said cones, and pivot-bolts passing through said cones and pivotally connecting said whiffletrees to and between the bars of said equalizing-beam, substantially as described.

5. The combination with vertically-spaced bars forming part of a draft connection to a vehicle, of a whiffletree pivoted between said bars, by means of cone-bearings.

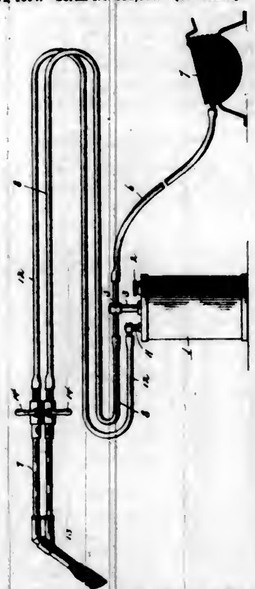
6. The combination with an equalizing-beam formed by vertically-spaced bars, of whiffletrees pivoted between said bars, by means of cone-bearings, and means for pressing the cooperating members of said cone-bearings into engagement, with a spring action, substantially as described.

609,066. **SPARK-ARRESTER.** ABRAHAM C. WILLIAMS, Gravett, Ark. Filed Feb. 15, 1897. Serial No. 623,049. (No model.)



Claim.—In a spark-arrester, the combination with an inverted conical deflector, pendent spaced bars mounted upon the same, a hinged clamp-ring connected to the lower ends of said bars and adapted to be drawn together by a suitable clamp-bolt whereby the deflector is secured in position above the discharge end of the smoke-stack, and a water-receptacle mounted upon the stack below its upper end, substantially as described.

609,067. **BLOWPIPE.** ALBERT M. WOLTZ, Washington, D. C. Filed Sept. 24, 1897. Serial No. 652,817. (No model.)



Claim.—The improved blowpipe herein described, comprising the tank having a removable top, the injector-pipe extended through the top and supported therein with its inner end extended in close proximity to the bottom of the tank, a discharge-pipe also supported in the top and extended therethrough and of less exterior height than that of the injector-pipe, the T on the outer end of the injector-pipe and terminating within the area of the top, which latter is provided with a filling-aperture with closure, a blowpipe or burner and independent flexible tubes connecting the same with the discharge-pipe and with one branch of the T on the injector-pipe, and a flexible tube on the other branch of said T and connected with a source of air-supply, all substantially as herein shown and described and for the purpose specified.

609,068. **DRUM.** EDWARD P. EISDLER, Cleveland, Ohio. Filed Mar. 19, 1898. Serial No. 674,473. (No model.)



Claim.—1. A drum provided with three several heads, two of which are outer heads and one an intermediate head, and snares for the intermediate and lower heads, substantially as described.

2. The drum having three separate heads and the middle head provided with snares, substantially as described.

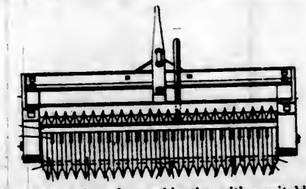
3. A drum having three heads and snares for the middle and lower heads and separate means to tighten and release said snares whereby an orchestra or a band drum may be made, substantially as described.

4. A drum constructed in two sections horizontally permanently secured together and having a head between the two sections provided with snares and upper and lower heads, substantially as described.

5. A drum having three heads, snares for the middle and lower head and means interposed between the lower head and its snares to deaden the sound of said head, and means to tighten the snares of the middle head, substantially as described.

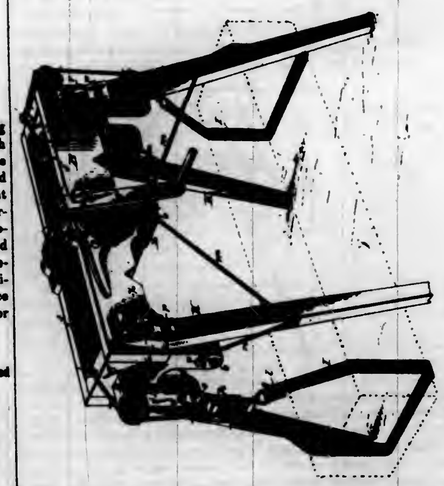
609,069. **COMBINED CLOD-CRUSHER AND LAND-ROLLER.** ADAM ZIMMER and BRUNO ROSENBUSH, Sebewaing, Mich. Filed Feb. 21, 1898. Serial No. 671,080. (No model.)

Claim.—1. A clod-crusher and roller, comprising a cylinder in two parts each on the same shaft but independent of the other, the cylinders formed of rings having their outer surface triangular in cross-section, the rings bolted together, the outer rings only of each cylinder bearing on the shaft, whereby the parts revolve independently, the shaft journaled in a suitable frame, as and for the purpose set forth.



2. In a clod-crusher, the combination with a suitable frame and a shaft journaled in the frame, of two independent cylinders on the said shaft with ends abutting, the cylinders formed of a series of rings each ring having its outer surface triangular in cross-section, the end rings bearing on the shaft, the middle rings free from the shaft but bolted to the end rings whereby the rings form when bolted together a cylinder having an annular corrugated surface, as and for the purpose set forth.

609,070. **DEVICE FOR RAISING OR LOWERING COFFINS.** JACOB H. ZOOK, Gunn City, Mo. Filed Feb. 14, 1898. Serial No. 670,312. (No model.)



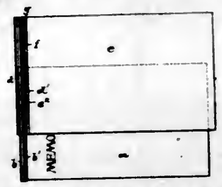
Claim.—1. In a device for raising and lowering coffins, caskets, and other objects, means for supporting the frame thereof above the ground consisting of adjustable legs formed of hinged sections and pivotally connected to the frame, in combination with brace-rods, said rods being arranged in pairs which are pivotally connected to each leg and detachably connected to the frame to form braces for the legs and retain them in their adjusted position, substantially as and for the purpose set forth.

2. A device for raising and lowering coffins, caskets, and other objects, consisting of a suitable frame, a windlass with cords or ropes provided with means for attaching to the object to be raised or lowered, supporting-legs for the frame, each leg comprising two hinged sections, the upper one of the sections adapted to be held in a vertical or horizontal position by means of screw pivot-bolts, and brace-rods arranged in pairs which are pivotally connected to the legs and detachably connected to the frame, one of the legs of each pair being adjustably connected to the frame to adapt the rods to the adjusted position of the legs, substantially as and for the purpose described.

609,071. **REMOVABLE COVER.** RALPH L. AKINS, Newark, N. J., assignor to the Whitehead & Hoag Company, of New Jersey. Filed Apr. 12, 1897. Serial No. 631,698. (No model.)

Claim.—1. The combination, with a book, and a detachable backing *b* having grasping edges *b'* for grasping the bound portion of the

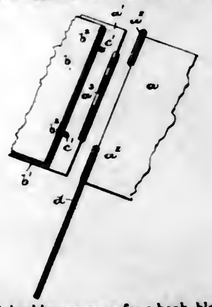
book, of a removable cover, consisting, essentially, of a backing *d* having grasping edges *d'* adapted to be slipped over said backing *b*, and covers connected with said backing *d*, substantially as and for the purposes set forth.



2. The combination, with a book, and a detachable backing *b* having grasping edges *b'* for grasping the bound portion of the book, of a removable cover, consisting, essentially, of a backing *d* having grasping edges *d'* adapted to be slipped over said backing *d*, a pair of covers, and a flexible connection connecting said covers with said backing *d* in such a manner, to form open spaces *g*, substantially as and for the purposes set forth.

3. The combination, with a book, and a detachable backing *b* having grasping edges *b'*, all molded from a plastic material and adapted to grasp the bound portion of the book, of a backing *d* having grasping edges *d'*, all molded from a plastic material and adapted to be slipped over said backing *b*, a pair of covers, and a flexible connection connecting said covers with said backing *d*, in such a manner, to form open spaces *g*, substantially as and for the purposes set forth.

609,072. REMOVABLE BOOK-COVER. RALPH L. AKIN, Newark, N. J., assignor to the Whitehead & Hoag Company, of New Jersey. Filed Jan. 6, 1898. Serial No. 665,768. (No model.)



Claim.—1. A backing or cover for a book, blotters, papers, &c., comprising, a pair of cover-sections having curled portions, in combination, with a holding device or devices having a holding loop or loops, and a pin or rod adapted to be arranged in said curled portions of the cover-sections and said loop or loops of the holding device or devices, substantially as and for the purposes set forth.

2. A backing or cover for a book, blotters, papers, &c., comprising a pair of separate cover-sections, and means connected with the back of said book, blotters, or the like, pivotally connected with the pin or pintle of the hinge parts of said cover-sections, consisting of fastening devices *c* having holding loops or eyes *c'*, substantially as and for the purposes set forth.

3. The combination, with a book or the like, having a fastening device provided with a holding loop or eye projecting from the back of the book, of a pair of hinged cover-sections *a* and *a'*, said section *a* having curled portions a^2, and said section *a'* a curled portion a^3, said curled portions being adapted to be arranged in alinement with each other, and a pin or pintle arranged in the curled portions of said cover-sections and said loop or eye of said fastening device, substantially as and for the purposes set forth.

4. The combination, with a book or the like, having fastening devices provided with holding loops or eyes projecting from the back of the book, of a pair of hinged cover-sections *a* and *a'*, said section *a* having curled portions a^2, and said section *a'* a curled portion a^3, said curled portions being adapted to be arranged in alinement with each other, with the said holding loops or eyes arranged between the abutting edges of said curled portions of the cover-sections, and a pin or pintle arranged in said curled portion of the cover-sections and said holding loops or eyes, substantially as and for the purposes set forth.

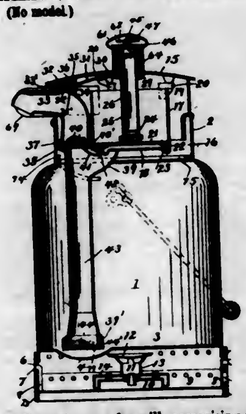
5. The combination with a book or the like provided with slits b^3, of fastening devices *c* arranged in said slits, having holding loops or eyes *c'* and oppositely-extending ears c^3, said loops or eyes projecting from the back of the book, and a pair of hinged cover-sections *a* and *a'*, said section *a* having curled portions a^2, and said section *a'* a curled part a^3, said curled parts being adapted to be arranged in alinement with each other, with the said holding loops or eyes arranged between the abutting edges of said curled parts of the cover-sections, and a pin or pintle arranged in said curled parts of the cover-sections and said holding loops or eyes, substantially as and for the purposes set forth.

609,073. COFFEE OR TEA POT. JOY S. ALLEN, Gainesville, Ga., assignor of one-fifth to M. M. Ham, same place. Filed Dec. 31, 1897. Serial No. 664,940. (No model.)



Claim.—In a device of the class described, the combination of a pot comprising inner and outer shells united at the bottom, the inner shell being conical and extending above the outer shell and forming a flue, a strainer or percolator comprising inner and outer foraminous walls, the outer wall having its upper edge arranged in substantially the same horizontal plane as the upper edge of the outer wall of the pot, the handle arranged at the top of the device and secured to the inner and outer walls of the strainer or percolator and connecting the same near their upper edges, said handle also forming a brace for supporting the strainer or percolator, and a lid arranged on the pot and provided with a central opening for the extended portion of the inner shell, said lid also serving as a closure for the strainer or percolator, substantially as described.

609,074. MILK-CAN. WILLIAM H. ARMER, Groveland, and EDWARD L. HENDERSCOTT, Pendell, N. Y. Filed June 26, 1897. Serial No. 642,443. (No model.)



Claim.—1. A dispensing-can for milk comprising a liquid-receptacle provided with a removable cap, a discharge-spout pivoted in said cap and communicating with the interior of said receptacle, in combination with a cylinder fixed in said cap, a piston-rod and piston located in said cylinder and means for simultaneously projecting said pivoted spout and operating said piston, as and for the purpose set forth.

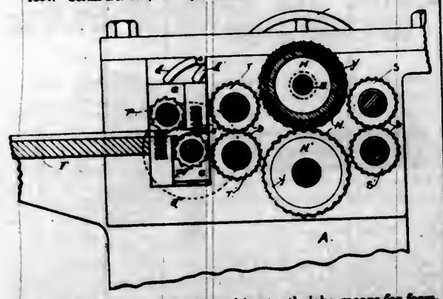
2. The can 1 formed with the horizontal bottom 3 and the annular reinforcing-band 5 formed with the orifices 6 6, of the removable bottom 9 formed with the annular flange *b* provided with the orifice *a*, the spring-arms 8, 8, fixed to said bottom and having their free ends adapted to engage said orifices 6 6, the lamps 10 fixed to said bottom 9, the wick-tube 11, the draft-shield 13 encompassing said wick-tube and the raised top 14 encompassing the upper end of said lamp and communicating with said shield, substantially as shown and described.

3. The combination with the can 1, provided with the removable cap 15, the removable strainer-frame 75, and the air-vent 16, of the cylinder 17, and its piston 21, removably secured in said cap, the valved tube 43, communicating with said cylinder, the pivoted spout 33, the valve 40, located in said spout, the curved arm 41, fixed to said valve and projecting into the path of the depending arm 42, fixed to said piston, substantially as shown and described.

4. The combination with the can 1, of the removable cap 15, provided with the orifice 68 and the hinged door 69, the cylinder 17, its piston 21, the tube 43, communicating with said cylinder and extending into the can, the discharge-spout 33, pivoted in the upper end of said tube, and means substantially as described for projecting said spout through the orifice 68 in the cap, substantially as shown and described.

5. The combination with the can 1, of the removable cap 15, the cylinder 17, secured in said cap, the piston 21, and its sleeve 25, extending through said cap, the knob 61 fixed on the upper end of said sleeve, the registering-disks 46 47, mounted on said sleeve within the knob, and means substantially as described for registering the consecutive movements of said piston on said disks, as and for the purpose set forth.

609,075. MACHINE FOR MAKING TOOTHPICKS. ELIJAH B. BENHAM, Mystic, Conn., and HOWARD B. BARLOW, Providence, R. I.; said Barlow assignor to Frank F. Tripp, Boston, Mass. Filed Mar. 31, 1897. Serial No. 630,066. (No model.)

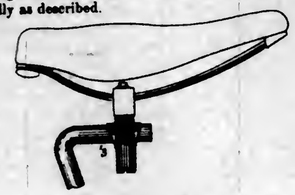


Claim.—1. In a machine for making toothpicks, means for forming a tapered point consisting of rotary cutters for operating on the pick on opposite sides thereof, and at different times, backing-blocks opposite said cutters, one of said blocks being movable toward the cutter opposite it, feed-rolls located in operative relation to said rotary cutters for moving said picks longitudinally through the machine, and means for variably moving the cutters in directions transverse to said longitudinal movement and against said picks, combined with suitable driving mechanism for said cutters and rolls, and means for moving said backing-block toward said cutter, substantially as described.

2. In a machine for making toothpicks, the combination with a series of rotary cutter-blades having transversely-corrugated edges for both separating the picks and finishing them upon opposite sides, and alternately disposed in relation to each other, and means for alternately moving said cutters automatically through the action of the machine alternately against opposite sides of the picks, of feeding mechanism operatively located near said cutters and rolls, for successively feeding strips of wood thereto, and means for rotating said cutters and rolls, and imparting movements to said feed mechanism substantially as described.

609,076. VELOCIPEDE-SADDLE SUPPORT. LEOPOLD BOHRT, Chicago, Ill. Filed May 27, 1897. Serial No. 638,336. (No model.)

Claim.—In a velocipede-saddle support, the combination with a bridge-piece provided with a recess and with grooves within said recessed portion adapted to receive a wire saddle-spring, of a reversible plate movably mounted within said recess and provided on one face with grooves adapted to register with said grooves in said bridge-piece to receive a wire saddle-spring, and in its other face with a rectangular recess adapted to receive a flat saddle-spring, and means for clamping a saddle-spring between said plate and said bridge-piece, substantially as described.



609,077. BICYCLE-GEARING. WILSON BROWN, Galveston, Tex. Filed June 21, 1897. Serial No. 641,629. (No model.)



Claim.—The combination with the side bars of the machine, of the rear axle journaled therein, the ratchet-wheels rigidly secured to the axle outside the side bars, the long pedal-bars pivoted upon the hubs of the ratchet-wheels, the sliding spring-pawls in the pedal-arms engaging the teeth of the ratchet-wheels, the rings embracing the side bars and pedal-arms respectively, and the spring-bars connecting said rings, substantially as described.

609,078. SHARPENING DEVICE. JACOB BOYER, Sandusky, Ohio. Filed Sept. 18, 1897. Serial No. 652,115. (No model.)



Claim.—1. In a device for sharpening edge-tools, the combination of a file having its operative faces oppositely cut, capable of use as a whetting-tool, and a detachable slide upon said bar carrying cutting means in inclined relation with one side of said bar.

2. In a device for sharpening edge-tools, the combination of an abrading-bar and a detachable slide composed of the sleeve D, the guide-flange E, the holder F on one edge of the guide-flange and the steel B in said holder.

3. In a device for sharpening edge-tools, the hollow double convex abrading-bar A composed of two file-cut concavo-convex bars, secured together one being cut to the right and the other to the left.

4. In a device for sharpening edge-tools, the combination of the double convex bar A, file-cuts upon opposite sides transversely to each other and a slide thereon, composed of the sleeve D the guide-flange E oblique to the sleeve, the holder F and the steel B adjustably secured therein.

5. In a device for sharpening edge-tools, a hollow double convex abrading-bar composed of two file-cut concavo-convex bars, said bars being oppositely cut, and a handle for said device also serving as a securing means for said bars, substantially as described.

6. In a device for sharpening edge-tools, the combination of a double convex abrading-bar capable of use as a whetting-tool, a removable slide on said bar, and a cutting means carried by said slide, substantially as described.

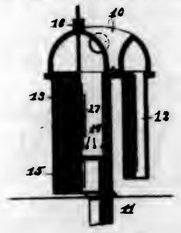
7. A hollow file comprising two substantially like concavo-convex bars or strips file-cut on the convex surface thereof, and means for securing said bars or strips together with their convex sides outward.

609,079. CLOSET-CISTERN. JAMES P. J. CAHILL, Worcester, Mass. Filed Oct. 16, 1897. Serial No. 655,873. (No model.)

Claim.—1. As an article of manufacture, a siphoning device for closet-cisterns, comprising a curved, Y-shaped body portion, an outlet siphon-leg connected to the stem of the Y-body portion, an inlet siphon leg, and a starting-chamber of larger diameter than the siphon-legs connecting to the branches of the Y-shaped body portion respectively, and means for forcing water from the starting-chamber into the siphon-legs, the body portion being shaped to form a curved, gradually-tapering passage for concentrating and directing the flow of water from the starting-chamber into the outlet siphon-leg, substantially as described.

2. In a device of the class described, the combination of a tank

A, a float-controlled ball-cock B for normally keeping said tank full, and a siphoning device comprising a curved Y-shaped body portion or casting 10, an outlet siphon-leg 11 connected to the stem thereof, an inlet siphon-leg 12, and a starting-chamber 13 of larger diameter than the siphon-legs connecting to the branches of the Y-shaped body portion respectively, said body portion being adapted to form a curved, gradually-tapering passage for concentrating and directing the flow of water from the starting-chamber into the outlet siphon-leg, said siphon-legs and starting-chamber being formed by pipe-sections threaded into the body portion, a plunger 15 mounted in the starting-chamber, an operating-lever 19, and connections from the operating-lever for raising the plunger, substantially as described.



609,080. BICYCLE-TIRE. ROBERT W. CHURCHILL, Peabody, Mass. Filed Apr. 26, 1898. Serial No. 678,902. (No model.)



Claim.—1. A pneumatic tire having outer and inner tubes and intermediate complemental puncture-closing projections and recesses adapted to fit into each other, substantially as described.

2. A pneumatic tire having outer and inner tubes and intermediate complemental puncture-closing strips provided respectively with projections and recesses adapted to fit into each other, substantially as described.

3. A pneumatic tire having outer and inner tubes, and intermediate complemental puncture-closing strips provided respectively with longitudinal grooves and recesses adapted to fit into each other, substantially as described.

609,081. PUZZLE. REUBEN J. C. COLLINS, London, England, assignor to Algernon Grundy Hartley, same place. Filed Apr. 9, 1898. Serial No. 677,094. (No model.)

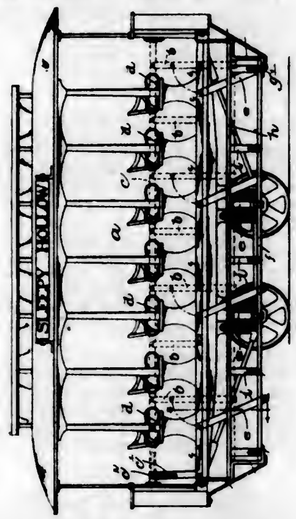


Claim.—1. A puzzle comprising two coacting members, one member consisting of three bars joined together at their ends, the middle bar having a division or passage and a depression on one section thereof, while the other member consists of a plurality of arms having stems that are connected together, one of said arms having two lugs, while the other arms have knobs, substantially as described.

2. A puzzle comprising two coacting members, one member consisting of three bars joined together at their ends, the middle bar having a division or passage and a depression on one section thereof, while the other member consists of six arms having stems that are connected together, one of said arms having two lugs, two arms adjacent said arm provided with the lugs having knobs on the same side thereof, while the remaining arms have knobs on the opposite side thereof, substantially as described.

609,082. COMBINED GUARD AND STEP FOR STREET-CARS. WILLIAM C. COLLYER and WILLIAM F. BULLOCK, Lynn, Mass. Filed Dec. 3, 1897. Serial No. 660,579. (No model.)

Claim.—In a street-car having one or more side entrances, a guard-rail or gate adapted to occupy a raised or obstructing position across said entrances, and a depressed or unobstructing position, a step connected with said rail and adapted to be raised and depressed bodily by the raising and depressing of the rail, a second step hinged to suitable supports, and means whereby the second step is made to occupy a tilted or sloping position when the rail is raised, and a horizontal position when said rail is depressed.



609,088. PUZZLE. CYRUS W. COURTNEY, Deniphan, Idaho, assignor to Charles K. Henderman, Baltimore, Md. Filed Feb. 23, 1898. Serial No. 671,998. (No model.)



Claim.—1. A game or toy having an interiorly visible and inaccessible receptacle, an elongated pocket arranged in the receptacle with an axially accessible neck or inlet-opening spaced from the walls of the receptacle, and a divisible object, of larger diameter than the neck of the pocket and movably arranged in the receptacle, for piecemeal introduction into said neck or inlet-opening of the pocket, substantially as specified.

2. A game or toy having an interiorly-inaccessible receptacle provided with a continuous curved side wall and approximately parallel front and rear walls, one of which is transparent, an elongated pocket arranged coincident with a diameter of the curved wall, and having a terminal inlet end spaced slightly from the plane of one of the approximately parallel walls, and a divisible object, of larger diameter than the neck of the pocket and movably arranged in the receptacle, for piecemeal introduction into said neck or inlet-opening of the pocket, substantially as specified.

3. A game or toy having a receptacle provided with an elliptical side wall and approximately parallel front and rear walls, an elongated bottle-shaped pocket arranged coincident with the major diameter of the elliptical wall, with its terminal inlet accessible parallel with and spaced from one of said approximately parallel walls, and a divisible object, of a size in excess of the inlet-opening of said pocket, movably mounted in the receptacle for piecemeal introduction into the pocket, substantially as specified.

4. A game or toy having a receptacle provided with an elliptical side wall, an elongated bottle-shaped pocket arranged coincident with a diameter of the elliptical wall, and having a terminal inlet-opening at the extremity of its neck accessible axially, and a movable object, of mercury, located in the receptacle, and of larger diameter than the inlet-opening, substantially as specified.

609,084. NUT-LOCK. JOHN M. CULLEN, Chicago, Ill. Filed Sept. 18, 1897. Serial No. 652,108. (No model.)

Claim.—The herein-described nut lock, consisting of the combination of the bolt C, the nut D, the washer E having the inclined slot *a* therein and the recess *b* therein extending under the head of the nut, the spring F, having the flange *d* extending under the head of the nut and an upward-extending flat portion which engages the face of the nut and the tongue *c* which sets into the slot *a*, all substantially as shown and described.



609,085. DIVING-ARMOR. JAMES J. DEVINE, Clifton Heights, Pa. Filed Dec. 31, 1897. Serial No. 664,860. (No model.)

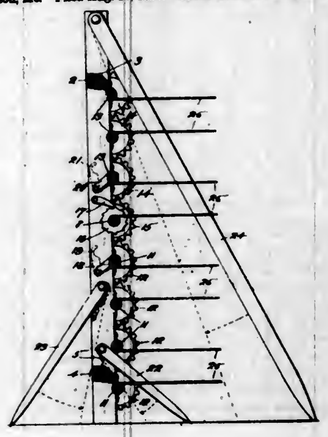


Claim.—1. A diving-armor comprising a suitable body portion, the legs and arms of which terminate in fin-shaped projections, and a fin-shaped receptacle on the back adapted to receive and hold an air-box.

2. In a diving-armor, a body-covering the legs and arms thereof terminating in fin-shaped projections, a fin-shaped receptacle on the back of the armor, a hood to cover the head of the wearer, a compressed-air box in the fin-shaped receptacle, and a conduit from the said air-box to the hood.

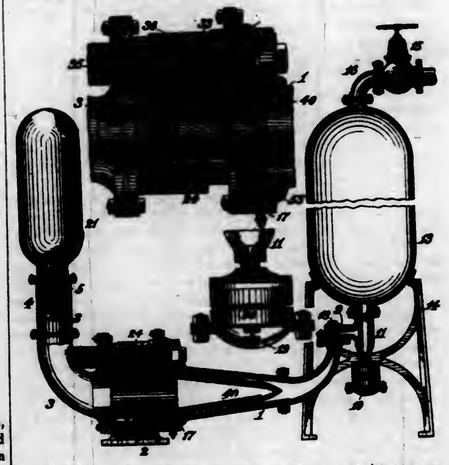
3. In a diving-armor, a body-covering the legs and arms thereof terminating in fin-shaped projections, a fin-shaped receptacle on the back of the armor, a hood to cover the head of the wearer, a compressed-air box in the fin-shaped receptacle, a conduit from the said air-box to the hood, and air-pipes 9, 9, leading into the hood, said air-pipes adapted to project above the water while the armor is submerged a short distance.

609,086. WIRE-STRETCHING MACHINE. JAMES M. DOSIER, Lexington, Mo. Filed Aug. 17, 1897. Serial No. 648,608. (No model.)



Claim.—A wire-stretching machine, comprising a pair of standards 1 1, a cross-bar 2, provided with notches 3, pivoted braces 24 24, a cross-bar 4, provided with notches 5, a shaft 8, having squared ends journaled upon said standards, and provided with a gear-wheel 15 and ratchet-wheel 16, and a pawl 17, engaging said ratchet-wheel, a series of shafts 11, geared together and to the shaft 8, and journaled upon said standards; the topmost of said shafts being longitudinally adjustable to sever the geared relation between shafts 8 and 11, a series of shafts 13, geared together and to the shaft 8; the lowest of said shafts being longitudinally adjustable to sever the relation between shafts 8 and 13, and dogs to lock adjustable shafts 11 and 13 in gear with the shaft 8, substantially as and for the purpose described.

609,087. AIR-COMPRESSOR. CHAUNCEY H. DUTTON, New York, N. Y. Filed July 27, 1896. Serial No. 600,651. (No model.)



Claim.—1. The combination, substantially as set forth, of a compressing-chamber, a conduit adapted to supply water under pressure thereto, a main valve governing a supply-port between the conduit and the compressing-chamber, and an automatic controlling-valve, actuated by water supplied from a conduit and controlling the fluid transmission of operating power to the main valve.

2. The combination, substantially as set forth, of a compressing-chamber, a valve-controlled air-supply port or passage opening thereinto, a reservoir, a check-valve controlling communication between the compressing-chamber and reservoir, a conduit adapted to supply water under pressure to the compressing chamber, a main valve governing a supply-port between the conduit and the compressing-chamber, and an automatic controlling-valve, actuated by water supplied from a conduit and controlling the fluid transmission of operating power to the main valve.

3. The combination, substantially as set forth, of a compressing-chamber, a discharge-passage therefrom, an air-supply port or passage thereto, a conduit adapted to supply water under pressure to the compressing-chamber, a main valve governing a supply-port between the conduit and the compressing-chamber, and an automatic controlling-valve, actuated by water supplied from a conduit and controlling the fluid transmission of operating power to the main valve.

4. The combination, substantially as set forth, of a compressing-chamber, an air-supply port or passage opening thereinto, a reservoir, a check-valve controlling communication between the compressing-chamber and reservoir, a discharge-passage for the release of water from the compressing-chamber, a drain-valve for the release of water from the reservoir, a conduit adapted to supply water under pressure to the compressing-chamber, a main valve governing a supply-port between the conduit and the compressing-chamber, and an automatic controlling-valve, actuated by water supplied from a conduit and controlling the fluid transmission of operating power to the main valve.

5. The combination, substantially as set forth, of a compressing-chamber which is reduced in transverse area at and toward its delivery end, an air-supply port or passage opening thereinto, a reservoir, a check-valve controlling communication between the delivery end of the compressing-chamber and the reservoir, a discharge-passage for the release of water from the compressing-chamber, a conduit adapted to supply water under pressure to the compressing-chamber, a main valve governing a supply-port between the conduit and the compressing-chamber, and an automatic controlling-valve, actuated

by water supplied from a conduit and controlling the fluid transmission of operating power to the main valve.

6. The combination, substantially as set forth, of a compressing-chamber, an air-supply port or passage opening thereinto, a conduit adapted to supply water under pressure thereto, an air-chamber connected with said conduit, a reservoir, a check-valve controlling communication between the compressing-chamber and reservoir, a discharge-passage for the release of water from the compressing-chamber, a main valve governing a supply-port between the conduit and the compressing-chamber, and an automatic controlling-valve, actuated by water supplied from a conduit and controlling the fluid transmission of operating power to the main valve.

7. The combination, substantially as set forth, of a compressing-chamber, an air-supply port or passage opening thereinto, a conduit through which water may be supplied, under the impact of a fall from a height, to the compressing-chamber, a main valve governing ports for the admission of water from the supply-conduit to the compressing-chamber, an actuating-piston on said main valve, a controlling-valve governing ports for admitting water from the supply-conduit alternately to opposite sides of the actuating-piston, a passage for the admission of water from the supply-conduit to the controlling-valve chamber, a passage for the admission of water from the compressing-chamber to the controlling-valve chamber, a check-valve governing said last-named passage, a reservoir, a check-valve controlling communication between the compressing-chamber and reservoir, and a discharge-passage for the release of water from the compressing-chamber.

8. The combination, substantially as set forth, of a compressing-chamber, an air-supply port or passage opening thereinto, a conduit through which water may be supplied, under the impact of a fall from a height, to the compressing-chamber, a valve-casing interposed between and connected with the supply-conduit and compressing-chamber, ports opening into the compressing-chamber from said casing, a tubular main valve fitted to reciprocate in a chamber of the casing and having end pistons, one governing the compressing-chamber ports and the other preventing direct communication between the supply-conduit and the chamber of the main valve, an operating-piston on said main valve, a controlling-valve having pistons of unequal area, between which water is admitted from the supply-conduit and to the larger of which water is admitted from the compressing-chamber, ports governed by said valve for admitting water from the supply-conduit to opposite sides of the operating-piston of the main valve, a check-valve governing communication between the compressing-chamber and the larger piston of the controlling-valve, a reservoir, a check-valve controlling communication between the compressing-chamber and reservoir, and a discharge-passage for the release of water from the compressing-chamber.

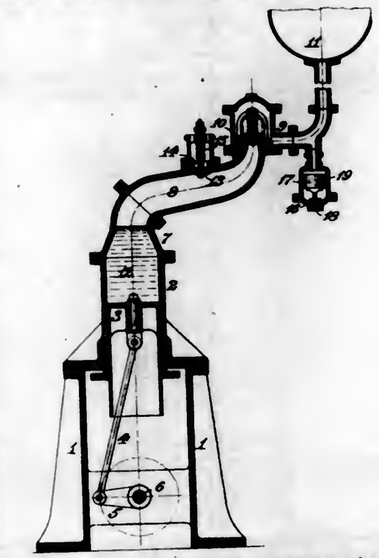
9. The combination, substantially as set forth, of a water-supply tube, a compressing-chamber, a main valve governing ports for the admission of water from the supply-tube to the compressing-chamber, an actuating-piston on said main valve, a controlling-valve governing ports for the admission of water to opposite sides of the actuating-piston, a piston on said controlling-valve, and means for effecting a limited exhaust of water through said piston in the preliminary portion of the traverse of the controlling-valve in one direction, and a free exhaust around said piston in the succeeding portion of the same.

10. The combination, substantially as set forth, of a water-supply tube, a compressing-chamber, a main valve governing ports for the admission of water from the supply-tube to the compressing-chamber, an actuating-piston on said main valve, a tubular controlling-valve governing ports for the admission of water to opposite sides of the actuating-piston, a restricted port for the exhaust of water through an end piston on the controlling-valve, and through the body thereof during its preliminary traverse in one direction, a regulating device for varying the discharge area of said restricted port, ports in the body of the controlling-valve, of sufficient area for the full exhaust of water, and a valve-chamber for the controlling-valve having a space of larger diameter than the end piston in which the restricted exhaust-port is formed, through which space said end piston traverses during the latter portion of its stroke in one direction.

11. The combination, substantially as set forth, of a water-supply tube, a compressing-chamber, a main valve governing ports for the admission of water from the supply-tube to the compressing-chamber, an actuating-piston on said main valve, a controlling-valve governing ports for the admission of water to opposite sides of the actuating-piston, differential pistons on said controlling-valve, a passage for admitting water from the supply-tube to a smaller piston area of the controlling-valve, a check-valved passage for admitting water from the compressing chamber to a larger piston area of the controlling-valve, and an adjusting device for varying the delivery area of said check-valved passage.

12. The combination, substantially as set forth, of a water-supply conduit, a conical compressing-chamber communicating at its larger end therewith, a conical deflector, fixed in the compressing-chamber concentrically therewith, a reservoir, a check-valved passage connecting the smaller end of the compressing-chamber with the reservoir, and an automatic valvular mechanism for intermittently supplying water, under the impact of a fall from a height, to the compressing-chamber.

609,088. AIR-COMPRESSOR. CHAUNCEY H. DUTTON, New York, N. Y. Filed Sept. 30, 1897. Serial No. 653,576. (No model.)



Claim.—1. In an air-compressor, the combination, substantially as set forth, of a compressor-cylinder, a water-packed piston fitted to reciprocate therein, a compression-chamber communicating directly with the compressor-cylinder, an air-reservoir, a valve-controlled passage connecting the compression-chamber and reservoir, and a release-valve which is open during the initial portion of the compressing stroke of the piston, and is closed when the piston has attained its maximum velocity.

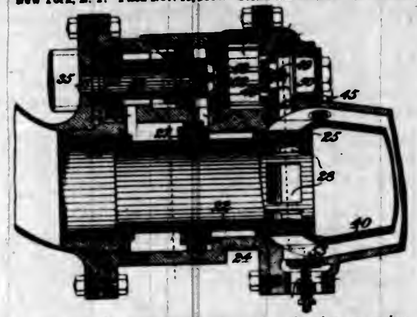
2. In an air-compressor, the combination, substantially as set forth, of a compressor-cylinder, a water-packed piston fitted to reciprocate therein, a compression-chamber communicating directly with the compressor-cylinder, an air-reservoir, a valve-controlled passage connecting the compression-chamber and reservoir, a passage from the compression-chamber to the atmosphere, an inwardly-opening valve controlling said passage, and means for opening said valve during the initial portion of the compressing stroke of the piston and closing it when the piston has attained its maximum velocity.

3. In an air-compressor, the combination, substantially as set forth, of a compressor-cylinder, a water-packed piston fitted to reciprocate therein, a compression-chamber communicating directly with the compressor-cylinder, an air-reservoir, a valve-controlled passage connecting the compression-chamber and reservoir, a passage from the compression-chamber to the atmosphere, an inwardly-opening valve controlling said passage, and a pressure device, as a spring or weight, which acts upon and imparts opening movement to said valve during the initial portion of the compressing stroke of the piston and permits its closure by internal pressure when the piston has attained its maximum velocity.

4. In an air-compressor, the combination, substantially as set forth, of a compressor-cylinder, a piston fitted to reciprocate therein, a compression-chamber communicating directly with the compressor-cylinder and of a volume sufficient to be substantially filled by water packing contained in the compressor-cylinder at the inner limit of the compressing stroke of the piston, an air-reservoir, a valve-controlled passage connecting the compression-chamber and reservoir, a passage from the compressor-chamber to the atmosphere, a valve controlling said passage, and means for opening said valve during the initial portion of the compressing stroke of the piston and closing it when the piston has attained its maximum velocity.

5. In an air-compressor, the combination, substantially as set forth, of a compressor-cylinder a piston fitted to reciprocate therein, a compression-chamber communicating directly with the compressor-cylinder and of volume sufficient to be substantially filled by water packing contained in the compressor-cylinder at the inner limit of the compressing stroke of the piston, said compressing-chamber being graduated in size, so that the advance of the water packing through it may be uniform, an air-reservoir, a valve-controlled passage connecting the compression-chamber and reservoir, a passage from the compression-chamber to the atmosphere, a valve controlling said passage, and means for opening said valve during the initial portion of the compressing stroke of the piston and closing it when the piston has attained its maximum velocity.

609,089. FLUID-ACTUATED VALVE. CHAUNCEY H. DUTTON, New York, N. Y. Filed Nov. 13, 1897. Serial No. 658,439. (No model.)



Claim.—1. The combination of a valve chamber or casing, a fluid-supply port leading thereinto, fluid-delivery ports leading therefrom on opposite sides of the supply-port, an end discharge-port leading therefrom, and a differential piston-valve fitted to be moved in opposite directions in the valve-chamber by the pressure of fluid from the supply-port and one of the delivery-ports respectively, said valve having pistons controlling the delivery-ports and a passage through its body communicating with the discharge-port.

2. The combination of a valve chamber or casing, a fluid-supply port leading thereinto, fluid-delivery ports leading therefrom on opposite sides of the supply-port, an end discharge-port leading therefrom, a differential piston-valve fitted to be moved in opposite directions in the valve-chamber by the pressure of fluid from the supply-port and one of the delivery-ports respectively, said valve having pistons controlling the delivery-ports and a passage through its body communicating with the discharge-port, a chamber or casing communicating at opposite ends with the delivery-ports, and a piston adapted to be reciprocated in said chamber by fluid from the delivery-ports.

3. The combination of a valve chamber or casing, a fluid-supply port leading thereinto, fluid-delivery ports leading therefrom on opposite sides of the supply-port, an end discharge-port leading therefrom, a differential piston-valve fitted to be moved in opposite directions in the valve-chamber by the pressure of fluid from the supply-port and one of the delivery-ports respectively, said valve having pistons controlling the delivery-ports and a passage through its body communicating with the discharge-port, and means for effecting a limited exhaust of fluid from behind an end piston of said valve in the preliminary portion of its traverse in one direction, and a free exhaust around said piston in the succeeding portion of the same.

4. The combination of a valve chamber, or casing, a fluid-supply port leading thereinto, fluid-delivery ports leading therefrom, a differential piston-valve fitted to be moved in opposite directions in the valve-chamber by the pressure of fluid from the supply-port and one of the delivery-ports respectively, said valve having pistons controlling the delivery-ports, a tubular body continuously open to the discharge-port, and ports in said tubular body, and a passage leading from one of the delivery ports, of limited area relatively to the ports in the valve-body, through which exhaust of fluid may be effected from one end of the valve independently of said ports.

5. The combination of a valve chamber or casing, bored for the reception of larger and smaller pistons, and having an enlargement for the free passage of fluid around a piston, a piston-valve having a tubular body, and heads fitting the larger and smaller bores of the valve-chamber, an intermediate head, and ports in its tubular body between its intermediate and one of its end heads, a supply-port which is always open to the valve-chamber between the intermediate and an end head of the valve, delivery-ports leading out of the valve-chamber, in position to be opened and closed by an end head and the intermediate head, respectively, of the valve, a passage from one of the delivery-ports to the enlargement of the valve-chamber, and a discharge-port which is always open to the tubular body of the valve.

6. The combination of a valve chamber or casing, a fluid-supply port leading thereinto, fluid-delivery ports leading therefrom on opposite sides of the supply-port, an end discharge-port leading therefrom, a valve fitted to reciprocate in the valve-chamber and having a tubular body in open communication with the discharge-port, an end head on the valve which cuts off communication between the supply and discharge ports, and alternately opens and closes communication between the supply-port and one of the delivery-ports, an opposite end head of larger diameter which makes a portion of its traverse in an enlarged bore in the valve-chamber, an intermediate head, which alternately opens and closes communication between the supply-port and a delivery-port, and ports in the tubular body between the intermediate and an end head, a passage from one of the delivery-ports to the enlarged bore of the valve-chamber, and a vertical extension communicating with said passage, to admit of the formation of a head of fluid to act upon the larger end head of the valve during closure of the adjacent delivery-port.

609,090. HAIR-CUTTER. JOSEPH R. FERLAND, Lawrence, Mass. Filed Dec. 10, 1897. Serial No. 661,357. (No model.)

Claim.—1. A hair-cutter comprising a templet or gage composed of thin parallel plates separated by spaces adapted to receive hair, said templet being of varying width, a cooperating set of blades at the inner edge of the templet, and means for operating said blades.

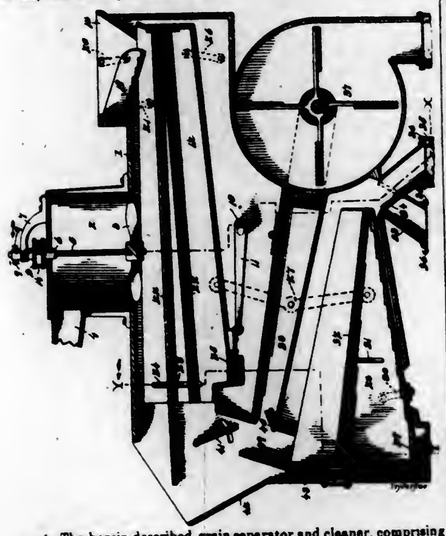
2. A hair-cutter comprising a handle, a holder rotatively mounted thereon, a plurality of templets or gages mounted in said holder, and composed of thin parallel plates separated by spaces adapted to receive hair, a plurality of independent sets of blades cooperating with the templets, and means for operating said blades.

609,091. GRAIN SEPARATOR AND CLEANER. EDGAR L. FIXLER, Delta, Ohio. Filed Feb. 26, 1897. Serial No. 624,967. (No model.)

Claim.—1. In a grain separator and cleaner, the combination of upper and lower separating-shoes, a passage connecting the delivery end of the upper shoe with the receiving end of the lower shoe and having its inner wall inclined, a suction-fan in communication with an opening in the said inclined wall, a gate for closing the opening in the inclined wall and pivoted at its lower end to the lower edge of the said opening, and adapted to swing inward at its upper end and shed outward any heavy grains falling within said opening, and a cant-board at the upper end of the said passage, pivoted at its upper end opposite the delivery end of the lowermost screen of the upper shoe, and adjustable at its lower end toward and from the aforesaid inclined wall to deflect the grain more or less toward it, substantially as and for the purpose specified.

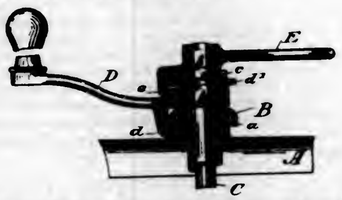
2. In a grain separator and cleaner, the combination of a drum surmounting the casing inclosing the separating and cleaning mechanisms, and a shaft vertically adjustable with respect to the drum and bearing a fan, substantially as and for the purpose specified.

3. In a grain separator and cleaner, the combination of a drum mounted upon the frame or casing containing the separating and cleaning mechanisms, a sleeve journaled to the drum and a bracket applied thereto, means for rotating the sleeve, and a shaft vertically adjustably mounted in the sleeve and bearing a fan operating in the drum, substantially as described.



4. The herein-described grain separator and cleaner, comprising a casing, a drum mounted thereon, a fan vertically adjustable in the drum, upper and lower shoes inversely disposed, levers connecting the said shoes, a pan located in the hopper, levers connecting the pan with the upper shoe, an approximately vertical passage connecting the upper and lower shoes, a horizontal passage communicating with the vertical passage and having connection with a fan, a gate at the juncture of the vertical and horizontal passages, an adjustable cant-board at the upper portion of the vertical passage, and a twin spout at the delivery end of the lower shoe supplied with a valve, substantially as and for the purpose set forth.

609,092. ELECTRIC CONTROLLER. JOSEPH D. FORBES, Johnstown, Pa., assignor to the Steel Motor Company, of Ohio. Filed July 11, 1896. Serial No. 685,631. (No model.)



Claim.—1. The combination of a pair of concentric shafts, operating-levers for each shaft, means for preventing the removal of one of said levers except when it is at a predetermined position, and independent means for preventing the said lever from being removed except when the other shaft is at a predetermined position.

2. The combination of a pair of concentric shafts, an operating-lever for each shaft, a fixed annular projection having a recessed portion, a lug on one lever engaging said projection and adapted to register at one position with said recessed portion, a slot in the same lever, and a stop on the other shaft adapted to register with said slot at one relative position of the said shaft and the said lever.

3. A pair of concentric shafts, operating-levers for the same, means for preventing the levers from being dissimultaneously removed from their shafts, and means for preventing them from being simultaneously removed except when at a predetermined position.

4. A pair of concentric shafts, operating-levers for the same, mechanism permitting independent rotation of said levers but preventing independent vertical movement of the same, and a lock for preventing simultaneous vertical movement except at a predetermined position.

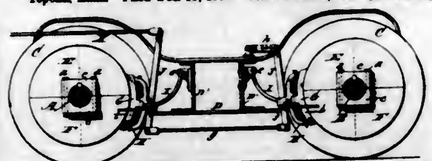
5. The combination of an annular projection having a recessed portion, the operating lever having a lug engaging said projection and adapted at one position to register with said recessed portion, and a second lever having a lug engaging a projection on the first-mentioned lever.

6. The combination of an annular projection having a recessed portion, a pair of shafts concentric with said annular projection, an operating-lever for each shaft, a lug on one lever engaging said projection and adapted at one position to register with the recessed portion thereof, an annular projection on the same lever, and a lug on the other lever engaging said last-mentioned projection.

7. The combination of an annular projection having a recessed portion, a pair of shafts concentric with said projection, an operating-lever for each shaft, a lug on one lever engaging said annular projection and adapted at one position to register with the recessed portion thereof, a similar projection and a slot on the same lever, a lug on the other lever engaging said last-mentioned projection, and a pin on one shaft adapted to register with said slot when at a predetermined position.

8. The combination of the annular projection *a* having recess *a'*, shaft B, operating-lever D therefor having lug *d*, annular projection *d'* and slot d^3, shaft C having pin *c*, and operating-lever E therefor having lug *e*, substantially as, and for the purpose, set forth.

609,093. CENTER-WHEEL CAR-BRAKE. FERDINAND GAHLER, Topeka, Kans. Filed Dec. 13, 1897. Serial No. 661,868. (No model.)



Claim.—1. A brake wheel or disk comprising the two segmental sections E F, each section having the reduced portions *a a'* upon the opposite sides thereof and diametrically opposite each other, each of the reduced portions of one section adapted to overlap those of the other section and abutting against the shoulders *b*, each section having integrally formed therewith and upon opposite sides a section of hub so that when the sections are together a complete hub will be formed upon opposite sides of the brake wheel or disk, to encircle the axle, and suitable fastening-bolts extending through both the hub-sections upon opposite sides of the wheel or disk to fasten the sections together, substantially as and for the purpose set forth.

2. A car-brake consisting of brake wheels or disks upon the opposite axles of a truck between the car-wheels, brake-shoes for engaging with the brake wheels or disks, brake-heads connecting with the shoes and provided with rods upon its sides to retain the shoes on line with the periphery of the brake wheels or disks, hangers and operating-levers connecting with the brake-heads, said levers being connected by a rod at their lower ends and adapted to operate substantially as and for the purpose set forth.

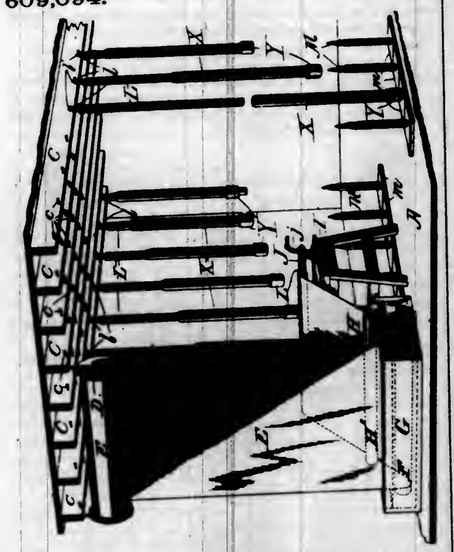
609,094. METHOD OF AND APPARATUS FOR MAKING ELECTRICAL-INSULATION CONDUITS. HUGO GALLIBOWSKY, St. Louis, Mo., assignor to the Lithostie Manufacturing Company, same place. Filed Nov. 15, 1897. Serial No. 658,606. (No model.)

Claim.—1. The herein-described method of making conduit-pipe, which consists in wholly submerging fibrous material in a bath of oxychlorid cement, thus saturating said material from both sides, winding said fibrous material so treated on a mandrel, and then removing the mandrel before the cement completely sets, by suspending the same by one end so that the mandrel will slip out, substantially as described.

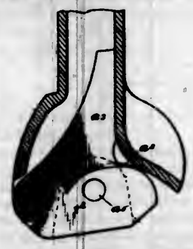
2. The herein-described method of making electrical-insulation conduits, the same consisting in winding a fibrous material treated with an insulation cementitious substance on a suitable mandrel, placing a hardened collar on one end of said green conduit, then suspending said mandrel, so that the green conduit will slip off of the same by gravity, the hardened collar on the end of the green conduit acting as a base or support, and preventing the end of the green conduit from becoming upset or marred, substantially as described.

3. The herein-described apparatus for making conduits, the same comprising suitable stocks, and a mandrel having a hook or eye formed on one end with a centering device beyond said hook or eye, and a locking device at the other end of said mandrel, substantially as described.

609,094.



609,095. EMERGENCY-KNUCKLE FOR CAR-COUPLINGS. GEORGE H. GILMAN and JAMES H. BROWN, Tacoma, Wash. Filed Mar. 17, 1898. Serial No. 674,249. (No model.)



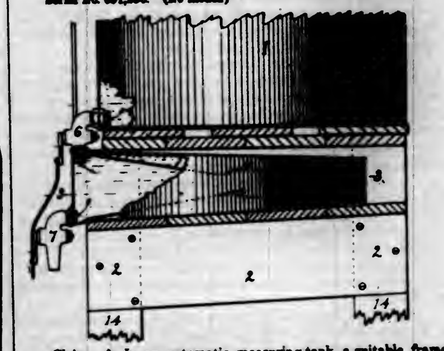
Claim.—1. A buffer adapted to take the place of the ordinary knuckle in a car-coupling, the said buffer comprising a head portion forming a buffer proper and having an attaching portion for receiving the pivot-pin of the coupling for holding it in place and a stem adapted to extend into the body portion of the coupler whereby the said buffer is substantially prevented from rotating upon the said pivot-pin, substantially as described.

2. An emergency-buffer comprising a head portion adapted to be mounted in a coupler by means of its pivot-pin, the rear contour of said head portion being adapted to rest against the front surface of the body portion of the coupler for protecting the faces and edges thereof and a stem adapted to engage the interior of the body portion of the coupler for substantially preventing the rotation of the buffer on the pivot-pin, substantially as described.

3. An emergency-buffer comprising a head portion forming a buffer proper and having a recess formed in the said head portion to receive a link and apertures to receive a coupling-pin and a stem adapted to extend some distance into the body of the coupler whereby the buffer is substantially prevented from having a swinging movement upon the pivot-pin, the construction being such that the buffer can be inserted in the place of a broken or disabled knuckle and held in place by means of the pivot-pin of the coupler, substantially as described.

4. An emergency-buffer comprising a perforated portion adapted to be engaged by the pivot-pin of an ordinary coupler, a head portion forming a buffer proper extending from the pivot-receiving portion in front of the end of the coupling and adapted to rest against the front face thereof for protecting the faces and edges of the coupler and a rearwardly-extending stem engaging the body portion of the coupler whereby the said buffer is substantially locked against any swinging movement, substantially as described.

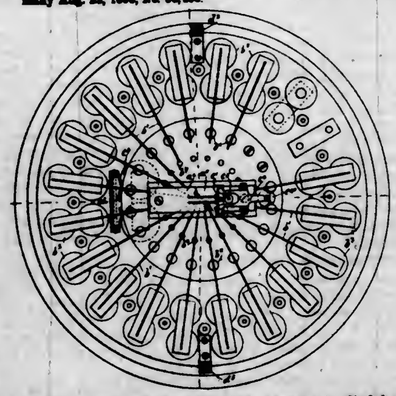
609,096. AUTOMATIC MEASURING-TANK. CHRIS H. GILBERSON and DE CLOSSE GLASEY, Minneapolis, Minn. Filed Sept. 10, 1897. Serial No. 651,260. (No model.)



Claim.—1. In an automatic measuring-tank, a suitable framework upon which it is placed, and the measuring-chamber 3 placed below the tank, and which measuring-tank is deepest at its front edge and shallowest at its rear one, and provided with a top and bottom which are cone-shaped and which have their central portions to approach each other, combined with the cock 6 which connects the tank and the measuring-chamber, the discharge-cock 7, and connection between the handles of the two cocks, whereby when one is opened, the other is closed; and the vent-pipe, the parts being combined and arranged to operate, substantially as shown.

2. In an automatic measuring-tank, a measuring-chamber which is deepest at its front edge and shallowest at its rear one, and which is provided with a cone-shaped top and bottom, and which top and bottom approach each other at or near their centers, combined with a suitable cock which connects the measuring-chamber with the measuring-tank, and a cock for drawing off the fluid from the measuring-chamber, substantially as described.

609,097. COMPOSING-MACHINE. GEORGE A. GOODSON, Minneapolis, Minn., assignor to the Goodson Type Casting and Setting Machine Company, same place. Filed Dec. 8, 1896. Serial No. 615,116. (No model.) Patented in France Dec. 4, 1894, No. 243,573; in England Dec. 5, 1894, No. 23,694; in Canada May 7, 1896, No. 52,195, and in Germany Aug. 22, 1896, No. 93,406.



Claim.—1. The combination with the source-wire *k'* of the insulated spring-contact k^2, the ball f^4, frame f^3, wire k^3, mercury-trough k^4, and the keys f^5 with contacts k^5 k^6, of such length and so related to the parts k^2 and k^4 that they will only enter or leave the mercury when the circuit is broken between k^2 f^4, substantially as and for the purposes set forth.

2. A positive-feed mechanism for a strip of material comprising a pair of cooperating parts which alternately penetrate the strip, the penetration of the one part taking place when the strip is held stationary by the other and at least one of said parts having a limited movement in the direction of the strip's travel, whereby, an exact feed is insured to the strip, substantially as described.

3. The combination with strip-supporting devices, of a recipro-

cating thrust-bar, movable transversely to the path of the strip, and a pair of feed-needles, or coöperating parts, carried by said thrust-bar, which alternately engage with the strip and are so related that the engagement of the one needle takes place when the strip is held stationary by the other, at least one of which needles has a limited movement in the direction of the strip's travel.

4. The combination with strip-supporting devices, of a thrust-bar reciprocating transversely to the strip, a pair of feed-needles on said thrust-bar between which the strip is passed, one of which is pivoted to the thrust-bar, a pair of cam-lugs for rocking the pivoted needle at the opposite limits of the thrust-bar's stroke and a spring-catch for yieldingly holding the needle at the opposite limits of its rocking motion, substantially as described.

5. The combination with strip supporting devices, of a thrust-bar subject to the action of a magnet in one direction and a retracting-spring in the other, circuit connections for energizing said magnet at the proper time to reciprocate said bar, and a pair of feed-needles, carried by said bar, alternately engageable with the strip from opposite side, of the same, at least one of which needles has a limited movement in the direction of the strip's travel, substantially as described.

6. The combination with the strip guide-block, of the thrust-bar c, the fixed needle c^{16} carried by the part of said thrust-bar above said guide, the pivoted feed-needle c^{15} carried by the part of said thrust-bar below said guide and having its free end working in and limited by a slot c^{16} in said guide-block, substantially as and for the purpose set forth.

7. The combination with the strip guide-block having the slot c^{16}, of the thrust-bar c, the feed-needle c^{15}, having the arms c^{15} c^{20}, carried by the thrust-bar with its free end working in said slot c^{16}, the fixed cam-lugs c^{21} coöperating with the arm c^{15} and the spring-latch c^{22} on the thrust-bar, coöperating with the arm c^{20}, substantially as described.

8. The combination with the strip-supporting devices of the feed-needles alternately engageable with the strip and one of which has a limited movement in the direction of the strip's travel to feed the strip, and a dash-pot applied to retard the action of said feeding member of said needles, to avoid tearing the strip, substantially as described.

9. The combination with the strip-supporting devices, of the thrust-bar c subject to magnet c^7 and retracting-spring c^8, the fixed feed-needle c^{16} and the pivoted feed-needle c^{15} carried by the thrust-bar and operating on said strip as described, and the dash-pot applied to said thrust-bar to retard the action of the thrust-bar and pivoted feed-needle when feeding the strip, substantially as described

10. The combination with the feed-needles c^{15} c^{16} and the thrust-bar c, carrying the same, of the retarding device, applied to said thrust-bar, comprising the lever c^9, dash-pot proper c^{10}, spring c^{12} and rod c^{14}, arranged and operating substantially as described.

11. The combination with strip-feeding devices, of a strip supplying or receiving device, electric connections for controlling the operation of said supplying or receiving device, and means whereby said connections are automatically controllable by the strip itself to always maintain a limited slack section of the strip, upon which the feeding devices may act, to propel the same, without any strain beyond the weight of the slack section of the strip, substantially as described.

12. The combination with strip-feedings device, of a strip supplying or receiving device, an electric motor for operating said supplying or receiving device, and electric connections for said motor controllable by the strip itself, to always maintain a limited slack section in the strip upon which slack section the feed devices may act without any strain beyond the weight of said slack section, substantially as described.

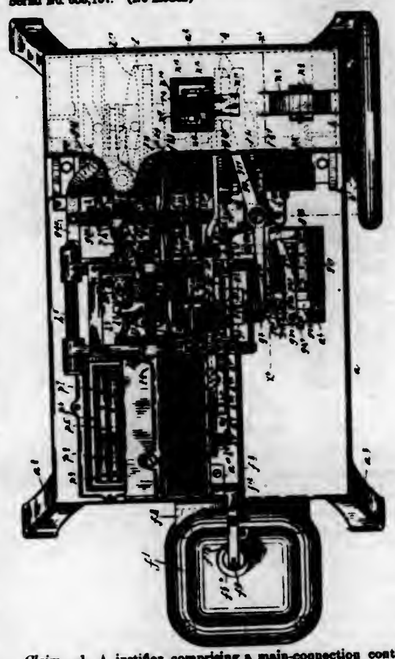
13. The combination with strip-feeding devices, of strip-supplying and strip-receiving devices, on opposite sides of said feeding devices, a corresponding pair of electric motors for operating said supply and receiving devices, and circuit connections for the same controlled by the strip itself to supply and take up the strip as required to always maintain a slack section of the strip subject to the feeding devices, substantially as described.

14. The combination with the strip-feeding devices, of the pair of strip-holding spools, on opposite sides of the feeding devices, for unwinding and winding up the strip, the pair of electric motors for said spools, and circuit connections for both of said motors controlled by the strip itself to unwind and wind up the strip as required to maintain a slack section subject to the feeding devices, substantially as described.

15. The combination with the spool d', of the electric motor d^4 and circuit connections for the same including as one of its elements the pivoted contact d^{15} tending to close the circuit at d^{11}, but operating to open the circuit whenever, from excess of slack, the strip drops onto the same, substantially as described.

16. The combination with the spool d^3, of the electric motor d^4 and circuit connections for the same incinding as one element thereof the pivoted contact d^{15} tending to open the circuit at d^{16}, but operating to close the circuit whenever, from excess of slack, the strip drops onto the same, substantially as described.

609,098. TYPE CASTING AND SETTING MACHINE. GEORGE A. GOODSON, Minneapolis, Minn., assignor to the Goodson Type Casting and Setting Machine Company, Providence, R. I. Filed Sept. 27, 1897. Serial No. 653,167. (No model.)



Claim.—1. A justifier comprising a main-connection controller and a pair of branch controllers each capable of controlling all the branch connections, which three controllers have parts adapted to be variably set in respect to each other to secure a variable number of coactions between the main controller and each of said two branch controllers, in succession, for producing spacings of the same or different sizes, as required to justify the line, substantially as described.

2. A justifier comprising a main-connection controller and a pair of branch-connection controllers, which branch controllers have parts adapted to be variably set for causing any two desired branches to coact, in succession, with the main controller, and which main controller has a part capable of being set to determine the number of coactions between said main controller and the set members of said branch controller, substantially as and for the purposes set forth.

3. A justifier comprising a main-connection controller and a pair of branch-connection controllers, which branch controllers have parts adapted to be variably set to fix the space-sizes, for the given line, and which main controller has an escapement controlled traveler adapted to coact in succession, with the set members of said branch controllers, and is provided with a shifter adapted to be variably set to fix the number of coactions between said traveler and the set members of the said branch controllers, substantially as described.

4. The combination with electrically-controlled variable spacing devices, of a justifier to control the same, comprising a main-lead controller and a pair of branch-lead controllers, in the circuit connections, which three controllers are adapted to be variably set to secure a variable number of contacts between said main lead and the set members of said branch leads, in succession, under a relative traveling movement of said main-lead and branch-lead controllers, substantially as described.

5. The combination with electrically-controlled variable spacing devices, of a justifier in the circuit connections for the same comprising a main-lead controller and a pair of branch-lead controllers, which branch-lead controllers are adapted to be variably set to fix the space-sizes, and which main-lead controller has an escapement-controlled traveling contact, adapted to coact, in succession, with the set leads of said branch controllers, and a shifter adapted to be variably set

to fix the number of contacts or coactions between said traveling member and said two set branch members, substantially as described.

6. The combination with a justifier having three elements which require to be variably set, in respect to each other, in order to secure a variable number of coactions between one thereof and each of the other two, in succession, of a representative strip having three perforations to control the setting of said justifier elements, and connections controlled by said holes of said strip, to effect the variable setting of said elements of the justifier, substantially as described.

7. The combination with variable, electrically-controlled word-spacing devices, and a representative strip having word-space holes to control said electric connections, as word-spaces, of the justifier comprising the pair of branch-lead controllers adapted to be set to variably fix the space-sizes and a main-lead controller having a traveling lead for coaction with the set members of said branch leads, in succession, a shifter adapted to be variably set to fix the number of coactions between said traveling lead and said set branch leads, and an escapement for imparting a step-by-step motion to said traveling lead, at word-spaces, under the control of said strip, substantially as and for the purposes set forth.

8. The combination with the representative strip, having the three justification-holes, of the justifier having the two branch controllers which require to be variably set, and having the main controller provided with the shifter which requires to be variably set, means for moving said parts of the justifier into an extreme or initial position against retracting-springs and three corresponding series of stops adapted to be variably set, under the control of said holes in said strip, for variably intercepting said three parts of the justifier, to properly set the same as required, substantially as described.

9. The justifier in the circuit connections to the mold-plunger magnets, comprising the branch-lead board, with leads corresponding to the possible size of the quads, the two contact-fingers adapted to be set variably for coöperation with the same or two different branch leads, the traveling lead adapted to coact, in succession, with said finger-contacts, a shifter with a pair of contacts connecting one with each of said finger-contacts and over which said traveling lead moves, which shifter is adapted to be variably set to determine the number of coactions between said traveling lead and said finger-contacts, in succession, and an escapement for imparting a step-by-step motion to said traveling contact at word-spaces, substantially as described.

10. In a justifier, the combination with two elements adapted to be variably set to make spaces of two different sizes, of a third element adapted to be variably set for coaction with the other two elements, in succession, to determine the number of said spaces to be made of each size, in any given line, substantially as and for the purposes set forth.

11. The combination of an integral-foot matrix-block working in a constant horizontal plane, a galley-floor parallel thereto, at a lower level, and a type-body mold movable in the vertical plane, at right angles to said block, for coöperation with said block, at the upper level, to cast the type, and for coöperation with the galley-floor at the lower level, for permitting the type to be ejected from the mold, directly onto the galley-floor on their feet, substantially as described.

12. The combination with the matrix-block and the galley, located at two different levels, of a vertically-movable support, the type-body mold carried by said support, and means for raising said support and holding the same in its uppermost position, for coöperation with the matrix-block in the casting action, substantially as described.

13. The combination with the matrix-block and the galley, located at different levels, of the vertically-movable support g^4, the type-body mold, as described, having its bed-sections fixed to said support, the cam-controlled lever g^7, for raising said support and mold into casting position and the springs g^{10} for lowering the same, substantially as described.

14. The combination with the matrix-block and the galley, located at different levels, of the vertically-movable support, the mold having its bed member fixed to said support, the nipple-slide carried by said support and vertically movable thereon, and the cam-levers and springs for operating said mold-support and nipple-slide, substantially as described.

15. The combination with the matrix-block and the galley, located at two different levels, of the vertically-movable mold-support, the nipple-slide carried by and vertically movable on said support, the mold having its bed member fixed to said support, the matrix-block centering-pin and its plunger, the shifting-lever for shifting laterally the movable members of the mold on the bed member thereof, the ejecting-lever for the mold-plunger, and coöperating cams and springs for operating all of said parts in the proper order, substantially as described.

16. The combination with the mold-plunger and its ejecting-lever, of devices for shifting the leverage, to impart an extraordinary or long stroke to said plunger, substantially as and for the purposes set forth.

17. The combination with the mold-plunger and its ejecting-lever, of a constantly-running cam for operating the said lever, to eject the successive type as cast, a shifting-bar and a cam-lever, and a normally idle cam-wheel on the driving-shaft operating to hold the fulcrum of said ejecting-lever in a normal position, as the type are cast, but operative, when said normally idle cam-wheel is tripped into gear with the driving-shaft, to shift the fulcrum of said ejecting-lever, substantially as and for the purposes set forth.

18. The combination with the mold and melting-pot and the delivery-nipple, of the force-pump therein, having the cylinder and the charging-chamber, in communication, at their lower ends, an outwardly-opening check-valve in said cylinder, an inwardly-opening check-valve in said charging-chamber, a two-sectioned piston in said cylinder, and a supply-port through the cylinder to said charging-chamber, which opens between the piston-sections, on the working stroke, and is closed by said piston, on the return stroke, whereby back suction at said nipple is avoided, substantially as described.

19. The combination with the matrix-block and its carriages for permitting a two-way movement of said block, of cams and cam-levers adapted to simultaneously operate on said block, in two different directions, at right angles to each other, against independent retracting-springs, acting at right angles to each other, whereby any particular matrix on the block takes a diagonal or shortest-path course from initial to casting position and reversely, substantially as and for the purposes set forth.

20. The combination with the matrix-block h and its main carriage h^2, of the small carriage h' mounted for movement crosswise of said main carriage, the lever h^7 pivoted to said main carriage and acting on said small carriage, the cam-slide h^3 h^4, movable transversely of said main carriage, for operating the lever h^7, the three-armed cam-lever h^{10}, one of its arms acting on said cam-slide and the other on said main carriage, and suitable retracting-springs applied one to each of said carriages, for action at right angles to each other, all substantially as and for the purposes set forth.

21. In a type casting and setting machine, the combination with the controlling-strip and suitable intermittent feed devices for the same, of an idle or non-driven spool from which the strip is unwound, and an automatic slack-provider comprising a device movable transversely to the strip and operative thereon at a point near the spool, when the strip is held stationary, at the point of feed, for pulling from the spool a slack section in said strip, which later becomes subject to said feed devices, with said parts constructed and arranged to first pull the slack section in the strip, and then instantly free the same from all tension until after the feed takes place, substantially as and for the purposes set forth.

22. In a type casting and setting machine, the combination with the controlling-strip and suitable feed devices for the same, of the bank of coöperating thrust-pins, an idle or undriven spool or holder from which the strip is unwound, and the slack-provider comprising the yoke embracing the strip, at a point near the holding-spool, and subject to a coöperating cam and spring, which cause the yoke to pull on the strip at a time when the strip is held stationary at the point of feed by the pressure thereon from those members of the thrust-pins which do not pass through holes in the strip, substantially as and for the purposes set forth.

23. The combination with the strip and the feed-plunger, of the feed-needles and the thrust-pin carriage subject to said plunger, but with said parts so related that the pin-carriage may be temporarily held up in an idle position while the plunger and upper needle make the initial part of their downstroke, whereby the rocking needle may be set to impart a slight overfeed to the strip, and the upper or centering needle will pull the same back and accurately center the strip before the pin-carriage is pulled down by the plunger, substantially as and for the purposes set forth.

24. The combination with the strip and the feed-plunger, of the feed-needles carried by said plunger, the lower member of which is mounted for rocking motion, at the opposite limits of the plunger's stroke, and the thrust-pin carriage seated on the plunger and subject thereto, but free to be held stationary while the plunger makes the initial part of its stroke, before becoming subject thereto, and means for temporarily holding the said carriage wherever left by said plunger, substantially as and for the purposes set forth.

25. The combination with the strip, of the feed-plunger n^{17}, the feed-needles n^{15} and n^{20}, mounted thereon, as described, the fixed pins n^{26}, for rocking the lower or pivoted needle, the spring-latch n^{24} carried by the plunger, the thrust-pin carriage n^{28} seated on and subject to said plunger, but free to be held stationary while the plunger makes the initial part of its stroke, and the yielding or spring action device n^{29} n^{31} n^{32}, for holding said carriage wherever left by the plunger, substantially as and for the purposes set forth.

26. The combination with the mold-plunger and the series of stops for variably intercepting the same, of the adjustable gage plates or guides for the upper ends of said stops, substantially as and for the purposes set forth.

27. The combination with the mold-plunger, stepped lever and slide, of the gage-lever underlying the stepped lever and connected to said slide, the spring tending to throw the stepped lever to its limit on said gage-lever, the series of stops and the gage-plates or guides for the upper ends of the same, substantially as and for the purposes set forth.

28. The combination with the mold-plunger and the ejecting-lever for the same, of the slide g^{26}, the gage-lever g^{25} connected to said slide, the stepped lever g^{23} subject to spring g^{27}, the slotted plate g^{22} carried by the mold-plunger and the pin g^{24} on the slide g^{26}, for coöperation, substantially as described.

29. The combination with the mold, of a galley having a delivery-channel through one wall thereof, and a type-holder seated in said galley-walls as a guide, and operating to engage each ejected type before the mold-plunger retreats and to clamp the same against the opposite wall of said delivery-channel, for preventing the type from falling back toward the mold in the delivery-channel, substantially as described.

30. The combination with the mold, the galley and the abutment-rack, of the take-up device operating to yieldingly clamp the last few type previously ejected against the walls of the delivery-channel, for alining the said type against one wall of said channel, and insuring proper resistance to said spring-held abutment-rack, substantially as described.

31. The combination with the mold and the abutment-rack, of the line-packer adapted to coöperate with the rack, at the outward limit of the line's movement, under the ejecting action of the plunger, to pack the line, substantially as described.

32. The combination with the mold-plunger, its ejecting-lever and the shifting-leverage devices, for imparting a long stroke thereto, after the line is cast, of the abutment-rack and the spring-held line-packer, adapted to intercept said rack, when under the action of said mold-plunger, at the said long stroke, to pack the line, substantially as described.

33. The combination with the mold-plunger, its ejecting-lever g^{23}, the fulcrum shifting-bar g^{29}, the cam-lever g^{30} and the cam-surfaces g^{31}, with passes g^{32}, on the normally idle cam-wheel 6, of the spring-held abutment-rack f^6 having the stud f^{22}, and the spring-held line-packer g^{33} in the path of said stud, near the limit of the rack's outward movement, all substantially as and for the purposes set forth.

34. The combination with the galley, of a line-clamp independent of the galley and movable through one wall of the galley, as a guide and adapted to engage with one end of the line of type last delivered for holding the same in the galley, substantially as described.

35. The combination with the galley and the line-clamp, of a releasing device, operative to throw the line-clamp into an idle position, at the proper time, to permit the entrance of the line into the galley, substantially as described.

36. The combination with the type-holder and the take-up device, of a device operative to throw the said parts outward into an idle position, at the time when the mold-plunger makes its long stroke, substantially as and for the purposes set forth.

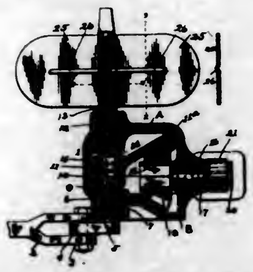
37. The combination with the mold and the shifting-leverage devices, of the spring-held type-holder, the spring-held take-up device, the spring-held bell-crank lever l^{31} with fingers l^{33} and l^{32}, engaging said type-holder and take-up devices, and the stud l^{30} on the shifting-bar g^{29}, for rocking the lever l^{31} and throwing the type-holder and take-up device into their idle positions, at the proper time, substantially as described.

38. The combination with the pump and its actuating devices, of the pivoted frame h^4 for supporting the matrix-block carriages, and a safety-lock for the pump, normally held in its releasing position when said frame is in its lowered or working position, but adapted to engage with some part of the pump-actuating devices, and lock the same in an idle position, when the said pivoted frame is turned over into an idle position, substantially as and for the purposes set forth.

39. The combination with the cam-rod f^{14}, having the stud f^{15} and the pivoted frame h^4, of the safety-lock for the pump comprising the notched lever f^{34}, the vertical arm f^{35}, normally held down by said frame, and the spring f^{36}, for throwing the notched lever f^{34} into engagement with the stud f^{15} and locking the pump when the said frame is turned over, substantially as described.

40. In the type casting and setting machine, substantially as described, the combination with the strip, the switch, the several circuit connections described, the normally idle cam-wheel 6, with cam-slide 7, under the control of said strip over the trip-circuit, of the justifier comprising the contact p, in the return branch of the escapement-circuit, the traveling contact p', the escapement therefor, with its magnet in the escapement-circuit, under the control of said strip at word-spaces, the shifter p^{14}, with the pair of contacts p^2, the sectional contacts p^3, the branch board p^7, the spring-retracted blocks p^8, with finger-contacts p^9, the shifter spring-held lever p^{13}, the projections p^{20} and p^{19} on the cam-slide 7, for action on said escapement, said blocks and said shifter, the two series of electric stop devices p^{11} p^{12} p^{18} for said blocks and the series of stop devices p^{17} p^{16} p^{15} for said shifter, with all of said electric stop devices located at the setting-circuit connections, all for coöperation, substantially as described.

609,099. RAILWAY-SWITCH STAND. EDWARD GRAFSTROM, Columbus, Ohio. Filed June 9, 1896. Serial No. 593,961. (No model.)

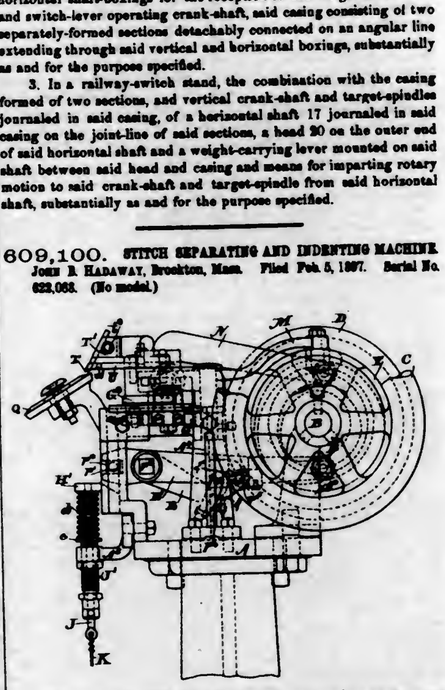


Claim.—1. In a railway-switch stand the combination with the casing, a switch-rail-operating crank and target-spindle journaled in said casing and having squared inner end portions, of a socket-piece within said casing engaging said squared ends and means for rotating said socket-piece, substantially as and for the purpose specified.

2. In a railway-switch stand, a casing therefor having vertical and horizontal shaft-boxings for the reception of the weight-lever shaft and switch-lever operating crank-shaft, said casing consisting of two separately-formed sections detachably connected on an angular line extending through said vertical and horizontal boxings, substantially as and for the purpose specified.

3. In a railway-switch stand, the combination with the casing formed of two sections, and vertical crank-shaft and target-spindles journaled in said casing, of a horizontal shaft 17 journaled in said casing on the joint-line of said sections, a head 20 on the outer end of said horizontal shaft and a weight-carrying lever mounted on said shaft between said head and casing and means for imparting rotary motion to said crank-shaft and target-spindle from said horizontal shaft, substantially as and for the purpose specified.

609,100. STITCH SEPARATING AND INDENTING MACHINE. JOHN B. HADAWAY, Brockton, Mass. Filed Feb. 5, 1897. Serial No. 623,063. (No model.)



Claim.—1. The combination with a stationary separating-tool, of a work-support and means to move said work-support toward the tool with a yielding pressure, and means to positively force said work-support toward the tool at intervals, substantially as described.

2. The combination with a stationary separating-tool, of a presser-foot, and means to alternately move the work-bearing face of said presser-foot above and below the working end of said tool, substantially as described.

3. The combination with a stationary separating-tool, of a presser-foot, and means to impart to said presser-foot vertical and lateral reciprocations, substantially as described.

4. The combination with a separating-tool adjustably mounted in a stationary position, of a presser-foot and means to alternately move said presser-foot above and below the separating-tool, substantially as described.

5. The combination with a stationary separating-tool, of a work-feed arranged to feed the work uniform distances, and to release said work to permit it to move laterally in either direction to locate the point of the separating-tool in the intervals between the stitches, substantially as described.

6. The combination with a stationary separating-tool, of a presser-foot and work-support, and mechanism to actuate the same to cause them to grip the work and move it laterally past the point of the tool, substantially as described.

7. The combination with a stationary stitch-separating tool of a presser-foot and work-support, means to positively move the presser-foot and work-support toward each other to clamp the work, and then to positively move them in the same direction toward the point of the separating-tool and means to cause said presser-foot to release the work as the work comes in contact with the point of the separating-tool, substantially as described.

8. The combination with a separating-tool, of mechanism for moving the work vertically to bring the same in contact with the tool, and mechanism to move the work laterally past the point of the tool, substantially as described.

9. The combination with a stationary separating-tool, of mechanism arranged to move the work laterally past the point of the tool and vertically toward and from the tool, substantially as described.

609,101. RAIL-JOINT. ROBERT HEBERLEIN, Chicago, Ill. Filed Mar. 9, 1896. Serial No. 582,469. (No model.)



Claim.—1. The rail-joint plate described, consisting of the metallic piece, rectangular in outline, having webs a a^3 in substantially the same plane, and having the inwardly-projecting ribs c c', the rounded-shoulder middle part d', and the ribs c^2 c^3 below said rounded shoulder, the web a^3 joining the under flange of the middle part d' at about midway of its width, said plate having the bolt-holes above and below the middle part, substantially as described and shown.

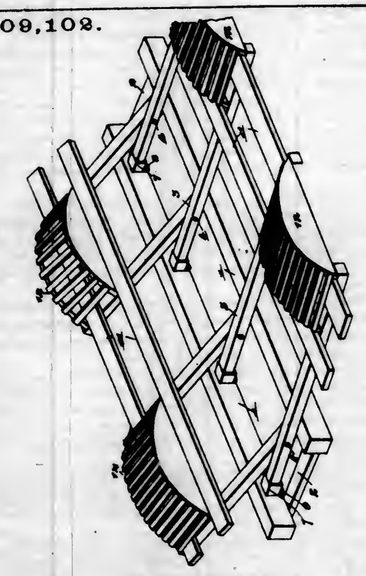
2. In a railway-joint, in combination with the adjacent rails of a track, a pair of similar joint-plates, each plate having webs a, a^3 in substantially the same vertical plane connected by rounded-shoulder portions, the ribs d, d', extending inward and fitting closely against the rail head and flange, the ribs c^2 extending inwardly nearly to each other under the rail-flange and the ribs c^3 extending toward each other from the lower edge of web a^3, the webs a^3 joining the under flanges of the middle parts d' at about midway of their width, the bolts extending through said plates and the rails, and a pair of bolts extending through the plates near the outer ends and below the rails, all substantially as described.

3. The combination with the abutting rails of a railway, of a pair of joint-plates, similar to each other, rectangular in outline, having upper and lower webs in substantially the same vertical plane, the upper web having upper and lower internal ribs extending inward about to the web of the track at the junction of said track-web with the head and flange respectively, the central portion of said plates curving outward around the flange of the track, the lower webs of the joint-plates having an upper and lower rib extending inward about into contact below the track-flange, and the upper bolts passing through the upper web of the track and of the joint-plates, and the lower bolts passing through the joint-plate webs below the track and between the ribs of the joint-plates, substantially as described.

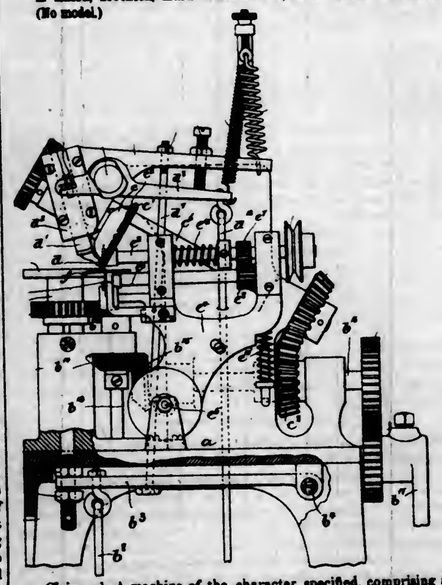
609,102. HAY-RACK. SAMUEL B. HUBB, Harrville, Ill. Filed Apr. 12, 1898. Serial No. 677,314. (No model.)

Claim.—The combination with the longitudinal supporting-beams, of tenon-sockets having a bolt-hole, and having on their rear edges embedding prongs or studs, bolts passing through said holes, the rack-bars having their inner ends crossing one another and pivoted together, and having at their extremities a beveled portion and a recessed portion, the beveling being on the lower edge of the bars and the recessing on the upper edge of said bars, rack-boards secured to said rack-bars, and wheel guards secured to said rack-bars, substantially as set forth.

609,102.



609,103. MACHINE FOR REINFORCING INNER SOLES. MYRON L. KEITH, Brockton, Mass. Filed Nov. 2, 1896. Serial No. 610,856. (No model.)



Claim.—1. A machine of the character specified, comprising a work-supporting bed, a rotatable forming and feeding wheel, and a presser-foot arranged to coöperate with said wheel in compressing a sole flange or rib.

2. A machine of the character specified, comprising a work-supporting bed, a rotatable forming and feeding wheel supported in fixed bearings, a presser-foot which is movable toward and from said wheel, and means for yieldingly maintaining the foot in its operative relation to said wheel.

3. A machine of the character specified, comprising a work-supporting bed, a rotatable forming and feeding wheel supported in fixed bearings, a presser-foot guide movable relatively to said wheel and yieldingly held in its normal relation thereto, a presser-foot slide movable independently in said guide and provided with a presser-foot

arranged to cooperate with said wheel, and means for yieldingly holding the said slide in its normal position relatively to the guide.

4. A machine of the character specified, comprising a rotary work-supporting bed, a rotary forming and feeding wheel adjacent thereto, a presser-foot arranged to cooperate with said wheel as described, and means for simultaneously rotating said bed and wheel.

5. A machine of the character specified, comprising a yieldingly-supported rotary work-supporting bed, means for depressing the same, a rotary forming and feeding wheel mounted in fixed bearings above the said bed, and a presser-foot arranged to cooperate with said wheel.

6. A machine of the character specified, comprising a yieldingly-supported rotary work-supporting bed, a rotary forming and feeding wheel mounted in fixed bearings above the bed, a presser-foot movable toward and from said wheel and yieldingly maintained in its operative relation thereto, and means for simultaneously displacing said bed and presser-foot.

7. A machine of the character specified, comprising means for pressing a sole-rib, sole-feeding mechanism, and a yieldingly-supported trimming mechanism movable toward and from the edge of the sole to conform automatically to the edge of the sole.

8. A machine of the character specified, comprising a work-supporting bed, rib or flange compressing devices adjacent to the bed, a cutter-holder mounted to move toward and from said bed and yieldingly maintained in its operative relation thereto, cutters carried by said holder, and an abutment on said holder arranged to bear on the edge of a sole.

9. In a machine for reinforcing insoles, the combination of a rotary forming and feeding wheel, and presser-foot arranged to engage the reinforcing material and conform the same to the lip on an insole, substantially as described.

10. In a machine for reinforcing insoles, the combination with a rotary forming and feeding wheel, of a presser-foot, said wheel and foot arranged to engage the reinforcing material upon opposite sides of the lip on the insole to conform said material to the lip, and said forming and feeding wheel having a peripheral bearing-face to lay the edge of the reinforcing material upon the feather of the insole, substantially as described.

11. In a machine for reinforcing insoles, the combination with a presser-foot arranged to press and conform the reinforcing material to one side of the lip of an insole, of a forming and feeding wheel arranged to conform the reinforcing material to the opposite side of the lip, and to feed the insole beneath the presser-foot, substantially as described.

12. In a machine for reinforcing insoles, the combination with a rotary work-support, of a rotary forming and feeding wheel arranged to conform the reinforcing material to one face of the lip on the insole and means to cause the insole to be gripped between the forming and feeding wheel and work-support to feed the insole, substantially as described.

13. In a machine for reinforcing insoles, the combination with a work-support arranged to support the insole, of means to conform the reinforcing material to the insole and cutters movable toward and from the edge of the insole arranged to automatically follow the edge of the insole and trim the edge of the reinforcing material, substantially as described.

14. In a machine for reinforcing insoles, the combination with a work-support, of means comprising a presser-foot to form a bead or crimp in the reinforcing material, and means for simultaneously moving the work-support and presser-foot to release the insole, substantially as described.

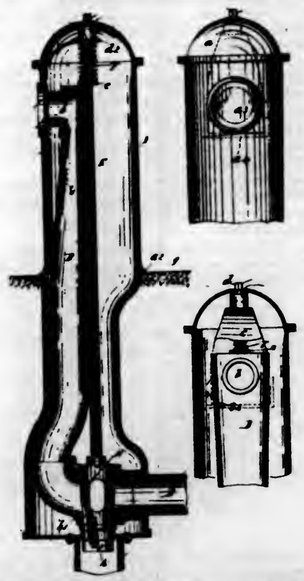
609,104. HOSE-HYDRANT. HENRY M. KUHS, New York, N. Y. Filed Dec. 4, 1897. Serial No. 660,784. (No model.)

Claim.—1. An improved hose-hydrant, comprising a casing having a mouth or opening, a slide or plate adapted to close the same, and a rotary plug rigid with said slide or plate and having an exteriorly-projecting operating end adapted to be engaged by a key or handle, substantially as and for the purpose set forth.

2. An improved hose-hydrant, comprising a casing having a mouth or opening and provided interiorly with limiting shoulders or flanges arranged with respect to said mouth or opening, a slide or plate adapted to close the opening and operating with respect to said interior flanges so that it engages the same when in normal position, and an operating-plug carrying said slide or plate and provided with an exteriorly-projecting operating end adapted to be engaged by a key or handle, substantially as and for the purpose set forth.

3. An improved hose-hydrant, comprising a casing carrying feed-pipe mechanism provided with an inlet-valve, a rotary stem connected with said valve and extending vertically within the casing, and a rotary depressible plug adapted to engage the valve-stem and provided with an exteriorly-projecting operating end adapted to be engaged by a key or handle, substantially as and for the purpose set forth.

4. An improved hose-hydrant, comprising a casing provided with feed-pipe mechanism having an inlet-valve, a valve-stem connected with said valve and extending vertically within the casing, a rotary and vertically-slidable operating-plug adapted to engage the end of the valve-stem and having an operating end exteriorly projecting from the casing and adapted to be engaged by a key or handle, and a spring mechanism for governing the connection of said operating-plug with the valve-stem, substantially as and for the purpose set forth.



5. An improved hose-hydrant, comprising a casing provided with a feed-pipe having an inlet-valve, a valve-stem connected with said valve and extending vertically within the casing, and a tubular operating-plug receiving the top end of said valve-stem and adapted to engage the same, said plug being rotatable and depressible with respect to the valve-stem and provided with a projecting end adapted to be engaged by operating devices, substantially as and for the purpose set forth.

6. An improved hose-hydrant, comprising a casing provided with a feed-pipe having an inlet-valve, a valve-stem connected with said valve and extending vertically within the casing, a tubular operating-plug receiving the top end of said valve-stem and adapted to engage the same, said plug being rotatable and depressible with respect to said valve-stem and provided with an operating end projecting exteriorly from the casing and adapted to be engaged by an operating device, and a governing coiled spring arranged between the valve-stem and said operating-plug, substantially as and for the purpose set forth.

7. An improved hose-hydrant, comprising a casing having a mouth or opening and provided with water-feed mechanism having an inlet-valve, a valve-stem connected with said valve and extending within said casing, a rotatable and depressible operating-plug adapted to engage the valve-stem, and a slide or plate adapted to close the mouth or opening in the casing and carried by said operating-plug, substantially as and for the purpose set forth.

8. An improved hose-hydrant, comprising a casing having a mouth or opening and provided with a water-feed mechanism having an inlet-valve, a valve-stem connected with said valve and extending within the casing, a rotatable and depressible plug adapted to engage the valve-stem and provided with an operating end extending exteriorly from the casing and adapted to be engaged by an operating key or handle, a slide or plate adapted to close the mouth or opening and carried by said rotatable plug, and spring mechanism for governing the connection between the plug and valve-stem, substantially as and for the purpose set forth.

9. An improved hose-hydrant, comprising a casing having a mouth or opening and provided with water-feed mechanism having an inlet-valve, a valve-stem connected with said valve and projecting vertically within the casing, a tubular operating-plug receiving the top end of said valve-stem and adapted to engage the same and provided with an end projecting exteriorly from the casing and adapted to be engaged by an operating key or handle, a slide or plate adapted to close the mouth or opening in the casing and carried by said operating-plug, the operating-plug being rotatable and depressible with relation to the valve-stem, and a coiled spring arranged between the valve-stem and plug and adapted to control the relation of said parts, substantially as and for the purpose set forth.

10. In a hose-hydrant, comprising a casing having a mouth or opening at the bottom of which is arranged an interior flange or limiting device, and having a stem extending from inlet-valve mechanism, a depressible and rotatable plug adapted to engage said valve stem when the plug is depressed, and a slide or plate adapted to close the mouth or opening and carried by said plug, whereby the closure-plate permits depression of the plug only when said plate is beyond the mouth or opening and out of engagement with the interior limiting flange devices, substantially as and for the purpose set forth.

11. In a hose hydrant comprising a casing having a closed bottom from which extends a waste-pipe, an inlet-pipe extending within said casing and provided with a rotary valve projecting into said waste-pipe and having an exterior groove adapted to form an outlet between the inlet-pipe and waste-pipe, substantially as and for the purpose set forth.

12. In a hose-hydrant, a casing having a lateral opening, a feed-pipe within said casing having a nozzle situated within the casing and opposite said opening, and means for closing said opening.

13. In a hose-hydrant, a casing having an opening, a feed-pipe within said casing having a nozzle situated within the casing and opposite said opening, and a movable plate on the inside of said casing adapted to close said opening.

14. In a hose-hydrant, a casing having an opening, a feed-pipe within said casing having a nozzle situated within the casing and opposite said opening, a movable plate on the inside of said casing adapted to close said opening, and limiting-flanges on the inside of said casing adapted to limit the extent of movement of said plate.

15. In a hose-hydrant, a casing having an opening, a feed-pipe within said casing having a nozzle situated within said casing and opposite said opening, and a movable plate on the inside of said casing adapted to close said opening and provided with a plug projecting through the casing and by means of which it can be moved.

16. In a hose-hydrant, a casing having a lateral opening, and a feed-pipe extending longitudinally within said casing and along the side thereof in which said opening is situated, the portion of said feed-pipe adjacent said opening being deflected or inclined away from the walls thereof and provided with a nozzle opposite said opening.

17. In a hose-hydrant, a casing having a lateral opening, and a feed-pipe extending longitudinally within said casing and along the side thereof in which said opening is situated, the portion of said feed-pipe adjacent said opening being contracted practically at right angles to the plane of said opening and provided with a nozzle opposite said opening.

18. In a hose-hydrant, a casing having a lateral opening, and a feed-pipe extending longitudinally within said casing and along the side thereof in which said opening is situated, the portion of said pipe adjacent said opening being flattened and widened and provided with a nozzle opposite said opening.

19. In a hose-hydrant, a casing having a lateral opening, a feed-pipe having a nozzle situated opposite said opening, a valve controlling said feed-pipe, a movable plate for closing said opening, and a common operating-plug for said plate and valve.

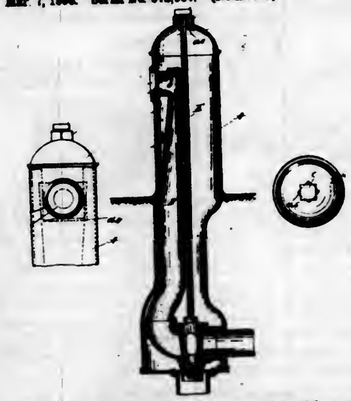
20. In a hose-hydrant, a casing having a lateral opening, a feed-pipe having a nozzle situated at its upper end and opposite said opening, a valve controlling said feed-pipe, and a movable plate to close said opening having a plug extending through the casing, said plug being adapted for connection with the valve-operating means.

21. In a hose-hydrant, a casing having a lateral opening, a feed-pipe having a nozzle situated opposite said opening, a valve controlling said feed pipe, a movable plate to close said opening having a plug extending through the casing, a valve-stem having a sliding connection with said plug, means for connecting said valve-stem and plug so that they rotate together, and a spring for moving said plug and valve-stem to disconnect the same.

22. In a hose-hydrant, a casing having an opening, a feed-pipe within said casing having a nozzle situated within the casing and opposite said opening, a valve controlling said feed-pipe, a movable plate for closing said opening, and means for successively moving said plate to open said opening and for opening said valve and for closing said valve and for moving said plate to close said opening.

23. In a hose-hydrant, a casing having a feed-pipe leading upwardly from its lower end, a valve in the feed pipe and at the bottom of the casing, a downward extension upon said valve extending through the bottom of the casing and into a waste-pipe, and a passage leading through said valve from a point opposite the feed-pipe into said downward extension to establish communication between said parts.

609,105. HYDRANT. HENRY M. KUHS, New York, N. Y. Filed Mar. 7, 1898. Serial No. 672,967. (No model.)



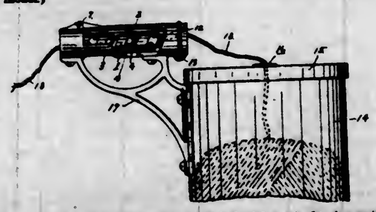
Claim.—1. In a hydrant, a casing provided with an opening and a revoluble cap mounted upon and closing the upper end of the casing and provided with a depending plate that is situated close to the inner face of said casing.

2. In a hydrant, a casing provided with an opening, and a revoluble cap mounted upon and closing the upper end of said casing and provided with a depending plate that is situated close to the inner face of said casing, and a boss on the upper end of said cap by means of which it is turned.

3. In a hydrant, having a casing provided with an opening, a nozzle of the feed-pipe situated within said casing and opposite said opening, and a revoluble cap mounted upon said casing and provided with a depending plate adapted to cover said opening in the casing, substantially as set forth.

4. In a hydrant, a casing provided with an opening a revoluble cap mounted upon and closing the upper end of the casing and provided with a depending plate that is situated close to the inner face of the casing, a boss upon the upper end of said cap having an opening, therethrough, a valve-stem extending through said opening and provided with a head.

609,106. TENSION DEVICE FOR TWINE-BINDERS. JOHN LAURITSEN, Tyler, Minn. Filed Oct. 25, 1897. Serial No. 656,278. (No model.)



Claim.—1. A tension device provided with a spiral twine or thread guiding channel and with a longitudinally-extended branch channel cutting through several of the coils or threads of said spiral channel, substantially as described.

2. A tension device provided with a spiral twine or thread guiding channel and with two or more longitudinally-extended branch channels cutting through said spiral channel at different circumferential points, substantially as described.

3. A tension device, comprising a removable core having a spiral twine or thread guiding channel, and a case or shuttle adapted to receive said core and hold the same, substantially as described.

4. A tension device, comprising the core 1 with spiral channel 4, end perforation 5 and one or more longitudinally-extended branch channels 6 cutting the said spiral 4, and a case or shuttle adapted to receive and hold said core 1, substantially as described.

5. A tension device, comprising the removable core 1 with spiral channel 4, end perforation 5 and one or more longitudinally-extended branch channels 6, and the case or shuttle formed in two parts 2 and 3 hinged together at 7 and provided with the semicircular notches 8 and cylindrical passage 9, substantially as described.

6. A tension device, comprising the removable core 1 with spiral channel 4, end perforation 5 and longitudinally-extended branch

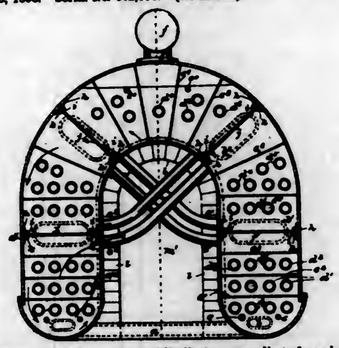
channels 6, and the case or shuttle formed by sections 2 and 3 hinged at 7, provided with the notches 8 and passage 9, and adapted to be locked together by the ring 12, substantially as described.

609,107. DRILL FOR STARTING HOLES IN ROCKS. JOHN G. LEYNER, Denver, Colo. Filed Oct. 12, 1897. Serial No. 654,953. (No model.)



Claim.—The combination with the cylinder, the piston and the sleeve having a partial round and partial polygonal bore, of a hole-starting drill adapted to be operatively positioned in said sleeve loosely and to project into said cylinder into the reciprocal path of said piston and comprising a shank of any suitable form of cross-section, a collar or stop adjacent to its striking end, a polygonal end fitting loosely said polygonal bore of said sleeve and a round portion between said polygonal section and said collar or stop, and an enlarged round cutting end having a flat face channeled, grooved, serrated and formed into cutting-teeth, and a hole through the axis of said drill-shank from end to end, substantially as described.

609,108. STEAM-BOILER. CHARLES LLOYD, Chicago, Ill. Filed Mar. 5, 1896. Serial No. 672,638. (No model.)



Claim.—1. A boiler with saddle-limbs extending from head to head thereof inclosing a fire-chamber of like length with water-tubes from a lower level of each saddle-limb to its opposite saddle-limb near its upper level and cross-tubes from the lowest edges of the saddle-limbs, substantially as specified.

2. The saddle-shaped and connected double shells $a^{\times}a^{\times\times}$ with longitudinal and arched smoke-flue between the water-legs, extended to the rear wall n by means of tiles having longitudinal spiral flues, a smoke-space g' connected with said arched smoke-flue through said tile-flues and longitudinal smoke-flues through the water-space of the boiler connected with said chamber g', substantially as specified.

3. A boiler with saddle-limbs extending from head end to head end thereof inclosing a fire-chamber of like length, with water-tubes from a lower level of each saddle-limb to its opposite saddle-limb near its upper level, removable stay rods at upper end of said tubes and manholes at upper ends of said tubes and in line therewith and said stay-rods, substantially as specified.

609,109. SHIRT-BOSOM RETAINER. ARTHUR MCYER, Nashville, Tenn. Filed June 19, 1897. Serial No. 641,429. (No model.)

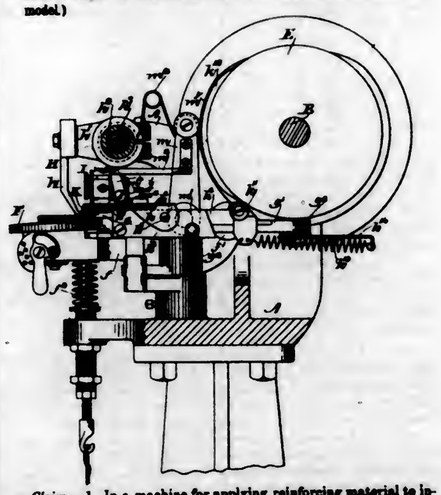


Claim.—1. A retaining device for shirt-bosoms, comprising the bands A and B, adapted to normally cross each other, and means for holding the bands in their crossed position, the said means consisting of two plates pivoted together, and adapted each to receive a band and, by reason of their joint action, to cause said bands to bind against each other when the pull on the bands is such as to bring said plates lengthwise of each other, as and for the purpose set forth.

2. In a retaining device for shirt-bosoms, the combination with retaining-bands, of a self-binding fastener for said bands, the same comprising two plates pivotally connected, and each provided with one or more slots or openings near its ends for the passage therethrough of said bands, respectively, whereby to hold the same and bring the bands in binding contact between the said plates, as and for the purpose set forth.

3. The combination of two plates, each being of greater length than width, centrally pivoted together, and provided with a buckle-bar at each end, as and for the purpose set forth.

609,110. INSOLE-REINFORCING MACHINE. GEORGE E MILLER, Chicago, Ill. Filed June 25, 1897. Serial No. 642,336. (No model.)



Claim.—1. In a machine for applying reinforcing material to insoles, the combination with bead-forming tools, for forming a bead or crimp in the reinforcing material and securing it to the insole, of a stretching and smoothing tool operating independently of said bead-forming tools, for stretching and smoothing the reinforcing material, substantially as described.

2. In a machine for applying reinforcing material to insoles, the combination with bead-forming tools for forming a bead or crimp in the reinforcing material and securing it to an insole, of a stretching and smoothing tool arranged to engage the reinforcing material and pull the same from the medial line of the sole toward the edge thereof, substantially as described.

3. In a machine for applying reinforcing material to insoles, the combination with bead-forming tools, for forming a bead or crimp in the reinforcing material and securing it to an insole, of a stretching and smoothing tool and means to impart thereto a pulling movement in a diagonal direction with reference to the front of the machine, substantially as described.

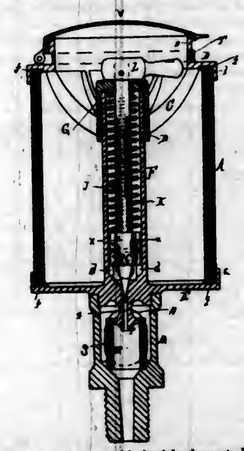
4. In a machine for applying reinforcing material to insoles, the combination with an anvil or former over which the reinforcing material is beaded or crimped, of a stretching and smoothing tool, and means to actuate the same arranged to cause said tool to press the reinforcing material against the anvil or former and exert a pull on said material, substantially as described.

5. In a machine for applying reinforcing material to insoles, the combination with bead-forming tools for forming a bead or crimp in the reinforcing material and securing it to an insole, of a stretching and smoothing tool, and means to positively project said tool over the reinforcing material and a spring to retract the tool, substantially as described.

6. In a machine for applying reinforcing material to insoles the combination with bead forming tools for forming a bead or crimp in the reinforcing material, and securing it to the insole, of a stretching and smoothing tool, a reciprocating slide arranged to move said tool toward and from the medial line of the sole, and a lever and connections for raising and lowering said tool toward and from the face of said tool, substantially as described.

609,111. OIL-CUP. WILLIAM L. MORRIS, Cleveland, Ohio. Filed Apr. 7, 1897. Serial No. 631,107. (No model.)

Claim.—1. The combination, with an oil-cup, a vertically movable and adjustable valve-stem, a valve, a plug provided with elongated openings diametrically opposite each other, and a glass sight-tube adapted to be inserted and removed through the elongated openings in said plug, substantially as and for the purpose set forth.



2. In an oil-cup, a plug provided with elongated openings in the side wall thereof, a sight-glass tube adapted to be inserted and removed through said openings, and a supplemental-valve-port stem provided with an annular head receivable within said sight-glass tube, substantially as set forth.

3. In an oil-cup, the head B, provided with the flange c, in combination with the band T, embracing said flange and carrying its hinged cover V, whereby the filler-opening and feed mechanism are inclosed and protected, substantially as set forth.

4. In an oil-cup, a cam-lever L, a valve-stem J, a collar H, a spring K, an adjustable nut G, which engages non-rotatably with said valve-stem, a hollow post F, provided with stationary guides d, to prevent said stem being rotated until collar H is disengaged therefrom, the bore of each portion of said hollow post being larger than the portion immediately below, whereby enabling the feed mechanism to be lifted out of said post, in the manner and for the purpose, substantially as set forth.

5. In an oil-cup, a feed mechanism consisting of a valve stem with valve at lower end, a spring engaging with said stem for closing the valve against its seat, vertical guides on stem and stationary corresponding guides on cup that necessitate raising the valve-stem to disengage same, a cam at upper end of valve-stem and an adjustable cam-support through which the stem slidingly but non-rotatably engages, substantially as and for the purpose specified.

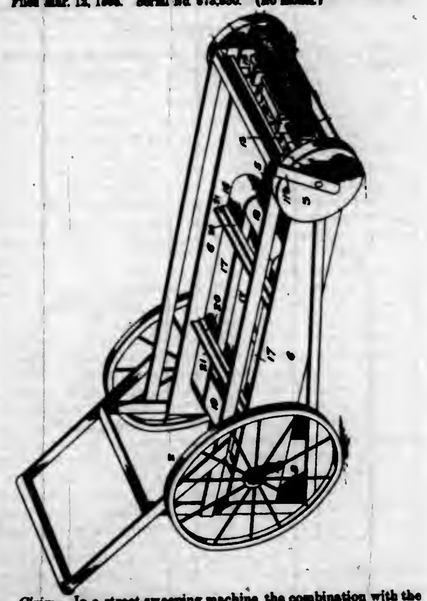
6. In an oil-cup, the combination of the heads B, E, the intervening cylinder A, said head B being provided with the depending spider C, having a hub D, and an upwardly-projecting flange or rim a, forming a filler-opening, a vertically-adjustable valve-stem and valve, a spring for closing said valve, a cam-lever or valve-operator located within the filler-opening and below the upper edge of said flange a, and a cover for inclosing both filler-opening and feed mechanism, substantially as and for the purpose described.

609,112. SHOE-LACE FASTENER. LLEWELLYN C. MOORE, Farragut, Iowa, assignor of one-half to Samuel A. Cox, Simon Crosser, and Harrison Rogers, same place. Filed Sept. 14, 1897. Serial No. 651,673. (No model.)



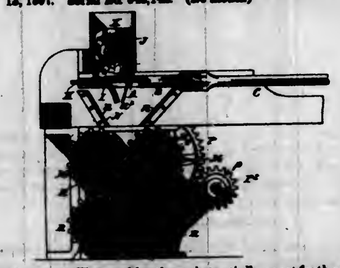
Claim.—A device of the class described, comprising a plate having a lip or flange forming a fixed jaw, a cam pivotally connected with the plate and arranged to coöperate with the fixed jaw, and an arm extending from the cam, forming a handle for operating the same and arranged to swing over the lip or flange to form a guard, said arm being arranged at an angle to the cam, whereby it is adapted to embrace the lip or flange and support the same against outward movement, substantially as and for the purpose described.

609,113. STREET-SWEEPER. SAMUEL MOORE, Wilmington, Del. Filed Mar. 12, 1898. Serial No. 673,630. (No model.)



Claim.—In a street-sweeping machine, the combination with the main supporting-frame, wheels journaled at the rear end of said frame and provided with a roller-axle, drive-wheels journaled at the fore end of the frame, a body supported by said frame comprising an inclined bottom and side pieces, a roller journaled between said side pieces at their forward ends, a rotary brush journaled at the forward end of the body and geared with the drive-wheels, an endless conveyer supported on said rollers and provided with flexible scrapers adapted to scrape the inclined bottom, a removable box supported by the main frame at the rear and below the inclined bottom, and covers for the body of said box, substantially as set forth.

609,114. MACHINE FOR PREPARING WOOD FOR FUEL. WILLIAM S. MURRAY, Hattiesburg, Miss., assignor, by mesne assignments, of one-half to Sarah S. Cohen, New Orleans, La. Filed Aug. 13, 1897. Serial No. 648,142. (No model.)

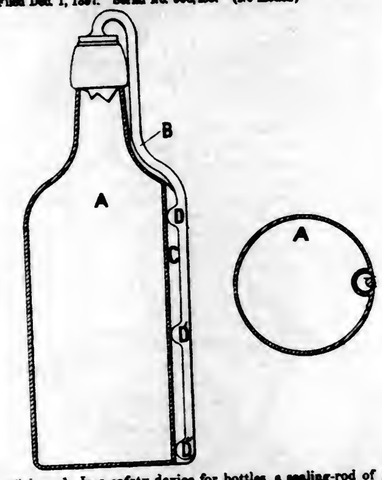


Claim.—1. The combination substantially as set forth of the block-guiding box, the knife pointed at its front central portion and having backwardly and laterally inclined edges, the spiked crushing rolls arranged below the knife, the guide-chute interposed between the crushing-rolls and the knife, the slotted apron or frame arranged in front of the knife and movable simultaneously therewith for supporting the block to be cut when the knife is withdrawn, and means for reciprocating the knife and apron and for actuating the crushing-rolls.

2. The combination, substantially as set forth, of the block-guiding box, the slotted apron arranged beneath the box, a centrally-pointed knife rigidly secured to the apron and having lateral and rearwardly-inclined cutting edges diverging from a cross-piece of the apron which is adapted to sustain the block when the knife is withdrawn, a guide-chute arranged immediately below the knife and apron, the crushing-rolls having rows of spikes breaking joints and

interlocking as described, and arranged below the guide-chute, and means for reciprocating the knife and apron for actuating the rolls.

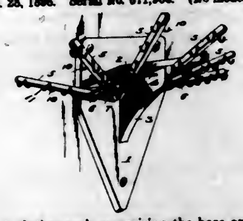
609,115. **SAFETY-BOTTLE.** JOHN J. MCCORMICK, New York, N. Y. Filed Dec. 1, 1897. Serial No. 660,455. (No model.)



Claim.—1. In a safety device for bottles, a sealing-rod of glass or other suitable material, one end bent down over the cork or stopper, and the other end, adapted to enter a groove or recess in the body of the bottle, provided with buttons or thickened portions at intervals along its length; in the manner, and for the purpose herein described.

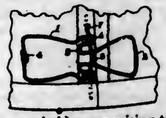
2. In a safety device for bottles, the combination, with a bottle, of a groove or recess in the body thereof, adapted to receive and hold a sealing-rod; and a sealing-rod, one end bent down over the cork or stopper, and the other end inserted in said groove or recess and fixed therein by means of cement, in the manner, and for the purpose herein described.

609,116. **CLOTHES-RACK.** JOHN W. MCDONALD, Lerna, Ill. Filed Feb. 23, 1898. Serial No. 671,966. (No model.)



Claim.—A clothes-rack comprising the base or support, a shelf, a curved rod secured to the support below the shelf, arms having bails by means of which the arms are connected to said rod, spring-rods fitted in slots on the under edge of the arms, and having curved heads, for the purpose set forth.

609,117. **GARMENT-HOLDER.** ROBERT S. MCMILLIN, Indianapolis, Ind., assignor of one-half to Virgil H. Lockwood, same place. Filed June 16, 1897. Serial No. 641,065. (No model.)

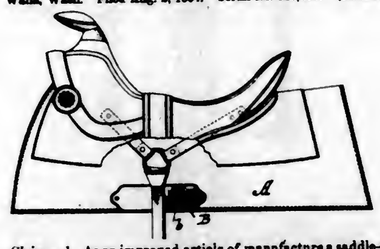


Claim.—1. A garment-holder comprising two arms connected by a double-acting spring joint or hinge, whereby the two parts will be held by the spring open or closed, and means near the joint for securing the holder to the garment.

2. A garment-holder comprising two arms or parts formed of wire or similar elastic material, the end of one part being outwardly curved and the ends of the other part extending under said curved portion and then back over the same at a point farther away from the middle of said curved portion, and means for securing the parts near their joint to the garment.

3. A garment-holder comprising two parts made of wire or similar elastic material, the ends of one part being outwardly curved and the ends of the wire forming the other part being passed under said curved portion and then back over the same at a point farther away from the center of the curved portion, then coiled about said curved portion one or more times, and then projected outward, one end extending from one side and the other from the other side, substantially as set forth.

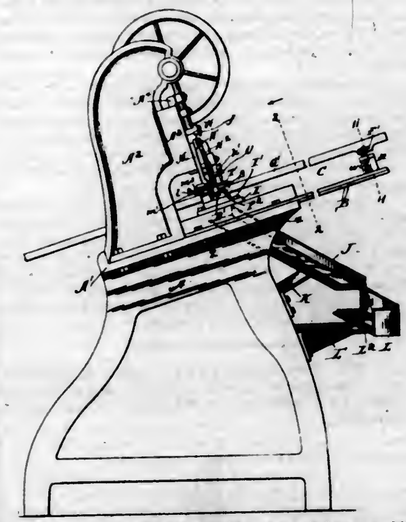
609,118. **SADDLE-SKIRT PROTECTOR.** CHARLES R. NYE, Walla Walla, Wash. Filed Aug. 2, 1897. Serial No. 646,834. (No model.)



Claim.—1. As an improved article of manufacture a saddle-skirt, having rigidly secured thereto adjacent to its lower edges a resilient metallic shield, positioned so as to be engaged by the girth or girth-rigging, for the purpose set forth.

2. A saddle-skirt having rigidly attached thereto midway between the ends and adjacent to its lower edges, resilient metallic plates B, the edges of which are beveled, said plate being perforated for the passage of rivets therethrough to provide the means for intimately connecting the shield to the saddle-skirt, substantially as shown.

609,119. **MACHINE FOR STAMPING CARDS FROM BLANKS.** LOUIS OTTO, Chicago, Ill., assignor, by direct and mesne assignments, to the Walker Otto Company, same place. Filed Mar. 3, 1897. Serial No. 626,443. (No model.)



Claim.—1. A machine for stamping out cards from a card-blank strip, comprising, in combination, frame, die, stamping-tool, an inclined card-blank feed-chute leading to the die of sufficient inclination to cause the blank to be fed by the action of gravity alone, and an intermittently-actuated stop for checking the downward movement of the blank preparatory to the stamping out of a card, substantially as and for the purpose set forth.

2. A machine for stamping out cards from a card-blank strip, comprising, in combination, frame, die, stamping-tool, an inclined card-blank feed-chute leading to the die of sufficient inclination to cause the blank to be fed by the action of gravity alone, and an automatically-operated stop for checking the downward movement of the blank preparatory to the stamping out of a card, substantially as and for the purpose set forth.

3. In a machine for stamping out plates from a blank, the combination with the frame, die and stamping-tool, of a gravity-operating chute for feeding the blank to the dies, a stop for checking the movement of the blank during the stamping operation, and means for causing the final portion of the remnant automatically to clear the stop, whereby the introduction of a new blank is permitted in time to prevent loss of a stroke, substantially as described.

4. In a machine for stamping out plates from a blank, the combination with the frame, die, and stamping-tool, of a gravity-operating chute for feeding the blank to the dies, a stop in the discharge-path for checking the movement of the blank during the stamping operation, mechanism for effecting the intermittent displacement of the stop to cause it to clear the adjacent portion of the remnant and reëngage the blank, and means for causing the final portion of the remnant automatically to clear the stop, whereby the introduction of a new blank is permitted in time to prevent loss of a stroke, substantially as described.

5. In a machine for stamping out plates from a blank, the combination with the frame, die, and stamping-tool, of a gravity delivery-chute leading to the die, an intermittently-actuated stop below the die-opening having its traverse extending into the path of the card-blank, and an offset or depression adjacent to the stop in the surface over which the blank passes on its way to the discharge, said depression operating to permit the blank-remnant to escape from the machine while said stop obstructs the passage of a new blank, substantially as and for the purpose described.

6. In a machine for stamping out plates from a blank, the combination with the frame, die, and stamping-tool, of an inclined feed-chute for the blanks leading to the die, an automatically-operated stop whose traverse intersects the path of the blank, and a depression in the surface over which the blank passes on its way to the discharge, operating to permit the escape of the remnant while the stop is in a position to check the passage of a new blank, substantially as and for the purpose set forth.

7. In a card-making machine or the like, the combination with the frame, die-plate, and stamping-tool, of an inclined feed-chute leading to the die, a movable tongue for supporting the card-blank in its movement across the die, a movable stop for checking the downward movement of the card-blank preparatory to stamping a section therefrom, and means for actuating said movable tongue, substantially as and for the purpose set forth.

8. In a card making machine or the like, the combination with the frame, die-plate, and stamping-tool, of an inclined feed-chute leading to the die down which the card-blank gravitates to feed new sections successively beneath the stamping-tool, a stripper over the die-plate, an automatically-operated supporting-plate movable beneath said stripper for supporting the blank in its movement across the die-opening, and an automatically-operated stop for checking the downward movement of the blank preparatory to stamping a card therefrom, substantially as and for the purpose set forth.

9. In a card-making machine or the like, the combination of a frame, inclined die-plate, stamping-tool, inclined feed-chute leading to the die, stripper over the die, automatically-operated tongue movable above the die-opening and beneath the stripper, and an automatically-operated stop for arresting the downward movement of the card-blank prepratory to stamping a card therefrom, comprising a lever provided at one end with a stop and pivoted toward the other end to the frame, a lateral projection at the fore end of said lever, a bell-crank lever pivoted to the frame one arm of which is adapted to engage said lateral projection, and a trip-rod carried by the stamping-tool cross-head for engaging said bell-crank lever on the downstroke to release the stop-carrying lever, and for engaging a projection on said last-mentioned lever on the upstroke to raise the stop, substantially as and for the purpose set forth.

10. In a card-making machine or the like, the combination of a frame, die-plate, stamping-tool, inclined feed-chute leading to the die, and a movable stop for checking the downward movement of the card blank, comprising a lever pivoted toward one end to the frame and provided at the opposite end with a stop and having toward the center of its length a guide, a spring-controlled slide in said guide, and a trip-rod carried by the cross-head of the stamping-tool and engaging said slide to raise the stop, substantially as and for the purpose set forth.

11. In a card-cutting machine or the like, the combination of a frame, die-plate, stamping-tool, inclined feed-chute leading to the die, stripper, automatically-operated stop, and an automatically-operated supporting-plate movable beneath said stripper operating to guide the card-blank over the die-opening but terminating some distance above the path of the stop, whereby the strip above the last perforation of the card-blank is allowed to drop through and pass beneath the stop to admit a new blank to the machine, substantially as and for the purpose set forth.

12. In a card cutting machine or the like, the combination of a frame, inclined die-plate and stamping-tool, inclined feed-chute leading to the die, stripper above the die, automatically-operated stop, and an automatically-operated supporting-plate comprising a tongue carried by an actuating-rod slidable in the frame, a spring-controlled bell-crank lever pivoted to the frame one arm of which engages said supporting-rod, and a trip carried by the stamping-tool cross-head to engage the other arm of said bell-crank to move it against the resistance of the spring, substantially as and for the purpose set forth.

13. In a card-cutting machine or the like, the combination of a frame, inclined die-plate and stamping-tool, inclined feed-chute leading to the die, stripper above the die, automatically-operated supporting-plate beneath the stripper, and an automatically-operated stop, comprising a lever provided at one end with a stop and at the other with a lateral projection and between its ends with an upwardly-extending bifurcated guide and pivotally connected near its front end with the frame, a spring-held slide in said guide projecting to the rear of the guide and provided with a sloping rear end, a spring-controlled bell-crank lever pivoted to the frame having its forward-projecting arm provided with a set-screw, a tripping-lever pivoted to the downward-projecting arm of said bell-crank and adjustable by means of said set-screw, a set-screw in the lower arm of said bell-crank to engage said lateral-projecting pin on said first-mentioned lever, and a trip-rod carried by the cross-head of the stamping-tool for operating the stop through the medium of said slide and trip-lever, substantially as and for the purpose set forth.

14. In a card-cutting machine or the like, the combination of a frame having an inclined top, a die supported thereon, detachable housings resting upon said top and extending at right angles thereto, a stamping-tool operatively mounted in the housings, feed-chute-supporting strips resting upon and attached to said top to incline therewith, and a feed-chute upon said supports and substantially parallel with said top, substantially as and for the purpose described.

15. In a card-cutting machine or the like, the combination with the frame, die, and stamping-tool, of a discharge-chute for the cards inclined downwardly and toward one side of the machine, and a collecting-box into which the cards discharge having a shelf provided with a recess to facilitate the removal of the cards, substantially as described.

609,120. **LUMBER-PILER.** PETER PETERSON, Menominee, Mich. Filed Jan. 17, 1898. Serial No. 666,939. (No model.)

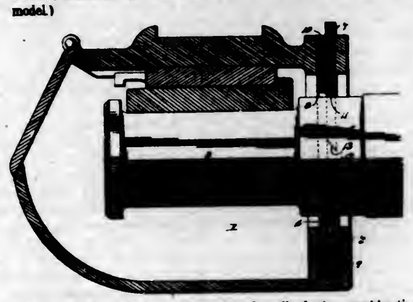


Claim.—1. The combination of the base board, the side rails pivoted at their upper ends on each side of said base-board and connected at their lower ends by the cross-brace, the vertical bar pivoted to said base-board and the lateral arms 13, 13, fixed to said bar, the horizontal plate 15 fixed to said arms, the swivel-bracket 16 mounted on said plate, and the roller 18 journaled in said bracket, as and for the purpose set forth.

2. The combination with the base-board, folding dogs hinged to the upper and lower ends of said board, the vertical bar 10, axially mounted on said board, and the roller 18 horizontally supported by said bar, as and for the purpose set forth.

3. The combination with the base-board 1, the bearing-lugs 12, 12, and the notched rack 23, fixed to said board, the bar 10, axially journaled in said lugs, the arms 13, 13, fixed to said bar, the roller 18, mounted on the outer ends of said arms, so as to rotate on its axis and also in its own horizontal plane, and the hand-lever 20 fulcrumed in said arms and adapted to engage said notched rack, as and for the purpose set forth.

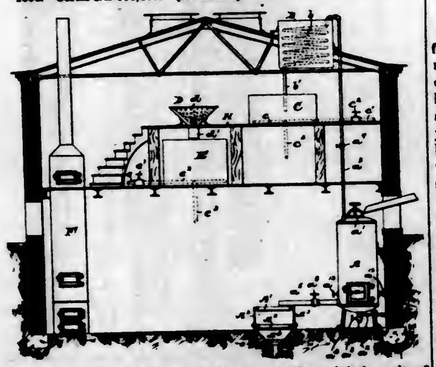
609,121. DUST-GUARD FOR CAR-AXLE BOXES. CLARK G. POTTER, Paducah, Ky. Filed June 30, 1896. Serial No. 594,810. (No model.)



Claim.—1. In a device of the class described, the combination with an axle-box having a dust-guard chamber, and a spring arranged at the bottom thereof, of a dust-guard comprising a plate supported by the spring and extending from the same to the top of the axle-box and provided with an opening to receive an axle, said plate having its upper portion reduced and having the shoulders, formed by such reduction, beveled, and a gravity-plate arranged in the upper portion of the dust-guard chamber, fitting against the upper portion of the said plate and provided at its bottom with a curved bearing edge to engage the upper portion of an axle, the lower edges of the gravity-plate being beveled at opposite sides of the curved edge, substantially as and for the purpose described.

2. In a device of the class described, a dust-guard having an axle-opening and comprising the plate 6 designed to extend from the top to the bottom of an axle-box and having its upper portion reduced, the shoulders formed by such reduction being beveled, and the upper gravity-plate arranged on the reduced portion of the plate 6 and provided at its bottom with a curved bearing edge 11 and having its lower edges 13 beveled to conform to the beveled shoulders, substantially as described.

609,122. APPARATUS FOR RECOVERING AMMONIUM SALTS FROM REFUSE. SAMUEL S. PRIDHAM, Newark, N. J. Filed Oct. 7, 1896. Serial No. 608,108. (No model.)



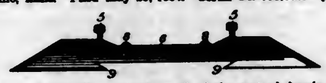
Claim.—1. The herein-described apparatus for reclaiming salts of ammonia from waste products, as animal or fecal matter or slaughter-house refuse, comprising, a tank A, a condensing-tank B, and connecting-pipe a^2, a coil *b* and a pipe *b'*, a tank C and steam-coil in said tank, a strainer, as *d*, a tank E and a steam-coil in said tank, substantially as and for the purposes set forth.

2. The herein-described apparatus for reclaiming salts of ammonia from waste products, as animal or fecal matter or slaughter-house refuse, comprising, a tank A, a condensing-tank B, and connecting-pipe a^2, a coil *b* and pipe *b'*, a tank C and steam-coil in said tank, a strainer, as *d*, a tank E and a steam-coil in said tank, an outlet-pipe a^3 connected with said tank A, and a screen, as A', substantially as and for the purposes set forth.

3. As a means for utilizing the waste products, as animal and fecal matter or slaughter-house refuse, the combination, with a tank A, having an opening *a*, and a perforated plate movably arranged therein, of a condensing-tank B, a connecting-pipe a^2, a coil *b* and a pipe *b'*, a tank C, and steam-coil in said tank, a strainer *d*, a tank E, and a steam-coil in said tank, all substantially as and for the purposes set forth.

4. As a means for utilizing the waste products, as animal and fecal matter or slaughter-house refuse, the combination, with a tank A, having an opening *a*, and a perforated plate, racks connected therewith, pinions meshing with said racks, and means for operating said pinions of a condensing-tank B, a connecting-pipe a^2, a coil *b* and a pipe *b'*, a tank C and steam-coil in said tank, a strainer *d*, a tank E and a steam-coil in said tank, all substantially as and for the purposes set forth.

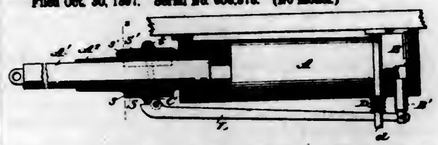
609,128. METALLIC RAILWAY-TIE. HARM A. SAATHOFF, Menlo, Kans. Filed May 29, 1897. Serial No. 638,099. (No model.)



Claim.—1. A railway-tie formed of sheet-steel, having its ends raised centrally to an apex, the inner extremities of said ends being undercut so as to snugly fit upon the flanges of the outer sides of rails *b*, the securing-plate 6 having its ends raised at such an angle as to bear upon the inner flanges of said rails, said plate adapted to be bolted upon the upper face of said tie, substantially as shown and described.

2. A railway-tie formed of sheet metal, having its ends raised centrally to an apex, the inner extremities of said ends being undercut so as to snugly fit upon the flanges at the outer sides of rails 5, the lower sides of the ends of said tie extending below its main portion and so cut as to form inwardly-projecting prongs 9, the securing-plate 6 having its ends raised, the main portions of said tie and securing-plate being provided with apertures which are adapted to register, and the bolts and nuts for binding said plate upon said tie, all substantially as and for the purpose set forth.

609,124. ELECTRIC BRAKE. ERNEST R. SKINNER, Ogden, Utah. Filed Oct. 30, 1897. Serial No. 656,573. (No model.)

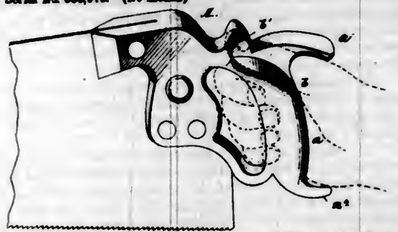


Claim.—1. In an electric brake, a solenoid and plunger therefor for operating the brake mechanism, a second solenoid disposed at right angles to the first-mentioned solenoid, a lever connected at one end to the plunger of the smaller solenoid and at the other end to links which are connected to a plate carrying a shoe, a plate having a projecting portion for engagement with the end of the lever beyond the links, a shoe carried by said plate and a spring positioned between the plunger of the smaller solenoid and the links to operate upon the lever, adjacent to the plunger of the smaller solenoid, substantially as shown and for the purpose set forth.

2. In an electromagnetic brake, a brake for the plunger or piston of the main solenoid consisting of two plates one of them carrying lugs to which a lever is pivoted, a plate having a projecting portion for engagement with the lever beyond the links, a slotted pin or projection through which the lever passes, a spring which encircles said slotted pin so as to bear upon the lever, and a piston or plunger for compressing the spring so as to release the brake-blocks carried by the plates from the brake-operating plunger or piston, substantially as shown and for the purpose set forth.

3. In combination with the magnets or solenoids A, B, having pistons or plungers which are drawn within the same by the current, a lever connected to the plunger of the smaller magnet, a spring mounted on a pin *d* so as to act upon the lever; together with a pair of shoes or blocks, one shoe being connected to the lever by links and the other shoe frictionally engaging with the lever so that the combined weight of the lever, plunger B', and force of the spring will operate when the current is off to draw one of the shoes or blocks against the plunger or piston, and push upon the other plunger or block, substantially as shown and for the purpose set forth.

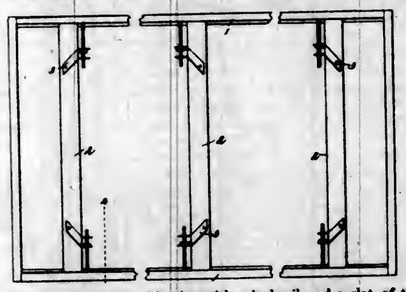
609,125. SAW-HANDLE. ROBERT F. SMITH, Victor, Colo., assignor of one-half to Fred Furch, same place. Filed May 17, 1898. Serial No. 680,978. (No model.)



Claim.—1. A saw-handle provided above the portion thereof which is grasped by the fingers with a laterally-projecting portion which extends beyond the vertical plane of the side of the handle the upper edge of which is convex to provide a thumb-rest, substantially as shown and for the purpose set forth.

2. A saw-handle provided with a grip and finger-opening in front of the same, a thumb-rest which projects laterally from the upper portion of the grip to provide a convex bearing-surface the handle adjacent to the forward and upper end of said projecting portion having a recess the horn above the laterally-projecting portion being curved to join the recess, substantially as shown.

609,126. BED-SLAT FASTENER. EDWIN C. SCHUPAK, Davilla, Tex. Filed Oct. 5, 1897. Serial No. 654,139. (No model.)



Claim.—1. The combination with a bed-rail, and a slat, of the bracket having a clip which embraces and is fastened to the slat and provided with a lug or ear that extends beyond the slat and lies parallel to the line of the bed-rail, and a bolt which passes through the bed-rail and the ear of the clip, substantially as described.

2. The combination with a bed-rail, and a slat, of the bracket having a clip which fits edgewise against, and embraces the faces, of the slat and provided with ears that project beyond one side of the slat parallel to the bed-rail, a bolt passing through the bed-rail and the ears of the bracket, and a nut fitted on the bolt between the bracket-ears, substantially as described.

609,127. BICYCLE-LOCK. WILLIAM I. I. STEARNS, Detroit, Mich. Filed Sept. 4, 1897. Serial No. 650,583. (No model.)

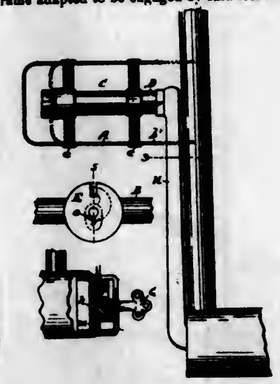
Claim.—1. A bicycle-lock comprising a pedal mounted on a crank and having a movable frame the free ends of which are adapted to stand astride of a tube in the bicycle-frame, substantially as specified.

2. In a bicycle-lock, the combination with a member of the bicycle-frame, a crank, a pedal carried by said crank, the pedal-frame, said frame being movable longitudinally to carry its opposed ends into line with said member of said frame on opposite sides thereof, and means for locking said pedal-frame.

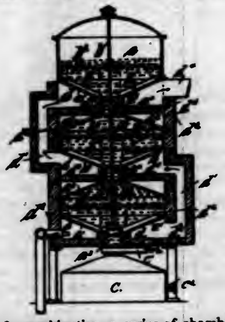
3. In a bicycle-lock, the combination with a member of the bicycle-frame, a crank, a pedal carried by said crank, the frame of said pedal being movable longitudinally into engagement with said member of the bicycle-frame, and means for locking said pedal-frame against longitudinal movement.

4. In a bicycle-lock, the combination with a member of the bicycle-frame, a crank, a pedal carried by said crank, the arms on the pedal, the pedal-frame having longitudinal slots which receive the ends of said arms to permit of the longitudinal movement of said pedal-frame, the inner ends of which are adapted to move to a position astride of said member of the bicycle-frame, and means for locking said pedal-frame in this position.

5. In a bicycle-lock, the combination with a member of the bicycle-frame, a crank, a pedal carried by said crank, the frame of said pedal mounted to slide longitudinally and engage the bicycle-frame, a lock carried by the body of the pedal, and a projecting tongue on the pedal-frame adapted to be engaged by said lock.

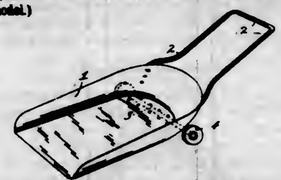


609,128. SALT-PAN. HARRY TEE, Liverpool, England. Filed Apr. 29, 1898. Serial No. 678,260. (No model.)



Claim.—In combination, a series of chambers *a* arranged one above the other and having inclined bottoms and openings axially in line, the necks between the said chambers, the shaft common to all the chambers and extending through the necks, the scrapers connected with the said shaft, the heating-flues *d'* and the partitions d^4 between the chambers, substantially as described.

609,129. COMBINED SCOOP AND HAND-TRUCK. LEVI E. TWIST, Albert Lea, Minn. Filed Feb. 23, 1898. Serial No. 671,247. (No model.)



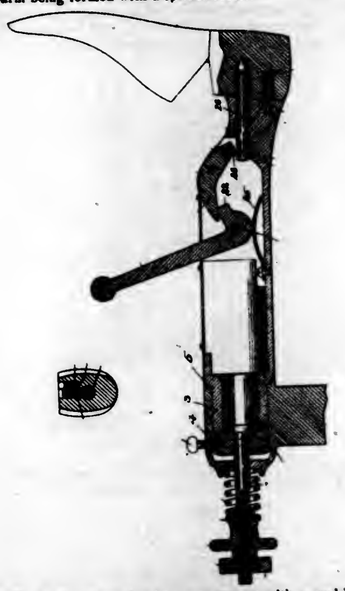
Claim.—The combination with the scoop 1 provided with the bail-like handle 2, of the axle 3, secured to the bottom and rear portion of said scoop, and provided with the truck-wheels 4, substantially as and for the purposes set forth.

609,130. SHOE-TREEING MACHINE. ABEL D. TYLER, Jr., Brockton, Mass. Filed Sept. 2, 1897. Serial No. 650,409. (No model.)

Claim.—1. The combination of a last-arm support; a last-arm journaled therein; a spindle-clutch; a handle engaging with the clutch to lock the spindle, the last-arm being provided with a spindle-recess.

2. The combination of a last-arm support; a last-arm adjustable therein; a spindle-clutch; a spring to return the clutch to inopera-

tive position; a handle engaging with the clutch to lock the spindle, the last-arm being formed with a spindle-recess.



3. The combination of a last-arm support with a rocking last-arm journaled in said support and provided with a rearward arm; a spring thereon and means for keeping the spring under tension; the last-arm being restrained from endwise movement by the spring on one side of the journal-bearing and by abutment of the arm, on the other side of the journal-bearing

4. The combination of a last-arm support with a last-arm journaled therein; the arm being provided with a spindle recess; a pivoted clutch; a handle-lever; and a spring therefor; and the handle-lever fulcrumed on the arm and having a lug which engages with the clutch to throw it into locking position.

5. The combination of a last-arm; a spindle-drawing clutch; and a handle.

6. The combination of a last-arm; a pivoted clutch; a pivoted lever having an extension engaging said clutch at one side of the pivot and a spring cooperating with said clutch to move it into inoperative position when the lever is thrown back.

609,181. MORDANT. GOTTLOB WIEDLER, Manchester, England. Filed July 30, 1897. Serial No. 646,453. (No specimens.) Patented in England May 3, 1897, No. 10,933.

Claim.—The hereinbefore-described composition of matter adapted for use as a mordant, consisting of or containing sixty parts by weight of commercial sulfuric acid, one hundred parts of calcined alkaline sulfate such as sodium sulfate and fifteen parts of boracic acid.

609,182. HORSESHOE. ROBERT S. WIESENFELD, Baltimore, Md. Filed Sept. 22, 1897. Serial No. 652,572. (No model.)



Claim.—1. A horseshoe having a channeled under face, the walls of the channel being continuous, and a series of projections extending from the bottom of the channel and arranged radially between the walls thereof, said projections being of greater height than the walls of the channel and of less extent than the width of the channel, substantially as described.

2. A horseshoe having a channel on its under face, a series of projections extending across between the walls of the channel and projecting from the bottom of the channel, and a series of longitudinally-extending projections alternating with the lateral projections, substantially as described.

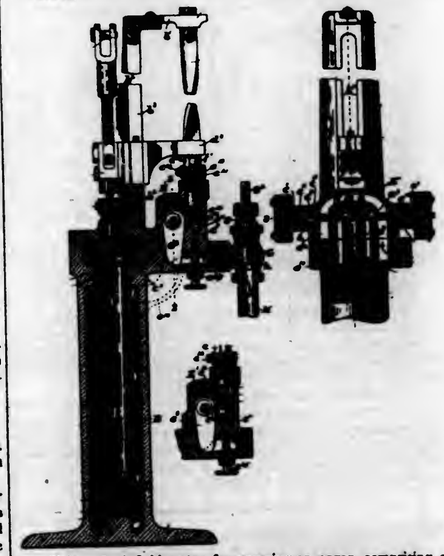
3. A horseshoe having a channel on its under face, a removable plate or plates therein, and a series of projections extending laterally of said plates, with means for holding the plates in position, substantially as described.

4. A horseshoe having a channel on its under face, a removable plate or plates therein, a series of projections carried by said plates, and holding means for said plates extending from the bottom of the channel, and supplemental holding means extending between the walls of the channel above the removable plates, substantially as described.

5. A horseshoe having a channel on its under face, a removable plate or plates therein with projections extending from the plates, and holding-pieces passing through the walls of the channel and extending over the plate, substantially as described.

6. A horseshoe having a channel on its under face, a plate or plates carrying projections fitted to said channel, said plates having projections on one edge, and holding means for said plates extending between the walls of the channel, substantially as described.

609,183. FLUID-MOTOR FOR PIPE-ORGANS. THOMAS H. WYER, Boston, Mass. Filed Sept. 20, 1897. Serial No. 652,260. (No model.)



Claim.—1. A fluid-motor for pumping an organ, comprising a hollow water-column or support, a cylinder detachably mounted therein, and detachable therefrom without interference with the water-column, a piston to reciprocate in said cylinder, and mechanism cooperating therewith to actuate said piston, substantially as described.

2. A fluid-motor, comprising a hollow water-column, having a central annular shoulder at its upper end, a cylinder held by and having threaded engagement with said shoulder, said cylinder extending at its upper end above said shoulder and at its lower end below the same, and being provided adjacent its ends with ports, a piston reciprocable in said cylinder, and mechanism to operate said piston, substantially as described.

3. A fluid-motor, comprising a hollow water-column, having a central annular shoulder at its upper end, a cylinder held by and having threaded engagement with said shoulder, said cylinder extending at its upper end above said shoulder and at its lower end below the same, and being provided adjacent its ends with ports, the ends of said cylinder being open, and the adjacent ends of the water-column having projecting bosses overlapping said open ends with an annular space therebetween constituting auxiliary ports, for the purpose specified, a piston reciprocable in said cylinder, and mechanism to operate said piston, substantially as described.

4. A fluid-motor, comprising a water-column, having an internal annular shoulder adjacent one end, a cylinder mounted therein and extending at the opposite sides of said shoulder, said cylinder being provided with ports at its opposite ends, independent chambers in said water-column separated by said internal shoulder, a stand b^3 mounted at one end of said water-column, a piston and piston-rod for said cylinder, a head carried by said rod and reciprocable in ways provided therefor in said stand, said head having a bifurcated end, a twisted blade rotatably mounted parallel to said ways and embraced on its opposite sides by said bifurcated end, a valve loosely connected to said blade to be intermittingly rocked thereby, a slide-valve, a valve-chamber therefor, said slide-valve being provided intermediate its ends with cut-off shoulders and at its ends with cushioning devices, end recesses in said chamber receiving said cushioning ends of the valve, passages from said end recesses to said rock-valve adapted to be controlled thereby, a central outlet from said chamber, a passage connecting therewith from the rock-valve, and passages from said valve-chamber to the water-column, substantially as described.

5. A fluid-motor, comprising a water-column, having an internal annular shoulder adjacent one end, a cylinder mounted therein and extending at the opposite sides of said shoulder, said cylinder being provided with ports at its opposite ends, independent chambers in said water-column separated by said internal shoulder, a stand b^3 mounted at one end of said water-column, a piston and piston-rod for said cylinder, a head carried by said rod and reciprocable in ways provided therefor in said stand, said head having a bifurcated end, a twisted blade rotatably mounted parallel to said ways and embraced on its opposite sides by said bifurcated end, a valve loosely connected to said blade to be intermittingly rocked thereby, a slide-valve, a valve-chamber therefor, said slide-valve being provided intermediate its ends with cut-off shoulders and at its ends with cushioning devices, end recesses in said chamber receiving said cushioning ends of the valve, passages from said end recesses to said rock-valve adapted to be controlled thereby, a central outlet for said chamber, a passage connecting therewith from the rock-valve, passages from said valve-chamber to the water-column, a plunger controlling the outflow from said outlet, and means automatically operating said plunger, substantially as described.

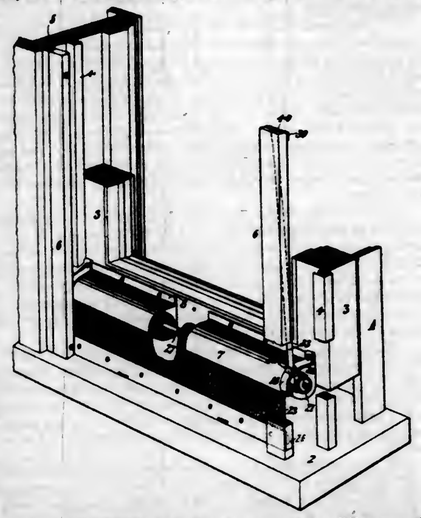
6. A fluid-motor, comprising a water-column, having an internal annular shoulder adjacent one end, a cylinder mounted therein and extending at the opposite sides of said shoulder, said cylinder being provided with ports at its opposite ends, independent chambers in said water-column separated by said internal shoulder, a stand b^3 mounted at one end of said water-column, a piston and piston-rod for said cylinder, a head carried by said rod and reciprocable in ways provided therefor in said stand, said head having a bifurcated end, a twisted blade rotatably mounted parallel to said ways and embraced on its opposite sides by said bifurcated end, a valve loosely connected to said blade to be intermittingly rocked thereby, a slide-valve, a valve-chamber therefor, said slide-valve being provided intermediate its ends with cut-off shoulders and at its ends with cushioning devices, end recesses in said chamber receiving said cushioning ends of the valve, passages from said end recesses to said rock-valve adapted to be controlled thereby, a central outlet from said chamber, a passage connecting therewith from the rock-valve, passages from said valve-chamber to the water-column, a plunger controlling the outflow from said outlet, means automatically operating said plunger, and a hand-plug between said plunger and the slide-valve for regulating the outflow from the rock-valve to said outlet, substantially as described.

7. In a fluid-motor, the herein-described loose connection for intermittingly operating the controlling-valve, in combination with said controlling-valve, a slide-valve, ports from the latter, and passages between said valves, said loose connection comprising a twisted blade extending in alinement with the rotary valve, the latter having opposite lugs projecting therefrom, and the twisted blade having a pin extending transversely across its end between said lugs, the space between said lugs being greater than the width of said pin, a bifurcated head in sliding engagement with said blade, and means for reciprocating said head, substantially as described.

609,184. WINDOW-SCREEN. GROVE R. BECKWITH and WILLIAM F. MCCOLLUM, Minneapolis, Minn., assignors, by direct and mesne assignments, to Thomas Cochran, Jr., St. Paul, Minn. Filed Jan. 31, 1896. Serial No. 663,519. (No model.)

Claim.—1. In a device of the class described, in combination, a frame, a sliding sash, a roll, a screen fabric attached thereto and expansively resilient as coiled thereon, and means for automatically rotating said roll to impart a predetermined peripheral speed of the superposed coils variable with respect to the travel of the sash, whereby the resiliency of said coils compensates for such variable speed, as and for the purposes set forth.

2. In combination with the frame and sliding sash, the roll, the means controlled by the travel of the sash for positively rotating the roll at a predetermined relative speed, and a resilient screen attached to and adapted to be wound upon said roll by its rotation, the elasticity of its coils compensating for the varying tension upon the screen.



3. In combination with the fixed part and the sliding part, the roll journaled on one part, the resilient screen attached to and coiled thereon, the drum upon said roll, and the ribbon wound thereon oppositely to the windings of the screen, the free end of both ribbon and screen being normally fixed to the other part whereby the resiliency of the screen maintains substantially constant tension upon both screen and ribbon.

4. In a structure of the class described, the combination with the frame, the sliding sash, the roll journaled on the sash, the resilient screen attached to and wound upon said roll, the means for detachably connecting the free end of the screen with the frame, and the winding-ribbon attached to said roll, of the slip connection for the free end of the ribbon with the frame, as and for the purposes set forth.

5. In combination the sheet-metal screen-case having overlapping open hems, and the brackets having spurs entering said hems; flanges overlapping the abutting ends of the case and flanges projecting into the spaces between the window parting-beads and stops, as and for the purposes specified.

6. In an apparatus of the class described, a sheet-metal screen-case, folded upon itself to form an attaching-flange, and having edges formed into overlapping open hems constituting a guide-slot for the screen, brackets having spurs entering and positioning said hems, and being secured to the case by tongues upon the latter passed through slots in the brackets and clenched, and flanges upon the brackets overlapping the abutting ends of the case.

7. In an apparatus of the class described, in combination with a screen-roll, a ribbon-drum thereon having a peripheral eye to receive a loop of the ribbon formed by cutting away the drum with a bar spanning the opening substantially parallel to the axis of the drum, as and for the purposes specified.

8. In a window-screen, the combination, of a window-frame and sliding sash, with a longitudinally-slotted barrel adapted to be attached to said sash, a roll journaled in said barrel, a resilient screen fabric attached to said roll and also to the window-frame, to be drawn from the said barrel by the opening movement of said sash, and an inelastic cord or tape having a normally-fixed point of attachment actuated by the closing movement of the sash to rotate said roll and draw the fabric into said barrel, substantially as described.

9. The combination, in a window-screen, of a longitudinally-slotted barrel, with a roller arranged therein, resilient screen fabric attached to said roller expanded within said barrel, and extending through the slot in said barrel, and an inelastic tape or band attached to said roller and wound thereon oppositely to said fabric, and having a relatively-fixed point of attachment, substantially as described.

10. The combination in a window-screen, of a window-frame and sliding sash, with a barrel or case mounted upon said sash and provided with a longitudinal slot, a roller to rotate within said case or barrel, a stiff resilient screen fabric having one end attached to said

roller, and having the other end extended through the slot in said barrel and attached to the window-frame, and a winding-tape attached to and wound upon said roller, and having a fixed point of attachment to said frame, whereby said roller is actuated by the movement of the sash, to lead the fabric into said barrel, substantially as described.

11. In combination, with a window and a sliding sash, a barrel or case mounted upon the sash, and having a longitudinal slot formed by the overlapping edges thereof, a roller journaled in said case, a stiff resilient screen fabric having one end attached to said roll and extending through the slot in said barrel, a wedge-shaped strip carried by the other end of the fabric and adapted to be attached to the window-frame, and to closely fit into the slot in said case when the sash is closed, and a winding-tape connected to said roll, and having a fixed point of attachment to said frame whereby it is actuated by the closing of the sash to turn said roll and lead the fabric into the barrel.

12. In an attachment of the class described, in combination, a barrel or case for the screen-fabric coil mounted upon the sash and having a longitudinal opening formed by one edge thereof overlapping, but spaced from, the other edge and through which opening the screen fabric travels, means for carrying the fabric into and out of said barrel, a wedge-shaped strip secured to the outward end of the fabric, and having an oscillating connection with the frame and adapted to fit into the opening in the barrel.

13. In an attachment of the class described, a barrel or case for the coil of screen fabric, formed of sheet metal and substantially cylindrical in shape, the edges thereof being brought adjacent to but not in contact with each other, and each provided with a hem or fold, in combination with the end plates for said case, having prongs entering said hems so as to position the same, substantially as described.

14. The combination, in a window-screen, of the tubular guard or casing, with the shaft or roller provided therein, the wire-screen fabric coiled within said guard or casing, the inner end of said fabric being attached to said roller, the differential pulley provided in connection with said roller and within said casing, the ribbon or band arranged upon said pulley and having one end attached thereto, and a slot in said casing through which the other end of said ribbon is carried, substantially as described.

15. The combination, in a roller or automatic window-screen of the window frame and sash, with a coil of wire-screen fabric, means for securing the outer end of the coil, said coil and outer end being connected respectively with the window-sash and the window-frame, turn-buttons on said frame to hold the edges of the fabric when drawn from the coil, and said turn-buttons being automatically operated by the movement of the window-sash, substantially as described.

609,135. DAMPER-FASTENER FOR STOVES OR STOVEPIPES.

JOHN H. BENSON and LOUIS GREENWALD, Leadville, Colo. Filed Mar. 25, 1898. Serial No. 675,094. (No model.)



Claim.—1. A device of the class described comprising a plate or body portion, a yoke arranged at one side of the plate or body portion, adapted to receive the shank of a damper and having one side free, a bracket located at the opposite side of the plate or body, and an adjusting device connecting the free side of the yoke with the bracket, substantially as described.

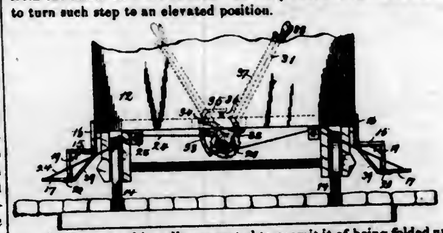
2. A device of the class described comprising a plate having one side bent to form a bracket, and having its opposite side extended and bent to form a yoke, and an adjusting screw or bolt connecting one side of the yoke with the bracket, substantially as described.

3. A device of the class described comprising a plate or body portion, a yoke arranged at one side of the plate or body portion, adapted to receive the shank of a damper and having one side free, an L-shaped bracket located at the opposite side of the plate or body, and an adjusting screw or bolt connecting the free side of the yoke with the bracket, substantially as described.

609,136. FOLDING CAR-STEP.

FRANK M. BICKELBERGER, Hyde Park, Ohio, assignor of one-half to William Bauer, Oakley, Ohio. Filed Mar 26, 1898. Serial No. 675,077. (No model.)

Claim.—1. A car-step hingedly connected to its riser to permit it of being folded up, brackets rigidly connected to and projecting from the latter on which it rests when in position for use and means to turn such step to an elevated position.



2. A car-step hingedly connected to permit it of being folded up, means to support it when in position for use, a winding-drum mounted on the car, a flexible connection between it and the step, a ratchet-wheel so mounted as to rotate with the drum, an operating-lever to rotate the two, a pawl on said lever to engage the ratchet-wheel, a locking-pawl to prevent the drum from unwinding and means to release the latter from the engagement with such pawl.

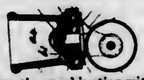
3. A car having two steps on one side, each step having a riser to which it is hingedly secured, brackets on each riser to support the steps thereon when in position for use, hinges whereby the riser of the lower step connects to the upper step, braces to prevent the lower step from swinging on the upper step when in position for use and means to fold steps and risers up against each other and against the side of the car.

4. A car having two steps on one side, each step having a riser to which it is hingedly secured, brackets connected to and projecting forwardly from each riser and upon which the steps rest when in position for use, hinges whereby the riser of the lower step connects to the upper step, means to fold steps and risers up against each other and against the side of the car and means acting automatically between the two steps, to hold the lower one rigid on the upper one when in position for use and to release the same to permit closing up.

5. A car having two steps on one side, each step having a riser to which it is hingedly secured, brackets on each riser to support the steps thereon when in position for use, hinges whereby the riser of the lower step connects to the upper step, the adjoining ends of the two sections of such hinges being inclined as shown at 45 to cause them to slip apart when one turns on the other, whereby the riser of the lower step receives a corresponding lengthwise adjustment, the hinge-pins of such hinges being of a sufficient length to permit such separation of the hinge-sections, a spring 46 to draw them together, means to fold steps and risers up against each other and against the sides of the car, a bracket 43 on the upper step and a pin 44 on the riser of the lower step, the two adapted to engage or disengage each other by the longitudinal movement of the lower step due to the separation of the hinge-sections as and for the purpose explained.

609,137. FURNITURE-CASTER.

FREDERICK J. BURRELL, Thetford, England. Filed Sept. 14, 1897. Serial No. 651,654. (No model.) Patented in England Feb. 6, 1896, No. 2,569.



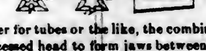
Claim.—In a caster, the combination with a top portion, a shoulder formed on the lower extremity thereof and a downwardly-directed annular flange projecting from the outer extremity of said shoulder of a bottom portion surmounted by a hollow cap adapted to pass between said shoulders, and an outwardly-directed annular flange at the base thereof, ball-bearings seated between said cap and said first-mentioned flange, and between said shoulder, and said last-named flange, of a pivot provided with an extended head adapted to be seated in said cap and ball-bearings seated between said head, and the interior of said cap and a roller supported by said lower portion, substantially as described.

609,138. TUBE-CUTTER.

FREDERICK J. BURRELL, Thetford, England. Filed Dec. 16, 1897. Serial No. 662,107. (No model.) Patented in England Sept. 22, 1894, No. 18,041.

Claim.—1. In a cutter for tubes or the like, a cutter triangular in cross-section having three cutting edges longitudinally tapered and adapted to slide in the jaws of a hand-tool to wedge between the same and the article to be cut, substantially as described.

2. In a cutter for tubes or the like, the combination with a blade having a beveled cutting edge tapered longitudinally and having longitudinal grooves therein, of a clip provided with side flanges to clasp the jaw of a hand-tool, and means whereby said clip is secured to said jaw, said clip being longitudinally ribbed to receive the groove of the cutter, substantially as described.



3. In a cutter for tubes or the like, the combination with a hand-tool having a recessed head to form jaws between which a tube may be inserted, of a blade having a beveled cutting edge longitudinally tapered and having longitudinal grooves therein, one of said jaws being provided with a longitudinally-extended rib adapted to coact with the groove in said blade, substantially as described.

4. In a cutter for tubes or the like, the combination with a spanner or the like, of a cutter comprising a cutter triangular in cross-section having three beveled cutting edges tapered longitudinally, and having longitudinally-extended grooves therein between each tube and said cutting edges, said spanner being provided with ribs adapted to coact with said grooves to limit the movement of said cutter, substantially as described.

5. In a cutter for tubes or the like, the combination with a blade having a beveled cutting edge, longitudinally-extended grooves therein and tapered longitudinally, of a clip comprising two plates, ratchet-teeth thereon and downwardly-extended flanges whereby said clip is secured to said jaw, said clip being provided with a rib adapted to coact with the groove of said blade, substantially as described.

609,139. CHIMNEY-HOLDER FOR LAMP-BURNERS.

GEORGE W. CARVER, Brookline, Mass. Filed Aug. 26, 1897. Serial No. 649,586. (No model.)



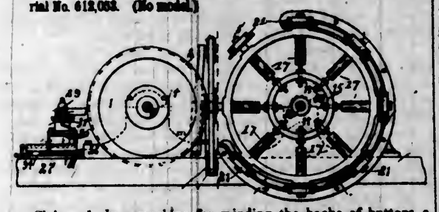
Claim.—1. The combination with a lamp-burner of a chimney-holding attachment consisting of a band of corrugated wire whose folds render the band contractile and afford a broad annular bearing upon the body of the chimney, and from which a series of elongated loops are extended downward and secured to the burner-base to uphold the band; all substantially as and for the purposes specified.

2. The combination with a lamp-burner of a chimney-holding attachment consisting of a band of corrugated wire whose folds render the band elastic and afford a broad annular bearing upon the circumference of the chimney, the upper circular edge of the band being flared and supported upon loops, formed of the same wire as the band, extending downward therefrom and secured to the base of the burner, as and for the purposes specified.

3. The combination with a lamp-burner of a chimney-holding attachment, consisting of a band of corrugated wire whose folds render the band elastic, and are so formed as to narrow the band to leave an open space in the lower edge thereof, the band being supported upon arms extended downward therefrom and attached to the base of the burner; all substantially as and for the purposes specified.

609,140. MACHINE FOR GRINDING BACKS OF BUTTON-BLANKS.

ROSWELL W. C. CLEVELAND, Philadelphia, Pa., assignor of one-half to Stewart P. Wharton, same place. Filed Nov. 14, 1896. Serial No. 612,053. (No model.)



Claim.—1. In a machine for grinding the backs of buttons, a grinding-wheel, means of rotating the same, a series of contractible and expansible chuck-jaws, a wheel supporting the same arranged to rotate with said chucks about a common axis, screws and nuts arranged to independently adjust said chuck-jaws in radial direction to and from said axis, said supporting-wheel having bearings therein holding said chucks rotatably each upon its own axis, and susceptible of sliding radially therein, and means to close said chucks and press them toward the grinding-wheel, in combination with a stationary cam arranged to open said chucks, all arranged to operate substantially as set forth.

2. In a button-grinding machine, the combination with a series of spring-chucks, the wheel supporting the chucks, a grinding-wheel, and means for operating the grinding-wheel, of a pulley attached to each chuck, an endless traveling band, and the adjustable wheels bearing upon said band to make a propelling contact only at the point where the button-blanks engage the grinding-wheel, substantially as set forth.

609,141. DOP FOR DIAMOND CUTTING AND POLISHING.

HERBERT COOPER, Jersey City, N. J., assignor of eleven-twentieths to Isidore Stern, New York, N. Y. Filed Nov. 5, 1896. Serial No. 611,118. (No model.)



Claim.—1. The combination in a dop, of the stem 12 secured to the dop, an adjustable clamp having a stem and a plurality of independently-movable gripping-fingers, said clamp being bodily adjustable in the direction of the length of the clamp-stem, means for securing said clamp in its position of adjustment, and a detachable stone-socket secured in the dop within the plane of movement of said fingers, substantially as described.

2. In a dop, the combination with the perpendicular stem 12, the dop-section 1 secured to the stem and provided with an upwardly-curving slot, the section 2 bodily adjustable in a circular and perpendicular arc on section 1, and a transversely-extending bolt passing through the slot in section 1 and secured to the section 2, whereby said adjustment is had, the section 2 having a clamping mechanism for holding a stone, substantially as described.

3. The combination with the stem 12 secured to the section 1, the section 2 bodily adjustable in a circular and perpendicular arc on section 1, and a clamp carried by section 2 having a stem adjustable in the direction of its length, and securing means for said clamp, substantially as described.

4. In a dop, the combination with the stem 12, the dop-section 1 secured thereto, the section 2, both sections having horizontal and perpendicular faces 3, 4, 5, 6, thereby forming an interlocking guide, a horizontally-disposed bolt 10 extending out from the section 2, and passing through an upwardly-extending and segmental slot formed in the section 1, a nut on the bolt, and a stone-clamping mechanism carried by section 2, substantially as described.

5. The combination in a dop, of a clamp comprising a stem and a plurality of independently-movable gripping-fingers extending therefrom, the stem being movable in the dop, means for holding a stone in the dop located within the plane of movement of said fingers, and a bolt for securing the fingers and clamp in position in relation to said means, substantially as described.

6. In a dop, the combination with a dop section having a supporting-stem, a second dop-section supported on the first section so as to be vibrated upwardly in the plane of an arc of a circle, a stone-clamp in said rotatable section having a stem movable in the direction of its length and normally disposed at an angle to said supporting-stem and adapted to be moved into parallelism therewith, feet on the stem, a stone-socket in the latter section within the plane of movement of said feet, and means for securing said clamp-stem in position, substantially as described.

7. In a dop, the combination with the clamp-stem movable in the dop and comprising a plurality of shanks having gripping-feet, a stone-securing socket in the dop and a screw-operated bolt in the dop embracing said shanks and binding said stem in place, substantially as described.

8. The combination in a dop having a stem, of a clamp comprising a stem, a plurality of shanks provided with gripping-fingers, said shanks being adjustable in the direction of their length, and means for securing said shanks in their position of adjustment in said dop, substantially as described.

9. The combination in a dop, of a clamp comprising a central stem and gripping-fingers having shanks rotatable about and movable lengthwise on said stem, the clamp being bodily adjustable in the dop in the direction of its length, and means for securing said clamp and fingers in either of its or their positions of adjustment in said dop, substantially as described.

10. The combination in a dop, of an adjustable clamp provided with adjustable gripping-fingers, and means for securing said clamp

and fingers in their position of adjustment in said dop, substantially as described.

11. The combination in a dop, of the clamp having a stem movable in the direction of its length, and clamping-feet extending outwardly from said stem, and means for adjustably securing said stem in the dop, said means engaging the stem and being movable transversely of said stem, substantially as described.

12. The combination in a dop, of a clamp comprising a stem and adjustable clamping-feet extending therefrom, a socket for receiving a stone secured to the dop within the plane of movement of said feet, and means for longitudinally adjusting said clamping-feet in relation to the socket, substantially as described.

13. In a dop, the combination with the body thereof, of a clamp having a stem and outwardly-projecting clamping-feet, said feet being separable, a socket, and means for adjustably securing said feet in relation to said socket, substantially as described.

14. In a dop, the combination with the body thereof, of a clamp comprising the stem, and feet extending therefrom, said feet being adjustable longitudinally on the stem in relation to each other, a socket held in said body, and means for securing said feet in their position of adjustment in relation to said socket, substantially as described.

15. The combination with the dop-section, of the longitudinally-movable bolt having an apertured eye, an aperture formed in the said section for receiving said bolt, further apertures formed in said body whose axes cross the first-mentioned aperture, a clamp having a stem passing through said latter apertures and an aperture formed in the eye of the bolt, and outwardly-extending clamping-feet on said clamp, substantially as described.

16. The combination with the dop-section, of the longitudinally-movable bolt having a threaded shank 21 and an enlarged apertured collar 22, and a clamp having a circular stem passing through apertures in the said section and embraced by said collar, and outwardly-extending feet on said clamp, substantially as described.

17. The combination in a dop, of a clamp having a longitudinally-movable stem and separable gripping-feet extending therefrom, a socket detachably secured in said dop, and means for securing said feet in their position of adjustment over said socket, substantially as described.

18. A clamp comprising the separable shanks, having independent feet, and means for securing the said shanks revolubly upon each other, substantially as described.

19. The combination with the clamp-shanks, each having an outwardly extending foot, and means for securing the shanks together, substantially as described.

20. The combination with the clamp-shanks, each having an independent foot, a central circular pillar partly embraced by said shanks, and means for securing said shanks rotatably upon each other, substantially as described.

21. The combination with the segmental shanks, the central pillar secured to either of said shanks, each of the shanks having circumferential grooves, and a ring in said groove for securing said shanks together, each of the shanks having independent projecting feet, substantially as described.

22. The combination with the segmental clamp-shanks, a central circular pillar 28 secured to either of said shanks, a pin secured to either of said shanks and said pillar, and a slot formed in the opposite shank through which said pin passes, substantially as described.

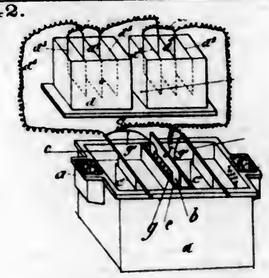
23. The combination with the segmental clamp-shanks, each shank having an outwardly-projecting, foot, circumferential grooves formed in the said shanks, a ring embracing said shanks in said grooves, the ring being of a width smaller than the longitudinal width of the grooves, substantially as described.

24. The combination with the segmental clamp-shanks, of the interposed pillar, a pin extending from said pillar, a slot in one of said shanks into which said pin projects, said slot being longitudinally wider than the diameter of said pin, substantially as described.

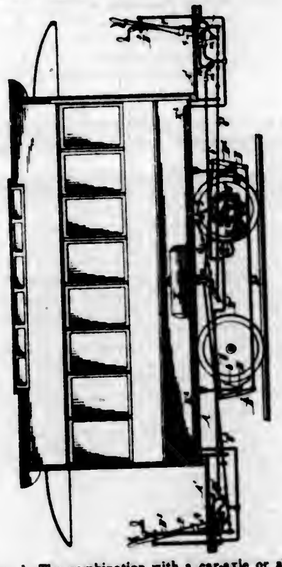
609,142. COMBINED BATTERY AND ELECTRIC CELL. JULES C DAGONEAU, Beaufort, France. Filed Jan. 15, 1896. Serial No. 634,997. (No model.)

Claim.—In a combined battery and electrolytic cell, the combination of a cell or container *a* containing sulfate of copper, an interior cell or container contained therein and comprising a rectangular framework of slats *f''* and membranes *f'* secured upon this framework and constituting the walls of the interior cell, a zinc element and dilute sulfuric acid contained in the said interior cell, suspension-bars *c* adapted to suspend the articles to be plated, circuit connections between the zinc plate and the bars *c* and one or more perforated lead plates in the interior cell upon which a copper deposit will be made.

609,142.



609,143. CAR-BRAKE. PAUL S. DUBEL, New Orleans, La. Filed Sept. 15, 1897. Serial No. 651,706. (No model.)



Claim.—1. The combination with a car-axle or similar rotary part and a drum mounted thereon, of a split brake or clutch band applied to said drum and adapted to turn therewith when tightened, a cylinder connected with one end of said band, a piston operating in said cylinder and connected with the opposite end of the band, said cylinder and piston being carried by the band so as to turn therewith, a conduit for supplying fluid under pressure to said cylinder, and a flexible connection extending from said brake-band to a relatively stationary part of the car and adapted to be wound upon said drum when the band is tightened, substantially as set forth.

2. The combination with a car-axle or similar rotary part, a brake-gear and brake-shoes operated by said gear, of a drum mounted on said axle or rotary part, a split brake-band applied to said drum and adapted to turn therewith when tightened, a cylinder connected with one end of said brake-band, a piston arranged in said cylinder and connected with the opposite end of the band, a conduit for supplying fluid under pressure to said cylinder, and a chain or cable connecting said band with the brake-gear and adapted to be wound upon said drum when the band is tightened, substantially as set forth.

3. The combination with a car-axle or similar rotary part and a drum mounted thereon, of a brake or clutch band applied to said drum, a cylinder connected with one end of said band, a piston arranged in said cylinder, a rod connecting the piston with the opposite end of said band, and an adjusting-bolt interposed between the piston and said rod for taking up wear, substantially as set forth.

4. The combination with a car-axle or similar rotary part and a drum mounted thereon, of a brake or clutch band applied to said drum, a cylinder connected with one end of said band, a piston arranged in said cylinder, rods connected at one end with the opposite end of said band and united at their front ends by a cross-head, and an adjusting-screw carried by said cross-head and provided with a serrated collar which interlocks with a serrated surface of the piston, substantially as set forth.

5. The combination with a car-axle or similar rotary part and a drum mounted thereon, of a brake or clutch device cooperating with said drum, a cylinder and piston for applying said brake or clutch device, a pump for delivering fluid under pressure to said cylinder, a discharge pipe connected with said cylinder and provided with a valve, a hand-lever for operating said pump extending above the car-platform, a releasing-shoe arranged to slide on said hand-lever and adapted to operate upon the stem of said valve for opening the latter, and a releasing-lever pivoted adjacent to the handle of said pump-lever and connected with said releasing-shoe, substantially as set forth.

6. The combination with a car-axle or other rotary part, and a drum mounted thereon, of a clutch or brake device cooperating with said drum, a cylinder and piston for applying said clutch or brake device, a pump having a piston provided with a hollow piston-rod, a supply-tank connected with the pump-cylinder, a valve-casing connected with the hollow piston-rod, a supply-pipe leading from said valve-casing to the operating-cylinder of the clutch or brake device, and a return-pipe leading from said valve-casing to said supply-tank, said hollow piston-rod being provided with a check-valve which prevents the returning fluid from entering the pump-cylinder and the return-passage of the valve-casing being provided with a check-valve which prevents the pumped fluid from passing directly into the return-pipe, substantially as set forth.

609,144. LOCK-NUT. EDGAR A. GODDIN, London, England. Filed Mar. 1, 1897. Serial No. 626,450. (No model.) Patented in England Jan. 27, 1896, No. 1,960.



Claim.—1. A lock-nut, or other equivalent part or parts, having two or more uniformly-threaded sections or zones, and provided with one or more elastic or spring portions between them uniform in extent or elasticity on all sides of the nut, and thereby exerting uniform action on all sides of the nut-axis, each section having considerable relative depth and being provided with threads having a plurality of complete turns therein, said sections being non-rotatable relatively to each other and being normally held out of pitch but still parallel with each other by said spring portions, substantially as described.

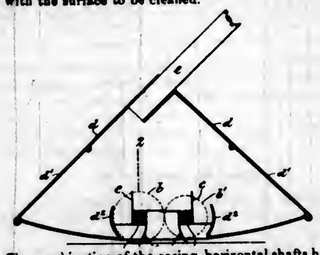
2. A lock-nut, or other equivalent part or parts having two or more uniformly-threaded sections or zones and provided with one or more elastic or spring portions between them exerting uniform action on all sides of the nut-axis, said sections on their inner or threaded edges being separated by an annular space transverse to, uniform at all sides about, and diametrically opposite, the nut-axis, each section having considerable relative depth and being provided with threads having a plurality of complete turns therein, said sections being non-rotatable relatively to each other and being normally held out of pitch and parallel with each other by said spring portions, substantially as described.

3. A lock-nut, or other equivalent part or parts, having two or more uniformly-threaded sections or zones and provided with one or more elastic or spring portions between them exerting uniform action on all sides of the nut-axis, said sections on their inner or threaded edges being separated by an annular space transverse to the nut-axis, and on their outer edges or walls being separated by a peripheral slit extending uniformly and only partially through to the inner threaded portion of the nut, each section having considerable relative depth and being provided with threads having a plurality of complete turns therein, said sections being non-rotatable relatively to each other, and being normally held out of pitch with each other by said spring portions, substantially as described.

4. A lock-nut, comprising two or more uniformly-threaded sections or zones, and provided with one or more elastic or spring portions between them exerting uniform action on all sides of the nut-axis, said sections on their outer edges or walls being separated by a peripheral slit extending uniformly and only partially through to the inner threaded portion of the nut, each section having considerable relative depth and being provided with threads having a plurality of complete turns therein, said sections being non-rotatable relatively to each other, and being normally held out of pitch with each other by said spring portion, substantially as described.

609,145. CARPET-SWEEPER. CHARLES J. HARVEY, Kidderminster, England. Filed Dec. 24, 1897. Serial No. 663,236. (No model.)

Claim.—1. The combination of a pair of shafts, means for supporting them and causing them to rotate, flexible flaps connected to and moving with one shaft and adapted to move over and in contact with the surface to be cleaned, and flexible flaps connected to and moving with the other shaft and also adapted to move over and in contact with the surface to be cleaned.



2. The combination of the casing, horizontal shafts having bearings in the casing, a roller carried by one shaft and adapted to move over the surface to be cleaned, a roller carried by the other shaft out of contact with the surface to be cleaned, and driven by the first-mentioned shaft, flexible flaps on one roller and flexible flaps on the other roller overlapping the flaps on the first-mentioned roller.

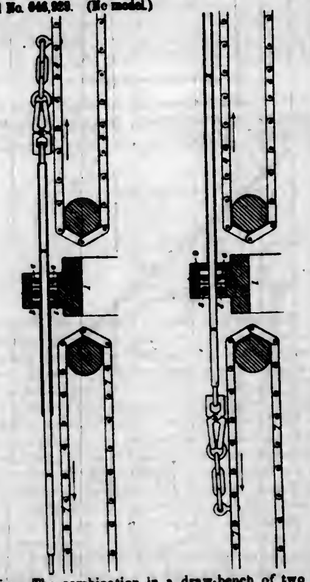
609,146. WRENCH. HUBERT C. HART, Unionville, Conn. Filed Dec. 22, 1897. Serial No. 662,976. (No model.)



Claim.—1. As a new article of manufacture, a sliding jaw, strap, and pintle for a wrench stamped from a single piece, the blank being bent centrally of its width to form the strap and than brought together and riveted to form the jaw and pintle, substantially as set forth.

2. A wrench consisting of a handle having a fixed jaw, and having teeth of screw pitch on one of its edges, a sliding jaw and strap consisting of a piece of plate metal bent into shape and riveted together and provided with an integral pintle, and a screw swiveled upon said pintle and engaging the teeth of the handle, substantially as set forth.

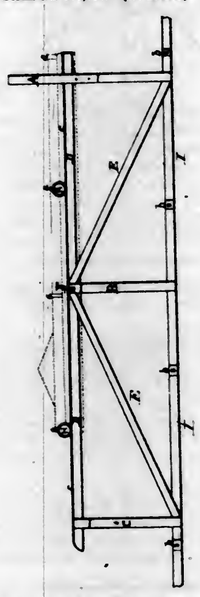
609,147. MACHINE FOR MANUFACTURING SEAMLESS DRAWN TUBES. ELLWOOD IVINS, Philadelphia, Pa. Filed Aug. 3, 1897. Serial No. 646,929. (No model.)



Claim.—The combination in a draw-bench of two oppositely-moving draft chains, an interposed fixed structure having a set of

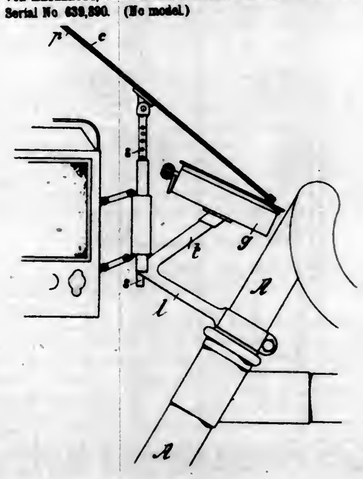
pressure-rolls adapted to bearings therein, and having on each side of said rolls a bearing or seat, a removable reducing draw-plate adapted to one of said seats, and a removable stripping draw-plate adapted to the other seat, and presenting an unbroken circular opening for the passage of the mandrel, in stripping the tube from the latter, substantially as specified.

609,148. HAY-RACK LOADER. SETH KELLUM, Milford, Iowa, assignor of one-third to A. W Bascom, Dickinson County, Iowa. Filed Apr. 7, 1898. Serial No. 676,757. (No model.)



Claim.—A device for lifting a hay-rack off and on a wagon comprising supporting frames, beams centrally pivoted upon said frames and adapted to serve as tracks for wheels upon the hay-rack, said beams capable of being tilted to and from a horizontal position, stops upon said supports to limit the movement of said beams, and guards to guide the wagon-wheels, substantially as set forth.

609,149. LAMP-HOLDER FOR BICYCLES. HANS FREIHERR VON KETELHODT, Ober Ehrenbreitstein, Germany. Filed June 8, 1897. Serial No. 639,890. (No model.)

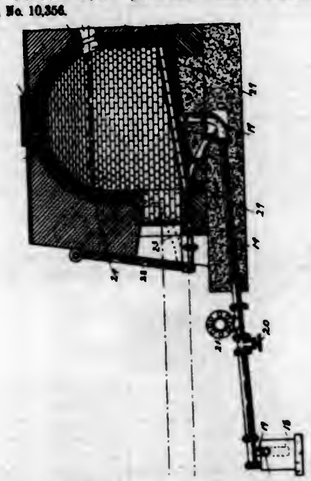


Claim.—1. In combination, the lamp-holder, a rod *s* adjustably carried thereby and a map-holding plate connected to the upper end of the rod *s*, substantially as described.

2. In combination with the lamp-holder, an arm *f* extending therefrom and a case *g* on said arm to receive a watch, substantially as described.

3. In combination with the holder for the lamp, the rod *s* carried thereby, a plate *p* pivotally connected to the said rod and a transparent cover *c* hinged to the plate *p*, substantially as described.

609,150. PROCESS OF AND APPARATUS FOR MANUFACTURING COKE. JOHN T. KEY, Sandal Magna, England. Filed Apr. 25, 1896. Serial No. 589,089. (No model.) Patented in England May 27, 1895, No. 10,356.



Claim.—1. The herein-described process of producing coke, which consists in igniting a charge of smudge at its top surface and introducing a supply of air above the same, producing a downward draft through the charge and thereby drawing the products of combustion through the same until the volatile constituents of the coal have been driven off, and then shutting off said downward draft and forcing steam in beneath the coke and up entirely through the same in the opposite direction to the original downward draft, in such quantity that the coke is thereby quenched and the remaining sulfurous fumes driven out thereof, all substantially as described.

2. In a coke-oven, a false bottom of the character described, apertures above the same communicating with an air-supply, and an exhaust-pipe penetrating partly through the said false bottom, at or near the center thereof, for the purpose set forth.

3. In a coke-oven, a false bottom, apertures above the same communicating with an air-supply, an exhaust-pipe penetrating partly through the said false bottom at or near the center thereof, and a separate exhaust-pipe connected with the main exhaust-pipe at a point below the false bottom and extending therefrom to one edge of the oven, for the purpose set forth.

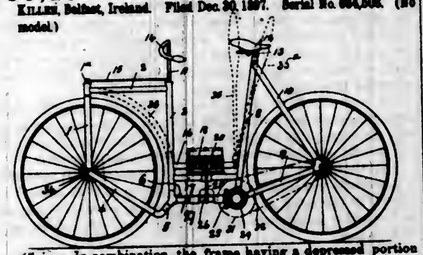
4. In a coke oven, a false bottom, consisting of three layers, the lower layer being impermeable and continuous, the middle layer consisting of bricks having channels formed in their under faces and being provided with laterally-extending projections as described, and the upper layer consisting of bricks laid loosely to form a practically continuous top surface, the said latter bricks being beveled on their side faces, all substantially as described.

5. In a coke-oven, a false bottom, means for drawing the products of combustion downwardly through the same, pipes laid around the circumference of the same and connected with a steam-supply, said pipes being provided with a plurality of escape-openings for the steam and means for introducing air above the said false bottom, all substantially as described.

6. A coke-oven comprising an oven proper having a false bottom consisting of three layers of bricks, pipes arranged to draw the products of combustion downwardly through the said false bottom, said pipes being connected with suitable exhausting and condensing apparatus, pipes extending around the circumference of the false bottom, adjacent to the middle layer thereof and provided with a plurality of openings, these latter pipes being connected with a steam-supply, and pipes for the admission of air connected with a plurality

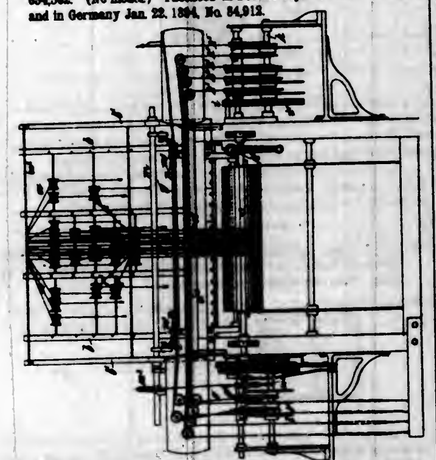
of holes extending around the oven above the level of its charge, all substantially as described.

609,151. DRIVING APPARATUS FOR CYCLES. EDWARD B. KILLEN, Belfast, Ireland. Filed Dec. 30, 1897. Serial No. 664,503. (No model.)



Claim.—In combination, the frame having a depressed portion formed by the vertical tubes 3 and 8 connected by tubes 16 and 6 at the lower portion and having the transverse inclined tubes 5, the rocking treadle mounted on the bar 16, the crank-shaft arranged beneath one end of the treadle and having one end journaled in one of the bars 5 and the other journaled in a bracket extending from the bar 6, and operating connections from said crank-shaft to the rear wheel of the bicycle, substantially as described.

609,152. MACHINE FOR MAKING BEADED TRIMMINGS. FLORENT P. LEDREUX, Paris, France. Filed Apr. 30 1897. Serial No. 634,562. (No model.) Patented in France Sept. 9, 1896, No. 249,561, and in Germany Jan. 22, 1894, No. 84,912.



Claim.—1. As a new and useful article of manufacture, a substantially flat strip of trimming comprising in its structure a weft-thread of chenille, twist, gimp or the like, laid sinuously and running laterally of the fabric, a warp-thread crossing the weft-thread and also laid sinuously and running laterally of the fabric and carrying beads at intervals thereon, and a binder or crochet thread looped around weft and warp threads at their intersection and binding the said warp and weft threads together.

2. In a machine for making beaded trimming, the combination of means for laying a weft-thread sinuously, means for laying a warp-thread sinuously, means for looping a thread around the weft and warp threads at their intersection, and bead-distributing means for distributing beads to the fabric in the course of its formation.

3. In a machine for making beaded trimmings, the combination of means for laying a warp-thread carrying beads, means for laying a weft-thread sinuously upon the warp-thread and means for looping a binding-thread around the weft and warp threads at their points of intersection and means for feeding the beads to the fabric in the course of its formation.

4. In a machine for making beaded trimmings, the combination of means for laying a weft-thread sinuously, means for laying a bead-carrying warp-thread sinuously, means for looping a binder-thread around the warp and weft threads at their intersection and pattern-controlled bead-distributing means for distributing beads to the trimming in the course of its formation.

5. In a machine for making beaded trimming, the combination of means for laying a weft-thread sinuously, means for laying a bead-carrying warp-thread sinuously, means for looping a binding-thread around the weft and warp threads at their intersection and a plurality of reeds engaging the warp-threads and movable backward and forward to separate beads carried by the warp-threads to allow the beads to be fed to the trimming in the course of manufacture.

6. In a machine for making beaded trimming, the combination of means for laying a weft-thread sinuously, means for laying a bead-carrying warp-thread sinuously, means for supporting a binder-thread, latch-needles for engaging the binder-thread and looping the same around the intersection of warp and weft threads in a crochet-stitch and means for distributing beads to the work.

609,153. DRIVE-CHAIN. CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed Feb. 15, 1898. Serial No. 670,376. (Model.)



Claim.—1 A drive-chain link having at one end an eye or loop, a hook at the opposite end; and a hook which swings in a direction perpendicular to the plane of the first-named hook; both hooks being adapted to engage with the eye of another link; substantially as set forth.

2. A drive-chain link having at one end an eye or loop, a rigid hook at the opposite end, one member of a pivotal connection between the hook and the eye; and a movable hook pivoted in the seat, substantially as set forth.

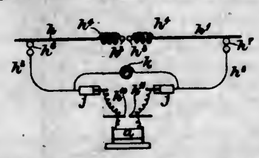
3. A drive-chain link having at one end an eye or loop, at the other end a hook, and a hook which is adapted to swing in a direction perpendicular to the plane of the first-named hook, the hooks being provided with interlocking parts, substantially as set forth.

4 A drive-chain link having at one end an eye or loop, an attached hook at the other end, with an intermediate member of a pivotal connection having cone-shaped inner faces; and a movable hook cast thereon with its body fitting closely the cone-shaped parts, substantially as set forth.

5. A drive-chain link having at one end an eye or loop and a member of a pivotal connection which is integral therewith, and having a notch or reduced portion; and a movable hook provided with a lip which is adapted to pass through the notch and into the eye of an adjacent link, substantially as set forth.

6. A drive-chain link having at one end an eye or loop, and a hook at its opposite end; and a movable hook disposed to swing in a plane perpendicular to the plane of the first-named hook; the point of each hook lying adjacent to the body of the other hook of the pair, substantially as set forth.

609,154. ELECTRIC TELEGRAPHY. OLIVER J. LODGE, Liverpool, England. Filed Feb. 1, 1898. Serial No. 668,702. (No model.)



Claim.—1. In a system of Hertzian-wave telegraphy, the combination, with a pair of capacity areas, of a self-inductance coil inserted between them electrically for the purpose of prolonging any electrical oscillations excited in the system and constituting such a system a radiator of definite frequency or pitch.

2. In a system of Hertzian-wave telegraphy, the combination, with a pair of capacity areas, of a self-inductance coil inserted between them electrically for the purpose of prolonging any electrical oscillations excited in the system, thus constituting the system a resonator or absorber of definite frequency or pitch, and a distant radiator of corresponding period capable of acting cumulatively.

3. In a system of Hertzian-wave telegraphy, the combination, with a pair of capacity areas, of electrical means having a spark-gap inserted between them and serving to synchronize them and means for bridging or shunting the spark-gap, whereby the apparatus is adaptable for use at will either as a radiator or resonator.

4. In a system of Hertzian-wave telegraphy, the combination, with a pair of capacity areas, of a number of self-inductance coils

having different amounts of self-induction each of which is capable of being switched in or out of circuit, serving to syntonize any such radiator to a corresponding resonator or vice versa, whereby signaling may be effected between any two or more correspondingly-attuned stations without disturbing other differently-attuned stations.

5. In a system of Hertzian-wave telegraphy, the combination, with a pair of capacity areas, of a variably-acting self-inductance coil, serving to syntonize such a radiator or resonator to any other such resonator or radiator, whereby signaling may be effected between any two or more correspondingly-attuned stations without disturbing other differently attuned stations.

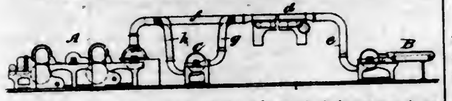
6. In combination, a pair of capacity areas connected by a coil of wire serving as the radiator in a system of Hertzian-wave telegraphy, means for syntonizing such radiator, and means for charging it by aerial disruption or impulsive rush.

7. In a system of Hertzian-wave telegraphy, the combination of a pair of capacity areas such as *k*, *k'*, means for syntonizing such capacity areas, a receiving circuit completed through one or both of such capacity areas, and means for bridging over the discharge-gap between such capacity areas when they are to be used as a receiver, whereby such capacity areas are rendered adaptable for use at will either as a radiator or resonator.

8. In combination, in a system of syntonic Hertzian-wave telegraphy, a pair of capacity areas, a self-inductance coil and a secondary coil surrounding said self-inductance coil, which secondary coil forms part of the coherer-circuit substantially as and for the purpose set forth.

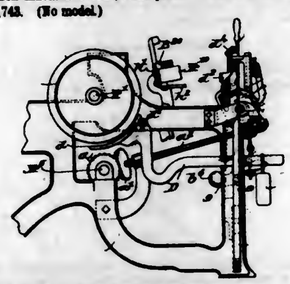
9. The combination, in the receiving circuit of a system of Hertzian-wave telegraphy, of a variably-acting self-inductance coil, connecting the capacity areas, a coherer, a battery, a receiving instrument, and a shunt across the coils thereof substantially as and for the purpose set forth.

609,155. EXHAUST-OPENER LAP-MACHINE. THOMAS R. MARSDEN, Oldham, England. Filed Sept. 28, 1897. Serial No. 653,302. (No model.) Patented in England Oct. 31, 1892, No. 19,513.



Claim.—In combination with the dust-trunk *d*, the opener A, an auxiliary opener C, the pipes *g*, *h*, connecting the same with the dust-trunk and opener A respectively, and a pipe *f* connecting the dust-trunk *d* with the opener A and forming a by-pass for the auxiliary opener C, substantially as described.

609,156. LOOM. JOHN T. MEATH, Taunton, Mass., assignor to the Mason Machine Works, same place. Filed Jan. 15, 1898. Serial No. 666,743. (No model.)



Claim.—1. In a loom, take-up mechanism, means to positively actuate it, stopping means for the loom, and connections between said stopping means and the take-up mechanism, operative when the latter is moved in advance of its actuating means, to stop the loom.

2. In a loom take up mechanism, an actuator to positively operate said mechanism, a connecting-clutch, stopping means for the loom, and devices intermediate said means and the clutch, to operate the former and stop the loom when the clutch is released, as by movement of the take-up in advance of its actuator.

3. In a loom, take-up mechanism, including a movable clutch member, positively-operated actuating means for said take-up, including a cooperating clutch member, advance movement of the take-up releasing the clutch, and stopping mechanism for the loom, connected with the movable clutch member and operated by release of the clutch.

4. In a loom, take-up mechanism, means to positively actuate it, a clutch to connect said actuating means and the take-up, movement of the latter in advance of said means releasing the clutch, and stopping means for the loom, controlled by release of the clutch to effect stoppage of the loom.

5. In a loom, the cloth-roll, movable supports therefor, guides for said supports, having plane surfaces over which the supports move and upon which they are automatically locked, at any point, and a controlling-spring for and to act upon said supports and normally maintain the cloth-roll in position, said supports being unlocked when the spring-tension is overcome.

6. In a loom, the cloth-roll, movable supports therefor, guides having plane surfaces upon which said supports move, and means to lock the supports at any point on their guides, whereby the cloth-roll may be removed at any point of its downward movement.

7. A cloth-roll support, a guide having plane surfaces upon which it is movable, means carried by the support to lock the same at any point of its movement, and a spring to yieldingly sustain the support and to hold it locked upon the guide until the tension of the spring is overcome.

8. In a loom, the cloth-roll, movable supports therefor provided with projections which straddle the guides, guides upon which said supports are adapted to slide and rock slightly relatively thereto, and spring-controlled means to act upon said supports exterior to the guides, to normally cramp the supports upon the guides at any point thereon and maintain the cloth-roll in position.

609,157. TIRE. HAMILTON L. MERRITT, Somerville, Mass. Filed May 15, 1897. Serial No. 636,632. (No model.)



Claim.—1. The tire above described made up of wire *b* and rubber portion B provided along its inner circumference with slots *b'* which expose the wire and furnish open chambers for the shanks of the fastening-bolts, substantially as shown and described.

2. In combination the tire made up of rubber portion B and wire *b*; tube b^2 which fits loosely over the ends of the wire *b* and bolts D one of which is fast to tube b^2, all substantially as described.

609,158. APPARATUS FOR BLOTTING OR DRYING WRITING. EDOUARD MOULARD and JOSEPH GUINY, Lyons, France. Filed Mar. 29, 1898. Serial No. 675,628. (No model.)

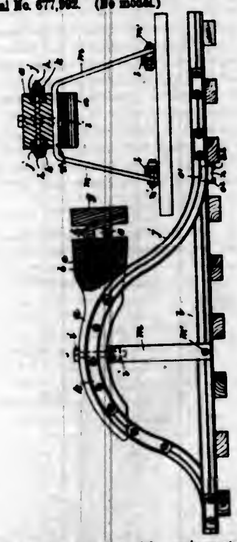


Claim.—1. In a blotter, the combination of a frame comprising a fixed arm, a pair of rollers connected to the said fixed arm and one of which is movable toward and from the other, and a movable arm also forming part of said frame and in engagement with the movable roller to hold it in position when at its greatest distance from the other roller, substantially as described.

2. In apparatus for drying writing, the combination of a frame having one fixed and one hinged arm, two axles fixed in the fixed arm, a roller mounted on one of said axles, two links mounted on the other axle, a link to receive the free ends of said axles, and retain the latter parallel with each other, an axle mounted in the free ends of the two links, a roller mounted on the latter axle, an endless blotter-band passed around the rollers, there being holes in the hinged arm to receive the ends of the axles at that side of the frame, and a spring-catch to retain the hinged arm in its closed position, substantially as herein set forth.

3. In apparatus for drying writing the combination with the stick of a penholder, of a frame having one fixed and one hinged arm, two axles fixed in the fixed arm, a roller mounted on one of said axles, two links mounted on the other axle, a link to receive the free ends of said axles and retain the latter parallel with each other, an axle mounted in the free ends of the two links, a roller mounted on the latter axle, an endless blotter-band passed around the rollers, there being holes in the hinged arm to receive the ends of the axles at that side of the frame, and a spring-catch to retain the hinged arm in its closed position, substantially as herein set forth.

609,159. CAR-BUMPER. JOSEPH MCMAHON, Chicago, Ill., assignor of one-half to Ellen R. McMahon, same place. Filed Apr. 18, 1898. Serial No. 677,962. (No model.)

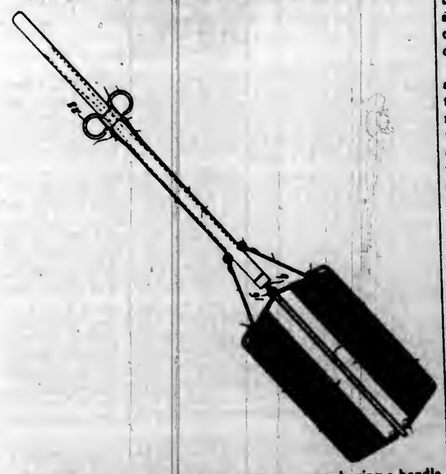


Claim.—1. The combination with a spring-actuated cushion-head and a side-channeled bumper-body, of centrally-arched track end rails and straight rails within said track-rails bolted thereto at each end of the arch, substantially as specified.

2. The combination with a spring-actuated cushion-head and a side channeled bumper-body, of centrally-arched track end rails and straight rails within said track-rails bolted thereto at each end of the arch, antibuckling-bars, and antitrack-spreading bars with inside track-holding mechanism, substantially as specified.

3. The combination with a spring-actuated cushion-head and a side-channeled bumper body with track-supported supporting-legs under a transverse bar, under the center of said arch, of centrally-arched track ends and straight rails within said track-rails at the arch ends of said track-rails, substantially as specified.

609,160. CORN-POPPER. TILLEY G. MCWITNEY, Cloquet, Minn. Filed Oct. 26, 1897. Serial No. 656,668. (No model.)

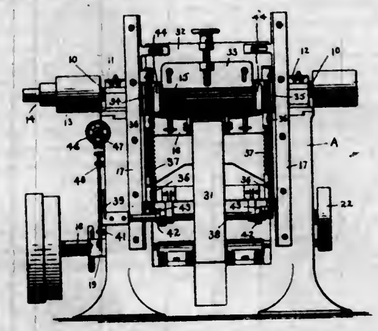


Claim.—1. A corn-popper, comprising a screen having a handle rigidly secured to one end thereof, a screen receptacle on each side of said screen, and hinged to the end thereof with which the handle is connected, operating-rods connected with the hinged ends of the screen receptacles and extending longitudinally along said handle, said rods being provided at their ends with loops or rings forming handles by which they may be operated, a locking device for holding the screen receptacles in a closed position, consisting of a ring or band mounted on the handle, and through which said rods pass, and bends or loops formed in said rods, substantially as shown and described.

2. A corn-popper, comprising a screen having a handle rigidly secured thereto, a screen receptacle on each side of said screen and hinged to the side thereof with which the handle is connected, operating rods connected with the hinged ends of the screen receptacles and extending longitudinally along said handle and between the same and an encircling guide, finger-pieces on the ends of said operating-rods, and shoulders upon said operating-rods to engage the guide and hold the screen receptacles closed against the screen, substantially as described.

3. A corn-popper comprising a screen having a handle rigidly secured thereto, a screen receptacle on each side of said screen and hinged to the side thereof with which the handle is connected, yokes connected with the hinged ends of the screen receptacles, operating-rods situated within longitudinal grooves in said handle and connected with said yokes, a guide encircling the handle near the outer ends of said operating-rods, finger-pieces at the ends of said operating-rods, and shoulders thereon to engage said guide and hold the screen receptacles closed against the screen, substantially as described.

609,161. MACHINE FOR CUTTING BOX-CORNERS. WILLIAM R. NICHOLS, Winchendon, Mass. Filed Sept. 20, 1897. Serial No. 652,329. (No model.)



Claim.—1. In a machine for the purpose stated, the combination of a series cutter or plurality of circular saws, a reciprocating feed-table mounted in ways, rods mounted in lugs formed on said table springs engaging said rods, and means for automatically relieving the clamping-jaw when the table is at the end of its stroke in either direction, substantially as described.

2. In a machine for the purpose stated, the combination of a series cutter or plurality of circular saws, a vertically-movable feed-table, rods mounted in said feed-table, a clamping-jaw carried by said rods, springs for normally holding said clamping-jaw into engagement with the work, a rock-shaft mounted in the table cam-pieces or rockers secured to said rock-shaft to raise the clamping-jaw, and means for operating said rock-shaft to release the clamping-jaw when the table is at the end of its stroke in either direction, substantially as described.

3. In a machine for the purpose stated, the combination of a bed piece or frame, a vertically-movable feed-table, a main shaft having a series cutter or a plurality of circular saws, means for adjusting the main shaft to regulate the depth of the cut, spring-pressed rods mounted in the feed-table, a clamping-jaw carried by said rods, a rock-shaft having cam-pieces or rockers for relieving said clamping-jaw, and adjustable stops for operating said rock-shaft when the feed-table is at the end of its stroke in either direction, substantially as described.

4. In a machine for the purpose stated, the combination of a feed-table, an adjustable gage mounted thereon, and a setting mechanism for the gage, comprising a number of varying-sized fingers 53, any one of which can be turned so that the gage can be set against the same, substantially as described.

5. In a machine for the purpose stated, the combination of a feed-table, an adjustable gage as 44 journaled thereon, a piece 50 carrying shaft 52, and a number of fingers 53 of different lengths, any one of which may be turned into position so that the gage can be adjusted thereby, substantially as described.

609,162. PNEUMATIC IMPACT-TOOL. SAMUEL OLDHAM Philadelphia, Pa. Filed Mar. 26, 1898. Serial No. 675,256. (No model.)

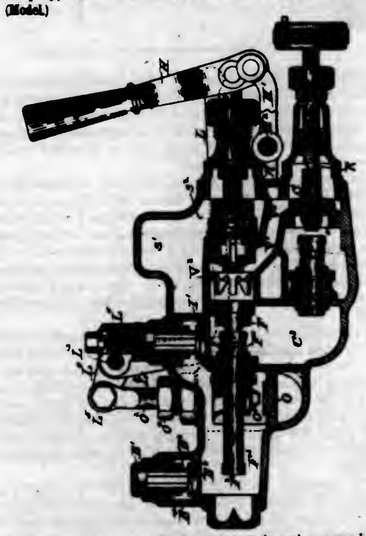


Claim.—1. In a pneumatic impact-tool, a cylinder provided with a fluid-inlet, a channel leading from said inlet and a groove forming the terminal of said channel, ports communicating with said cylinder and leading from said groove, a piston or hammer having concavities opposite each other and adapted to register with said ports, inlet-ports and channels leading respectively from one of the concavities of said piston or hammer to the upper portion thereof and from the other of the concavities of said piston or hammer to the lower portion of the same, substantially as and for the purposes described.

2. In a pneumatic impact-tool, a cylinder having a fluid-inlet, a channel leading from said inlet and provided with a semicircular groove forming the terminal of said channel, two diametrically opposite ports communicating with the interior of the cylinder and leading from the terminal of said groove, a piston or hammer having two concavities diametrically opposite to each other and adapted to register with said ports and two inlet-ports and channels leading respectively from one of said concavities to the upper portion of said piston or hammer and from the other of said concavities to the lower portion of the same, substantially as and for the purposes described.

3. In a pneumatic impact-tool, a cylinder having an inlet-port in its wall, a channel leading from said port, a groove forming the terminal of said channel, fluid-inlets leading from said groove to the interior of said cylinder opposite to each other, a piston or hammer adapted to reciprocate in said cylinder and having a series of concavities, whereof each is in communication with one of said fluid-inlets, a port leading from certain of said concavities to a space above the upper head of said piston or hammer, a port leading from certain other concavities to a space below the lower head of said piston or hammer, said ports adapted to be alternately brought into open communication with said fluid-inlets through said concavities during reciprocation of said piston or hammer, and exhaust-ports leading from a space above and a space below said piston-heads and adapted to be alternately opened and closed by movement of said piston or hammer, substantially as and for the purposes described.

609,168. INJECTOR. WILLIAM R. PARK, Taunton, and SELVIN T. WILLMOTH, Somerville, Mass., assignors to the Hancock Inspirator Company, Boston, Mass. Filed June 11, 1898. Serial No. 683,180. (Model.)



Claim.—1. In a composite injector, a main casing comprising isolated chambered divisions, a complete assemblage of injector-tubes in each division, a common steam-chamber communicating with the steam-tubes of the several injectors, suction-pipes, isolated from each other, a suction-pipe for each injector, overflow-outlets from each isolated injector-division of the main casing, boiler delivery-ports from the several injector-chambers and boiler check-valves controlling the said ports, respectively; and external devices whereby the said several injectors are respectively operated, substantially as described.

2. In a composite injector, a main casing comprising isolated chambered divisions, a complete assemblage of injector-tubes in each division, a common steam-chamber communicating with the steam-tubes of the several injectors, suction-pipes, isolated from each other, a suction-pipe for each injector, overflow-outlets from each isolated injector-division of the main casing, a boiler delivery-chamber common to the several injectors, boiler check-valves in the said boiler-delivery-chamber controlling the boiler delivery-ports of the several injectors, respectively, and external devices whereby the said several injectors are respectively operated, substantially as described.

609,164. ROLLER-COASTER. EDWIN PRESCOTT, Arlington, Mass. Filed Oct. 11, 1897. Serial No. 654,764. (No model.)



Claim.—1. A roller-coasting apparatus, comprehending a track presenting steep gradients, a vertical circularly-arranged spiral loop between the said gradients; a car to follow said tracks and pass about the interior of the loop; and safety appliances whereby the car is prevented from falling during its passage around within the circular loop, substantially as described.

2. In a roller-coasting apparatus, the following instrumentalities, viz: a main track composed of two substantially parallel rails presenting inclined portions connected by a vertically and spirally arranged loop; a guide-rail arranged between the said main rails and more closely to the outer one of said rails at the sharp curves of the track; a car having its axles mounted in pivoted frames, and having arms one of which has rollers to cooperate with said guide-rail, substantially as described.

3. In a roller-coasting apparatus, the following instrumentalities, viz: a car; main tracks *b* and *b'* presenting inclined portions, and between said inclines a vertically and spirally arranged circular portion; and a safety appliance composed essentially of additional safety-tracks *m* arranged in a smaller circle within the circularly-arranged main tracks; and rollers attached to the truck-frame and adapted under circumstances to contact with said safety-track, substantially as described.

4. In a roller-coaster, inclined main tracks *b* and *b'*, presenting inclined portions with vertically-arranged circular spiral portions between said inclines; a car-body having one of its wheel-carrying frames mounted to turn about a horizontal axle on said car-body, substantially as described.

5. In a roller-coaster, inclined main tracks *b* and *b'*, presenting inclined portions with vertically-arranged circular spiral portions between said inclines, combined with a car-body having one of its wheel-carrying frames mounted to turn about a horizontal and a vertical axle on said car-body, one of the wheels of each axle being loose thereon, substantially as described.

6. In a roller-coaster, main tracks presenting inclined portions and between said inclined portions vertically, circularly, and spirally arranged portions, and less inclined portions passing through the open center of the vertically and centrally arranged portions, substantially as described.

7. In a roller coaster, a car; an inclined track followed by a circular spiral or loop portion, and a track leading from said circular spiral or loop portion on which the car runs, a guide-rail arranged between said tracks, and safety appliances whereby the car is prevented from falling during its coast around within the said circular spiral or loop, substantially as described.

8. A roller-coasting apparatus, comprehending a track presenting steep gradients, and a vertical circularly-arranged spiral loop between the said gradients; a car to follow said tracks and pass about the interior of the loop; safety appliances, whereby the car is prevented from falling during its passage around within the circular loop; and an elevator to take the car from the passenger's platform to the switch, substantially as described.

9. In a roller-coasting apparatus, the following instrumentalities, viz: a main track composed of two substantially parallel rails; a guide-rail arranged between the said main rails and more closely to the outer one of said rails at the sharp curves of the track; a car having its axles mounted in pivoted frames, and having arms one of which has rollers to cooperate with said guide-rail, substantially as described.

10. In a roller-coaster, inclined main tracks *b* and *b'* presenting inclined portions with vertically-arranged circular spiral portions between said inclines, combined with a car-body having one of its wheel-carrying frames mounted to turn about a horizontal and vertical axle on said car-body, substantially as described.

11. In a roller-coaster, a circular spiral track portion having track portions connecting with it from each side of such circular spiral portion, combined with a car-body having one of its wheel-carrying frames mounted to turn about a horizontal axle on said car-body, substantially as described.

609,165. JUICE-EXTRACTOR. GEORGE PRICE, Tottenville, N. Y. Filed Sept. 13, 1897. Serial No. 651,487. (No model.)



Claim.—1. In a juice-extractor, a sphere, an outwardly-directed flange thereon, webs projecting from said flange on each side thereof, caps adapted in conjunction with the exposed surface of said sphere to extract juice from fruit and means for operating said caps, said webs being provided with means to facilitate the escape of the juice, substantially as described.

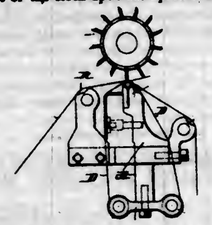
2. In a juice-extractor, a sphere, an outwardly-directed flange thereon, webs projecting from said flange on each side thereof, a projection attached to said sphere, caps pivotally connected with said projection and means whereby said caps may be brought into cooperation with the exposed surface of said sphere to extract juice from fruit, said webs being provided with means to facilitate the escape of the juice, substantially as described.

3. In a juice-extractor, a sphere, an outwardly-directed flange thereon, webs projecting from said flange on each side thereof, said webs being extended at one side and provided with openings to facilitate the escape of the extracted juice, a projection attached to said sphere, caps pivotally connected to said projection and means whereby said caps may be brought into cooperation with the exposed surfaces of said sphere to extract juice from fruit, substantially as described.

4. In a juice-extractor, a sphere, an outwardly-directed flange thereon, webs projecting from said flange on each side thereof, a projection attached to said sphere, caps provided respectively with an extension pivotally connected with said projection and a handle, and a guide-plate secured to said projection whereby excessive lateral oscillation of the compressors is prevented, substantially as described.

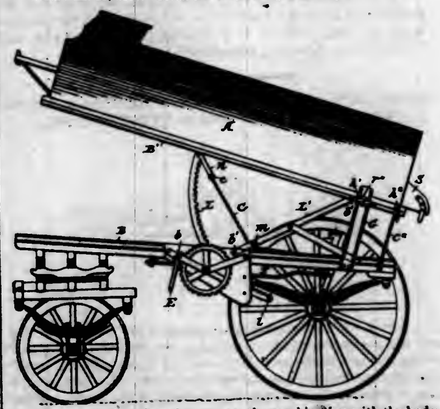
609,166. CLOTH-SHEARING MACHINE. CHARLES R. RICHARDSON, Springfield, Vt., assignor to the Parks & Woolson Machine Company, same place. Filed Nov. 10, 1897. Serial No. 661,948. (No model.)

Claim.—1. In a cloth-shearing machine, a bed and a cutter, a convex yielding or elastic cushion non-rotatably mounted on the bed and over which the cloth to be sheared passes, means to hold the cushion from rotation, a normally stationary longitudinally-adjustable flexible apron interposed between the cushion and the cloth, and means to support the cloth independently of the cushion, to prevent undue pressure of the cloth upon the apron and cushion.



2. In a cloth-shearing machine, a bed and a cutter, a convex yielding or elastic cushion mounted on the bed and over which the cloth to be sheared passes, means to prevent rotation of the cushion, a flexible apron under tension interposed between the cloth and the cushion, to reduce wear of the latter, and rests for the cloth at each side of the cushion, and between the apron and the cloth, to prevent undue pressure of the cloth upon the cushion and apron.

609,167. DUMPING-WAGON. JOHN T. RICHARDSON, Harrisburg, Pa., assignor of one-half to Alexander H. Ege, Mechanicsburg, Pa. Filed Mar. 13, 1897. Serial No. 627,310. (No model.)



Claim.—1. In a dumping-wagon, the combination with the body and truck frames, of lifting-arcs having their free ends bearing on the under surface of the body-frame, lifting-levers pivoted to the truck-frame and to the body-frame, supplemental lifting-levers pivoted to the lifting-levers and bearing upon the truck-frame, and chains passing around bearings near the lower ends of the lifting-levers and connecting the upper ends of the lifting-arcs with the supplemental levers, substantially as described.

2. In a dumping-wagon, the combination with the body and truck frames, of lifting-arcs having their free ends bearing on the under surface of the body-frame, lifting-levers pivoted to the truck-frame and to the body-frame, supplemental lifting-levers pivoted to the lifting-levers and a connection between the upper ends of the lifting-arcs and the supplemental lifting-levers, substantially as described.

3. In a dumping-wagon, the combination with the body and truck frames, of lifting-arcs having their free ends bearing on the under surface of the body, lifting-levers pivoted to the truck-frame and to the body-frame, and connections between the upper ends of the lifting-arcs and the lifting-levers adjacent the lower ends thereof, substantially as described.

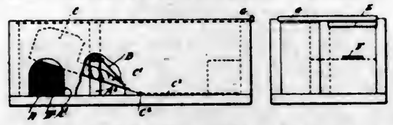
4. In a dumping-wagon, the combination with the body and truck frames, of vertically-lifting arcs whose upper ends roll freely on the under surface of the body-frame, lifting-levers pivoted to the truck-frame and to the body-frame, supplemental lifting-levers pivoted to the lifting-levers and bearing upon the truck-frame, and chains connecting the supplemental levers to the lifting-arcs, substantially as described.

5. In a dumping-wagon, the combination with the body-frame comprising parallel channeled rails having horizontal webs and vertical flanges, of the truck-frame comprising rails each of which con-

sists of separated parallel channeled bars having vertical webs and horizontal flanges upon the upper edges of which the rails of the body-frame normally bear, and means for elevating and depressing the body-frame, substantially as described.

6. In a dumping-wagon, the combination with the body and truck frames, of lifting-arcs and their operating means, lifting-levers pivoted to the truck-frame and engaging with the body-frame, supplemental lifting-levers pivoted to the lifting-levers and bearing and adapted to move upon the truck-frame, and connections between the upper ends of the lifting-arcs and the supplemental lifting-levers, substantially as described.

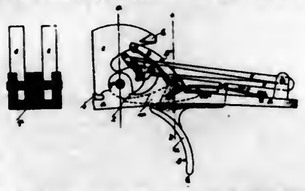
609,168. VERMIN-TRAP. FREDERICK W. ROE, Stonehenge, Tasmania. Filed Feb. 16, 1898. Serial No. 670,491. (No model.)



Claim.—1. In combination, the walls A having the partitions A^1 and A^2 forming the three compartments, the wire-gauze H in which the bait is placed, the plate C for closing the opening into the entrance-compartment, the plate C^2 connected to the said plate, the flap-door B, the third compartment alongside of the second and the flap-door B' between them, substantially as described.

2. In combination, the walls A forming the box of the trap, the partitions A^2 A^3 therein and the door and flaps within the compartments, the said partitions A^2 A^3 forming the inner chamber, said chamber being removable, substantially as described.

609,169. GUN-LOCK. HEINRICH R. SCHLEGELMILCH, Suhl, Germany. Filed June 8, 1897. Serial No. 638,891. (No model.)



Claim.—1. In combination in a gun-lock the hammer, the trigger and the two sears b and m operating upon the hammer, said sears being arranged on the same pivot with the trigger, the said trigger having shoulders, and the said sears having the shoulder b^4 and the lug m' respectively to engage the shoulders in the trigger, substantially as described.

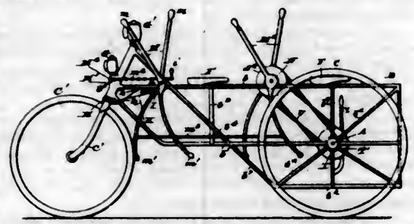
2. In combination in a gun-lock, the hammer, the trigger having a pivot-eye and the sear b arranged on the pivot of the trigger and having a sleeve which receives the trigger pivotally, the said eye of the trigger encircling the sear-sleeve, substantially as described.

3. In combination in a gun, the hammer having the tooth k at its upper end, and the tooth t near its pivot, the trigger, the sear b, pivoted on the same axis and extending up to engage the said tooth, said sear having also a shoulder b^4 to be engaged by a shoulder on the trigger near the pivot thereof, and the sear m also mounted on the pivot of the trigger and extending forwardly under the hammer to engage the tooth t thereof, said sear having a rear extension terminating in a lug m' to be engaged by the trigger, substantially as described.

4. In a gun-lock, the combination of two sears one of which is provided with sleeves, the trigger on one sleeve on one side of said sear and the second sear on the sleeve on the other side of the sear first mentioned, substantially as described.

609,170. SPEED-GEARING FOR CYCLES. SAMUEL L. SMITH, West Duluth, Minn. Filed Apr. 17, 1897. Serial No. 633,543. (No model.)

Claim.—1. A speed-gearing for cycles and other purposes, consisting of two parallel shaft-hangers L' L^2, a sleeve journaled in the hanger L' and projecting at each end beyond said hanger, grooved pulleys S' S^2 secured on the respective ends of the sleeve, said pulleys being of different diameters, a driving-shaft N journaled in the sleeve and projecting therefrom, a grooved pulley S secured on the driving-shaft, means for rotating the shaft, a driven shaft A journaled in the hanger L^2 and carrying a pulley T^2 near one end, a double pulley T T' sleeved loosely on the other end of the shaft A, and three endless belts U connecting the pulleys S T, S' T' and S^2 T^2, substantially as described.



2. In a cycle, the combination with a driving-shaft, of two ratchet-wheels secured thereto side by side, one right hand and the other left hand, a lever having a longitudinal groove on each side, a pawl in each groove and longitudinally movable therein, each pawl being adapted to drive one of said ratchet-wheels, and two face-plates, one on each side of the lever, inclosing the pawls and the ratchet-wheels and affording a bearing for the lever on the shaft, substantially as described.

3. In a cycle, the combination with a frame composed of an upper reach b, intermediate reach b' and lower reach b^3, uprights b^4, braces b^5, a steering-head b^6, side bars b^7, diagonal bars b^8, cross-bars b^9, and struts b^{10}, of a transverse axle B, rear wheels C and front wheel C', seats F supported on the ends of the cross-bars, transverse shaft-bearings L L' secured to the frame in front of each pair of seats, two pairs of levers each independently fulcrumed in one of the bearings, rods connecting the levers on the same side of the frame, a slotted block M' attached to the steering-head, a rocker connected with the front pair of levers and fulcrumed in the block M', and driving-gear operated by said levers and belted to the axle B, substantially as described.

609,171. BICYCLE-FRAME. WILLIAM X. STEVENS, Washington, D. C. Filed Feb. 11, 1897. Serial No. 622,975. (No model.)



Claim.—1. In bicycle-frames, the combination of a pair of side bars adapted to be connected with the fork-shaft of a forward wheel and extending rearward through and forming portions of a drop-reach, and thence continuing rearward, parted to receive a rear wheel, and further extending upward, forward and downward in loop form, which loop is located to the rear of the drop in the frame; substantially as described.

2. In bicycle-frames, the combination of a drop-reach and side bars extending rearward and upward therefrom in loop form, the loop being located to the rear of the drop; substantially as described.

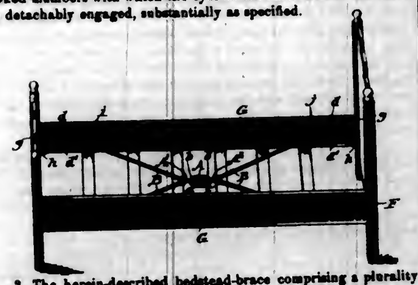
3. In bicycle-frames, the combination of a drop-reach, side bars extending in loop form to the rear of the reach and one or more stiffeners for the reach; substantially as described.

4. In bicycle-frames, the combination of side bars in loop form parted to receive the rear wheel and one or more reach-pieces extending forward from the loop to connect with a forward-wheel fork-shaft; substantially as described.

5. In bicycle-frames, the combination of a drop-reach and side bars extending rearward and upward therefrom in loop form, the loop being located to the rear of the drop.

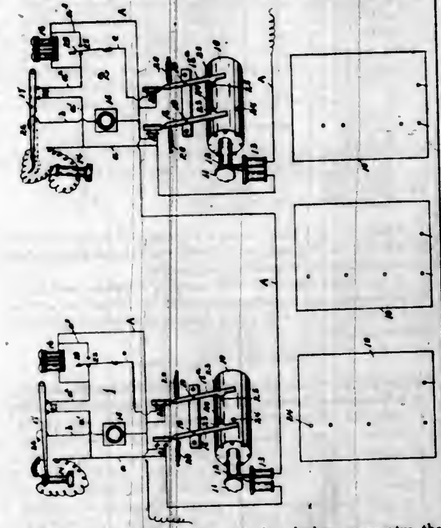
609,172. BED-BRACE. ALEXANDER STOCKNER, Sr., Yoakum, Tex. Filed June 28, 1897. Serial No. 642,698. (No model.)

Claim.—1. The combination with a bedstead having detachable end and side members, of a brace comprising a plurality of cables, each constructed of a single blank of wire folded upon itself at its center to form an eye, having its folds or sides intertwisted from said eye outwardly to an intermediate point in the length of the cable, and having its folds or sides deflected, beyond the end of said intertwisted portion, to form divergent arms or branches which are terminally secured to a standard of one of the end bedstead members, guides arranged at intermediate points of the side bedstead members, with which the cables are detachably engaged at the outer ends of their twisted portions, and a tension device having axially-adjustable hooked members with which the eyes at the inner ends of the cables are detachably engaged, substantially as specified.



2. The herein-described bedstead-brace comprising a plurality of cables, each being of plural strand construction and having a twisted body portion terminating at its inner end in an eye and at its outer end in divergent arms or branches, adapted for attachment to a standard of a bedstead, a guide engaged with each cable at an intermediate point and adapted for attachment to the side rail of a bedstead at an interval from the plane of the adjacent end member of the bedstead, and a tension device comprising a nut provided with flat radial ears or wings, and hook-bolts, engaged with the eyes of said cables, and having their threaded stems engaged by said nut and arranged in the common plane of said ears or wings thereof, whereby the body portions of the cables, the hook-bolts, and the ears or wings of the nut occupy a common horizontal plane, substantially as specified.

609,173. TELEPHONE SYSTEM. ALFRED F. SWAN, Bayonne, N. J. Filed Sept. 20, 1897. Serial No. 653,653. (No model.)



Claim.—1. The combination with the telephone apparatus, the line, and the switch-barrel moved by makes and breaks in the line, of the movable switch-arms directly controlling the circuit through the apparatus, and means for operatively actuating the arms by the movement of the switch-barrel, substantially as described.

2. The combination with the telephone apparatus, the line and the switch-barrel operated by makes and breaks in the line, of the movable switch-arms actuated form the switch-barrel, and suitable connections whereby one position of the switch-barrel cuts the bell to line, a second position cuts tha talking set to line, and a third position cuts the bell and talking set out of line by short-circuiting, substantially as described.

3. The combination with the telephone apparatus, the switch barrel having projections thereon, and means for moving the switch-barrel by makes and breaks in the line, of movable switch-arms actuated by contact with the projections on the switch-barrel, and electrical connections whereby one position of the switch-barrel cuts the bell to line, the second position cuts the talking set to line, and the third position cuts the bell and talking set out of line by short-circuiting, substantially as described.

4. The combination with the telephone apparatus, the line, and the switch-barrel actuated by makes and breaks in the line, and provided with projections, of a pair of contacts connected directly with the line, a second pair of contacts, one connecting with the line and the other with a push-button controlling the bell-circuit of the apparatus and switch-arms actuated by the projections on the switch-barrel, one of said arms being adapted to engage the first contacts and short-circuit the talking set and bell, and the second of said arms being adapted to engage the second contacts and cut the bell to line, substantially as described.

5. The combination with the telephone apparatus, the line, and the switch-barrel turned by makes and breaks in the line, said switch-barrel having projections thereon, of a pair of switch-arms actuated by the projections on the switch-barrel, and connections whereby the first movement of one arm is adapted to cut the talking set to line, the second movement adapted to cut the talking set and bell out of line by short-circuiting, and the movement of the second arm is adapted to cut the bell to line, substantially as described.

6. The combination with the talking set, the line, and the switch-barrel moved by makes and breaks in the line, of a movable switch-arm operated from the switch-barrel and adapted to cut the talking set in and out, substantially as described.

609,174. BICYCLE-SUPPORT. GEORGE S. THURSTON, Santa Rosa, Cal. Filed May 6, 1897. Serial No. 635,337. (No model.)



Claim.—1. The combination with the upper rear portion of the frame or saddle-post of a bicycle, of tubular supports connected therewith, and projecting downwardly and outwardly, adjustable rods mounted in the lower ends of said supports, a shaft mounted in the lower ends of said rods, and provided with wheels at its opposite ends and flexible and adjustable straps connecting each end of said shaft with the forward and rear portions of the frame of the bicycle, substantially as shown and described.

2. The herein-described support for bicycles comprising two tubes secured to the frame or saddle-post beneath the seat, rods telescopically mounted therein, an axle extending transversely of the bicycle in front of the rear wheel, small wheels mounted upon the outer end of said axle, said telescopic rod being connected with said axle by means of circular heads and straps connected with each of said heads and with the corresponding side of the rear fork of the frame and a second strap secured to each of said heads and to an attachment mounted on the forward end of the frame said straps being adjustable, substantially as and for the purpose described.

609,175. MOISTENER FOR GUMMED SURFACES. WHARTON L. WEST, Portland, Oreg., assignor to Frank M. Prindle and Joseph D. Johnson, San Francisco, Cal. Filed Sept. 20, 1897. Serial No. 652,360. (No model.)



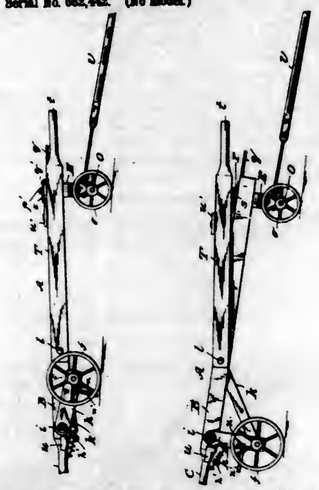
Claim.—1. A moistener for gummed surfaces and the like comprising a thimble open at both ends, one end of said thimble being contracted, and a sponge or like member contained within said thimble and projecting therefrom, said sponge being retained in position by the contracted portion, and the thimble being adapted to receive a finger in its end opposite the sponge; substantially as described.

2. A moistener for gummed surfaces and the like comprising a thimble open at both ends, the material of said thimble being turned inwardly at one end to present a flange for holding a sponge or simi-

lar member within the thimble and projecting therefrom, said thimble being adapted to receive a finger in the end opposite that in which the sponge is held; substantially as described.

3. A moistener for gummed surfaces and the like comprising a thimble open at both ends, and having one end formed to a plane at an inclined angle, and an inwardly-extending flange about the opening of said end, said flange being adapted to retain a sponge or similar member within the thimble but projecting therefrom, and the opposite end of said thimble being adapted to receive a finger; substantially as described.

609,176. **TRUCK.** ALBERT G. WOLCOTT, Lenox, Ohio. Filed Dec. 18, 1897. Serial No. 662,442. (No model.)



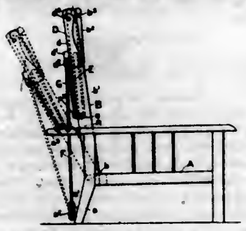
Claim.—1. In a wheeled truck, the combination with a frame having a rear axle adapted to be adjusted to raise and lower the rear end thereof, of pivoted lever-arms adapted to be raised to support the load and serve as levers in unloading, substantially as described.

2. In a wheeled truck, the combination with a frame having a rear axle adapted to be adjusted to raise and lower the rear end thereof, of pivoted lever-arms adapted to be raised to support the load and serve as levers in unloading, and bolts adapted to hold the lever-arms locked parallel with the frame and serve as supports for said lever-arms when the latter are raised, substantially as described.

3. In a wheeled truck, the combination with a frame, of a rear axle carrying wheels, swinging arms pivoted to the frame and carrying said axle, braces for supporting the arms in vertical position, and pivoted lever-arms adapted to be raised to support the load and to serve as levers in unloading, substantially as described.

4. In a wheeled truck, the combination with a frame, of a rear axle carrying wheels, swinging arms pivoted to the frame and carrying said axle, braces for supporting the arms in vertical position, lever-arms pivoted to the said bars of the frame and adapted to be turned down parallel with said frame and to be raised above the same, bolts on the front of the frame adapted to hold the levers when turned down, and support the same when raised, and a pivoted lever for operating said bolts, substantially as described.

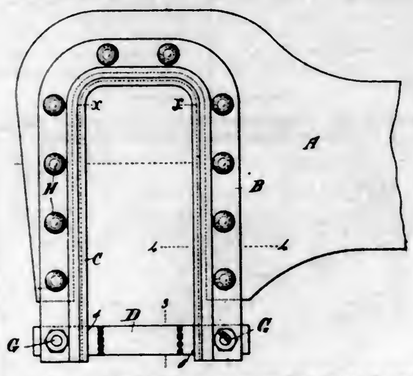
609,177. **RECLINING-CHAIR.** CLARENCE H. YOUPS, Boston, Mass. Filed Mar. 16, 1896. Serial No. 674,015. (No model.)



Claim.—1. In a reclining-chair, the following elements in combination: the chair-body, a back pivotally secured thereto, an auxiliary leg-piece pivotally secured to the back, an extensible head-rest fitted to slide upon the back, and connecting-rods secured to the auxiliary leg-piece and head-rest, respectively, one of the said rods being connected to and adjusted with relation to the relatively fixed bearing in the chair-body so as to move the auxiliary leg-piece into supporting relationship with the back, and extend the head-rest, as the back moves from an upright to a horizontal position, substantially as described.

2. In a reclining-chair, the following elements in combination: the chair-body, a back pivotally secured thereto, an auxiliary leg-piece pivotally secured to the back, an extensible head-rest fitted to slide upon the back, a connecting-rod hung to the auxiliary leg-piece at one end and bearing on the chair-body at the other end, a connecting-rod between the auxiliary leg-piece and the extensible head-rest, the said rods being so proportioned and adjusted as to give to the leg-piece a movement on its pivot toward supporting relationship with the back and to extend the head-rest, when the back moves from an upright to a horizontal position, substantially as described.

609,178. **WEARING-LINER FOR CAR-TRUCKS.** BERSAL BOSHAWS, Headingley, England, assignor to the PEX Solid Pressed Steel Company, of Illinois. Filed Feb. 13, 1896. Renewed June 20, 1898. Serial No. 684,734. (No model.)



Claim.—1. In a truck-frame, a wearing-liner fitting all around the axle-box opening, and provided with one or more flanges engaging the truck-frame, substantially as specified.

2. In a truck-frame, the combination of a pedestal composed of two angle-strips and a wearing-liner fitting all around the axle-box opening and provided with one or more flanges engaging the angle-strips, substantially as specified.

609,179. **CURTAIN-HANGER.** HENRY F. BOSSE, San Francisco, Cal., assignor of two-thirds to Henry Stelling and George M. Lawton, same place. Filed Apr. 23, 1897. Serial No. 633,498. (No model.)



Claim.—1. A curtain-hanger consisting of a band the normal tendency of which is to straighten out or expand, said band being extended at one end to form a jaw, a second jaw pivoted with relation to the first-named jaw and having a portion extended above its pivotal connection therewith, and a connection between the extended end of the second-named jaw and the free end of the band whereby said band and jaw may be detachably engaged and the band made to surround the curtain-pole.

2. As an article of manufacture, a curtain-hanger consisting of a band the normal tendency of which is to straighten out or expand, said band being extended at one end to form a jaw, a second jaw pivoted with relation to the first-named jaw and having a portion extended above its pivotal connection therewith, the adjacent ends of the band and the movable jaw having a bent tongue-and-slot connection whereby these parts are detachably interlocked when the band is made to surround the curtain-pole, said band expanding when said connection is broken, and a stop to engage and hold the jaws closed.

3. A curtain-hanger consisting of a piece of elastic material carrying a fixed jaw, and a movable jaw pivoted with relation to said fixed jaw, said piece adapted to be bent and made to surround the curtain-pole, with its free end adapted to be held under tension whereby the band expands and straightens out when said free end is released.

609,180. **CURTAIN-HANGER.** JOHN J. BROOKS, Athens, Ohio, assignor of one-half to Henry Banks, same place. Filed Aug. 23, 1897. Serial No. 649,218. (No model.)



Claim.—1. A window shade and curtain hanger, comprising a bracket-arm consisting of two broad, segmental-shaped plate-sections fitted to slide on one another, one of said sections being formed with a foot-piece, a hanger-rod connected with the other section and extending at right angles thereto, and a bracket sliding on said rod, substantially as described.

2. A window shade and curtain hanger, comprising a pair of bracket-arms 4, each consisting of two broad segmental-shaped plate-sections 5 6, formed with coinciding longitudinal slots 7, said plate 5 being provided at its upper end with a socket 12 and the plate 6 at its lower end with an attaching foot-piece, studs 8 projecting through said slots and connecting the plates to slide with their broad surfaces in contact, a set-screw 9 for clamping the plates together, a hanger-rod 11 fitted in the socket 12 of each plate 5 and held by a set-screw 12, said hanger-arms adapted to project in opposite directions past the casings of the window-frame in close relation thereto, and a bracket 13 sliding on each rod and formed with a straight or vertical rear face, a shank having an orifice to receive the rod and a set-screw to clamp it to said rod, substantially as described.

609,181. **THILL-COUPLING.** ROBERT RUSH, Smithtown, N. Y. Filed June 26, 1897. Serial No. 642,413. (No model.)

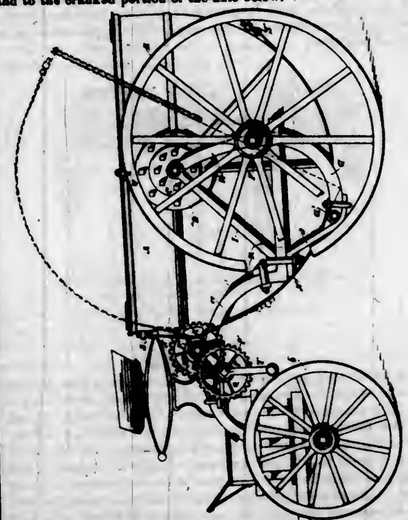


Claim.—The combination of a metal strip or plate, adapted to be fastened to any suitable part of a vehicle, and having a block or hook extending transversely from it, said block or hook having an inclined rear surface, and a U-shaped coupling-piece pivotally connected to an appurtenance of thills, the coupling-piece having an inside inclined surface next to the inclined surface of the block or hook, and being adapted to engage said block or hook, with means for holding the U-shaped coupling-piece in engagement with the said block or hook, substantially as specified.

609,182. **DUMPING-VEHICLE.** WILLIAM A. COWLEY, Benicia, Cal., assignor to the Baker & Hamilton, San Francisco, Cal. Filed Jan. 18, 1896. Serial No. 667,055. (No model.)

Claim.—1. In a dumping-vehicle, a segmental body having trunnions axial with relation to the curved periphery, a crank-axle comprising a cranked portion extending across beneath the body and out of the vertical line of its support, said cranked portion having arms upon which the bearing-wheels of the vehicle are journaled and turnable, and extensions above said arms to which the bearing-trunnions of the body are connected out of the vertical line of the bearing-wheel journals, whereby the body is suspended approximately above the wheel-bearings, and is turnable upon its trunnions to discharge its contents without contact with the cranked portion of the axle.

2. In a dumping-vehicle, a body portion having trunnions upon which it is turnable, a crank-axle comprising a cranked portion extending across beneath the body and out of the vertical line of its trunnions, said cranked portion having its side arms curving into the line of said trunnions, which are formed upon the upper portions of said arms, spindles carried by the arms and adapted to receive bearing-wheels, a main frame extending upon each side of the body and braces extending diagonally from the body to the trunnions above and to the cranked portion of the axle below.



3. In a dumping-vehicle, a body suspended upon axially-disposed trunnions about which it is turnable, drums mounted upon a horizontal shaft extending across the vehicle-frame in front of the body, chains coiled upon said drums, one of the chains extending upwardly to a point of attachment near the top of the body, and the others extending around the lower periphery to other points of attachment, and a gear, pinion, and crank mechanism whereby the drums are rotated to rotate the body in either direction.

4. In a dumping-vehicle, a body turnable upon trunnions axially disposed with relation to its periphery, shafts journaled across the framework of the vehicle having gears, pinions and crank whereby said body is turnable, conical tapering drums, one of said drums having a chain extending upwardly to a point of attachment near the top of the cylindrical body and the other drums having corresponding chains extending therefrom around the lower part of the body to points of attachment, whereby said chains respectively coil upon and uncoil from the drums with a variable power during the turning and discharging of the receptacle.

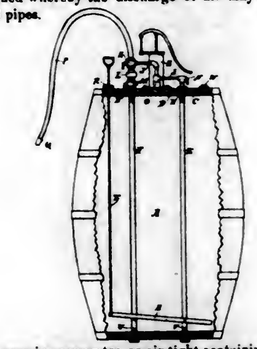
5. In a dumping-vehicle of the character described, a containing-body, trunnions about which the body is turnable, disks or plates by which the trunnions are carried, said disks or plates disposed in pairs with one disk or plate of each pair on the inside of the body and the other disk or plate on the outside thereof and said plates forming approximately smooth interior surfaces and bolted together through the sides of the body.

6. In a dumping-vehicle of the character described, a containing-body, trunnions upon which it is revoluble, an axle comprising a cranked portion extending beneath the body and independent arms extending upward upon each side of the body with spindles for the bearing-wheels and bearings for the trunnions of the body, said trunnions arranged out of the vertical line of the spindles, and means for detachably securing said arms to the cranked portion of the axle.

609,188. **SPRAYING APPARATUS.** GEORGE A. DUNN and ROBERT P. DUNN, Dinuba, Cal., assignors of one-third to W. A. CONN, Fresno, Cal. Filed Jan. 21, 1898. Serial No. 667,434. (No model.)

Claim.—1. In a spraying apparatus, the combination, of a tank, inlet and outlet passages extending to the bottom thereof, one of said passages having perforations for the admission of air to the tank and the other having perforations for the escape of liquid, under pressure, from said tank, a pump having a valve-chamber, and a valve-controlled connection between said chamber and one of said passages whereby air may be forced therethrough into the tank, said liquid discharging through the other passage without coming in contact with the pump.

2. In a spraying apparatus, a tank having an inlet-pipe extending from the top to the bottom with perforations near the bottom for the passage of air whereby the contents of the tank are agitated and a pressure established within the tank, a discharge-pipe also extending from the top to the bottom of the tank and having perforations for the passage of the liquid into it, a discharge-pipe connecting with said pipe exterior to the tank, a pump having a valve-chamber, connections between said chamber and the inlet-pipe and also with the outlet-pipe, cocks by which said pipes may be independently closed or opened whereby the discharge of air may be diverted to either of said pipes.



3. In a spraying apparatus, an air-tight containing-tank, an inlet and a discharge pipe extending from the top to near the bottom of the interior of the tank having perforations near the bottom through which air is discharged into the tank from the inlet-pipe, and the liquid under the pressure thus generated is forced into the outlet-pipe, a strainer fixed in the outlet-pipe exterior to the tank, a discharge-pipe connecting with the pipe above the strainer, a pump having a valve-chamber, connections between said valve-chamber and the inlet-pipe and also with the outlet-pipe, a three-way cock with which said pipe connects and by which air may be directed through the strainer, and a cock in the inlet-pipe whereby the passage of air therethrough can at the same time be prevented.

4. In a spraying apparatus, an air-tight tank, inlet and outlet pipes disposed as shown, a pump connecting with both inlet and outlet pipes exterior to the tank, cocks whereby the connection with either of said pipes may be opened or closed, a strainer interposed between the connection with the outlet-pipe and the tank, and cocks whereby the air may be cut off from the inlet-pipe and directed into the outlet-pipe above the strainer so as to discharge air therethrough to clear the strainer.

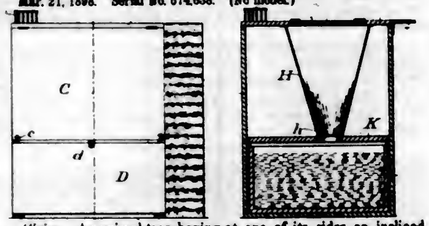
5. In a spraying apparatus, a tank having inlet and outlet pipes with controlling-cocks, an air-pump and flexible connections between the air-pump and each of said pipes, a strainer interposed in the outlet-pipe between the air-inlet passage and the tank whereby air may be forced backwardly through the strainer to clear it out, and both inlet and outlet pipes may be closed to maintain a pressure within the tank and allow the disengagement of the flexible connecting-pipes without loss of pressure.

6. In a spraying apparatus, an air-tight tank, pipes extending from the top to the bottom thereof, an air-pump and flexible connections between it and both inlet and outlet pipes and perforations made in the lower ends of said pipes within the tank whereby air may be forced therethrough to agitate the contained liquid and produce an internal pressure within the tank.

7. In a spraying apparatus of the character described, inlet and outlet pipes with perforations at the bottom and connected air-pump for the injection of air into the tank and a supplemental mechanical agitator situated within the tank and having a connecting-rod extending therefrom through the stuffing-box at the upper end as herein described.

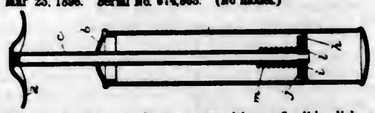
8. In a spraying apparatus, a barrel-shaped tank having flat heads, strengthening-plates fitting the exterior of said heads, tubes extending through said plates and heads having closed caps at the lower end and nuts fitting the screw-threaded exterior at the upper end and turnable so as to force the strengthening-plates against the heads, said tubes having perforations near the bottom interior to the barrel, an air-pump having flexible connections with said tubes, cocks whereby the air from the pump may be delivered through the inlet-pipe to agitate the contained liquid and provide an interior pressure, similar perforations in the outlet-pipe for the escape of the liquid, a strainer interposed between the air-passage of the outlet-pipe and the interior of the tank and cocks whereby the air may be diverted from the inlet-pipe to pass backward through the strainer to the outlet-pipe.

609,184. ANIMAL-TRAP. ISAAC FRANK, Cincinnati, Ohio. Filed Mar. 21, 1898. Serial No. 674,638. (No model.)



Claim.—An animal trap having at one of its sides an inclined passage-way with its upper surface roughened, the trap having a horizontal partition dividing it interiorly into two sections, each of said sections provided with a door at the front of the trap-chamber that can be separately opened, the upper part of the trap having spring-hinged doors opening into a chute having inclined sides reaching downwardly to the horizontal partition dividing the body of the trap into sections, said partition having an opening coincident in size and shape with the lower open end of the chute all in combination with a removable fluid-tank inclosed within lower section of the main structure and a flavored-bait crib at the top of the trap at opposite side of main entrance thereto, substantially as described.

609,185. PUMP-PLUNGER. JOHN H. GOSS, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed Mar 23, 1898. Serial No. 674,863. (No model.)



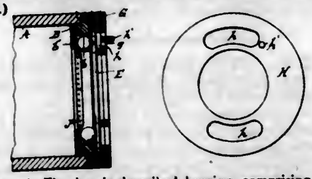
Claim.—1. A pump-plunger, comprising a flexible disk, a rigid washer and a rod or stem, the rigid washer having internal points or projections which are forced into and firmly engage the rod or stem, substantially as described.

2. A pump-plunger, comprising a tubular stem or rod, having one end reduced and thereby provided with a shoulder, a rigid washer seated against such shoulder and having internal points or projections which dig or embed themselves into the material of the rod or stem, thereby to hold the washer rigidly in place on the stem or rod, and a flexible disk secured on the rod or stem next to the said rigid washer, substantially as described.

3. A pump-plunger, having a tubular piston rod or stem and a head, the latter composed of a flexible disk interposed between washers, at least one of which is provided with points or projections which dig or embed themselves in the plunger rod or stem, the outer end of the stem being expanded or closed over the outer washer, substantially as described.

4. A pump-plunger, consisting of a tubular rod or stem, having a reduced and shouldered end, a rigid washer seated on such shoulder and having internal points or projections which dig or embed themselves in the rod or stem, a flexible disk arranged on said rod or stem next to the rigid washer, and another rigid washer applied to the rod or stem outside of the flexible disk, the outer end of the rod or stem being expanded or closed over upon the outer washer, substantially as and for the purpose described.

609,186. BOTTOM BRACKET FOR BICYCLES. WILLIAM I. GRUBB, Pottstown, Pa. Filed May 29, 1897. Serial No. 638,696. (No model.)

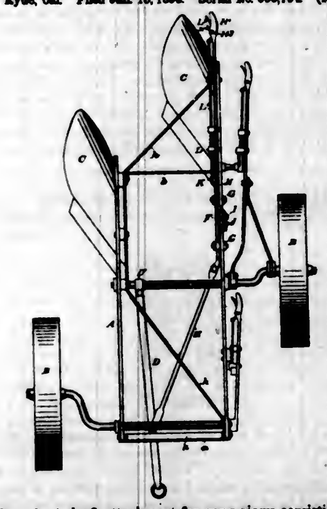


Claim.—1. The herein-described bearing, comprising a cup, a cap having slots or openings therein, and a shutter located between said cup and said cap and having slots or openings adapted to register with said former slots or openings, substantially as set forth.

2. The herein-described bearing, comprising a cup, a cap having slots or openings therein, a shutter located in said cap and having slots or openings adapted to register with said former slots or openings, a pin secured to said shutter and projected through one of the slots of said cap, and a friction-ring also located in said cap and adapted to bear against the inner face of said shutter, substantially as set forth.

3. The herein-described bearing, comprising a cup, a retaining-ring carried thereby, a cap removably secured to said cup and having slots or openings formed therein, a shutter also having slots or openings therein, a friction-ring adapted to hold said shutter against said cap, and means for rotating said shutter, substantially as set forth.

609,187. DRAFT-REGULATOR FOR PLOWS. CALVIN G. HAMPTON, Ryde, Cal. Filed Jan. 10, 1898. Serial No. 666,164. (No model.)



Claim.—1. A draft attachment for gang-plows consisting of the draft-bar having the rear end flexibly connected with the plow-frame, the front end adapted to receive the draft connection, a second bar having a front end connected with the draft-bar diverging rearwardly therefrom and a connection whereby the rear end of the second bar may be moved backward or forward upon the line of the frame whereby the draft-bar is moved from one side to the other.

2. A draft-regulator attachment for plows consisting of a bar having the rear end flexibly connected with the plow-frame, the front end adapted to receive the draft attachment, a second bar intersecting and having the front end connected with the draft-bar near the point of draft attachment, a slide movable in guides upon the line of the plow-frame, a fulcrumed lever, one arm of which engages the slide and the other is provided with a handle by which it may be moved to move the slide and change the position of the draft-bar.

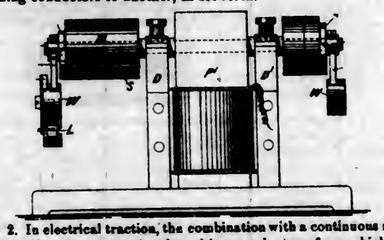
3. In a draft-regulator for plows, two bars having the front ends united, and diverging rearwardly, one of said bars having the rear end flexibly connected with the plow-frame, the other bar having its rear end connected with a slide movable in guides and on the line of the plow-frame, a fulcrumed lever the short arm of which engages the slide, a vertical rack over which the lever is movable, a handle formed upon the lever by turning the sides to form a concavo-convex end with lugs between which a short lever is fulcrumed, and a connection between said lever and the latch which is adapted to engage the holding-rack.

4. The fulcrumed lever by which the draft-regulating mechanism is actuated consisting of a flat bar having the handle bent into a concavo-convex form and provided with ears or lugs, and a lever fulcrumed between said lugs and adapted to tilt within the concavity of the handle.

5. In a gang-plow, a frame consisting of side bars formed of thin metal plates disposed with the greatest depth vertical, similar plates, one forming a transverse bar at the front and the other forming a transverse brace connecting the rear portions of said sides, and braces consisting of a plate or bar extending parallel with one of the side bars for a portion of its length and having its opposite ends bent diagonally toward the opposite side bar.

609,188. ELECTRICAL TRACTION. WILLIAM KINNEAR, Llandudno, England. Filed Dec. 23, 1897. Serial No. 663,161. (No model.) Patented in England May 21, 1896, No. 10,906.

Claim.—1. In electrical traction, the combination with a continuous main electrical conductor, sectional working conductors from which the motor-car directly collects the current, and a number of sectional auxiliary conductors, one such for every sectional working conductor, and through which auxiliary sectional conductor the current is passed from the main conductor to the sectional working conductor aforesaid; of means whereby each sectional auxiliary conductor can be either connected to or disconnected from the main electrical conductor, or to or from a corresponding sectional working conductor and an electromagnetic switch operated by the automatic action of the electric current as the motor-car passes from one of the sectional working conductors to another, as set forth.



2. In electrical traction, the combination with a continuous main electrical conductor, sectional working conductors from which the motor-car directly collects the current, and a number of sectional auxiliary conductors, one such for every sectional working conductor, and through which auxiliary sectional conductor the current is passed from the main conductor to the sectional working conductor aforesaid; of commutator-switches situated at each end of the sectional auxiliary conductors, and a device for automatically operating the commutator-switches by means of electromagnets having soft-iron armatures fixed on rocking shafts, mechanism for retaining the armatures normally in one or other of two positions so long as the magnets are not energized by a current of electricity, and mechanism whereby the movement of the rocking shaft is communicated to the commutator-switch, as set forth.

3. In electrical traction, the combination with a continuous main electrical conductor, sectional working conductors from which the motor-car directly collects the current, a number of sectional auxiliary conductors, one such for every sectional working conductor, and through which auxiliary sectional conductors the current is passed from the main conductor to the sectional working conductors, commutator-switches situated at each end of the sectional auxiliary conductors and electromagnets having soft-iron armatures fixed on rocking shafts whereby the commutator-switches are operated; of auxiliary commutator-switches, one such for each electromagnet, also operated by the rocking shaft to control the action of the electromagnet by connecting it with one or other of two adjacent sectional working conductors whereby the electromagnets may be energized by a current coming from one or other of two adjacent sectional working conductors, as set forth.

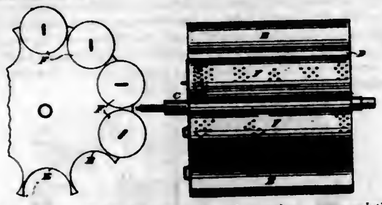
4. In electrical traction, the combination with a continuous main electrical conductor, sectional working conductors from which the motor-car collects the current, a sectional auxiliary conductor for each working conductor, through which the current is passed to the corresponding working conductor, a cylindrical commutator-switch located between adjacent ends of the sectional auxiliary conductors, contact-brushes for the commutator-switch, and metal conducting-plates thereon, whereby in one position thereof the main conductor is connected with a sectional auxiliary conductor, and in the other position the latter conductors are disconnected, and the next sectional auxiliary conductor is connected with its corresponding sectional working conductor; of an electromagnet with two pole-pieces, a soft-iron armature located between the pole-pieces, a rock-shaft to carry the armature, an auxiliary commutator-switch to electrically connect the magnet-coils with either one or other of adjacent sectional working conductors, and means for partially rotating the main commutator-switch and auxiliary commutator-switch by the motion given to the shaft, as set forth.

609,189. ACETYLENE-GAS GENERATOR. JOHN KIRKHAM, Oakland, Cal., assignor of one-half to Joseph Von Wyl, same place. Filed Mar. 15, 1898. Serial No. 673,917. (No model.)

Claim.—1. An apparatus for generating acetylene gas consisting of a generating-chamber, a horizontally-disposed carrier turnable about at its axis therein, segmental holders fixed upon the periphery of the carrier and perforated cylinders adapted to contain the material from which the gas is generated, fitting said holders and secured to the carrier thereby.

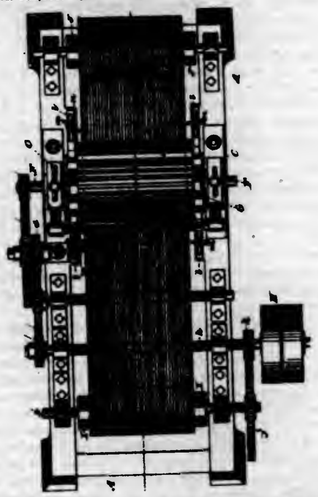
2. An apparatus for generating acetylene gas consisting of a closed casing, a horizontally-journaled carrier having segmental hold-

ers fixed to its periphery, perforated cylindrical chambers slidably fitting into said holders having the sides perforated for the admission of water and the escape of gas, the water-supply pipe extending through the upper part of the outer chamber in line above the line of travel of the containing-cylinders and a gas-escape pipe connecting with the chamber.



3. An apparatus for the generation of acetylene gas consisting of an exterior chamber, a horizontally-journaled rotatable carrier and means whereby it may be turned upon its axis, cylindrical segments fixed around the periphery of said carrier cylindrical chambers adapted to contain material from which the gas is generated and said cylinders having closed ends and perforated sides and fitting within the segmental holders, a perforated pipe extending through the upper part of the chamber adapted to discharge water into each of the cylinders as they are successively brought in line therewith, and openings with removable covers in the ends of the chamber and in line with the containing-cylinders whereby the latter may be removed and introduced.

609,190. CLOTH-ORNAMENTING APPARATUS. JOHN LANCASTER and CHARLES WITTEKE, New York, N. Y. Filed Nov. 17, 1896. Serial No. 612,505. (No model.)



Claim.—1. In a machine for ornamenting a completed strip of fabric, the combination of a traveling pattern, driving mechanism therefor, cloth-propelling means for bringing the fabric up to the pattern, and means for displacing the weft-threads of the fabric laterally in the plane of the fabric, the said displacing means coöperating with the pattern to reproduce the pattern on the fabric, substantially as described.

2. In a cloth-ornamenting machine, the combination of a pattern-roller and a weft-thread-displacing roller coöperating with the pattern-roller and means for driving the weft-thread-displacing roller at a higher rate of speed than the pattern-roller.

3. In a cloth-ornamenting machine, the combination of a pattern-roller having a yielding pattern thereon and a weft-thread-displacing roller, substantially as described.

4. In a cloth ornamenting machine, the combination of a traveling pattern and a weft-thread-displacing device provided with blades coöperating with the pattern, substantially as described.

5. In a cloth-ornamenting machine, the combination of a pattern-roller and a weft-thread-displacing roller and means for adjusting the weft-thread-displacing roller to and from the pattern-roller.

6. In a cloth-ornamenting machine, the combination of a pattern-roller provided with a yielding pattern, a weft-thread-displacing roller provided with springy blades and means for rotating the weft-thread-displacing roller at a greater speed than the pattern-roller.

7. In a cloth-ornamenting machine, the combination of a pattern-roller, a weft-thread displacing roller, a cloth-beam and a cloth-take-up beam, substantially as described.

8. In a machine of the character described, the combination with means for feeding a cloth and a weft-thread-displacing roller, of a pattern-roller provided with a raised pattern thereon, substantially as described.

9. In a cloth-ornamenting machine, the combination with cloth-propelling mechanism and a pattern-roller, of a weft-thread-displacing roller comprising in its structure one or more gangs consisting of superposed springy blades adapted to mutually support each other.

10. In a cloth-ornamenting machine, the combination of a rotating roller with means for driving the same, cloth-propelling means, and means for irregularly displacing the weft-threads of a fabric laterally in the plane of the fabric, reaching contact with the fabric as it passes over the rotating roller and coöperating with the said roller to produce the effect set forth whereby the irregular displacement of the weft-threads of the fabric will produce a pattern on the fabric.

609,191. AUTOMATIC AIR-VALVE FOR RADIATORS. EVERETT P. ALLEN, Chicago, Ill., assignor of one-half to James H. Egleston, same place. Filed July 15, 1897. Serial No. 644,670. (No model.)



Claim.—1. In an air-vent attachment for radiators, the combination with a hollow casing having a vent and adapted for communication with the radiator, of a lever, means controlled by heat for actuating the lever, a float, said lever being adapted to actuate the float, the float being also capable of action by water accumulated in the casing independent of the lever, and a valve for opening and closing the vent controlled by the float, substantially as described.

2. In an air-vent attachment for radiators, the combination with a hollow base portion *a*, of tubes *c c'* communicating with the same, caps *d d'* provided upon the upper ends of tubes *c c'* respectively, cap *d* being provided with a vent *e*, a nozzle *b* adapted to afford communication between the radiator and the casing formed of said tubes and bottom portion, a lever *h* fulcrumed within the base portion, an expansible rod *g* engaging said lever and adapted to lift one end thereof as it is expanded, a float *k* adapted to be seated upon the end of the lever that is thus lifted, a valve *l* supported by said float and adapted to seal the vent when the float is elevated, the float being adapted to be elevated from its seat by the water that is accumulated within the casing and being further adapted to be lowered as the water recedes from the casing or as the engaging end of the lever descends upon the contraction of the rod *g*, substantially as described.

3. In an air-vent attachment for radiators, the combination with a hollow casing, having a vent and adapted for communication with the raidator, of a lever, an expansible rod adapted to actuate the lever under the influence of heat, a float removably seated upon the lever, a valve for opening and sealing the vent controlled by the float, the float being adapted to actuate the valve independently of the lever through the agency of water accumulated within the casing, and also adapted to actuate the valve through the agency of the lever and expansible rod, substantially as described.

4. In an air-vent attachment for radiators, the combination with a hollow casing, of a nozzle or other suitable means adapted to afford communication between the same and the radiator, a float, a valve supported or controlled by said float, a vent adapted to be sealed by the valve as the float is elevated, and a recessed seat *h'* for the float provided with a restricted opening h^2, substantially as and for the purpose specified.

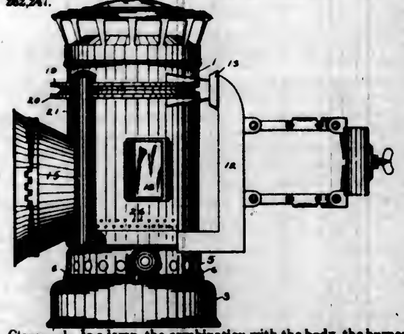
5. In an air-vent attachment for radiators, the combination with a hollow casing having a vent and adapted for communication with the radiator, of a lever, a float, a valve for opening and closing said vent controlled by the float, and a bucket adapted to receive water accumulated within the casing and adapted by its weight combined with the weight of the water contained therein to actuate said lever, as the water recedes from the casing, to maintain the valve closed, said bucket being provided with an outlet whereby the valve is opened after the water has all, practically, receded from the casing, substantially as described.

6. In an air vent attachment for radiators, the combination with a hollow casing having a vent, of suitable means adapted to afford communication between the same and the radiator, a lever, a float removably seated upon the lever and adapted to be actuated thereby, a valve for the vent controlled by the float, and a bucket or receptacle connected with the lever adapted to receive water admitted to the casing, the bucket and water contained therein being adapted to actuate the lever when the water recedes from the casing to maintain the float in an elevated position, the vent being thereby closed while the water recedes from the casing said bucket being also adapted to discharge its contents when the water in the casing has receded, substantially as described.

7. In an air-vent attachment for radiators, the combination with a hollow casing having a vent, of suitable means adapted to afford communication between the same and the radiator, a lever, a float removably seated upon the lever and adapted to be actuated thereby, a valve for the vent controlled by the float, a bucket or receptacle connected with the lever adapted to receive water admitted to the casing, the bucket and water contained therein being adapted to actuate the lever when the water recedes from the casing to maintain the float in an elevated position, the vent being thereby closed while the water recedes from the casing, said bucket being also adapted to discharge its contents when the water in the casing has receded, and an expansible portion adapted to also actuate said lever to seat the valve, substantially as described.

8. In an air-vent attachment for radiators, the combination with a hollow casing having a vent *e* and adapted for communication with the radiator, of a lever *h* pivoted between its ends within the casing, a float *k* removably seated upon the lever at one side of its pivot, a valve controlled by the float for opening and closing the vent, an expansible rod *g* adapted to be engaged by the portion of the lever upon the other side of its pivot, said rod *g* being adapted through the agency of heat to depress the portion of the lever engaged thereby to elevate the float, which thereupon is adapted to close the valve, the float being adapted to be removed from its seat upon the lever by the water accumulated within the casing to also close the valve, substantially as described.

609,192. BICYCLE-LAMP. CHARLES BERGENER, Rochester, N. Y., assignor to the C. T. Ham Manufacturing Company, same place. Filed Oct. 27, 1896. Serial No. 610,207. (No model.) Patented in England Dec. 15, 1896, No. 23,684, and in France Apr. 17, 1897, No. 262,247.



Claim.—1. In a lamp, the combination with the body, the burner, the burner-cone, and the air-chamber beneath the burner-cone, of the rear air-tube separated from the body and having the injector at its upper end and communicating with the air-chamber, and the side tubes closed at their upper ends and also connected to the air-chamber and having the openings and the dividing-plates therein, substantially as described.

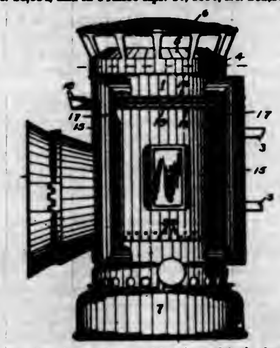
2. In a lamp, the combination with the body having the window at the front, and the air-tube at the rear separated from the body and having the injector at the top, of the burner and its cone, the air-chamber beneath the cone with which the rear tube connects, the air-director extending around the lamp-body, the separate side tubes having the closed upper ends and connected with the air-chamber and having the openings in proximity to the air-director, substantially as described.

3. In a lamp, the combination with the body, the burner and cone, and the air-chamber beneath the latter, of the rear air-tube separated from the body, having the injector at its upper portion and communicating with the air-chamber and also with the body above the burner, the side tubes closed at their upper ends and open near said ends on the side next the body and having the dividing-plates in said openings, and an annular air-director coöperating with the side and rear tubes.

4. In a lamp, the combination with the body having the window at the front, the burner, the burner-cone, and the air-chamber beneath the cone, of the rear air-tube having the injector at its upper end, the air-director having the upper, lower and intermediate air-channels, the side tubes connected to the air-chamber having the openings at their upper ends, and the dividing-plates in the openings, substantially as described.

5. In a lamp, the combination with the lamp-body having the window, the burner, burner-cone, and the air-chamber beneath the latter, of the side air-tubes having the closed upper ends and communicating with the air-chamber and open at their upper portions on the sides next the lamp-body, the vertical dividing-plate in said openings, and the horizontal air-director having an annular passage and the channeled lower side, substantially as described.

609,193. LAMP. CHARLES BERGENER, Rochester, N. Y., assignor to the C. T. Ham Manufacturing Company, same place. Filed Nov. 7, 1896. Serial No. 611,235. (No model.) Patented in England Dec. 15, 1896, No. 23,684, and in France Apr. 17, 1897, No. 262,247.



Claim.—1. In a lamp, the combination with the body having the open top and the burner, burner-cone and the air-chamber beneath the cone, of the air-tubes connected to the air-chamber at the burner and with the interior of the upper portion of the body and having the apertures, an annular air-director at the upper portion of the body intersecting the tube-apertures, and the vertical plates in the tube-apertures, substantially as described.

2. In a lamp, the combination with the body having the open top, the burner, the burner-cone, and the air-chamber beneath the cone, of the air-tubes connected to the air-chamber at the burner and to the upper portion of the body and having the apertures, an annular air-director intersecting the tube-apertures, having the central air-passage, the vertical plates in the tube-apertures extending across the air-passage in the director, substantially as described.

3. In a lamp, the combination with the body having the open top, the window at the front, the burner, burner-cone, and the air-chamber beneath the cone, of four air-tubes connected to the air-chamber at their lower ends and with the interior of the body above the burner, and having apertures intermediate their length, a horizontal air-director extending laterally of the openings in the tubes, and vertical dividing-plates in the tube-openings, substantially as described.

4. In a lamp, the combination with the body having the open top, the burner, burner-cone and the air-chamber beneath the cone, of the air-tubes separated from the body and communicating with the body above the burner and with the air-chamber beneath the cone, said tubes having air-inlet openings intermediate their ends and the horizontal air-director on the body coöperating with the tube-openings, substantially as described.

5. The combination with the body having the open top, the burner, burner-cone and and air-chamber beneath the cone, of the air-tubes separated from the body and communicating with the interior of the latter above the burner and with the air-chamber below it, said tubes having the apertures 17, the dividing-plates 21 and the horizontal air-director having the dished upper and lower sides and projecting beyond the body of the lamp, substantially as described.

6. In a lamp, the combination with the body open at the upper end, and the burner-cone at the bottom, the bottom plate beneath the cone having the aperture and forming with the cone an air-chamber, of air-tubes separated from the body and communicating with the latter above the cone and with said air-chamber, an oil-fount

separated from the body by an air-space, and the burner in the fount cooperating with the bottom plate and closing the aperture therein, substantially as described.

7. In a lamp, the combination with the body open at the upper end, and the burner-cone at the bottom, the bottom plate having the aperture and forming with the cone an air-chamber, of air-tubes separated from the body communicating with the latter above the cone, having air-feeding apertures intermediate their length and entering the air-chamber beneath the cone, the oil-fount connected to the body and separated therefrom by an open air-space, and the burner in the fount cooperating with the aperture in the bottom plate, to form a tight joint therewith, substantially as described.

8. In a lamp, the combination with the body open at the upper end, the bottom plate having the aperture and the cone above it, and an air-supply tube separated from the body connected with the latter above the burner and communicating with the chamber beneath the cone having air-supplying devices intermediate its length, of the oil-fount detachably connected with the bottom of the body and separated therefrom by an air-space, a removable burner in the oil fount, engaging the under side of the air-chamber around the aperture to close the latter.

9. The combination with the body having the window at the front and the plates 10 and 11 at the bottom, forming an air-chamber, an air-tube communicating at its lower end with the air-chamber in the body, of the oil-fount, detachable fastenings between it and the body and leaving an air-space between the bottom plate and the top of the oil-fount, and the burner in the oil-fount entering the air-chamber in the body and forming a tight joint with the bottom plate of the chamber.

10. The combination with the body having the cap, the window at the front, an air-chamber at the base, and an air-supply tube separated from the body and communicating with the air-chamber, the burner-cone above the air-chamber, the oil-fount detachably connected to the body and separated therefrom by an air space, and the burner in the fount entering the bottom of the air-chamber and forming a tight joint therewith.

11. In a lamp, the combination with the body, the cone-plate therein, and the bottom plate having an aperture, air-supplying tubes on the body above the bottom plate communicating with the air-space between the cone and bottom plates, and the perforated apron on the bottom of the body, of the oil-fount having the perforated flange cooperating with the apron and detachable connections between them, and the slip burner in the fount engaging the bottom plate close to the edges of the aperture, substantially as described.

12. In a lamp, the combination with the body having the open top, the burner, burner-cone, and the air-chamber beneath the cone, of a plurality of air-tubes arranged symmetrically around the body separated therefrom and connected to the body above the burner and to the air-chamber beneath the cone, said tubes having apertures intermediate their length, a horizontal air-director extending laterally of the openings in the tubes and having the dished upper and lower sides and vertical dividing-plates in the tube openings, substantially as described.

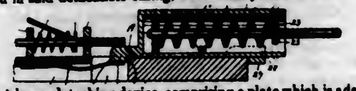
13. In a lamp, the combination with the body, the top plate, the conical plate beneath it, and the burner-cone, of the air-chamber beneath the cone, a plurality of air-tubes around the body communicating with the interior of the upper portion of the latter and with the air-chamber at the burner and having the apertures intermediate their length, the dividing-plates in the apertures and the annular air-director extending around the body and intersecting the apertures in the tubes, substantially as described.

14. In a lamp, the combination with the body, having a cone and an air-chamber beneath the cone, of an air-tube separated from the body and communicating with the air-chamber, and having an opening in the side, the annular air-director embodying the top and bottom channels and the intermediate channel and cooperating with the opening in the tube, substantially as described.

15. In a lamp, the combination with the body, and a vertical air-tube connected with the lower portion of the body, of the annular air-director on the body cooperating with the tube intermediate its ends, and having the dished upper and lower sides, and the intermediate air-passage, substantially as described.

609,194. HORSE-DETACHER. JOHN E. BERKSTRESSER, Sylacauga, Ala. Filed Apr. 30, 1898. Serial No. 678,200. (No model.)

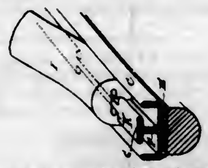
Claim.—1. A horse-detaching device, comprising a plate which is adapted to be secured to the shaft of the vehicle, said plate being provided centrally thereof with an angular hole or opening, at the rear of which is a longitudinal groove which communicates therewith, a spring mounted in said groove and the forward end of which projects across said hole or opening, a spring-operated bolt mounted over the rear end of said plate and adapted to be projected over said hole or opening, and a detachable longitudinal casing provided at its rear end with a backwardly-directed arm on which is formed a downwardly-directed head, and a spring-operated trace-attaching device mounted in said detachable casing, substantially as described.



2. A horse-detaching device, comprising a plate which is adapted to be secured to the shaft of the vehicle, said plate being provided centrally thereof with an angular hole or opening, at the rear of which is a longitudinal groove which communicates therewith, a spring mounted in said groove and the forward end of which projects across said hole or opening, a spring-operated bolt mounted over the rear end of said plate and adapted to be projected over said hole or opening, and a detachable longitudinal casing provided at its rear end with a backwardly-directed arm on which is formed a downwardly-directed head, and a spring-operated trace-attaching device mounted in said detachable casing, said plate being provided at the opposite side of its forward end with projecting lugs, and said detachable casing with a transverse plate which is secured to the bottom thereof, substantially as described.

3. A horse-detaching device consisting of a plate which is adapted to be secured to the shaft of the vehicle, said plate being provided centrally thereof with an angular hole or opening, and the rear end of said plate being provided with a spring which projects across said hole or opening, a spring-operated bolt mounted longitudinally over the rear end of said plate and adapted to be projected over said hole or opening and provided with means for connecting the detaching-line therewith, and an oblong detachable casing provided at its rear end with a projecting arm having a downwardly-directed head, said casing being provided with a longitudinally-movable spring-operated shaft which is mounted therein, and with which a trace may be connected, substantially as described.

609,195. RUBBER TIRE FOR VEHICLE-WHEELS. JOHN S. CROWELL, Springfield, Ohio. Filed July 30, 1897. Serial No. 646,434. (No model.)



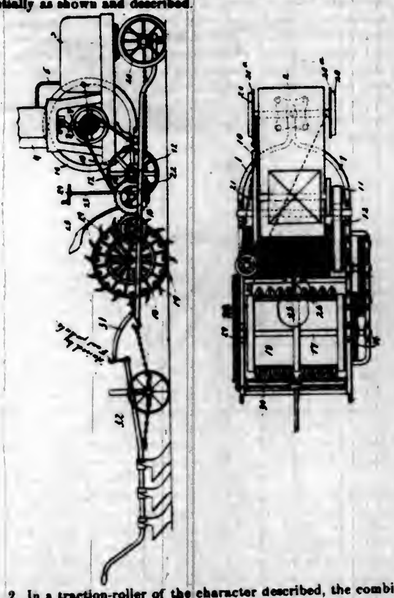
Claim.—1. In an elastic or rubber tire equipment, the combination with a channel-iron composed of an open ring having inwardly-projecting flanges to embrace the edges of an ordinary wheel structure, and two outwardly-extending flanges to form a groove for the rubber tire, and means to secure the ends of such ring together with the ends more or less remote, of a tire-retainer secured to such ring, extending circumferentially around it and itself in the form of an open ring, such retainer being cut away in its outer part for a short portion of its circumference, and a rubber tire proper formed with an interior space adapted to fit said retainer and adapted to be threaded upon the retainer at the point of such cut-away part.

2. In an elastic or rubber tire equipment, the combination with a channel-iron formed of an open ring having perforated plates secured to one end and adapted to be secured to the other end with the ends at different distances apart according to the length and circumference desired, said channel-iron having inwardly-extending flanges to embrace the wheel structure, and outwardly-extending flanges to form a groove for the tire proper, and a tire-retainer having a web and a head crosswise the web, and secured within the channel-iron, the retainer being also in the form of an open ring, and the head being cut away a short portion of its circumference, and a rubber tire proper having a space correspondingly shaped to the cross-section of the retainer and adapted to be threaded upon the retainer at the cut-away portion of the retainer, all as substantially shown and described.

3. In an elastic or rubber tire equipment, the combination with a channel-iron having one or more circumferential grooves, of a retainer fitted in each groove, and means to secure the ends of the channel-iron and the ends of the retainer or retainers.

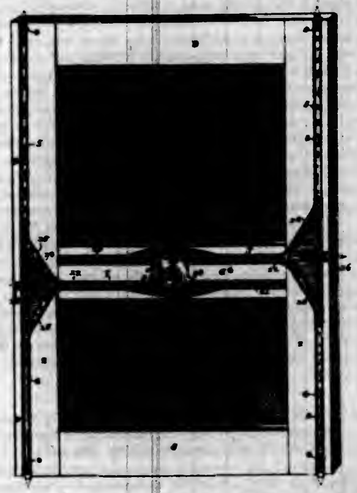
609,196. TRACTION MOTOR. ANTOINE JEAN PATERNOSTER DE SOUZA, Paris, France. Filed Sept. 1, 1896. Serial No. 604,518. (No model.) Patented in England Oct. 24, 1894, No. 20,267; in France June 27, 1895, No. 243,494; in Canada Sept. 18, 1896, No. 53,285, and in Hungary Feb. 10, 1897, No. 27,570.

Claim.—1. In a traction-roller of the character described, teeth comprising the curved plate *a*, the curved angular support *b*, brace *b'*, bolts *c*, and means for securing them to the follies and cross-bars, substantially as shown and described.



2. In a traction-roller of the character described, the combination, with a wheeled motor of the traction-roller provided with curved teeth, a plow or other implement detachably connected to the frame of the motor and a lever upon the frame connected to rods by which the plow and a scraper are attached, said lever adapted to operate the rods to raise the plow out of engagement with the ground and clean the teeth of the roller, substantially as shown and described.

609,197. WINDOW-SCREEN FASTENER. JOSEPH PRIBE, Marion, Ind. Filed Mar. 25, 1898. Serial No. 675,134. (No model.)



Claim.—1. The combination with a frame, of longitudinal reciprocating rods arranged in pairs and spaced apart at their inner terminals, transverse reciprocating rods located at right angles to the longitudinal rods, the pivoted connecting-rods arranged in pairs and extending from each horizontal rod to the inner ends of the adjacent longitudinal rods and forming a toggle connection between the latter, and means for operating the transverse rods, substantially as described.

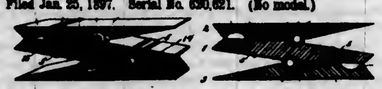
2. In a device of the class described, the combination of reciprocating locking-rods 5 and 6 spaced apart at their inner ends, a reciprocating locking-rod 7 arranged at right angles to the rods 5 and 6 at a point between the same, and the connecting-rods 15 extending from the inner ends of the rods 5 and 6 to the rod 7 at a point adjacent to the engaging end of the latter, said connecting-rods 15 forming a toggle connection between the rods 5 and 6, and providing a straight brace or connection between the same when the parts are locked, substantially as described.

3. The combination with a frame, of vertical upper and lower locking-rods guided on the frame and spaced apart at their inner terminals, horizontal locking-rods mounted on the frame opposite the spaces between the vertical rods and located at different elevations, the connecting rods 15 extending from the inner ends of the vertical rods to the horizontal rods and forming toggle connections between the former, and a pivoted locking-piece mounted on the frame and connected with the horizontal locking-rods at points at opposite sides of the pivot, substantially as described.

4. The combination with a screen-frame provided with vertical and horizontal grooves, of upper and lower vertical rods arranged in the vertical grooves of the frame of the screen, horizontal rods guided in the horizontal grooves of said frame, connections between the horizontal and vertical rods, and a centrally-pivoted locking-piece connected at opposite sides of the pivot with the horizontal rods, substantially as described.

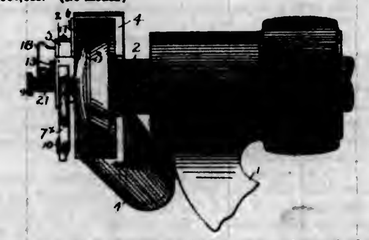
5. The combination with a frame, of upper and lower locking-rods arranged vertically, horizontal locking-rods, located at different elevations and connected with the vertical rods and adapted to reciprocate the same, a ratchet-plate mounted on the frame between the horizontal rods and provided with grooves, and an operating-piece pivoted to the frame and connected with the horizontal rods, said operating-piece being provided at its inner face with ribs interlocking with the ratchet-plate, substantially as described.

609,198. CLOTHES-PIN. FREDERICK S. GRAVES, Hancock, Me. Filed Jan. 25, 1897. Serial No. 620,621. (No model.)



Claim.—In a clothes-pin of the character described, the combination with the two outer bars, formed with semicircular grooves in the inner faces at opposite ends, and formed in the outer faces or sides with transverse grooves, and in their inner sides formed with central transverse sockets, of the intermediate beveled strip formed with central sockets in opposite sides, and the transverse grooves near the ends, and the springs each formed with a coil and with lateral arms at each end, substantially as described.

609,199. GAGE FOR CUTTING AND TRIMMING MACHINES. HENRY GRAVES, Rochester, N. Y. Filed Jan. 25, 1898. Serial No. 667,883. (No model.)



Claim.—1. The combination with a rotary cutting-tool, of a gage embodying an arm extending partially around the cutter, and pivoted to turn at right angles to the axis of the cutter, a spring for operating the gage-arm away from the cutter, and a retaining device for holding the gage in operative position.

2. The combination with a rotary cutting-tool, of a gage embodying an arm extending partially around the cutter and pivoted to turn on a center parallel with the axis of the cutter, a spring for operating the gage away from the cutter, a retaining device, and means for adjusting the gage.

3. The combination with a rotary cutting-tool, of a gage consisting of the support, the movable arm thereon formed in two sections relatively movable, the spring for holding the outer section extended, and detachable securing devices for holding the gage as a

whole in operative position with the outer yielding section in proximity to the cutter edge.

4. In a gage for rotary cutting-machines, the combination with the support, the slotted gage arm adapted to extend partially around the cutter, the pin on the support extending through the slot, and the adjusting-screw engaging the support and gage-arm.

5. In a gage for rotary cutting-machines, the combination with the support, the gage-arm movable on the support and having its end projecting beyond the face of the cutter, an adjusting-screw for adjusting said arm, the spring engaging the screw to lock it and also operating to move the arm, and retaining devices for holding the arm against the tension of the spring.

6. In a gage for rotary cutting-machines, the combination with the support and the segmental slotted plate thereon, of the gage-arm, the screw engaging and passing through the slot in the segmental plate and entering the gage-arm, and also adjustable in the slot, and the pivot-pin on the support engaging the arm.

7. In a gage for a rotary cutter, the combination with the support, the segmental slotted plate thereon and the pivot-pin below it, of the gage-arm engaging the pivot-pin, the screw having the slotted head and engaging the plate and also the arm, the spring locking the screw and operating the gage-arm away from the cutter, and the spring-operated pin for holding the arm against the tension of the spring.

8. The combination with the rotary shaft and the removable cutter on the free end thereof, of an adjustable gage-arm partially encircling the outer edge and free end of the cutter and having its edge projecting beyond the periphery of the latter, said arm being pivoted on an axis parallel with that of the cutter-shaft and movable toward and from the cutter, and means for holding the gage over the edge of the cutter and permitting it to move back from the free end thereof to permit the removal of the cutter, when desired.

609,200. WATERPROOFING COMPOUND. WILLIAM A. HALL, Bellows Falls, Vt. Filed Apr. 5, 1897. Serial No. 630,772. (No specimens.)

Claim.—1. A composition for giving an insoluble, porous coating to wall-surfaces, paper, &c., composed of a solution of casein or milk albumen, a retarding agent to prevent too rapid setting of the coating and to insure its porosity, and formaldehyde (CH_2O).

2. A composition for giving an insoluble, porous coating to wall-surfaces, papep, &c., composed of casein or milk albumen, an alkali, a retarding agent to prevent too rapid setting of the coating and to insure its porosity, and formaldehyde (CH_2O).

3. A composition for giving an insoluble, porous coating to wall-surfaces, paper, &c., composed of casein or milk albumen, an alkali, a mineral base to act as a retarding agent and give porosity to the coating, and formaldehyde (CH_2O).

4. The method of producing an insoluble composition for coating wall-surfaces, paper, &c., which consists in dissolving casein or milk albumen in an alkali solution, adding a mineral substance to said solution to serve as a base and retarding agent and to give porosity to the coating and then infusing into the compound thus formed formaldehyde (CH_2O).

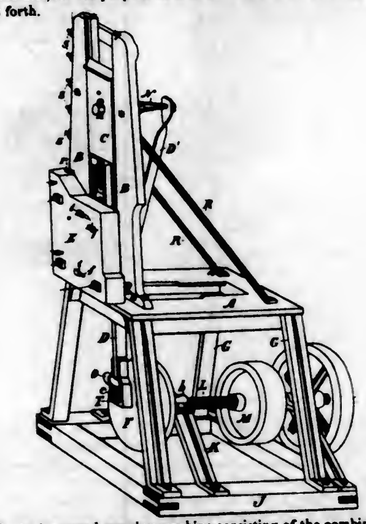
609,201. SWAGING-MACHINE. GEORGE H. HAYNES, Bangor, Me., assignor to the Dirigo Ball Manufacturing Company, same place. Filed Oct. 3, 1896. Serial No. 564,475. (No model.)

Claim.—1. An improved swaging-machine consisting of a stand having uprights with means for holding a slide; a slide having means for securing a die thereto and reciprocated by attachment with a revolving crank; a head secured parallel to said uprights to extend across the slide, and provided with means for holding a die thereon in line with the die on said slide, and means for adjusting the head vertically, transversely and longitudinally of the base, for the purpose described and substantially as shown and set forth.

2. In a swaging-machine, a frame, an adjustable head secured thereto, said head being provided with a vertical groove, uprights on the frame, one of which has flanges fitting in the groove of the head, a die-holder secured to the inner face of the head and provided with means for adjusting the die, said head being so arranged that a space is formed therebetween and one of the uprights, as and for the purpose set forth.

3. In a swaging-machine the combination of a stand having vertical uprights provided with guides for receiving a reciprocating slide; a wrist-pin secured to said slide, a connecting-rod attached to said wrist-pin and having a brace extending to the outer end of same, said connecting-rod having at its lower end a box adapted to slide between a strap secured thereto and a spring to retain said box in position, for the purpose described; a power-shaft having a crank-wheel attached to the lower end of said connecting-rod; and means for rotating said shaft for the purpose described and substantially as shown and described.

4. In a swaging-machine provided with a reciprocating slide having means for retaining a die thereon; a stationary head secured to and parallel with the frame of said machine, said head adjustable upon said frame by means of confining-bolts and set-screws bearing against projecting flanges rising from one side of the frame; an adjustable die-holder secured to said head and constructed with a ridge and means to secure a die thereto, adjusting-bolts securing the die-holder to said head; a separating-bolt between the front end of the head and frame on the opposite edge from the flanges, in such manner as to leave an open top and one side for inserting the metal between the dies, for the purpose described and substantially as shown and set forth.



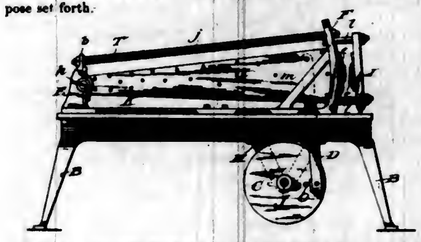
5. An improved swaging-machine consisting of the combination of a stand having depending legs, a horizontal shaft secured thereto and provided with power-wheels and connections with a suitable power medium; a crank-wheel secured to one end of said shaft, a connecting-rod pivoted to said crank-wheel by means of a sliding box held in place by a spring, said connecting-rod having its opposite end secured by a wrist-pin to a slide; said wrist-pin having an extended end connected by a brace to the connecting-rod for the purpose described, a slide having a raised surface and longitudinal rib for the purpose described, with means for retaining a forging-die thereon; parallel uprights extending from the top of said stand and having ways for receiving a slide, and also provided with a gib in said ways adjusted by gib-screws projecting from said upright; one or more flanges projecting from the side of one of the uprights, confining-bolts projecting from said uprights, and a head secured to the same by said confining-bolts, said head having a groove to receive said flanges and set-screws for adjusting the same, an adjustable die-holder secured to said head by bolts passing through slots in the latter, and having means for securing a die thereto, a separating-bolt between the front edge of the head and frame opposite the flange, all for the purpose described, and substantially as shown and set forth.

6. In a swaging-machine having a stationary frame, an adjustable head secured thereto by bolts passing through its lower corners and its upper left corner, said head provided with a groove adapted to receive projecting flanges from the upright of said machine, and adjusted thereon by set-screws; a die-holder secured to the inner face of said head and provided with die-holding arrangement, all constructed in such manner as to leave an opening between the head and one of the uprights for inserting the metal between the dies and over the top of the head, substantially for the purpose shown and described.

609,202. SWAGING-MACHINE. GEORGE H. HAYNES, Bangor, Me., assignor to the Dirigo Ball Manufacturing Company, same place. Filed July 24, 1897. Serial No. 645,881. (No model.)

Claim.—1. In a swaging-machine, an oscillating beam, guides arranged on either side of the swinging end of said beam, a head secured to said guides a die-holder on the head and means for oscillating said beam, as and for the purpose set forth.

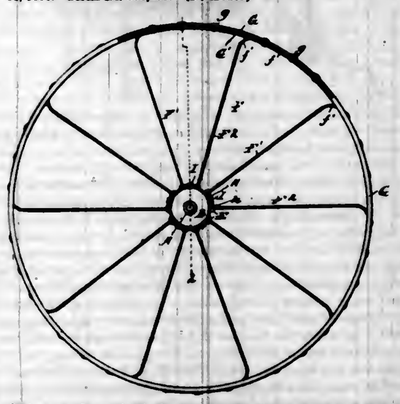
2. In a swaging-machine, a platform, an oscillating beam mounted thereon, guides arranged on either side of the swinging end of said beam, bolts run through said guides, a head held substantially parallel with said guides by said bolts, a die-holder adjustably arranged on the head and means for oscillating said beam, as and for the purpose set forth.



3. In a swaging-machine, the combination with a horizontal platform, of a frame secured to the top of the same, said frame consisting of a pillow-block with transverse journal-bearing and an extension above said bearing; curved uprights parallel with each other and connected at the base with said pillow-block; tie-rods connecting the upper ends of said guides and pillow-block; and tubes inclosing said tie-rods and separating said guides and the upper end of said pillow-block; a rectangular head bolted to said guides; set-bolts adapted to adjust said head; a concaved die-holder on inner face of said head with means for securing a die thereto; a swinging arm with one end adapted to reciprocate between said guides, and its opposite end provided with a transverse shaft inclosed in said pillow-block; and means for reciprocating the die end of said swinging arm by attachment to suitable power medium, for the purpose described and substantially as shown and set forth.

4. In a swaging-machine a beam pivoted at one end with its opposite end adapted to reciprocate between guides; means for reciprocating the free end of said swinging arm by suitable connection with a power medium; a die-holder at the swinging end of said beam, said die-holder having a convex face curved to correspond with the swinging radius of the beam, and having a longitudinally-extending ridge and means for securing a swaging-die thereto; a stationary block or head rigidly fastened in front of said convex die-holder, said block having means for attaching a concaved die-holder having its face curved on an arc having for a radius the distance to the pivotal point of the swinging beam, said concaved die-holder having a longitudinally-extending ridge with overhanging edge and means for securing a similarly-concaved forging-die to aline with the die on the convex die-holder, all for the purpose described and substantially as set forth.

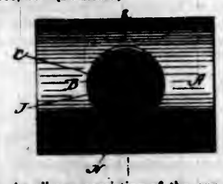
609,203. WHEEL. JAMES MACPHAIL, West Pullman, Ill., assignor to the Piano Manufacturing Company, Chicago, Ill. Filed Aug. 10, 1896. Serial No. 602,238. (No model.)



Claim.—1. In a wheel, the hub A; the flange C concentric with the hub and provided with the segmental recesses D; the flat double spokes F, comprising the two spokes F' and F^2 united at their hub ends by the loop F^3; the said loops F^3 being adapted to fit in the said recesses D; segmental clamping-plugs H adapted to fit within the loops F^3; bolts I passing through the said plugs H, loops F^3 and flange C; the rim G; and means for attaching the rim ends of the spokes thereto.

2. In a wheel, the integral spokes F, comprising the two spokes F' and F^2 united at their hub ends by the segmental loop F^3 and terminating with the segmental extensions *f* connected to the said spokes by the bends or loops *f'*; with the hub A comprising the flange C containing the segmental recesses D cooperating with the segmental loops F^3 together with the segmental plugs H and the bolts I; and the tire G having the internal flanges and connected to said extensions *f*, substantially as shown and described.

609,204. OIL-CUP. JAMES MACPHAIL, West Pullman, Ill., assignor to the Piano Manufacturing Company, Chicago, Ill. Filed Oct. 1, 1897. Serial No. 653,766. (No model.)



Claim.—1. An oil-cup consisting of the cup proper having an aperture, and a pivotal bearing-surface on the inner edge of said aperture, with the cover having a pivotal bearing-surface cooperating with said other bearing-surface and adapted, when closed, to rest upon the top of the cup, and a spring interposed between said cup and said cover to hold it normally closed, substantially as described.

2. An oil-cup comprising the cup B having the pivotal bearing-surface E and the lug F, with the cover having the bearing-surface H and the lug L, and the spring M interposed between said lugs.

3. An oil-cup comprising the cup proper having the pivotal bearing-surface and the lug F, with the cover having the lug L, and the overlapping portion N, and the spring interposed between said lugs, substantially as described.

4. The oil-cup comprising the cup B having the aperture C, the bearing-surface E, and the lug F, with the cover G having the bearing-surface H, the ribs J, and the lug L, and the spring M, all cooperating, substantially as and for the purposes described.

5. In an oil-cup for bearings, the cup proper cast integral with the bearing, and having an aperture and a pivotal bearing-surface on the inner edge of said aperture, with the cover having a pivotal bearing-surface cooperating with said other bearing-surface and adapted, when closed, to rest upon the top of the cup, and a spring interposed between said cup and said cover to hold the bearing-surfaces in contact and the cover closed, substantially as described.

6. An oil-cup comprising the cup proper having an aperture, said aperture having a pivotal bearing-surface on one edge thereof, with the cover for said aperture having a pivotal bearing-surface on one side thereof cooperating with said other bearing surface, an arm projecting into said cup, and a spring in said cup interposed between said arm and cup to hold the bearing-surfaces in contact and the cover closed, substantially as described.

7. An oil-cup for bearings comprising a cup proper having an aperture, a cover pivoted at the inner edge of such aperture and having an arm projecting into the cup and a spring abutting at one end against the arm and the other end against the cup at a point substantially opposite the edge of the aperture upon which the cover is pivoted.

609,205. FENCE-POST. ELISHA C. MATHEWS, Jacksonville, Ill. Filed Jan. 20, 1898. Serial No. 667,247. (No model.)



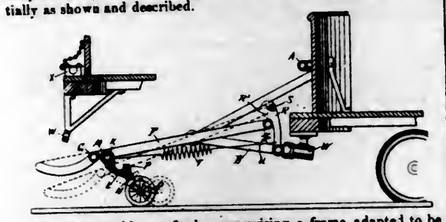
Claim.—1. In a fence-post, the combination with a tile and a standard and brace passing through the same, of hooks on the said standard and brace engaging the upper and lower edges of the tile.

2. In a fence-post, the combination of a tile, a ring clamped around the upper end of the tile, a standard and brace passing through the tile, hooks on the lower ends of the standard and brace engaging the lower end of the tile, and hooks on the standard and brace engaging over the upper end of the tile and secured to the ring.

609,206. CAR-FENDER. ANTON MARKOVICH, New York, N. Y. Filed Dec. 8, 1897. Serial No. 661,161. (No model.)

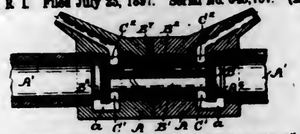
Claim.—1. A detachable car-fender, comprising a frame adapted to be removably attached to the car-platform, a tilting fender pivoted to said frame, a latch pivoted upon the rear of said frame, said latch comprising side sections and cross-braces and being provided with lips upon the upper front portion thereof adapted for engagement with a rear cross-piece of the tilting fender when depressed, a

spiral spring connecting and maintaining in connection said latch and said tilting fender, and a guide-wheel pivotally attached to the center of the forward cross-bar of the tilting fender, said wheel being adapted to support said tilting fender in its normal position, substantially as shown and described.



2. A detachable car-fender, comprising a frame adapted to be removably attached to the platform or the dashboard and platform, a tilting fender pivoted to said frame, a latch pivoted upon the rear of said frame, said latch comprising side sections and cross-braces and being provided with lips upon the upper front portion thereof adapted for engagement with the rear cross-piece of the tilting fender when depressed, a spiral spring connecting and maintaining in connection said latch and said tilting fender, and a guide-wheel pivotally attached to the center of the forward cross-bar of the tilting fender and a coil-spring attached thereto to maintain it in its normal position, said wheel being adapted to support said tilting fender in its normal position, substantially as shown and described.

609,207. VALVE-COUPLING. NELSON H. MEDBERY, East Providence, R. I. Filed July 23, 1897. Serial No. 645,707. (No model.)



Claim.—1. The combination with the two parts of a coupling each provided with two or more ducts, of a two-part valve, longitudinally divided into two or more ducts, closed at the opposite ends and provided with two or more ports, the said two-part valve being connected by the two parts of the coupling and the ducts connected by the partial rotation of the valve; whereby two or more ducts may be simultaneously connected or disconnected, as described.

2. In combination, the two parts of a coupling, and connections for securing the coupling together, ducts connecting with the coupling, a two-part rotatable, cylindrical valve one part in each of the two parts of the coupling and ports in ends of the valve; whereby, on partially turning the valve, the ports in the valve and ducts in the coupling are connected, and the two parts of the coupling are locked together, as described.

3. In combination, the two parts of a coupling, two or more ducts connecting with the two parts of the coupling, connections for securing the two parts of the coupling together, a two-part cylindrical valve one part connected with each of the two parts of the coupling, two or more ducts in the valve and ports in the valve for connecting the ducts in the valve with the ducts in the coupling, whereby, by the partial rotation of the valve, two or more passages are opened through the coupling, as described.

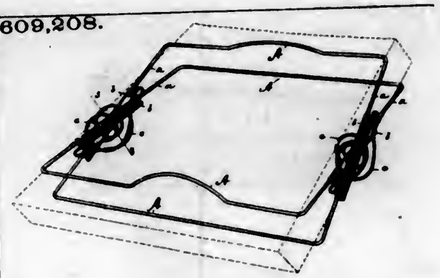
4. In a coupling, the combination with one part of the coupling provided with two or more ducts near one end, a socket A^9 and the annular groove A^9 connecting with the groove A^{11} on the other end and the pin A^{14} of the other part of the coupling provided also with two or more ducts and with the pins A^{10} and A^{12}, the two-part cylindrical valve B having two or more ducts and the dowel A^{16} connecting the two parts of the valve, the ports C C near the closed ends of the valve, the slot A^{13}, and the cam-slot A^{15}; whereby the coupling parts are secured together and the valve is operated to open the ports in coupling and close the ports in uncoupling, as described.

609,208. LETTER-CLASP. SAMUEL J. NEUGROSCHEL, LEO NEUGROSCHEL, ISRAEL NEUGROSCHEL, and CHARLES WALTERS, New York, N. Y. Filed Sept. 16, 1897. Serial No. 651,843. (No model.)

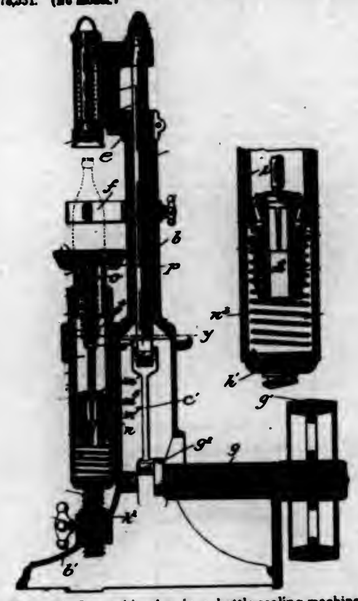
Claim.—1. A letter-clasp composed of a pair of frames, and duplex helical springs secured thereto and forming the pivots for the frames, substantially as specified.

2. A letter-clasp composed of a pair of frames, pockets secured to the end bars thereof, and duplex helical springs engaging the pockets and having center cross-arms that pivotally connect the frames, substantially as specified.

609,208.



609,209. MACHINE FOR APPLYING CORKS AND SEALS TO BOTTLES. WILLIAM PAINTER, Baltimore, Md., assignor to the Crown Cork and Seal Company, same place. Filed Apr. 28, 1896. Serial No. 678,531. (No model.)



Claim.—1. In combination in a bottle-sealing machine, a pressure-applying head, a table or rest for the bottle, means for moving one of said parts relatively to the other to obtain the desired pressure, and means for automatically limiting the application of pressure when a predetermined degree is reached, irrespective of the length of stroke of the movable part, substantially as described.

2. In combination in a bottle-sealing machine, a pressure-applying head, a table or rest for the bottle, means for moving one of said parts relatively to the other to obtain the desired pressure on the sealing medium and hydraulic controlling means for automatically limiting the application of pressure when a predetermined degree is reached, to compensate for variations in the length of the bottles.

3. In combination in an automatically-operating bottle-machine adapted to be driven by steam or like extraneous power, a pressure-head, a table or rest for the bottle, one of said parts having a movement toward and from the other of uniform stroke and hydraulic controlling means for automatically limiting the application of pressure when a predetermined degree is reached, irrespective of the point in the stroke at which this is attained, substantially as described.

4. In combination in a bottle-sealing machine, a pressure-head, a table or rest for the bottle, means for moving one of said parts toward and from the other to obtain the sealing pressure and a fluid controlling means for limiting the application of pressure when a predetermined degree is reached, said means comprising a cylinder and piston supported by a confined volume of fluid therein, one of said parts being connected with and exposed to the pressure from the sealing device and a valve confining said volume of fluid held under a determined pressure to release said volume of fluid when the predetermined pressure is exceeded at the sealing device whereby the connected controlling part will yield to relieve the pressure at the sealing device, substantially as described.

5. In combination in a bottle-sealing machine, a pressure-head, a table or rest for the bottle, means for giving one of said parts a relative movement, the piston connected with the table, the cylinder containing a confined volume of fluid supporting the piston to hold the table unyieldingly and a valve with means for applying a determined pressure thereto to allow said valve to open when the pressure transmitted from the pressure-head and table to the piston and the volume of fluid supporting it exceeds a predetermined degree whereby the said table may yield to limit the application of the sealing pressure without regard to the length of stroke of the machine, substantially as described.

6. In combination with the pressure-head, a table or rest for the bottle, means for giving one of said parts a movement toward and from the other, the piston connected with the table, a cylinder containing a confined volume of fluid supporting the piston to hold the table unyieldingly and a valve held under a predetermined pressure, carried by the piston and controlling the volume of the fluid to release the same when the desired maximum pressure is exceeded at the sealing device, whereby the table may yield to limit the application of pressure, substantially as described.

7. In combination with the pressure-head, the table, with operating means for said pressure-head, the cylinder containing a confined volume of fluid, a piston connected with the table and maintained in normal position by resting on said confined volume of fluid, an automatic valve carried by the piston for releasing the confined volume of fluid when the pressure transmitted from the table exceeds a predetermined amount, whereby the fluid may pass from the lower to the upper side of said piston, means for returning the piston to its upper position and the automatic return-valve to permit the fluid to flow to the lower side of the piston when it is moved upwardly to normal position, substantially as described.

8. In combination, the sealing-head, the table, the piston connected thereto, the cylinder, the valve n' controlling a discharge-port in the piston-head, the hollow extension on the piston-head, the return-valve and spring therefor surrounding said extension and controlling return-ports through the piston-head and the spring in the cylinder for moving the piston upwardly to normal position, substantially as described.

9. In combination, the sealing-head, the table, the piston connected thereto, the cylinder, the valve n' controlling a discharge-port in the piston-head, the hollow extension on the piston-head, the return-valve and spring therefor surrounding said extension and controlling return-ports through the piston-head, the cup-shaped sleeve inclosing the spring and the spring in the cylinder for moving the piston upwardly to normal position, said spring bearing upon a part of the cup-shaped sleeve, substantially as described.

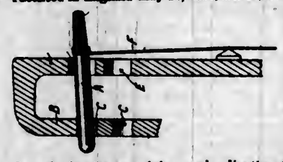
10. In combination, in a bottle-sealing machine, a sealing-head, a table or rest for the bottle with means for moving one of said parts toward and from the other and a hydraulic device for automatically limiting the application of pressure at the sealing-head, consisting of a hollow cylinder partially filled with oil or other liquid, a hollow piston having closed upper and lower ends connected with the table and spring-controlled valve mechanism at the lower end of the hollow piston adapted to open a passage for the escape of the liquid from the cylinder into the hollow piston when a given maximum pressure upon the bottle is reached and upon the release of said pressure to permit the liquid to flow back into the lower part of the cylinder, the said piston being returned to its normal position by a spring, substantially as described.

11. In combination in a bottle-sealing machine with the table and the sealing-head, a hydraulic controlling device for limiting the application of pressure when a predetermined degree is attained, consisting in a cylinder having a volume of liquid therein, a hollow piston connected with the table and moving in said cylinder, the lower head of said piston having a valve opening upward and a second valve opening downward and controlling respectively a port for the flow of the liquid from the cylinder into the hollow piston and return-ports for the flow of the liquid from the hollow piston into the cylinder, a spring controlling the upper valve reacting against the upper closed part of the piston, a spring for controlling the lower valve reacting against an extension of the lower piston-head and a spring for returning the piston and the table to normal position reacting against the lower end of the cylinder, substantially as described.

12. In combination in a bottle-sealing machine, a sealing-head, a table for supporting the bottle with means for moving one of the said parts in relation to the other, and a hydraulic controlling means for limiting the application of pressure of the sealing device when a predetermined pressure is reached, said means comprising a piston and a cylinder with an automatic release-valve and adjusting devices for setting the table relatively to the sealing-head to suit different grades of bottles, substantially as described.

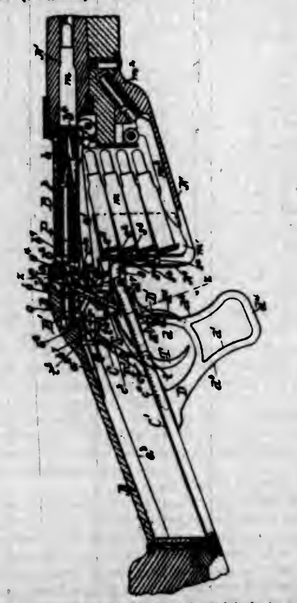
13. In combination, the sealing-head, a table or rest for the bottle, a hydraulic controlling device for limiting the application of pressure when a predetermined degree is reached consisting of a piston connected with the table, a cylinder holding a confined volume of fluid upon which the piston rests, a valve for automatically controlling said volume of fluid to allow the piston and table to recede when the predetermined pressure is exceeded and means for adjusting the hydraulic controlling means together with the table toward and from the sealing-head, substantially as described.

609,210. DEVICE FOR SUSTAINING AND ADJUSTING TENSION OF WIRES OF PIANOFORTES. JOHN H. PAPPS and LOUIS F. PAPPS, Southsea, England, assignors of one-third to Thomas Harrison, London, England. Filed Dec. 29, 1897. Serial No. 664,374. (No model.) Patented in England May 27, 1897, No. 13,069.



Claim.—In a device for sustaining and adjusting the tension of wires of pianofortes and like instruments, the framework having a front supporting-plate with tapering slotted apertures therein and a back plate with apertures therein and cylindrical wrest-pins passing into such apertures whereby the wires when tightened pull the wrest-pins into the tapered apertures in the plate so that they are gripped and prevented from turning, as set forth.

609,211. MAGAZINE BOLT-GUN. GEORGE L. PUTNAM and CHARLES H. FARMER, New York, N. Y. Filed Apr. 21, 1898. Serial No. 678,243. (No model.)



Claim.—1. In a breech-loading gun in which the breech-bolt grips a cartridge-shell in the firing-chamber, the combination with said breech-bolt and the breech-bolt actuator, of a lever having arms of different lengths, with its short arm engaging the breech-bolt and its long arm engaged by the breech-bolt actuator during the initial part of the movement of said actuator to retract the breech-bolt; whereby a multiple of the effort exerted upon said actuator will be exerted upon the breech-bolt to start the cartridge-shell from the firing-chamber.

2. In a breech-loading gun in which the breech-bolt reciprocates to open and close the breech-aperture and grips a cartridge-shell in the firing-chamber, the combination with said breech-bolt and the breech-bolt actuator, of a lever having arms of different lengths, with

its short arm engaging the breech-bolt and its long arm engaged by the breech-bolt actuator during the initial part of the movement of said actuator to retract the breech-bolt; whereby a multiple of the effort exerted upon said actuator to retract the breech-bolt will be exerted on said breech-bolt to start a cartridge-shell from the firing-chamber.

3. In a breech-loading gun in which the breech-bolt and its actuator reciprocate in the receiver to open and close the breech-aperture, and said bolt grips a cartridge-shell in the firing-chamber, the combination therewith, of a lever, fulcrumed in the receiver and having arms of different lengths, with its short arm engaging the breech-bolt and its long arm engaged by said actuator during the initial part of the throw of the latter to retract the former; whereby the actuator in the said part of its said throw will vibrate said lever against the breech-bolt.

4. In a breech-loading gun in which the breech-bolt is directly engaged at its rearward end by the breech-bolt actuator, which is operative within the receiver to reciprocate said bolt to open and close the breech-aperture, and said bolt grips a cartridge-shell in the firing-chamber, the combination therewith, of a lever, fulcrumed in the receiver and having arms of different lengths, with its short arm engaging the breech-bolt and its long arm engaged by said actuator during the initial part of the movement of said actuator to retract the breech-bolt; whereby, while said actuator will act to vibrate said lever against the breech-bolt, it will also directly exert an effective leverage on said bolt to withdraw it from and project it into the breech-aperture.

5. In a breech-loading gun in which the breech-bolt reciprocates in the receiver to open and close the breech-aperture and grips a cartridge-shell in the firing-chamber, and has a depending tail by which it is engaged to and actuated by a frame which is reciprocatory on ways rearwardly of and below said bolt in the receiver, the combination therewith, of a bell-crank lever having a short arm engaging said bolt and a long arm engaged by said frame during the initial part of a throw thereof on its ways to retract the breech bolt; whereby the said lever may be fulcrumed in the receiver with its arms reaching to said respective engagements.

6. In a breech-loading gun in which the breech-bolt reciprocates in the receiver to open and close the breech-aperture and grips a cartridge-shell seated in the firing chamber, the combination with said breech-bolt and the breech-bolt actuator, of a spring-actuated lever, fulcrumed in the receiver and provided with arms of different lengths, and having the shorter of said arms in engagement with said bolt and the longer of said arms engageable by said actuator during the initial part of the movement of the actuator to retract the bolt: and having the longer of said arms escape said actuator and the shorter of said arms engageable by said bolt during the reverse movement of the actuator to project the bolt toward the breech-aperture; whereby, after said lever acts upon said bolt in the retraction thereof, it will be vibrated to position for a succeeding action thereon.

7. In a breech loading gun in which the breech-bolt reciprocates in the receiver to open and close the breech-aperture and grips a cartridge-shell seated in the firing-chamber, and said bolt is actuated by a frame which reciprocates on ways rearwardly of and below said bolt in the receiver, the combination therewith, of a spring-actuated lever, fulcrumed in the receiver and having arms of different lengths, a stud, or studs, on said bolt to the rearward and near the free ends of the shorter arm, or arms, and a stud, or studs, on said actuator-frame, forward and near the free ends of the longer arm, or arms, of said lever; whereby, when said frame is thrown to retract said bolt, the stud, or studs, on the frame will temporarily engage said long arm, or arms, of said lever and vibrate the same to engage its short arm, or arms, with the stud, or studs on the bolt; and when said frame is reversely thrown to project the bolt toward the breech-aperture, said stud, or studs, on said frame will escape said long arm, or arms, and said stud, or studs, on said bolt will engage said short arm, or arms, of said lever and reversely vibrate the same.

8. In a breech-loading gun, the combination with the breech-bolt which reciprocates in the receiver to open and close the breech-aperture and grips a cartridge-shell in the firing chamber, a frame reciprocatory on ways in the receiver and having a slotted, forwardly and downwardly inclined top, and a tailpiece on the breech-bolt which plays in and engages and traverses said top of said frame, to withdraw the bolt from or project it into the breech-aperture, of a spring-actuated lever, fulcrumed in the receiver and having a short arm engaging the breech-bolt and a long arm engaged by said frame during the early portion of a further rearward throw thereof, at the conclusion of the downward traverse of the inclined top thereof by said tailpiece of the breech-bolt during the initial portion of said throw of said frame, and the said short arm engaged by the breech-bolt during the latter part of a forward throw of said frame, immediately before the upward traverse of said inclined top thereof by the tailpiece of the breech-bolt; whereby the vibrations of said lever will be effected respectively after and before the breech-bolt is withdrawn from and projected into the breech-aperture.

9. In a breech-loading gun in which the breech-bolt actuator is reciprocatory in the receiver, the combination therewith, of a rigid projection thereon, extending to and having play on the exterior of the receiver, and transversely slotted adjacently to its junction with said actuator, and provided with a rigid extension reaching from and beyond the outward portion of said projection, opposite to the junction thereof with said actuator; whereby an operating-grip for said actuator may be constituted which will also form a guard for the trigger, and which may be conveniently operated while the gun is at the shoulder, and during the reciprocation of which the liability to simultaneously manipulate the trigger is minimized.

10. In a breech-loading gun in which the breech-bolt actuator is reciprocatory in the receiver, the combination therewith, of a rigid projection thereon, extending to and having play on the under side of the receiver and transversely slotted adjacently to its junction with said actuator, and provided with an extension reaching from and beyond the outward portion of said projection, opposite to the junction thereof with said actuator; whereby a "straight-pull" grip to reciprocate said actuator and also forming a trigger-guard, may be constituted on the under side of the receiver, with said trigger-guard immediately adjacent to the receiver and the body of said grip extended below said guard.

11. In a breech-loading gun in which the breech-bolt actuator is reciprocatory in the receiver, the combination therewith, of a rigid projection thereon, extending to and having play on the under side of the receiver, and transversely slotted adjacently to its junction with said actuator, and provided with an extension reaching from and beyond the outward portion of said projection, opposite to the junction thereof with said actuator, in the direction below the receiver, the said united projection and its extension having front and rear concave faces; whereby a grip to operate said actuator, and comprising a guard for the trigger, may be constituted on the under side of the receiver and be given effective manipulation-faces for the reciprocation thereof.

12. In a breech-loading gun in which the breech-bolt actuator is reciprocatory in the receiver, the combination therewith, of a rigid projection thereon, extending to and having play on the exterior of the receiver, and transversely slotted adjacently to its junction with said actuator, to therein constitute a trigger-guard, and provided with an extension reaching from and beyond the outward portion of said projection, opposite to the junction thereof with said actuator, to constitute with said projection an operating-grip for said actuator, together with a locking-lever fulcrumed in said grip and which releasably locks to the receiver when said actuator with its said grip is at the limit of a throw to project the breech-bolt into the breech-aperture; whereby the parts will be locked in position when the breech-aperture is closed and must be unlocked before the actuator can be reversely thrown to retract the breech-bolt.

13. In a breech-loading gun in which the breech-bolt reciprocates in the receiver to open and close the breech-aperture, and is directly engaged at its rearward end with its actuator which is reciprocatary in the receiver, the combination therewith, of a rigid projection on the actuator, extending to and having play on the exterior of the receiver, and transversely slotted adjacently to its junction with said actuator, to constitute a trigger-guard, and an extension reaching from and beyond the outward portion of said projection, opposite to the junction thereof with said actuator, to constitute therewith an operating-grip for said actuator; whereby the effort applicable to the grip to throw the actuator to retract or project the bolt is minimized.

14. In a breech-loading gun in which the breech-bolt is reciprocatory in the receiver to open and close the breech-aperture, and is engaged and thrown by an actuator reciprocatory on ways in the receiver, the combination therewith, of a rigid projection on said actuator, extending to and having play on the under side of the receiver, and transversely slotted adjacently to its junction with said actuator, to therein constitute a trigger-guard, and an extension, reaching from and beyond the outward portion of said projection, opposite to its junction with said actuator, in the direction below the receiver, the said united projection and extension having front and rear concave manipulation-faces and constituting an operating-grip for said actuator, together with a spring-actuated lever, fulcrumed in the upper part of said front face, with an arm which protrudes beyond said face, and with a catch-arm which engages a lock-notch in the actuator-ways when said actuator is at the limit of a throw to project the breech-bolt; whereby, in the manipulation of the front face of the grip to retract the actuator and breech-bolt, the said locking-lever will be vibrated to unlock it from said actuator-ways.

15. In a breech-loading gun in which the breech-bolt actuator reciprocates in the receiver to operate the breech-bolt, the combination therewith, of a skeleton frame, projecting therefrom to and having play on the under side of the receiver, and having front and rear concave sides which are most widely divergent from each other at the junction of said frame with said actuator, and which converge toward each other to about midway of the projection of said frame from said actuator, and thence diverge from each other to the outer end of said frame, together with a cross-piece extending between said front and rear sides; whereby said frame constitutes an operating-grip for the actuator and comprises a guard for the trigger.

16. In a breech-loading gun in which the reciprocatory breech-bolt carries a spring-impelled firing-pin and is actuated by a slotted frame which engages the rearward end of said bolt and is reciprocatory on ways in the receiver, the combination with said firing-pin, of a tailpiece thereon playing in said slotted frame and provided with a forwardly-open and rearwardly-extending recess, which receives and permits the rearward play therein of a side of said slotted frame, during the rearward throw thereof to retract the breech-bolt, and the rearward side of which recess engages said side of said frame, during the bolt-projecting throw thereof; whereby, while the breech-bolt is directly engaged by its actuating-frame, said frame will be free from the tension of the impelling-spring of the firing-pin during its bolt retracting throw; and, whereby the firing-pin will be retracted in the breech-bolt during the projection of said bolt.

17. In a breech-loading gun in which the reciprocatory breech-bolt carries a spring-impelled firing-pin, and is actuated by a slotted frame which engages the rearward end of said bolt and is reciprocatory in the receiver, the combination with said firing-pin, of a tailpiece thereon, composed of a trilateral frame open on its forward side and playing in said slotted frame to the rear of the forward side thereof; whereby, when said slotted frame is thrown to retract the breech-bolt, its forward side will play in said trilateral frame on the firing-pin, and, when said slotted frame is thrown to project the breech-bolt, said forward side thereof will engage against the rearward side of said trilateral frame.

18. In a breech-loading gun, the combination with the breech-bolt operating mechanism and the receiver, of a ratchet device interposed between said mechanism and the receiver and having its members in engagement throughout the duration of movement of said mechanism in either direction, and to be disengaged only when said mechanism is at the limit of movement in either direction; whereby, when a movement of said mechanism is begun, it must be pursued and completed before a reverse movement thereof can be effected.

19. In a breech-loading gun, the combination with a breech-bolt actuator which is reciprocatory in the receiver, of a ratchet device interposed between said actuator and the receiver and having its members in engagement throughout the duration of each throw of said actuator, and to be disengaged only when said actuator is at the limit of a throw; whereby, when a throw of the actuator to either retract or project the breech-bolt is begun, it must be pursued and such bolt retraction or projection completed before a reverse throw can be made.

20. In a breech-loading gun in which the breech-bolt is reciprocated to open and close the breech-aperture and to extract and eject spent shells from and seat cartridges in the firing-chamber, and is engaged and impelled by a frame reciprocatory on ways in the receiver, the combination therewith, of a ratchet device interposed between said frame and its ways, and having its members in engagement throughout the duration of each throw of said frame on said ways, and to be disengaged only when said frame is at the limit of a throw; whereby, when the retraction or projection of the bolt is begun and the extraction and ejection of a shell or the seating of a cartridge thereby is initiated, such movement and function must be completed before the reverse thereof can be effected.

21. In a breech-loading gun in which the breech-bolt is reciprocated in the receiver to open and close the breech-aperture, and is engaged and actuated by a frame which reciprocates on ways in the receiver, the combination therewith, of a pawl pivoted on said frame and a rack on said ways, one or both, engageable by said pawl, together with recesses provided in said ways immediately adjacent to the respective ends of said rack; whereby the pawl may engage said rack during the entire of a throw of said frame on its ways in either direction, to retract or project the breech-bolt, and may escape said rack when said frame is at the limit of a throw, so as to reversely engage the rack during the succeeding throw of the frame.

22. In the firing mechanism of a breech-loading gun, comprising a spring-impelled firing-pin and a trigger reciprocatory in a rigidly-supported position, relatively to the sear, the combination therewith, of a sear having arms to respectively engage said firing-pin and said trigger, and fulcrumed to vibrate in a direction at an angle to the plane in which the trigger-engaging arm of said sear and the sear-engaging arm of said trigger lie when in position for an engagement of the former by the latter, the said arm of the sear having an engagement end beveled at an angle to said plane; whereby a throw of said trigger to endwise engagement with the sear and the traverse of the said engagement end of the trigger-engaging arm thereof by the sear-engaging arm of the trigger, will vibrate the sear to disengage its other arm from the firing-pin.

23. In the firing mechanism of a breech-loading gun, comprising a spring-impelled firing-pin and a trigger which is alternatively vibratory, or reciprocatory in a rigidly-supported position, relatively to the sear, and has a sear-engaging arm which overlaps the trigger-engaging arm of the sear when said trigger is at the limit of a throw toward said sear, the combination therewith, of a sear, fulcrumed on a support having adjustability in the direction parallel to the plane in which the said arms of the trigger and sear lie when in position for an engagement of the latter by the former, and vibratory at right angles to said plane, the said trigger and sear arms respectively having an engagement face and an engagement end which are severally vertically and laterally beveled at an angle to said plane; whereby the trigger-engaging arm of the sear may be presented to the sear-engaging arm of the trigger for either a sidewise or endwise engagement of the former by the latter; and, whereby, when such presentation for endwise engagement thereof is made, a throw of the trigger, in its reciprocation, to the sear will effect the vibration of said sear, and, when such presentation for sidewise engagement thereof, at the limit of said throw of the trigger, is made, a vibration of the trigger will effect the vibration of the sear; in either case releasing the arm thereof which engages the firing-pin from engagement therewith.

24. In a magazine breech-loading gun, comprising a magazine mechanism which successively sustains the cartridges in the magazine at the opening thereof into the receiver and in or out of the range of the breech-bolt in its projection movement, and a sear, fulcrumed on a support having adjustability in the receiver, relatively to the trigger, the combination with said magazine mechanism and said sear-support, of controlling devices common thereto and which simultaneously adjust and maintain said magazine mechanism to hold the cartridges out of said range of the breech-bolt, and the said sear-support to present the sear to the trigger for a firing vibration of the former by a vibration of the latter; or to hold a cartridge in said range of the breech-bolt, and to present the sear to the trigger for a firing vibration of the former by the automatic engagement therewith of the latter; whereby the gun may be adjusted for use as a simple breech-loader and fired by a distinct manipulation of the trigger, or as an automatic magazine-repeater.

25. In a magazine breech-loading gun, comprising a magazine mechanism which successively sustains the cartridges at the opening into the receiver and in or out of the range of the breech-bolt in its projection movement, a breech-bolt which engages a cartridge in its said range and seats it in the firing-chamber in its said movement, a reciprocatory breech-bolt actuator carrying the trigger which is therein vibratory from a rigidly-supported normal position, and a sear, fulcrumed on a support having adjustability in the receiver relatively to the trigger, the combination therewith, of controlling devices common to said magazine mechanism and said sear-support and which simultaneously adjust and maintain said magazine mechanism to hold the cartridges out of said range of the breech-bolt, and the sear-support to present the sear to the trigger for a firing vibration of the former by a vibration of the latter at the conclusion of a throw of said actuator to project the bolt, or to hold a cartridge in said range of said bolt, and to present the sear to the trigger for a firing vibration of the former by the automatic engagement therewith of the latter at said conclusion of said throw of the actuator; whereby, when the gun is adjusted for use as a simple breech-loader, it may be fired by a distinct manipulation of the trigger, and when it is adjusted as a magazine-repeater, it may be automatically fired by the operation of the breech-bolt actuator.

26. In a magazine breech-loading gun comprising a magazine mechanism which successively sustains the cartridges at the opening into the receiver and in or out of the range of the breech bolt in its projection movement a breech-bolt which engages a cartridge in its said range and seats it in the firing-chamber in its said movement, a reciprocatory breech-bolt actuator carrying the trigger which is therein vibratory from a rigidly-supported normal position, and a sear, fulcrumed on a support having adjustability in the receiver relatively to the trigger, said sear and trigger effecting a firing vibration of the former by either a sidewise or endwise engagement therewith of the latter, the combination therewith, of controlling devices common to said magazine mechanism and said sear-support and which simultaneously adjust and maintain said magazine mechanism to hold the cartridges out of said range of the breech-bolt, and the said sear-support to present the sear to the trigger sidewise thereof at the conclusion of a throw of said actuator to project the bolt, or to hold a cartridge in said range of the bolt, and the sear-support to present the sear to the trigger endwise thereof at said conclusion of said throw of the actuator; whereby a firing vibration of the sear may be alternatively effected by either a vibration of the trigger, or the automatic engagement thereof with said sear in the throw of the breech-bolt actuator to project the breech-bolt.

27. In a magazine breech-loading gun having an adjustable magazine mechanism comprising a cartridge-holding means sustained in normal position adjacent to the opening into the receiver, with means to successively sustain the cartridges, when in normal position, in the range of the breech-bolt in its projection movement, a breech-bolt

which engages a cartridge in its said range and seats it in the firing-chamber in its said movement, a reciprocatory breech-bolt actuator carrying the trigger vibratory therein from a rigidly-supported normal position, and a sear fulcrumed on a support having adjustability in the receiver to present said sear to the trigger either sidewise or endwise thereof, for a firing vibration of the former by either a vibration of or encounter with the latter at the conclusion of a throw of said actuator to project the bolt, the combination therewith, of a movable slide engaging said cartridge-holding means and having an arm rigidly connecting it to said sear-support, and which locks to the magazine-frame when at its limit of movement to retract said cartridge-holding means from the opening into the receiver and to adjust said sear-support to present the sear sidewise to the trigger, and which may be released to permit said cartridge-holding means to be sustained in its said normal position and to adjust said sear-support to present the sear endwise to the trigger; whereby, by the manipulation of said slide, the gun may be adjusted for use as a simple breech-loader or as an automatic magazine-repeater.

28. In a magazine breech-loading gun in which the magazine-frame receives and permits the play therein toward and from the opening into the receiver of a cartridge-holding means, and in which a spring commonly acts to sustain the said cartridge-holding means in normal position at the limit of its play toward said opening and to successively sustain the cartridges in the range of the breech-bolt in its projection movement, the combination therewith, of a movable slide engaging said cartridge-holding means, an arm carried by said slide and reaching into the receiver, a fulcrum-plate for the sear supported by said arm in the receiver, and a locking device carried by said slide which releasably locks the same against the tension of said spring when at its limit of movement to retract the cartridges from the receiver-opening; whereby, when said slide is moved to its said locked position, or is released and permits said cartridge-holding means to be sustained in said normal position, the said fulcrum-plate for the sear will be simultaneously moved in the receiver.

29. In a magazine breech-loading gun in which the magazine-frame receives and permits the play therein toward and from the opening into the receiver of a cartridge holding means, and in which a spring commonly acts to sustain said cartridge-holding means in normal position at the limit of its play toward said opening and to successively sustain the cartridges in the range of the breech-bolt in its projection movement, the combination therewith, of a movable slide which engages said cartridge-holding means, an arm carried by said slide and reaching into the receiver, and a fulcrum-plate for the sear supported by said arm in the receiver, together with a flanged stud on said slide reaching through and playing in a motion-limiting slot in the magazine-frame, a plate movable on said frame and which engages the flange of said stud, and a spring-actuated lever carried by said plate and having an arm which releasably engages a lock-notch in said frame when said slide and plate are at the limit of movement to retract the cartridge-holding means from the receiver-opening; whereby the movements of said slide may be defined and its detention in position be secured in effecting the simultaneous adjustment of said cartridge-holding means and said fulcrum-plate.

30. In a magazine breech-loading gun in which the trigger and sear effect a firing vibration of the latter by either a sidewise or endwise engagement therewith of the former, and in which the trigger is vibratory and reciprocatory in a rigidly-supported position relatively to the sear, and in which a support, on which the sear is fulcrumed, is movable in the receiver from the position in which it presents the sear to the trigger sidewise thereof to that in which it presents said sear to said trigger endwise thereof, the combination with said sear-support, of a stop movably mounted in the receiver and which engages said support before said trigger, thrown to sidewise presentation to the sear, encounters said sear, when said sear-support is moved in the direction from the position in which it presents the sear sidewise to that in which it presents the sear endwise to the trigger, and disengages said support when the trigger is thrown from said sidewise presentation to the sear; whereby the movement of said sear-support in said direction, in effecting an adjustment thereof when the breech-aperture is closed, will be interrupted and a firing vibration of the sear when the gun is cocked prevented, and said movement of the sear-support may be completed when the breech-aperture is opened.

31. In a magazine breech-loading gun in which the trigger and sear effect a firing vibration of the latter by either a sidewise or endwise engagement therewith of the former, and in which the trigger is carried by and is vibratory from a rigidly-supported position in the reciprocatory breech-bolt actuator, and the sear is fulcrumed on a spring-actuated support, normally in position in the receiver to present said sear to the trigger endwise thereof, and adjustable and detainable against the tension of its spring to present said sear to the trigger sidewise thereof, the combination with said sear-support, of a stop, movably mounted in the receiver and which engages said support before said trigger, thrown to sidewise presentation to said sear by said actuator, encounters said sear when said support is released to the action of its spring from its said detained position of adjustment, and disengages said support and frees it to the impulse of its spring when the trigger is thrown from said sidewise presentation to the sear by said actuator; whereby the movement of said support in said direction by its spring when the breech-aperture is closed will be interrupted, and may be resumed and completed when the breech-aperture is opened.

32. In a magazine breech-loading gun in which the trigger and sear effect a firing vibration of the latter by either a sidewise or endwise engagement therewith of the former, and in which the trigger is carried by and is vibratory from a rigidly-supported position in the reciprocatory breech-bolt actuator, and the sear is fulcrumed on a support adjustable in the receiver from the position to present the sear to the trigger sidewise to that to present the same endwise thereof, the combination therewith, of a stop mounted on said actuator, and which engages and interrupts the movement of said support before said trigger, throws to sidewise presentation to said sear by said actuator, encounters said sear, when said support is moved in the direction from the position to present said sear sidewise to that to present the same endwise to the trigger, and disengages said sear-support when the actuator is thrown to withdraw the trigger from said sidewise presentation to the sear; whereby said stop will be in position to engage said support when said actuator is thrown in the direction to effect the closing of the breech aperture, and will be moved to escape said support when said actuator is reversely thrown.

33. In a magazine breech-loading gun in which the trigger and sear effect a firing vibration of the latter by either a sidewise or endwise engagement therewith of the former, and in which the trigger is carried by and is vibratory from a rigidly-supported position in a frame which is reciprocatory in the receiver and engages and impels the breech-bolt, and the sear is fulcrumed on a support which projects into a slot in said frame and is rigidly connected by an arm to a movable slide on and releasably engageable to the magazine-frame against the tension of a spring therein at the limit of movement of said slide to adjust said support to present said sear to the trigger sidewise thereof, the combination therewith, of a stud located on said reciprocatory frame at a distance from said support less than that between said sear and trigger when the latter is thrown to sidewise presentation to the former by said reciprocatory frame, and projecting into the path of said support in its movement in the direction to adjust the same to present the sear endwise to the trigger at the release of said slide from its engagement to the magazine-frame, and which escapes said support in the reciprocation of said frame; whereby the said stud will engage and interrupt the movement of said support in said direction, while said frame may be freely reciprocated in the receiver.

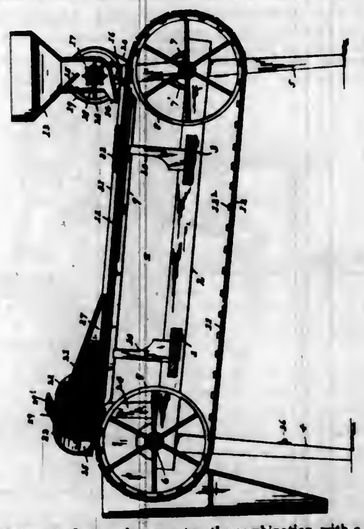
34. In a magazine breech-loading gun in which the magazine mechanism adjusts the cartridge-holding means in or out of use in firing, the combination therewith, of a plate, synchronously movable on the exterior of the gun with said mechanism in its movements to adjust the charge of cartridges, together with an area on the exterior of the gun having a color different to that of either the gun or said plate, and located to be covered and concealed by said plate when at the limit of its movement with said mechanism in adjusting the charge of cartridges either in or out of use, and to be uncovered and exposed by said plate in its reverse movement; whereby the nature of the said adjustment will be indicated by a visible signal on the gun.

35. In a magazine breech-loading gun in which the magazine mechanism adjusts the cartridge-holding means in or out of use in firing, the combination therewith, of a plate, synchronously movable on the exterior of the gun with said mechanism in its movements to adjust the charge of cartridges, and the color of the external face of which is similar to that of the gun, together with an area on the exterior of the gun having a different color and located to be covered and concealed by said plate when at the limit of its movement with said mechanism in adjusting the charge of cartridges out of use, and to be uncovered and exposed when at the limit of its movement with said mechanism in adjusting the charge of cartridges in use; whereby a spot of vivid color may be made visible on the gun when the charge of cartridges is adjusted to be in use.

36. In a magazine breech-loading gun in which the magazine mechanism adjusts the magazine charge in or out of use in firing, the combination therewith, of a plate, or plates, movably mounted on the exterior of the sides, one or both, of the magazine-frame and externally of similar color to that of said faces of said frame, and connected to said mechanism to move synchronously therewith in adjusting the magazine charge, together with an area on said sides, one or both, of the magazine-frame, having a color different to said faces and said plates, and located to be covered and concealed, or uncovered and exposed, by said plate or plates, in their said movement with said mechanism in adjusting the charge of cartridges respectively in or out of use; whereby a color-signal may be made visible on the exterior of the magazine-frame indicative of the nature of the adjustment of the contained charge of cartridges.

37. In a magazine breech-loading gun in which a cartridge-holding means is movable in the magazine-frame toward and from the opening into the receiver, and in which a spring acts to sustain said cartridge-holding means at the limit of its movement toward said opening, the combination therewith, of a movable plate on the exterior of the gun, and a slide which commonly engages said cartridge-holding means and said plate and is releasably locked to the gun to hold said cartridge-holding means against its said spring at the limit of movement from said receiver-opening, together with an area on the exterior of the gun having a color different to that of the gun-surface or said plate and located to be covered and concealed by said plate when said slide is in said locked position, and to be uncovered and exposed when said slide is released to the action of its said spring; whereby, when the charge of cartridges is at the opening into the receiver, a spot of vivid color may be visible on the gun, and, when said charge of cartridges is withdrawn from said opening, the said color-spot will be concealed.

609,212. GRAIN-SEPARATOR. GEORGE W. RICHARDSON, Sparta, Wis. Filed Nov. 11, 1897. Serial No. 658,160. (No model.)



Claim.—1. In a grain-separator, the combination, with a frame, of an inclined grain-carrier, a hopper arranged at one end and side of the frame and adapted to discharge the grain onto said carrier, a tailings-spout at the side of the frame diagonally opposite the hopper, a delivery-spout at the end of the frame opposite the hopper, a diagonally-arranged rotary brush adjacent to said delivery spout and adapted to sweep the tailings to one side of the frame and into said tailings-spout, and mechanism for operating the carrier and brush, substantially as described.

2. In a grain-separator, the combination, with a frame, of a carrier provided with pits or pockets of size to receive one character of grain but too small relatively to receive another character of grain, a hopper adapted to discharge the grain upon one side of the carrier, a tailings-spout diagonally opposite the hopper, a delivery-spout at the end of the frame diametrically opposite said hopper, and a diagonally-arranged brush adapted to allow the grain occupying the pits or pockets to pass to the delivery-spout and to sweep the grain not occupying said pits or pockets across the carrier into said tailings-spout, substantially as described.

3. In a grain-separator, the combination of a frame carrying belt-wheels, an endless carrier consisting of a pair of belts running over said wheels and a continuous series of transverse slats or lags connecting between said belts, said lags being provided in their outer faces with pits or pockets, a hopper adapted to discharge the grain upon one side of the carrier, a delivery-spout at the end of the frame diametrically opposite said hopper, a tailings-spout diagonally opposite the hopper, and a diagonally-arranged brush adapted to allow the grain occupying the pits or pockets to pass to the delivery-spout and to sweep the grain not occupying said pits or pockets across the carrier into said tailings-spout, substantially as described.

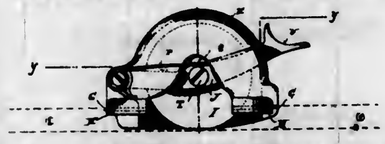
4. In a grain-separator, the combination of a frame carrying belt-wheels, and two parallel longitudinal guide bars, an endless carrier consisting of a pair of belts running over said wheels and a continuous series of transverse slats or lags connecting between said belts, said lags being provided in their outer faces with pits or pockets and in their inner faces with guide blocks or lugs adapted to run between said guide-bars, a hopper adapted to discharge the grain upon one side of the carrier, a tailings-spout diagonally opposite the hopper, a delivery-spout at the end of the frame diametrically opposite said hopper, and a diagonally-arranged brush adapted to allow the grain occupying the pits or pockets to pass to the delivery-spout and to sweep the grain not occupying said pits or pockets across the carrier into said tailings-spout, substantially as described.

5. In a grain-separator, the combination, with a frame, of a carrier provided with pits or pockets of size to receive one character of grain but too small relatively to receive another character of grain, a hopper adapted to discharge the grain upon one side of the carrier, a diagonal brush to spread the grain evenly over the carrier, a transverse brush alongside the hopper to prevent the grain from passing back of said hopper, a tailings-spout diagonally opposite the hopper, a delivery spout at the end of the frame diametrically opposite said hopper, and a diagonally-arranged brush adapted to allow the grain occupying the pits or pockets to pass to the delivery-spout and to sweep the grain not occupying said pits or pockets across the carrier into said tailings-spout, substantially as described.

6. In a grain-separator, the combination of a frame, an endless carrier having pits or pockets to receive the grain, a hopper at the front end of the frame adapted to discharge the grain upon one side of the carrier, a tailings-spout diagonally opposite said hopper, a delivery-spout at the rear end of the frame, a casing or housing adjacent to said delivery-spout provided in its bottom with a slot and at its front end with a contracted chamber having a side outlet facing said tailings-spout, and a diagonal rotary brush inclosed in said housing and projecting through said slot and adapted to sweep the tailings into the contracted chamber of the casing and through the side outlet thereof into the tailings-spout, substantially as described.

7. In a grain-separator, the combination of a frame, an endless carrier having pits or pockets to receive the grain, a hopper at the front end of the frame adapted to discharge the grain upon one side of the carrier, a tailings-spout diagonally opposite said hopper, a delivery-spout at the rear end of the frame, a casing or housing adjacent to said delivery-spout provided with a bottom slot, a top air-inlet, a chaff pocket or chamber at its rear end and a contracted chamber at its front end having a side outlet facing said tailings-spout, and a diagonal rotary brush inclosed in said housing and projecting through said slot and adapted to sweep the tailings into the contracted chamber of the casing and through the side outlet thereof into the tailings-spout, substantially as described.

609,218. PAPER-TRIMMER. NELLIE A. RIDGELY, Springfield, Ohio. Filed June 18, 1897. Serial No. 641,366. (No model.)



Claim.—1. In a paper-trimmer, the combination with a head having lugs adapted to engage with a guide-strip and having a slot or opening therein, of a spring-supported lever pivoted to the head and extending thence through the slot or opening in the head, and a blade rotatably mounted in the lever and within the head.

2. In a paper-trimmer, the combination with a head having lugs adapted to engage with a straight-edge, of a screw screwed into the head at one side, a lever mounted on said screw and extending thence through and beyond the head, a spring coiled about such screw and acting on a projection from the lever to lift the lever, a blade rotatably mounted in the lever on a screw extending through the lever at one side of the blade and engaging with the lever at the other side of the blade.

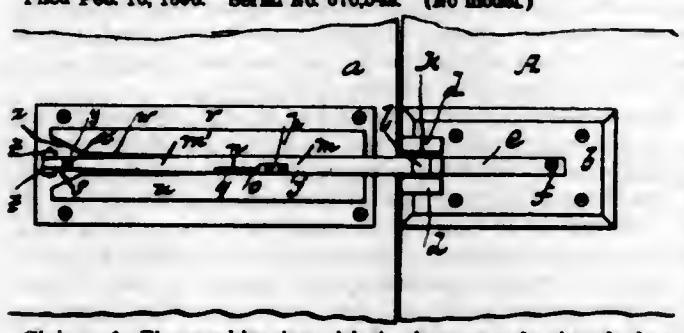
3. In a paper-trimmer, the combination with a head having a finger-piece, of a lever pivoted to the head at one side of the finger-piece and projecting beyond the head at the other side of the finger-piece, and a blade rotatably mounted in the lever, and means tending to lift the lever to raise the blade upward.

4. In a paper-trimmer, the combination with a head in the form of a hollow shell with lugs at one side adapted to engage with the guide-strip and having a finger-piece at the other side, of a lever pivoted in the head, a spring acting on the lever to lift it, the lever extending through the head and beyond it at one side and formed with a thumb-piece and into branches of unequal thickness, an arbor-

screw in these branches and screwing into one of them, and a circular blade rotatably mounted on said screw.

3. In a paper-trimmer, a lever for the blade formed into two branches, one of which is thicker than the other, and a blade between said branches and an arbor-screw passing through one branch and through the blade and screwed into the other branch.

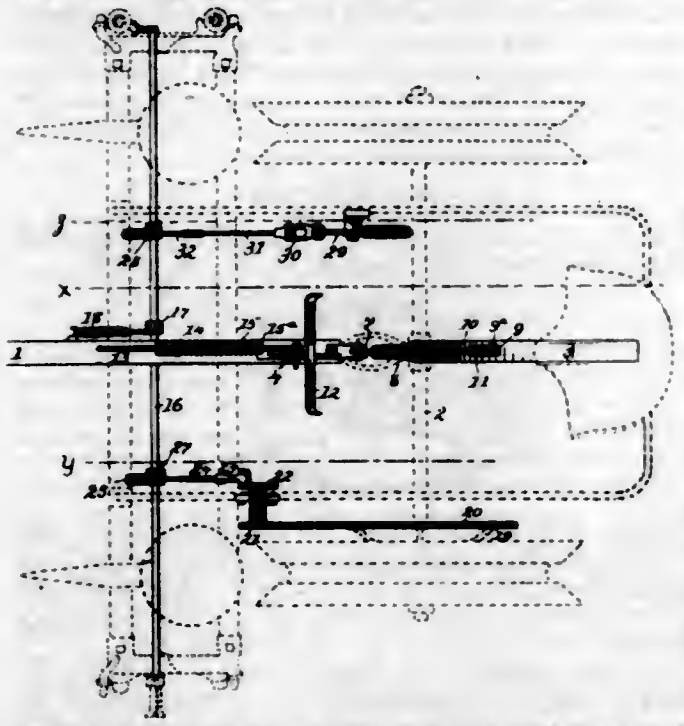
609,214. DOOR-CHECK. NELSON SHAW, Housatonic, Mass. Filed Feb. 16, 1898. Serial No. 670,542. (No model.)



Claim.—1. The combination with the door-plate having the lugs, and the box-plate having the slot and flanges, of the locking-arm, composed of two sections, and the flat spring, said arm pivoted to the lugs and provided with the cam and depression, on which the free end of the spring *e*, presses and the section *m'*, having the notch, the spring secured to the section *m*; the hooked end thereof engaging said notch and the rollers journaled to the end of the section *m'*, all substantially as described.

2. In a door-checking device of the character herein described the combination of the box-plate, having the slot and inner flanges and flaring mouth, the plate secured to the door having lugs, one side of said lugs being cut away to receive the end of the arm when in its folded position, the arm composed of sections, the holding-spring and the spring connecting the two sections when the arm is extended, substantially as described.

609,215. CORN-PLANTER. MARSHALL SATTLEY, ARCHIBALD SATTLEY, and MARTIN HEINEKE, Springfield, Ill., assignors to the Sattley Manufacturing Company, same place. Filed Feb. 14, 1898. Serial No. 670,233. (No model.)



Claim.—1. In a planter, the combination of a lift-lever, a rod connected pivotally with the lift-lever and extended through a relatively-fixed bearing in front of the lever and a compression-spring on the rod between the lever and the bearing.

2. In a planter, the combination of a lift-lever a rod connected with the lift-lever and extended through a relatively-fixed bearing in front of the lever, a collar adjustable on the rod and a compression-spring on the rod between the collar and the bearing.

3. In a planter, the combination of a drop-actuating rock-shaft, an arm on the shaft having a transverse pin, and a pitman having a slotted head one side of which is broken away to receive the pin of the arm.

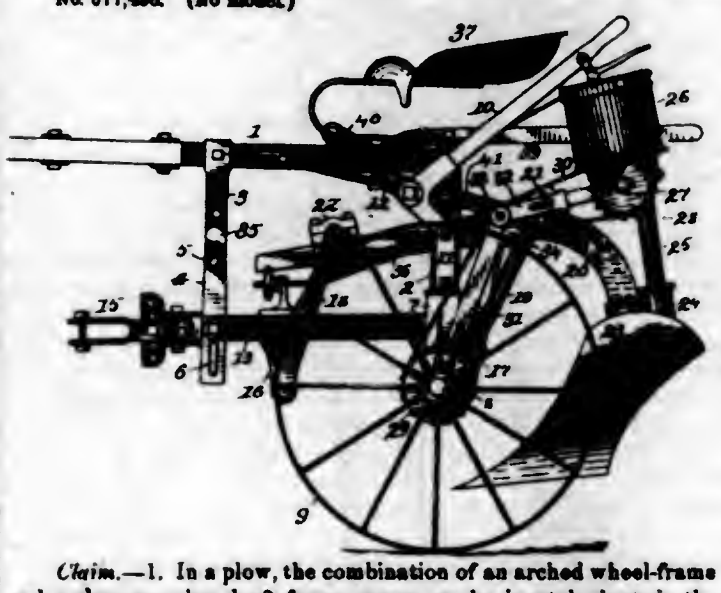
4. In a planter, the combination of a drop-actuating rock-shaft, an arm on the shaft having a transverse pin, and a pitman composed of a slotted head one side of which is broken away to receive the pin of the arm, a pivot-head bored and threaded and a rod rigidly connected with the slotted head and threaded to screw into the pivot-head.

5. In a planter, the combination of a drop-actuating rock-shaft, drill planter-driven mechanism actuated from a planter-wheel to throw the shaft in one direction only, a spring to throw the shaft in the opposite direction, and means whereby the operator may rock the shaft against the action of the spring and hold the spring extended.

6. In a planter, the combination of a drop-actuating rock-shaft, a crank shaft driven from a planter-wheel, a connection between the crank-shaft and the rock-shaft whereby motion is imparted to the rock-shaft in one direction, a spring to carry the rock-shaft in the opposite direction and means under the control of the operator for rocking the rock-shaft against the action of the spring and holding the spring extended.

7. In a planter, the combination of a drop-actuating rock-shaft, an arm on the rock-shaft having a transverse pin, a crank-shaft driven from a planter-wheel, a pitman on the crank-shaft having a slotted head engaging the pin of the arm, a spring to return the shaft after a throw of the crank-arm and a foot drop-lever connected with the rock-shaft, whereby the motion of the crank-shaft is lost on the rock-shaft when the foot-lever is held under pressure, substantially as set forth.

609,216. COMBINED PLOW AND PLANTER. MARSHALL SATTLEY and ARCHIBALD SATTLEY, Springfield, Ill., assignors to the Sattley Manufacturing Company, same place. Filed Apr. 13, 1898. Serial No. 677,498. (No model.)



Claim.—1. In a plow, the combination of an arched wheel-frame and a plow-carrying draft-frame swung on horizontal pivots in the wheel-frame, substantially as set forth.

2. In a plow, the combination of an arched wheel-frame having a tongue, and a plow-carrying draft-frame swung on horizontal pivots in the wheel-frame, substantially as set forth.

3. In a plow, the combination of an arched wheel-frame having a stiff tongue, a seat and a foot-rest, and a plow-carrying draft-frame swung on horizontal pivots in the wheel-frame, substantially as set forth.

4. In a plow, the combination of an arched wheel-frame having a stiff tongue and a driver's seat, a foot-rest supported from the tongue in front of the seat, a plow-carrying draft-frame swung at its rear end on horizontal pivots fixed to the wheel-frame and connections between the foot-rest and the front end of the draft-frame whereby vertical swing of the draft-frame is limited, substantially as set forth.

5. In a plow, the combination of an arched wheel-frame having a stiff tongue and a driver's seat, a foot-rest supported from the tongue in front of the seat, a plow-carrying draft-frame swung at its rear end on horizontal pivots fixed to the wheel-frame and extended under the foot-rest, slotted links depending pivotally from the foot-rest and pins on the draft-frame extending through the slots of the links, substantially as set forth.

6. In a plow, the combination of an arched wheel-frame, a draft-frame pivoted in the wheel-frame in a manner permitting independent vertical swing, and a plow carried by the draft-frame in a manner permitting a limited amount of independent vertical motion in the plow, or in the draft-frame, substantially as set forth.

7. In a plow, the combination of an arched wheel-frame, a draft-frame pivoted to swing vertically in the wheel-frame, and a plow swung in the draft-frame and having a backward lowering motion and a forward rising motion, substantially as set forth.

8. In a plow, the combination of an arched wheel-frame, a draft-frame pivoted to swing vertically in the wheel-frame, two bails pivoted in the draft-frame one in front of the other and extended up-

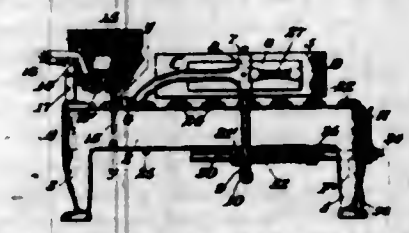
ward and rearward, the rearward inclination of the rear bail being greater than the rearward inclination of the front bail, and a plow the beam whereof is swung on the bails, substantially as set forth.

9. In a plow, the combination of an arched frame having a stiff tongue and a driver's seat, wheels adjustable on the arched frame, a foot-rest carried by the tongue in front of the seat a draft-frame swung at its rear end on horizontal pivots fixed to the arched frame, motion-limiting connections extending from the foot-rest to the front end of the draft-frame, and a plow swung in the draft-frame and having a limited amount of vertical motion independent of such draft-frame, substantially as set forth

10. In a combined plow and planter, the combination of a wheel-frame, a seedbox shiftable to and from the spindles of the wheels a drop-actuating sprocket-wheel movable with the seedbox, a sprocket-wheel on a carrying-wheel, a connection between the sprocket-wheels composed of two hinged bars pivotally connected and forming an angle at their conjunction, guide-pulleys at the conjunction of the bars and a chain running around the sprocket-wheels and over the guide-pulleys, substantially as set forth.

11. The combination with the lift-link 19, the plow-beam carried thereon and the seedbox carried by the beam, of the drive mechanism for the seed-dropper including a clutch, the lever engaging the shiftable clutch member, the arm extending upward from the bail and the link connecting the arm with the clutch-shifting lever, whereby the clutch is shifted and the drop thrown out of operation when the bail is raised, substantially as set forth.

609,217. **BOOT-CLEANER.** WILLIAM F. WAGNER and OTTO B. OLIN, Hartford, Conn. Filed Feb. 25, 1898. Serial No. 671,698. (No model.)



Claim.—1. The combination, with a base, of a pair of levers pivoted to the base and having transverse arms; a spring connected to said arms; brushes pivoted to the levers; and springs also carried by the levers and bearing at their free ends against the brushes.

2. The combination, with a base, of a spring-actuated scraper-plate supported thereby, and a trigger located to hold the plate in its retracted position.

3. The combination, with a base, of a spring-actuated scraper-plate; a series of bars fixed to said plate; guides for the bars, on the base; a spring acting against the scraper-plate and tending to force the same outward; and a trigger in position to hold the plate in its retracted position.

4. The combination, with a base, of a spring actuated scraper-plate supported thereby, and a gravity-trigger pivoted to the base and having a hook to engage the scraper-plate to hold it in its retracted position.

5. The combination, with a base, of a foot-rest consisting of a skeleton frame and a series of blocks fixed to the ribs thereof and extending above the base; a series of screws in threaded engagement with the foot-rest; and a brush or brushes mounted on the base.

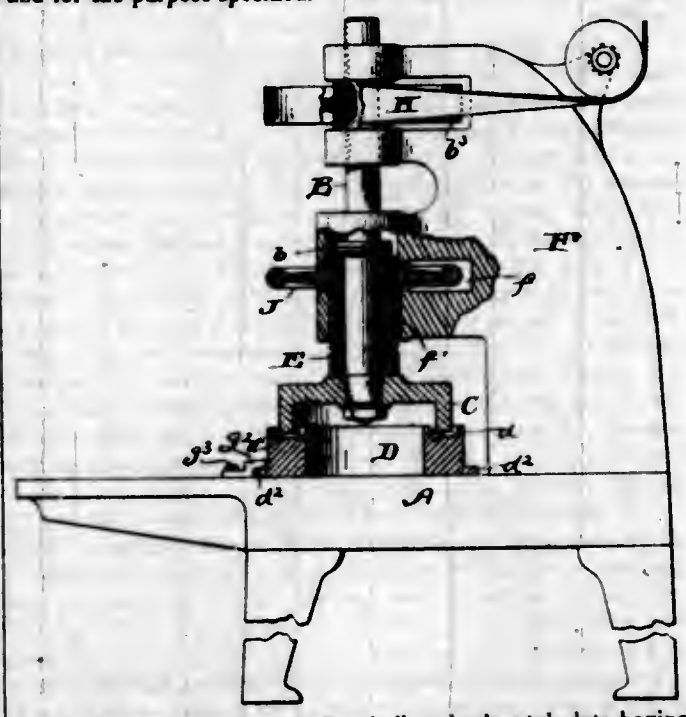
609,218. **MACHINE FOR GRINDING BALLS.** ROLLIN H. WHITE, Cleveland, Ohio. Filed June 14, 1897. Serial No. 640,614. (No model.)

Claim.—1. In a machine for grinding balls, in combination, a grinder rotatable upon a vertical axis and having a plane grinding-face, a horizontal plate below said grinder having in its upper face a recess adapted to contain a mixture of oil and emery or like substance and having in the bottom of said recess a ball-groove which, when the parts are in operative position, is not concentric to the grinder, substantially as and for the purpose specified.

2. In a machine for grinding balls, in combination, a rotatable tubular grinder, a plate, below said grinder, having in its top surface a circular channel concentric with said grinder, and having in the bottom of said channel a ball-groove which is eccentric to said grinder and channel, substantially as and for the purpose specified.

3. In a machine for grinding balls, in combination, a grinder rotatable upon a vertical axis, a table below said grinder, a plate slidable upon said table, which plate has in its upper surface an annular channel, and in the bottom of said channel an annular groove which is eccentric to the grinder, and guide-stops on the table for determining the position of the plate relative to the grinder substantially as and for the purpose specified.

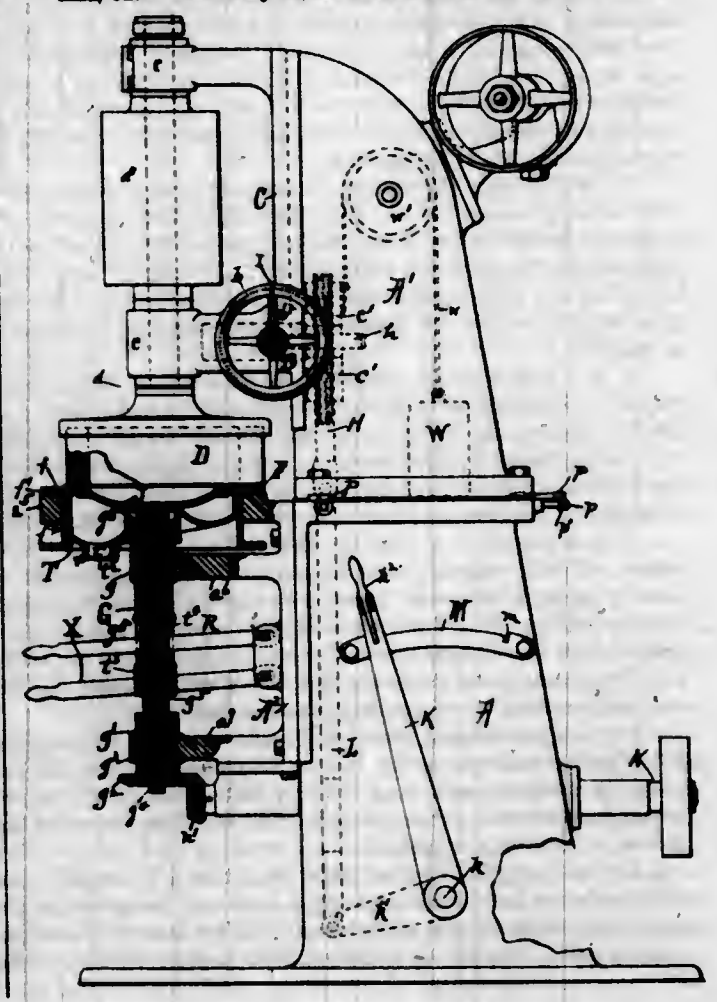
4. In a machine for grinding balls, in combination, a rotatable tubular grinder, a table below the grinder, a plate slidable upon said table, stops and a clamp for fixing the position of the plate relative to the grinder, said plate having, in its top surface, a circular channel adapted to receive the lower grinding edge of the grinder, and in the bottom of said channel a ball-groove which is eccentric to said channel, and means for moving the grinder vertically to permit the withdrawal of the plate from beneath the grinder, substantially as and for the purpose specified.



5. In a machine for grinding balls, a horizontal plate having, in its top surface, a circular channel, and in the bottom of said channel a circular ball-groove eccentric to said channel, substantially as and for the purpose specified.

6. In a machine for grinding balls, in combination, a grinder rotatable upon a vertical axis and having a flat grinding-surface, a substantially horizontal bed below said grinder, a plate movable upon said bed and having in its top a recess adapted to contain a mixture of oil and emery or like substance, and having in the bottom of said recess an endless ball-groove which, when the parts are in operative relation, is not a circle concentric with the axis of the grinder, substantially as and for the purpose specified.

609,219. **BALL-GRINDING MACHINE.** ROLLIN H. WHITE, Cleveland, Ohio. Filed July 14, 1897. Serial No. 644,498. (No model.)



Claim.—1. In a ball-grinding machine, in combination, a non-rotating circular raceway open at its inner periphery, a rotating revolver in the form of an inverted frustum of a cone which is inside of and concentric with the said raceway, the periphery of said revolver being adapted to bear upon the balls in the raceway, whereby it moves the balls around said raceway, and prevents their escape therefrom, and a grinder which bears upon the balls in the raceway, substantially as specified.

2. In a ball-grinding machine, in combination, a non-rotating circular raceway open at its inner periphery, a rotating revolver in the form of an inverted frustum of a cone, which is inside of and concentric with the said raceway, the periphery of said revolver being adapted to bear upon the balls in the raceway, whereby it moves the balls around said raceway, and prevents their escape therefrom, an eccentric rotary grinder, and mechanism for moving said grinder and revolver upward relative to the raceway, substantially as specified.

3. In a ball-grinding machine, in combination, a circular raceway open on its inner periphery, a revolver in the form of an inverted frustum of a cone, the periphery of which is adapted to bear upon the balls in the raceway, a cylinder concentric with and inside of, but normally below said raceway, a rotary grinder and mechanism for moving the grinder, cylinder and revolver upward relative to the raceway, whereby, first, the revolver releases the balls from said raceway, and the cylinder then forms a temporary inner periphery for the raceway, substantially as specified.

4. In a ball-grinding machine, in combination, a raceway open at its inner periphery, a revolver inside of and concentric with said raceway, which revolver is in the form of an inverted frustum of a cone, and is adapted to bear upon the balls in the raceway to hold and move them therein, a hollow cylinder concentric with and inside of said raceway, but normally below the same, which cylinder has a bottom, an eccentric rotary grinder adapted to bear upon the balls in the raceway, mechanism for moving the grinder, revolver and hollow cylinder upward relative to the raceway, for the purpose of first releasing the balls from the raceway, and allowing them to fall in said hollow cylinder, and then to cause said hollow cylinder to temporarily close the inner periphery of the raceway, whereby said raceway may be loaded with balls, substantially as specified.

5. In a ball-grinding machine, in combination, a circular raceway open on its inner periphery, means for holding the balls in said raceway and moving them around therein during the grinding operation, a grinder adapted to bear upon the tops of the balls in said raceway, and a cylindrical receiver movable upward relative to said raceway, which receiver is inside of and concentric with said raceway and normally below the same, said receiver being adapted to catch the balls which are released from said raceway, and is also adapted to form a temporary inner wall for the raceway when the same is being loaded with balls, substantially as specified.

6. In a ball-grinding machine, in combination, a circular raceway having an outer wall and a slightly-inclined bottom, a revolver, a cylinder inside and below the raceway, mechanism for raising the said revolver and cylinder relatively to the raceway, and a loader having a circular ball-groove of substantially the same diameter as the raceway and adapted to drop the balls from said groove into the raceway, substantially as specified.

7. In a ball-grinding machine, in combination, a circular raceway having an outer wall and a slightly-inclined bottom, a revolver, a cylinder inside and below the raceway, mechanism for raising the said revolver and cylinder relatively to the raceway, and a loader consisting of a ring having a beveled inner periphery, and an inner plate which is movable vertically relatively to said ring, substantially as specified.

8. In a ball-grinding machine, in combination, a circular raceway, a vertically-movable revolver, a vertically-movable cylinder inside the raceway and below it and the revolver, a loader consisting of an outer ring and an inner vertically-movable plate, means for holding the loader over the ball-raceway, and mechanism for raising the said cylinder, revolver and inner loader-plate, substantially as specified.

9. In a ball-grinding machine, in combination, a circular raceway, a vertically-movable revolver, a vertically-movable cylinder inside the raceway and below it and the revolver, a loader consisting of an outer ring and an inner vertically-movable plate, a pivoted arm carrying the loader, and adapted to be swung to bring the loader over the raceway, and mechanism for raising said cylinder, revolver and inner loader-plate, substantially as specified.

10. In a ball-grinding machine, a loader consisting of a ring having a beveled inner periphery and an inner plate which is movable vertically relative to said ring, whereby balls in the annular groove formed between said plate and ring may fall out of the bottom of said groove, substantially as specified.

11. In a ball-grinding machine, in combination, a vertically-movable grinder, an annular ball-raceway, a horizontal swinging arm pivoted to the frame of said machine, and a loader carried by said arm consisting of a ring having a beveled inner periphery and an inner plate which is movable vertically relative to said ring, whereby balls in the groove formed between said ring and plate may be permitted to fall out of the bottom of said groove into said raceway, substantially as specified.

12. In a ball-grinding machine, the combination of a ball-raceway, an eccentric grinder, means for moving the grinder vertically, a horizontal swinging arm, a loader-ring secured to said arm, a vertical central stud having a flange on its lower end, and an inner lower plate vertically movable upon said stud, substantially as specified.

13. In a ball-grinding machine, the combination of a vertically-movable grinder, a fixed ball-raceway eccentric thereto, a revolver which is attached to a vertically-movable shaft, a vertically-movable sleeve embracing said shaft, a cylinder within the ball-raceway and below the revolver which loosely embraces said shaft, a collar embracing said sleeve, rigid connection between said cylinder and collar, a swinging horizontal arm, a loader carried thereby consisting of a fixed outer ring having a beveled inner periphery, and a vertically-movable inner plate, and means for raising said collar, whereby the cylinder is raised and caused to form a temporary inner wall for the raceway, the revolver is raised and the inner plate of the loader is raised, whereby balls in the loader-groove fall out of the bottom of the same into the ball-raceway, substantially as specified.

14. In a ball grinding machine, a circular raceway, a rotary grinder eccentric thereto, a vertically-movable slide which supports said grinder, a vertically-movable rod, and means for supporting and operating the same, and adjustable connections between said rod and slide, substantially as specified.

15. In a ball-grinding machine, in combination, a circular ball-raceway, a rotary grinder eccentric thereto, a vertically-movable slide which supports the grinder shaft, a vertically-movable threaded rod, and means for moving and supporting the same, and an adjusting-nut which connects said rod and slide, substantially as specified.

16. In a ball-grinding machine, in combination, a circular ball-raceway, a rotary grinder eccentric thereto, a vertically-movable slide which supports the grinder-shaft, a vertically-movable threaded rod, an operating-lever, mechanism connecting the same with said threaded rod, a fixed support for the lower end of said rod, and adjustable connections between said rod and slide, substantially as specified.

17. In a ball-grinding machine, in combination, a circular ball-raceway, a rotary grinder eccentric thereto, a vertically-movable slide which supports the grinder-shaft, a vertically-movable threaded rod and means for moving the same, and an adjusting-nut which connects said rod and slide, an operating-lever, mechanism connecting the same with said threaded rod, a fixed support for the lower end of said rod, an adjustable worm-nut which connects said threaded rod and slide, and a worm-shaft mounted on the slide for turning said nut, substantially as specified.

18. In a ball-grinding machine, in combination, a circular ball-raceway, a rotary grinder eccentric thereto, a vertically-movable slide which supports the grinder-shaft, a vertically-movable threaded rod and means for moving the same, and an adjusting-nut which connects said rod and slide, an operating-lever, mechanism connecting the same with said threaded rod, a fixed support for the lower end of said rod, an adjustable worm-nut which connects said threaded rod and slide, and a worm-shaft mounted on the slide for turning said nut, a graduated hand-wheel secured to said shaft and a pointer secured to the slide, substantially as specified.

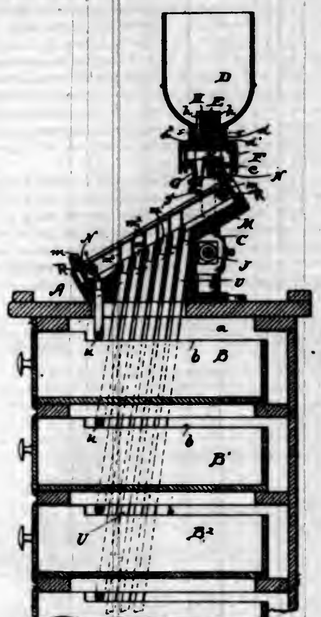
19. In a ball-grinding machine, in combination, a base which supports the ball-raceway, an upper frame member which supports the grinder and is bolted to the base, three adjusting-wedges interposed between the base and upper frame member, and means for operating said wedges, substantially as specified.

20. In a ball-grinding machine, the combination of an endless ball-raceway, and a rotating grinder for grinding the balls therein, said raceway and grinder being capable of relative vertical movement toward and from each other, with a loader having a groove of the same size and shape as the ball-raceway and adapted to contain balls to be ground, and means for releasing said balls through the bottom of said groove, substantially as and for the purpose specified.

21. In a ball-grinding machine, the combination of an endless ball-raceway, and a rotating grinder for grinding balls therein, said raceway and grinder being capable of relative vertical movement toward and from each other, with a loader consisting of an inner plate having externally the configuration of said ball-raceway, and an outer plate having a central opening of larger size but of the same shape, whereby a groove is formed between said plates of the same size and shape as said ball-raceway, and means for releasing through the bottom of said groove, balls placed therein, substantially as and for the purpose specified.

609,220. MACHINE FOR SORTING BALLS. ROLLIN H. WHITE, Cleveland, Ohio. Filed Nov. 30, 1897. Serial No. 660,300. (No model.)

Claim.—1. In a ball-sorting machine, the combination of a hopper having an inwardly-tapered lower end and a cylindrical neck below said tapered portion, and a plate secured across the lower end of said neck and provided with a hole d^1, with a rotatable cylinder fitted in said neck and provided with a surface groove whose lower end passes over said hole d^1, and a rotatable disk F below and close to said plate having a hole f, the disk F and cylinder being relatively so placed that the lower end of the surface groove in the latter and the hole f in the former are not in the same vertical line, substantially as and for the purpose specified.



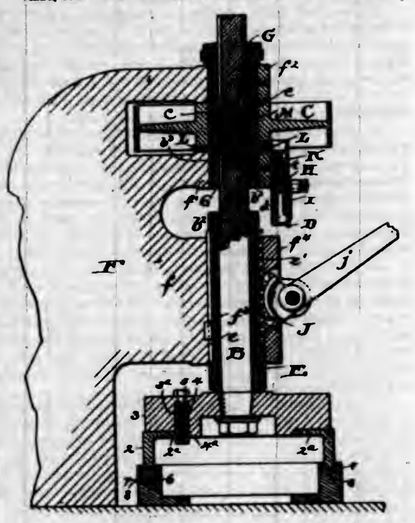
2. In a ball-sorting machine, in combination, a hopper having an inwardly-tapered lower end, and a neck below said contracted portion, a bottom plate secured across the lower end of said neck and having a hole for the passage of the balls, a rotatable vertical shaft passing centrally through said plate, a sleeve secured thereto and rotatably fitted in the neck of the hopper, said sleeve having a peripheral groove which extends from end to end and is adapted to pass over the hole in the bottom plate, and inclined diverging sorting-rails onto which the balls are delivered one by one after they fall through the hole in the bottom plate, substantially as and for the purpose specified.

3. In a ball-sorting machine, in combination, a hopper having an inwardly-tapered lower end and a neck below the same, a bottom plate secured across the lower end of said neck and having a hole for the passage of the balls, a rotatable vertical shaft passing through the said plate, a sleeve secured thereto and rotatably fitted in the neck of the hopper and extending up into the hopper, said sleeve having a peripheral groove which extends from end to end and is adapted to pass over the hole in the bottom plate, a driving-pulley secured to the lower end of said shaft close to said bottom plate and having a hole which is not directly below the groove in the sleeve, and inclined diverging sorting-rails onto which the balls are delivered one by one as they fall through the hole in the bottom plate, substantially as and for the purpose specified.

4. In a ball-sorting machine, in combination, diverging sorting-rails which incline downward from their rear to their front ends, a hopper, means for releasing the balls singly therefrom, a funnel into which the balls drop, and two guide-arms below the funnel, which arms extend rearward, whereby the balls which fall through the funnel are caught in said arms, and by them delivered in a rearward direction onto the rails, substantially as and for the purpose specified.

5. In a ball-sorting machine, in combination, two inclined diverging sorting-rails, a plurality of delivery-tubes below the said rails and adapted to catch the balls which fall between the rails, and a case having a plurality of sliding drawers therein, each drawer having the top edge of one side cut away, the lower ends of said tubes being bent laterally over the side cut-away edges so as to severally discharge into said drawers, substantially as and for the purpose specified.

609,221. BALL-GRINDING MACHINE. ROLLIN H. WHITE, Cleveland, Ohio. Filed Feb. 4, 1898. Serial No. 669,094. (No model.)



Claim.—1. In a ball grinding machine, the combination of a grinder rotatable upon a vertical axis, a rotatable indicating-arm adapted by its position to indicate when the grinder has rotated the proper number of times, and mechanism for driving said grinder and indicating-arm simultaneously but at different speeds, the movement of the indicating-arm being the slower, substantially as specified.

2. In a ball-grinding machine, the combination of a rotatable grinder, its operating mechanism, a disk rotatable simultaneously with the grinder but at a slow speed comparatively, and an arm N, and means for adjustably connecting said arm and disk, substantially as specified.

3. In a ball-grinding machine, the combination of a rotatable grinder, and mechanism for transmitting motion from the source of power to said grinder, a rotatable arm, and mechanism whereby it is turned simultaneously with the grinder but at a much slower speed, and means whereby this arm will disconnect some part of the power-transmitting mechanism when the grinder has made the desired number of revolutions, substantially as specified.

4. In a ball-grinding machine, the combination of a rotatable grinder, a belt-shipper, and a device adapted to cause the operation of the latter, with mechanism for simultaneously operating said grinder and belt-shipper-operating device, substantially as specified.

5. In a ball-grinding machine, in combination, a rotating grinder, its operating mechanism, an arm N and mechanism operating the same simultaneously with the grinder but at a slower speed, a spring-actuated belt-shipper, and a latching device which holds said belt-shipper in proper position to cause the belt to drive the machine, said latching device being in the path of said arm whereby it is released by said arm, substantially as specified.

6. In a ball-grinding machine, in combination, an endwise-movable rotating grinder-shaft, a sleeve (as the hub of the driving-pulley) which turns with the shaft but has no endwise movement, a worm on said sleeve, driving mechanism for said shaft, and a device operated by said worm for disconnecting some part of the driving mechanism, substantially as specified.

7. In a ball-grinding machine, an endwise-movable rotating grinder-shaft, its driving-pulley which has no endwise movement, a disk, mechanism operated by the driving-pulley for turning said disk, an arm mounted on the same axis with said disk, and means for adjustably connecting said disk and arm, substantially as specified.

8. In a ball-grinding machine, in combination, an endwise-movable grinder-shaft, a sleeve which turns with the shaft but has no endwise movement, a worm on said sleeve, a pivoted disk, mechanism driven by said worm for turning the disk, an arm mounted on the same axis with said disk, and means for adjustably connecting said disk and arm, substantially as specified.

9. In a ball-grinding machine, in combination, an endwise-movable grinder-shaft, a sleeve which turns with the shaft but has no endwise movement, a worm on said sleeve, a pivoted disk, mechanism driven by said worm for turning the disk, an arm mounted on the same axis with said disk, and means for adjustably connecting said

disk and arm, and belt-shifting mechanism adapted to be set in operation by said arm, substantially as specified.

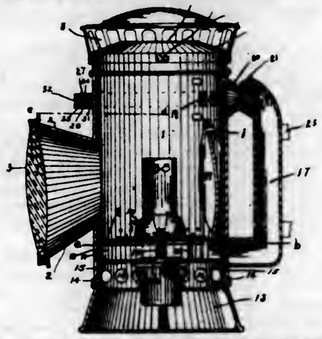
10. In a ball-grinding machine, in combination, a grinder-shaft, a worm which rotates simultaneously therewith, a rotating disk having a series of holes, mechanism intermediate of said worm and disk whereby the latter is driven, an arm pivoted upon the same axis as the disk, a pin carried thereby and adapted to engage with any of the holes in said disk, and a device adapted to be moved by said arm, substantially as specified.

11. In a ball-grinding machine, in combination, a rotatable grinder, a worm which rotates simultaneously therewith, a rotating disk having a series of holes, mechanism intermediate of said worm and disk whereby the latter is driven, an arm pivoted upon the same axis as the disk, a pin carried thereby and adapted to engage with any of the holes in said disk, an adjustable pointer, and means for fixing the pointer in different positions relative to said disk, and a device adapted to be moved by said arm, substantially as specified.

12. In a ball-grinding machine, in combination, a rotary grinder-shaft, a rotary disk, mechanism whereby both are rotated at different speeds, an arm mounted upon the axis of the disk, and means for adjustably connecting said arm and disk, spring-actuated belt-shifting mechanism, a sliding bar connected with said belt-shifting mechanism, said bar having a notch in its lower edge, a fixed plate with which said notch engages, a part of said bar being in the path of said arm, substantially as specified.

13. In a ball-grinding machine, in combination, of a substantially horizontal bed, a block movable upon the bed having a recess in its top surface adapted to contain a mixture of oil and emery or like substance, said block having at the bottom of said recess a sinuous endless ball-groove, and a rotary cylindrical grinder adapted to engage with balls in said sinuous groove, substantially as specified.

609,222. BICYCLE-LAMP. CHARLES BERGNER, Rochester, N. Y., assignor to the C. T. Ham Manufacturing Company, same place. Filed Sept. 5, 1896. Serial No. 604,996. (No model.) Patented in England Dec. 15, 1896, No. 28,684, and in France Apr. 17, 1897, No. 262,247.



Claim.—1. In a lamp, the combination with the body having the window at the front, the air-chamber at the bottom, the burner-cone and the burner, of the single air-tube at the rear of the body separated therefrom and communicating with the interior of the body above the cone and also with the air-chamber and the horizontally-extending air-injector at the upper portion of said tube, substantially as described.

2. In a lamp, the combination with the body having the window at the front, the air-chamber in the bottom and the burner-cone above the air-chamber, of the air-tube at the rear of the body, connecting with said air-chamber, the injector at the top of the tube, and an air-director on the body having the open upper and lower channels or passages connecting with the upper portion of the air-tube, substantially as described.

3. In a lamp, the combination with the body having the window at the front, the air-chamber at the bottom and the burner-cone, of the air-tube at the rear of the body communicating with the air-chamber at its lower end and with the body of the lamp above the burner, the air-injector at the upper portion of said tube, an air-director on the body having the open upper and lower air-channels communicating with the air-tube, substantially as described.

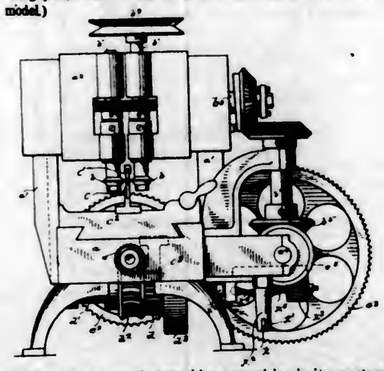
4. In a lamp, the combination with the body having the window at the front, the air-chamber at the bottom and the burner-cone forming part of said chamber, of the air-tube at the rear of the body communicating with the air-chamber at its lower end, the air-injector at the upper portion of the tube, an air-director on the body having the open upper and lower air-channels communicating with the air-tube and an intermediate open air-channel having the overhanging edges and also opening into the air-tube at the rear of the lamp, substantially as described.

5. In a lamp, the combination with the body having the window at the front, the air-chamber at the bottom and the burner-cone forming part of said air-chamber, of the air-tube at the rear of the body communicating with the air-chamber at its lower end, the air-injector at the upper portion of the tube, an air-director on the body having the open upper and lower air-channels communicating with the air-tube, substantially as described.

6. In a lamp, the combination with the body having the air-chamber at the bottom, the air-tube at the rear communicating with the air-chamber and having the injector at its upper portion, of the annular air-director having the open air-channels at top and bottom communicating with the air-tube, the intermediate open air-channel and having the overhanging edges, and the annular air-passage open at the front and communicating at the rear with the air-tube, substantially as described.

7. In a lamp, the combination with the body having the window at the front, the air-chamber at the bottom and the burner-cone, of the air-tube at the rear of the body communicating with the body of the lamp above the burner and also with the air-chamber, an air-injector at the upper end of said tube and the annular air-director on the body composed of the plates 34 and 35, arranged and operating substantially as described.

609,223. NEEDLE-GROOVING MACHINE. PHILO M. BEERS, Bridgeport, Conn. Filed June 1, 1896. Serial No. 593,693. (No model.)



Claim.—1. A grooving-machine comprising in its construction a clamp-slide having a rack, a shaft provided with a loose pinion engaging said rack, power-driven mechanism for operating said shaft, a clutch for controlling the connection between said pinion and shaft, a counter-shaft having a cam for controlling the clutch, and means independent of the cam for retaining the clutch in operative connection, after the action of the cam ceases.

2. A grooving-machine comprising in its construction a clamp-slide having a rack, a shaft provided with a loose pinion engaging said rack, power-driven mechanism for operating said shaft, a clutch for controlling the connection between said pinion and shaft and a counter-shaft having a cam for controlling the clutch the connection between the cam and the clutch including toggle-levers and means arranged to retain the clutch in operation after the action of the cam ceases.

3. A grooving-machine comprising in its construction a clamp-slide having a rack, a shaft provided with a loose pinion engaging said rack, power-driven mechanism for operating said shaft, a clutch for controlling the connection between said pinion and shaft, a counter-shaft having a cam for controlling the clutch said cam having a recess f^3 and the greater portion of the periphery of its disk having a shorter radius than the cam, the bar f^4 having shoulder f^5, the lever k, the upright k^2 and clutch mechanism operated by said upright for locking the clutch.

4. In a grooving-machine the combination with the operating mechanism including a clutch, of the disk f' having the greater portion of its periphery of uniform radius and having the cam f slightly raised and provided with a recess f^3, and mechanism operated by said cam for locking the clutch.

5. In a grooving-machine the combination with the operating mechanism including a clutch, of the disk f' having the greater portion of its periphery of uniform radius and having the cam f slightly raised and provided with a recess f^3, mechanism operated by said

cam for locking the clutch and means for automatically unlocking the clutch when permitted by the recess of the disk.

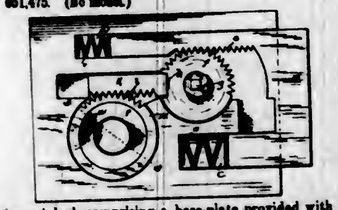
6. In a grooving-machine the combination with the operating mechanism including a clutch, of the disk f' having the greater portion of its periphery of uniform radius and having the cam f slightly raised and provided with a recess f^3, the bar f^4 having shoulder f^5, and toggle-lever mechanism operated by said bar f^4 for locking the clutch.

7. In a grooving-machine the combination with the operating mechanism including a clutch, of the disk f' having the greater portion of its periphery of uniform radius and having the cam f slightly raised and provided with a recess f^3, the bar f^4 having shoulder f^5, toggle-lever mechanism operated by said bar f^4 for locking the clutch, the elbow-lever / for insuring the unlocking of said toggle mechanism, and means connected with the main slide of the machine for operating the elbow-lever.

8. A grooving-machine comprising in its construction a clamp-slide having a rack, a shaft provided with a loose pinion engaging said rack, power-driven mechanism for operating said shaft, a clutch for controlling the connection between said pinion and shaft, a counter-shaft having a cam for controlling the clutch, the connection between the cam and the clutch including toggle-levers adapted in operation to pass beyond a straight line, means for retaining them in such position, and means controlled by the operation of the machine to return the toggle-levers to disengage the clutch.

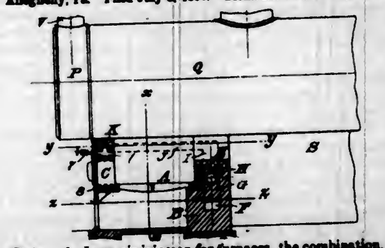
9. A grooving-machine comprising in its construction a clamp-slide having a rack, a shaft provided with a loose pinion engaging said rack, power-driven mechanism for operating said shaft, a clutch for controlling the connection between said pinion and shaft, a counter-shaft having a cam for controlling the clutch, said cam having a recess f^3 and the greater portion of the periphery of its disk having a shorter radius than the cam, the bar f^4 having shoulder f^5, the lever k, the upright k^2, toggle-levers k^3 adapted to be lifted above a straight line by the upright k^2, clutch mechanism operated by said toggle-levers for locking the clutch, and means controlled by the operation of the machine for depressing the upright and toggle-levers.

609,224. LOCK. SHELBY BOWEN, Poppa, W. Va., assignor of one-half to Stephen Herald and J. T. Vinson. Filed Sept. 13, 1897. Serial No. 651,475. (No model.)



Claim.—A lock comprising a base-plate provided with recesses corresponding to and to receive and form bearings for the operating portions of the lock, said operating portions comprising a bolt provided with rearwardly-projecting tongues, one of said tongues being adapted to play in its recess to form a guide, the other being provided with a rack to engage a pinion, a supplementary bolt adapted to enter a recess in the pinion, a second pinion in engagement with a rack on the supplementary bolt, said second pinion having a recess adapted to receive a key and being provided with a projection in the path of the key whereby the pinion may be revolved when the key is operated, and springs for placing the whole in a normally-locked position.

609,225. SMOKE-CONSUMING DEVICE. CHARLES E. BRINEY, Allegheny, Pa. Filed July 3, 1897. Serial No. 643,479. (No model.)



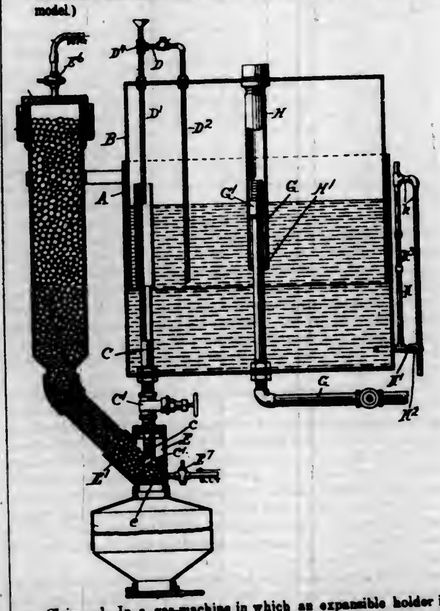
Claim.—1. In an air-injector for furnaces, the combination, substantially as set forth, of an air receiving and delivery chamber, having a body, a lateral air-inlet passage adapted to communicate with an air-heating conduit in the wall of a furnace, and an end passage for the discharge of air into a furnace, a threaded sleeve engaging the end of the body opposite the discharge-passage, a nut engaging said sleeve for clamping the same and the connected chamber detachably to a fire-front, a fluid-pressure-supply pipe passing freely through said sleeve and having a discharge-opening within the air receiving and delivery chamber, and an operating-stem passing through the supply-pipe and controlling the discharge-opening thereof.

2. In an air-injector for furnaces, the combination substantially as set forth, of an air receiving and delivery chamber, having a body, a lateral air-inlet passage adapted to communicate with an air-heating conduit in the wall of a furnace and an end passage for the discharge of air into a furnace, means for connecting said chamber detachably to the inside of a furnace-wall, a fluid-pressure-supply pipe extending into and fitting freely in said chamber and having a discharge-opening formed in a plug at its inner end, a union or coupling connected to said pipe, in position to be located exterior to a furnace-wall, an operating-stem passing through the union and fluid-pressure-supply pipe, and removable through the outer ends thereof, said stem being adapted to seat at the inner end of and control the discharge-opening, and a supply-pipe connected to the union.

3. The combination, substantially as set forth, of two or more air receiving and delivery chambers, each having an inlet adapted to communicate with an air-heating passage, means for connecting said chambers detachably to the inside of a furnace-wall, fluid-pressure-supply pipes, each fitting freely in one of said chambers and having a discharge-opening therein between its heated-air inlet and its delivery passage, unions or couplings, each connected to one of said pipes, in position to be located exterior to a furnace-wall, operating-stems, each passing through one of the unions and controlling the discharge-opening of the supply-pipe connected thereto, said stems being removable through the outer ends of the supply-pipes and unions, pipes connecting the several unions one to another, and a main supply-pipe, connected to one of said unions.

4. In an air-injector for furnaces, a fluid-pressure device adapted to be fitted removably in an air receiving and delivery chamber, and composed of a supply-pipe having one of its ends closed by a plug in which is formed a discharge-opening, a union detachably connected to the opposite end of said pipe and fitted for connection with a source of fluid-pressure, and an operating-stem passing through said union and having its end adapted to seat in the plug of the supply-pipe and control the discharge-opening thereof, substantially as set forth.

609,226. AUTOMATIC ACETYLENE-GAS MACHINE. CHARLES S. BURTON, Oak Park, Ill. Filed Nov. 23, 1896. Serial No. 613,051. (No model.)



Claim.—1. In a gas-machine in which an expansible holder is supplied with gas from a generating-chamber; a passage leading from the gas-space of the holder downward and terminating in the gener-

ating-chamber; a siphon which is raised and lowered by expansion and collapse of the holder, one end of such siphon being immersed and open in the liquid throughout all the fluctuations of the holder, and the other end terminating in said passage; and suitable means to prevent the flow of liquid through said siphon toward the immersed end.

2. In a gas-machine, in which an expansible liquid-sealed gas-holder is supplied with gas from a generating-chamber, in combination with such holder and chamber, a siphon which is raised and lowered by the expansion and collapse of the holder, having one end immersed and open in the seal liquid of the holder throughout all the expanding and collapsing movements of the latter, the other end being adapted to discharge into the duct or port of gas communication between the generating-chamber and the holder.

3. In a gas-machine in which an expansible holder is supplied with gas from the generating-chamber; such holder and chamber and a source of liquid, combined with a siphon which is raised and lowered by the expansion and collapse of the holder, one end of the siphon being immersed and open in the liquid throughout all the expanding and collapsing movements of the holder, the other end being adapted to discharge through the port or passage of gas communication between the generator and the holder.

4. In a gas-machine in which an expansible liquid-sealed holder is supplied with gas from a generating-chamber, such holder and chamber combined with a duct or passage which is open at its upper end in the gas-space of the holder, and which terminates at the other end in the generating-chamber; and a siphon which is raised and lowered by the expansing and collapsing movements of the holder having one end immersed in the seal liquid of the holder throughout all the expanding and collapsing movements of said holder, and having the other end open and adapted to discharge into said passage.

5. In a gas-machine, an expansible holder constructed to contain liquid and gas-space above the liquid; a generating-chamber communicating with the gas-space of the holder, and a siphon having one limb extending into the liquid of the holder and the other limb extending within the gas-communicating passage from the generating-chamber to the holder and adapted to be lowered therein by the collapse of the holder; and means for preventing backflow toward the limb which is immersed in the liquid.

6. In a gas-machine, an expansible holder constructed to contain liquid and gas-space above the liquid; a generating-chamber communicating with the gas-space of the holder; a siphon attached to the moving element of the holder having one limb immersed in the liquid and the other limb protruding within the gas-communicating passage leading from the generator, and a check-valve in said siphon arranged to prevent backflow therethrough into the liquid-immersed end.

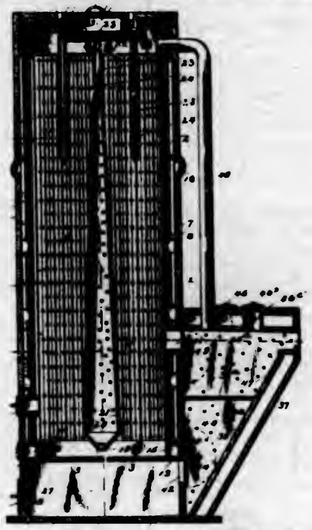
7. In combination with a telescoping gas-holder, a gas-duct leading up through the water-space thereof and open in the gas-space above the same, and a generating-chamber into which said gas-duct opens at the lower end; a magazine exterior to the holder and a passage leading from the magazine to the generating-chamber adapted to conduct by gravity fragmentary solid matter from the magazine to the generating-chamber, and suitable means by which the collapse of the holder causes water to be delivered into said gas-duct.

8. In a gas-machine for making gas by the action of liquid upon a solid, in combination with a gas-holder, a magazine for the solid located out of the path of the gas to and from the holder; a generating-chamber and a conduit leading laterally thereinto, through which conduit the solid in fragments is delivered by gravity from the magazine to the generating-chamber; a grate which restrains the movement of the solid into the generating-chamber; a source of liquid, and a duct by which such liquid may reach the generating-chamber and act upon the solid stopped by the grate; a receptacle into which the liquid and residuum of the solid may flow upon passing the grate, and a gas-duct leading from a point in the generating-chamber at which the liquid encounters the solid on the grate into the gas-holder.

9. In a gas-machine, in combination with the gas-holder, a magazine for solid matter from which the gas is to be generated wholly exterior to the gas-holder; a generating-chamber connected with the magazine and with the gas-space of the holder; and suitable means for delivering water to such generator, the magazine having an air-vent at the top, and the generator having an air-inlet near the bottom, and a valve in the duct which connects the generator with the holder, whereby said last-mentioned valve being closed, the generator and magazine may be ventilated by the circulation of air from the bottom of the generating-chamber up through the same and through the magazine.

10. In a gas-machine, in combination with the gas-holder, a magazine exterior thereto; a generator which receives fragmentary solid matter from the magazine by gravity, a gas-duct from the generator to the holder, and the valve which controls such duct; the magazine having a liquid-sealed cover; a ventilating-cock mounted on such cover and a draft or lower air-inlet cock controlling an air-passage into the generator.

609,227. **HEAT-GENERATOR.** NEWTON J. CAREY, Ostaloosa, Iowa. Filed May 2, 1892. Serial No. 431,505. (No model.)



Claim.—1. In a heat-generator, a fuel-chamber having an opening at or near the upper end for the admission of fuel, an opening at or near the other end for removing the unburned residue, an intermediate opening to a draft chimney, a circumferential series of draft-holes in the upper part of the walls composing the fuel-chamber and above the opening to the draft-chimney, and an adjustable draft in the lower portion of the chamber and upon the opposite end relative to the fuel-chamber and flue; substantially as described and for the purpose set forth.

2. In a heat-generator, the combination of a casing having means for the introduction of fuel at or near one end and means for the withdrawal of unburned residue at or near the opposite end, an intermediate flue leading to the draft-chimney, an internal air flue extending above said intermediate flue and adapted to be surrounded by fuel, a multiplicity of draft-holes in said air-flue, a circumferential series of draft-holes above the intermediate flue in the walls of the casing, means for regulating the amount of air entering the air-flue, and means for regulating the amount of air delivered by the holes in the casing; substantially as described.

3. In a heat-generator, the combination of a fuel-chamber having an opening at or near its upper end for the admission of fuel, an opening at or near the lower end for the discharge of unburned residue, an intermediate draft-flue to discharge the products of combustion, an air-tube adapted to be surrounded by fuel and depending downwardly from the upper end of the generator, and adapted to discharge air into the fuel above the intermediate draft-flue; substantially as described.

4. A heat-generator, consisting of a fuel-chamber, means for the admission of fuel at its upper end, means for the withdrawal of unburned residue at its lower end, a jacket surrounding said fuel-chamber and extending to or near its upper end and uniting thereto and forming an air-chamber, adjustable means for admitting air to the lower end of said air-chamber, a multiplicity of draft-openings through the walls of the fuel-chamber above the smoke-draft therefrom, and adjustable means for permitting air to enter the fuel-chamber below the smoke-draft therefrom, substantially as and for the purpose described.

5. A heat-generator, consisting of a fuel-chamber adapted to admit fuel at its upper end, and adapted to discharge unburned residue at its lower end, an intermediate smoke-flue leading to a chimney, perpendicular flues formed in the walls thereof having adjustable means for admitting air at their lower ends, and closed at their upper ends, a series of perforations or draft-holes from said flues to the interior of the fuel-chamber above the draft-flue, and an adjustable air-draft leading into the lower portion of the chamber below the draft-flue, substantially as and for the purpose described.

6. The combination, with a shell or casing; of a lining providing a fire-chamber and a coking-chamber and formed with air-holes extending from the outer side to the inner side, with vertical air-ducts within the body extending from the bottom to the top thereof, and with short air-holes extending from the vertical air-ducts to the inner side of the lining; substantially as described.

7. The combination, with a shell or casing; of a lining providing a fire-chamber and a coking-chamber arranged within the shell or casing having air-ducts between it and the shell or casing and formed with vertical air-ducts within the body extending from the bottom to the top thereof; substantially as described.

8. The combination, with a shell or casing; of a lining providing a fire-chamber and a coking-chamber arranged within the shell or casing, having air-ducts between it and the shell or casing, and formed with air-holes extending from the outer side to the inner side and with vertical air-ducts within the body extending from the bottom to the top thereof, substantially as described.

9. The combination, with a shell or casing; of a lining providing a fire-chamber and a coking-chamber arranged within the shell or casing having air-ducts between it and the shell or casing and formed with air-holes extending from the outer side to the inner side, with vertical air-ducts within the body extending from the bottom to the top thereof, and with short air-holes extending from the vertical air-ducts to the inner side of the lining; substantially as described.

10. The combination, with a shell or casing; of a lining providing a fire-chamber and a coking-chamber arranged within the shell or casing having air-ducts between it and the shell or casing and formed with vertical air-ducts within the body extending from the bottom to the top thereof and recesses by which the air-ducts between the shell or casing and the lining and the vertical air-ducts in the lining are connected; substantially as described.

11. The combination, of a lining providing a fire-chamber and a coking-chamber, having air-ducts on the outer side thereof and a shell or casing formed with an enlargement which surrounds the lining and connects the air-ducts; substantially as described.

12. The combination, with a shell or casing, and a lining providing a fire-chamber and a coking chamber; of the air-supply flue, the horizontal flue extending beneath the fire-chamber and connected to the air-supply flue, and the vertical air-column extending from the horizontal flue through the fire-chamber and into the coking-chamber and formed with air-holes connecting the interior of the air-column with the surrounding fire and coking chambers; substantially as described.

13. The combination, with a shell or casing and a lining providing a fire-chamber and a coking-chamber, of the air-supply flue, the horizontal flue extending beneath the fire-chamber, and connected to the air-supply flue, and the upwardly-tapering vertical air-column extending from the horizontal flue through the fire-chamber and into the coking-chamber and formed with air-holes connecting the interior of the air-column with the surrounding fire and coking chambers; substantially as described.

14. The combination, with a shell or casing and a lining providing a fire-chamber and a coking-chamber; of the air-supply flue, the horizontal flue extending beneath the fire-chamber and connected to the air-supply flue, and vertical air-columns extending from the horizontal flue through the fire-chamber and into the coking-chamber, having drop-burners at their upper ends; substantially as described.

15. The combination, with a shell or casing and a lining providing a fire-chamber and a coking-chamber; of the air-supply flue, the horizontal flue extending beneath the fire-chamber and connected to the air-supply flue and the vertical air-columns extending from the horizontal flue through the fire-chamber and into the coking-chamber having air-tubes provided with drop-burners which are formed with air-holes; substantially as described.

16. The combination, with the shell or casing and a lining providing a fire-chamber and a coking-chamber, having a flue extending from the coking-chamber through the lining, and through the shell or casing and an opening from the ash-pit extending through the shell or casing; of the projection or enlargement formed with a lining providing a comubustion-chamber, and with a heat-discharge opening; substantially as described.

17. The combination, with the shell or casing and a lining providing a fire-chamber and a coking-chamber having a flue extending from the coking-chamber through the lining and through the shell or casing and an opening from the ash-pit extending through the shell or casing; of the projection or enlargement consisting of a shell having an air-inlet, and a lining providing a combustion-chamber within an air-space between it and the shell and formed with air-holes for admitting air from the space to the combustion-chamber; the lining and shell being provided with a heat-discharge opening; substantially as described.

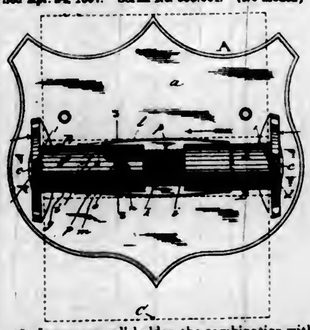
18. In a heat-generator, consisting of a fuel-chamber, means for the admission of fuel at one end, means for the withdrawal of unburned residue at the other end, with intermediate smoke-flue to discharge the products of combustion, one or more air-tubes adapted to be surrounded by fuel and having openings for the entry of air into the fuel above the smoke-flue, and a multiplicity of air-openings in the walls of the generator; substantially as described.

19. In a heat-generator consisting of a fuel-chamber, means for the admission of fuel at its upper end, means for the withdrawal of unburned residue at the lower end, an intermediate draft-opening for the discharge of the products of combustion, an air-box extending across the fuel-chamber above said opening to the chimney, and provided with openings to admit air to the fuel above said opening to the chimney, substantially as described.

20. In a heat-generator consisting of a fuel-chamber, draft-openings for the admission of air thereto, a draft for the products of combustion leading therefrom, a subcombustion-chamber located in the line of said draft, an air-chamber located above said subcombustion-chamber and having downdraft-openings suitable for delivering air to the top of the flame and gases proceeding from the main combustion-chamber, substantially as described.

21. In a heat generator, a fuel-chamber having an opening at or near its upper end for admission of fuel, an opening at or near the other end for withdrawal of unburned residue, an intermediate opening to a draft-chimney, a circumferential series of draft-openings between opening for fuel and the draft-opening to the chimney; substantially as described.

609,228. **PAPER-ROLL HOLDER.** WALTER H. CLARKE, St. Louis, Mo. Filed Apr. 24, 1897. Serial No. 633,661. (No model.)



Claim.—1. In a paper-roll holder, the combination with supporting-arms having sockets or bearings, of a roller composed of two sections or parts movable longitudinally with respect to each other, and means between the ends of the roller for locking the sections from movement toward each other when the roller is placed in said sockets or bearings, substantially as and for the purpose described.

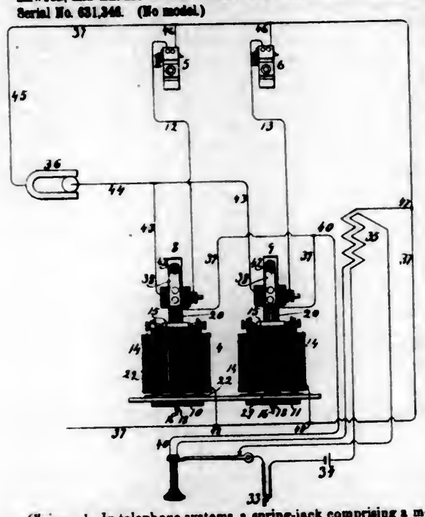
2. In a paper-roll holder, the combination with supporting-arms having sockets or bearings, of a roller composed of two sections or parts movable longitudinally with respect to each other, means between the ends of the roller for locking the sections from movement toward each other when the roller is placed in said bearings, and a spring between the sections for pressing the same against the arms, substantially as described.

3. In a paper-roll holder, the combination with supporting-arms having sockets or bearings, of a roller composed of two sections or parts movable longitudinally with respect to each other, one of said sections having a pin *o* and the other having a longitudinal slot *l* to receive the pin so as to permit the placing of the roller in the sockets or bearings and a lateral slot *m* to be engaged by the pin to prevent movement of the sections toward each other when the roller is placed in the bearings, substantially as described.

4. In a paper-roll holder, the combination with supporting-arms having sockets or bearings, of a roller composed of two sections or parts movable longitudinally with respect to each other, one of said sections having a pin *o* and the other having a longitudinal slot *l* to receive the pin so as to permit the placing of the roller in the bearings or sockets and a lateral slot *m* to be engaged by the pin to prevent movement of the sections toward each other when the roller is placed in the bearings, and a spring *k* between the sections for pressing the same against the arms, substantially as described.

5. In a paper-roll holder, the combination with supporting-arms having sockets or bearings and inclined grooves *d* leading to the bearings, of a roller composed of two sections or parts movable longitudinally with respect to each other, means between the ends of the roller for locking the sections from movement toward each other when the roller is placed in the bearings, a spring for pressing the sections against the arms, and spring-journals *e* in the ends of the roller, substantially as described.

609,229. TELEPHONE SYSTEM. CHARLES R. EGAN, BURTON L. LAWTON, and ERNEST C. WILCOX, Meriden, Conn. Filed Apr. 9, 1897. Serial No. 631,348. (No model.)



Claim.—1. In telephone systems, a spring-jack comprising a metallic frame, a drop-shutter, magnet-coils, a magnet-armature provided with a drop-shutter-retaining hook, a metallic plunger fitted to reciprocate in the frame and having a retracting-spring, a slideway for a switch-plug in the frame in line of the said plunger, a spring projecting into the slideway and connected with the winding of one of the magnet-coils, and the other coil having ground or common return line connection, and means for connecting a subscriber's line with the said frame, substantially as described.

2. In telephone systems, metallic spring-jack frames having each a slideway to receive a switch-plug; a metallic plunger fitted to reciprocate in contact with each frame in line of the said slideway, and a return-spring for each plunger; line-connecting springs located with their free ends projecting into the paths of the said plungers, respectively; switch-plugs connected in pairs and having metallic ends fitted to engage the said plungers; caps of insulating material for the rear ends of the plungers, and springs adapted to engage the said plugs, respectively, with the spring-jack coil, substantially as described.

3. In telephone systems, metallic spring-jack frames having each a slideway to receive a switch-plug; a metallic plunger fitted to reciprocate in contact with each frame, in line of the said slideway, and a return-spring for each plunger; a spring for connecting the central telephone-wire with each spring-jack, the free end of the said spring projecting into the path of the plunger of that jack; another spring for connecting with a generator and located in the path of the said plunger beyond the central-telephone-connecting spring; the said plunger being provided with a projection of insulating material interposed at a point to break the contact of the central-telephone-connecting spring with the plunger when the latter is in contact with the generator-connecting spring, substantially as described.

4. In telephone systems, metallic spring-jack frames having each a slideway for a switch-plug, a metallic plunger fitted to reciprocate in contact with each frame in line of the said slideway and provided with a return-spring; a spring for connecting each jack with the line of a central telephone and another spring and line for connecting with a generator, these two springs being located for temporary contact with the said plunger; a subscriber's communicating spring projecting into the said slideway in each spring-jack in the path of a switch-plug and fitted for metallic contact with that spring-jack frame; and a pair of switch-plugs having metallic nibs electrically connected through a cord, the nibs being fitted each to engage one of the subscriber's communicating springs, substantially as described.

5. In telephone systems, spring-jacks, each provided with a central-telephone-connecting spring, a generator-connecting spring, and a subscriber's communicating spring; a plunger fitted to reciprocate in each spring-jack to engage either of the first two-named springs; and a pair of connected plugs, each fitted to operate a plunger and provided with a metallic nib fitted to engage a subscriber's communicating spring.

6. In telephone systems, a switchboard having spring-jacks with apertures to receive each a switch-plug; a drop-shutter hung to move to and from the spring-jack and having an aperture to register with the aperture in the spring-jack when the shutter is closed or set, and connecting-plugs for the spring-jacks; the plugs and the holes in the shutters being so proportioned that a shutter may partially drop onto the plug while the plug remains inserted in the spring-jack, substantially as described.

7. In telephone systems, metallic spring-jack frames; subscribers' lines connected therewith; each jack having a passage to receive a switch-plug; a communicating spring connected with the winding of the magnetic coil of the drop; the free end of the spring projecting into the said plug-passage and resting normally on a metallic stud of the spring-jack frame; a plunger in contact with the frame and in line of the plug-passage, and a spring in line of the plunger, this spring being connected with a source of electricity; a pair of connected switch-plugs each having a necked metallic nib, and a larger body of insulating material to slide within the said plug-passage, keeping the nib insulated from the frame; a central operator's line and means electrically connecting it with the said plunger; the said plug-nib being adapted to engage its neck with the said communicating spring and being insulated both from the plug and frame when the source of electricity is connected, substantially as described.

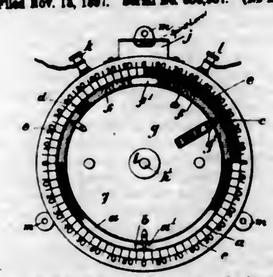
8. In telephone systems, a spring-jack connected with a subscriber's line and having a sliding metallic plunger; a spring connected with a central operator's line and having its free end located in the path of the plunger and beyond its end normally; another spring located in the path of the plunger beyond the operator's line-spring and connected with a source of electricity the said plunger having an insulating-collar to disengage the operator's spring when the generator is in connection substantially as described.

609,230. COMBINED PENCIL-HOLDER, SPECTACLE-CASE, &c. RICHARD A. HASSELIN, St. Joseph, Mo. Filed Apr. 28, 1898. Serial No. 679,433. (No model.)



Claim.—A combined spectacle-case and pencil-holder, comprising a back plate and a front plate, the latter tapered to a point at its lower end and having extensions at its upper and lower ends forming attaching-prongs, the said plate being bulged outward centrally from its top to near the bottom forming the front portion of a pocket and providing bearing-flanges at the sides and lower end of said pocket, one of the side flanges having slits therein near its upper and lower ends; together with short tubes provided with integral prongs which are passed through the aforesaid slits and the back plate, and prongs carried by the opposite flange, as herein shown and described.

609,231. MEANS FOR INDICATING A SHIP'S ROLL. JAMES J. HICKS and GILES H. SEAL, London, England; said Seal assignor to said Hicks. Filed Nov. 13, 1897. Serial No. 658,937. (No model.)



Claim.—1. An instrument for indicating a ship's roll and for giving other indications and alarms, comprising an annular tubular glass chamber half filled with mercury and means for carrying such chamber and oscillating it in a vertical plane, substantially as herein set forth.

2. The combination of an annular tubular glass chamber half filled with mercury, a vertical board or plate carrying such chamber and adapted to oscillate it, and an annular scale surrounding the same, substantially as herein set forth and for the purpose stated.

3. The combination of an annular tubular glass chamber having

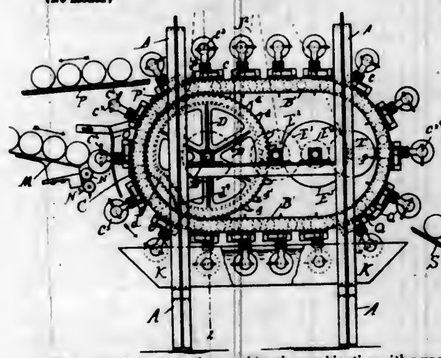
one half filled with mercury and creosote on the top of the mercury, a vertical board or plate carrying such chamber and by means of which it may be oscillated, an annular scale surrounding the chamber, and an index or indices within the chamber, substantially as herein set forth and for the purpose stated.

4. The combination of an annular tubular glass chamber half filled with mercury, a vertical board or plate carrying such chamber, a central stud or axis on which the board carrying the chamber can oscillate in the plane of the chamber, and two electric contacts sealed within the chamber, one at the lower part and the other above the level of the mercury, substantially as herein set forth and for the purpose stated.

5. The combination of an annular tubular glass chamber half filled with mercury, a plate carrying such chamber, a fixed back board having a stud or axis on which the chamber-carrying plate is mounted and on which it can be oscillated in the plane of the chamber, two electric contacts sealed within the chamber, one at the lower part and the other above the level of the mercury, and an annular scale surrounding the chamber, substantially as herein set forth and for the purpose stated.

6. The combination of an annular tubular glass chamber half filled with mercury, a plate carrying such chamber, a fixed back board having a screw-threaded stud or axis on which the chamber-carrier is mounted and on which it can be oscillated in the plane of the chamber, a clamping-nut mounted on the stud or axis, two electric contacts sealed within the chamber, one at the lower part and the other above the level of the mercury, an annular scale surrounding the chamber, two terminals fixed to the instrument, and means for connecting the contacts of the annular glass chamber with said terminals so as to permit of free motion of the chamber on said stud or axis, substantially as herein set forth and for the purpose stated.

609,232. CAN-TESTING MACHINE. EDWARD P. HOLDEN and JAMES L. BOARD, Chicago, Ill. Filed June 15, 1894. Serial No. 514,663. (No model.)



Claim.—1. In a can-testing machine the combination with a pneumatic chamber of a series of can-carriers independent of said chamber, mechanism for carrying said carriers to the chamber to bring them into pneumatic connection therewith and means for carrying the cans entirely away from the chamber, substantially as described.

2. In a can-testing machine the combination with a movable pneumatic chamber, of a series of can-carriers independent of the chamber and means for bringing the carriers and cans successively into pneumatic connection with the chamber, substantially as described.

3. In a can-testing machine the combination with a pneumatic chamber of a series of can-carriers independent of said chamber, a way in which the carriers travel, means for moving the carriers and cans to the chamber to bring them into the pneumatic connection therewith and means for carrying the cans entirely away from the chamber, substantially as described.

4. In a can testing machine the combination with the pneumatic chamber, of a series of pneumatic can-carriers independent of said chamber, an endless way on which the carriers travel, and means for bringing the carriers and cans successively into pneumatic connection with the chamber, substantially as described.

5. In a can-testing machine the combination with a movable pneumatic chamber of a series of can-carriers independent of the chamber, an endless way on which the carriers travel, and means for bringing the carriers and cans successively into pneumatic connection with the chamber, substantially as described.

6. In a can-testing machine the combination with a pneumatic chamber of a series of can-carriers, each independent of the chamber and each disconnected from the adjacent carrier and means for bringing the carriers and cans successively into pneumatic connection with the chamber, substantially as described.

7. In a can-testing machine the combination with a sprocket-wheel carrying a pneumatic chamber of a series of can-carriers independent of the sprocket-wheel and means for bringing the can-carriers successively into pneumatic connection with the sprocket-wheel chamber, substantially as described.

8. In a can-testing machine the combination with a revolving wheel carrying a pneumatic chamber and a series of valves on the periphery of said wheel, of a series of can-carriers on an endless track or way, and means for bringing the carriers into pneumatic connection with the conduits controlled by said valves, substantially as described.

9. In a can-testing machine the combination with a revolving wheel carrying a pneumatic chamber provided with a series of pneumatic connections between the chamber and the periphery of the wheel and a series of sprockets on the wheel of an endless series of can-carriers adapted to be engaged and moved by the sprockets on the wheel, valve mechanism on each carrier and on each conduit governing the admission to and exit of air from the can and a tank of liquid through which cans are successively passed after having pneumatic connection with the wheel, substantially as described.

10. In a can-testing machine the combination with a revolving wheel carrying a pneumatic chamber, one or more air-compressors arranged to supply compressed air to the chamber, a series of valves on the periphery of said wheel controlling the exit of air from the chamber, a series of can-carriers each carrying a can and adapted to engage the periphery of said wheel adjacent to the valves, means for opening said valves when the can-carriers are connected with the periphery, means for closing said valves after compressed air has been supplied to the can, and a tank through which the can is passed after being supplied with compressed air, substantially as described.

11. In a can-testing machine the combination of an endless track carrying a series of can-carriers, a chute for supplying the cans to the carriers, a revolving wheel carrying compressed-air chamber and provided with valves adjacent to its periphery, a conduit controlled by each valve extending from the compressed-air chamber to the periphery of the wheel, a conduit on the carriage adapted to connect with the conduit on the wheel, means for opening the valves after the can is pneumatically connected with the chamber, means for closing the valve when the can has been supplied with compressed air and a tank of liquid through which the can is passed, substantially as described.

12. In a can-testing machine the combination of a chute through which the cans are fed to the machine, a series of can-carriers arranged on an endless track or way, stop mechanism at the end of the chute to prevent more than one can being fed to a carrier, clamping mechanism on the carrier adapted to engage and hold the can, means engaged to a stationary point to operate said clamping mechanism, a revolving wheel carrying a pneumatic chamber, a series of valves controlling the exit of air from said chamber, a conduit on each carriage adapted to register with the conduit controlled by each valve, means engaged to a stationary point to open said valve after the can has pneumatic connection with the chamber, means for closing a valve after the can has been charged with compressed air, a tank of liquid through which the can is passed after being charged with compressed air, a chute on which the cans are discharged and means connected with a stationary point for opening said can clamping mechanism after the can is passed through the liquid, substantially as described.

13. In a can-testing machine the combination of a series of can-carriers, clamping mechanism adapted to engage and hold the can on the carriage, a compressed-air supply for charging the can with compressed air, a tank through which the can is passed, mechanism on the carrier connected with the clamping mechanism and adapted to be moved by the operator, consisting of a longitudinally-movable rod and mechanism on a stationary point against which said operator-moved mechanism will strike to release the clamping mechanism and thus release the can, substantially as described.

14. In a can-testing machine the combination of a series of can-carriers each having clamping mechanism to clamp the can, a compressed-air supply arranged to charge each can with compressed air, valve mechanism governing the exit of air from the can and means adjacent to and short of the terminus of the way on which the carrier travels for opening said valve mechanism and thus relieve the pressure in the can before the can is unclamped, substantially as described.

15. In a can-testing machine the combination of a series of can-carriers, each carrying a can, a compressed-air supply adapted to charge each can with compressed air, valve mechanism governing the exit of air from the can, and mechanism adjacent to the way on which the can travels for opening said valve mechanism before the can is released from the carriage, one of said parts being adjustable to regulate the amount of air released from the can substantially as described

16. In a can-testing machine the combination of a series of can-carriers, each carrying a can, a compressed-air supply adapted to charge each can with compressed air, valve mechanism governing the exit of air from the can, and means adjacent to the way on which the can travels for opening said valve mechanism before the can is released from the carriage, said release mechanism being adjustable, substantially as described.

17. In a can-testing machine the combination of a series of can-carriers, each carrying a can, a compressed-air supply adapted to charge each can with compressed air, valve mechanism on the carriage connected with the can, each valve provided with a projecting stem, and a wheel carried by the stationary frame against which the stem rides as it passes the wheel and thus opens the valve and relieves the pressure in the can, substantially as described.

18. In a can-testing machine the combination of a series of can-carriers, each carrying a can, a compressed-air supply adapted to charge each can with compressed air, valve mechanism on the carriage connected with the can, each valve provided with a projecting stem, and an adjustable wheel carried by the stationary frame against which the stem rides as it passes the wheel, substantially as described.

19. In a can-testing machine the combination with a supply-chute of a series of can-carriers adapted to pass said chute and pick up the cans, and stop mechanism at the lower end of the chute consisting of a tilting frame so arranged in the path of the picked-up can that the latter will tilt first one end and then the other in passing, and a stop carried by the frame against which the can strikes, substantially as described.

20. In a can-testing machine the combination of an endless track or way, a series of can-carriers substantially filling said track or way, mechanism on each carrier for engaging and clamping a can, a roller on the frame adapted to engage said clamping mechanism and operate it to clamp the can, a revolving sprocket-wheel located at one end of the track or way provided with sprockets adapted to engage and move each carrier, a compressed-air chamber carried by the wheel, a series of valves adjacent to the periphery of said wheel adapted to control the exit of air from the compressed-air supply, means for supplying said chamber with compressed air, cam mechanism on the frame adapted to open each valve after a carrier and can have been connected to the periphery of the wheel, cam mechanism on the frame for closing the said valve after the can has been charged with compressed air, a tank through which the can is passed, means to be operated by the operator for opening the can-clamping mechanism to release the can after it has passed through the tank and means on the frame for opening said clamping mechanism adjacent to a discharge-chute, substantially as described.

21. In a can-testing machine the combination with a revolving wheel carrying a compressed-air supply, said wheel provided on its periphery with a series of conduits into the compressed-air chamber, valves controlling said conduits, and a series of can-carriers each provided with a conduit adapted to register with a conduit on the periphery of the wheel, said conduit on the carrier provided with a valve adapted to prevent the escape of compressed air from the can, substantially as described.

22. In a can-testing machine the combination of a series of carriers, each provided with a stationary upright and a movable upright between which the can is clamped, one of said uprights provided with a conduit extending from the mouth of the can, a bell-crank lever connected with the movable upright for moving it to clamp the can and a valve located in the conduit to prevent the escape of compressed air from the can, substantially as described.

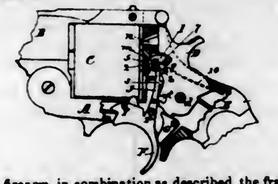
23. In a can-testing machine the combination of a series of can-carriers, a revolving wheel, a pneumatic chamber carried by the wheel, one or more pneumatic pumps also carried by the wheel, and means for pneumatically connecting the cans to the chamber, substantially as described.

24. In a can-testing machine the combination of a revolving sprocket-wheel, a pneumatic chamber carried by the wheel, one or more pneumatic pumps also carried by the wheel and a series of can-carriers propelled by the wheel adapted to successively come into pneumatic connection with the wheel-chamber, substantially as described.

609,233. SAFETY DEVICE FOR FIREARMS. LEWIS T. HOUGHTON, Worcester, Mass. Filed Feb. 19, 1896. Serial No. 670,881. (No model.)

Claim.—1. The combination with the hammer, the trigger, and the lifter-pawl, of a safety block or dog pivoted within the frame adjacent to the recoil-plate, its rear end adapted to swing up and down and to meet a recess and contact-surface at the breast of the hammer respectively above and below a guard-lug thereon, a spring that normally depresses the rear end of said swinging block, and a finger or lifter-pawl actuated by the trigger, for swinging upward the end of said safety-block at the final limit of the trigger action, substantially as set forth.

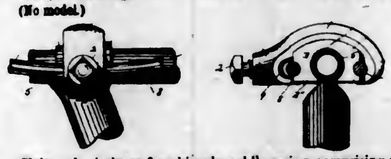
2. In combination with the hammer having its breast provided with the upper and lower recesses or notches 6 and 7, and the intervening angle-edged lug 9, the safety-block 1 pivoted in the frame, its rearwardly-projecting end adapted to swing above or below said lug, a spring that normally depresses the end of said safety-block, and means substantially as described for elevating said end when the trigger is drawn back.



3. In a firearm, in combination as described, the frame provided with the seating-surface 5, the safety-block 1 pivotally confined in the frame by a pin *w*, and having a rounded end acting against said seat, and an angle-edged rear end movable up and down by swinging action, a spring normally swinging said block in one direction, the pivoted hammer having the front angle-edged lug 9 with recesses above and below said lug, one of said recesses formed to effect interception of the hammer by contact with said block, and the other recess formed for receiving the end of the block without interception of the hammer, the lifter-pawl pivoted to the trigger-head and having the extension-finger 12 for operating said safety-block, substantially as set forth.

4. The pivoted upwardly and downwardly swinging safety-block having its under front portion cut away or recessed, as at 13, in combination with the hammer, and the hammer-lifting pawl carrying the detent *x* and provided with the extended finger 12, for the purpose set forth.

609,234. BICYCLE-SADDLE POST AND CLAMP. JONATHAN A. HUFF, Westborough, Mass. Filed Oct. 4, 1897. Serial No. 653,968. (No model.)



Claim.—1. A clamp for a bicycle-saddle spring, comprising a casing or shell having a central opening therethrough, which extends through the lower portion of the shell, a threaded boss on one end thereof for a clamping-bolt, and said bolt, a clamp-block recessed to receive the cross-piece of the saddle-support, and the spring-rods, and extending through the central opening in the shell, substantially as shown and described.

2. A clamp for a bicycle-saddle spring, comprising a casing or shell, having a central opening therethrough, which extends through the lower portion of the shell, a threaded boss on one end thereof for a clamping-bolt, and said bolt, a follower against which said bolt bears, a clamp-block recessed to receive the cross-piece of the saddle-support, and the spring-rods, and extending through the central opening in the shell, substantially as shown and described.

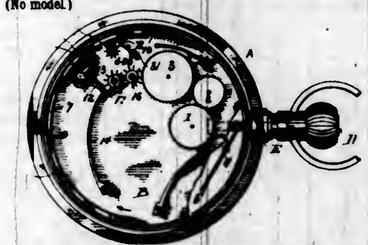
3. In a clamp for bicycle-saddle springs, &c., the combination with the casing or shell, having a threaded boss on one end thereof for the clamping-bolt, and said bolt, and having a central opening therethrough, which extends through the bottom or lower portion of the shell, to leave two parts to extend upon opposite sides of the cross-piece of the saddle-support, of a clamp-block which extends through the central opening in the shell, and is centrally cut out or recessed to extend over the cross-piece, and is also recessed on its opposite edges or ends to receive the spring rods, substantially as shown and described.

4. The combination with the cross piece of a bicycle-saddle support, of a clamp, comprising a shell or casing having a clamp-block, through which the cross-piece extends, said shell and block being open or cut out through its lower surface to allow of the clamp being moved along the cross-piece, and by the saddle-post, where it is connected to the cross-piece, substantially as shown and described.

5. The combination with the cross-piece of a bicycle-saddle support, of a clamp, comprising a shell or casing having a clamp-block through which the cross-piece extends, said shell, and block being open or cut out through its lower surface to allow of the clamp being moved along the cross-piece, and by the saddle-post, where it is connected to the cross-piece, and means for preventing the clamp from rotating on the cross-piece, substantially as shown and described.

6. The combination with a saddle-post, having its upper end tapering or of reduced diameter where it is connected to the cross-piece, and said cross-piece, of circular shape for nearly its full circumference where it is secured to the saddle-post, of a clamp for attaching the saddle-spring to the cross-piece, comprising a shell or casing having a central opening therethrough which extends through the bottom thereof, to allow the clamp to pass by the top of the saddle-post, and a clamp-block within the shell to receive the cross-piece and saddle spring rods, and means for clamping the cross-piece and spring-rods, substantially as shown and described.

609,235. WINDING-INDICATOR FOR WATCHES. AUGUSTUS G. JACOBS, Jonestown, Miss. Filed May 25, 1896. Serial No. 681,732. (No model.)



Claim.—1. In a watch-winding indicator, the push-pin and case-spring catch, a detent by which said push-pin may be held, and a segmental ring actuated from the watch-movement to lock said push-pin, and by the winding mechanism to unlock said push-pin, substantially as described.

2. In a watch, the time-train and a driving connection therefrom, the segmental ring having a rack engaged by the said driving-train, the push-pin and connections therefrom whereby the pin is locked against inward pressure by the movement of said ring, and means for unlocking the push-pin, all combined.

3. In a watch, the segmental ring acting as a lock to the push-pin, a train connected to the watch-movement by which such segment is moved, and means connected to the winding mechanism by which said segmental ring is moved and the push-pin freed, substantially as described.

4. In a watch, the segmental ring provided with rack-teeth and held in proximity to the rim of the case, a pinion engaging the rack on said segmental ring, a one-tooth wheel driven from the movement to rotate hourly and move the segmental ring one tooth, and means for retracting the segmental ring, substantially as described.

5. In a watch, the push-pin whereby the case is opened, a locking-detent by which said push-pin is held, a toothed segmental ring against the rim of the case, and actuated from the watch-movement to lock said push-pin, a lever, actuated by the winding mechanism, and a pawl connected to said lever and operating on the teeth of the segmental ring to retract the same as the watch is wound, all combined substantially as described.

609,236. FIREPLACE-SCREEN. PRENTIS R. LAW, Wilmette, Ill. Filed Nov. 8, 1897. Serial No. 657,768. (No model.)



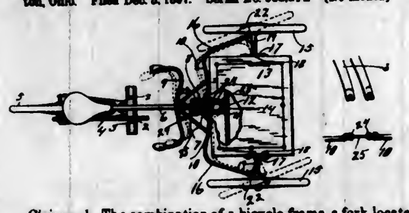
Claim.—1. A fireplace-screen comprising a support extending beyond and forward of the fireplace and grate, a screen composed of chains suspended from said support, and a hood extending from said support to the front wall of the fireplace, substantially as described.

2. A fireplace-screen comprising a support extending beyond and forward of the fireplace and the grate, a screen composed of chains slidingly connected with and extending from end to end of the support and from the grate-frame at one side of the fireplace to the grate-frame at the other side of the fireplace, and a hood extending from said support to the front wall of the fireplace, substantially as described.

3. A fireplace-screen comprising a support extending beyond and forward of the fireplace and parallel therewith, said support having curved ends extending to the front wall of the fireplace, a screen composed of chains suspended from said support throughout its length, and a hood extending from said support to the front wall of the fireplace, substantially as described.

4. A fireplace-screen comprising a slotted rod extending beyond and forward of the fireplace and grate to form a support, brackets carrying said support, hangers arranged to operate in the slot in the said support, a screen composed of chains suspended from said hangers, and a hood extending from the support to the front wall of the fireplace, substantially as described.

609,237. CONVERTIBLE TRICYCLE. CHARLES D. MONROE, Canton, Ohio. Filed Dec. 3, 1897. Serial No. 660,614. (No model.)



Claim.—1. The combination of a bicycle-frame, a fork located at the forward end thereof, and curved rearward at its lower end, a receptacle provided with the bar 11 located in front of the lower end of the fork, and pivoted at a fixed point, bars connected to the lower end of the fork, curved links or bars 16 pivotally connected to the lower end of the fork, vertical bars pivoted to the sides of the receptacle and provided with wheel-axles, and the arms 22 pivotally attached to the curved links or bars 16, substantially as and for the purpose specified.

2. The combination of an ordinary bicycle-frame, a fork located at the forward end thereof curved rearward at its bottom or lower end and provided with a steering-handle, a receptacle provided with the pivoted bar 11, said pivoted bar connected to the bottom or lower end of the fork, bars fixed to the lower end of the fork and at the sides thereof, curved links or bars pivotally attached to the bars located at the sides of the fork, vertical bars located at the sides of the receptacle and provided with wheel-axles and arms, and the curved links 16 pivoted to the arms, and the springs 23 located at the upper and lower ends of the vertical bars 18, and the bar 26 secured to the receptacle and to the frame, substantially as and for the purpose specified.

3. The combination of a bicycle-frame, a receptacle supported at its sides in a low position, a fork located at the front or forward end of the frame and curved rearward at its lower end, a bar fixed to the lower end of the fork and pivotally connected to the bars 10 at their rear ends, vertical bars pivotally attached to the sides of the receptacle and provided with arms 22 and wheel-axles 21 the links 16 pivotally attached to the arms 22, and the brace-bars 26 and 27, substantially as and for the purpose specified.

609,238. CARBONATING APPARATUS. EDWARD R. MURPHY, Boston, Mass., assignor to the New Era Process Company, of West Virginia. Filed Jan. 30, 1897. Renewed Nov. 26, 1897. Serial No. 659,860. (No model.)

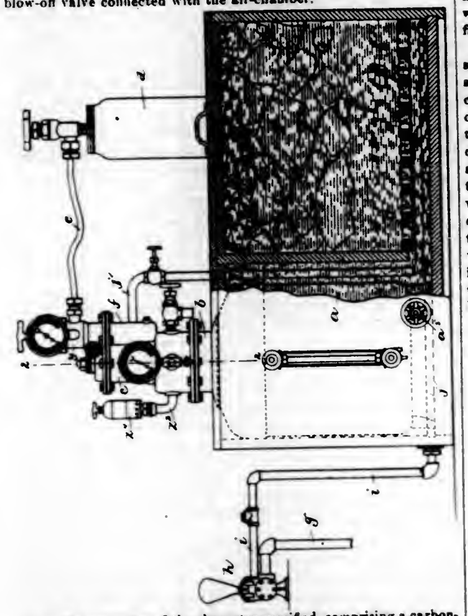
Claim.—1. An apparatus of the character specified, comprising a chamber or casing having a liquid-inlet, a gas-inlet, and an outlet for carbonated liquid; means in said casing for mechanically combining the liquid and gas which enter it, said means comprising an injector-nozzle; a carbonated-liquid receptacle communicating with said outlet; a liquid-conduit connected with the liquid-inlet; an automatic check-valve operated by an accumulation of carbonated liquid to close said conduit; and a steam-pump connected with the conduit and with a source of liquid-supply, the action of said pump being stopped by the closing of the automatic check-valve.

2. An apparatus of the character specified, comprising a chamber or casing having a liquid-inlet, a gas-inlet, and means for mechanically combining liquid and gas admitted through said inlets; a liquid-conduit connected with the liquid-inlet and including a casing or enlargement; and a gas-conduit connected with the gas-inlet and including a chamber having an automatic gas-valve, a portion of said gas-conduit passing through the casing *f*.

3. An apparatus of the character specified, comprising a carbonating-chamber, a receptacle for carbonated liquid below the carbonating-chamber, and an intermediate air-trap having an automatic blow-off valve.

4. An apparatus of the character specified, comprising a carbonating-chamber, a carbonated-liquid receptacle below said chamber,

an intermediate air chamber or space communicating with the liquid-receptacle, an elongated outlet extending from the carbonating-chamber below the upper portion of the air-chamber, and an automatic blow-off valve connected with the air-chamber.



5. An apparatus of the character specified, comprising a carbonated-liquid receptacle having a dome, a carbonating-chamber a portion of which is located above and a portion within said dome, and means for removing air from the dome.

6. An apparatus of the character specified, comprising a carbonated-liquid receptacle having a dome, a carbonating-chamber a portion of which is located above and a portion within said dome, the said carbonating-chamber having a guide in its lower portion, a float in the reservoir below the carbonating-chamber, a rod or stem on said float extending through said guide, a check-valve controlling the entrance of liquid into the carbonating-chamber, and connections between the float-rod and check-valve.

7. An apparatus of the character specified, comprising a carbonating-chamber having a liquid-inlet and a gas-inlet, a casing within said chamber having provisions for receiving and mixing gas and liquid, a check-valve controlling the admission of liquid to said chamber and casing, a lever connected to said valve and forked at one end to partially embrace said casing, a liquid-receptacle below the carbonating-chamber and provided with a dome that incloses a part of the said chamber, a float in said liquid-receptacle, and a rod secured to the float and extending through a guide in the bottom of the carbonating-chamber, said rod having a fork at its upper end that partly embraces the casing in the carbonating-chamber and is connected with the forked end of the lever.

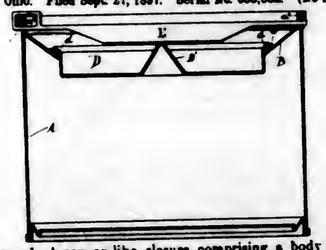
8. An apparatus of the character specified, comprising a carbonated-liquid receptacle having a dome, a carbonating-chamber a portion of which is located above and a portion within said dome, a series of wire disks in the lower portion of the casing, a tube affixed to the bottom of the casing and projecting upwardly through the series of disks, and a disk-clamping device on the upper end of the tube.

9. In an apparatus of the character specified, a mechanical mixing device comprising a casing having means for the admission of liquid and gas to its upper portion, and discharge-orifices at its lower portion, and a cup located between the receiving and discharge ends of the casing and having a closed bottom and outlets above said bottom.

10. In combination with a closed receptacle, a valve-casing on said receptacle and having a portion projecting into the interior of said receptacle, a liquid-inlet connected to said valve-casing, a liquid-conduit between the inner and outer portions of the valve-casing and opening into the interior of said receptacle, a main valve located in the portion of the valve-casing outside of the closed receptacle and controlling the main liquid-passage leading to said closed receptacle, an auxiliary valve located in the portion of the valve-casing within the closed receptacle and controlling the said liquid-conduit in the valve-casing and adapted upon closing said liquid conduit to cause the closing of the main valve controlling the said main liquid passage by the pressure of the liquid entering through said liquid-inlet, and a float within said receptacle arranged to act on said auxiliary valve which is adapted to close or open said liquid-conduit by the rise and fall of the float.

11. In combination with a closed receptacle, a valve-casing on said receptacle and having a portion projecting into the interior of said receptacle, a liquid-inlet connected to said valve-casing, a liquid-conduit between the inner and outer portions of the valve-casing and opening into the interior of said receptacle, a main valve located in the portion of the valve-casing outside of the closed receptacle and controlling the main liquid-passage leading to said closed receptacle, an auxiliary valve located in the portion of the valve casing within the closed receptacle and controlling the said liquid-conduit in the valve-casing and adapted upon closing said liquid-conduit to cause the closing of the main valve controlling the said main liquid passage by the pressure of the liquid entering through said liquid-inlet, a float within said receptacle arranged to act on said auxiliary valve which is adapted to close or open said liquid-conduit by the rise and fall of the float, and a steam-pump, the action of said pump being stopped by the closing of said liquid-conduit by said auxiliary valve.

609,239. CAN OR LIKE CLOSURE. AMOS B. MCNAIRY, Cleveland, Ohio. Filed Sept. 27, 1897. Serial No. 653,062. (No model.)

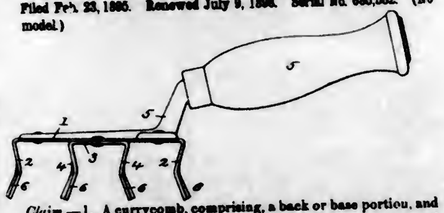


Claim.—1. A can or like closure comprising a body provided with openings at opposite points of its top edge, a locking-bar, the ends whereof project through said openings, said locking-bar being bodily shiftable lengthwise and being pivotally connected at one of said openings, and a cover provided with a raised central part beneath said locking-bar whereby when said locking-bar is turned downward the cover will be forced securely to its seat and whereby when the locking-bar is shifted bodily in the direction of its length the cover may be locked or unlocked.

2. A can or like closure comprising a body provided with openings at opposite points at the top edge, a locking-bar passing through said openings and bodily shiftable in the direction of its length, said bar being provided at one end with a hinged loop, a cover and a raised central part intermediate the locking-bar and the cover, and a seal in the loop of said locking-bar to prevent its being bodily shifted in longitudinal direction.

3. A can or like closure comprising a body provided with openings at opposite points of the top edge, a longitudinally-movable locking-bar provided with a hinge-loop at one end to permit the bar to swing vertically and to slide bodily in the direction of its length and having its opposite end arranged to enter a corresponding opening at the top edge of the can, a cover beneath said locking-bar and a centrally-raised part intermediate said locking-bar and said cover.

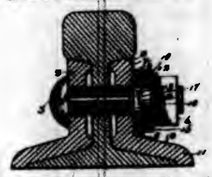
609,240. CURRYCOMB. WILLIAM R. PHILLIPS, Racine, Wis., assignor, by mesne assignments, to Lorenzo R. Baker, same place. Filed Feb. 23, 1895. Renewed July 9, 1898. Serial No. 686,532. (No model.)



Claim.—1. A currycomb, comprising, a back or base portion, and blades 2 and 4, that are fluted from their free ends inwardly toward the base, with their outer narrow surfaces of a plane or flat nature to admit of sharpening, such blades being set obliquely so as to impart a wavy nature to the scurfing or currying edges of the blades, substantially as set forth.

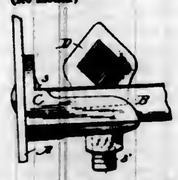
2. A currycomb, comprising, a back or base portion, and blades 2 and 4 that are fluted from their free ends inwardly toward the base, with their outer narrow surfaces of a plane or flat nature to admit of sharpening, such blades being set obliquely and in opposite and outward directions, so as to impart a wavy nature to the scurfing or currying edges of the blades, substantially as set forth.

609,241. NUT-LOCK. JOHN A. RAUSCH, St. Louis, Mo. Filed Dec. 18, 1897. Serial No. 662,402. (No model.)



Claim.—A nut-lock, comprising an ordinary bolt and nut, a circular plate 5 having a plane surface 6, which is adapted to come in contact with the fish-plate, means for holding said plate against rotation, two angular depressions 12, formed on the opposite side of said plate and oppositely located, shoulders 13, formed by said depression and having inclined flat surfaces 14, the said shoulders facing one another and the opposite inclined flat surfaces formed in the opposite direction, a circular washer 15, adapted to be passed over the bolt and brought in contact with said plate, two inclined projecting lugs 17, formed on the inner surface of said washer and oppositely located and cooperating with depressions 12, of plate 5, projecting lugs 18, formed on the opposite side of said washer and having outwardly-inclined faces, shoulders 19, forming a part of said lugs and facing one another and cooperting with the sides of the nut whereby when the nut is unscrewed the inclined projecting lugs will be forced out of the inclined depressions formed in the plate, but said plate and washer locked against rotation independent of one another when the nut is turned in the opposite direction or brought in contact with the inclined projecting lugs formed on the outer face of said washer, substantially as described.

609,242. HARROW. GEORGE W. REAM, Canton, Ohio, assignor to the Bucher & Gibbs Plow Company, same place. Filed Jan. 18, 1898. Serial No. 667,068. (No model.)



Claim.—In a harrow, a side bar, a cross-bar, a socket-plate pivoted to the side bar and fitting over the cross-bar, a tooth and tooth-holder, the bolt thereof passing through the cross-bar and socket-plate whereby the one bolt secures together the tooth, socket-plate and cross-bar, substantially as described.

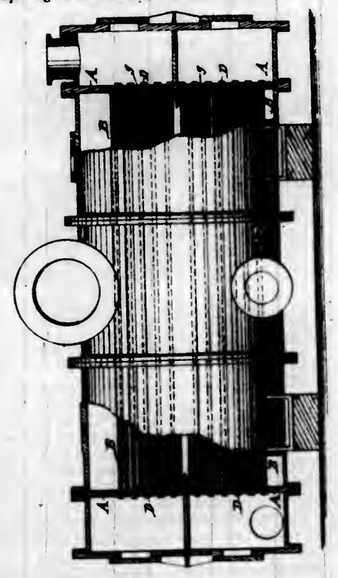
609,248. SURFACE CONDENSER. ROBERT A. SPROULS, New York, N. Y., assignor to Dolphin McLeod Cobb, same place. Filed Oct. 11, 1897. Serial No. 654,608. (No model.)

Claim.—1. A surface condenser, in which one row of condenser-tubes is packed at one end into one tube-head and affixed at its opposite end, stationary into the other tube-head, and in which the adjacent row of condenser-tubes is affixed at one end, stationary to the first tube-head and packed at its opposite end with the other tube-head, substantially as set forth.

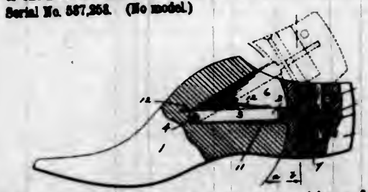
2. A surface condenser provided with alternating rows of condenser-tubes one row of condenser-tubes being provided with tube-packings at one end in one tube-head, while the adjacent row of condenser-tubes is provided with packings at the opposite end in the other tube-head, for the purpose of arranging a larger number of condenser-tubes in said tube-heads, substantially as set forth.

3. A surface condenser, the tube-heads of which are provided with rows of openings, the openings of one row being made of larger diameter than the openings of the adjacent row so as to provide for the packing of the alternating ends of the rows of condenser-tubes, substantially as set forth.

4. In a surface condenser, the combination of tube-heads provided with alternating rows of openings, the openings of one row being of larger diameter than the openings of the adjacent row, condenser-tubes the end of one row of which is packed into a row of larger openings in one tube-head, while the opposite end of said row of condenser-tubes is attached into a row of smaller openings in the other tube-head, the adjacent row of condenser-tubes being attached at one end stationary into a row of smaller openings of the first tube-head, while the opposite ends of said tubes are packed into a row of larger openings in the other tube head, substantially as set forth.



609,244. LAST. JOHN F. TEEHAN, Worcester, Mass., assignor of one-half to J. Herbert Shedd, Providence, R. I. Filed Apr. 13, 1896. Serial No. 587,258. (No model.)



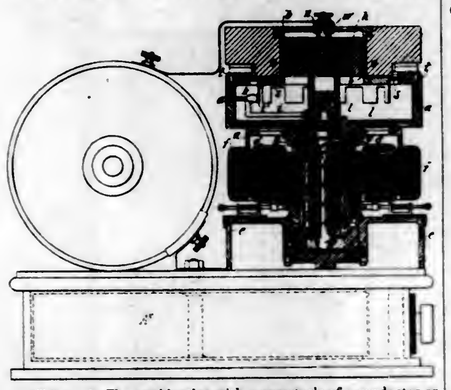
Claim.—1. A transversely-divided last, comprising a fore-part section with a convex face at its rear end, and a heel-section with a concave face at its front end, and a rod or bar secured to the heel-section, and extending in a slot or recess in the rear part of the fore-part section, and having a bearing on the bottom of said recess for the full depth thereof, and pivotally attached in said recess at a point above the center of the circle of which the rear curved face of the fore-part section is an arc, so that said arc will not be concentric with the arc of the circle described by the movement of the heel-section, substantially as described.

2. A transversely-divided last, comprising a fore-part section with a convex face at its rear end, and a heel-section with a concave face at its front end, and a rod or bar secured to the heel-section, and extending in a slot or recess in the rear part of the fore-part section, and pivotally attached in said recess at a point above the center of the circle of which the rear curved face of the fore-part section is an arc, so that said arc will not be concentric with the arc of the circle described by the movement of the heel-section, and a spring within said recess, to engage said bar and act to hold the heel and fore-part sections in their normal position, substantially as described.

3. A last transversely divided into two parts by a curved line, and one part pivotally attached to the other part, so that each point of said line, in a central vertical section lengthwise through the last, from the top of the line downward, is at a greater distance from the fulcrum or pivot-point of the rod or bar connecting the two parts than its immediately-preceding point, said rod or bar extending and pivoted in a recess, and a spring within said recess, to engage said bar and act to hold the heel and fore-part sections in their normal position, substantially as described.

4. In a transversely-divided last, the combination with the heel-section, having one end of a bar or rod rigidly attached thereto, the other end of said bar or rod extending into and pivotally secured in a recess in the fore-part section, of the fore-part section, and a spring secured at one end to said fore-part section, with its free end bearing on said bar or rod, substantially as shown and described.

609,245. ELECTRICAL-CIRCUIT CONTROLLER. NIKOLA TESLA, New York, N. Y. Filed Dec. 2, 1897. Serial No. 660,513. (No model.)



Claim.—1. The combination with a receptacle of a conductor or series of spaced conductors, a nozzle or tube for directing a jet or stream of fluid against the same, the nozzle and conductor being capable of movement relatively to each other, and means for maintaining a circulation of conducting fluid, contained in the receptacle, through the said nozzle, and dependent for operation upon such relative movement, set forth.

2 The combination with a closed receptacle of a conductor or series of spaced conductors, a nozzle or tube for directing a jet or stream of fluid against the same, and means for forcing a conducting fluid contained in the receptacle through the said nozzle, these parts being associated within the receptacle and adapted to be operated by the application of a single actuating power, as set forth.

3. The combination with a receptacle containing a series of spaced conductors, a duct within the receptacle having one of its ends directed toward the said conductors, means for maintaining a rapid movement of relative rotation between the said end and the conductors and means for maintaining a circulation of a conducting fluid contained in the receptacle through the duct against the conductors, the said conductors and jet constituting respectively the terminals or elements of an electric-circuit controller.

4. The combination with a receptacle capable of rotation and containing a series of spaced conductors, a duct within the receptacle having an orifice directed toward the said conductors, and an open end in position to take up a conducting fluid from a body of the same contained in the receptacle, when the latter is rotated, and direct it against the conductors, the said conductors and the fluid constituting the terminals or elements of an electric-circuit controller.

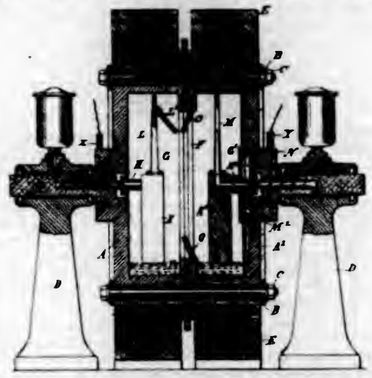
5. The combination with a receptacle for containing a conducting fluid and a series of spaced conductors thereon, of a duct having an orifice directed toward the said conductors and forming a conduit through which the fluid when the receptacle is rotated is forced and thrown upon the conductors.

6. The combination with a receptacle capable of rotation, and a series of conductors mounted therein, of a duct having an orifice directed toward the conductors, a holder for said duct mounted on bearings within the receptacle which permit of a free relative rotation of said receptacle and holder, and means for opposing the rotation of the said holder in the direction of the movement of the fluid while the receptacle is rotated, whereby the conducting fluid within the receptacle will be caused to flow through the duct against the conductors.

7. The combination with a receptacle and a motor for rotating the same, of a magnetic body mounted in the receptacle, a magnet exterior to the receptacle for maintaining the body stationary while the receptacle rotates, a series of conductors in the receptacle and a duct carried by the said magnetic body and adapted to take up at one end a conducting fluid in the receptacle when the latter rotates and to direct such fluid from its opposite end against the series of conductors.

8. The combination with a receptacle for containing a conducting fluid, a series of spaced conductors within the same, and a motor, the armature of which is connected with the receptacle so as to impart rotation thereto, a magnetic body capable of turning freely within the receptacle about an axis concentric with that of the latter, a duct carried by the said body having one end in position to take up the conducting fluid and the other in position to discharge it against the spaced conductors, and a magnet exterior to the receptacle for holding the magnetic body stationary when the receptacle is rotated.

609,246. ELECTRIC-CIRCUIT CONTROLLER. NIKOLA TESLA, New York, N. Y. Filed Feb. 28, 1898. Serial No 671,897. (No model.)



Claim.—1. A circuit-controller comprising in combination means for producing streams or jets of conducting liquid forming the terminals, and means for bringing the jets or streams of the respective terminals into intermittent contact with each other, as set forth.

2. In a circuit-controller, the combination with two sets of orifices adapted to discharge jets in different directions, means for maintaining jets of conducting liquid through said orifices, and means for moving said orifices relatively to each other so that the jets from those of one set will intermittently intersect those from the other, as set forth.

3. The combination in a circuit-controller of ducts and means for discharging therefrom streams or jets of conducting fluid in electrical contact with the two parts of the circuit respectively, the orifices of said ducts being capable of movement relatively to each other, whereby the streams discharged therefrom will intersect at intervals during their relative movement, and make and break the electric circuit, as set forth.

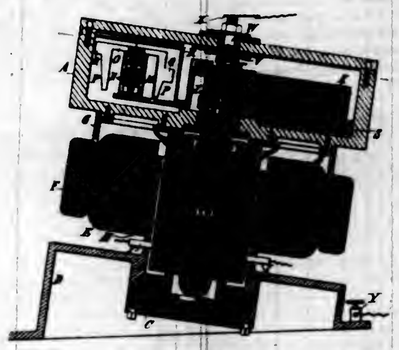
4. In a circuit-controller the combination with one or more stationary nozzles and means for causing a conducting fluid forming one terminal to issue therefrom, of one or more rotating tubes or nozzles, means for causing a conducting liquid forming the other terminal to issue therefrom, the said rotating nozzles being movable through such a path as to cause the liquid issuing therefrom to intersect that from the stationary nozzles as set forth.

5. The combination with a rotating receptacle divided into two insulated compartments, a spindle in one compartment with its axis concentric with that of the receptacle, means for opposing the rotation of said spindle, and a tube or duct carried by the spindle and adapted to take up a conducting fluid at one end from the inner periphery of the compartment when the receptacle is rotated and direct it from the other end into the other compartment, of a similar spindle in the other compartment and means for opposing its rotation, a tube carried by the spindle and having an opening at one end near the inner periphery of the compartment and discharging into a chamber from which lead one or more passages to nozzles fixed to the rotating receptacle and adapted to discharge across the path of the jet from the stationary nozzle, as set forth.

6. In a circuit-controller the combination with a rotating receptacle of a body mounted therein and formed or provided with a weighted portion eccentric to its axis which opposes its rotation and a tube or duct carried by said body and adapted to take up a conducting fluid from the rotating receptacle as set forth.

7. In a circuit-controller the combination of two sets of nozzles and means for projecting from the same, jets of conducting fluid which constitute respectively the terminals of the controller, means for moving the nozzles relatively to each other so that the jets of the two sets are brought successively into contact, the nozzles of each set being arranged symmetrically about an axis of rotation, there being one more nozzle in one set than in the other.

609,247. ELECTRIC-CIRCUIT CONTROLLER. NIKOLA TESLA, New York, N. Y. Filed Mar. 12, 1898. Serial No. 673,558. (No model.)



Claim.—1. A circuit-controller comprising, in combination, a closed receptacle containing a fluid, means for rotating the receptacle, a support mounted within the receptacle, means for opposing or preventing its movement in the direction of rotation of the receptacle, and a conductor carried by said support and adapted to make and break electric connection with the receptacle through the fluid, as set forth.

2. A circuit-controller comprising, in combination, a terminal capable of rotation and formed or provided with radiating contacts, a closed receptacle containing a fluid which constitutes the opposite terminal, means for rotating the receptacle, a support therein for the rotating terminal, and means for opposing or preventing the rotation of the support in the direction of the rotation of the receptacle, as set forth.

3. In a circuit-controller, the combination with a receptacle capable of rotation about an axis inclined to the vertical and containing a fluid which constitutes one terminal, a second terminal mounted within the receptacle, on a support capable of free rotation relatively to the receptacle, and a weight eccentric to the axis of rotation of the support for said terminal for opposing or preventing its movement in the direction of the rotation of the said receptacle, as set forth.

4. The combination with a receptacle mounted to revolve about an axis inclined to the vertical, of a spindle within the receptacle and concentric with its axis, a weight eccentric to the spindle, and a terminal carried by the said spindle, and adapted to be rotated by a body of conducting fluid contained in the receptacle when the latter is rotated, as set forth.

5. The combination with a receptacle mounted to rotate about an axis inclined to the vertical, a spindle within the receptacle and concentric with its axis, a weighted arm attached to said spindle, a bracket or arm also secured to said spindle, a rotary terminal with radiating contact arms or vanes mounted on said bracket in position to be rotated by a body of conducting fluid contained in said receptacle when said fluid is displaced by centrifugal action, as set forth.

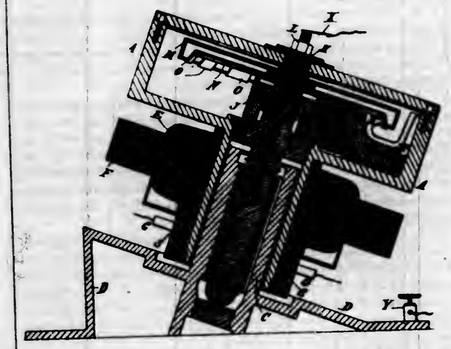
609,248. ELECTRIC-CIRCUIT CONTROLLER. NIKOLA TESLA, New York, N. Y. Filed Mar. 12, 1898. Serial No. 673,559. (No model.)

Claim.—1. In an electrical-circuit controller, the combination with a conductor forming one of the terminals, of means for maintaining a jet or stream of conducting fluid forming the other terminal, and directing it against said conductor, and a body adapted to be intermittently moved through and to intercept the jet or stream, as set forth.

2. In an electrical-circuit controller, the combination with a rigid terminal, of means for directing against such terminal a jet or stream of conducting fluid in electrical connection with the other terminal, and a body adapted to be intermittently moved through and to intercept the jet or stream, as set forth.

3. In an electrical-circuit controller, the combination with a rigid terminal, of means for directing against such terminal a jet or stream of conducting fluid in electrical connection with the other terminal, a body having a series of radial projections and means for rotating the same so that the said projections will intermittently intercept the stream or jet, as set forth.

4. In a circuit-controller, the combination with a rotary conductor forming one terminal, means for directing against such terminal a jet or stream of conducting fluid in electrical connection with the other terminal, and a body with spaced projections mounted to rotate in a path that intercepts the jet or stream of fluid, as set forth.

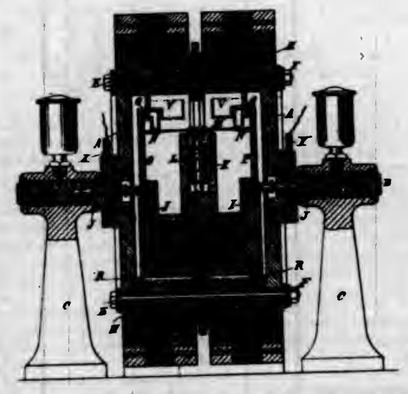


5. In a circuit-controller, the combination with a rotary conductor forming one terminal, and means for directing intermittently against such terminal a jet or stream of fluid in electrical connection with the other terminal, the part of said rotary conductor upon which the jet or stream impinges being formed so as to retain, by centrifugal force, a portion of the fluid directed against it, as set forth.

6. The combination of the receptacle, the conducting-disk secured within it, the insulated disk with peripheral projections and the stationary tube or duct for directing a stream or jet of conducting fluid toward the conducting-disk and across the path of the projections O, as set forth.

7. The combination of the receptacle, the conducting-disk with a peripheral trough-shaped flange, the insulated disk with peripheral projections O, and the stationary tube or duct for directing a stream or jet of conducting fluid into the trough-shaped flange of the conducting-disk and across the path of the projections O, as set forth.

609,249. ELECTRIC-CIRCUIT CONTROLLER. NIKOLA TESLA, New York, N. Y. Filed Mar. 12, 1898. Serial No. 673,560. (No model.)



Claim.—1. The combination in a circuit-controller with a closed rotary receptacle, of a rigid conductor mounted within the same and through which the circuit is intermittently established, and means for directing a jet or stream of a fluid which is contained in the receptacle, against the said body so as to effect its rotation independently of the receptacle, as set forth.

2. In an electric-circuit controller, the combination of a closed rotary receptacle, a conducting body therein adapted to be rotated independently of the receptacle by the impingement thereon of a jet or stream of conducting fluid, and means for maintaining such a jet and directing it upon the said conductor, as set forth.

3. In a circuit-controller, the combination with a rotary receptacle of a body or part mounted within the receptacle and concentrically therewith, a conducting-terminal supported by said body and

capable of rotation in a plane at an angle to the plane of rotation of the receptacle so as to oppose, by gyrostatic action, the rotation of the support, and means for directing a jet of conducting fluid against the said terminal, as set forth.

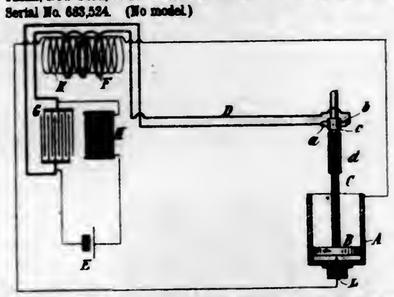
4. In a circuit-controller, the combination with a rotary receptacle of a support for a conductor mounted thereon concentrically with the receptacle and a gyrostatic disk carried by the support and adapted, when rotating, to oppose its movement in the direction of rotation of the receptacle, as set forth.

5. In a circuit-controller, the combination with a rotary receptacle containing a conducting fluid, a support mounted within the receptacle, means for opposing or preventing its movement in the direction of rotation of the receptacle, one or more tubes or ducts carried thereby and adapted to take up the fluid from the rotating receptacle and discharge the same in jets or streams, and a conductor mounted on the support and adapted to be rotated by the impingement thereon of said jet or jets, as set forth.

6. The combination in a circuit controller of a rotary receptacle, one or more tubes or ducts and a support therefor capable of rotation independently of the receptacle, a conductor mounted on said support in a plane at an angle to that of rotation of the receptacle, and adapted to be maintained in rotation by a jet of fluid taken up from the receptacle by and discharged upon it from the said tube or duct, when the receptacle is rotated.

7. The combination with a rotary receptacle of one or more tubes or ducts, a holder or support therefor mounted on bearings within the receptacle, which permit of a free relative rotation of said receptacle and holder, a disk with a bearing on the said holder and having its plane of rotation at an angle to that of the receptacle, the disk being formed or provided with conducting-vanes, upon which a jet of conducting fluid, taken up by the tube or duct from the receptacle when in rotation, is directed.

609,250. ELECTRICAL IGNITER FOR GAS-ENGINES. NIKOLA TESLA, New York, N. Y. Filed Feb. 17, 1897. Renewed June 15, 1898. Serial No. 683,524. (No model.)



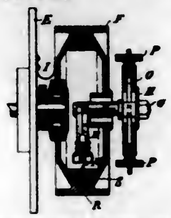
Claim.—1. In an apparatus which depends for its operation or effect upon the production of a sudden electric discharge at a given instant, or at predetermined intervals of time, the combination with a moving part of said apparatus of a switch or commutator, a condenser, a charging-circuit for the same, a primary circuit through which the condenser discharges, and a secondary circuit in inductive relation to the said primary circuit and connected with the terminals at the point in the apparatus where the discharge is required, the switch or commutator being operated by the said moving part to effect the discharge of the condenser at the proper intervals, as set forth.

2. In an apparatus which depends for its operation or effect upon the production of a sudden electric discharge at a given instant, or at predetermined intervals of time, the combination with a moving part of said apparatus of a circuit and a circuit-controller adapted to close said circuit at the time when the occurrence of said discharge is desired, a source of current in said circuit, a condenser adapted to be charged by said source while the circuit is interrupted, and a transformer through the primary of which the condenser discharges when the circuit is closed, the secondary of the transformer being connected with the terminals at the point in the apparatus where the discharge is required, as set forth.

3. In an apparatus which depends for its operation or effect upon the production of an electric discharge, at a given instant, or at predetermined intervals of time, the combination with a moving part of said apparatus of a circuit and a circuit-controller adapted to close said circuit at the time when the occurrence of the spark is desired, a source of current in said circuit, a self-induction coil which stores the energy of the source while the circuit is closed, a condenser into which said coil discharges when the circuit is broken, and a transformer through the primary of which the condenser discharges, the secondary of said transformer being connected with separated terminals at the point where the discharge is required.

4. In a gas or explosive engine of the kind described, the combination with a moving part of said engine of a circuit closer or switch controlling the charging and discharging of a condenser, separated terminals in the cylinder or explosive-chamber, and a transformer through the primary of which the condenser discharges, the secondary being connected with the terminals in the cylinder, as set forth.

609,251. ELECTRIC-CIRCUIT CONTROLLER. NIKOLA TESLA, New York, N. Y. Filed June 3, 1897. Renewed June 15, 1898. Serial No. 683,525. (No model.)



Claim.—1. A circuit-controller comprising, in combination, a receptacle containing a fluid, means for rotating the receptacle, and a terminal supported independently of the receptacle and adapted to make and break electric connection with the receptacle through the fluid, as set forth.

2. A circuit-controller comprising in combination a receptacle containing a conducting fluid and a non-conducting fluid, means for rotating the receptacle and a terminal adapted to make and break electrical connection with the conducting fluid within or under the non-conducting fluid, as set forth.

3. A circuit-controller comprising in combination a terminal capable of rotation and formed or provided with peripheral contacts, a receptacle comprising the opposite terminal and containing a fluid into which the said contacts extend, and means for rotating the receptacle, as set forth.

4. A circuit-controller, comprising, in combination, a terminal capable of rotation and formed or provided with peripheral projections, a receptacle containing a fluid conductor into which the points or projections of the said conductor extend, and means for rotating the said receptacle, as set forth.

5. A circuit-controller comprising, in combination, a terminal capable of rotation and formed or provided with peripheral projections, a centrifugal drum or wheel containing a fluid conductor into which the points or projections of the said conductor extend, and means for rotating the said drum, as set forth.

6. A circuit-controller comprising, in combination, a terminal capable of rotation and formed or provided with peripheral projections, a centrifugal drum or wheel containing a fluid conductor into which the points of the said terminal extend, and means for adjusting the latter with relation to the surface of the fluid, as set forth.

7. A circuit-controller comprising, in combination, a terminal having peripheral projections and capable of rotation, a centrifugal drum or receptacle containing a conducting and a lighter non-conducting fluid, the said terminal being arranged so that its points or projections extend through the non-conducting into the conducting fluid, when the fluids are distributed in the drum under the action of centrifugal force, as set forth.

8. The combination with a hollow centrifugal drum or wheel containing a conducting fluid, a motor for rotating the same, a support extending through an opening into the drum, and a rotatable terminal having peripheral projections, mounted on said support in position in which its projections extend into the fluid when displaced by centrifugal action, as set forth.

9. The combination with a receptacle containing a fluid and means for rotating the same, a terminal with peripheral projections capable of rotation, and a spring connection or support for said terminal tending to force it toward the periphery of the receptacle, as set forth.

10. The combination with a hollow centrifugal drum or wheel containing a conducting fluid and a lighter non-conducting fluid, means for rotating the said drum, a support extending through an opening into the drum, and a rotatable terminal having peripheral projections, mounted on said support in position in which the projections extend through the non-conducting into the conducting fluid when the fluids are displaced by centrifugal action, as set forth.

11. The combination with a centrifugal drum containing a conducting and a non-conducting fluid, means for rotating the drum, a terminal capable of rotation and having peripheral projections, mounted within the drum on a stationary support, and a spring or its equivalent acting on the said terminal and tending to force its projections toward the inner periphery of said drum, as set forth.

12. The combination with a receptacle containing a conducting fluid, a lighter fluid of low conductivity and a non-conducting fluid lighter than the others, and means for rotating the receptacle, of a terminal adapted to make and break the circuit by movements between the conducting and non-conducting fluid through the intermediate fluid of low conductivity, as set forth.

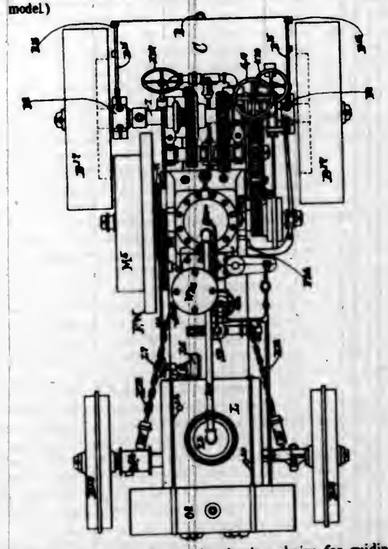
609,252. ELECTRIC RAIL-BOND. JOSEPH S. TUCKER, Chicago, Ill. Filed Jan. 20, 1897. Serial No. 619,930. (No model.)



Claim.—1. A rail bond comprising a conductor having its end portions provided with inwardly-tapering enlarged heads, said heads being provided at their inner or smaller ends with flanges.

2. A rail-bond comprising a conductor having its ends provided with enlarged tapered heads provided at their smaller ends with flanges, in combination with bushings adapted to encircle said heads.

609,253. TRACTION-ENGINE. BENJAMIN C. VANDUZEN, Winton Place, Ohio, assignor to the Vanduzen Gas and Gasoline Engine Company, Cincinnati, Ohio. Filed Sept. 13, 1894. Serial No. 522,898. (No model.)



Claim.—1. In a traction-engine, having chains for guiding the front axle, the drum E^{16} for operating the chains, supported in a bracket E^{17} partially embracing the reaches and being connected to a superincumbent jaw, substantially as and for the purposes specified.

2. In a traction-engine, having chains for guiding the front axle, the drum E^{16} for operating the chains, supported in a bracket E^{17} partially embracing the reaches, and being connected to a superincumbent jaw, and tie-rods E^{19} connecting the bracket E^{17} to the rear axle-saddle B^4, substantially as and for the purposes specified.

3. In a traction-engine, having chains for guiding the front axle, the drum E^{16} for operating the chains, supported in a bracket E^{17} partially embracing the reaches, and being connected to a superincumbent jaw, provided with worm-wheel E^{20} and also carrying the journal-bearings E^{24}, E^{24}, worm E^{21}, on the shaft E^{22}, journaled in the bearings E^{24} and E^{24}, substantially as and for the purposes specified.

4. In a traction-engine, having chains for guiding the front axle, the drum E^{16} for operating the chains, supported in a bracket E^{17} partially embracing the reaches, and being connected to a superincumbent jaw, and the bracket B^{26} clamped to the reaches, and carrying and pivotally holding one end of the oscillating reaches B^{30}, and front axle to which are attached the chains E^{15}, and the king-bolt holding the forward end of the oscillating reach, substantially as and for the purposes specified.

5. In a traction-engine, the rear axle and the saddle B^4 provided with the vertical flange B^5 arranged to lie against one side of the axle, and the vertical bolts B^6 and the eyebolts B^7, respectively embracing the other side of the axle and the bottom thereof, substantially as and for the purposes specified.

6. In a traction-engine, the rear axle provided with the saddle supporting and connected to the journal-bearings B^9, the saddle being provided with the downwardly-extending flange B^2 to which are secured the bars B^{12} of the platform, the bars being supported at rear by the diagonal brace B^{14} connected to the platform at one end and to the journal B^9 on the other, substantially as and for the purposes specified.

7. In a traction-engine, the rear axle provided with the saddle supporting and connected to the journal-bearings B^9, the saddle being provided with the downwardly-extending flange B^2, to which are attached below the axle, bars B^{12} of the platform, these bars being connected together by the brace B^{16} and receiving support at the rear by the braces B^{15} respectively connected to the brace B^{16} of the journal-bearing B^9, substantially as and for the purposes specified.

8. In combination with the rear axle and saddle B^4 provided with the flange B^5 extending down at the side of the axle, the draw-bar D supported at one end in said flange and at the other in the bracket D^2 supported by the platform, substantially as and for the purposes specified.

9. In a traction-engine, the supporting-frame consisting of reaches between the front and rear axles, said reaches being made of piping, forming a conduit for the passage of water through the same for the purposes substantially as specified, and the front cross head or head-block B^{21}, provided with sleeves B^{24} shrunk upon the piping and the king-bolt B^{25} connected thereto and to the saddle B^{26} on the front axle, substantially as and for the purposes specified.

10. In a traction-engine, the supporting-frame consisting of reaches (between the front and rear axles) made of piping, and forming a conduit for the passage of water through the same for the purposes substantially as specified, and the front cross head or head-block B^{21}, provided with sleeves B^{24} shrunk upon the piping, and the king-bolt B^{25} connected thereto and to the saddle B^{26} on the front axle, the saddle B^{26} having vertical flange B^{34}, and a central enlargement for the passage of the king-bolt, the king-bolt receiving the oscillating reach B^{29}, whose rear end is pivoted to a portion of the frame at the rear, substantially as and for the purposes specified.

11. In a traction-engine, the combination of the parallel conduits A^1, A^2, and the cylinder-engine bed, set directly on the conduits, and partly embracing the same, and clamped thereto, substantially as and for the purposes specified.

12. In a traction-engine, the rear axle B, saddle B^4, mounted thereon, and a supporting-frame, comprising the cylindrical reaches or perches of the vehicle, and sleeves B^2 respectively shrunk on the adjacent perches, and rigidly secured to the saddle B^4, substantially as and for the purposes specified.

13. In a traction-engine, the rear axle B, saddle B^4 mounted thereon, and a supporting-frame, comprising the cylindrical reaches or perches of the vehicle, and sleeves B^2 respectively shrunk on the adjacent perches, and rigidly secured to the saddle B^4, and the front cross-head B^{21}, and sleeves B^{24} shrunk upon the reaches or perches, and the king-bolt B^{25} connected thereto and to the saddle B^{26} on the front axle, substantially as and for the purposes specified.

14. In a traction-engine, the combination of the reaches forming the sides of the frame, the bracket B^{26} consisting of the lower portion B^{33}, holding the idlers E^{14} and the lower half of the clamp B^{34}, partially embracing the reaches, and the lower portion of the engine-bed resting upon said reaches and partially embracing the same, and forming the opposite jaw of the clamp, and clamped by bolts B^{37}, and the oscillating reach-brace B^{35}, secured at one end to the clamp B^{26}, and at the other end to the king-bolt, substantially as and for the purposes specified.

15. The clamp-bracket B^{26} secured to the supporting-reaches, and carrying idle-pulleys E^{14}, as abutments for guiding the chains E^{15} to the drum E^{16}, and partially holding one end of the oscillating reach B^{29}, substantially as and for the purposes specified.

16. In combination with the rear axle and saddle B^4 provided with the flange B^5 extending down at the side of the axle, the draw-bar D supported at one end in said flange and at the other in the bracket D^2 supported by the platform, the said draw-bar being provided with means for making it elastically yield in the direction of its length within limits, namely, spring D^4 surrounding the draw bar D and compressible between the flange B^5 and the enlarged head preferably consisting of the washer D^5 and the nut D^6, substantially as and for the purposes specified.

17. In combination with the rear axle and saddle B^4 provided with the flange B^5 extending down at the side of the axle, the draw-bar D supported at one end in said flange and at the other in the bracket D^2 supported by the platform, the said draw-bar being provided with means for making it elastically yield in the direction of its length within limits, namely spring D^4 surrounding, by the casing

D^3, the draw-bar D and compressible between the flange B^3 and the enlarged head preferably consisting of the washer D^6 and the nut D^4, the spring being surrounded by the tube D^5, substantially as and for the purposes specified.

18. In a traction-engine whose supporting-frame consists of piping A^3 forming the reaches of the gear, the clamp-brackets B^{31} secured to the piping substantially as described, and carrying the idle-pulleys E^{14}, substantially as and for the purposes specified.

19. In a traction-engine, the combination of the piping forming the reaches between the axles, the sleeve surrounding the conduit and the head-block connected to the said sleeve, saddle or axle, king-bolt connecting said saddle and head-block and also receiving the forward end of the oscillating reach B^{29}, and the bracket-clamp B^{28} at rear, connected to the piping and holding the pivot E^{34} upon which the rear end of the said oscillating brace oscillates, substantially as and for the purposes specified.

20. The combination of the piping A forming the reaches of a traction-engine, the bracket B^{32} consisting of the lower portion B^{33} holding the idlers E^{14} and the lower half of the clamp B^{34} partially embracing the piping A^3, A^3, and the lower portion of the engine-bed resting upon said piping and partially embracing the same and forming the opposite jaw or complementary portion of the clamp and being connected to the opposite portion of the clamp by bolts B^{37}, substantially as and for the purposes specified.

21. In a traction-engine, the piping A^3, A^3, forming a part of a conduit for the flow of water for cooling the engine, the lower jaw E^{34} of the clamp whose upper jaw or complementary portion is the engine-bed, each jaw partially embracing the piping, the jaws being connected together by bolts, and the low jaw carrying the bolt or projection B^{36}, forming the pivot of the rear end of the oscillating brace, substantially as and for the purposes specified.

22. In a traction-engine having the conduit-piping as a supporting-frame between the rear axle and the front head-block, the chains E^{13} connected to the front axle and guiding against deflecting-abutments as E^{14} and wound in opposite directions around the drum E^{16}, the drum being supported in a bracket E^{17}, partly embracing the piping, and being connected to the complementary portion or opposing clamp, resting on the piping, substantially as and for the purposes specified.

23. In a traction-engine having the conduit-piping as a supporting-frame between the rear axle and the front head-block, the chains connected to the front axle and guiding against deflecting-abutments as E^{14} and wound in opposite directions around the drum E^{16}, the drum being supported in a bracket E^{17}, partly embracing the piping, and being connected to the complementary portion or opposing clamp, forming the engine-bed, substantially as and for the purposes specified.

24. In a traction-engine, where the main portion of the frame constitutes a conduit-pipe for the purposes specified, the bracket E^{17} fastened to the piping and provided with the journal-bearings E^{24} and the drum and worm-wheel E^{20} and worm E^{21}, the said bracket also being provided with the journal-bearings E^{24}, E^{24}, in which the journals of the said worm revolve, shaft E^{23} of said worm, the shaft being further provided with the journal-bearing E^{26} connected to the frame of the machine, and the band-wheel E^{27}, substantially as and for the purposes specified.

25. The combination of the bracket-clamp E^{17}, clamped to the frame A^3, A^3 of the machine, and the rear axle, saddle B^4 secured to the axle, having downwardly-extending flange B^5, the said bracket being connected to the machine by tie-rods E^{18}, the bracket carrying the drum E^{16}, provided with a concentric worm E^{20} and also carrying the journal-bearings E^{24}, E^{24}, worm E^{21} on shaft E^{23} revolving at its lower end in the said journals E^{24} and revolving in its upper end in the journal E^{26}, support E^{25} of the journals E^{24} connected to the saddle B^4, substantially as and for the purposes specified.

26. In a traction-engine having front axle, capable of being turned on a pivot connected to the frame of the machine, and chains connected respectively to the outer or end portions of the axle and converging rearwardly against the deflecting abutments, and connected with means for drawing in one chain and loosening the other simultaneously, the spring being suitably connected with the bolt E^9 having semispherical bearing E^{13} rotating against the curved bearings in the saddle or projection, the recess in said saddle through which the bolt passes being enlarged rearwardly, substantially as and for the purposes specified.

27. In a traction-engine having front axle, capable of being turned on a pivot connected to the frame of the machine, and chains connected respectively to the outer or end portions of the axle and converging rearwardly against the deflecting-abutments, and connected with means for drawing in one chain and loosening the other simultaneously, the spring being suitably connected with the bolt E^9 having buttons or semispherical bearing E^{29} rotating against the curved bearings in the axle saddle or projection, the recess in said saddle through which the bolt passes being enlarged rearwardly, the bolt E^9 being provided with the head E^3 and the cylinder E^5, the said head lying within the cylinder E^5 and against the head E^4 of the latter, and the spring E^8 within the cylinder, and held in place by the cap E^2 and the draw-bolt E^7 whose head E^6 is within the cylinder and against that end of the spring which is opposite to the one which bears against the cap E^2, the bolt E^7 passing through the cap being provided with the hook E^{10} for connection with the chain, substantially as and for the purposes specified.

28. In a traction-engine having front axle, capable of being turned on a pivot, connected to the frame of the machine, and chains connected respectively to the outer or end portions of the axle and converging rearwardly against the deflecting-abutments, and connected with means for drawing in one chain and loosening the other simultaneously, the spring being suitably connected with the bolt E^9 having semispherical bearing E^{13} rotating against the curved bearings in the axle saddle or projection, substantially as and for the purposes specified.

29. In a traction-engine having front axle, capable of being turned on a pivot connected to the frame of the machine, and chains connected respectively to the outer or end portions of the axle and converging rearwardly against the deflecting-abutments, and connected with means for drawing in one chain and loosening the other simultaneously, the spring being suitably connected with the bolt E^9 having semispherical bearing E^{13} rotating against the curved bearings in the axle saddle or projection, the recess in said saddle through which the bolt passes being enlarged rearwardly, substantially as and for the purposes specified.

30. In a traction-engine, the frame for supporting the machine and constituting the reaches between the front head or cross block and the rear axle, consisting of piping A^3, A^3, forming the conduit, the piping at one end of the machine being connected by the conduit A^2 and the other end of the machine, one of the pipes A^3 being connected with the pipe A^4 connected in turn to the space between the jacket of the engine and the cylinder thereof, the adjacent end of the other pipe being connected by the auxiliary pipe A^5 to the pump, substantially as and for the purposes specified.

31. In an engine, the crank or driving shaft F carrying the expander F^3 fixed thereon, the expander having the opening F^9 in its outer portion, and the friction-shell F^8 surrounding the expander and connected to the driving-gear F^4, the shell and gear mounted loosely on the shaft, and the beveled expander key F^5 and expander-lever F^7 arranged to be moved outwardly from the shaft by key F^5 and still farther separate the portions of the expander opposing each other at the slit or opening F^9, thereby increasing the diameter of the expander, substantially as and for the purposes specified.

32. In an engine, the crank or driving shaft F, the driving-gear F^4 provided with the shell F^8 turning loosely on the shaft, and an expander F^3 fixed to the shaft and provided with a lever pivoted substantially at F^6, in connection with the slot F^9 of the expander for enabling the movements of the lever to increase the size of the expander, the free end of the lever carrying the adjustable set-screw F^{10} and expander-key F^5 in contact with the set-screw and reciprocating under and in contact with the set-screw, and means for reciprocating the key, substantially as and for the purposes specified.

33. In an engine, the crank or driving shaft F, the driving-gear F^4 provided with the shell F^8 turning loosely on the shell, and an expander F^3 fixed to the shaft and provided with a lever pivoted at F^6, and in connection with the slot F^9 of the expander for enabling the movements of the lever to increase the size of the expander, the free end of the lever carrying the adjustable set-screw F^{10} and expander-key F^5 in contact with the set-screw, and sliding in the groove F^{36} in the shaft and means for reciprocating the expander-key, substantially as and for the purposes specified.

34. In an engine, the crank or driving shaft F, the driving-gear F^4 provided with the shell F^8 turning loosely on the shaft, and an expander F^3 fixed to the shaft and provided with a lever pivoted substantially at F^6, in connection with the slot F^9 of the expander for enabling the movements of the lever to increase the size of the expander, the free end of the lever carrying the adjustable set-screw F^{10} and expander-key F^5 in contact with the set-screw, and sliding in the groove F^{36} in the shaft, and means for reciprocating the expander-key, and the shifter-sleeve F^{11} provided with abutments F^{12} and the forked lever F^{13} operating between said abutments and pivoted at F^{14} to the bracket F^{15} connected at F^{39} to the engine, substantially as and for the purposes specified.

35. In an engine, the combination of the driving-shaft F and driving-gear F^4, pinions G and G^3 meshing with the spur-wheel G^2 mounted on the clutch-gear shaft G^4, the said pinions and gear being located in the frame G^5, G^5, oscillating on the said shaft G^4, and the nut G^7 located in said frame, and the screw G^2 passing through and engaging the nut G^7 and journaled in the bracket G^{13}, substantially as and for the purposes specified.

36. In an engine, the combination of the driving-shaft F and driving-gear F^4, pinions G and G^3 meshing with the spur-wheel G^2 mounted on the clutch-gear shaft G^4, the said pinions and gear being located in the frame G^5, G^5, the said frame oscillating on the said shaft G^4, and the nut G^7 located in said frame, and the screw G^2 passing through and engaging the nut G^7 and journaled in the bracket G^{13}, set-screw rod being provided with the collar G^{14}, provided with the notch G^{15} and the lever G^{16} pivoted at G^{17} having the latch G^{18} for engaging said notch G^{15}, and tailpiece G^{20}, and having the elastic spring-set G^{21} having a point provided with two beveled sides engaging the point G^{22} on the bracket, which latter point also has two beveled sides, screw-shaft having nut or detent G^{19} preventing it from riding out of the bracket G^{13}, substantially as and for the purposes specified.

37. In combination with the oscillating frame G^5, G^5, pivoted on a shaft G^4, the spur-gear G^2 and pinions G^3 and driving-gear F^4 mounted on its separate shaft, the screw G^2 working in the notch G^8 in one portion of the oscillating frame G^5, G^5, and mechanism for preventing the rotation of the rod except by human agency, to wit: lever G^{16}, pivoted at G^{17}, and having latch G^{18} for engaging the notch G^{19} of the screw and tailpiece G^{20}, spring-set G^{21} pressed down by means of the spring G^{27} located in the chamber G^{26} of the lever, and the spring-set being provided with the nut or detent G^{25} and at its free or operating end being provided alternately with two bevels for engagement with two bevels on the latch-point of the bracket G^{13}, substantially as and for the purposes specified.

38. In combination with the oscillatory frame G^5, G^5, carrying the gears in combination with the driving-gear, the screw G^2 arranged for oscillating the frame G^5 and passing through the bracket G^{13} and provided above the bracket with collar G^{14} and below the bracket with the nut or detent G^{19}, the passage through the bracket being enlarged from the center in both directions to allow the necessary oscillation of the groove as the frame G^5, G^5, oscillates, substantially as and for the purposes specified.

39. In combination, the driving-wheels, a shaft I for operating one of said driving-wheels, and a sleeve I^3 for operating the other of said wheels, the shaft being received into said sleeve, and the eye I^2 located in the recess I^4 of said sleeve, and surrounding the shaft I, the eye having a bolt I^6, and a cap I^7 over recess I^4, the bolt I^5 passing through the cap and nut I^4 thereof, substantially as and for the purposes specified.

40. In the mechanism for enabling the driving-wheels to rotate the one faster than the other, while both are positively driven, the combination of the driving-wheels shaft I supported near one end in journal-bearings B^2 and pinion I^{20} fixed on said shaft I and internal gear B D on the adjacent driving-wheel B^{17}, sleeve I^3 loosely receiving the other end of the shaft and journaled in a bearing as B^4, a pinion I^8 fixed on said sleeve and engaging internal gear B D, and said internal gear located on the adjacent driving-wheel B^{17}, a driving-wheel positively driven by the engine and engaging a pinion I^{19} or I^{10}, said pinion being loosely journaled on shaft I, and beveled pinions I^{18} on opposite sides of hub of pinion I^{19} revolving loosely on shaft I, and the adjacent beveled gear I^9 and I^{15} respectively engaging said pinion I^{18} on opposite sides thereof, one of these beveled gears being fixed to the shaft I and the other to the sleeve I^3, the sleeve I^3 having a recess I^4, an eye I^2 surrounding the shaft, and a bolt I^5 connected to the eye and means for drawing the eye against the shaft I, substantially as and for the purposes specified.

41. In the mechanism for stopping the machine, the brake-wheel K, fixed on shaft I, operating the driving-wheels B^{17}, through suitable intermediate mechanism, and the brake-band K^4, K^4, attached at one end to the frame of the machine and at the other end at K^7 to the nut K^{14}, nut K^{13}, and screw-sleeve K^{12}, and screw-rod K^{16} screwing through the nut K^{13}, secured in the sleeve by the collars K^{17}, substantially as and for the purposes specified.

42. In the mechanism for stopping the machine, the brake wheel K, fixed on shaft I, operating the driving-wheels B^{17}, through intermediate mechanism, and the brake-band K^4, K^4, attached at one end to the frame of the machine and at the other end at K^7 to the nut K^{14}, nut K^{13}, and screw-sleeve K^{12}, and screw-rod K^{16} screwing through the nut K^{13}, secured in the sleeve by the adjustable collars K^{17}, substantially as and for the purposes specified.

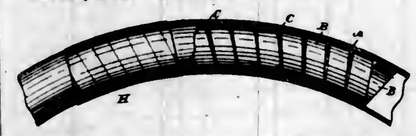
43. In the mechanism for stopping the machine, the brake-wheel K, fixed on shaft I, operating the driving-wheels B^{17}, through intermediate mechanism, and the brake-band K^4, K^4, attached at one end to the flange B^{24} of the axle-cap, and at the other end at K^7 to the nut K^{14}, nut K^{13}, and screw-sleeve K^{12}, and screw-rod K^{16} screwing through the nut K^{13}, secured in the sleeve by the collars K^{17}, substantially as and for the purposes specified.

44. The combination of the shaft M and the pulley M^3, friction-shell connected to gear-wheel meshing with gear on the crank-shaft F and an expander and expander-key fixed to shaft M, and device for shifting the expander-key, substantially as and for the purposes specified.

45. In combination with the piping A^3, A^3, A^3 and A^4, the caps P^4, P^4, on said piping A^3, A^3, and the buffer P, whose ends are connected to the said caps, substantially as and for the purposes specified.

46. In combination with the piping A^3, A^3, A^3 and A^4, the caps P^4, P^4, on said piping A^3, A^3, and the buffer P, whose ends are connected to the said caps, and whose center is provided with the concave piece P^3, centrally located therein, the buffer being of a box shape, substantially as and for the purposes specified.

609,254. BICYCLE-TIRE. AARON VREELAND, East Orange, N. J. Filed July 2, 1898. Serial No. 685,082. (No model.)



Claim.—1. In a bicycle-tire, the combination, with a piece of hose or tubing A bent into a ring and the ends joined by the flat strips D and rivets c as described, of a spiral spring fitted tightly to the interior of the tubing and tightly stuffed with curled hair, as and for the purpose set forth.

2. In a bicycle-tire, the combination, with a piece of rubber hose or tubing A bent into a ring and the ends joined by a series of flat metallic strips D fitted longitudinally inside and outside of the tubing across the joint, and secured by the rivets c as described, of the spiral spring having broad thin coils fitted tightly within the tubing, and tightly stuffed with curled hair, substantially as herein set forth.

3. In a bicycle-tire, the combination, with a piece of hose or tubing A bent into a ring and the ends formed with short slots or openings F as described, of a spiral spring fitted tightly to the interior of the tube and tightly stuffed with curled hair, as set forth, the series of metal strips D applied to the inner and outer sides of the tube across the joint and secured by the rivets c, and a lacing c applied to the opening F when the riveting is completed, substantially as herein set forth.

4. In a bicycle-tire, the combination, with a piece of hose or tubing A bent into a ring and the ends formed with short slots or openings F, as described, of a spiral spring fitted tightly to the interior of the tubing and tightly stuffed with curled hair, as set forth, the series of metal strips D applied to the inner and outer sides of the tubing across the joint and secured by the rivets c, the lacing c applied to the opening F when the riveting is completed, and the wrapping of adhesive tape H applied to the exterior of the tubing over such lacing and metal strips, substantially as herein set forth.

609,255. AXLE. WILLIAM H. WALDRON, New York, N. Y. Filed Feb. 24, 1898. Serial No. 671,431. (No model.)

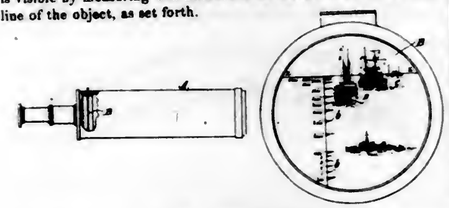


Claim.—1. In combination with the wheel A having a concentric recess contiguous to its junction with the axle which it rigidly carries, said axle being provided with an intermediate recess and extended channels *b*, leading thereto, the shouldered portions of the axle forming the intermediate recess being rounded as described, of a wheel B rigidly carrying an extended sleeve embracing said axle and having its end extending into the concentric recess of the wheel A, said sleeve having an intermediate transverse opening and suitable stopped openings the latter communicating with the channels *b*, a stuffing-box for protecting the end of the sleeve and the concentric recess, a short sleeve within the axle-recess and perforated as described, and a key for engaging the transverse openings in the long and short sleeves, substantially as specified.

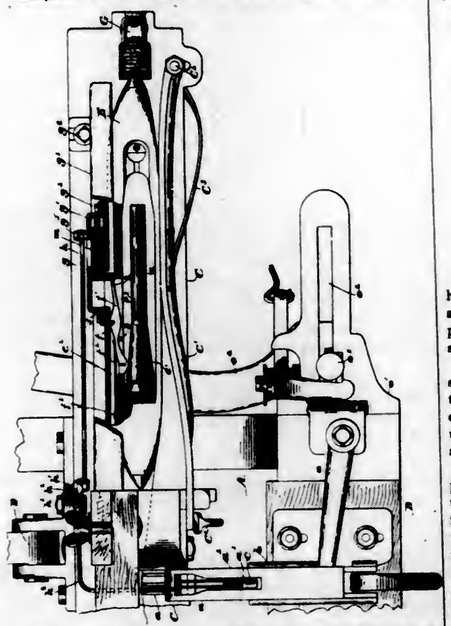
2. In combination with the wheel A having a concentric recess contiguous to its junction with the axle which it rigidly carries, said axle being provided with an intermediate recess and extended channels *b* leading thereto, of a wheel B, rigidly carrying an extended sleeve embracing said axle and having its end extending into the concentric recess of the wheel A, said sleeve having an intermediate transverse opening and suitable stopped openings, the latter communicating with the channels *b*, a stuffing-box for protecting the end of the sleeve and the concentric recess, a short sleeve within the axle-recess and perforated as described, and a key for engaging the transverse openings in the long and short sleeves, substantially as herein specified.

609,256. TELEMETER OR RANGE-FINDER. WILLIAM L. WILLIS, Hoo St. Werburgh, England. Filed Dec. 28, 1897. Serial No. 664,152. (No model.) Patented in England Jan. 4, 1897, No. 196.

Claim.—A telemeter or range-finder consisting of a telescope having a graduated or scaled transparent or semitransparent screen interposed between the object-glass and the eyepiece, such screen being so scaled or graduated for the height at which it is to be used as to enable the observer to ascertain the distance of an object which is visible by measuring the distance from the horizon to the water-line of the object, as set forth.



609,257. LOOM. HORACE WYMAN and RANDOLPH CROMPTON, Worcester, Mass., assignors to the Crompton & Knowles Loom Works, same place. Filed Feb. 26, 1898. Serial No. 671,825. (No model.)



Claim.—1. In a loom, a lay, a filling-fork, and means to actuate it, combined with a thread-catcher, and operative means therefor whereby the said thread-catcher when actuated will engage the filling lying along the raceway of the loom in the shed and put said filling into such position that it will fail to tip the filling-fork, leaving the latter in position to be engaged by its actuating means, substantially as described.

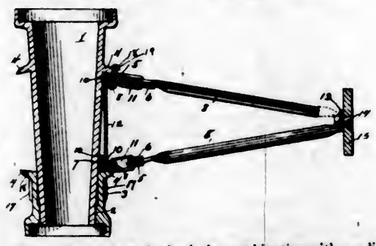
2. In a loom, a lay, a filling-catcher carried thereby, and actuating devices to move it to engage the filling laid in the shed, combined with a shuttle and a feeler, controlled as to its position by the quantity of filling on the bobbin in said shuttle, said feeler, when the filling has been exhausted from said bobbin to a predetermined extent, meeting and moving said actuating devices to turn the thread-catcher to engage the filling-thread and put it into its inoperative position, substantially as described.

3. The lay, its shuttle-box, having an alining-wall, a filling-catcher, actuating devices; a shuttle having mounted on it a feeler controlled as to its position by the quantity of filling on the bobbin, a spring to keep one end of said feeler against the filling on said bobbin, combined with connecting means between said actuating devices and said filling catcher, said feeler meeting said actuating devices as the shuttle enters the shuttle-box and moving said catcher to put the filling then in the shed into its inoperative position, substantially as described.

4. In a loom, the following instrumentalities, viz: a filling-fork, its carrier or slide, an arm adapted to be actuated by said slide, a lay having at one end a shuttle-box, a shuttle, a filling-catcher carried by said lay and occupying a position normally in a transverse space at the upper side of the raceway of the lay to be crossed by the filling laid in the shed, and means set in motion by said shuttle to operate said filling-catcher and put the filling in a position where though present in the shed it will not strike said filling-fork, and means to engage said filling-fork and move it and its slide, substantially as described.

5. In a loom the following instrumentalities, viz: a filling-fork, its carrier or slide, an arm adapted to be actuated by said slide; a lay having at one end a shuttle-box, a shuttle, an alining-surface, a thread-catcher, actuating devices carried by said alining-surface, a connection between said actuating devices and said thread-catcher; a shuttle having a feeler which as the filling is nearly exhausted from the bobbin in said shuttle puts said feeler into position to meet said actuating devices and operate said thread catcher to put the filling into position where it will not meet and tip the filling-fork; and means to thereafter engage the filling-fork and operate it, and its slide, as and for the purpose set forth.

609,258. METAL WHEEL. DANIEL J. C. ARNOLD, New London, Ohio. Filed Jan. 23, 1898. Serial No. 668,294. (No model.)



Claim.—1. In a metal wheel, the combination with a cylindrical hub, of circular pressed plates encircling the same in pairs and adapted to secure the inner ends of metal spokes between them, one plate in each pair being flanged to obtain a bearing upon the hub, substantially as described.

2. In a metal wheel provided with a cylindrical hub, pressed steel plates in pairs encircling the hub and securing the spokes between each pair, in combination with a sleeve separating each pair of plates, flanged and tapered inner extremities of the outer plates upon which said sleeve bears, and means for clamping the plates against the sleeve, substantially as described.

3. In a metal wheel, the combination with a taper hub, of metal plates encircling the same in pairs between which the inner extremities of the spokes are secured, a metal sleeve having its bearing upon flanged and tapered inner extremities of the plates, a taper split ring upon said hub underneath one of said flanges, and means for clamping the parts securely together, consisting of a flange upon the hub and a threaded and flanged sleeve bearing upon said ring and outer pair of plates, substantially as described.

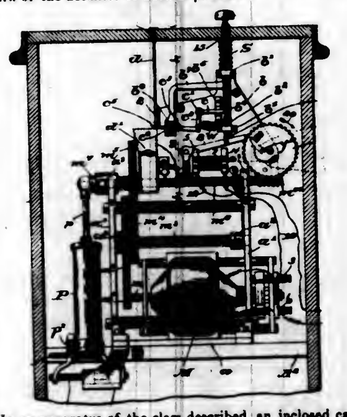
4. In a metal wheel, the combination with an inner hub portion, tapered within and without, of an outer portion adapted to be screwed over the same, outer and inner clamping-flanges arranged in pairs and adapted to incloso the metal spokes, an extension of one of said inner flanges adapted to encircle the tapered hub, and means for securing the flanges to the hub and for pressing the parts securely together, consisting of inclined flanges upon the hub portions, and a wedge-ring upon the taper hub abutting against the outer hub portion, substantially as described.

5. In a metal wheel, hub portions provided with inwardly-inclined flanges, sheet-metal flanges secured between said hub-flanges and separated by means of a sleeved extension of one of said metal flanges, spokes composed of doubled sheet metal secured between the pairs of flanges by means of elongated rivets, and provided with flattened extremities for attachment to the rim, and means for preventing the flanges from turning on the hub, consisting of notches upon the hub-flanges, and bolts adapted to pass through the notches and clamping-flanges, substantially as described.

609,259. COIN-CONTROLLED APPARATUS FOR INFLATING TIRES. IRVING H. ATWOOD Amesbury, Mass. Filed Mar. 26, 1898. Serial No. 675,262. (No model.)

Claim.—1. In an apparatus of the class described, a pump, a motor to operate it, a manually-operated actuator to effect the operation of the pump by the motor, coin-controlled locking means for said actuator, and means to automatically stop the pumping operation.

2. In an apparatus of the class described, an inclosed casing, a pump therein having a connection with its outlet led through the casing and adapted to be attached to the tire to be inflated, a motor to operate the pump, a manually-operated actuator to start the motor, locking means for said actuator moved into inoperative position by the insertion of a coin into the casing, and a device to automatically stop the motor after the pump has been operated for a predetermined length of time, and also to act upon and insure positive return of the actuator to normal position.



3. In an apparatus of the class described, an inclosed casing, a pump therein having an exterior connection with its outlet, an operating-motor for the pump, a manually-operated actuator adapted to start the operation of the pump by or through the motor, a locking device for said actuator movable into inoperative position by the insertion of a coin in the casing, and a stopping device for the motor connected with and operated by the latter to automatically stop the motor after a predetermined movement.

4. In an apparatus of the class described, a motor, a pump operatively connected therewith, a manually-operated actuator to inaugurate the operation of the pump, and coin-controlled means to normally lock the actuator from operation.

5. In an apparatus of the class described, a motor, a pump operatively connected therewith and having a connection adapted to be attached to the tire to be inflated, an inclosing casing having a coin-receiving channel, a manually-movable actuator to effect the operation of the pump by the motor, a locking device for the actuator movable into inoperative position by the insertion of a coin, and means operable by the movement of the actuator to effect release of the coin from engagement with said locking device.

6. In an apparatus of the class described, a pump, a motor operatively connected therewith, coin-controlled means to effect the operation of the pump, and a device to automatically and gradually stop the operation of the pump, said device including a yielding trip, and an adjustable cooperating stop.

7. In an apparatus of the class described, a pump, an electric motor to operate it, a circuit-controller adapted to throw the motor into or out of circuit, a manually-operated actuator to effect movement of the circuit-controller, locking means for said actuator, movable into inoperative position by the insertion of a coin, to thereby permit closure of the motor-circuit by the actuator, to start the motor and pump, and independent means including a moving, yielding trip to automatically move the circuit-controller to break the motor-circuit.

8. In an apparatus of the class described, a pump, a motor to operate it, a manually-movable plunger to effect the starting of the motor, a locking device for said plunger, means to withdraw the locking device from engagement with the plunger to normal position, operative movement of said plunger acting to release the coin from engagement with the locking device and a moving trip actuated by the motor to effect the stoppage of the latter automatically.

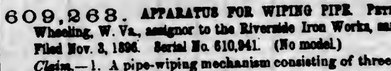
609,260. TOBACCO-PIPE. HENRY R. BARNARD, New York, N. Y. Filed Dec. 20, 1897. Serial No. 663,643. (No model.)

Claim.—1. The attachment for a tobacco-pipe herein described, consisting of a frame having a flange or lip at its upper end, and a spring-finger at its lower end, and a perforated plate movably connected with said frame and provided with a handle which projects upwardly and over the top of the bowl, substantially as shown and described.

2. The herein-described attachment for the bowl of tobacco-pipes, consisting of a vertical plate or frame having a slot formed therein, and provided at its upper end with a lip which overlaps the top of the bowl, and at its lower end with a spring-finger, and a perforated plate provided with a handle which projects through said slot, said handle being carried upwardly and passed through said lip, substantially as shown and described.

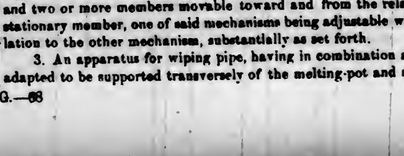


609,261. WOODEN CLOTHES-PIN. FRANCIS E. BENTON, Stoughton, Mass. Filed Dec. 30, 1897. Serial No. 664,653. (No model.)



Claim.—A bifurcated, one-piece, wooden clothes-pin, provided with a transverse tension-spring bolt, the latter passing through one leg of clothes-pin and screwing into the other while the spring is loosely placed about the bolt as shown and described; whereby the tension of the spring may be graduated to make the legs of clothes-pin securely clasp any size of line or thickness of the garment.

609,262. BURIAL-CASKET. WILLIAM H. BLACKFORD, Detroit, Mich., assignor to the Detroit Casket Company, same place. Filed Mar. 2, 1898. Serial No. 672,295. (No model.)



Claim.—1. In a burial-casket the combination of a casket-body, a cover formed of two sets of panels, each set of panels consisting of two leaves jointedly connected at their adjacent edges and having the outer leaves of each set hinged directly to the sides of the body, respectively, said sets of panels normally projecting upward and inward from the upper edges of the body above and over the top of the body and meeting at the longitudinal center of the cover, and arranged to fold outwardly from the upper edge of said body at the front and rear thereof, whereby either of said sets of panels may fold over and depend alongside the adjacent upright surface of the body, and end pieces secured to the ends of the body to close the casket at the extremities of the cover, substantially as set forth.

2. A burial-casket having in combination a casket-body, a cover formed of two sets of folding panels, each of said sets of panels consisting of two leaves jointedly connected at their adjacent edges and having the outer leaves of each set of panels hinged directly to the upper edge of casket-body at the front and rear thereof, said sets of panels normally projectiag upward and inward from the upper edges of the body and over the top of the body and meeting at the longitudinal center of the cover, said sets of panels arranged to fold outwardly from said body at the front and rear thereof, whereby either of said sets of panels may fold over and depend alongside the adjacent upright surface of the body, and end pieces hinged to the upper edges of the ends of said body to close the casket at the ends of the cover, substantially as set forth.

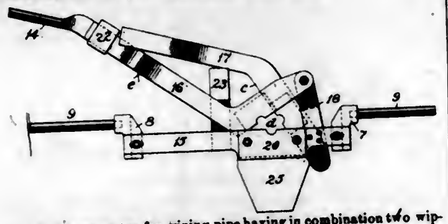
609,268. APPARATUS FOR WIPING PIPE. PETER BOYD, Wheeling, W. Va., assignor to the Riverside Iron Works, same place. Filed Nov. 3, 1896. Serial No. 610,941. (No model.)

Claim.—1. A pipe-wiping mechanism consisting of three or more members operating in different planes, each containing a wiping-groove semicircular or approximately so and arranged in different radial positions around the line of feed of the article to be wiped, whereby when all the members are in opposite position the diametric line of the half-round recess in some one of the members shall form an acute angle with a corresponding diametric line of the recess of at least one and preferably with both of the half-round recesses of the other members, substantially as set forth.

2. An apparatus for wiping pipe having in combination two wiping mechanisms each consisting of a relatively stationary member and two or more members movable toward and from the relatively stationary member, one of said mechanisms being adjustable with relation to the other mechanism, substantially as set forth.

3. An apparatus for wiping pipe, having in combination a plate adapted to be supported transversely of the melting-pot and adjust-

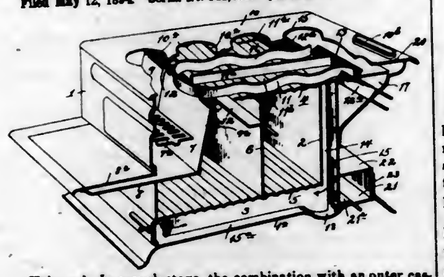
able transversely thereof, and two levers pivotally mounted on the plate in such relation thereto as to be movable at different angles toward and from the plate, substantially as set forth.



4. An apparatus for wiping pipe having in combination two wiping mechanisms provided with common trunnions and bearings for said trunnions adapted to be secured on the melting-pot, substantially as set forth.

5. An apparatus for wiping pipe having in combination two wiping mechanisms, each consisting of a plate and two levers pivotally mounted so as to be movable at different angles toward and from the plate, one lever of each wiping mechanism being provided with a shoulder for supporting the other lever thereof, the supporting-lever of one mechanism being provided with a clip for the reception of the supporting-lever of the other mechanism, substantially as set forth.

609,264. COOK-STOVE. JAMES R. BURGESS, Port Huron, Mich. Filed May 12, 1894. Serial No. 511,083. (No model.)



Claim.—1. In a cook-stove, the combination with an outer casing, a fire-pot, and an oven located in said casing so as to leave a space between the top thereof and the top of the casing, partitions dividing said space into three separate heat-flues each communicating at one end with the fire-pot, a smoke-flue with which each heat-flue communicates at its rear, and dampers at or near the rear of each of said heat-flues.

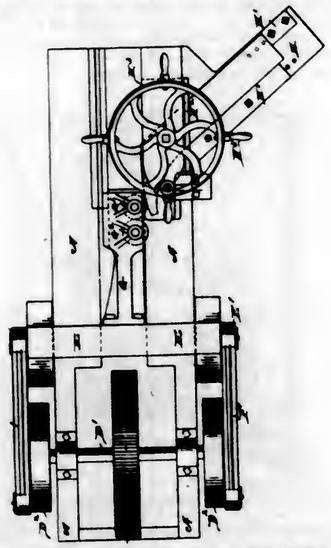
2. In a cook-stove, the combination with an outer casing, a fire-pot, a smoke-flue, and an oven, of separate heat-flues above the oven each communicating at its front end with the fire-pot and at its rear end with the smoke-flue, a diving-flue communicating with one of said heat-flues intermediate its ends, a damper in said heat-flue in rear of said diving-flue, a damper at the front of said heat-flue, an uptake-flue communicating with said diving-flue, and a damper in said other heat-flue in front of said uptake-flue, and a smoke-flue communicating with said uptake-flue.

3. In a cook-stove, the combination with an outer casing, a fire-pot, and an oven located in said casing so as to leave a space above, below and to the rear of said oven, partitions dividing each of said spaces into three separate flues, all of the flues above the oven communicating with the smoke flue and the outside flues above the oven communicating with the outside flues in rear of the oven, dampers in said outside upper flues in front of and in rear of said rear flues, a damper in said upper central flue in front of said central rear flue, flues below the oven communicating with each other and with the rear flues, and a smoke-flue communicating with the central rear flue, substantially as described.

4. In a stove, the combination with a fire-pot, and oven, of a heat-chamber below the oven provided with a depression or well, a flue from the fire-pot communicating with said heat-chamber, and an uptake-flue for the heat products from said chamber communicating with the latter through said well or depression.

609,265. UPSETTING-MACHINE FOR PLOWSHARES. WILLIAM A. CLARK, Rockford, Ill., assignor to the Weyburn & Briggs Company, same place. Filed Feb. 24, 1898. Serial No. 671,534. (No model.)

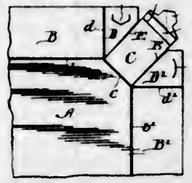
Claim.—1. In an upsetting-machine, in combination, a holding device, a carriage capable of a reciprocating movement and a grooved upsetting-roller and a plain upsetting-roller journaled on said carriage, substantially as and for the purpose specified.



2. In an upsetting-machine, in combination, a holding device having a recess of substantially the form of the upset desired, a carriage capable of a reciprocating movement, a grooved upsetting-roller and a plain-faced upsetting-roller journaled on said carriage and means for imparting motion to the carriage substantially as and for the purpose specified.

3. In an upsetting-machine, in combination, a holding-clamp, having a recess in its upper member of substantially the form of the upset desired, a carriage capable of a reciprocating movement, a grooved upsetting-roller and a plain-faced upsetting-roller journaled on the carriage, which latter upsetting-roller is of a greater diameter than the grooved upsetting-roller, substantially as and for the purpose specified.

609,266. PAPER BOX. FRANK B. DAVIDSON, Chicago, Ill., assignor to the Howe & Davidson, Incorporated, same place. Filed May 16, 1898. Serial No. 680,806. (No model.)

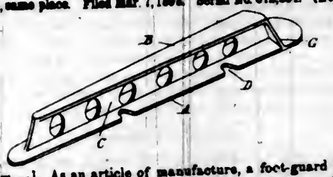


Claim.—1. A blank for paper boxes consisting of a central or body part, integral main flaps which form the side walls of the box, said main flaps having integral secondary flaps at their ends, and integral intermediate flaps located obliquely with respect to the main flaps, said secondary flaps and intermediate or oblique flaps being adapted to be folded in overlapped relation.

2. A blank for paper boxes consisting of a central or body part, integral main flaps which form the side walls of the box, said main flaps having integral secondary flaps at their ends, integral intermediate flaps located obliquely with respect to the main flaps and interlocking means on said secondary and intermediate flaps.

3. A blank for paper boxes consisting of a central or body part, integral main flaps which form the side walls of the box, said main flaps having integral secondary flaps at their ends which are adapted to be folded together and are provided with interlocking tongues and slits and integral intermediate flaps located obliquely with respect to the main flaps and provided with extensions which fold over the secondary flaps and are provided with tongues for engagement with the secondary flaps.

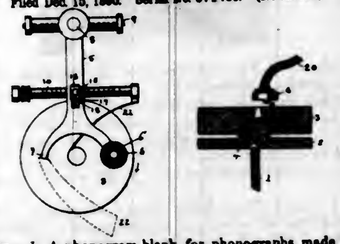
609,267. FOOT-GUARD FOR RAILWAY-SWITCHES. JAMES DONOVAN, Three Rivers, Mich., assignor to the Roberts, Throp & Company, same place. Filed Mar. 7, 1898. Serial No. 672,851. (No model.)



Claim.—1. As an article of manufacture, a foot-guard for railway-switches, &c., comprising a base-plate, a guard-plate sufficiently narrower than the opening between the switch-points to leave a space F on the sides, and a rigid supporting-web between the base-plate and guard-plate of a height to bring the top of the guard-plate substantially in line with the top rail-faces.

2. As an article of manufacture, a rail-guard comprising a tapering notched base-plate A, a central, vertical web C thereon, the narrow tapering guard-plate B supported on said web, the tapered end guard-plate G extending across the end of the web, the parts being arranged as and for the purpose described.

609,268. PHONOGRAPH. THOMAS A. EDISON, Llewellyn Park, N. J. Filed Dec. 15, 1890. Serial No. 374,750. (No model.)



Claim.—1. A phonogram-blank for phonographs made in the form of a thick disk adapted to be shaved off a number of times to receive new records, and provided with a central hole or depression formed perpendicular to and tapering toward the working surface, said hole or depression being adapted to fit a tapering support, whereby the blank will be centered and held in position wholly by friction, substantially as set forth.

2. A phonogram-blank for phonographs made entirely of recording material in the form of a thick disk adapted to be shaved off a number of times to receive new records and provided with a central hole or depression formed perpendicular to and tapering toward the working surface, said hole or depression being adapted to fit a tapering support, whereby the blank will be centered and held in position wholly by friction, substantially as set forth.

3. In a phonograph, the combination of a disk phonogram-blank or phonogram having a tapering opening, a tapering rotating mandrel for supporting and rotating said blank, a recording or reproducing device, support for said recording or reproducing device, pivoted so as to be capable of movement toward and away from the blank, and means for moving said arm across the face of the blank, substantially as set forth.

4. In a phonograph, the combination of a flat phonogram-blank or phonogram, a recording or reproducing device, an arm carrying said device and movable toward and away from the phonogram-blank or phonogram, and a determining device for determining the adjustment of the arm relative to the phonogram-blank or phonogram, substantially as set forth.

5. In a phonograph, the combination of a flat phonogram-blank or phonogram, a recording or reproducing device, an arm carrying said device and movable toward and away from the phonogram-blank or phonogram and across its face, and a determining device for determining the adjustment of the arm relative to the phonogram-blank or phonogram, substantially as set forth.

6. In a phonograph, the combination of a disk phonogram-blank, a holder for supporting and rotating said blank, a recording device, adapted to be moved across the face of said blank, and a tool for turning off the face of said blank, substantially as set forth.

7. In a phonograph, the combination of a disk phonogram-blank or phonogram, a rotating holder therefor, an arm carrying a recording or reproducing device, means for moving said recording or reproducing device across the face of the phonogram-blank or phonogram, a turning-off tool and a device for determining the position of said arm relative to the phonogram-blank or phonogram, substantially as set forth.

8. In a phonograph, the combination of a disk phonogram-blank, a recorder or reproducer, a support for said recorder or reproducer, pivoted so as to be capable of movement toward and away from the blank and across the face of the blank, a feed-screw, and a nut-section carried by said arm and adapted to engage said feed-screw and whereby the recording or reproducing device is caused to move across the face of the blank, substantially as set forth.

9. In a phonograph, the combination of a pivoted arm having two prongs, a recording or reproducing device carried by one prong, a turning-off tool carried by the other prong, and means for moving said arm relative to the phonogram-blank or phonogram, substantially as set forth.

10. In a phonograph adapted to receive a disk phonogram-blank or phonogram, the combination of an arm having two prongs and pivoted to move toward and away from the blank or phonogram, a recording or reproducing device carried by one prong, a turning-off tool carried by the other prong, and means for moving said arm across said phonogram-blank or phonogram, substantially as set forth.

11. In a phonograph adapted to receive a disk phonogram-blank or phonogram, the combination of an arm having two prongs and pivoted to move toward and away from the blank or phonogram, a recording or reproducing device carried by one prong, a turning-off tool carried by the other prong, a device for determining the position of said arm relative to the phonogram-blank or phonogram, and means for moving said arm across said phonogram-blank or phonogram, substantially as set forth.

12. In a phonograph, the combination with a phonogram-blank or phonogram, and a holder therefor, of a pivoted arm carrying a recording or reproducing device, a feed-screw, and an adjustable connection between said feed-screw and arm, whereby the position of the recording or reproducing device relative to the blank or phonogram may be adjusted, substantially as set forth.

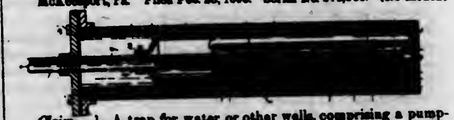
13. In a phonograph, the combination with a phonogram-blank or phonogram, and a holder therefor, of a pivoted arm carrying a recording or reproducing device, a feed-screw, an adjustable connection between said feed-screw and arm, and a device for determining the adjustment of said connection, whereby the position of the recording or reproducing device relative to the blank or phonogram may be adjusted, substantially as set forth.

14. In a phonograph, the combination with a disk phonogram-blank or phonogram, and a rotating holder therefor, of a pivoted arm carrying a recording or reproducing device, a feed-screw, and an adjustable connection between said feed-screw and arm, whereby the position of the recording or reproducing device relative to the blank or phonogram may be adjusted, substantially as set forth.

15. In a phonograph, the combination with a disk phonogram-blank or phonogram and a rotating holder therefor, of a recording or reproducing device, a support for said device pivoted so as to be capable of movement toward and away from and across the face of the phonogram-blank or phonogram, a feed-screw for moving said arm across the face of the phonogram-blank or phonogram, and an adjustable connection between said feed-screw and arm, whereby the position of the recording or reproducing device relative to the blank or phonogram may be adjusted, substantially as set forth.

16. In a phonograph, a slotted recorder or reproducer carrying arm, a block movable in said slot, a nut-section carried by the block, and a feed-screw adapted to engage said nut-section, substantially as set forth.

609,269. TRAP FOR PUMPING-WELLS. HARRY BYERRIPER, McKeesport, Pa. Filed Feb. 23, 1898. Serial No. 671,266. (No model.)



Claim.—1. A trap for water or other wells, comprising a pump-tube having its lower end perforated, a trap-cylinder surrounding the said pump-tube and which is closed at its lower end and extends a suitable distance above the said perforated portion of the pump-barrel leaving a water-space between them, a dam-cylinder extending a suitable distance above and surrounding the aforesaid trap-cylinder with water-space between them, and an outer perforated cylinder surrounding the said dam-cylinder with water-space between them, all arranged and combined to operate substantially as described.

2. A trap for water or other wells, comprising a pump-tube having its lower end perforated; a trap-cylinder surrounding the said pump-barrel and which is closed at its lower end and extends a suitable distance above the said perforated portion of the pump-tube leaving a water-space between them, a dam-cylinder incasing the aforesaid trap-cylinder, and closed at its upper end around the pump-barrel and extending a suitable distance above the aforesaid trap-cylinder leaving a water-space between them, and an outer perfo-

rated cylinder surrounding the said dam-cylinder with water-space between them, all arranged and combined to operate substantially as specified.

3. A trap for water or other wells comprising a pump-tube having its lower end perforated, a trap-cylinder surrounding the said pump-barrel and which is closed at its lower end and extends a suitable distance above the perforated portion of the pump-barrel leaving a water-space between them, a dam-cylinder inclosing the aforesaid cylinder and closed at its upper end around the pump-barrel and extending a suitable distance above the aforesaid cylinder, leaving a water-space between them, and an outer perforated cylinder inclosing the said dam-cylinder and which is closed at its top around the pump-tube leaving a water-space between it and the dam-cylinder with perforations, all arranged and combined to operate substantially as specified.

609,270. DEVICE FOR MIXING LIQUIDS, &c. JAMES F. FLANERTY, Philadelphia, Pa. Filed June 22, 1897. Serial No. 641,767. (No model.)



Claim.—1. In a mixing device, a tube provided with longitudinal slots and having within one or more wedge-shaped plugs, a rod adapted for longitudinal movement, provided with a friction washer or ring, a frame connected to said rod, and arms so hung in said frame as to engage with said wedge-shaped plugs and be radiated from said tube, by action of said rod.

2. In a mixing device, a tube provided with longitudinal slots, and having within a wedged-shaped plug, a rod adapted for longitudinal movement provided with a friction washer or ring, a frame connected to said rod, and series of arms joined by connecting-rods, and so hung in said frame that one arm of each series shall engage with said plug and be radiated from said tube by action of said rod.

3. A mixing device combining, a tube provided with longitudinal slots, and having within one or more wedge-shaped plugs, a rod adapted for longitudinal movement, provided with a friction washer or ring, a frame connected to said rod, and arms so hung in said frame as to engage with said wedge-shaped plugs and be radiated from said tube, by action of said rod, mechanism for rotating said tube and its contents.

4. A mixing device combining, a tube provided with longitudinal slots, and having within a wedge-shaped plug, a rod provided with a friction washer or ring, a frame connected to said rod adapted for longitudinal movement, and series of arms joined by connecting-rods, and so hung in said frame that one of each series shall engage with said plug and be radiated from said tube by action of said rod, mechanism for rotating said tube and its contents.

5. A mixing device combining, a tube provided with longitudinal slots and having within one or more wedge-shaped plugs, a rod adapted for longitudinal movement, provided with a friction washer or ring, a frame connected to said rod, and arms so hung in said frame as to engage with said wedge-shaped plugs and be radiated from said tube, by action of said rod, a case or frame, provided with a tapering base, and containing two bevel gear-wheels engaged, one centered on said tube and adjusted and held thereto by a set-screw or split collar, the other provided with a crank for operating.

6. A mixing device combining, a tube provided with longitudinal slots, and having within a wedge-shaped plug, a rod adapted for longitudinal movement provided with a friction washer or ring, a frame connected to said rod, series of arms joined by connecting-rods, and so hung in said frame that one arm of each series shall engage with said plug and be radiated from said tube by action of said rod, and a case or frame, provided with a tapering base and containing two bevel gear wheels engaged, one centered on said tube and adjusted and held thereto by a set-screw or split collar, the other provided with a crank for operating.

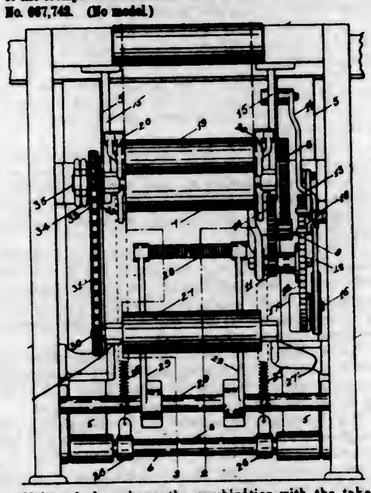
609,271. NON-REFILLING BOTTLE. CHRISTIAN H GOEBEL, Philadelphia, Pa., assignor to Walter Pfish, trustee, same place. Filed Jan. 13, 1897. Renewed Jan. 31, 1898. Serial No. 668,673. (No model.)



Claim.—1. A non-refillable bottle, having a neck provided with a recess in its upper portion, in combination with a sleeve located in said neck, diaphragms secured to said sleeve forming a valve-chamber, said diaphragms having ports therein, a flange on the upper portion of said sleeve seated in said recess, the upper of said diaphragms being located below the level of said flange, a valve controlling the port in the lower diaphragm and a weight normally bearing on said valve.

2. A non-refillable bottle having a neck with a shoulder in its lower portion and a recess in its upper portion, in combination with a sleeve in said neck, diaphragms secured to said sleeve forming a valve-chamber, said diaphragms having ports therein, a flange on the upper portion of the sleeve, a valve controlling the port in the lower diaphragm, a weight normally bearing on said valve, the lower end of said sleeve being seated in said shoulder and a nozzle projecting from the side of said bottle, said nozzle being primarily adapted for the filling thereof and also adapted to be closed by a cap forming an integral portion of the same.

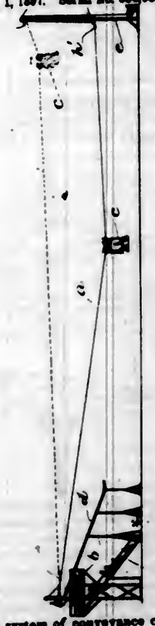
609,272. TAKE-UP MECHANISM FOR LOOMS. GEORGE GOODLIFF, Paterson, N. J., and HORACE WYMAN, Worcester, Mass., assignors to the Crompton & Knowles Loom Works. Filed Jan. 24, 1896. Serial No. 667,742. (No model.)



Claim.—1. In a loom, the combination with the take-up roll, means for revolving the same, the carrier-roll which bears against the take-up roll and is supported in arms pivoted on a swinging frame, and said swinging frame, and springs connected therewith for raising the frame and carrier-roll, and for holding said roll against the take-up roll, and a winding-up roll, of a sprocket-chain connection between the winding-up roll and the take-up roll, the sprocket-wheel of the take-up roll being frictionally connected with said roll, substantially as shown and described.

2. In a loom, the combination with the take-up roll, means for revolving the same, the carrier-roll which bears against the take-up roll, and is supported in arms pivoted on a swinging frame, and said swinging frame, and springs connected therewith for raising the frame and carrier-roll, and for holding said roll against the take-up roll, and a winding-up roll, of a sprocket-chain connection between the winding-up roll and the take-up roll, the sprocket-wheel of the take-up roll being frictionally connected with said roll, and of greater diameter and provided with a greater number of sprocket-teeth than the sprocket-wheel of the winding-up roll, substantially as shown and described.

609,273. AERIAL CONVEYER. WILLARD H. GILMAN, Boston, Mass. Filed Nov. 1, 1897. Serial No. 656,993. (No model.)



Claim.—1. A system of conveyance comprising a flexible cable having suitable supports, a car adapted to run on said cable under the influence of gravity, a stationary rigid inclined track down which the said car is adapted to run to give it an initial impulse, said cable being slack to impart an undulating motion to the car while traveling thereon, and means for suddenly changing the direction of movement of the car as it leaves the rigid track.

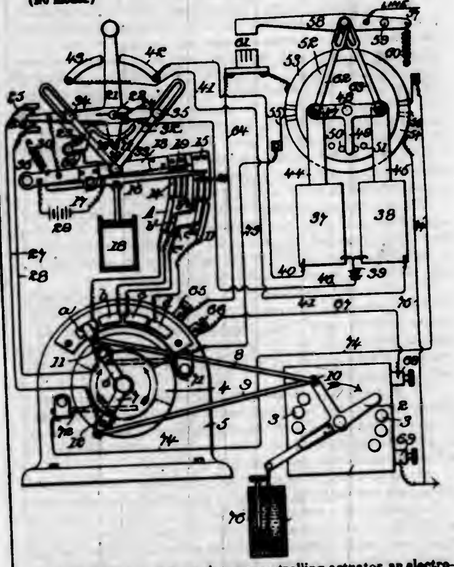
2. A system of conveyance comprising a cable, a car adapted to run on said cable under the influence of gravity, and a stationary rigid inclined track down which said car is adapted to run to give it an initial impulse, the said track being curved toward the horizontal at its lower end, and the cable being slack, whereby the car is caused to undulate while traveling on the cable.

3. A system of conveyance comprising a cable adapted to be held at a fixed height at one end, means for raising and lowering the other end so as to alternately hold said end at a higher and at a lower level than the fixed end, a car adapted to run back and forth on said cable under the influence of gravity, and a stationary rigid inclined track arranged at the fixed end of the cable, and adapted to give the car an initial impulse along the cable.

4. A system of conveyance comprising a cable suspended between two points at a suitable distance apart, one of which points is raised above the other, a track arranged below the raised end of the cable, and having a steeper inclination than the general inclination of the cable, and a car adapted to run down said track and along the cable, the latter having sufficient slack to enable the car to follow the inclined track for a distance before being supported wholly by the cable.

5. A system of conveyance comprising an inclined track, a cable extending from a point adjacent to the upper end of the track to a point beyond the lower end of the track, and means for displacing the portion of the cable over the track from its normal position, for the purpose specified.

609,274. SYSTEM OF CONTROL OF ELECTRIC MOTORS. EDWIN R. GILL, Englewood, N. J., assignor to the Invention Developing Company, of New Jersey. Filed Apr. 4, 1898. Serial No. 676,574. (No model.)



Claim.—1. A power-regulator, a controlling-actuator, an electromagnetic engager adapted to cause engagement between said regulator and actuator, electric circuits for energizing said engager, an engagement-interrupter moving with said engager for controlling said circuits at one set of terminals and a manipulator for controlling said circuits at another set of terminals.

2. In means for controlling motors, a power-regulator, a controlling-actuator, an engager adapted to cause frictional engagement between said regulator and said actuator, means for automatically interrupting said engagement and an adjustable retarding device attached to said regulator.

3. In means for controlling electric motors, a power-regulator, a controlling-actuator, an electromagnetic engager adapted to cause engagement between said regulator and actuator, electric circuits for energizing said engager, circuits for energizing the motor to be governed, an electromagnetic current-director for said motor-circuits, and a manipulator for simultaneously controlling said engager and said current-director.

4. In means for producing controlled movements at a distance, an engagement-interrupting switch, an engagement-producing switch having terminals connected to appropriate terminals in said engagement-interrupting switch, one or more brushes moving over the terminals of the engagement-producing switch, and means for keeping one terminal of the interrupting-switch in circuit after the brush has reached the next corresponding terminal in the engagement-producing switch.

5. A rotary disk, one or more electromagnets adapted when energized to be attracted to said disk, a circuit for energizing said magnet or magnets and a switch in said circuit actuated by movement of said magnet or magnets.

6. As a means for controlling mechanical movement, a disk adapted to revolve, an electromagnet adapted when energized to be attracted to said disk, a circuit for energizing said magnet, a switch actuated by movement of said magnet and means for completing the energizing-circuit through the stationary contacts of said switch successively.

7. A rotary disk and an electromagnet pivotally mounted in front of said disk and adapted when energized to be attracted to said disk; in combination with a contact moving with said magnet and electrically connected with the coils of said magnet, a series of stationary contacts in the path of movement of said movable contact,

and means for completing the magnet circuit through said stationary contacts successively.

8. As a means for converting rotary movement in one direction into corresponding movements in opposite directions at will, a rotary disk, two motive levers mounted upon a common pivot in front of said disk, two connecting-bars pivoted at the point of reverse movement and extending respectively to pivots at the extremities of said motive levers, an electromagnet on each of said motive levers adapted when energized to be attracted to said disk, and means for energizing one or the other of said magnets at will.

9. As a means for controlling successive electrical engagements, a series of stationary electric contacts near the point of engagement, a second series of stationary contacts near the point of control, one of which is in circuit with one of the extreme contacts of said first series, the others being in circuit with the intermediate contacts of said first series; and a third series of stationary contacts near the point of control one of which is in circuit with the opposite extreme contact of said first series, the others being in circuit with the intermediate contacts of said first series; in combination with a source of current, two brushes moving respectively over said second and third series of stationary contacts, and means for bringing one or the other movable contact in circuit with said source of current.

10. In a circuit-governing switch, two sets of stationary contacts, a pivoted lever moving over the same and carrying one end of the circuit to be governed; in combination with a brush-selector whereby the circuit and on said lever may be brought into electrical relation with one or the other set of stationary contacts.

11. In a circuit-governing switch, two sets of stationary contacts, and two brushes adapted to move together over said two sets of stationary contacts respectively; in combination with means for moving said brushes, and a switch operatively connected to said moving means for bringing one or the other of said movable brushes into the circuit to be governed.

12. In a switch, a pivoted lever, two insulated brushes carried thereby, a selecting-lever pivoted to said switch-lever, a circuit-making stop on each side of said selecting-lever connected respectively to said insulated brushes, and means tending to resist movement of said selecting-lever in unison with said switch-lever.

13. As a means for selecting and controlling electromagnetic engagement, two engaging magnets, an engagement-interrupter near said magnets, and an engagement-switch cooperating therewith; in combination with an operator for said engagement-switch, and an engagement-selector-closing circuit through one or the other of said engaging magnets when said operator is moved in one direction or the other at any point in its path of movement.

14. As a means for selecting and controlling electromagnetic engagement, two engaging magnets, an engagement-interrupter near said magnets, and an engagement-switch cooperating therewith; in combination with an operator adapted to produce similar movements of said engagement-switch on each side of a middle position, and an engagement-selector-closing circuit through one or the other of said engaging magnets when said operator is moved in one direction or the other at any point in its path of movement.

15. A pivoted switch-lever, a pivoted operator therefor, two links pivoted to said switch-lever and a pin on each side of the pivot of said operator engaging respectively with said links; in combination with a selecting-switch comprising a swinging contact-lever having a frictional support on the axis of said operator.

16. A pivoted switch-lever, a pivoted operator therefor, two links pivoted to said switch-lever, and a pin on each side of the pivot of said operator engaging respectively with the links; in combination with a selecting-switch comprising a swinging contact lever actuated by said operator.

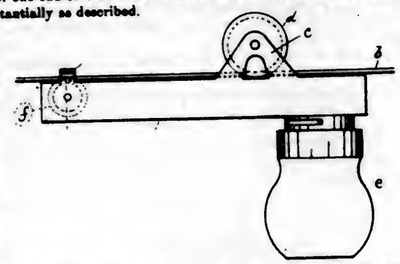
17. In a manipulator for control of mechanism at a distance involving alternate use of a plurality of magnets, a controlling-lever, a switch-lever movable thereby for operating electric connections extending to each of said magnets, and a magnet-selector for bringing one of said magnets at a time into said circuits.

18. In a manipulator for control of mechanism at a distance involving alternate use of two magnets, a controlling-lever, a switch movable thereby for operating electric connections extending to both of said magnets, and a magnet-selecting switch making frictional engagement with said controlling-lever so as to permit lost movement.

609,275. ELEVATED CARRIER. EMANUEL C. GIPE, Freeport, Ill., assignor of one-fourth to George W. Tassell, Waukesha, Wis. Filed June 3, 1896. Serial No. 632,465. (No model.)

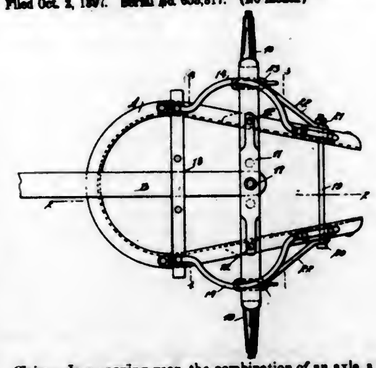
Claim.—1. An elevated-carrier car having a single carrier-wheel mounted above the track between the load and the opposite end of the car, and a friction-wheel mounted upon the opposite end of the car beneath the track, substantially as described.

2. An elevated-carrier car having two wheels, one above and the other below the track, the former being placed between the load and the secondary wheel, whereby the axis of the former may serve as a fulcrum and the latter may act to resist the upward tendency of one end of the frame when the load is applied to the other, substantially as described.



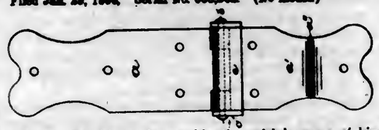
3. An elevated-carrier car having a single carrier-wheel mounted above the track between the load and the opposite end of the car, a friction-wheel upon the opposite end of the car beneath the track and a guard extending over the track above said secondary wheel, substantially as described.

609,276. VEHICLE RUNNING-GEAR. JAMES F. HENDREY, Winona, Minn., assignor to the Winona Wagon Company, same place. Filed Oct. 2, 1897. Serial No. 653,817. (No model.)



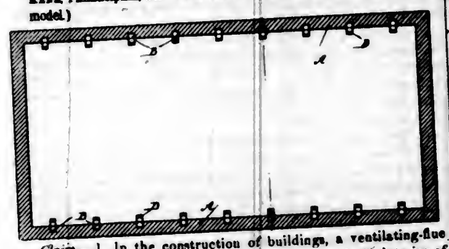
Claim.—In a running-gear, the combination of an axle, a reach, the front end of which is held on the axle, a sand-board bearing down on the reach and attached rigidly to the axle to hold the reach between the sand-board and the axle, two hounds formed integrally with each other, the hounds having a yoke shape and having the bent portion of the yoke extended rearwardly beyond the axle and beneath the reach, the front portions of the hounds projecting forward of the axle, a cross-brace extended between and connected with the rear portions of the hounds and engaging the reach, a horizontal brace secured to each end of the cross-brace, the horizontal braces passing forwardly and being respectively bowed outward and passed over the top of the sand-board, and the horizontal braces then extending inward and being respectively connected with the front portions of the hounds, a draw-bolt passing between the front braces of the hounds, and two additional braces, the front ends of which are respectively held by the ends of the draw bolts, and said additional braces respectively passing rearward and outward and being attached to the under side of the axle near the ends thereof.

609,277. TRUNK-HINGE. JOSEPH S. IMDON, New York, N. Y. Filed Jan. 29, 1896. Serial No. 662,282. (No model.)



Claim.—In a hinge, the combination with leaves *a*, *a'*, hinged together upon a hinge-pin, of a stay-plate *c*, having ears at each end which are bent and perforated to pivotally receive the said hinge-pin, said plate extending transversely across said leaves, and lying parallel to the hinge-pin in the angle formed by the leaves in operating the hinge, substantially as set forth.

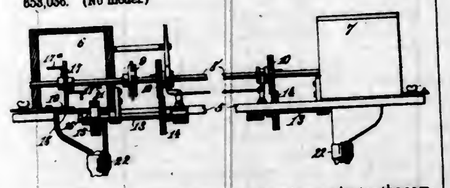
609,278. AUTOMATIC FLUE-OPENING DEVICE. WILLIAM KANE, Philadelphia, Pa. Filed Dec. 9, 1897. Serial No. 661,287. (No model.)



Claim.—1. In the construction of buildings, a ventilating-flue having an opening whereby it may communicate with the interior of the building and a pocket adjacent to said opening, a cover whose lower end rests in and forms a pivotal support in said pocket, and a heat-controlled holder for normally keeping the upper end of the cover in position to close said opening.

2. In the construction of buildings, a ventilating-flue having an opening whereby it may communicate with the interior of the building and a pocket adjacent to said opening, also a projection or stop extending into said pocket, a cover whose lower end rests in and has a pivotal support in said pocket and is adapted to engage said stop, and a heat-controlled holder for normally keeping the upper end of the cover in position to close said opening.

609,279. COMBINED COTTON-SEED AND CORN PLANTER. WILLIAM A. KILE, Putnam, Tex. Filed Sept. 25, 1897. Serial No. 653,036. (No model.)



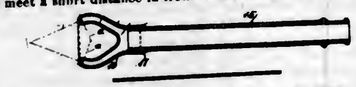
Claim.—1. In a combined cotton-seed and corn planter the combination with the frame carrying the wheels and hoppers of a shaft journaled in said hoppers carrying a cotton-seed stirrer and a gear-wheel, a supplemental shaft journaled beneath the hoppers carrying a corn-drum and a gear-wheel adapted to mesh with the gear-wheel on the main shaft, means operated by one of the drive-wheels for turning said main shaft, slots formed in the bottom of the hoppers in operative relation to the cotton-seed stirrer and corn-drum, respectively, means for closing the slot for the cotton-seed when it is desired to drop corn, and means for preventing the grains from clogging between the drum and the end of the slot, substantially as described.

2. In a combined cotton-seed and corn planter, the combination with the frame carrying the wheels and hoppers of a shaft journaled in said hoppers and extending between the same and carrying at its ends cotton-seed stirrers and intermediate its ends a sprocket-wheel and gear-wheels, a supplemental shaft journaled beneath each hopper and carrying at one end a gear-wheel adapted to be thrown into and out of mesh with the gear-wheel on the main shaft and at its other end a corn drum having a plurality of pockets therein, slots formed in the bottom of the hoppers in operative relation with the cotton-seed stirrer and corn-drum, respectively, a slide operated from the outside of the hopper to close the slot for the cotton-seed when it is desired to drop corn, a spring cut-off operating to prevent the clogging of the corn between the drum and the end of the slot, and means operated by the drive-wheel to impart motion through the sprocket-wheel to the shaft, substantially as described.

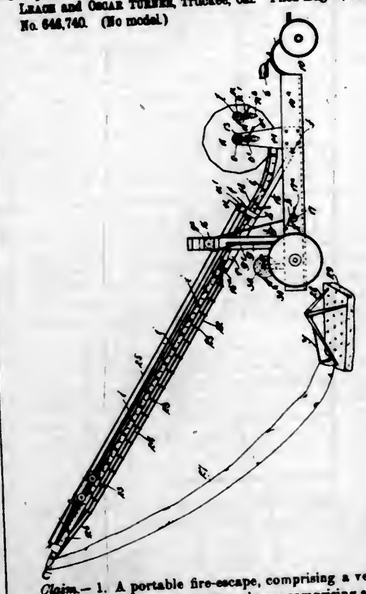
3. In a combined cotton-seed and corn planter, the combination with the frame and wheels, of an axle consisting of two metallic bars arranged parallel with one another and a suitable distance apart, said bars being provided at each end with a plurality of bolt-holes, axle-spindles having tongues adjustably interposed between the ends of the said bars and at the base of said tongues having shoulders adapted to engage the under side of said bars, said tongues being provided with a plurality of bolt-holes adapted to register with the bolt-holes in the bars, and bolts removably fitted in said bolt-holes for securing the tongues in their adjusted positions, substantially as described.

609,280. SYRINGE-NOZZLE. FERDINAND KIPS, New York, N. Y. Filed July 28, 1897. Serial No. 646,164. (No model.)

Claim.—As a new article of manufacture, a syringe-nozzle, consisting of an approximately semispherical body having its outer or front end curved downwardly and forwardly, and then curved inwardly and extended within the body, to form an inwardly-extending projection, which is spaced from the body and forms therewith a longitudinally-curved annular chamber, the inwardly-curved front portion of the body being perforated, whereby the spray delivered from the nozzle will converge toward the longitudinal center of the nozzle and meet a short distance in front of the same, as set forth.



609,281. PORTABLE FIRE-ESCAPE APPARATUS. DAVID W. LEACH and OSCAR TURNER, Truckee, Cal. Filed Aug. 2, 1897. Serial No. 646,740. (No model.)



Claim.—1. A portable fire-escape, comprising a vehicle, a reel-frame rotatable on the vehicle, a trackway comprising a pliable band that may coil on the reel-frame, a series of trackway-sections secured in sequence on said band, a series of cleats secured on the normally upper side of the pliable band, means to coil the trackway on the reel-frame, and a device to support the trackway extended at different angles of elevation from one end of the vehicle, as specified.

2. A portable fire-escape, comprising a vehicle, a pliable band, trackway-sections secured on the band so that the band may flex between the sections, a rotatably-supported reel-frame on the vehicle whereon the trackway may be wrapped, means for rotating the reel-frame for extension and retraction of the trackway, rockable braces on the jointed trackway-sections, and flexible connections adapted by draft strain to rock said braces and stiffen the joints of the trackway, and also to render said joints flexible, as specified.

3. A portable fire-escape, comprising a wheeled vehicle, a reel-frame having a rotatable support on the wheeled vehicle, a trackway composed of a pliable band, two series of sections held in parallel planes on said pliable band, and devices on the reel-frame and on the trackway-sections adapted to render the trackway rigid at its joints after the extension of said sections from the reel-frame, as specified.

4. In a portable fire-escape, a reel-frame having a polygonally-spiral periphery and rotatably supported on a vehicle, a normally flexible trackway composed of a pliable band, sections held in sequence on the pliable band to be wrapped upon the reel-frame, and trussed chords on the trackway adapted to stiffen the joints at the ends of the trackway sections when said trackway is extended and the chords are drawn taut, as specified.

5. In a portable fire-escape, the combination with a vehicle-body, and a rotatably-supported reel-frame thereon, of a normally flexible trackway connected by one end to the reel-frame whereon said trackway may be wrapped, a device for the revoluble movement of the reel-frame for unwrapping or coiling the trackway thereon, and means for supporting the trackway at an incline on the vehicle-body com-

prising a bed-frame pivoted at its lower end on the vehicle body, a prop-frame composed of two longitudinally-slotted stanchions pivoted at lower ends on said vehicle-body, a pivot-bar on the bed-frame loosely engaging ends thereof in the slots of the prop-frame members, and means to hold said prop-frame and bed-frame inclined at a desired angle, as specified.

6. In a portable fire-escape, the combination with a vehicle-body, a rotatable reel-frame thereon, a flexible trackway secured by one end to the reel-frame, means for rotating the reel-frame to wrap the trackway thereon, an adjustable bed-frame whereon one end of the trackway is disposed, an upright prop-frame pivoted on the vehicle-body and slidably engaged with the bed-frame, a winch mechanism adapted to rock and hold the prop-frame and a device for reversely rotating the reel-frame for an extension of the trackway beyond the bed-frame, as specified.

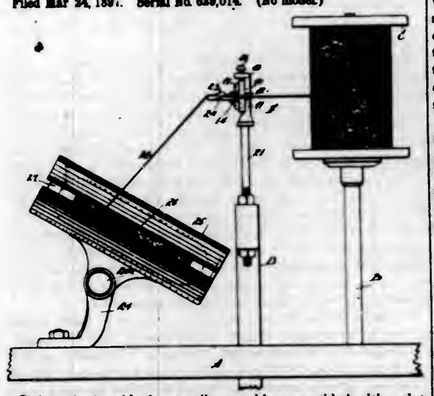
7. In a portable fire-escape, the combination with a vehicle-body, a rotatable reel-frame thereon, means for rotating the reel-frame in either direction, and a flexible trackway carried in part by the reel-frame, of a rockable bed-frame on the vehicle-body, whereon one end of the trackway rests, a prop-frame for the bed-frame, and a device on the prop-frame and vehicle-body and engaging the bed-frame for changing the inclination of said bed-frame, as specified.

8. In a portable fire-escape, the combination with a vehicle-body, and a reel-frame having its periphery polygonally spiral, producing a shoulder in said periphery, of a trackway composed of two series of trackway-sections secured at the side edges of a pliable band, one end of the trackway being fastened to the shoulder on the reel-frame, which trackway may be wrapped upon the reel-frame and lie against the sides of its polygonal periphery, as specified.

9. In a portable fire-escape of the character described, a flexible trackway, comprising oblong trackway-sections, a pliable band whereon said sections are arranged and secured in sequence along the side edges thereof, stay-ropes secured on the upper side of the trackway to reinforce the joints at the ends of the sections, and means for stiffening the said joints when the trackway is extended, as specified.

10. In a portable fire-escape of the character described, a flexible trackway, comprising two spaced series of oblong trackway-sections, dowel and socket connections between the meeting ends of said sections, a pliable band whereon the trackway-sections are affixed, stay-ropes on the upper side of the trackway, truss-chords having rockable braces, and a stretcher-rope engaging said braces to simultaneously adjust them, as specified.

609,282. THREAD-GUIDE. PETER M. LIBBY, Waterville, Me. Filed Mar 24, 1897. Serial No. 629,014. (No model.)



Claim.—1. A guide for spooling-machines, provided with a slot through which the thread is adapted to run in its course from the bobbin to the spool, and a supporting-finger in front of said slot and over which the thread passes, the said finger being mounted to turn axially and extending at an acute angle to the direction of said slot, as set forth.

2. A guide for spooling-machines, consisting of a frame provided with a horizontal guide-slot through which the thread is adapted to pass in its course from the bobbin to the spool, and a supporting-finger carried by said frame and rotatably adjustable thereon, the said finger having an inclination away from said slot, and the free end of said finger being curved, substantially as described.

3. A guide for spooling-machines provided with a slot through which the thread is adapted to pass in its course from the bobbin to the spool, and a curved supporting-finger held in front of said slot and having its end secured in a socket arranged at an angle to the guide, the said finger being mounted to turn axially in said socket and having an inclination away from the slot, substantially as described.

4. A guide for spooling-machines consisting of a frame, guide-plates carried by said frame and spaced apart forming a horizontal guide slot or opening, and a supporting-finger carried by said frame and rotatably adjustable thereon, said finger extending at an acute angle to the direction of the guide-slot and having its free end upwardly inclined, as specified.

5. The combination with the forked frame, and guide-plates carried by the members of said fork, of a socket offset from the closed end of the frame, and a curved guide or supporting finger held rotatably adjustable by the said socket at one of its ends, the said guide or supporting finger having an inclination and being carried in front of the space between the guide-plates, the free end of the said guide or supporting finger being carried upward above the plane of the top of the body of the finger, as and for the purpose set forth.

6. In a guide for spooling-machines, a frame provided with guide-plates between which the thread passes from the bobbin to the spool, a socket formed on said frame and arranged at an inclination to the guide-plates, and a guide or supporting finger having one end secured in said socket and rotatably adjustable therein, the said guide-finger extending in front of the space between the guide-plates and having an inclination away from said plates, substantially as shown and described.

7. A thread-guide for spooling-machines provided with a supporting-finger over which the thread passes, the said supporting-finger being mounted to turn axially and extending at an inclination in front of the guide, substantially as described.

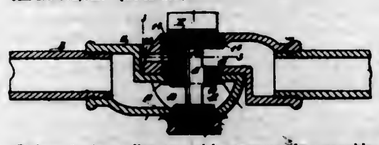
8. The combination of the thread-guide provided with a horizontal slot or opening, a spool on which the thread is wound, a guide or supporting finger over which the thread passes, the said guide-finger extending in front of the guide-opening and having an inclination away from said guide-opening, and a bobbin-holder arranged at an acute angle to the line of direction of said guide-slot, substantially as set forth.

9. In a spooling-machine, the combination of a thread-guide provided with a horizontal slot through which the thread is adapted to run, a bobbin-holder located at an acute angle to the line of direction of said guide-slot, and a supporting-finger rotatably adjustable and over which the thread passes from the bobbin of the holder, the said finger being held in front of said slot and extending at an acute angle to the direction thereof, substantially as shown and described.

10. In a spooling-machine, a stand, a bobbin-holder connected with the said stand, the said bobbin-holder being at an angle to the support for the stand and at an acute angle to the line of direction of the guide-slot through which the thread is to be conducted from the bobbin of the holder, and a curved supporting-finger over which the thread is carried, the said finger being rotatably adjustable and extending in front of the guide and having an inclination away from said guide, substantially as set forth.

11. In a spooling-machine an angular stand secured upon the frame of the machine, a bobbin-holder carried by the said stand, a guide to which the thread is to be conducted from the bobbin of the holder, the said bobbin-holder being at an angle to the support for said stand and at an acute angle to the guide and a supporting-finger over which the thread passes, the said finger extending at an inclination in front of the guide, substantially as described.

609,283. COUPLING. WILLIAM H. LOSH, Salem, Oreg., assignor of one-half to Joseph S. Parker, same place. Filed Mar. 3, 1896. Serial No. 672,443. (No model.)

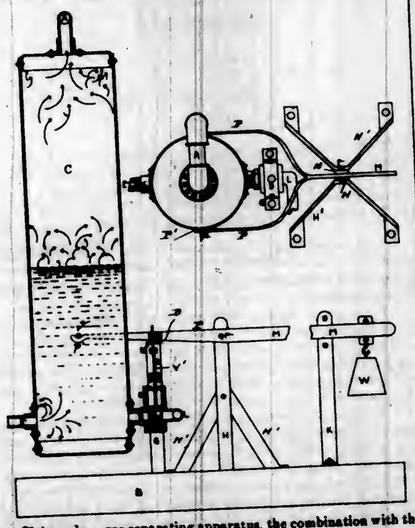


Claim.—1. A coupling comprising two members capable of turning one in the other, and a key mounted to turn in both members, and capable of establishing communication between the members, or of cutting off communication, as described.

2. A coupling comprising two members mounted to turn one upon the other, each member being provided with a hub, one of said members having a chamber therein communicating with its hub, and an opening in its inner and its outer faces, the other member of the coupling being provided with a barrel in communication with its hub, and a key closed at top and bottom, mounted to turn in the two members, the key being provided with an interior chamber having an opening communicating with the outlet of the barrel, and an opening communicating with the interior of the chambered member, as and for the purpose specified.

3. In a coupling, the combination, with opposing members held to turn one in the other, each member being provided with a hub, one member having an interior chamber in communication with its hub and an opening in its inner and in its outer face, the opening in the inner face having its wall beveled, the opposing member of the coupling being provided with a barrel in communication with its hub, and a projection arranged to enter the inner opening of the chambered member, the projection being tapered correspondingly to the taper of said opening, of a key held to turn in the barrel of one member, being made to extend through the outer opening in the opposing member of the coupling, the said key being closed at its ends and having one of its ends threaded to receive a nut, the key being provided also with an interior chamber having an opening capable of communication with the outlet of the barrel, and a double opening leading into the chamber of the chambered member of the coupling, as and for the purpose specified.

609,284. APPARATUS FOR SEPARATING NATURAL GAS FROM OIL, &c. LEANDER LOSURE, Van Buren, Ind. Filed June 26, 1896. Serial No. 597,091. (No model.)



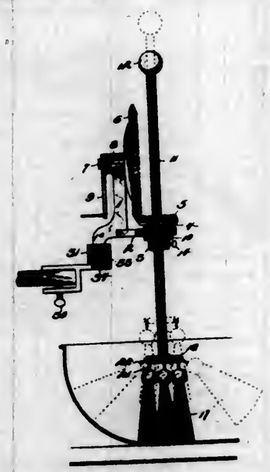
Claim.—In a gas-separating apparatus, the combination with the tank having an inlet-pipe at the lower end and an escape-opening, the opposite trunnions, the pivoted beam and the weight, of the escape-pipe at the lower end of said tank, the vertically-movable valve-casing connected therewith, the vertically-movable valve located therein, the valve-stem, the nuts thereon and the cross-piece through which said stem passes, substantially as described.

609,285. VESSEL-CLEANER. EMIL LUNDGREN, Ellwood, Pa. Filed Feb. 4, 1896. Serial No. 578,523. (No model.)

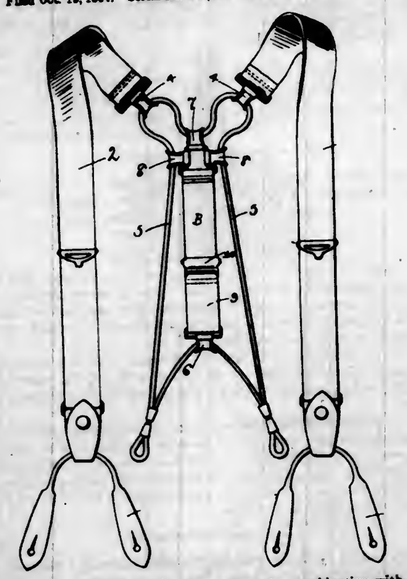
Claim.—1. In combination, a frame comprising a vertical standard or upright and a horizontal plate, which is provided with an aperture to receive a sleeve, a bevel-gear secured to the upper end of said sleeve, a shaft journaled in the upright and carrying a bevel-gear to engage with the aforementioned bevel-gear of the sleeve, a supporting-clamp for the frame and a vertical rod or shaft passing through the sleeve and having a series of brushes fulcrumed thereto, as and for the purpose set forth.

2. In combination, a frame, a supporting-clamp for same, a shaft journaled in said frame, a bevel-gear secured on one end of said shaft, and a crank on the other, a sleeve supported by and operating in said frame, a bevel-gear secured on said sleeve and engaging the aforementioned bevel-gear, a vertical shaft or rod passing through said sleeve, a removable disk on said rod and a series of brushes fulcrumed in said disk, as and for the purpose set forth.

3. In combination, a frame, an adjustable clamp for supporting said frame, a bevel-gear carried by said frame, a sleeve carried by and operating in said frame, a bevel-gear carried by said sleeve and engaging the aforementioned bevel-gear, and a movable shaft passing through said sleeve, said shaft carrying devices, which are rotated through the operating of the shaft, substantially as shown and described.



609,286. SUSPENDERS. HUGH G. MACWILLIAM, St. Paul, Minn. Filed Oct. 19, 1897. Serial No. 655,718. (No model.)



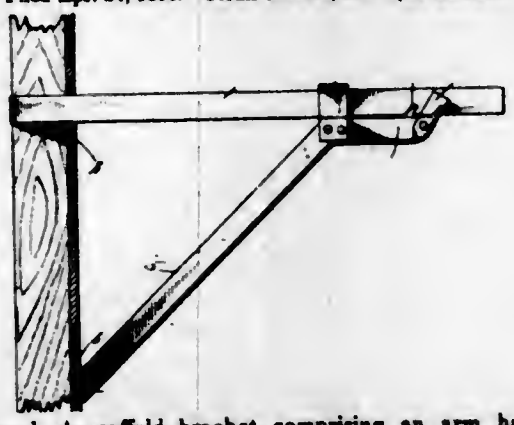
Claim.—1. In a pair of suspenders, the combination with the shoulder-straps, of the cord having sliding connection therewith and adapted to be detachably connected to the trousers, the elastic band, and the eyelets upon said band serving as guides for said cord.

2. In a pair of suspenders, the combination with the shoulder-straps, of the cord having sliding connection therewith, the extensible elastic band, and the eyelets carried by said band and serving as guides for said cord.

3. A pair of suspenders, comprising the shoulder-straps, the means for connecting said shoulder-straps with the rear portion of the trousers, consisting of an independent band, and the cord having sliding connection with the band and with the shoulder-straps.

4. A pair of suspenders, comprising the shoulder-straps, the means for connection between the same and the rear portion of the trousers consisting of an independent extensible band, the eyelets carried by said band, and the cord passing through said eyelets and having sliding connection with the shoulder-straps, and the means for detachable connection with the trousers.

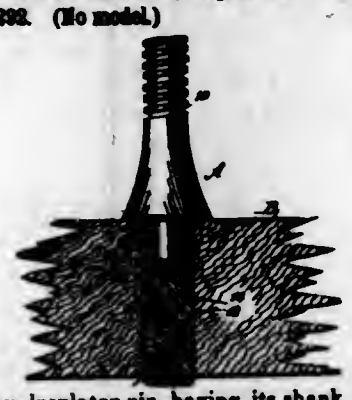
609,287. SCAFFOLD-BRACKET. LOUIS S. MILLER, New York, N. Y. Filed Apr. 27, 1898. Serial No. 678,987. (No model.)



Claim.—1. A scaffold-bracket, comprising an arm having a hooked inner end, and a notch near its outer end, a brace having a tooth at its lower end and a tooth at its upper end to engage in the notch of the arm, cheek-plates on the brace, for engaging against the sides of the arm, and a loop on the brace through which the arm is designed to pass, substantially as specified.

2. A scaffold-bracket, comprising an arm having a hooked inner end and notches formed near its outer end, a brace of angle-iron having a tooth at its lower end, the upper portion of the brace being turned outward at an acute angle to the body, cheek-plates on the outwardly-turned portion, a tooth between the cheek-plates to engage in either one of the notches in the arm, and a loop on the brace through which the arm may freely pass, substantially as specified.

609,288. MEANS FOR FASTENING INSULATOR-PINS TO CROSS-ARMS. LORON MITCHELL, Augusta, Ga. Filed May 10, 1898. Serial No. 680,292. (No model.)



Claim.—1. An insulator-pin having its shank provided with a groove triangular in cross-section, and a locking device carried by the said groove and adapted for frictional engagement with the wall of an opening into which the shank of the pin may be passed, substantially as shown and described.

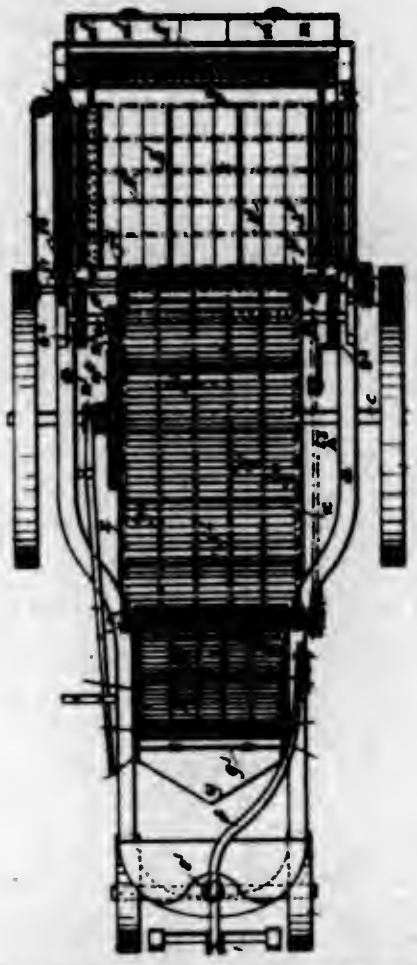
2. An insulator-pin provided with an annular groove in its shank triangular in cross-section, and an open ring of a spring material adapted to be contained within the said groove, for the purpose set forth.

3. The combination, with a cross-arm and an insulator-pin introduced into the cross-arm, the said pin being provided with an annular groove in that portion which enters the cross-arm, of a frictional locking device held within the said groove of the pin and adapted for engagement with a wall of the opening through which the pin is passed, substantially as described.

609,289. POTATO-DIGGING MACHINE. CHARLES J. MOULTON, Chatteris, and ARTHUR J. KEEBLE, Peterborough, England. Filed Dec. 28, 1897. Serial No. 664,114. (No model.) Patented in England Nov. 7, 1896, No. 25,008.

Claim.—1. In a potato-digging machine, the combination with a suitable frame, of a potato-digging share, a hinged part at the rear of such share, a short endless elevating-screen formed with a number of pockets and having its working face on a level or thereabout with the face of the share, a longer endless elevating-screen formed with a number of pockets and having its lower end below the upper end of the short endless elevating-screen, an endless cross-traveling topping-screen receiving the potatoes, tops, weeds and earth, from the longer endless elevating-screen, a pair of shaking screens or riddles receiving the potatoes from the topping-screen and delivering the potatoes to receivers, substantially as herein set forth.

2. In a potato-digging machine, the endless elevating-screens consisting of the combination of main outer chains, cross-bars connecting such outer chains together at intervals, lugs on certain links of the outer chains to which such cross-bars are fixed, slacker intermediate chains connected to the cross-bars and falling below the main chains, and cross-rods passed through links of the slacker chains to form pockets to receive and carry the potatoes, substantially as herein set forth.

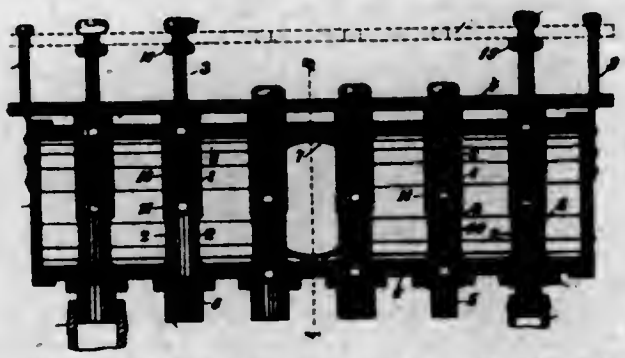


3. In a potato-digging machine, the topping-screen consisting of the combination of outer and intermediate chains, cross bars connecting the outer chains, and cross-rods passed through the intermediate chains, substantially as herein set forth.

4. In a potato digging machine, the combination of a potato-digging share, a short endless elevating-screen, a longer endless elevating-screen, guards at each side of said screens, an endless transversely-traveling topping-screen, a pair of shaking-riddles around which the topping-screen travels, and a potato-receiver provided with sliding doors or bottom, substantially as herein set forth.

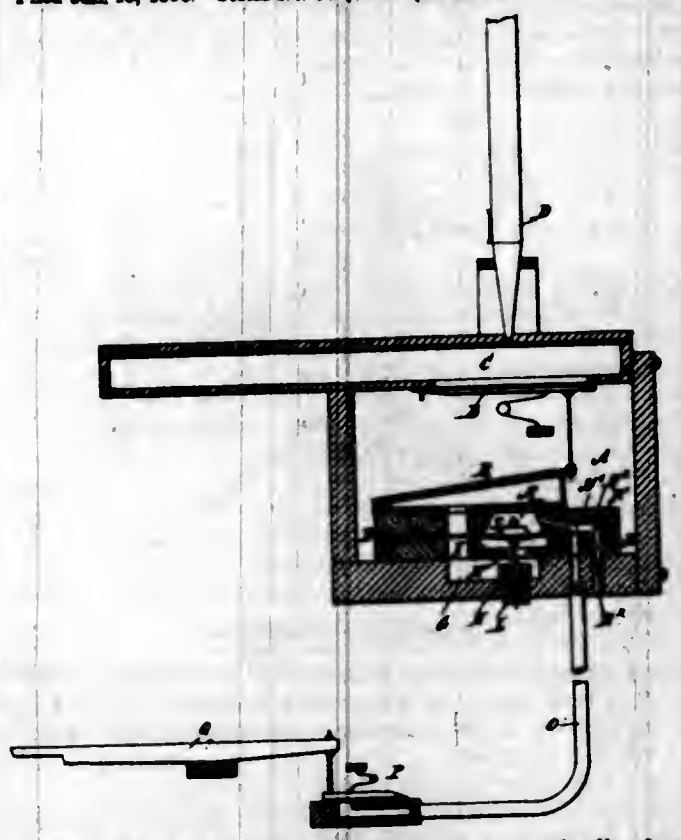
5. In a potato-digging machine, the combination with a suitable frame, of a potato-digging share, a hinged part at the rear of such share, a short endless elevating-screen formed with a number of pockets and having its working face on a level or thereabout with the face of the share, a longer endless elevating-screen formed with a number of pockets and having its lower end below the upper end of the short endless elevating screen, means to impart to said longer endless elevating-screen a greater speed than the shorter, an endless cross traveling topping-screen receiving the potatoes, tops, weeds and earth from the longer endless elevating-screen, and a pair of shaking screens or riddles receiving the potatoes from the topping-screen and delivering them to receivers, substantially as herein set forth.

609,290. BOTTLE-FILLING MACHINE. THOMAS MORTON, New York, N. Y. Filed Mar. 14, 1898. Serial No. 673,832. (No model.)



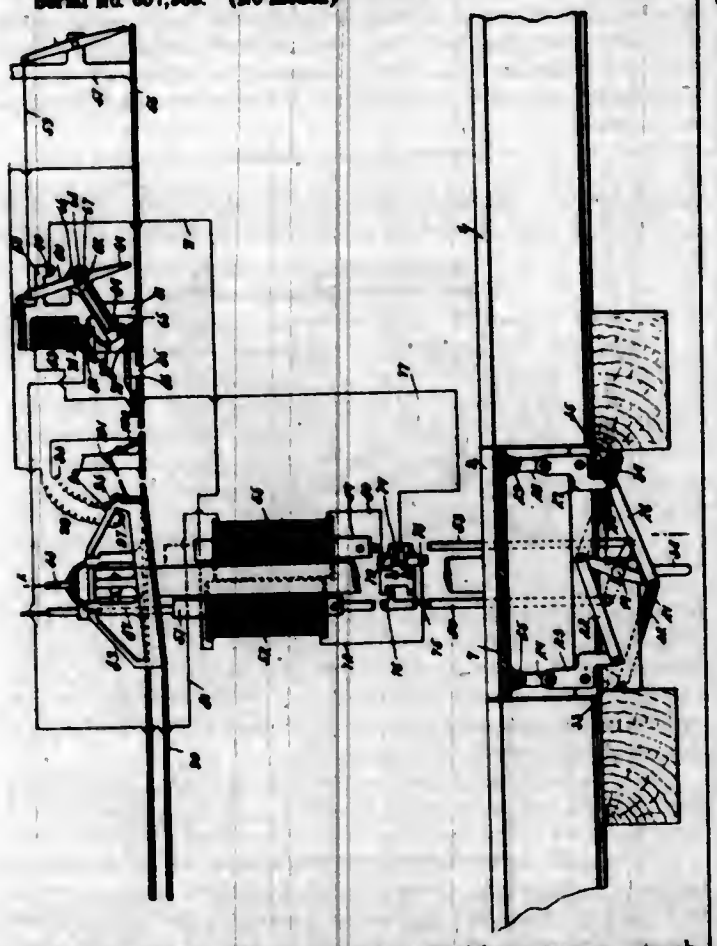
Claim.—In a bottle-filling machine, the combination with a distributing-reservoir and inlet; the vertical tubes with lateral openings; the pistons movable vertically in the said tubes to open and close the lateral openings; the movable elevating-bar and posts constructed to elevate the pistons simultaneously, and; either to depress them simultaneously or to permit them to be depressed separately: and the severable nozzles; substantially as shown and described.

609,291. ORGAN-ACTION. JOHN H. ODELL, New York, N. Y. Filed Jan. 15, 1898. Serial No. 666,826. (No model.)



Claim.—In an organ-action, a diaphragm, a passage leading from the wind-chest and having a branch leading to one side of the diaphragm, a sleeve extending into said passage so as to form a lining therefor and having a lateral aperture open to said branch passage, and a screw screwing into the end of the sleeve and arranged to vary the area of the lateral aperture.

609,292. SWITCH AND SWITCH-OPERATING MECHANISM. JAMES P. ORR and GEORGE H. FOOS, Pittsburg, Pa. Filed Nov. 9, 1897. Serial No. 657,963. (No model.)



Claim.—1. In a railway, a switch comprising a tongue, a track-section, electrical means for moving said tongue and track-section vertically, one section being moved downward as the other section is moved upward and means carried by a car for opening and closing the electrical current, substantially as specified.

2. In a railway, a switch comprising a vertically-movable switch-tongue, a vertically-movable switch-track section, a rocking shaft below the switch, arms extended from said shaft, angle-levers, link connections between said arms and said angle-levers, link connections between the angle-levers and the vertically-movable switch-sections, and electrically-operated means for rocking the shaft, substantially as specified.

3. In a railway, the combination with a vertically-movable switch, of solenoids, the cores of which have operative connection with the switch, circuit-controlling devices for throwing the current alternately through the solenoids and means carried by the car for operating the controlling devices, substantially as specified.

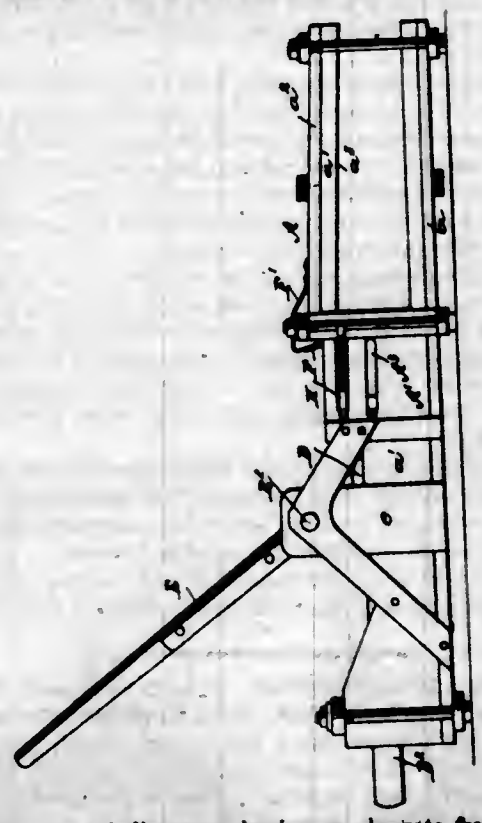
4. In a railway, the combination with a switch, of a pair of solenoids, the cores of which have operative connection with the switch, a circuit-changing device operated by the movement of one of the cores, a trip-lever arranged above the trolley-wire, an angle-lever comprising a circuit-closer and having a connection with the trip-lever, another angle-lever having a trip portion and a circuit-closing portion, both the said angled levers being mounted on the same pivot and movable one within the other, an electromagnet for holding the angle-levers in one position, and means carried by a car for moving the trip-lever and the angle-levers, substantially as specified.

5. A circuit-controlling device for an electrically-operated railway-switch, comprising an angle-lever, one portion of which forms a switch-closer and the other portion of which forms an armature, another angle-lever mounted on the same pivot with the first-named angle lever, the last-named angle-lever having a circuit-closing section and a trip-section, an electromagnet for holding the angle-levers in one position, lugs extended from one of the angle-levers, a pin extended from the other angle-lever between the lugs, and a shunt-circuit from the trolley-wire adapted to be controlled by the levers, substantially as specified.

6. In an electrically-operated switch for a railway, the combination with an electric circuit, of controlling devices operated by a part carried by a car, a swinging frame, a switch trolley-wire connected to said swinging frame and normally not in engagement with the main trolley-wire, and means carried by the switch-operating mechanism for swinging said frame and its wire into connection with the main wire, substantially as specified.

7. The combination with a railway-switch, of a pipe arranged below the switch and having an open end, a gas-burner below said open end, and branch pipes extended in opposite directions from the first-named pipe, substantially as specified.

609,293. BALING-PRESS. SUMNERFIELD M. PERRIN, Columbia, S. C., assignor of three-fourths to William J. Keenan, same place. Filed Jan. 21, 1898. Serial No. 667,444. (No model.)

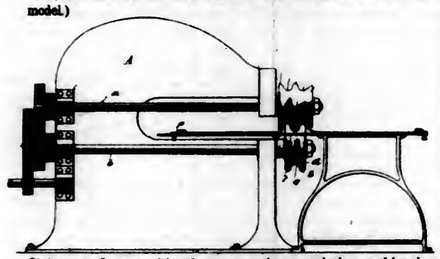


Claim.—1. A baling press having an elongate frame formed of a bottom portion with sides standing thereon, and with a top covering a portion of the frame to form a packing-box, such packing-box diminishing in size toward its discharge end and the remainder of the frame being open at its top to form a receiving and packing chamber, a plunger movable back and forth through the packing-box and receiving-chamber, a plunger-rod attached to the plunger and located in the receiving-chamber, antifriction-rollers held between the sides of the frame and guiding the rear portion of the plunger-rod, straps attached respectively to the sides of the plunger-rod, two antifric-

tion-rollers held at each side of the plunger-rod by means of said straps, stanchions rising from the sides of the frame at the receiving-chamber, a lever fulcrumed between said stanchions, and two cam-arms fast to the lever and straddling the plunger-rod and passed respectively between the members of the pairs of antifriction-rollers on said rod and inside of the straps of the plunger-rod.

2. In a baling-press, the combination with a frame comprising a packing-box, of a plunger slidable in and out of said box, a plunger-rod attached to the plunger and guided by the frame, two straps respectively attached to the sides of the plunger-rod, two antifriction-rollers at each side of the plunger-rod, each pairs of antifriction-rollers being respectively held by the straps, a lever fulcrumed on the frame, and two cam-arms attached to the lever and straddling the plunger-rod, the cam-arms respectively passing between the members of the pairs of antifriction-rollers and inside of the respective straps.

609,294. MACHINE FOR CORRUGATING METAL. LOUIS POTTHOFF, New York, N. Y. Filed Feb. 13, 1896. Serial No. 670,781. (No model.)



Claim.—1. In a machine for corrugating metal, the combination of a plurality of sets of rolls, each set having a predetermined pitch on each side thereof, and the pitch of each set increasing over that of the first set in opposite directions on opposite sides of the rolls, substantially as described.

2. In a machine for corrugating metal, the combination of an upper and a lower roll, one having a central depression equal to the full pitch of the desired corrugation, and two outer flanges, and the other having a central flange equal to the full pitch of the desired corrugation and corresponding with the depression of the first-named roll and one or more outer depressions to correspond with the outer flanges of the other roll, the outer flanges formed by said last-named depressions having a pitch of less than the full corrugation, substantially as described.

3. In a machine for corrugating metal, the combination of a plurality of sets of upper and lower rolls, the outer flanges of each set having a predetermined pitch which increases in each set until the last set is reached, where the flange has a pitch corresponding to the full bend of the desired corrugation, the increase of pitch of the outer flanges being in opposite directions on the opposite sides of the sets of rolls, substantially as described.

4. In a corrugating-machine, the combination of means for slightly bending one edge of the metal, means for increasing said bend until the full bend of the corrugation is reached, means for slightly bending the unbent portion of the metal in the opposite direction, means for increasing said bend until the full corrugation is formed, and means for repeating said bending operations, substantially as described.

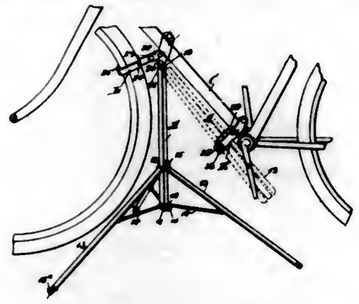
5. In a corrugating-machine, the combination of a set of rolls adapted to bend one edge of the metal to form substantially a half-bend of one corrugation, a second set of rolls adapted to bend the unbent portion of the metal in the opposite direction to complete the corrugation, and means for continuing said bending operations upon the unbent portion of the metal, substantially as described.

609,295. BICYCLE-SUPPORT. CHARLES L. RAYMOND, Jr., New Orleans, La. Filed Aug. 17, 1896. Serial No. 602,963. (No model.)

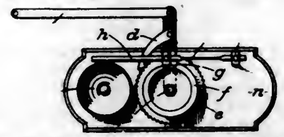
Claim.—1. In a bicycle-stand, legs having slots at their ends, and arms pivoted in the said slots, arranged to fold within the slots or assume a position at an angle to the slots, as and for the purpose specified.

2. In a bicycle-stand, the combination with a standard, of legs having sliding movement on said standard, the said legs being each provided at its lower end with an arm adapted to assume a position at an angle to the leg, as and for the purpose specified.

3. A stand for bicycles, consisting of a standard provided with legs adapted to be folded thereon, means for pivotally connecting said standard at its upper end with the bicycle-frame, and a hanger comprising a clip-body made in two sections arranged for attachment to a bicycle-frame, the said hanger having side members formed integral with the respective clip-sections and extending from the sides of the clip-body, the said side members diverging toward their outer ends, and a latch hinged to the outer end of one side member and adapted to engage a keeper on the outer side of the opposing side member, the said hanger being arranged to receive the standard and legs when folded, as set forth.

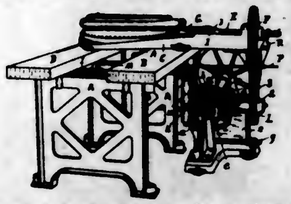


609,296. COUNTING ATTACHMENT FOR ROTARY CUTTERS. CHARLES H. REMINGTON, Watertown, N. Y., assignor to the C. R. Remington & Son Company, same place. Filed Dec. 25, 1897. Serial No. 663,277. (No model.)



Claim.—In a device for counting sheets of paper as they are cut by a rotary paper-cutting machine, the combination with the shaft on which the cutter-cylinder is mounted, the eccentric-pin on the said shaft, the ratchet-wheel mounted on a stub-shaft, the cam-flange terminating in a shoulder on the face of the said wheel, the pitman connected at one end to the said eccentric-pin, the link connecting the other end of the said pitman with the stub-shaft, the pawl pivoted to the said link and the pivoted bell-hammer and block carried thereby, which latter rides on the cam-surface of the ratchet-wheel, as shown and described.

609,297. HORSE-COLLAR-SHAPING MACHINE. SIMON ROSE, Cincinnati, Ohio. Filed June 1, 1897. Serial No. 638,996. (No model.)



Claim.—1. In a collar-shaping machine employing a stationary forming-block and traveling draw-head, the combination of an operating device for the draw head, a power-shaft and connections between said draw-head-operating device and said power-shaft, whereby a predetermined pressure on the collar can be automatically reached and thereafter maintained irrespective of the continued rotation of the power-shaft substantially as specified.

2. In a horse-collar-shaping machine employing a stationary forming-block and a traveling draw-head, in combination with a power-shaft, an operating device for the draw-head connected thereto and to said power-shaft, the said operating device comprising mechanism adapted to transmit a predetermined pressure to the draw-head and thereafter automatically maintain the same under said pressure irrespective of the continued rotation of the power shaft, substantially as specified.

3. In combination with a power-shaft and its connections, one or more collar-shaping machines, each employing a stationary forming-block and a traveling draw-head, a draw-head-operating device and power-transmitting devices connecting said power-shaft and said draw-head-operating device adapted to automatically transmit a predetermined pressure to the collar and thereafter automatically maintain said pressure irrespective of the continued rotation of the power-shaft, substantially as specified.

4. In combination with a power-shaft, a right and left hand transmitter mounted thereon, a collar-shaping machine employing a stationary forming-block and a traveling draw-head, an operating device for the draw-head, power-transmitting mechanism connected thereto and adapted to be engaged with either of said transmitters mounted on the power-shaft, a friction-clutch connecting one of the members of said transmitting mechanism to its shaft whereby a predetermined pressure on the collar can be automatically produced and thereafter maintained, irrespective of the continued rotation of the power-shaft, substantially as specified.

5. In combination with a power-shaft and right and left hand transmitters mounted thereon, one or more collar-shaping machines, each employing a stationary forming-block with a traveling draw-head, an operating device for the draw-head, and transmitting mechanism comprising a friction-clutch connection between said draw-head-operating device and said power-shaft adapted to be engaged with either a right or left hand transmitter mounted on said power-shaft, whereby a predetermined pressure on the collars can be automatically reached and thereafter maintained irrespective of the continued rotation of the power-shaft, substantially as specified.

6. In a collar-shaping machine employing a stationary forming-block and traveling draw-head, the combination of an operating device for the draw-head, a power-shaft and a friction-clutch connection applied to one of the transmitters between said draw-head-operating device and said power-shaft, whereby a predetermined pressure on the collar can be automatically reached and thereafter maintained irrespective of the continued rotation of the power-shaft, substantially as specified.

7. In a collar-shaping machine employing a stationary forming-block and a traveling draw-head, the combination of a draw-head-operating device, a movable power-transmitter connected thereto and adapted to be engaged with a right or left hand transmitter mounted on a power-shaft, a friction-clutch connecting one of the members of said movable power-transmitter to its shaft, whereby a predetermined strain can be imparted to the collar and thereafter automatically maintained irrespective of the continued rotation of the power-shaft, substantially as specified.

8. In a collar-shaping machine, in combination with a power-shaft, a traveling draw-head, a forming-block, power-transmitting mechanism operating said draw-head, means for throwing one of the transmitter members into engagement with either a direct or a reverse driving-gear mounted on the power-shaft, tripping and lever mechanism connected to said transmitter and adapted automatically to ship the same out of engagement with a reversing-gear at a given point of the reverse travel of the draw-head, substantially as specified.

9. In a collar-shaping machine, in combination with a power-shaft, a traveling draw-head, a movable power-transmitter connected to and operating said draw-head, a right and left hand transmitter mounted on said shaft, means for throwing said power-transmitter into engagement with either one of said transmitters, and a friction-clutch mechanism interposed between said power-shaft and the draw-head, whereby a predetermined pressure on the collar can be automatically reached and thereafter maintained irrespective of the continued rotation of the power-shaft, substantially as specified.

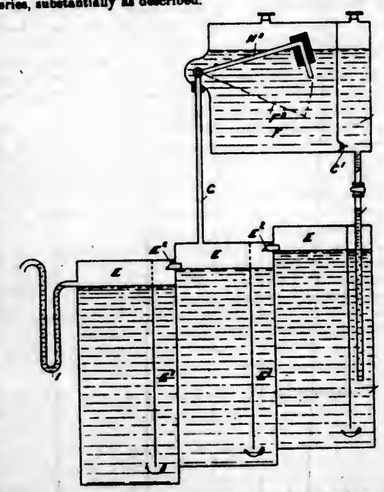
10. In a collar-shaping machine, the combination of a traveling draw-head, with power-driven mechanism consisting of a movable power-transmitter adapted to be engaged with either a driving or a reversing gear mounted on the driving-shaft, means for holding it normally out of engagement, a friction-clutch member connecting one of the power-transmitters to its shaft, and means for regulating the tension of said friction-clutch, substantially as specified.

11. In a horse-collar-shaping machine employing a traveling draw-head, a power-shaft, a right and left hand gear mounted thereon, a movable transmitting-gear, means for holding said gear normally between said gears on the power-shaft, transmitters connected to said movable gear operating said draw-head, a friction-clutch connecting one of said transmitting members with its shaft, a shipping-lever adapted to operate the movable transmitter, and tripping mechanism connecting the draw-head shaft with a catch engaging the shipping-lever, whereby the movable gear is automatically unshipped at one of the extreme movements of the draw-head, substantially as specified.

609,298. PRIMARY BATTERY. WALTER ROWBOTHAM, London, England. Filed Feb. 24, 1896. Serial No. 671,504. (No model.)

Claim.—1. A primary battery comprising a plurality of cells having each an open and a closed compartment, porous tubes extending through the open compartment and opening into the closed compartment, the negative-electrode rods located in said tubes, a closed tank for the exciting and depolarizing fluid having flow and return pipe connections to the closed compartments, and means for supplying water to the open compartments, substantially as described.

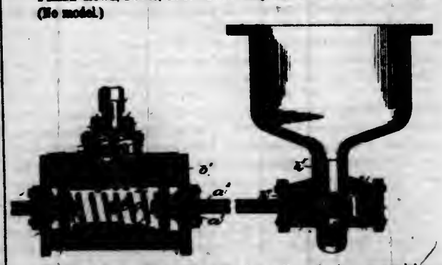
2. A primary battery comprising a plurality of cells having each an open and a closed compartment, with the compartments of each cell communicating with the complemental compartments of the next succeeding cell, porous tubes extending through each open compartment and opening into each closed compartment, a closed tank for the exciting and depolarizing fluid having flow and return pipe connections to the closed chambers of the first and last cells of the series and a water-supply to the open compartment of the first cell of the series, substantially as described.



3. A primary battery comprising a plurality of cells having each an open and a closed compartment, said closed compartments being in communication with each other, porous tubes in each open compartment opening only into the closed compartments, carbon rods in said tubes, a tank for exciting and depolarizing fluid having pipe connections to the first and last closed compartments of the series, a water-supply to the first open compartment of the series, a passage from the open compartment of each cell opening into the next succeeding cell above the water-line thereof, a switch included in the electric circuit from said battery, and means for controlling the flow of water from said water-supply, said means being operatively connected with the switch whereby the operation of the switch controls the water-supply, substantially as described.

4. A primary battery comprising a plurality of cells having each an open and a closed compartment in communication with the complemental compartments of the next succeeding cell, porous tubes in the open compartments opening only into the closed compartments, a water-supply for said open compartments, a closed tank for the exciting and depolarizing fluid opening, a partition dividing said tank into two compartments, a pipe from one of said compartments to the closed compartment of the first cell, and a pipe from the other compartment to the closed compartment of the last cell of the series, substantially as described.

609,299. SANDING APPARATUS FOR RAILWAY-CARS. FRANK ROWE, Dover, N. J. Filed July 30, 1897. Serial No. 646,519. (No model.)



Claim.—1. The herein-described sanding device, comprising a sand-reservoir having an outlet, a cylindrical casing connected thereto and provided with a longitudinal chamber and having a vertical bore coincident with said outlet, a valve working in said longitudinal chamber and adapted to close said bore, lateral branch pipes leading

from said bore, and means adapted to automatically operate said valve, substantially as set forth.

2. The herein-described sanding apparatus, comprising a sand-reservoir having an outlet, a transverse member removably secured to said reservoir and provided with a longitudinal chamber and a vertical bore coincident with said outlet, said bore intersecting said chamber, a reciprocating valve working in said chamber, lateral branch pipes leading from said vertical bore, and means adapted to automatically operate said valve, substantially as set forth.

3. The herein-described sanding apparatus, comprising a sand-reservoir having an outlet, a transverse cylindrical casing connected thereto and having an interior chamber communicating with said outlet, a reciprocating valve working in said chamber, a casing mounted adjacent said sand-reservoir, means for supplying air thereto, and a piston connected to said valve and adapted to be operated by the air-pressure within said cylinder, substantially as set forth.

4. The combination with controlling means, of a casing, members connected to said controlling means and located within said casing, means designed to cause said members to move away from each other, independent means designed to cause said members to move toward each other, and a valve constructed and arranged to be operated by air-pressure in said casing to control said latter means, as and for the purpose set forth.

5. The combination with controlling means, of a cylinder, pistons working therein and connected to said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a spring interposed between said pistons, a chamber communicating with said cylinder, means for supplying air thereto, and a valve designed to automatically control the admission of air to said chamber, said valve having a lower, piston-like stem designed to be acted upon by the air-pressure within said cylinder, substantially as set forth.

6. The combination with controlling means, of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber having ports communicating with said cylinder and provided with an upper opening, means for supplying air to said chamber through said opening, and a valve adapted to automatically close said opening, and having a stem provided with a lower, piston-like end extending into an opening leading from said cylinder, substantially as set forth.

7. The combination with controlling means, of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber communicating with said cylinder and having an upper dome or extension, a cap-plate secured to the latter and having an opening therein, means for supplying air to said chamber through said opening, and a valve adapted to normally close the latter, substantially as set forth.

8. The combination with controlling means, of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber communicating with said cylinder and having an upper dome or extension provided with an opening therein, a valve adapted to normally close the same, and means for regulating the escape of air from said chamber, substantially as set forth.

9. The combination with controlling means of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber communicating with said cylinder and having an upper dome or extension provided with an opening therein, a valve adapted to close said opening, means for supplying air to said chamber through said opening, a casing located in said dome or extension and having an escape-opening, and a valve adapted to automatically close said escape-opening when said former valve is unseated, substantially as set forth.

10. The combination with controlling means, of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber communicating with said cylinder and having an upper opening, a valve adapted to normally close the same, a casing located in said chamber having an upper open end and an interior outlet-port, and a valve adapted to automatically close said latter port when said former valve is unseated, substantially as set forth.

11. The combination with controlling means, of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber communicating with said cylinder and having an upper opening, a casing located in said chamber and having an outlet-port, a rod guided by said casing having valves adapted to cover both said upper opening and said outlet-port, and means for holding said rod normally elevated, substantially as set forth.

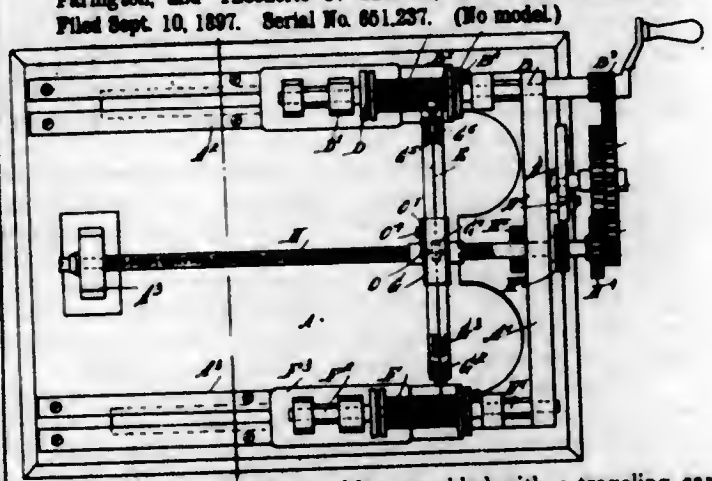
12. The combination with controlling means, of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber communicating with said cylinder and having an upper opening, a casing located in said chamber and having an outlet-port, a rod guided by said casing and having a valve adjustably secured to its upper end adapted to close said upper opening, a second valve rigidly secured to said rod and adapted to close said outlet-port, and means for holding said rod normally elevated, substantially as set forth.

13. The combination with controlling means, of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber communicating with said cylinder and having an upper opening, a casing located in said chamber and having an outlet-port, a rod guided by said casing and having a valve adjustably secured to its upper end and adapted to close said opening, a second valve rigidly secured to said rod and adapted to close said outlet-port, a spring adapted to keep said rod normally elevated, and means for adjusting the tension of said spring, substantially as set forth.

14. The combination with controlling means, of a cylinder, pistons working therein, and adapted to operate said controlling means, means for supplying air to said cylinder, whereby said pistons are normally held apart, a chamber communicating with said cylinder and having an upper opening, a casing located in said chamber and having an outlet-port, a rod guided by said casing and extending through a port or chamber in the walls of said cylinder, a piston secured to the lower end of said rod and working in said port or chamber, a valve adjustably secured to the upper end of said rod and adapted to close said upper opening, a second valve on said rod adapted to close said outlet-port, and a spring serving to hold said rod normally elevated, substantially as set forth.

15. The combination with a series of sand-boxes each having an outlet, and a valve adapted to control the same, of a casing, members adapted to reciprocate therein, means for operating the same, and rods connecting said members and the valves of said sand-boxes, as and for the purpose set forth.

609,800. WINDING-MACHINE. ERNEST J. SATTERWHITE, Falls City, Nebr., assignor of two-thirds to Fred R. Farington, Charles W. Farington, and Theodoric F. Sullivan, Richardson County, Nebr. Filed Sept. 10, 1897. Serial No. 651,237. (No model.)



Claim.—1. A winding-machine provided with a traveling carrier, a double nut held on the said carrier, two revoluble screw-rods adapted to be alternately engaged by the said double nut, to move the carrier forward and backward, a lever operatively connected with said double nut and arranged to swing about an axis extending transversely of the screw-rods, and stops adapted to engage said lever and to move it alternately in opposite directions, substantially as shown and described.

2. A winding-machine provided with a traveling carrier, a double nut held on the said carrier, two revoluble screw-rods adapted to be alternately engaged by the said double nut, to move the carrier forward and backward, and a shifting device for the said nut, and comprising arms carrying the nut and fulcrumed on the carrier, a lever connected with the said arm and fulcrumed on the carrier, and stops adapted to alternately engage the said lever, to impart a swinging motion thereto, for shifting the nut, substantially as shown and described.

3. A winding-machine provided with a traveling carrier, a double nut held on the said carrier, two revoluble screw-rods adapted to be alternately engaged by the said double nut, to move the carrier forward and backward, a shifting device for the said nut, and comprising arms carrying the nut and fulcrumed on the carrier, stops adapted to alternately engage the said lever, to impart a swinging motion thereto, for shifting the nut, and a graduated bar on which

the stops are adjustable, to set the stops according to the length of the spool to be wound, substantially as shown and described.

4. A winding-machine provided with screw-rods, mounted to turn in opposite directions, a carrier fitted to slide, a double nut held to slide in the said carrier, and adapted to alternately engage the said screw-rods, a lever fulcrumed at its middle on the said carrier and connected with the nut, to shift the same from one screw-rod to the other, and adjustable stops for engaging the ends of the said lever and rocking the same, substantially as shown and described.

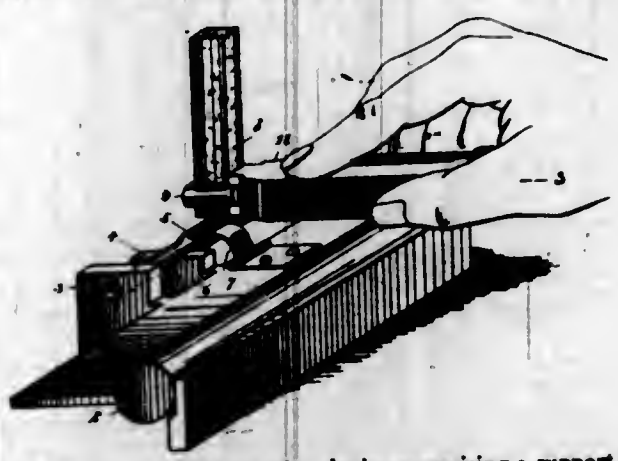
5. A winding-machine provided with screw-rods, mounted to turn in opposite directions, a carrier fitted to slide, a double nut held to slide in the said carrier, and adapted to alternately engage the said screw-rods, a lever fulcrumed at its middle on the said carrier and connected with the nut, to shift the same from one screw-rod to the other, and adjustable stops for engaging the ends of the said lever and rocking the same, the said stops being mounted on a shaft rotating in unison with the said screw-rods, substantially as shown and described.

6. A winding-machine provided with screw-rods, mounted to turn in opposite directions, a carrier fitted to slide, a double nut held to slide in the said carrier, and adapted to alternately engage the said screw-rods, a lever fulcrumed at its middle on the said carrier and connected with the nut, to shift the same from one screw-rod to the other adjustable stops for engaging the ends of the said lever and rocking the same, and means, substantially as described, for rotating the said screw-rods in unison, as set forth.

7. A winding-machine, provided with a spindle for rotating the core on which the material is to be wound, a guide for delivering the wire to said core, the said guide being mounted to travel forward and backward, revoluble screw-rods rotating in unison, intermediate interchangeable gear mechanism for rotating the said screw-rods from the said spindle, and a nut adapted to be moved alternately in engagement with the said screw-rods, to move the carrier alternately forward and backward, substantially as shown and described.

8. A winding-machine, comprising a reciprocating carrier, a shifting mechanism located upon the carrier to change the direction of its travel, and rotary stops each located at one end of the path of the carriage and adapted to engage and operate said shifting mechanism.

609,301. TOOL-SHARPENING DEVICE. JAMES W. SCULL, Elizabeth, N. J. Filed Apr. 12, 1898. Serial No. 677,345. (No model.)



Claim.—1. A tool-sharpening device comprising a support for a tool and a rest for a hone-holder consisting of a rotatively-mounted part, the upper surface of which is on a horizontal plane with the edge of the tool operated upon by the hone substantially as specified.

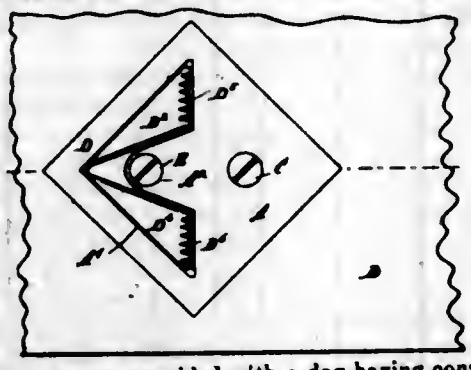
2. A tool-sharpening device, comprising a base, a tool-holder on said base, a movable stop on the base for holding the tool from rotation, and a rotatively-adjustable rest on the base, substantially as specified.

3. A hone-holder, comprising a tubular handpiece, a yoke for receiving the hone and having a shank extended through the tubular handpiece, and a nut engaging the threaded portion of said stem, substantially as specified.

4. A tool-sharpening device, comprising a bed-plate, a cylindrical rest seated in a depression at one side of said bed-plate, an upright at the opposite side of said bed-plate having a hole to receive the shank of a tool, another upright near the first upright and having a depression to receive the shank of a tool, a stop for the tool mounted on the bed-plate, and a hone-clamp for holding a hone along the cutting edge of a tool, substantially as specified.

609,302. BENCH-STOP. HARVEY R. SHAWVER, Harvey, Ill. Filed Aug. 3, 1897. Serial No. 646,881. (No model.)

Claim.—1. A bench-stop, provided with a dog having converging vertical members, said members having at their upper ends horizontal outwardly-projecting flanges whose inner edges are located in the planes of said vertical members, and whose outer edges converge toward the corner of the vertical members.



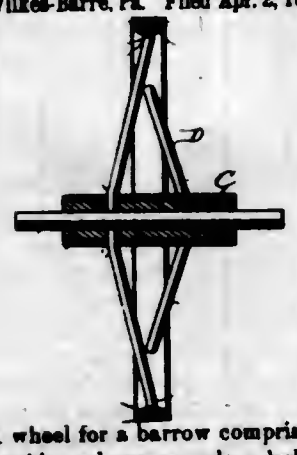
2. A bench-stop, provided with a dog having converging vertical members, said members having at their upper ends horizontal flanges, located exteriorly of the space inclosed between the planes of said members, the forward edges of said flanges being toothed, and alining transversely in advance of the upper ends of the front edges of the vertical members.

3. A bench-stop, comprising a plate having a V-shaped vertical guideway and a tongue projecting beyond the members of the guideway, said tongue being provided with a shoulder upon its under side, a dog movable vertically in said guideway, a clamping-plate held under the tongue and engaging the shoulder thereof, the free edge of the clamping-plate extending in advance of the forward edges of the dog, and means for forcing said edge of the clamping-plate rearward against the dog.

4. A bench-stop, comprising a guide-plate having a vertical guideway, a dog movable in said guideway, a clamping-plate whose central portion has a bend engaging a shoulder of said guide plate, while the free edge of the clamping-plate is adjacent to the edge of the dog, and means for pressing the other edge of the clamping-plate toward the said shoulder to cause the free edge to clamp the dog.

5. A bench-stop, comprising a guide-plate having a vertical guideway, a dog movable in said guideway, a clamping-plate whose central portion has a bend engaging a shoulder of said guide-plate, while the free edge of the clamping-plate is adjacent to the edge of the dog, the central portion of the clamping-plate having spaced flanges approximately at right angles to the plane of the clamping-plate, a screw passing through the clamping-plate between the said flanges and through the guide-plate, and a nut held on the screw between said flanges.

609,308. BARROW-WHEEL. ALBIN R. SMITH and JACOB SCHMITT, Jr., Wilkes-Barré, Pa. Filed Apr. 2, 1898. Serial No. 676,226. (No model.)



Claim.—1. A wheel for a barrow comprising in its construction a stationary removable gudgeon or axle, a hub portion comprising a removable solid continuous hard-wood plug and a single continuous metal inclosing sleeve or tube, the gudgeon passing through the said plug and extending beyond the ends of the same, removable spokes passed into the sleeve and plug, and a tire for the wheel, substantially as described.

2. A wheel for a barrow comprising in its construction a stationary removable gudgeon or axle, a hub portion comprising a removable solid continuous hard-wood plug and a single continuous metal inclosing sleeve or tube, the gudgeon passing through the said plug and extending beyond the ends of the same, removable spokes passed through the sleeve and plug, the spokes being "staggered" and formed with shoulders near their outer ends, and the spokes on one side being arranged alternately to the spokes on the other side, and a tire for holding the spokes tight and in position, substantially as described.

3. A wheel for a barrow comprising in its construction a stationary removable gudgeon or axle, a hub portion comprising a removable solid continuous plug and a single continuous metal inclosing sleeve or tube, the gudgeon passing through the said plug and extending beyond the ends of the same, removable spokes passed through

the sleeve and plug, and bearing with their inner ends on the gudgeon, a felly provided with openings to receive the outer ends of the spokes, and a tire secured on the felly and locking the parts of the wheel together, and forcing the inner ends of the spokes in contact with the gudgeon, substantially as described.

4. A wheel for a barrow comprising in its construction a stationary removable gudgeon or axle, a hub portion comprising a removable continuous solid plug and a single continuous metal inclosing sleeve or tube, the gudgeon passing through the said plug and extending beyond the ends of the same, spokes passed through the hub portion and bearing at their inner ends on the gudgeon, the spokes being "staggered" and formed with shoulders near their outer ends, a felly constructed of a single piece of metal and provided with openings to receive the reduced ends of the spokes, the ends of the felly being disconnected, and a tire secured on the felly and locking the parts of the wheel together, and forcing the inner ends of the spokes in contact with the gudgeon, substantially as described.

5. A wheel for a barrow comprising in its construction a stationary removable gudgeon or axle, a hub portion comprising a removable solid plug and a single continuous metal inclosing sleeve or tube, the gudgeon passing through the said plug and extending beyond the ends of the same, spokes passed through the sleeve and plug and bearing at their inner ends on the gudgeon, a felly constructed of a single piece of metal and provided with openings to receive the outer ends of the spokes, the ends of the felly being disconnected, and a tire secured on the felly and locking the parts of the wheel together, and forcing the inner ends of spokes in contact with the gudgeon, substantially as described.

6. A wheel for a barrow comprising in its construction a stationary removable gudgeon or axle, a hub portion comprising a removable hard-wood plug and a single continuous metal inclosing sleeve or tube, the gudgeon passing through the said plug and extending beyond the ends of the same, spokes passed through the hub portion and bearing at their inner ends on the gudgeon, the spokes being "staggered," and formed with shoulders near their outer ends, and the spokes on one side being arranged alternately to the spokes on the other side, a felly constructed of a single piece of metal and provided with openings to receive the reduced ends of the spokes, the ends of the felly being disconnected, and the outer ends of the spokes being riveted to the felly, and a tire of greater width than the felly and secured on the same by turning down portions of the tire onto the felly at suitable points, substantially as described.

609,804. RAIL-JOINT. WILLIAM M. SMITH, New Cumberland, W. Va. Filed Nov. 9, 1897. Serial No. 657,923. (No model.)



Claim.—1. The combination with the main rail of a supplemental rail conforming to the shape of the main rail, clamping-wedges engaging the inside of the rail and projecting below the main rail and being provided with a slot to receive a fastening-bar, a fastening-key to secure the fastening-bar in position, and means engaging the supplemental rail, and clamping-wedges, whereby said rail is held firmly against the main rail, substantially as shown and described.

2. In a rail-joint, the combination with the main rail of a supplemental rail engaging the face of the same and conforming to the shape thereof, clamping-wedges engaging the inner face of the main rail and the outer face of the supplemental rail, said wedges having an end extending below the lower face of the main and supplemental rails, a fastening-bar passing through slots in said ends, a fastening-key locking said bar in position, a spring secured between the upper end of the wedges and the supplemental rail, whereby the same is held in position.

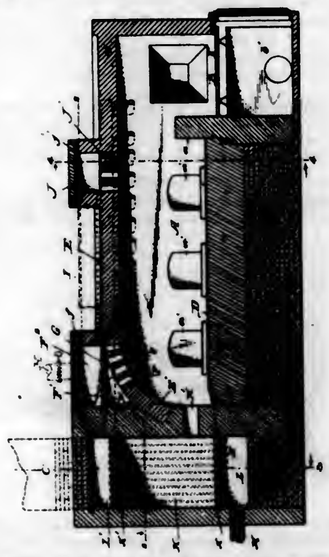
3. In a rail-joint, the combination of a main rail, a supplemental rail engaging the outer face of the same and conforming to the shape thereof, the outer face of said supplemental rail being parallel with the outer face of the main rail and being substantially the same length of the main rail, the joints of the main and supplemental rails being so arranged as not to register with each other, clamping-wedge engaging the inner face of the main rail and the outer face of the supplemental rail, said wedge having an end extending below the lower face of the main and supplemental rails, a fastening-bar engaging slots formed in said ends, a fastening-key locking the bar in position and a spring engaging the supplemental rail and the upper ends of the wedges to hold the supplemental rail in engagement with the main rail, substantially as shown and described.

609,805. SEED-PLANTER. GUSTAV K. SITTENBERG, Bismarck, Germany. Filed Apr. 19, 1895. Serial No. 546,419. (No model.) Patented in Germany Jan. 11, 1893, No. 68,115; in Luxemburg Feb. 22, 1895, No. 2,943; in France Feb. 23, 1895, No. 245,458; in Belgium Feb. 23, 1895, No. 114,334; in Spain Feb. 23, 1895, No. 17,074; in Austria Mar. 9, 1895, No. 19,563; in Switzerland Mar. 11, 1895, No. 10,219; in Hungary Mar. 26, 1895, No. 2,855, and in Italy Mar. 26, 1895, No. 38,456.



Claim.—In an apparatus for planting seed the combination with a suitable frame of a roller having drill-pressing members on its surface, of a hollow covering-roller having its mantle formed by knives peripherically arranged and adapted to penetrate into the soil so as to spread earth over the seed drills, and of a pressing-roller adapted to smooth the filled and covered seed-drills, substantially as described and for the purpose set forth.

609,806. AIR-HEATER FOR FURNACES. WILLIAM STUBBLEBINE, Bethlehem, Pa. Filed Jan. 26, 1897. Serial No. 620,816. (No model.)



Claim.—1. In a metallurgical furnace, the combination with a working chamber having a bridge-wall, and a stack or uptake, of isolated heating-chambers situated on the roof of said working chamber, one heating chamber lying adjacent to the uptake and the other arranged substantially over the bridge-wall, each heating-chamber containing within its walls a heating medium and said heating-chambers communicating with the working chamber by series of ports in the roof thereof, and a blast-pipe connected to said heating-chambers, as and for the purposes described.

2. In a metallurgical furnace, the combination with a stack or uptake, and a working chamber having a bridge-wall, of heating-chambers each divided by a transverse heating medium into upper and lower compartments and said lower compartments communicating directly with the working chamber through series of ports in the roof thereof, said heating-chambers being arranged one near the stack and the other substantially over the bridge-wall in the working chamber, and a blast-pipe connected to the heating-chambers to communicate with the upper compartments thereof only, substantially as and for the purposes described.

3. In a metallurgical furnace, the combination with a stack or uptake, and a working chamber having a bridge-wall at one end, of the heating-chambers situated on the roof of said working chamber, one adjacent to the stack and the other substantially over the bridge-wall, and each communicating with the working chamber through ports in the roof thereof, perforated metallic plates arranged within said heating-chambers and forming the heating mediums therein, and blast-pipes connected to said heating-chambers, as and for the purposes described.

4. A furnace having its rear stack-wall provided with a circulating-compartment which is free from, or unobstructed by, pipes or checker-work and also provided with a blast-chamber and with a hot-air chamber, combined with air-heating pipes embedded in the stack-wall adjacent to said chambers and connected at their ends with the blast-chamber and hot-air chamber, a working chamber connected by a port to said circulating-compartment, an uptake communicating with said circulating-compartment, and off-bearing pipes or flues connected to the upper hot-air compartment, as and for the purposes described.

5. The combination, in a furnace, of the roof arched adjacent to the stack or uptake and provided in said arched portion with transverse gas-ports, the uptake or stack, the heating-chamber over the arched part of the roof and divided by a transverse partition into two chambers, one of which compartments is connected with the working chamber and the uptake and the other compartment forming an isolated blast-compartment, a blast pipe or pipes connected to the blast-compartment of said heating-chamber, and a port or neck between the uptake and the lower compartment of the heating-chamber, substantially as described.

6. The combination with a stack or uptake, and a working chamber, of the heating-chamber divided into upper and lower compartments, the ports in the roof of the working chamber and connecting said working chamber directly to the lower compartment of the heating-chamber, a port or neck which connects said lower compartment of the heating-chamber with the stack or uptake, and blast-pipes connected to the upper compartment of the heating-chamber, substantially as described.

7. The combination with a working chamber, and an uptake of a metallurgical furnace, of the horizontally-divided heating chamber F, ports which connect one compartment F' of the heating-chamber with the working chamber, a port or neck connecting the stack and the compartment F' of the heating-chamber, blast-pipes connected to the isolated compartment F¹ of the heating-chamber, another sub-divided heating-chamber J connected to the working chamber, and the blast-pipes between the two chambers F, J, substantially as described.

8. The combination with a working chamber and an uptake, of a heating-chamber situated on the roof of the working chamber and provided with a partition which divides said chamber into two compartments, the lower of which compartments communicates directly by ports with the working chamber and the stack, to insure circulation through said chamber of the waste heat and gases on the way from the working chamber to the stack, another chamber situated at one side of the first-named chamber and over the working chamber, communicating directly therewith by ports in the roof of the same, and a blast-pipe connecting the upper compartment of the first-named chamber with said last-named chamber, substantially as described.

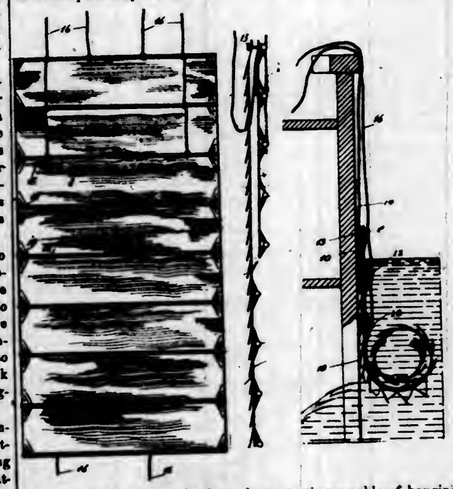
9. The combination with an uptake, and a working chamber, of the roof having the arch E adjacent to said uptake and provided with ports e which extend directly through the arched portion of said roof, the heating-chamber F having an intermediate partition which divides the heating-chamber into upper and lower compartments, the said lower compartment being in a plane substantially horizontally between the working chamber and the stack and communicating with said chamber and stack directly by the ports e and the neck, respectively, another chamber situated at one side of the chamber F and on the roof of the working chamber communicating directly with the latter through ports in said roof, a hot-blast pipe connected to the upper compartment of the chamber F and with the other heating-chamber, and a cold-blast pipe connected to said first-named heating-chamber, substantially as described.

609,807. SHIP'S BANDAGE. CARL F. SULTENEYER, Chicago, Ill., assignor of part to Harry V. Peters, Henry B. Clarke, and Patrick J. O'Flaherty, same place. Filed Jan. 3, 1898. Serial No. 665,411. (No model.)

Claim.—1. A ship's bandage having a series of independent flaps attached thereto, the bandage being capable of being rolled with the flaps outward so that the action of the water bearing against the flaps will unroll the bandage to place it against the hull of the vessel.

2. A ship's bandage capable of being rolled and having independent projecting portions secured thereto receiving the action of the water to unroll the bandage in the act of placing the bandage against the hull of the vessel.

3. A ship's bandage having two layers of cloth joined to each other for a portion of their lengths and having the remaining portions independently movable.



4. A ship's bandage having a loose portion capable of hanging down from the bandage when the bandage is rolled so as to engage with the side of the vessel.

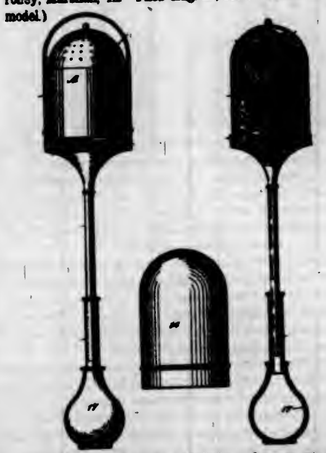
5. A ship's bandage having a layer of cloth disposed with independent parallel folds secured thereto and forming flaps, and a series of ribs secured to the bandage parallel with the flaps.

6. A ship's bandage having a series of independent parallel flaps secured thereto, and a frame of stiff material secured in each flap.

7. A ship's bandage provided with a series of ribs secured thereto at their ends by flexible connections, said connections being secured to the bandage at different points along the longitudinal edges thereof, substantially as described.

8. A ship's bandage provided with transverse ribs on one face and on the opposite face with a series of flaps containing stiffening-frames, the frames of the flaps being connected by flexible connections with the ribs, substantially as described.

609,808. COMBINED POCKET ASPERSORIUM AND INCENSE-HOLDER. AVELIS SEABO, Terre Haute, Ind., assignor to David J. Moroney, Marshall, Ill. Filed Aug. 23, 1897. Serial No. 649,167. (No model.)



Claim.—1. An aspersory consisting of a receptacle constructed in detachable sections, one of the sections being provided with apertures, an absorbent material contained in the said receptacle, a handle for the receptacle, and a cover having a water-tight connection with the said receptacle and adapted to inclose the same, as specified.

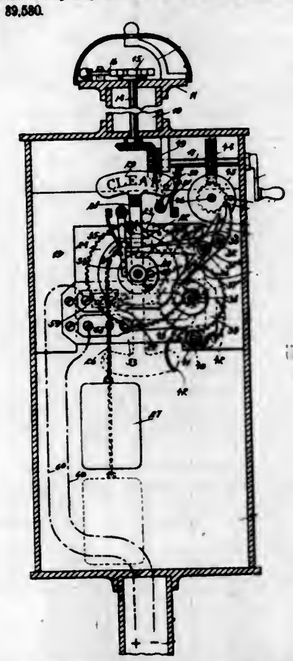
2. In an aspersorium, an aspersory consisting of a receptacle containing an absorbent material and having perforations for the escape

of liquid, a cover for the said aspersory, a handle for the same, and an incense-receiver carried by the said handle, for the purpose set forth.

3. In an aspersorium, an aspersory consisting of a receptacle containing an absorbent material and having perforations for the escape of liquid, a cover for the said aspersory, a handle for the same, a sleeve in which the handle of the aspersory has sliding movement, and an incense-receiver detachably connected with the said sleeve, whereby the handle may be carried into the incense-receiver, shortening the length of the aspersorium and enabling it to be readily carried, as specified.

4. The combination of a shank or handle, an aspersory attached thereto and formed in two sections, one of which is perforated, and a cover adapted to inclose the aspersory and having connection with the base thereof.

609,309. **FIRE-ALARM.** HILMAR TERSLING, Copenhagen, Denmark, assignor to Johannes Caroe, Niels Schmith, and Emil Schiemann, same place. Filed Mar. 15, 1897. Serial No. 627,549. (No model.) Patented in Norway May 15, 1896, No. 4,999, and in Germany May 19, 1896, No. 89,580.



Claim.—1. The combination with a casing, of a crank-shaft projectiog out thereof, an alarm, gearing connecting the alarm with the crank-shaft and driving the alarm therefrom, electric-circuit-closing mechanism, a motor for operating the same, the motor being controlled by the crank-shaft, and a stop-pawl released by the movement of said circuit-closing mechanism and engaging the gearing for operating the alarm whereby to stop the alarm.

2. The combinatioo with a casing, of a crank-shaft mounted therein, an alarm geared with the crank-shaft and driven thereby, an electric-circuit-closing apparatus, a motor for operating the same, a restraining-pawl for the motor, the pawl being controlled by the crank-shaft, and a stop-pawl for the alarm, the stop-pawl being released by the circuit-closing mechanism.

3. The combination with a support, of a shaft revolubly mounted therein, an alarm driven mechanically from the shaft, a lock-arm capable of restraining the movement of the shaft, a disk driven by the shaft and having a pin thereon, a pawl tripped by the pin of the disk, a swinging arm normally engaging the lock-arm to hold the same inactive, a motor in connection with said arm, gearing also in connection with the arm, the gearing being restrained by the pawl, and an electrical-circuit controller driven from the gearing.

4. The combination of a revoluble disk having a tripping-pin, two three-armed pawls successively tripped by said pin, a shaft, a motor in connection with the shaft to turn the same, a disk fixed to the shaft and having a shoulder engaged by one of the pawls, a supporting-arm adjacent to one arm of the other pawl and serving to support the same, a pin fixed to the disk of the shaft and serving to trip the supporting-arm, gearing in connection with the shaft, and a disk having a shoulder engaged by one arm of each pawl and being in connection with said gearing.

5. The combination of a shaft, a motor in connection therewith, a disk fixed thereto and having a shoulder and also having a pin, a supporting-arm hung adjacent to the disk and having a shoulder, two pawls, one pawl having an arm coacting with the shoulder of the supporting-arm and the other pawl having an arm bearing on the disk, a second shaft, gearing connecting the two shafts, and a second disk fixed to the second shaft and having a shoulder, and each pawl having an additional arm bearing against said shoulder of the second disk.

6. The combination of the three-armed pawl, means for tripping one arm of said pawl, a member restrained by a second arm of the pawl, and a supporting-arm having a shoulder capable of holding the third arm of the pawl.

7. The combination of the three-armed pawl, one arm of which serves to permit the tripping of the pawl, a member restrained by the second arm of the pawl, and a supporting-arm having a shoulder whereby to hold the third arm of the pawl.

8. The combination of a three-armed pawl, one arm of the pawl serving to permit the tripping of the pawl, a member restrained by the second arm of the pawl, and a disk having a notch, the disk being engaged by the third arm of the pawl and the notch serving to regulate the position of the pawl with reference to said member.

9. The combination of a three-armed pawl, one arm of which serves to permit the tripping of the pawl, a member restrained by the second arm of the pawl, a supporting-arm having a shoulder engaged by the third arm of the pawl, and a disk mounted to turn in the vicinity of the supporting-arm and provided with a pin whereby to trip said supporting-arm.

10. The combination of two three-armed pawls, one arm of each pawl serving to permit the tripping thereof, a member held by the second arm of each pawl, a supporting-arm mounted adjacent to the third arm of one of the pawls and having a shoulder whereby to support said third arm, and a disk against which the third arm of the remaining pawl bears, such disk having a peripheral notch and the disk also having a pin capable of tripping the supporting-arm.

11. The combination of a driven shaft, a disk fixed to the shaft and having a shoulder and also having a pin, gearing in connection with the shaft and serving to transmit a distant alarm, a pawl pivoted adjacent to the disk and bearing on the periphery thereof, a second pawl adjacent to the first pawl, means coacting with the pin and serving temporarily to hold the second pawl raised, a local alarm, a revoluble shaft geared with the local alarm and serving to drive the same, and a second disk controlled by said revoluble shaft and engaged by both pawls and the pin serving to trip the second-named pawl.

12. The combination of a driven shaft, gearing in connection therewith and serving to transmit a distant alarm, a disk fixed to the shaft and having a shoulder thereon and also having a pin, two pawls pivoted adjacent to the shaft, one of the pawls having an arm bearing against the shoulder of the disk, an arm pivoted adjacent to the shaft and having a shoulder serving normally to support the other pawl, means for successively tripping the pawls and a disk connected with said gearing, the disk having a shoulder coacting with an arm on each of the pawls.

13. The combination of a revoluble and driven shaft, gearing in connection with such shaft and comprising a shouldered disk, a second shouldered disk, the second shouldered disk being fixed to the shaft, a three-armed pawl, two arms of said pawl bearing respectively on the two shouldered disks, and means for tripping the pawl, such means coacting with the third arm thereof.

14. The combination of a driven shaft, gearing in connection therewith and comprising a shouldered disk, a shouldered disk fixed to the shaft, two three-armed pawls, each pawl having two of its arms coacting respectively with the disks, an arm pivoted adjacent to one of the pawls and having a shoulder on which one arm of said pawl bears, a pin fixed to the disk of the shaft and serving to throw the pivoted arm and means for successively tripping the pawls through the medium of the remaining arms thereof.

15. In a fire-alarm, the combination of a casing, a motor therein, means for restraining the motor, gearing comprising a crank located outside of the casing, by which gearing the said means are actuated to release the motor, an arm in connection with the motor and mounted to swing as the motor operates, the arm serving to indicate the condition of the apparatus, and means for locking said gearing, such locking means being controlled by the arm, so that as the arm moves with the motor, the locking means act to stop the said gearing.

16. In a fire-alarm, the combination with a casing, of a motor in the casing, a local alarm carried by the casing, a crank-shaft geared with said alarm, gearing for transmitting a distant alarm, a pawl serving to connect the gearing with the motor, an arm in connection with the motor and moving with the same, a pawl restraining the motor, and means in connection with the crank-shaft to operate the pawl to release the motor.

609,310. **ROTARY ENGINE.** JOHN H. VANDERGRIFT, Allenport, Pa. Filed Mar. 1, 1898. Serial No. 672,191. (No model.)

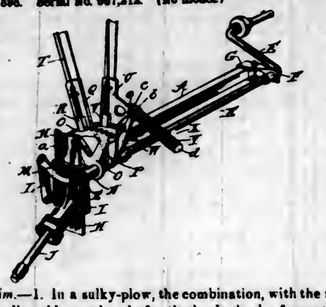


Claim.—1. A rotary engine comprising a cylinder formed of two side plates engaging a rim, said side plates being provided on their inner face with circumferential recesses or grooves, adjustable packing-rings engaging in said recesses or grooves, said side plates carrying pins arranged within the recesses or grooves and engaging the adjustable packing-rings to prevent the same revolving, a power-shaft journaled in said plates, a piston mounted on said shaft within the cylinder, said piston being substantially elliptical in form and being cut away at opposite sides of its periphery to provide two oppositely-disposed steam-receiving faces, steam-chests arranged at opposite sides of the cylinder, inlet-ports arranged above the said steam-chests and communicating with the cylinder, said steam-chests being provided with suitable exhaust-ports, plungers or slide-valves operating in said steam-chests and protruding into the cylinder to be engaged by the piston, said plungers or valves being provided with grooves on their one face which when the port is open register with the steam-chests and permit the inactive or dead steam to be exhausted into said chest, substantially as shown and described.

2. In a rotary engine, the combination of the cylinder formed of the side plates 5, and rim 16, suitable inlet ports for said cylinder, said side plates 5 being provided on their inner face with circumferential grooves or recesses, said grooves or recesses being adapted to receive adjustable packing-rings which are provided on their one side with recesses 10^a, said side plates 5 carrying pins located within the circumferential recesses or grooves to engage in the apertures provided therefor in the corresponding face of the packing-rings, screws engaging through the side plates and engaging the packing-rings for adjusting the same, a power-shaft journaled in the side plates, a substantially elliptical-shaped piston mounted on said shaft within the cylinder, steam-chests arranged at opposite sides of the cylinder and having suitable outlet-ports, said steam-chests being closed at their outer end by a plate provided with a central aperture to receive the stem of the slide-valve or plunger operating in said steam-chest, said slide-valves or plungers having grooves extending partially of their length, the grooves in one slide-valve or plunger being on the opposite face to those of the opposite slide-valve or plunger so that the inactive or dead steam will be simultaneously exhausted from the compartments of the cylinder while the live steam is being admitted, substantially as shown and described.

3. In a rotary engine, the combination of the cylinder formed of the side plates 5, and rim 16, a power-shaft journaled in said side plates, a piston mounted on said power shaft, said piston being substantially elliptical in form and dividing the cylinder into two compartments, said side plates being provided on their inner face with circumferential grooves or recesses, adjustable packing-rings engaging in said grooves or recesses, said plates carrying hubs on their outer face to receive packing for the power-shaft, caps engaging said hubs to hold the packing in position, said piston being provided at two opposite points on its periphery with cut-away portions which form steam-receiving faces, steam-chests arranged at opposite sides of the cylinder, inlet-ports for said cylinder, said ports being so arranged as to admit the steam simultaneously into the two compartments of the cylinder, slide-valves or plungers operating in said steam-chests, said slide-valves or plungers having grooves extending partially of their length and forming outlets for the inactive or dead steam which is exhausted into the steam-chest simultaneously from both compartments and also simultaneously with the admission of the live steam into contact with the steam-receiving faces of the piston, the stems of said slide-valves or plungers protruding through the outer plate of the steam-chests and provided with a suitable packing, substantially as shown and described.

609,311. **SULKY-PLOW.** LEWIS R. WATERMAN, Moline, Ill., assignor to the Rock Island Plow Company, Rock Island, Ill. Filed Jan. 20, 1898. Serial No. 667,212. (No model.)



Claim.—1. In a sulky-plow, the combination, with the main axle and the adjustable crank-axle for the land-wheel, of a vertically-adjustable slide mounted upon the furrow-wheel end of the main axle and carrying the furrow-wheel spindle, and a single adjusting-lever coöperating with said slide and with the crank-axle, to simultaneously raise or lower both the land and furrow wheels by operation of the single lever.

2. In a sulky-plow, the combination, with the main axle and the adjustable crank-axle for the land-wheel, of a vertical guide-plate rigidly secured to the furrow-wheel end of the main axle, a vertically-adjustable slide mounted upon said plate and carrying the furrow-wheel spindle, a crank-arm connected to said slide, and a single lever connected both to said crank-arm and to the crank-axle of the land-wheel, whereby both the land and furrow wheels may be simultaneously raised or lowered by operation of said single lever.

3. In a sulky-plow, the combination, with the main axle, of the land-wheel crank-axle mounted upon the forward side of the main axle and exteeding substantially the full length thereof, a vertical guide-plate rigidly secured to the furrow-wheel end of the main axle, a vertically-adjustable slide mounted on said plate and carrying the furrow-wheel spindle, a sleeve loosely mounted upon the adjacent end of the crank-axle and provided with a projecting arm connected by a link with said slide, and a lever secured to or formed integral with said sleeve and also connected to the crank-axle, whereby said sleeve and the crank-axle may be simultaneously rocked in one direction or the other by operation of said lever, to simultaneously raise or lower the land and furrow wheels.

4. In a sulky-plow, the combination, with the main axle and the adjustable land-wheel crank-axle, of a vertically-adjustable slide mounted upon the furrow-wheel end of the main axle and carrying the furrow-wheel spindle, a lever connected with said slide to raise and lower the same, and a connection between said lever and the crank-axle controlled by a second lever, whereby the land-wheel and furrow-wheel may be simultaneously raised or lowered by operating the first-mentioned lever, and whereby the land-wheel may be raised or lowered independently of the furrow-wheel by operating the second lever independently of the first-mentioned one.

5. In a sulky-plow, the combination, with the main axle and the adjustable land-wheel crank-axle, of a vertically-adjustable slide mounted upon the furrow-wheel end of the main axle and carrying the furrow-wheel spindle, a lever connected with said slide to raise and lower the same, a rack rigidly secured to said lever, and a second lever connected with the crank-axle and provided with a latch coöperating with said rack, whereby the land-wheel and furrow-wheel may be simultaneously raised or lowered by operating the first-mentioned lever, and whereby upon disengaging the latch of the second lever from the rack and swinging the lever forward or backward the land-wheel may be raised or lowered independently of the furrow-wheel.

6. In a sulky-plow, the combination, with the main axle, of the land-wheel crank-axle mounted upon the forward side of the main axle and extending substantially the full length thereof, a vertical guide-plate rigidly secured to the furrow-wheel end of the main axle, a vertically-adjustable slide mounted thereon and carrying the furrow-wheel spindle, a sleeve loosely mounted upon the furrow-wheel end of the crank-axle and having secured to or formed integral with it a lever and a projecting arm, a link connecting said arm with the slide, a rack rigidly secured to the main axle or the vertical guide-plate, or both, and coöperating with the latch of said lever, a second rack rigidly secured to said lever, and a second lever connected to the crank-axle and having a latch coöperating with said second rack, for the purposes described.

7. In a sulky-plow, the combination of the main axle A having the vertical guide-plate H rigidly secured to its end, the crank-axle E mounted upon the forward side of the main axle A and extending

substantially the full length thereof, the slide I mounted upon the plate H and carrying the furrow-wheel spindle J, the sleeve N loosely mounted upon the end of the axle E and provided with the rearwardly-projecting arm M, the link L connecting the arm M with the slide I, and the lever Q rigidly secured to the sleeve N and also connected with the crank-axle E, and having a latch cooperating with the fixed rack O, for the purpose described.

8. In a sulky-plow, the combination of the main axle A having the vertical guide plate H rigidly secured to its end, the crank-axle E mounted upon the forward side of the main axle A and extending substantially the full length thereof, the slide I mounted upon the plate H and carrying the furrow-wheel spindle J, the sleeve N loosely mounted upon the end of the axle E and provided with the rearwardly-projecting arm M, the link L connecting the arm M with the slide I, the lever Q rigidly connected to the sleeve N and provided with a latch cooperating with the fixed rack O, the rack P rigidly secured to or formed integral with the sleeve N, and the lever U connected to the axle E and provided with the latch cooperating with the rack P, for the purposes described.

9. In a sulky-plow, the combination, with the main axle A having the vertical guide-plate H secured to its end, the crank-axle E mounted at the land-wheel end of the main axle A in the clip G secured to and projecting forward from the axle A, and extending along the forward side of the axle A to the furrow-wheel end thereof, the rack-plate O rigidly secured to the plate H and having its lower end fitted to receive and form a support and bearing for the end of the axle E, the slide I mounted upon the plate H and carrying the furrow-wheel spindle J, the sleeve N loosely mounted upon the end of the axle E and extending through the rack-plate O, the arm M formed integral with and projecting rearwardly from the sleeve N, the link L connecting the arm M with the slide I, and the lever Q rigidly secured to the sleeve N and also connected with the axle E, and having a latch cooperating with the rack O, for the purpose described.

10. In a sulky-plow, the combination of the main axle A having the vertical guide-plate H secured to its end, the crank-axle E mounted at the land-wheel end of the main axle A in the clip G secured to and projecting forward from the axle A, and extending along the forward side of the axle A to the furrow-wheel end thereof, the rack-plate O rigidly secured to the plate H and having its lower end fitted to receive and form a support and bearing for the end of the axle E, the slide I mounted upon the plate H and carrying the furrow-wheel spindle J, the sleeve N loosely mounted upon the end of the axle E and extending through the rack-plate O, the arm M formed integral with and projecting rearwardly from the sleeve N, the link L connecting the arm M with the slide I, the lever Q rigidly secured to the sleeve N and provided with the latch cooperating with the rack O, the rack P formed integral with the sleeve N at its end opposite the arm M, the lever U loosely mounted upon the axle E and having a latch cooperating with the rack P, the arm W fast upon the axle E, the rod X having the head *d* at its forward end and passing at its rear end through the upper end of the arm W and a projecting ear upon the lever U, the spring X surrounding the rod Y, and the nut e screwed upon the rear end of said rod, for the purposes described.

609,812. TRIPLE VALVE. JOHN V. WELLS, Wilmerding, Pa.

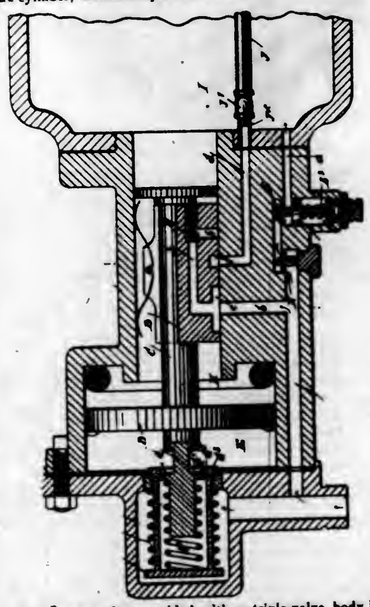
Filed Oct. 2, 1897. Serial No. 653,814. (No model.)

Claim.—1. A triple valve provided with a slide-valve adapted when moved in one direction to connect the train-pipe pressure with the brake-cylinder, a piston connected with the said valve and adapted to be acted on by excess train-pipe pressure, two springs for holding the piston normally in a release position, and a compressible gasket for the piston to rest on and compress the said gasket serving to make a close joint with the piston to prevent the leak of air and also serving by its resiliency to move the piston to disconnect the train-pipe pressure from the brake-cylinder, substantially as described.

2. A triple valve provided with a valve-body having two ports independently connected with the brake-cylinder, and a slide-valve arranged to uncover one of said ports to make connection with an auxiliary reservoir on an emergency application, the said slide-valve being provided with a recess in its face at all times in communication with the train-pipe pressure and a port leading from said recess, and adapted to connect the other port in the valve-body with the train-pipe pressure, substantially as shown and described.

3. A triple valve provided with a valve-body having two ports independently connected with the brake-cylinder, and a slide-valve arranged to uncover one of said ports to make connection with an auxiliary reservoir on an emergency application, the said slide-valve being provided with a port having a spring-pressed valve near one end and opening at the other end into a recess at all times in communication with the train-pipe pressure, the said port in the slide-valve being adapted to connect the other port in the valve-body with the train-pipe pressure, as shown and described.

4. A triple valve provided with a triple-valve body having a port for connecting the auxiliary reservoir with the train-pipe pressure and a port for connection with the brake-cylinder, a slide-valve having a recess for connecting the said ports with each other, a spring-pressed piston for operating the said valve, the said piston and valve being normally held in a release position with the said ports disconnected, and an elastic ring for the piston to rest on, the said ring being adapted to be compressed by the said piston when the latter is moved to cause the ports to be connected by the recess in the valve to allow excess of pressure to pass to the brake-cylinder, the resiliency of the said elastic ring causing it to expand to move the piston and valve to disconnect the ports and maintain the pressure in the brake cylinder, substantially as described.



5. A triple valve provided with a triple-valve body having a port for connecting the auxiliary reservoir with the train-pipe pressure, the port containing a check-valve and a graduated piston-valve, the said body being also provided with a branch port leading from the first-mentioned port, the valve-body being further provided with two separate ports connected with the brake-cylinder, and a slide-valve having a recess for connecting the branch port with one of the said brake-cylinder ports, the slide-valve also having a second recess for connecting the said brake-cylinder port with an exhaust-port, substantially as shown and described.

6. A triple valve provided with a triple-valve body having a port for connecting the auxiliary reservoir with the train-pipe pressure, the port containing a check-valve and a graduated piston-valve, the said body being also provided with two separate ports connected with the brake-cylinder, and a slide-valve having a recess for connecting the train-pipe pressure with one of the said brake-cylinder ports, the slide-valve also having a second recess for connecting the said brake-cylinder port with an exhaust-port, the other brake-cylinder port being adapted to be uncovered by the slide-valve, to connect the auxiliary reservoir with the brake cylinder, substantially as shown and described.

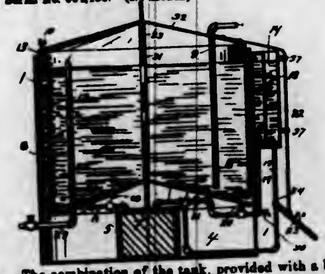
7. A triple valve provided with a triple-valve body having a port for connecting the auxiliary reservoir with the train-pipe pressure, the said port containing a check-valve and a piston-valve and a branch port leading from said port, the said body being also provided with two separate ports connected with the brake-cylinder, and a slide-valve having a recess at all times in communication with the train-pipe pressure and adapted to connect with one of the said brake-cylinder ports, the slide-valve also having an L-shaped recess for connecting both of the said brake-cylinder ports with an exhaust-port, substantially as shown and described.

8. A triple valve provided with a triple-valve body having a port for connecting the auxiliary reservoir with the train-pipe pressure, the port containing a check-valve and a piston-valve, the said body being also provided with a branch port leading from the first-mentioned port, the body being further provided with two separate ports connected with the brake-cylinder, and a slide-valve adapted to uncover one of said ports connected with the brake-cylinder to connect the auxiliary reservoir with the brake-cylinder, the said slide-valve being provided with a port having a valve near one end and opening at the other end into a recess formed on the face of the valve, the said recess being at all times in communication through the branch port in the body with the train-pipe pressure, the valved end of said port in the slide-valve being adapted to be moved in register with the other port in the body connected with the brake-cylinder, substantially as described.

9. A triple valve provided with a triple-valve body, a slide-valve contained in said valve-body, a cylinder, a piston mounted to travel in said cylinder and connected at one side by a stem with the said slide-valve, the other side of the said piston being connected with a stem provided with a collar a drain-cup having an inlet-port connected with the train-pipe, a cup arranged within said drain-cup and provided with an annular internal flange against which the collar on the valve-stem abuts, a spring arranged within the said cup and pressing on the collar on the valve-stem, a spring pressing on said cup and contained within the drain-cup, the said springs holding the piston normally in a release position, and a compressible gasket arranged within the cylinder for the piston to rest on and compress, substantially as shown and described.

10. A triple valve provided with a triple-valve body having a port for connecting the auxiliary reservoir with the train-pipe pressure, and a port for connection with the brake-cylinder, a slide-valve for connecting the said ports with each other, a piston connected with the said valve for operating the same, a cylinder in which the piston is mounted to travel, a drain-cup communicating with the said cylinder and having an inlet-port connected with the train-pipe, springs for holding the piston normally in a release position, and a compressible gasket held in the cylinder and adapted to be compressed by the piston, as and for the purpose set forth.

609,813. ACETYLENE-GAS GENERATOR. JOHN A. WELSON, Canal Dover, and JAMES V. PRICE, Gnadenhütten, Ohio. Filed Dec. 28, 1897. Serial No. 664,139. (No model.)



Claim.—The combination of the tank, provided with a bottom, and the conical secondary bottom 3, a chamber formed between said bottoms, a gasometer located within the tank and above the conical bottom, the receptacle 5 located in the chamber between the bottoms having located therein the carbid-box 7, an auxiliary tank, the pipe 15 leading from the auxiliary tank to the T 16 and extended below the top of the carbid-box, the pipe 17 connecting the T and the carbid-chamber, the valve 24 provided with a slotted lever, a rod connected to the lever and to the gasometer, the pipe 11 leading from the carbid-receptacle to the cooling-coil and provided with a valve, and the pipes 19 and 20, substantially as and for the purpose set forth.

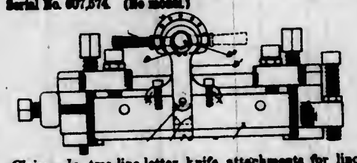
609,814. BICYCLE-GEARING. JAMES R. WHITEAVER, Edgewater, Colo. Filed Oct. 4, 1897. Serial No. 654,600. (No model.)



Claim.—1. A gear-wheel, comprising a body having teeth provided with approximately radial slots open toward the adjacent teeth and also open at one face of said body, a plate secured upon the said face of the body and provided with teeth covering one open side of each slot, said teeth having inwardly-projecting edges at the slots, a cross projection or stop at the outer end of each slot, and balls held in said slots.

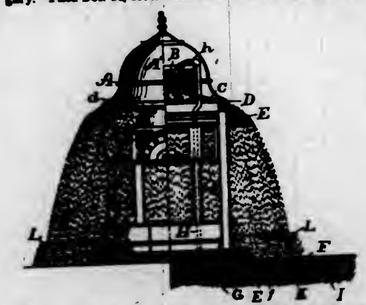
2. A gear-wheel having a central portion of reduced thickness forming shoulders at its junction with the marginal portion of the wheel, a crank-shaft made in two sections, each provided at its inner end with an enlargement or flange-plate seated in the reduced central portion of the wheel and against the shoulders thereof, and means for connecting the shaft-sections and wheel.

609,815. KNIFE ATTACHMENT FOR LINOTYPE-MACHINES. WATKIN WYNNE, Waverly, New South Wales. Filed Oct. 1, 1896. Serial No. 607,574. (No model.)



Claim.—In two-line-letter knife attachments for linotype machines, the combination with a stationary planing-knife, of a sliding gap-knife adapted to be moved to and from the cutting edge of the stationary knife, a rocking shaft having a handle at one end and an eccentric at the other, a rod or pitman connection between the eccentric and gap-knife, whereby the latter is moved, a quadrant or sector adjacent to the said handle, and adjustable stop-pieces on the sector for limiting the movement of the handle, substantially as described.

609,816. ARRANGEMENT FOR PRODUCING WATER WALLS ON OUTSIDE OF BUILDINGS. IAN ZAWIENSKI, Vienna, Austria-Hungary. Filed Dec. 14, 1897. Serial No. 661,895. (No model.)



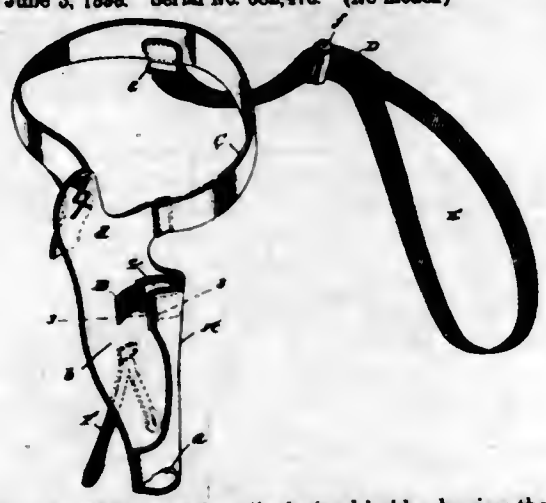
Claim.—1. In a device of the character described the combination with a building of a pipe D, arranged around the upper portion of the said building, discharge-openings in the said pipe, a curved surface arranged around the said building beneath the said pipe to receive the water therefrom and direct the fall thereof, pipes connecting the said pipe D with a suitable source of water, and a channel surrounding the base of said building to receive the water; substantially as described.

2. In a device of the character described the combination with a building of a pipe D, arranged around the upper portion of the said building, discharge-openings in the said pipe, a curved surface arranged around the said building beneath the said pipe to receive the water therefrom and direct the fall thereof, pipes connecting the said pipe D with a suitable source of water, a channel to receive the water, and a pipe having discharge-openings arranged in the said channel and connected with the water source; substantially as described.

3. In a device of the character described the combination with a building, a reservoir supported in the top of the said building, and means for supplying the said reservoir with water, of a pipe D, arranged around the upper part of the said building, discharge-nozzles in the said pipe, a curved surface arranged around the said building beneath the said nozzles to receive the water therefrom and direct the fall thereof, and pipes connecting the pipe D with the said reservoir, substantially as described.

4. In a device of the character described the combination with a building, a reservoir supported in the top of the said building, and means for supplying the said reservoir with water, of a pipe D, arranged around the upper part of the said building, discharge-nozzles in the said pipe, a curved surface arranged around the said building beneath the said nozzles to receive the water therefrom and direct the fall thereof, pipes connecting the pipe D with the said reservoir, a channel to receive the water and means for returning the water from the channel to the reservoir, substantially as described.

609,817. PISTOL-HOLDER. ELMER D. ZIMMERMAN, Alzada, Mont. Filed June 3, 1898. Serial No. 682,476. (No model.)

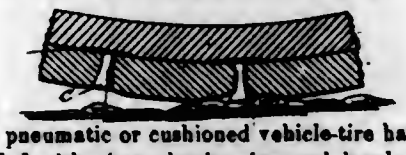


Claim.—1. The herein-described pistol-holder having the opening *b* in one side for the lateral introduction and removal of a pistol and also having the U-shaped spring connected to it; the said spring being disposed at right angles to the length of the holder with its mouth contiguous to the opening *b* thereof whereby it is enabled to grasp and hold a pistol and permit of the same being drawn laterally from the holder, substantially as specified.

2. The herein-described pistol-holder having the shallow pocket *a* at its lower end and the opening *b* in one side extending from the pocket to its upper end and also having the cover *c* connected to its inner side and the U-shaped spring arranged in said cover; the said spring being disposed at right angles to the length of the holder with its mouth contiguous to the opening *b* thereof, substantially as specified.

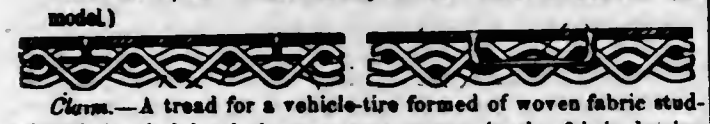
3. The combination of a pistol-holder, tabs connected thereto, a shoulder-strap also connected to the holder, and an elastic back-strap adjustably connected to the shoulder-strap and terminating in a shoulder-loop, substantially as specified.

609,818. VEHICLE TIRE. CALVIN T. ADAMS, New York, N. Y. Filed June 16, 1897. Serial No. 640,971. (No model.)



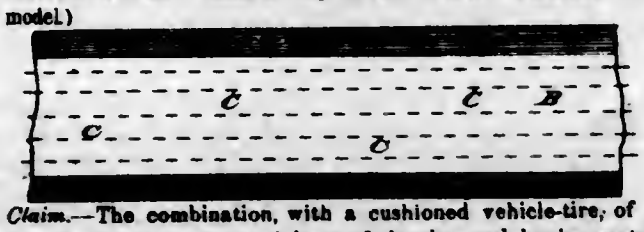
Claim.—A pneumatic or cushioned vehicle-tire having an outer fabric-ply studded with rivets having integral heads on both ends bearing against opposite sides of said fabric-ply.

609,819. VEHICLE-TIRE. CALVIN T. ADAMS, New York, N. Y. Filed June 16, 1897. Renewed July 21, 1898. Serial No. 686,532. (No model.)



Claim.—A tread for a vehicle-tire formed of woven fabric studded with headed hard rivets or parts woven in the fabric, having their heads retained by the meshes of the fabric and their ends exposed on the outer surface of the tread.

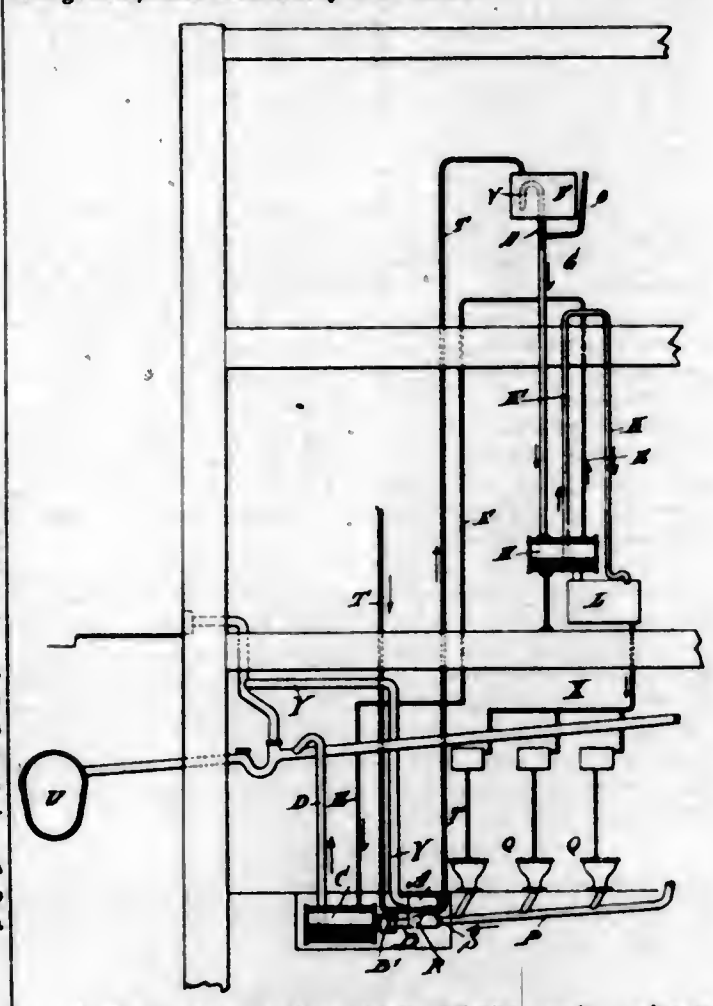
609,820. VEHICLE-TIRE. CALVIN T. ADAMS, New York, N. Y. Filed Dec. 26, 1895. Renewed July 21, 1898. Serial No. 686,533. (No model.)



Claim.—The combination, with a cushioned vehicle-tire, of a tread applied to the entire periphery of the tire, and having metallic wire interwoven with itself, parts of said interwoven wire lying substantially flush with the outer surface of the tread, and forming cushioned antislip bearings covering the sides and bottom of the tread.

609,821. APPARATUS FOR RAISING SEWAGE. SAMUEL H. ADAMS, London, England. Filed May 3, 1897. Serial No. 634,893. (No model.)

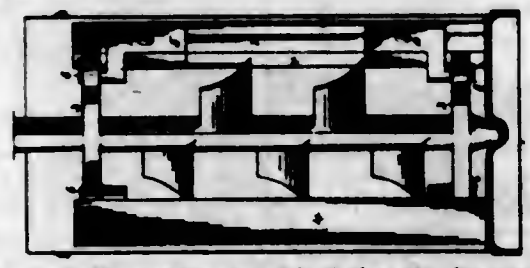
Claim.—1. The combination with the receptacle for the sewage or other matter, of a float in said receptacle, a water-supply pipe having a valve controlled by said float, an air-receptacle connected to said water-supply pipe, an air-pipe leading from the air-receptacle to the sewage-receptacle, and a discharge-pipe connected to the sewage-receptacle, substantially as described.



2. The combination of an automatic flushing-tank, a valve controlling the water-supply to said tank, a receptacle in which said valve is operated by the sewage to be raised, an air-receptacle, a forcing-receptacle, an air-pipe connecting them, a connection from the air-receptacle to the flushing-tank, and another connection from the sewage-receptacle to the forcing-receptacle, substantially as described.

3. The combination with the sewage-collecting pipe and the sewage-receptacle, of the forcing-receptacle having a valved connection with the sewage-collecting pipe and also having a discharge-pipe connected to the sewer, a float in the sewage-receptacle, a water-supply pipe having a cock or valve controlled by said float, a flush-tank connected to said water-supply pipe, a pressure pipe having a siphon connection to said flush-tank, and provided below the flush-tank with an air-inlet and a vent-pipe extending therefrom to a level higher than that of the siphon, an air-receptacle to which is connected the lower end of said pressure-pipe, an air-pipe leading from the air-receptacle to the forcing-receptacle, a withdrawing pipe for carrying the water away from the air-receptacle, flushing or other devices connected to the withdrawing-pipe, and a connection from said flushing devices to the sewage-collecting pipe, substantially as described.

609,822. DASHER FOR ICE-CREAM FREEZERS. CHRISTIAN AICHELE, Philadelphia, Pa., assignor to the North Brothers Manufacturing Company, same place. Filed Oct. 1, 1897. Serial No. 653,718. (No model.)

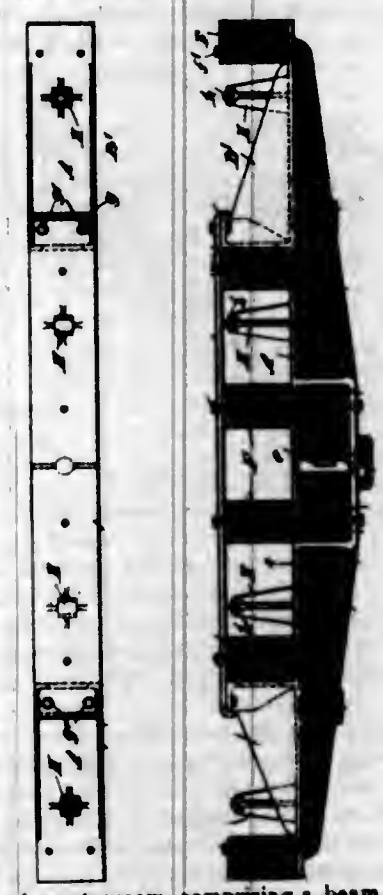


Claim.—1. The combination of the dasher of an ice-cream freezer with a freely-swinging scraper mounted so as to have vertical play on said dasher, the bottom of the scraper, when the dasher is inserted in the can, resting upon the bottom of said can, whereby the rotation of the can or dasher will tend to swing the scraper outwardly.

2. The combination of a dasher having upper and lower projecting arms, with a freely-swinging scraper having pintle-plates projecting between said arms and provided with projecting pintles adapted

to openings in the dasher-arms, said pintle-plates being so mounted on the dasher that, when the scraper rests on the bottom of the can, neither plate will be in contact with its arm.

609,323. CAR-TRANSOM. GUSTAF A. AKERLIND and JOHN T. CARROLL, Chicago, Ill. Filed July 16, 1897. Serial No. 644,774. (No model.)



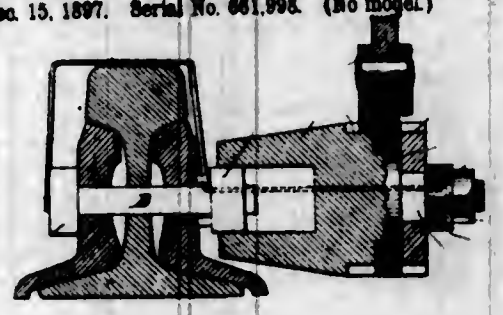
Claim.—1. A car-transom, comprising a beam having through-sockets for the draft-timbers, buttresses rising from said beam near its outer ends, and a truss rod or plate fixed to the buttresses and extending over the intermediate floor-beams, substantially as described.

2. In a car-transom, the combination of a beam, the top whereof consists mainly of a horizontal top plate, and a vertical web beneath the center portion, having a transverse plate at the bottom of the web extending at each end upward to the top plate, the part inclosed by said plate or web having through-sockets for the reception of the draft-timbers, the top plate near each end having a buttress rising therefrom, and a tension-plate attached to the tops of both buttresses, substantially as described.

3. In a car-transom, the combination of a beam, the top whereof consists of a horizontal top plate, and a vertical web beneath the central portion having a transverse plate at its bottom extending at each end upward to the top plate, the part inclosed by said plate having a through-socket at each end for the reception of the draft-timbers, a central socket for the king-bolt, having a keyway therethrough, the top plate near each end having a buttress rising from the top thereof, and a tension-bar attached to the tops of both buttresses, substantially as described.

4. In a car-transom, the combination of a beam, the body whereof consists mainly of a horizontal top plate with lugs or supports for the longitudinal truss-rods of the car, a vertical web beneath said top plate and having side bearings attached thereto, the central portion of the beam having a transverse plate at its bottom extending at each end upward to the top plate, the part inclosed by said plate having a through-socket at each end for the reception of the draft-timbers, a central socket for the king-bolt, a central bearing-ring projecting beneath the beam and concentric with said socket, the top plate near each end having a buttress rising from the top thereof, and a tension-truss attached to the tops of both buttresses, substantially as described.

609,324. WRENCH. JOHN H. ATKINSON, Winnebago, Minn. Filed Dec. 15, 1897. Serial No. 661,996. (No model.)

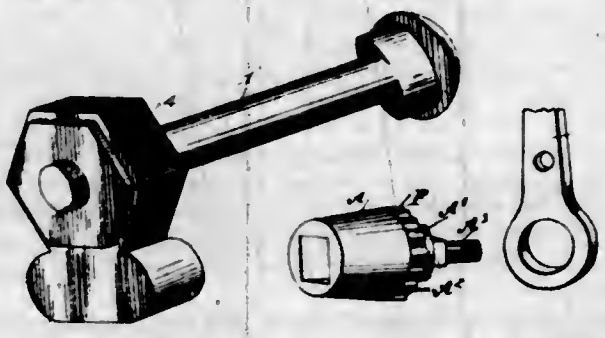


Claim.—1. A wrench provided with a head adapted to engage a nut, a lever fulcrumed loosely on the head, and carrying two pawls extending in opposite directions, ratchet-wheels on the said head, and adapted to be engaged by the said pawls, to turn the head and screw up or unscrew the nut, a clamping device comprising a yoke carried by the said head, and a clamp held on the said yoke, and formed with a U-shaped portion adapted to straddle a rail-joint and to engage the head of a bolt, substantially as shown and described.

2. The combination of a wrench-head, having a ratchet-wheel formed thereon and having a reduced portion projecting outwardly from the said ratchet-wheel, a lever mounted to turn on the reduced portion, a second ratchet-wheel mounted on the reduced portion and lying against the outer side of the lever, two pawls carried on the lever and respectively engaging the ratchet-wheels, a yoke carried loosely on said reduced portion and outward from the second ratchet-wheel, and a clamp pivotally connected with the ends of the yoke and capable of engaging a bolt to prevent the turning of the same under the action of the wrench-head.

3. The combination of a wrench-head, means by which to turn the wrench-head, a yoke mounted loosely on the wrench-head and projecting beyond each side thereof, and a swinging clamp mounted directly on the ends of the yoke and projecting longitudinally with the wrench-head beyond the same and capable of engaging a bolt to prevent the bolt from turning.

609,325. WEIGHTED NUT-LOCK. EUGENE D. BOASSO, Charenton, La., assignor of one-half to Herbert M. Cotten, same place. Filed July 26, 1897. Serial No. 645,986. (No model.)



Claim.—The combination with a bolt and nut, of a nut-lock comprising a body provided in its outer side with a recess conforming in shape and dimensions to and adapted to receive a nut so that the nut will be completely surrounded and inclosed, the inner side of the lock being closed with the exception of a round bolt-opening communicating with said recess, and a weight connected to the body and having a plane or flat lower surface with half-round ends, the closed side of the lock being designed to be clamped between the nut and the object through which the bolt passes, substantially as specified.

609,326. COMPOSITION FOR BUFFING-WHEELS. ARTHUR H. BOSANI, New York, N. Y., assignor to the Foot Manufacturing Company, same place. Filed Apr. 5, 1898. Serial No. 676,549. (Specimens.)

Claim.—1. A buffing composition consisting of earthy matter and camphor, substantially as set forth.

2. A buffing composition of Vienna lime and camphor, substantially as set forth.

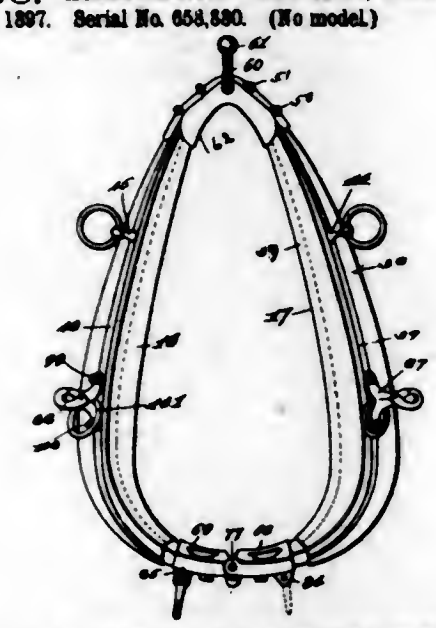
609,327. BLUE-BLACK DYE AND PROCESS OF MAKING SAME. RENÉ BOHN, Mannheim, Germany, assignor to the Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Filed Dec. 27, 1897. Serial No. 663,722. (Specimens.) Patented in Germany Nov. 23, 1895, No. 88,236, June 14, 1896, No. 92,471, Aug. 18, 1896, No. 92,472, and Aug. 20, 1896, No. 92,538; in France Apr. 10, 1896, No. 255,452, and in England Apr. 13, 1896, No. 7,766, and Sept. 12, 1896, No. 20,250.

Claim.—1. As a new article of manufacture, the new violet-blue to blackish coloring-matter which can be derived from dinitronaphthalene and which is soluble in water, gives a blue color in ammoniacal water and which yields a fluorescent bluish or bluish-green color in concentrated sulfuric acid.

2. As a new article of manufacture, the new violet-blue to blackish coloring-matter, which can be derived from the technical dinitronaphthalene and which is soluble in water, gives a blue color in ammonia-water and which yields a fluorescent bluish to bluish-green color in concentrated sulfuric acid and contains admixed a browner coloring-matter and so gives to boiling anilin a brown color, all substantially as described.

3. The process for the manufacture of a violet-blue to blue-black wool dyestuff by submitting a dinitronaphthalene to the action of a reducing agent, such as specified, in the presence of a sulfite in alkaline solution, all substantially as described.

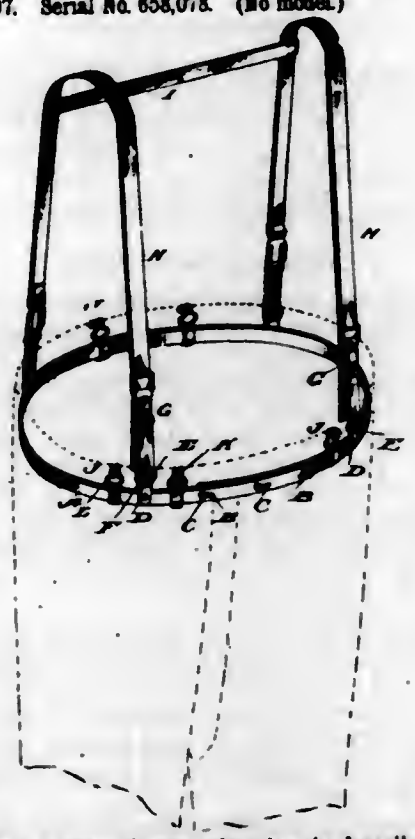
609,328. HORSE-COLLAR. CARL BLOCK, St. Louis, Mo. Filed Nov. 17, 1897. Serial No. 658,880. (No model.)



Claim.—1. In a horse-collar, a pair of rigid cores, each comprising the bent-wood portion 19, the plate 20 secured to the inner side of the upper end of the wood portion and provided with suitably-located integral lugs, which lugs pass through the wood portion and are provided with screw-threaded apertures in which are located the screws that hold the hinged plates that connect the upper ends of the cores, the plate 27 secured to the inner face of the wood portion below the lower end of the first-mentioned plate and provided with an integral lug through which passes a screw-threaded aperture and in which is located the shank of the line-ring, the ferrule 32 located upon the lower end of the wood portion and provided with suitably-located screw-threaded apertures, the plate 29 located upon the inner face of the wood portion and provided with suitably-located screw-threaded apertures, in which apertures are located the screws that hold the trace-hook, casings inclosing said cores, and means whereby the lower ends of the cores are held together, substantially as specified.

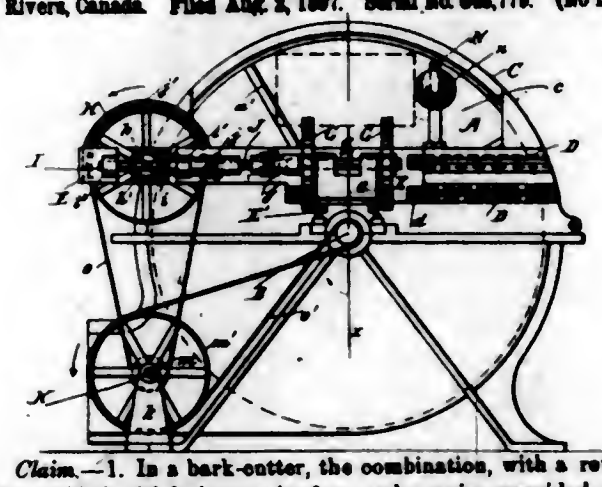
2. A horse-collar, constructed with suitable rigid cores, suitable casings for said cores, packing within said casings around said cores, an adjustable hinge connecting the upper ends of said cores, a separable adjustable latch connecting the lower ends of said cores, the hames 39 and 40 located upon the outside of the casings upon said cores, and the trace-hooks 87 and 88, the fastening-screws of which trace-hooks pass through the hames and into the cores, substantially as specified.

609,329. SUSPENDERS. JOSEPH B. BOOS, Carroll, Iowa. Filed Nov. 10, 1897. Serial No. 658,078. (No model.)



Claim.—The improved suspenders herein described and shown consisting of a flexible band adapted to encircle the waist of the wearer just inside the trousers, ears and rings secured to the band, shoulder-straps attached to said rings and adapted to pass over the shoulders of the wearer, and loops secured on the band and having the forward inverted-U-shaped portion adapted to pass over the edge of the trousers and engage the shank of the button and the expanded rear portion to accommodate the cloth back of the button.

609,330. BARK-CUTTER. SAMUEL W. BUTTERFIELD, Three Rivers, Canada. Filed Aug. 2, 1897. Serial No. 646,779. (No model.)

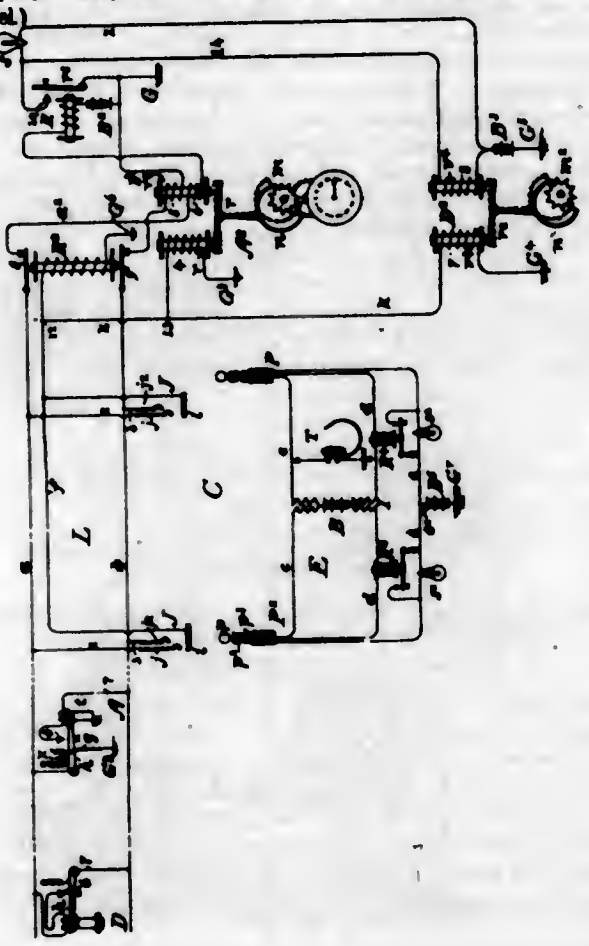


Claim.—1. In a bark-cutter, the combination, with a revoluble disk provided with knives on its face, and a casing provided with an opening at its upper part; of a carriage secured to the front end of the said casing and provided with an inclined support, a bracket slidable on the said support, toothed wheels journaled in the said bracket and arranged to support the log in front of the cutters, and driving mechanism for revolving the said wheels, substantially as set forth.

2. In a bark-cutter, the combination, with a revoluble cutting-disk, and its casing provided with horizontal guides; of a carriage slidable on the said guides and provided with an inclined support, a bracket slidable on the said support, and toothed wheels, for supporting and revolving the log in front of the said disk, journaled in the said bracket, substantially as set forth.

3. In a bark-cutter, the combination, with a shaft and toothed wheels for supporting the log, of a slidable bracket carrying the said shaft and wheels, a carriage supporting the said bracket, a driving-pulley carried by the said carriage, a shaft and intergearing bevel-toothed wheels driven from the said pulley, and an intermediate shaft and universal joints coupling the adjacent ends of the two aforesaid shafts, substantially as set forth.

609,331. TELEPHONIC MEASURED-SERVICE SYSTEM. WILLIAM W. DEAN, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Nov. 16, 1897. Serial No. 658,670. (No model.)



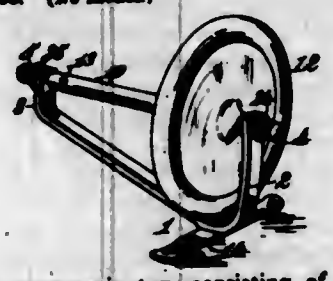
Claim.—1. The combination in a telephone-exchange system of a subscriber's circuit connecting two substations with a central station, call-sending devices at the substations, call-answering devices at the central station, and two call-registering mechanisms associated with said circuit at the central station, actuated by the normal operation, successively of the call-sending devices of either substation and the central call-answering devices, for discriminatively counting and registering the calls of the said substations, substantially as set forth.

2. The combination in a telephone system of an exchange-circuit having two substations and extending to a central station, call-sending devices at the substations; call-answering devices at the central station; with two associated call counting or registering mechanisms placed at the central station, one adapted to count and register the answered calls of one of the said substations, and the other to count and register the answered calls of both substations, whereby the number of matured calls chargeable to each substation severally can readily be determined; substantially as described.

3. In a telephone-exchange system, the combination of a main telephone-circuit; two substations and a central station connected therewith; call-signal-transmitting devices at the said substations; call-signal-answering devices at the central station; two call-registering mechanisms representing the two substations respectively, associated with the said main circuit and each having two actuating-electromagnets and being organized to count and record a call only when their said magnets are excited by two successive current impulses, one consequent on the operation of the substation-call-transmitting devices, and the other consequent on the operation of the central-station-answering devices, and connections whereby one of said actuating electromagnets of one registering mechanism only is energized to attract its armature when the call-transmitting device of one station is operated, and an electromagnet in each of the registering mechanisms is energized to attract its armature when the call-transmitting device of the other station is operated, the said registering mechanisms being respectively adapted to count and indicate the calls of their corresponding substations, one directly and the other comparatively, substantially as and for the purposes set forth.

4. The combination in a telephone system, of a metallic main circuit connecting two substations with a central station; a grounded circuit extending between one of the said substations and the central station and having for its main line one of the conductors of the said metallic circuit; a call-signal-receiving relay at the central station included in both of the said circuits, means at the two substations for closing the said two circuits respectively by the act of transmitting a call-signal; call-answering switch devices at the said central station; two local circuits at the central station, one controlled by the said call-receiving relay, and the other by the said call-answering switch devices; two call-registering mechanisms representing the substations respectively, each having two actuating-electromagnets, one magnet of each being in the local circuit controlled by the call-answering devices, the remaining magnet of one, being in the said two main circuits, but operatively in the grounded circuit only, and the remaining magnet of the other being in the relay-controlled local circuit; whereby the registering mechanism having the main line-magnet is enabled to register the calls of one of the substations, while that having the relay-controlled magnet is enabled to register the calls of both substations; substantially as specified.

609,882. GYROSCOPIC TOY. FRED H. DONALDSON, EDWARD H. OWEN, and CHARLES H. WILLIAMS, Sarvanna, Cal. Filed Aug. 19, 1897. Serial No. 648,795. (No model.)



Claim.—1. A gyroscopic toy, consisting of a frame, having spindle-bearings and a base or foot-piece constructed to rest upon and traverse the surface of a support, a spindle journaled on said bearings in a manner to be true with respect to one and eccentric with respect to the other, and a weighted body fixed on the spindle at or near one end thereof and of which the center of gravity is eccentric to the axis of rotation by virtue of said eccentric bearing, substantially as and for the purposes described.

2. A gyroscopic toy, consisting of a frame having at its ends arms or members provided with spindle-bearings, a spindle journaled on said bearings in a manner to be true with respect to one and eccentric with respect to the other, a weighted body fixed on the spindle and of which the center of gravity is eccentric to the axis of rotation by virtue of said eccentric bearing, a transverse foot-piece or shoe secured to the frame for holding the latter upright when in motion, and means for whirling the spindle and the weighted body, substantially as and for the purposes described.

3. A gyroscopic toy, consisting of a frame having a base or foot-piece to rest upon and traverse the surface of a support, spindle-bearings carried by the frame, a spindle journaled on said bearings in a manner to be true with respect to one and eccentric with respect to the other, a weighted disk or wheel fixed on the spindle and of which the center of gravity is eccentric to the axis of rotation by virtue of said eccentric bearing, and means for whirling the spindle and weighted disk or wheel, substantially as and for the purposes described.

4. A gyroscopic toy, consisting of a frame having two spindle-bearings and a transverse foot-piece or shoe projecting from its opposite sides to sustain the frame upright while in motion, a spindle journaled on said bearings in a manner to be true with respect to one and eccentric with respect to the other, a weighted body fixed on the spindle and of which the center of gravity is eccentric to the axis of rotation by virtue of said eccentric bearing, and means whereby the spindle and the weighted body may be whirled, substantially as and for the purposes described.

5. A gyroscopic toy, consisting of a frame, carrying a rotatable, eccentrically-mounted wheeled spindle and constructed to rest upon and traverse a smooth-surfaced support when the wheeled spindle is whirled, substantially as and for the purposes described.

6. A gyroscopic toy, consisting of a frame, and a rotatable spindle having an attached weighted body and eccentrically mounted at one end with relation to the axis of the weighted body, substantially as and for the purposes described.

7. A gyroscopic toy, consisting of a frame carrying a rotatable spindle eccentrically mounted at one end and having an attached weighted disk, or wheel, and a foot-piece or shoe constructed to rest upon and traverse a smooth-surfaced support when the spindle and the disk, or wheel are whirled, substantially as and for the purposes described.

609,888. HARROW. HENRY W. EISENHART, York, Pa., assignor to the A. B. Farquhar Company, Limited, same place. Filed Dec. 30, 1897. Serial No. 664,545. (No model.)



Claim.—1. The combination, in a harrow, of the tooth-carrying shafts provided with journals which are concentric with the axes of the shafts, and each shaft having at one end an eccentric head, and the frame provided with bearings in which the said journals of the shafts are mounted, and having eccentric-shaped openings through which the eccentric heads of the shafts are adapted to pass when the shafts are turned into certain unusual positions, substantially as set forth.

2. In a harrow, the combination of the frame having apertures with eccentric portions in its side bars, the hollow shafts or pipes to which the teeth are secured, and the plugs which are inserted into the ends of the shafts or tubes and there secured, such plugs being formed with cylindrical journal portions *k* and eccentric heads *k'*, substantially as set forth.

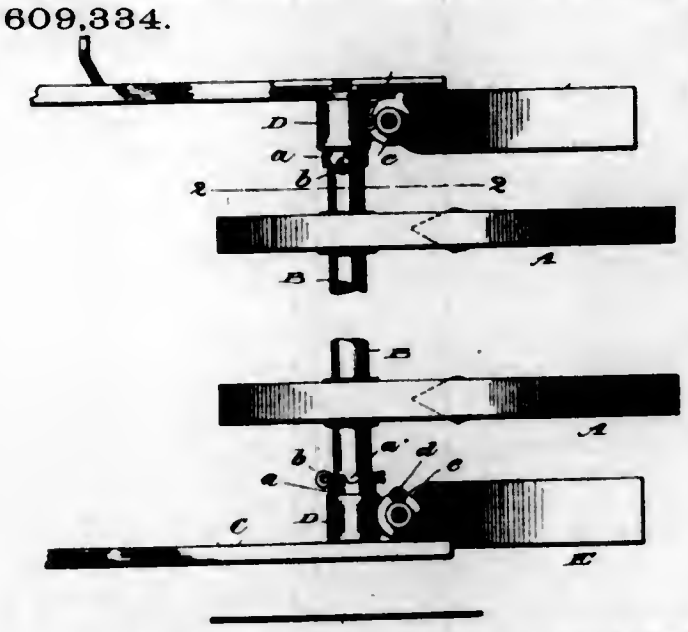
3. In a harrow, the combination of the frame having side bars formed with flanges, and provided with bearing-apertures between the flanges, and the tooth-carrying shafts mounted in the apertures of the said frame-pieces and provided with eccentric heads which are situated adjacent to the flanges of the side frame-pieces and are protected thereby, substantially as set forth.

4. In combination with a spring-tooth harrow, a seat and supporting-standards therefor, each standard having a forward-inclined leg with an eye at its end adapted to encircle a shaft on the harrow, and a rear leg with a fork at its end adapted to straddle another shaft on the harrow, substantially as and for the purposes hereinbefore set forth.

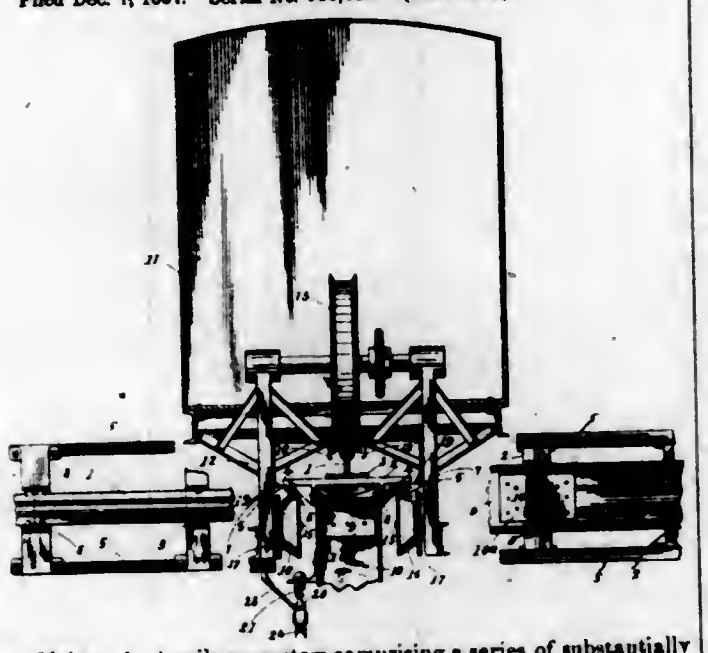
609,884. HARROW. HENRY W. EISENHART, York, Pa., assignor to the A. B. Farquhar Company, same place. Filed Mar. 17, 1898. Serial No. 674,178. (No model.)

Claim.—The combination with the I frame-bar of the harrow, of the bearing-block journaled upon a horizontal axis and also movable to and from said frame-bar, a laterally-projecting tongue on said block adapted to fit between the top and bottom flanges of said bar, and also notched to engage either of said flanges, and the runner carried by and vertically swiveled in said bearing-block, substantially as and for the purposes hereinbefore set forth.

609,334.



609,335. **RAILWAY SYSTEM.** OTTO B. ENGLISCH, Oakfield, N. Y. Filed Dec. 7, 1897. Serial No. 661,010. (No model.)



Claim.—1. A railway system comprising a series of substantially vertical supports or beams, a longitudinal beam secured to the upper ends of said vertical supports, a series of supporting-chairs mounted upon said longitudinal beam, a series of rails forming the main single-rail track supported upon the chairs, and a series of guide-rails fastened upon the outer side edges of the chairs on each side of the main single-track rails.

2. A railway system comprising a series of vertical beams a longitudinal beam supported upon the upper ends of said vertical beams, a series of supporting-chairs mounted upon the longitudinal beam and having flanged side edges forming supports, main-track rails supported in longitudinal continuity with each other upon the chairs and angle-irons forming supplementary guide rails rigidly secured to the supports.

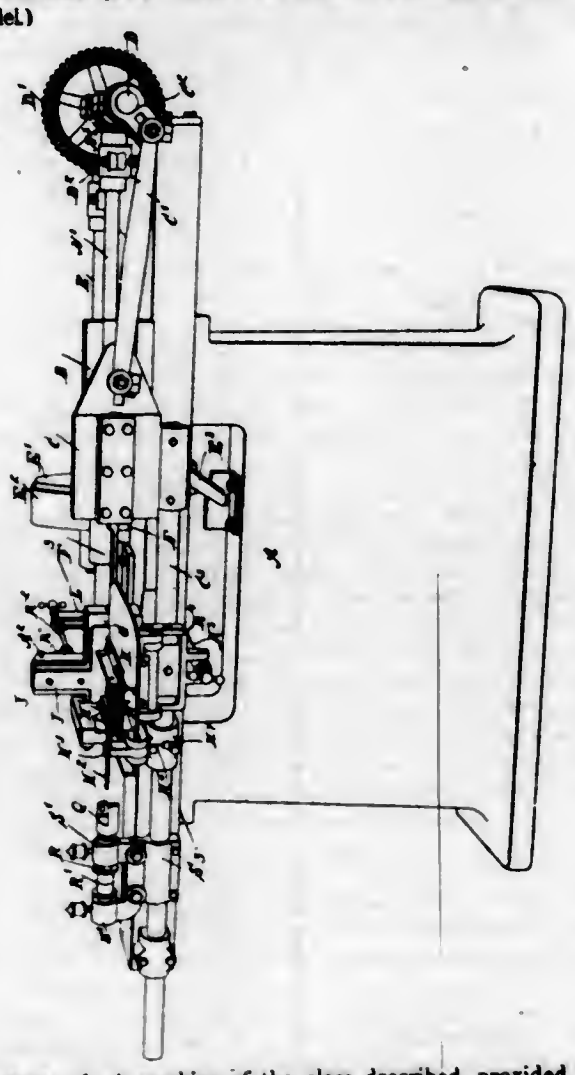
3. A railway system comprising a single line of main-track rails, a line of guide-rails arranged on each side of said main-track rails, a series of chairs for supporting both the main single line and the supplementary guide-lines, a longitudinal I-beam for supporting the chairs, and a series of vertical beams for supporting the longitudinal I-beam.

4. A railway system comprising a series of chairs having side edges or extensions extending diagonally downward and toward each other, a series of rails forming the main single-track rail secured upon and extending upward from substantially the central upper surface of the chairs, and a series of angle-irons forming guide-rails having their upper portions extending diagonally upward and outward and securely bolted to the side edges of the chairs, and their lower portions directly downward and outward, as set forth.

5. The combination with a railway system, comprising a series of chairs, having side edges or extensions extending diagonally downward and toward each other, a series of rails forming the main single-track rail secured upon the upper surface of the chairs, and a series of angle-irons forming guide-rails having their upper portions extending diagonally upward and outward, and bolted to the side edges of the chairs, and their lower portions diagonally downward and outward, of a railway-car having two or more main central wheels which aline longitudinally with each other, and upon the main rail of the system, and supplementary guide-wheels journaled upon horizontal axles located beneath and on each side of the main central wheels and provided with beveled portions adapted to engage with the guide-wheels, as set forth.

6. A railway system, comprising a series of vertical I-beams, a longitudinal I-beam rigidly secured thereto, a series of supporting-chairs seated upon and rigidly secured to the longitudinal I-beam at suitable intervals, a single main track supported upon the upper portion of the chairs and a series of guide-rails supported on each side of the single main track.

609,336. **MACHINE FOR MAKING SKEWERS, PINS, &c.** GEORGE A. ENSIGN, Defiance, Ohio, assignor to the Defiance Machine Works, same place. Filed Dec. 7, 1897. Serial No. 661,058. (No model.)



Claim.—1. A machine of the class described, provided with a blank-feed comprising a presser-foot, a rod carrying the presser-foot, a pivoted bearing in which the rod is fitted to slide, and a weight-drawn string, connected with the said rod, to feed the latter in said bearing, substantially as shown and described.

2. A machine of the class described, provided with an L-shaped shoe for receiving a blank, a table in front of the said shoe, and reciprocating guide-plates, one of which is under the said table and operates in conjunction with the shoe, and the other is disposed vertically and likewise operates in conjunction with the shoe, to move the blank downward into the shoe from the table, substantially as shown and described.

3. A machine of the class described, provided with an L-shaped shoe for receiving a blank, a table in front of the said shoe, reciprocating guide-plates, one of which is under the said table and operates in conjunction with the shoe, and the other is disposed vertically and likewise operates in conjunction with the shoe, to move the blank downward into the shoe from the table, and means, substantially as described, for imparting a simultaneous motion to the said plates, substantially as shown and described.

4. A machine of the class described, provided with an L-shaped shoe for receiving a blank, a table in front of the said shoe, reciprocating guide-plates, one of which is under the said table and operates in conjunction with the shoe, and the other is disposed vertically and likewise operates in conjunction with the shoe, to move the blank downward into the shoe from the table, and means, substantially as described, for imparting a simultaneous motion to the said plates, said means being provided with compensating-springs for allowing the said plates to yield for slight variations in the size of the blanks, substantially as shown and described.

5. In a woodworking-machine, the combination with a frame, of means for holding and feeding a blank, a slide mounted on the frame, a plunger carried by the slide to movably engage the blanks and force the same from engagement with said means, a die with which the blank engages as it passes from said means, a gripping device engaging the blank as it passes from the die, a cutter located adjacent to the gripping device and serving to point the blank, and a rod connecting the slide with the cutter whereby to cause said elements to move back and forth in unison with each other.

6. The combination with a frame, of a guideway, an L-shaped shoe carried thereby, two guide-plates movable respectively on the members of the shoe, a bell-crank in connection with each guide-plate, means for causing the bell-cranks to swing in unison whereby to operate the guide-plates in unison, and a feed-table mounted adjacent to the guide-plates and feeding the work thereto.

7. The combination with a frame, of a guideway formed thereon, an L-shaped shoe held by the guideway, two guide-plates mounted adjacent to the shoe and working thereon, a feed-table adjacent to the guide-plates, a bell-crank lever connected to each guide-plate, a link attached to each bell-crank lever, a lever to which both links are connected, a rotary shaft, and a cam on the shaft and engaging the lever to rock the same.

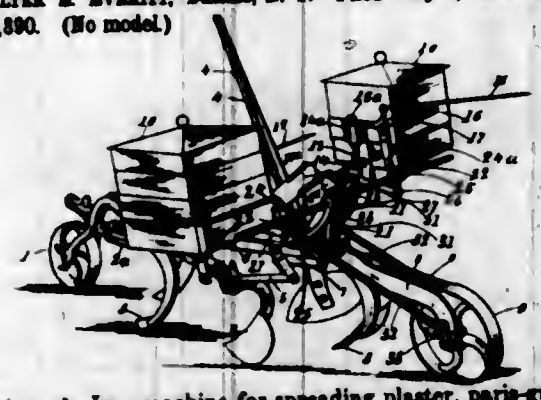
8. In a woodworking-machine the combination with a frame, of a guide mounted thereon, guide-plates movable on the guide and serving to center the work, a feed-table adjacent to the guide-plates, means for operating the guide-plates, a plunger adapted to push the work from the guide, and a tool for operating on the work as it is pushed from said shoe.

9. In a woodworking-machine, the combination with a frame, of means for holding the work, two guide-plates acting in unison and mounted on said means to center the work, a feed-table adjacent to the guide-plates, a plunger adapted to push the work from the guide-plates, and a tool acting on the work as it is moved from the guide-plates.

10. In a woodworking-machine, the combination with a frame, of a slide, a crank-shaft mounted on the frame and connected with the slide to drive it, a plunger carried by the slide, a work-holding device from which the plunger pushes the work, a die engaged by the work as it passes from said work-holding device, a grip serving to engage the work as it passes from the die, a cutter adapted to point the work when it is held by the die, a connection between the cutter and the slide to move the cutter back and forth in unison with the slide, gearing driven from the crank-shaft and actuating the gripping device in unison with the movements of the slide and cutter, and work-centering devices coacting with the work-holder and driven from the gearing that drives the gripping device.

609,887. MACHINE FOR SPREADING PARIS-GREEN, &c.

WALTER E. EVERITT, Buffalo, N. Y. Filed July 2, 1896. Serial No. 597,890. (No model.)



Claim.—1. In a machine for spreading plaster, paris-green, &c., the combination with the machine, its frame and the distributing vessels provided with perforated bottoms, of a perforated plate secured above each of said perforated bottoms and capable of an oscillating to-and-fro movement, a shaft mounted in each of said distributing vessels below the perforated bottom thereof and provided with a crank-arm at one end thereof, an arm extending upward from said shaft through an elongated slot in the perforated bottom and into operative engagement with the perforated plate, crank-operating arms actuated by the wheel of the machine, and provided with slots adapted to fit over the crank-pins of the crank-arms of the shafts, and mechanism operated from the handles of the machine for connecting or disconnecting the said slots to or from said crank-pins, as set forth.

2. In a machine for spreading plaster, paris-green, &c., the combination with the distributing vessels mounted on said machine and capable of an adjustment toward or from each other, of toggle-joint mechanism for adjusting said vessels in their relation to each other, perforated plates in the distributing vessels, shafts and cranks for oscillating said plates, operating-arms detachably connected to said cranks, shafts operated by the running-gear of the machine, for actuating the operating-arms, forked supporting portions projecting from the vessels and controlling the operating-arms for moving them along the gear-operated shafts and thus preserving the proper relation between the operating-arms and the cranks at any adjustment of the distributing vessels, and mechanism controlled from the handles of the machine for connecting or disconnecting either one or both of the operating-arms to or from the cranks, and thus providing means for oscillating either one or both of the perforated plates, or rendering both passive, while the machine is traveling.

3. In a machine for spreading plaster, paris-green, &c., the combination with the distributing vessels provided with perforated bottoms, of a perforated plate mounted in each of said vessels above the perforated bottom, so as to be capable of a to-and-fro movement, mechanism actuated by the running-gear for imparting the said to-and-fro movement, and mechanism controlled from the handles for disconnecting the said operating mechanism from one or both of the said perforated plates and thus preventing the oscillation of one or both of said plates while the machine is traveling.

609,888. ANIMAL-TRAP.

JEPTHA L. FARLEY, De Soto, Mo. Filed June 1, 1897. Serial No. 638,865. (No model.)



Claim.—1. An animal-trap comprising a compartment, an inner casing supported within said compartment and extending transversely of the same and having open ends and formed with an opening intermediate of its ends, a partition dividing said casing and located across said opening, and a passage-way leading downwardly from said opening and terminating a short distance from the bottom of said compartment.

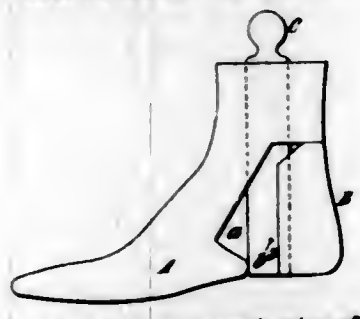
2. An animal-trap consisting of two compartments, a communication between said compartments, a gate controlling said communication, an inner casing supported within one of said compartments and extending transversely of the same, said casing opening at its ends through the end walls of said compartment, a communication between the bottom wall of said casing and the compartment in which it is located, a partition dividing said casing, said partition extending across the center of the opening, and a downwardly-extending casing secured at its upper end to said opening and having its walls converging toward their lower ends, the lower end of said walls terminating a short distance from the bottom of the compartment, substantially as set forth.

3. A trap comprising two compartments, a communication between said compartments, a plate secured to the bottom wall of the compartments adjacent the communication, a gate adapted to close said communication, said gate inclining downwardly and having its lower end adapted to engage the plate, a transversely-extending casing supported within one of said compartments and opening at its ends through the end walls thereof, said end walls being inclined inwardly toward the open ends of the inner casing, a communication between said inner casing and the compartment in which it is located, a casing secured at its upper end to the opening and depending therefrom, said casing having its walls converging toward their lower ends and terminating short of the bottom wall of the compartment, and an obstruction within the inner casing, said obstruction extending across the center of the communication, substantially as set forth.

4. The combination with an animal-trap having two compartments therein, formed by a dividing-partition extending transversely, of a casing adapted to contain water in which one end of said trap is adapted to fit, and hooks on said casing for securing the trap in place therein, the upper ends of the sides of said casing projecting above said partition when the trap is in place.

5. An animal-trap comprising two compartments, a communication between said compartments, a gate controlling said communication, one of said compartments being enlarged, a door for the opposite compartment, a transversely-extending passage-way formed within the enlarged compartment and opening through the end walls thereof, said end walls being inclined inwardly toward the open ends of the passage-way, a communication between the passage-way and the lower portion of the compartment, a casing secured about said communication and depending therefrom, said casing having its walls converging adjacent their lower ends and terminating short of the bottom wall of the compartment, and a partition within the passage-way, said partition dividing the communication, substantially as set forth.

609,889. BOOT-TREE. LEWIS FRAKER, London, England. Filed Aug. 23, 1897. Serial No. 649,249. (No model.)



Claim.—1. In a boot-tree, the combination of a main piece, a hinged heel-piece, an inclined surface on said heel-piece, a sliding rod working between said main and heel pieces and having its lower end bearing on said inclined surface, substantially as described.

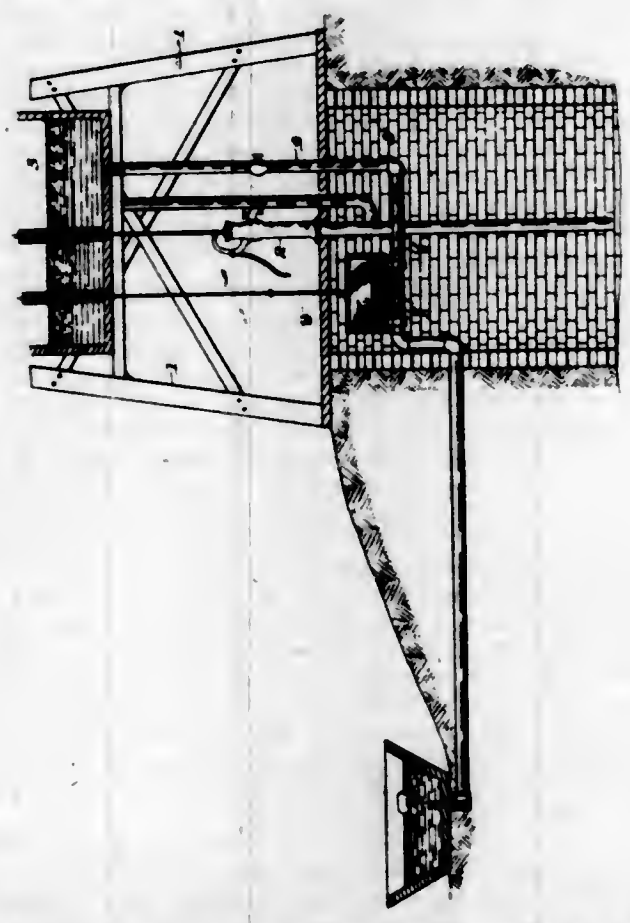
2. In a boot tree, the combination of a main piece A, a hinged heel-piece B, an inclined surface b^3 on said heel-piece, a sliding rod C working between said main and heel pieces and having its lower end bearing on said inclined surface, and a spring b' tending to press the heel piece inward, substantially as described.

3. In a boot-tree, the combination of a main piece, a hinged heel-piece, an inclined surface on said heel-piece, a sliding rod working between said main and heel pieces, a spring tending to press said heel-piece inward, a recess to receive the heel-piece when so pressed inward and a stop for preventing accidental withdrawal of the sliding rod, substantially as described.

4. In a boot-tree, the combination of a main piece, a hinged heel-piece, a sliding rod working between said main and heel pieces, a slot or groove in the heel-piece, strips forming flanges of said groove, and a pin on the said rod engaging said flanges so as to turn the heel-piece on its pivot substantially as described.

5. In a boot-tree, the combination of a main piece, a hinged heel-piece, a hinged toe-piece, a hinged link carrying said toe-piece, a rod working between said link and heal-pieces, and a spring acting on said link, substantially as described.

609,840. WINDMILL-GOVERNOR. HENRY S. GASKILL, Battle Creek, Mich. Filed Aug. 26, 1897. Serial No. 649,596. (No model.)



Claim.—The combination with the two stationary tanks in different horizontal planes, a feed-pipe communicating with said tanks and having a horizontal extension, and a float-valve controlling the lower tank, of a third movable tank located in a horizontal plane intermediate the other tanks and journaled on the horizontal extension of the feed-pipe, a connection attached to the free end of the movable tank and also connected to the gearing of a windmill, and a flexible tubular connection between the movable tank and feed-pipe.

609,841. PROCESS OF DEPHOSPHORIZING STEEL OR OTHER METALS. JOHN GORDON, Rio Janeiro, Brazil. Filed Nov. 12, 1897. Serial No. 658,273. (No specimens.)

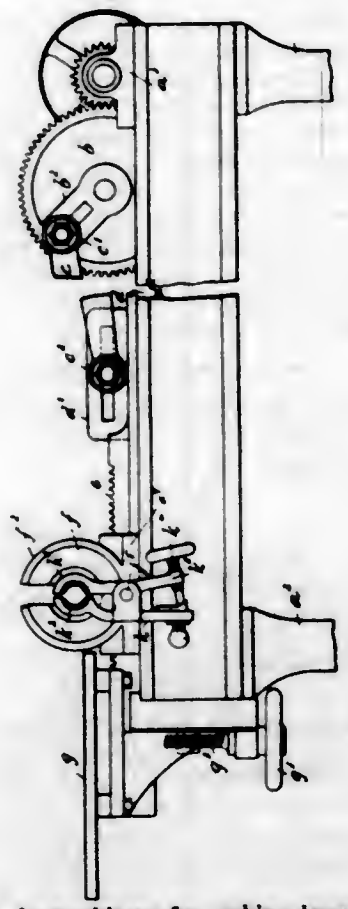
Claim.—The herein-described method of dephosphorizing metals, which consists in subjecting the metal in fusion to contact with, and the chemical action of, the metals of the cerium group which act as strong bases with respect to phosphorus, substantially as described.

609,842. PREPARING MEDICINAL COMPOUNDS. EDWIN W. GROVE, St. Louis, Mo. Filed Apr. 5, 1898. Serial No. 676,599. (No specimens.)

Claim.—1. The herein described process of producing tasteless quinine, which consists in dissolving a derivative of cinchona-bark, taking a substance insoluble in water and dissolving it, mixing and uniting said solutions, reducing said mixed solutions to a solid and homogeneous mass and reducing said mass to a finely-powdered form, substantially as specified.

2. The herein-described process of producing tasteless quinine, which consists in taking a derivative of cinchona-bark, as quinine, which has a bitter taste and applying to said quinine a liquid in which the same is soluble, taking a substance which is insoluble in water or is tasteless and applying to said substance a liquid in which the same is soluble, thus producing out of each of said quinine and substance a perfect solution, thoroughly mixing and uniting said solutions, applying heat to said united or mixed solutions to evaporate the dissolving liquid whereby a solid and homogeneous mass is produced and reducing said mass to a finely-powdered form, substantially as specified.

609,843. MACHINERY FOR MAKING JOINTS BETWEEN PARTS OF CYCLE OR LIKE FRAMINGS. CHARLES HARVEY, South Yardley, England. Filed Apr. 16, 1898. Serial No. 677,898. (No model.)



Claim.—1. In machinery for making brazeless joints between telescoping metallic parts by means of annularly impressing or creasing the metal, the combination with pivoted lever-arms having jaws carrying impressing dies or tools, of means for bringing said jaws together comprising an adjusting-screw carried by one of said arms, and a bearing-block for said screw slidably supported in the opposite arm, substantially as described.

2. In machinery for making brazeless joints between telescoping metallic parts by means of annularly impressing or creasing the metal, the combination with a tool-carrier and means for imparting a rocking or part-rotating movement thereto, of a center pin or peg eccentrically mounted on the face of said tool carrier or block, lever-arms pivotally supported on said center pin or peg, and having jaws carrying impressing dies or tools, and means for adjusting said jaws toward or from each other, substantially as described.

3. In machinery for making brazeless joints between telescoping metallic parts by means of annularly impressing or creasing the metal, the combination with a bearing having a tool-carrier mounted therein,

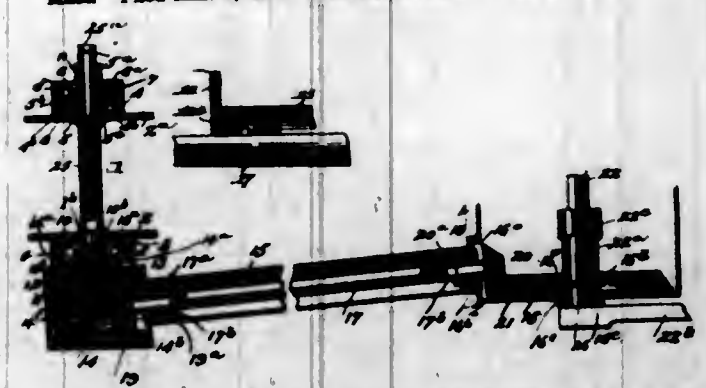
and means for rocking or partly rotating said carrier, of a cylindrical boss eccentrically mounted on the face of the said tool-carrier and having in its outer end a recessed portion, a rod journaled in said boss and having at its outer end a crank located in said recessed portion and capable of a slight rising or falling movement therein, a center pin or peg carried by said crank, lever-arms pivotally mounted on said center pin or peg and having jaws carrying impressing dies or tools, and means for adjusting said jaws toward or from each other, substantially as described.

4. In machinery for making brazeless joints between telescoping metallic parts by means of annularly impressing or creasing the metal, the combination with the bearing of a circular tool-carrier mounted therein having its periphery provided with gear-teeth, a rack-bar engaging said teeth and means for reciprocating said rack-bar whereby to rock or partly rotate said tool-carrier, a center pin or peg eccentrically and adjustably mounted on the face of a tool-carrier or sleeve, lever-arms pivotally supported on said center pin or peg and having jaws carrying impressing tools or dies, and means for adjusting said jaws toward or from each other, substantially as described.

5. In machinery for making brazeless joints between telescoping metallic parts by means of annularly impressing or creasing the metal, the combination with the bed of the machine, of a cylindrical bearing mounted thereon having a transverse slot, a cylindrical tool-carrier mounted in said bearing and having a transverse slot adapted to coincide with the slot in the bearing, a tube-rest located within said tool-carrier and having one end extending beyond the same and being bolted to said tool-carrier to turn therewith, said tube-rest having a slot coinciding with the slot in the tool-carrier, means for securing a tube in said rest, means for imparting a rocking or part-rotating movement to the tool-carrier, a center pin or peg eccentrically and adjustably mounted on the face of the tool-carrier, lever-arms pivotally supported on said center pin or peg and having jaws carrying impressing tools or dies, and means for adjusting said jaws toward or from each other, substantially as described.

6. A tool for annularly impressing or creasing metal tubing comprising lever-arms pivotally united intermediate their ends and having at their outer ends semicircular jaws, die-plates secured in said jaws and carrying impressing tools or dies, and an adjusting-screw carried by one arm and bearing against the opposite arm for bringing the jaws together, substantially as described.

609,344. BICYCLE-GEARING. MICHAEL P. HARRITY, Clinton, Mass. Filed Mar. 2, 1897. Serial No. 625,781. (No model.)



Claim.—1. A gearing for bicycles, comprising the crank-axle provided with a master gear-wheel, a shaft having a gear-wheel at each end, one of said gear-wheels being held in mesh with said master gear-wheel, the other being held in mesh with a gear-wheel detachably secured to the rear-wheel hub, and means for adjusting the said detachable gear consisting of a screw provided with a driver-receiving head fitted within the said rear-wheel hub.

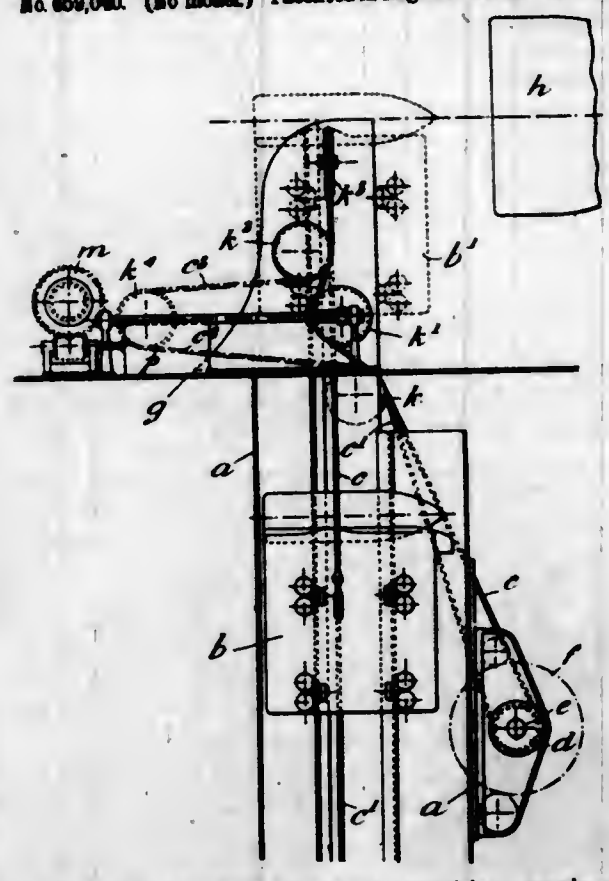
2. A gearing for bicycles, comprising the crank-axle, a master-gear beveled gear-wheel provided with a sleeve which is held in position on said crank-axle by a collar, a shaft provided at each end with a beveled gear-wheel, a detachable beveled gear-wheel adjustably mounted on the rear-wheel hub, a bearing-disk on said rear-wheel hub, having a concave inner face and an exterior annular groove, an opening for the said hub, the lower exterior portion of the disk being threaded, and a housing for said gearing, the portion 14 of which is attached to said disk and is provided with a removable cap, a tubular portion, inclosing the driving-shaft, having one end connected to said portion 14, the other end being connected to a portion provided with a concave face inclosing the said master gear-wheel.

3. A gearing for a bicycle, comprising the crank-axle provided with a beveled gear-wheel, a shaft carrying at each end a beveled gear-wheel, one of which meshes with the said gear-wheel on the crank axle, the other being adapted to mesh with an adjustable beveled gear-wheel detachably secured to the rear-wheel hub, a housing for said gearing, a stationary bearing-block mounted on said rear-wheel hub, provided with a sleeve, a housing mounted to turn upon said bearing-block and a cap-piece surrounding the said sleeve, securely attached to the end of the said housing.

4. The combination with the crank-axle, the drive-shaft 17 geared therewith, said shaft 17 having a bevel-gear 19, and the housing 16, of the drive-hub 1, having a detachable gear 11 adapted to mesh with the gear 19, the disk 2, fixedly secured to the drive-hub, the disk 10, bearings 13, the housing 14, detachably connected to the disk 10, and the housing 15, all being arranged as shown and for the purposes described.

5. A gearing for bicycles, comprising the crank-axle provided with a master gear-wheel, a shaft provided at each end with gear-wheels, a gear-wheel detachably mounted on the rear-wheel hub by means of a shank, which is fitted in a socket in the said hub, and means for adjusting the said gear-wheel consisting of a rod extending through said hub, the outer end of which is provided with driver-receiving head.

609,345. APPARATUS FOR CHARGING HEAVY BREECH-LOADING GUNS. FRANK W. HAWKINS, Sheffield, England, assignor to Vickers Sons & Co., Limited, same place. Filed Nov. 18, 1897. Serial No. 659,040. (No model.) Patented in England Jan. 29, 1897, No. 2,442.



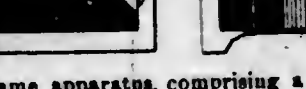
Claim.—1. An ammunition-hoist comprising a trunk or lift, carriers slidably supported therein, hoisting mechanism at the side of said trunk or lift, a series of pulleys at the top thereof, cables extending from the hoisting mechanism over said pulleys and connected to the carriers, and supplemental hoisting mechanism for raising each carrier to charging position comprising a pulley engaging the cable of said carrier and means for moving said pulley laterally, substantially as described.

2. An ammunition-hoist comprising a trunk or lift divided into two working ways or compartments at its lower end, guideways located on inner opposite sides of said trunk or lift and extending from top to bottom thereof, carriers slidably supported in said guideways, hoisting mechanism at the side of said trunk or lift, a series of pulleys at the top thereof, oppositely-wound cables extending from the hoisting mechanism over said pulleys and connected to said carriers, and supplemental hoisting mechanism for raising the carriers to charging positions, comprising pulleys engaging the cables and means for moving said pulleys laterally, the combination operating substantially as set forth.

3. An ammunition-hoist comprising, in combination with the gun-platform, a trunk or lift divided into two working ways or compartments at its lower end, guideways located on inner opposite sides of said trunk or lift and extending from top to bottom thereof, carriers slidably supported in said guideways, hoisting mechanism at the side of said trunk or lift, a series of supporting-pulleys and a series of guide-pulleys located at the upper portion thereof, cables oppositely wound on said hoisting mechanism and extending along said guide-pulleys and over said supporting-pulleys and connected to said carriers and operated by the hoisting mechanism to raise one carrier to a "ready" position while lowering a companion carrier to the bottom of the trunk or lift, and mechanism for raising the car-

riers independently from a "ready" to a charging position comprising guides supported on the gun-platform, yokes slidably mounted on said guides and carrying pulleys each of which engages a cable of a carrier between a pair of guide-pulleys, and winding-drums mounted on said platform and having cables connected with said yokes and operating independently to move said yokes with their pulleys over said guides and thereby draw the cable engaged by each pulley to one side, substantially as described.

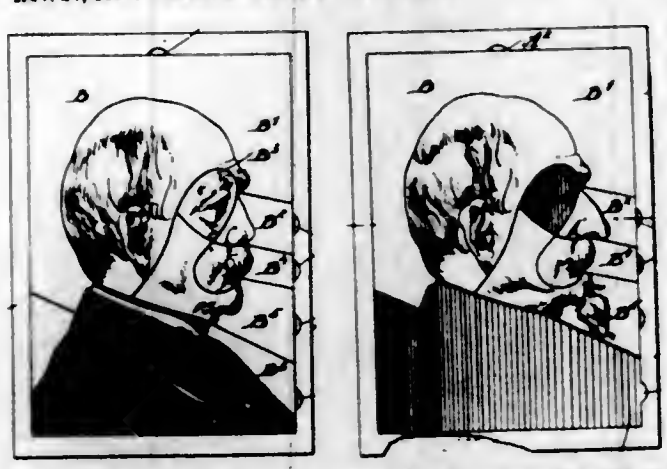
609,346. **WHEEL FOR CHAIN-GEARING.** THOMAS HEWETT, London, England, assignor of one-half to Thomas Kerrison Bellis, same place. Filed Feb. 10, 1898. Serial No. 669,821. (No model.)



Claim.—1. In a wheel for chain-gearing, the combination with two centrally-apertured disks having parallel radial flanges on their peripheries forming a circumferential groove for the reception of a sprocket-chain, said disks being provided with a plurality of registering slots, of an interiorly-threaded collar provided on its inner face with integral projections extending through the slots in the disks and headed down at their outer ends to firmly bind the disks together, substantially as described.

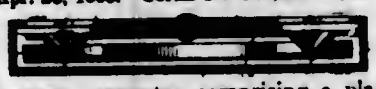
2. In a wheel for chain-gearing, the combination with two centrally-apertured disks having parallel radial flanges on their peripheries forming a circumferential groove for the reception of a sprocket-chain, said disks being provided with a plurality of registering slots, of an interiorly-threaded collar provided on its inner face with integral projections extending through the slots in the disks and headed down at their outer ends to firmly bind the disks together, the edges of the said central apertures in the disks being threaded and forming a continuation of the threads of the collar, substantially as described.

609,347. **GAME APPARATUS.** FRIEDRICH VON HOLLHAUSEN, Graz, Austria-Hungary, assignor to William L. Boalt, same place. Filed Nov. 27, 1897. Serial No. 659,956. (No model.)



Claim.—A game apparatus, comprising a series of trays, and portraits made in separable pieces, and adapted to fit into the depressions in the said trays, the separable pieces of the various portraits being alike in shape, to permit of interchanging the pieces of the various portraits, the said pieces being removable from the trays by having the sides of the trays formed with cut-out portions, as set forth.

609,348. **GAME APPARATUS.** BENJAMIN F. HUTCHER, Jr., Galveston, Tex., assignor of one-fourth to Henry M. Weaver, Mansfield, Ohio. Filed Apr. 29, 1895. Serial No. 547,509. (No model.)



Claim.—1. A game apparatus comprising a playing board or table having apertures therein, and a card-holder of circular form revoluble on the under side of the said table, carrying a series of card-retaining pockets arranged to pass under said apertures and present the hands of cards of each pocket successively thereat, as and for the purpose set forth.

2. A duplicate-whist table comprising a stationary top forming a clear field upon which the cards can be played and having four openings constituting passages through which the cards can be passed into and also removed from receptacles below said top, and a set of connected card-receiving receptacles supported under the table-top and arranged for receiving the cards from the openings therein, said set of card-receiving receptacles being movable as a whole to shift each receptacle from one to another opening in the top, and to cause the several receptacles to be simultaneously brought into register with the several openings.

3. In a game apparatus, a playing board or table having apertures in the form of radial slits, and a revoluble card-receptacle secured to the under side of the table having a circular arrangement of card holders or pockets for the several hands, which, as the same is revolved, causes the card-holders to pass under the said apertures and successively register therewith, as and for the purpose set forth.

4. A game apparatus comprising a playing board or table and a movable card-holder carried thereby on the under side thereof adapted to retain in proper order several hands of cards, the said board or table being provided with apertures for the extraction of the cards, which apertures are in slit form radially arranged, and provided with an enlargement to admit the fingers in extracting the cards, as set forth

5. A game apparatus comprising a playing board or table having apertures therein, a movable card-holder having a series of pockets adapted to register with said apertures, the said card-holder having the divisions between the pockets thereof cut away or depressed, as and for the purpose set forth.

6. A game apparatus comprising a playing board or table having apertures therein and a movable card-holder having a series of pockets adapted to register with said apertures, the said holder comprising a series of radial arms having a depression in each, and a circular bottom portion secured to said arms and suspended thereby at their depressed portion, as set forth.

7. In a game apparatus the combination of a playing board or table having apertures therein, of a movable card-holder consisting of a series of card-retaining pockets arranged in circular form, and an index carried by the said holder and adapted to show through the said apertures, as set forth.

8. In a game apparatus, the combination with a playing board or table having apertures therein, of a revoluble card-holder having a series of circularly-arranged pockets, and an indicator-disk carried by said card-holder, as set forth.

9. In a game apparatus the combination with a playing board or table having apertures therein, of a revoluble card-holder having a series of circularly-arranged pockets, and an indicator comprising a disk provided with suitable characters and an over disk having peripheral notches at predetermined points whereby to expose the characters of the under disk, as set forth.

10. In a game apparatus, the combination with a playing board or table having apertures therein, of a revoluble card holder having a series of circularly-arranged pockets, and an indicator-disk having a stop carried thereby whereby to lock said disk to the holder at different points to permit a change in the combination of hands, as set forth.

11. A duplicate-whist table comprising a top, radial card-receptacles mounted to move below said top, said receptacles adapted to register successively with openings adjacent to the four sides of the table.

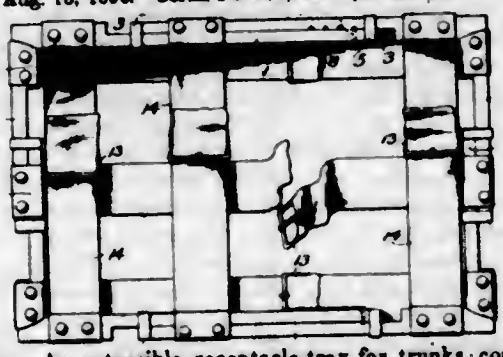
12. The combination with a series of radial receptacles each adapted to contain a hand, of a cover for these receptacles, said cover having four slots or openings whereby to simultaneously disclose four hands.

13. The combination with a series of radial card-receptacles, of means for closing these receptacles having four slots or openings therein equidistant from each other, substantially as set forth.

14. A duplicate-whist table comprising a top having a series of openings therein, a set of card-receiving receptacles supported under the table-top and movable to allow the several receptacles to be simultaneously brought to register with the openings in the table-top.

15. A table-top having apertures therein, a movable card-holder consisting of a series of card-retaining pockets, and an index carried by the said holder and adapted to show through said apertures.

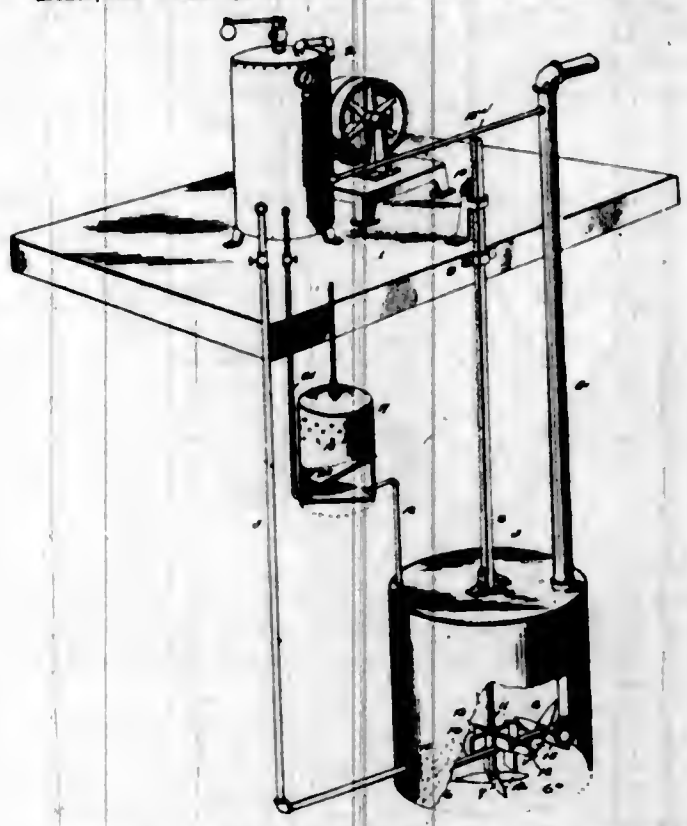
609,349. **TRUNK-TRAY.** CHLOE R. JOHNSON, Springfield, Mass. Filed Aug. 13, 1896. Serial No. 602,602. (No model.)



Claim.—An extensible receptacle-tray for trunks, consisting of sides and ends extensible in the direction of their length, means for securing the same when extended, and an extensible bottom for the tray extending across in the plane of the lower edges of said sides and ends, and consisting of strips arranged in pairs and having their

outer ends secured to the tray and provided at their inner ends with means whereby they may be adjustably connected, substantially as described.

609,850. PNEUMATIC DREDGER. THOMAS R. JONES, Sacramento, Cal. Filed Apr. 15, 1897. Serial No. 632,276. (No model.)



Claim.—1. In a dredger, the combination with a suitable support, of a dredging-bucket suspended therefrom, a discharge from said bucket, rotatable diggers mounted in said bucket and each provided with a plurality of wings, and means for introducing compressed air into said bucket against said wings, to operate said diggers, substantially as described.

2. In a dredger, the combination with a suitable support, of an air-compressor mounted thereon, a bucket suspended from said support, a pneumatic discharge-pipe connected to said bucket, a plurality of rotatable diggers mounted in said bucket, and each provided with a plurality of wings, and a pipe connecting the air-compressor with the bucket for forcing air into the latter to operate said diggers, substantially as described.

3. In a dredger, the combination with a float, of an air-compressor mounted thereon, a bucket closed at its top and sides, a standard connected to said bucket, and adjustably mounted upon said float, a suction discharge-pipe connected to said bucket, a plurality of pneumatic diggers mounted in said bucket, and a compressed-air supply connecting said compressor and bucket for operating the diggers, substantially as described.

4. In a dredger, the combination with a suitable support, a dredging bucket connected thereto, a pneumatic discharge for said bucket, digging devices mounted in said bucket, means for introducing compressed air into said bucket for operating said devices, and a water-ejector connected to the air-compressor and adapted to eject water into said bucket, substantially as described.

5. In a dredger, the combination with a suitable support, of a dredging-bucket connected thereto, a pneumatic discharge for said bucket, digging devices mounted in said bucket, means for introducing compressed air into the bucket for operating said devices, a water ejector, a pipe connecting the air-compressor with the lower portion of the water-ejector, a pipe connecting the opposite side of the ejector with the bucket, and a diaphragm mounted in the ejector for directing the air therethrough, substantially as described.

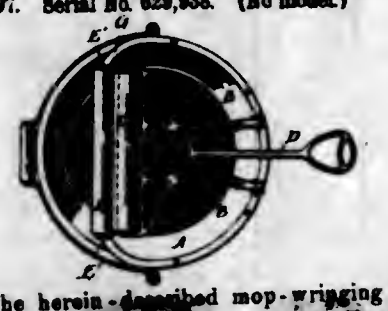
6. A dredger comprising a dredging-bucket, digging devices therein, mechanism for operating said digging devices, and means for introducing compressed air to said mechanism substantially as shown and described.

7. A dredger comprising a bucket, an air-compressor, digging devices in said bucket, a motor for driving said devices and connections from the air-compressor whereby the air may be utilized to drive the digging devices substantially as shown and described.

8. In a pneumatic dredging apparatus the combination of the dredging-bucket the digging devices, an air compressor, the ejector connected with the bucket and arranged to supply water thereto, and connections between the ejector and the air-compressor whereby said ejector may be operated by compressed air substantially as described.

9. An apparatus substantially as described consisting of the air-compressor, the dredging-bucket, the discharge-tube, the water-ejector having a water-inlet, and connections between the said ejector and the air-compressor, and between such ejector and the dredging-bucket, substantially as described.

609,851. MOP-WRINGER. ISAAC JOYNER, Anderson, Ind. Filed Mar. 30, 1897. Serial No. 629,938. (No model.)



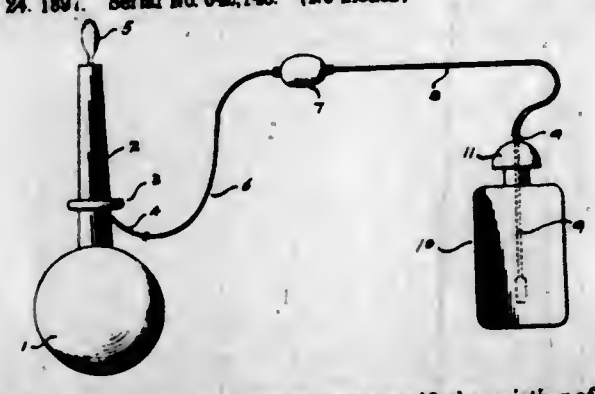
Claim.—The herein-described mop-wringing attachment for buckets, consisting of a flat [illegible]nic strap *B*, adapted to be secured to the upper edge of a bucket and to extend around somewhat more than one-half the circumference of the same, its free end portion being turned inward and up to form bearing-lugs, a roller journaled in the said lugs, a frame or bail pivoted to the intermediate portion of the said strap and carrying a second roller, and a handle pivoted to said frame or bail near the roller thereof, and adapted to lie flat upon the same when not in use, said handle being substantially equal in length to the height of the bucket whereby it is adapted to form a support for said bail or frame when the latter is thrown back into reversed position, substantially as specified.

609,852. BLUE DYE. PAUL JULIUS, Ludwigshafen, Germany, assignor to the Badische Anilin and Soda Fabrik, same place. Filed Nov. 9, 1897. Serial No. 657,961. (Specimens.) Patented in Germany Dec. 12, 1892, No. 71,147; in England Feb. 16, 1893, No. 3,487, and in France Apr. 26, 1893, No. 189,359.

Claim.—1. The blue coloring-matter which can be derived from nitrosodiethylmetaämidophenol and alpha-naphthylaminmonosulfo-acid hereinbefore mentioned and which is readily soluble in water giving pure blue solutions that are hardly changed in color by the addition of an alkali and giving a dirty reddish-brown color approaching black in concentrated hydrochloric acid and a reddish-brown color in concentrated sulfuric acid all substantially as described.

2. The new process of manufacturing the new dye consisting in condensing the nitrosodiethylmetaämidophenol with alpha-naphthylaminmonosulfo acid substantially as hereinbefore described.

609,858. SYRINGE. WILBERT S. KAIL, Scio, Ohio. Filed June 24, 1897. Serial No. 642,148. (No model.)

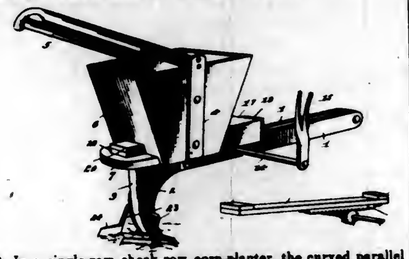


Claim.—A syringe for the purposes specified consisting of a lower yielding containing-bulb having an integral tubular neck extending therefrom and tapering toward its free end, said neck slightly in advance of the bulb having a solid flat collar surrounding the same, and a rigid tubular stem running through said neck and having a curved portion passing out through the neck between the collar and bulb for attachment to a supply-tube, the inner part of said stem having a perforate bulb on the free end thereof beyond the termination of said neck, whereby the neck in advance of the collar is entirely clear for insertible purposes and the collar is permitted to occlude the orifice without extraneous manipulation.

609,854. CORN-PLANTER. CHARLES D. KEITH, Cherokee, Ark. Filed May 7, 1896. Serial No. 690,017. (No model.)

Claim.—1. In a single-row, check-row corn-planter, the combination with the parallel bars forming plow-beams and which are curved downward at their rear ends to form the standard, of the transverse shaft journaled therein, the pinion fast on said shaft intermediate said

bars, the seed-dropper slide provided with a pendent rack engaging and operated by said pinion, and a fork-arm on said shaft for actuating said pinion and slide, substantially as described.



2. In a single-row check-row corn-planter, the curved parallel bars constituting the plow beam and standard, in combination with a pinion for actuating the seed-dropper slide arranged between said bars upon a transverse shaft journaled in said bars and carrying a forked arm to be actuated by the knot in the cord or wire, the seed-dropper slide provided with a pendent rack adapting it to be actuated by said pinion, and a spring for retracting said rack, substantially as described.

3. In a single check-row corn-planter, the combination with the parallel bars forming the plow-beam, of the upright arms to which the plow-handles are attached, the seed-hopper secured intermediate said arms, the slotted hopper-bottom perforated to receive the seed-tube, the tube connected with said hopper-bottom and extending down between the plow-standards, the seed slide moving over said bottom and provided with a perforation adapted to measure the quantity of seed to be deposited at each throw of the slide, a pendent rack-bar secured to the forward end of the seed-slide and engaging a pinion fast on the transverse shaft journaled in the plow-beam, the forked arms on said shaft adapted to be operated by the knotted cord or wire, and a spring for retracting said arms and the seed-slide when released from a knot on said cord, substantially as described.

4. In a single-row check-row corn-planter, the combination with the parallel and curved bars forming the plow beam and standard, of the slotted hopper-bottom, the seed-tube connected therewith to extend down between the pendent arms forming the standards of said plow-beam, the perforated seed slide moving on said slotted hopper-bottom and provided with a mechanism for actuating it adapted to be operated by the check-row cord, stops on said slide for limiting its longitudinal movement, and a spring for retracting said slide after the same has been operated upon by the check-row cord, substantially as described.

609,855. HOE. JOHN R. KELLEY, Reelfoot, Tenn. Filed Feb. 26, 1898. Serial No. 671,829. (No model.)



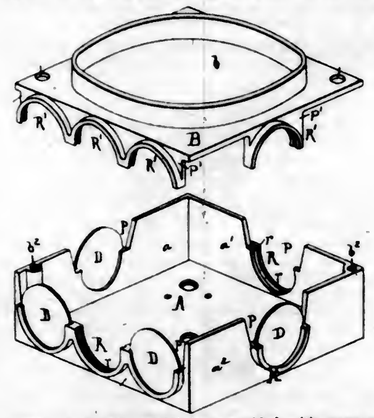
Claim.—1. In a device of the character described, the combination with a shank, and a wedge-shaped locking-plate, of a blade provided with an inclined-sided aperture designed for the reception of said plate, substantially as specified.

2. The combination with a shank provided with a wedge-shaped locking-plate, of a blade provided with an inclined-sided aperture designed for the reception of said blade and cooperating locking mechanism carried by the plate and blade, substantially as specified.

3. In a device of the character described, the combination with a shank provided with a wedge-shaped locking-plate having grooves along its side edges, of a blade provided with an inclined sided aperture for the reception of the blade, and with ribs along the side edge of the aperture and designed to be received within the grooves in the locking-plate.

4. In a device of the character described, the combination with a shank provided with a locking-plate extending substantially at right angles to the socket of said shank, and having longitudinal grooves along its side edges, of a blade provided with an inclined-sided transverse aperture designed for the reception of the locking-plate and having transversely wedge-shaped ribs along the side edges of said aperture and designed to be received within the grooves in the locking-plate, substantially as specified.

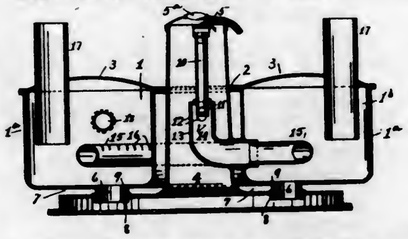
609,856. ELECTRICAL-CONDUIT BOX. HUBERT KRANTZ, New York, N. Y. Filed May 6, 1896. Serial No. 679,925. (No model.)



Claim.—1. A split conduit-box provided with corresponding semicircular rims on the two parts of the box to form the outlet-openings for the conduits, in combination with closing-disks held in place by the two parts of the box when fitted together, substantially as described.

2. A split conduit-box having corresponding grooved semicircular rims on the two parts of the box to form outlet-openings in combination with disks adapted to fit in the grooves and to be held in place to close the openings when the two parts of the box are fitted together.

609,857. WATER-HEATER. PHILIP LINDENMEYR, Baltimore, Md. Filed Oct. 25, 1897. Serial No. 656,297. (No model.)



Claim.—1. In a heater adapted to be submerged in water, a burner, a combustion-chamber, an air-chamber separate from the combustion-chamber and connected by a communicating conduit adapted to supply air to the burner, an air and gas mixer situated in the inlet to the air-chamber and connected to the burner by a conduit extending through the walls of the air-chamber and an intermediate water-space and having a tight connection with said walls, and a chimney, said chambers being exposed to water on all sides and at all points except at the connecting-conduits, air-inlet, and chimney substantially as described.

2. In a heater adapted to be submerged in water, a burner, a combustion-chamber, a separate air-supply chamber communicating with the combustion-chamber through one or more connecting-tubes, said tubes holding the chambers apart, whereby an intermediate water-circulating space is produced, substantially as described.

3. In a heater adapted to be submerged in water, a burner, a combustion-chamber, a separate air-supply chamber communicating with the combustion-chamber through one or more connecting-tubes, said tubes holding the chambers apart, whereby an intermediate water-circulating space is produced, the air-chamber serving as a supporting-base for the heater, substantially as described.

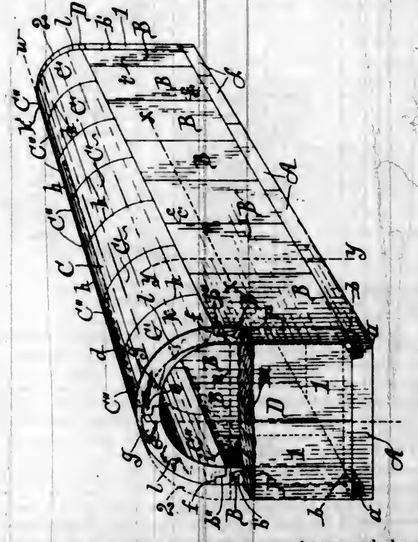
4. In a heater adapted to be submerged in water, the air-inlet pipe, the gas-supply pipe, the air and gas mixing tube 13 situated within the air-inlet tube and separated from the air-inlet tube by a water-space, the combustion-chamber, a burner, and a conduit connecting pipe 13 and the burner said conduit passing through the walls of the air-inlet and combustion-chamber and the intermediate water-space, substantially as described.

5. In a heater adapted to be submerged in water, the continuous combustion-chamber having an opening 2, the continuous ring-burner,

the air-supply tube 5, a conduit whereby the combustion-chamber and the air-supply tube communicate, the gas-supply tube, and a chimney near each end of the combustion-chamber, all in combination, substantially as described.

6. In a heater adapted to be submerged in water, the continuous water-tight combustion-chamber, the burner, the centrally-situated air-inlet tube 5 surrounded by a water-circulating space and centrally situated with respect to the combustion-chamber and its exits, a conduit whereby the air-inlet tube and the combustion-chamber communicate, and a handle attached to the upper end of said air-inlet tube, substantially as described.

609,858. PORTABLE GRAVE-VAULT. BENJAMIN F. LOCKWOOD, Lyons, N. Y. Filed May 7, 1897. Serial No. 635,609. (No model.)



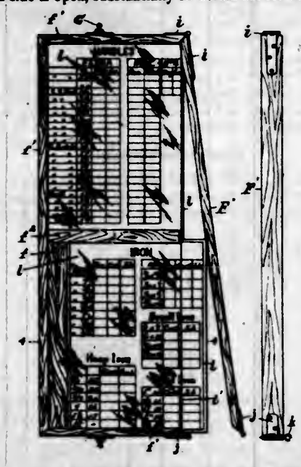
Claim.—1. A portable grave-vault composed of top arched segmental slabs, said slabs connected at their longitudinal center by a tongue-and-groove joint and at their sides by a lapping joint and each slab provided at its lower bottom edge with a projecting tongue and abutting shoulder, in combination with side slabs, said side slabs provided on one edge with a vertical groove, on the opposite edge with a tongue, on its upper end with a tongue on one edge thereof to engage the shoulder of the top slab, and at its bottom with a central tongue, bottom slabs each provided near its opposite side edges with a vertical groove to engage with the said lower central tongue of the side slabs, and sectional end pieces to close the vault, said end pieces connected by a tongue-and-groove joint and provided with an interiorly-projecting side and top flange to engage the top and side parts of the vault to additionally support the same, substantially as described.

2. In a portable grave-vault, the side slabs B provided on one side edge with a vertical groove and on the opposite edge with a tongue, its upper end provided with a tongue at one edge and its lower end with a central tongue, in combination with top and bottom slabs provided with suitable means to engage with said side slabs, substantially as described.

3. In a structure of the class described, parallel side walls composed of a series of upright slabs, an end slab of both walls being of a narrower width than its companions, in combination with a longitudinally-bisected roof upheld by the side walls, one of the two series of segment-shaped slabs forming the roof starting with a section narrower than the others of said series, and the other series of segments terminating in a section narrower than the preceding sections and at that end of the structure remote from the narrower segment of the first-named series, as and for the purposes set forth.

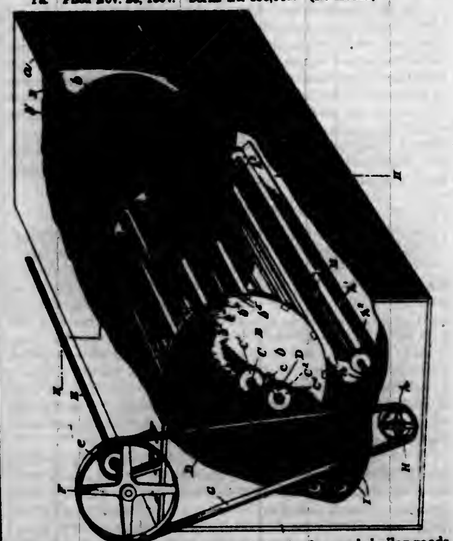
609,859. APPARATUS FOR DISPLAYING PRICE-CARDS. JOHN S. MILLER, Jersey City, N. J. Filed Apr. 30, 1897. Serial No. 634,867. (No model.)

Claim.—1. A casing for displaying price-cards, comprising the flat board *f* having the four marginal moldings *f'* attached to the edges, the molding being provided with central groove *g* and with rabbets A at the opposite edges of such groove, and the moldings being secured permanently upon three edges of the flat board *f*, and at the fourth side secured at one corner by a hinge and at the opposite corner by a detachable fastening, the rabbets upon such removable side being adapted to cover the edges of the price-cards *l* and glass *l'* when inserted in the opposite sides of the casing, and the flat board *f* holding the molding upon three sides rigidly in position when the fourth side is open, substantially as herein set forth.



2. The combination, with shelving or other vertical support, of a casing for displaying price-cards, comprising the flat board *f* having marginal moldings *f'* secured permanently upon three of its edges, and detachably upon the fourth edge, the molding being provided with central groove *g* and with rabbets A at the opposite edges of such groove, and the casing having pivots fixed eccentrically upon the top and bottom moldings, and brackets being projected from the shelving or vertical support and engaged with such pivots, substantially as herein shown and described.

609,860. OXIDIZING-MACHINE. ROBERT MEYER, Philadelphia, Pa. Filed Nov. 26, 1897. Serial No. 659,910. (No model.)



Claim.—1. An apparatus for oxidizing hosiery and similar goods comprising a suitably-closed case or chamber having a door and air-heating apparatus, a cylinder arranged to revolve within said case, having on its interior a series of containing-shelves consisting of parallel strips slightly separated and connected in arc shape to form a

curved containing-surface, together with a series of loops projecting from the outer strip and forming a continuation of said curvature, to adapt said shelves to shovel up the goods within the cylinder and carry them to the vertical center thereof, together with a fan arranged below the cage, and means for revolving the cage and simultaneously imparting motion to the fan, substantially as described.

2. An oxidizing apparatus comprising a closed case or chamber, means for permitting access thereto, means located within said case or chamber for heating the air therein, a revolving cage or cylinder journaled within said case, provided on its interior with a series of shelves composed of parallel slightly-separated longitudinal strips arranged to present a curved front, and a series of loops forming a continuation of the curvature projecting from the outer strip, together with a fan arranged within said case below said cage, and mechanism for revolving the cage and simultaneously imparting motion to the fan, substantially as described.

609,861. **MECHANICAL MOVEMENT.** SAMUEL G. MCKEAN, Pittsburg, Pa., assignor of one-half to Frederick Ingersoll and Le Grand Ingersoll, same place. Filed Jan. 14 1897. Serial No. 619,206. (No model.)



Claim.—1. The combination of a driven wheel provided with a series of involute flanges and intervening grooves extending from the periphery to the center of the driven wheel, a driving-shaft at right angles to the axial center of the driven wheel, means for applying power to the shaft, and a driving-wheel secured to the shaft provided with a series of rounded rollers 7 regularly arranged upon its periphery mounted on stems 8 secured to the wheel, substantially as set forth.

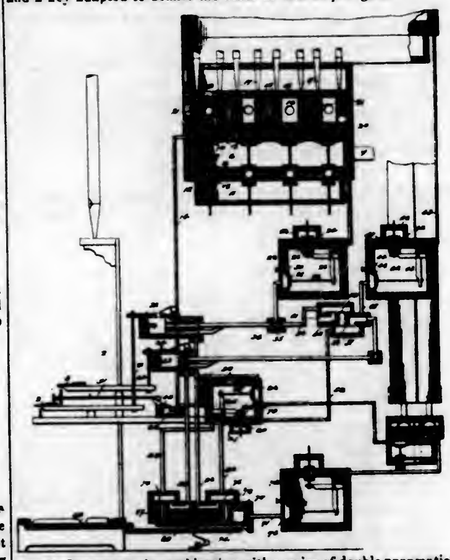
2. The combination of a driven wheel provided with a series of involute flanges and intervening grooves extending from the periphery to the center of the driven wheel, a driving-shaft at right angles to the axial center of the driven wheel, means for applying power to the shaft, and a driving wheel secured to the shaft provided with a series of rounded rollers 7 regularly arranged upon its periphery mounted on stems 8 secured to the wheel, with intervening ball-bearings 9 in suitable recesses in the face of the wheel, substantially as set forth.

3. The combination of a power-wheel provided with a series of rounded rollers mounted with ball-bearings on its periphery, a driven wheel mounted at right angles to the axial center of such power-wheel provided with a series of involute flanges extending from the periphery to the center of the driven wheel with intervening grooves in which the rollers engage, and a concave spirally-grooved wheel mounted on the shaft of a driven machine, a driving-wheel aliving with its longitudinal center provided with rounded rollers on its periphery engaging the grooves of the driven wheel, and a connecting-shaft secured to the involute wheel and such driving-wheel respectively, substantially as set forth.

609,862. **TUBULAR PNEUMATIC-ORGAN.** JULIUS NEHY, Philadelphia, Pa. Filed June 24, 1897. Serial No. 642,117. (No model.)

Claim.—1. In an organ, a double-pneumatic valve comprising a casing having therein a pair of chambers, a central opening extending from one of said chambers to the other, lateral openings through said casing each extending to one of said chambers adjacent said central opening, diaphragms held in said chamber each adapted when inflated to cover the end of the central opening and the end of that lateral opening leading to the chamber in which the diaphragm is located and adapted when both are deflated to permit the passage of wind from one of said lateral openings under its diaphragm through the central opening under the other diaphragm and through the other lateral opening and means for deflating said pneumatics.

2. In an organ, a double-pneumatic valve comprising a casing having therein a pair of chambers, a central opening extending from one of said chambers to the other, openings through said casing each extending to one of said chambers adjacent said central opening diaphragms held in said chambers each adapted when inflated to cover the end of the central opening and the end of that lateral opening leading to the chamber in which the diaphragm is located and adapted when both are deflated to permit the passage of wind from one of said lateral openings under its diaphragm through the central opening under the other diaphragm and through the other lateral opening, a draw-stop constituting means for deflating one of said diaphragms and a key adapted to deflate the other of said diaphragms.

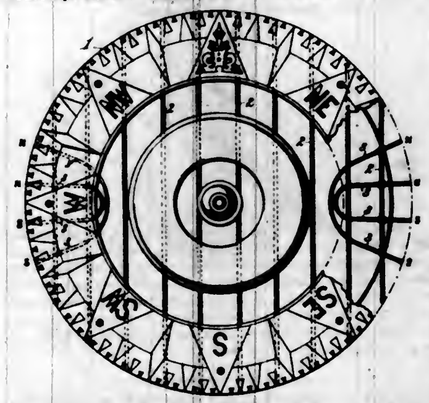


3. In an organ, in combination with a series of double pneumatics each comprising a casing having a chamber therein, a passage leading from said chamber, a second chamber into which said passage opens a passage leading from the exterior to said first chamber and opening adjacent said first-mentioned passage, a passage leading from the exterior of said casing and opening into said second chamber adjacent said first-mentioned passage, diaphragms held in each of said chambers to surround the openings thereinto and adapted when inflated to close the same and when deflated to form, with the three passages a continuous conveyance, a draw-stop, a ventil operated by said draw-stop, conveyances connecting said ventil with each of the series of first-mentioned chambers, whereby the diaphragms contained in the said first-mentioned chambers are simultaneously deflated when said draw stop is drawn, a series of ventils each operated by one of said keys, and a series of conveyances each extending from one of said ventils to the second chamber of the double pneumatic corresponding to said key.

4. In an organ, in combination with a series of double pneumatics each comprising a casing having a chamber therein, a passage leading from said chamber a second chamber into which said passage opens, a passage leading from the exterior to said first chamber and opening adjacent said first-mentioned passage, a passage leading from the exterior of said casing and opening into said second chamber adjacent said first-mentioned passage, diaphragms held in each of said chambers to surround the openings therein and adapted when inflated to close the same, and when deflated to form, with the three passages a continuous conveyance, a draw-stop, a ventil operated by said draw-stop, conveyances connecting said ventil with each of the series of first-mentioned chambers, whereby the diaphragms contained in the said first-mentioned chambers are simultaneously deflated when said draw-stop is drawn, a series of ventils each operated by one of said keys, a series of sets of pipes, a wind-chest and air-trunk, a series of openings between said wind-chest and said air-trunk, a series of double pallets each arranged to close either end of one of said openings, a series of pneumatics held in said wind-chest means for connecting each of said pneumatics to a separate double pallet, a conveyance leading from each of said openings between said wind-chest and said air-trunk, branches formed upon said conveyance corresponding in number to the number of pipes in the set to which said conveyance leads, diaphragms held upon said branches to close the lower end of said pipes when inflated and a series of conveyances each leading from one of said pneumatics to the passage extending from the exterior of the casing and opening beneath the diaphragm in the first-mentioned chamber of the double pneumatic corresponding to the set of pipes above referred to.

5. In an organ, in combination with a series of double pneumatics each comprising a casing having a chamber therein, a passage leading from said chamber a second chamber into which said passage opens, a passage leading from the exterior to said first chamber and opening adjacent said first-mentioned passage, a passage leading from the exterior of said casing and opening into said second chamber adjacent said first-mentioned passage, diaphragms held in each of said chambers to surround the openings thereinto and adapted when inflated to close the same, and when deflated to form, with the three passages a continuous conveyance, a draw-stop, a ventil operated by said draw-stop, conveyances connecting said ventil with each of the series of first-mentioned chambers, whereby the diaphragms contained in the said first-mentioned chambers are simultaneously deflated when said draw-stop is drawn, a series of ventils each operated by one of said keys, a series of sets of pipes, a wind-chest, an air-trunk, a series of double pallets each arranged to close either end of one of said openings, a series of pneumatics held in said wind-chest means for connecting each of said pneumatics to a separate double pallet, a conveyance leading from each of said openings between said wind-chest and said air-trunk, branches formed upon said conveyance corresponding in number to the number of pipes in the set to which said conveyance leads, diaphragms held upon said branches to close the lower end of said pipes when inflated and a series of conveyances each leading from one of said pneumatics to the passage extending from the exterior of the casing and opening beneath the diaphragm in the first-mentioned chamber to the double pneumatic corresponding to the set of pipes above referred to, pedal-keys, a series of ventils each adapted to be separately operated by one of said pedal-keys, a series of conveyances each extending from a separate one of the first-mentioned manual-ventils to the corresponding pedal-ventil, a series of pedal-organ pipes, a pedal wind-chest, a pedal air-trunk, a series of openings corresponding in number to the number of pedal-notes extending from said wind chest to said air-trunk, a series of double pallets each held to close either end of a single opening, a series of pneumatics, a series of conveyances each leading from a separate one of said pneumatics to the corresponding pedal-ventil, a series of conveyances each leading from a separate one of said openings between said wind-chest and said air-trunk and a series of pneumatics held upon said conveyances and adapted when inflated to close the pedal pipe or pipes belonging to the pedal-key operating said pneumatics.

609,863. **SHIP'S COMPASS.** ROBERT OLIVER, New York, N. Y. Filed Sept. 11, 1897. Serial No. 651,376. (No model.)

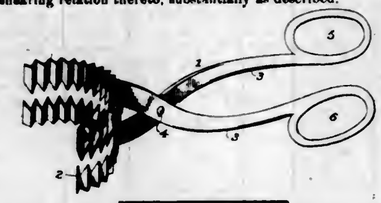


Claim.—1. In a mariner's compass, a compass-card having straight permanent bar-magnets arranged thereon parallel to a north and south meridian, and permanent U-shaped, or horseshoe magnets, arranged with their legs on opposite sides of the equatorial line, substantially as described.

2. In a mariner's compass, the combination with a compass-card of straight, permanent bar-magnets arranged at intervals in parallelism with a north and south meridian, and one or more permanent horseshoe-magnets attached to said bar-magnets and having the legs of north polarity upon the same side of the equatorial line as the ends of the bar-magnets having a like polarity, substantially as described.

609,864. **PINKING-SCISSORS.** IRA OLIVER, Denver, Colo. Filed Jan. 19, 1897. Serial No. 619,739. (No model.)

Claim.—As an improved article of manufacture, pinking-shears comprising pivoted handles, and approximately semicircular pinking-blades secured midway between their ends and on their convex sides to said handles, each blade comprising a strip of corrugated metal and forming a blade zigzag in form in longitudinal section, said blades projecting from the handles on their adjacent sides, and one adapted to pass its projecting edge within the projecting edge of the other, in shearing relation thereto, substantially as described.



609,865. **LAP-ROBE.** HENRY W. PLANT, New York N. Y. Filed Jan. 29, 1898. Serial No. 668,482. (No model.)



Claim.—As an improved article of manufacture the herein-described robe for children's carriages, the same consisting of a body portion having a central opening adapted to receive the body of the child, a flap portion adapted to protect the front of the child and a slit connecting the central opening with the edge of the robe, the lining or under face of the robe being provided at one side of the slit with a flap adapted to overlap the slit and to be attached to the lining or under face of the robe at the opposite side of the slit, substantially as shown and described.

609,866. **MORTISING-CHISEL.** WILLIAM POTTER, New York, N. Y. Filed Dec. 27, 1897. Serial No. 663,791. (No model.)



Claim.—A mortising-chisel, the chip-receiving channel whereof is provided with a floor running parallel with the under face of the chisel from the rear end wall to the point of inclination of the cutting edge, side walls having their exterior faces concave or otherwise hollowed out to avoid friction, and fluted cutting edges, as and for the purposes specified.

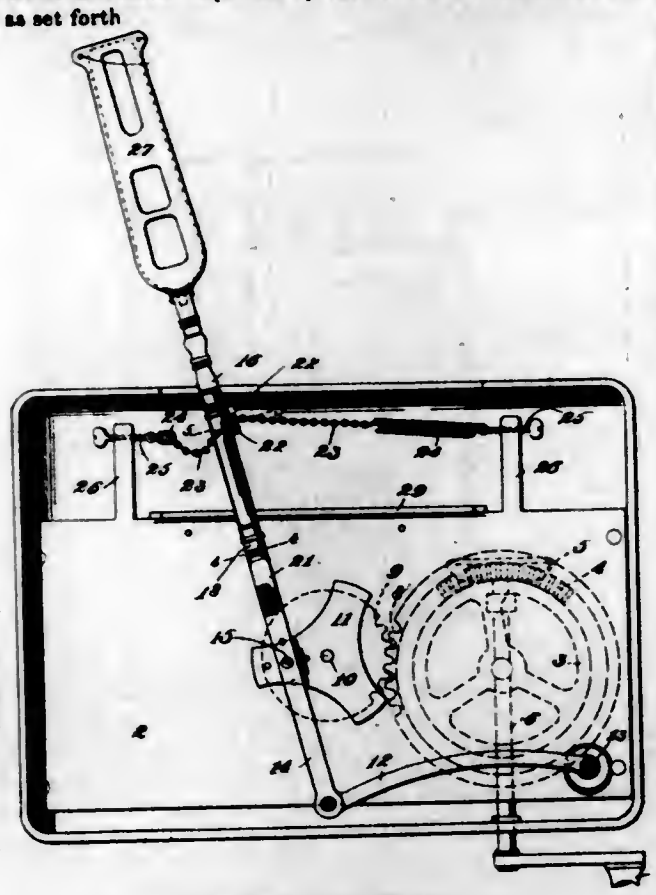
609,867. **DEVICE FOR SHARPENING EDGED TOOLS.** WALTER PURDY, Somerset, Pa. Filed Sept. 28, 1897. Serial No. 653,342. (No model.)

Claim.—1. In a device for sharpening edged tools, the combination with a support, and a hone in fixed relation thereto, of an arm mounted on said support and adapted to carry the tool to be sharpened in contact with the hone, means for imparting to the end of said arm carrying the tool an oval or elliptical motion over the surface of the hone, and means for reversing the position of the edge of the tool at approximately each limit of its movement, substantially as set forth.

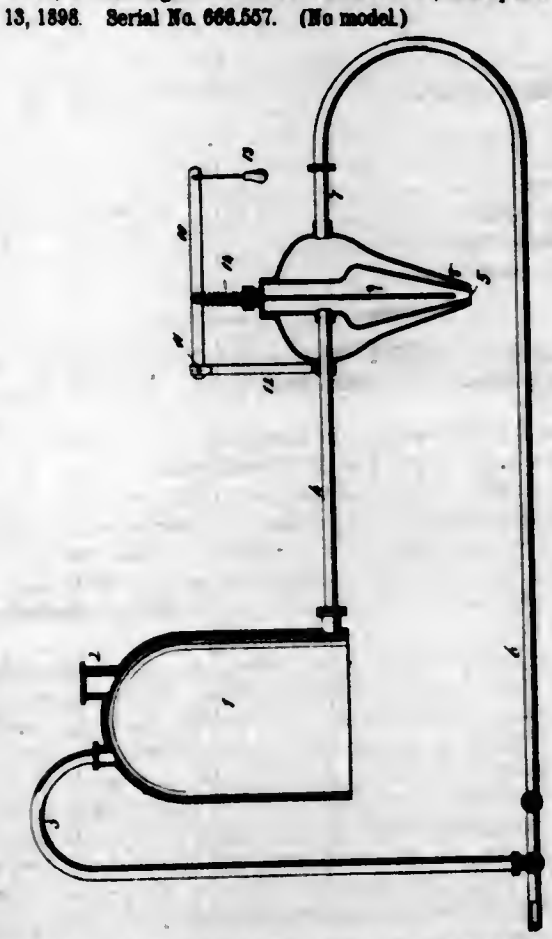
2. In a device for sharpening edged tools, the combination with a support, and a hone in fixed relation thereto, of a main arm mounted on said support, a tool-carrying arm rotatably mounted in said main arm and adapted to carry the tool to be sharpened in contact with the hone, means for imparting motion to said main arm, and resilient members connected to one side of said tool-carrying arm and connected at their other ends to points on each side of said tool-carrying arm whereby the reciprocation of said tool-carrying arm therebetween will alternately cause the tension of said resilient members to be exerted to rotate said tool-carrying arm in the main arm, substantially as set forth.

3. In a device for sharpening edged tools, the combination with a support, and a hone in fixed relation thereto, of a main arm mounted on said support, a tool-carrying arm rotatably mounted in said main arm and adapted to carry the tool to be sharpened in contact with the hone, means for imparting motion to said main arm, resilient members connected to one side of said tool-carrying arm and connected at their other ends to brackets on each side of said tool-car-

rying arm whereby the reciprocation of said tool-carrying arm therebetween will alternately cause the tension of said resilient members to be exerted to rotate said tool-carrying arm in the main arm, a pin on the inner end of said tool-carrying arm adapted to engage with sockets formed in the main arm to limit the rotation of said tool-carrying arm in said main arm, and a leaf-spring on said main arm adapted to contact with said pin to hold it in position against any but positive movement imparted by the resilient members, substantially as set forth



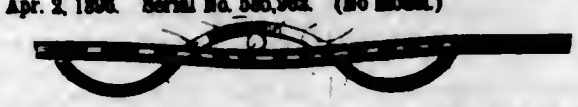
609,368. MOTTLING OR SPOTTING DEVICE. CORNELIUS REGAN, New York, N. Y., assignor to Frederick Haberman, same place. Filed Jan. 13, 1898. Serial No. 666,557. (No model.)



Claim.—1. In a mottling or spotting device, the combination with a pressure-tank, of a spout or nozzle connected therewith, a concentric pressure-spout disposed about said nozzle, a cleaning-stem arranged within said nozzle, means for projecting said stem through the discharge end of the nozzle, and a spring for normally holding said cleaning-stem retracted to permit the unobstructed discharge of the mottling material, substantially as described.

2. In a mottling or spotting device, the combination with a pressure-tank, of a spout or nozzle connected therewith, a pressure-spout disposed concentrically about said nozzle, a cleaning-stem arranged within said nozzle and adapted to be projected through the discharge end thereof to clear the same, a lever for projecting the cleaning-stem, and a spring arranged to normally hold the cleaning-stem retracted to permit the unobstructed discharge of the mottling material, substantially as described.

609,869. FENCE. AQUILA S. ROBINSON, Camden, N. J. Filed Apr. 2, 1896. Serial No. 585,962. (No model.)



Claim.—1. In a fence, the combination with a stringer-wire, and spring-metal fastener composed of a body part and oppositely-curved spring-bows, of a slot in the body part, and a picket inserted between the stringer and the curved body part and serving to force the spring-bows against the stringer, substantially as set forth.

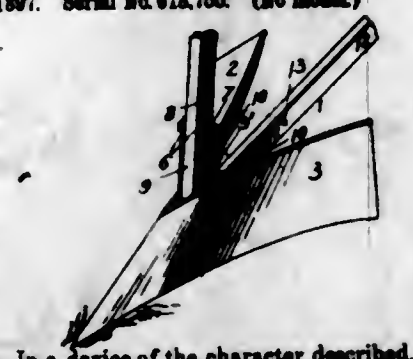
2. A fence consisting of stringer-wires and cross-pickets united together by a spring-fastener, retained in place upon the stringers by the pickets and operating, respectively, to exert a constant pressure against the stringers, and thereby to automatically control their tension, substantially as set forth.

3. In a fence-fastener, a spring-plate formed to constitute a body part and oppositely-curved spring-bows, substantially as set forth.

4. A fence-fastener, composed of a spring-plate curved to form a body part, oppositely-curved spring-bows, a longitudinal slot in the body part, and sharp edges defined upon the extremities of the bows and the opposite ends of the slot, respectively, substantially as set forth.

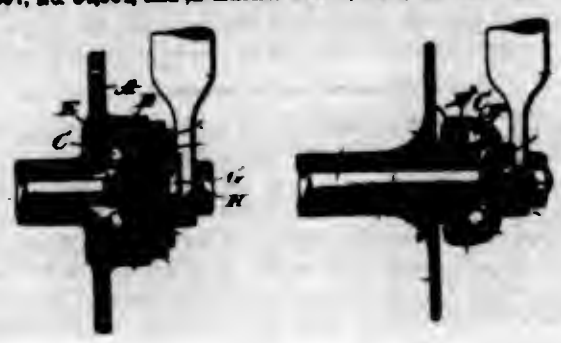
5. A fence-fastener consisting of a spring-metal plate, curved to form a body part, and a slot in the body part, in combination with spring-bows upon opposite extremities of the plate, in line with the slot, the ends of the bows normally extending beyond the axial line of the ends of the slot, substantially as and for the purpose specified.

609,870. PLOW. JOHN W. SARGEANT, Elmwood, Nebr. Filed Jan. 11, 1897. Serial No. 618,755. (No model.)



Claim.—In a device of the character described, the combination with a runner and runner post or standard disposed at right angles and provided respectively with a series of apertures, of a moldboard provided with a pair of parallel standards designed to embrace the runner-post and provided with securing mechanism, and a strap connecting the diverging ends of the moldboards, and provided with a loop for the reception of the runner, and a fastening-pin securing the runner therein, substantially as specified.

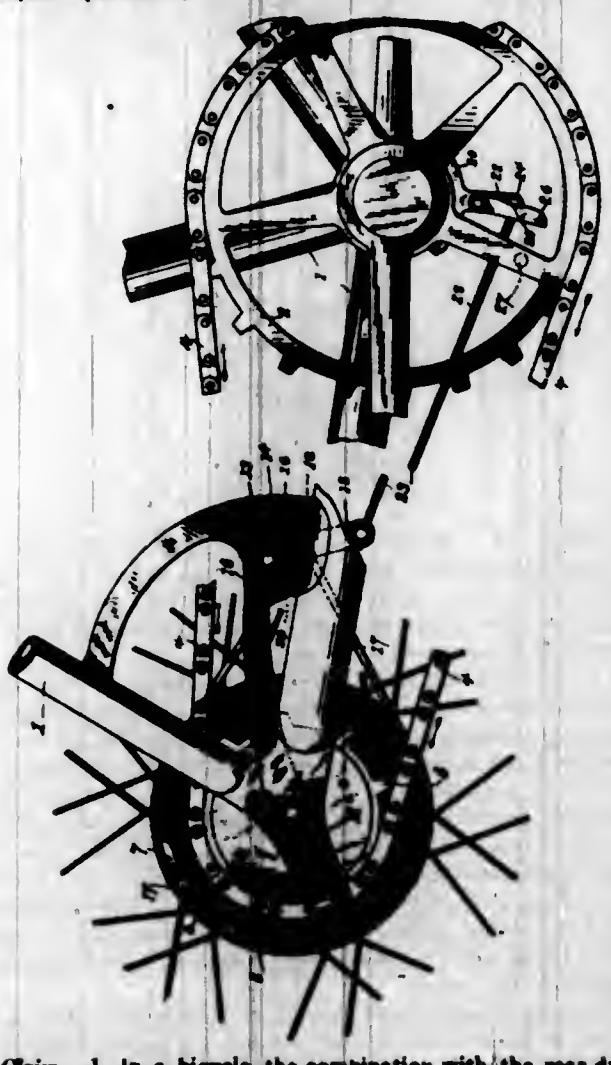
609,871. BALL-BEARING. FREDERICK W. SCHROEDER, Newtown, New South Wales, assignor to Schroeder's Ball-Bearing Company Limited, Sydney, New South Wales. Filed Dec. 23, 1896. Serial No. 616,769. (No model.) Patented in New South Wales Nov. 23, 1896, No. 7,075; in Victoria Nov. 25, 1896, No. 13,734; in Queensland Nov. 25, 1896, No. 3,642; in South Australia Nov. 25, 1896, No. 3,477; in New Zealand Dec. 3, 1896, No. 9,080; in West Australia Dec. 3, 1896, No. 1,409; in England Dec. 29, 1896, No. 29 926; in Belgium Jan. 4, 1897, No. 125,551; in France Jan. 4, 1897, No. 262,779; in Canada Feb. 11, 1897, No. 54,964, and in Austria Feb. 3, 1896, No. 855/48.



Claim.—1. In a ball-bearing, the combination of a ball race or way provided internally with a circumferential oil-keep having a contracted mouth, a spindle having thereon a cone provided with an inclined circumferential groove, an elastic and semiflexible washer secured obliquely in said groove, the said washer being adapted to be passed through the said contracted mouth and then assume its normal position to close the contracted mouth, thereby preventing the egress of oil and entrance of dust, and the balls located between the said ball-race and cone, substantially as described.

2. In a ball-bearing, the combination of a spindle, a ball race or way provided with a circumferential oil-keep having a contracted mouth, an adjusting-cone having an inclined circumferential groove, an elastic and semiflexible washer secured in said cone-groove to guard the contracted mouth of the oil-keep, a set of balls between the said race and cone, and means for locking the parts together, substantially as described.

609,872. BACK-PEDALING BRAKE. EDWARD H. SCHULTZ and EDWIN H. STARKEY, Grant, Minn. Filed Sept. 16, 1897. Serial No. 651,916. (No model.)



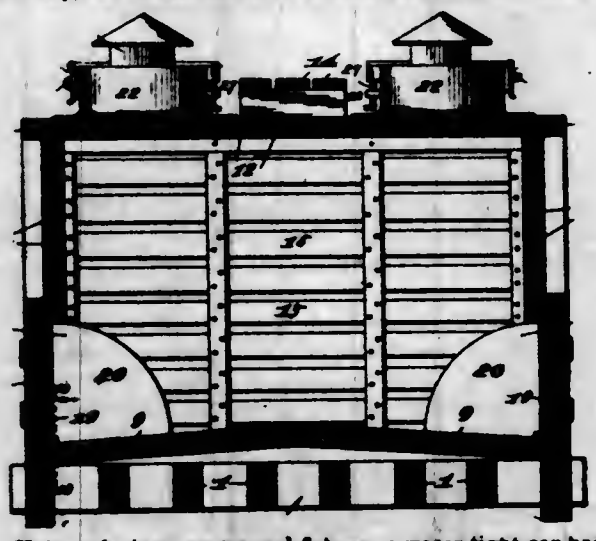
Claim.—1. In a bicycle, the combination with the rear driven wheel, of a sprocket-wheel having a clutch engagement with the said driven wheel, whereby when said sprocket-wheel is rotated, the driven wheel is turned in unison; a brake-wheel secured to turn in unison with the driven wheel, a drive sprocket-wheel, a chain connecting the two sprocket-wheels, a brake-band engaging the brake-wheel, a bell-crank lever connected to the ends of the band, a rod connecting the bell-crank lever to a link carried by the frame, and means carried by the drive-sprocket for actuating the rod to brake the rear driven wheel, substantially as set forth.

2. In a brake mechanism for bicycles, the combination with a brake-wheel, the clutch mechanism, the brake-band and the bell-crank lever connected to the ends of the band, a drive-sprocket having a laterally-projecting pin, a bracket secured to the frame of the machine and provided with a link and with a pivoted arm, said link being connected to the bell-crank lever by a connecting-rod, and said pivoted arm being in the path of the movement of the pin, whereby back pressure upon the pedal will apply the brake, substantially as set forth.

3. The combination with the rear driven wheel of a bicycle and means for adjustably securing the said wheel to the frame of the machine, a brake mechanism consisting of a band wheel, a strap embracing the band-wheel, a bell-crank lever adjustably journaled in the frame of the machine and connecting the ends of said straps, means for compressing the straps about the brake-wheel, and a link connecting the bell-crank lever with the rear axle of the machine, so that when the rear wheel is adjusted, the brake mechanism will be correspondingly adjusted, substantially as set forth.

4. In a bicycle, the combination with the rear driven wheel, a brake-wheel secured thereto, a sprocket-wheel having a clutch engagement with the hub of the driven wheel to permit the said wheel to turn independently of the sprocket-wheel when the latter is at rest but to turn with the sprocket-wheel when it is rotated, a bell-crank lever pivoted to said frame, a spring brake-band connected to said lever and embracing the brake-wheel, a bracket secured underneath the crank-shaft hanger of the machine, a link pivoted to the bracket and provided with a stud, a rod connecting the bell-crank lever with the link, an arm pivoted to engage said arm to apply the brake mechanism, substantially as set forth.

609,873. OYSTER OR FISH CAR. ARTHUR E. STILWELL, Kansas City, Mo. Filed Jan. 15, 1898. Serial No. 666,740. (No model.)



Claim.—1. In an oyster and fish car, a water-tight car-body constructed with receiving-openings in the top, discharge-openings in its sides adjacent its bottom, which bottom is constructed of transverse timbers slightly inclined from the sides of the car to the center thereof, substantially as specified.

2. In an oyster and fish car, a water-tight car-body and breakwater-partitions arranged transversely within said car-body, substantially as specified.

3. In an oyster and fish car, a water-tight car-body, in the top of which is formed the receiving-openings, and ventilator-caps normally closing said openings, substantially as specified.

4. In an oyster and fish car, a water-tight car-body, breakwater-partitions arranged transversely within said car-body, in the top of which car-body is formed a plurality of receiving-openings, and ventilator-caps normally closing said openings, substantially as specified.

5. In an oyster and fish car, a water-tight car-body constructed with discharge-openings in its sides adjacent its bottom, doors normally closing said openings, and gates hinged in said openings so as to close when the doors are closed and to swing downwardly and form discharge-chutes when said doors are open, substantially as specified.

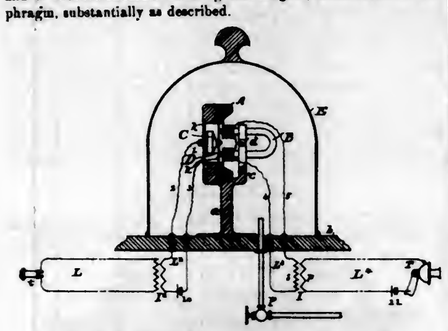
6. In combination with an oyster and fish car having discharge-openings formed in its sides, the gate 18 provided with the wings 20, which gate swings in the opening and forms a chute for the discharge of the contents of the car, substantially as specified.

7. In an oyster and fish car, a water-tight car-body, in the top of which body is formed ventilated receiving-openings and in the sides of which car-body is formed a series of discharge-openings, doors normally closing said discharge-openings, partitions arranged transversely within the car-body, and gates hinged in the discharge-openings in front of the doors therefor, which gates swing downwardly to form chutes when the doors are open, substantially as specified.

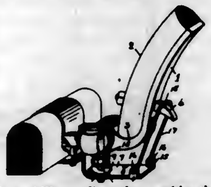
8. In an oyster and fish car, a water-tight car-body, a series of partitions arranged transversely within said car-body thus forming compartments, in the top of each compartment in said car-body there being formed a plurality of receiving-openings, ventilated covers for said openings, and in the side walls of each compartment of the car there being formed discharge-openings, doors normally closing said discharge-openings, and gates hinged in said openings, which gates swing downwardly and form discharge-chutes when the doors are open, substantially as specified.

609,874. TELEPHONE REPEATER OR RELAY. JOHN S. STONE, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Dec. 28, 1897. Serial No. 664,414. (No model.)

Claim.—A telephone-relay comprising an electromagnet in one circuit, transmitting-electrodes in a second circuit, a diaphragm common to both said electromagnet and said transmitting-electrodes, and a vacuum-chamber inclosing said magnet, electrodes, and diaphragm, substantially as described.



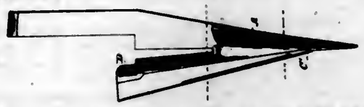
609,375. ANTIRATTLER AND SHAFT-COUPLING. EDWARD TARBOX, Jr., Hancock, N. Y. Filed May 15, 1897. Serial No. 636,811. (No model.)



Claim.—1. In a thill-coupling, the combination with a thill-iron having an open slot for engaging the axle-clip bolt or pin of a spring-actuated follower operating in the open end of said slot, an angle iron support for said follower and a spring surrounding the shank thereof and upheld by said angle-iron for the purpose and substantially as described.

2. The combination with an axle-clip, of a thill-iron having an open slot for engaging the clip bolt or pin, hooks on said thill-iron, one in front and another in rear of the slot therein, an angle-iron plate connected with the rear hook, an adjustable follower carried by said angle-iron and operating in the thill-iron slot, a link connecting said angle-iron with the forward thill-hook, a spring surrounding the shank of said follower, and means for adjusting the follower and the tension of said spring, substantially as described.

609,376. KNIFE-GUARD FOR MOWING-MACHINES. WILLIAM L. WALL, East Radford, Va. Filed Nov. 17, 1896. Serial No. 612,628. (No model.)



Claim.—1. A slotted guard-finger for harvesting-machines provided in its upper face with a longitudinal groove extending to near the point of the guard and through the cap portion thereof, in combination with an upright knife-blade secured in said groove and made tapering from its rear end to its point, substantially as and for the purpose described.

2. A slotted guard-finger for harvesters provided on its opposite sides in front of and below the plane of the knife-slot, with laterally-projecting knife-edges, and in its cap portion overhanging and in advance of the knife-slot with a vertical longitudinal groove, in combination with a tapering upright knife-blade removably secured in said groove, substantially as described.

3. A slotted guard-finger for harvesting-machines made tapering to a point at its forward end and provided on its sides in advance of the knife-slot with laterally-projecting V-shaped ribs located below the plane of the knife-slot and expanding in width from the point rearward, and in its upper face or cap portion in advance of and above the knife slot with a vertical longitudinal groove, in combination with a tapering knife-blade secured in said groove, for the purpose and substantially as described.

609,377. WHIST-TABLE. HENRY M. WEAVER, Mansfield, Ohio. Filed July 2, 1896. Serial No. 597,884. (No model.)



Claim.—1. A duplicate whist table comprising a top, radial card-receptacles mounted to move below said top, means for moving said receptacles so as to successively register them with openings adjacent to the four sides of the table and means for pushing the cards in the receptacles through said openings.

2. The combination with a series of radial receptacles each adapted to contain a hand, of a cover for these receptacles, said cover having four slots or openings therein whereby to simultaneously disclose four hands, and means for simultaneously ejecting the four hands.

3. The combination with a series of radial receptacles each adapted to contain a hand, of a cover for these receptacles, said cover having four slots or openings therein, means for simultaneously ejecting the four hands and means for restoring the cards to the receptacles.

4. The combination with a series of radial card-receptacles, of means for closing these receptacles having four slots or openings therein equidistant from each other, and means for simultaneously ejecting the four hands.

5. A card-table having a series of diametrically opposite openings in the sides thereof, a rotary support, a series of receptacles carried by said support and adapted to allne with said openings as the support is turned and means for simultaneously ejecting the four hands.

6. A card-table having a series of openings in the sides, a support, a series of receptacles for each opening, the said receptacles being carried by the support, means for rotating the support whereby the corresponding receptacles of each series are simultaneously presented at the several openings, and means for simultaneously ejecting the four hands.

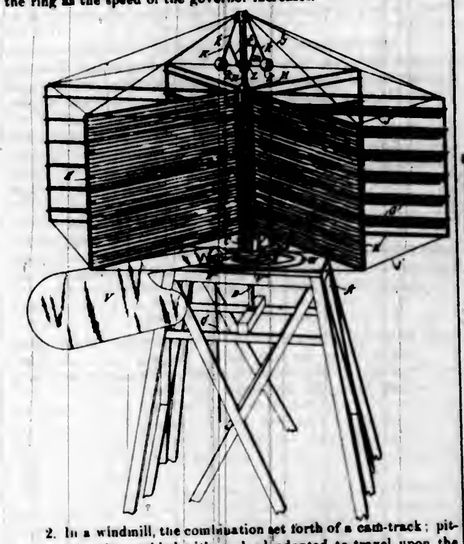
7. A card-table having a series of openings in its sides, series of movable receptacles each receptacle adapted to contain a "hand," means for moving the receptacles whereby the corresponding receptacles of each series are simultaneously presented at the several openings, and means for simultaneously ejecting the four hands.

8. A card-table comprising a pivoted support, a series of openings in the sides of the table, receptacles carried by the support gearing for rotating the support, and means for simultaneously ejecting a plurality of hands.

9. A duplicate whist table comprising a top having apertures therein, card-receptacles mounted to move below said top, and means for ejecting the cards in the receptacles opposite the openings in the top.

609,378. HORIZONTAL WINDMILL. JOHN A. WHITEL, Redlands, Cal. Filed Feb. 26, 1897. Serial No. 625,208. (No model.)

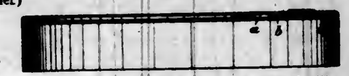
Claim.—1. In a windmill, the combination set forth of a base: a collar mounted to rotate on the base-block and provided with a cam-track: a ring arranged within the collar; a vertical shaft journaled in the base: wing-frames secured to the shaft; shutters pivoted in the wing-frames; pitmen, each provided at its lower end with a wheel to travel upon the cam-track, and arranged to operate the shutters of one wing; a governor secured upon the upper end of the shaft; rods connecting the governor with the ring and adapted to elevate the ring as the speed of the governor increases.



2. In a windmill, the combination set forth of a cam-track; pitman-rods, each provided with a wheel adapted to travel upon the track and to project inside the track and arranged to operate the shutters of the mill; a ring arranged within the track beneath the projecting portion of the wheels; a vertical shaft; a governor secured to the upper end of the shaft; rods rigidly secured at one end to the ring and having their upper ends arranged to slide through eyes provided in the governor; and means independent of the governor, arranged to elevate the ring.

3. In a windmill, the combination set forth of a base; a collar journaled upon the base and provided with a cam-track; a ring adapted to fit within the collar; a vertical shaft journaled in the base; recesses provided in the base below the ring; a yoke encircling the shaft and provided with arms seated in the recesses; a bifurcated lever pivoted below the base; pitman-rods connecting the ends of the lever with the yoke; means for operating the lever; wings secured to the shaft and each composed of shutters adapted to open and close; pitman-rods arranged to operate the shutters and each provided with a wheel to travel upon the cam-track and the ring; a governor; and means connecting the governor with the ring and adapted to operate to raise the ring when the speed becomes excessive.

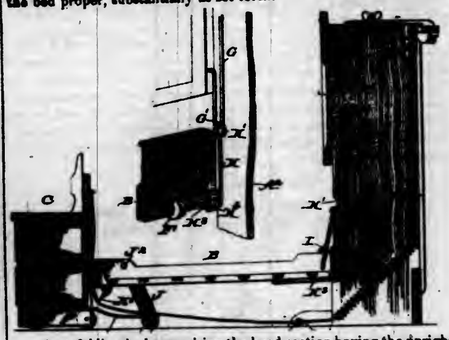
609,379. LOOSE COVER AND CUTTER FOR HERMETICALLY-SEALED METALLIC BOXES OR CASES. GEORGE H. WILLIAMSON, Worcester, England. Filed Nov. 22, 1897. Serial No. 659,508. (No model.)



Claim.—A loose cover or lid for boxes, cans or the like, having a depressed or sunken portion on the under side of its top near one edge to provide a guideway upon such under side, and a single longitudinal slot centrally arranged in the said depressed portion, said slot being of less length than the depression, a cutter-plate lying within and adapted to slide back and forth in the guideway formed by the said depression in the cover and arranged to close the said slot in either position of adjustment, a cutter at one end of said plate, and an attachment for the plate passing up through said longitudinal slot and having portions which overhang the side walls of the slot whereby the said cutter-plate is guided in its movement and retained in position.

609,380. FOLDING BED. CHARLIE H. YEAGER, Prairie Creek, Ind. Filed Mar. 16, 1898. Serial No. 674,338. (No model.)

Claim.—1. A folding bed comprising the head-section having guide-rods, the bed proper, and the hanger-links pivoted at one end to said bed proper and sliding at their other ends upon the guide-rods and swinging at such sliding ends toward and from the upper end of the bed proper, substantially as set forth.



2 A folding bed comprising the head-section having the upright guide-rods upturned at their ends forming seats, the bed proper and the hangers pivoted to the bed proper, sliding on the guide-rods and arranged to rest in the seats formed by the upturned lower ends of said rods substantially as set forth.

3. A folding bed comprising the head-section, the bed proper, and the hangers pivoted to the bed proper having a sliding connection at their upper ends with the head-section and provided with crank-like projections beyond their pivots which form stops by which to limit the outward movement of the bed proper substantially as described.

4. The improved folding bed comprising the head-section having the upright guide-rods the bed proper, and the hangers sliding at their upper ends on the guide-rods, pivoted to the bed proper and having the crank-like projections beyond its pivots substantially as set forth.

5. An improved folding bed comprising the head-section the foot-section, the bed proper pivoted to the foot-section and sliding into and out of the head-section and the spring secured to one of said sections and detachably interlocked with the other section whereby it may be adjusted to assist in the folding operation or may be released to prevent such operation accidentally and the drag-line extension whereby to connect and disconnect the spring substantially as set forth.

6. The combination of the head-section the foot-section, the bed proper having a notch at its foot and pivoted to the foot section and sliding into and out of the head-section and the spring secured to the bed-section and provided with a button to engage the notch in the foot of the bed proper substantially as set forth.

7. A folding bed comprising the head-section normally supported at its base, the bed proper, the foot-section having casters and devices whereby to raise the head-section to support its weight upon the foot-section substantially as set forth.

8. A folding bed comprising the head-section normally supported at its base, the upright guide-rods in said section, the foot-section having casters, the bed proper pivoted to said foot-section, the hangers pivoted to the bed proper and sliding on the guide-rods of the head-section and the lever whereby the weight of the head-section may be transferred to the foot-section substantially as set forth.

609,381. BILLIARD-CUE TIP. FRANK YOUNG and HARRY BUNDY, Santa Ana, Cal. Filed Aug. 31, 1897. Serial No. 650,093. (No model.)



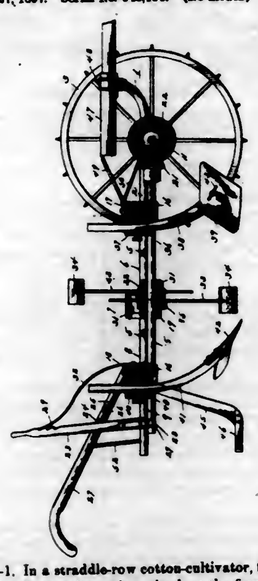
Claim.—1. A billiard-cue tip, comprising a ferrule secured to the upper end of the billiard-cue stick, a head having a threaded shank screwing in the said ferrule, a bolt held centrally in the said head and formed with a bolt-head made flat and having prongs, and a tip-base for receiving the tip proper and carried by the said bolt, the head of which engages, with its prongs, the material of the base, substantially as shown and described.

2. A billiard-cue tip, comprising an internally-threaded ferrule adapted to be secured to a cue, a head having a threaded shank screwing into the ferrule and provided with a central longitudinal aperture, a tip, a bolt having its head secured in the tip and its shank projecting through the shank of the head, and a nut on the bolt, substantially as described.

3. A billiard-cue, comprising an internally-threaded ferrule adapted to be secured to a cue, a head having a threaded shank screwing into the ferrule and provided with a longitudinal aperture, the inner end of the said shank being formed with a conical recess, a tip, a bolt having its head secured in the tip and its shank projecting through the shank of the head, and a conical nut on said bolt, substantially as described.

4. A billiard-cue tip, consisting of an internally-threaded ferrule adapted to be secured to a cue, a head provided with projections or spurs and having a threaded shank screwing into the ferrule, the head and shank being provided with a longitudinally-extending aperture, a tip-base resting upon the head, a bolt having its head formed with spurs and resting upon the tip-base, the shank of the bolt projecting through the shank of the head, and a nut on the said bolt, substantially as described.

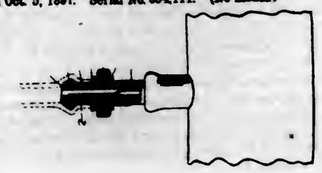
609,882. COTTON-CHOPPER. CHARLES ZINNER, Paris, Ark. Filed July 27, 1897. Serial No. 646,130. (No model.)



Claim.—1. In a straddle-row cotton-cultivator, the combination with a machine-frame, of carrying-wheels at the front end thereof, a centrally-arranged longitudinal shaft movable lengthwise and geared to the axle of the carrying-wheels, a chopper mounted directly on said shaft, a lever for moving said shaft longitudinally into and out of gear, and a spring bearing against and engaging said lever for urging the shaft forward with a yielding pressure, substantially as described.

2. In a cotton-cultivator, the combination with the machine-frame, of a transverse axle at the forward end thereof, carrying-wheels journaled upon said axle, a central longitudinal shaft operatively geared to said axle, a chopper adjustably mounted on said axle, means whereby the blades of the chopper are independently adjustable, a shipping-lever fulcrumed on the frame and having a sleeved connection with one end of said central shaft and adapted to shift the same longitudinally, and a spring arm or catch for engaging said shipping-lever and yieldingly holding the latter in its adjusted position, thus adapting the shaft to yield or slide longitudinally, substantially as described.

609,888. SWIVEL CONNECTION. CHARLES ANDERSON, Minneapolis, Minn., assignor to the Heath-Quimby Company, same place. Filed Oct. 5, 1897. Serial No. 654,111. (No model.)



Claim.—1. The combination, in a swivel connection, with a tubular body, of the sleeve swiveled thereon, said body being provided with means for securing it to the pipe or other connection, and a non-revoluble and longitudinally-movable collar or nut provided upon said body, as and for the purpose specified.

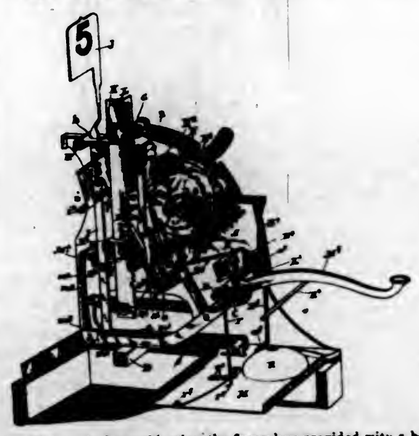
2. The combination, with a tubular body, of the sleeve swiveled thereon, said body being provided with a threaded end, and a non-revoluble but longitudinally-movable collar or nut arranged upon said body between said threaded end and said sleeve, substantially as described.

3. The combination, with a tubular body, of the sleeve swiveled thereon, the collar or nut having a limited longitudinal movement on said body, and means for holding the same against rotation on the body, said body being made to prevent the removal of said swiveled sleeve therefrom, substantially as described.

4. The combination, with the tubular body 2, provided with a polygonal collar 3, and a threaded end, of the nut or collar 9 engaged with said collar 3, and having a part to prevent its removal from the body 2, and a swiveled sleeve 6, substantially as and for the purpose specified.

5. The combination, with the tubular body 2, of the sleeve 6, the nut 9, said body and said nut having parts in engagement to prevent the rotation of the nut on the body, said body having a threaded end, and the washers or packings arranged on opposite sides of said nuts as and for the purpose specified.

609,884. CASH-REGISTER. WILLIAM RENFREW, Toronto, Canada, assignor to the Rex Cash Register Company, Limited, same place. Filed Nov. 2, 1896. Serial No. 610,874. (No model.) Patented in Canada Jan. 4, 1897, No. 54,512.



Claim.—1. In combination the finger-key provided with a boss at or near its rear end, the registering-wheel supported on a suitable shaft, the ratchet-wheel secured thereto, the projecting tooth of the ratchet-wheel, a rocking detent pivoted adjacent to the wheel and with which the projecting tooth is designed to come in contact, a bar suitably hung, permissible of vertical movement, located adjacent to the rocking detent and having a tail spring-held in position and with which the boss on the finger-key is designed to come in contact and a toe extending rearwardly from the bar, the registering-bar suitably held in guides and provided with a vertical column of figures and the vertical rack formed at the lower part of same and means for holding such bar in position upon being raised from number to number as and for the purpose specified.

2. In combination the finger-key provided with a boss at or near its rear end, the registering-wheel supported on a suitable shaft, the ratchet-wheel secured thereto, the projecting tooth of the ratchet-wheel, a rocking detent pivoted adjacent to the wheel and with which the projecting tooth is designed to come in contact, a bar suitably hung, permissible of vertical movement, located adjacent to the rocking detent and having a tail spring-held in position and with which the boss on the finger-key is designed to come in contact, a toe extending rearwardly from the bar, the registering-bar suitably held in guides and provided with a vertical column of figures, the vertical rack formed at the lower part of same and an oblique projecting spring designed to engage with the lower edge of each tooth of the rack as it ascends as and for the purpose specified.

3. In combination the finger-key provided with a boss at or near its rear end, the registering-wheel supported on a suitable shaft the ratchet-wheel secured thereto, the projecting tooth of the ratchet-wheel, a rocking detent pivoted adjacent to the wheel and with which the projecting tooth is designed to come in contact, a double bar provided with a slotted upper end supported on a cross-spindle, located adjacent to the rocking detent and having a tail spring-held in position with which the boss on the finger-key is designed to come in contact and a toe extending rearwardly from the bar, the registering-bar suitably held in guides and provided with a vertical column of figures and the vertical rack formed at the lower part of same and means for holding such bar in position upon being raised from number to number as and for the purpose specified.

4. The combination with the registering-bar of L shape in cross-section at the top thereof and provided with a column of figures arranged equidistant on the face thereof, the registering-disk, the key and key-lever for operating said disk, suitable guides for said bar, a rack formed on the lower front edge thereof, means operated by the finger-key and through the registering-disk mechanism whereby on each downward depression of the finger-key the registering-disk is rotated one step, means for lifting the registering-bar one tooth of its rack on each complete revolution of said disk and means for holding the registering-bar in its raised position after each upward movement, substantially as described.

5. In combination the registering-bar, suitable guides therefor, a rack formed at the lower front edge of the bar, the shaft, a spring projection having one end fixed in said shaft and its opposite end extending into the rack for holding the registering-bar in the raised position and means for rocking said shaft for throwing out the spring projection from its engagement with the rack as for the purpose specified.

6. In combination the registering-bar, suitable guides therefor, a rack formed at the lower front edge of the bar, a spring projection extending into the rack for holding the registering-bar in the raised position, a shaft extending across the machine and having a pin extending upwardly therefrom into proximity with the spring projection and means for turning the shaft so as to throw the pin against the spring projection as and for the purpose specified.

7. In combination the registering-bar suitable guides therefor, a rack formed at the lower front edge of the bar, a spring projection extending into the rack for holding the registering-bar in the raised position, a shaft extending across the machine and having a pin extending upwardly therefrom into proximity with the spring projection, a spring-held lever extending through the end of the shaft, an operating-lever extending above the end plate and suitably held in its normal position and a connecting-rod between the operating-lever and the spring-held lever on the end of the shaft as and for the purpose specified.

8. In combination, the casing, the registering-disks, the registering-bars operated through said disks, the shaft carrying said disks, the means for locking said bars, and the means for simultaneously releasing said bars and shaft, substantially as described.

9. The combination with the tablets and bar and supporting-guides therefor, the spring-held finger-key, the boss at the rear end of the finger-key, the tooth on the tablet-bar and the spring-held detent-plate designed to come in contact with the back of such tooth when the bar is thrown up by the finger-key, a rocking bar carrying said plate, a rod depending from the end of the same and having a lateral offset and means for rocking the bar directly by pressure upon such offset upon each downward movement of the finger-key as and for the purpose specified.

10. The combination with the tablets and bar and supporting-guides therefor, the depending spring-held finger-key, the boss at the rear end designed to form a rest for the bottom end of the tablet-bar, the tooth on the tablet-bar, the spring-held detent-plate designed to come in contact with the back of such tooth when the bar is thrown up by the finger-key, a rod depending from the end of the detent-plate shaft and having a lateral offset, a bar having a jog in it designed to normally abut the offset and an inclined end designed to normally rest on a guiding-pin extending laterally from the frame, a rod pivotally connected to the front end of the bar, the shaft from which such rod depends and is secured, the bent rod spring-held and finger-key all arranged to operate as and for the purpose specified.

11. The combination with the finger-key journaled on a shaft extending from end plate to end plate, a supplemental shaft having a bent rod extending outwardly therefrom, the spring for maintaining an upward pressure upon such rod, the depending rod secured to the supplemental shaft and having a bent end as specified and the spring-hanger, inclined guide situated above the stem of such hanger, and the bell situated in proximity to the hanger suitably supported as and for the purpose specified.

12. The combination with the finger-key, the supplemental shaft, the bent rod extending forwardly therefrom, the spring holding such rod with a normal pressure upward, the depending rod with inclined bent end, the lever with which such inclined end is designed to come in contact, the hanger having a beveled lower end, the spring pressed

drawer and the stop on the upper edge thereof designed to normally abut the straight rear end of the hanger as and for the purpose specified.

609,885. COMB-DABBING MECHANISM. JOHN W. CLARKSON, Worcester, Mass., assignor, by mesne assignments, to the Crompton & Knowles Loom Works, same place and Providence, R. I. Filed July 30, 1896. Serial No. 601,019. (No model.)



Claim.—1. A dabbing-brush, its carrier, an eccentric for actuating them, and shoes to bear on said eccentric, said carrier being composed of two members, one being slotted to receive a bolt from the other, said slotted member resting on and being adjustable on the other member, each of said members having at one end an offset, said shoes resting on said offsets, and having concave faces resting flatly against said eccentric and terminating short of each other, whereby said shoes may be moved toward each other to compensate for wear by the adjustment of the said two members of the carrier, substantially as described.

2. A frame, a shaft journaled therein provided with an eccentric, a dabbing brush guided on said frame, a carrier therefor composed of two members, a bolt carried by one of said members, and the other member and the shank of the dabbing-brush being adjustable on said bolt, each of said members having a guide at one end, supporting a shoe, said shoes being concave to rest on said eccentric, but only partly surrounding the latter, substantially as described.

3. The carrier, composed of two members, extending longitudinally of and against each other, one having a clamping-bolt and the other being adjustable thereon, a holding-stud guiding them in such adjustment, an eccentric to actuate the carrier, shoes between the eccentric and carrier, one on each member of the latter, said shoes being capable of adjustment toward each other to take up wear, a dabbing-brush mounted on said carrier, and means to adjust said brush thereon, substantially as described.

609,886. STEAM-PUMP REGULATOR. JOHN C. DEAN, Indianapolis, Ind. Filed Aug. 16, 1897. Serial No. 648,462. (No model.)



Claim.—1. A steam-pump regulator including a valve-casing with a port in it, an adjustable stationary valve, and a regulated valve, said valves being movable for adjustment or regulation in the same direction.

2. A steam-pump regulator including a valve-casing with a port in it, an adjacent regulated valve with a port in it adapted to register with the port in the casing, and a stationary valve adjacent to the regulated valve and so adjustable that the passage-ways into and out of the port in the regulated valve will vary inversely.

3. A steam-pump regulator including a valve-casing with a port therein, a regulated valve with a port in it adapted to register with the port in the casing, a stationary valve adjacent to the regulated valve, and means for so adjusting such stationary valve that by its coöperation with the casing the regulated valve when operated to its fullest extent will at first form a minimum passage-way for steam that gradually enlarges to the maximum and then gradually diminishes until shut off.

4. A steam-pump regulator including a valve-casing with a port therein, a regulated valve with a port in it adapted to register with the port in the casing, a stationary valve adjacent to the regulated valve, means for so adjusting such stationary valve that by its coöperation with the casing the regulated valve when operated to its fullest extent will at first form a minimum passage-way for steam that gradually enlarges to the maximum and then gradually diminishes until shut off, and means actuated by the fluid being pumped for operating such regulated valve.

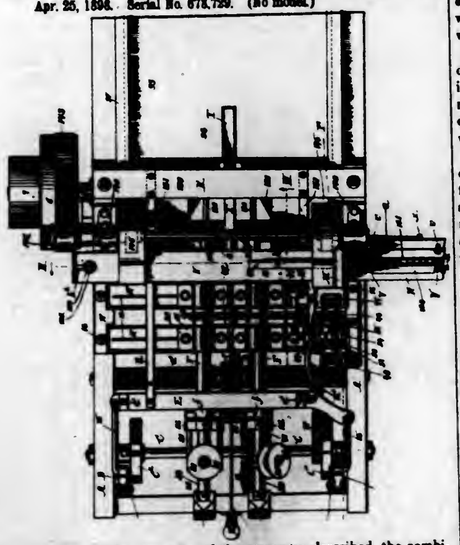
5. A steam-pump regulator including a hollow valve-casing with a circumferentially-extending port in it from the inlet, a regulated hollow slide-valve within the casing with a circumferentially-extending port in it adapted to register with the port in the casing, and a slidably-adjustable stationary valve within the regulated valve.

6. A steam-pump regulator including a cylinder provided with a casing therein so arranged as to leave an inlet-chamber around the casing and an outlet-chamber leading from the center of the cylinder with a series of ports through the casing leading from all parts of the outlet-chamber, a regulated cylindrical valve within said casing with a series of ports through it adapted to register with the ports through the casing, and a stationary valve within the regulated valve and adjustable in the same direction as the regulated valve moves.

7. A steam-pump regulator including a valve-cylinder having a head centrally apertured and threaded, a regulated slide-valve therein, a stationary valve within the regulated valve provided with a threaded stem extending through the threaded aperture in the head of the cylinder so that its rotation will cause the sliding movement of the stationary valve for its adjustment, and a lock-nut on such valve stem for locking the valve in the adjusted position.

609,887. MACHINE FOR MAKING SLAT-AND-WIRE FABRIC.

GEORGE P. FISHER, Jr., Chicago, Ill., and JOSEPH REID, Jr., Hebron, Ind., assignors to the Hercules Woodenware Company, Chicago, Ill. Filed Apr. 25, 1898. Serial No. 678,729. (No model.)



Claim.—1. In apparatus of the character described, the combination with one or more revoluble spindles or twister-heads mounted in manner free to reciprocate, of mechanism for operating said spindles comprising a cam-shaft, grooved cam mechanism upon said shaft, lever mechanism engaged by said grooved cam mechanism and operatively connected with said spindles to reciprocate the same, suitable gearing engaging said spindles to revolve the same, a clutch mechanism for controlling the revolution of said spindles and means for automatically throwing said clutch mechanism into and out of action.

2. In apparatus of the character described, the combination with one or more revoluble spindles or twister-heads mounted in manner free to reciprocate, of mechanism for operating said spindles comprising a cam-shaft, cam mechanism upon said shaft, lever mechanism engaged by said cam mechanism and operatively connected with said spindles to reciprocate the same, suitable gearing engaging said spindles to revolve the same, a clutch mechanism for determining the extent of revolution of said spindles and an adjustable tripper-lever for throwing said clutch mechanism out of action and a suitable revoluble part engaging said tripper-lever to shift the same.

3. In apparatus of the character described, the combination with a main frame, of a drive-shaft extending lengthwise of said frame, a cam-shaft extending transversely of said frame and suitably geared to said drive-shaft, cam mechanism upon said cam-shaft, one or more revoluble and reciprocating spindles mounted upon the main frame, lever mechanism operatively connecting said cam mechanism and said spindles whereby said spindles are reciprocated and gear mechanism connecting the main drive-shaft with the spindles whereby revolution is imparted to said spindles.

4. In apparatus of the character described, the combination with a suitable main frame and with one or more revoluble and reciprocating spindles mounted on said frame, of a main drive-shaft, a cam-shaft extending at right angles to said shaft, cam-wheels fixed upon said cam-shaft, driving-levers engaging with said cam-wheels the upper ends of said driving-levers being operatively connected with said spindles, suitable means for imparting revolution to said spindles and clutch mechanism for throwing said spindles into and out of action and automatic-actuated tripping mechanism for said clutch mechanism.

5. In apparatus of the character described, the combination with the main frame and with a drive-shaft mounted thereon, and with one or more revolvable and reciprocating spindles mounted on said frame, of a cam-shaft geared to said drive-shaft and provided with cam mechanism, and lever mechanism engaging said cam mechanism, said lever mechanism being adjustably connected with the spindles whereby the throw of said spindles may be varied.

6. In apparatus of the character described, a spindle or twister-head provided with a central aperture for one wire and with an eccentric aperture for another wire and with a groove or depression in the face of the spindle-head between said apertures.

7. In apparatus of the character described, the combination with one or more spindles or twister-heads, of means for feeding slats in front of said spindles or twister-heads comprising a feed device adapted to engage the end of a slat and means for shifting said feed device before it reaches the end of said slat to prevent its engagement with the end of said slat.

8. In apparatus of the character described, the combination with one or more spindles or twister-heads, of mechanism for feeding slats in front of said spindles or twister-heads comprising a feed-chain and means for driving the same, a dog mounted upon said feed-chain for engaging the ends of the slats and means for shifting the dog to prevent its engagement with the slats.

9. In apparatus of the character described, the combination with one or more spindles or twister-heads, of means for feeding slats in front of said spindles or twister-heads comprising a rack wherein the slats are held, a feed-chain extending beneath said rack, a feed-dog mounted upon said chain and having at its top a shoulder or part to engage the end of the lowermost slat, and a shiftable support for said feed-dog arranged beneath said rack and whereby said dog may be thrown out of action to prevent its engagement with the lowermost slat.

10. In apparatus of the character described, the combination with one or more spindles or twister-heads, of means for feeding slats in front of said spindles or twister-heads comprising a rack for the slats, a feed-chain extending beneath the bottom of said rack, a feed-dog carried by said chain and a table beneath said rack and over which said chain and dog travel, said table being shiftable to prevent the engagement of the dog with the lowermost slat.

11. In apparatus of the character described, the combination with one or more spindles or twister-heads, of a rack for the slats, means for feeding slats in front of said spindles or twister-heads comprising a feed-chain arranged to travel beneath the slats in said rack, a dog pivotally connected to said feed-chain and a table or support beneath said feed-chain and beneath said rack upon which table said dog rests as it passes beneath the rack, said table being shiftable to prevent the engagement of the dog with the slats.

12. In apparatus of the character described, the combination with one or more spindles or twister-heads, of means for feeding slats in front of said spindles or twister-heads comprising a rack for supporting the slats, a feed-chain arranged to travel beneath said rack and provided with a dog to engage the lowermost slat within said rack and an adjustable sprocket-wheel for said feed-chain.

13. In apparatus of the character described, the combination with one or more spindles or twister-heads, of means for feeding slats in front of said spindles or twister-heads comprising a rack for supporting the slats, a feed-chain provided with a dog whereby the slats are fed in front of the spindles, a table located beneath said rack and over which said feed-chain and dog pass, and means whereby said table may be manually shifted in order to prevent the engagement of the dog with the slats.

14. In apparatus of the character described, the combination with one or more spindles or twister-heads, of a feed device for automatically advancing the slats in front of the spindles or twister-heads, suitable means whereby the series of slats are advanced after they have been connected with the wires by said spindles, mechanism for shifting said feed device to prevent its engagement with the slats, and suitable tripper mechanism engaging with the woven fabric and arranged in position to pass through said fabric and in so doing to actuate the mechanism whereby the feed device is shifted.

15. In apparatus of the character described, the combination with one or more spindles or twister-heads and with mechanism for feeding slats in front of said spindles or twister-heads, of mechanism for advancing the woven fabric, mechanism for automatically throwing the slat-feeding mechanism out of action, and a suitable dummy or spacing mechanism arranged to pass in front of the spindles or twister-heads when the slat feeding mechanism is thrown out of action and thereby form an opening in the fabric.

16. In apparatus of the character described, the combination of one or more spindles or twister-heads, mechanism for feeding slats in front of said spindles or twister-heads, mechanism for automatically throwing said feeding mechanism out of action and a dummy or spacing mechanism arranged to be moved in front of said spindles or twister-heads and between the wires issuing therefrom when the slat-feeding mechanism is thrown out of action in order to form open spaces in the fabric.

17. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism and means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at the points where the slats have been omitted.

18. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism movable in the direction of the length of the slats and at right angles thereto, means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at the points where the slats have been omitted, mechanism for automatically feeding the slats in front of the spindles or twister-heads, and means for throwing said slat-feeding mechanism out of operation when said dummy or spacing mechanism is to be thrown into action.

19. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism, means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at points where slats have been omitted, said dummy or spacing mechanism comprising one or more pivoted arms having a part adapted to pass between the wires that issue from the spindles or twister-heads.

20. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around the slats to form a fabric, of a dummy or spacing mechanism and means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at the points where slats have been omitted, said dummy or spacing mechanism comprising one or more pivoted arms mounted to swing in the direction of the length of the slats and in position to pass into the fabric at points where slats have been omitted.

21. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism and means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at points where slats have been omitted, said dummy or spacing mechanism comprising pivoted arms or parts adapted to swing in the direction of the length of the slats and being mounted to move with the fabric transversely to the direction of the length of the slats.

22. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism and means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at points where slats have been omitted, said dummy or spacing mechanism comprising pivoted arms or parts arranged beneath the spindles and pivoted at their upper ends with blades adapted to pass between the wires that issue from the spindles and being sustained in manner permitting movement in the direction of the length of the spindles.

23. In apparatus of the character described, the combination with suitable spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism, means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at points where slats have been omitted, said dummy or spacing mechanism comprising two pivoted arms each furnished with a blade or head adapted to enter between the wires that issure from the adjacent spindle, and means whereby said arms may be simultaneously shifted.

24. In apparatus of the character described, the combination with suitable spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism and means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at points where slats have been omitted, said dummy or spacing mechanism comprising pivoted arms arranged to swing transversely to the wires issuing from the spindles and being mounted in manner free to slide in the direction of said wires, suitable levers for operating said arms and means for engaging said levers whereby the arms may be simultaneously moved in front of the spindles.

25. In apparatus of the character described, the combination with one or more spindles or twister heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism, means for inserting and withdrawing said dummy or spacing mechanism into and from the fabric at points where slats have been omitted, said dummy or spacing mechanism comprising one or more arms each having a part adapted to pass between the wires that issue from the spindles or twister-heads, suitable supports for said arms and whereon they are free to slide and means for retracting said arms toward the front of the machine after they have been withdrawn from the fabric.

26. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism and means for moving said dummy or spacing mechanism between the slats of the fabric, comprising a tripper bearing against the fabric and adapted to pass into the open spaces thereof, said tripper being suitably engaged with the dummy or spacing mechanism whereby when one of the open spaces of said fabric comes opposite said tripper the dummy or spacing mechanism will be thrown into the fabric.

27. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism and means for moving said dummy or spacing mechanism between the slats of the fabric, comprising a part engaging said dummy or spacing mechanism to shift the same and a part adapted to bear against the fabric and to enter the open spaces thereof, whereby when an open space of the fabric comes opposite the part of said shifting mechanism bearing against the fabric, the dummy or spacing mechanism will be thrown into action.

28. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism and means for moving said dummy or spacing mechanism between the slats of the fabric, comprising a lever mechanism engaging said dummy or spacing mechanism, said lever mechanism being provided at one end with a part engaging the dummy or spacing mechanism and being provided at its opposite end with an upwardly-extending part adapted to bear against the under side of the fabric and to enter open spaces of said fabric whereby when an open space of the fabric comes opposite the part of said lever mechanism bearing against the fabric, the dummy or spacing mechanism will be thrown into action.

29. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism comprising arms adapted to be moved in front of the spindles and mounted in manner free to slide back and forth in the direction of movement of the spindles, means for moving said dummy or spacing mechanism in front of the spindles and into the plane of the slats being woven and means for moving said dummy or spacing mechanism beneath the plane of the woven slats, and means for retracting the dummy to its initial position when it has been shifted entirely below the plane of the slats.

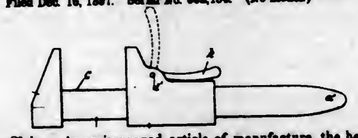
30. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a dummy or spacing mechanism for forming open spaces in the fabric, a table whereover the woven fabric is advanced, said table being formed with suitable openings, and means for moving said dummy or spacing mechanism to a position in front

of the spindles, comprising lever mechanism, one part whereof engages the dummy or spacing mechanism and the opposite part whereof extends up through the slotted table into position to bear against the under side of the woven fabric whereby when an open space of said woven fabric passes above the rear end of said lever mechanism the dummy or spacing mechanism will be thrown into action

31. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a shaft provided with cutter-heads arranged adjacent the ends of said spindles, and suitable means for forcing the slats beneath the cutter-heads before revolution is imparted to the spindles or twister-heads.

32. In apparatus of the character described, the combination with one or more spindles or twister-heads whereby wires are bound around slats to form a fabric, of a shaft provided with cutter-heads and push-rods mounted to move in unison with the spindles and arranged in close proximity to the cutter-heads.

609,388. **WRENCH.** WILLIAM C. FLINT, Glastonbury, Conn. Filed Dec. 16, 1897. Serial No. 662,156. (No model.)



Claim.— As an improved article of manufacture, the herein described wrench, the same comprising a bar having a head or fixed jaw at one end, serrations along one edge, and its opposite end reduced; a movable jaw consisting of complementary halves united by a single rivet above the bar-opening and itself having an aperture into said opening; a spring secured at one extremity to the upper side of the jaw near its lower end and carrying at its other extremity a serrated buffer standing within said aperture and adapted to engage the serrations on the bar, an eccentric cam pivotally mounted on said rivet behind the upper end of the spring, and a lever projecting from said cam and of such shape and length that when the serrations are engaged the body of the lever rests on the back of the spring and the lower end of the lever projects below the lower end of the jaw, all substantially as described and for the purpose set forth.

609,389. **CHAIR.** GEORGE A. GARLAND, Medford, Mass. Filed Aug. 18, 1897. Serial No. 648,650. (No model.)



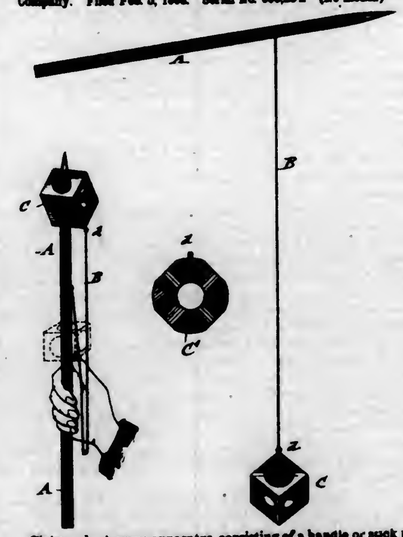
Claim.—1. A reclining-chair having a fixed base and a movable seat and back, combined with a fixed support for the back over which it may move, cooperating recessed ways, and wheels traveling in and retained by said ways, to permit relative movement and prevent separation thereof, means to equalize the strains on said seat and prevent one side moving ahead of the other, and a locking device to lock the seat and back in their adjustment, substantially as described.

2. In a device of the class described, the combination with the seat or movable member and the fixed member, of means to equalize the strains on the former, said means comprising links secured at one end to said movable member and at their other ends connected with links pivoted thereto, said second links being pivoted at their meeting ends to and at the middle of said fixed member, a bar, and other links pivoted to said second links and to said bar, and a fixed guide at the middle of said fixed member for the free end of said bar, and a locking device cooperating with said bar to hold said parts in their relative adjustment, substantially as described.

3. In a device of the class described, the combination with the seat or movable member and the fixed member, of means to equalize the strains on the former, said means comprising links secured at one end to said movable member and at their other ends connected with links pivoted thereto, said second links being pivoted at their meeting ends to and at the middle of said fixed member, a bar, and other links pivoted to said second links and to said bar, a fixed guide at the middle of said fixed member for the free end of said bar, and a locking device cooperating with said bar to hold said parts in their relative adjustment, said locking device having an operating member extending beyond the fixed member to be readily grasped by the hand, substantially as described.

4. In a device of the class described, the combination with the seat or movable member and the fixed member, of means to equalize the strains on the former, said means comprising links secured at one end to said movable member and at their other ends connected with links pivoted thereto, said second links being pivoted at their meeting ends to and at the middle of said fixed member, a bar, and other links pivoted to said second links and to said bar, a fixed guide at the middle of said fixed member for the free end of said bar, said bar having ratchet-teeth, and a locking-dog to cooperate with said teeth to lock the parts in adjusted position, substantially as described.

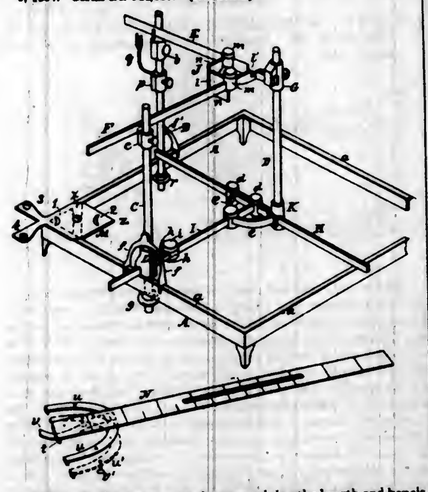
609,390. **GAME APPARATUS.** CARL HOLLSTEIN, New York, N. Y., assignor, by direct and mesne assignments, to the Hollstein Novelty Company. Filed Feb. 5, 1898. Serial No. 669,234. (No model.)



Claim.— 1. A game apparatus, consisting of a handle or stick portion, a block provided with openings bored in the direction of three central axes arranged at right angles to each other whereby said block is adapted to be impaled on said stick, and a cord connecting said block with the stick, substantially as set forth.

2. A game apparatus, consisting of a handle or stick portion, a block provided with openings bored in the direction of three central axes arranged at right angles to each other and to the sides of the block whereby said block is adapted to be impaled on said stick, and a cord attached at one end to said stick and at the other end to a corner of said block, substantially as set forth.

609,891. **APPARATUS FOR ASCERTAINING LENGTH AND BEVEL OF RAFTERS.** EDWIN H. HOSTON, Elkton, Mich. Filed July 9, 1897. Serial No. 644,009. (No model.)



Claim.—1. In an apparatus for ascertaining the length and bevels of rafters, the combination with a rectangular frame, of two outer posts, adjustably mounted on said frame, a horizontal bar H and an interior post adjustably mounted on said bar, a horizontal bar I, extending at right angles from said bar H and adjustably connected therewith, two ridge-boards in position at a right angle one with another and adjustably connected with said posts, a swiveled, perforated plate, adapted to support a gaging-rule and an adjustable support to hold said rule in position, substantially as and for the purposes described.

2. The combination, with a main frame, of two movable, horizontal bars, adjustably connected and placed at right angles one with another, three posts, two of which are adjustably connected with said frame, one being adjustably connected with a horizontal bar, two ridge-boards having an opening *l* at their joint, and holders supporting said ridge-boards, said holders being vertically adjustable on said posts, and a slotted holder adapted to be removably placed on both of said ridge-boards, and said holder being adapted to receive and support one end of a gaging-rule, substantially as and for the purposes described.

3. The combination, with the frame, adjustable posts and ridge-boards of a rafter-gaging apparatus, of an adjustable, perforated plate having perforated tongues, and a gaging-rule, adapted for connection with said plate, substantially as set forth and described.

4. The combination with a frame, horizontal bars H and I, and adjustable posts of a rafter-gaging apparatus, of an adjustable connection or coupling of said bars with one of said posts, said coupling being formed of a frame connected with one of said posts and provided with slotted cylindrical heads, through which one of said bars extends, and curved braces for the other horizontal bar which extends at right angles from the bar H and is fast to said frame, substantially as and for the purposes described.

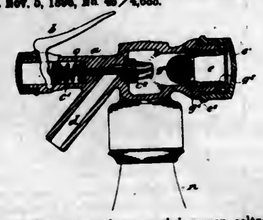
5. The combination with a frame and ridge-boards, of a rafter-gaging rule which is provided at one end, with hooked arms and *i* spring and a slot *s*, substantially as and for the purposes described.

6. The combination with a frame A, provided with a flange *a* of a squaring-rule provided with hooked arms at one end, and a pair of additional hooked arms adapted for adjustable connection with the hooked arms first mentioned, substantially as shown and described.

7. The combination with the frame of a rafter-gaging apparatus, of a series of posts movably mounted on said frame, two ridge-boards carried by said posts and secured together at a right angle, a holder, adapted to be removably placed on said ridge-boards, and provided with two converging plates, an opening *l* being left between their outer edges, and an opening *l'* being formed between said ridge-boards at their junction, substantially as set forth and described.

8. The combination, with the frame of a rafter-gaging apparatus, of the horizontal bars, ridge-boards and posts, a coupling of one of said posts with a horizontal bar, I, said coupling being provided with a slotted holder having arms *h* and a slotted head *i* connected with said arms, substantially as set forth and described.

609,892. **FITTING FOR AERATED-WATER SIPHONS.** ROBERT O. JONES, Ruthin, England, assignor to himself, Richard George Gregson-Ellis, and William Saxon Gregson-Ellis, same place. Filed Dec. 27, 1897. Serial No. 663,611. (No model.) Patented in England Jan. 15, 1896, No. 1,085; in Germany Oct. 29, 1896, No. 93,269; in France Oct. 30, 1896, No. 260,866; in Belgium Oct. 30, 1896, No. 124,236, and in Austria Nov. 5, 1896, No. 46/4,653.



Claim.—1. For aerated-water siphons or seltzogenes, a head having a charging-orifice controlled by a ball-valve and sealed by a screw-cap, and a discharging orifice or spout controlled by a spindle-valve arranged horizontally and operated by means of a lever, substantially as set forth.

2. For aerated-water siphons or seltzogenes, a head having an inlet-orifice arranged opposite the delivery-valve barrel, substantially as herein described and for the purposes specified.

609,893. **BOTTLE-CAP FASTENER.** PHILIP LIEBERMYR, Baltimore, Md., assignor, by mesne assignments, to Clement W. Shoemaker, Bridgeton, N. J. Filed Dec. 7, 1897. Serial No. 661,080. (No model.)



Claim.—1. The combination of a bottle or like vessel with a cap, a fastening-bar pivoted to the top of the cap and adapted to engage the bottle, and a clamping-bar connected to said fastening-bar at one side of its pivot and provided with a bottle-engaging part, as 6, movable eccentrically with respect to the bottle-mouth whereby it can bind the bars and cap on the bottle or release them by rotation of the clamping-bar, substantially as described.

2. The combination of a bottle or like vessel with a cap, a fastening-bar pivoted to the top of the cap and adapted to engage the bottle, and a clamping-bar connected to said fastening-bar at one side of its pivot and provided with a bottle-engaging part, as 6, movable eccentrically with respect to the bottle-mouth whereby it can bind the bars and cap on the bottle or release them by rotation of the clamping bar, said cap having inclined surfaces and the bars engaging said surfaces, substantially as described.

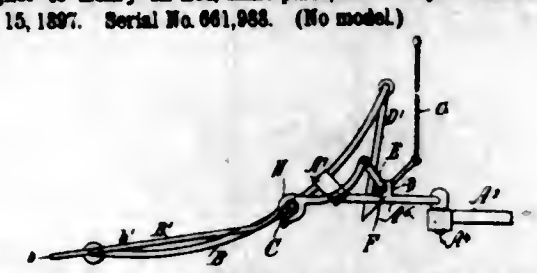
3. The combination of a bottle or the like, a cap, a fastening-bar pivoted to the center of the cap, and a clamping-bar pivoted to the fastening-bar between its pivot and the circumference of the cap, both bars having fingers to engage the cap and the bottle to hold them in close connection, and the clamping-bar and its finger being movable eccentrically of the cap to loosen or tighten the engagement of the several fingers, and a plastic packing between the cap and the bottle-mouth, substantially as described.

4. The combination of a bottle or like vessel, a cap provided with inclines, a cap-fastening bar pivoted to the cap-top, a clamping-bar pivoted to the fastening-bar at one side of its pivotal connection with the cap and adapted when moved in one direction to engage one of the inclines and when oppositely moved to swing clear of the cap, and means whereby the clamping-bar may positively engage the fastening-bar to disengage it from the bottle, substantially as described.

5. The combination of a bottle or like vessel having a shoulder 7, a cap provided with depressions or troughs in its top having inclined bottoms, a cap-fastening bar pivoted on the cap and adapted to engage said shoulder, and a lever pivoted to the bar, said bar and

lever having lugs adapted to move in the recesses along said inclined bottoms either to lock or to release the cap, substantially as described.

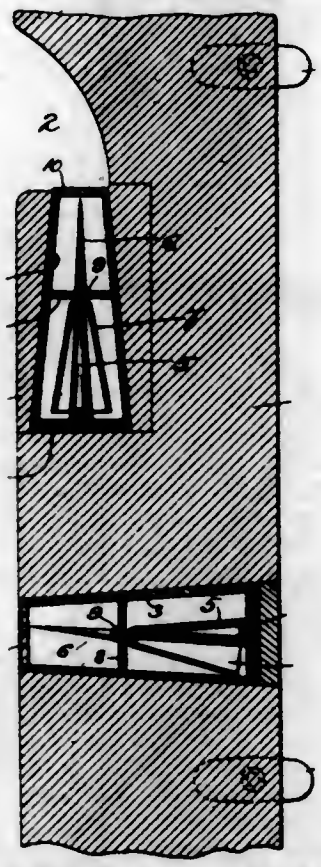
609,894. CAR-FENDER. TIMOTHY A. REMSEN, New York, N. Y., assignor to Henry M. Lee, same place, and Mary R. Remsen. Filed Dec. 15, 1897. Serial No. 661,963. (No model.)



Claim.—1. In a car-fender the combination of the rigid supporting-frame, a revolving cross-bar attached thereto with portions thereof provided with curved slotted plates to engage suspension-hooks on the rear portion of the wire frame which are automatically released when the frame B' is thrown back, substantially as shown and described.

2. In a car-fender the combination of the rigid supporting-frame attached to the car-body, having a cross-rod attached thereto with portions thereof provided with curved slotted plates to engage suspension-hooks on the rear portion of the wire frame, a wire frame pivotally suspended in the supporting-frame, an extension-frame having hooks on each side thereof to engage lugs on the wire frame, a lever connected to the cross-bar by means of a crank to operate the device from the dashboard of the car, substantially as shown and described

609,895. PLUMB-LEVEL. WILLIAM H. ATWOOD, Lincoln, Nebr. Filed June 26, 1897. Serial No. 642,490. (No model.)



Claim.—1. A plumb or level having in combination a post having a vertically-projecting point, an indicator supported loosely upon said point and having a counterbalance projecting downwardly on both sides of said post and extending below the upper end of said post and balancing said indicator, and means for confining said indicator to its seat on said point, substantially as set forth.

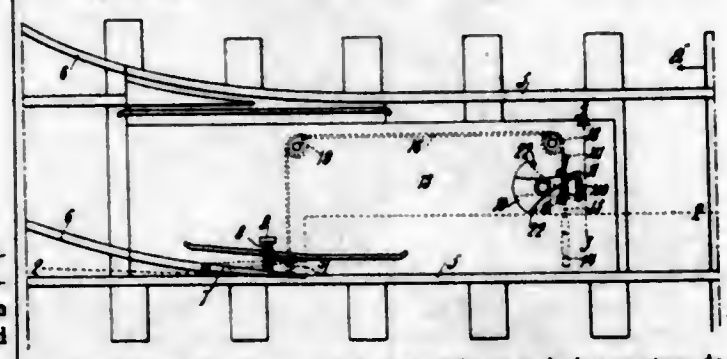
2. A plumb or level having in combination a pointed post or pivot, an indicator supported loosely upon said pivot, and having a counterbalance projecting downwardly below the point of said pivot and balancing said indicator, and an eye through which said indicator loosely passes, substantially as set forth.

3. A plumb or level having in combination a post or pivot, a bell-shaped counterbalance seated upon said post, a pointer or indicator supported by said counterbalance and an index arranged opposite said indicator, substantially as set forth.

4. A plumb or level having in combination a post or pivot, an indicator oscillatory in all directions and balanced upon said pivot, an eye through which said indicator passes and an indicator arranged opposite said indicator, substantially as set forth.

REISSUES.

11,687. RAILWAY-SWITCH. RICHARD CADY, Los Angeles, Cal. Filed Apr. 27, 1898. Serial No. 679,038. Original No. 588,951, dated Aug. 31, 1897.



Claim.—1. A railway-switch comprising a switch-operating device which consists in a triangularly-shaped trip-lever operatively connected with the switch-tongue and pivoted near the center to turn on a vertical axis to bring alternately one and another of its sides obliquely across a vertical plane extending parallel with the track-rails and through the pivot; a device carried by the car for operating the trip-lever and having a limited lateral movement and normally held in said vertical plane and being vertically movable, the amplitude of lateral movement of said trip-operating device being sufficient to allow said trip-operating device to pass on either side of the pivot of the trip-lever; means being provided for normally holding the trip-operating device yieldingly in said vertical plane; means carried by the car being provided to stop the lateral movement of said trip-operating device to cause the same to turn the trip-lever to throw the switch tongue; and means for temporarily holding the trip-lever in whichever position it is thrown by the trip-operating device.

2. In a railway-switch-operating apparatus, the combination of a lever which is substantially triangular in form, and which is pivoted between the rails of the main track, and which is provided at the end opposite the switch, with a pin which passes downwardly through a slot formed in a plate with which said lever is pivotally connected, a cord which is secured to said pin, and passes around pulleys mounted between the rails of the track, and connected with the free end of the switch bar or tongue, and springs which operate in connection with said pin, substantially as shown and described.

3. In a railway-switch-operating apparatus, the combination of a lever which is pivoted between the rails of the main track, and which is provided at the end opposite the switch, with a pin which passes downwardly through a slot formed in a plate with which said lever is pivotally connected, a cord secured to said pin, and passed around pulleys mounted between the rails of the track, and connected with the free end of the switch bar or tongue, said lever being adapted to be operated by devices connected with the platform of the car, and said plate being provided with means for limiting the movement of said lever, substantially as shown and described.

DESIGNS.

29,212. BADGE. RUFUS F. THOMPSON, Youngstown, Ohio. Filed Feb. 3, 1897. Serial No. 621,593. Term of patent 14 years.



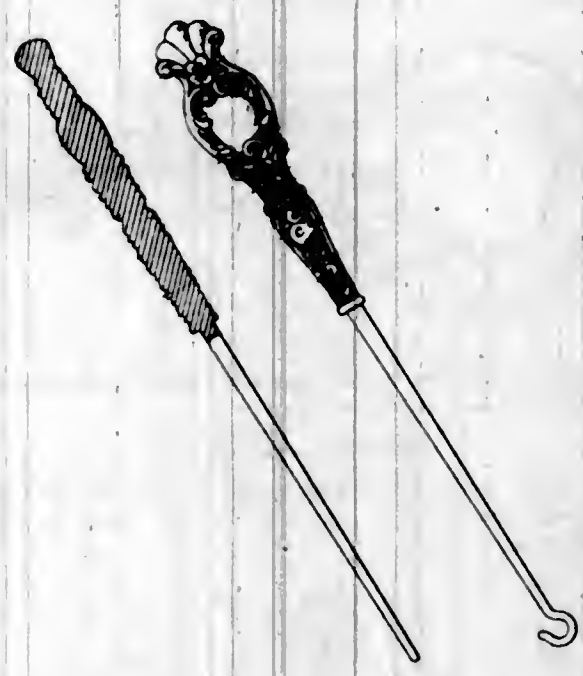
Claim.—The design for a badge, substantially as herein shown and described.

29,213. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. LOUIS KRANZ, Providence, R. I., assignor to the Waite, Thresher Company, same place. Filed July 9, 1898. Serial No. 685,562. Term of patent 3½ years.



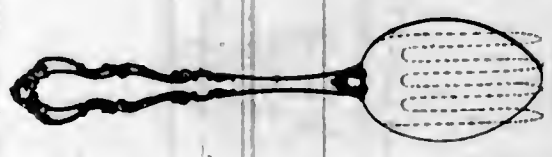
Claim.—The design for the handle of a button-hook or similar article, as herein shown and described.

29,214. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. LOUIS KRANZ, Providence, R. I., assignor to the Waite, Thresher Company, same place. Filed July 9, 1898. Serial No. 685,563. Term of patent 3½ years.



Claim.—The design for the handle of a button-hook or similar article, as herein shown and described.

29,215. HANDLE FOR SPOONS, FORKS, &c. JOHN CLULEE, Wallingford, Conn., assignor to the Simpson, Hall, Miller & Company, same place. Filed July 25, 1898. Serial No. 686,853. Term of patent 7 years.



Claim.—The design for a handle for spoons, forks and similar articles as herein shown and described.

29,216. BACK FOR BRUSHES OR SIMILAR ARTICLES. BURTACE CREES and CHARLES S. COURT, Providence R. I., assignors to George K. Webster, North Attleborough, Mass. Filed July 23, 1898. Serial No. 686,739. Term of patent 7 years.



Claim.—The design for the back of a brush or similar article substantially as herein shown and described.

29,217. BACK FOR BRUSHES OR SIMILAR ARTICLES. JOSEPH R. STRAKER, Jr., North Attleborough, Mass., assignor to George K. Webster, same place. Filed July 23, 1898. Serial No. 686,738. Term of patent 7 years.



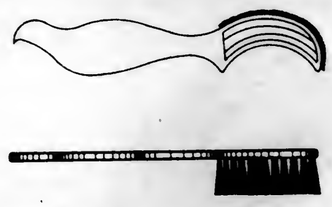
Claim.—The design for the back of a brush or similar article substantially as herein shown and described.

29,218. BACK FOR BRUSHES, &c. HENRY A. WEHMAN Philadelphia, Pa., assignor to John F. Simons and Thomas Maddock, same place, Frederic M. Simons, Swarthmore, Pa., and Edward S. Simons, Orange, N. J. Filed June 15, 1898. Serial No. 683,582. Term of patent 7 years.



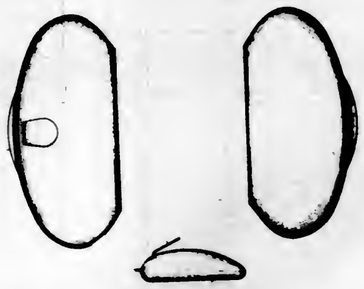
Claim.—The design for the back of a brush or similar article substantially as shown and described.

29,219. TOOTH-BRUSH. JULIA F. UFFORD, Boston, Mass. Filed June 10, 1898. Serial No. 683,145. Term of patent 7 years.



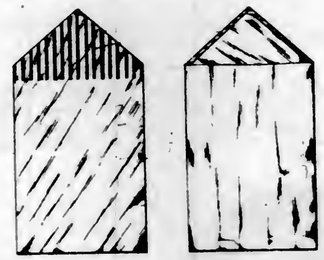
Claim.—The design for a tooth-brush herein shown and described.

29,220. EYEGLASS OR SPECTACLE CASE. WILLIAM ZOERB, Dedham, Mass. Filed June 13, 1898. Serial No. 683,369. Term of patent 14 years.



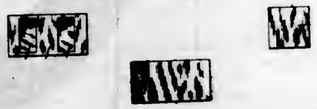
Claim.—The design for an eyeglass or spectacle case herein shown and described.

29,221. CIGAR-CASE. JOHN DITTMAR, New York, N. Y. Filed July 20, 1898. Serial No. 686,469. Term of patent 3½ years.



Claim.—The design for a cigar-case, as shown and described.

29,222. CASE FOR REGISTERS. CURTIS HOMSEY VEEDER, Hartford, Conn., assignor to The Veeder Manufacturing Company, same place. Filed July 23, 1898. Serial No. 686,750. Term of patent 14 years.



Claim.—The design for a case for registers, substantially as shown and described.

29,223. LAMP-BODY. CHARLES F. LINSLEY and REUBEN F. CROOKER, Meriden, Conn., assignors to the Bradley & Hubbard Mfg. Co., same place. Filed June 11, 1898. Serial No. 683,245. Term of patent 14 years.

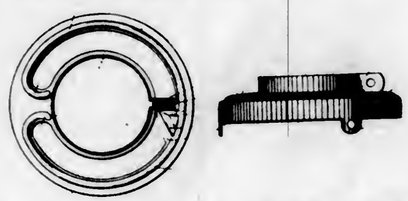


Claim.—1. In a design for a lamp-body, the design for the lamp-fonot as herein shown and described.

2. In a design for a lamp-body, the design for the lamp-foot, as herein shown and described.

3. The design for a lamp-body as herein shown and described.

29,224. SHADE-HOLDER. EDGAR A. RUSSELL, Wallingford, Conn. Filed July 25, 1898. Serial No. 686,846. Term of patent 7 years.



Claim.—The design herein shown and described for the shade-holder for incandescent electric lamps.

29,225. BACK AND SHANK FOR BUTTONS OR STUDS. ACHILL BIPPART, Newark, N. J. Filed Dec. 24, 1897. Serial No. 663,437. Term of patent 14 years.



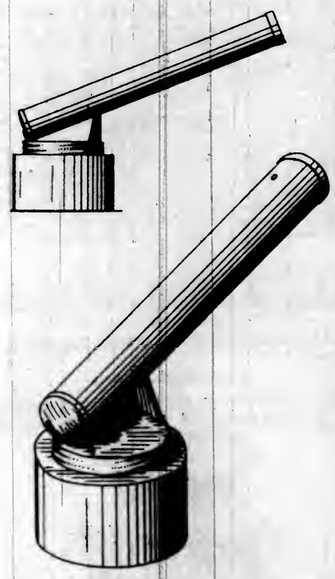
Claim.—The design for back and shank of button or stud, as herein described and shown.

29,226. HOLDER FOR GARMENT-SUPPORTERS. DE VER H. WARNER, Bridgeport, Conn., assignor to the Warner Brothers Company, same place. Filed July 21, 1898. Serial No. 686,549. Term of patent 14 years.



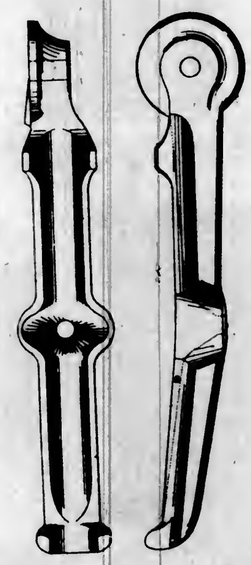
Claim.—The design for a holder for a garment-supporter substantially as shown and described.

29,227. BODY FOR SPRAYERS. DE WARE R. SMITH, Deerfield, N. Y. Filed July 14, 1898. Serial No. 685,956. Term of patent 14 years.



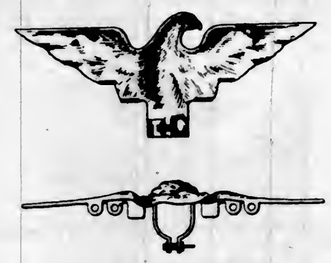
Claim.—The design for body of sprayers as herein shown and described.

29,228. ARM FOR FLAGSTAFF-HOLDERS. FRED H. FERRIS, Mechanicsville, N. Y. Filed June 2, 1898. Serial No. 682,407. Term of patent 14 years.



Claim.—The design for an arm for a flagstaff-holder, substantially as shown and described.

29,229. FLAG-HOLDER. EDWARD PIDGIN, Philadelphia, Pa. Filed July 23, 1898. Serial No. 686,740. Term of patent 7 years.



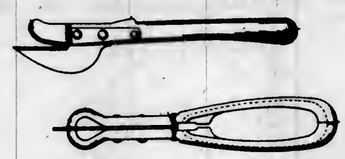
Claim.—The design for a flag-holder, substantially as herein shown and described.

29,230. CURLING-IRON HOLDER. ALICE PFLIEGER, Columbus, Ohio. Filed July 18, 1898. Serial No. 686,206. Term of patent 7 years.



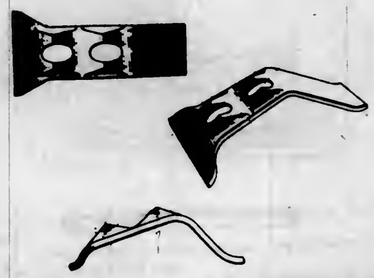
Claim.—The design for a curling-iron holder, substantially as herein shown and described.

29,231. CAN-OPENER. WILLIAM G BROWER, Kingston, N. Y. Filed July 9, 1898. Serial No. 685,531. Term of patent 14 years.



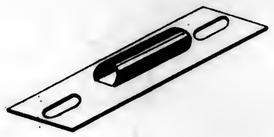
Claim.—The design for a can-opener substantially as herein shown and described.

29,232. BASIN-CLAMP. WILLIAM E. BYRNE, Cleveland, Ohio. Filed July 20, 1898. Serial No. 686,470. Term of patent 14 years.



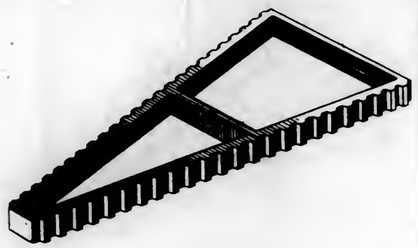
Claim.—The design for a basin-clamp, substantially as herein shown and described

29,233. SHIELD FOR SASH-PULLEYS. NILS P. JOHNSON, Omaha, Nebr. Filed Sept. 23, 1897. Serial No. 653,380. Term of patent 3½ years.



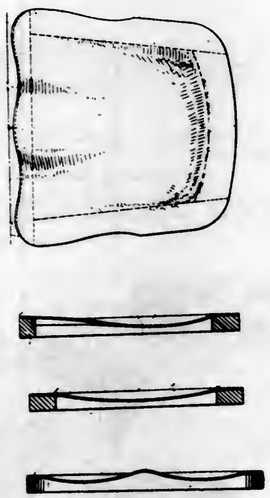
Claim.—The design for a shield for sash-pulleys, as herein shown and described.

29,234. PRINTER'S QUOIN. WILLIAM H. O'BRIEN, Akron, Ohio. Filed July 9, 1898. Serial No. 685,529. Term of patent 3½ years.



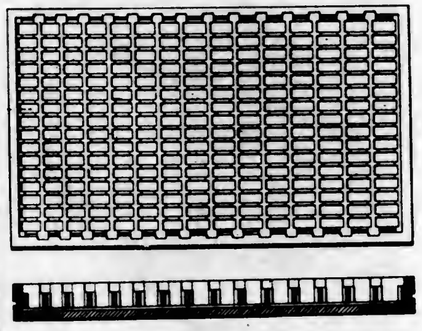
Claim.—The design for a printer's quoin, as herein shown and described.

29,235. BENT-WOOD CHAIR-SEAT. FRED A. DENNETT, Sheboygan, Wis. Filed July 16, 1898. Serial No. 686,295. Term of patent 14 years.



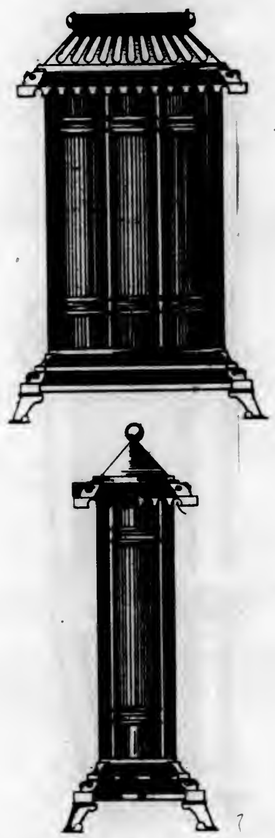
Claim.—The design for a bent-wood chair-seat, as herein shown and described.

29,236. STORAGE AND DISPLAY CASE. ALPHONSE WALTER, New York, N. Y. Filed July 16, 1898. Serial No. 686,157. Term of patent 7 years.



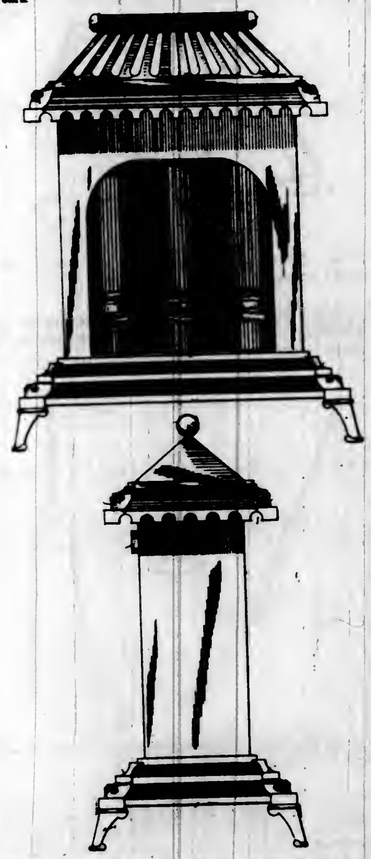
Claim.—The design for a storage and display case, as herein shown and described.

29,237. GAS STOVE OR HEATER. SAMUEL W. MARTIN, Springfield, Ohio. Filed May 25, 1898. Serial No. 681,748. Term of patent 7 years.



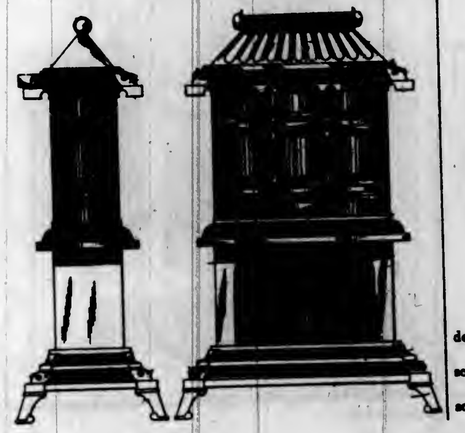
Claim.—The design for a gas stove or heater, substantially as shown and described.

29,238. GAS STOVE OR HEATER. SAMUEL W. MARTIN, Springfield, Ohio. Filed May 25, 1898. Serial No. 681,749. Term of patent 7 years.



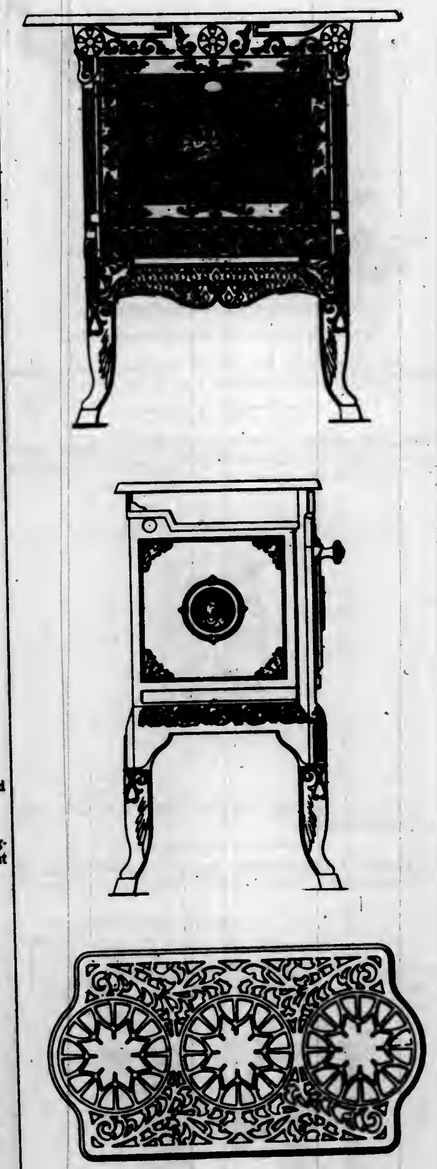
Claim.—The design for a gas stove or heater herein shown and described.

29,239. GAS STOVE OR HEATER. SAMUEL W. MARTIN, Springfield, Ohio. Filed May 25, 1898. Serial No. 681,750. Term of patent 7 years.



Claim.—The design for a gas stove or heater herein shown and described.

29,240. STOVE. AARON H. WOLFF, New York, N. Y. Filed July 7, 1898. Serial No. 685,348. Term of patent 3½ years.

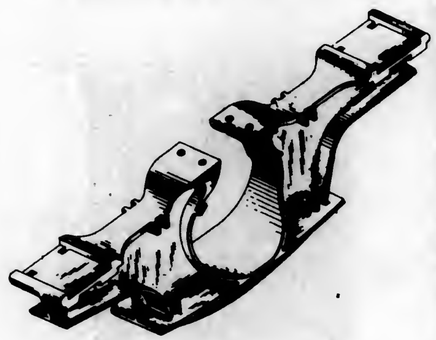


Claim.—1. The design for a stove substantially as shown and described.

2. In the design for a stove, substantially as shown and described, the design of the door.

3. In the design for a stove, substantially as shown and described, the design of the top plate.

29,241. YOKE FOR RAILWAY-CONDUITS. FRED S. PEARSON, Boston, Mass. Filed July 1, 1898. Serial No. 684,983. Term of patent 7 years.



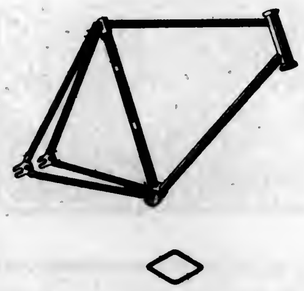
Claim.—The design for a yoke for railway-conduits, as substantially herein shown and described.

29,242. REIN-GUIDE BRACKET FOR HAMES. THOMAS W. ATTAWAY, Hart County, Ga. Filed July 19, 1898. Serial No. 686,373. Term of patent 7 years.



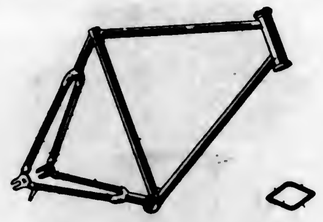
Claim.—The design for a rein-guide bracket for hames as herein shown and described.

29,243. BICYCLE-FRAME. GEORGE L. THOMPSON, Chicago, Ill. Filed July 5, 1898. Serial No. 685,178. Term of patent 7 years.



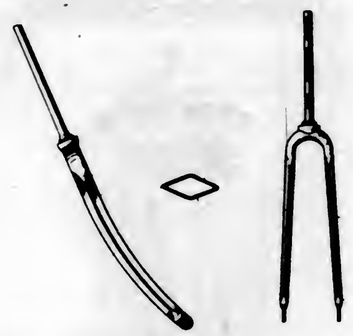
Claim.—The design for a bicycle-frame, substantially as herein shown and described.

29,244. BICYCLE-FRAME. GEORGE L. THOMPSON, Chicago, Ill. Filed July 5, 1898. Serial No. 685,177. Term of patent 7 years.



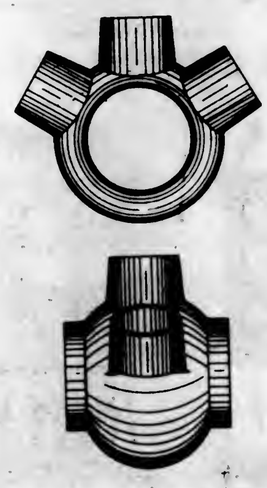
Claim.—The design for a bicycle-frame, substantially as herein shown and described.

29,245. FRONT FORK FOR VELOCIPEDES. GEORGE L. THOMPSON, Chicago, Ill. Filed July 5, 1898. Serial No. 685,176. Term of patent 7 years.



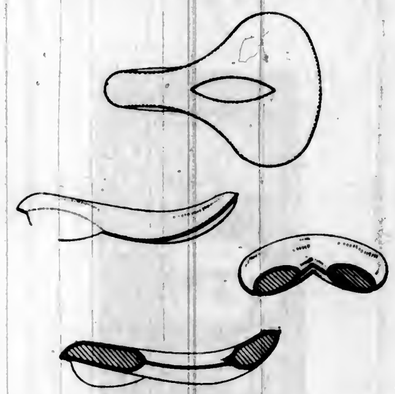
Claim.—The design for a front fork of a velocipede, substantially as herein shown and described.

29,246. BICYCLE CRANK-HANGER. PATRICK L. HUSSEY, Dayton, Ohio. Filed July 18, 1898. Serial No. 686,926. Term of patent 7 years.



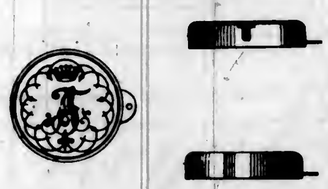
Claim.—The design for a bicycle crank-hanger, as herein shown and described.

29,247. BICYCLE-SADDLE SEAT. SYLVESTER J. BROWN, Denver, Colo., assignor, by mesne assignments, to The Brown Saddle Company, Elyria, Ohio. Filed July 27, 1898. Serial No. 688,713. Term of patent 14 years.



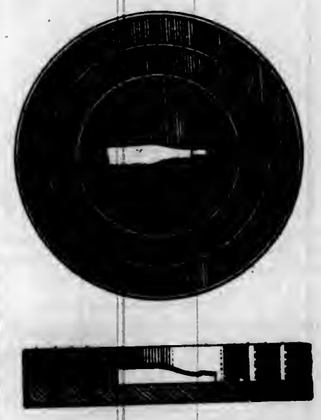
Claim.—The design for a bicycle-saddle seat, as herein shown and described.

29,248. GONG. FERDINAND FRANK, Munich, Germany. Filed Oct. 1, 1897. Serial No. 653,790. Term of patent 3½ years.



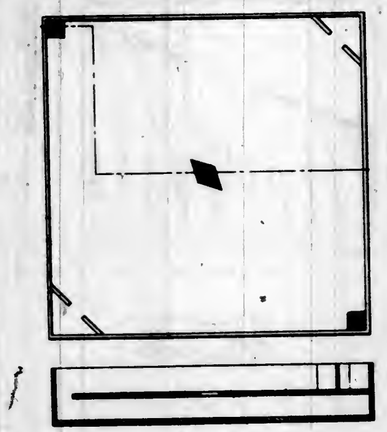
Claim.—The design for a gong as herein shown and described.

29,249. PUZZLE-BOARD. MAX HARRIS, Philadelphia, Pa., assignor of one-half to William J. Binfield, same place. Filed July 20, 1898. Serial No. 688,468. Term of patent 7 years.



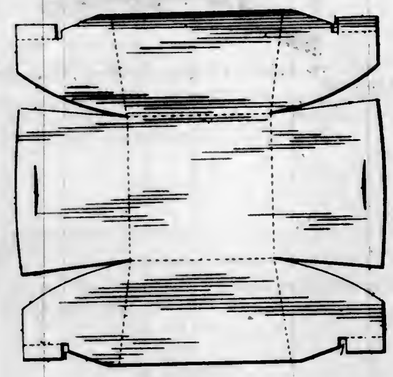
Claim.—The design for a puzzle-board substantially as shown and described.

29,250. GAME-BOARD. FRANK R. WELLS, Macoonville, N. Y. Filed July 13, 1898. Serial No. 685,574. Term of patent 7 years.



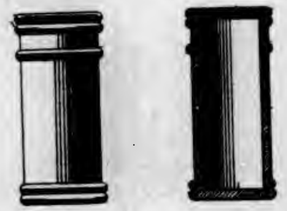
Claim.—The design for a game-board, herein shown and described.

29,251. PAPER-BOX BLANK. ERA A. ARMSTRONG, Sanaris, Mich., assignor of one-half to A. W. Leiter, Toledo, Ohio. Filed Jan. 14, 1898. Serial No. 666,710. Term of patent 14 years.



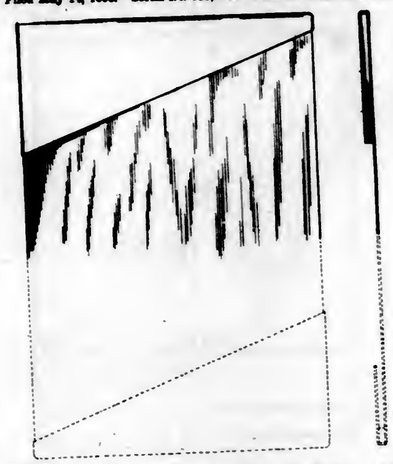
Claim.—The design for a paper-box blank, as herein shown and described.

29,252. WOODEN BOX. MATTHEW J. BOSSEY, Demarest, N. J. Filed July 25, 1898. Serial No. 686,845. Term of patent 7 years.



Claim.—The design for a wooden box, herein shown and described

29,253. WRITING-PAD. BLOOMFIELD BROWER, New York, N. Y. Filed May 14, 1898. Serial No. 680,743. Term of patent 14 years.



Claim.—The design for a writing-pad, substantially as herein shown and described.

29,254. STOCKING. OPHELIA L. FAY, Elyria, Ohio. Filed July 12, 1898. Serial No. 685,788. Term of patent 14 years.



Claim.—The design for a stocking, substantially as herein shown and described.

29,255. RUG. ADOLPH PEZOLD, Philadelphia, Pa., assignor to John H. Bromley and Edward Bromley, same place. Filed July 16, 1898. Serial No. 686,156. Term of patent 3½ years.



Claim.—The design for a rug substantially as shown and described.

TRADE-MARKS

REGISTERED AUGUST 16, 1898.

31,867. LETTER-BOOKS. GEORGE W. ROBERTSON, Corning, N. Y. Filed July 9, 1898.



Essential feature.—The representation of a man with a sledge-hammer and a copying-press. Used since March 15, 1898.

31,868. WAIST-BELTS, SHIRT-WAIST HOLDERS, AND SKIRT-SUPPORTERS. ANNA R. DUNBAR, Albany, N. Y. Filed June 26, 1898.

Royal

Essential feature.—The word "ROYAL." Used since June 1, 1897.

31,869. FOOTWEAR, INCLUDING OVERGAITERS, OVERSHOES, SLIPPERS, AND RUBBERS. PARKER, HOLMES & CO., Boston, Mass. Filed Feb. 11, 1898.



Essential feature.—The representation of a partially-laced shoe surrounded by concentric circles and the words "PARKER, HOLMES & CO." and "BOSTON" between such circles. Used since January 1, 1898.

31,870. CERTAIN NAMED FIBROUS COMPOSITIONS. THE P. C. HOLMES COMPANY, Gardiner, Me. Filed Apr. 27, 1898.

PEDROID

Essential feature.—The word "PEDROID." Used since May 25, 1894.

31,871. MEDICINES FOR DOMESTIC ANIMALS. MORRIS, LITTLE & SON, LIMITED, Doncaster, England, New York, N. Y., Melbourne, Victoria, and Port Elizabeth, Cape Colony. Filed July 13, 1898.



Essential feature.—A representation of clasped hands. Used since March 1, 1877.

31,872. MEDICINAL POMADE OR OINTMENT. ANTOINE LAURENT TADDEI, New York, N. Y. Filed June 2, 1898.

NYMPHE EGYPTIENNE
BAUME
DE CLEOPATRE.

Essential feature.—The words "NYMPHE EGYPTIENNE" located above the words "BAUME DE CLEOPATRE." Used since March, 1894.

31,878. ELIXIRS, LAXATIVES, ALTERATIVES, AND TONICS. REMINOL CHEMICAL CO., Baltimore, Md. Filed July 1, 1898.

CASCANATA.

Essential feature.—The word "CASCANATA." Used since May 31, 1898.

31,874. BLOOD MEDICINES. MINERAL SPRINGS MEDICAL CO. Mount Clemens, Mich. Filed July 2, 1898.

Essential feature.—The compound word "RHEUMA-SOUT-INE." Used since June 6, 1898.

31,875. FEVER REMEDIES. THEODORE J. VOSHEIMER, Buffalo, N. Y. Filed June 11, 1898.



Essential feature.—The representation of an angel descending upon a number of children. Used since May 23, 1898.

31,876. PROPRIETARY MEDICINES FOR CERTAIN NAMED DISEASES. THE GERMAN MEDICINE COMPANY, Chicago, Ill. Filed May 25, 1898.

NERVUTINE



Essential feature.—The word "NERVUTINE" and the nude bust of a man. Used since March 1, 1898.

31,877. EYE-TABLETS. HARRY M. GOODHUE, Providence, R. I. Filed June 28, 1898.



Essential feature.—The symbol comprising the picture of a human eye preceded by the letter "G" and followed by the letter "T." Used since March 25, 1898.

31,878. COMPOUND CELERY EXTRACT. RICHARD RAY, Kansas City, Mo. Filed Apr. 26, 1898.



Essential feature.—The representation of a tumbler containing a bunch of celery. Used since January, 1897.

31,879. CERTAIN NAMED FOOD EXTRACTS AND PREPARATIONS. CHARLES RICHARD VALENTINE, Lee, England. Filed Aug. 14, 1897.

VALTINE

Essential feature.—The word "VALTINE." Used since February, 1897.

31,880. CHEWING-GUM. THE GROVE COMPANY, Salem, Ohio. Filed June 30, 1898.

HOT STUFF

Essential feature.—The words "HOT STUFF." Used since March 22, 1897.

31,881. CERTAIN NAMED GROCERIES. GRIGGS, COOPER & CO., St. Paul, Minn. Filed Oct. 19, 1897.

HOME

Essential feature.—The word "HOME." Used since 1869.

31,882. CONDIMENT. THE VAUPEL SAMARITAN COMPANY, Cleveland, Ohio. Filed Mar. 16, 1898.

PEPSALT



Essential feature.—The word "PEPSALT" associated with the portrait of Vaupel. Used since January 3, 1898.

31,883. LYE OR POTASH. EAGLE LYE WORKS, Milwaukee, Wis. Filed July 18, 1898.

DIXIE

Essential feature.—The word "DIXIE." Used since July 1, 1898.

31,884. WASHING-POWDER. SAMUEL J. BRAUN, Toledo, Ohio. Filed June 22, 1898.

PROSPERITY

Essential feature.—The word "PROSPERITY." Used since March 1, 1897.

31,885. CERTAIN NAMED PRESERVATIVE COMPOUND. EDWARD CALM, New York, N. Y. Filed July 7, 1898.

HOMOZON

Essential feature.—The word "HOMOZON." Used since May 31, 1898.

31,886. CHEMICAL FERTILIZERS. GEORGE W. COCHRANE, Boston, Mass. Filed July 13, 1898.

IMP

Essential feature.—The word "IMP." Used since March 1, 1898.

31,887. MACHINERY FOR HARVESTING HAY AND CEREALS. THE PLANO MANUFACTURING COMPANY, Chicago, Ill. Filed June 4, 1898.



Essential feature.—The representation of a sheaf of wheat, a sheaf of grass, a banner, and a supporting-cord. Used since March 18, 1898.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE LAWRENCE.

Decided July 12, 1898.

DIVISION—DISTINCT AND INDEPENDENT INVENTIONS.

The action of the Examiner in requiring division between a set of claims covering subject-matter classified and examinable in Division I under "Fences, gate-openers, cab-doors" and another set of claims relating to a distinct and independent invention which is examinable in Division XX under "Builders' Hardware, hinges, coach" affirmed.

ON petition.

HANSOM-CAB.

Application of Joseph L. Lawrence filed December 18, 1897, No. 662,374.

Messrs. Crosby & Gregory for the applicant.

DUELL, *Commissioner:*

In the Examiner's action of February 28, 1898, it was stated that the subject-matter of claims 4, 5, and 6 should be presented in a separate application from the other claims. In his next action of June 14, 1898, it was held that the subject-matter of these three claims belonged to another division of the Office, and the requirement of division was repeated. The Examiner also rejected these claims on a certain British patent. From this requirement of division a petition was taken to the Commissioner.

In the Examiner's answer to the petition he says that the requirement for division was not repeated and that as he rejected claims 4, 5, and 6 applicant's course was by appeal and not by petition. The brief of the petitioner, however, sets forth that the record shows that the requirement of division was reiterated by the Examiner and requests the Commissioner to pass upon the question of division. The record shows that the action of June 14, 1898, was a repetition of the first action requiring division, and I have therefore concluded to pass upon the question raised by the petition.

An examination of the case shows that claims 1, 2, 3, 7, and 8 cover subject-matter which is classified and examinable in Division I under "Fences, gate-openers, cab-doors." The other claims, 4, 5, and 6, relate to an entirely distinct and independent invention—namely, a cab-door hinge—which is properly examinable in Division XX under "Builders' Hardware," subclass "Hinges, coach."

The requirement of the Examiner that the applicant limit his case to one or the other of these inventions is correct and is therefore affirmed.

The petition is denied.

CASLER v. LATHAM.

Decided May 10, 1898.

INTERFERENCE — MOTION TO DISSOLVE — NO INTERFERENCE IN FACT.

The issue of the interference is in substantially the words of claim 1 of Latham's application, and if said claim is allowed to Latham it would dominate the apparatus of Casler's application. On a motion by Casler to amend the issue *Held* that as Casler does not claim the issue there is no interference under the practice as laid down in *Hammond* v. *Hart* (83 O. G., 743) and the interference should be dissolved, and it is therefore not necessary to review the decision of the Examiner on the motion to amend, as Casler after the dissolution of the interference will be at liberty to make such claim as his application will support, and the interference may then be redeclared, provided he claims the subject-matter of the present issue.

APPEAL on motion.

APPARATUS FOR PROJECTING RAPIDLY-TAKEN PHOTOGRAPHS.

Application of Herman Casler filed February 26, 1896, No. 580,810. Application of Woodville Latham filed December 28, 1895, No. 573,585.

Messrs. E. M. Marble & Sons for Casler.

Mr. J. E. M. Bowen for Latham.

GREELEY, *Assistant Commissioner:*

This is an appeal from the decision of the Primary Examiner denying Casler's motion to amend the issue.

The issue in this interference is in substantially the words of claim 1 of Latham's application. While it may be that this claim, if allowed to Latham, would dominate the apparatus of Casler's application, it does not appear that Casler makes or intends to make such a claim. In fact it was strongly urged on behalf of Casler on the motion to dissolve before the Primary Examiner that this claim is not patentable in view of certain references.

The Examiner having after full consideration of Casler's motion and the arguments advanced in support thereof held that the issue is patentable over the references brought forward by Casler it must be accepted as patentable so far as this Office is concerned. As, however, Casler does not claim this issue, there is no interference as to this issue under the practice as laid down in *Hammond* v. *Hart* (83 O. G., 743) and the interference should be dissolved. Whether there is interference between these two applications as to other subject-matter claimed is a question to be considered by the Examiner. All that is here decided is that there is no interference as to the present issue.

It was urged on behalf of Casler as an alternative motion that the issue be amended. This was de-

nied by the Primary Examiner. It does not appear necessary to review the decision of the Examiner on this motion for the reason that Casler after the dissolution of the interference will be at liberty to make such claim as the disclosure in his application will support, provided it is patentable over the prior state of the art, and should he deem patentable and choose to claim the subject-matter of the present issue without the limitation to a specific form of variable-speed gear he may undoubtedly do so. In such case the question of interference will be again considered.

The decision of the Examiner denying the motion for re-formation of the issue is affirmed. The interference will be dissolved.

EX PARTE ARMS.

Decided May 13, 1898.

1. APPEAL TO THE COMMISSIONER—SECTION 4934 OF THE REVISED STATUTES—FEE.

The requirement of the statute is clear and unmistakable that a fee of $20 must be paid upon every appeal to the Commissioner from the Examiners-in-Chief and makes no distinction between the first and other appeals in the same case. (*Ex parte Arkell*, 45 MS. Dec., 25.)

2. APPEAL TO EXAMINERS-IN-CHIEF—SECTIONS 4909 AND 4934 OF THE REVISED STATUTES—FEE.

No fee is required in case of a second appeal to the Examiners-in-Chief in the same case, the fee for the first appeal having been paid.

ON petition.

DEHORNING-CLIPPER.

Application of John and Chester E. Arms filed March 30, 1896, No. 585,330.

Messrs. C. A. Snow & Co. for the applicant.

GREELEY, *Assistant Commissioner:*

This is a petition asking that the requirement for a second appeal fee in the above-entitled application be waived.

It appears from the record that certain claims being rejected in this case appeal was taken to the Examiners-in-Chief, and from their decision appeal was taken to the Commissioner. In the decision on that appeal it was held that the claims in the case were not patentable, but the Primary Examiner was directed to enter and consider a certain claim if presented in a proper amendment. This claim was accordingly presented and was rejected on the references before cited and on one new reference. Appeal was again taken to the Examiners-in-Chief, and under the authority of *ex parte Thomson* (56 O. G., 1203) no additional fee was required. The Examiners-in-Chief having affirmed the decision of the Examiner a second appeal to the Commissioner was filed, but was not accompanied by the appeal fee of $20, and the appellant was therefore informed that his appeal would not be set down for hearing until such fee was paid. It is from this action that the present petition is taken.

The statutory requirements in regard to the payment of fees on appeals to the Examiners-in-Chief are not the same as on appeals from their decisions to the Commissioner. Section 4909 of the Revised Statutes provides that a party may appeal to the Examiners-in-Chief "having once paid the fee for such appeal," and section 4934 of the Revised Statutes provides that—

> the following shall be the rates for patent fees: * * * On an appeal for the first time from the Primary Examiner to the Examiners-in-Chief, ten dollars.

It clearly appears, therefore, that no fee is required in case of a second appeal to the Examiners-in-Chief in the same case. (*Ex parte Thomson*, above.)

In regard to appeals to the Commissioner section 4910 of the Revised Statutes provides that—

> if such party is dissatisfied with the decision of the Examiners-in-Chief, he may, on payment of the fee prescribed, appeal to the Commissioner in person.

Section 4934, Revised Statutes, provides:

> The following shall be the rates for patent fees: * * * On every appeal from the Examiners-in-Chief to the Commissioner, twenty dollars.

The requirement of the statute is clear and unmistakable that a fee of $20 must be paid upon *every* appeal to the Commissioner and makes no distinction between the first and other appeals in the same case. (*Ex parte Arkell*, 45 MS. Dec., 25.)

The distinction between the two classes of appeals is made in the statute itself, and this Office is bound to give effect to the statute as worded.

The petition is denied.

KANE v. BRILL AND ADAMS.

Decided May 12, 1898.

1. INTERFERENCE—JUDGMENT ON THE RECORD.

Judgment cannot be rendered on the record against a party whose alleged date of conception is prior to the record date of his opponent merely because his reduction to practice is subsequent thereto.

2. SAME—INTERFERENCE IN FACT—NEW MATTER.

There being no appeal from the Examiner's holding that an amendment does not involve new matter, the application must be considered in its amended form in determining the question of interference in fact.

3. SAME—SUPPLEMENTAL OATH—EX PARTE MATTER.

The question as to whether a supplemental oath should or should not be furnished is an *ex parte* matter not open to argument in interference proceedings.

4. SAME—ISSUE.

One claim cannot properly be included under two separate issues, since it must necessarily be broader or narrower than one of those issues. (*Hammond* v. *Hart*, 88 O. G., 748.)

APPEAL on motion.

RAILWAY-BRAKE.

Application of Michael E. Kane filed June 28, 1897, No. 642,711. Application of John A. Brill and Walter S. Adams filed September 16, 1897, No. 651,886.

Messrs. Knight Bros. for Kane.

Mr. J. L. Levy and *Messrs. Wilkinson & Fisher* for Brill and Adams.

GREELEY, *Assistant Commissioner:*

This case is before me on an appeal by Brill and Adams from the decision of the Examiner of Interferences denying their motion for judgment of priority and on an appeal by the same parties from the decision of the Primary Examiner denying their motion to dissolve the above-entitled interference.

The motion for judgment is based on the record and on the allegations in the preliminary statement of Kane, it being contended that even admitting the allegations in Kane's preliminary statement to be true he could not be awarded priority, and therefore it would merely result in needless trouble and expense to take testimony to establish those allegations. This contention cannot be granted, however, since Kane alleges conception and disclosure prior to the record date of Brill and Adams and even prior to their alleged date of conception. The mere fact that Kane did not reduce the invention to practice until after Brill and Adams had filed an application which is stated to cover the invention is not conclusive of his right to priority. If he was the first to conceive and was duly diligent in reducing to practice, he is entitled to priority. Mere delay is not proof of a lack of diligence, since it may have been caused by good and sufficient reasons, and, as stated by the Court of Appeals in *Yates* v. *Huson* (74 O. G., 1732) and *Croskey* v. *Atterbury*, (76 O. G., 163,) the question of reasonable diligence is to be determined by the circumstances of each case. The facts alleged in Kane's preliminary statement do not prove that the delay may not have been justified by the circumstances of the case.

The decision of the Examiner of Interferences is affirmed.

The motion for dissolution was based on the grounds that—

1. There is no interference in fact as to the first count of the issue.
2. There was irregularity in the declaration.
3. Kane has no right to make the claim of the first count of the issue.

It appears from the record that the Examiner held that Kane's application as filed did not disclose an operative differential brake and that this holding was acquiesced in by Kane, who requested permission to so amend his application as to make the device operative. This permission was granted by the Primary Examiner, citing as authority *ex parte Snyder*, (22 O. G., 1975,) and the amendment was accordingly made.

It is true, as contended by Brill and Adams, that the application is the absolute foundation of the applicant's rights; but it is also true that the decision of the Primary Examiner holding that the amendment is properly a part of that application is conclusive. There is no appeal from the Examiner's decision holding that Kane has the right to make the claim, and therefore his application must be considered in its amended form in determining the question of interference in fact.

It is contended that even as amended Kane's application does not disclose an operative differential brake, since the power applied by the brake-lever acts on the two brake-rods at equal distances from the fulcrum, thus applying equal pressures to the rods. This contention is incorrect, however, since although the lever gives to the brake-rods equal motion it does not apply equal pressure. It is clearly stated in the specification, even if not shown in the drawings, that the spring on one brake-rod is stronger than that on the other, and it necessarily follows that more pressure is applied to the rod having the stronger spring than to the other in order to give them the same motion, and therefore more pressure will be applied to one brake-shoe than to the other.

It is urged that there was irregularity in the declaration in that Kane was not required to furnish a supplemental oath in support of the amendment to his application; but it is noted that the question as to whether a supplemental oath should or should not have been required is an *ex parte* matter not open for argument in interference proceedings. (*Rennyson* v. *Merritt*, 58 O. G., 1415.) The absence of such oath even where it should have been furnished is not such irregularity as to preclude a proper determination of the question of priority.

Since the hearing in this case the practice in regard to the declaration of interferences has been changed, and an interference is no longer declared between two applications merely because one has a generic claim which dominates a specific claim of the other, but—

> an interference can only be instituted for the purpose of determining the question of priority of invention between two or more parties claiming substantially the same patentable invention. (*Hammond* v. *Hart*, 88 O. G., 748.)

This change in the practice must be considered in disposing of the question of interference in fact in this case.

Kane's application contains only one claim and that is in the words of the second count of the issue. Interference proceedings in regard to that count will therefore settle the question of priority of invention as to the only thing which Kane claims. If the first count differs from Kane's claim and the second count in any material respects, and the fact that it is made a separate count indicates that it does contain material differences, it is necessarily either broader or narrower, and under the practice announced in *Hammond* v. *Hart* there can properly be no interference in regard to it in either case. There is no necessity for making two counts unless they differ materially from each other, for to do so would merely lead to confusion in taking testimony.

It is held that there is no interference in fact as to the first count, and therefore the decision of the Primary Examiner refusing to dissolve the interference as to that count is reversed.

EX PARTE GILLIE.

Decided May 28, 1898.

FOREIGN PATENT—GERMAN GEBRAUCHSMUSTER—LIMIT OF TERM OF PATENT.

While it has never been decided by the courts whether a patent granted in this country for an invention previously made the subject of a *Gebrauchsmuster* is limited in term under section 4887 of the Revised Statutes, the data as to such *Gebrauchsmuster* should be given in the specification, the question of limitation being left to the courts.

ON petition.

COMPASS-CARD.

Application of John W. Gillie filed July 29, 1896, No. 600,912.

Messrs. Edgar Tate & Co. for the applicant.

GREELEY, *Assistant Commissioner:*

This is a petition from the repeated requirement of the Primary Examiner that the proper data as to a German *Gebrauchsmuster* received by the petitioner before the filing of his present application for the same invention as that of the application be inserted in the specification. The Examiner's position is that the term "patented" in the statutes is broad enough to include a German *Gebrauchsmuster*.

It is the contention of the petitioner that the *Gebrauchsmuster* in question is not a patent within the meaning of the United States law and has not been so recognized and that it is not so termed by the German law. He also contends that the German *Gebrauchsmuster* in effect covers only the design and that since under the United States law a patent for a design does not affect a patent for the structure of the article to which the design is applied by analogy the Examiner's requirement is unlawful.

There is no doubt that the protection afforded by a *Gebrauchsmuster* is for its proper subject-matter substantially the protection afforded by a patent for inventions which are properly subject-matter for patent. The fact that a *Gebrauchsmuster* is taken out for an invention does not necessarily mean that such invention is proper subject-matter therefor, as the *Gebrauchsmuster* is registered on applications without preliminary examination.

It may be that the protection afforded by the *Gebrauchsmuster* is not commensurate in scope with the protection which is afforded by a mechanical patent in this country and protects only the design or configuration in which the invention is embodied, and from the best information at hand I am of the opinion that such is the case, yet as the question whether or not a United States patent granted for an invention which had been previously made the subject of a *Gebrauchsmuster* is limited under section 4887 of the Revised Statutes has never been decided by the courts, so far as can be ascertained, I am of the opinion that the Examiner is right in requiring that the data as to the *Gebrauchsmuster* be inserted in its proper place in the specification. The question as to whether or not the term of the patent which may be granted is limited is a question to be considered by the courts.

The petition is denied.

EX PARTE NOBLE.

Decided May 28, 1898.

AMENDMENT—ALTERNATIVE SPECIES—ELECTION OF SPECIES BINDING.

An applicant has no right to have an allowable claim drawn to a species alternative to that of other claim and presented by amendment after the rejection of such other claims considered. He is bound by his election of species.

ON petition.

CYLINDRICAL BALANCED GATE-VALVE.

Application of Theron A. Noble filed April 27, 1897, No. 634,092.

Messrs. Munn & Co. for the applicant.

GREELEY, *Assistant Commissioner:*

This is a petition asking that the Primary Examiner be directed to enter and act upon a claim once voluntarily withdrawn in view of his rejection.

It appears that when the case was originally presented claims for certain species were presented therewith and that in a subsequent amendment a claim for another species was presented. The second claim was objected to, although the Examiner in his letter stated that it was allowable. The claims to the species first mentioned were also at one time allowed, but were subsequently rejected upon another reference. The applicant seems to regard this reference as pertinent to the claims and asks that he be permitted to prosecute the claim to the other species. He holds that he was misled by the Examiner's preliminary allowance of the claims now rejected and that in justice he ought to be permitted to prosecute the claim for the other species.

I do not see that his request is well founded. He has had an examination upon the claims which he originally presented—that is, upon that species which he originally, before any action by the Office, elected to prosecute. I do not think that he would be justified under the prevailing decisions and under the uniform practice of the Office since *ex parte Eagle* (C. D., 1870, 137) in now having an examination and allowance of the claim for the alternative species, which was presented as an afterthought by an amendment and apparently without any supplemental oath for its claim after the original species had been presented and acted upon. An applicant can prosecute but one species in one application. (*Doehring*, 63 MS. Dec., 435; *Williams*, 64 MS. Dec., 58.)

The petition is denied.

MILLER v. KELLEY.

Decided June 1, 1898.

1. INTERFERENCE IN FACT—GENERIC CLAIMS.

Interference in fact exists where both parties make generic claims, although their structures may be specifically different.

2. SAME—DISSOLUTION.

While under the decision in the case of *Hammond* v. *Hart* (83 O. G., 743) and *Grimm* v. *Dolan* (83 O. G., 1209) it would be irregular to declare an interference until both parties made the claims in issue, *Held* that in an interference in which decision on priority had been rendered and in which the party not making the claims in issue could make them and had submitted an amendment containing such claims the interference should not be dissolved.

APPEAL on motion.

MATCH-MACHINE.

Application of Frederick J. Miller filed April 12, 1897, No. 631,793. Application of Alexander Kelley filed May 22, 1896, No. 592,605.

Messrs. Prindle & Russell for Miller.

Mr. E. B. Stocking for Kelley.

GREELEY, *Assistant Commissioner:*

This is an appeal from the decision of the Primary Examiner denying a motion for dissolution

brought by Miller. The reasons for this appeal are:

1. The Primary Examiner erred in holding that an interference in fact exists between the claims of the respective parties involved.
2. The Primary Examiner erred in ruling that there was no such irregularity in declaring the interference as to preclude a proper determination of the question of priority.
3. The Primary Examiner erred in not dissolving the interference.

* * * * * * *

In this interference priority was awarded to Kelley, the senior party, upon the record. Motion was thereupon brought by Miller to dissolve upon several grounds. From the refusal of the Examiner to dissolve on the ground that there is no interference in fact and on the ground of irregularity in declaring this appeal was taken.

As to the first count of the issue, which is in the terms of one of Kelley's claims, dissolution was asked on the ground of non-patentability and lack of right on the part of Kelley to make this claim. It was not urged by Miller that there was no interference as to this claim or any irregularity in declaring, so far as this count is concerned. The Examiner's decision affirming the patentability of this claim and Kelley's right to make it is final under the rules.

The decision of the Examiner of Interferences awarding priority to Kelley is as to this claim, unless appealed from, final.

Counts 2, 3, 4, and 5 are therefore the only counts to be considered. These are claims made by Miller. Kelley did not make them prior to the declaration of the interference. He has since that date filed an amendment, not yet entered, inserting these claims in his application. The decision of the Examiner upon the motion to dissolve holds that Kelley's claims cover substantially the subject-matter of these counts of the issue and may be considered as in effect holding that Kelley has the right to make these claims. For the purposes of this decision it may be considered that Kelley makes these claims.

On the face of the papers it would seem that there was here an interference in fact.

It is, however, necessary to determine the meaning of these claims as shown by the respective applications.

There is a clear difference between the apparatus of the two applications. This difference is in the means for controlling the rotation of the bars while they are disengaged from the chain. Kelley's apparatus is designed to so far control the rotation of these bars that they shall be properly presented to clamp between them the match-splint. He does not have the specific means of Miller's apparatus—namely, the polygonal wheel and the spring.

Miller is no doubt entitled to claims covering his specific means for this purpose and claims covering generically any device for this purpose other than or additional to the devices of Kelley's apparatus.

Counts 2, 3, and 5 are, in my opinion, broader than anything Miller is entitled to claim without interference with Kelley. These claims are not limited to any specific means for controlling the rotation of the bars. They are generic and cover the means of Kelley's apparatus, as well as the means shown and described by Miller. As to these counts there is interference in fact.

Count 4 of the issue is more specific, being limited to means rotating with the rotary carrier for the purpose of preventing rotation of the bars. This must be understood from Miller's specification to be the polygonal hub or projection on the inner face of the rotary carrier-wheels or an equivalent device rotating with the carrier. As Kelley has not this device, this claim when made by him, if, as seems to be held by the Examiner, he has a right to make this claim, does not mean the same that it means when made by Miller. As to this count of the issue there is no interference in fact.

The decision of the Examiner is affirmed, except as to count 4 of the issue. As to this claim the decision of the Examiner is reversed. The interference will be dissolved as to this claim.

While under the decision in the case of *Hammond* v. *Hart* (83 O. G., 743) and *Grimm* v. *Dolan*, (83 O. G., 1209,) both decided since the declaration of this interference, it would be irregular to declare an interference until both parties made the claims in issue—in this case until Kelley made the claims which form counts 2, 3, 4, and 5 of the issue—this irregularity is not, in view of Kelley's amendment above referred to, sufficient to warrant dissolution.

EX PARTE APPEL.

Decided June 2, 1898.

1. RECONSIDERATION—RULE 69.

A mere request for second consideration without explanation or argument and without "distinctly and specifically pointing out the supposed errors in the Examiner's action" (Rule 69) is not sufficient to entitle an applicant to reconsideration.

2. PETITION TO COMMISSIONER—PRACTICE.

Proper practice requires that an applicant should present fully before the Examiner the reasons why objections made should be withdrawn, and only after the position taken by the applicant is clear to the Examiner should petition be taken. It is not the duty of the Commissioner to act upon questions which could be and should be settled before the Examiner.

ON petition.

BEARINGS FOR RAILROAD-CARS AND MACHINERY.

Application of Johannes Appel filed December 27, 1897, No. 663,549.

Mr. Fritz Andreae for the applicant.

GREELEY, *Assistant Commissioner:*

It appears from the record that on taking up this application for examination the Examiner found that the description was insufficient to enable it to be understood. The Examiner in his letter of February 5, 1898, after stating that the invention could not be understood, points out in detail many defects and inaccuracies in the specification and claims. This letter bears evidence that the Examiner had given the case careful and painstaking attention. No references were cited and no claims were rejected in this letter. The Examiner stated distinctly that—

until a clear description and claims are furnished, action with a view to the citation of references must be deferred.

The attorney for the applicant presented a mere request "for second consideration," without explanation or argument, without attempting to remedy such of the Examiner's objections as upon reasonably careful consideration must have been admitted by the attorney to have been well taken, and without even "distinctly and specifically pointing out the supposed errors in the Examiner's action." (Rule 69.) Such a request does not under the rules entitle an applicant to reconsideration. The Examiner, calling attention to the irregularity of the request for reconsideration, consented to give such reconsideration, doubtless with the desire of facilitating as much as possible the progress of the case. While Rule 69, as well as other rules which require certain things to be done by the applicant before action can be had, should always be construed in such a way as to facilitate the progress of the case, it is clear that the present case is one in which a strict enforcement of this rule was necessary.

On reconsideration and affirmance of the first action by the Examiner the applicant brings this petition.

Arguments are presented upon the petition which should have been presented to the Examiner. To expect that they will be here considered is in effect to expect the Commissioner to act upon the case in the first instance. This is not his duty. It was never intended that questions which could be and should be settled before the Examiner—and most of the questions raised in this petition are such questions—should be permitted to be brought to the Commissioner. Proper practice requires that the applicant should, through his attorney, present fully before the Examiner the reasons why objections made should be withdrawn, and only after the position taken by the applicant is made clear to the Examiner should petition be taken.

Until this is done the questions raised by this petition will not be considered by me. The Examiner is directed to consider such arguments as may be presented by the applicant regarding the objections made to the application as presented.

The petition is dismissed.

CONVERSE *et al. v.* KERST.

Decided June 15, 1898.

1. INTERFERENCE—PRELIMINARY STATEMENT, OPENING.

A preliminary statement having been filed by a party through his regularly-appointed attorney and opened, a second preliminary statement filed through another attorney will not be opened at the instance of the other party, it appearing that it was not intended that the second statement should be filed.

2. SAME—MOTION TO DETERMINE STATUS OF PARTIES.

Motion to define the status of the parties as to seniority in advance of final hearing denied.

APPEAL on motion.

BRICK SANDING AND FORMING MACHINE.

Application of Albert L. Converse and John T. Underwood filed November 25, 1895, No. 570,042. Patent granted John G. Kerst March 24, 1896, No. 536,988.

Mr. Nicholas Du Bois for Converse and Underwood.

Mr. E. H. Bond and *Messrs. Bell & Bell* for Kerst.

GREELEY, *Assistant Commissioner:*

On March 7, 1898, Converse and Underwood filed two motions. In one of them they asked that a preliminary statement filed by Messrs. Higdon, Longan & Higdon in behalf of Kerst be opened and that they be permitted to examine it. In the other they asked that preliminary to the hearing an order be made defining the status as to seniority of the parties.

Both of these motions were denied by the Examiner of Interferences. Hence the present appeal.

November 22, 1897, the Examiner of Interferences wrote to both parties and recited that on November 4, 1897, a power of attorney to Messrs. Higdon, Longan & Higdon was filed, and on November 15, 1897, a proper statement and power of attorney to Mr. E. H. Bond. On November 17, 1897, a second preliminary statement was filed in an envelop bearing the card of Messrs. Higdon, Longan & Higdon, but was not opened. On November 18 Kerst through Bond requested the return of such statement. This request the Examiner refused to grant, but stated that he would not permit such statement to be opened.

No sufficient reason has been adduced for the opening of such statement. It was filed involuntarily and has no effect beyond that which a blank paper or a paper in another case would have. It is purely irrelevant. The intent of the applicant to file is lacking from the act of the filing of the second paper.

The second motion is simply an attempt to induce the Office to decide offhand the question of seniority. An interference proceeding is for the purpose of reaching a conclusion respecting such question.

The decision of the Examiner of Interferences is affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 11, 1898.

SIR: The Secretary of the Interior has ordered that W. H. Blakeley, of Wapakoneta, Ohio, be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 18, 1898.

SIR: The Secretary of the Interior has ordered that Henry F. Hill, of Fort Smith, Ark., be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,
EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

Renewal of Forfeited Cases.

Rule 175. When the patent has been withheld by reason of nonpayment of the final fee, any person, whether inventor or assignee, who has an interest in the invention for which such patent was ordered to issue may file a renewal of the application for the same invention; but such second application must be made within two years after the allowance of the original application. * * *

Rule 176. In such renewal the oath, petition, specification, drawing, and model of the original application may be used for the second application; but a new fee ($15.00) will be required. * * *

Notice of Interference—Loosley v. Decker.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., July 14, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

An interference having been declared by this Office between the application of Ernest A. Loosley, deceased, of Birmingham, Ala., and an application of William Lloyd Decker, of Worcester, Mass., whose attorney of record is Rufus B. Fowler, of same place; and the notices of said declaration, mailed by the Patent Office in the usual manner to the said heirs, executor, or administrator of Ernest A. Loosley, deceased, having elicited no response, notice is hereby given to such heirs, executor, or administrator that if it is desired to contest this interference communication with the Commissioner of Patents should be immediately established, in order that the above-mentioned notices may be duly forwarded at once.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

C. H. DUELL,
Commissioner.

File-Wrappers—Entries On.

It is directed that entries shall not be made on the back of a file-wrapper, containing the application-papers for a patent, of papers or actions which do not become a permanent part of the contents of the file.

A card (Form 2-284 Office Series of blanks, sample hereto attached) will be placed in the file showing all appellate actions.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 23, 1898.

Labels.

6,645.—Title: "OUR HERO." (For Cigars.) *American Lithographic Company*, New York, N. Y. Application filed June 11, 1898.

6,646.—Title: "NAVY BELLE." (For Cigars.) *American Lithographic Company*, New York, N. Y. Application filed July 26, 1898.

6,647.—Title: "GOLDEN SLIPPER." (For Rye Whisky.) *Henry H. Elliott*, Washington, D. C. Application filed July 27, 1898.

6,648.—Title: "LUCAS' DENGUE MEDICINE." (For Yellow Fever and La Grippe.) *George B. Lucas*, Austin, Tex. Application filed July 23, 1898.

Print.

75.—Title: "HOW TO CATCH A SPANIARD." (For Playing-Cards.) *The New York Consolidated Card Company*, New York, N. Y. Application filed July 28, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 16, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Between one and two months.			
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	June 20	Aug. 8	134
108	XIX. Stoves and Furnaces	June 20	Aug. 3	199
255	XII. Mechanical Engineering, Store-Service, etc.	June 18	Aug. 3	156
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	June 24	Aug. 2	132
98	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	June 24	Aug. 2	175
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	June 24	Aug. 1	114
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 6	July 30	125
	Between two and three months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	June 8	Aug. 9	277
253	X. Carriages and Wagons	June 1	Aug. 3	179
309	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 7	Aug. 1	174
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	May 17	Aug. 1	170
	Between three and four months.			
126	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	May 5	Aug. 9	144
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Apr. 20	Aug. 8	323
248	XVIII. Steam-Engineering, etc	Apr. 18	Aug. 4	206
256	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	Apr. 25	Aug. 2	377
20	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Apr. 22	Aug. 2	458
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	May 11	Aug. 1	209
240	VII. Velocipedes	May 2	Aug. 1	486
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	May 11	July 23	305
98	XXI. Textiles, etc	Apr. 21	July 18	282
	Between four and five months.			
139	XXIV. Sewing-Machines, Apparel, and Toilet.	Apr. 14	Aug. 3	283
120	IX. Hydraulics, Fire-Extinguishers, etc.	Mar. 30	Aug. 3	253
246	I. Tillage and Fences	Mar. 22	July 31	227
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Mar. 30	July 30	378
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Apr. 12	July 19	134
	Between five and six months.			
106	II. Farm Stock, Products, etc	Mar. 15	Aug. 1	532
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Mar. 1	July 29	444
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Feb. 17	July 20	790
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Mar. 12	July 15	395
	Between six and seven months.			
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Feb. 14	Aug. 8	463
221	XXIII. Registers, Fluid-Meters, and Accoustics, etc.	Jan. 17	Aug. 6	220
217	XXXIII. *Trade-Marks, etc., †Disclaimers, Drafting, and Optics.	Feb. 2	July 30	235
	Between seven and eight months.			
215	XVII. Printing, Type-Writing Machines, and Lino-typing.	Jan. 3	Aug. 4	432
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	Jan. 4	July 26	243

Applications Under Examination—Continued.

91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Jan. 10	July 26	456
	Between eight and nine months.			
261	XXXVI. Weighing and Measuring Devices and Driers.	Nov. 18	Aug. 6	268

Total number of applications awaiting action 10,476

Under one month.			
Designs	Aug. 10	Aug. 11	54
Trade-Marks	Aug. 1	Aug. 11	82

ISSUE OF AUGUST 23, 1898.

Patents	399	No. 609,396 to No. 609,764, inclusive.
Designs	18	No. 29,356 to No. 29,373, inclusive.
Trade-Marks	18	No. 31,888 to No. 31,905, inclusive.
Labels	4	No. 6,645 to No. 6,648, inclusive.
Prints	1	No. 75.
Reissues	1	No. 11,688.
Total issue	411	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	.....	New Hampshire	2	.....
Arizona Territory	.....	.....	New Jersey	14	2
Arkansas	4	.....	New Mexico Territ'y	.....	.....
California	9	.....	New York	54	5
Colorado	2	.....	North Carolina	.....	.....
Connecticut	12	.....	North Dakota	.....	.....
Delaware	1	.....	Ohio	18	.....
District of Columbia	2	1	Oklahoma Territory	2	.....
Florida	1	.....	Oregon	1	.....
Georgia	4	.....	Pennsylvania	42	.....
Hawaii	1	.....	Rhode Island	4	.....
Idaho	.....	.....	South Carolina	2	.....
Illinois	33	3	South Dakota	1	.....
Indiana	16	.....	Tennessee	6	.....
Iowa	13	.....	Texas	3	1
Kansas	7	.....	Utah	.....	.....
Kentucky	.....	.....	Vermont	.....	.....
Louisiana	2	.....	Virginia	7	.....
Maine	1	1	Washington	1	.....
Maryland	4	2	West Virginia	3	.....
Massachusetts	27	5	Wisconsin	7	.....
Michigan	14	.....	Wyoming	.....	.....
Minnesota	5	.....	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	11	2	Total to citizens of the United States	343	21
Montana	1	.....			
Nebraska	2	.....			
Nevada	.....	.....			

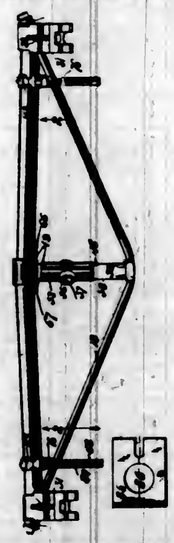
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Italy	2	.....
Australia	.....	.....	Mexico	.....	.....
Austria-Hungary	3	.....	Netherlands	.....	.....
Barbadoes	.....	.....	Newfoundland	.....	.....
Belgium	2	1	New South Wales	.....	.....
Bermuda	.....	.....	New Zealand	.....	.....
Brazil	.....	.....	Norway	.....	.....
Canada	3	1	Portugal	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile, Republic of	.....	.....	Russia	1	.....
China	.....	.....	Scotland	1	.....
Colombia	.....	.....	South African Republic	.....	.....
Cuba	.....	.....	South Australia	.....	.....
Denmark	.....	.....	Spain	.....	.....
Egypt	.....	.....	Sweden	.....	.....
England	13	.....	Switzerland	1	.....
Finland	.....	.....	Victoria	1	.....
France	7	.....	West Australia	.....	.....
Germany	11	.....	Total to citizens of foreign countries	44	2
Guatemala	.....	.....			
India	.....	.....			
Ireland	.....	.....			

PATENTS

GRANTED AUGUST 23, 1898.

609,896. BRAKE-BEAM. FRANCIS B. ASLAR, St. Louis, Mo., assignor to the Interchangeable Brake Beam Company, same place. Filed June 22, 1898. Serial No. 683,453. (No model.)



Claim.—1. In a brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing, and a rigid tubular malleable-iron strut securely keyed upon said compression member, substantially as specified.

2. In a brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing and a rigid tubular malleable-iron strut securely keyed upon said compression member, which strut consists of the rear end having the aperture 47 designed to receive the compression member and having the key-seat 48 at one side of said aperture, the hollow circular body 51 attached to said rear end, the body 52 at the front end of said circular body, the parallel bars 53 extending forwardly from said body 52, said parallel bars having the circular bodies 56 through which are formed the alined apertures 57, the body 54 attached to the front ends of said bars, the hollow circular body 58 projecting forwardly from said body 54, the ears 59 projecting upwardly from the front end of said circular body 58 and having the horizontally-alined apertures 60, the body 61 attached to the front end of said circular body 58 and having the recess 62 in its front face and designed to receive the truss-rod, and the key 49 in the key-seat 48, substantially as specified.

3. In a brake-beam, the compression member constructed of open-seam rolled-steel-plate tubing, a rigid tubular malleable-iron strut securely keyed to said compression member, reversible and interchangeable brake-heads upon said compression member, drop-plates upon said heads and a truss-rod connecting said heads and engaging said strut, substantially as specified.

4. In a brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing, a rigid tubular malleable-iron strut securely keyed to said compression member, reversible and interchangeable brake-heads upon said compression member; which brake-heads consist of the portion 29 having the opening 12, the circular portion 30 having the opening 17, the rib 31 projecting upwardly from the portion 29 and surrounding the portion 30, the walls 32 and 33 projecting inwardly from the top and bottom, respectively, of the circular portion 29, the curved body 34 projecting upwardly from the inner end of the wall 33 and having the end 35, the rib 31 being attached to the top of the wall 33 and to the rear side of the curved body 34 and the end 35, the flanges 36 projecting forwardly from the edges of the body 34, the curved body 37 extending downwardly from the inner end of the wall 32 and having the end 38, the flanges 39 projecting inwardly from the edges of the body 37, the lugs 42 and 43 projecting into the opening 41 formed between the curved bodies 34 and 37, the bodies 44 connecting the bases of the lugs 42 and 43 with the inner ends of the walls 32 and 33, respectively, and the lugs 45 projecting forwardly from the bodies 44; drop plates upon said heads and a truss-rod connecting said heads and engaging said strut, substantially as specified.

5. In a brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing and a rigid tubular malleable-iron strut securely keyed upon said compression member, reversible and interchangeable brake-heads upon said compression member, drop-plates upon said brake-heads, a truss-rod connecting said heads and engaging said strut, the nut-locks 20 upon said truss-rod and against said drop-plates, nuts upon said truss-rod and against said nut locks, said nut-locks consisting of the body portions 85 having the centrally-located apertures 86, the portion 87 joined to said body 85 at right angles and the ends 88 and 89 joined to said body at the opposite end from the portion 87, substantially as specified.

6. In a brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing and a rigid tubular malleable-iron strut securely keyed upon said compression member, reversible and interchangeable brake-heads upon said compression member, drop plates upon said brake-heads, a truss-rod connecting said heads and engaging said strut, nut-locks upon said truss-rod and against said drop-plates, nuts upon said truss-rod and against said nut-locks, and finger-guards attached to said compression member, each of which finger-guards consists of the malleable iron clip 69 designed to fit upon said compression member, the ends 70 and 71 projecting upwardly from said clip, the lug 75 projecting inwardly from the upper edges of said ends 70 and 71, the malleable-iron guard-hook 76 having one end against the end 71 and its other end engaging the truss-rod, the rod 80 having the screw-threaded end 81 and the squared portion 82 designed to fit in the openings in said ends 70 and 71, the nut-lock 83 upon said screw-threaded end and the nut 84 upon said screw-threaded end and against said nut-lock, substantially as specified.

7. A brake-beam comprising a compression member or back-strut, which compression member is constructed of open-seam rolled-steel-plate tubing, a rigid tubular malleable-iron king-post or strut securely keyed upon said compression member, finger-guards attached to said compression member, reversible and interchangeable brake-heads upon said compression member, drop-plates upon said brake-heads, a truss-rod connecting said brake-heads and engaging said strut, and hooks attached to said finger-guards and engaging said truss-rod, substantially as specified.

8. In a brake-beam, a compression member or back-strut 5 constructed of open-seam rolled-steel-plate tubing and having the rectangular cut-away portion 6 in each of its ends and the cut-away portions 9 extending inwardly from said cut-away portion and having the rounded inner ends 10, substantially as specified.

9. In a brake-beam, a reversible and interchangeable head 11 consisting of the portion 29 through which is formed the opening 12, the lugs 13 and 14 projecting into said opening 12 and forming the semicircular depression 18 between said lugs, said portion 29 being constructed to form the recesses 15 surrounding said opening 12 and designed to receive drop-plates, the circular portion 30 through which is formed the opening 17, the rib 31 projecting upwardly from the portion 29 and surrounding the portion 30, the walls 32 and 33 projecting inwardly from the top and bottom of said circular portion 29, the curved body 34 projecting upwardly from the inner end of the portion 29 and having the end 35, the flanges 36 projecting forwardly from the edges of the body 34, the curved body 37 projecting down-

wardly from the inner end of the wall 32 and having the end 38, the flanges 39 projecting outwardly from the edges of the body 37, lugs 42 and 43 projecting into the opening 41 formed between the walls 32 and 33, the bodies 44 connecting the bases of the lugs 42 and 43 with the inner ends of the walls 32 and 33 and the lugs 45 projecting forwardly from the bodies 44, all cast in one piece and annealed, substantially as specified.

10. In a brake-beam, the rigid tubular strut or king-post 46 consisting of the rear end having the aperture 47 designed to receive the compression member and the key-seat 48 communicating with said aperture and designed to receive the key 49, the hollow circular body 51 attached to said rear end, the body 52 attached to the front end of said circular body, the parallel bars 53 extending forwardly from the ends of said body 52, the circular bodies 56 having the apertures 57 at the centers of said parallel bars, the body 54 attached to the front ends of said parallel bars, the hollow circular body 58 extending forwardly from said body 54, the ears 59 extending forwardly from the front end of said hollow circular body 58, the body 61 attached to the front end of said hollow circular body 58 and having the recess 62 in its front face, said recess being designed to receive the truss rod, all cast in one piece and annealed, substantially as specified.

11. In a brake-beam, the finger-guards 68, each of which consists of the malleable-iron clip 69 designed to fit around the compression member, the ends 70 and 71 projecting upwardly from said clip, said ends 71 having the square opening 73 and the end 70 having the circular opening 74 in alinement with said square opening, the lugs 75 projecting inwardly from the upper edges of the ends 70 and 71, the malleable-iron guard-hook 76 consisting of the vertical portion 77 having the squared opening corresponding to the opening 73 and designed to be placed in alinement with said opening and against the outer face of the end 71, the horizontal portion 78 attached to the lower end of said vertical portion and the hooked end 79 designed to engage the truss-rod, the rod 80 having the screw-threaded end 81 designed to pass through the circular opening 74 and the squared portion 82 designed to pass through the squared openings in the vertical portion 77 and the end 71, the nut-lock 83 upon the screw-threaded end of said rod and against the end 70 and the screw-threaded nut 84 upon said screw-threaded end and against said nut-lock, substantially as specified.

12. A brake-beam comprising the compression member or back-strut 5 reconstructed of open-seam rolled-steel-plate tubing, the malleable-iron reversible and interchangeable heads 11, the drop-plates 16 designed to engage said heads, the truss-rod 19 connecting said heads, the nut-locks 20 upon the ends of said truss-rod, the nuts 21 upon the ends of said truss-rod and against said nut-locks, the rigid malleable-iron strut or king-post 46 upon said compression member and engaging said truss-rod, the key 49 interposed between said compression member and said strut and having its point 67 upset to hold it rigidly in position, the finger-guard 68 attached to said compression member and having the hooked ends 79 engaging said truss-rod, substantially as specified.

13. In a trussed metallic brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing, the edges of the open seam of said tubing being approximately in contact with each other substantially throughout the distance between the points near each end where the tension-rod enters the compression member, and cut away from said points to the ends of said compression member in a manner to form open-ended slots at each end of said compression member.

14. In a trussed metallic brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing, the edges of the open seam of said tubing being approximately in contact with each other substantially throughout the distance between the points near each end where the tension-rod enters the compression member, and cut away from said points to the extreme ends of said compression member in a manner to form open-ended slots for the reception of the said tension-rod and also for the reception of lugs from the brake-heads.

15. In a trussed metallic brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing, the edges of the open seam of said tubing being approximately in contact with each other substantially throughout the distance between the points near each end of said tube where the tension-rod enters the compression member, and cut away at the said points where the tension-rod enters the compression member to form slots for the reception of said tension-rod, and also cut away outside of said points and extending to the extreme ends of said compression member so as to form open ended slots for the reception of lugs from the brake-heads, the last-mentioned slots being wider than the first-mentioned slots so as to form shoulders at the junctions of the first and second above-mentioned slots, said shoulders being adapted to engage the said lugs from the brake-heads and prevent the latter from sliding toward the king-post of the beam.

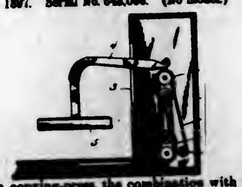
16. In a brake-beam, a compression member constructed of open-seam rolled-steel-plate tubing having the rectangular cut-away portion 6 at each of its ends, and a narrower cut-away portion extending inwardly from said cut-away portion 6.

17. In a trussed metallic brake-beam, the combination of a strut or king-post, a tension-rod, brake-heads having lugs projecting into the compression member, and a tubular compression member formed with open-ended notches at its ends for the passage of the said tension-rod and the said lug from the brake-heads, said notches beings formed with a transverse shoulder adapted to engage with said lugs, with suitable means of tying the several said members of the beam together.

18. In a brake-beam with a tension-rod and a compression member, a clip provided with lips, a bolt passing through said lips and serving the double purpose of a finger-guard and a bolt for clamping said clip on or around the compression member, and a hook engaging with and hooking over said tension-rod mounted at its base upon one of the lips of said clip and held in place by said bolt, with a nut upon the end of said bolt.

19. A strut or fulcrum-support for a brake-beam cast in the form of a circular tube cored throughout its entire length and formed with internal strengthening-ribs and a transverse circular recess at one end for the reception of a tubular compression member, and with a longitudinal slot between the two ends for the reception of the brake-lever.

609,897. COPYING-PRESS. ADELAIDE A. AIKIN, Stockton, Ala. Filed Aug. 12, 1897. Serial No. 648,096. (No model.)



Claim.—In a copying-press, the combination with the bed-plate and the casing having a vertical slot, of the horizontally-disposed lever pivoted within the casing and extended through said slot, a gravity-actuated presser-plate pivotally suspended from the outer end of said lever, a double pulley-block pivotally suspended from the inner end of the said lever within said casing, a double pulley-block pivotally secured to the bottom of the casing in vertical line with the first-mentioned block, a horizontal shaft supported in the casing with one end extended and provided with a crank-handle, a ratchet on said shaft, a pawl engaging said ratchet and a rope passed around said blocks with one end attached to the said shaft and adapted to be wound thereon and the other end connected with the under side of the upper pulley-block, all substantially as and for the purpose specified.

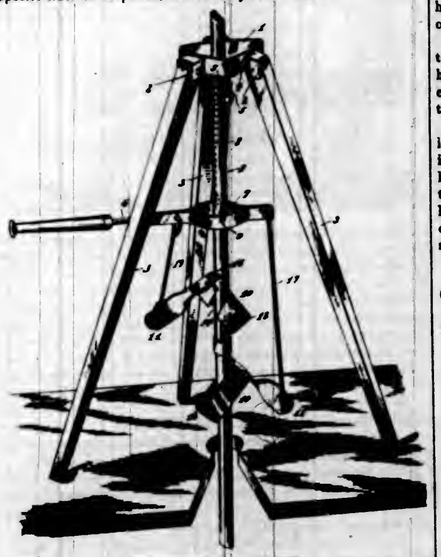
609,898. MECHANISM FOR LIFTING PIPES OR RODS FROM WELLS. GEORGE ALLSUP and GEORGE D. BARRY, Barneston, Nebr. Filed Aug. 31, 1897. Serial No. 650,150. (No model.)

Claim.—1. In a pipe or rod lifting mechanism, the combination with a supporting frame, of a lever pivotally supported by the frame, elongated link clutches loosely fitted on the pipe or rod one above the other to grip it in their upward movement and slip freely over it in their downward movement, each link having a lateral extension at one end to engage the pipe or rod and connections between the clutches and the lever to simultaneously raise one clutch and lower the other, and vice versa, substantially as described.

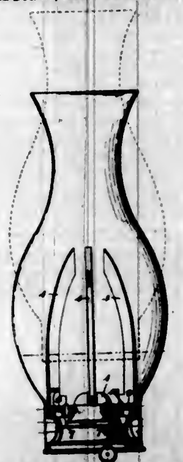
2. In a pipe or rod lifting mechanism, the combination with a supporting-frame, of a lever pivotally supported by the frame, elongated link clutches loosely fitted on the pipe or rod one above the other, to grip it in their upward movement and slip freely over it in their downward movement, each link having a lateral extension at one end to engage the pipe or rod, an arm extending from the upper end of each link, and rods connecting the outer ends of the respective arms to the lever on opposite sides of its pivot, substantially as described.

3. In a pipe or rod lifting mechanism, the combination with a supporting-frame, of a lever pivotally supported by the frame, elongated link clutches loosely fitted on the pipe or rod one above the other to grip it in their upward movement and slip freely over it in their downward movement, each link having an opening in one side to permit it to be moved sidewise over the pipe or rod, and an inclined lateral extension at one end to guide the closed side of the link against the pipe or rod, an arm extending from the upper end of each link, and rods connecting the outer ends of the respective arms to the lever on opposite sides of its pivot, substantially as described.

4. In a pipe or rod lifting mechanism, the combination with a supporting-frame, of a lever pivotally supported by the frame, oppositely-disposed link clutches loosely fitted on the pipe or rod one above the other, an arm secured to the upper end of each link, the inner end of each arm forming a lateral inclined extension of the end of the link to which it is attached, and having a knife-edge, and the outer ends of the arms being connected respectively to the lever on opposite sides of its pivots, substantially as described.



609,899. LAMP-CHIMNEY HOLDER. ALBERT C. ALTHOUSE, Pineville, Pa. Filed Dec. 24, 1897. Serial No. 663,317. (No model.)



Claim.—1. The combination with a burner, of means for retaining a chimney in place, consisting of spring-supports, and holders or bars detachably connected therewith, substantially as set forth.

2. The combination with a burner, of means for retaining a chimney in place, consisting of spring-supports, and transparent holders or bars applied to the spring-supports, substantially as set forth.

3. The combination with a burner, and spring-supports applied thereto, of glass holders or bars thoroughly annealed and detachably fitted to the spring-supports, substantially as set forth.

4. The combination with a burner, of means for securing a chimney in place, consisting of spring-supports having their lower ends bent and secured to the burner, and holders or bars applied to the upright arms of the spring-supports, substantially as specified.

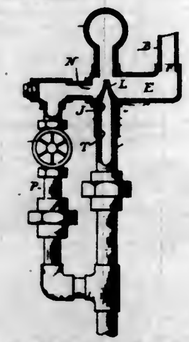
5. The combination with a burner, of spring-supports, plates at the upper ends of the spring-supports, vertical extensions at the ends of the plates and having their edge portions extending inwardly toward one another, and holders or bars having their lower ends fitted into the spaces formed by the said vertical extensions and the inwardly-projecting edges thereof, substantially as described.

6. The combination with a burner, of upright arms applied to the burner, spring-catches having connection with the arms, and holders or bars detachably connected with the said arms by means of the spring-catches, substantially as set forth.

7. The combination with a burner, of upright arms secured thereto, spring-catches applied to the upper ends of the said arms, and holders or bars having depressions in their sides to receive the spring-catches by means of which the said holders have detachable connection with the aforesaid arms, substantially as specified.

8. The combination with a burner, of spring-supports comprising upright arms having their end portions bent, the lower ends being secured to the burner, plates secured to the upper bent ends and having vertical extensions at their extremities and spring-catches at their sides intermediate of the vertical extensions, and transparent holders or bars having depressions in their sides to receive the spring-catches, and having their upper ends converging, substantially as shown for the purpose specified.

609,400. BOILER-CLEANER. FRANK T. ANDREWS, Cleveland, and WILLIAM B. JOHNSON, Burton, Ohio. Filed July 23, 1897. Serial No. 645,714. (No model.)



Claim.—1. In a boiler-cleaner, the combination with a boiler, of an outlet-pipe leading from said boiler at a point below the water-line, a waste-pipe having a restricted communication with the outlet-pipe, and a valve-controlled discharge-pipe communicating with the outlet-pipe.

2. In a boiler cleaner, the combination with a boiler, of an outlet-pipe leading therefrom at a point below the water-line, a waste-pipe communicating with the outlet-pipe, a nozzle interposed between said pipes through which the water in the boiler is adapted to be forced and to constantly flow, and a valve-controlled discharge-passage communicating with the outlet-pipe at a point below the nozzle.

3. In a boiler-cleaner, the combination with the boiler, of an outlet-pipe leading therefrom at a point below the water-line, a waste-pipe communicating with the outlet pipe, a nozzle detachably arranged between said pipes through which the water from the boiler is adapted to constantly flow, and a valve-controlled auxiliary discharge-passage or by-pass communicating with the outlet-pipe and the waste-pipe.

4. In a boiler-cleaner, the combination with a boiler, of a settling-chamber having a pipe connection therewith at a point below the water-line, a waste-pipe having a restricted communication with the settling-chamber, and a valve-controlled discharge-pipe communicating with the settling-chamber at a point near the bottom thereof.

5. In a boiler-cleaner, the combination with the boiler, of a settling-chamber having a pipe connection therewith at a point below the water-line, a waste-pipe having a restricted communication with the settling-chamber, and an auxiliary valve-controlled discharge-passage or by-pass connecting the chamber with the waste-pipe.

6. In a boiler-cleaner, the combination with the boiler, of a settling-chamber having a pipe connection therewith at a point below the water-line, a nozzle communicating with the settling-chamber, a waste-pipe communicating with the nozzle, and an auxiliary valve-controlled discharge-passage or by-pass connecting the settling-chamber with the waste-pipe.

7. In a boiler-cleaner, the combination with the boiler, of a settling-chamber having a pipe connection therewith at a point below

the water-line, a nozzle detachably secured within the chamber and communicating with the latter, a waste-pipe communicating with the nozzle, and an auxiliary valve-controlled discharge-passage or by-pass connecting the settling-chamber at a point below the nozzle, with the waste-pipe.

8. In a boiler-cleaner, the combination with the boiler, of a settling-chamber having a pipe connection therewith at a point below the water-line, a nozzle detachably secured within the chamber and communicating with the latter, a plug in said chamber above the nozzle, a waste-pipe communicating with the latter, and an auxiliary valve-controlled discharge-passage or by-pass connecting said settling-chamber, at a point below the nozzle, with the waste-pipe.

9. In a boiler-cleaner, the combination with the boiler, of a valve-controlled outlet-pipe leading therefrom, a waste-pipe, a transversely-disposed horizontal settling-chamber communicating with said pipes, a nozzle detachably secured within the chamber above the waste-pipe and communicating with the latter, a plug in said chamber above the nozzle, and an auxiliary valve-controlled discharge-passage or by-pass communicating with the settling-chamber at a point below the free end of the nozzle, and with the waste-pipe, substantially as shown and described.

10. In a boiler-cleaner, the combination with the boiler, of an outlet-pipe leading therefrom at a point below the water-line, and a waste-pipe having a restricted communication with the outlet-pipe, through which restricted passage the water from the boiler is adapted to be forced, whereby a slight but continuous discharge of the boiler contents is obtained.

11. In a boiler-cleaner, the combination with a boiler, of an outlet-pipe leading therefrom at a point below its water-line, a waste-pipe communicating with the outlet-pipe, and a nozzle, detachably arranged within, and at substantially the junction of, the two pipes, through which nozzle water from the boiler is adapted to be forced and to constantly flow.

609,401. SKATE. CHARLES P. BEISEL, Wilkes-Barré, Pa. Filed Aug. 3, 1897. Serial No. 646,965. (No model.)



Claim.—1. A divided sectional skate comprising a main part or foot member, a hinged toe member, a spring to normally lift the toe member, and a clamp carried by the foot member solely and entirely independent of the hinged toe member, whereby the skate may be held rigidly on the foot and the toe member is given an unrestrained yielding pressure against the foot, as and for the purposes described.

2. A divided sectional skate comprising a main part or foot member, a toe member, a pintle which connects the two members pivotally together, a coiled spring fitted on the pintle and having its ends connected to the respective members, and a clamp carried solely by the foot member and entirely disconnected from the hinged toe member, as and for the purposes described.

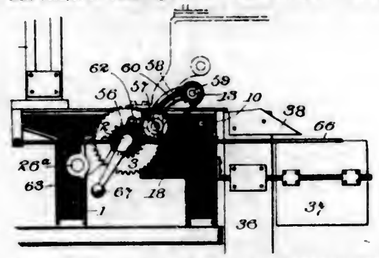
3. In a skate, a foot-plate provided with a slot which is arranged diagonally to the longitudinal axis of said foot-plate and the line of travel of the toe-clamp, combined with a two-part toe-clamp having its members united together by a slidable pivot which plays in said diagonal slot and imparts differential movement to the two members of said toe-clamp, and means for actuating the foot-clamp, substantially as described.

4. In a skate, the combination with a foot-plate, and a lever-controlled stem, of a bracket or carrier fitted on said stem and provided with a boss and an eccentric aperture, a two-part foot-clamp having one member thereof fitted loosely on the boss of said carrier, and a headed stud which serves to connect the other member of the foot-clamp to the eccentrically-apertured part of the carrier and to slidably attach the carrier to the foot-plate, as and for the purposes described.

5. In a skate, the combination with a lever-controlled stem, and a foot-plate having an inclined slot therein, of a carrier loosely connected to the slotted foot-plate and adjustably mounted on the stem, and a two-part clamp having its members connected with the bracket or carrier to have differential play or movement imparted thereto, as and for the purposes described.

6. In a skate, the combination of a foot-plate having a longitudinal inclined slot, a lever, a stem or rod threaded for a part of its length, a bracket or carrier with its lugs fitted to the stem and provided with a boss, a nut also fitted to the stem and arranged between the lugs of the bracket, a two-part clamp having one member loosely fitted to the boss of the bracket, and a head-stud which passes through the slot in the foot-plate and serves to pivot the other part of the foot-clamp to the bracket in eccentric relation to the same, as and for the purposes described.

609,402. STENCIL-PRINTING MACHINE. FRANK D. BELKNAP, New York, N. Y. Filed Aug. 14, 1897. Serial No. 648,194. (No model.)



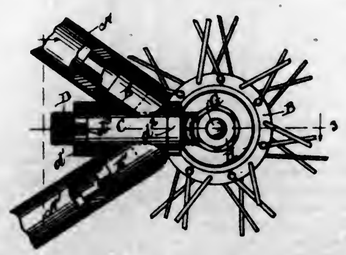
Claim.—1. In a stencil-printing machine, the combination of the lower revolving ink-carrying roller, which has a portion of its face cut away along its entire breadth, and has a full-faced portion along its entire breadth for the remainder of its circumference, the upper coacting roller which revolves at the same circumferential speed, means for feeding ink to the ink-carrying roller, and means for alternately bringing the upper coacting roller into contact with the full-faced portion of the ink-carrying roller during a portion of its revolution, and for lifting it away from said ink-carrying roller during the remainder of its rotation, substantially as described.

2. In a stencil-printing machine, the combination of the stencil-cards, a lower revolving, ink-carrying roller having its face cut away so as to have one or more portions whose surface dimensions are less than those of the stencil-card, the upper coacting roller which revolves at the same circumferential speed as the ink-carrying roller, means for feeding ink to the ink-carrying roller, and means for alternately moving the upper coacting roller toward and from the ink-carrying roller, substantially as described.

3. In a stencil-printing machine, the combination of the stencil-cards, a lower revolving, ink-carrying roller having its face cut away so as to have one or more portions whose surface dimensions are less than those of the stencil-card, the upper coacting roller which revolves at the same circumferential speed as the ink-carrying roller, means for feeding ink to the ink-carrying roller, and means for alternately moving the upper coacting roller toward and from the ink-carrying roller, together with means for guiding the stencil-card to the point of tangency to the two rollers, substantially as described.

4. In a stencil-printing machine, the combination of the revolving ink-carrying roller, the coacting roller which revolves at the same circumferential speed, said coacting roller, being mounted in a swinging frame, a sprocket-chain and connecting mechanism which conveys motion to the said roller from the main driving-gear, and a cam operated by said main driving-gear to move the swinging frame so that the said roller will alternately approach and recede from the ink-carrying roller, substantially as described.

609,403. REAR-WHEEL-ADJUSTING DEVICE. ANDREW BENSON, Peoria, Ill., assignor to the Rouse, Hazard & Company, same place. Filed Mar. 1, 1897. Serial No. 625,600. (No model.)



Claim.—The herein-described rear-wheel adjustment and tube connection for bicycles and the like, the same comprising a threaded bolt D having an eye *d* at its extreme rear end engaging the rear axle, an unbroken cylinder C having a smooth interior in which the body of said bolt fits closely but adjustably, nuts engaging the threads of the bolt and bearing against the opposite ends of the cylinder, two divergent arms rigidly connected with the exterior of the cylinder between its extremities and remote from its ends, and means for connecting the brace-tube and rear-fork tube of the wheel-frame with said arms, all as and for the purpose set forth.

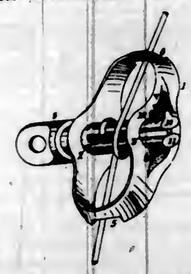
609,404. MATCH-HOLDER. WILLIAM BERNARD, New York, N. Y. Filed June 7, 1898. Serial No. 682,835. (No model.)



Claim.—1. A new article of manufacture comprising a tray having an integral upwardly-projecting block thereon and a receptacle made in a single piece and secured to said tray so as to embrace said block and extend above the same.

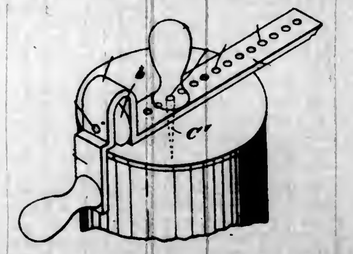
2. The combination with a base having an integral upward extension, of a receptacle comprising two uprights disposed on the base at respective sides of said extension and projecting above the same, a frame made integral with and connecting the uprights and fastening devices passing through the base from the lower ends of said frame, substantially as set forth.

609,405. WIRE-TIGHTENER. LOUIS BICKEL, Akron, Ohio. Filed Jan. 31, 1898. Serial No. 668,556. (No model.)



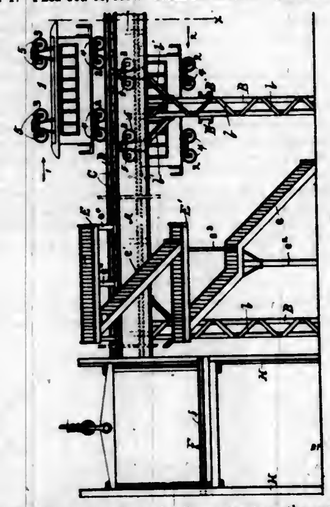
Claim.—An improved wire-tightener consisting of a link having oppositely-disposed apertures, and lugs adjacent to and on opposite sides of one of said apertures, in combination with a winding-fork having substantially similar arms, one whereof bears a lug arranged to engage either of said lugs, substantially as shown and described.

609,406. CAN-OPENER AND ICE-PICK. JOHN BRADY, New York, N. Y. Filed Sept. 11, 1897. Serial No. 651,390. (No model.)



Claim.—A combined can-opener and ice-pick, embodying a bar provided with a series of holes therein, a yoke formed on one end of said bar, a revolving cutter journaled in said yoke, an arm extending downwardly from said yoke and provided with a suitable handle, and an ice-pick adapted to enter one of said holes and pierce the metal of the can and serve as a pivot for the cutter, substantially as shown and described.

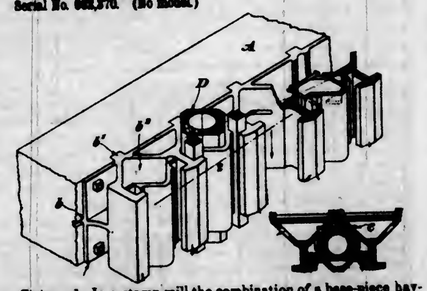
609,407. ELEVATED RAILWAY. JOHN BRADY, New York, N. Y. Filed Oct. 16, 1897. Serial No. 655,404. (No model.)



Claim.—1. In an elevated-railway structure, the combination of two sets of rails situated one above the other, and double platforms communicating with stairways leading to and from the street, and means for supporting the structure; with elevators located at the ends of the road for raising and lowering cars, whereby they may be placed either upon the upper or lower set of tracks, substantially as shown and described.

2. The combination of an elevated-railway structure, comprising an upper and a lower set of rails and double platforms and stairways leading to said structure, and elevators located at each end of the railway; with cars having traction-wheels secured respectively to their top and bottom surfaces, the top set of traction-wheels adapted for engagement with the lower set of rails for suspending the car and the lower set of traction-wheels adapted for engaging the upper set of rails, for supporting the car, whereby the car may be alternately supported upon the upper rails or suspended from the lower rails, substantially as shown and described.

609,408. STAMP-MILL. THOMAS W. CAPEN, Chicago, Ill., assignor to the Gates Iron Works, same place. Filed Dec. 13, 1897. Serial No. 662,370. (No model.)



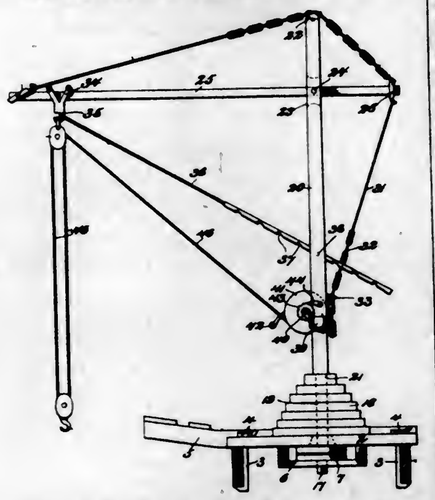
Claim.—1. In a stamp-mill the combination of a base-piece having a V-shaped vertical holding groove or grooves therein, a cap for each vertical groove provided with a substantially V-shaped groove, which in connection with the grooves of the base-piece forms a diamond-shaped holding-groove, guide-blocks formed in sections in each holding-groove, and means for securing the cap and the base-piece together, substantially as described.

2. In a stamp-mill, the combination of a base-piece having a substantially V-shaped vertical groove therein for holding the guide-block, projecting flange portions, a cap or caps arranged between the flanges provided with substantially V-shaped grooves forming in connection with the base-piece a diamond-shaped groove, guide-blocks formed in sections arranged in the holding-groove formed by the base-piece, the flanges and the cap, and keys for holding the parts in operative position, substantially as described.

3. In a stamp-mill, the combination of a base-piece having substantially V-shaped grooves therein for holding the guide-blocks, projecting ribs with flanges having V-shaped grooves on the outer end thereof, cap portion or portions arranged between the flanges and providing in combination with the base a diamond-shaped vertical holding-groove, guide-blocks formed in quarter-sections arranged in the holding groove, and wedge-keys arranged between the caps and flanges to hold the parts in position, substantially as described.

4. In a stamp-mill, the combination of a base-piece having substantially V-shaped grooves therein, projecting T-shaped flanged ribs thereon, cap portions arranged between the projecting flanged ribs and forming in connection with the base-piece a substantially diamond-shaped holding-groove, guide-blocks formed in quarter-sections having transverse slots engaged by removable portions on the cap and base-piece so as to hold the same in position and allow them to be removed when desired, and wedge-shaped keys interposed between the caps and the flanged ribs to hold the parts in operative position, substantially as described.

609,409. LOADING APPARATUS. JAMES CARROTHERS, Epworth, Ohio. Filed Feb. 18, 1896. Serial No. 670,338. (No model.)



Claim.—1. In a loading apparatus, the combination with a vertical mast or post, and a crane-arm fulcrumed thereon between its ends, of a pulley located in the post above said arm, a flexible connection extending over the said pulley and fixedly connected to the ends of the arm, and a connection between the rear end of said arm and the said mast or post below the fulcrum-point thereon of the arm.

2. In a loading apparatus, the combination with a mast or post, and a crane-arm fulcrumed between its ends thereon, of hooks located at the opposite ends of the said crane-arm, a pulley located in the post above the said arm, a hook on the post below said crane-arm, a flexible connection passing over the said pulley and fixedly connected to the ends of the crane-arm, and a rope or chain connected to the rear end of the crane-arm and at its lower ends adjustably connected to the hook on the post or mast.

3. In a loading apparatus, the combination with a vertical mast or post and a crane-arm extending therefrom, of a traveling truck located on said arm, a block and tackle depending from the truck, a winding mechanism supported by the mast or post and connected to the cable of the block and tackle, and a truck-actuating rod connected to the traveling truck and adjustably connected at its rear end to the mast or post.

4. In a loading apparatus, the combination with a mast or post, a crane-arm loosely fulcrumed thereon, and means for raising and lowering the crane-arm, of a traveling truck located on the crane-arm, a block and tackle depending therefrom a winding mechanism connected to the post and to the cable of the said block and tackle, a pin projecting from the post, and an adjusting-rod connected to the traveling truck and provided on its under side with notches for engaging said pin.

5. In a loading apparatus, the combination with a platform, a frame located below an opening in the same, a turn-table located on the frame and having its upper movable section provided with a socket, of a mast or post stepped in said socket, a crane-arm fulcrumed on the mast, means for adjusting the crane arm, a traveling truck mounted on the crane-arm, a block and tackle carried thereby, a winding mechanism connected to the block and tackle, and an adjusting-rod connected to the traveling truck and provided with notches for engaging a pin on the mast.

6. The combination with the rack-beams of a wagon, of a platform surmounting the same, the angular bolts depending through openings in the platform and having their lower ends engaging the lower edges of the rack-beams, and nuts applied to the upper ends of said bolts, of a lifting apparatus consisting of a mast stepped in a bearing carried by the platform, a crane-arm, and a traveling truck carried by said crane-arm.

7. The combination with the platform, the frame located below the same, and the stay-block mounted thereabove and provided with a circular opening, of a turn-table carried by the frame and provided upon its upper movable side with an angular socket, a mast stepped therein and having a lower squared end fitting the socket, and loading mechanism carried by said mast.

8. The combination with the lower section of the turn-table, having the central opening and the surrounding parallel annular flanges 11, provided at intervals with axially-alining bearings, of the rollers having trunnions located in the bearings and projecting above the plane of the said annular flanges, the upper movable section having an outer surrounding depending annular flange inclosing the outer annular flange of the lower section and resting on said rollers, the stud depending from the center of the upper section and through the opening in the lower section and the angular socket located on said upper section, of the platform for supporting the turn-table, the mast squared at its lower end to fit the said socket, and the lifting mechanism carried by the said mast.

609,410. DRAFT-RIGGING FOR CAR-COUPLINGS. JOHN CHRISTIE, Irvine, Pa. Filed Feb. 23, 1898. Serial No. 671,297. (No model.)



Claim.—1. The combination with a draw-head, of a frame or stirrup receiving the draw-head and composed of vertical sides, a horizontal top provided at its rear edge with an upwardly-extending flange 3ª, and a horizontal bottom extended from the sides to form lateral flanges 6, and a key mounted on the draw-head in rear of the frame or stirrup and adapted to engage the same, substantially as described.

2. The combination, of a draw-head provided in its shank with opposite slots, and a safety-key consisting of an enlarged body portion fitting within the shank of the draw-head, and arms extending through the slots of the shank and adapted to engage a car, said key being adapted to be partially rotated in the shank of the draw-head to extend its arms through and withdraw them from the said slots, substantially as specified.

3. The combination, of a draw-head provided in its shank with opposite longitudinal slots, and a safety-key consisting of a ball fitting snugly within the shank of the draw-head, and opposite arms extending from the ball and adapted to project through the slots of the shank of the draw-head to engage a car, substantially as described.

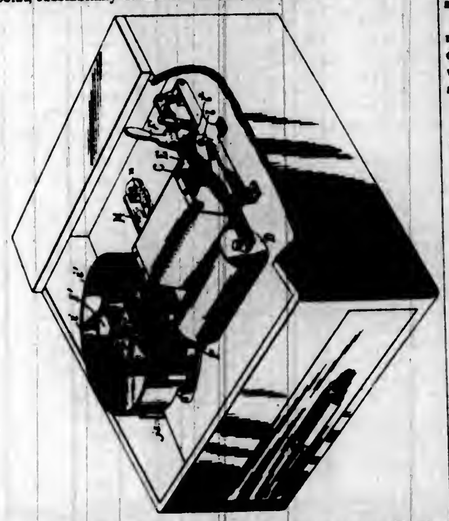
4. The combination of a draw-head provided in its shank with slots, a frame or stirrup supporting the same and forming a stop, and a safety-key consisting of an enlarged body portion fitting the opening of the shank, and opposite arms extending through the slots of the shank and arranged to engage the frame or stirrup, substantially as specified.

5. The combination of a draw-head, a tail pin or bolt, a key mounted on the pin or bolt, and a locking-washer provided with a slot to receive the key and adapted to be interposed between the same and a follower-plate, said groove being concave and the edge of the key being rounded to conform to the configuration thereof, substantially as described.

6. The combination of the draw-head, a tail pin or bolt provided with a slot, a key arranged in the slot of the pin or bolt, and a locking-washer provided with a groove to receive the key and designed to be interposed between the same and a follower-plate, said washer being provided with opposite lugs forming a guide, substantially as specified.

609,411. COIN-DISPLAYER. JOSEPH P. CLEAL, Dayton, Ohio, assignor to the National Cash Register Company, same place. Filed Sept. 30, 1897. Serial No. 653,593. (No model.)

Claim.—1. A coin-displayer for autographic registers or the like consisting of a rotatable outer casing divided into several compartments each being provided with a hinged bottom which automatically opens as the corresponding compartment is brought over a given point, substantially as and for the purpose set forth.



2. In a coin-displayer for autographic registers, the combination with a suitable containing-casing, of a movable casing arranged within the same and having an inner and an outer series of compartments, a cash-drawer and means for bringing a compartment of each series alternately into connection with said cash-drawer.

3. In an autographic register or the like, a cash-drawer, and a lid provided with a slot communicating with said drawer, in combination with a movable coin-displayer between the drawer and slot having an inner and an outer series of compartments one of each of said series of compartments being brought successively into register with the said slot, substantially as set forth.

4. In an autographic register or the like, a cash drawer, a lid provided with a slot communicating with the said drawer, a movable coin-displayer between the drawer and slot having an inner and outer series of compartments one of each of said series of compartments being brought successively into register with the slot, in combination with means actuated by the movement of the displayer for alternately opening and closing each portion of the slot registering with the inner and outer compartments respectively, substantially as set forth.

5. In an autographic register or the like, a coin-displayer having inner and outer adjacent compartments communicating with a slot in the register-case, in combination with means for moving the displayer step by step whereby an inner and an outer compartment are alternately brought into direct register with the said slot, substantially as set forth.

6. A coin-displayer for autographic registers and the like, having inner and outer compartments communicating with a slot in the register-case and with a cash-drawer, said compartments being provided with hinged bottoms which successively open into the said drawer, in combination with means for closing the said slot over a compartment when its bottom is open, substantially as set forth.

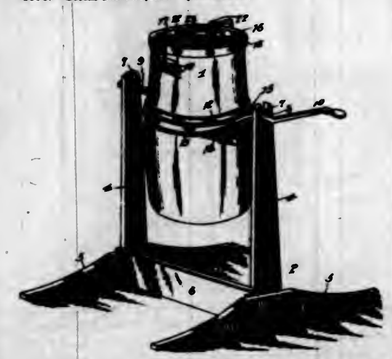
7. An autographic register and coin-displayer, or the like, comprising an outer case provided with a coin-chute, a series of revolving cash-trays, means for moving the same, to which said trays are fulcrumed, a supporting-rail which prevents the tilting of the trays during a portion of their revolution, an operating-lever and record-strip, and means by virtue of which the said cash-trays and record-strip are actuated, substantially as set forth.

8. An autographic register and coin-displayer, or the like, having a circular revolving series of cash-trays, means whereby the said trays are held in a substantially horizontal position in the same plane and to which said trays are fulcrumed at their inner ends, and means for guiding the outer ends of the trays in their movement, a record-strip, a cash-drawer, and means for revolving the series of trays, releasing the drawer, and moving the record-strip, substantially as set forth.

9. In an autographic register and coin-displayer, or the like, the combination of a case having a coin-chute and an opening for movable record-tape at its top, a crown-wheel provided with ratchet-teeth and carried by a drum which holds the record-tape, an operating-lever extending through the top of the register-case and cooperating with the said ratchet crown-wheel, a series of cash-trays supported beneath the said coin-chute, and means actuated by the said operating-lever for moving the said trays successively past the said coin-chute, substantially as set forth.

10. In an autographic register and coin-displayer, or the like, a revolving series of cash-trays, a spindle, a hub rotating on said spindle to which the trays are fulcrumed and having a ratchet crown-wheel, and means cooperating with the ratchet crown-wheel for actuating the same to revolve the cash-trays, substantially as set forth.

609,412. CHURN. HENRY D. COFFEY, Gays, Va. Filed Feb. 11, 1898. Serial No. 669,921. (No model.)

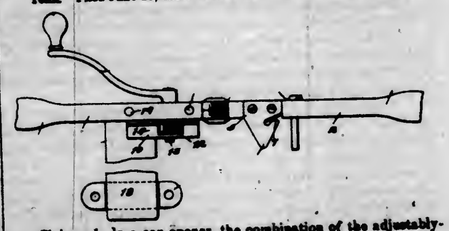


Claim.—1. In a churn, the combination of a supporting frame or stand, a churn-body provided with a lug, and a band journaled on the supporting frame or stand and arranged on the exterior of the churn-body and interposed between the lug and an adjacent portion of the said body, said band having a passage for the lug and being tapered to provide a cam, whereby it is adapted to be rotated to clamp the body, substantially as described.

2. In a churn, the combination of a stand provided with bearings, a churn-body having an enlargement and provided at opposite sides with lugs, and a band encircling the churn-body, journaled in the bearings of the stand and provided at opposite sides with recesses to permit it to pass the lugs, said band being oppositely tapered to form cams and adapted to be rotated in either direction to engage the lugs and clamp the churn-body, substantially as described.

3. In a churn, the combination of a stand, a churn-body provided with a rib extending around it, near its center, lugs arranged on the churn-body and spaced from the rib, and a band provided with journals and mounted on the stand, said band having passages for the lug and being tapered to form cams for engaging the lugs and the rib, substantially as described.

609,418. CAN-OPENER. MATTHEW F. COSNETT, Jr., Memphis, Tenn. Filed June 23, 1897. Serial No. 641,982. (No model.)



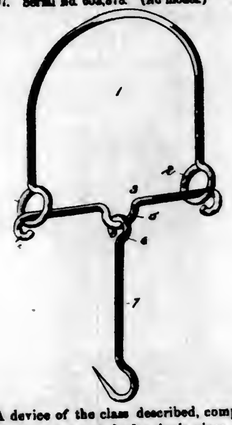
Claim.—1. In a can-opener, the combination of the adjustably-connected lever-arms carrying one the cutter and the adjustable can-guide and the other the feed-wheel, and means for actuating said wheel, said wheel and cutter being arranged to grasp the sides of the can between them, substantially as described.

2. In a can-opener, the combination of the adjustably-connected lever-arms, the one carrying a pendent cutter and the other the pendent feed-wheel and means for actuating it, and a stop for preventing injurious contact between the feed-wheel and cutter, substantially as described.

3. In a can-opener, the combination of the adjustably-connected

lever-arms, the pendent cutter and the adjustable can-guide connected with one of said arms, a feed-wheel and means for actuating it connected with the opposing arm, and a stop interposed between said arms for preventing injurious contact of the knife with the feed wheel, substantially as described.

609,414. MEAT-HANGER. LIZZIE COUCH, Forreston, Tex. Filed Sept. 24, 1897. Serial No. 652,873. (No model.)



Claim.—A device of the class described, comprising a substantially U-shaped loop constructed of a single piece of metal and provided at the lower ends of its sides with integral eyes and adapted to be arranged on a pole or support, the removable cross-piece detachably engaging the eyes of the loop, and a hook suspended from the cross-piece and detachably connected with the same, said hook being held against movement longitudinally of the cross-piece, substantially as described.

609,415. NIPPLE FOR NURSING-BOTTLES. WILLIAM R. COULBOURN and JEROME J. LANKFORD, Roanoke, Va. Filed May 15, 1897. Serial No. 636,668. (No model.)



Claim.—1. As a new article of manufacture, a nursing-bottle nipple having one of its walls thickened transversely to form the protruding enlargement, a transverse air-passage extending through said enlargement, and a flap-valve carried by a flexible strip which is united at both ends to the nipple and forms an integral part of the same, substantially as described.

2. A nursing-bottle nipple having a transverse air-passage, a flexible strip united at both ends to the nipple and forming an integral part of the same, and a flap-valve carried by said flexible strip at a point intermediate of its length and normally seated by the tension of said flexible strip over the inner end of the air-passage, substantially as and for the purposes described.

3. A nursing-bottle nipple provided, at an intermediate point of its length, with a transverse vent-opening, a valve-strip united at both ends to the nipple and provided with a valve adapted to be normally pressed, by the tension of the valve-strip, over the vent-opening, and an annular bead or flange projecting inwardly beyond the inner surface of said nipple and situated between the open mouth thereof and one point of union of the valve-strip with the nipple, substantially as described.

4. A nipple for nursing-bottles, having a vent or air-passage in the side thereof, said vent having thickened or enlarged walls, a concave valve-seat at the inner end thereof, and a flap-valve formed integral with the nipple having a convex enlargement fitting the concave valve-seat, substantially as and for the purpose set forth.

609,416. SAFE-BOLTWORK. GERMAN I. DAMES, Boston, Mass. Filed Dec. 15, 1896. Serial No. 615,761. (No model.)

Claim.—1. In combination with a safe or vault, independently-operating and normally-projecting bolts, and means for retracting the bolts and holding them against their tendency to project, until released, substantially as described.



2. In combination with a vault or safe, a series of locking-bolts each operative independently of the rest, an independent constantly-operative projecting power for each bolt, and a retracting means operating as a detent for the projecting powers to hold them against their tendency to project the bolts until it releases them, substantially as specified.

3. In a safe or vault, the combination with independently-mounted bolts of independently-operating automatic projecting means for the respective bolts, and a common retracting means operated by gravity.

4. In combination with the bolts of a vault, safe or other closure, means whereby each bolt is projected automatically and independently of the rest, a common gravitating releasing-frame, and a gravitating unlocking-bar, independent of the locking-frame but controlling the same.

5. In combination with the bolts of a vault, safe or like closure, the individual levers engaging the respective bolts and independently operative in the manner explained, the gravitating weights on the levers for projecting the bolts, and a common retracting power operating on all the bolts through the medium of their levers.

6. In boltwork for safes, vaults and the like, the combination of the independently-movable bolts disposed in suitable locking relation to the door, projecting means operating independently upon the respective bolts, the frame having retracting connection with the bolts and retracting power controlling said frame.

7. In combination with the independently-operating automatically-shooting bolts of a vault, safe or the like, a gravitating retracting device engaging the bolts by movement in one direction to retract them and releasing said bolts by movement in the opposite direction, whereby it has no effect upon the projection of the bolts at the time of locking other than to permit each to be projected by its independently-projecting power.

8. In combination with a vault or closure, a number of independently tight-seating bolts, a gravitating frame for releasing the bolts, and a fixed stop on the door for said frame.

9. In combination with the independently-moving bolts, the frame gravitating out of retracting relation thereto, a fixed stop on the door for said frame, the independent retracting power also having a stop fixed on the door, the unlocking-levers, and means for elevating the retracting power into engagement with the unlocking levers when setting the mechanism.

10. In an automatic locking mechanism for vaults or the like, the combination of bolts each provided with an independent projecting means having bearing upon a fixed part of the structure and which is set by the retraction of the bolt, and means for retracting the bolts to unlock the safe and releasing them so that they will be automatically projected to lock the door substantially as described.

11. In an automatic locking and unlocking mechanism for vaults and the like, the combination of bolts; a gravitating frame permitting the projection of the bolts by its downward movement, and retracting them by its upward movement; an independent drop-bar having

connections for elevating the gravitating frame; means for releasing the frame at the closing of the vault: and means for releasing the bar when the vault is to be unlocked, substantially as set forth.

12. In an automatic locking and unlocking mechanism for vaults and the like: the combination of bolts having independently-projecting powers; a vertically-reciprocating frame having retracting connection only with said bolts, withdrawing them and setting the projecting powers by its movement in one direction and releasing them to be independently projected, by its movement in the opposite direction, and a reciprocating bar of relatively greater power than the frame, having connection with the frame for moving it in the direction to retract the bolts, and means for releasing the frame and bar respectively at the closing of the door and time for unlocking the same, substantially as explained.

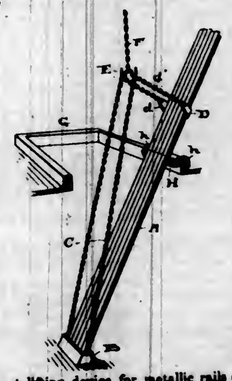
13. In an automatic locking mechanism for vaults and the like, the combination of bolts, a gravitating frame controlling the projection and retraction of the bolts, a relatively-heavier gravitating bar, a pivoted lever engaging the frame and bar by its respective ends, whereby the dropping of the bar on one end of the lever raises the frame by the other end of said lever: and means for releasing the frame and bar successively, for the purposes herein explained.

14. In a locking mechanism for safes or vaults, the combination of a series of bolts, a corresponding series of independently-operating projecting powers each having connection with one of the bolts and projecting it independently of all the rest when released, and a retracting power common to all the bolts and having connections through which it engages the projecting powers and sets them only when it moves in the direction for retracting the bolts and releases them for independent automatic action when it moves in the opposite direction, substantially as specified.

15. In combination with a vault or safe, a series of independently-operating gravity-projected bolts, and a retracting power engaging said bolts only in the direction for withdrawing them, substantially as explained.

16. In combination with the independently-operating automatic shooting bolts of a vault or safe, a gravity retracting device for the bolts, engaging them only in the direction of retracting, whereby it has no effect upon the projection of the bolts at the time of locking other than to release them and permit each to be projected by its independently-projecting power

609,417. DEVICE FOR HANDLING RAILROAD-RAILS. ERASTUS DAY, Lakewood, Ohio. Filed Apr. 4, 1898. Serial No. 676,288. (No model.)



Claim.—1. A lifting device for metallic rails consisting of the box-shaped member to place over the ends of a group of rails to lift the same, a member to support the opposite ends of said rails, chains connected with each of said rail-engaging members and a hoist connecting said chains to lift the group of rails bodily, substantially as described.

2. The carrier for engaging the rails, the stirrup having a hinged side to engage the rails bodily, and the suspensory chains, substantially as described.

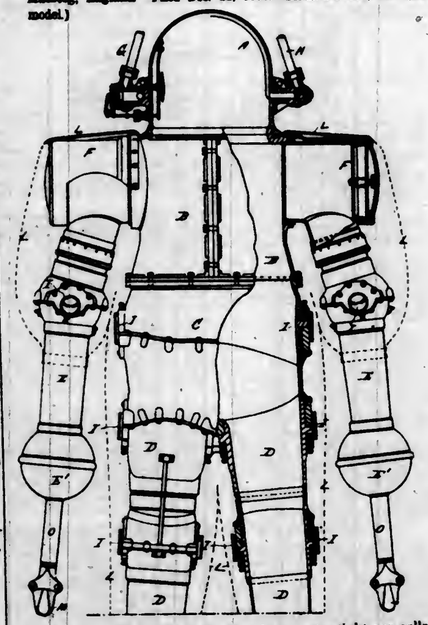
3. The carrier for engaging the rails and the stirrup to support the rails bodily, the suspensory chains for each of said parts, the hoist-chain and hooks connecting said hoist and suspensory chains, substantially as described.

4. A device for handling metallic rails comprising a member to receive and confine the corresponding ends of a group of rails, means to hold together and carry the opposite ends of said rails, and flexible connections uniting said rail-carrying parts, substantially as described.

5. The rail-carrier having a closed bottom and walled sides, and suspensory cables connected with said carrier, in combination with a member to engage the rails at the opposite ends from said carrier and flexible connections therefrom to said suspensory cables, substantially as described.

6. The carrier for railroad-rails consisting of a receptacle having a closed bottom and walled sides and a roller on its bottom on which it travels, in combination with suspensory cables connected therewith, substantially as described.

609,418. DIVING APPARATUS. JOHN DAY and GEORGE DAY, Maesteg, England. Filed Dec. 22, 1897. Serial No. 662,974. (No model.)



Claim.—1. The combination of an inner water-tight non-collapsible jointed metal diving-suit, an outer flexible waterproof covering or coverings secured water-tight to the suit and serving to protect the suit-joints from the access of water, sand, and other foreign matter and to permit of their freedom of movement, as set forth.

2. In diving apparatus, in combination, an inner non-collapsible metal-jointed diving-suit and outer flexible waterproof covering secured water-tight to the suit, covering one or more joints of the suit, lubricating material within said covering for said joints, the covering and lubricant serving to protect the suit-joints from the access of water, sand and other foreign matter and to permit of their freedom of movement, as set forth.

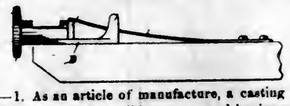
3. In joints for connecting the relatively-movable parts of diving apparatus, in combination, inner and outer jointed spherical or spheroidal parts (as I', I^2,) peripherally packed and having trunnion-bearings concentric with the axis of movement and V-shaped at the axis of rotation, the opposing faces of the axial bearings being shaped to allow of the required movements of the joint parts, and the peripheral parts being adapted with stops to determine the extent of movement, as set forth.

4. In joints for connecting the relatively-movable parts of diving apparatus, in combination, inner and outer jointed spherical or spheroidal parts (as I', I^2,) peripherally packed and having trunnion-bearings concentric with the axis of movement and V-shaped at the axis of rotation, the opposing faces of the axial bearings being shaped to allow of the required movements of the joint parts, and the peripheral parts being adapted with stops to determine the extent of movement, and an outer flexible and waterproof covering charged with lubricant and secured water-tight about the upper and lower parts of the joint, as set forth.

5. In joints for connecting the relatively-movable parts of diving apparatus, in combination, trunnion-bearings respectively applied to said parts concentric with the axis of movement and V-shaped at the axis of rotation of said parts, the opposing faces of the axial bearings being shaped to allow of the required movements of the joint parts, as set forth.

6. In combination with a diving apparatus, a manually-actuated mechanically-grasping device applied to a tubular extension of the hand-casing and consisting of a tube N, fitted with a handle Q, and pivoted spurred grips M, an inner rod T, formed with a handle Z, and a recessed head U, adapted to coact with the grip-spurs, means for separating and for closing together the handles Q, Z, and means for arresting the gripping device in any desired position about its axis of rotation, as set forth.

609,419. BAG-HOLDER FOR MAIL-BAG CRANES. JAMES W. HARDLY, Cascade, Mich. Filed Dec. 6, 1897. Serial No. 660,922. (No model.)



Claim.—1. As an article of manufacture, a casting adapted to be attached to the arm of a mail-bag crane, and having parallel lugs, and journal-bearings, a shaft journaled in said bearings, a square head on said shaft, and arms on the same projecting oppositely in the plane of the diagonal of the square head, substantially as described.

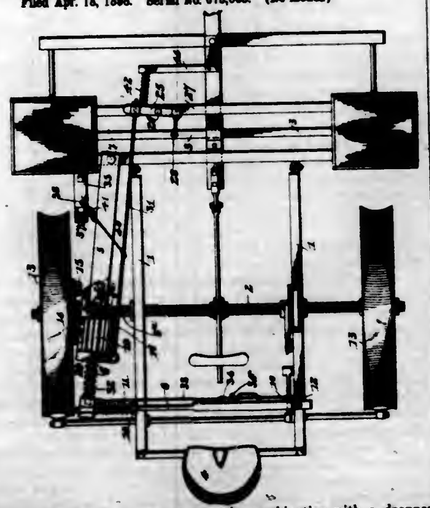
2. As an article of manufacture, a casting and a flat spring, both adapted to be attached to the arm of a mail-bag crane, said casting having parallel lugs to engage the sides of said springs, and journal-bearings, a shaft rotative in said bearings having a square head at one end and arms at the other end extending in the plane of the diagonal of said head and provided with enlarged ends, substantially as described.

3. In a mail-bag crane, a shaft journaled on the arm of the crane, a square head on the inner end of said shaft, a spring successively engaging the sides of said square head, and arms on the outer end of said shaft extending oppositely in the plane of the diagonal of said head, substantially as described.

4. In combination with the arm of a mail-bag crane, a casting attached to the same, a shaft journaled in said casting and parallel to said arm, a square head on the inner end of said shaft, arms on the outer end of said shaft and projecting oppositely in the plane of the diagonal of said square head, and having enlarged ends, and a spring successively engaging the sides of the square head on the shaft, substantially as described.

5. In combination with the arm of a mail-bag crane, a spring and casting secured to the same, parallel lugs on the casting engaging the sides of the spring, journal-bearings in said casting, a shaft journaled in said bearings, a square head on said shaft engaged by said spring, and arms on the outer end of said shaft projecting oppositely in the plane of the diagonal of the square head, substantially as described.

609,420. CORN-PLANTER. WILLIAM H. ECKMAN, Plumtree, Ind. Filed Apr. 18, 1898. Serial No. 678,063. (No model.)



Claim.—1. In a corn-planter, the combination with a dropper mechanism, of a compound gear and cam capable of rotary and reciprocating play, and operative connections between said compound gear and cam and the dropper mechanism, substantially as described.

2. In a corn-planter, the combination with a dropper mechanism and a driving device, of a compound gear and cam normally geared to the driving device, means for imparting reciprocating motion to the compound gear and cam as it is rotated by the driving device, and operative connections between said compound gear and cam and the dropper mechanism, substantially as described.

3. In a corn-planter, the combination with a dropper mechanism, and a rotary driving device, of a compound gear and cam normally engaging with said driving device, an abutment in the path of the cam-section for imparting reciprocating movement to the compound gear and cam as it is rotated by the driving device, a pressure device by which the compound gear and cam is normally in engagement with said abutment, and connections between the dropper mechanism and the compound gear and cam, substantially as described.

4. In a corn-planter, the combination with a dropper mechanism, and a rotary driving device, of a carrier-bar mounted for adjustment toward or from said driving device, a compound gear and cam fitted loosely on the carrier-bar to rotate and reciprocate thereon, an abutment on said carrier-bar in the path of said cam, means for normally pressing the cam-section of said compound gear and cam in engagement with the abutment, operative connections between the dropper mechanism and said compound cam-gear, and means for adjusting the carrier-bar toward or from the driving device, substantially as described.

5. In a corn-planter, the combination with a dropper mechanism, and a rotary driving device of a shiftable carrier, a compound cam-gear mounted loosely on said carrier-bar for reciprocating and rotary movement thereon, operative connections between the dropper mechanism and the compound cam-gear, and a supporting-bar loosely connected to the shiftable carrier to support the latter and adjust it relatively to the driving device, substantially as described.

6. In a corn-planter, the combination with a dropper mechanism and a carrying-wheel, of a driving-gear rotating with said carrier-wheel, a carrier-bar, a compound gear and cam fitted loosely on the carrier-bar, an abutment on the carrier-bar lying in the path of said cam, a spider which reciprocates with a compound gear and cam from free rotary engagement therewith, an impelling-spring acting against the spider, and operative connections between the dropper mechanism and the spider, substantially as described.

7. In a corn-planter, the combination with a dropper mechanism and a driving-gear on one of the carrier-wheels, of a shiftable carrier-bar provided with a stud or abutment, a slidable supporting-bar loosely connected with the carrier-bar and normally held in position by a spring, a compound gear and cam loosely fitted on the carrier-bar for the gear member thereof to mesh with the driving-gear and for its cam member to ride against the abutment, a spider adapted to travel with the compound gear and cam, a pressure-spring for said spider, and operative connections between the dropper mechanism and the spider, substantially as described.

8. In a corn planter, the combination with a dropper-bar, of a trip-lever connected therete, a rod attached to said trip-lever, a carrier-bar having a stud or abutment, a compound gear and cam slidably fitted on the carrier-bar and engaging with the stud or abutment, a spider fitted against the compound gear and cam and attached to the operating-rod of the trip-lever, and a driving-gear meshing with the gear member of the compound gear and cam, substantially as described.

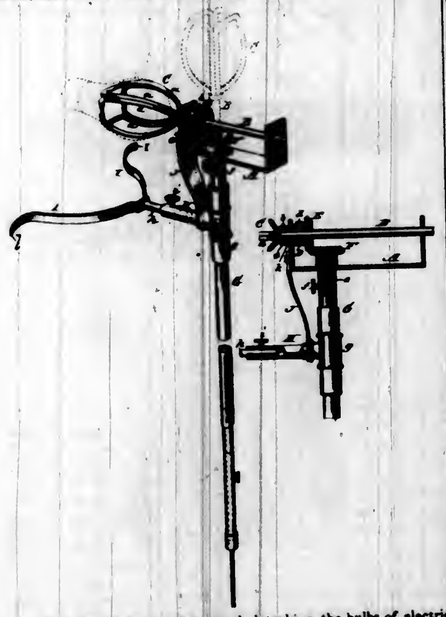
9. In a corn-planter, the combination with a planting mechanism and a drill, of a marker-hanger attached to said drill, a polygonal marker-disk idly journaled in the marker-hanger, a gravity locking-stem arranged to engage with said polygonal disk, and connections between the locking-stem and the planting mechanism to retract the locking-stem from engagement with the marker-disk at suitable intervals, substantially as described.

10. In a corn-planter, the combination with a reciprocating rod forming an operative connection between a driving mechanism and a planter-bar, of a marker-hanger attached to the drill-tube, a polygonal marker-plate journaled idly in the marker-hanger, a gravity locking-stem guided by the marker-hanger and arranged to engage with the marker-plate at its angles or corners, and a flexible connection between the locking-stem and said reciprocating rod, substantially as described.

609,421. DEVICE FOR ATTACHING OR DETACHING ELECTRIC-LAMP BULBS. CHARLES G. EDWARDS, Albert Lea, Minn. Filed Jan. 24, 1898. Serial No. 667,791. (No model.)

Claim.—1. A device for attaching and detaching the bulbs of electric lamps, consisting of a rotatable handle, a suitable grasp or holder for engaging with the bulb and connecting with the handle, and a suitable guard extending out from the handle, substantially as and for the purpose set forth.

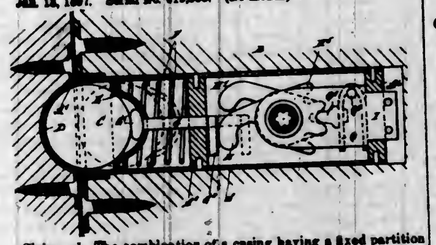
2. A device for attaching and detaching the bulbs of electric lamps, consisting of a rotatable handle provided with a bevel-gear and a bracket, said bracket consisting of a rectangular plate having upturned ends to form double bearings, a grasp or holder provided with a shaft having a bevel-gear thereon, said shaft having its bearings in both the upturned ends of the bracket and removable therefrom, substantially as and for the purpose specified.



3. A device for attaching and detaching the bulbs of electric lamps, consisting of a rotatable handle and a grasp or holder adapted for engagement with the bulb and connecting with the handle, and an adjustable and removable spring-guard extending out from said handle, substantially as and for the purpose specified.

4. A device for attaching and detaching the bulbs of electric lamps, consisting of a rotatable handle, a suitable bracket upon the end thereof, a removable and rotatable shaft supported by said bracket, a flanged bearing-sleeve and support upon the end of the shaft, a bevel-gear connecting with the sleeve and support and adapted to engage with a similar gear or handle, a suitable grasp or holder for engaging with the bulb connected to the end of the shaft, and an adjustable spring-guard extending out from the handle, substantially as and for the purpose set forth.

609,422. LOCK. EDWARD FACKNER, New York, N. Y. Filed Jan. 13, 1897. Serial No. 619,553. (No model.)



Claim.—1. The combination of a casing having a fixed partition therein, a spring-pressed bolt in the casing and arranged at the front side of the partition and comprising a rod movable through the partition, three brackets rigidly held in the casing at the rear side of the partition, two independent tumblers respectively sandwiched between the brackets, and each capable of engaging said rod to hold the same, and a key-rod in connection with each tumbler and operative respectively at the opposite sides of the casing.

2. The combination of a casing having a fixed partition intermediate its ends, a bolt arranged in the casing forward of the partition and comprising a rod movable through the partition, three brackets held rigidly in the rear portion of the casing, a ring held by the central bracket, two tumblers respectively sandwiched between the brackets and each turning on the ring, the tumblers being capable of engaging and holding the said rod, a key-rod attached to each tumbler, the key-rods being operative respectively from opposite sides of the casing, and a spring-pressed tooth respectively engaging the rear portion of each tumbler.

3. The combination of a casing, a bolt arranged in one end of the casing, brackets fixedly held in the casing, a tumbler mounted to turn in the brackets and capable of locking the bolt, the tumbler having a toothed rear portion, a spring carried in the rear of the casing, a tooth carried by the spring and engaging said rear portion of the tumbler, and a key-rod attached to the tumbler and operative from one side of the casing.

609,423. AXLE-LUBRICATOR. HENRY J. FAUST, Denmark, S. C. Filed Feb. 21, 1898. Serial No. 671,162. (No model.)



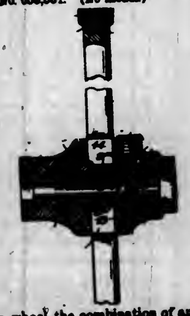
Claim.—1. The combination of an axle provided in its spindle with a groove and having an opening extending through the shoulder or enlargement at the inner end of the spindle and registering with the groove to form a vent, said axle being provided at the inner edge of the shoulder or enlargement with a straight edge or face, an axle-bed, a clip embracing the axle and the axle-bed, an oil-receptacle mounted upon the axle and arranged between the straight face or edge of the enlargement or shoulder and the adjacent end of the axle-bed and provided with an arm or plate interposed between the latter and the axle, and a tube extending from the receptacle through the opening to the groove, substantially as described.

2. The combination with an axle, of an oil-receptacle mounted thereon and having a tube extending to the spindle, a longitudinally-movable rod arranged within the tube, and a hinged cover provided with means for actuating the rod, whereby the latter will be automatically operated as the cover is opened and closed, substantially as described.

3. The combination with an axle, of a receptacle mounted thereon and provided with a tube extending to the spindle, a rod arranged within the tube and adapted to project therefrom, a spring arranged within the receptacle and connected with the rod, and an arm mounted on the cover of the receptacle and arranged to depress the spring and draw the rod inward when the cover is closed, whereby the rod will be caused to spring outward when the cover is opened, substantially as described.

4. The combination with an axle, of an oil-receptacle mounted thereon and having a tube extending to the spindle, a longitudinally-movable rod arranged within the tube, and a hinged cover provided with means for actuating the rod, whereby the latter will be operated automatically when the cover is opened and closed, said means being located wholly within the receptacle when the cover is closed, substantially as described.

609,424. VEHICLE-WHEEL. JOSEPH L. FOWLER, Coal Creek, Tenn., assignor of one-half to J. L. Humphrey, same place. Filed Sept. 20, 1897. Serial No. 653,531. (No model.)



Claim.—1. In a wheel, the combination of an inner hub-section, an axle-box extending from the inner hub-section, an outer hub-section mounted on the axle-box and provided with a sleeve extending

beyond it and tapered, spokes, and a split band interposed between the inner ends of the spokes and the tapered portion of the sleeve, substantially as described.

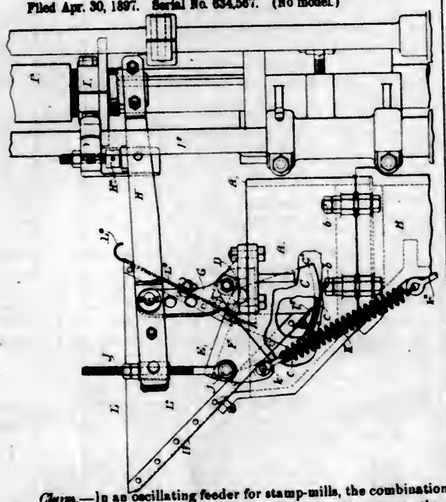
2. In a wheel, the combination of an axle-box having a threaded outer portion and provided with a perforation, an inner hub-section connected with the inner end of the axle-box, an outer hub-section having a lubricant recess or reservoir and provided with a perforation adapted to register with that of the axle-box, said outer hub-section being interiorly threaded and engaging the axle-box, and a tubular screw fitting in said perforations, forming a lubricant-passage and locking the outer hub-section on the axle-box, substantially as described.

3. In a wheel, the combination of a threaded axle-box having a perforation, an inner hub-section mounted on the axle-box, an outer hub-section provided with a lubricant-recess, spokes interposed between the hub-sections, a threaded cap engaging the lubricant-recess, an interiorly-threaded sleeve arranged within the outer hub-section, engaging the axle-box and provided with a perforation, and a tubular screw engaging the perforations of the sleeve and the axle-box, substantially as described.

4. In a wheel, the combination of a tire provided at its ends with perforations and having a groove at its inner face, a felly fitting in the groove to dispense with tire-bolts, and a coupling loop or link passing through the perforations of the ends of the tire and detachably connecting the same, substantially as described.

5. In a wheel, the combination of an inner hub-section, an axle box having a threaded outer portion extending from the inner hub-section, radial plates or flanges arranged at the inner end of said hub-section to form spoke-sockets and terminating short of the axle-box, an outer hub-section provided with an interiorly-threaded sleeve to engage the axle-box, said sleeve extending beyond the outer hub-section toward the inner hub-section and having its inner end tapered, the spokes, and a split band interposed between the inner ends of the spokes and the tapered inner end of said sleeve, substantially as described.

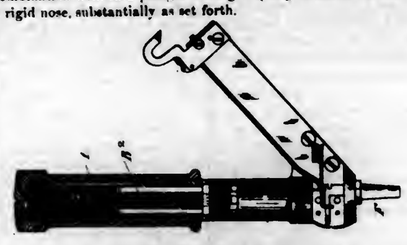
609,425. AUTOMATIC FEEDER FOR STAMP-MILLS. PHILETUS W. GATES, Chicago, Ill., assignor to the Gates Iron Works, of Illinois. Filed Apr. 30, 1897. Serial No. 634,567. (No model.)



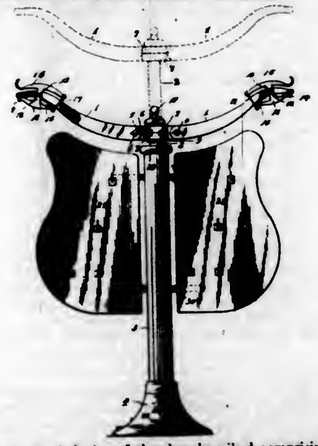
Claim.—In an oscillating feeder for stamp-mills, the combination of an oscillating feeding-plate provided with a curved bottom portion, a hopper having its inclined bottom terminating at or about the center of the oscillating feeding-plate, gate mechanism in such hopper to regulate the flow of material to such oscillating feeding-plate, an actuating-lever adjustably connected with the oscillating feeding-plate and having its free end arranged under a movable part of the stamp, spring mechanism for thrusting forward the oscillating feeding-plate in opposition to the movements of the actuating-lever, an adjustable tappet-collar on a movable part of the stamp arranged to contact the actuating-lever, and an adjustable set-screw to limit the range of action of the actuating-lever, substantially as described.

609,426. HAND TACK-DRIVING MACHINE. EDWARD F. GRANDY, Everett, Mass. Filed Mar. 30, 1896. Renewed Jan. 22, 1898. Serial No. 667,061. (No model.)

Claim.—In a hand tack-driving machine, a sleeve mounted to reciprocate over the part of the machine usually grasped by the hand of the operator, and rigidly fixed to the hollow driving-plunger, in combination with said plunger having a spring inclosed therein and a rigid nose, substantially as set forth.



609,427. COAT-LIFTER. JAMES P. GRIFFITH, Johnstown, Pa. Filed Feb. 21, 1898. Serial No. 671,139. (No model.)



Claim.—1. A device of the class described, comprising a hollow standard mounted upon a base, a carrier incased within the standard, coat-holding arms pivotally mounted upon the top of the carrier, a spring arranged around the carrier and within the standard, having its opposite ends bearing respectively against the exterior of the carrier and the interior of the standard, a catch pivoted within the base and adapted to engage with the carrier, and a foot-lever to disengage the catch, extending through a slot in the base, substantially as shown and described.

2. A device of the class described comprising the carrier, the swiveled collars at the top thereof, a pair of coat-holding arms, each arm having a clamp at its outer extremity and being adjustably connected with one of the collars at its inner extremity, an upright hollow standard incasing the carrier, a spring connected at one end with the standard and at the other end with the carrier, a catch mounted at the lower end of the standard and adapted to engage with the carrier to hold the same in its depressed position, and a foot-lever for disengaging the catch, substantially as shown and described.

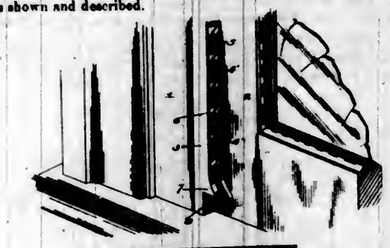
3. The combination with a standard, of a carrier supported thereby, coat-supporting arms swiveled upon the carrier so as to turn in a horizontal plane toward or from each other and each arm having an independent vertical adjustment in the arc of a circle, and clamps provided upon the supporting-arms for holding a coat, substantially as shown and described.

4. The combination with a standard, of a carrier supported thereby, coat-supporting arms provided upon the carrier and capable of an independent movement in a horizontal plane and also having an independent vertical adjustment, and clamps provided upon the supporting-arms, substantially as shown and described.

609,428. SASH-FASTENER. ROBERT GRIFFITH, Elizabeth, Pa. Filed Feb. 28, 1898. Serial No. 672,061. (No model.)

Claim.—As a new article of manufacture, a window-sash support, consisting of a head 3 formed with a series of retaining-notches 4', integral switch-rib 5, having their upper ends curved inwardly and terminating at the edge of the bottom of each contiguous notch, an integral longitudinal bevel-track 6 extending the entire length of said series of notches, an integral stop-shoulder 7 projecting at its lower

end beyond the notched face of the said head, and the weighted latch 4 pivoted to the sash and movable laterally on its pivot, substantially as shown and described.



609,429. FESTOON APPARATUS. JOSEPH A. GROSSI, New York, N. Y., assignor to the Kartheedt Manufacturing Company, same place. Filed Dec. 31, 1897. Serial No. 664,813. (No model.)

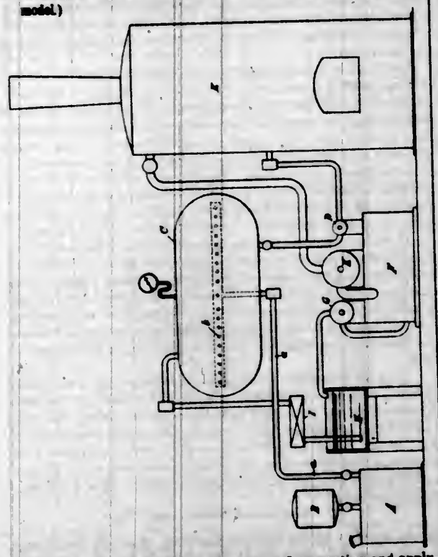


Claim.—1. A festoon-hook, substantially as herein described, the same consisting of a loop-receiving bight or bend having the guides c^2 c^2 leading thereto, the said guides being inclined with respect to each other and intersecting each other.

2. A festoon apparatus comprising loop-supporting means and intersecting guides for guiding the loop to the loop-supporting means whereby the loop will be conducted to the loop-supporting means and thereby held open sufficiently far to receive the needle upon its return stroke whereby a festoon-stitch may be formed.

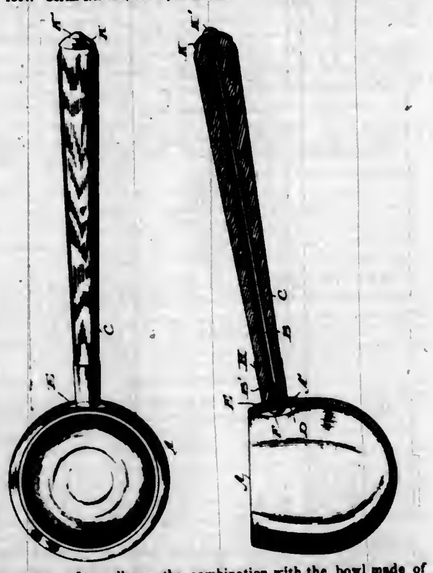
3. A festoon-hook bent up of sheet metal and having the bight or bend c^4 therein and the edges or guides c^2 c^2 leading thereto, the said edges or guides intersecting each other, whereby the said edges or guides will guide a thread into the said bight where the same will be held open to receive a needle.

609,430. GENERATION OF MOTIVE POWER. CARLO GUATTARI, London, England, assignor to the New Motive Power Syndicate, Limited, same place. Filed Apr. 24, 1897. Serial No. 633,602. (No model.)



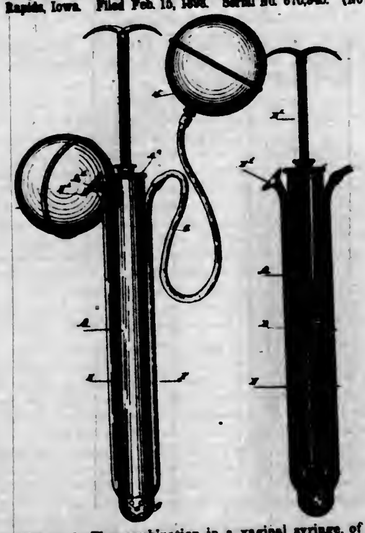
Claim.—The herein-described process of generating and applying motive power, the same consisting in generating gaseous pressure by evaporating a liquid charged with the compound formed by carbonic-acid gas and a reagent acting to prevent the evolution of the carbonic-acid gas, thereupon utilizing the said gaseous medium so generated and subsequently condensing the said gaseous medium to a liquid form which liquid may thereupon be again evaporated and used as before.

609,431. DIPPER. DANIEL W. HARPER, Memphis, Tenn., assignor of one-half to Robert L. Matthews, same place. Filed Nov. 13, 1897. Serial No. 658,385. (No model.)



Claim.—In a dipper, the combination with the bowl made of glass or other suitable material, the handle the threaded tube mounted therein, the disks D and E, the screws F and K', and the disk K, all arranged substantially as shown and described.

609,432. VAGINAL SYRINGE. ZERAH L. HAYDEN, Cedar Rapids, Iowa. Filed Feb. 15, 1898. Serial No. 670,345. (No model.)



Claim.—1. The combination in a vaginal syringe, of a pump, composed of a cylinder with an outlet near the upper end, a suitable cylinder-head through which the piston-rod passes, a piston-rod having a lifter at the outer end and a valved piston at the other end, and a perforated nozzle at the lower end of the cylinder, with a valve

therein, and a vent-pipe attached to said cylinder, its open, lower end communicating mediately or directly with said nozzle, and its open upper end having a suitable finger-cup, substantially as described.

2. The combination with a pump, substantially as described, consisting essentially of a cylinder with a valved, perforated nozzle at the lower end, an outlet near the upper end, a head to receive the piston-rod, and a suitable valved piston, rod and lifter, of an open-ended pipe attached to one side of the cylinder, its lower end communicating with said nozzle, and means substantially as described for injecting liquid through said pipe.

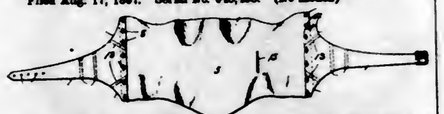
3. The combination of a pump substantially as described, provided with vent and injection pipes and a suitable discharge-outlet, and the receiving and injecting bulbs removably attached to said outlet and injecting pipes, respectivaly.

609,433. **FASTENING FOR CRANKS.** THOMAS A. HEARSON, London, England. Filed Dec. 31, 1897. Serial No. 665,134. (No model.)



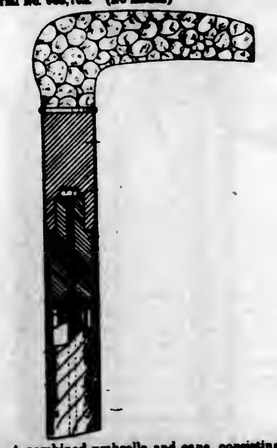
Claim.—The combination of a shaft and an attachment to be secured thereto, and a hollow screw-threaded split plug fitting a screw-threaded hole and arranged at approximately right angles to the axis of the shaft and extending into both the shaft and the attachment, and a tapered pin arranged in the bore of a hollow plug.

609,434. **CORSET.** ELEANOR E. HOWE, Bridgeport, Conn. Filed Aug. 17, 1897. Serial No. 648,493. (No model.)



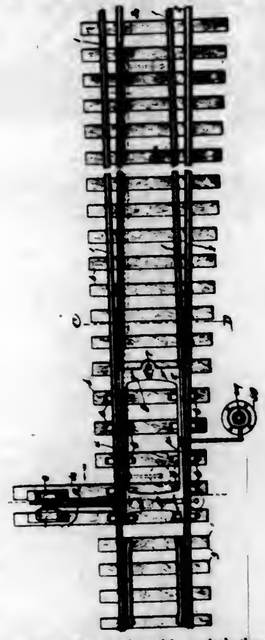
Claim.—A corset, the opposite sides of which are provided with detachable belts or straps, the ends of said belts or straps adjacent to the body of the corset being widened approximately as wide as said corset, the said straps or belts being provided at the free ends thereof with means for connecting the same, the upper and lower extended portions at the inner ends of the straps adjacent to the body portion of the corset being stiffened with transverse stays, and the body portions of said belts or straps adjacent to the wider ends being also provided with transverse stays, substantially as shown and described.

609,435. **COMBINED UMBRELLA AND CANE.** ERNST HUGENDUBEL, Stuttgart, Germany. Filed May 26, 1897. Renewed June 17 1898. Serial No. 683,762. (No model.)



Claim.—A combined umbrella and cane, consisting of a case or sheath of leather or other material and adapted to be attached to or detached from the handle, a handle provided with holes in its lower end, a perforated disk attached to the rod of the umbrella, a depending flange secured to said disk and provided with a socket, and a pin adapted to be housed in said socket and to connect the disk with the said handle to prevent the rotation of the rod, substantially as set forth.

609,436. **AUTOMATIC-LOCKING SWITCH.** WILLIAM H. JACKSON, Indianapolis, Ind., assignor to himself and Willis F. Martin, same place. Filed Aug. 2, 1897. Serial No. 646,846. (No model.)



Claim.—1. In an automatic-locking switch, the combination with a switch-rail plate pivotally secured between the rails of a track, of a side-track rail, having a longitudinally-extending slotted portion, a trip-rail fitted in said slot, a latch, a pawl, means whereby said latch is automatically operated to engage said pawl, and whereby power is applied automatically to said pawl to move said switch-rail plate into normal position.

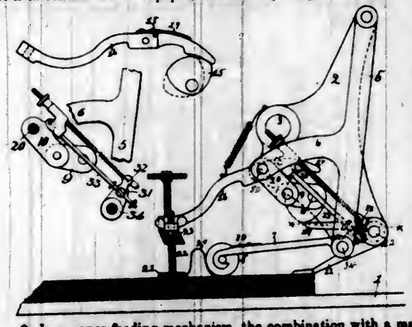
2. In an automatic switch, the combination with a switch-rail plate pivotally secured between the rails of a track, of a side-track rail having a longitudinally-extending slotted portion, a trip-rail in said slot and projecting above the surface of said side-track rail, a shaft beneath said rail, opposing horizontally-extending levers on said shaft, counterweights on one of the series of levers, and suitable connecting-rods connecting said trip-rail and the other series of levers, a pawl-lever on said shaft, a pawl pivoted on said lever, and means whereby said pawl is automatically engaged to said switch-rail plate to move the same when said trip-rail is released.

3. In an automatic switch, the combination with a switch-rail plate pivotally secured between the rails of a track, of a switch-lever, a rod connecting said lever and said switch-rail plate, a pawl, a pawl-engaging latch, a latch-releasing lever, a switch-latch lever on said switch-lever, suitable means whereby said latch-lever and releasing-lever are connected, and means for automatically moving said switch-rail plate when released, all substantially as and for the purpose set forth.

4. In an automatic switch, the combination with a switch-rail plate, pivotally secured between the rails of a track of a suitable switch-lever, a rod connecting said lever and said switch-rail plate, a pawl, a pawl-engaging latch, a latch-releasing lever, a suitable latch-lever on said switch-lever, suitable means for connecting said latch-lever on said switch-lever to said releasing-lever, and a gravity-actuated lever-arm adapted to engage said switch-rail plate, all substantially as set forth.

609,437. **PAPER-FEEDING MACHINE.** EDWIN M. JILLSON, West Carrollton, Ohio. Filed July 26, 1897. Serial No. 645,962. (No model.)

Claim.—1. In a paper-feeding mechanism, the combination with a main driving-shaft, a cam thereon, and a feed-regulating shaft 20, of a short rock-arm consisting of two members with abutting ends, and having a spring-controlled connection, and one of which is rigidly mounted on said shaft 20, a gage-foot carried on one of said members and adapted to rest upon a pile of paper adjacent to the edge thereof, a spring holding said members normally closed but allowing them to yield under the action of the cam when the gage-foot is in contact with the paper, substantially as specified.



2. In a paper-feeding mechanism, the combination with a main driving-shaft, a cam thereon, the feed-regulating shaft 20, a rock-arm and a buckling-finger mounted thereon, of a short rock-arm consisting of two members the inner ends of which abut, and have a spring-controlled connection, one of said members being supported on the shaft 20 and the other of said members being in the path of said cam so that the rotating cam coming in contact therewith will cause said member to yield during certain periods in the operation of said rock-arm, a gage-foot carried on one member of said rock-arm and adapted to rest upon the top sheet of a pile of paper at a suitable point near the edge of said pile to enable the buckling-finger to make a short buckle in each sheet, substantially as described.

609,438. **BLOCK AND TACKLE.** CHARLES S. KERSHAW, Sherburne, N. Y. Filed Dec. 3, 1896. Serial No. 614,317. (No model.)



Claim.—1. In a tackle, a rope-fastener consisting of an external sleeve secured to the tackle-block frame, an internal shouldered conical sleeve adapted to receive the end of the rope, a bail over and secured to the larger end of said conical sleeve and a two-part conical wedge adapted to separate the fibers of the rope and bind them in the inner sleeve, substantially as set forth.

2. A tackle-block frame having registering bosses on opposite parts, the securing-bolt passing through the frame and bosses, and a pair of interlocking hooks having eyes or holes at right angles with the line of separation between the hooks, which eyes receive the said bosses, substantially as set forth.

609,439. **AUTOMATIC CUT-OFF AND STRAINER FOR CISTERNS.** ADOLPH A. KLAR, Cincinnati, Ohio. Filed July 17, 1897. Serial No. 644,990. (No model.)



Claim.—1. In a water-purifier, the combination of the oscillatory dumping-receptacles having screens, casing, openings E for the discharge of the debris from the screens, and the opening F in the casing, and chamber G in communication with the two conduits H and J, and the valve in chamber G for directing the flow of water into one or the other of these conduits, substantially as and for the purpose specified.

2. In a water-purifier, the combination of the oscillatory dumping-receptacles having screens, casing, openings E for the discharge of the debris from the screens, and the opening F in the casing, and chamber G in communication with the two conduits H and J, and the valve in chamber G for directing the flow of water into one or the other of these conduits, and the screen of finer mesh in the tube J, substantially as and for the purposes specified.

3. In a water-purifier, the combination of a water-compartment and screen above, and the tube J for receiving the water, and the tube-section or chamber K^2 having the upright cylindrical screen or screens K, through which the water enters, and the openings in the bottom of the same, through which the water passes in, substantially as and for the purposes specified.

4. In a water-purifier, the combination of a water-compartment and screen above, and the tube J for receiving the water, and the tube-section or chamber K^2 having the upright cylindrical screen or screens K, through which the water enters, and the openings in the bottom of the same, through which the water passes in, and the supplemental curved screen L below the cylinders K, and receiving the water from them, substantially as and for the purposes specified.

5. In a water-purifier, the combination of a water-compartment and screen above, and the tube J for receiving the water, and the tube-section or chamber K^2 having the upright cylindrical screen or screens K, through which the water enters, and the openings in the bottom of the same, through which the water passes in, and the supplemental curved screen L below the cylinders K, and receiving the water from them, the tube-section K^2 being separable from the tube J, and from the succeeding section, substantially as and for the purposes specified.

6. In a water-purifier, the combination of a water-compartment and screen above, and the tube J for receiving the water, and the tube-section or chamber K^2 having the upright cylindrical screen or screens K, through which the water enters, and the openings in bottom of the same, through which the water passes in, and the supplemental curved screen L below the cylinders K, and receiving the water from them, the tube-section K^2 being separable from the tube J, and from the succeeding section, and provided above with the separable door, or lid, substantially as and for the purposes specified.

7. The combination of the oscillatory receptacle having a pivot B^2, and central division-wall C, and top screens over each compartment, and end delivery-orifices, and interior screens C^4, from the upper part of the end part way inward, and the casings having openings E for the discharge of the debris from the screens, substantially as and for the purposes specified.

8. The combination of the oscillatory receptacle having a pivot B^2, and central division-wall C, and top screens over each compartment, and end delivery-orifices, and interior screens C^4, from the upper part of the end part way inward, and exterior fenders C^5 over the mouths of the delivery-orifices, and the casings having guide-openings E adapted to receive and discharge the debris from the screens, substantially as and for the purposes specified.

9. In a device for purifying water and delivering it, the combination of the casings having the end openings E, and the lower opening F, and an oscillatory receptacle having two compartments, separated by a division C and topped by screens C^3, having end delivery-orifices, the bottoms of the compartments inclining outward and upward, and the screens inclining outward and downward, when the receptacle is at the mid-point of oscillation, substantially as and for the purposes specified.

10. In a device for purifying water and delivering it, the combination of the casings having the end openings E, and the lower opening F, and an oscillatory receptacle having two compartments, separated by a division C and topped by screens C^3, having end delivery-orifices, the bottoms of the compartments inclining outward and upward, and the screens inclining outward and downward, when the receptacle is at the mid-point of oscillation, and the interior screens C^4, substantially as and for the purposes specified.

11. The combination of the oscillatory receptacle having two compartments, each having an upper screen, and one below the latter, and the casing, substantially as and for the purposes specified.

12. The combination of the casing having discharge-openings E, and the inlet-conduit M above, and the oscillatory receptacle beneath said conduit M, and the lower opening F of the casing and chamber G and the waste-conduit H and cistern-conduit J, and the valve in chamber G for controlling the direction of the water, and the lever N of the valve and rod N^3 thereof, and provided with device for suspending it to a support as N^4, lever S of the pivot or shaft of the oscillating receptacle, and link S^2, lever S^3 thereof, and pivoted, and pawl S^5 pivoted thereto, and pawl S^7, and ratchet-wheel P having stud P^2, and engaging the said pawls, substantially as and for the purposes specified.

13. The combination of the casings, their openings, oscillatory screened compartments, on a pivot, and pawls, and ratchet-wheel, and the valve and branch conduits controlled by the valve, and means for enabling the revolution of the ratchet-wheel to operate the valve, and means for enabling the oscillation of the oscillatory receptacle

to work the operating-pawl and ratchet-wheel, substantially as and for the purposes specified.

14. The combination of the casing, provided with its openings and the oscillatory receptacle, and the two-way valve, and means for enabling the oscillatory receptacle to throw the valve after a given number of oscillations, substantially as and for the purposes specified.

15. The combination of the casing, and the oscillatory receptacle, two-way valve, and the mechanism for enabling the latter to automatically throw the valve, after the receptacle has operated a given number of times, and a hood inclosing said mechanism, and provided with a door, substantially as and for the purposes specified

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609,440. **FERTILIZER-DISTRIBUTER.** LOUIS H. KROHN, Baltimore, Md. Filed June 1, 1897. Serial No. 638,858. (No model.)

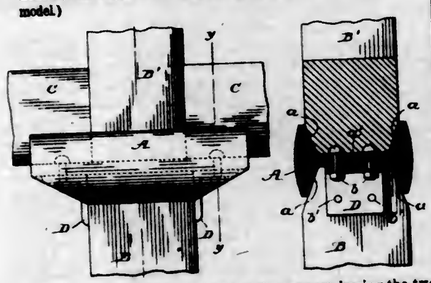


Claim.—1. In a device of the class described, the combination with a hopper having a delivery-mouth, of a cutting or chipping slide movable in said mouth and comprising a frame, cutting-blades journaled thereto, and means for shifting said blades to regulate the amount of opening therebetween, and means for moving said chipping-slide.

2. In a device of the class described, the combination with a hopper having a delivery-mouth, of a chipping or cutting slide movable in said mouth and comprising a frame, cutting-blades or chippers journaled in said frame, a shifting-bar pivoted to said blades, adjustable connections between said bar and the frame whereby the same may be held rigid, and means for moving said chipping or cutting slide.

3. In a device of the class described, the combination with a hopper and a delivery-trough, of a cover hinged to the hopper and provided with a bent lip separated from the trough thereby providing an elongated delivery-mouth, and agitators adapted to travel along said trough.

609,441. **COMBINED CAP AND GIRDER-SUPPORT.** GEORGE R. KURRIE, Philadelphia, Pa. Filed Mar. 26, 1896. Serial No. 675,261. (No model.)



Claim.—1. A combined cap and girder-support having the two sides that extend parallel with the girder, formed with outwardly-extending flanges that will permit the post to have a wedge-shaped bearing therein, substantially as shown and for the purpose described.

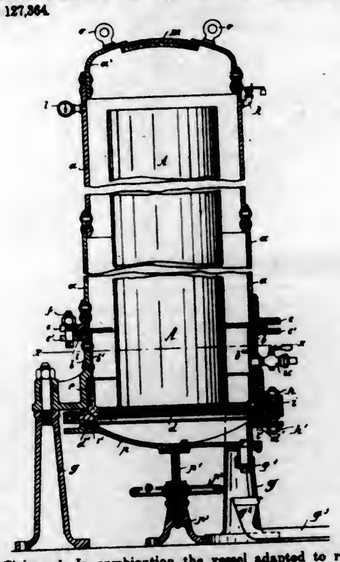
2. A combined cap and girder-support, composed of the outwardly-beveled flanged sides *a*, *a*, joined together by the intervening flat web portion *a'*, that extends beyond the line of the posts and parallel with the girder, substantially as shown.

3. A combined cap and girder-support, composed of the outwardly-beveled flanged sides *a*, *a*, and the intervening web portion *a'*, both of the beveled flanged sides *a*, *a*, extending above and below the intervening web portion, substantially as shown.

4. A combined cap and girder-support, composed of the outwardly-beveled flanged sides *a*, *a*, the intervening flat web portion *a'*, and an angle-piece D, secured to the under side of the web portion of the cap and adapted to rest against the side of the wooden column, substantially as shown and for the purpose described.

5. In a cap and girder-support, the combination of the beveled flanged sides *a*, *a*, joined together by an intervening flat web portion with an angle-piece D, secured to the under side of the web portion and made shorter than the distance between the two beveled sides *a*, *a*, substantially as shown.

609,442. **APPARATUS FOR DYEING AND IMPREGNATING WOOD.** GEORG F. LEBIODA, Paris, France. Filed Dec. 29, 1897. Serial No. 664,337. (No model.) Patented in Belgium July 5, 1897, No. 127,364.



Claim.—1. In combination, the vessel adapted to receive the wood to be treated and having a perforated bottom to support the wood, the removable under part *p* adapted to form a chamber beneath the perforated bottom, the threaded standard and hand-wheel for raising and lowering said part *p*, and the admission and exit valves to said vessel and chamber for the treating fluid, substantially as described.

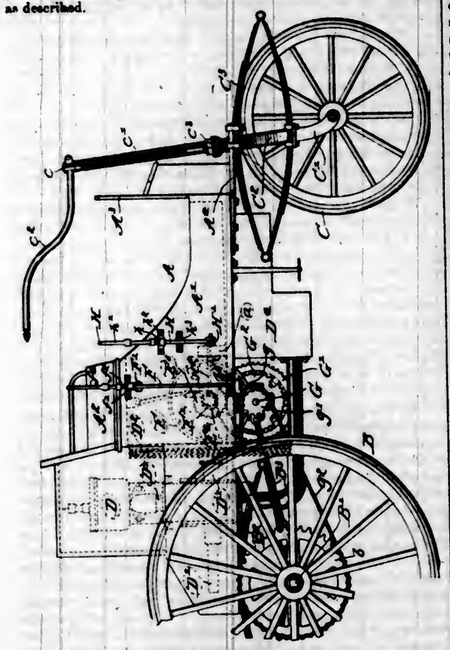
2. In combination, the vessel for the wood composed of two parts *a b* detachably connected together, the perforated bottom plate abutting against the lower edge of said vessel and having an annular flange extending up within the vessel and abutting against an annular shoulder within the vessel, said flange forming with the wall of the vessel an annular steam-channel, steam inlet and exhaust ports to said chamber, a removable under part *p* forming a chamber beneath the perforated plate, and admission and exit valves for the treating liquid, substantially as described.

609,448. **VEHICLE-MOTOR.** GEORGE W. LEWIS, Chicago, Ill. Filed July 10, 1895. Renewed Jan. 23, 1896. Serial No. 668,360. (No model.)

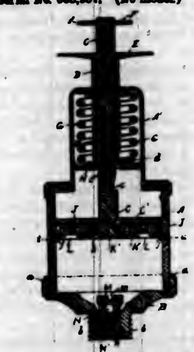
Claim.—1. The combination with vehicle driving-wheels, the vehicle-body and the motor, of a driving-wheel comprising a friction-disk mounted to turn on horizontal axis arranged longitudinally of the vehicle-body, a shaft extending across the vehicle-body parallel with the face of the disk, a pulley mounted to slide endwise on the shaft and adapted for contact with the face of the disk and means for moving said pulley endwise on the shaft, embracing an arm which is pivoted to the body at one end and is connected with the pulley at its opposite or free end, a hand-lever pivoted to the side of the body at its lower end, so as to swing in a plane transverse to the side of the body, said hand-lever being provided with a spring-actuated detent adapted to engage a notched segment, and a link connected at one end with said lever above its pivot and at its opposite end with said arm at a point between the ends of the latter, substantially as described.

2. The combination with the vehicle driving-wheels and a motor, of a rotary friction-disk driven by the motor, a shaft arranged substantially parallel with the face of the disk and movable toward and from the same, a friction-pulley mounted to rotate with said shaft but movable endwise thereon and adapted to engage the face of said disk, an actuating-arm pivotally connected at one end to the vehicle by means of a universal joint and connected at its free end with said pulley, said universal joint affording lateral movement of said arm with the shaft when the latter is shifted toward and from the disk,

a hand-lever provided with a spring-actuated detent adapted to engage a notched segment, a link connecting said hand-lever with said actuating-arm at a point intermediate of the ends of the latter and gearing connecting said shaft with the driving-wheels, substantially as described.



609,444. **LUBRICATOR.** JOHN F. LEWIS, Scranton, Pa., assignor to the Lackawanna Lubricating Company, of Pennsylvania. Filed Jan. 7, 1896. Serial No. 625,237. (No model.)



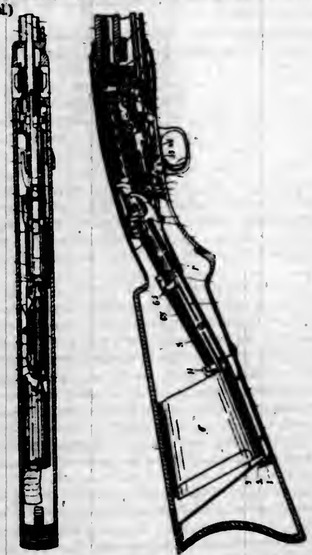
Claim.—1. In a lubricator of the kind described the combination of a barrel or main portion with the plunger operating therein the said plunger being provided with a cylindrical stem having portions filed away at regular intervals so as to form catches which are adapted to engage with an inwardly-bent tongue of a spring-actuated sleeve incasing said plunger-rod the said catches being sloped so as to permit of an upward or sidewise sliding of said tongue to throw it out of engagement, substantially as specified.

2. The herein-described lubricator consisting of the barrel portion A having the dome A' integrally made therewith and adapted to have compressed within it the coiled spring G, the coiled spring G inclosed therein and encircling the movable sleeve D, the sleeve D having the seat H by means of which the spring may be compressed when the sleeve is slid upward; together with a plunger fitted in the barrel portion A, and the stem thereof extending upward through the said sleeve D the said stem having catches adapted to engage with an inward-bent portion of the said sleeve D so that the action of the spring may thereby be exerted on the plunger substantially as and for the purpose specified.

3. In a lubricator of the kind described the combination of a cylindrical plunger-rod, having catches cut out on one side thereof, extending through a sleeve having a tongue bent in from one of its sides adapted to engage with the catches on the said plunger-rod and the said sleeve being revoluble on the plunger-rod so as to throw the said inward-bent tongue out of or into engagement with the catches substantially as specified.

4. In combination with a lubricator of the kind described the main or barrel portion adapted to hold the lubricant a plunger having an upwardly-extending rod fitted therein and a sleeve through which the rod of said plunger is adapted to slide; the said plunger-rod having catches cut in one side thereof and the said sleeve having a tongue adapted to spring inwardly from one of the sides thereof and engage with the catches on the said plunger-rod; together with handles attached to the upper ends of the said plunger-rod and sleeve by means of which they may be revolved relatively the said handles marked so as to indicate by their relative position whether the tongue aforesaid is into or out of engagement with the catches on the plunger-rod, substantially as specified.

609,445. **MAGAZINE-GUN.** MYRON C. LISLE, Grand Rapids, Mich., assignor of eleven-twentieths to William A. Berkey and James Bayne, same place. Filed Mar. 5, 1897. Serial No. 625,940. (No model.)



Claim.—1. The combination with the barrel, of a sliding hand-piece and ways receding from the barrel toward the rear, said hand-piece being guided in said ways, substantially as described and for the purposes specified.

2. In a gun, a stock having a receiver having an opening at its forward end, a fore-arm having a lug on its forward end, a barrel having a socket to engage said lug and a transverse groove and inserted in said opening, and a pin to engage said groove and having a concave side, substantially as described.

3. In a gun having a concealed hammer, the combination with the stock and said hammer, of a lug projecting from said hammer, a rock-shaft journaled in the wall of said stock and provided with an indicator upon its outer end, and with an arm upon its inner end, said arm being located in the path of movement of said lug, and a spring to turn the indicator in one direction, substantially as described.

4. In a gun, the combination of a pivoted locking-lever having a hook at one end, the gun-stock, an indicator on the outside of the latter, a rock-shaft to which said indicator is attached, a spring to move the indicator in one direction, an arm on said rock-shaft, and a concealed hammer having a lug to engage said arm and hook, substantially as described and for the purposes specified.

5. In a gun in combination with a concealed hammer, a lug on the hammer, a pivoted lever having a hook to engage the lug and extending outside the stock, a signal displayed by said lever when the hammer is released and covered thereby when the hammer is

secured, an indicator moving in a segmental chamber in the outside of the stock, a rock-shaft to which said indicator is attached, a spring to move the indicator, and an arm on the shaft to engage the lug on the hammer, substantially as described.

6. In a magazine-gun, the combination with the internal mechanism, of the hollow fore-arm having a longitudinal slot in its bottom opening into its interior, a movable operating-rod traversing said slot and closing the same, and the slidable handpiece to which said rod is attached, substantially as described.

7. In a magazine-gun, the combination with the internal mechanism, of the hollow fore-arm having a longitudinal slot in the bottom opening into its interior, said slot having grooved side walls, and a movable operating-rod traversing said slot and closing the same, the sides of said rod being received by said grooved side walls whereby said slot is closed by said rod and said rod supported by said grooved walls, substantially as described.

8. In a magazine-gun, in combination with the internal mechanism of the same, a hollow fore-arm having a slot in its bottom opening into its interior and grooved at each side of said slot, said fore-arm also having longitudinally-grooved sides, a movable operating-rod traversing said grooved walls of the slot and closing said slot, and a handpiece to which said rod is attached, said handpiece having tongues engaging the grooves in the sides of said fore-arm, substantially as described.

9. In a breech-loading gun, a breech-block having acute angles and a receiver having undercut ways in which said block slides, said angles and ways coacting to prevent spreading of the receiver, substantially as described.

10. In a breech-loading gun, a vertically-slidable breech-block, a horizontally-slidable rod having a longitudinal slot having a lateral extension, a prop pivoted to said block at one end and having a pin provided with a flat side at the other end and traversing said slot and engaging said extension, substantially as described.

11. In a breech-loading gun, a vertically slidable breech-block, a horizontally-slidable rod having a slot and a lateral extension to said slot, and a rib on the side, and a prop pivoted to the breech-block and having a flattened pin traversing the slot and engaging the extension, and a lug to engage said rib, substantially as described.

12. In a breech-loading gun, a vertically-slidable breech-block, a horizontally-slidable operating-rod, a prop pivoted to said block and operated by said rod, a rib on said rod, and a lug on said prop to run under said rib and hold the block down, substantially as described.

13. In a gun in combination with a movable breech-block, and a firing-pin longitudinally movable in said block, and a prop pivoted to said block to operate the same and means for operating said prop, a shoulder on said pin and a cam on said prop to retract and hold said pin when the block is lowered, substantially as described.

14. In a breech-loading gun, a slidable breech-block, a movable firing-pin in said block having shoulders, a slidable rod having a slot, a lateral extension to said slot, and a rib, props pivoted to said block, a lug on one of said props engaging said rib, a flattened pin connecting said props and traversing said slot and engaging the extension, and cams on said props engaging the shoulders on the pin, substantially as described.

15. In a gun, the combination with the trigger guard-plate having posts extending inward therefrom, a hammer slidably mounted on said posts, a spring engaging the hammer, a horizontal latch pivoted at one extremity to one of the posts and having an upwardly-projecting hook at its forward end to engage the hammer and lock the same in fully-cocked position, said latch having a laterally-extending inclined projection from its lower forward end, a longitudinally-movable rod having an inclined shoulder to engage said inclined projection, and a firing-sear and trigger pivoted to the guard-plate, substantially as described.

16. In a gun, a lock having a longitudinally-movable hammer, a dog pivoted on said hammer, a cocking-hook engaging said dog, a spring engaging said dog and hook, a fixed arm to engage and release said hook, and a slidable rod having a lug to engage said dog, substantially as described.

17. In a gun, a longitudinally-movable hammer, a spring engaging the same, a dog pivoted on said hammer, a rib on said dog, a spring engaging the rib, a cocking-hook engaging said dog, a fixed arm to engage and release said hook, an automatic latch and a firing-sear engaging notches in said hammer, a longitudinally-movable rod having a shoulder to engage and release the automatic latch, and a lug to engage the dog, substantially as described.

18. In a gun, a longitudinally-movable spring-pressed hammer, having a dog and sear-notches, a latch and a firing-sear alternately engaging said sear-notches respectively, and a longitudinally-movable rod having a lug directly engaging said dog and thereby moving the hammer into engagement with said latch and sear, and also having a shoulder engaging said latch to release the same from the sear-notch in the hammer, substantially as shown and described.

19. In a gun, a sliding breech-block, a firing-pin in the same, a sliding hammer engaging said pin a spring to actuate said hammer, a sear to hold said hammer, a trigger to release said sear, a dog on said hammer, a sliding rod having a lug to engage the dog, and a longitudinal slot, a prop pivoted to the block and having a pin traversing said slot, substantially as described.

20. In a gun, a vertically-movable breech-block, a firing-pin movable in said block, a longitudinally-movable hammer engaging said pin, a spring actuating said hammer, a latch-sear and a firing-sear alternately engaging the hammer, a dog on said hammer, a prop pivoted to said block at one end and having a flattened pin at the other end, and a lug on its side, a longitudinally-movable rod having a slot having a lateral extension and traversed by said pin, and a rib engaging the lug on the prop, and a lug engaging the dog on the hammer, and a shoulder engaging the automatic latch, and means for reciprocating said rod, substantially as described.

21. In a gun, a barrel, a stock having an opening at the rear of the barrel, a sliding cover to close the opening, an extractor attached to said cover, a vertically-sliding breech-block, a longitudinally-movable hammer engaging said pin, a spring actuating said hammer, a dog on said hammer, an automatic latch and a firing-sear engaging said hammer, a prop pivoted to said breech-block at the upper end, and having a flattened pin at the lower end, and a lug on its side, a sliding rod having a slot and lateral extension engaged and traversed by said pin, and a rib to engage the lug on the prop, and a lug to engage the dog on the hammer, and a shoulder to release the automatic latch, said rod also being connected to and operating said cover and extractor, and means for operating said rod, substantially as described

22. In a gun, the combination of a barrel, a stock having an elongated opening at the rear of the barrel, and a tapered fore-arm beneath said barrel, a handpiece slidable on said fore-arm, a rod attached to the handpiece and sliding in a slot in the fore-arm, and having a slot a lateral extension, a rib, a lug, and a shoulder, a breech block movable in said stock, a firing-pin in the breech-block, said pin having shoulders and being longitudinally movable, a prop pivoted to the breech-block and having cams engaging said shoulders, a lug engaging the rib on the rod, and a flattened pin engaging the slot and extension in the rod, a longitudinally-movable hammer engaging the firing-pin, a spring engaging the hammer, a dog on the hammer engaging the lug on the rod, an automatic sear engaging the hammer and released by the shoulder on the rod, a firing-sear engaging the hammer and released by a trigger, a slide connected to said rod and attached to the cover and operating the same, substantially as described.

23. In a gun, a hollow stock having an opening in the under side, and a door closing said opening, means for detachably securing said door, consisting of a hook on said door, a spring-hook in the stock, and a slide on the door engaging the end of the spring-hook, and having a thumb-piece movable in an opening in the door, substantially as described.

24. In a gun, a hollow stock having an opening in its under side, a door hinged at its forward end and secured by a spring-hook engaging a hook on the door, and having a rod with an inwardly-turned end, a packet held in place by said door, having a follower with an outwardly-turned end to engage the end of said rod, and a transfer-arm having a hook to engage the end of the follower and release the door, substantially as described.

25. In a gun, a hollow stock having a door in its under side, secured by a hook having a forwardly-extended rod having an inwardly-turned end, a packet having a lateral extension at its lower side, a slot in said extension and an opening in its side having a lateral and curved extension near said slot, a follower in the packet having an end projecting through the said opening and traversing the same, and engaging the end of said rod, and a transfer-arm having a hook to engage and remove the cartridges and a hook to engage the follower, substantially as described.

26. In a gun in combination with a transfer-tube, and means for moving the cartridge through the tube, a spring-stop to engage the rear of the cartridge-flange, a spring-stop to engage the front of said flange, a cam on the last-named stop, and a sliding plate engaging said cam to lift said stop and means for moving the cartridge along the transfer-tube, substantially as described.

27. In a gun, in combination with a transfer-tube and means for intermittently moving cartridges in said tube, stops consisting of a plate secured to said tube and divided longitudinally at its ends and adapted to engage the respective sides of the flange and hold the same, cams on the stops engaging the forward sides of the flanges, and a sliding plate beneath the stops having shoulders engaging said cams and means for moving said plate, substantially as described.

28. In a gun, in combination with a transfer-tube having a longitudinal slot and side openings, and arms reciprocating in said slot having a hook and a shoulder to engage and move the cartridges, two spring-stops in said openings to engage the rear of the cartridge-flanges, two spring-stops in said openings to engage the front of said cartridges, cams on the last-named stops, a slidable plate beneath said stops having fins extending between said stops, and shoulders engaging the cams, and a slide having a lug engaging one of said fins, substantially as described.

29. In a gun, transfer mechanism, a transfer-tube having ribs, a slide embracing said tube and movable on said ribs and operating the transfer mechanism, a handpiece slidable on the fore-arm, and a rod connecting said handpiece and slide, said parts being arranged, combined and operating substantially as described.

30. In a gun, a tube having a slot in its top and openings in its side, and longitudinal ribs, a slide embracing said tube and slidable on said ribs, a divided and flexible arm attached to said slide, said arm having a hook and a shoulder at its respective ends and moving in said slot spring-stops in said side openings to engage the respective sides of the cartridge-flanges, cams on the stops engaging the forward sides of said flanges, a slidable plate having shoulders to engage said cams, and a fin projecting outward, a lug on the slide to engage said fin, a rod attached to said tube, a cross-head and spring movable on said rod, stops to limit the movement of said cross-head, a hook on said slide to engage and move said cross-head, and a spring-hook on the cross-head to engage the flange of a cartridge, substantially as described.

31. In a gun, a transfer-tube having a slot, a slide embracing said tube and moving on the same, means for reciprocating said slide, a rod attached to the tube, a cross-head running on said rod and engaged by said slide, stops loosely surrounding said rod, one of said stops having an incline engaging a projection on the cross-head a hook on the slide engaging said projection, and a hook on said cross-head engaging the flange of a cartridge, substantially as described.

32. In a gun, a barrel, a stock having an opening at the rear of said barrel, a sliding cover closing said opening a transfer-tube below said opening having an open top and a slot, a slide embracing said tube and moving thereon and attached to said cover, an extractor attached to said slide, a sliding cross-head above said tube having flexible fingers extending below said cover and also having a hook moving in said slot, stops limiting the movement of said cross-head, and a hook on said slide detachably engaging a projection on the cross-head, substantially as described.

33. In a gun, a stock having an elongated opening at the rear of the barrel, a rearwardly-sliding cover to close the same, an extractor attached to said cover, a transfer-tube having an upwardly open forward end and a slotted rear end, a packet having a slot opposite the bottom cartridge, a slide moving on said tube, an arm having a hook and shoulder at its respective ends, said arm attached to said slide and moving in said slot, spring-stops to engage the flanges of the cartridges, a sliding plate to lift said stops, a lug on the slide to operate the plate, a cross-head having flexible fingers extending below the cover and at each side of the extractor, and a hook traversing the slot in the tube, a spring to move the cross-head, stops to limit its movement, a detachable hook on the slide to engage said cross-head, and means for reciprocating said slide, substantially as described.

34. In a gun, a breech-block operated by a prop pivoted to the same and having a transverse pin, a lock having a longitudinally-movable hammer, a pivoted dog on the hammer, a cocking-hook holding said dog, a transfer-tube, a slide movable on said tube and operating the transfer mechanism a transverse pin on said slide, an operating-rod having a hook and notch to engage said pin, joints in said rod, a spring to hold the rod in line, a lug on said rod to engage a projection and release said notch, a slot in said rod traversed by the pin on the prop, and a lug on said rod to engage the dog on the hammer, substantially as described.

35. In a gun, a slide to operate the transfer mechanism and having a transverse pin, a lock having a longitudinally-movable hammer, a pivoted dog on the hammer, a hook engaging said dog, springs engaging said dog and hook, a fixed arm engaging said hook to release the dog, a longitudinally-movable rod having a hook at the end and a notch near said hook to engage the pin on the slide, joints in said rod, and a spring on said rod to hold the same in line, a lug on said rod engaging a fixed projection to release the notch from the pin, substantially as described.

36. In a gun, a vertically-movable breech-block having a movable firing-pin, a prop pivoted at one end to said block and having a pin at the other end having a flattened side a lug on the side of said prop, a longitudinally-movable hammer engaging the firing-pin, a spring to actuate the hammer, an automatic latch and a firing-sear engaging notches in said hammer, a pivoted dog on said hammer, a cocking-hook and a spring engaging said dog, a slide to operate the transfer mechanism said slide having a transverse pin, a handpiece slidable on the fore-arm and an operating-rod attached to said handpiece and having a slot and lateral enlargement engaging and traversed by the pin of the prop, and a flange engaged and traversed by the lug on the prop, and a lug engaging the dog on the hammer, and a shoulder to release the automatic latch, and a hook at the end, and a notch near the same to engage the pin of the slide, and joints, and a spring opposite the joint near the notch to hold the rod in line, and a lug on said rod to engage an inclined projection on the guard-plate and release the hook from the pin, substantially as described.

37. In a gun, a magazine having a spring-follower engaging and pressing upon the cartridges, a transfer-tube having a slot, a slide moving on said tube, a divided flexible arm attached to said slide and traversing said slot a hook on the rear end of said arm to remove a cartridge from the packet, a shoulder on the forward end of said arm to move the cartridge along in the tube, and a projection on said forward end to prevent the cartridge from racing forward, substantially as described.

609,446. VEHICLE-SPRING. PAUL LWOFF, St. Petersburg, Russia. Filed Mar. 1, 1898. Serial No. 672,213. (No model.)



Claim.—In combination, the axle, the frame, the cable having its central portion resting upon the axle, and a pair of buffer-springs carried by said frame and connected to opposite ends of the cable, substantially as described.

609,447. PUZZLE OR TOY LOCK. JOHN R. LYNN, Philadelphia, Pa. Filed Dec. 13, 1897. Serial No. 661,740. (No model.)



Claim.—1. In a puzzle or toy lock the combination of a disk having a recess in its under side, a spindle having an annular recess running around its periphery and a block or seat having a bore to receive spindle, with a bore opening into and extending obliquely from the spindle-bore and containing a bolt of length sufficient to project within recess in spindle and extend to and contact with under side of disk.

2. In a puzzle or toy lock the combination of a graduated disk having an aperture in its under side and a spindle having an annular recess running around its periphery—with a block or seat having a bore *f* adapted to said spindle and a bore *g* opening into and extending obliquely from the said bore containing a bolt adapted to slide within, said bolt being of length sufficient to project within recess in periphery of spindle and extend to and engage with under side of disk.

3. In a puzzle or toy lock the combination of a block or seat having a bore *f* adapted to a spindle, a bore opening into and extending obliquely from the said bore and containing a bolt adapted to slide therein with a disk having an aperture in its under side adapted to receive end of bolt and a spindle having an annular recess running around its periphery.

609,448. SHUTTER-WORKER. RANDOLPH H. MARSH, Frederick, Md., assignor of two-thirds to Samuel D. Thomas and Marshall Pent, same place. Filed Jan. 21, 1898. Serial No. 667,457. (No model.)



Claim.—1. The combination with a sash having a recess in its lower edge, of a journal-plate fixed to the window-sill outside of the sash, a shaft journaled in said plate, extending through the recess in the sash and provided with the collar which is adapted to abut against the sash and close the recess therein, a spring seated against the journal-plate and the shaft-collar, a shutter-bracket, a crank-arm on the shaft, and a rod, substantially as and for the purposes described.

2. In a shutter-worker, the combination of a journal-plate provided with a series of transverse apertures which extend entirely through said plate, an operating-shaft fitted loosely in the journal-plate for axial and endwise movement therein, and provided with a collar, a crank-arm rigid with the shaft and provided with a locking-stud adapted to engage with the apertures of said plate, a shutter-

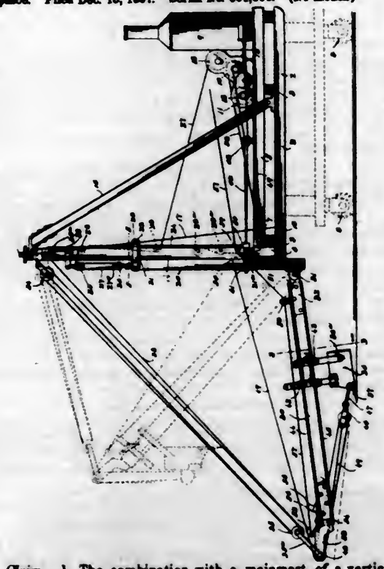
bracket, and a rod connected directly to the shutter-bracket and the crank-arm, substantially as described.

3. The combination with a sill and a sash having a recess in its lower edge, of a plate fixed to the sill outside of the sash and provided with a journal-boss and a series of transverse apertures, a shaft fitted loosely in the sash-recess and boss of the plate and provided at an intermediate point of its length with a collar arranged to bear against the sash and close the recess therein, a spring fitted on the shaft and seated against its collar and the boss of the journal-plate, a crank-arm rigidly attached to the outer end of the shaft and provided at its free end with an eye and at an intermediate point of its length with a locking-stud adapted to either of the apertures in said plate, a shutter-bracket provided with an eye, and an eye-formed rod loosely connected to the eyes of the shutter-bracket and the crank-arm, substantially as described.

4. In a shutter-worker, the combination of a shutter-bracket having a rounded eye, a journal and locking plate provided with a bearing, a shaft fitted in said bearing for turning and sliding adjustment therein, a crank-arm attached to said shaft and having a locking-stud and a rounded eye, a spring seated against said shaft and the plate, and a connecting-rod provided at its ends with eyes which are loosely connected with the eyes of said bracket and the arm, respectively, whereby the rod is directly attached to the bracket and crank-arm and the shutter may be opened or closed and locked without auxiliary devices, substantially as described.

5. In a shutter-worker, the combination of a plate, a shaft journaled therein and provided at a point intermediate of its length with a collar adapted to close a recess in a sash through which the shaft is adapted to pass, a shutter-bracket, and connections between the bracket and the shaft, substantially as described.

609,449. EXCAVATING-MACHINE. GUSTOF J. MILLER, Duluth, Minn., assignor of one-half to J. A. Watterworth and H. Fee, same place. Filed Dec. 13, 1897. Serial No. 661,666. (No model.)



Claim.—1. The combination with a mainmast, of a vertically-slidable mast, a boom carried thereby, an excavator-bucket mounted on the boom, means for adjusting said slidable mast in a vertical direction, and operating means for the boom and the traveling bucket, substantially as and for the purposes described.

2. The combination of a mainmast mounted to turn in a horizontal plane, a vertically-slidable mast connected thereto to turn horizontally therewith, a swinging boom having a hinged connection with the foot of said slidable mast to swing independently in a vertical plane and to travel in perpendicular and horizontal planes with said slidable mast, and suitable operating mechanism for the masts and boom, substantially as described.

3. The combination with a mainmast, of a slidable mast connected thereto, a boom pivoted to the foot of the slidable mast, a traveling excavator bucket or shovel mounted on said boom, a latch or trigger to confine the bucket or shovel against traveling movement on the boom, and operating means for the slidable mast, the boom and said bucket or shovel, substantially as and for the purposes described.

4. The combination with a suitable framework and a mainmast mounted to rock thereon, of a slidable mast attached to said mainmast and adapted to turn therewith and to slide endwise thereon, a boom connected to the slidable mast, a traveling bucket or shovel mounted on the boom, and means for rocking the mainmast, adjusting the slidable mast in a vertical direction, raising and lowering the boom, and hauling the shovel or bucket, substantially as and for the purposes described.

5. The combination with a frame and a main..ast mounted thereon, of a slidable mast attached to said mainmast and adapted to be lowered below the frame, a boom carried by the slidable mast, a traveling bucket or scoop, and operating means for said slidable mast, the boom and the bucket or scoop, substantially as and for the purposes described.

6. The framework having diagonal timbers united together by a vertically-disposed casting having one of its faces adapted to serve as a guide, in combination with a mainmast, a slidable mast connected with said mainmast and adapted to ride against the guide-face of said casting, a boom, a traveling bucket or scoop, and means for operating said slidable mast, the boom and the bucket or scoop, substantially as and for the purposes described.

7. The combination with a frame and a mainmast, of a vertically-slidable mast, a keeper fixed to said slidable mast and loosely embracing the mainmast, another keeper fixed to the mainmast and slidably fitted to the slidable mast, a boom, a traveling bucket or scoop, and suitable operating means, substantially as and for the purposes described.

8. The combination of a mainmast provided with track-rails, a slidable mast fitted laterally against said mainmast, a keeper fixed to the slidable mast and carrying suitable rollers adapted to travel on the track-rails of the mainmast, another keeper fixed to the mainmast and embracing the slidable mast, means for raising and lowering said slidable mast, a boom, a traveling bucket or scoop, and suitable operating means for the boom and said bucket or scoop, substantially as and for the purposes described.

9. The combination with a suitable frame having a vertical guide-casting, of a mainmast stepped on the frame and provided on one side with track-rails which terminate above said guide-casting, a slidable mast having a movable keeper and rollers or wheels adapted to travel on the track-irons, a keeper fixed to the mainmast below the track-irons and above the guide-casting to embrace the foot of the slidable mast, a boom carried by the slidable mast, and a traveling bucket or scoop, substantially as and for the purposes described.

10. The combination with a boom, of the sheave-carrying plates fixed to the beam at its free end, an overbalanced trigger hung in said plates and having its nose normally in the path of the bucket-carriage, a bucket-carriage slidably fitted to the boom and arranged to engage with the trigger to be confined thereby at the outer end of the boom, a haulage-cable guided in the sheave-carrying plates and connected to a bucket on said bucket-carriage, and a trip-cord attached to the trigger, substantially as described.

11. The combination with a boom, of a bucket-carriage fitted thereto and consisting of a hanger and a saddle, a bucket or scoop hinged to the hanger and a haulage-cable attached to said bucket or scoop and adapted to force the latter against the saddle, whereby said saddle limits the upward movement of the bucket or scoop with relation to the boom, substantially as and for the purposes described.

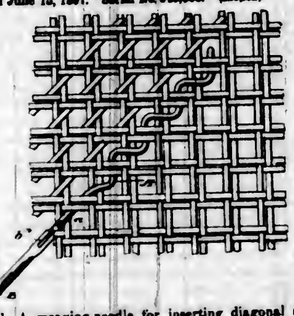
12. The combination with a boom, of a hanger slidably fitted thereto, a bucket or scoop hung eccentrically on said hanger, a saddle fitted on said boom to travel thereon with the hanger and arranged to bear upon the bucket or scoop in advance of its pivotal connection with the hanger, and a haulage-cable connected to said bucket or scoop below the bearing of the saddle thereon, substantially as and for the purposes described.

13. The combination of a boom provided on its upper and lower sides with track-irons, a bucket-carriage fitted loosely on said boom and provided with rollers adapted to travel on said track-irons above and below the boom, a bucket hinged to said carriage, a trigger mounted on the boom in the path of the bucket-carriage, and a haulage-cable connected to said bucket, substantially as and for the purposes described.

14. The combination of a swinging boom, a bucket-carriage consisting of a hanger and a saddle mounted on the boom to travel endwise thereon, a bucket hinged eccentrically to the hanger and adapted to press or bear against the saddle of said carriage, a haulage-cable connected to the bucket in advance of its pivotal connection with the hanger and below the bearing of the saddle on said bucket, a trigger or latch mounted on the boom in the path of the bucket-carriage and having an operating-line, and means for raising and lowering said boom, whereby the latch is adapted to confine the carriage and bucket, at or near the free end of the boom, while the latter is being raised and the bucket is adapted to tilt to a dumping position without hindrance from the saddle of the bucket-carriage, substantially as and for the purposes described.

15. The combination with a suitable framework, of a mainmast stepped thereon, a transverse bar or arm rigid with said mainmast and having suitable operating-lines to turn the mainmast in a horizontal direction, a vertically-slidable mast connected with said mainmast and adapted to be lowered below the frame and the mainmast, a swinging boom carried by the foot of the slidable mast, means for raising and lowering the slidable mast and said swinging boom, a traveling bucket or scoop mounted on the swinging boom, and a haulage-cable guided on the mainmast and the swinging boom and connected with said bucket or scoop, substantially as and for the purposes described.

609,450. WEAVING-NEEDLE. EDWARD MORRIS, Michigan City, Ind. Filed June 15, 1897. Serial No. 640,865. (Model.)



Claim.—1. A weaving-needle for inserting diagonal strips in cane-cloth, having a long shaft adapted to reach across the fabric, and an eye in its front end, in combination with a pin having a spiral advancing end and a straight rear portion constituting a continuation or prolongation of the spiral, and provided with a recess, circular in cross-section, to receive the front end of the needle.

2. A weaving-needle having a long shaft adapted to be grasped by the hands of the operator and to reach across the fabric, and having an eye in its front end, in combination with a pin having a spiral advancing end and a straight rear portion constituting a prolongation of the spiral and arranged in the axis thereof, said prolongation being formed with a recess or socket, circular in cross-section, to accommodate the end of the needle which has a swivel connection therewith.

3. The combination of the weaving-needle, having a long straight shaft adapted to be grasped by the operator and to extend across the fabric, a pin and a bearing-piece secured to the rear end of the pin and formed with a recess at its rear end, circular in cross-section, to receive the tip of the needle.

4. A weaving-needle, having its front end made separately and secured to the needle-shaft, and provided with a slot or eye and a cylindrical tip, in combination with a pin having a straight rearwardly-projecting portion formed with a recess, circular in cross-section, to receive the tip of the needle and to permit the pin to turn relatively to the needle.

5. The combination of a weaving-needle, a pin constructed of relatively soft steel, and a bearing-piece of hard metal secured to the rear end of the pin and having a recess to afford a loose pivotal connection with the front end of the needle.

609,451. THREAD FOR WEAVING. EDWARD MORRIS, Michigan City, Ind. Filed Nov. 6, 1897. Serial No. 657,679. (No model.)



Claim.—1. A thread for weaving composed of a filament of good tensile strength, covered with fibrous material, sized, hardened, compressed and glazed.

2. A thread for weaving composed of a filament of good tensile strength, covered with strips of fibrous material, sized, cemented together, compressed into form, and having a glazed coating.

3. A thread for weaving, flat on one side and curved on the other, and composed of a filament of good tensile strength, covered with fibrous material treated with a sizing, and which is compressed and glazed.

4. A thread for weaving, flat and ribbed on one side and curved on the other, and composed of a filament of good tensile strength covered with fibrous material treated with a sizing and compressed into form and glazed.

5. A thread for weaving composed of a filament of good tensile strength, such as wire, covered with hardened fibrous material treated externally with a glaze.

6. A thread for weaving composed of paper, textile fabric and a strengthening filament united together by glue or cement and pressure and having closed, smooth longitudinal edges.

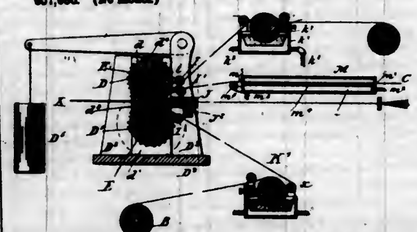
7. A thread for weaving, composed of a filament of good tensile strength, a layer of paper above it, a layer of paper below it, and an interposed layer of textile fabric, sized, cemented and united together, substantially as described.

8. A thread for weaving, composed of a filament of good tensile strength, such as wire, a layer of paper above it, and layer of paper below it, an interposed layer of textile material such as muslin, and glue and cement to give hardness to the thread and unite the layers.

9. A thread for weaving composed of a filament of good tensile strength, such as wire, a layer of paper above it, coated with silicate of soda, a layer of relatively thin paper below it, and an interposed layer of sized muslin cemented to the two layers of paper.

10. A thread for weaving composed of wire of good tensile strength, but sufficiently soft to be readily cut, strips of paper above and below the wire, sized fabric between the paper strips, a coating of silicate of soda on the paper, and a varnish over the silicate of soda.

609,452. ART OF AND APPARATUS FOR MANUFACTURING COMPOSITE THREADS FOR WEAVING CHAIR-SEAT FABRICS, &c. EDWARD MORRIS, Michigan City, Ind. Filed Nov. 6, 1897. Serial No. 657,680. (No model.)



Claim.—1. The art of manufacturing threads for weaving, consisting in uniting together by pressure, strips of paper treated with an adhesive substance, a strip of sized textile material and a strengthening-filament.

2. The art of manufacturing threads for weaving, consisting in uniting together by pressure, strips of paper treated with an adhesive substance, a strip of sized textile material and a strengthening-filament, and then treating the material with a coating to glaze or harden it.

3. The art of manufacturing threads for weaving, consisting in sizing a strip of textile material, applying an adhesive substance to strips of paper, then softening the sized material, then uniting the paper and textile material to a strengthening-filament and then compressing the combined materials into form.

4. The art of manufacturing threads for weaving, consisting in sizing a strip of textile material, applying cementing material to strips of paper, then softening the sized fabric, assembling the paper, fabric and a strengthening-filament, then compressing the assembled materials to unite them and give to them the proper form.

5. The art of manufacturing threads for weaving, consisting in sizing a strip of textile material, applying cementing material to strips of paper, then softening the sized fabric, assembling the paper, fabric and a strengthening-filament, then compressing the assembled materials, uniting them and giving to them the proper form, and then treating the formed material with a glazing substance to harden and finish it.

6. The herein-described apparatus for the manufacture of threads for weaving, comprising grooved compressing-rolls, cement-applying devices, softening devices, means for supplying paper past the cement-applying devices to the compressing-rolls, means for supplying sized textile fabric through the softening devices, and means for operating the rolls to unite, compress and give form to the materials.

7. The herein-described apparatus for the manufacture of threads for weaving, comprising grooved compressing-rolls, cement-applying devices, softening devices, means for supplying paper past the cement-applying devices to the compressing-rolls, means for supplying sized textile fabric through the softening devices to the compressing-rolls, means for operating the rolls to unite, compress and give form to the

materials, and means for supplying a strengthening-filament, such as wire.

8. The herein-described apparatus for the manufacture of threads for weaving, comprising grooved compressing-rolls, cement-applying devices, softening devices, means for supplying strips of paper to the compressing-rolls, means for supplying sized textile material through the softening devices to the compressing-rolls, means for supplying a plurality of strengthening-filaments, such as wire, guides for directing the wires individually, and means for operating the rolls.

9. The assembling, compressing and feeding rolls herein described, the upper one of which has a concave peripheral groove and the lower one of which has a peripheral groove much smaller and narrower than the groove in the upper roll but arranged under it and in line with its middle portion.

10. The assembling, compressing and feeding rolls herein described, the upper one of which has a series of concave peripheral grooves and the lower one of which has a corresponding series of peripheral grooves, much smaller than the grooves in the upper roll, but arranged beneath them and in line with their middle portions.

11. The combination with the grooved feeding and compressing rolls, of means for supplying strips of fibrous material thereto and a wire-guide having grooves or channels for directing the wires individually.

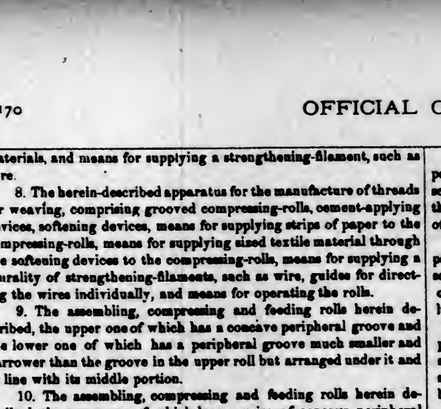
12. The combination with the grooved assembling, compressing and feeding rolls of a wire-guide having individual grooves at its front ends and a transverse groove in rear of said guiding-grooves.

13. The wire-guide herein described, having a tapered front end and formed with a series of longitudinal grooves and with a transverse groove in rear of the first-mentioned groove, and having also channels, j^3, for supplying cleansing material to the transverse groove.

14. The combination of the compressing-rolls, one of which has a series of peripheral concave grooves and the other of which has a series of peripheral grooves smaller than those of the upper roll but arranged opposite their middle portions, means for supplying material to the rolls and a wire-guide having a series of longitudinal grooves arranged opposite the grooves in the lower roll for directing the wires thereto.

15. The combination of the assembling, compressing and feeding rolls, cement-applying devices arranged at a distance from the rolls, softening devices also removed from the rolls, guides for guiding fibrous material from the cement-applying devices and the softening devices to the rolls, and a wire-guide having its front end close to the body of the rolls.

609,458. TYPE-DISTRIBUTING MACHINE. RICHARD J. MOXLEY, New York, N. Y., assignor to the Empire Type Setting Machine Company, same place. Filed May 2, 1896. Renewed July 21, 1898. Serial No. 686,534. (No model.)



Claim.—1. The combination of the page-table, the line-raising plate, the page-follower, and the back plate countersunk on its front face opposite the line-raising plate, whereby, when the latter is raised a space is left between its rear face and the front face of the back plate.

2. The combination of the page-table, the line-raising plate, the page-follower, the back plate countersunk on its front face as described, and a movable plate forming the face of the countersunk portion.

3. The combination of the page-table, the line-raising plate, the page-follower, the back plate countersunk on its front face as described, and a movable plate forming the face of the countersunk portion, sliding in a slot cut in the countersunk face of the back plate.

4. The combination of the page-table, the line-raising plate, the page-follower, the back plate countersunk on its front face as described, and a movable sliding plate forming the face of that part of the countersunk portion of the back plate which is opposite the line of type on the page-table.

5. The combination of the page-table, the line-raising plate, the page-follower, the back plate countersunk on its front face as described, and a movable plate arranged to slide in a slot in that part of the countersunk face of the back plate which is opposite to the line of type on the page-table.

6. The combination of the page-table, the line-raising plate, the page-follower, the back plate countersunk on its front face as described, and a movable plate tapered on its rear face, arranged to slide in a correspondingly-tapered slot in the countersunk face of the back plate.

7. The combination of the page-table, the back plate countersunk on its front face as described, a movable plate tapered on its rear face, provided with suitable shoulders upon which it slides, and a correspondingly-tapered slot, provided with suitable grooves on the edges of the slot, in the countersunk face of the back plate.

8. The combination of the page-table, the line-raising plate, the page-follower, the back plate countersunk on its front face as described, a movable plate tapered on its rear face and arranged to slide in a correspondingly-tapered slot cut longitudinally in the countersunk face of the back plate, and means substantially as described, for holding the plate at any desired point in the slot.

9. The combination of the page-table, the line-raising plate, the page-follower, the back plate countersunk on its front face as described opposite to the line-raising plate, a movable plate tapered on its rear face and arranged to slide in a correspondingly-tapered slot cut longitudinally in the countersunk face of the back plate, and means, substantially as described, for holding the plate at any desired point in the slot.

10. The combination of the page-table, the line-raising plate, the page-follower, the back plate countersunk on its front face opposite to the line-raising plate and containing in the countersunk portion a tapering slot, and a series of adjustable and interchangeable plates arranged to be inserted therein for the purposes set forth.

609,454. FENCE-POST. WILLIAM M. MYERS, Rockland, Ind. Filed Aug. 20, 1897. Serial No. 648,908. (No model.)



Claim.—1. A sectional fence-post comprising separate members, each having an upright and means for bracing the same, and adapted to be arranged in parallel positions, said uprights being provided with parallel rabbets or seats adapted to be engaged to form an interlocking connection, substantially as specified.

2. A sectional fence-post, each member of which consists of an upright, and bracing devices attached to and carried by the upright, in combination with bearing-blocks for supporting the uprights and bracing devices, and an anchor-loop engaging the uprights contiguous to their lower ends and inclining downwardly therefrom, substantially as specified.

3. A sectional fence-post, each member of which consists of an upright and an inclined brace arranged in a common vertical plane, and a looped brace connecting the uprights and diagonal braces below their points of contact, in combination with bearing-blocks disposed beneath the lower ends of the uprights and diagonal braces, a sunken anchor, and an anchor-loop attached to the anchor and engaging the uprights of both post-sections above the plane of said looped brace, said anchor-loop extending downwardly and rearwardly at an angle of approximately forty-five degrees from the uprights, substantially as specified.

4. A sectional fence-post comprising separable members each consisting of an upright provided with a lateral longitudinal rib arranged at an intermediate point of the width of the upright and combining therewith to form a rabbet or seat, a diagonal brace bearing at its upper end against said lateral rib, and a looped brace connecting the upright and diagonal brace below their points of contact, substantially as specified.

5. A sectional fence-post comprising separable members each consisting of an upright and means for bracing the same, in combination with a false standard interposed between said uprights, and stirrups disposed between and engaged with the uprights and forming seats for the false standard, substantially as specified.

609,455. CLOTHES-LINE PROP. PATRICK MCCLAFFERTY, Boredentown, N. J., assignor of one-half to Thomas J. Murphy, same place. Filed Dec. 23, 1897. Serial No. 663,257. (No model.)



Claim.—1. In a clothes-line prop, the combination of a fixed jaw having a notch in the inner side near its outer end, a separate spring-actuated jaw having loose but positive connection with the fixed jaw and adapted to close the open side of the notch, and a stop carried by the fixed jaw and engaging the spring-actuated jaw to limit and guide the latter in its movement, substantially as set forth.

2. In a clothes-line prop, the combination of a fixed jaw having a notch in its inner side near its upper end, and having the latter outwardly beveled beyond the notch, a spring-actuated jaw having direct and loose connection with the fixed jaw and adapted to close the aforesaid notch, and having its upper end outwardly beveled, and a pin reinforcing the lower side of the aforesaid notch and passing loosely through an opening formed transversely in the spring-actuated jaw to direct it in its movements, substantially as set forth.

3. In a clothes-line prop, the combination of a fixed jaw having a notch in its inner side near its upper end, and the latter outwardly beveled beyond the notch, a spring-actuated jaw having loose and direct connection with the fixed jaw and adapted to close the notch therein, and having its upper end outwardly beveled, and a headed pin secured in an opening formed transversely in the fixed jaw and reinforcing the lower side of the line-receiving notch formed therein, and passing loosely through an opening formed in the spring-actuated jaw to direct the latter in the movements and limit its outward play, substantially as set forth.

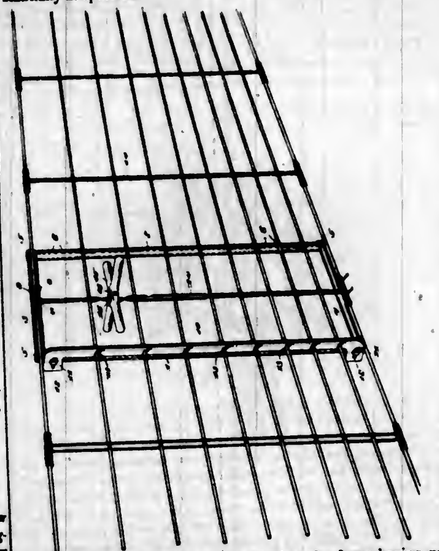
4. In a clothes-line prop, the combination of a fixed jaw having a notch to receive the line, a separate movable jaw for closing the open side of the said notch, the said jaws having their outer ends oppositely beveled, and a flat spring secured at its opposite ends to the jaws and concealed and protected by being located within a recess formed between the opposing portions of the jaws, whereby the movable jaw is opened by lateral pressure, substantially as set forth.

5. In a clothes-line prop, the combination with the body thereof having its upper end notched or cut away forming a fixed jaw, and provided with a socket formed in the base of the notch and a slot extending below the socket, of a movable jaw having a tongue fitted in said socket, and a spring having one end seated in the slot and secured to the body of the prop, and its other end connected to the movable jaw, substantially as and for the purpose set forth.

609,456. WIRE-FENCE MACHINE. CHARLES F. NEWKIRK, Little Georgetown, W. Va. Filed Mar. 2, 1898. Serial No. 672,217. (No model.)

Claim.—1. In a fence-machine, the combination of a frame having parallel side bars connected by terminal cross-bars, marginal runner-engaging devices carried respectively by said cross-bars, and a clamping device mounted upon one of the side bars for engaging the intermediate fence-runners, substantially as specified.

2. In a fence-machine, the combination of a frame having parallel side bars connected by terminal cross-bars adjustably mounted upon the side bars, means for securing the cross-bars at the desired adjustments with relation to the side bars, marginal runner-engaging devices carried by the cross-bars, and a clamping device carried by one of the side bars for engaging the intermediate fence-runners, substantially as specified.



3. In a fence-machine, the combination of a frame having parallel side bars provided with series of sockets, cross-bars connecting the side bars and secured thereto by bolts engaging said sockets, for maintaining the cross-bars at the desired relative adjustment, marginal runner-engaging devices carried by said cross-bars, and an intermediate runner-clamping device carried by one of the side bars, substantially as specified.

4. In a fence-machine, the combination with a frame having side bars terminally connected by head and foot bars, of marginal runner-engaging devices carried by said head and foot bars, the engaging device on the head-bar consisting of spaced pins and a cooperating interposed spring-tongue, and the engaging device on the foot-bar consisting of spaced rest-pins, and intermediate wire-clamping devices mounted upon the frame, substantially as specified.

5. In a wire-fence machine, the combination with a frame provided with means for engaging marginal fence-runners, of a clamping-bar mounted for adjustment toward and from the plane of the frame, and provided in its edge contiguous to said frame with a plurality of runner notches or seats, and means for securing said bar at the desired adjustment, substantially as specified.

6. In a wire-fence machine, the combination with a frame provided with means for engaging marginal fence-runners, and having a vertical side bar, of a clamp-bar terminally mounted upon said side bar and having terminally-arranged slots, and securing-bolts mounted upon the side bar and engaging said slots of the clamp-bar, the clamp-bar being cut away between its extremities, and provided with a plurality of runner notches or seats for arrangement contiguous to the plane of the side bar, to bind engaged runners in contact with the surface of the latter, substantially as specified.

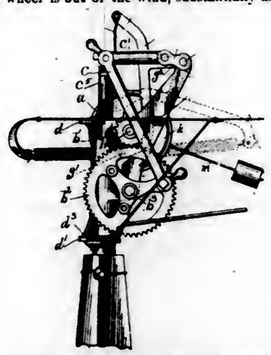
609,457. WINDMILL. LA VERNE W. NOYES, Chicago, Ill. Filed May 20, 1897. Serial No. 638,197. (No model.)

Claim.—1. In a windmill the combination with the wind-wheel and the driving-train, of a tail pivoted on the side of the driving-train opposite the wind-wheel, and having the end extended beyond the pivot, a pivoted furl-lever having the end moving between the wind-wheel and the driving-train, and a coiled spring connecting the extended end of the tail and the furl-lever and passing between the wind-wheel and the driving-train, substantially as described.

2. In a windmill, the combination with the wind-wheel and the driving-train, of a tail pivoted on the side of the driving-train opposite the wind-wheel and having the end extended beyond the pivot and bent laterally toward the wind-wheel, a pivoted furl-lever having the end moving between the wind-wheel and the driving-train, and a coiled spring connecting the extended end of the tail and the furl-lever and passing between the wind-wheel and the driving-train, substantially as described.

3. In a windmill, the combination with a wind-wheel and the driving-train, of the tail pivoted on the side of the driving-train op-

posite the wind-wheel and having the end extended beyond the pivot and bent or deflected laterally toward the wind-wheel, a furl-lever having the end moving between the wind-wheel and the driving-train, a coiled spring connecting the end of the furl-lever and the extended end of the tail, a locking-rod attached to the end of the tail and passing through the interior of said coiled spring, and a locking face or abutment against which the end of said locking-pin rests when the wheel is out of the wind, substantially as described.



4. In a windmill, the combination with the wind-wheel, of a pivoted tail having the end extended beyond the pivot, a locking-pin attached at one end to the extended end of said tail, and a locking face or abutment against which the opposite end of said locking-pin rests when the wheel is out of the wind, substantially as described.

5. In a windmill, the combination with the wind-wheel and a pivoted tail having the end extended beyond the pivot, of a furl-lever, a resilient connection, as a coiled spring, connecting the furl-lever and the extended end of the tail, a locking-pin attached to the extended end of the tail, and a locking face or abutment against which the end of the locking-pin rests when the wheel is out of the wind, substantially as described.

6. The combination with a wind-wheel and a pivoted tail, of a furl-lever, a coiled spring connecting the tail and the furl-lever, a locking-pin attached to the tail and extending through the interior of said spring, and a locking face or abutment adapted to be engaged by the pin when the tail is in position to hold the wheel out of the wind, substantially as described.

7. In combination, a pivoted tail, a furl-lever, a coiled spring connecting the same, a locking-pin attached to the tail and extending through the interior of the said spring, a locking-face, and a lug on the furl-lever for holding said pin against the locking-face, substantially as described.

8. In combination, a pivoted tail, a furl-lever having one arm connected with the furling rod or wire, a coiled spring between the other arm and the tail, a locking-pin attached to the tail and extending through the interior of the spring, and a plate carrying ridges on the face for the engagement of said locking-pin, substantially as described.

9. In a windmill-brake, the combination with the wind-wheel, of the sleeve in which the wheel-shaft is journaled, a rotatable ring thereon, and a brake-disk for engaging the wheel threaded upon said ring, substantially as described.

10. A windmill-brake comprising a brake-disk for engaging the wheel, a rotatable ring upon which the disk is threaded and a support upon which the ring is threaded, substantially as described.

11. A windmill-brake comprising a brake-disk for engaging the wheel, a rotatable ring for advancing the same a weighted rod attached to the ring, and a lever for raising and lowering the rod, substantially as described.

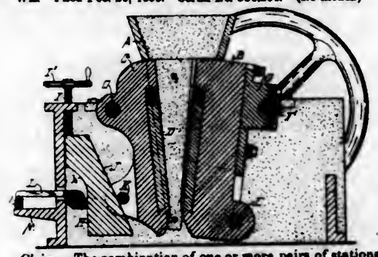
12. A windmill-brake comprising a brake-disk for engaging the wheel, a rotatable ring upon which the disk is threaded, a support upon which the ring is threaded, a weighted rod attached to the ring and a lever for raising and lowering the rod substantially as described.

13. In combination, the brake-disk, the rotatable ring, upon which the same is threaded, the support upon which the ring is threaded, the weighted rod attached to the ring and the furl-lever upon which the rod rests for raising and lowering the same as the furl-lever is moved back and forth, substantially as described.

14. In combination, the pivoted tail, the furl-lever, the coiled spring joining the same, the locking-rod passing through the spring the brake-disk engaged thereby, the rotatable threaded ring supporting the brake-disk and the weighted rod attached to said ring and supported upon the furl-lever, substantially as described.

15. The combination with the sleeve for the main bearing, of the rotatable ring threaded thereon, the brake-disk threaded on said ring and carrying the downwardly-extending arms, and the bearing-sleeve for the counter-shaft straddled by said arms, substantially as described.

609,458. ROCK AND ORE CRUSHER. MICHAEL O'HARE, Utley, Wis. Filed Feb. 29, 1898. Serial No. 581,296. (No model.)



Claim.—The combination of one or more pairs of stationary and movable crushing-jaws, converging at their lower ends; a shaft supporting the lower ends of the movable jaws; an actuating-shaft located in the rear of said jaws above the supporting-shaft, and provided with eccentric jaw-actuating sections; and sliding blocks bearing upon the rear surface of the jaws and having supporting-bearings on the eccentric shaft-sections, said blocks being engaged in vertical channels on the rear surface of the jaws, and held therein by cross-bars secured to the jaws, whereby the movement of the shaft is communicated to the jaws to oscillate the latter, substantially as described.

609,459. SADDLE FOR VELOCIPEDES. PAUL PAMARD, Paris, France. Filed Aug. 24, 1895. Serial No. 560,390. (No model.) Patented in France May 7, 1894, No. 236,338.



Claim.—In a velocipede-saddle, the combination of a supporting-frame upon which a covering is stretched, said frame having projecting arms extending therefrom at opposite ends of the saddle, a flexible thrust-rod connected to said projecting arms, a C-spring directly connected at one end to one of the arms and the other free end passing freely through the other arm, and a pivoted strap connected with said spring, whereby the entire weight upon the saddle bears upon the spring, substantially as and for the purposes specified.

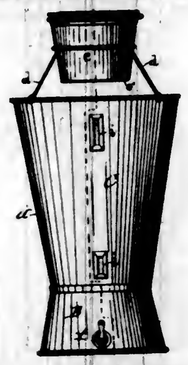
609,460. MOLD-CHILL. EMIL PEIPERS, Siegen, Germany. Filed May 31, 1895. Serial No. 551,171. (No model.) Patented in Germany June 15, 1894, No. 79,363; in Belgium June 15, 1894, No. 112,773; in England Jan. 22, 1895, No. 1,563, and in Luxemburg Jan. 29, 1895, No. 2,230.



Claim.—A mold-chill for casting chilled-metal articles, having its inner face provided with furrows or grooves, such inner face being covered with a thin coating of refractory material which extends into the furrows and partially fills the same, leaving a longitudinal cavity along the rear face of said filling in each groove for the escape of gases.

609,461. CREAM-SEPARATOR. JOHN R. PHILLIPS, Central Square, N. Y. Filed Sept. 11, 1897. Serial No. 651,225. (No model.)

Claim.—The within-described process of separating cream from milk by specific gravity, consisting in causing the creamy milk to fall in separate drops through the air onto the surface of a tranquil body of diluting liquid and thereby diluting each drop separately, and by the gentle diffusion of the milk of the successive drops in the diluting liquid causing the cream thereof to become separated from the diluted milk and form a stratum of cream upon the surface of the tranquil liquid, and subsequently drawing the diluted milk from under the supernatent stratum of cream as set forth.



609,462. WATCHCASE-PENDANT. WILLIAM R. RAMEY, Waverly, Kans. Filed Nov. 18, 1897. Serial No. 659,031. (No model.)



Claim.—1. The combination with a pendant and its bow, of a cross-bar secured at its ends to the sides of the bow, and a flat spring applied to the top side of the cross-bar and having a stud passing loosely through an opening formed therein and adapted to interlock with the pendant-crown, substantially as set forth.

2. The combination with a pendant and its bow, of a cross-bar secured at its ends to the sides of the bow at diametrically opposite points, a flat spring applied to the top side of the cross-bar and having a stud passing loosely through an opening therein to interlock with the pendant-crown, and a headed pin or stud provided at the free end of the spring and passing loosely through an opening in the aforesaid cross-bar, substantially as and for the purpose set forth.

3. The combination with a pendant and its bow, of a cross-bar having its ends bent and grooved to receive the side portions of the bow to which they are secured, said bar having a notch midway of its ends, a flat spring applied to the top side of the cross-bar and provided with a stud passing loosely through an opening in the bar to enter a depression in the pendant-crown, and a headed pin or stud applied to the free end of the spring, substantially in the manner and for the purpose specified.

609,463. BALL-BEARING. CHARLES C. READ and CHAUNCEY SMITH, Cambridge, Mass., executors of Chauncey Smith, deceased. Filed Dec. 23, 1896. Serial No. 616,754. (No model.)



Claim.—1. The combination in a roller-bearing, of a series of rollers; and a frame consisting of two annular sections having coinciding pockets forming receptacles for the rollers, those of one section increasing successively in depth and those of the other decreasing successively in depth, and the deepest pocket of one section coinciding with the shallowest pocket of the opposing section, substantially as described.

2. The combination in a roller-bearing of a frame consisting of two annular sections having coinciding pockets forming receptacles for the rollers, the pockets of one section increasing successively in depth, and those of the other section decreasing successively in depth and the deepest pocket of one section coinciding with the shallowest pocket of the opposing section, a series of rollers within the receptacle of the frame, the rollers projecting beyond the opposite faces of the frame only to such an extent that the thickness of the frame shall be greater than that diameter at which pressure will cause the rollers to rupture, substantially as described.

609,464. GIN-BRUSH. EDWIN Y. REESE, Atlanta, Ga., assignor of one-half to George M. McKinnon. Filed Dec. 17, 1896. Serial No. 616,067. (No model.)



Claim.—1. In a gin-brush, the combination with a lag, of a detachable rod extending parallel to the axis of rotation of the brush and adapted to be turned end for end, a series of flat wipers extending upon both sides of the rod, and means for securing said rod when the same is reversed or turned end for end, substantially as described.

2. A gin-brush, comprising a series of wipers, a rod common to and forming a support for said wipers and having one end notched, and a latch on the brush-frame for engaging the notched end of the rod, substantially as and for the purpose described.

3. In a gin-brush, a brush-frame comprising end pieces and connecting-lags, one of which is grooved longitudinally on its outer surface, in combination with a rod slidingly seated in said groove so as to be capable of longitudinal movement, wipers secured to said rod and arranged at spaced intervals, and provision for adjusting said rod and holding it fixed longitudinally, substantially as described.

609,465. AUTOGRAPHIC REGISTER. ORWELL C. REEVES, Dayton, Ohio, assignor to the National Cash Register Company, same place. Filed Mar. 19, 1896. Serial No. 674,463. (No model.)



Claim.—1. In an autographic cash-register, the combination with a base provided with a rack, of a casing movably mounted on said base, a writing-strip in said casing, a feeding-roller for moving said strip, an operating-shaft mounted on said casing and connected to both the rack and the feeding-roller so as to move the latter upon the movement of the casing and a clutch connecting the casing and the shaft for preventing movement of the latter except in one direction.

2. In an autographic cash-register, the combination with a base provided with a rack, of a casing movably mounted on said base, a writing-strip in said casing, a feeding-roller for moving said strip, an operating-shaft mounted on said casing and provided at its opposite ends with gears which engage respectively the base-rack and the feeding-roller so that the movement of the casing on the base will cause the movement of the feeding-roller.

3. In an autographic cash-register the combination with a base having a rack, of a casing pivoted thereon, antifriction-rollers mounted on said casing and engaging said base, a writing-strip in said casing, a feed-roller for said strip and gearing mounted on said casing and engaging said rack for moving the roller when the casing is turned.

4. In an autographic cash-register the combination with a base provided with a rack, of a casing movably mounted on said base, a writing-strip in said casing, a feed-roller for moving the same forward, an operating-shaft connected to the feed-roller, a gear mounted on said shaft and engaging the rack, a clutch member mounted on

the casing and a spring-pressed companion member mounted on the shaft.

609,466. ALLOY OF IRON AND TITANIUM AND PROCESS OF PRODUCING IT. AUGUSTE J. ROSSI, New York, N. Y., assignor of one-half to James MacNaughton, Albany, N. Y. Filed June 5, 1895. Serial No. 551,720. (No specimens.)



Claim.—1. The process of producing a new compound or alloy of titanium and iron, containing some carbon, and titanium in industrially important proportions, that is to say in excess of five per centum of titanium, which consists in supporting in a bath of molten iron and while subjected to intense heat, say not less than 3,500° Fahrenheit, a mixture of carbon and of titanic acid, substantially as and for the purposes described.

2. The process of producing a new compound or alloy of titanium and iron, containing some carbon, and titanium in industrially important proportions, that is to say in excess of five per centum of titanium, which consists in supporting in a bath of molten iron and while subjected to intense heat, say not less than 3,500° Fahrenheit, a mixture of carbon and of a compound, containing titanic acid as one of its important constituents, substantially as and for the purposes described.

3. The process of producing a new compound or alloy of titanium and iron, containing some carbon, and titanium in industrially important proportions, that is to say in excess of five per centum of titanium, which consists in supporting in a bath of molten iron and while subjected to intense heat, say not less than 3,500° Fahrenheit, a mixture of carbon and titaniferous iron ore, substantially as and for the purposes described.

4. As an article of manufacture, a compound containing an important quantity of iron, say not less than ten per centum of the mass, some carbon, and titanium in industrially important proportions, that is to say, not less than five per centum of the mass, substantially as and for the purposes described.

609,467. PROCESS OF MANUFACTURING ALLOYS OF TITANIUM. AUGUSTE J. ROSSI, New York, N. Y., assignor of one-half to James MacNaughton. Filed Oct. 16, 1897. Serial No. 655,372. (No specimens.)

Claim.—The process of producing a new compound or alloy of titanium and iron, containing some carbon, and titanium in industrially important proportions that is to say, in excess of five per centum of titanium, which consists in supporting in a bath of molten iron and while subjected to intense heat, say not less than 3,500° Fahrenheit, a mixture of carbon and highly-titaniferous slag, substantially as and for the purposes described.

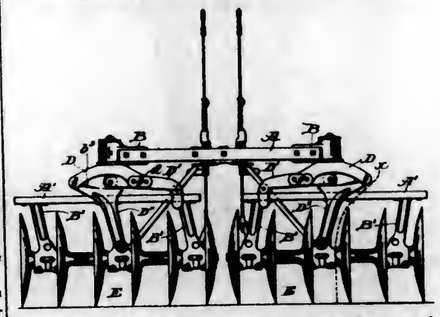
609,468. COMBINATION SALT-CELLAR AND PEPPER-BOX. EUGENE DE SALIGNAC, Keyport, N. J. Filed Nov. 10, 1897. Serial No. 658,052. (No model.)



Claim.—1. A combination salt-cellar and pepper-box, consisting of a casing which is provided centrally with a transverse partition-plate, said casing being also provided at each end with a removable perforated plate which is provided on both sides of the perimeter thereof with a flange or rim, one of said flanges or rims serving as means for connecting said plate with the casing, and a hinged cap or end plate connected with the other flange or rim, said hinged cap or end plate being spring-operated, and provided adjacent to the spring with the thumb-piece, substantially as shown and described.

2. A combination salt-cellar and pepper-box, consisting of a casing which is provided with a partition the ends of said casing being screw-threaded interiorly, perforated plates having exteriorly-screw-threaded flanges extending on both sides of the same, one of said flanges screwing into the end of the casing, an interiorly-screw-threaded ring or band screwing upon the other flange of the perforated plate, and a spring-actuated hinged cover upon each of said rings or bands.

609,469. DISK HARROW. CHARLES S. SHARP, Auburn, N. Y., assignor to the D. M. Osborne & Company, same place. Filed Aug. 2, 1897. Serial No. 646,778. (No model.)



Claim.—1. In a disk harrow or cultivator, the disk gang, the gang-frame comprising uprights B' and beam A', the support, a yoke bestriding said gang-frame pivoted at its upper end to said support and pivoted at its lower end to the frame, said yoke having a rest or abutment, a pressure device consisting of the bar D' pivoted at a point between its ends to said support, one end of which bears upon said rest or abutment, and the other end bears upon said beam A', substantially as described.

2. In a disk harrow or cultivator, the disk gang, the gang-frame comprising uprights B' and beam A', the support, a pivoted yoke connecting said gang to said support, said yoke having a rest or abutment, a pressure device consisting of the bar D' pivoted at a point between its ends to said support, one end of said bar bearing upon said rest or abutment and its opposite end bearing upon said beam A' and having downwardly-extended portions located a short distance apart which bestride said beam, substantially as described.

609,470. SLEIGH-KNEE. CHARLES J. SHAW, Owosso, Mich. Filed June 23, 1897. Serial No. 641,907. (No model.)



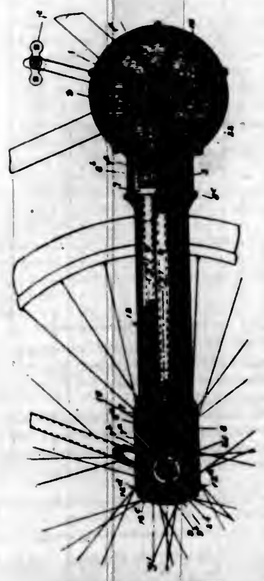
Claim.—1. In a sled, the combination with the saddle attached to the sled-runner, of the bolster-plate having the central depending arm, the pivot-pin extending through said arm, and side walls of the saddle, and the rollers interposed between the bolster-plate and saddle; substantially as described.

2. In a sled, the combination with the saddle, secured to the sled-runner, the shoulders on the inner side walls thereof, having depressions at each end, of the bolster-plate, the rollers interposed between the bolster and saddle and resting in the depressions in the shoulder on the saddle; substantially as described.

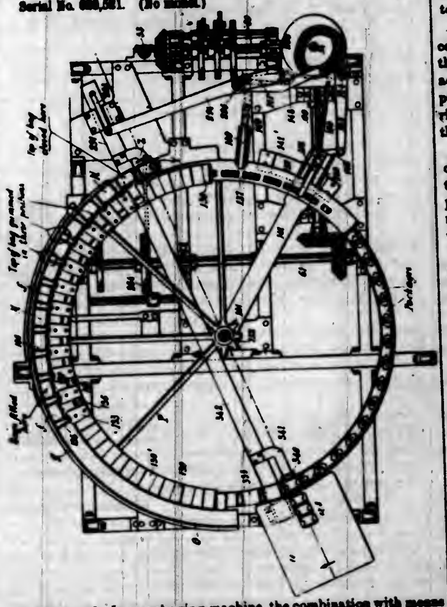
3. In a sled, the combination with the bolster-plate having the central depending arm, convex under surface and provided with convex side flanges and straight end flanges, the saddle, to which said bolster-plate is pivotally secured, secured to the sled-runners and having the concave top to correspond to the under curved surface of the bolster-plate, the shoulders on the inner side walls of the saddle, the rollers carried by said shoulders and upon which the bolster-plate bears, the pivotal or oscillatory movement between the saddle and bolster-plate being limited in one direction by the end flanges on the plate and in the other direction by contact between the roller and depending arm; substantially as described.

609,471. CHAINLESS BICYCLE-GEARING. DUFF H. GARDNER, Denver, Colo. Filed Nov. 20, 1897. Serial No. 659,128. (No model.)

Claim.—In a bicycle, a gear-wheel carried by the pedal-shaft, in combination with another gear-wheel on the hub of the rear wheel, a pair of intervening gear-wheels, geared respectively to the wheels first above mentioned, and provided on each side with wrist-pins arranged at different points of the periphery, a pair of pitmen provided at each end with heads which fit on the said wrist-pins, and a covering or casing which takes the place of a rear fork or bar of the frame and incloses all of the said gears and pitmen, besides affording bearings for the wheels which carry the said wrist-pins substantially as set forth.



609,472. PACKAGING-MACHINE. HENRY R. SUTTON, New York, N. Y., assignor to Arbuckle Brothers, same place. Filed Mar. 27, 1897. Serial No. 629,261. (No model.)



Claim.—1. In a packaging-machine, the combination with means for operating on and delivering packages, of an endless movable carrier for receiving the packages delivered therefrom having top and bottom plates adapted to receive the folded ends of the packages between them and thereby hold them closed, and means for transferring the successive packages to the carrier by pushing them between said plates.

2. In a packaging-machine, the combination with a revolable wheel carrying a series of pockets for holding bags or packages, of a circular carrier for receiving the packages therefrom, fastened to and turning with said wheel, and having top and bottom plates adapted to receive the folded ends of the packages between them, and thereby hold them closed, means for transferring the successive packages from the pockets to the carrier by pushing them between said plates, and means for finally expelling the packages from the carrier.

3. In a packaging-machine, the combination with a series of pockets for holding bags or packages, comprising side walls embracing such packages, and open at top and bottom, of an endless movable carrier for the packages, consisting of a series of compartments having closed bottoms for supporting the packages, means for transferring the packages successively out of said pockets and into said compartments, and means for finally expelling the packages from said compartments.

4. In a packaging-machine, the combination with a series of pockets for holding bags or packages, comprising side walls embracing such packages, and open at top and bottom, and the packages carried by said pockets with their folded ends at the open top and bottom ends of the pockets, of an endless carrier for the packages, consisting of top and bottom plates between which the folded ends of the packages are received, and by which they are held closed, and intervening partitions by which the carrier is divided into compartments, means for intermittently advancing the pockets and said compartments, means for transferring the packages successively from the pockets to the compartments of the carrier, and means for finally expelling the packages from the compartments.

5. In a packaging-machine, the combination with means for operating on and delivering packages, of an endless movable carrier for receiving the packages delivered therefrom consisting of top and bottom plates adapted to receive the folded ends of the packages between them, and mounted to revolve, and means for transferring the successive packages to the carrier consisting of a pusher Z adapted to push the package between said plates, with its folded ends in contact with said plates.

6. In a packaging-machine, the combination with a series of pockets N, of an endless rotary carrier moving parallel therewith on a different level, and consisting of top and bottom plates between which the package is held, vertically-moving plungers X and Y adapted to grasp the package between them and transfer it out of the pocket and to the level of said carrier, and a pusher Z adapted to push the package from between said plungers into the carrier.

7. In a packaging-machine, an endless carrier for the packages, consisting of continuous top and bottom plates adapted to receive the successive packages between them, combined with a pusher adapted to push the successive packages into said carrier, and a pusher adapted to push the packages successively out from said carrier, with mechanism for operating said pushers connected to move them simultaneously.

8. In a packaging-machine, an endless carrier for the packages consisting of parallel top and bottom plates, a pusher adapted to push the successive packages into said carrier, another pusher adapted to push them successively out of the carrier, a reciprocating slide carrying both said pushers, and driving mechanism for alternately advancing the carrier and reciprocating said slide at intervals.

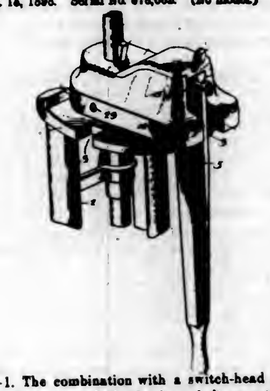
9. In a packaging-machine, a carrier consisting of upper and lower plates 331 and 332, with intervening radial partitions 334 forming compartments, combined with two pushers arranged to reciprocate into successive compartments for thrusting packages into and out of said compartments.

10. The combination with a wheel P carrying pockets N N, of a carrier 330 fastened beneath and turning with said wheel, consisting of top and bottom plates between which to embrace the packages and means for transferring packages from the pockets of said wheel to said carrier.

11. In a packaging-machine, the combination with means for operating on and delivering packages, of a carrier for receiving the packages having top and bottom plates adapted to receive the folded ends of the packages between them, one of said plates mounted to yield vertically to adapt itself to variations in the height of a package.

12. In a packaging-machine, the combination with means for operating on and delivering packages, of a carrier for receiving the packages having top and bottom plates adapted to receive the folded ends of the packages between them, the top plate being subdivided and constructed as segmental vertically-yielding plates movable to adapt themselves to variations in the height of the successive packages.

609,473. SWITCH-STAND. JOHN G. SORENSON, Davenport, Iowa. Filed Apr. 18, 1898. Serial No. 678,062. (No model.)



Claim.—1. The combination with a switch-head and a pivotal switch-lever, of a locking device having a bolt mounted for sliding movement, and a swinging tumbler for engagement with a shoulder on the bolt and having a member in the path of a projection on the bolt to cause engagement of the tumbler with said shoulder, substantially as specified.

2. The combination with a switch-head and a pivotal switch-lever, of a locking device having a bolt mounted for sliding movement and provided with a cam-face and a spaced shoulder, and a swinging trip adapted for engagement with said shoulder and having an offset arranged in the path of the cam-face of the bolt, substantially as specified.

3. The combination with a switch-head and a pivotal switch-lever, of a locking device having a bolt mounted for sliding movement and yieldingly held in its extended position, said bolt being provided with a cam-face and a spaced shoulder, and a pivotal trip for terminal engagement with said shoulder and having an offset arranged in the path of said cam-face, the tumbler being deflected at an intermediate point for engagement by a key-ward, substantially as specified.

4. The combination of a switch-head having a switch-lever seat, a switch-lever pivotally mounted at an intermediate point in said seat, a fixed stop-ear arranged in the path of the free end of the switch-lever extension, for checking the movement of the lever when it reaches its normal or engaging position, and a locking device carried by the switch-lever extension and having a bolt for engagement with a socket in the wall of the switch-lever seat contiguous to said stop, substantially as specified.

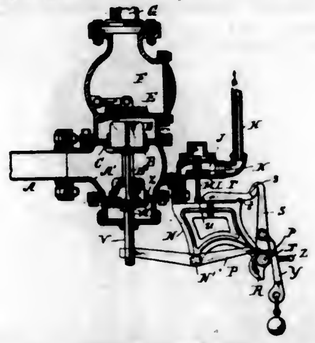
5. The combination of a switch-head having a switch-lever seat, a switch-lever fulcrumed at an intermediate point in said seat, a fixed stop-lip arranged in the path of the inner end or extension of the switch-lever, the latter being rabbeted to arrange the face of the lever flush with the exterior surface of said stop-lip, a locking device mounted upon the switch-lever extension and having a bolt for engagement with a socket in the wall of the switch-lever seat contiguous to the plane of the stop-lip, and a keyhole-guard pivotally mounted upon said stop-lip to cover the keyhole of the switch-lever, substantially as specified.

609,474. DRY-PIPE VALVE FOR FIRE-EXTINGUISHING SYSTEMS. ERNST F. STECK, Chicago, Ill., assignor to the Fire Extinguisher Manufacturing Company, same place and New York, N. Y. Filed Jan. 14, 1898. Serial No. 666,617. (No model.)

Claim.—1. In an automatic dry-pipe valve, the combination with a dry-pipe system, a water-supply pipe terminating in a chamber as shown, said chamber having an outlet into the dry-pipe system, a main valve governing said outlet, a counterbalancing-valve of lesser area than the main valve and fixedly secured thereto located in said chamber and exposed to the water-pressure therein so as to partly counteract the pressure on the main valve, a stem on the counterbalanciag-valve, and operating means substantially as shown and described connected to said stem and to the dry-pipe system, as and for the purpose set forth.

2. In an automatic dry-pipe valve, the combination of the main supply-pipe, a dry-pipe system, the main valve held closed by the water-pressure, a counterbalancing-valve connected thereto of a lesser area than the main valve and also exposed to the water-pressure, automatic releasing mechanism connected to the controlling-valve and to the dry-pipe system, and a valve located in the dry-pipe system and holding the releasing mechanism in check, as and for the purpose set forth.

3. In an automatic dry-pipe valve, the combination of a main water-supply pipe A, the chamber A′, main valve B, counterbalancing-valve W of lesser area, connecting-stem B′, a stem V upon the counterbalancing-valve, an operating-lever P, a valve K in the dry-pipe system, and mechanism substantially as shown and described extending between the said valve K and the lever P and adapted to operate upon the withdrawal of the air-pressure from the valve K, as and for the purpose set forth.



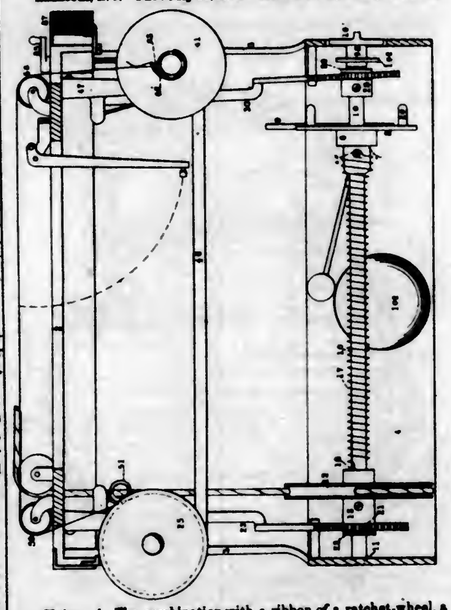
609,475. PYROXYLIN COMPOUND. JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, New York, N. Y., a Corporation of New Jersey. Filed May 7, 1898. Serial No. 679,997. (No specimens.)

Claim.—1. A new composition of matter consisting of pyroxylin and a salt of camphoric acid, substantially as described.

2. A new composition of matter consisting of pyroxylin, a solvent of the same, and a salt of camphoric acid, substantially as described.

3. A new composition of matter containing pyroxylin and sodium camphorate.

609,476. TYPE-WRITING MACHINE. BURNHAM C. STICKNEY, Elizabeth, N. J. Filed July 30, 1896. Serial No. 601,094. (No model.)



Claim.—1. The combination with a ribbon of a ratchet-wheel, a pawl, and a pinion connected to the carriage-driving mechanism and adapted to actuate the pawl, the pawl being provided with teeth to engage the ratchet-wheel, and also with teeth to engage the pinion, substantially as set forth.

2. The combination with a ribbon of a ratchet-wheel, a pawl, a pinion for actuating the pawl, the pawl being provided with teeth to engage the ratchet-wheel and also with teeth to engage the pinion, and a spring for pressing the pawl into engagement with the ratchet-wheel, substantially as set forth.

3. In a type-writing machine, the combination with a ribbon, a pair of spools and a pair of ratchet-wheels of a transverse carriage-driving shaft provided with a pair of pawls for actuating the ratchet-wheels and provided also with a sheave, and a cord attached at one end to the sheave and at the other end to the carriage, substantially as set forth.

4. The combination with a ribbon, a pair of spools and a pair of ratchet-wheels of an actuating-shaft, a pair of pinions thereon and a pair of pawls adapted to be actuated by said pinions and in turn to actuate said ratchet-wheels, substantially as set forth.

5. In a type-writing machine, the combination with a ribbon, a pair of spools, one located at each side of the machine, and a pair of ratchet-wheels, of a carriage-driving shaft mounted transversely at the base of the machine and provided with a pair of pinions, and a pair of pawls geared to the pinions and extending to the ratchet-wheels, substantially as set forth.

6. The combination with a ribbon of a spool arranged to rotate and means for mechanically swinging the spool in the plane of its rotation, substantially as set forth.

7. The combination of a ribbon, a pair of spools, a pair of eccentrically-pivoted supports, and a link pivoted at each end to one of the supports, and serving to transmit the motion of one to the other, substantially as set forth.

8. The combination with a ribbon of a pair of reciprocatory spools, each being adapted to receive and wind the ribbon while at one end of its reciprocal movement and to pay out the ribbon while at the other end of such movement, and means for mechanically moving either spool to its winding position and simultaneously moving the other spool to its delivering position, substantially as set forth.

9. In a type-writing machine the combination with a pair of spools arranged at the sides of the machine and a ribbon arranged across the machine and extending down to the spools, of means for mechanically elevating either spool and simultaneously depressing the other spool, substantially as set forth.

10. The combination of a ribbon, a spool, a ratchet-wheel, a driving-pawl, and a pivoted support provided with a switch to alternately engage and disengage the pawl and ratchet-wheel, substantially as set forth.

11. The combination with a ribbon of a pair of reciprocatory ribbon-spools, a pair of reciprocatory supports therefor, means for connecting the supports so that they will move simultaneously, and a double-acting spring arranged to act upon both supports to hold them at either end of their reciprocal motion, substantially as set forth.

12. The combination with a ribbon of a spool, a ratchet-wheel, a pivoted support therefor, a driving-pawl, a switch, and a double-acting spring, substantially as set forth.

13. The combination with a ribbon of a pair of spools, means for winding the ribbon upon either spool, a switch, and means whereby either spool may be actuated to operate the switch at the cessation of the unwinding movement of the other spool, substantially as set forth.

14. The combination with a ribbon of a pair of spools, a pair of ratchet-wheels, a pair of driving-pawls directly engaging said ratchet-wheels, means for reciprocating the pawls, a pair of vibratory supports, and a bar, as 48, connecting the supports and also adapted to move the pawls alternately out of engagement with the ratchet-wheels, substantially as set forth.

15. The combination with a ribbon of a pair of spools, a pair of driving-wheels, means for actuating the wheels, and a switch controlled by a double-acting spring and arranged to be operated at the cessation of the unwinding movement of either spool, substantially as set forth.

16. The combination with a ribbon, a pair of spools, and means for winding the ribbon from either spool to the other, of means for mechanically prolonging the longitudinal movement of the ribbon past the printing-point after it ceases to unwind from the delivery-spool, substantially as set forth.

17. The combination of a ribbon, a pair of spools, means for winding the ribbon from either spool to the other, means for prolonging the longitudinal movement of the ribbon past the printing-point after it ceases to unwind from the delivery-spool, and a switch arranged to be actuated during such prolongation of the movement of the ribbon, substantially as set forth.

18. The combination of a ribbon, a pair of spools, and means for mechanically actuating either spool both to wind the ribbon thereon and to prolong the longitudinal movement of the ribbon past the printing-point after it ceases to unwind from the other spool, substantially as set forth.

19. The combination of a ribbon, a pair of spools, a switch, and means for actuating either spool, first, to wind the ribbon thereon; second, to prolong the longitudinal movement of the ribbon past the printing-point after it ceases to unwind from the other spool, and, third, to operate the switch during such prolonged movement, substantially as set forth.

20. The combination with a ribbon and a spool of means for mechanically moving the spool laterally at the cessation of its unwinding movement and thereby prolonging the longitudinal movement of the ribbon past the printing-point, substantially as set forth.

21. The combination with a ribbon of a pair of spools and means for mechanically actuating either spool to wind the ribbon thereon and to also move the other spool laterally at the cessation of the unwinding movement thereof and thereby prolong the longitudinal movement of the ribbon past the printing-point, substantially as set forth.

22. The combination with a ribbon of a pair of spools, a switch, and means for actuating either spool, first, to wind the ribbon thereon; second, to move the other spool laterally at the cessation of the unwinding movement thereof and thereby prolong the longitudinal movement of the ribbon past the printing-point, and, third, to operate the switch during such prolonged movement of the ribbon, substantially as set forth.

23. The combination with a ribbon of a pair of spools, means for winding the ribbon upon either spool, a switching mechanism arranged to operate through the longitudinal movements of the ribbon when the body of the ribbon becomes wound upon either spool, to disengage the same from its winding means, and means for relieving the ribbon from longitudinal stress during such disengagement, substantially as set forth.

24. The combination with a ribbon of a pair of spools and means for mechanically winding the ribbon upon either spool and mechanically moving said spool laterally at the cessation of its winding movement, substantially as set forth.

25. The combination with a ribbon and a pair of spools connected for a simultaneous lateral movement, of means for mechanically winding the ribbon upon either spool and mechanically moving both spools laterally at the cessation of the winding movement, substantially as set forth.

26. In a type-writing machine, the combination with a pair of spools located at the sides of the machine, the spools being connected for a simultaneous lateral movement, and a ribbon arranged across the machine and extending down to the spools, of means for winding the ribbon upon either spool and forcing such spool downward and the other spool upward when the body of the ribbon becomes wound upon the said winding-spool, substantially as set forth.

27. The combination with a ribbon, a spool and a ratchet-wheel, of a pawl adapted to rotate the ratchet-wheel and spool and also to move the same laterally, substantially as set forth.

28. In a type-writing machine, the combination with spools provided with ratchet-wheels and located at the sides of the machine, the spools being connected for a simultaneous lateral movement, and a ribbon arranged across the machine and extending down to the spools, of a pair of pawls, each arranged to rotate its associate ratchet-wheel and spool to wind the ribbon thereon, and to also force such spool downward and the other spool upward at the cessation of the winding movement of the spool, substantially as set forth.

29. The combination with a ribbon, a pair of spools and a switch, of means for winding the ribbon upon either spool and moving such spool laterally to actuate the switch at the cessation of its winding movement, substantially as set forth.

30. The combination with a ribbon, a pair of spools provided with ratchet-wheels, and a switch, of a pair of pawls, each arranged to rotate its associated ratchet-wheel and spool to wind the ribbon thereon and to also move such spool laterally to operate the switch when the body of the ribbon becomes wound thereon, substantially as set forth.

31. The combination with a ribbon, a pair of spools, a switch, and a double-acting spring, of means for winding the ribbon upon either spool; and means, called into action at the cessation of the unwinding movement of the other spool, for operating the double-acting spring to actuate the switch, substantially as set forth.

32. The combination with a ribbon of a pair of spools, pawl-and-ratchet mechanism for winding the ribbon upon either spool, a switch, and a switch-actuating spring called into operation through the tension of the ribbon when it is all unwound from the other spool, substantially as set forth.

33. The combination with a ribbon and a pair of spools of means for applying frictional opposition to the rotation of either spool only during the unwinding of the ribbon therefrom, substantially as set forth.

34. The combination with a ribbon, a pair of spools and a switching mechanism arranged to be operated through the longitudinal movements of the ribbon, of means for applying frictional opposition to the rotation of either spool during the unwinding of the ribbon

therefrom, the construction and arrangement being such that the spool is relieved from such frictional application during the winding of the ribbon thereon, substantially as set forth.

35. The combination with a ribbon of a laterally-reciprocating spool and a stop arranged to both limit the lateral movement of the spool in one direction and frictionally oppose the unwinding of the ribbon therefrom, substantially as set forth.

36. The combination with a ribbon of a laterally-reciprocating spool, a friction-stop, and a spring for the spool arranged to augment the frictional opposition of the stop to the unwinding movement of the spool, substantially as set forth.

37. The combination with a ribbon of a laterally-movable spool provided with a boss or collar, and a friction-stop at said boss or collar, substantially as set forth.

38. The combination of a ribbon, a pair of spools, a switch, and means whereby the spools are alternately actuated, first, to wind the ribbon thereon; second, to move the ribbon widthwise, and, third, to operate the switch at the cessation of the unwinding movement of the other spool, substantially as set forth.

39. In a type-writing machine, the combination with a paper-carriage, a propelling-spring, a ribbon, a pair of spools, and a ribbon-switch, of a pawl-and-ratchet mechanism actuated by said spring and serving to move the ribbon lengthwise and widthwise and to operate the switch, substantially as set forth.

40. The combination of a spool, a shaft, a detent, a spring, and a plunger, substantially as set forth.

41. The combination of a shaft provided with a sliding sleeve, a spool arranged to fit over the sleeve, a detent, and a spring, substantially as set forth.

42. The combination with a shaft of a sleeve arranged to slide thereon and adapted to bear a ribbon-spool, the sleeve being prolonged beyond the end of the shaft, a spring arranged within the sleeve and adapted to bear in one direction against said end of the shaft and in the other direction against the sleeve, and a spool-detent controlled by the movements of the sleeve, substantially as set forth.

43. The combination of a detachable ribbon-spool provided with a series of circularly-disposed notches, and a spring-operated detent arranged to enter any of the notches, substantially as set forth.

44. The combination of a spool-support with a detachable and endwise-reversible ribbon-spool provided with a series of circularly-disposed notches, and a spring-detent for entering the notches and locking the spool upon its support, substantially as set forth.

45. The combination with a spool-support of a detachable and endwise-reversible ribbon-spool provided with a series of circularly-disposed notches at each end, and a spring-detent adapted to enter any of the notches and lock the spool in position, substantially as set forth.

46. The combination of a spool-support provided with a detent, and a detachable ribbon-spool composed of two flanges and a core, the core being provided with circularly-disposed openings to receive the detent, substantially as set forth.

47. The combination of a shaft, a detent pivoted thereon, and a detachable spool supported thereby and provided with a series of circularly-disposed notches for receiving the detent, substantially as set forth.

48. The combination of a shaft provided with an independently-movable sleeve, a spool arranged to fit over the sleeve and to be supported thereon, and a detent pivoted on the shaft and controlled by the sleeve, substantially as set forth.

49. The combination of a shaft, a spring-detent, a spool, and a plunger arranged at one end of the spool for operating the detent to release the spool, substantially as set forth.

50. In a type-writing machine, the combination of a shaft, a spring-detent, a spool, and a plunger arranged at the front of the spool for operating the detent to release the spool, substantially as set forth.

51. The combination of a ribbon spool, a shaft, a detent mounted on the shaft, a sleeve arranged on the shaft and provided with an opening, and a projection on the detent arranged within said opening, substantially as set forth.

52. The combination with a ribbon-spool of a shaft, a detent projecting therefrom to lock the spool to the shaft, and a sleeve arranged to slide upon the shaft and force the detent to release the spool, substantially as set forth.

53. The combination with a ribbon-spool of a shaft provided with a detent for locking the spool and also with a plunger for forcing the detent to release the spool, substantially as set forth.

54. The combination with a pair of spools of a ribbon attached to each spool by a yielding connection adapted to yield when the spool is empty and the ribbon is drawn taut, means for winding the ribbon upon either spool, and a switching mechanism arranged to be called into operation by the cessation of the delivery of the ribbon from either spool, substantially as set forth.

55. The combination with a ribbon of a pair of spools, means for winding the ribbon upon either spool, a switching mechanism called into action at the cessation of the unwinding movement of either spool and arranged to engage such spool with its winding means prior to the disengagement of the other spool from its winding means, and means operating to release the ribbon from the winding action of the empty spool during such premature engagement with its winding means, substantially as set forth.

56. The combination with a spool having a series of openings of a spring arranged upon the spool and provided with a projection for entering any of the openings, and a ribbon attached to the spring and adapted to withdraw the projection to permit the spool to rotate independently of the spring and ribbon, substantially as set forth.

57. The combination of a ribbon, a laterally-reciprocating ribbon-spool provided with a winding-wheel, and a driving-wheel provided with a crank and arranged to engage said winding-wheel at one end of said reciprocal movement, whereby the spool may be rotated manually, substantially as set forth.

58. In a type-writing machine, the combination with a ribbon and a detachable spool of a top plate arranged over the spool and provided with a slot or opening for the passage of the ribbon, and a gate arranged at said opening, substantially as set forth.

59. The combination with a ribbon of a pair of endwise-inactive spools and a pair of pulleys over which the ribbon passes and to which it clings, the pulleys being adapted to reciprocate endwise independently of the spools and thereby constantly actuate the ribbon in widthwise direction, substantially as set forth.

60. The combination with a ribbon of a pair of endwise-inactive spools located at the sides of the machine, a pair of horizontal deflectors arranged above the spools, the ribbon being passed up from one spool and partly around the first deflector, thence across to the other deflector and partly around the same, and thence down to the other spool, and means for reciprocating the deflectors endwise independently of the spools at the passage of the ribbon from either spool to the other, to constantly actuate the portion of the ribbon between the deflectors in widthwise direction, independently of the remaining portion thereof, by reason of the clinging of the ribbon to the deflectors, substantially as set forth.

61. The combination with a ribbon of a pair of endwise-inactive spools located at the sides of the machine, a pair of horizontal pulleys arranged above the spools, the ribbon being passed up from one spool and partly around the same, so that it clings to the pulleys, and thence down to the other spool, and means for reciprocating the pulleys endwise independently of the spools, so as to constantly actuate the ribbon in widthwise direction, by reason of the clinging of the ribbon to the pulleys, substantially as set forth.

62. The combination with a ribbon of an endwise-reciprocating pulley, the construction and arrangement being such that the pulley is reciprocated endwise when set in motion by the passage of the ribbon thereover, substantially as set forth.

63. The combination with a ribbon of a rotating pulley, a cam arranged to cooperate therewith, and means for engaging the cam to cause the pulley to reciprocate endwise by reason of its rotation, substantially as set forth.

64. The combination with a ribbon of a pulley, a diagonally-arranged disk, and means for engaging the disk to cause the pulley to move endwise when rotated, substantially as set forth.

65. The combination of a pulley provided with a pair of diagonal disks and a pair of projections for engaging the disks to reciprocate the pulley endwise when rotated, substantially as set forth.

66. The combination of a pulley, a pair of diagonally-arranged disks, a bracket, and a pair of guiding-pins.

67. In a type-writing machine, the combination with the paper-carriage of a carriage-driving shaft arranged transversely in the base of the machine, and an arm arranged within the base for supporting the shaft at one end, the shaft being prolonged within the base beyond said arm and bearing upon its end an adjustable sleeve or cap for setting the carriage-alarm, substantially as set forth.

68. In a type-writing machine, the combination with the paper-carriage of a carriage-driving shaft arranged in the base of the machine, and being provided at its end with an adjustable sleeve or cap for setting the carriage-alarm, and such sleeve or cap being arranged to protrude through the wall of the base, substantially as set forth.

69. In a type-writing machine, the combination with a base and a top plate, of a carriage supported upon the top plate, a shaft arranged within the base and provided within the base with a sheave, spring, spring-adjusting means and adjustable sleeve for operating the carriage-alarm, and a cord attached to the sheave and extending up to the top plate and passing over a pulley thereat to a connection with the carriage, substantially as set forth.

70. In a type-writing machine, the combination with a paper-carriage, an inking-ribbon and a pair of spools, of a transversely-arranged shaft provided within the base with a sheave, spring, ribbon-spool-actuating means and adjustable sleeve for setting the carriage-alarm, and a cord attached to the sheave and connected to the paper-carriage, substantially as set forth.

71. The combination of a switching mechanism adapted to operate at the cessation of the unwinding movement of either spool without subjecting the ribbon to excessive wear at any point; spool-winding means; a ribbon, and a pair of spools secured thereto; the ribbon with its attached spools being detachably connected to both the switching mechanism and the winding means, substantially as set forth.

72. The combination of mechanism for mechanically reversing the longitudinal travel of the ribbon; spool-winding means; a ribbon, and a pair of transposable spools secured thereto; the ribbon with its attached spools being detachably connected to both the reversing mechanism and the winding means, so that the ribbon and spools may be bodily removed, turned end for end and replaced, without disconnecting the ribbon from either spool, whereby a different portion of the ribbon, considered widthwise, is subjected to the action of the types, substantially as set forth.

73. The combination of a switching mechanism actuable through the longitudinal movements of the ribbon; spool-winding means; a ribbon, and a pair of transposable spools secured thereto; the ribbon with its attached spools being detachably connected to both the switching mechanism and the winding means, so that the ribbon and spools may be bodily removed, turned end for end and replaced, without disconnecting the ribbon from either spool, whereby a different portion of the ribbon, considered widthwise, is subjected to the action of the types, substantially as set forth.

74. The combination of a switching mechanism arranged to operate at the cessation of the unwinding movement of either spool; spool-winding means; a ribbon, and a pair of transposable spools secured thereto; the ribbon with its attached spools being detachably connected to both the switching mechanism and the winding means, so that the ribbon and spools may be bodily removed, turned end for end and replaced, without disconnecting the ribbon from either spool, whereby a different portion of the ribbon, considered widthwise, is subjected to the action of the types, substantially as set forth.

75. The combination of mechanism for mechanically reversing the longitudinal travel of the ribbon; spool-winding means; a ribbon, and a pair of endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to both the reversing mechanism and the winding means, so that the ribbon and spools may be bodily removed, turned bodily over and replaced, in the described manner, without disconnecting the ribbon from either spool, whereby the other surface of the ribbon is presented to the types, substantially as set forth.

76. The combination of switching mechanism actuable through the longitudinal movements of the ribbon; spool-winding means; a ribbon, and a pair of endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to both the switching mechanism and the winding means, so that the ribbon and spools may be bodily removed, turned bodily over and replaced, in the described manner, without disconnecting the ribbon from either spool, whereby the other surface of the ribbon is presented to the types, substantially as set forth.

77. The combination of a switching mechanism arranged to operate at the cessation of the unwinding movement of either spool; spool-winding means; a ribbon, and a pair of endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to both the switching mechanism and the winding means, so that the ribbon and spools may be bodily removed, turned bodily over and replaced, in the described manner, without disconnecting the ribbon from either spool, whereby the other surface of the ribbon is presented to the types, substantially as set forth.

78. The combination of mechanism for mechanically reversing the longitudinal travel of the ribbon; spool-winding means; a ribbon, and a pair of transposable and endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to both the reversing mechanism and the winding means, so that the ribbon and spools may be bodily removed and either turned end for end or turned bodily over and replaced, without disconnecting the ribbon from either spool, substantially as set forth.

79. The combination of a switching mechanism actuable through the longitudinal movements of the ribbon; spool-winding means; a ribbon, and a pair of transposable and endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to both the switching mechanism and the winding means, so that the ribbon and spools may be bodily removed and either turned end for end or turned bodily over and replaced, without disconnecting the ribbon from either spool, substantially as set forth.

80. The combination of a switching mechanism arranged to operate at the cessation of the unwinding movement of either spool; spool-winding means; a ribbon, and a pair of transposable and endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to both the switching mechanism and the winding means, so that the ribbon and spools may be bodily removed and either turned end for end or turned bodily over and replaced, without disconnecting the ribbon from either spool, substantially as set forth.

81. The combination of means for mechanically imparting widthwise movement to the ribbon; spool-winding means; a ribbon, and a pair of spools secured thereto; the ribbon with its attached spools being detachably connected both to said means for imparting widthwise movement and to said winding means, so that the ribbon and spools may be bodily removed from the machine without disconnecting the ribbon from either spool, substantially as set forth.

82. The combination of means for mechanically imparting widthwise movement to the ribbon; spool-winding means; a ribbon, and a pair of transposable spools secured thereto; the ribbon with its attached spools being detachably connected both to said means for imparting widthwise movement and to said winding means, so that the ribbon and spools may be bodily removed, turned end for end and replaced without disconnecting the ribbon from either spool, substantially as set forth.

83. The combination of means for mechanically imparting widthwise movement to the ribbon; spool-winding means, a ribbon, and a pair of endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to said means for imparting widthwise movement and to said spool-winding means, so that the ribbon and spools may be bodily removed, turned bodily over and replaced without disconnecting the ribbon from either spool, substantially as set forth.

84. The combination of means for mechanically imparting widthwise movement to the ribbon; spool-winding means; a ribbon, and a pair of transposable and endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to said means for imparting widthwise movement and to said spool-winding means, so that the ribbon and spools may be bodily removed and turned end for end or turned bodily over and replaced without disconnecting the ribbon from either spool, substantially as set forth.

85. The combination of means for mechanically reversing the longitudinal travel of the ribbon; means for mechanically moving the ribbon widthwise; spool-winding means; a ribbon, and a pair of spools secured thereto; the ribbon with its attached spools being detachably connected to the reversing, widthwise-moving and winding means, whereby ribbon and spools may be bodily removed from the machine without disconnecting the ribbon from either spool, substantially as set forth.

86. The combination of means for mechanically reversing the longitudinal travel of the ribbon; means for mechanically moving the ribbon widthwise; spool-winding means; a ribbon, and a pair of transposable spools secured thereto; the ribbon with its attached spools being detachably connected to the reversing, widthwise-moving and winding means, whereby the ribbon and its attached spools may be removed, turned end for end and replaced without disconnecting the ribbon from either spool, substantially as set forth.

87. The combination of means for mechanically reversing the longitudinal travel of the ribbon; means for mechanically moving the ribbon widthwise; spool-winding means; a ribbon, and a pair of endwise-reversible spools secured thereto; the ribbon with its attached spools being detachably connected to the reversing, widthwise-moving and winding means, whereby the ribbon with its attached spools may be removed, turned bodily over and replaced without disconnecting the ribbon from either spool, substantially as set forth.

88. The combination of a switching mechanism adapted to be operated through the longitudinal movements of the ribbon; means for mechanically moving the ribbon widthwise; spool-winding means; a ribbon, and a pair of spools secured thereto; the ribbon with its attached spools being detachably connected to the switching mechanism and to the widthwise-moving and winding means, whereby ribbon and spools may be bodily removed from the machine without disconnecting the ribbon from either spool, substantially as set forth.

89. The combination of a switching mechanism arranged to operate at the cessation of the unwinding movement of either spool; means for mechanically moving the ribbon widthwise; a ribbon, and a pair of spools secured thereto; the ribbon with its attached spools being detachably connected to the switching mechanism and to the widthwise-moving and winding means, whereby ribbon and spools may be bodily removed from the machine without disconnecting the ribbon from either spool, substantially as set forth.

90. In a type-writing machine provided with a base, a top plate, and a paper-carriage supported above the top plate, the combination of a carriage-driving shaft provided with an adjustable spring and mounted transversely within the base, a sheave fixed on said shaft within the base and connected by a cord to the carriage, a detachable ribbon-spool at each side of the machine, a ratchet-wheel in rear of each spool, and means at each end of the said shaft for actuating the ratchet-wheels, substantially as set forth.

91. In a type-writing machine, the combination with a ribbon, a

pair of spools, a pair of ratchet-wheels and a switch, of a transverse carriage-driving shaft provided at its ends with a pair of pawls for actuating the ratchet-wheels and the switch, substantially as set forth.

92. The combination with a ribbon-spool-winding means and a mechanically-operated switch of a ribbon-spool adapted to move laterally at the switching operation, substantially as set forth.

93. The combination with a ribbon spool-winding means of a mechanically-operated switch and a ribbon-spool provided with a pivoted support, whereby it is swung laterally at the switching operation, substantially as set forth.

94. The combination with a ribbon of a pair of independently-mounted spools, means for winding the ribbon from either spool to the other, a mechanically-operated switch, and means for moving the spools laterally at the switching operation, substantially as set forth.

95. The combination with a ribbon of a shaft bearing a ribbon-spool and a ratchet-wheel, a mechanically-operated switch, and a hanger or support for the shaft adapted to vibrate at the switching operation, substantially as set forth.

96. The combination of a pair of deflectors, over which the ribbon passes and to which it clings; means for reciprocating the deflectors endwise, whereby the ribbon is constantly actuated in widthwise direction; a ribbon, and a pair of endwise-inactive spools secured thereto; the ribbon with its attached spools being detachably connected to the deflectors and the winding means, so that the ribbon and spools may be bodily removed from the machine, without disconnecting the ribbon from either spool, substantially as set forth.

97. The combination of a spool-shaft supported at one end; a spool arranged to be slipped onto the free end of the shaft; a detent to hold the spool on the shaft; and a device arranged on the free end of the shaft outside of the spool and adapted to be moved in the direction of the spool-axis to release the spool from the shaft, substantially as set forth.

98. In a type-writing machine, the combination of a carriage-propelling spring of ribbon-spool-winding means adapted to be actuated thereby; means for mechanically reversing the longitudinal movement of the ribbon also adapted to be operated by said spring; a ribbon, and a pair of spools secured thereto, the ribbon with its attached spools being detachably connected to said spring-operated spool winding and reversing means, whereby ribbon and spools may be bodily withdrawn from the machine without disconnecting the ribbon from either spool, substantially as set forth.

99. In a type-writing machine, the combination of a carriage-propelling spring of ribbon-spool-winding means adapted to be actuated thereby; means for mechanically reversing the longitudinal movement of the ribbon also adapted to be operated by said spring; means also adapted to be operated by said spring for imparting widthwise movement to the ribbon; a ribbon, and a pair of spools secured thereto, the ribbon with its attached spools being detachably connected to said spring-operated spool winding, reversing, and widthwise-moving means, whereby ribbon and spools may be bodily withdrawn from the machine without disconnecting the ribbon from either spool, substantially as set forth.

100. The combination with a ribbon and winding means therefor of a self-reciprocating pulley partly around which the ribbon passes and by which the ribbon is moved widthwise, substantially as set forth.

101. In a type-writing machine the combination of a pair of spools, one arranged at each side of the type system, the spools being disposed edge to edge, so that they rotate in transverse planes, and the ribbon extending from one spool once across the type system to the opposite spool, and a switch adapted to operate mechanically at the cessation of the unwinding movement of either spool, substantially as set forth.

102. The combination with a ribbon of a pair of spools, a laterally-movable ratchet-wheel connected to each spool, and a spring-actuated driving-pawl for each ratchet-wheel, each pawl being provided with a series of teeth for engaging its associated ratchet-wheel both to rotate it and to move it in lateral direction, substantially as set forth.

103. In a type-writing machine provided with a system of types and a paper-carriage adapted to travel over the types, the combination of a pair of vertically-swinging supports, one at each side of the type system and below the path of the paper-carriage; stops for limiting the movement of the vertically-swinging supports; a pair of ribbon-spools, one upon each support; a pair of winding-wheels, one at each ribbon-spool; a pair of actuating devices, one at each winding-wheel; and means actuable through the movements of the vertically-swinging supports for engaging either winding-wheel with its associated actuating device, and simultaneously disengaging the other winding-wheel from its associated actuating device, substantially as set forth.

104. In a type-writing machine having a circular series of type-bars mounted in a top plate, and both a paper-carriage and a ribbon arranged to travel transversely over the type-bars, the combination with the spool-winding mechanism of, first, a pair of detachable ribbon-spools, one at each side of the type-bar system, the ribbon being passed up from one spool, across and over the type-bars and down to the other spool, and the construction being such that the spools may be slipped off and together with the ribbon lifted bodily from the machine, without disconnecting the ribbon from either spool, and, second, a switch connected to the spool-winding mechanism and adapted to operate mechanically at the cessation of the unwinding movement of either spool, substantially as set forth.

105. In a type-writing machine having a circular series of type-bars mounted in a top plate, and both a paper-carriage and a ribbon arranged to travel transversely over the type-bars, the combination with the spool-winding mechanism of, first, a pair of detachable ribbon-spools, one at each side of the type-bar system, the ribbon being passed up from one spool, across and over the type-bars and down to the other spool, and the construction being such that the spools may be slipped off and together with the ribbon lifted bodily from the machine, without disconnecting the ribbon from either spool, and, second, a pair of endwise-reciprocating deflectors, one on each side of the type-bar system, around which the ribbon passes and to which it consequently clings, whereby movement is constantly imparted to the ribbon in widthwise direction, substantially as set forth.

106. The combination with a ribbon of a pair of spools, each provided with a rotary driver, such as a ratchet-wheel, and an actuator therefor, such as a pawl; and a switching mechanism called into operation by either actuator when the ribbon becomes taut by reason of the cessation of the unwinding movement of the delivery-spool, and adapted to effect the disengagement of said actuator from its associated rotary driver and to also effect the reëngagement of the other actuator with its associated rotary driver; the construction and arrangement being such that at such cessation of the unwinding movement of the delivery-spool the switching mechanism is positively actuated independently of the rotary driver and actuator associated with the empty spool, and such that the rewinding of the ribbon upon the empty spool begins simultaneously with the cessation of the longitudinal movement of the ribbon past the printing-point in either direction, substantially as set forth.

107. In a type-writing machine, the combination with a ribbon of a pair of spools, one located at each side of the machine, and each provided with a rotary driver, such as a ratchet-wheel, and an actuator therefor, such as a pawl; and a switching mechanism called into operation by either actuator when the ribbon becomes taut by reason of the cessation of the unwinding movement of the delivery-spool, and adapted to effect the disengagement of said actuator from its associated rotary driver and to also effect the reëngagement of the other actuator with its associated rotary driver; the construction and arrangement being such that at such cessation of the unwinding movement of the delivery-spool the switching mechanism is positively actuated independently of the rotary driver and actuator associated with the empty spool, and such that the rewinding of the ribbon upon the empty spool begins simultaneously with the cessation of the longitudinal movement of the ribbon past the printing-point in either direction, substantially as set forth.

108. In a type-writing machine, the combination with a ribbon of a pair of spools, one located at each side of the machine, and each provided with a rotary driver, such as a ratchet-wheel, and an actuator therefor, such as a pawl; a spring arranged both to propel the paper-carriage and to also operate the said actuators; and a switching mechanism called into operation by either actuator when the ribbon becomes taut by reason of the cessation of the unwinding movement of the delivery-spool, and adapted to effect the disengagement of said actuator from its associated rotary driver and to also effect the reëngagement of the other actuator with its associated rotary driver; the construction and arrangement being such that at such cessation of the unwinding movement of the delivery-spool the switching mechanism is positively actuated independently of the rotary driver and actuator associated with the empty spool, and such that the rewinding of the ribbon upon the empty spool begins simultaneously with the cessation of the longitudinal movement of the ribbon past the printing-point in either direction, substantially as set forth.

109. The combination with a ribbon of a receiving-spool; a ratchet-wheel operatively connected thereto; a delivery-spool; a pawl adapted to engage the ratchet-wheel to wind the ribbon upon the receiving-spool; and a switching mechanism adapted to be operated by the pawl through further movements of the spool and ribbon when the ribbon becomes taut by reason of the cessation of the unwinding movement of the delivery-spool, and thereby effect a disconnection between the pawl and the receiving-spool, substantially as set forth.

110. The combination with a ribbon of a pair of spools, each provided with a ratchet-wheel and an actuating-pawl; and a switching mechanism adapted to be operated by either pawl through further movements of its associated spool and the ribbon when the ribbon becomes taut at the cessation of the unwinding movement of the other spool, and to thereby effect both a disengagement between such pawl and its associated ratchet-wheel, and a reëngagement of the other pawl to its associated ratchet-wheel, substantially as set forth.

111. The combination of a ribbon; a pair of spools; means for winding the ribbon alternately upon the spools; a switching mechanism connected to the winding means and adapted to be operated by the ribbon through the terminal longitudinal movement thereof in either direction; and means for applying frictional opposition to the longitudinal movements of the ribbon only during the interval between switching operations, substantially as set forth.

112. In an automatic ribbon winding and switching mechanism in which the actuation of the switching mechanism necessitates a longitudinal strain upon the ribbon, in consequence of which there is liability of the coils of ribbon drawing more tightly upon the winding-spool, thus delaying the consummation of the switching operation: the combination with the spools, the winding means and the switching mechanism of means for applying frictional opposition to the spools alternately during the unwinding of the ribbon therefrom, whereby the coils of ribbon are drawn tightly upon the winding-spool during the winding of the ribbon thereon and prior to the actuation of the switching mechanism, substantially as set forth.

113. In a type-writing machine, the combination of a ribbon-spool, a horizontally-arranged shaft, and a movable support or bracket, the shaft being rotatably supported at its rear end in the bracket, and the spool being detachably mounted upon the forward end of the shaft; means for winding the spool; and means connected to the movable support or bracket and adapted to be actuated thereby for automatically rendering the winding means inoperative, substantially as set forth.

114. In a type-writing machine, the combination with a ribbon of a spool, a ratchet-wheel provided with an actuating-pawl, a shaft, and a pivoted support or bracket for the shaft, the shaft bearing the ratchet-wheel at one end and the spool at the other end, and being supported by the bracket between the ratchet-wheel and spool; and means connected to the pivoted support or bracket and adapted to be actuated thereby for effecting a disconnection between the ratchet-wheel and the actuating-pawl, substantially as set forth.

609,477. THILL-COUPLING. CHARLES B. STOVER, Creston, Iowa. Filed Oct. 6, 1897. Serial No. 654,351. (No model.)



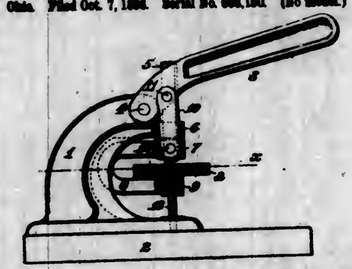
Claim.—In thill-couplings, a bifurcated clip having a perforation near each of its outer ends and a fixed reserve bolt in the rear of and lower than said perforations, an attachment for thills having an enlarged perforated central portion and a hooked rearward end and means to unite the clip and attachment whereby the hooked end will extend around but not in contact with the reserve bolt, all combined as set forth.

609,478. HIT-BRACE. FRANKLIN M. STRONG, Shelbyville, Ill. Filed Feb. 14, 1898. Serial No. 670,270. (No model.)



Claim.—A brace-head comprising the hollow spindle having the transverse slots, a body rigid with said spindle and formed on its inner face with the annular recess, the jaws having their toe-pieces, 19, fitted loosely in the transverse slot of the spindle and formed at their outer ends with the shoulders, 23, on their inner faces and with the shoulders, 22, on their outer exposed faces, a socket-block, 8, fixed within the slotted spindle, a bowed spring with its looped end fitted in the hollow part of the spindle to embrace the socket-block and having its free ends engaging with the shoulders, 22, of the jaws, and an external rotatable sleeve mounted at its inner end in the recess of the body and engaging at its outer end with the shoulders, 23, of the jaws, said sleeve having the recessed and shouldered inner faces at opposite sides near the outer end thereof, substantially as described.

609,479. RIVETING-MACHINE. JOSEPH W. THOMPSON, Salem, Ohio. Filed Oct. 7, 1896. Serial No. 608,150. (No model.)



Claim.—1. In a riveting-machine, the combination, substantially as set forth, of an anvil, a plunger which is movable in line therewith, and a rivet-guard connected to and movable with the plunger, and guided on the anvil.

2. In a riveting-machine, the combination, substantially as set forth, of an anvil, a plunger which is movable in line therewith, a fixed guide for said plunger, and a rivet-guard connected to and movable with the plunger, and guided on the anvil.

3. In a riveting-machine, the combination, substantially as set forth, of a frame or body, an anvil fixed thereon, an operating-lever pivoted thereto, a plunger fitted to traverse in a guide on the frame in line axially with the anvil, a U-shaped carrier, having one of its arms connected to the plunger and having a passage through its opposite arm which fits freely around the anvil, and links coupling the carrier and operating-lever.

609,480. ODORLESS COOKING UTENSIL. WILLIAM S. TERRY, Trenton, N. J. Filed Oct. 26, 1897. Serial No. 656,402. (No model.)



Claim.—1. In combination with a vessel of the character described, an odor-conveyor and agitator consisting of a hub adapted to form a joint with a hollow nipple carried by the vessel, tubes bent in U shape leading from the hub above the normal level of the contents of the vessel, said tubes communicating with the passage in the nipple, and means for agitating the conveyor, as and for the purpose set forth.

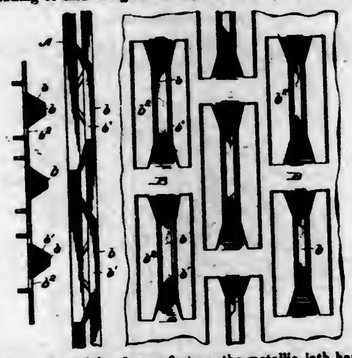
2. The herein-described combination of a vessel, a nipple secured in the bottom thereof having a passage-way therethrough, a hub having a socket adapted to fit over the tapered end of the nipple, odor-conveyor tubes connected to the hub and extending upward above the normal level of the contents of the vessel, said tubes communicating with the passage in the nipple, a cover, and means journaled within said cover for revolving the odor-conveyor, as specified.

3. The herein-described combination of a cooking vessel, a nipple secured in the bottom thereof having a passage therethrough and a tapered end, a hub having a socket therein adapted to fit over the tapered end of the nipple, odor-conveyor tubes connected with the hub and extending upward in U shape, above the normal level of the contents of the vessel, said tubes communicating with the passage in the nipple, a yoke-bar adapted to engage the upper ends of the tubes, a rod extending upward from the bar, a cover in which said rod is journaled, and a handle formed upon the upper end of the rod whereby the odor-conveyor may be revolved when the cover is in place, as specified.

609,481. LATH. SUMNER A. TURNBULL, Chicago, Ill., assignor to Rankin R. Turnbull, same place. Filed Feb. 11, 1898. Serial No. 669,978. (No model.)

Claim.—1. As a new article of manufacture, the metallic lath having a series of keys each comprising a struck-up or sunken, approximately pyramidal, trough or "cup" and a series of lateral flanges or lodges flanking the outer edges of said trough, or "cup,"

and the keyways or passages formed at each side of the troughs and by the sinking of said troughs therein, substantially as described.



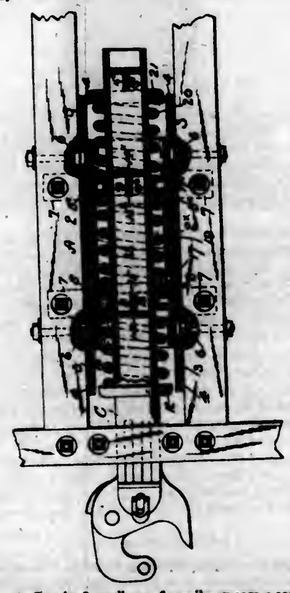
2. As a new article of manufacture, the metallic lath having a series of keys, each key comprising a sunken or struck-up trough, or "cup," approximately pyramidal in its general outline or contour, and a series of lateral flanges or ledges flanking the outer edges of said troughs or "cups," and the keyways or passages formed at each side of the troughs and by the sinking of said troughs therein, substantially as described.

3. As a new article of manufacture, the lath having the sunken troughs provided with lateral ledges or flanges forming keyways, substantially as set forth.

4. As a new article of manufacture, the lath having the sunken or depressed troughs provided with lateral flanges and flared ends, substantially as specified.

5. As a new article of manufacture, the lath having troughs with flared ends and lateral flanges, and lateral flanges or ledges along the edges of the keyways or passages formed by sinking or depressing said troughs, substantially as set forth.

609,482. DRAFT APPLIANCE FOR RAILWAY-CARS. WILLIAM T. VAN DORN, Chicago, Ill. Filed Jan. 14, 1896. Serial No. 575,706. (No model.)



Claim.—1. In a draft appliance for railway-cars, a casing secured to the car and formed with transverse partitions having draw-bar openings and keyways therein, a draw-bar slidingly arranged in the openings of the casing, keys projected through the draw-bar to stand normally in the keyways in the casing, a spring on the draw-bar in the casing between said keys, and springs on the draw-bar outside of the casing and abutting against the opposite ends of the casing with their inner ends.

2. In a draft appliance for railway-cars, a casing secured to the car, and having partitions therein, a draw-bar slidingly carried by the casing, spiral springs on the draw-bar outside of the casing and abutting the partitions, and a spiral spring on the draw-bar between the partitions, and the three springs so arranged that two of them will resist the impact on the draw-bar and two of them the pulling force thereon.

3. In a draft appliance for railway-cars, a casing secured to the car having partitions therein formed with vertical keyways therethrough, a draw-bar slidingly arranged in the casing and formed with keyways adapted to register with the keyways in the partitions of the casing, keys through the draw-bar in said keyways therein, springs on the draw-bar arranged to abut with their inner ends against the outer faces of the partitions of the casing, and a spring on the draw-bar between the partitions compressed by one of the keys in the draw-bar when moved back or forward.

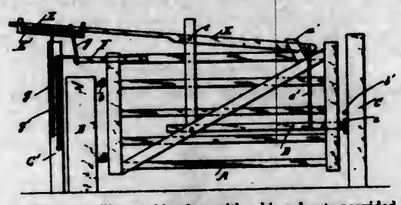
4. In a draft appliance for railway-cars, a casing secured to the car, and formed with partitions having vertical keyways therethrough, a draw-bar slidingly disposed in the casing and having an annular buffer-collar and formed with keyways adapted to register with the keyways in the partitions, a spiral spring on the draw-bar between the annular collar and the front partition of the casing, a spiral spring on the draw-bar between the partitions of the casing and pins of the draw-bar, and a spiral spring on the rear portion of the draw-bar between the outer face of the rear partition and the fastening means at the end of the draw-bar.

5. A casing or housing for a draft appliance for railway-cars, consisting of a cylindrical central portion formed with partitions therein having keyways therethrough and draw-bar apertures or openings through the partitions, and an opening in the bottom of the casing and formed with integral side pieces whereby the casing or housing may be secured to the car.

6. A casing or housing for a draw-bar and the springs thereon, consisting of a cylindrical central portion formed with partitions therein having keyways therethrough and central draw-bar openings, and having an opening in the under side of the casing between the partitions, and formed with side pieces extending beyond the ends of the cylinder and laterally-extending fastening-lugs.

7. The draw-bar herein described, consisting of a draw-head and continuous draw-bar stem integral therewith and made hollow and formed with an annular buffer-collar and keyways through the stem arranged at predetermined distances and partitions contiguous to the edge of each keyway, substantially as set forth.

609,488. BARN-GATE. JOHN A. WALLACE, Clarkton, Mo. Filed Dec. 7, 1897. Serial No. 661,065. (No model.)

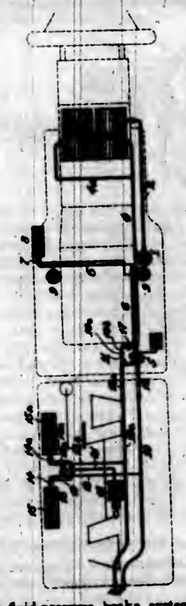


Claim.—1. The combination, with a hinged gate provided with a latch, of a pivoted lever operatively connected with the said latch and provided with a rear end portion extending beyond the gate-hinges, arms secured to the gate and projecting outwardly and rearwardly beyond its hinges, opening-cords bearing on the said rear end portion of the said lever and connected to the said arms, and closing-cords also connected to the said arms, substantially as set forth.

2. The combination, with a hinged gate, of a lever pivoted to the gate and operating to raise the latch, said lever having an end portion projecting rearwardly beyond the gate-hinges, an arm secured to the gate and projecting outwardly and rearwardly beyond its hinges, and an opening-cord bearing on the end portion of the lever and secured to the said arm, said cord affording a means for first raising the latch and then opening the gate, substantially as set forth.

3. The combination, with a hinged gate, of a lever pivoted to the gate and operating to raise the latch, said lever having an end portion projecting rearwardly beyond the gate-hinges, arms secured one on each side of the gate and projecting outwardly and rearwardly beyond its hinges, two opening-cords supported by the said end portion of the said lever and connected to the said arms respectively, and means for keeping the lifting-cords apart where they pass over the said lever, substantially as set forth.

609,484. FLUID-PRESSURE AUTOMATIC BRAKE. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa., assignor to the Westinghouse Air Brake Company, same place. Filed Sept. 3, 1895. Serial No. 561,294. (No model.)

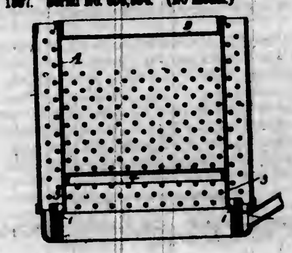


Claim.—1. In a fluid-pressure brake system, the combination, substantially as set forth, of a main automatic brake apparatus, a supplemental automatic brake apparatus, an engineer's brake-valve controlling the operation of both of said apparatuses, a charging-pipe fitted with a check-valve, and a discharge-pipe fitted with a discharge-valve, each of said pipes connecting the engineer's brake-valve with the train-pipe of the supplemental brake apparatus.

2. In a fluid-pressure automatic brake system, the combination, substantially as set forth, of a main train-pipe, a supplemental train-pipe, a valve device for supplying and exhausting air to and from each of said pipes, a main auxiliary reservoir, a main triple valve connected therewith and with the main train-pipe, a supplemental auxiliary reservoir, a supplemental triple valve connected therewith and with the supplemental train-pipe, pipes leading from the brake-cylinder-supply passages of said triple valves to a check-valve casing, two connected check-valves in said casing, each closing one of said pipes while the other is unseated, and a pipe leading from said casing, to the brake-cylinder.

3. In a fluid-pressure automatic brake system, the combination, substantially as set forth, of a main and a supplemental train-pipe, an engineer's brake-valve connected directly with the main train-pipe, a charging-pipe connecting the engineer's brake-valve with the supplemental train-pipe, a check-valve fitted in said pipe and opening outwardly from the engineer's brake-valve, a discharge-pipe connecting the engineer's brake-valve with the supplemental train-pipe, an inwardly-opening discharge-valve in said pipe, and a device for opening said discharge-valve by movement of the handle of the engineer's brake-valve beyond that required for releasing air from the main train-pipe.

609,485. BURNER. LEWIS T. WILCOX, Lansing, Mich. Filed Nov. 18, 1897. Serial No. 659,094. (No model.)



Claim.—1. In a burner, the combination with an annular combustion-chamber, of an annular oil-chamber communicating therewith, a solid portion of metal forming an upward extension of the inner wall of said oil-chamber above the outer wall thereof, a wick within said oil-chamber, said wick being of such thickness as to leave an annular chamber surrounding it within the oil-chamber and of a height to extend to a point between the ends of said extension of the inner wall of the oil-chamber and an oil-inlet tube communicating with the annular chamber surrounding the wick and at a point below the upper end of said wick.

2. In a burner, the combination with an annular combustion-chamber, of an annular oil-chamber communicating with the bottom thereof, the inner wall of the oil-chamber extending above the outer wall, the lower portion of said inner wall of the oil-chamber projecting outwardly toward the outer wall, and a wick in said oil-chamber surrounding said outwardly-projecting portion of said inner wall of the oil-chamber and projecting above it, substantially as set forth.

3. In a burner, the combination with an annular combustion-chamber, of an oil-chamber communicating with the lower end thereof, the inner wall of the oil-chamber having an integral extension projecting above the outer wall, the lower portion of said inner wall disposed in a plane nearer the outer wall than said extension whereby to contract the size of the oil-chamber relatively to the combustion-chamber, a wick in the oil-chamber, and surrounding the said lower portion of the inner wall thereof, so as to leave an annular space between said wick and the outer wall of the oil-chamber, and an oil-inlet communicating with said annular space, substantially as set forth.

4. In a burner, the combination with an annular combustion-chamber, of an annular bowl communicating therewith, a wick so disposed within said bowl as to leave an annular space around it, said wick projecting above the upper end of the bowl, an extension on the bowl projecting above the wick and an oil-inlet communicating with the annular space surrounding the wick, substantially as set forth.

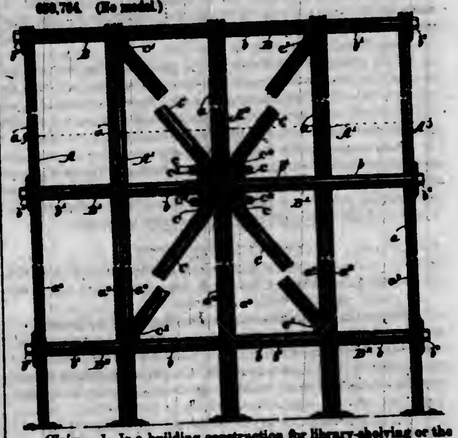
5. In a burner, the combination with an annular combustion chamber, of an annular bowl communicating therewith, a wick so disposed within said bowl as to leave an annular space around it, said wick projecting above the upper end of the bowl and an extension on the bowl projecting above the wick, substantially as set forth.

609,486. RIBBON-CLASP. RUFUS WILSON, Noblesville, Ind. Filed Feb. 5, 1897. Serial No. 622,118. (No model.)



Claim.—As an article of manufacture, a ribbon-clasp consisting of a strip of metal doubled upon itself to form the substantially straight tongue 7 having a sharpened end, the shoulder 8, and the lip 9, extending beyond the outer end of the lip 7 and bent toward said lip, substantially as and for the purpose set forth.

609,487. BUILDING CONSTRUCTION. WILLIAM H. WINSLOW and FRANCIS A. WINSLOW, Chicago, Ill. Filed Nov. 26, 1897. Serial No. 659,704. (No model.)



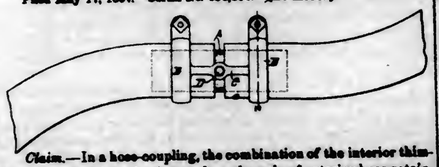
Claim.—1. In a building construction for library-shelving or the like, the combination with uprights each comprising a main support-

ing-web and clamp-bars secured thereto, of horizontal connecting members comprising tubes extending from upright to upright, tie-rods passing through the same and connecting them together and braces extending between diagonally-opposite angles of the structure and provided with adjusting-screws adapted to vary the length of the diagonals and thereby true up and brace the structure; substantially as described.

2. A building construction for library-shelving or the like comprising webs, *a*, clamp-bars, a^2, secured thereto, tubes extending between the webs, tie-rods passing through the tubes and webs and connecting the parts together, diagonal braces extending diagonally from approximately the middle of the center web, crotches in the ends of said diagonal braces engaging the tubes and webs and set-screws in the inner crotches bearing against the central web; substantially as described.

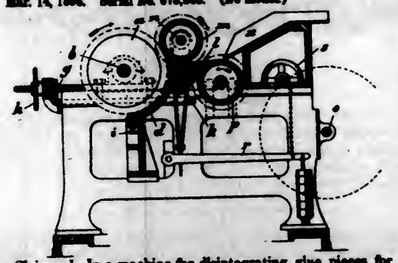
3. A building construction comprising uprights, A, A', A^3, horizontal connecting-bars, B, B', B^2, a truss extending from approximately the center of the frame and to the upper and lower horizontal member thereof and set-screws threaded in said truss and engaging the upright, A^3, substantially as and for the purpose set forth.

609,488. HOSE-COUPLING. CHARLES A. WOOD, Milwaukee, Wis. Filed May 17, 1897. Serial No. 636,830. (No model.)



Claim.—In a hose-coupling, the combination of the interior thimble provided with projecting studs, and a pair of exterior hose-retaining clamps, connected together by a pair of arms, and to the interior thimble by studs projecting therefrom and engaged in apertures in said arms, substantially as described.

609,489. DISINTEGRATING-MACHINE FOR GLUE PIECES. CARL F. WUERMACH, Mitau, Germany. Filed Apr. 19, 1895. Renewed Mar. 14, 1898. Serial No. 673,865. (No model.)



Claim.—1. In a machine for disintegrating glue pieces for the manufacture of size, the combination of an adjustable curved casing, with a yieldingly-supported fluted roller, and a conveying and distributing roller, substantially as described.

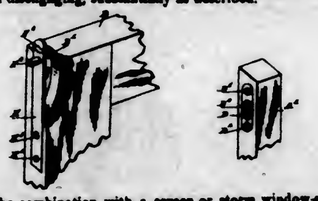
2. In a machine for disintegrating glue pieces for the manufacture of size, the combination of an adjustable curved casing the upper part of which has the form of a pocket, with a yieldingly-supported fluted roller turning in said pocket, and a conveying and distributing roller with a rough surface, substantially as specified.

3. In a machine for disintegrating glue pieces for the manufacture of size, the combination of an adjustable drum formed of crossed saw-bands, with an adjustable curved casing provided with alternated recesses and parallel and angular teeth, and a fluted roller connected with an adjustable weight-lever, substantially as set forth.

609,490. ATTACHMENT FOR WINDOW-SCREENS, STORM-SASHES, &c. JOSEPH T. REMOVEY, Cedar Rapids, Iowa. Filed Mar. 31, 1898. Serial No. 676,018. (No model.)

Claim.—1. In a window-screen attachment, the combination with a stop-plate D, provided with a suitable hole D^2, of a spring-plate E attached near the upper corner of the sash, and provided with a projecting stud E^2, and a sash to which said plate is attached suitably plowed behind said spring to admit of its springing back out of engagement with the stop-plate, substantially as described.

2. In an attachment for window-screens or storm window-sash, the combination with a slotted stop-plate D, provided with an elongated hole, D^2, of a spring-plate E attached to the sash near the upper corner, and provided with a stud, E^2, to engage the stop-plate, and an offset finger-plate, E^3, the sash to which said plate is attached being plowed at C' to allow for the movement of the spring backwardly in disengaging, substantially as described.

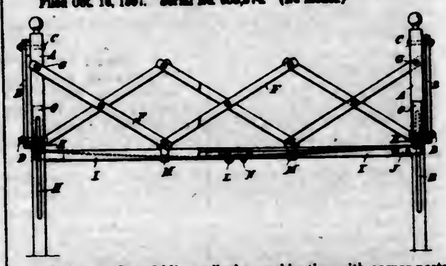


3. The combination with a screen or storm window-sash of a spring-plate E having an outwardly-projecting stud, E^2, a slotted plate D attached to the window-stop adjacent to said sash, a hook F attached in a suitable recess in the lower rail of the sash, and a pin, G, in the window-sill with which said hook is adapted to engage, substantially as and for the purpose set forth.

4. The combination with a window-screen or storm window-sash plowed a short distance near its upper corners, a spring-plate E provided with a stud E^2, adapted to spring in and out in said plowed recess, a slotted plate D attached to the window-stop adjacent to said sash, and adapted for engagement with the stud of the spring-plate, a hook F pivoted to the lower rail of the sash, a pin G with which said hook may engage, and a brace H also attached to the lower sash-rail and adapted to engage with said pin, substantially as described.

5. In an attachment for storm window-sash, the combination with a sash plowed at C' to allow for the spring of an attaching-plate, of a spring-plate E, provided with a stud, E^2, and a slotted plate, D, having one of its sides, D^2, extended out to the full width of the casing, substantially as and for the purpose set forth.

609,491. FOLDING CRIB. RICHARD P. ASHWELL, Bayard, N. J. Filed Oct. 14, 1897. Serial No. 655,374. (No model.)



Claim.—1. In a folding crib the combination with corner-posts, of sides composed of levers pivoted together in the manner of lazy-tongs, the upper extremities of the end bars being secured to the posts and the corresponding lower extremities being movable along the posts, of a bottom having side bars hinged in the middle and connected at the ends to the end bars of the sides, and stirrups secured to the lower extremities of the bars intermediate to the posts and affording supports for the side bars of the bottom, as set forth.

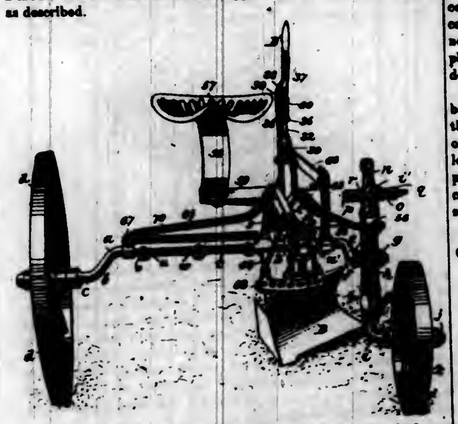
2. In a folding crib the combination with corner-posts, of the extensible sides and ends composed of bars pivoted together in the manner of lazy-tongs, and secured to the posts near their tops, of a bottom hinged in the middle and supported at its ends by the extensible sides of the crib, as set forth.

3. In a folding crib the combination with corner-posts, of extensible sides and ends composed of bars pivoted together in the manner of lazy-tongs, a bottom having side bars hinged in the middle and supported at the ends by the extensible sides of the crib, and a cross bar or bow for insertion between the side bars of the bottom, as set forth.

4. In a folding crib the combination with corner-posts, of extensible sides and ends composed of bars pivoted together in the manner of lazy-tongs, the end bars being connected with the posts at fixed points and to slots therein respectively, a bottom having side bars hinged in the middle and connected with the end bars of the sides which are movable along the corner-posts, stirrups on the bars intermediate to the posts for supporting the side bars of the bottom, and a cross bar or bow for insertion between the said side bars, as set forth.

609,492. PLOW. AXEL P. RENQUIST, Fairfield, Iowa. Filed May 11, 1897. Serial No. 635,116. (No model.)

Claim.—1. In a sulky-plow, the combination with the main axle and the plow-beam, of a frame upon the axle comprising a plate having a concave portion conforming to the upper surface of the axle and clamping-plates surrounding the axle and bolted to the plate, and a saddle secured to the frame and supporting the beam, substantially as described.



2. In a sulky-plow, the combination with the main axle, of a frame upon the axle, a saddle upon the frame, adjustable means at each end of the saddle for raising or lowering the same independently of the axle and the plow-beam secured to the saddle, substantially as described.

3. In a sulky-plow, the combination with the beam thereof, of the casting secured thereto at the rear and provided with the swivel, a swivel-pin passing through the casting and swivel and normally forced downward by a spring, a trail-wheel, an arm journaled in the swivel and constituting an axle for the trail-wheel, and a locking device engaging the swivel, substantially as described.

4. In a sulky-plow, the combination with the plow-beam, of a casting projecting therefrom, a bracket swiveled to swing horizontally upon the casting provided with a sleeve, and an arm carrying a trail-wheel journaled in said sleeve to move vertically, substantially as described.

5. In a sulky-plow, the combination with the beam, of a casting secured thereto at the rear, a swivel supported thereby having a recess or depression, a locking-plate engaging in said depression, a pin passing through this plate, the casting, and the swivel, a spring normally drawing the pin downward, and the trail-wheel supported from said swivel, substantially as described.

6. In a sulky-plow, the combination with the axle and the frame bolted thereto, of the saddle having the lug on the landside, the beam, and the angle-plate, means for securing the beam in place between the said lug and angle-plate, and means for adjusting the saddle at either end to vary the lateral position of the beam and plow, substantially as described.

7. In a sulky-plow, the combination with the axle and the frame secured thereto, of the saddle embracing the frame at or near one end of the latter, adjusting screw-bolts passing through the saddle and bearing on the frame, a lug and an angle-plate on the saddle, and the beam secured between said lug and plate, substantially as described.

8. The combination with the beam, the axle and wheels, of the vertical sleeve or hollow casting supporting said axle at one end, the vertical shaft passing through this sleeve, means for raising and lowering the axle and beam, and connections between said means and the sleeve whereby the position of the latter is maintained irrespective of the position of said axle and beam, substantially as described.

9. In a sulky-plow, the combination with the plow-beam, of a casting projecting therefrom, a bracket provided with a depression, a spring-actuated swivel-pin connecting the bracket and casting, a locking-plate carried by said pin and adapted to engage the depression of the bracket, and a trail-wheel carried by said bracket, substantially as described.

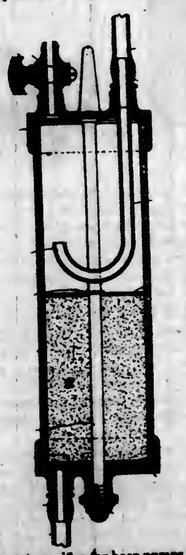
10. The combination with the main axle, the beam, the wheels, and the vertical hollow sleeve, of the hand-lever and connections between the same and axle for raising and lowering the axle and beam, a short lever and a link connecting the same with the main lever, and a rod connecting said short lever with an eye on the sleeve, substantially as described.

11. The combination of the plow-beam, an axle having an arm, a hand-lever, connections intermediate the lever and arm on the axle for raising and lowering the axle, and a spring connecting the arm and the hand-lever, substantially as described.

12. In a sulky-plow, the combination with the axle bent near its opposite ends and formed with spindles, of a wheel mounted upon one of said spindles, a vertical sleeve provided with a collar for reception of the other spindle, a shaft rotatably mounted in the vertical sleeve, a furrow-wheel carried upon said shaft, a plow-beam connected to the axle, an arm fixed upon the axle, a lever pivoted to the plow-beam, and a bar connecting said lever and arm, substantially as described.

13. In a sulky-plow, the combination with the main axle, the beam, the wheels and the hollow vertical sleeve, of an arm fixed upon the axle, a hand-lever and connections between the same and the arm of the axle, a short lever, a link connecting the same with the hand-lever, a rod connecting said short lever with the vertical sleeve, a pivoted hook likewise connected with the short lever, and a spring connecting the hook with the arm of the axle, substantially as described.

609,493. AIR-PURIFIER FOR BEER-PUMPS. HENRY BOUTELSPANNER, Bridgeport, Conn. Filed Feb. 5, 1898. Serial No. 669,214. (No model.)



Claim.—1. An air-purifier for beer-pumps comprising a glass cylinder closed at the ends by air-tight caps, hollow nipples extending from the upper and lower caps and communicating with the interior of said cylinder, connections between the beer-keg and air-pump and said upper and lower caps respectively, and the air-purifying material contained within the upper portion of said cylinder, substantially as set forth.

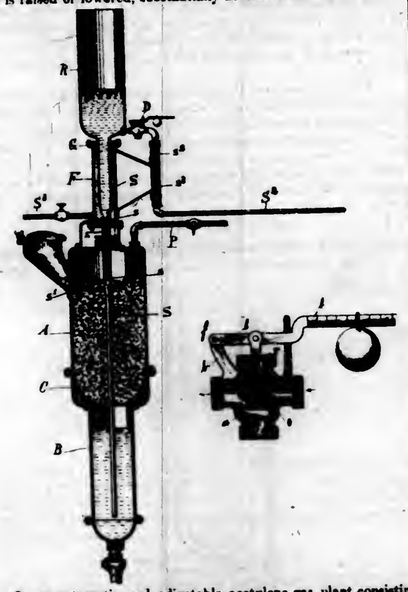
2. The air-purifier for beer-pumps which comprises a glass cylinder having its ends hermetically closed by metal caps, air-purifying material contained within the upper portion of said cylinder, hollow nipples communicating with said cylinder and extending from the top and bottom caps and connected respectively with the beer-keg and air-pump, and the pipe in connection with the lower nipple and rising within the cylinder and terminating immediately below said material in a gooseneck which is directed toward the bottom cap, substantially as set forth.

609,494. ACETYLENE-GAS GENERATOR. LOUIS E. BEIN, New York, N. Y., assignor to the Electro Gas Company, of West Virginia. Filed June 1, 1898. Renewed May 26, 1898. Serial No. 681,705. (No model.)

Claim.—1. An automatic and adjustable acetylene-gas plant consisting of a gas-generating apparatus in which the gas is automatically generated as consumed, a water supply reservoir with water-supply tube which consists of two parts sliding in each other, for the purpose of raising or lowering the water-reservoir, substantially described.

2. An automatic and adjustable acetylene-gas plant consisting of a gas-generating apparatus in which the gas is automatically gen-

erated as consumed, a water-supply reservoir with water-supply tube which consists of two parts sliding in each other for the purpose of raising or lowering the water-reservoir and a water-level regulator provided with a sliding device so that the regulator remains always at a constant distance from the water-level in the reservoir when the same is raised or lowered, substantially as described.



3. An automatic and adjustable acetylene-gas plant consisting of a gas-generating apparatus, a water-reservoir whose supply-tube consists of two parts sliding in each other, a water-level regulator with sliding device, and a small cylinder between the reservoir and the gas-generator and permanently attached to the generator and provided with a supply-tube for introducing press-water in the cylinder for the purpose of raising and lowering the water-reservoir, substantially as described.

4. In an automatic and adjustable acetylene-gas plant a water-supply consisting of the reservoir proper which can be raised and lowered and whose water-level can be adjusted, a water-level regulator provided with a sliding device, and a water-supply pipe consisting of two parts which slide in each other, substantially as described.

5. In an automatic and adjustable acetylene-gas plant a water-supply consisting of the reservoir proper which can be raised and lowered and whose water-level can be adjusted, a water-level regulator provided with a sliding device, a water-supply pipe consisting of two parts which slide in each other and a small cylinder surrounding the top portion of the water-supply pipe with a pipe through which press-water is introduced, substantially as described.

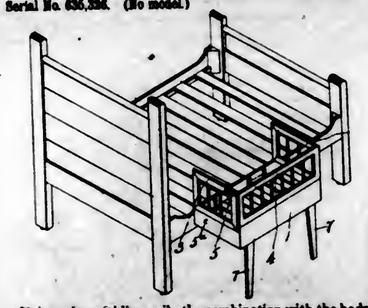
609,495. SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to the E. J. Brooks & Company, New York, N. Y. Filed May 2, 1898. Serial No. 679,496. (No model.)



Claim.—1. A compressible seal part having a central recess in its face and a transverse wall located centrally within such recess and provided with a closed slot, in combination with a flexible shackle of suitable wire preliminarily fastened within said seal part at one end and provided at its other extremity with a rigid anchoring-loop adapted to be passed into and through said slot, and thus located and retained within said recess preparatory to the pressing operation.

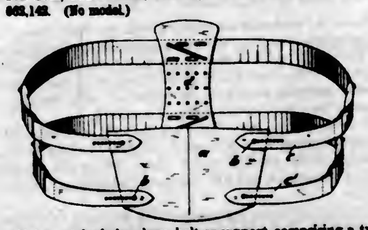
2. The combination, in a seal, of a compressible seal part having a central recess in its face and a central transverse wall within said recess provided with a closed slot perpendicular to the back of the recess, and a flexible shackle of suitable wire provided at both ends with rigid anchoring-loops, one of which is preliminarily fastened down against said back and the other is passed through and interlocked with said wall preparatory to the pressing operation, substantially as hereinbefore specified.

609,496. FOLDING CRIB. ROBERT H. BUCHANAN, Swifton, Ark., assignor of one-half to J. H. Brewer, same place. Filed May 6, 1897. Serial No. 635,336. (No model.)



Claim.—In a folding crib, the combination with the body having end rails and a side rail, the side rail extending above the end rails, of the folding sections hinged to the end and side rails, bearings pivoted to the end rails, legs hinged to the side rail, so as to be folded and held in contact with said bearings, hooks connected to the side folding section to engage staples on the end folding sections, and the intermediate staples, secured to the end rails, whereby when the side hinged section is folded on the hinged end sections, the hooks engage the intermediate staples so as to hold the said hinged sections together, substantially as specified.

609,497. BANDAGE. HERMANN BUNSEN, Lichtenthal, and THEODOR LEIS, Baden-Baden, Germany. Filed Dec. 16, 1897. Serial No. 662,142. (No model.)



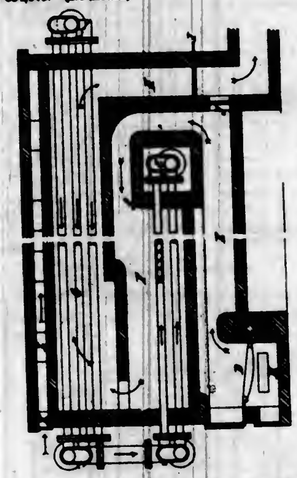
Claim.—A body bandage, belt or support, comprising a two-part laced front pad provided in each with a flexible plate which is interposed between the front and back materials of said pad and having upper and lower studs, the lower studs being nearer to each other than the upper studs, a dorsal pad provided with parallel rows of perforations, two body-straps each perforated and adapted to engage said studs and laces adapted to be passed through said strips and dorsal pad, when certain rows of perforations of said pad are caused to register with the perforations of said straps, whereby the distance between the straps on the dorsal pad may be readily adjusted, substantially as and for the purposes specified.

609,498. BICYCLE. MILTON T. CAMPBELL, Indianapolis, Ind., assignor of one-half to William H. Thomas, same place. Filed Nov. 15, 1897. Serial No. 658,615. (No model.)



Claim.—In a bicycle, the combination, of the frame, the wheels the driving-wheel being fixedly mounted on its axle, cones D′, D² mounted thereon, a bearing for supporting the frame A on ball-bearings between the end of the hub and cone D², a clutch-base on said axle between said cones D′ and D², spring-clutches mounted thereon in pairs alongside each other, a pair of gear-rings surrounding said base and supported on ball-races in said cones and separated by balls mounted in the races between their adjacent faces, said rings being formed with flanges to cover said races and with external gear and internal racks to engage said pawls, the crank-shaft, the crank-arms, and pitmen carrying a rack to engage the under side of one of said gear-wheels and another to engage the top side of the other one, said construction being duplicated on each end of said axle, all substantially as set forth.

609,499. STEAM-SUPERHEATER. SAMUEL CHATWOOD, London, and SAMUEL B. CHATWOOD, Bolton, England. Filed Dec. 28, 1897. Serial No. 664,073. (No model.)



Claim.—1. In a superheater, the combination of a fire-box, three superposed fire-brick chambers arranged one over the other and through which the products of combustion pass successively, superheating-pipes arranged horizontally in the two upper chambers, a passage connecting the lower chamber with the middle one for conducting the products of combustion through the chambers in such manner that they shall not come directly in contact with the superheating-pipes, a passage for conducting products of combustion from the middle chamber into the upper one in such manner as to cause them to come into contact with the pipes therein, pipe connections for admitting steam to the pipes at that end of the pipes opposite the end through which the products of combustion are admitted and pipe connections for conducting away the steam from the pipes in the lower chamber at the end nearest the entrance end of the chamber for the admission of the products of combustion.

2. Superheating apparatus comprising a fire-box, two chambers through which products of combustion from the fire-box successively pass, superheating-pipes arranged in said chambers, pipe connections for causing the steam to pass through said pipes in the opposite direction to that in which the products of combustion pass, and spirally-twisted blades arranged in said superheating-pipes.

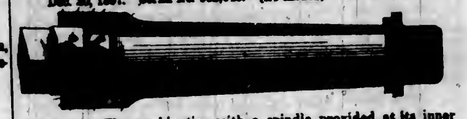
609,500. CAN-OPENING NOZZLE. VIRGINIA I. COPLAND, Washington, D. C. Filed June 14, 1898. Serial No. 683,407. (No model.)



Claim.—1. A can-opener and nozzle comprising the body having a nozzle, and the cutter secured to the body and having a blade and steady-spurs spaced apart from the blade by a curve between them, the body passing down over the curve and thereby operating to prevent the cutting of the can between the blade and spurs substantially as set forth.

2. The herein-described can-opener and nozzle consisting of the cylindrical body having a nozzle and the cutter consisting of a plate having at its center or front portion the depending blade and at its ends the steady-spurs and curved upward between said spurs and blade, such cutter being fitted and held within the body and the latter extending down over the curve between the blade and spurs whereby to prevent the cutting of the can between such parts, and the lower edge of the body forming a shoulder to rest upon the can all substantially as and for the purposes set forth.

609,501. VEHICLE-SPINDLE. RUSH D. CRITCHFIELD, Coffeyville, Kans., assignor of one-half to J. W. Glass, Independence, Kans. Filed Dec. 20, 1897. Serial No. 662,646. (No model.)



Claim.—The combination with a spindle provided at its inner end with an enlargement, of an axle-box provided at its inner end with opposite grooves, and a bushing arranged on the enlargement of the spindle and provided with a flange fitting against the shoulder thereof, said bushing having ribs or lugs fitting in the grooves of the axle-box, whereby the bushing is detachably interlocked with the axle-box, and is caused to rotate with the same, substantially as described.

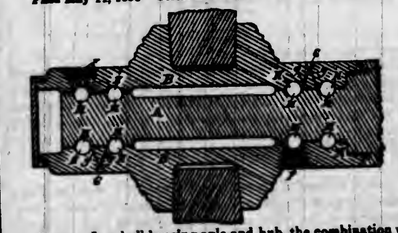
609,502. FERTILIZER ATTACHMENT FOR CULTIVATORS. WILLIAM ROBERT, Jr., Bloomfield, Conn. Filed Nov. 20, 1897. Serial No. 659,234. (No model.)



Claim.—1. In combination, the cultivator, the fertilizer-hopper pendent from the cultivator-handles and provided with an outlet, the operating-lever pivotally attached to the cultivator-frame and extending rearwardly underneath the cultivator-handles, the gate for said outlet, and the connecting-rod from said lever to said gate, all substantially as described and for the purposes set forth.

2. In combination, the cultivator, the fertilizer-hopper provided with two outlets, the operating-lever adapted to oscillate midway of said outlets, the gates for said outlets, and the connecting-rods from said lever to said gates, all substantially as described and for the purposes set forth.

609,503. BALL-BEARING. IRA FAUSER, Williamsville, Ill. Filed May 11, 1896. Serial No. 690,401. (No model.)



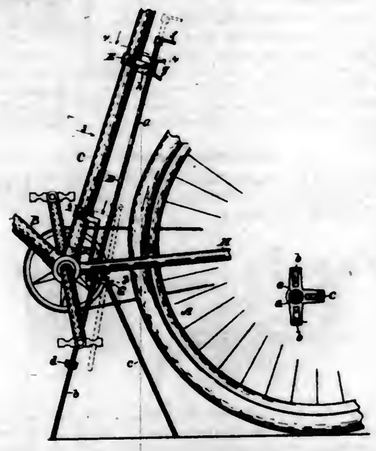
Claim.—In a ball-bearing axle and hub, the combination with an axle A having several annular grooves in its surface, the hub B with annular grooves on its inner surface corresponding with those in the axle, balls C C filling the raceways formed by the grooves in the axle and hub, plug D with lugs O and P near its posterior end and with its anterior end cut across with a curved groove semicircular in section, plug E having threads on its perimeter, its anterior end fitting firmly against plug D and in its posterior end a locking-arm F, pin *f* and coil-spring *e*, the plug G threaded as a screw and holes *g g*, all substantially as and for the purposes set forth.

609,504. SUPPORTING ATTACHMENT FOR BICYCLES. ALGAR F. FRENCH, Rochester, N. Y., assignor of one-half to Isaac Christiansen, same place. Filed Jan. 24, 1898. Serial No. 667,789. (No model.)

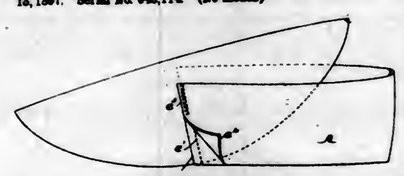
Claim.—1. The combination with the upper hanger, of the lower hanger having depending portion and laterally-expanded foot, the main rod movable through openings in said hangers, the three-armed yoke secured to said rod above the said foot, the rods pivotally connected to the arms of said yoke and passed through openings in the foot at the angles of an equilateral triangle, and means for holding the rods in their uppermost position, substantially as shown and described.

2. The combination with the upper hanger, and the lower hanger

having a depending portion terminating in laterally-extending expanded foot, of the main rod movable through openings in said upper hanger and said foot, the three-armed yoke secured to the rod above the foot, the rods pivotally connected to the arms of said yoke and passed through openings in the foot, means for holding the rods in their uppermost position, and a nut on the lower end of the main rod to engage said foot to limit the upward movement of the rod, all substantially as and for the purpose specified.



609,505. SHOE. ORRA I. FOSTER, Haverhill, Mass. Filed Aug. 13, 1897. Serial No. 648,114. (No model.)



Claim.—1. A shoe consisting of a vamp and quarter composed of material, each doubled centrally upon itself, so that one and the same side of said material appears at both the outer and at the inner side of the said vamp and quarter, said vamp and quarter being united together substantially as described, by stitching which is concealed when the shoe is in its finished condition, substantially as described.

2. A shoe presenting an upper composed of a seamless vamp and a seamless quarter, each of double thickness and made by folding the material of the vamp and quarter, whereby both the inside and the outside of the finished shoe present a finished face corresponding exactly with the outer face of the vamp and quarter, substantially as described.

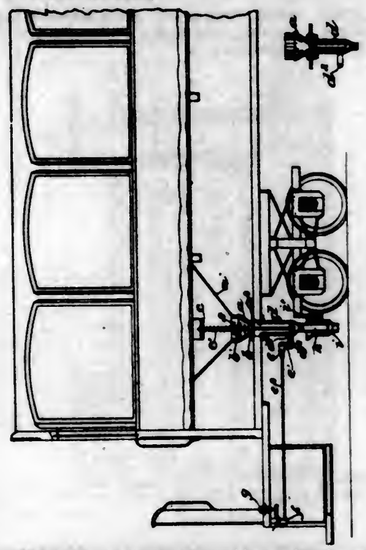
3. In a shoe, a quarter composed of material folded upon itself in the direction of the length of the quarter, the lower edge of the folded quarter being united to the sole of the shoe, substantially as described.

4. In a shoe, a vamp composed of a blank folded centrally transversely upon itself, and having its two free edges stitched or united to the sole of the boot or shoe, said folded edge forming the top of the vamp and being seamless, substantially as described.

5. A boot or shoe composed of a vamp folded transversely and centrally upon itself to form a seamless double-thickness vamp, a quarter folded longitudinally on itself to form a seamless double-thickness quarter, both the vamp and quarter being united together to leave a folded seamless edge of material about the upper edge of the quarter and the top of the vamp, the two lower edges of each of said vamp and quarter being united with the sole of the shoe, substantially as described.

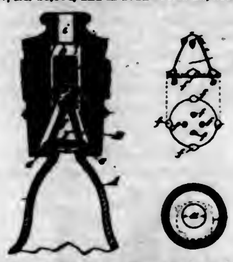
6. A shoe composed of a vamp and quarter each of double thickness to thereby constitute an inner and outer face for the same, a stay applied within the folded parts of said vamp and quarter to receive the stitching used to unite said vamp and quarter, and a sole, substantially as described.

609,506. SANDING DEVICE FOR STREET-CARS. FRANK O. FURBER and WILLIAM A. MITCHELL, Saco, Me.; said Furber assignor to said Mitchell. Filed July 23, 1896. Renewed Feb. 11, 1898. Serial No. 670,008. (No model.)



Claim.—The combination of a sand-hopper, its valve and spring-pressed valve-stem, guide-plate *e*, cylinder *d* slotted at *d'* and having an ear d^3, and means for operating said valve consisting of the bell-crank lever *d'*, bell-crank lever *f*, connecting-rod e^2, and the foot-piece *g* passing down through a hole in the floor and bearing upon said bell-crank lever *f*, substantially as described.

609,507. NON-REFILLABLE BOTTLE. GEREMIA GIORDANO, Turin, Italy. Filed June 8, 1897. Serial No. 639,892. (No model.) Patented in Italy Dec. 9, 1896, Nos. 43,696 and 43,699; in Austria Feb. 2, 1897, No. 47/367; in France Apr. 12, 1897, No. 268,920; in Hungary May 7, 1897, No. 8,920; in Belgium May 31, 1897, No. 128,173, in Spain June 15, 1897, No. 20,894, and in Brazil June 26, 1897, No. 2,300.



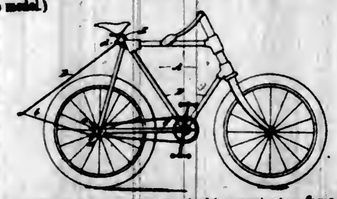
Claim.—1. The combination with a bottle and with a stop-cap and safety stopper, of a plane valve having a conical body with an annular projection below, and external protuberances arranged in two circles in such manner that when the valve slides they will not engage in the holes of the stop-cap, and of almost identical weight with the liquid so that when the bottle, being empty, is held in an inverted position and an attempt is made to introduce a liquid, the valve will rise and close the aperture forming the mouth of the bottle, and when instead, the bottle is held horizontally the valve, guided constantly by the inner conical surface of the stop-cap, slides backward and falls with its projecting ledge onto its seat, thus covering the aforesaid aperture.

2. The combination of a bottle having a plane surface, with a valve having a projecting ledge seating on said surface, a safety-stopper, a stop-cap with an inner conical surface of the same angle as the conical body of the valve, with lateral apertures for the escape of the liquid arranged in such a manner however that during the movements of the valve its different protuberances do not engage with these apertures and with a cylindrical enlargement at the top

to prevent any iron wire or other instrument introduced through the hole in the stopper from reaching so far as to touch the valve and prevent its movement, the stop-cap serving as a constant guide for the valve which either remains withdrawn within the bottom of the cap when the bottle is completely or nearly inverted, or slides on the lower portion of the inner surface of the cap, when the bottle is made to assume, with its axis, a horizontal position, and which falls with its annular projecting ledge against the plane surface of support on the neck of the bottle thus completely concealing the central aperture and leaving no position of the bottle wherein if an attempt be made to introduce liquid the valve does not cover the interior mouth thereof.

3. The bottle having the prolongation of the neck in combination with a stopper, which surrounds with its central aperture the cylindrical enlargement of the stop-cap, which has two slits or apertures that correspond to the solid part of the stop-cap which stop-cap is fixed in the stopper by means of the two lateral projections on the upper enlargement of the stop-cap engaging in the aforesaid apertures, and which allows free passage for the liquid, but prevents the introduction of an iron wire or other instrument into the interior cavity of the cap in order to encounter therein the valve during the movement of the latter.

609,508. CLOTHING-PROTECTOR FOR BICYCLES. CHARLES M. HANDOVER, New York, N. Y. Filed May 27, 1896. Serial No. 593,223. (No model.)



Claim.—The herein-described clothing-protector for a bicycle, comprising the combination with a bicycle of legs *a'*, each having a screw-threaded aperture, a rod *b*, on one side having a hook *c*, a similarly-attached rod on the other side of the drive-wheel, a finger *d*, provided with a hooked end, a strip D, having apertures *e*, *e*, all combined substantially as shown and described and for the purpose set forth.

609,509. MEANS FOR COUPLING SMALL PIPES. WILLIAM A. JENNER, Glasgow, Scotland. Filed Nov. 23, 1897. Serial No. 659,502. (No model.)



Claim.—1. The herein-described means for coupling pipes, said means consisting of a nut composed of two parts which are adapted to be interlocked, and said nut being also provided at one end with an inwardly-directed flange or rim, substantially as shown and described.

2. A nut for use in coupling pipes, said nut being composed of two parts which are adapted to be interlocked, and said nut being also provided at one end with an inwardly-directed flange or rim, substantially as shown and described.

3. The combination with two pipes, one of which is provided at one end with a cylindrical screw-threaded head, and the other with a flange, rim or collar, of a coupling-nut which is composed of two interlocking parts, said nut being provided at one end with an inwardly-directed flange or rim, substantially as shown and described.

609,510. THILL-COUPLING. MICHAEL KNUPP, Toledo, Ill., assignor of one-half to S. H. Frederick, same place. Filed Aug. 25, 1897. Serial No. 649,496. (No model.)



Claim.—1. In a thill-coupling, the combination with a pair of upwardly-opening hooks designed for the reception of a thill-head provided with trunnions, of a cap comprising a tailpiece pivoted between the hooks, guard-disks projecting from the front end of the cap, and designed to cover the outer sides of the hooks, a spring-guard, and a spring provided with a head designed to rest upon the top of the cap and having a standard passing between the hooks and braced by the spring-guard and having its extremity bent upwardly from the bottom of the standard and designed to bear against the thill-head, substantially as specified.

2. In a thill-coupling, the combination with a pair of upwardly-opening hooks, and a thill-head provided with trunnions carrying said hooks, of a cap comprising a tailpiece pivoted between the hooks, and guard-disks projecting from its front end and designed to cover the outer side of the hooks, a spring-guard carried by the cap, a spring comprising a standard braced by the spring-guard, an upturned end portion in contact with the thill-head, a head upon the upper extremity of the standard designed to rest upon the top of the cap, and a block secured upon the opposite extremity of the spring and designed to limit the movement thereof by coming in contact with the standard, substantially as specified.

609,511. RAILWAY-TRACK STRUCTURE. CARL F. KRESS, Jr., Johnstown, Pa., assignor to the Johnson Company, of Ohio. Filed July 11, 1896. Serial No. 598,694. (No model.)



Claim.—1. In a railway-frog the two wing-rails each of which is placed with its head lying against the heads of one of the point-rails, and having flangeways cut in their heads, in combination with a chock between the webs and under the heads of the four rails.

2. In a railway-frog the two wing-rails each of which is placed with its head bearing against the heads of one of the point-rails, and having flangeways cut in their heads, in combination with a chock between the webs and under the heads of the four rails and a raised portion at one end of said chock forming an approach to the floor formed by the flangeways cut in the wing-rails.

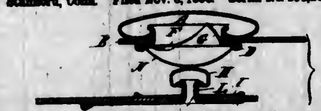
3. A railway-frog comprising two rails cut and fitted together and forming the point, a chock of cast metal surrounding and uniting the same, and a pair of wing-rails with heads grooved to form floors and secured to the exterior of the said chock.

4. In a railway-track structure, a chock fitting under the heads of the point and wing rails but having one end raised to form a tapered approach to the floor formed by the wing-rails.

5. A railway-frog comprising a bent point-rail, a second bent rail with its head cut to lie against the side of the point-rail, a pair of wing-rails with heads grooved to form a floor, a chock between the rails and beneath the floor, means for uniting the chock to the two first-mentioned rails and independent means for uniting the wing-rails to the remainder of the frog.

6. A railway-frog comprising the point-rails, the wing-rails grooved to form a floor, the chock uniting the point-rails and fitting under the head portions of the rails, a raised portion of said chock forming an approach to said floor, and means for securing the whole together.

609,512. STUD AND EYELET FOR SAME. ALFREDO LEBLANC, Stamford, Conn. Filed Nov. 6, 1896. Serial No. 611,207. (No model.)

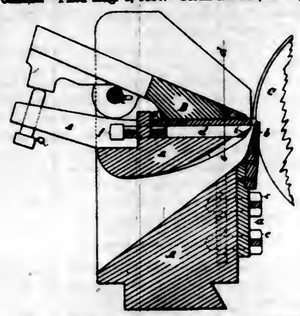


Claim.—1. A two-part garment-fastener, the same consisting of a female part, an engaging hook or catch located on one side of the opening in the female part adapted to receive the headed stud, a headed stud, and a spring supported on one of said parts and pressing directly against the opposed face of the other part to maintain the engagement of the headed stud with said hook or catch substantially as specified.

2. A two-part garment-fastener, the same consisting of a female part, an engaging hook or catch located on one side of the opening in the female part adapted to receive the headed stud, a headed stud having a spring-plate secured to its base, said spring pressing directly against the opposed face of the female part to maintain the engagement of the headed stud with said hook or catch, substantially as specified.

3. A two-part garment-fastener, the same consisting of a female part, an engaging hook or catch located on one side of the opening in the female part adapted to receive the headed stud, a beveled guide located in said opening on the side opposed to said hook or catch, a headed stud, and a spring carried by one of said parts and pressing directly against the opposed face of the other part, to maintain the engagement of the headed stud with said hook or catch, substantially as specified.

609,513. VENEER-CUTTING MACHINE. GEORGE E. M. LEWIS, Truro, Canada. Filed Aug. 9, 1897. Serial No. 647,544. (No model.)



Claim.—In a veneer-cutting machine, the knife-block, and a curved knife-blade secured thereto, combined with the knife-block provided with grooves *e*, the pivoted clamp, the screw Q, the presser-bar *g* held in position by the clamp, the two chamfering-knives placed in grooves in the block A and held in position by the presser-bar, and the screws *f* for adjusting them, substantially as shown and described.

609,514. HAT. RAPHAEL LIEUX, New Roads, La. Filed May 25, 1897. Serial No. 638,069. (No model.)

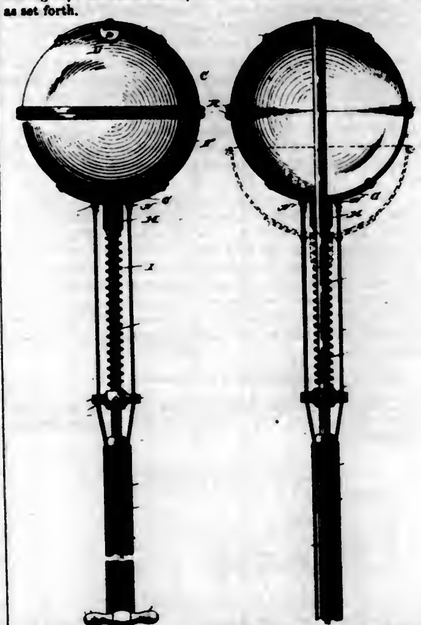


Claim.—1. In a sunshade-hat, the combination of a vertical stem having a series of sockets around its upper end, ribs having their upper terminals fitted into the said sockets and provided with transverse openings a short distance from their extremities, a cord passing through the said openings and connecting the upper end portions of the ribs, straight braces crossing intermediate of their ends and secured at their point of crossing to the lower end of the vertical stem and at their outer ends to the ribs between their extremities, a cord passing through openings in the lower ends of the ribs and wrapped around each rib to hold them in fixed relation, a covering placed over the ribs, and a head-band suspended from the ribs and having rigid connection therewith, substantially as described.

2. A sunshade-hat, comprising a vertical stem having a series of sockets around its upper end, ribs having their upper terminals fitted into the said sockets and provided with transverse openings a short distance from their upper extremities, a cord passing through the said openings and connecting the upper end portions of the ribs, straight braces crossing intermediate of their ends and secured at their point of crossing to one another and to the lower end of the vertical stem and at their outer ends to the ribs at a point between their extremities, a cord passing through openings in the lower ends of the ribs and wrapped around each to hold them in fixed relation, an outer covering placed over the ribs, an inner covering secured to the lower side of the straight braces and to the inner side of the ribs below the said braces, a head-band, and arms upwardly divergent and rigidly connecting the head-band with the lower portion of the aforesaid ribs, substantially as set forth.

609,515. FRUIT-PICKER. DANIEL LLOYD, Cambridge, Md. Filed Dec. 28, 1897. Serial No. 664,084. (No model.)

Claim.—1. In a fruit-picker, the combination of a handle, a rod carried thereby, a sectional casing the upper section of which is secured to the upper end of said rod and the lower section movable upon said rod, a collar adjustable upon the rod and formed with perforated ears, ropes or wires secured at one end to the movable section and extending through the perforated ears, a spring coiled about said rod between the collar and the movable section and serving to hold the latter in engagement with the stationary section, and an operating-rope to which the ropes or wires are attached, substantially as set forth.



2. In a fruit-picker, the combination with a handle having a rod carried by its upper end, of a casing comprising two hemispherical sections, one of which is secured to the upper end of the rod and the other movable thereon, a collar adjustable on said rod and having perforated ears, a coil-spring arranged between said collar and the movable section and serving to hold the latter in engagement with the stationary section, ropes or wires secured to the movable section and extending through the perforated ears of the collar, said collar thus serving as a guide for said wires, and also for the purpose of adjusting said spring to vary the tension thereof, and an operating-rope to which said ropes or wires are attached, substantially as described.

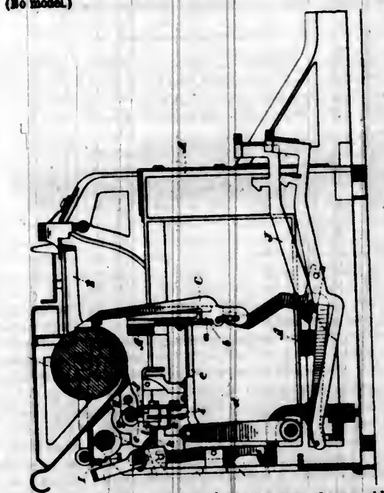
3. In a fruit-picker, the combination with a handle having a rod carried by its upper end, of a casing comprising two sections, one of which is secured to the upper end of the rod and the other formed with a socket and movable on said rod, a collar adjustable on said rod and having perforated ears, a spring coiled about said rod between said collar and socket and serving to hold the movable section normally in engagement with the stationary section, ropes or wires secured to eyes carried by the movable section on opposite sides of the socket, said ropes or wires extending through the perforated ears of the collar, said collar thus serving as a guide for said wires, and also for the purpose of adjusting said spring to vary the tension thereof, and an operating-rope to which said ropes or wires are attached, substantially as described.

609,516. RAZOR-SHARPENER. ANDREW C. MACK, Portland, Oreg. Filed Mar. 31, 1897. Serial No. 630,107. (No model.)



Claim.—A razor-sharpener constructed of a single piece of material of substantially uniform thickness throughout its area and pressed or molded into shape to form a rolled back and two side wings, the latter being provided with permanently-formed concavo-convex middle portions, presenting inner convex faces to conform to the concave of a razor and having outer concave faces to form finger-rests, substantially as described.

609,517. TABULATING MECHANISM FOR TYPE-WRITERS. EDWARD J. MANNING, New York, N. Y., assignor to the Wagner Typewriter Company, same place. Filed June 16, 1897. Serial No. 640,843. (No model.)



Claim.—1. In a type-writer, the combination of a movable carriage, tabulating mechanism for causing said carriage to move any desired number of spaces according to adjustment and means for controlling the speed of said carriage in its movement in the direction of its feed, and mechanism for throwing the controlling means into and out of operation at will.

2. In a type-writer, the combination of a movable carriage, tabulating mechanism for causing said carriage to move any desired number of spaces according to adjustment and a brake for controlling the speed of said carriage in its movement in the direction of its feed.

3. In a type-writer, the combination of a movable carriage, tabulating mechanism for causing said carriage to move any desired number of spaces according to adjustment, a brake for controlling the speed of said carriage in its movement in the direction of its feed and means under control of the operator for applying said brake.

4. In a type-writer, the combination of a movable carriage, tabulating mechanism for causing said carriage to move any desired number of spaces according to adjustment, a brake and means under control of the operator for applying said brake and varying the pressure thereon to control the speed of the carriage in its movement in the direction of its feed.

5. In a type-writer, the combination of a movable carriage, tabulating mechanism for causing said carriage to move any desired number of spaces according to adjustment, means for controlling the speed of said carriage in its movement to a predetermined stopping-point and connections between said tabulating mechanism and controlling means, whereby an operation of the tabulating mechanism may effect an operation of the controlling means.

6. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, an adjustable tabulating-stop, means for throwing said feeding mechanism out of operation and the adjustable stop into operation and means under control of the operator for controlling the speed of the carriage in its movement to the stopping-point determined by the adjustable tabulating-stop.

7. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, an adjustable tabulating-stop, means for simultaneously throwing said feeding mechanism out of operation and the adjustable stop into operation and a brake under control of the operator for controlling the speed of the carriage in its movement to the stopping-point determined by the adjustable tabulating-stop.

8. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, an adjustable tabulating-stop, means for throwing said feeding mechanism out of operation and the adjustable stop into operation and a brake for controlling the speed of the carriage in its movement to the stopping-point determined by the adjustable tabulating-stop, said brake being connected with and operated by the means for throwing the feeding mechanism out of and the adjustable stop into operation.

9. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, means for operating the said feeding mechanism at each operation of a type-bar or spacing-bar, an adjustable tabulating-stop, means for throwing said feeding mechanism out of operation and the adjustable stop into operation and means under control of the operator for controlling the speed of the carriage in its movement to the stopping-point determined by the adjustable tabulating-stop.

10. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, means for releasing the feeding mechanism so as to allow of a free movement of the carriage in the direction of its feed, a brake and means for applying said brake to the carriage to control the speed of the carriage in its movement in the direction of its feed.

11. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, means for releasing the feeding mechanism so as to allow of a free movement of the carriage in the direction of its feed, a brake and means under control of the operator for applying said brake to the carriage with variable degrees of pressure to control the speed of the carriage in its movement in the direction of its feed.

12. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, an adjustable tabulating-stop, a brake for controlling the speed of the carriage in its movement to the stopping-point determined by the adjustable tabulating-stop and a key for simultaneously throwing the feeding mechanism out of operation and the adjustable stop and brake into operation.

13. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, an adjustable tabulating-stop, a brake for controlling the speed of the carriage in its movement to the stopping-point determined by the adjustable tabulating-stop and a key for simultaneously throwing the feeding mechanism out of operation and the adjustable stop and brake into operation, the brake being so connected with the key that the harder the key is depressed the greater will be the pressure exerted upon the brake.

14. In a type-writer, the combination of a movable carriage, a rock-shaft, a brake carried thereby and adapted to bear against the carriage and retard its movement in the direction of its feed and a key connected with said rock-shaft.

15. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, a rock-shaft, a brake carried thereby and adapted to bear against the carriage and retard its movement, an adjustable stop carried by said rock-shaft, a projection extending from the rock-shaft and adapted to engage a portion of the feeding mechanism and throw the same out of operation and a key connected with said rock-shaft whereby a depression of the key will cause the feeding mechanism to be disengaged, the brake to be applied and the stop to be interposed in the path of an abutment on the carriage.

16. In a type-writer, the combination of a movable carriage, feeding mechanism therefor, a rock-shaft, a brake carried thereby and adapted to bear against the carriage and retard its movement, an adjustable stop carried by said rock-shaft and having a pointer which is adapted to cooperate with the scale on the brake to indicate the position of the stop, a projection extending from the rock-shaft and adapted to engage the dogs of the feeding mechanism and throw the same out of operation and a key connected with said rock-shaft whereby a depression of the key will cause the feeding mechanism to be disengaged, the brake to be applied and a stop to be interposed in the path of an abutment on the carriage.

609,518. HEEL-TRIMMING MACHINE. BENJAMIN F. MAYO, Salem, Mass., assignor to James W. Brooks, trustee, Petersham, Mass. Filed Dec. 20, 1896. Serial No. 617,311. (No model.)



Claim.—1. For heel-trimming, a rotary cutter and rand-guide, having cooperating with them an independent rotary rest discon-

nected from said rand-guide and presenting a series of projections occupying the spaces between the blades of the cutter, to form a rest for the edge of the sole, the rand-guide and rest being movable one toward and from the other to adapt the cutter to trim heels of different heights, substantially as described.

2. A rotary cutter, a rand-guide, and a rotating rest, substantially as described, for the edge of the sole, combined with a feather-edger device located at one side of said rest to contact with the outer face of the sole near its edge as the heel is being trimmed, substantially as set forth.

3. A rotary cutter, a slotted sleeve to which it is attached, a rotary rest having a series of projections entering the spaces between the blades of the cutter, a bearing for the hub of the said rest, and means to connect the said hub and shaft through the said sleeve to thus drive the said rest in unison with the cutter, substantially as described.

4. A slotted sleeve provided with a rotary cutter, a rand-guide, and a rotating rest having projections entering the spaces between the blades of the said cutter, combined with an auxiliary guide presenting a guiding edge to cooperate with said rest in controlling the presenting of the heel to the cutter, substantially as described.

5. A rotary cutter and attached rand-guide, and a rotating rest having projections entering the spaces between the blades of the said cutter, combined with two auxiliary guides, one at each side of the said rotary cutter, and presenting guiding edges in line with said rotating rest, to operate, substantially as described.

6. In a heel-trimming machine, a rotating sleeve and a rotary cutter, and a rand-guide attached thereto, a rotating feather-edger, and a rest, presenting arms inserted between the blades of the cutter, a rotating shaft as B, and connections between it and said sleeve, to enable the said sleeve with its attached cutter and the rand-guide to slide to and from the feather-edger and rest according to variation in thickness of heel, combined with a stationary sole-support occupying a position at one side of said cutter in a plane at an angle to the vertical plane in which the cutter rotates, and means to adjust and then fix the said support in its adjusted position, whereby said support may be inclined more or less according to the inclination desired for the edge of the heel, substantially as described.

7. A rotary cutter, its rand-guide, a sleeve carrying said cutter and said guide, a rotating rest having projections to enter the spaces between the blades of said cutter, combined with a spring-held plate or finger acting on the said rand-guide and normally keeping it and the cutter in position to trim the heel of minimum height at its thinnest portion, letting the said rand-guide and cutter move, however, in unison to adapt themselves to the increasing thickness of the heel, substantially as described.

8. A rotary cutter, its rand-guide, a sleeve carrying said cutter and said guide, a rotating rest having projections to enter the spaces between the blades of said cutter, and a spring-held plate or finger acting on the said rand-guide and normally keeping it and the cutter in position to trim a heel of minimum height at its thinnest portion, letting the said rand-guide and cutter move, however, in unison to adapt themselves to the increasing thickness of the heel, combined with an adjusting device cooperating with said finger to adapt it to changes in width of cutter used, substantially as described.

9. In a heel-trimming machine, a head, a bearing *c* connected therewith, a rotating rest mounted in said bearing, a rotating sleeve extended through said rest and having an attached cutter, the projections of the said rest entering the spaces between the blades of the said cutter, and a hollow box A^1, combined with an adjusting device composed of a screw attached to one end of said hollow box, and a nut held loosely in a yoke carried by said head and fitting the threads of said screw, the rotation of said nut adjusting the said head, the bearing and the rest, to preserve the proper relation between the said cutter and rest notwithstanding the decrease in the diameter of the cutter due to grinding, substantially as described.

10. For heel-trimming, a rotary cutter and rand-guide having cooperating with them a rotating rest presenting a series of projections occupying only the rear parts of the spaces between the blades of the cutter, the rand-guide and cutter being movable together laterally with relation to the said rest to uncover more or less of the cutting edges of the cutter and thus adapt it to trim heels of different heights, substantially as described.

11. In a heel-trimming machine, a rotating shaft; and a rotating cutter and rand-guide movable longitudinally together with relation to said shaft to thereby enable the cutter to trim heels of different thickness; combined with a sole-support held stationary during the operation of trimming a heel, it occupying at each time a position at one side of said cutter and in a plane at an angle to the vertical plane in which the cutter rotates, substantially as described.

12. In a heel-trimming machine, a rotatable sleeve, a rotary cutter attached to it and a cooperating rand-guide, combined with a sole-support made as a flat table, and auxiliary guides located near one edge of said table and partially embracing the said cutter, the face of said support occupying a position at one side of said cutter in a plane at an angle to the vertical plane in which the cutter rotates, and means to hold said support stationary throughout the operation of trimming a heel, substantially as described.

13. In a heel-trimming machine, the following instrumentalities, viz: a rotating shaft; and a rotating cutter and rand-guide movable together longitudinally with relation to said shaft to thereby adapt them to trim heels of different thickness; combined with a sole-support held stationary in a position at one side of said cutter and in a plane at an angle to the vertical plane in which the cutter rotates during the operation of trimming a heel; and a rotary rest d^3, it also occupying a defined position with relation to the said stationary sole-support during said heel-trimming operation, substantially as set forth.

609,519. **TRIMMING-MACHINE FOR BOOT OR SHOE WORK.** BENJAMIN F. MAYO, Salem, Mass., assignor to James W. Brooks, principal trustee, Peterham, and John Brooks, associate trustee, Cambridge, Mass. Filed May 23, 1897. Serial No. 637,860. (No model.)



Claim.—1. In a trimming-machine, a rotary shaft having an attached rand-guide, and a cutter; and a feather-edger loose on said shaft and having teeth to enter between the blades of the cutter, said feather-edger rotating with said cutter and being movable longitudinally on or with relation to said shaft; combined with an independent, spring-controlled table made movable in a line parallel with the axis of rotation of the said shaft, to follow the feather-edger in adapting itself to material of varying thickness, substantially as described.

2. In a trimming-machine for boots and shoes, a rotary shaft, a connected rand-guide, and a rotating cutter; a spring-controlled feather-edger rotatable with said cutter and adapted to be moved to and from said rand-guide by varying thicknesses of material being trimmed; combined with a table-support and a table made adjustable on said support, to thereby change its angle with relation to the axis of said shaft, said table-support and table being movable in a line parallel to the axis of rotation of said shaft, and in unison with the feather-edger, substantially as described.

3. In a trimming-machine, a rotary shaft having an attached rand-guide, and a cutter; a feather-edger surrounding said shaft and rotatable therewith and with said cutter; combined with an independent table-support, and a table pivotally mounted thereon near the circumference of the said feather-edger, and a spring to keep the table pressed in a yielding manner toward the rand-guide, substantially as described.

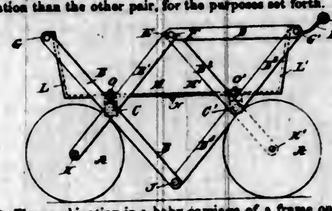
4. In a trimming machine, a rotary shaft having an attached rand-guide, and a cutter; a feather-edger surrounding said shaft and rotatable with it and said cutter; a spring surrounding said shaft and acting upon said feather-edger, to move it toward said cutter; combined with an independent table-support, and a table pivotally mounted thereon, and a spring to normally press said table-support toward said rand-guide, substantially as described.

5. In a trimming-machine, a rotary shaft having an attached rand-guide, and a cutter; a feather-edger surrounding said shaft loosely and rotated with said shaft through the said cutter, and a spring to move said feather-edger toward said cutter; combined with a table-support independent of said feather-edger and movable longitudinally with relation to the axis of said shaft, said table-support having pivoted upon it near the circumference of the rand-guide a table, and means to hold said table in adjusted position, substantially as described.

609,520. **BABY-CARRIAGE.** HENRI P. DE VOS, Brussels, Belgium. Filed Dec. 9, 1897. Serial No. 661,219. (No model.)

Claim.—1. The combination in a baby-carriage of a frame on each side of the body composed of four pivotally-connected bars, a body composed of three sections, two of them rigidly attached to said bars, and a central section composed of boards pivotally connected to the side frames and hinged to each other whereby they are adapted to fold upon themselves, and wheels likewise supported upon said bars, for the purposes set forth.

2. The combination in a baby-carriage of a frame on each side of the body, each frame composed of four pivoted bars arranged in pairs, the bars of each pair crossing each other between their ends, a pivot-pin at the place of their intersection; a body supported on said bars having a hinged bottom; and wheels supported on the lower ends of said bars, as shown, one pair of said wheels having less separation than the other pair, for the purposes set forth.



3. The combination in a baby-carriage of a frame on each side of the body composed of four bars pivoted together at their meeting ends and at their intermediate points of intersection, as shown, stay-bars at each side of the carriage pivoted at one end to the upper part of one of the bars of the side frame, and at the other end adapted to engage with one of the other bars, whereby they are locked in their extended position; a body supported on said bars, and wheels likewise supported on said bars, for the purposes set forth.

4. The combination in a baby-carriage of a frame on each side of the body composed of four bars arranged in pairs, those of each pair crossing each other between their ends, said bars being pivoted together at their meeting ends, and also at the points of their intersection; a pivoted stay-bar adapted to engage with the other bars and hold them rigidly in their extended position; a body having two rigid end sections rigidly attached to the side frames, and a central section composed of two parts hinged at their outer edges to the end sections and hinged together on their central line; and wheels supported on the lower ends of the outside bars of each pair, one pair of said wheels having less separation than the other pair, for the purposes set forth.

609,521. **NUT-LOCK.** JOHN A. PENNINGTON, Pittsburg, Pa. Filed Dec. 30, 1897. Serial No. 664,694. (No model.)



Claim.—The combination with a bolt of any ordinary construction of a pair of locking-nuts, one of which has a slightly-tapered extension or sleeve formed upon one side, and which is split at various points so that it may be contracted to a smaller diameter, a jam-nut adapted to screw upon the said extension in order to contract it, and a split washer arranged between the inner faces of both nuts, and whose ends are formed to a knife-edge and oppositely turned outwardly so as to engage with the faces of the nuts and prevent them being turned in an opposite direction, substantially as shown and described.

609,522. **KNOT-TYING DEVICE FOR GRAIN-BINDERS.** CHAS. S. SHARP, Auburn, N. Y., assignor to the D. M. Osborne & Company, same place. Filed Jan. 11, 1897. Serial No. 618,720. (No model.)



Claim.—1. In a knot-tying device for grain-binders, a knot-tying bill and a cord-holding disk, turning on axes radial to the knotter-shaft, a movable cord-holding plate embracing a segmental portion of said disk between the spindle of said disk and the knot-tying bill, a spring bearing upon it, that portion of the edge of said plate along which the cord runs, as the disk turns, occupying a position substantially parallel to the knotter-shaft, whereby the cord used in making a knot is pulled from the cord-holder by the knot-tying bill without rotating the holding-disk, substantially as described.

2. In a knot-tying device for grain-binders, a knot-tying bill and a cord-holding disk, turning on axes radial to the knotter-shaft, and a movable cord-holding plate embracing a segmental portion of said disk between the spindle of said disk and the knot-tying bill, a spring bearing upon it, the edge of said plate along which the cord runs as the disk turns and over which the cord is drawn by the bill in forming the knot, occupying a position substantially at right angles to a line intersecting the spindles of said disk and bill, substantially as described.

3. In a knot-tying device for grain-binders, a knot-tying bill and a cord-holding disk, turning on axes radial to the knotter-shaft, and a movable cord-holding plate embracing a segmental portion of said disk between the spindle of said disk and the knot-tying bill, a spring bearing upon it having a curved guide for the cord near the cord-holding plate, the edge of said plate along which the cord runs as the disk turns and over which the cord is drawn by the bill in forming the knot, occupying a position substantially at right angles to a line intersecting the spindles of said disk and bill, substantially as described.

609,523. **WIRE-FENCE SPACER.** GEORGE H. SHELDON, Chili Station, N. Y. Filed Dec. 11, 1897. Serial No. 661,545. (No model.)

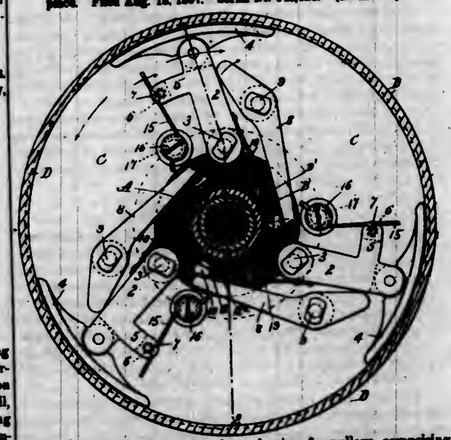


Claim.—1. The combination, in a wire-fence spacer, of a suitable arm or bar having two jaws tapering on their outer surfaces projecting laterally from one end thereof, said jaws being adapted to engage the line-wire and the stay-wires in open spaces between the loops, and one or more laterally-projecting rests for the next adjacent horizontal wire at or near the other end of the bar, substantially as described.

2. The combination, in a wire-fence spacer, of a suitable arm or bar having the relatively-adjustable jaws tapering on their outer surfaces projecting laterally from one end thereof, said jaws being adapted to engage the line-wire and the stay-wires in open spaces between the loops, and one or more laterally-projecting rests for the next adjacent horizontal wire at or near the other end of the bar, and means for securing the adjustable jaw to the bar, substantially as described.

3. The combination with the bar I, provided with the laterally-projecting lugs K near one end, of the fixed jaw J' and the relatively-adjustable jaw J projecting laterally from the other end, the screw M attached to the adjustable jaw and passing through a slot N in the arm, and the nut P outside the arm, substantially as described.

609,524. **FRICTION CLUTCH MECHANISM.** ALLEN L. SKINNER, Springfield, Mass., assignor of one-half to Arthur J. Skinner, same place. Filed Aug. 18, 1897. Serial No. 648,628. (No model.)



Claim.—1. A friction clutch mechanism for pulleys, comprising a shaft, a circular flange provided with a suitable hub, fixed on said shaft, a drive pulley having a bearing on the hub of said flange and turning freely thereon, toggle-levers pivotally supported by one end on said flange, clutch-shoes pivotally supported on the opposite ends of said toggle-levers for engagement with the rim of said driven pulley, which shoes are normally held out of engagement therewith; the levers S, pivoted on said flange, one end of said levers bearing on

said toggle-levers, and wedge-shaped pins having a longitudinal movement on said shaft and bearing against the inner ends of the levers 8, whereby said levers 8 are operated to permit the engagement or effect the disengagement of the said clutch-shoes and the rim of said driven pulley; and two sets of springs which bear against the two sets of levers, substantially as shown.

2. A friction clutch mechanism for pulleys comprising a circular flange secured to a driving-shaft, a driven pulley having a free turning movement on said shaft in proximity to said flange, clutch-shoes for engagement with the rim of said driven pulley, toggle-levers on which said shoes are pivotally held, pivotally supported by one end on said flange, levers 8 pivotally supported on said flange, springs on said flange bearing on said toggle-levers for moving them in a direction contrary to the direction of rotation of said driving-shaft, pins having wedge-shaped ends for engaging levers 8, which pins have a longitudinal movement on said shaft, whereby said levers are actuated to permit the engagement of the said clutch-shoes and driven pulley, and to effect the disengagement thereof, and a suitable spring between said toggle-levers and said levers 8, substantially as described.

3. In a friction-clutch, the flange C, having an annular cavity 19 around its center, the sliding collar, and the pins 12 connected thereto and passing through the flange into the annular cavity, combined with the levers 8 having inwardly-turned ends and projections formed thereon for engaging with the pins, the toggle-levers which are pivoted upon the flange, separate springs applied to the levers 2 and 8 and the shoes 4 applied at the ends of the toggle-levers, substantially as shown.

609,525. FIBER VESSEL. ANDREW STARK, Chicago, Ill. Filed Apr. 20, 1897. Serial No. 634,377. (No model.)



Claim.—1. A fiber vessel having the bottom impressed to form triangular feet about the periphery with a depressed center, and radial depressions between the feet merging in such depressed center.

2. A fiber vessel whose bottom exterior has a depressed center, and radial depressions merging in said central depression, said radial depressions having their bottoms inclined or sloping from the bottom of the central depression to the outer lower periphery of the vessel, and constituting openings through said periphery.

3. A fiber vessel having the bottom formed with a central depression and radial extensions therefrom diminishing in depth outward from the central depression, said radial extensions being deepest at their central radial lines respectively, whereby there are formed between them, on the bottom of the vessel, triangular feet in an annular series, said feet having sloping sides and points.

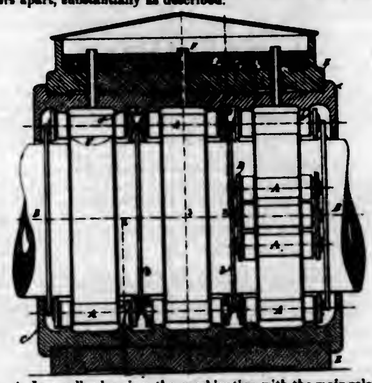
4. A fiber vessel whose bottom has exteriorly a depressed center and radial depressions merging in said central depression, leaving a marginal series of triangular feet projecting from such bottom, such triangular feet having their lateral edge portions of greater density than the remainder of the bottom.

609,526. ROLLER-BEARING. MESSRS. C. P. THIERRY, Paris, France, assignor of three-fourths to Charles Victor Thierry, Gordon David Sturrock, and Francis Frederick Henry Lewis Mesmons, same place. Filed Oct. 7, 1897. Serial No. 654,527. (No model.) Patented in France June 4, 1896, No. 256,986, and Mar 8, 1897, No. 264,757; in Belgium June 4, 1896, No. 121,719; in Germany June 8, 1896, No. 90,976; in England June 8, 1896, No. 12,522; in Austria July 7, 1896, No. 1,340; in Hungary July 14, 1896, No. 6,497; in Switzerland Nov. 24, 1896, No. 13,543; in Luxemburg Nov. 24, 1896, No. 2,267; in Italy Dec. 1, 1896, No. 43,271, and in Spain Dec. 2, 1896, No. 20,042.

Claim.—1. In a roller-bearing, the combination with the opposing parts of the bearing, of interposed bearing-rollers provided at their ends with axial pins, and disks of larger diameter than the rollers loosely mounted on said pins and bearing against one another, substantially as described.

2. In a roller-bearing, the combination with the shaft and its box or casing, of interposed bearing-rollers provided at their ends with axial pins of comparatively small diameter, and disks of larger diameter than the rollers loosely mounted on said pins and bearing against one another to keep the rollers apart, substantially as described.

3. In a roller-bearing, the combination with the shaft and its box or casing, of interposed double-diameter bearing-rollers provided at their ends with axial pins of comparatively small diameter, and disks of larger diameter than the maximum diameter of the rollers loosely mounted on said pins and bearing against one another to keep the rollers apart, substantially as described.



4. In a roller-bearing, the combination with the main relatively-movable parts thereof, of interposed conical double-diameter bearing-rollers provided at their ends with axial pins of comparatively small diameter, and disks of larger diameter than the maximum diameter of the rollers loosely mounted on said pins and bearing against one another to keep the rollers apart, substantially as described.

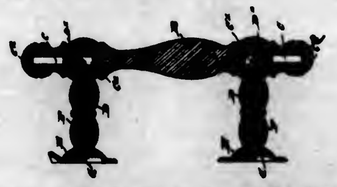
5. In a roller-bearing, the combination with the shaft and its box or casing, of interposed bearing-rollers provided at their ends with axial pins of comparatively small diameter, disks of larger diameter than the rollers loosely mounted on said pins and bearing against one another to maintain the rollers separated, and collars arranged adjacent to said disks and adapted to confine them on said pins, substantially as described.

6. In a roller-bearing, the combination with the shaft and its box or casing, of interposed bearing-rollers having axial pins of comparatively small diameter at their ends, disks of larger diameter than the rollers loosely mounted on the pins and bearing against one another to keep the rollers apart, and collars on the shaft adapted to confine the disks on said pins, substantially as described.

7. In a roller-bearing, the combination with the shaft and its box or casing, of two series of bearing-rollers interposed between said shaft and casing at right angles to each other, the rollers of one series being cylindrical and those of the other series conical, axial pins of comparatively small diameter on the ends of said rollers, and disks of larger diameter than the rollers loosely mounted on said pins and bearing against one another to maintain the rollers separated, substantially as described.

8. In a roller-bearing, the combination with the fixed and movable paths or tracks, of rollers with two diameters interposed between said paths or tracks, only the portions of said rollers which are of the same diameter being in contact with each path respectively, the diameters and lengths of the generatrices of the rollers being such that the bearing surfaces or areas, determined by them, shall be in the proportion required to apportion the wear of the two paths or tracks, notwithstanding differences in their surfaces and nature, substantially as set forth.

609,527. COFFEE OR TEA POT HANDLE. GEORGE WILHELM and JOHN F. MCGOVERN, Kokomo, Ind. Filed Nov. 13, 1897. Serial No. 658,454. (No model.)



Claim.—1. A handle consisting of an upright of non-heat-conducting material provided with a longitudinal bore at each end, and a lateral bore connecting with the inner end of each of said longitudinal bores, sleeves of analogous material engaging in said lateral bores, and wires or rods connected to the pot at their inner ends passing through said sleeves and having bent ends to enter the longitudinal bores of the upright, substantially as described.

2. The combination of the upright or handle B having longitudinal bores C and lateral bores C' connecting therewith, the sleeves F inserted in said lateral bores, the ears E secured to the pot, and the wires D fastened to the ears at their inner ends and having angular ends D' entering the sockets C, substantially as described.

3. The combination of the upright or handle B having longitudinal bores C and lateral bores C' connecting therewith, the sleeves F inserted in said lateral bores, the ears E secured to the pot, and the wires D fastened to the rods at their inner ends by spreading said ends, and having angular ends D' entering the sockets C, substantially as described.

609,528. COAL-HOD LIFTER AND BOX OR RECEIVER FOR SAME. ABRA R. WILSON, Bridgeton, N. J. Filed July 12, 1897. Serial No. 644,236. (No model.)

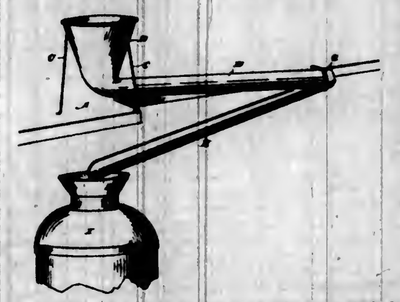


Claim.—1. A coal-hod box and lifter, having in combination, a box or case, a spring-supported lifter within the same adapted to hold a hod, and a spring-actuated foot-lever at the base of the box, adapted automatically to engage with each lifter when the latter is lowered sufficiently, and thus to hold down the lifter, all substantially as set forth.

2. In combination with a box or case for a coal-hod, the lifter, springs for supporting and lifting the same, the receptacles for such springs having vertical slits therein to allow the lifter to be lowered and raised, an eye on the bottom of the lifter, and a latch at the base of the box normally held to place by a spring and adapted to engage itself with such eye, and provided with a projection extending through the box, pressure upon which serves to release the lifter and its hod or load to permit the same to rise automatically.

3. In combination with the box, the lifter and lifter-springs, swinging ears on the lifter as described, serving to permit a hod or scuttle to be turned thereon, and a spring-actuated foot-lever at the base of the box as set forth.

609,529. MILK-STRAINER. JOHN H. WRIGHT, Laverne, Minn. Filed Sept. 14, 1897. Serial No. 651,868. (No model.)

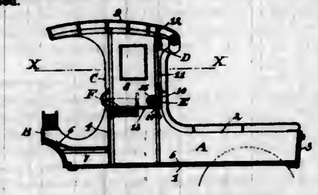


Claim.—A milk-strainer, comprising a bowl or receptacle for milk, having its sides inclined downwardly toward the center, a pipe leading from the bottom thereof laterally and slightly downward, having its outer end closed and provided with perforations in its lower side extending throughout the length of the pipe, and a trough below the perforated pipe in the same vertical plane but inclined downward in the opposite direction to receive the milk passing through the perforations in the inclined pipe, substantially as described.

609,530. UNDERTAKER'S WAGON. JOHN SWAAN, Albany, N. Y. Filed Sept. 8, 1897. Serial No. 650,903. (No model.)

Claim.—1. An undertaker's wagon as herein shown and described, provided with a box, A, having a permanent protector, C, which covers the forward portion of said box, the after portion of the latter being left uncovered by the said protector; the latter being provided with a forwardly-projecting roof, as and for the purpose specified.

2. The combination, in an undertaker's wagon, of a wagon-box, A, having a protector, C, permanently erected thereon adjacent to the foremost portion of said box; the rearmost portion of the box being uncovered, and a transverse partition, 4, between the sides of said box near the front of the protector, of a vertically-adjustable seat, F, arranged within said protector, as and for the purpose specified.



609,531. HEAD-PIECE FOR STRINGED INSTRUMENTS. JOHN BRANDT, Chicago, Ill. Filed Jan. 18, 1898. Serial No. 667,168. (No model.)



Claim.—1. In a head-piece for stringed instruments, the combination of a plate having two flanges; rotary pegs arranged on each side of said plate in two rows longitudinally thereof; a head-stock arranged lengthwise of said plate, between said two rows of pegs, and consisting of a channeled plate having perforations or notches in the sides thereof; spindles, bearing worms, and having a bearing in one of the flanges on said flanged plate, and held, at their inner extremities, by said head-stock; and gears on said pegs to engage with the worms on said spindles, all substantially as described.

2. In a head-piece for stringed instruments, the combination of a plate having two flanges; rotary pegs, whose longitudinal center line is at right angles to said plate, and arranged on each side of said plate in two rows longitudinally thereof; a head-stock arranged lengthwise of said plate between said two rows of pegs, and consisting of a channeled plate having perforations or notches in the sides thereof; spindles, bearing worms, and having a bearing in one of the flanges on said flanged plate, and held at their inner extremities by said head-stock; and gears on said pegs to engage with the worms on said spindles, all substantially as described.

3. In a head-piece for stringed instruments, the combination of a plate having two flanges; rotary pegs whose longitudinal center line is at right angles thereto, and arranged on each side of said plate in two rows longitudinally thereof; a head-stock arranged lengthwise of said plate between said two rows of pegs, and consisting of a channeled plate, having notches in the sides thereof; spindles having a bearing in one of the flanges of said plate, and carrying worms to engage with gears on said pegs; heads on the inner end of said spindles; grooves between said heads and the inner extremity of said worms; the groove on said spindles fitting into said notches in said head-stock, whereby said spindles are firmly held, all substantially as described.

4. In a head-piece for stringed instruments, the combination of a flanged plate, an additional plate in contact with said flanged plate; a rotary peg extending through an aperture in said additional plate; a gear attached to said peg; a shoulder on said peg, said shoulder and said gear being of greater diameter than the aperture in said additional plate, whereby said additional plate is clamped between said gear and said shoulder; an aperture in said flanged plate, adapted to receive and fit said shoulder on said peg, the head of said peg extending beyond, and the longitudinal center line of said peg being at right angles to said flanged plate, means for operating said gears, and means for attaching said additional plate to said flanged plate; all substantially as described.

5. In a head-piece for a stringed instrument, the combination of a plate having two flanges; a head-stock arranged lengthwise of said plate, and consisting of a channeled plate having notches in the sides thereof; spindles carrying worms, and having a bearing in one of the flanges on said plate, and each of said spindles having at its inner extremity a head and a groove between said head and said worm; said grooves fitting into said notches on said head-stock; and pegs with gears thereon to engage with said worms on said spindles, substantially as described.

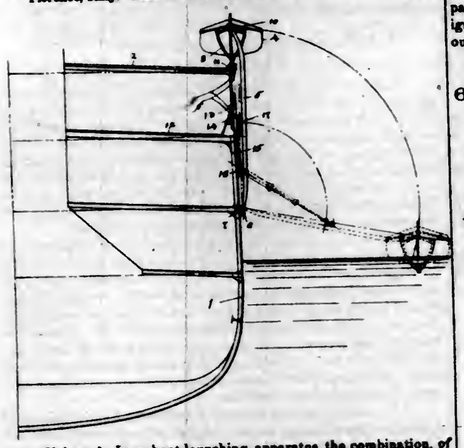
6. In a head-piece for stringed instruments, a plate bearing worm-gearing, and a head-stock to hold the inner extremities of said worm-

gearing; said head stock consisting of a channeled plate with notches therein to receive the inner extremities of said worm-gearing, substantially as described.

7. A head-piece for a stringed instrument, said head-piece containing tuning-pegs perpendicular to the upper face of said head-piece, and worm-gearing for actuating said pegs; and a central head-stock to retain the spindles which carry said worm-gearing; said head-stock consisting of a channeled plate having perforations or notches on each side thereof; said head-piece being adapted to be placed upon the upper side of the head of said instrument, substantially as described.

8. The combination of a flanged plate, whose flanges are apertured to receive and form bearings for spindles bearing worms; spindles having said worms thereon, bearing at one end in said flanges, and having heads, and grooves fitting into notches in a central head-stock on said plate; an additional plate apertured to receive tuning-pegs; pegs having gears at one extremity to engage with said worms, and shoulders thereon of greater diameter than the apertures in said additional plate, so that said additional plate is clamped between said gears and shoulders on said pegs; apertures in said flanged plate to receive and fit said shoulders on said pegs; and a central head-stock having notches therein: all substantially as described.

609,582. BOAT-LAUNCHING DEVICE. ALFREDO CAPPELLINI, Florence, Italy. Filed Jan. 18, 1896. Serial No. 667,119. (No model.)



Claim.—1. In a boat-launching apparatus the combination, of a pair of davits pivoted to the side of a vessel, with a boat-carrying cradle, pivoted to the free ends of the davit upon trunnions, which permit the boat to maintain its level in all positions of the davit, and a davit-controlling device, also pivoted to the side of the vessel at one end and connected to the davit at the other end, and adapted to control the descent of the davit and boat when released, substantially as described.

2. In a boat-launching apparatus the combination, of a pair of davits pivoted to the side of a vessel, with a boat-carrying cradle, pivoted to the free ends of the davit upon trunnions, which permit the boat to maintain its level in all positions of the davit, an automatic controlling device adapted to control the descent of the davit and boat when released and means for disconnecting the davit-controller from the davit when the boat has been launched.

3. In a boat-launching apparatus the combination, of a pair of davits pivoted to the side of the vessel, with a boat-carrying cradle, pivoted to the free ends of the davits, upon trunnions, which permit the boat to maintain its level in all positions of the davits, and a davit-controlling device consisting of, a series of telescoping cylinders, filled with fluid, pivoted to the side of the vessel at one end, and secured to the davit at the other, and adapted to control the descent of the davits and boat when released.

4. In a boat-launching apparatus, the combination of a pair of davits pivoted to the side of a vessel, with a boat-carrying cradle, pivoted to the free ends of the davits upon trunnions, which permits the boat to maintain its level in all positions of the davits, and a davit-controlling device consisting of a series of telescoping cylinders, filled with fluid, pivoted to the side of the vessel at one end, and secured to the davit at the other, and adapted to control the descent of the davits and boat when released, and means for releasing the controller from the davit to permit it and the cradle to sink below the boat when the boat is launched.

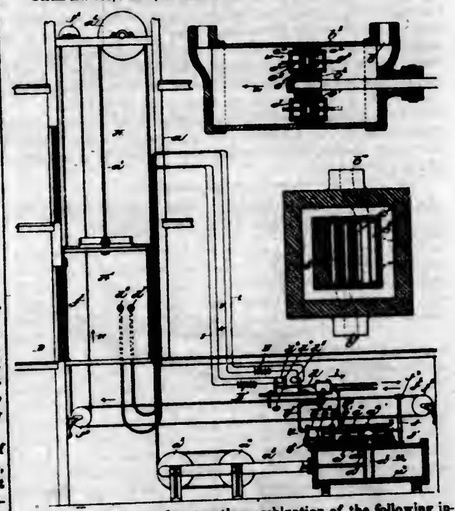
5. In a boat-launching apparatus, the combination, of a pair of davits pivoted to the side of the vessel, with a boat-carrying cradle pivoted to the free ends of the davits, with a locking device, for locking the davits to the side of the vessel, controlled by an electrical device, whereby the davits may be unlocked and the boat launched, by closing a circuit at any desired part of the ship.

6. In a boat-launching apparatus the combination, of a pair of davits, pivoted to the side of the vessel with a boat-carrying cradle pivoted to the free ends of the davits, with a locking device for locking the davits to the side of the vessel, said locking device consisting in part, of a block of fragile material which may be broken to unlock the davits.

7. In a boat-launching apparatus, the combination, of a pair of davits pivoted to the side of the vessel, with a boat-carrying cradle pivoted to the free ends of the davits, a locking device for locking the davits to the side of the vessel, said locking device consisting in part of a block of fragile material, containing an explosive and an electrical device, for igniting the explosive, to rupture the fragile block and unlock the davit.

8. In a boat-launching device the combination, of a pair of davits pivoted to the side of a vessel, with a boat-carrying cradle pivoted to the free ends of the davits by means of trunnions, said cradle being adapted to maintain the boat in a horizontal position, in all positions of the davits, with a locking device for locking the davits to the side of the vessel, and a locking device for locking the keel of the boat or the cradle to the deck, said locking devices consisting in part of fragile blocks, containing an explosive, electrical means for igniting said explosives and rupturing said fragile blocks simultaneously, by the closing of a circuit at any desired part of the vessel.

609,588. ELEVATOR. JOHN H. CLARK, Boston, Mass., assignor to the Whittier Machine Company, same place. Filed May 26, 1897. Serial No. 290,433. (No model.)



Claim.—1. In an elevator, the combination of the following instrumentalities, viz: an elevator-car, a cylinder containing a piston connected with and to operate said car, a main valve to control the flow of fluid to and from said cylinder, an auxiliary cylinder containing a piston connected with and to move said main valve, an auxiliary valve for said auxiliary cylinder, electromechanical devices controllable from the car to move said auxiliary valve and thereby the main valve, independent mechanical devices also controllable from the car to move said main valve, and relief-valves for and to permit circulation of the fluid from one to the other end of said auxiliary cylinder when the piston therein and its connected main valve are moved by said mechanical devices, substantially as described.

2. In an elevator, the combination of the following instrumentalities, viz: an elevator-car, a cylinder containing a piston connected with and to operate said car, a main valve to control the flow of fluid to and from said cylinder, an auxiliary cylinder containing a piston connected with and to move said main valve, an auxiliary valve for said auxiliary cylinder electromechanical devices controllable from the car to move said auxiliary valve and thereby the main valve, independent mechanical devices also controllable from the car to move said main valve, and relief-valves in the piston of the auxiliary cylinder to permit circulation of fluid from one to the other side of the piston in the cylinder when the piston and its connected valve are moved by the said mechanical devices, substantially as described.

3. In an elevator the combination of the following instrumentalities, viz: an elevator-car, a cylinder containing a piston connected with and to operate said car, a main valve to control the flow of fluid to and from the said cylinder, an auxiliary cylinder containing a piston connected with and to move the main valve, electromechanical devices controllable from the elevator-car, whereby the piston in the auxiliary cylinder is moved and thereby the main valve, independent mechanical devices also controllable from the elevator-car and connected to move the main valve, and relief-valves for, and to permit the circulation of fluid from one to the other side of the piston in the auxiliary cylinder, substantially as and for the purposes set forth.

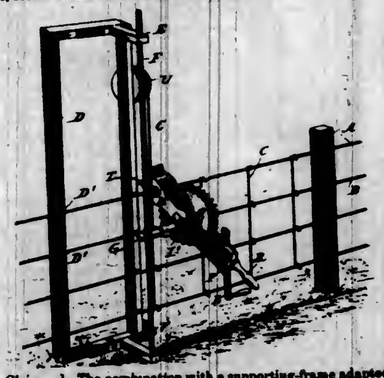
609,584. PIPE CLAMP AND HOLDER. ROBERT W. CLARK, Clinton, Minn. Filed Aug. 24, 1897. Serial No. 649,268. (No model.)



Claim.—1. In combination with a stovepipe, the clamp 2, thumbscrew 7, and a holder 12, having the perforated body 14 arm 15 with catch end 16, and spring-arm 17, substantially as shown and described.

2. In combination with the stovepipe the holder 12, having the perforated body 14 arm 15 with catch end 16 and spring-arm 17 having catch end 18 said holder adapted to be secured on the inner side of a stovepipe by screw, rivet, or other substantial means, substantially as set forth.

609,585. WIRE-FENCE MACHINE. HUBE L. DAVIS, Braymer, Mo., assignor to the De Kalb Fence Company, De Kalb, Ill. Filed Sept. 8, 1897. Serial No. 651,008. (No model.)



Claim.—1. The combination with a supporting-frame adapted to be slid along the line of fence, of a twisting-frame slidingly secured on the supporting-frame, a twister on the twisting-frame having a slot adapted to engage the line-wire, a hook on one end of the twister adapted to engage the stay-wire, and means for rotating the twister to engage the hook with the stay-wire, substantially as described.

2. The combination with the supporting-frame adapted to be slid along the line of fence, of a twisting-frame slidingly secured on the supporting-frame, a twister on the twisting-frame provided with a slot adapted to engage the line-wire, a hook on one end of the twister adapted to be engaged with the stay-wire, a shoulder on the twister opposite the hook, and means for actuating the twister, substantially as described.

3. The combination with a frame adapted to be slid along the line of fence, of a twisting-frame pivotally and slidingly secured on the supporting-frame and provided with a bifurcated end, a twister provided with a slot adapted to engage the line-wire, a hook on the twister adapted to be engaged with the stay-wire, means on the twister for disengaging the stay-wire from the hook, means for actuating the twister, and means for locking the actuating means to register the slot in the twister with the bifurcated end of the twisting-frame, substantially as described.

4. The combination with a supporting-frame adapted to be slid along the line of fence and a twisting-frame slidingly secured on the supporting-frame, of a twister on the twisting-frame provided with a slot adapted to engage the line-wire, a hook on the twister adapted to be engaged with the stay-wire, a shoulder on the end of the twister on the opposite side of the slot, a beveled portion on the shoulder for disengaging the hook from the stay-wire, and means for actuating the twister.

5. The combination with the supporting-frame adapted to be slid along the line of fence, of a twisting-frame provided with a bifurcated end and slidingly secured on the supporting-frame, a gear-wheel journaled on the twisting-frame, oppositely-arranged pinions journaled on the frame and meshing with the gear-wheel, an operating-handle secured to one of the pinions, a twister secured to the opposite pinion and provided with a slot adapted to engage the line-wire, a hook on the twister adapted to engage the stay-wire, a spring-actuating means for locking the parts when the slot in the twister registers with the bifurcated end of the frame, and a lever pivoted on the twisting-frame for releasing said means.

6. The combination with a supporting-frame adapted to be slid along the line of fence, of a twisting-frame slidingly and pivotally secured to the supporting-frame and provided with a bifurcated end, a gear-wheel journaled on the twisting-frame and provided with oppositely-arranged apertures, pinions journaled on the twisting-frame on opposite sides of the gear-wheel, one pinion provided with actuating means, a twister connected to the opposite pinion and provided with the slot in line with the apertures in the gear wheel, at stated intervals a hook on the twister, a shoulder on the twister opposite the hook, a pin adapted to engage one of the apertures in the gear-wheel, and a spring-actuated lever for forcing the pin in engagement with the apertures, substantially as described.

609,586. FLUE-CUTTER. PATRICK DIXON, Bloomington, Ill. Filed Dec. 28, 1897. Serial No. 663,857. (No model.)



Claim.—1. A flue-cutter, comprising a hollow body open at the ends having parallel flat sides and a transverse slot, a lever journaled within and guided by such sides, said lever having a transverse cylindrical socket, and a cutter-piece having a cylindrical foot to seat in such socket, said cutter-piece having its upper end bold to pass through the transverse slot in the hollow body as set forth.

2. In a flue-cutter, the combination of the hollow body open at the ends and having a transverse slot, said body having parallel flat sides and rounded edges, the front end having a projecting flange, having an undercut guide portion, a lever having one end pivotally held within and guided by the side walls of the body, its inner end having a transverse cylindrical socket terminating in a neck having oppositely-inclined stop portions, and the cutter having a curved upper edge and an enlarged cylindrical transverse foot adapted to be slid endwise into the socket of the lever, all being arranged substantially as shown and described.

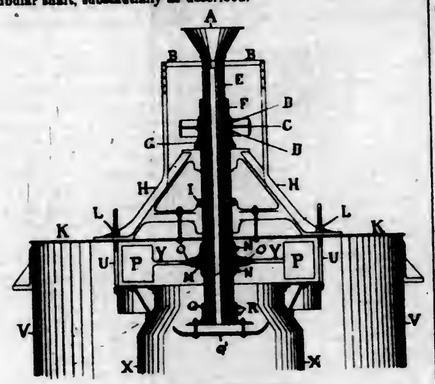
3. An improved flue-cutter, comprising a hollow body, a lever having its head portions extended within the body and horizontally pivoted therein, a transversely-held cutter-piece pivotally secured on the end of the said head portion, adapted to be projected through the transverse slot in the body, said body having a projecting member on its front face, and an adjustable screw-stop held therein for limiting the downward movement of the operating-levers as specified.

609,587. AIR-SEPARATOR. GEORGE S. REMMEY, Philadelphia, Pa. Filed Apr. 16, 1897. Serial No. 632,494. (No model.)

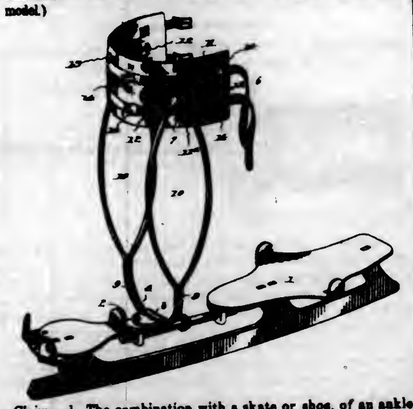
Claim.—1. In combination, the outer casing K K V V having the funnel opening W, the inner casing X X adjustably suspended within said outer casing by means of the rods U U and having the funnel opening Z, the tubular shaft F supported by the frame H H and rotated by the adjustable driving-pulley O, the discharge-plate Q Q' adjustably attached to said tubular shaft, the hub M adjustably attached to said tubular shaft above said discharge-plate, the arms Y Y adjustably attached to said hub and carrying the fan-blades P P, the non-rotating feed-pipe E with its hopper A, and the adjustable cross-piece B B, all substantially as described and for the purposes set forth.

2. In combination, the tubular shaft F, the hub M adjustably attached to said tubular shaft, the arms Y Y adjustably attached to said hub and carrying the fan-blades P P, the discharge-plate Q Q' adjustably attached to said tubular shaft, the non-rotating feed-pipe E, the outer casing K K V V having the outlet W, the inner casing

X X adjustably suspended within said outer casing by means such as the rods U U and having the outlet Z, and means for rotating said tubular shaft, substantially as described.



609,538. ANKLE-BRACE. JOHN W. FRERICH and JOSEPH H. FRERICH, Alvord, Iowa. Filed Oct. 30, 1897. Serial No. 656,956. (No model.)



Claim.—1. The combination with a skate or shoe, of an ankle-brace comprising a pair of U-shaped rods, means for pivotally attaching said U-shaped rods to the skate or shoe to turn on a horizontal axis and said rods bowed in opposite directions to form spaces for the reception of the ankle, a leg-band pivoted to the upper ends of the rods on a horizontal axis, and means to secure the band on a leg, substantially as described.

2. The combination with a skate, a shoe, of an ankle-brace comprising a pair of U-shaped rods, means for attaching said brace-rods to a skate or shoe to turn on a horizontal axis, a two-part leg-band to which the brace-rods are respectively pivoted on horizontal axes, and securing-straps on which the two-part leg-band is slidably fitted, substantially as described.

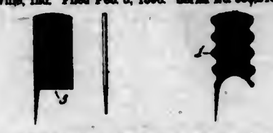
3. The combination with a skate, a shoe, of a clip attached to said skate or shoe, a pair of U-shaped rods pivotally connected to the clip on a horizontal axis, said rods extending up on each side of the foot and being bent or bowed in opposite directions to form spaces for the reception of the ankle, a leg-band to which the upper ends of the rods are pivoted on a horizontal axis, said leg-band being formed in two sections, and securing-straps loosely connected to the leg-band, substantially as described.

4. An ankle-brace comprising a pair of U-shaped rods which are bowed laterally to provide spaces for the reception of the wearer's ankles, means for pivotally attaching the lower looped end of said brace-rods to a skate or shoe, a leg-band pivoted to the upper ends of the rods, and attaching-straps connected to said leg-band, substantially as described.

5. An ankle-brace comprising brace-rods looped at their lower ends, a clip fitted to the looped ends of the brace-rods and having means for attachment to a skate or shoe, a leg-band pivoted to the brace-rods to turn on a horizontal axis, and fastening-straps attached to the leg-band, substantially as described.

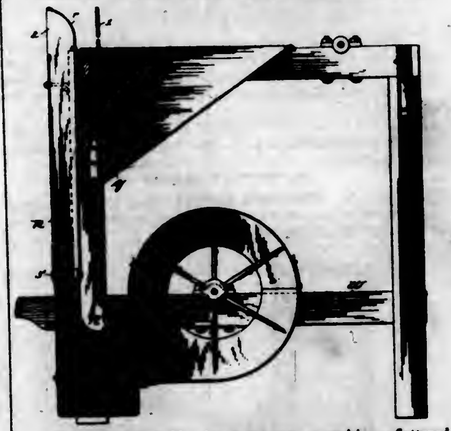
6. The combination with an ankle-brace, of a two-part leg-band having its sections pivoted independently to the upper ends of said ankle-brace to turn on horizontal axes, and fastening-straps slidably fitted to the members of said leg-band, substantially as described.

609,539. CLAMP FOR CARVINGS. CHARLES J. GARTHER, Shelbyville, Ind. Filed Feb. 5, 1898. Serial No. 669,513. (No model.)



Claim.— The herein-set-forth clamp for carvings, &c., comprising a long, wide and thin handle substantially rectangular in form, having a brad projecting from said handle in line with one of its longest edges, substantially as described.

609,540. GOLD AND ORE SEPARATOR. WILLIAM GRAY, Lincoln, Nebr. Filed Aug. 18, 1897. Serial No. 648,845. (No model.)



Claim.—1. A portable air-concentrator, comprising a flattened vertical flue, having a clear unobstructed passage, a hopper discharging through an opening into the upper part of said flue, a fan of substantially the same width as the flue, a curved passage of the same width as the flue, leading from the fan to the flue and an evening-flap freely suspended at its upper edge in said passage, near the fan, and extending from side to side of the passage, substantially as described.

2. A portable air-concentrator comprising a flattened vertical flue, having a clear unobstructed passage, a hopper discharging through an opening of the same width as the flue, into the upper part thereof, a fan of substantially the same width as the flue, a curved passage also of the same width, leading from the fan to the flue, and an evening-flap freely suspended at its upper edge in said passage near the fan and extending from side to side of the passage and a flaring discharge-opening at the upper end of the vertical flue, substantially as described.

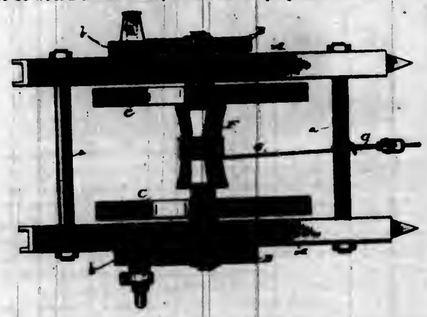
3. In a portable air-concentrator and in combination and arrangement, as shown, a vertical flattened flue having a clear unobstructed passage, and connected by a curved passage with a fan all of the same width as the flue, an evening-flap freely suspended near the upper edge in said passage, the lower wall of said curved passage being at the bottom of the flue and being perforated, and a box beneath the perforations.

4. In a portable air-concentrator and in combination and arrangement as shown, a vertical flue connected to a fan by a curved passage, all of substantially the same width, an evening and indicating flap freely suspended by its upper edge across the passage from side to side thereof, and an indicator-arm on the outside of the passage and on the end of the axis of said flap.

609,541. CAR-MOVER. HUGH HARDY, Hewarden, Iowa. Filed Aug. 19, 1898. Renewed Jan. 22, 1898. Serial No. 667,669. (No model.)

Claim.—In a car-moving apparatus, the combination of a frame

mounted on transporting-wheels and adapted to be tilted downward at its forward end and engaged with a stationary part in the road-bed, means for connecting the rear end of the frame with the road-bed to prevent tilting up, the shaft journaled in the frame, and means for operating said shaft, and a draft-chain connected to and adapted to be wound on said shaft, as and for the purposes set forth.



609,542. WHEEL FOR BICYCLES. GEORGE HAYES, New York, N. Y. Filed Nov. 6, 1897. Serial No. 657,854. (No model.)



Claim.—1. In a wheel for bicycles and other vehicles, an axle-hub provided with a set of spindles arranged parallel thereto, at intervals around the same, a spoke-nave encircling the axle-hub and provided with a set of spindles arranged parallel to the hub, a set of free spindles also parallel to the axle-hub, and upon the aforesaid spindles, cylindrical coils of spring metal, the several coils all being connected, essentially as set forth.

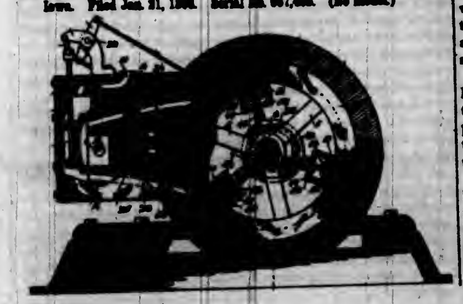
2. In a wheel for bicycles and other vehicles, an axle-hub resiliently suspended within an encircling spoke-nave, the points of suspension being cone spirals, essentially as set forth.

3. In a wheel for bicycles and other vehicles, an axle-hub sustained centrally within an encircling spoke-nave by suspensory springs formed as radiating arms terminating in coils, and which extending beyond the periphery of the spoke-nave, are connected therewith by arms finishing in coils, essentially as set forth.

4. In a wheel for bicycles and other vehicles, a system of springs between an axle-hub and encircling spoke-nave, formed as radiating arms connected at their bases by coiled springs, each to its contiguous neighbor, and at their outermost extremity each arm terminating in a coil, from which depend arms arranged anglewise, and also forming an angle at their meeting-point where connected to the spoke-nave, then uniting in a coil, essentially as set forth.

5. In a wheel for bicycles and other vehicles, a system of spirally-coiled metal springs, each of tubular shape and each encircling a spindle, the springs connected by straight continuations or stretches of the metal, and the whole system connected to an axle-hub and an encircling spoke-nave to provide for elasticity and resiliency, essentially as set forth.

609,543. ROTARY ENGINE. EDWIN J. KENNEDY, Garnaville, Iowa. Filed Jan. 21, 1898. Serial No. 667,469. (No model.)



Claim.—1. In a rotary engine, the combination with a cylinder, of a rotary piston, a fixed abutment in contact with the periphery of the piston, piston-wings mounted for radial movement upon the piston, an eccentric mounted for rotary adjustment coaxially with the piston, operating connections between the eccentric and the piston-wings and means, including locking devices, for varying the position of the eccentric, substantially as specified.

2. In a rotary engine, the combination with a cylinder, of a rotary piston, a fixed abutment in yielding and permanent contact with the periphery of the piston, piston-wings mounted for radial movement upon the piston, an eccentric mounted for rotary adjustment coaxially with the piston, operating connections between the eccentric and the piston-wings, and exterior means, including locking devices, for varying the position of the eccentric, substantially as specified.

3. In a rotary engine, the combination with a cylinder and valve mechanism, including a throttle-valve, a rotary piston having wings mounted for radial extension and retraction, an eccentric mounted for rotary adjustment coaxially with the piston and operatively connected with the piston-wings, means for varying the adjustment of the eccentric, and operating connections between the eccentric and said throttle-valve, substantially as specified.

4. In a rotary engine, the combination with a cylinder and valve mechanism, including a throttle-valve, of a rock-shaft operatively connected with the valve, a piston having radially-movable piston-wings, an eccentric mounted for rotary adjustment coaxially with the piston and operatively connected with said piston-wings, an exterior rotary cap connected with the eccentric, means for adjusting the cap to vary the position of the eccentric, and connections between said cap and the rock-shaft of the valve mechanism, substantially as specified.

5. In a rotary engine, the combination with a cylinder and valve mechanism, including a throttle-valve, of a rock-shaft operatively connected with the valve, a piston having radially-movable piston-wings, an eccentric mounted for rotary adjustment coaxially with the piston and operatively connected with said piston-wings, an exterior rotary cap connected with the eccentric and having peripheral sprocket-teeth, means for varying the position of the cap to adjust the eccentric, and connecting-rods between a cross-head upon the rock-shaft of the valve mechanism, and a flexible traveler traversing the toothed periphery of the cap, substantially as specified.

6. In a rotary engine, the combination with a cylinder, of a piston having radial pockets in communication with a steam-chamber, piston-wings mounted to slide radially in said pockets, an eccentric, slides mounted in guides upon the piston, yielding connections between each slide and a piston-wing, and an eccentric-strap having arms respectively connected with the slides, substantially as specified.

7. In a rotary engine, the combination with a cylinder, of a piston having radial pockets in communication with a steam-chamber, piston-wings mounted to slide radially in said pockets, an eccentric, slides mounted upon the piston, a yielding connection between each slide and a piston-wing, the same including a piston-wing stem projecting into a socket in the wing, and a spring-cushion interposed between a shoulder of the stem and a fixed part of the wing, substantially as specified.

8. In a rotary engine, the combination with a cylinder, of a piston having radial pockets in communication with a steam-chamber, piston-wings mounted to slide radially in said pockets, an eccentric, slides mounted upon the piston, and a yielding connection between each slide and a piston-wing, the same including a piston-wing stem extending into a socket in the piston-wing, a cap-screw closing the inner end of the socket and forming a guide for the stem, and a spring coiled upon the stem between the collar thereof and the outer end of the socket, substantially as specified.

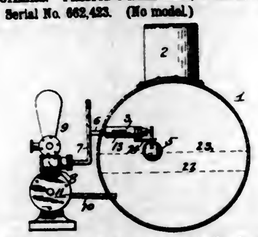
9. In a rotary engine, the combination with a cylinder, of a piston having radially-movable piston-wings, an eccentric having a strap movable with the piston, slides mounted upon the piston and respectively connected with said wings, one of the slides being provided with spaced adjustable tappets, and eccentric-arms extending from the eccentric-strap to the slides, one of said eccentric-arms having a sliding connection with the tappet-provided slide, substantially as specified.

10. In a rotary engine, the combination with a cylinder, of a piston having radially-movable piston-wings, an eccentric having an eccentric-strap for movement with the piston, slides mounted upon the piston and respectively connected with the wings thereof, and eccentric-arms carried by said strap and having a limited sliding connection, respectively, with the slides, substantially as specified.

11. In a rotary engine, the combination with a cylinder, of a piston having a radially-movable piston-wing, an eccentric having a strap for movement with the piston, a slide mounted upon the piston and having connection with said wing, the slide being provided with radial ribs mounted in a guide on the piston and with a radial slot, an eccentric-arm carried by the said eccentric-strap, and a pin fixed to said eccentric-arm and extending through the slot of the slide, said

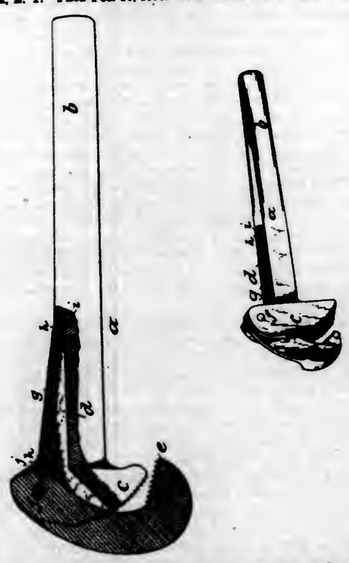
pin being provided with clamping devices whereby the slide may be secured at the desired adjustment with relation thereto, substantially as specified.

609,544. AUTOMATIC FEED-WATER REGULATOR FOR STEAM-BOILERS. PRESTON O'NEAL HIPP, Warren, Ark. Filed Dec. 18, 1897. Serial No. 662,423. (No model.)



Claim.—The combination of the steam-boiler 1; the valve 3, secured on the inside of said boiler and consisting of the hollow cylinder 12, provided with a steam-inlet 13, and packing-heads 15 16; shaft 17, provided with an enlargement, 18, and working on the inside of cylinder 12, said shaft being hollow from point 19 to its end 14, and having an opening 20, corresponding to opening 13 passing into the hollow of said shaft 17; lever 4, rigidly secured to said shaft 17 and its end 21; hollow ball 5, secured on the free end of lever 4; arresting-arm 24 secured to packing-head 15; pipe 6, one end secured to the end 14 of valve 3, and passing thence through boiler 1, and adapted to convey steam to a steam-pump, 9, substantially as shown and described and for the purposes set forth.

609,545. PIPE-WRENCH. DANIEL H. HOLLINGSWORTH, New York, N. Y. Filed Feb. 16, 1898. Serial No. 670,510. (No model.)



Claim.—In a pipe-wrench, the combination of a body portion comprising a handle and a partly-bifurcated and serrated jaw, the upper side of the handle having an open cavity formed in line with, and extending into, the bifurcation of the jaw; a serrated movable jaw pivoted to and arranged to work within the bifurcation of the fixed jaw; and a coil-spring attached to eyebolts arranged to work in the said open cavity of the handle, one end being attached to a fixed pin and the other end being attached to the shank of the movable jaw; the latter point of attachment, the pivot of the jaw and the coil-spring being approximately in alinement with one another, when the said movable jaw is closed, substantially as described.

609,546. BREAD-RAISER. AMANDA HOUSE, Jacob's Creek, Pa. Filed Dec. 31, 1897. Serial No. 668,076. (No model.)

Claim.—1. A bread-raiser consisting of a receptacle provided at its under side with parallel water-troughs so arranged whereby a heating-chamber is left between them, substantially as described.

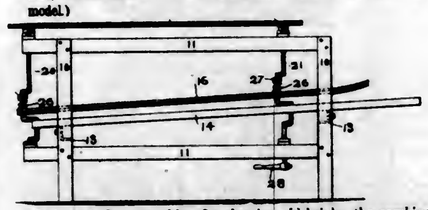


2. A bread-raiser consisting of a receptacle provided with interior pan-supports, in combination with water-troughs arranged beneath the said receptacle and provided with a heating-space therebetween, substantially as described.

3. A bread-raiser consisting of a receptacle having formed upon its under side a pair of parallel rectangular water-troughs so arranged whereby a direct-heating chamber is left between them, one end of each of said troughs being extended and provided with an opening for the admission of water, substantially as described.

4. A bread-raiser consisting of a rectangular receptacle provided with interior flanges adapted to support the pans, in combination with a pair of rectangular water-troughs extending the entire length of the said receptacle and provided with extended open-end portions, said water-troughs being so arranged beneath the said receptacle whereby a heating-space is left between them, substantially as described.

609,547. MACHINE FOR CLEANING BRICKS. SAMUEL I. HOWARD, Worcester, Mass. Filed Apr. 11, 1898. Serial No. 677,137. (No model.)



Claim.—1. In a machine for cleaning old bricks, the combination of two substantially parallel platforms, and means for producing a relative to-and-fro motion between said platforms, substantially as described.

2. In a machine for cleaning old bricks, the combination of two inclined, substantially parallel platforms, means for adjusting the inclination of said platforms, and means for producing a relative to-and-fro motion between said platforms, substantially as described.

3. In a machine for cleaning old bricks, the combination of a frame, two substantially parallel platforms, and crank-shafts for producing a relative to-and-fro motion between said platforms, substantially as described.

4. In a machine for cleaning old bricks, the combination of a frame, cross-pieces adjustably secured to the said frame, a platform supported by said cross-pieces and extending beyond the end of the frame of the machine to receive the bricks to be operated upon, an upper platform, and vertical crank-shafts for producing a relative to-and-fro motion between said platforms, substantially as described.

5. In a machine for cleaning bricks, the combination of an angle-iron frame, comprising uprights, and side pieces, cross-pieces adjustably secured in said frame, a lower platform supported by said cross-pieces and comprising a wooden body portion having angle-iron sides extending above the wooden surface, an upper platform having its ends slightly curved up to allow the introduction of the bricks between said platforms, and double-bent, vertical crank-shafts geared together to produce a relative to-and-fro motion between said platforms, substantially as described.

6. In a machine for cleaning old bricks, the combination of an angle-iron framework, comprising uprights and side pieces, cross-pieces adjustably secured in the frame, a lower platform carried by said cross-pieces and comprising a wooden body portion with angle-iron sides extending above the surface thereof, an upper platform having its ends slightly bent up to allow the introduction of bricks between said platforms, double-bent vertical crank-shafts geared together to produce a relative to-and-fro motion between said platforms, coiled springs normally pressing down on the upper platform, and means for adjusting the tension of said springs to produce the desired pressure on the bricks between said platforms, substantially as described.

609,548. HORSE-HITCHING DEVICE. SAM S. JOY, New Market, N. H. Filed Feb. 23, 1898. Serial No. 671,201. (No model.)

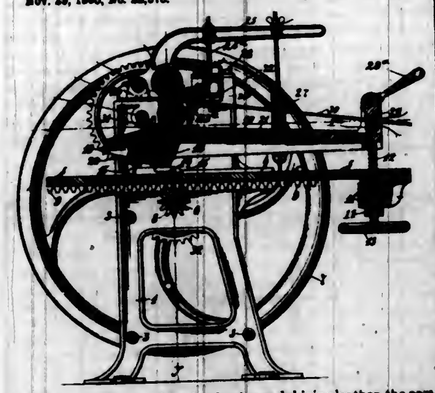


Claim.—1. A horse-hitching device comprising, a suitable metal frame, and a grip and guide lever mounted both on the same pivot and movable independently one of the other.

2. A horse-hitching device comprising, a suitable metal frame, a grip and guide lever mounted both on the same pivot and movable independently one of the other, and a spring-actuated latch for engaging the guide-lever.

3. A horse-hitching device comprising, a metal frame substantially of the form shown and having an elevation or wall provided with a V-groove, a grip-lever having a cross-arm adapted to engage said V-groove, a guide-lever having a cross-arm filling the space between the side walls of said frame, and a spring-actuated latch for engaging the said guide-lever, all substantially for the purpose set forth.

609,549. MACHINE FOR SCARF-JOINTING LEATHER. WILHELM KAHLHAUSEN, Aachen, Germany. Filed Feb. 3, 1898. Renewed Nov. 1, 1897. Serial No. 657,060. (No model.) Patented in England Nov. 29, 1895, No. 22,575.



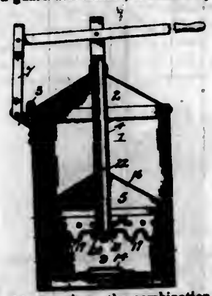
Claim.—1. In a machine for shaving and skiving leather, the combination with the frame, of the reciprocating table, the knife, the vertically-movable knife-roller, the pressing roller and levers carrying the journals of said pressing-roller journaled to the frame, and a spring-coil connecting adjustably the frame with the free end of said lever, substantially as described.

2. In a machine for shaving and skiving leather, the combination with the frame, of the reciprocating table, the vertically-moving knife-roller, the pressing-roller supported in bearings in spring-actuated levers journaled to the frame, and a knife secured to a block journaled at its ends in the frame to be moved into and out of working distance from the knife-roller, substantially as described.

3. In a machine for shaving and skiving leather, the combination with the frame, of the adjustable knife-roller, the pressing-roller, the knife, the table made in two sections, one journaled to and adjustable on the other, and a nose-plate fixed to the journal-bearings of said tables to lift the adjustable knife-roller, substantially as described.

609,550. WASHING-MACHINE. WILLIAM T. KING, Tallapoosa, Ga. Filed July 5, 1897. Serial No. 643,878. (Model.)

Claim.—1. In a washing-machine, the combination of a boiler, a plunger operating in the upper portion of the boiler, a vessel centrally apertured and of less diameter than the boiler and located in the lower portion thereof providing an annular space and having its upper edge bent outwardly to close the said space, radial strips secured to the bottom of the vessel and forming supports therefor and having their inner upper edges notched, a valve operating in the space formed by notching the supporting-strips and closing against the bottom of the vessel, and a plate spanning the valve-controlled perforate portion of the bottom of the said vessel and secured at its extremities thereto and serving as a guard and handle, substantially as set forth.



2. In a washing-machine, the combination of a boiler, a vessel located within the lower portion of the boiler and having a space between its bottom and sides and the corresponding parts of the boiler, and provided in its bottom with a valve-controlled opening, a plunger operating in the upper portion of the boiler and comprising a hollow stem having openings in its sides above the plunger-head, and a valve for closing the lower end of the stem, substantially as and for the purpose set forth.

609,551. NON-SLIPPING HORSESHOE. BENJAMIN F. M. LANG, Buffalo, N. Y., assignor of one-half to Jacob M. Roesch, same place. Filed Jan. 14, 1898. Serial No. 666,606. (No model.)



Claim.—1. An adjustable horse shoe or boot having a sole consisting of a sheet of flexible material provided with a slot or recess which extends forwardly from the rear edge of the sole and terminates at a distance from the toe or front edge thereof, dividing the sole into two adjustable sections which are connected by the unrecessed front portion of the sole and which can be expanded or contracted for varying the size of the horseshoe and an upper extending upwardly from the edge of said sole, substantially as set forth.

2. An adjustable horseshoe having an elastic sole provided with a V-shaped or forwardly-tapering recess which extends forwardly from the rear edge of the sole and which is formed at its apex with an enlargement for preventing puckering of the sole in contracting the shoe, substantially as set forth.

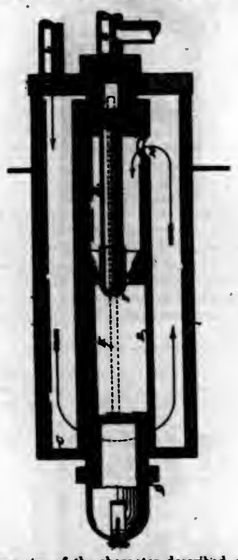
3. An adjustable horseshoe having an elastic sole provided with a V-shaped or forwardly-tapering recess which extends forwardly from the rear edge of the sole, dividing the same into two adjustable sections, a flexible upper projecting upwardly from the edge of the sole and terminating at the rear edge of the sole, whereby the back of the upper is left open, and a fastening device connecting the rear portions of the upper, substantially as set forth.

609,552. RETORT OIL-BURNER. GEORGE H. LARNER, San Francisco, Cal. Filed Mar. 10, 1898. Serial No. 673,260. (No model.)

Claim.—1. In a retort oil-burner of the character described, concentric oil-vaporizing and steam-superheating chambers cast in a single structure with an annular permanent closure for the front end of the superheating-chamber, an open passage directly through the inner vaporizing-chamber, screw-threaded at opposite ends, a burner-tip removably fitted to the screw-threaded front end of said chamber, a screw-plug closing the rear end of the chamber, and having an annular flange adapted to fit against and close the rear of the exterior superheating-chamber coincidently with the closure of the central chamber.

2. In an apparatus of the character described, a central cylindrical vaporizing-chamber open at opposite ends, an annular superheating-chamber concentric and exterior thereto with a permanently-closed front end, a screw-cap closing the rear end of the inner vaporizing-chamber and having an annular flange to fit against and close the rear of the superheating-chamber, a diaphragm extending from

the rear of the exterior chamber to a point near the front leaving an open communication between the two halves of said chamber, a pipe by which steam is admitted into one of said halves to circulate around the central chamber to be returned through the other half, and a passage by which the steam is delivered from the exterior into the rear end of the interior chamber, a centrally-disposed oil-supply pipe and tip through which the oil is delivered into the central chamber and a removable burner-tip fitting the front end of said chamber.



3. In an apparatus of the character described, a central cylindrical open-ended retort and vaporizing-chamber, a concentric exterior superheating-chamber permanently closed at the front end, a burner-tip screw-threaded and fitting corresponding threads in the front end of the central chamber, a screw-plug and annular disk serving to close the rear end of both chambers in unison, a diaphragm by which the outer chamber is divided into two segments, said diaphragm having open communication between the two halves near the front end of the superheating-chamber, a pipe through which steam is supplied into one half of said chamber to circulate around the inner chamber and return from the front toward the rear in the other half, a passage near the rear by which steam is admitted from the outer to the inner chamber, an oil-supply pipe with discharge-tip delivering near the center of the inner chamber and an annular flange interior to the inner chamber surrounding the burner-tip whereby the steam is delivered from the rear into the front end of the chamber and mixed with the vaporized oil and finally discharged from the burner.

4. In an apparatus of the character described, the concentric oil-vaporizing and steam-superheating chambers with closures at the rear and front end, an interposed diaphragm, connecting-passages and oil and steam supply pipes as shown, in combination with the removable burner-tip having the projecting segmental flanges whereby the burner-slit may be opened or closed and its form varied.

5. A burner-tip for oil-burners having the rear end adapted to be detachably connected with the retort and vaporizer, said burner having a semiglobular head with a transverse segmental slit, and flanges projecting beyond said head one upon each side of the slit and adapted to be moved toward and from each other to vary the form of the slit.

6. In an apparatus of the character described, concentric vaporizing and steam-superheating chambers, a screw-plug closing one end of the vaporizing-chamber and having an annular flange to close the corresponding end of the superheating-chamber, a diaphragm in the latter chamber and passages connecting one chamber with the other, oil and steam supply pipes, a tip fitted to the oil-pipe and a burner-tip fitted to the front end of the vaporizing-chamber, and a pipe connecting with the oil-supply pipe adjacent to the rear end of the apparatus, as that by opening it and closing the oil-supply, steam may be blown back through the inner chamber to cleanse it.

609,553. FOLDING TENT. ARTHUR D. LLOYD, San Francisco, Cal. Filed Apr. 5, 1898. Serial No. 676,260. (No model.)

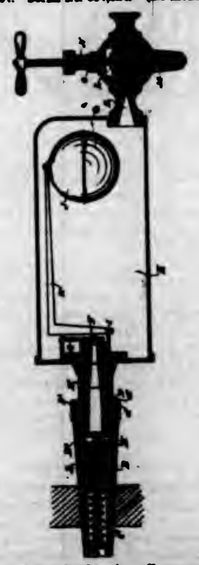
Claim.—1. A folding tent composed of rods pivoted at one end to common center pieces and radiating outwardly therefrom, separate transverse bars uniting the outer ends of these rods in pairs and having a length to form the proposed width of the tent, transversely-jointed hinges uniting the radial and transverse bars whereby they may be folded upon the transverse bar and upon each other, and a covering attached to the transverse and side bars so as to be extensible and foldable in unison therewith.



2. A shelter-tent consisting of side bars hinged to a common center, separate transverse bars uniting each pair of side bars, flexible inwardly-folding joints whereby the side bars may be folded upon the transverse bars, and a flexible covering material attached to the bars so that the latter may be opened into a semicircular form, said covering material having inwardly-projecting flaps at the bottom adapted to pass under the outermost side and transverse bars and to be held thereby.

3. In a shelter-tent of the character described, radial side bars hinged to a common center, separate transverse bars uniting each pair of these side bars, and flexible inwardly-folding joints whereby the side bars may be folded upon the transverse bars, a flexible covering material so formed and attached to the bars that the latter may be opened into a semicircle about the common pivot of the side bars, and the covering material form an inclosure for the top and sides, said covering material having its lower edge adapted to be turned inward beneath the outer side and transverse bars, which are adapted to lie directly on the ground, and said covering having one or more openings cut in the sides, and an inserted window of open-mesh fabric fixed therein.

609,554. AUTOMATIC PRESSURE-EQUALIZING BEER-FAUCET. CARLOS R. MARTIN and LOUIS A. STORELLI, San José, Cal. Filed Nov. 4, 1897. Serial No. 657,294. (No model.)



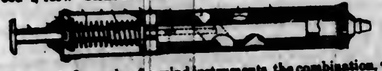
Claim.—1. In a faucet for drawing effervescent liquids, the combination, of a substantially horizontally-disposed expansion-chamber, having at one end a draw-off faucet, a lever, fulcrumed at one end within the chamber and having a float at its opposite end, a valve, pivotally suspended from above and interposed between an arm of the lever and the inlet to the chamber, a hollow stem, extending in line with the chamber, having one end to be fitted directly to the cask and having the opposite end internally chambered, a hollow coupling connecting said internal chamber with the expansion-chamber, a tapering spring-pressed valve in the stem between said internal chamber and the inner end, adapted to seat against a corresponding seat and having an extension to be directly engaged by the said coupling whereby the valve is unseated.

2. In a faucet for drawing effervescent liquids, the combination, of an expansion-chamber, having at one end a hollow stem adapted to be directly connected with the cask or receptacle, and at the opposite end a draw-off faucet, a valve in said chamber, having a stem pivotally suspended from above, said valve controlling the passage leading from the cask to the expansion-chamber, and adapted to be opened by the pressure from within the cask, and a bent lever, fulcrumed at one end of its vertical arm and having a float connected with the outer end of its horizontal arm, said vertical arm serving to control the opening and closing of the valve.

3. In a device for drawing effervescent liquid, a hollow stem forming direct communication with the cask or receptacle containing the liquid having an elongated tapering spring-pressed valve closing outwardly from a corresponding seat within the stem, an enlarged chamber exterior to the valve and a lug projecting from the outer end of the valve into said chamber, an expansion-chamber having a coupling by which it is connected with the hollow stem, said coupling screwing therein with its inner end perforated and forming a contact with the lug upon the valve whereby the latter is forced backward and an annular passage formed around it for the escape of the liquid, a second valve closable against the seat through which the liquid enters the expansion-chamber, a lever fulcrumed with relation to said valve carrying a float upon its outer end so that the increase of liquid within the expansion-chamber will raise the float and close the valve and its decrease will allow the valve to open, and a draw-off faucet connecting with the end of the expansion-chamber opposite to the inlet-passage.

609,555. WITHDRAWN.

609,556. VALVE FOR WIND INSTRUMENTS. JULIUS J. HEUMANN, Chicago, Ill., assignor to the Lyon & Healy, same place. Filed Oct. 4, 1897. Serial No. 653,993. (No model.)



Claim.—1. In a valve for wind instruments, the combination, with a cylinder or casing and its cap, and a piston-valve and its stem, of an apertured disk seated in the cylinder, closing the space between the cylinder and valve-stem, and provided with an upwardly-extending sleeve fitting the valve-stem, a collar on said stem, and a spring abutting against said disk and collar and located in the chamber formed between the disk and cap, substantially as set forth.

2. In a valve for wind instruments, the combination, with a cylinder or casing and a valve-spring therein, of a piston-valve fitting said cylinder or casing below the spring and having a passage or conduit through its body from top to bottom through which water may pass, substantially as set forth.

3. In a valve for wind instruments, the combination, with a cylinder or casing and a valve-spring therein, of a piston-valve fitting said cylinder or casing below the spring and having a hollow body, apertures in the heads or ends thereof and a groove in its upper end, substantially as set forth.

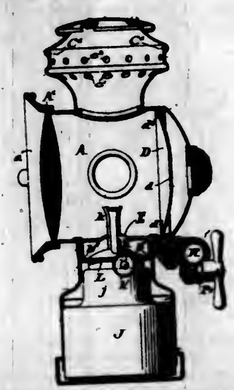
4. In a valve for wind instruments, the combination, with a cylinder or casing and a piston-valve having a water passage or conduit in its body from top to bottom, and provided with a valve-stem, of an apertured disk in said cylinder or casing closing the space between said cylinder or casing and the valve-stem, a spring above said disk for lifting the piston, and means for limiting the upward movement of the piston to a point some distance below the disk, whereby a space or chamber is provided between said disk and the upper end of the piston at its upward limit of motion, substantially as set forth.

609,557. VAPORIZER FOR HYDROCARBON OILS. WILLIAM H. PHELPS, Fort Wayne, Ind. Filed Sept. 20, 1898. Serial No. 607,492. (No model.)

Claim.—In a vaporizer for hydrocarbons, a shell having an inlet-passage upon one side, an outlet-passage upon the other, and a shield placed in between the two passages; a hinge provided with a valve for closing the inlet-opening upon one arm and a striker-plate upon the other, combined with a screw-plug which is inserted into the top of the shell, a vertically-moving valve which is operated by the striker-plate, a suitable shell or casing through which the valve is placed and through which the supply of oil is fed, and means for regulating the upward movement of the valve, substantially as shown and described.



609,558. LANTERN. EDWIN M. ROSENBLATH, Philadelphia, Pa. Filed Sept. 24, 1896. Serial No. 606,837. (No model.) Patented in England May 3, 1897, No. 11,592.



Claim.—1. A vehicle lantern having a combustion chamber, the rear wall of which is provided with a lens or jewel, and with a series of small air openings, in combination with a reflector mounted within said chamber in the vicinity of said rear wall, the said reflector being provided with a flange or rim which makes contact with the wall of the combustion chamber, and supports said reflector removably in position, said reflector embodying a central light opening and a circumferential series of small air openings, substantially as set forth.

2. In a bicycle lamp, in combination with a combustion chamber, a lamp chamber formed with a neck and a body, depending from said combustion chamber, and provided with subdividing air openings in its body, a lamp provided with a burner and a wick tube which latter extends through a wick tube opening formed in the bottom of the combustion chamber, and an annular draft plate carried by said burner and having air passages consisting of apertures and marginal serrations, and in contact as to its margin with the neck of the lamp chamber,—substantially as set forth.

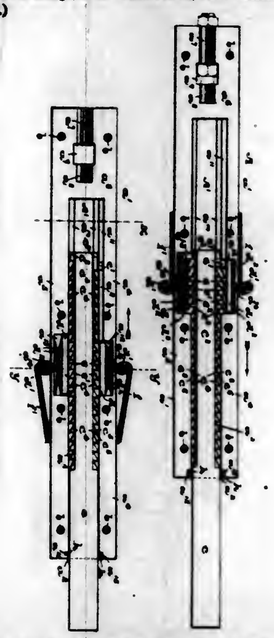
3. In a lantern, in combination with an open bottomed lamp chamber, provided upon its lower exterior portion with a stud or projection,—an oil collecting lamp retaining clamp consisting of a plate having a rim adapted to inclose the lower portion of said lamp chamber,—which rim embodies a slot adapted to take over said stud or projection, and a flat spring secured to the said plate,—substantially as set forth.

4. In a bicycle lamp, in combination with a combustion chamber, a lamp chamber depending from said combustion chamber, a wick tube opening which places said chambers in communication, a lamp mounted in said lamp chamber and having a wick tube extending through said wick tube opening, an annular space between the upper portion of the lamp and the lamp chamber, sub-dividing air openings formed in said lamp chamber and opening into said annular space, a draft plate embodying a circular series of perforations and serrations, said draft plate being disposed between the sub-dividing air openings and the wick tube opening and said circular series of openings being of greater diameter than the wick tube opening,—substantially as set forth.

5. In combination, a lantern-supporting bracket consisting of a cylindrical hook-provided main shank and a hook-provided auxiliary shank having its end entered through an opening in said main shank, a screw which controls the approach of said shanks, a lantern having

a horizontally disposed bearing or socket of circular section adapted to be seated upon said cylindrical shank, and means for adjusting the diameter of said bearing or socket, substantially as set forth.

609,559. BRAKE-SHOE-OPERATING MECHANISM. MICHAEL O. RUTAN, East Orange, N. J. Filed Oct. 23, 1897. Serial No. 656,635. (No model.)



Claim.—1. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars and their brake-shoes, of connecting-rods 7 and 9 connecting said bars, and a take-up device or devices in said rods 7 and 9, acting automatically to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels of the truck, substantially as and for the purposes set forth.

2. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device, comprising a casing attached at one end to one of said sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, and means in said casing adapted to engage with and lock said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels of the truck, and mechanism for causing a disengaged arrangement of said push-bar with said locking means, to permit the withdrawal of said push-bar from said casing, substantially as and for the purposes set forth.

3. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device, comprising a casing attached at one end to one of said sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving gripping-dog in said casing adapted to engage with and lock said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, substantially as and for the purposes set forth.

4. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device, comprising a casing attached at one end to one of said sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving gripping-dog in said casing adapted to engage with and lock said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, and means connected with said gripping-dog for throwing it out of its operative engagement with said push-bar, substantially as and for the purposes set forth.

5. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device comprising a casing attached at one end to one of the sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving slide in said casing, a gripping-dog sliding longitudinally in said slide, and teeth on said dog engaging and locking with teeth on said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, substantially as and for the purposes set forth.

6. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device comprising a casing attached at one end to one of the sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving slide in said casing, a gripping-dog sliding longitudinally in said slide, teeth on said dog engaging and locking with teeth on said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, and means connected with said slide for throwing said gripping-dog out of its operative engagement with said push-bar, substantially as and for the purposes set forth.

7. In a brake mechanism for wheeled trucks, the combination, with movable brake-bars, their brake-shoes, and a connecting-rod made in sections, of a take-up device comprising a casing attached at one end to one of the sections of said connecting-rod, a push-bar in sliding arrangement in said casing, having one end extending from said casing and attached to the other section of said connecting-rod, a laterally-moving slide in said casing, a gripping-dog sliding longitudinally in said slide, teeth on said dog engaging and locking with teeth on said push-bar, acting automatically, to move said brake-bars inward and adjust the brake-shoes to the peripheries of the wheels, and means connected with said slide for throwing said gripping-dog out of its operative engagement with said push-bar, consisting, essentially, of an eye on the back of said slide extending through an opening in the side of the casing, and an eccentric lever or arm operatively connected with said eye, substantially as and for the purposes set forth.

8. The herein-described take-up device for the brake mechanism of wheeled trucks, comprising a casing, a push-bar movably arranged in said casing, and spring-actuated means in said casing adapted to engage and lock with said push-bar, and mechanism for causing a disengaged arrangement of said push-bar with said locking means, to permit the withdrawal of said push-bar from said casing, substantially as and for the purposes set forth.

9. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, a push-bar movably arranged in said casing, and a spring-actuated gripping-dog in said casing adapted to engage and lock with said push-bar, and mechanism for causing a disengaged arrangement of said push-bar with said locking means, to permit the withdrawal of said push-bar from said casing, substantially as and for the purposes set forth.

10. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, a push-bar movable arranged in said casing, a chambered or recessed portion in said casing, a laterally-moving slide in said chambered or recessed portion, and a gripping-dog in said slide, having teeth adapted to engage with teeth on said push-bar, substantially as and for the purposes set forth.

11. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, a push-bar movably arranged in said casing, a chambered or recessed portion in said casing, a laterally-moving slide in said chambered or recessed portion, a gripping-dog in said slide, having teeth adapted to engage with teeth on said push-bar, and means connected with said slide for throwing said gripping-dog out of its operative engagement with said push-bar, substantially as and for the purposes set forth.

12. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, a push-bar movably arranged in said casing, a chambered or recessed portion in said casing, a laterally-moving slide in said chambered or recessed portion, a gripping-dog in said slide, having teeth adapted to engage with teeth on said push-bar, and means connected with said slide for throwing said gripping-dog out of its operative engagement with said push-bar, consisting, essentially, of an eye on the back of said slide extending through an opening in the side of the casing, and an eccentric lever or arm operatively connected with said eye, substantially as and for the purposes set forth.

13. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a', and means for securing them together, a recessed portion a^3 in each section and each section having an opening a^8, guides a^{10} in said sections and recessed parts a^{12} and a^{13}, a push-bar slidably arranged on said guides a^{10}, and means in said recessed parts a^{12} and a^{13} adapted to engage and lock with said push-bar, substantially as and for the purposes set forth.

14. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a', and means for securing them together, a recessed portion a^3 in each section and each section having an opening a^8, guides a^{10} in said sections and recessed parts a^{12} and a^{13}, a push-bar slidably arranged on said guides a^{10}, and a movable gripping-dog in each part a^{12} and a^{13} adapted to engage and lock with said push-bar, substantially as and for the purposes set forth.

15. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a', and means for securing them together, a recessed portion a^3 in each section and each section having an opening a^8, guides a^{10} in said sections and recessed parts a^{12} and a^{13}, a push-bar slidably arranged on said guides a^{10}, gripping-teeth on said push-bar, a slide d in each part a^{12} and a^{13}, and a sliding dog in each slide having teeth adapted to engage and lock with the teeth of said push-bar, substantially as and for the purposes set forth.

16. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a', and means for securing them together, a recessed portion a^3 in each section and each section having an opening a^8, guides a^{10} in said sections and recessed parts a^{12} and a^{13}, a push-bar slidably arranged on said guides a^{10}, gripping-teeth on said push-bar, a slide d in each part a^{12} and a^{13}, a sliding dog in each slide having teeth adapted to engage and lock with the teeth of said push-bar, and means connected with said slides for throwing said gripping-dogs out of their operative engagement with said push-bar, substantially as and for the purposes set forth.

17. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing, consisting of sections a and a', and means for securing them together, a recessed portion a^3 in each section and each section having an opening a^8, guides a^{10} in said sections and recessed parts a^{12} and a^{13}, a push-bar slidably arranged on said guides a^{10}, gripping-teeth on said push-bar, a slide d in each part a^{12} and a^{13}, a sliding dog in each slide having teeth adapted to engage and lock with the teeth of said push-bar, and means connected with said slides for throwing said gripping-dogs out of their operative engagement with said push-bar, consisting, essentially, of an eye on the back of each slide extending through openings in the sides of said sections a and a', and eccentric levers or arms operatively connected with said eyes, substantially as and for the purposes set forth.

18. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each section having an opening a^8, guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13}, a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said bar and adapted to slide in said guides a^{10}, and a projection c' on said push-bar adapted to fit and slide in said guide a^{11}, and means in said recessed parts a^{12} and a^{13} adapted to engage and lock with the teeth on the push-bar, substantially as and for the purposes set forth.

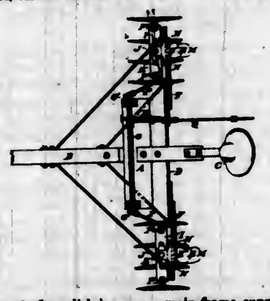
19. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each section having an opening a^8, guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13}, a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said bar and adapted to slide in said guides a^{10}, a projection c' on said push-bar adapted to fit and slide in said guide a^{11}, and a movable gripping-dog in each part a^{12} and a^{13} having teeth adapted to engage and lock with said push-bar, substantially as and for the purposes set forth.

20. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each section having an opening a^8, guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13}, a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said bar and adapted to slide in said guides a^{10}, a projection c' on said push-bar adapted to fit and slide in said guide a^{11}, a spring-actuated slide d in each part a^{12} and a^{13}, and a sliding dog in each slide having teeth adapted to engage and lock with the teeth of said push-bar, substantially as and for the purposes set forth.

21. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each section having an opening a^8, guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13}, a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said bar and adapted to slide in said guides a^{10}, a projection c' on said push-bar adapted to fit and slide in said guide a^{11}, a spring-actuated slide d in each part a^{12} and a^{13}, a sliding dog in each slide having teeth adapted to engage and lock with the teeth of said push-bar, and means connected with said slides for throwing said gripping-dogs out of their operative engagement with said push-bar, substantially as and for the purposes set forth.

22. The herein-described take-up device for the brake mechanism of a wheeled truck, comprising a casing consisting of sections a and a' and means for securing them together, a recessed portion a^3 in each section, and each section having an opening a^8, guides a^{10} and a^{11} in said sections, and recessed parts a^{12} and a^{13}, a push-bar slidably arranged in said casing, teeth c^4 and projections c^7 and c^8 on said bar and adapted to slide in said guides a^{10}, a projection c' on said push-bar adapted to fit and slide in said guide a^{11}, a spring-actuated slide d in each part a^{12} and a^{13}, a sliding dog in each slide having teeth adapted to engage and lock with the teeth of said push-bar, and means connected with said slides for throwing said gripping-dogs out of their operative engagement with said push-bar, consisting, essentially, of an eye on the back of each slide extending through openings in the sides of said sections a and a', and eccentric levers or arms operatively connected with said eyes, substantially as and for the purposes set forth.

609,560. REVERSIBLE DISK HARROW. CAMPBELL T. SETTLE, San José, Cal. Filed Mar. 10, 1898. Serial No. 673,355. (No model.)



Claim.—1. In a disk harrow, a main frame, supplemental extension-bars adjustably attached transversely thereto, vertical boxes adjustably fixed to the ends of the extension-frame, revolvable disks mounted in groups upon axles, a bar having standards, to the lower ends of which the axles are journaled, a vertical central swivel-post in each vertical box about which the bar and disks are turnable, a horizontal shaft journaled transversely upon the bed of the machine, crank-arms at the ends of the shaft and rods connecting the crank-arms with the ends of the swivel-beam, and an actuating-lever and pawl-and-rack mechanism whereby the shaft may be turned and locked at any desired point.

2. In a disk harrow, a main frame, transverse extension-bars adjustable outwardly from the center of the main frame, vertical boxes adjustably fixed to the ends of the extension-frame and adapted to be tilted from side to side thereon, beams having vertical pivots turnable in said boxes and standards projecting downwardly from said beams in which the shafts of disk harrows, mounted in groups, are journaled.

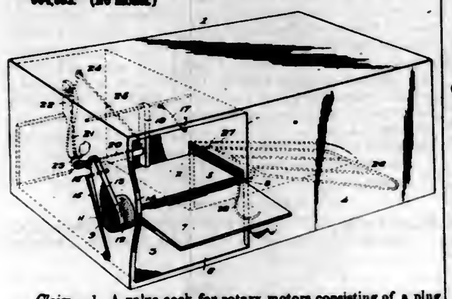
3. In a disk harrow, a main frame, transverse extension-bars adjustable outwardly from the center of the main frame, vertical boxes adjustably fixed to the ends of the extension-frame, beams having vertical pivots turnable in said boxes and standards projecting downwardly from said beams in which the shafts of disk harrows, mounted in groups, are journaled, and mechanism whereby the disk harrows are turnable about the vertical journal-pins, consisting of one or more shafts journaled transversely upon the main frame, with an actuating-lever and pawl-and-rack holding mechanism, crank-arms formed upon the shafts and rods adjustably connected with said cranks and with the adjacent ends of the disk-carrying and vertically-journaled frame.

609,561. AUTOMATIC SELF-SETTING ANIMAL-TRAP. JOHN J. ISAACSON, Tea, Md., assignor of one-half to Hermann H. Isaacsen, same place. Filed Jan. 29, 1898. Serial No. 667,262. (No model.)

Claim.—In a self-setting animal-trap, comprising the bait-chamber 3, provided with the entrance 6, the cage 4, separated by the partition 2 formed with the passage-way 5, the horizontal shaft 8 and the door 7 fixed on said shaft in said entrance, the crank 13 loosely journaled on the projecting end of said shaft, the spring 14 connected at its inner end to said shaft and at its outer end to said crank and the spring-pawl 15 having its free end projecting into the path of said crank, in combination with the spring-pawl 17 projecting into the path of the upper end of said door, the depending pawl 19, the spring

20 actuating said pawl 19, the trigger 21 and the rod 25 connecting said trigger and pawl 19, and the inclined gate 26 pivoted across the passage-way 5 and provided with the integral curved arm 28 projecting into the path of said door, substantially as shown and described.

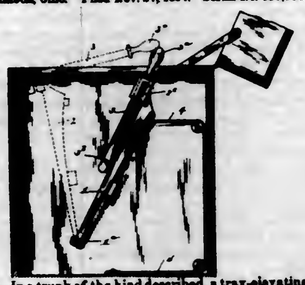
609,562. VALVE-COCK FOR ROTARY MOTORS. GIULIO SILVESTRI, Vienna, Austria-Hungary. Filed Dec. 30, 1897. Serial No. 664,632. (No model.)



Claim.—1. A valve-cock for rotary motors consisting of a plug k mounted stationarily upon the piston-shaft and rotating with the same and being provided with radial groove k' and symmetrical openings k^2, k^3, an annular space k^5 around the shaft, diametrically opposite slots k^4 k^4 and tubes c', c^2 in combination with an expansion-mantle composed of adjustable circular portions M', M² provided with laps m', m', m^3, m^3 and slot for the admission of the driving medium, and steam-channels substantially as described.

2. In a valve-cock for rotary motors an expansion-mantle composed of adjustable circular portions M' M² provided with laps m', m', m^3, m^3, placed diametrically to each other in the mantle and extending toward each other, slots for the admission of the driving medium and steam-channels m^4, m^4 in the mantle, as specified.

609,563. LEVER FOR OPERATING TRUNK-TRAYS. PAUL H. SMITH, Columbus, Ohio. Filed Nov. 27, 1897. Serial No. 659,950. (No model.)



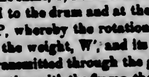
Claim.—1. In a trunk of the kind described, a tray-elevating lever comprising a pivoted part, and a handled part sliding longitudinally with respect to and parallel to said pivoted part, and means, substantially as described, permitting said sliding part to be turned backward on said pivoted part only when the sliding part is drawn out, as set forth.

2. In a trunk of the kind described, a tray-elevating lever comprising a pivoted part having at its upper end a socket 2, open at its back, and its sides provided with slots or channels, and an extensible part in said socket having a pin to enter said slots or channels to permit the bending of said extensible part with respect to the pivoted part, substantially as shown and described.

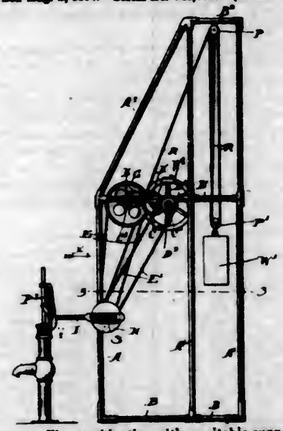
3. In a trunk, the combination with an end wall thereof, of a lever, comprising a pivoted part and a handled part sliding longitudinally upon and parallel to said pivoted part, said sliding part being adapted when drawn out to be bent backward from said pivoted part, two vertically-arranged pulleys on said end wall near the rear corner of the trunk, a horizontally-arranged pulley at the bottom of the trunk, a cord attached to said lever and passing over said pulleys, and a partition to inclose said lever and pulleys and separate the same from the main receptacle of the trunk, substantially as described.

609,564. CUFF-BUTTON. HORACE B. SWIFT, Boston, Mass., assignor to the Watson & Newell Company, Attleborough, Mass. Filed June 22, 1897. Serial No. 641,703. (No model.)

Claim.—In a separable cuff-button, the combination with the button A, the tubular post B curved at the junction with the button A and provided with the inward-projecting point d, of the button A', the post curved at the junction with the button A' and provided with the longitudinal groove e, and the annular groove f; whereby the buttons are locked together when in the normal oblique position and are separated by partially turning one of the buttons, as described.



609,565. MOTOR FOR OPERATING PUMPS. JOHN W. WESCH, HARVEY JEWETT, WILLIAM L. TAYLOR, and DANIEL A. BELLER, Oregon, Ill. Filed Aug. 2, 1897. Serial No. 646,727. (No model.)



Claim.—1. The combination with a suitable supporting-frame of a shaft mounted in the frame and provided with a rigidly-mounted drum, a rope attached to said drum and passing over suitable pulleys, a weight attached to the free end of the said rope, a crank-plate mounted loosely on said drum-shaft and free to rotate independently thereof, a train of gearing interposed between the drum-shaft and said crank-plate and means for connecting the crank-plate with a pump-lever, the rotation of the drum-shaft in one direction being adapted to raise the weight and its rotation in the opposite direction being transmitted through said gearing to said crank-plate whereby the latter may be rotated and thereby operate the pump-lever.

2. The combination with the frame comprising substantially, the standards, A, A, and the higher standards, A', A', A², A², the oblique members, A², A², the horizontal members, B, B, B', B', B², B², connecting said standards, the standards, A', A², being arranged to form a skeleton shaft, and the weight-supporting members, B², of the pulley, P, suspended from said supporting members in the center of the shaft, the weight, W', the pulley, P', suspending said weight, the rope, R, passing over the pulley, P, and around the pulley, P', the shaft, C, and drum, W, mounted thereon, the crank-plate loosely mounted on said shaft and the gearing constructed substantially as described and interposed between the shaft, C, and the crank-plate, the rope, R, being fastened at one end to the drum and at the opposite end to the housing of the pulley, P, whereby the rotation of the shaft, C, in one direction may raise the weight, W', and its rotation in the opposite direction may be transmitted through the gearing to the crank-plate.

3. The combination with the frame, the shaft, C, having the drum, W, and the rope attached to the frame and passing over suitable pulleys to a weight, W', of the shaft, C', connected substantially as shown and described with the shaft, C, the ratchet-wheel, F, mounted rigidly on the shaft, C', the gear-wheel, G, mounted loosely on the shaft, C', and provided with the pawl, F', adapted to engage the ratchet-wheel, F, the crank-plate, H, mounted loosely on the shaft, C, and gearing interposed between the gear-wheel G and the crank-plate, H, whereby the rotation of the gear-wheel, G, may be transmitted to the crank-plate.

609,566. KNITTING-MACHINE NEEDLE. STEPHEN WOODWARD, Manchester, N. H. Filed Apr. 13, 1898. Serial No. 677,522. (No model.)

Claim.—1. A knitting-machine needle of the class described, having a thickening member bent to embrace the heel of the needle, said member between its ends passing bodily through an opening in said heel to prevent it from slipping endwise therefrom.

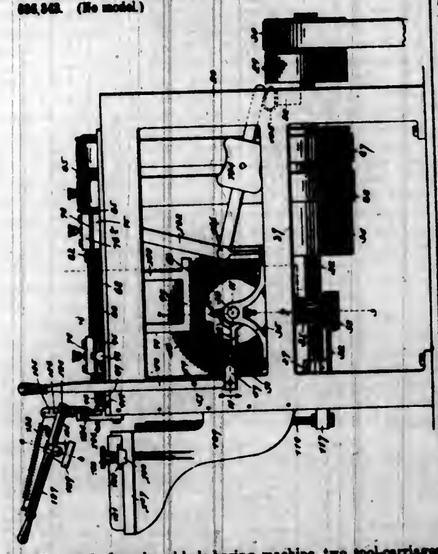


2. A knitting-machine needle bent upon itself, to form a heel and having a thickening member applied to said heel and bent to more or less embrace the same, said thickening member between its embracing ends passing between the limbs thereof.

3. A knitting-machine needle of the class described, having a thickening member applied to its heel, between the limbs of the heel and embracing such limbs.

4. In a knitting-machine needle, the combination with the heel thereof having a perforation, of a wire passed through said perforation, the ends of the said wire being bent in opposite directions around their respective heel portions whereby said heel may be strengthened and the wire may be held permanently in place.

609,567. DOWEL-HOLE-BORING MACHINE. JOHN YERKES, St. Louis, Mo. Filed July 12, 1897. Renewed July 26, 1898. Serial No. 686,843. (No model.)



Claim.—1. In a dowel-hole-boring machine, two tool-carriages slidingly mounted side by side, a lever-operated connection between one of said carriages and the driving-shaft whereby said carriage is operated independently, a lever-operated connection between the second one of said carriages and the driving-shaft whereby said second carriage is operated, and a connection between said carriages whereby the first-mentioned carriage is operated by the operation of the second-mentioned carriage, substantially as specified.

2. In a dowel-hole-boring machine, two tool-carriages slidingly mounted side by side, a projection upon one carriage engaging the other carriage as required to operate the second-mentioned carriage by the operation of the first-mentioned carriage and as required to allow the second-mentioned carriage to operate independently, connections between both or each of said tool-carriages and the driving-shaft for operating said carriages, adjustable stop mechanism regulating the strokes of said carriages, and means of returning said carriages to their normal positions after they have been advanced to the work, substantially as specified.

3. In a dowel-hole-boring machine, a driving-shaft, tool-holding carriages mounted to slide in a plane parallel with the driving-shaft, a second shaft mounted transversely of the driving-shaft, a worm upon the driving-shaft, a worm-gear upon the second shaft engaging said worm, friction-clutches upon said second shaft, levers operating said friction-clutches, a rack-and-gear connection between said friction-clutches and said sliding carriages whereby said carriages are advanced to the work by the operation of said clutches, projection upon one of said sliding carriages and engaging the other one of said sliding carriages whereby the second carriage is operated by the operation of the first carriage and whereby the second carriage is allowed to operate independently of the first carriage, substantially as specified.

4. In a dowel-hole-boring machine, a driving-shaft, a tool-holding carriage mounted to slide in a plane parallel with the driving-shaft, a second shaft mounted transversely of the driving-shaft, a worm upon the driving-shaft, a worm-gear upon the second shaft engaging said worm, a friction-clutch upon said second shaft, a lever operating said friction-clutch, a rack-and-gear connection between said friction-clutch and said sliding carriage whereby said carriage is advanced to the work by the operation of said clutch, a bell-crank lever pivotally mounted, a connection between the upper end of said bell-crank lever and said sliding carriage, and a weight attached to the lower end of said bell-crank lever, the gravity of said weight operating to withdraw said carriage from the work when the clutch is released, substantially as specified.

5. In a dowel-hole-boring machine, a driving-shaft, a tool-holding carriage mounted to slide in a plane parallel with the driving-shaft, a second shaft mounted transversely of the driving-shaft, a worm upon the driving-shaft, a worm-gear upon the second shaft engaging said worm, a friction-clutch upon said second shaft, a lever operating said friction-clutch, a rack-and-gear connection between said friction-clutch and said sliding carriage whereby said carriage is advanced to the work by the operation of said clutch, an adjustable stop carried by said carriage to reverse said lever and thereby release said clutch, a bell-crank lever pivotally mounted, a connection between the upper end of said bell-crank lever and said carriage, and a weight attached to the lower end of said bell-crank lever, the gravity of said weight operating to withdraw the carriage from the work when the clutch is released, substantially as specified.

6. In a dowel-hole-boring machine, a driving-shaft, two tool-holding carriages mounted to slide in a plane parallel with the driving-shaft, a projection upon one of said sliding carriages and engaging the other one of said carriages whereby the second carriage is operated by the operation of the first carriage and whereby the second carriage is allowed to operate independently of the first carriage, a second shaft mounted transversely of the driving-shaft, a worm upon the driving-shaft, a worm-gear upon the second shaft engaging said worm, friction-clutches upon said second shaft, one for each carriage, levers operating said friction-clutches, rack-and-gear connections between said friction-clutches and said carriages whereby the carriages are advanced to the work by the operation of the clutches, the operation of one clutch controlling the said second carriage and the operation of the other clutch controlling both carriages simultaneously, adjustable stops carried by said carriages to reverse said levers and thereby release said clutches, bell-crank levers pivotally mounted, connections between the upper ends of said bell-crank levers and said carriages, and weights attached to the lower ends of said bell-crank levers to withdraw the carriages from the work when the clutches are released by the action of said stops, substantially as specified.

7. In a dowel-hole-boring machine, a suitable frame, a work-bench mounted for vertical adjustment relative to said frame, tool-holding carriages slidingly mounted upon said frame, the bow-shaped bracket 124 attached at its ends to said frame and extending over the tools, the arm 125 extending upwardly from the central portion of the bracket and having the series of apertures 126, the hand-lever 127 pivotally and adjustably attached to said arm, the work-holder 129 slidingly mounted upon said lever, and the spring 133 connecting the free end of the lever with the upper end of the arm, substantially as specified.

8. In a dowel-hole-boring machine, the plate 135, the bar 136 attached to the lower face of said plate, the work-bench 107 having the recess 108 in which said bar 136 operates, the flange 138 projecting upwardly from the forward edge of said plate 135, the flange 139 projecting upwardly from one end of said plate, the plate 140 attached to the front face of said flange 138 and having a dovetail slot formed in its front face, the gage-stops 141 adjustably mounted in said slot, the block 146 attached to the work-bench and the leaf-spring 148 attached to said block and engaging said stops, 141, substantially as specified.

609,568. BALL-CASTER. HENRY D. ADELL, Columbus, Ohio. Filed Sept. 14, 1896. Serial No. 606,07[illegible]. (No model.)



Claim.—The improved furniture-caster herein described, comprising the ball-shaped roller of glass having oppositely-disposed sockets extending inwardly from the periphery for a distance less

than one-half the diameter of the roller, with the portion of the roller between said sockets imperforate, boxings in said sockets and secured against displacement, short rollers in said boxings, and the caster-shank provided with flagers embracing opposite sides of the roller and having trunnions rigid therewith and extending into the sockets and surrounded by said rollers, all substantially as and for the purpose specified.

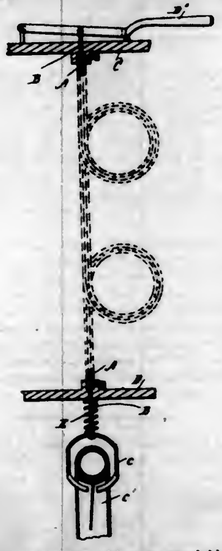
609,569. COOKING VESSEL. ANTON BERCHTOLD, Innsbruck, Austria-Hungary. Filed Dec. 31, 1897. Serial No. 665,143. (No model.) Patented in Germany Feb. 18, 1896, No. 89,051; in Austria Feb. 26, 1896, No. 46/739, and Dec. 9, 1896, No. 46/4,927; in Italy Apr. 2, 1896, XXXI, 40,890; in France June 2, 1896, No. 254,160; in England June 15, 1896, No. 13,190, and Oct. 7, 1896, No. 22,263; in Belgium Oct. 15, 1896, No. 123,677; in Hungary Oct. 24, 1896, No. 6,351, and in Switzerland Apr. 30, 1897, No. 13,069.



Claim.—1. A cooking vessel consisting of a vessel *a* with loops *b*, *b'* on its upper edge, an elastic cover *c* with notches *d* on its sides receiving the loops and provided in its center with a strengthening-plate *e* having a projecting support *i* which forms a nut, a flat spring *f* resting with its center portion on support *i*, engaging with its ends the loops and having a longitudinal slot in its center and a screw *h* passing through the slot, as specified.

2. In a cooking vessel a fastening and relieving device comprising an elastic cover *c* with notches *d* on its sides and provided in its center with a strengthening-plate *e* having a projecting support *i* which forms a nut, a flat spring *f* resting with its center portion on support *i*, and having a slot in its center and a screw *h* passing through this slot, as specified.

609,570. MECHANISM FOR TRANSMITTING MOTION OR POWER. ERNEST M. BOWDEN, London, England. Filed Nov. 29, 1897. Serial No. 660,145. (No model.) Patented in England Nov. 11, 1896, No. 25,338; in France Apr. 23, 1897, No. 266,260, and in Belgium Apr. 26, 1897, No. 127,847.



Claim.—1. The combination, with a non-revoluble and tortuous guide, of a non-revoluble and tortuous member for transmitting power and motion said member being movable longitudinally with relation to its guide and having greater lateral flexibility than its guide, substantially as set forth.

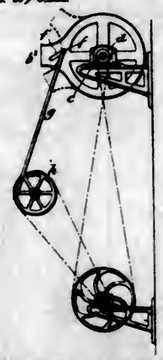
2. The combination, with a tortuous non-revoluble guide, of a non-revoluble and tortuous rod slidable longitudinally in the said guide, substantially as set forth.

3. The combination, with a non-revoluble and tortuous guide-tube formed of coiled wire, of a non-revoluble and tortuous rod slidable longitudinally in the said tube, substantially as set forth.

4. The combination, with a non-revoluble and tortuous guide-tube formed of coiled wire, the coils of the wire being arranged close to each other; of a non-revoluble and tortuous rod formed of twisted wires and not extensible longitudinally, said rod being slidable longitudinally within the said tube, substantially as set forth.

5. The combination, with a non-revoluble and tortuous guide-tube formed of coiled wire, and stationary abutments having the ends of the said tube secured to them; of a non-revoluble and tortuous rod slidable longitudinally in the said tube, and a brake operatively connected to one end portion of the said rod, substantially as set forth.

609,571. BLOWING-FAN. JOHANN BRELICH, Ips, Austria-Hungary, assignor to Albert Gans, Kaumlbach, Austria-Hungary. Filed Aug. 27, 1897. Serial No. 649,707. (No model.) Patented in Austria Aug. 18, 1896, No. 46/3,222.



Claim.—1. A blowing-fan consisting of the fan *a* mounted on shaft *c* in bearings *d*, an oscillating fan-case with mouth b^2 and provided with trunnions b' reaching into the hollowed-out portions d' of the bearings *d* and mounted loosely on shaft *c*, a reducing-gear, a crank-wheel *h* with a rod *g* which is linked to a bolt *f* in slot f' on the case *b* so that upon revolving the fan the case oscillates, as specified.

2. In a blowing-fan an oscillating casing mounted loosely on the fan-shaft, a reducing-gear in connection with the shaft and driving a crank-wheel with crank-rod which is linked to an adjustable bolt on the casing, substantially as specified.

3. In a blowing-fan an oscillating casing mounted loosely on the fan-shaft and having a mouth, in combination with a device for varying the width of the mouth consisting of a hinged portion b^2, a pivoted bolt *p* with nut *p'*, and spring *n*, as specified.

609,572. POWDER-DISTRIBUTER. CLEMENT C. CLAWSON, Newark, N. J. Filed Nov. 16, 1897. Serial No. 658,703. (No model.)



Claim.—1. In a powder-distributer, the combination, with a closed frame or base having an opening for the reception of a brush, of a powder-receptacle in said frame, having a discharge-opening, means connected with said receptacle operating to normally close said discharge-opening, and open the same, when the brush is inserted

in the opening in said frame or base, and an oscillating brush in said powder-receptacle, and a spring connected with said brush to cause the return of said brush to its normal position over said discharge-opening, and also, to cause the closing of said opening upon the withdrawal of the brush previously inserted in the opening of the base or frame of the distributer, substantially as and for the purposes set forth.

2. In a powder-distributer, the combination, with a closed frame or base having an opening for the reception of a brush, of a powder-receptacle in said frame, having a discharge-opening, an oscillatory slide connected with said powder-receptacle, means for operating said slide when the brush is inserted in said opening in the frame or base, and an oscillating brush in said powder-receptacle, and a spring connected with said brush to cause the return of said brush to its normal position over said discharge-opening, and also, to cause the closing of said opening upon the withdrawal of the brush previously inserted in the opening of the base or frame of the distributer, substantially as and for the purposes set forth.

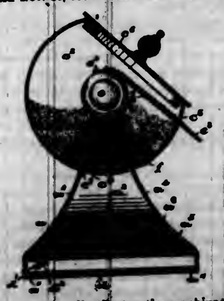
3. In a powder-distributer, the combination, with a closed frame or base having an opening for the reception of a brush, of a powder-receptacle in said frame, a fork-like frame pivoted to said receptacle, comprising a pair of pointed portions extending into and through holes in the sides of said receptacle, said receptacle having a discharge-opening, curved parts c^2 and c^3 and a part c^4 connected with said fork-like frame, a curved plate or slide c^5 on said fork-like frame, adapted to normally close said discharge-opening and to be removed therefrom when the brush is inserted in said opening in the frame or base, an arbor or shaft connected with said pointed portions of said fork-like frame in said receptacle, and a brush or brushes on said arbor or shaft, substantially as and for the purposes set forth.

4. In a powder-distributer, the combination, with a closed frame or base having an opening for the reception of a brush, of a powder-receptacle in said frame, a fork-like frame pivoted to said receptacle, comprising a pair of pointed portions extending into and through holes in the sides of said receptacle, said receptacle having a discharge-opening, curved parts c^2 and c^3 and a part c^4 connected with said fork-like frame, a curved plate or slide c^5 on said fork-like frame, adapted to normally close said discharge-opening and to be removed therefrom when the brush is inserted in said opening in the frame or base, an arbor or shaft connected with said pivoted portions of said fork-like frame in said receptacle, a brush or brushes on said arbor or shaft, and a spring for causing the return of the movable parts to their initial positions, substantially as and for the purposes set forth.

5. In a powder-distributer, the combination, with a frame or base, having a rest for the reception of a brush, of a powder-receptacle in said frame, having a discharge-opening, an oscillatory brush in said powder-receptacle, a slide arranged over said discharge-opening, means for operating said slide, against said means, consisting, of a pivoted fork-like frame to which said slide and said oscillatory brush are attached, substantially as and for the purposes set forth.

6. In a powder-distributer, the combination, with a frame or base, having a rest for the reception of a brush, of a powder-receptacle in said frame, having a discharge-opening, an oscillatory brush in said powder-receptacle, a slide arranged over said discharge-opening, means for operating said slide, when the brush is forced against said means, consisting, of a pivoted fork-like frame to which said slide and said oscillatory brush are attached, and a spring for causing the return of the movable parts to their initial position, substantially as and for the purposes set forth.

609,573. POWDER-DISTRIBUTER. CLEMENT C. CLAWSON, Newark, N. J. Filed Nov. 16, 1897. Serial No. 658,707. (No model.)



Claim.—1. In a powder-distributer, the combination, with a frame or base, having a rest for the reception of a brush, of a powder-receptacle movably arranged in said frame or base, having a discharge-opening, and means operating to normally close said opening, consisting of a plate or bar *f* on said frame or base, substantially as and for the purposes set forth.

2. In a powder-distributer, the combination, with a closed frame or base having an opening for the reception of a brush, of a powder-receptacle movably arranged in said frame or base, having a discharge-opening, and means operating to normally close said opening, consisting of a plate or bar *f* on said frame or base, substantially as and for the purposes set forth.

3. In a powder-distributer, the combination, with a frame or base, having a rest for the reception of a brush, of a powder-receptacle movably arranged in said frame, having a discharge-opening, a fixed brush in said receptacle, and means operating to normally close said discharge-opening, substantially as and for the purposes set forth.

4. In a powder-distributer, the combination, with a frame or base, having a rest for the reception of a brush, of a powder-receptacle movably arranged in said frame, having a discharge-opening, a fixed brush in said receptacle, and means operating to normally close said discharge opening, consisting of a plate or bar *f* on said frame or base, substantially as and for the purposes set forth.

5. In a powder-distributer, the combination, with a closed frame or base, having an opening for the reception of a brush, of a powder-receptacle movably arranged in said frame or base, having a discharge-opening, a fixed brush in said receptacle, and means operating to normally close said discharge-opening, substantially as and for the purposes set forth.

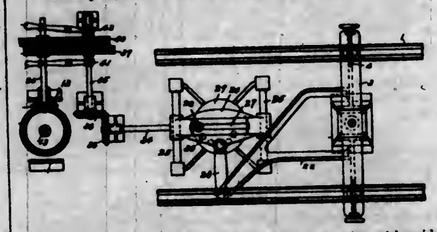
6. In a powder-distributer, the combination, with a closed frame or base, having an opening for the reception of a brush, of a powder-receptacle movably arranged in said frame or base, having a discharge-opening, a fixed brush in said receptacle, and means operating to normally close said discharge-opening, consisting of a plate or bar *f* on said frame or base, substantially as and for the purposes set forth.

7. In a powder-distributer, the combination, with a frame or base *a*, having bearing portions a^7 and a^8, pins or screws in said bearing portions, an oscillatory powder-receptacle on said pins or screws, having a discharge-opening, and means operating to normally close said discharge-opening, consisting of a plate or bar *f* on said frame or base, substantially as and for the purposes set forth.

8. In a powder-distributer, the combination, with a frame or base *a*, having bearing portions a^7 and a^8, pins or screws in said bearing portions, an arbor or support secured in a fixed position on said pins or screws and a brush or brushes thereon, an oscillatory powder-receptacle on said pins or screws, having a discharge-opening, and means operating to normally close said discharge-opening, substantially as and for the purposes set forth.

9. In a powder-distributer, the combination, with a frame or base *a*, having bearing portions a^7 and a^8, pins or screws in said bearing portions, an arbor or support secured in a fixed position on said pins or screws and a brush or brushes thereon, an oscillatory powder-receptacle on said pins or screws, having a discharge-opening, and means operating to normally close said discharge-opening, consisting of a plate or bar *f* on said frame or base, substantially as and for the purposes set forth.

609,574. TENTERING-MACHINE. FREDERICK I. DANA, Providence, R. I., assignor to the Thomas Phillips Company, same place. Filed May 14, 1897. Serial No. 636,593. (No model.)



Claim.—1. In a tentering-machine, the combination with guide-rails for the conveying devices, of mechanism for operating the conveying devices, a cross-head provided with a slot, a crank working in said slot, and connections between said cross-head and said guide-rails whereby said guide-rails are reciprocated from said cross-head, substantially as described.

2. In a tentering-machine the combination with guide-rails for the conveying devices of mechanism for operating the conveying devices, a cross-head provided with a slot, a crank working in said slot, and connections from said cross-head to each of said guide-rails.

3. In a tentering-machine the combination with guide-rails for the conveying devices, of mechanism for operating the conveying devices, a cross-head provided with a slot, a crank working in said slot,

a transverse bar pivoted to said rails, and connections between each end of said bar and said cross-head.

4. In a tentering-machine, the combination with guide-rails for the conveying devices, of mechanism for operating the conveying devices, a cross-head provided with a slot, a crank working in said slot, an arm oscillating about an axis and connected with the rails, and a link connecting said arm and cross-head, substantially as described.

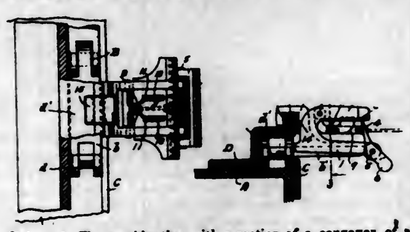
5. In a tentering-machine, the combination with guide-rails for the conveying devices, of mechanism for operating the conveying devices, a cross-head provided with a slot, a crank working in said slot, a transverse bar pivoted to said guide-rails and provided with an arm, and a link connecting said arm and cross-head, substantially as described.

6. In a tentering-machine, the combination with guide-rails for the conveying devices, of mechanism for operating the conveying devices, a cross-head provided with a slot, a crank working in said slot, a transverse bar pivoted to said guide-rails, and provided with two arms, and links connecting said arms to said cross-head, substantially as described.

7. In a tentering-machine, the combination with guide-rails for the conveying devices, of supports for said guide-rails, sprocket-wheels for operating the conveying devices, a shaft and gearing for operating said sprocket-wheels, a cross-head provided with a slot, a crank working in said slot, and connections between said cross-head and said guide-rails whereby said guide-rails are reciprocated from said cross-head, substantially as described.

8. In a tentering-machine, the combination with the guide-rails for the conveying devices, of mechanism for reciprocating said guide-rails, mechanism for operating the conveying devices, a driving-shaft connected with said latter mechanism, a second shaft connected with the guide-rail-operating mechanism, a series of pairs of gears upon said shafts, and means for rendering any one of said pairs of gears operative, substantially as described.

609,575. CLIP FOR TENTER-MACHINES. FREDERICK I. DANA, Providence, R. I., assignor to the Thomas Phillips Company, same place. Filed Feb. 21, 1898. Serial No. 671,008. (No model.)



Claim.—1. The combination with a section of a conveyer, of a laterally-sliding clip or clamp supported thereby, substantially as described.

2. The combination with a section of a conveyer provided with a laterally-projecting arm, of a clip or clamp mounted to slide on said arm, substantially as described.

3. The combination with a section of a conveyer provided with a laterally-projecting arm, of a carriage mounted to slide on said arm, a stationary jaw on said carriage, and a movable jaw on said carriage, substantially as described.

4. The combination with a conveyer, of laterally-movable clips or clamps carried thereby, and a cam-rail for engaging said clips and holding them in proper relation to the conveyer, substantially as described.

5. The combination with a conveyer, of laterally-sliding clips or clamps carried thereby, guides for said conveyer, and a cam-rail for engaging said clips and holding them in proper relation to the conveyer, substantially as described.

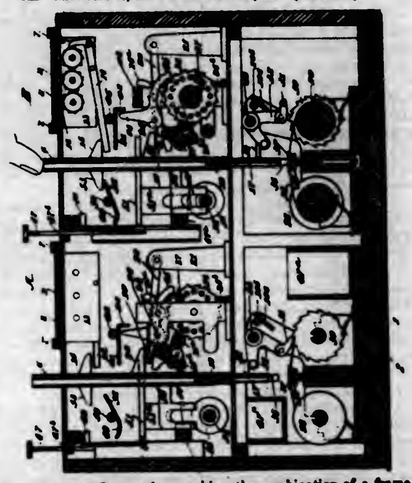
6. In a tenter-machine the combination with the side rail, of a conveyer carried thereby, laterally-movable clips or clamps carried by said conveyer, and a cam-rail on said side rail for engaging said clips, and resisting the lateral strain on said clips, substantially as described.

7. In a tenter-machine the combination with the side rail, of a conveyer carried thereby, laterally-movable clips or clamps carried by said conveyer, and a cam-rail on said side rail for engaging said clips substantially in line with the fabric, substantially as described.

8. In a tenter-machine, the combination with the side rail, of a conveyer carried thereby, a laterally-sliding clip or clamp carried by said conveyer, and a cam-rail extending the length of said side rail for engaging said clip, substantially as described.

9. In a tenter-machine the combination with the side rail, of a conveyer carried thereby, laterally-sliding clips or clamps carried by said conveyer, a cam for opening the jaws of the clip, means for controlling the closing of the jaws by the fabric, and a cam-rail on said side rail for engaging said clips, substantially as described.

609,576. VOTING-MACHINE. SALOMON DUDAS, San Francisco, Cal. Filed Jan. 13, 1898. Serial No. 676,973. (No model.)



Claim.—1. In a voting-machine, the combination of a frame or casing, a series of voting-pins, a series of parts alined with each other and adapted to move in unison, an arm on each voting-pin arranged to engage and actuate said parts, an independent series of voting-pins for straight party-tickets, and means comprising a slide, a swinging bail and an intermediate connection adapted to prevent the operation of the voting-pins of the independent series, said movable parts being capable of a limited extent of movement and being adapted when moved by the operation of one of the first-mentioned voting-pins, to hold the other voting-pins of that series against operation.

2. In a voting-machine, the combination of a frame or casing, a voting-pin adapted for longitudinal movement and having a projection, a pivoted bail to be engaged by the projection, a lever to be moved by said bail, a ratchet-wheel having an adjustable stop, a pawl pivoted on said lever, and a weighted dog pivoted on said lever, and arranged to engage the adjustable stop of the ratchet-wheel.

3. In a voting-machine, the combination of a frame or casing, a series of voting-pins therein, a type carried by each pin, spring-pressed platen-bars beneath the lower ends of the pins, a strip for each pin arranged to be engaged by said type, and a pivoted lever and weighted pawl actuated by the movement of a voting-pin for feeding the strip under said type.

4. In a voting-machine, the combination of a frame or casing, a series of endwise-movable voting-pins carrying types, paper strips arranged to move under the types, reels on which the strips are mounted, and means comprising a lever pivoted between its ends and provided with pawl-and-ratchet mechanism, said lever being in the path of and actuated by the movement of the pins, for moving the reels to feed the strips.

5. In a voting-machine, the combination of a frame or casing, a series of endwise-movable voting-pins, carrying types, paper strips arranged to move under the types, reels whereon the strips are carried, means comprising an arm on each pin, a lever for each pin, pivoted between its ends and having one end in the path of said arm, and pawl-and-ratchet mechanism, said lever actuated by the movement of the pins for moving said reels to feed said strips, and a spring-supported platen arranged under the strips and types and constructed in sections.

6. In a voting-machine, the combination of a frame or casing, a series of voting-pins therein, each having a printing device, a strip for each pin and adapted to be engaged by said type, a reel for each strip, pivoted levers and pawls for feeding the strip beneath the pins, said levers engaged by arms or projections on the pins when the pins are depressed, and means substantially as described for simultaneously moving all of the levers into operative position.

7. In a voting machine, the combination of a frame or casing, a series of voting-pins for individual candidates, a series of independent voting-pins for straight party-ballots, buttons arranged to be moved,

arms on the first-mentioned voting-pins to engage and move the buttons, and a slide operated by the pins of the last-named series, said slide being arranged when moved to prevent the movement of the buttons, and said buttons when moved being arranged to prevent the movement of the slide.

8. In a voting-machine, the combination of a frame or casing, a series of voting-pins for individual candidates, a series of independent voting-pins for straight party-ballots, buttons adapted to be moved when the pins of the first-named series are operated, a slide operated by the pins of the last-named series, said slide being arranged when moved to prevent movement of the buttons and said buttons being adapted when moved to prevent the movement of the slide and means for moving the slide and buttons out of operative position.

9. In a voting-machine, the combination of a frame or casing, a series of voting-pins for individual candidates, a series of independent voting-pins for straight party-ballots, buttons arranged to be moved when the pins of one series are operated, a slide operated by the pins of the last-mentioned series and arranged when moved to prevent the movement of the buttons, said buttons when moved being adapted to prevent the movement of the slide, and a cam-plate provided with means for moving it and arranged to engage said buttons and slide and return them to their normal positions.

10. In a voting-machine, the combination of a frame or casing, a series of voting-pins for irregular candidates, a series of voting-pins for straight party-ballots, a rod to be turned by the pins of one series and a plate on said rod, a slide to be moved by the pins of the other series and means to engage said plate and hold the rod against movement.

11. In a voting-machine, the combination of a frame or casing, a series of voting-pins for irregular candidates, a series of voting-pins for straight party-ballots, a rod to be turned by the pins of one series, a plate on said rod, a slide-plate to be moved by the pins of the other series, and a locking-pin carried by said slide to engage said plate to hold said rod against being turned.

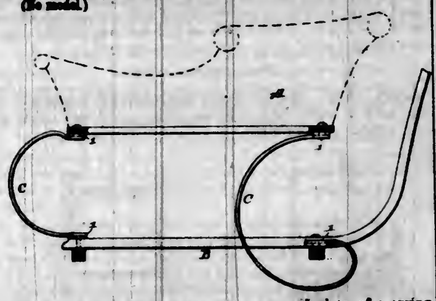
12. A voting-machine having a frame or casing, one wall of which is constructed in sections separated by elongated spaces, voting-slides held in said spaces between the sections and spacing-blocks held in said spaces between the slides.

13. In a voting-machine, the combination of a frame or casing, two parallel series of voting-pins for individual candidates, a series of voting-pins for straight party-ballots, two rods, buttons on the rods, means for moving the buttons by the movement of the pins of the first-named series and a slide actuated by the pins of the last-named series, said slide being arranged when moved to prevent the operation of the buttons, and said buttons being arranged when moved to prevent the operation of the slide.

14. In a voting-machine, the combination of a frame, a shaft 46 oscillating therein, a counter 13, means between the counter and shaft for actuating the former, a notched bar 80 and an arm projecting from the shaft and adapted to engage said bar.

15. A voting-machine having a depressible bail, a bar mounted to slide parallel to the bail, arms connecting the bail and bar, and voting-pins arranged to move the bail and bar at different points along the same.

609,577. CONNECTING DEVICE FOR SPRINGS. WILLIAM B. BURROW, Harrisonburg, Va. Filed Apr. 9, 1898. Serial No. 677,066. (No model.)



Claim.—1. The combination with a recessed plate, of a spring provided at its ends with spring-jaws to enter the recess in the plate and bear against the walls thereof, substantially as set forth.

2. The combination with a recessed plate, of a spring having jaws to enter the recess in the plate and lips at the free ends of said jaws and adapted to engage the plate, substantially as set forth.

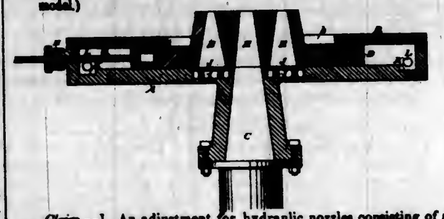
3. The combination with a recessed plate, of a spring having spring-jaws at one end adapted to enter the recess in the plate, a shoulder on the spring at one end of the jaws to bear against the plate and lips at the free ends of the jaws to engage said plate, substantially as set forth.

4. The combination with a plate having a recess with beveled walls, of a spring having spring-jaws at its end to enter the recess in the plate, said jaws having beveled side edges to bear against the beveled walls of the recess in the plate, substantially as set forth.

5. The combination with a plate and a spring, of spring-jaws at the end of said spring and dovetailed in said plate, substantially as set forth.

6. The combination with the running-gear and body of a carriage, of springs secured at one end to the body, plates secured to the running-gear and body and having recesses, and spring-jaws at the lower end of each spring and adapted to enter the recessed plates so as to have a dovetail connection therewith, substantially as set forth.

609,578. ADJUSTABLE HYDRAULIC NOZZLE. ASA R. EASTWOOD, Newcastle, Cal. Filed Nov. 11, 1897. Serial No. 658,135. (No model.)

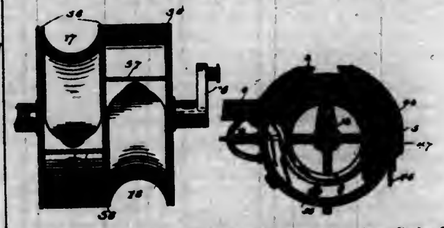


Claim.—1. An adjustment for hydraulic nozzles consisting of a transversely-movable slide having a line of nozzles of varying diameter projecting from one side, a casing within which said slide is movable having a slotted cover through which the nozzles project at one side, a supply-pipe connecting with the other side, and a rod by which the slide is movable within the chamber.

2. An adjustment for hydraulic nozzles consisting of a sliding plate having a series of nozzles projecting from one side and standing in the line of its movement, a casing within which said slide is movable having a longitudinally-slotted cover through which the nozzles project whereby the slide is allowed to move the length of the slot, a supply-pipe connecting with the opposite side of the casing whereby either of the nozzles through the slide may be brought into line therewith, spring-pressed packing-plates extending transversely across the bottom of the casing and forming a joint with the bottom of the slide whereby leakage from one nozzle to the other is prevented.

3. An adjustable hydraulic nozzle consisting of a slide having nozzles projecting from one side, a casing within which the slide is movable, a cover for said casing having a longitudinal opening through which the nozzles project and within which they are movable, a supply-pipe connecting with the opposite side of the casing, spring-pressed packing-plates whereby a joint is maintained between the plate and the nozzles, settling-chambers formed at the ends of the casing and discharge-openings therefrom.

609,579. ROTARY STEAM-ENGINE. HERBERT H. FREEMAN, Pierre, S. D. Filed July 1, 1897. Serial No. 643,131. (No model.)

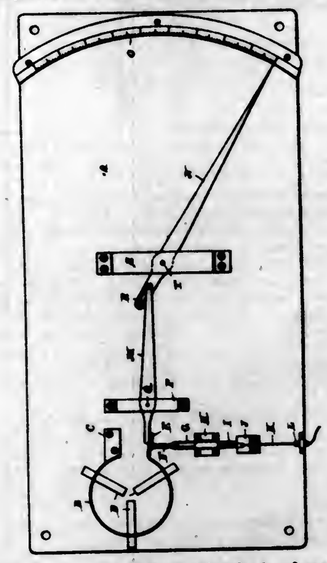


Claim.—1. The rotary steam-engine, comprising the cylinder 2 open at both ends, the live-steam chest 6 and the exhaust-steam chest 5, in combination with the exhaust-valve 47, the drum 13 mounted in said cylinder, and provided with the oppositely-disposed grooves 17 and 18 and the endless guide-grooves 55, the pressure-plates 9, 9, extending into the grooves 17 and 18 midway between the passages connecting the live-steam chest and the cylinder, the movable valve-seats 7, the slide-valves 8 and the guide-bars 52, 52, provided at one end with the stud 54 projecting into the guide-grooves 55, said bars being operatively connected at their opposite ends to said slide-valves, substantially as shown and described.

2. The rotary steam-engine comprising the cylinder 2, open at both ends, the live-steam chest 6 and the exhaust-steam chest 5, arranged on opposite sides of said cylinder, the drum-piston 12 mounted in said cylinder and having its solid ends arranged in the same plane with the ends of the cylinder so as to form closed heads for said cylinder, the steam-inlet valves 8, 8, operatively connected to said drum-piston, and the exhaust-valve 47, adapted to be operated by hand and independently of said steam-inlet valves, substantially as and for the purpose set forth.

3. The rotary steam-engine, comprising the cylinder 2, open at both ends, the live-steam chest 6 and the exhaust-steam chest 5, arranged on opposite sides of said cylinder, the drum-piston 12, adapted to fill said cylinder and form heads therefor, and formed with the oppositely-arranged grooves 17 and 18 in combination with the pressure-plates 9, 9 projecting into said grooves, the movable valve-seats 7 and the steam-inlet valves 8 mounted in said live-steam chest 6, and means for independently operating said valve-seats and valves and the exhaust-valve 47, and means for manually operating said exhaust-valve independently of said inlet-valves, substantially as shown and described.

609,580. GAGE FOR WATCH-CRYSTALS. MAX GORDON, Waterbury, Conn. Filed Jan. 11, 1898. Serial No. 666,393. (No model.)



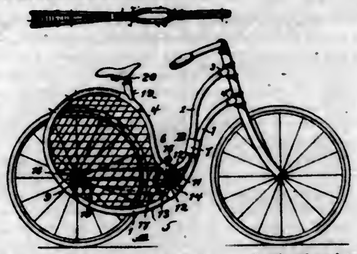
Claim.—1. In a gage for determining the size of watch-crystals, the combination of an encircling spring comprising a fixed and movable end, means for normally closing said end, mechanism for opening said spring, a pivoted lever, operated in one direction by the movement of the free end of said spring, a pointer operated by said lever and adapted to indicate in numerals the circumference of the crystal, substantially as shown and described.

2. In a gage for determining the size of watch-crystals, the combination of an encircling spring, one end of which has fixed means for opening and closing the free end of said spring, a lever connected with said free end, a pointer connected with said lever and adapted to be operated upon a pivot, a graduated dial in line of movement of said pointer and upon which the same indicates the size of the crystals within the spring.

3. The combination in a gage for determining the size of watch-crystals, the combination of the body, an encircling spring, one end of which has fixed thereto cleats secured to said body and radiating from the center of the spring, a spring-guided slide connecting the free end of said encircling spring and adapted to close the same, a secondary lever connected to said lever and carrying a pointer, a semicircular indicator in line of movement of said pointer and upon which the same registers the position of the encircling spring.

609,581. BICYCLE. CHARLES R. HARRIS, Williamsport, Pa. Filed Aug. 20, 1898. Serial No. 689,262. (No model.)

Claim.—1. A bicycle-frame comprising a steering-head, and two semicircular or D-shaped tubes in cross-section, said tubes bent in the form of an oval loop or scoop and secured at their ends to the steering-head at different points with their flat faces secured together for some distance back from the steering-head, and spread apart to receive the rear wheel between them.



2. A bicycle-frame composed of a steering-head and two tubes semicircular or D-shaped in cross-section, said tubes bent into oval shape, the upper leads forming a dip and the ends bent upward and secured to the steering-head, the two tubes having their flat faces secured together for a portion of their lengths, spread apart a short distance at the bottom of the dip and then secured together again.

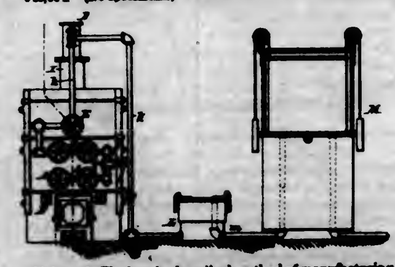
3. A bicycle-frame composed of a steering-head and two semicircular or D-shaped tubes in cross-section, said tubes bent to form an oval or loop, the flat faces of the tubes secured together in pairs during a portion of their lengths and the four leads secured together at one point, the ends of the tubes secured to the steering-head.

4. In a bicycle, the combination with a frame composed of two tubes bent into oval form and secured together for a portion of their length, the frame bent to form a dip and the two tubes bent apart at the bottom of the dip, of a crank-hanger secured beneath this dip, a crank-shaft journaled therein, and a sprocket-wheel secured on the crank-shaft and located and housed within the space formed by the tubes immediately beneath the dip.

5. In a bicycle, the combination with a frame consisting of a single sweep of rod or tubing, the upper member of said frame being bent to approach the lower member at a point between the ends of the frame, and a crank-hanger supported by the members of the frame where they approach each other, the members of the frame being secured together in advance of the crank-hanger, a crank-shaft supported in the hanger and a sprocket-wheel on said shaft, substantially as set forth.

6. In a bicycle, the combination with a single-sweep drop-frame, the upper member of which approaches the lower member at a point between the ends of the frame, said frame comprising two tubes secured together at the forward portions and separated at the rear portion of the bicycle and also where the members of the frame approach each other, of a crank-hanger disposed between the separated tubes where the members of the frame approach each other, brackets connecting the crank-hanger with the tubes of the frame, a driving-sprocket on the crank-shaft and between the tubes composing the respective members of the frame, brackets secured to the rear portion of the frame and having upwardly-projecting ears, a rear wheel disposed between the tubes at the rear end of the frame and an axle for said rear wheel mounted in the upwardly-projecting ears of said brackets and carrying a sprocket-wheel and a sprocket-chain connecting said sprocket-wheels between the tubes composing the respective members of the frame, substantially as set forth.

609,582. PROCESS OF AND COMPOSITION FOR MAKING GAS. LOUIS G. HARRIS, Toronto, Canada. Filed Aug. 16, 1897. Serial No. 648,604. (No specimens.)



Claim.—1. The herein-described method of manufacturing a combustible gas from garbage and similar materials which consists in distilling such material mixed with a liquid hydrocarbon, such as mineral oil, and an equalizing ingredient whereby the distillation is expedited and rendered uniform, substantially as set forth.

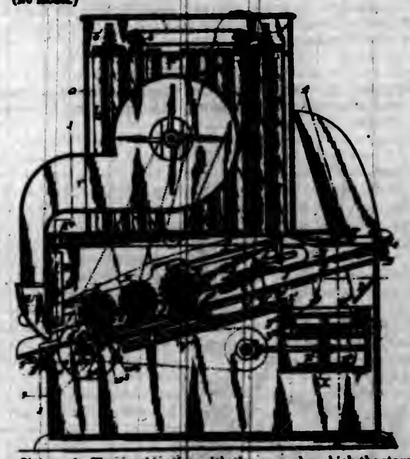
2. The herein-described method of manufacturing a combustible gas from garbage and similar materials which consists in distilling such material mixed with a liquid hydrocarbon, such as mineral oil, and alkali, substantially as set forth.

3. The herein-described method of manufacturing a combustible gas from garbage and similar materials which consists in distilling such material mixed with a liquid hydrocarbon, such as mineral oil, alkali, chlorid of lime and soap-bark, substantially as set forth.

4. A composition of matter for admixture with garbage and other materials, consisting of a liquid hydrocarbon, such as mineral oil, and an equalizing ingredient whereby the action is equalized and expedited and the hydrocarbon is prevented from being prematurely distilled off, substantially as set forth.

5. A composition of matter for admixture with garbage and other materials, consisting of a liquid hydrocarbon, such as mineral oil, alkali, chlorid of lime and soap-bark, substantially as set forth.

609,583. CONFECTIONER'S SEPARATING AND FILLING MACHINE. ARCHIE KEELE and THOMAS S. MACE, Silver Creek, N. Y.; said Mace assignor to said Keele. Filed Dec. 27, 1897. Serial No. 663,680. (No model.)



Claim.—1. The combination with the screen by which the starch is separated from the candies, of a tray-feeder arranged transversely below the head portion of the screen, and a starch-conveyor arranged underneath the following portion of the screen and moving the starch which passes through that portion of the screen to the tray-feeder, whereby the trays on the feeder receive directly the starch which is sifted through the head portion of the screen and receive from the conveyer the starch which is collected by the latter, substantially as set forth.

2. The combination with the separating-screen, of a tray-feeder arranged transversely below the head portion of the screen, a starch-receiving table arranged underneath the screen between the tray-feeder and the tail of the screen, and a reciprocating scraper-conveyer arranged upon said table, substantially as set forth.

3. The combination with the separating-screen and the receiving-table arranged underneath the screen, of a reciprocating scraper arranged upon said table, and movable latches or switches whereby the scraper is raised from the table during its return stroke, substantially as set forth.

4. The combination with the screen by which the starch is delivered to the trays, of a stationary tray guide and support arranged transversely underneath said screen, and an endless feed-belt arranged on one side of said screen and in line with said guide and support, whereby each tray is moved by the belt upon said stationary support and then released, leaving the tray stationary while being filled and until displaced by another tray fed forward by the feed-belt, substantially as set forth.

5. The combination with the separating-screen provided with an imperforate section, of a movable brush arranged above said imperforate section, substantially as set forth.

6. The combination with the separating-screen provided with an imperforate section, of a rotary brush arranged above said section and means whereby said brush is moved back and forth over said section, substantially as set forth.

7. The combination with the separating-screen provided with an imperforate section, of a rotary brush arranged above said section, reciprocating supports in which said brush is journaled, and means whereby said supports can be adjusted toward and from the screen, substantially as set forth.

8. The combination with the separating-screen, of a movable brush arranged above said screen, and an air-spout separate from said brush and delivering a blast of air against that portion of the screen which lies in rear of said brush and is not obstructed by the same, substantially as set forth.

9. The combination with the separating-screen having an imperforate section, of a movable brush arranged above said section, an air-spout by which a blast of air is delivered against the screen in rear of said brush, and a tray-feeder arranged underneath the screen, substantially as set forth.

10. The combination with the separating-screen and the chamber inclosing the same, of a movable brush arranged in said chamber and above said screen, a filtering starch-collector arranged above said chamber and communicating at its lower end with the same, and a fan whereby an air-current is drawn through said chamber and starch-collector and which has its blast-spout arranged to direct the blast upon the screen in rear of said brush and into said chamber, whereby the air is returned to the screen-chamber after it has been freed from the starch, substantially as set forth.

11. The combination with the separating-screen and the chamber inclosing the same and a tray-feeder, of a starch-collector arranged above said chamber and screen, and a fan whereby an air-current is drawn through said chamber and starch-collector and which has its blast-spout arranged to direct the blast upon the screen in said chamber, whereby the blast is delivered upon the screen after having been freed from the starch by said collector, substantially as set forth.

12. The combination with a shaking-screen, of a spring arranged transversely to the line of movement of the screen and at an oblique angle to the screen-surface, substantially as set forth.

13. The combination with a shaking-screen of a spring arranged transversely to the line of movement of the screen and at an oblique angle to the screen-surface, and means whereby the oblique position of the spring can be adjusted, substantially as set forth.

14. The combination with a shaking-screen and the stationary frame in which the screen is mounted, of transverse springs arranged at both ends of the screen at an oblique angle to the screen-surface and secured at their ends to said frame and at their middle to the screen, and means whereby the screen is moved, substantially as set forth.

15. The combination with the separating-screen and the tray-guide arranged below the same, of a tray-retaining frame and springs whereby said frame is yieldingly pressed against the trays, substantially as set forth.

16. The combination with the separating-screen and the tray-guide arranged below the same, of a tray-retaining frame arranged in said guide and provided with side bars adapted to bear against the trays, and leaf-springs secured to said bars and provided at their ends with hooks which engage with the adjacent wall, substantially as set forth.

17. The combination with the separating-chamber and the tray-guide, of a vertically-movable tray-retaining frame arranged in said guide and provided with two longitudinal bars each of which consists of a depending portion having a rounded front end and a horizontal portion having a rounded front end, substantially as set forth.

18. The combination with the separating-chamber and the tray-guide, of a vertically-movable tray-retaining frame arranged in said guide and provided with two longitudinal bars each of which consists of a depending portion having a rounded front end and a horizontal portion having a rounded front end, and springs whereby said frame is yieldingly held in a depressed position, substantially as set forth.

609,584. FIRE-EXTINGUISHER. SOLOMON JOHNES, Painesdale, Ohio. Filed Nov. 1, 1897. Serial No. 657,602. (No model.)



Claim.—In a fire-extinguisher, the combination with a tank having an outlet, and a neck portion, of a cap 3 detachably connected with said tank-neck portion, a bottle-stopper guide-frame 7 detachably connected with said cap, a cage or frame 11 suspended from and having a threaded engagement with said stopper guide-frame, a bottle supported in said cage, a stopper-holding disk, an adjustable supporting-stem therefor and a stopper detachably connected with said disk and adapted to close the mouth of said bottle, substantially as and for the purpose specified.

609,585. SPRING-HINGE. JOSEPH KERBS, Chicago, Ill. Filed Apr. 18, 1898. Serial No. 677,994. (No model.)

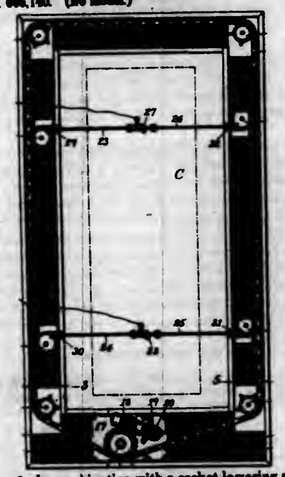


Claim.—1. A leaf for a spring-hinge consisting of a plate of sheet metal one edge of which has formed integral therewith a perforated extension, said extension being bent at an angle to the body of the hinge-leaf and folded upon itself and into a recess in the body of the leaf, the body of the hinge-leaf being provided with an aperture above said extension.

2. A leaf for a spring-hinge consisting of a plate of sheet metal one edge of which has formed integral therewith a perforated extension, said extension being bent at an angle to the body of the hinge-leaf and folded upon itself and into a recess at the edge of the leaf, said extension being provided with notches to receive adjacent parts of the leaf-body, the body of the leaf being provided with an aperture above said extension.

3. A leaf for a spring-hinge consisting of a plate of sheet metal one edge of which has formed integral therewith a perforated extension, said extension being bent at an angle to the body of the hinge-leaf and folded upon itself, the body of the hinge-leaf being provided at the base of said extension with lugs between which said extension rests, said lugs engaging said extension to hold the same in place.

609,586. CASKET-LOWERING APPARATUS. WILLIAM H. LEMKE, Wethersfield, and GEORGE E. SMART, Hartford, Conn., assignors to the Casket Lowering Company, of Connecticut. Filed Jan. 10, 1898. Serial No. 666,140. (No model.)



Claim.—1. In combination with a casket-lowering apparatus, an endless traveling carrier, casket-suspending ropes attached thereto, with means for guiding the depending portions of the suspending-ropes in paired relation, so as to cooperate in the lowering operation.

2. A casket-lowering device comprising a framing for the grave-opening, an endless traveling carrier, means for supporting the carrier, around the circuit of the framing, oppositely-disposed casket-suspending ropes attached to the carrier and means for guiding and supporting the suspending-ropes in a parallel relation to the carrier as they are drawn thereby into the framing and around the corners thereof.

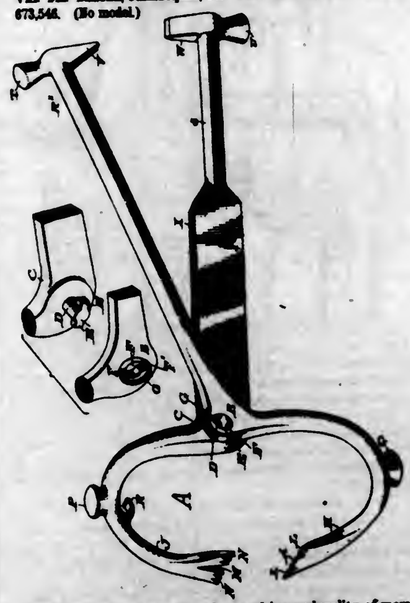
3. In combination with a casket-lowering apparatus, an endless traveling carrier, oppositely-disposed casket-suspending ropes attached thereto in pairs, with means for guiding the depending portions of each pair in cooperative relation to each other, and for guiding and supporting those portions of the suspending-ropes which are within the framing in a parallel relation to the carrier as they are drawn thereby around the corners of the frame.

4. In combination with a casket-lowering apparatus, a traveling carrier consisting of an endless linked chain, with oppositely-disposed casket-suspending ropes attached thereto in pairs, a toothed driving-sprocket for the chain, and sprocket-idlers for supporting the linked chain to enable it to travel in a circuit around the apparatus.

5. In combination with a casket-lowering apparatus, an endless linked carrier, arranged in a horizontal plane, with oppositely-disposed casket-suspending ropes attached thereto in pairs, a toothed sprocket-wheel for driving the carrier, and driving means therefor consisting of a vertical crank-shaft, beveled gears, a worm, and a worm-wheel, substantially as described.

6. In a casket-lowering apparatus, the combination of a framing for the grave-opening, an endless carrier arranged to travel in a horizontal plane around the circuit of the framing, with oppositely-disposed casket-suspending ropes attached thereto in pairs, a sprocket driving-wheel for the carrier, a vertical crank-shaft for the operator, with gearing connecting the vertical shaft with the sprocket driving-wheel for the horizontal carrier.

609,587. VETERINARY TOOL. JOHN F. MCAULEY and PETER VAN DEN BERGH, Philadelphia, Pa. Filed Mar. 11, 1898. Serial No. 673,546. (No model.)

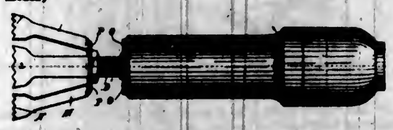


Claim.—1. A veterinary tool comprising a plurality of members pivotally connected, jaws on said members adapted to be employed as hoof-testers and having their ends flattened, one of said ends being provided with the portion K having the recesses or serrations L on either side thereof, and the other of said ends having a recess M and serrations N on either side thereof.

2. A veterinary tool consisting of the members B and C pivotally attached to each other, each member being provided with jaws having their ends flattened, one of said ends having the portion K and the recesses or serrations L on either side thereof, the other end having a V-shaped recess M and serrations N on either side thereof, and a lip or lug R located within one of the jaws and adapted to be engaged by a rope.

3. A veterinary tool comprising a plurality of members pivotally connected, means for disconnecting said members according to requirements, one of said members being provided with teeth adapted for use as a file, jaws on said members flattened at their ends, one of said jaws provided with recesses or serrations L, and the other jaw with the V-shaped recess M and serrations N, hammer-heads on the outer bulged portion of said jaws, a lip or lug R within one of said jaws adapted to be engaged by a rope, and a head and punch carried by one of said members, in combination with a head and clench-cutter carried by the other of said members.

609,588. MOTOR FOR FLUE SCRAPERS OR CLEANERS. ERWIN R. PARKS, Grand Rapids, Mich., assignor of one-half to Frank A. Simonds, same place. Filed Sept. 20, 1897. Serial No. 652,341. (No model.)



Claim.—1. In combination with a reciprocating piston, a valve-chamber, a diaphragm in said chamber having an opening, a cylinder attached to said diaphragm, a valve moving in said cylinder and having a head having an opening in line with the opening in the diaphragm, and a rod moving in said opening and having a reduced portion, substantially as described.

2. In combination with a reciprocating piston, a valve-chamber, a fixed diaphragm in the same having a central opening, a cylinder concentric with said opening, a valve movable in said cylinder, having a head having a central opening, inlet and exhaust ports controlled by said valve, and a rod in said openings having a reduced portion and attached to the reciprocating piston, substantially as described.

3. In combination with a reciprocating piston, a valve-chamber, and exhaust-ports; a longitudinally-movable cylindrical valve having lateral ports and a head having a central opening; a diaphragm in the valve-chamber having a central opening and openings near the walls of the valve-chamber, a cylinder attached to said diaphragm and surrounding said valve, and a rod attached to said piston and having a reduced portion, said rod also passing through the openings in said valve and diaphragm, substantially as described.

4. In combination with a reciprocating piston, a spring and a valve-chamber at the respective sides of the same, exhaust-ports and inlet-ports in the valve-chamber, a diaphragm in said chamber having a central opening and marginal openings, a cylinder on said diaphragm between the central and marginal openings, a cylindrical valve having a flange engaging the end of said cylinder, and lateral ports closed by said cylinder, and a head having a central opening; a spring engaging said valve, and a rod attached to said piston and having a reduced portion and passing through said openings in the head and diaphragm, substantially as described.

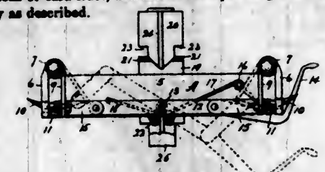
5. In combination with a piston, a cylinder having a reduced bore and enlarged end and ports between the same, a valve-chamber attached to said enlarged end, a diaphragm in said chamber having a central opening and marginal openings and a cylinder between said central and marginal openings, a cylindrical valve having a flange, lateral ports and a head having a central opening, springs to move said piston and valve, a rod having a reduced portion attached to the piston and extending through the opening in the valve and diaphragm, a rod extending from the piston through a perforated head in the forward end of the cylinder, and a scraping-tool attached to said rod, substantially as described.

6. The combination of a cylinder having a reciprocating piston extending from one end thereof, and lateral exhaust-ports, a valve-chamber at the other end of said cylinder having an end opening adapted to attach said chamber to a pipe, a valve in said chamber to admit fluid to one side of the piston and to exhaust said fluid, valve mechanism to admit fluid to said valve to move the same in one direction, and springs to move the piston and valve in the direction opposite to the fluid-pressure, substantially as described.

7. The combination of a reciprocating flue-scraper, a cylinder having a reduced bore and exhaust-ports at one end and a perforated head at the other end, a piston in said cylinder, a rod extending from said piston through said perforated head, said flue-scraper attached to said rod, a spring engaging said piston, a valve-chamber at the rear of said cylinder, a rod in the axis of said chamber and attached to said piston and having a reduced portion, a cylindrical valve surrounding said rod, having a spring, a flange, lateral ports, and a head having a central opening, a cylinder surrounding said valve, a diaphragm to which said cylinder is attached, a central opening and marginal openings in said diaphragm, substantially as described.

609,589. BAG-HOLDER. MORTIMER R. PERKINS, Bristol, Conn. Filed Aug. 12, 1897. Serial No. 648,098. (No model.)

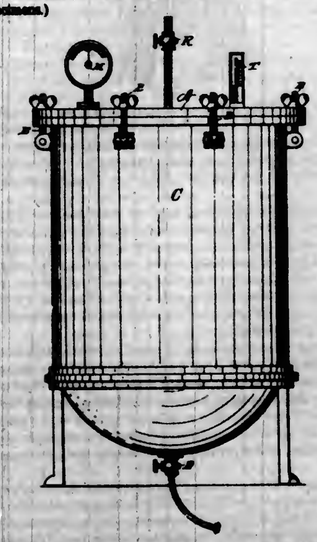
Claim.—1. In a bag-holder, the frame consisting of a strap or plate like structure bent flatwise on two transverse lines and forming when seen in edge view three sides of a right-angled figure, the sides 6, 6, of which are provided at their upper edge with hinge-lugs and toward their lower edge with the stripper portion, in combination with the swinging wings pivoted to the hinge-lugs of said frame by their upper edge, and carrying at their lower portion curved points that register with the openings therefor in the stripper portions of said sides, and means for operating said wings, substantially as described.



2. In a bag-holder, the combination of the frame having the back 5 and the two fixed sides 6 6, the lower portions of which fixed sides serve as strippers, the swinging wings 9 pivoted by their upper edges to the said stripper sides and extending downwardly inside of the said stripper sides, the upwardly-curved and outwardly-projecting points mounted on said wings near their lower edge, and mechanism for swinging said wings to and from said stripper sides to project and withdraw the said points through said sides in a curved path, substantially as described.

3. In a bag-holder, the combination of the bracket 19 having the pair of hooks 21 at its upper edge with a space between said hooks, and the rearwardly-extended and slotted lower end, with the bracket-plate of T form in plan or end view, having its mid-rib adapted to be engaged by the slotted lower end of the said bracket and with the back or cross piece of the said T-shaped bracket-plate having in its opposite edges the series of side notches for receiving the said hooks 21, substantially as described.

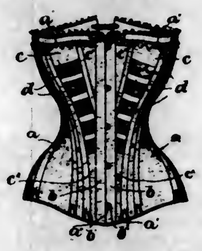
609,590. PROCESS OF PRESERVING FOOD. OCTAVE DE SANTA CRUZ, Versailles, France. Filed Jan. 3, 1898. Serial No. 665,536. (No specimens.)



Claim.—The preservation of food by using the combined and simultaneous action of vacuum, carbonic acid under pressure and cold, that is to say, by submitting each chilled food in a hermetically-sealed vessel to the action of carbonic acid applied and retained under pressure, the food thus being at a refrigerating temperature without freezing, and such refrigerating temperature being maintained throughout such treatment, substantially as described.

609,591. GRILLE. CLEMENTINE DE VERE SAPIN, Paris, France. Filed Nov. 16, 1897. Serial No. 658,670. (No model.)

Claim.—A corset comprising the side sections *a a* of practically inelastic construction, having provisions at their rear edges for adjustable connection with each other at the back, the vertical front stay-pieces *b b*, inelastic pieces c^2 connecting the lower portions of the said stay-pieces with the side sections *a a*, inelastic breast-pockets between the upper portions of the side sections *a a* and the stay-pieces, and elastic insertions which diverge in width from the pieces c^2 c^2 toward the upper inelastic connections, whereby the upper and lower end portions of the corset, including the breast-pockets, are inelastic and have the desired adjustable permanency of form, while the portions directly over the respiratory organs at the front of the corset are elastic.



609,592. FOLDING OR COLLAPSIBLE TABLE. ANTHONY R. SHIRLEY, North Baltimore, Ohio. Filed June 19, 1897. Serial No. 641,467. (No model.)



Claim.—1. A folding table comprising a hollow standard adapted to receive the folded leaves of the table, a top section removably connected with the standard, a table formed of a series of substantially triangular leaves hinged at their edges, and means for supporting the table in a horizontal position upon the top section, substantially as described.

2. A folding table comprising a hollow standard adapted to receive the folded leaves of the table and a portion of its supporting means, a top section removably secured to the hollow standard, a short standard having a screw-threaded rod passing therethrough and provided with plates or washers at or near its upper end, means for drawing the washers together, and a table formed of a series of leaves substantially triangular in form and hinged together at their edges, substantially as described.

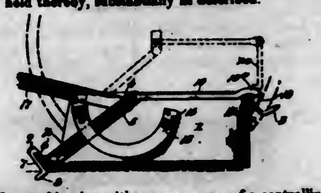
3. A folding table comprising a hollow standard adapted to receive the folded leaves of the table and a portion of the supporting means, a top section removably secured to the standard, a short standard mounted on the top section, a screw-threaded rod passing through the short standard and provided at its upper portion with washers or plates 15 and 17, a head on said rod adapted to be turned to draw the plates together, and secure the table between them, substantially as described.

4. A folding table comprising a hollow standard substantially triangular in form and adapted to receive the folding leaves of the table and a portion of the supporting means, provided at its bottom with extensible slides, a top section, folding table proper, and means substantially as described for supporting and maintaining the table in horizontal position.

609,593. WHEELED SCRAPER. WILLIAM X. SIMPSON, ARTHUR H. Filed Sept. 10, 1897. Serial No. 651,283. (No model.)

Claim.—1. The combination with a scraper-pan, and a draft-ball pivoted thereto, of a lifting-lever attached to the pan at the pivotal connection of the ball thereto, and means for sustaining the lever in a position above the pan-bottom, whereby said lifting-lever may be dropped into engagement with the ground and the draft-ball pulls on the pan to lift the same.

2. The combination with a scraper-pan, and a draft-ball pivoted thereto, of a lifting-lever attached to the pan at the pivotal connection of the ball thereto, and an adjusting and locking mechanism mounted on the heel of the pan and operatively connected with the lifting-lever, said locking mechanism arranged to engage with the pan to be held thereby, substantially as described.



3. The combination with a scraper-pan, of a controlling-lever, a lifting-lever fulcrumed on the pan near its open front end and arranged to project normally beyond said pan, and a link connecting the controlling-lever to the lifting-lever, substantially as and for the purpose described.

4. The combination with a scraper-pan, of guides fastened to the side of said pan, lifting-levers fulcrumed to the pan and arranged between the same and the guides, and a controlling-lever operatively connected with the lifting-lever.

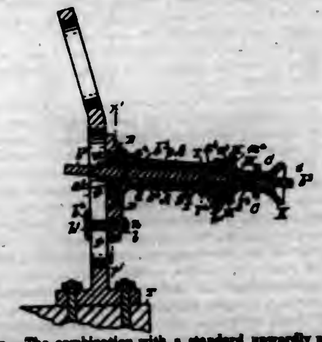
5. The combination with a scraper-pan, of a rock-shaft journaled thereon and provided with crank-arms, lifting-levers fulcrumed to the pan and projecting normally beyond the open front end thereof, links pivoted to the lifting-levers and having bowed ends pivoted to the cranks of the rock-shaft, and a controlling-lever carried by the rock-shaft.

6. In a scraper, a lifting-lever having its free end bent to provide the foot and the projecting heel, combined with a pan to which one end of said lifting-lever is fulcrumed, and means for operating said lifting-lever, as and for the purposes described.

7. The combination with a scraper-pan, of lifting-levers fulcrumed near one end to the sides of the pan and provided at their free ends with penetrating hooks, a draft appliance connected to the fulcra of said lifting-levers, and a cranked rock-shaft linked to the lifting-levers at one side of the fulcra thereof, as and for the purposes described.

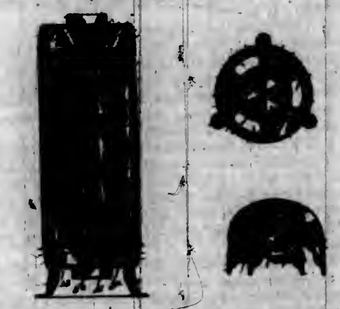
8. The combination with a scraper-pan, and a draft-ball attached thereto, of lifting-levers each pivoted at one end on said pan and projecting at its free end beyond said pan, a rock-shaft journaled on the heel of the pan and provided with crank-arms, links pivoted to said crank-arms of the shaft and to the lifting-levers, and an operating-lever attached to the rock-shaft and adapted to engage the pan to normally hold the lifting-levers in raised positions, substantially as described.

609,594. BUR-HOLDER ATTACHMENT FOR KNITTING-MACHINES. HENRY V. H. SMITH, Norfolk, Va., assignor to Tompkins Brothers, Troy, N. Y. Filed July 30, 1897. Serial No. 646,788. (No model.)



Claim.—The combination with a standard upwardly projected from a knitting-machine table, said standard being provided with a laterally-extended tube-form arm, and having a bracket projected therefrom; of a bur-holder bar provided with a shelf on its inner end, and adapted to turn in said tube-form arm; a sinker-bar journaled on said shelf; a worm-wheel mounted on said bur-holder bar and arranged in a recess formed in said standard-bracket; a shaft provided with bearings in said bracket and having mounted upon it a worm adapted to mesh into said worm-wheel, whereby as said worm-shaft is rotated, the bur-holder may be rotated with small measures of movement and thus cause the sinker-bar to incline more or less from a perpendicular and thus give to the bur-blades a regulated measure of pitch substantially as shown and described.

609,595. AIR-HEATING RADIATOR. JAMES M. STRICKLER, Ephrata, Pa. Filed Apr. 15, 1898. Serial No. 678,047. (No model.)



Claim.—1. A heating-radiator comprising inner and outer concentric chambers and upper and lower heads; each head made up of a side wall and inner and outer diaphragms and divided by radial partitions into flues; the inner diaphragms of each head being formed with ports located to connect some of the flues with the inner concentric chamber, and the other flues to the outer chamber, and the outer diaphragms provided with ports located for separately directing gases and air to and from the respective flues; substantially as explained.

2. In a radiator the combination of concentric walls forming inner and outer chambers; upper and lower heads, and centrally-located smoke-pipe connections; said upper and lower heads being provided with inner diaphragms closing the ends of the concentric chambers, outer diaphragms for controlling inlet and discharge of air and smoke from the flues, and radial partitions dividing the heads into flues; said inner diaphragms being provided with ports which connect the flues of the inner chamber with the outer atmosphere, and the flues of the outer chamber with the respective smoke-pipe connections; substantially as explained.

3. A head for heating-drums, comprising two diaphragms, a side wall and radially-arranged partitions dividing the space within the head into a number of segmental flues; said diaphragms being provided with ports communicating with the respective flues and located alternately at inner and outer ends of the flues and disposed so that each flue has an inlet and outlet at opposite ends and opposite sides; substantially as and for the purposes set forth.

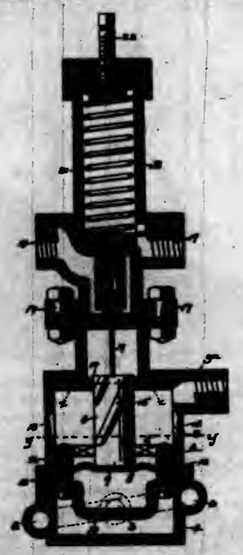
4. In combination with a heating-drum head having radially-disposed flues arranged for communication with separate chambers of the drum and having separate discharge-openings at different radial distances from the center of the drum; a rotary cap surrounding said head and formed with a central pipe-attachment communicating with the inner series of openings, and a series of outer openings corresponding to the outer series of openings of the head and brought by rotation of the cap into and out of coincidence with the openings of the head; substantially as and for the purposes set forth.

5. In combination with a heating-drum head having radially-disposed flues arranged for communication with separate chambers of the drum and having separate discharge-openings at different radial distances from the center of the drum; a rotary cap surrounding said head and formed with a central pipe-attachment communicating with the inner series of openings, and a series of outer openings corresponding to the outer series of openings of the head and brought by rotation of the cap into and out of coincidence with the openings of the head; said cap-openings having inwardly-projecting flanges which space the cap apart from the head and form a smoke-chamber; substantially as and for the purposes set forth.

609,596. WATER-HEATER. JOSEPH W. TAYLOR, Williamsburg, Pa., assignor of one-half to Henry W. Holbrook, Pittsburg, Pa. Filed June 24, 1897. Serial No. 642,178. (No model.)

Claim.—1. In a water-heater, in combination with a water-receptacle, a source of heat-supply, a source of water-supply and a water-outlet, a regulator to control the flow of heat and water, a chamber for said regulator and automatic means controlled by the flow of water to prevent the collection of sediment within said chamber, substantially as described.

2. The combination with a water-receptacle provided with a supply-pipe and an outlet-pipe, a gas-burner adapted to heat the water-receptacle, a supply-pipe for the burner, a valve in the gas-supply pipe, a chamber in the water-supply pipe, a regulator in said chamber to operate the gas-valve adapted to be raised by the flow of water through the chamber and lowered when the flow of water is stopped, said regulator provided with means adapted to prevent the collection of sediment within the chamber.



3. The combination with a water-receptacle provided with a supply-pipe and an outlet-pipe, a gas-burner adapted to heat the water-receptacle, a supply-pipe for the burner, a valve in the gas-supply pipe, a chamber in the water-supply pipe, a regulator in said chamber to operate the gas-valve adapted to be raised with a rotary movement by the flow of water through the chamber and lowered with a rotary movement when the flow of water is stopped, said regulator provided with means adapted to prevent the collection of sediment within the chamber.

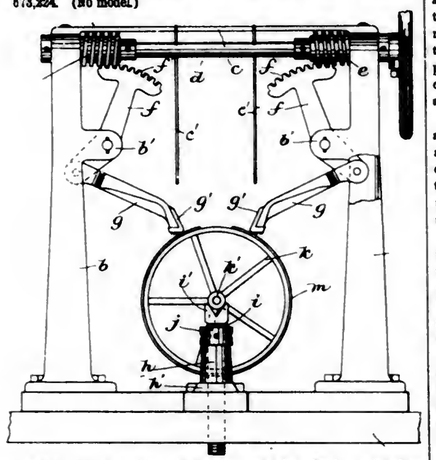
4. The combination with a water-receptacle provided with a supply-pipe and an outlet-pipe, a gas-burner adapted to heat the water-receptacle, a supply-pipe for the burner, a valve in the gas-supply pipe, a chamber in the water-supply pipe, a regulator in said chamber adapted to operate the gas-valve and be raised by the flow of water through the chamber and lowered by the pressure above the regulator when the flow of water is stopped, a stirrer in said chamber attached to the regulator, and means for giving the regulator and stirrer a rotary movement as they are raised and lowered.

5. In a water-heater, the combination with the water-receptacle, a source of heat-supply, an outlet from the water-receptacle, a water-supply pipe, a casing in the supply-pipe, a regulator in the casing adapted to control the supply of heat to the water-receptacle and be actuated by the flow of water through the casing and by the pressure above the regulator when the flow of water is stopped, a stirrer within the casing attached to the regulator and adapted to move with it.

6. In a water-heater, the combination with the water-receptacle, a source of heat-supply, an outlet from the water-receptacle, a water-supply pipe, a casing in the supply-pipe, a regulator in the casing adapted to control the supply of heat to the water-receptacle, a stirrer attached to the regulator, said regulator and stirrer adapted to be raised with a rotary movement by the flow of water through the casing and lowered with a rotary movement by the pressure above the regulator, when the flow of water is stopped.

7. In a water-heater, the combination with the water-receptacle, a source of heat-supply, an outlet from the water-receptacle, a water-supply pipe, a casing in the supply-pipe, a chamber in the casing means for discharging water into the chamber from different horizontal planes and imparting two opposite currents to the water within the chamber, a regulator within the chamber adapted to control the supply of heat to the water-receptacle and be actuated by the flow of water through the chamber and by the pressure above the regulator when the flow of water is stopped, a stirrer within the chamber attached to the regulator and adapted to move with it.

609,597. MACHINE FOR COVERING ROLLS WITH LEATHER. JAMES S. TURNER, Chelmsford, Mass. Filed Mar. 9, 1898. Serial No. 673,224. (No model.)



Claim.—In a machine of the character described, a pair of oppositely-disposed stretching-arms, and end pieces formed to fit said arms and removably secured to the ends thereof, the said end pieces being thickly studded on their acting-faces with pins which have pointed ends adapted to become embedded in the ends of a leather band for the purpose of stretching the same over a roll.

609,598. RED DYE AND PROCESS OF MAKING SAME. HENRI R. VIDAL, Paris, France. Filed July 24, 1897. Serial No. 645,853. (Specimens.) Patented in France Feb. 27, 1897, No. 264,512, and in England Mar. 3, 1897, No. 5,689.

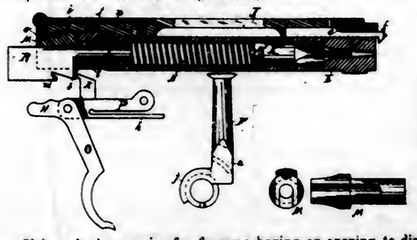
Claim.—1. The method of producing coloring-matters by heating hydrazins with a carboxylated carbinol compound, such as dicarboxylated trioxyphenylcarbinol, substantially as described.

2. The described coloring-matters derived from carboxylated carbinol compounds (such as dicarboxylated trioxyphenylcarbinol) the same being a vivid red-blue mass, soluble in alkalies, capable of dyeing directly animal and mordanted cotton fibers, substantially as described.

609,599. PROCESS OF OBTAINING TRIPHENYLMETHANE DERIVATIVES. HENRI R. VIDAL, Paris, France. Original application filed July 24, 1897, Serial No. 645,859. Divided and this application filed Jan. 11, 1898. Serial No. 666,351. (No specimens.) Patented in France Feb. 24, 1897, No. 264,384, and in England Mar. 2, 1897, No. 5,535.

Claim.—The process of producing tricarboxylated derivatives of phenolic or amidated compounds of triphenylmethane consisting in heating said compounds in presence of a condensing agent such as oxalic and sulfuric acid, substantially as described.

609,600. MAGAZINE BOLT-GUN. THOMAS R. WILSON, Springfield, Mass., assignor to Charles R. Billings, Hartford, Conn. Filed Sept. 28, 1891. Serial No. 406,990. (No model.)



Claim.—1. A magazine for firearms having an opening to discharge the cartridges, a cover on the magazine, a spring-catch to hold the cover down, and a spring attached to the wall having the lower free end thereof projecting beyond the magazine and adapted to hold said magazine in position, substantially as described.

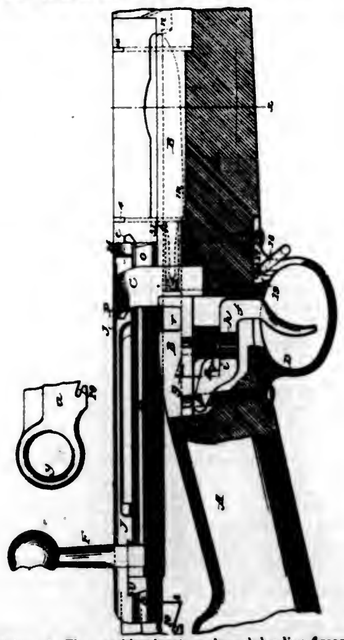
2. The combination of the receiver formed with an opening to take the cartridges and with a plate extending vertically downward, a magazine formed with an opening to discharge the cartridges into the receiver-opening and having a spring attached to the wall of the magazine having its lower free end projecting beyond the inner wall thereof, said spring holding said magazine in an elevated or lowered position by engaging with said vertical plate, and a catch on the receiver whereby the magazine is stopped from being raised too high, substantially as described.

3. In a firearm, the combination of the extractor-bar J having a dovetailed recess iq its lower side, the breech-bolt E having a lug *j* adapted to enter part of said recess and having one face fitting the corresponding dovetail, and the sleeve M provided with a lug *i* fitting the remainder of the same recess, said lugs *j* and *i* allowing a relative rotation but not allowing relative longitudinal motion between the pieces J, E and M, substantially as described.

4. In a firearm, the combination of the extractor-bar J provided with a dovetailed recess, the spring *n* attached to said bar and provided with a pin *o* engaging with the sleeve M, the sleeve M provided with a lug engaging a portion of said dovetailed recess, and a breech-bolt E provided with a lug also engaging in said recess, both said lugs preventing any relative longitudinal motion, substantially as described.

5. In a firearm, the combination of the rotatable hollow breech-bolt, the hollow slotted sleeve M, said breech-bolt and sleeve each being provided with a lug adapted to enter a recess in the extractor-bar, and the extractor-bar provided with a spring attachment adapted to prevent the rotation of said sleeve, substantially as described.

609,601. MAGAZINE BOLT-GUN. THOMAS R. WILSON, Springfield, Mass., assignor to Charles R. Billings, Hartford, Conn. Filed May 9, 1896. Serial No. 542,725. (No model.)



Claim.—1. The combination in a breech-loading firearm, of a frame provided with a receiver, a cartridge-receiving recess *m* having its axial center substantially parallel with the axial center of the receiver, said recess being located in part below and in part at one side of the receiver, a hopper-shell *c*, adapted to receive a magazine or cartridge packet and telescope the same, and a gate provided with a lug to be moved when the packet is forced downwardly, the wall between the receiver and recess being cut away to permit the passage of the cartridges, substantially as and for the purposes stated.

2. The combination in a breech-loading firearm of a receiver, a bolt adapted to fit the same, provided at its rear end with an enlargement, a cocking-cam recess cut from said enlargement only, a firing-pin, a mainspring, a firing-pin spindle and cocking-piece provided with a part *t*, overhanging a portion of the bolt and projecting from the cocking-piece into the cocking cam recess in the bolt enlargement, substantially as and for the purposes stated.

3. The combination in a bolt-gun of a receiver, a bolt fitting the same, provided with a dovetailed portion 8, a sleeve *b* provided with a dovetail portion *v*, and a part J, provided with a dovetailed recess to receive the dovetailed portions 8 and *v*, substantially as and for the purposes stated.

4. The combination in a bolt-gun of a receiver, a bolt fitting the same, provided with an enlarged dovetailed portion 8, a sleeve *b* provided with a dovetailed portion *v*, a part J, provided with a dovetailed recess to receive the dovetailed parts on the bolt and sleeve, and a cocking-cam on said portion 8, and a cocking-piece with part *t* engaging said cam, and arranged to pass through a slot in the sleeve, and into a cocking-recess in the enlargement, substantially as stated.

5. In a breech-loading firearm, the receiver formed at its forward end with a cam groove or recess *n* and an overhanging part C at the rear portion having a rear cam-wall *p* arranged in alinement with cam-groove *n*, and a handle-bar recess *r* at the base of the part C, a longitudinally-movable bolt in the receiver formed with a cam-lug *o* at its forward end to engage in the cam-groove *n*, and a handle-bar F, arranged to engage the cam edge *p* and lock in the recess at the base thereof, whereby the bolt is locked in forward position and the bolt on initial backward rotation will positively start the cartridge from the explosion-chamber.

6. The combination in a firearm of a sear provided with a spring-receiving chamber, a spring arranged within said chamber, a stud or screw passing through said chamber and having a slotted head in which the trigger-body moves, and means to draw the sear out of engagement with the cocking-piece, substantially as and for the purposes stated.

7. The combination in a firearm of a sear *g* provided with a chambered portion and a stud 14, a shouldered screw *h* arranged within said chambered portion, a spring arranged within said chamber bearing at one end upon the screw-shoulder, and at its opposite end upon the upper wall of the recess in said chamber, a trigger *f* provided with a recess 13 adapted to engage the pin or lug 14, and projecting rearwardly with its end arranged to bear against the lower wall of the frame, substantially as and for the purposes stated.

8. In a magazine-firearm the combination of a hopper *e* detachably arranged at the side of the receiver and a latch *j* upon the outer side of said hopper, and provided with a lip 9 arranged to project into the hopper and over the cartridge, and to be retracted from the cartridge-passage, said latch being pivoted at the end of the hopper, substantially as and for the purposes stated.

609,602. PLOW. WILLIAM A. WOOD, Nashville, Tenn. Filed Oct. 20, 1897. Serial No. 656,005. (No model.)



Claim.—1. In combination, a standard having a foot and an enlarged portion above and overhanging the foot, and a point having a slot extending inwardly from its rear edge to receive that portion of the standard extending between the foot and overhanging part, whereby the said point is retained in place, substantially as set forth.

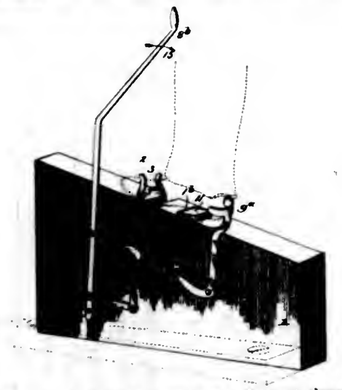
2. In combination, a standard, a double moldboard detachably fitted to the standard, and a subsoiler removably fitted to the standard and having a depression in its top side to receive the lower edges of the moldboard-wings, substantially as and for the purpose set forth.

3. In combination, a standard bearing an earth-treating device and having a centrally-disposed lug at its rear edge, a furrow-bar pivoted at its front end to the said lug, and a rod applied to the rear end of the furrow-bar for adjusting the latter and holding it in the required position, substantially as set forth.

4. In combination, a standard bearing an earth-treating device and provided with a centrally-disposed and rearwardly-extending lug, a curved furrow-bar pivoted to the said lug, a rod having pivotal connection with the furrow-bar, and means for adjusting the rod and holding it in an adjusted position, substantially as set forth.

5. In combination, a beam having a longitudinal slot, a standard having adjustable connection with the beam and provided with an earth-treating device, a curved furrow-bar having pivotal connection with the standard, a rod applied to the furrow-bar and having its upper end threaded and passing loosely through the longitudinal slot of the beam, and clamp-nuts placed upon the threaded end portion of the rod to secure it to the beam in a desired position, substantially as set forth.

609,608. BOOTJACK. IDOLF A. YOUNGBERG and JOHN O. HORD, Ishpeming, Mich. Filed Dec. 4, 1897. Serial No. 660,746. (No model.)



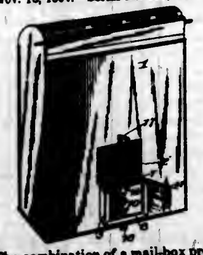
Claim.—1. A bootjack, comprising a foot-rest, clamp devices carried thereby to engage the front end of the foot and the heel, and means for simultaneously causing such devices to clamp the front and heel end of the boot, said means having an operating-lever extended within convenient reach of the user, as specified.

2. A bootjack, comprising a supporting-base, separate clamp devices for engaging the front, the toe end and the heel end of the boot, a stop for holding the foot from moving forward between the toe-clamps and hand-operated means for simultaneously moving the toe and heel clamps to an operative position as specified.

3. An improved bootjack, comprising a foot-rest having a scissors-like clamp to engage the front end of the foot, a pivotal clamp adapted to move into engagement with the heel, a pivot-lever having a hand portion extended within convenient reach of the user and connections between such lever and the shoe-clamps, substantially as shown and described, whereby the manipulation of such lever will simultaneously move such clamps to their shoe-engaging position substantially as set forth.

4. The combination with the foot-rest, having a transverse slot or recess 2, and a spring-actuated stop 11, at a point adjacent said recess, of a scissors-like clamp 3, and the heel-clamp 9, the bell-crank 6, links 10 and 7, and the hand-lever 8, all being arranged substantially as shown and described.

609,604. TIME-CARD RECEPTACLE. HENRY ZUBER, Hennessey, Okla. Filed Nov. 15, 1897. Serial No. 658,968. (No model.)

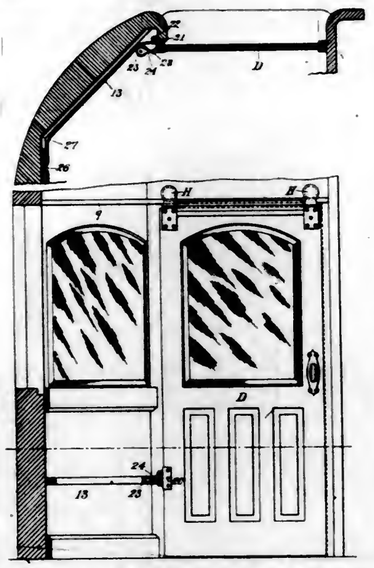


Claim.—1. The combination of a mail-box provided with a closed recess, and a frame provided at its top and ends with flanges for holding a time-card and having its bottom open, said frame being hinged to the mail-box at the bottom of the recess and fitting within the same so that the bottom of the recess will close its open bottom and support the time-card, the frame being adapted to swing outward and downward, whereby the open bottom will be arranged uppermost, substantially as described.

2. A time-card receptacle for mail-boxes, comprising an open frame having its top and ends bent to form flanges, and having lugs on its lower edge, a pane of glass seated against the inner face of the

frame to close the opening therein, and over the lower edge of which glass said lugs are folded, and a plate secured to said flanges in rear of the glass and having its ends bent to form guide-strips parallel with the plate and spaced therefrom to receive the time-card, and the vertical edges of the guide-strip being bent to form lips to engage the glass and thus keep the time-card out of engagement with the glass, substantially as described.

609,605. **SLIDING-DOOR GUIDE AND CLOSER.** CHARLES F. AGARD, Hartford, Conn. Filed Sept. 4, 1897. Serial No. 650,675. (No model.)



Claim.—1. In combination with a door and with the guide-rail therefor, arranged in a curved or sinuous path, a guiding device attached to the door and consisting of a relatively-fixed member, and of a yielding member, engaging the opposite sides of the rail at different locations longitudinally thereof.

2. The combination with a sliding door and a guide-rail therefor, of a spring-pressed arm carried by the door and engaging with said rail, the rail being provided with a depression or inclination for engaging with the arm when the door is in its open position, serving to retain it in that position.

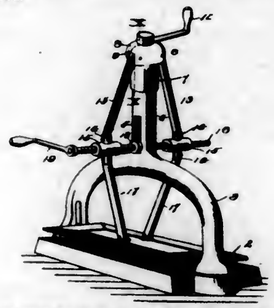
3. In combination with a sliding door, and with a guide-rail therefor having an inclined surface near the end thereof adjacent the doorway; of a spring-controlled arm carried by the door and adapted to operatively engage said inclined surface during the closing movement of the door whereby the door is fully closed and yieldingly retained in its closed position.

4. In combination with a sliding door of the class specified, and with a guiding-rail therefor, means attached to the door for engaging with the rail and for guiding the door in its opening movement, consisting of a fixed arm provided with a roller, and of a spring-pressed arm provided with a roller, for yieldingly engaging with the opposite side of the guide-rail at different positions longitudinally of the rail, a portion of the rail adjacent to the position of the yielding arm when the door is in its closed position being arranged so as to present an inclined surface to the action of the arm with relation to the direction of travel of the door.

609,606. **COPYING-PRESS.** CHARLES P. BELL, Staunton, Va. Filed Apr. 26, 1897. Serial No. 633,350. (No model.)

Claim.—1. In a letter-press, the combination with a base, pressure-plate and arch, of toggle-levers pivotally connected to said pressure-plate, a transversely-slotted upright extending above the arch, a means adjustably mounted on the upper end of the upright and to which the upper ends of the said toggle-levers are movably attached, and vertically-movable means for operating the said toggle-levers extending through and outwardly from opposite sides of said upright, substantially as described.

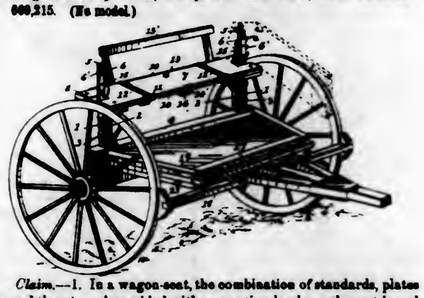
2. In a copying-press, the combination with a base, pressure-plate and an arch thereover, of an upright extending above the said arch and having a transverse slot therein, an adjustable cap on the upright, toggle-levers connected to said cap and pressure-plate, and a transversely-extending vertically-movable screw-stem passing through said slot in the upright and connected to said toggle-levers; substantially as described.



3. In a copying-press, the combination with a base, pressure-plate and an arch thereover, of an upright extending above the arch and having a transverse slot therein, a cap adjustably mounted on the said upright, toggle-levers pivoted to said cap and to the said pressure-plate, intermediate sleeves carried by the toggle-levers, a vertically-movable screw-stem extending through the said sleeves and the slot in the upright and provided with right and left screw-threads on opposite ends, and collars on the screw-stem on opposite sides of the upright, substantially as described.

4. In a copying-press, the combination of a base having an arch rising therefrom, a pressure-plate mounted thereover, an upright extending through and above the arch and having slots in the opposite sides thereof, a cap movably mounted on said upright and having a screw-stem for turning therethrough with an operating crank or handle connected to the upper end thereof, toggle-levers attached to the opposite sides of the upper part of the cap and at their lower ends to the pressure-plate, sleeves movably carried intermediately by the said toggle-levers, and a screw-stem extending through said sleeves and the slots in the upright, said screw-stem having threads running in opposite directions thereon, substantially as and for the purposes specified.

609,607. **WAGON-SEAT.** GEORGE M. BOWEN, Talbott, Tenn., assignor to Mary Bowen, same place. Filed Feb. 5, 1898. Serial No. 669,215. (No model.)



Claim.—1. In a wagon-seat, the combination of standards, plates secured thereto and provided with supporting-hooks, and a seat-board notched at its ends to receive said standards and provided with pivoted stirrups or bails adapted to engage said hooks, substantially as described.

2. In a wagon-seat, the combination with the standards, of a reversible seat-board supported thereby, and a back-rest for said seat-board, substantially as described.

3. In a wagon-seat, the combination with the standards, of a seat-board supported thereby, and a spring-arm carried by the seat-board and engaging the standards, substantially as described.

4. In a wagon-seat, the combination with the seat-board notched on opposite edges, of securing-straps extending transversely around the seat-board and engaging the notches, substantially as described.

5. In a wagon-seat, the combination of the standards, a reversible seat board supported thereby and provided with sockets on opposite edges, and a back adapted to be supported by said sockets, substantially as described.

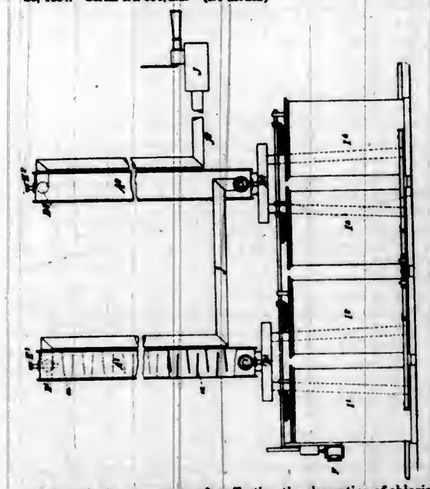
6. The combination with a vehicle, of a removable seat, a pivoted bail for suspending the seat from the vehicle when not in use, and a catch carried by the seat for holding the bail closed when the seat is in use, substantially as described.

7. In a vehicle, the combination with the running-gear, of a reversible foot-board, adapted to be removably positioned upon said running-gear, substantially as described.

8. In a vehicle, the combination with the running-gear, of a removable foot-board positioned thereon between the bolster of the rear axle and the cross-bar supporting the brake-bar, said board having battens at its side edges, which project therefrom and engage the cross-bar, substantially as described.

9. In a wagon-seat, the combination of main standards, auxiliary standards adapted to be supported by the main standards and notched, and a seat-board carrying pivoted bails which engage the notches of the auxiliary standards, substantially as described.

609,608. **APPARATUS FOR MAKING CHLORATES AND BLEACHING LIQUOR.** WILLIAM R. CLARKE, Liverpool, England, assignor to the United Alkali Company, Limited, same place. Filed Oct. 26, 1897. Serial No. 656,422. (No model.)

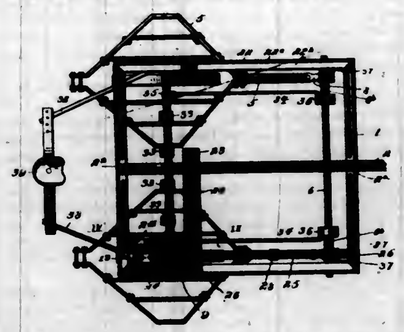


Claim.—1. In an apparatus for effecting the absorption of chlorin gas in the manufacture of chlorates and bleaching liquor, the combination with a tower having inlets and outlets for the absorbent liquid and for the gases from which chlorin is to be absorbed and in its interior a series of plates or partitions over which the liquid passes and meets a stream of upwardly-flowing gases containing chlorin, of a refrigerator, two tanks, a pump, pipes or passages—one leading from the tanks to the pump, another from the pump through the refrigerator to the liquid-inlet of the tower, and a third from the liquid-outlet of the tower back to the tanks—and valves for controlling the communication from said first-mentioned pipes to the tanks, respectively, substantially as described.

2. In an apparatus for effecting the absorption of chlorin gas in the manufacture of chlorates and bleaching liquor, the combination with two towers having inlets at their upper ends and outlets at their lower ends for the absorbent liquid, and inlets at their lower ends and outlets at their upper ends for the gases from which chlorin is to be absorbed, the gas-outlet of one tower communicating with the gas-inlet of the other by a suitable pipe or passage, and each tower having in its interior a series of plates or partitions over which the liquid passes and meets a stream of upwardly-flowing gases containing chlorin, of a pair of tanks and a pump for each tower, respectively, constituting two sets of apparatus, pipes or passages connecting the apparatus of each set as follows: one leading from the tanks to the pump, another from the pump to the liquid-inlet of the tower, and a third leading from the liquid-outlet of the tower back to the tanks, valves for controlling the communication from said first-mentioned pipe to the tanks, respectively, and a third pump suitably connected between the two sets of apparatus so as to pump the liquid circulated through one set into the other set, substantially as described.

3. In an apparatus of the kind described, the combination with two towers having inlets at their upper ends and outlets at their lower ends for the absorbent liquid, and inlets at their lower ends and outlets at their upper ends for the gases from which chlorin is to be absorbed, the gas-outlet of one tower being connected to the gas-inlet of the other by a suitable pipe or passage, and each tower having in its interior a series of plates or partitions over which the liquid circulates and meets a stream of upwardly-flowing gases containing chlorin, of a pair of tanks and a pump for each tower, respectively, and a refrigerating device for one tower, constituting in all two sets of apparatus, a trough located above and communicating with the tanks of each set, suitable agitating devices for the tanks, pipes or passages connecting the apparatus of each set as follows: one leading from the tanks to the pump, another from the pump to the liquid-inlet of the tower, said pipe in one set of the apparatus passing through the refrigerator, and a third pipe from the liquid-outlet of the tower to the trough, valves for controlling communication from the first-mentioned pipe to the tanks respectively, a third pump between the two sets of apparatus connected at one end with a pipe communicating with all of the tanks through suitable valve-controlled connections, and at its other end having three branch pipes controlled by valves, two of said branches connecting respectively with the pipe leading from the pump to the tower in each set of apparatus, and the third branch leading to a suitable receiving-tank, substantially as described.

609,609. **CULTIVATOR.** CHARLES W. DAVIS, near Peotone, Kans. Filed Feb. 10, 1897. Serial No. 622,807. (No model.)



Claim.—1. In an implement of substantially the character described, the combination of the gang-frames, the wheels running in the gang-frames, the frame mounted on the wheels and having the transverse draw-head, sleeves confined on the draw-head but adapted to turn thereon, stirrups clamped to the sleeves and draw-bars projecting from the gang-frames and having laterally-swinging connection with the stirrups, substantially as herein described.

2. In an agricultural implement, the combination of a suitable frame, arch carrying wheels on its downwardly-extending ends, a draw-head secured beneath the forward part of the frame, bracing-rods extending forward and upward from the lower parts of the arch and the socket-clamps receiving the ends of the brace-rods and adjustably fixed on the lower parts of the arch and upon the draw-head, substantially as explained.

3. In an agricultural implement, the combination of the divided arch carrying wheels, the frame supported on the arch, the draw-head carried by the frame, sleeves mounted rotatively on the draw-head, gang-frames having connections secured upon the sleeves, collars for confining the sleeves longitudinally, and braces extending from the lower parts of the arch and entering sockets formed in the confining-collars of the draw-head, substantially as explained.

4. In an agricultural implement, the combination of the gang-frames having central openings, and suitable frame by which the gang-frames are drawn and on which they are adjustable, and the divided adjustable arch secured beneath said frame and having downwardly-projecting ends entering the openings in the gang-frame-carrying wheels, substantially as explained.

5. In an agricultural implement, the combination of a main frame mounted on wheels, a gang-frame drawn by the main frame, a seat, a gang-frame-elevating mechanism mounted on the main frame on the opposite side of the wheels from the seat, whereby the weight of the rider balances the weight of the gang-frame when lifted; the connection of the elevating means with the main frame, being adjustable horizontally to adapt it to balance different riders, as explained.

6. In an agricultural implement, the combination of a main frame, wheels upon which said main frame is mounted, a gang-frame drawn by the main frame, a seat mounted on the rear of the main frame, an elevating mechanism including a pulley and a flexible connection attached to the gang-frame and passing from said pulley; said pulley being on the main frame in front of the wheel-axle and being adjustable from front to rear on said main frame in order to balance the implement under different conditions, as explained.

7. In an agricultural implement, the combination of the main frame, wheels upon which the main frame is mounted, a gang-frame drawn by said main frame, a seat mounted upon the main frame, in rear of the wheel-axle, and an elevating device mounted on the main frame in front of the wheel-axle and comprising a flexible connection with the gang-frame, a pulley over which said flexible connection passes, a bar on which the pulley is longitudinally adjustable and which is laterally adjustable on the main frame, and means for taking up the flexible connection, substantially as explained.

8. In an agricultural implement, the combination of the soil-stirring devices, an elevating device and a frame upon which the soil-stirring devices are movable laterally for the purposes explained and upon which said elevating device is also movable laterally in order to have its position changed to correspond with the soil-stirring devices, substantially as explained.

9. In an agricultural implement, the combination of gang-frames, a main frame mounted on wheels and having laterally-adjustable draft connection with the gang-frames, elevating mechanism and a longitudinal bar on which the elevating mechanism is mounted and which bar is secured laterally adjustable upon the frame of the implement, substantially as shown and described.

10. In a cultivator, the combination of a pair of gang-frames each extending from an outer to a middle row, and having openings formed by the disposition of the borders and intermediate longitudinal bars of said frames, wheels traveling in said openings, a main frame mounted above wheels, a draw-head secured to the main frame, an arch-bar, an arch, suitable means for securing the arch beneath the arch-bar, stirrups clamped upon the draw-head adjustably and providing pivoted connection between gang-frames and the draw-head in a manner permitting the vertical elevation and lateral swinging of the gang-frames, substantially as and for the purposes set forth.

11. In an agricultural implement, the combination of a main frame, an arch-bar secured below the main frame, a divided arch secured below the arch-bar, wheels mounted on the depending arms of said arch, twin collars adjustably secured the respective parts of the divided arch to the arch-bar, and a draw-head comprising a transverse bar, a pair of sleeves rotatively mounted on said transverse bar, and collars confining the sleeves adjustably thereon, substantially as and for the purposes set forth.

12. In a cultivator, the combination of a main frame, a divided arch having its respective parts secured to the main frame by suitable means, wheels mounted on axles projecting from the lower ends of the depending arms of the arch, and braces extending from the lower parts of said depending arms to adjustable connections with a draw-head, substantially as and for the purposes set forth.

13. In a cultivator, the combination of a main frame suitably mounted on a wheeled support, a gang-frame carrying suitable soil-stirring parts and having adjustable draft connection with said main frame, a lever having connection with the gang-frame, an elevating mechanism that is adjustable both longitudinally and laterally, and a draw-head upon which the gang-frame, and attached soil-stirring parts, are adjustable laterally, substantially as and for the purposes set forth.

14. In an agricultural implement, a soil-stirring tooth comprising a curved flat metal body portion twisted into a plane at right angles to its upper portion, of which upper portion, a section is enlarged and provided with a transverse slot, and with a perforation near its upper end, by which said tooth is adapted to be secured to a suitable member of the implement in a manner permitting its vertical shifting and adjustment, substantially as and for the purposes set forth.

15. As a means for attaching parts in an agricultural implement, a twin collar formed with two integral split sockets each provided with an independent clamping means, substantially as herein described.

16. As a means for attaching the parts of an agricultural implement, the twin collar substantially as herein shown, comprising two split rings suitably spaced apart in parallel relation by an integral web, and each having projecting lips with clamping-screws adapting each to be independently clamped on the part which it surrounds, substantially as set forth.

17. In an agricultural implement, a draw-head adapted to provide draft connection for gang-frames for soil-stirring devices, and means permitting lateral adjustment and vertical movement on said draw-head, comprising a transverse bar extending across the main frame, sleeves rotatably mounted on said transverse bar and adjustable longitudinally thereon, and clamping-collars employed to confine said sleeves adjustably upon said transverse bar, substantially as and for the purposes set forth.

18. In a cultivator, an elevating mechanism adapted to provide for vertical movement and lateral swinging of a gang-frame, and which is adjustable longitudinally, substantially as and for the purposes set forth.

19. In a cultivator, the combination of a main frame, a draw-head carried by said main frame, gang-frames having laterally-adjustable connections with said draw-head, and an elevating mechanism mounted on the main frame and constructed for lateral adjustment corresponding with the gang-frames, substantially as explained.

20. In a cultivator, an elevating mechanism adapted to be adjusted in correspondence with adjustments of a stirrup adapted to provide pivoted connection between a gang-frame and the draw-head, and of the divided arch relatively to the arch-bar, substantially as and for the purposes set forth.

21. In a cultivator, the combination of a pair of gang-frames, an arch-bar, a divided arch, and an elevating mechanism adapted to be adjusted both laterally and longitudinally, substantially as and for the purposes set forth.

22. In a cultivator, the combination of a main frame, an arch-bar, a divided arch laterally adjustable on said arch-bar, gang-frames drawn by said main frame and laterally adjustable thereon, and an elevating mechanism mounted on the main frame, and adjustable both laterally and longitudinally thereon, substantially as and for the purposes set forth.

23. In a cultivator, the combination of a main frame, a divided arch adjustably secured beneath said main frame and affording support for wheels upon which the main frame travels, gang-frames drawn by the main frame, elevating mechanism mounted on the main frame and connected with the gang-frames and braces extending from suitable points on the main frame to the depending arms of the divided arch and having pivotal and adjustable connections with said parts, substantially as and for the purposes set forth.

24. In a cultivator, the combination of a main frame, a divided arch adjustably secured beneath the main frame, and affording mountings for wheels upon which the main frame travels, a draw-head also secured to the main frame, gang-frames, draw-bars projecting from said gang-frames and having laterally-adjustable connections with the draw-head, and braces extending from the draw-head to the depending arms of the divided arch, and having laterally-adjustable connection with said draw-head whereby the braces may be moved as the divided arch is adjusted, substantially as set forth.

25. In a cultivator, the combination of a main frame suitably mounted over wheels, a pair of gang-frames each having its border and bars disposed in a manner to form a well or opening in the longitudinal center thereof for wheels to travel in, a pair of wheels suitably mounted on axles projecting from the depending arms of an arch, a draw-head adapted to provide adjustable draft connection between the gang-frames and the main frame, and an elevating mechanism adapted to be adjusted laterally to conform to the adjustment of gang-frames relatively to the main frame, substantially as and for the purposes set forth.

26. In a cultivator, the combination of a main frame, a divided arch secured to said main frame and having wheels mounted on its depending arms, a draw-head on said main frame, clamping socket-collars adjustably mounted on the depending arms of the arch and upon the draw-head, and braces having pivoted and adjustable connections with said depending arms of the divided arch and draw-head through the medium of said clamping socket-collars, substantially as and for the purposes set forth.

27. In a gang-frame for an agricultural implement, the combination of a border, intermediate bars, a wheel-opening and a front socket adapted to receive a soil-stirring part, substantially as and for the purposes set forth.

28. In a gang-frame for an agricultural implement, the combination of a substantially continuous border, intermediate bars, a wheel-opening formed by the disposition of said border and bars, and sockets at both front and rear adapted to receive soil-stirring parts, substantially as and for the purposes set forth.

29. In a gang-frame for an agricultural implement, the combination of a border forming converging sides, intermediate bars, a wheel-opening, and a rear socket adapted to receive a soil-stirring part, substantially as and for the purposes set forth.

30. In a cultivator, a gang-frame having a border shaped to form sides tapering to one end from centrally-disposed straight longitudinal sections, with other longitudinal sections interposed in the said tapering portions of said frame, which are adapted to form seats to receive soil-stirring parts, and sockets formed at the ends of said frame, substantially as and for the purposes set forth.

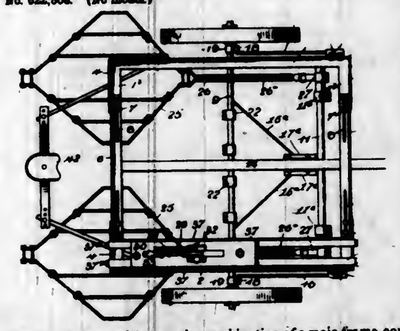
31. In a cultivator, a gang-frame comprising a substantially continuous border with offsets therein adapted to provide seats for soil-stirring parts, and having clamps for securing the soil-stirring parts in said seats, substantially as shown and for the purpose set forth and described.

32. In a cultivator, the combination of gang-frames, a main frame mounted on a pair of wheels disposed in openings centrally formed in the gang-frames by the disposition of the border and intermediate bars comprised in said frames, draw-bars projecting from the gang-frames, and a draw-head mounted on the main frame and comprising a non-rotating transverse bar and rotating sleeves surrounding the transverse bar, and to which the draw-bars are connected, and clamping collars confining the sleeves adjustably upon said transverse bar, substantially as and for the purpose set forth.

33. In a cultivator adapted to the simultaneous tillage of two entire row-spaces, the combination of an elevating mechanism adjustable laterally and longitudinally, a pair of wheels, suitable soil-stirring parts, gang-frames, and a draw-head, all of which parts are severally adjustable in correspondence one with another, substantially as and for the purposes set forth.

609,610. CULTIVATOR AND SOIL-STIRRING IMPLEMENT.

CHARLES W. DAVIS, near Peotone, Kans. Filed Feb. 10, 1897. Serial No. 622,908. (No model.)



Claim.—1. In a cultivator, the combination of a main frame comprising the end portions and draft-tongue fixed thereto and laterally-adjustable side portions, an arch-bar and draw-head each fixed to the intermediate portion of the main frame, and adjustably secured to the laterally-adjustable side portions of said main frame, substantially as set forth, and suitable soil-stirring devices having draft connection with the draw-head, and wheels mounted on the arch substantially as described.

2. In an agricultural implement, the combination of the main frame having laterally-adjustable sides and a draft-tongue or equivalent centrally-disposed portion, an arch-bar secured beneath said draft-tongue or centrally-disposed portion and adjustably secured to the laterally-adjustable sides, and an arch secured beneath the arch-bar and having mountings or means for attachment of the wheels, substantially as herein explained.

3. In an agricultural implement, the combination of the main frame, the arch having downwardly-projecting ends, the axles adjustable in the lower ends of the arch, gang-frames having drag-bars located above the axles and connected with the main frame forward of the arch, substantially in the manner and for the purpose set forth.

4. In an agricultural implement, the combination of the main frame, the arch having downwardly-extending ends, the axles secured in the lower portions of said arch, the braces for securing the lower portions of said arch and the attaching-plates in which said braces are swiveled and which are secured longitudinally adjustable on the main frame, substantially as herein explained.

5. In an agricultural implement, the combination of the main frame, the draw-head secured beneath the main frame by hangers, one of which is centrally disposed, and the stirrup having a bifurcated attaching-clamp for engaging the draw-head on opposite sides of the hanger and constructed for the attachment of an intermediate gang-frame, as herein explained.

6. In an agricultural implement, the combination of a main frame, a pair of angle-bars secured upon the main frame, a base-plate mounted between the angle-bars by means which permits adjustment longitudinally, an elevating mechanism mounted on said base-plate, substantially as herein explained.

7. In an agricultural implement, the combination of the main frame, the gang-frames connected with the main frame, the longitudinal bars mounted on the main frame, and the base-plate secured upon said bars and carrying elevating mechanism and a guide-sheave and movable on the bars for adjusting the sheave and elevating mechanism simultaneously as herein explained.

8. In an agricultural implement, the combination of the main frame, the gang-frame drawn by the main frame, longitudinal bars mounted on the main frame, a base-plate mounted on said bars, elevating mechanism mounted on said base-plate, a clamping-plate for securing said base-plate to the bars and carrying a guide-sheave, and a flexible connection between the elevating mechanism and the gang-frame passing over said guide-sheave, substantially as herein explained.

9. In an agricultural implement, the combination of a main frame, formed of angle-iron with upwardly-extending flange, a gang-frame drawn by said main frame, an elevating mechanism for said gang-frame, and a mounting for the elevating mechanism comprising a pair of bars resting upon the vertical flanges of the main frame and means for clamping said bars to the main frame, substantially as set forth.

10. In an agricultural implement, the combination of a main frame having laterally-adjustable sides and constructed of angle-iron and with overlapping end portions, a gang-frame drawn by said main frame, elevating mechanism, and a pair of bars upon which said elevating mechanism is mounted, and which rests upon one of the flanges of the angle-iron to avoid interference with the adjustment of the overlapping portions, substantially as herein explained.

11. In an agricultural implement, the combination of a main frame, a gang-frame drawn by said main frame, an elevating mechanism, a base-plate upon which said elevating mechanism is mounted and a pair of longitudinal bars spaced apart and clamped together by clamping-plates in connection with said base-plate and having their ends adjustably secured upon the main frame, whereby said bars are held in proper relation and adjusted simultaneously as explained.

12. In an agricultural implement, the combination of a laterally-adjustable main frame and an arch beneath said main frame carrying in its lower ends laterally-adjustable wheel-axles, and gang-frames having drag-bars extending outside the arch and above the axles and connected with the main frame, substantially as herein described.

13. A tooth or soil-stirring device for agricultural implements, comprising a curved flat metal body portion and a vertical attaching-socket formed on the upper end of the said body portion and permitting lateral and vertical adjustment of said tooth; substantially as herein described.

14. In an agricultural implement, the combination of a vertical shank and a curved metal tooth having an end portion, bent into a vertical socket which receives said shank and secures said tooth vertically and angularly adjustable on said shank; substantially as herein described.

15. In an agricultural implement, the combination of a straight vertical shank, and a spring-tooth formed with a vertical attaching-socket, engaging said shank, and means for clamping said socket to the shank, and permitting angular and vertical adjustment of the tooth on the shank, substantially as and for the purposes set forth.

16. In an agricultural implement, a gang-frame having a continuous border and a substantially continuous draw-bar constructed for attachment at one end to draft connections, and extending through the gang-frame to its rear end, for the purposes set forth.

17. In an agricultural implement, the combination of a gang-frame, having a continuous border intermediate bars for the attachment of soil-stirring devices, and a substantially continuous draw-bar extending through the gang-frame and affording support for the intermediate bars, substantially as herein explained.

18. In an agricultural implement, the combination of a gang-frame and a draw-bar extending through said gang-frame from front to rear and adjustable therein for the purpose of permitting the extension of said draw-bar on the frame; substantially as and for the purpose set forth.

19. In an agricultural implement; a gang-frame having a continuous draw-bar extending through it from front to rear and intermediate bars extending from said draw-bar to the sides of the frame; substantially as herein set forth.

20. In an agricultural implement, the combination of a gang-frame having a continuous border, a bar extending from front to rear of said frame, and angularly-arranged intermediate bars extending from said front to rear bar to the edge or border of the frame for the purpose explained.

21. In an agricultural implement, the combination of a gang-frame having a border, soil-stirring devices arranged on the border or edge of said frame, a bar extending from front to rear of said frame, and diagonally-arranged bars extending from said front to rear bar to the border or edge of the frame and connected thereto at or near the points of location of the soil-stirring devices, substantially as and for the purpose set forth.

22. In an agricultural implement, the combination of a gang-frame having a border or edge formed with angle-bends, substantially as described, a longitudinal bar extending from front to rear of said frame, and diagonal bars extending from said longitudinal bar to the points of arching in the edge or border of the frame, substantially as and for the purpose set forth.

23. In an agricultural implement, the combination of a gang-frame having a border, a longitudinal bar in said gang-frame, and diagonal bars extending from said longitudinal bar to the edge or border of the gang-frame and having terminal ends projecting beyond the same, in substantially the manner described and for the purpose set forth.

24. In a cultivator, the combination of a wheeled main frame constructed with laterally-adjustable sides, a draw-head secured to the main frame, gang-frames having adjustable draft connection with said draw-head and longitudinally adjustable thereon; and longitu-

dinally-adjustable elevating mechanisms mounted on the shiftable parts of the main frame; substantially as and for the purposes set forth.

25. In a cultivator, the combination of a main frame, comprising ends and laterally-shiftable sides, a draft-tongue secured to said ends, an arch-bar secured beneath the tongue, and adjustably attached to the sides, an arch secured beneath the arch-bar, axles adjustably mounted in the ends of the arch and adapted for the mounting of wheels, and elevating mechanisms laterally and longitudinally adjustable on the sides and laterally adjustable with said sides, whereby they may be shifted in correspondence with adjustment of gang-frames and other parts of the implement; substantially as and for the purposes set forth.

26. In an agricultural implement; a soil-stirring tooth comprising a curved flat metal portion twisted into a plane at a right angle to an upper portion, the end of the upper portion forming a clamping-socket adapted to engage a vertically-disposed shank; substantially as and for the purposes set forth.

27. A curved flat metal tooth having its upper end provided with a vertical shank-socket, whereby the tooth is adapted to both horizontal and vertical adjustment upon the shank; substantially as and for the purposes set forth.

28. In an agricultural implement, the combination of a vertically-disposed shank and a spring-tooth formed with a vertical clamping-socket engaging said shank and permitting both horizontal and vertical adjustment of said tooth; substantially as and for the purposes set forth.

29. In a cultivator; a gang-frame comprising a border shaped to form an angular front, curved or dished, and sides converging from said front portion to a centrally-disposed point at the rear of said frame with straight longitudinal side sections interposed in said converging sides, a longitudinal bar disposed in the center of said frame from front to rear, and intermediate bars extending diagonally from said longitudinal bar to connection with the border forming said converging sides; substantially as and for the purposes set forth.

30. In an agricultural implement, the combination of a main frame having an arch formed with downwardly-extending arms carrying outwardly-extending wheel-axles, a draw-head on said main frame providing a draft connection, gang-frames extending in rear of and laterally beyond the wheels and having draw-bars extending forward above the axles and between the vertical arms of the arch and said wheels and having laterally-adjustable connection with the draw-head, and an elevating mechanism laterally adjustable on the main frame in correspondence with lateral adjustments of gang-frames; substantially as and for the purposes set forth.

31. In an agricultural implement, the combination of a main frame, a draft-tongue secured to the main frame, an arch upon which the main frame is mounted and having downwardly-extending arms, wheels mounted upon axles projecting from said arms, and gang-frames extending in the rear of and outwardly beyond said wheels and having draw-bars extending above the axles and between said arch-arms and wheels to connections with said main frame forward of said arch; substantially as and for the purposes set forth.

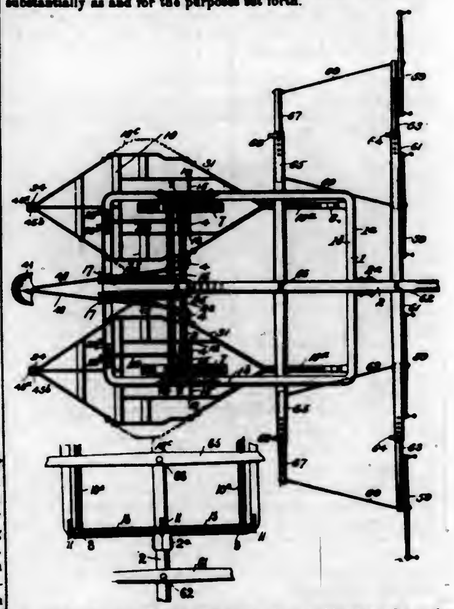
32. In an agricultural implement, the combination of a wheeled main frame, an arch supporting said main frame and having means for mounting wheels carrying the main frame, and gang-frames extending outwardly beyond the wheels and having draw-bars extending above the axle and forwardly between said wheels and the vertical arms of the arch to draft connections with the main frame forward of said arch; substantially as and for the purposes set forth.

609,611. CULTIVATING AND SOIL-STIRRING DEVICE. CHAS. W. DAVIS, near Pootoose, Kans. Filed May 21, 1897. Serial No. 637,633. (No model.)

Claim.—1. In an agricultural implement; the combination of a main frame mounted on wheels, gang-frames having draft connection with said main frame, a divided arch secured beneath the main frame, and braces adjustably secured to the depending arms of said arch which extend upwardly and rearwardly from said arms to adjustable connections with the rear part of the main frame; substantially as and for the purposes set forth.

2. In an agricultural implement; the combination of a suitably-mounted main frame, a draw-head secured to the main frame, gang-frames drawn by the main frame through the medium of draw-bars connecting them with the draw-head, an arch supporting the main frame and having wheels mounted on axles projecting from its vertical arms, and elevating means comprising flexible connections depending from the main frame, and equalizing lifting-bails spanning the gang-frames transversely; substantially as and for the purposes set forth.

3. In an agricultural implement; the combination of a wheeled main frame, a draw-head secured to the main frame, gang-frames connected with the draw-head and drawn by the main frame through means having rotative movement on said draw-head, and lifting-bails affording swinging connections for gang-frames with the main frame; substantially as and for the purposes set forth.



4. In an agricultural implement; the combination of a main frame, a divided arch, gang-frames drawn by the main frame and having openings formed by the disposition of the borders and bars of said frames, wheels traveling in said openings and mounted on axles projecting from depending arms of said arch, and a draw-head providing draft connection between said main frame and gang-frames, secured to the main frame in front of said arch and comprising a transverse bar, and sleeves rotatively mounted on said bar; substantially as and for the purposes set forth.

5. In an agricultural implement; a gang-frame comprising a substantially continuous border shaped to form converging sides, and intermediate longitudinal and transverse bars providing with said border an opening in the front portion of said frame adapted to have a wheel travel therein; said longitudinal bars bending in conformity with the converging ends, and reinforcing the same; substantially as and for the purposes set forth.

6. In an agricultural implement; a gang-frame comprising a substantially continuous border shaped to form converging sides, and intermediate longitudinal and transverse bars providing with said border an opening in the front portion of said frame adapted to have a wheel travel therein; said longitudinal bars bending in conformity with the converging ends, and reinforcing the same and extending forward and forming with said ends, an integral draw-bar; substantially as and for the purposes set forth.

7. In combination with an agricultural implement; a transverse draw-head attached at an intermediate point to a centrally-disposed portion of the implement and at its ends to the side of the implement and divided on opposite sides of said intermediate point, both transversely and concentrically, into an inner fixed portion or core, and two surrounding independently-rotative outer portions extending from the central point of attachment to the respective sides of the implement; substantially as and for the purposes set forth.

8. In combination with an agricultural implement; a transverse draw-head attached at an intermediate point to a centrally-disposed portion of the implement and at its ends to the side of the implement and divided on opposite sides of said intermediate point, both transversely and concentrically, into an inner fixed portion or core, and two surrounding independently-rotative outer portions extending from the central point of attachment to the respective sides of the implement, and gang-frames having draft connection with said draw-head through the medium of clamps laterally adjustable on the respective rotary portions of the draw-head, whereby the gang-frames are normally movable vertically and may be adjusted laterally at will; substantially as set forth.

9. In agricultural implement; the combination of a main frame, the arch-carrying wheels at the lower ends of its downwardly-extending arms, gang-frames, a draw-head comprising inner continuous portion and outer independently-rotating parts, draft connections for the gang-frames clamped to and laterally adjustable on the respective rotatable parts of the draw-head, elevating mechanisms for the gang-frames and equalizing-bails interposed in said elevating connections; substantially as and for the purposes set forth.

10. In an agricultural implement; the combination of a main frame, an arch supporting the main frame and carrying wheels on axles projecting from its downwardly-extending arms, gang-frames carrying soil-stirring parts and having elevating connections with the main frame, a draw-head secured to the implement in front of the supporting-arch and concentrically divided into inner and outer portions, of which the outer portion is also divided transversely to form two portions adapted to rotate independently upon the inner portion, and draft connections between the respective gang-frames and the rotatable outer portions of the draw-head, which are laterally adjustable relatively to said rotatable portions; substantially as and for the purposes set forth.

11. In an agricultural implement; a gang-frame comprising a substantially continuous border shaped to form converging sides, intermediate longitudinal and transverse bars providing with said border a forwardly-disposed opening adapted to have a wheel travel therein, and longitudinal terminals adapted to have soil-stirring parts attached thereto; substantially as and for the purposes set forth.

12. In an agricultural implement; an attaching-bracket of approximately triangular form having a right-angular front leg and a diagonal brace, and with an integrally-formed tightening-clamp at the end of the front leg and diagonal brace; substantially as and for the purposes set forth.

13. In an elevating mechanism for the gang-frame of an agricultural implement; the combination of a rotating shaft and a lifting-arm having an integrally-formed clamping-socket by which it is mounted on said shaft and adapted to be adjusted laterally thereon in correspondence with lateral adjustment of the gang-frame with which it has connection; substantially as and for the purposes set forth.

14. In an elevating mechanism for an agricultural implement; a lifting-arm having an integrally-formed clamping-socket adapting it to be adjustably secured to a rotating member of said mechanism; substantially as and for the purposes set forth.

15. In combination with an agricultural implement; a laterally-adjustable elevating mechanism comprising a fixed bar suitably mounted at its ends, a tube rotatable on said fixed bar and extending between its mountings, means fixed upon one end of said tube for rotating said tube, and elevating connections laterally adjustable upon said tube; substantially as and for the purposes set forth.

16. In combination with the main frame of an agricultural implement; a centrally-disposed longitudinal member, gang-frames having connection with said main frame, an elevating mechanism for said gang-frames comprising non-rotating bars having their ends fixed between the centrally-disposed member and the sides of the main frame, a rotating tube sleeved upon each of said bars and extending between the mountings thereof, a lifting-arm secured laterally adjustable upon each of said tubes, a lever mounted upon the inner end of each of said tubes, and means for holding said lever in adjustment; substantially as and for the purposes set forth.

17. In an elevating mechanism for an agricultural implement; the combination of a round rod fixed between suitable mountings at its ends, a tube mounted rotatably on said rod and having a rectangular outer section, a lifting-arm, a rotating part having a rectangular clamp securing the arm laterally adjustable on said tube, a lever mounted on said rotating part, and means for holding said lever in adjustment; substantially as and for the purposes set forth.

18. In an agricultural implement; an elevating mechanism comprising a rotating tube or bar, a lifting-arm adjustably secured to said rotating part, a lever mounted on said rotating portion, and means for holding said lever in adjustment, said mechanism being adjustable both laterally and longitudinally; substantially as and for the purposes set forth.

19. In an agricultural implement; the combination of an elevating mechanism adjustable laterally and longitudinally, and a lifting-bail having connection with said mechanism and a soil-stirring device; substantially as and for the purposes set forth.

20. In an agricultural implement; the combination of an elevating mechanism longitudinally adjustable, and an auxiliary spring tending to actuate said mechanism, and also adjustable longitudinally of the implement; substantially as and for the purposes set forth.

21. In an agricultural implement; the combination of an elevating mechanism adjustable both laterally and longitudinally, and an auxiliary spring tending to actuate said mechanism and adjustable both laterally and longitudinally; substantially as and for the purposes set forth.

22. In an agricultural implement; the combination of a laterally-adjustable arch and braces having adjustable connections with the depending arms of said arch extending upwardly and rearwardly and having laterally-adjustable connections with the main frame; substantially as and for the purposes set forth.

23. In a wheeled agricultural implement; an arch having its vertical arms deflected over the hubs mounted on said arms; substantially as and for the purposes set forth.

24. In an agricultural implement; an arch having reversible axles secured in its lower ends and extensible inward and outward therefrom, whereby wheels may be disposed on said axles either exteriorly or interiorly to the vertical arms of said arch; substantially as and for the purposes set forth.

25. In an agricultural implement; a twin collar for attaching parts substantially as herein shown, comprising two split sockets, one circular and the other angular, suitably spaced apart in parallel relation to an integral web, and each having projecting lips and clamping-screws adapting each socket to be independently clamped on the part which it surrounds; substantially as and for the purposes set forth.

26. In an agricultural implement; a clamp adapted to adjustably secure shanks of soil stirring parts to members of angle-bar sections, and having a groove to receive the edge of one flange of said angle-bar; substantially as and for the purposes set forth.

27. In a wheeled agricultural implement; the combination with a swinging gang-frame, of a vertical hand-staff projecting rigidly from the gang-frame and an equalizing-bail holding the gang-frame level as it is deflected from the direct line of draft; substantially as and for the purposes set forth.

28. In a cultivator, the combination of a wheeled frame, a gang-frame having a centrally-disposed member connected to the front part of the wheeled frame and adapted to carry soil-stirring parts, an elevating mechanism having connection with said wheeled frame and the gang-frame, an evener and an equalizing-bar each pivoted to the centrally-disposed member of said wheeled frame and each having a section pivoted to each of its ends, hangers depending from the sections pivoted to the evener and provided with means for the attachment of singletrees, and rods extending from the ends of the sections pivoted to the equalizing-bar to said hangers, substantially as and for the purposes set forth.

29. In a cultivator; the combination of a wheeled main frame, a draft-tongue, gang-frames attached at the front of the main frame, an elevating mechanism for said gang-frames, and a device providing means for the attachment of four draft-animals, comprising an evener 61 pivoted to said tongue in front of the attachment of the gang-frames and having sections 63 pivoted to each of its ends, hangers 60 depending from the respective ends of the sections 63, singletrees 59 attached to the hangers, an equalizing-bar 65 pivoted to a centrally-disposed part of the implement in rear of the attachment of the gang-frames and having sections 67 pivoted at its ends, and rods 69 extending downwardly and forwardly from the ends of the sections 67 to the lower portions of hangers 60; substantially as and for the purposes set forth.

30. In a wheeled cultivator; the combination of a main frame, an arch supporting the main frame, wheels mounted on axles having connections with depending arms of the arch, gang-frames having draft connections with the main frame, a mechanism affording means for the vertical elevation of the gang-frames and having connection with the main frame, and a device adapted to provide means for the attachment of draft-animals without impeding the vertical movement of the gang-frames, comprising an evener 61 pivoted to a centrally-disposed portion of the implement and having a section 63 pivoted to each of its ends, hangers 60 depending from the ends of sections 63, singletrees 59 attached to hangers 60, an equalizing-bar 65 pivoted to a centrally-disposed part of the implement in rear of the attachment of the gang-frames and having sections 67 pivoted at its ends, and rods 69 extending downwardly and forwardly to connections with hangers 60; substantially as and for the purposes set forth.

31. In a wheeled cultivator, the combination of a main frame, an arch-bar beneath the main frame, an arch secured beneath the arch-bar, wheels mounted in the depending arms of the arch, a draw-head at the front of the main frame, gang-frames having draft connection with said draw-head and surrounding the respective wheels so that they travel within the borders of said frames, and carrying soil-stirring parts, elevating mechanisms providing connections between gang-frames and the main frame, and a device adapted to provide means for the attachment of draft-animals, comprising an evener 61 pivoted to a centrally-disposed part of the implement in front of the draw-head and having a section 63 pivoted to each of its ends, hangers 60 depending from the respective ends of sections 63, singletrees 59 attached to hangers 60, an equalizing-bar 65 pivoted to a centrally-disposed part of the implement in the rear of the attachment of the draw-head and having sections 67 pivoted to its ends, and rods 69 extending downwardly and forwardly to connections with hangers 60; substantially as and for the purposes set forth.

32. In a wheeled cultivator; the combination of a main frame, an arch supporting the main frame and mounted on wheels, a concentrically-divided draw-head secured to the implement in front of the supporting-arch and adapted to provide draft connection between said main frame and gang-frames, a gang-frame having connection with the outer portion of said draw-head, an elevating mechanism providing flexible connection between the main frame and gang-frame, and a device adapted to afford attachment for draft-animals, comprising an evener and equalizing-bar respectively pivoted to a centrally-disposed part of the implement in front and rear of the draw-head and each having a section pivoted to each of its ends, hangers depending from the evener and provided with means for the attachment of singletrees, and rods extending from the sections attached to the equalizing-bar to connections with said hangers; substantially as and for the purposes set forth.

33. In an agricultural implement; a main frame having a tongue and comprising two parts, each providing a side and end portions of the frame, and having its flanges disposed horizontally and vertically, and having the ends of the end portions attached to the tongue by lapping the horizontal flanges beneath the tongue and projecting the vertical flanges longitudinally along the sides of the tongue; substantially as explained.

34. In an agricultural implement; the combination of a main frame, a rod or bar affording support for elevating mechanism, and the clamping-rack in which the end of said rod or bar is adjustably mounted, consisting of a pair of plates having in their contiguous edges corresponding semicircular clamping-sockets and means for holding said plates in position; as explained.

35. In an agricultural implement; the combination of a main frame, a rod or bar affording support for elevating mechanism, and the clamping-rack for holding the end of said rod or bar, consisting of two plates having their contiguous edges formed with corresponding semicircular depressions, one of said plates being provided with transverse end projections by which it is attached to the main frame; substantially as explained.

36. In an agricultural implement; the combination of a supporting-rod and a supporting-rack for said rod consisting of two parts having their adjacent edges provided with corresponding series of indentations or notches, and adapted to be secured in position to form sockets to receive the ends of said rod; substantially as and for the purposes set forth.

609,612. POULTRY-COOP. LOUIS DEVEAU, Springfield, Mo., assignor of one-half to Paul Ellenburg, same place. Filed Dec. 14, 1897. Serial No. 661,838. (No model.)



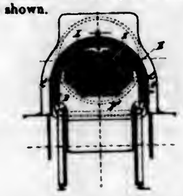
Claim.—1. In a shipping-crate, the combination of sides and ends hingedly connected in pairs, and provided with guideways parallel with their upper edges, means for connecting the pairs of sides and ends at their free edges, a bottom supported by the sides and ends, and a top slidably fitted in said guideways, substantially as specified.

2. In a shipping-crate, the combination of foldably-connected side and end walls provided at their upper edges with alined guideways, a bottom removably supported between the side walls with its edges in contact with the inner surfaces thereof, and a cover removably fitted to slide in said guideways, substantially as specified.

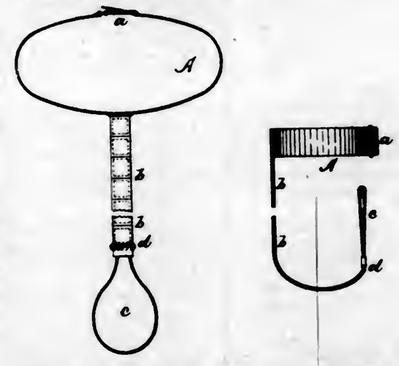
3. In a poultry-coop, shipping-case or the like, the combination of sides having inner ledges at their lower edges and longitudinal guideways at their upper edges, a front hinged to one of the sides at its end and having an inner ledge at its lower edge, a back hinged to the other side and provided with parallel ledges at its upper and lower edges, means for detachably connecting the free ends of the front, back and sides, a bottom resting upon the lower ledges, and a top slidably mounted in the aforesaid guideways, substantially as described.

609,618. BOILER-FURNACE. EUGENE DOCTEUR, Brussels, Belgium. Filed May 4, 1896. Serial No. 590,190. (No model.) Patented in Belgium May 24, 1894, No. 110,141, and in France June 16, 1894, No. 236,216.

Claim.—In a locomotive-furnace, for the distribution of the hot air by adjacent jets directed alternately in contrary senses, an interior lining having independent passages for each jet of air, of the said interior lining being thus divided into hollow arches, each one of which is an independent air passage which communicates alternately, on the one hand with the external air, and on the other hand with the interior of the furnace above the layer of combustible, substantially as described and shown.



609,614. ELECTRICAL APPLIANCE FOR ASSISTING ANATOMICAL ORGANS. JAMES DOTT, Syracuse, N. Y. Filed Mar. 22, 1898. Serial No. 674,811. (No model.)



Claim.—1. An appliance for assisting the male generative organ in the natural performance of its functions, consisting of a wholly-elastic loop and means to stretch it longitudinally to produce downward and rearward pressure upon the corpus cavernosum and congestion of its blood vessels.

2. An appliance for assisting the male generative organ in the natural performance of its functions, consisting of an elastic loop, and a connection to a waist-belt, whereby the adjustment of said belt produces lengthwise and downward and rearward strain upon said loop to stretch it upon and over the corpus cavernosum and corpus spongiosum and produce congestion of the blood vessels therein.

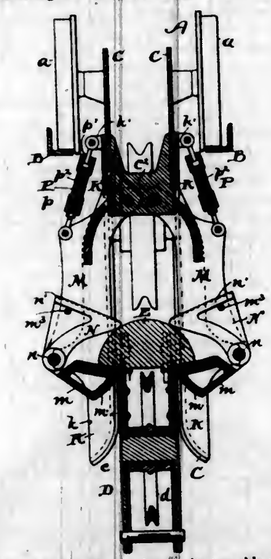
3. An appliance for assisting the male generative organ in the natural performance of its functions, consisting of an elastic loop as rubber, an electric waist-belt, and a conducting connection between them whereby the corpus cavernosum is congested by the downward and rearward local pressure of said loop, and electric energy is supplied to the branches of the pubic nerves and to the hypogastric plexus, stimulating the muscles.

4. An appliance for assisting anatomical organs in the performance of their functions consisting of a belt adapted to produce electrogalvanic energy, an elastic and longitudinally-yielding loop, and a connection between them, said connection being a conductor of said energy supplying it locally to parts adjacent to said loop by downward and rearward strain thereon.

5. An appliance for assisting anatomical organs in the performance of their functions consisting of a supporting and strain-adjusting belt, a generator of electrogalvanic energy connected thereto, and an elastic loop of non-conducting material connected to said generator and stretched lengthwise downwardly and rearwardly by the adjustment of said belt.

609,615. CARRIAGE MECHANISM FOR HOISTING AND CONVEYING MACHINES. HARRY FULLER, Cleveland, Ohio, assignor to the King Bridge Company, same place. Filed Mar. 26, 1898. Serial No. 675,208. (No model.)

Claim.—1. The combination of a carriage, two jaw-levers M M pivoted thereto, and dogs N N pivoted to said jaw-levers, with a load-supporting device having a laterally-extended head E, and means for hoisting and lowering the load-supporting device, substantially as specified.



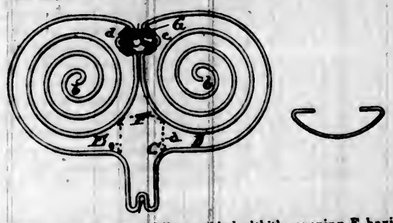
2. The combination of a carriage A, its two side plates C C having the slots *c c*, the pivoted jaw-levers M M, and the dogs N pivoted to said jaw-levers, with the sheave-block D having a laterally-extended head E, and the hoisting-cable, substantially as specified.

3. The combination of a carriage A, the two depending vertical side plates C C whose lower ends are curved outward, said plates having vertical slots *c c*, whose lower ends are beveled outward, with two jaw-levers pivoted to said carriage on opposite sides thereof and which levers work through said slots, dogs pivoted to said levers, and the sheave-block D having a laterally-projecting head E, and the hoisting-cable, substantially as specified.

4. The combination of the carriage A, the side plates C C forming a part thereof and having the slots *c c*, the jaw-levers M pivoted to said side plates and operating through said slots, the dogs N pivoted at their outer edges to the said levers and adapted to fall by gravity upon the approximately horizontal jaw-surfaces of said levers and to overhang the same, and stops to prevent the dogs being swung over their pivots, with the sheave-block D, its head E, and hoisting-cable, substantially as specified.

5. The combination of the carriage A, its side plates C C having the slots *c c*, the jaw-levers M M pivoted to the carriage and operating through said slots, the links, composed of two telescoping parts *p*, *p'*, and the spring p^3, which links are pivotally connected at their ends with the jaw-levers and carriage, and the dogs N pivoted to said levers, with the sheave-block D, its head E, and the hoisting-cable, substantially as specified.

609,616. BICYCLE-SADDLE. HENRY G. GLOVER, Jackson, Mich. Filed May 19, 1896. Serial No. 592,143. (No model.)



Claim.—1. A bicycle-saddle provided with the opening, F, having its longer axis disposed anteroposteriorly of the saddle, and having its outer boundary formed of a single piece of wire which extends from the front end of the pommel immediately rearward and outward to and constituting the outside bounding-line of the wire platform, and continuing thence by inwardly-progressing convolutions it substantially a common plane, as set forth.

2. A bicycle saddle comprising a wire platform provided with the opening F having its longer axis disposed anteroposteriorly of the saddle and having its outer boundary formed of wire which extends from the front of the pommel immediately to and forming the outer convolutions of the coils, in combination with a support for the rear portions of said outer convolutions, the wire after passing the support being continued by inwardly-progressing convolutions in substantially a common plane, as set forth.

3. A bicycle-saddle comprising a wire platform having a pommel provided at its front end with a throat to receive a bolt, two coils formed of the same piece of wire with the pommel and in substantially the same horizontal plane therewith, a supporting-bar, clamps connecting the rear end of the bar with the outer coils and a clamp connecting the front end of the bar with the front end of the pommel, substantially as set forth.

4. A bicycle-saddle comprising a wire platform having a pommel provided at its front end with a forwardly-open slot adapted to be thrust under a headed bolt, two coils in rear of the pommel and having their convolutions in substantially the same plane with the pommel, a supporting-bar provided at its front end with a headed bolt or stud to receive the open slotted end of the pommel, a clamp connecting the rear end of the bar with the outer convolutions of the coils and supporting them against downward thrust, substantially as set forth.

5. A bicycle-saddle comprising a wire platform having a pommel provided at its front end with a throat to receive a bolt, two coils in rear of the pommel and having their convolutions in substantially the same plane with the pommel, a supporting-bar, a clamp connecting the front end of the bar with the front end of the pommel, and a clamp constructed to grip the inner portions of the outer convolutions of the coils and connect them to the rear end of the bar, to support said coils against lateral movement and against downward thrust, substantially as set forth.

609,617. GATE. ISOM A. GORDEN, Blue Mound, Ill. Filed May 18, 1898. Serial No. 681,066. (No model.)



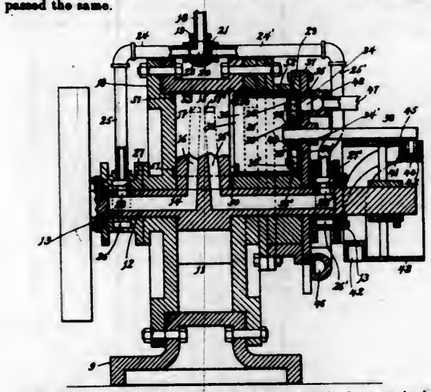
Claim.—1. The combination with a gate, and a swinging frame or crane, of a vertically-adjustable oblong hanger mounted on the frame or crane and receiving the gate, said hanger being composed of two reversely-arranged L-shaped portions, one of the L-shaped portions forming a vertical pintle and a horizontal pivot for the gate, substantially as described.

2. The combination with a gate, and a swinging frame or crane, of a hanger composed of the L-shaped support having its horizontal portion passing through and forming a pivot for the gate, the vertical portion of the support being vertically adjustable in an opening of the frame or crane and provided with perforations, and an L-shaped bar connected at its ends to the terminals of the L-shaped support, a fastening device passing through one of the perforations of the support and arranged above the frame or crane, and a bracket mounted on the frame or crane and having an arm extending over the fastening device and provided with a perforation receiving the vertical portion or support, substantially as described.

609,618. ROTARY ENGINE. HENRY R. HITZ, Milwaukee, and CARL A. M. VON STRUBE, South Milwaukee, Wis. Filed Aug. 2, 1897. Serial No. 646,726. (No model.)

Claim.—1. In a rotary engine, the combination, of a cylinder, a main shaft provided with longitudinal channels, one for the direct and one for the reverse, a rotatable piston within the cylinder and extending from the shaft, said pistons having passages therein leading out through opposite sides thereof, an inlet for the actuating medium, said inlet leading to one channel of the main shaft, another inlet leading to the other channel of said main shaft, an exhaust leading out of the casing, and out of communication with either channel of the shaft, a plurality of gates, and means for reciprocating said gates, whereby each gate is successively moved to an open position as the piston advances toward the gate, and said gate subsequently moved to a closed position, after the piston has passed the same.

2. In a rotary engine, the combination, of a cylinder, a main shaft having a longitudinal channel therein, and a port leading to said channel, a rotatable piston within the cylinder and extending from the shaft, said piston having a passage therein and leading out through one side thereof, an inlet for the actuating medium said inlet leading to a chamber, the wall of said chamber provided with a plurality of ports, with which the port of the shaft is successively brought into register as said shaft rotates, an exhaust, a plurality of gates means for reciprocating said gates, whereby each gate is successively moved to an open position as the piston advances toward the gate, and said gate subsequently moved to a closed position, after the piston has passed the same.



3. In a rotary engine, the combination, of a cylinder, a main shaft having a longitudinal channel therein, with ports at opposite ends leading to said channel, a rotatable piston within the cylinder and extending from the shaft, said piston having passages therein leading out through opposite sides of the piston, an inlet leading to a chamber, the wall of said chamber provided with a plurality of ports with which each port of the shaft is successively brought into register as said shaft rotates, means for admitting the inlet-actuating medium to one of the chambers leading to either end of the longitudinal channel of the shaft, an exhaust, a plurality of gates, means for reciprocating said gates, whereby each gate is successively moved to an open position as the piston advances toward the gate, and said gate subsequently moved to a closed position, after the piston has passed the same.

4. In a rotary engine, the combination, of a cylinder, a main shaft, a rotatable piston within the cylinder and extending from the shaft, a plurality of reciprocating gates, each gate provided with an interior chamber, and with an opening leading to said chamber, and also provided with an opening leading to the exhaust, a valve for automatically opening the valve-opening of each gate as said gate moves toward an open position, and also adapted, after the gate is fully opened, to automatically close the valve and remain in a closed position during the subsequent closing of the gate, means for supplying the actuating medium to each space between the piston and the gate in the rear of the line of rotation of the piston, and for exhausting from each space between the gates in advance of the revolving piston, and means for reciprocating the gates, whereby each gate is moved to an open position as the piston advances toward the gate, and said gate subsequently moved to a closed position, as the piston passes the same.

5. In a rotary engine, the combination, of a cylinder, a main shaft, a rotatable piston within the cylinder and extending from the shaft, a plurality of reciprocating gates, each gate provided with an interior chamber, and also provided with a valve-opening leading to the exhaust, a valve loosely fitting against the outer side of one end of the gate, and provided with an inwardly-extending stem, passing through the valve-opening in the end of the gate, said stem provided at its inner end, within the chamber of the gate, with an interior valve adapted to regulate the valve-opening of the gate, a rod passing loosely through the valve and connected to the end of each gate, means for reciprocating said rod, whereby as it is reciprocated in a direction to open the gate, said gate is pulled away from the inner valve toward and against the outer valve, whereby the valve-opening of the gate is opened and the actuating medium permitted to pass to the exhaust until the gate is fully opened, when said gate will be pulled against the outer valve and the flow of the actuating medium to the exhaust thereby shut off, and when said rod is reciprocated in the opposite direction to close the gate, the end of the gate will contact with the inner valve, and cause a closing of the valve-opening of the gate, means for supplying the actuating medium to each space between the piston and the gate in the rear of the line of rotation of the piston, and for exhausting from each space between the gates in advance of the revolving piston, and means for reciprocating the gates whereby each gate is moved to an open position as the piston advances toward a gate, and said gate subsequently moved to a closed position as the piston passes the same.

6. In a rotary engine, the combination, of a cylinder, a main shaft provided with longitudinal channels, one for the direct and one for the reverse, a piston extending from the shaft, said piston having passages therein leading out through opposite sides thereof, said passages being in communication with the longitudinal channels of the shaft, an inlet for the actuating medium, said inlet leading to the channels of the shaft, a valve within the inlet, and adapted to control the flow of the actuating medium to either channel of the shaft, an exhaust leading out of the casing, said exhaust being out of communication with either channel of the shaft, a plurality of gates, and means for reciprocating said gates, whereby each gate is successively moved to an open position, as the piston advances toward the gate, and said gate subsequently moved to a closed position after the piston has passed the same.

609,619. RAILROAD TIME-INDICATOR. MORGAN JOLLY, Wynne, Ark. Filed Jan. 20, 1896. Serial No. 667,327. (No model.)



Claim.—1. An indicator having a graduated time-dial, and a station or distance dial arranged coaxially with the time-dial, and one of them being revolubly movable independently of the other, said station or distance dial having a route-line divided to represent angular distances between stations, and an index or pointer extending radially with relation to the surfaces of said dials, and movable independently thereof, substantially as specified.

2. An indicator having a graduated time-dial, a station-dial having concentric route-lines divided, respectively, to indicate relative angular intervals denoting distances between stations, and an index or pointer arranged radially with relation to the surfaces of said dials, two of said members being angularly adjustable with relation to the other and independently of each other, substantially as specified.

3. An indicator having a graduated time-dial, a station-dial of less diameter than and arranged contiguous to the graduated surface of the time-dial, and mounted for rotary movement coaxially therewith, said station-dial being provided with concentric route-lines divided to form intervals representing distances between stations, and an index or pointer mounted coaxially with the station-dial for traversing the surfaces of the dials, substantially as specified.

4. An indicator having a graduated time-dial, a station-dial provided with concentric route-lines representing train speeds of different rates per hour and each divided to represent the relative intervals between successive destination-points of a road, and an index or pointer arranged radially with relation to said dials, two of said members being angularly adjustable with relation to the other, substantially as specified.

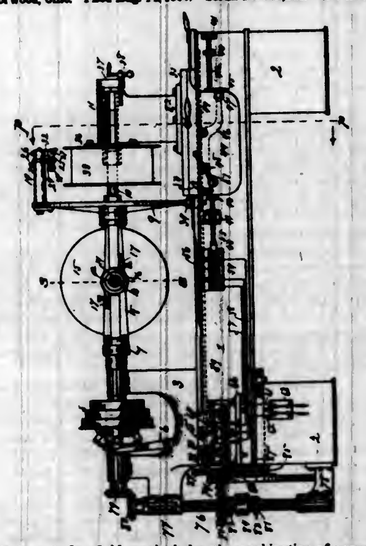
5. An indicator having a time-dial, a station-dial mounted for coaxial rotary movement upon the time-dial, means for clamping the station-dial at the desired angular adjustment, a pointer mounted for angular adjustment coaxially with the station-dial, and means, independent of said clamping devices, for securing the index at the desired adjustment, substantially as specified.

6. An indicator having a time-dial provided with a central post, a station-dial mounted for rotary adjustment upon said post, a clamp-nut threaded upon the post for securing the station-dial at the desired adjustment, a pointer mounted upon the post coaxially with the station-dial, and means for maintaining said index at the desired angular adjustment, substantially as specified.

7. An index having a time-dial, a tubular post rising from the time-dial, a station-dial mounted for rotary adjustment upon the post, and an index or pointer having a spindle fitted in the bore of said post and frictionally held against accidental adjustment, substantially as specified.

8. An indicator having a time-dial, a hollow post rising from the time-dial, a station-dial mounted upon said post, means for clamping the station-dial at the desired adjustment, an index or pointer having a hub provided with an angular opening, and a spindle for the index having a split pin fitted in the bore of said post for frictional contact with the surface thereof, an angular shoulder to engage the opening in the hub of the index, and an exposed knob by which motion may be communicated to the index, substantially as specified.

609,620. FIELD-SPOOL-WINDING MACHINE. WILLIAM LEESE, Norwood, Ohio. Filed Aug. 14, 1897. Serial No. 648,341. (No model.)



Claim.—1. In a field-spool winder, the combination of a support, two parts mounted on said support, namely, a rotatively-mounted frame provided with means for removably supporting a supply-spool and a carriage having means for moving one of said parts relatively to the other part in a direction parallel to the axis of rotation of the frame, substantially as set forth.

2. In a field-spool winder, the combination of a support, a frame rotatively mounted thereon and provided with means for supporting a supply-spool, a carriage at one end of said frame and alined with the axis of rotation thereof, said carriage being adapted to support a spool to be wound, a flier-arm projecting from the end of said rotatively-mounted frame and arranged to traverse the periphery of the spool held on the carriage, and means for moving the carriage relatively to the frame in a direction parallel to the axis of rotation of the frame, substantially as set forth.

3. In a field spool winder, the combination of a support, two parts mounted on said support, namely, a rotatively-mounted frame provided with means for supporting a supply-spool mounted to turn with its axis at right angles to the axis of rotation of the rotatively-mounted frame and a carriage having means to support a spool to be wound, and means for moving one of said parts relatively to the other part in a direction parallel to the axis of rotation of the frame, substantially as set forth.

4. In a field-spool winder, the combination of a support, two parts mounted on said support, namely, a rotatively-mounted frame and a carriage having means to support a spool to be wound, means for moving one of said parts relatively to the other part in a direction parallel to the axis of rotation of said frame, and bearing devices at opposite sides of said frame alined with each other and having their axes at right angles to the axis of rotation of the frame, said bearing devices being adapted to hold a supply-spool, substantially as set forth.

5. In a field spool winder, the combination, with a support, of a frame rotatably mounted thereon, the side pieces of which are each provided with a bearing, a sleeve in each bearing, the inner end of which is tapered, a shaft through the sleeves, a nut on each end of the shaft, a brake, a flier-arm, a carriage provided with means for supporting the spool to be wound, and means for reciprocally changing the position, longitudinally, of said frame and carriage relatively to each other, substantially as set forth.

6. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon provided with means for supporting a supply-spool, a flier-arm, a head upon the outer end of the arm, a spring-actuated shaft through the arm and connected with the head, a guide and tension devices on the head, a carriage provided with means for supporting the spool to be wound, and means for reciprocally changing the position, longitudinally, of said frame and carriage relatively to each other, substantially as set forth.

7. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon provided with means for supporting a supply-spool, a flier-arm, the outer end of which is provided with a swiveled head, a saddle secured to the head, two wheels journaled in the saddle, an adjustable saddle secured to the first-mentioned saddle, a tension-roller mounted in the adjustable saddle, a carriage provided with means for supporting the spool to be wound, and means for reciprocally changing the position, longitudinally, of said frame and carriage relatively to each other substantially as set forth.

8. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon provided with means for supporting a supply-spool, a flier-arm, a carriage, a longitudinally-movable head on the carriage, the inner end of which is provided with a disk for supporting the spool to be wound, and the other end is provided with a projection, a screw through the projection, and means for reciprocally changing the position, longitudinally, of said frame and carriage relatively to each other, substantially as set forth.

9. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, provided with means for supporting a supply-spool, a shaft projecting from the outer end of said frame, a flier-arm, a carriage, a head on the carriage provided with a hollow extension and with means for supporting the spool to be wound, and means for reciprocally changing the position, longitudinally, of said frame and carriage relatively to each other, substantially as set forth.

10. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon provided with means for supporting a supply-spool, a carriage reciprocally mounted on the main support, provided with means for supporting the spool to be wound, reversible mechanism for moving the carriage, and means controlled by the movement of the carriage for reversing said carriage-moving mechanism, substantially as set forth.

11. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, a reciprocally-movable carriage on the support, automatic or manually operated mechanism for moving the carriage, and electrically-controlled means for reversing the automatic mechanism, substantially as set forth.

12. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, a reciprocally-movable carriage on the support, automatically or manually operated means for moving the carriage, one of which is thrown out of gear when the other one is thrown in, and electrically-controlled reversing mechanism for the automatic means, substantially as set forth.

13. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, a reciprocally-movable carriage, an apron on the carriage, a rod provided with adjustable collars, a lever pivotally secured to the apron, one end of which carries means for operating the carriage manually, a slide connected with the other end, said slide being adapted to be thrown into or out of engagement with one of the collars, means for automatically moving the carriage, and electrically-controlled reversing mechanism connected with the rod, substantially as set forth.

14. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, a reciprocally-movable carriage on the support, automatic reversing mechanism for moving the carriage, two solenoids and a plunger for moving the reversing mechanism, and a single-pole double-throw switch for completing a circuit through the solenoids, and means upon the carriage for throwing the switch, substantially as set forth.

15. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, a reciprocally-movable carriage, a screw-threaded shaft connected with the carriage, a double ended clutch upon the shaft, a lever for moving the clutch, two solenoids and a plunger for moving the lever, a single-pole double-throw switch, for completing a circuit through the solenoids, and means for operating the switch by the movement of the carriage, substantially as set forth.

16. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, a reciprocally-movable carriage, a screw-threaded shaft connected with the carriage, two bevel-wheels and a double clutch on one end of the shaft, a bevel-wheel in mesh with said two wheels, a lever for moving the clutch, and electrically-controlled mechanism for operating the lever, substantially as set forth.

17. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, a reciprocally-movable carriage, automatic reversing mechanism for the carriage, a driven disk for operating the reversing mechanism, a driving-disk connected with the main shaft of the machine, and means for adjusting said disks relatively to each other, substantially as set forth.

18. In a field-spool winder, the combination, with a support, of a frame rotatably mounted thereon, a reciprocally-movable carriage, a shaft for moving the carriage, one end of which is provided with automatically-controlled reversing mechanism, a shaft for operating the reversing mechanism provided with a pinion, a disk and a pinion journaled at the end of the support, an interchangeable wheel between said pinions, and a driving-disk connected with the main shaft of the machine and in engagement with the driven disk, substantially as set forth.

19. In a field-spool winder, the combination, with a support provided with means for winding a spool, of a driven disk at one end of the support for controlling the winding mechanism, a vertically-journaled shaft in front of the disk, a driving-disk thereon, the hub of which is screw-threaded, an adjustable screw-threaded collar on the shaft below the disk, the screw-threads of the hub and the collar being in opposite directions, and an adjusting-nut on said hub and collar, substantially as set forth.

20. In a field-spool winder, the combination of a support, two parts mounted on said support, namely, a rotatively-mounted frame adapted to carry a supply-spool and a carriage for the spool to be wound, means for moving one of said parts relatively to the other part in a direction parallel to the axis of rotation of the frame, a flier-arm carried on the frame, a swiveled head on said arm, a guide and tension devices on the head, and a spring for holding said head elastically in position, substantially as set forth.

21. In a field-spool winder, the combination of a support, a frame rotatively mounted on the support and adapted to carry a supply-spool, a carriage mounted on the support for movement in a direction parallel to the axis of rotation of the frame, and a head on the carriage also mounted for movement relatively to the carriage in a direction parallel to the axis of rotation of the frame and adapted to support a spool to be wound, substantially as set forth.

22. In a field-spool winder, the combination of a support, two parts mounted on said frame, namely, a rotatively-mounted frame adapted to carry a supply-spool and a carriage for the spool to be wound, one of said parts being movable longitudinally in a direction parallel to the axis of rotation of the frame, means for driving the frame, gearing actuated from said driving means for imparting longitudinal movement to the movable part relatively to the other part, and means for throwing said gearing out of operation to permit the movable part to be moved longitudinally independently of said driving mechanism, substantially as set forth.

23. In a field-spool winder, the combination of a support, a frame rotatively mounted thereon, a reciprocally-moving carriage on the frame, reversible mechanism for moving the carriage, a manually-operated mechanism for moving the carriage, and means for simultaneously throwing one of said carriage-moving mechanisms out of and the other mechanism into operation, substantially as set forth.

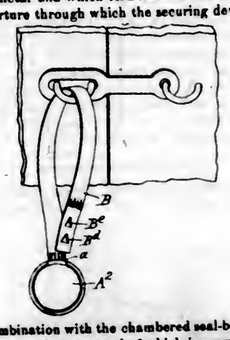
24. In a field-spool winder, the combination of a support, two parts mounted thereon, namely, a rotatively-mounted frame and a carriage for the spool to be wound, one of said parts being movable in a direction parallel to the axis of rotation of said frame, reversible mechanism for moving said movable part, and electrical devices actuated by the movement of said movable part for controlling said reversible mechanism, substantially as set forth.

25. In a field-spool winder, the combination of a support, a frame rotatively mounted thereon, a reciprocally-movable carriage, a screw-threaded shaft connected to the carriage, two bevel-wheels and a double clutch on one end of the shaft, a bevel-wheel in mesh with said two wheels, a lever for moving the clutch, and means actuated by the movement of the carriage for operating said lever, substantially as set forth.

26. In a field-spool winder, the combination of a support, a rotatively-mounted frame adapted to carry a supply-spool, a disk on the end of the frame, a carriage adapted to support a spool to be wound, a flier-arm on the disk arranged to traverse the spool held on the carriage, and antifriction-rollers arranged under the disk and in contact with the periphery thereof to support the same, substantially as set forth.

609,621. SELF-LOCKING SEAL. ADOLPH MELIN, Chicago, Ill. Filed Sept. 15, 1897. Serial No. 651,762. (No model.)

Claim.—1. In combination with the chambered body, the securing device consisting of a strap, one end of which is permanently secured to the body, and the other end of which is adapted to be inserted into the body alongside the secured end, and suitable engaging devices within the body; the adjacent portions of the securing device at the margin of the body having longitudinal corrugations struck in the metal and which terminate at and overhang the margin of the aperture through which the securing device is inserted.



2. In combination with the chambered seal-body, a securing device consisting of a strap, one end of which is permanently secured to the body, and the other end of which is adapted to be inserted into the body alongside the secured end, and suitable engaging devices within the body; the adjacent portion of the securing device at the margin of the body being provided with interlocking longitudinal corrugations which overhang the margin of the aperture through which the securing device is inserted.

3. In combination with a chambered seal-body, the securing device consisting of a metal strip having two apertures longitudinally separated; rigid ratchet-shaped teeth projecting from the opposite lateral walls of the seal-chamber having their sloping faces toward the entrance and their abrupt shoulders facing inward adapted to enter said apertures in the opposite sides of the strip when its longitudinal entering movement brings its apertures into registration with said rigid teeth respectively.

4. In combination with the chambered seal-body, the securing device having two apertures longitudinally separated; engaging devices located within the seal-body corresponding in position to said apertures in the securing device and adapted to enter them respectively when the securing device, in its longitudinal inserting movement, brings its apertures into registration with said engaging devices; said engaging devices consisting of rigid fixed ratchet-shaped teeth projecting from the opposite lateral walls of the seal-chamber, adapted to enter said apertures from opposite directions, and a deflecting-shoulder B^e within the seal-body adapted to be encountered by the end of the securing device as it approaches locking position, tending to deflect said end in a direction to cause it to be held engaged with the nearest of said engaging devices.

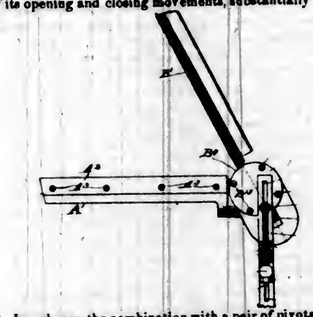
5. In combination with a chambered seal-body, the securing device consisting of a flexible strip B having teeth B^c and B^b projecting from the same side, and folded upon itself toward the side from which said teeth project, and at a point between them adapted to bring the two teeth a short distance apart longitudinally with respect to the strip, the opposite end of the strip having apertures at a distance apart corresponding to that of the teeth after the strip is folded, and adapted to receive said teeth respectively.

609,622. PAPER-CUTTING SHEARS. AUGUSTUS H. MORRISON, Amsterdam, N. Y. Filed Aug. 13, 1897. Serial No. 648,095. (No model.)

Claim.—1. A shears comprising a pair of pivotally-connected blades one of which is movable lengthwise and transversely of the blade-connecting pivot, and provided with means for imparting lengthwise movements to the movable blade, substantially as described.

2. In a shears, the combination with pivotally-connected blades, one of which has its cutting edge deflectable laterally of the plane of vibratory cutting movement; means for forcing the deflectable edge into engagement with the cutting edge on the other blade during the closing vibratory movement; and means for suspending the deflectable movement during a part of the opening movement whereby the blades are prevented from engagement with each other during such opening movement, substantially as described.

3. In a shears, the combination with pivotally-connected hubs; of a blade fixed on one hub; a blade rotatively mounted on the other hub with its axis of rotation in line with the longitudinal axis of the blade; means for imparting rotative movements to the rotary blade during a part of the closing and opening movements; and means for securing the rotary blade against rotary movements during the other part of its opening and closing movements, substantially as described.



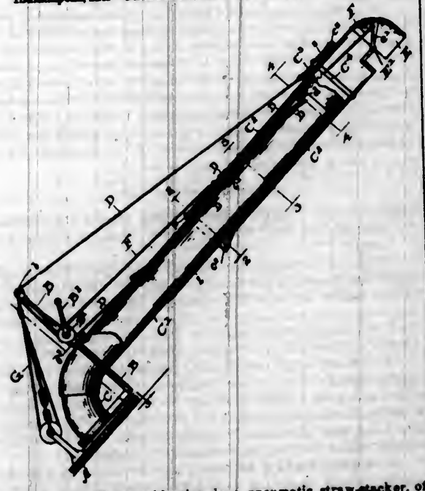
4. In a shears, the combination with a pair of pivotally-connected hubs, of a blade fixed upon one of the hubs; a blade rotatively secured to the other hub with its axis of rotation in line with the blade; a segmental gear-plate rotary upon the pivot connecting the hubs; stops on one of the hubs for limiting the rotative movements of the gear-plate; and a gear fixed upon the rotative blade and engageable with the gear-plate, substantially as described.

5. In a shears having one of its blades rotatively mounted in a pivot-hub, and provided with means for imparting rotative movements upon its longitudinal axis to such blade, the combination with the hub having a spiral cam-groove, of a cam-follower on the blade adapted to travel in such groove, whereby longitudinal slide movements are imparted to the blade simultaneously with the rotative movements, substantially as described.

6. In a shears, having its blades mounted upon pivotally-connected hubs, and one of the blades provided with means for imparting to it rotative movements upon its longitudinal axis during a part of each opening and closing movement of the shears, a spring-actuated stop for controlling the rotative movements of the blade, substantially as described.

7. In a shears having a pair of blades with supporting-hubs pivotally connected together, the combination with one of the blades and its supporting-hub; of a pivotal connection between such blade and hub having the pivotal axis of such connection approximately parallel with the longitudinal axis of the blade; and means for adjustably securing such blade against pivotal oscillation on its supporting-hub, substantially as described.

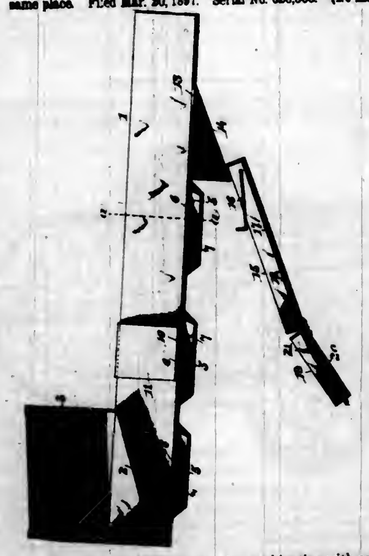
609,623. PNEUMATIC STRAW-STACKER. JOHN A. MCCUTCHEON, Battle Creek, Mich., assignor to The Indiana Manufacturing Company, Indianapolis, Ind. Filed June 5, 1897. Serial No. 639,547. (No model.)



Claim.—1. The combination, in a pneumatic straw-stacker, of the telescopic parts C and C^9, an interior hollow rib c', within said part C, a vertically-positioned sheave d mounted at the front end thereof, a rope D passing from the inner end of the outer part C^9 between the two parts to the outer end of said inner part, and over the sheave d, thence back through said hollow rib, out through a perforation in said part C, around suitable spools, and thence to an attachment on the outer portion of said trunk part C^9, said several parts being arranged and operating substantially as shown and described.

2. The combination, in a telescopic trunk or chute for pneumatic stackers, of two parts or sections, the inner section having a perforation in the upper side thereof, a hollow interior rib therein leading forward from said perforation, a sheave mounted therein at the forward end of said rib, and a rope passing within said hollow rib around said sheave and thence between the two parts or sections to the inner or lower end of the outer part or section, to which it is connected, substantially as shown and described.

609,624. AMALGAMATOR. NELSON P. NELSON, Helena, Mont., assignor of two-thirds to Benjamin R. Young and Frank D. Spratt, same place. Filed Mar. 20, 1897. Serial No. 628,506. (No model.)



Claim.—1. In an amalgamator, the combination with an inclined sluiceway, of a shelf inclined in the reverse direction to the inclination of said sluiceway and having its discharge end terminating above the bottom of the sluiceway, and the vitreous impact-plate situated at the head of the sluiceway and extending from the bottom thereof upwardly beyond the discharge edge of the shelf to form a passage between said shelf and the impact-plate, whereby the impact-plate prevents the ore-passage to the sluiceway from lodging against the head thereof and to deflect the same upon the inclined bottom of said sluiceway, substantially as described.

2. In an amalgamator, the combination of a sluiceway having the flanged sides and the transverse openings in the bottom thereof, oppositely inclined spouts arranged beneath the openings in said sluiceway, sluice-boxes communicating with said spouts, and imperforate, flanged, valve-plates slidably interlocked with the respective flanged sides of the sluiceway, and each valve-plate arranged to slide on the sluiceway to partially cover one of the openings therein, to cut off communication between the sluiceway and either of the spouts on one side thereof, as and for the purposes described.

3. In an amalgamator, the sluiceway having its bottom provided, at intervals, with transverse screened openings, and having the side walls thereof flanged at their upper edges, combined with sluice-boxes arranged beneath said sluiceway to communicate therewith through said screened openings, and independent valves disposed within the sluiceway to close the openings in the bottom thereof, said valves arranged on opposite sides of the medial line of the sluiceway and constructed to slidably engage with the respective flanged walls thereof, for the purposes described, substantially as set forth.

4. In an amalgamator, the combination with a sluiceway having openings in the bottom thereof, of a pair of oppositely-inclined discharge-spouts arranged beneath each of said openings, and the spouts of each pair separated one from the other by a vertical partition situated centrally with respect to the opening in the sluiceway, sluice-boxes to receive the material discharged from said spouts, and valves

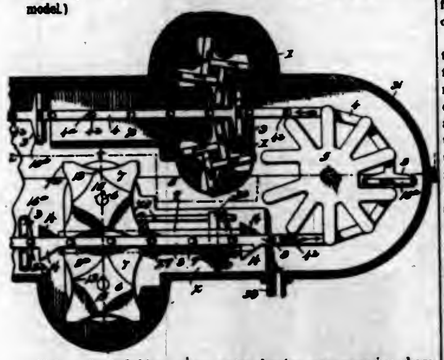
slidably fitted in the sluiceway and arranged on opposite sides of the medial line thereof to move longitudinally over the bottom of the sluiceway, substantially as described, for the purposes set forth.

5. In an amalgamator, the combination with an inclined sluiceway, and a spout extending laterally from the bottom of said sluiceway, of a sluice-box having at its head a shelf which extends beneath said laterally-extending spout from the sluiceway, a vitreous plate situated in the bottom of said sluice-box and below the shelf therein, and a collecting-plate carried in the sluice-box below the vitreous plate, substantially as described, for the purposes set forth.

6. The combination with a sluice-box, of an adjustable tailing-chute forming a continuation of the sluice-box, and a riffle attached within said tailing-chute and having projecting unconfined rows of fibrous material arranged to float in water passing over the riffle, substantially as described, for the purposes set forth.

7. The combination with a sluiceway, and a sluice-box to receive therefrom, of an adjustable tailing-chute connected to, and forming a continuation of, said sluice-box, impact and amalgamated plates carried within said sluice-box one below the other, and a riffle attached within the tailing-chute and having unconfined loose ends, substantially as described, for the purposes set forth.

609,625. FLUID-PRESSURE MOTOR. PETTER G. H. PEDERSON, West Superior, Wis. Filed July 28, 1897. Serial No. 646,394. (No model.)



Claim.—1. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of spaced piston-heads adapted to pass successively through the expansion-chamber, a traveler located exteriorly of the expansion-chamber and operatively connected with the piston for coincidental movement, and connections between the traveler and said gates, whereby the latter are reversed successively as they are approached by the piston-heads, substantially as specified.

2. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of spaced piston-heads adapted to pass successively through the expansion-chamber, a traveler operatively connected with the piston for coincidental movement, and spiders carried by the gates and having their arms arranged in the paths of engaging devices on the traveler, substantially as specified.

3. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of spaced piston-heads adapted to pass successively through the expansion-chamber, a traveler mounted for linear movement and operatively connected with the piston, spiders on the gates having bearing-surfaces to engage the traveler and prevent accidental movement of the gates, and means for periodically connecting the spiders with the traveler to reverse the gates, substantially as specified.

4. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of spaced piston-heads adapted to pass successively through the expansion-chamber, a traveler mounted for linear movement and operatively connected with the piston, spiders carried by the gates and having arms to engage spaced recesses in the traveler, and trip devices for actuating the spiders to cause engagement of their arms with the recesses of the traveler, substantially as specified.

5. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of spaced piston-heads adapted to pass successively through the expansion-chamber, a traveler mounted for linear movement parallel with the piston, spiders carried by the gates and having arms for successive engagement by the traveler, and cam-faced trips on the traveler for engaging projections on the spiders, to cause engagement of the arms of the latter with the traveler, substantially as specified.

6. A fluid-pressure motor having an expansion-chamber, a piston having an endless carrier and a plurality of spaced piston-heads adapted to pass successively through the expansion-chamber in a common direction, rotary winged gates in the expansion-chamber, an endless traveler operatively connected with the piston for continuous movement in a uniform direction, armed spiders carried by the spindles of the gates and having flat bearing-surfaces normally in contact with opposite surfaces of the traveler, said traveler having recesses to engage the arms of the spiders, and cam faced trips on the traveler for successively engaging trip-shoulders located on the spiders between the arms thereof, substantially as specified.

7. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of spaced piston-heads adapted to pass successively through the expansion-chamber in a common direction, gates located at the inlet end of the expansion-chamber, a traveler mounted for movement parallel with the piston, and valve mechanism for admitting motive agent to the expansion-chamber, said mechanism including trip-arms located in the path of trips carried by said traveler, substantially as specified.

8. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of spaced heads adapted to pass successively through the expansion-chamber in a common direction, gates for closing the inlet end of the expansion-chamber, valve mechanism having a reversing-bar operatively connected with the controlling-valve, and trip-arms connected with the reversing-bar, and a traveler mounted for movement parallel with the piston and having cam-faced trips for successive engagement with the trip-arms to alternately open and close the controlling-valve, substantially as specified.

9. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of spaced heads adapted to pass successively through the expansion-chamber in a common direction, gates arranged at the inlet end of the expansion-chamber and provided with exterior spiders, valve mechanism including oppositely-located trip-arms operatively connected with the controlling-valve, and adapted to be successively operated to open and close said valve, a traveler mounted for movement parallel with the piston and provided with means for engaging the arms of said spiders on the gates, and cam-faced trips for successively engaging projections on the spiders and said trip-arms, substantially as specified.

10. A fluid-pressure motor having an expansion-chamber, valve mechanism, and a piston-head to operate in the expansion-chamber, said piston-head being provided with packing devices consisting of angular terminally-interlocking packing-strips, each having arms pivotally connected at the angle formed thereby, and means for yieldingly holding said strips in their extended positions, substantially as specified.

11. A fluid-pressure motor having an expansion-chamber, valve mechanism, and a piston-head to operate in the expansion-chamber, said piston head being provided with packing devices consisting of angular terminally-interlocking strips, flat guard-plates spanning the interlocking extremities of the contiguous strips at their inner surfaces and attached to the extremity of one of them, and means for yieldingly holding the strips extended, substantially as specified.

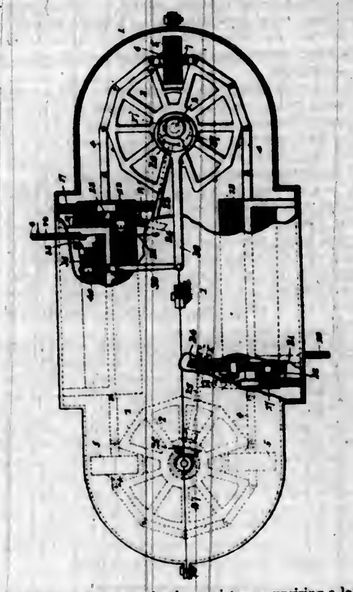
12. A fluid-pressure motor having an expansion-chamber, gates for closing the inlet end of the expansion-chamber, and valve mechanism, in combination with a piston having a flexible carrier, and a plurality of piston-heads adapted to pass successively through the expansion-chamber, said carrier consisting of hingedly-connected sections provided at their contiguous extremities with interlocking eyes, fulcrum-pins engaging the interlocking eyes, and locking-pins transversely engaging said fulcrum-pins to secure them against accidental displacement and this is held in place by the abutting ends of contiguous carrier-sections, substantially as specified.

609,626. FLUID-PRESSURE MOTOR. PETTER G. H. PEDERSON, West Superior, Wis. Filed Oct. 27, 1897. Serial No. 656,564. (No model.)

Claim.—1. A fluid-pressure motor having a piston comprising a longitudinally-movable carrier and a plurality of piston-heads mounted to slide thereon, and adapted for successive exposure to motive pressure in an expansion-chamber, means for preventing backward movement of a piston-head, and means for communicating forward movement of a piston-head to the carrier, substantially as specified.

2. A fluid-pressure motor having a piston comprising a longitudinally-movable carrier and a plurality of piston-heads mounted to slide thereon, and adapted for successive exposure to motive pressure in an expansion-chamber, means for preventing backward movement of a piston-head, and a stop for limiting the forward movement thereof with relation to the carrier, substantially as specified.

3. A fluid-pressure motor having a piston comprising a longitudinally-movable carrier and a plurality of piston-heads mounted to slide thereon, and adapted for successive exposure to motive pressure in an expansion-chamber, means for preventing backward movement of a piston-head, a stop for limiting the forward movement of a piston-head independently of the carrier, and means for communicating forward movement of the carrier to a piston-head, substantially as specified.



4. A fluid-pressure motor having a piston comprising a longitudinally-movable carrier and a plurality of piston-heads mounted to slide thereon, and adapted for successive exposure to motive pressure in an expansion-chamber, means for preventing backward movement of a piston-head, and yielding stops for limiting the forward movement of the piston-heads independently of the carrier, substantially as specified.

5. A fluid-pressure motor having a piston comprising a longitudinally-movable carrier and a plurality of piston-heads mounted to slide thereon, and adapted for successive exposure to motive pressure in an expansion-chamber, means for preventing backward movement of a piston-head, and stops for limiting the forward movement of the piston-heads independently of the carrier, said stops consisting of yielding latches beveled at their front sides and having abrupt shoulders to engage the front surfaces of the piston-heads, substantially as specified.

6. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, catches for preventing backward movement of a piston-head with relation to the expansion-chamber, and means for alternately extending and withdrawing the catches, substantially as specified.

7. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, catches yieldingly held extended in the path of backward movement of the piston-heads, and trip mechanism for periodically withdrawing the catches to admit a succeeding piston-head, substantially as specified.

8. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, means for preventing backward movement of the piston-heads in the expansion-chamber, and yielding stops for limiting the forward movement of the piston-heads independently of the carrier, substantially as specified.

9. A fluid-pressure motor having a piston comprising a longitudinally-movable carrier and a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, catches yieldingly held in the path of backward movement of the piston-heads and provided with means for engaging and locking said piston-heads successively against forward movement, and trip mechanism for periodically withdrawing the catches to admit a succeeding piston-head, substantially as specified.

10. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, catches yieldingly held in the path of backward movement of the piston-heads and provided with restraining-pins for engaging peripheral sockets in the piston-heads to prevent forward movement thereof, and trip mechanism for periodically withdrawing the catches to admit a succeeding piston-head, substantially as specified.

11. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, catches yieldingly held in the path of backward movement of the piston-heads, a revoluble trip-ring having cams for engaging trip-ears on the catches, and means for actuating the trip-ring, substantially as specified.

12. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, catches yieldingly held in the path of backward movement of the piston-heads, a revoluble trip-ring having cams for engaging trip-ears on the catches, and means for imparting continuous rotary movement to the trip-ring, substantially as specified.

13. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, means for preventing backward movement of the piston-heads in the expansion-chamber, and detachable connections for communicating forward movement of the carrier to the piston-heads, substantially as specified.

14. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, means for preventing backward movement of the piston-heads in the expansion-chamber, latches for communicating forward movement of the carrier to the piston-heads, and trips connected with said latches and adapted, when actuated, to disengage said latches and release the carrier from the piston-head substantially as specified.

15. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, means for preventing backward movement of the piston-heads in the expansion-chamber, latches for communicating forward movement of the carrier to the piston-heads, and reciprocable trips connected with said latches and adapted to be actuated by said means for preventing backward movement of the piston-heads, for disengaging the latches to release the carrier from the piston-heads, substantially as specified.

16. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion chamber in one direction, means for communicating forward movement of a piston-head to the carrier, reciprocable catches for arrangement in the path of backward movement of the piston-heads, actuating devices for said catches, latches for communicating forward movement of the carrier to the piston-heads, and trips operatively connected with said latches, and arranged in the paths of said catches when a piston-head is engaged by the catches, substantially as specified.

17. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction means for communicating forward movement of a piston-head to the carrier, reciprocable catches for arrangement in the path of backward

movement of the piston-heads, actuating devices for said catches, latches for communicating forward movement of the carrier to the piston-heads, and spring-actuated reciprocable trips operatively connected with said latches, and arranged in the paths of said catches when a piston-head is engaged by the catches, substantially as specified.

18. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion chamber in one direction, means for communicating forward movement of a piston-head to the carrier, reciprocable catches for arrangement in the path of backward movement of the piston-heads, actuating devices for said catches, latches for communicating forward movement of the carrier to the piston-heads, and yielding reciprocable trips extending rearwardly from the planes of the piston-heads for arrangement in the paths of said catches when a piston-head is engaged by the catches, said trips being operatively connected with said latches, and adapted, when actuated, to disengage the latches to release the carrier from the piston-head, substantially as specified.

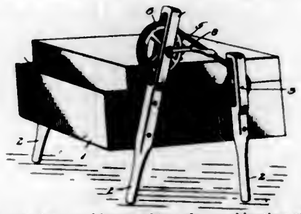
19. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, means for preventing backward movement of the piston-heads in the expansion-chamber, and cushioning devices interposed between preceding and succeeding piston-heads, substantially as specified.

20. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, means for preventing backward movement of the piston-heads in the expansion-chamber, and cushioning devices interposed between preceding and succeeding piston-heads and consisting of dash-pots, substantially as specified.

21. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, means for preventing backward movement of the piston-heads in the expansion-chamber, and cushioning devices interposed between preceding and succeeding piston-heads, and consisting of plungers and cylinders arranged respectively upon the contiguous faces of said piston-heads, substantially as specified.

22. A fluid-pressure motor having an expansion-chamber, a piston having a plurality of piston-heads mounted for longitudinal movement upon a continuous longitudinally-movable carrier, and adapted to pass successively through the expansion-chamber in one direction, means for communicating forward movement of a piston-head to the carrier, means for preventing backward movement of the piston-heads in the expansion-chamber, cushioning devices interposed between preceding and succeeding piston-heads for spacing the contiguous faces thereof and communicating forward movement from the succeeding to the preceding piston-head, and means for admitting motive agent to the expansion-chamber, including a feed-port arranged contiguous to the plane of the front surface of a piston-head engaged by said means for preventing backward movement of the piston-heads, and a controlling-valve for said port, substantially as specified.

609,627. WASHING-MACHINE. JOHN R. PRINE, Shawnee, Okla. Filed Feb. 14, 1898. Serial No. 670,252. (No model.)



Claim.—1. In a washing-machine, the combination of a stationary rubber, of yielding rubbers opposed to the opposite sides of the stationary rubber and extending parallel thereto, the yielding rubbers being flexibly supported at both ends, and means for conveying fabric between said rubbers, substantially as specified.

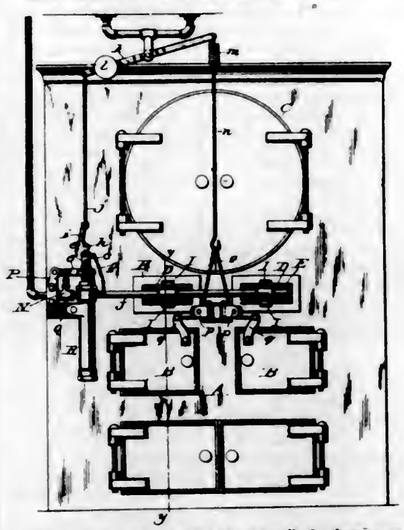
2. In a washing-machine, the combination with a receptacle, of a swinging rubber-frame mounted therein, a stationary rubber carried by said frame, a rubber arranged parallel to the stationary rubber and yieldingly urged toward the same, a conveyer designed to force fabric between the rubbers, and an auxiliary rubber at one end of the stationary rubber comprising a curved series of rollers, substantially as described.

3. In a washing-machine, the combination with a receptacle, of a stationary rubber, yielding rubbers mounted above and below the stationary rubber, corrugated rollers contiguous to the opposite ends of the rubber, an endless conveyer passing around said rollers and the stationary rubber, and a yielding auxiliary rubber urged against one of the corrugated rollers, substantially as specified.

4. In a washing-machine, the combination with a receptacle, of a swinging rubber-frame therein, a stationary rubber and a spring-actuated yielding rubber carried by said frame, corrugated rollers contiguous to the ends of the stationary rubber, endless conveyers passing around the rollers and stationary rubber, a hinged cover for the receptacle, and a spring-actuated yielding rubber carried by said cover and designed to cooperate with the stationary rubber and to be thrown out of action when the cover is lifted, substantially as specified.

5. In a washing-machine, the combination with a receptacle, of a rubber-frame pivoted at one end within the receptacle, a stationary rubber carried by the rubber-frame and composed of an endless series of transversely-arranged rollers, corrugated rollers contiguous to the opposite ends of the rubber, endless conveyers passing around the rollers and rubber, loops upon said conveyers, a spring-actuated, yielding rubber mounted in the rubber-frame below the stationary rubber and likewise composed of a series of rollers, a vertically-disposed spring-actuated auxiliary rubber-frame, provided with transverse rollers urged toward one of the corrugated rollers, a hinged cover for the receptacle, a yielding rubber carried by said cover and composed of a series of rollers, and actuating mechanism upon the exterior of the receptacle and operatively connected with one or both of the corrugated rollers, substantially as specified.

609,628. SMOKE-CONSUMING APPARATUS. HENRY M. QUACKENBUSH, Herkimer, N. Y., assignor to Manning A. Deimel, same place. Filed Mar. 31, 1896. Serial No. 675,956. (No model.)



Claim.—1. In combination with the wall of a furnace, an air-inlet formed therein; and a two-part slide working in said opening, the upper member being provided with a deflecting member, which when drawn back serves to fit against the lower member and close the air-inlet, substantially as described.

2. In combination with the wall of a furnace, an air-inlet formed therein; and a two-part slide mounted in said inlet one above the other, the upper member being formed with a forwardly-extending downwardly-inclined deflecting member, the lower member having its side walls beveled off, whereby when the upper slide is drawn back its deflecting member will fit down upon the beveled walls and close the inlet.

3. In combination with the wall of a furnace, an air-inlet formed therein; slide F mounted in said inlet and having inclined faces *a* formed at the inner end thereof; and a slide G also mounted in said opening above said slide F, and having an inclined deflector-plate H designed when drawn back to fit against the faces *a* and to close the inlet.

4. In combination with the wall of a furnace, an air-inlet formed therein; slide F mounted in said inlet and having inclined faces *a*, and rearwardly-extending handle I; and a slide G also mounted in said inlet above the slide F, having a deflector H and a handle I, said handles I being so formed as to engage the outer face of the furnace and prevent the slides from being forced inwardly out of the inlet.

5. In a smoke-consumer, in combination with a furnace; an air-inlet communicating with the fire-chamber thereof; a steam-discharge nozzle mounted in said inlet; a steam-supply pipe; a valve located in said pipe; a lever O connected to the valve-stem; a fuel-door; a lever *k* pivoted to a suitable support; a connection between one end of the lever and the door; a check-cylinder; a connection between the piston-rod of said cylinder and the opposite end of the lever *k*; a connection between lever O and said lever *k*; and a stop connected to the piston-rod designed to bear upon and depress the lever O when said rod nears its limit of downward movement.

6. In a smoke-consumer, in combination with a furnace; air-inlets communicating with the fire-chamber thereof; steam-discharge nozzles mounted therein; lever *k* provided with a weight *l*; a rod *n* connected to one end thereof; doors B B: chains *o* connecting said doors and rod *n*; rod *j* depending from the opposite end of lever *k*; a check-cylinder; a block connected to the upper end of the piston-rod thereof; a chain *i* connecting the lower end of rod *j* and said block; a valve controlling the supply of steam to the discharge-nozzles; a lever O connected to the valve-stem; a chain *g* connecting the lever and the block aforesaid; and a projection extending from the block out over the upper face of lever O.

7. In combination with a cylinder having an enlarged chamber formed in its lower end; a piston-rod; a piston of such dimensions as to fit the smaller diameter of the cylinder; openings passing up through said piston; a cap-piece yieldingly supported upon the lower end of the piston and having an opening therethrough; means for restricting said opening; and a spring for forcing the piston down in the cylinder.

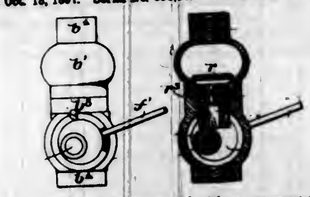
8. In combination with a cylinder having an enlarged chamber formed in its lower end; a hollow piston-rod; a stem *b* mounted therein; a piston carried by the end of the rod and provided with openings V extending therethrough; a depending skirt formed upon the piston; a cap yieldably held against said skirt; and a spring for forcing the piston toward the enlarged chamber, substantially as described.

9. In combination with a cylinder having an enlarged chamber formed at its lower end; a hollow piston-rod mounted therein; a stem *b* adjustably mounted therein; a piston carried by said rod and provided with openings V extending therethrough; a depending skirt formed upon the piston; a cap W having a central opening X; screws Y mounted in pockets formed in the piston extending through and engaging said cap; springs for holding the cap up to the skirt; and a spring *d* serving to force the piston down, substantially as described.

10. In combination with the walls of a furnace; an air-inlet formed therein; and a slide mounted in said opening and provided with a deflecting member at its forward end designed when drawn back to close the air-inlet, and when moved forward to serve to deflect the blast down onto the fire.

11. In a smoke-consumer, the combination of a steam-supply pipe; a valve mounted in said pipe; a check or controlling cylinder; a piston mounted in said cylinder and arranged to have a rapid movement near the completion of its stroke; and means intermediate the piston and the valve for closing the valve quickly during the latter part of the movement of the piston.

609,629. BALL-COCK. ANDREW J. ROBINSON, Boston, Mass. Filed Oct. 18, 1897. Serial No. 655,562. (No model.)

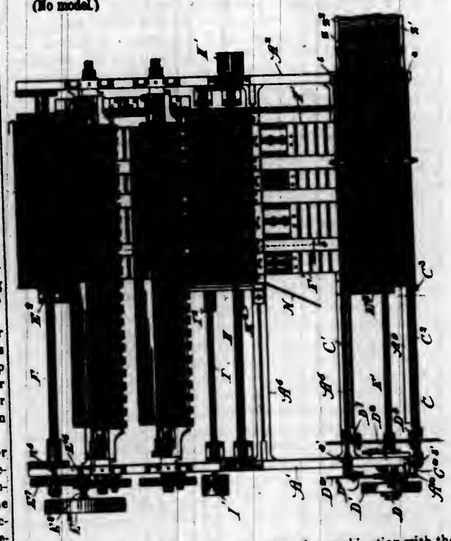


Claim.—1. A valve-stem provided with one or more spiral members, and a valve member loosely carried by said stem, the spiral members terminating below the end of the stem, for the purpose set forth.

2. A valve-stem provided with one or more peripheral flanges adapted to engage the walls of the casing in which said stem is loosely arranged, and a valve member having a part loosely arranged in said stem.

3. A ball-cock comprising in its construction a casing, a valve mounted therein, a spindle, a loose member carried by said spindle and adapted to engage said valve, eccentrics mounted in said casing, the ends of said spindle being loosely arranged in said eccentrics, and means, as a float, connected to said eccentrics for operating the latter.

609,630. MACHINE FOR STEP-MITERING AND PRINTING BOX-BLANKS. FREDERICK P. ROSBACK, Chicago, Ill., assignor to William P. Healy, same place. Filed Dec. 7, 1897. Serial No. 661,080. (No model.)



Claim.—1. In a step-mitering machine, the combination with the feeding mechanism for the material to be step-mitered operating to advance the material sidewise as regards its grain, of rotating initial cutting-saws, in the path of the material as it is fed, operating to produce the side cuts of the steps across the grain of the material, and rotating chipping-disks in the path of the material beyond said saws operating to chip out the material between the side cuts to produce the steps, substantially as described.

2. In a step-mitering machine, the combination with the feeding mechanism for the material to be step-mitered operating to advance the material sidewise as regards its grain, of a rotating saw cluster H^3, in the path of the material as it is fed, operating to produce the side cuts of the steps across the grain of the material, and a rotating cluster I^4 of chipping-disks in the path of the material beyond said saw cluster operating to chip out the material between the side cuts to produce the steps, substantially as described.

3. In a step-mitering machine, the combination with the feeding mechanism for the material to be step-mitered operating to advance the material sidewise as regards its grain, of a rotating shaft carrying a series of initial-cutting-saw clusters in the path of the material as it is fed to produce the side cuts of the steps across the grain of the material, and a rotating shaft carrying a series of chipping-disk clusters in the path of the material beyond said saw clusters operating to chip out the material between the side cuts to produce the steps, substantially as described.

4. In a step-mitering machine, the combination with the feeding mechanism for the material to be step-mitered operating to advance the material sidewise as regards its grain, of a rotating shaft carrying initial-cutting-saw clusters adjustable toward and away from each other and in the path of the material as it is fed to produce the side cuts of the steps across the grain of the material, and a shaft carrying clusters of chipping-disks adjustable toward and away from each other and in the path of the material beyond said saw clusters operating to chip out the material between the side cuts to produce the steps, substantially as described.

5. In a step-mitering and printing machine, the combination with the feeding mechanism for the material to be step-mitered and printed operating to advance the material sidewise as regards its

grain, of step-mitering mechanism in the path of the material as it is fed comprising rotating initial cutting-saws and rotating chipping-disks beyond said saws, and a printing-cylinder in position to print upon the material as it passes through the machine, substantially as described.

6. In a step-mitering and printing machine, the combination with the feeding mechanism for the material to be step-mitered operating to advance the material sidewise as regards its grain, of rotating initial cutting-saws in the path of the material as it is fed, operating to produce the side cuts of the steps across the grain of the material, rotating chipping-disks in the path of the material beyond said saws operating to chip out the material between the side cuts to produce the steps, and a printing-cylinder beyond the said chipping-disks and operating to print upon the material as it passes to the end of the machine, substantially as described.

7. In a step-mitering machine, the combination of intermittent feed mechanism for the material to be step-mitered, a guide for the material, extending crosswise of and over the initial end portion of said feed mechanism, through which the material is advanced laterally into the machine, trip mechanism at said guide in the path of said material, means for depressing said material and transferring it from said guide to the feed mechanism, means for starting the feed mechanism and transferring mechanism actuated by the trip mechanism through contact with the latter of the said material, and rotating step-mitering disks in the path of the material as it is fed by said feed mechanism, substantially as described.

8. In a machine for step-mitering a box-blank, which consists of a sheet reinforced on one side with cleats, means for advancing the blanks through the machine comprising movable endless chains and feed-blocks on the chains adapted to engage the cleats and form a bed with which the sheet rests in contact, and rotating step-mitering disks in the path of the material, substantially as described.

9. In a machine for step-mitering box-blanks, the combination with the rotating shafts carrying the step-mitering disks, of shafts E E' normally stationary, sprocket-wheels on said shafts, feed-chains on said sprocket-wheels, provided with means for engaging and moving the blanks across the step-mitering disks, rotating means for the shafts E E', normally out of engagement therewith, a guide, through which the blanks are advanced into the machine from one side thereof, extending crosswise of and over one end of said feed-chains, means for depressing and transferring the blanks from the guide to the feed-chains, clutch mechanism operating to produce engagement between said shafts and their rotating means, and trip mechanism at said guide in the path of the blanks operatively connected with said transferring and clutch mechanisms, substantially as and for the purpose set forth.

10. The combination of the upsetting-guides *r*, traveling feed F, blank engaging and depressing fingers D^{10} and trip mechanism in the path of the blanks as they are advanced into the machine operatively connected with said guides and fingers, substantially as and for the purpose set forth.

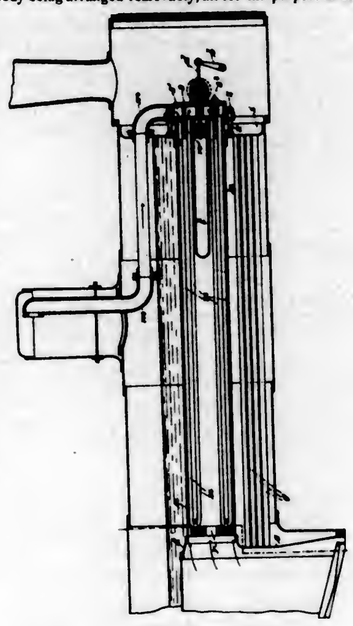
11. In a machine for step-mitering box-blanks provided with cleats on one side and reinforcing-wires on the opposite side having projecting ends, the combination with the guide through which the blanks are advanced into the machine, of a wire-end engager on the guide operating to engage and turn back the projecting ends of the wires, substantially as and for the purpose set forth.

609,631. STEAM GENERATOR AND SUPERHEATER. WILHELM SCHMIDT, Ballenstädt, Germany. Filed Mar. 30, 1897. Serial No. 629,982. (No model.) Patented in France Nov. 10, 1896, No. 261,143; in Switzerland Dec. 21, 1896, No. 13,645; in Hungary Dec. 24, 1896, No. 3,533; in Austria Feb. 14, 1897, No. 47/488; in Norway Mar. 11, 1897, No. 5,840; in Belgium Mar. 15, 1897, No. 126,958, and in Italy Mar. 31, 1897, No. 277, LXXXVI.

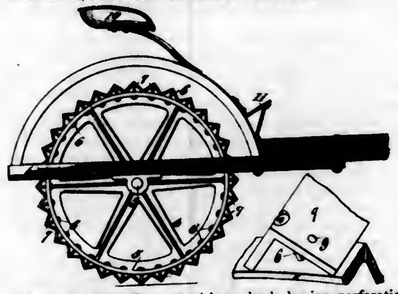
Claim.—1. In a steam-generator, the combination with the heating-tubes proper, of a heating-tube of larger diameter, superheating-tubes arranged in two concentrical groops, within said wider tube parallelly to the longitudinal axis of the latter, a chamber connecting the ends of the tubes admitting the steam to be superheated, another chamber connecting the outlet ends of the tubes, which conduct the superheated steam away, and means for regulating the flow of furnace-gases through said wider tube, substantially as and for the purpose set forth.

2. In a steam-generator, the combination with the heating-tubes of the same, of a heating-tube of a larger diameter, superheating-tubes, arranged concentrically within said wider tube parallelly to the longitudinal axis of the latter, a longish body arranged centrally among said superheating-tubes, and adapted to deflect the furnace-gases to said tubes, and means for regulating the flow of furnace-gases through said wider tube, for the purpose set forth.

3. In a steam-generator, the combination with the heating-tubes proper of the same, of a heating-tube of a larger diameter, U-shaped superheating-tubes arranged radially within said wider tube, and extending parallelly to the longitudinal axis of the latter, whereby the inlet and outlet ends enter separate central divisions of a container common to both, a longish body arranged centrally among said heating-tubes and adapted to deflect the furnace-gases to said tubes, the said body being arranged removably, all for the purpose as set forth.

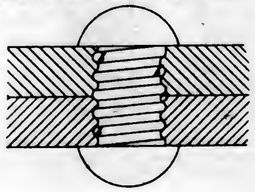


609,632. LAND-ROLLER. FRANK SCHOSHOFF, Uniontown, Mo. Filed Jan. 20, 1898. Serial No. 667,206. (No model.)



Claim.—A land-roller comprising wheels having perforations, angle-iron bars having holes in the flanges and at the apex of the bars, bolts whereby the bars are secured to the wheels to provide a skeleton cylinder, an axle mounted in the wheels, and a frame mounted on the axle; substantially as described.

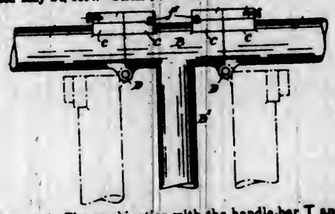
609,633. METHOD OF RIVETING. LEBRECHT STEINMÜLLER, Gummersbach, Germany. Filed Dec. 18, 1897. Serial No. 662,467. (No model.) Patented in Germany Feb. 24, 1897, No. 95,393; in France June 16, 1897, No. 267,941, and in Belgium June 21, 1897, No. 128,968.



Claim.—1. The herein-described method of riveting, consisting in forming holes in the parts to be united, the walls of each hole intermediate the edges in each part being provided with recesses or the like, inserting a hot rivet therein, and then upsetting the rivet, thus forming the head thereupon and expanding the body portion into the recesses in each plate, substantially as shown.

2. The herein-described method of riveting, consisting in forming holes in the parts to be united, the walls of each hole intermediate the edges in each part being provided with screw-threads or the like, inserting a hot rivet therein, and then upsetting the rivet, thus forming the head thereupon and expanding the body portion into the recesses in each plate, substantially as shown.

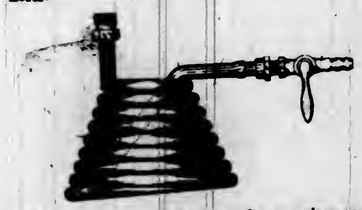
609,634. BICYCLE. WILLIAM J. TANNER, London, England. Filed May 24, 1897. Serial No. 637,881. (No model.)



Claim.—1. The combination with the handle-bar T and the end sections, of divided tubular clips and means for securing the clips to the handle-bar sections, a hinge for connecting the clips, locking-blocks upon the clips, a stirrup pivoted near one end to one of the locking-blocks and closing down and holding the other locking-block for rigidly connecting the parts together, substantially as set forth.

2. The combination with the handle-bar T and the end sections, of divided tubular clips and means for securing the clips to the handle-bar sections, a hinge for connecting the clips, locking-blocks upon the clips, a stirrup pivoted near one end to one of the locking-blocks and closing down and holding the other locking-block for rigidly connecting the parts together, and a cross-bar between the sides of the stirrup and near the pivot thereof passing into a groove in one of the locking-blocks, substantially as set forth.

609,635. BEER OR ALE PIPE CLEANER. MICHAEL TEEHAN, New York, N. Y. Filed Nov. 21, 1896. Serial No. 612,941. (No model.)



Claim.—1. As a new article of manufacture, a beer or ale pipe cleaner made of tubing wound in coil form and having one end turned upwardly from its top and its other end turned upwardly from its bottom and extended through the coil, combined with means for the attachment of said coil, substantially as described.

2. A beer or ale pipe cleaner consisting of a coiled, tubular reservoir of substantially constant area of cross-section throughout, adapted to receive and contain a flushing solution and provided with inlet and discharge ends both located at the top of said reservoir, and means for connecting the inlet end of the reservoir substantially with its full opening to the flushing-water supply, substantially as described.

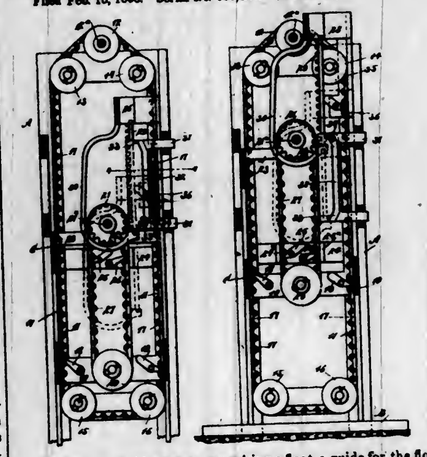
3. A beer or ale pipe cleaner made of tubing wound in coil form and having an upwardly-turned discharge end, and an inlet end turned upwardly from the bottom of the coil and extending through the same, combined with means for the attachment of said coil, substantially as described.

4. In an apparatus for cleaning beer or ale pipes, the combination of a reservoir adapted to be filled with a flushing liquid; said reservoir being formed of a coiled pipe of substantially the diameter of the pipe to be cleaned and having both ends located above its top; a flexible hose connected to a water-supply; and couplings for connecting the ends of the coiled pipe respectively to the hose leading to the water-supply and to the pipe to be cleaned, substantially as described.

609,686. COMPOSITION FOR CLOSING PUNCTURES IN PNEUMATIC TIRES. EDWARD THURLOW, Albert Park, and PERCY H. HENRY, St. Kilda, Victoria, assignors to George John Betts and Frederick Theodore Bewer, St. Kilda, Victoria. Filed May 12, 1898. Serial No. 680,491. (No specimens.)

Claim.—The herein-described elastic viscous composition consisting of melted india-rubber, chalk, meal and glycerin, in about the proportions and for the purpose specified.

609,687. TIDE-MOTOR. SILAS P. TOMKINS, Tilly Foster, N. Y. Filed Feb. 10, 1898. Serial No. 669,827. (No model.)



Claim.—1. A tide-motor, comprising a float, a guide for the float, endless chains, a power-shaft operated by the said endless chains, a double series of pawls carried by the float and engaging the said chains, imparting a continuous movement thereto in one direction during the movement of the tide, an auxiliary driving device for the said chains, and a weight-motor arranged to operate the said auxiliary driving device, the weight-motor acting when the tide for the main motor is inactive, as specified.

2. In a tide-motor, the combination, with a movable float, a guide therefor, endless chains, a power-shaft operated by the said chains, a double series of pawls carried by the float and arranged to operate the said chains, imparting thereto a continuous movement in one direction during both the ebb and the flow of the tide, of an auxiliary weight-motor, comprising auxiliary chains carried by the float structure, dogs carried by the guides for the float and engaging with the auxiliary chains, a weight-receptacle provided with a guide-rack, the rack being in gear connection with the said auxiliary chains, dogs carried by the weight-receptacle and engaging with the main chains, and means, substantially as described, for carrying the rack at intervals out of gear with the said auxiliary chains, as specified.

609,688. LOOM FOR WEAVING TUFTED FABRICS. EUGENE TYNDSON, Yonkers, N. Y., assignor to the Alexander Smith & Sons Carpet Company, same place. Filed May 24, 1897. Serial No. 637,819. (No model.)



Claim.—1. The combination of a tuft-yarn-spool frame having end spool-supports and one or more intermediate spool-supports mounted in the frame on one side of the spool and unsupported on the opposite side of the spool, and a spool formed in sections journaled in said supports and having at their meeting ends opposed bearing-faces to bear against and grip the intermediate supports to prevent bending at the points of juncture of the spool-sections, substantially as described.

2. The combination of a tuft-yarn-spool frame formed of a single bar having end spool-supports and one or more intermediate spool-supports projecting from the bar and unsupported on the opposite

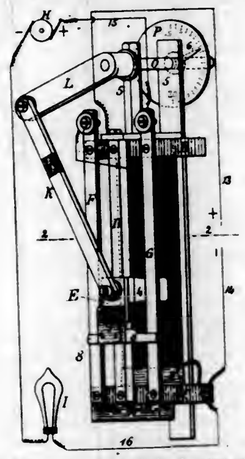
side of the spool from the bar, and a spool formed in sections journaled in said supports and having at their meeting ends opposed bearing-faces to bear against and grip the intermediate supports to prevent the spool bending at the points of juncture of the sections, substantially as described.

3. The combination of a tuft-yarn-spool frame having end spool-supports and one or more intermediate spool-supports, and a spool formed in sections journaled in said supports and having their meeting ends formed to bear against opposite sides of the intermediate supports and each pair of meeting ends being provided, one with a central socket and a collar around said socket forming a bearing for the spool-section in the support, and the other with a pin entering said socket, substantially as described.

4. The combination of the bar 10 having end supports 12 and one or more intermediate supports 15, and the spool A formed in sections *a* journaled in said supports and having flanges 2 bearing against the intermediate supports 15, substantially as described.

5. The combination of the bar 10 having end supports 12 and one or more intermediate supports 15, and the spool A formed in sections *a* journaled in said supports and having their meeting ends provided with flanges 2 to bear against opposite sides of the intermediate supports and provided with a pin 3 and with a socket 4 and collar 5, respectively, substantially as described.

609,689. **ELECTROMEDICAL APPARATUS.** REINHOLD H. WAPPLER, New York, N. Y. Filed Nov. 2, 1897. Serial No. 657,163. (No model.)



Claim.—1. The combination with the rheostat-coil, the slider and contact and a crank and connecting-rod for moving the slider, of a dial and hand by which to indicate the action of the rheostat in the electric circuit, there being insulating material upon which the sliding contacts rest when the current is turned off, substantially as set forth.

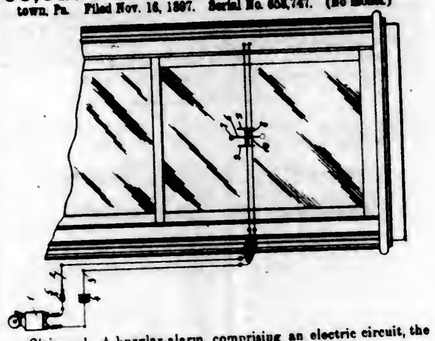
2. The combination with the rheostat-coil and a slider, of a bar for supporting such slider, an insulated contact carried by and moving with the slider and a bar over which the contact is moved by the slider, such bar having an insulating-surface for acting with the contact to break the circuit, substantially as set forth.

3. The combination with the rheostat-coil, of two sliders, a shaft, cranks and connections for moving the sliders in opposite directions, a hand upon the crank-shaft and a dial for indicating the action of the rheostat in the electric circuit, substantially as set forth.

4. The combination with the rheostat-coil, of two sliders and cranks and connections for giving motion to the sliders in opposite directions, an insulated contact carried by one of the sliders and a bar included in the electric circuit and having an insulated surface near the center of the bar for breaking the circuit at the time the sliders in contact with the rheostat are near each other, substantially as set forth.

5. The combination with a rheostat-coil and a source of electric energy, of two sliders, means for moving them in opposite directions, a motor with a field in a derived or shunt circuit from the rheostat, and the armature of the motor in the main circuit, an insulated contact connected with and moved by one of the sliders, bars with which the contact engages, such bars being in the main circuit and having insulated surfaces near their middle portions for interrupting the current substantially as specified, so that the current can be turned on or off, or the motor rotated in either one direction or the other, and the speed thereof regulated according to the resistance thrown into the circuit by the rheostat-coil, substantially as set forth.

609,640. **BURGLAR-ALARM.** DANIEL L. WARTENLUFT, Kutztown, Pa. Filed Nov. 16, 1897. Serial No. 658,747. (No model.)

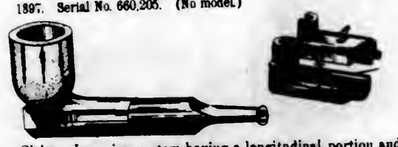


Claim.—1. A burglar-alarm, comprising an electric circuit, the wires of which are extended across a window or the like, an alarm in the circuit, and a circuit-closer mounted to swing on one of the wires and adapted to close the circuit when swung out of its normal engagement with the window or the like, substantially as specified.

2. A burglar-alarm, comprising an electric circuit, the wires of which are extended across a window or the like, an alarm in the circuit, and a circuit-closer consisting of a sleeve surrounding the upper wire, a weighted arm extended from the sleeve, and normally resting against a window-pane or the like, and contact-fingers extended in opposite directions from the sleeve, substantially as specified.

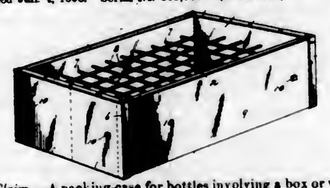
3. A burglar-alarm comprising electric-circuit wires arranged one above the other and a circuit-closer mounted to swing on the upper wire, the said circuit-closer having an arm provided with a weight at its free end and also having fingers adapted to engage with the lower wire, substantially as described.

609,641. **TOBACCO-PIPE.** SAMUEL D. WEBB and ISAAC L. JOHNSON, Washington, D. C.; said Johnson assignor, by mesne assignments, of one-half his right to Martin V. Webb, same place. Filed Nov. 30, 1897. Serial No. 660,205. (No model.)



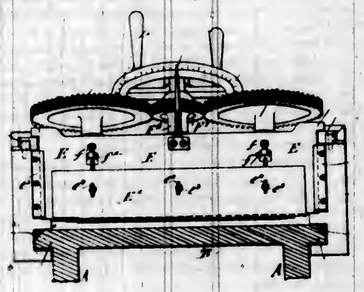
Claim.—In a pipe, a stem having a longitudinal portion and an integral portion projecting vertically from the forward end of the longitudinal portion, the stem being centrally divided into an upper and a lower member, tongues formed on the lower member, and grooves formed in the upper member into which the tongues are adapted to snugly fit in assembling the stem, the tongues on the vertical portion of the stem being inclined from a vertical direction, whereby when the members are assembled, the inclined tongues will have a wedging action in their respective grooves.

609,642. **PACKING-CASE.** JOSEPH P. WENDT, Phœbus, Va. Filed Jan. 4, 1898. Serial No. 665,506. (No model.)



Claim.—A packing-case for bottles involving a box or vessel having perforations or passages through one side and one end, recesses or sockets in the opposite side and end, readily-removable rungs or rods, and cover-plates detachably connected with the perforated side and end, substantially as described.

609,648. **MACHINE FOR SHAVING ELECTROTYPES, STEREOTYPES, &c.** FERDINAND WEBEL, New York, N. Y. Filed Nov. 5, 1897. Serial No. 657,469. (No model.)



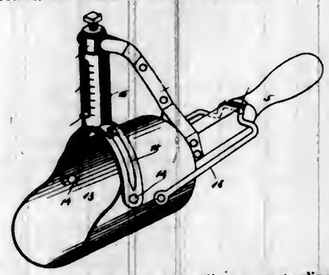
Claim.—1. In a stereotype-shaving machine, the combination, with the support, of a knife-head guided on the same, a knife on said knife-head, adjustable gages on said support adapted to arrest the knife-head in its downward motion, and means for moving said knife-head along the support until arrested by the gages, substantially as set forth.

2. In a stereotype-shaving machine, the combination, with the support, of a knife-head guided on the same, pivoted gages on said support, said gages being provided with lugs of different sizes, a knife supported on the face of the knife-head, stop lugs at the ends of the knife-head, and means for raising or lowering the knife-head until the same is arrested by contact with the stop-lugs of the gages, substantially as set forth.

3. In a stereotype-shaving machine, the combination of a reciprocating support, a knife-head guided on said support, a knife on said knife-head, and a yielding roller located back of the knife and below the edge of the same, substantially as set forth.

4. In a stereotype-shaving machine, the combination, with a reciprocating support, a knife-head supported on said support, a knife attached to said knife-head, a spring-pressed roller located back of the knife-head and below the edge of the same, guide-boxes for the shanks of the roller-bearings, and screw-spindles for adjusting said shanks so as to adjust the roller to the required position relatively to the edge of the shaving-knife, substantially as set forth.

609,644. **WEIGHING-SCOOP.** AUGUSTUS A. WEST, Gilman, Ill. Filed Dec. 21, 1897. Serial No. 662,873. (No model.)



Claim.—1. The combination of a handle, an arm standing thereon, a tube pivoted to the arm, a block held in the upper portion of the tube, a screw adjustable in said block, a spring attached to the screw, a yoke to which the spring is also attached, a tube attached to the yoke and slidably receiving the first-named tube, a scoop-body pivotally mounted in the yoke, and a lock-bar pivoted to the scoop-body and capable of engaging with the handle.

2. The combination of a handle, an arm standing thereon, a tube mounted to swing from the arm, a spring connected with the tube, a yoke to which the spring is also connected, a tube fixed to the yoke and slidably receiving the first-named tube, a scoop-body to which the yoke is pivoted, and a lock-bar pivoted to the body portion and engaging the handle.

3. The combination of a handle having a notch, a body portion, a weighing device supporting the body portion on the handle, and a U-shaped lock-bar, the ends of which are pivoted to the body portion and the intermediate portion of which is provided with an offset capable of removably seating in a recess in the handle.

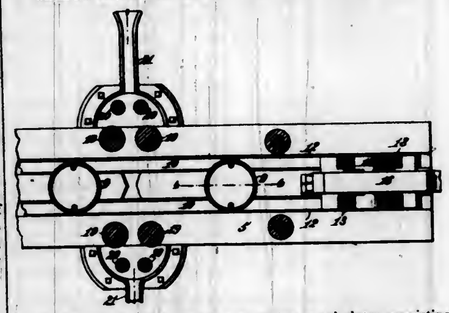
4. The combination of a handle, an arm standing thereon, a tube hung from the arm, a screw supported on the upper portion of the tube, a spring attached to the screw and adjusted thereby, a yoke to which the spring is also connected, a tube attached rigidly to the yoke and slidably receiving the first-named tube, a scoop body portion pivotally connected with the yoke, and a lock-bar capable of removably holding the body portion in rigid connection with the handle.

5. The combination of a handle, an arm standing thereon, a tube hung from the arm, a screw held adjustable in the upper portion of the tube, a spring attached to the screw, a yoke to which the spring is also connected, a tube rigidly attached to the yoke and slidably receiving the first-named tube, and a scoop body portion to which the yoke is connected.

6. The combination of a handle, an arm standing thereon, a weighing device suspended from the arm, a scoop carried by the weighing device, and a lock-bar pivoted to the scoop and capable of removable engagement with the handle to hold the scoop firmly engaged with the handle or to permit the free movement of the scoop.

7. The combination of a handle, an arm standing thereon, a weighing device hung from the arm, a scoop carried by the weighing device, and a U-shaped lock-bar straddling the scoop and pivoted thereto and engaging the handle at the intermediate portion of the lock-bar, the lock-bar being capable of removably holding the scoop rigidly with the handle.

609,645. **MACHINE FOR SEPARATING PACKS OF TIN PLATES.** FELIX WESTWOOD, Wheeling, W. Va. Filed Feb. 24, 1898. Serial No. 671,533. (No model.)



Claim.—1. An apparatus for separating metal plates, consisting of oppositely-arranged pairs of abutments for the end portions of the plates, reciprocatory pillars acting on the plates between said abutments, and means for reciprocating said pillars, substantially as and for the purposes described.

2. An apparatus for separating metal plates, consisting of oppositely-arranged abutments for the ends of the plates, reciprocatory guided bars moving between the oppositely-arranged abutments, pillars carried by said reciprocatory bars to act upon the plates between said opposite abutments, and means for operating said bars, substantially as and for the purposes described.

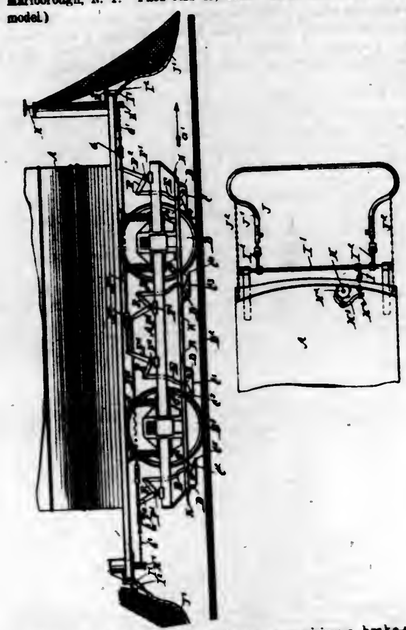
3. An apparatus for separating metal plates, consisting of abutments for the end portions of the plates, reciprocatory pillars acting on the plates between said abutments, and a spring-yielding pitman for reciprocating said pillars, substantially as and for the purposes described.

4. An apparatus for separating metal plates, consisting of oppositely-arranged abutments for the ends of the plates, reciprocatory, guided bars moving between the oppositely-arranged abutments, pillars carried by said reciprocatory bars to act upon the plates between said opposite abutments, and a spring-yielding pitman connected with the reciprocatory bars for operating the same, substantially as and for the purposes described.

5. An apparatus for separating metal plates, consisting of a bed-plate or foundation, pairs of roller-abutments located at opposite sides of the bed-plate or foundation, reciprocatory, guided bars moving between the oppositely-arranged roller-abutments, pillars carried by said bars to act upon the metal plates between the opposite roller-abutments, and means for reciprocating the bars, substantially as and for the purposes described.

6. An apparatus for separating metal plates, consisting of a bed-plate or foundation, pairs of roller-abutments located at opposite sides of the bed-plate or foundation, reciprocatory, guided bars moving between the oppositely-arranged roller-abutments, pillars carried by said bars to act upon the metal plates between the opposite roller-abutments, and a spring-yielding pitman for reciprocating said bars, substantially as and for the purposes described.

609,646. CAR BRAKE AND FENDER. OLIVER B. WHITNEY, Marlborough, N. Y. Filed Jan. 12, 1898. Serial No. 666,456. (No model.)

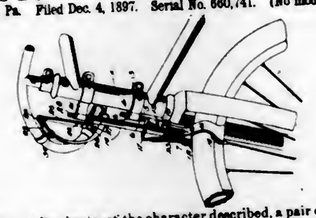


Claim.—1. A car brake and fender, comprising a brake-shoe adapted to pass between a rail and a wheel, a brake-staff connected with the said shoe, for holding the latter normally in an inactive raised position, and a car-fender connected with the said brake-staff, for releasing the same automatically and applying the brakes when an obstruction passes into the fender, substantially as shown and described.

2. A car brake and fender, comprising a brake-shoe adapted to pass between a rail and a wheel, a link for carrying the shoe normally in the path of and out of contact with the wheel, a brake-staff having connection with the said link, a locking device for the said brake-staff, and a fender connecting with the said locking device, to open the latter automatically to release the staff when an obstruction passes into the fender, substantially as shown and described.

3. A car-brake, provided with a shoe adapted to pass between a wheel and a rail, a link for carrying the shoe normally in the path of and out of contact with the wheel, and arranged to allow the shoe to move down into a resting position on the track in advance of the wheel, to allow the latter to run onto the shoe, a spring-arm extending forwardly from the shoe, and fixed stops on the car-frame for holding the shoe in place, one of the stops being adapted to be engaged by the said arm to guide the shoe forward and upward to a normal, inactive position, substantially as shown and described.

609,647. BICYCLE-BRAKE. WILLIAM WOLLSHLAEGER, Port Perry, Pa. Filed Dec. 4, 1897. Serial No. 660,741. (No model.)

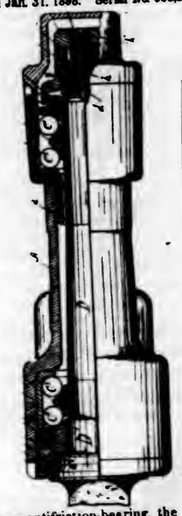


Claim.—1. In a brake of the character described, a pair of brake-shoes adapted to embrace one of the wheel-rims and pivotally supported upon a hanger adjustable toward and away from the wheel-rim, upwardly-diverging extensions or arms on said shoes disposed flatwise in opposition to each other and having longitudinal slots, means for normally holding said shoes apart, a spreader moving substantially parallel to the head-tube of the machine, headed studs on said spreader working in the slotted extensions on the shoes, a spring for elevating said spreader from beneath, and a hand-lever for depressing the spreader, substantially as described.

2. In a brake of the character specified, in combination, a pair of oppositely-curved brake-shoes adapted to contact with a wheel-rim, a vertically-adjustable hanger adapted to be secured to the machine-frame and forming a common pivot for said brake-shoes, slotted extensions on said brake-shoes disposed flatwise in parallel relation, a movable runner, a guide-rod for said runner, a hollow wedge-shaped spreader carried by the runner and operating between said slotted extensions, headed studs on the spreader working in the slots of said extensions, a spring for elevating the runner, and a hand-lever for depressing the runner, substantially as described.

3. In a bicycle-brake, the combination with a guide-rod extending along one side of the head-tube, of a bracket connecting the upper end of said rod to the steering-head a tubular runner slidingly mounted thereon, a wedge-shaped spreader on said runner, a vertically-adjustable hanger pivoted brake-shoes thereon for contacting with each side of the rim of one of the wheels and designed to be operated by said spreader, and means for raising and lowering said runner, substantially as described.

609,648. ANTIFRICTION-BEARING. WALTER C. BAKER, Cleveland, Ohio. Filed Jan. 31, 1898. Serial No. 668,595. (No model.)



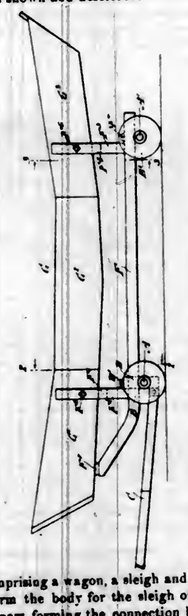
Claim.—1. In an antifriction-bearing, the combination with an axle or spindle having a slit at its end, adjustable bearing-cones, antifriction-balls, and an outer casing, of an adjusting-nut threaded to engage the threaded end of the axle or spindle, and having a flange bearing against one of the cones, and a head internally recessed, and provided with a central threaded opening, and a screw passing through the opening in the head of the nut, and provided at its inner end with a wedge adapted to enter the slit in the spindle.

2. In an antifriction-bearing, the combination with an axle or spindle having a slit and a conical recess at its end, adjustable bearing-cones, antifriction-balls, and an outer casing, of an adjusting-nut threaded to engage the threaded end of the spindle, and having an annular flange bearing against the adjacent bearing-cone and a head internally recessed, and provided with a central threaded opening, and a screw passing through the opening in the head of the nut and provided at its inner end with a wedge fitting the conical recess in the end of the spindle.

3. In an antifriction-bearing, the combination with the spindle threaded at its outer end, and slitted and recessed, of adjustable cones and antifriction-balls, an adjusting-nut provided with an annular flange bearing against the outer cone, and having an internally-recessed head, provided with an internally-threaded opening, and a screw engaging the threads of the threaded opening and having a wedge at its inner end entering the recess at the end of the spindle, said wedge-screw being adjustable and removable independently of the nut.

609,649. COMBINED WAGON, SLEIGH, AND BOAT. CHARLES BALTRUWEIT, New York, N. Y. Filed Apr. 8, 1898. Serial No. 676,884. (No model.)

Claim.—1. A vehicle, comprising a wagon, a sleigh and a boat, the latter being arranged to form the body for the sleigh and the wagon, substantially as shown and described.



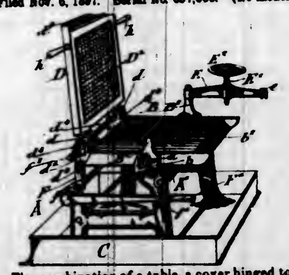
2. A vehicle, comprising a wagon, a sleigh and a boat, the latter being arranged to form the body for the sleigh or the wagon, said sleigh having its runners forming the connection between the front and rear axles of the wagon, substantially as shown and described.

3. A vehicle, comprising a front and a rear axle, a bolster connected by a king-bolt with the front axle, sleigh-runners secured to the said bolster and rear axle, and a boat removably carried by said runners, substantially as shown and described.

4. A vehicle, comprising a front and a rear axle, a bolster connected by a king-bolt with the front axle, sleigh-runners secured to the said bolster and rear axle, a boat removably carried by said runners, and a pair of posts on the said runners, the posts of each pair being connected with each other by a cross-beam to form supports for the said boat, substantially as shown and described.

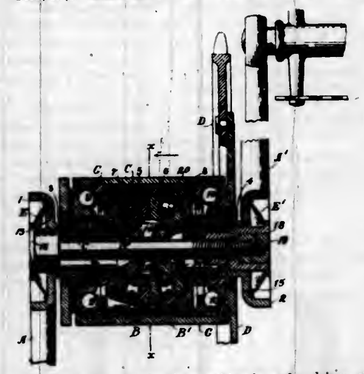
5. A vehicle provided with a sectional boat, a propeller-wheel made in knockdown sections, a frame adapted to be secured to the rear end of the boat and in which said wheel is journaled, and a hand-actuated driving mechanism for the said wheel, substantially as shown and described.

609,650. MAKE-READY PRESS. FRANK W. BAUM, Springfield, Mass., assignor to the F. Wesel Manufacturing Company, New York, N. Y. Filed Nov. 6, 1897. Serial No. 657,660. (No model.)



Claim.—The combination of a table, a cover hinged to said table, a hurdy-gurdy plate fixed to the inner face of the cover and provided with a multiplicity of teats on its exposed face, means for pressing the cover toward the table whereby the teats on the hurdy-gurdy plate are pressed against the electroplate, and means for sustaining the table, cover, and hurdy-gurdy plate and electroplate in upright position, so that cooling-water can be caused to flow downwardly between the teats of the hurdy-gurdy plate and along the adjacent surface of the electroplate, substantially as set forth.

609,651. BACK-PEDALING BRAKE. GERARD BEEKMAN, New York, N. Y. Filed Aug. 31, 1897. Serial No. 650,108. (No model.)



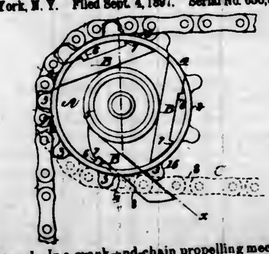
Claim.—1. In a cycle, the combination of a driven element a driving element consisting of two members, having a limited relative longitudinal and rotary movement, cooperating friction-faces upon the driven element and the two relatively movable members of the driving element, and two independent positive clutches comprising two sets or groups of rollers or balls arranged in seats between the friction-clutch faces, one set or group being arranged between each member of the driving element and the driven element, substantially as set forth.

2. In a cycle, the combination of a driven element, a driving element consisting of two members, having a limited relative longitudinal and rotary movement, cooperating inclined friction-faces upon the driven element and the two members of the driving element, and two independent positive clutches comprising two sets or groups of rollers or balls arranged in seats between the friction-clutch faces, which seats are inclined with reference to the axis of rotation, and one set or group being arranged between each member of the driving element and the driven element, substantially as set forth.

3. In a cycle, the combination of a driven element, a driving element consisting of two members, which have a limited relative movement, cooperating inclined friction-faces upon the driven element and the two members of the driving element which are thrown into engagement by the relative movement of the two members of the driving element, and two independent clutches comprising two sets or groups of rollers or balls arranged in seats between the friction-clutch faces, which seats are inclined with reference to the axis of rotation, and one set or group being arranged between each member of the driving element and the driven element, substantially as set forth.

4. In a cycle, the combination with a friction-clutch having its members respectively connected with the driving and driven elements, of rotary pedal-cranks having a limited relative movement to actuate said clutch, a tie-bolt or axis and a spring confined upon the axis and tending to maintain said cranks normally in opposite relation, a bearing-cone sliding on the axis and engaged by the spring, and rolling bearings between the bearing-cone and a bearing on one of the crank-hubs to receive the pressure of said spring and relieve the cranks from friction in their said relative movement, substantially as set forth.

609,652. SAFETY DEVICE FOR BICYCLES. GERARD BEEKMAN, New York, N. Y. Filed Sept. 4, 1897. Serial No. 650,630. (No model.)



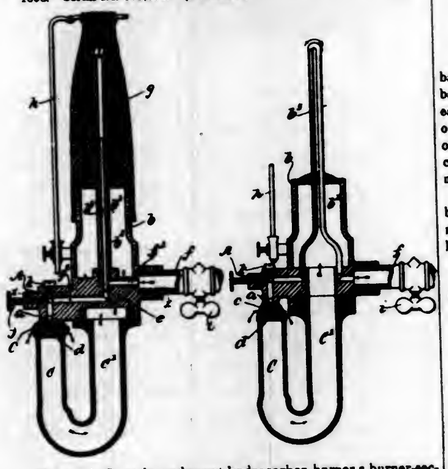
Claim.—1. In a crank-and-chain propelling mechanism, the combination with the driven sprocket-wheel, of latches arranged on said wheel so that they are retained by the chain, and adapted when the

chain leaves its normal position on said wheel, to become projected, and a suitable stop device located to engage said latches and arrest said wheel when the latches or any of them are projected.

2. In a crank-and-chain propelling mechanism, the combination with the driven sprocket-wheel, of gravity-latches arranged on said wheel so as to be retained by the drive-chain and to gravitate into a projected position when the chain leaves its normal position, and a suitable stop to engage said latches when projected.

3. The combination with a chain-driven sprocket-wheel of tangential gravity slides or latches arranged on said wheel at angles so adapted that they are retained by gravity upon the uncovered part of the wheel and retained by the chain at a covered portion of the wheel, but released by gravity at said portion when the chain leaves its normal position, and a suitable stop device for engaging said latches.

609,653. HYDROCARBON INCANDESCENT BURNER. ROBERT BIDDLE, Jr., and EDWARD J. FROST, Philadelphia, Pa. Filed Mar. 8, 1898. Serial No. 673,090. (No model.)



Claim.—1. In an incandescent hydrocarbon-burner a burner-section having a chamber therein, a main body portion, a tubular vaporizer and a return gas-tube provided vertically and centrally within a mantle, an inverted injector provided in the main body portion substantially centrally in the length of the combined burner, an air-inlet port and a depending enlarged mixing-chamber connecting the said inverted injector and the air-inlet port with the chamber in the burner-section, substantially as described.

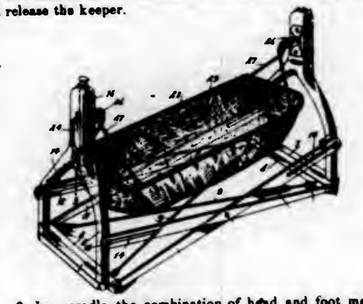
2. In an incandescent hydrocarbon-burner, a main body portion, a burner-section provided thereon, a tubular vaporizer and return gas-tube provided vertically and centrally within the mantle, an inverted injector provided in the main body portion near the burner-section, an air-inlet port and a depending mixing-chamber connecting the said inverted injector and air-inlet port with the burner-section, substantially as described.

3. In an incandescent hydrocarbon-burner, a main body portion, a cylindrical burner-section provided thereon, a mantle, an elongated tubular vaporizer and return gas-tube provided vertically and centrally within the mantle, an inverted injector provided in the main body portion substantially centrally in the length of the combined burner, an air-inlet port, and a depending U-shaped mixing-chamber connecting the said inverted injector and air-inlet port with a chamber in the burner-section, substantially as described.

609,654. CRADLE. RALPH BIRD, Jersey City, N. J. Filed Apr. 9, 1898. Serial No. 677,063. (No model.)

Claim.—1. In a cradle, the combination of head and foot arches, a base-rail on which each arch stands, a bar hinged to each base-rail and running parallel therewith, brace-rods joining the bars to each other, additional braces fixed to the bars and having sliding connection with the respective head and foot arches, an extension-standard carried by each arch, a keeper attached to each arch and projecting into proximity with the standard thereof, a bolt carried by each standard and removably engaging the keeper thereof, a sling pivotally attached to each extension-standard, and a cradle proper hung from the slings.

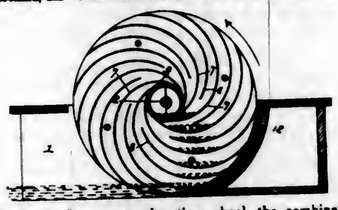
2. In a folding cradle, the combination of an arch forming a supporting member, a keeper attached rigidly to the outer side of the arch and extending upward and inward therefrom, an extension-standard pivotally mounted at the upper portion of the arch and having a cavity capable of receiving a portion of the keeper, and a sliding bolt carried in the extension-standard and movable to engage and release the keeper.



3. In a cradle, the combination of head and foot members, a base-rail on which each member is mounted, a bar hinged to each base-rail and extending parallel therewith, two braces attached to each bar, the braces having slotted ends, two pins carried by each of said head and foot members and respectively fitting into the slots of the braces, and two dog-plates mounted on two of the braces and capable of engaging the adjacent pins so as to hold the head and foot members in perpendicular position.

4. In a folding cradle, the combination of head and foot members adapted to support the cradle, a bar with which each of said members is hingedly connected, and braces attached to the bars and having sliding connection with said head and foot members.

609,655. LIQUID-ELEVATING WHEEL. BENJAMIN S. BIRDSALL, Raceland, La. Filed Jan. 29, 1898. Serial No. 668,407. (No model.)



Claim.—1. In a water-elevating wheel, the combination of a support, the horizontal shaft journaled thereon, a wheel carried by said shaft, said shaft extending centrally through the wheel and rigidly attached to the same, one side of the wheel being open, a series of water-passages extending from the periphery of the wheel to near the center thereof, and curving outward in the direction of rotation and a stationary discharge-tube supported centrally within the wheel and extending outward through the open side thereof, said tube being provided with an opening extending longitudinally of it and coincidentally with the discharge ends of the water-passages, the closed portion of the tube closing the passages not discharging as and for the purposes set forth.

2. The combination of a support, a water-wheel comprising side disks and intermediate partitions, these partitions curving outward in the direction of rotation and forming water-scoops, a shaft journaled on the support and extending centrally through the wheel and rigidly attached thereto at one side, a stationary central tube inclosing the shaft and supported at its inner end on the shaft and at its outer end upon the support at a point outside of the wheel, this discharge-tube being provided with an opening running longitudinally of it to receive the water from the scoops.

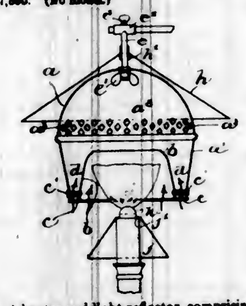
3. In a rotary water-elevator, the combination of a support, a shaft, a water-wheel carried by said shaft, said wheel being provided with main curved scoops or wings extending from its periphery to near its center, a stationary discharge-tube supported within the wheel and provided with an opening to receive the water from the scoops, said tube extending out through the side of the wheel and being suitably supported, and a series of curved supplemental wings interposed between the aforesaid scoops or wings and extending from the periphery of the wheel to a point short of the discharge ends of the main scoops, as and for the purposes set forth.

4. In a rotary water-elevator, the combination of a support, a shaft, a wheel carried by said shaft, said wheel being formed with wings which act as water-scoops, a stationary discharge-tube at the center of said wheel, the inner ends of said wings terminating close to the exterior surface thereof, said tube being open on one side to receive the water from the scoops and closed on the other side to prevent it returning to the scoops which have not yet reached a position to discharge their contents, substantially as described.

5. In a rotary water-elevator, the combination of a support, a shaft, a wheel carried by said shaft, said wheel being formed with wings which act as water-scoops, a stationary discharge-tube at the center of said wheel, the outer end of said tube extending through a flanged opening at one side of the wheel, said projecting end being notched at 15 to receive a beam of the support, a tube 11 apertured for the passage of said beam, and having its inner end embracing the flanged opening in the wheel and its outer end extending beyond the beam and beyond the outer end of the central discharge-tube, substantially as described.

6. In a rotary water-elevator, the combination of a support, a shaft journaled thereon, a wheel carried by said shaft and rigidly attached thereto, a central opening being formed at one side of the wheel, this opening being provided with an outward-projecting flange, a series of water-passages extending from the periphery of the wheel to near its center, a stationary discharge-tube supported upon the shaft centrally within the wheel and extending outward through the opening in the side thereof, a support for the tube beyond the wheel, and a stationary tube 11 inclosing the outer end of said central tube and embracing and supporting the outward-extending flange on the wheel, as and for the purposes set forth.

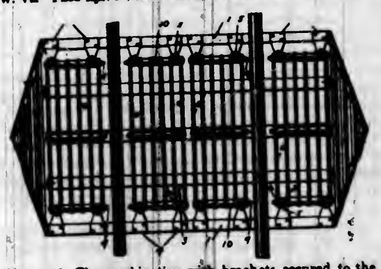
609,656. HEATING AND ILLUMINATING ATTACHMENT FOR GAS-BURNERS. HARRY A. BOWER, Chelsea, Mass., assignor to Wendell P. Lee and William H. Brose, Boston, Mass. Filed Jan. 4, 1897. Serial No. 617,886. (No model.)



Claim.—1. A heater and light-reflector, comprising a casing, and a light-reflecting band secured in said casing and being of a smaller cross-diameter than said casing, whereby there is an annular space between them, and means for permitting the circulation of air through said space.

2. A heater and light-reflector, comprising a dome-shaped casing closed at the upper end and having a series of apertures in its sides, a frusto-conical light-reflecting band, within said casing, and means for securing said band in said casing so as to leave an annular space between them.

609,657. CATTLE-GUARD. JOSEPH W. BRIGHTWELL, Milton, W. Va. Filed Apr. 17, 1897. Serial No. 632,578. (No model.)



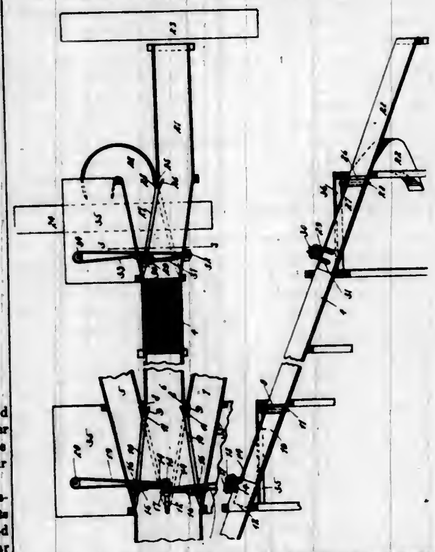
Claim.—1. The combination with brackets secured to the ties or other stationary part, and having hooked outer ends, of swinging guards, eyes carried thereby, and links pivotally connecting said eyes and brackets, as and for the purpose set forth.

2. The combination of brackets secured at one end to the ties, hooks formed in the opposite ends, guards composed of blades or strips secured together, the same being retained the proper distance apart, and links pivoted to said guards and attached to the hooked ends of the bracket, substantially as described.

3. The combination of the stationary guards secured in either side of the track and extending longitudinally of the same, hooked brackets secured at one end to the ties adjacent the ends of the stationary guards, movable guards comprising blades or strips secured together by bolts, collars upon said bolts for holding the strips the required distance apart, eyes carried by the collars upon opposite ends, and links pivoted at one end to the eyes and at the opposite ends to the brackets, substantially as described.

4. The combination of stationary guards secured upon opposite sides of the track and extending longitudinally of the same, said guards diverging from the track at their upper ends, brackets secured at one end to the ties adjacent the ends of the stationary guards, said brackets extending upwardly and inclined toward each other, hooks formed in the extremities of said brackets, detachable guards comprising blades suitably secured together and properly spaced, and links pivoted to the ends of said detachable guards and adapted to be attached to the hooks of said brackets, whereby said guards may be attached or detached from the brackets, substantially as described.

609,658. COAL-CHUTE. JAMES S. CREW, What Cheer, Iowa. Filed Apr. 16, 1898. Serial No. 677,814. (No model.)



Claim.—1. A coal-chute having two branches, a post mounted at the meeting walls of said branches, and a deflector having a jaw loosely embracing the post, the deflector being mounted to swing on the chute to command each branch thereof, and the jaw serving to shed the coal past the post.

2. A coal-chute having two branches, two walls of which meet to form a point, and a deflector mounted to swing at said point to command the branches, the deflector having a jaw loosely embracing the said point of the walls so as to shed the coal past the same.

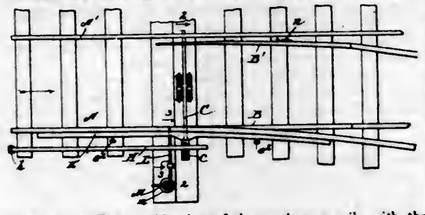
3. A coal-chute having a deflector, a frame attached rigidly thereto, a roller carried by the frame, a guide-rail run across the chute and having the roller engaged therewith to guide the deflector, a pulley mounted on the chute, and a rope in connection with the frame and rove around the pulley whereby to impart movement to the deflector.

4. A coal-chute having three branches, two deflectors mounted to swing on the chute to command said branches, a head-block engaged by the free ends of the deflectors, two guide-rails projecting respectively in opposite directions from the head-block and across the chute, a roller carried by each deflector, the rollers running respectively on the guide-rails, and means for swinging the deflectors.

5. A coal-chute having three branches, two deflectors mounted to swing on the chute to command said branches, a frame carried by each deflector, a roller mounted in each frame, a head-block mounted on the chute and engaged by the rollers, guide-rails attached to the head-block and respectively projecting laterally beyond the same,

the said rollers running on the guide-rails, two pulleys mounted on the head-block, and ropes attached respectively to the deflectors and respectively rove around the pulleys of the head-block.

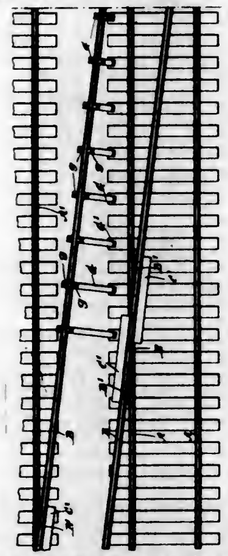
609,659. **RAILWAY-SWITCH.** HANS CHRISTENSON, Crystal Falls, Mich. Filed Dec. 20, 1897. Serial No. 662,553. (No model.)



Claim.—1. The combination of the stationary rails, with the switch-rails movably secured, a transverse operating-bar uniting the switch-rails and having at one of its ends a slot, springs located about the middle of said bar to retract the same, an arm secured to one of the switch-rails and extending through an opening in one of the stationary rails and carrying a catch, the rail E, pivotally secured alongside one of the stationary rails and having in its inner portion a recess to engage said catch, and means to shift the operating-bar, switch-rails, and said arm, substantially as described.

2. The combination of the stationary rails, with the switch-rails movably secured, a transverse operating-bar uniting the switch-rails and having at one of its ends a slot, springs located about the middle of said bar to retract the same, an arm secured to one of the switch-rails and extending through an opening in one of the stationary rails and carrying a catch the rail E, pivotally secured alongside one of the stationary rails and having in its inner portion a recess to engage said catch, the upright piece D, located in the slot of the operating-bar, a piece resting on said upright piece, and means to force said pieces downwardly, substantially as described.

609,660. **EMERGENCY-CROSSOVER.** FRANK R. COATES, Stamford, Conn., and ORRY M. SHEPARD, New York, N. Y. Filed Jan. 5, 1898. Serial No. 665,621. (No model.)



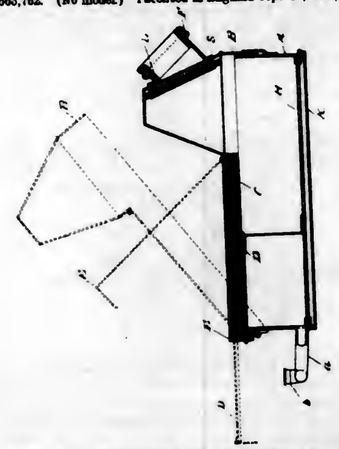
Claim.—1. An emergency-crossover, having one of the point-rails formed of a T-rail having the web and base cut away at one end at an angle so as to fit against the side of the track-rail, and the head extending over the head of the track-rail and beveled to form an incline for raising the wheels so their flanges will clear the track-rail, and a plate fixed to the bottom of said point-rail and extended in the direction of its length and adapted to rest upon the tie and support the point-rail at the proper elevation.

2. An emergency-crossover, having a removable section where the temporary rails cross the permanent track, consisting of a short section of T-rail having the base and web removed so as to fit over the track-rail at the proper angle, and short fish-plates connecting the removable section with the adjoining track-sections, such fish-plates having slots of a length to accommodate a bolt in each rail-section.

3. An emergency-crossover, comprising two base-plates adapted to fit against the rail of the permanent track and to support the temporary rails in a raised position, said plates having a series of spike-holes therein and a short section of rail secured to each in the line of the temporary track, and a removable rail-section adapted to connect said rail-sections and carry the wheels over the permanent track, consisting of a short section of T-rail adapted to connect the sections which are mounted upon the plates and having its base and web cut away to form a diagonal groove adapted to receive the head of the permanent rail, and means for securing said removable rail to the aforesaid short section.

4. The improvement herein described, comprising the main track and its ties, the crossover fitted over the same at an angle, the temporary rails extending at an angle to the main track, and the bearing-plates connected at one end to the temporary rails and extended laterally thereto and secured to the ties of the main track, substantially as set forth.

609,661. **PHOTOGRAPHIC DEVELOPING APPARATUS.** ALBERT S. CORNELL, Höchst, Germany. Filed Dec. 27, 1897. Serial No. 663,762. (No model.) Patented in England Sept. 18, 1897, No. 21,482.



Claim.—1. A photographic developing apparatus comprising a tray, a cover therefor having an opening for admitting light, two superposed glass plates of different colors covering said opening, and fitting in sliding shutters and a lid hinged to the cover for screening said plates, substantially as described.

2. A photographic developing apparatus comprising a liquid-tight tray having its bottom composed of a colored-glass plate, an opaque lid hinged to the outside of the tray and adapted to cover said bottom, a cover fitting the upper part of the tray and containing an opening, one or more removable colored-glass screens covering said opening, and an opaque lid hinged to the outside of the cover for covering said screens, substantially as described.

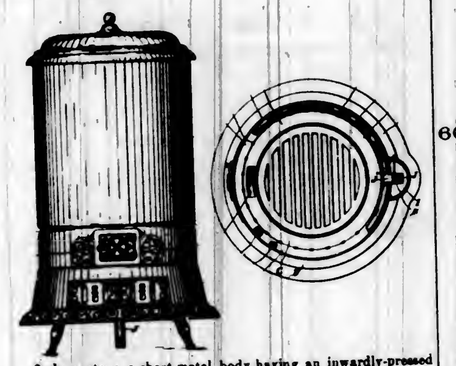
3. In a photographic developing apparatus, the combination with a tray A having a glass bottom H, lid K and pipes *a*, of a cover B hinged to said tray and carrying glass plates C, D, hinged lid E, and a dome provided with eyepieces F, substantially as described.

4. In photographic developing apparatus, the combination with a tray, of a cover therefor having a domed portion, eyepieces on said domed portion, a hinged lid for the other portion, and colored-glass plates inside said eyepieces and under said lid, substantially as described.

5. In a photographic developing apparatus the combination with a glass plate covering the top of it and a hinged lid having a light-reflecting under side substantially as described.

609,662. **HEATING-STOVE.** PETER J. COPPENS, Grand Rapids, Mich. Filed Feb. 10, 1898. Serial No. 669,777. (No model.)

Claim.—1. In a stove, a sheet-metal body having an inwardly-pressed bead, a fire-pot having an outwardly and upwardly inclined flange engaging said bead, a base supporting said body and having an inwardly-extended flange engaging the fire-pot near the bottom, and bolts extending through the flanges of the fire-pot and base, substantially as described.



2. In a stove, a sheet-metal body having an inwardly-pressed bead, a fire-pot having an outwardly and upwardly inclined flange engaging said bead, a base supporting said body and having an inwardly-projecting flange engaging the fire pot near the bottom, bolts passing through said flanges, and an inclined extension on said fire-pot extending through the said body, and closed by a door and register, substantially as described.

3. In a stove, the combination of a sheet-metal body having an inwardly-pressed bead, a fire-pot having an outwardly and upwardly extended flange, a base supporting said body and having a flange engaging the side of the pot near the bottom, an annular air-chamber at the top of said fire-pot having a series of openings, and bolts extending through the air-chamber and the flanges, substantially as described.

4. In a stove the combination of a sheet-metal body having an inwardly-pressed bead, a fire-pot having an upwardly and outwardly extended flange engaging said bead, a base supporting said body and having an inwardly-projecting flange engaging the lower part of the fire-pot, and an air-chamber segmental in cross-section, having openings in its lower edge and resting against the body at its upper edge, and means for admitting air to said chamber substantially as described.

5. In a stove, in combination with a body and a fire-pot having a flange engaging the body at its outer edge; a casting engaging the flange at one side and engaging the body at the other side, and provided with openings for escape of air, said body, flange and casting thus forming an air-chamber and means for supplying air to the said chamber substantially as described.

6. In a stove, the combination of a fire-pot, an annular air-chamber at the top of the same having openings, a vertical flue, a vertical duct in said flue opening at its upper end into the chimney-pipe, air-ducts extending from the said vertical duct to the air-chamber and a damper to shift the air-currents, substantially as described.

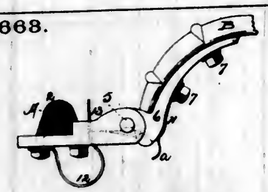
7. In a stove, the combination of a body, base, and fire-pot forming a heating-chamber around the fire-pot, and having inlet and exit openings, a vertical flue connected to the exit-opening and open at the top, an air-chamber surrounding the top of the fire-pot and having a series of openings, an air-duct in said flue opening into the chimney-pipe, air-ducts extending from said duct to the air-chamber, and a damper to change the current of air, substantially as described.

8. In a stove, the combination of a fire-pot, an annular air-chamber having openings, a vertical air-duct opening into the chimney-pipe, a T opening into said vertical air-duct, branch ducts extending oppositely from said T and within the upper part of the stove and thence downward to the air-chamber, and a damper alternately closing and opening the vertical pipe, and a second damper to close and open the passage to the chimney-pipe, substantially as described.

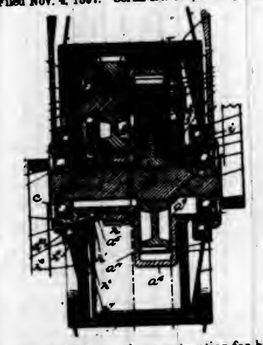
609,663. **THILL-COUPLING.** ALBERT L. CRANDALL, Phelps, N. Y. Filed Nov. 26, 1897. Serial No. 659,732. (No model.)

Claim.—In a thill-coupling, the combination with an axle and a coupling-body secured thereon and bifurcated in its forward end, and a draft-pin across said bifurcation cut away on one side, of a draft-iron recessed and slotted transversely to permit its receiving said draft-pin, a spring engaging with the heel of said draft-iron, and a spring-pressed latch normally closing said slot.

609,668.

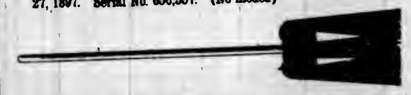


609,664. **MULTIPLE GEARING FOR BICYCLES.** MORTON A. DIEHLR, Jackson, Mich., assignor of one-half to Hugh L. Smith, same place. Filed Nov. 4, 1897. Serial No. 657,392. (No model.)



Claim.—In a multiple-gearing construction for bicycles, the combination of the frame having tubular inward-projecting members; an integral interior support comprising a sleeve and ring spaced apart and affixed respectively to said tubular frame members, parallel arms springing radially from the sleeve and ring, a web substantially semicircular in cross-section connecting the outer ends of said arms, a third radial arm, and a web substantially semicircular in cross-section connecting the latter with the other arms, the three arms having alining openings with ball-races in the openings of the two outer arms; a compound gear whose common axle extends through the alining openings of said arms and carries cones confronting the races on the outer arms, the members of said compound gear being housed by said semicircular webs respectively; balls between the races and cones; an axle or shaft extending centrally through the sleeve and ring of the interior support and through the tubular frame members and journaled in the latter; a gear fast on said axle or shaft between the sleeve and ring and meshing with one member of the said compound gear; and a hub journaled on the tubular frame members and having a reëntrant tubular portion embracing the sleeve of the interior support and having a gear in mesh with the other member of the compound gear.

609,665. **BROOM.** HENRY DURHAM, Sylvania, Ind. Filed Oct. 27, 1897. Serial No. 656,557. (No model.)



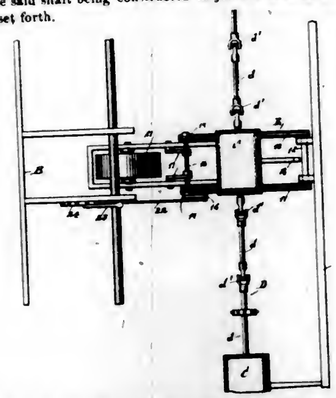
Claim.—1. In a broom, a handle, brackets consisting of horizontal link-shaped portions and perpendicular portions secured on opposite sides of the handle and broom-corn inserted with the butt-end from the top through said link-shaped portions, the corn then being bent over and secured in place.

2. In a broom, a handle, brackets consisting of horizontal link-shaped portions and perpendicular portions secured on the opposite sides of the handle and broom-corn inserted through said link-shaped portions and suitably secured in place.

609,666. **PLANTER.** JOHN S. BARNART and CHARLES MILLER, Millersville, Ill. Filed Oct. 21, 1897. Serial No. 655,955. (No model.)

Claim.—1. In a planter, a main frame, seedboxes carried by said frame, an auxiliary frame, a seedbox carried by said auxiliary frame, a frame pivotally attached to the said auxiliary frame and provided with means for engaging the ground, a device for raising or lowering the said pivoted frame, and a continuous shaft passing through the seedboxes and connecting the dropping mechanism of all the seed-

boxes, the said shaft being constructed in jointed sections, substantially as set forth.



2. In a planter, the combination with a main frame, a seedbox, a supporting-frame for the seedbox, and a runner provided for said seedbox, of a frame having side pieces connected at their rear by a cross-piece, the said side pieces having upwardly extending forward ends pivotally attached to the supporting-frame of the seedbox, a wheel journaled in the rear portion of the pivoted frame and a lift-lever connected with the pivoted wheel-carrying frame, for the purpose set forth.

3. In a planter, a main frame, seedboxes carried by said frame, an intermediate seedbox, a supporting-frame for said intermediate seedbox, a frame pivotally attached to the supporting-frame of the said intermediate seedbox, a wheel carried by the said pivoted frame, a lift-lever connected with the wheel-carrying frame, and a continuous jointed shaft connecting the seed-dropping mechanism of the several boxes, as and for the purpose set forth.

4. In a planter, the combination with a frame, a seedbox, a supporting-frame for the seedbox, and a runner provided for said box, of a frame pivotally attached at its forward portion to the supporting frame of the seedbox at or near the central portion thereof, said extending forwardly therefrom, a wheel carried by the rear portion of the pivoted frame, a shaft carried at the rear portion of the said supporting-frame of the seedbox, a connection between said shaft and the said pivoted frame, and a lever connected with the said shaft, for the purpose set forth.

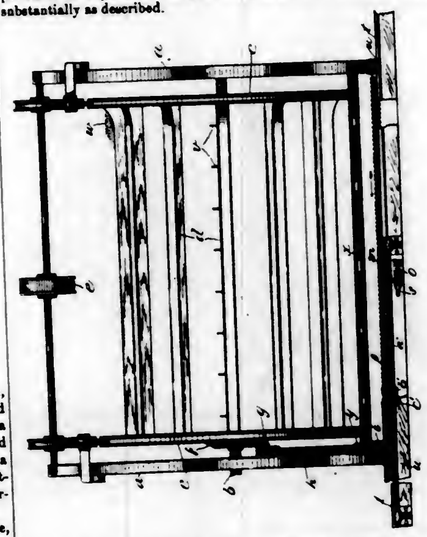
5. In a planter, the combination with a frame, a seedbox carried by the frame, and a runner connected with the seedbox, the sides of the said frame at the rear being provided with upwardly-projecting standards, of a shaft journaled in the said standards, the said shaft being provided with a crank-arm at one of its ends and crank-arms one at each side of the center, a second frame, pivoted at its forward end to the seedbox-supporting frame, at or near the central portion thereof and extending rearwardly therefrom, a wheel journaled in the said rearwardly-extending frame near the rear end thereof, the intermediate crank-arms of the said shaft being pivotally connected with uprights attached to the said rearwardly-extending frame, a lever, a support for the same, and a link connecting the said lever with the crank-arm at the end of the said shaft, as specified.

609,667. WARPING-REEL. JOHN E. EASTWOOD, Rockville, Conn., assignor of one-half to the Springville Manufacturing Company, same place. Filed Oct. 22, 1897. Serial No. 656,073. (No model.)

Claim.—1. In a device of the character described, the combination with a longitudinally-movable frame, a feed-worm carried thereby, and means for rotating said worm; of a pinion in mesh with the worm and fast on a circular base, a clamp surrounding the latter, means for supporting said clamp, and a screw for adjusting its grasp upon the base, as and for the purpose set forth.

2. In a device of the character described, the combination with a longitudinally-movable frame, a feed-worm carried thereby, and means for rotating said worm; of a pinion in mesh with the worm and fast on a circular base, a clamp surrounding the latter, means for adjusting its grasp upon the base, trunnions on the exterior of the clamp, and fixed bearings in which the trunnions are supported, as and for the purpose set forth.

3. In a device of the character described, the combination with a longitudinally movable frame, a feed-worm carried thereby, and means for rotating said worm; of a pinion in mesh with the worm and fast on a base, a clamp surrounding the latter, a screw for adjusting its grasp upon the base, trunnions on the exterior of the clamp, a fixed plate, and bearings thereon in which the trunnions are supported so as to permit rocking of the clamp and its contained base, substantially as described.



4. In a device of the character described, the combination with a longitudinally-movable frame, a feed-worm carried thereby, and means for rotating said worm; of a pinion in mesh with the worm, a plate fixed with respect to said frame, a clamp carried by said plate, and means for applying or releasing its grasp upon the pinion, as and for the purpose set forth.

5. In a device of the character described, the combination with a frame mounted on wheels, a rotating reel whose shaft is journaled therein, a worm journaled in and traveling with the frame, and gearing between the shaft of the reel and said worm; of a pinion with which said worm is in mesh, a fixed support for the pinion, and means for controlling the rotation of the pinion in its support, all as and for the purpose set forth.

6. In a device of the character described, the combination with a frame mounted on wheels, a rotating reel whose shaft is journaled therein, a worm journaled in and traveling with the frame, and gearing between the shaft of the reel and said worm; of a pinion with which said worm is in mesh, means for controlling the rotation of the pinion, a bar extending longitudinally of the frame, an arm adjustable thereon, and a stop with which said arm makes contact, as and for the purpose set forth.

7. In a device of the character described, the combination with a movable frame, a bar carried thereby and extending in the direction of its movement, and an arm adjustably clamped on this bar; of a rod adjustably clamped in the arm parallel with said bar, a stop-sleeve, a support therefor, and a pawl thereon with which the end of the rod contacts, as and for the purpose set forth.

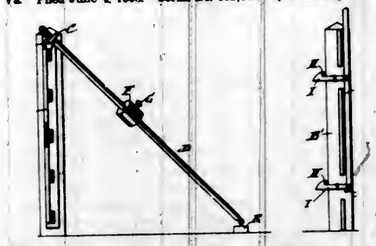
8. In a device of the character described, the combination with a movable frame, a bar carried thereby and extending in the direction of its movement, and an arm clamped on this bar; of a rod clamped in the arm parallel with said bar, a second bar parallel with the first and fixed with respect to the frame, a stop-sleeve adjustable longitudinally on this bar, and a movable pawl on and adjusted by the sleeve, with which pawl the rod contacts, as and for the purpose set forth.

9. In a device of the character described, the combination with a movable frame, an arm thereon, and a rod adjustably carried by this arm and standing parallel with the movement of the frame: of a fixed bar parallel with said rod, a stop-sleeve on this bar in position to engage said arm, and a pawl movably carried by the sleeve in position to engage said rod and adapted to turn transversely out of such position when the engagement is broken, as and for the purpose set forth.

10. In a device of the character described, the combination with a movable frame, an arm thereon, and a rod carried by this arm and standing parallel with the movement of the frame, the tip of the rod having a counterpoint; of a fixed bar parallel with said rod, a stop-sleeve on this bar in position to engage said arm, a pawl pivoted and sliding on this bar against said sleeve, and an adjusting-screw through the outer end of the pawl and having a countersink adapted to engage said counterpoint, the pawl falling out of engaging position when the engagement is broken, as and for the purpose set forth.

11. In a device of the character described, the combination with a movable frame, and a rod carried thereby and standing parallel with its movement, the tip of the rod having a counterpoint; of a bar fixed with respect to the frame and standing parallel with said rod, a pawl-arm mounted loosely on said bar, means for adjusting the position of the pawl, and an adjusting-screw through its outer end having a countersink in its head adapted when in engagement with said counterpoint to hold the arm suspended but when released therefrom to permit the arm to drop out of said position in engagement with said rod, as and for the purpose set forth.

609,668. SELF-CLOSING GATE. PEYTON B. GREEN, Wytheville, Va. Filed June 4, 1898. Serial No. 682,584. (No model.)

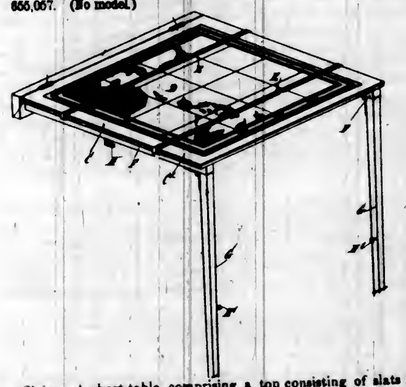


Claim.—1. The combination, with a gate mounted to swing and provided with a guide-roller, of a rod standing at an angle to the gate and carrying an adjustable weight, the lower end of the rod being fulcrumed on a fixed support, and the free end of the rod resting on said roller, so that the weight of the rod tends to hold the gate in a closed position and permits of swinging the gate open, the free end of the rod traveling on the guide-roller, substantially as shown and described.

2. The combination, with a gate mounted to swing and provided with a guide-roller, and a fixed loop extending over the guide-roller, of a rod standing at an angle to the gate and carrying an adjustable weight, the outer, lower end of the rod being fulcrumed on a fixed support, and the free end of the rod resting on said roller and extending through the loop, so that the weight of the rod tends to hold the gate in a closed position and permits of swinging the gate open, said free end of the rod traveling on the guide-roller, substantially as shown and described.

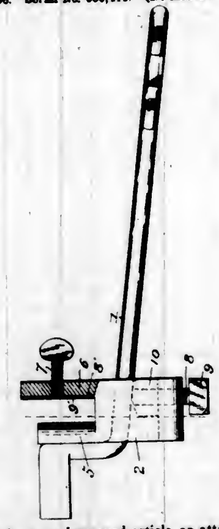
3. The combination of a swinging gate, and a weighted swinging rod, mounted adjacent to the gate and having sliding engagement therewith, the rod standing at an angle to the gate when the gate is closed whereby to keep the gate in such position.

609,669. CHART-TABLE. SILAS H. GREENLEAF, Seattle, and HENRY BARKER, Hoquiam, Wash. Filed Oct. 13, 1897. Serial No. 655,067. (No model.)



Claim.—A chart-table, comprising a top consisting of slats arranged close together, a flexible material holding the slats together, the said flexible material being secured to the upper surface of the slats so that a smooth unbroken top surface is provided when the table is in use, a support to which one edge of the top is hinged, supporting-arms hinged to the support, flexible straps for holding a chart on the table-top, and a strap for holding the top in its rolled position, substantially as specified.

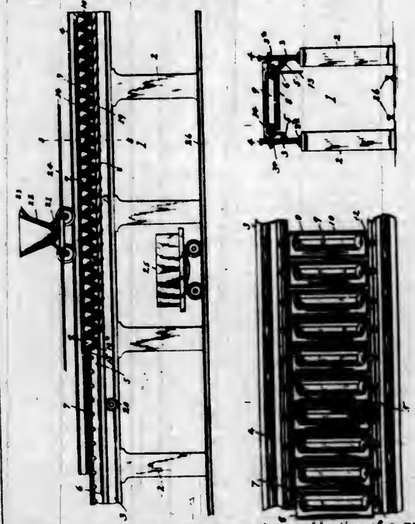
609,670. WRENCH. SAMUEL A. HAINES, Garrett, Tex. Filed Feb. 7, 1898. Serial No. 669,411. (No model.)



Claim.—1. As an improved article, an attachment for wrenches consisting of the head formed with an opening in one end and an intersecting slot, the arms at the opposite end and the set-screw, substantially as described.

2. The combination with a wrench, of the head formed with an opening and an intersecting slot at one end and the headed bolt engaging with said slot, its nut, the arms at the opposite end of said head, the set-screw passing through one of said arms, and the spring-plate located between said arms, substantially as described.

609,671. CASTING APPARATUS. FREDERICK HARDY, Birmingham, Ala., assignor of one-half to John H. Means, same place. Filed Oct. 11, 1897. Serial No. 654,771. (No model.)



Claim.—1 In casting apparatus, the combination of a pair of track-rails, fixed bearings mounted on the inner sides of the rails and a series of transversely-arranged molds mounted to tilt in said bear-

ings, a truck adapted to traverse said rails, and a ladle carried by the truck adapted to deliver a continuous stream of molten metal to the molds as the truck travels over the same, substantially as described.

2. In casting apparatus, the combination of a pair of parallel beams 3, track-rails 4 mounted thereon, a bearing-plate 5 secured on the inner side of each beam below the rails, a series of molds mounted to tilt in said bearing-plates, a truck adapted to traverse said rails, and a tilting ladle carried by the truck adapted to deliver a continuous stream of molten metal to the molds as the truck travels over the same, substantially as described.

3. In casting apparatus, the combination of a pair of parallel beams 3, track rails 4 mounted thereon, a bearing-plate 5 secured on the inner side of each beam below the rails, a se ies of molds each provided with trunnions journaled in said bearing-plates and a crank-arm, a connection between the crank-arms of all the molds, and a metal-reservoir adapted to traverse said rails, substantially as described.

4. In casting apparatus, the combination of the I-beams 3 carrying track-rails 4, the supporting-plates 5 secured on the inner side of the beams and provided with vertical flanges 6 having bearings, molds provided with trunnions journaled in said bearings, and a metal-reservoir adapted to traverse said track-rails, substantially as described.

5. In casting apparatus, the combination of the I-beams 3 carrying the track-rails 4, the supporting-plates 5 secured on the inner sides of the beams and provided with vertical flanges 6 having bearings, molds provided with trunnions journaled in said bearings, transverse guide or deflecting plates resting on said beams above the molds, and a meta'-reservoir adapted to traverse said track-rails, substantially as described.

6. In casting apparatus, the combination of a pair of parallel supporting-beams carrying fixed bearings arranged on the inner sides thereof, a continuous series of molds between said beams and mounted to tilt in said bearings, track-rails mounted on said beams, guide or deflecting plates resting upon the beams and supported thereby independent of the molds so as to leave the latter free to tilt, and a metal-reservoir constructed and arranged to traverse said trackway, substantially as described.

7. In casting apparatus, the combination of supporting-beams carrying fixed bearings, a series of molds extending transversely between the beams and mounted to tilt in said bearings, and a series of guide or deflector plates arranged above said molds and forming a platform between the beams, said plates being supported independent of the molds with their side edges abutting and provided with recesses, whereby the recesses of two adjoining guide-plates form a feed-opening for admission of metal into a mold below the same, substantially as described.

8. In casting apparatus, the combination of a series of molds, and guide or deflector plates mounted above the same, said plates being formed on their under side with recesses separated by a rib to receive one-half of a mold and on their upper side with side recesses beveled from the center to form a shedding-ridge, whereby the side recesses of two adjoining guide-plates form a feed-opening for entrance of metal into the mold and the bottom recesses a chamber to inclose the upper portion of said mold, substantially as described.

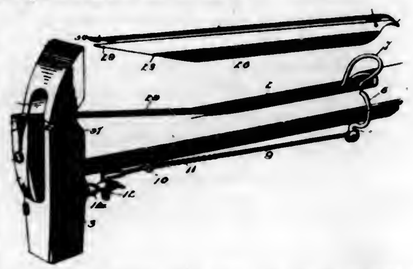
9. In casting apparatus, the combination of I-beams carrying bearings, a series of molds mounted to tilt in said bearings, and a device for applying refractory material to the inverted molds and arranged to traverse the lower webs of the beams below said molds, substantially as described.

10. In casting apparatus, the combination with a stationary bed of molds mounted in bearings to tilt and dump the castings, of a refractory-material-applying device adapted to be moved below said molds and comprising a trough mounted on a carriage, a shaft journaled in the walls of the trough and carrying paddles or blades, and means for driving said shaft.

11. In casting apparatus, the combination with a stationary bed of molds mounted in bearings to tilt and dump the castings, of a refractory-material-applying device adapted to be moved below said molds and comprising a wheeled carriage having one of its wheels provided with a toothed wheel, a trough mounted on said carriage and provided with flanged drip-plates and a shaft journaled in the walls of the trough and carrying at one end a pinion meshing with said toothed wheel and provided on the interior of the trough with paddles or blades, substantially as described.

609,672. TACK OR NAIL HAMMER. GEORGE R. HAMILTON, Vicksburg, Miss. Filed May 25, 1897. Serial No. 638,139. (No model.)

Claim.—1. The combination with a hammer comprising a head and handle, of a channel-plate extending through the handle from one end to the other thereof at an angle of inclination and through a straight transverse opening in the head located mainly above the front termination of said channel, and a feeder movably mounted on the outer edge of the head directly in front of the said opening and having a free end to coact with the said channel-plate.



2. The combination with a hammer comprising a head and handle, of a channel-plate extending through the handle from one end to the other thereof at an angle of inclination and through a transverse opening in the head, the said channel-plate receiving and feeding the tacks in inverted position, and a feeder rotatably mounted on the outer side of the head in front of the said opening and having a free end movable and adjacent to the front termination of the channel-plate and also receiving the tacks in inverted position, the said feeder by its rotation placing the tacks in proper position for driving.

3. In a device of the character set forth, the combination of a hammer having a hollow handle open at its rear end and provided with a channel-plate extending therethrough from end to end, the rear end of the said channel-plate having the opposite portions thereof flared away from the adjacent support, and a hollow loading-fork with a reduced pointed flared end having a slot exteading longitudinally through one portion thereof and through said pointed end, the latter being fitted to the flared part of the channel to deliver a load of tacks therein.

4. In a device of the character set forth, the combination of a hollow handle having a channel-plate extending from one end to the other thereof, a spring coacting with the rear end of said channel-plate to close the same, a spring-finger and arm operating in connection with the outer end of said channel-plate, and a feeder having a retention-plate therein provided with a laterally-projecting finger, substantially as and for the purposes specified.

5. In a hammer of the character set forth, the combination with a channel-plate in the handle extending from end to end thereof, of a feeder on the head thereof having a spindle with a rearwardly-projecting screw, and a spring-actuated operating-rod having an angularly-bent loop to engage said screw, substantially as and for the purposes specified.

6. In a hammer of the character set forth, the combination of a handle having a channel-plate extending from end to end of the latter, a feeder in engagement with the head of the hammer, said feeder having one end thereof coacting with an adjacent exposed portion of the channel-plate and provided with a shank having a rearwardly-extending screw, a spring-actuated rod having an angularly-bent loop engaging the said screw, and a lever for actuating the said rod, substantially as and for the purposes specified.

7. In a hammer of the class set forth, the combination of a handle having a feeding channel-plate extending from end to end thereof with an outer projection at the head end, a feeder on the head having a recess in its free end, in which is pivotally mounted a retention-plate formed with a laterally-extending finger adapted to engage the said projection of the channel-plate, means for holding the tacks in the channel-plate against accidental disconnection, and means for operating the said feeder, substantially as and for the purposes specified.

8. In a hammer of the class set forth, the combination of a feeder having a shank with a screw thereon, and mechanism in engagement with the said screw adapted to be moved in one direction to throw the feeder in operative position, and having a return movement to close said feeder inward over the head of the hammer, and means for limiting the movement of the said feeder, substantially as described.

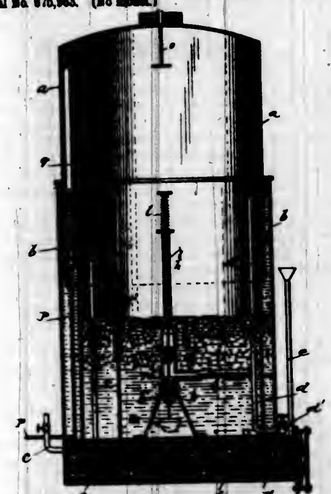
9. In a hammer of the character set forth, the combination of a feeder having a shank with a screw thereon, and a propelling device in engagement with the said screw which is moved forwardly to throw the feeder in position to set a tack, and automatically returned to close said feeder inwardly over the head of the hammer.

10. In a hammer of the class set forth, the combination with a hammer-head of a feeder, a pin adjustably mounted in said feeder below the tack-carrying end thereof, and a set-screw engaging said pin, whereby the said feeder may be regulated to different sizes of tacks, substantially as and for the purposes specified.

11. In a hammer of the character set forth, the combination with a hammer-head, of a feeder having a rotary movement, a pin adjustably mounted in said feeder below the tack-carrying end thereof, and a set-screw engaging the said pin whereby the said feeder may be regulated to operate with different sizes of tacks.

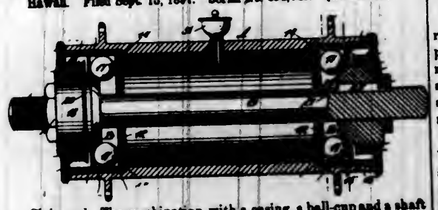
12. In a hammer of the class set forth, the combination of a head and a handle having a feeding channel-plate therein extending through a transverse opening in said head, and a rotatable feeder mounted on said head and having a free tack-carrying end adapted to aline with the part of the channel-plate extending through the head, substantially as described.

609,678. ACETYLENE-GAS-GENERATING APPARATUS. JAMES T. HAYS and THOMAS C. HAYS, Mountsburg, Md. Filed Mar. 31, 1896. Serial No. 675,963. (No model.)



Claim.—In a gas apparatus, the combination of a gas-holder consisting of an upper movable part or bell and a liquid-tank, a carbid-holder in communication with said gas-holder and the liquid-tank, a tube supported in the gas-holder and depending into the liquid and having its lower end open and provided with valve-seats *k'* and *n'*, a lateral branch pipe connected at one end to said tube and communicating at its other end with the carbid-holder, a valve-rod extending down through said tube and provided with a valve *k* at its lower end adapted to close upon the aforesaid valve seat *k'*, means actuated independently of the movable part of the gas holder for normally closing said valve *k* up against its seat, means whereby said valve-rod is depressed and valve *k* forced away from its seat when the movable part of the gas-holder falls, a supplemental valve *n* attached to the valve-rod above the branch-pipe connection and adapted to seat itself against said valve-seat *n'* in the tube below the branch-pipe connection when the movable part of the gas-holder falls a predetermined distance, substantially as set forth.

609,674. BALL-BEARING. ARTHUR G. HITCHCOCK, Honolulu, Hawaii. Filed Sept. 15, 1897. Serial No. 651,749. (No model.)



Claim.—1. The combination, with a casing, a ball-cup and a shaft or axle passed through the said ball-cup, of a cone, a key securing the cone on the shaft or axle, an outer end of the shaft being threaded and the outer end of the key reduced and correspondingly threaded to the axle, and a nut located on the threaded portion of the shaft or axle and the threaded portion of the key, for the purpose set forth.

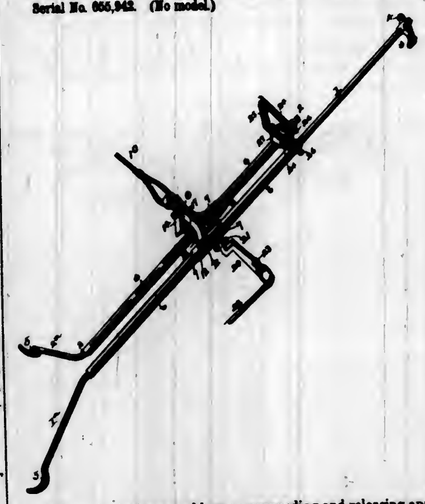
2. The combination, with a shaft or axle having an end threaded, and a cone for the axle or shaft, of a key securing the cone to the axle or shaft, the outer end of the key being threaded correspondingly to the axle and forming a portion of the exterior threaded surface of the axle, for the purpose specified.

3. The combination of a casing, a back plate secured in each end of the casing, each back plate having a marginal flange extending outward from the respective plates, a shaft or axle passed through the casing and through the back plates, a cone secured to each end of the shaft or axle, and coacting with the back plates to form ball-races, each cone having an annular peripheral flange, a dust-cap secured in each end of the casing, the dust-caps respectively encircling the cones and each dust-cap having an inwardly-extending annular flange respectively coacting with the flanges on the ball-cones, a washer encircling each cone, the washers being respectively confined between the members of the two pairs of flanges, and means for securing the cones rigidly to the shaft or axle.

4. The combination of a casing, a back plate secured in each end thereof, a shaft or axle passed through the casing and through the back plates, a ball-cone fixed to each end of the shaft, the ball-cones coacting with the back plates to form ball-races, each cone having an annular peripheral flange, a dust-cap secured in each end of the casing, the dust-caps encircling the ball-cones and having each an inwardly-projected annular flange, a washer fitting between the members of each pair of flanges, a retaining-ring held between each back plate and the adjacent dust-cap, and means for securing the cones on the shaft or axle.

5. The combination of a casing, an axle mounted therein, a ball-cone fixed on the axle and having an annular flange secured thereto, a dust-cap secured in the end of the casing and encircling the ball-cone outside of the flange thereof and having a flange projecting toward the flange of the ball-cone, and a washer encircling the ball-cone and bearing between the two flanges so as to be held thereby.

609,675. HARNESS SUSPENDING AND RELEASING APPARATUS. JOSEPH W. HOWGATE, Wilmington, Del. Filed Oct. 21, 1897. Serial No. 655,942. (No model.)



Claim.—1. An improved harness suspending and releasing apparatus, comprising a hanger, two parallel, rotatable rods having lateral projecting portions adapted to detachably engage harness attachments, trip mechanism connected with such rods, a retracting-spring, and a device for operating such mechanism, to automatically unlock and allow rotation of the rods as required to cause release of the harness, substantially as shown and described.

2. An improved harness suspending and releasing apparatus, comprising a hanger, two parallel, rotatable rods having lateral extensions for engaging a harness, a retracting-spring applied to such rods, radial projections on the latter, and spring mechanism adapted to lock with said projections and automatically release the same when tripped, to allow rotation of the rods and release of the harness, substantially as shown and described.

3. An improved harness suspending and releasing apparatus, comprising two, parallel rotatable rods, having radial locking and stop pins, a hanger adapted to arrest the rotary movement of such pins.

a catch for engaging the latter, and means for actuating the catch, to unlock the pins and rods, substantially as specified.

4. An improved harness suspending and releasing apparatus comprising the rotatable rods arranged parallel and having divergent rear ends forming angle-arms, the automatic locking and trip mechanism, a retracting-spring, and a hanger, as shown and described.

5. In an improved harness suspending and releasing apparatus, the combination of the rotatable parallel rods, having laterally-projecting portions for engaging a harness, locking and stop pins set radially in said rods, sleeves in which the rods are held, the same having slots for said pins, a hanger applied to said sleeves, a double spring-catch adapted to engage the free ends of the pins, a retracting-spring, and a lever for acting on the catch to release the pins and rods, substantially as shown and described.

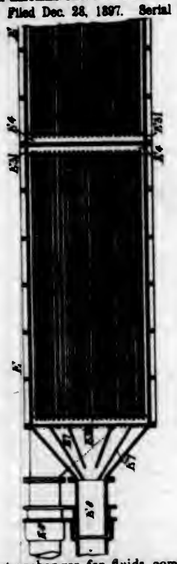
6. An improved harness suspending and releasing apparatus, the combination with the hanger and double catch whose stem slides in keepers on the hanger, the sleeves having radial slots, pins arranged opposite each other and fixed in the rods and projecting through said slots, and the hinged and pendent lever for acting on the catch, as shown and described.

7. The combination of the two parallel rotatable rods having lateral projections adapted for engaging and releasing a harness, a hanger or means for supporting and rigidly connecting said rods, radial projections on the rods, stops on the hanger for arresting the projections when the rods are rotated, a spring attached to and connecting radial arms of said rods, spring locking and releasing mechanism, and a lever for tripping the latter, as shown and described.

8. An improved harness suspending and releasing apparatus the combination of two parallel rotatable rods, sleeves in which the latter are held, radial arms on said rods, a spring connecting the arms, radial pins set in the rods, a hanger having tubular portions provided with radial slots for the pins, a double catch having a stem or bar encircled by a spring, and a trip-lever for acting on said bar, as shown and described.

9. In an improved harness suspending and releasing apparatus, the combination with the parallel, rotatable rods one of which has an adjustable finger for engaging a harness, radial arms that are adjustable around said rods, and a spring connecting the arms as specified, the hanger and bridge composed of a vertical bar and tubular slotted portions, pins set in the rods and projecting radially through the slots in such tubular portions, a spring-catch for engaging the outer ends of said pins, and means for tripping the catch, as shown and described.

609,676. **HEAT-EXCHANGER FOR FLUIDS.** PETER S. HYSLOP, Walmer, England. Filed Dec. 28, 1897. Serial No. 664,075. (No model.)



Claim.—1. A heat-exchanger for fluids, comprising a vessel in which separate passages are formed, for the ingoing cold fluid to be heated, and for the fluid from which the heat is to be obtained, by a partition made of a thin metal sheet in a zigzag or serpentine form, with distributing guide-flanges leading to the passages formed by the zigzags, substantially as herein set forth.

2. A heat-exchanger for fluids, comprising a vessel with inlets and outlets and a separating-partition of thin metal of zigzag section, to form passages for the flow of the fluids, the said zigzag partition having also indentations or projections, to cause agitation of the flowing fluids, as and for the purpose described.

609,677. **APPARATUS FOR DEVELOPING PHOTOGRAPHIC FILMS.** JOHN R. JOHNSTON, New York, N. Y., assignor of one-half to Frank Sachse, same place. Filed Oct. 7, 1897. Serial No. 654,232. (No model.)



Claim.—1. An apparatus for developing photographic films, consisting of a drum on which the film can be wound and means for holding the film on the drum, substantially as herein shown and described.

2. In an apparatus for developing photographic films, the combination with a drum on which the films can be wound and means for mounting said drum over a trough containing a solution and for rotating said drum while immersed in the solution, substantially as herein shown and described.

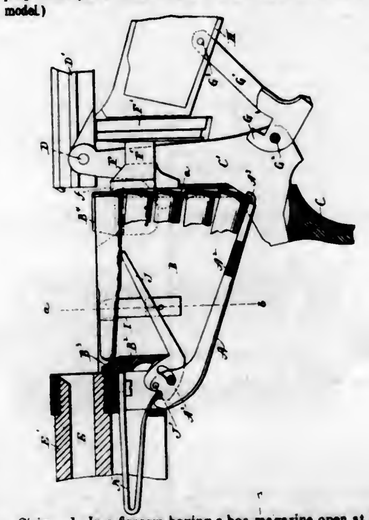
3. In an apparatus for developing photographic films the combination with a drum on which the films can be wound, of an open frame having bearings for said drum to adapt rotating the drum on its axis, which frame fits over a trough for receiving a liquid, substantially as herein shown and described.

4. In an apparatus for developing photographic films, the combination with a drum, on which the films can be wound, of clamps on the end parts of the drum for holding the ends of the films on the drum, substantially as herein shown and described.

5. In an apparatus for developing photographic films, the combination with a drum, on which the films can be wound, of a clamp adjustable circumferentially on the end part of the drum, substantially as herein shown and described.

6. In an apparatus for developing photographic films, the combination with a drum, of a collar mounted loosely on the shaft of the drum at one end of the latter, an arm on said collar, a sliding clamp on said arm, extending over the circumferential surface of the drum and a spring acting on said clamp to press it toward the circumferential surface of the drum, substantially as herein shown and described.

609,678. **BOX-MAGAZINE LEVER-GUN.** THOMAS C. JOHNSON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed May 27, 1896. Serial No. 593,246. (No model.)



Claim.—1. In a firearm having a box-magazine open at its bottom, a cover pivotally suspended by its forward end, normally closing the open bottom of the said box-magazine, and formed at its rear end with a cartridge-retaining hook.

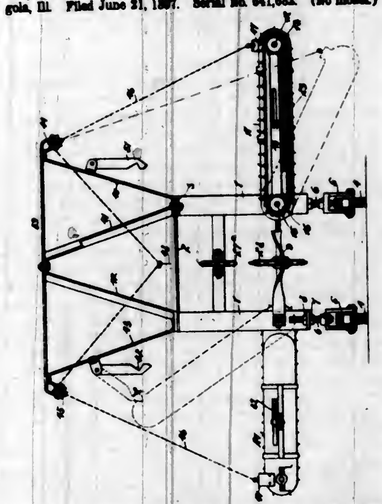
2. A box-magazine comprising a body portion made from a single piece of sheet metal bent to be U-shaped in horizontal section and so that its fold or bend will form a closed rear end for it, open at its top and bottom, and having grooves formed in its closed rear end for the reception of the rims of the cartridges, and a shoe to which the forward ends of the said body portion of the magazine are permanently secured, and by which its forward end is closed.

3. A box-magazine comprising a body portion made from a single piece of sheet metal bent to be U-shaped in horizontal section, and so that its bend or fold will form a closed rear end for it, and open at its top and bottom, a shoe closing the open forward end of the said body portion, the ends of which are rigidly secured to it, and combined guide and stop plates located opposite each other at the rear end of the body portion of the magazine to which they are permanently secured.

4. A sheet-metal box-magazine having its body portion made from a single piece of sheet metal bent to be U-shaped in horizontal section, having its bottom and top open, having its rear end closed, and formed with two oppositely-located, vertically-arranged grooves made in the inner faces of the rear ends of its side walls to receive the rims of the cartridges.

5. In a breech-loading, box-magazine firearm, the combination with the box-magazine thereof, of an incline for engagement by the front ends of the bullets of the cartridges for lifting the cartridges into line with the chamber of the gun-barrel, a vertically-movable recoil-block, a spreading-block connected with the said recoil-block movable therewith and provided with an inwardly-projecting nose which is located within the box-magazine, and means for feeding the cartridges upward in the box-magazine, whereby the rear end of the uppermost cartridge is engaged with the said nose and caused to be moved forward so that the front end of its bullet will be engaged with the said incline.

609,679. **GRADER AND SCRAPER.** CALVIN KARRAKER, Douglas, Ill. Filed June 21, 1897. Serial No. 641,682. (No model.)

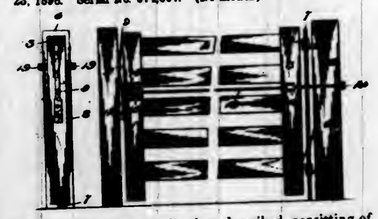


Claim.—1. A ditcher and grader comprising a carriage, a frame mounted to swing vertically with relation to the carriage and consisting of side sections, each consisting of two parts adjustable longitudinally, one part on the other, shafts at the ends of the frame, wheels on the outer ends of each shaft, braces extended from the shafts to the side pieces of the frame, the said braces being slotted at their inner ends, a bolt extended through the slots of the overlapped inner ends of pairs of braces, ground-breaking devices operated by the wheels, means for imparting motion to the wheels and means for vertically moving the frame, substantially as specified.

2. A ditcher and grader, comprising a carriage, a frame mounted to swing vertically on the carriage, and consisting of side sections, each consisting of two sections adjustable longitudinally, one section on the other, shafts at the ends of the frame, sprocket-wheels on the outer ends of each shaft, a sprocket-wheel at the center of each shaft, braces engaging with the shafts at the sides of the center sprocket-wheels and extending to the side pieces of the frame, the said braces being slotted at their inner ends, a bolt extending through the slots of the overlapped inner ends of pairs of braces, sprocket-chains engaging with the sprocket-wheels, ground-breaking devices carried by the chains, means for imparting motion to the sprocket-wheels and means for vertically moving the frame, substantially as specified.

3. A ditcher and grader, comprising a carriage, frames mounted to swing on opposite sides of the carriage, ground-breaking devices movable around said frames, an engine and connections between said frames and a piston-rod of the engine, substantially as specified.

609,680. **GATE.** STEVEN J. KLEIN, Pittsburg, Pa. Filed Mar. 23, 1898. Serial No. 674,867. (No model.)



Claim.—In a gate of the class described, consisting of a gate proper hinged to a suitable supporting-post, a spring-catch secured to the front edge of the head-post, a catch secured to a post and adapted to engage the spring-catch, stay-chains secured to each side of the gate and to the supporting-post, keepers secured to each side of the post 3, pulleys secured to each side of the supporting-post, said head-post being provided with an opening 15 into which projects an eyelet carried by the spring-catch, operating cords secured to said eyelet and passing through the keepers secured to the gate, and through the pulleys secured to the supporting-post, the operating-cords passing through pulleys or keepers carried by posts arranged at right angles to the gate when closed, substantially as described.

609,681. **ROUTER.** ALLEN J. KNIFFEN, Schenectady, N. Y. Filed Sept. 27, 1897. Serial No. 653,151. (No model.)



Claim.—1. A router having fixed sleeves mounted on bracket-arms, an intermediate sleeve movable vertically and slightly laterally mounted on a movable bracket-arm, and an adjusting-screw for vertically adjusting the movable sleeve, in combination with a cutting-tool having a shank held in frictional engagement in said sleeve, and means connected with the movable sleeve for locking it to the main frame of the tool which also draws the movable sleeve laterally to clamp the tool-shank, as set forth.

2. A router having fixed bracket-arms carrying the sleeves, a vertically-movable bracket-arm carrying a sleeve which may be moved slightly laterally, and an adjusting-screw for vertically moving the movable sleeve, a groove in the main portion of the tool with which the movable sleeve engages, and a threaded arm, projecting from the movable sleeve, and having a nut for binding and locking the movable sleeve to the main frame of the tool and also drawing it laterally, in combination with a cutting-tool having its shank held in frictional engagement with said sleeve, as set forth.

3. A router having fixed brackets carrying sleeves, a vertical groove between said brackets, a movable bracket and sleeve engaging and movable vertically and slightly laterally in said groove, an adjusting-screw engaging said bracket, a threaded arm projecting from said movable sleeve through a slot in the bottom of said vertical groove, and a nut on said threaded arm for locking said movable sleeve in said groove, in combination with a cutting-tool, having its shank held in frictional sliding engagement in said sleeves, as set forth.

609,682. **MACHINE FOR PERFORATING PAPER, &c.** ARMIN KRAH, Berlin, Germany. Filed Feb. 16, 1897. Serial No. 623,646. (No model.)

Claim.—1. A paper-perforator, consisting of a base having a recess, a cutting-plate secured to the base and having holes located above the recess, bearing-blocks fixed to opposite sides of the base and provided with a series of vertically-movable punches registering

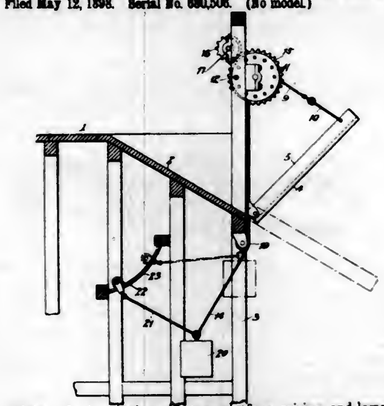
with the holes of the cutting-plate and having racks thereupon, two or more punches being located in each bearing-block, a rock-shaft journaled at its ends in the said bearing-blocks and having gears housed within and wholly concealed by said bearing-blocks and meshing with the racks of the punches, and a handle for turning the rock-shaft substantially as described.



2. A paper-perforator, consisting of a base having a recess, a cutting-plate secured to the base and having holes located above the recess, bearing-blocks fixed to opposite sides of the base and provided with a series of vertically-movable punches registering with the holes of the cutting-plate and having racks thereupon, two or more punches being located in each bearing-block, a rock-shaft journaled at its ends in the said bearing-blocks and having gears housed in said bearing-blocks and meshing with the racks of the punches, a handle for turning the rock-shaft in one direction, and a spring acting on the shaft to turn it in the opposite direction, substantially as described.

3. In a device for perforating paper, the combination with the base having vertical openings extending therethrough and with the apertured cutting-plate and punching mechanism supported thereon, of an adjustable slide extending transversely through the base in line with the openings therein and having at one end an upward projection to serve as a guide for the paper to be punched, substantially as and for the purpose described.

609,683. SPOUT-HOISTING APPARATUS. HENRY F. KUHS, Escanaba, Mich., assignor to himself and Quintin R. Hessel, same place. Filed May 12, 1898. Serial No. 680,506. (No model.)

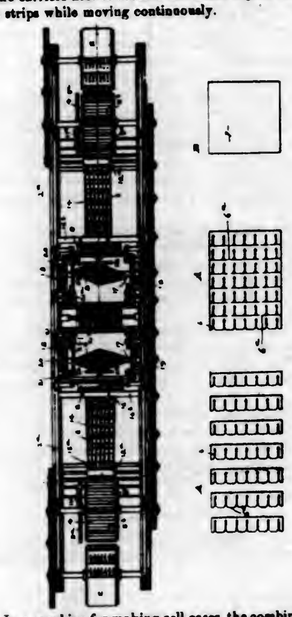


Claim.—1. A swinging spout or platform raising and lowering apparatus, comprising a drum tapered in both directions, with the smaller diameter near its ends, the said tapered portions being each provided with a spiral groove or channel, cables engaging in said grooves or channels and having connection with the outer end of the spout or platform, a tapered and spirally-channeled equalizing-drum on the shaft of the first-named drum, a crank for rotating said drums, a counterbalance-weight having a cable engaging with the equalizing-drum, and means for preventing the weight from swinging outward to strike a boat or the like, substantially as specified.

2. A hoisting apparatus for a spout or platform, comprising a drum tapered in both directions to its ends, the said tapered portion being spirally grooved, cables extended from the drum to a connection with the spout or platform, a perforated disk on the shaft of the drum, through the perforations of which a holding-bolt is designed to be passed, a tapered and spirally-channeled equalizing-drum on the shaft of the first-named drum, a cable connecting therewith, a weight on the lower end of said cable, a link or rod extended from said weight, a pulley with which said link or rod engages, and a curved guide on which the pulley runs, as specified.

609,684. MACHINE FOR MAKING CELL-CASES. HARRY I. LANE, Lafayette, Ind. Filed July 31, 1897. Serial No. 646,800. (No model.)

Claim.—1. In a machine for making cell-cases, the combination with cell-strip forming and transmitting mechanisms, of a double set of carriers supported upon endless chains and moved continuously to present the carriers first to receive the filler-strips and then to interlock said strips while moving continuously.



2. In a machine for making cell-cases, the combination with two sets of paper-carrying rolls and punching and cutting mechanism arranged respectively upon opposite ends of the machine to form sets of interlocking strips of transmitting mechanism for each of said sets of strips, oppositely-disposed carriers supported on link belts which are brought together to interlock the said strips and means for delivering the cell-cases from said carriers, substantially as described.

3. In a machine for making cell-cases, the combination with two paper-carrying rolls, punching and cutting mechanism arranged respectively upon opposite ends of the machine to form sets of interlocking strips and alternate partition-boards between said sets of transmitting mechanism for each of said sets of strips, oppositely-disposed carriers supported on link belts which are brought together to interlock the said strips and means for separating and delivering the partition-boards from the machine, substantially as described.

4. In a machine for making cell-cases, the combination with a set of horizontally-arranged rolls, and a set of strip-carriers, of a set of tapes and tape-carriers adapted to transmit said strips from a horizontal position at the rolls to an inclined position at the carriers, substantially as described.

5. In a machine for making cell-cases, the combination with a set of horizontally-arranged cell-strip-forming rolls, of a set of endless tapes and tape-carriers to transmit said cell-strips from a horizontal to an inclined position, and an endless chain having carriers pivotally supported thereon and adapted to be oscillated from an inclined position to receive said strips to a second position for delivering said strips, substantially as described.

6. In a machine for making cell-cases, the combination with a cell-strip forming and transmitting mechanism, of a double set of endless chains, cell-strip carriers pivotally supported thereon, guide-rails upon the frame, an intermediate mechanism adapted to oscillate said carriers from inclined positions to receive said strips to oppositely-inclined positions across each other to interlock said strips, substantially as described.

7. In a machine for making cell-cases, the combination with the frame, of a cell-strip forming and transmitting mechanism, a double set of endless chains carried thereon, each set having cell-strip carriers supported thereon, inclined guideways on the frame to engage with said endless chains and bring the carriers together from opposite sides of the frame, substantially as described.

8. In a machine for making cell-cases, the combination with the frame, of a cell-strip forming and transmitting mechanism, oppositely-disposed endless link belts, two sets of cell-strip carriers supported thereon and brought together to interlock the said strips while said carriers are moving in the same direction adjacent to each other, and fixed stripping-rods arranged in the path of movement of the carriers and adapted to remove the cell-cases from said carriers after the strips have been put together by the continuous progressive movement of the carriers and link belts, substantially as described.

9. In a machine for making cell-cases, the combination with the cell-strips forming and transmitting mechanism, of an upright frame, chain-carrying wheels supported upon transverse shafts to revolve therein, two pairs of endless chains carried by said wheels, shafts supported by said chain-carriers, crank-arms secured thereto, guides for holding the ends and directing the travel of said shafts and guides for receiving the ends of the crank-arms which control the oscillatory movement of the carriers, substantially as described.

10. In a machine for making cell-cases, the combination, the upright frame, the chain-carrying wheels, the endless chains, the shafts and carriers pivoted thereto, the arms secured to the carriers, the guide-rails for shifting said carriers from one angle to another upon the shaft, and spring-catches to connect the carriers with the said shaft when not acted upon by the arms and guide-rails, substantially as described.

11. In a machine for making cell-cases, the combination with the frame, of the endless chains, the shafts, the carriers pivoted thereto having a set of fixed clamping-plates and a corresponding set of hinged clamping-plates, pins projecting from the hinged plates, a bar pivotally connected to each of said pins, crank-arms on the carriers and guide-rails for oscillating the same and a stop on the carrier-shaft for operating said bar and hinged plates, substantially as described.

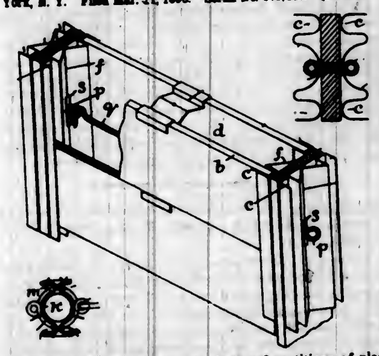
12. In a machine for making cell-cases, the combination with the cell-strip-forming mechanism, feed-rolls to deliver said strips therefrom, a system of carriers for conveying, arranging and interlocking the male and female strips of the cell-cases and a transmission mechanism interposed between the feed-rollers and the said carriers comprising initial feed and tape carrying rolls, a set of tape-pulleys arranged at an angle to that of the said feed and tape carrying rolls and the tapes connecting said rolls and pulleys, substantially as described.

13. In a machine for making cell-cases, the combination with the rotary punching-rolls, the rotary cutting-rolls for partly cutting the strips transversely from the sheet, feed-delivery rolls, strip carrying and assembling mechanism, transmission-tapes and rollers carrying the receiving ends of the transmission-tapes arranged parallel to the feed-delivery rolls, and geared at a higher surface speed to separate the strips with suitable intervals for delivering them to the strip-carriers.

14. In a machine for making cell-cases, the combination with the rotary punching-rolls, the rotary rolls for cutting the strip sets and alternate partition-boards transversely from the sheet, strip-transmission mechanism and partition-board-delivery mechanism and a switch located between the rolls and between the said transmission and delivery mechanism to divide the strip sets from the partition-boards, substantially as described.

15. In a machine for making cell-cases, the combination with the frame, of the endless link belts, the shafts, the carriers having a set of fixed clamping-plates, and a corresponding set of hinged clamping-plates, pins projecting from the hinged plates, a bar pivotally connected to each of said pins, a sliding plate fitted upon each of said shafts, and means for pressing said plate against the bar to release the clamping-plates, substantially as described.

609,685. FIREPROOF PARTITION. ELOF R. LEONARD, New York, N. Y. Filed Mar. 11, 1898. Serial No. 673,440. (No model.)



Claim.—1. The combination in fireproof partitions of plaster-holding plates, and corrugated metallic studding-strips having one or more grooves for reception of the ends of the plates set up edgewise one upon another substantially as described.

2. The combination in fireproof partitions of plaster-holding plates and two corrugated metallic studding-strips having one or more grooves for reception of the ends of the plates set up edgewise one upon another, said strips placed and secured together back to back substantially as described.

3. The combination in fireproof partitions of plaster-holding plates, metallic bar-studs, and corrugated metallic studding-strips attached to the sides of the bar-studs and having one or more grooves for reception of the ends of plaster-holding plates set up edgewise one on another substantially as described.

4. The combination in fireproof partitions of plaster-holding plates, corrugated metallic studding-strips having one or more grooves for reception of the ends of the plates set up edgewise one on another, and corrugated stays, having grooves, connecting the edges of two partition-plates substantially as described.

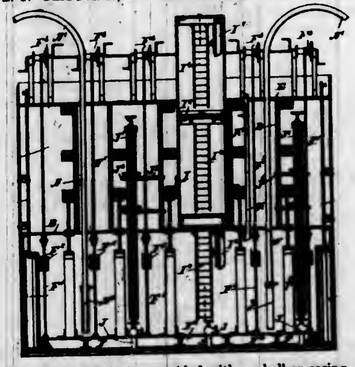
5. The combination in fireproof partitions of plaster-holding plates, corrugated metallic studding-strips having one or more grooves for reception of the ends of the plates set up edgewise one upon another, metallic bar-studs, having said strips attached to the sides, eye-links inserted through slots of the strips and bars, and hook tie-rods connecting the studs by said links substantially as described.

6. The combination in fireproof partitions, of the bar-studs, nailing-strip chairs, and nailing-strips seated in said chairs between the partition-plates, said chairs attached to the sides of the studs substantially as described.

7. The combination in fireproof partitions, of the bar-studs, nailing-strip chairs, and nailing-strips seated in said chairs between the partition-plates, said chairs attached to the studs by screws inserted through them and the studs and screwed into the end of a nailing-strip substantially as described.

8. The combination in fireproof partitions of plaster-holding plates, corrugated metallic studding-strips having one or more grooves for reception of the ends of the plates set up edgewise one upon another, and sheath-strips confining the marginal flanges of the studding-strips substantially as described.

609,686. MOVABLE CAISSON. CHARLES C. LOVEJOY, New York, N. Y. Filed Feb. 19, 1898. Serial No. 670,889. (No model.)



Claim.—1. A caisson, provided with a shell or casing, a working chamber in the lower portion of the casing, and a water-loading compartment above the working chamber and adapted to be filled with water from the said chamber to form a deck-load to keep the casing in position, substantially as shown and described.

2. A caisson provided with a casing, a working chamber in the lower portion of the said casing, and provided with doors in the bottom for opening the chamber to the sand-bed, and when closed permitting of converting the caisson into a floating vessel, and an air-supply for the said working chamber for forcing the water out of the chamber at the time the doors are closed, and for keeping the river-water out of the chamber when the doors are opened, substantially as shown and described.

3. A caisson provided with a casing, a water-loading compartment in the upper portion of the casing, a working chamber in the lower part of the casing, a compressed-air-supply pipe opening into the working chamber, and water-pipes leading from the working chamber to the loading-compartment, so that the water is forced by the compressed air from the working chamber into the loading-compartment, substantially as shown and described.

4. A caisson provided with a casing, a water-loading compartment in the upper portion of the casing, a working chamber in the

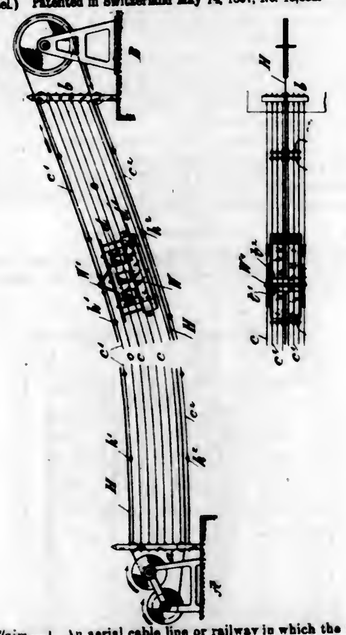
lower part of the casing, a compressed-air-supply pipe opening into the working chamber, water-pipes leading from the working chamber into the loading-compartment, so that the water is forced by the compressed air from the working chamber into the loading-compartment, and doors in the bottom of the said working chamber, to give access to the sand in the bed of the waterway, substantially as shown and described.

5. A caisson provided with a casing, a working chamber in the lower portion of the casing, a water-loading compartment in the upper part of the casing, means for emptying the water from the working chamber into the loading-compartment, and means for discharging the water from the loading-compartment to float the caisson, substantially as shown and described.

6. A caisson provided with a working chamber having hollow bottom doors, and means for heating the same to thaw the bed with which the doors are in contact, substantially as shown and described.

7. A caisson provided with a working chamber having hollow sides and hollow bottom doors, and means for heating the said sides and doors, substantially as shown and described.

609,687. AERIAL CABLE-RAILWAY. ANTON MARGHER, Zurich, Switzerland. Filed Dec. 29, 1897. Serial No. 664,383. (No model.) Patented in Switzerland May 14, 1897, No. 13,852.

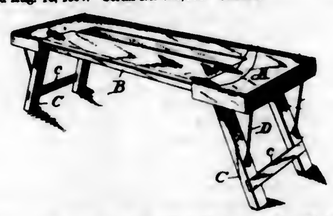


Claim.—1. An aerial cable line or railway in which the track is formed of a tubular or tunnel-like system of longitudinal cables bridging the spans without any intermediate supports, the car being carried on said track by means of rollers while a separate traction-cable is provided parallel to the cable-tunnel, substantially as hereinbefore set forth.

2. In an aerial cable-railway: a track-body formed of a tubular or tunnel-like series of cables bridging the spans without intermediate supports, the car being guided on said track by means of rollers, a traction-cable carried on guide-rollers; and a carrying-roller connected with the car and attached to the traction-cable and guided by a further series of guide-cables c' lying parallel to the tubular track of cables c; in combination substantially as hereinbefore described.

3. An aerial cable-railway comprising a track formed of a tubular or tunnel-like series of longitudinal cables bridging over the spans without any intermediate support, the car being guided on said track by means of rollers; a carrying-roller connected with the car and attached to the traction-cable; a further series of guide-cables c' arranged above the tubular track of cables c and parallel thereto to carry or guide said carrying-roller and another layer or series of longitudinal guide-cables c^2 arranged below the tubular track of cables c to carry the return traction-cable, in combination, substantially as hereinbefore described.

609,688. IRONING-TABLE. STEPHEN C. MARTIN, Tifton, Ga. Filed Aug. 10, 1897. Serial No. 647,764. (Model.)



Claim.—An ironing-table, rectangular in shape and provided with a rail, and having its central portion cut away, leaving projecting ends and provided with a hinged member partially filling the cut-away part, leaving an elongated slot located nearly in the center of the table and also provided with a button, with hinged legs and with hooks for securing said legs, substantially as described.

609,689. LAMP. JOHN J. MASON, Newark, N. J. Filed Nov. 29, 1897. Serial No. 660,016. (No model.)



Claim.—1. In a lamp, the combination with a perforated cylinder depending therefrom, and an oil-fount, removably engaging with the cylinder, of a series of radial partitions within said cylinder, cooperating with the oil-fount to divide the cylinder into a series of air-chambers, an air-passage from the top of the cylinder into the lamp-body, which is common to all of the chambers, and surrounds the wick-tube projecting into the lamp-body, and a draft-reducer interposed between the air-chambers and the burner.

2. In a lamp, the combination with a perforated cylinder depending therefrom, and an oil-fount, removably engaging with the cylinder, of a series of radial partitions within said cylinder, cooperating with the oil-fount to divide the cylinder into a series of air-chambers, an air-passage from the top of the cylinder into the lamp-body, common to all of the air-chambers, and surrounding the wick-tube which projects into the lamp-body, and a perforated plate interposed between the air-chambers and the lamp-body and covering the said air-passage.

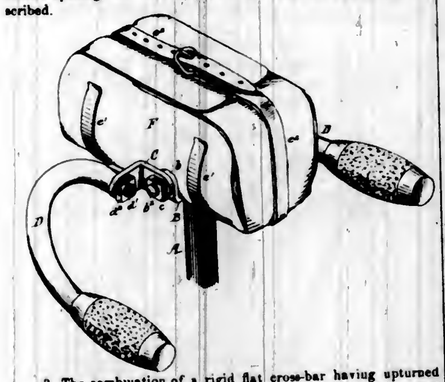
3. In a lamp of the character described, a wick-lock consisting of a spindle extending outside of the lamp-body, at each end, and secured against longitudinal movement, toothed wheels carried by said spindle and engaging with the wick, a disk for turning the spindle to raise and lower the wick, and a winged nut working upon the opposite, screw-threaded end of the spindle and designed to bear against the side of the lamp, to prevent rotation of the said spindle, substantially as described.

4. In a lamp, the combination with a depending, annular extension, provided with oppositely-disposed, vertical, slots, and a horizontal slot, branching from one of the vertical slots, of an oil-fount, designed to enter said extension and having a rotatable cap, carrying a wick-raiser spindle, which projects therefrom at each side, and is designed to enter the vertical slots, a nut carried thereby and designed to bear against the said annular extension, and a pin or stud, which projects from the body of the oil-fount, and enters the horizontal slot, to lock the fount in place, when the body thereof is rotated with relation to the cap, substantially as described.

609,690. HANDLE-BAR AND LUGGAGE-CARRIER. AM MAYERSON, Philadelphia, Pa. Filed Nov. 30, 1897. Serial No. 660,228. (No model.)

Claim.—1. The combination in a handle-bar for bicycles, of the cross-bar, handle-bars and intermediate angle-brackets having arms formed at right angles, one arm of each angle-bracket being secured to the cross-bar and the other arm of each angle-bracket being secured to a handle-bar, and means for permitting rotative adjustment of the angle-brackets on the cross-bar and of the handle-bars on the brackets, substantially as described.

2. The combination of a cross-bar, a many-sided stud thereon, a right-angled bracket having an arm with a many-sided opening adapted to the stud, the other arm of the angle-bracket also having a many-sided opening, a handle-bar having a many-sided stud adapted to said opening, and nuts adapted to the studs, substantially as described.



3. The combination of a rigid flat cross-bar having upturned ends, bolts projecting from said ends, a right-angled bracket mounted on each bolt and secured thereto by nuts, handle-bars having bolts adapted to openings in the angle-brackets and secured thereto by nuts, and a luggage-carrier mounted on the flat cross-bar between the upturned ends thereof, substantially as described.

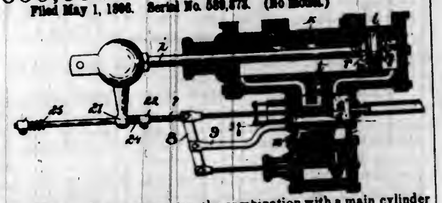
609,691. WOOD-BENDING DEVICE. FREDERICK M. MEYER, Jamestown, N. Y. Filed Dec. 16, 1897. Serial No. 662,205. (No model.)



Claim.—1. A dog comprising opposite slats or bars with openings in the ends thereof, and angle-irons removably and rotatably fitted in said openings and adapted to receive the opposite ends of the wood to be bent, substantially as described.

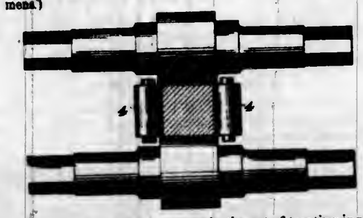
2. The combination with a press, having a bed with an upper concave surface, of a dog comprising opposite bars with circular openings therein, angle-irons removably fitted in said openings and adjustable as to their angles, and a pressing-head having an under convex face, substantially as described.

609,692. WATER-MOTOR. WILLIAM W. MOYER, Lykens, Pa. Filed May 1, 1896. Serial No. 589,673. (No model.)



Claim.—In a water-motor, the combination with a main cylinder having a piston therein, and a minor cylinder having also a piston, of a water-chest having an exhaust, ports leading to the main cylinder and the exhaust, a second series of ports leading to the minor cylinder and the exhaust, a cut-off for the main-cylinder ports, a second cut off for the minor-cylinder ports, connections between the main-cylinder piston and the minor-cylinder cut-off for operating the latter intermittently, and a lever pivoted intermediate its ends and connected with the minor-cylinder piston and the major-cylinder cut-off, whereby the latter may be moved with the minor-cylinder piston.

609,693. CASTING INGOTS. ROBERT A. MCDONALD, Aspinwall, Pa., assignor of two-thirds to David W. Dunlevy and Reuben Miller, Jr., Pittsburg, Pa. Filed Dec. 9, 1897. Serial No. 661,237. (No specimens.)



Claim.—1. As an improvement in the art of treating ingots, the method herein described, which consists in progressively displacing in a longitudinal direction from the lower toward the upper end of the ingot the molten interior portions of the ingot, by pressure applied to the exterior of the ingot, substantially as set forth.

2. As an improvement in the art of treating ingots, the method herein described, which consists in removing the ingot from the mold while the interior portions are in a plastic condition, and then forcing inwardly a portion of one or more sides of the ingot progressively from its lower toward its upper end, substantially as set forth.

3. As an improvement in the art of treating ingots, the method herein described, which consists in forcing inwardly a portion of one or more sides of the ingot while the metal of the interior is plastic, such inward movement being progressive and graduated from the lower toward the upper end of the ingot, substantially as set forth.

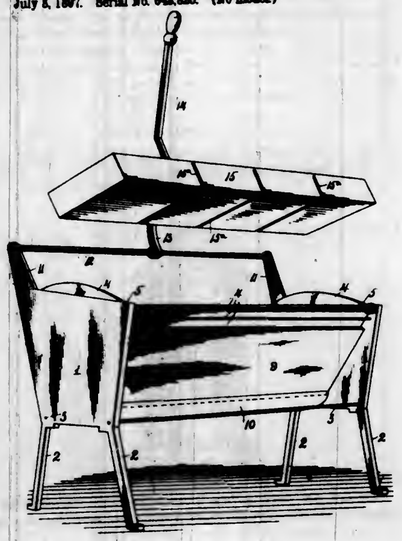
609,694. BLANK FOR KNITTED GARMENTS. DAVID MCGENNIS, Easthampton, Mass., assignor of one-half to Oren C. Burt, same place. Filed Jan. 3, 1898. Serial No. 666,101. (No model.)



Claim.—1. A blank for sleeves or legs of knitted garments, consisting of a tube of tuck-rib fabric having at intervals in its length, blocks or sections of plain-rib fabric, extending part way around the tube, substantially as described.

2. A blank for sleeves or legs of knitted garments consisting of a tube of tuck-rib fabric having at intervals in its length, blocks or sections of plain-rib fabric extending part way around, alternately disposed on opposite sides of the tube, substantially as described.

609,695. FRUIT-PRESS. JAMES B. MCKEE, Bardsdale, Cal. Filed July 8, 1897. Serial No. 643,826. (No model.)



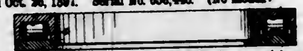
Claim.—A fruit press or squeezer, involving the combination of a frame or support, a fruit receptacle or trough pivotally connected with the frame and provided with a perforated bottom, a supplemental trough or juice-receptacle carried by the main receptacle, a plurality of knives or cutters within the receptacle, a lever pivotally connected with the frame, and a presser-block carried by the lever, said presser-block having grooves to register with the knives, substantially as described.

609,696. VALISE-SEAT AND LUNCH VESSEL. PHILIP NICOLLE, Toronto, Canada. Filed Oct. 23, 1895. Serial No. 566,652. (No model.) Patented in Canada Apr. 20, 1896, No. 52,003.



Claim.—The combination in a valise-seat and lunch vessel, the outside shell A its fixed seat B at one end and the inner outside shell G its fixed seat C at one end sliding in and out of said outside shell, the said inner outside shell and the smaller shells H each with fixed seat at one end and each fitted into each other sliding in and out of said inner outside shell, the smallest shell H and lunch vessel K its sliding door L and ring M on top and the rings N sliding in and out of said smallest shell, whereby when the lunch vessel is taken out of smallest shell and the smaller shells taken out of inner outside shell and inner outside shell taken out of outside shell they can all be stood on end and occupied as seats and when put back in their respective places and secured and encircled by straps form a portable valise, substantially as described.

609,697. FIFTH-WHEEL. CHRISTEN NIELSON, New York, N. Y. Filed Oct. 26, 1897. Serial No. 656,440. (No model.)



Claim.—1. Bearing-plates for fifth-wheels comprising an annular track-plate, provided with parallel grooves on its upper edges and an inverted-U-shaped cover fitted upon the track-plate, the edges of its downwardly-extending sides engaging in the grooves of the track-plate, thus holding the cover in position upon the track-plate and resisting its sidewise dislocation.

2. A fifth-wheel comprising a lower or track plate provided with parallel grooves on both of its upper edges, as shown and described, an upper channel plate or cover fitted upon the lower or track plate in such manner that the edges of its downwardly-extending sides engage in the grooves of the lower plate thereby holding the upper plate in proper position upon the lower and against a sidewise dislocation, and a chain of rollers set between the plates.

3. In a fifth-wheel the combination with a chain of rollers of two bearing-plates, the lower one being provided with parallel running annular grooves and a suitably-shaped bearing-surface between these grooves, and the upper with a similarly-shaped bearing-surface bounded by parallel running annular flanges or walls, forming an annular channel, the upper plate being mounted upon the lower in such manner that the edges of the walls engage in the grooves of the lower plate.

609,698. STOVE. ANTON OHNESUS, Quincy, Ill. Filed Dec. 15, 1897. Serial No. 661,990. (No model.)



Claim.—A stove comprising a fire-pot formed at top with a flange having a segmental air-passage at the back portion of the stove, and a shield formed at the top with a flange, at bottom with a segmental air-passage extending around the front and sides of the stove, and at the front and sides of the stove with radial lugs whereby the shield is supported on the flange of the fire-pot; the portion of the shield at the back portion of the stove seating on the body of the fire-pot; substantially as described.

609,699. NECK-YOKE ATTACHMENT. SWAIN PEARSON, Rock Island, Ill., assignor of one-half to W. W. Harris, same place. Filed Apr. 4, 1898. Serial No. 676,493. (No model.)



Claim.—1. In a neck-yoke end attachment, a member, comprising a pair of integrally-formed loops extending at an angle of forty-five degrees to each other, substantially as described.

2. In a neck-yoke end attachment, a member, comprising a pair of integrally-formed loops, one of them much smaller than the other and arranged centrally below and extending at an angle of forty-five degrees to the other, and provided centrally and at opposite sides of its lower end with rounded projections, substantially as described.

3. In a neck-yoke end attachment, a member, consisting of two integrally-formed loops extending at an angle of forty-five degrees to each other, with the upper side of the lower loop in the form of a pair of oppositely-disposed prongs, substantially as described.

4. In a neck-yoke end attachment, the combination with an upper member comprising a pair of integrally-formed loops which extend at an angle of forty-five degrees to each other, of a loop connected to the end of the neck-yoke bar and extending through the lower loop of the upper or first-named member, substantially as described.

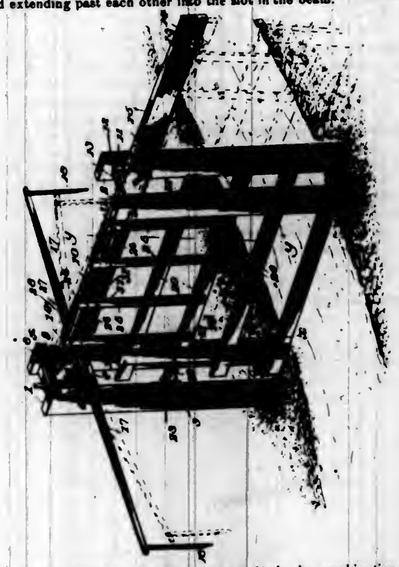
5. In a neck-yoke end attachment, the combination with an upper member comprising a pair of integrally-formed loops which extend at an angle of forty-five degrees to each other, and a clasp for engagement with the end of the neck-yoke bar, of a loop, secured to the clasp and extending loosely through the lower loop of the upper member, substantially as described.

6. In a neck-yoke end attachment, the combination with an upper member, comprising a pair of integrally-formed loops to extend at an angle of forty-five degrees to each other, and a clasp for engagement with the end of the neck-yoke bar and provided with arms, of a loop engaging the lower loop of the upper member, and provided with arms fitting between the arms of the clasp, and a bolt and nut securing the arms of the loop between the arms of the clasp, substantially as described.

609,700. GATE. PETER PETERSON, Rock, Iowa. Filed Apr. 2, 1898. Serial No. 676,217. (No model.)

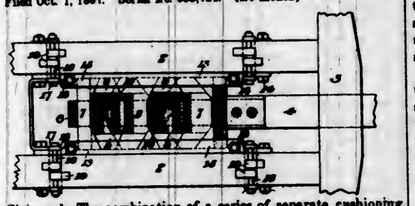
Claim.—1. In a device of the character set forth, the combination of opposite end posts arranged in pairs spaced apart from each other, a space-block between the upper part of the outer posts and secured to one of the latter, said block being of less width than the distance between the posts to provide a seat-space at one side transverse rest and limiting bars on the inner sides of the said outer posts and disposed respectively at the lower and upper portions of the seat-space, said bars having recesses in the edges thereof adjacent to and alining with said space, a tilting operating-beam loosely fulcrumed on a rod mounted in the rear pair of posts and held to one side by a space-sleeve on said rod, the outer end of said beam loosely extending into said seat-space and the opposite end projecting rearwardly through and away from the rear posts, a slot being formed in the lower part of the beam adjacent the outer posts, a track rod or rail secured to one side of the beam and having opposite end stops, a gate proper having upper suspending-bars supporting loosely-

mounted rollers movable on the said track rod or rail, and operating-levers pivotally mounted on the inner sides of the outer posts and extending outwardly in planes at right angles to the position of the gate proper, the inner ends of said operating-levers being reduced and extending past each other into the slot in the beam.



2. In a device of the character set forth, the combination of outer and rear pairs of posts spaced apart from each other, a tilting beam loosely fulcrumed on the rear pair of posts and having a track rod or rail secured to one side thereof, the said beam projecting beyond the rear pair of posts and having a slot formed therein adjacent said outer posts, a pair of levers pivotally attached to the inner portions of the outer posts and having their inner ends reduced and extending into said slot in the beam, and a gate proper having suspending-bars attached thereto with upper cross-bars connecting the same in pairs, and grooved rollers loosely mounted in the upper portions of the suspending-bars and engaging the said track rod or rail on the beam.

609,701. DRAFT-RIGGING. WILLIAM M. PIPER, Allegheny, Pa. Filed Oct. 1, 1897. Serial No. 653,721. (No model.)



Claim.—1. The combination of a series of separate cushioning devices, each device being complete in itself and containing moving friction parts, the moving parts of one device being independent of those of the others, said devices being arranged side by side in tiers and operating independently of each other, and a longitudinal bar extending transversely of the series and arranged to act upon the devices.

2. The combination of a series of separate cushioning devices, each complete in itself, the series being arranged side by side in tiers, of a longitudinally-movable bar arranged to operate said devices successively.

3. The combination with a series of cushioning devices arranged side by side in different tiers, each device containing a block having oppositely-directed inclines, wedges contacting with the inclines, and a spring arranged to resist the movement of the wedges along the incline, of a longitudinally movable bar arranged to actuate said devices.

4. The combination with a series of cushioning devices arranged side by side in tiers, each device containing a block having oppositely-directed inclines, and spring-pressed wedges contacting with the inclines, a connection between the block of one device and that of another, and a longitudinally-movable bar arranged to actuate the series.

5. The combination of a series of cushioning devices arranged side by side in tiers, each device containing a block provided with oppositely-directed inclines and spring-pressed wedges contacting with the inclines, a yoke surrounding the series, and a longitudinally-movable bar to which the yoke is secured.

6. The combination with a longitudinally-movable bar, of a yoke secured at the end thereof, transverse blocks arranged side by side in tiers within the yoke, the end block of one tier projecting beyond that of the other, and spring-pressed wedges coacting with oppositely-directed inclines upon the blocks.

7. A draft-rigging comprising a coupler having a draw-bar provided with an end yoke, a series of transverse blocks extending through the yoke and arranged side by side, said blocks having oppositely-directed inclines, spring-pressed wedges contacting with the inclines, and a connection between the end block of one tier and the opposite end block of the next tier.

8. A securing device for draft-riggings consisting of a yoke arranged to surround the draft-timber and having pivoted lugs arranged to bear thereon.

609,702. MANUFACTURE OF FLUID FOR IMPREGNATING FIBERS FOR INCANDESCENT LIGHTING. GERHARD B. PUCHMÜLLER, Schöneberg, Germany, assignor to the Daylight Incandescent Mantle Company, Limited, London, England. Filed Mar. 31, 1896. Serial No. 674,701. (No specimens.)

Claim.—1. The herein-described method of manufacturing a fluid for impregnating fibers, fabrics, or bodies to be used for incandescent lighting, which method consists in combining oxids of strontium, zirconium, barium and aluminium and dissolving the same, substantially as hereinbefore described.

2. The herein-described method of manufacturing a fluid for the purpose above specified, which method consists in combining oxids of strontium, zirconium, barium and aluminium, dissolving the same, and adding thereto small quantities of soluble metallic compounds which, when ignited, produce light-giving metallic oxids, or metals, substantially as hereinbefore described.

3. A fluid for the purpose above specified, composed of a solution of oxids of strontium, zirconium, barium and aluminium, substantially as described

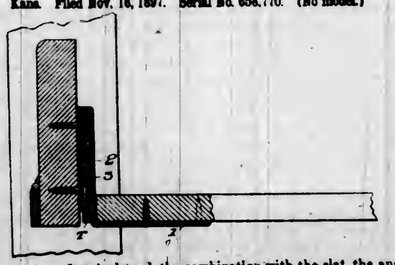
4. A fluid for the purpose above specified, composed of a solution of oxids of strontium, zirconium, barium and aluminium and a small quantity of dissolved metallic compounds which, when ignited will produce light-giving metallic oxids, substantially as described.

5. A fluid for the purpose above specified, composed of a solution of oxids of strontium, zirconium, barium and aluminium and small quantities of magnesium nitrate, oxid of antimony, uranium nitrate, an ammonium compound adapted to impart a desired color to the light, and chromic acid, substantially as described.

6. A fluid for the purpose above specified, composed of a solution of oxids of strontium, zirconium, barium and aluminium and small quantities of magnesium nitrate, oxid of antimony, uranium nitrate, wolframate of ammonia, vanadate of ammonia and chromic acid, substantially as described.

7. A fluid for the purpose above specified, composed of a solution of oxids of strontium, zirconium, barium and aluminium and small quantities of magnesium nitrate, oxid of antimony dissolved in water containing tartaric acid, uranium nitrate, wolframate of ammonia, vanadate of ammonia, chromic acid, and nitrate of silver, substantially as described.

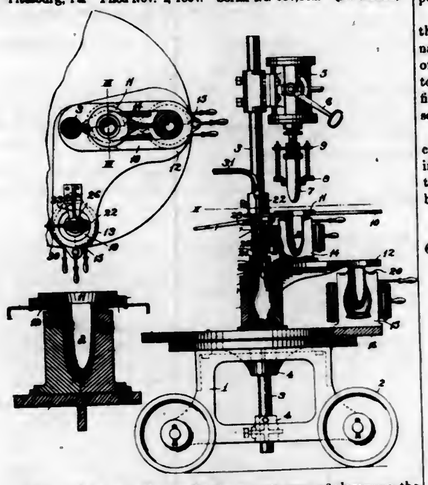
609,708. STAY FOR BED-SLATS. MARIA RICHARDSON, Helmick, Kans. Filed Nov. 16, 1897. Serial No. 658,770. (No model.)



Claim.—In a bedstead, the combination with the slat, the angle-stay secured to the end thereof formed with a vertical portion, two

inwardly-extending flanges with a central slot between the inner edges and forming a recess open at the lower end, and the transverse portion closing the upper end of said recess and its edges projecting beyond said flanges and engaging with the upper end of the plate secured to the side rail, of the side rail, the plate secured thereto, the rectangular lug engaging with the recess in the stay, and the rivet securing said lug to the plate, substantially as described.

609,704. MANUFACTURE OF GLASSWARE. DANIEL C. RIPLEY, Pittsburg, Pa. Filed Nov. 4, 1897. Serial No. 657,362. (No model.)



Claim.—1. In an apparatus for the manufacture of glassware, the combination of a pressing mechanism, a press or blank mold, a press-mold support, a blow-mold stationary beneath the press-mold at the time of and during the movement of the blank from the press-mold and a mechanism for blowing the blank, substantially as set forth.

2. In an apparatus for the manufacture of glassware, the combination of a pressing mechanism, a blowing mechanism, a press-mold, a press-mold support, a blow-mold, and means for shifting the blow-mold to and from alinement with the press-mold to operative position under the blowing mechanism, substantially as set forth.

3. In an apparatus for manufacturing glassware, the combination of pressing mechanism, a press or blank mold, a press-mold support, a blow-mold, a movable blow-mold support arranged below the press-mold support, a mechanism for blowing the blank, and means for guiding the blank in its movement from the pressing to the blow mold, substantially as set forth.

4. In an apparatus for blowing glassware, the combination of a press-mold, a blow-mold, and means for supporting said molds in such relation to each other as to permit of the vertical dropping movement of the blank from the press to the blow mold, substantially as set forth.

5. In an apparatus for the manufacture of glassware, the combination of pressing mechanism, a press or blank mold, having a removable ring, a radially-slotted mold-ring support, a press-mold support, a blow-mold, a movable blow-mold support, said supports being arranged in such relation to each other as to permit of the passage of the blank by a vertical movement from the press to the blow mold, substantially as set forth.

6. In an apparatus for the manufacture of glassware, the combinaiton of a sectional mold, a mold-ring, a support for the mold-ring, and means for holding the article in the mold-ring during the opening of the mold and adapted to be shifted to release the article by the mold-sections while being opened, substantially as set forth.

7. The combination of a blow-mold having a shaping-cavity and at a point above the shaping-cavity provided with means for supporting the blank as against too great vertical movement, and a cap or plate provided with a connection to a suitable source of air under pressure, the cap being constructed to form a tight joint with the upper end of the blow-mold, substantially as set forth.

8. The combination of a blow-mold having a shaping-cavity and provided at a point above the shaping-cavity with a shoulder adapted to support the blank as against too great vertical movement, and a cap or plate provided with a connection to a suitable source of air under pressure, the cap being constructed to form a tight joint with the upper end of the blow-mold, substantially as set forth.

9. In an apparatus for manufacturing glassware, the combination of a pressing mechanism, a press or blank mold movable into and out of line with the pressing mechanism, a blow-mold, a blow-mold support movable in a plane below the plane of movement of the press-mold, and mechanism for blowing the blank, substantially as set forth.

10. The combination of a press-mold provided with a blank-shaping cavity, and a blow-mold provided with a shaping-cavity, the upper portions of the cavities in said molds being suitably proportioned so that the blank formed in the press-mold will close the upper portions of the cavity in the blow-mold, substantially as set forth.

11. The method of transferring plastic pressed glass blanks from the press-mold in which they are pressed, into a blow-mold preliminary to blowing, by dropping the blank bodily under the influence of gravity, through the open bottom of the press-mold into the open top of the blow-mold, and cushioning its fall by the air partially confined in the blow-mold by the blank as it falls, substantially as described.

12. The method of manufacturing articles of glassware, which consists in pressing a blank, transferring the blank bodily and while in a plastic condition, by the action of gravity from the press-mold to the blow-mold and expanding the blank to the finished shape by blowing, substantially as set forth.

609,705. GAS-PRODUCER. JAMES G. SANDERSON, Scranton, Pa. Filed Jan. 7, 1897. Serial No. 618,360. (No model.)



Claim.—1. A gas-producer comprising a casing, the fuel-hoppers, the magazine-feeders located at the sides of the casing and providing a gas-chamber between them, the downwardly-converging fire-pot having side grates formed with lateral grate-openings, the superheating-chambers for the air and steam located at the sides of the fire-pot and discharging through the grate-openings, and means for breaking clinker and discharging ash at the foot of the inclined sides; substantially as described.

2. A gas-producer comprising a casing, the fuel-hoppers, the magazine-feeders located at the sides of the casing and providing a gas-chamber between them, the downwardly-converging fire-pot having side grates formed with lateral grate-openings, the superheating-chambers for the air and steam located at the sides of the fire-pot and discharging through the grate-openings, and the discharge-valve located at the bottom of the said fire-pot; substantially as described.

3. A gas-producer comprising a casing, the magazine-feeders located at the sides of the casing and providing a gas-chamber between them, the downwardly-converging fire-pot having side grates formed with lateral grate-openings, the superheating-chambers for the air and steam located at the sides of the fire-pot and discharging through the grate-openings, the breaking-pieces provided with projections and located beneath the grates, and the discharge valve having projections working in conjunction with the projections on the breaking-pieces and located between the breaking-pieces; substantially as described.

4. A gas-producer comprising a fire-pot having downwardly-converging ends, and downwardly-converging sides formed with horizontal plates spaced apart to provide lateral openings proportioned to the width of said plates, the plates being of sufficient width to prevent ash or fuel falling through the lateral openings between the plates, the superheating-chambers located at the ends and sides of the fire-pot and discharging through the said lateral openings, and the magazines located at the sides of the producer through which the fuel is continuously fed; substantially as described.

5. A gas-producer comprising a continuous feeding device along two sides of the producer, a fire-pot having two downwardly-converging sides formed with horizontal plates spaced apart to provide lateral openings proportioned to the width of said plates, the plates being of sufficient width to prevent ash or fuel falling through the lateral openings between the plates, the superheating-chambers located at the sides of the fire-pot and discharging through the said lateral openings, and a suitable device for breaking and discharging ash and clinker at the foot of the converging sides; substantially as described.

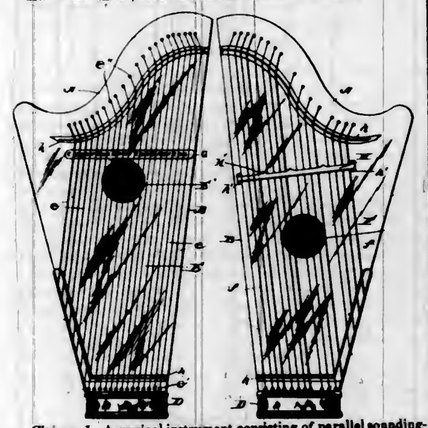
6. A gas-producer comprising a downwardly-converging fire-pot having side grates, the breaking-pieces having projections and located between the side grates, and the ash-discharge valve consisting of a stationary portion having openings, and a movable portion having openings adapted to register with the openings in the stationary part, and projections working in conjunction with the projections on the breaking-pieces; substantially as described.

7. A gas-producer comprising a fire-pot having downwardly-converging ends, and downwardly-converging sides formed with horizontal plates spaced apart to provide lateral openings proportioned to the width of said plates, the plates being of sufficient width to prevent ash or fuel falling through the lateral openings between the plates, the superheating-chambers located at the ends and sides of the fire-pot and discharging through the said lateral openings, the downwardly-flaring magazines located at the sides of the producer through which the fuel is continuously fed, and a water-tank beneath the fire-pot to receive the ash as the fuel is consumed; substantially as described.

8. A gas-producer comprising feed-hoppers extending lengthwise of the producer, the peaked top forming the under side of the hoppers placed a sufficient distance from the sides of the producer to provide feed-openings, rotary cylindrical valves located in the feed-openings along the two sides, the inwardly-inclined pendent plates forming the inner walls of the magazine-feeders, a fire-pot having two downwardly-converging sides formed with horizontal plates spaced apart to provide lateral openings, and the superheating-chambers located at the sides of the fire-pot and discharging through said lateral openings; substantially as described.

9. A gas-producer comprising a continuous feeding device along the sides of the producing-chamber, a fire-pot having downwardly-converging sides formed with grate-plates with openings arranged to prevent ash or fuel falling through the superheating-chambers located about the sides of the fire-pot and discharging through the said openings, a suitable device for breaking and discharging ash and clinker below the fire-pot, and a water-tank forming a seal for the ash-pit; substantially as described.

609,706. MUSICAL INSTRUMENT. EDWARD A. SCHUBERT, St. Charles, Mo., assignor of one-half to Ernest A. Zimmermann, St. Louis, Mo. Filed Jan. 27, 1898. Serial No. 668,191. (No model.)

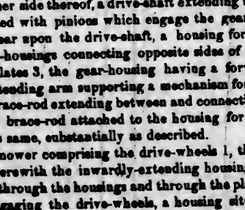


Claim.—1. A musical instrument consisting of parallel sounding-boards separated by a horizontal, transverse partition having perforations for the purpose described, a series of melody-strings arranged on one side of the instrument across one side thereof, a string-guide across the sounding-board devoted to the series of melody-strings, a series of chord-strings situated on the opposite side of the instrument across the other sounding-board thereof, arranged in groups, a chord-guide across the last-named series of strings, and the sounding-board devoted thereto, having prongs to locate said groups, substantially as described.

2. In a musical instrument, a frame consisting of a hollow foot-piece, a head-piece, and the upright members united to the foot and head pieces, combined with parallel sounding-boards arranged in different planes and secured on opposite sides of the frame, two independent series of strings stretched across bridges at the top and bottoms of the frame and arranged adjacent to the respective sound-boards, and a horizontal, transverse, perforated partition secured within the frame and between the sound-boards thereof, substantially as described.

3. A chord-guide for a musical instrument, consisting of a flat strip of metal having a foot at each end and adapted to span all the chord-strings of said instrument, and prongs upon one edge of said guide to assist in locating the chords by the sense of feeling, substantially as described.

609,707. STRIPED KNITTED FABRIC. ROBERT W. SCOTT, Philadelphia, Pa., assignor of one-half to Louis H. D. Williams, Ashbourne, Pa. Filed Feb. 25, 1898. Serial No. 671,650. (No model.)

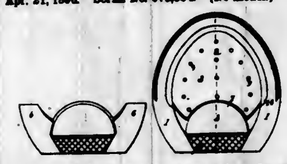


Claim.—1. A knitted fabric having a chain of stitches between and parallel with the wales of said knitted fabric and composed of yarn independent of the knitting-yarn but wrapped around said knitting-yarn where the same crosses from wale to wale, substantially as specified.

2. A knitted fabric having a chain of stitches between and parallel with the wales of said knitted fabric and having a stitch for each course of said knitted fabric, said chain being composed of yarn independent of the knitting-yarn but wrapped around said knitting-yarn where the latter crosses from wale to wale, substantially as specified.

3. A knitted fabric having dropped stitches replaced by stitches of a knitted chain parallel with the wales of said knitted fabric and wrapped around the knitting-yarn at such dropped stitches, substantially as specified.

609,708. HORSESHOE-PAD. JOHN SHEEHAN, Sing Sing, N. Y. Filed Apr. 21, 1898. Serial No. 678,334. (No model.)



Claim.—1. A pad for a horseshoe consisting of a cushion of felt, a perforated sole, and a rubber heel, extended portions of the heel reaching under the cut-away portions of the metal shoe, the heel portion projecting beyond the metal surface of the shoe, with a supporting-body extending within the shoe, substantially as herein shown and described.

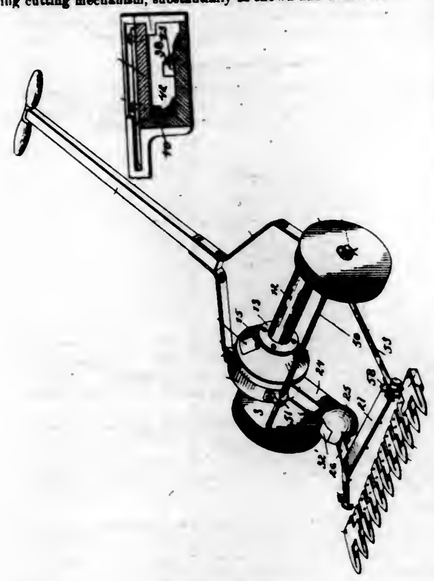
2. A padded horseshoe comprising a felt cushion a perforated sole, a rubber pad with a body extension partly over the sole, with the heel projecting beyond the surface of the metal shoe, and with wings extending under the metal shoe, the ends of the said shoe being cut away to receive said wings, all combined substantially as and for the purposes herein set forth.

609,709. HAND LAWN-MOWER. CHARLES L. SNOWLS, Tuscola, Ill. Filed Oct. 14, 1896. Serial No. 608,851. (No model.)

Claim.—1. A lawn-mower comprising the drive-wheels, the plates 3 at the inner side thereof, a drive-shaft extending through the plates and provided with pinions which engage the gear-wheels, an intermediate gear upon the drive-shaft, a housing for the intermediate gear, shaft-housings connecting opposite sides of the gear-housings and the plates 3, the gear-housing having a forwardly and downwardly extending arm supporting a mechanism for reciprocating the cutter, a brace-rod extending between and connecting with the plates 3, the said brace-rod attached to the housing for bracing and supporting the same, substantially as described.

2. A mower comprising the drive-wheels 1, the plates 3 having integral therewith the inwardly-extending housings, a driving-shaft extending through the housings and through the plates provided with pinions engaging the drive-wheels, a housing situated between the inner ends of the shaft-housings and united thereto, the said interme-

diate housing inclosing the gear and made in two parts for the purpose described, one part of the housing having a rigid arm extending downward and outward and supporting a mechanism for reciprocating the cutter-bar, and an operative connection extending through the said arm and between the drive-shaft gears and the reciprocating cutting mechanism, substantially as shown and described.



609,710. MOP-WRINGER. JOHN L. SPRAGUE, New Hartford, Iowa. Filed Dec. 20, 1897. Serial No. 662,613. (No model.)



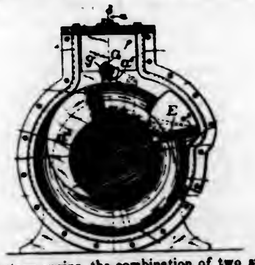
Claim.—1. In a mop-wringer, a bowl provided with a series of laterally-inclined slots and having a bottom composed of downwardly bowed or curved cross-bars disposed at an angle to each other and each having serrations or teeth on its opposite upper edges, said bars being separated by drip-spaces.

2. In a mop-wringer, a bowl having an open bottom composed of cross-bars disposed at an angle to each other which are bowed or curved laterally and which have teeth or serrations on their inner curved portions.

3. A mop-wringer comprising a bowl whose sides are provided with upwardly-disposed inclined slots narrowed or tapered gradually from top to bottom and an open bottom composed of downwardly bowed or curved crossed cross-bars having serrations or teeth on both of their opposite upper edges.

609,711. ROTARY ENGINE. CORNELIUS J. SULLIVAN, Norwood, Mass. Filed July 10, 1897. Serial No. 644,123. (No model.)

Claim.—1. A rotary engine provided with two steam-tight circular casings, each having a circular periphery, a cylinder provided with a piston-head mounted in each one of the casings, said piston-heads being mounted at substantially one hundred and eighty degrees apart, a rib of gradually-decreasing width arranged behind each piston-head, a pivoted abutment-valve in each casing adapted to be operated by said rib and to fall by its own weight after the piston-head has passed it, an inlet-opening arranged above each casing, valves for said inlet-openings mounted on a single rotary shaft, said valves being approximately halves of cylinders mounted substantially at ninety degrees apart upon said shaft, a lever arm secured to the shaft of one of the abutment-valves, a second lever-arm secured to the shaft of the steam-valves, and a link connecting said lever-arms whereby by the rise of said abutment-valve one of the said steam-levers will be opened and the other closed, and whereby by the fall of said abutment-valve the reverse operation is carried out, substantially as described.



2. In a rotary engine, the combination of two steam-tight circular casings located parallel to each other, a partition between said casings, each of said casings being formed in two parts and each part provided with a central opening for the passage of a shaft and with steam inlet and exhaust openings, and each casing being carved on its periphery to form a quarter-circle and provided with an interior depression immediately within said quarter-circle, a circular elevation immediately within said depression and a circular depression within said elevation said depressions being adapted to contain packing, a revoluble part located in each casing and rigidly fastened to a shaft passing through the entire machine, each revoluble part being composed of a cylinder with a groove on its periphery substantially semicircular in shape and with its ends hollowed out, a circular piston-head fastened to each of the said cylinders in the semicircular groove, said piston-heads being arranged at substantially one hundred and eighty degrees apart, and a rib of gradually-decreasing width located behind each piston-head and at right angles to the shaft, and a pivoted abutment-valve located in each casing and adapted to be operated by said rib and to fall by its own weight when said piston-head has passed it, substantially as described.

3. In a rotary engine, the combination of two steam-tight circular casings located parallel to each other, a partition between said casings, each of said casings being formed in two parts and each part provided with a central opening for the passage of a shaft and with steam inlet and exhaust openings, and each casing being curved on its periphery to form a quarter-circle and provided with an interior depression immediately within said quarter-circle, a circular elevation immediately within said depression, and a circular depression within said elevation, said depressions being adapted to contain packing, a revoluble part located in each casing and rigidly fastened to a shaft passing through the entire machine, each revoluble part being composed of a cylinder with a groove on its periphery substantially semicircular in shape and with its ends hollowed out, a circular piston-head fastened to each of said cylinders in the semicircular groove, said piston-heads being arranged at substantially one hundred and eighty degrees apart, a rib of gradually-decreasing width located behind each piston-head and at right angles to the shaft, a pivoted abutment-valve located in each casing and adapted to be operated by said rib and to fall by its own weight when said piston-head has passed it, steam-valves mounted on a shaft and so arranged that when one is opened the other is closed, a lever-arm mounted upon the shaft of one of the abutment-valves, a second lever-arm mounted upon the shaft of the steam-valves, and a link connecting said levers, substantially as described.

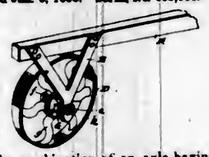
609,712. NEEDLE. ELTON H. THOMPSON, Drake's Mills, Pa. Filed Sept. 3, 1897. Serial No. 650,491. (No model.)



Claim.—1. A needle comprising a body, a shank longitudinally adjustable therein, provided with an eye, and a sleeve surrounding said shank and adapted to bear against the rear end of said body for limiting the inward movement of the shank therein.

2. A needle comprising a body, having a screw-threaded socket at the rear end thereof, a shank adapted to screw into said socket and provided with an eye at its rear end, and a sleeve surrounding said shank and adapted to bear against the rear end of said body for limiting the inward movement of said shank, as and for the purpose set forth.

609,718. PLOW-WHEEL BOX. CALVIN P. WAKEFIELD, Livingston, Cal. Filed Jan. 6, 1898. Serial No. 666,800. (No model.)

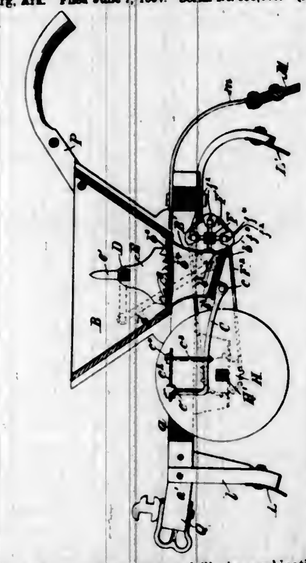


Claim.—1. The combination of an axle having an angular portion at the inner end of its spindle, a wheel having a box provided with a bore receiving the axle and also provided with a recess at the inner end of said bore, the washer mounted on the angular portion of the axle and arranged within the recess of the box and having its outer side beveled, and the cap mounted on the angular portion of the axle and snugly receiving the inner end of the box and having the notch in its under side, substantially as specified.

2. The combination of an axle having a head at the outer end of its spindle and an angular portion at the inner end of the same terminating in a threaded end adapted to receive a nut, a wheel having a box provided with a bore receiving the axle and also provided with a recess at the inner end of said bore, the washer mounted on the angular portion of the axle and arranged within the recess of the box and having its outer side beveled, the cap mounted on the angular portion of the axle and snugly receiving the inner end of the box and having the notch in its under side, and a cap resting over the outer ends of the axle and box and secured upon the latter, substantially as specified.

3. The combination of an axle having a head at the outer end of its spindle and an angular portion at the inner end of the same terminating in a threaded end adapted to receive a nut, a wheel having a box provided with a bore receiving the axle, a cap mounted on the angular portion of the axle and snugly receiving the inner end of the box, and a cap resting over the outer ends of the axle and box and secured upon the latter, substantially as specified.

609,714. DRILL AND SEED-PLANTER. ROBERT W. WATT, Hamburg, Ark. Filed June 7, 1897. Serial No. 639,775. (No model.)



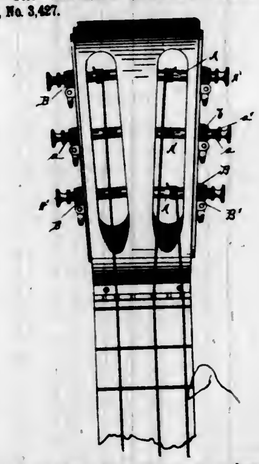
Claim.—1. In a seed-planter and drill, the combination with a main frame, of a seed-hopper mounted thereon, a receptacle mounted beneath and opening into said hopper, a partition having an aperture therein and located in the upper part of said receptacle, a toothed agitator having its teeth projecting into said aperture, a cranked shaft carrying the same, a second cranked shaft located below the hopper, means for imparting oscillatory motion to the hopper-shaft from the first shaft, a spring-pressed bottom engaging the lower end of said receptacle, and means for periodically moving the said bottom from said receptacle and allowing the seed to fall therefrom, substantially as described.

2. In a seed-planter and drill, the combination with a main frame, of a seed-hopper mounted thereon, a receptacle mounted beneath and opening into said hopper, a partition having an aperture therein and located in the upper portion of the receptacle, a toothed agitator having its teeth projecting into said aperture, a cranked shaft carrying said agitator, a second cranked shaft located below the hopper, the crank of said second shaft being shorter than that of the first shaft, a connecting-rod connecting the two so that a rotary motion of one shaft imparts an oscillating motion to the other, a spring-pressed bottom engaging the lower end of said receptacle, a plurality of projecting lugs mounted on the shaft below the hopper, means for rotating the said shaft whereby the said lugs are brought successively into engagement with the said bottom pressing it partly away from the said receptacle and allowing the seed to fall, substantially as described.

3. In a seed-planter and drill, the combination with a main frame, of a seed-hopper mounted thereon, a receptacle mounted beneath and opening into said hopper, a slotted partition located in the upper portion of said receptacle, an agitator in the form of a toothed sector having its teeth projecting into the slot of said partition, a spring-pressed bottom closing the lower end of the said receptacle, a shaft carrying said agitator, a second shaft located below the hopper, means for transmitting oscillatory motion to the first shaft from the second, adjustable lugs mounted upon said shaft and adapted to engage the spring-pressed bottom successively as the shaft is revolved, and to press the same away from the receptacle, a sprocket-wheel carried by said lower shaft, a shaft located forward of the said hopper, a sprocket carried by said shaft, a chain connecting the two sprockets, and a driving-wheel mounted on said forward shaft, substantially as described.

4. In a seed-planter and drill, the combination with a main frame, of a seed-hopper mounted thereon, a receptacle mounted beneath and opening into said hopper, an agitating feeder carried within said hopper and adapted to feed the seed into said receptacle, a spring-pressed bottom covering the lower end of said receptacle, a wheel having projections around its periphery, said projections adapted to come in contact successively with said bottom and to press it away from said receptacle, a shaft carrying said wheel, means for transmitting motion to the shaft, a lever adapted to shift the said shaft laterally and to bring the said lugs into or out of line with said bottom, plows and a coverer carried by said frame, substantially as described.

609,715. TUNING DEVICE FOR MUSICAL STRINGED INSTRUMENTS. EMIL WETTERSEN, Markneukirchen, Germany. Filed Dec. 18, 1897. Serial No. 662,497. (No model.) Patented in Austria Sept. 17, 1897, No. 3,427.

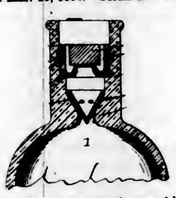


Claim.—1. In string instruments, a peg adapted to be moved longitudinally, passing loosely through the worm-wheel of the ordinary tuning device and having an outer head with a projecting tooth adapted to enter into a notch in the worm-wheel, substantially as described and for the purpose set forth.

2. In string instruments, pegs longitudinally movable in the head of the instrument, worm-wheels revolubly secured to a plate and adapted to be operated by worms secured on the head of the instrument, said worm-wheels having hubs each provided with a notch adapted to receive a tooth or projection of the knob or thumb-piece, said knob or thumb-piece being located on the outer end of said pegs,

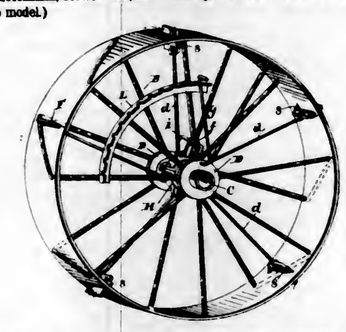
whereby when the strings have been tightened the pegs can be pushed longitudinally inward and locked, substantially as described and for the purpose set forth.

609,716. NON-REFILLABLE BOTTLE. SIMON S. WHITAKER, Venetia, Pa. Filed Mar. 19, 1897. Serial No. 628,255. (No model.)



Claim.—In an antirefilling bottle, the combination with the bottle proper having a conical valve-seat and an annular shoulder formed in its neck, of a conical flexible washer mounted on said valve seat, a hollow conical valve mounted on said washer and formed with a plurality of apertures adapted to be closed when the valve is seated, and a guard mounted in the neck above the valve so as to rest upon the annular shoulder and formed with a plurality of concentric vertical passages and an inwardly and an upwardly extending flange adapted to protect the lower ends of said passages; the inwardly-turned flange of said guard also acting as a stop to limit the movement of the valve, substantially as described.

609,717. TRACTION-WHEEL. FRANK WILLIAMS and WILLIAM H. QUICKHALL, Stewardson, Ill. Filed Apr. 16, 1898. Serial No. 677,838. (No model.)



Claim.—1. A wheel comprising a rim having openings, friction-blocks adapted to move through said openings, a band journaled upon the hub of the wheel, connections between the blocks and the band, the band having a radially-extending slotted member, an operating member having its end journaled in the flanges of the wheel-hub, said operating member having a crank-arm between the flanges engaging the slotted member of the band, the outer end of the operating member having a projecting handle, and a notched segment secured to the outer side of the spokes of the wheel, substantially as described.

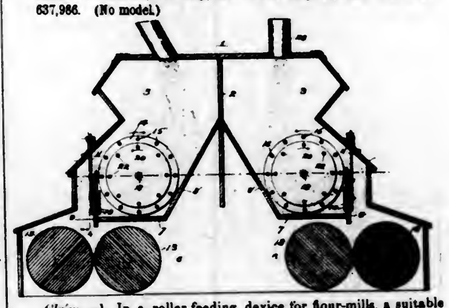
2. A wheel comprising a rim having openings therein, a hub having peripheral flanges, frictional blocks movable through the said rim-openings, a band journaled upon the hub, connections between the friction-blocks and the band, an operating member having its end journaled in the flanges of the hub and provided with a laterally-projecting operating portion between the flanges, the band having parallel arms between which the lateral portion of the actuating member is situated, the actuating member having one of its ends provided with an operating-handle outside of the flanges of the hub, substantially as described.

3. A wheel comprising a rim having openings, frictional members movable through said openings, a band journaled upon the hub of the wheel having longitudinally-extending ears provided with transverse openings, rods having their ends provided with hooks passing through the openings of the ears and the said friction members, an operating member consisting of a rod having its ends journaled in the flanges of the hub and provided with a U-shaped crank-arm between the flanges, the band having projecting members engaging the U-shaped portions of the rod, one end of the rod provided with a laterally-extending operating-arm, and a segment with which the arm is adapted to engage, substantially as described.

609,718. DRAWING TUBES. ALFRED C. WRIGHT, Birmingham, England. Filed Feb. 16, 1898. Serial No. 670,561. (No specimens.)

Claim.—The herein-described process of drawing tubes with dies consisting in coating one of the contacting surfaces with antifriction metal; mounting the tube on a mandrel; drawing the tube and mandrel through the dies in succession without intermediate annealing or pickling and releasing the tube from the mandrel after each pass through a die without removing the tube from the mandrel, substantially as described.

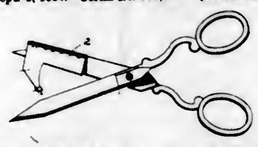
609,719. ROLLER-FEEDING DEVICE FOR FLOUR-MILLS. JAMES W. YEAGER, Waverly, Mo. Filed May 24, 1897. Serial No. 637,986. (No model.)



Claim.—1. In a roller-feeding device for flour-mills, a suitable casing provided with two compartments, an adjustable gage between said compartments, a driven roller within one compartment, having rods or arms to lift the stock and discharge it over said gage into the other compartment, and a second roller driven in the opposite direction and provided with rods or arms arranged to successively pass successive rods or arms of the other roller as the latter attain positions adjacent to and in about the same horizontal plane as the upper edges of said gages, substantially as described.

2. In a roller-feeding device for flour-mills, a suitable casing provided with two compartments, an adjustable gage between said compartments, a driven roller within one compartment having rods or arms to lift the stock and discharge it over said gage into the other compartment, a second roller driven in the opposite direction and provided with rods or arms arranged to successively pass successive rods or arms of the other roller as they attain positions adjacent to and in about the same horizontal plane as the upper edges of said gages, and a pair of crushing-rolls arranged in the said other compartment to receive the stock discharged over the gage-board, substantially as described.

609,720. BUTTONHOLE-CUTTER. ERNEST R. ZINK, Kansas, Ill. Filed Sept. 9, 1897. Serial No. 651,044. (No model.)



Claim.—1. The combination with a pair of scissors, of a buttonhole attachment therefor comprising a clamp adapted to be applied to one of the scissors-blades, a cutting-blade thereon, and an adjustable slide consisting of a spring clamping-yoke mounted on said cutting-blade and adapted to coact with the other blade of the scissors.

2. The combination with a pair of scissors, of a buttonhole attachment therefor comprising a spring-clamp adapted to be applied to one of the scissors-blades, a cutting-blade formed integral with said clamp and having an inclined cutting edge formed at its end with a sharp point, and a spring-yoke adapted to slide upon said cutting-blade to form a stop or gage against which the other blade of the scissors is adapted to bear.

609,721. FILTERING-FAUCET. WILLIAM ZOLLER, San Francisco, Cal. Filed May 25, 1897. Serial No. 638,070. (No model.)

Claim.—1. In a filtering-faucet, the combination with a pipe connection, a valve-casing and a spout leading into said casing, of a filter having a draw-off cock and a plug-valve provided with fluid-passages adapted to bring the spout and pipe connection in fluid communication when turned in one direction and the pipe connection and filter in fluid communication when turned in another direction.

2. In a filtering-faucet, the combination with a valve-casing, a pipe connection leading thereto and a spout for the casing, of a filter connected to the casing below the spout and pipe connection, a draw-off cock for said filter, and a plug-valve having a longitudinal passage therein, a passage adapted to receive fluid from the pipe connection, and leading into the longitudinal passage, a second passage leading from the longitudinal passage and adapted for alinement with the spout, and a third passage leading to the longitudinal passage and adapted to afford communication with the filter, said latter passage being offset from the passage last aforesaid.



3. In a filtering-faucet, the combination with a valve-casing having a pipe connection and a spout, of a filter-casing connected with the valve-casing and provided with a delivery spout or cock and a flush-cock, a double cylinder within said casing inclosing filtering material and located away from the walls of said casing to leave an annular space around the filter-inclosing cylinder, and a valve in the valve-casing having ports whereby communication can be had between the pipe connection and the spout or the filter, substantially as described.

609,722. BICYCLE. RUSSELL P. AMBLER, De Funiak Springs, Fla. Filed June 1, 1897. Serial No. 638,955. (No model.)



Claim.—1. In a bicycle or other foot-propelled vehicle, the combination with the crank-shaft thereof and the pedal-levers connected to said shaft, of supplemental levers pivoted to the frame and also to said pedal-levers and having their free end portions lying above and adjacent to the pedals of the pedal-levers, whereby they may be operated by the feet upon the upward movement thereof, substantially as specified.

2. In a bicycle or other foot-propelled vehicle, the combination with a crank-shaft having oppositely-extending cranks at its ends, of foot-levers, one of which is pivoted at its rear end to the end portion of each crank, and supplemental levers, one of which is pivoted at each side to a stationary part of the frame, and those intermediate portions are loosely connected respectively to the first-named levers and whose free end portions extend to points above the pedals of the respective foot-levers and in position to be engaged by the feet during the upward movement thereof, substantially as specified.

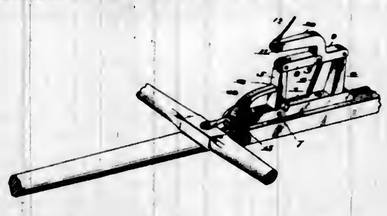
609,723. SCREEN-DOOR AND WINDOW-SCREEN. LOUIS F. ARBO, Jackson, Mich. Filed July 3, 1897. Serial No. 643,265. (No model.)

Claim.—1. The combination with the frame of a door or window, of a narrow strip at one side of the same, angular spring-bolts at the ends of said strip for holding the same in place, angular sockets in the door or window frame to receive said bolts and prevent the same from turning, a screen-frame, bolts at the top and bottom thereof, and sockets in the door or window frame to receive said bolts, the latter being adapted to turn in their sockets and to serve in connection therewith as hinges for said screen-frame.



2. The combination with the frame of a door or window, of a screen-frame, disconnected, spring-actuated bolts oppositely disposed on said screen-frame adjacent to one edge thereof to serve as hinge-pintles adapted to be withdrawn by hand, removable socket-pieces on the door or window frame normally engaging the said bolts, a narrow strip secured to the door or window frame at the swinging edge of the screen-frame by spring-actuated, angular bolts on the strip, removable plates on the door or window frame having angular sockets engaged by said angular bolts whereby said strip is prevented from turning, and means for securing the screen-frame to said strip, all substantially as described.

609,724. HORSE-DETACHER. AUGUST BAATZ and ALBERT BAATZ, Butternut, Wis. Filed Jan. 6, 1898. Serial No. 665,814. (No model.)



Claim.—1. In a horse-detacher, a pivoted hook for holding the whiffletree, in combination with a swinging piece having a socket to receive the point of said hook and prevent the latter from swinging, a fixed upright, toggle-links connecting the upright and swinging piece, and means for operating said links, substantially as described.

2. In a horse-detacher, the combination with a base adapted to be secured to a vehicle, of a whiffletree-hook pivotally connected to said base and extending rearward, a stationary upright on said base, a pivoted upright on the base having a socket to receive and hold the hook, toggle-links interposed between the stationary and pivoted uprights, a spring for holding said links in alinement with each other, and a lever-arm on one link whereby the links may move out of alinement, substantially as and for the purpose described.

3. In a horse-detacher, in combination, a base provided at one end with a rigid hook, a pivoted and rearwardly-extending hook at the opposite end of the base, a stationary upright at the heel end of the base, a pivoted upright on the base having a socket to receive the end of the hook, toggle-links connecting the upper ends of said uprights, a spring for maintaining said links in longitudinal alinement, a lever-arm on one of said links, and a flexible connection attached to said lever-arm, all arranged for joint operation, substantially as described.

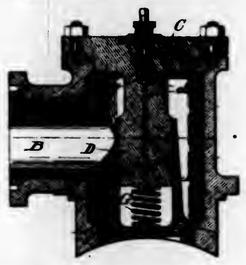
609,725. SOAP-HOLDER. JAMES C. BAKER, Blue Grass, Iowa. Filed Jan. 14, 1898. Serial No. 666,566. (No model.)

Claim.—1. In a soap-holder, the combination with the receptacle, and the lugs secured to the interior thereof, of the rotatable shafts journaled to said receptacle near the edges thereof, the inclined plates or shelves, the cranks at the ends of said shafts and the stops on the outside of said receptacle for limiting the movement of the cranks, substantially as described.

2. In a soap-holder, the combination with the approximately U-shaped receptacle, the bottom thereof, the plate at the lower end of said receptacle, the lugs secured to the interior of said receptacle, and the stops secured to the exterior thereof, of the rotatable shafts, the perforated inclined plates or shelves secured thereto, and the cranks at the ends of the shafts, substantially as described.



609,726. VALVE. PHILIP DE C. BALL, St. Louis, Mo. Filed Sept. 27, 1897. Serial No. 653,155. (No model.)



Claim.—1. In a valve for controlling discharge-pipes in pumps, the combination of a casing provided with a valve-seat, a valve provided with a stem, a guide for said stem and forming therewith a chamber, a valve for controlling a passage placing said chamber and casing in communication, and a spring arranged in said chamber acting to hold the valve to its seat.

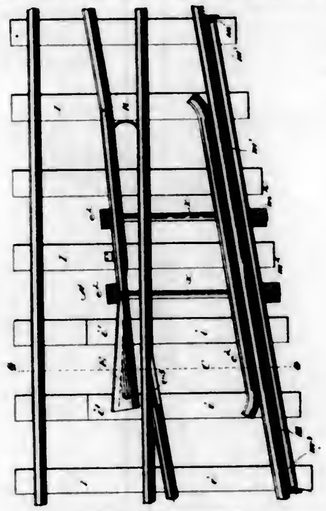
2. In a valve for controlling discharge-pipes in pumps, the combination of an open-ended casing with a valve-seat opposite the open end, a cap for said open end provided with a plunger extending toward but terminating a distance from said valve-seat and provided with an open passage leading to the end of the plunger, a valve controlling said passage, a valve having a hollow stem slidingly engaging said plunger and forming therewith a chamber between the end of the plunger and the valve, and a spring in said chamber seated against the plunger and valve.

609,727. RAILWAY. CHARLES H. BALLIETTE, Carlisle, Pa., assignor of one-half to Abraham B. Dunkle, Steelton, Pa. Filed Dec. 20, 1897. Serial No. 662,682. (No model.)

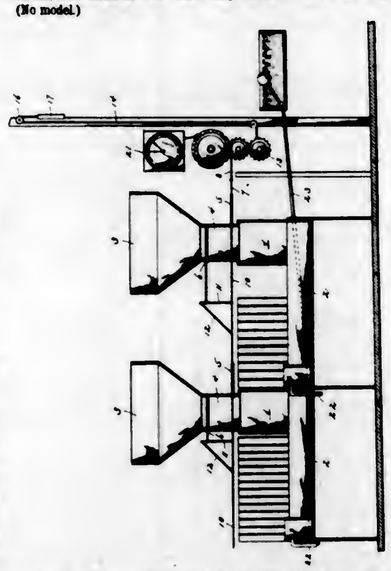
Claim.—1. In a railway or the like, a track, a plate along the side of one of the rails of said track and projecting above said rail, said plate having a straight upper surface, brackets along the track-rail, pivotal lugs between the plate ends and the brackets whereby the plate is pivoted to swing about its longitudinal axis, and connections between said plate and a movable member, as a frog, whereby motion given the plate is transmitted to the movable member; substantially as described.

2. In a railway or the like, a track, a plate along the side of one of the rails of said track, a rib integral with said plate and projecting therefrom above the track-rail, said rib having a straight upper surface, brackets along the track-rail, pivotal lugs between the plate ends and the brackets whereby the plate is pivoted to swing about its longitudinal axis, and connections between said plate and a movable member, as a frog, whereby motion given the plate is transmitted to the movable member; substantially as described.

3. In a railway or the like, a main track, a track branching therefrom, a frog pivoted between the rails of the main track to swing in a horizontal plane to clear either the main track or the branch track, a spring between the frog and a rail of the main track whereby the frog is normally held in such position that the main track is clear, a plate along one of the rails of the branch track and having a straight upper portion projecting above the said branch-track rail, brackets along the said rail, lugs upon the plate ends journaled in the brackets whereby the plate is adapted to swing about its longitudinal axis, and connections between the plate and the frog for moving the said members one by the other; substantially as described.



609,728. STOCK FEEDER AND WATERER. HERMAN J. BOLIBEKI, New London, Wis. Filed Aug. 11, 1897. Serial No. 647,785 (No model.)



Claim.—1. The combination in an apparatus for feeding and watering stock, of a feed box or hopper, a feed-supply chute connected therewith and provided with connected slides arranged one above another to operate from opposite sides of the chute, whereby when one is drawn out the other is drawn in, a single reciprocating rod connected to said lower and upper slides to operate them simultaneously to close one and open the other, a crank-wheel connected to said rod for operating it, mechanism connected to said crank-wheel for actuating it, and a clock mechanism connected to said crank-actuating mechanism for tripping the latter, substantially as described.

2. The combination in a stock feed and watering device, of a feed-slide-actuating mechanism a clock mechanism connected to said feed-slide mechanism for tripping the latter at predetermined intervals, a feed hopper and chute, connected lower and upper slides in said chute operating simultaneously from opposite sides thereof the one to open and the other to close the chute, said slide-actuating mechanism consisting of a single reciprocating rod connected to said slides, a crank-wheel to which said rod is connected, and means for actuating said crank-wheel to impart a single revolution thereto when tripped and released by the clock mechanism, substantially as described.

3. In a stock-feeding device, the combination with the feed-hoppers and the chutes thereof, of connected lower and upper slides arranged to operate from opposite sides of the chutes, one to open and another to close the same, the reciprocating rod 10 connected to the slides 5 and carrying uprights 11 connected to the slides 6, a crank-wheel 9 connected to said rod for actuating the slides, a cord-drum 13 geared to said crank-wheel and carrying a weight for actuating it, a notched or shouldered wheel 17 geared to the crank-wheel, and a clock mechanism provided with a tripping arm or pawl engaging the said shouldered wheel said clock mechanism being adapted to actuate said arm at predetermined intervals to release said wheel, substantially as described.

609,729. AUTOMATIC PLAYING-CARD SHUFFLER. JOSEPH BOOTH, New York, N. Y. Filed Aug. 5, 1896. Serial No. 601,800. (No model.)



Claim.—1. In a card-shuffling apparatus, the combination with the casing, having an opening at the top, a card-guideway formed of side walls and partitions attached to each of the same, and arranged longitudinally opposite those of the opposite wall, a retractible device including tapered fingers for temporarily supporting and intermixedly releasing the cards to be shuffled, and a card-condensing device in the guideway, as shown and described.

2. In a card-shuffling apparatus, the casing having inturned lips or flanges around its upper opening, and a card-guideway provided with a series of card-dividers formed of partitions having transverse or bridge portions, as shown and described.

609,780. APPARATUS FOR SHUFFLING CARDS. JOSEPH BOOTH, New York, N. Y. Filed Nov. 5, 1897. Serial No. 657,530. (No model.)



Claim.—1. In an apparatus for shuffling playing-cards, a horizontally-movable device and a card-supporting finger which is tapered and inclined from base to point, and provided with a flat bottom, substantially as and for the purpose stated.

2. In an apparatus for shuffling playing-cards, a horizontally-movable device and a card-supporting finger which is attached thereto and made tapered and provided with toothed side flanges, substantially as shown and described.

3. In an apparatus for shuffling playing-cards, a horizontally-movable device and a card-supporting finger attached thereto, the same being tapered, and inclined downward from base to point, and having a flat bottom and toothed side flanges, substantially as shown and described.

4. In an apparatus for shuffling playing-cards, a horizontally-movable device and a card-supporting finger attached thereto, the same being tapered, and inclined downward from base to point, and having a flat bottom, and narrow upright flanges extending along the sides, substantially as described.

5. As an improved art of manufacture, the card-separating device composed of a vertical base-strip, and one or more fingers which are tapered, inclined, and have a flat bottom, and toothed upright flanges at the edges of the bottom, substantially as described.

609,731. HOE-SLING. ALLEN J. CARLEY, Belmont, La., assignor of one-half to Benjamin T. Locke, same place. Filed Mar. 9, 1898. Serial No. 673,157. (No model.)



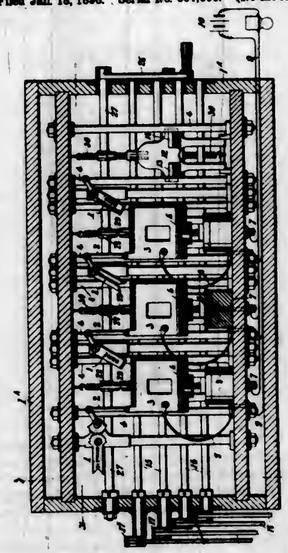
Claim.—1. A sling for hoes and the like comprising a hanger-section, a shoulder-strap and independent elastic sections between the ends of said shoulder-strap and the hanger-section substantially as set forth.

2. A sling for hoes and the like comprising the shoulder-strap, a hanger-section and elastic sections of different tension between said shoulder-strap and the hanger-section substantially as set forth.

3. A sling for hoes and the like comprising the shoulder-strap, elastic sections connected therewith and composed of webbing folded twice upon itself and having at its ends reinforce or cover straps substantially as set forth.

4. The herein-described sling for hoes and the like comprising the shoulder-strap, the elastic sections at the ends thereof, the hanger-section having its upper end buckled to the elastic sections at the ends of the shoulder-strap and means at the lower end of the hanger-section for connection with the hoe substantially as shown and described.

609,782. APPARATUS FOR SIGNALING ON LOCOMOTIVES. FRANK A. CHESTHAM, Rastrick, and RALPH BOSTOCK, Brighouse, England. Filed Jan. 13, 1898. Serial No. 667,099. (No model.)



Claim.—1. In an apparatus for signaling in locomotives, the combination with a weighted faller and a semaphore connected thereto, carried by the locomotive; of means for supporting said faller; a shaft and connections for releasing said faller; a pivoted lever carried by the locomotive, connections between said lever and said shaft for operating the latter; a plate situated between the tracks, and means for operating same to bring it into contact with the pivoted lever during the travel of the locomotive, so that through the said shaft, the faller is released and the semaphore operated; and means for raising the faller, substantially as described.

2. In apparatus for signaling on locomotives the combination with a weighted faller and a semaphore connected thereto carried by the locomotive, of means for guiding said faller, a catch-lever for holding same, a shaft for operating the catch-lever, connections between said catch-lever and the shaft, a pivoted lever carried by the locomotive, connections between said lever and the shaft, a plate situated between the tracks and means for operating same to bring it in contact with the pivoted lever during the travel of the locomotive, so that through the shaft, the catch-lever of the faller is removed and the semaphore operated, means for raising the faller and means for replacing the catch-lever substantially as described.

3. In apparatus for signaling on locomotives the combination with semaphores 1 carried by the locomotive of fallers 3 guides for same, means for holding and releasing the fallers, a slotted link 29 carried by each faller, a rod 27, a series of arms carried thereby engaging with the slotted links and a handle for operating the shaft to restore such fallers as have been operated substantially as described.

4. In an apparatus for signaling on locomotives, the combination with a weighted faller and a semaphore connected thereto carried by the locomotive; of means for guiding said faller; a catch-lever for holding the faller; a shaft for operating the catch-lever, connections between said catch-lever and the shaft; devices actuated by striking an obstruction upon the track, connected to said shaft for operating the latter; a plate situated between the tracks, and means for operating the same to bring it into position to be struck by said devices upon the locomotive, whereby the catch-lever of the faller is released and the semaphore operated; means for raising the faller; and means for replacing the catch-lever, substantially as described.

609,733. DIGESTER AND METHOD OF PROTECTING SAME.

JAMES L. COKER, Jr., Hartsville, S. C. Filed June 25, 1897. Serial No. 642,317. (No model.)



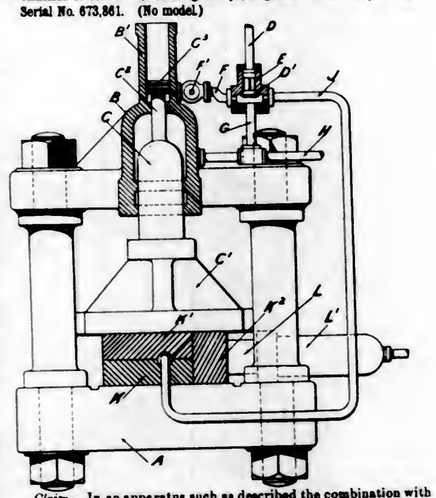
Claim.—1. The method of stopping leaks in brick or cement linings of digesters which consists in introducing under pressure into the digester, between the shell and its lining, a solution containing a salt which will combine with the acid or acids of the digester to form an insoluble precipitate, substantially as and for the purposes hereinbefore set forth.

2. The method of treating digester-linings which consists in introducing into the digester, between its shell and the lining, a solution under pressure containing a salt which will combine with the acid or acids of the digester to form an insoluble precipitate, and varying said pressure during the "cooking" operation so that it shall alternately and at suitable intervals exceed and fall below the internal pressure at which the digester is working, substantially as and for the purposes hereinbefore set forth.

3. The combination of the digester-shell, the lining separated from the shell by an interspace, means for introducing a salt solution under pressure into said interspace, and an absorbent filling in said interspace which backs and supports the lining and holds the solution, substantially as hereinbefore set forth.

609,734. APPARATUS FOR MAKING TUBULAR JOINTS.

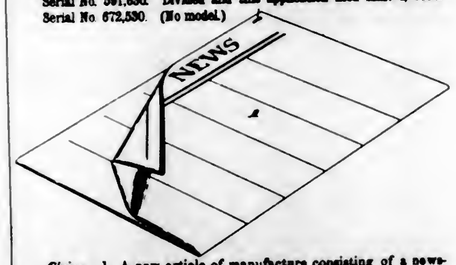
CHARLES T. CROWDEN, Leamington Spa, England. Filed Mar. 14, 1898. Serial No. 673,861. (No model.)



Claim.—In an apparatus such as described the combination with the sectional mold having the die-cavity of the shape to receive the sections of the joint to be made, formed in the adjacent faces of the mold-sections, with means for supplying hydraulic pressure to the interior of the joint-sections contained in the die-cavity and a hydraulic ram for holding the mold-sections together against the pressure exerted in forcing the joint-sections contained in the die-cavity into union; substantially as described.

609,735. NEWSPAPER-SEAL.

LUTHER C. CROWELL, New York, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, same place. Original application filed May 15, 1896 Serial No. 591,630. Divided and this application filed Mar. 4, 1898. Serial No. 672,530. (No model.)



Claim.—1. A new article of manufacture consisting of a newspaper or similar publication formed of a sheet or sheets folded or doubled together and having their free edges united and sealed from being spread open by a wire passed through the free edges and clenched or bent over upon the paper to secure the wire therein, substantially as described.

2. A new article of manufacture consisting of a newspaper or similar publication formed of a sheet or sheets folded or doubled together and having their free edges united and sealed from being spread open by a wire staple having its two legs passed through the free edges and clenched or headed upon the paper to secure the staple therein, substantially as described.

609,736. NON-REFILLABLE BOTTLE.

HORACE G. DODDS, New Castle, Pa., assignor of one-half to Henry Earl Beighler, same place. Filed Apr. 12, 1898. Serial No. 677,303. (No model.)



Claim.—1. In a non-refillable bottle, a bottle-neck having an upper and lower enlarged portion one above the other, short vertical channels connecting the two portions, the upper portion having at its base a shoulder or seat to receive a guard-plate, an annular rim or ridge on said guard-plate; and said lower portion having at its base a shoulder or seat auxiliary movable stopper with solid indented base which is confined below said channels, a standard and disk, substantially as herein shown and described.

2. In a non-refillable bottle, a neck, said neck having an upper and lower enlarged portion, a seat at the lower end of said upper enlarged portion adapted to have seated thereon a guard-plate, a movable auxiliary indented stopper, said stopper adapted to be seated upon a shoulder formed at lower end of said lower enlarged portion and channels above the limit of movement of said stopper, substantially as herein shown and described.

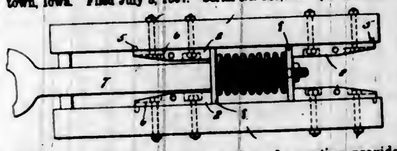
3. In a non-refillable bottle, a neck, said neck having an upper and lower enlarged portion, vertical channels connecting the two portions for the admission of the liquid to the bottle, said enlarged portions having shoulders or seats at their lower ends, a guard-plate arranged in said upper portion, a movable auxiliary stopper having a solid indented base which is confined below said channel, a standard and disk, and said auxiliary stopper arranged in said lower enlarged portion, and adapted to be suspended by means of a wire passing through said channels and over and resting upon said guard-plate, said wire fastened to the under side of said stopper-disk, said auxiliary stopper adapted to be seated upon the seat or shoulder of said lower enlarged portion when the wire is withdrawn, substantially as herein shown and described.

4. In a non-refillable bottle, the combination of a neck having two enlarged portions one above the other and connected by short channels, a guard-plate arranged in said upper enlarged portion of the neck, seated against a shoulder or seat formed at the lower end of said upper enlarged portion, said guard-plate having an annular rim or ridge, a stopper-disk connected to a movable auxiliary stopper by a standard, said auxiliary stopper having a solid indented or scalloped base which is confined below said channels and arranged within said lower enlarged neck portion, said lower enlarged neck portion having a shoulder at its lower end, a wire connecting said guard-plate, stopper-disk and auxiliary stopper, said auxiliary stopper adapted to be seated against a shoulder or seat at the lower end of the lower enlarged neck portion when the wire is withdrawn, substantially as herein shown and described.

5. In a non-refillable bottle, a neck provided with a guard, channels around said guard, a movable valve provided with an indented base, a valve-seat, and a cylindrical portion above said seat, the upward limit of movement of said base being always below said channels, substantially as described.

609,737. DRAW-BAR STOP.

CHARLES H. EMERSON, Marshalltown, Iowa. Filed July 8, 1897. Serial No. 643,905. (No model.)



Claim.—1. A draw-bar stop consisting of a casting provided with guide-strap-bolt holes at about the middle of the length of said stops, and bolt-holes for securing the stop to the draft-timbers on opposite sides of the guide-strap hole, substantially as described.

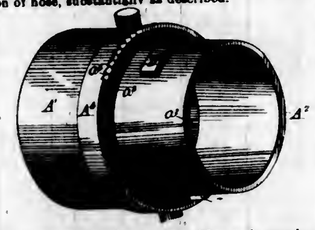
2. A draw-bar stop consisting of a casting provided with a single rib or projection at the back end, guide-strap-bolt holes about the middle of the length of said stops, and bolt-holes for securing the stop to the draft timbers on opposite sides of the guide-strap-bolt hole, substantially as described.

3. The combination of the draft-timbers of a railroad-car, draw-bar stops each having a single rib at the back end, a guide-strap-bolt hole through the middle of said stop, a pair of bolt-holes for securing the stop to the timber on either side of the guide-strap bolt, guide-straps, and follower-plates, substantially as described.

609,738. COUPLING.

FLOYD R. EMMITT, Chillicothe, Ohio, assignor to Cornelia H. Emmitt, same place. Filed May 17, 1897. Renewed July 28, 1898. Serial No. 687,112. (No model.)

Claim.—1. In a coupling, the combination with a male member having a tapered end, and a female member having one end adapted to receive said tapered end, and having the end of a section of hose secured to its other end, the length and size of said tapering portion being such that it will enter and fit tightly within the end of said hose-section, of a cam connection between said male and female members, whereby in the act of connecting them they are forced more tightly together and the tapered end forced farther into the end of the section of hose, substantially as described.



2. In a coupling, the combination with a male member having a tapered end, and having an annular grooved ring at the commencement of the tapered portion, packing in said grooved ring, and a female member having one end adapted to receive said tapered end, and having the end of a section of hose secured to its other end, the length and size of said tapered portion being such that it will enter and fit tightly within the end of said hose-section, and the end of the female member being adapted to contact with the packing in said grooved ring, of cam connection between said male and female members, whereby in the act of connecting them they are forced more closely together and a tighter junction of all joints secured, substantially as described.

3. In a coupling, the combination with a male member having a tapered end, and a female member having one end correspondingly tapered to receive such tapered end, and having the end of a section of hose secured to its other end, the length and size of said tapered end being such that it will enter and fit tightly within the end of said hose-section, said female member having an interior annular ring against which said hose-section is adapted to abut, and having inclined guides to guide said tapered end, of means for securing together said male and female sections, substantially as described.

4. In a coupling, the combination with a male member having a tapered end, an annular grooved ring at the commencement of the tapered portion, and packing in said grooved ring, and a female member having one end adapted to receive said tapered end, and having the end of a section of hose secured to its other end, the length and size of said tapered end being such that it will enter and fit tightly within the end of said hose-section, and the end of the female member being adapted to contact with the packing in said grooved ring, said female member having an interior annular ring of the thickness of said hose-section against which said hose-section is adapted to abut and having interior guides to guide said tapered end, of cam connection between said male and female members, whereby in the act of connecting them they are forced more closely together and a tighter junction of all joints secured, substantially as described.

5. In a coupling, the combination with a male member having a tapered end, and a female member having one end adapted to receive said tapered end, and having the end of a section of hose secured to its other end, the length and size of said tapered portion being such that it will enter and fit tightly within the end of said hose-section, of the lugs D formed on said male portion, and the cut-away portions b^3 and cam-grooves b^4 formed on said female portion, whereby as the parts of the coupling are connected they are forced more tightly together and the tapered end forced farther into the end of the section of hose, substantially as described.

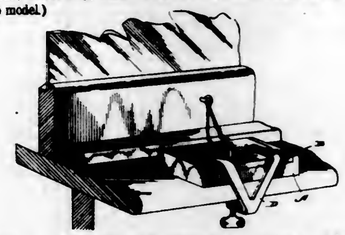
6. In a coupling, the combination with a male member having a tapered end, and having an annular grooved ring at the commencement of the tapered portion, packing in said grooved ring, and a female member having one end adapted to receive said tapered end, and having the end of a section of hose secured to its other end, the length and size of said tapered portion being such that it will enter and fit tightly within the end of said hose-section, and the end of the female member being adapted to contact with the packing in said grooved ring, said female member having an interior annular ring of the thickness of said hose-section against which said hose-section is adapted to abut and having interior guides to guide said tapered end, of the lugs D formed on said male portion, and the cut-away portions b^3 and cam-grooves b^4 formed on said female portion, whereby as the parts of the coupling are connected they are forced more tightly together and the tapered end forced farther into the end of the section of hose, substantially as described.

7. In a coupling, the combination with male and female portions

and mechanism for connecting the same together, said mechanism being adapted to allow the turning of the hose-sections with relation to each other, of a projecting rim on one section, ratchet-teeth formed thereon, and a cam having a toothed periphery mounted on the other portion in meshing relation with said ratchet-teeth, whereby when the two sections are turned with relation to each other they are held in the position in which they remain when rotation ceases, substantially as described.

8. The combination with a section of coupling having screw-threads formed on the inner surface thereof, of a section of hose having a metal tube formed with screw-threads of the same pitch as those on the section of coupling inserted in the end thereof, whereby the end of said section of hose can be screwed into said hose-section and held therein, substantially as described.

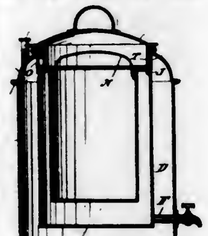
609,739. **BURGLAR-ALARM.** ALLEN FOWLER and PLEASANT N. GREEN, Union City, Tenn. Filed Oct. 16, 1897. Serial No. 655,473. (No model.)



Claim.—1. A burglar-alarm comprising a casing containing a cartridge charged with an explosive and asafetida or equivalent noxious material, mechanism for discharging the cartridge consisting of a hammer pivoted to the casing near its end opposite the hammer, a spring to which the extreme end of the hammer is secured, a trigger about centrally pivoted and engaging a notch on the free end of the hammer, a dog for operating the trigger said dog being pivoted to the casing at one end and having a cord or chain at its opposite end for releasing the trigger by any movement of a window or door to which said cord or chain is secured, substantially as described.

2. A burglar-alarm comprising a casing holding a cartridge charged with an explosive and an offensive material, the end of said cartridge projecting from one side of the casing and a discharging mechanism comprising a trigger, a spring-actuated hammer, a string or cord actuated dog, and rods both on the hammer and trigger, projecting through segmental slots in the casing for setting or cocking the discharging or firing mechanism, substantially as described.

609,740. **STEAM HEATER AND COOKER.** LEONARD C. GILLETT, Brownsdale, Minn. Filed Jan. 17, 1898. Serial No. 666,959. (No model.)

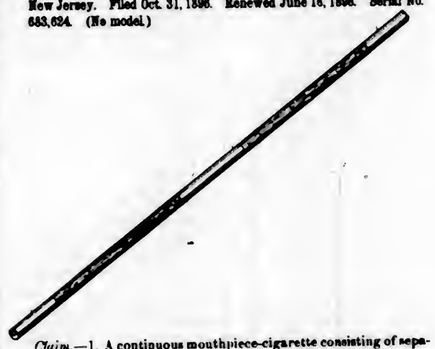


Claim.—1. In a steam cooking utensil, the combination with a steam-chamber of a receptacle provided with a steam-inlet port, and a cover for said receptacle having an inlet-port which is adapted to register with the inlet-port of the receptacle when the cover is rotated, substantially as described.

2. In a steam cooking utensil, the combination with a receptacle having a steam-chamber and a steam-inlet port communicating therewith, of a receptacle removably positioned within said receptacle and of such size as to form a chamber between its walls and the walls of the latter, and having a flange closing said chamber and provided with a port, and a cover for the outer receptacle having a flange which rests upon the flange of the inner receptacle and provided with a port adapted to register with the port thereof when the cover is rotated, said cover also provided with a port adapted to register with the inlet-port of the outer receptacle, substantially as described.

3. In a steam cooking utensil, the combination with a receptacle having a steam-chamber, and an inlet-port communicating therewith, said receptacle also provided with slotted ears, of a receptacle adapted to be positioned within said outer receptacle and carrying lugs adapted to engage said slotted ears, and a cover adapted to control the passage of steam into said receptacles, substantially as described.

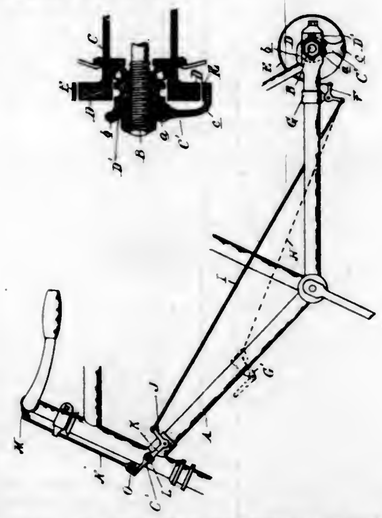
609,741. **MOUTHPIECE-CIGARETTE.** EZRA T. GILLILAND, New York, N. Y., assignor to the Gilliland Cigarette Machine Company, of New Jersey. Filed Oct. 31, 1896. Renewed June 16, 1898. Serial No. 683,624. (No model.)



Claim.—1. A continuous mouthpiece-cigarette consisting of separate portions of mouthpiece-tubing, tobacco intermediate the same and a continuous wrapper enveloping the tobacco and uniting the separate portions of tubing; and adapted to be cut into individual cigarettes.

2. A continuous mouthpiece-cigarette consisting of separate portions of mouthpiece-tubing each of the length of two mouthpieces, tobacco intermediate the tubing portions also of extra length, and a continuous wrapper enveloping the tobacco and uniting the separate portions of tubing; and adapted to be cut at the middle of the tubing portions and at the intermediate tobacco to form individual mouthpiece-cigarettes.

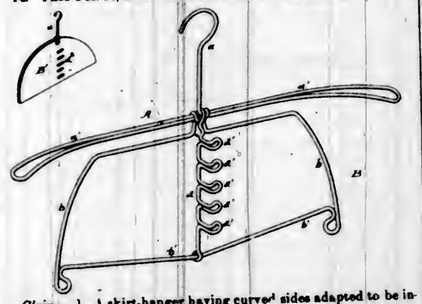
609,742. **BICYCLE-BRAKE.** ERASTUS W. HAHN, Candor, N. Y., assignor to William J. Payne, same place. Filed Oct. 18, 1897. Serial No. 655,506. (No model.)



Claim.—In a bicycle-brake, the combination with a wheel, a frame comprising a fork member having the extension D', of a brake-rim on said wheel, a bracket having a substantially vertical portion provided with a hole and a substantially horizontal portion opposite said brake-rim, flanges or ribs on said vertical portion forming a substantially horizontal seat for said extension D', one of said flanges having an overhanging lip, a brake-band encircling said brake-rim

and secured at one end to said horizontal portion of the bracket, a bell-crank lever secured to the frame to which the other end of said brake-band is connected, and operating means for said bell-crank lever.

609,743. **GARMENT-HANGER.** JOHN S. HEATON, Philadelphia, Pa. Filed Feb. 26, 1896. Serial No. 671,819. (No model.)



Claim.—1. A skirt-hanger having curved sides adapted to be inserted within the skirt and to project through the waistband end thereof so as to support the skirt-body by its waistband resting on the curved sides, and a hook centrally arranged between the said sides and on a line with the points of support of the waistband on said sides and adapted to engage the rear portion of the waistband, substantially as described.

2. A skirt-hanger having a segmental portion upon which the waistband of a skirt can rest, and a series of vertically-arranged hooks within the segment, said hooks being so arranged that one will engage the back portion of the waistband of a skirt mounted on the segmental portion, substantially as described.

3. A skirt-hanger made of bent wire and having a segmental portion with curved sides upon which the waistband of a skirt can rest, said portion being wider at the base than at the top, a cross-piece at the bottom, and a vertically-arranged wire extending from the upper portion of the segment to the cross-bar and bent to form a series of hooks adapted to engage the back of the waistband of a skirt, substantially as described.

609,744. **MEANS FOR UTILIZING FUEL.** CHARLES T. HERTIG, Buffalo, N. Y., assignor to James R. Hatmaker, New York, N. Y. Filed Dec. 2, 1897. Serial No. 660,567. (No model.)



Claim.—1. As a means for delivering pulverized fuel for combustion, a storage-magazine having an outlet for the fuel, means for producing gaseous pressure on that side of the fuel away from said outlet, and a pipe leading through the body of said fuel, from the pressure-chamber to said outlet, substantially as described.

2. In a means for delivering pulverized fuel for combustion, a flaring flue in the furnace-wall, and a pipe for fuel delivery of smaller diameter than said flue, directed into the same.

3. In a means for delivering pulverized fuel for combustion, a flaring flue in the furnace-wall having perforations in that part which is outside the wall, and a pipe for fuel delivery of smaller diameter than said flue, entering said perforated portion of the flue.

4. A boiler, a fire-box therefor, and means for delivering pulverized fuel and air to said box, in combination with a lining of refractory material for said fire-box, and passages formed of refractory material and offering large radiating-surfaces to the burning fuel, within said box.

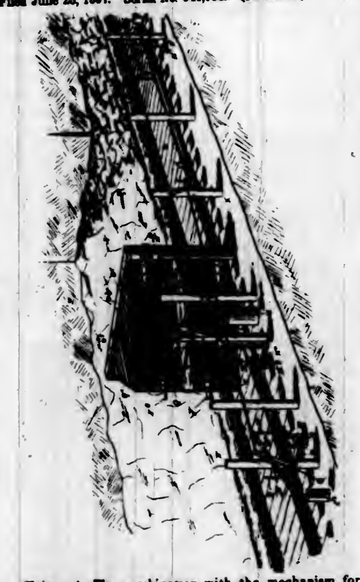
5. In a locomotive-tender, a substantially air-tight chamber for storing fuel, having a delivery-outlet, and a feed-door; a storage-tank for compressed air connected to the upper part of said fuel-chamber by a pipe; and an induction-pipe and connected source of gaseous pressure, said pipe leading to said outlet-opening.

6. As a means for fuel feed on railway-trains provided with an air-brake system, a substantially air-tight closed tender for fine fuel or its equivalent, a connection with the air-brake system leading to the top of said tender, an outlet for said fuel leading to the locomotive, an induction-pipe discharging at said outlet and means for supplying a fluid under pressure thereto.

609,745. **DIAPHRAGM FOR ELECTROLYTIC PURPOSES.** WILLIAM G. LUNTON, Liverpool, England, assignor to the United Alkali Company, Limited, same place. Filed Apr. 9, 1896. Serial No. 677,072. (No model.)

Claim.—A diaphragm made of a composition of cement, sand, and a porous material mixed with water and allowed to dry, or set, said diaphragm having pores through the substance of the porous material and interstices between the cement and the other constituent particles substantially as hereinbefore described.

609,746. **MINE TRAP-DOOR.** JAMES O'BRIEN, Evansville, Ind. Filed June 23, 1897. Serial No. 641,950. (No model.)



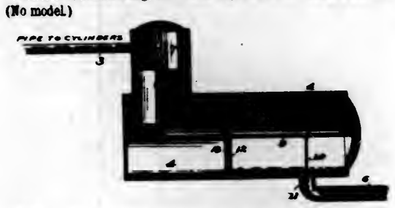
Claim.—1. The combination with the mechanism for opening mine trap-doors comprising an arm attached to the door and a vertical shaft carrying a horizontal lever connected with said arm, and a second horizontal lever, of a lever pivoted to a post and connected to said horizontal arm, two arms normally held upright adjacent to the rails in opposite directions from the trap-door, and mechanism connecting each of these arms with the lever before mentioned, whereby the depression of either of the actuating-arms by the wheels of an approaching car will actuate the door-opening mechanism, substantially as described.

2. The combination of a trap-door hinged to a vertical post and provided with projecting bars or catches at its outer end, with a post erected adjacent to the door, a latch pivoted to said post and adapted to engage with the lower catch-bar, a hook also pivoted to said post and adapted to engage with the upper catch of the door, the hook being slightly longer than the latch, and means for connecting the hook with the latch whereby when the latch is raised out of engagement with its catch-bar the hook is thrown dowaward into engagement with its catch-bar, substantially as described.

3. The combination of a horizontal shaft parallel to the rail, a post adjacent thereto, a latch-lever pivoted to said post, a hook-lever pivoted to said post above the latch-lever and projecting beyond its pivot, an arm projecting from the shaft first mentioned, a rod connecting said arm to the latch-lever between its point and pivot, and a second rod connecting said arm with the hook-lever in the rear of its pivot, whereby the latch-lever and hook-lever are simultaneously operated in opposite directions, substantially as described.

4. The combination with a mine trap-door mounted across a railway-track and provided with two catch-bars on its outer edge, of a latch-lever and hook-lever adapted to engage the lower and upper catch-bars respectively, a bar lying parallel to the railway-rail adapted to be depressed by the car-wheels, and a shaft, an arm, and rods connecting said bar with the latch-lever and hook-lever whereby the hook-lever, which is slightly longer than the latch-lever, will be actuated into engagement with the upper catch-bar of the door, when the latch-lever is released from engagement with the lower catch-bar, by the passage of a train, substantially as described.

609,747. **WATER-TRAP.** JOSEPH PATTON, Sharpsville, Pa., assignor, by mesne assignments, to J. L. Luse, Cleveland, Ohio, and W. B. Mitcheltree, Riddlesburg, Pa. Filed Sept. 12, 1896. Serial No. 605,642. (No model.)



Claim.—The improved apparatus, for receiving and automatically discharging water of condensation from steam-engine cylinders, the same consisting of the reservoir proper, having an elevated dome, a reticulated baffle-plate located transversely in the reservoir, and provided with a vertical slot-guide, a waste-pipe attached on the under side, an inlet-pipe extending from said dome, to connect with engine-cylinders, a lever pivoted in said reservoir and movable in the aforesaid guide, a valve and stem connected with the lever, for controlling the waste, and a float, connected to and extending above the free end of said lever, and movable in the dome, thus leaving the reservoir-chamber mainly unobstructed, substantially as described.

609,748. **METHOD OF PRINTING REPRESENTATIONS OF WOVEN FABRICS.** ALEXANDER B. SHERWOOD, Chicago, Ill., assignor of one-half to Zepaniah S. Holbrook, same place. Filed Oct. 4, 1897. Serial No. 653,991. (No specimens.)

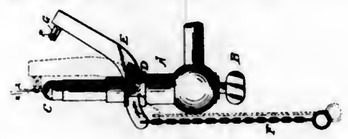


Claim.—1. The method of producing a pattern or design upon a plane surface, which consists in covering one side of a sheet of fabric woven with the design to be produced with ink of desired collar, and then impressing the side of the fabric to which the ink has been applied upon the plane surface, substantially as described.

2. The method of reproducing a design or pattern upon the surface of flexible material, which consists in securing a sheet of fabric woven with the design to be reproduced upon the cylinder or bed of a printing-press, covering one side of such fabric with ink of desired color, and then impressing the side of the fabric to which the ink has been applied upon the surface of flexible material, substantially as described.

3. The method of producing an embossed and printed pattern or design upon a sheet or web of paper or like flexible material, which consists in covering one side of a sheet of fabric woven with the design to be produced with ink of desired color, and then impressing the side of the fabric to which the ink has been applied upon the paper or the like, with force sufficient to emboss as well as print the pattern or design upon the latter, substantially as described.

609,749. **IGNITING DEVICE.** ALFRED J. STERER, New York, N. Y., assignor of fifty-one one-hundredths to Henry Zuckerman, Louis B. Rolston, and William H. Rolston, same place, and W. Alexander Bass, Little Silver, and Edwin S. Hooley, Plainfield, N. J. Filed Dec. 27, 1897. Serial No. 663,588. (No model.)



Claim.—1. The combination with a burner, of an igniting device therefor consisting of an igniting-body containing finely-divided platinum, a plurality of fine wires in contact with said body at a plurality of separate points, and a movable support carrying said igniting-body and wires and adapted to move same into or out of proximity to the burner.

2. The combination with a burner, of an igniting device therefor consisting of an igniting-body containing finely-divided platinum, a movable supporting-frame carrying said body and adapted to move same into and out of proximity to the burner, and a plurality of fine platinum wires strung over the frame and over the said igniting-body and contacting with said body at a plurality of points.

3. The combination with a burner of an igniting device therefor consisting of an igniting-body containing finely-divided platinum, a movable supporting-frame carrying said body and adapted to move same into and out of proximity to the burner, and a plurality of fine platinum wires strung over the frame in parallelism with the jet to be ignited and over the said igniting-body and contacting with said body at a plurality of points.

4. The combination with a burner, a pivoted supporting-frame having two arms, a plurality of fine platinum wires strung over said arms, and an igniting-body supported by said frame and having the said wires strung over it so as to contact with different portions thereof, the said supporting-frame being movable to bring the igniting-body into or out of proximity to the burner.

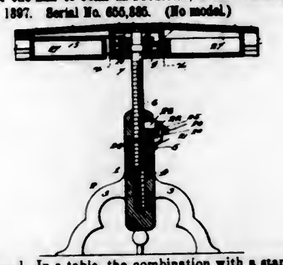
5. An igniting-body for use in gas-igniters, consisting of a mass composed of sand, pulverized asbestos and reduced platinum, a wrapping of fibrous asbestos surrounding said mass and platinum wire wound over said wrapping.

609,750. **PROCESS OF TREATING STEEL FOR CASTINGS.** CHARLES H. WELLMAN, Upland, Pa., assignor of one-half to Samuel T. Wellman, same place. Filed June 18, 1894. Serial No. 514,968. (No specimens.)

Claim.—1. The process herein described of making castings of steel containing carbon, said process consisting in combining with the molten steel a small percentage of tin, such as from substantially one-tenth to one-half of one per cent., to increase the solidity of the steel and to reduce the risers or sink-heads, and then casting the steel so treated, substantially as described.

2. The process described of treating steel containing carbon for casting, said process consisting in adding to the molten steel a small percentage of tin and aluminium, substantially as and for the purpose set forth.

609,751. **STUDY-TABLE.** JOHN K. WHIPPO, Sherrett, Pa., assignor of one-half to John H. Frederick, West Monterey, Pa. Filed Oct. 21, 1897. Serial No. 655,886. (No model.)



Claim.—1. In a table, the combination with a standard having a screw-threaded socket therein, of a shaft fitting and moving therein, a table-top upon the upper end of said shaft, a notched disk on said shaft, an inwardly spring-pressed arm on the top adapted to fit within the notches in said disk, and means for throwing said spring-arm into and out of engagement with the disk, as and for the purpose set forth.

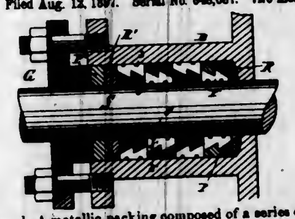
2. In a table, the combination with a standard having a screw-threaded socket therein, of a threaded shaft fitting and moving within said socket, a table-top upon the upper end of said shaft, a notched disk secured to said shaft, an inwardly spring-pressed arm on said top adapted to fit within the notches in said disk, a loosely-mounted wheel on said shaft, connections between said wheel and said spring-arm, and means for rotating said wheel whereby said spring-arm may be thrown into or out of engagement with said disk.

3. In a device of the character set forth, the combination with a suitably-supported vertical standard having an internally-screw-threaded socket therein, of a screw-shaft in said socket and means for locking the same against rotation, a notched wheel or disk rigidly secured to said shaft near the upper end thereof, a loosely-mounted wheel on said shaft, a suitable table on the upper end of said screw-shaft, a plurality of rods suitably supported beneath said table and connected to the loosely-mounted wheel and extending tangentially to the periphery thereof so that an inward or outward movement of said rods will cause a partial rotation of said wheel, a spring-arm secured beneath the table and having connection with one of said rods, said spring-arm being provided with a laterally-extending arm adapted to enter one or the other of the notches in the notched disk, and means for locking the loosely-mounted wheel against rotation with the screw shaft, substantially as and for the purpose set forth.

4. The combination with the vertical standard having an internally-screw-threaded socket therein, an externally-screw-threaded shaft in said socket and having rigidly secured thereto near its upper end a notched disk, loosely-mounted wheel on said shaft above the disk, having a peripheral notch therein, a suitable table supported on said shaft, a plurality of rods suitably supported beneath the table and having pivotal connection with said wheel and extending tangentially to the periphery thereof so that an inward or outward movement of said rods will cause a partial rotation of said wheel, a spring-arm suitably supported in proximity to said wheel and adapted to engage the notch in the periphery thereof for the purpose set forth, a second spring-arm suitably supported beneath the table and having connection with one of the rods, said spring-arm being provided with a laterally-extending arm adapted to enter one or the other of the notches in the notched disk, and means for locking the screw-shaft against rotation, substantially as described.

5. The combination with the vertical standard having a laterally-extending slot and an internally-screw-threaded socket therein, a screw-shaft in said socket having a notched disk rigidly secured thereto and a longitudinal groove therein, a shaft mounted in bearings in the side of the standard and having a latch pivotally secured to a crank-arm thereon and extending through the slot in the standard and into the groove in the shaft, means for keeping the latch normally in engagement with the shaft, a wheel loosely mounted on the shaft above the notched disk, said wheel being provided with a notch in its periphery, a suitable table supported upon said shaft, a plurality of rods having pivotal connection with the loosely-mounted wheel near the periphery thereof and extending tangentially through said periphery so that a slight inward or outward movement of the rods will cause a partial rotation of said wheel, a spring-arm secured to the table in proximity to said wheel and adapted to enter the notch therein for the purpose specified, a second spring-arm secured below the table and having connection with one of said arms, a laterally-extending arm on the last-mentioned spring-arm adapted to enter one or the other of the notches in the notched disk to cause the table to rotate with the shaft, and suitably supported rods beneath said table, substantially as described.

609,752. **METALLIC PACKING.** JOSEPH T. H. ADGELL, New York, N. Y. Filed Aug. 12, 1897. Serial No. 648,067. (No model.)

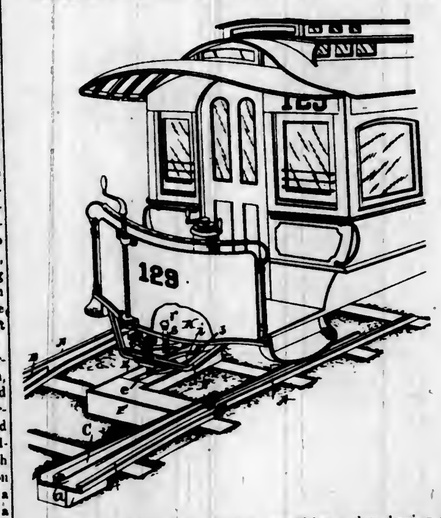


Claim.—1. A metallic packing composed of a series of outer sectional rings placed one upon another, their outer faces being adapted to fit a stuffing-box, their upper and lower faces being substantially flat and their inner faces provided with one or more conical faces together with a series of sectional inner rings, whose faces on the inside are adapted to fit the rod to be packed and on the outside are adapted to fit the inner faces of the outer rings and whose upper and lower faces are substantially flat, substantially as specified.

2. A metallic packing composed of a series of inner and outer sectional rings having faces with double conical surfaces substantially as described upon the inner sides of the outer rings and the outer sides of the inner rings, the outer face of the outer rings being adapted to fit the stuffing-box, the inner face of the inner rings to fit the rod to be packed and the lower faces of which are adapted and arranged to fit upon and be supported by the adjacent upper faces of the succeeding ring of like character, all substantially as set forth.

3. A compound sectional metallic packing-ring composed of an outer and an inner ring, the outer face of the first and the inner face of the second being adapted to fit respectively, the stuffing-box and the rod to be packed and the faces of which said rings opposite those named have double conical surfaces, whereby when pressure is put upon one ring it may slide down over the conical part of the other and yet in setting there is a holding together of the parts, substantially as set forth.

609,753. **AUTOMATIC RAILWAY-SWITCH.** JOHN J. BENES, Boston, Mass. Filed Mar. 31, 1898. Serial No. 675,910. (No model.)



Claim.—1. A switch mechanism comprising a plate having an oval-shaped depression provided with contracted inlet and outlet ends and diverging walls leading to the contracted inlet, an oval-shaped lever intermediately pivoted in said recess and provided with pointed ends coacting with and forming a gate for the contracted outlet and inlet ends of said depressions, in combination with a vertically and laterally moving key guided by the inlet end of said lever and coacting with the walls of the contracted outlet end of the depression to force the outlet end of the lever laterally, a movable frog, and a connection between said lever and the frog, substantially as described.

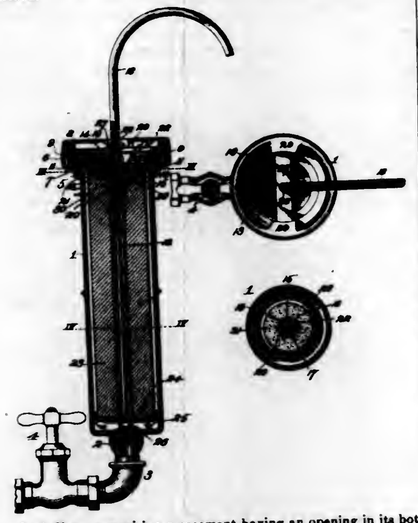
2. In a switch mechanism, a pivoted member adapted to operate the switch in combination with a car provided with a foot piece at each end and a detachable vertically and laterally movable key adapted to be operated by the foot-piece, whereby it can be removed from one end of the car and placed at the other, substantially as described.

609,754. **FILTER.** JOHN A. CHANDLER, Kansas City, Mo., assignor to the Standard Filter Company, same place. Filed Oct. 26, 1897. Serial No. 656,381. (No model.)

Claim.—1. A filter comprising a casement having an opening in its bottom to receive the unfiltered water, a flexible packing-ring clamped in the upper end of said casement, a clamp-plate embraced snugly by said packing-ring and provided with a discharge-tube, a tubular filtration-cylinder in said casement, a washer or packing-ring provided with a central opening, clamped by said filtration-cylinder against the bottom of said clamp-plate, said washer-opening affording communication between the channel of the filtration-cylinder and said discharge-pipe, and a packing-disk clamped up against the bottom of the filtration-cylinder, substantially as described.

2. A filter, comprising a casement having an opening in its bottom to receive the unfiltered water and enlarged diametrically at its upper end, a packing-ring depending into the enlargement of the cylinder and provided with a flange resting upon the upper end of

the cylinder, and a ring clamped down upon the flange of said packing-ring, in combination with a clamp-plate provided with a wall externally and snugly embraced by said packing-ring, and provided also with a central passage and a discharge-pipe communicating therewith, a washer or packing-ring at the bottom of said plate and provided with a central opening in communication with the central passage of the plate, a tubular filtration-stone having its channel in communication with the opening of said washer or packing-ring, and clamping said washer or ring firmly against the bottom of said plate, a packing-disk clamped against the lower end of said tubular filtration-stone, and a connection between said packing-disk and said clamping-plate, to the end that the removal of the latter will insure the removal of the former and the interposed stone, substantially as described.



3. A filter, comprising a casement having an opening in its bottom, to receive the unfiltered water, a flexible packing-ring clamped in the upper end of said casement, a clamp-plate embraced snugly by said packing-ring and provided with a discharge-tube, a tubular filtration cylinder in said casement, a washer or packing-ring provided with a central opening, clamped by said filtration-cylinder against the bottom of said clamp-plate, said washer-opening affording communication between the channel of the filtration-cylinder and said discharge-pipe, a packing-ring clamped up against the bottom of said filtration-cylinder, and means to lock the clamp-plate and the connected parts in their operative positions within the casement, substantially as described.

4. A filter, comprising a casement having an opening in its bottom to receive the unfiltered water, a flexible packing-ring in and upon the upper end of the casement, a clamp-ring clamping said packing-ring down upon the casement, and provided at diametrically opposite points with oppositely-disposed hooks, a clamp-plate embraced snugly by said packing-ring and provided with a discharge-tube, a tubular filtration-cylinder in said casement, a washer or packing-ring provided with a central opening, clamped by said filtration-cylinder against the bottom of said clamp-plate, said washer-opening affording communication between the channel of the filtration-cylinder and said discharge-pipe, a packing-disk clamped up against the bottom of the filtration-cylinder, and a latch-bar pivotally mounted upon the discharge-pipe of the clamp-plate and engaged at its ends by the hooks of the clamp-ring, substantially as described.

5. A filter, comprising a casement having an opening in its bottom, a flexible packing-ring clamped in its upper end, a clamp-plate embraced externally and snugly by the packing-ring and provided with a central passage, a discharge-pipe communicating therewith, a boss depending centrally and provided with radial passages communicating with said central passages, a tie-rod connected to and depending from said boss, a washer at the bottom of the clamp-plate and provided with an opening through which said boss depends, a tubular filtration-stone surrounding said tie-rod and having its channel in communication with the opening of said washer and with the radial passages of said boss, a packing-disk at the bottom of said stone, and a nut clamping said disk against the bottom of said stone, and said stone against the washer at the bottom of the clamping-plate, substantially as and for the purpose described.

609,755. AUTOMATIC FEED-RESERVOIR. ANDREW P CRAPIN, Springfield, Mass., assignor of one-half to Fred E. Lay, Westfield, Mass. Filed Mar. 14, 1898. Serial No. 673,715. (No model.)

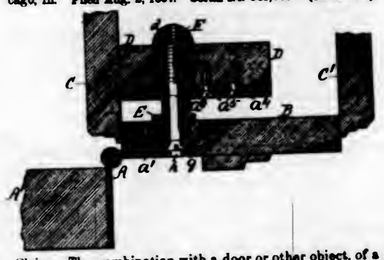


Claim.—1. A reservoir, a base for supporting said reservoir, there being an aperture through the wall of said reservoir lying wholly below the upper surface of said base, a part movable on said reservoir whereby the height of said aperture may be decreased, and a trough-like depression in said base communicating with the interior of the reservoir, and a valve in said base through which said reservoir may be filled, and which is adapted to be closed by the contents of said reservoir, substantially as described.

2. A reservoir, a base supporting said reservoir, the latter having an inverted-V-shaped top whose largest diameter is greater than the diameter of said base, there being an aperture in the wall of said reservoir lying wholly below the upper surface of said base, a part movable on said reservoir, whereby the height of said aperture may be decreased, a trough-like depression in said base communicating with the interior of the reservoir, and a valve in said base through which said reservoir may be filled, and which is adapted to be closed by the contents of said reservoir, substantially as described.

3 The combination of the reservoir A, having the neck B, a base C on which said neck rests for supporting said reservoir, a trough-like depression in said base, there being an aperture in said neck B, communicating with said trough-like depression, and a part movable on said neck whereby the height of said aperture may be regulated, substantially as described.

609,756. ADJUSTABLE JAMB-HINGE. LEWIS M. CURRY, Chicago, Ill. Filed Aug. 2, 1897. Serial No. 646,770. (No model.)



Claim.—The combination with a door or other object, of a movable jamb, a hinge, a plate, secured to one leaf of the hinge and located on the inner side of the jamb and having a stop projection extending therethrough, and a guide projection extending in the opposite direction, a socket-piece, secured rigidly in place and with which said guide projection has a movable engagement, and an adjusting-screw, inserted longitudinally through said plate and projections and having a threaded engagement with said socket-piece, substantially as described.

609,757. SPINDLE AND BEARING. GEORGE O. DRAPER, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Nov. 26, 1897. Serial No. 659,314. (No model.)

Claim.—1. The combination with a bolster-case, of a bolster having an integral expansible portion arranged to frictionally engage the case and be supported thereby.

2. The combination with a bolster-case, of a bolster having an integral annularly-enlarged expansible portion adapted to telescopically enter and be frictionally held in vertically-adjusted position in the case.

3. A bolster-case having a closed lower end, a removable spindle-step held sustained by the lower end of the case, and a bolster having an integral expansible supporting portion arranged to frictionally engage and be sustained by the case in vertical adjusted position.

4. A bolster-case, and a bolster having an annularly-enlarged, expansible portion, arranged to fit into and be frictionally held in position by the case.

5. A bolster-case, and a bolster having an annularly-enlarged, counterbored end longitudinally slotted, said end being adapted to enter and be frictionally held in position in the case.

6. The combination with a bolster-case, of a bolster having a tapered bore to fit the pintle of the spindle, and having a spring-acting portion, arranged to frictionally engage and be held by the bolster-case, said spring portion being counterbored to prevent cramping of the pintle adjacent thereto.



7. The combination with a bolster-case, of a bolster having an expansible supporting portion to frictionally engage and be held in adjusted position by the case, the expansible portion being interiorly recessed to prevent engagement with the adjacent part of the spindle-pintle.

8. The combination with a bolster-case, of a bolster mounted therein, an integral expansible portion of one being arranged to engage frictionally a laterally-unyielding portion of the other, to retain the two members in vertically-adjusted relative position.

609,758. SPINDLE AND BEARING. GEORGE O. DRAPER, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Nov. 30, 1897. Serial No. 660,211. (No model.)



Claim.—The combination with a bolster-case, of a bolster, and an expansible annular support for and to frictionally engage the bolster, said support being carried by and at the upper end of the case.

609,759. SPINDLE AND BEARING. GEORGE O. DRAPER, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Dec. 18, 1897. Serial No. 662,366. (No model.)

Claim.—1. A bolster-case, a bolster, a concentric support telescopically connected with and frictionally engaging the bolster and on which support said bolster is vertically adjustable, and a spindle-step unconnected with the bolster.

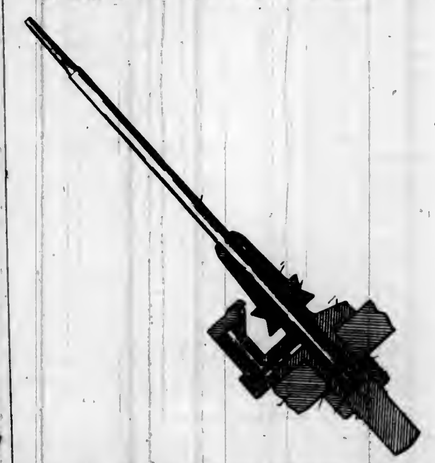
2. The combination with a bolster, of a split, sleeve-like support in frictional engagement with the lower end of and to adjustably sustain the bolster at any desired height relative to said support.

3. A spindle having a tapered bearing portion, a bolster therefor, a split bolster-support engaging with a sliding fit the lower end of the bolster, to adjustably support the bolster, and a spindle-step below the engaging portion of the bolster and its support.



4. A spindle having a tapered bearing portion, a step to support the spindle, a bolster above the step, and an intermediate support for the bolster, said support frictionally engaging and substantially surrounding the lower end of the bolster, for the purpose set forth.

609,760. SPINDLE AND BEARING. GEORGE O. DRAPER, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Dec. 1, 1897. Serial No. 660,371. (No model.)

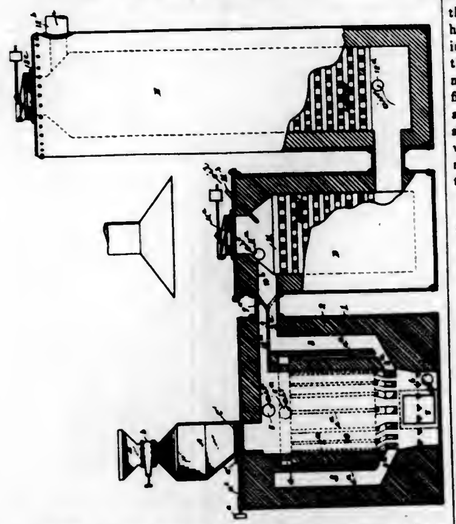


Claim.—1. The combination with a bolster-case, of a bolster, an expansible annular support for and located entirely below the bolster, and means to positively hold the bolster from rotation, said support being held in vertical adjustment at any point in the bolster-case solely by frictional engagement therewith.

2. A bolster-case, a bolster having a lug at its lower end, a split ring vertically movable in and held frictionally by the bolster-case, the lower end of the bolster resting on said ring with the lug projecting between the ends of the ring.

3. A bolster-case, a bolster loosely held therein, and a split ring engaging the inner wall of the bolster-case at any point thereof and being held in adjusted position thereat by its frictional contact, the lower end of the bolster resting on the ring, one of said parts having a projection and the other part a notch to receive the projection, to prevent rotation of the bolster.

609,761. GAS-PRODUCER. PETER ENGLISH, Benton Harbor, Mich., assignor of one-half to George H. Paine, Detroit, Mich. Filed May 1, 1897. Serial No. 634,709. (No model.)



Claim.— 1. In a gas-producer the combination of a producer-chamber adapted to be filled with coal, an annular combustion-chamber surrounding the producer-chamber, flues leading from the producer-chamber to the bottom of the annular chamber, inlet-pipes for air or steam leading through the wall between the two chambers and adapted to deliver a supply of air or steam, and means whereby the air or steam can be directed through either of said chambers, substantially as described.

2. In a gas-producer, the combination of a producer-chamber provided with a suitable blast-inlet and a suitable outlet communicating with both the top and bottom of the producer-chamber, a system of steam or air inlet flues in the wall surrounding the producer-chamber, a valve adapted to direct the air at will either through the producer chamber or into the outlet from the producer-chamber, substantially as described.

3. In combination with a producer-chamber provided with a suitable blast-inlet and with a common outlet communicating with both the top and bottom of the producer-chamber, an annular chamber arranged to receive a supply of steam, flues leading from the annular chamber into that part of the outlet that communicates with the bottom of the producer-chamber, and a valve arranged in the common outlet to direct steam either through the producer-chamber or into the outlet therefrom, substantially as described.

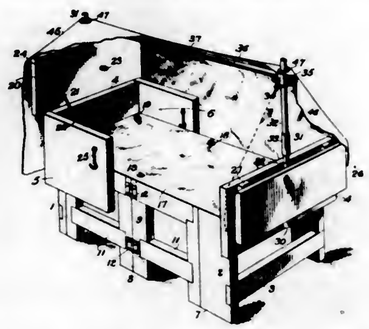
4. In a gas-producer, the combination of a producer-chamber, an annular chamber surrounding the producer-chamber and communicating with the producer-chamber near the bottom thereof, an annular steam or air chamber in the wall between the producer-chamber and the annular chamber surrounding the producer-chamber, flues leading from the steam or air chamber and arranged to deliver steam or air into the communicating passages between the producer-chamber and the annular chamber, substantially as described.

609,762. WRENCH. LOGAN W. EVERHART, Chanute, Kans., assignor of one-half to Zachary T. Postlethwaite and Alonzo W. Postlethwaite, same place. Filed May 22, 1897. Serial No. 637,750. (No model.)



Claim.—The hereinbefore-described improved wrench, comprising a shank having a front toothed face, a stationary jaw having an inclined engaging face, and provided with tapering reinforce or abutment portions 5 5ª; a sliding jaw mounted on the shank, consisting of sides having tapering upper edges adapted to engage the abutment portions of the fixed shank and having an inclined grip-face 8, terminating at its inner end in a fulcrum-point 12, normally engaging the fixed shank, said casing having a slotway of greater width than the fixed shank, a closed back portion and a bearing-spring for holding the casing in frictional contact on the fixed shank, and having an inner toothed portion 9, adapted to engage with the teeth of the fixed jaw, the inclined or abutting portions of the fixed jaw terminating at the inner edge of the clamp or engaging face of such fixed jaw, such inclines and the incline faces 7ª, of the sliding casing and its fulcrum-point 12, being relatively so arranged that when the sliding jaw is moved up to its limit, the inclined faces 7ª and 5 5ª, will take up the abutting shock and the fulcrum-point 12, thereby relieved of undue wear, all being arranged substantially as and for the purposes set forth.

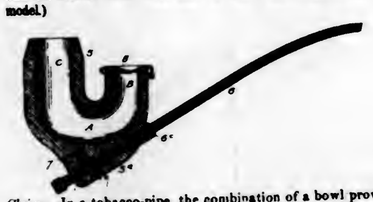
609,763. COMBINATION TABLE AND BED. CHARLES E. LINDE, Philadelphia, Pa., assignor of one-fourth to Mary B. Hyde, same place. Filed Mar. 16, 1897. Serial No. 627,774. (No model.)



Claim.—1. The combination of end frames, jointed side frames hinged together and to the end frames and adapted to fold inwardly, head and side rails rigidly attached to one of the end frames, and a foot-rail to the other, said rails extending above said frames and forming (when the latter is folded) a box or compartment, a folding bed-bottom attached to the end frames, sockets on the end frames, standards adapted to said sockets, a ridge-pole adapted to be connected with the said standards, and a canopy adapted to be sustained by the standards and ridge-pole and to envelop the entire structure.

2. A table adapted to be extended to form a bed, said table comprising end frames, folding legs or frames interposed between said end frames and hingedly connected thereto and to each other, side and end rails projecting above the end and side frames to form a compartment or receptacle, textile fabric stretched over the frame as a whole and forming the bottom of said compartment, means for supporting the side edges of said fabric at intermediate points, and a top hinged to one of said rails, substantially as described.

609,764. TOBACCO-PIPE. WILLIAM V. SMITH and HENRY B. BARTON, Denver, Colo. Filed Sept. 10, 1897. Serial No. 651,247. (No model.)



Claim.—In a tobacco-pipe, the combination of a bowl provided with two openings besides the smoke-exit, suitable means for tightly closing one of said openings, the bowl of the pipe being provided with a projection extending below the tobacco-chamber and having a stem-opening formed therethrough below the two main openings in the bowl, and a smoke-exit leading downward from the tobacco-chamber to said opening, and a stem passing through the said opening and having a port registering with the smoke-exit, the protruding extremity of the stem adjacent the bowl of the pipe having a detachable closure to facilitate cleaning.

REISSUES.

11,688. COMBINATION WHISK-BROOM. ASA F. MIDDAUGH, ALFRED T. HORVEY, and FRANCIS T. ANDERSON, Denver, Colo., assignors to the Economy Broom Company, same place. Filed Feb. 15, 1897. Serial No. 623,567. Original No. 534,177, dated Apr. 23, 1895.



Claim.—1. As an improved article of manufacture, a whisk-broom provided with a wire embracing the wood part of the handle, and bent outwardly from the lower portion of the wood part, and downwardly into the inner part of the brush, substantially as described.

2. As an improved article of manufacture, a whisk-broom provided with an integral wire brace having an exposed loop at the top, its lower part being shouldered and terminating in depending points projecting into the body of the broom, substantially as described.

3. As an improved article of manufacture, a whisk-broom provided with a combined hanger and dirt-removing device, attached to the handle, said device consisting of a hanging-loop having thereon an outer scraping edge, substantially as described.

4. As an improved article of manufacture, a whisk-broom provided with a combined hanger and dirt-removing device attached to the handle, and projecting above same; said device consisting of a wire, triangular in cross-section, bent double, with the angular edges projecting outwardly, and providing scraping edges, substantially as described.

5. As an improved article of manufacture, a whisk-broom provided with a combined hanger and dirt-removing device attached to the handle and projecting above same; said device consisting of a wire, having opposite scraping edges extending longitudinal of same, and bent into a loop with one of said edges projecting on either side of the plane of the loop, substantially as described.

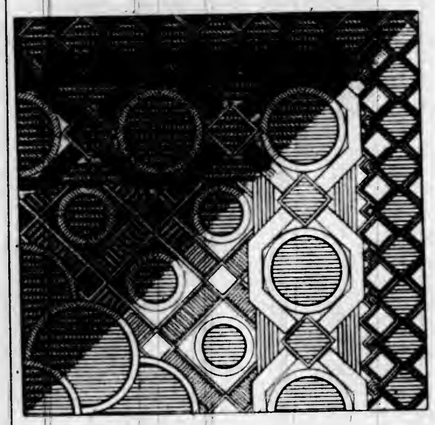
DESIGNS.

29,256. MUFF. ISAAC COHOON, New York, N. Y. Filed July 27, 1898. Serial No. 687,041. Term of patent 7 years.



Claim.—The design for a muff, as herein shown and described.

29,257. BEDSPREAD. WILLIAM WHITE, Rutherford, N. J., assignor to Clarence Whitman & Co., New York, N. Y. Filed May 7, 1898. Serial No. 680,068. Term of patent 7 years.



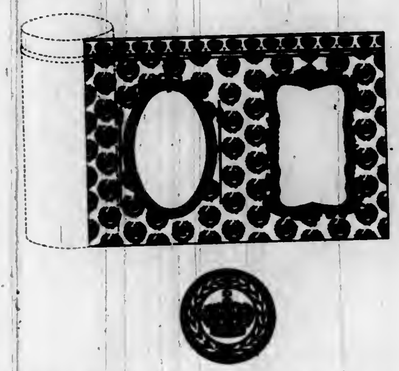
Claim.—The design for a bedspread, substantially as shown and described.

29,258. ORNAMENTAL ALBUM-COVER. WILLIAM H. IRBISTER, Philadelphia, Pa. Filed July 16, 1898. Serial No. 686,155. Term of patent 7 years.



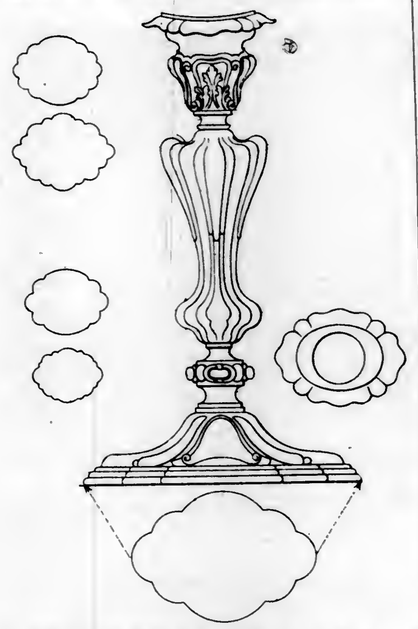
Claim.—The design for an ornamental album-cover, substantially as shown and described.

29,259. ORNAMENTAL TOILET-POWDER BOX. BENJAMIN G. TAITT, Philadelphia, Pa. Filed July 16, 1898. Serial No. 686,154. Term of patent 14 years.



Claim.—The design for an ornamental toilet-powder box or like article, substantially as shown and described.

29,260. CANDLESTICK. AUSTIN F. JACKSON, Taunton, Mass. Filed July 21, 1898. Serial No. 686,543. Term of patent 14 years.



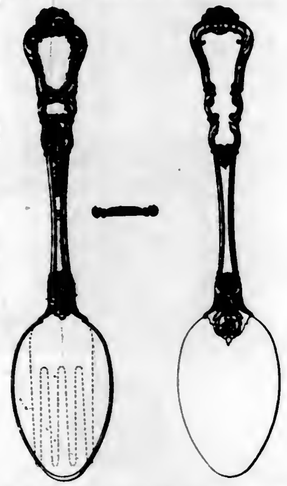
Claim.—1. The design for a candlestick, as herein shown and described.

2. In a design for a candlestick, the design for the top, as herein shown and described.

3. In a design for a candlestick the design for the shank as herein shown and described.

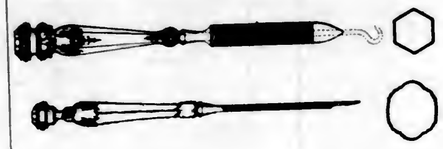
4. In a design for a candlestick, the design for the base as herein shown and described.

29,261. HANDLE FOR SPOONS, &c. WILLIAM C. CODMAN, Providence, R. I., assignor to the Gorham Manufacturing Company, same place. Filed July 29, 1898. Serial No. 687,217. Term of patent 14 years.



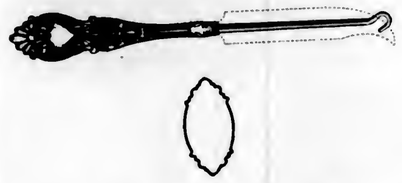
Claim.—The design for the handle of spoons, forks and similar articles substantially as herein shown and described.

29,262. HANDLE FOR NAIL-FILES, &c. THEODORE W. FOSTER, Providence, R. I. Filed July 29, 1898. Serial No. 687,219. Term of patent 3½ years.



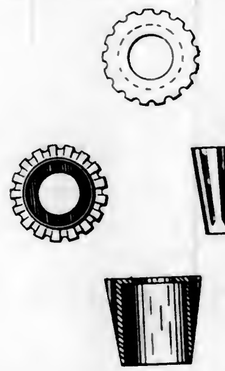
Claim.—The design for the handle of a nail-file or similar article substantially as herein shown and described.

29,263. HANDLE FOR BUTTON-HOOKS, &c. JOSEPH E. STRAKER, Jr., North Attleborough, Mass., assignor to the James E. Blake & Company, Attleborough, Mass. Filed July 29, 1898. Serial No. 687,218. Term of patent 3½ years.



Claim.—The design for the handle of a button-hook or similar article substantially as herein shown and described.

29,264. CONE FOR ROLL-PAPER. ARTHUR GREEN, Atlanta, Ga. Filed July 13, 1898. Serial No. 685,878. Term of patent 14 years.



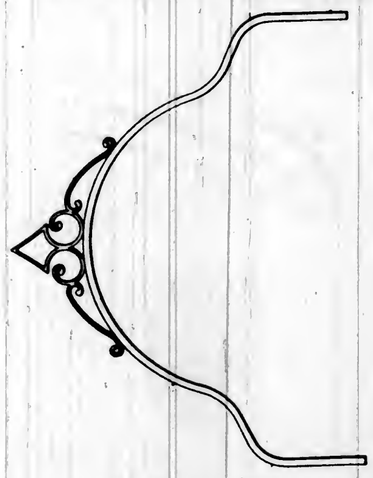
Claim.—The design for a cone for roll-paper substantially as herein described.

29,265. BATTERY-PLATE. CHARLES T RICHMOND, Cleveland, Ohio, assignor to the National Carbon Company, same place. Filed July 18, 1898. Serial No. 686,297. Term of patent 7 years.



Claim.—The design for the battery-plate substantially as herein shown and described.

29,266. REIN-HOLDER. PERRY C. GALLAWAY, Abbott, Tex. Filed July 30, 1898. Serial No. 687,366. Term of patent 14 years.



Claim.—The design for a rein-holder herein shown and described.

29,267. HAME-HOOK. EDWARD WILHELM, Buffalo, N. Y., assignor to the United Hame Company, same place. Filed July 28, 1898. Serial No. 687,140. Term of patent 7 years.



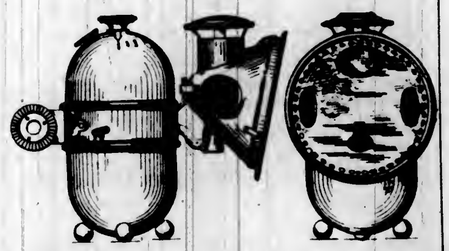
Claim.—The design for a hame-hook substantially as herein shown and described.

29,268. TIRE-REPAIRING PLUG. ARRAH J. WEIMER, Kokomo, Ind. Filed Aug. 2, 1898. Serial No. 687,567. Term of patent 3½ years.



Claim.—The design for a tire-repairing plug, as herein shown and described.

29,269. BICYCLE-LAMP. FREDERICK L. WHITE, Waterbury, Conn., assignor, by mesne assignments, to The Calcium King Lamp Company, same place. Filed June 20, 1898. Serial No. 684,011. Term of patent 14 years.



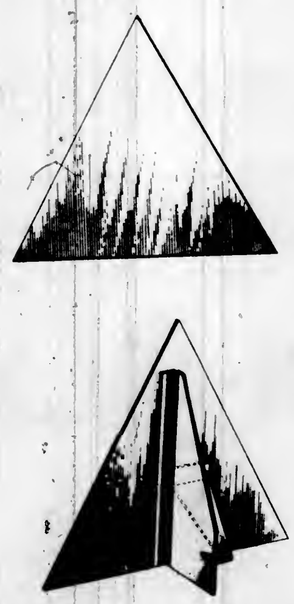
Claim.—The design for a bicycle-lamp, substantially as shown and described.

29,270. YOKE FOR RAILWAY-CONDUITS. FRED S. PEARSON, Boston, Mass. Filed July 14, 1898. Serial No. 685,961. Term of patent 7 years.



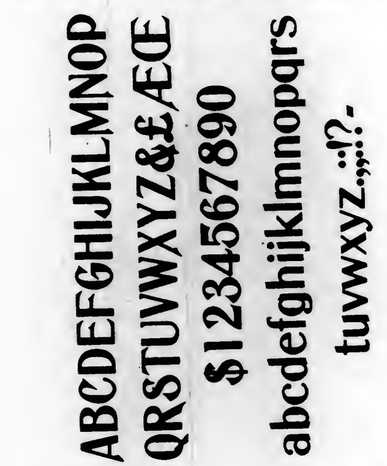
Claim.—The design for a yoke for railway-conduits as substantially herein shown and described.

29,271. DISPLAY-STAND. ALFRED BRUNOT SCHANZ, Attica, Ind. Filed July 19, 1898. Serial No. 686,372. Term of patent 14 years.



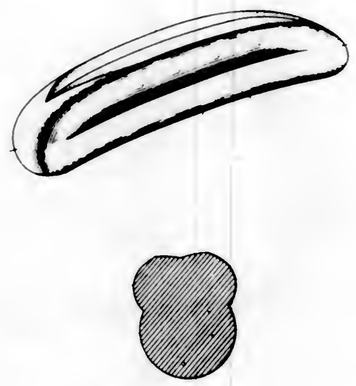
Claim.—The design for a display-stand, as herein shown and described.

29,272. FONT OF PRINTING-TYPE. Charles W. Herrgesell, Oak Lane, Pa., assignor to Mather Manufacturing Co., Philadelphia, Pa. Filed July 30, 1898. Serial No. 687,368. Term of patent 7 years.



Claim.—The design for a font of printing-type, substantially as shown and described.

29,278. LOAF OF BREAD. Charles W. Kola, Philadelphia, Pa. Filed July 13, 1898. Serial No. 685,880. Term of patent 7 years.



Claim.—The design for a loaf of bread substantially as herein shown and described.

TRADE-MARKS

REGISTERED AUGUST 23, 1898.

31,888. ELASTIC GORING, CORDS, BRAIDS, AND NARROW WEBS. Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Filed June 25, 1898.

EUREKA!

G

Essential feature.—The word "Eureka" and a large letter "G." Used since July 1, 1896.

31,889. ELASTIC GORING, CORDS, BRAIDS, AND NARROW WEBS. Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Filed July 27, 1898.

VICI

Essential feature.—The word "Vici." Used since June, 1896.

31,890. ELASTIC GORING, CORDS, BRAIDS, AND NARROW WEBS. Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Filed July 27, 1898.

VIDI

Essential feature.—The word "Vidi." Used since April, 1896.

31,891. ELASTIC GORING, CORDS, BRAIDS, AND NARROW WEBS. Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Filed July 27, 1898.

VENI

Essential feature.—The word "Veni." Used since February, 1896.

31,892. ELASTIC GORING, CORDS, BRAIDS, AND NARROW WEBS. Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Filed July 27, 1898.

VENI, VIDI, VICI

Essential feature.—The words "Veni-Vidi-Vici." Used since July, 1896.

31,893. TRISODIUM PHOSPHATE. Provident Chemical Works, St. Louis, Mo. Filed July 20, 1898.

HYDROPURA

Essential feature.—The word "Hydropura." Used since February 15, 1898.

31,894. WITHDRAWN.

31,895. CERTAIN REMEDY FOR NERVOUS AILMENTS AND SEQUELÆ. Harry Arnold, Baltimore, Md. Filed July 8, 1898.

KAFSIKO

Essential feature.—The word "Kafsiko." Used since June 15, 1898.

31,896. MEDICINAL MIXTURE TO AID DIGESTION. The Maltine Chemical Company, Buffalo, N. Y. Filed June 11, 1898.

PEPCREOSE.

Essential feature.—The word "Pepcreose." Used since June 7, 1898.

31,897. SULFUR. Koch & Ries, Antwerp, Belgium. Filed June 11, 1898.



Essential feature.—The representation of a lion and the letters "K" and "R." Used since 1868.

81,898. VEGETABLE BITTERS FOR BILIOUSNESS AND JAUNDICE. ESTATE OF HENRY H. HAY, DECEASED, Portland, Me. Filed Feb. 25, 1898.

LF

Essential feature.—The letters "L. F." Used since 1865.

81,899. ROASTED COFFEE. THE AMERICAN COFFEE COMPANY, New York, N. Y. Filed May 27, 1898.



Essential feature.—The representation of an eagle, a sunburst, and the words "EAGLE BRAND." Used since July 1, 1897.

81,900. TEA. PETER C. LARKIN, Toronto, Canada. Filed July 27, 1898.

'SALADA'

Essential feature.—The word "SALADA" in quotation-marks. Used since December 31, 1892.

81,901. CHESTS OR BINS. MILLARD F. BROWN, Kansas City, Mo. Filed June 10, 1898.

STAR

Essential feature.—The word "STAR." Used since October 20, 1897.

81,902. CERTAIN NAMED BICYCLE SUNDRIES. RICHARD C. JENKINSON, Newark, N. J. Filed June 1, 1898.

J
R E
FINISH

Essential feature.—The letters "J R E" and the word "FINISH." Used since May 1, 1898.

81,903. BICYCLES. PEORIA RUBBER and MANUFACTURING COMPANY, Peoria, Ill. Filed July 18, 1898.

Atalanta

Essential feature.—The word "ATALANTA" and the representation of a Maltese cross. Used since January, 1898.

81,904. CERTAIN NAMED VEHICLES. MOLINE WAGON COMPANY, Moline, Ill. Filed June 27, 1898.



Essential feature.—The representation of a wheel and a dog running beside the wheel. Used since June, 1897.

81,905. FLUID-METERS. NEPTUNE METER COMPANY, Jersey City, N. J., and New York, N. Y. Filed June 1, 1898.

FROST BOTTOM

Essential feature.—The words "FROST BOTTOM." Used since June 30, 1895.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE JONES.

Decided January 12, 1898.

BAR TO THE GRANT OF A MECHANICAL PATENT BY A DESIGN PATENT.

A design patent and a mechanical patent are the subjects of two distinct monopolies, and the grant of one does not preclude the grant of the other. A design patent is therefore not a statutory bar to the grant of a mechanical patent covering the structure of a device the shape or configuration of which is the subject of the design patent. (*Ex parte Palmer*, 21 O. G., 1111, cited, and *Miller* v. *Eagle Mfg. Co.*, 66 O. G., 845, distinguished.)

APPEAL from Examiners-in-Chief.

WATER-WHEEL BUCKET.

Application of Edwards P. Jones filed November 16, 1896, No. 612,306.

Mr. N. A. Acker and *Mr. L. S. Bacon* for the applicant.

GREELEY, *Acting Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief affirming the rejection by the Primary Examiner of the following claims:

1. In a water-wheel bucket, the combination with the curved bottoms meeting at a central apex or sharp ridge, of the curved rear walls continuous with the curved bottoms, the curved rear walls being separated by a central portion beyond which the said curved walls inwardly extend, the front wall and the converging side walls uniting the rear curved walls to the front wall of the bucket.

2. In a water-wheel bucket, the combination with the curved bottoms meeting at a central apex or sharp ridge so as to form two distinct pockets, the central apex or ridge being formed convex on each face at or near its butt-end, the curved rear walls forming a continuation of the curved bottoms, the rear curved walls being separated by a central portion beyond which the said curved walls inwardly extend, the front wall, and the converging side walls which unite the front wall to the rear curved walls.

The reference is design patent to Jones, January 26, 1897, No. 26,568.

It seems that this application and the application for the design patent were filed the same day. The design application was duly allowed, and became a patent January 26, 1897. This application, which had been allowed January 22, 1897, was then withdrawn from issue and claims 1 and 2 thereof rejected upon the design patent in view of the decision of the United States Supreme Court in *Miller* v. *Eagle Mfg. Co.*, (C. D., 1894, 147,) the Examiner holding that the design patent and the present application are for the same invention.

The figures of the design patent are substantially identical with some of those of the application, and in fact are practical *facsimiles* of them. The position taken by the appellant is that the design patent is for an invention different from that of the application—that the configuration of an article is patentably different from its mechanical structure.

In the decision referred to by the Examiner the two patents were each for the same structure, although specifying different functions. The Supreme Court held that—

no patent can issue for an invention actually covered by a former patent, especially to the same patentee, although the terms of the claims may differ.

The constitutional power to confer a monopoly is exhausted by a single grant. A design patent and a mechanical patent are, however, subjects of two distinct monopolies, and the grant of one does not therefore preclude the grant of the other. Throughout the decision in question only mechanical patents were considered, and the fact that no reference was made to those decisions of that tribunal in which design patents were discussed and considered tends to show that the Court did not consider design patents as belonging to the same statutory class as mechanical patents.

This question was considered by a former Commissioner in *ex parte Palmer*, (21 O. G., 1111.) The conclusion then reached was that the application for a design patent could not properly be rejected upon a mechanical patent for the same thing, the circumstances being in that respect different from those of the case before me. This does not seem to be important, however, and I have arrived at the conclusion that a design patent is not a statutory bar to the grant of a mechanical patent covering the structure of a device whose shape or configuration is the subject of the design patent.

The decision of the Examiners-in-Chief is accordingly reversed.

EX PARTE HEALEY.

Decided April 8, 1898.

DIVISION—SEPARATE PARTS OF A BICYCLE—DISTINCT AND INDEPENDENT INVENTIONS.

When an applicant had no claim covering the fundamental organization of the bicycle, but each claim was drawn to an improvement on some specific part of it—viz., first, the crank-shaft covered by claim 1; second, the handle-bar-stem clamp covered by claim 2; third, the wheel-hub formation covered by claim 3; fourth, the axle-wheel and cone formation covered by claim 4; fifth, the seat-post clamp covered by claim 5; sixth, the crown-fork formation covered by claims 6 and 7, and, seventh, the handle-bar grip covered by claims 8 and 9, *Held* that these separate improvements are distinct and independent inventions, which should be presented in separate applications. (*Ex parte Willcox and Borton*, 45 O. G., 455; *ex parte Stearnes*, 50 O. G., 1768; *ex parte Cook*, 51 O. G., 1620; *ex parte Speckbauch*, 54 O. G., 1265; *ex parte Burgess*, 80 O. G., 1759; *ex parte Rose*, 62 MS. Dec., 366, and *Sessions* v. *Romadka*, 28 O. G., 721, cited.)

ON petition.

BICYCLE.

Application filed April 24, 1896, No. 588,916.

Messrs. C. A. Snow & Co. for the applicant.

GREELEY, *Assistant Commissioner:*

This is a petition from the action of the Primary Examiner requiring division of the above-entitled application.

The Examiner states that there are seven distinct and independent inventions claimed which do not mutually contribute to produce a single result within the meaning of Rule 41, and therefore holds that no two of them should be covered by one application. The inventions are improvements on a bicycle and are divided as follows:

1. The crank-shaft construction, covered by claim 1.

2. The handle-bar-stem clamp, covered by claim 2.

3. The wheel-hub formation, covered by claim 3.

4. The wheel-axle and cone formation, covered by claim 4.

5. The seat-post clamp, covered by claim 5.

6. The fork-crown formation, covered by claims 6 and 7.

7. The handle-bar grip, covered by claims 8 and 9.

The applicant has no claim covering the fundamental organization of the bicycle, but each claim is drawn to an improvement on some specific part of it. No claim is, in fact, drawn to cover, in combination, any two of the parts claimed specifically, and it appears to be recognized that no such claim could properly be drawn, since there is not such cooperation between them as to make a valid combination. The rule for determining under such circumstances whether division should be required was stated by Commissioner Mitchell in *ex parte Stearnes* (50 O. G., 1768) to be:

> When the machine or apparatus improved upon is old and no claims are made professing to cover its fundamental organization, the several specific improvements are to be grouped with reference to the several single functions which they mutually contribute to discharge, and it is not enough to justify joinder in the same application that they all relate to the same machine or apparatus and in various disconnected ways tend to improve it.

This rule was quoted with approval in *ex parte Burgess*, (80 O. G., 1759,) wherein it was said:

> * * * When a device has been made by the inventors themselves and by the manufacturing interests of the country a distinct subject of invention and manufacture, and so stands in a distinct class, applicants should not be permitted to claim this particular device in an application with other distinct and separate inventions.

In the present case claim 1 covers the means for fastening together the parts of the crank-shaft, which is made in two pieces, and the arrangement of the bearing-surfaces thereon. This improvement is adapted for use with any ordinary bicycle and it is entirely immaterial in so far as its structure and operation are concerned whether the bicycle with which it is actually used is or is not provided with the other specific improvements claimed. Crank-shafts have been made a distinct and separate subject of invention from other parts of a bicycle, as is evidenced by the patents now found in the class of "Pedals and Cranks." This claim therefore under the practice announced above should be included in a separate application. It clearly comes within the rule announced in *ex parte Willcox and Borton* (45 O. G., 455) and *ex parte Speckbauch* (54 O. G., 1265) that division should be required where—

> the invention has obtained a distinct place in art and manufacture, and can be used in other relations.

Claim 2 covers the peculiar structure of the fork-stem and a split ring which coöperates therewith for the purpose of holding the handle-bar stem firmly in place. This ring is somewhat similar in appearance to that covered by claim 5, which is used for clamping the seat-post in place, and also has a similar function, since they both act as clamps. The Examiner states that neither can be used in place of the other, however, and that they belong in different classes, since one is peculiar to the steering-head of the bicycle and the other to the seat-post. They are certainly separate and distinct structurally, and the operation of one does not in any manner affect that of the other. If, however, they are regarded broadly as merely different forms of clamps, one of which may be used in place of the other and which belong to the same art of invention, it is apparent that they are two species or modifications of the invention and should not be claimed in one application. (*Ex parte Cook*, 51 O. G., 1620.) These two devices are not only distinct from each other, but are also entirely independent of the inventions covered by the remaining claims. The only relation between either of them and the other inventions is that they tend in disconnected ways to improve the bicycle with which they are used, and, as noted in *ex parte Stearnes*, cited above, this is not sufficient to warrant their inclusion in one application.

Claim 3 covers the construction of the wheel-hub by which the spokes of the wheel are fastened in place and is assignable to a different division of the Office from any of the other claims. The matter covered by this claim has been made the subject of distinct and independent invention, as will be seen by reference to the class of "Carriages and Wagons, Hubs," and is entirely independent of the other inventions claimed, and should therefore be covered by a separate application.

Claim 4 covers the construction of the axle and the bearing-cones mounted thereon whereby the cones are fastened in place. It covers a structure which is assignable to the class of "Bearings," which, as stated in *ex parte Rose*, (62 MS. Dec., 366,) has been recognized by inventors themselves as being separate and distinct from other parts of a bicycle.

Claims 6 and 7 cover a construction for strengthening the frame of a bicycle at the fork-crown which is in no way connected in design or operation with the other inventions claimed, and it should therefore be presented in a separate application. (*Ex parte Rose*, above.)

The handle-bar grip covered by claims 8 and 9 is clearly independent of any other parts of a bicycle and has been so recognized by manufacturers and inventors, as is apparent from the fact that handle-bar grips may be bought separately at any

store keeping bicycle supplies just as the bell or lamp may be purchased.

It is therefore held that each of the inventions referred to by the Examiner should be presented in a separate application.

It is true that all of these inventions relate to improvements on one machine—a bicycle—but they cannot for that reason be allowed in one application, since they are as independent of each other both structurally and functionally as if they related to different machines. This case is analogous to that considered by the court in *Sessions* v. *Romadka*, (28 O. G., 721,) wherein as a condition precedent to granting the relief asked the patentee was required to disclaim all but one of the several independent improvements covered by his patent. In that case the court said in regard to the several improvements:

> They are all designed for use upon one article—namely, a trunk; but they do not all tend to the accomplishment of a single result further than that all combine generally to improve the trunk. Each is a distinct invention or improvement by itself, and the operation of one has no relation to the operation of the others. Although all may be placed upon the same trunk, each singly has a distinct and appropriate use, and in such use they are unconnected.

The petition is denied.

TREVETTE *v.* DEXTER.

Decided May 21, 1898.

1. INTERFERENCE — MOTION FOR DISSOLUTION — RULE 114 CONSTRUED.

   Under Rule 114 motion for dissolution must not only be filed, but must also be noticed for hearing within the limit of appeal in order to operate as a stay to the running of the time limited. (*Meyrose* v. *Jahn*, 56 O. G., 1447, cited.)

2. SAME—MOTIONS, TRANSMISSION OF.

   The Examiner of Interferences is bound to transmit proper motions noticed for hearing within the limit of appeal, if in proper form; but after that time he will exercise his discretion under the circumstances of each case in determining whether the motion shall be transmitted.

3. LIMIT OF APPEAL, EXTENSION OF.

   The Office is not bound by the strict rules of practice that obtain in the courts and may extend the limit of appeal in a proper case even after the time first set has expired.

4. SAME—JURISDICTION OF EXAMINER OF INTERFERENCES.

   The Examiner of Interferences may himself extend the limit of appeal in a proper case, and it is not necessary to first make a motion before the Commissioner to restore to him jurisdiction of the interference. The decisions in *Garrison* v. *Hübner* (54 O. G., 1889) and *Guerrant* v. *Cable* v. *Coffee* (61 O. G., 285) modified.

ON petition.

PAPER-FEEDING MACHINES.

Application of Wentworth G. Trevette filed December 18, 1895, No. 572,581. Application of Talbot C. Dexter filed July 13, 1894, No. 517,396.

Messrs. Raymond & Omohundro for Trevette.

Mr. E. Laass and *Mr. Harry E. Knight* for Dexter.

GREELEY, *Assistant Commissioner:*

This is a petition by Dexter from the decision of the Examiner of Interferences transmitting to the Primary Examiner Trevette's motion to dissolve the above-entitled interference.

It appears from the record that on November 19, 1897, priority was decided in favor of Dexter for the reason that Trevette's preliminary statement failed to overcome the filing date of his application. December 9, 1897, was set as the limit of appeal from this decision. This limit was on motion extended to December 24, 1897. On December 23 Trevette filed a motion to dissolve the interference and a motion to transmit the same to the Primary Examiner, and requested a suspension of proceedings pending a determination of the motion to transmit. This motion was noticed for hearing on December 28, four days after the limit of appeal had expired.

It is contended by Dexter that by reason of the expiration of the limit of appeal the Examiner of Interferences had no jurisdiction of the interference on the day of hearing and therefore could not properly consider or decide the motion to transmit.

Rule 114 provides that where judgment is rendered on the record the defeated party may, within the limit of appeal, bring any of the motions permitted by the rules and that—

> the filing of such a motion, noticed for hearing within the limit of appeal, will operate to stay the running of the time so limited until the final determination of the motion.

The wording of this rule indicates that if not noticed for hearing within the limit of appeal the mere filing of the papers in this Office will not itself operate to stay the running of the time, and in that respect differs from the limitations in Rule 122, as construed in *Beckfield* v. *Ruud*, (63 MS. Dec., 35,) in reference to the limit within which motions to dissolve should be made. Such has been the construction heretofore given this rule, as is indicated in the decision of *Holton and Malsch* v. *Merrow*, (41 MS. Dec., 457,) quoted with approval in *Meyrose* v. *Jahn*, (56 O. G., 1447,) wherein it was said:

> A motion must not only be filed, but must also designate a day of hearing within the limit of the appeal, in order to operate of itself "to stay the running of the time limited." If the day fixed is not within the time limited, the Examiner of Interferences will be without jurisdiction when the day for hearing is reached, unless the limit of appeal shall meanwhile have been extended by him.

The appellant calls attention to the strict construction given by the courts to the statutory limitations in regard to appeals and urges that the same practice should be followed in this Office. In the court practice the limit of appeal cannot be extended for any reason, and if appeal is not taken within that time the court is without jurisdiction. (*U. S.* v. *Curry*, 6 How., 106; *Radford* v. *Folsom*, 131 U. S., 392.) The Office practice is not, however, strictly analogous to the court practice, and therefore the rules which are binding on the courts are not always applicable to the procedure in this Office.

As stated by the Court of Appeals of the District of Columbia in *Ross* v. *Loewer*, (77 O. G., 2141:)

> * * * The proceedings of the Patent Office are not controlled by the ordinary rules of practice that obtain in the courts of the country, but are controlled by statutory provisions and a code of rules made in pursuance of statutory provisions wholly unlike the rules of practice enforced in the courts.

It is possible in court practice to have a uniform limit of appeal, since each court has jurisdiction in only a limited and comparatively small territory. The court is almost equally accessible to all parties within that territory, and therefore it is just to enforce the same limit as to time against them all.

On the other hand, parties having business with this Office reside in all parts of the United States and even in foreign countries, and the short limit of appeal usually set for parties residing near the Office would be inadequate for parties residing at a great distance. Most of the business with this Office is conducted by correspondence, and in order for a party to intelligently present a motion for dissolution it is necessary for him to obtain copies of his opponent's application, and to do this where he resides at a distance requires much time. In view of these facts the limit of appeal in interference proceedings in this Office is not fixed by statute or by the rules, but is set by the Examiner of Interferences at such time as in his discretion seems proper in view of the circumstances of each particular case. It follows from this method of setting the time that a mistake may occur in a particular case, and at a subsequent period it may be discovered that the time originally set is insufficient under the circumstances and that it would be inequitable to hold the parties strictly bound by the limit first set. To extend the time in such case would not involve a violation of any statute or rule. Rule 114 simply provides a means by which a party may as a matter of right obtain a suspension of proceedings for a consideration of a motion, but does not prohibit the Office from extending the limit of appeal under other circumstances upon its own motion or upon the request of a party in a proper case. I cannot agree with the appellant in holding that the fact that judgment has been rendered presents the rights of the parties in any different light from what they would be under Rule 122 if no such judgment had been rendered. The judgment is no more conclusive of the questions presented under a motion to dissolve than is the declaration of the interference itself. Motions to dissolve are made not alone to avoid the expense of interference proceedings, but also to prevent an incorrect or misleading decision on priority. As stated in *Garrison* v. *Hübner*, (54 O. G., 1889:)

> In disposing of this motion it must be remembered that a judgment upon the record under Rule 114 is a judgment rendered before the Office has had the benefit of the views of counsel for either party upon the questions involved therein. The interference is declared by the Office while each party is in ignorance of the nature of his opponent's application. The preliminary statements are prepared, filed, and accepted while the same state of things exists. If the Office has made a mistake, the entire public, as well as the injured party, is interested to have the mistake corrected.

In that decision it was held that this Office has authority to extend the limit of appeal even after such limit has expired. The same conclusion was announced in *Guerrant* v. *Cable* v. *Coffee*, (61 O. G., 285,) wherein it was said:

> As to matters coming properly before it, this Office has not only all the powers of a court of equity, but the peculiar administrative powers committed to it warrant the Commissioner in departing from strict court practice, at his sound discretion, in exceptional cases.

In these decisions it was held that the question should be presented to the Commissioner in the first instance for the purpose of restoring to the Examiner of Interferences jurisdiction of the interference; but I do not agree that this is the correct practice. Since the Commissioner himself has authority to extend the limit of appeal, it follows that he may delegate that authority to the Examiner of Interferences if he sees proper. The Examiner sets the limit in the first instance at such time as in his opinion seems proper, and there is no apparent reason why he may not in his discretion extend such time whenever such extension is necessary, just as he may extend the twenty days for motions under Rule 122. He is the proper party to consider the question in the first instance, since such action would be merely in the nature of a reconsideration of his former action in setting the limit of appeal. He is bound to transmit proper motions noticed for hearing within the limit of appeal if in proper form, but after that time he will exercise his discretion under the circumstances of each case in determining whether the motion shall be transmitted.

The decisions above noted are modified to the extent of holding that it is not necessary to make a motion before the Commissioner in order to restore the jurisdiction of the Examiner of Interferences, but that he may assume such jurisdiction himself, in his discretion, when proper occasion arises.

In the present case he has assumed such jurisdiction and has transmitted the motion to the Primary Examiner. This action amounts to such extension of the limit of appeal as was necessary in order to consider the motion. It is true, as urged by Dexter, that he seems to have regarded the motion as in strict compliance with Rule 114, although it was not noticed for hearing within the limit of appeal; but whether it was so regarded or not his action in transmitting the motion to the Primary Examiner was proper. The motion papers were filed before the limit of appeal had expired and the day set for hearing was not such a length of time thereafter as to indicate any intention to unreasonably delay the proceedings. (*Beckfield* v. *Ruud*, above cited.)

The petition is denied.

EX PARTE GROSSKLIN.

Decided August 11, 1898.

AFFIDAVIT UNDER RULE 75—FOREIGN PATENT—PRINTED PUBLICATION—RECEPTION AND CONSIDERATION OF THE AFFIDAVIT BY PRIMARY EXAMINER.

An affidavit tending to show that an invention shown but not claimed in a German patent was derived from the applicant and that it is in fact nothing more than a printed publication of applicant's invention and not the invention of another is competent evidence for the consideration of a Primary Examiner and should be received and considered by him. (*Ex parte Payen*, 43 MS. Dec., 73, cited.)

ON rehearing.

NAPPING-MACHINE.

Application of Nicolas H. Grosselin filed December 7, 1894, No. 531,116.

Messrs. Foster & Freeman for the applicant.

GREELEY, *Acting Commissioner:*

This is a rehearing granted on a petition on which the Examiner was sustained in refusing to admit an affidavit filed to overcome a German patent cited in rejection of applicant's claims. This German patent was granted to a person other than

the present applicant and shows, but does not claim, the invention of the rejected claims. It is attempted to show by the affidavit that the invention was made abroad by the present applicant before the German patent was applied for; that the German patentee knew of applicant's invention and in his application on which the German patent was granted did not attempt to claim such invention, but limited his claims to certain changes or improvements on applicant's invention and merely showed without claiming the broad invention now claimed by applicant.

As the German patent does not claim applicant's invention, it must be considered for the purposes of this case as a printed publication and not as a patent.

Rule 75 requires that when an application is rejected on a printed publication and the applicant makes oath to facts showing completion of the invention *in this country* before the date of the printed publication, etc., then the publication will not bar the grant of a patent to the applicant; but this rule presupposes that the printed publication is the publication by some one other than the applicant whose application is rejected—by some one who asserts inventorship therein either in himself or some person other than the applicant. A prior foreign patent to the applicant or a prior printed publication in which the applicant's right to inventorship is recognized is not under the statute in force at the time this application was filed a bar.

In the case of *Payen* (MS. Dec., 43, p. 73) Commissioner Mitchell after a careful consideration of the authorities held that affidavits tending to show that a certain foreign patent on which Payen's application had been rejected, though taken out by other parties, had been taken out through fraud upon Payen, the invention having originated with him and been pirated from him by these parties, constituted competent evidence for the consideration of the Examiner and should be received.

Following the principles of this decision, it appears clear that affidavits tending to show that the invention shown in the German patent was derived from the applicant and that it is in effect nothing more than a printed publication of applicant's invention and not the invention of another would be competent evidence for the consideration of the Examiner and should be received and considered. The question of the sufficiency of the present affidavit is of course a question for the Examiner to decide, subject to appeal to the Examiners-in-Chief.

The former decision of July 10, 1896, (76 O. G., 1573,) is set aside and the petition is granted.

CHANGES IN CLASSIFICATION.

(ORDER No. 1,222.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., August 11, 1898.

The following changes in classification are hereby directed:

DIVISION II.

In Class 119, Care of Live Stock, a subclass is established as follows:

64. Steading and feeding—
Feed-troughs, automatic.

In Class 131, Tobacco, the following subclasses are abolished:

61. Tube-machines—
62. Folders,
63. Spiral-wind,
Tube-machines—
64. Straight-wind.

A new class and subclasses are established, as follows:

232. Paper-Tube Machines:
1. Adjuncts.
2. Axial-feed
3. Convolute-wind.
4. Spiral-wind.
5. Tapering-wind.
6. Tube-cutters.

DIVISION III.

In Class 96, Coating with Metal, the following subclasses are abolished:

2. Galvanizing.
8. Precipitating.
7. Tinning.
10. Wipers.

In the same class subclasses are established as follows:

Coating with Metal:
1. Apparatus—
2. Continuous-feed,
3. Dipping.
4. Fluxing.
5. Pots.
Precipitating—
6. On metals,
7. On non-metals.
8. Processes.
10. Wiping and finishing.

DIVISION X.

In Class 21, Carriages and Wagons, the following subclasses are established:

129. Whip-sockets—
130. Lock.
131. Whip-sockets and rein-holders combined.
127. Rein-holders—
132. Clamp,
Rein-holders—
133. Spring—
134. Pivoted,
135. Weighted,
136. Wheel.

DIVISION XI.

In Class 54, Harness, subclass 27, Whips, is abolished and a new class and subclasses are established, as follows:

231. Whips and Whip Apparatus:
1. Whips.
2. Whip-machines.
3. Whip-racks.
4. Whip-trimmings.

The remaining subclasses in Class 54, Harness, are abolished and the following subclasses are established:

54. Harness:
42. Attaching and detaching devices.
43. Back-bands.
40. Billet-loops.
44. Blankets.
1. Bonnets and covers.
41. Breast-strap slides.
45. Bridles—
46. Blinds,
47. Brow-bands,
48. Crown-loops,
49. Gag-runners,
50. Stranglers.
51. Bits—
52. Check.
53. Breechings.
54. Check-hooks.
55. Checkreins.
56. Checkrein-retainers.
57. Checking and unchecking devices.
58. Cockeyes.
59. Collars—
60. Breast,
61. Collar and hame connections.
4. Collar-fasteners.
62. Cruppers.
6. Fly-nets.
63. Girths.
64. Halters.
9. Hames.
65. Hame and trace connectors.
8. Hame-fasteners—
66. Lever.
67. Hame-straps.
28. Hame-tugs—
68. Adjustable.
11. Harness-machines—
69. Collar-shaping,
70. Collar-stuffing,
71. Pressers and formers,
72. Work-holders.
Harness-pads—
73. Back,
74. Neck,
75. Shoulder,
76. Pad-fasteners.
12. Harness-saddles—
77. Cart,
78. Cushion,
79. Tug-bearers.
80. Harness structures.
81. Harness-supports.
35. Hitching-straps.
82. Hitching-strap holders.
16. Horse-boots.
83. Martingales.
84. Miscellaneous parts—
85. Elastic connections,
86. Trace connections.
87. Ornamental trimmings.
31. Ox-yokes.
88. Reins.
36. Rein-buttons.
89. Rein-guards.
21. Riding-saddles.
90. Riding-saddle attachments.
91. Spurs.
92. Strap-shields.
93. Stirrups—
94. Elastic,
95. Safety.
96. Tail-holders.
97. Terrets.
98. Traces.
24. Trace-carriers.
99. Trace-supports.
100. Track-harnesses.
Trimmings—
101. Covered.
26. Tugs—
102. Open.
103. Underchecks.
104. Yoke-harnesses.
Harness-buckles—
105. Bail,
106. Clamp,
107. Buckle-guards,
108. Lock,
109. Pivoted-tongue,
112. Pivoted-tongue and clamp,
113. Rigid frame and tongue.
114. Slide,
115. Sliding tongue-piece,
116. Wedge.
Harness snap-hooks—
110. Pivoted-tongue,
111. Sliding-bolt,
117. Spring-tongue.
118. Harness-buckles and snap-hooks combined.

DIVISION XIII.

In Class 59, Chains, Staples, and Horseshoes, subclass 2, Chain and link making, is abolished and the following subclasses are established:

12. Chain-making—
13. Wire,
14. Sheet-metal,
15. Weldless.
16. Link-bending.
17. Link-welding.
18. Link bending and welding.

In the same class subclasses are established in addition to present subclass 6, Horseshoe-machines, as follows:

Horseshoe-machines—
Jaw or former—
19. Reciprocating,
20. Rotary,

Horseshoe-machines—
21. Punching and creasing,
22. Swaging.
23. Ox-shoe machines.

In Class 76, Metal Tools and Implements, Making, the following subclasses are established in addition to subclass 8, File-cutting:

File-cutting—
28. Swinging tool,
29. Sliding tool,
30. Sliding tool and trip,

File-cutting—
31. Stationary tool and rammer.
32. File-swaging machines.
33. Rasp-punching machines.

In the same class, subclass 20, Saws, sharpening, reciprocating tool, is abolished and the following subclasses are established:

Saws, sharpening, reciprocating tool—
52. Gin-saw,
53. Power-driven,
54. Hand-driven,

Saws, sharpening, reciprocating tool—
55. File-holders.
56. Combined saw sharpening and setting.

Subclass 22, Saw-swaging, is also abolished, the following subclasses being established:

Saw-swaging—
48. Cam,
49. Lever,

Saw-swaging—
50. Hammer,
51. Tools.

Subclass 26, Saw clamps and jointers, is abolished and the following subclasses are established:

34. Saw-clamps.
35. Saw-jointers.

36. Saw-dressers.
37. Saw-gages.

Subclass 19, Saw-setting, is abolished and subclasses are established as follows:

Saw-setting—
38. Tools,
39. Sliding set,
40. Oscillating set,
41. Pivoted set,
42. Lever-actuated set,

Saw-setting—
43. Idle-punch,
44. Trip,
45. Rotary set,
46. Multiple set,
47. Swage set.

Class 134, Metal-Tube Manufacture, is abolished.

In Class 206, Metal-Welding, the following subclasses are abolished:

Ingots and piles—
2. Bar,
3. Beam,
4. Plate,

Ingots and piles—
5. Rail,
6. Tube.

The following subclasses are established in the same class:

Compound ingots—
9. For plate,
10. For wire.
Metal-working—
Electric—
11. Arc system,
12. Liquid electrode,
13. Riveting.
Piles and fagots—
14. Beam,

Piles and fagots—
15. Box and scrap.
16. Plates and bars,
17. Rails,
18. Tube.
Tubes—
19. Cross,
20. Spiral,
21. Straight.
22. Welding-machines.

DIVISION XV.

In Class 92, Paper-Making, the following subclasses are established:

Pulp-making—
48. Bleaching,
49. Digesters,
50. Chemical processes,
51. Beating-engines,

Pulp-making—
52. Rag-cutters,
53. Refining-engines,
54. Wood-grinders.

DIVISION XIX.

In Class 126, Stoves and Furnaces, subclasses are established as follows:

140. Soot-catchers.
141. Smoke-stacks.

DIVISION XXIX.

In Class 145, Woodworking-Tools, the following subclasses are established:

Clamps—
56. Box and frame,
57. Box-joint,
58. Miter.

Handsaws—
59. Extensible frame,
60. U-frame,
61. Truss-frame.

Subclass 40, Clamps, box and miter, in the same class, is abolished.

DIVISION XXX.

In Class 67, Lamps and Gas-Fittings, the following subclasses are abolished:

62. Gas-lighting attachments.
63. Lamp-lighting attachments.
Match-boxes—
98. Igniting,

Match-boxes—
110. Single-delivery.
30. Vapor-burners.

The following subclasses are established in the same class:

121. Explosive lighters.
Incandescent gas-burners—
122. Block,
123. Magnesium,
124. Mantle-supports,
125. Miscellaneous.
144. Acetylene-gas burners.
Gas-lighting attachments—
126. Conducting-tube,
127. Flame-guards,
128. Pilot,
129. Self-igniting.
Lamp-lighting attachments—
130. Aperture,
131. Match-scratchers,
132. Miscellaneous,

Lamp-lighting attachments—
133. Separable.
Match-safes—
134. Baffle,
135. Single-delivery.
Vapor-burners—
Air-mixing—
136. Conducting-plate,
137. Heating-jet,
138. Retorts,
139. Auxiliary-jet,
140. Double-flame,
141. Heat-conducting,
142. Main-flame-heated,
143. Miscellaneous.

DIVISION XXXIII.

In Class 88, Optics, the following subclasses are established:

27. Canopy-lights.
28. Vault-lights.
29. Window-lights.

DIVISION XXXIV.

In Class 104, Railways, the following subclasses are abolished:

Tramway—
128. Car devices,
129. Track devices.

The following subclasses are established in the same class:

Hose-bridges—
167. Overhead,
168. Under-rail.
Rail-joints—
169. Cast-on.
Switches—
Tramway—
170. Horse-treads,

Switches—
Tramway—
171. Point-throwers,
172. Track-cams.
Track-layers—
173. Tampers.

In Class 188, Railway-Brakes, subclasses are established as follows:

Fluid-pressure—
Momentum-pump—
71. Governors,
72. Speed-controlled,
73. Strainers and drain-cups.

Rail—
Grippers—
74. Automatic,
75. Rotary.
76. Safety-catches.
77. Setting devices.

A. P. GREELEY,
Acting Commissioner

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 84—No. 9. TUESDAY, AUGUST 30, 1898. PRICE—$6 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 25, 1898.

SIR: The Secretary of the Interior has ordered that Noah C. Pitts, of Greenville, Ky., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 26, 1898.

SIR: The Secretary of the Interior has ordered that John T. Wilson, of Norfolk, Va., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

Roster of Registered Attorneys.

An alphabetical list of the individuals and firms registered in this Office under the provisions of Rule 17 of the Rules of Practice, as amended August 6, 1897, corrected to July 1, 1898, has been published, and copies will be furnished at the nominal price of five cents each, a five-cent coupon being acceptable in payment therefor.

Registrants are requested to give notice of any errors that appear in the list as published or any change of address since the list was prepared for publication.

Complete Applications.

It is hereby ordered that applications shall not be given serial numbers as complete applications and forwarded to the examining divisions for examination (1) when the petition has not been signed by the inventor; (2) when the specification and claims have not been signed by the inventor and the signature attested by two witnesses; (sec. 4888, Rev. Stats.;) (3) when the drawing has not been signed by the inventor or his attorney in fact and the signature attested by two witnesses; (sec. 4889, Rev. Stats.;) and (4) when the oath to the application does not fill the requirements of sections 4887 and 4892, Revised Statutes.

The requirements of section 4896, Revised Statutes, respecting the right of executor or administrator to make application for a patent for the invention of a deceased person must also be observed before the application will be considered as complete and forwarded for examination. The legal requirements in cases where the application is made by a foreign administrator are stated in *ex parte Ransome*, (C. D., 1870, 143.)

Under existing law no right is given to the guardian of an insane person to make an application for a patent for the invention of said insane person, and such application will not be received for examination.

This order, so far as applicable, relates to applications for the registration of trade-marks, labels, and prints, which must in all respects comply with the requirements of the statutes.

CERTIFICATES OF REGISTRATION ISSUED AUGUST 30, 1898.

Labels.

6,649.—Title: "YANKEE DROPS, MANILA FLAVOR." (For Cigars.) *American Lithographic Company*, New York, N. Y. Application filed August 2, 1898.

6,650.—Title: "GREATWORTH'S TEAS AND COFFEES." (For Teas and Coffees.) *Charles W. Snook*, New York, N. Y. Application filed July 26, 1898.

6,651.—Title: "HAAS' KREMONIA OR AMMONIA CREAM." (For Cleansing Compounds.) *Zucker & Levett & Loeb Company*, New York, N. Y. Application filed July 28, 1898.

6,652.—Title: "HAAS' KREMONIA OR AMMONIA CREAM." (For Cleansing Compounds.) *Zucker & Levett & Loeb Company*, New York, N. Y. Application filed July 28, 1898.

6,653.—Title: "CHIPS THAT PASS IN THE NIGHT." (For Matches.) *The Diamond Match Company*, Chicago, Ill. Application filed July 15, 1898.

6,654.—Title: "H. W. JOHNS' IMPROVED ASBESTOS ROOFING." (For Asbestos Roofing and Roofing-Felts.) *H. W. Johns Manufacturing Company*, New York, N. Y. Application filed July 7, 1898.

Print.

76.—Title: "ENGLISH WOOLEN MILLS COMPANY." (For Men's Wearing-Apparel, Suits, Overcoats, and the Like.) *Edward S. Rogers*, Cleveland, Ohio. Application filed July 20, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 23, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Between one and two months.			
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	June 23	Aug. 15	114
102	XIX. Stoves and Furnaces	July 5	Aug. 12	163
256	XII. Mechanical Engineering, Store-Service, etc.	June 24	Aug. 10	148
38	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	June 27	Aug. 8	230
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 22	Aug. 6	132
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	June 24	Aug. 4	110
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	June 29	Aug. 3	120
	Between two and three months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	June 20	Aug. 16	252
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 8	Aug. 9	163
253	I. Carriages and Wagons	June 2	Aug. 9	171
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	June 1	Aug. 8	142
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 20	July 19	134
	Between three and four months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	May 4	Aug. 15	258
248	XVIII. Steam-Engineering, etc	Apr. 23	Aug. 11	319
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	May 20	Aug. 10	198
128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	May 7	Aug. 10	139
240	VII. Velocipedes	May 9	Aug. 9	443
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Apr. 23	Aug. 9	449
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	May 18	Aug. 5	270
253	VI. Chemistry, Explosives, Medicines, Fertilisers, Sugar and Salt, Surgery.	Apr. 25	July 25	373
	Between four and five months.			
123	XXIV. Sewing-Machines, Apparel, and Toilet.	Apr. 19	Aug. 8	254
106	II. Farm Stock, Products, etc.	Mar. 25	Aug. 8	509
120	IX. Hydraulics, Fire-Extinguishers, etc.	Apr. 2	Aug. 4	255
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Mar. 30	Aug. 2	352
246	I. Tillage and Fences	Mar. 30	Aug. 1	224
93	XXI. Textiles, etc	Apr. 22	July 27	274
	Between five and six months.			
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Mar. 7	Aug. 8	402
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Feb. 24	Aug. 1	781
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Mar. 12	July 30	385
	Between six and seven months.			
217	XXXIII. *Trade Marks, etc., †Designs, Drafting, and Optics.	Feb. 2	Aug. 15	210
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Feb. 21	Aug. 11	457
	Between seven and eight months.			
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Jan. 10	Aug. 16	450
231	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	Jan. 17	Aug. 10	220
95	XXX. Paper Manufactures. Lamps, and Gas-Fittings.	Jan. 4	Aug. 9	244

Applications Under Examination—Continued.

215	XVII. Printing, Type-Writing Machines, and Linotyping.	Jan. 15	Aug. 6	424
	Between eight and nine months.			
261	XXXVI. Weighing and Measuring Devices and Driers.	Nov. 29	Aug. 11	297

Total number of applications awaiting action 10,066

Under one month.			
Designs	Aug. 12	Aug. 17	80
Trade-Marks	Aug. 16	Aug. 15	28

ISSUE OF AUGUST 30, 1898.

Patents	396	No. 609,765 to No. 610,160, inclusive.
Designs	25	No. 39,274 to No. 39,298, inclusive.
Trade-Marks	22	No. 31,906 to No. 31,928, inclusive.
Labels	6	No. 6,649 to No. 6,654, inclusive.
Prints	1	No. 76.
Reissues	2	No. 11,689 to No. 11,690, inclusive.
Total issue	453	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	----	New Hampshire	1	----
Arizona Territory	1	----	New Jersey	13	1
Arkansas	5	----	New Mexico Territ'y	----	----
California	6	----	New York	56	9
Colorado	6	----	North Carolina	----	----
Connecticut	24	1	North Dakota	----	----
Delaware	----	----	Ohio	26	4
District of Columbia	6	----	Oklahoma Territory	1	----
Florida	3	----	Oregon	1	----
Georgia	1	----	Pennsylvania	42	2
Idaho	----	----	Rhode Island	3	2
Illinois	31	3	South Carolina	1	----
Indian Territory	1	----	South Dakota	----	----
Indiana	9	----	Tennessee	----	----
Iowa	6	----	Texas	10	----
Kansas	4	----	Utah	1	----
Kentucky	2	----	Vermont	----	----
Louisiana	3	----	Virginia	2	----
Maine	2	----	Washington	4	----
Maryland	3	----	West Virginia	1	----
Massachusetts	18	2	Wisconsin	7	----
Michigan	17	----	Wyoming	7	----
Minnesota	5	----	U. S. Army	----	----
Mississippi	----	----	U. S. Navy	----	----
Missouri	23	----			
Montana	2	----	Total to citizens of the United States	356	24
Nebraska	2	----			
Nevada	----	----			

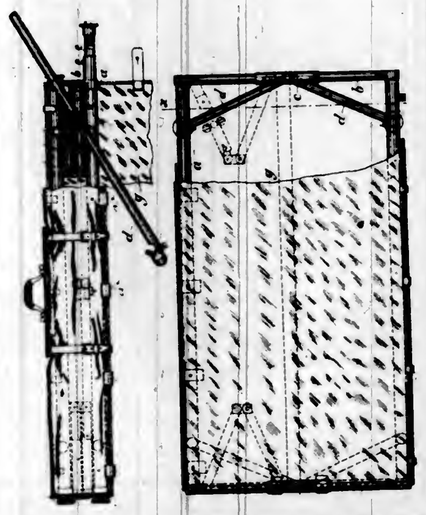
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	1	----	Italy	2	----
Australia	----	----	Mexico	----	----
Austria-Hungary	3	----	Netherlands	----	----
Barbadoes	----	2	Newfoundland	----	----
Belgium	----	----	New South Wales	1	----
Bermuda	----	----	New Zealand	----	----
Brazil	----	----	Norway	----	----
British Guiana	1	----	Portugal	----	----
Canada	4	1	Queensland	----	----
Cape Colony	----	----	Russia	----	----
Chile, Republic of	----	----	Scotland	----	----
China	----	----	South African Republic	----	----
Colombia	----	----	South Australia	----	----
Cuba	----	----	Spain	----	----
Denmark	----	----	Sweden	----	----
Egypt	----	----	Switzerland	2	1
England	28	1	Victoria	1	----
Finland	----	----	West Australia	----	----
France	4	----			
Germany	17	1	Total to citizens of foreign countries	65	6
Guatemala	----	----			
Ireland	1	----			

PATENTS

GRANTED AUGUST 30, 1898.

609,765. TABLE. KARL ABEL, Berlin, Germany. Filed Oct. 16, 1897. Serial No. 655,408. (No model.) Patented in Germany Nov. 11, 1896, No. 94,580.



Claim.—1. In a table or the like, the combination of the cover and collapsible frame, comprising side rods, legs, transverse connecting-rods pivoted to the side rods and to each other, means for preventing movement of said transverse rods relative to each other, and pivoted struts supported upon the transverse rods provided at their free ends with clamps adapted to embrace the legs of the table, substantially as described.

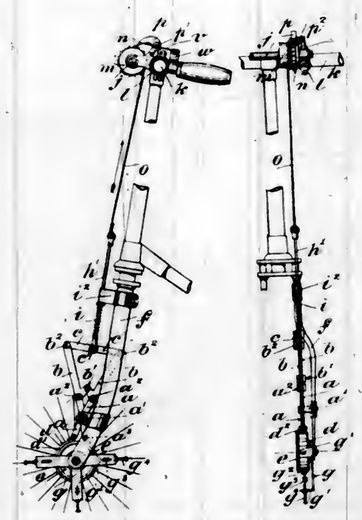
2. In a table or the like, the combination of the cover and collapsible frame comprising side rods, transverse connecting-rods pivoted to the side rods and to each other, supporting legs and struts pivotally connected to the transverse rods and adapted to be connected to and disconnected from the supporting-legs, substantially as described.

3. In a table or the like, the combination of a cover, a collapsible frame comprising in part, a hollow rod, legs of less diameter than the chambers of the hollow frame-rod adapted to be attached to and detached from the frame and to be received into the chamber of the hollow frame-rod, said legs being provided with plugs adapted to fit and close the open ends of the said hollow rod, substantially as described.

4. In a table or the like, the combination of a cover, a frame formed with hollow members, detachable hollow supporting-legs for the frame, said legs being of different diameters and the legs of smallest diameter being adapted to be received into the chambers of those of larger diameter, and the legs of greatest diameter being adapted to be received into the chambers of the hollow frame-rods, substantially as described.

5. In a table or the like, the combination of the frame and a detachable cover therefor, said frame comprising longitudinal side rods, supporting-legs, transverse connecting-rods pivoted to the side rods and to each other, a sleeve longitudinally movable upon the connecting-rods and adapted to surround the connected ends thereof, and struts pivotally supported upon the sleeve and adapted to be connected and disconnected with the supporting-legs, substantially as described.

609,766. BICYCLE-BRAKE. BENJAMIN W. ASHWELL, Manchester, England. Filed Aug. 4, 1897. Serial No. 647,116. (No model.) Patented in England Oct. 17, 1896, No. 23,070.



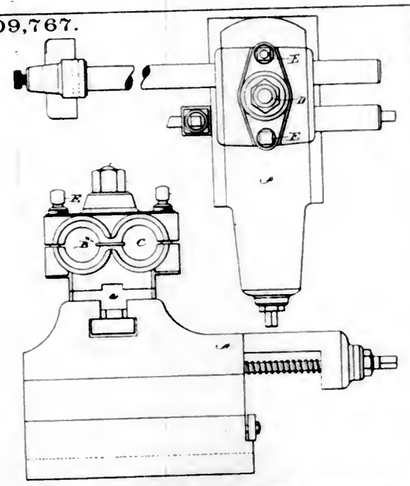
Claim.—1. In a brake, the braking-surfaces, a pair of levers *a*, *a*, pivoted at one point and having divergent arms, one end of which arms being connected with the brake-surface, a pair of bell-crank levers *b*, *b*, having their short arms pivoted together and pivoted at the junction of its arms to the levers *a*, *a*, the links *c*, *c*, pivoted to the long arms of the bell-cranks and the operating means pivoted to the links, substantially as described.

2. In combination with a bicycle and its handle-bars, the brake mechanism, the drum having a ratchet and detent, the handle for turning the drum, and the pawl-and-ratchet connection comprising the two pawls operating upon the ratchet and means for rendering either one or the other of said pawls inactive, the said handle being arranged adjacent to the handle-bar of the machine to operate in either direction or to be set in any desired position to suit the taste of the rider, substantially as described.

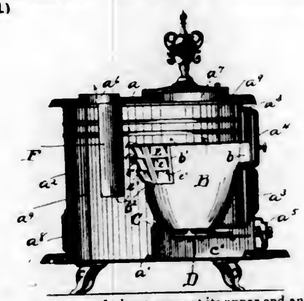
609,767. LATHE ATTACHMENT. JOHN A. BAILEY, Atlanta, Ga. Filed June 30, 1897. Serial No. 642,961. (No model.)

Claim.—In a lathe attachment, the combination of a tool-holder provided with a plural number of tool-holding sockets, adapted to receive boring-bars and other tools, a key arranged within a slit between said sockets and adapted to engage the tools held in the said sockets, binding-screws for clamping or unclamping the said sockets, a boss upon the top of said attachment between the said binding-screws and a bolt to secure the said attachment to a tool-rest, substantially as shown and for the purpose set forth.

609,767.



609,768. STOVE. WILLIAM W. BALDWIN, Cleveland, Ohio, assignor to the Cleveland Co-Operative Stove and Hollow Ware Foundry Company, same place. Filed Aug. 16, 1897. Serial No. 648,378. (No model.)



Claim.—1. A stove fuel-pot, open at its upper end and having on one side a rigid pitcher-spout and having a portion of its opposite side cut away, said cut-away portion being occupied by sections which are separable, removable, and have openings through them, substantially as described.

2. The combination, with a stove having an entrance-door a^4 and an ash-box which has a top plate C, of a fuel-pot B joining at its bottom said top plate C, and having at its front a pitcher-spout b leading to said entrance-door, and having at its rear removable perforated sections E, substantially as described.

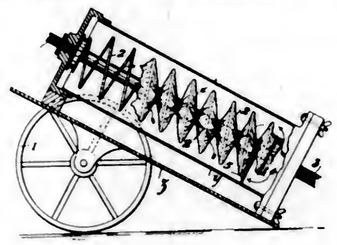
3. In combination, a fuel-pot B open at its upper end and having a portion of its side cut away from said upper end, the band b^4 secured to said fuel-pot across said cut-away portion, and a plurality of sections E having orifices through them and adapted to occupy said cut-away space and be supported by said band, substantially as described.

4. In a stove, in combination, a fuel-pot B having a portion b' cut away in the side wall from the upper end, arms b^3 projecting upward from said fuel-pot outside of said cut-away portion, a band b^4 supported by said arms, and the separable sections E adapted to occupy said cut-away portion and be supported by said band, substantially as described.

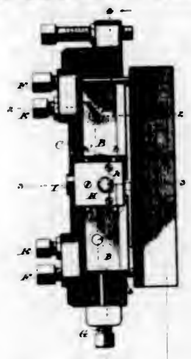
5. In a stove, a fuel-pot B having a portion of its side wall cut away from its upper edge, a flange b^3 projecting outward from the fire-pot at the base of said cut-away portion, holes in said flange and separable sections E adapted to occupy the portion cut away and having lugs e^3 at their lower ends adapted to take into said holes, and means for holding said separable sections in place, substantially as described.

609,769. DOMESTIC OR OTHER FILTER. WILLIAM H. BARR, Bury, England. Filed Dec. 2, 1897. Serial No. 660,536. (No model.) Patented in England Feb. 27, 1897, No. 5,272.

Claim.—A filter-bed for the indicated purposes consisting of a central perforated tube around which is arranged a spiral coil of wire upon which is secured a straining-cloth or cloth and paper on the surface of which is carried and deposited a close porous coating of filtering medium arranged and acting in conjunction with a suitable casing in the manner and substantially as described.



609,770. LINOTYPE-MACHINE. GEORGE A. BATES, New York, N. Y., assignor to the Mergenthaler Linotype Company, of New York. Filed Mar. 10, 1896. Serial No. 582,638. (No model.)



Claim.—1. In a linotype-machine, the combination of a main knife to trim the body of the slug, and a secondary knife extending endwise beyond the cutting portion of the main knife, and also extending beyond the main knife in the direction from which the slug is advanced; whereby the secondary knife is adapted to act on the overhanging ear of the slug before the body portion is trimmed.

2. In a linotype-machine, a trimming-knife B and a secondary trimming-knife H mounted thereon in position to trim a different portion of the slug and adjustable forward and backward in relation thereto.

3. In a linotype-machine, a trimming-knife B adjustable forward and backward and a secondary knife H adjustable forward and backward independently of the other, the two having parallel cutting edges arranged to act on different portions of the slug, substantially as described.

609,771. STEAM AND HOT-WATER BOILER. HENRY G. BAUMAN, Pittsburg, Pa. Filed July 14, 1897. Serial No. 644,477. (No model.)

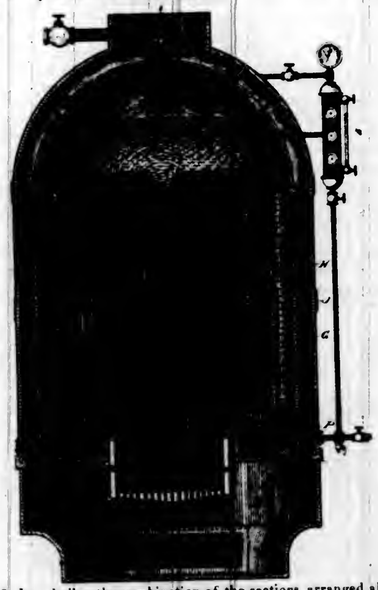
Claim.—1. In a boiler, the combination of the casing, a dome, a series of sections arranged in a circle, tubes extending transversely of the boiler, said tubes connecting said section internally of the boiler in pairs and in series, substantially as shown and described.

2. In a steam or hot-water boiler, a series of sections arranged in a circle, a series of tubes connecting said sections in pairs and in series, said tubes extending transversely of the interior of the boiler, and a suitable dome above said sections and connected thereto, substantially as shown and described.

3. A boiler consisting of a series of sections, tubes connecting said sections in pairs and in series, a dome above said sections, connections between each section and the dome, and a suitable casing for the sections and dome, substantially as shown and described.

4. A boiler consisting of a series of sections, a dome arranged above the sections, nipples connecting each section with the dome, a series of tubes connecting the sections from the inside in pairs and in series, substantially as shown and described.

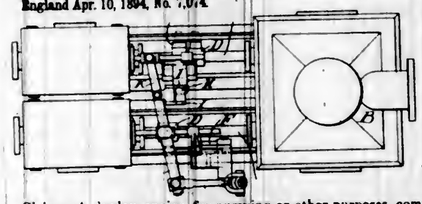
5. In a boiler, a series of sections, a series of tubes connecting the sections together in series from the inside of the boiler, in combination with a suitable dome, and a casing for said sections and dome, substantially as shown and described.



6. In a boiler the combination of the sections arranged above the water-leg, a dome arranged above said sections, a series of tubes extending transversely of the interior of the boiler, said tubes connecting the sections in pairs and in series, substantially as shown and described.

7. A boiler consisting of a series of manifold sections, a series of tubes connecting the sections in pairs and in series, a dome, a base, nipples connecting each of said sections with the dome and base, substantially as shown and described.

609,772. VALVE-GEAR. AUGUSTUS BEYER, Dewsbury, England. Filed May 19, 1897. Serial No. 637,227. (No model.) Patented in England Apr. 10, 1894, No. 7,074.

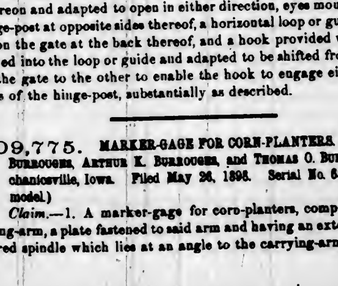


Claim.—A duplex engine for pumping or other purposes, comprising two steam-cylinders with their respective steam chests, valves, pistons and piston-rods, and valve-gears embodying two spindles operated by means of a vibrating lever pivotally connected with two swinging levers worked by the said piston-rods, said valve-gear being adjusted to admit steam to and cut steam off from their respective cylinders in such a manner that one piston shall lead the other one-half stroke, substantially as shown and described.

609,773. HEATING-STOVE. JOHN H. BROWN, Horton, Kans. Filed Jan. 31, 1898. Serial No. 668,636. (No model.)

Claim.—1. The combination of a stove-body, a fire-box open at the top and having its sides and back spaced from the body and forming intercommunicating rear, side and bottom spaces, means for supporting the fire-box above the bottom of the body, the side plates secured to the sides of the fire-box and projecting rearward therefrom and closing the sides of the rear space, and a top plate closing the upper end of the rear space, substantially as described.

2. In combination, a stove-body having its sides outwardly bulged, a fire-box having straight ends and sides and removably fitted within the stove-body and having intercommunicating rear, bottom and side spaces, the latter being formed by the outward bulge of the stove-body sides, strips secured to the bottom of the fire-box and having their end portions bent forming supports, plates secured to the sides of the fire-box and projecting in the rear thereof and closing the sides of the rear space, and a top plate closing the upper end of the said rear space and secured to the fire-box and having its rear portion bent upwardly to secure a close joint with the rear end of the stove-body, substantially as set forth.



609,774. GATE. ALLEN C. BURNER, Green Bank, W. Va. Filed Dec. 31, 1897. Serial No. 664,990. (No model.)

Claim.—1. The combination with a hinge-post, of a swinging gate mounted thereon and arranged to open in either direction, a flexible connection attached to the rear end of the gate and provided with a weight adapted to close the gate when the same is released, and a vertical pulley receiving the flexible connection and pivotally mounted on the hinge-post, said pulley being arranged to swing laterally to follow the movement of the flexible connection, substantially as described.

2. The combination with a post, of a swinging gate hinged to the same and arranged to open in either direction, a segmental extension mounted on the gate at the rear end thereof, a flexible connection provided at its lower end with a weight and having diverging branches at its upper end secured to the segmental extension of the gate, and a vertical pulley pivotally mounted on the post or support and arranged to swing laterally of the gate, substantially as and for the purpose described.

3. The combination with a post or support, of a swinging gate hinged to the same and adapted to open in either direction, a block mounted on the gate at the top thereof and forming a segmental extension, an arm projecting upward from the post and provided with a slot or opening, a vertical pulley-casing provided at its top and bottom with journals and mounted in suitable bearings at the opening or slot of said arm, a pulley mounted in the pulley-casing, and a flexible connection provided with a weight passing over the pulley and having branches at its upper end connected with the segmental extension at opposite sides of the center thereof, substantially as described.

4. The combination of a hinge-post, a swinging gate mounted thereon and adapted to open in either direction, eyes mounted on the hinge-post at opposite sides thereof, a horizontal loop or guide mounted on the gate at the back thereof, and a hook provided with an eye linked into the loop or guide and adapted to be shifted from one side of the gate to the other to enable the hook to engage either of the eyes of the hinge-post, substantially as described.

609,775. MARKER-GAGE FOR CORN-PLANTERS. ALONZO M. BURROUGHS, ARTHUR K. BURROUGHS, and THOMAS O. BURROUGHS, Mechanicsville, Iowa. Filed May 26, 1898. Serial No. 681,815. (No model.)

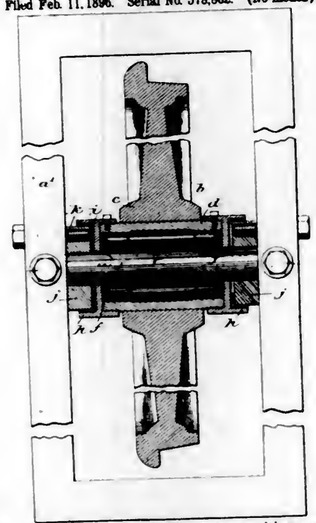
Claim.—1. A marker-gage for corn-planters, comprising a carrying-arm, a plate fastened to said arm and having an extended shouldered spindle which lies at an angle to the carrying-arm, a marker-

disk, the hub-sections secured to opposite sides of the disk and fitted loosely on the spindle for one hub-section to snugly embrace the shoulder thereof, a dust-exclusion cap fitted loosely to the outer end of the spindle to embrace the other hub-section, and a fastener or retainer secured to the spindle and engaging with said cap to hold the latter and the marker-disk in place on the spindle, substantially as described.



2. A marker-gage for corn-planters comprising a carrying-bar, a spindle made in a single piece with an inclined attaching-plate and provided with an annular collar and with a threaded socket, the concavo-convex gage-disk, the coincident hub-sections rigidly secured to the respective faces of said disk and with the inner hub-section formed with a cavity for the reception of the said collar, a dust-exclusion cap fitted to the protruding end of the spindle and the nose of the outer hub-section, and a screw secured in the socket of the spindle to confine the exclusion-cap in place against the gage-hub, substantially as described.

609,776. ROLLER-BEARING. GEORGE J. CAPEWELL, Hartford, Conn. Filed Feb. 11, 1896. Serial No. 578,862. (No model.)



Claim.—1. An improved roller-bearing comprising a case, rollers supported in said case, and means whereby some of the rollers are normally pressed radially outward and the remainder radially inward.

2. In a bearing, in combination, an axle, rollers grouped about the axle and yielding supports whereby some of the rollers are thrust radially outward and the others in alternation thrust inwardly by their yielding supports, and a case inclosing the rollers whereby contact of the rollers at all times with either the surface of the axle or the inner surface of the case is maintained, all substantially as described.

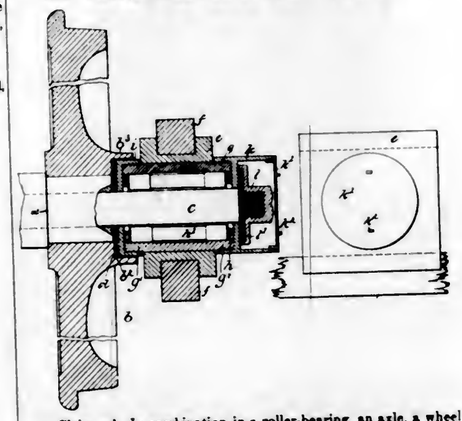
3. In combination with an axle, a roller-bearing frame mounted on the axle, a series of rollers mounted in the frame, a pin supporting each roller and having a lengthwise groove, a spring arranged in the groove with the opposite ends projecting into openings in each end of the roller-bearing frame whereby the said pins are held against rotation and the roller held with a yielding support, all substantially as described.

4. In combination with an axle or shaft, a roller-bearing frame supporting a series of rollers grouped about the shaft said rollers having a radial movement in openings in the bearing-frame, said rollers being arranged in pairs diametrically opposite to each other in the frame and in alternation as to the direction of the normal thrust of their yielding supports, the yielding supports, and a case inclosing the bearings, all substantially as described.

5. In combination with a frame, an axle *a* secured to the frame, a car-wheel *b* mounted on the axle and provided with a roller-bearing case *d*, a roller-bearing frame held within the case by caps secured to opposite ends of the roller-bearing case, rollers mounted within the roller-bearing frame, the said rollers being arranged in pairs diametrically opposite to each other and in alternation as to the direction of pressure of the yielding supports, yielding supports thrusting radially inward as to one pair of the rollers and radially outward as to the alternate pair whereby a continued rotary movement of the rollers between the axle and the bearing-case is insured, all substantially as described.

6. In combination with an axle or shaft, a roller-bearing frame supporting a series of rollers grouped about the shaft said rollers having a radial movement in openings in the bearing-frame and arranged in pairs diametrically opposite each other in the frame and in alternation as to the direction of the normal thrust of their yielding supports, the yielding supports, a case inclosing the bearings, a flanged shoulder removably secured to the axle-arm at the inner end of the inclosing case, and a packing located between the case and the flanged collar, all substantially as described.

609,777. ROLLER-BEARING. GEORGE J. CAPEWELL, Hartford, Conn. Filed Apr. 11, 1896. Serial No. 587,097. (No model.)



Claim.—1. In combination in a roller-bearing, an axle, a wheel secured to the axle and having a flange forming a recess with the bottom wall in line with the end of the axle, a journal secured to the axle, a housing, a roller-bearing case located in the housing, rollers in contact with the journal and case, said case having its end projecting within the recess in the wheel, and a dust-cap secured to the inner end of the roller-bearing case, all substantially as described.

2. In combination with the pedestal-arms of a car-truck or the like, a housing movably supported between said arms, flanges projecting from each side of the housing, rollers located within the housing, a dust-cap connected with the flange at the outside of the housing, a dust-cap located on the flange at the inside of the housing and within a recess in the hub of a wheel secured to an axle, the axle having an end extending through the housing between the rollers and the wheel secured to the axle, and having a recess for the reception of the dust-cap, all substantially as described.

3. In combination with the pedestal-arms of a car-truck or the like, a housing movably supported between said arms, a roller-bearing case composed of hardened steel secured within the housing and with ends extending on each side thereof, rollers supported within the roller-bearing case, a dust-cap secured to the inner end of the roller-bearing case and extending into a recess formed in the hub of a wheel secured to an axle, the wheel secured to the axle and having a recess for the reception of the dust-cap, and the axle extending through the housing between the rollers, all substantially as described.

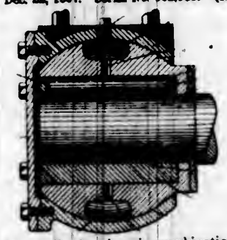
4. In combination with the pedestal-arms of a car-truck or the like, a housing movably supported between said arms, a roller-bearing case of hardened steel located within the housing, rollers supported within the roller-bearing case, an axle having a reduced end extending through the case between the rollers, a wheel secured to the axle and having a flange forming a recess the bottom wall of which is on a line with the end of the axle, a washer located at the bottom of said recess, and a dust-cap secured to the end of the projecting roller-bearing case and extending within the recess, all substantially as described.

5. In combination in a roller-bearing, an axle, a wheel secured to the axle and having a flange forming a recess, a journal secured to the axle, a roller-bearing case supporting the rollers in con act with the journal, said case having its end projecting within the recess in the wheel, the roller, and a dust-cap secured to the inner end of the roller-bearing case.

6. In combination with the pedestal-arms of a car-truck or the like, a housing movably supported between said arms and having a hardened surface, rollers located within the housing, an axle having a journal supporting the rollers, and a wheel secured to the axle and having a recess surrounding the end of the housing.

7. In combination with the pedestal-arms of a car-truck or the like, a housing movably supported between said arms, rollers located within the housing, an axle having a journal supporting the rollers, a wheel secured to the axle, and having a recess in the face of the hub, and a dust-cap secured to the housing and with a flange projecting into the recess in the face of the hub.

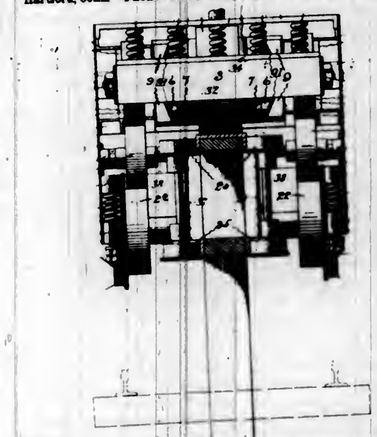
609,778. ROLLER-BEARING. GEORGE J. CAPEWELL, Hartford, Conn. Filed Dec. 22, 1897. Serial No. 662,963. (No model.)



Claim.—1. In a roller-bearing, in combination, a case with a spherical recess, a roller-bed having a spherical contour with an annular peripheral recess and a central perforation with passages from the recess to the perforation, said roller-bed located within and practically filling the spherical recess in the case, a roller-holder having annular ends and radial webs located within the perforation of the bed, rollers loosely retained by the holder between the webs, and a cover secured to the case and closing one side of the spherical recess, substantially as specified.

2. In a roller-bearing, in combination, a rotatable case with a spherical recess, a roller-bed having a spherical contour, located within and practically filling the spherical recess, a roller-holder having annular ends and radial webs located within the perforation of the bed, rollers loosely retained by the holder between the webs, a cover secured to the case and closing one side of the spherical recess, an axle extending through the case between the rollers, and a frame-piece supported by the axle, substantially as specified.

609,779. TRUCK FOR RAILWAY-CARS. GEORGE J. CAPEWELL, Hartford, Conn. Filed Dec. 22, 1897. Serial No. 662,964. (No model.)



Claim.—1. In a railway-car truck, in combination, an upper central traction-wheel adapted to run on a single raised-rail track, a motor-frame supported by the traction-wheel, a truck-frame connected with the motor-frame, side bearing retaining-wheels borne by the truck-frame, lower side traction-wheels connected with the truck-frame and adapted to run on a two-rail track that is lower than the central-rail track, and a motor with gearing connections arranged to drive both the upper central and the lower side traction-wheels, substantially as specified.

2. In a railway-car truck, in combination, a traction-wheel, a motor-frame supported by the traction-wheel, a motor movably hung in the motor-frame, gearing between the motor and the traction-wheel, and a truck-frame supported by the motor-frame, substantially as specified.

3. In a railway-car truck, in combination, a traction-wheel, a motor-frame supported by the traction-wheel, a motor movably hung in the motor-frame, gearing between the motor and the traction-wheel, and a truck-frame supported by yielding connections mounted on the motor-frame, substantially as specified.

4. In a railway-car truck, in combination, a traction-wheel, a motor-frame supported by the traction-wheel, a motor movably hung in the motor-frame, and a truck-frame joined by a pivotal connection with one end of the motor-frame and joined by springs with the other end of the motor-frame, substantially as specified.

5. In a railway-car truck, in combination, a central-rail traction-wheel, a motor-frame supported by this traction-wheel, a motor supported by the frame, friction-gearing between the motor and this traction-wheel, side traction-wheels, and friction-gearing between the central traction-wheel and the side traction-wheels, substantially as specified.

6. In a railway-car truck, in combination, a central-rail traction-wheel, a motor-frame supported by this traction-wheel, a motor hung in the motor-frame, friction-gearing between the motor and the central traction-wheel, a truck-frame supported by the motor-frame, and retaining-wheels supported by the truck-frame, substantially as specified.

7. In a railway-car truck, in combination, a central-rail traction-wheel, a motor-frame supported by this traction-wheel, a motor hung in the motor-frame, friction-gearing between the motor and this traction-wheel, a truck-frame supported by the motor-frame, side traction-wheels, yokes supported by the side traction-wheels, and pivotal connections between the yokes and the truck-frame, substantially as specified.

8. In a railway-car truck, in combination, a central-rail traction-wheel, a motor-frame supported by this traction-wheel, a motor hung in the motor-frame, friction-gearing between the motor and this traction-wheel, a truck-frame, cushions between the truck-frame and one end of the motor-frame, springs between the truck-frame and the other end of the motor-frame, side traction-wheels, yokes supported by the side traction-wheels, and pivotal connections between the yokes and the truck-frame, substantially as specified.

9. In a railway-car truck, in combination, a central-rail traction-wheel, a motor-frame supported by this traction-wheel, a motor movably hung in the motor-frame, friction-gearing between the motor and the central traction-wheel, a truck-frame, yielding connections between the motor-frame and the truck-frame, side traction-wheels, pivotal connections between the side traction-wheels and the truck-frame, friction-gearing between the central-rail traction-wheel and the side-rail traction-wheels, and retaining-wheels supported by the truck-frame, substantially as specified.

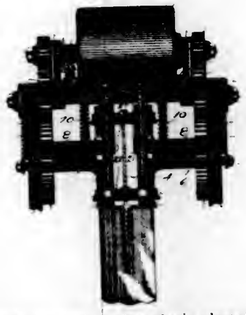
10. In a railway-car truck, in combination, a traction-wheel, a motor-frame supported by the traction-wheel, a motor supported by the motor-frame, friction-gearing between the motor and the traction-wheel, a truck-frame, pivotal connections between the traction-wheel and the truck-frame, and pivotal connections between the motor-frame and the truck-frame, substantially as specified.

11. In a railway-car truck, in combination, a central traction-wheel adapted to run on a raised single-rail track, traction-wheels adapted to run on a double-rail track that is lower than the single-rail track, a truck-frame supported by either the single-rail traction-wheel or the double-rail traction-wheels, depending upon the track that is being used, retaining-wheels supported by the truck-frame and arranged to bear against the sides of the single rail, a motor-frame in the truck-frame, and a motor supported by the motor-frame for rotating the traction-wheels, substantially as specified.

12. In a railway-car truck, in combination, a central traction-wheel adapted to run on a raised single-rail track, traction-wheels adapted to run on a double-rail track that is lower than the single-rail track, a truck-frame supported by either the single-rail traction-wheel or the double-rail traction-wheels, depending upon the track that is being used, a motor-frame in the truck-frame, a motor supported by the motor-frame, and gearing between the motor and the upper single and lower double traction-wheels, substantially as specified.

609,780. RAILWAY-CAR TRUCK. GEORGE J. CAPEWELL, Hartford, Conn. Filed Dec. 22, 1897. Serial No. 662,965. (No model.)

Claim.—1. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, a truck-frame supported by the wheels, and side-bearing retaining-wheels supported by the truck-frame, substantially as specified.



2. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, yokes supported by said wheels, and a truck-frame supported by the yokes, substantially as specified.

3. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, yokes supported by said wheels, a truck-frame supported by the yokes, and retaining-wheels for keeping the central-track wheels in position, substantially as specified.

4. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, yokes supported by said wheels, a truck-frame supported by the yokes, and retaining-wheels supported by the truck-frame, substantially as specified.

5. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, with connections between the side and central wheels, yokes supported by both side and central wheels, and a truck-frame supported by the yokes, substantially as specified.

6. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, yokes, each of which is supported by one outside and one central wheel, and a truck-frame supported by the yokes, substantially as specified.

7. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, yokes supported by said wheels, a truck-frame supported by said yokes, a motor borne by the truck-frame, and connections between the motor and the driving-wheels, substantially as specified.

8. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, yokes supported by said wheels, bars and springs supported by said yokes, a truck-frame supported by said bars and springs, a motor supported by one of said bars, and connections between the motor and the driving-wheels, substantially as specified.

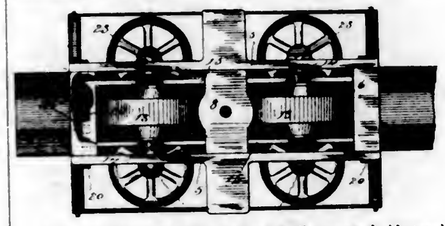
9. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track wheels adapted to travel on a central-rail track, yokes supported by said wheels, bars and springs supported by said yokes, a truck-frame supported by said bars and springs, a motor supported by one of said bars and by springs, connections between the motor and the driving-wheels, and retaining-wheels supported by the truck-frame, substantially as specified.

10. A railway-car truck having wheels adapted to travel on a standard-gage two-rail track, wheels adapted to travel on a central-rail track, yokes supported by the wheels which are being made use of, and a truck-frame pivotally connected with the outer ends of the yokes and connected by springs with the inner ends of the yokes, substantially as specified.

609,781. CAR-TRUCK. GEORGE J. CAPEWELL, Hartford, Conn. Filed Nov. 13, 1896. Renewed Jan. 5, 1898. Serial No. 665,702. (No model.)

Claim.—1. In combination in a car-truck, a centrally-located wide-tread traction-wheel, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, and yielding supporting connections between the wheel-frame and the truck-frame whereby the wheel-frame may be permitted an oscillation from side to side independently of the truck-frame to enable the wheel-tread to run flat upon the traction-rail without tipping the truck-frame, substantially as specified.

2. In combination in a car-truck, a centrally-arranged wide-tread traction-wheel, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, and yielding supporting connections between the wheel-frame and the truck-frame whereby the wheel-frame may be permitted an oscillation from end to end independently of the truck-frame to enable the wheel to run over slight elevations or depressions without tipping the truck-frame, substantially as specified.



3. In combination in a car-truck, a centrally-arranged wide-tread traction-wheel, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, and yielding supporting connections between the wheel-frame and the truck-frame whereby the wheel-frame may be permitted an oscillation from side to side transversely independent of the truck-frame and from end to end longitudinally independent of the truck-frame, substantially as specified.

4. In combination in a car-truck, a centrally-arranged wide-tread traction-wheel, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, yielding supporting connections between the wheel-frame and the truck-frame whereby the wheel frame may be permitted an oscillation from side to side independently of the truck-frame, and horizontally-arranged side guiding-wheels, substantially as specified.

5. In combination in a car-truck, a centrally-arranged wide-tread traction-wheel having a tire of cushioning material, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, and yielding supporting connections between the wheel-frame and the truck-frame whereby the wheel-frame may be permitted an oscillation from side to side independently of the truck-frame, substantially as specified.

6. In combination in a car-truck, a centrally-arranged wide-tread traction-wheel having a tire of cushioning material, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, yielding supporting connections between the wheel-frame and the truck-frame whereby the wheel-frame may be permitted an oscillation from side to side transversely independent of the truck-frame and from end to end longitudinally independent of the truck-frame, and horizontally-arranged side guiding-wheels having tires of cushioning material, substantially as specified.

7. In combination in a car-truck, a pair of traction-wheels arranged centrally of the truck one behind the other, an independent wheel-frame supported by the journal of each traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, and yielding connections between the truck-frame and the wheel-frames so that the wheel-frames may be permitted transverse oscillation independently of each other and of the truck-frame, substantially as specified.

8. In combination in a car-truck, a pair of traction-wheels arranged centrally of the truck one behind the other, an independent wheel-frame supported by the journal of each traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, yielding connections between the truck-frame and the wheel-frames so that the wheel-frames may be permitted a transverse oscillation independently of each other and of the truck-frame, and horizontally-arranged guiding-wheels located on each side of and below the traction-wheels, substantially as specified.

9. In combination in a car-truck, a pair of traction-wheels, a pair of wheel-frames supported by the journals of the traction-wheels, a truck-frame adapted to be pivotally connected with a car-body, yielding connections between the truck-frame and the wheel-frames so the wheel-frames may be permitted a transverse oscillation independently of each other and of the truck-frame, and a pair of horizontally-arranged side guiding-wheels located each side of and below each of the traction-wheels, substantially as specified.

10. In combination in a car-truck, a traction-wheel, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be pivotally connected with a car-body, transversely-extending bars with hubs loosely resting against parts of the wheel-frame, and springs thrusting between the bars and parts of the truck-frame, substantially as specified.

609,782. RAILWAY-CAR TRUCK. GEORGE J. CAPEWELL, Hartford, Conn. Filed Jan. 23, 1896. Renewed Jan. 5, 1898. Serial No. 665,703. (No model.)



Claim.—1. In a truck, in combination, traction-wheels, wheel-frames supported by the traction-wheels, each wheel-frame having an independent oscillation transversely of the truck on an axis extending longitudinally of the truck, a truck-frame adapted to be connected with a car-body, and yielding connections between the wheel-frames and the truck-frame, substantially as specified.

2. In a truck, in combination, traction-wheels, wheel-frames supported by the traction-wheels and having an independent transverse oscillation, guiding-wheels borne by the wheel-frames, a truck-frame adapted to be connected with a car-body, and yielding connections between the wheel-frames and the truck-frame, substantially as specified.

3. In a truck, in combination, traction-wheels having independent journals, wheel-frames having bearings for the wheel-journals, each wheel-frame having an independent oscillation transversely of the truck on an axis extending longitudinally of the truck, a truck-frame adapted to be connected with a car-body, and yielding connections between the wheel-frames and the truck-frame, substantially as specified.

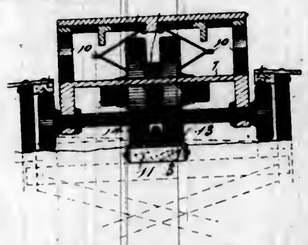
4. In a truck, in combination, traction-wheels having wide treads with narrow flanges and independent journals, wheel-frames having bearings for the wheel-journals and having an independent oscillation, a truck-frame adapted to be connected with a car-body, and yielding connections between the wheel-frames and the truck-frame, substantially as specified.

5. In a truck, in combination, traction-wheels having independent wheel-frames supported by the traction-wheels and held by a longitudinal pivot so as to permit of separate transverse oscillation, a truck-frame adapted to be pivotally connected with a plate secured to a car-body, and yielding connections between the wheel-frames and the truck-frame, substantially as specified.

6. In a truck, in combination, traction-wheels having independent journals independent wheel-frames supported by the traction-wheels and held together by a longitudinal pivot so as to permit of separate transverse oscillation, a pair of outward-bearing guiding-wheels borne by each independent wheel-frame, a truck-frame adapted to be pivotally connected with a plate secured to a car-body, and spiral and leaf springs connecting the wheel-frames and the truck-frame, substantially as specified.

7. In combination, a railway-car having trucks provided with traction-wheels, wheel-frames supported by the traction-wheels and bearing guiding-wheels, a truck-frame, springs connecting the wheel-frames with the truck-frame, a traction-rail consisting of parallel inside metallic rails and outside stringers lying against the metallic rails, and a guideway consisting of stringers supported above and outside of the traction-rails in position for engagement with the guiding-wheels, substantially as specified.

609,783. TRUCK FOR RAILWAY-CARS. GEORGE J. CAPEWELL, Hartford, Conn. Filed Jan. 23, 1896. Renewed Jan. 5, 1898. Serial No. 665,704. (No model.)



Claim.—1. In a truck, in combination, pairs of traction-wheels with wide treads located side by side a short distance apart so as to leave a guiding-groove between them, a wheel-frame supported by the traction-wheels, a truck-frame adapted to be pivotally connected with a car-bottom, and spring connections between the wheel-frame and the truck-frame, substantially as specified.

2. In a truck, in combination, pairs of traction-wheels with wide treads located side by side a short distance apart so as to leave a guiding-groove between them, said wheels arranged tandem in the center of the truck, a wheel-frame supported by the traction-wheels, a truck-frame adapted to be pivotally connected with a car-bottom, and spring connections between the wheel-frame and the truck-frame, substantially as specified.

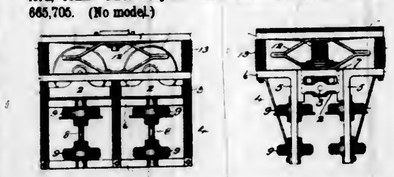
3. In a truck, in combination, traction-wheels with wide double treads and peripheral guiding-grooves between the wide treads, a wheel-frame supported by the traction-wheels, upward-bearing guard-wheels borne by a journal held by the wheel-frame on each side of the traction-wheels outside of the line of the wheel-frame, a truck-frame adapted to be pivotally connected with a car-bottom, and spring connections between the wheel-frame and the truck-frame, substantially as specified.

4. In a truck, in combination, a pair of traction-wheels with peripheral grooves arranged tandem in the center of the truck, a wheel-frame supported by the traction-wheels, a pair of guard-wheels borne by the wheel-frame on each side of the traction-wheels, a truck-frame adapted to be connected with a car-bottom, and spiral and leaf springs connecting the wheel-frame with the truck-frame, substantially as specified.

5. In combination, a car-body, trucks having traction-wheels with grooved peripheries, a wheel-frame supported by the traction-wheels, a truck-frame pivotally connected with the car-body and yieldingly connected with the wheel-frame, a central traction rail having wide tread-sections and a central guiding-rib projecting into the peripheral grooves of the traction-wheel, substantially as specified.

6. In combination, a car-body, trucks having traction-wheels with grooved peripheries, a wheel-frame supported by the traction-wheels and bearing guard-wheels, a truck-frame pivotally connected with the car-body and yieldingly connected with the wheel-frame, a central traction-rail having wide tread-sections, and a central guiding-rib projecting into the peripheral grooves of the traction-wheels, and elevated guard-rails on each side of the traction-wheels above the path of the guard-wheels, substantially as specified.

609,784. RAILWAY-CAR TRUCK. GEORGE J. CAPEWELL, Hartford, Conn. Filed May 19, 1896. Renewed Jan. 5, 1898. Serial No. 665,705. (No model.)



Claim.—1. In combination in a car-truck, a traction-wheel, a wheel-frame supported by the journal of the traction-wheel, and a truck-frame connected with the wheel-frame by pivots that extend lengthwise of the wheel-frame in front and back of the traction-wheel whereby the wheel-frame and the truck-frame are permitted an oscillation independently of each other on an axis extending longitudinally of the wheel, substantially as specified.

2. In combination in a car-truck, a wide-tread traction-wheel located centrally of the truck, a wheel-frame supported by the journal of the traction-wheel, and a truck-frame adapted to be connected with a car-body, pivotally supported by the wheel-frame, substantially as specified.

3. In combination in a car-truck, a wide-tread traction-wheel located centrally of the truck and having a journal that extends transversely of the truck, a wheel-frame supported by the transverse journal of the traction-wheel and having a journal that extends longitudinally of the truck, and a truck-frame adapted to be connected with a car-body, supported by the longitudinal journal of the wheel-frame, substantially as specified.

4. In combination in a car-truck, a wide-tread traction-wheel located centrally of the truck, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be connected with a car-body, pivotally supported by the wheel-frame, and horizontally-arranged guiding-wheels located each side of and below the traction-wheel, substantially as specified.

5. In combination in a car-truck, a wide-tread traction-wheel located centrally of the truck, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be connected with a car-body, pivotally supported by the wheel-frame, and a pair of horizontally-arranged guiding-wheels located upon each side of and below the traction-wheel, substantially as specified.

6. In combination in a car-truck, wide tread traction-wheels located centrally of the truck, one behind the other, independent wheel-frames supported by the journals of the traction-wheels, a truck-

frame adapted to be connected with a car-body, connected with the wheel-frame by pivots, and a pair of horizontally-arranged guiding-wheels located on each side of and below each of the traction-wheels, substantially as specified.

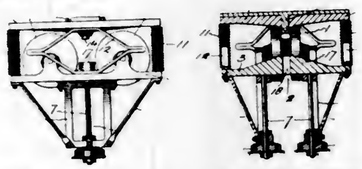
7. In combination in a car-truck, a traction-wheel located centrally of the truck and having a wide tread of elastic material, a wheel-frame supported by the journal of the traction-wheel, and a truck-frame adapted to be connected with a car-body, pivotally supported by the wheel-frame, substantially as specified.

8. In combination in a car-truck, a traction-wheel located centrally of the truck and having a wide tread of elastic material, a wheel-frame supported by the journal of the traction-wheel, a truck-frame adapted to be connected with a car-body, pivotally supported by the wheel-frame, and horizontally-arranged guiding-wheels having wide treads of elastic material located each side of and below the traction-wheel, substantially as specified.

9. In combination in a car-truck, a wide-tread traction-wheel located centrally of the truck, a wheel-frame supported by the journal of the traction-wheel, a truck-frame bearing spiral and leaf springs, pivotally supported by the wheel-frame, a car-frame supported by the springs and adapted to be pivotally connected with a car-body, and horizontally-arranged guiding-wheels located each side of and below the traction-wheels, substantially as specified.

10. In combination in a car-truck, traction-wheels located centrally of the truck, one behind the other and having wide treads of elastic material, independent wheel-frames supported by the journals of the traction-wheels, a truck-frame bearing spiral and leaf springs and connected with the wheel-frames by pivots, a car-frame supported by the springs and adapted to be pivotally connected with a car-body, and a pair of horizontally-arranged guiding-wheels having wide treads of elastic material located on each side of and below each of the traction-wheels, substantially as specified.

609,785. RAILWAY-CAR TRUCK. GEORGE J. CAPEWELL, Hartford, Conn. Filed May 26, 1896. Renewed Jan. 5, 1898. Serial No. 665,706. (No model.)



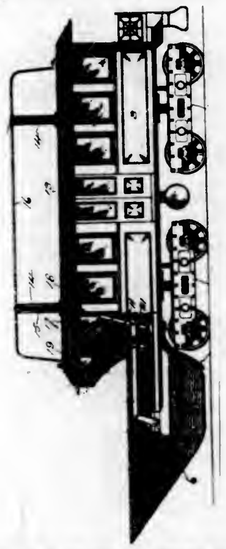
Claim.—In a car-truck, in combination, a pair of centrally-arranged vertically-bearing traction-wheels having grooved peripheries, journals for the traction-wheels, a horizontal frame supported by the journals of the traction-wheels, an open rectangular frame depending vertically from the horizontal frame on each side of the plane of the traction-wheels, a horizontally-bearing flanged retaining-wheel supported by bearings in each vertical frame below and in a plane extending between the traction-wheels, brace-rods extending from the middle of the lower end of each vertical frame upwardly and outwardly to the side edges of the horizontal frame, brace-rods extending from the corners of the lower end of each vertical frame upwardly and outwardly toward the front and rear corners of the horizontal frame, spiral and leaf springs supported by the horizontal frame, a similar horizontal frame supported by the springs, and a plate pivotally connected with the upper frame, substantially as specified.

609,786. AIR-RESISTANCE DEVICE FOR RAILWAY-VEHICLES. GEORGE J. CAPEWELL, Hartford, Conn. Filed July 18, 1896. Renewed Jan. 5, 1898. Serial No. 665,707. (No model.)

Claim.—1. In combination with a railway-vehicle, a resistance part arranged to deflect air from the end of the vehicle when in motion, said part being movably connected with the body of the vehicle, and mechanisms for moving the resistance part from a position of minimum resistance, that is from a position in which it deflects air from the end of the vehicle, to a position of maximum resistance, that is a position in which the end of the vehicle is exposed to the air when moving, substantially as specified.

2. In combination with a railway-vehicle, a deflector for air movably connected with and projecting forward at an angle to the front end of the vehicle, and mechanisms for moving the deflector from a position which will minimize the air resistance to a position which will increase the air resistance to the moving vehicle, substantially as specified.

3. In combination with a railway-vehicle, a deflector for air movably connected with the front end of the vehicle, mechanisms for moving the deflector from a position which will minimize the air resistance to a position which will increase the air resistance to the vehicle, resistance parts movably connected with the body of the vehicle, and means for moving the resistance parts from positions of little resistance to positions of great resistance to the air, substantially as specified.



4. In combination with a railway-vehicle, a circular deflector for air mounted upon a pivot and projecting forward at an angle to the front end of the vehicle, and mechanisms for oscillating the deflector on its pivot, substantially as specified.

5. In combination with a railway-vehicle, resistance-vanes pivotally supported upon the top of the vehicle, and mechanisms for oscillating the resistance-vanes from positions of no resistance to positions of great resistance, substantially as specified.

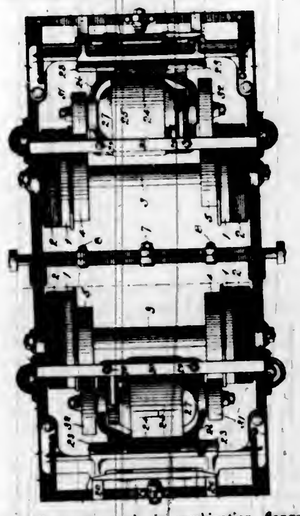
609,787. WINDOW-CLEANER. GEORGE J. CAPEWELL, Hartford, Conn. Filed Aug. 6, 1896. Renewed Jan. 5, 1898. Serial No. 665,706. (No model.)



Claim.—In combination with a window for moving craft or vehicles, an open frame, a glass movably supported in the frame, wipers held by the frame against the surface of the glass, a motor adapted to be energized by the motive power of the craft or vehicle, and mechanisms connecting the motor with the glass, whereby the glass is moved when the motor is energized, substantially as specified.

609,788. RAILWAY-CAR TRUCK. GEORGE J. CAPEWELL, Hartford, Conn. Filed Jan. 14, 1896. Serial No. 666,669. (No model.)

Claim.—1. In a railway-car truck, in combination, flanged traction-wheels, friction-pulleys connected thereto, a truck-frame supported by the axles of the traction-wheels, a motor-carriage loosely mounted upon and movable longitudinally of the truck-frame, a motor supported by the carriage, pulleys mounted on the armature-shaft of the motor, springs normally holding the carriage with the pulleys out of contact, and mechanism for moving the carriage so that the pulleys on the armature-shaft will engage with the pulleys on the traction-wheel axle, substantially as specified.



2. In a railway-car truck, in combination, flanged traction-wheels, friction-pulleys of different diameters connected thereto, a truck-frame supported by the traction-wheels, a motor-carriage loosely mounted upon the truck-frame, means for moving either side of the motor-carriage, a motor supported by the carriage, and friction-pulleys of different diameters mounted upon the armature-shaft of the motor and adapted to be moved into and out of contact with the traction-wheel pulleys, substantially as specified.

3. In a railway-car truck, in combination, flanged traction-wheels, wide-tread traction wheels connected thereto, a truck-frame supported by the traction wheels, a motor-carriage loosely mounted upon the truck-frame, means for moving the carriage, a motor supported by the carriage, and friction connections between the motor and traction-wheels, substantially as specified.

4. In a railway-car truck, in combination, flanged traction-wheels, wide-tread tractiee-wheels and friction-pulleys mounted upon the same axles, a truck-frame supported by the traction-wheels, a motor-carriage loosely mounted upon the truck-frame, means for moving the motor-carriage toward and from the traction-wheels, a motor supported by the carriage, and friction-pulleys mounted upon the armature-shaft of the motor and adapted to be moved into and out of contact with the pulleys connected with the traction-wheels, substantially as specified.

5. In a railway-car truck, in combination, flanged traction-wheels, a truck-frame in two parts, each part being supported by a pair of traction-wheels, bolts for pivotally connecting the parts of the truck-frame whereby they may have an independent vertical oscillation, a motor-carriage loosely mounted upon and movable longitudinally of each truck-frame, means for moving the carriages, motors supported by the carriages, and friction connections between the motors and traction-wheels and adapted to be engaged and disengaged according to the movement of the carriages, substantially as specified.

6. In a railway-car truck, in combination, flanged traction-wheels, wide-tread traction-wheels connected thereto, a truck-frame supported by the traction-wheels, a motor-carriage adjustably mounted upon the truck-frame, means for moving the carriage, a motor supported by the carriage, friction connections between the motor and the traction-wheels, and retaining-wheels located at the sides of the truck-frame, substantially as specified.

7. In a railway-car truck, in combination, wide-tread flangeless traction-wheels, friction-pulleys connected thereto, a truck-frame supported by the traction-wheels a motor-carriage loosely mounted upon the truck-frame, means for moving the motor-carriage toward and from the traction-wheels, a motor supported by the carriage, friction-pulleys mounted upon the ends of the armature-shaft of the motor and adapted to be moved into and out of contact with the pulleys connected with the traction-wheels, and retaining-wheels located at the sides of the truck-frame, substantially as specified.

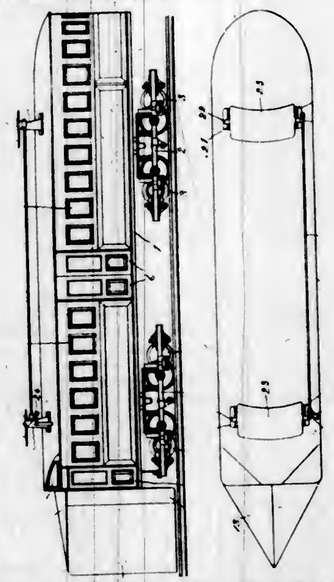
8. In a railway-car truck, in combination, flanged traction-wheels, wide-tread traction-wheels and friction-pulleys mounted upon the same axles, a truck-frame supported by the traction-wheels, a motor-carriage loosely mounted upon the truck-frame, means for moving the motor-carriage toward and from the traction-wheels, a motor, a double hinge connection between the motor and the motor-carriage, and friction-pulleys mounted upon the armature-shaft of the motor and adapted to be moved into and out of contact with the pulleys connected with the traction-wheels, substantially as specified.

9. In a railway-car truck, in combination, flanged traction-wheels, friction-pulleys of different diameters connected thereto, a truck-frame supported by the traction-wheels, a motor-carriage loosely mounted upon the truck-frame, means for moving either side of the motor-carriage, a motor, a double hinge connection between the motor and the motor-carriage, a wedge-bar adapted to move either side of the motor-carriage, a lever arranged to reciprocate the wedge-bar, and friction-pulleys of different diameters mounted upon the armature-shaft of the motor and adapted to be moved into and out of contact with the pulleys connected with the traction-wheels, substantially as specified.

10. In a railway-car truck, in combination, flanged traction-wheels, wide-tread traction-wheels connected thereto, a truck-frame formed in two parts, each part being supported by a pair of traction-wheels, pivot-bolts connecting the parts of the truck-frame so that they may have an independent vertical oscillation, and side-bearing retaining-wheels secured to the side bars of the truck-frame, substantially as specified.

11. In a railway-car truck, in combination, flanged traction-wheels adapted to run upon the two rails of the ordinary track, flat-tread traction-wheels without flanges mounted upon the same axles with the flanged traction-wheels and adapted to run upon special rails that are higher than and which extend alongside the rails of the ordinary track, a truck-frame supported by the traction-wheels, and retaining-wheels borne by the truck-frame and adapted to run against side rails elevated above the traction-rails when the truck is supported by the flat-tread traction-wheels upon the higher special rails, substantially as specified.

609,789. AIR-RESISTANCE DEVICE FOR RAILWAY-VEHICLES. GEORGE J. CAPEWELL, Hartford, Conn. Filed Jan. 14, 1896. Serial No. 666,670. (No model.)



Claim.—1. In combination with a locomotive, motor-car, or similar vehicle, a vertically-arranged wedge-shaped deflector having movable side walls connected with the front end of the vehicle, and mechanisms for moving the side walls in opposite directions from oblique to the line of travel and at an angle with each other to parallel with the line of travel and each other, substantially as specified.

2. In combination with a locomotive, motor-car, or similar vehicle, a wedge-shaped deflector having horizontally-movable walls connected with the front end of the vehicle, and mechanisms for opening the front edges of the walls from and closing them against each other, substantially as specified.

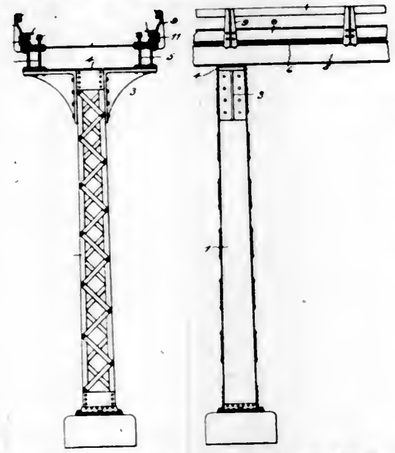
3. In combination with a locomotive, motor-car or similar vehicle, a wedge shaped deflector having vertically-arranged side walls mounted so that they may be swung toward each other to form a wedge or swung from each other to form a pocket, and mechanisms for swinging the side walls, substantially as specified.

4. In combination in a locomotive, motor-car or similar vehicle, a vertically-arranged wedge-shaped deflector having movable side walls connected with the front end of the vehicle, mechanisms for moving the side walls, wings mounted upon the roof of the vehicle, and connections between the wings and the walls of the deflector whereby they are moved simultaneously, substantially as specified.

5. In combination with a locomotive, motor-car or similar vehicle, a vertically-arranged wedge-shaped deflector having movable side walls connected with the front end of the vehicle, mechanisms for moving the side walls in opposite directions, wings movably mounted upon the roof of the vehicle with their axes extending horizontally, and connections between the wings and the walls of the deflector whereby they are moved simultaneously, substantially as specified.

6. In combination in a locomotive, motor-car or similar vehicle, a vertically-arranged frame secured to the front end of the vehicle, vertically-arranged shafts supported by the frame, brackets projecting from the shafts, walls attached to the ends of the brackets, and mechanisms for oscillating the shafts and brackets so that the walls may be swung toward each other to form a wedge and from each other to form a pocket, substantially as specified.

609,790. **RAILWAY.** GEORGE J. CAPEWELL, Hartford, Conn. Filed Mar. 15, 1898. Serial No. 673,907. (No model.)



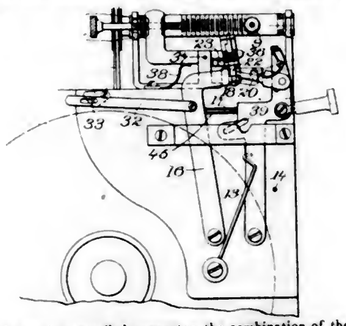
Claim.—1. An improved railway having a track formed by two parallel rails with tread-faces of usual shape and common gage, and a track formed by two rails with smooth horizontal tread-faces extending parallel with but higher than the rails of the first-mentioned track and two rails with smooth vertically-arranged tread-faces extending parallel with and higher than the other rails and braced to withstand outward or horizontal thrust, substantially as specified

2. An improved railway having a track formed by two parallel rails with tread-faces of the usual shape and common gage, and a track formed by two rails that have horizontal tread-faces at a higher level and wider gage than the rails of the first-mentioned track and two rails with vertical tread-faces extending parallel with and higher than the other rails, substantially as specified.

3. An improved railway having a track formed by two parallel rails with tread-faces of usual shape and common gage, a track formed by two rails with horizontal tread-faces higher than and of wider gage than the rails of the first-mentioned track, brackets at intervals extending upwardly from the rails with horizontal tread-faces, and rails with vertical tread-faces secured to the upper ends of the brackets, substantially as specified.

609,791. **COIN-OPERATED DEVICE.** GEORGE K. CHENEY, New York, N. Y. Filed Jan. 29, 1898. Serial No. 668,384. (No model.)

Claim.—1. In a coin-controlled apparatus, the combination of the movable arm, an automatic feed mechanism therefor, a brake for said feed mechanism, a return feed mechanism normally in gear with the arm, and coin-actuated means for throwing both said brake and return feed mechanism out of engagement, substantially as described.



2. In a coin-controlled apparatus, the combination of the movable arm, an automatic feed mechanism therefor, a brake for said feed mechanism, a return feed mechanism normally in gear with the arm, and coin-actuated means for throwing both said brake and return feed mechanism out of engagement, together with automatic means for throwing the return feed mechanism into engagement with the arm at the end of its movement, substantially as described.

3. In a coin-controlled apparatus, the combination of the movable arm, an automatic feed mechanism therefor, a brake for said feed mechanism, a return feed mechanism normally in gear with the arm, and coin-actuated means for throwing both said brake and return feed mechanism out of engagement, together with automatic means for throwing the return feed mechanism into engagement with the arm at the end of the movement, and means for forcing the brake into engagement at the end of the return movement of the arm, substantially as described.

4. In a coin-controlled apparatus the combination of the movable arm, an automatic feed mechanism therefor, a return feed-screw, connections whereby said return feed-screw is rotated by the automatic feed mechanism, coin-controlled means for raising and lowering said screw, and a projection from the movable arm which engages with said return feed-screw, when the latter is in its uppermost position, substantially as described.

5. In a coin-controlled apparatus the combination of the movable arm, an automatic feed mechanism therefor, a return feed-screw, connections whereby said return feed-screw is rotated by the automatic feed mechanism, coin-controlled means for raising and lowering said screw, and a projection from the movable arm which engages with said return feed-screw, when the latter is in its uppermost position, together with a brake for the automatic feed mechanism and connections whereby the coin-controlled mechanism releases the brake when it lowers the return feed-screw out of engagement with the projection on the movable arm, substantially as described.

6. In a coin-controlled apparatus, the combination of the brake, the lever which controls the same, the lock on said lever, the operating-lever so placed as to push the brake-lever through the agency of an interposed coin, and a projection on said operating-lever disposed to trip the lock on the brake-lever, substantially as described.

7. In a coin-controlled apparatus, the combination of the brake, the lever which controls the same, the lock on said lever, the operating-lever so placed as to push the brake-lever through the agency of an interposed coin, and a projection on said operating-lever disposed to trip the lock on the brake-lever, together with automatic means for forcing back said brake-lever and throwing the brake into engagement again at the end of a predetermined cycle of operations, substantially as described.

8. In a coin-controlled apparatus the combination of the movable arm, an automatic feed mechanism therefor, a return feed-screw, movable bearings therefor, connections whereby said return feed-screw is rotated by the automatic feed mechanism, a projection from the movable arm adapted to engage with the feed-screw, a spring which normally holds said return-feed-screw bearings in their uppermost position, and coin-controlled means for lowering said bearings so that the return feed-screw will not engage the projection from the movable arm during a predetermined period of time, substantially as described.

9. In a coin-controlled apparatus the combination of the movable arm, an automatic feed mechanism therefor, a return feed-screw, movable bearings therefor, connections whereby said return feed-screw is rotated by the automatic feed mechanism, a projection from the movable arm adapted to engage with the feed-screw, a spring which normally holds said return-feed-screw bearings in their uppermost position, and coin-controlled means for lowering said bearings so that the return feed-screw will not engage the projection from the

movable arm during a predetermined period of time, together with a spring-catch for holding said screw-bearings down, and an adjustable projection on said catch, located in the path of the movable arm at the end of its forward movement, substantially as described.

10. In a coin-controlled apparatus the combination of the movable arm, an automatic feed mechanism therefor, a return feed-screw, movable bearings therefor, connections whereby said return feed-screw is rotated by the automatic feed mechanism, a projection from the movable arm adapted to engage with the feed-screw, a spring which normally holds said return-feed-screw bearings in their uppermost position, and coin-controlled means for lowering said bearings so that the return feed-screw will not engage the projection from the movable arm during a predetermined period of time, together with a spring catch for holding said screw-bearings down, and an adjustable projection on said catch, located in the path of the movable arm at the end of its forward movement, a brake for the automatic feed mechanism, and mechanism connected therewith which extends across the path of the movable arm at the end of the return movement, substantially as described.

11. The combination with a gramophone, of a brake for the rotating plate thereof, means for normally supporting the needle out of engagement with the rotating plate, and coin-controlled means for withdrawing said supporting means, and disengaging the brake substantially as described.

12. The combination with a gramophone, of a brake for the rotating plate thereof, means for normally supporting the needle out of engagement with the rotating plate, and coin-controlled means for withdrawing said supporting means, and disengaging the brake, together with a spring-catch for holding said supporting means withdrawn, and an adjustable projection on said spring-catch located in the path of the needle-carrying arm, substantially as described.

13. The combination with a gramophone of a brake for the rotating plate thereof, a return feed-screw normally in engagement with the needle-carrying arm and supporting the needle out of engagement with the rotating plate, mechanism whereby the motion of the rotating plate is transmitted to the return feed-screw, a coin-controlled lever for lowering said return feed-screw out of engagement with the needle-carrying arm, and releasing the brake, a spring-catch for holding said feed-screw in its lowered position, a trip for said spring-catch located in the path of the needle-supporting arm, and a projection on said coin-controlled lever located also in the path of the needle-carrying arm at the end of its return stroke, substantially as described.

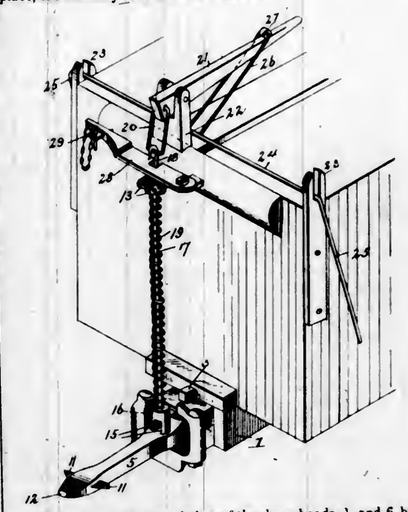
14. The combination with a gramophone of a brake for the rotating plate thereof, a return feed-screw normally in engagement with the needle-carrying arm and supporting the needle out of engagement with the rotating plate, mechanism whereby the motion of the rotating plate is transmitted to the return feed-screw, a coin-controlled lever for lowering said return feed-screw, out of engagement with the needle carrying arm, and releasing the brake, a spring-catch for holding said feed-screw in its lowered position, a trip for said spring-catch located in the path of the needle-supporting arm, and a projection on said coin-controlled lever located also in the path of the needle-carrying arm at the end of its return stroke, together with a spring-lock on said coin-controlled lever, a coin-pusher, and means whereby the forward motion of said coin-pusher trips said lock, substantially as described.

15. The combination with a gramophone of a brake for the rotating plate thereof, a coin-operated lever, a pin-and-slot connection between the two, a spring-supported return feed-screw normally in engagement with the needle-carrying arm of the gramophone, connections whereby the forward motion of the coin-operated lever lowers the feed-screw before the pin traverses the length of the slot in the brake connection, and a friction-mounting for the brake which prevents it from moving during the play of the pin-and-slot connection, substantially as described.

16. The combination with a gramophone of a brake for the rotating plate thereof, a coin-operated lever, a pin-and slot connection between the two, a spring-supported return feed-screw normally in engagement with the needle-carrying arm of the gramophone, connections whereby the forward motion of the coin-operated lever lowers the feed-screw before the pin traverses the length of the slot in the brake connection, and a friction-mounting for the brake which prevents it from moving during the play of the pin-and-slot connection, but allows it to move when the lost motion of the slot is taken up, together with a projection on the coin-controlled lever which is struck by the needle-carrying arm at the end of its return stroke to force on the brake, substantially as described.

609,792. **AUTOMATIC CAR-COUPLING.** HENRY R. COCHRAN, Bearden, Ark. Filed Mar. 10, 1898. Serial No. 673,362. (No model.)

Claim.—1. In combination with a car-coupler, substantially as shown and described, a threaded nut, 16, secured to the coupling-bar, 5; a rod, 17, its lower end secured in nut, 16, its upper end secured to a link, 20; link, 20, pivoted in the short end of a lever, 21; lever, 21, fulcrumed in a bearing, 22, mounted on the top of the coach, said lever adapted to raise the rod, 17, and thereby the dart end of the coupling-bar; rod, 24, working in bearings 23, extending above the top of the coach; its ends bent down forming levers, 25, and having rigidly secured to said bar a lever, 26, adapted to press down the long arm of lever, 21; coil-spring, 19, its lower end resting on the upper end of the nut, 16, its upper end resting against the lower face of the abutment, 13, said spring adapted to press the dart end of the coupling-bar, 5, downward; and plate, 28, secured above the abutment, 13, and adapted to hold the upper end of rod, 17, in place, substantially as shown and described.



2. A car-coupler, consisting of the draw-heads, 1, and 6, having upper and lower slots, 4, inclines, 9, and recesses, 10; a coupling-bar, 5, having slots, 4', and, 14; dart end, 12, provided with barbs, 11, said coupling-bar pivoted in one of the draw-heads by a bolt, 3, and its other end, 12, adapted to enter the mouth of the opposite draw-head, its barbs, 11, to catch in the recesses, 10; threaded nut, 16, secured to the coupling-bar, 5; rod, 17, its lower end secured in nut, 16, and its upper end to the link, 20; link, 20, pivoted in the short arm of lever, 21; lever, 21, fulcrumed in bearing, 22, mounted on the top of the coach; rod, 24, working in bearings, 23, and having arms, 25; lever, 26, rigidly secured to the rod, 24, and adapted to press down the long arm of the lever, 21; coil-spring, 19, encircling rod, 17, and working between the bearing, and nut, 16; substantially as shown and described and for the purposes set forth.

609,793. **BARREL-HEAD.** JAMES D. COPPERFIELD, Philadelphia, Pa. Filed Sept. 4, 1897. Serial No. 650,576. (No model.)



Claim.—1. In combination a barrel-head having its central portion cut away to form a ring, an inwardly-projecting flange at the lower portion of said ring, wedge-blocks having inclined lower surfaces provided in the internal face of said ring overhanging said flange, a sealing-disk seated on the inwardly-projecting flange and means to prevent rotation of said disk, a cover-disk adapted to said ring above and upon the sealing-disk and wedge-blocks provided on the inner face of said cover-disk adapted to coact with the wedge-blocks of the ring, substantially as described.

2. In combination a ring for barrel-heads having an external flange adapted to fit in the croze of the barrel-staves, an inwardly-projecting flange at the lower portion of said ring, wedge-blocks provided on the internal face of the ring at or near the upper portion of the same having inclined lower wedge-shaped surfaces overhanging said inwardly-projecting flange, a sealing-disk on the inwardly-projecting flange having a portion of its periphery cut away to pass said wedge-shaped blocks on assembling, spacing-fingers g', and a cover-disk having outwardly-extending flanges, of greater diameter than the internal diameter of the ring adapted to the face of said

ring, wedge-blocks provided on the lower face of said outer cover at intervals having an inclined upper surface adapted to the inclined lower surface of the overhanging wedge-blocks for binding upon the upper face of the sealing-disk when in position, substantially as described.

3. In combination a ring for barrel-heads and means for securing said ring to the barrel-head, an inwardly-projecting lower flange at the lower portion of said ring, wedge-blocks having inclined lower surfaces provided on the internal face of said ring overhanging said lower flange, a sealing-disk seated on said inwardly-projecting flange and spacing-fingers provided upon the periphery thereof, a cover-disk provided upon said sealing-disk having at intervals near its periphery on the lower face wedge-shaped blocks having inclined upper faces adapted to coact with the wedge-blocks of said ring and means for adjusting said disks, substantially as described.

4. In combination a barrel-head having a ring, A, outwardly-extending flange, *a*, inwardly-extending flange, *c*, encircling bead, *d*, upon the face of the flange, *c*, sealing-ring, *e*, a sealing-disk, G, having spacing-fingers, *g'*, wedge-blocks, *b*, provided in said ring, A, having inclined lower surfaces, cover-disk, I, having external flange, *i*, adapted to the outer face of the ring, A, inner wedges, *b'*, provided at intervals upon the periphery of the inner portion of the disk, I, said wedges having upper inclined faces adapted to the upper inclined wedges, *b*, and means for adjusting said disks, substantially as described.

5. In combination, a barrel-head having its central portion cut away to form a ring A adapted to a seat within the stave-croze, an inwardly-projecting flange *c*, at the lower portion of said ring, wedge-blocks *b* having inclined lower surfaces provided on the internal face of said ring, a sealing disk G, having peripheral spacing-fingers *g'*, adapted to form a sealing-joint with flange *c*, a cover-disk I, provided on a periphery with wedge-blocks *k*, and having an outwardly-projecting flange *i*, adapted to fit over a portion of the upper surface of the ring A, the upper surface of the cover-disk being provided with diametrically opposite recessed openings *l*, substantially as specified.

6. In combination, a barrel-head made in the form of a sectional ring, the adjacent edges of each section being dovetailed or recessed for the reception of a correspondingly-shaped filling-block whereby on the removal of said block or blocks the sections of the ring may be removed from position, and a cap or cover adapted to a seat in said ring, substantially as specified.

609,794. RUBBER TIRE. DAVID CROWTHER, Huddersfield, England. Filed June 6, 1898. Serial No. 682,624. (No model.)



Claim.—1. In tires for wheels, the combination with a double-arched tire, comprising an inner arched member having a central bead or rib on its apex, an outer arched member surrounding the top and sides of said inner arched member, and resting at its apex on the said central bead or rib, and air-spaces intermediate of the apices of said inner and outer arched members, of lateral or transverse ribs integral with the inner arched member and extending from the central bead on each side in arched curves coincident with the radius of the inner arched wall of the outer arched member of the tire and dying away into the sides of the inner arched member substantially as herein set forth.

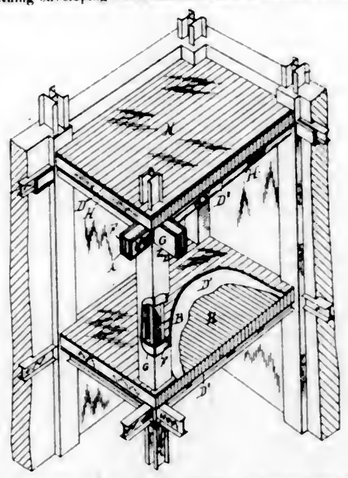
2. In tires for wheels, the combination of an inner arched member provided at its apex with a central bead and extending therefrom on each side with lateral or transverse beads or ribs arranged at equal distances apart and at an angle to said central bead whereby the extremity of one transverse bead on one side is opposite the extremity of its neighboring rib on the opposite side, and an outer arched member surrounding the top and sides of said inner arched member and bearing or resting on the central and the transverse beads or ribs between which latter there are air-spaces, substantially as herein set forth.

609,795. FIREPROOF STRUCTURE. ALPHONSE DE MAN, Detroit, Mich. Filed Nov. 14, 1896. Serial No. 612,086. (No model.)

Claim.—1. In a fireproof structure, a metal supporting or carrying member, and a protection therefor to cover the exposed faces and screen them from heat and water comprising wooden pieces each entirely surrounded with a non-combustible insulating material, and means for securing said pieces in place.

2. In a fireproof structure, a metal supporting or carrying member, and a fire protection therefor, consisting of insulated wooden pieces secured to cover the exposed faces, the insulating material being fireproof and at the same time porous to permit of the seasoning of the wood through it.

3. In a fireproof structure, metal columns, wooden insulated strips formed into a surrounding box, metal strips attached to this box, metallic lathing enveloping the whole and secured on these strips.

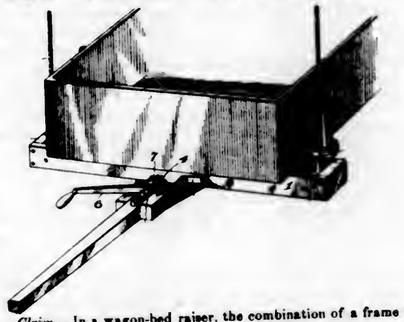


4. In a fireproof floor, the combination with supporting members, of a series of wooden planks or joists arranged closely side by side, and porous fireproof covering for the top and bottom and ends thereof, and sheets of insulating material between certain planks excluding air for combustion.

5. In a fireproof floor, the combination with supporting members, of a series of wooden planks or joists arranged closely side by side, of fireproof material between the plank members (or groups thereof) and a fireproof covering for the top and bottom thereof.

6. In a fireproof floor, the combination with supporting planks or joists arranged closely side by side, strips of flexible fireproof material arranged between these floor members (or groups thereof) flaps at top and bottom of said strips turned over on top and bottom of the floor members, and fireproof sheets covering the top and bottom of the floor.

609,796. WAGON-BED RAISER. STEPHEN H. DRYSDALE, Gravois Mills, Mo. Filed Feb. 21, 1898. Serial No. 671,134. (No model.)



Claim.—In a wagon-bed raiser, the combination of a frame for arrangement transversely under and adapted to support a wagon-bed, terminal guides on the frame spaced apart at an interval in excess of the width of the wagon-bed, an intermediate drum, ratchet mechanism for preventing backward rotation of the drum, an elevating-cable reeled upon the drum and having its members extended respectively around said terminal guides for disposition at the sides of a wagon-bed, an operating-lever fulcrumed upon the spindle of the drum outside of the frame, and a clutch for connecting the lever with the spindle, the same including a clutch-disk and a spring for yieldingly holding the lever in operative relation with said disk, substantially as specified.

609,797. PROCESS OF MAKING FERTILIZERS. HANS DUDEN, Indianapolis, Ind. Filed Nov. 12, 1897. Serial No. 658,322. (No specimens.)

Claim.—1. The process of making fertilizer consisting in mixing albuminous substance and tank-water products and applying thereto an electric current.

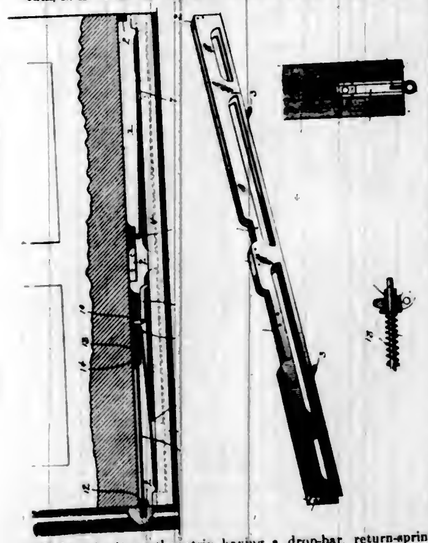
2. The process of making fertilizer consisting in mixing albuminous substance with the tank-water products, heating the mixture and passing an electric current through the mixture.

3. The herein-described process consisting in mixing abuminous substance and tank-water products and simultaneously subjecting the mixture to steam and electricity, substantially as set forth.

4. The herein-described process consisting in mixing albuminous substance and tank-water products and oxidizing the mixture.

5. The herein-described process, consisting in concentrating tank-water, concentrating blood-serum and preserving the coagulating power, mixing the tank-water product and the concentrated blood-serum in substantially the proportions stated, then subjecting the mixture to the action of steam and electricity and finally drying, grinding and screening the product.

609,798. WEATHER-STRIP. CLARENCE M. EVELETH, Plymouth, N. H. Filed Jan. 14, 1897. Serial No. 619,657. (No model.)



Claim.—1. A weather-strip having a drop-bar, return-springs attached to said bar and engaged with fixed supporting pins, the extremity of one of said springs being coiled around its supporting-pin to hold the bar from endwise displacement, and the extremity of the other spring having a sliding bearing upon its supporting-pin to allow tilting movement of the bar, and depressing devices having means for applying downward pressure to the drop-bar at an intermediate point, substantially as specified.

2. The herein-described weather-strip attachment for doors, the same comprising a parallel-sided frame or casing consisting of parallel side plates and interposed terminal and intermediate spacing-blocks, a drop-bar fitted snugly between and guided for vertical movement by the opposing faces of said side plates and terminally flush with the ends of said side plates, lifting-springs attached at their outer ends to the drop-bar and bearing at their inner ends upon cross-pins connecting the side plates of the frame, one of said springs being engaged with its cross-pin to prevent endwise displacement of the drop-bar, and the upward movement of the drop-bar being limited by the said terminal spacing-blocks, a depressing-lever, and a push-bar having a yielding connection with the depressing-lever, to apply pressure therethrough to the drop-bar, all being mounted upon, and between the planes of the opposing faces of, the side plates of the frame, for simultaneous insertion therewith into a longitudinal kerf or groove of a door edge, substantially as specified.

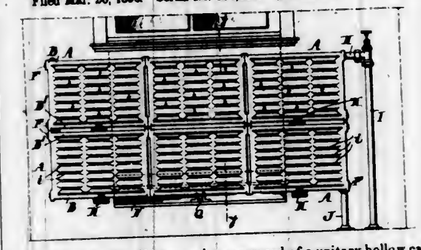
609,799. DEVICE FOR SALTING MEAT. WILLIAM T. FLINN, Jamestown, Ark. Filed Feb. 25, 1898. Serial No. 671,611. (No model.)

Claim.—1. A meat-salting device comprising a tube, a spear adapted to close and bear against one end thereof, a flaring mouth formed at the opposite end of the tube, a stem carried by the spear and passing through the tube, the spear and stem being adapted to be inserted and withdrawn from the end of the tube which is opposite to the month thereof, and means for securing the stem and spear carried by it from the end of the tube carrying the mouth, substantially as set forth.



2. A meat-salting device comprising a salt-holding tube, a spear, adapted to close one end of the tube, a stem carried by the spear and adapted to be inserted into the tube, a funnel or flaring mouth formed at the opposite end of the tube, a cap having a circular lip or flange adapted to embrace the edge of the funnel, a screw-thread being formed on the stem at the free end thereof, the cap being adapted to be screwed to said screw-threaded end of the stem, the parts operating substantially as and for the purpose set forth.

609,800. RADIATOR. ARTHUR H. FOWLER, Norristown, Pa., assignor to the Fowler & Wolf Manufacturing Company, same place. Filed Mar. 20, 1896. Serial No. 584,015. (No model.)



Claim.—1. A radiator-section composed of a unitary hollow casting, consisting of four outer tubes communicating with one another at the corners, one or more intermediate cross-tubes between opposite outer tubes, and a series of connecting-tubes between each intermediate cross-tube and the opposite outer tube or adjacent intermediate cross-tube.

2. A radiator-section composed of a unitary hollow casting, consisting of a tubular structure embracing outer tubes communicating with one another at the corners, one or more cross-tubes between the outer tubes, and a series of connecting-tubes between said cross-tubes and the adjacent outer tubes.

3. A radiator-section composed of a flat hollow casting, made up of a multiplicity of communicating tubes, and provided at the corners with openings in the plane of the section arranged at right angles one to the other, whereby said section may be coupled with other sections to extend the radiator both longitudinally and transversely.

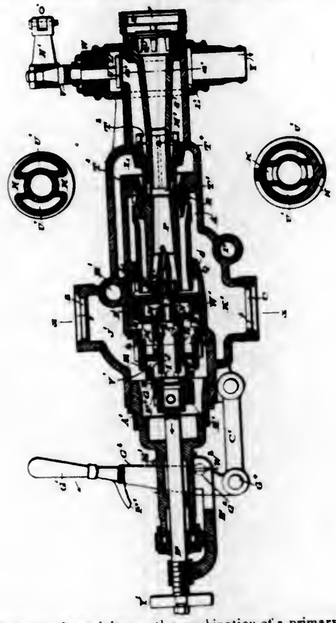
4. A radiator-section composed of a flat hollow casting, made up of a multiplicity of communicating tubes, and provided at the corners with openings in the plane of the section arranged at right angles one to the other, whereby said section may be coupled with other sections to extend the radiator both longitudinally and transversely, in combination with similar sections coupled with said section at said openings and respectively located in a longitudinal and transverse direction with reference to said section.

5. A radiator consisting of one or more flat hollow sections consisting of a battery of communicating tubes, arranged in an upright position, in combination with a wall located adjacent thereto so as to form an air-space between said wall and the inner face of the radiator, the spaces between the adjacent tubes in the lower portion of the radiator being closed to prevent the passage of the air between them and the top of the flue being closed to deflect the air and guide it between the open spaces between the tubes in the upper portion of the radiator.

6. A radiator consisting of one or more flat hollow sections consisting of a battery of communicating tubes, arranged in an upright position, in combination with a wall located adjacent thereto so as to form an air-space between said wall and the inner face of the radiator, the spaces between the adjacent tubes in the lower portion of

the radiator being closed to prevent the passage of the air between them and the top of the flue being closed to deflect the air and guide it between the open spaces between the tubes in the upper portion of the radiator, an air-inlet at the lower portion of said flue, and means to control said inlet to regulate the volume of air admitted through it to said space between the radiator and wall.

609,801. **INJECTOR.** JOSEPH W. GAMBLE, Philadelphia, Pa., assignor to the Eynon-Evans Manufacturing Company, of Pennsylvania. Filed Dec. 2, 1897. Serial No. 660,476. (Model.)



Claim.—1. In an injector, the combination of a primary or supply set of tubes and a secondary or forcing set of tubes, said primary set of tubes enveloping said secondary set and being so arranged that the delivery end of the primary set substantially coincides with the entrance end of the secondary set of tubes.

2. In an injector, a primary or supply set of tubes, a secondary or forcing set of tubes, the latter set being enveloped by said primary set with the delivery end of the primary set substantially coincident with the entrance end of the secondary set of tubes and a steam-distributing valve for admitting steam to the steam-nozzles in their proper sequence and means for operating said valve.

3. In a double-tube injector, the combination of a front secondary or forcing tube and a rear secondary or forcing tube, said front tube being recessed to envelop said rear tube, and being itself enveloped by the primary set of tubes.

4. In a double-tube injector, the combination of the enveloping tubes, the secondary tubes enveloped thereby a distributing steam-valve, a lever or handle therefor, means for limiting the stroke of the valve, a spindle and means for changing the extent of the stroke of the valve according to requirements.

5. In a double-tube injector, the combination of the enveloping tubes, a steam-distributing valve constructed substantially as shown, an operating lever or handle and means on the fulcrum of said lever for clamping said lever at any point of its stroke.

6. In a double-tube injector, a forcing or secondary set of tubes having a front tube and a rear tube adapted to be enveloped by said front tube, whereby an air-space is provided between the jet of water moving through the forcing set and the jet of steam moving in the contrary direction in the steam-nozzle of the primary set, means being also provided for permitting a free vent for the steam blowing through the suction steam-nozzle.

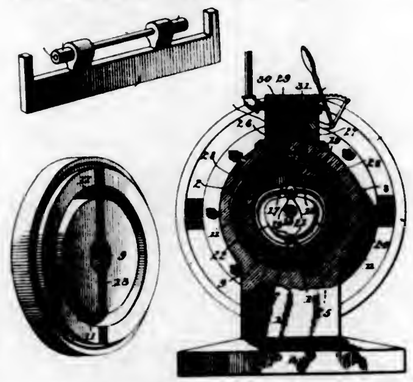
7. In an injector, a steam-inlet, a shell E, chambers V' and W', in said shell, passages U' forming a communication between said chambers, a steam-valve controlling the inlet of steam to said chambers, ports K controlled by said valve, and leading to the passages L, a primary steam-nozzle R in communication with said passages L, a primary combining-nozzle Q, a secondary combining-nozzle P enveloped by said nozzle Q, a secondary steam-nozzle Q', within said nozzle P, a steam suction-nozzle O, and means for controlling the flow of steam to the chambers V', passages L and nozzle O.

8. In an injector, the shell E, the chambers V', W', inclosed thereby, the passages U' connecting said chambers, the ports K leading to the passages L, and a set of primary and secondary tubes, in combination with a valve H, a cylinder J attached thereto, and provided with ports I and P', a nozzle O, attached to said cylinder and having a piston X' and ports N therethrough, an opening in said valve H, a valve G for initially controlling said opening, and means for operating said valves.

9. In a double-tube injector, the combination of a primary set of tubes and a secondary set of tubes enveloped thereby, of a steam suction-nozzle, a valve, a hollow cylinder movable with the valve and connected with the nozzle, means for operating the valve, and means for adjusting said nozzle, valve and cylinder to regulate the capacity of the injector.

10. In a double-tube injector, the combination of a primary set of tubes and a secondary set of tubes enveloped thereby, of a steam suction-nozzle constituting a piston, a steam-distributing valve connected with the nozzle, and means for operating said valve and nozzle simultaneously.

609,802. **ROTARY ENGINE.** VERNER R. GATES, Sherman, Mich., assignor of one-half to Vincent C. Wall, same place. Filed Apr. 24, 1897. Serial No. 633,771. (No model.)

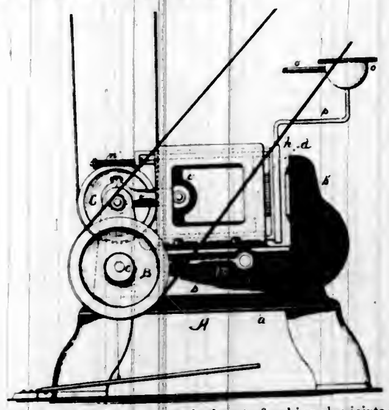


Claim.—1. A rotary engine having a cylinder, a concentric piston comprising a cylindrical open-ended single-piece drum, and terminal removable heads closing the ends of the drum and provided with concentric grooves in which the extremities of the drum are fitted, and also provided with radial grooves of less depth than the concentric grooves, and the drum being provided with longitudinal slots registering with said radial grooves of the drum-heads and terminating at the bottoms of said radial grooves, and hence short of the extremities of the drum, abutments or wings fitted to slide in said registering radial grooves and slots, and fixed cams arranged within the drum, and operatively connected with said abutments or wings, and having a cam-shaft extending through one of the drum-heads and the contiguous head of the cylinder and secured in a fixed position to the latter, substantially as specified.

2. A rotary engine having a cylinder, a concentric piston comprising a cylindrical open-ended drum, terminal heads fitted upon and closing the ends of the drum and provided with radial guides registering with longitudinal slots in the drum, and abutments or wings fitted to slide in said guides and slots and provided contiguous to their extremities with longitudinally-extending guide-pins, duplicate oppositely-positioned cams arranged within the drum and provided with grooves in which said guide-pins respectively operate, and a common cam-shaft supporting said cams and extending through one head of the piston, the piston-shaft being attached to the other head, substantially as specified.

3. A rotary engine having a cylinder in one head of which is mounted a power-shaft, a piston having a hollow drum closed at its extremities by terminal heads, and provided with radially-movable abutments or wings, one of the piston-heads being secured to the inner extremity of the power-shaft, a cam-shaft extending through the opposite head of the cylinder and into the piston and stepped at its extremity in a socket in the end of the power-shaft, means for securing said cam-shaft at the desired revoluble adjustment, and cams carried by the cam-shaft and operatively connected with the abutments or wings, substantially as specified.

609,803. **BOX-MAKING MACHINE.** JAMES F. GILLILAND, Adrian, Mich., assignor to the Adrian Box Company, same place. Filed Aug. 6, 1897. Serial No. 647,306. (No model.)



Claim.—1. An improvement in the art of making glue-joints consisting of severing the material by a succession of cuts gradually penetrating the material, and coating the cutting instrument with an adhesive before each cut, substantially as described.

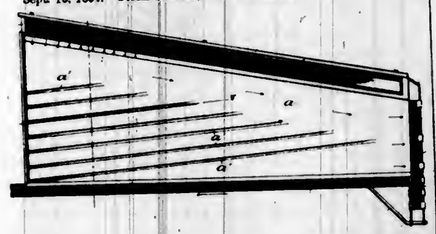
2. In a box-making machine, reciprocating dies and means for causing them to gradually penetrate the material, combined with means for coating the reciprocating dies with an adhesive during reciprocation, substantially as shown.

3. In a box-making machine, reciprocating tongue-and-groove-cutting dies, and means for causing the dies to reciprocate, combined with means for dropping glue, or other adhesive material upon the outer surfaces of the knives or cutters in their advance to the material, whereby the surfaces of the tongues and grooves are covered with the glue, substantially as shown.

4. In a box-making machine, a series of reciprocating tongue-and-groove-cutting dies, combined with means located above the dies for dropping or distributing adhesive material upon the outer surfaces of the knives or cutters in their advance to the material, and a suitable conduit through which the dies reciprocate and into the top of which the adhesive is dropped, substantially as set forth.

5. In a box-making machine, the stripper *h*, suitable connecting-rods connected thereto, and springs applied to the ends of the rods, combined with a condnit, the reciprocating tongue-and-groove-cutting dies, and means for supplying the conduit with adhesive material at a point above the dies, whereby the outer surfaces of the dies in their advance to the material are covered with the adhesive, and the adhesive is carried into the tongues and grooves, substantially as set forth.

609,804. **ORE-CONCENTRATOR.** SAMUEL L. HALLETT, Aspen, Colo., assignor of one-half to David M. Hyman, Cincinnati, Ohio. Filed Sept. 16, 1897. Serial No. 651,877. (No model.)



Claim.—1. In an ore-concentrator the combination with the shaking-table, of a receiving-launder extending along the discharging side of the table and composed of sections independently adjustable to vary their individual longitudinal extent for receiving the ore from the table.

2. In an ore-concentrator the combination with the shaking-table, of a receiving-launder extending along the ore-discharging side of the table and composed of a series of overlapping sections independently adjustable in the direction of their length, substantially as and for the purpose described.

3. In an ore-concentrator, the combination of a shaking-table, rods extending crosswise of the discharging end of said table, and a series of overlapping troughs together constituting a sectional launder and separately supported on said rods with provision for separate longitudinal adjustment, substantially as described.

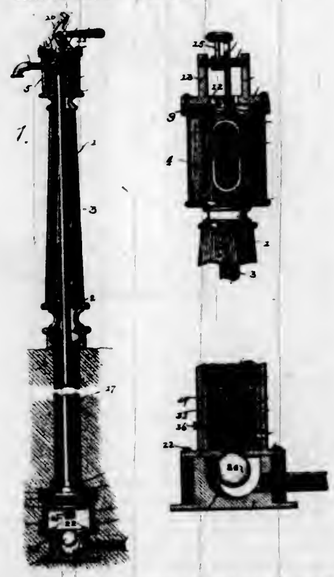
4. In an ore-concentrator, the combination with the table, of a sectional launder composed of a series of independent cooperatively-arranged longitudinally adjustable and removable sections, substantially as described.

5. In combination with the table, the sectional launder or receptacle composed of telescopically-arranged sliding sections each removably supported adjacent to the discharge end of the table to adapt the several sections to be separately adjusted and secured in different positions relatively to each other and to be readily removed and replaced, substantially as described.

6. A sectional launder comprising a series of independent concave sections or receptacles telescopically arranged and adapted to slide longitudinally with respect to each other, each having lateral supporting fingers or lugs adapted to rest on suitable supports adjacent thereto, and provided at one end with a discharge-opening, substantially as described.

7. In an ore-concentrator, the combination with the table, of the sectional launder comprising a series of concave sections or receptacles telescopically arranged and adapted to slide longitudinally with respect to each other, each having lateral supporting fingers or lugs and provided at one end with a discharge-opening, and longitudinally-arranged supporting rods or bars on which said sections are supported and adjustably secured adjacent to said table, substantially as described.

609,805. **HYDRANT.** JOHN J. HARDY, Columbia, Pa. Filed Sept. 29, 1897. Serial No. 653,458. (No model.)



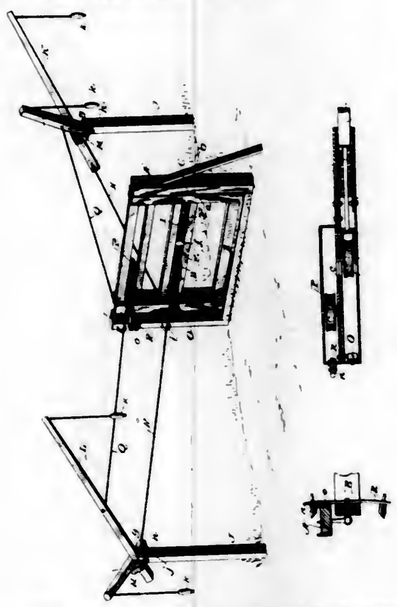
Claim.—1. In a hydrant, the casing having a lower extension, a valve-chamber having a water-supply-pipe connection therewith, and a closure-cap at its upper side provided therein with a single valve-opening, a separate piston-cylinder removably fitted to the lower extension of the casing and arranged directly on top of the closure-cap for said valve-chamber, a ball-valve arranged within the valve-chamber, and the vertically-movable hydrant-pipe carrying an imperforate piston fitting said piston-cylinder and provided with a perforate end projecting below the piston and adapted to pass through the valve opening and engage against the valve when unseating the latter, substantially as set forth.

2. In a hydrant, the casing having a lower extension carrying the flanged cap, a valve-chamber having a water-supply-pipe connection therewith, and a flanged cap at its upper side provided therein with a single valve-opening, an enlarged cylinder interposed between and secured at its extremities within the oppositely-located flanged caps to form a waste-chamber, a ball-valve arranged within the valve-chamber, and the vertically-movable hydrant-pipe carrying an imperforate piston snugly registering within said cylinder, and having

its lower extremity perforated and projecting below the plane of the piston so as to pass through the valve-opening and engage against the ball-valve when unseating the latter, substantially as set forth.

3. In a hydrant, the combination with a casing and the hydrant-pipe, of a series of perforated diaphragms within the casing through which the pipe passes, a removable cap detachably secured to the upper end of the casing and having an elongated opening, spaced ears projecting upwardly from the cap, a crank-lever pivotally supported between said ears and a link extending through said elongated opening and pivotally connected at its ends to the short arm of the crank-lever and the upper end of the hydrant-pipe respectively, substantially as described.

609,806. GATE. STERLING P. HARRINGTON, Farley, Mo. Filed Mar. 5, 1898. Serial No. 672,736. (No model.)



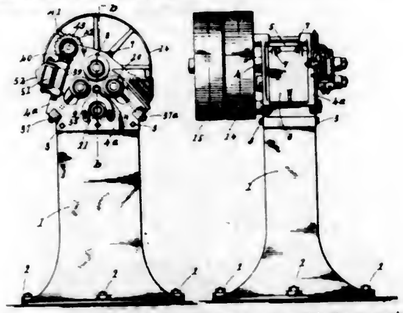
Claim.—1. In a gate, the combination with a pulley journaled in slots, of a loop secured to the shaft of the said pulley, a rod connected to the said loop, the said rod having a catch upon its free end, a coiled spring secured around the said rod, interposed between the said catch and a brace, cables secured to the opposite ends of a cross-piece passing in opposite directions around the said pulley, and through loops on opposite sides of the post supporting the gate and to corresponding levers at equal distances from each side of the gate, substantially as shown and described.

2. In a gate, the combination with a pulley, journaled in a fixed position, of a curved steel spring having lugs thereon adapted to engage flanges upon opposite sides of the post supporting the gate, cables connected to the opposite ends of the said spring, and passing in opposite directions around the pulley, through loops on opposite sides of the said post and connected to corresponding levers, substantially as shown and for the purpose set forth.

609,807. MACHINE FOR FLARING AND BENDING METAL HOOPS. EDWARD HOLMES and BRITAIN HOLMES, Buffalo, N. Y. Filed Sept. 29, 1897. Serial No. 653,430. (No model.)

Claim.—1. In a hoop flaring roller, the combination with an operating-shaft, of a flanged roller secured to said shaft, a flanged sleeve mounted on the flanged roller so as to be longitudinally movable thereon and so that the side faces of the flanges face each other, means for holding the movable flanged portion toward the other with a yielding force, and means for adjusting the distance it shall move toward the other flanged portion.

2. In a hoop flaring and bending machine, the combination with an operating-shaft, of a flanged roller, a flanged sleeve mounted on said roller so as to be longitudinally movable thereon, and so that the side faces of the flanges will face each other and allow the hoop-forming strip to pass between them, and means for holding one face toward the other with a spring force.

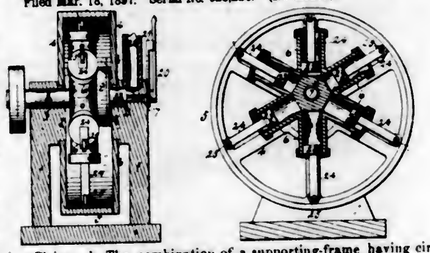


3. In a hoop-flaring roller, the combination with the operating-shaft of a flanged roller rigidly secured to it, a cylindrical tubular flanged portion mounted on the flanged roller and adapted to move easily toward or from the flanged portion of said roller, means for preventing it from turning on said roller, a spring for keeping it and its flanged portion in their normal position near the roller-flanged portion, and means for adjusting the distance the two flanges shall come toward each other for the purposes described.

4. In a hoop flaring and bending machine, the combination with a flaring-roller shaft of a cylindrical portion, 16, rigidly secured to said shaft and having a face *r*, a tubular portion or sleeve provided with a reduced central opening adapted to fit and slide on the portion, 16, means for preventing it from turning thereon, an enlarged opening extending from said reduced opening through the sleeve and an exterior screw-thread, a spiral spring within the enlarged opening and surrounding the portion, 16, a screw-threaded portion and nut at the end of the flaring-roller shaft for adjusting the force of said spring, and a cap adapted to screw onto said sleeve for adjusting the distance the faces *r* and *s* shall come together, as above set forth.

5. In a hoop flaring and bending machine, the hoop-flaring rollers mounted on the machine and connected by gearing, for bending the hoop in an edgewise direction, their operating mechanism connecting with the driving-shaft, and means for adjusting them in the line of a circle toward or from each other, in combination with two rollers for bending the hoop in a transverse direction, gearing connecting said rollers with the driving-shaft for operating them, and means for adjusting said rollers toward or from each other for regulating the size of the hoop to be bent, as above set forth.

609,808. ROTARY STEAM-ENGINE. CLIFFORD A. HOLCOMB, Beloit, Wis., assignor of one-half to Patrick H. Crahen, same place. Filed Mar. 18, 1897. Serial No. 628,226. (No model.)

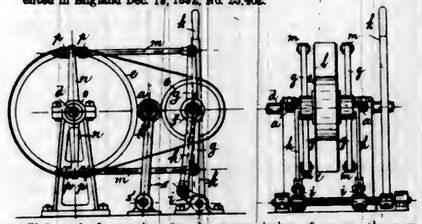


Claim.—1. The combination of a supporting-frame having circular projections extending toward each other, a casing having ends supported by the projections, a shaft supported by the frame eccentrically to the casing, a series of cylinders rotatable with the shaft radiating therefrom and located within the casing, each cylinder supporting a piston and each piston supporting a roller bearing against the inner face of the casing, means for admitting steam to the cylinders and allowing it to exhaust therefrom, the cylinders and casing rotatable together in the same direction.

2. The combination of a supporting-frame, a circular casing supported thereby, a shaft supported by the frame eccentrically to the casing, a series of cylinders rotatable with the shaft and located within the casing, each cylinder supporting a piston and each piston supporting a roller bearing against the inner face of the casing, the casing rotated by the action of the rollers against its inner face, means for admitting steam to the chamber and allowing it to exhaust therefrom.

3. In a steam-engine, the combination of a steam-chamber, a disk valve located therein and rotatable in the same direction by contact with the cylinder-port face, and supported in a relative position with the ports, a rod having an offset end on which the disk valve rotates and by which its position can be changed, the rod being independent of the power-shaft of the engine.

609,809. GEARING FOR TRANSMISSION OF POWER. THOMAS D. HOLLICK, London, England, assignor of one-third to John Charles Howell. Filed Dec. 23, 1897. Serial No. 663,237. (No model.) Patented in England Dec. 19, 1892, No. 23,402.



Claim.—1. In gearing for the transmission of power, the combination of a driving-wheel the periphery of which would be normally out of contact with the wheel to be driven and a third or pressing wheel, bearings for said wheel carried in connecting-rods and toggle-joints connecting said rods to the frame, the parts being so arranged that the pressing-wheel is adapted to be thrown in and out of contact so as to cause the driving and driven wheel to be pressed together or released from contact with each other, substantially as and for the purposes specified.

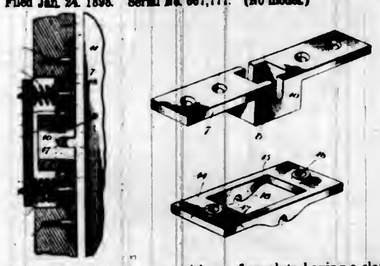
2. In gearing for the transmission of power, the combination of a driving-wheel the periphery of which would be normally out of contact with the wheel to be driven, a third or pressing wheel, bearings for said wheel carried in connecting-rods, toggle-joints connecting said rods to the frame the parts being so arranged that the pressing-wheel is adapted to be thrown in and out of contact so as to cause the driving and driven wheel to be pressed together or released from contact with each other and a belt or band passing around the outer wheels, substantially as and for the purposes set forth.

3. In gearing for the transmission of power, the combination of a driving-wheel the periphery of which would be normally out of contact with the wheel to be driven, a third or pressing wheel, bearings for said wheel carried in connecting-rods, toggle-joints connecting said rods to the frame, a lever for changing the position of the pressing-wheel, substantially as and for the purposes set forth.

4. The combination with a friction-pulley *b* upon an axle *a* turning in bearings, centers *s* carrying said bearings and situated between two other friction-pulleys *c* and *c* one on each side of said friction-pulley *b*, the two other pulleys being surrounded by a flexible band *l* by which they are held in contact with the central pulley, of the adjustable bearings *f*, *f*, bars *h h* adjustable in length for the purpose of accurately adjusting the position of the adjustable pulley *e*, levers *i i* and handle *k* all as and for the purpose set forth.

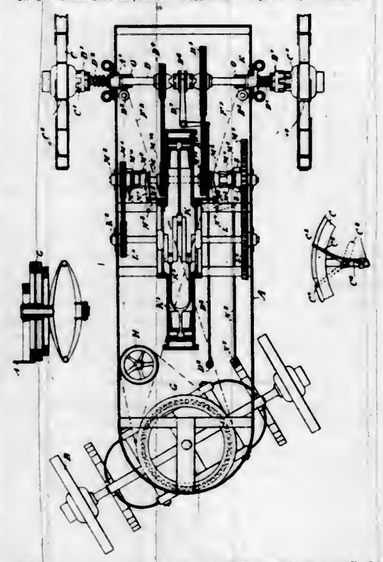
5. In combination, a driving-wheel, a driven wheel, a pressing-wheel, levers *g g*, *n*, *n*, and the connecting-rods *m*, *m*, having adjustable nuts *p*, the positions of which are so adjusted that when the axis of the pressing-wheel is coming into the same plane as the axis of the driving and driven wheels the nuts *p* come into operation and prevent the further separation of the axes of the two outer wheels substantially in the manner and for the purpose set forth and shown.

609,810. SASH-HOLDER. ANDREW J. INGLEY, Winnfield, La. Filed Jan. 24, 1898. Serial No. 667,777. (No model.)



Claim.—A sash-holder comprising a face-plate having a slotted boxing, a pressure-plate slidably fitted to the boxing to be guided thereon and provided with bearings, a roller having its journals supported in said bearings and slidably fitted in the slotted boxing to be sustained and guided horizontally therein, a tension-plate arranged in rear of said face and pressure plates, adjusting-screws fitted to the face and tension plates to support the latter and having the pressure-plate slidably fitted thereon, and coiled springs interposed between the tension and pressure plates, substantially as described.

609,811. MOTOR-VEHICLE. CHARLES M. JOHNSON, New York, N. Y. Filed Dec. 22, 1896. Serial No. 616,633. (No model.)



Claim.—1. A motor-vehicle provided with two cylinders arranged opposite each other of which the piston of one is connected to one of the cranks of a crank-shaft with three cranks, two of which are opposite to the third crank, while the other piston is connected to the other two cranks in such manner that both pistons receive a simultaneous impulse and approach and recede from each other simultaneously and so that the shock or vibration resulting from the impulse in one cylinder is neutralized by the shock or vibration resulting from the impulse in the opposite cylinder substantially as set forth.

2. A motor-vehicle provided with two cylinders arranged opposite each other of which the piston of one is connected to one of the cranks of a crank-shaft with three cranks, two of which are opposite to the third crank while the other piston is connected to the two other cranks in such manner that both pistons receive a simultaneous impulse and approach and recede from each other simultaneously, gearing for communicating motion from the crank-shaft to the road driving-wheels; clutches for putting said gearing in and out of gear for going forward or backward or stopping, gearing and clutches for varying the speed of the road driving-wheels and means for steering the vehicle substantially as described and shown.

3. A motor-vehicle provided with two cylinders K^2 K^2 arranged opposite to each other of which the piston of one is connected by a connecting-rod K to one of the cranks of a crank-shaft L while the other piston is connected by a forked connecting-rod K′ to the other two cranks, gearing for communicating motion from the crank-shaft to the road driving-wheels C C consisting of a chain-wheel L′ a chain and a chain-wheel M′ mounted loosely on a counter-shaft M and a spur-wheel L^3 gearing with the spur-wheel M^3 also mounted loosely on the counter-shaft, two clutches sliding on and revolving with the counter-shaft and connected together so that either may gear with or not gear with the chain-wheel M′ or spur-wheel M^3 respectively to cause the counter-shaft to revolve in either direction or not to revolve, two chain-wheels mounted on the counter-shaft and communicating motion by chains to two other chain-wheels D^4 and D^5 on the axle of the road driving-wheels, a clutch D^4 sliding on and revolving with the said road-driving-wheels' axle, means for causing the said clutch D^4 for gearing with either or neither of the chain-wheels D^4 or D^5, clutches D′ D′ operated by the turning of the fore-carriage to cause one of the road driving-wheels to be capable of independent revolu-

tion when the vehicle turns and means for steering substantially as described and shown

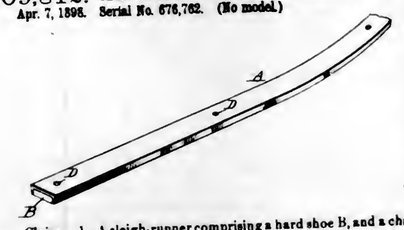
4. In a motor-vehicle, the combination of a shaft, a wheel loosely journaled on said shaft and having a projecting hub, a clutch mechanism consisting of a collar fixed on said shaft, a lever pivoted to said collar and adapted to bear at one end on said hub, a ball mounted in the end of said lever bearing on said hub, and means for operating said lever.

5. In a motor-vehicle, the combination of a shaft, a wheel loosely journaled on said shaft and having a projecting hub, a clutch mechanism consisting of a collar fixed on said shaft, a lever pivoted to said collar and adapted to bear at an end on said hub, a ball mounted in the end of said lever bearing on the hub, a cone sliding on said shaft, and means for forcing said cone beneath the free end of said lever.

6. In a motor-vehicle, the combination of a driven shaft, a gear-wheel and a sprocket-wheel mounted on said shaft, a counter-shaft, a gear-wheel loosely journaled on said counter-shaft and meshing with the gear-wheel on said driven shaft, a sprocket-wheel loosely journaled on said counter-shaft, a chain connecting said sprocket-wheels, clutch mechanisms for connecting with the counter-shaft either the sprocket-wheel or the gear-wheel journaled thereon, and means for operating said clutch mechanisms.

7. In a motor-vehicle, the combination of a driven shaft, a gear-wheel and a sprocket-wheel mounted on said driven shaft, a counter-shaft, a gear-wheel loosely journaled on said counter-shaft and meshing with the gear-wheel mounted on the driven shaft, a sprocket-wheel loosely journaled on said counter-shaft, a chain connecting said sprocket-wheels, clutch mechanisms for connecting with the counter-shaft either the gear or sprocket wheels loosely journaled thereon, means for operating said clutch mechanism, a driving-shaft, and mechanism for conveying motion from said counter-shaft to said driving-shaft.

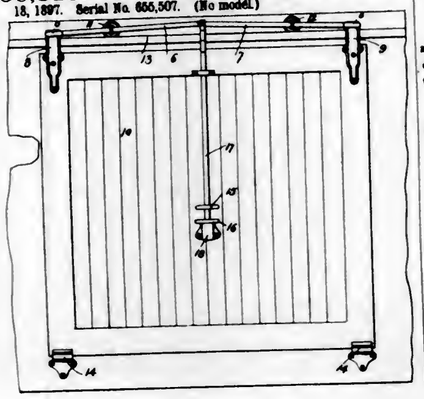
609,812. **SLED-RUNNER.** JOHN A. JOHNSON, Madison, Wis. Filed Apr. 7, 1898. Serial No. 676,762. (No model.)



Claim.—1. A sleigh-runner comprising a hard shoe B, and a channel-piece A of relatively soft metal mounted and shrunk upon the upper part thereof, the sides of the channel-piece extending down about the sides of the shoe B nearly to the lower face thereof.

2. A sleigh-runner comprising a hard cast-metal shoe B; and a channel-piece A of wrought metal mounted and shrunk upon the upper part thereof, the side members *a* of the channel piece extending down about the sides of the shoe B approximately to the lower face thereof, whereby a hard central bearing-face is formed supported upon each side by a relatively softer surface.

609,818. **CAR-DOOR.** GRAHAM P. JONES, Chicago, Ill. Filed Oct. 18, 1897. Serial No. 655,507. (No model.)

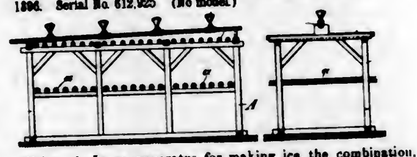


Claim.—1. The combination with a sliding car-door, and mechanism for lifting and lowering it to and from its sliding position, of an operating device for said lifting and lowering mechanism, a handle carried by said operating device, and a stationary handle carried by the car-door in proximity to said first-mentioned handle, substantially as described.

2. The combination with a sliding car-door, and mechanism for lifting and lowering it to and from its sliding position, of an operating device for said lifting and lowering mechanism, a handle carried by said operating device, a stationary handle carried by the door in proximity to said first-mentioned handle, and a guide for said operating device, substantially as described

3. The combination with a sliding car-door, levers pivotally connected to the upper portion of the door, and wheels carried by said levers, of a track upon which said wheels run, a connecting-rod connected to said levers, a guide for said connecting rod carried by the car-door, a handle carried by said connecting-rod, and a handle carried by the car-door in proximity to said first-mentioned handle, substantially as described.

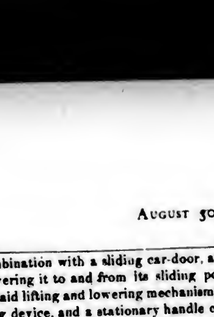
609,814. **PRODUCING ICE.** GEORG KOSER, Geislingen, Germany, assignor to Heinrich Bechmann, Bamberg, Germany. Filed Nov. 21, 1896. Serial No. 612,925. (No model.)



Claim.—1. In an apparatus for making ice, the combination, with a spraying device arranged to project its spray upward, of rods below the spraying device and arranged to receive the congealed water formed by the freezing of the spray.

2. In an apparatus for making ice, the combination with a spraying device arranged to project its spray upward, of a series of horizontally-arranged rods located below the spraying device and arranged to receive the congealed water formed by the spray.

609,815. **FASTENING DEVICE FOR STOPPERS OF BOTTLES, &c.** LUIGI KOST and RUGGERO GUGGERI, Milan, Italy. Filed June 7, 1898. Serial No. 682,837. (No model.)



Claim.—In combination with a bottle having a reduced neck and a rim C, a seal consisting of a ring *a* intact throughout and fitting closely the neck, said ring having extensions to pass over the top of the bottle-closure, substantially as described.

609,816. **DUMPING TRUCK OR CAR.** PHILIP KRAMER, New York, N. Y. Filed Apr. 11, 1898. Serial No. 677,133. (No model.)



Claim.—In a dumping apparatus of the character described, the combination of a truck-body, the chutes B C provided with inclined

bottoms *c d* meeting at an apex *e*, a plurality of gates constituting prolongations of the said inclined bottoms and converging at the apex *e* of the said bottoms and toggle-joints for positively sliding the said gates forward to stop the flow of material through the chutes.

609,817. **BUGGY-BOOT.** JOHN F. LASH, Linneus, Mo. Filed Apr. 5, 1898. Serial No. 676,560. (No model.)



Claim.—1. In a device of the class described, the combination with a buggy-box having a seat and provided beneath the same with a transverse bar, of bearings arranged at opposite sides of the box, adjacent to the seat, a buggy-boot loosely arranged in the bearings, and a spring composed of coils mounted on the transverse bar, and a loop detachably secured to the buggy boot and arranged to draw the same downward and inward, substantially as described.

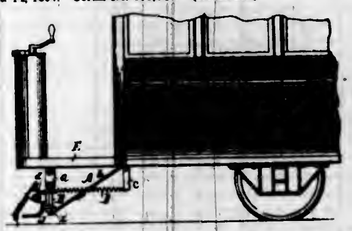
2. In a device of the class described, the combination with a buggy-box having a seat, of bearings arranged on the inner faces of the sides of the box and provided with curved upper edges, a boot having curved cleats or portions loosely arranged on the bearings to form a hinge-joint, and a spring mounted on the box and composed of end coils and a connecting-loop detachably engaging the boot, substantially as described.

3. In a device of the class described, the combination of a buggy-box having a seat and provided with a transverse bar, curved bearings mounted on the sides of the box, a buggy-boot extending beneath the seat and having curved cleats arranged on the bearings, a hook-shaped projection or arm mounted on the buggy-boot, near the rear end thereof, and a spring composed of coils mounted on the transverse bar, arms depending from the coils, and a substantially rectangular loop arranged at an angle to the arms and detachably engaging the hook-shaped projection or arm, substantially as described.

4. In a device of the class described, the combination with a buggy-box having a seat with recesses 2^a in its lower face, of bearings arranged on the inner faces of the sides of the box and provided with curved upper edges, a boot having curved cleats or portions loosely arranged on the bearings to form a hinge-joint, said cleats or portions being extended beyond the inner end of the boot and projecting upward into the recesses 2^a, and a spring mounted on the box and composed of end coils and a connecting-loop detachably engaging the boot, substantially as described.

5. In a device of the class described, the combination with a buggy-box having a seat with recesses 2^a in its lower face, of bearings arranged on the inner faces of the sides of the box and provided with curved upper edges, a boot having curved cleats or portions loosely arranged on the bearings to form a hinge-joint, said cleats or portions being extended beyond the inner end of the boot and projecting upward into the recesses 2^a, and a spring mounted on the box and connected with the boot, substantially as described.

609,818. **CAR-FENDER.** PRESTIS R. LAW, Wilmetta, Ill. Filed Oct. 14, 1897. Serial No. 655,143. (No model.)



Claim.—1. A car-fender, comprising a guard having a limited vertical pivotal movement and a limited upward bodily vertical movement from its normal position, substantially as described.

2. A car-fender, comprising a guard having a limited horizontal pivotal movement and a limited upward bodily vertical movement from its normal position, substantially as described.

3. A car-fender, comprising a guard having a limited vertical pivotal movement, a horizontal pivotal movement and a limited upward bodily vertical movement from its normal position, substantially as described.

4. A car-fender comprising a guard and means for normally and yieldingly maintaining said guard in an inclined position, said guard being capable of a limited bodily vertical movement while in any of its possible positions, substantially as described.

5. A car-fender, comprising a guard and means for normally and yieldingly maintaining said guard in an inclined position, said guard being capable of a limited vertical pivotal movement and a limited bodily vertical movement, substantially as described.

6. A car-fender, comprising a guard and means for normally and yieldingly maintaining said guard in an inclined position, said guard being capable of a limited vertical pivotal movement, a limited horizontal pivotal movement and a limited bodily movement, substantially as described.

7. A car-fender, comprising a guard pivotally supported on a car in a normally-inclined position and adapted to be forced downward into a more nearly vertical position and closer to the ground, or bodily upward from its normal position, when engaged by an obstruction, substantially as described.

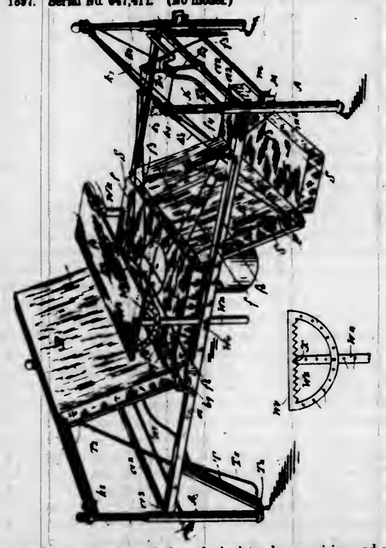
8. A car-fender, comprising a supporting-frame, a pivot forming part of said frame, a substantially straight guard pivotally mounted on said pivot and springs secured to the guard and holding the same normally out of contact with the ground and at right angles to the length of the car, but permitting the guard to move into a position closer to the ground and turn on its pivot when engaged by an obstruction to throw the same out of the way of the car, substantially as described.

9. In a car-fender, the combination with a supporting-frame, of a pivot-frame pivotally mounted on said supporting-frame, a guard pivoted to said pivot-frame and springs connected to the guard and holding the same normally out of contact with the ground and at right angles to the length of the car, substantially as described.

10. In a car-fender, the combination with a supporting-frame comprising a pivot-pin, a pivot-frame pivotally mounted on said pin, and capable of a limited vertical movement thereon, a guard pivoted to said pivot-frame, springs for holding the guard normally out of contact with the ground and substantially at right angles to the length of the car and devices for limiting the movement of the guard, substantially as described.

11. In a car-fender, the combination with a supporting-frame comprising a yoke, a pin secured to said yoke, braces secured to the pin and to the car, a pivot-frame pivotally mounted on the pin and having a limited vertical movement, a substantially straight guard pivoted to said pivot-frame, springs attached to the car and to the guard on each side of its pivot to hold the guard normally out of contact with the ground and at right angles to the length of the car and stop devices connected to the pivot-frame for limiting the movement of the guard on said frame, substantially as described.

609,819. **BED.** JOHN LAWRENCE, Columbus, Ohio. Filed Aug. 7, 1897. Serial No. 647,411. (No model.)



Claim.—1. A bed consisting of a bedstead, comprising end posts longitudinal side bars and end bars; said bed being provided with a

body portion consisting of four separate sections or frames, a head-section, a seat-section, a leg-section, and a foot-section; said head-section being adapted to be folded forwardly and upwardly, and said leg-section being adapted to fold or drop downwardly, and the foot-section being pivotally connected with the foot of the bedstead, and adapted to drop downwardly, and a mattress also consisting of four separate sections, substantially as shown and described.

2. A bed consisting of a bedstead, comprising end posts, longitudinal side bars and end bars; said bed being provided with a body portion consisting of four separate sections or frames, a head-section, a seat-section, a leg-section and a foot-section, said head-section being adapted to be folded forwardly and upwardly, and said leg-section being adapted to fold or drop downwardly, and the foot-section being pivotally connected with the foot of the bedstead, and adapted to drop downwardly, and a mattress also consisting of four separate sections, the separate sections of the mattress being flexibly connected and adapted to fold so as to correspond with the movement of the head-section, and the leg-section, and that section of the mattress which rests upon the foot-section being adapted to be drawn off of the foot section and to rest on the floor, substantially as shown and described.

3. A bed comprising a bedstead, and provided with four separate sections or frames consisting of a head-section, a seat-section, a leg-section and a foot-section, the head-section being hinged to the bedstead, and adapted to fold forwardly and the leg-section being also hinged to the bedstead and adapted to fold downwardly, and said foot-section being hinged to the foot of the bedstead and adapted to swing downwardly, substantially as shown and described.

4. A bed comprising a bedstead, and provided with four separate sections or frames consisting of a head-section, a seat-section, a leg-section, and a foot-section, the head-section being hinged to the bedstead, and adapted to fold forwardly and the leg-section being also hinged to the bedstead and adapted to fold downwardly, and said foot-section being hinged to the foot of the bedstead and adapted to swing downwardly, said head-section being provided with spring-levers which assist in raising the same, and also with pivoted side levers which are adapted to lock it in the lowered position, substantially as shown and subscribed.

5. A bed comprising a bedstead, and provided with four separate sections or frames consisting of a head-section, a seat-section, a leg-section, and a foot-section, the head-section being hinged to the bedstead, and adapted to fold forwardly and the leg-section being also hinged to the bedstead and adapted to fold downwardly, and said foot-section being also hinged to the foot of the bedstead and adapted to swing downwardly, said head-section being provided with spring-levers which assist in raising the same, and also with pivoted side levers which are adapted to lock it in the lowered position, and said levers being provided with cords by which they may be operated and the leg and foot sections being also provided with cords and attaching devices by which they may be lowered or raised, substantially as shown and described.

6. A bed comprising a bedstead, and four separate sections connected therewith, said sections consisting of a head-section, a seat-section, a leg-section and a foot-section, said head-section being adapted to be folded forwardly and upwardly, and said leg-section downwardly, and the foot-section being pivotally connected with the foot of the bed and also adapted to swing downwardly, said sections being each provided with a section of a mattress, and said sections of the mattress being flexibly connected, and the foot-section of the mattress being secured to the leg-section thereof, substantially as shown and described.

7. A bedstead provided with four separate sections or frames, consisting of a head-section, a seat-section, a leg-section and a foot-section, said seat-section being held stationary, and provided with a central opening in which is placed a commode and said head-section being adapted to be raised forwardly and said leg-section to be folded downwardly, said head-section being also provided with locking-levers whereby it is locked in the lowered position, and with spring-levers which assist in raising it, and said leg section being provided with cords which are secured to the opposite sides thereof, and which pass over pulleys mounted on the sides of the bedstead, and said leg-section being also provided with cords which are secured to the sides thereof, and which are passed over pulleys connected with the top of the foot-posts of the bedstead and provided with means for operating the same, substantially as shown and described.

8. A bedstead provided with four separate sections or frames, consisting of a head-section, a seat-section, a leg-section and a foot-section which is pivoted to the bedstead, said seat-section being held stationary, and said head-section being adapted to be raised forwardly and said leg-section to be folded downwardly, said head-section being also provided with locking-levers whereby it is locked in the lowered position, and with spring-levers which assist in raising it, and said leg-section being provided with cords which are secured to the opposite sides thereof, and which pass over pulleys mounted on the sides of the bedstead, and said leg-section being also provided with cords which are secured to the sides thereof, and which are passed over pulleys connected with the top of the foot-posts of the bedstead and provided with means for operating the same, and which is also adapted to operate the foot-section, substantially as shown and described.

9. A bedstead provided with four separate sections or frames, consisting of a head-section, a seat-section which is pivoted to the bedstead, a leg-section and a foot-section, said seat-section being held stationary, and said head-section being adapted to be raised forwardly and said leg-section to be folded downwardly, said head-section being also provided with locking-levers whereby it is locked in the lowered position, and with spring-levers which assist in raising it, and said leg-section being provided with cords which are secured to the opposite sides thereof, and which pass over pulleys mounted on the sides of the bedstead, and said leg-section being also provided with cords which are secured to the sides thereof, and which are passed over pulleys connected with the top of the foot-posts of the bedstead, and provided with means for operating the same, and which is also adapted to operate the foot-section, and said foot-section being also provided with cords which are connected with the pulleys secured to the sides of the bedstead and which extend forwardly, substantially as shown and described.

10. A bedstead constructed as herein described, and provided with a folding head-section, a stationary seat-section, and a folding leg-section and having a foot-section which is pivotally connected with the bedstead, said stationary seat-section being provided with a central opening, in which is placed a spring-supported commode, the bottom of which is provided with a neck with which is connected a detachable vessel or receptacle, said commode being also pruvided with a valve which is adapted to close said neck and to be operated substantially as shown and described.

11. A bedstead constructed as herein described, and provided with a folding head section, a stationary seat-section, and a folding leg-section, said stationary seat-section being also provided with a central opening in which is placed a spring-supported commode, the bottom of which is provided with a neck with which is connected a detachable vessel or receptacle, said commode being also provided with a valve which is adapted to close said neck and to be operated, and said commode being also provided with a pneumatic cushion or pad mounted on the top thereof, and with which are connected a plurality of quandrential and inflatable pads or cushions which are adapted to close the entrance to the commode, substantially as shown and described.

12. A bedstead constructed as herein described and provided with a folding head-section, a stationary seat-section, and a folding leg-section, said stationary seat-section being also provided with a central opening in which is placed a spring supported commode, the bottom of which is provided with a neck with which is connected a detachable vessel or receptacle, said commode being also provided with a valve which is adapted to close said neck and to be operated, and said commode being also provided with a pneumatic cushion or pad mounted on the top thereof, and with which are connected a plurality of quadrential and inflatable pads or cushions which are adapted to close the entrance to the commode, and means for inflating said pads or cushions adapted to be operated by the movement of the head-section, substantially as shown and described.

13. A bed constructed as herein described, and provided with a stationary seat-section, and a head-section which is adapted to be raised, and a leg-section which is adapted to be lowered, said stationary seat-section being provided centrally thereof with a detachable spring-supported commode which is provided around the top thereof with a cushion or pad, said cushion or pad being also provided with inwardly-directed inflatable cushions or pads which are adapted to close the entrance to the commode, substantially as shown and described.

14. A bed constructed as herein described and provided with a stationary seat-section, a mattress mounted thereon, and provided with a central opening, a detachable spring-supported commode mounted in said section and extending upwardly partly through the mattress, a cushion mounted on the top of said commode, and provided with inwardly-directed inflatable cushions or pads which are adapted to close the entrance to said commode, said cushions or pads when inflated being flush with the top of the mattress, substantially as shown and described.

15. A bed constructed as herein described, and provided with a stationary seat-section, in the center of which is mounted a detachable commode, said seat-section being also provided with a mattress in the center of which is formed an opening into which the commode projects, and an annular or elliptical cushion or pad, said plate being also provided on its under side with a cover of rubber which rests on the commode and is integral with the cushion or pad, and said annular cushion or pad being also provided with inwardly-directed sectional cushions or pads which are inflatable so as to fill or close the opening into the commode, substantially as shown and described.

16. A bed constructed as herein described, and provided with a stationary seat-section, in the center of which is mounted a detachable commode, said seat-section being also provided with a mattress in the center of which is formed an opening into which the commode projects, and an annular or elliptical plate which rests on said commode, and on which is placed an annular or elliptical cushion or pad, said plate being also provided on its under side with a cover of rubber which rests on the commode and is integral with the cushion or pad, and said annular cushion or pad being also provided with inwardly-directed sectional cushions or pads which are inflatable so as to fill or close the opening in the commode, said detachable commode being also supported on springs, and being provided at its lower end with a neck which is adapted to be closed by a ball-valve and a detachable vessel or receptacle connected with the lower end of said neck and provided with means for operating said valve, substantially as shown and described.

17. A bed constructed as herein described and provided with separate sections, consisting of a folding head-section and stationary seat-section, a folding leg-section and a foot-section which is pivotally connected with the foot of the bedstead, and adapted to drop downwardly, said separate sections being also provided with sectional mattresses which are flexibly connected, and said seat-section being provided centrally thereof with an opening in which is placed a spring-supported commode which extends upwardly partly through a similar opening formed in that section of the mattress which is placed on the seat-section, said commode being provided at the top thereof with an annular cushion or pad with which are connected inflatable sectional cushions or pads which are adapted to close the entrance to the commode, substantially as shown and described.

18. A bed constructed as herein described and provided with separate sections, consisting of a folding head-section, and stationary seat-section, a folding leg section and a foot-section which is pivotally connected with the foot of the bedstead, and adapted to drop downwardly, said separate sections being also provided with sectional mattresses which are flexibly connected, and said seat-section being provided centrally thereof with an opening in which is placed a spring-supported commode which extends upwardly partly through a similar opening formed in that section of the mattress which is placed on the seat-section, said commode being provided at the top thereof with an annular cushion or pad with which are connected inflatable sectional cushions or pads which are adapted to close the entrance to the commode, and means for inflating said inflatable cushions or pads consisting of air-pumps which are adapted to be operated by the folding head-section and which are in operative connection with said cushions or pads and tubes which connect said cushions or pads and the cylinders of said pumps substantially as shown and described.

19. A bedstead provided with separate sections consisting of a head-section which is adapted to be folded upwardly and forwardly, a stationary seat-section, a leg-section which is adapted to be folded downwardly and a foot-section which is pivotally connected with or hinged to the foot of the bedstead, and adapted to drop downwardly, and means for holding the free end of the foot-section in a raised or horizontal position consisting of spring-operated bolts which are connected with the side bars of the bedstead and operated by cords passing therethrough, substantially as shown and described.

20. A bedstead provided with separate sections consisting of a head-section which is adapted to be folded upwardly and forwardly, a stationary seat-section, a leg section which is adapted to be folded downwardly, and a foot-section which is pivotally connected with or hinged to the foot of the bedstead, and adapted to drop downwardly, and means for holding the free end of the foot-section in a raised or horizontal position consisting of spring-operated bolts which are connected with the side bars of the bedstead and operated by cords passing therethrough, said foot-section being also provided with means for supporting the free ends of the leg-sections in a horizontal position, substantially as shown and described.

21. A bedstead, the posts of which are hollow and provided with supplemental tubular posts which are mounted therein, said supplemental tubular posts being adapted to be forced downwardly so as to raise the bedstead or either end thereof, and also to be raised so as to form a support for a hammock, substantially as shown and described.

22. A bedstead the posts of which are hollow and provided with supplemental tubular posts which are mounted therein, said supplemental tubular posts being adapted to be forced downwardly so as to raise the bedstead or either end thereof, and also to be raised so as to form a support for a hammock, and said supplemental posts being also provided with vertically-movable rods which are mounted therein, and which are adapted to support a canopy, substantially as shown and described.

23. A bedstead, the main posts of which are hollow and provided with supplemental vertically-adjustable posts which are mounted therein, said main posts being provided with means for raising or lowering said supplemental posts, consisting of shafts connected with the ends of the main posts at each end of the bedstead, drums mounted thereon, and tapes or bands wound on said drum and connected with the upper and lower ends of said supplemental posts, substantially as shown and described.

24. A bedstead, the main posts of which are hollow and provided with supplemental vertically-adjustable posts which are mounted therein, said main posts being provided with means for raising and lowering said supplemental posts, consisting of shafts connected with the ends of the main posts at each end of the bedstead, drums mounted thereon, and tapes or bands wound on said drum and connected with the upper and lower ends of said supplemental posts, said tapes or bands being passed inwardly around pulleys mounted in said main posts adjacent to said drums and said drums being provided with ratchet-wheels and pawls which operate in connection therewith, substantially as shown and described.

25. A bedstead provided with tubular posts in which are mounted supplemental vertically-adjustable posts, means for raising and lowering said supplemental posts, and end rods and side rods connected with the upper ends of said vertically-adjustable supplemental posts and adapted to serve as supports for a hammock, said supplemental posts being also provided at their lower ends with rollers, substantially as shown and described.

26. A bedstead provided with tubular posts in which are mounted supplemental vertically-adjustable posts means for raising and lowering said supplemental posts, and end rods and side rods connected with the upper ends of said vertically-adjustable supplemental posts and adapted to serve as supports for a hammock, said vertically-adjustable supplemental posts being also provided at their lower ends with rollers, substantially as shown and described.

27. A bedstead provided with tubular posts in which are placed hollow vertically adjustable supplemental posts mounted therein, vertically-adjustable rods mounted in said supplemental posts, hammock-supports connected with the upper end of said supplemental posts, and supports for a canopy connected with the upper ends of said rods, substantially as shown and described.

28. A bedstead constructed as herein described, and provided with a folding head-section, a stationary seat-section, a folding leg-section, said head-section being adapted to fold upwardly and forwardly, and said seat-section to fold downwardly, and a foot-section pivotally connected with the foot of the bedstead and adapted to fold downwardly, said bedstead being also provided with tubular posts in which are mounted vertically-adjustable supplemental posts, said supplemental posts being provided with means for supporting a hammock, and said supplemental posts being also tubular in form and provided with vertically-adjustable rods which are adapted to support a canopy, substantially as shown and described.

29. A bedstead constructed as herein described, and provided with a folding head-section, a stationary seat-section, a folding leg-section, said head-section being adapted to fold upwardly and forwardly, and said seat-section to fold downwardly, and a foot-section pivotally connected with the foot of the bedstead and adapted to fold downwardly, said bedstead being also provided with tubular posts in which are mounted vertically-adjustable supplemental posts, said supplemental posts being provided with means for supporting a hammock, substantially as shown and described.

30. A bedstead provided with separate sections consisting of a head-section, a seat-section, a leg-section and a foot-section, said head-section being adapted to fold upwardly, and forwardly, said leg-section to fold downwardly, and said foot-section being connected with the foot of the bedstead, and adapted to fold downwardly, each of said sections being also provided with mattress-springs, and the springs of the head-section, the seat-section and the leg-section being flexibly connected, substantially as shown and described.

31. A bedstead provided with separate sections consisting of a head-section, a seat-section, a leg-section and a foot-section, said head-section being adapted to fold upwardly, and forwardly, said leg-section to fold downwardly, and said foot-section being connected with the foot of the bedstead and adapted to fold downwardly, each of said sections being also provided with mattress-springs, and the springs of the head-section, the seat-section, and the leg-section being flexibly connected, and the springs of the seat-section being secured thereto, and adapted to fold therewith, substantially as shown and described.

32. A bedstead provided with separate sections consisting of a head-section, a seat-section, a leg-section and a foot-section, said head-section being adapted to fold upwardly, and forwardly, said leg-section to fold downwardly, and said foot-section being connected with the foot of the bedstead and adapted to fold downwardly, each of said sections being also provided with mattress-springs, and the springs of the head-section, the seat-section and the leg-section being

flexibly connected, and the springs of the seat-section being secured thereto, and adapted to fold therewith, and said sections being also provided with a mattress which is composed of sections all of which are flexibly connected, substantially as shown and described.

33. A bed constructed as herein described, and provided with a folding head-section, a stationary seat-section, a folding leg section and a foot-section which is pivotally connected with the foot of the bed, and adapted to fold downwardly, said head section being adapted to fold upwardly and forwardly, and said leg-section downwardly, and said foot-section being provided with means for supporting the leg-section in a horizontal position, substantially as shown and described.

34. A bed constructed as herein described, and provided with a folding head-section, a stationary seat-section, a folding leg-section and a foot-section which is pivotally connected with the foot of the bed, and adapted to fold downwardly, said head-section being adapted to fold upwardly and forwardly, and said leg-section downwardly, and said foot-section being provided with means for supporting the leg-section in a horizontal position, the head-section, seat-section and leg-section being provided with a body portion and mattress-springs which are connected by transverse and longitudinal bottom strips, and transverse and longitudinal top wires or strips, these springs being flexibly connected transversely of the meeting-points of said head, seat and leg sections, substantially as shown and described.

35. A bed constructed as herein described and provided with a folding head section, a stationary seat-section, a folding leg-section, and a foot section, which is pivotally connected with the foot of the bed, and adapted to fold downwardly, said head-section, being adapted to fold upwardly and forwardly, and said leg-section downwardly, and said foot-section being provided with means for supporting the leg-section in a horizontal position, the head-section, seat-section and leg-section being provided with a body portion and mattress-springs which are connected by transverse and longitudinal bottom strips, and transverse and longitudinal top wires or strips, these springs being flexibly connected transversely of the meeting-points of said head, seat and leg sections, and the foot-section being also provided with mattress-springs which are also connected by transverse and longitudinal bottom strips, and transverse and longitudinal top strips independently of the springs connected with the leg section, substantially as shown and described.

36. A bed constructed as herein described, and provided with an upwardly-folding head-section, a stationary seat-section, a downwardly-folding leg-section, and a foot section, pivotally connected with the foot of the bedstead and adapted to swing downwardly, each of said sections being also provided with a mattress, and all of said mattresses being flexibly connected, and said bedstead being also provided with a vertically-adjustable table which is mounted over the seat-section, substantially as shown and described.

37. A bed constructed as herein described and provided with an upwardly-folding head-section, a stationary seat section, a downwardly-folding leg-section, and a foot-section pivotally connected with the foot of the bedstead and adapted to swing downwardly, each of said sections being also provided with a mattress, and all of said mattresses being flexibly connected, and said bedstead being also provided with a vertically-adjustable table which is mounted over the seat-section, said table being adapted also to be tilted laterally and moved longitudinally of the bedstead, substantially as shown and described.

38. A bedstead provided with the usual side bars, an upwardly-folding head-section, mounted therein, a stationary seat-section, a downwardly-folding leg-section, separate mattresses mounted on said sections and flexibly connected, said seat-section being also provided centrally thereof, with an opening which extends through the mattress, and a commode mounted in said seat-section which extends upwardly partly through the mattress mounted thereon, and means for closing said commode, said commode being also in communication at the bottom thereof with a detachable vessel the entrance of which is adapted to be closed, the bedstead being also provided with upwardly-directed portions with which are connected locking-levers by which the head-section is held in a raised position, substantially as shown and described.

39. A bedstead constructed as herein described, and provided with an upwardly-folding head-section, a stationary seat-section, a downwardly folding leg-section, all of said sections being connected with the side bars of the bedstead and a foot-section pivotally connected with the foot of the bedstead and adapted to fold downwardly, said foot-section being provided at its opposite ends with forwardly-directed extensions which are adapted to support the free end of the leg-section, and means for operating said foot-section so as to raise the same and the leg-section above the horizontal level of the bedstead, substantially as shown and described.

40. A bedstead constructed as herein described and provided with an upwardly-folding head-section, a stationary seat-section, a downwardly-folding leg-section, all of said sections being connected with the side bars of the bedstead, and a foot-section pivotally connected with the foot of the bedstead, and adapted to fold downwardly, said foot-section being provided at its opposite ends with forwardly-directed extensions which are adapted to support the free end of the leg-section, and means for operating said foot-section so as to raise the same and the leg-section above the horizontal level of the bedstead, and said sides of the bedstead being provided with spring-levers which operate in connection with the leg-section so as to control the downward movement thereof, substantially as shown and described.

41. A bed provided with a folding head-section, a stationary seat-section provided with a central opening, and a folding leg-section together with a spring-bottom having an opening adapted to receive a commode, said bottom being composed of an elastic top fabric, and a non-elastic bottom fabric, and springs mounted between said fabrics, substantially as shown and described.

42. A bed provided with a spring-bottom having an opening adapted to receive a commode, said bottom being composed of an elastic top fabric, and a non-elastic bottom fabric, and springs mounted between said fabrics, said springs being larger at the center and smaller toward the sides, and both of said fabrics being connected with loops or yokes at the sides of the bed, substantially as shown and described.

43. A bed provided with a spring-bottom having an opening adapted to receive a commode, said bottom being composed of an elastic top fabric and a non-elastic bottom fabric, and springs mounted between said fabrics, said springs being larger at the center and smaller toward the sides, and both of said fabrics being connected with loops or yokes at the sides of the bed and said loops or yokes being passed through the side bars of the bed-frame, and provided with eyes through which a cord may be passed, substantially as shown and described.

44. A bedstead provided with a spring-bottom, and a mattress each of which is provided with a corresponding opening adapted to receive a commode, a commode mounted in said opening and provided with an inflatable rubber seat around the opening in the mattress and flush with the surface of the mattress, and inflatable cushions which are adapted to be inflated and deflated in said opening, substantially as shown and described.

45. A bedstead provided with a spring-bottom, and a mattress mounted thereon, an opening formed in said spring-bottom and said mattress, a commode mounted in said opening and extending through said mattress, a frame mounted in the opening of the mattress against which the top of the commode bears, and an inflatable cushion or seat mounted on said frame, and flush with the surface of the mattress and means for closing the opening in the mattress, said commode being provided with spring-supports which force it against said frame, substantially as shown and described.

46. A bedstead provided with a spring-bottom, and a mattress mounted thereon, an opening formed in said spring-bottom and said mattress, a commode mounted in said opening and extending through said mattress, a frame mounted in the opening of the mattress against which the top of the commode bears, and an inflatable cushion or seat mounted on said frame, and flush with the surface of the mattress, said commode being provided with spring-supports which force it against said frame, and said cushion being also provided with inflatable pads which are adapted to close the opening into the commode, substantially as shown and described.

47. A bed provided with a bottom and a mattress mounted thereon, said mattress and said bottom being provided with an opening, a spring-supported commode mounted in said opening, and projecting partly through said mattress, said commode being provided with an inflatable cushion or seat, and means for closing the opening into said commode, substantially as shown and described.

48. A bedstead provided with a spring bottom, as described and having a large oval or round opening formed therein, a mattress mounted on said spring-bottom, and provided with a corresponding opening, a spring-supported commode mounted in the opening in the spring-bottom, a plate fixed in the upper portion of the spring bottom against which the commode is forced, said plate being provided with an inflated seat or cushion, and means for closing the opening into the commode, substantially as shown and described.

49. A bedstead provided with a bottom in which is formed an opening adapted to receive a commode, a commode set in said opening, and a detachable receptacle connected with the bottom thereof and in communication therewith, said commode being provided with a neck in which is placed a ball-valve, and said detachable receptacle being provided with means for operating said valve, and said receptacle being also provided with means for closing the same when detached from the commode, substantially as shown and described.

50. A bed constructed as herein described, and provided with a stationary seat-section, and in the center of which is mounted a detachable commode, provided with a neck at its lower end, a mattress for said seat-section provided with an opening in the center thereof into which the commode projects, an annular or elliptical plate which rests on said commode, an annular or elliptical cushion or pad mounted on said plate, a cover of rubber or similar material on the under side of said plate and resting on the commode, said cover being integral with the cushion or pad, said annular cushion or pad being also provided with inwardly-directed sectional cushions or pads which are inflated so as to fill or close the opening in the commode, springs for supporting said commode, a ball-valve for closing the neck thereof, and a detachable vessel or receptacle connected with the lower end of said neck and provided with means for operating said valve, consisting of a crank-lever pivotally supported in said vessel or receptacle, and provided with a spring-rod which passes up through said vessel or receptacle and through said neck, and which is provided at its upper end with spring-fingers which are adapted to receive said valve, and a rod which passes through the side of said vessel or receptacle, and is pivotally connected with said crank, substantially as described.

51. A bed constructed as herein described and provided with a plurality of separate sections, one of which constitutes a stationary seat-section, said seat-section being provided centrally with an opening, a spring-supported detachable commode mounted in said opening, a mattress mounted on said section and provided with a central opening into which the top of the commode projects, an annular or elliptical plate mounted on said commode, a rubber cushion which separates the commode from said plate and against which the commode is spring-pressed, inflatable cushions connected with said plate and adapted to close the entrance to the commode, said commode being provided with a downwardly-directed neck, and a ball-valve adapted to close the same, and a vessel or receptacle detachably connected with said neck and provided with means for operating said valve, substantially as described.

52. A bed constructed as herein described, and provided with a plurality of separate sections, one of which constitutes a stationary seat-section, said seat-section being provided centrally with an opening in which is mounted a spring-supported detachable commode, a mattress mounted on said section and provided with a central opening into which the top of the commode projects, an annular or elliptical plate mounted on said commode, a rubber cushion between said commode and said plate against which the commode is spring-pressed, inflatable cushions connected with said plate and adapted to close the entrance to the commode, said commode being also provided with a downwardly-directed neck, and a ball-valve which is adapted to close the same, a vessel or receptacle detachably connected with said neck and provided with means for operating said valve, said commode being also provided with means for washing or cleaning the same, and with inflating devices for said cushions or pads which are adapted to be operated, substantially as described

53. A bedstead provided with a head-section, a seat-section, a leg-section, and a foot-section, the head-section being adapted to be folded upwardly and forwardly and the leg-section downwardly, said head-section being provided with locking-levers which are adapted to hold it in the lowered position and with pivoted spring-levers, and rollers mounted on or connected with the head-section in connection with which said levers operate so as to assist in raising the same, the bed-frame at each side being provided with upwardly-directed parts or projections with which said spring-levers are connected, substantially as described.

54. A bedstead provided with a head-section, a seat-section, a leg-section, and a foot-section, the head-section being adapted to be folded upwardly and forwardly, and the leg-section downwardly, said head-section being provided with locking-levers which are adapted to hold it in the lowered position, and rollers mounted on or connected with the head-section, and pivoted spring-levers which operate in connection with said rollers so as to assist in raising said section, one end of said spring-levers being vertically adjustable on their supports, substantially as described.

55. A bed constructed as herein described and provided with separate body sections consisting of a folding head-section, a stationary seat-section, a folding leg-section, and a folding foot-section which is pivoted to the bedstead, said head-section being adapted to be folded upwardly and forwardly, and the sides of the bedstead being provided with upwardly-directed plates with which said head-section is pivotally connected, said head section being also provided with supplemental plates by means of which said connection is made, and antifriction-rollers connected with said supplemental plates which bear on the plates secured to the side bars of the bedstead, substantially as described.

56. A bed constructed as herein described and provided with separate body-sections, consisting of a head-section, a seat-section, a leg-section, and a foot-section, said head-section being adapted to be folded upwardly and forwardly, and the bedstead being provided with upwardly-directed plates formed on or secured to the side bars thereof with which said head-section is pivotally connected, said head-section being provided with supplemental plates by means of which said connection is made, antifriction-rollers connected with said supplemental plates which bear on the plates secured to the side bars of the bedstead, and spring-levers connected with said last-named plates which operate to raise the said head-section, and locking-levers by which said head-section is locked in the lowered or horizontal position, substantially as described.

57. A bed-frame consisting of the usual posts, side bars, and end rods or bars, said bed-frame being provided with a body portion composed of spiral springs which are larger at their upper than at their lower ends, a top fabric composed of metal wires or strips by which the upper ends of said springs are connected, and a bottom fabric composed of metal wires or strips by which the lower ends of said springs are connected, the ends of said metal wires or strips being connected with yokes or loops, substantially as described.

58. A bedstead provided with a spring-bottom composed of an upper and lower fabric or network, and spiral springs between said fabrics, said spring-bottom being provided with a large circular or oval opening, and a large spiral spring placed in said opening between the upper and lower fabric, and a commode supported by said spring, substantially as described.

59. A bedstead provided with a spring-bottom composed of an upper and lower fabric or network, and spiral springs placed between said upper and lower fabrics or networks, said bottom being also provided with a large circular or oval opening, and a large spiral spring placed in said opening between the upper and the lower fabrics, and a commode supported by said spring, said spring being supported by a ring connected with the lower fabric, substantially as described.

60. A bedstead provided with a spring-bottom composed of an upper and a lower fabric or network, and spiral springs placed between the same, said bottom being also provided with a large circular or oval opening, and a large spiral spring placed in said opening between said upper and lower fabrics, a commode supported by said spring, a ring by which said spring is supported, said ring being connected with the lower fabric, and a vertically-movable support mounted in said ring on which the commode rests, substantially as described

61. A bedstead provided with a spring-bottom composed of an upper and lower fabric or network, and spiral springs placed between said upper and lower fabrics, said bottom being also provided with a large circular or oval opening, a large spiral spring placed in said opening between said upper and lower fabrics, a ring connected with the lower fabric by which said spring is supported, and a vertically-movable commode-support connected with said ring, said support being provided with spring-catches for holding the commode in position, substantially as described.

62. A bedstead provided with a spring-bottom composed of an upper and lower fabric or network, a large spiral spring placed in said opening between said upper and lower fabrics, a ring connected with the lower fabric by which said spring is supported, and a vertically-movable commode-support mounted in said ring, said support being provided with spring-catches for holding it in a raised position, and also with a supplemental spring on which said commode rests, substantially as described.

63. A bedstead the main posts of which are hollow and provided with supplemental vertically-adjustable posts which are mounted therein and which are adapted to be projected from the upper and lower ends thereof, said main posts being provided with means for raising and lowering said supplemental posts, consisting of shafts connected with the ends of the main posts at each end of the bedstead, drums mounted thereon, and tapes or bands wound on said drums and connected with the upper and lower ends of said supplemental posts, said tapes or bands being passed inwardly around pulleys mounted in said main posts adjacent to said drums, and said drums being provided with ratchet-wheels, and pawls which operate in connection therewith, and said supplemental posts being adapted to serve as supports for a hammock, substantially as described.

64. A bedstead, the posts of which are hollow, and provided with supplemental tubular posts which are mounted therein and vertically movable, said supplemental tubular posts being adapted to be forced downwardly so as to raise the bedstead or either end thereof, and the lower ends of said supplemental tubular posts being provided with rollers, and the upper ends thereof being also adapted to be raised above the main posts, and provided with means for supporting a hammock, substantially as shown and described.

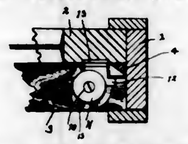
609,820. MANUFACTURE OF STAMPED WHEELS FOR TOYS OR THE LIKE HIPPOLYTE J. LECOMTE and HILAIRE M. GOURRIER, Paris, France. Filed Dec. 19, 1896. Serial No. 616,220. (No model.) Patented in France July 11, 1896 No 258,005, and in Belgium July 17, 1896, No. 122,553.



Claim.—1. A one-piece sheet-metal wheel, comprising a rim *b*, spokes *a*, perforated lugs *c* extending from the center of the wheel between the spokes and bent over upon opposite sides of the wheel to bring their perforations *d* in line with each other and with the central perforation *f* of the wheel and strengthening-ears *e*, against which the perforated lugs *c* are adapted to bear.

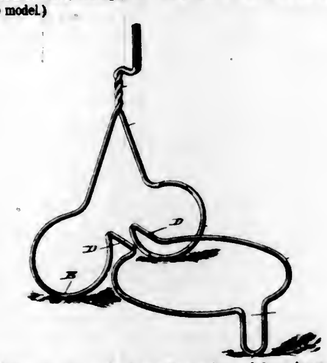
2. In a sheet-metal wheel, the combination of a rim *b*, spokes *a*, a plurality of ears *c* provided with apertures *d* and extending from the center of the wheel in radial directions and bent over to bring their apertures in line with each other and with the central aperture *f* of the wheel and strengthening-ears *e* forming a brace or support for the ears *c*.

609,821. **SASH-FASTENER.** DAVID L. LONG, Columbus, Ohio. Filed Jan. 20, 1897. Serial No. 619,998. (No model.)



Claim.—The combination with the window-frame and the stop-strip 4 having horizontal recesses extending angularly therethrough, of the plates on the side stile of the sash and having horizontal recesses coincident with those of the stop-strip, a rotatable lock-plate having a continuous curved locking-tongue adapted to engage in the recesses of the stop-strip and plates, and a pivoted lock carried by the rotatable lock-plate, all substantially as and for the purpose specified.

609,822. **COMBINED BRACKET AND STAND FOR LAMPS.** JOSEPH B. LONG, Chicago, Ill. Filed Mar. 8, 1897. Serial No. 626,382. (No model.)



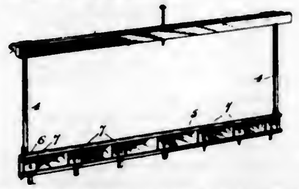
Claim.—1. A combined bracket and stand for a lamp formed of a single piece of wire bent to provide a ring adapted to embrace the fount, a loop proceeding downward from the fount-ring for the triple purpose of forming a leg, accommodating the handle of the lamp and increasing the elasticity of the ring, a hanger adapted to rest against the wall, and a pair of legs disposed between the hanger and the fount-ring, substantially as set forth.

2. A combined bracket and stand for a lamp formed of a single piece of wire bent to provide a ring adapted to embrace the fount, a loop proceeding downward from the fount-ring for the triple purpose of forming a leg, accommodating the handle of the lamp, and increasing the elasticity of the ring, an arm having two branches proceeding rearward from the fount-ring, a pair of legs proceeding downward from the rear ends of the two branches of said arm, a hanger proceeding upward from said legs, and an offset tongue above the hanger for supporting the reflector, substantially as set forth.

609,828. **DISPLAY DEVICE.** JOHN A. LOVE, Searcy, Ark., assignor of one-half to S. L. Joseph, Paragould, Ark. Filed July 7, 1897. Serial No. 643,741. (No model.)

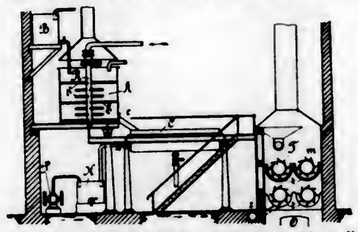
Claim.—1. In a display device, the combination of a carrying-bar having transverse openings, a price card or cards fitted to said bar, and article-holders fitted to the slotted bar and engaging with said price-cards to hold the latter against edgewise displacement, as and for the purposes described.

2. In a display device, the combination of a carrying-bar having a longitudinal guideway and a series of slots or openings, price-cards having openings or notches in their edges and fitted to the guideway, and article-holders connected to the bar and engaging with the price-cards, as and for the purposes described.



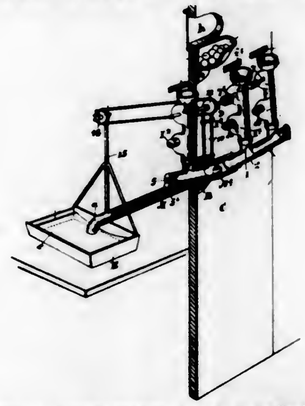
3. In an overhead display device, the combination with a suspension-bar, of a roller journaled thereon, a carrying bar having a guideway, flexible cords or tapes attached to the carrying-bar and coiled on the roller, price-cards on said bar, and article-holders attached to the bar and engaging the price-cards, as and for the purposes described.

609,824. **METHOD OF OBTAINING CATTLE-FOOD.** EDMUND LÖWI, Prague, Austria-Hungary. Filed Dec. 9, 1895. Serial No. 571,570. (No specimens.) Patented in Belgium Oct. 15, 1894, No. 112,137; in Austria Dec. 29, 1894, No. 44/3,536; in France Jan. 18, 1895, No. 241,959, and in Hungary Aug. 22, 1896, No. 3,454.



Claim.—The method of treating all kinds of residuary liquors from the fabrication of spirits, dry yeast, and the like herein set out, which method consists in mixing the residuary liquor with a solution of acetate of alumina and sulfate of magnesia and bringing them to a temperature of 100° Celsius, and then throwing in regenerated carbonate of lime, substantially as and for the purpose specified.

609,825. **VOTING-MACHINE.** PATRICK A. MACDONALD, Winnipeg, Canada. Filed Apr. 3, 1897. Serial No. 630,582. (No model.)



Claim.—1. A voting-machine comprising an inclined tube, a partition-screen intermediately supporting the tube, a T-shaped upper end joint for the tube, branch tubes having T-shaped lower ends designed to be inserted into the joint and each other, balls for depositing in such tubes and receiving and registering mechanism operated by the balls, caps for closing the extreme ends of the T-shaped lower ends of the branch tubes and a connecting-chain for the caps having one end extending through a slot in one cap, and a padlock for the end projecting link as and for the purpose specified.

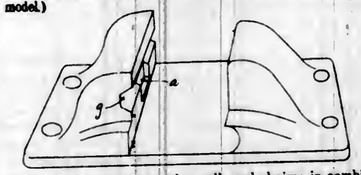
2. The combination with the main tube and intermediate screen supporting the same, branch tubes connected to the upper end of the main tube, the controlling rotating wings for each branch tube suitably journaled in enlargements of the tube and designed to have one wing normally extending into the tube, the rods to which the rotating wings are affixed, the central spindle journaled on suitable standards and provided with a pin-wheel universal joints between the ends of the spindle and the rods, a pin-wheel journaled on a suitable standard on the opposite side of the screen and provided with a suitable handle and a band connecting both pin-wheels as and for the purpose specified.

3. The combination with the main tube and intermediate screen supporting the same, of the branch tubes connected to the upper end of the main tube, the rotating wings for each branch tube suitably journaled and designed to have one wing normally extending into the tube, a pinion on the end of the arbor of the wings, and registering-wheels operated from such pinion, a casing covering the registering-wheel provided with a slot to expose the numbers, a cap for such casing, a slot in the end of the cap, a staple extending from the end of the casing through the slot in the cap, and a padlock for the staple as and for the purpose specified.

4. The combination with the main tube and intermediate screen supporting the same, of the branch tubes connected to the upper end of the main tube, the rotating wings for each branch tube suitably journaled and designed to have one wing normally extending into the tube, a bell in the case and mechanism operated from the wings to strike the bell upon each depression of the wing in the tube as and for the purpose specified.

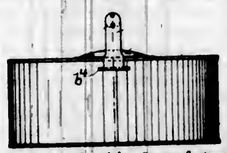
5. The combination with the main tube and intermediate screen supporting the same, of the branch tubes connected to the upper end of the main tube, the rotating wings for each branch tube suitably journaled and designed to have one wing normally extending into the tube, a bell in the casing, laterally-extending pins from the wings, a hammer pivoted in proximity to the wings provided with a V-shaped projection and spring-held as and for the purpose specified.

609,826. **RAIL AND JOINT THEREFOR.** GEORGE F. MARTIN, Eastleigh, England. Filed Oct. 4, 1897. Serial No. 654,053. (No model.)



Claim.—In means for securing rails and chairs: in combination a locking-piece having a projection which engages in a recess in the chair; a wedge-shaped pin having a strip of flexible material which is driven between the locking-piece and the chair; said strip of flexible material being bent so as to secure the pin in the desired position.

609,827. **POWDER-DISTRIBUTING APPARATUS.** PHINEAS T. MERRILL, Boston, Mass. Filed Nov. 2, 1897. Serial No. 657,175. (No model.)

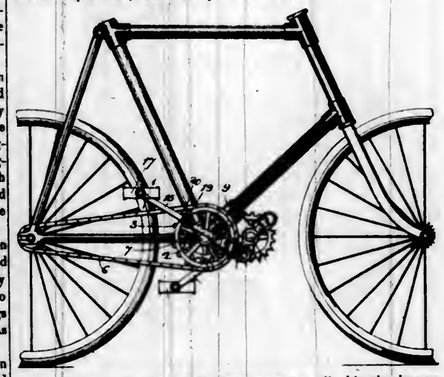


Claim.—As an improved article of manufacture, a shaker or distributer for powdered material provided with a receptacle for the powder consisting of a body portion provided with a bottom having a plurality of substantially small openings, and having substantially diametrically opposite slots, and a handle having lugs or ears extended into said slots and of a width less than the length of the slots, substantially as and for the purpose specified.

609,828. **VELOCIPEDE.** ROBERT MIEHLE, Chicago, Ill. Filed Oct. 22, 1895. Serial No. 566,616. (No model.)

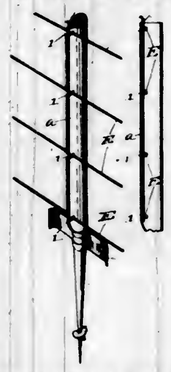
Claim.—1. In a driving mechanism for the purpose described, the combination with a crank-shaft having a crank, of a lever pivoted to said crank, and a second crank-shaft geared to said first crank-shaft and having a crank provided with movable connection with said lever, said crank-shafts being geared to rotate in opposite directions substantially as set forth.

2. A driving mechanism for the purpose described having in combination a crank-shaft provided with a crank, a lever pivoted to said crank and having a pedal located at one side of said pivot and a loop or slot at the other side thereof, a second crank-shaft having a crank and being geared with and rotating in the opposite direction from said first crank-shaft, said second crank having a stud running in said loop or slot, substantially as set forth.



3. A driving mechanism for the purpose described having in combination a crank-shaft provided with a crank, a second crank-shaft having a crank of less length than said first crank, said crank-shafts being geared together, and a lever connected to said first crank and having sliding connection with said second crank, substantially as set forth.

609,829. **FENCE-POST.** WILLIAM F. MILLIGAN, Ridgeville, Ind. Filed Dec. 7, 1895. Serial No. 571,400. (No model.)



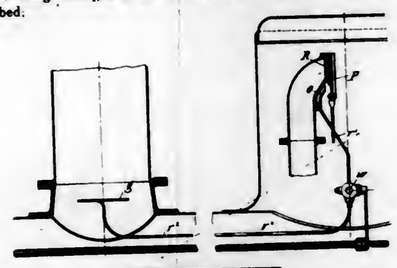
Claim.—1. A fence-post formed of a single piece of metal having its lower portion annular in cross-section and tapering to a point, a screw-thread located adjacent to the lower portion of the post, and a vertically-arranged stay-plate loosely and slidingly secured on the lower portion of the post and adapted to be forced into the ground when the post is being placed in position to brace the post.

2. A fence-post formed of a single piece of metal having its upper portion formed oval-shaped in cross-section the edges being formed parallel and pressed together, the edges being provided with slots adapted to receive the line-wires, and the lower portion of the post being formed annular in cross-section and tapering to a point, a screw-thread located adjacent to the lower portion of the post, and a stay-plate loosely and slidingly secured on the lower portion of the post.

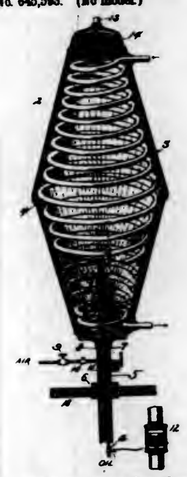
609,830. **THROTTLE-VALVE FOR CONTROLLING LOCOMOTIVE-BLOWERS.** ANTON PALLA, Prague, Austria-Hungary. Filed Apr. 20, 1897. Serial No. 632,959. (No model.) Patented in Austria Jan. 21, 1897, No. 47/208.

Claim.—In combination with a steam-boiler, the smoke passage or stack, the regulator R, the steam-conduit O opening adjacent thereto and having pipe connection with the smoke-stack to supply steam thereto and a valve to control the regulator R and the conduit

O to open the latter when the former is closed, the edges of the openings of the conduit and regulator being in the same plane and the valve being arranged to slide across the same substantially as described.



609,831. CARBURETER. CLARENCE LE ROY PARKER, Silver Creek, N. Y., assignor to David Parker, same place. Filed July 22, 1897. Serial No. 645,593. (No model.)



Claim.—1. A carbureter, consisting of an external shell; a heating-coil within the shell; an oil-pipe; and an air-inlet pipe, the air-pipe being arranged to deliver its blast across the mouth of the oil-pipe and to deliver oil therefrom, in the form of a spray, directly upon the heating-coil.

2. A carbureter, consisting of a shell or casing of conical or tapering form; a heating-coil within said shell and of like form; an oil-pipe; and an air-pipe arranged substantially as shown and described, whereby it is caused to deliver a blast of air across the discharge-opening of the oil-pipe and to project oil in the form of a spray directly upon the coil, and whereby the air is thoroughly carbureted.

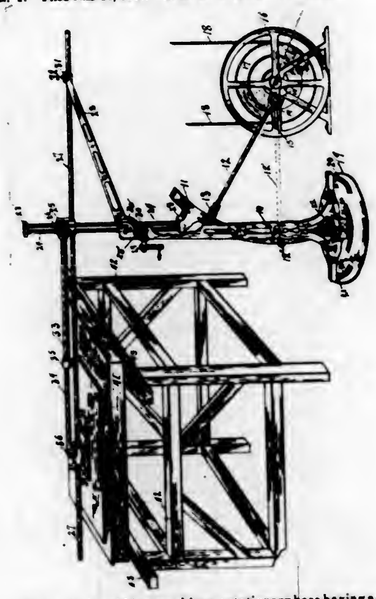
3. A carbureter comprising an upright shell in the form of two conical bodies united at their bases; a heating-coil of like form within the shell; a pipe for the introduction of carbureting liquid; and a pipe for the introduction of air, gas or steam under pressure, the latter pipe being arranged to deliver its blast across the open end of the liquid-pipe, and both said pipes having their outlet-openings at the lower end of the shell; whereby the liquid is thrown in the form of a fine spray against the upper turns of the coil, and any particles which fall back are intercepted by the lower turns of the coil.

4. The herein-described carbureter, consisting of shell 3; oil-pipe 7; air-pipe 8 arranged to deliver a blast of air across the opening of pipe 7; and a heating-coil 4 located directly in the path of the spray produced by the blast of air across the oil pipe opening; whereby the oil is delivered in the form of spray to the heating-coil and is vaporized by contact therewith.

5. The carburetor herein shown and described, comprising an outer shell 3; an internal heating-coil 4; an oil-pipe 7; a blast-pipe 8; and a feeder or guard 14 between the gas-outlet and the coil.

6. In combination with the water-jacket of a gas or vapor engine; a carbureter consisting of a shell or casing, a heating-coil wholly contained within said shell and communicating with said water-jacket, and means for spraying oil or hydrocarbon upon the coil, whereby all the heat given off by the water is utilized within the carbureter to vaporize the oil or hydrocarbon, and the cooling effect of the spray is applied to every portion of the coil to reduce the temperature of the water.

609,832. RUBBING-MACHINE. JOHN W. PENCILLE, Jamestown, N. Y. Filed Jan. 11, 1897. Serial No. 618,785. (No model.)



Claim.—1. In rubbing-machines, a stationary base having a frame mounted thereon, an adjustable arm one end of which is mounted in the top of said frame and the other end connected to a guide-bar, a reciprocating frame mounted at the base of the frame and provided with a long slot and an adjustable wrist, a pitman attached thereto, the opposite end being connected to a drive-wheel to give a reciprocating motion to a rubbing-block, and a lateral motion to the guide-bar, as shown and described.

2. In rubbing-machines, a reciprocating frame, the upper part having suitable rods, a head-block mounted therein, friction-guides secured thereto, a guide-bar mounted in the head-block, a sleeve connecting the guide-bar to a movable arm mounted in the frame, the arm having ratchets to connect with a worm-gear to raise and lower the guide-bar, a set-screw to lock the arm in position, as shown and described.

3. In rubbing-machines, a reciprocating frame mounted in the base of an upright standard or frame that rests on a base-plate securely mounted below the line of the machine, having connections with a drive-wheel to move the reciprocating frame, having guide-rods at the upper end and guide connections through which passes a horizontal guide rod carrying a rubbing-block which is controlled by a guide-rod and sleeve, substantially as shown and described.

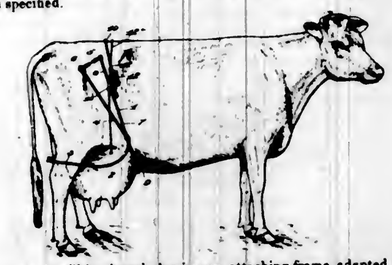
4. In rubbing-machines, the base 19 having ways 20 20, the upright standard 10, having wheels to run on the track, a reciprocating standard 11, a driving-wheel 16, pitman 12, movable wrist 13, guide-rods 24, adjusting-arm 29, mounted in the top of the main standard, guide-rod 27, a rubbing-block mounted thereon, adjusting-sleeve 35, and rod 36, all combined and arranged to operate in the manner and for the purpose set forth.

609,833. MILKING-HOPPLE. ABRAM RICE, Danville, Iowa. Filed Mar. 15, 1898. Serial No. 673,951. (No model.)

Claim.—1. A milking-hopple having an attaching-frame adapted to engage the body of a cow, and a leg-engaging rod extending rearwardly from said frame to prevent forward movement of the engaged leg, substantially as specified.

2. A milking-hopple having an attaching-frame for engaging the body of a cow, and a terminally-bifurcated leg-engaging arm extending rearwardly from said frame, to receive the near leg of the cow and prevent forward movement thereof, substantially as specified.

3. A milking-hopple having an attaching-frame for engaging the body of a cow, and an adjustable leg engaging arm extending rearwardly from said frame to receive and maintain the near leg of the cow in the desired position against forward movement, substantially as specified.



4. A milking-hopple having an attaching-frame adapted to be engaged with the body of a cow, a hopple-lever fulcrumed upon said frame and provided with a rearwardly-extending bifurcated arm for engaging a cow-leg, and means for securing said lever at the desired adjustment, substantially as specified.

5. A milking-hopple having an attaching-frame for engagement with the body of a cow, a hopple-lever fulcrumed upon said frame and having a bifurcated rearwardly-extending arm for engaging the near cow-leg, and adjusting devices, consisting of a chain, extending rearwardly from the attaching-frame for engagement with a terminal hook on the lever, substantially as specified.

6. In a milking-hopple, the combination with a hopple-arm for engaging a cow-leg, of an attaching-frame for supporting said arm, and having a body-rod, for extending under the body of a cow, a back-rod, and adjustable connections between said rods, substantially as specified.

7. In a milking hopple, the combination with a leg-engaging arm, of an attaching-frame of sectional construction having body and back members connected at their near extremities, and a flexible connection between the off or remote ends of said rods, substantially as specified.

8. In a milking-hopple, the combination with a leg-engaging arm, of an attaching-frame having body and back rods connected at the near side of a cow, and a flexible connection depending from the back-section and having a detachable engagement with the end of the body-rod at the off side of the cow, substantially as specified.

9. In a milking-hopple, the combination with a leg-engaging arm, of an attaching-frame having a body-rod and a back-rod connected together at the near side of a cow, and a looped connection attached to the off end of the back-rod, detachably engaged with a terminal hook on the off end of the body-rod, and adjustably engaged with one of the rods contiguous to the point of connection thereof, substantially as specified.

10. In a milking-hopple, the combination with a leg-engaging arm, of an attaching-frame having a body-rod provided with a side arm and a curved lower arm, a back-rod, an adjustable connection between the near end of the back-rod and the side arm of the body-rod, and a flexible connection between the off ends of the back and body rods, substantially as specified.

11. In a milking-hopple, the combination with a leg-engaging arm, of an attaching-frame having a body-rod comprising a side arm and a lower body-arm, a back-rod provided at its near end with a hook, an adjustable connection consisting of a chain attached to the side arm of the body-rod and engaged with said hook of the back-rod, and a flexible connection between the remote or off ends of the back and body rods, substantially as specified.

609,834. DRIVE-WHEEL FOR MOTOR-CYCLES. CHARLES E. ROBERTS, Oak Park, Ill. Filed Jan. 23, 1896. Serial No. 668,335. (No model.)

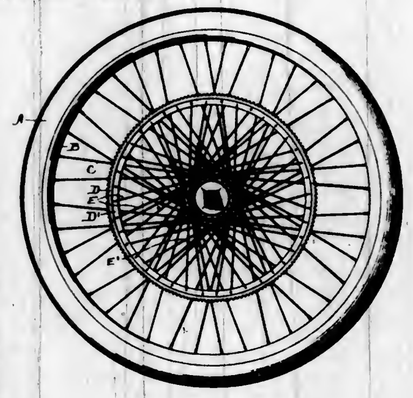
Claim.—1. The supporting and gear wheels, having a single hub provided with vertical flanges for the attachment of the spokes of one wheel, and overhanging flanges for the attachment of the spokes of the other wheel, substantially as specified.

2. The gear and supporting wheels, each having its own suspension spokes, and both employing the same hub, said hub having separate flanges to receive the spokes of each wheel, and those for one of the wheels projecting horizontally, substantially as set forth.

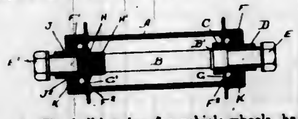
3. The combination with the supporting and gear wheels shown, of a hub F having overhanging flanges F^2 and F^4 for the attachment of the spokes of the gear-wheel, and other means for the attachment of the spokes of the supporting-wheel, substantially as specified.

4. A combined supporting-wheel and actuating-gear therefor, both provided with tension-spokes, and the gear being united to the wheel by connecting its spokes to the hub of the wheel, substantially as specified.

5. A suspension-spoke supporting-wheel in combination with a suspension-spoke gear for driving said wheel, the spokes of both being joined to the same hub, and the spokes of the gear having adjusting-turnbuckles, substantially as specified.



609,835. BALL-BEARING. CHARLES E. ROBERTS, Oak Park, Ill. Filed Sept. 7, 1897. Serial No. 650,707. (No model.)



Claim.—1. The ball-bearing for vehicle-wheels, having inside cones, one of which is threaded on the axle and is provided with a split friction-exerting extension on its inner end acting to retain the adjustment of the cone when the bearing is taken apart, substantially as specified.

2. The ball-bearing for vehicle-wheels having inside cones, one of said cones being adjustably threaded on the axle and also provided with an inward split friction-creating extension acting to retain the adjustment when the bearing is taken apart, and the outer end of the same cone being adapted to engage a suitable rotating device, substantially as specified.

3. The ball-bearing for vehicle-wheels, having inside cones, one of which is threaded on the axle and is provided with a split friction-exerting extension on its inner end acting to retain the adjustment of the cone when the bearing is taken apart, the bearing also having a loose sleeve J upon the axle rotatably engaging said threaded cone, substantially as specified.

4. In a ball-bearing having inside cones, the combination of the barrel, the axle, the cups, the cones one of which is adjustable and the other non-adjustable, the sleeves D and J loose upon the axle and setting against the outer ends of the cones, and the nuts for confining the sleeves, substantially as specified.

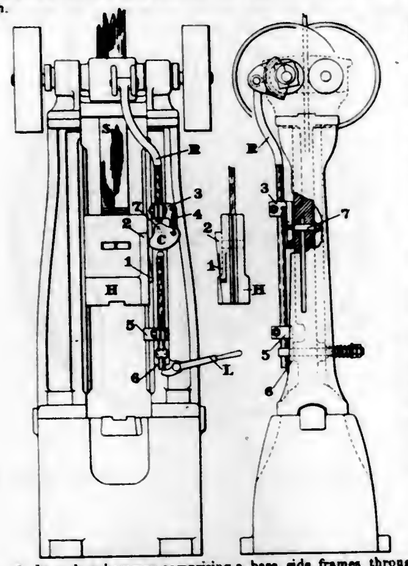
5. In a ball-bearing, the combination with the adjustable cone H threaded upon the axle, of sleeve J loosely fitting the axle and engaging said cone, and serving both as a means of adjusting said cone and of locking it against rotating, and means for confining said sleeve upon the axle, substantially as specified.

609,836. DROP-HAMMER. GEORGE ROWBOTTOM, Waterbury, Conn., assignor to the Waterbury Farrel Foundry and Machine Company, same place. Filed Mar. 27, 1897. Serial No. 629,506. (No model.)

Claim.—1. In a drop-hammer comprising a base, side frames, one of which is provided with a series of transverse pin-holes, a ram and its actuating mechanism, the said ram provided with a laterally-projecting inclined cam-surface, the combination therewith of a partially-rotatable sector-cam, actuated by the cam upon the edge of the ram and adapted to be mounted in said pin-holes and mechanism for operating the ram-releasing mechanism adjustably secured thereto and operated by the said sector-cam, substantially as set forth.

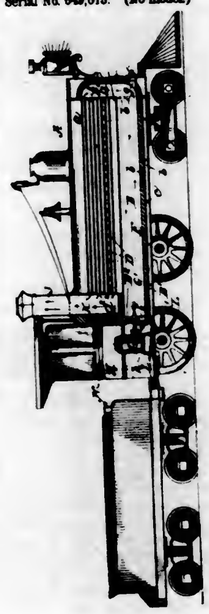
2. In a drop-hammer comprising a base, side frames, through one of which extends a plurality of pin-holes, a ram and its actuating mechanism, the said ram having a cam upon one of its edges, the combination therewith of a cam-follower actuated by the cam upon the edge of the ram, a dog having a depending arm adjustably

secured to the said ram-actuating mechanism and a spring connection between the said cam-follower and dog, substantially as set forth.



3. In a drop-hammer comprising a base, side frames, through one of which extends a plurality of pin-holes, a ram and its actuating mechanism, the said ram provided with a cam upon one edge thereof, the combination therewith of the sector-cam follower C having a shank adapted to be inserted and operate within the said pin-holes and actuated by the cam upon the edge of the ram, dog 3 clamped to the actuating-rod R and having the spring 4 connecting it with the said cam-follower, substantially as set forth.

609,837. LOCOMOTIVE. WILLIAM M. RUSSELL, New York, N. Y., assignor of one-half to Tomas R. De Sotolongo, same place. Filed Aug. 21, 1897. Serial No. 649,013. (No model.)



Claim.—1. A locomotive having a cab and a boiler, a combustion-chamber having two walls provided with a space between them forming a water-jacket, said space or jacket having communication with the interior of the boiler, a pulverizer and blower located in said cab, and a nozzle opening into said combustion chamber and in communication with said pulverizer and blower, substantially as described.

2. A locomotive having a cab and a boiler, a combustion-chamber having two walls provided with a space between them forming a water-jacket, said walls being connected with the boiler, said boiler having one or more openings leading to the space or jacket between said walls, a pulverizer and blower located in said cab, and a nozzle connected with said pulverizer and blower, said nozzle being located in the front wall of the combustion-chamber, substantially as described.

609,838. HYDROCARBON-BURNER. JOSEPHUS T. SCHERER, Hall, Ind., assignor of one-half to Howard C. Jones, same place. Filed Oct. 22, 1896. Serial No. 609,700. (No model.)



Claim.—1. A hydrocarbon-burner comprising a retort, a burner resting on the retort and having a hollow chamber in its upper portion, a feed-pipe entering said chamber, means for conveying the oil from said chamber to the retort, and a burner-tube arranged below and communicating with the retort, said tube being provided with discharge-openings, and the burner being adapted to heat the retort and the hollow chamber in the top of the burner.

2. In a hydrocarbon-burner, the combination with the retort, of a cap or burner proper resting on the retort and provided with a hollow chamber in its upper portion, said burner being adapted to heat said hollow chamber and the retort, means for supplying fuel to said hollow chamber, means for conveying the fuel from the said chamber to the retort, and means for supplying vapor to the burner from the retort.

3. In a hydrocarbon-burner, the combination of a retort, a burner-cap resting thereon and having a hollow chamber in its upper portion, said burner being adapted to heat said hollow chamber and the retort, means for supplying fuel to said chamber, a filter, a pipe leading from the hollow chamber in the cap to the filter, a pipe leading from the filter to the retort, and means for supplying vapor to the burner-cap from the retort.

4. The combination with the retort having ribs on its upper side forming rectangles, having conical upper surfaces inclosed by said ribs, and provided with inclosed openings extending vertically from its bottom to the apexes of said conical surfaces, kerfed caps extending over said conical surfaces and surrounded by said ribs, said caps having hollow chambers in their upper portions, means for supplying fuel to said hollow chambers, means for conveying the fuel from the said chambers to the retort, and means for feeding the fuel from the retort and through the inclosed vertical openings therein to the kerfed caps.

5. The combination with the retort having vapor-tubes extending vertically therethrough, of vertical legs surrounding said tubes and connecting the top and bottom of the retort and caps resting on the retort over said tubes.

609,839. PNEUMATIC TIRE FOR CYCLES. WILLIAM H. SEWELL, Port Stewart, Ireland. Filed Dec. 27, 1897. Serial No. 663,726. (No model.)



Claim.—In the tires of cycles, carriages, and other vehicles the use of a tubular formation of wheel-rim the outer or ground face of which will be provided with hollow nests or depressions or open or basin shaped sections or segments attached to or depending from said ground-face of rim and forming the tread, the whole inclosing a circumferential pneumatic tube of such elasticity as will, when inflated or densified by means of a valve projecting through wall of rim, enable it to breast or distend itself into the open hollow of the basin-shaped segments, nests, depressions, or treads and so provide the walls of same with the requisite pneumatic bearing power, substantially as described and illustrated on the accompanying sheets of drawings.

609,840. TIRE-TIGHTENER. WILLIAM SHOPE, Wood Hill, Mo. Filed Feb. 21, 1896. Serial No. 671,129. (No model.)



Claim.—1. A wheel having a split felly, and a split tire having inturned extremities forming wedge-seats, a tightener having a longitudinally-disposed bolt, felly and tire bearing-nuts threaded upon said bolt, and bearing respectively upon the separated extremities of the felly and tire, a wedge removably fitted between said wedge-seats, and a removably-secured cap-plate closing the interval between the spaced extremities of the tire and felly, and engaged with said wedge to lock it against accidental displacement, substantially as specified.

2. A wheel having a split felly and a split tire having inturned extremities spaced apart to form wedge-seats, and adjusting devices having a bolt, and felly and tire bearing-nuts threaded upon the bolt, a wedge removably seated between the inturned extremities of the tire, a cap-plate for closing the interval between the spaced extremities of the tire and felly, and having tongues for engaging said wedge, and means for securing the cap-plate in place, substantially as specified.

3. A wheel having a split felly and a split tire having inturned extremities, one of which bears against the contiguous extremity of the felly, and the other of which is spaced from the other extremity of the felly, an adjusting device having a bolt, and felly and tire bearing-nuts threaded upon the bolt, and bearing respectively upon the spaced extremities of the felly and tire, a wedge seated between the inturned extremities of the tire, a cap-plate for closing the open sides of the space between the separated extremities of the felly and tire, said cap-plate having tongues engaged with openings in the wedge to maintain the latter in place with its outer edge flush with the exterior surface of the tire, and a securing-bolt for holding the cap-plate in its operative position, substantially as specified.

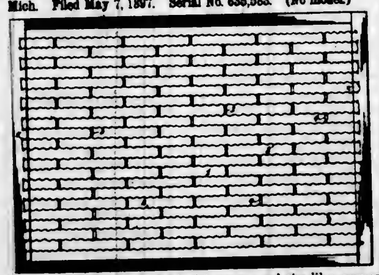
609,841. APPARATUS FOR CHECKING RUNAWAY HORSES. JAMES M. SINGLETON, Lufkin, Tex. Filed Feb. 7, 1898. Serial No. 669,404. (No model.)



Claim.—1. In a device of the class described, the combination with a running-gear, of a shaft 1 journaled directly upon the running-gear, supported by the same and provided with angularly-disposed pieces 3, having bearings at their outer ends, the shaft 2 journaled in the bearings of the pieces 3 and extended beyond the same, wheels mounted on the shaft 2 and arranged to engage the hubs of the adjacent vehicle-wheels, the lines connected with the shaft 2 and arranged to be wound thereon, and the weighted arm 9 secured to and extending from the shaft 1 and holding the wheels of the shaft 2 normally out of engagement with the vehicle-wheels, substantially as described.

2. In a device of the class described, the combination with a running-gear provided at the upper face of its front hounds with bearings, the shaft 1 journaled in the bearings and located above the said hounds and provided with rearwardly-extending pieces 3, the shaft 2 journaled on the pieces 3 at the outer terminals thereof and extended beyond the same, wheels mounted on the shaft 2 and arranged to engage the adjacent vehicle-wheels, the lines 12 connected with the shaft 2 and arranged to be wound thereon, and the arm 9 extending forward from the shaft 1 and rigidly connected with the same, said arm 9 being located above and adapted to have its downward movement limited by the tongue or pole, and provided near its outer end with a projection or enlargement forming a weight adapted to counterbalance the wheels of the shaft 2 and hold the same normally out of engagement with the vehicle-wheels, substantially as described.

609,842. SPRING-BED DEVICE. CHARLES G. SMITH, Detroit, Mich. Filed May 7, 1897. Serial No. 636,563. (No model.)



Claim.—A wire fabric for bed-bottoms and the like, comprising a series of duplicate parallel sections, each section formed from a single length of wire bent or formed into an alternate series of loops, the sides thereof being parallel and waved or crimped laterally or in the plane of the fabric, the closed ends of the loops at one end of the series being formed straight or at approximate right angles to the sides of the loops, and the other end formed into straight hooks disposed in a plane beyond that of the fabric, the hooks of each section being caught around the straight closed ends of the adjoining section and thereby disposing the respective sides of the loops in a continuous straight line from end to end of the fabric, thereby placing the strain longitudinally upon the sides of the loops, substantially as set forth.

609,843. SPRAYER. DE WAHN R. SMITH, Deerfield, N. Y. Filed Mar. 19, 1896. Serial No. 674,422. (No model.)



Claim.—1. The combination in a sprayer of a barrel or cylinder having a head with an opening therein, a plunger in the cylinder, a receptacle-head secured to and suspended under the barrel, the removable receptacle adapted to be secured to said head and a suction-pipe extending from the position substantially at the bottom of the receptacle to a point approximating said opening in the head at the outside, substantially as set forth.

2. The combination in a sprayer of the barrel having the head with an opening therein, a plunger in the barrel, the receptacle-head secured to and suspended under the barrel at an acute angle with the barrel as shown, the removable receptacle-body and suction-pipe, substantially as set forth.

3. The combination in a sprayer of the plunger, the barrel having a head with an opening therein, the receptacle-cover secured to the barrel and having one side projecting in advance of the head, the removable receptacle and the suction-tube passing through the projecting edge of the cover, substantially as set forth.

4. The combination in a sprayer of the barrel having an apertured head, a plunger, a receptacle-cover secured to the under side of the barrel at an acute angle therewith and having one edge projecting beyond the end of the barrel, a removable receptacle and means for securing it to the cover and the suction-tube passing through the projecting edge of the cover and having its discharge end in close proximity to the aperture in the barrel-head, substantially as set forth.

609,844. CAR-AXLE LUBRICATOR. FRANK S. SMITH and SAMUEL J. SMITH, Conemaugh, Pa., assignors of one-half to John P. Lehman, Geistown, and Lewis Elmer Kinch, Pittsburg, Pa. Filed May 18, 1898. Serial No. 681,045. (No model.)

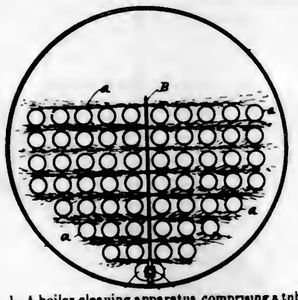


Claim.—1. A device of the class described, comprising a box or reservoir, feed-rolls arranged in the box or reservoir, stirrups or hangers supporting the box or reservoir and designed to be interlocked with a journal bearing or brass, and springs interposed between the bottom of the box or reservoir and the stirrups or hangers to hold the rolls against a journal and prevent the stirrups or hangers from becoming disengaged, substantially as described.

2. In a device of the class described, the combination with a journal bearing or brass provided with studs, of a box or reservoir designed to be arranged beneath a journal, hangers supporting the box or reservoir and provided with slots receiving the studs, and springs interposed between the bottom of the box or reservoir and the bottoms of the hangers, substantially as described.

3. In a device of the class described, the combination with a journal bearing or brass provided with headed studs, of a box or reservoir provided at opposite sides with loops or guides, rectangular hangers supporting the box or reservoir and passing through the loops or guides and provided with keyhole-slots engaging the studs of the journal bearing or brass, and springs interposed between the bottom of the box or reservoir and the lower portions of the hangers, substantially as described.

609,845. APPARATUS FOR CLEANING BOILERS. JOHN STEPHENSON, Newark, N. J., assignor to himself, and George T. McDonald, New York, N. Y. Filed Oct. 9, 1897. Serial No. 654,665. (No model.)



Claim.—1. A boiler-cleaning apparatus, comprising a tubular arm or pipe provided with openings in its side walls and adapted to be operated between the boiler-flues, and feed devices connected with said perforated member, substantially as and for the purpose set forth.

2. A boiler-cleaning apparatus, comprising a tubular arm or pipe having flat sides in which are formed jet-openings, said perforated member being adapted to be inserted and operated between the boiler-flues, and feed devices connected with said perforated member, substantially as and for the purpose set forth.

3. A boiler-cleaning apparatus, comprising a tubular arm or pipe provided with openings in its side walls and adapted to be inserted and operated between the boiler-flues, a step or foot upon which said perforated member is supported within the boiler, and feed devices connected with said perforated member, substantially as and for the purpose set forth.

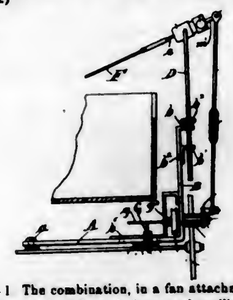
4. A boiler-cleaning apparatus, comprising a vertical arm or member having openings in its side walls, a horizontal feed-pipe connected with said perforated member at its bottom, and the bottom foot or step forming a rest for the apparatus, substantially as and for the purpose set forth.

5. A boiler-cleaning apparatus, comprising the vertical tubular arm or pipe having flattened sides in which are formed the series of perforations, the horizontal feed-pipe connected with said perforated member, and the foot or step forming a rest or support at the bottom, substantially as and for the purpose set forth.

6. In a boiler-cleaning apparatus of the class described, a tubular arm or pipe having the series of openings in its side walls on the same plane, said separate series of openings being arranged one above the other, substantially as set forth, whereby when the perforated member is inserted and operated between the boiler-flues the jets from said openings will pass between the flues, and feed devices connected with said perforated member, substantially as and for the purpose set forth.

7. In a boiler-cleaning apparatus of the class described, the vertical tubular arm or pipe having flattened sides in which are formed the horizontal series of jet-openings, said horizontal series being arranged respectively one above the other, whereby when the perforated member is inserted and operated between the flues the jets from the openings will pass in a direct line between the flues, and feed devices connected with said perforated member, substantially as and for the purpose set forth.

609,846. FAN ATTACHMENT FOR BABY-CARRIAGES. ADOLPH STÖLTING, New York, N. Y. Filed June 5, 1897. Serial No. 639,567. (No model.)

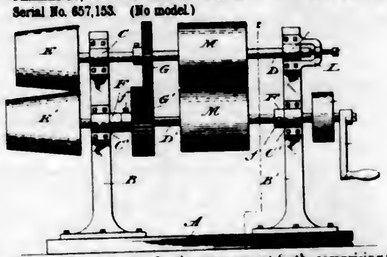


Claim.—1 The combination, in a fan attachment for baby-carriages and like vehicles, of a main frame and auxiliary frame mounted upon the running-gear of a carriage, the end of one arm of said main frame pivotally connected to one end of the running-gear, a shaft revolving in the said frame and auxiliary frame, a roller mounted upon the outer end of said shaft and engaging against the tire of a wheel of the carriage, and a fan actuated by said shaft, substantially as shown and described.

2. The combination in a fan attachment for baby-carriages and the like, of a main frame and auxiliary frame mounted upon the running-gear of the carriage, the end of one arm of said main frame pivotally connected to one rod of the running-gear, a shaft revolving in the said frame and auxiliary frame, a roller mounted upon the outer end of said shaft and engaging against the tire of a wheel of the carriage, a driving-pulley also mounted upon the said shaft between the main frame and auxiliary frame and a revolving block mounted upon the upper end of an upright rod extending from the said main frame, said block carrying a fan and revolved by means of a driving-cord and the aforesaid pulley, substantially as shown and described.

3. The combination in a fan attachment for baby-carriages and the like, of a main frame and auxiliary frame mounted upon the running gear of a carriage, a shaft carrying a roller and driving-pulley and revolubly mounted in the said frame and auxiliary frame, said roller engaging against the wheel of the carriage, an upright rod mounted in the upper portion of the frame, said rod having its lower portion threaded and worked in threaded openings in the said upper portion of the main frame, a set-nut engaging upon the threaded portion of the rod and against the upper end of the aforesaid frame and adapted to securely lock said rod in position, a revolving block revolubly mounted upon the bent end of the aforesaid upright rod and held in position by a set-screw mounted in the block, said block having an outwardly-projecting pin upon which is mounted a suitable fan, a driving-cord moving around the aforesaid driving-pulley and around the revolving block in a groove on same, and a suitable spring mounted between the base of the main frame and running-gear, and employed to keep the roller continually against the tire of the aforesaid wheel, substantially as shown and described.

609,847. MACHINE FOR SHARPENING AGRICULTURAL IMPLEMENTS, &c. JOHN A. SUMNER, Tillar, Ark. Filed Nov. 2, 1897. Serial No. 657,153. (No model.)



Claim.—An apparatus for the purposes set forth, comprising parallel shafts journaled in bearing-boxes carried by posts or standards, one of said shafts having a longitudinal movement, conical rolls mounted upon the outer ends of the shafts one above the other, gearing between said shafts, and plain or cylindrical rolls mounted upon the shafts between the standards, together with a yoke carried by one of the standards, and a set-screw engaging a threaded opening in said yoke, the set-screw forming a stop for the movable shaft by

contact with the inner end thereof, substantially as shown and described.

609,848. RAILROAD TIE AND CLAMP. CHARLES SWAN and JOSHUA G. GRAY, Hillside, Pa. Filed Jan. 27, 1898. Serial No. 668,167. (No model.)



Claim.—1. The combination with the tie 1 formed with the longitudinal recess 2, of the top plate 4 formed with the shoulder 5 having the recess 6, the packing fabric 3, 7, and means for removably securing said top plate to said tie, substantially as shown and described.

2. The combination with the tie formed with parallel flanges 15, 15, of the rail 9, the clamps 12, 12', each formed with a transverse recess 13, a depending lug 14 having an inner beveled face 16 and a depending lug 17 formed with a right-angular key 18 having the rabbeted recess 19 and means for securing said clamps simultaneously to said tie and rail substantially as shown and described.

609,849. SIGNAL DEVICE FOR LAMPS. JOHN H. TORNEY, Washington, D. C., assignor of one-half to Richard W. Cornwell same place. Filed Jan. 4, 1898. Serial No. 665,527. (No model.)



Claim.—1. The combination with a lamp, of a signal carried thereby and an intermediate connection between the signal and the burner of the lamp, whereby to cause the operation of the signal when the light on the burner becomes extinguished, substantially as set forth.

2. The combination with a lamp and a signal carried thereby, of a thermostatic strip disposed in proximity to the burner of the lamp and a connection between said thermostatic strip and the signal, whereby to hold said signal at rest while the lamp is burning and release it when the lamp becomes extinguished.

3 The combination with a lamp and an audible signal carried thereby, of a motor for said signal carried by the lamp, a thermostatic strip disposed in proximity to the burner of the lamp, and a device connected with said thermostatic strip and with the motor for releasing the latter and causing the signal to be sounded when the flame on the burner becomes extinguished, substantially as set forth.

4. The combination with a burner, of a thermostatic strip secured at its ends and adapted to bear at a point between its ends against said burner, a signal, a motor for said signal, a trip for the motor and a connection between said trip and the thermostatic strip, whereby when the burner is lighted the motor will be locked and when the light becomes extinguished the motor will be released so as to operate the signal, substantially as set forth.

5. The combination with a burner and a thermostatic strip permanently located in proximity thereto, of a signal, a motor for the signal, an arm connected with said motor and a pin or rod attached to the thermostatic strip and adapted to control the movement of said arm whereby to control the operation of the motor, substantially as set forth.

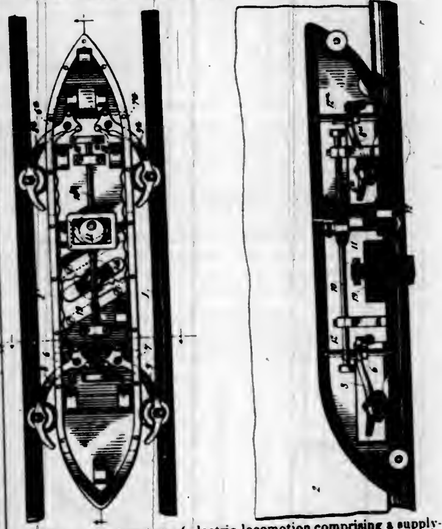
6. The combination with a lamp and the wick-tube, of a bar secured in the lamp and having upturned arms at its ends, a thermostatic strip secured at its ends to said arms and extending past the upper end of the wick-tube, a motor, a signal to be sounded by said motor, and a pin or rod attached to the thermostatic strip and projecting into the motor whereby to control the operation of the latter, substantially as set forth.

609,850. SUBSOIL ATTACHMENT FOR RIDING-PLOWS. JAS P. TWOMEY and ROBERT C. MILLS, Anaheim, Cal. Filed Feb. 16, 1898. Serial No. 670,552. (No model.)

Claim.—The combination with the plow-beam 1 and the notched rack 12 detachably secured thereto, of the horizontal brace 2, removably secured to said beam and formed with the integral uprights 8 8 and yoke 5, of the bifurcated bracket 6 journaled in said yoke and the ground-wheel 7 journaled in said bracket, the hand-lever 10 fulcrumed in said uprights the vertically-adjustable standard 14 pivoted at its upper end to said lever and the horizontally-pivoted brace 16 connecting said standard 14 and plow beam 1, substantially as shown and described.



609,851. ELECTRIC LOCOMOTION. HENRY VAN HOEVENBERGH, New York, N. Y., assignor to Noah C. Rogers, same place. Filed Oct. 10, 1895. Renewed June 23, 1898. Serial No. 684,309. (No model.)



Claim.—1. A system of electric locomotion comprising a supply-conductor extending along a roadway, and a series of trolleys supported thereon for leading current to road-vehicles, said trolleys being provided with sloping frames to permit transit over one another and a flexible conductor connected with a traveling vehicle whereby the trolleys may rest by gravity on the supply-conductors.

2. A system of electric locomotion comprising a supply-conductor extending along a roadway, and a series of current-collecting trolleys supported thereon, the trolley-frames being provided with front and rear extensions sloping in parallel directions from the base and a flexible conductor connected with a traveling vehicle whereby the trolleys may rest by gravity on the supply conductors.

3. A system of electric locomotion comprising a slotted conduit extending along a roadway, said conduit having a metallic inner vertical wall electrically connected with the source of current, a series of current-collecting trolleys having folding arms bearing against the metallic wall, and conductors leading from the trolleys to road-vehicles.

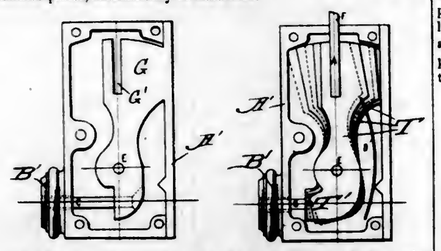
4. A trolley having spring-pressed contacts, and conductors for connecting with a vehicle, the conductors being mounted on the frame by a laterally-movable connection.

5. A system of electric locomotion comprising a slotted overhead conduit extending along the side of the roadway, trolleys or current-collectors having folding arms, and movable connections between the trolley and conductor so organized as to permit two trolleys to pass each other on the same set of conductors, substantially as described.

609,852. LOCK. NICOLAS P. VETERE, Buenos Ayres, Argentina. Filed May 11, 1898. Serial No. 680,408. (No model.)

Claim.—1. In combination, the casing, the partition G dividing the same, and having a gating G', a pivot E extending on opposite sides of the partition-plate G, the series of tumbler-plates on each side of the partition-plate having gatings, the key-pin C extending from the partition-plate at right angles to the pivot E, the springs D for holding the tumblers with their gatings out of alinement, the fence-bar

and the key adapted to the key-pin and having bits to engage the tumbler-plates, substantially as described.



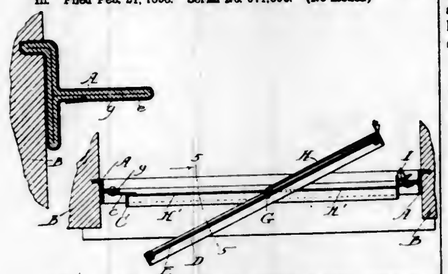
2. In combination, the casing, the partition G with the gating G' therein, the pivot E extending through the partition and on each side thereof, the tumblers supported on the said pivot, the key-pin also connected with the partition and below the pivot E, and the key having bits to engage the tumblers on the opposite sides of the partition, substantially as described.

609,853. RAILWAY-RAIL JOINT. ALWIN VIETOR, Wiesbaden, Germany, assignor to Ausführungen für Eisenbahn-Oberbau-Abtheilung Stossfangschiene Siegm Eppenstein, Berlin, Germany. Filed Dec. 27, 1897. Serial No. 663,593. (No model.)



Claim.—In an auxiliary rail for railway-rail joints the head pressed down at both ends and the web bent out in proportion to the depression of the head, essentially as shown and described.

609,854. FIREPROOF WINDOW. FRANK VOIGTMANN, Chicago, Ill. Filed Feb. 21, 1898. Serial No. 671,096. (No model.)



Claim.—1. The herein-described fireproof window consisting of the combination of the metallic casing A, having the projecting flange *g*, the metallic sash C, having the projecting flange *c*, and the bolts *d* or similar means for securing the sash in the casing, all substantially as shown and described.

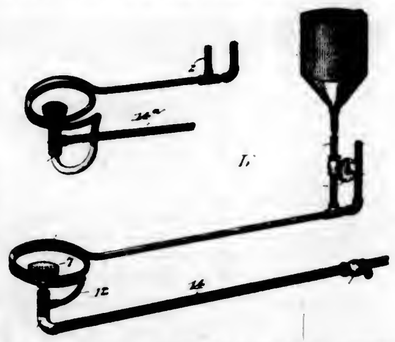
2. In a fireproof window the herein-described non-conducting casing consisting of sheet metal folded with a flat face against the masonry and a projecting lug to which the sash is attached, and asbestos or similar material folded in said sheet metal, all substantially as shown and described.

3. In a fireproof window the herein-described winging sash consisting of the combination of the sash D, having the pivots G at top and bottom, the strips H' at top and bottom extending clear across the opening, and the strips H extending half-way across at top and bottom on the inside on one side of the pivots and on the outside on the other, all substantially as shown and described.

4. The herein-described fireproof window consisting of the combination of the metallic casing A, the metallic sash C, the glass E, the metallic securing-stripe *f*, and the bolts F, all substantially as shown and described.

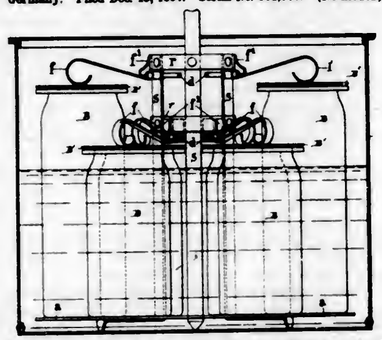
609,855. HYDROCARBON-BURNER. DELL WARD, Toledo, Ohio. Filed Nov. 18, 1897. Serial No. 659,010. (No model.)

Claim.—1. The herein-described fluid-fuel burner having a vertically-disposed mixer terminating at its upper end in a burner-tip, an approximately horizontal feed-pipe extended and coiled concentrically with the burner-tip, and approximately in the plane of the outlet thereof, to form a retort, which is further extended to constitute a fuel-pipe in communication with the mixer, means for communicating a constant blast of combustion-supporting agent to and in alinement with said feed-pipe, a fuel-supply pipe entering the feed-pipe transversely and provided with means for regulating the flow of liquid fuel therethrough, and an air-supply for communicating a variable blast of combustion supporting agent to the mixer, one of the parts which communicates with the mechanism being arranged to enter the same axially and the other laterally, substantially as specified.



2. The herein-described fluid fuel burner having a tubular vertically-disposed mixer, an enlarged burner-tip communicating with the mixer at its upper end and having an interior cavity forming a catch-basin, an approximately horizontal feed-pipe extended and coiled concentrically with the burner-tip and approximately in the plane of the outlet thereof to form a retort, which is further extended to form a fuel-pipe in communication with said mixer at its side, a blast-pipe communicating axially with the feed-pipe and corresponding in diameter therewith, a valved supply-pipe communicating transversely with the feed-pipe at a point remote from the coiled retort, and an air-pipe for communicating a variable blast of combustion-supporting agent to the mixer, and communicating axially with the latter, said air-pipe being provided with blast-controlling means, substantially as specified.

609,856. STERILIZING APPARATUS. JOHANN WECK, Oedingen, Germany. Filed Dec. 15, 1897. Serial No. 661,969. (No model.)

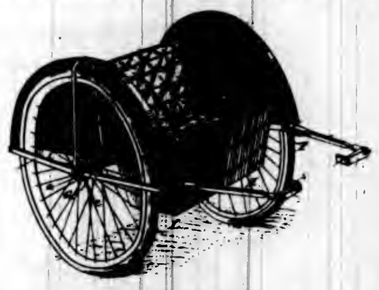


Claim.—In a sterilizing apparatus, the combination of a base-plate with a number of uprights, a ring connecting the same, pins beneath the ring, and bow-springs mounted on the pins and having heels that bear against the ring, substantially as specified.

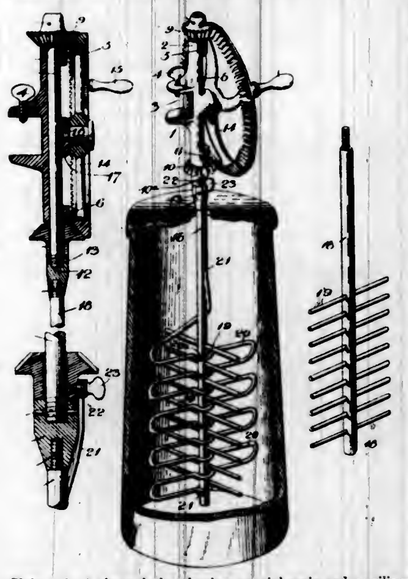
609,857. BICYCLE ATTACHMENT. EDWARD M. WEST, Bridgeton, N. J. Filed Aug. 30, 1897. Serial No. 649,931. (No model.)

Claim.—1. In a bicycle attachment, the combination of a two-wheel vehicle having a frame consisting of a transverse tube, the ends of which are bent so as to form half-loops extending upward and at right angles thereto, of horizontal loops secured at right angles to the half-loop, of a lug formed upon one end of the said loops, the said lug adapted to support a detachable arm, the said arm having a connecting-link, of wheels mounted within the said loops and half-loop, substantially as shown and described.

2. In a bicycle attachment the combination of a vehicle-frame consisting of a transverse tube having its ends bent so as to form half-loops extending upward and at right angles thereto, horizontal loops secured at right angles to the said half-loops, by the axles and provided with arms, the said arms adapted to support a seat or carriage a lug upon one end of the said loops, arms supported by the said lugs, connecting-links pivotally secured to the said arms and adapted to be rigidly secured to the axle of the rear wheel of a bicycle, wheels mounted upon the said axles within the said loops and half-loops, substantially as shown and for the purpose set forth.



609,858. CHURN-DASHER. EDWARD R. WEST, Bettie, Tex. Filed Oct. 19, 1897. Serial No. 655,706. (No model.)



Claim.—1. A churn-dasher having coaxial main and auxiliary dasher-blades, the main dasher-blade consisting of a stem having radially-disposed wings, below the lowermost of which the stem projects to form a terminally free extension, and the auxiliary dasher-blade consisting of a series of wings, which operate in transverse planes between those of the main dasher-wings, the auxiliary dasher-blade being mounted at its lower end upon said extension of the main dasher-blade for downward displacement, and being spirally extended at its upper end around, and yieldingly engaged with, the main dasher-stem, to provide for lateral displacement, whereby when the upper end of the auxiliary dasher-blade is disengaged the lower end thereof may be dismounted downwardly from the main stem extension, substantially as specified.

2. A churn-dasher having a main dasher-blade comprising a stem and a series of radially-disposed wings, and an auxiliary dasher-blade comprising a series of looped wings, having their sides arranged respectively above and below the planes of the main dasher-wings, the sides of each of the auxiliary wings having alined half-bearings to receive the stem of the main dasher-blade, respectively between the planes of the main dasher-wings, and said auxiliary dasher also having a lower terminal bearing in which the extremity of the main dasher-stem is removably seated, and an extension or stem which is in bearing contact with the main dasher-stem at the opposite side from said half-bearings, to maintain the latter in operative relation with the main dasher-stem, substantially as specified.

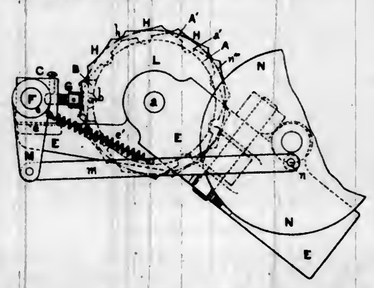
3. The combination with a main dasher-blade having a revoluble stem and radially-disposed wings, of an auxiliary dasher-blade constructed of a single blank of wire, doubled upon itself successively to form a plurality of oppositely-extending loops, of which the sides are arranged transversely opposite the intervals between the main dasher-wings, and are offset laterally in a common direction to form half-bearings to bear against the main dasher-stem at one side, said blank being provided at its extremities with extensions which bear against the opposite side of the main dasher-stem from said half-bearings, and combining therewith to revolubly mount the auxiliary dasher-blade upon the main dasher-stem, and means for communicating rotary motion in opposite directions to the main and auxiliary dasher-blades, substantially as specified.

4. A churn-dasher having a main dasher-blade comprising a stem and a plurality of radially-disposed straight wings or beaters, below the lowermost of which the stem projects to form a terminally free extension, and an auxiliary dasher-blade, constructed of a single blank of wire and having wings consisting of a series of oppositely-disposed open-ended loops, with their open ends disposed alternately in opposite directions, and between the sides of which the main dasher-blade wings operate, said auxiliary dasher-blade terminating at its lower end in a bearing-eye mounted upon said lower extremity of the main dasher-stem, and terminating at its upper end in a stem which is coiled spirally around and yieldingly engages the stem of the main dasher-blade to form an upper bearing, whereby the lateral displacement of the spirally-coiled upper end of the auxiliary blade provides for the downward dismounting of the bearing-eye at the lower end thereof from the main stem extension, substantially as specified.

5. The combination of concentric main and auxiliary dasher-spindles, a main dasher-blade having a stem provided with a series of radial dasher wings or beaters, and having a detachable interlocking connection with the main dasher-spindle, an auxiliary dasher-blade detachably mounted upon the main dasher-stem and comprising a series of oppositely-disposed loops arranged radially with relation to the main dasher-stem, and extended to form a stem, and a securing-screw for attaching the stem of the auxiliary dasher-blade to the auxiliary dasher spindle, substantially as specified.

6. The combination with concentric main and auxiliary dasher-spindles, of main and auxiliary dasher-blades detachably secured respectively to said main and auxiliary dasher-spindles, the main dasher-blade having a stem provided with a series of radially-disposed wings or beaters, and the auxiliary dasher-blade comprising a plurality of oppositely-disposed loops having their sides spaced apart to receive the main dasher-blade wings or beaters, having their sides offset laterally in one direction to form half-bearings to receive the main dasher-blade stem at one side and arrange the body portions of said loops radially with relation to the main dasher-blade stem, terminating at its lower end in a bearing in which is stepped the lower end of the main dasher-blade stem, and terminating at its upper end in a stem which is detachably coiled around the main dasher-blade stem to bear against the opposite side thereof from said offset portions of the looped wings, substantially as specified.

609,859. APPARATUS FOR STRIPPING FLATS OF CARDING-ENGINES. JAMES WILLIAMS, Salford, England. Filed Dec. 10, 1897. Serial No. 661,443. (No model.)



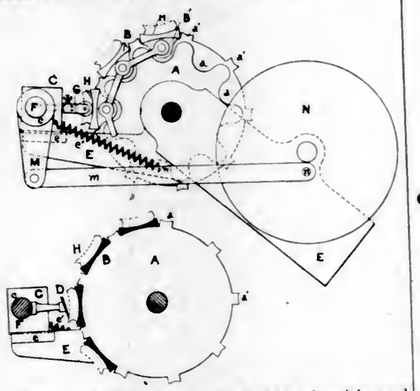
Claim.—1. Apparatus for stripping the flats of revolving carding-engines, comprising a comb and oscillating comb-bar, sliding brackets in which the comb-bar is pivoted and a rotating disk rotating about the same center as the flats with surfaces around its periphery which form a guide for a projection from the sliding bracket and a projection on the said bracket engaging the surfaces of the disk.

2. In apparatus for stripping the flats of revolving carding-engines the combination with the comb and comb-bar and sliding brackets in which the comb-bar is pivoted capable of being moved to and from the flats of surfaces parallel to the face of the flats to be stripped, substantially as and for the purpose described.

3. In apparatus for stripping the revolving flats of carding-engines, the combination with the oscillating comb and comb-bar and sliding brackets provided with projections to engage the cam of a cam for guiding the stripping edge of the comb, formed with surfaces parallel with the wire face of the flat when in position to be stripped, and with indents to permit the edge of the comb entering between the flats to strip the edges thereof, substantially as described.

4. In apparatus for stripping the revolving flats of carding-engines, the combination with the oscillating stripping comb D and comb bar F, of sliding brackets C capable of moving to and from the flats in which the comb-bar is pivoted at c, the fixed arm E upon which the bracket slides, the spring e' which draws the bracket toward the flats, and the cam L to adjust the position of the edge of the stripping-comb relative to the flats.

609,860. APPARATUS FOR STRIPPING FLATS OF CARDING-ENGINES. JAMES WILLIAMS, Salford, England. Filed Dec. 10, 1897. Serial No. 661,444. (No model.)



Claim.—1. In apparatus for stripping the flats of revolving carding-engines the combination with the stripping-comb D and guide G thereon and the flats B having surfaces H thereon parallel with the face of the wires on the flats of the pulley A provided with recesses at one side to engage with the backs of the flats and projections on the periphery to raise it at intervals to the level of the surface on the flats, substantially as described.

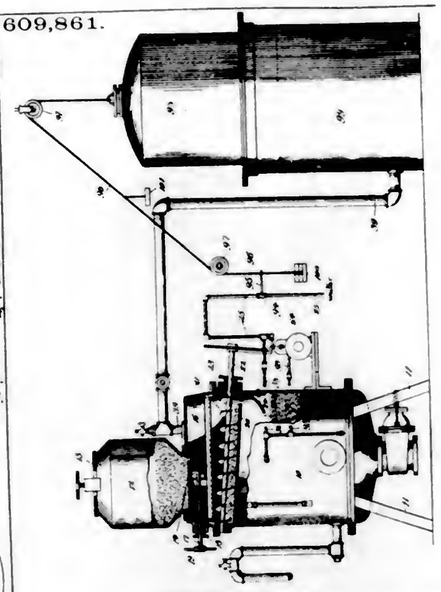
2. In apparatus for stripping the flats of revolving carding-engines the combination with the comb D and comb-bar F of sliding brackets C in which the comb-bar is pivoted, capable of being moved to and from the flats the guiding projections G projecting from the sliding brackets, the flats B constructed with surfaces H parallel with the surface of the wires and against which the guiding projections G bear, and the pulleys A constructed to fill up the spaces between the flats, substantially as described.

3. In apparatus for stripping the flats of revolving carding-engines the combination of the pulleys A upon which the flats revolve constructed to fill up the space between the flats, the flats B provided with surfaces H parallel with the face of the wires, the stripping-comb D for removing waste from the wire, the comb-bar F to which the comb is affixed, the sliding brackets C in which the comb-bar is pivoted, the fixed arms E upon which the brackets slide the springs e for drawing the brackets toward the flats, and the adjustable guiding projections G bearing against the surfaces H on the flats and the projections a' on pulleys A for determining the relative position of the comb to the flats when working, substantially as described.

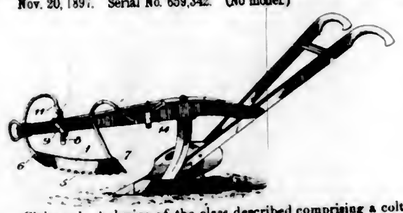
609,861. ACETYLENE-GAS GENERATOR. JOHN WILLIAMSON, Chicago, Ill. Filed Aug. 30, 1897. Serial No. 649,926. (No model.)

Claim.—In a gas-generator of the character described, the combination, with the generating-chamber and the conveyer therein, of a water-supply pipe, a motor connected with the water-supply pipe and adapted to operate the conveyer, a pipe connecting the waste-port of the motor with the generating-chamber, and a controlling-valve in the water-supply pipe operatively connected with the movable tank of the gas-holder, substantially as set forth.

609,861.



609,862. COLTER. EDWARD J WING, Centre Hill, Fla. Filed Nov. 20, 1897. Serial No. 659,342. (No model.)



Claim.—1. A device of the class described comprising a colter-blade designed to be mounted on a plow-beam in advance of the plow-point, and springs for connecting the blade to the plow-beam and pivotally secured to the blade, whereby the latter is permitted to spring vertically and produce a shear or saw cut, substantially as and for the purpose described.

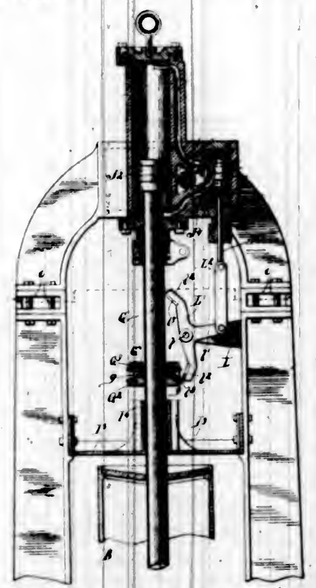
2. In a device of the class described, the combination with a plow-beam, of a colter-blade provided with teeth and disposed at a slight inclination, in advance of the plow-point, and springs connecting the blade with the plow-beam, substantially as described.

3. In a device of the class described, the combination with a plow-beam, of a colter-blade, the substantially U-shaped front spring pivotally connected to the front of the colter-blade and secured to the plow-beam, and the rear spring secured to the beam and pivoted to the blade, said rear spring being provided between its ends with a substantially U-shaped bend, substantially as specified.

4. In a device of the class described, the combination with a plow-beam, of a colter-blade, front and rear springs, each having one end connected with the blade, and having its other end reinforced by doubling the metal on itself and bending the terminal around the spring, and clips or clamps adjustably securing the reinforced portions of the springs to the beam, substantially as specified.

609,863. STAMP-MILL. GEORGE WOOD Prescott, Ariz. Filed June 19, 1897. Serial No. 641,406. (No model.)

Claim.—1. The combination with the reciprocating stem of a stamp-mill and an engine comprising a cylinder provided with steam inlet and exhaust ports, a piston therein which is connected with said stamp-stem, and a slide-valve for controlling the admission of steam to said cylinder, of a valve-actuating mechanism comprising a pivoted lever operatively connected at one end with said valve and formed at its opposite end with two oppositely-directed tappet-arms, detachable contact-plates which have slotted connection with the opposite ends of said arms, and a tappet-collar on said stamp-stem adapted to alternately engage said contact-plates of the lever-arms in the reciprocation of the stem.



2. In combination with the reciprocating stem of a stamp-mill and an engine comprising a cylinder provided with steam inlet and exhaust ports, a piston therein which is connected with said stamp-stem and a slide-valve for controlling the admission of steam to said cylinder, of a valve-actuating mechanism comprising a pivoted lever operatively connected at one end with said valve and formed at its opposite end adjacent to the stamp-stem with two separated arms, detachable contact-plates mounted on opposite ends of said arms, interfitting projections and recesses on the adjacent faces of the plates and arms, a bolt having screw-threaded engagement with each of said plates and having slotted connection with the arms and a tappet-collar on said stamp-stem for alternately engaging said contact-plates of the tappet-arms in the reciprocation of the stem.

3. The combination of the reciprocating stem of a stamp mill, a frame comprising two upright extensible standards connected by an upper arched portion, an engine mounted on said arched portion of the frame comprising a cylinder provided with steam inlet and exhaust ports, a piston therein connected with said stamp-stem, a valve for controlling the passage of steam through said ports and means for varying the vertical length of said standards.

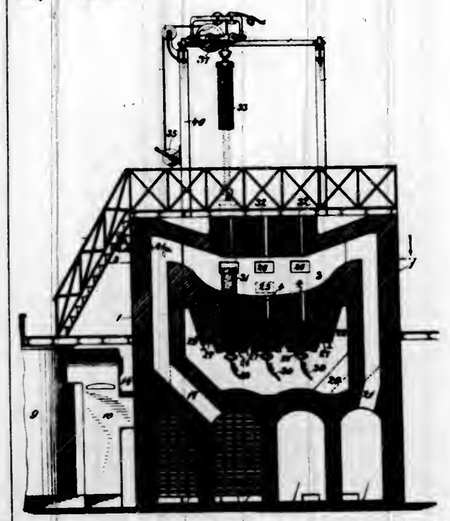
4. The combination of the reciprocating stem of a stamp-mill, a frame comprising two upright standards, and a separate arched portion mounted on said standards, an engine mounted on said arched portion of the frame comprising a cylinder provided with steam inlet and exhaust ports, a piston therein connected with said stamp-stem and a slide-valve for controlling the passage of steam through said ports, and detachable distance-blocks inserted between the upper ends of said standards and the arched portion of the frame.

5. In a stamp-mill, the combination of a mortar, a stamp adapted to reciprocate therein and provided with a stamp-stem, a supporting-frame comprising two upright standards secured at one side of the mortar independently of the foundation which supports the mortar and overhanging at their upper ends said mortar, a steam-engine supported upon said overhanging portion of the standards and connected with said stamp-stem, and a cross-piece extending between said standards and formed outside of the same in a wide shallow tray which overhangs said mortar, said tray being povided centrally with a vertically-extended guide-bearing through which the stamp-stem passes.

6. In combination with a stamp-stem G' of the collar G^3 provided in its upper surface adjacent the stem with a groove G^3 adapted to receive a mass of absorbent material and a screen attached to the collar to retain said absorbent material in place.

609,864. PROCESS OF AND APPARATUS FOR PRODUCING CALCIUM CARBID. MATTHEW P. WOOD, New York, N. Y. Filed Apr. 23, 1897. Renewed Jan. 27, 1898. Serial No. 668,280. (No model.)

Claim.—1. The process of reducing refractory mineral compounds, which consists of the following steps: first, forming a mixture of the pulverized mineral and carbon with a suitable binder into a cartridge; second, subjecting said cartridge to the direct heat of a combustion-furnace; third, passing an electric current through the cartridge while still subjected to the heat of said furnace, substantially as described.



2. The process of reducing refractory mineral compounds which consists in the following steps: first, forming a mixture of the pulverized mineral and carbon with a suitable binder into cartridges; second, subjecting a number of said cartridges to the highest heat of a combustion-furnace; third, passing an electric current through each of said cartridges successively until it is melted down; fourth, replacing each cartridge when melted down by a new one, whereby the process is rendered continuous, substantially as described.

3. The combined combustion and electrical furnace which has a hearth with a series of holes therein, suitable ports for the admission of combustible gas and air a carbon cathode in the bottom of each hole and insulated from the pan thereof, a series of holes in the roof of the furnace registering with those in the hearth, a traveling crane, and a carbon anode supported therefrom, capable of being lowered into any one of the holes in the roof, a flexible electrical conductor connected with said anode, and electrical connections to the cathodes, substantially as described.

4. The combined combustion and electrical furnace which has a hearth with a series of holes therein suitable ports for the admission of combustible gas and air a carbon cathode in the bottom of each hole and insulated from the pan thereof, a series of holes in the roof of the furnace registering with those in the hearth, a traveling crane, and a carbon anode supported therefrom, capable of being lowered into any one of the holes in the roof, a flexible electrical conductor connected with said anode, and electrical connections to the cathodes, together with a hollow foundation for said hearth, and removable fastenings for said cathodes underneath the pan of the furnace, projecting into said hollow space, whereby access thereto may be had, substantially as described.

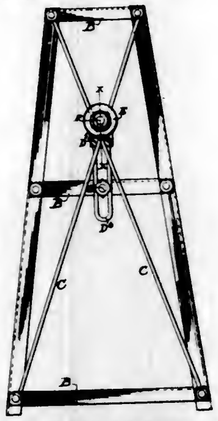
5. The process of reducing refractory mineral compounds, which consists of the following steps: first, forming a mixture of the pulverized mineral and carbon with a suitable binder into a cartridge; second, subjecting said cartridge to the heat of the combustion-furnace; third, passing an electric current through the cartridge while in a vertical position still subjected to the heat of said furnace, the initial contact and fusion occurring at the top of said cartridge, substantially as described.

609,865. TIGHTENER FOR BRACE-RODS. HARRISON WOODWARD, Freeport, Ill. Filed May 19, 1898. Serial No. 681,165. (No model.)

Claim.—1. In a tightener for brace-rods, in combination, a clamp comprising two disk-like members, means for holding the members together and a projection extending from one of the members for securing the clamp to the framework, substantially as and for the purpose specified.

2. In a tightener for brace-rods, in combination, a clamp com-

prising two disk like members, one of said members having a projection for the reception of the brace-rods and a serrated surface for preventing the slipping of the clamp with relation to the rods, a bolt for holding the members together and a projection from one of the said members for securing the clamp to the framework, substantially as and for the purpose specified.

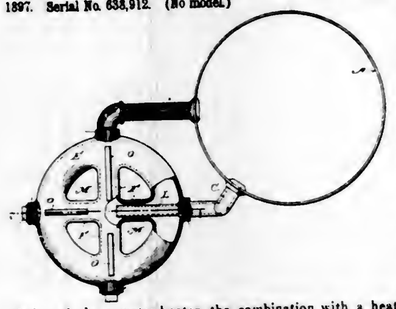


3. In a tightener for brace-rods, in combination, a clamp comprising two members, one of said members having a projection providing for the reception of the brace-rods and a serrated portion for preventing the slipping of the clamp with relation to the rods, means for holding the members together and a loop extending from one of the members of the clamp for securing the latter to the framework, substantially as and for the purpose specified.

4. In a tightener for brace-rods, in combination, a clamp comprising two members, one of said members having three projections providing for the reception of the brace-rods and a serrated portion for preventing the slipping of the clamp with relation to the rods and means for holding the members together, substantially as and for the purpose specified.

5. In a tightener for brace-rods, in combination, a clamp comprising two members, one of said members having three projections providing for the reception of the brace-rods and a serrated portion for preventing the slipping of the clamp with relation to the rods, the other one of said members having an edge adapted to impinge upon one of the rods, means for holding the members together and a loop extending from one of the members of the clamp for securing the latter to the framework, substantially as and for the purpose specified.

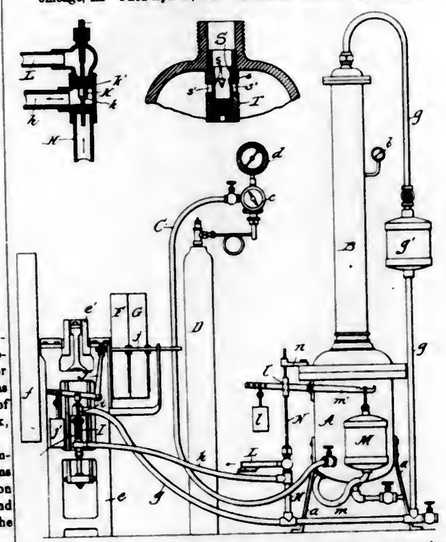
609,866. WATER-HEATER. JAMES R. BAKER, Madison, Wis., assignor of one-half to George C. Kollock, same place. Filed June 1, 1897. Serial No. 638,912. (No model.)



Claim.—1. In a water-heater, the combination with a heater proper consisting of a hollow body having a central opening, and a water-inlet pipe entering into one side of said body, and having hollow portions in said central opening, and an outlet pipe or passage extending from approximately the center of said hollow portions outward to and through one side of said body, whereby the outgoing water is taken from the hottest part of the heater and whereby also the flames are allowed to pass upward through this heater to be utilized for other purposes at the same time that they are made to envelop the said hollow portions.

2. A water-heater consisting of an outer hollow portion and transverse hollow portions uniting near the center and forming at such point a water space or receptacle, and of two pipes, one of said pipes being connected with the outer hollow portion and extending thence outward, and the other of said pipes being connected with the outer portion and extended thence outward and thence inward across the outer portion and down through one of the transverse portions and terminating at or near the center.

609,867. CARBONATING APPARATUS. CHARLES L. BASTIAN, Chicago, Ill. Filed Apr. 24, 1897. Serial No. 633,734. (No model.)



Claim.—1. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid through the supply-pipe to the mixer, a belt-shipper, devices for operating said belt-shipper and a valve device controlled and operated by the level of the liquid in the mixer for permitting the liquid to flow from the supply-pipe and operate said belt-shipper by direct pressure of the liquid, substantially as described.

2. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid from the supply-pipe to the mixer, a belt-shipper and devices for operating the same, a pipe connection between the belt-shipper-operating devices and the liquid supply pipe and means automatically operated for permitting liquid from the supply-pipe to pass through said pipe connection to actuate the belt-shipper-operating devices by direct pressure of the liquid to ship the belt, substantially as described.

3. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid through said supply-pipe to the mixer, a belt-shipper, means for operating the belt-shipper, a pipe connection between said belt-shipper-operating means and the liquid-supply pipe, a valve in said connection and a balanced tank having a pipe connection with the mixer and adapted to be automatically operated by the quantity of liquid therein to actuate the valve, thereby permitting liquid from the supply-pipe to flow into the belt-shipper-operating means and operating the same to stop the pump, substantially as described.

4. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid through said supply-pipe to the mixer, a belt-shipper and means for operating the same, a pipe connection between the belt-shipper-operating means and the liquid-supply pipe, a double-seating wing-valve in said pipe connection and means for automatically operating said valve to allow liquid to pass from the supply pipe to the belt shipper-operating means to ship the belt and stop the pump and then allow the liquid to flow to an exhaust again shipping the belt to start the pump, substantially as described.

5. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid through the supply-pipe to the mixer, a belt-shipper and means for operating the same, a pipe connection between said belt-shipper-operating means and the liquid-supply pipe, a double-seating wing-valve in said pipe connection, an exhaust-pipe above said valve, the conical lower end of said valve being adapted to prevent the passage of liquid from the supply-pipe to said pipe connection when seated and the conical upper end of said valve adapted to prevent the passage of liquid from the pipe connection to the exhaust-pipe when seated and allow the liquid in said pipe connection to pass to said exhaust-pipe when the conical lower end of said valve is seated, and means for automatically operating said valve to control the operation of the pump, substantially as described.

6. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid through the supply-pipe to the mixer, a belt-shipper and means for operating the same, a pipe connection between said belt-shipper-operating means and the liquid-supply pipe, a valve in said pipe connection and means for automatically operating said valve to permit the liquid by its pressure to actuate the belt-shipper-operating means to stop the pump temporarily, substantially as described.

7. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid through said supply-pipe to the mixer, a belt-shipper, a bell-crank lever connected with said belt shipper, a cylinder, a piston-rod connected to said bell-crank lever and carrying a piston operating in said cylinder, a pipe connection between the cylinder and the liquid-supply pipe, a valve in said pipe connection and means for automatically operating said valve to allow liquid to flow from the supply-pipe under pressure through the pipe connection to the cylinder and force the piston therein upward to ship the belt temporarily, substantially as described.

8. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid through said supply-pipe to the mixer, a belt-shipper, a bell-crank lever connected with said belt-shipper, a cylinder, a piston-rod connected to said bell-crank lever and carrying a piston operating in said cylinder, a pipe connection between the cylinder and the liquid-supply pipe, a double-seating wing-valve located in said pipe connection, an exhaust-pipe above said valve and means for automatically operating the valve to control the operation of the pump, the conical lower end of said valve being adapted when seated to prevent the flow of liquid from the supply-pipe to the cylinder, while the liquid in said cylinder and the pipe connection is flowing to the exhaust-pipe, and the conical upper end of said valve being adapted when seated to prevent the liquid in the cylinder and pipe connection from flowing to the exhaust-pipe while the conical lower end of said valve is unseated and liquid is flowing from the supply-pipe to the pipe connection and the cylinder, substantially as described.

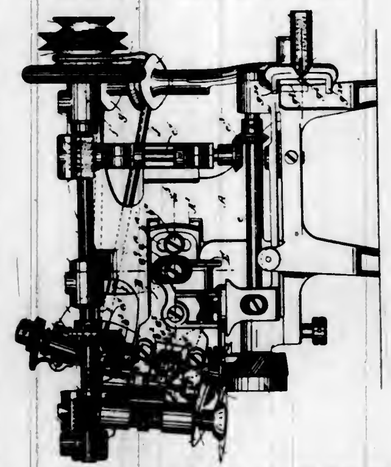
9. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe admitting gas thereto, a liquid-supply pipe, a pump for forcing liquid through said supply-pipe to the mixer, a belt-shipper, a bell-crank lever connected with said belt-shipper, a cylinder, a piston-rod connected to said bell-crank lever and carrying a piston operating in said cylinder, an extension on the supply-pipe, a pipe connecting said extension with the cylinder, a double-seating wing-valve arranged to operate in said extension, an exhaust-pipe located above the valve and connected to said extension, the lower conical end of said valve adapted, when seated, to prevent the flow of liquid from the supply-pipe to the cylinder while the conical upper end of said valve is unseated and the conical upper end of said valve adapted, when seated, to prevent the flow of liquid from the cylinder and the pipe connection to the exhaust pipe while the conical lower end of said valve is unseated, a stem for said valve provided with a yoke, a lever pivoted on the mixer and having one end passing through said yoke and provided with a weight, a balanced tank hung on the other end of said lever and having a pipe connection with the mixer, substantially as and for the purpose described.

10. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe connected therewith, a liquid-supply pipe entering the top of said mixer, an inclosing cylinder located around the end of the liquid-supply pipe and provided with regular openings therein and a spring-pressed cylinder arranged within the inclosing cylinder and provided with openings therein to register with the openings in the inclosing cylinder, the openings in the spring pressed cylinder being graduated in size, substantially as and for the purpose described.

11. In a liquid-carbonating apparatus, the combination with a mixer, of a gas-supply pipe connected therewith, a liquid-supply pipe entering the top of said mixer, an inclosing cylinder located around the end of the liquid-supply pipe within the mixer and provided with square openings on its sides and a spring-pressed cylinder located within said inclosing cylinder and provided with triangular openings arranged to register with the openings in the inclosing cylinder, substantially as and for the purpose described.

12. In an apparatus for carbonating liquids, a chamber wherein the liquid is saturated with gas, said chamber having therein a roll of wire-gauze, over which the liquid passes in filmy form through the chamber, substantially as and for the purpose described.

609,868. LEATHER-SKIVING MACHINE. CHARLES H. BAYLEY, Boston, Mass., assignor to the Amazeen Machine Company, Portland, Me. Filed July 15, 1895. Serial No. 556,004. (No model.)



Claim.—1. The combination with a rotary disk cutter and movable bearing bracket or support therefor, of a grinder and grinder-shaft and bearing frame or bracket therefor supported on said cutter-shaft bracket, and means for adjusting the position of the grinder-bracket upon the cutter-bracket, whereby the said grinder may be set in proper position with relation to the cutter and retained therein independently of changes of position of the cutter, substantially as and for the purpose described.

2. In a skiving-machine, the cutter-shaft and bearing frame or bracket therefor, and a slide adjustably connected to the main frame, said cutter-shaft bracket being pivotally connected with said slide and provided with a locking device for fastening it in any desired pivotal adjustment on said slide; a grinder-shaft and bearing frame or bracket therefor pivotally supported on the cutter-shaft frame, and a locking device for fastening said grinder-shaft bracket in the desired pivotal adjustment on said cutter-shaft bracket, substantially as described.

3. The combination with a rotary disk cutter, of a grinder and grinder-shaft; means for moving said grinder-shaft longitudinally; a stop which positively limits the movement of said grinder-shaft and grinder toward the cutter; and a spring whereby said grinder-shaft and grinder are advanced toward the cutter as far as permitted by said stop, substantially as described.

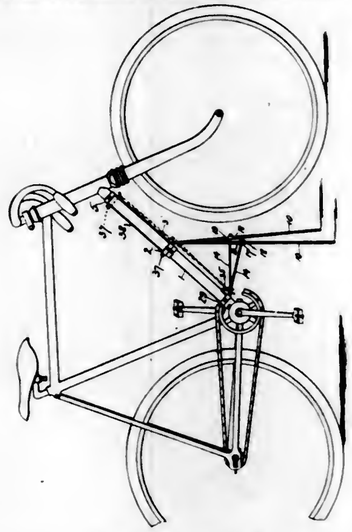
609,869. BICYCLE-SUPPORT. SAMUEL S. BEEBE, Wisner, Nebr. Filed Apr. 4, 1898. Serial No. 676,256. (No model.)

Claim.—1. A support for the purpose described having in combination a slide; means for securing said slide in position; a pair of legs hinged to said slide; a pair of arms flexibly joined at one end to said legs respectively and having a hinge-support at their other end; and a wedge interposed between said arms whereby the movement of said slide will automatically cause said legs and arms to spread apart and will thrust the lower ends of said legs forwardly, substantially as set forth.

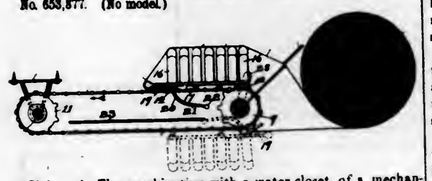
2. A support for the purpose described having in combination a slide, the inclined bar 1 of the bicycle to which said slide is secured, means for limiting the movement of said slide, a pair of legs hinged to said slide, a pair of arms having hinge-support at one end, universal joints connecting the other ends of said arms to said legs respectively and a wedge interposed between said arms whereby the movement of the slide will automatically cause said legs and arms to spread apart while thrusting the lower ends of said legs downwardly and forwardly, substantially as set forth.

3. A support for the purpose described having in combination a

slide, means for securing said slide in place, means for limiting the movement of said slide, a pair of legs hinged to said slide, a pair of hinged arms flexibly joined to said legs respectively, a plate having outwardly and downwardly diverging slots through which said arms pass and by which said arms are spread apart, the upper edges of said plate being inclined for assisting in supporting the lower ends of said legs when in their drawn-up position, substantially as set forth.



609,870. TOILET APPLIANCE. LESTER M. BIGGS, Akron, Ohio, assignor to Lester E. Biggs, same place. Filed Oct. 2, 1897. Serial No. 653,877. (No model.)



Claim.—1. The combination with a water-closet, of a mechanical device for performing the work specified, and comprising a flexible traveling hand and a grip to engage paper with the hand, substantially as described.

2. In an appliance for the purpose specified, the combination with a flexible hand having a series of fingers, and operating means therefor constructed to carry the hand in a circuit and means for gripping the paper with the hand, substantially as described.

3. In an appliance for the purpose described, the combination with a flexible hand, of operating means therefor, a roll of paper, means for connecting the paper with the hand, and means for severing and delivering said paper, substantially as described.

4. In an appliance of the character specified, the combination with a flexible hand, of actuating means therefor, a paper-gripper carried by the hand, a roll of paper, and a cutter for severing the paper, substantially as described.

5. In an appliance of the character specified, a movable and flexible hand, actuating means therefor, and a paper-gripper carried by the hand, in combination with a roll of paper, and a cutter for severing the paper substantially as described.

6. In an appliance of the character specified, the combination of a flexible hand, of operating means therefor, a pivoted paper-gripping device carried by said hand, and means for opening and closing said gripping device at the proper points, substantially, as described.

7. In an appliance of the character specified, the combination with suitable chains and sprocket-wheels, and operating means therefor, of a flexible hand carried by said chains, a paper-gripping device carried by said hand, means for opening and closing said gripping device, a roll of paper, and a cutter arranged contiguous to said roll, substantially as described.

8. In an appliance of the character specified, the combination with a flexible hand and means for imparting motion thereto, of a roll of paper, and a rotary cutter operating at intervals upon said paper, substantially as described.

9. In an appliance of the character specified, the combination with a set of continuous chains and operating means therefor, of a flexible hand connected with and actuated by said chains, and a paper-gripping device carried by said hand, substantially as described.

10. In an appliance of the character described, a flexible hand, composed of a series of fingers united to a common flexible base, and a paper-gripping device connected with said hand, substantially as described.

11. In an appliance of the character specified, a flexible hand having a series of flexible fingers and a common flexible base to which said fingers are severally and collectively attached, in combination with an endless carrier for said hand, substantially as described.

12. In an appliance of the character described, a flexible hand, composed of a flexible base or sheet, and a series of flexible fingers connected to said base and spaced apart and having their outer active surfaces shaped to conform to the curvature of the surface to which they are to be applied, in combination with an endless carrier for said hand and means to grip a sheet of paper to said hand, substantially as described.

13. In an appliance of the character described, the combination with suitable actuating mechanism, of a flexible hand, consisting of a number of fingers collectively attached to a common base projected at one end beyond the fingers to form a paper-gripping jaw, and a pivoted gripping device comprising a movable jaw carried by said hand and operating in connection therewith to grip the paper, substantially as and for the purposes described.

14. The combination with a water-closet, and the seat thereof, of an auxiliary seat interposed between the bowl and main seat, and paper-carrying mechanism arranged within said auxiliary seat, said mechanism comprising a flexible band and an endless carrier for the hand, substantially as described.

15. In an appliance substantially as described, the combination of the water-closet and the auxiliary lid thereon next to the water-closet bowl, an endless carrier supported on said lid having a series of cross-pieces and a series of flexible fingers supported on said cross-pieces, substantially as described.

16. The water-closet bowl and the auxiliary lid thereon, in combination with an endless carrier on said lid having chains at the sides of the lid, a hand having a series of flexible fingers secured midway between the sides of said carrier, means to operate the carrier and means to engage a slip of paper with said hand, substantially as described.

17. The endless carrier having transverse pieces and a hand with flexible fingers supported midway on said pieces and gripping mechanism to engage a sheet of paper with said hand, in combination with means to operate said carrier, a paper-roll support and means to sever the paper, substantially as described.

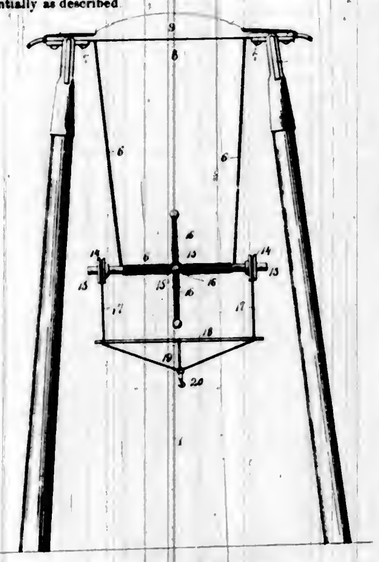
18. The combination of the water-closet bowl, the auxiliary lid thereon, an endless carrier on the rear portion of said lid and a flexible hand on said carrier, a paper-roll supported on the rear of the closet, means to draw the paper over said hand and grip the paper, and cutters to sever the paper between the roll and the hand, substantially as described.

609,871. WINDLASS. GEORGE BRUNELLE, Red Lake Falls, Minn. Filed June 24, 1897. Serial No. 642,131. (No model.)

Claim.—1. In windlasses, the combination of a frame consisting of side standards, the standards at each side being connected by socket-pieces having cross-plates, and a head or bridge piece connecting the standards and provided at each side with parallel plates forming guideways for the reception of the said cross-plates, substantially as described.

2. In windlasses, the combination of a frame comprising standards, a socket-piece connecting the standards at each side of the frame, said socket-piece being provided with a cross bar or plate, a head or bridge piece provided at each end thereof with parallel plates which fit down upon the cross-plates and connecting side standards, said bridge-piece being also provided with attaching-lugs and openings adjoining the same, a windlass-shaft, and a winding cord or rope secured to the shaft and having its ends passed through said openings and attached to the said lugs, substantially as described.

3. In windlasses, the combination of a frame consisting of supporting-standards, a socket-piece at each side of the frame and each provided with two depending socket members which fit over the ends of the standards at that side, said socket members being connected by a cross-plate, a head or bridge piece provided at each end thereof with downwardly-projecting parallel plates which fit down upon and confine the said cross-plates, said bridge-piece being also provided at each end with attaching-lugs and openings adjoining the same, a windlass-shaft, and a winding cord or rope secured to the same, passed through the said openings and attached to said lugs, substantially as described.



609,872. BALE-TIE. DOUGLAS M. CAMPBELL, Houston, Tex., assignor of one-fourth to Sinclair Taliaferro, same place. Filed Jan. 27, 1898. Serial No. 668,190. (No model.)



Claim.—1. A bale tie comprising a band, a key engaged with the band and rotatable to coil the same thereround, and a lock fitted upon the band and engaged with the key to prevent reverse rotation thereof, substantially as specified.

2. A bale-tie comprising a band, a slotted key engaged with the band and rotatable to coil the same thereon, and a lock fitted upon the band and engaged with the key, substantially as specified.

3. A bale-tie comprising a band, a slotted key engaged with the band and rotatable to coil the same thereon, and a lock mounted to slide on the band and provided with a key-seat, substantially as specified.

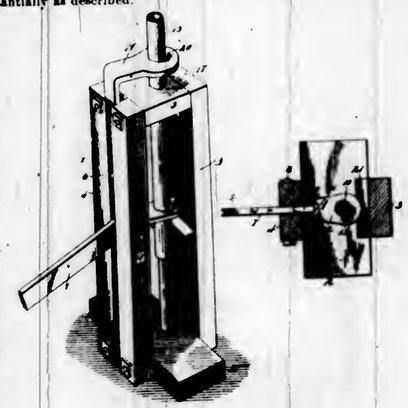
4. A bale-tie comprising a band, a slotted key engaged with the band and rotatable to coil the same thereon, and a lock fitted to slide on the band, and having an open-ended key-seat, substantially as specified.

5. A bale-tie comprising a band, a slotted buckle through which the extremities of the band extend, and a slotted key engaged with one extremity of the band, and adapted to be turned to coil the same, substantially as specified.

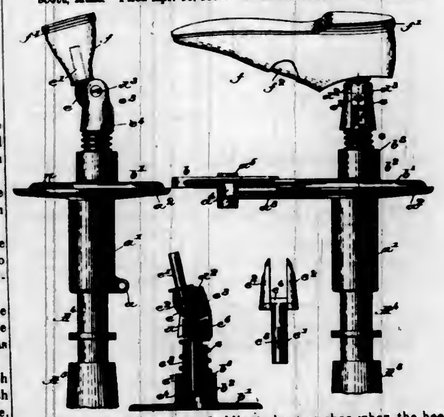
6. A bale-tie comprising a band, a cross-sectionally angular slotted key engaged with the band and rotatable to coil the same thereon, and a lock fitted upon the band and provided with an angular seat to engage a projecting end of the key, substantially as specified.

609,873. LIFTING-JACK. ROBERT CAMPBELL, South Haven, Mich. Filed Feb. 23, 1898. Serial No. 672,059. (No model.)

Claim.—In a lifting-jack, the combination of a frame comprising a base 2 provided in its lower face with a centrally-arranged recess, the side 3 secured to the base and provided at its inner face with a horizontal cleat 21, the side 4 secured to the base and composed of spaced bars provided with the registering perforations and the top piece secured between the upper ends of the sides and provided with a central opening, the vertical guide-rod 16 having its lower end reduced and threaded and extended through the base, the shoulder formed by the reduction resting upon the upper face of the base and the threaded portion projecting into the recess of the lower face of the same, said guide-rod having its upper end arranged within the opening of the top piece, a tubular lifting-bar guided on the rod and arranged to extend through the opening of the top piece, a nut engaging the threaded end of the rod and arranged in the recess of the base, an upper clutch engaging the tubular lifting-bar and arranged at the top of the frame, a pivot arranged in perforations of the side 4, a lever fulcrumed on the pivot and operating in the space between the bars of the side 4, and a clutch carried by the inner end of the lever and engaging the tubular lifting-rod, and having one of its ends located above the cleat 21 and arranged to rest thereon, substantially as described.



609,874. JACK FOR SLUGGING AND NAILING HEELS. LOUIS A. CARGRAIN, Winchester, Mass., assignor to James W. Brooks, principal trustee, Petersham, and Frank F. Stanley, associate trustee, Swampscott, Mass. Filed Apr. 16, 1897. Serial No. 632,466. (No model.)



Claim.—1. In a jack for holding a boot or shoe when the heel is having fastenings driven into it, a swing-plate, and a vertically-movable shank carried thereby, said shank having a pivoted holder provided with a last-pin, substantially as described.

2. In a jack, a shank, a guide for said shank, a spring to support said shank, and a pivoted toothed holder provided with a last-pin, combined with a toothed locking device interposed between said shank and said toothed holder, said locking device engaging said holder when said shank is depressed, substantially as described.

3. A swing-plate having a tubular hub, means to support said swing-plate, a shank having a forked upper end, a spring interposed between the said forked upper end and said hub and normally acting to keep said shank elevated, means to limit the upward movement

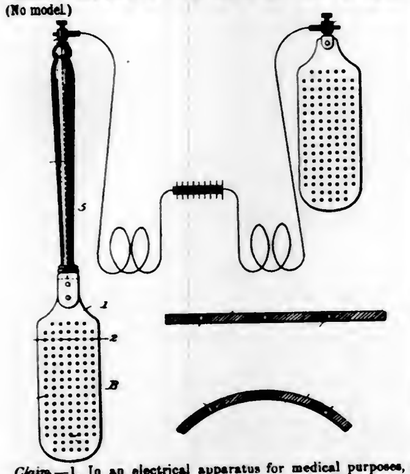
of said shank under the action of said spring, combined with a pivoted holder having a last-pin, and a locking device arranged to be engaged with said holder to lock the same when the holder and its shank are depressed due to pressure applied to the bottom of the last supported on said last-pin, substantially as described

4. In a jack, a shank, a guide for said shank, a spring to support said shank, and a pivoted toothed holder provided with a last-pin, and a spring to act on said holder to normally tip it and its last-pin out of vertical position; combined with a toothed locking device interposed between said shank and said toothed holder, said locking device engaging said holder when said shank is depressed, substantially as described.

5. The plate a^3 having stops and a suitable guide, combined with a swing-plate having an arm coöperating with said guide, a shank fitted in said swing-plate, and a pivoted holder mounted in said shank and provided with a last-pin, substantially as described.

6. The plate a^3 having a stud-screw a^4 and a swing-plate resting on said plate a^3, and having a slotted arm embracing and free to slide on said stud-screw, combined with a shank fitted into said swing-plate and provided with a pivoted last-pin, substantially as described.

609,875. ELECTRODE FOR MEDICAL PURPOSES. MARIAN N. CLARKE, Wilkes-Barré, Pa. Filed Jan. 8, 1898. Serial No. 666,001. (No model.)

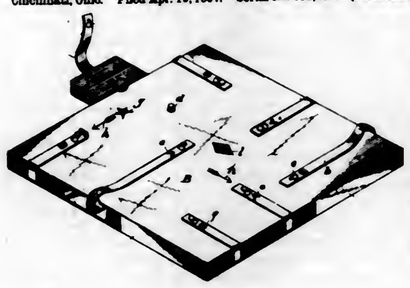


Claim.—1. In an electrical apparatus for medical purposes, a suitable source of electricity and a pair of electrodes consisting of suitably-shaped metal plates filled with small perforations, substantially as described.

2. In an electrical apparatus for medical purposes, an electrode comprising a suitably-shaped metal plate, said plate having its surface filled with perforations which are countersunk on the operative face of the electrode, substantially as described.

3. In an electrical apparatus for medical purposes, an electrode or brush consisting of a suitably-shaped plate filled with perforations which are countersunk on its operative face, a handle of non-conducting material, and a conductor connecting the plate with a suitable source of electricity, substantially as described.

609,876. TRAY FOR DUPLICATE WHIST. WALTER S. COLE, Cincinnati, Ohio. Filed Apr. 19, 1897. Serial No. 632,737. (No model.)

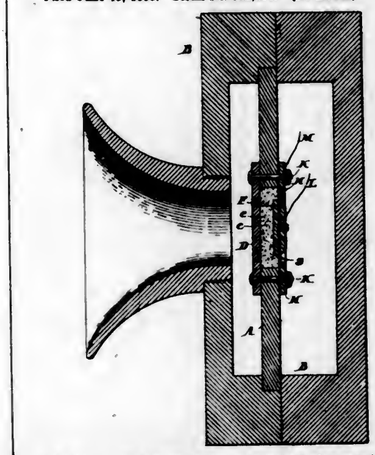


Claim.—1. In a duplicate-whist tray, a case divided into a series of eight compartments open at the ends and arranged in pairs, with ribbons to pass around the cards and secure same in the case, said ribbons of the corresponding compartments of each pair being marked with the same indicating device, whereby confusion may be avoided in the play of the hands, substantially as shown and described.

2. In a duplicate-whist tray, a case divided into a series of eight compartments open at the ends and arranged in pairs, with ribbons to pass around the cards and secure same in the case, said ribbons of the corresponding compartments of each pair being marked with a number, to indicate the various hands, substantially as shown and described.

3. In a duplicate-whist tray, a case divided into a series of eight compartments open at the ends and arranged in pairs, with ribbons to pass around the cards and secure same in the case, said ribbons of the corresponding compartments of each pair being marked with the same indicating device, and with a number to indicate the various hands, substantially as shown and described.

609,877. TENSION-REGULATOR FOR ELECTRICAL TRANSMISSION OF SPEECH. ALFRED C. COUSENS, Newark, N. J., assignor of one-half to George W. Gregory and John C. Edwards, Boston, Mass. Filed June 15, 1895. Serial No. 552,896. (No model.)



Claim.—1. The herein-described method of transmitting sound, which consists in subjecting to the action of the transmitting-current a substance from which is thereby generated a gaseous variable-resistance medium, and varying the resistance of said gaseous medium by the action of and to conform to the sound-waves to be transmitted.

2. The herein-described method of transmitting sound, which consists in passing the transmitting-current through a plurality of electrodes in a closed chamber and composed of a conducting substance from which is generated a variable-resistance medium on the passage of the transmitting-current, and varying the resistance of such gaseous medium by the action of and in conformity with the sound-waves to be transmitted.

3. In a transmitting-telephone, a diaphragm or sound-board, an electrode rigidly secured thereto and forming the front wall of a resistance-chamber supported by said diaphragm, a spacing-electrode supported within the rear opening of the chamber by a flexible disk secured to the side wall or casing of said chamber, and together with the said electrode forming a wall thereof, and a conducting substance in said chamber capable of generating a gaseous variable-resistance medium on the passage of the transmitting-current, in series with and separating the electrodes, the resistance of said gaseous medium being varied by the action of and in conformity with the sound-waves to be transmitted, substantially as described.

4. In a transmitting-telephone, the combination of a sound-receiving diaphragm, an electrode rigidly secured to said diaphragm and forming the front wall of a resistance-chamber situated approximately in the middle of said diaphragm and between the planes of the two surfaces thereof; a spacing-electrode supported within the rear opening of said chamber, a flexible disk to which said spacing-electrode is secured, clamped to the back of said diaphragm; and finely-divided conducting material in a loose and free state within said chamber, a space between said finely-divided material and said back electrode produced by movements of said electrode being normally occupied by a stratum of gas or gases derived entirely or in part from said finely-divided material and constituting the variable-resistance medium within the said chamber.

5. The combination of a sound-receiving diaphragm of thin wood; a chamber approximately situated between the planes of the surfaces of the said diaphragm, the front opening of said chamber closed by a plate of greater radius rigidly secured at or near its edge to said diaphragm and forming the front electrode thereof; a relatively movable electrode of slightly less diameter than said chamber supported within the back opening thereof by a flexible disk, said flexible disk being clamped to the diaphragm near the circumference of the chamber and together with the said electrode forming the rear wall of said chamber; a finely-divided conducting material in a loose and free state within said chamber, said electrodes and said finely-divided material consisting of a metallic compound adapted to form a conducting gas or gases between the approximating surfaces thereof and normally separated by said gas and in series therewith, said gas constituting the variable-resistance medium of a transmitting-telephone.

609,878. DOOR-HINGE. CHARLES DIETZ, Chicago, Ill. Filed Feb. 28, 1898. Serial No. 672,088. (No model.)



Claim.—1. In a door-hinge, the combination with a plate having a socket therein, the wall of which is extended to form a retaining-guide, of a pintle for said socket having its lower end cut out on one side, substantially as and for the purpose described.

2. In a door-hinge, the combination with a cam and a pintle having its lower end cut out on one side, of a socket-plate having its socket-wall extended to form a guide, said plate having an inclined slot therein, the upper wall of said slot being constructed to ride on the cam of the pintle, substantially as described.

3. In a door-hinge, the combination with twin pintles having cams thereon, of a plate provided with sockets to receive the pintles and having inclined walls thereon to ride on the cams to lift the door when it is swung, substantially as described.

4. In a door-hinge, the combination with twin pintles having their lower ends cut out on their outer sides, of a plate provided with sockets to receive the pintles and retaining-guides normally clearing the cut-out ends of the pintles, substantially as and for the purpose described.

5. In a door-hinge, the combination with twin pintles having their lower ends cut out on one side, and cams, of a plate provided with sockets to receive the pintles and having slots therein to receive the cams, the upper walls of the slots being adapted to ride on the cams to lift the door when it is swung and retaining-guides normally clearing the cut-out ends of the pintles, substantially as and for the purpose described.

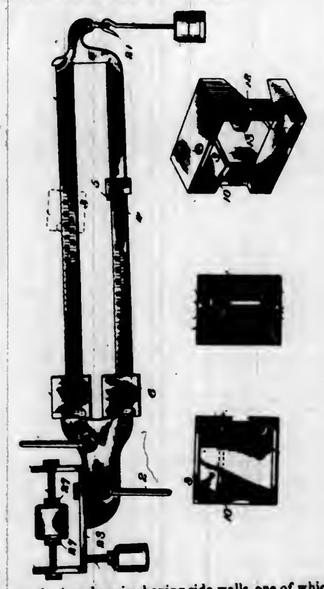
609,879. CRATE. JAMES C. DOSSER, Louisville, Ky. Filed Oct. 25, 1897. Serial No. 656,290. (No model.)



Claim.—1. A crate having walls constructed of marginal cleats, the contiguous extremities of the marginal cleats of adjoining walls being secured together, vertical rabbeted braces connecting said marginal cleats at the corners of the structure, and single-layer end and side wall veneers arranged in contact with the inner surfaces of said marginal cleats, and fitted at their edges in rabbets in said vertical braces, substantially as specified.

2. A crate having corner-braces provided in their inner or facing sides, parallel with the plane of the end wall, with rabbets, end-wall veneers fitted at their edges in said rabbets, side-wall veneers secured to the exterior or remote faces of the corner-braces, and terminating flush with the outer end surfaces thereof, marginal end cleats disposed parallel and flush with the upper and lower edges of the end-wall veneers, and extending beyond the exterior side surfaces of the corner-braces a distance equal to the thickness of the side-wall veneers, and marginal side-wall cleats parallel and flush with the upper and lower edges of the side-wall veneers, and extending beyond the extremities thereof to lie in contact with the extremities of the end-wall cleats, whereby rabbets, for the reception of the edges of the side-wall veneers, are formed between the corner-braces and the end-wall cleats, and are closed at their outer sides by the side-wall cleats, substantially as specified.

609,880. SCALE-BEAM. JAMES A. FLEMING, Danville, Ill. Filed Jan. 11, 1897. Serial No. 618,735. (No model.)



Claim.—1. A scale-poise having side walls, one of which walls is provided with an inclined flange projecting toward the other wall, said flange being stationary relatively to said walls and arranged directly to engage the edge of a scale-beam while the poise is being adjusted thereon, as described.

2. A poise made in sections having inclined interior flanges, an inclined recess having an integral rib therein, in combination with a point, having a groove corresponding in shape to the rib, substantially as described.

3. A poise made in sections, having integral points or projections therein bent to hold the filling in place, as described, inclined flanges and a point held in place by a rib and groove, substantially as described.

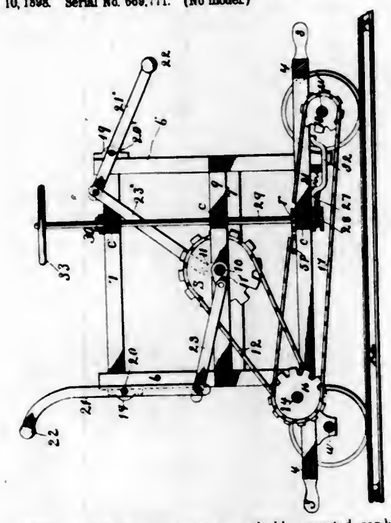
4. A poise for scale-beams, having side walls, one of which is provided with an inclined flange projecting toward the other, and said other wall being provided with a point, as specified.

5. A poise for scale-beams, made in sections and having inclined interior flanges, projections for holding the filling in place, and a point, for the purposes specified.

6. The herein-described compound beam, consisting of two arms located one directly beneath the other and connected together at their ends, the upper arm having a hundred-pound scale, and the lower arm having at one end only a scale forming a continuation of that on said upper member and a scale for units and tens formed directly on its outer end, said lower arm also having between its ends means for separating the two scales thereon, a counterbalance at the outer end of said beam, and a governor-balance attachment on the inner end of said beam, said governor-balance attachment consisting

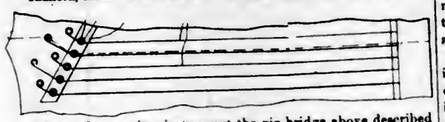
of a frame, a weight adjustable horizontally within said frame above said inner end, a rod depending from the bottom of said frame, and a weight adjustable vertically on said rod adjacent to said inner end of the beam, substantially as shown and described.

609,881. HAND-CAR. PAUL FLESSER, Hoyt, Kans. Filed Feb. 10, 1898. Serial No. 669,771. (No model.)



Claim.—A hand-car comprising a suitably-mounted car-body, rectangular duplicate frames mounted on the car parallel with each other lengthwise of the car, a shaft carried by and journaled in said frames, oppositely-arranged cranks on the ends of said shaft, a main or driving sprocket-wheel S, on the said main shaft, an independent shaft 14 journaled on the car, a sprocket-wheel 13 on the shaft 14, a sprocket-chain 12 around the sprocket-wheels S and 13, a second sprocket-wheel 16 larger than the sprocket-wheel 13 on the shaft 14, a sprocket-wheel 18 on the car-axle remote from the shaft 14, a sprocket-chain 17 connecting the sprocket-wheels 16 and 18, hand-levers 21, 21', fulcrumed at opposite upper ends of the rectangular frames, and connecting-rods or pitmen jointed to the inner arms of the said hand-levers and having their other ends operatively connected to the cranks on the main sprocket-wheel shaft, substantially as set forth.

609,882. PIN-BRIDGE FOR STRING INSTRUMENTS. GEORGE A. FULLERTON, Boston, Mass., assignor to James E. Maynadier, trustee, Taunton, Mass. Filed Jan. 10, 1898. Serial No. 666,182. (No model.)



Claim.—In a string instrument the pin-bridge above described made up of shouldered pins and a bridge, the pins extending through the bridge and sounding-board and into the pin-block, the shoulders of the pins supporting the strings and the heads of the pins staying the strings, all substantially as set forth.

609,883. MOLD FOR LINOTYPE-MACHINES. ERNEST GIROD, London, England, assignor to the Mergenthaler Linotype Company, New York, N. Y. Filed Dec. 24, 1897. Serial No. 663,334. (No model.) Patented in England May 17, 1897, No. 12,214.



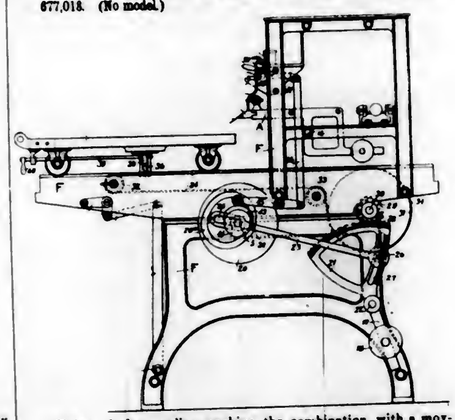
Claim.—1. A linotype-mold provided with transverse slots, in combination with a stopping-off bar.

2. A linotype-mold, in combination with a removable transverse stopping-off bar, and a locking device to hold said bar.

3. A linotype-mold in combination with the removable stopping-off bar, substantially as described, and an ejector-blade, slotted lengthwise, as described.

4. A mold for a linotype-machine provided with a removable stopping-off or dividing plate whereby it may be adapted to form a single long linotype or a plurality of shorter linotypes.

609,884. RULING-MACHINE. ELLIS GRABER and LEWIS HEPWORTH, Tunbridge Wells, England. Filed Apr. 9, 1896. Serial No. 677,018. (No model.)



Claim.—1. In a ruling-machine, the combination, with a movable table, and a pivoted pen-beam: of a pivoted striker, clutch mechanism connecting the striker with the pen-beam and permitting the pen-beam to be raised independent of the striker, a revoluble cam, and intermediate lever mechanism arranged between the said cam and striker, whereby the rise and fall of the striker and pen-beam is controlled by the said cam, substantially as set forth.

2. In a ruling-machine, the combination, with a flexible tube for feeding the ink to the pens, and a bar bearing against one side of the said tube; of a shaft, a nipping-bar secured to the said shaft and bearing against the other side of the said tube, a pivoted rocking lever and means for operating it, and an arm 49 operatively connected with the said shaft and arranged in the path of the said lever, said arm being connected with the said shaft so that it may be placed out of engagement with the said lever when a supply of ink is not required, substantially as set forth.

3. In a ruling-machine, the combination, with a table, and means for moving it back and forth in a horizontal plane; of a pen-beam supported over the table, a pen-slide carried by the pen-beam, and means for reciprocating the pen-slide in the pen-beam parallel with the surface of the table and crosswise of the direction of its motion, substantially as set forth.

4. In a ruling-machine, the combination, with a table, and driving mechanism for moving it back and forth in a horizontal place: of a pivoted pen-beam, a pen-slide slidable in the pen-beam, and driving mechanism which reciprocates the said pen-slide and permits the pen-beam to move vertically, the said driving mechanisms being operatively connected together, substantially as set forth.

5. In a ruling-machine, the combination, with a revoluble table, of driving mechanism which causes the table to travel slightly more than one complete revolution, brake mechanism stopping the table at the completion of its movement in one direction, and means for driving the table back to the position from which it started, substantially as set forth.

6. In a ruling-machine, the combination, with a revoluble table, and grippers for holding the paper on the table; of a tubular driving-shaft for driving the said table, a stationary and tubular stud-axle having the said shaft journaled on it, a transverse bar operating the said grippers, and a spindle movable longitudinally in the said stud-axle and operating to raise the said bar, substantially as set forth.

7. In a ruling-machine, the combination, with a table, and driving mechanism for moving it back and forth, in a horizontal plane; of a pen-beam supported over the said table, a pen-slide slidable in the said pen-beam crosswise of the direction of motion of the table, and driving mechanism for reciprocating the pen-slide provided with change-wheels for varying the number of reciprocations of the pen-slide with respect to those of the table, the said driving mechanisms being operatively connected together, substantially as set forth.

8. In a ruling-machine, the combination, with a table to receive the sheets of paper to be ruled, of a pivoted pen-beam, a striker pivoted concentric with the pen-beam, clutch mechanism connecting the striker with the pen-beam when the striker is moving in one direction, one or more cams for operating the said striker carried by a cam-disk on the main axle of the machine, and means for imparting a variable reciprocating movement to the pen-slide, as and for the purpose set forth.

9. In a ruling-machine, the combination, with a revoluble table formed of two parts superimposed one above the other, the lower part having radial slots and the upper part having pins projecting through the said slots, of a foundation-plate provided with a stud-axle for supporting the lower part of the table, an adjustable guide-ring supported by the foundation-plate and provided with a groove with which the said pins engage, and an intermediate axle receiving motion from the main axle of the machine and imparting motion to the upper part of the revoluble table, substantially as set forth.

10. In a ruling-machine, the combination, with a pivoted pen-beam, of a striker pivoted concentric with the pen-beam, clutch mechanism connecting the striker with the pen-beam when the striker is moving in one direction, one or more cams for operating the said striker, a revoluble table formed of two parts superimposed one above the other, the lower part having radial slots and the upper part having pins projecting through the said slots, a foundation-plate provided with a stud-axle for supporting the lower part of the table, an adjustable guide-ring supported by the foundation-plate and provided with a groove with which the said pins engage, and an intermediate axle receiving motion from the main axle of the machine and imparting motion to the upper part of the rotating table, substantially as and for the purpose set forth

11. In a ruling-machine, the combination, with a pivoted pen-beam, of a striker pivoted concentric with the pen-beam, clutch mechanism connecting the striker with the pen beam when the striker is moving in one direction, one or more cams on the main axle for operating the said striker, a revoluble table formed of two parts superimposed one above the other, the lower part having radial slots and the upper part having pins projecting through the said slots, a foundation-plate provided with a stud-axle for supporting the lower part of the table, an adjustable guide-ring supported by the foundation plate and provided with a groove with which the said pins engage, an intermediate axle receiving motion from the main axle of the machine and imparting motion to the upper part of the rotating table, and means for imparting a reciprocating movement to the pen-slide, substantially as and for the purpose set forth.

12. In a ruling-machine, the combination, with a frame, and a pen-beam pivoted to the frame and provided with a striker for raising and lowering it; of a table, a driving-shaft, a revoluble cam driven by the said shaft, a lever pivoted to the frame and provided with a roller which engages with the said cam, a connecting-rod pivoted to the said striker and lever, and intermediate driving mechanism arranged between the said table and shaft and operating to move the table back and forth once to each revolution of the said cam, substantially as set forth.

13. In a ruling-machine, the combination, with a frame, and a longitudinally-movable table supported by the frame; of an endless flexible band, means for supporting and driving the said band, a bracket secured to the table and provided with a slot through which the said band passes, a gripping-piece slidable in the said bracket, and an eccentric carried by the said bracket and operating to press the gripping-piece on the said band thereby clamping it to the bracket, substantially as set forth.

14. In a ruling-machine, the combination, with a frame, a stationary bar carried by the frame, an ink-reservoir, and a flexible feed-tube connected to the ink reservoir; of a nipping-bar pivoted to the said frame, means for causing the nipping-bar to nip the said tube against the aforesaid bar, a trip-lever pivoted to the frame and operating to retract the nipping-bar, a revoluble driving-cam, and rod-and-lever mechanism operatively connecting the said cam with the said trip-lever, substantially as set forth

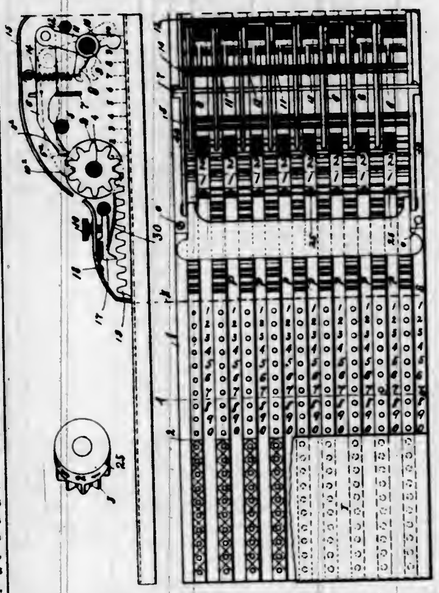
15. In a ruling-machine, the combination, with a frame, a stationary bar carried by the frame, an ink-reservoir, a flexible feed-tube connected to the reservoir, and a nipping-bar pivoted to the said frame and operating automantically to nip the feed-tube against the aforesaid bar; of a table, a driving-shaft, a revoluble cam driven by the said shaft, a trip-lever pivoted to the frame and operating to retract the nipping-bar, rod-and-lever mechanism operatively connecting the said cam with the trip-lever, and intermediate driving mechanism arranged between the said table and shaft and operating to move the table in one direction while the said feed-tube is released and in the reverse direction while the feed-tube is nipped, substantially as set forth.

16. In a ruling-machine, the combination, with a frame, a table carried by the frame, and a paper-gripper pivoted to the table and provided with a lever for operating it; of two levers pivoted to the frame, a bar pivoted to the free ends of the said levers and operating the gripper-lever when raised, a revoluble cam, and an arm connected to one of the said two levers and operated by the said cam, substantially as set forth.

17. In a ruling-machine, the combination, with a frame, a pen-beam pivoted to the frame, and a pen-slide carried by the said beam and slidable crosswise of the frame; of a table carried by the frame, a driving-shaft, intermediate driving mechanism arranged between the said shaft and table and operating to move the table back and forth, and intermediate driving mechanism arranged between the said shaft and the pen-slide and operating to reciprocate the pen-slide crosswise of the direction of motion of the table while the said table is in motion, substantially as set forth.

18. In a ruling-machine, the combination, with a frame, a pen-beam pivoted to the frame, a pen-slide carried by the said beam and slidable crosswise of the frame, and a projecting pin 63 operatively connected to the said pen-slide; of guides carried by the frame, a bar slidable in the said guides crosswise of the frame, a plate carried by the said bar and having a vertical slot which engages with the said pin, and a crank-shaft provided with an adjustable crank-pin which is operatively connected with the said bar, substantially as set forth.

609,885. ADDING-MACHINE. HOMER A. HERR, Philadelphia, Pa. Filed Jan. 12, 1893. Serial No. 458,122. (No model.)



Claim.—1. In an adding-machine the combination of a grooved frame or bed-plate, a series of sliding bars provided with a rack at one end and a series of perforations at or near the other end thereof, a series of registering-wheels, a series of levers one for each of said racks excepting the rack of the highest order, a series of wheel-actuating pawls, one for each lever and carried thereby, and a common supporting-shaft for said wheels, whereby on the operation of any of the sliding bars the rack thereon will engage with the teeth of its corresponding registering-wheel and move it to the proper degree to register the amount corresponding to the movement given the slide, and whereby units can be carried to tens, tens to hundreds, hundreds to thousands.

2. The combination in an adding-machine of a bed-plate or frame, a series of registering-wheels, a common supporting-shaft therefor, a series of wheel-operating racks sliding on and supported by said bed-plate and a lock common to all of said racks, said lock consisting of a transverse-located pivoted frame, whereby the said racks can be locked against movement by said frame engaging with any of the teeth of all of the slides at any stage of a calculation.

3. The combination in an adding-machine of a bed-plate or frame, a series of registering-wheels, a common supporting-shaft therefor, a series of wheel-operating racks, one rack for each wheel and a me-

chanical connection between each rack which operates the registering-wheeel of a lower order, and the wheel of the next higher order, consisting of a pivoted lever adapted to be operated by said rack and a wheel-actuating pawl carried by said lever, substantially as described.

4. The combination in an adding-machine of a frame having a series of grooves, a series of sliding bars, moving in said grooves, each bar of which is provided with a rack at one end and a series of holes at or near the other end thereof, a series of registering-wheels operated thereby, and a mechanical connection between each slide of a lower order and the registering-wheel of the next higher order, consisting of a pivoted lever adapted to be operated by its respective slide and a wheel-operating dog carried by said lever, with means for returning said levers to their normal position on being operated by their respective slides.

5. The combination in an adding-machine of a frame having a series of grooves, a series of sliding bars moving in said grooves, a series of registering-wheels, a supporting shaft for said wheels, and a connecting mechanism between the sliding bar operating the wheel of a lower order and the registering-wheel of the next higher order, consisting of a pivoted lever adapted to be operated by its respective rack and a wheel-operating dog or pawl carried by said lever, whereby the addition can be automatically carried from units to tens, from tens to hundreds, hundreds to thousands and so on.

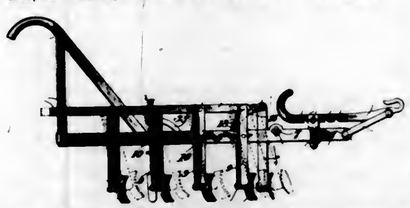
6. The combination in an adding-machine of a frame having a series of longitudinal grooves, a series of slides movable therein, a series of registering-wheels operated thereby and a lock common to all of said slides, said lock consisting of a transverse-positioned pivoted frame and a hand-operating part without the case for operating said frame.

7. The combination in an adding-machine of a bed-plate or frame provided with a series of grooves, a series of numerals from "0" to "9", one series of numerals for each groove, a series of slides moving in said grooves, one slide for each groove, each slide being provided with a series of perforations corresponding in normal transverse position to the numerals on the bed-plate, a series of registering-wheels also provided with numerals from "0" to "9" and a mechanical connection between each slide of a lower order and the registering-wheel of the next higher order, consisting of a pivoted lever adapted to be operated by the slide and a wheel-operating dog carried by said lever whereby on operating any slide of the series, from the perforations corresponding in transverse position to any of the numerals on the bed-plate, to its predetermined limit, the value of the movement will be registered on the adding-wheel corresponding thereto.

8. The combination in an adding-machine of a grooved frame or bed-plate, a series of sliding bars movable in the grooves of said frame, a series of registering wheels operated thereby, a connecting mechanism between the sliding bar operating a wheel of a lower order and the registering-wheel of the next higher order, consisting of a pivoted lever adapted to be operated by said slide and a wheel-operating pawl or dog carried by said lever, and means for normally holding said pawl out of engagement with the wheel it operates, normally.

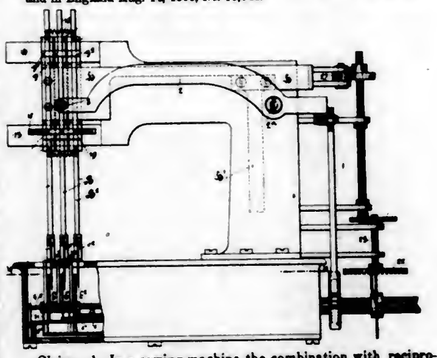
9. The combination in an adding-machine of a series of operating-slides, supported on a common frame, a series of registering-wheels operated thereby, a mechanical connection between the slide of a lower order and the registering-wheel of the next higher order, consisting of a pivoted lever adapted to be operated by the slide and a wheel-operating pawl or dog carried by said lever, and means for returning said wheel-operating pawl to its normal position on the operation of its corresponding slide.

609,886. PLOW-CULTIVATOR. ROLLIN R. JONES, East Bethlehem, Pa. Filed Apr. 14, 1896. Serial No. 587,447. (No model.)



Claim.—In a cultivator, the combination with a main beam, wing-beams and shovel-shanks, of a rearwardly-projecting end upon the main beam, a vertically-movable guide carried therein, a support movably secured to the guide at one end, and secured to the beam at the other end by a frangible connection, and a coiled spring uniting the guide to the support, so as to render the former yieldingly movable, substantially as set forth.

609,887. MULTIPLE-SEWING MACHINE. PAUL A. KÜHN and PAUL F. KLUGE, Burgstadt, Germany. Filed Aug. 20, 1896. Serial No. 603,366. (No model.) Patented in Germany Feb. 21, 1896, No. 88,800, and in England Aug. 14, 1896, No. 18,041.

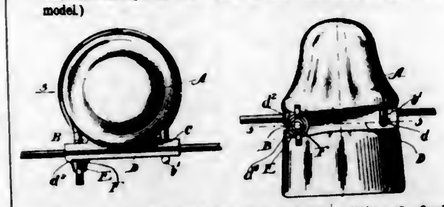


Claim.—1. In a sewing-machine the combination with reciprocating needle-bars and the corresponding coöperating loopers, of connected slides with connections between said slides and one of the needle-bars and loopers respectively to move the same laterally in unison therewith and centrally-pivoted reversing-levers each connected at one of their ends with one of the slides and at their opposite ends with the other needle-bar and looper respectively, whereby when the slides are moved in one direction one set of needle-bars and loopers will be moved in the same direction therewith and the other set of needle-bars and loopers will be moved in the opposite direction to produce diverging or converging lines of stitches; substantially as described.

2. In a sewing-machine, the combination with reciprocating needle-bars, of independently laterally movable feeders, an oscillating shaft for moving said feeders to feed the goods to be operated upon, independently laterally movable loopers, an oscillating shaft for moving said loopers, a main drive-shaft, a slide with connections between said slide and one of said needle-bars, one of said feeders and one of said loopers, for moving the same in unison with the slide, centrally-pivoted reversing-levers, interposed between said slide and another of said needle-bars loopers and feeders respectively, whereby when said slide is moved in one direction, each set of needle-bars loopers and feeders will move toward or away from the other set of needle-bars loopers and feeders, and a cam on the main drive-shaft for reciprocating said slide; substantially as described.

3. In a sewing-machine, the combination with independently laterally movable reciprocating needle-bars and independently laterally movable loopers for cooperating therewith, of a slide with connections between said slide and said needle-bars and loopers for moving the needle-bars and loopers in pairs in opposite directions simultaneously to produce divergent or convergent lines of stitches, a main drive-shaft with connections between said main drive-shaft and needle-bars for reciprocating the same and an intermittingly-operating cam driven by said main drive-shaft and coöperating with said slide to move the same together with the needle-bars and loopers when the needle-bars are raised; substantially as described.

609,888. CLAMP FOR ELECTRIC WIRES. SYLVESTER S. LEONARD, Chicago, Ill. Filed Jan. 24, 1896. Serial No. 667,634. (No model.)



Claim.—1. A clamp of the class described consisting of a flexible loop adapted to embrace the glass insulator and a pair of clamping-blocks loosely secured to the loop at one end and each provided at the other end with a notch adapted to receive the free end of the wire, said free end being provided with means for clamping it upon said blocks; substantially as described.

2. A clamp of the class described consisting of a pair of clamping-blocks formed upon their adjacent surfaces to receive and hold a wire or cable, the block next to the glass insulator having its rear surface fitted thereto sufficiently to prevent longitudinal movement thereupon and both of said blocks being notched at one end from their edges inward, a flexible loop loosely secured at one end to the other end of said blocks and adapted at its free end to enter said notches and a clamping-nut threaded to the free end of the loop and adapted to be screwed down upon the blocks; substantially as described.

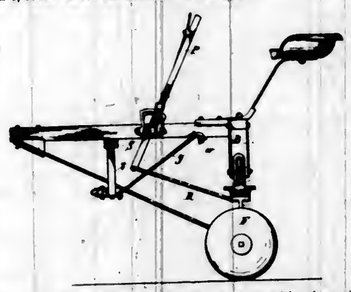
3. In a clamp of the class described, the flexible wire loop, B, the blocks, C, D, having the notches, c', d', and one of the lugs, d^3, d^3, the inner surfaces of said blocks being adapted to clamp a wire or cable, one end of the loop being loosely secured to the blocks and the other end being adapted to enter the notches and being provided with a clamping-nut; substantially as described.

4. A clamp of the class described having two wire-clamping blocks perforated at one end and notched at the other, the inner of said blocks being longitudinally concave and laterally convex and the outer having an outwardly-extending projection at extremity of the notch and a loop extending through the perforations and clenched upon the blocks at one end and being adapted at the other end to enter the notches and there provided with a nut adapted to seat upon the outer surface of the outer block behind said projection; substantially as described.

5. The combination with the blocks, C, D, having the perforations, c, d, the notches, c', d', the grooves, c^4, d^4, and the rib, c^3, of the loop, B, extending through the perforations and cleeched at b', and having at the other end the nut, E; substantially as described.

6. A clamp for attaching electric wires and the like to the ordinary insulator consisting of an inner block longitudinally concave and laterally convex on one side, to fit the customary circumferential groove in the insulator, and adapted upon its opposite side to engage with the wire, an outer block having its inner surface also adapted to engage said wire, a rib or elevation upon one of said blocks at a distance from the line of engagement with the wire and adapted to bear upon the other block and a clamping-loop adapted to embrace the insulator and engage at its opposite ends the opposite ends of the blocks between the wire and the rib; substantially as described.

609,889. DISK HARROW AND CULTIVATOR. PETER E. LITTLE, Dayton, Ohio, assignor to the Ohio Rake Company, same place. Filed Jan. 6, 1898. Serial No. 665,781. (No model.)



Claim.—1. In a harrow and cultivator, the combination, with the main frame and gang-frames vertically pivoted thereto, with hangers and series of disks carried thereby, of draft and lever rods with coupling connections therefor on opposite sides of the disk gangs for the draft-rods at the gang-axles and for the lever-rods at opposite ends of the gang-frames, substantially as shown and described.

2. In a harrow and cultivator, the combination, of the main frame and gang-frames vertically pivoted thereto, with hangers and series of disks carried thereby with journal-boxes therefor, eyes formed on opposite sides of one of said journal-boxes draft-rods hooked therein and to the draft-pole with lever-rods and means for coupling same at opposite ends of the disk gangs, substantially as shown and described.

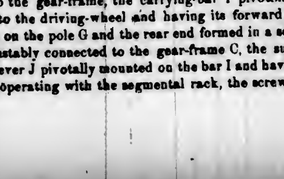
3. In a harrow and cultivator, the combination, with the main cross-beam of a plate laterally adjustable thereon and provided with a vertical opening, coupling-pin pivoted therein and hinged horizontally to its respective disk gang, substantially as shown and described.

4. In a harrow and cultivator, the combination, with the main cross-beam, of a plate laterally adjustable thereon and provided with a vertical opening coupling-pin pivoted therein and hinged horizontally to itr respective disk gang, flanged plate on the disk gang and vertically-adjustable hook secured to said laterally-adjustable plate, substantially as shown and described.

5. In a harrow and cultivator, the combination, with the main cross-beam of a plate laterally adjustable thereon and provided with a vertical opening, coupling-pin pivoted therein and hinged horizontally to its respective disk gang, journal-boxes for the disk gangs, eyes formed on opposite sides of one of said journal-boxes, draft-rods hooked therein and to the draft-pole with lever-rods and means for coupling same at opposite ends of the disk gangs, substantially as shown and described.

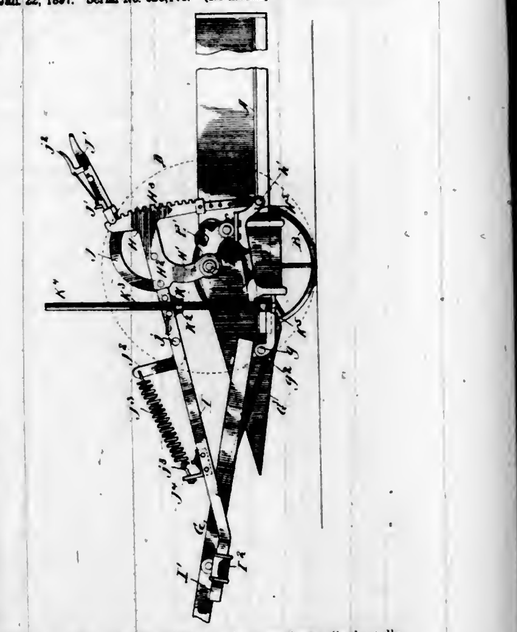
6. In a harrow and cultivator, the combination, with the main cross-beam, of a plate laterally adjustable thereon and provided with a vertical opening coupling-pin pivoted therein and hinged horizontally to its respective disk gang, flanged plate on the disk gang and vertically-adjustable hook secured to said laterally-adjustable plate, journal-boxes for the disk gangs eyes formed on opposite sides of one of said journal-boxes, draft-rods hooked therein and to the draft-pole with lever-rods and means for coupling same at opposite ends of the disk gangs, substantially as shown and described.

609,890. LOCKING-LINK FOR CHAINS. HEINRICH F. LOOS, Nuremberg, Germany. Filed Apr. 1, 1898. Serial No. 676,139. (No model.)



Claim.—A link-chain having two links at one end and one at the other, a pin projecting from said single link adapted to enter an opening in one of the two links and a pin projecting from the other of the two links adapted to enter a groove or recess in the single link, substantially as described.

609,891. REAPING-MACHINE. JAMES MACPHAIL, Blue Island, Ill., assignor to the Piano Manufacturing Company, Chicago, Ill. Filed Jan. 22, 1897. Serial No. 620,170. (No model.)



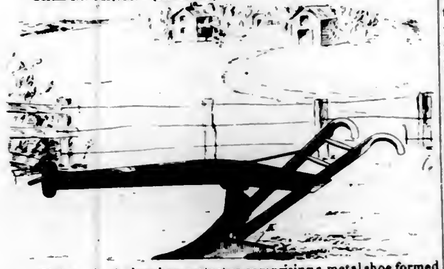
Claim.—1. In a reaping-machine, the gear-frame C pivotally mounted in relation to the driving-wheel, the pole G pivotally attached to the gear-frame, the carrying-bar I pivotally mounted in relation to the driving-wheel and having its forward end slidingly mounted on the pole G and the rear end formed in a segmental rack and adjustably connected to the gear-frame C, the substantially L-shaped lever J pivotally mounted on the bar I and having the spring-latch cooperating with the segmental rack, the screw-threaded rod

K^3 having bearings in the frame C and in the pivotal nut K^3 carried by the bar I, and the spring J^3 connected to the bar I and to the upturned end of the lever J, substantially as and for the purposes described.

2. In a reaping-machine, the axle D; the casting F mounted upon the axle; the foot-lever F^4 mounted upon the casting; and the seat F^5 and its connections detachably mounted in the said casting.

3. In a reaping-machine, the axle D; the casting F, comprising the forwardly-extending arm F^2 and the bracket F^1, provided with a box f^3; the foot-lever F^4 mounted in the said arm F^2; the seat F^5; the seat-post F^6; and the horizontal bar F^9 secured at one end to the seat-post and detachably secured at its opposite end in the box f^3, substantially as described.

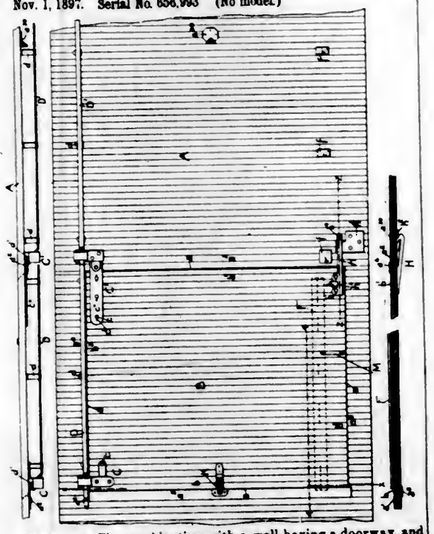
609,892. PLOW-BAR PROTECTOR. MOSES E. MANIRE and THOMAS HOOD, Norman, Okla.; said Manire assignor of his right to William H. Snow and Warren T. Mayfield, and said Hood assignor of one-half his right to Jerry McCarthy, same place. Filed July 7, 1897. Serial No. 643,730. (No model.)



Claim.—1. A plow-bar protector comprising a metal shoe formed with a bottom and side walls adapted to embrace the bottom and sides of a plow-bar, an end wall for said shoe, and a forwardly-inclined bottom in the open end of same, and means for fastening the said shoe to the plow-bar, substantially as described.

2. A plow-bar protector comprising a shoe formed of a single piece of material having side walls adapted to embrace the side walls of the plow-bar, an end wall, a bottom having its forward surface beveled, and an upwardly-extending lug formed on one of the said side walls having an aperture for the reception of a bolt, whereby the same is secured to the plow-bar, substantially as shown and described.

609,893. FLUSH SLIDING DOOR. DAVID MANUEL, Hyde Park, Mass., assignor of two-thirds to Lucy A. Smith, Boston, Mass. Filed Nov. 1, 1897. Serial No. 656,993. (No model.)



Claim.—1. The combination with a wall having a doorway and its sliding door, of a keeper device comprising holding means on said wall, and a hook device secured to said door, near the rear of the latter, said hook device being arranged to engage said holding means automatically upon sliding, closing movement of said door, to cramp the latter inward and prevent displacement from said doorway in a direction perpendicular to said wall.

2. A keeper for sliding doors, comprising an attaching portion adapted to be secured to the door adjacent its rear edge, and a hook portion adapted to project to the rear of said door with the point of said hook turned inwardly and forwardly, and arranged to operate substantially as described.

3. The combination with a wall and its door, of a keeper, secured to said door near the rear of the latter, and adapted to engage said wall at times, said keeper comprising an inwardly and forwardly directed hook and means to regulate the operation of said hook.

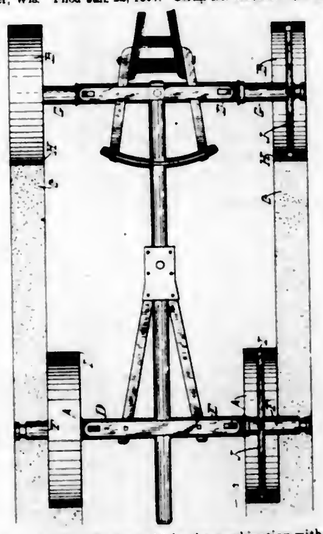
4. The combination with a wall having a doorway and a door adapted to slide horizontally parallel with said wall when open and to enter said doorway flush with said wall to close said doorway, of means to prevent displacement of said door during sliding movement near the rear portion of its path, said means comprising a fin or ledge and a cooperating projection mounted one on said wall and the other on said door and arranged to engage one another to prevent displacement of said door from the path in which it slides normally, but offering no hindrance to movement of said door into flush position.

5. The combination with a wall having a doorway, and a door arranged to slide outside of and parallel to said wall when open, and into position flush with said doorway to close the latter, of means to prevent displacement of said door when sliding in front of said wall, said means comprising a straight horizontal ledge attached to said door and having an extended free portion, and a projection secured to said wall and also having a free portion, said free portions being arranged to overlap one another and enter into mutual engagement upon transverse movement of the door when in open sliding position, but to offer no obstacle to sliding movement of said door into flush closed position.

6. A hanger-trolley for sliding doors comprising a bearing-block having downwardly-extended trunnions; a roller provided with an extended axle journaled in said trunnions and presenting a convexly-rounded tread to run upon a track, and a guide member of suitable contour to fit snugly the lower surface of said bearing-block and inclose said roller and axle; said guide member having an interiorly-located aperture to permit passage of said roller-tread.

7. A keeper for sliding doors, comprising an attaching portion A^5, adapted to be secured to the door adjacent the rear edge of the latter, a hook portion A^4 adapted to project to the rear of said door with the point of said hook turned inwardly and forwardly, and means A^3, adapted to regulate the length of said hook.

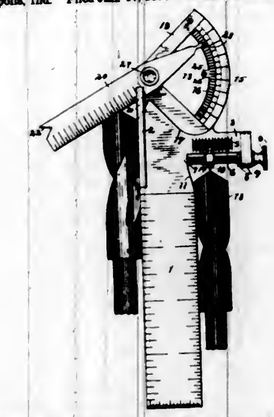
609,894. WHEELED VEHICLE. IRAN Z. MERRIAM, Whitewater, Wis. Filed Jan. 22, 1897. Serial No. 620,210. (No model.)



Claim.—1. In a wheeled vehicle, the combination with the front and rear axles, of broad-rimmed wheels, the rims and spokes of one pair of wheels being secured to the respective hubs outside of the common center between the respective ends of such hubs, and the rims and spokes of the other pair of wheels secured to their respective hubs inside of the common center between their respective ends, whereby the hubs of the front and rear wheels on each side of the vehicle may be in alinement, but with the rims of such wheels in adjacent and slightly-overlapping vertical planes, substantially as described.

2. In a wheeled vehicle, the combination with the front and rear axles of broad-rimmed wheels, the rims and spokes of the front wheels being secured to the respective hubs outside of the common center between the respective ends of such hubs, while the rims and spokes of the rear wheels are secured to their respective hubs inside of the common center between their respective ends, substantially as and for the purpose specified.

609,895. COMBINATION-TOOL. COLONEL C. A. MITCHELL, Indianapolis, Ind. Filed Jan. 17, 1898. Serial No. 666,874. (No model.)

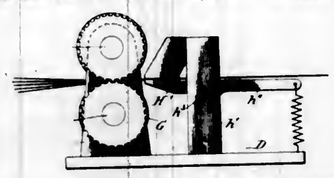


Claim.—1. A combination-tool of the class described, having scales upon its upper and lower face and across the outer end, consisting of the body portion provided with mortised lips or flanges 2 upon its inner edge, a cut-out portion 11 in its outer edge opposite said lips 2, an integral sector 15, graduated upon its upper side having the lug 26 with the depression 25, and an integral arm 3 having a depending bearing 4 at its outer end and a scale 5 upon its upper side; the pivotally-secured scale-arm 20, having the thread-gage 22 upon its outer end, the pointed inner end and the teat 24 near said inner end; the screw 6, mounted in the depending bearing 4, and the traveling gage-point 10, mounted upon the screw 6 and having the mortise 14 and the point 12, all as shown and described.

2. A tool of the class described, comprising a body provided with coarse and fine graduations upon its upper and lower faces and graduations across its lower end, a drill-grinding gage provided with an adjustable scale-arm, a drill-centering gage provided with the traveling gage-point mounted on a screw, a protractor formed by the sector 15 and arm 20, a square consisting of the arm 20 secured at right angles to the edge of the body portion and secured by clamping the teat 24 on its inner end into the depression 25, formed in the lug 26, the bevel-square formed by the arm and body portion, and the sixty-degree thread gage formed in the outer end of the scale arm, all as shown and described.

3. In a machinist's combination-tool, the combination of the body 1, having the graduated scales upon the sides and across the outer end thereof, for obtaining measurements in tool-grinding, the cut-out portion 11, the flanges or lips 2, on its inner edge, having the mortise 31, and the extending arm 3, carrying the depending bearing 4, and having the scale 5; the sector 15, having the scale 16, and the inwardly-extending lug 26, and the connecting portion 19, said sector and connecting portion being of half the thickness of the body portion and integral therewith; the drill-grinding gage formed by the inner edge of the body portion, the scale-arm 20, and the lips 2; the scale-arm 20 adapted to form in connection with the other parts of the tool, a square, a bevel-square, and protractor, consisting of the arm pivoted upon the screw-stud 21, opposite the center of the sector, said arm having the point 23 at its inner end with a teat 24 upon one side of said point and having a sixty-degree thread-gage 22, formed in its opposite end; the means for securing the scale-arm consisting of the screw-stud 21, having the head 27, the round portion 28, adapted to enter the like opening in the scale-arm 20, the square portion 29, adapted to enter a square opening in the body portion, and the thumb-nut 30, adapted to mesh with the screw-stud 21; and the drill-centering device, consisting of the screw 6, secured in the bearing 4, and the drilled recess 7, by the collar 8, and adapted to be revolved by the thumb-head 9, said screw carrying the traveling gage-point 10, said gage-point being mortised at 14 to slide upon the arm 3, all substantially as shown and described.

609,896. ROTARY CUTTER. EDMUND MORRIS, Michigan City, Ind. Filed Nov. 12, 1897. Serial No. 658,327. (No model.)

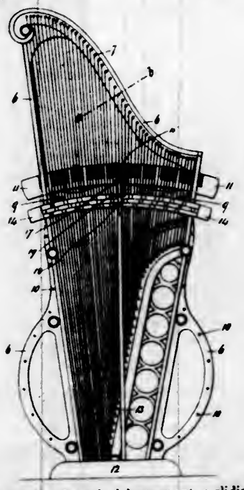


Claim.—1. The combination of a gang of circular cutters having concave grooves in their peripheries, another gang of circular cutters overlapping the cutters of the first-mentioned gang and having relatively narrow grooves in their peripheries.

2. The combination of a gang of circular cutters having concave grooves in their peripheries, a second series of circular cutters having relatively narrow grooves in their peripheries, and a guide having corrugated openings placed opposite the grooves in the cutters.

3. The combination of the rotary cutters and a guide, consisting of an upper guide-bar having a series of curved grooves, and a lower guide-bar having a series of grooves arranged beneath the first-mentioned grooves, but smaller in cross-section than said grooves.

609,897. MUSICAL STRINGED INSTRUMENT. HENRY MULLER, London England. Filed July 21, 1897. Serial No. 645,366. (No model.) Patented in England Oct. 30, 1896, No. 24,228, and May 6, 1897, No 11,322.



Claim.—1. In a stringed musical instrument, a sliding board 14 having a line of projections and intervening spaces, in combination with the movable picker-stick 13, having coacting roller contacts with said board, substantially as and for the purpose set forth.

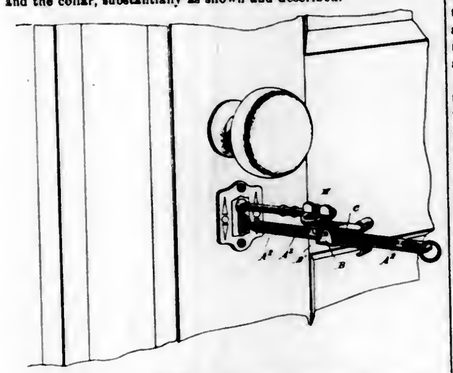
2. In a stringed musical instrument, the movable picker-stick having the end finger-piece, the adjustable picker 17, and adjustable rollers, substantially as set forth.

3. In a stringed musical instrument, the movable picker-stick having the end finger-piece, the adjustable picker 17, and the adjustable rollers and interposed springs, substantially as set forth.

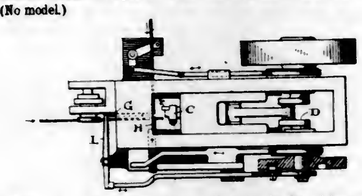
609,898. KEY-GUARD. JOHN R. MYERS, Springfield, Mo. Filed Feb. 23, 1897. Renewed Feb. 24, 1898. Serial No. 671,540. (No model.)

Claim.—A key-fastener composed of a flat metal strip having a

twisted end at right angles to the perforated body portion, and a clasp sliding on the body portion, said clasp carrying a pin adapted to fit in any one of the perforations and provided with a collar, and a nut fitting on the pin for holding the bow of the key between it and the collar, substantially as shown and described.



609,899. PROCESS OF AND MACHINE FOR MAKING CHAPLETS. AUGUSTUS M. MCGEE, Cleveland, Ohio, assignor of one-half to Charles Haas, same place. Filed Mar. 19, 1898. Serial No. 674,458. (No model.)

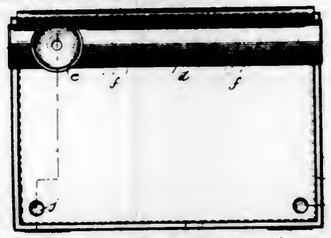


Claim.—1. The method herein described of making chaplets, which consists, first, in forming an opening from the edge to the center of the plate which constitutes the head of the chaplet, then passing the stem laterally through said opening to the base thereof and then securing the stem upon the plate, substantially as described.

2. A machine for making chaplets, having dies to cut the chaplet-plates to the desired length, and a tongue to form a slot from the edge to the center of the head, in combination with means to cut the stems of the chaplet to suitable lengths and pass them to position laterally from the edge to the center of the plate, and means to lock the stem rigidly in the plate, substantially as described.

3. The method substantially as described of making chaplets, consisting, first, in forming an opening from the edge to the center of the chaplet-plate and turning back the stock along both sides of the said opening to form an open slot to introduce the stem, then passing the stem laterally into the bottom of said opening, and, lastly, turning the stock back to close said opening and against said stem, and locking the stem in said head, substantially as described.

609,900. PHOTOGRAPHIC-NEGATIVE WASHER. WILLIAM NEIL, Chicago, Ill., assignor to James H. Smith, same place. Filed May 23, 1898. Serial No. 681,449. (No model.)



Claim.—1. The combination in a negative-washing apparatus, of a series of stationary trays supported in substantially horizontal positions one above the other in a rigid framework, said trays being provided with perforations in the bottom and adjacent to one of the side walls, a series of removable negative-holding trays adapted to rest within said stationary trays and means for raising the bottoms of the removable trays so as to provide a space between them and the stationary trays, substantially as described.

2. In a device of the class described, the combination of a plurality of substantially horizontal trays each having bottom perforations adjacent to one of its side walls, said trays being secured one above the other in a rigid framework, and a series of removable negative-holding trays of lesser depth than said stationary trays and adapted to be contained within the latter, substantially as described.

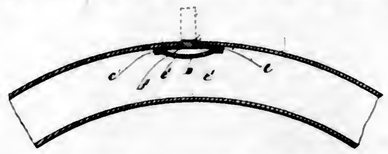
3. A negative-washing apparatus in which is combined a plurality of substantially horizontal trays each having bottom perforations adjacent to one of its side walls, said trays being supported one above the other in a rigid framework, and a series of removable negative-holding trays each having a flange extending from the top of one of its sides adapted to engage and overhang the side wall of one of said stationary trays, substantially as described.

4. A negative-washing apparatus in which is combined a plurality of substantially horizontal trays each having bottom perforations adjacent to one of its side walls, said trays being supported one above the other in a rigid framework, a series of removable negative-holding trays adapted to be contained within said stationary trays, means for providing a space between the bottoms of the stationary and removable trays, and means for suspending one side of each of the removable trays to one of the side walls of the stationary trays, substantially as described.

5. In a device of the class described, the combination of a plurality of substantially horizontal trays each having bottom perforations adjacent to one of its side walls, said trays being supported one above the other in a rigid framework, a series of removable negative-holding trays adapted to be contained within said stationary trays, flanges upon one of the side walls of said removable trays for engaging one of the side walls of said stationary trays, and indentations in the bottoms of said removable trays adjacent to the walls opposite to said flanged walls, substantially as described.

6. In a device of the class described, the combination of a plurality of substantially horizontal trays each having bottom perforations adjacent to one of its side walls, said trays being supported one above the other in a rigid framework, a series of removable negative-holding trays adapted to be contained within said stationary trays, flanges upon one of the side walls of said removable trays for engaging one of the side walls of said stationary trays, indentations in the bottoms of said removable trays adjacent to the walls opposite to said flanged walls, and means for introducing and distributing water to the topmost removable tray, substantially as described.

609,901. PNEUMATIC-TIRE PLUG. OWEN F. O'NEILL, Philadelphia, Pa. Filed Feb. 26, 1898. Serial No. 671,856. (No model.)



Claim.—1. A plug for a pneumatic tire consisting of a plug, a thin flexible disk integral therewith, a secondary disk of heavier body, said latter disk having air-inlet holes and the two said disks being united by vulcanization or other means near their respective circumferences.

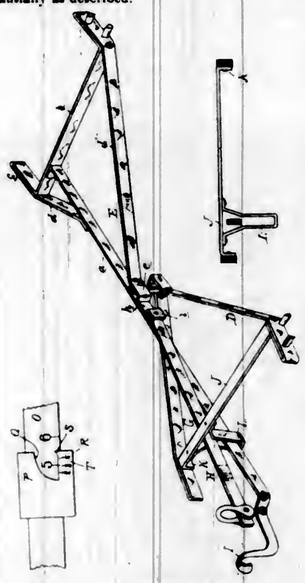
2. A plug for a pneumatic tire consisting of a stem or plug, a thin flexible integral plate carried thereby, a secondary plate heavier in body than said former plate, said latter plate having holes permitting air to pass therethrough, said two plates being united near their circumferences, whereby the said latter heavy plate relieves the former lighter one from undue tension thus strengthening the plug as a unit, and whereby the said lighter plug pneumatically assists in sealing the puncture.

609,902. WEIGHING-TRUCK. ORLANDO W. PARSELL, Flushing, Mich. Filed Aug. 30, 1897. Serial No. 649,916. (No model.)

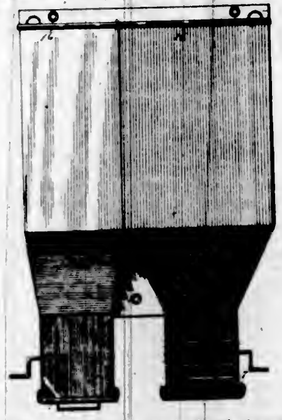
Claim.—1. In a scale, a lever formed of bar or band metal comprising the bar *a* the cross-bar secured to the bar *a* at its end and bent to have pivot-supporting extensions and bracing connections between the cross-bar and the bar *a*.

2. In a scale, the combination of a long lever comprising the bar *a* the end cross-bar *b* bent to have the end pivot-supporting sections, and the bracing-sections *d d'*, the bracing-section *d* bent to have the two parallel sections *i e* separated from the bar *a* and the section *h* in contact therewith and secured thereto between the other parallel sections for the purpose described.

3. In a platform-scale, a lever comprising a straight longitudinal bar, a transverse bar secured at the end thereof and bent to form end pivot-supporting extensions, and bracing-bars extending from said end pivot-supporting extensions and secured to the longitudinal bar, substantially as described.



609,903. MEAL AND FLOUR BIN. THOMAS PERRIN, Sedalia, Mo. Filed Nov. 5, 1897. Serial No. 657,518. (No model.)



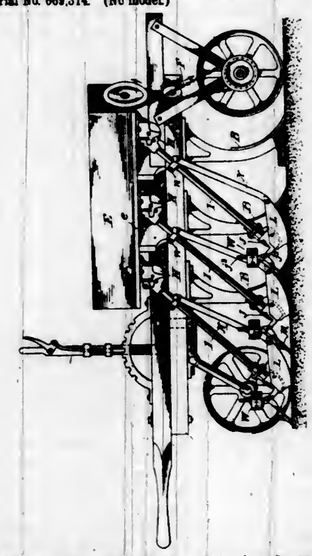
Claim.—The combination of a bin having the lower edges of its sides bent upward and forming ways, a sliding cover extending over the entire bottom of the bin and having its side edges bent upward and engaging the ways of the bin, said cover having its rear edge extended upward and provided with a loop, and a horizontal guide-rod mounted on and extending rearward from the bin and passing through the loop of the cover, said guide-rod having its outer end bent at an angle and arranged to be engaged by the upwardly-extending rear edge of the cover, the latter having both its forward and rearward movement limited by its rear edge, substantially as and for the purpose described.

609,904. SASH-FASTENER. FRANK H. PETERS, Montreal, Canada, assignor, by mesne assignments, of one-half to Elma Peters, same place. Filed May 20, 1895. Serial No. 550,031. (No model.)

Claim.—In a sash-lock the combination of the pivoted toothed lock-piece A, wedge B, spring E, push B', and lifting-hook C^2 as and for the purposes described.



609,905. SEED-DRILL. JAMES PORTEOUS and ROBERT W. COLE Fresno, Cal.; said Cole assignor to said Porteous. Filed Feb. 7, 1898. Serial No. 669,314. (No model.)



Claim.—1. In a seed-drill, the combination of a seedbox, brackets bolted to the bottom of said box at intervals, hoppers pivoted to the side of said brackets, each hopper communicating with a discharge from the seedbox and consisting of a two-part casting, the upper portion of which forms the hopper and the lower portion a clamping-socket, conveyer-pipes having their upper ends secured in the clamping-sockets and communicating with the hoppers, and drill attachments carried by the lower ends of the conveyer-pipes and drawn thereby.

2. In a seed-drill, the combination of a rigid pipe conveyer, a shoe connected therewith, and a link connected with the forward end of the shoe and adjustably connected with the pipe conveyer above, whereby the inclination of the shoe can be adjusted.

3. In a seed-drill, the combination of a rigid pipe conveyer pivotally connected with a fixed part of the frame above, a hollow foot secured to the lower end of the pipe conveyer and communicating therewith, and a shoe having a recess into which the foot is fitted.

4. In a seed-drill, the combination of a rigid pipe conveyer pivotally connected with a fixed part of the frame above, a hollow foot secured to the lower end of the pipe conveyer and communicating therewith, and a shoe having a recess into which the foot is fitted pivotally, said shoe having a link connected with its forward end and adjustably connected at its upper end with the pipe conveyer.

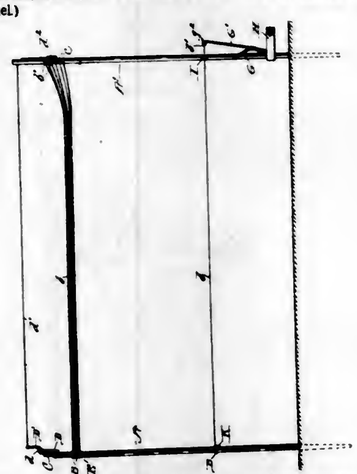
5. In a seed-drill, the combination of a rigid pipe conveyer pivotally connected with a fixed part of the frame above, a foot-piece connected with its lower end, a shoe connected with said foot-piece, and a weight-receiver on said foot-piece, to regulate the pressure on the shoe.

6. In a seed-drill, the combination of a rigid pipe conveyer pivotally connected with a fixed part of the frame above, a foot-piece connected with the lower end of the pipe conveyer and having an arm with a pin adapted to receive weights, and a shoe connected with the foot-piece.

7. In a seed-drill having independent drills, the independent conveyer-plates pivotally connected with the lower ends of the drills and

having forked extremities to break down the walls of the cuts made by the drill attachments, whereby the seed is covered, and a fixed stop rising from the lower end of each drill to limit the upward swing of the coverer-plate and to insure its return.

609,906. TIME-RECORDER. ELMER E. RANDOLPH and HENRY L. McCOY, Manito, Ill. Filed Jan. 3, 1898. Serial No. 665,302. (No model.)



Claim.—1. In a time-indicator purposed to indicate the time made by racers, the combination with the posts A, A', placed at opposite sides of a race-track, of the rings B, provided with strings *b*, attached thereto across the track and held on the post A', of means for alternately dropping the rings B, and for placing the strings *b*, into position to be contacted with by the racer, and of means connected with said strings for instantaneously indicating upon a stop watch or clock the exact time made by the racer when crossing and recrossing the tape, all substantially as and for the purpose set forth.

2. In a time-indicator adapted to indicate the time made by racers, the combination with the posts A, A', of the rings B, carried on post A, and held thereon by the pin E, strings *b*, attached to the rings B, extending across the track and held on the post A', of means for alternately placing the rings and strings in position whereby the strings will be contacted with by the racer, which contact will instantaneously indicate the time made by the racer when crossing and recrossing the tape, consisting of the lever D', contacting with the spring C, arranged in post A, the trip F, arranged in the spring C, which when the lever D', is operated shoves the rings B, alternately off the pin E, the lever G' provided with the hook g^2, to which the string *b*, is attached which when pressure is brought to bear against it will move the lever G', which will contact with a stop-watch carried in a frame secured to the post A', all substantially as and for the purpose set forth.

3. A time-indicator for race-tracks, consisting of contacting strings carried across said track, and contacting with posts at each side thereof, means suitably carried on said posts adapted to be actuated by the operator for causing the said strings to drop at intervals to be contacted with by the speed-producer and a time-indicator suitably carried in connection with said posts and actuated by the movement of said strings when contacted with by the speed-producer, all substantially as and for the purpose described.

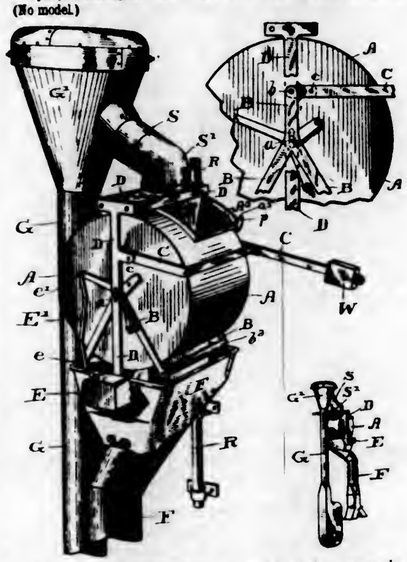
4. In a time-indicator for indicating the time of any speed-producer, posts arranged along the side of the race-track and upon opposite sides thereof, strings carried across said track and operated upon by said speed-producer, the means controlled by the operator for dropping said strings one after another to be contacted with by the speed-producers, and suitable levers controlled by said strings, for operating a stop watch or clock which indicates the exact time made by the speed-producer, all substantially as and for the purpose described.

609,907. PROCESS OF PRODUCING CERAMIC COMPOSITIONS. CARL C. SCHIRM, Berlin, Germany, assignor of one-half to Otto Lessing, same place. Filed July 19, 1897. Serial No. 645,059. (No specimens.)

Claim.—1. A process for producing a ceramic composition which consists in mixing six parts of finely-powdered fired porcelain, earthenware or the like, with one part of plaster-of-paris, one part of a flux, which fuses at a comparatively low temperature, molding the composition thus produced and firing same substantially as described.

2. A process for producing a ceramic composition which consists in mixing about six parts of finely powdered fired material such as porcelain, earthenware and the like, with about one part of plaster-of-paris and one part of a flux as specified, firing the whole after molding the figure to be produced and finally immersing the said figure in a silicate bath in the manner and for the purpose substantially as described.

609,908. AUTOMATIC WEIGHER. JAMES B. SCHUMAN, Columbia City, Ind., assignor to the Pneumatic Elevator and Weigher Company, Indianapolis, Ind. Filed Nov. 2, 1897. Serial No. 657,161. (No model.)



Claim.—1. The combination, in a weigher, of a receptacle A, a stationary frame D the side pieces whereof have short central vertical slots therein, the frame B having pivot-holes therein, pivots or gudgeons *a* on the said receptacle passing through said holes and said slots, a scale-beam C pivoted to the frame D and to the upper end of the frame B, and a catch-segment on the upper side of said receptacle with suitable catches therefor on the stationary frame, said several parts being arranged and operating substantially as shown and described.

2. A weigher-receptacle cylindrical in form and mounted on horizontal axial pivot-points, a frame also carried by said pivots or gudgeons having branches which extend diagonally to the lower side of said receptacle, discharge-opening doors pivoted to said receptacle at its lower side, means whereby said receptacle is caused to rock from one side to the other as it is loaded and discharged, whereby said doors are brought in contact with bars carried by said stirrup branches and closed or permitted to open alternatively, a segment-shaped piece at the upper side of said cylindrical receptacle having notches at its ends and projections outside said notches, and a frame member having edges adapted to enter one or the other of said notches when said receptacle is in its upper position thus securing it in place while being filled, all substantially as and for the purposes set forth.

3. The combination, in a weigher, of a pivoted cylindrical receptacle having a central partition with a widened lower end and having two ingress-openings at the upper side of said receptacle one upon each side of said partition and two egress-openings at the lower side one upon each side of said central partition, doors to said egress-openings hinged at the outer sides thereof, the inner edges of said doors each extending when closed partially over the widened lower edge of said central partition, a stationary framework carrying the weigher structure and provided with slots through which the ends of the gudgeons or pivots to the receptacle extend, a scale beam pivoted to said frame, a tilting frame pivoted to the inner ends of the scale-beam and in which the cylindrical receptacle is immediately mounted, said tilting frame having arms or branches, cross-bars carried in the ends of said branches and passing behind the doors to

said receptacle, and a segment upon the upper side of said receptacle having notches at or near its ends the stationary frame having suitable engaging points or edges adapted to enter said notches separately and alternatively as the receptacle is rocked from side to side and there remain while said receptacle is in its raised position, the whole being arranged and operating substantially as shown and described.

609,909. PENCIL. HERBERT H. SEAMAN, New York, N. Y., assignor to the Stylus Pencil Company, same place. Filed June 14, 1897. Serial No. 640,649. (No model.)



Claim.—1. A pencil or the like comprising a series of individual, nested, conical members constructed to form a series of circular depressions, and a wrapper or cover secured to said series of conical members and having portions which are indented or pressed into said series of circular depressions.

2. A pencil or the like comprising a series of individual, nested, conical members constructed to form a series of circular depressions, and a wrapper or cover secured to the outer surfaces of said conical members and indented and also secured within said series of circular depressions.

3. A pencil or the like comprising a series of individual, nested, conical members, each of which is formed with a shoulder 9 and an end or shoulder 10, thereby forming with adjacent conical members circular depressions, and a wrapper or cover surrounding said series of conical members and having portions which are indented into said series of circular depressions.

4. A pencil or the like comprising a series of individual, nested, conical members, each of which is provided with a shoulder 9, a shoulder 10, and a cylindrical portion 11, and a wrapper or cover surrounding said series of conical members and having portions which are indented within the series of circular depressions formed by said portions 9, 10 and 11.

5. A pencil or the like comprising a series of individual, nested, conical members, each consisting of a cylindrical collar 8, a shoulder 9, a shoulder 10, and a cylindrical portion 11, and a wrapper or cover secured to the cylindrical collar 8 and indented within the circular depressions formed by the portions 9, 10 and 11.

6. A pencil or the like comprising a series of individual, nested, conical members having each a shoulder 9, so put together as to form a series of circular depressions at the ends or bases of said members, and a cover or wrapper indented into said series of circular depressions and secured to said shoulders 9.

7. A pencil or the like comprising a series of individual, nested, conical members having each an outside taper and an inside taper, the latter being greater in length than the former, so that when the series of conical members are nested together a space, as 7, is formed or produced between the tips or smaller ends of successive cones, and a continuous stick of lead or the like.

8. A pencil comprising a series of individual, nested, conical members each tapering externally and internally the latter taper being longer than the former, and having each a cylindrical bearing portion, as 3, forward of the internal tapering portion, and a centrally-disposed continuous stick of lead or the like.

9. A pencil comprising a series of individual, nested, conical members, each tapering externally and internally, the latter taper being longer than the former, and each having a cylindrical bearing portion 3, a cylindrical collar 8, and a cylindrical depressed portion 11, a centrally-disposed continuous stick of lead or the like, and an indented wrapper or cover.

10. A pencil or the like, comprising a series of individual, nested, conical members having each an internal cylindrical bearing portion 3, a slight tapered portion 4 extending therefrom, a longer tapered portion 6 extending from the portion 4 to the base end of the conical member, the external cylindrical collar 8, the shoulders 9 and 10, and the external taper 12, a centrally-disposed continuous stick of lead or the like, and an exteriorly-indented cover or wrapper.

11. A pencil or the like comprising a series of individual, nested, conical members constructed to form a series of cylindrical depressions, and a spiral wrapper or cover secured to said members and having portions which are indented or pressed into said series of circular depressions.

12. The conical member consisting of the cylindrical collar 8, the shoulders 9 and 10, the cylindrical portion 11, the outside taper 12 and the inside taper 6 of greater length than the outside taper.

13. The conical member consisting of the cylindrical collar 8, the shoulders 9 and 10, the cylindrical portion 11, the outside taper 12, the inside longer taper 6, and the inside cylindrical bearing 3.

14. The conical member comprising the interior cylindrical bearing 3, the interior taper 4, the interior taper 6, the exterior collar 8, the shoulders 9 and 10, the cylindrical portion 11, and the exterior taper 12.

15. A pencil or the like comprising a series of individual, nested, conical members having each an outside taper and an inside taper, a part of the latter being cut away or tapered at a different angle at one end, so that the series of nested conical members form or produce a series of spaces as 7, between the tips or smaller ends of successive cones, and a continuous stick of lead or the like.

16. A pencil or the like comprising a series of individual, nested, conical members, each tapering externally and internally, a part of the latter being cut away or tapered at a different angle, and having each a cylindrical bearing portion as 3 forward of the internal tapering portion, and a centrally-disposed continuous stick of lead or the like.

17. A pencil or the like comprising a series of individual, nested, conical members, each tapering externally and internally, a part of the latter being cut away or tapered at a different angle and having each a cylindrical bearing portion 3, a cylindrical collar 8, and a cylindrical depressed portion 11, a centrally-disposed continuous stick of lead or the like and a wrapper or covering.

18. A pencil or the like comprising a series of individual, nested, conical members, having each an internal cylindrical bearing portion 3, a slight tapered or cut-away portion 4 extending therefrom, a longer tapered portion 6 extending from the portion 4 to the base end of the conical member, the external cylindrical collar 8, the shoulders 9 and 10, and the external taper 12, a centrally-disposed continuous stick of lead or the like, and a wrapper or covering.

609,910. PENCIL. HERBERT H. SEAMAN, New York, N. Y., assignor to the Stylus Pencil Company, same place. Filed June 14, 1897. Serial No. 640,650. (No model.)

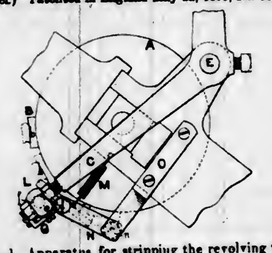


Claim.—1. A pencil comprising a series of individual, nested, conical members and having a series of depressions at the bases of the members, and a wrapper covering only a portion of each said depressions and thereby exposing a portion of the same.

2. A pencil comprising a series of individual, nested, conical members, a series of circular depressions formed at the bases of said members, and a wrapper or cover secured to said members and having its edges spaced or separated so as to expose portions of said depressions.

3. A pencil comprising a series of individual, nested, conical members, a series of circular depressions formed at the bases thereof, and a wrapper or cover of a length equal to said pencil and a width less than the circumference thereof and gummed or otherwise secured to said conical members, so that its longitudinal edges are spaced or separated and thereby expose portions of the said circular depressions.

609,911. APPARATUS FOR STRIPPING FLATS OF CARDING-ENGINES. WILLIAM SENIOR, Pendleton, England, assignor to James Williams, Salford, England. Filed Dec. 10, 1897. Serial No. 661,439. (No model.) Patented in England May 22, 1895, No. 10,100.



Claim.—1. Apparatus for stripping the revolving flats of carding-engines comprising a comb, a comb-bar to which the comb is attached, bearing-brackets at each end in which the comb-bar is swiveled carried by oscillating arms, oscillating arms to support the bearing-brackets and to operate the comb-bar and a movable body provided with a flat surface parallel to the face of the flats when the comb is in operation with which a bearing-bracket on the comb-bar

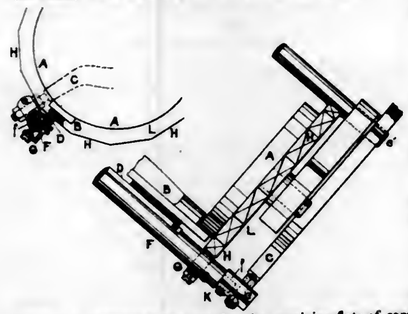
engages to direct the movement of the stripping edge of the comb in a path parallel with the face of the wires of the flat.

2. Apparatus for stripping the revolving flats of carding-engines, comprising a stripping-comb, a swiveling comb-bar provided with pivots at both ends, oscillating arms for actuating the comb-bar to which the bar is pivoted, a projecting piece on the comb-bar and a body provided with surface parallel with the face of the wires of the flat when the comb is in operation against which the projecting piece bears to direct the movement of the stripping edge of the comb in a path parallel to the face of the wires substantially as described.

3. In apparatus for stripping the revolving flats of carding-engines, the combination with a stripping-comb and swiveling comb-bar, of oscillating arms in which the comb-bar is pivoted, an adjustable bracket attached to each end of the comb-bar, and a block against one side of which the working surfaces of the flats rest, and the other surface of which directs the movement of the stripping edge of the comb in a path parallel with the face of the flat-wires, substantially as described.

4. In apparatus for stripping the revolving flats of carding-engines the combination with a stripping-comb, swiveling comb-bar, and oscillating carrier-arms by which the comb-bar is carried and the comb actuated, of adjustable devices affixed to the ends of the comb-bar, swiveling blocks resting upon the ends of the flats with a surface parallel to the face of the flat-wires, an oscillating arm and fixed bracket to carry the block and a spring or weight to maintain it in position, substantially as described.

609,912. APPARATUS FOR STRIPPING FLATS OF CARDING-ENGINES. WILLIAM SENIOR, Pendleton, England, assignor to James Williams, Salford, England. Filed Dec. 10, 1897. Serial No. 661,440. (No model.) Patented in England May 22, 1896, No. 10,100.



Claim.—1. Apparatus for stripping the revolving flats of carding-engines comprising a swiveling comb-bar, provided with pivots at both ends, oscillating arms for actuating the comb-bar to which the bar is pivoted, an adjustable bracket attached to the comb-bar to engage a guiding-surface and a surface placed in a suitable position to direct the movement of the stripping edge of the comb in a plane parallel to the face of the flat, substantially as described.

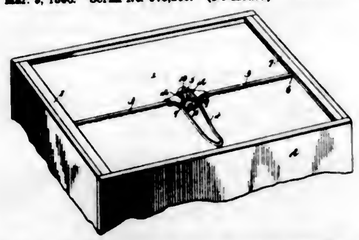
2. In a carding-engine the combination with the flats B, the drum A over which the flats travel, and the oscillating stripping-arms C pivoted at c, of the stripping-comb D, the comb-bar F pivoted to the oscillating arms C so as to be capable of swiveling, the brackets G affixed to the comb-bar F, engaging the guiding-surface H and the disk L provided with surfaces H which cause the stripping edge of the comb D to move in a plane parallel to the working face of the flat.

3. Apparatus for stripping the revolving flats of carding-engines comprising the oscillating arms C pivoted at c', the swiveling comb-bar F, pivoted to the arms C, the stripping-comb D affixed to the swiveling comb-bar, the guiding-bracket G secured to the comb-bar, resting against the surfaces H, and the disk L rotating as the flats B move forward, carrying the surfaces H upon its periphery, substantially as and for the purpose described.

4. The combination with a stripping-comb and arms or levers C upon which it is mounted, so as to be capable of a swiveling motion, of an adjustable bracket, moving over and working against a surface parallel with the working surface of the flat and a surface H parallel with the working surface of the flats to engage the adjustable bracket.

5. In apparatus for stripping the revolving flats of carding-engines, the combination with an oscillating comb and comb-bar provided with an adjustable bracket at either end, adapted to be guided on the surface H of a rotating disk provided with surfaces parallel to the face of the flat-wires when in position to be stripped to direct the path of the stripping edge of the comb, substantially as described.

609,918. BOX-FASTENER. WALTER B. SHERR, Quincy, Ill., assignor to Henry B. Dines and John C. Dussair, same place. Filed Mar. 9, 1896. Serial No. 673,209. (No model.)

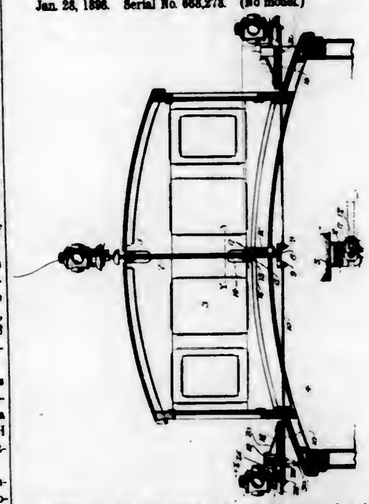


Claim.—1. A device of the class described comprising a pair of reciprocating locking-arms designed to be mounted on a lid or cover, a resilient handle of substantially U-shaped form having its sides connected with the locking-arms, and a plate provided with grooves to receive the arms and adapted to secure the same to a lid or cover and having diverging slots located at the inner ends of the grooves and receiving the sides of the handle, said plate being provided, at the inner and outer ends of the slots, with means for positively engaging the sides of the resilient handle, whereby it is detachably interlocked with the plate at each limit of its movement, substantially as described.

2. A device of the class described comprising a pair of locking-arms, a plate having grooves at its inner face to receive the arms and provided with diverging slots and having recesses arranged at the inner and outer ends of the slots and formed in the walls thereof, and a resilient handle connecting the locking-arms and having sides operating in the slots and adapted to engage the recesses, whereby the handle is locked against accidental movement, substantially as described.

3. In a device of the class described, the combination of a cover or lid provided at opposite ends with cleats having perforations, locking-arms arranged in the perforations and adapted to project outward therefrom, a resilient handle composed of two sides connecting the locking-arms, and a plate centrally secured to the lid or cover and retaining the locking-arms and the handle thereon, said plate being provided at its inner face with grooves to receive the arms and having slots to receive the sides of the handle, the latter being detachably interlocked with the walls of the slots to hold it against accidental movement, substantially as described.

609,914. CAR-SIGNAL. THOMAS H. SHERRIN, Sedalia, Mo. Filed Jan. 28, 1898. Serial No. 668,278. (No model.)



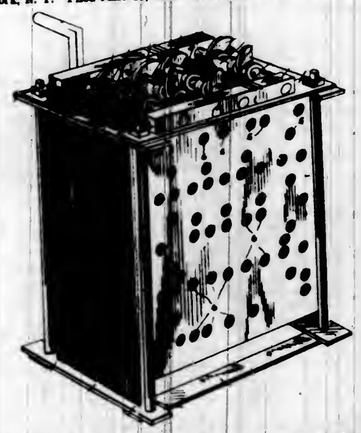
Claim.—1. In a car-signal, the combination of a signal-lantern or the like mounted in a bearing and having a plurality of pins disposed to correspond with the faces of the lantern, a rod having an opening to make detachable connection with either one of the pins according to the relative position of the lantern, and means for imparting movement to the rod for operating the lantern, substantially as set forth.

2. In a car-signal, the combination of a signal lantern or the like mounted in a bearing and having a plurality of pins disposed to correspond with the faces of the lantern, a rod having an opening to make detachable connection with either one of the pins according to the relative position of the lantern, a keeper 30 upon a portion of the car between which keeper and car portion the rod is guided, and means for imparting movement to the rod for operating the lantern; substantially as described.

3. In a car-signal, the combination of an operating-rod, a light, a vertically-separable pivotal connection between the side light and operating-rod, and a vertically-movable bearing supporting the side light and adapted to admit of the side light being disconnected from its operating-rod so as to have its position relatively shifted, substantially as set forth.

4. A car-signal comprising a vertical shaft, a signal-light detachably and reversibly connected with the upper end of the shaft, side lights mounted in bearings which have detachable connection with the caboose, operating-rods having detachable connection at their outer ends with the side lights to admit of them being relatively reversed, a cross-bar secured to the aforesaid shaft and having its end portions connected with the operating-rods, a bracket having a notched portion, and a weighted handle pivotally connected with the shaft and adapted to interlock with the bracket, substantially as set forth.

609,915. ILLUMINATED SIGN. CLARENCE C BIBLEY, New York, N. Y. Filed June 18, 1897. Serial No. 641,347. (No model.)



Claim.—1. In a sign, a bank of independently-movable plates each having a similar series of main openings and a supplemental series of openings differing on each plate to represent a letter or character, the main openings on the plates registering one with the other, and means to move each plate independently to register its supplemental openings with the main openings of the remaining plate, as and for the purpose set forth.

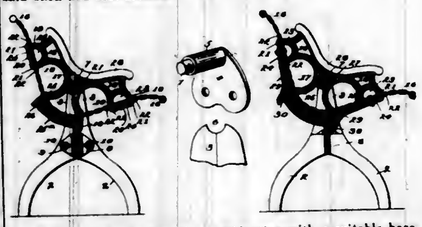
2. In a sign, a bank of spring-supported independently-movable plates, each having a similar series of main openings, and a supplemental series of openings differing on each plate to represent a character, the main openings in the plates normally registering, and a series of cams adapted respectively to move a plate to register its supplemental openings with the main openings of the remaining plates, as and for the purpose set forth.

3. In a sign, a bank of independently-movable plates arranged in parallel relation to each other, each plate having a similar series of slots arranged parallel to each other, and a series of perforations differing on each plate to form a character, the slots in the several plates registering one with the other, combined with means to move each plate separately to register its perforations with the slots in the remaining plates, as and for the purpose set forth.

4. In a sign, the combination with a bank of independently-movable plates, each having a series of main and supplemental openings as described, of a cam adjustably supported to move a plurality of said plates separately, as and for the purpose set forth.

609,916. SEAT OR SETTEE. ELDRIDGE J. SMITH, Washington, D. C., assignor to the Smith Flexible Chair Manufacturing Company of Virginia. Filed June 18, 1897. Serial No. 641,327. (No model.)

Claim.—1. In a seat or settee, the combination with a suitable base, of a combined back and seat section, a metallic bracket or casting mounted at each side of the said back and seat section and comprising the end portions of the seat, said brackets or castings being provided with oppositely-disposed transverse notches which extend entirely therethrough to form supporting-shoulders or rests for the said back and seat section.



2. In a seat or settee, the combination with a suitable base, of a slatted back and seat section, a metallic bracket or casting mounted at each end of the back and seat section, and extensions on the said brackets, said extensions being provided with oppositely-disposed transverse notches which extend entirely therethrough and within which some of the slats of the back and seat section rest and are retained.

3. In a reversible seat or settee, the combination with a suitable base, of a slatted back and seat section, a metallic bracket or casting pivoted to each side of the base and each provided with two outwardly and oppositely extending wings or arms which are disposed at right angles to the slats of the back and seat section, and each wing having transverse notches or recesses upon opposite sides thereof which extend entirely therethrough to form supporting-shoulders for some of the slats of the said back and seat section.

4. In a reversible seat or settee, the combination with a suitable base having a cross-rail, of a slatted, reversible back and a seat section, a metallic bracket or casting pivoted to each side of the base and each provided with outwardly and oppositely extending wings or arms and a downwardly-extending central portion, said wings or arms being provided with transverse notches or recesses which extend entirely through the same and within which the slats of the back and seat section rest and are secured to retain the parts in position, and stops on the said downwardly-extending central portion of each bracket, which stops abut against the cross rail to limit the movement of the seat.

5. In a reversible seat or settee, the combination with suitable base-standards, of a cross-rail connecting said standards, wear-bolts secured to the ends of said cross-rail and entering the standards, a metallic bracket pivoted to each side standard and each bracket provided with a portion which engages each of the said wear-bolts, and a combined back and seat section secured to the said brackets or castings.

6. In a reversible seat or settee, the combination with the supporting legs or standards, of a cross-rail connecting said legs or standards, metallic angle-brackets secured to the said standards and cross-rail respectively between the angles formed by the latter at their points of intersection, wear-bolts secured to the ends of said cross-rail and entering the standards, a metallic bracket pivoted to each side standard and each bracket provided with a portion which has a bearing upon the wear-bolts, and a combined back and seat section secured to the said brackets or castings.

7. A metallic bracket for seats or settees comprising a body portion provided with outwardly and oppositely extending wings, each wing being provided with transverse notches or recesses upon opposite sides for the purpose specified, and a downwardly-extending central portion arranged intermediate the said wings, substantially as and for the purpose specified.

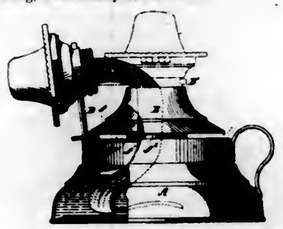
8. A metallic bracket for seats or settees comprising a body portion provided with outwardly and oppositely extending wings, each wing being provided with transverse notches or recesses upon opposite sides substantially as described, and a downwardly-extending central portion arranged between the wings, said central part terminating in an arched portion, with notches at its opposite ends, substantially as and for the purpose described.

9. A metallic bracket or casting for seats or settees comprising a body portion provided with two outwardly and oppositely extending wings 18, each wing comprising the notched or recessed parallel bars 19, and connecting cross-bars 20, and a downwardly-extending central portion 25, arranged between the wings.

609,917. LAMP. WILLARD P. STEDMAN, Bristol, Conn. Filed Jan. 23, 1896. Serial No. 667,533. (No model.)

Claim.—1. A lamp constructed as to its body part with means

to receive the button attached to the shaft of the burner when the burner has been detached from the lamp so as to hold the burner in a position in filling, substantially as described.



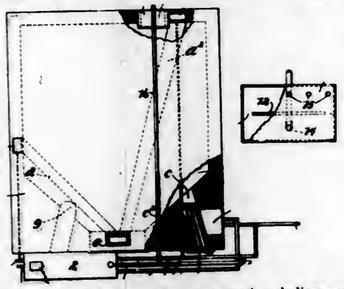
2. A lamp comprising in its construction an annular space adapted to receive the button of the burner so that the burner may be maintained in a position away from the neck or opening in the lamp for convenience in filling the same, substantially as described.

609,918. GLOVE-FASTENER. JULIUS STEINBERGER, San Francisco, Cal. Filed Nov. 16, 1896. Serial No. 612,175. (No model.)



Claim.—In a glove, the combination with a frame-plate secured to one of the wrist-sections, said frame-plate having an elongated opening therein, of the base-plate carrying a fastening stud or button, a shank depending from the base-plate fitting within the elongated opening of the frame-plate, and of a disk provided with an upwardly-projecting stem which engages with the depending shank of the base-plate.

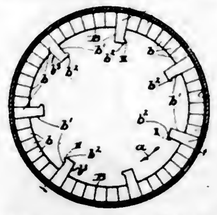
609,919. BAKER'S OVEN. WILLIAM E. STOKFYLER, Philadelphia, Pa. Filed July 24, 1897. Serial No. 645,776. (No model.)



Claim.—1. Means for generating steam and excluding products of combustion during baking in an ordinary oven having a single fireplace arranged to preheat the baking-chamber by discharging products of combustion through it, which comprise the combination of a damper arranged to close the offtake or exit from the baking-chamber, a water-back located in the single fireplace, and connections, substantially as described, leading from the water-back to the rear of the baking-chamber and arranged to discharge steam forwardly thereby excluding products of combustion from the baking-chamber and confining them to the fireplace and permitting the fire to smolder and heat the water-back and maintain such supply of steam during baking, substantially as described.

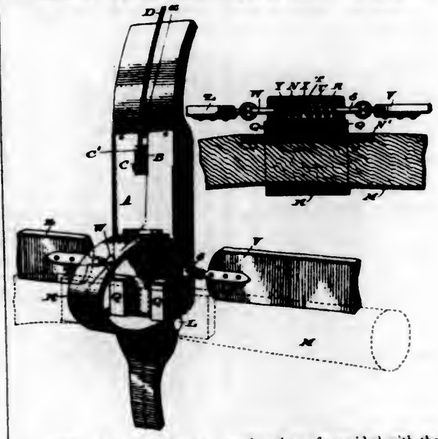
2. Means for generating steam and excluding products of combustion during baking in an ordinary oven having a single fireplace arranged to preheat the baking-chamber by discharging products of combustion through it, which comprise the combination of a damper arranged to close the offtake or exit from the baking-chamber, a water-back located in the single fireplace, and connections including a storage-boiler and steam-box leading from the water-back to the rear of the baking-chamber and arranged to discharge steam forwardly thereby excluding products of combustion from the baking-chamber and confining them to the fireplace and permitting the fire to smolder and heat the water-back and maintain such supply of steam during baking, substantially as described.

609,920. HEATING OR BURNING CYLINDER. CHARLES E. STOWE, Cleveland, Ohio. Filed Mar. 12, 1897. Serial No. 627,102. (No model.)



Claim.—The combination with a metallic heating or burning cylinder, of a lining comprising rows of magnesian blocks, a portion of said blocks being extended inwardly beyond the faces of the adjacent rows, and beveled and recessed to form lugs, which are longitudinally alined, and a layer of fireproof material resting against the inner surface of the metallic cylinder and against the outer faces of the magnesian blocks, to constitute a peripheral support for the latter, substantially as described.

609,921. HORSE-DETACHING DEVICE. CHARLES E. TAYLOR, Ocala, Fla. Filed Apr. 22, 1897. Serial No. 633,239. (No model.)



Claim.—A harness having a portion thereof provided with the walls E', E, and G', a bolt movably mounted in said walls, a spring operating said bolt, and having one end thereof bearing against the wall E, the other end of said spring being attached to said bolt, a guard K pivoted to said harness and having an opening therein adapted to be engaged by an end of said bolt, and lugs attached to said harness in combination with a shaft having a lug attached thereto, and adapted to engage said first-mentioned lugs.

609,922. CUSHION-TIRE FOR BICYCLES. GEORGE W. TUBBS, Cleveland, Ohio, assignor of one-half to C. E. Cotton, same place. Filed Feb. 24, 1898. Serial No. 671,434. (No model.)



Claim.—1. In vehicle-wheels, a wooden rim having a flat exterior, a flat band of flexible metal around said rim having flanges along its edges and channels on the inside at the base of said flanges, said flanges being deepest in cross-section next above said channels, in combination with a solid-rubber tire having a bead along each inner edge engaged in said channels, and a fabric-covered wire embedded in the base of said tire and having projecting portions at intervals extending into said beads, substantially as described.

2. The wheel described having a wooden rim and a flat band around the same having flanges along its edges and channels in the angles of the flanges and the said band, in combination with a solid-rubber tire having reinforced beads engaged in said channels and fabric projecting into the center of the tire from the said beads, substantially as described.

609,923. INHALER. GEORGE H. TUTTLE, Cambridge, Mass., assignor of one-third to Frank H. Willard, same place. Filed Aug. 18, 1897. Serial No. 648,648. (No model.)



Claim.—1. An inhaler comprising a single piece of fabric having when in use substantially the form of a cone, said fabric being on its inner side extremely absorbent of ether, chloroform, and other anæsthetics, and having intermediate its outer and inner surfaces a substance resistant to the passage of ether, &c., the outer surface of said fabric being hard, flexible, and slightly resilient, whereby the one piece of fabric is capable of automatically maintaining a permanent form and of receiving a large amount of anæsthetic, providing at the same time an extended evaporating-surface therefor, while being impervious to the passage of the anæsthetic through it from the inside out, substantially as described.

2. An inhaler having on its inner side an absorbent and evaporating surface for the ether or other anæsthetic, on its outer side a coating rendering it slightly rigid and resilient, and intermediate said inner and outer sides a layer impervious to the passage therethrough of the ether, &c., said inner side, outer side, and intermediate layer being formed integrally with each other in one fabric, substantially as described.

3. An inhaler in the form of a cone having a relatively small air-opening at its apex, and a sponge positively held at the extreme small end of the cone and into the said opening, thereby definitely closing the latter as desired, said cone having absorbent material for the ether throughout its entire inside area, substantially as described.

4. An inhaler consisting of a flexible and slightly-resilient material normally extending out flat in one sheet but capable of being rolled into the form of a truncated cone, and having when flat a notch in one edge approximately semicircular in shape, a short, straight edge $a^{\times}$ extending from said notch at the opposite edges thereof, said two straight edges being in line with each other and substantially in line with the diameter of said notch, said material having the remainder of its perimeter from the remote ends of said two short, straight edges $a^{\times}$ cut on a curved line to conform, when the inhaler is in its conical form for use, to the contour of the face, said inhaler being provided slightly back from its said short, straight edges with coöperating fastenings adapted to secure said edges together when overlapped for use in the said form of a truncated cone and adapted to be quickly unfastened for detaching said edges from each other when it is desired that the inhaler should assume its said normal flat form when not in use, said inhaler being made in one piece of fabric, said fabric being on its inner side extremely absorbent of ether, chloroform, and other anæsthetics, and having intermediate its outer and inner surfaces a substance resistant to the passage of ether, &c., the outer surface of said fabric being hard, flexible, and slightly resilient, whereby the one piece of fabric is capable of automatically maintaining a permanent form and of receiving a large amount of anæsthetic, providing at the same time an extended evaporating-surface therefor, while being impervious to the passage of the anæsthetic through it from the inside out, in combination with a stud secured to the outside of the inhaler, a sponge, and securing means for said sponge fastened to said stud and adapted to extend over the adjacent edge of said notch and hold the sponge into the opening of the inhaler when the latter is rolled into its conical form, substantially as described.

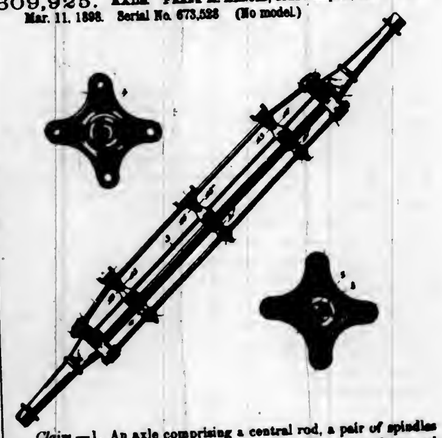
609,924. INCANDESCENT-LAMP SHADE OR COVER. WALLACE H. WELLS, Bradner Falls, N. Y. Filed Mar. 28, 1896. Serial No. 675,514. (No model.)



Claim.—1. As a new article of manufacture, a shade for incandescent lamps consisting of a spring-metal strip the ends of which are adapted to clasp said lamp, and a cover secured to said strip and adapted to incase the lamp-bulb, substantially as described.

2. As a new article of manufacture, a shade for incandescent lamps consisting of a narrow spring-metal strip adapted to loop over the bulb and having outwardly-projecting ends for clasping the upper end of said bulb therebetween, and a cover or shade secured, substantially as described, to said strip and adapted to incase the bulb, substantially as and for the purpose described.

609,925. AXLE. FRANK M. ARNOLD, Grand Rapids, Ohio. Filed Mar. 11, 1898. Serial No. 673,523. (No model.)



Claim.—1. An axle comprising a central rod, a pair of spindles arranged at the ends of the rod and adapted to be adjusted upward and downward to arrange them at the proper angle, and the upper and lower tie-rods adjustably secured to the spindles and securing them in their adjustment, substantially as described.

2. An axle comprising a pair of spindles having central bores or openings and provided at their inner ends with perforated enlargements, a central connecting-rod passing through the bores or openings of the spindles and secured to them, upper and lower tie-rods having threaded terminals passing through the perforations of the enlargements of the spindles, and the nuts arranged in pairs on the ends of the tie-rods and engaging the inner and outer faces of the enlargements of the spindles and adapted to secure the latter at the proper adjustment, substantially as described.

3. An axle comprising a pair of spindles, upper and lower tie-rods arranged in pairs, one pair of tie-rods being bowed, a central rod connecting the spindles, vertical struts composed of sections or blocks interposed between the rods and having grooves receiving the same, and fastening devices connecting the blocks or sections of the struts, substantially as described.

4. An axle comprising spindles, upper and lower tie-rods, and a strut connecting the tie-rods and provided at its top with flanges forming a recess to receive a hound or the reach of a running-gear, substantially as described.

5. An axle comprising a pair of spindles, a connecting-rod passing through the spindles and having a central enlarged portion interlocked with their inner ends, and a sleeve arranged on the enlarged portion of the connecting-rod and interposed between and bearing against the spindles, substantially as described.

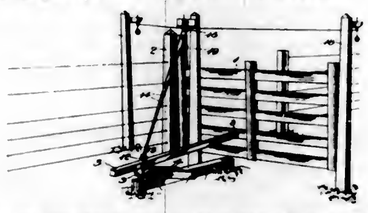
6. An axle comprising a pair of spindles, upper and lower tie-rods, a central connecting-rod passing through the spindles, and a sleeve arranged on the connecting-rod and interposed between the spindles, substantially as described.

7. An axle comprising a pair of spindles, a central connecting-rod composed of an angular body portion, interlocked with the spindles and end portions, extended through the spindles, a longitudinal spacing-sleeve arranged on the connecting-rod and abutting against the inner ends of the spindles and fitting in recesses thereof, and means for securing the spindles to the connecting-rod, substantially as described.

609,926. GATE. HENRY ASBELL, Huntsville, Mo., assignor of one-half to J. J. Baker, same place. Filed Dec. 20, 1897. Serial No. 663,837. (No model.)

Claim.—1. The combination with a swinging gate, of a horizontal support, a bar hinged to the gate and extending therefrom to the

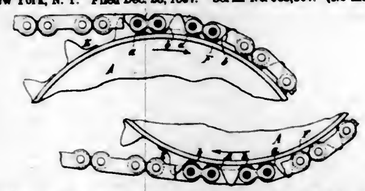
support, and a link fulcrumed at one end at the support and pivotally connected at its other end with the said bar and adapted to swing from one side to the other to open and close the gate, said link being arranged to rest upon the support in either position and to lock the gate open and closed, substantially as described.



2. The combination with a swinging gate, of a horizontal beam arranged upon the ground at one side of the gate, a pair of links located at opposite sides of the beam and fulcrumed to the same, near the center thereof, a bar hinged to the gate, extending outward therefrom and provided at its outer end with a block or weight arranged between and hinged to the links, and operating mechanism connected with the outer end of the bar for swinging the links upward, substantially as and for the purpose described.

3 The combination with a swinging gate, of a horizontal beam arranged upon the ground at one side of the gate, a pair of link-bars located at opposite sides of the beam and fulcrumed at one end to the same between the ends thereof, said link-bars being adapted to swing from one side to the other and to rest upon the beam in both positions, a bar hinged to the gate and extending outward therefrom, a block or weight mounted on the bar and pivoted between the links, a central support located adjacent to the beam, operating-ropes connected with the bar and extending to the central support, and means for supporting the outer ends of the operating-ropes at opposite sides of the gate, substantially as described

609,927. SPROCKET-CHAIN GEARING. FREDERIC E. BALDWIN, New York, N. Y. Filed Dec. 28, 1897. Serial No. 663,867. (No model.)



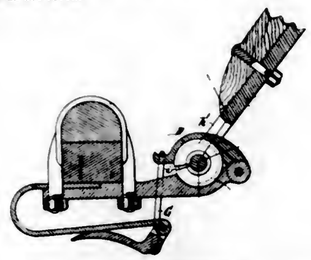
Claim.—1. The combination with a sprocket-wheel and a sprocket-chain composed of connecting and driving links, the driving-links occupying the interdental spaces on the wheel, the wheel being formed or provided with raised seats or supports for the ends of the driving-links immediately adjacent to the working faces of the teeth and seats or supports on the sides of the wheel for the connecting-links, adjacent to the idle faces of the teeth which maintain the driving-links out of contact with the wheel at the points of rubbing friction, as set forth.

2. A sprocket-wheel having raised seats or supports for the ends of the driving-links immediately adjacent to the working faces of the teeth, and formed or provided with side flanges of approximately the diameter of the lower portions of the interdental spaces on the periphery of the wheel and affording a support for the ends of the connecting-links adjacent to the idle faces of the teeth, as set forth.

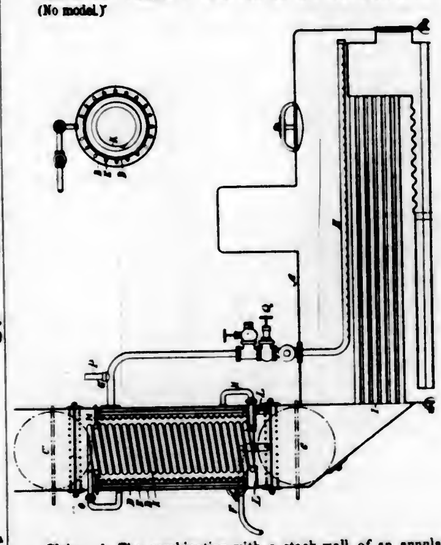
3. The combination with a sprocket-wheel and a sprocket-chain composed of driving and connecting-links, the spaces in the chain between the ends of adjacent driving-links being greater than the width of the teeth along the line of the chain, the wheel being formed or provided with raised seats or supports for the ends of the driving-links immediately adjacent to the working faces of the teeth, and seats or supports for the connecting-links adjacent to the idle faces of the teeth which maintain the chain-links out of contact with the wheel at the points of rubbing friction, as set forth.

609,928. THILL-COUPLING. CHRISTOPHER C. BRADLEY, Syracuse, N. Y. Filed Sept. 28, 1897. Serial No. 653,330. (No model.)

Claim.—The combination with a draft-eye having spherical recesses in its jaws and a draft-iron having a spherical knuckle, of an interposed spherical packing provided with an open longitudinal joint along its sides and with truncated ends at the ends of said joint, said packing enveloping the knuckle entirely and separating the same from the spherical bearing-surfaces of the surrounding draft-eye, substantially as set forth.



609,929. FEED-WATER HEATER FOR STEAM-BOILERS. JOHN DICKSON, New York, N. Y. Filed Feb. 26, 1897. Serial No. 625,187. (No model.)



Claim.—1. The combination with a stack-wall, of an annular feed-water chamber on the interior thereof, a coil located in the space surrounded by said chamber to be exposed to the products of combustion and having both ends projected through the walls of said stack, and sections of readily-expansible pipe connected to the extended ends of the coil and communicating with the interior of the annular chamber at substantially opposite ends thereof, substantially as described, for the purposes set forth.

2. The combination with a section of a boiler-stack, of the inner corrugated shell coupled at its ends to said boiler-stack and forming therewith an annular chamber, a primary heating-coil situated in the space inclosed by said corrugated shell and having its respective ends attached to the upper and lower parts of said stack or shell to communicate with said chamber and provide a continuous back-and-forth circulation of water to and from the coil and chamber, flues extending through said annular chamber and opening at their ends through the inner shell, and an off-bearing boiler-feed pipe independent of the circulating-coil and communication with said annular chamber, substantially as described.

3. A feed-water heater located in the stack of a boiler and consisting of an annular chamber formed by the stack and an inner wall or shell, a series of flues extending through the chamber and opening through the heads of said chamber, an interior heating-coil coextensive with the annular chamber within the space inclosed by the inner wall or shell and having its ends extended through the stack-wall, and sections of readily-expansible pipe coupled to the respective ends of said coil and with the stack-wall to communicate with the annular chamber at opposite ends thereof, substantially as described, for the purposes set forth.

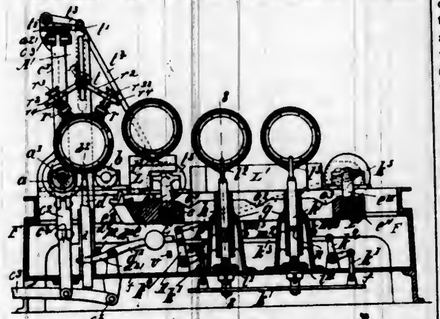
4. The combination with an annular chamber located in the stack of a boiler and having an inner wall or shell, of a heating-coil situated within said inner shell and having its ends projected through the stack-wall, sections of readily-expansible pipe connected to the ends of said coil and to the stack-wall to communicate with the chamber at opposite ends thereof, supports fixed within the stack to sustain the coil and stays connected to the stack and to the upper part of the coil, substantially as described, for the purposes set forth.

609,930. SASH-BALANCE. WILLIAM DERMODY, Brockville, Canada. Filed Dec. 29, 1897. Serial No. 664,242. (No model.) Patented in Canada Nov. 4, 1896, No. 50,455.



Claim.—The combination with a frame or casing, the sashes, and an overhead guide-sheave, of a suspension-chain fitted over the guide-sheave and having one end attached to the upper sash, and a slotted chain-holder adjustably fastened to the lower sash and provided with a forked arm with which the free end of the suspension-chain may be engaged, substantially as and for the purposes described.

609,931. BARREL-WASHER. CARL C. F. EHRENGART, Nienstedten, Germany. Filed Oct. 12, 1897. Serial No. 655,702. (No model.)



Claim.—1. In a barrel-washing machine, the main frame a support for the barrel comprising a revoluble shaft, two bearings adapted to revolve with and have endwise motion on said shaft, means for moving said bearings from and toward each other on their shaft, and two complementary revoluble bearings, for the purpose set forth.

2. In a barrel-washing machine, the main frame a support for the barrel comprising a revoluble shaft, two bearings adapted to revolve with and have endwise motion on said shaft, means for moving said bearings from and toward each other on their shaft, and two complementary revoluble bearings; in combination with horizontally and vertically arranged brushes, adjustable relatively to the aforesaid support to enlarge or contract the space between them, and means for moving said brushes out of and back into their normal adjusted position, for the purpose set forth.

3 In a barrel-washing machine, the main frame a vertical stop-bar adapted to be raised and lowered, revoluble bearings for a barrel on opposite sides of said bar, one set of said bearings adjustable and adapted to position the barrel relatively to the stop-bar to adapt the latter to enter the bung-hole of said barrel, brushes arranged relatively to and above the said bearings to act upon the body and heads of a barrel thereon, a feed device provided with a forked bearing for a barrel, and mechanism adapted to actuate said device to move said bearings horizontally toward the stop-bar, then upwardly along the same then rearwardly and downwardly, for the purpose set forth.

4. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side of the bar, complementary revoluble centering-bearings on the opposite side thereof adapted to center a barrel so as to adapt said bar to enter the bung-hole of such barrel, brushes arranged relatively to the aforesaid bearings to act upon the body and heads of a barrel thereon, a feed device provided with a forked bearing for a barrel, and mechanism adapted to actuate said device to move its bearing upwardly to, along, and away from the stop-bar, and then downwardly; in combination with mechanism adapted to automatically lift the stop-bar, and a retaining-lever adapted to hold said bar against upward motion for the purpose set forth.

5. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side of the bar, complementary revoluble centering-bearings on the opposite side thereof adapted to center a barrel so as to adapt said bar to enter the bung-hole of such barrel, brushes arranged relatively to the aforesaid bearings to act upon the body and heads of a barrel thereon, a feed device provided with a forked bearing for a barrel, and mechanism adapted to actuate said device to move its bearing upwardly to, along, and away from the stop-bar, and then downwardly, in combination with mechanism adapted to automatically lift the stop-bar, and a retaining-lever adapted to hold said bar against upward motion, and mechanism adapted to shift said retaining-lever and enable the lifting mechanism to lift said stop-bar, for the purpose set forth.

6. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side of said bar, complementary revoluble centering-bearings on the opposite side thereof, adapted to center a barrel so as to adapt said bar to enter the bung-hole thereof, brushes arranged relatively to the aforesaid bearings to act upon the body and heads of a barrel thereon, a feed device provided with a forked bearing for a barrel, mechanism actuating said device to move its bearing upwardly to, along and away from the stop-bar and then downwardly, in combination with mechanism adapted to lift said bar, and mechanism controlled by a moving element of the machine and adapted to move the brushes out of their operative position when the feed device is set in motion, for the purpose set forth.

7. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side of said bar, complementary revoluble centering-bearings on the opposite side of said bar adapted to center a barrel so that the stop-bar may enter the bung-hole thereof, brushes arranged relatively to the bearings to act upon the body and heads of a barrel thereon, a feed device provided with a forked bearing for a barrel, and mechanism actuating said device to move its bearings upwardly to, along and away from the stop-bar, and then downwardly; in combination with bearings adapted to intercept a barrel on the feed device as it moves downward, mechanism controlled by a moving element of the machine, adapted to move the brushes out of their operative positions during the upward movement of the feed device, a lifting-lever adapted to lift the stop-bar, a check-lever adapted to check the movements of the lifting-lever, and mechanism actuating the check-lever to release the lifting lever, for the purpose set forth.

8. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side thereof, complementary revoluble centering-bearings on the opposite side of said bar adapted to center a barrel so that the stop-bar may enter the bung-hole thereof, a weighted lever supporting said bar and tending to lift the same, a check-lever checking the action of said weighted lever, means for shifting the check-lever to release the weighted lever, and brushes arranged relatively to the barrel-bearings to act upon the body and heads of a barrel thereon; in combination with a feed device provided with a forked bearing for a barrel, mechanism actuating said device to move its bearing upwardly to, along and away from the stop-bar and then downwardly, in combination with mechanism adapted to intercept a barrel on the feed device as it moves downwardly, and mechanism controlled by a moving element of the feed device, adapted to move the brushes out of their operative positions, for the purpose set forth.

9. In a barrel-washing machine, the main frame a vertically-movable stop-bar, a weighted lever connected therewith and tending to lift the same, a check-lever checking the action of said weighted lever, bearings for a barrel on one side of the stop-bar, a shaft on the opposite side thereof, two belt-pulleys loose on said shaft, a clutch device adapted to lock either pulley to said shaft, and means controlled by movements of the clutch device to shift the check-lever out of or into engagement with the aforesaid weighted lever; in combination with complementary barrel-bearings revoluble with and having endwise motion on the pulley-shaft, actuating-levers connected with the complementary bearings, a weighted lever connected with the actuating-levers and tending to hold the complementary bearings in a normal position relatively to the stop-bar, and brushes arranged relatively to the barrel-bearings to act on the body and heads of a barrel, for the purpose set forth.

10. In a barrel-washing machine, the main frame a vertically-movable stop-bar, a weighted lever connected therewith and tending to lift the same, a check-lever checking the action of said weighted lever, bearings for a barrel on one side of the stop-bar, a shaft on the opposite side thereof, two belt-pulleys loose on said shaft, a clutch device adapted to lock either pulley to said shaft, and means controlled by the movements of the clutch device to shift the check-lever out of or into engagement with the aforesaid weighted lever; in combination with complementary barrel-bearings revoluble with and having endwise motion on the pulley-shaft, actuating-levers connected with the complementary bearings, a weighted lever connected with the actuating-levers and tending to hold the complementary bearings in a normal position relatively to the stop-bar, brushes arranged relatively to the barrel-bearings to act on the body and heads of a barrel, an up-and-down movable feed device adapted to take a barrel when held against rotation by the stop-bar and move said bar-

rel away from said stop-bar, and bearings adapted to intercept said barrel on the downward motion of the feed-bar, for the purpose set forth.

11. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side thereof, complementary revoluble centering-bearings on the opposite side of the bar adapted to center a barrel so that said bar when lifted may enter the bung-hole thereof, brushes arranged relatively to said bearings to act upon the body and heads of a barrel thereon, non-revoluble spaced barrel-bearings in rear of said revoluble bearings, a feed-frame provided with a corresponding number of barrel-bearings, mechanism actuating said feed-frame to take a barrel and transfer it from the stop-bar to the non-revoluble bearings successively, vertically-movable injectors adapted to enter the bung-holes of barrels as they are deposited by the feed-frame on said non-revoluble bearings, pipe connections connecting the injectors with a liquid under pressure, and means controllable by the feed-frame and by the barrels, adapted to establish communication between the supply-pipes and injectors only when the latter enter the bung-hole of a barrel, for the purpose set forth.

12. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side thereof, complementary revoluble centering-bearings on the opposite side of the bar adapted to center a barrel so that said bar when lifted may enter the bung-hole thereof, brushes arranged relatively to said bearings to act upon the body and heads of a barrel thereon, non-revoluble spaced barrel-bearings in rear of said revoluble bearings, a feed-frame provided with a corresponding number of barrel-bearings, mechanism actuating said feed-frame to take a barrel and transfer it from the stop-bar to the non-revoluble bearings successively, vertically-movable injectors adapted to enter the bung-holes of barrels as they are deposited by the feed-frame on said non revoluble bearings, pipe connections connecting the injectors with a liquid under pressure, means controllable by the feed frame and by the barrels adapted to establish communication between the supply-pipes and injectors only when the latter enter the bung-hole of a barrel, and means for regulating the volume of liquid supplied to the injectors, for the purpose set forth.

13. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side thereof, complementary revoluble centering-bearings on the opposite side of the bar adapted to center a barrel so that said bar when lifted may enter the bung-hole thereof, brushes arranged relatively to said bearings to act upon the body and heads of a barrel thereon, non-revoluble spaced barrel-bearings in rear of said revoluble bearings, a feed-frame provided with a corresponding number of barrel-bearings, mechanism actuating said feed-frame to take a barrel and transfer it from the stop-bar to the non-revoluble bearings successively, revoluble and vertically-movable injectors adapted to enter the bung holes of barrels as they are deposited by the feed-frame on said non-revoluble bearings, pipe connections connecting the injectors with a liquid under pressure, and means controllable by the feed-frame and by the barrels, adapted to establish communication between the supply-pipes and injectors only when the latter enter the bung-hole of a barrel, for the purpose set forth.

14. The combination of the main frame the shaft a', the loose belt-pulleys a^3 a^{32} thereon, the double-cone friction-clutch a^4 between said pulleys, the shifting lever a^5 for said clutch, the bell-crank lever p connected with said lever, and the lever p^3 connected with said bell-crank lever; with the vertically-movable stop-bar d, and the weighted lever d' engaging said bar and engaged by the lever p^3, substantially as and for the purpose set forth.

15. In a barrel-washing machine, the main frame a vertically-movable stop-bar, a weighted lever tending to lift said bar, a check-lever checking the action of said weighted lever, revoluble bearings for a barrel on one side of the stop-bar, a shaft on the opposite side of said bar, two loose belt-pulleys on said shaft, a clutch device adapted to lock either pulley with the shaft, and complementary barrel-bearings on and revoluble with such shaft, in combination with the feed-frame e, provided at one end with a barrel-bearing, geared shafts having cranks pivoted near opposite ends of said feed-frame, a loose driving-gear and a clutch device on one of said shafts, and mechanism adapted to be operated by the aforesaid weighted lever and to operate the clutch on the feed-frame shaft to lock the loose gear thereto when the aforesaid check-lever is shifted to release the weighted lever, for the purpose set forth.

16. The combination with the main frame the feed-frame shaft E, the loose gear W, the clutch device comprising a sleeve revoluble with said shaft, a spring-actuated coupling-pin w^3 having motion in the sleeve toward and from said loose gear and provided with a lock-notch, the arcuate locking-lever w normally in engagement with said notch to hold the coupling-pin out of engagement with the loose gear, and the spring-actuated pawl w' pivoted to the free end of said locking-lever, the pawl-arm v' normally in engagement with the pawl w', and the actuating-lever v, of the weighted lever d', the weighted arm of which is adapted to act on the free end of lever v', the check-lever p^3 checking the action of said weighted lever, and means for shifting the check-lever to release the weighted lever, substantially as and for the purpose set forth.

17. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side of said bar, complementary revoluble bearings on the opposite side thereof adapted to center a barrel so that the stop-bar when lifted may enter the bung-hole thereof, brushes arranged relatively to said bearings to act upon the body and head of a barrel thereon; in combination with a feed-frame, guard-shafts provided with cranks to which said frame is pivoted near its opposite ends, a continuously-revoluble loose gear on one of the shafts of said frame, a coupling device revoluble with and adapted to be coupled to said loose gear, and mechanism operating automatically and adapted to couple said device to said loose gear whenever the aforesaid stop-bar is lifted, substantially as and for the purpose set forth.

18. In a barrel-washing machine, the main frame a vertically-movable stop-bar, revoluble bearings for a barrel on one side of said bar, complementary revoluble bearings on the opposite side thereof adapted to center a barrel so that the stop bar when lifted may enter the bung-hole thereof, brushes arranged relatively to said bearings to act upon the body and head of a barrel thereon; in combination with a feed-frame, guard-shafts provided with cranks to which said frame is pivoted near its opposite ends, a continuously-revoluble loose gear on one of the shafts of said frame, a coupling device revoluble with and adapted to be coupled to said loose gear, mechanism operating automatically and adapted to couple said device to said loose gear whenever the aforesaid stop-bar is lifted, and appliances operating automatically and adapted to uncouple the coupling device from said loose gear as the feed-frame shaft completes a revolution substantially as and for the purpose set forth.

19. The combination with the main frame, the bearings L hinged thereto, and the fixed bearings l'; of the crank-shafts E and E', the feed-frame e, pivoted between two cranks on said shafts and having motion between the aforesaid bearings, substantially as and for the purpose set forth.

20. The combination with the revoluble bearings a a and b b, of the vertically-movable stop-bar d in the plane of rotation of the bung-hole of a barrel on said bearings, said stop-bar provided with an antifriction roller at its upper end having its axis of rotation parallel with the axis of rotation of said bearings, for the purpose set forth.

21. The combination with the main frame, oppositely-arranged bearings for a barrel or barrels on said frame, a longitudinally-slotted feed-frame between said bearings, and two revoluble shafts having cranks between which said frame is pivoted near its opposite ends; of an injector-casing provided with an internal annular chamber, an injector-pipe provided with peripheral ports, said pipe projecting through the slot in the feed-frame to the bearings thereon and having vertical motion in its casing to move the ports into and out of register with the annular chamber, a supply-pipe connected therewith, two stop-cocks m and m' in said pipe, a weighted lever 4 on the plug of stop-cock m, a rod m^4 connected with said lever and extending vertically to a point slightly above the frame-bearings for the barrel, said rod having its upper end bent horizontally in line with said bearings, a weighted lever 44 connected with the plug of stop-cock m', the free end of said lever in the path of the feed-frame below the same, substantially as and for the purpose set forth.

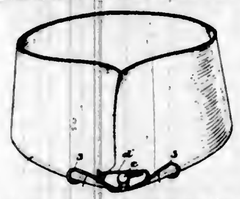
22. The combination with the main frame, oppositely-arranged bearings for a barrel or barrels on said frame, a longitudinally-slotted feed-frame between said bearings, and two revoluble shafts having cranks between which said frame is pivoted near its opposite ends; of an injector-casing provided with an internal annular chamber, an injector-pipe provided with peripheral ports, said pipe projecting through the slot in the feed-frame to the bearings thereon and having vertical motion in its casing to move the ports into and out of register with the annular chamber, mechanism adapted to impart rotary motion to said injector-pipe, a supply-pipe connected with said chamber, two stop-cocks m and m' in said pipe, a weighted lever 4 on the plug of stop-cock m, a rod m^4 connected with said lever and extending vertically to a point slightly above the frame-bearings for the barrel, said rod having its upper end bent horizontally in line with said bearings, a weighted lever 44 connected with the plug of stop-cock m', the free end of said lever in the path of the feed-frame below the same, substantially as and for the purpose set forth.

23. The combination with the main frame provided with oppositely-arranged bearings for a barrel; of a longitudinally-slotted feed-frame between said main-frame bearings provided also with oppositely-arranged bearings for a barrel, two revoluble shafts having cranks between which the feed-frame is pivoted near its opposite ends, chain-connected sprocket-wheels on said shafts, and a cam on the rear crank-shaft; of an injector-pipe projecting through the slot in the feed-frame to a point on a line with the main-frame barrel-bearings, a support for the pipe, bell-crank levers from the horizontal arms of which said support is suspended, a connecting-rod connecting the vertical arms of said levers, an actuating-rod connected with one of said vertical arms and adapted to be reciprocated by the cam on the aforesaid rear crank-shaft, substantially as and for the purpose set forth.

24. The combination with the main frame provided with oppositely-arranged bearings for a barrel, and the sprocket-wheel 2 revoluble on a spindle on said frame; of a longitudinally-slotted feed-frame between said main-frame bearings, provided also with oppositely-arranged bearings for a barrel, two revoluble shafts having cranks between which said feed-frame is pivoted near its opposite ends, a sprocket-wheel on each of said shafts, a chain connecting said sprocket-wheels and driving the aforesaid sprocket-wheel 2, and a cam on the rear crank-shaft; of an injector-pipe projecting through the slot in the feed-frame to a point on a line with the main-frame barrel-bearings, a bevel-wheel adapted to revolve with and slide longitudinally on said pipe, a support for the latter, bell-crank levers from the horizontal arms of which said support is suspended, a connecting-rod connecting the vertical arms of said levers, an actuating-rod connected with one of said vertical arms and adapted to be reciprocated by the cam on the aforesaid rear crank-shaft, and a bevel-wheel on the shaft of sprocket-wheel 2 meshing with the bevel-wheel on the injector-pipe, substantially as and for the purpose set forth.

25. The combination with the main frame the cross-shaft l^2, the radial arms l^3, hangers l', and connecting-rod l^4, of the feed-frame crank-shaft E, a disk rigidly secured thereto and provided with a laterally-projecting pin l^6, and the crank-arm l^7 connected with rod l^4 and loose on said shaft E in the path of the aforesaid pin, substantially as and for the purpose set forth.

609,932. COLLAR-ADJUSTER. VIVIAN GREENLOCH, Newton, Mass. Filed Jan. 8, 1898. Serial No. 666,002. (No model.)



Claim.—1. A collar-adjuster composed of spring-wire presenting an eye to receive a collar-button and having spring-arms bent upwardly and backwardly toward their ends, the extremities of said wire being bent backward to form a clamp having a space to receive the lower edge of a collar, the wire bent to form the clamp presenting portions lying in different horizontal planes to leave a shoulder to act against the front side of the collar near its lower edge and aid in applying said clamp to said edge, substantially as described.

2. A collar-adjuster composed of spring-wire having a loop to engage a collar-button, and having clamps at its ends to embrace and press upwardly upon the lower edge of a collar, combined with a necktie-holder applied to said adjuster, substantially as described.

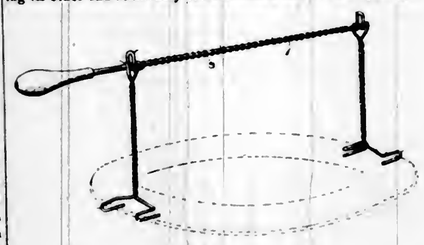
3. A collar-adjuster composed of spring-wire having a loop to engage a collar-button and having clamps at its ends to embrace and press upwardly upon the lower edge of a collar, combined with a necktie-holder applied to said adjuster, said holder occupying a position crossing a vertical line drawn centrally through said loop, substantially as described.

4. A collar-adjuster presenting an eye to embrace a collar-button and spring-arms to act on the lower edge of a collar to press upwardly thereon, combined with a necktie-holder having a space through which the tie may be passed, substantially as described.

609,933. SUPPORTING-BRACKET. CHARLES H. HAHN and CLARENCE E. SALEWSKY, New Haven, Conn. Filed May 19, 1897. Serial No. 637,179. (No model.)

Claim.—1. The combination with a rod provided at one end with an arm extending substantially at a right angle thereto and having bent fingers for the purpose specified, of a second arm also extending at right angles to said rod and having a sleeve in which the rod is slidingly received, the second arm being also provided with bent fingers, and a spring coiled around the rod and attached at one end to the sliding arm while its opposite end is adjustably connected to the rod, substantially as described.

2. A bracket consisting of a rod provided with a stationary arm and with a movable arm, said arms being provided with supporting-fingers, a plurality of openings in said rod, and a spring mounted upon said rod and secured at one end to said movable arm and having its other end removably secured within one of said openings.



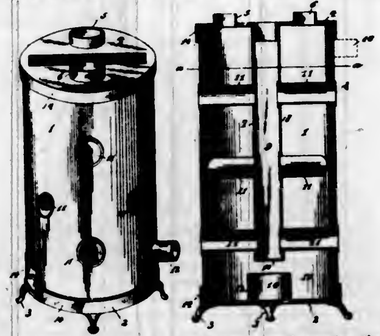
609,934. TWINE-HOLDER. ANTON HEUSON, Chicago, Ill., assignor of one-half to William Zimmerman, same place. Filed Dec. 4, 1897. Serial No. 660,811. (No model.)



Claim.—1. The combination with a twine-holder provided with a twine-outlet and a ball of twine, of a reservoir connected to said twine-holder, and a material therein adapted to pass, by active force, into the void made by the outgoing twine and, interiorly hold the twine ball from collapsing, substantially as specified.

2. The combination with a twine-holder provided with a twine-outlet and a ball of twine, of a reservoir connected to said twine-holder and a material therein adapted to pass, by active force, and progressively fill the void made by the outgoing twine and means to make known the amount of expended and unexpended twine, substantially as specified.

609,935. HEATING-DRUM. LUTHER W. HOLLAND, Fulton, Mo. Filed Dec. 31, 1897. Serial No. 664,965. (No model.)

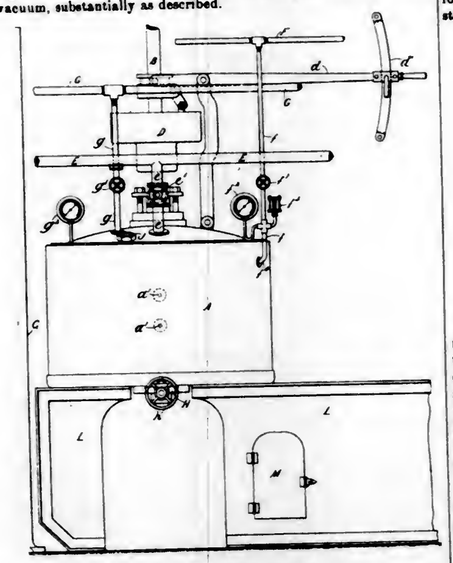


Claim.—A heating drum comprising the shell or casing, the parallel partitions, 7, 9, extending from the side of the drum and joined at their lower ends by a wall, 10, above the bottom of said drum to form a vertical central air-chamber, 10, and provide the continuous circulating-compartments within said drum and around the air-chamber, the series of horizontal pipes arranged in different vertical and horizontal planes in the smoke-circulating spaces and joined to said drum-shell and the partitions, 7, 8, a smoke-inlet at the upper end of the drum and on one side of the air-chamber, and a smoke-outlet on the opposite side of the air-chamber and at the upper end of the drum, substantially as described.

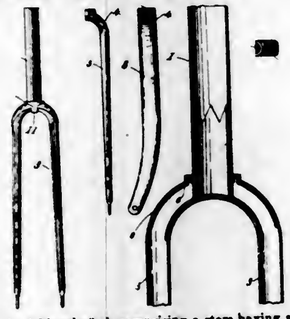
609,936. PROCESS OF MAKING PAINT. CHARLES D. ISRAY, Newcastle-upon-Tyne, England. Filed Oct. 3, 1896. Serial No. 607,770. (No specimens.) Patented in England Dec. 14, 1895, No. 23,969; in France Sept. 28, 1896, No. 260,661, and in Belgium Sept. 28, 1896, No. 133,741.

Claim.—The herein-described process of converting white lead into white-lead paint consisting in mixing the pulp of white lead with oil, agitating the same to cause the separation of the water, decant-

ing the water and then subjecting the resulting product to heat and vacuum, substantially as described.



609,937. FORK FOR BICYCLES. DAVID L. KELLY, Buffalo, N. Y. Filed Feb. 10, 1898. Serial No. 669,750. (No model.)



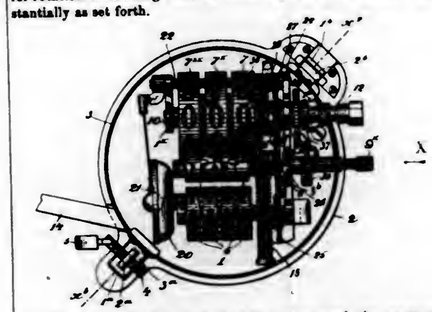
Claim.—1. A bicycle-fork comprising a stem having a branched lower end, a crown portion, and two fork sides having their upper ends curved toward each other and fitted over the crown portion and branched lower end of the stem.

2. A bicycle-fork comprising a stem having a branched lower end, a stem-reinforcement, a crown portion, two fork sides having their upper ends curved toward each other and fitted over the crown portion and branched lower end of the stem, and an outer strengthening-cap.

3. A bicycle-fork comprising a stem having a branched lower end, a reinforcement fitted in the lower end of said stem, a crown portion provided with a central circular opening and adapted to fit over the stem, two hollow fork sides having their upper ends curved toward each other and provided with a semicircular depression on the upper sides thereof, the curved upper ends of the said fork sides being fitted over the crown portion and branched lower end of the stem, with the upper sides of said crown portions encircling the stem and the lower sides meeting to form an arch, as set forth.

609,938. FARE-REGISTER. JAMES A. KEYES, New York, N. Y. Filed Feb. 17, 1897. Renewed Nov. 13, 1897. Serial No. 658,433. (No model.)

Claim.—1. The combination with the trip-register, of a resetting-shaft which is connected by gears with the trip-register, an actuating ratchet-wheel which turns independently of said shaft but is connected with the gears which connect said shaft with the trip-register, and means whereby the resetting-shaft is locked against rotation while the actuating ratchet-wheel turns in registering, or released for rotation in resetting while the actuating-wheel is stationary, substantially as set forth.



2. The combination with the trip-register and the permanent register, of a resetting-shaft which is connected by gears with the trip-register, an actuating ratchet-wheel which turns independently of said shaft but is connected with the gears which connect the shaft with the trip-register, gears whereby the actuating ratchet-wheel is permanently connected with the permanent register, and means whereby the resetting-shaft can be locked against rotation while registering or released for rotation in resetting, substantially as set forth.

3. The combination with the trip-register, and the direction-indicator, of a resetting-shaft which is connected by gears with the trip-register, an actuating ratchet-wheel which turns independently of said shaft but is connected with the gears which connect the shaft with the trip-register, a locking-wheel secured to the resetting-shaft, a locking dog engaging with said wheel, and an escapement mechanism by which the direction-indicator is actuated and which controls said locking-dog, substantially as set forth.

4. In a fare-register, the combination with the units-wheel of the trip-register, of a resetting-shaft 11, alined with the axis of said wheel, the ratchet-wheel 13, mounted loosely on said shaft, means for imparting intermittent rotary motion to said ratchet-wheel, a toothed wheel 28, fixed on said shaft 11, a toothed wheel 31, fixed to said units-wheel, a carrier attached to the ratchet-wheel 13, two wheels 29 and 30 secured together and rotatively mounted on said carrier, the former gearing with the wheel 28 and the latter with the wheel 31, and means for holding said shaft 11 against rotation during the normal operation of the register, substantially as set forth.

5. In a fare-register, the combination with a resetting-shaft 11, the toothed wheels 28 and 32, fixed thereon, the ratchet-wheel 13, mounted loosely thereon and provided with a carrier the rotatably-mounted units-wheel of the trip-register provided with the toothed wheel 31, and the toothed wheels 29 and 30, secured together and gearing, respectively, with the wheels 28 and 31, of the locking-dog 33, adapted to engage the teeth of the wheel 32, the direction-indicator 8, the vibrating escapement-fork 9 for intermittently rotating the indicator 8, said fork having a lug 9^a, adapted to engage the dog 33 at its back, as described, the spring 39 under the dog 33 and means, substantially as described, for putting said spring 39 under compression except when the trip-register is at zero.

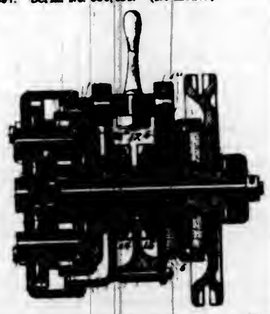
6. In a fare-register, the combination with the numeral-bearing wheels of the trip-register, each carrying a disk 34 with a notch and a shoulder $34^\times$, the rock-shaft 36, the pawls 35 thereon and bearing on the respective disks 34, the rocker 37, fixed on the shaft 36, the spring 38 under one arm of said rocker, the locking-dog 33, the spring 39, between the other arm of said rocker and a shoulder on the dog 33, the toothed wheel 32, with which the locking-dog engages, the rotary direction-indicator 8, having the square 8^a, the vibratable fork 9, and the spring 4, under a lug on said fork, said fork being provided with a lug which takes behind the locking-dog and holds the latter in its locking position normally, substantially as and for the purposes set forth.

7. In a fare-register, the combination with two rotatively-mounted numeral-bearing wheels of a trip-register, as the units and tens wheels, and mechanism for imparting intermittent rotation to the said units-wheel, of a fixed wheel 41 arranged concentrically with the units-wheel and having one long tooth, y, with an enlarged extremity, a wheel 42, rotatively mounted on the units-wheel and gearing with the fixed wheel 41, said wheel 42 having in it a recess to receive the enlarged tooth y, of wheel 41, the wheel 43, fixed to the wheel 42 and rotating concentrically therewith, and the wheel 44, fixed to and concentric with the tens-wheel of the register, whereby, at each rotation of the units-wheel the tens-wheel is rotated through a predetermined extent in the opposite direction.

8. In a fare-register, the combination of the rotatively-mounted numeral-bearing wheels 7 and $7^\times$, of means whereby at each full rotation of the wheel 7, the wheel $7^\times$ will be rotated in the opposite direction through a predetermined portion of its rotation, said mechanism comprising a fixed wheel 41, concentric with the wheels 7 $7^\times$, said wheel having one elougated and enlarged tooth y, the wheel 42 mounted on the wheel 7, in gear with wheel 41, and having a recess to receive the enlarged tooth on the latter, the wheel 43, fixed to and concentric with the wheel 42, and the wheel 44 on and concentric with the wheel $7^\times$, and in gear with the wheel 43, substantially as set forth.

9. In a fare-register, the combination with the ratchet-wheel 13, the pawl-slide 16, having a shoulder 16^a, and the pawl 17, all arranged to operate as described, of the vibrating or rocking fork 9, having a part 46, adapted to be moved into the path of the shoulder $16^\times$, when the fork is rocked, substantially as set forth.

609,939. CHAIN HOIST. JOSEPH W. KINCAID, Reading, Pa., assignor to the Reading Crane and Hoist Works, same place. Filed Oct. 27, 1897. Serial No. 656,488. (No model.)



Claim.—1. A pulley block or hoist comprising a friction-disk, and a revoluble pawl-plate carrying a pawl and holding the disk against independent movement, as set forth.

2. A pulley block or hoist comprising a fixed frame having teeth, a loosely-mounted revoluble pawl-plate, and a pawl on the plate to engage said teeth, as set forth.

3. A pulley block or hoist comprising a frame having teeth, a revoluble plate, a pawl on the plate to engage said teeth, a friction-disk held by said plate, and a disk between the friction-disk and the pawl-plate, as set forth.

4. A pulley block or hoist comprising a fixed frame provided with internal ratchet-teeth, a pawl-plate, and a pawl carried by said plate and adapted to be revolved in engagement with said teeth, as set forth.

5. The combination, with the casing, of a spur-gear bracket provided with spindles for the gears, and legs adapted to receive suitable bolts for securing the bracket to the casing, as set forth.

6. A fixed hoist-frame having ratchet-teeth formed therein, a lift-sheave journaled in the frame, a driving-shaft, a sleeved disk keyed to the driving-shaft, a revoluble plate loosely mounted on the hub of the sheave, and a pawl engaging said teeth.

7. A fixed hoist-frame having ratchet-teeth formed therein, a lift-sheave journaled in the frame, a revoluble pawl-plate loosely mounted on one hub of the sheave, a pawl engaging said teeth, and an internal gear secured to the other hub of the said sheave.

8. The combination, with a hoist-frame composed of two parts suitably joined together with a space between them, one part having internal ratchet-teeth, and the other part having a recessed outer face, of a lift-sheave journaled in and between the frame portions, an internal gear secured to one hub of the sheave in said recess, a revoluble pawl-plate loosely mounted on the other sheave-hub, and a spring-controlled pawl carried by said plate, as set forth.

9. The combination of a driving mechanism comprising a shaft, a hand-wheel connected to one end of the shaft, a pinion on the other end of the shaft, an internal gear keyed to the hoist-sheave, and the spur-gears composed of integral large and small members, two of the large members being out of the plane of the other two and all meshing with the pinion, and the small members all being in the same plane and meshing with the internal gear, as set forth.

10. The combination of the spur-gears, the bracket, the internal gear, the sheave, the gear-spindles having one end secured to the bracket, the fixed casing having the bracket secured thereto and carrying the other end of the spindles, and means for driving the gears to operate the sheave, as set forth.

11. The combination, with the frame, the lift-sheave, the shaft, the shaft-pinion, and the casing secured to the frame, of the bracket having legs attached to the casing, the spur-gears, the spur-gear spindles fixed to the bracket and projecting into the casing, and means for operating the said shaft, as set forth.

12. The combination of the bracket, the spur-gears carried by the bracket and composed of large and small members, a driving-shaft, a hoist-sheave, a gear on the sheave, a pinion on the shaft of sufficient length to engage the large members, two of which are out of the plane of the other two, the small members all being in the same plane and meshing with the sheave-gear, and means for operating the shaft, as set forth.

13. The combination, with the shaft, and means for driving it, of the frame, the lift-sheave having the shaft extending through it and journaled in the frame, a gear keyed to the sheave, a pinion on the shaft adjacent the said gear, a casing secured to the frame, a bracket held by the casing, and the spur-gears each composed of two members carried by the bracket, one member meshing with said pinion and the other member meshing with said sheave-gear, as set forth.

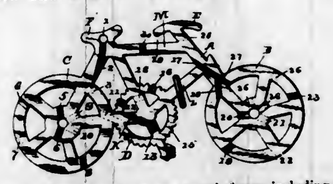
14. The combination, with the frame composed of two portions suitably joined together with an interval or space between them, one of said portions having internal ratchet-teeth in its outer face, the other of said portions having a dished or recessed outer face, of the lift-sheave loosely mounted in said interval or space and having hub portions bearing in add extending through said frame portions into said faces, a driving-shaft extending loosely through the sheave, a hand-wheel, and means for imparting motion to the said sheave and to the said shaft, as set forth.

609,940. TILE MOLDING. EMIL KOEHLER, New York, N. Y. Filed Nov. 24, 1897. Serial No. 659,682. (No model.)



Claim.—A tile molding having an upper rearwardly-extending flange, a hollow inner face, and an upper and a lower laterally-extending tongue and socket formed within the thickness of the tile, the upper tongue being placed in a plane in front of the lower tongue, substantially as specified.

609,941. TOY. HENRY E. LEJEUNE, Thibodeaux, La. Filed Sept. 15, 1897. Serial No. 651,761. (No model.)



Claim.—1. A toy having an open-work frame including a plurality of spoked ring portions connected by interposed bars, said rings, spokes, and bars being provided with reduced or web portions, in combination with a movable split ring, normally engaged with the members of the frame, and having an open side of less width than the thickness of the frame members, and of sufficient width to receive said web portions, substantially as specified.

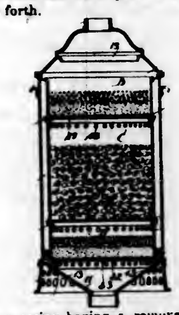
2. A toy having an open-work frame, including wheel and connecting frame portions of which the members are reduced at intervals to form webs, and a movable ring engaged with the frame and having an open side of less width than the thickness of the body portion of the frame and of greater width than the thickness of the webs thereof, substantially as specified.

3. A toy having an open-work frame A, B, C, &c., provided at intervals with reduced or neck portions 1, 2, 3, &c., in combination with a ring, engaged with the frame, having an open side of less width than the thickness of the frame, proper, and of greater width than said reduced or web portions, substantially as specified.

609,942. FILTER. WILLIAM A. MADDIN, Muscogee, Ind. Ter. Filed Oct. 4, 1897. Serial No. 653,979. (No model.)

Claim.—1. In a filter, a casing provided with a cover, and apertures near its base, filtering receptacles located within the casing, the receptacles being of less diameter than the diameter of the casing,

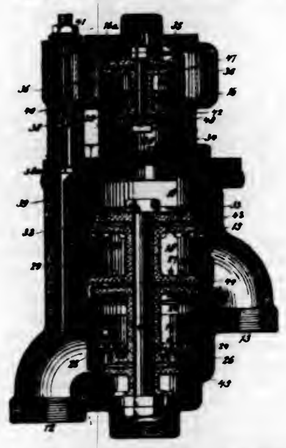
the lowermost filtering-receptacle being provided with openings at its margin below its bottom, communicating with the space between the casing and the filtering-receptacles, sundry of said filtering-receptacles being provided also with apertures in their top portions, for the purpose set forth.



2. In a filter, a casing having a removable top and provided with apertures near its bottom, independent filtering receptacles located within the casing, being placed one over the other, the filtering-receptacles being of less diameter than the diameter of the casing, the lowermost filtering-receptacle being provided with a flange at its bottom, resting upon the bottom of the casing, which flange is apertured, and sundry of the filtering-receptacles being also provided with apertures near their top portions, for the purpose set forth.

3. In a filter, the combination, with a casing having apertures near its bottom, a removable cover provided with an inwardly flaring annular lip, the cover having an inlet, and the bottom being provided with an outlet-opening, of a series of independent receptacles arranged to fit one upon the other and each to contain filtering material, the lowermost receptacle being provided with an apertured flange which rests upon the bottom of the casing, the filtering-receptacles being of less diameter than the diameter of the casing, whereby an air-space is provided between the filtering-receptacles and the casing, communicating with the outlet of the bottom through the apertures in the flange of the bottom receptacle, as and for the purpose specified.

609,948. DISPLACEMENT-PUMP. FRANK H. MERRILL, Plainfield, N. J. Filed Apr. 23, 1897. Serial No. 633,483. (No model.)



Claim.—1. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, an exhaust therefrom, a main ingress compressed-gas passage leading to said main-valve chamber, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped; said supplemental valve being located outside the displacement-compartment.

2. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, an exhaust therefrom, a main ingress compressed-gas passage leading to said main-valve chamber, an exhaust therefrom, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped; said supplemental valve being located outside the displacement-compartment.

3. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, an exhaust therefrom, a main ingress compressed-gas passage leading to said main-valve chamber, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped; said supplemental valve being located above the water-level.

4. In a displacement-pump, in combination, a duplex displacement-compartment each part of which contains liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, an exhaust therefrom, a main ingress compressed-gas passage leading to said main-valve chamber, main egress compressed-gas passages leading from said main-valve chamber, respectively to the parts of said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve, another branch compressed-gas passage leading against a surface connected with said supplemental-valve chamber, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped and controls the pressure in both parts of said duplex displacement-compartment.

5. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, an exhaust therefrom, a main ingress compressed-gas passage leading to said main-valve chamber, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped; said first-named branch passage branching from said main ingress-passage.

6. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, a main ingress compressed-gas passage leading to said main-valve chamber, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped; said second-named branch passage branching from said main egress-passage.

7. In a displacement pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, a main ingress compressed-gas passage leading to said main-valve chamber, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped; said branch passages branching respectively from said main ingress and egress passages.

8. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom a supplemental valve, a supplemental-valve chamber, an exhaust therefrom, a main ingress compressed-gas passage leading to said main-valve chamber, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped; and a retarder whereby the movement of said supplemental valve is timed.

9. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, an exhaust therefrom, a main ingress compressed-gas passage leading to said main-valve chamber, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped; and a throttle whereby the duration of pressure against said surface connected with said supplemental valve is controlled.

10. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main valve, a main-valve chamber, an exhaust therefrom, a supplemental valve, a supplemental-valve chamber, an exhaust therefrom, a main ingress compressed-gas passage leading to said main-valve chamber, a main egress compressed-gas passage leading from said main-valve chamber to said displacement-compartment, a branch compressed-gas passage leading through said supplemental-valve chamber and against a surface connected with said main valve and another branch compressed-gas passage leading against a surface connected with said supplemental valve, substantially as described, whereby said main valve is pneumatically actuated independently of the liquid pumped, and a throttle whereby both the pressure and exhaust against said surface connected with said supplemental valve are retarded.

11. In a displacement-pump, in combination, a displacement-compartment a main valve regulating the pressure in the same, a passage whereby pressure is conducted against a surface connected with the main valve to move the same, a supplemental valve outside the displacement-compartment controlling the pressure in said passage, a passage independent of the displacement-compartment whereby the pressure and exhaust produced by the movements of the main valve are communicated with a surface connected with said supplemental valve and means whereby the movement of said supplemental valve is retarded, substantially as described, whereby the main valve independently of the liquid pumped controls itself by the aid of said retarded supplemental valve.

12. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main piston-valve and a differential plunger for operating the same, cylinders therefor, a supplemental valve, a supplemental-valve chamber, a main compressed-gas passage leading through said main-valve cylinder, a branch compressed-gas passage leading through said supplemental-valve chamber against said plunger and means whereby said supplemental valve is controlled independently of the water pumped, substantially as described.

13. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main piston-valve, and a differential plunger connected therewith, cylinders therefor, a supplemental piston-valve and a differential plunger connected therewith, cylinders therefor, a main compressed-gas passage leading through said main valve-cylinder, a branch compressed-gas passage leading through said supplemental valve-cylinder against said first-named plunger and another branch compressed-gas passage leading against said second-named plunger, substantially as described.

14. In a displacement-pump, in combination, a displacement-compartment containing liquid ingress and egress openings, a main-valve chamber, an ingress pressure-passage to said main-valve chamber, an egress pressure-passage from said main-valve chamber, a pressure-controlling valve in said main-valve chamber, a branch passage whereby pressure for actuating said main valve is conducted from said ingress-passage against a surface connected with said main valve and mechanism independent of the displacement compartment whereby said main-valve-actuating pressure is intermitted, said mechanism being mechanically disconnected from said surface, substantially as described.

15. In a displacement-pump, in combination, a displacement compartment containing liquid ingress and egress openings, a compressed-gas-pressure-supply pipe leading thereto, a piston-valve controlling said pressure, a differential surface connected with said piston-valve, a differential cylinder containing said piston-valve and said differential surface, a passage whereby valve-actuating pressure is conducted independently of the displacement-compartment from said supply-pipe into said differential cylinder against said differential surface and mechanism outside of said displacement-compartment whereby said valve-actuating pressure against said differential surface is intermitted, substantially as described.

16. In a displacement-pump, in combination, a displacement-compartment, a main differential cylinder 17, 18, a valve therein containing the differential plungers 43 and 45, a supplemental differential cylinder 19, 20, a valve therein containing the differential plungers 47 and 48, a pressure-passage connected with the main cylinder between the plungers therein, an exhaust connected with the minor part of the main cylinder outside of the plunger contained therein, a port in said minor part of the main cylinder connected with said displacement-compartment, a port in the minor part of said supplemental cylinder, a passage connecting the same with the major part of said main cylinder outside of the plunger therein, a pressure-passage connected with the minor part of said supplemental cylinder outside of the plunger therein, an exhaust connected with said supplemental cylinder between the plungers therein, a passage connecting the major part of said supplemental cylinder outside the plunger therein with a passage to said displacement-compartment, substantially as described.

17. In a displacement-pump, in combination, a duplex displacement-compartment, a main differential cylinder 17, 18, a valve therein containing the plungers 43, 44 and the differential plunger 45, a supplemental differential cylinder 19, 20, a valve therein containing the differential plungers 47, 48, a pressure-passage connected with the main cylinder between the differential plungers 44, 45, an exhaust connected with the minor part of the main cylinder outside of the plunger therein, a port in said minor part of the main cylinder connected with part 1 of said displacement-compartment, an exhaust connected with the major part of the said main cylinder between the plungers 43 and 44, a port in said major part of the main cylinder cooperating with the plunger 44 and connecting with part 2 of said displacement-compartment, a port in the minor part of said supplemental cylinder, a passage connecting the same with the major part of said main cylinder outside of the plunger 43, a pressure-passage connected with the minor part of said supplemental cylinder outside of the plunger therein, an exhaust connected with said supplemental cylinder between the plungers therein, a passage connecting the major part of said supplemental cylinder outside the plunger therein with a passage to said displacement-compartment, substantially as described.

18. In combination, a differential cylinder 17, 18, a plunger in each part thereof, a connection between said plungers, a pressure-passage leading into the space between said plungers, an exhaust connected with the minor part of said cylinder outside of the plunger therein, a passage connected with the major part of said cylinder outside of the plunger therein, an auxiliary cylinder to which the last-named passage leads, a differential valve in said auxiliary cylinder, pressure and exhaust passages connected with said auxiliary cylinder and a throttle-valve in one of such pressure-passages whereby the transitions of pressure in said supplemental cylinder are timed substantially as described.

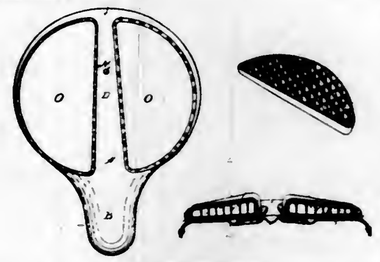
19. In combination with a pressure-controlling valve and the ingress and egress passages thereof, the differential cylinder 47, 48, the differential plungers therein, pressure-passages connecting the major and minor parts of said cylinder respectively with said ingress and egress passages and a throttle-valve interposed in one of said pressure-passages whereby the speed of said plunger is regulated, substantially as described, independently of the body moved by the pressure controlled by said valve.

20. In combination, the alined plungers 43, 44, of substantial equal area and the differential plunger 45, the cylinder part 18, the cylinder part 17, the pressure-passage 21 entering between said cylinder parts, pressure-ports in the minor cylinder part cooperating with plunger 45, pressure-ports in the major cylinder part cooperating with plunger 44, exhaust-ports between plungers 43 and 44 and exhaust-port outside of plunger 45, a passage connecting cylinder 18 outside the plunger 43 with the passage 21, a valve 48, a plunger 47 connected therewith and a passage leading from the ports 24 to said plunger, substantially as described.

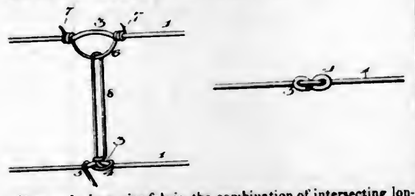
609,944. BICYCLE-SADDLE. CHARLES E. PAGE, Denver, Colo., assignor to the Page Saddle Company, same place. Filed Jan. 11, 1897. Serial No. 618,773. (No model.)

Claim.—The combination in a saddle of a base stamped from sheet metal having a horn and a substantially flat cantle arranged on substantially a horizontal level with said horn and the seat portions

curved downward below said cantle and horn with a slight curve extending from the top of said cantle to the horn and transversely across the center of the saddle in approximately a horizontal line, a downwardly-turned marginal edge all arouud the base and three stiffening-ribs formed in the base by depressing a narrow concaved groove in desired positions, a covering of leather stretched over said base and riveted to its marginal flange and at the saddle's center with an independent piece of leather glued to said leather covering over each seat portion of the metal base and with rubber seat-plates resting on said piece of leather and on said leather covering directly over each seat portion of the metal base of the saddle and of substantially semicircular form and approximately wedge-shaped in thickness and adapted to rest in the downward-curved central seat portions of the base with their thinnest edges toward the horn and having said seat-plates provided with a series of open cells extending into them from their bottom side to within a short distance of its top surface, leaving a thin partition and its thickest end resting on the cantle and its thinnest end extending approximately even with the flanged edge of the base and at its side adjacent to the horn, and having the border edge of said independent glued piece of leather of the same shape as the said seat-pads, a leather cup-shaped cover fitting tightly over said seat-plates and provided with a right-angled flanged edge adapted to be sewed to the edges of said independent piece of leather on which said seat-plates rest, and also to be sewed with said independent piece of leather to the leather covering of the base, whereby said rubber seat-plates, their covers and the independent piece of leather and the leather covering of the base are integrally secured together but are loose and free from the metal base of the saddle at its seat portions and are free to give, expand and stretch in all directions independent of it, substantially as set forth.



609,945. WIRE FENCE. JUDSON R. PECK, Naples, N. Y. Filed Jan. 27, 1898. Serial No. 668,199. (No model.)



Claim.—1. In a wire fabric, the combination of intersecting longitudinal and transverse members, the former being provided, at the points of intersection, with crimps extending in the plane of the fabric, each transverse member, at a point of intersection, extending under the crimp at its most elevated point, thence parallel with the longitudinal member and looped to engage one side of the crimp, thence under the crimp and across the plane of the longitudinal member and doubled upon itself to form a loop 5, engaged with the other side of the crimp, the intermediate portions of the transverse member being approximately straight, substantially as specified.

2. In a fence, the combination of runners provided with transversely-alined crimps, an inwardly-bowed stirrup carried by the upper marginal runner, and a stay provided at its upper end with an elongated guide-loop engaged with said stirrup, and provided, at each point of intersection with the remaining runners, with locks of which each consists of a horizontally-extended closed loop or eye engaging one side of a runner-crimp, and an approximately vertical suspending-loop engaging the other side of the crimp, and at the opposite side of the line of the stay from said horizontal loop, substantially as specified.

3. In a fence, the combination of runners provided with transversely-alined crimps, a stirrup carried by and arranged approximately in the vertical plane of the upper marginal runner, and consisting of a blank of wire having its arms coiled around said runner and terminally extended to form barbs, and a stay provided at its upper extremity with an elongated guide-loop engaged with said stirrup, and, at its points of intersection with the runners, with locks engaging said crimps, each lock consisting of a laterally-extended holding-loop and an oppositely-extended suspending-loop, respectively engaged with opposite sides of the runner-crimp, substantially as specified.

609,946. PARCEL HANDLE OR CARRIER. JOSHUA PUSEY, Lima, Pa. Filed Jan. 11, 1893. Serial No. 457,983. (No model.)



Claim.—1. A flexible and detachable carrier or handle for parcels, consisting of an integral strip of suitable flexible material, formed with an opening or slot therethrough near each end portion, and with slits leading into the respective openings or slots from the side, whereby the handle or carrier may be engaged with or disengaged from the parcel tie cord or cords by an edgewise movement, substantially as specified.

2. The herein-described flexible and detachable parcel carrier or handle, consisting of a thin flexible integral strip of suitable tough material, formed with a slot or aperture therethrough near each of its ends, said slots or apertures having each an opening or slit at one side, and notches opposite the other ends of the said openings or slits and designed to catch the parcel cord or cords and direct them into the said slits or openings, substantially as specified.

3. The herein-described flexible and detachable parcel carrier or handle, consisting of an integral strip of suitable flexible material formed with a cord-receiving slot or aperture near each end, with slits leading into the said slots or apertures from the side, and with flexible or spring hook portions which guard the said slits, substantially as specified.

4. A slidable, detachable, parcel carrier or handle, consisting of an integral, flexible strip, having near each end a cord-receiving slot or aperture formed therethrough, said slots or apertures having each an opening near one side whereby the strip may be engaged with the tie-cord of the package by an edgewise movement, substantially as specified.

5. A detachable, flexible, parcel carrier or handle, consisting of a strip of material, such as vulcanized fiber or the like, which is flexible, tough, strong, and capable of receiving writing or printing thereon, said strip being formed with cord-receiving apertures therethrough, one at each end portion, and with slits or openings extending laterally into the said apertures, whereby the strip may be engaged with or disengaged from the cord or cords of a package by a lateral or edgewise movement, substantially as specified.

6. A parcel handle or carrier comprising a flexible strip of suitable tough material, said strip having a tapered aperture at each end portion, the lateral slits or passages which communicate with said apertures, and the flexible or spring tongues, substantially as specified.

7. A parcel-carrier comprising a flexible strip of vulcanized fiber, or similar strong and tough material, said strip having a cord-receiving aperture adjacent to each end portion thereof and slits or passage-ways leading into said apertures, respectively, from opposite sides of the strip, and the flexible or spring tongues or hooks, substantially as and for the purpose set forth.

609,947. COIN HOLDER OR WRAPPER. JOSHUA PUSEY, Lima, Pa. Filed Dec. 31, 1897. Serial No. 664,824. (No model.)



Claim.—1. A coin-holder blank consisting of a substantially rectangular sheet of cardboard or the like, having adjacent to opposite edges thereof beads and corresponding grooves formed by corrugating the sheet and adapted to receive a holding-band, substantially as and for the purpose described.

2. A coin-holder blank consisting of a substantially rectangular sheet of paper, cardboard or the like, having adjacent to opposite edges thereof beads and corresponding grooves formed by corrugating the sheet and adapted to receive a holding-band, and scored or weakened along suitable transverse lines, substantially as and for the purpose described.

3. A coin-holder consisting of a substantially rectangular integral sheet of cardboard or the like having adjacent to opposite edges thereof beads and corresponding grooves adapted to receive a holding-band formed by corrugating the sheet; said sheet being also divided into panels by scoring or weakening along suitable transverse lines; an end panel being provided with a suitable adhesive, all substantially as and for the purpose set forth.

4. A coin-holder, consisting of a substantially rectangular sheet of cardboard or the like, having adjacent to opposite edges thereof beads and corresponding grooves, formed by corrugating the sheet or blank, and having its end panels, when bent into holder form, overlapped with the grooves and beads thereof interfitting, substantially as specified.

609,948. VEHICLE-TIRE. JAMES G. RODGERS, Springfield, Ohio. Filed Nov. 24, 1897. Serial No. 659,691. (No model.)



Claim.—1. The combination with a channeled rim, of a tire within the channel of the rim comprising a base-section, and a tread-section formed separately, the base-section being under tension and the tread-section under compression, substantially as described.

2. The combination with a channeled rim, of a tire within the channel of the rim comprising a channeled base-section, and a tread-section formed separately, the tread-section being under compression and within the channel of the base-section to completely cover the same, and the base-section being under tension, substantially as described.

3. The combination with a channeled rim, of a tire within the channel of the rim comprising a base-section of yielding material under tension, and a tread-section of yielding material under compression, the yielding qualities of the tread-section being greater than those of the base-section, substantially as described.

4. The combination with a channeled rim, of a tire within the channel comprising a base-section of yielding material having a peripheral groove and a tread-section of relatively greater yielding material within said groove and a longitudinal retaining-wire passing through the outer section, substantially as described.

5. The combination with a channeled rim, of a tire comprising a base-section of yielding material having a peripheral groove, and a tread-section of relatively greater yielding material provided with a continuous non-extensible retaining-ring of a diameter less than the maximum diameter of the rim, substantially as described.

6. The combination with a rim having a peripheral channel and annular outwardly-flaring side flanges, of a tire comprising a base-section of yielding material conforming to the said channel and having a peripheral groove and a tread-section of yielding material within the groove provided with a continuous non-extensible retaining-ring, said tread-section extending beyond the rim and having its sides inclined inwardly from the side flanges of the rim and completely covering the base-section, substantially as described.

7. The combination with a rim having a peripheral groove and annular outwardly-flaring side flanges, of a tire within the channel comprising a base-section of yielding material conforming to the said channel and having a peripheral groove and a tread-section of relatively greater yielding material cemented within the groove provided with a continuous non-extensible retaining-wire, said tread-section extending beyond the rim and having its sides inclined inwardly from the side flanges of the rim, substantially as described.

609,949. TANK-HEATER. GOTTLIEB SCHNEIDER and WILBER H. HILL, Kendallville, Ind. Filed Jan. 25, 1898. Serial No. 667,905. (No model.)

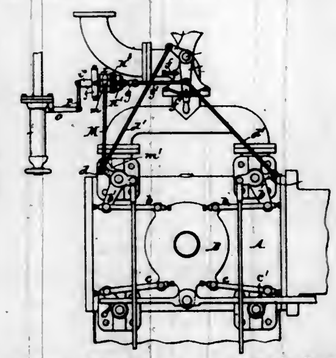
Claim.—1. In a tank-heater, the combination of a grate located in the lower portion thereof and comprising a fixed and a movable section, an ash-pan located in the space formed between the grate and the bottom of the heater and directly below the movable section of the grate, and a plate placed beneath the fixed section of the grate and inclining downwardly and toward the ash-pan to direct the ashes thereto, substantially as set forth.

2. In a tank-heater, the combination with the tank, and heater, of a plate secured to the bottom of the tank, a corresponding plate secured to the bottom of the heater and having its end portions projecting, brackets secured to the upper portion of the heater and having openings, and vertically-disposed rods having their lower ends secured to the terminal portions of the plates attached to the bottom of the tank and engaging with the end portion of the plate applied to the bottom of the heater, and having their upper ends bent and adapted to make detachable connection with the aforesaid brackets, substantially as described.



3. The herein-described tank-heater, comprising a body having an inner vertical air-passage at one side, and a smoke-outlet at the opposite side, a grate secured within the lower portion of the body and comprising a fixed and a hinged section, the latter clearing the lower end of the air-passage, an ash-pan removably inserted within the body of the heater, a plate placed beneath the fixed part of the grate and adapted to direct the ashes falling thereon into the ash-pan, and a cover having a relatively-fixed part supporting the smoke-pipe, and a movable part clearing the upper end of the aforesaid air-passage and adapted to be turned aside to permit of the removal of the ash-pan, substantially as set forth.

609,950. PUMPING-ENGINE. CLARENCE H. SCOTT, Buffalo, N. Y., assignor to the Snow Steam Pump Works, same place. Filed Jan. 15, 1897. Serial No. 619,285. (No model.)



Claim.—1. The combination with a longitudinally-movable regulator-stem, a rotatory screw-sleeve engaging the same, a stationary bearing in which said sleeve is held against longitudinal movement, and a ratchet-wheel secured to said sleeve, of a pawl-carrier mounted to oscillate concentric with said stem and sleeve, a duplex pawl carried by said support, and a pressure device whereby said pawl is automatically engaged with and disengaged from said ratchet-wheel, substantially as set forth.

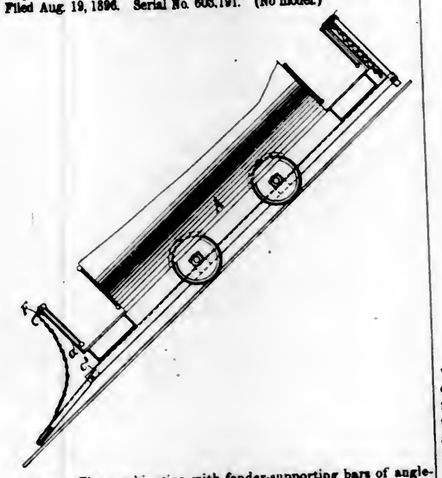
2. The combination with a regulator screw stem and sleeve provided with an actuating ratchet-wheel, of a pawl-support mounted to oscillate concentric with said screw stem and sleeve, a duplex pawl mounted on said support and provided with a crank-arm having its free end arranged in line with the axis of said stem and sleeve, and a pressure device connected with the free end of said crank-arm and adapted to shift the same and the duplex pawl, substantially as set forth.

3. The combination with a regulator screw stem and sleeve provided with an actuating ratchet-wheel, of an arm mounted to oscillate concentric with said stem and sleeve, a pin journaled in the free end of said arm parallel with the screw stem and sleeve, a duplex pawl secured to said pin and adapted to engage said ratchet-wheel, a crank-arm secured to said pin and having its free end arranged in line with said stem and sleeve, and a pressure device connected with the free end of said crank-arm, substantially as set forth.

4. The combination with a longitudinally-movable regulator screw-stem, of a rotatory screw-sleeve engaging therewith, a ratchet mechanism whereby said sleeve can be rotated, a water-pressure device which automatically controls the operation of said ratchet mechanism, and a disengaging device whereby the ratchet mechanism is thrown out of gear when the regulator-stem has reached the desired limit of its movement, substantially as set forth.

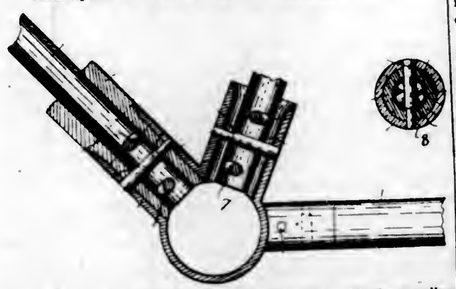
5. The combination with a longitudinally-movable regulator screw-stem, of a rotatory screw-sleeve engaging therewith and provided with a ratchet-wheel, an oscillating pawl-support, a pawl mounted on the same and having a longitudinal groove in its hub, and a disengaging-arm connected with said stem and guided in said groove and having an inclined head adapted to disengage the pawl, substantially set forth.

609,951. CAR-FENDER. ANDREW L. SMITH, New York, N. Y. Filed Aug. 19, 1896. Serial No. 603,191. (No model.)



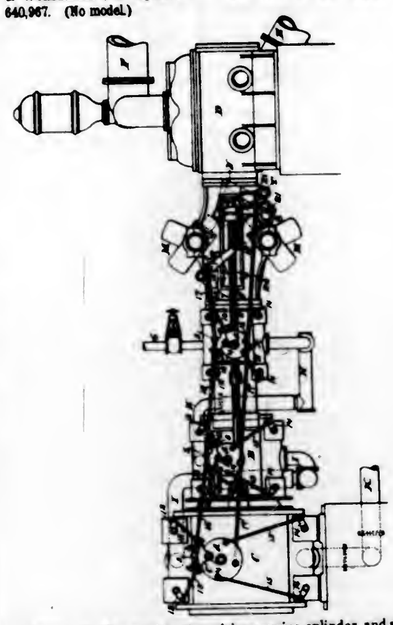
Claim.—The combination with fender-supporting bars of angle-iron construction fixed to the car-trucks, of a fender comprising a frame of angle-iron construction bent into loop form and having its branches hinged to the ends of the fender-supporting bars, the flanges of the said bars being cut away to permit the frame to swing upwardly and serving to support the frame in its lowered position with its outer end spaced from the ground and a flexible apron loosely suspended between the end of the frame and the dashboard of the car, substantially as set forth.

609,952. BICYCLE-FRAME. ABNEL F. TEMPLE, Muskegon, Mich. Filed Sept. 9, 1897. Serial No. 651,127. (No model.)



Claim.—In a bicycle-frame, the combination with the coupling provided with a socket having a number of holes of varying diameters, at different angles, of the hollow wooden bar, the metal tube inserted therein formed with holes coinciding with the holes in the socket, and the rivets having ends of different diameters, the small ends serving to bind the tube and socket together and the large ends acting as a binder for the two outer walls of the socket, substantially as described.

609,953. VALVE-MOVEMENT FOR STEAM-ENGINES. CHAS. C. WORTHINGTON, Irvington, N. Y. Filed June 16, 1897. Serial No. 640,967. (No model.)



Claim.—1. The combination with an engine-cylinder, and a single valve at each end of the cylinder controlling the admission and cut-off of the motor fluid, of a rocker having two pivots, connections from the rocker to the respective valves, and means for oscillating the rocker on one of its pivots for operating the valves for admission and on the other pivot for operating the valves for cut-off, substantially as described.

2. The combination with an engine-cylinder, and a single valve at each end of the cylinder controlling the admission and cut-off of the motor fluid, of a rocker having two pivots, connections from the rocker to the respective valves, means for oscillating the rocker on one of its pivots for operating the valves for admission and on the other pivot for operating the valves for cut-off, and separate exhaust-valves and means for operating the same, substantially as described.

3. The combination with an engine-cylinder, and a single valve at each end of the cylinder controlling the admission and cut off of the motor fluid, of a rocker connected to the respective valves, a movable member on which the rocker is pivoted, means for operating the movable member to oscillate the rocker for operating the valves for admission, and means for oscillating the rocker on its pivot to the movable member for operating the valves for cut-off, substantially as described.

4. The combination with an engine-cylinder, and a single valve at each end of the cylinder controlling the admission and cut-off of the motor fluid, of a rocker, connected to the respective valves, a movable member on which the rocker is pivoted, means for operating the movable member to oscillate the rocker for operating the valves for admission, means for oscillating the rocker on its pivot to the movable member for operating the valves for cut off, separate exhaust-valves, and operating connections between said valves and the movable member, substantially as described.

5. The combination with an engine-cylinder, and a single valve at each end of the cylinder controlling the admission and cut-off of the motor fluid, of a rocker connected to the respective valves, a second rocker on which said rocker is pivoted, means for actuating said second rocker to oscillate the first-mentioned rocker for operating the valve for admission, and means for oscillating the first-mentioned rocker on its pivot to the second rocker for operating the valves for cut-off, substantially as described.

6. The combination with an engine-cylinder, and a single valve at each end of the cylinder controlling the admission and cut-off of the motor fluid, of a rocker connected to the respective valves, a second rocker on which said rocker is pivoted, means for actuating said second rocker to oscillate the first-mentioned rocker for operating the valves for admission, means for oscillating the first-mentioned rocker on its pivot to the second rocker for operating the valves for cut-off, separate exhaust-valves, and operating connections between said exhaust-valves and said second rocker, substantially as described.

7. The combination with an engine-cylinder, and a single valve at each end of the cylinder controlling the admission and cut-off of the motor fluid, of a rocker connected to the valves, a movable member on which the rocker is pivoted, actuating means having a pivotal connection to the rocker for oscillating said rocker on the movable member for operating the valves for cut off, said actuating means being detachable and adapted to be secured in a fixed position for the operation of the valves without cut-off, and means for actuating said movable member to oscillate the rocker on its pivotal connection to the actuating means for operating the valves for admission, substantially as described.

8. The combination with two cylinders, and a single valve at each end of each cylinder controlling the admission and cut-off of the motor fluid, of a rocker for each cylinder having two pivots, separate connections from each rocker to the respective valves of its cylinder, and connections between each of said rockers and the pistons of both of the cylinders for oscillating the rockers on their respective pivots for operating the valves for admission and cut off, substantially as described.

9. The combination with two cylinders, and a single valve at each end of each cylinder controlling the admission and cut-off of the motor fluid, of a rocker for each cylinder having two pivots, separate connections from each rocker to the respective valves of its cylinder, connections between each of said rockers and the pistons of both of the cylinders for oscillating the rockers on their respective pivots for operating the valves for admission and cut-off, and separate exhaust-valves and means for operating the same.

10. The combination with two cylinders and a single valve at each end of each cylinder controlling the admission and cut-off of the motor fluid, of a rocker for each cylinder, separate connections between the rocker of each cylinder and the respective valves of its cylinder through which each of said valves is operated by said rocker for admission and cut-off, and connections between the rocker of each cylinder and the pistons of both the cylinders, all combined and operating to actuate the valves of each cylinder through said rocker by the piston of the other cylinder to admit the motor fluid and through the same rocker by its own piston to cut off the motor fluid, substantially as described.

11. The combination with two cylinders and a single valve at each end of each cylinder controlling the admission and cut-off of the motor fluid, of a rocker for each cylinder, separate connections between the rocker of each cylinder and the respective valves of its cylinder through which each of said valves is operated by said rocker for admission and cut-off, connections between the rocker of each cylinder and the pistons of both the cylinders, all combined and operating to actuate the valves of each cylinder through said rocker by the piston of the other cylinder to admit the motor fluid and through the same rocker by its own piston to cut off the motor fluid, separate exhaust-valves, and means for actuating the exhaust-valves of each cylinder by the piston of the other cylinder, substantially as described.

12. The combination with two cylinders and single valves controlling the admission and cut-off of the motor fluid, of a rocker for each cylinder connected to the respective valves of its cylinder, a movable member for each cylinder on which the rocker is pivoted, connections between each of said movable members and the piston of the other cylinder, and connections between each of said rockers and the piston of its own cylinder, all combined and operating to actuate the valves of each cylinder by the piston of the other cylinder to admit the motor fluid, and by its own piston to cut off the motor fluid, substantially as described.

13. The combination with two cylinders and single valves controlling the admission and cut-off of the motor fluid, of a rocker for each cylinder connected to the respective valves of its cylinder, a movable member for each cylinder on which the rocker is pivoted, connections between each of said movable members and the piston of the other cylinder, connections between each of said rockers and the pistons of its own cylinder, all combined and operating to actuate the valves of each cylinder by the piston of the other cylinder to admit the motor fluid, and by its own piston to cut off the motor fluid, separate exhaust-valves, and operating connections between said valves and the movable members, substantially as described.

14. The combination with two cylinders and single valves controlling the admission and cut-off of the motor fluid, of a rocker for each cylinder connected to the respective valves of its cylinder, a second rocker for each cylinder on which the first-mentioned rocker is pivoted, connections between each of said first-mentioned rockers and the pistons of both the cylinders, connections between each of said second rockers and the pistons of the other cylinder, and connections between each of said first-mentioned rockers and the piston of its own cylinder, all combined and operating to actuate the valves of each cylinder by the piston of the other cylinder to admit the motor fluid, and by its own piston to cut off the motor fluid, substantially as described.

15. The combination with two cylinders and single valves controlling the admission and cut-off of the motor fluid, of a rocker for each cylinder connected to the respective valves of its cylinder, a second rocker for each cylinder on which the first-mentioned rocker is pivoted, connections between each of said first-mentioned rockers and the pistons of both the cylinders, connections between each of said second rockers and the pistons of the other cylinder, connections between each of said first-mentioned rockers and the piston of its own cylinder, all combined and operating to actuate the valves of each cylinder by the piston of the other cylinder to admit the motor fluid, and by its own piston to cut off the motor fluid, and separate exhaust-valves and connections between said exhaust-valves and the second rockers, substantially as described.

16. The combination with a cylinder and a valve at each end of the cylinder controlling the admission and cut-off of the motor fluid, of a movable member, rocker *c* pivoted on said movable member between the valves, separate link connections between said rocker and each of said valves, and means for actuating rocker *c* and movable member for operating the valves through said rocker for admission and cut-off, substantially as described.

17. The combination with a cylinder and a valve at each end of the cylinder controlling the admission and cut-off of the motor fluid, of rocker *d* mounted on the cylinder, rocker *c* pivoted on said rocker *d* between said valves, a link connection between said rocker *c* and each of said valves, and means for actuating rockers *c* and *d* for operating the valves through rocker *c* for admission and cut-off, substantially as described.

18. The combination with a cylinder having a valve at each end of the cylinder controlling the admission and cut-off of the motor fluid and separate exhaust-valves, of rocker *d* mounted on the cylinder, connections between said rocker *d* and the exhaust-valves, rocker *c* pivoted on said rocker *d* between the valves, a link connection between said rocker *c* and each of the valves controlling the admission and cut-off, and means for actuating rockers *c* and *d* for operating the valves through rocker *c* for admission and cut-off and for operating the exhaust-valves through rocker *d*, substantially as described.

19. The combination with a cylinder having a valve controlling the admission and cut-off of the motor fluid and a separate exhaust-valve, of a rocker provided with a block connected to the valve controlling the admission and cut-off and adjustable to vary the point of connection between the valve connections and rocker, means for actuating said first-mentioned valve for admission and cut-off through said rocker, and means independent of the adjustment of said block for actuating said exhaust-valve substantially as described.

20. The combination with a cylinder having single valves controlling the admission and cut-off of the motor fluid at opposite ends of the cylinder, and separate exhaust-valves, of a rocker provided with separate blocks connected to the respective valves controlling the admission and cut-off and adjustable to vary the points of connection between the valve connections and rocker, means for actuating the valves for admission and cut-off through said rocker and means independent of the adjustment of said blocks for actuating the exhaust-valves substantially as described.

21. The combination with cylinder A having single valves controlling the admission and cut-off of the motor fluid, of rocker *c* having adjustable connection-blocks 3, links connecting said blocks to the respective valves, and means for actuating said rocker *c* for operating the valves for admission and cut-off through said rocker *c*, substantially as described.

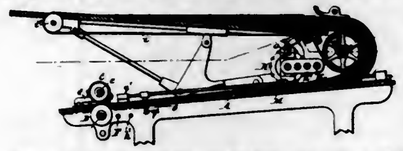
22. The combination with a cylinder having single valves controlling the admission and cut-off of the motor fluid at opposite ends of the cylinder, of rocker *c* mounted between said valves, link connections between said rocker and the respective valves, and rocker *d* on which rocker *c* is pivoted at such point that each of the valves is substantially stationary while the other valve is being operated by the rocker *c* for cut-off, substantially as described.

23. The combination with a cylinder having single valves controlling the admission and cut-off of the motor fluid at opposite ends of the cylinder, of rocker *c*, link connections between said rocker and the respective valves, rocker *d* on which said rocker *c* is pivoted and by which the valves are operated for admission, said rockers and link connections being constructed and arranged to hold each of said valves substantially stationary while the rocker *d* is actuating the other valve for admission, substantially as described.

24. The combination with a cylinder and an oscillating valve at each end of the cylinder controlling the admission and cut-off and cranks 12 on the valve-stems, of a movable member, rocker *c* pivoted on said movable member, and means for actuating said rocker *c* and said movable member to operate the valves for admission and cut-off through said rocker *c*, substantially as described.

25. The combination with a cylinder and an oscillating valve at each end of the cylinder controlling the admission and cut-off and cranks 12 on the valve-stems, of rocker *d* mounted on the cylinder, rocker *c* mounted on said rocker *d* between the valves, single links 13 connecting said rocker *c* to the cranks 12, and means for actuating said rockers *c*, *d* to operate the valves for admission and cut-off through said rocker *c*, substantially as described.

609,954. PAPER-FEEDING MACHINE. THOMAS A. BRIGGS, Arlington, Mass., assignor to the Standard Machinery Company, Mystic River, Conn. Filed Mar. 27, 1897. Serial No. 629,504. (No model.)



Claim.—1. The combination with the feed-table, the lower feed-roller, and the upper feed-roller, of a rock-shaft arranged below the feed-table and provided with arms carrying upwardly-projecting rods or pins, and bearings in which the upper feed-roller is mounted and which rest loosely on said rods or pins, whereby said bearings and the upper feed-roller can be removed without disturbing said rods or pins, substantially as set forth.

2. The combination with the feed-table, the lower feed-roller, the upper feed-roller and the shaft supporting the upper feed-roller, of a rock-arm provided with a bearing in which said shaft is journaled, a vertical pin or rod guided in said table, an adjusting-screw arranged in said arm and resting on said pin or rod, and a rock-shaft provided with an arm which is connected with the lower end of said pin or rod, substantially as set forth.

3. The combination with the feed table, the lower feed-roller, the upper feed-roller, and the shaft supporting the upper feed-roller, of a rock-arm provided with a bearing in which said shaft is journaled, and an upwardly-projecting lug arranged on the table and engaging with a notch in the under side of said arm, substantially as set forth.

4. The combination with the feed table, the lower feed-roller, the upper feed-roller, and the shaft supporting the upper feed-roller, of a rock-arm pivoted on the table and provided with a bearing in which said shaft is journaled, a coupling-bolt detachably connecting the arm with the table, and a spring interposed between the arm and the bolt, substantially as set forth.

5. The combination with the table, the lower feed-roller, the upper feed-roller, and the shaft supporting the upper feed-roller, of a rock-arm provided with a bearing in which said shaft is journaled, a plate arranged on the table below the rock-arm and provided with a slot, a coupling-bolt arranged in said arm and slot and provided at its lower end with a cross-bar which bridges the slot, and a spring interposed between the upper side of said arm and a shoulder or head on said bolt, substantially as set forth.

6. The combination with the lower feed-roller, of an upper feed-roller, vertically-movable bearings in which the upper feed-roller is journaled, a rock-shaft connected with said bearings to raise and lower the same and provided with a rock-arm, and a stop which can be adjusted to stand in the path of said rock-arm for holding the bearings in an elevated position or to clear the arm for permitting the bearings to be lowered, substantially as set forth.

7. The combination with the lower feed-rollers and the upper feed-rollers, of a shaft carrying the upper feed-rollers, vertically-movable bearings in which said shaft is journaled, a rock-shaft whereby said bearings are raised and lowered, a rock-arm arranged on the rock-shaft and provided with a shoulder, and a rotary rod provided with a notch or recess which receives said arm and with a shoulder which is adapted to engage with the shoulder of said arm, substantially as set forth.

8. The combination with the feed-table and the main driving-shaft journaled in stationary bearings, of a comb-wheel, a counter-shaft geared with the comb-wheel and journaled in longitudinally-movable bearings, and a longitudinal telescopic shaft geared with the main shaft and the counter shaft, substantially as set forth.

9. The combination with the feed-table, of a comb-wheel, mechanism whereby said wheel is alternately lowered upon the bank of paper and raised therefrom, and a presser-foot arranged at the side of the comb-wheel and adapted to bear upon the bank of paper, substantially in line with the comb-wheel, substantially as set forth.

10. The combination with the feed-table, of a comb-wheel, mechanism whereby said wheel is alternately lowered upon the bank of paper and raised therefrom, a presser-foot, and mechanism whereby said foot is lowered to hold the bank of paper when the comb-wheel is elevated, and raised to release the top sheet when the comb-wheel is lowered, substantially as set forth.

11. The combination with the feed-table, of a comb-wheel, a vertically-movable rock-shaft, a hanger loosely connecting said wheel with said shaft, a presser-foot guided on said hanger and provided with a cam, and a rock-arm secured to said rock-shaft and engaging with said cam, substantially as set forth.

12. The combination with the feed-table, of a comb-wheel, a vertically-movable rock-shaft arranged over the comb-wheel, a hanger loosely connecting the wheel with said shaft, a presser-foot provided with upright bars guided on opposite sides of said hanger and having a cross-bar provided with a cam-slot, and a rock-arm secured to said rock-shaft and provided with a pin or projection engaging with said slot, substantially as set forth.

13. The combination with the feed-table, of a comb-wheel, a presser-foot, a vertically-movable shaft whereby the comb-wheel and presser-foot are supported and alternately lowered on the pile, a rock-shaft journaled in stationary bearings, and rock-arms connecting said shafts, substantially as set forth.

14. The combination with the feed-table, of a comb-wheel, a presser-foot, a vertically-movable shaft whereby the comb-wheel and presser-foot are supported and alternately lowered on the pile, a rotary lifting-rod journaled in stationary bearings, a hollow shaft journaled on said rod, arms connecting the vertically-movable shaft with the hollow shaft, and a radial pin arranged on the lifting-rod and engaging with a segmental slot in the hollow shaft, substantially as set forth

15. The combination with the feed-table, of a comb-wheel, a presser-foot, a vertically-movable transverse shaft whereby the comb-wheel and presser-foot are supported and alternately lowered on the pile, a longitudinal shaft journaled in stationary bearings, and a telescopic vertical shaft having its upper and lower ends geared respectively with the transverse shaft and the longitudinal shaft, substantially as set forth.

16. The combination with the feed-table, of a sheet-feeding device, a moving shaft which when coupled with said device causes the same to become inoperative, a trip-lever which is shifted by the advancing sheet and which causes the coupling of said shaft to said sheet-feeding device, and mechanism whereby the feeding device is returned to its operative position after having been rendered inoperative, substantially as set forth.

17. The combination with the feed-table, and a rotating shaft, of a comb-wheel, lifting mechanism whereby the comb wheel is raised and lowered and which is adapted to be operated by said rotating shaft, and a trip-lever which is shifted by the advancing sheet and which couples said lifting mechanism to said rotating shaft for raising the comb-wheel, substantially as set forth.

18. The combination with the feed-table, of a sheet-feeding device, a moving shaft which when coupled with said device causes the same to become inoperative, a trip-lever which is shifted by the advancing sheet and which causes the coupling of said shaft to said sheet-feeding device, mechanism whereby the feeding device is returned to its operative position after having been rendered inoperative, and an abutment arranged opposite said trip-lever, substantially as set forth.

19. The combination with the feed-table, of a sheet-separating mechanism, an actuating mechanism whereby the separating mechanism is alternately rendered operative and inoperative, a trip-lever which is provided with a shoulder adapted to be engaged by a sheet and which controls said actuating mechanism, and a movable support on which said lever is pivoted, substantially as set forth.

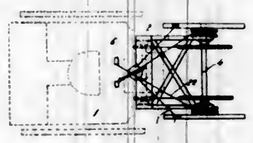
20. The combination with the feed-table, of a sheet-separating mechanism, an abutment-roller arranged on one side of the path of the sheets and provided with a circumferential groove, a trip-lever arranged on the opposite side of the path of the sheets and projecting into the groove of the abutment-roller, a rock-shaft carrying the trip-lever, and intermediate actuating mechanism which is controlled by the trip lever and whereby the separating mechanism is alternately rendered operative and inoperative, substantially as set forth.

21. The combination with the feed-table and the sheet-separating mechanism, of a trip-segment capable of turning on a horizontal axis and on an axis transversely to the horizontal axis, a gear-wheel with which the trip-segment is adapted to be engaged by swinging on its transverse axis, a trip-lever having an upper arm adapted to be engaged by the sheets and a lower arm which is adapted to hold the trip-segment out of engagement with the gear-wheel, and intermediate mechanism which is actuated by the movement of the trip-segment about its horizontal axis and whereby the separating mechanism is alternately rendered operative and inoperative, substantially as set forth.

22. The combination with the feed-table and the sheet-separating mechanism, of a horizontal rock-shaft, a gear-wheel arranged adjacent to the rock-shaft, a rotary sleeve turning on the rock-shaft, a trip-segment pivoted to said sleeve transversely to the axis of the sleeve and adapted to be engaged with and disengaged from the gear-wheel, a trip-lever pivotally supported on the rock-shaft and having its lower arm engaging with a flange on the segment for holding the latter out of engagement with the gear-wheel while its upper arm is adapted to be engaged by the sheets, a spring whereby the trip-segment is turned for engaging the same with the gear-wheel, an elbow-lever connected by intermediate mechanism with the separating mechanism for shifting the same alternately into an operative and an inoperative position, toggle-bars connecting said elbow-lever with said rotary sleeve, and a releasing-bar pivoted at one end to the rock-shaft and provided at its opposite end with a shoulder adapted to engage with a shoulder on one of the toggle-bars, substantially as set forth.

23. The combination with the upper and lower tables and the mechanism by which the bank of sheets is moved from one table to the other and which is provided with a ratchet-wheel, of a pawl-carrier having a forward-and-backward movement and provided with a pawl engaging with said ratchet-wheel, and a rock-arm consisting of a lower section mounted on a rock-shaft and an upper section which is yieldingly connected with the lower section and adapted to be moved into and out of the path of the pawl carrier, substantially as set forth.

609,955. STEERING MECHANISM FOR MOTOR-VEHICLES. ARTHUR W. BRIGHTMORE, Knighton, England. Filed Dec. 31, 1897. Serial No. 664,913. (No model.) Patented in England Mar. 20, 1897, No. 7,250.



Claim.—1. In a motor-vehicle, the steering-wheels, the motor for driving the same, brakes for said wheels, means for operating said brakes, and means for regulating the speed of the motor simultaneously with the operation of the brakes, said means operating independently of the speed of the motor.

2. In a motor-vehicle, the steering-wheels, the motor for driving the same, brakes for said wheels, and means for simultaneously applying said brakes and for controlling the supply of propelling medium to said motor.

3. In a motor-vehicle, the steering-wheels, the motor for driving the same, brakes for said wheels, and an operating-lever connected with said brakes and controlling the supply of propelling medium to the motor, said parts being arranged to effect the regulation of the motor when either or both brakes are applied.

4. In a motor-vehicle, the steering-wheels mounted to rotate upon an axle, a ratchet-wheel and double pawls connecting said parts, and a motor for driving said axle.

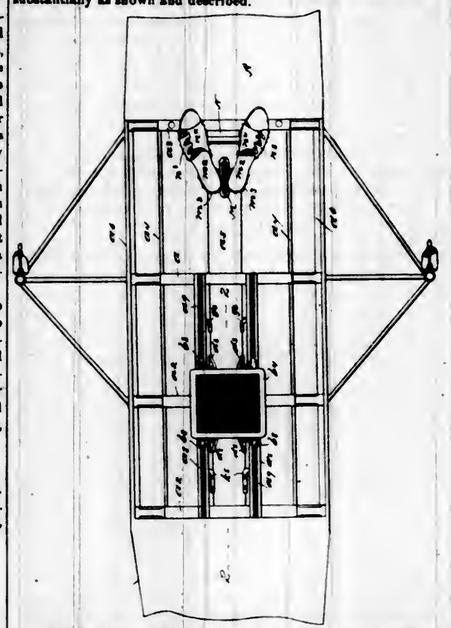
5. In a motor-vehicle, the steering-wheels mounted to rotate upon an axle, a double pawl carried by said wheels, a toothed wheel fast upon said axle, and a brake-pulley having frictional engagement with said axle and controlling the movement of said pawl.

6. In a motor-vehicle, the steering-wheels mounted to rotate upon an axle, double pawls carried by said wheels, toothed wheels fast upon said axle, brake-pulleys having frictional engagement with said axle and having cams to control the movement of said double pawls, and brake bands and levers.

7. In a motor-vehicle, the steering-wheels mounted to rotate upon an axle, double pawls carried by said wheels, and having end and central projections, toothed wheels fast upon said axle, brake-pulleys having frictional engagement therewith, double-horned cams upon said brake-pulley, notches in said cams to receive the center projections of said pawls, and brake bands and levers.

609,956. ROW-BOAT. THOMAS H. BROMHEAD, Livermore Falls, Me., assignor to Millett & Bromhead, same place. Filed July 23, 1897. Serial No. 645,723. (No model.)

Claim.—1. A row-boat provided with two longitudinal bars or supports, tracks or ways pivotally connected with said longitudinal bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and devices in operative connection with said longitudinal bars or supports, and with the opposite ends of said tracks or ways for raising and lowering the opposite ends of said tracks or ways, substantially as shown and described.



2. A row-boat provided with two longitudinal bars or supports, the opposite ends of which are downwardly inclined, tracks or ways pivotally connected with the upper side of said bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and devices connected with said longitudinal bars or supports and said tracks or ways, at the opposite ends thereof, for alternately raising and lowering the opposite ends of said tracks or ways, substantially as shown and described.

3. A row-boat provided with two longitudinal bars or supports, the opposite ends of which are downwardly inclined, tracks or ways pivotally connected with the upper side of said bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and devices connected with said longitudinal bars or supports and said tracks or ways, at the opposite ends thereof, for alternately raising and lowering the opposite ends of said tracks or ways, and said seat being provided with rollers which move in grooves formed in said tracks or ways, and at the front and rear thereof with spring-projected runners, by which said devices are operated, substantially as shown and described.

4. A row-boat provided with two longitudinal bars or supports, the ends of which are downwardly inclined, longitudinal tracks or ways pivotally supported on said bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and toggle-levers pivotally connected with said tracks or ways, and extending downwardly and pivotally connected with hangers secured to said bars or supports, levers pivotally connected with said hangers and extending upwardly, tie-rods connected with the lower ends of said levers, and provided at their ends with slots or openings through which said toggle levers pass, and devices connected with said seat for operating said first-named levers, substantially as shown and described.

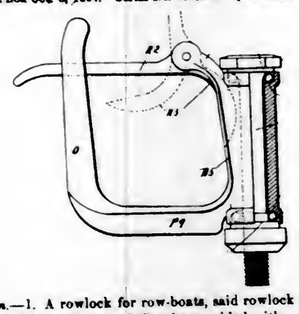
5. A row-boat provided with two longitudinal bars or supports, the ends of which are downwardly inclined, longitudinal tracks or ways pivotally supported on said bars or supports, a longitudinally-movable seat mounted on said tracks or ways, and toggle-levers pivotally connected with said tracks or ways, and extending downwardly and pivotally connected with hangers secured to said bars or supports, levers pivotally connected with said hangers and extending upwardly, tie-rods connected with the lower ends of said levers, and provided at their ends with slots or openings through which said toggle-levers pass, and devices connected with said seat for operating said first-named levers, consisting of spring-operated runners which project from the front and rear of said seat, substantially as shown and described.

6. A row-boat provided with longitudinal bars or supports, the ends of which are inclined, tracks or ways pivotally mounted on said bars or supports, a seat mounted on said tracks or ways, and

provided with rollers which move in grooves formed therein, said seat being also provided with side plates which engage with grooves formed in the inner sides of said tracks or ways, spring-operated runners connected with said seat and projecting forwardly and backwardly thereof, hangers connected with said bars or supports, and provided with toggle-levers which are pivotally connected with the opposite ends of said tracks or ways, tie-rods through the opposite ends of which said toggle-levers pass, and levers pivotally connected with said hangers, and with said tie-rods, substantially as shown and described.

7. A row-boat provided with two longitudinal pivotally-supported tracks or ways, a rolling seat mounted on said tracks or ways, and devices for alternately raising and lowering the opposite ends of said tracks or ways, substantially as shown and described.

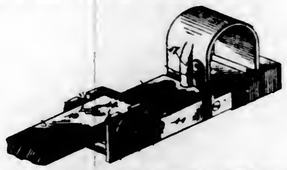
609,957. ROWLOCK. THOMAS H. BROSNIHAN, Livermore Falls, Me. Filed Oct. 8, 1897. Serial No. 654,545. (No model.)



Claim.—1. A rowlock for row-boats, said rowlock consisting of a tubular head, a rod sleeved therein provided with a head at one end and screw-threads at the other end, ball-bearings arranged between said rod-head and the upper portion of the tubular head, a bearing arranged upon one side of the tubular head having a vertical groove, an outwardly and upwardly directed arm integral with said bearing and provided with a slot in its upper end, an outwardly-curved arm integral with the upper portion of said bearing, and an angular lever pivoted in said arm one end of which engages the slotted end of the outwardly-directed arm and the lower end of which engages the groove in said bearing, substantially as described.

2. A rowlock for row-boats, said rowlock consisting of a tubular head, a rod sleeved therein provided with a head at one end and screw-threads at the other, a collar arranged upon the threaded end of said rod, ball-bearings arranged between the rod-head and said collar and the upper and lower portions respectively of said tubular head, a bearing arranged upon one side of the tubular head having a vertical groove, an outwardly and upwardly directed arm integral with said bearing and provided with a slot in its upper end, an outwardly-curved arm integral with the upper portion of said bearing, and an angular lever pivoted in said arm one end of which engages the slotted end of the outwardly directed arm and the lower end of which engages the groove in said bearing, substantially as described.

609,958. THILL-COUPLING. DANIEL W. CLARK, Tionesta, Pa. Filed Mar. 30, 1898. Serial No. 675,782. (No model.)



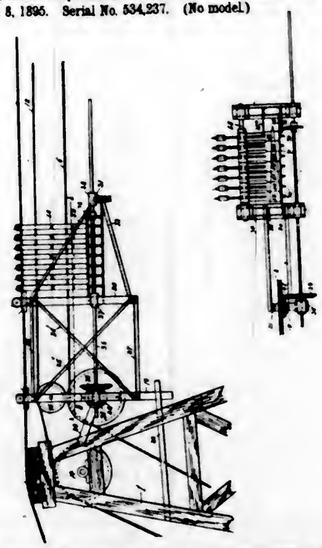
Claim.—1. In a device of the class described, the combination of an axle-clip, a pair of forwardly-extending ears having circular openings and provided with entrance-recesses, a swinging frame arranged on the exterior of the perforated ears and provided with annular lugs or disks fitting in the circular openings of the ears and provided with bearing-recesses adapted to receive the pivot of a thill-iron, and a locking device mounted on the axle-clip and engaging the frame, substantially as described.

2. In a device of the class described, the combination of an axle-clip, a pair of forwardly-extending ears having openings and provided with entrance-slots, a substantially rectangular frame having sides arranged on the exterior of the arms or ears, annular lugs or disks arranged at the inner faces of the sides of the frame, fitting in the openings of the ears and provided with bearing-recesses, a pivoted latch mounted on the axle-clip and engaging the frame, and a stop mounted on one of the ears in advance of the frame, substantially as described.

3. In a device of the class described, the combination of a pair of perforated ears having openings and provided with entrance-slots, a swinging frame provided with annular lugs or disks having bearing-recesses, said frame being provided with perforations registering with the recesses, and a thill-iron having a removable pivot fitting in the bearing-recesses, substantially as described.

4. In a device of the class described, the combination of the perforated ears having openings and entrance-slots, a frame having annular lugs or disks provided with bearing-recesses, open washers arranged in the bearing-recesses and forming cushions, and a thill-iron having a pivot arranged in the bearing-recesses and supported by the washers, substantially as described.

609,959. HOISTING AND CONVEYING APPARATUS. ALFRED H. DE CAMP, Trenton Junction, N. J.; Estelle Austin De Camp and Clarence A. De Camp executors of said Alfred H. De Camp, deceased. Filed Jan. 8, 1895. Serial No. 534,237. (No model.)



Claim.—1. In a hoisting and conveying apparatus, a way, a rope-support movably mounted upon said way, and a running-line, in combination with mechanism stationarily located relatively to the way and movement to and fro thereon for automatically discharging said rope-support into connection with said running-line; substantially as shown and described.

2. In a hoisting and conveying apparatus, a way, a rope-support movably mounted on said way and a running-line, in combination with mechanism stationarily located relatively to the way and movement to and fro thereon for automatically discharging said rope-support into connection with the running-line, and means on said rope-support whereby it may fixedly engage said running-line; substantially as shown and described.

3. In a hoisting and conveying apparatus, a way, a rope-support movably mounted on said way, and a running-line, in combination with mechanism stationarily located relatively to the way and movement to and fro thereon for automatically discharging said rope-support into connection with the running-line, and means whereby the said mechanism may be operated by the running-line; substantially as shown and described.

4. In a hoisting and conveying apparatus, a way, a series of fall-rope supports having rollers whereby they are movably mounted upon said way, a fall-rope, and a running line, in combination with mechanism stationarily located relatively to the way and movement to and fro thereon for automatically discharging said fall-rope supports into connection with the running-line, and means on said fall-rope supports whereby they may fixedly engage said running line and sheaves mounted on said fall-rope supports for sustaining the fall-rope thereon; substantially as shown and described.

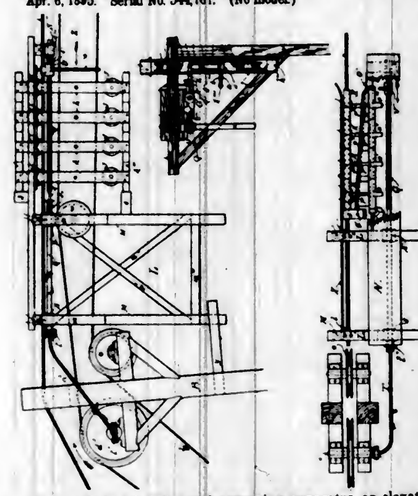
5. In a hoisting and conveying apparatus, a way, a series of fall-rope supports movably mounted on said way, said fall-rope supports having sustaining-sheaves for the fall-rope, and having adjustable frames embracing the running-line of the apparatus, in combination with mechanism stationarily located relatively to the way and movement to and fro thereon for automatically receiving said fall-rope supports and releasing them from the running-line and for discharging them at intervals upon said running-line in gripping contact therewith, the fall-rope and the running-line; substantially as shown and described.

6. In a hoisting and conveying apparatus, a mechanism stationarily located with reference to the way and movement to and fro thereon for operating the fall-rope supports, said mechanism comprising a threaded operating-shaft, gearing connected with said shaft, a sheave, and a running-line, the latter in its movement over the sheave effecting the operation of the various parts; substantially as shown and described.

7. In a hoisting and conveying apparatus, a mechanism stationarily located with reference to the way and movement to and fro thereon, said mechanism comprising a sheave rigidly connected with its axle, a sliding threaded shaft connected by gears with the axle of said sheave said shaft having a finger piece adapted to contact with pivoted operating-pieces, said operating-pieces having wedge-shaped projections adapted when in their normal position to contact with and expand the frames of the fall-rope supports of the apparatus, and the fall-rope supports, said supports having adjustable frames, springs adapted to close said frames toward each other, and sheaves for sustaining the fall-rope of the apparatus, in combination with said fall-rope and the running-line, the latter in its movement over the sheave effecting the operation of the various parts; substantially as shown and described.

8. In a hoisting and conveying apparatus, a way, a rope-support movably mounted on said way, and a running-line, in combination with a mechanism stationarily supported relatively to said way and movement to and fro thereon for automatically receiving and discharging said rope-support into connection with the running-line; substantially as shown and described.

609,960. HOISTING AND CONVEYING APPARATUS. ALFRED H. DE CAMP, Trenton Junction, N. J.; Estelle Austin De Camp and Clarence A. De Camp executors of said Alfred H. De Camp, deceased. Filed Apr. 6, 1895. Serial No. 544,761. (No model.)



Claim.—1. In a hoisting and conveying apparatus, an elevated way, a running-line, a fall-rope, a fall-rope support movably sustained on said way and means on said fall-rope support for automatically gripping said running-line, in combination with a mechanism stationarily located relatively to the way, said mechanism comprising a revoluble threaded shaft, a device adapted to traverse said shaft as it revolves and throw the said means on the fall-rope carrier into gripping contact with said running-line, and means for releasing such grip; substantially as shown and described.

2. In a hoisting and conveying apparatus, an elevated way, a running-line, a fall-rope, a fall-rope support movably sustained on said way, and means on said fall-rope carrier for automatically gripping and releasing said running-line, in combination with a mechanism stationarily located relatively to said way, said mechanism comprising a revoluble sheave operated by said running-line, a revoluble shaft having a broken thread formed upon it, said shaft being connected with said sheave to revolve with it, a nut adapted to traverse said shaft in a normally upright position when said shaft revolves, means on said nut adapted to take into the break in the thread on said shaft and cause the nut to turn with the shaft, means on said nut for throwing the gripping device on said fall-rope carrier into operative contact with the running-line, and means for restoring said nut to its normal upright position on said shaft; substantially as shown and described.

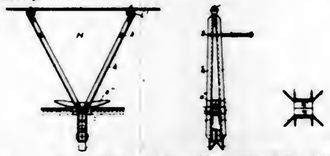
3. In a hoisting and conveying apparatus, the combination of an elevated way, a running-line, a fall-rope and a fall-rope support movably sustained upon said way, means on said fall-rope support for gripping said running-line and a mechanism stationarily located relatively to said way, said mechanism comprising a sheave operated by said running-line, a shaft so connected with said sheave as to revolve simultaneously with it, said shaft having a broken thread formed upon it, a nut on said shaft, said nut having a threaded portion adapted to take onto the thread upon said shaft and to cause said nut to move lengthwise of said shaft when the same is revolved, said nut having also a lock-pin adapted to travel upon the thread on said shaft and catch in the break in said thread, an operating-piece swung between the lines of travel of the said nut and the said fall-rope carrier and adapted to contact with and operate the gripping device on said fall-rope carrier, a tripping device on said nut for contacting with said operating-piece, and a tripping device fixed at a point opposite the break in the thread of said shaft for contacting with said lock-pin and raising it from the thread of said shaft; substantially as shown and described.

4. In a hoisting and conveying apparatus, the combination of an elevated way, a carriage adapted to travel on said way, means for moving said carriage on said way, a running-line beneath said way in a vertical plane therewith and passing over sheaves upon the supports of the said apparatus, a fall-rope passing over a sheave on said carriage and a series of fall-rope supports sustained upon said way, means on said fall-rope supports for gripping said running-line, and a mechanism stationarily located relatively to said way, said mechanism comprising a sheave operated by said running-line, a shaft so connected with said sheave as to revolve simultaneously with it, said shaft having a thread formed upon it and said thread being broken at intervals, a nut on said shaft, said nut having a threaded portion adapted to take onto the thread upon said shaft and to cause said nut to move lengthwise of said shaft when the same is revolved, said nut having also a lock-pin adapted to travel upon the thread on said shaft and catch in the breaks in said thread, a series of operating-pieces pivotally swung between the lines of travel of the said nut and the said fall-rope carriers and adapted to contact with and operate the gripping devices on said fall-rope carriers, a tripping device on said nut for contacting with said operating-pieces, and a series of tripping devices, one of each of which tripping devices is fixed at a point opposite a break in the thread of said shaft for contacting with said lock-pin and raising it from the thread of said shaft; substantially as shown and described.

5. In a hoisting and conveying apparatus, the combination of a tram-cable, a carriage adapted to travel on said tram-cable, a running-line connected with said carriage, means for operating said running-line a fall-rope passing over a sheave on said carriage, and a series of fall-rope supports sustained upon said tram-cable, means on said fall-rope supports for gripping said running-line, and a mechanism stationarily located relatively to said way, said mechanism comprising a sheave operated by said running-line, a shaft connected with said sheave to turn with it, said shaft having a thread formed upon it, said thread being broken at intervals, a nut on said shaft, said nut having a threaded portion adapted to take onto the thread upon said shaft and to cause said nut to move lengthwise of said shaft when the same is revolved, said nut having also a lock-pin adapted to travel upon the thread on said shaft and catch in the breaks in said thread, a series of operating-pieces pivotally swung between the lines of travel of the said nut and the said fall-rope carriers and adapted to contact with and operate the gripping devices, a tripping device on said nut for contacting with said operating-pieces, and a series of tripping devices, one of each of which tripping devices is fixed at a point opposite a break in the thread of said shaft for contacting with said lock-pin and raising it from the thread of said shaft, and means on said threaded shaft for timing the movements of the nut to the movements of the fall-rope carriers; substantially as shown and described.

6. A tripping mechanism comprising a revoluble shaft having a broken thread, a nut adapted to traverse said shaft in a normally upright position when said shaft is revolved, a locking device on said nut for taking into the break in the thread of said shaft and causing the nut to revolve with the shaft, a trip on said nut, and means for releasing the locking device from the break in the thread of the shaft; substantially as shown and described.

609,961. **HOISTING AND CONVEYING APPARATUS.** ESTELLE A. DE CAMP and CLARENCE A. DE CAMP, Boonton, N. J., executors of Alfred H De Camp, deceased. Filed Jan. 24, 1898. Serial No. 667,706. (No model.)



Claim.—1. In a hoisting and conveying apparatus, a way, a carriage movable upon said way, said carriage having a flexible deflecting frame with elevated pointed ends, the outer end portions of said frame being supported upon guiding-sheaves running on the way of the apparatus, and the inner ends of said portions of said frame being hinged to the ends of the middle portion thereof, and a fall-rope passing over a sheave on said carriage, in combination with a cable sustained above said way practically parallel in a vertical plane therewith, a fall-rope support depending from said cable and embracing said way, said fall-rope support comprising duplicate frames, and guides mounted on the inner faces of said frames to bear upon the deflecting frame of said carriage as it passes.

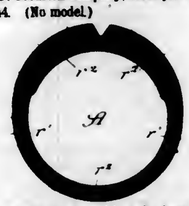
2. In a hoisting and conveying apparatus, a tram-cable, a carriage adapted to travel thereon, said carriage having a flexible deflecting frame with pointed elevated ends, the outer end portions of said frame being supported upon guiding-sheaves running on the way of the apparatus, and the inner ends of said portions of said frame being hinged to the ends of the middle portion thereof, guide-sheaves on said frame to embrace the tram-cable, and a fall-rope passing over a sheave on said carriage, in combination with a cable supported above said tram-cable and practically parallel therewith in a vertical plane, a weight attached at one end of said cable for producing tension thereon, a fall-rope support connected with said cable and embracing the said tram-cable, said fall-rope support comprising duplicate frames, a guide-piece on the inner faces of said duplicate frames for embracing the tram-cable and bearing upon the duplicate frame of said carriage when it passes, and means for closing and holding said frames together at their lower ends when in normal position.

3. In a hoisting and conveying apparatus, a way, a carriage adapted to traverse said way, means for moving said carriage on said way, a flexible deflecting frame fixed on said carriage, said frame having pointed ends and flaring sides, sheaves on the outer ends of said frame for guiding said frame on said way, the end portions of said frame being hinged to the middle portions thereof, and a fall-rope passing over a sheave on said carriage, in combination with a cable sustained above said way practically parallel thereto in a vertical plane therewith, a fall-rope support connected with said cable, said fall-rope support comprising duplicate frames embracing said way, and vertically-curved supporting-guides attached to the inner faces of said duplicate frames for supporting said frames on said way and contacting with the deflecting frame of said carriage.

4. In a hoisting and conveying apparatus, a fall-rope support comprising duplicate frames, each of said frames having at its lower end a sheave for sustaining the fall-rope of the apparatus, and a guide for directing the fall-rope past said sheaves when it is raised.

5. In a hoisting and conveying apparatus comprising a fall rope support, a carriage adapted to travel on the way of said apparatus, said carriage having a flexible deflecting frame, said frame consisting of a middle portion and two end portions hinged together so as to permit of vertical deflection of the frame, said frame having pointed elevated ends and flaring sides, and means on said frame for retaining the pointed ends thereof in a fixed relation to said way.

609,962. **PNEUMATIC TIRE** JOHN W. DUNN, Akron, Ohio, assignor to the B. F. Goodrich Company, same place. Filed Feb. 28, 1898. Serial No. 671,944. (No model.)

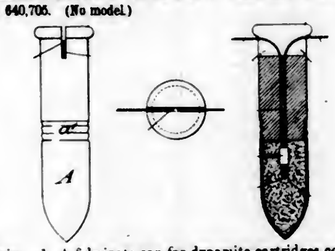


Claim.—1. A pneumatic tire thinned about its tread to form a species of circumferential hinge-joint, and reinforced with puncture-resisting material interposed about the tread portion at opposite sides of such joint, substantially as described.

2. In a pneumatic tire, the tread portion provided with a circumferential groove and reinforced with puncture-resisting material omitted along the base of said groove and extending at opposite sides thereof, substantially as described.

3. In a pneumatic tire, the tread portion provided centrally with a circumferential V-shaped groove and reinforced with puncture-resisting material omitted along the apex of said groove and extending at opposite sides thereof, substantially as described.

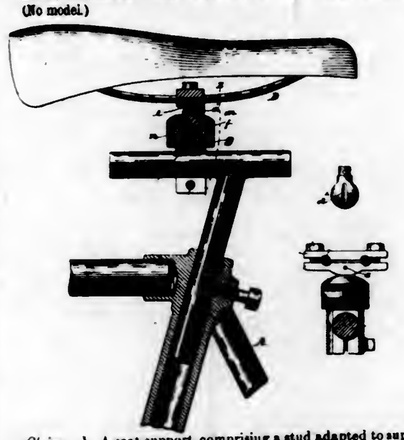
609,963. **FULMINATE-CAP FOR DYNAMITE-CARTRIDGES.** WILLIAM P. FERGUSON, New York, N. Y. Filed June 14, 1897. Serial No. 640,705. (No model.)



Claim.—1. A fulminate-cap for dynamite-cartridges comprising a casing for the fulminate, the said casing being developed at one end into a well-defined point for insertion into the explosive charge, a handle fixed to and projecting away from the opposite end of the shell along the line of its axis for pushing the fulminate-cap into the explosive charge and wires extending through the said handle into the charge of fulminate for exploding it, the said wires being so arranged as to leave the end of the handle free for the reception of the finger in pushing the cap into the cartridge, substantially as set forth.

2. A fulminate-cap for dynamite-cartridges comprising a pointed shell for receiving the fulminate, a handle fixed to and extending away from the shell along the line of its axis, the said handle being provided with a longitudinal bore and a transverse slot and wires extending from within the charge of fulminate along the longitudinal bore and thence along the transverse slot in the handle, substantially as set forth.

609,964. **SADDLE-SUPPORT FOR BICYCLES.** EDWARD HATHAWAY, Marblehead, Mass. Filed Feb. 25, 1898. Serial No. 671,564. (No model.)



Claim.—1. A seat-support, comprising a stud adapted to support a saddle, and a block for carrying the stud, said stud and block being shaped to permit rocking movement of the stud relatively to the block and each centrally provided in their meeting ends with a recess, a spring retained by and extending into both of said recesses for automatically centering and restoring the saddle to its normal position, and means holding said stud and block in engagement, substantially as described.

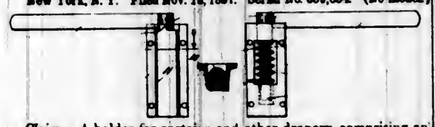
2. A seat-support, comprising a stud adapted to support a saddle, and having a ball-shaped lower end, and a block provided in its upper end with a socket to receive said ball-shaped end of the stud, the latter and said socket being centrally provided in their meeting ends with a recess, the recess of the stud being ball-shaped, a spring retained by and extending into both of said recesses for restoring the saddle to its normal position when tilted, and holding means retaining said stud in said socket, substantially as described.

3. As a seat-support between the spring of the seat and the ⊤-pin, a plate having a stud provided with a ball-shaped end bored for the reception of a spring, and a threaded union mounted loosely on a neck of said stud, combined with a socket shaped to receive the ball-shaped end of said stud and threaded to enable said union to be united to said socket to retain the ball seated in said socket, and a spring entering the opening of said ball and retained at the bottom of said socket, substantially as described.

4. A seat-support comprising a ball-and-socket joint, the ball thereof being provided with a vertical groove, the socket also having a vertical groove, and an antifriction-ball retained in and by said two vertical grooves for preventing horizontal rotation while permitting the rocking or tipping of the saddle, substantially as described.

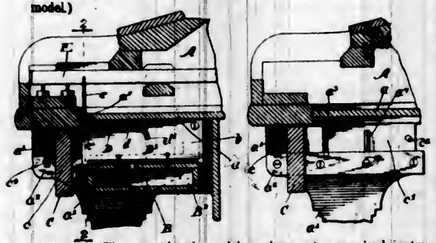
5. A plate having extended from its lower side a stud provided with a ball-shaped end, and a reduced neck, said ball having a vertical groove; a saddle sustained by the upper side of said plate; and a threaded union applied loosely to the neck of said stud, and shaped to coact with a part of said ball-shaped end; and a threaded socket adapted to be sustained by the ⊤-pin, and provided with a seat for said ball, said seat having a vertical groove, combined with an antifriction-ball entering the vertical grooves of both the ball and the seat part of the socket, substantially as described.

609,965. **HOLDBACK FOR CURTAINS.** FRANK W. KELSEY, New York, N. Y. Filed Nov. 18, 1897. Serial No. 659,054. (No model.)



Claim.—A holder for curtains and other drapery, comprising an oblong plate or support which is adapted to be secured to a window or other frame, said plate being provided with a longitudinal keeper formed on or secured to one side thereof, and open at its upper end, a spindle mounted in said keeper and projecting above the same, a spring mounted on said spindle within said keeper, one end of which is secured to the spindle, and the other to the keeper, said spring being adapted to turn said spindle outwardly, and a curved arm connected with the upper end of said spindle, said keeper being also provided at its upper end with a lug or projection, substantially as described.

609,966. **ATTACHMENT FOR PIANOS.** FRIEDRICH KINDERMANN, Oregon, Ill. Filed Jan. 17, 1898. Serial No. 666,967. (No model.)



Claim.—1. The combination with a piano, of a musical instrument secured beneath the keys of the piano, a frame provided with a series of hammers adapted to play said musical instrument when in the proper position with relation thereto, connecting devices between said hammers and the keys of the piano and means for supporting the frame adapted to permit of its movement into or out of said proper position; substantially as described.

2. The combination with a xylophone adapted to be secured to the under side of the keyboard of a piano, of an adjustable frame, C, a series of hammers, D, secured to said frame and adapted to strike the xylophone and pins, *e*, secured to the keys and adapted to strike said hammers when the frame is in one position, but not to strike them when the frame is adjusted to another position; substantially as described.

3. The combination with a piano, of a xylophone supported beneath the keyboard, a movable series of hammers adapted to play the same and devices operated by the keys for actuating the hammers, the movement of the hammers being adapted to throw them into or out of proper position for striking the xylophone; substantially as described.

4. The combination with a piano, of a xylophone supported beneath the keyboard, a series of hammers adapted to play the same provided with a movable supporting device whereby they may be moved into or out of position to strike the xylophone, and a series of pins extending down from the keys of the piano and adapted to be depressed by said keys and to strike the hammers; substantially as described.

5. The combination with a piano or analogous musical instrument, of a supplementary musical instrument having a series of musical elements corresponding with the strings of the piano, a series of hammers adapted to play said supplementary instrument, a frame movably supported upon the under side of the keyboard and adapted to support said hammers and suitable means connected with the keys for striking the hammers of the supplementary instrument, the hammer-carrying frame being adapted to be moved into two positions whereby when in one position said hammers will be struck by the keys and in another position will not; substantially as described.

6. The combination with a piano having a pair of cleats, a^2, secured thereto, of a xylophone supported upon the under side of the keyboard, a series of hammers adapted to play the same, a series of pins secured to the keys of the piano and adapted to strike said hammers, a hammer-supporting frame having the side rails, *c'*, adapted to slide upon the cleats, a^2, stops upon said frame and coacting stops upon the cleats lying in the paths of the first named stops adapted to limit the movement of the frame; substantially as described.

609,967. **TOOL-HOLDER.** WILLYS C. LADD, Bristol, Conn. Filed Nov. 8, 1897. Serial No. 657,734. (No model.)



Claim.—1. In combination with a flat-bladed tool, of a spring-wire handle, the ends bent to form a loop and being substantially parallel with each other, the inside faces of said ends being grooved to receive the edges of said flat tool, and a yoke tightly embracing one of said ends and slotted to loosely embrace the other and permitting it to yield toward the first-mentioned end a substantial amount to allow for tools of varying width, and means carried by the yoke for pressing the free end of the handle toward the other thus clamping the edges of the tool, substantially as described.

2. In combination with a flat-bladed tool, of a spring-wire handle, the ends bent to form a loop and being substantially parallel, the inside faces of said ends being grooved for a substantial distance to receive the edges of said flat tool, and a yoke tightly embracing one of said ends and slotted to loosely embrace the other and permitting it to yield toward the first-mentioned end a substantial amount, and means carried by the yoke for pressing the free end of the handle toward the other, thus clamping the edges of a tapering tool for a substantial distance and permitting an adjustment to different tools of different widths or of different degrees of tapering, substantially as described.

609,968. **SHEET-SEPARATOR.** EMIL LARSON, Chicago, Ill. Filed Dec. 3, 1897. Serial No. 660,629. (No model.)

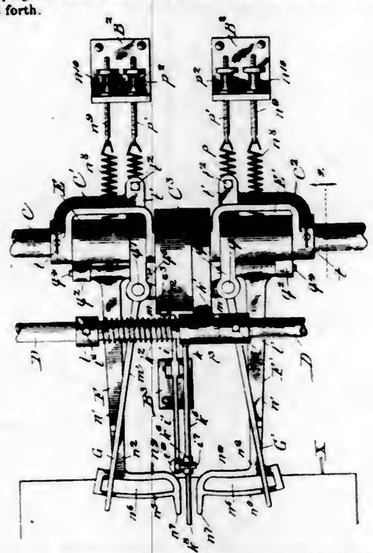
Claim.—1. In a sheet-separator for sheet-feeding devices, the combination of a buckler, and a separator, coöperating with said buckler, having a separating projection supported to be raised by the buckling of the top sheet moving means operating to move the separator at its said projection past the edge then under the top sheet to be separated and means for clamping the under sheets down, substantially as and for the purpose set forth.

2. In a sheet separator for sheet-feeding devices, the combination of a buckler having sheet-engagers and operating means for causing the sheet-engagers to approach and recede with relation to each other, and a separator, between and coöperating with the sheet-engagers, having a separating projection supported to be raised by the buckling of the top sheet, moving means for the separator operating to move the separator at its said projection past the edge then under the top sheet to be separated and means for clamping the under sheets down, substantially as and for purpose set forth.

3. In a sheet-separator for sheet feeding devices, the combination of a buckler having sheet-engagers and operating means for causing the sheet-engagers to approach and recede with relation to each other, presser devices across which the sheet-engagers move, and a separator, between and coöperating with the sheet-engagers and presser devices, having a separating projection supported to be raised by the buckling of the top sheet moving means for the separator operating to move it at its said projection past the edge then under the top sheet to be separated, and means for clamping the under sheets down, substantially as and for the purpose set forth.

4. In a sheet-separator for sheet feeding devices, the combina-

tion of a buckler having sheet-engagers and operating means for causing the sheet-engagers to approach and recede with relation to each other, presser devices, across which the sheet-engagers move, having adjacent upturned guide portions, and a separator between and cooperating with the sheet-engagers, having a separating projection, moving means operating to move the separator at its said projection past the edge then under the top sheet to be separated and means for clamping the under sheets down, substantially as and for the purpose set forth.



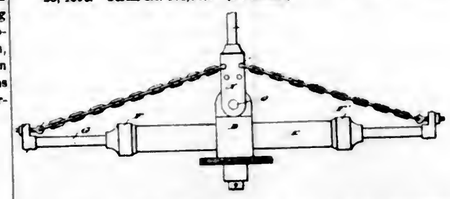
5. In a sheet-separator for sheet feeding devices, the combination of a buckler, and a separator cooperating with said buckler comprising a nearly-counterbalanced bar to rest lightly at its free end portion upon the buckled sheet to be raised thereby and there having an upper prong and a shorter lower prong, and reciprocating and clamping means operating to move the separator at its lower prong past the edge of the buckled top sheet whereby it drops to cause the upper prong to rest upon said sheet, and then move the lower prong under the sheet to be separated and clamp the under sheets down, substantially as and for the purpose set forth.

6. In a sheet-separator for sheet-feeding devices, the combination of a buckler having sheet-engaging surface portions, means for raising and lowering the buckler at said sheet-engaging portions and for moving them to approach and recede with relation to each other, a presser device for guiding the sheet as it is buckled, means for raising and lowering said presser device, and a separator cooperating with the buckler and presser device resting lightly upon the sheet to be separated and having a separating projection, and reciprocating and clamping means operating to move the separator at its said projection past the edge then under the sheet to be separated and clamp the under sheets down, substantially as and for the purpose set forth.

7. In a sheet-separator for sheet-feeding devices, the combination of a buckler having sheet-engaging arms and means for causing said arms to move toward and away from each other, presser mechanism at each of said arms having upturned sheet-guiding edge portions, raising and lowering mechanisms for the said buckling-arms and presser mechanism, a sheet-separator resting at one end portion lightly upon the sheet to be separated between the presser mechanisms and there provided with an upper prong k^4 and a lower shorter prong k^7 separated by an opening k^8, means for reciprocating the separator to move it at its lower prong past the edge then under the sheet to be separated, and clamping mechanism for the separator, all arranged to operate substantially as and for the purpose set forth.

8. In a sheet-separator for sheet-feeding devices, the combination of a buckler, and a separator cooperating with said buckler comprising a nearly-counterbalanced bar to rest lightly at its free end portion upon the buckled sheet to be raised thereby and there having an upper yielding prong and a shorter lower prong, and reciprocating and clamping means operating to move the separator at its lower prong past the edge of the buckled top sheet whereby it drops to cause the upper yielding prong to rest upon said sheet, and then move the lower prong under the sheet to be separated and clamp the under sheets down, substantially as and for the purpose set forth.

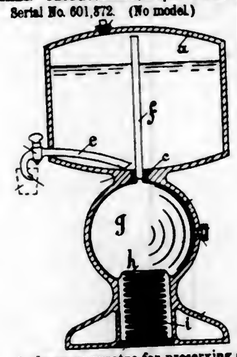
609,969. TROLLEY. DAVID LIPPY, Mansfield, Ohio. Filed Feb. 23, 1898. Serial No. 671,343. (No model.)



Claim.—1. The combination of the pivoted mast a horizontal rod, provided with suitable bearings secured in a post connections between the mast and rod, a coil-spring surrounding the rod to hold the mast in a vertical position the said rod adapted to have a longitudinal movement in the bearings, the mast-head provided with a series of holes radiating from the pivot center to increase or diminish the leverage upon the spring substantially as specified.

2. The combination of the post, the mast pivoted to the post, a tubular case secured within the post and projecting upon both sides of the same, caps secured upon the ends of the tubular case, the outer ends having reduced openings, a horizontal rod placed in the center of the tubular case, the said rod provided with collars to fit the reduced openings, flanged sleeves placed loose upon the rod between the collars, a coil-spring surrounding the rod between the flanged sleeves, and suitable connections from each end of the rod to the pivoted mast-head substantially as shown and described.

609,970. APPARATUS FOR KEEPING AND SENDING LIQUID MATERIALS. PAUL LOCHMANN, Leipsic-Gohlis, Germany. Filed Aug. 6, 1896. Serial No. 601,572. (No model.)



Claim.—1. In an apparatus for preserving and transporting liquids, a liquid-containing vessel and an elastic gas-receiver inflated within and tightly against the walls of a chamber attached to the vessel and having communication with the liquid-containing space of the vessel, substantially as set forth.

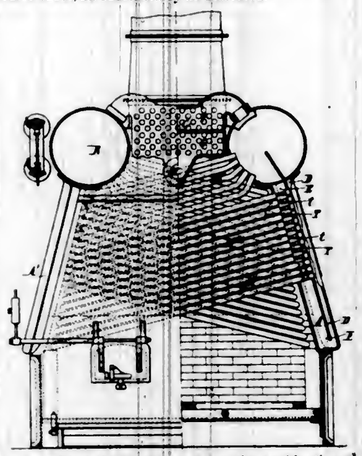
2. In an apparatus for transporting liquids, a liquid-containing vessel provided with a closed chamber, an elastic gas-receiver arranged within the chamber and fitting, when inflated, tightly against the walls of the chamber, and a pressure device acting on the walls of the elastic receiver said receiver having communication with the liquid-containiug space of the vessel, substantially as set forth.

609,971. STEAM-GENERATOR. ANTONIN MONTUPET, Paris, France. Filed Dec. 30, 1897. Serial No. 662,673. (No model.) Patented in France June 2, 1896, No. 256,843.

Claim.—1. In a multitubular steam-generator, the combination with two separate steam-chambers, of two intersecting sets of tubes, the tubes of one set being arranged in the spaces between the tubes of the other, and the tubes of each set having connection at one end only with its respective steam-chamber.

2. In a multitubular steam-generator, the combination with two separate steam-chambers each divided into two compartments, of two intersecting sets of tubes, the tubes of one set being arranged in the spaces between the tubes of the other, and each of said tubes being in communication at one end with one of the compartments of the steam-chambers, and tubes arranged within the first-mentioned or outer tubes and in communication at one end with the other compartment of the steam-chambers, and at the opposite end with the other end of the said outer tubes, all substantially as described.

3. In a multitubular steam-generator, the combination with two separate steam-chambers, and a partition arranged in each chamber to divide the same into two compartments, of two intersecting sets of tubes, the tubes of one set being arranged in the spaces between the tubes of the other, one end of each tube being seated within the wall of the chambers, and tubes arranged within the first-mentioned or outer tubes and seated at one end within the partitions of the steam chambers, the outer tubes being in communication at one end with one of the compartments of the steam-chambers, and the inner tubes being in communication at one end with the other compartment of the steam-chambers and at the opposite end with the other end of the outer tubes, all substantially as described.



4. In a multitubular steam-generator, the combination with two casings forming steam-chambers, of two intersecting sets of tubes, the tubes of one set being arranged in the spaces between the tubes of the other, and the tubes of each set having connection at one end only with its respective casing, reservoirs at the upper ends of the casings, tubes communicating at one end with the interior of the reservoirs, and tubes arranged within the first-named tubes communicating at one end with the interior of the reservoirs and at the opposite end with the other ends of the outer tubes, all as and for the purpose specified.

5 In a multitubular steam-generator, the combination with two casings forming steam-chambers, of two intersecting sets of tubes, the tubes of one set being arranged in the spaces between the tubes of the other, and the tubes of each set having connection at one end only with its respective casing, reservoirs at the upper ends of the casings, tubes communicating at one end with the interior of the reservoirs, and tubes arranged within the first-named tubes and communicating at one end with the interior of the reservoirs and at the opposite end with the other ends of the outer tubes, the said inner tubes being in sections detachably secured together, as and for the purpose specified.

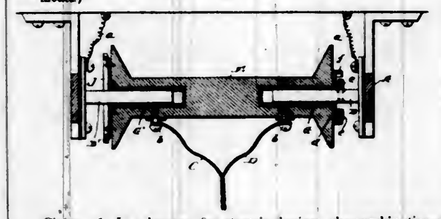
6. In a multitubular steam-generator, the combination with two separate steam-chambers, of two intersecting sets of tubes, the tubes of one set being arranged in the spaces between the tubes of the other, and the tubes of each set having connection at one end only with its respective steam-chamber, and tubes arranged within the first-named tubes and having one end in communication with a steam-chamber and the opposite end in communication with the outer tubes, and collars secured to one end of the inner tubes and to the adjacent ends of the outer tubes, as and for the purpose specified.

7. In a multitubular steam-generator, the combination with casings forming steam-chambers, of two intersecting sets of tubes, the tubes of one set being arranged in the spaces between the tubes of the other, and the tubes of each set having connection at one end only with its respective casing, the casings being provided with openings formed by intersecting annular openings, as set forth, and plugs removably fitted in the openings so formed.

8. In a multitubular steam-generator, the combination with casings forming steam-chambers, of two intersecting sets of tubes, the tubes of one set being arranged in the spaces between the tubes of the other, and the tubes of each set having connection at one end only with its respective casing, reservoirs at the upper end of the casings, a casing arranged between and communicating with the interior of the reservoirs, partitions dividing said casings into chambers as described, tubes communicating at one end with one of the chambers, and tubes arranged within the other tubes and communicating at one end with the other chamber and at the opposite end with the other end of the outer tubes.

9. In a multitubular steam-generator of the character described, a lower series of inclined tubes T secured to the inner wall and also to the partition-wall of the steam-chamber and perforated at their ends where they enter the steam-chamber, and containing inner water-tubes *t*, in combination with an upper series of inclined tubes secured at their ends to the inner wall of the steam-chamber, and containing water-tubes *t* secured to the partition-wall of the steam-chamber, substantially as set forth.

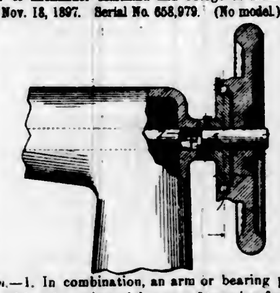
609,972. HANGER FOR ELECTRIC LAMPS. WILLIAM F. MURPHY, Iowa City, Iowa. Filed Dec. 21, 1897. Serial No. 662,926. (No model.)



Claim.—1. In a hanger for electric devices, the combination of bracket-arms, metallic spindles connected with and extending inwardly from the bracket-arms and adapted to be electrically connected with the opposite poles of an electric generator, the spool or drum having metallic bushings in its opposite ends snugly receiving the spindles, wires wound on the spool and adapted to be connected with an electrical device, metallic screws connecting the wires to the spool or drum and impinging against the bushings thereof, suitable means for rotating the spool to wind the wires thereon, and suitable means for normally holding the spool against rotation, substantially as specified.

2. The hanger described for electric devices comprising the bracket-arms, metallic spindles connected with and extending inwardly from the bracket-arms; one of said spindles having seats, the spool or drum having metallic bushings in its ends snugly receiving the spindles and also having a gear, and pawls adapted to engage the seats of the spindle, an arbor carried by the bracket-arms, a gear mounted on said arbor and meshing with the gear on the spool or drum, a coiled spring surrounding the arbor and having one end fixed with respect to the bracket arms and its opposite end connected with the gear on the arbor, the wires adapted to be connected with an electric device and wound on the spool or drum and the screws connecting said wires to the spool or drum and impinging against the bushings thereof, substantially as specified.

609,973. MEANS FOR THROWING SEWING-MACHINES INTO OR OUT OF GEAR. GEORGE S. NEELEY, Pacific, Mo., assignor of two-thirds to Alexander Maitland and George E. Birkicht, same place. Filed Nov. 18, 1897. Serial No. 658,979. (No model.)



Claim.—1. In combination, an arm or bearing provided in its outer side with a circumferential recess of tapering form, a shaft journaled in the said bearing, a clutch-ball and spring located in the said tapering recess, a disk secured to the shaft and having a hub portion coming against the outer face of the bearing and closing the aforesaid recess formed therein and holding the ball-clutch and spring in place, a hand-wheel loosely mounted upon the shaft and having a tapering depression in its inner face, and a ball-clutch and spring located in the said tapering depression and adapted to operate against the aforementioned disk by a wedging action and in an opposite direction to the first-mentioned ball-clutch, whereby upon turning the hand-wheel backwardly the shaft will be clutched to the bearing, and upon turning the hand-wheel forward will be released and clutched

so as to turn with the hand-wheel, substantially as and for the purpose set forth.

2. In combination, a bearing having a circumferential tapering recess, a shaft journaled in the said bearing, a clutch-ball and spring placed in the said tapering recess, a disk secured to the shaft and closing the open side of the aforesaid tapering recess, a hand-wheel loosely mounted upon the shaft and having a grooved pulley on its inner side recessed to snugly receive the disk, and having a tapering recess in the wall encircling the said disk and closed by the latter, and a ball-clutch and spring located in the said recess of the pulley to act against the periphery of the disk, the tapering recesses of the bearing and grooved pulley extending in opposite directions with respect to each other to cause the parts to operate substantially in the manner specified.

609,974. STOPPERED JAR, BOTTLE, OR OTHER RECEPTACLE. WILLIAM A. PARSONS and WALTER RAWSON, London, England. Filed Mar. 14, 1898. Serial No. 673,745. (No model.)



Claim.—1. The combination with a vessel provided at its mouth with a flange A having vertical peripheral recesses dividing the same into sections, the under faces of which are inclined in one and the same direction, of a cap fitting over said flange the rim of which cap is provided with inward depressions fitting into the aforesaid flange-recesses, means within the cap adapted to close the mouth of the vessel fluid-tight, and a locking device movable on the cap having depending more or less elastic clips corresponding in number and location with the said flange and cap recesses and adapted to engage the under face of the flange-sections, for the purpose set forth.

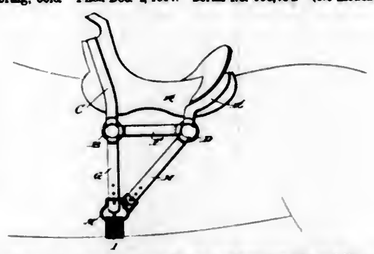
2. The combination with a vessel provided about its mouth with a flange A having vertical peripheral recesses of different widths dividing the same into sections, the under faces of which are inclined in one and the same direction, of a cap fitting over said flange, the rim of which cap is provided with inward depressions fitting into the aforesaid flange recesses, means within the cap adapted to close the mouth of the vessel fluid-tight, and a locking device movable on the cap having depending more or less elastic clips corresponding in number and location with the said flange and cap recesses and adapted to engage the under face of the flange-sections, for the purpose set forth.

3. The combination with a vessel provided about its mouth with a flange A having vertical peripheral recesses dividing the same into sections whose under faces are inclined in one and the same direction, of a cover provided with an annular groove in its under face, a packing in said groove adapted to seat on the face of the mouth of the vessel, a cap fitting over said cover and flange A, said cap having inwardly depressed portions fitting into said flange-recesses, and a locking device movable on the cap and provided with depending more or less elastic clips corresponding in number and location with the aforesaid flange-recesses, said clips adapted to engage the inclined under faces of the flange-sections, for the purpose set forth.

4. The combination with a vessel provided about its mouth with a flange A having vertical peripheral recesses dividing the same into sections whose under faces are inclined in one and the same direction, of a cover provided with peripheral vertical recesses corresponding with the recesses in said flange A and with an annular groove in its under face, a packing in said groove adapted to seat on the face of the mouth of the vessel, a cap fitting over said cover and flange A, said cap having inwardly-depressed portions fitting into said cover and flange recesses, and a locking device movable on the cap and provided with depending more or less elastic clips corresponding in number and location with the aforesaid flange-recesses, said clips adapted to engage the inclined under faces of the flange-sections, for the purpose set forth.

5. The combination with a vessel provided about its mouth with a flange A having vertical peripheral recesses dividing said flange into sections whose under faces are inclined in one and the same direction; of a cover for the vessel, the contacting surfaces between the cover and vessel being ground true, said cover provided with peripheral vertical recesses corresponding with those in the flange A, and with an annular groove in its under face, an elastic packing-ring in said groove adapted to seat on the ground face of the vessel, a cap fitting onto the cover and flange A and provided with inward depressions fitting the peripheral recesses in the cover and flange, and a locking device movable on the cap and having more or less elastic clips corresponding in number and location with the recesses in said flange A, said clips adapted to engage the under face of the flange-sections, for the purpose set forth.

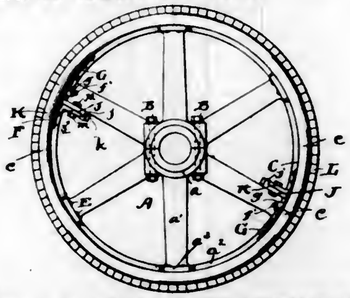
609,975. SADDLE AND GIRTH CONNECTION. FREDERICK ROSS, Craig, Colo. Filed Dec. 4, 1897. Serial No. 660,734. (No model.)



Claim.—1. In a saddle-girth, the combination of a saddle a girth-strap, straps G, H, arranged at one side of the saddle and connected at their upper ends with the saddle adjacent to the opposite ends thereof and having apertures at intervals in their length, and the buckle permanently connected at one end of the girth-strap and adjustably connecting the same with the straps G, H; the said buckle comprising the frame formed in one piece and having the rigid divisional bar dividing it into two loops, a tongue pivotally mounted on the frame-bar connected to the girth-strap and adapted to bear on the opposite bar of one loop, and the tongue pivotally mounted on the divisional bar and adapted to bear on the opposite bar of the other loop, substantially as specified.

2. In a saddle-girth, the combination of a saddle, rings arranged on opposite sides of the saddle at points adjacent to the opposite ends thereof, and connected to the ends of straps resting in front of the pommel and in rear of the cantle, respectively, straps F, arranged on opposite sides of the saddle and connecting the rings, straps G, H, connected to and depending from the rings, and having apertures at intervals in their length, a girth-strap and the buckles permanently connected to the ends of the girth-strap and adjustably connecting the same with the straps G, H; the said buckles respectively comprising the frame formed in one piece and having the divisional bar dividing it into two loops, a tongue pivotally mounted on the frame-bar connected to the girth-strap and adapted to bear on the opposite bar of one loop, and the tongue pivotally mounted on the divisional bar and adapted to bear on the opposite bar of the other loop, substantially as specified.

609,976. PULLEY. ADOLF SCHIMINSKY, Cleveland, Ohio. Filed Mar. 16, 1898. Serial No. 674,049. (No model.)



Claim.—1. In a pulley, in combination, a central body part having flanges at its periphery, a sheet-metal rim encircling said periphery and extending across the face of the pulley and having integrally-rolled-up edges which curve outwardly and backwardly so as to be of substantially U shape in cross-section, peripheral dovetailed pieces on the outer side of said sheet-metal rim, bolts or rivets extending from these pieces and through the sheet-metal rim into the flanges of the pulley-center, whereby the same bolts or rivets hold the dovetailed pieces to the rim and the rim to the pulley-center, and strips of material similar to leather lying radially around the rim and bearing against the same and held in place by said rolled edges and dovetailed pieces and supported substantially throughout their length by said rim and dovetailed pieces, substantially as described.

2. In a pulley, a center made in two parts and consisting of a hub *a*, spokes *a'*, peripheral rib a^2 connecting the ends of the spokes and lateral flanges a^3 at the ends of the spokes, said center being divided through its hub and through the periphery along the side of spokes, plates or flanges J rigid with those spokes at which such division is made, plates K extending inward from the peripheral ribs at their free ends, bolts joining the plates J and K, in combination

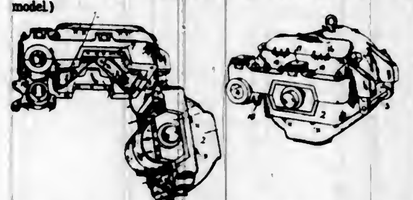
with a sheet-metal rim outside the pulley-center and secured to the flanges a^3, substantially as described.

3. The combination, in a pulley made up of separate parts, of interlocking members secured to the meeting edges of such parts, each of said members having a projection which extends over the other member, said projections being substantially at right angles with each other whereby one of said members prevents movement of the other radially inward, and the other member prevents movement of the first-mentioned member in a direction parallel with the pulley-axis, substantially as described.

4. The combination, in a pulley made of separate parts, of a lock for the meeting edges thereof, composed of two members secured to the inner side of the pulley at its periphery at the meeting edges, each of said members having flanges projecting substantially radially inward from the pulley-rim, one of said flanges having lips extending over the sides of the other flange, and the other of said flanges having a lip extending over the inner end of the first flange, substantially as described.

5. A lock for the meeting edges of a pulley-rim consisting of the two plates F and G adapted to be secured to the pulley-rim, the flanges *f* and *g* extending from the ends of said plates at right angles, the lip *f'* extending from the end of the flange *f* and adapted to come over the end of the flange *g* and the lip *g'* extending from the sides of the flange *g* and adapted to project beyond the flange *f* and bear against the plate F, substantially as described.

609,977. ELECTRIC RAILWAY-MOTOR. ALBERT SCHMID, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed May 10, 1894. Serial No. 510,674. (No model.)



Claim.—1. In a railway-motor, the combination with an armature, of a field-magnet constructed in two sections, the upper section being supported by the car-truck and the lower section being hinged to and supported by the upper section and adapted to swing downward, substantially as and for the purpose set forth.

2. In a railway-motor, the combination with an armature, of a field-magnet constructed in two sections, the upper section being spring-supported on the car-truck and the lower section being hinged to and supported by the upper section and adapted to swing downward, substantially as and for the purpose set forth.

3. In an electric car, a motor having a horizontally-divided field-magnet, one member of which is sleeved at one end upon an axle of the car, the other member being hinged to the first-named member at one end and removably fastened thereto at its other end independently of the axle-bearing, substantially as described.

4. An electric motor, having a horizontally-divided field-magnet, the upper portion of which is provided with an axle-bearing at one end and the lower portion of which is hinged to said upper portion, independently of said axle-bearing, whereby it may be swung downwardly without disturbing said bearing.

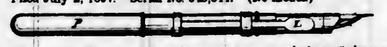
5. In an electric car, a motor sleeved at one end upon the axle of the car, suspension-bars secured to said motor above its center of gravity, springs supporting the ends of said bars, and means whereby said springs are attached to the truck, substantially as described.

6. In a motor for electric cars, the combination with the armature, of a field-magnet comprising an upper section supported by the car-truck and a lower section hinged to said upper section, and means whereby the armature may be supported by either section when the lower section is swung downward, substantially as described.

7. In a motor for electric cars, a field-magnet surrounding the armature and horizontally divided, the two sections of said field-magnet being provided with corresponding recesses; in combination with armature-bearings fitting said recesses, and means for removably fastening said armature-bearings to either of the field-magnet sections, substantially as described.

8. In a motor for electric cars a field-magnet surrounding the armature, and horizontally divided, the two halves of said field-magnet being provided with corresponding recesses; in combination with armature-bearings fitting said recesses, fastenings removable from the outside, securing said bearings to the upper half of the field-magnet, and fastenings removable from the outside, for securing said bearings to the lower half of said field-magnet, substantially as described.
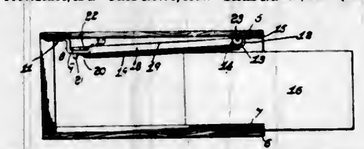
609,978. FOUNTAIN-PEN. HENRY J. SCHULTE, Los Angeles, Cal. Filed July 2, 1897. Serial No. 643,311. (No model.)



Claim.—1. The improved fountain-pen, consisting of the combination of the pen, the fountain, the elastic chamber, the spring contact-pieces, the adjustable sliding ring, the valve situated in the lower part of the lower end of the fountain, the chamber into which the valve opens, the inclined tube leading from the lower part of this chamber and inclined at an angle upward to the under side of the nibs or writing-points of the pen, the valve for admitting air to the fountain when a partial vacuum is formed therein, the cover for closing over the pen when out of use and for being placed on the upper end of the fountain so as to lengthen the holder of the pen when in use, substantially as set forth.

2. The adjustable spring contact device for regulating the pressure applied by the thumb and finger to the elastic or flexible parts of the fountain, consisting of the contact-pieces, the springs connecting said contact-pieces to the ring by which they are attached to the fountain-penholder and the sliding ring for regulating the length of the operating parts of the springs carrying the contact-pieces, the penholder and pen, substantially as set forth.

609,979. BOX AND LID-SUPPORT THEREFOR. GEORGE WELSH, Providence, R. I. Filed Nov. 1, 1897. Serial No. 657,003. (No model.)

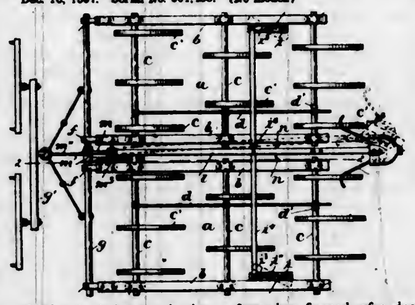


Claim.—1. The box-lid supports comprising a pair of rear hooks, each having the abutment 8, the guide 9 and the member 10, and a pair of forward hooks each having the abutment 12, the guide 13 and the member 14, and means for supporting the hooks.

2. In a box-lid support, the combination with the lid having laterally-extending pins, of a pair of rear hooks having elongated portions in which the pins at the rear of the lid are normally engaged and may slide, and rear abutments to limit the sliding of said pins, and a pair of front hooks open at the rear ends, normally disengaged from the pins on the forward portion of the lid, and having guide portions with which said pins may be engaged.

3. The combination with the box 16, the lid 17 having the strip 18 with its lip 19 cut away as at 20 and the lip 21, and the pins 22 22 and 23 23 mounted on the strip 18, of the rear hooks having abutments 8 8, the guides 9 9 and the members 10 10, with which the pins 22 22 are normally engaged, the forward hooks having the abutments 12 12, the guides 13 13 and the members 14 14, with which the pins 23 23 are normally disengaged, and means for supporting the hooks.

609,980. HARROW. ETTINGER R. WHIPPLE, Utica, N. Y. Filed Dec. 10, 1897. Serial No. 661,433. (No model.)



Claim.—1. A harrow having a frame-bar formed of a deep channel-iron, a tooth-bar arranged transversely of the frame-bar, a block fitted longitudinally in the channel of the frame-bar and partially inclosed thereby and having the outwardly-projecting portion in which the tooth-bar is fitted, and securing means drawing said block into said channel and rigidly locking the same therein, substantially as described.

2. A harrow having turnable tooth-beams provided with teeth and operating means, the frame-bars of said harrow having recesses or seats in their under sides, blocks fitted and secured therein and

having bearing-boxes depending therefrom in which said tooth-beams are mounted to turn, substantially as described.

3. A harrow having its frame-bars formed with bottom channels, blocks fitted in said channels and bolted therein and provided with bearing-blocks at the exterior of the frame-bars, the turnable tooth-beams mounted in said bearing-boxes, substantially as described.

4. Several harrow-sections having an evener-bar extending across the front ends thereof and confined thereto against vertical movement independent of said sections, the sections being confined to said bar to permit limited independent play of each section fore and aft and up and down on said bar as a center, substantially as described.

5. Several harrow-sections having an evener-bar extending across the front ends thereof and confined in slots elongated fore and aft of the harrow-sections and of a width to prevent vertical movement of the bar independent of the sections, whereby the sections have independent fore-and-aft play on said bar the length of said slots, substantially as described.

6. Several harrow-sections having forwardly-exteoding rigid brackets longitudinally slotted, in combination with a rigid evener-bar confined in said slots and extending across the front ends of the sections.

7. A harrow-section having side frame-bars having forwardly-extending brackets rigidly secured to their front ends and formed with longitudinal slots, in combination with a rigid evener-bar passing through said brackets and confined in said slots.

8. A harrow-section having an evener-bar confined in longitudinal slots in a part rigid with the section, means to prevent said bar turning, and a supporting-shoe extending down from the bar, substantially as described.

9. A harrow-section having a rigid evener-bar extending across the front end thereof and confined thereto against vertical play independent of the section and provided with a depending supporting-shoe in front of the harrow-section, substantially as described.

10. Several harrow-sections, in combination with an evener-bar extending across the front ends thereof and loosely confined thereto and held against vertical play independent thereof, and ground-supports secured to said bar and extending down therefrom in front of said sections and held against independent vertical movement.

11. Several harrow-sections, in combination with an evener-bar in front of the sections and coupled thereto loosely, an arm rigid with said bar and arranged to engage a part of the harrow to prevent turning of the bar, substantially as described.

12. A harrow, in combination with an evener-bar coupled thereto and provided with a lateral arm to prevent turning of the bar, and a wheeled riding attachment having a draft-tongue coupled to said bar.

13. In a harrow, an evener-bar having an upwardly-extending arm, rigid with said bar, and means preventing independent axial movement of said bar, in combination with a wheeled riding attachment having a forwardly-extending draft-tongue at its front end coupled to said arm, substantially as described.

14. A harrow provided with a riding attachment having a draft-tongue connected with the draft of the harrow and also, at an intermediate point, connected with the harrow, said riding attachment having a turnable frame in which its supporting-wheel is mounted, whereby said wheel can be directed to the right or left and thereby crowd the tongue and push the harrow in the same direction.

15. A harrow comprising two sections independently movable vertically having front ground-supports, guiding and supporting wheels, respectively, at the outer sides of the sections, supports for the inner sides of the sections, and a wheeled riding attachment controlling said guiding-wheels to direct them in the same direction either to the right or left.

16. A harrow having an independent riding attachment having a pivoted frame carrying a supporting-wheel and provided with means to turn the frame and direct the wheel to the right or left and thereby crowd the rear of the harrow correspondingly.

17. A harrow having an independent riding attachment provided with a pivoted frame in which a supporting-wheel is mounted, means to turn said frame to the right or left to guide the riding attachment and thereby crowd the rear of the harrow correspondingly, and means for locking the frame to the attachment with the wheel directed straight ahead.

18. A vertically independently movable harrow having guiding and supporting wheels mounted in turnable frames, in combination with a riding attachment connected with the draft of the harrow and connected with said turnable frames to turn the same together in the same direction, and provided at the after part of the harrow with a supporting-wheel mounted in a turnable frame and having directing or turning means, such as foot-rests.

19. A harrow having guiding-wheels mounted in turnable frames, a cross-bar pivotally joined to said frames to turn the same together, in combination with a riding attachment comprising a draft-tongue extending forwardly of and connected with the draft of the harrow and extending across and pivotally joined to said cross-bar, said tongue having a supporting-wheel at the rear of the harrow mounted in a turnable frame having guiding foot-rests, and a seat carried by the tongue.

20. A lever-adjustment curved-spring-tooth harrow having draft attachment, and front depending ground-supports carrying the front of the harrow-frame in an elevated plane, in combination with wheeled supports arranged at the after part of the harrow and holding the frame in an elevated plane, said wheeled supports so confined to the frame as to be capable of independent horizontal swing and permit independent vertical movement of the harrow above the limit of downward movement, means connecting said wheeled supports to move the same laterally in the same direction, and operating and controlling mechanism therefor, whereby the wheeled supports can be shifted to crowd the rear of the harrow laterally in either direction, substantially as described.

21. A harrow having front supporting means holding its frame in an elevated plane, in combination with wheeled supports arranged intermediate the harrow and loosely confined to the harrow-frame to permit lateral turning of the supports independently of the frame, said supports constructed and arranged to uphold the harrow-frame in an elevated plane and permit independent vertical play thereof above such plane, and operating and controlling means for said supports, whereby the supports are simultaneously turned to the right or left and thereby crowd the rear of the harrow correspondingly, substantially as described.

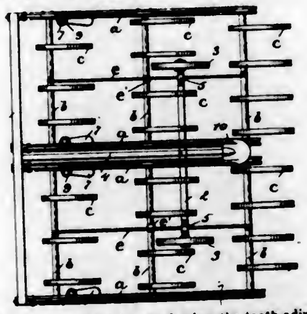
22. A several-section harrow, the sections of which have independent vertical play, provided with independent supporting and guiding wheeled supports at its after part having controlling means, whereby the rear ends of the harrow-sections can be simultaneously crowded to the right or left.

23. A harrow comprising several independent sections, a front evener-bar therefor, ground-supports upholding the front ends of the section-frames, in combination with wheeled supports arranged at the after part of the harrow and movable laterally independently of the harrow-sections and confined thereto connections between said supports to move the same together in either direction, a seat stick or tongue extending forwardly of the harrow and coupled to said evener-bar, and at an intermediate point coupled to said connections to control the same, and at its rear provided with a guiding wheeled support all combined for the purposes substantially as stated

24. A harrow having depending front ground-supports holding the front end thereof in an elevated plane, and at intermediate points in its after part provided with guiding wheeled supports holding the harrow in an elevated plane, said supports loosely confined to the frame to permit lateral turning independent of the frame, and controlling and operating means for said supports whereby they can be turned together to the right or left and thereby crowd the rear of the harrow in the corresponding direction, substantially as described.

25. A several-section harrow, in combination with guiding wheeled supports loosely coupled to the frames thereof and holding the same in an elevated plane and having a horizontal movement independently thereof, a connection between said supports controlling the same to turn together and extending beneath the sections to support the same, and a guiding or steering device coupled to said connection to operate said supports to crowd the harrow-sections simultaneously to the right or left, substantially as described.

609,981. WHEELED SUPPORTING ATTACHMENT FOR HARROWS. ETTINGER R. WHIPPLE, Utica, N. Y. Filed Dec. 27, 1897. Serial No. 663,683. (No model.)



Claim.—1. A sectional harrow having the tooth-adjusting bars arranged about centrally of the sections thereof, a wheeled support within the harrow and across the sections thereof with guides between which said bars play having stops to limit the downward movement of the said bars.

2. A harrow having an independent wheeled riding and supporting attachment coupled loosely with the harrow and arranged within the frame of the harrow with supporting parts or portions beneath and limiting the downward movement of the harrow, whereby the weight of the harrow is carried by said attachment and the harrow is suspended from or balanced on said supporting parts.

3. A several-section lever-adjustment harrow having front depending supports, and provided with a wheeled riding attachment or support loosely coupled with the harrow and arranged transversely of the harrow-sections and intermediate of the length thereof and in advance of the rear ends of the sections, substantially as described.

4. A lever-adjustment several-section harrow having an independent wheeled riding attachment or support extending beneath intermediate portions of the adjusting-bars of the harrow-sections and arranged to uphold the sections through the medium of said bars.

5. A lever-adjustment several-section harrow having an independent wheeled riding attachment extending transversely of the sections and beneath parts thereof between the front and rear harrow-tooth bars, said attachment constructed and arranged to permit independent vertical play of the sections and to hold the same suspended or balanced from said intermediate parts and sustain practically the full weight of the sections, substantially as described.

6. A lever-adjustment curved-spring-tooth harrow comprising several independent sections, in combination with a wheeled riding attachment limiting the downward movement of said harrow-sections and permitting independent vertical movement of said sections above a fixed plane or planes, said attachment arranged intermediate of the length of the harrow-sections and extending transversely of the space between the two sections and of the inner frame-bars of the sections and having its wheels between the frame and tooth-bars and in advance of the rear tooth-bars, substantially as described.

7. A lever-adjustment curved-spring-tooth harrow comprising several independent sections, in combination with a wheeled riding and supporting attachment limiting the downward movement of the harrow-sections to uphold the frames thereof from the ground whether the teeth are in or out of operative adjustment, said attachment comprising an axle or frame arranged transversely of the sections in advance of the rear ends thereof and across the space between the sections with supporting-wheels between the frame and tooth-bars of the respective sections, and a draft appliance from said frame or axle extending forwardly to move the attachment forward with the harrow.

8. A lever-adjustment harrow comprising several independent sections, in combination with a wheeled riding and supporting attachment having an axle arranged transversely of the sections and across the inner sides thereof and in front of the rear portions of the sections and having supporting-wheels within intermediate parts of the sections, said attachment constructed and arranged to limit the downward movement of both sections and permit free upward play thereof above said limit, and provided with means coupling the attachment with the draft of the harrow and holding the axle against tilting, and depending ground-supports from the harrow-section just in advance of the wheeled attachment, substantially as described.

9. A several-section harrow, in combination with an axle arranged above the sections and extending transversely of intermediate portions of both sections and provided with supporting-wheels between the frame and tooth-bars and teeth of the respective sections and a draft-tongue from the axle extending forwardly and coupled with the draft of the harrow, said axle provided with elongated guideways loosely receiving a part of each harrow-section and each having an adjustable stop, as and for the purposes set forth.

10. A several-section lever-adjustment curved-spring-tooth harrow, each section having the central connecting-bar and the hand-lever on an intermediate tooth-bar, in combination with a wheeled supporting and riding attachment arranged transversely of an intermediate part of the harrow with its supporting wheels between the tooth and frame bars of the respective sections, said attachment having supports beneath the respective connecting-bars of the sections limiting the downward movement thereof below certain planes and arranged beneath intermediate parts of the lengths of the bars and thereby upholding or balancing the sections from said connecting-bars, said sections having depending frame-supports in advance of the wheeled attachment to hold the front ends of the section-frames from tilting forwardly onto the ground.

11. A two-section lever-adjustment curved-spring-tooth harrow, each section having the about-central connecting-bar, and depending frame-supports in advance of its central portion, in combination with an independent wheeled riding attachment arranged transversely of the sections at or about the central or an intermediate portion thereof, said attachment coupled with the draft of the harrow and provided with vertically-elongated supports receiving the connecting-bars of the sections, respectively, near the central or intermediate portions of the lengths thereof, and limiting the downward movement of each connecting-bar and thereby upholding the sections and balancing the same independently from and by the connecting-bar of each.

12. A lever-adjustment curved-spring-tooth harrow having the connecting-bar, in combination with an independent wheeled riding attachment provided with a support at an intermediate portion of said connecting bar and arranged with relation to coacting with said connecting-bar to hold the same so that the harrow-frame is drawn up to permit the teeth being forced down without requiring the rider to leave his seat or lift the harrow-frame by hand substantially as described.

13. A rocking-tooth-bar lever-adjustment curved-spring-tooth harrow, in combination with an independent wheeled riding attachment coupled to move with the harrow and permit independent play of the harrow, said attachment having a support constructed and arranged to coöperate with a part of the harrow about at the transverse central portion thereof, and lift the harrow-frame independently of the riding attachment and balance the harrow therefrom and carry practically its full weight, substantially as described.

14. A rocking-tooth-bar lever-adjustment curved-spring-tooth harrow, having the usual connecting-bar, the harrow-frame and connecting-bar approaching or receding from each other as the tooth-bars are rocked, in combination with an independent wheeled riding attachment moving with the harrow and provided with a stop or support at an intermediate part of the connecting-bar and limiting the downward movement thereof below a certain plane and thereby causing the harrow-frame to draw up toward said bar when the tooth-bars are rocked beyond certain points and hence elevating the harrow-frame and permitting the teeth to easily move down independently of the riding attachment and while the operator retains his seat, substantially as described.

15. A lever-adjustment curved-spring-tooth harrow having depending ground-supports in advance of its transverse central portion, in combination with an independent wheeled riding attachment moving forward with the harrow and arranged transversely intermediate of the harrow, and comprising supports about at the central portion of the harrow and upholding the same in an elevated plane and balancing and sustaining practically the weight thereof, said harrow allowed vertical play independent of the riding attachment and above the plane of said supports, substantially as described.

16. A harrow having an independent wheeled riding attachment arranged within the frame thereof and constructed and arranged to limit downward movement of said frame at intermediate points of the harrow and to thereby balance and uphold practically the entire harrow from the riding attachment, and means to hold the harrow-frame from rocking or tilting into engagement with the ground, substantially as described.

17. A rocking-tooth-bar lever-adjustment harrow having the connecting-bar, in combination with an independent wheeled supporting attachment moving forward with the harrow and provided with a support at a point over the harrow holding said bar against downward movement below a certain plane, whereby the frame draws up toward said bar when the tooth-bars are rocked beyond certain points, said support upholding practically the entire weight of the harrow through the medium of said bar and throwing said weight onto the wheeled attachment.

18. A harrow, in combination with an independent wheeled riding attachment moving forward therewith and provided with adjustable supports arranged about at the transverse central portion of the harrow and upholding the harrow in an elevated plane and governing the working depth of the teeth and balancing the harrow and throwing practically the entire weight of the harrow onto the attachment from intermediate points of the harrow, substantially as described.

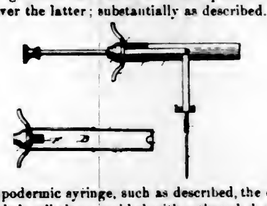
19. A harrow having depending shoes between its transverse center and front end, in combination with a wheeled riding attachment arranged within the harrow just in rear of its transverse center line and provided with supports about at the central portion of the harrow constructed and arranged to limit the downward movement of the harrow whether the teeth are in or out of the soil and balancing and upholding the harrow from said intermediate points.

20. A lever-adjustment harrow having a connecting-bar, in combination with an independent wheeled support having an upright guide loosely receiving said connecting-bar and in which said bar moves vertically and provided with a stop limiting the downward movement of the bar and upholding the harrow through the medium of said bar.

609,982. HYPODERMIC SYRINGE. BENJAMIN T. WINCHESTER, Baltimore, Md. Filed Oct. 4, 1897. Serial No. 654,033. (No model.)

Claim.—1. In a syringe such as described the combination with the open-ended cylinder and a needle whose base is applied directly to the end of the cylinder, of a supporting-frame formed of sections pivotally connected, the rear section furnished with means for sus-

taining the cylinder and adjusting the same, while the front section supporting the needle being articulated is capable of being swung laterally to bring the needle in line with the open end of the cylinder or to uncover the latter; substantially as described.



2. In a hypodermic syringe, such as described, the combination of the open-ended cylinder provided with a threaded collar at one end, a needle-base adapted to contact with the front end of said cylinder; and a supporting-frame comprising front and rear sections articulated together, the rear section carrying a hollow screw for engaging the collar on the cylinder to support and adjust the latter and form a bearing for the piston-rod, while the front section of the frame is provided with a bearing to receive the needle-base; substantially as described.

3. In a syringe such as described, the combination with the open-ended cylinder and a removable needle base or support, of the supporting-frame composed of front and rear sections hinged together, the rear section provided with means for detachably securing the cylinder to the frame and adjusting said cylinder longitudinally, and the front section furnished with a head or cross-piece provided with an opening or bearing for the reception of the detachable needle-base arranged to swing transversely in front of the open end of the cylinder; substantially as described.

4. In a syringe such as described, the combination with the open-ended cylinder provided with a screw-collar at its rear end, the detachable needle-support and the piston and piston-rod of the supporting-frame comprising front and rear heads connected by diametrically opposite side bars formed in sections and hinged together, the finger-piece and adjusting-screw applied to the rear head of the frame and the bearing for the needle-support formed in the front head of said frame; substantially as described.

5. In a hypodermic syringe such as described the combination of a sectional pivoted frame, a cylinder supported at its rear end in one of said sections, a hollow needle supported in the opposite section and adapted to close the open end of the cylinder and means for advancing and retracting the cylinder; substantially as described.

6. In a hypodermic syringe such as described, the combination of the open-end cylinder; a frame supporting said cylinder and provided with a head or abutment adapted to be swung into alinement with and beyond the open end of the cylinder; a hollow needle detachably mounted in said swinging head and adapted for direct application to the end of the cylinder; and means, such as a screw for advancing and retracting the cylinder; substantially as described.

7. In a hypodermic syringe such as described the combination with the open-end cylinder and the hollow needle fitted to close the end of the cylinder, of the frame provided with a screw engaging a cap on the rear end of the cylinder, pivotally-connected side bars and a cross-piece or head perforated for the reception of the hollow needle; substantially as described.

8. In a hypodermic syringe such as described, the combination with the cylinder and hollow needle, the latter adapted to engage and close the end of the cylinder, of a frame provided with two heads or abutments connected by hinged or pivoted side bars one of said heads being provided with a hollow screw forming a bearing for the piston-rod and an adjustable attachment for the cylinder, while the opposite head is perforated for the reception of the flanged hollow needle; substantially as described.

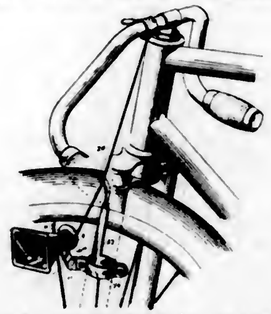
9. The hereinbefore-described improved hypodermic syringe, the same comprising a frame formed in sections pivoted together and adapted to be swung into and out of alinement; a cylinder adjustably connected by its rear end to one section of the frame; and a hollow needle detachably connected to the other section of the frame to permit it to be moved into and out of alinement with the front end of the cylinder; substantially as described.

609,983. BICYCLE-BELL. DAVID P. WOLBAUPTER, Washington, D. C., assignor of one-half to Edward G. Siggers, same place. Filed Apr. 9, 1898. Serial No. 677,084. (No model.)

Claim.—1. In a bell, a gong having its wall shaped to form a plurality of striking-faces, and a rotatable striker adapted to engage each of said faces in succession, the latter being equidistant from the axis of rotation, substantially as described.

2. In a bell, a pyramidal-shaped gong, and a rotatable striker arranged longitudinally within the gong and carrying a clapper adapted to engage the flat faces thereof, substantially as described.

3. In a bell, a pyramidal shaped gong, of a square form in cross-section, and a rotatable spring-arm arranged longitudinally within the gong and carrying at one end a fixed clapper adapted to spring against the flat faces thereof, substantially as described.



4. In a bell, a pyramidal-shaped gong, and a rotatable spring-arm arranged longitudinally within the gong and carrying at one end a fixed clapper adapted to spring against the flat faces thereof, substantially as described.

5. In a bell, a pyramidal-shaped gong having a bearing at its apex, a suitably-rotated shaft journaled in said bearing, and a spring-arm arranged longitudinally within the gong and rigidly connected at one end with said shaft, said arm carrying at its free end a clapper normally out of contact with flat faces of the gong, substantially as described.

6. In a bell, a pyramidal shaped gong having a bearing at its apex, a movable support for said gong, a shaft journaled in the bearing, a spring-arm arranged longitudinally within the gong and rigidly connected at one end with the inner end of the shaft, said arm carrying at its free end a clapper, an operating wheel or disk fitted to the outer end of shaft, and means for moving said wheel or disk against a rotating object, substantially as described.

7. In a bicycle-bell, a pyramidal-shaped gong, a fork-clamp carrying a pivoted bracket-arm rigidly connected with the gong at the apex thereof, a shaft mounted in the apex of the gong and carrying at its outer end an operating-wheel adapted to engage the bicycle-wheel, a spring striker-arm arranged longitudinally within the gong and rigidly connected at one end with the inner end of said shaft, and an operating connection with said pivotal bracket-arm, substantially as described.

8. In a bicycle-bell, a fork-clamp provided at one side with an upwardly-disposed guide-arm having a guide-opening at its upper end, and having an ear extension at one extremity, said ear extension being formed in its lower edge with a stop-shoulder, a horizontal bracket having upturned ends, one of which is pivoted to said ear extension in advance of said stop-shoulder, a gong fitted to one upturned end of the bracket-arm, the striking mechanism mounted in the gong and having a shaft carrying an exterior operating-wheel, and an operating connection connected with said bracket-arm, substantially as described.

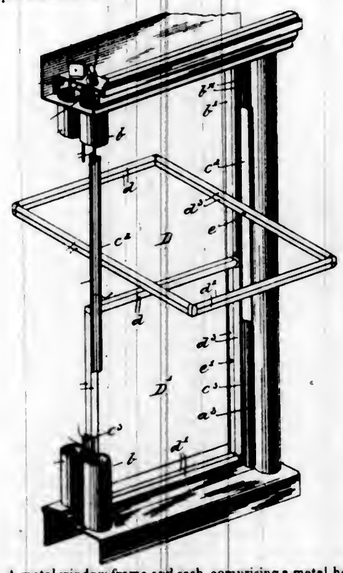
609,984. METAL WINDOW FRAME AND SASH. EDWIN P. BERTOLETT, Philadelphia, Pa., assignor to the Bertolett Manufacturing Company, same place. Filed Nov. 29, 1897. Serial No. 660,054. (No model.)

Claim.—1. A metal window frame and sash, comprising a metal head and sill supported by tubular uprights, weight-tubes extending into said head and sill and slidable runners connected with means passing over pulleys from weights adapted to travel in said tubes and sash pivotally supported from said runners, substantially as and for the purposes described.

2. A metal window frame and sash, comprising a metal head and bottom sill supported by tubular uprights engaged by nipples, bushings applied thereto, slidable T-shaped inner and outer runners, weight-tubes held in said head and sill, sash pivoted respectively to said inner and outer runners connected with a cord, chain or wire passing over pulleys and carrying weights traveling within said weight-tubes, substantially as and for the purposes described.

3. A metal window frame and sash, comprising a metal head and bottom sill supported by tubular uprights engaged by nipples provided with removable bushings, weight-tubes held in said head and sill, slidable runners afforded their ranges of movement respectively between the tubular uprights and said weight-tubes, sash pivoted to said runners and connected respectively with cords, chains or wires passing over pulleys and carrying weights adapted to travel within said tubes, substantially as and for the purposes described.

4. A metal window frame and sash, comprising a metal head and bottom sill supported by tubular uprights, weight-tubes held in said head and sill and provided with lugs or projections and said sill provided with bolts or screws, movable T-shaped runners, sash pivoted to said runners, cords, chains or wires connected with said runners and passing over pulleys and having weights, substantially as and for the purposes described.



5. A metal window frame and sash, comprising a metal head and bottom sill supported by tubular uprights, weight-tubes removably connected with said head and sill, T-shaped metal runners slidable between said uprights and weight-tubes, upper and lower sash respectively pivoted to said runners, cords, chains or wires connected with said runners and passing over pulleys and carrying weights adapted to travel within said weight-tubes, substantially as and for the purposes described.

6. A metal window frame and sash, comprising a metal head and bottom sill supported by vertical uprights nippled in said head and sill and with bushings applied thereto, weight-tubes provided with lugs or projections so as to be removably mounted in said head and sill, slidable runners provided with concave shaped faces having complemental springs, sash pivoted to said runners, cords, chains or wires connected with said runners and passing over pulleys and carrying weights adapted to travel in said tubes, substantially as and for the purposes described.

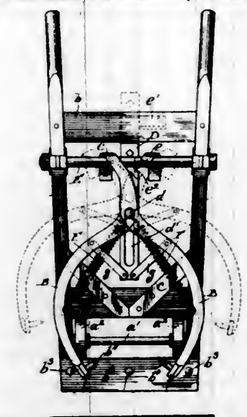
7. A metal window frame and sash, comprising a head and sill supported by vertical uprights, weight-tubes entering said head and sill and removably connected therewith, runners provided with concave-shaped faces, and complemental springs, sash pivoted to said runners, and means for actuating said runners, substantially as and for the purposes described.

609,985. HAND-TRUCK. LEONARD R. CATHER, Chicago, Ill. Filed Oct. 14, 1897. Serial No. 655,134. (No model.)

Claim.—1. The combination with a truck-frame, of a pair of gripping-levers adjustably secured thereon, and having at their lower ends forwardly-projecting arms provided with means to engage the package, a bar to operate said levers and a toggle-joint connecting the operating bar and levers, substantially as described.

2. The combination with a truck-frame, of a pair of gripping-levers, pivotally secured together and having at their lower ends means to engage the package, and at their upper ends means to engage a supporting-rod, a supporting-rod transversely secured on the truck-frame, an operating-bar having a slot to receive the pivot-bolt of the levers and a toggle-joint connecting said bar and levers, substantially as described.

3. The combination of a truck-frame, provided at one of its ends with spurs or projections, of a supporting-rod located crosswise the frame, a pair of spring-actuated gripping-levers pivotally secured together and having at their lower ends forwardly-extending arms provided with projections to engage the package, and at their upper ends hooks to engage the supporting-rod, an operating-bar having a slot to receive the pivot-bolt of the levers and a toggle-joint connecting the said bar and levers, substantially as described.



609,986. APPARATUS FOR DRAWING OFF LIQUIDS CONTAINING AIR OR OTHER GASES. BENNO DANNIGER, Mannheim, Germany. Filed Dec. 31, 1897. Serial No. 664,915. (No model.) Patented in Germany Apr. 1, 1897, No. 95,373.

Claim.—1. A cock for drawing off liquids containing air or other gases comprising a plug-box provided with ports for liquid and gas respectively, and a plug provided with like ports, said box movable on and along the plug, and means whereby the ports in said plug are brought into communication with the corresponding ports in the box when the latter is moved along said plug.

2. A cock for drawing off liquids containing air or other gases, comprising a spring-controlled plug-box provided with ports for liquid and gas respectively, and a plug provided with like ports, said box movable on and along the plug, and means whereby the ports in said plug are brought into communication with the corresponding ports in the box when the latter is moved along said plug against the stress of its spring.

3. A cock for drawing off liquid containing air or other gas, comprising a plug-box provided with ports for liquid and gas respectively, and a plug provided with like ports, said box movable on and along the plug and means whereby the ports for gas and liquid in said plug are successively brought into communication with the corresponding ports in the box.

4. A cock for drawing off liquid containing air or other gases, comprising a cam engaged by studs on the plug and adapted to turn the latter when the cock is pressed against the receptacle to be filled with the liquid substantially as described.

5. A cock for drawing off liquid containing air or other gases, comprising a tube having oblique slots engaged by studs on the plug and adapted to turn the latter when the cock is pressed against the receptacle to be filled with the liquid substantially as described.

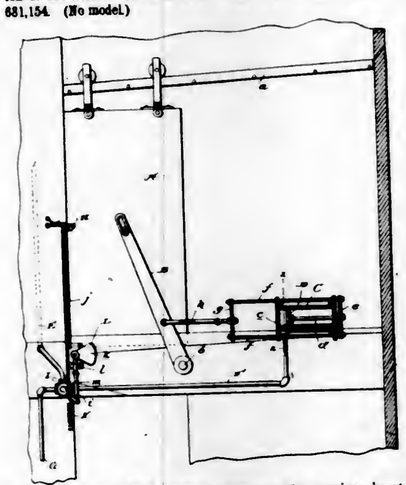
6. A cock for drawing off liquid containing air or other gases comprising a tube having oblique slots engaged by studs on the valve-plug the casing of the cock being arranged to slide within the tube against the tension of a spring substantially as described.

7. In a cock for drawing off liquid containing air or other gases the combination of a movable cock-box and a plug having two channels with a tube provided with oblique slots and studs on the plug adapted to enter the slots to give the plug a partial rotation on the cock-box being pressed down against the tension of a spring, substantially as described.

8. In a cock for drawing off liquid containing air or other gases the combination of a movable cock-box, with a plug having studs and a cam engaged by said plug, the plug being provided with two channels or openings, communicating each with one of two concentric pipes connected to the plug and leading into the receptacle, substantially as described.

9. In a cock for drawing off liquid containing air or other gases the combination of a movable cock-box with a plug having studs, and a cam engaged by said plug, the plug being provided with two channels or openings of which one coincides with the respective opening in the box or casing before the other coincides with the opening of the box belonging thereto, when the plug is turned by the longitudinal motion of the cock-box, substantially as described.

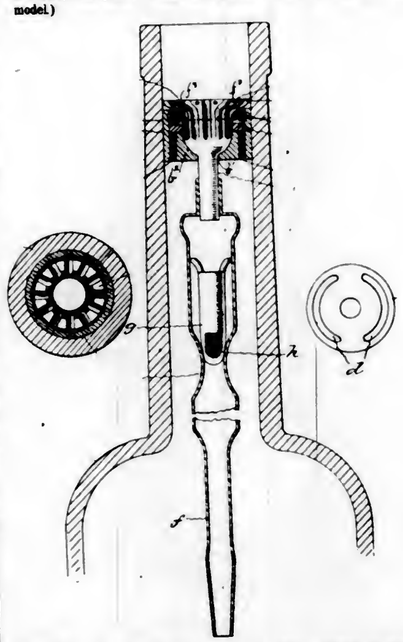
609,987. ELEVATOR-DOOR-OPENING APPARATUS. FREDERICK T. ELLITHORPE, Newark, N. J. Filed May 19, 1898. Serial No. 681,154. (No model.)



Claim.—1. In a fluid-pressure apparatus for opening elevator-doors, the combination of a door, a latch therefor, a piston-cylinder, a piston therein connected with the door, a fluid-pressure-supply pipe, a cylinder-pipe, a valve for effecting communication between the supply-pipe and cylinder-pipe and communication between said cylinder-pipe and an exhaust, a connection between the valve and the latch, and suitable means for operating the valve, substantially as specified.

2. In a fluid-pressure apparatus for opening elevator-doors, the combination of a door, a latch therefor, a piston-cylinder, a piston therein connected with the door, a fluid-pressure-supply pipe, a cylinder-pipe, a partially-rotatable valve provided with a crank-arm and arranged to effect communication between the supply-pipe and cylinder-pipe and communication between said cylinder-pipe and an exhaust, a pitman connecting the crank-arm of the valve and the latch, a spring connected to the crank-arm of the valve and adapted to normally hold said valve in a position to effect communication between the cylinder-pipe and the exhaust, and the bell-crank lever having the arm connected by a pitman with the crank-arm of the valve and also having the segment-shaped arm adapted to be engaged by a tappet on an elevator-car, substantially as specified.

609,988. BOTTLE FILLER-GUARD. CHARLES H FARNAM, Hartford, Conn., assignor of five-eighths to Alexander Harbison and Wilbur S. Steele, same place. Filed July 6, 1895. Serial No. 555,174. (No model.)



Claim.—1. The combination with a bottle, a hollow cylindrical valve-plug secured within its neck and provided with perforations in its base near its periphery, also a central perforation terminating in a concave portion in its upper face, and a hollow corrugated funnel-shaped protector with a closed upper end provided with air-holes and an open reduced lower extremity or stem, the latter fitting the central perforation and the enlargement fitting the concavity in the plug; of a reciprocating valve within the plug surrounding the protector and closing the perforations in the plug, and a removable retaining-ring secured within the plug, substantially as and for the purpose set forth.

2. The combination with a bottle, a hollow cylindrical valve-plug secured within its neck and provided with perforations in its base near its periphery, also a central perforation terminating in a concave portion in its upper face, a hollow corrugated funnel-shaped protector with a closed upper end provided with air-holes and an open reduced lower extremity or stem, the latter fitting the central perforation and the enlargement fitting the concavity in the plug, and a valved vent-tube attached to the stem; of a reciprocating valve within the plug surrounding the protector and closing the perforations in the plug, and a retaining-ring secured within the plug, substantially as and for the purpose set forth.

3. The combination with a bottle, a hollow cylindrical valve-plug secured within the neck and provided in its base with a central concave perforation and a series of perforations around the same, a centrally-perforated valve within the plug and a retaining-ring secured above the valve; of a hollow corrugated protector having a closed upper end provided with a series of perforations near its periphery, a substantially cylindrical body on which said valve slides, and a reduced lower portion; and a vent-tube connected with the latter and extending near to the bottom of the bottle, the body and stem fitting within and passing through the valve-plug, substantially as and for the purpose set forth.

4. A valve for bottles consisting of a hollow cylindrical valve-plug secured within the neck, perforations near its periphery, and a central perforation terminating in an enlarged cavity in the upper face of the plug, a hollow funnel-shaped protector having a closed upper end and an open reduced lower extremity, grooves or corrugations in the exterior of its body, and air-openings near the periphery through its upper end, the whole fitting within and passing through the valve-plug and a valve surrounding the protector and covering the perforations in the plug, substantially as and for the purpose set forth.

609,989. BAG-FASTENER. PETER GAHM, Salem, Ohio. Filed May 7, 1898. Serial No. 680,064. (No model.)



Claim.—1. The bag-fastener comprising the two pivoted members, the bag-engaging portions of which are approximately straight and formed T-shaped in cross-section with the inwardly-projecting rounded friction-lugs, the pivoted ends of said members formed with stops to limit the outward swing thereof so that the bag-engaging portions thereof will be held practically in continuation of each other when opened, and one member formed integral with the two separated enlarged plates and the other member with the corresponding plate or portion turning between said plates of the other member for the purpose stated, one member formed with an outwardly-projecting head forming a finger-hold and having a transverse opening and spring-lock, the other member formed V-shaped with the lateral ratchet-arm to enter said opening, and the outwardly-projecting horn or finger-hold from its angle or apex.

2. A bag-fastener comprising the two pivoted members having approximately straight bag-engaging portions, one member continued outwardly by a head having a transverse opening at its inner portion and forming a finger-hold, a spring-actuated pawl carried by said head and having its operating releasing portion at the rear or outer edge of said head outwardly beyond said opening, for the purpose stated, the other member formed V or hook shaped with the long lateral curved arm having ratchet-teeth at its outer edge, and a finger-hold or horn at or about the apex of the member, and a stop mechanism at the jointed ends of the members to hold the bag-engaging portions of said members about in continuation of each other when opened so that they can be easily held with the ratchet-bar forming a long hook into which the bag can be gathered, as set forth.

3. A bag-fastener comprising the two pivoted members having their bag-engaging portions about or approximately straight, one member having the transverse opening and extended outwardly beyond said opening to form a finger-hold and provided with a spring-actuated pawl, the other member formed V-shaped with the long ratchet-bar with the teeth at its outer edge, and the horn extended outwardly from its angle or apex, said ratchet-bar curving or extending laterally and inwardly to form a hook when the members are extended and held in the hand, substantially as described.

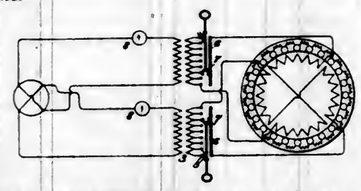
4. A bag-fastener comprising two pivoted members having their bag-engaging portions about straight, one member having the two separated rounded friction-lugs and the other member having one rounded friction-lug arranged opposite the space between the two opposite lugs to press and clamp the gathered portion of the bag between said lugs, substantially as set forth, one member having an extended head having a transverse opening and spring-actuated pawl, and the other member formed V-shaped with the laterally-exteoded ratchet-bar to enter said opening and form a hook.

5. A bag-fastener comprising two pivoted members, one member extended outwardly by a hollow head having a transverse opening, a swinging pawl therein formed in one piece and mounted on a pivot and formed with the end normally projecting into said opening and the finger or depressing portion projecting to the exterior of the rear edge of said head outwardly beyond said opening, a spring yieldingly holding said pawl with said end pressed in and said finger portion pressed out, and a stop therefor, the other member formed with the long laterally-extending ratchet-arm forming a hook and having teeth on its outer edge to engage said end of the pawl, substantially as described.

6. A bag-fastener of the character described comprising two pivoted members, one having the ratchet-bar and the other a projecting hollow head with an opening to receive the ratchet-bar, and the pawl therein looped around a pivot with the outwardly-projecting locking end, the thumb-piece projecting at the side edge of the head, a spring within the head pressing out the thumb-piece, and a stop for the pawl.

609,990. MEANS FOR CONTROLLING NON-SYNCHRONOUS ALTERNATING-CURRENT MOTORS. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Mar. 11, 1896. Serial No. 582,705. (No model.)

Claim.—1. In a polyphase alternating-current electric motor, the combination with the primary member, of a secondary member provided with a comparatively high resistance winding directly short-circuited on itself, and means for varying the electromotive force applied to the primary member whereby the speed of the motor is varied.

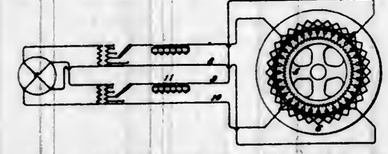


2. A variable-speed, non-synchronous motor having a comparatively large secondary resistance and a small degree of magnetic leakage between its primary and secondary members, in combination with means for varying the electromotive force applied to its primary member, whereby the speed of the motor is varied.

3. The combination with an induction-motor having small magnetic leakage and a high-resistance secondary circuit, of means for varying the speed of said motor consisting of a transformer or transformers for supplying current to the primary winding of the motor and means for varying the relation between the primary and secondary coils, and thereby varying the electromotive force supplied by the secondary.

4. The combination with a polyphase induction-motor having a high-resistance secondary winding directly short-circuited on itself, of transformers for supplying current to the primary member thereof, and means for varying the active lengths of the secondaries of such transformers whereby the electromotive force applied to the primary of the motor is varied, in order to vary the speed of the motor.

609,991. METHOD OF AND MEANS FOR SECURING CONSTANT TORQUE IN POLYPHASE MOTORS. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed Feb. 10, 1898. Serial No. 669,848. (No model.)



Claim.—1. The combination with an induction alternating-current motor having a comparatively high resistance secondary winding and a low degree of magnetic leakage, of a reactive coil in each of the supply-circuits the core of which becomes saturated by a predetermined amount of current whereby a substantially constant torque is secured.

2. The combination with an induction polyphase motor having a comparatively high resistance secondary winding and small magnetic leakage, of choke-coils in the external circuit the cores of which become saturated by a given current whereby a substantially constant torque is secured.

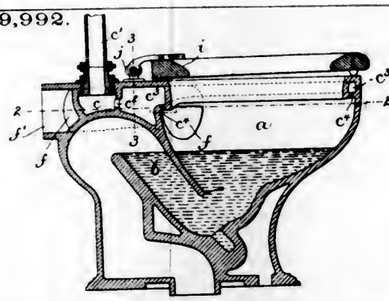
3. The method of securing constant torque in an induction alternating-current motor which consists in supplying the actuating-currents through choke-coils the magnetic circuits of which become saturated at a predetermined point in the increase of the quantity of current.

4. The method of producing and maintaining constant torque in alternating-current motors having rotary fields produced by out-of-phase currents, which consists in subjecting such out-of-phase currents to self-induced counter electromotive forces which vary with the current up to a given point, and which vary at a materially different rate beyond that point.

609,992. WATER-CLOSET BOWL. WILLIAM H. LLOYD, Boston, Mass., assignor to the Smith & Anthony Company, same place. Filed Oct. 19, 1895. Serial No. 566,237. (No model.)

Claim.—A siphon-jet water-closet, comprising in a single structure a bowl or hopper and a communicating leg or trap, an inlet-chamber *c* supported upon and having its base formed by the crown of the leg or trap, said chamber having an inlet-aperture, two outer casings or walls forming two ventilating-ducts and extending around the inlet-chamber *c*, and having large mouths communicating with the bowl, and a neck in the rear of the said chamber into which said ventilating-ducts both lead, said neck being partially formed by the said crown, substantially as described.

609,992.

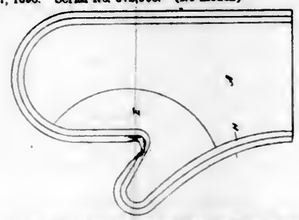


arranged quadrangularly with the numbers in the positions shown, so that the sum of the numbers on any four pegs similarly placed will be thirty-four, substantially as set forth.

2. The herein-described puzzle, consisting of four circular rotatable bases and their central connections and sixteen movable numbered pegs adapted to being arranged upon the movable bases, so that the sum of the numbers upon any four similarly-placed pegs will be the same, substantially as set forth.

3. The herein-described puzzle, consisting of a bottom base and four circular bases and central attaching-screws, and an endless cord passing around such bases, so that they turn together, each base being divided into quarter-circle sections with corresponding colors or designations and perforations and movable numbered pegs adapted to being arranged upon the bases, so that the sum of the numbers upon any four of the similarly-placed bases corresponds, substantially as set forth.

609,993. RUBBER MITTEN. CHARLES E. LOSEBEE, New Haven, Conn., assignor to the Seamless Rubber Company, same place. Filed Mar. 7, 1898. Serial No. 672,968. (No model.)



Claim.—A rubber mitten comprising a mitten proper and an outwardly-projecting fabric flange extending around its edge, and to which an auxiliary covering may be attached, substantially as described.

609,994. COUNTER-BATTERY. WILHELM MEYER, Chicago, Ill. Filed Feb. 25, 1898. Serial No. 671,670. (No model.)

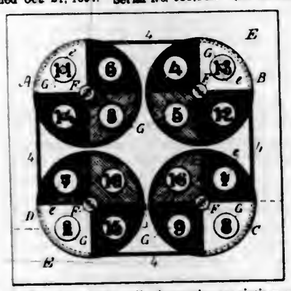


Claim.—1. The combination of a counter or the like, bushings in perforations in said counter adapted to receive cartridges, spring-pressed rods adapted to explode said cartridges, and means for operating the rods.

2. The combination of a counter, bushings therein, cartridges in said bushings, a rod pressing against the cartridge, a disk on the rod, a spring pressing against the disk, a tube surrounding said spring, a perforated, adjustable cap over one end of the tube adapted to retain the spring, a crank, shaft and handle adapted to operate said detonating-rod and means for retaining the tube in position, substantially as described.

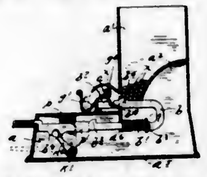
3. In combination with a counter, cartridges and exploding devices, a shaft adapted to operate said devices, provided at the end with a bevel-gear adapted to engage with a second shaft operating similar devices substantially as described.

609,995. ARITHMETIC PUZZLE. JAMES J. MURPHY, New York, N. Y. Filed Oct. 21, 1897. Serial No. 655,943. (No model.)



Claim.—1. The herein-described puzzle consisting of movable numbered pegs and bases for the reception of such numbered pegs

609,996. MATCH-SAFE AND CIGAR-CUTTER. MERRITT G. POND, Minneapolis, Minn. Filed Feb. 23, 1897. Serial No. 624,563. (No model.)



Claim.—1. In a match-safe, the combination with a match-magazine and a device for receiving and holding the matches delivered thereto, of a feed-slide constructed to receive one or a predetermined number of matches, at one time, and to deliver the same to the exterior of said magazine, and a "kicker" operated by said slide and serving to kick said match or matches from said slide and into said match-receiving device, substantially as described.

2. In a match-safe, the combination with the base *a* and magazine *a'*, said magazine having the bottom a^2 and match-passage a^3, of the feed-slide *b* provided with the notch b^4 and subject to the action of the spring *b'*, the bifurcated "kicker" *c c'* pivoted to said base *a*, and the catch-fingers *g g'* supported substantially as described.

3. In a match-safe, the combination with a match-magazine, of a feed-slide constructed to receive and deliver one, or a predetermined number of matches, at a time, and provided with the single agitating-lug or cam projection which operates on the matches in said magazine, substantially as described.

4. In a match-safe, the combination with a match-magazine, provided with a slot through which the matches may be ejected, of a feed-slide working outward through said slot, provided with a notch to receive the matches, one at a time, and provided with a raised shoulder or surface outward of said notch, substantially as and for the purposes set forth.

609,997. RED-VIOLET PHTHALEIN DYE. JAKOB SCHMID and HERMANN REY, Basle, Switzerland, assignors to the Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Filed Dec. 28, 1897. Serial No. 663,898. (Specimens.) Patented in France Sept. 3, 1896, No. 259,420, and in England Sept. 3, 1896, No. 19,516.

Claim.—1. The herein-described improvement in the manufacture of dyestuffs of the phthalein series, which consists in first melting equal molecular parts of phthalic anhydrid and metaoxyphenylorthotolylamin, until the molten mass thickens, and then extracting therefrom the product of condensation, substantially as set forth.

2. The improvement in the manufacture of dyestuffs of the phthalein series, which consists in condensing one molecule of the product resulting from the condensation of equivalent quantities of phthalic anhydrid and metaoxyphenylorthotolylamin, with one molecule of a meta-substituted phenol, such as specified.

3. The improvement in the manufacture of dyestuffs of the phthalein series, which consists in condensing one molecule of the product resulting from the condensation of equivalent quantities of phthalic anhydrid and metaoxyphenylorthotolylamin, with one molecule of a meta-substituted phenol, such as specified, then converting the mono-orthotolyl-phthalein dye thus obtained into a sulfo-acid by treating it with sulfuric acid and finally converting the sulfo-acid thus obtained in an alkaline salt, as described.

4. As a new article of manufacture the herein-described dyestuff, which forms the alkaline sulfonate of a monoorthotolyl-phthalein dye and which dyes wool and silk in acid-bath in fine red-violet tints, dissolves in water with a blue-red color and a yellowish fluorescence, is sparingly soluble in alcohol, insoluble in ether and benzene, dissolves in concentrated sulfuric acid with yellow coloration and may

be precipitated from its solution in concentrated sulfuric acid, by an addition of water, in the form of free sulfo-acid.

609,998. SULFONATED MONOBENZYL-PHTHALEIN DYE. JAKOB SCHMID and HERMANN REY, Basle, Switzerland, assignors to the Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Filed Dec. 28, 1897. Serial No. 663,900. (Specimens.) Patented in France Oct. 31, 1887, No. 186,697.

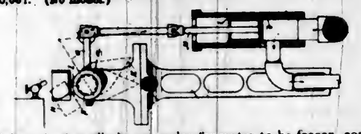
Claim.—1. The improvement in the manufacture of dyestuffs of the phthalein series, which consists in condensing one molecule of phthalic anhydrid with one molecule of a benzylalkylmetaamidophenol, by melting these substances together, as described.

2. The improvement in the manufacture of dyestuffs of the phthalein series, which consists in condensing one molecule of the product resulting from the condensation of equivalent quantities of phthalic anhydrid and of a benzylalkylmetaamidophenol, with one molecule of a meta-substituted phenol such as specified, as described.

3. The improvement in the manufacture of dyestuffs of the phthalein series, which consists in condensing one molecule of the product resulting from the condensation of equivalent quantities of phthalic anhydrid and of a benzylalkylmetaamidophenol, with one molecule of a meta-substitnted phenol, such as specified, then converting the monobenzylated-phthalein dye thus obtained into sulfo-acid by treating it with sulfuric acid and finally converting the resulting sulfo-acid in an alkaline salt, as described.

4. As a new article of manufacture the herein-described dyestuff, which is the alkaline sulfonate of a monobenzylated-phthalein dye, dyeing textile fibers in fiery-red tints and being a red powder, which is soluble in water with a red coloration and a yellowish fluorescence, with difficulty soluble in alcohol and insoluble in ether and benzene.

609,999. PRELIMINARY COOLER FOR ICE-MACHINES. RICHARD F. SCHROEDER, Sacramento, Cal. Filed Dec. 3, 1897. Serial No. 660,681. (No model.)



Claim.—1. A preliminary cooler for water to be frozen, consisting of channels for conveying the water to the freezing-cans, a cold-brine supply above the same, a directing apparatus between and in line with the channels and the brine-supply for discharging cold brine upon the channels, while the can is being filled, and means automatically controlled by the flow in the channels for throwing the directing apparatus out of line therewith and with the brine-supply whereby the discharge is diverted from the directing apparatus while the flow in channels is arrested.

2. A preliminary cooler for water to be frozen consisting of channels for conveying the water to the freezing-cans, a cold-brine supply above the same, a directing apparatus comprising a trough between and in line with the channels and the brine-supply, having openings in its bottom adapted to discharge cold brine upon the channels, while the can is being filled, and a pipe within the upper part of the trough and turnable in unison therewith, and having an open slot in its top, means for supplying brine through said open top and means automatically controlled by the flow in the channels for throwing the directing apparatus out of line with the channels and with the brine-supply whereby the discharge is diverted from the directing apparatus while the flow in the channels is arrested.

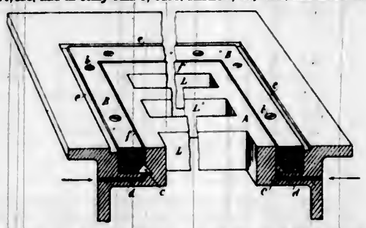
3. A preliminary cooler for ice-machines consisting of channels interposed between the source of supply and the freezing-can, a trough having discharge-openings in the bottom, a pipe fixed longitudinally within the upper part of the trough, the ends forming journals about which both pipe and trough are turnable, a central box fixed to the pipe and connecting with its interior, means for supplying the cold brine to said box, and thence to the interior of the pipe, means for tilting the mechanism, automatically controlled by the flow in the channels whereby the trough is alternately tilted to discharge the brine upon the channels while water is flowing therethrough and to divert the flow of brine when the flow of water through the pipe ceases.

4. A preliminary cooler for water to be frozen in ice-machines consisting of channels interposed between the water-supply and freezing-cans, through which the water flows, a trough having a pipe extending longitudinally through the upper part forming journals about which the pipe and trough are turnable, discharge-openings in the bottom of the trough in line with the channels through which the water flows, a box fixed to the pipe in the upper part of the trough, a supply-pipe delivering brine into said box and thence into the interior of the pipe, a slotted opening in the top of the pipe through which the brine overflows into the trough, and mechanism for automatically tilting the trough so as to discharge to one side of the channels when water is not flowing therethrough, said tilting also carrying the supply-box out of the line of the supply-pipe and allowing the latter to discharge to one side of the trough and water-conducting channels

5. A preliminary cooler for water to be frozen in ice-machines, consisting of channels interposed between the water-supply and the freezing-cans through which the water flows, a pivoted tilting trough having openings in the bottom, means comprising a box and a slotted turnable pipe whereby the trough is supplied with cold brine, said trough being movable so that the openings stand above the channels, or are moved to one side thereof, mechanism for automatically tilting the trough and its connections consisting of a plunger fitting in the enlarged upper part of a cylinder, a supply-pipe entering the bottom of the cylinder, a pipe leading from the cylinder to the cooling-channels, a lever-arm fixed to the tilting trough, connecting-rods between the plunger and lever-arm whereby it is turned to discharge the brine away from the channels when the piston is moved upwardly in the cylinder.

6. A preliminary cooler for water to be frozen in ice-machines, consisting of channels interposed between the water-supply and the freezing-cans through which the water flows, a pivoted tilting trough having openings in the bottom, means comprising a slotted turnable pipe and a connected box having an outlet whereby the trough is supplied with cold brine, said trough being movable so that the openings stand above the channels, or are moved to one side thereof, mechanism for automatically tilting the trough and its connections consisting of a plunger fitting in the enlarged upper part of a cylinder, a supply-pipe entering the bottom of the cylinder, a pipe leading from the cylinder to the cooling-channels, a lever-arm fixed to the tilting trough, connecting-rods between the plunger and lever-arm whereby it is turned to discharge the brine away from the channels when the piston is moved upwardly in the cylinder, and a weight supported from the same side of the trough whereby the piston is depressed and the trough returned to its normal position when the flow through the pipes is again commenced.

610,000. LUBRICATING DEVICE FOR SLIDE-VALVES. JEAN P. SERVE, Lyons, France. Filed Dec. 11, 1897. Serial No. 661,500. (No model.) Patented in France July 9, 1897, No. 268,573; in England July 14, 1897, No. 16,732; in Belgium Dec. 9, 1897, No. 132,458; in Spain Dec. 16, 1897, No. 21,915; in Russia Dec. 18, 1897, No. 3,512; in Austria Dec. 27, 1897, No. 43,627; in Hungary Dec. 30, 1897, No. 11,436, and in Italy Jan. 3, 1898, XXXIV, 46/314, and XCII, 152.



Claim.—1. In combination with the seat or slide-plate of a distributing-valve, an internal lubricating-channel formed by a groove in the periphery of the seat and partially closed by a frame fitted in the said groove, said frame forming a part of the slide-surface of the lubricating slide-valve, substantially as hereinbefore described.

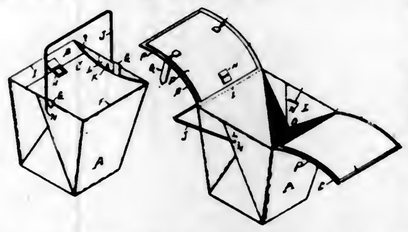
2. In combination with the seat or slide-plate of a distributing-valve, an internal lubricating channel or passage formed by a groove made in the periphery of the seat and partially closed by a frame forming a part of the slide-surface of the valve, the said channel communicating with the slide-surface of the valve by means of a narrow peripheral slot or passage formed between one side of the frame and the corresponding side of the groove, substantially as hereinbefore described.

3. In combination with a distributing slide-valve having an internal lubricating-passage formed by a peripheral groove partially closed by a frame and communicating with the slide-surface of the valve, of strips provided with longitudinal grooves arranged in said passage substantially as hereinbefore described.

610,001. OYSTER-PAIL. JOHN M. SHARPLE, Middletown, Ohio. Filed Aug. 3, 1897. Serial No. 646,955. (No model.)

Claim.—1. The combination with two lids hinged respectively on the opposite edges of the mouth of a pail, the one of said lids being

longer than the mouth of the vessel and adapted to close said mouth by abutting against the hinge-line of said other lid, whereby the middle portion of the said long lid is curved downwardly and within the mouth of the pail when the shorter lid is folded thereon, and means to secure the lids together when closed.



2. The combination with two lids hinged on respective opposite edges of the mouth of a pail, the one of said lids being longer than the mouth of the vessel and adapted to close said mouth by abutting against the hinge-line of the other lid, whereby the middle portion of the long lid is curved downwardly within the vessel and in the form of an inverted arch when the said other lid is folded thereon and means to fasten said lids in the closed position, of a bail hinged to ears at points above the edges of the lids when closed and clasps secured to and near the edges of the under one of said lids and movably fastened to the top of said respective ears whereby the lids are sustained in proper closed position and the ears are held closely against the edges of the lids.

3. In a pail the combination with two lids hinged on respective opposite edges of its mouth, the one of said lids being longer than the mouth-opening, of ears formed on the adjacent opposite edges of said mouth respectively, a bail pivotally secured in the ears and at points therein below a plane spanning the hinge-lines of the lids and means to retain said lids when closed in a position with their middle portions curved downwardly within the vessel and below the pivotal points of the bail in the ears.

4. In a pail the combination with a lid hinged on one edge of its mouth and being longer than the mouth-opening and adapted to enter and close said mouth-opening by having its middle portion curved downwardly therein and in the form of an inverted arch, of clasps secured on the middle portion and near the respective opposite edges of said lid, said clasps being arranged to engage with the adjacent ears of the pail respectively whereby said lid is supported in position and the adjacent ears of the pail are held in contact with the edges of the lid.

5. In a pail the combination with ears reinforced by an inward and downward fold of the respective opposite edges of a pail, a bail pivotally fastened to the ears at points below the plane of the mouth-opening, of lids hinged to the opposite edges of the pail adjacent to the ears and arranged to close the mouth of the pail by being folded together therein and in the form of an inverted arch and means to retain the edges of the lids below the pivotal points of the bail in the ears.

610,002. PULLEY, TOOTHED WHEEL, &c. FREDERICK R. SIMMS, London, England. Filed Dec. 28, 1897. Serial No. 664,066. (No model.)



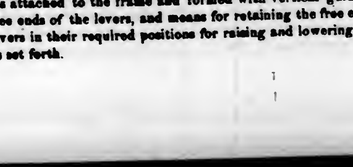
Claim.—1. In a driving-wheel, the combination with the main body of the wheel, of a pneumatic cushion surrounding the same, having separated edges along its periphery, an outer rim surrounding said cushion and provided with an inwardly-extending web, fastening devices passing laterally through said separated edges and said web and driving projecting portions on the outer surface of said rim, substantially as described.

2. In a driving-wheel, the combination with the main body, of a pneumatic cushion surrounding the same, said cushion comprising two rings semicircular in cross-section, means for attaching the inner edges to the main body of the pulley, an outer rim surrounding said cushion and provided with an inwardly-extending web, adapted to enter between the outer edges of said rings, clamping annular casings engaging the outer faces of said outer edges, and fastening devices extending transversely through said casings, outer edges and web, substantially as described.

3. In a driving-wheel, the combination with the main body, of a pneumatic cushion surrounding the same, said cushion comprising two rings semicircular in cross-section, means for attaching the inner edges to the main body of the pulley, an outer rim surrounding said cushion and provided with an inwardly-extending web, adapted to enter between the outer edges of said rings, annular casings engaging the outer surfaces of said outer ring edges for clamping them upon said web and fastening devices extending transversely through the said casings, outer ring edges and said web, substantially as described.

4. In a wheel, the combination with the main body, of a pneumatic cushion surrounding the same comprising two rings semicircular in cross-section, having their inner edges lying on each side of a portion of the said main body, inner clamping-casings on each side of said inner edges, clamping devices passing transversely through said inner edges, inner casings and the adjacent portion of said main body, an outer rim surrounding said cushion and provided with an inwardly-extending web, adapted to enter between the outer edges of said rings, outer clamping-casings on each side of said outer edges, and clamping devices passing transversely through said outer casings, outer ring edges and said web, substantially as described.

610,003. WEEDER. JOHN E SPERRY, Munnsville, N. Y. Filed Feb. 12, 1898. Serial No. 670,083. (No model.)



Claim.—1. A weeder-frame consisting of transverse bars carrying the weeder-teeth, and draft-bars uniting said transverse bars and terminated with direct tag attachments to retain said frame at its requisite angle to the line of draft as set forth.

2. A weeder-frame composed of metal tubes disposed transversely to the line of draft and provided with means for attaching the weeder-teeth, draft-bars extending across said tubes, and clips embracing the tubes and secured to the draft-bars by nuts to permit the tubes to be loosened and turned to carry the teeth at different angles of inclination as set forth.

3. In an agricultural implement, a tooth-carrier consisting of a metallic tube slotted longitudinally, a bolt passing transversely through said tube and provided with a nut on one end and having its opposite end passing through the slot of the tube and enlarged in the direction of said slot to prevent the bolt from turning and provided with a slot in its protruding portion, and a tooth inserted in said slot and retained by pressure against the exterior of the tube as set forth.

4. The combination of a tooth-carrying bar formed with compressible jaws, a tooth having its shank resting transversely on said jaws, and means for pressing said shank onto the jaws and simultaneously compressing said jaws as set forth.

5. The combination of a circumferentially-compressible metal tube slotted longitudinally, a bolt passing transversely through said tube and provided with a nut on one end and having its opposite end passing through the slot of the tube and enlarged in the direction of said slot and formed adjacent thereto with a horizontally-elongated eye, a tooth inserted in said eye and held in contact with the tube, and a clip embracing and compressing said tube as set forth.

6. The combination with the frame, of metal bars extending from the front to the rear of said frame and fastened thereto and each of said bars formed with vertical extensions at its ends and thills adjustably connected to said extensions as set forth.

7. The combination with the frame and a plurality of rows of teeth supporting said frame during the operation of said teeth, of levers pivoted to the frame and provided with fulcrums for lifting the frame as set forth.

8. The combination with the frame and a plurality of rows of teeth supporting the frame during the operation of said teeth, of levers pivoted to the frame and provided with fulcrums for lifting said frame, and brackets attached to the frame and provided with means for retaining the levers in their various required positions for raising and lowering the frame as set forth.

9. The combination with the frame and a plurality of rows of teeth supporting the frame during the operation of said teeth, of combined guiding and adjusting levers pivoted to the front part of the frame and extending with their free ends beyond the rear of the frame, fulcrums attached to said levers for lifting the frame, brackets attached to the frame and formed with vertical guides for the free ends of the levers, and means for retaining the free ends of the levers in their required positions for raising and lowering the frame as set forth.

610,004. RAIL-BOND. WILLIAM H. TALLEY, Waco, Tex., assignor, by direct and mesne assignments, of nine-tenths to George H. Williams, Charles B. Barnes, and C. R. Sherrill, same place. Filed Nov. 26, 1897. Serial No. 659,869. (No model.)



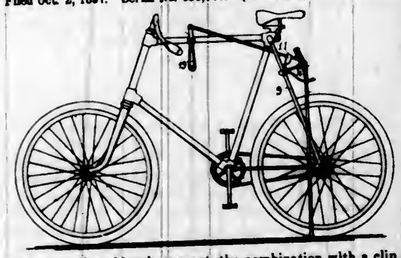
Claim.—1. A rail-joint, comprising a suitable rail having a base angle-bar located on either side of said rail and having basal flanges, normally in contact with the base of the rail, angular shaped grooves formed in the basal flanges of the angle-bars, and triangular conducting-bars located in said grooves and in direct contact with upper surfaces of the base of the rail, substantially as described

2. A rail-joint comprising a suitable rail having a base and web, angle-bars located on either side of said rail, and having basal flanges, angular-shaped grooves formed on the lower surface of the basal flanges of the angle-bars, angular conducting-bars having rounded edges, said conducting-bars being in direct contact with the upper surface of the base of the rail, and located with their rounded edges adjacent to the web of the rail, substantially as described.

3. An electric track-circuit rail-joint, comprising a suitable rail having a base and web portion, angle-bars located on either side of said rails, and having basal flanges, angular-shaped grooves formed on the lower surface of the basal flanges of the angle-bars, each of which is composed of a vertical flat wall triangular-shaped conducting-bars adapted to be snugly received by said grooves, the lower inclined sides thereof being in direct contact with the upper surface of the base of the rail, whereby said bars are rigidly and compactly held between the several parts, in such a position as to thoroughly convey the electrical current, substantially as described.

4. An electric track-circuit rail-joint, comprising a suitable rail having a base and web portion, angle-bars located on either side of said rail and having basal flanges, angular-shaped grooves formed on the lower surface of the basal flanges of the angle-bars, each groove of which is composed of a vertical flat wall, and an upper flat wall, triangular-shaped conducting-bars snugly located within said grooves, each of said bars having a lower flat and rounded surface, the flat surface thereof being in direct contact with the upper surface of the base of the rail, and the rounded surface out of contact, whereby the conducting-bars are permitted to ride over the upper surface of the base of the rail when the parts are drawn together, substantially as described.

610,005. BICYCLE-SUPPORT. FRANK WALENTA, Yonkers, N. Y. Filed Oct. 2, 1897. Serial No. 653,903. (No model.)



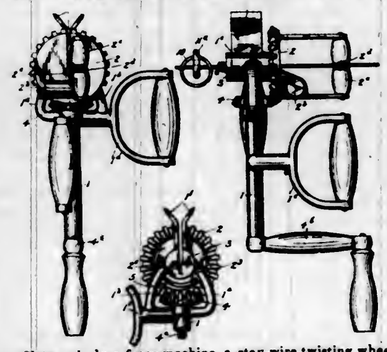
Claim.—1. In a bicycle-support, the combination with a clip, of a pair of folding legs, a hinged support on which the legs are pivoted, a rod having a cross-head in sliding engagement with diverging portions of the legs for rocking them on the hinge, stops at the outer ends of the cross-head for closing the legs on a movement in one direction on the hinge, and means for separating the legs on their movement in the opposite direction, substantially as described.

2. In a bicycle-support, the combination with a pair of crossed and pivoted legs, of a rod provided with a cross-head having a sliding engagement with the upper ends of said legs above their pivotal connection, means for operating said rod, and a V-shaped spreader for separating said legs in their downward movement, substantially as described.

3. In a bicycle support, the combination with a clip for attachment to the rear braces of a safety-bicycle of a V-shaped spreader attached to said clip, a pair of supporting-legs having slotted diverging portions, a hinged connection between the clip and legs, a rod having a cross-head in sliding engagement with said slotted portions, stops at the outer ends of the cross-head to engage the outer sides of the slotted portions of the legs, and means for moving and holding said rod, substantially as described.

4. In a bicycle-support, the combination with a suitable clip, of a bolt extending therefrom, a pair of supporting-legs intersecting each other and pivotally mounted at their point of intersection on a bolt which is hinged to the first-named bolt, said legs being provided with slotted portions, a sliding rod having a cross-head working in said slotted portions, and a thumb latch-lever for operating and holding said sliding rod, all arranged for joint operation, substantially as described.

610,006. FENCE-MACHINE. JAMES H. WALKER, Plain City, Ohio. Filed Feb. 21, 1898. Serial No. 671,119. (No model.)



Claim.—1. In a fence-machine, a stay-wire twisting wheel having a slot, a stay-wire-coil holder on one side of the said wheel, a hole for the passage of the wire from the coil to the opposite side of said wheel, and a handle on the spool side of said wheel whereby the stay-wire passing through the wheel may be brought to stand at right angles to the horizontal fence-wire, substantially as described.

2. In a fence-machine, a stay-wire-twisting wheel having a slot, and a stay-wire-coil holder on one side of said wheel, a hole for the passage of the wire from the coil to the opposite side of the wheel, and a handle on said wheel whereby the stay-wire passing through the wheel may be brought to stand at right angles to the horizontal fence-wire, said handle being also constructed to engage said horizontal wire in the twisting position of the wheel to steady the machine, substantially as set forth.

3. In a fence-machine, a stay-wire-twisting wheel having a slot, a frame having a bearing for said wheel, and a latch consisting of a spring-arm 5 having a bent portion 5^a, said spring-arm being attached to the bearing of said wheel, and a projection having inclined surfaces on the side of the wheel adjacent the spring-arm engaged by the bent portion 5^a of said arm, whereby said wheel is yieldingly held against rotation, the release of said wheel being effected by the forcible rotation of the wheel alone, substantially as shown and described.

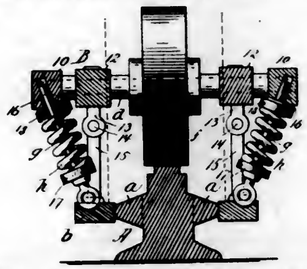
4. In devices for constructing a fence of the kind described, a spacer for the horizontal wires consisting of a hollow bar or tube notched at intervals to allow said bar or tube to be placed on the horizontal wires, and a rod to be placed in said bar or tube between the wires and the inner wall of said tube to prevent the removal laterally of said spacer, substantially as described.

610,007. CONTACT DEVICE FOR ELECTRIC RAILWAYS. LOUIS R. WALKER, Springfield, Mass., assignor of two-thirds to Francke W. Dickinson, same place, and George M. Jewett, Glenville, Md. Filed Jan. 24, 1896. Serial No. 667,712. (No model.)

Claim.—1. The combination with the axles of electric-railway cars, of a shoe-supporting frame having suspension-supports from said axles, and comprising the articulated supporting member, springs interposed between the top of the frame and a portion of the car or its truck thereabove, a wheel centrally carried by the frame and adapted to run on the top of the third-rail conductor, and a shoe having a depending support from the frame and adapted to bear yieldingly against a sidewise portion of the third rail, substantially as described.

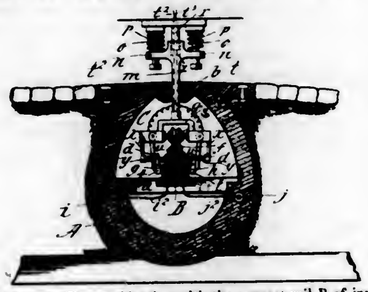
2. The combination with the shoe-supporting frame B comprising longitudinally-extending beams or members, and provided centrally between its sides with a wheel adapted to run on the top of

the third-rail conductor, of a shoe pivotally secured to, and dependent below one of said longitudinal frame members, a rod having a slide engagement obliquely in a socket therefor which is provided in a portion of said supporting-frame, and connected to the shoe, and a spring surrounding said rod, having its one end resisted by the supporting-frame and exerting a downward and inward stress longitudinally against said rod, substantially as described.



3. The combination with a third-rail conductor having opposite longitudinally-ranging contact portions *a a*, of a shoe-supporting frame to be mounted under an electric car having a centrally-disposed wheel adapted to run on the top of the third-rail conductor, and provided with the ear-lugs 13, 13, the paired bars 15 pivoted to, and depending below said ear-lugs, the beam-shoes horizontally and longitudinally supported at the lower portions of said bars 15, 15, and adapted to have sidewise on said opposite rail contact members, the shouldered rods *g* having a guiding engagement obliquely downwardly, inwardly in sockets 16 therefor which are provided in the shoe-supporting frame and the spiral springs surrounding said rods, the upper ends thereof being resisted by the frame, and they by their lower ends being in bearing against the shoulders of said rods, substantially as described.

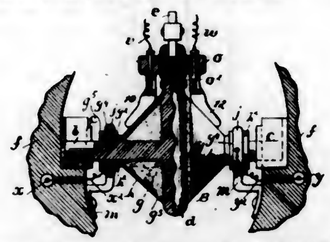
610,008. CONTACT-RAIL APPLIANCE FOR ELECTRIC RAILWAYS. LOUIS E. WALKINS, Springfield, Mass., assignor to George M. Jewett, Glenville, Md., and Charles M. King, Jersey City, N. J. Filed Feb. 2, 1898. Serial No. 668,906. (No model.)



Claim.—1. The combination with the support-rail B of insulating material provided at opposite sides with the continuous longitudinally-ranging metallic contact-conductors, of a double-shoe trolley device consisting of a depending trolley-support *m* having a roller-carrying yoke to run on the top of the support-rail and provided with the oppositely-arranged depending inwardly spring-pressed shoes, said trolley-support being provided at its upper portion with the paired lateral arms having perforations; and the depending rods or posts downwardly extended through said perforated arms, and the springs *p* all arranged substantially as and for the purposes set forth.

2. The combination with the underground conduit having line feed and return wires *i j* and provided therewithin with the cross-ties, the rail-support B having embedded in and protruding outwardly beyond, the opposite sides thereof, longitudinally continuous metallic contact-conductors which are bonded to said feed and return wire, and having an inverted-V-shaped top formation with the eaves overhanging said contact-conductors, and provided at its top with the angular wear-plate, of the trolley device C consisting of the downwardly spring-pressed support *m* having at its forward and rearward ends the yokes *q q* with V-shaped rollers journaled therein to run on the angular wear-plate of said rail and provided with the downwardly-depending rigidly-supported bars *x x* at opposite sides, the pivoted supporting-bars *u u* carrying the contact-shoes *t t* and the springs *y y* interposed between said depending bars *x* and the shoes, all substantially as and for the purposes set forth.

610,009. ELECTRIC RAILWAY. LOUIS E. WALKINS, Springfield, Mass., assignor of one-half to George M. Jewett, Glenville, Md. Filed Feb. 2, 1898. Serial No. 668,907. (No model.)



Claim.—1. In an electric-railway system, the combination with a longitudinally-ranging series of transversely-axial roller-wheels horizontally arranged, each having a central rim, and at either side thereof an annular section of metal insulated from the central rim, and each of said annular sections having a surrounding collar in contact therewith, of means for preventing the rotation of the collar, line and return wires and electrical connections respectively between said wires and said collars, substantially as and for the purpose set forth.

2. In an electric-railway system, the combination with a series of horizontal longitudinally-arranged roller-wheels having at opposite sides of the central rim thereof and surrounding its axle, annular sections of insulating material united thereto, annular sections of metal supported on the insulating-section and separated from the roller-wheel, each provided with a groove or annular seat, and having a metallic collar in said seat, of the feed and return wires, electrical connections uniting them respectively to the opposite side collars on the roller device, and means for preventing rotation of the collars, substantially as described.

3. In an electric-railway system, a longitudinally-ranging series of roller-wheels horizontally arranged, each having a central rim and at either side thereof, an annular section of metal insulated from the central rim, and each of said annular sections having a surrounding collar in contact therewith, means for preventing the rotation of the collars, line and return wires and electrical conductors respectively connecting said wires and said collars, combined with a trolley or current-collector for the motor-car having a central body or portion adapted to have a running bearing along the rims of said rollers, and having at opposite sides thereof, the separate conducting members or shoes adapted to have running bearings along on said sidewise-arranged annular metallic sections, each said shoe member being insulated from the other, substantially as described.

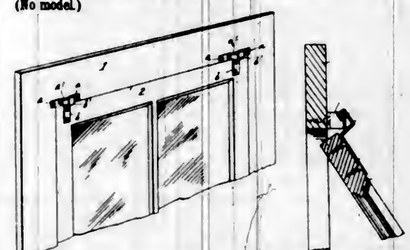
4. In an electric-railway system, a longitudinally-ranging series of roller-wheels horizontally arranged, each having a central rim and at either side thereof, an annular section of metal insulated from the central rim, and each of said annular sections having a surrounding collar in contact therewith, brackets immovably mounted and supporting said collars against rotation, line and return wires, and electrical conductors respectively connecting said wires and said collars, combined with a trolley or current-collector for the motor-car having a central body or portion adapted to have a running bearing along the rims of said rollers, and having, at opposite sides thereof, the separate conducting members or shoes adapted to have running bearings along on said sidewise-arranged annular metallic sections, each said shoe member being insulated from the other, substantially as described.

5. In an electric-railway system in combination, the longitudinally-arranged series of horizontally-journaled transverse axles having each a median flange or extended rim, a section of insulating material at either side of the rim less extended than the margin of said rim, each said section of insulating material being of an outwardly-tapering form, and provided at its apex end with a hub like or cylindrical portion, the metallic sheath *h* of combined funnel and annular cylindrical form surrounding said insulating-sections except at the portions of the latter adjoining said extended rim, the said cylindrical portions of the sheaths being grooved and receiving therein the collars *j*, brackets, fixed adjacent said collars and united thereto, line and feed wires ranging along the railway, and conductors connecting them and said respective collars, substantially as described.

6. In an electric-railway system in combination, the longitudinally-arranged series of horizontally-journaled transverse axles having each a median flange or extended rim, a section of insulating material at either side of the rim within its margin of conical outwardly-tapering form, and provided at its apex end with a hub-like or cylindrical portion, the metallic sheath *h* of combined funnel and annular cylindrical form surrounding said insulating-sections except at the portions of the latter adjoining said extended rim, the said cylindrical portions of the sheaths being grooved and receiving therein the collars *j*, the endwise boundary of said groove being constituted by a screw-engaged collar, brackets fixed adjacent said collars and united thereto, line and feed wires ranging along the railway and conductors connecting them and said collars, substantially as described.

7. In an electric-railway system, a series of horizontally-arranged separated roller-wheels each having at its one side a body of insulating material, a sheath or covering of metal surrounding said insulated body, but by said body insulated from the rim portion of the roller-wheel, a collar surrounding an annular portion of said sheath in electrical contact therewith, but non-rotatable relative thereto, means for holding the collar against rotation, a continuous electric wire, and respective conductors connecting same to said collars and a shoe or trolley having a portion thereof adapted for rolling bearing on the rims of said rollers and having a portion thereof arranged for a running contact along said sheaths of the successive rollers, substantially as described.

610,010. SEPARABLE SUSPENSION-HINGE. RUDOLPH G. WINTER, Minneapolis, Minn. Filed May 10, 1898. Serial No. 680,256. (No model.)



Claim.—1. A separable suspension-hinge, the upper member of which has an outwardly-offset vertical holder approximately of rectangular form in cross-section, and the lower member of which has at its upper end a vertical hook outwardly offset and approximately of rectangular form in cross-section, whereby when the said holder and the said hook are engaged with each other they will interlock against lateral motion but permit a limited pivotal motion, substantially as described.

2. A separable suspension-hinge, the upper member of which has an outwardly-offset vertical holder of approximately rectangular form in cross-section, and is provided with a lug or tongue projecting inward from the outer wall of said holder, and the lower member of which hinge has an outwardly-offset vertical hook of approximately rectangular form in cross-section, the downturned lip of which hook cooperates with said holder-lug, as a stop to limit the pivotal motion, substantially as described.

610,011. REED FOR LOOMS. EDWARD ADAMSON, Pawtucket, R. I., assignor to the Excelsior Loom Reed Works, Incorporated, same place. Filed Nov. 3, 1897. Serial No. 657,273. (No model.)

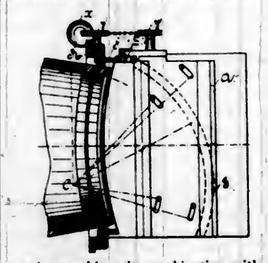


Claim.—1. In a loom-reed, the combination with the dents and the upper and lower ribs, of the end bars, metal blocks slotted to receive the end bars, and longitudinal metal strips embedded in the ribs and in the metal blocks, whereby the end bars are secured, as described.

2. In a loom-reed, the combination with the dents 5, the ribs 6, 6, and the end bars 10, of the longitudinal strips 8, the end blocks 9 having the vertical slots 10' for the reception of the end bars, and the grooves 7', 7' in which the ends of the strips 8 are secured by solder, as described.

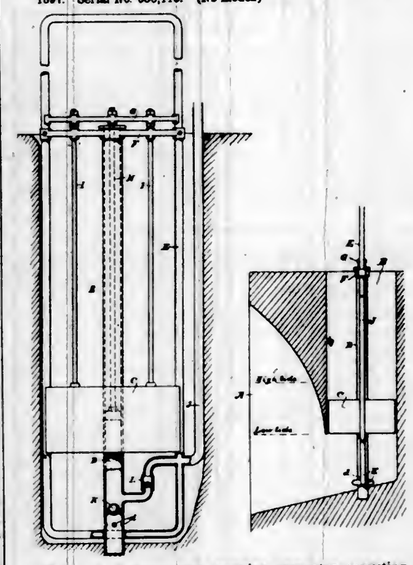
610,012. MACHINERY FOR MAKING CROZES FOR CURVED CASK-HEADINGS. JOHANN ARTHUS, Flensburg, Germany. Filed Dec. 7, 1897. Serial No. 661,089. (No model.)

Claim.—1. In a crozing-machine, the combination, with means for holding and revolving a barrel; of a stationary base B arranged at the end of the barrel, a plate A slidable on the said base, guide mechanism constraining the said base to slide on an arc substantially parallel with the curved end portion of the barrel at one side thereof, means for supporting a cutter from the said plate at the said side of the barrel, and driving devices positively connected with the said means for revolving the barrel and operating to reciprocate the said plate back and forth a prearranged number of times during each revolution of the barrel, and to place the said plate at the end of each revolution of the barrel in the position it occupied at the beginning of the revolution, substantially as set forth.



2. In a crozing-machine, the combination, with means for holding and revolving a barrel; of a stationary base B arranged at the end of the barrel, a plate A slidable on the said base, guide mechanism constraining the said plate to slide on an arc substantially parallel with the curved end portion of the barrel at one side thereof, said plate being provided with a slot arranged at substantially a right angle to the said curved side portion of the barrel, means for supporting a cutter from the said plate at the said side of the barrel, and a crank provided with a crank-pin which engages with the said slot and reciprocates the said plate as the barrel is revolved, substantially as set forth.

610,013. WAVE-POWER PUMPING APPARATUS. JOHN E. ARMSTRONG and WILLIAM ARMSTRONG, Santa Cruz, Cal. Filed Nov. 11, 1897. Serial No. 658,115. (No model.)



Claim.—1. A wave-power pumping apparatus consisting of a vertical well, having an entrance flaring outwardly therefrom to direct and concentrate the waves into the bottom of the well, a float adapted to rise and fall therein, stationary guides upon opposite sides of the float, a central opening in the float, a centrally-disposed pump-column upon which the float is loosely movable, a plunger in said pump-column, a plunger-rod extending through the upper end thereof, a cross-head with which the plunger-rod is connected, slidable upon the guides and connecting-rods uniting the cross-head with the float.

2. A wave-power pumping apparatus consisting of guides fixed within a vertical well, a pump-column centrally disposed between the guides having a fixed lower end, and yokes or braces by which the upper end is connected with the guides, openings through which water is admitted into the lower end of the pump-column, a discharge-pipe connecting therewith, an inlet-valve in the pump-column and an outlet-valve in the discharge-pipe, a plunger fitting the pump-column, a plunger-rod extending upwardly through the upper end, a cross-head with which said plunger-rod is connected, said cross-head

being slidable upon the guides, a float also guided thereon having a central opening by which it fits and loosely slides upon the pump-column, connecting-rods fixed to the float and to the cross-head respectively whereby the vertical movement of the float is imparted to the cross-head and thence to the plunger.

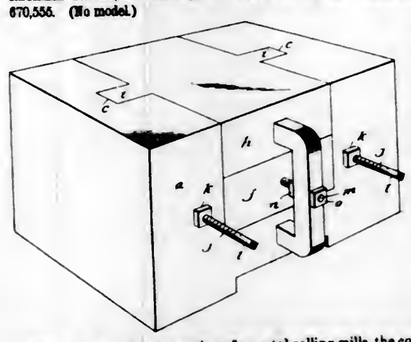
3. In a pumping apparatus of the character described, a rising and falling float having a central opening, a pump-column fixed at the bottom extending upwardly through said opening, hollow guides upon opposite sides by which the movement of the float is also steadied, connections to hold the pump-column in position with relation to the guides, a cross-head slidable upon the guides and with which the plunger-rod of the pump is connected, rods connecting the cross-head with the float whereby reciprocation is imparted to the plunger, inlet-passages and a downwardly-closing valve in the lower part of the pump-column, a discharge-pipe connecting with the pump-column having an upwardly-opening valve therein, connections between the hollow guides and the discharge-pipe above its valve whereby the guides act as an air-chamber for the pump.

4. In a pumping apparatus of the character described, a central vertically-disposed well, a centrally-fixed pump-column having inlet and discharge valves and a discharge-pipe, hollow parallel guides extending upwardly parallel with the pump-column, and connections whereby the upper end of said column is supported, said guides having also an open connection with the discharge-pipe whereby they serve as an air-chamber therefor, a float fitting loosely about the pump-column and movable between the guides, a cross-head slidable upon said guides, and rods connecting the cross-head with the float, a plunger within the pump-column and a plunger-rod connecting it with the cross-head and a surrounding well or chamber within which the float is movable said well having an opening at the bottom and a flaring or funnel-shaped chamber opening outwardly therefrom whereby the waves are directed and concentrated into the bottom of the vertical well to act upon the float.

610,014. PROCESS OF EXTRACTING METALS FROM METALLIC OXIDS. HEINRICH C. ASCHERMANN, Cassel, Germany. Filed Apr. 20, 1897. Serial No. 633,061. (No specimens.) Patented in Germany June 30, 1896, No. 93,744, and Nov. 24, 1896, No. 94,405; in England Jan. 12, 1897, No. 859; in Belgium Jan. 30, 1897, No. 125,598, and in France Apr. 20, 1897, No. 262,994.

Claim.—The process of extracting metals from metallic oxids, which consists in adding to such oxids the sulfid of antimony in greater proportion than the oxid, and then subjecting the mixture to electric currents, as specified.

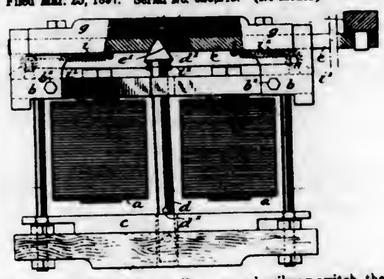
610,015. RIDER OR CARRIAGE FOR METAL-ROLLING MILLS. REGINALD BAILEY, Ellwood City, Pa. Filed Feb. 16, 1898. Serial No. 670,555. (No model.)



Claim.—1. In a rider or carriage for metal rolling mills, the combination with the main or body portion having a recess, the sides of which are provided with vertical slots, blocks seated in said recess one above the other, and having laterally-extending lugs to engage said slots, the lugs on the lower block being of less width than the recesses, said lower block having an inclined face, and means for moving the lower block longitudinally, whereby the upper block is moved vertically, substantially as set forth.

2. In a rider or carriage for metal-rolling mills, the combination with the main or body portion having a recess and vertical slots in its sides, blocks seated in said recess one above the other, the lower block having an inclined under face, and each block having laterally-projecting lugs that project into the slots, the lugs on the lower block being of less width than the slots, set-screws projecting through the main or body portion and engaging the lugs on the lower block, a screw-threaded stud projecting from the lower block, a clamp loosely mounted upon said stud and having its ends engaging the upper block and the face of the main or body portion of the rider or carriage, and a nut on the outer end of the screw-threaded stud for shifting the position of the lower block, substantially as set forth.

610,016. ELECTRIC SWITCH. ROLLIN A. BALDWIN, South Norwalk, Conn., assignor of one-half to Heavion Rowland, same place. Filed Mar. 25, 1897. Serial No. 629,213. (No model.)



Claim.—1. In an electrically-operated railway-switch, the combination of an electromagnet and its armature, a rod moved by said armature, a wedge-shaped cam against the faces of which said rod is driven by the magnet to deflect the rod in one direction or the other, means for determining which of said cam faces the rod shall be driven against, and a switch-tongue connected with the rod and partaking of its deflected movements.

2. In an electrically-operated railway-switch, the combination of an electromagnet and its armature, a rod attached to and moving with the armature, a guide adapted to deflect the rod when it is moved by the armature and a switch-moving bar under the control of the guided movement of the rod, substantially as described.

3. In an electrically-operated railway-switch, the combination of an electromagnet and its armature, a thrust-rod carried by the armature, a reciprocating bar connected with the switch-point, the thrust-rod and bar being provided with corresponding cam-surfaces and a fixed guide directing the movement of the thrust-rod and so controlling the movement of the reciprocating bar, substantially as described.

4. In an electrically-operated railway-switch, the combination of an electromagnet and its armature, a thrust-rod carried by the armature and having a wedge-shaped cam at its extremity, a reciprocating bar connected with the switch-point, the thrust-rod and bar being provided with corresponding cam-surfaces and a wedge-shaped fixed cam against which the cam on the thrust-rod is adapted to strike to deflect the latter and cause it to act on the reciprocating bar, as set forth.

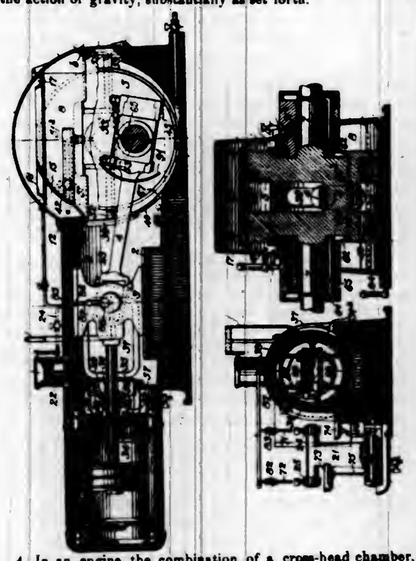
5. In an electrically-operated railway-switch, the combination of an electromagnet and its armature, a rod pivoted to the armature and carrying a wedge-shaped cam, two opposing springs connected respectively to the opposite sides of the rod, a fixed wedge-shaped cam pointing toward the cam on the rod, and a reciprocating bar connected with the switch-point and adapted to be engaged by the rod, substantially as described.

610,017. STEAM-ENGINE. CHARLES W. BARNABY, Meadville, Pa., assignor of one-half to the Phœnix Iron Works Company, same place. Filed Sept. 18, 1897. Serial No. 652,117. (No model.)

Claim.—1. In a self-oiling engine, a lubricating system, comprising a continuous circuit in which oil is automatically circulated, a reservoir in the circuit adapted to contain a considerable portion of the oil, means whereby oil may be fed from the reservoir to the bearings by the action of gravity, and means for preventing any considerable accummulation of oil in the bottom of the crank-chamber whereby the oil may be automatically returned to the reservoir, and the greater proportion of the oil at all times maintained in a comparatively quiescent state in the reservoir, substantially as set forth

2. In the crank-chamber of a self-oiling engine, a lubricating system comprising a continuous circuit in which oil is automatically circulated, a reservoir in the circuit adapted to contain a considerable portion of the oil, means whereby oil may be fed from the reservoir to the bearings by the action of gravity, and means whereby oil may be supplied to the reservoir by the rotation of the crank-disks, and any considerable accumulation of oil in the bottom of the crank-chamber may be prevented, substantially as set forth.

3. The combination, in the crank-chamber of a self-oiling engine, of a reservoir from which oil is automatically supplied to the bearings by the action of gravity, receptacles for catching oil thrown off by the rotating parts, in whichever direction the engine is rotated, and adapted to feed oil to the reservoir and to the bearings by the action of gravity, substantially as set forth.



4. In an engine, the combination, of a cross-head chamber, a closed crank-chamber, and a partition between the crank-chamber and cross-head chamber, substantially as set forth.

5. In an engine, the combination, of a closed crank-chamber, a cross-head outside of the crank-chamber, and an opening in the wall of the crank-chamber through which the connecting-rod may pass, substantially as set forth.

6. In an engine-frame, a closed crank-chamber, a cross-head chamber separated therefrom by a partition, and a stuffing box chamber separated from the cross-head box-chamber by a partition, substantially as set forth.

7. In an engine provided with a piston-rod, a cross-head, and a connecting-rod, the combination, with a closed crank-chamber, of an automatic lubricating system in the crank-chamber, a cross-head chamber, and a partition, between the crank-chamber and the cross-head chamber, substantially as set forth.

8. In a self-oiling engine, the combination, of a closed crank-chamber, an opening in the wall of the chamber, a crank-disk on one side of the opening, and a rib on the periphery of the disk from which oil may be thrown off to one side of the opening, substantially as set forth.

9. In a self-oiling engine, the combination, of a closed crank-chamber, an opening in the wall of the chamber, crank-disks on opposite sides of the opening, and means whereby oil throws off from the crank disks will be deflected away from the opening, substantially as set forth.

10. In a self-oiling engine, the combination, of a closed crank-chamber, a lubricating system therein comprising receptacles for feeding oil to the bearings by the action of gravity and to which oil may be supplied by the rotating parts, a crank-disk, and a rib on the crank-disk adapted to take up oil from the bottom of the crank-chamber and to deliver it to the receptacles, whereby the oil may be carried at such a low level in the bottom of the crank-chamber that the main body of the crank-disk may not dip therein, substantially as set forth.

11. In a self-oiling engine, the combination, in a closed crank-chamber, of a receptacle located in position to receive oil from the upper half of the crank-chamber, and to prevent oil passing to the bottom of the chamber, and means whereby oil may flow from the receptacle to a bearing by the action of gravity, substantially as set forth.

12. The combination, with an engine-bearing, of a groove, or pocket, on the outside of the bearing, adapted to receive oil passing through the bearing, a passage for conducting the oil to the inner end of the bearing, a crank-disk and a groove in the crank-disk near the end of the passage which is adapted to receive oil from the passage, substantially as set forth.

13. In an engine, the combination, with a crank-shaft and crank-disk, of a bearing, a groove in the crank-disk, a groove, or pocket, on the outer end of the bearing, a free passage from the groove, or pocket, on the bearing, to the inner end of the bearing, by which oil may be led to the groove in the crank-disk, and a passage from the groove in the disk to the crank-pin, through which oil may pass to the crank-pin, substantially as set forth.

14. In a self-oiling engine, the combination, with a closed crank-chamber and an automatic lubricating system therein, of a reservoir adapted to supply oil by the action of gravity to the main bearings within the crank-chamber, and by means of distributing-pipes to the bearings outside of the chamber, substantially as set forth.

15. The combination, in an engine, of a rocker-arm, bearings for the connections from the rocker-arm to an eccentric and to a valve, means for supplying oil by gravity to the bearings, and from the bearings to the rocker-shaft, substantially as set forth.

16. The combination, with an engine frame, or casing, of a sliding door mounted on the inside of the frame, or casing, and so arranged as to permit, when open or closed, drainage into the casing of any oil or other liquid which may be deposited on the door, substantially as set forth.

17. The combination, in an engine frame, or casing, of a cross-head chamber, a partition between the cross-head chamber and the chamber or space in which the piston-rod stuffing-box is located, and a removable cover surrounding the piston-rod, and adapted to be removed to give access to the stuffing-box, substantially as set forth.

18. The combination, in an engine, of a cross-head chamber, a partition between the cross-head chamber and the chamber, or space, in which the piston-rod stuffing-box is located, to prevent the passage of steam or water from the stuffing-box into the cross-head chamber, and a compound piston-rod stuffing-box, comprising a gland and a follower to prevent the passage of water, or moisture, along the piston-rod, into the cross-head chamber, vent-openings in the follower for permitting the escape of water or vapor to the atmosphere, substantially as set forth.

19. The combination, in an engine, of a cross-head chamber, a partition between the cross-head chamber and the chamber or space in which the stuffing-box is located, a compound stuffing-box, comprising a main gland and follower, with an opening, or openings, for the release of steam or water of condensation, and an auxiliary gland and follower, for preventing the passage of moisture along the piston-rod, substantially as set forth.

20. In a self-oiling engine, the combination, with a closed crank-chamber, of an automatic lubricating system therein, a reservoir to which oil is automatically supplied and from which oil is fed by gravity to the bearings, through openings, or flow-holes, above the bottom of the reservoir and means whereby oil may be drawn off from the reservoir from below the flow-holes to oil the bearings, substantially as set forth.

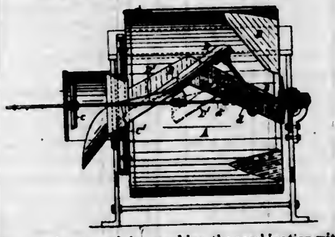
21. In an engine, the combination, with a closed crank-chamber, of an opening in the walls of the chamber, connecting-rod, passing through the opening, and a shield on the connecting-rod, substantially as set forth.

22. In an engine, the combination with a crank-chamber and a cross-head chamber, of a partition between the chambers, an opening in the partition, a connecting-rod passing through the opening and a shield on the connecting-rod, to prevent the passage of oil through the partition, substantially as set forth.

23. The combination, with the crank-chamber of an engine, of a cover for the crank-chamber, and a liquid seal to prevent the splashing of oil through the joint between the engine-casing and the cover, substantially as set forth.

24. The combination, with the crank-chamber of an engine, of a cover for the crank-chamber, which is adapted to rest on the edge of the engine casing, or frame, a receptacle, or trough, on the edge of the casing adapted to contain a liquid, and a rib, or flange, on the cover which is adapted to project into the receptacle, or trough, substantially as set forth.

610,018. APPARATUS FOR MIXING TEA. CHARLES H. BARTLETT, Bristol, England. Filed Dec. 22, 1897. Serial No. 663,011. (No model.) Patented in England Apr. 7, 1891, No. 5,990.



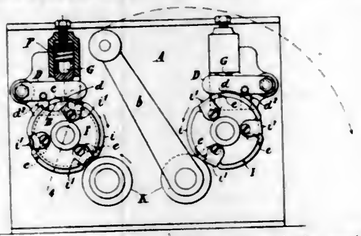
Claim.—1. In a tea-mixing machine, the combination with a horizontal revolving drum having an axial discharge-aperture in one end

and having internally-projecting pallets at intervals around its circumference, each pallet extending from end to end and bent at an intermediate point of its length to a wide-angled-V form, of a chute mounted wholly within the drum in such relation to the angular part of the pallets and to the discharge-aperture as to receive the charge carried up in the reentering angle of the pallets during rotation of the drum in one direction and deliver the same through the aperture, substantially as specified.

2. In a tea-mixing machine, the combination with a horizontal revolving drum having an axial discharge-aperture in one end, and having internally-projecting pallets at intervals around its circumference, each pallet extending from end to end, and bent at an intermediate point in its length to a wide-angled-V form, of a stationary chute mounted within the drum in such relation to the angular part of the pallets as to receive the charge raised thereby, the chute being formed of two parts, the one adjustable so as to be capable of forming an extension bridging over the space between the other part and the discharge-aperture, or of being retracted so as to allow the matters received by the other part of the chute falling back into the drum, substantially as specified.

3. In a tea-mixing machine, the combination with a horizontal revolving drum having an axial discharge-aperture in one end and having internally-projecting pallets at intervals around its circumference, each pallet extending from end to end, and bent at an intermediate point in its length to a wide-angled-V form, of a stationary chute mounted upon a stationary axial support within the drum and above the axis thereof in such relation to the angular part of the pallets as to receive the charge raised thereby, and of an adjustable chute adapted to form a continuation of the stationary chute and to bridge over the space between it and the said aperture or to be retracted as specified, and of a cover for the said aperture, movable with the adjustable part of the chute so as to uncover the aperture when the movable part of the chute is in operative position and close the aperture when the movable part of the chute is retracted, substantially as specified.

610,019. MILL FOR CUTTING TEA. CHARLES H. BARTLETT, Bristol, England. Filed Dec. 22, 1897. Serial No. 663,012. (No model.) Patented in England Nov. 4, 1893, No. 20,982.



Claim.—1. In a tea-mill the combination, with the revolving cutting-cylinder and with a stationary knife or set of knives journaled upon an axis parallel to the cylinder and with detent mechanism for retaining the same yieldingly in operative position, of friction-gear adapted to come into operation after the knife has been moved out of engagement with the detent mechanism, and to impart a continued motion to the knife in the same direction so as to move it farther from the cylinder and return it or bring another knife into operative position by such continued rotation, substantially as and for the purpose specified.

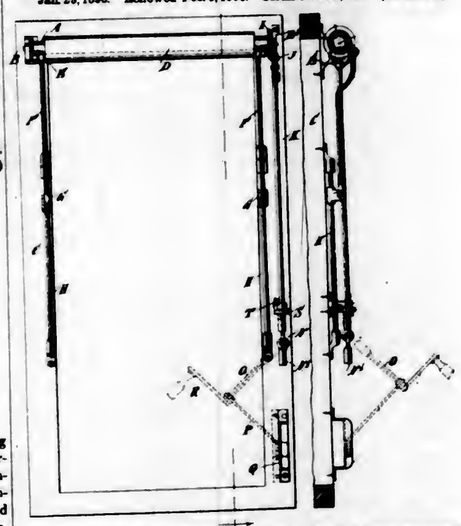
2. In a tea-mill, the combination with a revolving cutting-cylinder and with a stationary knife or set of knives journaled upon an axis parallel to the said cylinder, of yielding detent mechanism for retaining the knife in operative position and consisting of a lug on the knife-axis and a detent held yieldingly in engagement with said lug, the contacting surfaces of the lug and detent being adapted to act as a cam whereby a turning movement applied to the knife-axis substantially in excess of the normal will overcome the load on the detent and force it back so as to permit the escape of the lug and the revolution of the knife-axis.

3 In a tea-mill the combination with a revolving cutting-cylinder and with a stationary knife or set of knives journaled upon an axis parallel to the said cylinder, of yielding detent mechanism for retaining the knife in operative position and consisting of a lug on the knife axis, a spring-pressed detent-lever pivoted to a fixed point and adapted to engage with the lug, and means of regulating the stress of the spring, the lug and detent engaging by a surface oblique to the path of the lug so as to act as a cam whereby a turning movement of the knife-shaft substantially in excess of the normal, will be applied to overcome the stress of the spring, and force the detent out of engagement with the lug, substantially as specified.

4. In a tea-mill the combination with a revolving cutting-cylinder, of a set of two or more knives on the same shaft, lugs on the shaft corresponding one to each knife, a spring-pressed detent adapted to enter into engagement with any one of said lugs and to yield thereto under a turning movement of the knife-shaft in excess of the normal, and of friction gear adapted to transmit partial rotary motion from the cutting-cylinder shaft to the knife-shaft when the latter escapes from the detent, said friction-gear consisting of a friction-pinion on the cutter-shaft and a mutilated friction-wheel on the knife shaft, having friction-segments in correspondence only with the inoperative positions of the knives so that when the knife-shaft is partially rotated to move one knife out of operative position, another will by the engagement of the pinion with a segment of the mutilated wheel be simultaneously brought into operative position by the same motion of the shaft, substantially as and for the purpose specified.

5. A tea-mill having, in combination with the revolving cylinder, a set of knives divided into independent lengths or sections, each length or section being journaled upon an axis and combined with detent mechanism adapted to engage with lugs on the knife-shaft and to yield thereto under an excessive turning movement of the knife-shaft, and of friction-gear consisting of a friction-pinion on the cutter-shaft and a mutilated friction-wheel on the knife-shaft, the adjacent ends of the two sections being journaled in an intermediate bearing, substantially as and for the purpose specified.

610,020. AWNING. CÉLESTIN BERGERON, New York, N. Y. Filed Jan. 29, 1896. Renewed Feb. 9, 1898. Serial No. 669,711. (No model.)



Claim.—1. An awning, provided with a driving-shaft connected at its upper end with the awning-roller, and provided at its lower end with a universal joint for connection with an operating crank-arm, substantially as shown and described.

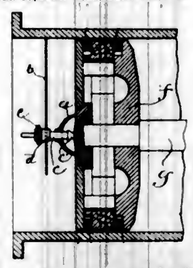
2. In an awning, the combination with an awning-roller carrying the canvas, of a driving-shaft geared with said roller and provided at its lower end with a universal joint, and an operating crank-arm adapted to engage a member of said universal joint, to permit of rotating said driving-shaft by said crank-arm, substantially as shown and described.

3. In an awning, the combination with an awning-roller carrying the canvas, of a driving-shaft geared with said roller and provided at its lower end with a universal joint, an operating crank-arm adapted to engage a member of said universal joint, to permit of rotating said driving-shaft by said crank-arm, and an arm adapted to be set at an angle to the door or window, and in which said crank-arm is journaled, substantially as shown and described.

4. In an awning, the combination of a roller, a driving-shaft operatively connected thereto and formed in sections connected by a universal joint, a crank-shaft having one end operatively connected to one section of the driving-shaft, and an arm mounted to swing, said crank-shaft being journaled in said arm, substantially as set forth.

5. In an awning, the combination of, a window-casing or the like, a roller mounted to turn on the casing, a driving-shaft formed in sections connected by a universal joint, said driving-shaft being operatively connected with said roller, a bracket secured to the window-casing, an arm swiveled on the bracket and arranged to stand in an inclined position, and a crank-shaft journaled in said arm and operatively connected to one section of the driving-shaft, substantially as set forth.

610,021. CENTERING-GAGE. CHARLES V. BOGART, Fitchburg, Mass. Filed Dec. 15, 1897. Serial No. 661,971. (No model.)



Claim.—1. A gage for centering a body within a cylinder, comprising a rigid guiding-base adapted to be placed against a surface of said body normal to the cylinder-axis, a center projecting forwardly from said base and having provisions for a normally free axial movement with respect thereto, and an arm or sweep pivotally mounted on said base, the construction and arrangement being such that the rigid base, positioned against the normal surface of the body serves to maintain the axis of rotation of the arm or sweep parallel to the cylinder-axis.

2. A gage for centering a body within a cylinder, comprising a rigid guiding-base adapted to be placed against a surface of said body normal to the cylinder-axis, a spindle mounted in said base and having a center at its front end, said spindle being capable of a normally free axial and rotative movement in said base, and an arm or sweep adjustably secured to said spindle and projecting laterally therefrom, the construction and arrangement being such that the rigid base, positioned against the normal surface of the body, serves to maintain the axis of rotation of the spindle and arm parallel to the cylinder-axis.

3. A gage for centering a body within a cylinder, comprising a rigid guiding-base adapted to be placed against a surface of the body normal to the cylinder-axis, a spindle mounted in said base and having a center at its front end, said spindle being capable of a normally free axial and rotative movement in said base, a ring on the rear end of the spindle, an arm or sweep passing transversely through the spindle and adapted to be engaged by the ring, and a nut abutting the ring and operating therethrough to lock the arm to the spindle at various adjustments, the construction and arrangement being such that the rigid base, positioned against the normal surface of the body, serves to maintain the axis of rotation of the spindle and arm parallel to the cylinder-axis.

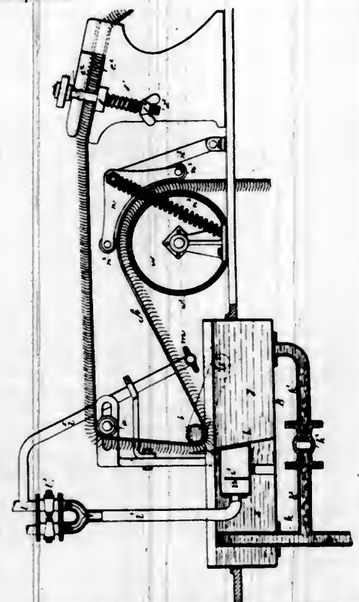
610,022. PROCESS OF AND APPARATUS FOR HARDENING POINTS OF CARDS. GUSTAV BOVENKERPEN, Mettmann, Germany. Filed Oct. 11, 1897. Serial No. 654,754. (No model.) Patented in Belgium Jan. 12, 1897, No. 125,665; in France Jan. 12, 1897, No. 263,027; in Austria Jan. 16, 1897, No. 47/2,702; in Italy Jan. 19, 1897, No. 43,663; in England Jan. 20, 1897, No. 1,579, and in Switzerland Jan. 25, 1897, No. 13,694.

Claim.—1. The process of hardening card-teeth secured in a card-band, which consists in glowing the teeth, simultaneously cooling the band, immersing the points of the teeth into a hardening-bath, and then drying the teeth by air-jets, substantially as specified.

2. An apparatus for hardening card-teeth secured in a card-band, which consists of a hollow cooling-body that engages the card-band, means for supplying a cooling medium to the interior of said body, a burner placed in proximity to such body, a vessel adapted to contain a hardening-bath, into which the points of the card-teeth enter after having passed the burner, and means for feeding the card-band, substantially as specified.

3. An apparatus for hardening card-teeth secured in a card-band, which consists of an upper adjustable guide-roll, a lower hollow cooling-body, means for supplying a cooling medium to the interior of said body, a burner placed in proximity to such body, a vessel adapted to contain a hardening-bath into which the points of the card-teeth enter after having passed the burner, and means for feeding the card-band, substantially as specified.

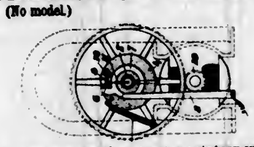
4. An apparatus for hardening card-teeth secured in a card-band, which consists of a brake mechanism, a guide-roll in the rear thereof, a cooling-body beneath the guide-roll, a burner placed in proximity to the cooling-body, a vessel adapted to contain a cooling-bath placed underneath the same, and means for feeding the card-band, substantially as specified.



5. An apparatus for hardening card-teeth secured in a card-band, which consists of a hollow cooling-body that engages the card-band, means for supplying a cooling medium to the interior of said body, a burner placed in proximity to the cooling-body, a vessel adapted to contain a bath placed underneath the same, a perforated tube adapted to throw drying-jets upon the teeth after their emergence from the bath, and means for feeding the card-band, substantially as specified.

6. In an apparatus for hardening card-teeth secured in a card-band, a hollow cooling-body, means for supplying a cooling medium to the interior of the same, a Bunsen burner placed in proximity to said body, means for supplying gas and air to said burner, a vessel adapted to contain a hardening-bath placed underneath the cooling-body, and means for feeding the card-band, substantially as specified.

610,023. AUTOMATIC CUT-OUT FOR MAGNETO-GENERATORS. WILLIAM J. BOWEN and CHARLES A. FEDERER, Cleveland, Ohio, assignors to Lewis Sands, same place. Filed May 26, 1898. Serial No. 681,765. (No model.)



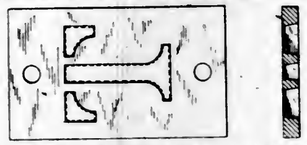
Claim.—1. In an automatic cut-out, a rotatory spindle having a projection of insulating material provided with a recess, a loosely-mounted wheel connected with the generator and having a pin resting within the recess of the projection, a contact-plate secured in the recess and a spring arranged to normally hold the plate and pin in contact; substantially as described.

2. In an automatic cut-out, a spindle carrying a loose wheel and an insulating projection rigidly secured to the spindle, a pin-and-slot connection between the wheel and projection, a contact-plate on one of these parts, and a spring arranged to hold the pin in contact with the plate; substantially as described.

3. In an automatic cut-out, a spindle having a loose wheel mounted thereon, and connected to the magneto-generator, a disk of insulating material secured to the spindle, said disk having a notch engaged by a conducting-pin upon the wheel, a contact-plate within the notch, a connection leading from the contact-plate through the spindle to the magneto-generator, and a spring arranged to hold the plate in contact with the pin; substantially as described.

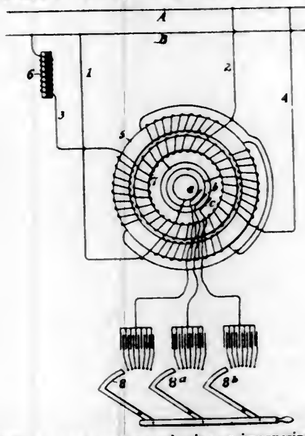
4. In an automatic cut-out, a spindle having a loose wheel mounted thereon and connected to the magneto-generator, a disk rigidly secured to the spindle and having a recess engaged by a conductor-pin on the wheel, a contact-plate within the recess connected to line, another contact-plate within the recess connected through the spindle to the magneto-generator, and a spring connected to the disk and the wheel to hold the pin normally in contact with the plate connected to the generator; substantially as described.

610,024. **BLANK FOR MAKING DIES.** ANDREW J. BRADLEY, St. Louis, Mo., assignor to the Bradley Stencil Machine Company, of Missouri. Filed Dec. 18, 1894. Serial No. 532,240. (No model.)



Claim.— As an article of manufacture, a die-body blank having holes therein of approximately the desired outline, the sides of said holes being inclined so that at the face of the die-body blank, the outlines of said holes are smaller than said desired outline and at the back, said holes are larger in outline than such desired outline, substantially as and for the purpose set forth.

610,025. **ALTERNATING-CURRENT MOTOR.** CHARLES S. BRADLEY, Avon, N. Y. Filed Sept. 17, 1897. Serial No. 652,064. (No model.)



Claim.—1. An electric motor having a primary winding provided with a plurality of branches, one or more of which includes inductance to set up in the primary core a rotary field when connection is made with a single-phase current, and a secondary element the winding of which is connected with an adjustable phase-leading device.

2. An electric motor provided with a rotary field-winding on its primary element, the several leads of which are adapted for connection with a single-phase circuit and include inductance or inductances to produce a difference of phase, and a secondary circuit including an adjustable condenser to produce a maximum phase separation.

3. An electric motor provided with a rotary field-winding on its primary element, the several leads of which are adapted for connection with a single-phase circuit and include inductance or inductances to produce a difference of phase, and a polyphase secondary circuit including an adjustable condenser for each branch.

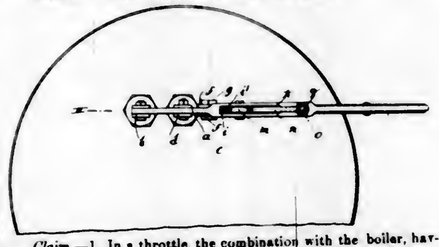
610,026. **WOOD-STOVE.** ISAAC BROOKE, Pottstown, Pa., assignor to Floyd, Wells & Co., Royersford, Pa. Filed Apr. 22, 1897. Serial No. 633,211. (No model.)

Claim.—1. A wood-stove consisting of an oval body, an oval base on which said body rests, a flange around the rim of said base, battens of angular form on the opposite long sides of said base, having their horizontal limbs secured to said base and their vertical limbs bearing against the inner side of the lower end portion of said body, said portion resting freely between the flange of the base and the vertical limbs of the battens.

2. A wood-stove consisting of an oval body, an oval base on which said body rests, a flange around the rim of said base, battens of angular form on the opposite long sides of said base, having their horizontal limbs secured to said base and their vertical limbs bearing against the inner side of the lower end portion of said body, said portion resting freely between the flange of the base and the vertical limbs of the battens, said battens being also secured to the base by the bolts which are connected with the top plate of the body and pass through the battens and base and secured to the latter.



610,027. **THROTTLE-LEVER.** LORIN W. CANADY, Toyah, Tex. Filed Dec. 15, 1897. Serial No. 661,999. (No model.)



Claim.—1. In a throttle, the combination with the boiler, having a rigid arm and a gland, a lever fulcrumed on said rigid arm, an arm mounted to swing on the gland and having sliding engagement with the lever, and a spring-pressed cam carried on the lever and capable of engaging the arm.

2. The combination with a boiler having a rigid arm projecting outward therefrom, and also having a packing-gland thereon, of a lever fulcrumed to the arm, a movable arm having an elongated orifice receiving a portion of the packing-gland whereby to pivotally mount the arm, the lever having a slot therein through which slot the arm extends, a cam mounted in the slot and capable of engaging the arm to lock the arm and lever with each other, a spring pressing the cam, and a handpiece mounted on the lever and in connection with the cam to move the lever against the tension of the spring.

3. The combination of a lever, an arm mounted to swing adjacent to the lever, a cam mounted to rock on the lever and engaging the arm to lock the same with the lever a spring pressing the cam and a handpiece mounted on the lever and connected with the cam to move the same against the spring.

610,028. **ACTINOMETER.** JOHN A. CHEAPS, Charlottesville, Va. Filed Mar. 22, 1898. Serial No. 674,827. (No model.)



Claim.—1. An actinometer consisting of an exposure box, fixed scales indicating the speed of plate or film and the time of the film or plate exposure, and slides having denoted on one the light value, and lens-stops and on the other, the different subjects to be photographed.

2. An actinometer consisting of an exposure-box, means for regulating the amount of light to be admitted thereto and a movable reflector.

3. In an actinometer, an exposure-box provided with means for regulating the quantity of light admitted thereto, in combination with a stencil, and a paper-holder movable toward and away from the stencil, substantially as described.

4. In an actinometer, an exposure-box provided with a reflector, in combination with a stencil, and a paper-holder movable toward and away from the stencil, substantially as described.

5. In an actinometer, an elongated body portion having an exposure-box at one end, a stencil device, and a slide on the body portion provided with graduated stops arranged to be passed over the open end of the box to graduate the light, substantially as described.

6. In an actinometer, a tubular body portion provided with slides bearing registering indicia, in combination with an exposure-box, a stencil and a hinged paper-holder arranged to open and close, substantially as described.

7. In an actinometer, an elongated tubular body portion provided with longitudinally-movable slides bearing registering indicia, in combination with an exposure-box and a stencil device, substantially as described.

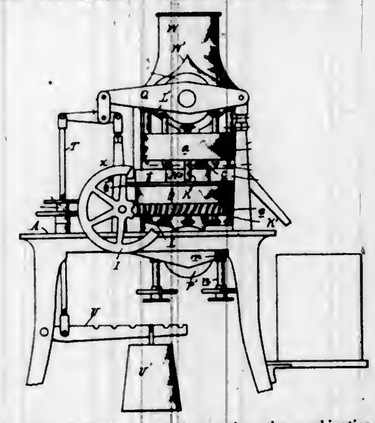
8. In an actinometer, the combination with a rectangular tube arranged and adapted to contain strips of sensitized paper, of a stencil-plate at one end of the tube, said tube being provided with an opening through which the paper is extended to a point beneath the stencil and a holder on which said extended end is held to the action of the stencil, and means for clasping the paper on the holder, substantially as described.

9. In an actinometer, a cubic exposure-box provided with a stencil, in combination with a paper-holder, one being adapted to open away from the other, substantially as described.

10. An actinometer, consisting of an exposure-box, a plate having different-sized holes therein adapted to be moved over the box for regulating the amount of light thereto, and a reflector cooperating with the exposure-box.

11. An actinometer comprising a tubular body having a stencil, a cubical exposure-box, and a paper-holder located at one end.

610,029. **POWDER-COMPRESSOR.** ERNEST C. CLARK, Detroit, Mich. Filed Jan. 3, 1898. Serial No. 665,417. (No model.)



Claim.—1. In a compressor for powders, the combination of a frame, a stationary vertical spindle, a rotary head journaled thereon consisting of two sections connected by a neck, the two sections having alined apertures, a feed-frame secured to bear on the lower section for directing the material into the apertures in said section, the plungers in the apertures in both sections, and actuating means for the plungers to compress the material at two points in their travel.

2. In a compressor for powders, the combination with the rotary head comprising upper and lower sections having alined apertures, plungers therein, with actuating devices at two points, and a neck connecting the two sections, of a feed-frame secured to rest on the lower section, comprising two sets of gathering devices located between the points of actuation of the plungers, and a connecting-frame at one side only of the neck for the purpose described.

3. In a compressor for powders, the yoke-shaped feed-frame, comprising two sets of gathering-wings, and a connection between the two at one end only.

4. In a compressor for powders, the combination with the two-part rotary head connected by a neck, of a feed-frame having a yoke-shaped opening adapted to embrace the neck; a series of gathering-wings thereon and a stationary support for the frame.

5. In a compressor for powders, the combination of a feed-frame, a series of wings converging to a common concentric line, an opening being formed in the wings on this line, and the rotary head having a series of apertures adapted to travel beneath these openings.

6. In a compressor for powders, the combination of the rotary apertured head carrying plungers which are adapted to form tablets during rotation, a stationary feed-frame on a portion only of the head leaving a portion or portions free, means at the free portion for forming tablets in the apertures and means for pushing them out of the apertures, and a wall at the beginning of the gathering-frame adapted to arrest the tablets, but permitting the powder to pass thereunder into the gathering-frame.

7. In a compressor for powders, the combination of the rotating head, carrying the plungers, means for gathering the material into the apertures in which the plungers work, of a cam-track for the upper die, a depression therein at the point of operation, a wheel or roller above the depressed portion of the track and beneath which the upper plunger passes, and a lever in which said roller is journaled, substantially as described.

8. The combination with a rotary apertured head carrying plungers which are adapted to form tablets during the rotation of the head, a stationary feed or gathering frame on a portion of said head leaving portions uncovered or free, means at said free portions for forming the tablets in the apertures, means for pushing them out of said apertures, inclined walls for pushing the formed tablets off from the head, and an annular shelf surrounding said head on which said tablets will lodge adapted to carry them to a common point of discharge.

610,030. **CULTIVATOR.** SAMUEL C. COBB, Janesville, Wis. Filed July 27, 1897. Serial No. 646,155. (No model.)



Claim.—1. In a cultivator, the combination of a double lever journaled on an axle and provided with a toothed sector, and a vertical pivoted lever having a toothed sector engaging the sector end of the axle-lever, substantially as shown and described

2. In a cultivator, the combination with an axle, of a sleeve journaled on said axle and provided with a two-arm lever having a toothed sector, a vertical pivoted lever having a toothed sector engaging the sector of the sleeve-lever, a spring connected with said vertical lever, and a link connecting the end of said spring with an arm of the axle-lever, substantially as shown and described.

3. In a cultivator, the combination of a vertical pivoted lever having a toothed sector, and a lever journaled on an axle and provided with a sector end engaging the sector of the vertical lever and a stop adapted to bear against said vertical lever and limit the movement of said levers, substantially as shown and described.

4. In a cultivator, the combination of a lever journaled on an axle and provided with a toothed sector and a slot, and a vertical pivoted lever having a toothed sector engaging the sector of the axle-lever and provided with an offset pin engaging the slot of said axle-lever, substantially as shown and described.

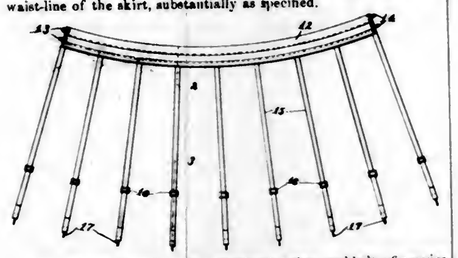
5. In a cultivator, the combination with a two-arm lever journaled on an axle and provided with a toothed sector, of a vertical pivoted lever having a sector end engaging the sector of the axle-lever, and a spring connected at its upper end with said vertical lever and at its lower end with a link having an adjustable connection with one of the arms of said axle-lever, substantially as shown and described.

6. In a cultivator, the combination with a two-arm lever journaled on an axle, of a vertical pivoted lever having a toothed sector engaging the toothed sector of the axle-lever, a spring having an adjustable connection between its upper end and said vertical lever, and a link connecting one end of said spring with one of the arms of the axle-lever, substantially as shown and described.

610,031. **DRESS-SKIRT SUPPORTER.** HARRIE B. COSKLING and JAMES H. LEE, St. Louis, Mo. Filed Aug. 16, 1897. Serial No. 648,425. (No model.)

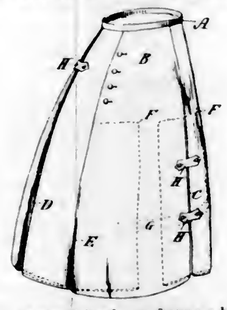
Claim.—1. The combination with a skirt having the usual belt, of a series of supports, as 11, attached to said skirt at a point below the belt, a series of attaching devices, as 10, located at a point below the said supports 11, and a belt or band entirely separate from said skirt-belt and carrying a series of depending straps which are loosely passed through said supports and have at their lower ends means for

engaging said attaching devices 10, whereby the said separate belt or band may be disengaged from around the wearer's waist and thrown downwardly and loosely suspended at a point below the waist-line of the skirt, substantially as specified.



2. The combination with a skirt having the usual belt, of a series of loops 11 fixed to the said skirt at a point below the said belt, a series of attaching devices 10 secured to said skirt at a point below said loops, a band or belt that is entirely separate from the belt of the skirt, a series of straps secured at their upper ends to the said separate band or belt and having at their lower ends means for engaging said attaching devices 10, said straps passing one through each of said loops 11, and means for adjusting the length of the said straps, substantially as and for the purpose specified.

610,032. BICYCLE-SKIRT. ERNESTINE COTTRELLY, New Rochelle, N. Y. Filed Sept. 28, 1897. Serial No. 653,309. (No model.)



Claim.—1. As an article of manufacture, a bicycle-skirt consisting of the body B; waistband A; wind-guards E, E, located one on each side below the hip portion of the skirt, the material of the rear portion being looped forward under the material of the front portion of the skirt and yieldingly secured to the skirt-body B, substantially as specified, whereby freedom of motion for the limbs is provided for in riding, and interference with the limbs in walking is prevented.

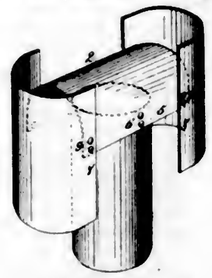
2. The within-described bicycle-skirt, consisting of the body B: the side folds or wind-guards E E; constructed and arranged to operate substantially as specified, and the front double folds C, C; the front folds C, C, and the wind-guards E E, being secured in normal position by the elastic restraining-band G, attached to the inner or under portions of said folds or plaits and adapted to permit circumferential extension of the skirt material, in use on a bicycle substantially as specified.

3. The within-described article of manufacture, consisting of the skirt-body B with its supporting-band A, folds E E, forming wind-guards located diametrically opposite each other, one on each side at and below the hip portion substantially as specified, the inner portion of each fold being practically secured to the skirt by a suitable attachment as G, in such a manner that freedom of movement is provided for the limbs in riding a bicycle and interference with the limbs prevented in walking, substantially as specified.

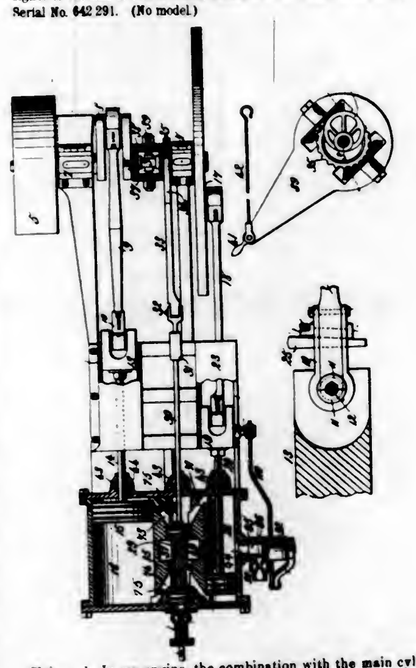
610,033. CHIMNEY-COWL. ALEXANDER DICKEY, Trenton, N. J., assignor of one-half to Robert William Dickey, Philadelphia, Pa. Filed Mar. 26, 1898. Serial No. 675,312. (No model.)

Claim.—1. A chimney-cowl, consisting of a vertical pipe, a horizontal semicylinder having its side flanges overlapping and secured to the upper end of the pipe, and two vertical semicylinders which, respectively, have their side flanges overlapping and secured to the extremities of the horizontal semicylinders, substantially as described.

2. A chimney-cowl, consisting of a vertical pipe, a horizontal semicylinder having its side flanges embracing and riveted to the upper end of the pipe and two vertical semicylinders which, respectively, have their side flanges embracing and riveted to the extremities of the horizontal semicylinder, substantially as described.



610,034. GAS-ENGINE. ALLEN H. DINGMAN, De Haven, Pa., assignor of one-half to James Amm, Buffalo, N. Y. Filed June 25, 1897. Serial No. 642,291. (No model.)



Claim.—1. In an engine, the combination with the main cylinder and its piston, and a combustion-cylinder and its piston, of a cylindrical valve-chamber intermediate the two said engine-cylinders and provided with centrally-located inlet and exhaust ports and with ports that communicate with the ends of the engine-cylinders, and a cylindrical main valve located in the said valve-chamber and provided in its opposite sides with grooves to connect the ports of the engine-cylinders with the inlet and exhaust ports of the valve-chamber and having longitudinal perforations between the said grooves, substantially as described.

2. In an engine, the combination with the two cylinders and their pistons, a valve-chamber intermediate the said cylinders and provided with an inlet-port and an exhaust-port and with ports to and from the engine-cylinders, and a main engine-valve in said valve-chamber, of a vaporizer-chamber communicating with the inlet-port of said valve-chamber, an exhaust-chamber located in the vaporizer-chamber and communicating with the exhaust-port of the said valve-chamber, metal balls or refractory material placed in the vaporizer-chamber around the inclosed exhaust-chamber, a gas box or chamber communicating with the vaporizer-chamber and provided with a perforated gas-inlet pipe, a gas-valve, an air box or chamber communicating with the gas-box and provided with an air-valve, and means for operating the gas-valve and air-valve jointly, substantially as described.

3. In an engine, the combination with the vaporizer, the gas-box communicating with the vaporizer, and an air-box communicating with the said gas-box, of a perforated gas-inlet pipe extended into the gas-box and provided with a gas-valve, a main air-valve geared with the said gas-valve for joint operation, and an independently-operated sub air-valve, substantially as described.

4. In an engine, the combination with a main cylinder and its piston and a combustion-cylinder and its piston, and means for supplying said combustion-cylinder with an explosive gas, of an igniter or combustion-jet composed of a valve-chamber and an ignition-chamber, the said valve-chamber being intermediate the combustion-cylinder and said ignition-chamber and having a perforated tubular passage extended through the ignition-chamber, means for maintaining a flame in the said ignition-chamber around the said tubular passage, and a valve located in the said valve-chamber of the igniter and actuated from a moving part of the engine, substantially as described.

5. In an engine, the combination with a main cylinder and its piston and a combustion-cylinder and its piston, and means for supplying the said combustion-cylinder with an explosive gas, of an igniter or combustion-jet provided with a valve actuated from a moving part of the engine and adapted to control an explosion of gas in the combustion-cylinder at the end of each stroke, substantially as described.

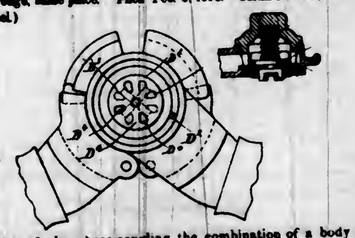
6. In an engine, the combination with the main engine-cylinder and its piston, a combustion-cylinder and its piston, a valve-chamber intermediate and communicating with said cylinders, and a main engine-valve located in said chamber, and provided with longitudinal passages, of an accumulator-chamber provided with a drainage-cock, a check-valve intermediate the main-valve chamber and said accumulator, cut-off valves for the ports between the main-engine-valve chamber and main engine-cylinder, and a pipe leading from the accumulator chamber, substantially as described.

7. In an engine, the combination with the main engine-cylinder and its piston, the combustion-cylinder and its piston, the main-engine-valve chamber having ports communicating with the engine-cylinders and the longitudinally-perforated main engine-valve located in said chamber, of the cut-off valves in the ports between the main engine-cylinder and main-valve chamber, an accumulator-chamber adapted to communicate with the main-valve chamber and provided with an outlet-pipe for conducting accumulated pressure to another engine or machine, and a valve to control communication between the main-valve chamber and said accumulator-chamber, substantially as described.

8. In an engine, the combination with the main engine-cylinder and its piston, the main-valve chamber having ports communicating with said main cylinder, and an accumulator-chamber communicating with the said main-valve chamber, of cut-off valves for the ports between the main-valve chamber and main cylinder, each of said cut-off valves consisting of a straight cylindrical body screw-threaded at one end and supported in a packing-box with which the threaded portion of the valve is engaged, a hand-wheel for said valve, and screw-threaded followers for compressing the packing around said valves, substantially as described.

9. In an engine, the combination of the engine-cylinders and their pistons, a crank-shaft with which the piston-rods are connected, a main engine-valve intermediate the two engine-cylinders and actuated from an eccentric on the main shaft, a reversing-gear for said valve, mechanism for exploding gas in one of the engine-cylinders, and an accumulator for gas-pressure adapted to have valve-controlled communication with the main-engine-valve chamber, substantially as described.

610,035. AUTOMATIC STOP-VALVE FOR HOSE-COUPLINGS. GEORGE W. EGGLESTON, Coalville, Utah, assignor of one-fifth to Alma Eldredge, same place. Filed Feb. 3, 1898. Serial No. 669,005. (No model.)

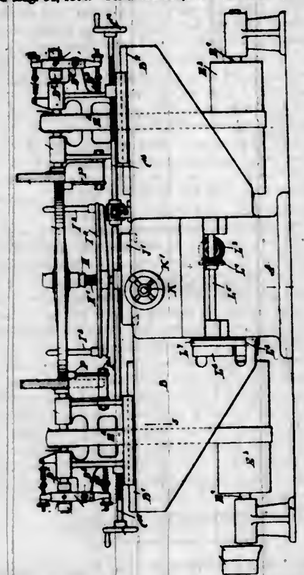


Claim.—1. In a hose-coupling the combination of a body portion or member, provided with a cavity opening at each face thereof, a plug screwed into the outer end of the cavity to close the same, a valve-seat held in the cavity by engagement with the plug, the valve-seat being provided with orifices, a valve-disk having its face bearing against the inner face of the valve-seat and having orifices coacting with the orifices in the valve-seat, a valve-stem attached to the valve-disk and extending through the valve-seat to the inner face of the body portion or member, and a gasket held at the inner end of the cavity and engaged by the valve-seat.

2. In a hose-coupling, the combination of a body portion or member having a cavity therein and extending through each face thereof, a plug screwed in the outer end of the cavity, a valve-seat mounted in the cavity and engaged by the plug whereby to hold the valve-seat, a valve-disk engaging the inner face of the valve-seat, and a valve-stem attached to the valve-disk and extending through the valve-seat and projecting out from the inner end of the cavity.

3. In a hose-coupling the combination of a coupling member or body portion having a cavity therein, the cavity opening at the inner face of the coupling member or body portion, a valve-seat held rigidly in the cavity, a valve-disk mounted on the inner face of the valve-seat and coacting therewith, and a valve-stem attached to the valve-disk and passing revolubly through the valve-seat, the valve-stem projecting inward beyond the inner end of the cavity.

610,086. TREAD-SANDING MACHINE. GEORGE A. ERMEN, Defiance, Ohio, assignor to the Defiance Machine Works, same place. Filed Aug. 31, 1897. Serial No. 650,175. (No model.)



Claim.—1. A tread-sanding machine, comprising two head-stocks having their shafts in the same straight line and adjustable toward and from each other, abrading-disks upon the adjacent ends of the shafts and a wheel-support provided with feeding mechanism for moving the same between the disks in a plane parallel with the plane of the wheel and the shafts of the abrading-disks, substantially as described.

2. A tread-sanding machine, comprising two head-stocks having their shafts in line and adjustable toward and from each other, abrading-disks upon the adjacent ends of the shafts and a wheel-support provided with feeding mechanism for moving the same between the disks and parallel with the plane of the wheel and the shafts of the abrading-disks, and means for revolving the wheel upon its axis during said transfer, substantially as described.

3. A tread-sanding machine, comprising two head-stocks having their shafts in line and adjustable toward and from each other, abrading-disks upon the adjacent ends of the shafts and a wheel-support provided with feeding mechanism for moving the same between the disks and in the direction of the plane of the wheel, and rim-supports attached to the head-stocks and engaging the under surface of the wheel-rim, substantially as described.

4. A tread-sanding machine provided with slidable head-stocks, spindles journaled in the said head-stocks, abrading-disks on the said spindles, and means for moving the said head-stocks simultaneously toward and from each other, substantially as shown and described.

5. A tread-sanding machine provided with slidable head-stocks, spindles journaled in the said head-stocks, abrading-disks on the said spindles, means for moving the said head-stocks simultaneously toward and from each other, and a tension device for each of the said spindles, to allow a longitudinal yielding of the spindles in their bearings in the head-stocks, substantially as shown and described.

6. A tread-sanding machine provided with a spindle, an abrading-disk on the spindle, and a tension device for the said spindle, to allow a longitudinal yielding of the spindle in its bearings, substantially as shown and described.

7. A tread-sanding machine provided with a spindle, an abrading-disk on the spindle, a tension device for the said spindle, to allow a longitudinal yielding of the spindle in its bearings, and an adjusting device for regulating the degree of tension on the said spindle, substantially as shown and described.

8. A tread-sanding machine provided with slidable head-stocks, spindles journaled in the said head-stocks, abrading-disks secured on the said spindles, screw-rods screwing in the said head-stocks, and a lever loosely connected with the said screw-rods, to permit of adjusting the head-stocks independently of each other upon turning the screw-rods, and of moving the head-stocks simultaneously upon imparting a swinging motion to the lever, substantially as shown and described.

9. A tread-sanding machine provided with slidable head-stocks, spindles journaled in the said head-stocks, abrading-disks secured on the said spindles, screw-rods screwing in the said head-stocks, a lever loosely connected with the said screw-rods, to permit of adjusting the head-stocks independently of each other upon turning the screw-rods, and of moving the head-stocks simultaneously upon imparting a swinging motion to the lever, and means for locking the said lever in place, substantially as shown and described.

10. A tread-sanding machine provided with a slidable yoke, a spindle journaled in the said yoke, an arm carried by the spindle and engaging the wheel so as to rotate the latter upon revolving the spindle, a worm-wheel carried by the said spindle, a worm in mesh with the worm-wheel, and a revoluble shaft with which turns the said worm, the latter being also free to slide on said shaft, substantially as described.

11. A tread-sanding machine, comprising two head-stocks mounted to slide toward and from each other, shafts therein extending in the direction of said motion and having abrading-disks upon their adjacent or inner ends, a wheel-support provided with feeding means for moving the same between the disks in the direction of the plane of the wheel, means for revolving the wheel upon its axis during said transfer and rim-supports attached to the head-stocks and adjustable in height, substantially as described.

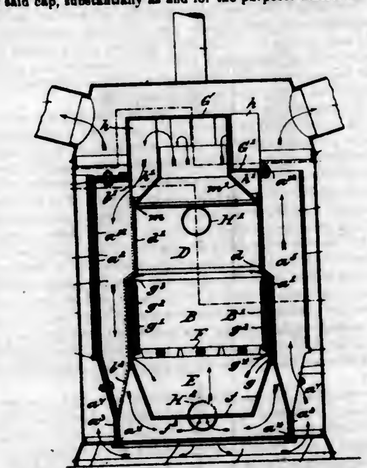
12. A tread-sanding machine, comprising two head-stocks mounted to slide toward and from each other, shafts therein extending in the direction of said motion and having abrading-disks upon their adjacent or inner ends, a horizontal supporting-table mounted to slide across the axes of said disks and between them, a shaft mounted in said table and adapted to engage the wheel to support and rotate it, a worm-wheel upon said shaft, a fixedly-journaled shaft having a worm slidingly mounted thereon and engaging said gear and thrust or end supports for said worm mounted upon the work supporting table, substantially as described.

610,037. HOT-AIR FURNACE. JOHN EVANS, Philadelphia, Pa. Filed Jan. 17, 1898. Serial No. 666,873. (No model.)

Claim.—1. In a hot-air furnace, in combination with a fire-pot and a combustion-chamber, a series of castings arranged around the fire-pot and combustion-chamber, said castings being provided with flanges adapted to overlap to form alternate flues and air-boxes, the lower end of said castings tapering to a substantially flat portion to form below the fire-pot a circular wall, and a bed-plate arranged below the fire-pot and provided with an annular groove adapted to receive and support the flat portions of the castings, substantially as and for the purposes described.

2. In a hot-air furnace, in combination with a fire pot and a combustion-chamber, a series of castings arranged around said fire-pot and combustion-chamber, said castings being provided with flanges adapted to overlap to form alternate flues and air-boxes, and a cap located above the combustion-chamber and upon the castings, said cap having its interior in communication with the combustion-chamber and the flues and its exterior in communication with the air-boxes, substantially as and for the purposes described.

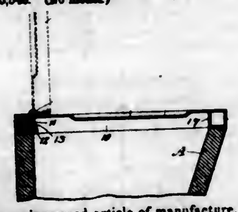
3. In a hot-air furnace, in combination with the fire-pot, combustion-chamber and exterior casing, of a series of castings arranged adjacent to the fire-pot and combustion-chamber and within the casing, said castings being provided with flanges adapted to overlap to form alternate flues and air-boxes, a cap located above the combustion-chamber and having its interior in communication with said chamber and with said flues and having its exterior in communication with the air-boxes, and an air-drum supported by said casing and inclosing said cap, substantially as and for the purposes described.



4. In a hot-air furnace provided with an ash-pit, a fire-pot and a combustion-chamber, an offtake-pipe, branch pipes leading to the combustion-chamber and to the exterior of the ash-pit, flues connecting the combustion-chamber with the exterior of the ash-pit, grooves or air-spaces formed in the wall of the fire-pot and communicating with the combustion-chamber, and with the interior of the ash-pit, substantially as and for the purposes described.

5. A hot-air furnace, comprising an exterior casing, a hollow bed-plate supporting the casing, an air-drum supported upon the casing, an ash-pit supported within the casing above the bed-plate, a fire-pot and combustion-chamber arranged within the casing and above the ash-pit, a series of castings supported by the bed-plate and surrounding the ash-pit, fire-pot and combustion-chamber, said castings having flanges adapted to overlap to form alternate flues and air-boxes, a cap surmounting the combustion-chamber and supported by the castings, the interior of said cap communicating with the combustion-chamber and the flues and the exterior of the cap communicating with the drum and the air-boxes, said flues opening into the space below the ash-pit and the air-boxes communicating with the interior of the hollow bed-plate, an offtake-pipe, branch pipes leading to the combustion-chamber and to the space below the ash-pit, and a jacket surrounding the offtake-pipe and open at its upper end for the reception of the cold air and communicating directly with the interior of the bed-plate, substantially as and for the purposes described.

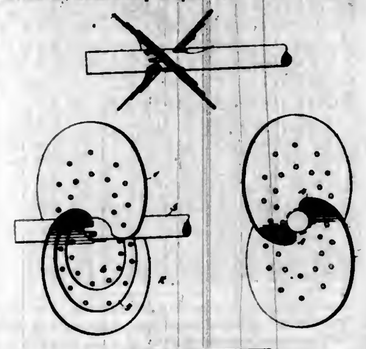
610,088. COMBINED LAUNDRY-TUB COVER AND DRAINING-BOARD. PETER G. FISCHER, Homestead, N. J. Filed Mar. 29, 1898. Serial No. 675,548. (No model.)



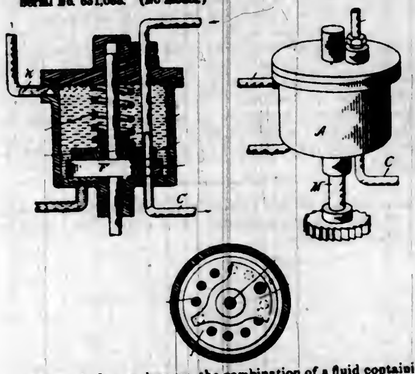
Claim.—As an improved article of manufacture, a top for laundry-tubs, constructed of metal and comprising a back strip, a cover hinged to the back strip, said cover having a depression forming a tray, and apertures in the said depressed surface, whereby the cover may be used as a draining-board, and a hollow, ventilated marginal flange for the cover, whereby also air may circulate above the tub beneath the cover when said cover is closed, substantially as described.

610,089. PROPELLER. CARL J. H. FLINDT, New York, N. Y., assignor to Edward Bechtoldt, same place. Filed Feb. 10, 1897. Renewed Dec. 10 1897. Serial No. 661,423. (No model.)

Claim.—In a propeller, the combination with a shaft, of two propeller-blades on the shaft and crossing each other at right angles, the said blades being extended in straight lines from the shaft outward and having their fore and aft edges forward and rearward of their connection with the shaft, the width of the blades being greater than the height and the extreme stern ends of the blades being curved toward the shaft, substantially as specified.



610,040. CARBURETER. HENRY FORD, Detroit, Mich., assignor to William C. Maybury, trustee, same place. Filed Apr. 7, 1897. Serial No. 631,063. (No model.)



Claim.—1. In a carbureter, the combination of a fluid containing receptacle, an exit-pipe leading therefrom, an air-supply pipe leading into said receptacle in alinement with said exit-pipe, an intermittently-actuated feed-disk working in said receptacle between said pipes and provided with a series of cells adapted to be filled and brought successively into alinement with said pipes, and a cut-off of a shape to cover a portion of the disk adjacent the pipes and to leave exposed a portion of the disk containing one or more of said cells.

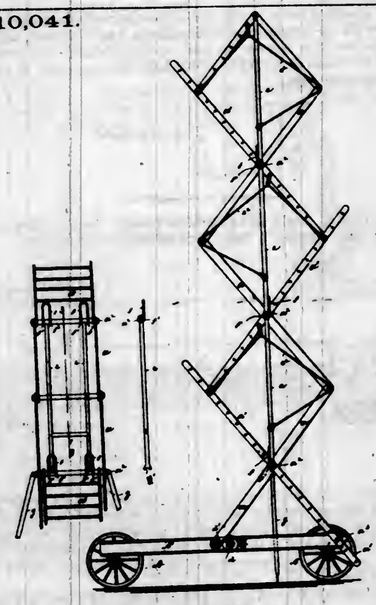
2. In a carbureter, the combination of a closed tank and a closed receptacle, connections respectively between the bottoms and the tops of the tank and receptacle, and feed-pockets adapted to be fed alternately with fluid and with air for the purpose described, the connecting-pipes between the tops of the receptacle and tank being adapted to supply at the top of the main tank an amount of air equal to the amount of fluid fed therefrom.

3. In a carbureter, the combination of a closed receptacle, a closed elevated tank, a feed-pipe for the receptacle leading from the bottom of the tank to the bottom of the receptacle, a pipe connecting the upper part of the receptacle with the upper part of the tank, a movable disk in the receptacle provided with cells, an air-pipe leading into the receptacle on one side of said disk, a pipe leading from the receptacle on the other side of said disk with which pipes said cells are adapted to be alined, and a cut-off adjacent said pipes, substantially as described.

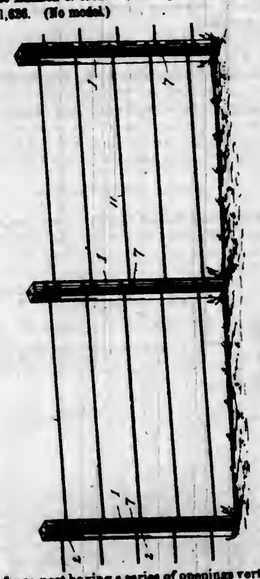
610,041. FIRE-ESCAPE. DAVID FRIEDMAN, New York, N. Y. Filed Nov. 8, 1897. Serial No. 657,742. (No model.)

Claim.—A fire-escape composed of a series of frames and ladders, revoluble rungs for pivotally connecting the same, a series of depending stay-rods, and U-shaped guards having coiled ends that are wrapped around the rungs at both sides of the stay-rods and form continuous lateral abutments, substantially as specified.

610,041.



610,042. FENCE-POST. JAMES C. FROST, Athens, Ohio, assignor of one-third to Addison C. Creamer, same place. Filed May 24, 1898. Serial No. 681,636. (No model.)



Claim.—A fence-post having a series of openings vertically alined in the upper part thereof, combined with open staples or fasteners mounted therein and adapted to the securing of wire runners and having opposite-inturned hooks to engage boards or rails placed therein.

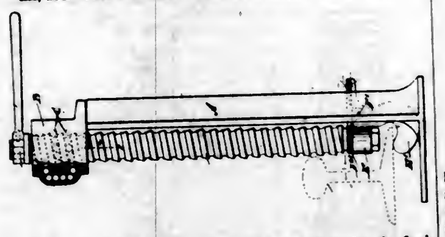
610,043. PROTECTING-PLATE FOR SHOES. HERBERT G. H. GLASS, Detroit, Mich. Filed Nov. 5, 1897. Serial No. 657,495. (No model.)

Claim.—1. In a protector for shoe-soles, a metallic plate, teeth struck out therefrom to form securing means therefor, and a flexible connection between the teeth and plate.

2. A toe-protector for shoe-soles, comprising a sheet-metal plate, teeth struck up therefrom to form securing means therefor, and a flexible connection between the teeth and plate formed by an extension of the tooth in the plane of the plate, by cutting slits D, substantially as described.



610,044. BALL-BEARING SCREW-JACK. DANIEL GLENN, Del Rio, Tex. Filed Oct. 7, 1897. Serial No. 654,355. (No model.)

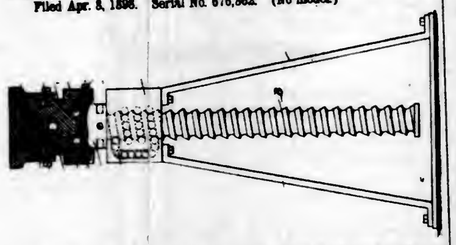


Claim.—1. A ball-bearing screw and nut, each having the flank of the thread receiving the thrust curved to fit the balls and extending over the center of the balls, and the opposite flank of the thread sloping from the point to the root of the thread, the nut having an inclosed passage or ball-race connecting its opposite ends, substantially as described.

2. A screw-jack comprising a threaded shaft and a nut, balls between them, a load-support mounted on one end of the shaft and adapted to engage the object to be lifted, a pawl or ratchet lever mounted on said support, and a ratchet-ring upon the shaft, engaged by said pawl-lever to prevent backward rotation of said shaft, substantially as described.

3. A screw-jack comprising a threaded shaft and a nut, balls between them, a load-support mounted on one end of the shaft and adapted to engage the object to be lifted, an upwardly-facing ratchet-wheel secured to turn with the threaded shaft, and a pawl-lever pivoted on the support and engaging said ratchet-wheel, the opposite end of said lever projecting outward for engagement by the operator's foot to release the ratchet wheel, and a spring normally holding said pawl-lever in engagement with said wheel, substantially as described.

610,045. SCREW-JACK HEAD. DANIEL GLENN, Del Rio, Tex. Filed Apr. 8, 1898. Serial No. 676,862. (No model.)



Claim.— A screw-jack, having a threaded shaft terminating at one end in a peripherally-grooved head, a bearing-head recessed to fit over said head and having an internally-opening groove in the wall of said recess adapted to register with the groove in the shaft-head, locking-blocks fitting said grooves and holding the two parts together, the groove in the bearing-head being of a depth to entirely receive the blocks, and set-screws in the bearing-head and engaging the locking-blocks.

610,046. GAME-BOARD AND EDUCATIONAL APPLIANCE. DOMINIC GOLDEN, Washington, D. C. Filed Feb. 19, 1898. Serial No. 670,954. (No model.)

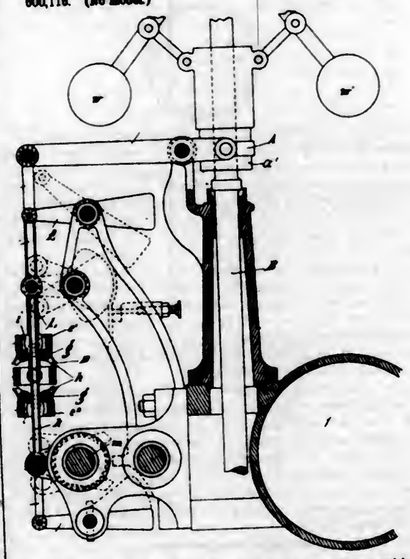
Claim.—1. In an educational appliance, the combination with a chart having a way and a column of numerals representing multiplicands arranged adjacent thereto, of a disk movable in said way and carrying a numeral representing the multiplier and adapted to register with the multiplicands, and a second column of numerals arranged adjacent to the multiplicands and indicating the products obtained by the multiplication, substantially as described.



2. In an educational appliance, the combination with a chart having a way formed therein and a column of numerals representing multiplicands arranged adjacent thereto, of a disk movable in said way and carrying a numeral representing the multiplier and adapted to register with the multiplicands, means for retaining said disk registering with the desired multiplicand, and a second column of numerals arranged adjacent to the multiplicands and indicating the products obtained by the multiplication, substantially as described.

3. In an educational appliance, the combination with a chart having a slot formed therein and a column of numerals arranged on each face thereof adjacent to said slot and representing multiplicands, of a push-button comprising a shank movable in said slot and carrying a disk upon each face of chart, said disks having numerals thereon representing multipliers and adapted to register with the multiplicands, and a second column of numerals on each face of the chart indicating the products of the multiplication, substantially as described.

610,047. CUT-OFF-VALVE-REGULATING MECHANISM. MARTIN HAENSER, Duisburg, Germany. Filed July 22, 1896. Serial No. 600,116. (No model.)

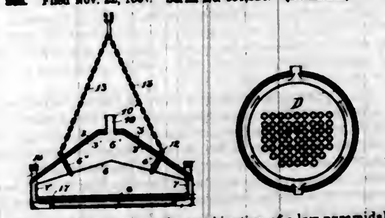


Claim.—1. In a cut-off-regulating mechanism, the combination of the valve or expansion slide, a shifting device therefor connected to the governor and means normally held in position to be operated by said shifting device on motion in either direction to connect said shifting device to the expansion valve or slide to shift the latter and automatically disengage itself therefrom and return to normal position, substantially as set forth.

2. In an expansion-gear mechanism for steam-engines, the combination in a shifting device connected to the governor, detents mounted on each side of said shifting device, a toothed member connected to the expansion valve or slide and adapted to be engaged by said detents and means of disengaging said detents from said toothed member and automatically returning them to normal position, substantially as set forth.

3. In an expansion-valve gear for steam-engines, the combination of the expansion-valve, its shaft, and shifting rings and pawls mounted concentrically with said shaft and connected with the governor, substantially as and for the purposes set forth.

610,048. APPARATUS FOR MINING IN FROZEN GROUND. SAMUEL H. HAYCOCK, Iroquois, and EDWARD B. HAYCOCK, Ottawa, Canada. Filed Nov. 22, 1897. Serial No. 659,536. (No model.)



Claim.—1. In a sinker, the combination of a low pyramidal top, a nozzle at the apex, a vertical rim or flange at the edge, a strengthening-bar along the lower edge of the rim or flange, a non-conducting lining to the top, an inner casing consisting of crown and rim a little distance from the outer one so as to form a space and the rim not extending as far down as the outer one and provided with a strengthening-bar, connections at intervals between the outer casing and the inner, and cross-stays connecting said outer rim, substantially as set forth.

2. In a sinker, the combination of a low pyramidal top, a nozzle at the apex, a vertical rim or flange at the edge strengthened at its lower edge, a non-conducting lining to the top, an inner casing consisting of crown and rim similar to the outer one but smaller and a little distance from it so as to form a space and its rim strengthened at the lower edge not extending as far down as the outer one, connections at intervals between the inner and outer casings, vertical pipes in the spaces between the flanges having lateral bends below and projecting above the top and provided with means of connecting them with hose or closing them, substantially as set forth.

3. A radiating apparatus or sinker approximating the shape of an inverted funnel and consisting of a flattened funnel-shaped top with central nozzle and hose-coupling and having a vertical flange or rim at the lower or outer edge, and an inner casing similar to the outer one but smaller and with crown more depressed and forming a radiating-surface with a space between it and the outer one that is open at the lower edges of the rims, substantially as set forth.

610,049. CAN-TOP. MARY E. HENDERSON, Columbia, Mo. Filed May 25, 1897. Serial No. 638,086. (No model.)

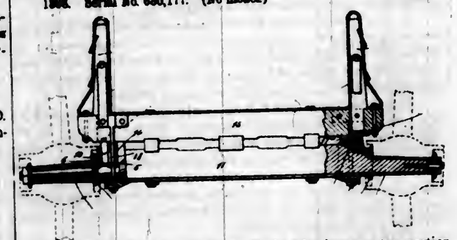


Claim.—1. The improved removable top for cans, comprising a cylindrical body having an arc slot and interior, annular, integral flange which is separated from said body by a narrow space, a circular slide or cut-off which is arranged and adjustable in such space or groove, and a lateral arm fixed on said slide and projecting through the arc slot, the said body and slide having registrable openings or outlets, as shown and described, to operate as specified.

2. The combination, with the can-body, of the removable top, the same being united by a screw-joint, said top having a vertical annular space or groove, also a lateral arc slot, and outlet-openings, an adjustable annular slide or cut-off arranged in such groove, having a lateral arm projecting through the arc slot, and an outlet adapted to be placed in coincidence with the first-mentioned outlets, and the removable screw cap or cover, as shown and described.

3. A removable can-top composed of two concentric cylinders of different diameters united at their lower ends to form between them an annular groove open on top, outlet-openings through each, an annular slide in said groove for opening and closing said outlet-openings, means for operating said slide, and a removable cap for said top, all combined substantially as described.

610,050. BOLSTER-STOOL. JAMES F. HERSEY, Winona, Minn., assignor to the Winona Wagon Company, same place. Filed May 9, 1898. Serial No. 680,177. (No model.)



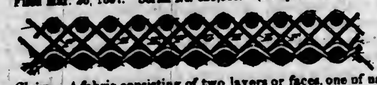
Claim.—1. A bolster-stool provided at its lower outer portion with an outwardly-projecting arc-shaped flange having at its end an upwardly-extended wall, the stool also having at its front and rear sides vertical parallel ribs forming grooves, and the stool also having in its top surface a transverse groove terminating at its outer end in an upwardly-extended lug, the bottom surface of the stool being concave and provided with a rib.

2. A bolster-stool having at its lower outer portion an upwardly-projected arc-shaped flange terminating at its outer edge in an upwardly-extended wall, the flange being adapted to extend into the space inclosed by the collar of the wheel-hub, so that the wall abuts against the inner end of the hub.

3. A bolster-stool having a concave bottom surface, and an upwardly-extending lug at its top surface, the front and rear of the stool having vertically-extending parallel ribs.

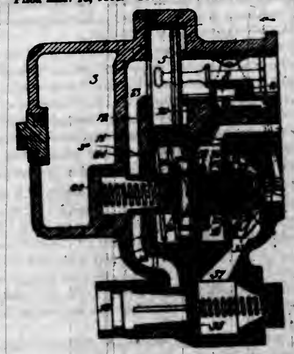
4. A bolster-stool having in its top surface a transverse groove, at the outer end of which is an upwardly-extended lug.

610,051. WOVEN FABRIC. ROBERT H. HEY, Philadelphia, Pa. Filed Mar. 26, 1897. Serial No. 629,309. (No specimens.)



Claim.—A fabric consisting of two layers or faces, one of napped woolen material and the other of cotton, each layer having an equal number of fillers, the cotton layers having additional warps passing alternately above and below its fillers, and the fillers of the woolen layer being connected to the cotton fillers by four series of woolen warps, the adjacent threads of each series of woolen warps passing around the different fillers, and a thread of each of said four series passing around the fourth consecutive filler of each layer of fillers and all of said warp-threads serving as binders, said fillers having no floats therebetween.

610,052. DEVICE FOR ACTUATING FLUID-PRESSURE BRAKES. MAURY W. HIBBARD, Chicago, Ill., assignor to Richard Fitzgerald, same place. Filed Mar. 15, 1898. Serial No. 674,304. (No model.)



Claim.—1. In a brake mechanism, the combination, with the train-pipe, brake-cylinder and auxiliary reservoir, of valve mechanism for admitting fluid under pressure to the brake-cylinder and means inde-

pendent of the brake-cylinder pressure and also independent of the difference between the train-pipe pressure and the auxiliary-reservoir pressure for closing such valve mechanism.

2. In a brake mechanism, the combination with the train-pipe, brake-cylinder and auxiliary reservoir, of valve mechanism for admitting fluid-pressure from the train-pipe to the brake-cylinder in emergency action and means for closing such valve mechanism independently of train-pipe pressure in such action.

3. In a brake mechanism, the combination with the train-pipe, brake-cylinder and auxiliary reservoir, of valve mechanism for admitting fluid-pressure to the brake-cylinder from the auxiliary reservoir and the train-pipe and means for closing such valve mechanism independently of train-pipe pressure in such action.

4. In a brake mechanism, the combination, with the train-pipe, brake-cylinder and auxiliary reservoir, of valve mechanism for admitting fluid under pressure to the brake-cylinder, a movable abutment to actuate such mechanism, and an expansion-chamber normally in communication with the train-pipe and whose pressure, after emergency operation, is adapted to operate the abutment to close the port to the brake-cylinder and close communication between the brake-cylinder and auxiliary reservoir.

5. In a brake mechanism, the combination with the train-pipe, brake-cylinder and auxiliary reservoir, of valve mechanism for admitting fluid under pressure to the brake-cylinder, and an air-chamber independent of the train-pipe and auxiliary reservoir and whose pressure closes such valve mechanism and cuts off communication between the auxiliary reservoir and brake-cylinder after an emergency action and before restoration of train-pipe pressure.

6. In a brake mechanism, an emergency-valve mechanism for operating the brakes in emergency action and closing the communication between the auxiliary reservoir and brake-cylinder after an emergency action and before restoration of train-pipe pressure whereby the pressure as equalized in emergency action is retained in the auxiliary reservoir.

7. In a brake mechanism, a pressure-reducing valve for reducing the pressure in the brake-cylinder, in combination with means adapted to admit fluid pressure into the brake-cylinder and to retain the emergency pressure in the auxiliary reservoir during the emergency application of the brakes.

8. In a brake mechanism, the combination, with a train-pipe, a brake-cylinder and an auxiliary reservoir, of valve mechanism for admitting fluid under pressure to the brake-cylinder, means for closing such mechanism to cut off communication between the brake-cylinder and auxiliary reservoir after an emergency operation of the parts and during the emergency application of the brakes and means for reducing the brake-cylinder pressure above a predetermined amount.

9. In a brake mechanism, the combination with a train-pipe, a brake-cylinder and an auxiliary reservoir, of a casing having valve mechanism for admitting fluid-pressure to the brake-cylinder from both the train-pipe and auxiliary reservoir in emergency action, means for closing such mechanism to cut off communication between the brake-cylinder and auxiliary reservoir after an emergency operation of the parts, and means for relieving the brake-cylinder of pressure proportionate to the decrease of speed of the car.

10. In a brake mechanism, the combination, with the train-pipe, brake-cylinder and auxiliary reservoir, of valve mechanism for admitting fluid under pressure to the brake-cylinder from the train-pipe and auxiliary reservoir, means for causing such mechanism to close, after an emergency movement thereof, to cut off communication between the auxiliary reservoir and brake-cylinder, and a blow-down device for relieving excess pressure in the brake-cylinder by a slow initial reduction and an increased subsequent reduction proportionate to the decrease in speed of the car.

11. In a brake mechanism, the combination of an emergency-valve traveling in a chamber and adapted to vent train-pipe pressure into the brake-cylinder, a movable abutment for actuating said valve, means for releasing pressure from behind the abutment at emergency action and means for restoring pressure behind the abutment and moving the same to close communication between the brake-cylinder and the auxiliary reservoir after emergency pressure has obtained in the brake-cylinder and before restoration of train-pipe pressure.

12. In a brake mechanism, the combination of a train-pipe, a brake-cylinder, an auxiliary reservoir, a casing having a chamber, with connections respectively with the train-pipe, brake-cylinder and auxiliary reservoir, a partition therein, valve mechanism working therethrough to admit auxiliary-reservoir and train-pipe pressure into the brake-cylinder, a movable abutment traveling in said chamber to actuate said mechanism and having train-pipe pressure on one face and auxiliary pressure on the other face and means for releasing the brake-cylinder.

13. In a brake mechanism, the combination of a valve mechanism for admitting fluid-pressure to a brake-cylinder, a movable abutment traveling in a chamber for actuating such valve mechanism and normally having train-pipe pressure on one face and auxiliary-reservoir pressure on the other face, means for venting in emergency action the pressure from behind the movable abutment and into the brake-cylinder, an expansion-chamber communicating with the abutment-chamber and an annular flange on the abutment adapted to close communication between the expansion-chamber and train-pipe and permit the pressure of such expansion-chamber to restore the valve mechanism and close communication into the brake-cylinder.

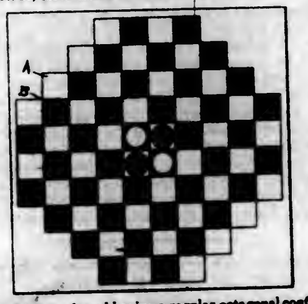
14. In a brake mechanism, the combination of a casing having two chambers, a service and an emergency valve working together in one of such chambers and adapted to control admission of pressure into the brake-cylinder, means for actuating the valves to close communication into the brake-cylinder after emergency action independent of restoration of train-pipe pressure and brake-release mechanism operating in the other of the two chambers.

15. A pressure-releasing device for the brake-cylinder pressure in a brake mechanism comprising a hollow casing communicating with the pressure of the brake-cylinder, a valve in the casing normally closing a port to the atmosphere but adapted to open such port when the brake-cylinder pressure rises to a predetermined point, and a second valve in the casing for causing an increased reduction after the initial reduction.

16. A pressure-releasing device for the brake-cylinder pressure in a brake mechanism comprising a hollow casing communicating with the pressure of the brake-cylinder, a valve in the casing for controlling an exhaust-port to the atmosphere and opening the same when the brake-cylinder pressure rises to a predetermined point, and a second valve controlling a second exhaust-port and adapted to open the same after the first reduction whereby an increased subsequent reduction is obtained.

17. A pressure-releasing device for brake-cylinder pressure in a brake mechanism comprising a casing communicating with the pressure of the brake-cylinder, a hollow valve therein having a passage therethrough, and governing an exhaust-port, a second valve traveling within the first valve and governing the passage through such first valve to a second exhaust-port and a spring adapted to raise the second valve to permit pressure to blow thereabout and escape through the second exhaust-port.

610,053. GAME APPARATUS. ALFRED HOSER, New York, N. Y. Filed Nov. 20, 1897. Serial No. 660,063. (No model.)



Claim.—A game-board having a regular octagonal configuration and subdivisions formed by lines crossing each other at right angles and parallel with two opposite sides of the game-board, there being four subdivisions on each of the eight sides, substantially as set forth.

610,054. HANDLE FOR CASKETS. FRANCIS J. HOWELL, Cincinnati, Ohio, assignor to the Cincinnati Coffin Company, same place. Filed Oct. 15, 1897. Serial No. 655,260. (No model.)

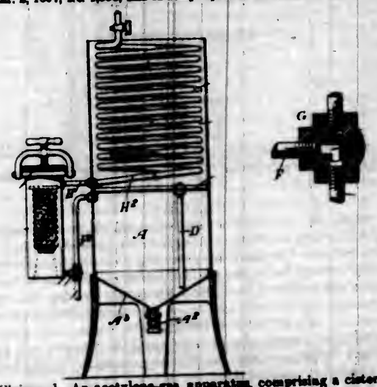


Claim.—1. In a handle for caskets, the combination of a base-piece having an orifice therein, a raised rim surrounding said orifice, said rim being provided with lip D, the bottom of the orifice forming a ledge M, a handle-piece pivoted in said orifice closing and concealing the same in both raised and lowered positions, said handle-piece in its raised position bearing against the end of the lip D and the ledge M.

2. In a handle for caskets the combination of the base-piece having an orifice therein and raised rim around the sides of said orifice, a handle pivoted in said orifice, the upper end of said handle-piece having a rabbet which fits the edge of said rim whereby the said orifice is closed and concealed in the lowered position of the handle.

3. In a handle for coffins, the combination of a base-plate having an orifice therein, a raised rim around the sides of said orifice, a handle pivoted in said orifice the upper end of said handle-piece having a rabbet which fits the edge of said rim when the handle is lowered, the handle-piece when raised bearing against the under surface of the under edge of the rim only, and not against its face whereby the orifice is closed and concealed in both the raised and lowered positions of the handle and abrasion or disfiguring of the surface of the plate is prevented, substantially as described.

610,055. APPARATUS FOR PRODUCING ACETYLENE GAS. THOMAS HOLLIDAY, Huddersfield, England. Filed Nov. 13, 1896. Serial No. 612,060. (No model.) Patented in England Mar 16, 1896, No. 5,813, and Jan. 13, 1897, No. 995; in France June 11, 1896, No. 256,168; in Belgium June 16, 1896, No. 131,951; in Cape Colony Nov. 26, 1896, No. 1,266; in Transvaal Dec. 9, 1896, No. 1,876; in Natal Dec. 31, 1896, No. 12; in Switzerland Jan. 21, 1897, No. 12,631; in Hungary Jan. 21, 1897, No. 23,311; in Austria Jan. 21, 1897, No. 47/1,018; in India Feb. 17, 1897, No. 66; in Victoria Feb. 16, 1897, No. 13,949; in South Australia Feb. 19, 1897, No. 2,557; in New South Wales Feb. 20, 1897, No. 7,279; in Portugal Feb. 21, 1897, No. 2,409; in Tasmania Feb. 23, 1897, No. 1,831; in Queensland Feb. 23, 1897, No. 3,761; in Spain Feb. 23, 1897, No 20,374; in New Zealand Feb. 27, 1897, No. 8,306; in West Australia Mar. 2, 1897, No. 1,533, and in Italy Apr. 23, 1897, LXXXVI, 76.



Claim.—1. An acetylene-gas apparatus, comprising a cistern, a holder below the cistern and into which a pipe from the cistern extends nearly to the bottom thereof, a coil of pipe in the cistern and adapted to be connected with the service-pipe, a gas-generator connected directly with the said coil, and a pipe leading from the lower end of the generator into the upper end of the holder and provided with a three-way cock, substantially as described.

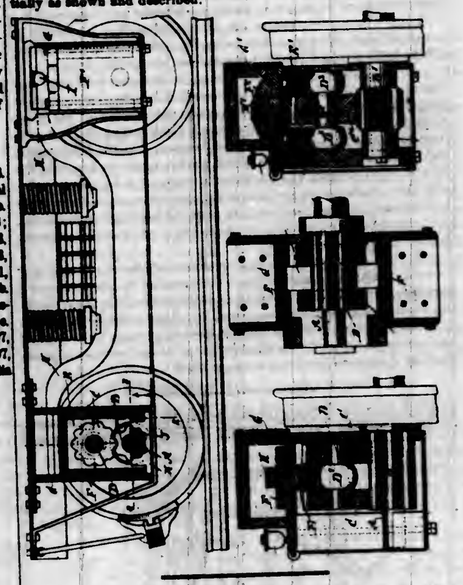
2. An acetylene-gas apparatus consisting of a water-holder having a drain-pipe in its bottom, a cistern above the holder and separated therefrom by a horizontal partition, a pipe leading from the partition down to within a short distance of the bottom of the holder, a coil of pipe in the cistern and adapted to be connected with a service-pipe, a generator having its upper end connected with the said coil, said generator being outside of the holder and on about a level therewith, a pipe leading from the upper end of the holder to the lower end of the generator, and a three-way cock in said pipe, substantially as herein shown and described.

610,056. CAR-AXLE BOX. ELISHA J. HUNT, New York, N. Y. Filed Dec. 14, 1897. Serial No. 661,822. (No model.)

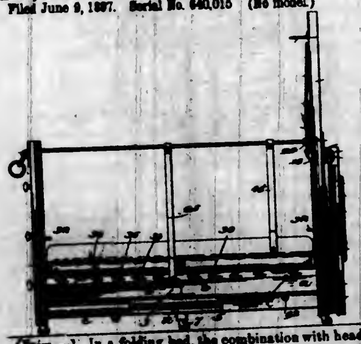
Claim.—1. A car-axle box comprising a box proper, a brass in the said box, a journal extending into the said box below the brass, a wheel secured on the said journal and a second wheel having its under side in mesh with the top of the said journal-wheel, the shaft of this second wheel being journaled on the said brass, substantially as shown and described.

2. A car-axle box, comprising a box proper, a brass in the said box, a journal extending into the said box, a toothed wheel secured on the said journal, a second toothed wheel having its under side in mesh with the upper part of the said journal-wheel, a shaft carrying the said second toothed wheel and a ball-head on the said shaft and engaging a corresponding seat on the said brass, substantially as shown and described.

3. A car-axle box, a pedestal carrying the box, an equalizing-bar engaging the box, a brass fitted to slide in said box, a shaft having a ball-head seated on said brass, a wheel carried by said shaft, a second wheel in mesh with the first-named wheel, and a journal extending into the box, and carrying the said second wheel, substantially as shown and described.



610,057. FOLDING BED. FREDERIK JENSEN, Seattle, Wash. Filed June 9, 1897. Serial No. 640,015. (No model.)



Claim.—1. In a folding bed, the combination with head and foot boards, of side rails connected thereto and comprising several sections hinged to each other, the headboard having a hinged extension which forms the top of the bureau when the parts are folded, together with eyes attached to the head and foot boards, and detachable boards which form the sides of the bureau, provided with hooks to engage the eyes substantially as shown and for the purpose set forth.

2. In a folding bed, the combination with head and foot boards, of the side rails each consisting of several sections hinged to each other so that the intermediate sections will fold upward upon each other, an extension hinged to the upper part of the head-section and having a flange at its outer end provided with openings, eyes projecting outwardly from the foot-section, and a locking-bar adapted to engage the eyes, substantially as shown and for the purpose set forth.

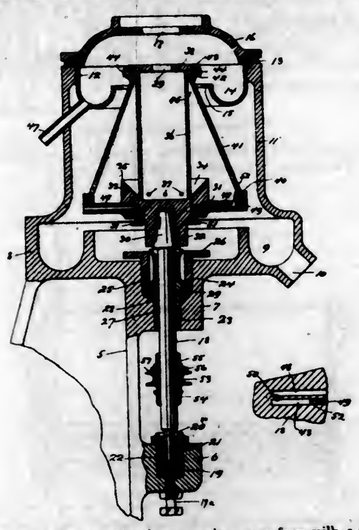
3. In a folding bed, the combination with head and foot boards, of the side rails each consisting of several sections hinged to each other so that the intermediate sections will fold upward, an extension hinged to the upper end of the headboard and provided at its inner and outer ends with flanges having openings therein, eyes projecting from the upper end of the head-section and from the upper end of the foot-section, and a locking-bar adapted to engage the eyes for holding the extensible section in its adjusted positions, substantially as shown and for the purpose set forth.

4. In a folding bed, the combination with the head and foot sections, of the side rails each consisting of several sections hinged to each other so that the intermediate sections will fold upward, an extension hinged to the upper end of the headboard and having a flange at its outer end and openings therein, eyes projecting outward from the upper end of the footboard, rods or bars pivoted to the head-section and having eyes which are brought on a horizontal line with the eyes of the foot-section, and a locking-bar adapted to be passed through the eyes, said rods having curtains attached thereto, substantially as shown and for the purpose set forth.

5. In a folding bed, the combination with the head and foot boards and sectional side rails connecting the same, of an extension hinged to the upper end of the headboard having a projecting flange at its outer end provided with openings, a footboard having eyes with which the flange engages, rods or bars connected to the head-section and having eyes at their ends which are brought on a line with the eyes of the footboards, and a locking-bar engaging the eyes; together with side boards having hooks which engage the cross-bars and other hooks which engage eyes extending from the head and foot sections, said boards forming the sides of the bureau, substantially as shown and for the purpose set forth.

6. In a folding bed, the combination with the head and foot sections connected to each other by a sectional bed-bottom, and a sectional spring-mattress mounted upon the bed-bottom and comprising upper and lower frames separated by elastic coil-springs, the intermediate sections of the spring-mattress being hinged to each other, said spring-mattress comprising short foot and head sections, substantially as shown and for the purpose set forth.

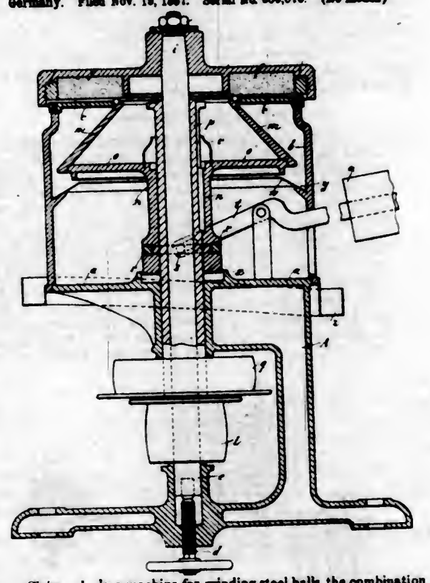
610,058. CENTRIFUGAL CREAMER. FREDERICK G. JOHNS, Bristol, England. Filed Aug. 25, 1897. Serial No. 648,462. (No model.)



Claim.—1. In a machine for separating cream from milk, a drum provided with means for withdrawing the blue milk at the bottom thereof, comprising a plurality of radial bores or passages, each of which consists of two radial bores 48, a communicating passage 50 at the inner end thereof, a passage 52, communicating with the interior of the drum, and means to regulate the flow of milk through the said passages comprising a screw-threaded plug 49 and a set-screw 50, substantially as and for the purpose described.

2. In a machine for separating cream from milk, a drum revolubly mounted in a suitable casing and provided with means to withdraw the blue milk from the bottom thereof comprising a plurality of radial passages, each of which consists of two radial passages 48, a communicating passage 50 at the inner end thereof and a passage 52 communicating with the interior of the drum and the cream from the top thereof, and means to centrifugally introduce the milk into the drum above the said blue-milk passage consisting of a cylindrically-raised portion formed centrally on the upper side of the base of said drum and provided with a flaring chamber or recess in the upper side thereof, a milk-tube mounted centrally of said drum and extending into said flaring chamber, said milk tube being provided at the bottom thereof with a plurality of openings whereby milk is introduced into the said flaring chamber at the bottom thereof and means for introducing milk into said milk-tubes, substantially as shown and described.

610,059. MACHINE FOR GRINDING CAST-STEEL BALLS. CARL R. KAPPLER, Gochsheim, and FRIEDRICH SCHUNK, Schweinfurt, Germany. Filed Nov. 19, 1897. Serial No. 659,076. (No model.)



Claim.—1. In a machine for grinding steel balls, the combination of a horizontally-revolving grinding member, presenting a horizontal grinding-face, a fixed member, presenting a vertical grinding-face, a member rotating horizontally at a different speed to the first-named member and presenting a conical grinding-face, the said three grinding-faces leaving between them an annular channel of triangular form, wherein the balls are received and ground by contact with said members only, the conical member being vertically movable, and means, such as a weight connected to the conical member to maintain the said channel of constant size.

2. In a grinding-machine for steel balls, the combination of a horizontally-revolving grinding member, presenting on its lower side a horizontal grinding-face, a fixed member presenting a vertical grinding-face, and a rotating member presenting a conical grinding-face inclosing with the aforesaid grinding-faces, an annular triangular channel for receiving the balls, means for moving the conical grinding member vertically, and a channel arranged around and below said conical grinding member to receive and collect the balls when released from the grinding-channel by depression of such member.

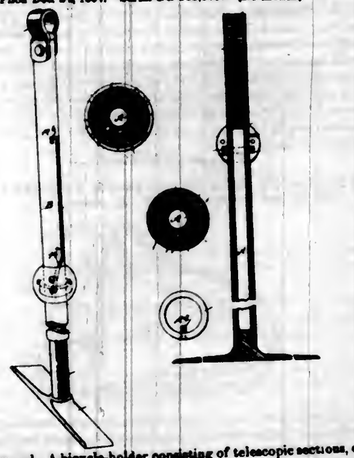
610,060. DEVICE FOR PREVENTING BAGGING OF TROUSERS AT THE KNEE. SOLOMON KEPNER, Pottstown, Pa. Filed Dec. 21, 1897. Serial No. 662,784. (No model.)



Claim.—1. The combination with the sleeve of a garment, of longitudinally-disposed attachments respectively secured at opposite sides of the sleeve, and consisting respectively of inflexible sections universally connected, substantially as specified.

2. The combination with a garment-sleeve having longitudinally-disposed side seams, of an attachment secured to each seam at opposite points and each consisting of two inflexible sections universally connected and having rearwardly-extending terminal eyelets, said attachments being secured to the garment by stitches passing through the terminal eyelets and stitches engaging the sections adjacent to the universal connection, substantially as specified.

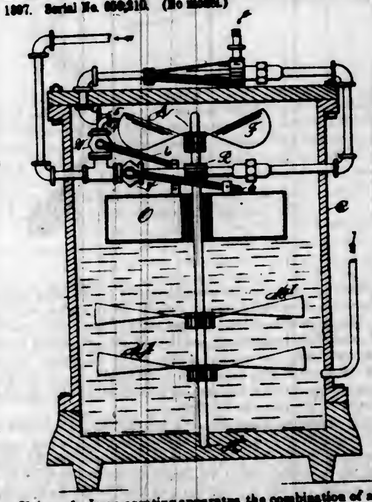
610,061. BICYCLE-STAND. PERCY W. KIRKPATRICK, Bellair, Fla. Filed Dec. 24, 1897. Serial No. 663,575. (No model.)



Claim.—1. A bicycle-holder consisting of telescopic sections, one of the sections being spring-controlled and provided with a base, and the other section being provided with a slot having a locking-section at one end and a curved section at the opposite end, a slide loosely mounted on the slotted section of the holder, a ring loosely mounted in the slide, a guide-pin carried by the ring, which pin is passed through the said slot and is attached to the base-carrying section of the holder, and a locking device also carried by the said slide, as and for the purpose set forth.

2. In a bicycle-holder, the combination, with an inner tube, a base attached thereto, an outer and longer tube, a spring located between the ends of the two tubes and connected therewith, the outer tube being provided with a slot having an angular upper portion and a curved lower portion, of a slide loosely mounted on the outer tube, a ring loosely mounted in the slide, a guide-pin carried by the ring passing through said slot to an engagement with the inner section of the holder, and a locking-pin carried by the slide, also entered into the said slot, operating independently of the guide-pin, for the purpose set forth.

610,062. AUTOMATIC CARBONATING APPARATUS. ERIL KOENIG and MITCHELL L. BELLANGER, New York, N. Y. Filed Nov. 19, 1897. Serial No. 659,210. (No model.)



Claim.—1. In an aerating apparatus, the combination of a chamber and fluid-supply pipe leading into the chamber, a valve in said pipe, a float within the chamber connected to operate said valve, and a rotating agitating device immersed by the liquid and having blades above the level of the contained liquid impinged on by the incoming fluid from said supply-pipe, as set forth.

2. In an aerating apparatus, the combination of a chamber and gas-supply pipe having two outlets leading to said chamber, a water-supply also communicating with said chamber, and float-controlled means for controlling each of the gas-inlets as set forth.

3. In an aerating apparatus, the combination of a chamber and gas-supply pipe leading to said chamber, an uninterrupted water-supply communicating with the gas-supply pipe, and automatically-operated valves for controlling the supply of gas to the water-supply or to the chamber according to the height of water therein as set forth.

4. In an aerating apparatus, the combination of a carbonating-chamber, a gas-supply pipe leading to said chamber and having two orifices, a water-supply communicating with one of said orifices, valves interposed in the pipe leading to said orifices, and automatic means for reversely operating said valves controlled by the height of water or other beverage in said chamber as set forth.

5. In an aerating apparatus, the combination of a carbonating-chamber a gas-supply pipe leading to said chamber and having two orifices a water-supply communicating with one of said orifices valves interposed in the pipe leading to said orifices automatic means for reversely operating said valves controlled by the height of water or other beverage in said chamber as set forth.

6. In an aerating apparatus, the combination, of a chamber, a gas-supply pipe leading to said chamber and having two orifices, a water-supply communicating with one of said orifices, valves interposed in the pipe leading to said orifices, means for reversely operating said valves controlled by the height of water or other beverage in said chamber, and a rotatable agitating device operated by the pressure of the incoming fluid from either one of said orifices, as set forth.

7. In an aerating apparatus the combination of a carbonating-chamber a gas-supply pipe leading to said chamber and having two orifices a water-supply communicating with one of said orifices valves interposed in the pipe leading to said orifices means for operating said valves controlled by the height of water or other beverage in said chamber and a rotatable agitating device operated by the pressure of the incoming fluid from either of said orifices and a float-operated means for maintaining a constant level of the liquid, as set forth.

8. In an aerating apparatus the combination of two gas-outlets discharging into the aerating-chamber valves controlling said outlets a water-supply connecting with one of said gas-outlets and a float for simultaneously controlling said valves closing one and opening the other as set forth.

9. In an aerating apparatus the combination of a chamber a gas-supply leading to said chamber, a water-supply leading to the orifice of the gas supply a valve for controlling the gas supply and automatic means for controlling said valve and the level of the liquid in said chamber and a rotatable device immersed in the liquid for circulating the liquid in said chamber having blades above the contained liquid operated by the inflowing fluid-supply as set forth.

10. In an aerating apparatus the combination of a chamber a gas-supply having two inlets to said chamber a water supply communicating with one of said inlets means for controlling the admission of gas from either one of said inlets and a rotatable device for circulating the liquid in said chamber operated by the pressure passing from either one of said inlets, as set forth.

11. In an aerating apparatus the combination of a chamber a gas-supply leading to said chamber a rotatable device operated by the pressure from the gas-supply admitted above the level of the contained liquid means for maintaining said level substantially constant and means operated by said rotatable device for causing the downward circulation of the water in said chamber as set forth.

12. In an aerating apparatus the combination of a chamber a gas-supply leading to said chamber a rotatable device operated by the pressure from the gas-supply admitted above the level of the contained liquid means for maintaining said level substantially constant and means operated by said rotatable device for causing the downward circulation of the water in said chamber as set forth.

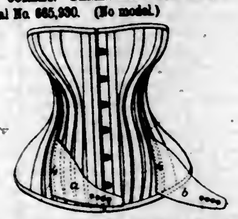
13. The combination of a chamber an inlet for supplying gas thereto, an injector connected to a liquid-supply and to a gas-supply, valves for controlling the supply of gas to the chamber and to the injector, a float in the chamber and connections between the float and the valves, whereby the supply of gas to the chamber is closed, and the supply of gas to the injector is opened as the liquid in the chamber falls, as set forth.

14. In an aerating apparatus the combination of a chamber a drawing-off pipe a supply for water and gas and a rotatable device extending above the level of the liquid and having one or more revolving blades the angularity of the blade or blades being such as to cause a downward movement of the water or other beverage, and means for maintaining the level of said liquid substantially constant as set forth.

15. In an aerating apparatus the combination of a carbonating-chamber, a drawing-off pipe, a gas-supply pipe leading into and through said chamber projecting outwardly of said chamber and connecting with the water-supply chamber on top of the carbonating-chamber as set forth.

16. In an aerating apparatus the combination of a carbonating-chamber, a drawing-off pipe, a gas-supply pipe leading into and through said chamber, having on the inside of said chamber a branch, two valves of which one is interposed in said pipe and the other in said branch and a ring or collar to which the stem or shaft of a rotatable agitating device is journaled, as set forth.

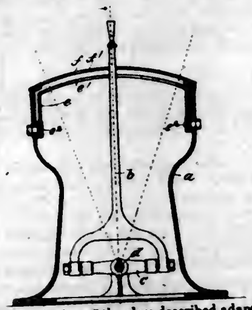
610,068. CORSET. DANIEL KOPS, New York, N. Y. Filed Jan. 7, 1898. Serial No. 665,930. (No model.)



Claim.—1. In a corset, the tapering straps having convex edges at their wider ends where they are attached to the corset and inturned edges and a strip of bias fabric folded and secured between the inturned edges by lines of stitches, substantially as set forth.

2. In a corset the tapering straps attached at their wider ends to the corset and each having inturned edges stitched together and an interior strip of webbing extending through the strap and sewed to the corset with the strap at the wider end and eyelets passing through the fabric and through the webbing near the narrower end, substantially as set forth.

610,064. CONTROLLING DEVICE. KARL A. R. D. KÖTTGEN, Charlottenburg, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Dec. 30, 1897. Serial No. 664,576. (No model.)



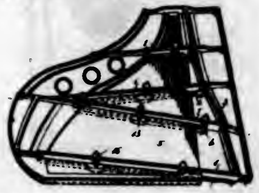
Claim.—1. In a device of the class described adapted to control a plurality of appliances, the combination with a controlling-lever, of a mounting therefor adapted to permit its composite movement, a guide-plate adapted to direct the movement of said lever, a slotted controller part *e* adapted to be moved by the lateral actuation of said lever, and connecting parts uniting the lever and controller part with the controlled appliances, substantially as described.

2. The combination in a controlling device with a plate *f* provided with a branched guiding-slot, of a laterally-movable slotted controller part *e*, a controlling-lever extending through said slotted parts, a mounting therefor adapted to permit the composite movement of said lever, and connecting parts uniting the controlling-lever and part *e* with the controlled machinery, substantially as described.

3. The combination in a controlling device, with an operating-lever, of a universal joint or mounting permitting a free movement of said lever in any desired direction, a guiding way or slot adapted to direct the movement of said lever in the necessary direction, a slotted controller part *e* adapted to be actuated by the lateral movement of the operating-lever, a plurality of separate controlling appliances governing the controlled machinery, and means for transmitting to said several appliances the corresponding movement of said operating-lever and controller part *e*, substantially as described.

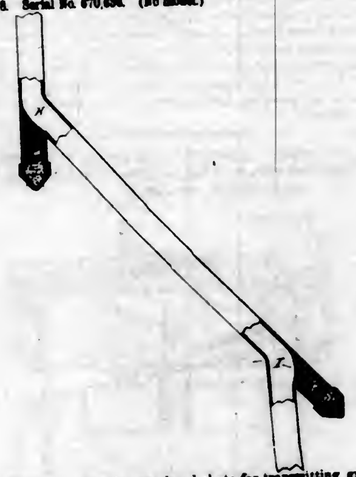
4. The combination in a controlling device for electrically-actuated appliances, with electrical and mechanical controlling apparatus as a switch or starting-box, and a brake device suitably connected with the controlled machinery and a source of electrical energy, of an actuating-lever *b*, a universal mounting therefor, a guide-plate *f* having a branched slot adapted to direct the several movements of said lever, slotted controller part *e* pivotally mounted and adapted to be moved by the lateral movement of the lever, and means for connecting said lever and controller part with the said mechanical and electrical controlling apparatus, whereby the separate movements of said lever are communicated to the respective pieces of apparatus and the connected machinery is in turn controlled, substantially as described.

610,065. PIANO. BERNARD KROEGER, White Plains, N. Y. Filed Feb. 15, 1896. Serial No. 670,273. (No model.)



Claim.—In a piano, a string-frame comprising cross-bars and the casting, a sounding-board arranged below the frame and trusses below the sounding-board, a truss being directly under each cross-bar, and each truss having one end extended freely through an opening in the sounding-board and engaging against the casting, the opposite ends of the trusses being secured to the bars by means of bolts passing through the bars, the truss and through spacing-blocks, and bolts connecting the central portion of each truss to its bar, the said bolts passing through enlarged openings in the sounding-board, substantially as specified.

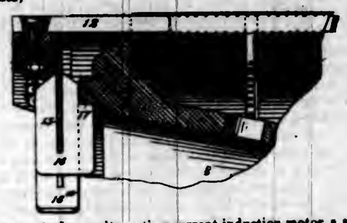
610,066. GRAIN-CHUTE. FRED KUBER, New York, N. Y., assignor of one-half to Raymond L. Ward, same place. Filed Feb. 17, 1898. Serial No. 670,636. (No model.)



Claim.—1. A continuous-closed chute for transmitting grain or like material, composed of sections which lie at angles relative to each other, a pocket adapted to catch and hold some of the material and located intermediate and just beyond the intersection of such continuous-angling sections and at the end of the section through which the material first passes, and a removable cap for closing or opening said pocket and adapted to be removed without disturbing the chute, for the purposes set forth.

2. A continuous-closed chute for transmitting grain or like material, composed of a plurality of sections, each succeeding section connecting with the side of the preceding one some distance above its end, the projecting end of the preceding section being closed to form a pocket adapted to catch and hold some of the material, said pocket being disconnected from any chute except at its upper end, there being also an unobstructed passage-way for the material over that which is held in the pocket, for the purposes set forth.

610,067. INDUCTION-MOTOR. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed July 22, 1897. Serial No. 645,511. (No model.)

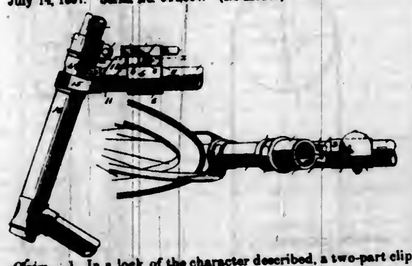


Claim.—1. In an alternating-current induction-motor, a secondary member comprising a spider, a laminated, slotted core, bar conductors located in the core-slots and projecting beyond the ends of the same, and resistance-rings provided with ventilating and centering blades which are bolted to the inner sides of the projecting ends of the bar conductors, and have shoulders bearing against the adjacent portion of the spider.

2. In an induction alternating-current motor, a secondary member comprising a spider, a laminated core provided with slots, bar conductors located in said slots and projecting beyond the ends of the same and resistance-rings fastened to the inner sides of the projecting ends of the conductor-bars by means of bolts, nuts and spring-washers, and provided with ventilating-blades some of which have shoulders engaging the adjacent portion of the spider.

3. In an alternating-current induction-motor, a secondary member comprising a spider, a laminated core mounted thereon and provided with slots, bar conductors located in said slots and projecting beyond the ends of the same, and resistance-rings bolted to the inner sides of the ends of the conductor-bars and having an inwardly-projecting plate provided with ventilating-blades some of which have shoulders engaging the adjacent portion of the spider.

610,068. BICYCLE-LOCK. LOUIS T. LAFAUCH, Utica, N. Y. Filed July 14, 1897. Serial No. 644,567. (No model.)



Claim.—1. In a lock of the character described, a two-part clip, arms connected thereto and spaced slightly apart and also adapted to embrace the head of the machine, securing means for the two parts of the clip a notched reciprocating bolt mounted on the clip and having a guide-plate traveling between said arms, a flat-sided locking-bolt adapted to engage one of a series of notches in the reciprocating bolt, and also to lock said securing means and means for operating said locking-bolt, substantially as described.

2. In a lock of the character described, the combination with the clamp-collar of a safety-bicycle, of a reciprocating bolt mounted on the machine and having a flanged head embodying obliquely-disposed ears to engage said clamp-collar and hold the steering-wheel at an angle, and means for locking said bolt when adjusted, substantially as described.

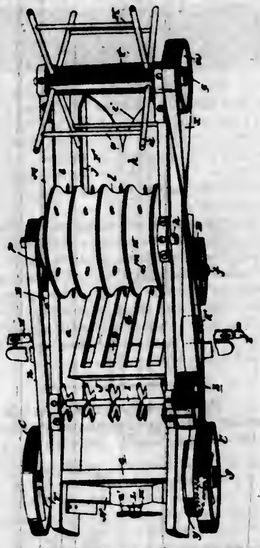
3. The combination with a bicycle having the usual clamp-collar on the handle-bar stem, of a reciprocating bolt having a flanged head embodying obliquely-disposed ears to engage said clamp-collar, one of said ears being provided with a socket to receive the head of the clamping-screw and locking means for holding said reciprocating bolt, substantially as described.

4. In a lock of the character described, the combination with the head-clamp of a bicycle, of a reciprocating bolt mounted on the machine and provided with a head embodying oppositely-arranged ears to engage the clamp-collar, and flanges on one of said ears to embrace the head of the clamping-screw, substantially as described.

5. In a lock of the character described, the combination with the usual clamping-collar of a bicycle, of a reciprocating bolt, a guide-plate on said bolt adapted to engage notches in the ball-cup on the machine-head, a stud on said guide-plate for engaging one of a series of openings in the head-tube, and means for locking said bolt when adjusted, substantially as described.

6. In a lock of the character described, the combination with a reciprocating bolt having a flanged head for engaging the usual clamp-collar on the handle-bar stem of a bicycle, of a clip in which the reciprocating bolt is mounted, said clip being composed of two members adapted to embrace one of the machine-bars and connected by a bolt passing therethrough and having a flat-sided nut thereon, a flat-sided locking-bolt for engaging the reciprocating bolt and also forming a lock for the aforesaid nut, and means for reciprocating said locking-bolt, substantially as described.

610,069. CANE-CUTTER. ALFIO LE BLANC, New Orleans, La. Filed Oct. 26, 1897. Serial No. 656,234. (No model.)



Claim.—1. A machine for harvesting cane comprising a main frame, a cutter connected to the frame and adapted to cut the cane near the ground, a suitable apron extending upwardly and rearwardly from the cutter, a rotary drum arranged above the apron and having circumferential grooves for guiding the cane, and radial barbs arranged in said grooves and a suitable means for rotating the drum, substantially as specified.

2. A machine for harvesting cane comprising a main frame, a cutter connected to the frame and adapted to cut the cane near the ground, a suitable apron extending upwardly from the cutter, a suitable means for moving the cane up the apron, a transverse shaft arranged in rear of the upper end of the apron, cutters fixed on said shaft at intervals in its length and disposed in the direction of the length of the machine, and suitable means for rotating the shaft, substantially as specified.

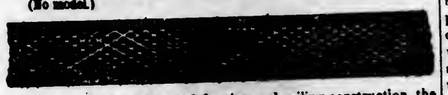
3. A machine for harvesting cane comprising a main frame, a cutter connected to the frame and adapted to cut the cane near the ground, a suitable apron extending upwardly and rearwardly from the cutter, a rotary drum arranged above the apron and having circumferential grooves for guiding the cane and radial barbs in said grooves, means for rotating said drum, a transverse shaft arranged in rear of the upper end of the apron, cutters fixed on said shaft at intervals in its length and disposed in the direction of the length of the machine; the spaces between said cutters being arranged in alinement with the circumferential grooves of the drum, and a suitable means for rotating the cutter-shaft, substantially as specified.

4. A machine for harvesting cane comprising a main frame, a cutter connected to the frame having the rear transverse bar *c* and adapted to cut the cane near the ground; a reel arranged above and in advance of the cutter, means for rotating said reel so as to enable it to depress the cane in a direction away from the forward end of the frame, an apron extending upwardly and rearwardly from the cutter, means for moving cane up said apron, a transverse shaft arranged in rear of the upper end of the apron, cutters fixed on said shaft at intervals in its length and disposed in the direction of its length, means for rotating said cutter-shaft, and a cutter arranged

in rear of the series of cutters and disposed at right angles to the length of the machine and in a plane below the upper edge of the frame-bar c; said cutter being fixed on a shaft and rotated by suitable means, substantially as specified.

5. In a cane-harvester, the combination of a main frame having a transverse bar at its rear end, a shelf connected to the rear side of said bar below the upper edge thereof, a longitudinally-disposed shaft journaled below the shelf and carrying a transversely-disposed cutter, suitable means for rotating said cutter and suitable means for feeding the cane rearwardly over the rear transverse bar of the frame, substantially as specified.

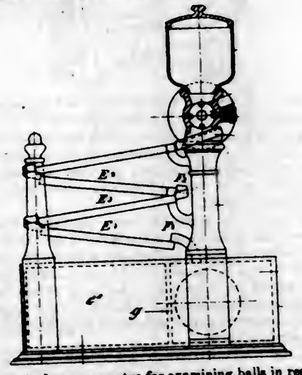
610,070. FIREPROOF CEILING AND FLOOR. WILLIAM G. LEWIS, Washington, D. C. Filed Dec. 7, 1897. Serial No. 661,015. (No model.)



Claim.—1. In a fireproof flooring and ceiling construction, the combination with flanged girders, an intermediate foraminous web connecting the lower edges of the girders, and a body of plastic fire-resisting material in which said web is embedded forming a suspended ceiling, producing a load-support, of an arched foraminous brace arranged thereover, and a body of fire-resisting plastic material surrounding the same and at each side thereof uniting with and supported by said ceiling.

2. In a fireproof flooring and ceiling construction, the combination with the girders, an intermediate foraminous web stretched therebetwees and connected to the lower flanges of the girders, and a body of fire-resisting plastic material in which said web is embedded, the latter forming a suspended ceiling producing a load-support, of a series of hollow foraminous braces located at intervals above said suspended ceiling, and a body of fire-resisting plastic material surrounding said braces and between the same, uniting with the plastic material forming a part of the ceiling.

610,071. APPARATUS FOR EXAMINING THE EXACT SPHERICAL FORM OF BALLS. HEINRICH MELTZER, Ratibor, Germany. Filed Dec. 16, 1896. Serial No. 615,920. (No model.)



Claim.—1. In an apparatus for examining balls in respect to the exactness of their sphericity, the combination with a perfectly smooth and true inclined plane over which the balls are allowed to roll, the said inclined plane permitting free escape of diverted bodies over its side edges the breadth of the said plane being but slightly greater than the diameter of the balls to be tested, of a guide at the head of the incline to start the balls in a given line on the inclined surface, and a collecting-box at the end of the inclined plane, substantially as specified.

2. In an apparatus for testing the sphericity of balls, the combination with a feed-wheel provided with peripheral holes, of a guide-channel to which the balls are conveyed by said feed-wheel, smooth stepped inclined bars onto which the balls pass, the said bars being connected by arc-shaped guiding parts, the width of the said bars being but slightly greater than the diameter of the balls to be tested, and the edges of said bars being undefended a receptacle located at the end of the bars, and a receptacle for the balls that fall over the sides of the bars, substantially as set forth.

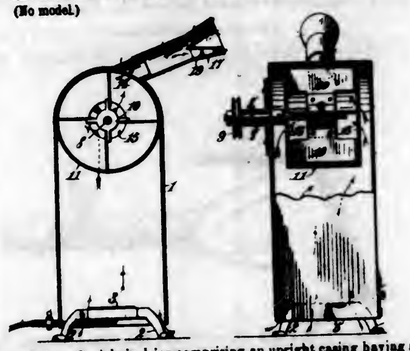
3. An apparatus for testing the sphericity of balls, the apparatus having a narrow plane and inclined surface whereon the balls may roll, and which is adapted to permit the free escape of the balls over its side edges the width of the said inclined surface being slightly in excess of the diameter of the balls to be tested, and a guide at the head of the inclined surface, the guide serving to start the ball in a given line on the inclined surface, substantially as described.

4. An apparatus for testing the sphericity of balls, comprising a receptacle for the balls, a feed-wheel mounted to rotate in the said receptacle and provided with peripheral recesses, a guide-channel to which the balls are delivered one by one from said feed-wheel, and a narrow incline plane onto which the balls are directed from the guide-channel, and which is adapted to permit the free escape of the balls over its side edges a collecting-box at the end of the incline plane, and collecting-boxes arranged to receive the balls that fall over the sides of the incline plane, substantially as set forth.

5. An apparatus for testing the sphericity of balls, comprising a receptacle for the balls, a feed-wheel mounted to rotate in the lower part of said receptacle and provided with peripheral recesses, a guide-channel to which the balls are delivered one by one from said feed-wheel, and a series of narrow bars having a smooth inclined upper surface, the first of said bars being in line with the guide-channel, the said bars being inclined in opposite directions, and arc-shaped guides arranged to conduct the balls from one inclined bar to another, substantially as described.

6. An apparatus for testing the sphericity of balls, comprising a receptacle into which the balls are placed, a guide-channel into which the balls pass from the receptacle, and a series of bars having a smooth inclined upper surface, the first of said bars being in line with the guide-channel, the said bars being inclined in opposite directions, curved guides arranged to conduct the balls from one inclined bar to the other, a collecting-box arranged to receive the balls that roll to the lower end of the inclined bars, and collecting-boxes arranged to receive the balls that fall over the sides of the inclined bars, substantially as set forth.

610,072. APPARATUS FOR USE IN DRYING LADIES' HAIR. EDWARD MINK, Catskill, N. Y. Filed Sept. 8, 1897. Serial No. 650,971. (No model.)



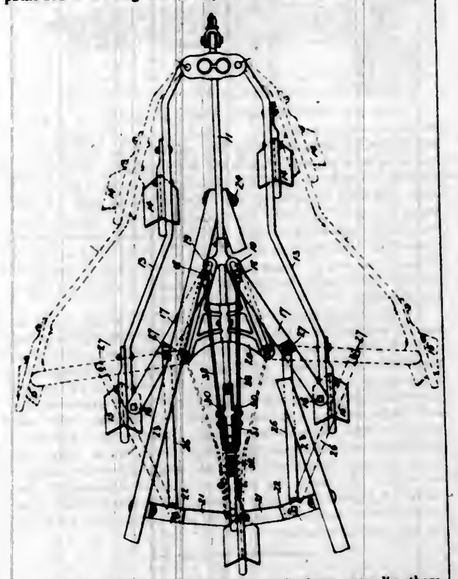
Claim.—1. A hair-drier comprising an upright casing having an open bottom for the admission of air and an air-discharge opening at the top, a heater located at the bottom of and supporting the said casing, a fan mounted in the top of said casing and in proximity to the discharge-opening, a circular casing inclosing said fan and having air-inlet openings and a discharge-opening registering with the discharge-opening of the outer casing, a funnel secured to said casing at its discharge-opening for directing the air-blast, and means for revolving the said fan, substantially as described.

2. In a hair-drier, the combination with a casing having an air-inlet opening, a discharge-opening, a heater located at the inlet-opening and a fan revolubly mounted in said casing in proximity to the discharge-opening, of a funnel secured to said casing at its discharge-opening for directing the air-blast, and a distributer removably secured in said funnel for diminishing the volume of the air-blast, substantially as described.

610,073. CULTIVATOR. DAVID M. MOTHERWELL, Chicago, Ill., assignor to the Whitman & Barnes Manufacturing Company, Akron, Ohio. Filed Mar. 12, 1898. Serial No. 673,634. (No model.)

Claim.—1. In a cultivator, a central bar, a handle-frame extending therefrom, a pair of side frames adjustable toward and from said central bar, a pair of spreading links connected at their outer ends to said side frames, and guides for the inner end of said links making an angle with the central bar, said angular guides diverging rearwardly, in combination with braces connecting said links with stationary points.

2. In a cultivator, a central bar, a handle-frame extending therefrom, a pair of side frames adjustable toward and from said central bar, a pair of spreading links connected at their outer ends to said side frames and having their inner ends guided in substantially straight lines diverging rearwardly at an angle to the central bar, in combination with means for causing said inner ends to move in said paths and for locking them in any desired position therein.



3. In a cultivator, a central bar, a handle-frame extending therefrom, a pair of side frames adjustable toward and from said central bar, a pair of spreading links connected at their outer ends to side frames and having their inner ends guided in substantially straight lines diverging rearwardly at an angle to the central bar, in combination with means for causing said inner ends to move in said paths and for locking them in any desired position therein, and braces connecting said links with stationary points.

4. In a cultivator, in combination, a central bar, a handle-frame extending therefrom, a pair of side frames adjustable toward and from said central bar, a pair of links connected at one end with the sides frames and having their other ends guided in substantially straight lines, diverging rearwardly at an angle to the central bar, rods connecting said guided ends of said spreading links with an operating-lever and means for locking the operating-lever in desired points.

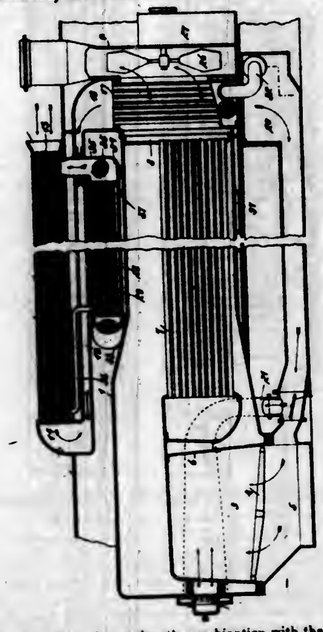
5. In a cultivator, in combination, a central bar, a side frame adjustable toward and from a central bar, a spreading link connected to said side frame and also connected to an operating-lever and substantially straight-line guides making an angle to each other and to the center bar of the cultivator and extending rearwardly thereof.

6. In a cultivator, the combination with a central bar of a block having substantially straight-line guides making an angle to each other and to the central bar and extending rearwardly thereof

610,074. AIR AND WATER HEATING APPARATUS FOR LOCOMOTIVES. THOMAS J. MURRAY, Butte, Mont. Filed Sept. 28, 1897. Serial No. 653,358. (No model.)

Claim.—1. In a locomotive-engine, the combination with the boiler, fire-box, and smoke stack, of a condenser above the boiler, a series of air-heating tubes arranged between the discharge end of the boiler and the smoke-box, a flue connecting the rear end of the condenser with the air-heating tubes, an air-chest below the boiler, and with the front end of which the said air-heating flues communicate, the rear end of the air-chest being connected with the fire-box above and below the grate thereof, and a fan in the smoke-box, substantially as and for the purpose set forth.

2. In a locomotive-engine, the combination with the boiler, fire-box, smoke-box, and smoke-stack, of a condenser above the boiler and having an air-chamber at its rear end, a series of air-heating tubes in the smoke-box, a chamber above the smoke-box and with which the upper ends of the air-heating flues communicate, a flue leading from the chamber at the rear end of the condenser to the chamber above the smoke-box, an air-chest below the boiler and with the front end of which the lower ends of the air-heating tubes communicate, a connection between the rear end of the air-chest and the fire-box, above and below the grate thereof, and a fan in the smoke-box, substantially as described.



3. In a locomotive-engine, the combination with the boiler, cylinders, fire-box, and smoke-stack, of a condenser above the boiler, a series of air-heating tubes arranged between the discharge end of the boiler and the smoke-box, a flue connecting the rear end of the condenser with the air-heating tubes, an air-chest below the boiler and communicating at its front with the air-heating tubes and at its rear end with the fire-box, a fan in the smoke-box, a feed-water heater between the condenser and boiler and with which the exhaust-pipes from the cylinders are connected, and a connection between the feed-water heater and condenser to allow the exhaust steam after passing through the heater to enter the condenser, substantially as described.

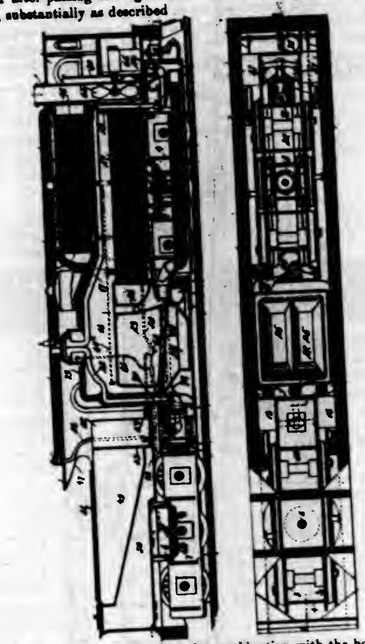
4. In a locomotive-engine, the combination with the boiler, cylinders, fire-box, and smoke-stack, of a condenser above the boiler, a series of air-heating tubes arranged between the discharge end of the boiler and the smoke-box, a flue connecting the rear end of the condenser with the air-heating tubes, an air-chest below the boiler and having its front end communicating with the heating-tubes and its rear end with the fire-box, a fan in the smoke-box, a feed-water heater comprising a shell having a chamber at each end, and pipes in said shell, exhaust-steam pipes leading from the cylinders to the chamber at the rear end of the feed-water heater, pipes connecting the condenser with the chamber at the front end of the feed-water heater, and a pipe leading from the rear end of the condenser to the shell of the said heater, substantially as described.

610,075. LOCOMOTIVE-ENGINE. THOMAS J. MURRAY, Butte, Mont. Filed Sept. 28, 1897. Serial No. 653,359. (No model.)

Claim.—1. In a locomotive-engine, the combination with the boiler, fire-box, and smoke-stack, of an air-chest in a plane below the boiler and having one end communicating with the outer air and its other end connected with the fire-box, exhaust-steam pipes in the air-chest, a feed-water heater above the boiler and with which the exhaust-steam pipes are connected after leaving the air-chest, and a fan in the smoke-stack, substantially as described.

2. In a locomotive-engine, the combination with the boiler, fire-box, and smoke-stack having a jacket around it, of an air-chest directly below the boiler and having its rear end connected with the fire-box and its front end with the space between the jacket and smoke-stack, exhaust-steam pipes in the air-chest, a feed-water heater above the boiler and with which the exhaust-steam pipes are con-

nected after passing through the air-chest, and a fan in the smoke-stack, substantially as described



3. In a locomotive-engine, the combination with the boiler, and fire-box, of an air-chest below the boiler and communicating with the fire-box, exhaust-steam pipes in the air-chest, a feed-water heater above the boiler and with which the exhaust-steam pipes are connected after passing through the air-chest, and a condenser above the feed-water heater and having one end connected with the feed-water heater and its other end with a water-receptacle, substantially as described.

4. In a locomotive-engine, the combination with the boiler, fire-box, and smoke-stack having a jacket around it, of an air-chest below the boiler and having its rear end connected with the fire-box and its front end with the space between the jacket and smoke-stack, a feed-water heater above the boiler, exhaust-steam pipes in the air-chest and connected with the feed-water heater after passing through the air-chest, a condenser above the feed-water heater and having its front end connected with the feed-water heater and its rear end with a water-receptacle, and a fan in the smoke-stack, substantially as described.

5. In a locomotive-engine, the combination with the boiler, fire-box, and cylinders, of an air chest below the boiler, and having its rear end communicating with the fire-box, a boxing in the front end of the air-chest and into which the exhaust-pipes from the cylinders lead, steam-pipes leading from the boxing through the air-chest, a feed-water heater above the boiler, and a pipe leading from the feed-water heater and into which the pipes in the air-chest discharge, substantially as described.

6. In a locomotive-engine, the combination with the boiler, and fire-box, of an air-chest below the boiler and having its front end communicating with the outer air, a flexible connection between the rear end of the air-chest and the fire-box, exhaust-steam pipes in the air-chest, a feed-water heater above the boiler, a pipe at the rear end of the air-chest and into which exhaust-steam pipes discharge, and a pipe leading from the feed-water heater and having a flexible connection with the pipe into which the exhaust-steam pipes discharge, substantially as described.

7. In a locomotive-engine, the combination with the boiler, fire-box, cylinders, and smoke-stack having a jacket around it, of an air-chest below the boiler and having its front end communicating with the space between the jacket and smoke-stack and its rear end communicating with the fire-box, exhaust-steam pipes leading from the cylinders into and through the air-chest, a feed-water heater above the boiler and with which the exhaust-steam pipes are connected after passing through the air-chest, a casing inclosing the several parts, a condenser on the top of the casing and having its front end connected with the feed-water heater and its rear end with a water-receptacle, and a fan in the smoke-stack, substantially as described.

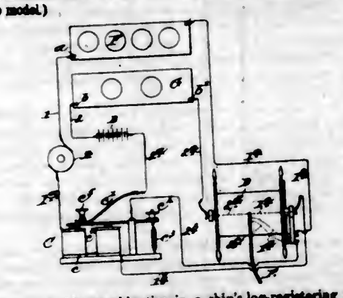
610,076. VALVE FOR REGENERATIVE FURNACES. GEORGE W. MCCLURE, Pittsburg, Pa. Filed Jan. 26, 1895. Serial No. 536,330. (No model.)



Claim.—1. The combination, with a furnace-flue, of a water-cooled valve-seat set therein; a sliding valve; and a casing interposed between the seat and the flue above, having vertical water-cooled portions extending above the level of the top of the sliding valve upon which the upper flue is adapted to rest, and water-cooled webs extending horizontally above and below the valve between which the valve may slide; the valve-seat having a hollow water-cooled ledge projecting inwardly beyond the casing, upon which the valve slides; the chambers of the casing and of the valve-seat being distinct from each other and each being provided with an independent water inlet and outlet arranged to cause a circulation of water therethrough.

2. The combination, with a furnace-flue, of a sliding valve; an annular water-cooled valve-seat set therein; and a casing interposed between said seat and the flue above having vertical water-cooled portions extending above the level of the top of the sliding valve and partially around the circumference of the valve-seat, and having tangentially-projecting vertical water-cooled legs connected at top and bottom by horizontal water-cooled webs, between which the valve may slide; the valve-seat having a hollow water-cooled ledge projecting inwardly beyond the casing; the upper flue being supported partially by the vertical portions and partially by the legs and webs of the casing; the chambers of the valve-seat and of the casing being distinct from each other and each being provided with an independent water inlet and outlet arranged to cause a circulation of water therethrough.

610,077. SHIP'S LOG AND REGISTERING MECHANISM. WARREN H. MCCURDY, Boston, Mass. Filed Jan. 22, 1897. Serial No. 620,441. (No model.)



Claim.—1. The combination in a ship's-log-registering system, of a log, means contained in and connected with said log to register the ship's speed in denominations of a predetermined character, mechanism also contained in and connected with said log to register on shipboard the ship's speed in denominations indicating shorter distances than said other denominations, said means for indicating said longer distances being normally operative, and said mechanism for indicating said shorter distances being normally inoperative, and means on shipboard to render said latter mechanism operative at will, whereby the one log operates in the system ordinarily to register the ship's speed in denominations indicating relatively long distances and also, when required, and without removal from the water or manipulation, the said log is caused to make its registrations in shorter distances, or more frequently for a given speed, substantially as described.

2. In a ship's-log-registering system, a log, electric circuits, two independent registers, one being normally active and one normally inactive, and means to put one or both of said registers in circuit with said log as desired, substantially as described.

3. In a ship's-log-registering system, a log, two registering mechanisms, electrical connections therefor, a main source of energy, as the ship's dynamo normally in circuit, an auxiliary source of energy normally out of circuit, but always active and means to automatically put said auxiliary source of energy in circuit when said main source breaks down or ceases to supply a given current, substantially as described.

4. A ship's log, provided with four electric wires making two independent circuits, the ends of said wires being sealed in the ends of rubber tubes and intermediately connected by mercury within the tubes, substantially as described.

5. In an electric ship's log, means to prevent the entrance of water therein, and additional means to prevent the access of moisture to the terminal wires, said means including a rubber tube connecting the said terminals, sealed thereabout at its ends, and filled with a liquid conductor, substantially as described.

6. In a ship's log, two independent electric circuits, and two make-and-break mechanisms, one for each circuit, one of said mechanisms being operated faster than the other, substantially as and for the purpose set forth.

7. In an electric ship's log, a make-and-break mechanism, comprising a plunger, a spring-retractor, a friction-roll carried on said plunger, and an actuating-cam, said roll engaging said cam and said retractor maintaining said engagement substantially as described.

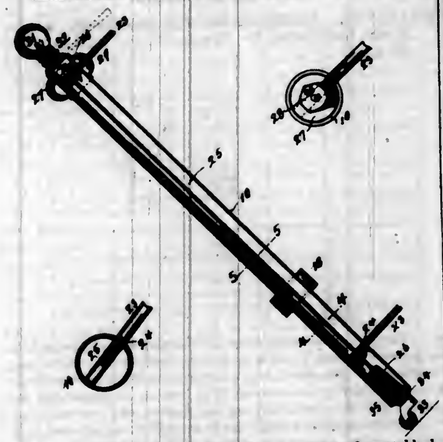
8. In an electric ship's log, a make-and-break mechanism, comprising a plunger, a bearing therefor, a roll journaled in one end of said plunger, a cam engaging said roll, and means to actuate the same, substantially as described.

9. The combination with a ship's log, and its cable, of a section M, extending beyond the log and capable of limited flexure said section having a shouldered annulus secured on its outer end, and a screw-nut abutting against said shoulder, and the adjacent end of the cable having a long tapered socket end to offer least resistance in the water threaded to engage said screw-nut opposite said annulus, substantially as described.

10. The combination with a ship's log, and its cable, of an intermediate section, comprising a flexible sheath, a cap at one end to fasten the same to the log, and a joint connection at the other end to join the section to said cable, said connection comprising a tapered and threaded socket end, a shouldered annulus, and a screw-nut, substantially as described.

11. In combination with an electric ship's log, a tubular section containing conducting-wires for connection to the log, and a cable also provided with conducting-wires, the latter wires projecting from said beyond their cable, and the adjacent end of said section being provided with sockets containing and in which are exposed the ends of its wires said sockets receiving the said projecting wires of the cable when the latter is coupled to said section, substantially as described.

610,078. POST FOR METAL BEDSTEADS. SAMUEL NEWMAN, Cincinnati, Ohio. Filed June 28, 1897. Serial No. 642,506. (No model.)



Claim.—1. In combination with the corner-post of a metal bedstead, the rail-supporting bracket 11 connected thereto, having supporting-arms 14 and 15, arm 14 being formed as shown, having part 16 set farther out so as to be not in line with the balance of the arm.

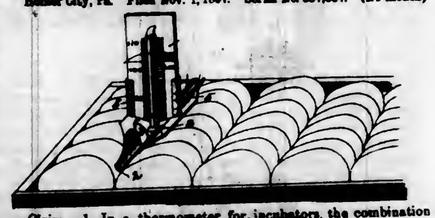
2. In combination with the corner-post of a metal bedstead, the rail-supporting bracket 11, consisting of a hollow hub, having supporting-arms 14 and 15 projecting therefrom, the serrated clamp 21 within the hub, fitted against the outside of the post for supporting the bracket thereon and a wedge for holding clamp 21 in place.

3. The corner-posts of the ends of a metal bedstead made of metal tubing, cross-rails 23 for connecting the posts of an end, entering said posts sidewise through perforations in their walls, the end portions of the rails being perforated within the posts and a closely-fitting retaining member received by these perforations to prevent rails 23 from slipping out of the posts.

4. The combination with a corner-post for metal bedsteads made of metal tubing, of cross-rails 23 entering the same sidewise through perforations therethrough, the ends of said cross-rails being vertically perforated within the post, a rod 25 passing vertically through the post and through all the perforated ends of the cross-rails within, a flanged plug at the lower end of the post which said rod enters for centering it thereat, a washer 27 for centering the rod near the upper end and a nut 28 above said washer for holding the rod in place and for drawing plug 26 into the lower end of the post.

5. The combination with the hollow corner-post of a bedstead having a plug 26 secured within its lower end, an upwardly-extending socket in the plug, a caster having a pointed pivot-pin 34 with an annular groove near its upper end which occupies the socket formed in plug 26, bearing contact being only at the pointed end of said pin, and a screw 35 entering the plug sidewise and occupying the annular groove in pin 34 for the purpose described.

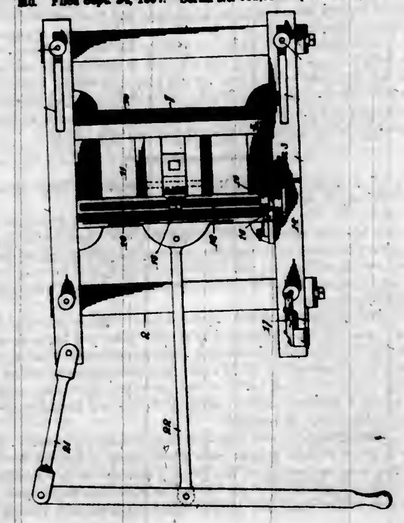
610,079. THERMOMETER FOR INCUBATORS. JAMES I. NIX, Homer City, Pa. Filed Nov. 1, 1897. Serial No. 657,067. (No model.)



Claim.—1. In a thermometer for incubators, the combination with the base having a hole or opening therein, and the upwardly-projecting plate secured thereto formed with guide-flanges, of the adjustable graduated plate engaging with said flanges, the mercury-tube secured to said graduated plate, and the bulb projecting below the bottom of the graduated plate and through the opening in the base, substantially as described.

2. In a thermometer for incubators, the combination with the base, consisting of a plate having its sides curved upwardly forming a longitudinal keel, and having a hole or opening and the plate located above said opening having its ends turned inwardly forming guide-flanges, of the graduated plate, the mercury-tube secured thereto, and the bulb extending below said graduated plate and through the openings in the base, substantially as described.

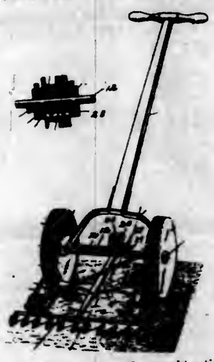
610,080. PLANING-MACHINE. BENJAMIN F. OSBURN, Wellsville, Mo. Filed Sept. 24, 1897. Serial No. 653,231. (No model.)



Claim.—1. A planing-machine comprising a frame provided with cross-pieces having flanges provided with set-screws, a carriage movable upon said frame, a lever mounted upon the frame connected with said carriage, a tool-holder movable in transverse guides upon the carriage, a feed-screw mounted upon the carriage and engaging a nut carried by said tool-holder, a ratchet-plate upon said feed-screw, and a spring-finger mounted upon the frame and situated in the path of said ratchet-plate.

2. A planing-machine comprising a frame having side pieces and cross-pieces, said cross-pieces being provided with flanges having set-screws while one of the cross-pieces is adjustably connected with the side pieces, a sliding carriage, a lever pivoted at one end to a link that is pivoted to the carriage, a connecting-rod pivoted to said lever and connected to the carriage, a tool-holder movable in transverse guides upon the carriage provided with a nut, a feed-screw mounted upon the carriage and engaging the said nut a ratchet-plate upon said feed-screw, and a spring-finger mounted upon the frame and situated in the path of said ratchet-plate.

610,081. LAWN-MOWER. ROWLEY K. ORFF, Norristown, Pa.
Filed Sept. 20, 1898. Serial No. 607,033. (No model.)



Claim.—1. In a lawn-mower, the combination with a transverse shaft on the frame thereof, of a push-bar, a yoke secured thereto whose branches are pivoted to said shaft and whose forward ends are upturned and lie in advance of said shaft, and a draft-frame attached to the upturned ends of said branches.

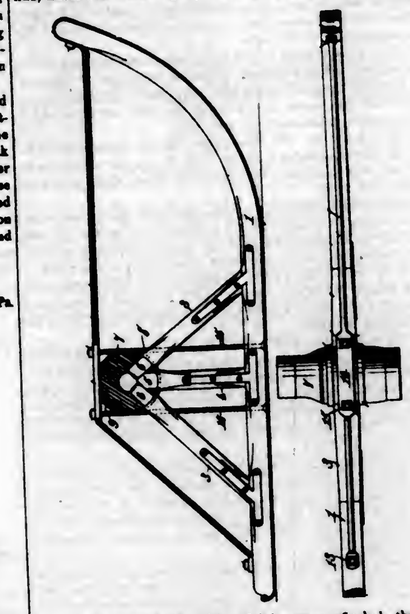
2. In a lawn-mower, the combination with the frame thereof comprising side bars having circular rear ends and hollow spindles or trunnions extending outwardly therefrom, suitable cross-bars, and an axle having reduced ends forming outwardly-facing shoulders, the said reduced ends extending through the hollow trunnions on said side bars and the shoulders engaging the inner surfaces of said side bars, of flanged drive-wheels mounted upon said trunnions and provided with internal teeth, nuts upon the ends of said axle engaging the outer surfaces of said wheels for holding the latter in place upon said trunnions and for holding the side bars of the frame in contact with the shoulders on said axle for retaining said wheels and said side bars in proper relative positions, a drive-shaft extending through the circular portions of said side bars, and pinions carried by said drive-shaft meshing with the internal teeth on said wheels.

610,082. SLEIGH-RUNNER. CHARLES OTT, Clinton, Iowa
Filed Apr. 21, 1898. Serial No. 678,379. (No model.)

Claim.—1. The combination with a sleigh-runner, of a hub, a plurality of knees mortised at their opposite ends in the runner and hub, a rave attached at its opposite ends to the opposite ends of the runner and extending over and bearing on the hub, and tie-bolts for attaching the rave to the runner on opposite sides of the hub, substantially as described.

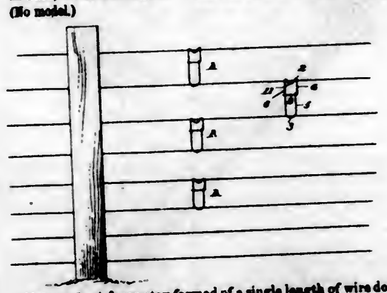
2. The combination with a sleigh-runner of a hub, a plurality of knees mortised at their opposite ends to said runner and hub, a rave consisting of a metallic rod having a hook-shaped forward end embracing the turned-up end of the runner and bolted thereto, and extending over the hub and bolted to the rear end of the runner, said rave having a flattened portion resting on the hub and bolted to the runner, substantially as described.

3. The combination with a sleigh-runner, of a hub, a plurality of knees mortised at their opposite ends in said runner and hub, a rave extending over and resting on the hub and attached at its opposite ends to the opposite ends of the runner, tie-bolts attached at their lower ends to the runner and at their upper, threaded ends passing through the rave on opposite sides of the hub, and nuts screwed over the upper ends of the rave and operating to draw the latter and the hub, knees and runner tightly together, substantially as described.



4. The combination with a sleigh-runner, of a hub, three knees attached at their lower ends to the runner, and provided at their upper ends with tenons mortised into the hub, the tenon on the central knee being wedge-shaped and pressing against the adjacent faces of the tenons on the inclined knees, a rave resting on top of the hub, and tie bolts attached to the rave and runner on opposite sides of the hub, substantially as described.

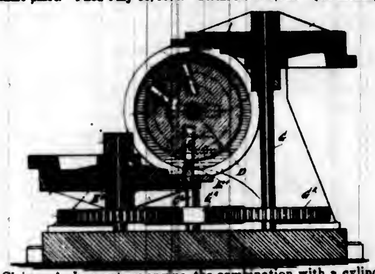
610,083. ADJUSTABLE STAY FOR WIRE FENCES. WILLIAM H. RICE, Mechanicsburg, Pa. Filed Dec. 29, 1897. Serial No. 664,227. (No model.)



Claim.—1. A fence-stay formed of a single length of wire doubled upon itself to form looped ends and one straight side, one of said looped ends of the stay being bent over to form a transverse hook, and the wire being bent near one of its ends at an angle with the straight side, and permanently secured thereto, while the other end of the wire is provided with a hook adapted to engage with said angular portion to lock the stay in position, substantially as described.

2. A fence-stay formed of a single length of wire doubled upon itself to form looped ends and one straight side, one of the looped ends of the stay being bent over to form a transverse hook, the other looped end of the stay having its curved sides bent laterally in opposite directions away from the plane of the main body of the stay, and the wire being bent near one of its ends at an angle to the straight side and permanently secured thereto, while the other end of the wire is provided with a hook adapted to engage with said angular portion to lock the stay in position, substantially as described.

610,084. ROTARY ENGINE. FRED M. RICHARDS and HENRY M. FORBES, Portage, Wis., assignors of one-third to George E. York, same place. Filed July 16, 1897. Serial No. 644,748. (No model.)



Claim.—1. In a rotary engine, the combination with a cylinder, and a piston mounted to turn in the cylinder and provided with a piston-head, of a revoluble disk mounted with its axis at right angles to the axis of the piston and having an annular flange projecting at an angle from the disk and extending into the working chamber of the cylinder to form an abutment, said flange being cut away to permit the passage of the piston, substantially as described.

2. In a rotary engine, the combination with a cylinder, and a piston mounted on a horizontal axis to turn in the cylinder and provided with a piston-head, of a revoluble disk mounted on a vertical axis and having an annular flange projecting at an angle from the disk and extending into the working chamber of the cylinder to form an abutment, said flange being cut away for the passage of the piston, substantially as described.

3. In a rotary engine, the combination with a cylinder, and a piston mounted on horizontal pivots to turn in the cylinder, of two disks mounted at opposite sides of the cylinder on vertical pivots and having annular flanges projecting at angles from the disks and extending into the working chamber of the cylinder to form abutments, said flanges being cut away for the passage of the piston, and means for operating the said disks from the piston, substantially as described.

4. In a rotary engine, the combination with a cylinder provided with a steam-chest, and a piston mounted on horizontal pivots and provided with a piston-head, of disks mounted at opposite sides of the cylinder on vertical pivots and having annular flanges projecting at angles from the disks and extending into the working chamber of the cylinder to form abutments, said flanges being cut away for the passage of the piston, means for operating the disks from the piston, and an oscillating valve in the steam-chest of the cylinder, substantially as described

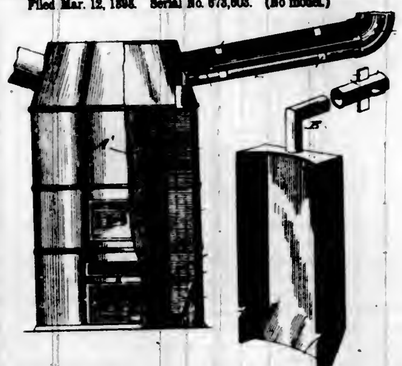
5. In a rotary engine, the combination with a cylinder provided with a steam-chest on one side and an exhaust-chest on the other side, and a piston mounted on horizontal pivots in the cylinder, and provided with a piston-head and with ports leading from said chests to the working cylinder, of disks mounted on vertical shafts at opposite sides of the cylinder, and having annular flanges projecting at angles from the disks, the flanges extending into the working chamber of the cylinder, and cut away for the passage of the piston, gearing between the shafts of the disks and the piston, and an oscillating valve in the steam-chest of the cylinder, substantially as described.

6. In a rotary engine, the combination of a cylinder provided with an annular steam-chest having steam-inlets at diametrically opposite sides and provided with fixed and oppositely-arranged abutments, a piston in the cylinder and having a port connecting the steam-chest with the cylinder and an oscillating valve in the steam-chest and provided with diametrically opposite arms extending between the fixed abutments, substantially as described.

7. In a rotary engine, the combination of a cylinder provided with an annular steam-chest having steam-inlets at diametrically opposite sides and provided with fixed and oppositely-arranged abutments, a piston in the cylinder and provided with a port connecting the steam-chest with the cylinder, a valve arranged in the steam-chest and provided with diametrical arms extending between the fixed abutments and with a gear-wheel, and a pinion meshing with the gear-wheel of the valve and a stem secured to the pinion under the control of the operator, substantially as described.

8. A rotary engine, comprising a cylinder having a central working chamber, a steam-chest on one side and an exhaust-chest on the other, the steam-chest being provided with fixed abutments, a piston mounted in the cylinder on a horizontal axis and provided with a piston-head and with ports leading from the chests into the working chamber, two disks mounted on vertical shafts and arranged at opposite sides of the cylinder and having annular flanges projecting at angles from the disks, the flanges extending into the working chamber of the cylinder to form abutments, and cut away for the passage of the piston, gearing for operating the disks from the piston, and an oscillating valve provided with arms projecting into the steam-chest, substantially as herein shown and described.

610,085. FURNACE. JOHN S. L. RODRICK, Washington, D. C.
Filed Mar. 12, 1898. Serial No. 673,803. (No model.)



Claim.—1. The combination in a hot-air furnace of the combustion-chamber, a superheating-box open at one side arranged in the hot-air space with the open side of the box next to and against the combustion-chamber, such box having an air-inlet and a delivery-tube leading from the box into the hot-air flue substantially as described.

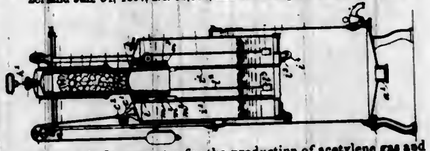
2. In a hot-air furnace an attachment consisting of a box open at one side and adapted at such side to fit against the combustion-chamber of the furnace and having an air-inlet and the delivery-tube leading from such box and adapted to enter the hot-air flue substantially as set forth.

3. The combination in a hot-air furnace, of the combustion-chamber abutting at one side against the vertical side of and conforming at such side to the said side of the combustion-chamber and having a delivery-tube leading into the hot-air flue, substantially as described.

4. A hot-air furnace provided with a combustion-chamber, a hot-air space, and the hot-air flue or flues, and a separate superheating-chamber applicable to and alongside the said combustion-chamber and having an air-inlet and a delivery-tube extending into the hot-air flue and spaced therefrom, the superheating-chamber being movable laterally in the hot-air space, whereby it may be adjusted to discharge into any desired flue, substantially as set forth.

5. A superheating attachment for hot-air furnaces consisting of a box open at one side, adapted at such side to fit against the combustion-chamber, having its outer side at its lower end sloped inward toward the open side, and provided with a delivery-tube, substantially as set forth.

610,086. ACETYLENE-GAS GENERATOR. VINCENZO SARDI, Turin, Italy. Filed Dec. 29, 1897. Serial No. 664,264. (No model.)
Patented in Italy Mar. 16, 1896, LXXX, 320, Apr. 29, 1896, LXXXI, 185, and Sept. 4, 1896, LXXXIII, 239; in Belgium Sept. 17, 1896, No. 122,720; in England Sept. 21, 1896, No. 20,903; in France Nov. 16, 1896, No. 258,473; in Spain Nov. 20, 1896, No. 19,464; in Austria Nov. 28, 1896, No. 46/6,777; in Hungary Jan. 2, 1897, No. 7,441; in Switzerland Jan. 31, 1897, No. 12,804, and in Portugal Feb. 20, 1897, No. 29.

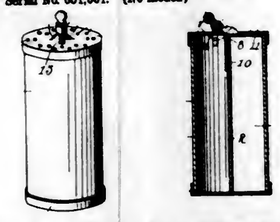


Claim.—1. In apparatus for the production of acetylene gas and in combination, a water vessel, an air-bell, a counterbalance for the latter, an extension-tube on such bell, a perforated tube for the carbid, means for supporting and guiding the carbid-tube in such extension, a water seal between the extension and the air-bell, a movable bell-shaped valve for holding the water forming the seal, on which the carbid-tube rests, means for lowering the carbid-tube into the water of the main vessel, and means for guiding the bell-shaped valve as it descends with the carbid and leaves the extension-tube which forms part of the seal substantially as described.

2. In apparatus for the production of acetylene gas the combination with the gas-bell and carbid-tube of a valve *m* and tube *f*

forming a water seal and means for counterweighting and guiding such valve in the bell, substantially as described.

610,087. SALT AND PEPPER BOX. ALEXANDER J. SAVAGE, Norfolk, Va., assignor of one-fourth to A. J. Bolsom, same place. Filed Sept. 14, 1897. Serial No. 651,661. (No model.)



Claim.—1. A receptacle for salt and pepper having a longitudinal partition therein dividing the same up into a plurality of compartments, a pivotally-mounted cut-off comprising two wings lying at substantially right angles one to the other, each adapted to close the compartment in which it is located, and means for operating said cut-off from the outside of the receptacle.

2. A receptacle for salt and pepper having a longitudinal partition therein dividing the same up into a plurality of compartments, a pivotally-mounted cut-off comprising two wings lying at substantially right angles one to the other, each adapted to close the compartment in which it is located, means for operating said cut-off from the outside of said receptacle, and means for holding it to any position to which it may be adjusted.

3. A receptacle for salt and pepper having a longitudinal partition therein dividing the same up into a plurality of compartments, a pivotally-mounted cut-off adapted to close one of said compartments and simultaneously open the other, a perforated upper end on said receptacle having an elongated slot therein, a stem on said cut-off extending through said slot, a handle on said stem whereby said cut-off may be turned, and a frictional connection between said handle and the perforated upper end of said receptacle.

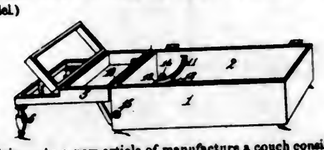
4. A receptacle for salt and pepper made up of a cylindrical casing having a longitudinal partition therein dividing the same up into a plurality of compartments, a perforated cover upon the upper end of said casing having an elongated slot therein with a raised portion or bulge adjacent to said slot, a cut-off pivotally mounted in said casing adjacent to the upper end of said partition made up of a disk bent at its central point forming two substantially semicircular wings adapted to close the upper ends of said compartments respectively, a stem on said cut-off projecting through a slot in said perforated cover, a handle secured upon the upper end of said stem, a cup in which the lower end of said handle fits and through which said stem passes, and a spring located within said cup for holding the same down in contact with the raised portion or bulge on said perforated cover, as and for the purpose set forth.

610,088. HITCHING DEVICE. FREDERICK SCHERRER, St. Louis, Mo. Filed Oct. 4, 1897. Serial No. 654,041. (No model.)



Claim.—The combination with the rectangular casing 7 provided with apertured blocks in its corners, through which blocks pass bolts that rigidly locate said casing, and which casing is provided with a transversely-arranged fixed shaft, of a pair of disks rotatably arranged upon said shaft within the casing, a ring 15 separating said disks to form a winding-drum, a convolute spring within said ring, one end of said spring being fastened to the ring and the opposite end to the fixed shaft, a ring 19 rotatably arranged upon said shaft and located in a clear space beneath said spring, and a cord having its inner end fixed to the last-mentioned ring, its length being wound upon the ring 15 between the disks and its outer end passing outwardly through an aperture in the casing, substantially as specified

610,089. CONVERTIBLE FURNITURE. HENRY G. SCHRENKEISEN, New York, N. Y. Filed July 12, 1897. Serial No. 644,319. (No model.)



Claim.—As a new article of manufacture a couch consisting of a body provided with guide-brackets, an axle carrying toothed wheels, the end wall of said body provided with holes leading to said guide-brackets, in combination with a frame provided with toothed segments rigidly secured thereto the free ends of which segments pass through the holes in the end of the body into the guide-brackets and intermesh with the toothed wheels, whereby said frame may be adjusted to various positions relatively to the body of the couch, substantially as described.

610,090. ELECTRIC RAILROAD. BENJAMIN C. SEATON, St. Louis, Mo., assignor to the Electric Third Rail and Signal Company, same place. Filed Apr. 5, 1897. Serial No. 630,852. (No model.)



Claim.—1. In an electric railroad, a conductor for supplying current to an electrically-propelled car, located above ground and beneath the said car and carried between supports made of insulating material, which insulating-supports also form a housing for said conductor adapted to protect the latter against snow, rain, sleet, and accidental contact, substantially as shown and described.

2. In an electric railroad, a conductor for supplying current to an electrically-propelled car, located above ground and beneath the said car and supported upon a structure carried by wooden cross-bars fastened to both the railroad-rails of a single track independently of the ordinary cross-ties which support the said rails, substantially as shown and described.

3. In an electric railroad, a conductor for supplying current to an electrically-propelled car, said conductor being carried by an insulating support and housing, composed of two members arranged one above the other, and suitably fastened together, the said conductor being clamped between the two said members.

4. In an electric railroad, a working conductor for supplying current to an electrically-propelled car, located above ground and beneath the said car, and carried between supports composed of insulating material, which supports form a housing for said conductor and also serve as the roof of a closed conduit designed to carry feed-wires.

5. In an electric railroad, a working conductor therefor, insulating-supports for said conductor composed of two members, and notched metallic strips gained into said insulating-supports and arranged to grip the said conductor when the two members of said insulating-supports are fastened together, and means of fastening the latter together.

6. In an electric railroad, a working conductor therefor divided into two parts arranged parallel with each other, one upon either side of an insulating support and housing for said conductor, and metallic strips for holding said conductor and electrically connecting the two said parts of the conductor together.

7. In an electric railroad, the combination of the cross-pieces, 1, the angle-irons, 6, the insulating support and housing, 9, and 10, the metallic strips, 12, the clamping-bolts, 11, and the conductor, 13, substantially as shown and described.

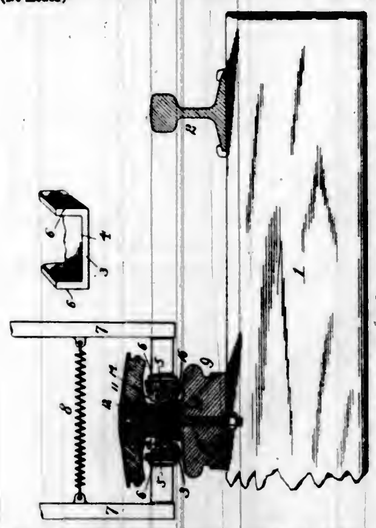
8. In an electric railroad, the combination of the cross-pieces, 1, the insulating support and housing, 9, and, 10, the clamping and fastening devices, 11, and the conductor, 13, substantially as shown and described.

9. In an electric railroad, a working conductor therefor, an insulating support and housing for the conductor formed of some material impervious to moisture, such as glass or some other equally good insulating material, at the points of support, and a housing for said conductor intermediate between said points of support, composed of some cheaper material such as wood.

10. The combination, in an electric-railroad conductor system, of the glass insulators 9^a, and 10^a, the wooden housing 9^b, and, 10^b, and the working conductor, 13, with means of fastening said conductor to said insulators.

11. An insulating-support for an electric railroad conductor, made of some vitreous insulating material, and formed of two members having a form substantially as shown, the lower member having a wooden core, substantially as shown.

610,091. THIRD RAIL FOR ELECTRIC RAILWAYS. BENJAMIN C. SEATON, St. Louis, Mo., assignor to the Electric Third Rail and Signal Company, same place. Filed Dec. 7, 1897. Serial No. 661,104. (No model.)



Claim.—1. In an electric railway, a third rail formed with a channel in the upper side to receive feed-in wires, substantially as set forth.

2. In an electric railway, an insulation, and a third rail formed with a channel in the upper side on each side of and divided by the insulation, said channels being adapted to receive feed-in wires, substantially as set forth.

3. In an electric railway, a third rail formed with channels in the upper side to receive feed-in wires and formed with outer faces to receive contact-shoes, substantially as set forth.

4. In an electric railway, a third rail formed with channels to receive feed-in wires and having outer vertical faces to receive contact-shoes, substantially as set forth.

5. In an electric railway, the combination of a third rail formed with a channel to receive feed-in wires, a sill for supporting the rail, a hood located over the rail, an upper strip of insulation located between the hood and the rail, and a lower strip of insulation located between the rail and the sill, substantially as set forth.

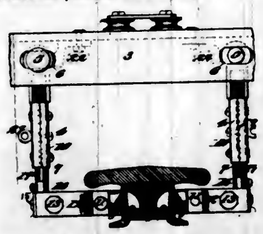
6. In an electric railway, the combination of a third rail formed with channels to receive feed-in wires, a longitudinal sill supporting said rail, a hood located over said rail, an upper strip of insulation located between said hood and the rail, and which is recessed into the rail, and a lower strip of insulation located between the rail and the sill and which has a recessed bearing in the rail, substantially as set forth.

7. In an electric railway, the combination of a third rail provided with channels for receiving feed-in wires, a longitudinal sill for supporting the rail, and a hood located over the rail, substantially as set forth.

8. In an electric railway, the combination of a third rail formed with a channel to receive feed-in wires, a longitudinal sill supporting the rail, a hood located over the rail, strips of insulation located between the hood and the rail and between the rail and the sill, and connecting-bolts securing the parts together, substantially as set forth.

610,092. CONTACT DEVICE FOR ELECTRIC RAILWAYS. BENJAMIN C. SEATON, St. Louis, Mo., assignor to the Electric Third Rail and Signal Company, same place. Filed Feb. 4, 1898. Serial No. 669,139. (No model.)

Claim.—1. In a contact device for electric railways, the combination of a hanger, a head secured to the hanger, a frame pivoted to the head, a shoe secured to the frame, and a spring for holding said frame in a horizontal position, substantially as set forth.



2. In a contact device for electric railways, the combination of a hanger, a head secured to the hanger, a frame pivoted to the head, a shoe secured to the frame, and a flat spring secured to the hanger and the ends of which bear against the flat ends of said frame to hold the latter in a horizontal position, substantially as set forth.

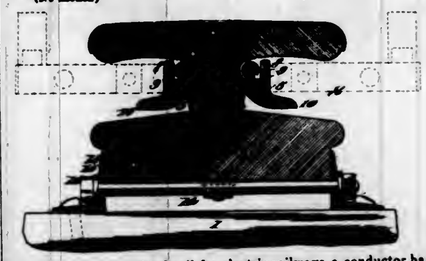
3. In a contact device for electric railways, a supporting-bar, a hanger having a slot-and-pin connection with the bar, a bracket against which the hanger bears, a spring forcing the hanger against the bracket, and a shoe secured to the lower end of the hanger, substantially as set forth.

4. In a contact device for electric railways, the combination of a bar, a hanger having slot-and-pin connection with the bar, a bracket against which the hanger bears, a spring for pressing the hanger against the bracket, a head secured to the lower end of the hanger, a frame pivoted to the head, and a shoe secured to the frame, substantially as set forth.

5. In a contact device for electric railways, a bar, a hanger secured to the bar so as to swing horizontally in a vertical plane, and a shoe secured to the hanger and adapted to swing in a vertical plane when subjected to strain, substantially as set forth.

6. In a contact device for electric railways, the combination of pivoted hangers, shoes carried by the hangers, cables secured to the hangers, pulleys over which the cables pass, a drum or pulley for moving said cables, a shaft to which the drum is secured, a pinion on the shaft, and a rack for engaging said pinion and which is provided with a foot-piece, substantially as set forth.

610,093. THIRD RAIL FOR ELECTRIC RAILWAYS. BENJAMIN C. SEATON, St. Louis, Mo., assignor to the Electric Third Rail and Signal Company, same place. Filed Feb. 4, 1898. Serial No. 669,140. (No model.)



Claim.—1. In a third rail for electric railways, a conductor having a vertical flange providing an exposed surface for the contact-shoes and a lateral flange, providing a guard for the contact-shoes substantially as and for the purpose set forth.

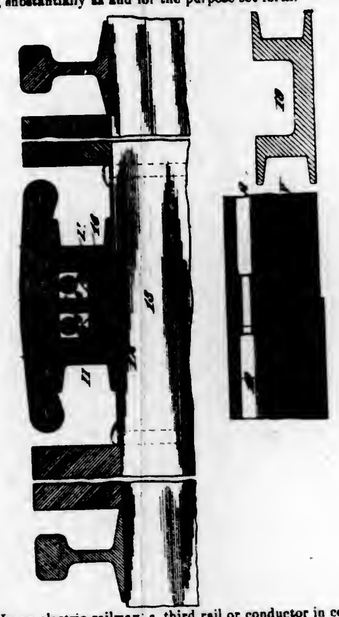
2. In a third rail for electric railways, a conductor consisting of a web having at each edge a vertical flange providing an exposed surface for the contact-shoes and a lateral flange, providing a guard for the contact-shoes substantially as and for the purpose set forth.

3. A third rail for electric railways having a main conductor, and a cap or hood of non-conducting material covered by metallic strips, insulated by the cap or hood from the main conductor, and serving as conductors for signal-currents substantially as and for the purpose set forth.

610,094. ELECTRIC RAILWAY. BENJAMIN C. SEATON, St. Louis, Mo., assignor to the Electric Third Rail and Signal Company, same place. Filed Feb. 18, 1898. Serial No. 670,811. (No model.)

Claim.—1. In an electric railway, a third rail in combination with a crossing located in a gap in the third rail and consisting of a,

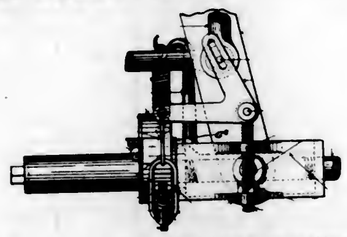
hood, bars supporting the hood, and a conduit inclosed by the hood and bars, substantially as and for the purpose set forth.



2. In an electric railway, a third rail or conductor in combination with a crossing located in a gap in the third rail; said crossing consisting of a hood, channel-bars supporting the hood, a conduit inclosed by the hood and bars, and concrete surrounding the conduit, substantially as set forth.

3. In an electric railway, a third rail or conductor, in combination with a crossing; said crossing consisting of a hood, channel-bars supporting the hood, a conduit inclosed by the hood and channel-bars, and concrete surrounding the conduit; said hood having a metallic cover adapted to receive the ends of the hood of the third rail, substantially as set forth.

610,095. SLACK-ADJUSTER. FREDERICK W. SELLEY, Enmore, and WILLIAM H. NISBET, Sydney, New South Wales. Filed Sept. 2, 1897. Serial No. 650,397. (No model.)



Claim.—1. In a brake-gear slack-adjuster, the combination with suspension-rods and the brake lever fulcrumed thereon, of the nut-box or bridle carried by the brake-lever, a threaded pull-rod passing through said nut-box or bridle and connected to the brake-beam, a nut engaging the threaded end of the pull-rod and having formed thereon a ratchet, a rocking lever fulcrumed on the end of the nut-box or bridle and having formed integrally therewith a box or casing inclosing said ratchet-nut, a removable cover for said box or casing, a pawl pivoted in said box and engaging said ratchet, a pivoted bell-crank lever movably connected at one end to the fulcrum of the brake-lever and at its other end to one end of the rocking lever, and a spring attached to the other end of the rocking lever and operating to rock said lever in a direction opposite to the bell-crank lever, substantially as described.

2. In a brake-gear slack-adjuster, the combination with suspension-rods and the brake-lever fulcrumed thereon, of the nut-box or bridle carried by the brake-lever, a threaded pull-rod passing through said nut-box or bridle and connected to the brake-beam, a nut engaging the threaded end of the pull-rod and having formed thereon a ratchet bearing against the end of the nut-box or bridle, a rocking lever fulcrumed on the end of the nut-box or bridle and provided with a pawl engaging said ratchet, a screw adjustably threaded in supports carried by the nut-box or bridle, a bell-crank lever pivoted upon the upper end of said screw, said bell-crank lever being movably connected at one end to the fulcrum of the brake-lever and at its other end connected to one end of the rocking lever, and a spring attached to the other end of the rocking lever and operating to rock said lever in a direction opposite to the bell-crank lever, substantially as described.

3. In a brake-lever slack-adjuster, the combination with suspension-rods and the brake-lever fulcrumed thereon, of a nut-box or bridle carried by the brake-lever, a threaded pull-rod passing through said nut-box or bridle and connected to the brake beam, a nut engaging the threaded end of the pull-rod and having formed thereon a ratchet bearing against the end of the nut-box or bridle, a rocking lever fulcrumed on the end of the nut-box or bridle and having formed integrally therewith a box or casing inclosing said ratchet, a pivoted pawl arranged in said box and in engagement with said ratchet, a pin carried by said pawl and projecting through a curved slot in the cover of the box, a pivoted bell-crank lever carried by the nut-box or bridle and movably connected at one end to the fulcrum of the brake-lever and connected at its other end to one end of the rocking lever, and a spring operated to rock the rocking lever in a direction opposite to the bell-crank lever, substantially as described.

610,096. VEHICLE-WHEEL. THOMAS M. SHROUT, Hillsborough, Ky. Filed Nov. 9, 1897. Serial No. 657,831. (No model.)

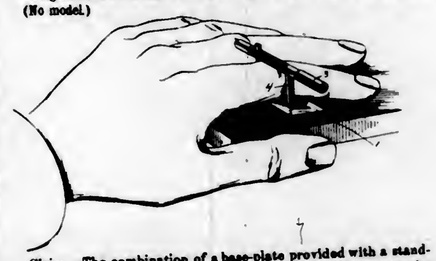


Claim.—1. In a vehicle-wheel, a hub having an oil-reservoir therein, a washer forming a covering therefor and having an opening to allow the escape of oil to the axle; substantially as described.

2. In a vehicle-wheel, in combination with the hub, having a chamber or reservoir for oil or other lubricant, a washer fitting over said chamber or reservoir, a grooved axle, and a washer having an opening whose edge fits within the groove of said axle; substantially as described.

3. In a vehicle-wheel, in combination with the hub having a chamber or reservoir for oil or other lubricant, a washer or closing-cap for said reservoir having an opening to permit escape of the oil to the axle, a two-part washer embracing the axle, said axle being grooved to receive the edge of the washer, and means for adjusting the parts of the washer to take up wear; substantially as described.

610,097. GAGE FOR FINGER-RINGS. MANOEL R. DE SILVA, Georgetown, British Guiana. Filed Aug. 12, 1897. Serial No. 648,067. (No model.)



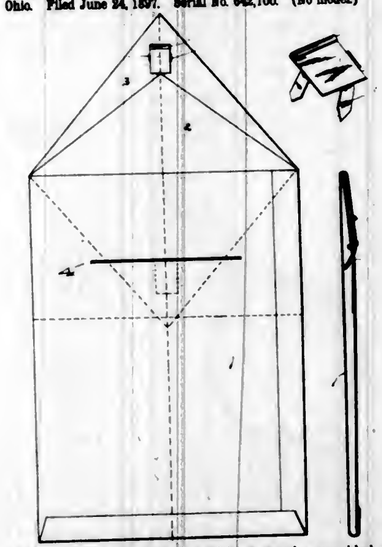
Claim.—The combination of a base-plate provided with a standard, a graduated bar provided with a mortise or slot whereby the graduated bar may be readily adjusted upon the standard, and a gage-stud for adjustment with relation to the standard, substantially as described.

610,098. FISH-HOOK. CORNELIUS J. SLY, Klamath Falls, Oreg. Filed Nov. 23, 1897. Serial No. 659,641. (No model.)



Claim.—A hook comprising a suitable casing having mounted therein a rod or shank provided with a head, a spring arranged on the shank and bearing against the head and the end of the casing, hooks carried by the said head, a spreader-bar arranged between the hooks, a trigger-bar slidably connected with the casing and carrying a bait-hook, and a trigger carried by the shank and adapted to be released by the trigger-bar, substantially as described.

610,099. ENVELOP-FASTENING. CLYDE L. SMITH, Leipsic, Ohio. Filed June 24, 1897. Serial No. 642,100. (No model.)



Claim.—1. The combination with an envelop provided with a slot and a sealing-flap adapted to enter said slot, of a fastening-plate secured to said sealing-flap and having a hooked end adapted to engage the upper walls of said slot, as and for the purpose set forth.

2. The combination with an envelop provided with a slot, and a sealing-flap to enter said slot, of a fastening-plate secured to the inner face of said sealing-flap and having one end bent upon itself to form a hook which is adapted to engage a wall of said slot when the sealing-flap is inserted in the same as and for the purpose set forth.

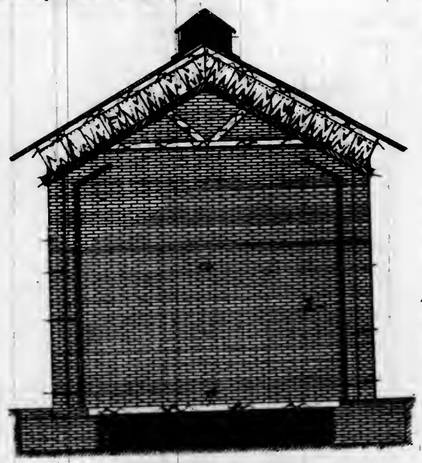
3. The herein-described fastening for envelops, consisting of a plate having fingers projecting from sundry edges thereof, and by which it is attached to the sealing-flap of the envelop, and having another edge bent to form a hook, as and for the purpose set forth.

610,100. DRY-KILN. JAMES M. SPROUT, Muncy, Pa. Filed July 12, 1897. Serial No. 644,178. (No model.)

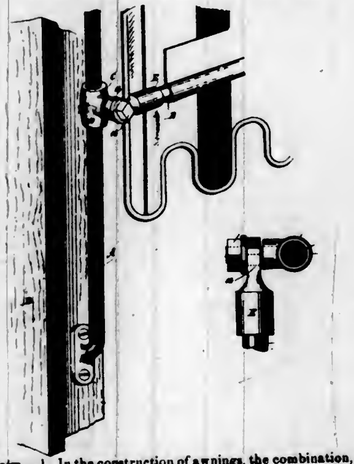
Claim.—1. In a dry-kiln, the combination with the kiln proper, of condensing-plates formed of any suitable material, set at an angle above the kiln and resting against the rafters and upon an auxiliary rafter or support which is grooved and lined with some waterproof material, to carry off the condensed moisture, substantially as shown and described.

2. A dry-kiln, consisting of the kiln proper, condensing-plates composed of any suitable material arranged at an angle above the kiln, and supported by grooved rafters or supports which receive and carry off the moisture from the plates, substantially as shown and described.

3. In a dry-kiln, consisting of the kiln proper, a roof for said kiln, a set of rafters for said roof, another lower set of intermediate rafters, condensing-plates, each supported by an upper and a lower rafter and forming the ceiling of the kiln, whereby are formed a series of passage-ways between said roof and ceiling, and a continuous current of cool air is brought in contact with the condensing-plates, substantially as shown and described.



610,101. AWNING-FIXTURE. JAMES SULLIVAN, New York, N. Y. Filed Nov. 5, 1897. Serial No. 657,513. (No model.)

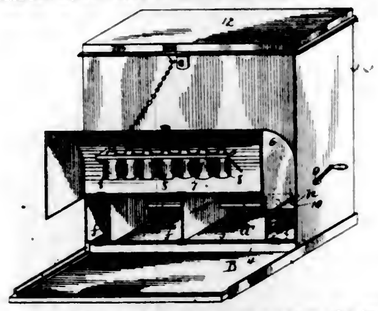


Claim.—1. In the construction of awnings, the combination, with a guide-rod and a runner held to travel thereon, of a binding-screw entering the runner and arranged for engagement with the said guide-rod, and a fitting formed with a socket adapted to receive a portion of the awning-frame, the said fitting being attached to the said screw, turning the same when the awning is raised or lowered, as specified.

2. In the construction of awnings, a runner, a binding-screw entering the said runner and provided with a polygonal surface at a point in its length, and a fitting formed with a socket adapted to receive an end of the lower side rod of the awning-frame, and a shank having an opening adapted to closely receive the polygonal portion of the said binding-screw, as specified.

3. In the construction of awnings, a runner, a binding-screw entering said runner, said binding-screw being formed midway of its length with a polygonal surface, a fitting formed with a socket adapted to receive an end of the lower side rod of the awning-frame and a shank having an opening by which it fits closely over the polygonal surface of said binding-screw, and a nut on the outer end of said binding-screw and by which the shank is kept in place on the said polygonal surface, as and for the purpose set forth.

610,102. KITCHEN-CABINET. JAMES E. TATE, Baltimore, Md. Filed Nov. 24, 1897. Serial No. 659,712. (No model.)



Claim.—1. The combination in a kitchen-cabinet, of a bread-board having a flange at its end and a pivotally-supported device depending over said bread-board and terminating in proximity to the face thereof, said depending device being free to swing in one direction and a stop adapted to prevent it from swinging in the other direction beyond a vertical position, substantially as set forth.

2. The combination with a kitchen-cabinet and a sliding bread-board, of a pivoted stop free to swing in one direction only and adapted to engage the cabinet, whereby to prevent rearward movement of the bread-board when the latter is in use, substantially as set forth.

3. In a kitchen-cabinet, the combination with a body portion, of a sliding bread-board connected thereto, and a depending device connected with said cabinet in such manner as to form a scraper and a stop for said board against inward movement, substantially as set forth.

4. In a kitchen-cabinet, the combination with a body portion having bins with outlets at their lower ends, of an upturned flange at the bottom of said outlets, a sliding bread-board under said outlets, and a depending device hinged to the upper edge of said flange and serving as a scraper and as a stop for said bread-board, substantially as set forth.

5. In a kitchen-cabinet, the combination with a body portion having bins with outlets at their lower ends, of a sliding bread-board under said outlets, flanges at the edges of said board, a depending device hinged to the body portion and cooperating with said board and flanges to form a scraper and a stop for the board, substantially as set forth.

6. In a kitchen-cabinet, the combination with a body portion, of a cover therefor, a hollow flange projecting outward near the top of the body portion and serving as stops for the cover, an upturned flange adapted to be encompassed by the cover, and inwardly-projecting stiffening-strips inserted in said hollow flanges, substantially as set forth.

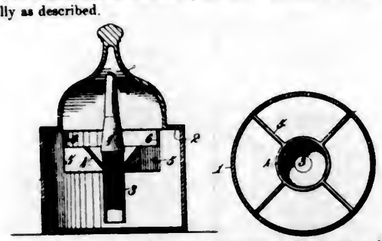
7. In a kitchen-cabinet, the combination with a body portion having bins therein with inlets at their upper ends, of a hollow flange near the top of said body portion, strips inserted in said hollow flanges and projecting inwardly from the same and covers for said bins adapted to rest on said strips, substantially as set forth.

8. In a kitchen-cabinet, the combination with a body portion having a series of bins with inlets at their upper ends, of a cover for the top of the cabinet and common to all of said bins, hollow flanges near the upper end of said body portion and serving as stops for said cover, strips inserted in said hollow flanges and projecting inwardly beyond the same, and supplemental covers for the bins adapted to rest on said strips, the central supplemental cover being hinged and serving alternately for the two central bins, substantially as set forth.

9. In a kitchen-cabinet, the combination with a body portion and bars or ways projecting therefrom, of a bread-board, strips secured to the edges of said bread-board and forming flanges therefor, said strips having recesses in their under faces, rollers located in said recesses and adapted to run on the bars or ways and fastening devices securing the strips to the board and serving as bearings for said rollers, substantially as set forth.

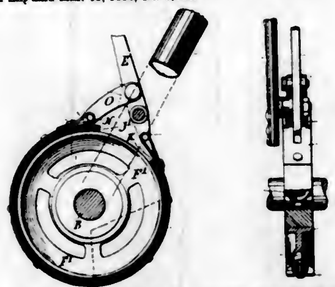
610,103. MUCILAGE-HOLDER. CLARENCE W. TAYLOR, Sioux City, Iowa. Filed Apr. 27, 1898. Serial No. 679,017. (No model.)

Claim.—1. In a mucilage-holder, the combination with the cup or liquid-receptacle, of a brush-receiver having a cylindrical lower portion extended to near the bottom of the cup and a funnel-shaped upper end supported centrally below the mouth or neck of the cup and out of contact therewith, the said brush-receiver being thereby adapted to confine the erectly-held brush in such manner as to promote capillary attraction between said brush and cylindrical portion of the receiver and serve as a wiper and rest for the brush, substantially as described.



2. In a mucilage-holder, the combination with the cup or liquid-receptacle having a wide mouth, of a brush receiver and wiper consisting of a cylindrical lower portion extended to near the bottom of the cup and having a funnel-shaped upper end provided with a plurality of laterally-extended arms whereby the said brush-receiver is supported centrally below the mouth or neck of the cup and out of contact therewith, the cylindrical lower portion of the receiver being adapted to confine the brush in erect position and promote capillary attraction and its upper end serving as a wiper and rest for the brush, substantially as described.

610,104. BICYCLE-BRAKE. WILLIAM TAYLOR, Ballarat, Victoria. Filed July 7, 1897. Serial No. 643,767. (No model.) Patented in England Mar. 15, 1897, No. 6,780.



Claim.—In a band-brake for vehicles, the combination with a brake-wheel having a grooved periphery, and a lever-arm pivoted near one end upon the frame of the vehicle in juxtaposition to said brake-wheel; of a yielding band slightly shorter than the periphery of said brake-wheel, adapted to engage the groove therein; a flat metallic spring secured upon said yielding band, pivotally connected at one end to the short end of said lever; a link pivotally connected at one end to the other end of said spring near the corresponding end of the said yielding band; the said link having its other end bifurcated and pivoted upon said lever upon the opposite side of its fulcrum from the point of pivotal connection of the first-named end of the spring; and a stop at one side of said bifurcation to arrest the backward movement of the lever with respect to said link when the brake is released, substantially as described.

610,105. STRAP OR ROPE CLAMP AND TIGHTENER. AARON G. TRAYER, Kensington, Kans. Filed Jan. 18, 1898. Serial No. 667,029. (No model.)



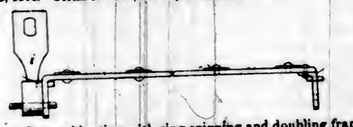
Claim.—1. A clamp, comprising a frame having guide-bars, a ring and cross-bar for the admission of a rope or strap, and a slidable cross-bar on said guide bars and arranged to operate in conjunction with said ring and cross-bar, to securely clamp the end of the strap or rope in place, substantially as shown and described.

2. A clamp, comprising a frame having longitudinal guide-bars, a ring connecting said bars and located in a plane approximately perpendicular to the common plane of said guide-bars, a cross-bar likewise connecting said guide-bars, and another cross-bar slidable upon the guide-bars, substantially as described.

3. A clamp, comprising a frame having longitudinal guide-bars, transverse rings connecting the ends of said guide-bars, a stationary cross-bar in one of said rings, and a movable cross-bar mounted to slide on the guide-bars between the rings, substantially as described.

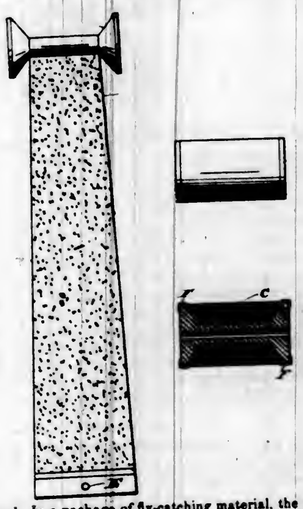
4. A clamp, comprising a frame having parallel guide-bars, a ring on both ends of said frame, and two cross-bars on the frame, one movable on the said guide-bars, the latter extending beyond said ring and being bent over so as to overlap, as shown and described.

610,106. RING-SPINNING AND DOUBLING FRAME. GEORGE H. THOMSON, Rochdale, and WILLIAM THOMSON, Shaw, England. Filed Jan. 5, 1898. Serial No. 665,909. (No model.)



Claim.—In combination with ring-spinning and doubling frames, a rail carrying a plurality of fingers projecting horizontally above the ring-rail between the spindles, and pivoted crank-arms extending downward from said rail and serving to support the same in a nearly-balanced position whereby on the lifting of the ring-rail a determined distance said rail and fingers will become overbalanced to remove the fingers automatically out of the way of the cops, substantially as described.

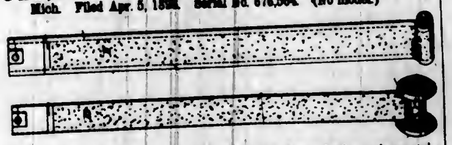
610,107. PACKAGE OF STICKY FLY-PAPER. WILLIAM THUM, Grand Rapids, Mich. Filed Mar. 21, 1898. Serial No. 674,867. (No model.)



Claim.—1. In a package of fly-catching material, the combination with a spool having adjacent flaring substances, a web narrowest at the point where it is attached to the spool and widest at the free end thereof, or the part farthest from the spool, adapted to be wound upon the spool so as to entirely fill up the space between the adjacent faces of the ends of the spool, substantially as described.

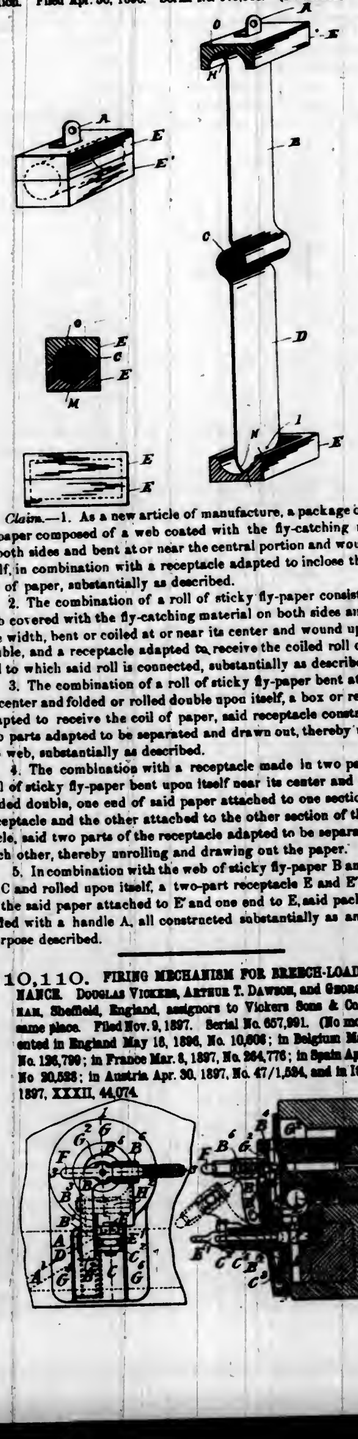
2. In combination with a spool having adjacent surfaces flaring, a web widening from the point where it is attached to the spool to its outer end and adapted to roll upon the spool so as to fill the entire space between the flaring ends of the spool, and provided, when rolled into a package, with a suitable sealing material, substantially as described.

610,108. STICKY FLY-PAPER. WILLIAM THUM, Grand Rapids, Mich. Filed Apr. 5, 1898. Serial No. 676,564. (No model.)



Claim.—A package of sticky fly-paper formed of a web or strip of suitable material having its central portion covered with the fly-catching compound, its margin covered by a retaining material, the central portion separably connected to the marginal portions and adapted to be unrolled without unwinding said marginal portion, substantially as described.

610,109. STICKY FLY-PAPER. OTTO THUM, Grand Rapids, Mich. Filed Apr. 30, 1898. Serial No. 679,388. (No model.)



Claim.—1. As a new article of manufacture, a package of sticky fly-paper composed of a web coated with the fly-catching material on both sides and bent at or near the central portion and wound upon itself, in combination with a receptacle adapted to inclose the coiled roll of paper, substantially as described.

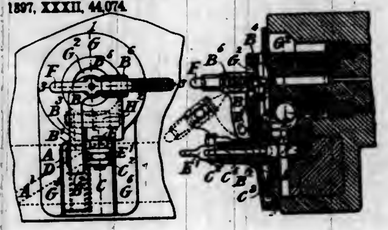
2. The combination of a roll of sticky fly-paper consisting of a web covered with the fly-catching material on both sides and its entire width, bent or coiled at or near its center and wound upon itself double, and a receptacle adapted to receive the coiled roll of paper, and to which said roll is connected, substantially as described.

3. The combination of a roll of sticky fly-paper bent at or near its center and folded or rolled double upon itself, a box or receptacle adapted to receive the coil of paper, said receptacle constructed in two parts adapted to be separated and drawn out, thereby unrolling the web, substantially as described.

4. The combination with a receptacle made in two parts, of a coil of sticky fly-paper bent upon itself near its center and rolled or folded double, one end of said paper attached to one section of the receptacle and the other attached to the other section of the receptacle, said two parts of the receptacle adapted to be separated from each other, thereby unrolling and drawing out the paper.

5. In combination with the web of sticky fly-paper B and D, bent at C and rolled upon itself, a two-part receptacle E and E', one end of the said paper attached to E' and one end to E, said package provided with a handle A, all constructed substantially as and for the purpose described.

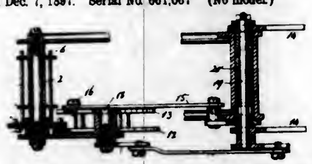
610,110. FIRING MECHANISM FOR BREECH-LOADING ORDNANCE. DOUGLAS VICKERS, ARTHUR T. DAWSON, and GEORGE T. BUCKHAM, Sheffield, England, assignors to Vickers Sons & Co., Limited, same place. Filed Nov. 9, 1897. Serial No. 657,991. (No model.) Patented in England May 18, 1896, No. 10,606; in Belgium Mar. 8, 1897, No. 136,799; in France Mar. 8, 1897, No. 264,776; in Spain Apr. 17, 1897, No. 20,533; in Austria Apr. 30, 1897, No. 47/1,594, and in Italy May 8, 1897, XXXII, 44,074.



Claim.—1. In firing mechanism for a breech-loading gun, in combination with the breech-plug carrier and its horizontal slide-bar, a hammer having an insulated striker, a spring-trigger, a nut on the obturating-bolt, and a sliding plate thereon adapted to cover and uncover the head of a firing-tube, or primer, and to actuate an extractor, substantially as described.

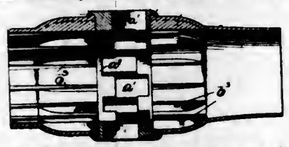
2. In firing mechanism for a breech-loading gun, in combination with the breech-plug carrier and its horizontal slide-bar, an insulated sliding striker and its spring-trigger, a nut on the obturating-bolt, and a sliding plate thereon adapted to cover and uncover the head of a firing-tube, or primer, and to actuate an extractor, substantially as described.

610,111. VELOCIPEDE. FRANK X. WAGNER, New York, N. Y. Filed Dec. 7, 1897. Serial No. 661,067. (No model.)



Claim.—A driving-wheel combined with a transmission-gear comprising a disk having differential teeth or gears, made to extend in opposite directions from the sides of the disk, and a driving-gear comprising two differentially-toothed spaced disks, said transmission-gear being shiftably located between the driving-disks, substantially as described.

610,112. METALLIC HUB-CASING. OSCAR L. WARNER, Naugatuck, Conn. Filed May 4, 1898. Serial No. 679,722. (No model.)

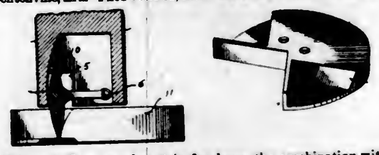


Claim.—1. A metallic hub-casing comprising end shells having well-defined outstanding flanges or beads at their inner ends or bases, and a central band having recessed opposite sides receiving the flanged ends of said shells, the sides of the recesses being bent over the said flanges or beads and against the body portions of the shells, and the exterior surface of the band practically merging into the exterior surfaces of the shells.

2. A vehicle-hub comprising a central band comparatively thick and formed with an encircling staggered series of mortises, one end wall of each mortise being comparatively thin and the opposite sides of the band being recessed, and shells having flanged ends or bases fitting in the recesses and interlocked with the sides thereof, said shells having longitudinally-extending reinforcing-ribs whose inner ends abut the bottoms of the recesses in the central band.

3. A vehicle-hub comprising a central band comparatively thick and formed with an encircling staggered series of mortises, one end wall of each mortise being comparatively thin and the opposite sides of the band being recessed, and shells having flanged ends or bases fitting in the recesses and interlocked with the sides thereof, said shells having longitudinally-extending reinforcing-ribs whose inner ends abut the bottoms of the recesses in the central band, and whose longitudinal edges are flush with the interior surface of the band.

610,113. WEATHER-STRIP FOR DOORS. THOMAS A. WATSON, Bentonville, Ark. Filed June 12, 1897. Serial No. 640,467. (No model.)



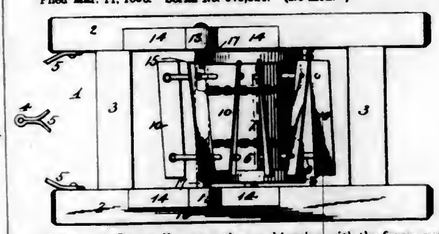
Claim.—1. In a weather-strip for doors, the combination with a door having a recess in its lower end, a weather-strip having projecting arms by which it is pivoted within the recess, a spring for projecting the strip, and a track for elevating the strip against the action of the spring, substantially as shown and for the purpose set forth.

2. In a weather-strip for doors, the combination with the door having a recess in its lower end, of a strip provided with projecting arms turned at their ends to form bearings, the front side of the strip being curved in the arc of a circle, and a block or circular track upon which the strip rides when the door is opened, substantially as shown and for the purpose set forth.

3. In a weather-strip for doors, the combination with the door having a recess in its lower end, corner-brackets covering the ends of the recess and forming bearings, a weather-strip provided with projecting arms turned at their ends to bear within the brackets, the front side of said strip being curved, a spring bearing upon the strip, and a circular track upon which the weather-strip rides when the door is opened, substantially as shown and for the purpose set forth.

4. In a weather-strip for doors, the combination with the door having a recess in its lower end, brackets closing the ends of the recess, said brackets being provided with open-ended slots and adjoining openings forming bearings, a weather-strip having a curved front wall and rearwardly-projecting arms turned at their ends to form bearings or pintles which bear in the brackets, a spring located within the recess and bearing upon the strip, the ends of the latter being extended, as shown, to play within the slots of the brackets; together with a circular track secured upon the door-sill and cut away at its forward end, substantially as shown and for the purpose set forth.

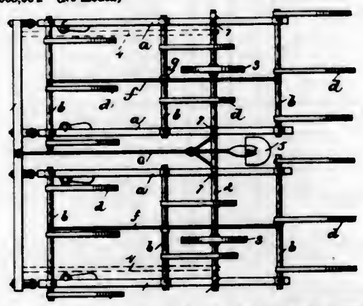
610,114. STALK-CUTTER. JOHN R. WEATHERLY, Sumter, S. C. Filed Mar. 11, 1898. Serial No. 673,521. (No model.)



Claim.—1. In a stalk-cutter, the combination with the frame and means for connecting it with a wagon tongue, of the rotatable drum formed with a central peripheral recess, the arms secured to said drum near each end but in different planes and the knives inclined alternately in opposite directions, substantially as described.

2. In a stalk-cutter, the combination with the frame, the pivoted bail or yoke at the front end thereof adapted to be connected with a wagon-tongue, the standards, the rod passing therethrough provided with a tightening-nut, and the rotatable tube on said rod, of the rotatable drum or cylinder having a central peripheral depression, the arms near the ends of said drum located in different longitudinal planes and of alternately-different lengths, the knives or cutters inclined alternately in opposite directions with respect to the longitudinal and vertical axes of the drum, and the inclined teeth in the front of said drum, substantially as described.

610,115. SUPPORTING ATTACHMENT FOR HARROWS. EPHRAIM R. WHIPPLE, Utica, N. Y. Filed Dec. 27, 1897. Serial No. 663,684. (No model.)



Claim.—1. A harrow having a wheeled supporting attachment extending transversely beneath all the side frame-bars of the harrow and having supporting-wheels within the harrow-frame and draft connections.

2. A harrow having the axle arranged transversely beneath the inner and outer side frame-bars of the harrow with supporting-wheels, and draft connections extending forwardly and connected with the draft of the harrow.

3. A harrow having a supporting attachment extending beneath the side frame-bars thereof with supporting-wheels between said frame-bars, and draft connections, and arranged to permit independent vertical play of the harrow and to uphold the same by the frame-bars when the teeth are elevated.

4. A two-section lever-adjustment harrow having a wheeled support extending transversely beneath the inner and outer side frame-bars of both sections between tooth-bars thereof and beneath the harrow-teeth, and draft connections from the support connected with the draft of the harrow.

5. A wheeled supporting attachment for a harrow having draft attachments and guides to receive the harrow-frame bars provided with springs to yieldingly hold the harrow down to work, substantially as described.

6. A wheeled supporting attachment for harrows comprising the axle having wheels, a forwardly-extending draft-tongue, and inclosing guides to receive parts of the harrow and rigid with the axle and elongated vertically, substantially as described.

7. A harrow having a wheeled supporting attachment loosely connected thereto to permit independent vertical movement of the harrow, and springs carried by the wheeled support and yieldingly holding down the harrow to work, substantially as described.

8. A wheeled supporting attachment for harrows having vertical guides to hold the harrow against lateral swaying and permit independent vertical movement, substantially as described.

9. A two-section harrow having a front evener-bar, and supporting devices from the side frame-bars a distance back from the front ends thereof, and a wheeled axle, coupled with the draft of the harrow and extending transversely beneath the harrow-sections and the inner and outer frame-bars thereof and between the tooth-bars thereof and beneath the teeth of the tooth-bars immediately in front thereof.

10. A two-section harrow having a wheeled supporting attachment arranged transversely thereof and loosely connected with the draft thereof to permit independent vertical play of the sections and to uphold the same when the teeth are raised, said attachment holding the sections in line and against independent lateral swaying, substantially as described.

11. A curved-spring-tooth rocking-tooth-bar harrow comprising several independent sections, in combination with an independent wheeled riding attachment moving forward with the harrow and provided with a support arranged about at the transverse central portion of the harrow and constructed and arranged to balance each section at opposite sides of the section and sustain practically the entire weight thereof in a certain plane with the section-frame elevated from the ground and permit independent play of each section above such plane, substantially as described.

12. A rocking-tooth-bar curved-spring tooth harrow, in combination with an independent riding attachment moving forward with the harrow and having a support arranged transversely of the harrow about at the transverse central portion thereof and upholding opposite side portions of the harrow in a certain elevated plane and permitting independent play thereof above said plane, and whereby the harrow is balanced from the attachment and practically the entire weight thereof is carried by the attachment, substantially as and for the purposes stated.

13. A lever-adjustment curved-spring-tooth harrow, in combination with a wheeled supporting attachment having a seat and comprising an axle in length approximately equal to the width of the harrow and arranged transversely thereof at about the transverse central portion of the harrow and having wheels between the frame and tooth bars of the harrow, said axle supporting and balancing the harrow in an elevated position whether the teeth are in or out of operative engagement with the soil and permitting independent movement of the harrow above such position, substantially as described.

14. A two-section harrow, in combination with a wheeled riding attachment moving forward with the harrow and comprising an axle arranged transversely of the side frame-bars of each section at an intermediate portion thereof, and provided with supporting-wheels approximately within the longitudinal central portions of the sections, respectively, said axle supporting each section from points on opposite sides thereof and intermediate the longitudinal length of said section, whereby the section-frames are carried in an elevated plane above the ground, substantially as described.

15. A lever-adjustment curved-spring-tooth harrow having its adjusting-lever on an intermediate tooth-bar, in combination with an independent wheeled riding attachment moving forward with the harrow and arranged about at the transverse central portion of the harrow and provided with a rider's seat, said attachment provided with a support upholding the harrow at the frame sides thereof in an elevated plane above the ground so that the harrow is balanced from the support and practically its entire weight is carried thereby, whereby the harrow-frame is held elevated when the teeth are raised so that the teeth can be lowered by said lever without lifting the frame.

16. A several-section lever-adjustment harrow having depending frame-supports in advance of its transverse center, in combination with an axle arranged transversely of the several sections and the frame-bars thereof and provided with supporting-wheels, said axle arranged transversely of the sections a distance in advance of their rear ends and having a forwardly-extending draft connection to the draft of the harrow, each section being supported or upheld by its opposite side frame-bars from said axle in an elevated plane above the ground and independently movable vertically above said plane, substantially as described.

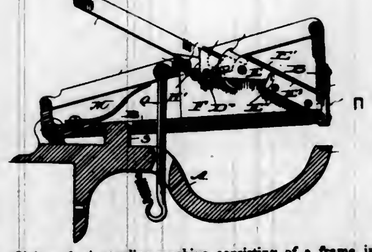
17. A lever adjustment curved-spring-tooth harrow comprising several independent sections, and an independent wheeled riding attachment therefor combined with and arranged in respect to said sections as to uphold and balance each section on its opposite side frame-bars and at intermediate points thereof and thereby support the section-frames in an elevated plane above the soil and permit independent play thereof above such plane, substantially as described.

18. A several-section harrow having a front evener-bar, in combination with a wheeled riding and supporting attachment having a draft-bar rigid therewith and extending forwardly beneath the plane of the tooth-bars of the harrow and at its front end secured to the evener-bar, substantially as described.

19. A harrow, in combination with a wheeled axle carrying a seat, the harrow having a vertical movement independently of said axle, and a draft bar or tongue from the axle extending forwardly of the harrow beneath the plane of its tooth and frame bars and at the front coupled with the draft of the harrow, substantially as described.

20. A harrow, in combination with an independent wheeled riding attachment coupled with the draft of the harrow and provided with vertical elongated guides embracing parts of the harrow and permitting vertical play of the harrow independently of said wheeled attachment and provided with stops limiting the play of the harrow.

610,116. STAPLING-MACHINE. GEORGE W. ASHLEY, Medical Lake, Wash., assignor of one-half to George B. Jordan, Spokane, and A. L. Smalley, Davenport, Wash. Filed Jan. 3, 1898. Serial No. 665,376. (No model.)



Claim.—1. A stapling-machine consisting of a frame, inclined tracks mounted thereon and a tilting staple-carrying member on the edge of which staples are adapted to be picked up singly from the upper track and slide by gravity to the lower inclined track, and means for operating the device.

2. A stapling-machine consisting of the inclined tracks mounted in the frame as set forth, combined with a tilting staple-carrying member having a flat edge, down which edge a staple is adapted to slide from the upper track to the lower one of the inclined tracks, as the said member is tilted, and means for operating the same.

3. A stapling-machine consisting of a casting which is adapted to be secured to a table or other suitable place, a die secured to the outer bent end of the said casting, a member pivoted to the said casting, a lever pivoted to one end of the said member, and a staple-driving rod at its other end, combined with the inclined tracks, down which the staple falls by gravity, and a staple-conveying member adapted to transfer singly the staples from one incline to another, and means for operating the same, as shown and described.

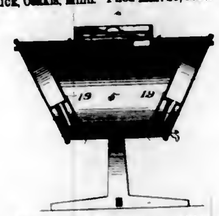
4. In a stapling-machine, the casting having a die at its outer curved end, the member pivoted to said casting, having its outer upturned end channeled, a lever pivoted at the opposite end of the said member, a staple-driving rod pivoted to the outer end of the said lever, adapted to work in the said channel, a plate secured over the outer face of the upturning portion of the said member, and a spring B^3 mounted thereon designed to hold a staple, the inclined tracks, casing and the staple-conveying member, arranged substantially as shown and described.

5. In a stapling-machine, the combination of the casting having a die at its outer end, of the member pivoted to the said casting,

the lever pivoted to one end of the said member, a spring interposed between the member and lever, the casing, the inclined tracks mounted therein, the staple-carrying member pivoted between the walls of the casing, pins mounted on the said conveyer, adapted to travel in slots in the said truss, of the staple-driving rod, plate and spring, as set forth.

6. In a stapling-machine, the casing, the casting member B and lever with the staple-driving member as described, the inclined sectional track mounted in the casing, a detachable section of the inclined track adapted to be held in alinement with a section of the track which is mounted within the casing, and the staple-conveying member pivoted to the walls of the casing and having a straight edge terminating at one end in a shoulder, which is adapted to pick singly the staples and allow the same to fall down its straight inclined surface and fall by gravity to a location adjacent to the staple-driving rod, and the spring adapted to hold the staple in readiness to be driven by the rod as the lever is depressed, as set forth.

610,117. WASHING-MACHINE. AUSTIN M. BELDING and CHARLES A. RICE, Oaklis, Minn. Filed Mar. 29, 1898. Serial No. 675,568. (No model.)



Claim.—1. The combination, with a rocking or swinging vessel having downwardly and inwardly inclined ends, and means for controlling the movement of the vessel, of the air-chambers upon the said ends, and the tubes opening into the air-chambers and into the vessel.

2. The combination, with a rocking and swinging vessel having a mouth, of the springs having a portion bowed around said mouth, arms depending from said bowed portion upon each side of the vessel and terminating in coil-springs, the ends of the wire being secured below the pivot or journal point of the vessel, as set forth.

3. The combination in a washing-machine of the vessel having inclined ends and adapted to rock or swing, air-chambers having their only and permanent openings near the bottom of the vessel, tubes forming said openings and a channel between the chambers and the vessel, and a shield or protector having a portion secured to the air-chambers, and a portion depending in front of the tubes and engaging the inner wall of the vessel, as set forth.

610,118. PIVOTAL TRUCK. GEORGE M. BRILL and SAMUEL M. CURWEN, Philadelphia, Pa., assignors to John A. Brill, same place. Filed Nov. 3, 1896. Serial No. 610,902. (No model.)

Claim.—1. The combination in a car-truck and its running-gear, of the side frames supported outside of the wheel-gage, the truck-bolster, and separable spring-links and equalizing-bars supporting said bolster directly from the side frames, substantially as described.

2. The combination in a car-truck and its running-gear, of the side frames supported outside of the wheel-gage, the truck-bolster, the bolster being supported from the side frames by equalizing-bars and extensible spring swinging links outside of the wheel-gage, substantially as described.

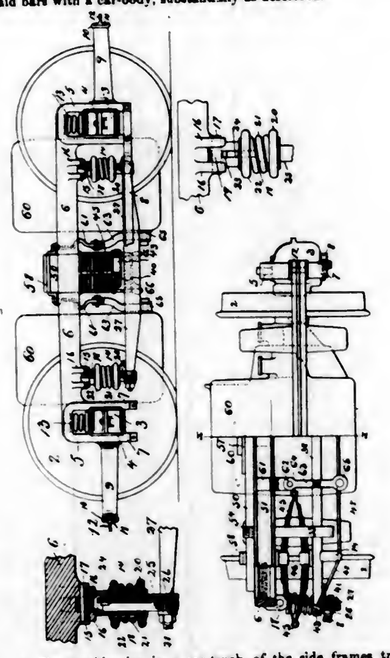
3. In a truck, the combination with the truck-frame, of a bolster, the transversely-swinging resilient suspending-links secured to the truck-frame adjacent the axle-boxes, the inflexible equalizing-bars secured to said links, the bolster being supported on said bars, substantially as described.

4. In a car-truck, the combination with the side frames, of transversely-swinging links pendent from the side frames adjacent the axle-boxes, longitudinal inflexible connections between the links, and a bolster supported upon said connections, substantially as described.

5. The combination with a car-truck, of the side frames, extensible swing-links having load-supporting springs ranged in the direction of the length of the truck and pendent from the side frames, a bolster, and equalizing-bars extending between said links and supporting the bolster, substantially as described.

6. In a car-truck, the combination with the side frames, a bolster, the spring-plank, springs intermediate of the spring-plank and bolster, the spring-plank being connected to the side frames by intermediate swing-links, and a spring on each of said links sustaining the spring-plank, substantially as described.

7. The combination in a car-truck of the side frames, spring-links depending from the side frames, longitudinal equalizing-bars connecting the links below the side frames, and means for connecting said bars with a car-body, substantially as described.



8. The combination in a car-truck, of the side frames, transversely-swinging spring-links depending from the side frames, longitudinally-disposed transversely-movable equalizing-bars connecting the links beneath the side frames, and means for connecting said bars with a car-body, substantially as described.

9. The combination in a car-truck, of the side frames, with extensible spring swinging links depending from the side frames, an equalizing-bar connecting the links, and a bolster supported on said equalizing-bars, substantially as described.

10. The combination in a car-truck, of the side frames, swing-links supported from the side frames, each of said links being yieldable in the direction of its length, equalizing-bars connecting said links, and a bolster supported on said equalizing-bars, substantially as described.

11. The combination with a car-truck, of the side frames, pendent extensible links on the side frames, springs on the links, the equalizing-bars movably connected to the links, and a bolster supported on said equalizing-bars, substantially as described.

12. The combination in a car-truck, of the side frames, the equalizing-bars movably and resiliently suspended from the side frames, and a bolster supported on said equalizing-bars, substantially as described.

13. In a truck, the combination with the side frames, having axle-box pedestals, the longitudinally-disposed transversely-swinging equalizing-bars, pendent extensible resilient connections between the ends of the equalizing-bars and the side frames adjacent said pedestals, and a bolster supported on said equalizing-bars, substantially as described.

14. The combination in a car-truck, of the side frames having axle-box pedestals, each frame having an upper longitudinal chord, and a lower parallel and swinging member, the lower member being movably suspended from the upper chord, springs included in said suspension, and a bolster supported on said lower member, substantially as described.

15. The combination of a car-truck, of the side frames, the equalizing-bars, a cross-bolster secured to the equalizing-bars, links suspended from the side bars and attached to said equalizing-bars, and springs carried by said links adapted to oppose the motion of the side frames or equalizing-bars, substantially as described.

16. In a car-truck, the combination with the side frames, the links suspended from the side frames, each link carrying a double-acting spring, equalizing-bars secured to said links, and a bolster supported on the equalizing-bars, substantially as described.

17. The combination in a car-truck, of the side frames having axle-box pedestals, springs interposed between the axle-boxes and the axle-box pedestals, separate springs hung from the side frames adjacent said pedestals, connections between said springs on each side frame, a spring-plank connecting said connections, springs on the spring-plank, and a bolster on said latter springs, substantially as described.

18. The combination in a car-truck, of the side frames having axle-box pedestals, springs interposed between the axle-boxes and said pedestals, a further set of springs supported from the side frames, equalizing-bars supported by said further springs, a spring-plank supported by said equalizing-bars, other springs on said spring plank, and a bolster on said latter springs, substantially as described.

19. The combination in a car-truck, of the side frames having axle-box pedestals, springs interposed between the axle-boxes and said pedestals, links with interposed springs, said links being supported from the side frames, equalizing-bars connecting the links, a spring-plank connecting said bars, bolster-springs on said spring-plank, and a bolster on said latter springs, substantially as described.

20. The combination in a car-truck, of the side frames having axle-box pedestals, springs interposed between the axle-boxes and said pedestals, links with interposed springs, said link being supported from the side frames, and a further set of springs for supporting the car-body supported by said link-interposed springs, substantially as described.

21. In a car-truck, the combination with the side frames having the axle-box pedestals, springs interposed between said pedestals and the axle-boxes, another set of springs, two for each side frame, hung to depend from the side frames adjacent said pedestals, the spring-plank supported by said last-mentioned springs, bolster-springs on said spring-plank, and a bolster on said bolster-springs, substantially as described.

22. In a car-truck, the combination with the side frames having the axle-box pedestals, springs interposed between said pedestals and the axle-boxes, links with interposed springs, said links being supported from the side beams adjacent the pedestals, and a further set of car-upholding springs supported by said link-interposed springs, substantially as described.

23. In a car-truck, the combination with the side frames having the axle-box pedestals, springs interposed between said pedestals and the axle-boxes, links with interposed springs, said links being supported from the side frames at or near the pedestals, the spring-plank supported by said link-interposed springs, bolster-springs on the spring-plank, and a bolster on said bolster-springs, substantially as described.

24. The combination in a car-truck, of the side frames having axle-box pedestals, spiral springs interposed between the axle-boxes and said pedestals, and a further set of spiral springs of greater carrying capacity supported from the side bars, a spring-plank connected with said last-mentioned springs, elliptic springs on said spring-plank, and a bolster supported on said elliptics, substantially as described.

25. In a car-truck, the combination with the side frames having axle-box pedestals, springs interposed between the axle-box pedestals, a further set of springs supported from said side frames, equalizing-bars suspended by said latter springs, a spring-plank transversely connecting said equalizing-bars, springs on said spring-plank, and a bolster on said last-mentioned springs, substantially as described.

26. The combination in a car-truck, of the side frames, the pendent swing-links, springs supported on the links, equalizing-bars suspended by said springs, and a bolster supported on said equalizing-bars, substantially as described.

27. The combination in a car-truck, of the side frames, extensible links each with an interposed spring hung on the side frames, equalizing-bars suspended by said springs, and a bolster supported on said equalizing-bars, substantially as described.

28. The combination in a car-truck, of the side frames, extensible links each with an interposed spring hung to swing transversely from the side frames, equalizing-bars movably connecting the links on each of the side frames, and a bolster supported on said equalizing-bars, substantially as described.

29. The combination in a car-truck, of the side frames, extensible links with interposed springs hung from the side frames to swing transversely thereof, the inflexible equalizing-bars pivotally connected at the ends to said links, and a bolster supported on the equalizing-bars, the bolster, bars, and links being adapted to swing transversely of the side frames, substantially as described.

30. The combination in a car-truck, of the side frame, a hanger pivotally suspended from said frame, a bolt movable in said hanger, a follower on the bolt, a spring interposed between the hanger and follower, equalizing-bars secured at their ends to the bolt exterior to the hanger, and a bolster secured to said equalizing-bars, substantially as described.

31. In a car-truck, the combination of the side frames having pendent lugs, a pin passing through said lugs, a barrel suspended by said pin, a spring-seat on said barrel, a spring on the seat, an eyebolt having an eye at one end exterior to the barrel and a follower on the other end resting on said spring, an equalizing-bar connected at its ends to said bolts, and a bolster on said equalizing-bar, substantially as described.

32. In a car-truck, the combination with the side frames, the barrels pivotally supported from the side frames, spring-seats formed at the lower portions of said barrels, a spring on each of said seats, the equalizing-bars, bolts on the ends of the equalizing-bars extending into said barrels, and connections between said bolts and the springs on the barrels, substantially as described.

33. The combination with the side frames, having the top chords, the lugs on the chords, the barrels suspended by the lugs having the apertures at one end and exterior spring-seats on the lower end, a pin passing through said lugs, springs on said spring-seats, the equalizing-bars and connected bolster, the bolts extending from the ends of the equalizing-bars into said barrels, a movable cap on said springs, and a bar passing from said bolts through said barrel and engaging said cap, substantially as described.

34. The combination in a car-truck, of the side frames, the bolster, the equalizing-bars, the eyebolts movably secured to the ends of the equalizing-bars, barrels movably suspended from the side frames, said bolts having followers guided by the barrels, and springs interposed between said followers and said barrels, substantially as described.

35. The combination in a car-truck, of the side frames, a spring-plank, means for suspending the spring-plank from the side frames, a spring on the spring-plank, a truss-rod extending between the ends of the spring-plank and lying beneath it, and a spreader interposed between said truss rod or rods and the said plank, substantially as described.

36. The combination in a car-truck, of the side frames, a spring-plank, springs on the plank, means for suspending the plank from the side frames, paired truss-rods extending between the ends of the spring-plank, and spreaders interposed between the plank and said rods beneath the springs, said spreaders having lips engaging the plank, and recessed legs to receive the rods, substantially as described.

37. The combination in a truck-frame, of the side bars, transoms extending between the side bars, a spring-plank and bolster, springs between said plauk and bolster, and a safety-strapping consisting of a strap encircling said plank, springs, and bolster secured to the top of each of said transoms, substantially as described.

38. The combination with a car-truck, of the inwardly-extending brackets 51ª formed on the inside of the top chords 6, having longitudinal strengthening-webs 52, and transoms of angle-iron extending between said top chords, said angle-irons each having a longitudinal web resting on the top of the webs 52, and vertical webs secured to the brackets 51ª, substantially as described.

39. The combination with the side bars, of the equalizing-bars rigid throughout their length, resilient links for suspending the equalizing-bars from the side bars, and a spring-plank secured to the equalizing-bars, substantially as described.

40. The combination in a car-truck of the side bars, depending links, the equalizing-bars on the links, a spring-plank secured to said equalizing-bars, and a truss rod or rods extending between the ends of said plank, substantially as described.

41. The combination in a truck, of the side bars of the truck-frame, transoms extending between said bars, a bolster movably supported between the transoms, a motor secured at one end upon one of the truck-axles, a hanger attached to the transom, a link pivotally secured to the hanger and depending therefrom, an aperture formed in the end of the hanger, a circular lug projecting from the free end of the motor passing through said aperture, and means for securing said hanger to said lug below the transom, substantially as described.

42. The combination in a car-truck, of the top chords of the truck-frame, a transom extending between said chords, a motor supported at one end upon one of the truck-axles, a pendent hanger or hangers secured to said transom, a pendent swing-link secured to said hanger or hangers, said link having an apertured eye at the end, and a circular lug on the free end of the motor engaging said eye, substantially as described.

43. The combination in a truck, of the motor secured on an axle thereof, the side frames, transverse connections between the frames, the hangers 61 pendent from said connections and ranged in line with each other, links 63 suspended from the hangers by pins 62, the transversely-disposed apertured eyes 65 on the ends of the links, and rounded lugs 66 extending from the motor into said eyes, substantially as described.

44. In a car-truck, the combination with the side bars comprising the axle-box pedestals or yokes, a bar connecting said yokes, lugs depending from said bar, links depending from said lugs, the inflexi-

ble equalizing-bars connecting the links, and a bolster supported by said equalizing-bar, substantially as described.

45. A car-truck having links comprising a plurality of parts movable to or from each other in the direction of their length, a spring for opposing such movement, equalizing-bars pivotally secured at their ends to said links, a plank on said bars, springs on said plank, and a bolster on said latter springs, substantially as described.

46. A car-truck having a bolster and links extensible in the direction of their length and having interposed springs, equalizing-bars pivotally secured at their ends to an extensible element of said links, a plank on said bars, springs on said plank, and a bolster on said latter springs, substantially as described.

47. A two-part link, the parts being separable in the direction of their length, an interposed spring opposing such separation, and pivoting-eyes formed on the opposing ends of the said parts, combined with a truck-frame, equalizing-bars, and a bolster on said bars, the upper eye being pivotally attached to said frame, the lower eye being pivotally attached to said bars, substantially as described.

48. The combination with the side bars, the apertured barrel 18 having a spring-seat 20 at the lower exterior end thereof, means for suspending the barrel from the side bars, a spring on said seat exterior to the barrel, the cap 22 exterior to the barrel and on said spring, a bolt movable in said barrel, an equalizing-bar secured to said bolt and means for connecting the bolt and the cap 22, substantially as described.

49. The combination with the side bar, of the apertured barrel 18 pivoted thereto, a spring-seat 20 at the lower exterior end of the barrel, a spring on the seat exterior to the barrel, a cap 22 exterior to the barrel and on the spring, a bolt movable in the barrel and means for connecting it with the cap 22, and an equalizing-bar movably secured to said bolt, substantially as described.

50. The combination with the side bar, of the barrel 18 pendent therefrom, the spring-seat 20 on the lower portion of the barrel, a spring on said seat, a cap exterior to the barrel and resting on said spring diametrically-disposed slots 23 formed in said barrel, the bolt 25 movable in the barrel, a bar 24 extending from the bolt through the slots and engaging the cap 22, and the equalizing-bar 27 secured to said bolt, substantially as described.

51. The combination with the side bar 6 having the depending lugs 16, a pin 17 passing through said lugs, a barrel 18 supported from said pin, a spring supported on the exterior of said barrel, a bar 25 moving in said barrel, means for connecting said bar and said spring, and an equalizing-bar secured to said bar below said spring, substantially as described.

52. The combination with the side bar, depending lugs 16, a pin 17 in said lugs, a barrel 18 having an apertured head 19 through which said pin passes, the base of said head engaging the said lugs, a spring supported on the exterior of said barrel, a bar movable in said barrel, means for connecting said bar and said spring, and an equalizing-bar secured to said bar below said spring, substantially as described.

53. A spring link or hanger comprising the barrel 18 having an interior chamber, a thrust-bar 25 movable in said chamber, a seat 20 formed on the exterior of said barrel, a spring 21 resting on said seat and surrounding said barrel, a cap 21 resting on said spring and guided by said barrel, slots 23 formed in said barrel and a bar 24 extending from said thrust-bar through said slots and resting on the cap 22, substantially as described.

54. In a car-truck, the combination with the side frames, of eyebolts movably suspended from the side frames, bars movably secured to the eyebolts, springs combined with the eyebolts whereby said bars are elastically supported, a cross-beam supported by said bars, one or more springs thereon, and a car-supporting bolster supported by said latter springs, substantially as described.

55. In a car-truck, the combination with the side frames, of link-sections pivoted to the said frames, eyebolts to which the link-sections are movably secured, bars movably secured to the eyebolts, springs on the link-sections whereby the bars are elastically supported, a cross-beam supported by said bars, one or more springs on the beam, and a car-supporting bolster supported by the latter springs, substantially as described.

56. In a car-truck, the combination with the side frames, of link-sections pivoted to said frames, eyebolts to which the link sections are movably secured, bars movably secured to the eyebolts, spiral springs on the link-sections, cup-shaped spring-seats against which the spiral springs press, and a car-supporting bolster suitably supported on said bars, substantially as described.

57. In a car-truck, the combination with the side frames having axle-box pedestals, of the swing-links suspended from the side frames adjacent to said pedestals, inflexible equalizing-bars pivotally secured to said links below the side frames, and a cross bolster connecting the equalizing-bars below the side frames, substantially as described.

58. In a car-truck, the combination with the side frames, of the links hung from the side frames, springs on the links, equalizing-bars supported by said springs, a cross-beam connecting the equalizing-bars, one or more springs on said cross-beam, and a bolster on the latter springs, substantially as described.

59. In a car-truck, the combination with the side frames, of the links hung from the side frames, spiral springs supported and guided by said links, equalizing-bars supported by said springs, a cross-beam connecting the equalizing-bars, one or more elliptical springs on said cross-beam, and a bolster on the latter springs, substantially as described.

60. In a car-truck, the combination with the side frames, of the links hung from the side frames, springs on the links, equalizing-bars supported by said springs, a cross-beam connecting the equalizing-bars, one or more springs on the cross-beam, a bolster on the latter springs, and transoms extending between the side frames between which transoms the said bolster lies, substantially as described.

61. In a car-truck, the combination with side frames provided with axle-box pedestals near their ends to receive axle-boxes, springs disposed between the boxes and pedestals, whereby said frames are cushioned on the axle-boxes, of a car-body-supporting bolster elastically suspended from the side frames, and a motor sustained at one end on one of the truck-axles, the support for its free end finding an ultimate bearing on the journal-boxes, substantially as described.

62. In a car-truck, the combination with the side frames, of a car-body-supporting bolster, a beam pivotally and elastically suspended from the truck-frame below said bolster, and springs mounted on said beam and supporting said bolster, substantially as described.

63. In a car-truck, the combination with suitable side frames, of a swinging car-body-supporting bolster, a beam elastically suspended from the side frames below said bolster and a pair of elliptic springs mounted on said beam and connected with and supporting said bolster, substantially as described.

64. In a car-truck the combination with the side frames, links pivoted to said frames and movably connected to eyebolts, bars elastically suspended from said eyebolts, and a cross-beam supported by said bars, of elliptic springs mounted on said beam, and a car-body-supporting bolster mounted on said springs, substantially as described.

65. In a car-truck the combination with the side frames, of bars elastically suspended by link connections respectively from said frames, a beam extending transversely of the truck and resting on said bars, and a bolster supported on said beam, substantially as described.

66. In a car-truck, the combination with the side frames, of bars elastically suspended by link connections respectively from said side frames, a beam extending transversely of the truck and resting on said bars, a car-body-supporting bolster, and springs interposed between said beam and bolster, substantially as described.

67. In a car-truck, the combination with the truck-frame, of swing-links, a spring-plank, a bolster on the plank, and means for supporting the plank from the truck-frame, comprising springs and said links, substantially as described.

68. In a car-truck, the combination with the truck-frame, of swing-links, a spring-plank, springs on the plank, a bolster on the springs, and means for supporting said plank from the truck-frame comprising said links and additional springs adapted to cooperate with said links, substantially as described.

69. In a car-truck, the combination with the axle-boxes, and side frames provided near each end with openings adapted to receive or straddle said axle-boxes, of springs supporting said side frames elastically on the axle-boxes, and a car-body-supporting bolster elastically suspended from said side frames, substantially as described.

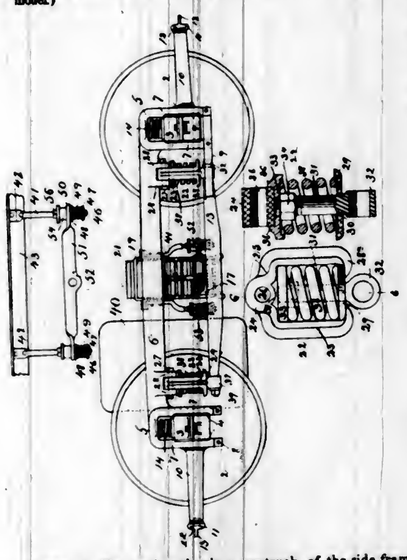
70. In a car-truck, the combination with the axle-boxes, and side frames provided near each end with openings adapted to receive or straddle said axle-boxes, of spiral springs arranged within the openings of said side frames and elastically supporting the latter on the axle-boxes, a car-body-supporting bolster on the equalizing-bars, and appliances elastically suspending said bars directly from the side frames, substantially as described.

71. In a car-truck, the combination with the side frames, of links pivoted to said frames, eyebolts to which the links are movably connected, bars movably connected to the eyebolts, springs whereby the bars are elastically supported, a cross-beam supported by said bars, one or more springs on the beam, and a car-supporting bolster supported by the springs, substantially as described.

72. In a car-truck, the combination with the side frames, of links pivoted to said frames, eyebolts to which the links are movably connected, bars to which the eyebolts are movably connected, spiral springs 21 supporting said bars, cups against which the spiral springs press, and a car-supporting bolster suitably supported on said beams, substantially as described.

73. In a car-truck, the combination with the side frames provided with openings near their ends to receive or straddle the journal-boxes, and springs arranged between the tops of said openings and the journal-boxes, whereby said frames are cushioned on the journal-boxes, equalizing-bars spring-supported from the side frames, a bolster elastically supported on said bars, a motor supported at one end on one axle, the free end of the motor being supported on the journal-boxes of the truck through an intermediate connection, substantially as described.

610,119. PIVOTAL TRUCK. GEORGE M. BRILL and SAMUEL M. CURWEN, Philadelphia, Pa., assignors to John A. Brill, same place. Original application filed Nov. 3, 1896, Serial No. 610,902. Divided and this application filed June 23, 1897. Serial No. 641,868. (No model.)



Claim.—1. The combination in a car-truck, of the side frames, hangers pivotally suspended from said frames, a bolt movable in each of the said hangers, a follower on the bolt, a spring interposed between the hanger and the follower, equalizing-bars secured at their ends to the bolt exterior to the hanger, and a bolster secured to said equalizing-bars, substantially as described.

2. In a car-truck, the combination with the side frame having pendent lugs, a pin passing through each of said lugs, stirrups suspended by said pins, an apertured spring-seat on said stirrup, a spring on the seat, an eyebolt having an eye at one end exterior to the stirrup, and a follower on the other end resting on said spring, an equalizing-bar connected at its end to each of said bolts, and a bolster on said equalizing-bars, substantially as described.

3. In a car-truck, the combination with the side frames, the stirrups pivotally supported from the side frames, spring-seats formed at the lower portions of said stirrups, a spring on each of said seats, the equalizing-bars, bolts on the ends of the equalizing-bars extending into said stirrups, connections between said bolts and the springs, and car-supporting devices resting on said bars, substantially as described.

4. The combination with the side frames, having the side bars, lugs on the side bars, stirrups suspended by the lugs, each stirrup having an aperture at the upper end and a spring-seat on the lower end, a pin passing through said lugs and aperture, springs on each of the spring-seats, the equalizing-bars and connected bolster, bolts extending from the ends of the equalizing-bars into the stirrups, and a follower in the stirrup resting on said spring, substantially as described.

5. The combination in a car-truck, of the side frames, the bolster, the equalizing-bars, the eyebolts movably secured to the ends of the equalizing-bars, a stirrup movably suspended from said side frames, said bolts having followers, and springs interposed between said followers and said stirrups, substantially as described.

6. In a car-truck, the combination with the top chord, of the link or hanger comprising the stirrups 23 having the top bar 25 provided with an apertured enlargement 24, apertured lugs on the top chord, a pin securing said stirrup to said lugs, an eyebolt and follower, a spring interposed between the follower and the stirrup, the follower having upwardly-extending lugs embracing the sides of the top bar 25, substantially as described.

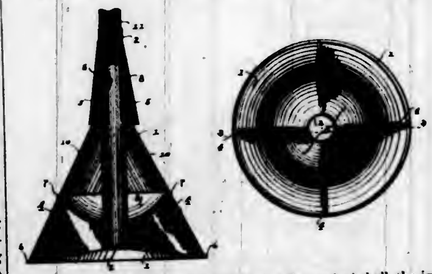
7. In a car-truck, the combination of the side bar, with the stirrup 23 having a top cross-bar 25, a transversely-apertured enlargement 24 in the top cross-bar, a pin securing the enlargement to the side bar a spring-seat 29 formed on the lower cross-bar 28ª, an aperture 30 formed in said seat, a bolt 31 passing upwardly into the stirrup through the aperture in the seat 29, a spring 38 on the seat 29 surrounding said bolt, a follower 33 secured on said bolt and resting on said spring, an apertured eye 32 formed on the end of said bolt and a bolster secured through intermediate connections to the said eye, substantially as described.

8. In a car-truck, the combination of the side bar, with the stirrup 23 having a top cross-bar 25, a apertured enlargement 24 in the top cross-bar, a pin securing said enlargement to the side bar, a spring-seat 29 formed on the lower cross-bar 28ª, a follower 33 within the stirrup, a bolt 31 passing into said stirrup through an aperture in the seat 29, said bolt being threaded and engaging a thread formed in the follower 33, a set-nut 34, engaging the follower, an apertured eye 36 formed on the said bolt exterior to the stirrup and a bolster secured through intermediate connections to said eye, substantially as described.

9. The combination in a car-truck and the axle-sustained motor, of the top chords of the truck-frame a transom extending between said chords, hangers depending from and secured to said transom, a cross-bar extending between said hangers, springs on the hangers above and below said bar, a spring-cap secured to the hanger below the transom against which cap the upper springs bear, a stop on the hanger for confining said cap thereon and means for connecting said bar to the free end of said motor, substantially as described.

10. The combination with the side bars 6, of the transom 43 extending between the side bars, the hangers 41 pendent from the transom, the cross-bar 51 on the hangers, springs for supporting said bar on said hangers located below the bar, springs above said bar on said hangers, nuts below and above each of said last-mentioned springs and a thread on the hangers for engagement with said nuts, substantially as described.

610,120. CLOTHES-WASHER. LEONARD B. BROOKS, Independence, Iowa. Filed Aug. 11, 1897. Serial No. 647,881. (No model.)

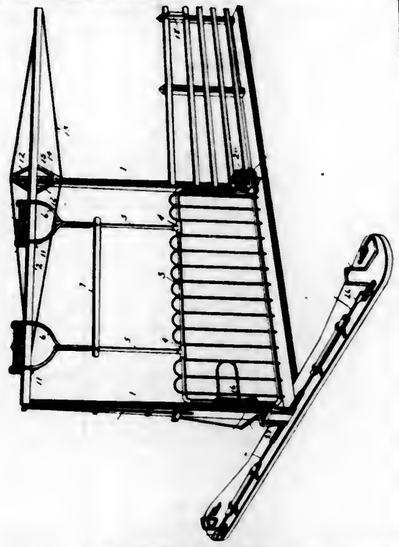


Claim.—A clothes-pounder comprising the conical shell, the imperforate concavo-convex diaphragm 3, arranged within the shell at a point between the top and bottom thereof to form an upper dead-air space for floating the pounder and presenting a lower convex face, the air-inlet tube 2 extending centrally into the shell and through the diaphragm and terminating short of the base of the shell at a point between the lower edge of the same and the diaphragm and provided at its top, above the shell, with openings, the substantially triangular radial plates 4 secured within the shell and presenting curved upper edges to the diaphragm and provided with lower inclined edges extending upward and inward from the lower edge of the shell to the lower end of the tube 2, the latter being adapted to supply the compartments formed by the plates 4, while the lower portion of the device is entirely submerged, and the hoods arranged above the shell and secured to the same and to the tube and disposed at an inclination over the openings of the latter and being open at their lower ends, substantially as described.

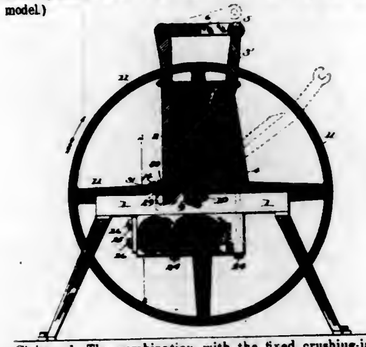
610,121. GATE. JOHN H. CHENOWETH, Paris, Ill. Filed July 15, 1897. Serial No. 644,682. (No model.)

Claim.—In a sliding gate, the combination of a track-rail having central oppositely-projecting braces, truss-rods extending over the braces to the ends of the rail, the lower brace being provided with a vertical series of holes, a bearing-pin carried by a post or upright at one side of the roadway upon which the track-rail is pivoted by said pin engaging one of the holes in the lower brace, an operating-rod connected to one end of the track-rail bell-crank levers connected to the operating-rod double-crank shafts connected by rods to the bell crank levers; together with a gate having uprights, rollers carried in the upper ends of the uprights and traveling upon the track-rail, and a spring-latch secured to the forward end of the gate, said

latch engaging a catch-plate carried by the gate-post substantially as shown and for the purpose set forth.



610,122. ROCK-BREAKER AND ORE-CRUSHER. FRANCIS H. COOK, Spokane, Wash. Filed Apr. 5, 1897. Serial No. 630,744. (No model.)



Claim.—1. The combination, with the fixed crushing-jaw, the movable jaw having the vertically-extended arm 3', provided with an open slot, or notch, on its upper end, and eccentric shaft on which the movable jaw is mounted, and the swinging arms 6, pivoted to the extension of the fixed jaw and having a transverse connecting-rod which is adapted to enter the aforesaid slot, and to be freely disengaged therefrom, as shown and described, for the purpose specified.

2. The combination with box-like frames arranged horizontally and having integral partitions, a fixed roll whose shaft is journaled in such partitions, a movable roll and journal-blocks therefor which are adapted to slide in said frames, screw-bolts passing through such partitions, and blocks and springs for cushioning the same, as shown and described.

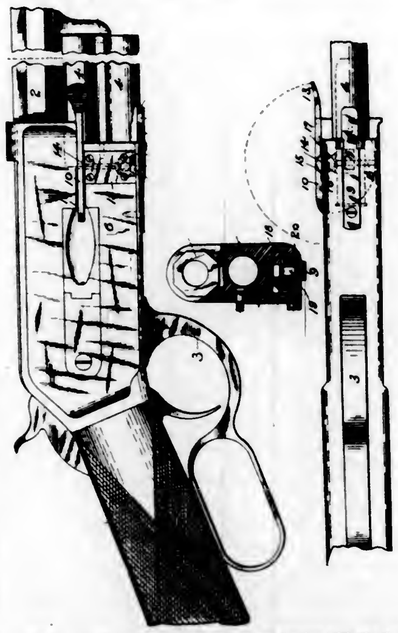
3. The combination with the fixed frame, and a shaft held in its top, of the fixed jaw, parallel arms pivoted on said shaft, and the pivoted jaw, having a detachable connection with said arms, substantially as shown and described.

4. The combination with the fixed jaw, of the breakable supporting L-bar arranged horizontally at the base of the same, and bolted thereto and to the base proper, as shown and described.

5. The reversible frame for roller-journals, the same having a fixed partition and slots alined lengthwise on opposite sides of the partition, as shown and described.

6. The combination with the movable jaw, adjustable crushing-rolls, and gears on the shafts of the same, of a shiftable gear 14, that meshes with the first-mentioned gears, the shaft 19 having an eccentric journal 17, and adapted to be rotated on its axis, and having polygonal portions, and the cotter-pin for securing said shaft in any desired rotary adjustment, as shown and described.

610,123. MAGAZINE FOR FIREARMS. HOWARD CRANER, Williamsport, Pa. Filed Oct. 23, 1897. Serial No. 656,175. (No model.)



Claim.—1. In a magazine-gun, the combination with the frame, the barrel and the connected rotatable magazine-tubes, formed with a slot near the rear end, of the spring-bar secured to the frame having a lug engaging with said slots, a rod having a cam engaging with said bar, the pinion on said rod, the intermeshing pinion, the rod to which it is secured and the lever secured to said last-mentioned rod, one end of which is adapted to pass through a slot in the side of the frame, substantially as described.

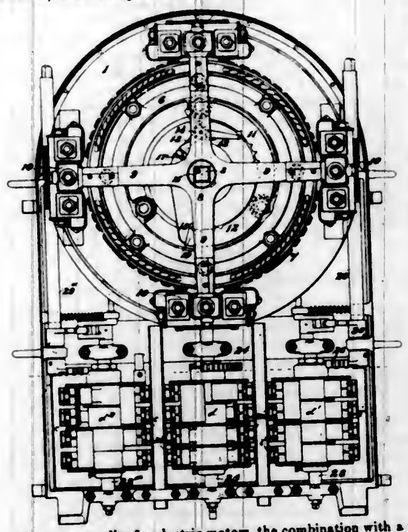
2. In a magazine-gun, the combination with the frame, the barrel, the connected rotatable magazine-tubes, having a slot near the rear end, and the spring-bar having a lug adapted to engage with said slots, of the lever at the side of the frame, one end of which is adapted to be projected through a slot in the frame, and means operated by said lever to disengage said lug from the slots in said tubes, substantially as described.

610,124. CONTROLLER FOR ELECTRIC MOTORS. HARRY P. DAVIS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed Apr. 26, 1898. Serial No. 678,690. (No model.)

Claim.—1. In a controller for electric motors, the combination with a resistance-varying switch having revolving brushes and a separate series-parallel switch, of gearing between the shafts of said switches, means for operating the first-named switch, a cut-out switch for each motor and means actuated thereby for preventing the operation of the series parallel switch beyond the series positions when a motor is cut out.

2. In a controller for electric motors, the combination with a resistance-varying switch having a plurality of revolving brushes, of a series-parallel switch comprising a drum and cooperating contact-fingers, gearing between the shaft of said drum and the shaft of said brushes, cut-out and reversing switches and interlocking devices to prevent operation of any of said switches except when the others are in predetermined positions.

3. In a controller for electric motors, the combination with a resistance-varying switch and a series-parallel switch, the shafts of said switches being at right angles to each other, of gearing between said shafts, combined cut-out and reversing switches and interlocking mechanism, substantially as described.

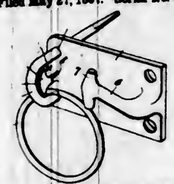


4. In a controller for electric motors, the combination with a resistance-varying switch having a plurality of sets of stationary contacts and a plurality of cooperating revolving brushes, of a series-parallel switch having a drum and cooperating contact-fingers, the shaft of said drum and that of said brushes being at right angles, gears of different ratio between said shafts corresponding to different portions of the rotary movement of the brush-shaft, and means for applying power to said brush-shaft.

5. In a controller for electric motors, the combination with a resistance-varying switch and a series-parallel switch, of gearing between the shafts of said switches, combined cut-out and reversing switches and interlocking mechanism, substantially as described.

6. In a controller for four electric motors, the combination with a resistance-varying switch and a series-parallel switch, of gearing between the shafts of said switches, combined cut-out and reversing switches for the respective motors on two shafts and operating connections between said shafts whereby their simultaneous operation is insured.

610,125. HARNESS-HAME ATTACHMENT. ISAAC P. DAVIS, Hungerford, Tex. Filed May 27, 1897. Serial No. 638,473. (No model.)

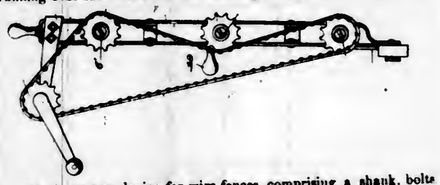


Claim.—A hame having the contour set forth, and an enlargement on the outer side standing outwardly therefrom, combined with a chain-fastening mounted on said enlargement and consisting of an inwardly-extending hook, a lug with opposite concave sides having a staple mounted thereover, and a ring engaging the said staple and lug, substantially as described.

610,126. WIRE-FENCE MACHINE. JOHN DEWITT and LESLIE C. JOLLY, Cooperstown, Ill. Filed Aug. 3, 1897. Serial No. 646,960. (No model.)

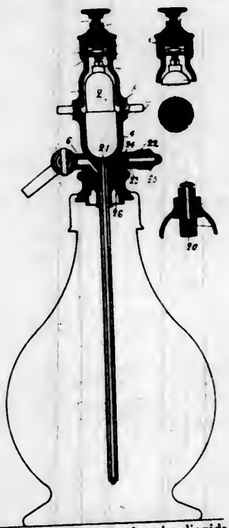
Claim.—1. In a wire-fence machine, the combination with an upright frame, of twisting-wheels having tubes journaled in the frame, an arm, bolts adjustably connecting the arm to said frame whereby the arm may be moved vertically, a wheel journaled on said arm, a crank connected to said wheel, and a chain running over said wheel and the twisting-wheels, substantially as described.

2. In a wire-fence machine, the combination with a frame comprising upright portions, of twisting-wheels having tubes carried by the frame, an arm, J-shaped clip-bolts adjustably connecting the arm to the said frame whereby said arm may be moved vertically, a wheel journaled to said arm, a crank carried by the wheel, and a chain running over said wheel and the twisting-wheels.



3. A tension device for wire fences, comprising a shank, bolts projecting out therefrom, a head rotatably connected to the shank, a transverse spindle journaled in the head, an arm rigid on one end of said spindle, and a pin removably inserted in registering openings in the arm and head, substantially as described.

610,127. APPARATUS FOR CONTAINING COMPRESSED CARBONIC ACID AND CHARGING WATER THEREWITH. VICTOR DURAPORT, Paris, France. Filed Feb. 19, 1898. Serial No. 670,969. (No model.)



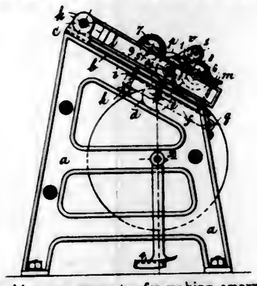
Claim.—1. An apparatus for charging liquids with gas, consisting of a cartridge or gas-container an outlet-valve for the gas closed by interior pressure, a stem entering said container its outer end lying in a chamber containing the cartridge and a movable slide entering a screw-cap for said chamber and supported directly over said stem by an elastic diaphragm which separates the interior of the screw-cap from said chamber, substantially as described.

2. An apparatus for charging liquids with carbonic-acid gas consisting of a cartridge or compressed-gas container inclosed in a chamber, an outlet-valve for said container closed by interior pressure of said gas, a stem entering the cartridge and having one end on said valve, the other end being on the outside, a threaded sleeve tapped into a screw-cap, which closes the cartridge-containing chamber a slide arranged to move in said sleeve an elastic diaphragm between the slide and the stem of the outlet-valve, and a cross-head on the outer end of the slide adapted to engage the end of the sleeve and turn it, to adjust it inwardly and outwardly, substantially as described.

610,128. MACHINE FOR MAKING EMERY OR GLASS CLOTH OR PAPER. RICHARD J. EDWARDS, London, England. Filed Dec. 10, 1897. Serial No. 661,445. (No model.) Patented in England Apr. 13, 1897, No. 9,344, and in France Sept. 24, 1897, No. 270,715.

Claim.—1. In machinery or apparatus for making emery or glass cloth or paper in lengths, the combination of the frame *a*, table *b*, pressure-roller *d*, a frame *f* carrying said pressure-roller and hinged at *g* to the table *b*, adjusting-screws *k*, and elastic block *i*, frame *l*, pivoted to the table *b*, screws *m*, transverse spindle *n* and revolving helically-grooved roller *o*, transverse spindle *s*, tube *u*, weighted lever

r, needles or teeth *w*, and transverse bar 1, spindle *x* and cams 2 and 3, transverse spindles 5 and 6 and brushes 7 and 8, and driving-pulleys, belts and friction-gear, arranged and operating substantially in the manner and for the purposes described and illustrated.



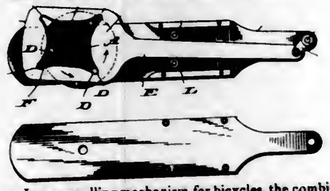
2. In machinery or apparatus for making emery or glass cloth or paper in lengths, the combination of a frame *a*, table *b*, pressure-roller *d*, a frame carrying said pressure-roller, adjusting-screws *h* and elastic block *i*, frame *l* pivoted to the table *b*, screws *m*, transverse spindle *n*, and revolving grooved roller *o*, arranged and operating substantially as and for the purpose described and illustrated

3. In machinery or apparatus for making emery or glass cloth or paper, the combination with the helically-grooved roller *o*, of the transverse revolving spindle *s*, tube *u*, weighted lever *v*, needles or teeth *w* for cleaning the helical grooves in the revolving roller *o*, and revolving cams 2 and 3, arranged and operating substantially as and for the purpose described and illustrated.

4. In machinery or apparatus for making emery or glass cloth or paper, the combination with the revolving grooved roller *o*, of the transverse revolving spindles 5 and 6 and brushes 7 and 8, arranged and operating substantially as and for the purpose described and illustrated.

5. In combination with the revolving grooved rollers *o*, and revolving brushes 7 and 8, means for slightly oiling the brushes, substantially as described.

610,129. BICYCLE PROPULSION. ERIC W. ERICSON, Florence, Wis. Filed Feb. 15, 1898. Serial No. 670,374. (No model.)



Claim.—In a propelling mechanism for bicycles, the combination with the pedal-shaft, the disk mounted thereon, lugs on the face thereof, antifriction-rollers on the said lugs, the pitman, having an opening or aperture in its broadened end, with an irregular margin forming a track on which the said antifriction-rollers are adapted to travel when the disk is rotated, and the antifriction-rollers mounted on the casing carrying the pitman, and between which rollers the pitman is guided in its reciprocating movements, and the crank pivoted to the end of the pitman, as shown and described.

610,130. JOURNAL-BOX. NATHAN M. FARMER, Empire, Colo. Filed Mar. 22, 1898. Serial No. 674,821. (No model.)



Claim.—A journal-box comprising a base-piece having a groove in its upper surface, a lug upon the upper side thereof adjacent to one end and located in line with the transverse center thereof and a pair of parallel lugs at the opposite end thereof integral with the base-piece, and a lid or cover having a socket in its under surface in which the centrally-located lug on said base-piece fits, to which lug said lid is pivoted, and having a tongue or tenon at its opposite end integral with the lid which fits between the parallel lugs on the base-piece, the said tongue or tenon being formed by recesses upon opposite sides thereof in which said parallel lugs fit, and said lid or cover being further provided with a groove upon its under surface which registers with the groove in the base-piece, as and for the purpose set forth.

610,131. BILLIARD-CUE. JAMES W. FARRAND, El Paso, Tex. Filed July 31, 1897. Serial No. 646,657. (No model.)



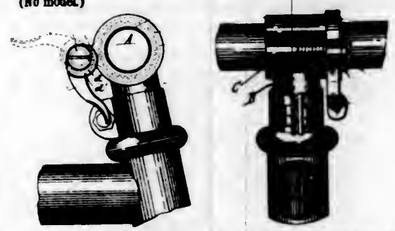
Claim.—1. The combination with a cue chambered inwardly from its end to provide a chalk-magazine, of a screw-threaded wire located within the chamber centrally thereof and connected to the cue, which wire has laterally-extending pins, located at intervals along its length, which bear against the walls of the chamber and hold said wire centrally thereof, a tip, and a threaded cap connected to the tip and adapted to screw on the wire.

2. The combination with a cue having a chamber in one end thereof, of a screw-threaded wire located within said chamber and connected to the cue, and a tip comprising a leather portion, a rubber washer, an interposed wooden washer, and a cap countersunk within said wooden washer having a central threaded aperture, the said cap adapted to fit within said chamber, engage the threads on said wire, and provide a space between it and the inner surface of said chamber, as and for the purpose set forth.

3. The combination with a cue chambered inwardly from one end thereof to provide a chalk-magazine, of a sack containing an absorbent located in the chamber, and a tip detachably connected to the cue and normally closing the mouth of the chamber.

4. The combination with a cue chambered inwardly from one end, of a wire located in said chamber and connected to the cue, an annular sack containing absorbent material which encircles the wire, and a tip detachably connected to the wire and normally closing the mouth of the chamber.

610,132. ADJUSTABLE HANDLE-BAR FOR BICYCLES. JAMES F. GOODRIDGE, Boston, Mass. Filed Oct. 23, 1897. Serial No. 656,705. (No model.)



Claim.—1. The combination with the internally-toothed socket on the steering-post and the longitudinally-movable, axially-adjustable handle-bar passed through said socket and having external teeth interlocking with those in the socket, of a locking-lever or eccentric pivoted on one end of the socket and adapted to engage the handle-bar, substantially as described.

2. The combination with the internally-toothed socket on the steering-post, and the longitudinally-movable, axially-adjustable handle-bar having external teeth at its middle interlocking with those in the socket, and a stop shoulder or collar at one end of the handle-bar teeth, of a lever pivoted on one end of the socket and having a cam or eccentric surface to engage the handle bar, substantially as described.

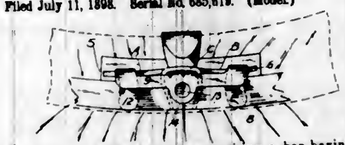
3. The combination with the socket on the steering-post and the axially-adjustable handle-bar passed therethrough and having a sliding interlocking engagement with the interior thereof: said handle-bar being provided with a stop collar or shoulder abutting against one end of the socket, of a locking-lever having a cam-surface to engage the outer face or periphery of said collar or shoulder and a flange or lip to engage the outer side face of the shoulder, substantially as described.

4. The combination with the socket on the steering-post having

internal longitudinal teeth extending from end to end, and the longitudinally-movable, axially-adjustable, handle-bar passed through said socket and having external teeth corresponding to and interlocking with those in the socket, and also having a stop collar or shoulder, of a locking device mounted on one end of the socket, and movable inwardly far enough to engage the said collar or shoulder but insufficiently to engage the teeth on the handle-bar, substantially as described.

5. The combination with the internally-toothed socket and the longitudinally-movable, axially-adjustable handle-bar toothed to correspond with said socket and provided with a stop collar or shoulder of greater diameter than the said socket of a lever pivoted to one end of the socket and having a cam or eccentric face to engage the outer face of the said collar or shoulder and a flange or lip to engage the outer side face of said shoulder; said cam-surface and flange being insufficient in width to cross or intersect the bore of the socket, substantially as described.

610,133. SKIRT-SUPPORTER. LUCIE A. GRAHAM, Denver, Colo. Filed July 11, 1898. Serial No. 685,619. (Model.)

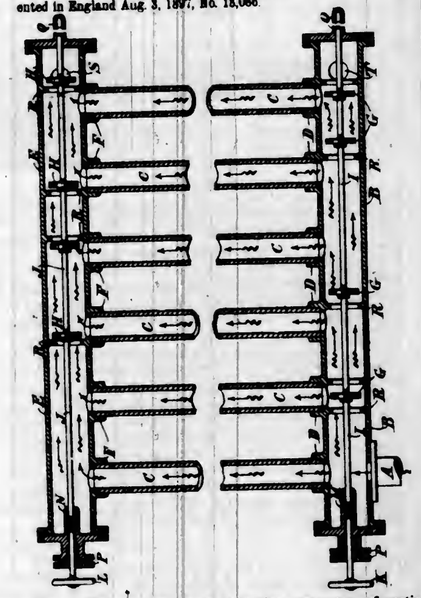


Claim.—1. A skirt-supporter comprising a bar having an upwardly-projecting skirt-supporting arm for engagement with the skirt, and having inwardly and downwardly turned arms for engagement with the waist: substantially as described.

2. A skirt-supporter comprising a bar having an upwardly-projecting skirt-supporting arm extending from the upper edge and provided with an outwardly-turned hook and a series of hooks turned inwardly and downwardly from said bar for engaging the waist, as set forth.

3. A skirt-supporter comprising a bar having a central upwardly-projecting skirt-supporting arm whose upper portion is provided with an outwardly-turned hook, the extremities of said bar being provided with inwardly-turned downwardly-projecting hooks, for engagement with the waist, as set forth.

610,134. HEATING APPARATUS. EDWARD GREEN, Wakefield, England. Filed Dec. 20, 1897. Serial No. 662,672. (No model.) Patented in England Aug. 3, 1897, No. 18,086.



Claim.—The combination, in a heating apparatus, of vertical tubes C, upper and lower horizontal pipes E and B connected, respectively, with the upper and lower ends of said tubes and provided internally, in juxtaposition to, and at points between the ends of the vertical tubes, with internal ribs R constituting valve-seats, lengthwise-movable rods J and I, located in the horizontal pipes, and valves H and G, each rod having a series of attached valves located, respectively, between two of the said valve-seat ribs, and some of the valves constructed and arranged, respectively, to close against either one of two adjacent valve-seat ribs to change the direction of the flow of the supply-water, substantially as and for the purposes described.

610,135. SASH-LIFT. WILLIAM H. GREEN, Elizabeth, N. J. Filed Mar. 15, 1898. Serial No. 673,952. (No model.)



Claim.—1. An attachment for a window, comprising a plate or shield adapted to be attached to the top rail of a sash, an inwardly-extended ledge at the upper edge of said plate or shield, and brackets extended inward from the plate or shield below said ledge, substantially as described.

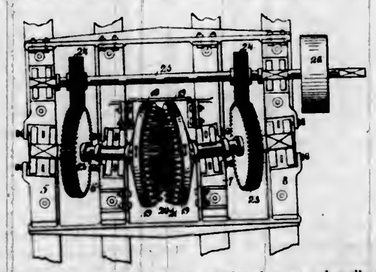
2. An attachment for a window-sash, comprising a plate or shield adapted to be secured to the inner side of the top rail of a sash, an inwardly-extended ledge at the upper edge of said plate or shield, and an upwardly-extended flange on the inner upper edge of said ledge, substantially as specified.

3. An attachment for a window-sash, comprising a plate or shield adapted to be attached to the inner surface of the upper rail of the window sash, a ledge extended inward from the upper edge of said plate or shield, and a stop extended inward from said plate or shield below the ledge, substantially as specified.

4. An attachment for a window-sash, comprising a plate or shield adapted to be attached to the inner side of the top rail of a sash, and having a flange for engaging over the upper surface of said top rail, a ledge extended inward from the upper edge of the plate or shield, a flange extended upward from the inner upper edge of said ledge, and a stop on the flange which extends over the upper surface of the rail, substantially as specified.

5. An attachment for a window-sash, comprising a plate or shield adapted to be secured to the inner side of the top rail of a sash, and having an outwardly-extended flange at its top to engage upon the top of the upper rail, a loop-shaped stop extended upward from said flange, a ledge extended inward from the upper edge of the plate or shield, and having its under side inclined downward and inward, an upwardly-extended flange on the upper inner edge of said ledge, a loop shaped stop extended inward from the plate below said ledge, and brackets extended inward from said plate at the sides of its center, substantially as specified.

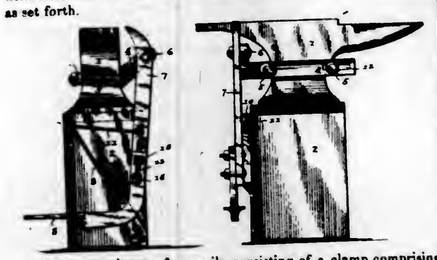
610,136. COAL-CRUSHER. THOMAS R. GRIFFITH, Pittston, Pa. Filed Dec. 18, 1896. Serial No. 616,186. (No model.)



Claim.—In a crushing-machine of the character described, the combination with a pair of shafts provided with toothed crusher-disks, journal-boxes for said shafts, journal-supporting plates, means for adjusting the journal-boxes with respect to said plates, sole-plates supporting the journal-supporting plates, and mechanism for adjusting the relations of said sole-plates and journal-supporting plates, substantially as specified.

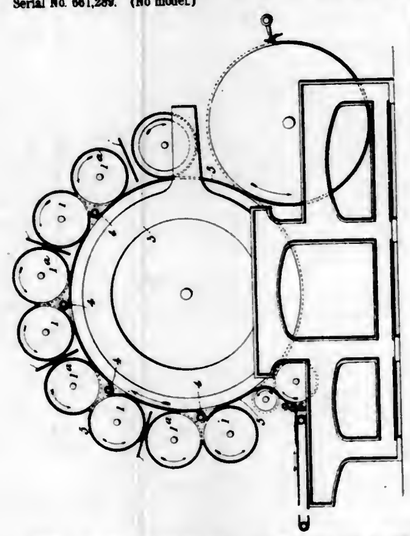
610,137. ANVIL ATTACHMENT. JAMES A. GUILES, Hadley, Mich. Filed Feb. 23, 1898. Serial No. 671,307. (No model.)

Claim.—1. The herein-described attachment for anvils consisting of a clamp comprising longitudinal bars and bolts connecting the end portions of the bars and clamping them against the sides of the anvil, one of the bars having an end portion extended and bent to provide an obliquely-disposed arm, a lever fulcrumed near its upper end to the said oblique arm and terminating in a jaw to grip the work between it and a side of the anvil, and having its lower end bent and flattened to provide a treadle, a flat spring to be secured at one end to the anvil-block, and a link connecting the free end of the spring with the lever to hold the latter normally out of action, substantially as set forth.



2. An attachment for anvils, consisting of a clamp comprising parallel bars having longitudinal slots at one end, bolts connecting the bars, one of the bolts operating in the longitudinal slots thereof and one of the bars having an upwardly-extending arm, a lever fulcrumed to said arm and composed of sections having their end portions overlapping and longitudinally slotted, fastenings operating in the slots of the lever-sections and adjustably connecting them, a spring, and a link connecting the spring with the lever, substantially as set forth.

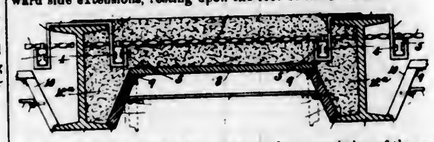
610,138. CARDING-ENGINE. ARMITAGE HAIGH, Huddersfield, England, and ALPHONSE BORIOS, Vevey, Switzerland. Filed Dec. 9, 1897. Serial No. 661,289. (No model.)



Claim.—In a carding-engine, the combination of a main cylinder, workers arranged around said cylinder in proximity thereto and at equal distances therefrom, diverting-plates placed at intervals between the workers and serving to separate them into groups of two, and a stripper between the workers of each pair, said strippers operating to strip the cotton from the first worker of each pair, substantially as described.

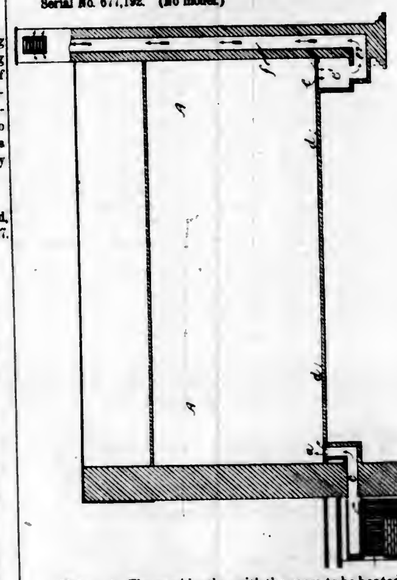
610,139. CONSTRUCTION OF CONCRETE FLOORS FOR BUILDINGS. WARNER H. JENKINS, Philadelphia, Pa., assignor, by mesne assignments, of one-half to Virgil W. Waters, same place. Filed Nov. 3, 1897. Serial No. 657,274. (No model.)

Claim.—1. In a floor for buildings, the combination of the I-beams, the series of saddles resting upon and depending therefrom, and provided with the sockets, the longitudinal bars resting in said sockets and having a series of notches in the upper edge thereof, the cross-bars extending between opposite I-beams, and resting in the said notches, together with the body of concrete having inwardly-inclined downward side extensions, resting upon the feet of the I-beams.



2. A skeleton support for a concrete floor, consisting of the combination of the I-beams, the series of saddles resting upon and depending therefrom, and having the sockets, the longitudinal bars resting in said sockets and having a series of notches in the upper edge thereof, together with the cross-bars extending between opposite I-beams and resting in said notches, substantially as described.

610,140. MEANS FOR HEATING, DRYING, AND VENTILATING. JOHN LANGFIELD, Manchester, England. Filed Apr. 11, 1898. Serial No. 677,192. (No model.)

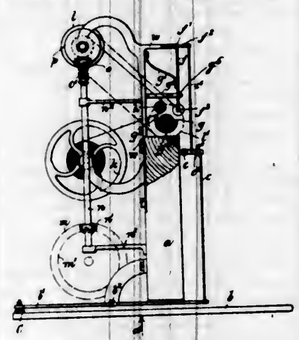


Claim.—1. The combination with the room to be heated, or dried and ventilated, of a suitable air-heating apparatus, an expansion-chamber between the air-heating apparatus and the room into which the heated air is discharged, an inlet connecting the room with said chamber, the area of which inlet is greater than the combined area of the air-heating tube or tubes of the air-heating apparatus, an outlet from said room of greater area than the inlet and greater than the area of the chimney or uptake, an uptake or chimney and a reservoir between said outlet and uptake or chimney, substantially as described.

2. The combination with the room to be heated, or dried and ventilated, of a suitable air-heating apparatus, an expansion-chamber between the air-heating apparatus and the room into which the heated air is discharged, an inlet connecting the room with the chamber, the area of which inlet is at least twice the area of the air-heating tube or tubes, an outlet from said room of greater area than the inlet, an uptake or chimney of less area than the outlet, and a reservoir between the outlet and uptake or chimney, the area of which reservoir is substantially twice the area of the openings in the grid forming the outlet and the cubic capacity of which is greater than the number of square feet of area in the outlet, substantially as described.

610,141. MUSIC-RECORDING MECHANISM. ALBERT A. LAVEUILLERE, London, England. Filed Apr. 19, 1898. Serial No. 678,161. (No model.)

Claim.—In combination with the frame *a* having means for attaching it in upright position to the piano and above the keys of the same, levers *b'* extending over the keys and pivotally supported by the frame to be operated by an upward movement of the rear end of the key, the inking-roller *g* and trough, the tension and guide roller *h* above the same, the paper-supply roll and winding-roll, means for driving the winding-roll, a connection between the same and the inking-roller to drive the same, the said guide and tension roller *h* directing the paper so as to be exposed to view at the front of the instrument and above the inking-roller, the printing-disks f^4 at the front of the guide-roller and above the inking-roller, the depending arms carrying the printing-disks and the connections between said arms and the levers *b'* over the keys, substantially as described.



610,142. COMBINED MATCH-BOX, CIGAR-CUTTER, &c. ADOLPHE W. LE BRON, Montgomery, Ala., assignor of two-thirds to Fred F. Visscher, same place, and Otto K. Le Bron, Chattanooga, Tenn. Filed Mar. 14, 1898. Serial No. 673,740. (No model.)



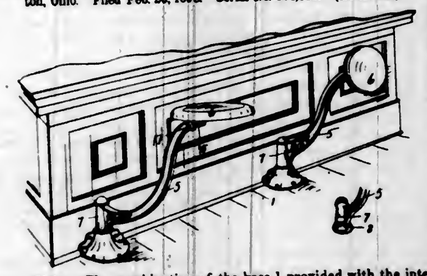
Claim.—1. A match-box provided with a pipe-packer rigidly secured to the end of the same, substantially as set forth.

2. A match-box, provided with a pipe pick or cleaner lying wholly within and adapted to be projected from one end of the same, substantially as set forth.

3. A match-box, having an extension at one end provided with an opening, and a knife sliding within the box and independent of the cover and adapted to be projected from the box across said opening without opening the box, substantially as set forth.

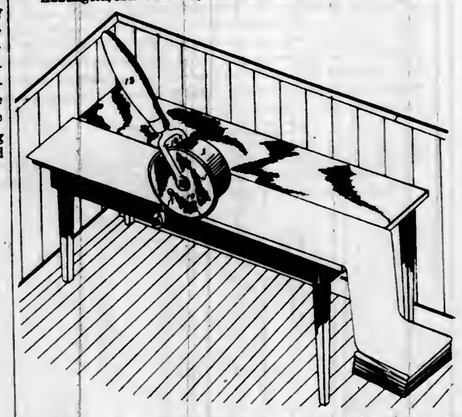
4. A match-box, provided interiorly with a combined pipe pick or cleaner, and a cigar-cutter, the former being adapted to be projected from one end of the box, and the other adapted to be projected from the opposite end, substantially as set forth.

610,143. COUNTER OR TABLE STOOL. CHARLES H. LIND, Canton, Ohio. Filed Feb. 26, 1898. Serial No. 671,815. (No model.)



Claim.—The combination of the base 1 provided with the integral tapering spindle or post 2 having at its upper end the cup or recess 3, the notches or recesses 4 formed in the base 1, the stool-arm 5 provided with a socket having a lug for engagement with the recess 4, and a lug to fit the recess in the upper end of the spindle, the seat 6 provided with a plate having an eye and lugs a locking-bolt and a recess or opening formed in the rounded portion of the stool-arm, substantially as and for the purpose specified.

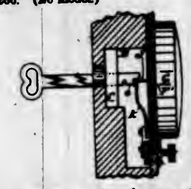
610,144. ROTARY PAPER-CUTTING KNIFE. WILLIAM C. MILES, Huntington, Ind. Filed July 17, 1897. Serial No. 644,914. (No model.)



Claim.—1. As an improvement in revoluble knives for paper-hangers, &c., the combination with the revoluble blade, of a barrel secured thereto, an axle taking through said barrel and having each end thereof recessed; a conical head taking into each recess and designed to contact with antifriction-balls placed therein and means for holding said heads in position, substantially as specified and for the purpose set forth.

2. As an improvement in revoluble knives for paper-hangers, &c., the combination with a revoluble blade, of a barrel secured thereto, an axle taking through said barrel and having each end thereof recessed, a conical head taking into each recess and designed to contact with antifriction balls placed therein; an operating-handle having arms adapted to extend to either side of the knife thus provided, and suitable means for holding said heads and arms in their operative positions, substantially as specified and for the purpose set forth

610,145. WATCHMAN'S TIME-DETECTOR. JOSEPH MCCARTHY, Franklin, Ohio, assignor of three-fourths to Leo H. McCarthy, same place, and Chas. R. Oglesby, Middletown, Ohio. Filed June 13, 1898. Serial No. 683,266. (No model.)



Claim.—1. In a watchman's time-detector, the combination of a clock having a rotating time-dial, and a lock having a key-opening entirely through it, of a resilient arm mounted between the lock and the face of the dial and movable in an arc, a pin on said arm that may be shifted to vary the positions of its impressions on the time-dial when the key is moved inwardly against said arm, substantially as and for the purposes specified.

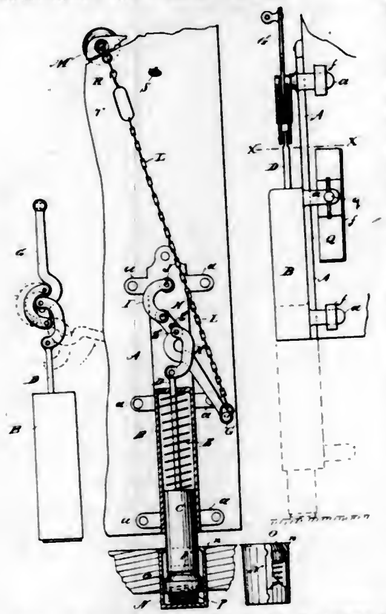
2. In a watchman's time-detector, the combination of a supporting-plate having a T-shaped and a segmental slot therein, a clock-supporting case having a T-shaped projection adapted to interlock with the T-shaped slot in said supporting-plate, and a segmental slot in said clock-supporting case, a resilient arm with pin thereon adapted to project through said segmental slots, a segment-gear fixed to the shaft of said arm, and a pinion meshing with said segment-gear, and means for directing the movement of said pinion to regulate the position of the said arm, substantially as and for the purposes specified.

3. In a watchman's time-detector, the combination of a supporting-plate having a T-shaped and a segmental slot therein, a clock-supporting case having a T-shaped projection adapted to lock with said T-shaped slot, and a segmental slot adapted to be in line with the segmental slot in the supporting-plate, a time-dial exposed through said segmental slots, a segment-gear connected with said arm, a pinion meshing with said segment-gear, and a lock and key by means of which said resilient arm is operated, substantially as and for the purposes specified.

4. In a watchman's time-detector, the combination of a support-

ing-plate having a segmental slot therein, a clock-supporting case mounted an said supporting-plate and having a segmental slot therein in line with the similar slot in the said supporting-plate, a time-dial exposed through said segmental slots, a resilient arm mounted on said supporting-plate, a pin on said arm adapted to puncture the dial through the said segmental slots, a segment-gear connected with said arm, a pinion meshing with said gear, and a scale and pointer for directing the movement of said arm and pin through said gearing, substantially as and for the purposes specified.

610,146. DOOR HOLDER AND BOLT. ROBERT NORTH, Webster Groves, Mo., assignor of one-half to William North, Faulkner, Kans. Filed Nov. 29, 1897. Serial No. 660,068. (No model.)



Claim.—The body-piece provided with a barrel, a plunger-bolt placed in the barrel, a stem connected to the bolt and extending through the upper end of the barrel, a spring placed in the upper portion of the barrel, and bearing against the plunger-bolt, the curved links I, K, and the operating-lever connected to the inner end of each of the links, combined with the two-part shell N, the plug O placed therein and normally closing the opening in the casing, and the spring P placed under the plug, the parts being arranged to operate substantially as shown.

610,147. DUST-GUARD FOR AXLE-BOXES. FRANK RATTEE, Denver, Colo. Filed May 28, 1898. Serial No. 682,082. (No model.)



Claim.— 1. In a dust-guard for car-axle boxes, the combination of a washer adapted to surround the journal of the axle, and a packing-ring engaging the journal, the washer being provided with tongues engaging the packing-ring on one side, while the body of the washer engages it on the opposite side, the washer being further provided with springs engaging the axle-box, whereby the device is held securely in place.

2. In a dust-guard for axle-boxes, the combination of a washer surrounding the journal and provided with tongues formed integral with the body of the washer and bent inwardly from its outer edge toward the journal, a packing-ring engaging the journal and located between the body of the washer and the tongues, another packing-ring larger than the first-named ring, the washer being provided with lips engaging the larger ring which is held between the lips and the body of the washer, the latter being so constructed as to cooperate with the lips and tongues to hold the packing-rings in place.

3. In a dust-guard for axle-boxes, the combination of a washer surrounding the journal and provided with tongues formed integral with the body of the washer and bent inwardly from its outer edge toward the journal, and a packing-ring engaging the journal and located between the body of the washer and the tongues.

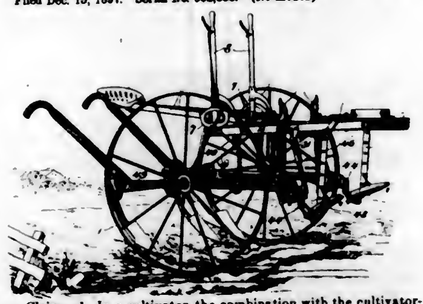
4. In a dust-guard, the combination of a washer provided with tongues, lips, and springs, all formed integral with the body of the washer, and two packing-rings held in place by the tongues and lips, the springs being adapted to hold the dust-guard in operative relation with the journal and the adjacent portion of the journal-box.

5. In a dust-guard, the combination of a washer adapted to surround the journal of the axle, a packing-ring held in place by the washer, and springs formed integral with the washer, bent inwardly from its outer edge and engaging the adjacent portion of the journal-box to hold the dust-guard in place.

6. A dust-guard comprising a washer provided with springs, tongues and lips, all formed integral with the body of the washer, and two packing-rings of unequal size held in place on the washer by the tongues and lips respectively, the washer being shaped to cooperate with said elements, the springs being adapted to engage the adjacent portion of the journal-box to hold the dust-guard in place.

7. In a dust-guard for axle-boxes, the combination of a packing-ring adapted to surround the journal, said ring being divided, its adjacent extremities being fashioned to overlap forming a tight joint, and a washer having tongues bent inwardly toward the journal to hold the packing-ring in place, the latter being located between the body of the washer and the tongue extremities.

610,148. CULTIVATOR. JAMES D. SCHOFIELD, Dallas, Tex., assignor to the Texas Implement and Machine Company, same place. Filed Dec. 15, 1897. Serial No. 662,038. (No model.)



Claim.—1. In a cultivator, the combination with the cultivator-frame, the adjustable crank-axle and ground-wheels, of the front arched draft-yoke, the head-blocks carried thereby, the inclined braces connecting the head-blocks and cultivator-frame, and braces pivotally connecting the inclined braces and the crank-axles.

2. In a cultivator, the combination with the cultivator-frame, the adjustable crank-axle and ground-wheels, of the front arched draft-yoke, the head-blocks carried thereby, the inclined braces connecting the head-blocks and cultivator-frame, clips located on the crank axles and the inclined braces, and braces pivoted at their ends to the clips at each side of the machine.

3. In a cultivator, the combination with the opposite side beams, and an arched draft-yoke, of castings secured to the beams and provided with depending sleeves embracing the depending terminals of the draft-yoke.

4. In a cultivator, the combination with the opposite side beams, and an arched draft-yoke, of castings secured to the beams and provided with depending sleeves embracing the depending terminals of the draft-yoke, said castings being provided with sockets, curved standards located in the sockets, lifting-springs depending from the standards, and beams coupled to the ends of the arched draft-yoke and connected to the lifting-springs.

5. In a cultivator, the combination with opposite side beams, an intermediate cross-bar, an arched draft-yoke connected thereto, of castings secured to the side beams and provided with depending sleeves receiving the depending terminals of the draft yoke.

6. In a cultivator, the combination with the opposite side beams, the intermediate cross-bar terminating in end securing-plates bolted to the beams and having its under side longitudinally concaved, and an arched draft-yoke located therein and clipped to the cross-bar, of opposite castings bolted to the side beams and provided with depending sleeves receiving the depending terminals of the arched yoke-frame, and braces between said sleeves and castings.

7. In a cultivator, the combination with the opposite side beams, the draft-pole pivoted between its ends between the front ends of said beams, the angular heel-plate casting 20 bolted to the rear end or heel of the draft-pole and provided with a vertical flange having a series of bolt-holes, of a cross-bar connecting the side beams and having a pair of perforated lugs to embrace the flange of the heel-plate, and a connecting-bolt.

8. In a cultivator, the combination with the frame and the transverse axle, of a pair of seat-bars pivoted at their front ends to the frame, a seat supported upon the rear ends of the bars, and a pair of sliding sleeves mounted on the bars, each sleeve having a vertical flange provided with steps or notches located in different planes and adapted to engage over the axle.

9. In a cultivator, the combination with the cast-metal side beams terminating at their rear ends in the integral alining eyes and the toothed sectors, of the sleeve located in and connecting the eyes, the divided axle located in the sleeve, the lifting-sleeves fulcrumed at the sides of the sectors and carrying locking pawls and lifting-arms, the cultivator-beams, and the lifting-chains connected to the lifting-arms and beams.

10. In a cultivator, the combination with the upper framework and the arched draft-yoke, of the head-blocks mounted on the terminals of the yoke-frame and having the ends of their bores flared, the bored cones located in said ends, means for securing said cones in position, and beams connected to the head-blocks.

11. In a cultivator, the combination with the frame, arched axle, and arched draft-yoke terminating in outwardly-disposed ends, bored head-blocks located on said ends, cone-bearings located on said ends and fitting the ends of the bores of the head-blocks, inclined braces bolted to the frame and terminating at their lower ends in eyes engaging the outer cones, and braces connected to the brace-rods and to the arched axle.

12. The combination with a cultivator comprising an arched draft-yoke, head-blocks for the same and a member of a draft clevis for each of the blocks, of opposite beams provided at their front ends with companion clevis members, planting mechanisms mounted on said beams, and an adjustable connection between the said beams.

13. The combination with a cultivator-frame, comprising lift-levers, head-blocks, clevis members, and an arched draft-yoke, of beams provided at their front ends with companion clevis members, planting mechanisms supported by the beams, and lift-chains for the same connected to the lift-levers.

14. The combination with a cultivator-frame comprising clevis members, of a pair of beams having their front ends inwardly disposed and provided with companion clevis members and carrying planter mechanisms, perforated bars overlapping each other and extending from the beams, and bolts for the same whereby they are adjustably connected.

610,149. BOTTLE-STOPPER. EZRA M. O. SEAMAN, Beaver Falls, Pa. Filed Apr. 11, 1898. Serial No. 677,162. (No model.)



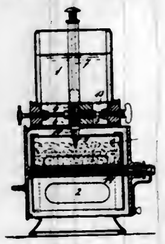
Claim.—1. In a non-refillable bottle, the combination with the neck, of a supplemental neck or casing brazed or otherwise secured thereto, said bottle-neck being provided on its sides with vertically-extending irregular grooves which terminate at their lower ends in recesses or pockets, said grooves being adapted to receive a wire or cord which is attached to the fastener and secured in the aforesaid recess, said wire or cord carrying a stopper, substantially as shown and described.

2. In a non-refillable bottle, the combination with the bottle-neck having an exterior annular groove, two vertically-extending irregular grooves terminating below the exterior annular groove in pockets or recesses, said grooves and recesses being adapted to receive the fastening means, and a stopper carried by said fastening means, substantially as shown and described.

3. In a non-refillable bottle, the combination with the bottle-neck having an exterior annular groove, and vertically-extending irregular grooves which terminate at their lower ends in pockets or recesses, a supplemental neck or casing brazed or otherwise secured to the bottle-neck, said grooves and recesses being adapted to receive the fastening means for the stopper carried thereby, substantially as shown and described.

4. In a non-refillable bottle the combination with the bottle-neck having exterior vertically-extending irregular grooves terminating at their lower ends in pockets or recesses said pockets or recesses adapted to receive a fastening device to which the cords or wires within said grooves are attached, said cords or wires carrying the stopper within the bottle-neck, substantially as shown and described.

610,150. APPARATUS FOR GENERATING ACETYLENE GAS. MAX STRAKOSCH, Vienna, Austria-Hungary. Filed Apr. 7, 1898. Serial No. 676,768. (No model.)



Claim.—1. The combination of a gas-generating apparatus, having a water-chamber, a calcium-carbid chamber having therein a series of carbid-cartridges, means for regulating the water-supply from the water to the carbid-chamber, a vertically-movable rod mounted in the water-chamber and extending into the carbid-chamber and having lower pointed end to perforate the carbid-cartridges, successively when the said rod is depressed and means for successively bringing the said carbid-cartridges under said rod end substantially as described.

2. The combination of a water-chamber having a vertical tube mounted therein, a rod adapted to slide in said tube and having a pointed end, a carbid chamber below said water-chamber having water-inlet and gas-outlet, a drum revolubly mounted in said carbid-chamber and means for partially rotating said drum, means for allowing a regulated quantity of water to pass to said carbid-chamber and means for periodically depressing said rod to cause its end to enter the carbid-cartridges in the carbid-chamber substantially as described.

3. The combination of a water-chamber having a cylindrical carbid-chamber arranged thereunder, a tube in the lower part of said water-chamber having an opening communicating with the said water-chamber, a vertical tube extending through the water-chamber and a rod vertically movable therein, a pointed lower end to said rod having longitudinal grooves therein and an opening leading from the tube in the water-chamber to the rod-tube, a drum mounted in the carbid-chamber and means for rotating the same, a series of carbid-cartridges in said drum and means for operating the rod to perforate the cartridges in succession, substantially as described.

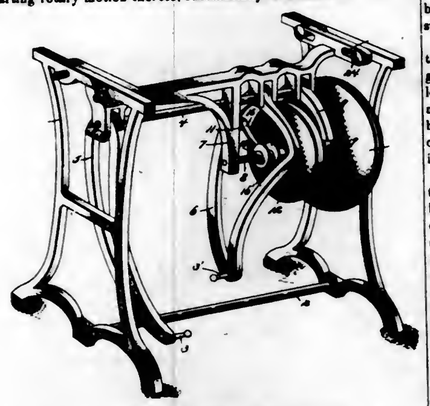
4. The combination of a water-chamber and a carbid-chamber thereunder, means for regulating the water-supply from the former to the latter, a vertical tube mounted in the former and a vertically-movable rod therein having lower pointed end extending into the said carbid-chamber, a drum in the carbid-chamber having a ratchet-wheel mounted on its axis exteriorly of said chamber and a retaining-ratchet to said wheel, a hand-lever mounted pivotally at the top of said water-chamber and pin-and-slot connection between one end of the same and the vertically-movable pointed rod, a spring-pressed rod pivoted to the opposite end of said hand-lever and having a spring-pressed pawl mounted at its lower end, to engage and rotate said drum ratchet-wheel when the said hand-lever is depressed, substantially as described, a series of carbid-cartridges being mounted in the said drum as specified.

610,151. POWER-TRANSMITTING DEVICE. DAVID ASHMAN, Baltimore, Md. Filed June 12, 1897. Serial No. 640,545. (No model.)

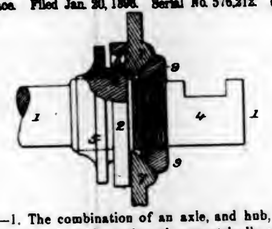
Claim.—1. In power-transmitting mechanism, the combination with a hollow wheel or pulley, and a rotary shaft on which the same is journaled, of an arm connected to said shaft and having a rabbeted end, an S-shaped clutch-pawl pivotally mounted in the rabbeted end of the arm and engaging the inner surface of the wheel or pulley, the long arm of said clutch partially encircling the shaft, and a spring connected to said long arm at one end and having its opposite end attached to a lateral extension of the arm on which the clutch is pivoted, substantially as described.

2. In power-transmitting mechanism, the combination with a hollow wheel or pulley, and a rotary shaft on which the same is jour-

naled, of an arm connected to said shaft and having a rabbeted end, an S shaped clutch-pawl pivotally mounted in the rabbeted end of the arm and engaging the inner surface of the wheel or pulley, the long arm of said clutch partially encircling the shaft, and a spring connected to said long arm at one end and having its opposite end attached to a lateral extension of the arm on which the clutch is pivoted, and a pair of foot-operated levers geared to said shaft for imparting rotary motion thereto, substantially as described.



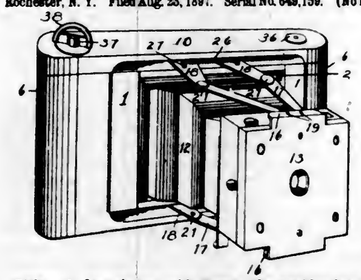
610,152. SPROCKET ATTACHMENT FOR CYCLES. WILLIAM H. BINNS, Chicago, Ill, assignor to the A. Featherstone & Company, same place. Filed Jan. 20, 1896. Serial No. 576,212. (No model.)



Claim.—1. The combination of an axle, and hub, the one provided with a series of equidistantly and concentrically arranged conical holes 6, and the other with a series of similarly-arranged conical studs 8, and a centrally-arranged holding-nut 9, screwing onto the axle, and adapted to cause the studs 8, to have a uniform bearing within the receiving-holes 6, as described and for the purpose set forth.

2. The combination of an axle, and hub, the one provided with a series of equidistantly and concentrically arranged conical holes 6, and the other with a series of similarly-arranged conical studs 8, and a centrally-arranged holding-nut 9, screwing onto the axle, and having a cone-shaped outer surface engaging a correspondingly-formed bore in the hub, the said centrally-arranged nut being adapted to force the studs 8 to a uniform bearing within the receiving-holes 6, as described and for the purpose set forth.

610,153. PHOTOGRAPHIC CAMERA. FRANK A. BROWNELL, Rochester, N. Y. Filed Aug. 23, 1897. Serial No. 649,159. (No model.)



Claim.—1. In a photographic camera, the combination with the frame having the central chamber open at front and back, and the open spool-chambers at the ends on opposite sides of the central chamber, of the bellows connected to the frame at the back of the central chamber, the movable camera-front adapted to fold within the central chamber having the smooth outer face arranged to extend flush with the front of the casing, said front being connected to the bellows, the arms pivoted to the frame and to the front and entirely supporting the latter, and the casing sliding on the frame longitudinally of the spool-chambers covering the back of the central chamber and having the ends extending around the spool-chambers, substantially as described.

2. In a camera, the combination with the frame having the central chamber, the film-chambers on opposite sides thereof, and the grooves 8 in the front portion, of the movable camera-front, the bellows connected thereto and to the rear of the central chamber, the metal casing sliding on the frame longitudinally of the spool-chambers, and covering the back of the central chamber and the spool-chambers and having the flanges 7 coöperating with the grooves 8 in the frame.

3. In a camera, the combination with the frame having the central chamber and the film-chambers on opposite sides thereof, of the bellows connected to the rear of the central chamber, the movable camera-front connected to the bellows and having the smooth front surface and adapted to fold within said central chamber with its outer face flush with the outer surface of the frame, the supporting-arms pivoted to the camera-front and frame and arranged outside of the bellows, and a casing covering the rear and ends of the frame and also the arms when the latter are folded.

4. In a camera, the combination with the main frame and the camera-front, of the two pairs of arms pivoted on the frame, the arms of each pair being connected at their rear ends for simultaneous operation in opposite directions, the two pairs of arms pivoted on the front, the arms of each pair being connected for simultaneous operation in opposite directions, and pivotal connections between the free ends of corresponding arms on the frame and front respectively, substantially as described.

5. In a camera, the combination with the main frame and the camera-front, of the two pairs of arms pivoted on the frame, the arms of each pair being connected for simultaneous operation in opposite directions, two pairs of arms pivoted on the front, the arms of each pair being connected for simultaneous operation in opposite directions, pivotal connections between the arms of corresponding pairs on the frame and front respectively and holding-springs operating across the pivotal centers of the pairs of arms for holding the front projected and retracted, substantially as described.

6. In a camera, the combination with the frame, and the movable front of the arms 18 pivoted on the frame and having the intermeshing gear-teeth, the arms 17 pivoted on the front having the intermeshing gear-teeth, pivotal connections between the free ends of corresponding pairs of arms, and spring devices operating on the arms for holding the front projected and retracted, substantially as described.

7. In a camera, the combination with the frame having the central chamber, and the film-chambers on opposite sides, of the camera-front, the bellows connected thereto and to the rear edge of the central chamber and adapted to fold in the latter, the pivoted arms connecting the front and frame connected to the outer side of the top and bottom of the frame, the cover-plate 10, and the removable casing sliding on the frame and adapted to cover the bottom thereof and also the central and film chambers, substantially as described.

8. In a camera, the combination with the frame having the central chamber, the film-chambers at opposite sides, and spool-centering devices in the film-chambers, of the movable camera-front, pivoted arms connecting the front and frame for causing the parallel relative movements of the latter, spring devices for holding the front projected or retracted, the bellows connecting the front and frame, the cover-plate 10, and the casing sliding on the frame and covering the rear of the central chamber, the film-chamber and one end of the frame, substautially as described.

9. In a camera, the combination with the frame having the central chamber and the film-chambers on opposite sides thereof, of the movable camera-front, the bellows connected thereto and to the rear of the central chamber, said bellows folding within the central chamber and the front movable flush with the front of the frame, pivoted supporting-arms connecting the front and frame, and the removable casing having the flanges at the sides engaging the frame and adapted to cover the rear and ends of the frame, substantially as described.

10. In a camera, the combination with the frame having the central chamber and the film-chambers on opposite sides thereof, of the movable front and the bellows connected thereto, the plates 23 and 23× on the frame, having the spring-arms and spool-centering devices on the arms entering the ends of the film-chambers, substantially as described.

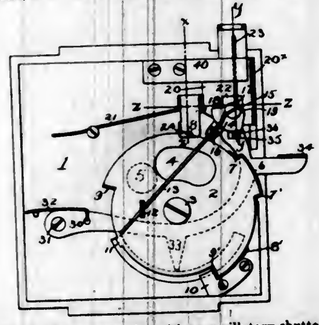
11. In a camera, the combination with the frame having the central chamber and the film-chambers on opposite sides thereof, of the movable front and the bellows connected thereto, the plates 23 and 23× having the spring-arms, spool-centering devices on said arms entering the film-chambers, the arms 18 pivoted on the plates 23 and 23×, the arms 17 pivoted on the camera-front, and pivotal connections between the arms 17 and 18, substantially as described.

12. In a camera, the combination with the frame, having the central chamber and the film-chambers on opposite sides thereof, of the plate 23× having the spring-arms, the spool-centering stud on one arm, the rotary arbor on the other arm adapted to engage a spool and having the ratchet-wheel and the pawl coöperating therewith, substantially as described.

13. In a camera, the combination with the frame, the movable front, the plates 23, 23× having the spring-arms and spool-centers thereon, the arms 18 pivoted on the plates and having intermeshing gear-teeth, the arms 17 pivoted on the front having the intermeshing gear-teeth and connected to the arms 18, and the bellows, substantially as described.

14. In a folding camera, the combination with the main frame, having a central chamber, of a movable front smaller than the camera-frame and adapted to fold in the central chamber, foldable supporting-arms connecting the front and frame, and an extensible supporting-leg mounted on the front and adapted to be projected to support the front when extended, substantially as described.

610,154. PHOTOGRAPHIC SHUTTER. FRANK A. BROWNELL, Rochester, N. Y. Filed Aug. 23, 1897. Serial No. 649,160. (Model.)



Claim.—1. The combination with an oscillatory shutter, of a reversible motor-spring, a movable member, a spring for actuating it in one direction, connections between said member and the spring for tensioning the latter upon opposite sides of the shutter alternately when said member is moved in one direction only, and a detent controlled by the member for engaging the shutter and releasing it when the member is moved in one direction.

2. The combination with an oscillatory shutter, of a reversible motor-spring engaging the shutter, a movable member, a latch and switch-block arranged between the member and motor-spring for causing the reversal of the spring by successive operations of the member in one direction, and a detent controlled by the member for holding and releasing the shutter.

3. The combination with an oscillatory shutter, of a reversible motor-spring engaging the shutter, a movable member, a switch-block connected to the spring, a latch on the member coöperating with the switch-block, and a detent for holding and releasing the shutter operated by the movable member.

4. The combination with an oscillatory shutter, of a pivoted switch-block, a spring thereon operating on the shutter, the movable member having the spring-latch thereon coöperating with the switch-block, and a detent for holding and releasing the shutter actuated by the movable member.

5. The combination with an oscillatory shutter having the stops 8 and 8′, of the movable member having the detent 24, the spring for moving the member in one direction, a reversible motor-spring engaging the shutter, and a switch connection between said member and spring for tensioning the latter in opposite directions by successive movements of the member in the same direction.

6. The combination with an oscillatory shutter, of a reversible actuating-spring connected thereto, a pointed switch-block to which the spring is connected, a movable member, a spring-latch carried by the member and coöperating with the block to oscillate it in opposite directions alternately, and a detent engaging the shutter and controlled by the movable member.

7 The combination with an oscillatory shutter, of a reversible actuating-spring connected thereto, a pivoted support connected to the spring, a movable member, connections between the member and support for operating the latter in opposite directions alternately by the successive movements of the member in the same direction, and a detent for the shutter controlled by the movable member.

8. The combination with an oscillatory shutter, of spring-actuating devices for operating the shutter in opposite directions alternately, a movable member, connections between the movable member and actuating devices for causing the latter to coöperate with opposite sides of the shutter alternately by successive movements of the member in the same direction, and holding devices for the shutter released by the movement of the member.

9. The combination with an oscillatory shutter having the stops 8, 8′, the reversible actuating-spring, and the pivoted pointed switch-block connected to the spring, of the movable member having the spring-latch coöperating with the switch-block, and the detent operated by the movable member and coöperating with the stops on the shutter.

10. The combination with a support having a lens-opening and an oscillatory apertured shutter, of spring-actuating devices for operating the shutter in opposite directions alternately, a movable member, connections between the movable member and the spring-actuating devices for causing the latter to coöperate with opposite sides of the shutter alternately by successive movements of the member in the same direction, holding devices for the shutter released by the movement of the member, a time member connected to the movable member to actuate it in one direction and coöperating with the shutter for arresting the latter with the aperture in line with the lens-opening.

11. The combination with a support having a lens-opening and an apertured oscillatory shutter, of a reversible shutter-actuating motor for moving the shutter in opposite directions, a movable member, a spring for actuating it in one direction, connections between said member and the motor for operating the latter in opposite directions alternately when the member is moved in one direction only, a detent controlled by the member for engaging the shutter and releasing it by the continued movement of the member in one direction, a time member connected to and actuating the movable member and having a portion coöperating with the shutter to arrest it with the aperture in line with the lens-opening.

12. The combination with a photographic shutter, an actuating-spring for operating it, a movable member, connections between said member and the spring for tensioning or setting the latter, and a detent controlled by the member for holding and releasing the shutter, of a movable time member coöperating with the first-mentioned member to move it, and connections between said time member and the shutter for holding the latter open.

13. The combination with an oscillatory apertured shutter, a reversible actuating-spring coöperating therewith, a movable member, connections between said member and the spring for flexing the spring in opposite directions alternately at each movement of the member in one direction, and a detent operated by the member for engaging and holding the shutter against the tension of the spring and releasing it, of a movable time member adapted when operated to arrest the shutter intermediate the extremes of its oscillations, and connections between said time member and the first mentioned member for operating the latter when the time member is operated.

14. The combination with an oscillatory apertured shutter, a reversible actuating-spring coöperating therewith, a movable member, and a latch and switch connection between the member and spring for flexing the spring in opposite directions at each movement of the member in one direction, of a detent actuated by the member for holding and releasing the shutter, a movable time member coöperating with the shutter to hold it intermediate the extremes of its oscillations, and connections between the first-mentioned member and the time member for actuating the former by the movement of the latter.

15. The combination with a movable apertured shutter, a spring for operating it, means for placing the spring under tension, and a detent for holding the shutter, of a time member coöperating with the shutter to arrest it intermediate the extremes of its movement, and connections between said time member, the spring-tensioning device and the detent for tensioning the spring and releasing the detent when the time member is operated to arrest the shutter.

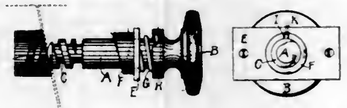
16. The combination with a movable apertured shutter having the stops 7, 7′, 8, 8′, and 11, and the flange 6, of the spring 13, the movable member having the detent coöperating with the stops, the spring for moving the member in one direction, connections between the movable member and the spring for tensioning the latter in opposite directions alternately, the time member coöperating with the stop 11, and having the loose connection with the movable member to operate it.

17. The combination with the apertured oscillatory shutter, spring-motor devices for operating the shutter in opposite directions alternately, a movable member, a shutter-detent operated thereby, and connections between said member and the motor devices for

placing the latter under tension on opposite sides of the shutter alternately, and releasing the detent at each successive movement of the member in one direction, of a time member having a loose connection with the first-mentioned member, and adapted to cooperate with the shutter to arrest it intermediate the extremes of its movement.

18. The combination with the apertured oscillatory shutter having the stops 7, 7', 8, 8', and 11, and flange 6, the movable member having the detent, the shutter-spring 13, and the switch and latch connection between the spring and member, of the pivoted lever 30 having the arm 33, the spring for operating the lever, and a loose connection between the lever 30 and the movable member.

610,155. SASH-LOCK. ROBERT D. DUFF, Tacoma, Wash., assignor of one-fourth to John E. Johnson, same place. Filed May 26, 1897. Serial No. 638,262. (No model.)

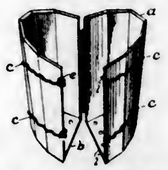


Claim.—1. In a sash lock or bolt having a turned shaft with a knob-head and screw-point, and fitted into the meeting-rail of the lower sash of a window as shown, and having a screw-socket made and fitted into the meeting-rail of the upper sash to receive the screw of the shaft fitted into the lower sash for the purpose of locking the window as described, the combination of an escutcheon having a cylindrical cam fitted around the shaft, a spiral spring fitted loosely around the shaft and between the escutcheon and the hub of the knob-handle, the hub made hollow to receive and conceal the spring, and a small pin or peg set into the shaft at such a point that when at the bottom of the cam, the screw-point of the shaft will be in position to enter the screw-socket made and set to receive it when the shaft is pushed into contact with it, and the knob is turned to the right, substantially as shown and described.

2. In a sash-lock, the combination with an interiorly-screw-threaded socket, of a rotatable and longitudinally-sliding screw-threaded bolt to engage the threads in said socket, a pin projecting from the side of the bolt, and a fixed shoulder extending lengthwise of the bolt in a parallel line therewith to permit the pin in the rotation of the bolt to come in contact with the shoulder to stop the rotation of the bolt and at the same time permit the pin to move along and be guided by the shoulder in the longitudinal sliding movement of the bolt toward the socket, substantially as and for the purposes described.

3. In a sash-lock, the combination with an interiorly-screw-threaded socket, of a rotatable and longitudinally-slidable bolt formed with screw-threads at one end, a stud and a cam, one of which is fixed, and the other movable with the bolt, said cam being formed with a shoulder for the stud to abut against, and a spring for moving the bolt longitudinally, substantially as and for the purposes described.

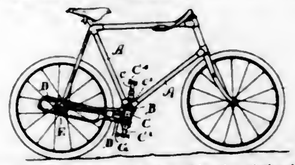
610,156. WOODEN FLOWER-TUB. WILLIAM MECHWART and ADAM BRAHM, Chicago, Ill. Filed Dec. 11, 1897. Serial No. 661,548. (No model.)



Claim.—1. In a wooden flower-tub adapted to be divided into two equal parts the combination of a perforated divisible base, wooden staves fitted to the base, the sides of the staves provided with dowels, sinuous wire hoops composed of two equal parts and placed on the tub to permit the ends to meet at a line drawn through the center of the tub, the ends of the parts of the hoops provided with spiral rings integral therewith, and means for locking the parts together as specified.

2. In a wooden flower-tub adapted to be divided into two parts, the combination of a divisible perforated bottom *b* wooden staves *a*, *a*, dowels *i*, *i*, in the sides of the staves, sinuous wire hoops *c*, *c*, each composed of two equal parts, and a spiral ring *e* on each end of the separated parts of the hoop and integral therewith, the rings *e*, *e*, adapted to be locked together at the line of division of the tub by means of the metal pins *d*, *d*, substantially as specified and shown.

610,157. BICYCLE. MILTON T. CAMPBELL, Indianapolis, Ind., assignor of one-half to William H. Thomas, same place. File. Dec. 21, 1896. Serial No. 616,398. (No model.)



Claim.—1. The combination, in a bicycle, of the driven wheel, a pitman connected to the hub of said driven wheel and running thence to an arm on the crank-shaft, said crank-shaft, and said arm, said pitman and said arm being adjustably connected together at a point intermediate the pedals and crank-shaft, whereby the stroke may be lengthened or shortened while the relative positions of the pitman and the crank-shaft may be either maintained or varied, substantially as and for the purposes set forth.

2. The combination, in a gearing, of the wheel, the pitman, and the crank-arm to which said pitman is connected, said crank-arm being formed in two parts and united by a cross-head adjustably secured on said parts, said pitman being immediately connected to the transverse member or wrist-pin of said cross-head, substantially as shown and described.

610,158. TOOL FOR CUTTING SCREW-THREADS. FRANK G. ECHOLS, Hartford, Conn. Filed Mar. 26, 1898. Serial No. 675,222. (No model.)



Claim.—1. The combination, in a screw-cutting tool provided with an expansible chaser-holder having a series of separated chaser-receiving seats and keyways, said keyways extending entirely across the chaser-holder, of a series of chasers; a ring surrounding the chasers; and a series of keys adapted to be driven in the keyways to expand the chaser-holder.

2. The combination, in a screw-cutting tool provided with an expansible chaser-holder having a series of chaser-seats and also having keyways oblique to the chaser-seats, of a series of chasers, and keys adapted to be driven in the keyways to spread the chaser-holder.

3. The combination, in a screw-cutting tool provided with an expansible chaser-holder having a series of chaser-seats and also having keyways oblique to and which converge with the chaser-seats toward the axis of the tool, of a series of chasers, and keys adapted to be driven in the keyways to spread the chaser-holder.

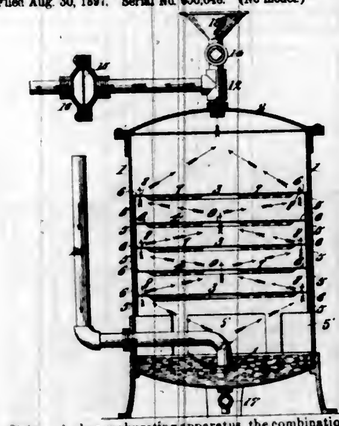
4. The combination, in a screw-cutting tool having a head, of an annular expansible chaser-holder on the head, having a series of chaser-seats and also having keyways oblique to and adjacent to the respective seats; a series of chasers; and keys adapted to be driven in the keyways to spread the chaser-holder.

5. The combination, in a screw-cutting tool consisting of a shank and a head, said head being provided with an annular expansible chaser-holder having a series of chaser-seats and also having keyways extending entirely across said chaser-holder, the chaser-seats and keyways alternating and being separated and adjacent, of a series of chasers; a chaser-retaining ring removably fitted upon the head and surrounding the chasers; and a series of tapered keys adapted to be driven in the keyways to spread the chaser-holder.

6. The combination, in a screw-cutting tool provided with an expansible chaser-holder having a series of chaser-seats and also having keyways oblique to the chaser-seats, of a series of chasers serrated upon one side, the serrated portions being adapted to engage the chaser-holder, and keys adapted to be driven in the keyways to spread the chaser-holder.

7. The combination, in a screw-cutting tool having a head provided with an annular chaser-holder having a series of key-seats and also having a series of diagonal slits alternating with the chaser-seats and adjacent, respectively thereto, and having rounded tapered key-seats, of a series of chasers, and a series of keys adapted to be driven in said key-seats thereby to spread the chaser-holder.

610,159. CARBURETER. ROBERT G. SPEER, St. Louis, Mo. Filed Aug. 30, 1897. Serial No. 650,048. (No model.)

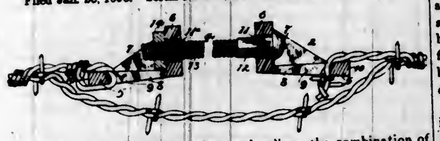


Claim.—1. In a carbureting apparatus, the combination of a tank or casing having a removable cover portion, inlet and outlet pipes or passages connected to said casing, a series of trays arranged loosely within said casing and formed with plane marginal portions, and corrugated central portions, the corrugations being concentric, and a series of loose supporting-rings, arranged between the extreme marginal portions of the trays, said trays being formed alternately with a single central orifice and with a series of marginal orifices, substantially as set forth.

2. In a carbureting apparatus, the combination of a tank or casing, having inlet and outlet pipes or passages, a series of trays arranged one above the other in said casing in separated relation, and formed with plane marginal portions, and corrugated central portions, the corrugations being concentric and arranged wholly below the plane of the marginal portion and adapted to contain a body of gasolene in a separated condition, the said trays being provided alternately with a single central orifice, and with a series of marginal orifices, substantially as set forth.

3. In a carbureting apparatus, the combination of tank or casing 1, an inlet-pipe 10, extending into the central part of the tank, and provided with a downturned end 11, an outlet-pipe 12, a filling-funnel 13, a series of removable trays 3 and 4, having alternate central and marginal orifices 9 and 8, and loose rings 5, supporting the trays in separated relation, substantially as set forth.

610,160. WIRE STRETCHER AND SPLICER. EZRA TAYLOR, Attica, Kans., assignor of one-half to Elias M. Padget, same place. Filed Jan. 20, 1898. Serial No. 667,188. (No model.)



Claim.—1. In a wire stretcher and splicer, the combination of the castings 2 and 3, having the inclined bases 5, provided with semi-circular openings 8, converging into elongated slots 9, the upright portion 6, having openings 11 and 11ª respectively; the reinforcing-flanges 7, and the bolt 4, having the squared shank 12, and the threads 13, extending from the end to the squared shank, in which the bolt 4, by rotation, becomes the means for stretching or regulating the wire, the adjustment of said wire being limited by the length of the threaded portion of the bolt, as shown and described.

2. In a wire-stretching splicer, the bolt 4, as shown, in combination with the castings 2 and 3, said casting 2 having the slotted inclined base 5, the upright portion 6, having a plain opening 11, and the side flanges 7, and supplying a swivel for the head of the bolt 4, and the casting 3, having the slotted inclined base 5, the upright 6, having a threaded opening 11ª, and the side flanges 7, supplying a nut for said bolt 4, substantially as, and for the purposes shown and described.

3. In a wire stretcher and splicer, the combination of the bolt 4, having coarse threads 13, and a short square portion 12, with the nut and swivel portions 6, of the castings 2 and 3, having the semi-circular openings 8, and the elongated slots 9, in their inclined bases 5, and the portions 6 and bases 5, braced by the flanges 7, for the purposes shown and described.

4. The combination with a wire strand, of the bolt 4, having the coarse threads 13, and a short squared portion 12; the castings 2 and 3, having the inclined slotted bases 5, the side flanges 7, and the upright portions 6, provided respectively with openings 11 and 11ª; said bolt 4, adapted to be turned in the swivel-casting 2 and the nut-casting 3, by means of a wrench applied to its squared portion, to shorten or stretch said strand, as shown and described.

REISSUES.

11,689. ELECTRIC-CIRCUIT CONTROLLER. JOSEPH H. BOWLEY, Washington, D. C., assignor of one-half to John W. Stockwell, Marengo, Ill. Filed Mar. 19, 1898. Serial No. 674,545. Original No. 593,510, dated Nov. 9, 1897.



Claim.—1. An automatic regulator for electric circuits, consisting of a receptacle having a base and neck portion, said neck having an upper and lower compartment, a float mounted in the lower compartment of the neck, a standard erected upon said float and in said neck and having fingers designed to engage the ends of the wires forming the circuit, substantially as specified and for the purpose set forth.

2. The herein-described electric-circuit opener and closer, consisting of the mercury-receptacle having a base and neck portion, said neck portion being divided into two communicating chambers, the lower one being slightly larger, a float mounted in said lower chamber of the neck, a rod erected upon said float and extending upward through the upper neck-chamber, said rod carrying cross bars or fingers designed to connect the adjacent ends of the wires forming the circuit as said rod is raised or lowered by the action of said float, all operatively combined in the manner and for the purpose set forth.

3. A switching device for electrical energy consisting of a cylindrical coil of insulated wire, a series of contact-points in electrical contact with said wire, a supporting-axle for rotatably mounting said cylindrical coil and having electrical connection therewith, and a support or seat designed to receive part of said cylinder, said seat being provided with a series of transversely-disposed contact-plates for cooperating with the points on said cylinder, each of said plates being connected with the source of electrical energy, substantially as described and for the purpose set forth.

4. The herein-described switchboard, consisting of an outer casing, a series of rotatable disk-sections mounted therein, each of said disks having a series of segmental compartments, and an open section, electric batteries mounted in said compartments, an individual contact point or brush for each battery, attached to the periphery of said disk, a contact-plate for cooperating with said brush, located upon the inner face of the outer casing, and a series of contact-plates located in a concave seat upon the table, each having wire connection with the plates on the casing, as and for the purpose set forth.

5. As an improvement in differentiating mechanism for electric energy, the combination with a series of batteries having an individual plate for each cell thereof, each plate being transversely disposed in a concave seat, of a cylinder formed of insulated wire and provided with a series of spirally-disposed contact-points upon its surface designed to successively engage said plates, a supporting-axle in electrical union with said wire and points, designed to rotatably hold said cylinder in said seat, and means for rotating and locking said cylinder in an adjusted position, as set forth.

6. As an improvement in electrical switches, the combination with a series of batteries and graduated plates having electrical union, of a rotatably mounted cylinder formed of insulated wire having contact-points spirally disposed on the surface thereof, a supporting axle, having suitable bearings, in electrical union with said contact-

points and with the transmitting-wire and a concave seat designed to receive said plates and cylinder and permit the contact-points thereon to successively engage the plates, substantially as described and for the purpose set forth.

7. The herein-described valve designated to permit liquid to pass through it in either direction, consisting of two contiguous drums, said drums having perforations in their contacting faces, one of said drums being stationary and having a plurality of pipe connections, while the other drum is rotatably mounted and provided with a single pipe connection, all of said parts being arranged in the manner and for the purpose set forth.

8. A switching device for electrical energy consisting of a cylinder having insulated coils of wire, a series of contact-points held in position by said wires and in electrical connection therewith, a leading-out wire electrically connected with said coils of wire, and contact-plates each connected with a separate source of electrical supply, said contact-points and contact-plates being so arranged one in relation to the other that in the movement of one the members of the two will be successively brought into or out of contact one with the other to vary the electrical energy, substantially as described and for the purpose set forth.

9. The valve designed to permit an agent to pass through it in either direction, consisting of two contiguous drums having ports in their meeting faces, one of said drums being stationary while the other drum is rotatable, one of said drums having an inlet for the agent and the other pipes from its ports, substantially as described and for the purpose set forth.

10. An automatic regulator for electric circuits consisting of a chamber having a valve-controlled opening, an electric circuit, an electromagnet in said circuit and whose armature is adapted to actuate said valve, a movable contact-point adapted on the increase of the temperature to complete said circuit and energize the magnet to open the valve, a second circuit of which said contact-point constitutes a part, and an electric heating device in said second circuit, said movable contact-point operating upon the fall of the temperature below a given temperature to close said second circuit to energize said heating device to raise the temperature, substantially as and for the purposes described.

11. The electric-circuit opener and closer consisting of the circuit-wires, a movable contact-point adapted to establish a circuit through one set of coils in coming in contact with its terminals and to break said circuit and in coming in contact with the terminals of another set of circuit-wires to establish another circuit, and a chamber for containing a sensitively expanding and contracting agent influenced by changes in temperature for actuating said contact-point on a change in temperature to close one or the other of said circuits according as the temperature is to be raised or lowered, substantially as described and for the purpose set forth.

12. An electrical-circuit opener and controller comprising circuit-wires, a movable contact-point adapted to establish a circuit through one set of circuit-wires in coming in contact with its terminals and to break said circuit and in coming in contact with the terminals of another set of wires to establish another circuit, cooling and ventilating means in one of said circuits, heating means in the other circuit, and a chamber for containing a sensitively expanding and contracting agent influenced by changes in temperature for actuating said contact-point on a change in temperature to close one or the other of said circuits according as the temperature is to be raised or lowered, substantially as and for the purposes described.

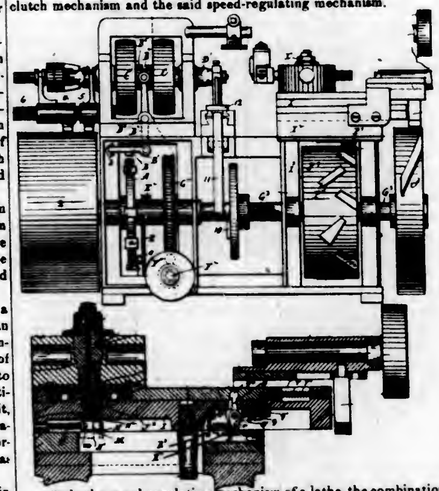
13. The combination of a number of revolving sections arranged one above the other, electrical-energy devices in said sections, and means for establishing electrical connection between said devices and electrical conductors, substantially as described and for the purpose set forth.

14. The combination of a revolving section, an electrical-energy device carried by said section, means for establishing electrical connection between said device and an electrical conductor, a casing or housing for said section having an open portion for viewing the electrical-energy device when brought to said open portion, and a movable switchboard over said open portion, substantially as described and for the purpose set forth.

11,690. TURRET-LATHE. JOSEPH P. LAVIGNE, New Haven, Conn. Filed Aug. 3, 1898. Serial No. 687,658. Original No. 607,693, dated July 19, 1898.

Claim.—1. In a lathe, the combination with a work-holding chuck of a clutch mechanism by means of which the work-holding chuck is reversed in the direction of its rotation, cutting-tools, a speed-regulating mechanism for varying the speed with which the cutting-tools are advanced toward and retired from the said work-holding chuck, and a single disk provided with reversing-cams and speed-cams respectively arranged to coact with the reversing mechanism and the speed-regulating mechanism for operating the same.

2. In a lathe, the combination with a work-holding chuck, of a clutch mechanism by means of which the work-holding chuck is reversed in the direction of its rotation, the said clutch mechanism including a clutch-lever; cutting-tools, a speed-regulating mechanism for varying the speed with which the cutting-tools are advanced toward and retired from the said work-holding chuck, including a belt-shifting lever; a cam-disk, and reversing-cams and speed-cams mounted in the said disk and respectively coacting with the said clutch-lever and the said belt-shifting lever for the operation of the said clutch mechanism and the said speed-regulating mechanism.



3. In the speed-regulating mechanism of a lathe, the combination with a worm-gear, of a worm located below the same, a hollow shaft upon which the worm is located, a shaft passing through the said hollow shaft, slow and fast pulleys mounted upon the adjacent ends of the hollow and inclosed shaft respectively, and the elements of a planet-motion mechanism connected with the opposite ends of the shafts, whereby the worm-gear is driven fast or slow according as the power-belt runs upon the slow or fast pulley.

4. In a lathe, the combination with a worm-gear, of a worm located below and meshing into the same, a tubular shaft carrying the said worm, a shaft passing through the tubular shaft, a slow pulley keyed to one end of the tubular shaft, a fast pulley keyed to the projecting adjacent end of the inclosed shaft, a cup keyed to the projecting opposite end of the inclosed shaft, a pinion located within the said cup and mounted upon a stud located near the edge thereof, two gear-wheels located substantially within the said cup, corresponding to each other in size, differentiated in the number of their teeth, and both meshed into by the said pinion, the wheel having the fewest teeth being keyed to the adjacent end of the tubular shaft, and the wheel having the larger number of teeth being loosely mounted upon the said end of the said shaft, a ratchet connected with the gear-wheel last mentioned, and a pawl coacting with said ratchet whereby when the power-belt runs upon the slow pulley the gear-wheel into which the worm meshes will be driven at a comparatively high speed, while when the power-belt is shifted to the fast pulley the speed of the said gear-wheel will be reduced by the operation of the cup, the pinion, the differentiated gear-wheels, the ratchet-whee and the pawl.

5. In a lathe, the combination with a slide-holder, of a slide mounted therein, a turret mounted upon the slide, an operating-ring rigidly secured to and depending from the turret, an operating-disk carried by the slide but located within the said ring, a pawl carried by the said disk, and coacting with notches formed in the said ring, an operating-spring located within the disk and oscillating the same for successively engaging the pawl with the notches in the ring, an operating-pin depending from the disk, and a dog mounted in the slide and coacting with the ring for positively rotating the turret in the backward movement of the slide, and at the same time compressing the spring which acts in the forward movement of the slide to oscillate the disk, substantially as described.

6. In a lathe, the combination with a slide-holder, of a slide mounted therein, a turret mounted upon the slide, a turret-stud passing downward through the turret into the slide with which it is connected, a binding-rod passing downward through the said stud, a binding-nut applied to the upper end of the binding-rod and exerting a downward pressure upon the turret for clamping the same against

rotation, an operating-head secured to the lower end of the rod, a spring coacting with the said head for turning the rod in one direction, and a yielding dog mounted in the said head, and operating to turn the rod in the opposite direction during the rearward movement of the slide.

7. In a lathe, the combination with a slide-holder, of a slide mounted therein, a turret mounted on the slide, a turret-stud passing downward through the turret and connected with the slide, a binding-rod passing downward through the turret-stud, a binding-nut applied to the upper end of the binding-rod, and adapted to exert downward pressure upon the turret, an operating-head secured to the lower end of the said rod, a spring coacting with the said head so as to turn the rod in one direction and bring the binding-nut at its upper end into operation, a yielding dog also mounted in the said head, and forced out of action during the forward movement of the slide, and a stud mounted in the slide and coacting with the said yielding dog which operates to turn the binding-rod in the opposite direction during the backward movement of the slide for taking off the clamping action of the binding-nut at the upper end of the rod.

8. In a lathe, the combination with the slide-holder, the slide and the turret thereof, of a reciprocating bar for positively locking the turret, means for actuating the said bar, and means for taking up the wear of the bar and restoring the alinement of the machine by shifting the forward end of the bar.

9. In a lathe, the combination with a slide-holder, of a slide mounted therein and formed with a long groove and with two integral yielding arms forming the forward portions of the side walls of the said groove, a locking-bar located in the said groove and coacting with the turret to positively lock the same against rotation in either direction, means for reciprocating the slide, and adjusting-screws coacting with the said integral yielding arms for taking up wear and for restoring the alinement of the machine by shifting the forward end of the bar.

10. In a turret-lathe, the combination with a slide-holder, of a slide, a turret mounted upon the slide, a bracket secured to the rear end of the slide, a tool-carriage mounted in the said bracket, a tool-holder carried by the said carriage, and means for operating the said tool-holder, whereby work presented to the said cutter by the turret is cut on the opposite end from the end cut by the tools carried by the turret.

11. In a lathe, the combination with the bed thereof, of a worm-gear located below the same, a worm situated below the said worm-gear, a hollow shaft upon which the worm is located, a shaft passing through the said hollow shaft, slow and fast pulleys mounted upon the adjacent ends of the hollow and inclosed shafts respectively, planet-motion mechanism connected with the opposite ends of the shafts, whereby the worm-gear is driven fast or slow according as the power-belt runs upon the slow or fast pulley, and an oil-box located below the worm-gear and between the fast and slow pulleys and the planet-motion mechanism, and containing the said hollow shaft and therefore the worm, which is more or less submerged in the oil within the box.

12. In a turret-lathe, the combination with the turret thereof, of a turret-slide, a turret-stud secured by its lower end to the slide, having the turret mounted for rotation upon it and projecting upward through the same, formed with a central longitudinal passage, and adapted to take up wear between it and the turret, a binding-rod passing through the said passage of the turret stud and projecting above and below the upper and lower ends thereof, means applied to the projecting upper end of the stud and the projecting upper end of the rod for imposing downward pressure upon the upper face of the turret, and automatically-operated means connected with the projecting lower end of the binding-rod for automatically binding the turret in its operating positions.

13. In a turret-lathe, the combination with the turret thereof, of a turret-slide, a turret-stud passing through the turret which rotates upon it, secured to the slide, having a central longitudinal passage formed in it, and provided at its upper end with a threaded neck, a binding-rod extending downward through the central passage of the turret-stud, and having its upper end threaded, a binding-nut screwed upon the said neck of the stud, and also screwed upon the upper end of the binding-rod which is threaded for the purpose, the threads of the neck and the rod being differentiated, and means connected with the lower end of the rod for automatically operating the rod to bind the turret through the binding-nut in its operating positions.

DESIGNS.

29,274. BOX. FREDERICK A. C. KAISER, Hoboken, N. J., assignor to the American Lithographic Company, New York, N. Y. Filed June 28, 1898. Serial No. 684,602. Term of patent 7 years.

29,274.



Claim.—The design for a box substantially as shown and described.

29,275. BACK FOR BRUSHES OR SIMILAR ARTICLES. JEAN THEOBALD, North Attleborough, Mass., assignor to the Frank M. Whiting & Company, same place. Filed July 22, 1898. Serial No. 686,624. Term of patent 3½ years.



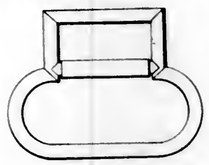
Claim.—The design for a back of a brush or similar article herein shown and described.

29,276. BADGE. KNULAND H. SHAFFER, Hudson, N. Y. Filed Aug. 3, 1898. Serial No. 687,657. Term of patent 3½ years.



Claim.—The design for a badge substantially as shown and described.

29,277. BUCKLE. LEOPOLD KABIS, Cheyenne, Wyo., administrator of Thomas Moore, deceased. Filed July 27, 1898. Serial No. 687,042. Term of patent 14 years.



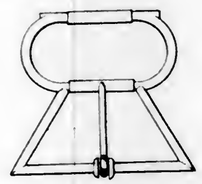
Claim.—The design for a buckle, substantially as herein shown and described.

29,278. BUCKLE. LEOPOLD KABIS, Cheyenne, Wyo., administrator of Thomas Moore, deceased. Filed July 27, 1898. Serial No. 687,043. Term of patent 14 years.



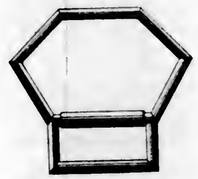
Claim.—The design for a buckle, substantially as herein shown and described.

29,279. BUCKLE. LEOPOLD KABIS, Cheyenne, Wyo., administrator of Thomas Moore, deceased. Filed July 27, 1898. Serial No. 687,044. Term of patent 14 years.



Claim.—The design for a buckle, substantially as herein shown and described.

29,280. BUCKLE. LEOPOLD KABIS, Cheyenne, Wyo., administrator of Thomas Moore, deceased. Filed July 27, 1898. Serial No. 687,045. Term of patent 14 years.



Claim.—The design for a buckle, substantially as herein shown and described.

29,281. BUCKLE. LEOPOLD KABIS, Cheyenne, Wyo., administrator of Thomas Moore, deceased. Filed July 27, 1898. Serial No. 687,046. Term of patent 14 years.



Claim.—The design for a buckle, substantially as herein shown and described.

29,282. BUCKLE. LEOPOLD KABIS, Cheyenne, Wyo., administrator of Thomas Moore, deceased. Filed July 27, 1898. Serial No. 687,047. Term of patent 14 years.



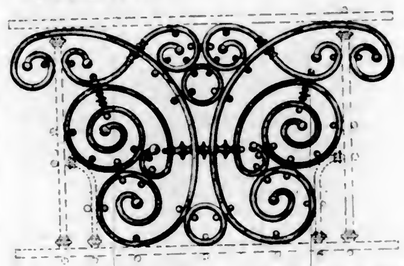
Claim.—The design for a buckle, substantially as herein shown and described.

29,283. NAIL. EDWARD M. SWEENY, South Hanover, Mass., assignor of one-half to Morrill A. Phillips, same place. Filed July 30, 1898. Serial No. 687,362. Term of patent 14 years.



Claim.—The design for a nail, substantially as herein shown and described.

29,284. PANEL FOR THE FOOT OR HEAD OF BEDSTEADS. WILLIAM MORGAN PETERS, Chicago, Ill., assignor to the Adams & Westlake Company, same place. Filed Aug. 1, 1898. Serial No. 687,443. Term of patent 7 years.



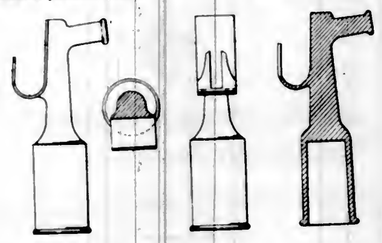
Claim.—The design for the head or foot of a bedstead, substantially as herein shown and described.

29,285. PICTURE-FRAME. JAMES V. RIDGWAY, Hinsdale, Ill. Filed Aug. 3, 1898. Serial No. 687,641. Term of patent 3½ years.



Claim.—The design for a picture-frame substantially as described and shown.

29,286. WINDOW-POLE AND PICTURE-HOOK HANGER. GEO. W. WILLARD, Detroit, Mich. Filed Apr. 29, 1898. Serial No. 679,247. Term of patent 14 years.



Claim.—The design for a window-pole and picture-hook hanger, substantially as herein shown and described.

29,287. SASH-HOLDER. THOMAS WARREN TALIAFERRO, South Omaha, Nebr. Filed May 29, 1897. Serial No. 638,3004. Term of patent 14 years.



Claim.—The design for a sash-holder as herein shown and described.

29,288. CLEANER AND SMOKE-DEFLECTOR. WILLIAM O. BLAKE, Wilkes-Barré, Pa. Filed July 28, 1898. Serial No. 686,948. Term of patent 14 years.



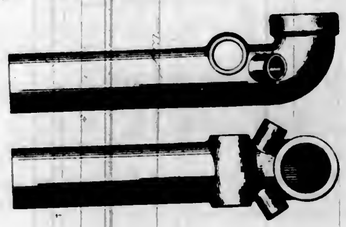
Claim.—The design for a cleaner and smoke-deflector for a pipe, substantially as herein shown and described.

29,289. PROTECTOR FOR LAMP-CHIMNEYS. JACOB WUEST, Anglum, Mo. Filed July 27, 1898. Serial No. 687,023. Term of patent 7 years.



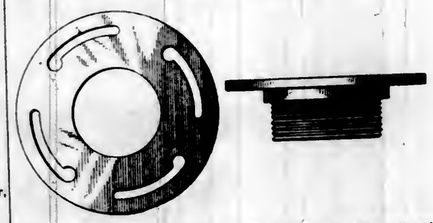
Claim.—The design for protector for lamp chimneys and globes, herein shown and described.

29,290. CLOSET-BEND, &c. EDWARD J. RICE, Rochester, N. Y., assignor to James R. Rice, same place. Filed July 19, 1898. Serial No. 686,371. Term of patent 14 years.



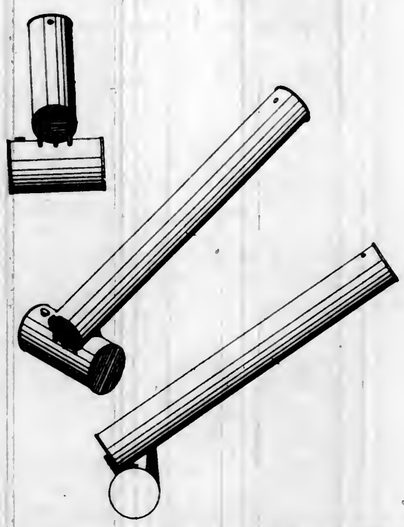
Claim.—The design for a closet-bend and connection, substantially as shown and described.

29,291. FLANGE FOR CLOSET-BENDS. EDWARD J. RICE, Rochester, N. Y., assignor to James R. Rice, same place. Filed Aug. 8, 1898. Serial No. 688,118. Term of patent 14 years.



Claim.—The design for a flange for closet bend and ferrule, substantially as shown and described.

29,292. BODY FOR SPRAYERS. DE WANE R. SMITH, Deerfield, N. Y. Filed Aug. 3, 1898. Serial No. 687,649. Term of patent 3½ years.



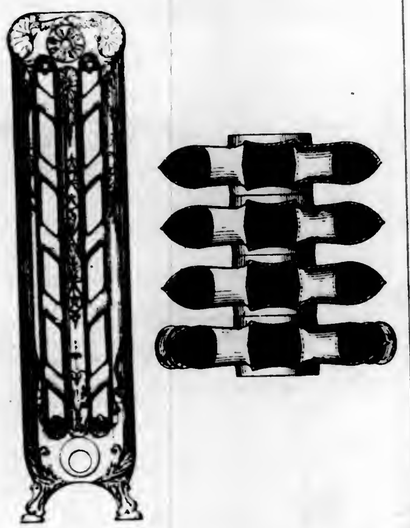
Claim.—The design for a body for sprayers as herein shown and described.

29,293. CANOPY FOR OIL-STOVES, &c. MARY E. LEITZ, Philadelphia, Pa. Filed July 15, 1898. Serial No. 686,041. Term of patent 7 years.



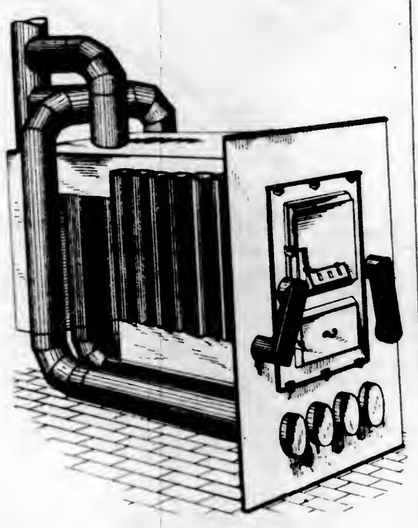
Claim.—The design for a canopy for oil and gas stoves, as herein shown and described.

29,294. RADIATOR-SECTION. TIMOTHY HOLLAND, Chicago, Ill., assignor to Mary C. Holland, same place. Filed July 25, 1898. Serial No. 686,844. Term of patent 14 years.



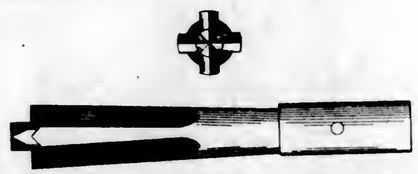
Claim.—The design for a radiator-section substantially as herein shown and described.

29,295. HOT-AIR FURNACE. GEORGE M. EDISON and JOHN WHEELER, Grand Rapids, Mich. Filed Aug. 2, 1898. Serial No. 687,566. Term of patent 14 years.



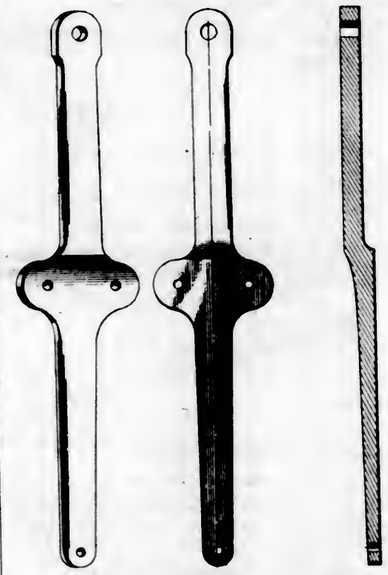
Claim.—The design for a hot-air furnace substantially as herein shown and described.

29,296. ROCK-DRILL. MEYER KRAMER, Norway, Mich. Filed Aug. 5, 1898. Serial No. 687,865. Term of patent 14 years.



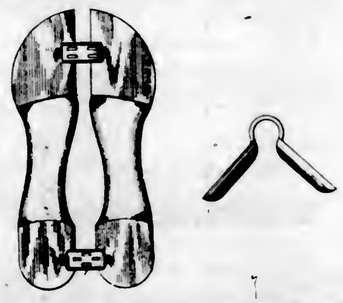
Claim.—The design for a rock-drill, substantially as shown and described.

29,297. DRIVING-CRANK. SAMUEL O. WILSON, Little Compton, R. I. Filed Aug. 3, 1898. Serial No. 687,646. Term of patent 14 years.



Claim.—The design for a driving-crank, herein shown and described.

29,298. PACK-SADDLE FRAME. LEOPOLD KAHN, Cheyenne, Wyo., administrator of Thomas Moore, deceased. Filed July 27, 1898. Serial No. 687,049. Term of patent 14 years.



Claim.—The design for a pack-saddle frame, substantially as herein shown and described.

TRADE-MARKS

REGISTERED AUGUST 30, 1898.

81,906. MURAL DECORATIONS. BENJAMIN MOORE & COMPANY, New York, N. Y. Filed July 18, 1898.

MURESCO



Essential feature.—The word "MURESCO" and the representation of an anchor. Used since December, 1892.

81,907. TEXTILE MATERIAL WITH FLEXIBLE WATERPROOF COATING. THE KERATOL COMPANY, Newark, N. J. Filed June 6, 1898.

KERATOL

Essential feature.—The word "KERATOL." Used since April 1, 1898.

81,908. WOOLEN FABRICS FOR CLOTHING. HEYTER & SCHEUER, Cleveland, Ohio. Filed May 21, 1898.

BUCKEYE

Essential feature.—The word "BUCKEYE." Used since April 1, 1892.

81,909. YARN WITH SILK FINISH. FRANK R. WARBURTON, Pawtucket, R. I. Filed July 30, 1898.

FLOSSINE

Essential feature.—The word "FLOSSINE." Used since June 7, 1898.

81,910. YARN WITH SILK FINISH. FRANK R. WARBURTON, Pawtucket, R. I. Filed July 30, 1898.

FLOSSETTE

Essential feature.—The word "FLOSSETTE." Used since June 7, 1898.

81,911. MEN'S, BOYS', AND CHILDREN'S CLOTHING. Ab. Kirschbaum & Co., Philadelphia, Pa. Filed May 12, 1898.

VITALS

Essential feature.—The word "VITALS." Used since June 4, 1892.

81,912. OVERSHOES. A. E. LITTLE & Co., Lynn, Mass. Filed July 9, 1898.

SOROSIS

Essential feature.—The word "SOROSIS." Used since February 1, 1898.

81,918. SALMON. JOHN M. CHAPMAN, New York, N. Y. Filed Apr. 27, 1898.



Essential feature.—The representation of a jewel with radiating rays. Used since February 1, 1898.

81,914. HAMS, BACON, SHOULDERS, AND CANNED, CURED, AND SMOKED MEATS. THE JACOB DOLD PACKING COMPANY, Buffalo, N. Y.; Kansas City, Mo.; Wichita, Kans.; Harrisburg, Pa., and Liverpool, England. Filed July 21, 1898.



Essential feature.—The pictorial representation of an American bison or buffalo. Used since October 1, 1890.

81,915. SOFT SOAP. J. H. FARR & Co., Toronto, Canada. Filed July 23, 1898.

SANATINE

Essential feature.—The word "SANATINE." Used since June, 1898.

81,916. FRICTION-MATCHES. THE DIAMOND MATCH COMPANY, Chicago, Ill. Filed July 23, 1898.



Essential feature.—The word "CHIPS." Used since April 1, 1898.

31,917. WOOD-FILLERS. JOHN W. BEATTY and ANDREW W. FULLER, Norwalk, Conn. Filed May 3, 1898.

FulFiller

Essential feature.—The word "FULFILLER." Used since July 1, 1897.

31,918. PORTLAND CEMENT. THE HAMMER SOCIETY, Tournay, Belgium. Filed July 21, 1898.



Essential feature.—The representation of a hammer and the word "HAMMER." Used since January 1, 1896.

31,919. PORTLAND CEMENT. THE HAMMER SOCIETY, Tournay, Belgium. Filed July 21, 1898.



Essential feature.—The representation of a dove and the word "DOVE." Used since January 1, 1896.

31,920. CUTCH OR CATECHU DYE. THE SARAWAK CUTCH COMPANY, Limited, London, England. Filed Aug. 1, 1898.

TUAN

Essential feature.—The word "TUAN." Used since April 10, 1896.

31,921. INSECT-DESTROYER. ROBERT R. SMITH, Pittsburg, Pa. Filed Aug. 2, 1898.

RXY

Essential feature.—The letter "X" and word "RAY." Used since December 1, 1894.

31,922. CERTAIN ANTISEPTIC REMEDY. F. HOFFMANN-LA ROCHE & Co., Basle, Switzerland. Filed June 6, 1898.

ANESON

Essential feature.—The word "ANESON" Used since September 15, 1897.

31,923. MEDICINAL PREPARATION IN THE FORM OF A FLOUR FOR CERTAIN DISORDERS. CHARLES C. JEROME, Chicago, Ill. Filed Mar. 17, 1898.



Essential feature.—The representation of an eagle holding an angular package in his claws. Used since September 1, 1897.

31,924. COMPOUNDS FOR THE CURE OF NERVOUS DEBILITY. PEAL MEDICINE CO., Cleveland, Ohio. Filed June 15, 1898.

Sexine

Essential feature.—The word "SEXINE." Used since December, 1892.

31,925. TONIC REMEDY. CLEVELAND VETERINARY REMEDY CO., Cleveland, Ohio. Filed June 29, 1898.

APPETIZINE

Essential feature.—The word "APPETIZINE." Used since April 1, 1898.

31,926. LAGER-BEER. S. S. PIERCE COMPANY, Boston, Mass. Filed June 13, 1898.



Essential feature.—The word "OLYMPIA" and a pictorial representation of the United States cruiser *Olympia*. Used since June 10, 1898.

31,927. ALCOHOL, SPIRITS, GIN, AND WHISKY. STANDARD DISTILLING AND DISTRIBUTING COMPANY, New York, N. Y. Filed Aug. 1, 1898.



Essential feature.—The representation of a hand holding scales. Used since July 1, 1898.

31,928. CERTAIN NAMED ARTICLES OF STATIONERY. THE FIRM OF J. S. STAEDTLER, Nuremberg, Germany. Filed Feb. 28, 1898.



Essential feature.—A representation of the moon and the words "THE MOON." Used since February 25, 1887.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE COUSENS.

Decided June 2, 1898.

APPEAL—PETITION—NEW MATTER—PROPER PROCEDURE.

Where an amendment was objected to by the Examiner on the ground that it contained new matter and the claims which depended on the disclosure contained in the amendment for their support were rejected and no reconsideration of the Examiner's action was asked for by the applicant, but petition was taken to the Commissioner, *Held* that the question raised by the petition is one affecting the merits, and applicant's course under the rule is to ask reconsideration of the Examiner's action, and if upon reconsideration the Examiner adheres to the rejection appeal lies to the Examiners-in-Chief, as the question is one which may not be brought to the Commissioner by petition.

ON petition.

TENSION-REGULATORS FOR THE ELECTRICAL TRANSMISSION OF SPEECH.

Application of Alfred C. Cousens filed June 15, 1895, No. 552,896.

Mr. A. C. Cousens pro se.

Messrs. Crosby & Gregory for the assignee.

GREELEY, *Assistant Commissioner:*

It appears that certain of the claims of petitioner's application were rejected by the Examiner on the ground of inoperativeness and on the further ground that if operative they were met by cited references.

On appeal to the Examiners-in-Chief the decision of the Examiner was reversed; but the Examiners-in-Chief, acting under Rule 139, annexed to their decision a statement of certain grounds why the claims should not be allowed. The substance of the statement was that the invention was not disclosed in such a manner as to enable those skilled in the art to make and use the same.

Whether or not it would be possible for the applicant to so disclose the invention without introduction of new matter was not decided by the Examiners-in-Chief, but was expressly left by them for the determination of the Examiner.

On the return of the case to the Examiner he rejected it upon the reasons for rejection contained in the statement annexed to the decision of the Examiners-in-Chief.

On December 13, 1897, the applicant presented an amendment intended to obviate the objections originally raised by the Examiners-in-Chief and urged by the Examiner in his letter of November 5, 1897.

This amendment was objected to by the Examiner for the reason that it contained new matter, and the claims which depended upon the disclosure contained in the amendment for their support were rejected. No reconsideration of this action has been asked by the applicant.

The question by the petition is whether or not the Examiner's objection as to new matter is well taken. This is a question affecting the merits. Applicant's course under the rules is to ask reconsideration, and if upon reconsideration the Examiner adheres to the rejection to appeal to the Examiners-in-Chief. The question is not one which can be brought before the Commissioner by petition.

The petition is dismissed.

EX PARTE MAYNARD.

Decided June 13, 1898.

1. AMENDMENTS AFTER FINAL REJECTION—SHOWING REQUIRED.

An additional claim presented after final rejection should not be admitted without the showing of "good and sufficient reasons why it was not earlier presented" required by Rule 68.

2. PRACTICE—PETITIONS—WITHDRAWAL OF EXAMINER'S OBJECTION.

Proper practice requires that reasons for the withdrawal of an Examiner's objections should be fully presented to the Examiner before petition to the Commissioner is taken.

ON petition.

EMBROIDERY-HOOP.

Application of William C. Maynard filed March 23, 1897, No. 628,892.

Messrs. C. A. Snow & Co. for the applicant.

GREELEY, *Assistant Commissioner:*

Interference was declared between this application and the application of one Hammond on an issue which it is urged by applicant was somewhat less broad than the broadest claim found allowable to Hammond. No testimony was taken, Hammond conceding priority. At the time of declaring the interference a claim not involved in the interference was under rejection, the question of its patentability being, at applicant's request, left to be finally determined after the interference should be decided.

The question of priority having been decided applicant requested final action on the rejected claim. This was on March 19, 1898. The Examiner on March 23 called attention to the fact that this claim was under final rejection. On the 25th applicant presented an additional claim without

making any reference to the final rejection of the 23d and without making the "showing duly verified of good and sufficient reasons" why it was not earlier presented which is required under Rule 68. The amendment was refused admission by the Examiner, and from such refusal the applicant brings this petition. No such showing has as yet been made in the case. It was stated at the hearing that applicant can make such showing and will do so.

The action of the Examiner in refusing to admit the amendment was clearly in conformity with the rule. The applicant should have made the showing required before the Examiner. He should have complied with the rule fully before taking this petition. As was pointed out in *ex parte Appel*, (64 MS. Dec., p. 287)—

> it was never intended that questions which could be and should be settled before the Examiner * * * should be permitted to be brought to the Commissioner. Proper practice requires that the applicant should through his attorney present fully before the Examiner the reasons why objections made should be withdrawn, and only after the position taken by the applicant is made clear to the Examiner should petition be taken.

The petition is dismissed, applicant being given leave to present before the Examiner the showing required under Rule 68. In the consideration of such showing the promptness with which the amendment was filed may properly be taken into consideration.

CROCKER *v.* ALLDERDICE.

Decided August 12, 1898.

INTERFERENCE—TRANSMITTING MOTION—JURISDICTION OF EXAMINER OF INTERFERENCES AND PRIMARY EXAMINER.

The transmission of a motion provided for by the rules by the Examiner of Interferences to the Primary Examiner for his decision does not give the Primary Examiner jurisdiction for all purposes, but only for consideration of the motion transmitted. Jurisdiction as to all other matters respecting the interference clearly remains with the Examiner of Interferences and he has authority to entertain motions to dissolve or any other motions which may under the rules be made. (*Hutt and Phillips* v. *Foglesong*, 60 O. G., 1477, and *Jenne and Brown* v. *Booth*, 45 MS. Dec., 88, cited.)

APPEAL on motion.

BICYCLE-BRAKE.

Application of John C. Crocker filed February 23, 1897, No. 624,656. Application of William H. Allderdice filed December 7, 1896, No. 614,816.

Messrs. C. A. Snow & Co. for Crocker.

Messrs. Whitman & Wilkinson and *Messrs. Wilkinson & Fisher* for Allderdice.

GREELEY, *Acting Commissioner:*

It appears that in this case Crocker, the junior party, has taken testimony. Before the expiration of the time set for Allderdice to take his testimony a motion was made by him to dissolve under the decision in the case of *Hammond* v. *Hart*, (83 O. G., 743,) and the decision of the Examiner of Interferences transmitting this motion to the Primary Examiner was affirmed by the Commissioner on appeal.

From the fact that no motion to dissolve was made prior to the taking of testimony it would seem that there is no question that both parties show and describe and intend to claim the same invention, and the only ground for dissolution is that Crocker does not make the claims in issue in the words of the issue.

Crocker filed promptly upon the decision of the Commissioner affirming the transmission of the motion for dissolution a motion to amend under Rule 109 by inserting claims in the precise language of the issue. This motion was transmitted by the Examiner of Interferences, and it is from his decision transmitting this motion that this appeal is taken by Allderdice. The grounds of the appeal are not stated in the appeal, and consequently Crocker has had no notice of the precise reasons why the decision of the Examiner of Interferences is believed by Allderdice to be unwarranted. I would not be justified in reversing the decision appealed from without giving Crocker an opportunity for a hearing, either by brief or otherwise, upon the grounds urged at the hearing on behalf of Allderdice; but as it is clear that the decision appealed from must be affirmed a further hearing is not necessary.

The ground urged at the hearing on behalf of Allderdice, Crocker not appearing, but relying on a brief filed in his behalf, is that the Examiner of Interferences having transmitted one motion has thereby given up jurisdiction of the case and cannot entertain further motions of any sort. No authorities are cited in support of this position, and it must be held to be not well founded. The transmission of a motion provided for by the rules by the Examiner of Interferences to the Primary Examiner for his decision does not give the Primary Examiner jurisdiction for all purposes, but only for consideration of the motion transmitted. (*Hutt and Phillips* v. *Foglesong*, 60 O. G., 1477.) Jurisdiction as to all other matters respecting the interference clearly remains with the Examiner of Interferences, and there can be no question that he has authority to entertain motions to dissolve or any other motions which may under the rules be made. (*Jenne and Brown* v. *Booth*, 45 MS. Dec., 88.) To hold that when a motion to dissolve has been made by one party and transmitted a motion to dissolve made by the other party must await the final disposition of the first motion before it can be transmitted to and heard by the Primary Examiner would in many cases result in a delay which is obviously not only needless, but calculated to seriously prejudice the rights of parties and of the public.

The decision of the Examiner of Interferences is affirmed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Sixth Circuit.

FREDERICK R. STEARNS & COMPANY *v.* RUSSELL.

Decided February 8, 1898.

1. RUSSELL—DEVICE FOR HOLDING AND DIPPING PILLS—VOID.

Letters Patent No. 389,485, granted September 11, 1888, to John B. Russell, for a device for holding and dipping pills, consisting of a hollow bar having a number of seats for the reception of pills and adapted to have the air exhausted from its interior, so as to hold the pills to the seats by atmospheric pressure, is void for want of invention in view of the prior use of similar devices for analogous purposes.

2. INVENTION—ANALOGOUS USE—POTTS *v.* CREAGER.

The application of a device designed for lifting sheets of paper by exhausting the air in hollow points of contact therewith to the lifting and holding of pills while dipping them in a gelatin-bath considered to be a mere analogous use where no substantial change in the device was necessary. (*Potts & Co.* v. *Creager*, 70 O. G., 494; 155 U. S., 597, distinguished.)

3. SAME—SAME.

Where it requires substantially no change in an old device to adapt it to a new use, such adaptation cannot be the subject of a patent no matter how remote and unthought of the new use may be, provided no new force or mode of application be necessary in carrying on such use.

4. SAME—PRIOR ART, ASSUMPTION THAT INVENTOR KNOWS.

In estimating the amount of invention in a patented device the court is bound to assume that the history of prior patents and machines having a bearing on the subject was known to the patentee, though in fact he may have been ignorant thereof and actually exercised inventive faculty.

5. COMBINATION.

A pill-dipping bar with nipples against which the pills are held by suction created by exhaustion of the air from the interior of the bar and which is manipulated by hand in dipping the pills has no such relation to the pills and the gelatin-bath as to form with them a patentable combination or mechanism.

6. CONSTRUCTION OF CLAIMS—IMPLYING ELEMENTS NOT NAMED IN CLAIM.

To imply as elements of a claim parts not named therein for the purpose of limiting its scope, so that it may be accorded novelty, is contrary to a well-settled rule of patent law.

APPEAL from the Circuit Court of the United States for the Eastern District of Michigan.

STATEMENT OF THE CASE.

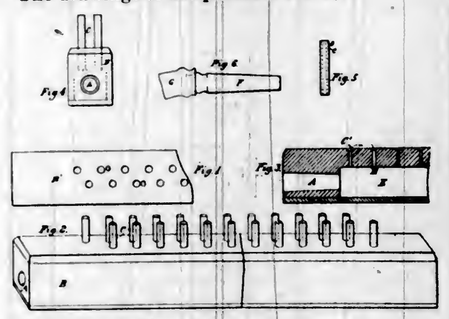
John B. Russell filed his bill in equity in the circuit court against Frederick R. Stearns & Company, a corporation, seeking to restrain the defendant from further infringement of United States Letters Patent No. 389,485, issued on September 11, 1888, to the complainant, for a "device for holding and dipping pills, etc." The bill described the device by the following averment:

> That your orator's patented device consists of a bar having a number of hollow seats for the reception of pills, which bar is adapted to be connected with an exhaust or sucking apparatus, so that the pills to be dipped are held to their seats by atmospheric pressure while being dipped.

The answer set up the usual defenses of non-infringement, want of novelty, non-invention, and anticipation. The specification of Russell's patent contained the following:

> Pills are now dipped in gelatin by the use of what is known as a "needle-bar," viz., a bar in which are set a number of needles. The pills are impaled on these needles, partially dipped, are allowed to dry, and then removed from the needles, usually by spring-fingers, and the uncoated portion dipped. This of course makes a hole in each pill, and requires considerable manipulation.
>
> My invention consists in holding the pills on the dipping mechanism by atmospheric pressure, and I do this by maintaining a partial vacuum behind the pills when in position.

The drawings of the patent are below:



The specification continues:

> The drawings represent mechanism adapted to practice my process, in which B represents a bar having therein a cavity E and an orifice through one end of the bar, preferably somewhat tapering, the other end of the bar being closed.
>
> C represents a number of tubes set tightly in the top of bar B and communicating with the interior cavity E.
>
> In the modification shown in Fig. 3 the tubes C are omitted and holes H are drilled through the bar into the cavity E, terminating at their outer end in concavities C'. The end of each tube C also has a slight concavity formed therein, as indicated in dotted lines in Fig. 5, to partially fit the pills or other objects to be held thereby.
>
> F represents a hollow tube adapted to fit the orifice A and preferably tapered to fit said orifice.
>
> G represents a flexible tube, one end of which is connected with the tube F and the other end with any suitable suction apparatus, such as an exhaust-fan, ejector, or pump.
>
> B' represents a portion of a board perforated with holes O, slightly larger than the pills to be coated, bored so as to register with the tubes C or concavities C'.
>
> The operation of my invention is as follows: The bar B is laid down with the tubes or concavities upward, and the board B' is placed in a frame so that the holes O register with the tubes C. A number of uncoated pills are thrown upon the board B', and some of them pass down through the holes O until they rest upon the end of tubes C, when the surplus pills are brushed off and the board removed, leaving a pill on the end of each tube or in each concavity C'. The tube F is now pressed into the orifice A, and, being connected with the suction apparatus, the air is exhausted from the cavity E and the pills are pressed firmly [against the ends of the tubes or concavities. The bar B is now lifted up and turned over, and, in doing this, the tube F may be turned in the orifice A] to avoid twisting tube G, and the pills are then dipped in a gelatin-bath as deeply as possible without permitting the gelatin to come in contact with the tube or to be sucked up through the tube or holes H by the vacuum. The pills are removed from the gelatin, the bar is given a slight rotary motion to distribute the gelatin evenly, and laid down with the tubes upward, in which position the tube F may be withdrawn and the bar and pills are left to dry. When the coating has become dry, the bar is again connected with the suction apparatus. A similar bar is laid down with the holes or tubes up, and with a perforated board B' placed over it, as before described. The bar containing the partially-coated pills is now raised, turned over, and the pills presented to the perforated holes in the board, and the suction apparatus is disconnected from the bar, when the partially-coated pills fall on the ends of the tubes and are held thereby. The suction apparatus is now connected to the second bar, the perforated board removed, and the uncoated portion of the pills dipped and dried, as before.
>
> It is evident that the gist of my invention consists in supporting the articles to be dipped by atmospheric pressure instead of by mechanical means, and that the form and mechanical construction details of the specific apparatus shown can be considerably modified.
>
> What I claim as my invention, and desire to secure by Letters Patent, is—
>
> 1. In mechanism for dipping pills, a chambered dipping-bar having seats for the pills which have atmospheric connection with an exhaust-chamber in said bar, substantially as described.
>
> 2. In a mechanism for dipping pills, a dipping-bar having seats for the pills and provided with passages forming atmospheric connection between said seats, and an interior exhaust-chamber formed in said bar, and a tubular connection entering said chamber and having a flexible tube or section to permit the movement of said bar when the chamber is exhausted, substantially as described.
>
> 3. In combination with the bar B and tubes C, the tapering tube F and the flexible tube G, connected with a suction apparatus, substantially as and for the purposes set forth.

The words in brackets are not in the specification, but they are, as counsel have suggested, needed to make the sense clear.

The first issue was as to the construction of the specification and claims. The plaintiff's counsel contended that the invention was only a part of the mechanism used in coating pills, of which the gelatin and its receptacle and the pills themselves were all elements, and that its novelty was to be determined in its relation to these other elements of the same so-called "mechanism." The contention for the defendant was that the patent was for a mere mechanical device to hold pills during the process of pill-dipping, and that it did not cover a combination with other appliances used in pill-dipping; that the patent was not for a process, but for a tool. To sustain this view, defendant introduced the file-wrapper and contents of the patent in suit, and also of an application filed by the complainant "for a new and useful improvement in the process for dipping pills."

In the latter application he described the method of dipping the pills very much as it is set forth in the specification quoted above, and framed his claim as follows:

> 1. The process of coating pills and other small objects, consisting in supporting them upon a dipping-bar by atmospheric

pressure while in the act of dipping, substantially as herein described.

The application was rejected by the Examiner in these words:

It being common to sustain pills for the purpose of dipping them by impaling the same upon pins attached to a bar, as is shown, for instance, by the patent of A. F. W. & F. A. Neymaber, No. 170,185, November 23, 1875, (sugar and salt, confectionery-pill machines,) and the use of a vacuum for sustaining articles in a similar manner to that shown in the present application being shown in the patents to D. H. Campbell, Nos. 297,495 and 297,496, April 22, 1884, (metal-working, buttons and clasps,) the process claimed is regarded as lacking in patentability.

Russell then amended his claim to read as follows:

The process herein described of coating pills and other small articles, which consists in holding them upon a dipping-bar by atmospheric pressure, and, while so held, dipping the pills in a coating composition substantially as set forth—

and pointed out the improvement in this process over the pill-impaling method theretofore in use by which a hole was made in each pill and required considerable additional manipulation. The appellant further called attention to the fact that the Campbell patent related to a different art from that of coating pills with gelatin, being a machine for making buttons. The amended application was again rejected, with the statement that—

the process claimed aside from the mere function of the apparatus is devoid of patentable novelty, in view of the patents, and for the reasons cited in the former Office letter.

The application was again amended by inserting the following disclaimer:

I am aware that suction-cups have been used in the manufacture of buttons and other like articles for the purpose of assembling the parts that go to make up such articles. Such, therefore, I do not broadly claim—

and by striking out of the claim the words "other small articles."

To this the Office answered:

The process of dipping pills, regardless of the apparatus used, is shown by numerous patents, and acknowledged by the applicant to be old. The method of sustaining articles by means of atmospheric pressure the applicant concedes also to be old and well known, such having been shown in the patent previously cited. In view of the above-mentioned facts, it is believed, as stated in the last Office letter, that the application presents no patentable process, and hence it must be for a second time, and finally, rejected.

At the same time that the application for the process patent was under consideration Russell was pressing his application for the patent in suit. He called it an "improvement in mechanism for dipping pills." He was required to substitute for the word "mechanism" the word "device" and to add the word "holding," so as to make his claim of invention one for a device for holding and dipping pills. As a condition of obtaining the patent in suit Russell was required to abandon his process application, which he did in the following letter, filed with the Commissioner of Patents:

In compliance with the directions of the Office, and for the purpose of having my application for mechanism for dipping pills, Serial No. 255,324, considered, I herewith withdraw my application for patent for process of dipping pills, filed November 16, 1887, Serial No. 255,324.

Yours, respectfully, JOHN B. RUSSELL.

Upon the issues of novelty and anticipation the complainant relied on the admitted facts that never before the use of the device in suit had its pneumatic principle been utilized in the pill-dipping art; that pill-dipping began in 1849, and that since that date some seven or eight patents for holding and dipping the pills had been taken out, in all of which were serious defects, which his device obviated. Of these prior devices those in most general use were bars with rows of pins or points, upon each of which a pill was impaled and held for dipping. These devices always left holes in the gelatin pill, which had to be filled in some other way or else left the pill-covering defective. The complainant, further, to show both novelty and utility, relied on evidence, not contradicted, that since his device has been used by Parke, Davis & Co., large manufacturers of pills in Detroit, for pill-dipping they have used it in making 129,000,000 pills a year and have increased their manufacture and sales of pills very largely as compared with the manufacture and sale of pills by their competitors who use the old devices.

Upon these issues the defendant introduced witnesses to prove the common use of air exhaustion to maintain balls in ball-valves against the mouth of an exhaust-chamber, and it also introduced American and English patents to show a frequent utilization of the same principle.

The Campbell patent of 1884, which, it will be remembered, was referred to by the Patent Office Examiner to show the want of novelty of the process applied for by complainant, was an improvement in button-making machines in which coöperative dies were employed for uniting as many as five different parts to form a button, the improvement consisting in devices for feeding the several parts automatically into the dies successively and in the proper order. The dies were in a circle inside the periphery of a revolving table, while the parts to be fed were in magazines outside the periphery of the table. The parts were transferred one at a time from their respective magazines to the dies by means of cupules or suckers, which were pipes suspended above the table and communicating with a common exhaust-chamber and having such a swivel-joint connection with the chamber as to permit their lower ends to swing from their respective magazines to the circle of the revolving dies. The construction of the machine was quite complicated in order to effect the necessary automatic coöperation of the parts; but the simple office of each cupule or sucker was to attach to its lower end a particular part of the button to be made and to lift it from its magazine and carry it around to a point where it could drop it into one of the revolving dies, with which it would register. The lifting and holding of the part thus carried to the end of the sucker or cupule was effected by exhausting the air in the exhaust-chamber, connected by a flexible pipe with suction apparatus, and the dropping was accomplished by breaking the atmospheric connection between the vacuum-chamber and the pipes of the cupules or suckers by means of automatically-operated valves. Another cupule was used to lift the finished button from the die and deliver it from the machine. The patentee said in his specification:

Instead of relying upon mechanically-organized grasping and delivering devices, operating after the manner of nippers, and in some cases after the manner of puncturing-forks, for feeding or delivering the parts to and removing the finished buttons from the dies, I employ cupules or "sucking-cups" with atmospheric pressure, made available at suitable proper intervals by a continuous partial vacuum mechanically induced, and an automatic control of said pressure adjacent to and affecting said cupules in their operation. So far as my knowledge extends, this pneumatic principle has never before been applied to button-making machinery, although I am aware that it has been employed in machines for making trunk-nails having brass filled heads; but in said machines, instead of effecting the release of a "filling" from a lifter by modifying the atmospheric pressure, as in my machine, said release was effected by mechanically-operated plungers; and, instead of employing a continuous partial vacuum, as in my machine, the partial vacuum in said prior machine was intermittingly induced by a pump, which was worked for each operation of the lifter. I am also aware that the pneumatic principle has heretofore been employed in twine-balling machines for conveying "tickets" from receptacles to hollow sinking balling-spindles by means of cupules or suckers; and I am still further aware that there have been employed in other connections suckers which embodied means within themselves for inducing a partial vacuum at each movement toward or upon the object to be lifted.

The articles lifted in the Campbell machine were metal shells, metal collets, cloth covers, paper fillings and tufts, as well as the whole buttons. The machine for making trunk-nails referred to by Campbell was covered by a patent to Zachariah Walsh, issued in 1865. The machine is a very complicated one. The things lifted by suckers or cupules were small circular tin or metal plates and circular pieces of pasteboard of the same size.

In 1851 one Frearson had taken out an English

patent for lifting by pneumatic suckers small pieces of metal and delivering them into cutting, shaping, and pressing machinery. The same pneumatic principle was used in printing-presses to lift sheets of paper and convey them from one part of the machine to another. There were quite a number of devices of this kind. The one most important in this case was a patent for a feeding attachment for cylinder printing-presses, issued to Sanford C. Cox May 12, 1885. In this the paper was delivered into the press by a tubular carrier Q, which itself was carried from the place of reception to the place of delivery suspended in triangular slots of carrying-levers and moving over segmental tracks. The carrier was described as follows:

The under side of the carrier Q is provided with the suction-cups S, which communicate with its hollow interior, and have secured around their edges the rubber rings *s*, to cause them to adhere to the paper when the air is exhausted from the carrier and cups. One end of the tubular carrier is closed, and the other end is connected by a flexible tube T with an air-pump, which is not shown in the drawings, but which is operated from the cylinder or operating-shaft of the press, and which is so constructed and arranged that it shall exhaust the air from the carrier when the latter reaches the paper-table, and cease operation and permit air to enter the carrier when the latter reaches the end of its stroke. The ends of the segmental tracks D are vertical or abrupt, and the triangular slots O in the carrying-levers will permit the carrier to descend the required distance at either end and will again raise or lift it at the beginning of the movement in the opposite direction. By this construction the suction-cups will always descend squarely upon the paper, and will never fail to deliver it evenly and smoothly.

Fig. 3 of the drawings shows this tubular carrier:

Fig. 3.

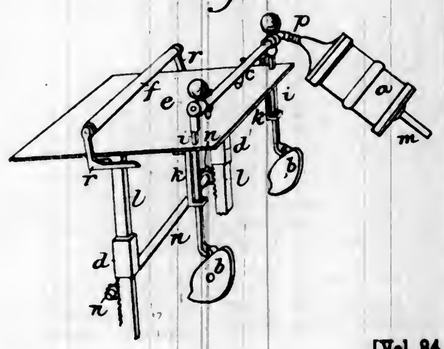


A very similar device was shown in a paper-separator, patented to Comly in 1853.

His invention [he said] consists in a method of feeding or supplying paper, sheet by sheet, from a heap through the agency of atmospheric pressure.

His machine consisted of (1) an elevating-table; (2) a roller; (3) an air pump or exhauster attached by a flexible tube or bracket to a horizontal tube pierced on the under side with any required number of small holes, in which he inserted small tubes of, say, one inch in length and caliber in proportion to the size of the horizontal tube and the power of the exhauster, and (4) a supporting-bar. The air was exhausted from the tube C at the moment when the tubes Z Z Z were nearest to the top sheet of paper, at which time the revolution of cam-wheels raised the tube C, with the sheet, and it was carried from the heap to any required point. Fig. 2 of the drawings, reproduced below, shows this tubular carrier:

Fig. 2.



Before TAFT, LURTON, and SEVERENS, Judges.

Mr. R. A. Parker for the appellant.

Mr. Cyrus E. Lothrop and *Mr. Ephraim Banning* for the appellee.

TAFT, *J.*, after stating the case as above, delivered the opinion of the court.

The first issue between the parties is whether the patent before us is to be regarded as a machine merely for lifting and holding pills or as an element of a larger mechanical combination of parts used in the process of pill-dipping. It seems to be the view of the defendant and appellee that other things required to be used in dipping pills can be implied as elements of the claims, and that thereby the novelty of the invention will become clear from the circumstance that no device of any form embodying the pneumatic principle of complainant's bar had ever before been used in combination with pills and a gelatin-bath. To imply as elements of a claim parts not named therein for the purpose of limiting its scope, so that it may be accorded novelty, is contrary to a well-settled rule of the patent law. It was proposed to limit a claim thus in *McCarty* v. *Railroad Co.*, (160 U. S., 110, 116; 16 Sup. Ct., 240.) The patent there under consideration was for a car-truck bolster. Mr. Justice Brown, in delivering judgment for the Supreme Court, said (p. 116):

There is no suggestion in either of these claims that the ends of the bolster rest upon springs in the side trusses, although they are described in the specification and exhibited in the drawings. It is suggested, however, that this feature may be read into the claims for the purpose of sustaining the patent. While this may be done with a view of showing the connection in which a device is used, and proving that it is an operative device, we know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement. The difficulty is that if we once begin to include elements not mentioned in the claim in order to limit such claim, and avoid a defense of anticipation, we should never know where to stop. If, for example, a prior device were produced exhibiting the combination of these claims plus the springs, the patentee might insist upon reading some other element into the claims, such, for instance, as the side frames and all the other operative portions of the mechanism constituting the car-truck, to prove that the prior device was not an anticipation. It might also require us to read into the fourth claim the flanges and pillars described in the third. This doctrine is too obviously untenable to require argument.

But it is said that the claims of the patent in question here do contain a suggestion of such a combination in the opening words, "In pill-dipping mechanism." We think these words are only used to define the useful purpose to which the patentee intended his device to be devoted and cannot bear the construction by which all the other substances and parts used in dipping pills may be considered as making up the combination claimed.

There is a still more serious objection to such a view in the fact that the other elements which it is sought to introduce into the claims do not, when taken in connection with the specified device, in any proper sense constitute a mechanism or arrangement of mechanical parts that can be patented as such. The complainant's patent is for a pill-holding device and nothing else. It is a tool for manual use. To the extent that the pump or fan, the flexible tube, the chambered bar, and the tubes or nipples of the bar coöperate to hold the pills upon the tube or nipple ends against the force of gravity they form a mechanism or machine; but

when considered in relation to the dipping process this machine is merely a tool, exactly as a pin would be a tool used by hand to impale a pill and to dip it into gelatin. The gelatin and its receptacle are not coacting parts of a mechanism of which the bar is also a part. There is no relation between them at all, except as it is initiated and maintained by the voluntary manual and continuously-guiding act of the human operator. It is no more proper to describe the dipping-bar as a co-element in dipping mechanisms with the pill and the gelatine-bath than it is to describe the ax as a co-element of the log and the chopping-block in mechanism for splitting wood. Mechanism may be defined to be the arrangement and relation of the parts in a machine, and a machine is defined by Professor Robinson in his work on patents (sec. 173) to be—

an instrument composed of one or more of the mechanical powers, and capable, when set in motion, of producing, by its own operation, certain predetermined physical effects.

Again, he says (sec. 175) that—

a machine differs from all other mechanical instruments in that its rule of action resides within itself.

Within these definitions the chambered dipping-bar, with its pill-seats and the exhaust-pump, is a machine for holding pills, and the bar, the chamber, the pump, and the hollow pill-seats are parts of the mechanism forming the machine operating upon the pills; but when the hand of the operator is needed to turn the bar over and to carry it to the bath and to dip the attached pills into the bath the function of the bar, so far as it has relation to the bath and the dipping process, is that of a tool. Of course we do not mean to say that various mechanical steps taken by means of different tools or machines in operating upon a substance to transform it from one thing to another may not be the subject of a patent; but in such a case the patent is for a process and not for a machine. (*Cochrane* v. *Deener*, 11 O. G., 687; 94 U. S., 780, 787, 788; *Locomotive Works* v. *Medart*, 158 U. S., 68, 75, 76; 15 Sup. Ct., 745.) Whether such a process patent might have been valid for the steps in pill-dipping pointed out in complainant's specification we need not discuss, because the complainant as a condition of getting the patent in suit expressly abandoned and withdrew an application for just such a process patent, and he is thereby estopped from contending for any construction of his present patent which would, in effect, secure him the same thing. (*Sutter* v. *Robinson*, 38 O. G., 230; 119 U. S., 530, 541; 7 Sup. Ct., 376; *Shepard* v. *Carrigan*, 34 O. G., 1157; 116 U. S., 593; 6 Sup. Ct., 493; *Leggett* v. *Avery*, 17 O. G., 445; 101 U. S., 256.) What we have to determine in this case, therefore, is whether complainant's chamber-bar was a new invention. First, was the bar itself new? Second, if not, did its use for holding pills involve the inventive faculty on the part of the complainant, who is conceded to have first conceived such use?

The Campbell machine for making buttons and the much earlier devices of Walsh for making heads for trunk-nails clearly disclosed the method of lifting, holding, and moving small articles like pieces of metal, cloth, wood, and paper from one place to another by attaching them to the ends of hollow tubes connected with an exhaust-chamber, from which the air was withdrawn by a pump, fan, or other exhausting device. Such devices were part of a larger machine and discharged their functions automatically and at regular intervals. Although the principle of their action, so far as lifting and holding these articles against the force of gravity was concerned, was exactly the same as that embodied in complainant's bar, their form was not precisely the same. The same principle was used in another art—that of the printing-press—for lifting and delivering paper to the press, and in this art we find the complainant's dipping-bar complete, with hardly a variation. It appears satisfactorily that what is called the "tubular carrier" of the paper-delivering device of Sanford C. Cox, patented several years before complainant's application was filed, is substantially in the same form as complainant's bar, operates upon exactly the same principle, and if removed from the Cox machine, as it can be easily, will hold, carry, and dip pills in the same way. It appears that no change is necessary whatever in the Cox carrier to make it suited to pill-dipping, except it may be a reduction in the size of the tubes or pill-seats. Differences between the two bars or carriers are suggested. First, the exhaust-chamber of complainant's bar is connected by a swivel-joint to the flexible rubber tube leading to the air-exhausting machine. This swivel-joint is not in Cox's carrier; but the tube connected to the chamber of the carrier is flexible, and it is quite manifest that the flexibility of the tube, if sufficiently long, would permit the performance of the same function—that of enabling the tube to be turned over—which is the office of the swivel-joint in complainant's bar. Again, it is said that the ends of the Cox carrier-tubes are not made of a semiglobular form to form the pill-seats and have rubber rings about them; but it clearly appears that the model made according to the Cox carrier will hold the pills without such seats, and this, too, with or without the rubber rings, which of course were used to make the connection with the paper sheet more close. The very triviality of the differences dwelt upon only emphasizes the substantial identity of the two bars. The Comly carrier for sheets of paper, which is a much earlier device, also quite nearly resembles complainant's carrier in form and principle of operation; but the resemblance is not so close as that of the Cox carrier, and we need not further notice it.

The remaining question is, did it require the inventive faculty to conceive the use of the Cox carrier for pill-dipping and to apply it to that art? It has long been settled that a mere use or function is not the subject of a patent, and also that—

the inventor of a machine is entitled to the benefit of all the uses to which it can be put, no matter whether he conceived the idea of the use or not. (*Roberts* v. *Ryer*, 10 O. G., 204; 91 U. S., 150, 157; *Goshen Sweeper Co.* v. *Bissell Carpet Sweeper Co.*, 37 U. S. App., 555; 19 C. C. A., 13, and 72 Fed. Rep., 67, and cases there cited.)

It would seem to follow as a corollary to these two propositions that where it requires substantially no change in the old device to adapt it to the new use such adaptation cannot be the subject of a patent, no matter how remote and unthought of the new use may be, provided no new force or mode of application be necessary in carrying on such use. Otherwise in case the device has been patented the right of monopoly of the prior patentee is invaded by excluding him from a use of a machine which by the rule stated and the authorities cited above he is entitled exclusively to enjoy. If, however, the adaptation of the old machine to the new use involves a change in its form or operation, it may by the changes and very newness of the use or function become either a new machine or an improvement on the old machine and be patentable as such, or the new use of the old machine may result in a new product which is itself patentable, or the use may be a step in a new and patentable process. The general rule, however, is stated by Mr. Justice Gray, in delivering the judgment of the Supreme Court in *Pennsylvania R. Co.* v. *Locomotive Engine Safety Truck Co.*, (27 O. G., 207; 110 U. S., 490, 494; 4 Sup. Ct., 220,) as follows:

It is settled by many decisions of this Court, which it is unnecessary to quote from or refer to in detail, that the application of an old process or machine to a similar or analogous subject, with no change in the manner of application, and no result substantially distinct in its nature, will not sustain a patent, even if the new form or result has not before been contemplated.

Tested by this rule we cannot think that the device of the complainant was patentable. Cox's machine was applied to the lifting of sheets of paper by exhausting the air in the hollow points of contact with the paper. Its subject was the lifting of the paper against the force of gravity without hooking or sticking devices. The same principle had been theretofore applied in lifting small articles like buttons, nail-heads, and their component parts. Complainant's machine is a reproduction of Cox's, and its use is to lift pills and hold them against the force of gravity without hooking or sticking devices. There is no change in the manner of operating the machine, and the result is not substantially distinct in its nature, because it is in each case the holding of the article against gravity while it is being lifted from one place to another—in the Cox machine from the pile of paper to the press, in the complainant's machine from pill-magazine to the bath and thence to the drier. We cannot think that such a use is not an analogous use, although never until the complainant did it had such a device been applied to holding up pills while being dipped. There would be more ground for maintaining that the use was non-analogous if it were not that small articles quite like pills had been held up in the same manner. It is quite possible that the conception of the machine by the complainant was a real exercise of the inventive faculty on his part, because he did not know of the Cox or Comly devices or of the Campbell and Walsh patents; but in judicially estimating the amount of invention in a patented device the court is bound to assume that the history of prior patents and machines having a bearing on the subject-matter was known to the patentee.

The case upon which complainant's counsel most rely is that of *Potts & Co.* v. *Creager*, (70 O. G., 494; 155 U. S., 597; 15 Sup. Ct., 194.) In that case the patentee had taken the cylinder of a wood-polishing machine, containing a series of glass bars fitted into longitudinal grooves in the periphery of the cylinder, and, discarding the glass bars, had substituted others of steel and provided the cylinder thus changed with an abutting roller and then used it, not for wood-polishing, but for disintegrating clay. The Supreme Court held the patent valid. Mr. Justice Brown delivered the opinion of the Court, and in answer to the question whether these changes involved invention he said:

The answer to this requires the consideration of the often recurring question, which has taxed the ingenuity of courts ever since the passage of the patent acts, as to what invention really is.

When a patented device is a mere improvement upon an existing machine, and the case is not complicated by other anticipating devices, the solution is ordinarily free from difficulty. But, where the alleged novelty consists in transferring a device from one branch of industry to another, the answer depends upon a variety of considerations. In such cases we are bound to inquire into the remoteness of relationship of the two industries; what alterations were necessary to adapt the device to its new use, and what the value of such adaptation has been to the new industry. If the new use be analogous to the former one, the Court will undoubtedly be disposed to construe the patent more strictly, and to require clearer proof of the exercise of the inventive faculty in adapting it to the new use—particularly if the device be one of minor importance in its new field of usefulness. On the other hand, if the transfer be to a branch of industry but remotely allied to the other, and the effect of such transfer has been to supersede other methods of doing the same work, the Court will look with a less critical eye upon the means employed in making the transfer.

Doubtless, a patentee is entitled to every use of which his invention is susceptible, whether such use be known or unknown to him; but the person who has taken his device and, by improvements thereon, has adapted it to a different industry, may also draw to himself the quality of inventor. If, for instance, a person were to take a coffee-mill, and patent it as a mill for grinding spices, the double use would be too manifest for serious argument. So, too, this Court has denied invention to one who applied the principle of an ice-cream freezer to the preservation of fish, (*Brown* v. *Piper*, 10 O. G., 417; 91 U. S., 37;) to another who changed the proportions of a refrigerator in such manner as to utilize the descending instead of the ascending current of cold air, (*Roberts* v. *Ryer*, 10 O. G., 204; 91 U. S., 150;) to another who employed an old and well-known method of attaching car-trucks to the forward truck of a locomotive-engine, (*Pennsylvania R. Co.* v. *Locomotive Engine Safety Truck Co.*, 27 O. G., 207; 110 U. S., 490; 4 Sup. Ct., 220;) and still another who placed a dredging-screw at the stem instead of the stern of a steamboat, (*Atlantic Works* v. *Brady*, 23 O. G., 1330; 107 U. S., 192; 2 Sup. Ct., 225.) In *Tucker* v. *Spalding*, (1 O. G., 144; 13 Wall., 453,) the patent covered the use of movable teeth in saws and saw-plates. A prior patent exhibited cutters of the same general form as the saw-teeth of the other patent attachable to a circular disk, and removable as in the other, the purpose of which patent was for the cutting of tongues and grooves, mortises, etc. The Court held that if what it actually did was in its nature the same as sawing, and its structure and action suggested to the mind of an ordinarily skilful mechanic this double use to which it could be adapted without material change, then such adaptation to a new use was not new invention, and was not patentable.

Upon the other hand, we have recently upheld a patent to one who took a torsional spring, such as had been previously used in clocks, doors, and other articles of domestic furniture, and applied it to telegraph instruments, the application being shown to be wholly new. (*Western Electric Co.* v. *La Rue*, 55 O. G., 571; 139 U. S., 601; 11 Sup. Ct., 670.) So, also, in *Crane* v. *Price*, (1 Web. Pat. Cas., 409,) the use of anthracite coal in smelting iron ore was held to be a good invention, inasmuch as it produced a better article of iron at a less expense, although bituminous coal had been previously used for the same purpose. (See also *Steiner* v. *Heald*, 6 Ex., 607.)

Indeed, it often requires as acute a perception of the relation between cause and effect, and as much of the peculiar intuitive genius which is a characteristic of great inventors, to grasp the idea that a device used in one art may be made available in another, as would be necessary to create the device *de novo*. And this is not the less true if, after the thing has been done, it appears to the ordinary mind so simple as to excite wonder that it was not thought of before. The apparent simplicity of a new device often leads an inexperienced person to think that it would have occurred to any one familiar with the subject; but the decisive answer is that with dozens and perhaps hundreds of others laboring in the same field, it had never occurred to any one before. The practiced eye of an ordinary mechanic may be safely trusted to see what ought to be apparent to every one. As was said by Mr. Justice Bradley in *Webster Loom Co.* v. *Higgins*, (21 O. G., 2081; 105 U. S., 580, 591:)

"Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention."

As a result of the authorities upon this subject, it may be said that, if the new use be so nearly analogous to the former one, that the applicability of the device to its new use would occur to a person of ordinary mechanical skill, it is only a case of double use, but if the relations between them be remote, and especially if the use of the old device produce a new result, it *may* at least involve an exercise of the inventive faculty. Much, however, must still depend upon the nature of the changes required to adapt the device to its new use.

In the case at bar it is true that the complainant's device has been very useful in the art of pill-dipping, and if that alone is to determine whether a use is analogous or non-analogous when an old device is used in another art the complainant's device must be sustained as patentable; but it will be observed that Mr. Justice Brown in this very carefully and cautiously worded discussion of the subject includes as very large elements to be considered in reaching a conclusion in any case the changes in the old device required to adapt the old device to the new use and the remoteness of the new use. (*Schreiber Co.* v. *Grimm*, 43 U. S. App., 10, 19; 19 C. C. A., 67, and 72 Fed. Rep., 671.) In the case he was considering the changes were marked. The old device would have been wholly inoperative if applied as it was to disintegrating clay. In the case before us no change was necessary at all except simple disengagement from other parts of a larger machine and a mere reduction in size of the holes in the contact-tubes. In *Potts & Co.* v. *Creager* the old use was polishing wood; the new was disintegrating clay. They were obviously totally different and distinct purposes. Here the old use was lifting and holding paper and small articles, and the new was lifting and holding pills. We are of opinion that, notwithstanding the utility and success of the new application of the device to pill-dipping, the circumstances that no change of form was necessary in the new application and that the functions or purposes new and old were not wholly different and distinct, but were substantially the same, make this a different case from *Potts & Co.* v. *Creager* and lead to a different result. In *Western Electric Co.* v. *La Rue*, (55 O. G., 571; 139 U. S., 601; 11 Sup. Ct., 670,) referred to by Mr. Justice Brown above, the invention was of a combination of parts making up a telegraph instrument, the novel element in which was a torsional spring. Such a spring took the place of elements which required the most delicate adjustment and were always getting out of order. The spring had never before been an element in such a combination and had never before discharged the same function. The case has no likeness to the one before us. In *Colgate* v. *Telegraph Co.* (15 Blatchf., 365; Fed. Cas., No. 2,995) it was held that the use by the patentee of an electric wire covered with gutta-percha to insulate it was not a double use, though gutta-percha had been used for protecting from abrasion or injury from without a metallic wire which was not used to conduct electricity. Here the new use involved a new force. The wire and the covering each discharged new functions, and the invention was manifestly a different one from that involved in merely covering wire to protect it. The cases of *Williames* v. *McNeely* (64 Fed. Rep., 766) and *Williames* v. *Barnard*, (41 Fed. Rep., 356,) cited for appellee, throw little light on the case at bar, because in those cases the patents were sustained on the ground that ingenuity was shown in devising the mechanism needed to apply the principle of the old machine to the new use.

The cases in which it has been held that an old machine applied to a new purpose is not a new patentable machine are so numerous that it would take too much space to cite them all. In addition to those already cited may be mentioned *Howe* v. *Abbott*, (2 Story, 190; Fed. Cas., No. 6,766;) *Bean* v. *Smallwood*, (2 Story, 408; Fed. Cas., No. 1,173;) *Knapp* v. *Morss*, (65 O. G., 1593; 150 U. S., 221; 14 Sup. Ct., 81;) *Aron* v. *Railway Co.*, (49 O. G., 1365; 132 U. S., 85; 10 Sup. Ct., 24;) *Ansonia Brass & Copper Co.* v. *Electrical Supply Co.*, (58 O. G., 1692; 144 U. S., 11, 18; 12 Sup. Ct., 601;) *Busell Trimmer Co.* v. *Stevens*, (53 O. G., 2044; 137 U. S., 423; 11 Sup. Ct., 150;) *Dunbar* v. *Tack Co.*, (4 Ban. & A., 518; Fed. Cas., No. 4,127ª;) *Moffitt* v. *Rogers*, (8 Fed. Rep., 147;) *Miller* v. *Foree*, (33 O. G., 1497; 116 U. S., 22; 6 Sup. Ct., 204;) *Lovell Manufacturing Co.* v. *Cary*, (62 O. G., 1821; 147 U. S., 623; 13 Sup. Ct., 472;) *Kay* v. *Marshall*, (2 Web. Pat. Cas., 36;) *Harwood* v. *Railway Co.*, (11 H. L. Cas., 654.) The case of *Manufacturing Co.* v. *Cary* had some points of resemblance to the case before us. The patent there was for a process of restoring the resiliency of furniture-springs by heating them to a great heat. The invention was said to have revolutionized the art; but it was held that the prior use of the same method for tempering wire clock-bells and blued hair-springs in marine clocks made the patented process only a double use, although the furniture and clock making arts would not seem to be very nearly allied. Following language used in *McClain* v. *Ortmayer*, (57 O. G., 1129; 141 U. S., 419, 428; 12 Sup. Ct., 76,) the Court said of the argument founded upon the extent to which the article had gone into use that—

> while in a doubtful case the fact that a patented article had gone into general use is evidence of its utility, it is not conclusive even of that, much less of its patentable novelty.

See, to the same point, *Knapp* v. *Morss*, (65 O. G., 1593; 150 U. S., 221; 14 Sup. Ct., 81.)

Professor Robinson, in his valuable work on patents, (sec. 269,) states the rule which he conceives to be applicable to a case like this as follows:

> Where an invention consists of a specific force applied in a specified manner, but without reference to specific objects, diversity of use may arise from a change of objects, the diversity being double use if the substituted object were already known as capable of substitution, but being a new invention if this susceptibility of that object were first discovered by its use.

Even judged by this rule, which is certainly more liberal than that laid down in many of the authorities, we cannot see how any other conclusion than that already expressed can be reached in the case at bar. It was known that pills had the same susceptibility of being held up against the force of gravity by pneumatic pressure that other small articles and that paper sheets had. Of course pills had not been so held; but, assuming a knowledge that paper, buttons, small pieces of cloth, metal, cardboard, and nail-heads could be so lifted, there was nothing about a pill which would lead the ordinary observer to suppose that it was not equally susceptible to the same operation. Hence the use of the same device for holding pills was a double use and not a new invention.

A suggestion has been made that the pill, being rather soft and round, might suggest difficulties in the creation of a partial vacuum behind it that would be absent in hard bodies like buttons and nail-heads, because the latter would make a closer contact with the cupule or sucker-tube; but we cannot think that there is anything of substance in this suggestion. The question of a sufficient vacuum is only a matter of degree, and it was manifest that the difficulty, if any existed, might be obviated by a slight change in the form of the tubes at their ends and in the power of the suction. The conclusion we have reached makes it unnecessary to consider the question of infringement.

The decree of the circuit court is reversed, with directions to dismiss the bill.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 84.—NO. 10. TUESDAY, SEPTEMBER 6, 1898. PRICE—$5 per year.

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Revision of Laws Relating to Patents, Etc.

The act approved June 4, 1898, provides for the appointment of three commissioners, whose duty it shall be to revise and amend the laws of the United States concerning patents, trade and other marks, and trade or commercial names, which shall be in force at the time such commission shall make its final report, so far as the same relates to matters contained in or affected by the convention for the protection of industrial property concluded at Paris March 20, 1883, the agreements under said convention concluded at Madrid April 14, 1891, and the protocols adopted by the conference held under such convention at Brussels, 1897, and the treaties of the United States, and the laws of other nations relating to patents, trade and other marks, and trade or commercial names.

The commissioners appointed are Peter S. Grosscup, United States District Judge for the Northern District of Illinois, Francis Forbes, of New York, and Arthur P. Greeley, Assistant Commissioner of Patents.

All persons interested in the revision and amendment of the laws provided for in the act above referred to are invited to send to the commissioners such suggestions as they may wish to make in reference thereto before October 15, 1898. Communications should be in triplicate and may be addressed in care of the Assistant Commissioner of Patents, Washington, D. C.

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 30, 1898.

SIR: The Secretary of the Interior has ordered that Thomas Giffe, of Chattanooga, Tenn., be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 30, 1898.

SIR: The Secretary of the Interior has ordered that J. F. Ryerson, of Denver, Colo., be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

EDWARD M. DAWSON,
Chief Clerk.

The Commissioner of Patents.

Interference Notice—Decker v. Loosley.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 1, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

Notice is hereby given that times have been set as follows for taking testimony in this interference and for its final hearing, to wit:

Decker's testimony-in-chief to close November 8, 1898. Loosley's testimony-in-chief to close November 28, 1898. Decker's testimony in rebuttal to close December 13, 1898. Final hearing January 5, 1899. No testimony to be taken before October 18, 1898. Loosley will be restricted to his record date.

This notice will be published in the OFFICIAL GAZETTE for six weeks.

C. H. DUELL,
Commissioner.

CERTIFICATES OF REGISTRATION ISSUED SEPTEMBER 6, 1898.

Labels.

6,655.—Title: "GAME OF RACE AROUND THE WORLD." (For a Game.) *McLoughlin Brothers*, New York, N. Y. Application filed August 9, 1898.

6,656.—Title: "GAME OF THE ROBBER KITTEN." (For a Game.) *McLoughlin Brothers*, New York, N. Y. Application filed August 9, 1898.

6,657.—Title: "THE GAME OF THE TEN LITTLE NIGGERS." (For a Game.) *McLoughlin Brothers*, New York, N. Y. Application filed August 9, 1898.

6,658.—Title: "HOLLANDS." (For Coffee.) *Holland Coffee Company, Limited*, New York, N. Y. Application filed July 29, 1898.

6,659.—Title: "POONG'S READY CURE." (For a Medicine.) *Chen Yuhi Poong*, New Orleans, La. Application filed August 4, 1898.

Print.

77.—Title: "MYSTIC PLAYING CARDS." (For Playing-Cards.) *The United States Playing Card Company*, Cincinnati, Ohio. Application filed August 8, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business August 30, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Under one month.			
38	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	Aug. 2	Aug. 16	164
	Between one and two months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	June 30	Aug. 23	254
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	July 11	Aug. 22	152
108	XIX. Stoves and Furnaces	July 11	Aug. 22	167
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	July 12	Aug. 15	101
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	July 6	Aug. 9	115
228	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 22	Aug. 6	147
	Between two and three months.			
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 2	Aug. 18	184
255	XII. Mechanical Engineering, Store-Service, etc.	June 25	Aug. 16	137
253	X. Carriages and Wagons	June 14	Aug. 16	185
158	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	June 8	Aug. 15	143
89	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 1	Aug. 13	281
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 8	Aug. 9	187
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 27	July 30	127
	Between three and four months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	May 21	Aug. 20	264
128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	May 23	Aug. 19	139
240	VII. Velocipedes	May 16	Aug. 16	462
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	May 2	Aug. 16	442
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	May 16	Aug. 3	354
	Between four and five months.			
248	XVIII. Steam-Engineering, etc	Apr. 23	Aug. 19	286
120	IX. Hydraulics, Fire-Extinguishers, etc.	Apr. 6	Aug. 16	260
106	II. Farm Stock, Products, etc.	Apr. 1	Aug. 15	496
246	I. Tillage and Fences	Mar. 30	Aug. 13	201
122	XXIV. Sewing-Machines, Apparel, and Toilet.	Apr. 28	Aug. 8	241
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Apr. 2	Aug. 2	380
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Mar. 30	Aug. 2	369
98	XXI. Textiles, etc	Apr. 29	July 28	270
	Between five and six months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Mar. 1	Aug. 15	706
25	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Mar. 7	Aug. 12	413
	Between six and seven months.			
217	XXXIII. *Trade-Marks, etc., †Designs, Drafting, and Optics.	Feb. 3	Aug. 26	214
21	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Feb. 4	Aug. 23	433
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Feb. 24	Aug. 16	451
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215	XVII. Printing, Type-Writing Machines, and Linotyping.	Feb. 1	Aug. 6	416
95	*Between seven and eight months.* XXX. Paper Manufactures, Lamps, and Gas-Fittings.	Jan. 4	Aug. 15	253
261	*Between nine and ten months.* XXXVI. Weighing and Measuring Devices and Driers.	Nov. 29	Aug. 13	202

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Trade-Marks	Aug. 26	Aug. 26	39

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Designs	25	No. 29,299 to No. 29,323, inclusive.
Trade-Marks	28	No. 31,929 to No. 31,956, inclusive.
Labels	5	No. 6,655 to No. 6,659, inclusive.
Prints	1	No. 77.
Reissues	None.	
Total issue	414	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama			New Hampshire	2	
Arizona Territory			New Jersey	16	
Arkansas	1		New Mexico Territ'y	1	
California	11		New York	54	12
Colorado	7		North Carolina		
Connecticut	10	2	North Dakota		
Delaware			Ohio	33	3
District of Columbia	1		Oklahoma Territory		
Florida		1	Oregon	1	
Georgia			Pennsylvania	39	2
Idaho			Rhode Island		1
Illinois	35	3	South Carolina	1	
Indian Territory			South Dakota		
Indiana	10	1	Tennessee	3	
Iowa	8		Texas	5	
Kansas	8		Utah		
Kentucky	5		Vermont	2	
Louisiana		1	Virginia	4	
Maine	5		Washington	2	
Maryland	8	1	West Virginia		
Massachusetts	22	1	Wisconsin	8	1
Michigan	10		Wyoming	1	
Minnesota	6		U. S. Army		
Mississippi	2		U. S. Navy		
Missouri	3	3			
Montana			Total to citizens of the United States	330	32
Nebraska					
Nevada					

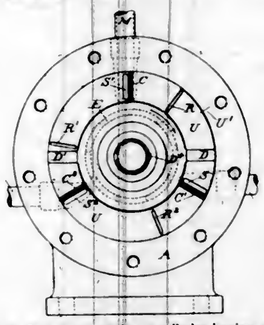
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	1		Italy		
Australia			Mexico		
Austria-Hungary			Netherlands		
Barbadoes			Newfoundland		
Belgium	2		New South Wales	1	
Bermuda			New Zealand	1	
Brazil			Norway		
British Guiana			Portugal		
Canada	5	1	Queensland		
Cape Colony			Russia		
Chile, Republic of			Scotland	4	
China			South African Republic		
Colombia			South Australia		
Cuba			Spain	1	
Denmark	1		Sweden		
Egypt			Switzerland	1	
England	15		Victoria	2	
Finland			West Australia		
France	3				
Germany	13	1	Total to citizens of foreign countries	50	2
Guatemala					
Ireland					

PATENTS

GRANTED SEPTEMBER 6, 1898.

610,161. ROTARY ENGINE. HARRY I. ARNOLD, Columbia, Tenn., assignor to Katye W. Arnold, same place, and Alfred Christiansen and Mary L. Arnold, Watervliet, N. Y. Filed Oct. 14, 1897. Serial No. 655,189. (No model.)



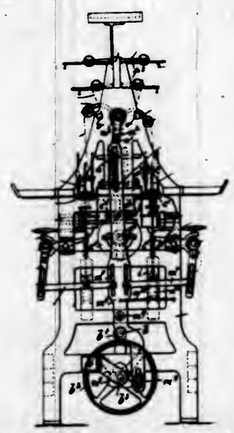
Claim.—1. In a rotary engine, a cylinder having an annular piston-chamber with a plurality of alternating induction and eduction ports; in combination with a retreating slide-gate, projecting exteriorly of the chamber to the atmosphere, and located in the chamber between two eduction-ports each open to the gate and the atmosphere while the gate is being withdrawn and exteriorly-located gate-operating mechanism, whereby the gate is withdrawn from the chamber longitudinally of the shaft without contact with the piston and while the chamber on both the opposite sides of the gate is open to the atmosphere, substantially as described.

2. In a rotary engine, the combination with a cylinder having an annular piston-chamber with three valved induction-ports and three open eduction-ports; of two oppositely disposed pistons; and three slide-gates movable in and out of the piston-chamber, each projecting exteriorly of the chamber to the atmosphere, whereby the chamber is divided into three sections adapted to be alternately opened and closed to the atmosphere by the pistons; exteriorly-located mechanism for forcing the gates longitudinally of the shaft successively in and out of an open section of the piston-chamber; and means for operating the valves controlling the induction-ports, substantially as described.

610,162. THREAD-SPOOLING OR QUILLING MACHINE. ROBERT ATHERTON, Paterson, N. J. Filed Apr. 7, 1898. Serial No. 676,730. (No model.)

Claim.—1. In a thread-spooling machine, the combination with the vertically-reciprocating cop or quill carrying spindle, and with the thread-guide carrier revolubly mounted thereon, of a revolving disk in frictional contact with the thread-guide-carrier-supporting disk, a weighted fulcrumed lever carrying a pin in engagement with the disk of the thread-guide carrier, a rod or wire suitably fulcrumed and having its lower bent portion normally in engagement with the shorter arm of the fulcrumed lever and having its upper portion crank-shaped, an arm in the path of the said crank-shaped upper portion of the wire, a revoluble sleeve carrying said arm a second arm projecting from the upper portion of said sleeve, and means connected with the thread-guide carrier for operating said last-mentioned arm, substantially as and for the purposes described.

2. In a thread-spooling machine, the combination with the vertically-reciprocating cop or quill carrying spindle, and with the thread-guide carrier revolubly mounted thereon, of a revolving disk in frictional contact with the thread-guide-carrier-supporting disk, a weighted fulcrumed lever carrying a pin in engagement with the disk of the thread-guide carrier, a rod or wire suitably fulcrumed and having its lower bent portion normally in engagement with the shorter arm of the fulcrumed lever, and having its upper portion crank-shaped, an arm in the path of said crank-shaped upper portion of the wire, a revoluble sleeve carrying said arm, a second arm projecting from the upper portion of said sleeve, means connected with the thread-guide carrier for operating said last-mentioned arm, and a spiral spring for controlling said fulcrumed rod or wire, substantially as and for the purposes described.

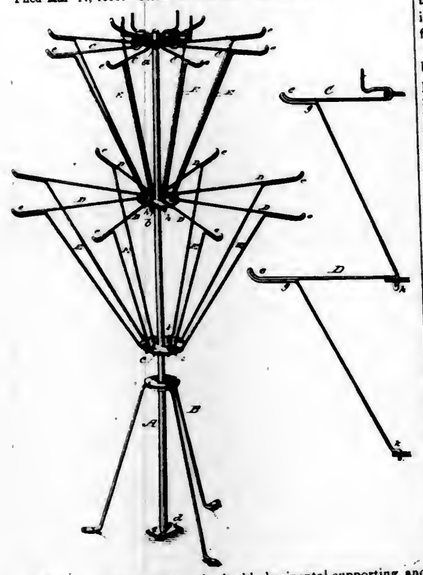


3. In a thread-spooling machine, the combination with the frame, the main driving-shaft and with the horizontal bobbin-supporting spindles arranged at opposite sides of the machine and parallel with the same, of a beveled disk revolubly mounted above the main driving-shaft and operated therefrom, a series of cop-carrying spindles on each side of the center of the machine, a thread-guide carrier revolubly mounted on each spindle and normally in frictional contact with the beveled disk, a vertically-reciprocating guided beam on each side of the machine and supporting its respective spindles, an oscillating lever fulcrumed on one end of the machine and operated from the main driving-shaft, means for adjustably connecting said oscillating lever with each of the reciprocating beams to operate the latter, a rocking shaft in the upper portion of the machine—centrally arranged and parallel with the main driving-shaft, means for adjustably connecting said rocking shaft with the oscillating lever, thread-tension devices carried by said rocking shaft, and means for automatically throwing the thread-guide-carrier-supporting disk out of operative engagement with the revolving beveled disk, substantially as and for the purposes described.

4. In a thread-spooling machine, the combination with the frame, the main driving-shaft and with the horizontal bobbin-supporting spindles arranged at opposite sides of the machine and parallel with the same, of a beveled disk revolubly mounted above the main driving-shaft and operated therefrom, a series of cop-carrying spindles on each side of the center of the machine, a thread-guide carrier revolubly mounted on each spindle and normally in frictional contact with the beveled disk, a vertically-reciprocating guided beam on each side of the machine and supporting its respective spindles, an oscillating lever fulcrumed on one end of the machine and operated from the main driving-shaft, means for adjustably connecting said oscillating

lever with each of the reciprocating beams to operate the latter, a rocking shaft in the upper portion of the machine—centrally arranged and parallel with the main driving-shaft, means for adjustably connecting said rocking shaft with the oscillating lever, thread-tension devices carried by said rocking shaft, means for automatically throwing the thread-guide-carrier-supporting disk out of operative engagement with the revolving beveled disk, and means for regulating the speed of the bobbin-carrying spindles, substantially as and for the purposes described.

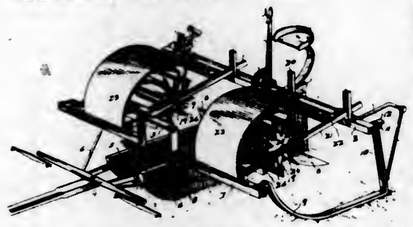
610,163. DISPLAY-RACK. WILLIAM BENT, Sr., Abingdon, Ill. Filed Mar 17, 1898. Serial No. 674,175. (No model.)



Claim.—1. In a display-rack, double horizontal supporting and swinging arms terminating at their outer ends in hooks and provided with inclined braces which terminate in pivot-pins, the upper one of said arms provided at its inner end with an upright support, substantially as and for the purpose set forth.

2. A display-rack, consisting of an upright rotatable post or rod having perforated plates near its upper and lower ends and an intermediate perforated plate upon said post or rod, double horizontal supporting and swinging arms terminating at their outer ends in hooks and having diagonal braces, both of said arms and braces engaging with the perforations in the plates to form a pivotal connection, substantially as and for the purpose described.

610,164. WEED-CUTTER. JAMES BRANAGAN, Mayview, Kans. Filed Jan. 10, 1898. Serial No. 666,225. (No model.)



Claim.—1. In an agricultural implement, the combination with the frame bearing operating mechanism, of inner and outer runners and means for raising and lowering corresponding runners to throw the operating mechanism into and out of action as required, substantially in the manner set forth.

2. In an agricultural implement, the combination with the frame bearing operating mechanism, of inner and outer runners, the latter being pivoted at one end to the frame, and means for raising and lowering the pivoted runners at their free ends, substantially as and for the purpose specified.

3. In an agricultural implement, the combination with the frame bearing the operating mechanism, of runners having pivotal connection at one end with the frame and having their opposite ends provided with uprights and adapted to move in guides provided on the frame, and means for raising and lowering the said runners at their free ends, substantially as set forth.

4. In an agricultural implement, the combination with the frame bearing the operating mechanism, of runners pivoted to the frame at one end, uprights at the opposite end of the runners adapted to operate in guides of the frame and having stops at their upper ends to limit the downward movement of the runners, and means for raising and lowering the runners at their free ends, substantially as and for the purpose described.

5. In an agricultural implement, the combination with the frame bearing an operating mechanism, inuer and outer runners, the latter pivoted at their front ends to the frame and having uprights at their front ends passing loosely through guides of the frame, a shaft having crank portions connected with the outer runners, and means for turning the shaft to raise or lower the runners at their free ends and secure the shaft and runners in a located position, substantially as specified.

6. In combination, a frame, inner and outer runners, and a cutting mechanism mounted between the runners and adapted to have a free vertical movement to adapt itself to the surface condition of the ground over which the implement is drawn, substantially as set forth.

7. In combination, a frame, inner and outer runners, a cutting mechanism located in the space formed between the runners and adapted to have a free vertical movement, and means for raising and lowering a set of runners, substantially as described.

8. In combination, a frame having pivotal connection at its front end with a frame-bar and bearing a cutting mechanism, and vertical guides for directing the pivoted frame in its vertical movements, substantially as specified.

9. In a weed-cutter, the combination of front and rear transverse bars, connections between these bars, connected longitudinal bars having pivotal connection at their front ends with the forward transverse bar, vertical guides applied to the rear transverse bar and receiving the rear ends of the longitudinal bars to direct them in their vertical movement, and a cutting mechanism applied to the longitudinal bars and movable therewith, substantially as set forth.

10. In a weed-cutter, the combination of a front transverse bar having an arch intermediate of its ends, a rear transverse bar, runners having adjustable connection with the transverse bars so as to be spaced a greater or less distance apart, outer runners having pivotal connection at their front ends with the forward transverse bar and adjustably connected at their rear ends with the rear transverse bar, frames bearing rotary cutting-cylinders pivoted to the aforesaid front transverse bar, and guides applied to the said rear transverse bar and receiving the rear portions of the pivoted frames to direct them in their vertical movements, substantially as specified.

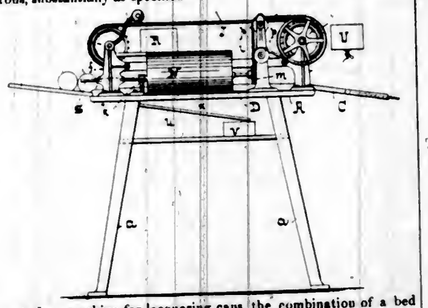
11. In a weed-cutter, the combination of front and rear transverse bars, the front bar having an arch intermediate of its ends, inner runners having their rear ends extended vertically, outer runners pivoted at their front ends to the forward transverse bar and movable vertically at their rear ends, a shaft under the control of the driver and having crank portions in connection with the pivoted runners for raising and lowering them, knives projecting laterally from the rear ends of the inner runners, frames bearing rotary cutting-cylinders having pivotal connection with the aforesaid forward transverse bar, guides applied to the rear transverse bar for directing the pivoted frames in their vertical movements, and shields applied to the pivoted frames and extending over the upper portion of the rotary cutting-cylinders, substantially as and for the purpose set forth.

610,165. MACHINE FOR LACQUERING CANS. CHARLES A. BURT, Baltimore, Md. Filed July 16, 1897. Serial No. 644,766. (No model.)

Claim.—1. In a machine for lacquering cans, a brush to apply the lacquer to the cans, combined with a lacquer-saturated flexible cloth against which the brushes revolve to receive the lacquer, substantially as specified.

2. In a machine for lacquering cans, the combination of mechanism to feed the cans longitudinally of the machine, a cylindrical brush with means to revolve it in contact with a can-head, a porous flexible apron with which the brush is in contact, a receptacle for lacquer, and means to conduct lacquer from the receptacle to the porous apron to saturate the same, substantially as specified.

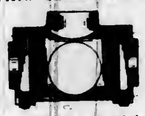
3. In a machine for lacquering cans, the combination of feed-belts to roll cans longitudinally of the bed of the machine, horizontally-placed revoluble brushes with which the heads of the cans come in contact in their passage along the bed, porous aprons having their under side in contact with the revoluble brushes, and a receptacle for lacquer with a discharge leading to the upper surface of the said aprons, substantially as specified



4. In a machine for lacquering cans, the combination of a bed and means to roll cans longitudinally of the same, horizontally-placed revoluble cylindrical brushes with which the heads of the cans come in contact in their passage along the bed, porous aprons situated over, and with their under side in contact with the brushes, and with their lower edge turned up to form pockets, and a receptacle for lacquer with discharge-cocks to convey the lacquer onto the upper surface of the porous aprons to saturate the same, substantially as specified.

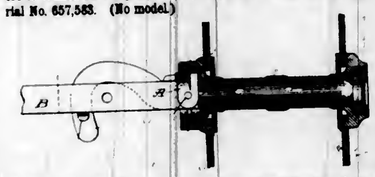
5. In a machine for lacquering cans, the combination of an endless feed-belt to roll cans longitudinally of the machine, revoluble cylindrical brushes which extend longitudinally of the path of the rolling cans with their centers practically coincident with the centers of the cans, a receptacle for lacquer with means to control the discharge therefrom, porous flexible aprons with their under side resting on the brushes, and having their upper side supplied with lacquer from a suitable receptacle, substantially as specified.

610,166. BICYCLE-BEARING. CHARLES E. COLEGROVE, Cleveland, Ohio, assignor to the White Sewing Machine Company, same place. Filed Jan. 29, 1897. Serial No. 621,153. (No model.)



Claim.—The combination with a crank-hanger, and a ball-cup, of a locking device having its outer end provided with a dog angular to its body and adapted to have friction end bearing against the periphery of the ball-cup, the opposite end of such locking device being provided with a transverse flange projecting toward the crank-hanger, together with a fastening device connecting such crank-hanger and locking device together, said flange serving as a fulcrum relative to the clamping action of such fastening device, substantially as set forth.

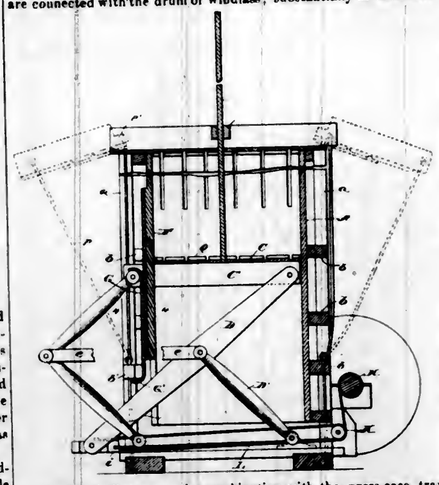
610,167. HUB-HOLDING DEVICE. DAVID R. COLLIER and CHRISTOPHER C. RATHBURN, Gardner, Mass., assignors to the Heywood Brothers & Wakefield Company, Jersey City, N. J. Filed Nov. 5, 1897. Serial No. 657,583. (No model.)



Claim.—The hub-holding device above described made up of a lever pivoted to the axle and provided with means to engage the hub and with a lug to engage the axle and thereby lock the lever in place substantially as described.

610,168. BALING-PRESS. PETER K. DEDERICK, Loudonville, N. Y. Filed Feb. 3, 1897. Serial No. 621,856. (No model.)

Claim.—1. In a baling-press, the combination with the press-case, the traverser working therein, the power-levers and a drum or windlass, of duplicate systems of tackling, the cables of which pass over pulleys on the frame and lever respectively and unite through a clevis at one end to render therethrough and at their opposite ends are connected with the drum or windlass; substantially as described.



2. In a baling-press, the combination with the press-case, traverser, power mechanism and heads opposing said traverser, of skeleton corner-pieces having internal recesses corresponding to the configuration of the edges of the bale and end pieces projecting into the corners of the bale for forming the seats for the ties; substantially as described.

3. In a baling-press, the combination with the press-case, and movable traverser, of angular corner-pieces for forming the edges of the bale having tie-spaces between them and having their central portions recessed to form the square edge of the bale; substantially as described.

4. In a baling-press, the combination with the press-case, slotted vertically, the traverser working therein and the power mechaniam connected with said traverser through the slot, of a sliding gate working in said slot and projections on said gate cooperating with the power mechanism to move the gate vertically when the power mechaniem is moved, the distance between said projections being sufficient to permit the power mechanism to have a limited iudependent movement; substantially as described.

5. In a baling-press, the combination with the press-case, having the vertical slots and intermediate tongue cut away at the lower end, of the traverser working in the press-case, the power mechauism connected with the traverser through said slots and working through the opening beneath the tongue, of a sliding gate mounted on said tongue and forming an extension thereof, when lowered to close said opening and projections on said gate cooperating with the power mechanism to move the gate as the power mechanism approaches opposite extremes of its movement: substantially as described.

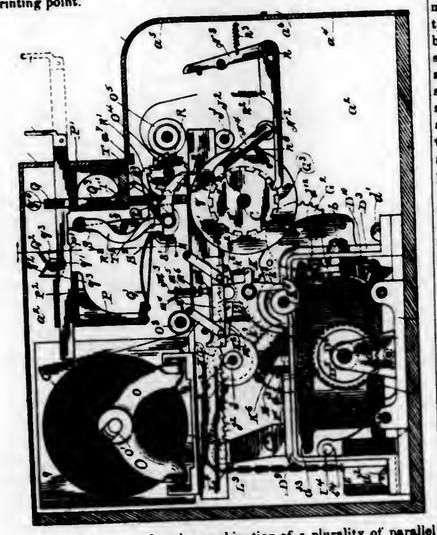
6. In a baling-press, the combination with the press-case, having the vertical slots and intermediate tongue, the traverser and the power mechanism working through the press-case beneath the tongue and connected with the traverser through said slot of the sliding gate mounted on said tongue and adapted to project below the same to close the opening, said gate having flanges projecting flush with the inner side of said press-case and having outwardly-extending projections between which the power mechanism works and whereby the gate is moved up and down; substantially as described.

610,169. WORKMAN'S TIME-RECORDER. JOHN W. DEURNER, Chicago, Ill., assignor, by direct and mesne assignments, to the Chicago Time Register Company, same place. Filed Sept. 28, 1896. Serial No. 607,198. (No model.)

Claim.—1. In a time-recorder, the combination of a set of revoluble printing devices and a set of reciprocatory printing devices, clock-controlled mechanism operating to move said sets past a printing-point but at a different rate of speed and independent manually-operable means for taking impressions of the combinations of characters presented at the printing-point by each pair of printing devices.

2. In a time-recorder, the combination of a set of revoluble printing devices and a set of reciprocatory printing devices, clock-controlled mechanism operating to move said sets past a determined

printing-point side by side at different rates of speed and with their printing-surfaces in substantially the same plane and means independently operable for taking impressions of the combinations of characters of each pair of printing devices thus presented at the printing point.



3. In a time-recorder, the combination of a plurality of parallel connected type-bars arranged with intervening spaces between each adjacent two and mounted to reciprocate longitudinally, a set of type-wheels revolubly mounted on axes arranged at right angles to the direction of movement of the type-bars and each wheel located adjacent to the side of one of said type-bars and having its peripheral printing-surface located approximately in the same plane with the printing-surface of the type-bars, clock mechanism for controlling the movement of said type members and means for taking an impression from the same.

4. In a time-recorder, the combination of a plurality of parallel type-bars mounted to reciprocate longitudinally, mechanism for actuating said type-bars, mechanism for automatically releasing and returning the type-bars to the starting-point at the end of a determined run, and means for taking an impression from the type-bars.

5. In a time-recorder, the combination of a plurality of parallel type-bars mounted to reciprocate longitudinally, mechanism for actuating said bars, mechanism for automatically releasing and returning the bars to the starting-point at the end of a determined run, a plurality of type-wheels revolubly mounted adjacent to the type-bars mechanism for actuating said type-wheels at a rate of speed different from that of the type-bars, and mechanism for taking impressions of the combinations thus produced at a determined printing-point.

6. In a time-recorder, the combination of a plurality of parallel type-bars mounted to reciprocate longitudinally, clock-controlled ratchet mechanism for actuating the type-bars step by step, means for automatically releasing the ratchet mechanism, a weight for returning the bars to the starting-point and mechanism for taking impressions from the type-bars.

7. In a time-recorder, the combination of a plurality of parallel type bars mounted to reciprocate longitudinally, clock-controlled ratchet mechanism for actuating the type-bars step by step comprising holding and push pawls, means for simultaneously releasing both pawls, a weight for returning the bars to the starting-point, means for holding the ratchet mechanism free from the bars during the return movement of the latter comprising a presser-bar movably mounted adjacent to the pawls and adapted to act on the latter, a spring arranged to act upon the presser bar and means for holding the presser-bar from movement under the action of the spring releasable by the forward movement of the type-bars, and means for taking impressions from the type-bars.

8. In a time-recorder, the combination of a plurality of type-bars mounted to reciprocate longitudinally, clock-controlled ratchet mechanism for actuating the type-bars step by step, means for automatically releasing the ratchet mechanism, a weight for returning the bars to the starting point, a plurality of type-wheels each revolubly mounted adjacent to one of the type-bars and having its peripheral printing-surface located approximately in the same plane with the printing-surface of the type-bar, mechanism for actuating said type-wheels at a speed differing from that of the type-bars, and mechanism for taking impressions of the combinations thereby produced at a determined printing-point.

9. In a time-recorder, the combination of a plurality of type-bars mounted to reciprocate longitudinally, a motor for actuating the type-bars step by step, means for automatically releasing the type-bars at the end of a determined run and returning the latter to the starting-point, a plurality of type-wheels each revolubly mounted adjacent to one of the type-bars and having its peripheral printing-surface located approximately in the same plane with the printing-surface of the type-bars, driving connections from the motor for actuating said type-wheels at a rate of speed different from that of the type bars, a clock arranged to control the movement of the motor, and mechanism for taking impressions of the combinations thereby produced at a determined printing-point.

10. In a time-recorder, the combination of a plurality of reciprocatory printing devices, clock-controlled mechanism for actuating said printing devices, means for automatically returning the printing devices to the starting-point, a date-wheel and operative connections between the reciprocatory printing devices and said date-wheel, whereby the latter is actuated once for each cycle of the reciprocatory printing devices.

11. In a time-recorder, the combination of a plurality of type-bars mounted to reciprocate longitudinally, clock-controlled ratchet mechanism for actuating said type-bars step by step, means for automatically releasing the ratchet mechanism, a weight for returning the type-bars to the starting-point, a date-wheel, operative connections between the type-bars and the date-wheel whereby the latter is moved forward a step for each cycle of the type-bars, and means for taking impressions of the type-bars and date-wheel.

12. In a time-recorder, provided with a shiftable key, the combination with an impressing-hammer and a reciprocating member operatively connected with the key of a reversible cam-block pivotally mounted upon one of said members provided with two surfaces, stops for holding the cam-block in each of its positions with one of its cam-surfaces inclined to the plane of relative movement of the other member, and an engaging part or wiper upon the part which moves relatively to the cam, adapted to cooperate with the cam-block to reciprocate the hammer when said reciprocating member is shifted in each direction.

13. In a time-recorder, the combination with a shiftable key-bar and an impressing-plunger mounted to reciprocate adjacent thereto in a direction transverse to the direction of movement of the key-bar, of a reversible cam-block pivotally mounted upon the key-bar, said cam-block having the general form in its outline of a diamond, the sides converging together to form one of its points being adapted to act as cams and its pivotal attachment being located near the opposite point of the block, stops for holding the cam-block with each of its cam-surfaces inclined to the plane of movement of the key-bar and its opposite cam-surface in a position substantially at right angles thereto, a wiper upon the plunger adapted to cooperate with the cam-block to lift the plunger when the key-bar is shifted in either direction and a spring acting on said plunger in opposition to the cam.

14. In a time-recorder provided with a plurality of shiftable keys, the combination with a sheet-feeding mechanism arranged to be operated only each time a key is shifted in a direction opposite that of the movement of the last preceding key, of a dating device and mechanism operating to take an impression from the dating devices each time only the recording-sheet is moved.

15. In a time-recorder, the combination with a vibratory member, of a sheet-feeding mechanism, of means for taking an impression each time only the sheet is fed forward a step, a spring-pressed impressing device, a toggle connected therewith and arranged to lift the impressing device when the toggle is straightened and operative connections between the vibratory member and the toggle whereby the latter will be straightened to and beyond its dead-center each time said vibratory member is reciprocated.

16. In a time-recorder, the combination with a set of reciprocatory type-bars, of mechanism for actuating said bars, comprising a ratchet-bar mounted upon the type-bars, an oscillatory lever provided at one end with an actuating-pawl adapted to act upon said ratchet, a continuously-rotating shaft, operative connections between said shaft and the oscillatory lever arranged to oscillate the latter, a weight arranged to act upon the set of type-bars in opposition to the actuating-pawl and a detent for holding the type-bars while the actuating-pawl is retracted.

17. In a time-recorder, the combination with a set of reciprocatory type-bars, of mechanism for actuating said bars, comprising a ratchet-bar mounted upon the type-bars, an oscillatory lever provided at one end with an actuating-pawl adapted to act upon said ratchet, a continuously-rotating shaft, operative connections between said shaft and the oscillatory lever arranged to oscillate the latter, a weight arranged to act upon the set of type-bars in opposition to the actuating-pawl and a detent for holding the type-bars while the actuating-pawl is retracted, and mechanism for releasing said pawls from the ratchet-bar at the end of a determined number of forward movements.

18. In a time-recorder, the combination with a set of reciprocatory type-bars, of mechanism for actuating said bars, comprising a ratchet-bar mounted upon the type bars, an oscillatory lever provided at one end with an actuating-pawl adapted to act upon said ratchet, a wiper upon the opposite end of said lever, a rotating shaft mounted adjacent to said wiper and provided with a snail-cam adapted to act upon the latter, a spring arranged to act upon the oscillatory lever in opposition to said cam, a weight arranged to act upon the type-bars in opposition to the actuating-pawl, a detent for holding the type-bars while the actuating-bar is retracted and mechanism for throwing off the pawl and detent at the end of a determined number of forward movements of the type-bars.

19. In a time-recorder, the combination with a set of reciprocatory type-bars, of mechanism for actuating said bars, comprising a ratchet-bar mounted upon the type-bars, an oscillatory lever provided at one end with an actuating-pawl adapted to act upon said ratchet, a wiper upon the opposite end of said lever, a rotating shaft mounted adjacent to said wiper and provided with a snail-cam adapted to act upon the latter, a spring arranged to act upon the oscillatory lever in opposition to said cam, a weight arranged to act upon the type-bars in opposition to the actuating-pawl, a detent for holding the type-bars while the actuating-bar is retracted, means for throwing off the pawl and detent at the end of a determined number of forward movements of the type-bars, comprising a presser-bar movably supported adjacent to the pawl and detent and arranged to act thereon, mechanism for shifting said presser-bar laterally with relation to the plane of the ratchet-bar simultaneously with the forward movement of the type-bars so as to throw the pawl and detent out of engagement with the latter and means for holding said pawl and detent retracted during the return movement of the type-bars.

20. In a time-recorder, the combination with a printing-bar arranged to reciprocate therein, of a date-wheel rotatively mounted adjacent to said type-bar, a pawl-and-ratchet mechanism adapted to actuate said date-wheel step by step and a tappet upon the printing-bar adapted to act upon said ratchet mechanism to move the date-wheel a step upon each reciprocation of the type-bar.

21. In a time-recorder, the combination of a spring-motor, a release-shaft and a train of gears arranged to communicate motion from the motor to the release-shaft, an escapement-arm mounted upon said release-shaft, an oscillatory lever pivoted between its ends and an escapement-lever connected with each end of the oscillatory lever so as to be conversely vibrated into and out of the path of the escapement-arm, to permit a single revolution of the release-shaft upon each oscillation of said levers, and a clock operatively connected with said escapement-levers and arranged to oscillate the latter at predetermined intervals of time.

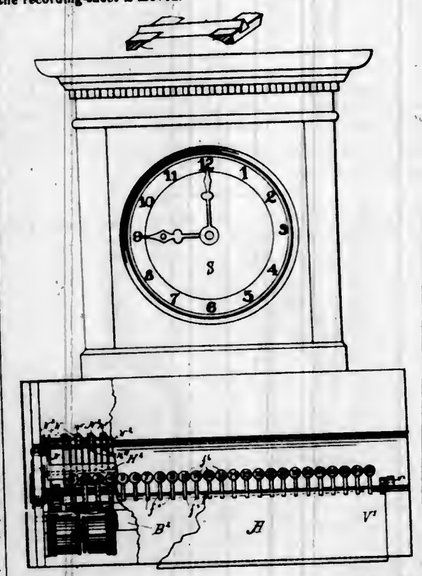
22. In a time-recorder, the combination of a revoluble printing-form, a reciprocatory printing-form, clock-controlled printing mechanism operating to move said forms automatically past a printing-point at regular but different speeds and manually-operable means for at will taking an impression from the combinations of characters thus presented at the printing-point.

610,170. WORKMAN'S TIME-RECORDER. JOHN W. DEUBNER, Chicago, Ill., assignor, by direct and mesne assignments, to the Chicago Time Register Company, same place. Filed Feb. 20, 1897. Serial No. 624,375. (No model.)

Claim.—1. In a time-recorder, the combination with a main shaft and a plurality of type-wheels mounted side by side thereon, of ribbon-supports arranged to extend horizontally between the peripheries of said type-wheels, the upper edges of said supports being arranged to rise slightly above the peripheries of the type-wheels so as to support the ribbon normally free from type-wheels.

2. In a time-recorder, the combination with a main shaft and a plurality of type-wheels mounted thereon, of a ribbon-supporting bar arranged to extend horizontally above and adjacent to the peripheries of said type-wheels, said bar being provided with an opening or space through which the peripheries of the several type-wheels are arranged to project, and connecting cross or guide bars extending across said opening between the type-wheels, adapted to support the ribbon free from the type-wheels, the upper edges of said cross-bars being made knife-edged to form scoring devices.

3. In a time-recorder, the combination with a plurality of individual impressing devices and a shiftable key-bar for each of a recording-sheet and mechanism adapted to move said recording-sheet each time only a key is shifted in a direction opposite that of the last preceding key and a dating mechanism arranged to make an impression once only each time the recording-sheet is moved, comprising a revoluble type-wheel arranged with its periphery adjacent to the recording sheet, a spring-pressed impressing-hammer, a rock-bar arranged to extend transversely of the set of key-bars and adapted to be oscillated by each one of the latter, a tappet-arm mounted on said rock-bar and a toggle connected at one end with the rock-bar and arranged to be flexed by said tappet-arm to lift the impressing hammer against the action of its spring and permit it to fall each time the recording-sheet is moved.



4. In a time-recorder, the combination with the printing-forms, the inking-ribbon and recording-sheet and the impressing-hammers adapted to force the ribbon and recording-sheet against said printing-forms, of a cushioning-strip of felt or the like interposed between the faces of the impressing-hammers and the printing-forms and adapted to render the impressions more uniform.

5. In a time-recorder, the combination with a plurality of type-wheels arranged in pairs, the inking-ribbon and recording-sheet and a plurality of impressing-hammers, each provided with an impressing-face adapted to act upon both members of a pair of type-wheels simultaneously, of a cushioning-strip of felt or the like, interposed between the faces of the hammers and the said type-wheels and adapted to render the impressions more uniform.

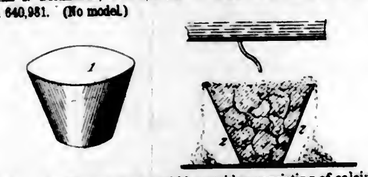
6. In a time-recorder, the combination with a plurality of key-bars arranged in the same plane with each other, of a locking bar or plate adapted to engage each of the several key bars when at either limit of their throw, and means for locking said bar in this position.

7. In a time-recorder, the combination with a plurality of horizontally-arranged shiftable key-bars, having a uniform throw or reciprocatory movement arranged in the same plane with each other and each provided with a projection, of a locking bar or plate adapted to be locked in position in the path of the said projections of the key-bars so as to hold the latter at either limit of their throw.

8. In a time-recorder, the combination with a plurality of horizontally-arranged shiftable key-bars, having a uniform throw, arranged in the same plane with each other and each provided with an upturned end arranged to project out through a slot in the casing, of a locking bar or plate adapted to overlie said slots and occupy the space between the opposite limits of throw of the key-bars, parallel pivoted arms arranged to support said bar out of, and to guide it into, operative position and means for locking the bar in operative position.

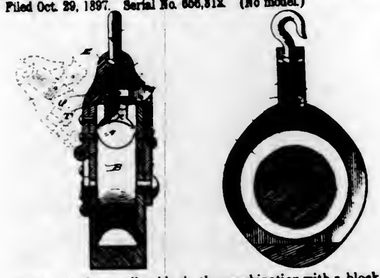
9. In a time-recorder, the combination with a plurality of printing-forms and a pivotally-mounted spring-pressed impressing-hammer for each form, of mechanism for actuating each impressing-hammer comprising a reversible cam-block movably mounted upon the impressing-hammer, an actuating-lever pivotally mounted between its ends and provided at one end with a projection adapted to act upon the cam to lift the hammer against the action of its spring when oscillated in either direction, and arranged to extend at its opposite end adjacent to a shiftable key-bar and a projection or stub on said key-bar adapted to engage the end of the actuating-lever in the to-and-fro movement of the key-bar.

610,171. CARBID-CARTRIDGE FOR ACETYLENE GAS. EDWARD N DICKERSON, New York, N. Y. Filed June 16, 1897. Serial No. 640,981. (No model.)



Claim.—A self-supporting carbid-cartridge consisting of calcium carbid and a cementing material which gradually releases the calcium carbid as the same is acted upon by water, the said cartridge having an upper surface of greater area than its base, and inwardly converging sides, thereby permitting the refuse lime to fall free of the base, substantially as described.

610,172. PULLEY-BLOCK. IRA M. DOTSON, Sanborn, Minn. Filed Oct. 29, 1897. Serial No. 656,812. (No model.)



Claim.—1. In a pulley-block, the combination with a block carrying the pulley, of the head hinged to one of the sides of the block, means for uniting the head to the opposite side of the block, and a tripping mechanism carried by the said head for automatically releasing the same from its securing means, substantially as described.

2. In a pulley-block, the combination with a block carrying the pulley, of the head hinged to one of the sides of the said block, a keeper for engaging and uniting the head to the opposite side of the block, a latch carried by the head for engaging said keeper and holding it in engagement with the head, and a tripping mechanism for automatically disengaging said latch from the keeper, substantially as described.

3. In a pulley-block, the combination of the head pivoted to one side of the block, a keeper carried by the opposite side of the block, a latch carried by the head for engaging said keeper, a tripping-bar movable within the head and adapted to disengage the latch from the keeper, and means carried by the cable for actuating said tripping-bar, substantially as set forth.

4. In a pulley-block, the combination of the head pivoted to one of the sides of the block, a keeper carried by the other side, a slotted latch pivoted in the head and adapted to engage said keeper, a tripping-bar movable vertically in the head and having a pin engaging the slot of the latch, and means for effecting the movement of said tripping-bar, substantially as set forth.

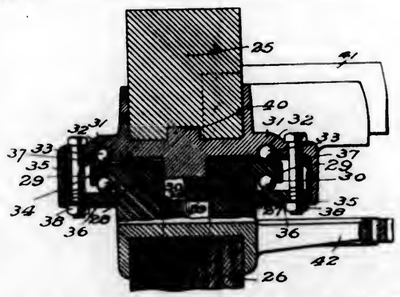
5. In a pulley-block, the combination of the head pivoted to one of the sides of the block and having lugs projecting therefrom, a keeper pivoted to the other side of the block and adapted to engage the lugs of the head, a latch carried by the head for engaging the keeper, a tripping-bar for disengaging said latch from the keeper, and means for automatically actuating said tripping-bar, substantially as set forth.

6. The combination of a pulley-block having one of its sides formed in sections and hinged together, a head carried by the movable section, a keeper carried by the other side of the block, a latch carried by the head and adapted to engage said keeper, a tripping-bar adapted to disengage said latch from the keeper, and means for actuating said tripping-bar, substantially as set forth.

7. In a pulley-block, the combination of a head pivoted to one of the sides of the block, a keeper carried by the other side of the block, a latch carried by the head adapted to engage the keeper, a tripping-bar adapted to disengage the latch from the keeper, and a tripping-cone carried by the cable adapted to engage and actuate the tripping-bar, substantially as set forth.

610,178. FIFTH-WHEEL. JOHN EDGAR, Rochester, Minn. Filed Nov. 20, 1897. Serial No. 659,236. (No model.)

Claim.—1. In a device to connect an axle and a head-block, or equivalent parts, the combination, of three plates, one thereof bound or held between and at the margins of the others and means for taking up the slack caused by the wear of said plates, substantially as described.



2. The combination, with the three concentric plates, of means at or near the margins thereof binding or holding two of said plates upon the other one and whereby the wear of said plates may be taken up, substantially as described.

3. The combination, with three plates, having a common axis, of adjustable means binding together the margins of said plates and permitting the wear of said plates to be taken up, substantially as described.

4. The combination, of three plates, with the common center pivot, means holding said plates together at the margins, means for securing the middle plate upon one part of the vehicle, and means to secure the other plates on another part of the vehicle, substantially as described.

5. The combination, of the three centrally-pivoted plates, with means connecting the outer plates to secure and hold the same on the middle plate and to permit the wear of said plates to be taken up, substantially as described.

6. The combination, of the three centrally-pivoted plates, two thereof having extensions with bolts arranged in said extensions to bind said plates on opposite sides of the other plate, the said two plates and the middle plate being adapted to be secured to relatively-movable vehicle parts, substantially as described.

7. The combination, of the middle plate adapted to be secured to one vehicle part, with the outer plates adapted to be secured to the other vehicle parts, means for holding said plates concentric, bolts at the margins of said plates binding the outer plates upon the inner plate, and means to prevent the tilting of said bolts, substantially as described.

8. The combination, with the middle plate, of the outer plates, said outer plates carrying bolts holding the same upon the middle plate at the margins thereof, said bolts being connected by means centrally held, substantially as described.

9. The combination, with the middle plate, of the outer plate bound on said middle plate at the margin thereof, and adapted to rotate with respect thereto, and one of said plates provided with a central pivot or stud for the other plates and means at the margins of said outer plates to take up the wear of said plates, substantially as described.

10. The combination, of the two centrally-pivoted disks or plates, one overlapping the other, of a ring carried by said overlapping plate, and means at the margins of said disks or plates for binding the smaller plate or disk upon said overlapping disk and said ring, substantially as described.

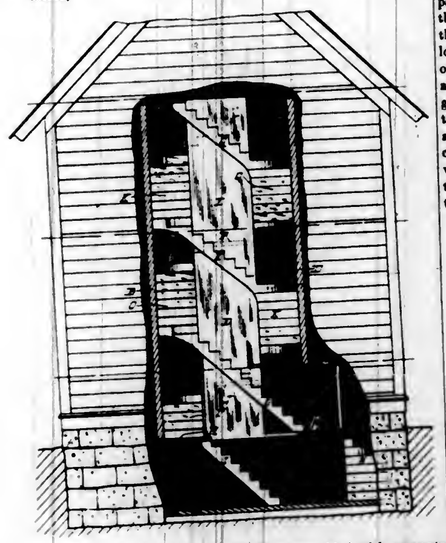
11. The combination, of the middle disk, with the outer disk centrally pivoted, the ring, and means at the margins of said disks or plates for adjustably clamping said outer disk and ring upon said middle disk, substantially as described

12. The combination, of the middle disk, with the outer disk centrally pivoted, the ring, and means at the margins of said disks or plates for adjustably clamping said outer disk and ring upon said middle disk, and a series of balls arranged upon said disks, substantially as described and for the purpose specified.

13. The combination, of the disk 31, provided with the ball-groove, of the disk 38, also having a ball-groove, the balls in said groove, the ring 36, and means at the edge of said disk 31 securing said ring upon said disk 31, as and for the purpose specified.

14. The combination, of three circle parts or members, with a common center, one of them having a flange at right angles thereto, and against which flange one of the other parts at its edge or margin bears and rotates with it and adjustable means at the margins of said parts or members to take up the wear thereof.

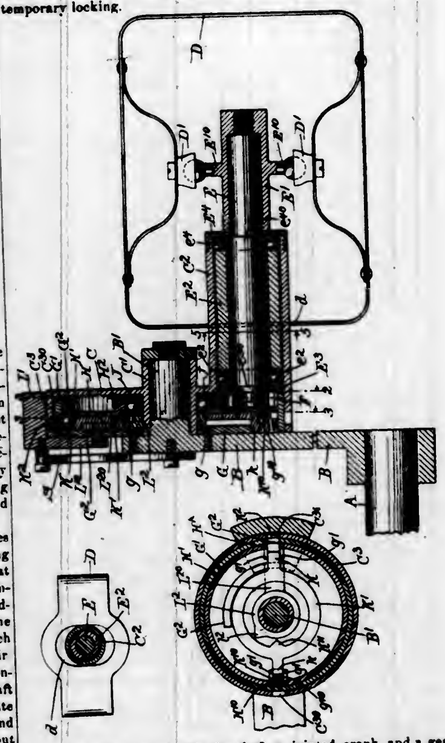
610,174. DUAL-STAIRWAY SYSTEM FOR FLATS. KYRLE S. EVANS, Milwaukee, Wis. Filed May 4, 1897. Serial No. 635,006. (No model.)



Claim.—1. In a two-story flat-building provided with separate entrances for the respective tenants, the combination of the stairway-inclosing walls, a central shaft, two separate landings located opposite the respective entrances, two separate stairways, one leading from one of said entrance-landings around the central shaft to the first floor, and the other leading around said shaft from the other entrance-landing to the second floor, and two separate stairways leading respectively around said shaft from the first and second floor landings directly to the attic without any intermediate landings, the stairways leading from the respective landings being independent of each other and leading to different parts of the attic, substantially as described.

2. In a two-story flat-building provided with separate entrances for the respective tenants, the combination of the stairway-inclosing walls, a central shaft, a separate floor located in said central shaft at the landings of the first and second floors, a doorway or opening communicating with said central shaft at said separate floors and landings, landings located opposite the respective entrances below the level of the first floor, two separate stairways, one leading from each of said landings to separate parts of the basement, two separate stairways, one leading from one of said entrance-landings around the central shaft to the first floor, and the other leading around said shaft from the other entrance-landing to the second floor, and two separate stairways leading respectively around said shaft from the first and second floor landings directly to separate parts of the attic without any intermediate landings, substantially as described.

3. In combination with the pedal-crank and its shaft, said crank being jointed, the outer part being adapted to turn about the pivot which connects them, the pedal journaled at the free end of the outer part; a gear concentric with the pedal, and secured so as to rotate therewith, and a gear journaled about the pivot of the two parts of the crank and meshing with the first-mentioned gear; means for locking the inner member of the crank either to the outer member, or to the gear journaled at their pivot; said locking devices being adapted normally to lock the two parts of the crank, a centrifugal governor operating by virtue of the rotary speed of the crank about the shaft and adapted upon predetermined changes of speed to actuate the locking device to temporarily unlock the two parts of the crank from each other and lock the gear to the inner member, whereby the outer member of the crank is swung around its pivot to the inner member by the engagement of the two gears during such temporary locking.



4. In combination with the shaft, a jointed crank and a gear journaled at their pivotal joint; the two parts of the crank and said gear having webs or flanges successively adjacent to each other, the said flange of the inner member of the crank being between the flanges of the other two parts, said flanges having notches adapted to coincide at predetermined positions in their rotation or adjustment about said pivot; the pedal journaled at the free end of said outer member of the crank and having a gear concentric and secured so as to rotate with it which meshes with the first-mentioned gear; a locking-bolt having its head adapted to stand in said notches and across the planes of contact of either two of them, and thereby adapted to lock to the inner member of the crank either the outer member, or the gear; a spring which tends to hold the bolt in position to lock the two members of the crank together; a tripping-cam pivoted concentrically with said three parts, and a centrifugal weight attached to said cam, and a spring tending to hold the weight back toward the crank-shaft, whereby the centrifugal force developed by the rotation of the crank about the shaft tends to carry the weight outward and rotate the tripping-cam, said tripping-cam being adapted, as it rotates, to engage the bolt, overcoming its spring, and to change the engagement of the bolt-head with the disks, and to travel out of engagement with the bolt when such change of engagement with the disks is effected: substantially as and for the purpose set forth.

5. In combination with the shaft, the jointed crank-arm consisting of the parts B and C; the gear journaled at their pivotal

610,175. VELOCIPEDE PEDAL-CRANK. JOHN FLINDALL, Chicago, Ill. Filed Jan. 17, 1896. Serial No. 575,864. (No model.)

Claim.—1. In a velocipede, in combination with the pedal crank-shaft and pedal, the pedal-crank composed of two parts, one of which is rigid with the crank-shaft and the other of which carries the pedal, said two parts being connected together and adapted to move relatively to permit the pedal to approach the crank-shaft, a centrifugal governor operating by virtue of the speed of the crank about the shaft and adapted to control the distance of the pedal from the shaft; and automatic locking devices which secure said connected parts of the crank in the position to which they are automatically adjusted.

2. In a velocipede, in combination with the crank-shaft, the pedal-crank consisting of two parts pivoted together, the pedal journaled at the free end of the remote part; a gear non-rotatable with respect to the pedal journaled at the pedal shaft or stem, and a gear meshing with the first journaled at the pivot of the two parts of the crank, whereby, at said pivot, are three parts—to wit, the two parts of the crank and said gear—and devices for locking the inner part of the crank either to the outer part of the same or to the gear, whereby the outer member of the crank may be rigid with the inner member, or may be turned about its pivot to the latter by the rotation of the pedal about its axis as the crank revolves.

joint; said two parts of the crank having the concentric flanges G′ and C^3, respectively; the gear H^3 having rigid with it the flange H′ concentric with the flanges G′ and C^3, the flange G′ having a notch G^3, the flange C^3 having a plurality of notches adapted to coincide, one at a time, with the notch G^3, as the part C rotates about its pivot, and the flange H′ having one or more notches adapted to come into line radially with the notch G^3 as the gear H^3 revolves about said pivot; the pedal and a gear rigid therewith meshing with the gear H^3; the locking-bolt having its head adapted to stand across the planes of contact of either two of said concentric flanges in their said coincident notches; a spring tending to hold the bolt with its head in the coincident notches of the flanges G′ and C^3; the tripping-cam and its weighted arm and the spring which tends to hold the weight inward toward the shaft; the tripping-cam being adapted, as it rotates, to engage the bolt, with a tendency to withdraw its head from the flange G′ toward the flange H′, and to release it when it has been drawn into engagement with the latter flange: substantially as set forth.

6. In combination with the shaft, a jointed crank and a gear journaled at their pivotal joint, said two parts of the crank and said gear having webs or flanges provided with notches adapted to come into line radially as said parts rotate relatively about their pivotal center, and a locking-bolt adapted to engage at such notches in the web or flange of the outer or pivoted member of the crank simultaneously with the web or flange of either of the other of said three parts, and thereby lock together the two parts thus engaged; a spring tending to hold such bolt in engagement with the two parts of the crank, the outer or pivoted one of said parts having a plurality of notches suitable for such engagement to the bolt, whereby it may be so engaged at more than one position in the range of its rotation about its pivot; a tripping-cam having a weighted arm adapted to acquire centrifugal tendency by the rotation of the crank about the shaft, said cam being adapted to engage the locking-bolt and force it out of engagement with the web or flange of the fixed member of the crank, and into engagement with the web or flange of the gear and to release it after the latter engagement has been effected; such tripping-cam having within the range of its movement induced by the centrifugal tendency of its weighted arm, tripping-points corresponding in number to the points of engagement for the bolt-head with which the web or flange of the pivoted member of the crank is provided; in each half of its circumference: substantially as set forth.

7. In a centrifugal governor, the combination with the revolving crank, of the weighted arm pivoted thereon and adapted to swing about its pivot as the weight tends to move centrifugally when the crank revolves; an S-shaped or double spiral spring fixedly attached at its ends respectively to the crank and to the weighted arm; whereby the tendency of the centrifugal movement of the weight to shorten the spring by coiling one of its spirals is compensated by its tendency to lengthen the spring by uncoiling the other spiral.

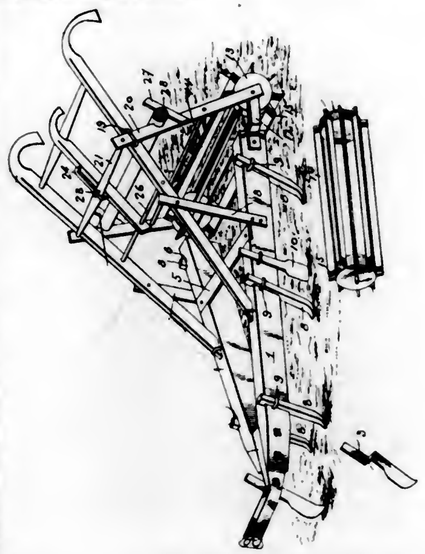
8. In combination with the fixed member B of the crank, the pivoted member C; the gear journaled at their pivot and the pedal-stem journaled in said member C, and having a pinion meshing with said gear; and mechanism for locking the said gear to render it non-rotatable with respect to the fixed member; the member C constituting a housing for said gear and pinion and locking mechanism: substantially as set forth.

9. In combination with a member B of the crank, a cylindrical housing pivoted at its center to said member B, and having the bearing C^3 for the pedal-stem and constituting a pivoted member of the crank; the gear H^3 journaled about said pivot; the locking-bolt K and means for operating it as described; the pedal-stem journaled in the bearing C^3 and the pinion rigid with said stem and meshing with the gear H^3 within such housing; the crank-arm B having the disk B′ which closes the housing at the inner side; the said means for operating the bolt K comprising a centrifugal weight exterior to the housing and having an arm reaching thereinto through the disk B′, said disk being slotted to permit said arm to oscillate and the governing-spring S exterior to the housing: substantially as set forth.

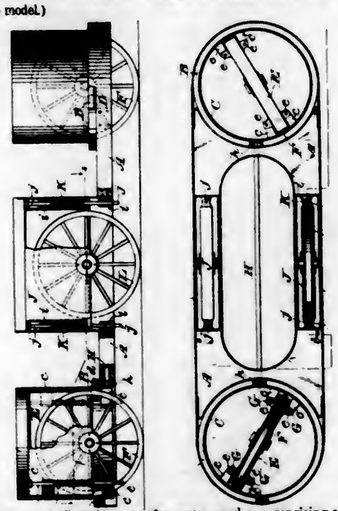
610,176. CULTIVATOR. JESSE S. FORD, Westerfield, Ky. Filed Nov. 3, 1897. Serial No. 657,239. (No model.)

Claim.—1. In a cultivator, the combination with the converging beams, the handles and the bar connecting the same, of the brackets pivoted to the rear of said beams, the staples through which they pass, the rotatable cutter, the bars connected with the journals of said cutter, the staples secured to the handles through which said bars pass, the cross-bar and staple, the lever and the rod secured thereto engaging with said staple, substantially as described.

2. In a cultivator of the character described, the combination with the inclined beams, the pivoted brackets at the rear, and the rotatable cutter, of the bars connected with said cutter, the arms secured thereto at an angle, the removable weight having saw-kerfs at the end engaging with said bars, the handles and the cross-bar located above the same connecting the said bars connected with the cutter, substantially as specified



610,177. RUNNING-GEAR FOR MOTOR-CYCLES. RICHARD GAERTNER, Milwaukee, Wis. Filed Nov. 22, 1897. Serial No. 659,380. (No model.)



Claim.—1. Running-gear for motor-cycles, comprising a suitable frame, two guiding-wheels arranged centrally at the ends of the frame and capable of turning horizontally therein, steering connections adapted to turn said wheels in opposite directions, and supporting-wheels arranged on opposite sides of the center of the frame between the guiding-wheels and having vertically-yielding bearings, substantially as and for the purposes set forth.

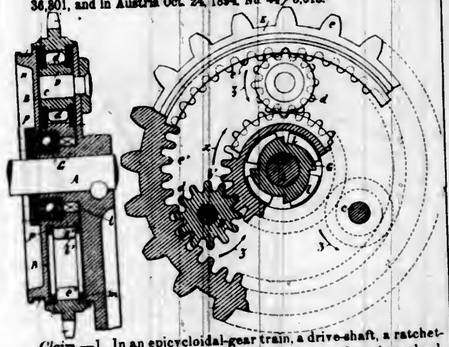
2. Running-gear for motor-cycles, comprising a suitable frame provided at the ends with horizontally-disposed rings, two guiding-wheels carried, one at each end of the frame, in housings or frames provided with annular bearings which support and turn under the rings on the frame, steering mechanism connecting said wheel housings or frames and adapted to turn the same simultaneously in opposite directions, and supporting or balancing wheels arranged on opposite sides of the frame, substantially as and for the purposes set forth.

3. In running-gear for motor-cycles the combination with a main frame provided at or near the ends with horizontally-disposed rings, two wheel frames or housings having spring connections with annular bearings which support the rings on the main frame and are provided with circular racks, a longitudinal shaft provided with pinions which engage with said racks, guiding-wheels having bearings in said wheel frames or housings, and supporting-wheels arranged on opposite sides of the frame between the guiding-wheels, substantially as and for the purposes set forth.

4. In running-gear for motor-cycles the combination with a main frame provided at or near its ends with horizontally-disposed rings, cylindrical housings arranged concentrically within said rings and provided with similar rings which project under and carry those on the main frame, said rings being formed in their opposing faces with grooves or ball-races, balls or rollers interposed between said rings in said grooves or races, wheel-frames arranged within said housings and connected therewith by vertical rods which have sliding bearings with one of the connected parts, spiral springs placed on said rods between the housings and wheel-frames, guiding-wheels journaled one at each end of the main frame in said wheel-frames, steering mechaniam arranged to turn said housings, wheel housings or frames having vertically-yielding connections with the main frame on opposite sides thereof and between the guiding-wheels and supporting-wheels journaled in said housings or frames, substantially as and for the purposes set forth.

5. In running-gear for motor-cycles the combination with a suitable frame of guiding-wheels having vertically-yielding bearings which are adapted to turn horizontally about axes perpendicular to the axes of the wheels at their centers, steering mechanism adapted to turn said wheel-bearings simultaneously in opposite directions, housings fixed to the frame on opposite sides, wheel-frames movably connected with said housings by vertical rods, springs interposed between said housings and frames and yieldingly supporting the main frame and wheels journaled in said wheel-frames, substantially as and for the purposes set forth.

610,178. VARIABLE-SPEED GEARING. LOUIS L. H. GÉRARD, Paris, France, assignor to La Société des Appareils a Changement de Vitesse, same place. Filed Dec. 28, 1897. Serial No. 663,901. (No model.) Patented in France Apr. 19, 1894, No. 239,885; in Germany June 1, 1894, No. 81,234; in England June 11, 1894, No. 11,301; in Belgium July 13, 1894, No. 110,959; in Switzerland July 19, 1894, No. 8,699; in Hungary Aug. 13, 1894, No. 336; in Italy Sept. 30, 1894, No. 36,801, and in Austria Oct. 24, 1894, No. 44/5,615.

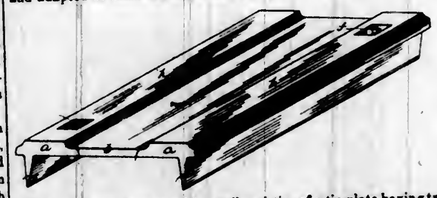


Claim.—1. In an epicycloidal-gear train, a drive-shaft, a ratchet-wheel fixed upon said shaft, a pinion surrounding said ratchet-wheel, a strap-brake engaging an extension of said pinion, slidable wedge-pawls between said ratchet-wheel and said pinion, a planetary disk integral with said fixed ratchet-wheel, planetary gears carried upon said disk and which mesh with said pinion, and a double-toothed rim having two sets of teeth one of which engages with said planetary gears and the other with an endless chain, substantially as described.

2. In a planetary-gear train, a driving-pinion, contact-rings upon cylindrical extensions of said pinion adjacent to the ends of the teeth, the circumference of which corresponds to the pitch-circle, planetary gears engaging said pinion, similar-pitch contact-rings upon said gears, and a driven rim having two sets of teeth, the inner teeth of which engage said planetary gears, and similar-pitch contact-rings adjacent to said teeth within said rim, substantially as described.

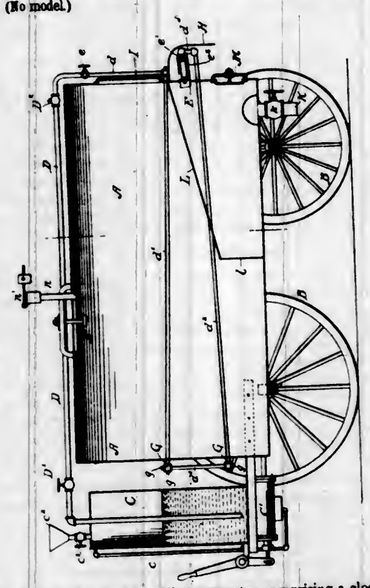
610,179. TIE-PLATE. WILLIAM GOLDIE, Wilkinsburg, Pa. Filed May 27, 1898. Serial No. 681,874. (No model.)

Claim.—1. A rail-sustaining plate formed of two or more thick rigid rail-sustaining bars connected by one or more thin webs, and downwardly-projecting flanges below and extending along the bars and adapted to enter the tie, substantially as set forth.



2. The combination with a rail and tie, of a tie-plate having two or more thick rigid rail-sustaining bars upon which the rail rests, and a connecting-web between said bars, and downwardly-projecting flanges below and extending along the bars and entering the tie substantially longitudinally of its fiber, substantially as set forth.

610,180. APPARATUS FOR MELTING SNOW. JOSEPH B. GREENE, Philadelphia, Pa. Filed Aug. 14, 1897. Serial No. 648,229. (No model.)



Claim.—1. A snow-melting apparatus comprising a closed tank having a doorway for the passage of the snow to be melted, an injector-burner adapted to direct a jet of flame into direct contact with the snow to be melted, and a deflecting-plate located within the tank between the burner and the doorway to direct the flame toward the lower rear end of the tank, substantially as specified.

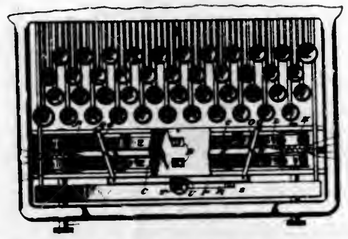
2. A snow-melting apparatus comprising a closed tank having at one end a doorway for the passage of the snow to be melted, a door for closing said doorway, an outlet at the lower end of the tank, an injector-burner adapted to direct a jet of flame against the snow to melt the same by direct contact, and a deflector-plate between the burner and the doorway, substantially as specified.

3. The combination of the closed tank, A, having a doorway for the passage of the snow to be melted, a door, I, for closing the same, a deflector-plate extending inwardly from below the doorway, a screen, *l*, between the deflector-plate and the bottom of the tank, an outlet-pipe, K, and an injector-burner, E, located at or near the end of the furnace below the deflector-plate to direct an impinging flame against the snow, substantially as specified.

610,181. WORD-REGISTER FOR TYPE-WRITING MACHINES. FERDINAND A. HASSLER, Santa Ana, Cal. Filed Nov. 13, 1897. Serial No. 658,444. (No model.)

Claim.—1. The combination with a type-writing machine, of an

indicating device therefor, a push-bar for actuating said indicating device, and an operating-key hinged to the spacing-bar and adapted, when depressed, to actuate the push-bar and the spacing-bar, substantially as set forth.



2. In a device of the character described, the combination of pairs of rollers, tapes carried by said rollers and provided with indicating-numerals, said rollers provided with ratchets, a spring-bar secured intermediate its ends and carrying dogs at its extremities which engage the ratchets of the diagonally opposite rollers, a push-bar adapted to engage the spring-bar and depress the same to effect the operation of the dogs, and means for effecting the engagement of the dogs with the opposite rollers of the pairs, substantially as set forth.

3. In a device of the character described, the combination of a casing, pairs of rollers rotatable therein, tapes secured at their ends to the opposite rollers and carrying indicating-numerals, said rollers provided with ratchets, a spring-rod secured intermediate its ends and carrying dogs at its extremities adapted to engage the ratchets of the diagonally opposite rollers, rods secured to said spring-rod on opposite sides of the center and extending upwardly, spring-arms secured at their inner ends to the casing and attached intermediate their ends to the upper end of said rod, a push-bar connecting the free ends of said spring-rod, and means for effecting the engagement of the dogs with the other rollers of the pairs, substantially as set forth.

610,182. ADHESIVE COMPOUND. CHARLES M. HIGGINS, New York, N. Y. Filed Nov. 12, 1897. Serial No. 658,293. (No specimens.)

Claim.—1. An improved adhesive substance, consisting of starch digested in solution of a salt of alumina, or its specified equivalent to a non-gelatinous state and then cooled into a pasty form, substantially as herein set forth.

2. An adhesive compound formed of a solution of a salt of alumina or its specified equivalent, an adhesive substance dissolved or diffused therein, and a precipitating element producing a flocculent or gelatinous precipitate throughout the adhesive mass in the effective proportion herein specified, substantially as and for the purpose set forth.

3. An improved adhesive compound, consisting of a solution of salt of alumina or its specified equivalent, a starchy or adhesive substance dissolved or diffused therein, and an alkaline substance added thereto in substantially the proportion herein set forth.

4. An improved adhesive compound consisting of a starchy or adhesive substance diffused or dissolved in a solution of a salt of alumina or its specified equivalent, and an alkaline borate added thereto, in substantially the proportion herein set forth.

5. An improved adhesive paste consisting of a starchy or adhesive substance in aqueous solution, in combination with gelatinous alumina diffused through the said solution and forming a substantial part of the mass and in such proportion to the primary adhesive matter as to impart a non-fluid or gelatinous consistency to the mixture, substantially as herein set forth.

6. An improved adhesive paste formed of digested or non-gelatinous starch in aqueous solution, in combination with a gelatinous hydrate such as gelatinous alumina diffused through the same and in such proportion as to impart a non-fluid consistency to the said solution, substantially as and for the purpose set forth.

7. A starch or flour paste impregnated with a gelatinous hydrate such as gelatinous alumina diffused through the same and in proportion relatively to the starch or flour as to form a substantial part of the adhesive mass, imparting body and non-fluidity thereto, substantially as and for the purpose herein set forth.

8. A paste formed of a salt of alumina, or its specified equivalent, water, and a starchy or adhesive substance, the salt being about one-eighth or more of the weight of the starch, substantially as herein described.

9. A paste formed of a salt of alumina or its specified equivalent, water, and a starchy or adhesive substance, the salt being about one-eighth or more of the weight of the starch, and a precipitating element sufficient to neutralize the said salt or nearly so, substantially as and for the purpose set forth.

10. The process of producing an adhesive paste, viz., dissolving or digesting a starchy or adhesive substance in solution of a salt of alumina or its specified equivalent, then gradually adding an alkaline salt and intimately mixing the same and thereby producing a soft or gelatinous precipitate throughout the adhesive mass, substantially as herein set forth.

11. The process herein described of treating starch in a hot solution of a salt of alumina or its specified equivalent until a paste is formed, and then adding an alkaline substance causing a precipitate of gelatinous alumina to become diffused through and combined with the said paste, substantially as herein set forth.

610,183. COMPOUND FOR ADHESIVE PASTE. CHARLES M. HIGGINS, New York, N. Y. Original application filed Nov. 12, 1897, Serial No. 658,293. Divided and this application filed July 27, 1898. Serial No. 687,017. (No specimens.)

Claim.—1. An improved paste-powder consisting of starch in combination with a digesting salt sufficient to digest or convert the starch when the two are dissolved in hot or boiling water, substantially as herein set forth.

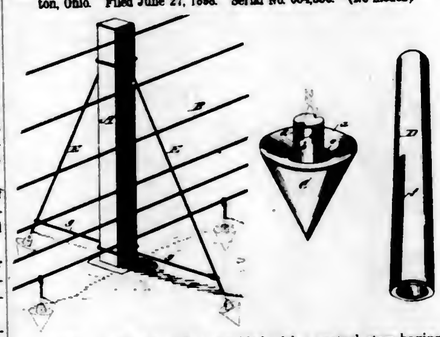
2. A paste-powder consisting of starch in combination with a salt of alumina sufficient to digest or liquefy the starch when the two are dissolved in hot or boiling water, substantially as herein set forth.

3. An improved paste-powder consisting of starch in combination with sulfate of alumina sufficient to digest or liquefy the starch when the two are dissolved in hot or boiling water, substantially as herein set forth.

4. An improved paste-powder consisting of a finely-divided adhesive substance in combination with a salt of alumina or its specified equivalent, the salt being in the proportion of one-eighth or more of the weight of the adhesive, substantially as herein set forth.

5. An improved paste-powder consisting of starch or equivalent finely-divided adhesive matter, in combination with a salt of alumina or its specified equivalent in such proportion as will produce on solution and decomposition a substantial mass of gelatinous hydrate, substantially as and for the purpose set forth.

610,184. LAND-ANCHOR FOR POSTS. ELIJAH W. HILL, Covington, Ohio. Filed June 27, 1898. Serial No. 684,536. (No model.)



Claim.—1. A land-anchor provided with a central stem having a hole extending horizontally through it, and grooves joining the same to form seats for the wire stay, substantially as and for the purpose set forth.

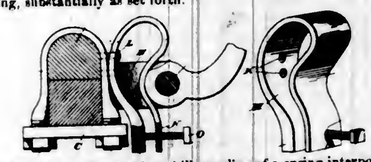
2. A land-anchor concave at its upper end and provided with a central stem with means for attaching the wire stay thereto, substantially as and for the purpose described.

3. A land-anchor having a central stem with a mortise around the base thereof, said stem having means for attaching the stay-wire thereto, substantially as and for the purpose specified.

4. A land-anchor having a concavity and a mortise at its upper end, and a central stem having a horizontal hole through it and upright grooves joining the same, as and for the purpose set forth.

610,185. THILL-COUPLING. EDWIN G. HOOVER, Pottsville, Pa. Filed May 26, 1897. Serial No. 638,196. (No model.)

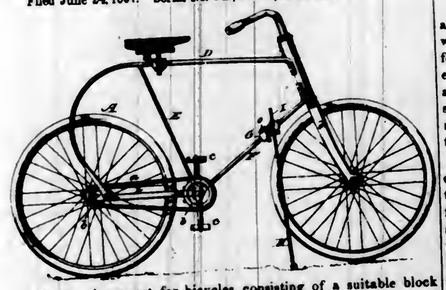
Claim.—1. The combination with a thill-coupling, of a spring interposed between the clip and the thill-iron, said spring being composed of a tapered flat strip bent upon itself having its thicker wall secured to the clip and provided with a recess, its thinner wall resting against the thill-iron curved to partially embrace it and having a screw-threaded opening opposite the recess in the thick wall, the central portion forming a large loop above the coupling, and a set-screw threaded to engage the threaded opening and having a cylindrical smooth end to engage in the recess in the thicker wall of the spring, substantially as set forth.



2. The combination in a thill-coupling of a spring interposed between the clip and thill-iron, said spring being composed of a strip bent upon itself with its ends downward, and screws passing through openings in the rear side or leg of the spring to secure it to the axle-clip, substantially as described.

3. The combination with a thill-coupling of a spring interposed between the clip and thill-iron, said spring consisting of a tapered strip bent upon itself to form two legs with the ends projecting downward, the leg formed of the thicker end of the spring lying adjacent to the axle and provided with perforations and a cylindrical recess in its forward face, its thinner leg resting against the thill iron and having a screw-threaded opening opposite the recess in the thick wall, a set-screw engaging the said threaded opening and having a smooth cylindrical end engaging the recess in the thicker leg, and screws passing through the perforations in the thicker leg and securing the spring to the axle, substantially as described.

610,186. BICYCLE-SUPPORT. JONAS L. KNOLL, Lebanon, Pa. Filed June 24, 1897. Serial No. 642,055. (No model.)



Claim.—A support for bicycles, consisting of a suitable block connected to the frame of the bicycle, rods connected by a looped cross-head pivotally and slidably connected to the block, a keeper and spring for holding the rods in a horizontal position, and slots in the block with which the rods engage when in a vertical position, substantially as and for the purpose described.

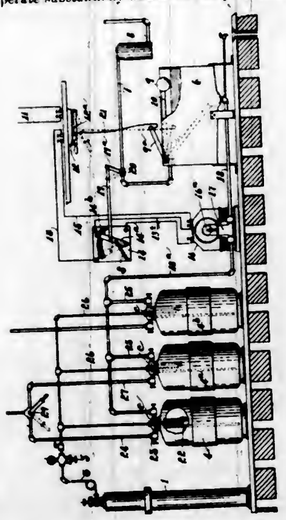
610,187. MUFF. GARDNER C. LEONARD, Albany, N. Y. Filed Dec. 20, 1897. Serial No. 662,765. (No model.)



Claim.—The herein-described muff, consisting of an exterior cover, an interior lining and two ends, inclosing a filler, the exterior cover, the interior lining and the two ends consisting of an integral knitted fabric, united together at one of the ends of the muff.

610,188. SODA-WATER APPARATUS. FISHER H. LIPPINCOTT, Philadelphia, Pa., assignor to the American Soda Fountain Company, Trenton, N. J. Filed Dec. 28, 1897. Serial No. 663,843. (No model.)

Claim.—1. In an apparatus of the character recited, the combination, of a receiver adapted to communicate with a supply of gas under pressure, a tank adapted to communicate with a source of water-supply, a pump communicating with said tank and with a suitable spraying device within said receiver, the electric motor for actuating said pump, a switch between the motor and the source of electrical energy for closing and breaking the circuit, means for causing said switch to break the circuit when the level of the water within said tank has fallen a predetermined distance, and the rheostat adapted to turn on the supply of water to said tank when the electrical circuit is broken by the said switch, all constructed, arranged and adapted to operate substantially as and for the purpose set forth.



2. The combination of the tank, the pipe leading therefrom to a source of water-supply, the stop-cock in said pipe, a suitable float within the tank, the pump communicating with the latter, the motor for said pump adapted to be driven from a source of electrical energy, the switch connected with and operated by said float and adapted to close and break the circuit between said motor and the source of energy, together with the rheostat having the electromagnet and the spring-controlled arm connected with the stop-cock in the water-supply pipe, substantially as and for the purpose set forth.

3. In an apparatus of the character described, the combination of the pump, the tank communicating therewith, the electric motor, the conductors leading therefrom to a source of electrical energy, the float within said tank, the pivoted arm connected with said float, the switch, a flexible connection between said arm and the switch, the pipe communicating between said tank and a source of water-supply, the stop-cock in said pipe, the rheostat having the pivoted spring-controlled arm connected with said cock, together with the electro-magnet, all constructed, arranged and adapted to operate substantially in the manner and for the purpose set forth.

4. The combination of the closed tank, means for supplying the gas under pressure thereto, the spraying device within said tank having the outlet-openings adjacent to and facing each other, and means for supplying water or the like under pressure to said spraying devices, substantially as and for the purpose set forth.

5. The combination of the closed tank, means for supplying gas under pressure thereto, the spraying device within said tank composed of the body portion communicating with the inlet-pipe of a source of water-supply under pressure and having the two L-shaped passage-ways with their exits adjacent to and facing each other, substantially as and for the purpose set forth.

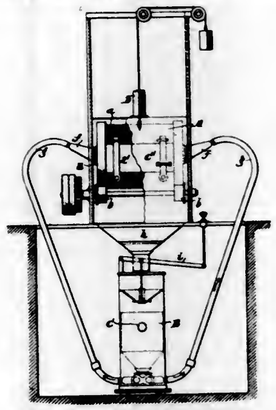
610,189. SAND-BLAST APPARATUS. JEREMIAH E. MATHEWSON, Sheffield, England. Filed Oct. 23, 1896. Serial No. 610,278. (No model.) Patented in England Dec. 24, 1895, No. 24,715.

Claim.—1. A sand-blast tumbling-barrel apparatus having a perforated rotatable barrel in combination with a hopper placed beneath said barrel, a sand-blast apparatus situated beneath said hopper arranged to receive sand therefrom and one or more delivery-conduits leading from the sand-blast to the inside of the tumbling-barrel.

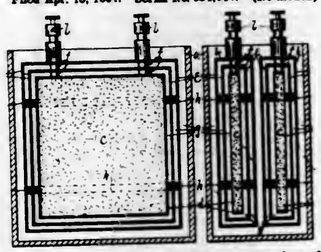
2. A sand-blast tumbling-barrel apparatus having a perforated rotatable barrel in combination with a closed chamber surrounding said apparatus said chamber having a hopper-bottom and also an exhaust-conduit leading therefrom, a sand-blast apparatus situated beneath said hopper arranged to receive sand therefrom and one or more delivery-conduits leading from the sand-blast apparatus to the inside of the tumbling-barrel.

3. A sand-blast tumbling-barrel apparatus having a perforated rotatable barrel in combination with a closed chamber surrounding said apparatus said chamber having a hopper-bottom and also an ex-

haust-conduit leading therefrom, rollers *b* for supporting and driving the tumbling-barrel situated in said chamber, a sand-blast apparatus situated beneath said hopper arranged to receive sand therefrom and one or more delivery-conduits leading from the sand-blast apparatus to the inside of the tumbling-barrel.



610,190. **SECONDARY BATTERY.** GEORGE J. MILLER, Kenton, Ohio. Filed Apr. 13, 1897. Serial No. 631,917. (No model.)



Claim.—1. In a secondary battery the combination of an insulating-box, positive and negative electrodes within said box composed of active materials mounted within and in conductive connection to a perforated metallic-lead case, a surrounding space between said active material and the surrounding case except where attached, means for preserving said space, and means for connecting conducting feed and discharge wires substantially as shown and specified.

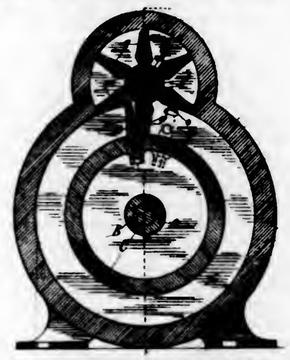
2. In a secondary battery the combination of an insulating-box for containing an electrolytic solution, positive and negative electrodes submerged therein, said electrodes being composed of active materials and a series of metallic-lead cases surrounding said active material spaces between said active materials and the innermost case and between each case of each series of cases, means for conductively connecting the active material and cases to each other, openings through said cases for the circulation of the electrolytic fluid and means for connecting conducting feed and discharge wires substantially as shown and specified.

3. In a secondary battery the combination of an insulating-box, and within said box positive and negative electrodes composed of active materials, a series of cases surrounding the active materials, spaces between the active material and the innermost case of the series and between each case of the series, conductive connections between the active material and each case of each series, bars between the active material and the innermost case and between each case of the series for preserving the spaces, openings through the surrounding cases for the circulation of the electrolytic solution and means for connecting conducting feed and discharge wires substantially as shown and specified.

4. In a secondary battery the combination of positive electrodes composed of peroxid-of-lead cakes mounted in metallic-lead frames, a series of perforated metallic-lead cases surrounding said cakes, a surrounding space between said cakes and the innermost case and between each case, negative electrodes composed of litharge cakes mounted in metallic-lead frames, a series of perforated metallic-lead cases surrounding said cakes, a surrounding space between said cakes and the innermost case and between each case, and means for connecting conductors to the electrodes substantially as shown and specified.

5. In a secondary battery the combination of active materials in the positive and negative electrodes, a series of cases surrounding the active material of each positive and negative electrode, a surrounding space between the active material and the innermost case of each electrode, and between each case of each series of cases, openings in said cases for the circulation of the electrolytic solution, means for connecting conducting-wires to the electrodes and a box for containing the electrolytic solution and the electrodes forming the battery substantially as shown and specified.

610,191. **ROTARY ENGINE.** CHARLES J. MILLIGAN, Chicago, Ill. Filed Sept. 13, 1897. Serial No. 651,432. (No model.)



Claim.—1. In a concentric piston rotary engine the combination with the body portion and the piston, of a plurality of revolving bulkheads mounted together so as to successively cross the expansion-chamber, and being so disposed that when one bulkhead is transverse to the expansion-chamber adjacent bulkheads coincide with the inner peripheral face of the body portion, the rearward faces of the bulkheads being concave to correspond with the curvature of such face, and their forward faces receding toward their bases so that the bulkheads may begin to advance while the piston-blade is in contact with the face of the head next to cross the expansion-chamber, an induction-port entering the expansion-chamber immediately forward of a line through the centers of movement of the piston and the bulkheads, an exhaust-port back of and removed from such line and a by-pass in the wall of the body portion and in radial alinement with the exhaust-port.

2. In a rotary steam-engine, the combination with a casing having an annular pressure-chamber and a lateral chambered extension open to such pressure-chamber, of a piston-blade traveling in the pressure-chamber, a plurality of bulkheads radiating from a common hub journaled within the extension so that the heads successively cross the pressure-chamber, the inner wall of the casing being provided with a by-pass of greater circumferential length than the width of the piston, whereby steam may pass the piston.

3. In a rotary steam-engine, the combination with a circular casing having a lateral chambered extension, an annulus journaled concentrically within the casing and of less diameter than its chamber, a radiating piston-blade carried by the annulus and sweeping the walls of its casing, a plurality of bulkheads radiating from a common hub and journaled within the lateral extension of the casing so as to contact successively with the periphery of the annulus, an exhaust-port in the side wall of the casing outside of the annulus, a by-pass formed in the inner wall of the casing in radial alinement with the exhaust-port and of greater length than the thickness of the piston-blade, whereby steam may pass the piston blade for the purpose of advancing the bulkhead.

4. In a concentric piston rotary engine having a plurality of rigidly-connected revolving bulkheads adapted to be successively brought to position across the expansion-chamber of the engine, of a bevel-pinion mounted on the shaft of such heads, a bevel-gear intermeshing with such pinion, a shaft carrying the bevel-gear, a crown-wheel mounted upon the shaft, a collar-cam mounted upon the engine-shaft and intermeshing with the crown-wheel, such cam having oblique and straight portions whereby intermittent movement is communicated to the bulkheads and such heads are rigidly held between their successive steps.

5. In a concentric rotary engine the combination with the body portion having an annular expansion-chamber, a piston revolving in such chamber, a shaft carrying the piston, a plurality of rigidly-connected revolving bulkheads adapted to successively cross the expansion chamber and being so disposed that the heads adjacent to the head immediately in service form continuations of the peripheral wall of the expansion-chamber, of an induction port immediately forward of a line through the centers of movement of the piston and the bulkheads, an exhaust-port back of and removed from such line, a by-pass in the wall of the expansion-chamber and in radial alinement with the exhaust-port, a collar-cam on the engine-shaft and having straight and oblique portions, a crown-wheel intermeshing with the cam, and bevel-gears for communicating motion from the crown-wheel to the shaft of the bulkheads, the cam being so timed that its oblique portion engages the crown-wheel while the piston is moving from the exhaust-port to the line of service of the bulkhead.

6. In a concentric rotary engine the combination with the body portion having an annular expansion-chamber, a piston revolving in such chamber, a shaft carrying the piston, a plurality of rigidly-connected revolving bulkheads adapted to successively cross the expansion-chamber and being so disposed that the heads adjacent to the head immediately in service form continuations of the peripheral wall of the expansion-chamber, of an induction-port immediately forward of a line through the centers of movement of the piston and the bulkheads, an exhaust-port back of and removed from such line, and a by-pass in the wall of the expansion-chamber and in radial alinement with the exhaust-port.

7. In a concentric rotary engine the combination with the body portion having an annular expansion-chamber, a piston revolving in such chamber, a shaft carrying the piston, a plurality of rigidly-connected revolving bulkheads adapted to successively cross the expansion-chamber and being so disposed that the heads adjacent to the head immediately in service form continuations of the peripheral wall of the expansion-chamber, of an induction-port immediately forward of a line through the centers of movement of the piston and the bulkheads, an exhaust-port back of and removed from such line, a by-pass in the wall of the expansion-chamber and in radial alinement with the exhaust-port, and means for positively holding the bulkhead in place until the piston-blade has passed the exhaust-port.

610,192. **APPARATUS FOR MAKING FLY-CATCHERS.** OSWALD I. MILNE, London, England. Filed Apr. 4, 1898. Serial No. 676,287. (No model.)



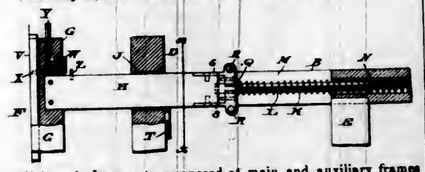
Claim.—1. The combination of a collapsible tube, a mouthpiece, and means for holding a string against the mouthpiece.

2. The combination of a collapsible tube and a slotted mouthpiece.

3. The combination of a collapsible tube, a slotted mouthpiece, and means for holding a string in the slot of the mouthpiece.

4. The combination of a collapsible tube, a slotted mouthpiece, and a slide on the mouthpiece.

610,193. **NURSERY-GATE.** PETER MOTLEY, Philadelphia, Pa. Filed May 14, 1898. Serial No. 680,679. (No model.)



Claim.—1. In a gate composed of main and auxiliary frames fitted to each other telescopically, and formed of vertical side stiles and horizontal bars, a spring occupying a horizontal bar of the main frame and bearing against said bar and the adjacent bar of the auxiliary frame, and a laterally-projecting cross-bar secured to the inner end of the bar of the auxiliary frame and adapted to ride on the bar of the main frame and abut against the stile of the latter.

2. In a gate composed of main and auxiliary frames fitted to each other telescopically and formed of vertical side stiles and horizontal bars, a plate secured to the end of a horizontal bar of the auxiliary frame and a laterally-projecting cross-head mounted on said plate and adapted to ride on a horizontal bar of the main frame.

3. In a gate formed of main and auxiliary frames fitted to each other telescopically and comprising vertical side stiles and horizontal bars, a rod projecting from the inner end of a horizontal bar of the auxiliary frame and entering the horizontal bar of the main frame, a spring bearing against the bars of said frames for forcing out the auxiliary frame, a plate secured to the end of the horizontal bar of the auxiliary frame adjacent to the place of connection of said rod with said bar and a cross-head on said plate adapted to ride on the horizontal bar of the main frame.

4. In a gate having main and auxiliary frames fitted to each other telescopically and composed of vertical side stiles and horizontal bars, an eccentric pivotally mounted on a stile of the main frame and having its periphery contiguous to a horizontal bar of the auxiliary frame.

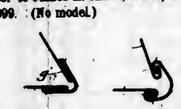
5. In a gate of the character stated, the latch W, and stop Z on a stile of one of the frames thereof.

6. In a gate of the character stated, the latch W, and the bolt Y in a stile of one of the frames thereof, said bolt being adapted to control said latch and form part of a hinge for the gate.

7. In a gate composed of main and auxiliary frames fitted to each other telescopically and formed of vertical side stiles and horizontal bars, an eccentric pivotally mounted on the stile of the main frame and having its periphery contiguous to a horizontal bar of the auxiliary frame, said eccentric being adapted for the reception of an operating implement.

8. In a gate composed of main and auxiliary frames fitted to each other telescopically and formed of vertical side stiles and horizontal bars, a vertical groove in the outer side of the stile of the auxiliary frame, a stationary tongue adapted to be secured to a sustaining object and freely entering said groove and a latch passing through said stile into said tongue.

610,194. **PHOTOGRAPHER'S LANTERN.** WILLIAM NEIL, Chicago, Ill., assignor to James H. Smith, same place. Filed Nov. 29, 1897. Serial No. 660,099. (No model.)



Claim.—1. The combination in a lamp of the class described, of folding side walls and vertically-flanged corner-pieces, each corner-piece being provided with two inturned flanges loosely interlocking with counterpart flanges upon adjacent side walls, and a suitable light-tight base and top arranged to engage therewith, substantially as described.

2. The combination in a photographic lantern, of folding side walls having their vertical edges flanged outwardly, vertical corner-pieces having inturned flanges adapted to engage loosely with the outwardly-turned flanges upon said side walls, whereby a hinge action may be obtained while the passage of light rays is intercepted, and a removable base and top having vertical grooves adjacent to the edges thereof respectively, to engage the bottom and top of said side walls and lock them in position while rendering the separable joints light-tight, substantially as described.

3. The combination in a photographer's lantern, of side walls provided with flanges arranged to interlock at all but one of the intersecting corners, with vertical corner-pieces adapted to intercept light and to loosely engage with the flanges of said side pieces, thereby serving as hinged connections, detachable interlocking flanges arranged to join one of said corners, and a suitable light-tight base and top arranged to engage with said side walls, substantially as described.

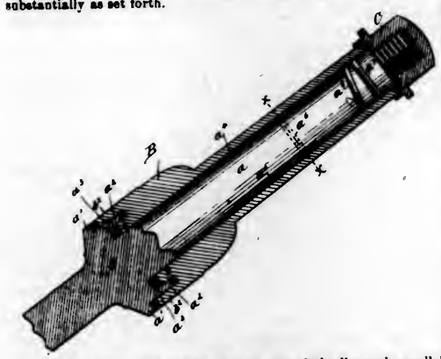
4. A photographer's lantern having side walls arranged to interlock with each other at one corner by means of a light-tight disconnecting joint and at the others by means of corner-pieces, said corner-pieces being vertically flanged, vertical flanges upon said side walls arranged to loosely interlock with the flanges upon said corner-pieces so as to permit a hinge movement, and a detachable base and top formed to engage with and lock said side walls in position when the lantern is in use, substantially as described.

5. A photographer's folding lantern, having flanged corner-pieces adapted to engage and interlock with its side walls so as to form light-tight joints, a detachable, double-walled base and top respectively, each provided with ventilating-openings therein arranged to admit air and to intercept the passage of light, and suitable grooves for the reception and engagement respectively of the bottom and top of the side walls, substantially as described.

610,195. **LUBRICATING-AXLE.** JOHN G. OBERMIER, Canton, Ohio. Filed Mar. 12, 1898. Serial No. 673,635. (No model.)

Claim.—1. A solid axle-spindle, provided with oppositely-disposed parallel longitudinal grooves terminating short of the spindle ends, a distributing-groove connecting the same, a circumferential groove at the outer end of the spindle and connecting with one of the

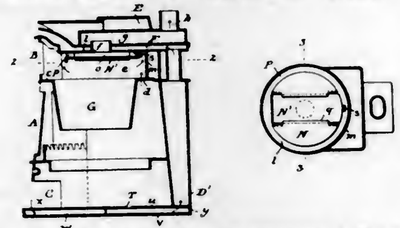
longitudinal grooves near its outer end, and a spiral groove extending partially around the spindle, one end merging into the plane of the spindle, and the other connected with said longitudinal groove, substantially as set forth.



2. A tapering axle-spindle, having oppositely-disposed parallel longitudinal grooves which end short of the spindle ends, a distributing-groove a^6 connecting said oppositely-disposed parallel grooves, a circumferential groove at the outer end of the spindle and connected with one of the longitudinal grooves, substantially as set forth.

3. An axle-spindle having at its inner end an enlarged head provided with a projecting collar a', and an inner annular flange provided with an annular groove, forming a dust-trap, in combination with a box, having a short inner annular flange and an outer annular flange, the latter of which projects over the inner annular flange and groove, abutting against the projecting collar of the axle, substantially as set forth.

610,196. FIREPLACE-HEATER. JOHN R. OLDERSHAW, Baltimore, Md. Filed Dec. 11, 1897. Serial No. 661,519. (No model.)



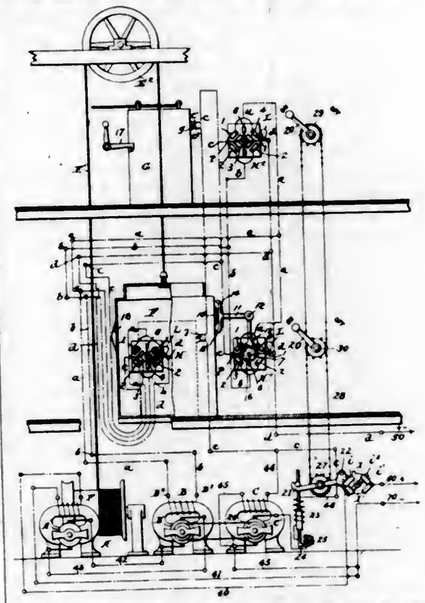
Claim.—1. In a fireplace-heater, the combination of a fire-pot; a combustion-chamber, *c*, in the upper part of the heater; an open-top magazine, G, below the combustion-chamber and depending into the fire-pot and having a top exterior flange, *c*, which separates the fire-pot from the combustion-chamber, said flange provided with smoke-holes, *d*; an exit-flue, *f*, in the crown; and a false or supplemental top smaller than said crown, and secured to the latter by lugs so as to form between the two a space or passage, *o*, and also form around the edge of said supplemental top an annular opening leading to the said space or passage, as set forth.

2. In a fireplace-heater, the combination with a combustion-chamber having in its crown or top an exit-flue, *f*; a false or supplemental top separated from said crown by a space or passage, *o*, and having an annular opening around the edge leading from the combustion-chamber to said space or passage—said supplemental top being composed of two stationary sides having parallel guides and a central section, N', which slides between said two sides in the guides thereon, as set forth.

610,197. CONTROLLING DEVICE FOR ELECTRIC ELEVATORS. NORTON P. OTIS and RUDOLPH C. SMITH, Yonkers, N. Y., assignors to the Otis Brothers & Company, New York, N. Y. Filed Apr. 4, 1892. Serial No. 427,740. (No model.)

Claim.—1. The combination with an elevator-car and its operating mechanism, of two circuit terminals or contacts one to control a circuit for operating the mechanism to elevate the car and the other to lower it, a push-button at the landing, an automatic switch actuated by the car and governing said contacts, and means for holding the switch in an intermediate position when the car is opposite a landing, substantially as described.

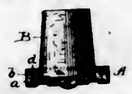
2. The combination with an elevator and its operating mechanism, of a controlling-circuit including circuit-breakers for the several elevator-well doors arranged in series, push-buttons at the several landings, branches from said controlling-circuit, and an automatic switch governed by the position of the elevator and adapted to direct the circuit of the push-buttons through devices for causing the elevator to move up or down according as the elevator is above or below the push-button operated, substantially as described.



3. The combination with an elevator-car and starting mechanism, of a floor-switch governing the circuit for operating the mechanism to elevate and lower the car, and means for holding the floor-switch at an intermediate position with the circuits broken when the car is opposite a landing, substantially as described.

4. The combination with the automatic floor-switch operated by the car and forming at each landing a path for the push-button circuit whereby the car may be controlled from the landing, of means for holding the switch in circuit-breaking position while the car is opposite each landing, substantially as described.

610,198. BOTTLE-STOPPER. HENRY L. PHILLIPS, London, England, assignor to Charles M. Higgins, New York, N. Y. Filed Dec. 31, 1897. Serial No. 664,964. (No model.) Patented in England June 16, 1891, No. 10,160.



Claim.—1. An improved bottle-stopper consisting of an external grasping-shell *a*, cork or plug B, and an internal cement layer *b*, between the sides of the cork and shell and uniting the two, substantially as and for the purpose set forth.

2. In a bottle-stopper, the combination with the cupped shell *a*, of the cement layer *b* filling said shell, and a tapering cork or plug B having its larger end projecting within said shell and immersed in said cement, substantially as and for the purpose set forth.

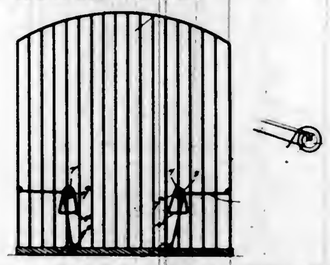
3. The combination with the shell *a*, of the cork or plug B projecting thereinto, a cement filling *b* between cork and shell, and a centralizing-guide *d*, or its equivalent, arranged and operating, substantially as and for the purpose set forth.

4. The combination with the shell *a*, of the cork or plug B projecting thereinto, a cement filling *b* between cork and shell, and an annular plate or washer closing the mouth of the shell and surrounding the cork at its point of protrusion from the shell, substantially as described.

5. A bottle-stopper consisting of a sheet-metal shell or head *a*, a cementing-layer *b*, and cork or plug B, arranged in said shell with said cement between the sides of said shell and cork, substantially as herein shown and described

6. A bottle-stopper consisting of a cupped shell *a* having vertical fluted sides or rim, a cork or plug B having its end projecting into said fluted shell, and a cementing-filling *b* between the two at the sides and top thereof, substantially as and for the purpose set forth.

610,199. TRAP. WESLEY A. PICKARD, Ewing, Ill. Filed Oct. 23, 1897. Serial No. 656,170. (No model.)



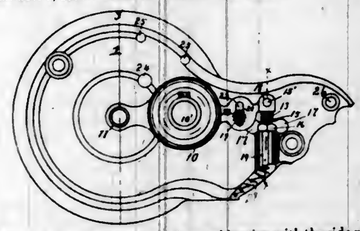
Claim.—1. A trap comprising a receptacle having an entrance, a grooved and pivoted rod carrying a plurality of pendent fingers controlling said entrance, and sockets in the bottom of said trap to receive the lower ends of said fingers and hold them in an inwardly-inclined position.

2. A trap comprising a receptacle having an entrance, a transverse bar at the upper end of said entrance having a longitudinal groove and a plurality of fingers having their upper ends bent around said bar with their extremities situated within the groove, and devices for limiting the outward movement of the lower end of said fingers.

3. A trap comprising a receptacle having an entrance, a transverse rotatable bar extending across said entrance, a handle for turning said bar, means for holding the bar against rotation, and a plurality of pivoted fingers carried by said bar and controlling said entrance.

4. A trap comprising a receptacle having an entrance, a transverse, grooved bar pivoted above said entrance, a plurality of pendent fingers secured to said bar said fingers inclining inward toward their lower ends and being provided with inwardly-projecting barbs or pins, and guides secured to said bar for controlling the movement of said fingers.

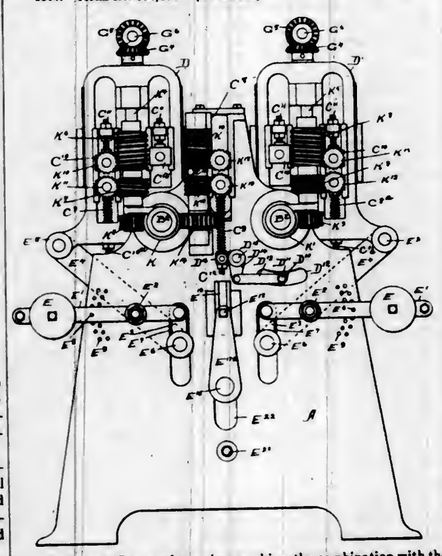
610,200. LAWN-MOWER. OLIVER B PICKETT, Richmond, Ind. Filed Nov. 5, 1897. Serial No. 657,515. (No model.)



Claim.—1. In a lawn-mower, the combination with the side plates each of which has the vertical recesses 13 and 14 on opposite sides with an intervening opening 17, and an adjacent opening 21, of a bearing-plate 10 pivoted to each of said side plates and adapted to support the shaft of the cutting-reel, the said bearing-plate having a vertical slot 22, and an opening 18 on its outer end, a bolt lying in said recesses 13 and 14 with its upper end projected into the opening 18 in the bearing-plate, whereby an arc movement may be imparted to the bearing-plate, and means for securing said plate in its adjusted position, substantially as shown and described.

2. In a lawn-mower, the combination of side plates having openings therein for the ends of the shaft of the rotating blades to project through, and vertical recesses with their concaved sides facing in opposite directions with an intervening space between their inner ends, bearing-plates mounted on the said side plates and upon which the end of the shaft of the rotating blades has its bearing, a bolt and nut operating in said vertical recesses and intervening space in the side plates for moving the bearing-plates and a bolt passing through each of said side plates and bearing-plates for locking the latter plates in position, substantially as described.

610,201. SANDPAPERING-MACHINE FOR BENT WORK. JAMES L. PERRY, Chicago, Ill., assignor, by direct and mesne assignments, to the Universal Sander Company, same place. Filed Apr. 16, 1897. Serial No. 632,488. (No model.)



Claim.—1. In a sandpapering-machine, the combination with the sandpaper-cylinder of feed-rolls movable through the arc of a circle concentric with the surface of the cylinder, substantially as specified.

2. In a sandpapering-machine, the combination with the sandpaper-cylinder of feed and pressure rolls movable through the arc of a circle concentric with the surface of the cylinder, substantially as specified.

3. In a sandpapering-machine, the combination with the sandpaper-cylinder of a pressure-roll movable through the arc of a circle concentric with the surface of the cylinder, substantially as specified.

4. In a sandpapering-machine, the combination with the sandpaper-cylinder of feed-rolls movable through the arc of a circle whose axis is located in a horizontal plane lying below the level of the acting side of the cylinder, substantially as specified.

5. The combination with the sandpaper cylinder of a wood-polishing machine, of feed devices carried in frames swiveled upon the bearings of the cylinder shaft, substantially as specified.

6. The combination in a sandpapering-machine, of two parallel sandpaper-cylinders and feed-rolls for moving the stock across such cylinders, said rolls being movable as to their positions to enable them to conform to the curvature of bent stock, substantially as specified.

7. The combination in a sandpapering-machine, of two parallel sandpaper-cylinders and feed-rolls for moving the stock across said cylinders and pressure-rolls for pressing the stock against the cylinders, all said rolls being movable as to their positions to enable them to conform to the curvature of the stock, substantially as specified.

8. The combination with two sandpaper-cylinders of feed rolls located at the outer side of each cylinder and movable through arcs of circles concentric with the surfaces of the cylinders, and intermediate feed-rolls for conducting the stock from one cylinder to the other, substantially as specified.

9. The combination with two sandpaper-cylinders of feed-rolls located at the outer side of each cylinder and movable through arcs of circles concentric with the surfaces of the cylinders, and intermediate vertically-movable feed-rolls for conducting the stock from one cylinder to the other, substantially as specified.

10. The combination with the swinging feed-rolls at opposite sides of a sandpapering cylinder or cylinders, and their respective carrying-frames, of an independent counterbalance-weight for each pair of said rolls, and mechanical connections between said weights and the frames, substantially as specified.

11. The combination with the sandpaper-cylinders and the feed-rolls and their carrying-frames movable about the cylinders as set forth, of means for detachably locking the frames together, substantially as specified.

12. The combination with two sandpaper-cylinders of two pairs of feed-rolls movable in swinging supports, and means for locking such supports against movement, substantially as specified.

13. The combination with two sandpaper-cylinders of two pairs of feed-rolls mounted in swinging supports, means for uniting said supports so that both must move together, and means for locking them against movement, substantially as specified.

14. The combination with the swinging feed-roll supports, of the compound slides, the gears carried by the central members of the slides, the racks mounted on the side members, and the mechanical connections between said slides and the swinging supports, substantially as specified.

15. The combination with the swinging feed-roll supports, of the compound slides, the gears carried by the central members of the slides, the racks mounted on the side members, the mechanical connections between the swinging supports and the slide, and means for locking said connections so as to prevent movement by the supports, substantially as specified.

16. The combination with the swinging supports, the compound slide and connections between said supports and the side members of the slide, of a shaft carried by the central members of the slide and provided with gears meshing with racks upon the side members, and means for locking said shaft against turning, substantially as specified.

17. The combination with a sandpaper-cylinder of a feed-roll, a pressure-roll, adjustable slides in which both said rolls are journaled, each roll being also adjustable independently of the other roll, and swinging frames carrying said slides, substantially as specified.

18. The combination with the sandpaper-cylinders, of upper and lower feed-rolls mounted in supports swinging over the outer sides of the cylinders and upper and lower feed-rolls between the cylinders, all said lower rolls being supported upon springs, substantially as specified.

19. The combination with the upper intermediate feed-roll, of the swinging frames D and D' and the eveners pivotally joined to the frames, and also connected to and moving said roll, substantially as specified.

20. The combination of two cylinders, rolls swinging about each and mechanism by which said rolls are swung together or independently at will, substantially as specified.

21. The combination with the cylinder of a sandpapering-machine, and feed-rolls swinging about the same, of worm gearing driving said rolls and taking power from the cylinder-shaft, substantially as specified.

22. The combination with the cylinder of a sandpapering-machine, of a worm on the cylinder-shaft, a vertical shaft having a gear meshing with said worm and also having worms such as K^6 and K^7, and feed-rolls having gears meshing with said last-mentioned worms, substantially as specified.

23. The machine for sandpapering bent stock wherein are combined two parallel sandpaper-cylinders, feeding devices at the outer side of each cylinder, and intermediate feed-rolls changing their positions automatically in conformity to the curvature of the stock, substantially as specified.

610,202. TRUSS. NELS PERSON, Garner, Iowa. Filed Aug. 15, 1895. Renewed Mar. 21, 1898. Serial No. 674,690. (Model.)

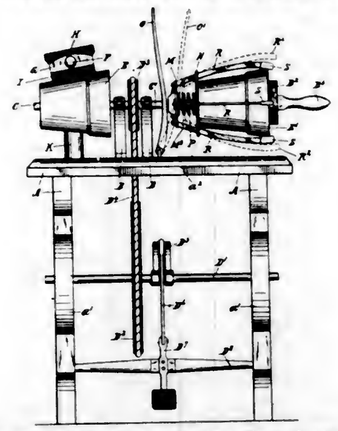


Claim.—A truss consisting of a suitable harness, and a pad connecting therewith, a cylinder within the pad and having a guide-pin projecting outwardly from its bottom; combined with a coiled spring in the cylinder; a chambered plunger adapted to work in the cylinder, and having secured to its outer end attaching means, and to its inner end a shoulder to prevent this end from being withdrawn from the cylinder; and a cap-plate secured to the outer side of the pad, and catching over the shoulder on the plunger, substantially as shown.

610,203. FLOWER-POT CLEANER. HOWARD REYNOLDS, Sarnia, Canada. Filed Nov. 15, 1897. Serial No. 658,661. (No model.)

Claim.—1. The shaft, C, and means for supporting and operating the same, and the chuck or cone, D, fixed thereon, in combination with a body, G, scraper, H, handle, F, rod, J, and post, K, in which an opening, k^3, is formed, substantially as and for the purpose set forth.

2. The shaft, C, and means for supporting and operating the same, and the chuck or cone, D, fixed thereon, in combination with a body, G, brush, I, handle, F, rod, J, and post, K, in which an opening, k^3, is formed, substantially as and for the purpose set forth.



3. The shaft, C, and means for supporting and operating the same, and the chuck or cone, D, fixed thereon, in combination with a body, G, scraper, H, brush, I, handle, F, rod, J, and post, K, in which an opening, k^3, is formed, substantially as and for the purpose set forth.

4. The shaft, C, and means for supporting and operating the same, and the chuck or cone, D, in combination with the body, G, the scraper, H, the handle, F, the rod, J, provided with the shoulder, J', the post, K, provided with the flange, k', and in which the opening, k^3, is formed, having the beveled faces, k^3, and, k^4, the table portion, a^3, of the frame in which the opening, a^2, and recess, a^4, are formed, and the plate, L, substantially as and for the purpose set forth.

5. The shaft, C, and means for supporting and operating the same, and the chuck or cone, D, in combination with the body, G, the brush, I, the handle, F, the rod, J, provided with the shoulder, J', the post, K, provided with the flange, k', and in which the opening, k^3, is formed, having the beveled faces, k^3, and, k^4, the table portion, a^3, of the frame, in which the opening, a^2, and recess, a^4, are formed, and the plate, L, substantially as and for the purpose set forth.

6. The shaft, C, and means for supporting and operating the same, and the chuck or cone, D, in combination with the body, G, the scraper, H, the brush, I, the handle, F, the rod, J, provided with the shoulder, J', the post, K, provided with the flange, k', and in which the opening, k^3, is formed, having the beveled faces, k^3, and, k^4, the table portion, a^3, of the frame, in which the opening, a^2, and recess, a^4, are formed, and the plate, L, substantially as and for the purpose set forth.

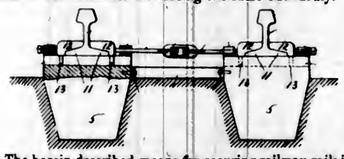
7. The shaft, C, and means for supporting and operating the same, and the lever, O, in combination with the plate, M, which is adjustable lengthwise on, at the same time rotates with the shaft, C, and in which the radial openings, m^3, are formed, the stationary plate, N, in which the radial openings, n', are formed, and the clamping-arms, R, substantially as and for the purpose set forth.

8. The shaft, C, and means for supporting and operating the same, collar, T, and the lever, O, in combination with the plate, M, which is adjustable lengthwise on, at the same time rotates with the shaft, C, and in which the radial openings, m^3, are formed, the stationary plate, N, in which the radial openings, n', are formed, and the clamping-arms, R, substantially as and for the purpose set forth.

9. The shaft, C, and means for supporting and operating the same, and the lever, O, in combination with the plate, M, which is adjustable lengthwise on, at the same time rotates with the shaft, C, and in which the radial openings, m^3, are formed, the stationary plate, N, in which the radial openings, n', are formed, the clamping-arms, R, and the tips, S, substantially as and for the purpose set forth.

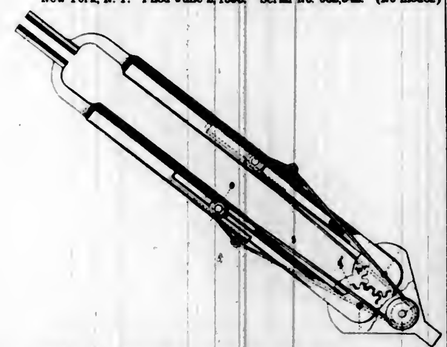
610,204. RAILWAY-TRACK SECURER. THOMAS SHERWOOD, Belchertown, Mass. Filed Nov. 13, 1897. Serial No. 658,458. (No model.)

Claim.—1. The herein-described improved means for securing railway-rails in position, said means comprising base-blocks provided in their upper surfaces with transverse grooves and at their opposite sides with keepers projecting above the plane of said grooves, the bases of the rails being adapted to rest upon said base-blocks between said keepers, key-blocks which conform to and overlap the base-flanges of the rails at the respective sides of the latter, said key-blocks being provided with downwardly-projecting extensions or pins which enter the respective grooves in the base-blocks, devices mounted in the keepers for keying said blocks in position, said devices consisting of screws which are passed through the outer keepers and bolts which are passed through the inner keepers, and means for connecting the inner ends of said bolts and for forcing the same outwardly.



2. The herein described means for securing railway-rails in position, said means consisting of base-blocks which are substituted for the usual ties, said base-blocks being connected and provided in their upper surfaces with transverse grooves, said blocks being also provided over said grooves and at their opposite sides with keepers between which the bases of the rails are placed, and key-blocks which are adapted to be placed on the flanges of the rails, and which are provided with downwardly-directed pins or projections which enter said grooves, and devices mounted in said keepers for keying said blocks in position, said devices consisting of screws which are passed through the outer keepers, and with bolts which are passed through the inner keepers, and the inner ends of which are connected by a turnbuckle, substantially as shown and described.

610,205. WINDOW-CLEANER. LEON SUSSMAN and AARON HILL, New York, N. Y. Filed June 2, 1896. Serial No. 632,342. (No model.)



Claim.—1. In a window-cleaner, the combination of a mounting pivoted to swing in a plane approximating the plane of the window-pane to be cleaned and a plurality of arms carrying rubbers and pivoted to the said mounting in a plane or planes at an angle to the pivotal plane of the mounting.

2. In a window-cleaner, the combination of a pivoted mounting, a plurality of arms carrying rubbers pivoted to the said mounting at an angle to the pivotal plane of the mounting, the said arms being operatively connected together so that the same may be pressed toward each other by the movement of one or the other of the said arms.

3. In a window-cleaner, the combination of a pivoted mounting, a plurality of arms pivoted to the said mounting and geared together, substantially as described, and rubbers mounted upon the said arms, whereby the arms will be adapted to grasp and rub the window-pane between them, substantially as described and for the purposes set forth.

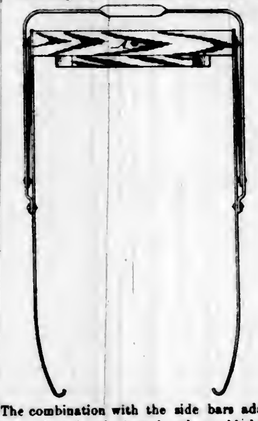
4. In a window-cleaner, the combination of a mounting, a plurality of arms pivoted thereto, the said arms comprising adjustable members and rubbers carried by the said adjustable members, whereby the said arms will be adapted to rub opposite sides of a window-pane and a mechanical connection intervening between the said arms, whereby the movements of adjustment of one arm will be repeated by the other arm, substantially as described.

5. In a window-cleaner, the combination of a plurality of adjustable arms, a mounting pivotally connected to the said arms and means for adjusting one of the said arms from the other arm, substantially as described and for the purposes set forth.

6. In a window-cleaner, the combination of a pair of arms provided with means for adjusting one of the said arms from the other arm and carrying rubbers and adapted to grasp a window-pane between them, each of the said arms comprising two members, one of which is adjustable with respect to the other and a cord or band connection intervening between the adjustable members of the said arms for mutually adjusting the said adjustable members one from the other.

7. In a window-cleaner, the combination of a plurality of arms, each comprising two members one of which is adjustable with respect to the other, a connection intervening between the adjustable members of the said arms, whereby one adjustable member may be adjusted from the other adjustable member and a connection intervening between the arms, whereby one arm may be moved by the movement of the other, substantially as described and for the purposes set forth.

610,206. BARREL-HEADING PRESS. ALBERT L. SWETT, Medina, N. Y. Filed Aug. 30, 1897. Serial No. 649,934. (No model.)



Claim.—The combination with the side bars adapted to hook with their lower ends under the barrel and provided in their upper portions with upright slots, of a presser-head arranged between the slotted upper portions of the side bars, a bail pivoted to the middle portion of the side bars, links extending from the bail to the presser-head and arranged with their upper portions on the outer sides of the slotted upper portions of the side bars, and bolts which pass through the slots of the side bars and connect said links with the presser-head, forming a swiveling connection of the presser-head with said links and also guiding the presser-head on the side bars, substantially as set forth.

610,207. SASH-FASTENER. ANDREW TRACY, Richland, Iowa, assignor of one-half to M. W. Logan, same place. Filed Mar. 30, 1898. Serial No. 675,742. (No model.)



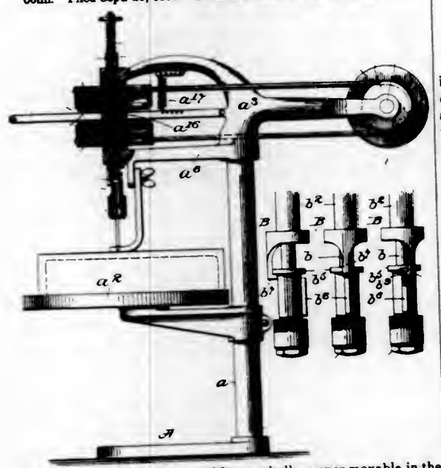
Claim.—1. In a device of the class described, the combination of an oscillating bar or bolt, a bowed or depressible spring mounted on the oscillating bar or bolt longitudinally of the inner face thereof, and a lever arranged to engage the spring at either side of the pivot of the bolt or bar, whereby either portion of the latter may be extended to its engaging position, substantially as described.

2. In a device of the class described, the combination of a bar pivoted between its ends and adapted to have either of its ends thrown outward into engagement with a sash, a bowed spring extending longitudinally of the inner face of the bar and mounted thereon, a pivoted lever arranged to engage the spring at either side of the pivotal point of the bar, and a sliding bolt arranged to engage the inner end of the pivoted bar, substantially as described.

3. In a device of the class described, the combination of an os-

cillating bar pivoted between its ends and provided with lugs having headed projections, a bowed spring provided at its ends with slots extending inward from the termiuals of the spring, the latter being detachably arranged on the lugs and engaging the projections, and a pivoted lever having an oppositely-beveled end engaging the spring and adapted to swing to either side of the pivot of the bar, substantially as described.

610,208. TAPPING-MACHINE. HENRY A. TUTTLE, Stamford, Conn. Filed Sept. 29, 1897. Serial No. 653,439. (No model.)



Claim.—1. A chuck, comprising a spindle proper movable in the direction of its length and provided with an engaging projection, and a suitably-controlled driving-sleeve engaging either side of said projection to rotate the spindle and being adapted to successively engage opposite sides thereof to effect the advance and withdrawal of the tool, as specified.

2. A chuck, comprising a spindle proper movable in the direction of its length and provided with an engaging projection, and a suitably-controlled driving-sleeve having a dog engaging said projection to rotate the spindle and being adapted to successively engage opposite sides thereof, to effect the advance and withdrawal of the tool, as specified.

3. A chuck, comprising a spindle movable in the direction of its length and provided with an engaging projection, a suitably-controlled driving-sleeve having a dog engaging said projection to rotate the spindle and being adapted to successively engage opposite sides thereof to effect the advance or withdrawal of the tool, and a spring sustaining said parts normally in engagement, as specified.

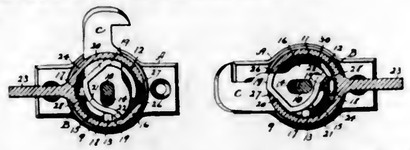
4. The combination with reversible driving mechanism, of a chuck, comprising a spindle proper movable in the direction of its length and provided with an engaging projection, and a suitably-controlled driving-sleeve engaging either side of said projection to rotate the spindle and being adapted to successively engage opposite sides thereof to effect the advance and withdrawal of the tool, as specified

5. The combination with reversible driving mechanism, of a chuck, comprising a spindle movable in the direction of its length and provided with an engaging projection, a suitably-controlled driving-sleeve having a dog engaging said projection to rotate the spindle and being adapted to successively engage opposite sides thereof to effect the advance or withdrawal of the tool, and a spring sustaining said parts normally in engagement, as specified.

6. The combination with reversible driving mechanism, of a chuck, comprising a driven member independently movable in the direction of its length, and provided with a circumferential flange, and an axially-disposed projection terminating adjacent to said flange, and a driving member adapted to engage either side of said projection for the purpose described.

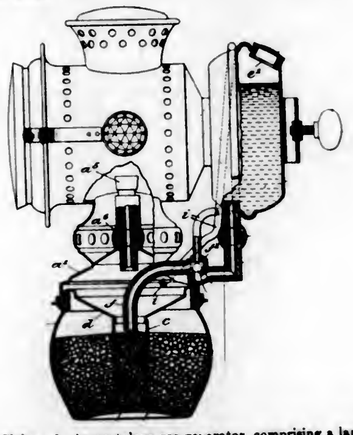
610,209. FASTENER FOR MEETING-RAILS OF SASHES. HENRY G. VOIGHT, New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed Apr. 4, 1898. Serial No. 676,278. (No model.)

Claim.—1. The combination of the base having the flange-segment 12, and stud 13, with the hollow sweep having the rim 24 provided with shoulders 25, 26 and 27 and also having the projection or lug 28, the longitudinally-sliding latch having the concentric edge faces 15 and 16, shoulders 17, slot and shoulder 18 and 19, and the top cam 19, 20, 21, 22, and a central post for securing the said sweep and latch on the said base, substantially as described.



2. The combination of a base, a pivotal post, a longitudinal sliding latch having a cam with two opposite portions on opposing sides of the pivotal post in the longitudinal direction of the latch, and a sweep having devices for simultaneously engaging the said two portions of the cam on said latch for controlling its longitudinal movement, substantially as described.

610,210. ACETYLENE-GAS-GENERATOR LAMP. HENRY W. WELLS, Philadelphia, Pa., assignor to the Helios Carbide Specialty Company, Atlantic City, N. J. Filed May 6, 1898. Serial No. 679,891. (No model.)



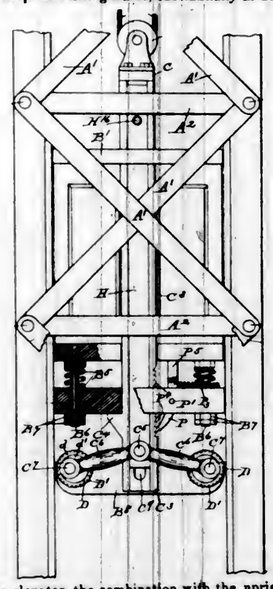
Claim.—1. An acetylene-gas generator, comprising a lamp provided with a burner, two chambers, one for fluid secured in rear of said lamp and the other for carbid located below said lamp and detachably connected therewith, a pipe connection from said fluid-chamber with said carbid-chamber, a ball check-valve seated in said pipe connection and elevated by the flow of fluid from said fluid-chamber, and a branch gas-pipe from the upper part of said ball check-valve, encircling said fluid-chamber and connected with said carbid-chamber and adapted to depress or seat the ball of said valve in said pipe connection to cut off the supply of fluid to the carbid in its chamber by the pressure of the generated gas therefrom against said ball, substantially as shown and for the purposes specified.

2. An acetylene-gas generator, comprising a lamp provided with a burner, two chambers, one for fluid secured in rear of said lamp and the other for carbid located below said lamp and detachably connected therewith, a perforated tube in said carbid-chamber adapted to contain an absorbent material, a deflector-plate interposed between the lamp base and carbid-chamber and extending into the same and the throat of said plate fitting into said perforated tube, a pipe connection from said fluid-chamber with said carbid-chamber, means in said pipe connection actuated by the fluid of said fluid-chamber to permit of the flow of the fluid to the carbid in its chamber and a branch gas-pipe from said pipe connection about said means and connected with said carbid-chamber to cut off the supply of fluid to the carbid in its chamber by the pressure of the generated gas therefrom, substantially as shown and for the purposes specified.

610,211. SAFETY-ELEVATOR. ERNEST W. WEST, Gloversville, N. Y. Filed Feb. 24, 1896. Serial No. 671,450. (No model.)

Claim.—1. In an elevator, the combination with the upright guide-posts; the car; and stops on the car engageable with the posts; of a car-lifting frame movable vertically relatively to the car; means

for imparting vertical movements to the frame relatively to the car; a pawl-and-ratchet connection between the car and frame for locking the parts in varying positions; and stop-actuating connections between the stops and lifting-frame, substantially as described.



2. In an elevator, the combination with the upright posts; the car; the stops on the car engageable with the posts; and a stop-actuating spring; of a main car-lifting frame; a releasing-section movable on and locked to the main frame; and controlling the stop-actuating spring; and means within the car for unlocking the releasing-section, substantially as described.

3. In an elevator, the combination with the upright guide-posts; the car; and eccentric-stops on the car engageable with the posts; of means for bringing the stops into engagement with the posts; and retraction-springs for controlling the rotative movements of the stops, whereby that side of each stop having the shortest radius is presented to the post while not actively engaged, substantially as described.

4. In an elevator, the combination with the upright posts; the car; and stops on the car engageable with the posts; of a stop-actuating spring; a main car-lifting frame having a lifting projection positively engageable with the car; a releasing-section movable on the main frame and controlling the stop-actuating spring; means for locking the releasing-section at each end of its path of movement; and means within the car for unlocking the releasing-section, substantially as described.

5. In an elevator, the combination with four guide-posts and the car; of a lifting-frame movable vertically relatively to the car; compressed springs between the car and lifting-frame; depending vertical side walls connected to the car; a pair of cross-rods movable horizontally toward and from each other in horizontal slots formed in said side walls; stops on the opposite ends of each cross-rod engageable with the four posts respectively; toggle mechanism for operating the stops and cross-rods; and operating connections between the lifting-frame and several toggle mechanisms, substantially as described.

610,212. HORSESHOE-CALK. RICHARD WHITAKER, New Brunswick, N. J., assignor to the Heverslip Manufacturing Company, same place. Filed Mar. 23, 1898. Serial No. 674,871. (No model.)



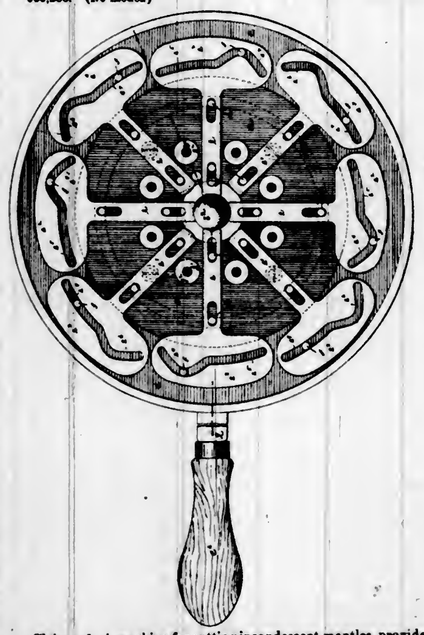
Claim.—1. A removable horseshoe-calk consisting of a central plug having one end screw-threaded and its opposite end received into a shell internally wider in its wearing end and adhering thereto, substantially as described.

2. A removable horseshoe-calk consisting of a central plug of soft iron having one end screw-threaded and its opposite end received into a shell of harder metal internally wider at its wearing end and secured thereto, substantially as described.

3. A removable horseshoe-calk consisting of a central plug of soft iron having its periphery screw-threaded in combination with a shell of harder metal encircling and covering one end of said plug and secured thereto, substantially as described.

4. A removable horseshoe-calk consisting of a central plug of iron having a collar about half-way of its length and the end above said collar screw-threaded, in combination with a shell of steel internally wider in its wearing end covering and encircling the end of said plug under its collar and secured to said plug, substantially as described.

610,213. MACHINE FOR CUTTING INCANDESCENT MANTLES. HERBERT R. WHITE, New York, N. Y. Filed Feb. 5, 1898. Serial No. 669,255. (No model.)



Claim.—1. A machine for cutting incandescent mantles, provided with knives adapted to first slit the mantle and to then cut the unsevered portions between the slits, substantially as specified.

2. A machine for cutting incandescent mantles, provided with two sets of radially-movable knives, and means for consecutively actuating such sets of knives, substantially as specified.

3. A machine for cutting incandescent mantles, provided with a base-plate, a revoluble ring, two sets of knives having oppositely-set cams, and pins on the ring that engage the cams and actuate the knives, substantially as specified.

4. A machine for cutting incandescent mantles, provided with a base-plate, a revoluble ring, two sets of knives having oppositely-set cams, each cam having a concentric and a connecting eccentric groove, and pins on the ring that engage the cams and actuate the knives, substantially as specified.

5. A machine for cutting incandescent mantles, composed of an annular base-plate, a centering-pin, two sets of radially-movable knives, and means for consecutively actuating such sets of knives, substantially as specified.

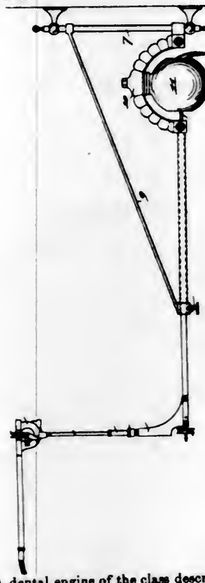
6. A machine for cutting incandescent mantles, composed of an annular base-plate, a centering-pin, a revoluble ring, two sets of knives having oppositely-set cams, and pins on the ring that engage the cams and actuate the knives, substantially as specified.

7. A machine for cutting incandescent mantles, composed of an annular base-plate, means for adjustably suspending the mantle above the same, two sets of knives, and means for consecutively actuating said sets of knives, substantially as specified.

8. A machine for cutting incandescent mantles, composed of an annular base-plate, a vertically-adjustable tubular pocket adapted to receive the mantle-wire, two sets of knives, and means for consecutively actuating said sets of knives, substantially as specified.

9. A machine for cutting incandescent mantles, composed of a pivoted perforated holder, a vertically-adjustable tubular pocket, means for adjustably attaching the tubular pocket to the holder, two sets of knives, and means for consecutively actuating said sets of knives, substantially as specified.

610,214. DENTAL ENGINE. JOHN D. WILKENS, Chicago, Ill., assignor to John N. Crouse, same place. Filed Oct. 11, 1895. Serial No. 565,329. (No model.)



Claim.—1. A dental engine of the class described, comprising in combination a swinging bracket having an arched frame to which the base of the arm is connected, an electric-motor frame suspended from said arched frame and adapted to hold the motor with its shaft in alinement with said arm and a driving-shaft rotatably mounted in said arm and adapted for connection with the motor-shaft, substantially as described.

2. A dental engine of the class described, comprising in combination a swinging bracket having an electric motor supported by the base of the arm thereof, a driving-shaft mounted in said arm and connected with the motor and said arm having an extensible section carrying the standard and said driving-shaft having an extensible section carrying a driving-pulley, substantially as described.

3. In a dental engine of the class described a bracket having a swinging arm composed of a polygonal tube having its outer end longitudinally slotted to provide a free spring-tongue in one wall of said tube, an extensible section sliding within said arm and a set-screw having a bearing on said spring-tongue whereby to clamp said part in position, substantially as described.

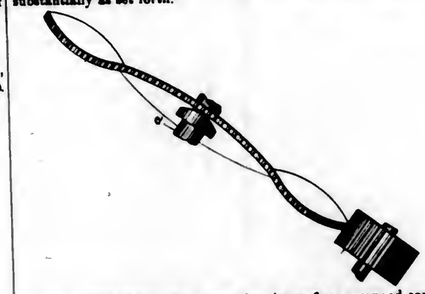
4. A sectional driving-shaft for dental engines, comprising in combination two sections, one of which is hollow and adapted to receive the other and the hollow member having a longitudinal slot and the other member a rounded head and a pin carried by the head and adapted to said slot whereby driving engagement between the two may be maintained while they are adjusted lengthwise upon each other, substantially as described.

5. The combination with a sectional driving-shaft consisting of a tubular member, a solid member telescoped therewith and an extensible arm composed of two tubes telescoped together and the tubular member of the driving-shaft having a bearing upon the inner end of the extensible member of the arm, substantially as described.

6. In an engine of the class described, a standard composed of a base-section having its wall longitudinally slotted and its upper end threaded and terminating in a bevel-seat, an extensible section telescopically mounted within said base-section and a clamping-ring having a tapered bearing, substantially as and for the purpose described.

610,215. GEAR-WHEEL. JOSEPH A. WILLIAMS, Cleveland, Ohio, assignor to the Williams Electric Company, same place. Filed Apr. 12, 1898. Serial No. 677,284. (Model.)

Claim.—1. A gear provided with a toothed rim or face having a trend forming a series of successive curves extending axially of the wheel and diagonally of a plane at right angles to the wheel's axis, substantially as set forth.



2. A sheet-metal gear having its rim or face arranged concentrically of the gear's axis and having a sinuous trend axially, substantially as set forth.

3. A gear having its rim or face arranged concentrically of the gear's axis and having a sinuous trend forming curves reversely arranged alternately, substantially as set forth.

4. The combination with a gear having its rim or face arranged concentrically of the gear's axis and having a trend extending axially; of a pinion meshing with the gear and fixed so far as axial movement is concerned and having its face extending axially far enough to maintain mesh between the two wheels during a complete rotation of the gear, substantially as set forth.

5. The combination with a gear, provided with a rim or face having a trend axially as well as circumferentially; of a pinion meshing with the gear and having its face extending axially far enough to maintain mesh between the two wheels during a complete rotation of the gear, which pinion is fixed so far as axial movement independently of the gear is concerned and has such a number of teeth relative to the number of the gear's teeth that the quotient obtained by dividing the number of the gear's teeth by the number of the pinion's teeth is a mixed number, substantially as and for the purpose set forth.

6. The combination with the gear provided with a rim or face having a trend axially as well as circumferentially; of a pinion meshing with the gear and fixed so far as axial movement of the same independently of the gear is concerned and having its face extending axially far enough to maintain mesh between the two wheels during a complete rotation of the gear and having a tooth in excess of a number that will equally divide the number of the gear's teeth, substantially as set forth.

610,216. WIRE-FENCE MACHINE. WILLIAM R. WILLIAMS, Chicago, Ill., assignor to C. R. Robinson, same place. Filed Dec. 5, 1896. Serial No. 614,565. (No model.)

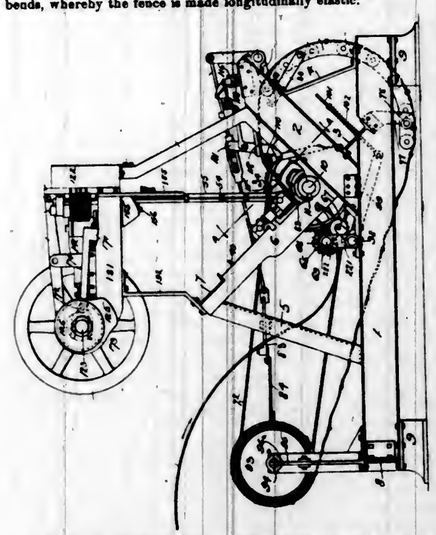
Claim.—1. The combination with an intermittently and positively driven series of warp-wire-feed devices, of a tension device for acting upon the warp-wires, a positively-driven clutch-shaft provided with a clutch and a take-up drum for the fabric and intermittently driven from the clutch-shaft, said tension device automatically operating the clutch of the clutch-shaft to engage and drive the take-up drum at all times save only when a sufficient tension is upon the warp-wires or fabric, substantially as specified.

2. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips and having a series of devices for holding a series of clips in line with each other astride a series of warp-wires, and devices for threading a woof-wire through the series of clips, of clip-forming dies, and means for conveying to a series of crossing-points, respectively, the successive clips formed by one set of dies.

3. In a fence-machine, the combination with means for simultaneously feeding forward at intervals a set of spaced warp-wires, of means for placing upon each wire, after such feeding, a U-shaped perforated clip, means for then threading through the perforations in all the clips a woof-wire, and means for then straightening all the clips.

4. In a machine for making wire-fence fabric, the combination with devices for holding a series of clips in line with each other astride a series of warp-wires, and means for automatically feeding a woof-wire across a series of spaced warp-wires, of means for at will disengaging the feeding mechanism from the devices actuating it, whereby the devices for feeding the woof-wire become free to be operated by hand for adjusting the position of the wire.

5. The combination with a machine for forming a wire-fence fabric having a series of longitudinal or warp wires, and having a series of devices for holding a series of clips in line with each other astride a series of warp-wires, and devices for threading a woof-wire through the clips, and devices for bending the clips, of devices arranged to give each of said wires at intervals, permanent, sinuous bends, whereby the fence is made longitudinally elastic.



6. The combination with a fence-machine adapted to secure a series of transverse or woof wires across a series of spaced longitudinal or warp wires, at intervals, of automatic devices arranged to bend back upon itself the projecting end portion of each woof-wire.

7. The combination with a series of devices for holding a series of clips in line with each other astride a series of warp-wires, devices for threading a woof-wire through the series of clips and distinct sets of devices for feeding a set of warp-wires, of means for synchronously operating said devices, and means for at will disengaging any of said devices from the operating mechanism.

8. The combination with sets of clip-forming dies operating in unison, of sets of devices for feeding to said sets of dies, respectively, strips of clip-stock, and means whereby the feeding devices advance to the dies one strip at a time, only.

9. The combination with sets of clip-forming dies, of devices for intermittently feeding to each set a strip of clip-stock, and means whereby certain of the strips are fed at shorter intervals than other strips.

10. The combination with a set of clip-forming dies, of devices adapted to feed a strip of clip-stock to said dies at regular intervals, and devices arranged to permit such feeding during a certain period of time and to prevent such feeding during a succeeding period of predetermined length.

11. The combination with a set of clip-forming dies, of means for feeding clip-stock thereto, a clip-guide leading from said dies, and an automatic switch arranged to deliver a certain number of the successively-formed clips at different points respectively.

12. The combination with a set of clip-forming dies and devices for feeding clip-stock thereto, of a flexible clip-guide arranged to receive the clips from said dies, means for flexing said guide by successive steps, and a set of fixed strip-guides arranged to aline, respectively, with the flexible guide at the completion of its successive steps.

13. The combination with a die-plate having a small and a larger opening, of devices for intermittently feeding a strip across said openings, a reciprocating die arranged to coact with the first opening in perforating the strip, a headed mandrel crossing the second opening in the rear of the plate's face, a forked die adapted to coact with the second opening to cut from the strip a portion previously perforated and double it over the mandrel, and means for moving the mandrel longitudinally to discharge the doubled clip.

14. The combination with a clip-forming die-plate, of devices for intermittently feeding a strip across an opening therein, a mandrel crossing the opening in the rear of the plate's face, and a forked die arranged to cut a clip from said strip and in its further advance to double the clip centrally over the mandrel.

15. The combination with devices for forming U-shaped clips, of a clip-guide arranged to receive said clips and lie between their branches, and a second guide following the course of the first and lying contiguous throughout to the middle outer surface of clips passing upon the first.

16. The combination with a plate provided with a narrow slot continuous at one end with a larger opening, of a parallel plate at a clip's width from the first, having a similar slot terminating at the opposite end in a larger opening, a flat clip-guide passing through and fitting laterally in both said slots, and means for reciprocating said plates together; whereby a clip pressing forward upon the guide is arrested by the first plate, allowed to pass as the advance of the plate brings the large opening in registering position, arrested by the second plate, and allowed to pass through the plate as the retraction of the latter brings its large opening in registering position.

17. The combination of a device engaging a clip between the limbs thereof with a bar provided with a transverse punchway and with a lateral opening to admit clips thereto, a guide arranged to bring clips to said opening, a stop normally supporting each clip after it enters the punchway, and a punch arranged to reciprocate in said punchway past said opening, said stop being arranged to move out of the way as the punch descends past the opening.

18. The combination with a rigid bar having in one edge transverse grooves to receive the warp-wires of a fence, a longitudinal groove for a woof-wire, and punchways perpendicular to the plane of the wires at their intersections, anvil-blocks lying below said punchways respectively, means for delivering a perforated U-shaped clip in each punchway and astride the corresponding warp-wire, means for threading a woof-wire through said clips, and punches reciprocating in the punchways, respectively.

19. The combination with means for holding a warp-wire, of means for placing a perforated U-shaped clip astride said wire, means for passing a woof-wire through the perforations in the clip, a rotary block having in the plane of the clip a gradually-widening segmental rib to move between and spread the clip branches, means for forcibly rotating the block, and means for flattening the clip against the block after its ends have been so spread.

20. The combination with a rigid bar grooved transversely to receive a series of warp-wires and longitudinally to receive a woof-wire, of means for placing such wires in the grooves respectively, means for securing the woof-wire to each warp-wire while both are held in the grooves, and means for then dropping all said wires out of the grooves to allow feeding of the fabric.

21. The combination with a rigid bar provided with transverse grooves to receive respectively a set of warp-wires, and with a shallower groove to receive a woof-wire, of means for covering the latter groove between the warp-wire grooves to form a closed passage, and means for threading a woof-wire through said passage.

22. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips and having a series of devices for holding a series of clips astride a series of warp-wires, a guide for directing a woof-wire through the series of clips, of a positively-driven warp-wire feed, a positively-driven fabric-winding drum, and means whereby undue tension on the fabric delays the rotation of the drum.

23. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips and having a series of devices for holding a series of clips astride a series of warp-wires, a guide for directing a woof-wire through the series of clips, of a plurality of clips forming dies, and means for conveying to the crossing-points the clips formed by the dies.

24. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips and having a series of devices for holding a series of clips astride a series of warp-wires, a guide for directing a woof-wire through the series of clips, of clip-forming dies, means for conveying the clips formed by the dies to magazines, and means for removing from each magazine a single clip at a time.

25. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips and having a series of devices for holding a series of clips astride a series of warp-wires, a guide for directing a woof-wire through the series of clips, of a magazine for holding a quantity of clips, and means for taking from the magazine a single clip at a time and placing the same upon the warp-wires.

26. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of a chuteway for the clip at each warp-wire, and means for holding the clip exactly in position on the warp-wire, and means for threading the woof-wire through the clip so held.

27. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of a clip-chuteway for each warp-wire, means for holding the clips received from the chuteway rigidly in position upon the warp-wire, means for threading through the clip so held the woof-wire, and means for bending the clip and the woof-wire after the threading of the woof-wire.

28. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of a device for holding the clips in position upon the warp-wires, means for threading through the clips so held the woof-wire from a continuous roll of wire, and means for cutting off the woof-wire from the main roll after the threading.

29. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of means for holding in exact position upon the wire the metal clips, and means for threading through the clip so held the woof-wire, and a reciprocating punch coacting with a die-block for bending out the clip to a locking position upon the woof-wire.

30. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of a device for holding the clips in position to be threaded upon the warp-wires, and means for threading through the clips so held the woof-wire, and reciprocating punches coacting with a movable die for bending out the clips upon the woof-wire.

31. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of devices for holding in exact position the warp-wires, and devices for holding upon the warp-wires the clips, and means for threading through the clips so held the woof-wire, and means for bending out the clips to a locking position upon the warp-wires, and means for positively releasing and freeing from the holding, threading, and bending devices, the wires thus fixed together.

32. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of means for holding the warp-wires, and means for holding in exact position upon the warp-wires so held the clips, and an inclosed guideway for directing the passage of the woof-wire to the apertures in the clips, and means for threading the woof-wire through this aperture and through the clips.

33. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of means for holding the warp-wires, and means for holding in exact position upon the warp-wires so held the clips, and an inclosed guideway for directing the passage of the woof-wire to the apertures in the clips, and means for threading the woof-wire through this aperture and through the clips, and means for opening the inclosed guideway for the discharge of the woof-wire after threading.

34. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of means for holding the clips and woof-wires together in exact position for threading, and a guideway for directing the course of the woof-wire in threading, with intermittent actuated feed-rolls for feeding the woof-wire across through the clips.

35. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of means for holding the clips and woof-wire together in position for threading, and a plurality of sets of feed-rolls located at different points in the path of the travel of the woof-wire for feeding across the woof-wire.

36. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips, of devices for holding the clips and woof-wires together in position for threading, and a plurality of sets of feed-rolls for feeding across through the clips the woof-wires, and means for releasing some of the rolls from contact with the woof-wire after threading, thereby permitting the free discharge of the threaded woof-wire.

37. The combination with a wire-fence machine adapted to secure the fabric-wires together at their crossing-points by metal clips and having a series of devices for holding a series of clips astride a series of warp-wires, a guide for directing a woof-wire through the series of clips, of clip-forming dies, and a chuteway or magazine receiving from the dies in regular position the clips as discharged by the dies.

38. In a machine for manufacturing woven or stay wire fence, wherein the transverse or stay wires are secured to the fence or strand wires by sheet-metal clips through which the stay-wires are inserted, the combination with means for holding a series of strand-wires in line with each other, with devices for holding a series of clips astride the strand-wires and in line with each other, and devices for guiding or directing a stay or woof wire through the series of metal clips, substantially as specified.

39. In a machine for manufacturing woven or stay wire fence, wherein the transverse or stay wires are secured to the fence or strand wires by sheet-metal clips through which the stay-wires are inserted, the combination with means for holding a series of strand-wires in line with each other, with devices for holding a series of clips astride the strand-wires and in line with each other, devices for guiding or directing a stay or woof wire through the series of metal clips, and devices for spreading or bending the clips to tighten them on the fence-wires and stay-wire, substantially as specified.

40. The combination with a series of devices for holding a series of strand-wires in line with each other, of a series of devices for holding a series of clips astride the fence-wire and in line with each other, and a two-part opening and closing guide for directing the stay-wire through the series of clips, substantially as specified.

41. The combination with a series of devices for holding a series of strand-wires in line with each other, of a series of devices for holding a series of clips astride the fence-wire and in line with each other, of a two-part opening and closing guide for directing the stay-wire through the series of clips, and cutters for severing the stay from the stay-wire, substantially as specified.

42. The combination with a series of devices for holding a series of strand-wires in line with each other, of a series of devices for holding a series of clips astride the fence-wire and in line with each other, of a two-part opening and closing guide for directing the stay-wire through the series of clips, and feed devices for the stay wire, substantially as specified.

43. The combination with a series of devices for holding a series of strand-wires in line with each other, of a series of devices for holding a series of clips astride the fence-wire and in line with each other, a two-part opening and closing guide for directing the stay-wire through the series of clips, and a series of feed devices for the strand-wires, substantially as specified.

44. The combination with a series of devices for holding a series of strand-wires in line with each other, of a series of devices for holding a series of clips astride the fence wire and in line with each other, a two-part opening and closing guide for directing the stay-wire through the series of clips, and a series of devices for setting the clips to fasten them on the stay and strand wires, substantially as specified.

45. The combination with a series of devices for holding a series of strand-wires in line with each other, of a series of devices for holding a series of clips astride the fence-wire and in line with each other, of a two-part opening and closing guide for directing the stay-wire through the series of clips, and a device for bending the end of the stay-wire about the marginal wire of the fabric, substantially as specified.

46. The combination with a series of guides or chutes for the clips, of a series of devices for feeding the clips one by one, a series of devices for holding a series of clips in line with each other astride the series of strand-wires, and a two-part opening and closing guide for directing a stay or woof wire through the series of clips, substantially as specified.

47. The combination with a series of guides or chutes for the clips, of a series of devices for feeding the clips one by one, a series of devices for holding a series of clips in line with each other astride the series of strand-wires, a two-part opening and closing guide for directing a stay or woof wire through the series of clips, and a series of devices for setting or bending the clips, substantially as specified.

48. The combination with a series of guides or chutes for the clips, of a series of devices for feeding the clips one by one, a series of devices for holding a series of clips in line with each other astride the series of strand-wires, a two-part opening and closing guide for directing a stay or woof wire through the series of clips, and devices for feeding the stay-wire through said guide, substantially as specified.

49. The combination with a series of guides or chutes for the clips, of a series of devices for feeding the clips one by one, a series of devices for holding a series of clips in line with each other astride the series of strand-wires, a two-part opening and closing guide for directing a stay or woof wire through the series of clips, devices for feeding the stay-wire through said guide, and a series of clip-bending devices, substantially as specified.

50. The combination with a series of guides or chutes for the clips, of a series of devices for feeding the clips one by one, a series of devices for holding a series of clips in line with each other astride the series of strand-wires, a two-part opening and closing guide for directing a stay or woof wire through the series of clips, devices for feeding the stay-wire through said guide, a series of clip-bending devices, and devices for cutting the stay from the stay-wire, substantially as specified.

51. The combination with a series of guides or chutes for the clips, of a series of devices for feeding the clips one by one, a series of devices for holding a series of clips in line with each other astride the series of strand-wires, a two-part opening and closing guide for directing a stay or woof wire through the series of clips, devices for feeding the stay-wire through said guide, a series of clip-bending devices, devices for cutting the stay from the stay-wire, and a drum or reel for winding up the fabric, substantially as specified.

52. The combination with a series of devices for holding a series of clips astride a series of strand-wires in line with each other, of a device for guiding or directing a stay-wire through the series of clips, and mechanism for swaging or bending the clips to fasten them in position, substantially as specified.

53. The combination with a series of devices for holding a series of clips astride a series of strand-wires in line with each other, of a device for guiding or directing a stay-wire through the series of clips, mechanism for swaging or bending the clips to fasten them in position, a series of clip-feed chutes or guides, a series of clip-feed devices, and mechanism for delivering the clip-feed chutes or guides, substantially as specified.

54. The combination with a series of chutes or guides for the clips, a series of clip-feed devices, a series of devices for holding a series of clips in line with each other, a series of guides or devices for holding or supporting a series of warp-wires in position, and a series of devices for assembling the clips and warp-wires, substantially as specified.

55. The combination with a series of chutes or guides for the clips, a series of clip-feed devices, a series of devices for holding a series of clips in line with each other, a series of guides or devices for holding or supporting a series of warp-wires in position, a series of devices for assembling the clips and warp-wires, a guide for directing the woof-wire through the series of clips, substantially as specified.

56. The combination with a series of chutes or guides for the clips, a series of clip-feed devices, a series of devices for holding a series of clips in line with each other, a series of guides or devices for holding or supporting a series of warp-wires in position, a series of devices for assembling the clips and warp-wires, a guide for directing the woof-wire through the series of clips, and devices for feeding the woof-wire forward at intervals, substantially as specified.

57. The combination with a series of chutes or guides for the clips, a series of clip-feed devices, a series of devices for holding a series of clips in line with each other, a series of guides or devices for holding or supporting a series of warp-wires in position, a series of devices for assembling the clips and warp-wires, a guide for directing the woof-wire through the series of clips, devices for feeding the woof-wire forward at intervals, and a series of devices for feeding the warp-wires forward at intervals, substantially as specified.

58. The combination with a series of chutes or guides for the clips, a series of clip-feed devices, a series of devices for holding a series of clips in line with each other, a series of guides or devices for holding or supporting a series of warp-wires in position, a series of devices for assembling the clips and warp-wires, a guide for directing the woof-wire through the series of clips, devices for feeding the woof-wire forward at intervals, a series of devices for feeding the warp-wires forward at intervals, and a series of devices for setting or bending the series of clips, substantially as specified.

59. The combination with a series of chutes or guides for the clips, a series of clip-feed devices, a series of devices for holding a series of clips in line with each other, a series of guides or devices for holding or supporting a series of warp-wires in position, a series of devices for assembling the clips and warp-wires, a guide for directing the woof-wire through the series of clips, devices for feeding the woof-wire forward at intervals, a series of devices for feeding the warp-wires forward at intervals, a series of devices for setting or bending the series of clips, and devices for cutting off the woof-wire, substantially as specified.

60. The combination with a series of chutes or guides for the clips, a series of clip-feed devices, a series of devices for holding a series of clips in line with each other, a series of guides or devices for holding or supporting a series of warp-wires in position, a series of devices for assembling the clips and warp-wires, a guide for directing the woof-wire through the series of clips, devices for feeding the woof-wire forward at intervals, a series of devices for feeding the warp-wires forward at intervals, a series of devices for setting or bending the series of clips, devices for cutting off the woof-wire, and a device for bending the woof-wire about the marginal clip, substantially as specified.

61. The combination with a series of chutes or guides for the clips, a series of clip-feed devices, a series of devices for holding a series of clips in line with each other, a series of guides or devices for holding o. supporting a series of warp-wires in position, a series of devices for assembling the clips and warp-wires, a guide for directing the woof-wire through the series of clips, devices for feeding the woof-wire forward at intervals, a series of devices for feeding the warp-wires forward at intervals, a series of devices for setting or bending the series of clips, devices for cutting off the woof-wire, a device for bending the woof-wire about the marginal clip, and a drum or reel for taking upon the finished fabric, substantially as specified.

62. The combination with a series of devices for holding a series of clips in line with each other, and devices for holding a series of warp-wires in line with each other, and means for assembling the clips and warp-wires, substantially as specified.

63. The combination with a series of devices for holding a series of clips in line with each other, and devices for holding a series of warp-wires in line with each other, means for assembling the clips and warp-wires, and a guide for the woof-wire, substantially as specified.

64. The combination with a series of devices for holding a series of clips in line with each other, and devices for holding a series of warp-wires in line with each other, means for assembling the clips and warp-wires, a guide for the woof-wire, and a series of devices for bending the clips, substantially as specified.

65. The combination with a series of devices for holding a series of clips in line with each other astride a series of strand-wires, with means for threading the warp-wires through the series of clips, and a series of clip-bending devices for fixing the clips in position on the warp-wire and strand-wires, substantially as specified.

66. The combination with a series of devices for feeding a series of strand-wires forward at intervals, with a device for feeding a transverse or woof wire across the strand-wires, and a series of devices for feeding a series of clip-strips forward at intervals, substantially as specified.

67. The combination with a series of devices for feeding a series of strand-wires forward at intervals, with a device for feeding a transverse or woof wire across the strand-wires, and a series of devices for feeding a series of clip-strips forward at intervals, and a series of devices for cutting clips from the series of clip-strips, substantially as specified.

68. The combination with a series of clip-strip-feed devices and a series of clip-cutters, of a series of devices for bending the clips to secure them in place at the crossings of the strand and stay wires, substantially as specified.

69. In a woven-wire-fence machine, the combination with a series of devices for bending a series of clips to secure them in position at the crossings of the series of strand-wires and the stay-wire, of mechanism for automatically operating the said series of clip-bending devices, substantially as specified.

70. In a woven-wire-fence machine, the combination with a series of devices for bending a series of clips to secure them in position at the crossings of the series of strand-wires and the stay-wire, of mechanism for automatically operating the said series of clip-bending devices, and a series of devices for cutting a series of clips from a series of clip-strips, substantially as specified.

71. The combination in a woven-wire-fence machine wherein the stay-wire is secured to a series of strand-wires by a series of clips, of mechanism for supporting and feeding a series of strand-wires, with mechanism for guiding and feeding a transverse or stay wire across the strand-wires, and mechanism for bending a series of clips to secure them in position on the stay and strand wires at the crossings of the same, substantially as specified.

72. The combination in a woven-wire-fence machine wherein the stay-wire is secured to a series of strand-wires by a series of clips, of mechanism for supporting and feeding a series of strand-wires, with mechanism for guiding and feeding a transverse or stay wire across the strand-wires, mechanism for bending a series of clips to secure them in position on the stay and strand wires at the crossings of the same, and a series of clip cutting and forming dies, substantially as specified.

73. The combination in a woven-wire-fence machine wherein the stay-wire is secured to a series of strand-wires by a series of clips, of mechanism for supporting and feeding a series of strand-wires, with mechanism for guiding and feeding a transverse or stay wire across the strand-wires, mechanism for bending a series of clips to secure them in position on the stay and strand wires at the crossings of the same, a series of clip cutting and forming dies, and a series of clip-strip-feed devices, substantially as specified.

74. In a machine for making woven-wire fence wherein the stay-wire is secured to the strand-wires by a series of metal clips, the combination with mechanism for assembling the clips, stay-wire and strand-wires, with mechanism for bending the clips to secure them on the strand and stay wires at the crossings of the same, substantially as specified.

75. In a machine for making woven-wire fence wherein the stay-wire is secured to the strand-wires by a series of metal clips, the combination with mechanism for assembling the clips, stay-wire and strand-wires, with mechanism for bending the clips to secure them on the strand and stay wires at the crossings of the same, and mechanism for cutting the clips from a series of clip-strips, substantially as specified.

76. The combination with a series of devices for feeding a series of strand-wires, of a guide and feed device for the stay-wire, and a series of mechanisms for bending a series of clips and a stay-wire in respect to a series of strand-wires for securely uniting the clips and stay-wire to the strand-wires, substantially as specified.

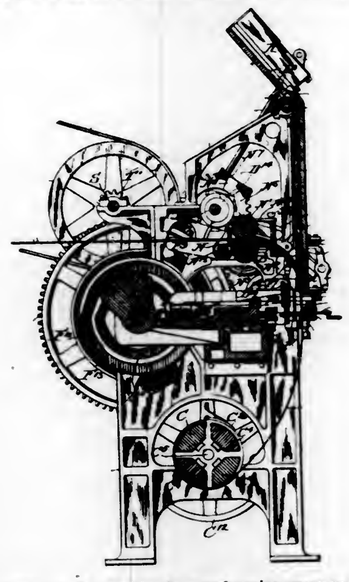
77. The combination with a series of devices for bending a series of clips and a stay-wire in respect to a series of strand-wires, of means for producing slack in the stay-wire to give the stock consumed in forming the bends in the stay-wire, substantially as specified.

78. In a machine for making woven-wire fence wherein the stay-wire is secured to the series of strand-wires by a series of clips, a series of devices for forming bends in the stay-wire at the crossings of

the stay-wire with the strand-wire, in combination with devices for feeding the strand-wires forward and a take-up reel for the finished fabric substantially as specified.

610,217. MACHINE FOR MAKING WOVEN-WIRE FENCING.

WILLIAM R. WILLIAMS, Chicago, Ill., assignor to Cory R. Robinson, Joliet, Ill. Filed Dec. 17, 1897. Serial No. 662,325. (No model.)



Claim.—1. In a machine for manufacturing woven or stay wire fence, having the cross or stay wires secured to the strand-wires by metal clips through which the stay-wires are threaded, the combination with a series of guides for a series of fence or strand wires, with a series of guides for the clips, a series of sets of gates or slides for opening and closing the clip guides and feeding the clips one by one therefrom, a series of clip carriers and holders for moving the clips into position for receiving the stay-wire and holding them with their openings through which the stay-wire is to be threaded accurately in line with each other, a sectional two-part opening and closing guide for the stay-wire to direct it through the openings in the series of clips, a series of pairs of dies for swaging, bending or crimping the strand-wires, clips and stay-wire, a pair of cutters or knives for cutting the surplus stock from the free end of the stay, a folder for bending the free end of the stay about the marginal clip at one edge of the fence or fabric, a pair of cutters or knives for severing the stay from the stay-wire, a folder for bending the severed end of the stay about the marginal clip at the other edge of the fence or fabric, a feed device for the stay-wire, a series of feed devices for the strand-wires, a take-up drum or reel, a series of magazines in which the clips are held in bulk each provided with devices for arranging and delivering the clips in position to enter the clip-guide, substantially as specified.

2. The combination with a series of guides for the strand-wires, of a series of guides for the clips, a series of clip carriers and holders, and a sectional two-part opening and closing guide for the stay-wire to thread or direct it through the clips, substantially as specified.

3. The combination with a series of guides for the strand-wire, of a series of clip-holders, and a sectional two-part opening and closing guide for the stay-wire, substantially as specified.

4. The combination with a series of devices for holding a series of clips in line with each other astride a series of strand-wires, of an opening and closing sectional two-part guide for directing the stay-wire through the clips, substantially as specified.

5. The combination with a series of devices for holding a series of clips in line with each other astride a series of strand-wires, of an opening and closing sectional two-part guide for directing the stay-wire through the clips, and feed devices for the stay-wire, substantially as specified.

6. The combination with a series of devices for holding a series of clips in line with each other astride a series of strand-wires, of an opening and closing sectional two-part guide for directing the stay-wire through the clips, and a series of devices for feeding the strand-wires, substantially as specified.

7. The combination with a series of devices for holding a series of clips in line with each other astride a series of strand-wires, of an opening and closing sectional two-part guide for directing the stay-wire through the clips, feed devices for the stay-wire, and a series of devices for feeding the strand-wires, substantially as specified.

8. The combination with a series of guides for the strand-wire of a series of clip-holders, a sectional two-part guide for the stay-wire, and a series of pairs of dies for setting the clips rigidly in position, substantially as specified.

9. The combination with a series of guides for the strand-wire, of a series of clip-holders, a sectional two-part opening and closing guide for the stay-wire, and a stay-wire-feed device, substantially as specified.

10. The combination with a series of guides for the strand-wire, of a series of clip-holders, a sectional two-part opening and closing guide for the stay-wire, and a series of devices for feeding the strand-wires, substantially as specified.

11. The combination with a series of guides for the strand-wire, of a series of clip-holders, a sectional two-part opening and closing guide for the stay-wire, a stay-wire-feed device, and a series of devices for feeding the strand-wires, substantially as specified.

12. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, substantially as specified.

13. The combination with a strand-wire guide, of a clip-guide extending tangentially thereto to feed the clip astride the strand-wire, substantially as specified.

14. The combination with a strand-wire guide, of a clip-guide extending tangentially thereto to feed the clip astride the strand-wire, and feed gates or slides to feed the clips one by one, substantially as specified.

15. The combination with a strand-wire guide, of a clip-guide extending tangentially thereto to feed the clip astride the strand-wire, feed gates or slides to feed the clips one by one, and a stop gate or slide to arrest the clip in position, substantially as specified.

16. The combination with a strand-wire guide, of a clip-guide extending tangentially thereto to feed the clip astride the strand-wire, feed gates or slides to feed the clips one by one, a stop gate or slide to arrest the clip in position, and a clip carrier and holder, substantially as specified.

17. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, and a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, substantially as specified.

18. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, and a series of stop gates or slides for arresting the clips, substantially as specified.

19. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, and a series of clip carriers and holders, substantially as specified.

20. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, a series of clip carriers and holders, and a sectional opening and closing two-part stay-wire guide, substantially as specified.

21. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, a series of clip carriers and holders, a sectional opening and closing two-part stay-wire guide, and a series of pairs of dies, substantially as specified.

22. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, a series of clip carriers and holders, a sectional opening and closing two-part stay-wire guide, a series of pairs of dies, and devices for feeding the strand-wires, substantially as specified.

23. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, a series of clip carriers and holders, a sectional opening and closing two-part stay-wire guide, a series of pairs of dies, devices for feeding the strand-wires, devices for feeding the stay-wire, substantially as specified.

24. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, a series of clip carriers and holders, a sectional opening and closing two-part stay-wire guide, a series of pairs of dies, devices for feeding the strand-wires, devices for feeding the stay-wire, and a take-up drum or reel, substantially as specified.

25. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, a series of clip carriers and holders, a sectional opening and closing two-part stay-wire guide, a series of pairs of dies devices for feeding the strand-wires, devices for feeding the stay-wire, and a folder for the free end of the stay-wire, substantially as specified.

26. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand-wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, a series of clip carriers and holders, a sectional opening and closing two-part stay-wire guide, a series of pairs of dies, devices for feeding the strand-wires, devices for feeding the stay-wire, and a pair of knives for severing the stay from the stay-wire, substantially as specified.

27. The combination with a series of strand-wire guides, of a series of clip-guides extending each tangentially or at an acute angle to the strand wire guides, whereby the clips are assembled astride the fence-wires, a series of feed gates or slides for feeding the clips one by one from each of said clip-guides, a series of stop gates or slides for arresting the clips, a series of clip carriers and holders, a sectional opening and closing two-part stay-wire guide, a series of pairs of dies, devices for feeding the strand-wires, devices for feeding the stay-wire, a pair of knives for severing the stay from the stay-wire, and a folder for the severed end of the stay, substantially as specified.

28. The combination with feed devices for the stay-wire, of a series of successively-acting pairs of dies for setting the clips, substantially as specified.

29. The combination with a sectional opening and closing two-part guide for the stay-wire, of a series of successively-acting pairs of dies for setting the clips, substantially as specified.

30. The combination with a sectional opening and closing two-part guide for the stay-wire, of a series of successively-acting pairs of dies for setting the clips, and a series of movable clip-holders, substantially as specified.

31. In a clip-stay-wire-fence machine, a pair of dies having die-cavities for simultaneously bending or shaping the clip, stay-wire, and strand-wire, in combination with means for automatically operating the same at intervals as required substantially as specified.

32. The combination with a clip-guide, of a box or magazine for containing the clips in bulk, and means for arranging and delivering the clips in position to enter said clip-guide, and mechanism for automatically vibrating or tilting said magazine substantially as specified.

33. A magazine or holder for assembling and delivering clips to a clip-guide having a longitudinal saddle-bar astride which the clips fall and slide upon in passing out of the magazine, and mechanism for automatically vibrating or tilting said magazine substantially as specified.

34. In a magazine or holder for assembling clips and delivering them to a guideway, a saddle-bar fixed in the bottom of the magazine in alinement with the gate for the escape of the clips, and a fixed guideway located to receive the clips in succession as they are discharged from the saddle-bar, and mechanism for automatically vibrating or tilting said magazine substantially as specified.

35. The combination with a magazine or hopper for holding and carrying a quantity of clips, of a slide for directing the fall of the clips in line to an escape-aperture, and said escape-aperture provided with a gate for shutting off the clips when desired, and mechanism for automatically vibrating or tilting said magazine substantially as specified.

36. The magazine or hopper for holding a quantity of clips, and mounted to be vibrated or oscillated in a manner to agitate the clips held therein, and having an escape-orifice so shaped that the clips can only escape therefrom in succession in regular order, combined with a guideway for receiving the clips as they escape from the way or guide, and mechanism for automatically vibrating or tilting said magazine substantially as specified.

37. The combination of a magazine or hopper for holding a quantity of clips, with mechanism for giving the hopper a vibrating or oscillating motion, an escape-orifice for the clips so shaped that the clips can escape only in succession and in regular position, a guideway for receiving the clips in the order that they escape from the magazine, with a gateway for shutting off the clips from the orifice actuated by coming in contact with the clips in the guideway when said guideway is filled therewith, substantially as specified.

38. The magazine or hopper for holding a quantity of clips mounted upon a shaft in a manner adapted to be oscillated or vibrated by the movement of the shaft, and having a clip passage-way for the escape of the clips from the magazine, and with a fixed guideway for receiving the clips as they escape from the magazine, said guideway adapted to receive the clips in a variety of positions of the magazine, substantially as specified.

39. The combination of a magazine or hopper for holding a quantity of clips, and mounted to be oscillated or vibrated in manner to agitate the clips within the hopper, with a guideway in the bottom of the hopper adapted to catch the clips in a determined position and direct their escape from the magazine in succession and regular order, an orifice so shaped as to permit the escape of the clips only in the position determined by the guideway, a fixed clip-guide for receiving the clips as they escape from the magazine, and mechanism for automatically vibrating or tilting said magazine substantially as specified.

40. The combination of a magazine or hopper for holding a quantity of clips and adapted to be vibrated or oscillated for the purpose of agitating the clips within the hopper, having an escape-orifice so shaped as to prevent the escape of the clips in all but a certain determined position, with a guideway for directing the clips to the escape-orifice in the desired position, and a fixed guideway for receiving the clips as they escape from the magazine, a gate for shutting off the escape of the clips from the magazine, said gateway being automatically operated by engagement with the clips held in the fixed guideway, and a stop for holding the said gate closed until the clips are discharged from the fixed guideway sufficiently to prevent their engagement with the gate, substantially as specified.

41. A magazine or hopper for holding a quantity of clips, and adapted to be vibrated or oscillated for the purpose of agitating the clips held therein, having a guideway and an escape-orifice adapted to direct any of the clips from the magazine, combined with a gate for shutting off the escape of the clips when desired, said gateway held normally open by a spring and locked shut at desired intervals by means of a stop and spring-catch, substantially as specified.

42. The combination with a magazine or hopper for holding a quantity of clips, and mounted in a manner to be vibrated or oscillated to agitate the clips held therein, of a guideway and escape-orifice so shaped as to permit the escape of the clips in a determined position only, a guideway for receiving the clips as they escape from the orifice, a gate for automatically shutting off the escape of the clips from the magazine, said gate mounted to be moved to a position in contact with the clips held in the receiving-guideway, and to engage any clips that may be located in its path and be moved thereby to a position shutting off the escape of the clips from the magazine, a lock for holding the said gate so closed until the clips in the receiving-guideway have passed beyond the point of engagement with the gate, and an unlocking-stop fixed in position to unlock the gate at certain intervals of the movement of the magazine and gate, substantially as specified.

43. A clip-guideway for holding the clips in succession in a determined position, combined with a clip-feed device mounted in the path of the guideway and adapted to disengage a single clip at a time, with a secondary clip-feed device for receiving the clips as they are disengaged by the first feed device and holding them in position to be acted upon by other mechanism of the machine and mechanism for alternately operating said feed devices substantially as specified.

44. A clip-guideway for holding the clips in succession in a determined position, combined with a clip-feed device located in the path of the guideway, and adapted to disengage a single clip at a time, with a secondary clip-feed device also located in the path of the guideway for receiving the clip as disengaged by the first feed device, said feed devices being operated alternately, substantially as specified.

45. The combination of a clip-guideway for holding the clips in

succession in a determined position, with a strand-wire guideway whereby the strand-wire is directed in a position to be engaged by the clips as they descend in the clip-guideway, substantially as specified.

46. A clip-guideway adapted to hold the clips in succession and in a determined position combined with a strand-wire guideway merging into and forming a part of the clip-guideway, and a clip-feed device located at or near the final junction of the clip-guideway for the purpose of disengaging the clip from the clip-guideway and engaging it on the strand-wire, substantially as specified.

47. The combination with a clip-guideway for directing the clips in a position to engage the strand-wire, of a strand-wire guideway for directing the strand-wire in a position in relation to the clips as directed by the clip-guideway, and a clip-feed device adapted to hold the clip in exact position to engage the strand-wire, and also adapted to engage the strand-wire and hold it free to permit the clip to fall freely by gravity to the position upon the strand-wire, substantially as specified.

48. The combination with a clip-guideway for holding the clips in succession in a desired position, of a strand-wire guideway merging into and forming a part of the clip-guideway, with a clip-feed device for discharging the clip from the guideway, said device being composed of an upper apertured plate and a lower notched plate, the bottom of the notch of the lower notched plate being adapted to engage the strand-wire to hold it in registering position to be engaged by the clip, substantially as specified.

49. The combination of a clip-guideway for directing the clips in succession in a desired position, with a clip-feed device for disengaging a single clip at a time from the guideway, a strand-wire guideway for directing the strand-wire in position to be engaged by the clip as released from the clip-guideway by the clip-feed device, and a clip-holder for engaging the clip as discharged by the clip-feed device, substantially as specified.

50. The combination of a clip guideway for holding the clips in succession in a desired position, with a feed device for disengaging a single clip at a time from a clip-guideway, a strand-wire guideway for directing the strand-wire to a position to be engaged with the clip as discharged from the clip guideway by the clip-feed device, and a clip-holder for receiving the clip as discharged by the clip-feed device and holding it upon the strand-wire in a position of registration for receiving the stay-wire, substantially as specified.

51. The combination with a clip-guideway for directing the clips in succession in a desired position, of a clip-feed device for discharging a single clip at a time from the clip-guideway, a strand-wire guideway for directing the strand-wire in position to be engaged by the clip as discharged by the clip-feed device, a clip holder and carrier adapted to hold the clip in engagement with the strand-wire when the clip is discharged by the feed device, and adapted to be reciprocated and carry the clip to a position of registration to receive a stay-wire, substantially as specified.

52. The combination with a clip-guideway for directing the clips to a position upon the strand-wire, of a strand-wire guideway for directing the strand-wire to be engaged by the clip as delivered by the guideway, a clip holder and carrier for receiving the clip from the guideway and holding it in engagement with the strand-wire and carrying it to a position in advance of the clip-guideway, a stay-wire guideway adapted to direct the stay-wire through the clip so held upon the strand-wire by the holder and carrier in its advanced position, substantially as specified.

53. A clip carrier and holder made in two parts, one part adapted to reciprocate longitudinally to and from the other part, and both parts adapted to reciprocate vertically, substantially as specified.

54. A clip-holder made in two parts, one part adapted to move in relation to the other in engaging the clip, and one part provided with a surface or contact-point for engaging the strand-wire, and the other part provided with apertures for receiving and directing the stay-wire to a clear passage beside the strand-wire in threading the stay-wire through the clip so held by the clip-holder, substantially as specified.

55. A clip-holder made in two parts, one part of which is made to conform to the outer sides of the clip, and the other part to the inner sides, and the part which engages the inner sides being provided with a contact-point for engaging the strand-wire to hold it free of the apertures provided in the clip for the stay-wire, substantially as specified.

56. A clip-holder made in two parts movable in relation to each other, and shaped to engage and positively hold the clip when the two parts are together, and to release the clip when the parts are separated, in combination with means for automatically operating the same at intervals as required, substantially as specified.

57. The combination with a clip-guideway terminating at a clip-feed device, of a strand-wire guideway directing the strand-wire to a position at the clip feed device, a stay-wire guideway located across the path of the strand-wire in advance of the clip-guideway, a clip-feed device, and a clip carrier and holder reciprocating to and from the clip-feed device and to and from the stay-wire guideway, substantially as specified.

58. In combination a clip-guideway for holding and delivering the clips in a desired position, a clip-feed device for disengaging a single clip at a time from the clip-guideway, a strand-wire guideway for directing the strand-wire to a position to be engaged by the clip at the clip-feed device, a clip holder and carrier for engaging the clip upon the strand-wire and carrying it to a forward position on the strand-wire, and a strand-wire-feed device operating to feed the strand-wire during the interval of movement of the clip-carrier, whereby the clip and the strand-wire move forward simultaneously, substantially as specified.

59. In combination a clip-guideway for directing the clips to a position of engagement with the strand-wire, a strand-wire guideway for directing the strand-wire to a position to be engaged by the clip and released from the clip-guideway, a die for setting the clip upon the strand-wire, located in the path of the strand-wire in advance of the clip-guideway, and a clip-carrier for carrying the clip from the terminus of the guideway to a position at the die, substantially as specified.

60. In combination a clip-guideway for directing the clips to a position to engage the strand-wire, a strand-wire guideway for directing the strand-wire to a position in relation to the clip as held by the clip-guideway, a stay-wire guideway located across the path of travel of the strand-wire in advance of the terminus of the clip-guideway, a die for setting the clip upon the strand-wire located adjacent to the line of the stay-wire guideway, and mechanism for carrying the clip from the terminus of the guideway to and in line with the stay-wire guideway, substantially as specified.

61. In combination a clip-guideway for directing the clips to a position of engagement with the strand-wire, a strand-wire guideway for directing the strand-wire to a position to be engaged by the clip held in the guideway, a stay-wire guideway for directing the travel of the stay-wire across the path of the strand-wire, a clip-holder for holding the clip upon the strand-wire after delivery by the clip-guide in registering position with the stay-wire guide, and devices for feeding the stay-wire through the stay-wire guide and the clip held by the clip-holder, substantially as specified.

62. In combination a stay-wire guide for guiding the stay-wire across the path of the strand-wires, a series of dies located adjacent to the stay-wire guide and along the path of travel of the strand-wires, a series of clip-holders for holding the clips in engagement upon the strand-wires and in line with the stay-wire guideway, said clip-holder being adapted to hold the clip during the threading of the stay-wire through the clip, and to release the clip and move clear therefrom after the threading, and a series of movable dies or slides adapted to swage and bend the clip and stay-wire to a locking position upon the strand-wire, substantially as specified.

63. In combination a stay-wire guideway for guiding the travel of the stay-wire across the paths of the strand-wires, a series of dies fixed adjacent to the path of the stay-wire, mechanism for holding the clips upon the strand-wires in registering position with the stay-wire guideway, whereby the stay-wire may be directed through the apertures in the clips, with a series of reciprocating dies or slides adapted to move forward and swage and bend the clips and stay-wire after the threading of the stay-wire, substantially as specified.

64. In combination a stay-wire guideway for directing the travel of the stay-wire across the paths of travel of the strand-wires, a series of fixed dies located adjacent to the stay-wire guideway, a series of movable dies or slides adapted to engage the clips and wire between it and the fixed dies for the purpose of setting the clips and stay wires upon the strand-wires, in combination with mechanism for automatically operating the movable dies at intervals, substantially as specified.

65. In combination a stay-wire guideway for directing the path of travel of the stay-wire across the paths of travel of the strand-wires, a series of fixed dies located adjacent to the stay-wire guideway, with a series of reciprocating dies adapted to coact with the fixed dies in setting the clips and stay-wire upon the strand-wires, with means for operating successively the reciprocating dies in order that the surplus wire required for the bending of the stay-wire in the fixing of the strand-wire may be drawn from the stay-wire stock without excessive stretch of the stay, substantially as specified.

66. In a clip-stay-wire-fence machine, the combination with a sectional guide for the stay-wire, of a series of pairs of dies operating between the sections of said guide and adapted each pair to simultaneously bend or shape the clip and strand-wire, substantially as specified.

67. In a clip-stay-wire-fence machine, the combination with a series of strand-wire guides, of a series of clip-guides, a stay-wire guide, devices for holding a series of clips in line with each other astride the strand-wires, and means for feeding the stay-wire alternately for a long and short stay, substantially as specified.

68. The combination with guides for a series of strand-wires, of guides for a series of clips, a guide for the strand-wire, a device for holding a series of clips in line with each other astride the strand-wires, and means for alternately shutting off certain of the clip-guides, to adapt the mechanism to apply alternately long and short stays, substantially as specified.

69. The combination with a series of clip-guides, of means for alternately shutting off certain of said guides to adapt the mechanism to apply long and short stays, substantially as specified.

70. The combination with a stay-wire guide, of feed devices or rolls for the stay-wire, a series of successively-acting dies for setting the clips, and means for relieving the tension or grip of the feed rolls or devices on the stay-wire when the dies are operating, substantially as specified.

71. The combination with a series of dies for setting a series of clips on a series of strand-wires and a stay-wire, of a pair of folders for bending the two ends of the stay about the marginal clips, substantially as specified.

72. The combination with a series of clip-setting dies, of mechanism for successively operating the dies, substantially as specified.

73. In a clip-stay-wire-fence machine, the combination with a series of strand-wire guides, of a series of clip-holders reciprocating longitudinally of the strand-wires, substantially as specified.

74. In a clip-stay-wire-fence machine, the combination with a series of strand-wire guides, of a series of clip-holders reciprocating longitudinally of the strand-wires, and to and from the same, substantially as specified.

75. In a clip-stay-wire-fence machine, the combination with a series of strand-wire guides, of a series of clip-holders reciprocating longitudinally of the strand-wires, and a guide for the stay-wire having a movable part to permit the guide to release the stay, substantially as specified.

76. In a clip-stay-wire-fence machine, the combination with a series of strand-wire guides, of a series of clip-holders reciprocating longitudinally of the strand-wires, a guide for the stay-wire having a movable part to permit the guide to release the stay, and a take-up drum or reel, substantially as specified.

77. The combination with a clip-guide, of a strand-wire guide and two pairs of clip-feed gates or slides, and means for alternately operating said pairs of feed gates or slides, substantially as specified.

78. The combination with a clip-guide, of a strand-wire guide, and a movable clip-holder, and a stay-wire guide, substantially as specified.

79. The combination with a clip-guide, of a strand-wire guide, a movable clip-holder, a stay-wire guide, and a stay-wire-feed device, substantially as specified.

80. The combination with a clip-guide, of a strand-wire guide, a movable clip-holder, a stay-wire guide, a stay-wire-feed device, and a pair of dies for setting the clips, substantially as specified.

81. The combination with a clip-guide, of a strand-wire guide, a movable clip-holder, a stay-wire guide, a stay-wire-feed device, a pair of dies for setting the clips, and a folder for bending the end of the stay about the clip, substantially as specified.

82. The combination with a clip-guide, of a strand-wire guide, a movable clip-holder, a stay-wire guide, a stay-wire-feed device, a pair of dies for setting the clips, a folder for bending the end of the stay about the clip, and a pair of knives for severing the stay from the stay-wire, substantially as specified.

83. The combination, in a clip-stay-wire-fence machine, of a stay-wire guide, with a pair of cutters for severing the stay from the stay-wire, one of said cutters having a rotary movement to enable it to also serve as a folder to bend the severed end of the stay about the clips, substantially as specified.

84. The combination with stay-wire-feed devices, of a rotary cutter and folder operating to both sever the stay and fold or bend its severed end, substantially as specified.

85. A knockdown take-up drum for a woven or stay wire fence machine, comprising a fixed rotary head, a reciprocating rotary head, a series of loose connecting-bars fitting in recesses in said heads, and a non-reciprocating spider rotating with one of said heads, and adapted to engage the ends of said loose bars to free them from the sliding head when it is withdrawn, substantially as specified.

86. A stay-wire guide, in a fence-machine, in two parts, one part of which is composed of a groove of a section to conform to the stay-wire, and the other part having a flat surface permitting the parts to be articulated in contact with each other without binding upon the stay-wire, substantially as specified.

87. A stay-wire guideway made in two parts, one part having a flat surface and fixed rigidly to the frame and the movable part provided with a groove for engaging the stay-wire and carrying it with it in releasing the stay-wire from the guideway, substantially as specified.

88. The combination of a stay-wire guideway made in two parts, one part fixed and the other movable, the movable part having a groove which engages and carries with it the stay-wire in its movements, with a series of dies located adjacent to the stay-wire guideway, whereby a bend or set is made in or upon the stay-wire by the die, and mechanism for moving the movable part of the stay wire guideway, whereby it carries the stay-wire free from the die, substantially as specified.

89. In combination with a series of strand-wire-feed devices, of stay-wire guideway having a movable part adapted to move the stay-wire in order to release it from the stay-wire guideway, means for moving the stay-wire guideway to release the stay-wire and hold it free to move at the period of operation of the strand-wire-feed devices, whereby the stay is permitted to move in conjunction with the strand-wires, substantially as specified.

90. The combination of a stay-wire guideway with a series of dies located adjacent to the stay-wire guideway, and a series of movable dies coacting therewith in setting the stay-wire upon the strand-wire, and said stay-wire guide provided with engaging surfaces for coacting with the dies in bending and setting the stay-wire to the desired form, substantially as specified.

91. The combination of a set of dies for setting the clips and strand-wires upon the stay-wire, with a folder for folding over the end of the stay-wire upon the clip, said folder acting upon the stay-wire during the period of the pressure or set of the dies, substantially as specified.

92. The combination of a set of dies for setting the clip and stay-wire upon the strand-wire, with a folder for folding the end of the stay-wire upon the clip, said folder being pivoted to turn upon an axis in folding the end of the stay-wire, substantially as specified.

93. The combination with mechanism for setting the clip and stay-wire about the strand-wire, a pivoted folder adapted to swing about a pivot and fold over the end of the stay-wire for the purpose of making a secure joint at the marginal wire, substantially as specified.

94. A pivoted folder adapted to swing about a pivot in folding over the end of the stay-wire, and provided with a cutting edge for severing the stay-wire the desired length for the purpose of folding, substantially as specified.

95. The combination with a pivoted folder and cutter for cutting and folding the ends of the stay-wire, a fixed knife coacting with the cutting edge of the folder and also serving as a guide for directing the feed of the stay-wire stock, substantially as specified.

96. A stay-wire folder for folding the end of the stay-wire and mounted to swing about a pivot in so doing, a lever connected to the folder and pivoted to a reciprocating rod for actuating the folder, substantially as specified.

97. In combination with a folder for folding over the end of the stay-wire, a set of dies for setting and holding the stay-wire upon the strand-wire, one of which is provided with a cavity adapted to permit the folder to enter in folding the stay-wire, substantially as specified.

98. In combination with a stay-wire guideway, a series of dies located adjacent to the stay-wire guideway for setting the clips and stay-wire upon the strand-wire, of a cutter for the stay-wire located adjacent to the stay-wire guideway and adapted to act upon the stay-wire while held in the guideway, and a folder for folding over the end of the stay-wire before the stay-wire is released by the dies and stay-wire guideway, substantially as specified.

99. The combination of a stay-wire-fence mechanism having two independent feeding devices engaging the stay-wire with mechanism for alternately engaging with the wire each of said two sets of feeding devices, substantially as specified.

100. The combination with a pair of feed-rolls, of a driving-shaft for one of them provided with a universal joint, and the bearing for this shaft adjacent to the roll provided with an adjustable box whereby rolls of different diameters may be placed upon the shaft without changing the location in relation to the frame of the point of contact of the rolls with the stay-wire, substantially as specified.

101 The combination of a set of feed-rolls for the stay-wire, with a rocker-shaft for tightening the rolls upon the stay-wire, said rocker-shaft being operated by a cam which varies the tension of the rolls at each interval of operation of the rolls, substantially as specified.

102. The combination with two sets of feeding-rolls for the stay-wire, of a rocker-shaft for alternately tightening the pairs of feed-rolls, substantially as specified.

103. In combination with two sets of feeding-rolls for the stay-wire, a rocker-shaft for alternately tightening each set of rolls, and a cam for actuating the rocker shaft, and provided with two cam-tracks alternately in engagement with the rocker-shaft, substantially as specified.

104. In combination with a take-up drum for the finished fabric, a longitudinally-movable head for engaging the drum, and an ejector provided with projections for discharging the drum from the head during the movement of the head, substantially as specified.

105. In combination with the drum for taking up the finished

fabric, a longitudinally-movable head for engaging the drum, and an ejector for discharging the drum from the head located upon the shaft carrying the head and rotating therewith, substantially as specified.

106. In combination with the drum for taking up the finished fabric, a longitudinally-movable head for engaging the drum, and an ejector for discharging the drum, from the head, located upon the shaft carrying the head and rotating therewith, and a lever for moving the drum-head shaft, substantially as specified.

107. The combination with a stay-wire-feed mechanism adapted to alternately feed a long and a short stay, clip-feed devices adapted to feed alternately a greater and less number of clips to suit the requirements of the different lengths of stays, substantially as specified.

108. In combination with a series of clip-feed devices adapted each to feed single clips at a time, a slide or gate for shutting off alternately a portion of the clips, a stay-wire-feed mechanism, substantially as specified.

109. In combination with a series of sets of feed-rolls for feeding the strand-wires, a counter-shaft intermediately transmitting the power from the driving member to the feed-rolls, an interchangeable gearing for connecting this counter-shaft with the feed-roll shaft, whereby the amount of travel of the feed-rolls may be varied for the purpose of differently spacing the stay-wires upon the strand-wires, substantially as specified.

110. In combination with the large spur-gear-driving cam-shaft, a small driving-pinion by which motion is imparted to the large gear of the machine, a mutilated gear mounted to be operated intermittently from the teeth of the large gear, a large tooth and a mutilated flange upon a large gear, and a large tooth and a stop-block upon the mutilated gear, whereby the intermittent motion is transmitted from the large gear to the mutilated gear, and the pinion is permitted to drive the large gear at all times, substantially as specified.

111. In combination with a series of progressively-operated dies or slides, a bar for automatically and simultaneously retracting the dies or slides, and mechanism for operating the bar substantially as specified.

112. In combination with a series of dies or slides, a series of cams for actuating the dies in their forward movement, and a bar for retracting the dies independently of their cams, substantially as specified.

113. In a clip-stay-wire-fence machine, a series of pairs of dies having each die-cavities for simultaneously bending both the strand-wire and the stay-wire, in combination with means for automatically operating the same at intervals as required, substantially as specified.

114. In a woven-wire-fence machine, the combination with a series of devices for making bends in a series of strand-wires, with a series of devices for making a series of bends in a stay-wire, and mechanism for automatically operating said series of devices, substantially as specified.

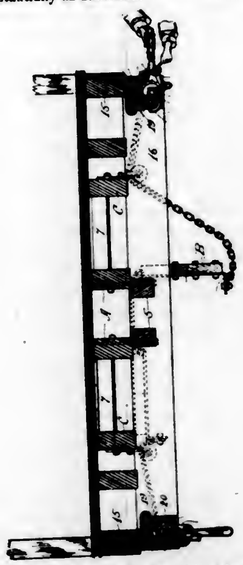
115. In a woven-wire-fence machine, the combination with a series of devices for making bends in a series of strand-wires, with a series of devices for making a series of bends in a stay-wire, and a series of devices for bending a series of clips to secure them on the stay and strand wires at the crossings thereof, and mechanism for automatically operating said series of devices, substantially as specified.

610,218. DUMPING-CAR. HENRY C. WILLIAMSON and HERMAN PRIEM, Michigan City, Ind. Filed Mar. 23, 1898. Serial No. 674,878. (No model.)

Claim.—1. In a dumping-car, the combination with a gate hinged below the car-body and adapted to swing downwardly, and an outwardly-extending projection on the outer edge of said gate, of a chain secured at one end to said projection and passing over a pulley adjacent to said projection and higher than the point of connection of the chain therewith, a shaft mounted in bearings adjacent the side of the car-body and connected with said chain at its other end, and devices for turning said shaft, comprising a ratchet-wheel at one end of same, a pawl engaging said ratchet, a lever carrying devices adapted to engage said pawl to release said ratchet, and a pawl on said lever adapted to engage said ratchet to turn the same, substantially as described.

2. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft, comprising a ratchet-wheel on one end of same, a pawl pivoted to a rigid portion of the car adapted to normally rest in engagement with said ratchet, a lever pivoted adjacent said ratchet and carrying devices for throwing said pawl out of engagement to release said ratchet, and a pawl on said lever adapted to cooperate with said first-named pawl to turn said ratchet, substantially as described.

3. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft, comprising a ratchet-wheel on one end of same, a pawl pivoted to a rigid portion of the car adapted to normally rest in engagement with said ratchet, a lever pivoted adjacent said ratchet and carrying devices for throwing said pawl out of engagement to release said ratchet, a pawl on said lever adapted to cooperate with said first-named pawl to turn said ratchet, and means on said lever for locking said first-named pawl in engagement with said ratchet, substantially as described.



4. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft, comprising a ratchet-wheel on one end of same, a pawl pivoted to a rigid portion of the car adapted to normally rest in engagement with said ratchet, a lever pivoted adjacent said ratchet and carrying devices for throwing said pawl out of engagement to release said ratchet, a pawl on said lever adapted to cooperate with said first-named pawl to turn said ratchet, and an arm on said lever adapted to engage said first-named pawl to lock the same in engagement with said ratchet, substantially as described.

5. In a dumping car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, means for operating said shaft comprising a ratchet-wheel on one end of said shaft, a pawl pivoted to a rigid portion of the car adjacent said ratchet and adapted to normally rest in engagement therewith, a projection on said pawl, an eccentric pivoted adjacent said ratchet and adapted to engage said pawl to throw the same out of engagement with said ratchet to release said shaft and dumping devices, a curved arm on said eccentric adapted to form a hook to engage said projection on said pawl to lock same into engagement with said ratchet, a hand-lever on said eccentric, and a pawl on said hand-lever adapted to be thrown into engagement with said ratchet to turn said shaft, substantially as described.

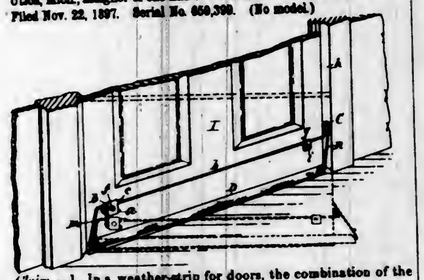
6. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft comprising a ratchet-wheel on one end of said shaft, a pawl pivoted to a rigid portion of the car adjacent said ratchet and adapted to normally rest in engagement therewith, a projection on said pawl, an eccentric pivoted adjacent said ratchet and adapted to engage said pawl to throw the same out of engagement with said ratchet to release said shaft and dumping devices, a curved arm on said eccentric adapted to form a hook to engage said projection on said pawl to lock same into engagement with said ratchet, a hand-lever on said eccentric, a pawl on said hand-lever adapted to be thrown into engagement with said ratchet to turn said shaft, and means for locking said hand-lever and said first-named pawl against movement, substantially as described.

7. In a dumping-car, the combination with a shaft and dumping devices connected therewith and adapted to be operated therefrom, of means for operating said shaft comprising a ratchet-wheel on one end of said shaft, a pawl pivoted to a rigid portion of the car adjacent said ratchet and adapted to normally rest in engagement therewith, a projection on said pawl, an eccentric pivoted on said shaft adjacent said ratchet and adapted to engage said pawl to throw the same out of engagement with said ratchet to release said shaft and

dumping devices, a curved arm on said eccentric adapted to form a hook to engage said projection on said pawl to lock same into engagement with said ratchet, a hand-lever on said eccentric, and a pawl on said hand-lever adapted to be thrown into engagement with said ratchet to turn said shaft, substantially as described.

8. In a dumping-car, a shaft connected with and adapted to operate dumping devices, a ratchet at one end of said shaft, a plate mounted on a rigid portion of the car adjacent said ratchet through which said shaft passes, a pawl pivotally mounted on said plate and adapted to normally rest in engagement with said ratchet, an eccentric pivotally mounted on said shaft adjacent said ratchet and adapted to engage said pawl to throw the same out of engagement with said ratchet to release said shaft and dumping devices, a curved arm on said eccentric adapted to form a hook to engage said projection on said pawl to lock same into engagement with said ratchet, a hand-lever on said eccentric, a pawl on said hand-lever adapted to be thrown into engagement with said ratchet to turn the same, a perforated projection on said hand-lever, a perforated projection on said plate, and a hook provided with seal-wire perforations adapted to pass through said perforations in said projections on said hand-lever and plate when said hand-lever reaches the lower limit of its movement, whereby said shaft and first-named pawl are locked against movement, substantially as described.

610,219. WEATHER-STRIP FOR DOORS. WILLIAM F. WILMOT, Utica, Mich., assignor of one-half to William F. Tomlinson, Milton, Mich. Filed Nov. 22, 1897. Serial No. 659,399. (No model.)



Claim.—1. In a weather-strip for doors, the combination of the integral spring-frame having its upper member rigidly secured to the door at one end and attached at the other end to the door so as to rotate, the lower member of said frame, the fabric strip mounted on said lower member, the projecting arm attached to said members of the frame and adapted to engage the jamb of the door.

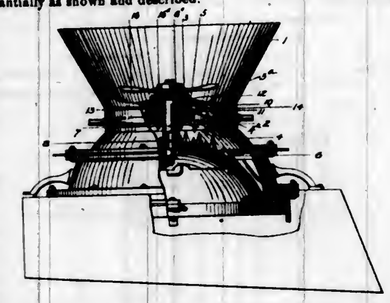
2. In a weather strip, the combination of a quadrangular spring-frame formed of a continuous piece, a plate uniting the meeting ends of said frame in which one of said ends is held from rotation, a fabric strip mounted on said frame, a projecting arm at the end of said frame connected with the members thereof and adapted to engage the jamb of the door, and means for attaching said frame to the door near its lower edge.

3. In a weather-strip for doors, the combination of the quadrangular frame, the upper bar of said frame consisting of a torsion-rod secured to the face of the door so as to rotate at one end only, the lower bar of said frame carrying the fabric strip, the integral projecting arm connected with said torsion-bar and with said lower bar, said arm standing at an angle to the plane of the secured end of the torsion-bar and adapted to engage the jamb of the door to carry said fabric strip against the lower edge thereof substantially as set forth.

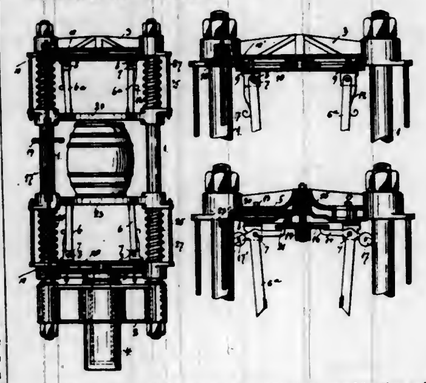
610,220. GRINDING-MILL. JOHN C. WOODCOCK, Chillicothe, Ohio. Filed July 9, 1897. Serial No. 644,007. (No model.)

Claim.—1. In a grinding-mill, the combination of the inner grinding-cone 6 having an upwardly-projecting stem 7, the outer grinding-cone 4 having an apertured hub 5 to receive said stem and spidered at its upper part with teeth on the spider-arms, ring 2 rotatably seated on the outer cone having an apertured hub 3 keyed to the stem 7 and also provided with toothed spider-arms, and two bearing-rings 10 and 11 having horizontal bearing-surfaces and projections 12 to engage the hub 5 and hub 3, substantially as shown and described.

2. In a grinding-mill, the combination of the inner grinding-cone 6 having an upwardly-projecting stem 7, the outer grinding-cone 4 having an apertured hub 5 to receive said stem and spidered at its upper part with teeth on the spider-arms, ring 2 rotatably seated on the outer cone and having an apertured hub 3 keyed to stem 7 and also provided with toothed spider-arms, and two bearing-rings 10 and 11 having horizontal bearing-surfaces and projections 12 to engage hubs 5 and 3, and a depending flange 14 on the upper ring 10, substantially as shown and described.



610,221. MACHINERY FOR HOOPING CASKS, BARRELS, OR THE LIKE. JOHANN ANTSON, Flensburg, Germany. Filed Dec. 7, 1897. Serial No. 661,038. (No model.)



Claim.—1. In a barrel-hooping machine, the combination, with the stationary end plates 2 and 3, and the guide-bars 1 connecting them; of a table 5 slidable on the said bars, plates 23 and 24 slidable on the said bars and operating to clamp the barrel, springs interposed between the said plates and the table and end plate 3 respectively, and driver-arms carried by the said table and end plate 3 and projecting through openings in the said plates 23 and 24, substantially as set forth.

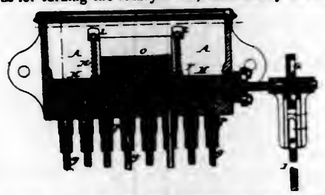
2. In a barrel hooping machine, the combination, with the stationary end plate 3, and the vertical guide-bars 1 secured to it; of a plate 24 slidable on the said guide-bars, means for limiting the downward travel of the said plate, springs interposed between the said plates, and driver-arms carried by the plate 3 and projecting through openings in the plate 24, substantially as set forth.

3. In a barrel-hooping machine, the combination, with stationary guide bars, of a table slidable on the said bars, a plate 23 also slidable on the said bars, springs interposed between the said table and plate, driving-arms carried by the said table and projecting through openings in the said plate, and means for connecting the free end portions of the said arms with the said plate so that the said table and plate can be constrained to move simultaneously when desired, substantially as set forth.

4. In a barrel-hooping machine, the combination, with stationary guide-bars, of a table slidable on the said bars, a plate 23 also slidable on the said bars, springs interposed between the said table and plate, driving-arms carried by the said table and projecting through openings in the said plate, and stop-pieces 29 pivoted to the free end portions of the said arms, said stop-pieces being slidable in the openings of the plate when arranged longitudinally of the said arms and constraining the said plate to slide with the table when turned crosswise of the said arms, substantially as set forth.

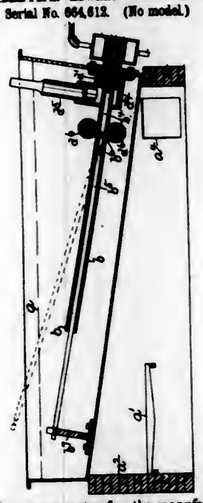
610,222. LUBRICATOR. TAGE BLOM, Copenhagen, Denmark. Filed Aug. 14, 1896. Serial No. 602,746. (No model.) Patented in England Jan. 20, 1896, No. 1,003, and in Germany Sept. 26, 1891, No. 59,024.

Claim.—1. In combination, a casing comprising a cylindrical portion, a series of inlet-openings leading thereto from the interior of the casing, a series of outlet-openings extending from the cylinder, a series of right-angular passages extending vertically of the casing and connected with the discharge-openings below the cylinder, a rotary valve having a series of openings extending through the same to register with the inlet and discharge openings and the screw-threaded plugs arranged in the opening of the valve and adjustable therein and means for turning the rotary valve, substantially as described.



2. In combination in a lubricating device, the casing, a movable valve therein having an opening therethrough, a port leading to the valve, and an exit leading from the valve and an air-port extending past the valve and independent thereof to connect with the outlet-port whereby the said air-port may serve as a conduit for the lubricating material in case of failure of the valve, substantially as described.

610,223. APPARATUS FOR MANUFACTURING COMPOSITE NON-CORRODIBLE PIPE. EDWARD I. BRADDOCK, Medford, Mass. Filed Dec. 30, 1897. Serial No. 664,612. (No model.)



Claim.—1. In an apparatus for the manufacture of composite non-corrodible pipe, from a tube of iron or steel and a non-corrodible metal of lower melting-point, the combination of a tank to contain the non-corrodible metal and means to keep it in a molten condition, an outlet-pipe which extends into and outside of said tank, and has devices within the inwardly-extending portion to center the iron tube, and a chilling-jacket around the outwardly-extending portion of the outlet-pipe, a mandrel extending through said outlet-pipe to determine the bore of the composite pipe, and devices upon said mandrel to center it within the said iron tube, substantially as described.

2 In an apparatus for making composite pipe of a primary tube of iron or steel and an axially-concentric tube of metal having a substantially lower melting-point than that of the primary tube; the combination of a vessel to hold and maintain in a molten state the metal of the lower melting-point, means for heating said vessel, an opening in one end of said vessel to receive the primary tube; a mandrel with devices to center it in the primary tube, yet to permit the passage of molten metal; a chilling-chamber outside of the said vessel adjacent to the said opening therein; mechanism to maintain the said mandrel within the primary tube at the location of the chilling-chamber, and means to feed the primary tube through the openings in said vessel and chilling-chamber and over the said mandrel, substantially as described.

3. In an apparatus for making composite pipe of two axially-concentric metal tubes, the outer one of which is of metal having a substantially lower melting-point than that of the inner one constituting the primary tube; the combination of a vessel to hold the metal of the lower melting-point, means to heat it and maintain the metal of lower melting-point in a molten state, a forming-die opening into said vessel and provided with means projecting inwardly to center the primary tube therein and yet permit the flow of molten metal; a chilling-jacket around the outer end of said forming-die, and mechanism to feed the primary tube through said vessel and die, substantially as described.

4. In an apparatus for making composite pipe by uniting to both the interior and exterior surfaces of a primary metal tube, axially-concentric secondary tubes of metal having a substantially lower melting-point than that of the primary tube; the combination of a vessel to hold the metal of the lower melting-point; means to heat said vessel; a forming die, which opens into said vessel and has devices to center the primary tube therein yet to permit the flow of metal; a mandrel with devices to center it in the primary tube and to maintain it within the forming-die yet to permit the flow of metal; a chilling-jacket around the forming-die outside of the vessel, and mechanism to move the primary tube through said vessel and die and over the mandrel.

5. In an apparatus for the manufacture of composite pipe of corrodible and non-corrodible metal, the combination of the following instrumentalities, viz: a tank or vessel having an inclined bottom and provided with an outlet-pipe for the flow of molten metal therefrom, means to heat said vessel, a mandrel to determine the bore of the composite pipe inserted into said outlet-pipe and extended into said tank and upon which the corrodible pipe is placed, and a forming and chilling die into which said mandrel is extended to form a space between it and the corrodible pipe within the said die, into which the molten metal flows and wherein it is solidified, substantially as described.

6. In an apparatus for the manufacture of composite non-corrodible pipe, the combination of the following instrumentalities, viz: a tank or vessel for containing a bath of molten non-corrodible metal provided with an opening for the insertion of a corrodible pipe into said vessel, an outlet-pipe for said tank or vessel, means to heat said vessel, a chilling-die axially in line with said outlet-pipe, and a mandrel anchored at one end and having its other end extended from within the tank through said outlet-pipe into said chilling-die, substantially as described.

7. In an apparatus for the manufacture of composite pipe of corrodible and non-corrodible metals, the combination of the following instrumentalities, viz: a tank or vessel to contain a bath of molten non-corrodible metal provided with an opening for the insertion of a corrodible pipe into said vessel, means to heat said vessel, an outlet-pipe in said vessel, which pipe is adapted to receive the corrodible tube and is provided upon its interior with one or more longitudinal channels or grooves for the passage of non-corrodible metal, a die to form the exterior of the composite pipe having a chilling-jacket and located axially in line with said outlet-pipe, and a mandrel extended from within said tank through the outlet-pipe and into the said chilling-die and upon which the corrodible pipe is placed, substantially as described.

8. In an apparatus for the manufacture of composite pipe of corrodible and non-corrodible metals, the combination of the following instrumentalities, viz: a tank or vessel to contain a bath of molten non-corrodible metal, means to heat said tank, an outlet-pipe for said tank, a forming and chilling die axially in line with said outlet-pipe, a mandrel within said outlet-pipe and die, and a device to retain the mandrel in position, which device is normally in line with the mandrel within the said tank and is constructed and arranged to be raised from the tank independent of the mandrel, substantially as described.

9. In an apparatus for the manufacture of composite non-corrodible pipe, the combination of the following instrumentalities, viz: a tank or vessel to contain a bath of molten non-corrodible metal provided with an opening for the insertion of a corrodible pipe into said vessel, means to heat said vessel, an outlet-pipe for said tank, a chilling-die located outside of the tank axially in line with the said outlet-pipe, a mandrel located in said outlet-pipe and extended from within the tank into said chilling-die and removable therefrom, and means to close the said outlet when the mandrel is removed.

10. In an apparatus for the manufacture of composite pipe of corrodible and non-corrodible metals, the combination of the following instrumentalities, viz: a tank or vessel to contain a bath of molten non-corrodible metal, means to heat said tank, an outlet from said tank of the size of the external diameter of the corrodible tube and having one or more grooves or channels extended longitudinally through said outlet, a die for forming the non-corrodible tube, which is of larger diameter than the said outlet, and is located outside of said tank, a chilling-jacket upon the said die, and a mandrel of less diameter than said outlet and extended through the outlet and into said die, substantially as described

11. In an apparatus for the manufacture of composite pipe of corrodible and non-corrodible metals, the combination of the following instrumentalities, viz: a tank or vessel to contain the non-corrodible metal and maintain it in molten condition, provided with an opening for the insertion of a corrodible pipe into said vessel and with an outlet for said metal and corrodible pipe, means to heat said vessel, a chilling-die located axially in line with and beyond said outlet, and a mandrel within the tank extended through the outlet and into said chilling-die and of a diameter within the die equal to the bore desired of the non-corrodible tube to permit the composite pipe to be moved from within the tank over the mandrel and through the chilling-die, substantially as described.

12. In an apparatus for the manufacture of composite pipe of corrodible and non-corrodible metals, the combination of the following instrumentalities, viz: a tank or vessel to contain a bath of molten non-corrodible metal, provided with an opening for the insertion of a corrodible pipe into said vessel and with an outlet for the passage of a corrodible tube and said molten metal, means to heat said vessel, a chilling-die located axially in line with said outlet, a mandrel extended from within the tank through said outlet and corrodible tube into said chilling-die and of a diameter within the die equal to the bore desired of the non-corrodible tube, devices to reader the mandrel stationary, and means thereon to center it within the tube of corrodible metal, substantially as described.

13. In an apparatus for the manufacture of composite pipe of corrodible and non-corrodible metals, the combination of the following instrumentalities, viz: a tank or vessel to contain a bath of molten non-corrodible metal, provided with an inlet-opening for the insertion into the tank or vessel of the corrodible tube and with an outlet-opening for the passage of the corrodible tube and said molten metal out of said tank; means to heat said tank or vessel; a chilling-die located axially in line with said outlet-opening; a mandrel extended from within the tank through said outlet-opening and corrodible tube into said chilling-die and of a diameter within the die equal to the bore desired of the non-corrodible tube, and means on said mandrel to center it within the tube of corrodible metal, substantially as described.

610,224. COMPOSITE PIPE. EDWARD I. BRADDOCK, Medford, Mass. Filed Jan. 3, 1896. Serial No. 665,234. (No model.)



Claim.—1. A composite pipe, consisting of two axially-concentric tubes of metal molecularly united together, the outer one of iron or steel, and the inner one of non-corrodible metal of relatively lower melting-point, such as tin, zinc, lead or their alloys.

2. A composite pipe, consisting of an iron or steel tube inclosed between and molecularly united to two axially-concentric tubes of non-corrodible metal of relatively lower melting-point, such as tin, zinc, lead or their alloys.

3. A composite pipe, consisting of an iron or steel tube, a tube of non-corrodible metal such as specified within said iron or steel tube and molecularly united thereto, and a second tube of non-corrodible metal as specified on the outside of the iron or steel tube, and molecularly united thereto and of less thickness than the non-corrodible tube within said iron or steel tube.

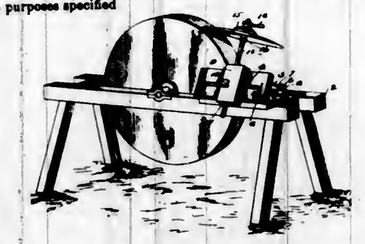
610,225. SHOE-LACE FASTENER. MARTIN L. BYERS, Hagerstown, Md. Filed Sept. 9, 1897. Serial No. 651,042. (No model.)

Claim.—As an improved article of manufacture, the within-described shoe-lace fastener, comprising the straight portion and inner portions parallel thereto, the opposite ends slightly curved outwardly, the semicircular portions abutting one another, and the inwardly-bent ends, the latter being straight and adapted to lie flat upon the leather of the shoe, whereby the leather, when the fastener is in position, serves to hold, by spring-pressure, the lacing-string, all as shown and described.

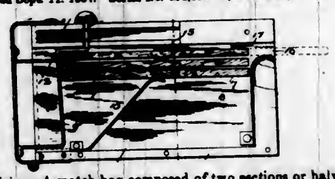
610,226. DISK-SHARPENER. LAWRENCE P. CARR, Concordia, Kans., assignor of one-third to Robert Hanson, same place. Filed May 20, 1897. Serial No. 637,343. (No model.)

Claim.—1. In a disk-sharpening device, the combination of a grindstone, an adjustable support, a rod movably attached to said support, a slide adjustably mounted on the support, and a gravitating shaft carried by said slide and adapted to support a disk relatively to the said grindstone, substantially as and for the purposes specified.

2. In a disk-sharpening device, the combination of an adjustably-mounted support, an apertured slide movably carried by said support, a gravitating shaft mounted in said slide, and a clamping-spider on the said shaft adapted to hold the disk, substantially as and for the purposes specified



610,227. MATCH-BOX. ELIZABETH I. R. CARROTHERS, Tiro, Ohio. Filed Sept. 11, 1897. Serial No. 651,239. (No model.)



Claim.—A match-box composed of two sections or halves, each section having raised portions or ridges along three of its edges along which the sections are coupled, a cavity formed in one of the longitudinal ridges, the walls of said cavity being slotted- longitudinally, a coiled spring having one end secured at the base of the cavity adjacent to the open end of the box, an ejecting-finger having a shank operating within the slotted walls of the cavity and being secured to the opposite or free end of the coiled spring, the finger projecting into the interior of the box, a hinge carried by the box, and having a ledge which when the lid is closed is adapted to support the igniting ends of the matches, the ledge being inclined to the normal position of the finger whereby the matches can be readily shoved toward the finger, a spring feed-arm for forcing the matches toward the finger, the base of the box having a delivery-opening opposite the finger, a scraping-plate bounding one of the sides of the opening, and a yielding plate for forcing the matches against the scraping-plate, substantially as set forth.

610,228. LINOTYPE-MACHINE. THOMAS H. CATHERALL, London, England. Filed Mar. 13, 1897. Serial No. 627,448. (No model.) Patented in England Oct. 23, 1896, No. 23,560, and Dec. 11, 1896, No. 28,300.

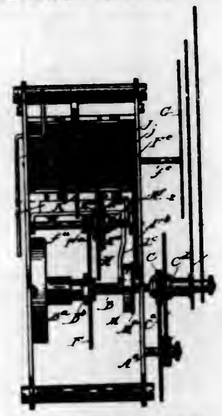


Claim.—1. In a linotype-machine in combination with the mold having an adjustable slot composed of the fixed part having a slot therein with a movable plate inserted in said slot and independent of the opposite walls or parts which form the said slot, the said movable plate being adapted to move toward and from the opposite wall and the screws for operating the movable plate, substantially as described.

2. In combination in a linotype-machine, a mold M, N having recesses P, *j* and *l*, a plate *g* therein having depending ends A A' entering the recesses *j* and an upturned back *k* moving in the recess *l*, the lugs *m m'* on the plate *g* and the screws engaging the said lugs for adjusting the plate *g*, said plate having the grooves *s*, substantially as described.

3. In combination in a linotype-machine, the mold having a groove T and a plate V in said groove connected to the mold by the screws Y Y' passing through inclined slots, in the said plate whereby the same may be adjusted vertically and horizontally in relation to the mold-slot, substantially as described.

610,229. ELECTRIC CLOCK-TRAIN. CHARLES M. CROOK, Elgin, Ill., assignor to Charles S. Burton, Trustee, Oak Park, Ill. Filed Apr. 29, 1897. Serial No. 634,313. (No model.)



Claim.—1. In a clock-movement, in combination with a motor such as a mainspring, a principal train actuated thereby in the ordinary running of the clock, extending to and including the staffs of all the time-indicating hands and a governing device, the latter being actuated solely by frictional connection with the anterior portion of the train, and all the hand-staffs being actuated in such anterior portion, such frictional connection of the governing device being adapted to endure without slipping the full driving power transmitted to it by the train.

2. In a clock-movement, in combination with a motor such as a mainspring, a principal train actuated thereby in the ordinary running of the clock, extending to and including the staffs of the minute and hour hands and a governing device, the latter being actuated solely by frictional connection with the anterior portion of the train, and all the hand-staffs being actuated in such anterior portion, such frictional connection of the governing device being adapted to endure without slipping the full power transmitted thereto by the train.

3. In a clock-movement, in combination with a motor such as a mainspring; a principal train actuated thereby in the ordinary running of the clock and extending to and including the seconds-hand, and a governing device; a secondary or offshoot train actuated solely by frictional connection with a principal train and leading to and including a governing device, such frictional connection of the offshoot train being adapted to endure without slipping the full driving power transmitted thereto by the train.

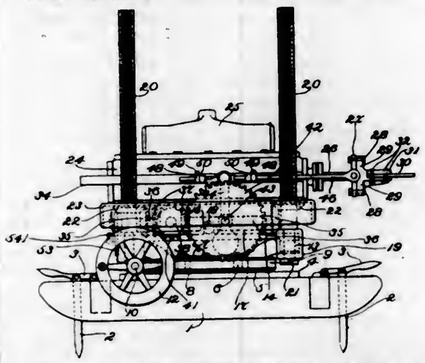
4. In a clock-movement, in combination with a motor such as a mainspring, a principal train actuated thereby extending to and including the staffs of all the time-indicating hands, and a governing device, the latter being actuated solely by frictional connection with the anterior portion of the train, and all the hand-staffs being actuated and positively connected in such anterior portion, such frictional connection of the governing device being adapted to endure without slipping the full driving power transmitted thereto by the train, a synchronizing device adapted to act upon one of the positively-connected wheels of such hands-train, and suitable extraneous means for operating the synchronizing device.

5. In a clock-movement, in combination with a motor such as a mainspring, a principal train actuated thereby, such train extending to and including the staffs of the minute and hour hands, and an escape-wheel, the latter being actuated solely by frictional connection with the anterior portion of the train, and the minute and hour hands being actuated and positively connected in such anterior portion, a synchronizing device to act upon one of the positively-connected hand-actuating wheels, and means for actuating such synchronizing device.

6. In a clock-movement, in a combination with a motor such as a mainspring, the principal train actuated thereby extending to and including the seconds-hand, a secondary or offshoot train actuated by frictional connection with the principal train, such offshoot leading to and comprising an escape-wheel; a synchronizing device adapted to act upon a wheel in the principal train positively connected with the seconds-hand staff, and means for operating the synchronizing device.

7. In combination with the hands train of a clock, an electromagnet on the frames, a circuit in which it is energized, an armature for such magnet, a lever connected thereto and actuated thereby and adapted to act upon a wheel in said train when the magnet is energized, a disk on said lever having a projection adapted to encounter a wheel on the shaft of the train when the armature experiences the initial impulse of the magnet, said wheel having a path for the projection at a position on the wheel which coincides with the path of the projection in its movement with the lever at the synchronizing hour, the amplitude of said path in the wheel being in excess of the actual path of the projection by an amount corresponding to the maximum correction for which the synchronizing device is calculated.

610,230. MACHINE FOR FELLING TREES. FRED F. DOW, Lynn, Mass., assignor, by mesne assignments, to the Dow Machinery Manufacturing Company, same place. Filed June 19, 1897. Serial No. 641,403. (No model.)



Claim.—1. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a mounting for said mechanism, devices for feeding the saw vertically with reference to the said mounting, and means to adjust the inclination of the said mounting laterally with respect to the length of the saw whereby the latter may be caused to make a cut or kerf which is laterally inclined or oblique with respect to the length of the tree, substantially as described.

2. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a mounting for said mechanism, feed-screws applied to said mounting, means to effectuate the feeding of said mechanism lengthwise of the said screws, and means of adjustment whereby to adjust the inclination of the said mounting on said portable support laterally whereby the saw may be caused to make a cut or kerf which is laterally inclined or oblique with respect to the length of the tree with reference to the vertical, substantially as described.

3. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a mounting for said mechanism, means to set the said mounting in a laterally-inclined position on said portable support, whereby the saw may be caused to make a cut or kerf which is laterally inclined or oblique with respect to the length of the tree, feed-screws applied to said mounting, the gears 22, 22, applied to the said feed-screws, and devices to actuate said gears and thereby automatically feed the saw to its work, such devices embracing a pawl, a wheel engaged thereby, and means to operate said pawl, substantially as described.

4. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a mounting for said mechanism, feed-screws applied to the said mounting, the gears 22, 22, applied to the said feed-screws, and devices to actuate said gears and thereby automatically feed the saw to its work, such devices embracing a reciprocating feed-rod, adjustable stops thereon, a pawl, a pawl-carrier gravitating normally to its starting position, and a wheel engaged by the said pawl, substantially as described.

5. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a mounting for said mechanism, devices for feeding the saw vertically with reference to the said mounting, and devices for effecting universal adjustment of the said mounting, substantially as described.

6. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a mounting for said mechanism, devices for feeding the saw vertically with reference to the said mounting, a frame on which the said mounting is fitted with capacity to swing in a vertical plane, the said frame itself being applied to the said support with capacity to swing in a second vertical plane at right angles to the first, substantially as described.

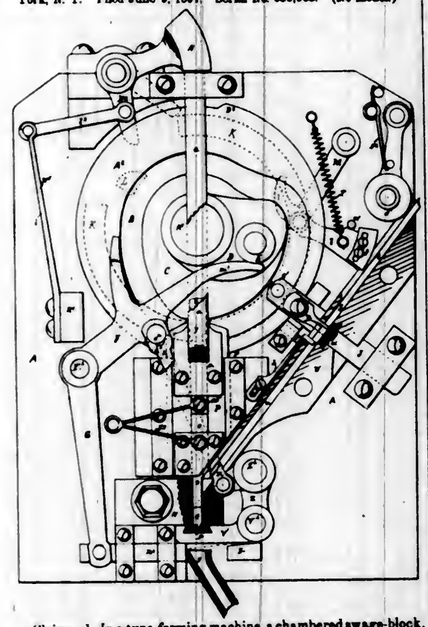
7. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a carriage on which said mechanism is mounted, a series of feed-screws, a series of gears 22, 22, applied to the said feed-screws, means to rotate said gears, a frame, as 17 to which the said feed-screws are applied, and a second frame as 14 on which the first frame is pivoted to swing vertically, the said second frame being mounted on the said support with capacity to swing vertically at right angles to the first frame, substantially as described.

8. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a mounting for said mechanism, devices for feeding the saw vertically with reference to the said mounting, means to adjust the inclination of the said mounting laterally, and the turn-table mounted upon the said support and having the said mounting sustained thereupon, substantially as described.

9. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a frame on which said mechanism is carried, a second frame on which the first frame is pivoted with capacity to swing vertically, and a turn-table on which the second frame is pivoted to swing vertically at right angles to the first frame, the said turn-table being mounted upon the said support, substantially as described.

10. A tree-felling machine comprising a portable support, a saw, motive mechanism therefor, a carriage on which the said mechanism is mounted, a series of feed-screws, a series of gears 22, 22, applied to the said feed-screws, means to rotate the said gears, a frame, as 17, to which the said feed-screws are applied, a second frame as 14, on which the first frame is mounted to swing vertically, and a turn-table on which the second frame is mounted to swing vertically at right angles to the first frame, the said turn-table being mounted upon the said support, substantially as described.

610,231. TYPE-MAKING MACHINE. MERRITT GALLY, New York, N. Y. Filed June 9, 1897. Serial No. 639,963. (No model.)



Claim.—1. In a type forming machine, a chambered swage-block, open only at its ends; one end of the chamber provided with a removable die-plate for forming the character on the type, the opening at the other end for receiving a type-blank; a swaging-tool for following the blank into the chamber and in line therewith, and means for driving the swaging-tool longitudinally against the blank, to form the type.

2. In a type-forming machine, a chambered swage-block, open at its ends; one end provided with a removable die-plate for producing the character on the type, the other end open for receiving a type-blank; a swaging-tool for entering the chamber of the swage-block longitudinally with the chamber, and having one movement for compressing or swaging the type, and a secondary movement after the removal of the die-plate, for forcing the type out of the swage-block

3. In a type-forming machine, a chambered swage-block, open at its ends; one end provided with a removable die-plate for producing the character on the type, the other end open for receiving a type blank; a swaging-tool for entering the chamber of the swage-block longitudinally with the chamber, and having a movement for compressing the type-blank by applied pressure and a hammer for giving the type a sharp finish by means of a sudden stroke.

4. In a type-forming machine, a chambered swage-block, open at its ends; one end provided with a removable die-plate for producing the character on the type; the other end open for receiving a type-blank; a swaging-tool entering the swage-block, longitudinally with the chamber, and having a movement for compressing the blank by means of pressure mechanism for forming the type; a secondary sudden movement and hammer for producing the same, to give sharp finish to the type, and an extended movement for thrusting the type out of the swage-block.

5. In a type-forming machine, the combination with a chambered swage-block, and a swaging-tool for forming the type from a type-blank; of a drop-hammer, and a spring device for accelerating the momentum of the hammer.

6. In a type-forming machine, a chambered swage-block constructed to hold a type-blank within its chamber; a swaging-tool and a slideway leading to the chamber of the block, so inclined to a horizontal as to cause the type-blank when placed in the slideway to slide through it by gravity to the chamber of the block.

7. A device for cutting into form, from a strip of material, the type-blank of a short-bodied type for a rabbeted composite type-bar; consisting of a die and cutter and a suitable motor mechanism; the cutter being of such shape as to form on the type-blank one of the members of the rabbet.

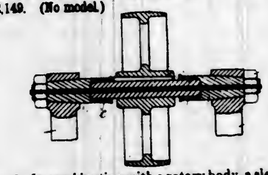
8. In a type-forming machine a swaging-tool having a part of its surface serrated, to produce a serrated face or surface on the type.

9. A linotype or type-bar composed of short-bodied type and a body-slug, one or more of these parts being provided with a serrated face or surface.

10. In a type-forming machine, a chambered swage-block constructed to hold a type-blank within its chamber, a swaging-tool adapted to enter one end of the chamber longitudinally in line therewith; a die-plate for closing the end of the chamber opposite the end at which the tool enters; a die-carrier for the die plate having a movable support and means for allowing the die-carrier to drop away from the finished type, and then for moving the die-carrier transversely for carrying it out of the way of the type, when the type is removed from the chamber of the swage-block.

11. In a type-forming machine: a chambered swage-block; a swaging-tool adapted to enter one end of the chamber to drive a type-blank contained in the chamber against a die placed at the other end of the chamber; a reciprocating die-carrier pivoted at one end and resting on a removable support at its other end.

610,232. BEARING FOR ROTARY DISKS. HERMANN GANSWINDT, Mariendorfer Weg, Schoeneberg, Germany. Filed Mar. 1, 1898. Serial No. 672,149. (No model.)



Claim.—1. In combination with a rotary body, a sleeve connected therewith, a wire shaft of small sectional area passing through the said sleeve, bell-shaped parts at the ends of the sleeve and the supports at the ends of the sleeves, substantially as described.

2. In combination with a rotary body, a sleeve connected therewith, a wire shaft of small sectional area passing through the said sleeve, and the supports at the ends of the sleeves having blocks therein carrying bell-shaped parts, substantially as described.

610,233. PNEUMATIC TIRE. NATHANIEL B. HARMON, New York, N. Y. Filed Dec. 27, 1897. Serial No. 663,585. (No model.)

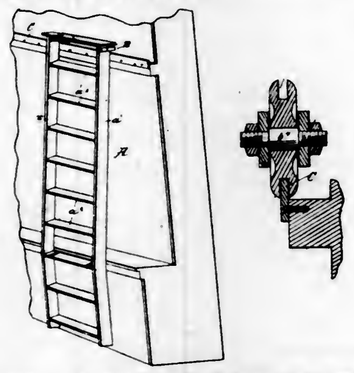


Claim.—1. In combination with a wheel-rim provided with a central projection or rib, of a tire having a groove along one edge which overlaps and engages with said projection, and the opposite edge of the tire also overlapping the projection and having a projecting claw which engages with a shoulder formed in the first-named edge of the tire.

2. In combination with a wheel-rim having a concaved outer face and a projecting rib surrounding the central concaved portion of the rim, said rib having undercut sides, of a rubber tire having a dovetail groove along one edge which fits snugly over the said projecting rib, the opposite edge of said tire being provided with a projecting claw which engages with the first-named edge of the tire over which it is lapped, and retaining-wires engaging the edges of the tire, said wires being located upon opposite sides of the projecting rib.

3. In combination with a wheel-rim provided with a central projection or rib having undercut sides, of a tire having a groove with similar undercut sides, said groove being arranged along one edge of the tire and adapted to overlap and engage with the said projection, and the opposite edge of the tire being provided with a projecting claw which interlocks with a shoulder on the first-named edge of the tire.

610,234. STORE-SERVICE LADDER. WILLIAM E. HEFFNER, Canton, Ohio, assignor to S. Anna Heffner, same place. Filed Oct. 8, 1897. Serial No. 654,490. (No model.)



Claim.—1. In a store-service ladder, the combination with a ladder, of a carrier-frame consisting of an inner and an outer member securely bolted together, the ends thereof bent at right angles to the frame, and adapted to be bolted to the sides of the ladder, and trolley-wheels journaled in the frame, substantially as described and for the purpose set forth.

2. A trolley carrier-frame for store-service ladders, consisting of two pieces of strap-iron substantially U-shaped, and bolted together, the free ends thereof adapted to be bolted to the inner and outer sides respectively of the ladder, and trolley-wheels journaled in the frame, substantially as described and for the purpose set forth.

3. The combination in a trolley-frame for store-service ladders, of two pieces of strap metal bolted together near their centers, and the ends thereof bent at right angles, the ends of the inner member adapted to pass between the sides of the ladder, the outer member to embrace the sides of the ladder, bolts passing through the inner and outer members and the sides of the ladder, and trolley-wheels journaled in the frame, substantially as described and for the purpose set forth.

4. The combination in a store-service ladder, of a trolley-frame consisting of an inner and an outer member securely bolted to each other, the ends thereof bent at right angles and adapted to be bolted to the sides of the ladder, trolley-wheels journaled in the frame, and a rubber-tired trolley-wheel journaled in metallic straps or brackets adapted to be bolted to one of the steps of the ladder, substantially as described and for the purpose set forth.

610,235. FORE PART FOR BOOT OR SHOE TREES. OLIVER L. HOWE, Beverly, Mass., assignor, by mesne assignments, to the Morley Finishing Machine Company, of Maine. Filed Mar. 12, 1897. Serial No. 627,304. (No model.)

Claim.—1. The foot piece or fore part herein described consisting of the body part *a*, sliding side piece *b*, and a sliding connection at the sole-surface connecting said parts consisting of the laterally-projecting T-shaped guide block on the abutting face of one part, a guideway on the other part, having a T-shaped slot for said guide-piece and also having an entrance-slot at the side thereof.

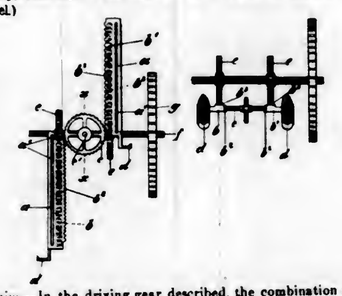


2. The foot-piece or fore part herein described, consisting of the body part *a*, sliding side piece *b*, and a sliding connection for said parts consisting of a laterally-projecting guide-piece on the abutting face of one part and a guideway for it on the sole-surface of the other part having an entrance-slot c^2, at the abutting face.

3. The foot-piece or fore part herein described, consisting of the body part *a*, sliding side piece *b*, and a sliding connection for said parts consisting of a laterally-projecting guide-piece on the abutting face of one part and a guideway for it on the other part at the sole-surface, having as a cooperative part of it the removable plate *c*, which is secured to said sole-surface.

4. The foot-piece or fore part herein described, consisting of the body part *a*, sliding side piece *b*, and a sliding connection for said parts consisting of a laterally-projecting guide-piece on the abutting face of one part and a guideway for it on the other part at the sole-surface consisting of the plates *c* and *c* formed to present a slot to receive said guide-piece and an entrance-slot.

610,236. VELOCIPEDE DRIVING-GEAR. ADOLF JORISSEN, Adelby, Germany. Filed July 30, 1897. Serial No. 646,540. (No model.)



Claim.—In the driving gear described, the combination of the shaft *f* to be driven, the parallel wheels *e* fixed on said shaft and each having one half of its periphery toothed and the other half smooth, the peripherally-toothed wheel *c* mounted on a shaft and disposed at right angles to the wheels *e* and arranged between the longitudinal vertical planes of said wheels *e* and the vertically-movable, pedal-racks disposed at opposite sides of the wheel *c* and in the same vertical planes as the wheels *e*; the said racks each being formed in one piece and having teeth on their inner sides in mesh with those of the wheel *c* and teeth on their faces or sides contiguous to wheels *e* adapted to mesh with the teeth of said wheels *e* and also having longitudinal slots for the reception of guide-pins, substantially as specified.

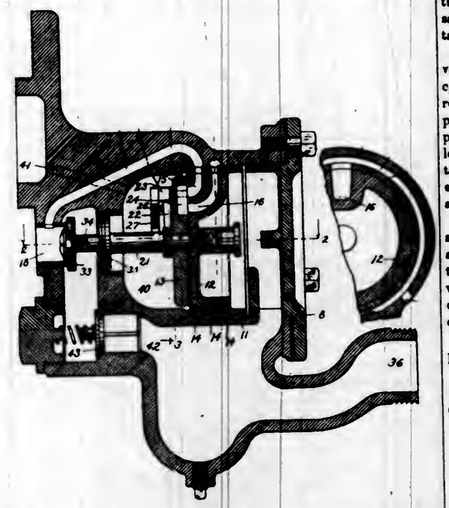
610,237. TRIPLE VALVE FOR AIR-BRAKES. ALONZO G. KINYON, Chicago, Ill. Filed Mar. 5, 1898. Serial No. 672,672. (No model.)

Claim.—1. In a triple valve for air-brakes, the combination of a casing; an emergency-piston disposed within said casing and comprising a main valve and main-valve seat; a main piston connected with said emergency-piston; and an emergency-valve connected with said emergency-piston.

2. In a triple valve for air-brakes, the combination of a casing; an emergency-piston disposed within said casing and comprising a rotary valve and valve-seat; a main piston operating said rotary valve; and an emergency-valve connected with said emergency-piston.

3. In a triple valve for air-brakes, a casing; a main valve and main-valve seat disposed within said casing; an emergency-valve connected with said main valve and seat, whereby said valve and seat are adapted to operate said emergency-valve.

4. In a triple valve for air-brakes, a casing; a main valve and main-valve seat disposed within said casing; and a main piston and an emergency-valve connected with said main valve, whereby said main piston is adapted to operate said main valve, and whereby said main valve and valve-seat are adapted to operate said emergency-valve.



5. In a triple valve for air-brakes, a casing; a rotary valve and valve-seat disposed within said casing; an emergency-valve connected with said rotary valve and valve-seat, whereby said valve and seat are adapted to operate said emergency-valve.

6. In a triple valve for air-brakes, a casing; a rotary valve and valve-seat disposed within said casing; a main piston and an emergency-valve connected with said rotary valve and seat, whereby said main piston is adapted to operate said rotary valve, and said rotary valve and valve-seat are adapted to operate said emergency-piston.

7. In a triple valve for air-brakes, a casing; an emergency-piston disposed within said casing and comprising means of controlling port-openings leading to an auxiliary reservoir and a brake-cylinder; an emergency-valve connected with said piston; and a main piston connected with said emergency-piston.

8. In a triple valve for air-brakes, a casing; an emergency-piston disposed within said casing and comprising means of controlling port-openings leading to a brake-cylinder and the atmosphere; an emergency-valve connected with said piston; and a main piston.

9. In a triple valve for air-brakes, a casing; an emergency-piston disposed within said casing and comprising means for controlling port-openings leading to an auxiliary reservoir and a brake-cylinder, and a brake-cylinder and the atmosphere respectively; an emergency-valve connected with said piston; and a main piston.

10. In a triple valve for air-brakes, a casing; an emergency-piston disposed within said casing and including a main valve and a valve-seat, and said main valve adapted to control port-openings leading to an auxiliary reservoir and a brake-cylinder, and to a brake-cylinder and the atmosphere respectively; a main piston adapted to operate said main valve; and an emergency-valve connected with said emergency-piston.

11. In a triple valve for air-brakes, a casing; an emergency-piston disposed within said casing and including a rotary valve and a valve-seat; said rotary valve adapted to control port-openings leading to an auxiliary reservoir and a brake-cylinder, and to a brake-cylinder and the atmosphere respectively; a main piston adapted to operate said rotary valve; and an emergency-valve connected with said emergency-piston.

12. In a triple valve for air-brakes, a casing; a cylindrical valve-seat provided with port-openings adapted to register with openings leading to a brake-cylinder and the atmosphere; a main valve connected with said valve-seat and adapted to control said ports; a main piston adapted to operate said main valve; and an emergency-valve connected with said cylindrical valve-seat.

13. In a triple valve for air-brakes, a casing; a cylindrical valve-seat provided with port-openings leading to a brake-cylinder and the atmosphere; a rotary valve connected with said valve-seat and adapted to control said ports; a main piston adapted to operate said main valve; and an emergency-valve connected with said cylindrical valve-seat.

14. In a triple valve for air-brakes, a casing; a cylindrical valve-seat and rotary valve connected with an emergency-valve and adapted to operate said emergency-valve; said cylindrical valve-seat provided with port-openings adapted to register with openings leading to a brake-cylinder and an auxiliary reservoir, and a brake-cylinder and the atmosphere respectively; said rotary valve adapted to control said port-openings; and a main piston adapted to operate said rotary valve.

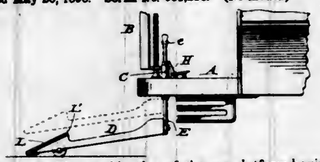
15. In a triple valve for air-brakes, a casing; a valve-seat provided with port-openings leading to an auxiliary reservoir and a brake-cylinder, and to a brake-cylinder and the atmosphere respectively; a rotary valve provided with a recess adapted to register with said port-openings leading to a brake-cylinder and the atmosphere, and provided with an aperture adapted to register with said port-opening leading to a brake-cylinder and an auxiliary reservoir; a supplementary valve adapted to control said aperture; and a piston and an emergency-valve suitably connected with said supplementary valve and said rotary valve.

16. In a triple valve for air-brakes, a casing; a rotary valve adapted to control port-openings leading to an auxiliary reservoir and a brake-cylinder, and a brake-cylinder and the atmosphere respectively; a port-opening through said rotary valve and a supplemental valve adapted to control said port; and a main piston adapted to operate said supplemental and rotary valve, and an emergency-valve connected with said rotary valve.

17. In a triple valve for air-brakes; an emergency-piston comprising a main valve and a main-valve seat, substantially as described

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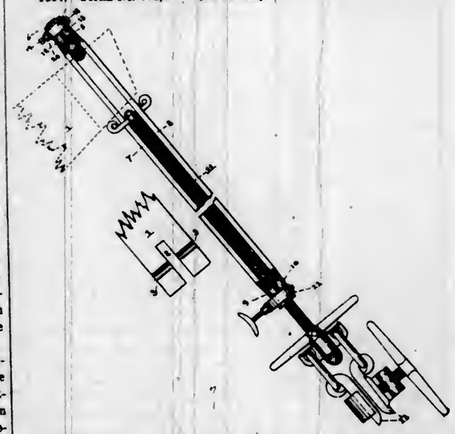
610,238. CAR-FENDER. HARRY LEHRER, New York, N. Y. Filed May 20, 1898. Serial No. 681,230. (No model.)



Claim.—1. The combination of the car-platform having tubular sockets C C secured therein at or near its sides, a fender having vertical rods E E sliding or telescoping in such sockets, and a central vertical rod passing through an aperture in the platform, the rocking lever connected with the upper end of the central rod and a catch or trigger adapted to engage the free end of said lever when the fender is in its uppermost position, substantially as set forth.

2. The combination of a car-platform having tubular socket-pieces extending therethrough at or near each side thereof, vertical rods E sliding in such tubular sockets and having enlarged heads *e*, a central rod F passing through an aperture in the car-platform, the rocking lever attached thereto and the spring catch or trigger, and a car-fender to which the lower ends of the rods E E F are attached.

610,239. TEMPER-SCREW FOR OIL OR ARTESIAN WELL DRILLING TOOLS. PATRICK H. MACK, Bradford, Pa. Filed Dec. 10, 1897. Serial No. 661,464. (No model.)

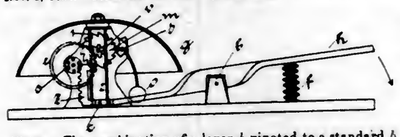


Claim.—1. In a temper-screw for oil and Artesian well drilling tools, the combination with the reins consisting of two bars provided

at each of their ends with a screw-threaded half-nut, of the yoke 22, and its set-screw, the yoke 17, and its set-screw, and the screw-threaded temper-screw T provided with a shoulder at the base of the screw-thread, substantially as shown and described.

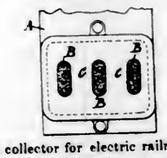
2. A temper-screw frame, consisting of two reins, each rein provided at its upper and lower end with a half-nut, the half-nuts being provided with internal screw-threads all of the same dimensions, and each set of half-nuts being provided with a yoke and set-screw substantially as shown and for the purpose herein described.

610,240. **BELL.** JOHANNES OBERLE, Gernsbach, Germany. Filed Nov. 5, 1897. Serial No. 657,540. (No model.)



Claim.—The combination of a lever *h* pivoted to a standard *b*, a bell *g* mounted in proximity to said lever, a rack *z* mounted underneath the bell and means for guiding the same vertically, pin-and-slot connection between said lever and rack, a pinion *s* to engage said rack and ratchet-wheel and pawl connection between said pinion and a gear loosely mounted in proximity thereto, a ratchet-like wheel mounted in proximity to said gear and a pinion to rotate with said ratchet-like wheel and engage said gear, a pivotally-mounted hammer *o* having escapement *d* to engage the ratchet-like wheel *m* and a spring *f* to retain the operating-lever *h* in its initial position substantially as described.

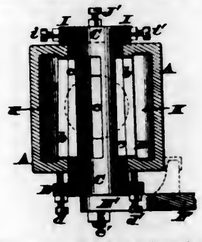
610,241. **COLLECTOR FOR ELECTRIC RAILROADS.** FRED S. PEARSON, Boston, Mass. Filed Mar. 31, 1897. Serial No. 630,022. (No model.)



Claim.—1. In a collector for electric railroads, in combination, a contact-plate arranged and adapted to convey the electricity from the collector; and an ice-dissolving material carried by the plate whereby the ice is removed from the conductor, substantially as described.

2. In a collector for electric railroads, in combination, the contact-box A having the openings B, arranged and adapted to convey the electricity from the conductor; and an ice-dissolving material carried by the box A whereby the ice is removed from the conductor, substantially as described.

610,242. **INLET-VALVE FOR WATER-TANKS.** JOHN H. POAGE, College Hill, Ohio. Filed Jan. 27, 1898. Serial No. 668,114. (No model.)



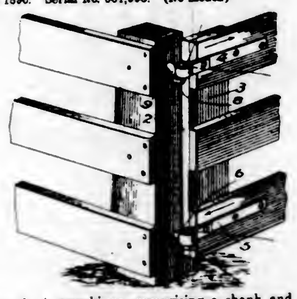
Claim.—1 The combination, in a balanced valve, of the shell A, having an inlet and closed heads, which heads are united by a tubular seat B, slotted longitudinally at *b*; a hollow plug C fitted in said seat, slotted longitudinally at *c*, and projecting beyond said closed heads; a chamber K surrounding said seat; and means at one end of said plug for operating it by a float, the arrangement of these devices being such as to cause the plug to receive water at its slot *c*, and discharge it from the end of said plug, as herein set forth.

2. The combination, in a balanced valve, of the shell A having an inlet and closed heads, which heads are united by a tubular seat B, slotted longitudinally at *b*, and having its axis eccentric with reference to that of said shell; a hollow plug C, fitted in said seat, slotted longitudinally at *c*, and projecting beyond said closed heads; a chamber K surrounding said eccentric seat; and means at one end of said plug for operating it by a float, the arrangement of these devices being such as to cause the plug to receive water at its slot *c*, and discharge it from the end of said plug, as set forth.

3. The combination, in a balanced valve, of the shell A, having a side inlet *a*, and closed heads; a tubular seat B uniting said heads, and slotted longitudinally at *b*; a hollow conical plug C fitted in said seat, slotted longitudinally at *c*, and projecting beyond said closed heads; a chamber K surrounding said seat; and a float-lever attached to the larger end of said plug, the arrangement of these devices being such as to cause the plug to receive water at its slot *c*, and discharge it from each end of said plug, as set forth.

4. In an inlet-valve of the character described, the plug C *c*, having a collar I, provided with two sets of screws *i*, *i'*, J, J', and an integral flange D, provided with a pair of set-screws *d*, *d'*, for the purpose stated.

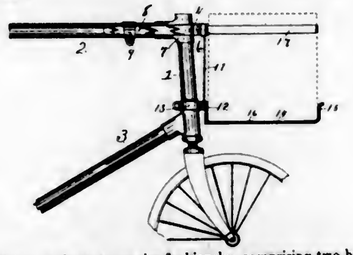
610,243. **GATE-HINGE.** HOWARD RENO, Folsom, N. Mex. Filed Aug. 7, 1896. Serial No. 601,993. (No model.)



Claim.—1. A gate-hinge, comprising a shank and a pintle at right angles thereto, and a strap or eye arranged upon said pintle and the middle of said eye being in line with or coincident with the axis of said shank, substantially as described.

2. The gate-iron, comprising the shank and the pintle at substantially right angles to one another, and the middle portion of that part of the pintle which is occupied or engaged by the hinge-strap being in line with the axis of said shank, whereby the force of the hinge-strap upon said pintle will be equally divided upon opposite sides of the axis of said shank, substantially as described.

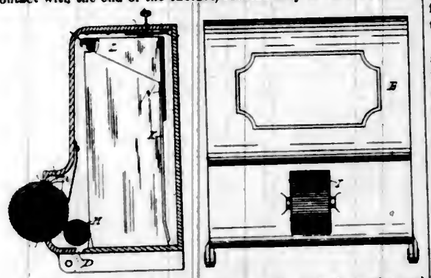
610,244. **LUGGAGE-RACK FOR BICYCLES.** GEORGE W. SCHERMAN, Richmond, Ind. Filed Oct. 11, 1897. Serial No. 654,774. (No model.)



Claim.—A luggage-carrier for bicycles, comprising two horizontal bars 4 and 5 united and forming a loop adapted to surround the steering-head of a bicycle, and terminating in rearward extensions 8 adapted to inclose the sides of the upper brace-tube of a bicycle-frame, a horizontal bar 10 rigidly attached to said bars 4 and 5, an upright bar 11 rigidly attached to said bar 10, a clamp for securing the extensions 8 to the upper brace-tube, and a clamp for securing the upright bar 11 to the lower portion of the steering-head, supporting-bars 14 14 upon which the luggage is supported, and straps attached to the ends of bar 10 for securing the luggage in position, substantially as shown and described.

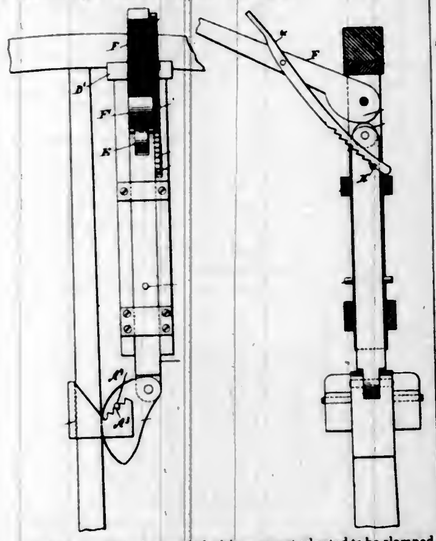
610,245. **BILL OR TOILET PAPER HOLDER.** FRANK SCHILL, Milwaukee, Wis., assignor to Hugo Loewenbach, same place. Filed July 6, 1897. Serial No. 643,638. (No model.)

Claim.—1. A bill or toilet paper cabinet, comprising a body portion and cover portion hinged together and provided with a discharge-slot in the lower end, a friction discharge-roller located in the interior of the cabinet adjacent to the discharge-slot, an actuating-roller located in an opening in the cabinet with its inner surface bearing upon the discharge-roller and arranged to actuate the same, and a presser-plate arranged to engage a package of paper between it and the friction-roller with the lower edges of the sheets in frictional contact with the end of the cabinet, substantially as described.



2. A bill or toilet paper cabinet, comprising a body portion and cover portion, and provided with a discharge-slot in the lower end, a friction discharge-roller located in the interior of the cabinet adjacent to the discharge-slot, a presser-plate having forwardly-projecting supporting-arms at its upper end, pivotally engaged by supporting-pins projecting from the sides of the cabinet said plate being weighted at its upper end and adapted to engage a loose package of paper between its lower end and said friction-roller, and to support the same with the edges of the sheets resting upon the bottom or end of the cabinet adjacent to the discharge-slot, substantially for the purpose set forth.

610,246. **JACK.** JOHN S. SCHLOSSER, Wadsworth, Ill. Filed Nov. 11, 1897. Serial No. 658,191. (No model.)



Claim.—1. A jack provided with a support adapted to be clamped to the spoke of a wheel, the said support comprising a U-shaped member formed with sets of steps, and a clamping member having a cam-surface and a pivot-pin for engaging the steps, substantially as shown and described.

2. A jack provided with a support adapted to be clamped to the spoke of a wheel, a lifting device comprising a post pivotally connected with the support, a frame in which the post is fitted to slide, a cam-lever for sliding the frame on the post and in engagement with the felly of the wheel, and a locking-arm for locking the cam-lever in place, as set forth.

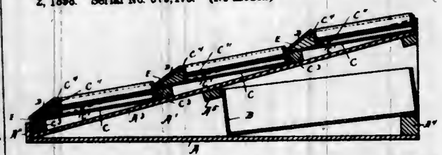
3. A jack comprising a support formed of two detachable members, one of which is mounted to swing on the other, and a lifting device provided with a post pivotally connected with the pivoted member of the said support, a frame in which the post is fitted to slide, a head on the said frame for engagement with the felly, and a cam-lever fulcrumed in the frame and engaging the said post, substantially as shown and described.

4. The combination of a U-shaped member, provided with steps on each arm thereof, a cam having pivot-pins bearing on the steps, whereby to rockably mount the cam, a post pivoted to the cam, a frame slidable on the post, and means for moving the frame along the post.

5. The combination of a U-shaped member, having steps on each arm thereof, a cam having a pivot-pin projecting beyond each side thereof, the ends of the pins being seated on the steps, a post pivoted to the cam, a frame sliding on the post, and a cam-lever mounted on the frame and capable of engaging the post to move the frame.

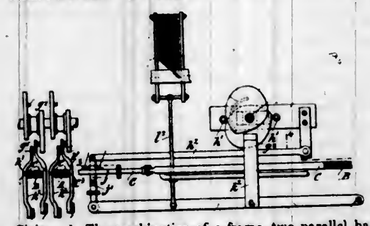
6. The combination of a U-shaped member, each arm of which is provided with steps, and a cam having pivots bearing on said steps, whereby to rockably mount the cam on the U-shaped member.

610,247. **DISPLAY DEVICE FOR CONFECTIONERY.** WILLIAM E. SCHRAFFT and GEORGE F. SCHRAFFT, Somerville, Mass. Filed May 2, 1898. Serial No. 679,478. (No model.)



Claim.—In a goods display device, in combination, an inclined hollow tray-supporting box open at its rear end and having a lateral supply-box support A^4 at such rear end, a series of removable tray-holders resting on the inclined tray-support, each such tray-holder having on its under side a lateral supporting-bar C^3, an inclined label-holding bar C^4 on its forward end, a removable false bottom, and a removable tray, substantially as and for the purpose set forth.

610,248. **JACQUARD MECHANISM FOR EMBROIDERING-MACHINES.** ROBERT SCOTT, Nottingham, England. Filed Mar. 31, 1898. Serial No. 675,967. (No model.)



Claim.—1. The combination of a frame, two parallel bars free to move longitudinally, mechanism actuated by the bars moving the frame in two directions at right angles to each other, second and third pairs of parallel bars, means whereby one or other bar of each of the latter pairs moves one of the first bars and pattern mechanism reciprocating the second and third pairs of bars.

2. The combination of a frame, a diagonal guide, a part moving in the guide and connected to the frame, two parallel bars free to move longitudinally, connections between one bar and the frame and the other bar and the guide, pattern mechanism and means actuated by it for moving the bars.

3. The combination of a frame, two parallel bars free to move longitudinally, a diagonal guide, a part moving in the guide, connections between one bar and the frame and the other bar and the guide, second and third pairs of parallel bars, means whereby one or other bar of each of the latter pairs moves one of the first bars, and pattern mechanism reciprocating the second and third pairs of bars.

4. The combination of a frame, two parallel bars free to move longitudinally, mechanism actuated by the bars moving the frame in two directions at right angles to each other, second and third pairs of parallel bars, means whereby one or other bar of each of the latter pairs moves one of the first bars, jaws on the bars of the second and third pairs, links passing between the jaws, rods pivoted to one end of the links, means for reciprocating the rods through a constant distance, levers pivoted to the other ends of the links, and pattern mechanism for raising the levers.

5. The combination of a frame, two parallel bars free to move

longitudinally, a diagonal guide, a part moving in the guide, connections between one bar and the frame and the other bar and the guide, second and third pairs of parallel bars, means whereby one or other bar of each of the latter pairs moves one of the first bars, jaws on the bars of the second and third pairs, links passing between the jaws, rods pivoted to one end of the links, means for reciprocating the rods through a constant distance, levers pivoted to the other ends of the links, and pattern mechanism for raising the levers.

6. The combination of a frame, two parallel bars free to move longitudinally, mechanism actuated by the bars, moving the frame in two directions at right angles to each other, second and third pairs of parallel bars, teeth on two sides of the bars of the first pair, teeth on one side of the other bars, means whereby the latter teeth are caused to engage with the former, and pattern mechanism reciprocating the second and third pairs of bars.

7. The combination of a frame, two parallel bars free to move longitudinally, a diagonal guide, a part moving in the guide, connections between one bar and the frame and the other bar and the guide, second and third pairs of parallel bars, teeth on two sides of the bars of the first pair, teeth on one side of the other bars, means whereby the latter teeth are caused to engage with the former, and pattern mechanism reciprocating the second and third pairs of bars.

8. The combination of a frame, two parallel bars free to move longitudinally, mechanism actuated by the bars moving the frame in two directions at right angles to each other, second and third pairs of parallel bars, teeth on two sides of the bars of the first pair, teeth on one side of the other bars, means whereby the latter teeth are caused to engage with the former, jaws on the second and third pairs of bars, links passing between the jaws, rods pivoted to one end of the links, means for reciprocating the rods through a constant distance, levers pivoted to the other ends of the links, and pattern mechanism for raising the levers.

9. The combination of a frame, two parallel bars free to move longitudinally, a diagonal guide, a part moving in the guide, connections between one bar and the frame and the other bar and the guide, second and third pairs of parallel bars, teeth on two sides of the bars of the first pair, teeth on one side of the other bars, means whereby the latter teeth are caused to engage with the former, jaws on the second and third pairs of bars, links passing between the jaws, rods pivoted to one end of the links, means for reciprocating the rods through a constant distance, levers pivoted to the other ends of the links, and pattern mechanism for raising the levers.

10. The combination of a frame, two parallel bars free to move longitudinally, mechanism actuated by the bars moving the frame in two directions at right angles to each other, second and third pairs of parallel bars, jaws on the bars of the second and third pair, links passing between the jaws, rods pivoted to one end of the links, means for reciprocating the rods through a constant distance, levers pivoted to the other ends of the links, pattern mechanism for raising the levers, plates on the levers, teeth on two sides of the bars of the first pair, teeth on one side of the other bars, and cams acting on the plates when raised, causing them to move the bars of the second and third pairs, so making their teeth engage with those of the first bars.

11. The combination of a frame, two parallel bars free to move longitudinally, a diagonal guide, a part moving in the guide, connections between one bar and the frame and the other bar and the guide, second and third pairs of parallel bars, jaws on the bars of the second and third pairs, links passing between the jaws, rods pivoted to one end of the links, means for reciprocating the rods through a constant distance, levers pivoted to the other ends of the links, pattern mechanism for raising the levers, plates on the levers, teeth on two sides of the bars of the first pair, teeth on one side of the other bars, and cams acting on the plates when raised, causing them to move the bars of the second and third pairs, so making their teeth engage with those of the first bars.

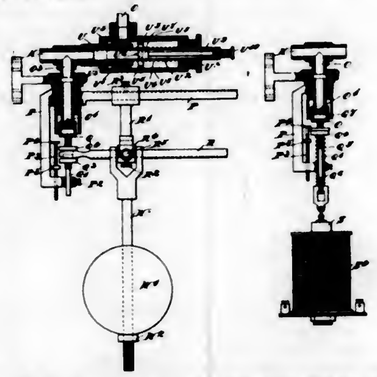
610,249. TOBACCO-PIPE RACK. HENRY SKILTON, Ramsgate, England. Filed Apr. 13, 1897. Serial No. 632,047. (No model.) Patented in England Oct. 16, 1896, No. 22,958.



Claim.—A tobacco-pipe rack having a number of perforated tobacco-pipe holders mounted upon a common pivot so as to be folded together.

610,250. GOVERNOR FOR ENGINES. EDWARD THUDERBOLT, Carlton, Victoria. Filed Apr. 10, 1897. Serial No. 631,579. (No model.)

Claim.—1. In a governing device of the kind herein described the combination with the controlling-cylinder of such device and the pump operated by the engine for supplying air to said cylinder, of a pipe or passage O having a port O', a slide-valve Q, a lever R connected with such valve and having a sliding fulcrum, and a controlling device connected to said lever R, substantially as and for the purpose described.



2. In a governing device of the kind herein described the combination with the controlling-cylinder, of the pipe or passage O, having port O', the slide-valve for said opening, the lever connected to said slide-valve, means connected to said lever for moving the same to vary the size of the valve-opening, and the adjustable stops for limiting the movement of the lever, substantially as described.

3. In a governor for marine engines, the combination with the controlling-cylinder of such device and the pump operated by the engine for supplying air to said cylinder, of the pressure-valve casing connected with said controlling-cylinder, an air-supply pipe connection therefrom to the air-pump, the pressure-valve therein, the second valve-casing also connected with the air-supply pipe, a valve therefor, a pendulum for operating the same, and means for locking said last-named valve out of operation when the first valve is in operation, substantially as described.

4. In a governing device of the kind herein described the combination with the controlling-cylinder of such device of a pipe or passage O, a port O', a slide-valve Q, a lever R having a sliding standard R', a pendulum W and a fixed beam P, substantially as and for the purpose described.

5. In a governing device of the kind herein described the combination with the controlling-cylinder of such device and the pump operated from the engine for supplying air to said cylinder, of a pipe or passage O, a port O', a slide-valve Q, a rod Q', a frame P, and a locking-pin P^3, with adjustable nut P^4, and the controlling device for operating the valve Q, substantially as and for the purpose described.

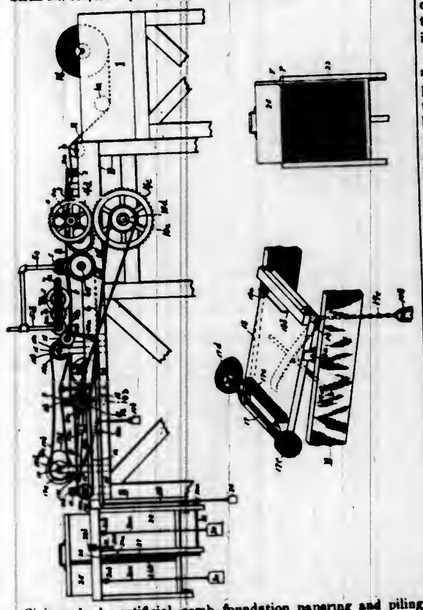
610,251. LUGGAGE-CARRIER. DAVID M. J. WALL, Buffalo, N. Y., assignor to Lillie Wall, same place. Filed June 30, 1898. Serial No. 684,870. (No model.)



Claim.—1. As an improved article of manufacture, a luggage-carrier consisting, essentially, of a main bar having its ends formed into hooks adapted to engage an object to which the luggage-carrier is to be attached, eyes formed on said bar adjacent to said hooks, an auxiliary bar shorter than the main bar and having hooks adapted to snap onto the main bar, eyes formed in said auxiliary bar adjacent to said hooks, links, connecting said bars and formed of rods having their ends formed into eyes engaging each other and the said eyes on the bars respectively, and a bag secured with its sides to the said bars and with its ends to said links, as and for the object set forth.

2. A frame for a parcel-carrier consisting, essentially, of a bar, hooks at the end thereof, eyes adjoining these hooks, a further bar slightly shorter than the said first-mentioned bar and having hooks at its ends adapted to engage the said first-mentioned bar, loops adjoining these hooks, and links having eyes at their ends engaging each other and the eyes and loops of the bars respectively, as and for the use and purpose specified.

610,252. MACHINE FOR PAPERING AND PILING ARTIFICIAL HONEYCOMB-FOUNDATIONS. EDWARD R. WEED, Medina, Ohio, assignor to the A. I. Root Company, same place. Filed Nov. 5, 1897. Serial No. 657,453. (No model.)



Claim.—1. An artificial-comb-foundation papering and piling device consisting of a receptacle for receiving sheets of foundation with adhering sheets of paper; a holder for sheets of paper; a feeder to place foundations into contact with the sheets of paper on the holder, and a carrier to carry the foundations with the adhering sheets of paper to the receptacle.

2. Means for placing sheets of paper between sheets of artificial comb-foundation when piled, said means consisting of a holder adapted to hold a pile of sheets of paper; means for placing sheets of artificial comb-foundation consecutively into contact with said pile of papers whereby a sheet of paper will adhere to each sheet of foundation; and a carrier to remove the said foundations with the adhering sheets of paper from the pile of paper.

3. A pivoted paper-holder, a carrier for carrying foundations to the paper-holder, a receptacle, and a carrier to take sheets of foundation with adhering sheets of paper from the paper-holder to the receptacle.

4. The combination of a pivoted paper-holder for supporting sheets of paper, rollers for carrying foundations after they shall have been cut to a required size onto paper held by said paper-holder, means for elevating the forward end of the paper-holder, a revolving stop at the forward end of the paper-holder, a driven shaft arranged above the paper-holder, a brush fixed to said shaft and adapted to engage the foundation-sheets, and a cam on said shaft for depressing the forward end of the paper-holder, substantially as described.

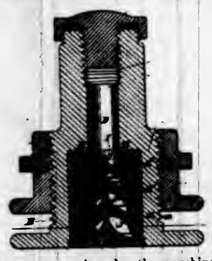
5. The combination of a pivoted paper-holder having a weighted lever adapted to elevate its forward end and a spring-clamp for holding sheets of paper on top of the paper-holder, with means for conveying foundations after they shall have been cut into sheets of a required size onto the paper on said paper-holder, a stop at the forward end of the paper-holder, a driven shaft arranged above the paper-holder, a cam fixed on said shaft and adapted to depress the forward end of the paper-holder, and a brush fixed to the said shaft and adapted to engage the foundation-sheet at the time that the cam depresses the paper-holder, substantially as described.

6. An artificial-comb-foundation piling device consisting of a receptacle open in front and on the rear end and adapted to be raised and lowered in a suitable frame, in combination with a rock-shaft journaled back of the receptacle, a bell-crank lever having an arm 19^b, a rock-shaft 21 having an arm 21^a and a downwardly-projecting arm, a connecting-rod 20, a flap hinged in front of the receptacle, an arm extending outwardly from the flap, a rod connecting this arm and the downwardly-projecting arm of the rock-shaft, and means for operating the bell-crank lever, substantially as described.

7. The combination of die-rolls, an endless carrier and a gripping-roller to take favosed sheets of wax from the die-rolls, a knife for cutting the favosed sheets into foundations of a required size, a paper-holder pivoted in front of the endless carrier, rollers for conveying the foundation-sheets into the paper-holder, a receptacle, means for carrying the foundation-sheets from the paper-holder into the receptacle, and means for automatically arranging the foundation-sheets in a uniform pile in said receptacle, substantially as described.

8. The combination of die-rolls, means for conveying favosed sheet of wax from the die-rolls to the cut-off knife, a paper-holder pivoted forward of the cut-off knife, means for carrying the foundation-sheets from the cut-off knife onto said paper-holder, a weighted lever adapted to elevate the forward end of the paper-holder, a revolving stop journaled in standards at the forward end of the paper-holder, means for depressing the forward end of the paper-holder at intervals, and means for carrying the foundation-sheets from the paper-holder into the receptacle, substantially as described.

610,253. VALVE. FRANK M. BELL, New York, N. Y., assignor of one-half to Wilma Pollack, same place. Filed Sept. 21, 1897. Serial No. 652,436. (No model.)



Claim.—1. In an automatic valve the combination of an outer casing with an inner casing and valves adapted to be seated by pressure within said inner resilient casing, substantially as specified.

2. In an automatic valve, the combination of an outer substantially non-resilient casing with an inner resilient casing having seats arranged therein and a plurality of substantially non-resilient concavo-convex valves arranged within said inner resilient casing, substantially as specified.

3. In an automatic valve, the combination of an outer casing with an inner resilient casing having seats arranged therein and a plurality of superposed, concavo-convex valves arranged within said inner resilient casing, substantially as specified.

4. In an automatic valve, the combination of an outer casing with an inner resilient casing having seats arranged therein, a plurality of valves arranged therein, and means for maintaining said valves separated from each other within said resilient casing, substantially as specified.

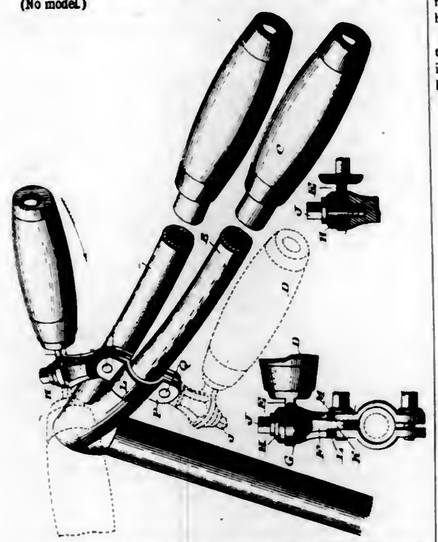
5. In an automatic valve, the combination of an outer casing with an inner resilient casing having a terraced aperture therein forming seats, a series of graduated concavo-convex valves arranged therein, and means for maintaining said valves duly separated within the resilient casing, and the resilient casing in position within the outer casing, substantially as specified.

6. In an automatic valve, the combination of an outer casing having a hollow stem, and means for sealing the nozzle thereof, with an inner, resilient casing having an aperture therein provided with valve-seats, a plurality of concavo-convex valves arranged within said inner resilient casing, a foraminated head secured within the casing at its base to hold the inner, resilient casing and valves arranged therein in position within said outer casing, means for maintaining said valves separated from each other and the foraminated head, and means for securing the valve to a container, substantially as specified.

7. In an automatic valve, the combination of an outer casing having a hollow stem extending therefrom and provided with a plug for sealing the nozzle thereof, with an inner, resilient casing having a terraced aperture therein forming valve seats, a series of graduated, substantially non-resilient concavo-convex valves arranged within said resilient casing, a foraminated head secured within the outer casing at its base, means for maintaining said concavo-convex valves separated from each other, and the lowermost valve from the foraminated head, and means for securing the valve to a container, substantially as specified.

8. In an automatic valve, the combination with an outer casing having screw-threads arranged upon its outer surface, a stem extending from the top thereof, and a lateral flange projecting from the base thereof, an aperture extending through said outer casing and stem, a screw-plug adapted to seal said aperture at the end of the stem, a soft-rubber casing arranged within the outer casing having a terraced aperture therein forming valve-seats, a series of substantially non-resilient concavo-convex valve-faces arranged within said soft-rubber casing, said valve-faces being provided upon their convex surfaces with centrally-situated teats, a head provided upon its upper surface with a centrally-situated teat and a series of concentrically-arranged air-ports, said head being secured within the outer casing at its base to maintain the soft-rubber inner casing in position within the outer casing, and coil-springs disposed upon the teats above named whereby to maintain the valves separated from each other and the head, and a screw-threaded sleeve working upon the outside of the casing provided with a laterally-projecting flange, and a binding-nut disposed upon the outside of the case above the sleeve whereby to lock the sleeve in position, substantially as specified.

610,254. ADJUSTABLE GRIP FOR HANDLE-BARS OF BICYCLES. NUMA A. BILLE, Philadelphia, Pa., assignor of one-half to Fritz Muller, same place. Filed Apr. 10, 1897. Serial No. 631,484. (No model.)



Claim.—1. A clamping device adapted to be detachably secured to a bicycle handle-bar, a post pivoted at one end to one end of said clamping device and adapted to be clamped in fixed position thereon, and a handle provided with a shank mounted on said post and adjustable thereon at substantially right angles to the longitudinal extension of said post.

2. In an adjustable grip for handle-bars of bicycles, a clip composed of sections having ears at their ends and provided with clamping-screws, a post having a tongue adapted to be pivoted between said ears, a bolt having a flanged portion and adapted to be secured to said post, a shank held on said bolt between said flanged portion and said post, and a handle on said shank.

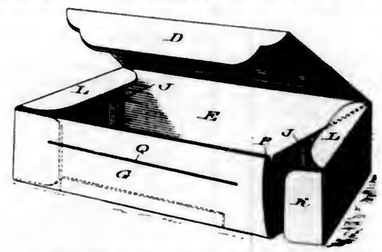
610,255. PAPER BOX. GUSTAV A. BISLER, Philadelphia, Pa. Filed May 25, 1898. Serial No. 681,713. (No model.)

Claim.—1. A paper box having a body provided with a tubular tuck, closed at top and bottom, and a tongue adapted to be inserted into an end thereof.

2. A paper box having a flap continuous of a wall of the body thereof and connected therewith, forming a tubular tuck open at the ends thereof and closed at top and bottom, said tuck being adapted to receive lips on said body for holding the latter in closed condition.

3. A paper box formed of the parts of a body as described, and an additional flap and attaching fold continuous of a wall of the box, said flap being turned on said wall and secured by said fold forming a tubular tuck open at each end for the reception of locking-tongues on said body for holding the latter in closed condition.

4. A paper box having a body provided with a double wall forming a tubular tuck, and tongues adapted to enter said tuck at each end for holding the members of said body in closed condition.

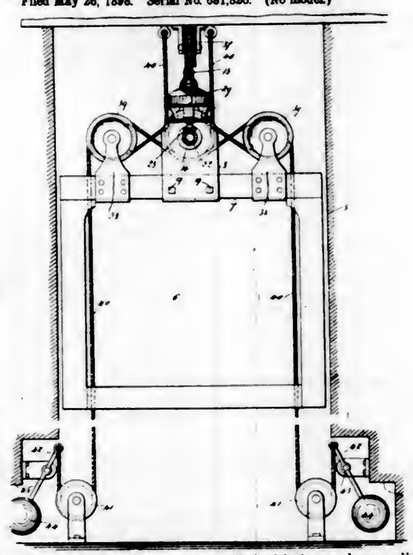


5. A paper box having a body formed of a back, a bottom, ends, tongues on said ends, and a tubular tuck in front, said tuck being open at its opposite ends and said tongues being adapted to enter said ends and thereby hold said body in closed condition.

6. A paper box comprising sides, ends, bottom, tuck and lid formed of one piece of material, said tuck being closed at top and bottom and open at its ends.

7. A paper box comprising a body formed of sides, ends, bottom and lid, and an additional member integral therewith, constituting a tubular tuck which is open at its ends and closed at top and bottom.

610,256. ELEVATOR-BRAKE. GEORGE BROWN, New York, N. Y. Filed May 26, 1898. Serial No. 681,830. (No model.)



Claim.—1. An elevator-car provided with the usual suspending-cable by which it is raised or lowered, and a brake mechanism, comprising two vertical plates secured to the top of the elevator-car, a brake-shaft passing therethrough, two double pulleys mounted on said shaft and adapted to revolve in opposite directions, means for locking either of said pulleys to said shaft, a governor connected with said shaft, a threaded wheel mounted on the end of said shaft adjacent to one of said plates, and provided with a ratchet-hub, a locking-bar connected with said governor and operating in connection with said hub, two other double pulleys mounted on opposite sides of said first-named pulleys, and two supplemental cords or cables which are connected with a suitable support at the top of the shaft, and passed around the pulleys on the brake-shaft, and the pulleys at the opposite sides thereof, said supplemental cables being also carried downwardly to the bottom of the shaft and provided with yielding connections, substantially as shown and described.

2. The combination with an elevator-car provided with a cable by which it is raised and lowered, of a brake mechanism, comprising two supplemental cables secured at the top of the elevator-shaft and

provided with suitable connections at the bottom thereof, a brake-shaft mounted in yielding side plates at the top of the car, two double pulleys mounted thereon, and adapted to revolve in opposite directions, one or the other of said pulleys being always locked in connection with said shaft, other pulleys mounted on the opposite sides of the pulleys on the brake-shaft, a screw-threaded wheel mounted on one end of said shaft provided with a ratchet-hub, said wheel being adapted to be forced against one of said plates, and a governor in operative connection with said shaft and provided with a vertically-movable bar which is adapted to operate in connection with said ratchet-hub, substantially as shown and described.

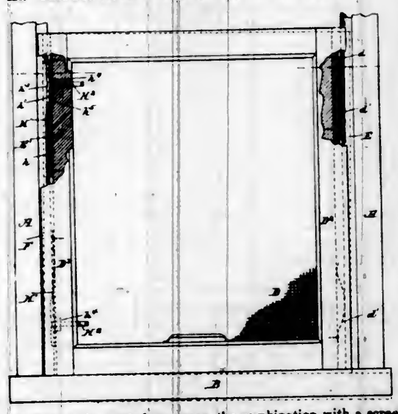
3. In a brake mechanism for elevator-cars constructed as herein described, the combination of two yielding plates, a brake-shaft passing therethrough, two double pulleys mounted on said shaft and adapted to be locked in connection therewith, one end of said shaft being screw-threaded and provided with a screw-threaded wheel which is adapted to be forced against one of said plates, and a governor geared in connection with said end of said shaft and provided with a vertically-movable locking-bar, which is adapted to operate in connection with said wheel, substantially as shown and described.

4. A brake mechanism for elevator-cars constructed as herein described, and comprising two yielding plates, a brake-shaft passing therethrough, two pulleys mounted on said shaft and adapted to revolve in opposite directions, one end of said shaft being screw-threaded and provided with a screw-threaded wheel which is adapted to be forced against one of said plates, and a governor geared in connection with said end of said shaft, and adapted to operate in connection with said wheel, and two supplemental cables which are connected with a support at the top of the elevator-shaft and passed around said pulleys, said cables being carried downwardly to the bottom of the shaft and provided with yielding connections, substantially as shown and described.

5. A brake mechanism for elevator-cars comprising two yielding plates secured at the top thereof, a brake-shaft passing therethrough, a governor in operative connection with the end of said shaft, a screw-threaded wheel, mounted on the screw-threaded end of said shaft, means connected with said governor for preventing the revolution of said wheel, two double pulleys mounted on said shaft and adapted to be locked in connection therewith, and supplemental cords or cables supported at the top of the elevator-shaft and passed around said pulleys, substantially as shown and described.

6. A brake mechanism for elevator-cars comprising two yielding plates secured at the top thereof, a brake-shaft passing therethrough, a governor in operative connection with the end of said shaft, a screw-threaded wheel mounted on the screw-threaded end of said shaft, means connected with said governor for preventing the revolution of said wheel, two double pulleys mounted on said shaft and adapted to be locked in connection therewith, and supplemental cords or cables supported at the top of the elevator-shaft and passed around said pulleys, said car being also provided with supplemental pulleys on the opposite sides of the pulleys mounted on the brake-shaft and around which said supplemental cords or cables are also passed, substantially as shown and described.

610,257. WINDOW-SCREEN. EDWARD T. BURROWES, Portland, Me. Filed Dec. 28, 1897. Serial No. 663,976. (No model.)



Claim.—1. In a window-screen, the combination with a screen-frame, of independent positively-adjustable screen-justifying devices at the edge of the frame, substantially as described.

2. In a window-screen, the combination with a screen-frame, of yielding abutments at one edge thereof, and means for justifying the screen on the opposite edge, substantially as described.

3. In a sliding screen, the combination with a screen-frame, of yielding abutments secured at one edge of the same, and independent positively-adjustable justifying devices at the opposite edge substantially as described.

4. In a screen, the combination with a frame, of separated justifying-shoes located at the edges thereof, and means for independently moving the shoes toward and from the frame and maintaining the same in their adjusted positions, substantially as described.

5. In a sliding screen, the combination with the frame having abutment-springs secured at one edge thereof, of independently-adjustable shoes at the opposite edge of the frame, and means for maintaining the shoes in their various positions of adjustment, substantially as described.

6. In a window-screen, the combination with the screen-frame, of yielding abutments secured at one edge thereof, independent, positively-adjustable justifying devices at the opposite edge of the frame, and a flange projecting from one edge of the frame beyond the plane of the justifying devices, substantially as described.

7. In a screen, the combination with a frame having one of its side moldings grooved, of spring-abutments located within the groove, a fixed bead fitted within the groove against which the abutments rest whereby the frame can be moved edgewise, a bead at the opposite edge of the frame, positively-adjustable independent justifying devices opposite the spring-abutments and a single flange on the edge of the frame opposite the grooved edge of a width greater than the extent of edge movement allowed the frame, substantially as described.

8. In a screen, the combination with an edgewise-movable frame, of positively-adjustable independent adjusting devices on the edge of the frame, and a flange on the frame projecting beyond the adjusting devices of a width greater than the edgewise-movable distance of the frame, substantially as described.

9. In a screen, the combination with an edgewise-movable frame, of independent screen-adjusting shoes at the edge of the frame, and screws resting against said shoes and engaging the frame for moving the shoes outward from the frame, substantially as described.

10. The combination with an edgewise-movable screen-frame, of a justifying-shoe comprising an elongated transversely-curved bead-engaging portion, rounded end portions, and means on the frame for adjusting the shoe outwardly, substantially as described.

11. The combination with an edgewise-movable screen-frame, of a justifying-shoe consisting of a curved bead-engaging portion and an extended securing portion, and adjusting means on the frame engaging with the bead-engaging portion of the shoe, substantially as described.

12. A justifying-shoe having a concaved bead-engaging portion formed with rounded ends, and a depressed center, and an adjusting-screw having its end secured to the depressed portion, substantially as described.

13. The combination with an edgewise-movable screen-frame having a single flange at one edge, of independent positively-adjustable justifying-shoes secured on the edge at the side of the flange, and a securing-button on the flanged edge opposite the flange, substantially as described.

610,258. CATTLE-FOOD. JAMES S. COCHRAN, Philadelphia, Pa., assignor to Andrew Cochran, same place. Filed Nov. 17, 1897. Serial No. 658,847. (No specimens.)

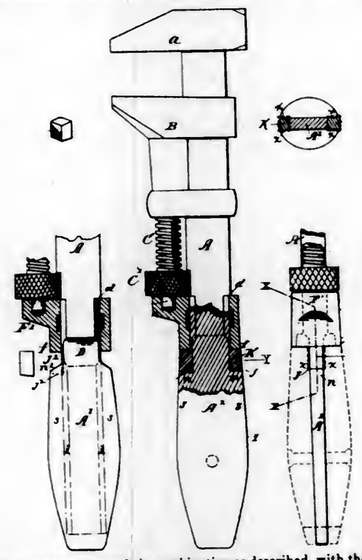
Claim.—As a new article of manufacture, food for cattle, &c., composed of sugar-cane bagasse, divested of pith, with or without a binder of suitable material, as above specified.

610,259. WRENCH. LORING COES, Worcester, Mass., assignor to the Coes Wrench Company, same place. Filed Jan. 17, 1898. Serial No. 666,851. (No model.)

Claim.—1. A wrench having its main bar formed with a shouldered neck and opposite side cavities therein, the ferrule fitted upon the neck of the bar, the extended portion of the bar-shank laterally flattened and expanded at the front and rear edges, and furnished with transverse recesses in said edges adjacent to the lower end of the ferrule, and the key-blocks or chock-pieces inserted in said recesses and respectively filling the spaces between the expanded edge portions of said bar-shank and the end of the ferrule, for the purpose set forth.

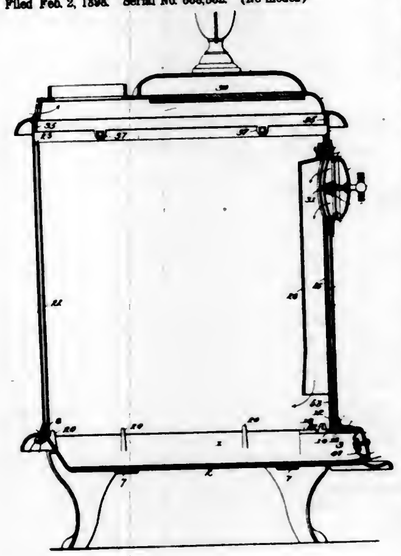
2. In a screw-wrench of the character specified, in combination with the main bar, and the ferrule fitting upon the neck of the bar-shank and against a shoulder at its top end, the projecting portion of the bar-shank laterally flattened, and expanded at the front and rear edges to the full width of the handle, and having spaces between the expanded edge portions and ferrule end dressed out to form key-

recesses, and the key-blocks or chock pieces inserted in said recesses and respectively fitting or wedged between the shoulder formed by said expanded edge portion and the ferrule end, and permanently integrated therewith by brazed contact-surfaces, for the purpose set forth.



3. In a screw-wrench, in combination as described, with the main bar and ferrule supported on the neck of said bar; the bar-shank having that portion which projects through the ferrule flattened laterally and expanded at the front and rear edges, and said edges provided with transverse recesses adjacent to the ferrule end, and the key-blocks or chock-pieces shaped to match said recesses, and formed of greater thickness than the recessed portion of the shank, inserted within said recesses between the expanded part of the shank and the ferrule, and therein laterally compressed and condensed to the normal thickness of said flattened bar-shank, substantially as and for the purpose set forth.

610,260. HEATING-STOVE. RICHARD A. CULTER, Peoria, Ill. Filed Feb. 2, 1898. Serial No. 668,862. (No model.)



Claim.—1. In a sheet-iron-drum stove and in combination with the drum and an ash-pit casting having the top curbing, a side doorway-opening extending across the top, and a ledge or seat at the top of each side of said opening, of a separately-cast plate constructed to connect at its ends the said side ledges or seats whereby to form a bridge for the ash-pit-door opening and a continuation of the top of said base and its seating for the drum.

2. The stove-base having the open ash-pit and the top, the base formed with a side opening for the ash-pit doorway extended across the top, a ledge or seat at the top of each side of said doorway-opening and a curb rising from the top around the walls of the ash-pit, in combination with the drum and a separately-cast top plate forming a segment of the base-top adapted to connect and span the top of the doorway-opening and having a curb which when said separate plate is connected to bridge said doorway will be in circular alinement with the top curb and form a continuation thereof.

3. The combination with the stove-base having the open ash-pit formed with an open side neck for the ash-pit doorway a ledge or seat at the top of each side of said open neck a curb around the walls of the ash-pit and terminating at each side of said open neck, of a separate plate adapted to connect the sides of and span the open neck at its top and formed with a curb corresponding with and forming a continuation of the curb of the base and the stove-drum whereby the ash-pit neck is bridged to form the doorway and the seating of the stove-drum made continuous.

4. The combination with the stove-drum and the base formed with a neck projecting from its side the floor of the ash-pit and the floor of the neck on a level both open at the top of the base and forming the ash-pit doorway, of a separate plate adapted to span the neck-opening and connect at its ends the side walls of the neck to form the top of the ash-pit doorway and a continuation of the top of the base, the said base and the said bridge-plate having a continuous curb for the seating of the drum over the neck-bridge.

5. The combination with the stove-drum, of the ash-pit casting having the drum-joint forming-curb, and a lining-drum op the inner side of the curb, of studs or risers arranged around the ash-pit walls on the inner side of the curb and having their sides next the curb inclined therefrom whereby the drum being fitted in place upon the studs or risers, and driven home upon their inclined sides is caused to be forced or jammed outward all around its seating edge, to form a close joining with the inner wall of the base-curb for the purpose stated.

6. The combination, with the stove-drum, a base-casting and a lining-drum, of a downdraft-flue casting upon the wall of said lining-drum a packing-ring between the drums, a valve-seat on the wall of the stove, and a draft screw-valve, the said flue-casting, packing-ring and the valve-seat being secured by the same screw-bolts to the double drum-bodies.

7. The stove-base formed with the ash-pit and the open-top neck at the side thereof each side of the neck at its top having a seat-forming surface and risers 15 and studs 16 upon said surface, in combination with a separate bridge-plate having its ends formed to engage the risers and the studs and secured in symmetrical seating with the top of said base the said bridge-plate making the upper joint-forming edge of the doorway-opening and forming the edge of said opening continuous for the doorway-joint.

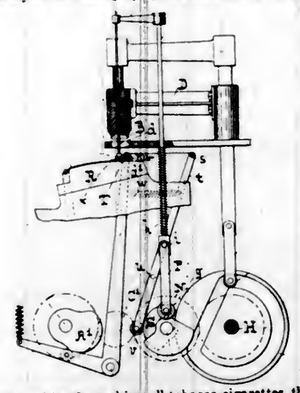
8. The stove-base formed with the ash-pit and with the neck open at the top and end the latter forming three sides of the joint-facing of the neck-opening, in combination with a separate bridge-plate for said open-top neck arranged in symmetrical seating with the top of the base and means for securing said bridge-plate in such relation to said neck-opening as to complete the fourth side of and form the doorway-joint.

9. The combination with the stove-drum and a base and a lining-drum, of the air-inlet flue the back plate thereof rests upon said base and a packing-ring at the air-inlet between the drums the said flue back plate, the packing-ring and the drums being clamped together at the said packing-ring.

10. In combination with the stove-drum, the ash-pit casting having the side opening forming the bottom and side joint-forming faces for the door, of a separate bridge-plate seated and spanning said opening and completing the joint-forming facing of the doorway and the seating for the drum.

610,261. MACHINE FOR MAKING ALL-TOBACCO CIGARETTES. JACOB S. DETRICK, Baltimore, Md., assignor, by mesne assignments, to the Detrick Cigarette Machine Company of Baltimore City, of Maryland. Filed Dec. 24, 1895. Serial No. 573,206. (No model.)

Claim.—1. In a machine for making all-tobacco cigarettes, the combination of a die, a punch, mechanism to move the punch into the die to cut a wrapper, a rolling-up table and apron having a vertical reciprocating movement or one toward and from the die, means to effect the said movement of the rolling-up table and apron, a bunching-roller, and positive means to convey the cut wrapper from the die directly to the rolling-up apron, substantially as specified.



2. In a machine for making all-tobacco cigarettes, the combination of a punch and die, a rolling-up table and apron beneath the said punch and die, a reciprocating presser-plate adapted to move from a position within the punch to the apron, and means to effect such movement, and a bunching-roller with means to operate it, so arranged and timed as to bring the bunching-roller over the edge of a wrapper delivered to the apron by the presser-plate and before the beginning of the upward stroke of the said presser-plate, substantially as specified.

610,262. TUBULAR BAR. CHARLES S. DIKEMAN, Torrington, Conn. Filed Mar. 1, 1894. Serial No. 501,960. (No model.)



Claim.—A section of a bicycle-frame consisting of a tubular bar having a thin wall and a reinforcing-tube in its end and also having a thin wall, said end of the tubular bar and the reinforcing-tube being secured together by the simultaneous taper-swaging operation.

610,263. GAS-BURNER. ALBERT L. DOWELL, Paterson, N. J., assignor of one-half to Jew Garlick, same place. Filed Feb. 28, 1898. Serial No. 672,001. (No model.)



Claim.—1. In a safety gas-burner, the combination of a casing having a lateral opening, a valve mounted to turn within the said casing and having a passage to be brought in register with the lateral opening of the casing, means for limiting the turning of the valve with reference to the casing, a shell applied to the projecting end of the valve and bearing a tip, and a fan secured to the shell, substantially as set forth.

2. In a safety gas-burner, the combination of a casing having a lateral opening, a valve mounted within the casing and having a passage to register with the opening thereof, and having its inner end made conical and forming a support for the valve and the parts applied thereto, a shell applied to the projecting end of the valve and provided with a tip, means for limiting the turning of the valve within the casing, and a fan applied to the shell, substantially as and for the purpose specified

3. In a safety gas-burner, the combination of a casing, a valve mounted within the casing and provided with a passage to register with an opening of the casing, a nut mounted upon the valve and having screw-thread connection with the casing and adapted to retain the valve in position, means for limiting the turning of the valve, and a fan having connection with the valve, substantially as described.

4. In a safety gas-burner, the combination of a casing, a valve mounted within the casing and having the end portion projecting beyond the casing reduced, a nut mounted upon the reduced end of the valve and making screw-thread connection with the casing, a shell applied to the outer end of the valve, stops between the shell and nut to limit the turning of the valve, and a fan applied to the said shell, substantially as set forth.

5. In combination, a casing having its lower end reduced and the upper portion of the reduced part made flaring, and having a lateral opening about at the juncture of the flaring portion with the reduced part, a valve mounted to turn within the casing, and having a longitudinal passage and a lateral opening in communication and adapted to register with the opening of the casing, the upper end of the valve being reduced, a nut mounted upon the valve and making screw-thread connection with the casing, a shell applied to the upper end of the valve and adapted to receive the tip, stops between the shell and nut, and a fan applied to the said shell, substantially as described.

610,264. THREAD-CUTTING ATTACHMENT FOR THIMBLES. CHARLES K. DOWNS, Seymour, Iowa. Filed Dec. 27, 1897. Serial No. 663,587. (No model.)



Claim.—1. The combination of a thimble provided at its open rear end with a laterally-extending pocket, and a thread-cutter having a blade extending across the outer end of the pocket and having its cutting edge located above the pocket beyond the edge of the thimble, substantially as described.

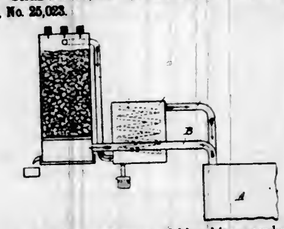
2. The combination with a thimble, having a laterally-extending pocket at its rear open end, of a plate secured in said thimble to close the gap therein caused by the pocket, and a thread-cutter projecting from the plate into said pocket, substantially as described.

3. The combination with a thimble having a laterally-extending pocket at its rear open end, of a thread-cutter seated in said pocket, and a plate integral with the cutter secured within the thimble, said plate forming a lip extending beyond the open end of the thimble, substantially as and for the purpose specified.

4. The combination with a thimble having a laterally-extending pocket at its rear open end, said pocket tapering toward the front end of the thimble, a thread-cutting blade seated in said pocket, a plate integral with the blade secured within the thimble, and a filling in the pocket, substantially as described.

5. The combination with a thimble having a laterally-extending pocket at its rear open end, a thread-cutting blade seated in said pocket and projecting beyond its open end, a plate integral with the blade secured within the thimble to close the gap therein caused by the pocket, and also forming a lip extending beyond the rear open end of the thimble, the outer end of said lip being curved inwardly, substantially as described.

610,265. PROCESS OF AND APPARATUS FOR MAKING BLEACHING-POWDER. VERO C. DRIFFIELD, Widnes, ARTHUR CAREY, Liverpool, and FREDERICK W. WRIGHT, Widnes, England, assignors to the United Alkali Company, Limited, Liverpool, England. Filed Oct. 28, 1897. Serial No. 656,423. (No model.) Patented in England Dec. 29, 1893, No. 25,023.

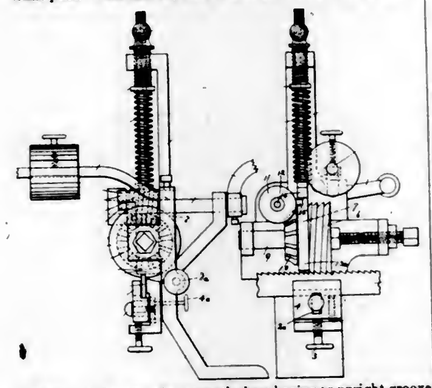


Claim.—1. In the manufacture of bleaching-powder in successive absorption-compartments, the drying of the gas issuing from any one compartment in order to remove the vapor of water evolved in that compartment or preceding compartments combined with the cooling of the gas before it enters a succeeding compartment, substantially as and for the purpose hereinbefore described.

2. In apparatus for the manufacture of bleaching-powder the combination with successive absorption-compartments through which chlorin gas passes in succession, of means—such as a cooling-cham-

ber—and means—such as a coke-tower—through which the chlorin gas passes in one direction and sulfuric acid passes in the opposite direction, both such means being located between successive compartments, the former for cooling the gases and the latter for drying them in order to remove the vapor of water evolved in the preceding compartment or compartments before the gas passes to the succeeding compartment, substantially as described.

610,266. SAW SET AND SHARPENER. PETER R. ERICKSON, Port Chester, N. Y., assignor of one-half to John William Czermak, same place. Filed Mar. 24, 1898. Serial No. 675,004. (No model.)



Claim.—1. In a saw-sharpener the base having an upright groove on one of its side faces, a clamping-plate having a rib fitting within said groove, an upright slot in said clamping-plate, an adjustable screw passing through said slot and into the base, an adjusting-screw carried by the base and engaging the lower end of said clamping-plate, and an adjusting-screw passing through said face and engaging the rear face of said clamping-plate.

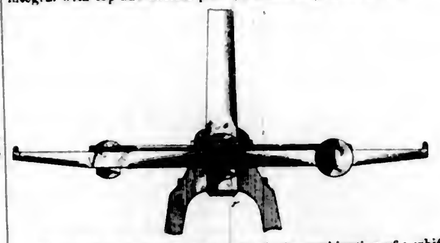
2. A device of the character herein described, comprising a suitable base, an upright connected with said base, a saw-carrier connected with said upright in which the saw is adapted to move, a frame hinged to said upright, a rotatable cylindrical sharpener and feeder mounted in said frame and provided with a spiral groove the walls of which are provided with file-surfaces, a vertically-movable spring-depressed plunger mounted in front of said sharpener and feeder, and adapted to set the teeth of the saw, and means for raising said plunger and rotating said cylinder, substantially as shown and described.

3. A device of the character herein described, comprising a suitable base, an upright connected with said base, a saw-carrier connected with said upright in which the saw is adapted to move, a frame hinged to said upright, a rotatable cylindrical sharpener and feeder mounted in said frame and provided with a spiral groove the walls of which are provided with file-surfaces, a vertically-movable spring-depressed plunger mounted in front of said sharpener and feeder and adapted to set the teeth of the saw, and means for raising said plunger and rotating said cylinder, comprising a crank-shaft mounted transversely of the shaft of the sharpener and feeder and provided with a worm-gear which operates in connection with a corresponding gear on the shaft of the sharpener and feeder, and said crank-shaft being also provided with a shoulder or projection which operates in connection with a corresponding shoulder or projection on the plunger, substantially as shown and described.

4. A device of the character herein described, comprising a suitable support, a saw-carrier connected therewith, a frame hinged to said support and provided with a weighted arm, a rotatable saw sharpener and feeder mounted in said support, a vertically-movable spring-depressed plunger mounted in front of said sharpener and feeder, and means for raising said plunger and rotating said sharpener and feeder, substantially as shown and described.

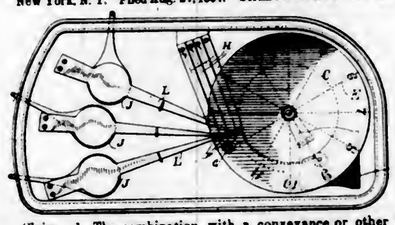
610,267. DRAFT-EQUALIZER. WILLIAM W. FERRER, Hardin, Mo., assignor of one-half to J. F. Floyd, same place. Filed Jan. 27, 1898. Serial No. 668,183. (No model.)

Claim.—1. In a device of the class described, the combination of a whiffletree having a straight rear edge, a straight rack-bar arranged at the front edge of the whiffletree, and a casing loosely receiving the whiffletree and comprising top and bottom plates, a curved rear wall having a smooth inner convex face arranged to be engaged by the straight rear edge of the whiffletree, and the front wall provided at its inner face with a curved rack meshing with the straight rack of the whiffletree, front and rear walls being formed integral with top and bottom plates, substantially as described.



2. In a device of the class described, the combination of a whiffletree provided with a straight rack at its front edge, and a casing comprising top and bottom plates and curved front and rear walls, the top and bottom plates being extended beyond the front and rear walls, and the front wall being provided with a curved rack to mesh with the rack of the whiffletree, substantially as described.

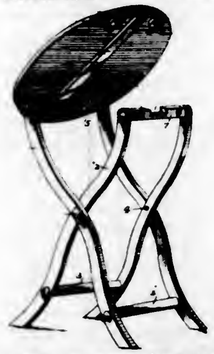
610,268. RECORDER FOR CONVEYANCES. EZRA T. GILLILAND, New York, N. Y. Filed Aug. 27, 1897. Serial No. 649,678. (No model.)



Claim.—1. The combination, with a conveyance or other support which is jarred or shaken, of a movable record, and a vibrating carrier holding the marker, when quiet, immediately off the record, but when jarred or shaken vibrating said marker repeatedly into and out of contact with the record so as not to drag thereon.

2. The combination, with a conveyance or other like movable support having a seat, of a movable record, a recording-marker, a vibrating spring-arm carrying the marker, when quiet, immediately off the record, but when jarred or shaken, vibrating said marker into and out of contact therewith, a damper to engage and stop the vibrations of said marker-carrying arm, and means whereby the burden of an occupant on the seat throws the damper out of engagement with the vibrating marker-carrying arm.

610,269. FOLDING TABLE. CURTIS H. HODGKINS, Northeast Harbor, Me. Filed Dec. 16, 1897. Serial No. 662,195. (No model.)



Claim.—1. A folding table comprising a top, the oppositely-inclined legs arranged in pairs and centrally pivoted together, the upper ends of one pair of legs being hinged to the top, a cross-bar connecting the upper ends of the other pair of legs and provided with a perforation, and a plate secured to the lower face of the table-top and provided with an inwardly-extending projection or pin arranged to engage the perforation of the cross-bar, substantially as and for the purpose described.

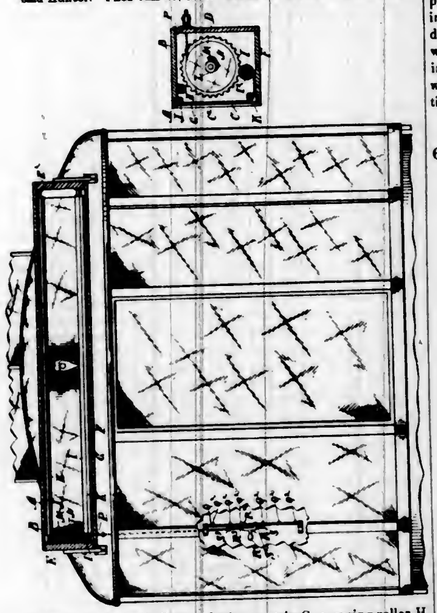
2. A folding table comprising a top, the oppositely-inclined legs arranged in pairs and centrally pivoted together, the upper ends of one pair being hinged to the top, a cross-bar connecting the upper ends of the other pair and provided with perforations and having a recess between them, plates secured to the lower face of the top and having inwardly-extending projections engaging the perforations of the cross-bar, and a longitudinal cleat mounted on the lower face of the top, arranged between said plates and fitting in the recess of the cross-bar, substantially as described.

610,270. BACK-PEDALING BRAKE. HENRY M. HUNT, Indianapolis, Ind. Filed June 19, 1896. Serial No. 596,143. (No model.)



Claim.—In an automatic bicycle-brake, the combination with a wheel-hub provided with a series of pockets, of a sprocket slidable in relation to the hub and having clutch members normally adapted for reception in the pockets, a spring-washer having a series of arms which abut on the sprocket and actuate the latter to keep its clutch members normally in the pockets of the hub, a stationary dish-shaped friction-cone whose rim is normally out of contact with the sprocket, said members being so disposed and related that when the direction of rotation of the sprocket is reversed the clutch members of the latter will be thrown out of the pockets of the hub and the sprocket will be forced into frictional contact with the rim of the friction-cone.

610,271. STATION-INDICATOR. LYTLE J. HUNTER, Covington, Ky., and WILLIAM F. PETERS, Cincinnati, Ohio; said Peters assignor to said Hunter. Filed Jan. 25, 1897. Serial No. 620,560. (No model.)



Claim.—1. In an indicator device, a strip G, a spring-roller H, and a roller I combined with the said strip, and a setting device consisting of the rail Q having lugs Q^2 and a runner R having sleeves R^2 bent at a given point for enabling the runner to pass the lugs when the runner is held in a given position and means substantially as described for enabling the runner to rotate the indicator mechanism, substantially as and for the purposes specified.

2. In an indicator device, a strip G, a spring-roller H, and a roller I combined with the said strip, and a setting device consisting of the rail Q having legs Q^2 and a runner R having sleeves R^2 bent at a given point for enabling the runner to pass the lugs when the runner is held in a given position, and a pulley-band P connected to the indicator mechanism, substantially as and for the purposes specified.

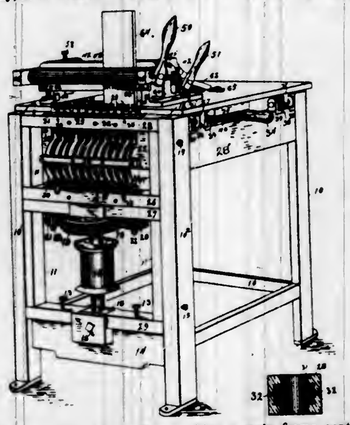
3. In a station-indicating device, the combination of the chamber having the spring-roller H and the roller I, and the indicating-strip G having its ends respectively connected to said rollers, and the roller I being provided with pinion I^2, and a gear-wheel M for enlarging the diameter, and turning with the pulley N, provided with a pulley strap or band P, in combination with a suitable device for moving the pulley-band and stopping the same at a given point, the stopping device being located outside of the frame D, and in connection with the handle worked by the operator, substantially as and for the purposes specified.

4. In a station-indicating device, the combination of the chamber having the spring-roller H and the roller I, and the indicating-strip G having its ends respectively connected to said rollers, and the roller I being provided with pinion I^2, and a gear-wheel M for enlarging the diameter, and turning with the pulley N, provided with a pulley strap or band P, in combination with a suitable device for moving the pulley-band and stopping the same at a given point, a setting device consisting of a runner R, R^2, R^2, operating on a rail provided with lugs Q^2, substantially as and for the purposes specified.

5. In a station indicating device, the combination of the chamber having the spring-roller H and the roller I, and the indicating-strip G having its ends respectively connected to said rollers, and the roller I being provided with pinion I^2, and a gear-wheel M for enlarging the diameter, and turning with the pulley N, provided with a pulley strap or band P, in combination with a suitable device for moving the pulley-band and stopping the same at a given point, a setting device consisting of a runner R, R^2, R^2, operating on a rail provided with lugs Q^2, the runner being provided with a setting device consisting of the screw S and the nut S^2, substantially as and for the purposes specified.

6. In a station-indicating device, the combination of the chamber having the spring-roller H and the roller I, and the indicating-strip G having its ends respectively connected to said rollers, and the roller I being provided with pinion I^2, and a gear-wheel M for enlarging the diameter, and turning with the pulley N, provided with a pulley strap or band P, in combination with a suitable device for moving the pulley-band and stopping the same at a given point, a setting device consisting of a runner R, R^2, R^2, operating on a rail provided with lugs Q^2, the runner being provided with a setting device consisting of the screw S and the nut S^2, the pulley-band being provided with link or links T connected together by hooks and eyes, substantially as and for the purposes specified.

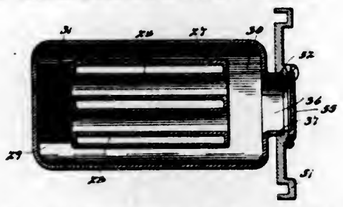
610,272. DOVETAILING-MACHINE. ERICK I. LINDWALL, Kennedy, N. Y. Filed Oct. 22, 1897. Serial No. 656,026. (No model.)



Claim.—1. In a dovetailing-machine, a main frame containing an adjustable upright frame supporting a gang of two or more curved upright shafts with conical cutters, said shafts united at their curved centers, gear-wheels and a pulley to drive the same, in combination with a table-top supported and sliding on bolts at each corner, an adjustable roll hinged to the under side of said top, eccentrically-journaled rolls and levers, a frame on said top, a lever attached to the under side of said top and to the main frame to operate said top, substantially as shown and described and for the purpose set forth.

2. In a dovetailing-machine, main frame 10, upright frame 11, adjusting-screws 13 13, pulley 16, gears 19 20 21, curved upright shafts 22 23, conical cutters 25 25, boxes 30 31, bar 24, oil-tray 33, lever 34, lugs 37 37 37 37, bolts 38, on lugs 39 39, at each corner, adjustable stop 40, clamping-frame 42 43, supports 46 46, eccentrically-journaled roll 47, clamping-piece 46', springs 48, levers 50 51, set-screws 52 52, eccentrically-journaled roll 53, hinged roll 54 and adjusting-screws 58 58, in holders 59 59, all made to operate in the manner and for the purpose set forth.

610,273. HEATING-FURNACE. JOSEPH P. MOLBY, Cambria, Mich. Filed Mar. 5, 1897. Serial No. 626,134. (No model.)



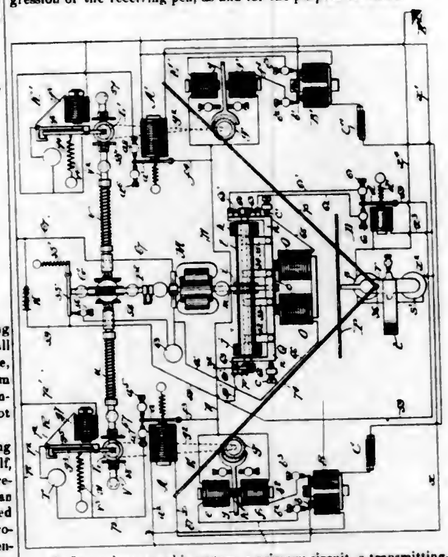
Claim.—1. In a heating-furnace, the combination with a casing forming the ash-pit, of a grate supported therein below the top wall thereof, said casing having an opening in its top wall over the grate, a fire-pot supported in said opening and having a shelf extending from the rear thereof, a flange around said shelf and fire-pot, and a combustion-chamber removably supported upon said shelf and fire-pot within the flange, substantially as described.

2. In a heating-furnace, the combination of a fire-pot consisting of a single casting and provided at its back with a horizontal shelf, a combustion-chamber supported upon the fire-pot and the shelf thereof and consisting of a single casting provided at its rear end with an upper opening located above said shelf, a lower radiator 27 composed of a horizontal series of tubes and consisting of a single casting provided at its front end with an upper opening and having a lower opening at its rear end registering with that of the combustion-chamber and connected with the latter by a joint, an upper radiator 38 composed of a horizontal series of tubes and consisting of a single casting provided at its front end with an opening communicating with the upper opening of the lower radiator and connected with the same by a joint, and supports holding the upper and lower radiators out of contact with each other and maintaining the lower radiator out of contact with the combustion-chamber and providing intervening spaces between such parts, substantially as described.

3. In a heating-furnace, the combination of a fire-pot having a shelf extending from the rear thereof, a combustion-chamber supported upon the fire-pot and the shelf thereof and provided at its rear end with an opening offset from the fire-pot and located above the shelf, said combination-chamber being provided with an upwardly-extending flange 25 surrounding the opening, the lower radiator 27 composed of a horizontal series of tubes and consisting of a single casting provided at the bottom of its rear end with an opening receiving the upwardly-extending flange 25, a support interposed between the front end of the lower radiator 27 and the combustion-chamber and cooperating with the flange 25, to hold the said lower radiator out of contact with the combustion-chamber and to provide an intervening space between them, the upwardly-extending flange 34 formed integral with the top of the lower radiator 27 and surrounding an opening at the front end of the same, an upper radiator 38 composed of a horizontal series of tubes and consisting of a single casting provided with at its front end with a bottom opening receiving the flange 34 of the lower radiator, and a support interposed between the rear ends of the upper and lower radiators and cooperating with the flange 34 to hold the upper radiator out of contact with the lower one and to provide an intervening space between the radiators, substantially as described.

610,274. TELAUTOGRAPH. LEON O. MCPHERSON, Highland Park, Ill., assignor to The Gray European Telautograph Company, Chicago, Ill. Filed Mar. 13, 1897. Serial No. 627,443. (No model.)

Claim.—1. In a telautographic system, a transmitting-pen, a receiving pen, a line-circuit and a source of electric current, means for connecting one of the poles of said source of current to the line-wire, a circuit-changer actuated by the movement of the transmitting-pen in the plane of the record surface for initially varying the resistance in the line-circuit, thereby initially varying the strength of the current sent to line-wire, an additional circuit-changer actuated by the changes in the direction of movement of progression of the transmitting-pen for introducing in such circuit additional resistance variations, thereby additionally varying the strength of the current sent to line, means arranged to be thrown into action by such initial variations in current strength for actuating said receiving pen, in the movements of progression thereof, and means arranged to be thrown into action by such additional variations in current strength for changing the direction of the movements of progression of the receiving-pen, as and for the purpose set forth.



2. In a telautographic system, a primary circuit, a transmitting-pen, a transformer a derived circuit and a receiving-pen, a circuit-changer arranged to be actuated by the movements of the transmitting-pen in the plane of the record-surface for varying the path of the line-current without varying the polarity thereof, each path including a resistance varying from that in the other path or paths, whereby through such transformer currents of alternate direction are produced in the derived circuit, and means arranged in said derived circuit and adapted to be actuated by the currents of alternate direction induced therein for controlling the movements of the receiving-pen in the plane of its record-surface, as and for the purpose set forth.

3. In a telautographic system, a line-circuit, a transmitting-pen and a receiving-pen, a circuit-changer arranged to be actuated by the movements of progression of the transmitting-pen for initially varying the path of the line-current without varying the polarity thereof, an additional circuit-changer arranged to be actuated by changes in direction of the movements of progression of the transmitting-pen for additionally varying the path of the line-current without varying the polarity thereof, each path including a different resistance, whereby the strength of line-current is initially and additionally varied without varying the polarity thereof, magnets for controlling the direction and extent of the movements of progression of the receiving-pen, circuits for said magnets, and a transformer arranged to generate currents of varying polarity from said initial and additional variations in strength of the line-current of fixed polarity, said currents of varying polarity arranged to traverse the circuit of the magnets which control the extent of movement of progression of the receiving-pen, as and for the purpose set forth.

4. In a telautographic system, a line-circuit, a transmitting-pen, a derived circuit and a receiving-pen, a circuit-changer arranged to be actuated by both the continued movement and also by variations in the direction of movement of progression of the transmitting-pen in the plane of its record-surface, and adapted to vary the path of the line-circuit, each path including a different resistance, whereby on each change of path of the line-circuit the strength of the line-current is varied without varying the polarity thereof, a transformer operated by said changes in current strength for inducing currents of varying polarity in said derived circuit, polarized magnets arranged in said derived circuit and variably actuated by such currents of varying polarity, said magnets arranged to control the extent of the movements of progression of the receiving-pen in the plane of its record-surface, a pole-changer for the line current arranged to be actuated by the movements of the transmitting-pen toward and from its record-surface, and a magnet arranged in the line-circuit and actuated by such changes in polarity of the line-current, said magnet adapted to control the movements of the receiving-pen toward and from its record-surface, as and for the purpose set forth.

5. In a telautographic system, a line-circuit, a transmitting-pen, a derived circuit and a receiving-pen, means for sending to line a current of fixed polarity, and a path-changing device arranged to be actuated by the movements of progression of the transmitting-pen in the plane of its record-surface and adapted to vary the path of the line-current, a different resistance being arranged in each path whereby the strength of the line-current is varied according to the path it traverses without varying the polarity thereof, and a transformer arranged to be acted upon by said currents of varying strength, in combination with magnets arranged in the derived circuit for controlling the movements of progression of the receiving-pen, said magnets adapted to be actuated by the currents of alternate direction induced in sai dderived circuit through said transformer by the variations of current strength in the line-circuit, as and for the purpose set forth.

6. In a telautographic system, a line-circuit, a transmitting-pen, a derived circuit and a receiving-pen, a movable switch actuated by the movements of progression of the transmitting-pen for varying the path of the line-current without varying the polarity thereof, each path including a different resistance, thereby varying the strength of the line-current, a transformer arranged to be acted upon by the variations in current strength in the line-circuit and adapted to induce, thereby, currents of varying polarity in the derived circuit, and magnets arranged in the derived circuit and adapted to be actuated by said induced currents of varying polarity for controlling the movements of progression of the receiving-pen, as and for the purpose set forth.

7. In a telautographic system, a transmitting-pen and a receiving-pen, a line-circuit connecting the same, and a derived circuit, a movable contact actuated by changes in direction of the movements of progression of the transmitting-pen for initially varying the path of the current sent to line without varying the polarity thereof, an additional movable contact arranged to be vibrated by the continued movement of the transmitting-pen in the same direction for introducing further variations in the path of the line-current without varying its polarity, a different resistance arranged in each path whereby the strength of the line-current is varied, actuating devices for the receiving-pen, a magnet arranged in the line-circuit and actuated by such initial variations in current strength, said magnet adapted to control the direction of action of said actuating devices, magnets arranged in said derived circuit adapted to control the extent of action of said actuating devices irrespective of the direction in which they operate, and a transformer arranged to be actuated by such additional variations in current strength for inducing currents in said derived circuit, as and for the purpose set forth.

8. In a telautographic system, a transmitting-pen, a receiving-pen, a line-circuit, a path-changing device arranged to be actuated by the movements of progression of the transmitting-pen for varying the path of the line-current, a different resistance arranged in each path whereby the strength, but not the polarity, of the line-current may be varied, a derived circuit at the receiving-station, a transformer arranged and adapted to transform the variations of current strength in the line-circuit into currents of variable direction in the derived circuit, actuating devices for said receiving-pen, circuits therefor, and magnets arranged in said derived circuit and actuated by such currents of variable direction for controlling the circuits of said actuating devices, as and for the purpose set forth.

9. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, means arranged in the line-circuit and actuated by the movements of the transmitting-pen in the plane of its record-surface for varying the resistance contained in the line circuit, thereby varying the strength of electric pulsations sent to line-wire without varying the polarity thereof, a derived circuit at the receiving-station, a condenser arranged therein, actuating devices for the receiving-pen circuits therefor, and magnets arranged in the condenser-circuit and actuated by currents of alternate direction produced therein by the variations in strength of the line pulsations for controlling the circuits of said actuating devices of the receiving-pen, as and for the purpose set forth.

10. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, resistances, means arranged in the line-circuit and actuated by variations in the direction of movements of the transmitting-pen in a plane parallel to the record-surface, for initially varying the resistance included in the line-circuit, thereby varying the strength without varying the polarity of electric pulsations sent to line, means also arranged in said line-circuit and actuated by the continual movement of the transmitting-pen in the same direction for successively introducing additional resistance variations in the line-circuit, and means actuated by the movements of the transmitting-pen in a direction at right angles to the record-surface for changing the polarity of the pulsations sent to line, actuating devices for the receiving-pen, circuits therefor, a magnet arranged in the line-circuit and actuated by the initial changes in current strength and adapted to control said circuits for regulating the direction of actuation of the receiving-pen-actuating devices, a derived circuit, magnets arranged therein and adapted to control said circuits for regulating the extent of actuation of the receiving-pen-actuating devices, said magnets actuated by the additional variations in the strength of the line pulsations of fixed polarity, devices for controlling the movements of the receiving-pen in a direction substantially at right angles to its record surface, said devices arranged in the line-circuit and actuated by the changes in polarity of the line-current, as and for the purpose set forth.

11. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, means actuated by the movements of progression of the transmitting-pen for varying the resistance included in the line-circuit, thereby varying the strength of electrical pulsations sent to line without varying the polarity thereof, a pole-changing device also arranged in said line-circuit and actuated by the movements of the transmitting-pen toward and from its record-surface for varying the polarity of the current sent to line-wire, actuating devices for duplicating in the receiving-pen the movements of progression of the transmitting-pen, circuits therefor, magnets arranged to control said circuits, said circuits being in derived relation with respect to the line, a transformer actuated by the variations in current strength in the line-circuit for inducing currents in said derived circuit, a magnet arranged in the line-circuit and actuated by changes in polarity of the line-current for duplicating in the receiving-pen the movements of the transmitting-pen toward and from its record-surface, as and for the purpose set forth.

12. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, means actuated by the movements of progression of the transmitting-pen for sending to line-currents of fixed polarity but of varying strength, a derived circuit at the receiving-station, a transformer arranged in such derived circuit for transforming the variations in strength of the line-currents into currents of varying polarity, and means arranged in said line-circuit and actuated by such currents of varying polarity for controlling the movements of progression of the receiving-pen, as and for the purpose set forth.

13. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, means actuated by movements of progression of the transmitting-pen for varying the resistance in the line-circuit, a local circuit at the receiving-station, electromagnets arranged in such local circuit and adapted to control the movements of progression of the receiving-pen, a circuit in derived relation to the line-circuit, a polarized magnet arranged therein and adapted to control the circuits of said electromagnets, and a transformer also arranged in said derived circuit, adapted to send currents of alternate direction through said polarized magnet by the variations in strength of the line-currents, as and for the purpose set forth.

14. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, a local circuit at the receiving-station, means arranged in said local circuit for controlling the movements of progression of the receiving-pen, a circuit in derived relation with the line-circuit, a polarized relay arranged therein, a condenser also arranged in said derived circuit, and means actuated by the movements of progression of the transmitting-pen for varying the strength of the current sent to line, as and for the purpose set forth.

15. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, means actuated by the movements of progression of the transmitting-pen for varying the resistance in the line-circuit, and a magnetic circuit-changing device operated jointly with the resistance-varying means and maintaining a constant position during the extent of movement in a fixed direction of the transmitting-pen, and means actuated by the variations in strength of the line-current for controlling the movements of progression of the receiving-pen, as and for the purpose set forth.

16. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, an initially-acting switch arranged in the line-circuit and adapted to be actuated only in a change of direction of movement of the transmitting-pen, a switch also arranged in the line-circuit for cutting in and out resistances, means for vibrating said last-named switch during the entire extent of movement of progression of the transmitting-pen in any direction, and means actuated by the variations in current strength for controlling the movements of the receiving-pen, as and for the purpose set forth.

17. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, a magnetic switch arranged in the line circuit, means actuated by the movements of progression of the transmitting-pen for actuating said switch, means for retaining said switch in the position to which it is moved until the movement of progression of the transmitting-pen is reversed in direction, a second switch also arranged in the line-circuit, and adapted when actuated to vary the resistance of the line circuit, means actuated by the movements of

progression of the transmitting-pen for vibrating said second switch, and means actuated by variations in strength of the line-current for controlling the movements of progression of the receiving-pen, as and for the purpose set forth.

18. In a telautographic system, a circuit-changing and resistance-varying device comprising a magnet, a movable series of teeth and a switch arranged within the range of magnetic influence of such magnet, and adapted to be vibrated by the making and breaking of the magnetic circuit by the movement of such teeth in either direction, and a second switch arranged within the range of magnetic influence of such magnet and operating only upon reversals of movements of such teeth, and a circuit jointly controlled by said switches, as and for the purpose set forth.

19. In a telautographic system, a circuit-changing and resistance-varying device comprising magnets, a toothed wheel or disk arranged in magnetic influence of such magnets, a vibratory switch arranged to be actuated magnetically by the teeth of such wheel, an auxiliary switch arranged to be actuated only upon reversals of movements of such wheel, and a circuit jointly controlled by said switches, as and for the purpose set forth.

20. In a telautographic system, a circuit-changing and resistance-varying device, permanent magnets, a toothed wheel, forming when in proper position a part of the magnetic circuit of such magnets, an electric circuit-changer adapted to be vibrated magnetically by the movements of said wheel in either direction, an auxiliary circuit-changer arranged to be acted upon magnetically by said wheel and to be moved thereby only upon change in direction of movement of such wheel, as and for the purpose set forth.

21. In a telautographic system, a magnet, a wheel or disk arranged within the range of influence of such magnet, a switch frictionally coupled to move with such wheel and adapted to be acted upon magnetically thereby, and limiting-stops therefor whereby said switch is actuated only upon reversals of movement of said wheel or disk, as and for the purpose set forth.

22. In a telautographic system, a magnet, a wheel arranged within the magnetic influence thereof, a lever of magnetic material having corners or teeth formed thereon, said lever frictionally coupled to move with said wheel, limiting stops therefor, and a circuit-changing device actuated magnetically by the teeth on said lever, as and for the purpose set forth.

23. In a telautographic system, magnets presenting poles of opposite polarity, a lever having one end thereof arranged within the influence of one of said magnets, a magnetic pallet arranged within the influence of the other of said magnets, the opposite end of said lever being presented to said pallet to complete the magnetic circuit, a circuit-changing device actuated by said pallet and means for rocking said lever to break or close said magnetic circuit, as and for the purpose set forth.

24. In a telautographic system, magnetic poles of opposite polarity, a wheel arranged within the influence of one of said poles, a magnetic pallet arranged within the influence of the other of said poles, and a lever for completing the magnetic circuit between said magnets, said lever adapted to be rocked upon change in direction of movement of the said wheel whereby the said pallet is vibrated and a circuit-changer actuated by said pallet, as and for the purpose set forth.

25. In a telautographic system, magnetic poles of opposite polarity, a lever having one end thereof arranged within the influence of one of said poles, a magnetic pallet arranged within the influence of the other of said poles, said lever having the opposite end thereof presented to said pallet and said pallet and lever being provided with projecting corners or teeth upon their opposed surfaces, a circuit-changing device actuated by said pallet and means for rocking said lever, as and for the purpose set forth.

26. In a telautographic system, a magnet, a wheel within the range of influence of such magnet, a divided lever arranged to straddle said wheel and frictionally engaged to move with said wheel, said lever being acted upon magnetically by said wheel and a circuit-changing device adapted to be actuated magnetically by the movements of such lever, as and for the purpose set forth.

27. In a telautographic system, a magnet, a wheel within the range of influence of such magnet, a bifurcated lever of magnetic material, having the legs thereof arranged to straddle said wheel and to be magnetized thereby and a magnetic circuit-changing device arranged to be actuated by movements of such lever, as and for the purpose set forth.

28. In a telautographic system, a shaft suitably journaled to rotate freely in either direction, a toothed wheel mounted on to rotate with said shaft, a magnet within the influence of which said wheel is arranged, a magnetic pallet arranged to be vibrated magnetically by the teeth of said wheel, a switch actuated by said vibratory pallet, a magnetic lever frictionally coupled to rotate with said shaft, limiting-stops therefor whereby said lever responds to changes in direction of rotation of said shaft but after being initially moved is not disturbed during a continuation of movement of such shaft in the same direction, and a circuit-changer actuated by said lever, as and for the purpose set forth.

29. In a telautographic system, a shaft, a pen-drum and a toothed wheel mounted thereon, a magnet within the influence of which said wheel is mounted, a second magnet, a magnetic pallet within the influence thereof, the magnetic circuit between said magnet adapted to be made and broken by teeth of said wheel during the rotation thereof, whereby said pallet is vibrated, a switch adapted to be actuated by the vibrations of such pallet, a third magnet, a magnetic pallet within the influence thereof, a circuit-changer actuated by said pallet, and a lever frictionally coupled to said shaft and adapted to break or close the magnetic circuit between said wheel and last-mentioned pallet, limiting-stops for said lever, a transmitting-pen arm adapted to actuate said drum and line-circuit controlled jointly by said switch and circuit-changer, as and for the purpose set forth.

30. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, an arm arranged to vary the circuit connections to change the polarity of the line-current, a magnet arranged to be actuated by movements of the transmitting-pen toward and from its record-surface for actuating said arm, a rest for the receiving-pen, a polarized magnet for moving said rest toward and from the record-surface of said receiving-pen, said polarized magnet arranged in the line-circuit and actuated by reversals in polarity of the line-current, as and for the purpose set forth.

31. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, a movable contact arranged to vary the circuit connection of the line-circuit to vary the polarity of the line-current, a magnetic head connected with said contact, and a coöperating magnetic head for moving said contact, said coöperating magnetic head arranged to be actuated by movements of said transmitting-pen toward and from its record-surface, a rest for the receiving-pen, an electromagnet for moving said rest toward and from the record-surface of the receiving-pen, said magnet arranged in the line-circuit and actuated by reversals in polarity of the line-current, as and for the purpose set forth.

32. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, a movable transmitting-platen arranged to be moved by raising the transmitting-pen therefrom or lowering it thereon, a movable contact for varying the circuit connections of the line-circuit whereby the polarity of the line-current is varied, a magnetic head connected therewith and a coöperating magnetic head for moving said contact, said coöperating head arranged to be moved by the movements of said platen, a rest for the receiving-pen, an electromagnet for raising and lowering the same toward and from the record-surface of said receiving-pen, said electromagnet arranged in the line-circuit and actuated by reversals in the polarity of the line-current, whereby the movements of the transmitting-pen toward and from its record-surface are duplicated in the receiving-pen, as and for the purpose set forth.

33. In a telautographic system, a pole-changer, including magnetic poles of opposite polarity, a magnetic pallet having projecting corners or teeth, a movable magnetic head having coöperating projecting teeth or corners presented to said pallet, means for automatically moving said head whereby the magnetic circuit is disturbed and said pallet is vibrated and a reversing-switch actuated by said pallet, as and for the purpose set forth.

34. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, a pole-changer arranged in the line-circuit and comprising a reversing-switch, magnetic poles of opposite polarity, a magnetic pallet arranged within the magnetic circuit of said poles and adapted to operate said reversing-switch, a magnetic head, and means actuated by raising the transmitting-pen from and lowering the same upon the transmitting-platen for moving said head, whereby the magnetic circuit is disturbed and said pallet is actuated, and means actuated by reversals of the line-current for causing the receiving-pen to be correspoodingly raised from or lowered upon the receiving-platen, as and for the purpose set forth.

35. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, a movable transmitting-platen, a lever upon which said platen rests, whereby when said platen is moved by imposing thereon or relieving therefrom the pressure of the transmitting-pen said lever is also moved, a magnetic head carried by said lever, a pallet to which said head is presented, magnetic poles of opposite polarity within the influence of which said head and pallet are arranged, a reversing-switch arranged to be actuated by said pallet, and means actuated by reversals in the line-circuit for causing the receiving-pen to be moved toward or from the receiving-platen, as and for the purpose set forth.

36. In a telautographic system, a transmitting-pen, a receiving-pen, recording-platens therefor, and a line-circuit, a pole-changer for reversing the line-current, a magnetic head connected therewith, a coöperating magnetic head for actuating said head, said coöperating head normally held in one limit of its movement, means actuated by lowering the transmitting-pen upon its record-platen for displacing said coöperating magnetic head, thereby actuating said pole changer to reverse the line-current, whereby when said transmitting-pen is raised said coöperating magnetic head is returned to its normal position, thereby restoring the normal condition of the line-current, a rest for the receiving pen, an electromagnet for actuating said rest, said magnet being arranged in the line-circuit and normally operating to maintain the receiving-pen in elevated position, as and for the purpose set forth.

37. In a telautographic system, a receiving-pen, means for actuating the same in directions parallel with the plane of the paper, a local circuit for said pen-actuating means, a commutator arranged to make and break said circuit, a paper-shifting mechanism including a shaft, a motor for actuating the same, said commutator being mounted on and rotating with said shaft, whereby during the operation of the paper-shifter the actuation of the receiving-pen is arrested, as and for the purpose set forth.

38. In a telautographic system, a receiving-pen, a ratchet mechanism for effecting the movements of progression thereof, devices for actuating said ratchet mechanism, a commutator arranged in the circuit of said actuating devices, a paper-shifting mechanism, means for actuating the same, said commutator connected to and moving with said paper-shifting mechanism, as and for the purpose set forth.

39. In a telautographic system, a receiving-pen, a ratchet mechanism for effecting the movements of progression of said pen, electromagnets for actuating said ratchet mechanism, a paper-shifting roll, means for actuating the same, a commutator mounted on said roll and arranged in the circuit of said electromagnets for controlling said circuits, as and for the purpose set forth.

40. In a telautographic system, a receiving-pen, means for actuating the same, a paper-shifting mechanism including a shifting-roller, a commutator mounted thereon, said commutator being arranged in the circuit of the said pen-actuating means and appliances for rotating said paper-shifting roll whereby when said roll is rotated, the circuit of said actuating means is broken, thereby arresting said actuating means during the paper-shifting operation, as and for the purpose set forth.

41. In a telautographic system, a receiving-pen, means for imparting the movements of progression thereto, a paper-shifting roll, a commutator carried thereby, said commutator arranged to control the circuit of said movements of-progressiou imparting means, as and for the purpose set forth.

42. In a telautographic system, a receiving-pen, a ratchet mechanism for imparting the movements of progression thereto, electromagnets for actuating said ratchet mechanism, a paper-shifting roll, means for actuating the same, and a commutator carried thereby, said commutator arranged in the circuit of said electromagnets, as and for the purpose set forth.

43. In a telautographic system, a receiving-pen, a ratchet mechanism for imparting the movements of progression thereto, electromagnets for actuating said ratchet mechanism, a paper-shifting roll, a commutator carried thereby, a brush in constant contact with a conducting portion of said commutator, and a brush adapted to alternately contact with conducting and insulating segments of such commutator, said brushes being included in the circuit of said electromagnets, and means for rotating said roll to shift the paper, as and for the purpose set forth.

44. In a telautographic system, a receiving-pen, electrical means for imparting the movements of progression thereto, a paper-shifting mechanism including a shifting-roller, a commutator mounted on each end thereof, one of said commutators arranged to control the circuit of said paper-shifting mechanism and the other to control the circuit of the means for imparting the movements of progression to said pen, as and for the purpose set forth.

45. In a telautographic system, a receiving-pen electrically-operated means for controlling the movements of progression of said pen, electrically-operated means for controlling the direction of movements of progression of such pen, a common circuit for said electrically-operated means, a paper-shifting roll, means for actuating the same and a commutator mounted on said roll and arranged in said circuit whereby said circuit is broken during the shifting of the paper, as and for the purpose set forth.

46. In a telautographic system, a receiving pen, electrically-operated devices for controlling the extent and direction of the movements of progression thereof, a commutator for controlling the circuit of said devices, and means actuated by the shifting of the paper for actuating said commutator, as and for the purpose set forth.

47. In a telautographic system, a receiving-pen, electrically-operated devices for controlling the extent and direction of the movements of progression of said pen, a circuit for said devices, a commutator arranged in said circuit, and means actuated by the shifting of the paper for closing or breaking said circuit through said commutator, as and for the purpose set forth.

48. In a telautographic system, a receiving-pen, means for controlling the direction and extent of the movements of such pen, electrical devices for actuating said controlling means, a circuit therefor, a paper-shifting mechanism including a roller, a commutator mounted thereon but insulated therefrom, and adapted to be actuated thereby, said commutator arranged to control the said circuit, and means for actuating said paper-shifting devices, as and for the purpose set forth.

49. In a telautographic system, a receiving-pen, means for controlling the direction of movements of progression thereof, electrical devices for actuating said controlling means, a circuit therefor, a paper-shifting roll, means for rotating the same, a commutator mounted on said roll and arranged in said circuit for making or breaking said circuit and a circuit-breaker also arranged in said circuit and means actuated by the variations in strength of the line-current for actuating said circuit-breaker, as and for the purpose set forth.

50. In a telautographic system, a transmitting-pen, a receiving-pen, and a line circuit, means actuated by changes in the direction of progression of the transmitting-pen for varying the strength of the line current, electrical devices for controlling the direction of progression of the receiving-pen, a circuit therefor, a relay adapted to be actuated by variations in the strength of the line-current for controlling said circuit, and means also arranged in said circuit for making and breaking the same, a paper-shifting device, and means actuated by the movements thereof for actuating said circuit making and breaking device, as and for the purpose set forth.

51. In a telautographic system, a transmitting-pen, a receiving-pen, and a line-circuit, means actuated by the movements of progression for varying the strength of the line-current, electrical devices for controlling the movements of progression of the receiving-pen, circuits therefor, relays arranged in said circuits and adapted to be actuated by variations in strength of the line-current, an auxiliary circuit-breaker for said circuit, a paper-shifting mechanism, means for actuating the same, and means actuated by the movements of said paper-shifting mechanism for actuating said auxiliary circuit-breaker, as and for the purpose set forth.

52. In a telautographic system, a transmitting-pen, a receiving-pen, and a line-circuit, means actuated by the movements of progression of the transmitting-pen for varying the strength of the line-current, a local circuit at the receiving-station, a reversing mechanism, and an escapement mechanism arranged in parallel with each other in said local circuit, a relay arranged to control said reversing mechanism and a relay arranged to control said escapement, both of said relays adapted to be actuated by variations in the strength of the line-current, as and for the purpose set forth.

53. In a telautographic system, a transmitting-pen, a receiving-pen and a two-wire line-circuit, a rest for the receiving-pen, a polarized electromagnet having the armature thereof directly connected to said pen-rest, the coils of said polarized electromagnet being directly included in the line-circuit of both wires, a vibrating contact-arm arranged to vary the pole connections of the source of line-current, and means actuated by the movements of the transmitting-pen toward and from its record-surface for vibrating said arm, thereby simultaneously reversing the polarity of the line-current in both line-wires, as and for the purpose set forth.

54. In a telautographic system, a transmitting-pen, a receiving-pen and a two-wire line-circuit, a rest for the receiving-pen, a polarized electromagnet, the armature of said magnet forming a part of said rest, the coils of said magnet being directly included in the line-circuit of both wires, a vibrating contact-arm arranged to vary the pole connections of the source of line-current, and means actuated by lowering the transmitting-pen upon or raising it from its record-surface for vibrating said arm, thereby simultaneously reversing the polarity of the line-current in both line-wires, whereby the said magnet is energized directly by the combined current of both line-wires, as and for the purpose set forth.

55. In a telautographic system, a receiving-pen, a transmitting-pen, and a line-circuit, a local circuit at the receiving-station, a magnet of large self-induction and a magnet of relatively small self-induction arranged in parallel series with the line-circuit, and a circuit-controller for the local circuit arranged to be actuated by said magnet of small induction, whereby changes in polarity of the line-current do not affect said controller, as and for the purpose set forth.

56. In a telautographic system, a receiving-pen, a transmitting-pen, and a two-wire line-circuit, means actuated by the movements of the transmitting-pen for sending currents over both wires of the line-circuit, a local circuit at the receiving-station, an electromagnet of small self-induction arranged in series with both line-wires and adapted to control said local circuit, and a magnet of large self-induction, also arranged in series with both line-wires and in parallel with said control-magnet, whereby said control-magnet is actuated by currents arriving over either line-wire but is not affected by changes in polarity of the arriving current, as and for the purpose set forth.

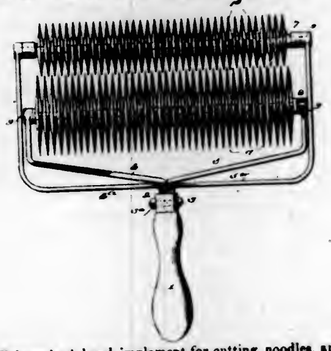
57. In a telautographic system, a transmitting-pen, a receiving-pen and a line-circuit, an interrupter adapted to be actuated by the movements of the transmitting-pen in the plane of its record-surface,

resistances arranged to be cut into or out of said line-circuit by said interrupter, whereby the strength of the current sent to line-wire is varied without varying the polarity thereof, devices for actuating the receiving-pen in the plane of its record-surface, a local circuit therefor, means for closing said circuit, an escapement for said actuating means, a circuit in derived relation with respect to said line-circuit, means arranged in said derived circuit and actuated by the variations in current strength of the line-circuit for controlling said escapement, as and for the purpose set forth.

58. In a telautographic system, a transmitting-pen, a receiving-pen, a line-circuit, resistances arranged to be included in said line-circuit, means actuated by the same movements of progression of the transmitting-pen for varying said resistances, actuating means for said receiving-pen including an escapement, actuating means for said escapement, a local circuit for said actuating means, a circuit in derived relation with respect to said line-circuit, a transformer arranged in said derived circuit for transforming the variations in strength in the line-current into currents of alternate direction, and a polarized relay for controlling the circuit of said escapement-actuating devices, as and for the purpose set forth.

59. In a telautographic system, a transmitting-pen, a receiving-pen, a line-circuit, resistance arranged to be included in said line-circuit, means actuated by the continued movement of the transmitting-pen in the same direction in the plane of its record-surface for varying the resistance in the line-circuit, means actuated by changes in the direction of movement of progression of the transmitting-pen for introducing other successive changes in the resistance of the line-circuit, means for actuating the receiving-pen including an escapement, actuating devices for said escapement, a circuit in derived relation with respect to said line-circuit, a transformer arranged in said derived circuit; a polarized magnet also arranged in said derived circuit and adapted to be actuated by the currents of alternate direction generated therein, and means actuated by said polarized relay for controlling the circuit of said escapement-actuating devices whereby the movements of the transmitting-pen in the plane of its record-surface are duplicated by the receiving-pen, as and for the purpose set forth.

610,275. NOODLE-CUTTER. BERTHA J. NEUENSCHWANDER, Vera Cruz, Ind. Filed Apr. 20, 1897. Serial No. 632,934. (No model.)

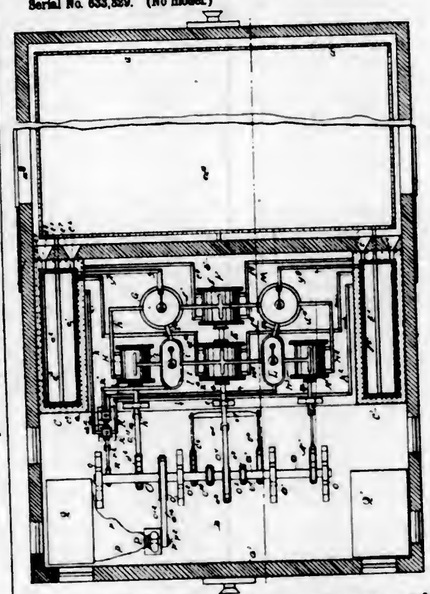


Claim.—1. A hand implement for cutting noodles, and consisting of a handle, two elastic frames secured to said handle and each frame having extremities adapted to receive and secure a shaft end, one of said frames being of greater length and width than the other, a transverse shaft detachably secured at the said extremities of each of said frames and parallel one with the other, a series of disk-knives revolubly mounted on each of said shafts, the disks of one of said series being of greater diameter than that of the disks composing the other of said series and the said disks having the greater diameter being adapted to split the strips or noodles formed by the disks of the opposite of said series of disks, substantially as shown and described.

2. In a hand implement for cutting noodles, the combination of the handle having a hollow shank, the pair of elastic frames each consisting of two arms and detachably connected and secured in said hollow shank, one of said frames being of greater length than the other, a stationary shaft secured transversely at the extremities of each of said frames and parallel with each other, the series of disk cutting-knives of small diameter revolubly mounted on one of said shafts and the series of disk cutting-knives of large diameter revolubly mounted on the other of said shafts and so arranged as to adapt them to split the noodle strips first formed by the series of small disks, substantially as shown and described.

3. In a noodle-cutter for hand use, the combination of the handle 1, the frames 4ª 5ª and 4 5 provided with downwardly-extending extremities and detachably secured to said handle, the transverse shafts mounted in said frame extremities, the cutting-disks 10 revoluble on one of said shafts and the cutting-disks 11 having a greater diameter than said disks 10 and revolubly mounted on the other one of said shafts and arranged in relation to said disk 10 as shown, substantially as and for the purposes set forth.

610,276. AIR PURIFYING AND REFRIGERATING SYSTEM FOR REFRIGERATOR-CARS, &c. EDWIN C. NICHOLS, Topeka, Kans., assignor of one-half to Wm. C. Smith, same place. Filed Apr. 24, 1897. Serial No. 633,829. (No model.)



Claim.—1. In an air purifying and refrigerating system, a refrigerator and a tank, having separate water-circulating and air-cooling chambers, and a passage for the air from the refrigerator to said air-cooling chamber in said tank, a water suction and forcing apparatus, and separate conductors connected with said apparatus and the water-circulating chamber in said tank, and a cold-air-generating apparatus, a conductor leading from the air-cooling chamber in said tank to the said cold-air generating apparatus, and a separate conductor leading from said apparatus to said refrigerator through the air-cooling chamber in said tank.

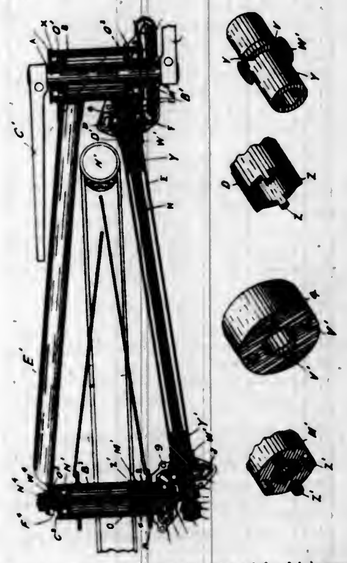
2. In a refrigerator-car, a refrigerating-chamber and a tank, having separate water-circulating and air-cooling chambers, and a passage for the air from the refrigerator to said air-cooling chamber in said tank, a water suction and forcing apparatus, and separate conductors connected with said apparatus and the water-circulating chamber in said tank, an air-compressor and a conductor of air connected with the said air-cooling chamber of said tank and said compressor, an air-expanding engine and a conductor of compressed air connected with said engine and said air-compressor, a coil of pipe for the cold air within the air-cooling chamber of said tank connected with said refrigerating-chamber, and a conductor of cold air connected with the said coil in said air-cooling chamber, and also with the said air-expanding engine, as and for the purpose set forth.

3. In an air purifying and refrigerating system, a refrigerator and a tank having separate water-circulating and air-cooling chambers and a passage for the air from the refrigerator to said air-cooling chamber in said tank, an air-compressor and an air-cooling receiver for cooling the compressed air ejected from the compressor, and a water suction and forcing apparatus, having separate conductors connected with the water-circulating chamber in said tank and also with the air-cooling receiver and a separate conductor connected with said air-cooling receiver and the water-circulating chamber in said tank, an air-expanding engine, a conductor of compressed air connected with said air-compressor and said engine, a coil of pipe for the cold air within the air cooling chamber of said tank connected with the refrigerating-chamber, and a conductor of cold air connected with the said coil of pipe and the air expanding engine, as and for the purpose set forth.

4. In an air purifying and refrigerating system, a refrigerator and a tank having separate water-circulating and air-cooling chambers, and a passage for the air from the refrigerator to said air-cooling chamber in said tank, an air-cooling receiver having separate upper and lower chambers for the expansion of the compressed air, and an intermediate water-chamber and pipes in said chamber connected with both of said air-chambers, a water suction and forcing apparatus, a conductor connected with said apparatus and the water-chamber in said receiver, and separate conductors connected with said apparatus, and also with the water-chamber in said air-cooling receiver and said water-circulating tank, a duplex air-compressor and separate conductors of compressed air, one of which is connected with one of said compressors and with the air-cooling chamber in said tank, and the other connected with the other compressor, and also with the air expanding chamber in the lower part of said receiver, an air-expanding engine and separate conductors of compressed air connected with the upper air-expanding chamber in said air-cooling receiver, and also with the coil of pipe in the air-cooling chamber in said tank, for the purpose described.

5. In an air purifying and refrigerating system a refrigerator and a tank having separate water circulating and air-colling chambers and a passage for the air from the refrigerator to said air-cooling chamber in said tank, a coil of pipe for cold air within said air-cooling chamber in said tank connected with said refrigerator, an air-cooling receiver having separate upper and lower air-expanding chambers, and an intermediate water-chamber and pipes extending from one air-chamber of said air-cooling receiver to the other, a water suction and forcing apparatus and separate conductors, one of which is connected with the water-circulating chamber in said tank, and the other with the water-chamber in said air-cooling receiver, an air-expanding engine and separate conductors connected with said engine, one of which is connected with the coil of pipe in said air-cooling chamber of said tank, and the other with the upper air-cooling chamber of said air-cooling receiver, and separate air-compressors having separate pipes conducting the air from one compressor to the other, and a conductor of recompressed air connected with one of said compressors and with the lower air-expanding chamber in the air-cooling receiver, and a separate conductor connected with the air-cooling chamber in the said tank, and also with the other air-compressor, and means for operating both compressors at different degrees of speed, as set forth.

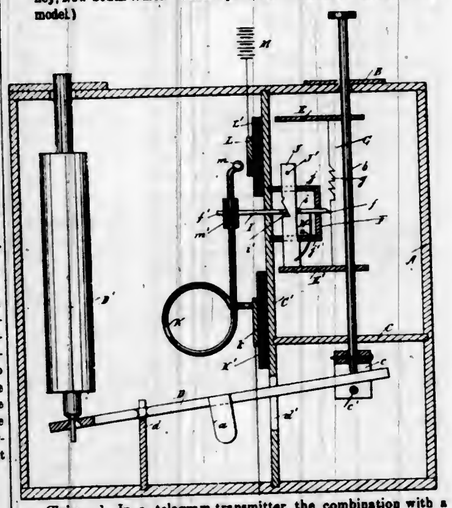
610,277. BICYCLE-GEAR. EDWARD J. O'CONNOR and EDWARD R. KNOWLES, New York, N. Y. Filed May 12, 1897. Serial No. 636,137. (No model.)



Claim.—1. In a bicycle the combination of the driving-axle and crank-shaft, each carrying a bevel-gear, and a connecting hollow shaft carrying at its extremity a tight sleeve upon which a gear-wheel rotates, said sleeve having a notched flange and the gear-wheel with corresponding projections entering the notches, and a ball-bearing cone independently and adjustably mounted with respect to the gear-wheel, all arranged to permit of the longitudinal adjustment of the wheel while it remains locked to the shaft.

2. In a bicycle, the combination of the hub of the driving wheel, a cup secured in the end thereof, the bottom of said cup having openings, a gear-wheel whose hub is internally threaded and projects into the cup and provided with lugs entering said openings and a bushing as O passing through the bottom of the cup and screwed into the hub of the gear-wheel to hold the latter in place, substantially as described.

610,278. TELEGRAM-TRANSMITTER. EDWARD PORTER, Sydney, New South Wales. Filed Sept. 4, 1897. Serial No. 650,580. (No model.)



Claim.—1. In a telegram-transmitter, the combination with a slidable key having a code-plate; of a slide having an operative connection with said code-plate during its downward movement; a circuit make and break device operated by said slide; a slidably-mounted stop-plate having a contact with said slide upon the return movement of said key, said stop-plate serving to retain said slide in a fixed inoperative position; and means, connected with said key, for moving said stop-plate at the end of movement of said key.

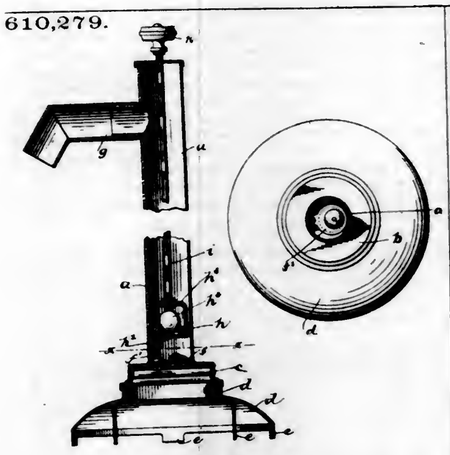
2. In a telegram-transmitter, the combination with a slidable key, having a code-plate; of a slide operatively connected to said code-plate during the downward movement of said key; a circuit make and break device operatively connected to said slide; a slidably-mounted stop-plate having a positive contact with said slide during the upward movement of said key, whereby said slide will be retained in fixed position away from said code-plate; and tappets secured to said key for moving said stop-plate into and out of operative connection with said slide, at each end of the movement of said key.

3. In a telegram-transmitter, the combination with a series of keys, each provided with code-plates; of a series of slides operatively connected with said code-plates during the downward movement of said keys; an electrical contact-plate; a series of contact-pieces, each having an operative connection with corresponding slides and each having an independent contact with said contact-plate; and means connected with said keys for holding said slides in a fixed inoperative position during the upward movement of said key.

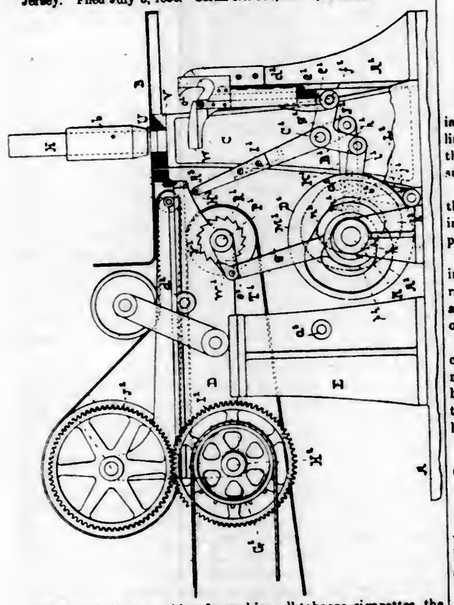
610,279. CISTERN-CLEANING DEVICE. WILLIAM M. RICKETTS, Columbus, Ohio, assignor of one-half to William H. Sinde, same place. Filed Nov. 15, 1897. Serial No. 658,564. (No model.)

Claim.—In a cistern-cleaning device, the combination with the pump-cylinder *a*, its discharge-spout, a sucker-rod and sucker working in said cylinder, a check-valve connected with said sucker and a check-valve in the lower end portion of said cylinder, of a substantially dome-shaped and flaring base-plate *d* having a rigid upstanding neck portion detachably connected with said pump-cylinder and having legs *e* formed with the lower edge of said base and with the arch portion thereof, said legs depending therefrom at intervals, substantially as and for the purpose specified.

610,279.



610,280. MACHINE FOR MAKING ALL-TOBACCO CIGARETTES. HANSON ROBINSON, Baltimore, Md., assignor, by mesne assignments, to the United States Standard Machine Company, of New Jersey. Filed July 3, 1896. Serial No. 598,053. (No model.)



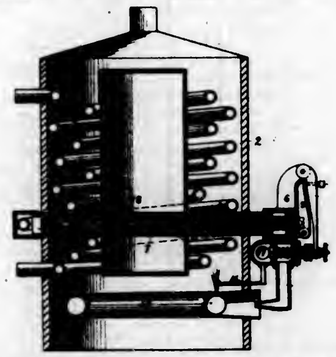
Claim.—1. In a machine for making all-tobacco cigarettes, the combination of a rolling-up table and apron, a forming-roller with means to operate it, a die, a punch and actuating devices, a wrapper-carrier within the punch with devices to operate it, and a finger within the carrier with means to force it down into the loop formed in the rolling-up apron to hold the wrapper in position until the edge of the wrapper is caught by the filler in the rolling-up operation, substantially as specified.

2. In a machine for making all-tobacco cigarettes, the combination of a rolling-up table and apron, a forming-roller with means to actuate it, a die, a vertically-moving punch with means to operate it, a wrapper-carrier having mechanism for moving it independently of the punch, a wrapper-straightening finger hinged within the said wrapper-carrier and a spring to force out the said finger so as to straighten out the wrapper after its edge has been caught by the filler, substantially as specified.

3. In a machine for making all-tobacco cigarettes, a vertically-moving rolling-up table having a pair of upwardly-hooked knives attached to its discharge end, adapted to receive and hold a cigarette as it is delivered from the said table, combined with a pair of fixed inwardly-hooked knives which project over the movable ones, whereby in the upward movement of the table the cigarette is carried with it and its ends clipped off by the cooperation of the two pairs of knives, substantially as specified.

4. In a machine for making all-tobacco cigarettes, the combination of a vertically-moving rolling-up table and apron, a paste-pot and pasting-roller which receives paste from the said pot, and means to give the said pot and roller, a vertical as well as a forward-and-backward movement, substantially as specified.

610,281. AUTOMATIC WATER-HEATER. EDWIN RUUD, East Pittsburg, Pa. Filed Jan. 22, 1897. Serial No. 620,196. (No model.)



Claim.—1. In a water-heater, the combination, of a water-heating coil, a heater for heating the same, and a thermostatic controlling means in the circuit of the coil between the inlet and outlet of that portion of the coil which is subjected to the action of the heater, substantially as set forth.

2. The combination, in a coil water-heater, of a burner, and a thermal regulating device for controlling the burner, which is located in a section of the coil exposed to the direct action of the heat supplied by the burner, substantially as set forth.

3. The combination, in a water-heater, of a heating-coil inclosed in a casing, a burner for supplying heat to the coil, and a thermal regulating device for controlling the burner and which is located in a portion of the coil exposed to the direct action of the ignited gases, or flame, from the burner, substantially as set forth.

4. In a water heater, the combination of a burner, a water-receptacle arranged in the combustion-chamber of said burner, a thermostat for operating the valve controlling the flow of gas to said burner and arranged in a chamber forming a part of the outlet from the water-receptacle and so located as to be directly subjected to the heat from the burner.

610,282. PROCESS OF MAKING COLORING-EXTRACTS. WALTER T. SCHEELE, Rahway, N. J., assignor to Carl Beringer, same place. Filed May 11, 1896. Serial No. 680,413. (No specimens.)

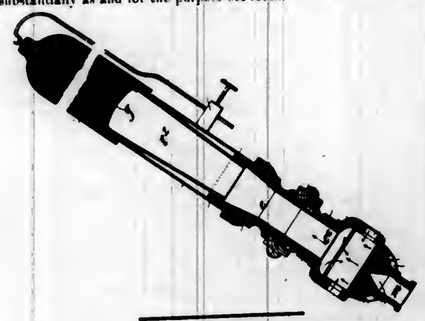
Claim.—The process of extracting the coloring principle from vegetable substances, which consists in treating the latter with ketones having their boiling-point between 80° and 227° Celsius, substantially as specified.

610,288. INCANDESCENT GAS-BURNER. PAUL G. DE SCHOOT, Namur, Belgium. Filed Oct. 19, 1897. Serial No. 655,704. (No model.)

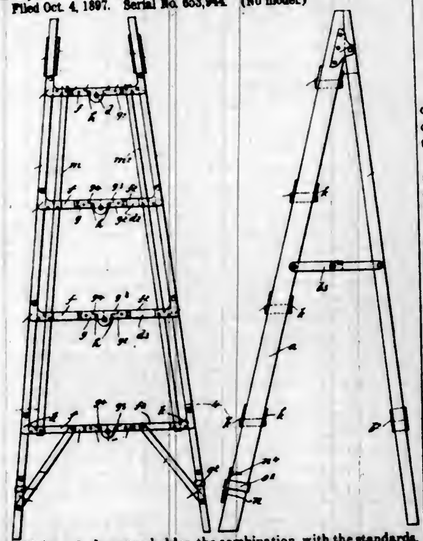
Claim.—1. A burner comprising a jacketed tube tapering from its outlet to its inlet, a wire-gauze covering said outlet, and a gas-supply pipe in communication with said tube and its jacket, for the purpose set forth.

2. A burner comprising a burner-tube tapering from its outlet to its inlet, a gas-passage leading to the burner expanding from a point intermediate of its inlet and outlet to the latter, and a mixing-chamber connected with the inlet of said passage and having its walls converging to said inlet formed of paraboloidal curves, and provided with air-ports m^1, m' respectively, of an injector-nozzle projecting axially into said mixing-chamber, substantially as and for the purpose set forth.

3. The combination with a burner comprising a cylindrical burner-tube, a wire-gauze protector covering the mouth thereof, and an inwardly-tapering tube fitting fluid-tight into said mouth, of a mixing-chamber, a conical injector-nozzle projecting axially into the same, the walls of said chamber at the outlet thereof being formed by paraboloidal curves converging to said outlet, two sets of air-ports m' m^2 formed in the chamber-walls and disposed relatively to the injector-nozzle, as set forth, and a passage leading from the outlet of the chamber to the inlet of the auxiliary burner-tube, said passage of gradually-increasing cross-sectional area from a point intermediate of the chamber-outlet and the inlet to the auxiliary tube, substantially as and for the purpose set forth.



610,284. STEP-LADDER. HERMANN SCHUBERT, New York, N. Y. Filed Oct. 4, 1897. Serial No. 653,944. (No model.)



Claim.—1. In a step-ladder, the combination, with the standards, of a plurality of steps, each of said steps comprising two sections pivoted together and provided at their outer edges with longitudinal extensions and stops and having end extensions by which the sections are pivoted to said standards, substantially as and for the purpose set forth.

2. In a step-ladder, the combination with the standards, of a plurality of steps pivoted thereto, each of said steps comprising two sections pivoted together and a rod pivoted to a section of each step at each side of the step-ladder, substantially as set forth.

3. In a step-ladder, the combination with the standards, of a plurality of steps, each of said steps comprising two sections, each pivoted at its outer end to a standard, and the inner ends of the sections being pivoted together and provided with longitudinal extensions and stops, substantially as set forth.

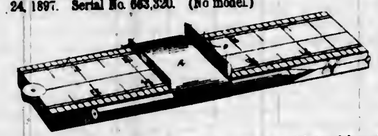
4. In a step-ladder, the combination, with the standards, of a plurality of steps pivoted thereto, each of said steps comprising two sections pivoted together, braces comprising two links each pivoted to a standard and to one of said steps, and a collar, whereby when said ladder is unfolded said collar will encompass one of said links to insure additional rigidity, substantially as and for the purpose set forth.

610,285. CUP OR PAIL. JAMES W. SCOLES, Martinsville, Ill. Filed Mar. 15, 1897. Serial No. 627,477. (No model.)



Claim.—As a new article of manufacture, a drinking-cup provided on its outside with a handle, a depending flange below the bottom of said cup and forming a recess, and a counterweight secured within the recess to partially cover the face of the cup-bottom and arranged on one side of the vertical axis of the cup-body opposite to the side to which the handle is secured, whereby the vessel is maintained normally in an upright position to float on the water by the counterweight which is disposed to utilize the liquid as a fulcrum in overbalancing the gravity of the handle, substantially as described.

610,286. GAGE. SAMUEL A. SEAT, Hematite, Mo. Filed Dec. 24, 1897. Serial No. 663,320. (No model.)



Claim.—1. A gage for rules and rulers provided with resilient clamping-jaws adapted to engage frictionally the side edges of a rule or ruler, said jaws being tubular and forming pencil-holders, substantially as described.

2. A gage for rules and rulers comprising a body, a gage-flange and resilient clamping-jaws adapted to engage frictionally the side edges of a rule or ruler, said jaws being tubular and forming pencil-holders, substantially as described.

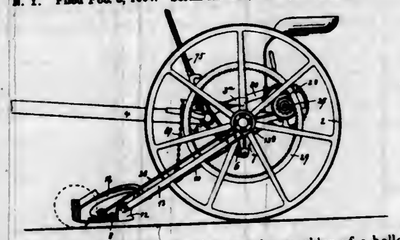
3. A gage for rules and rulers, comprising a body, a pair of resilient clamping-jaws adapted to engage the side edges of a rule or ruler to hold the gage thereon and enable it to be removed at any point, and a gage-flange provided with a projecting point adapted to be embedded in a board, substantially as and for the purpose described.

4. A gage for rules and rulers provided with a transverse gage-flange, and having an extension projecting outward beyond the gage-flange at right angles to the same and forming a wear-plate for protecting a rule or ruler and disposed longitudinally thereof, substantially as described.

5. A gage for rules and rulers provided with a transverse gage-flange and having an extension projecting beyond the flange to form a wear-plate, said extension being provided with a recess to permit the point of a pencil to be brought close to the flange, substantially as described.

6. A gage for rules and rulers comprising a body, resilient clamping-jaws arranged at the sides thereof, a gage-flange arranged at one end of the body, and a flange located at the other end of the body and adapted to form a finger-hold, substantially as and for the purpose described.

610,287. MOWING-MACHINE. ADOLPHUS I. SIMMONS, Utica, N. Y. Filed Feb. 3, 1897. Serial No. 621,773. (No model.)



Claim.—1. The combination in a mowing-machine of a hollow axle-frame, wheels, finger-bar, reciprocating knife, a knife-operating

mechanism consisting in part of a triangular oscillating frame pivoted at one corner outside of the wheel, one side of the frame extending through the hollow axle-frame, substantially as set forth.

2. The combination in a mowing-machine of a hollow frame, driving-wheel, finger-bar, reciprocating knife, knife-driving mechanism consisting in part of an oscillating frame pivoted on one side of the driving-wheel and a driving-crank located on the other side of the driving-wheel, substantially as set forth.

3. The combination in a mowing-machine of a frame, driving-wheels, a finger-bar located in front of the frame, a reciprocating knife in the finger-bar a bar connecting the knife-bar and the outer end of the frame and pivoted to each, a knife-driving mechanism and a connection 39 between the knife-driving mechanism and the said connecting-bar adjacent to the knife, substantially as set forth.

4. The combination in a thrust-cut mowing-machine of a frame, driving-wheels a finger-bar located in front of the frame, a reciprocating knife and a knife-driving mechanism consisting in part of an angular frame, one side of which passes through the drive-wheel, substantially as set forth.

5. The combination in a thrust-cut mowing-machine of a frame, drive-wheels, a finger-bar located in front of the frame and connected therewith by thrust-arms at either end, one of the thrust-arms being pivoted to the main frame and connected to the end of the finger-bar by a ball-joint in line with the finger-bar, substantially as set forth.

6. The combination in a mowing-machine of a frame, driving-wheels, a finger-bar located in front of the frame, and having shoes at each end, thrust-bars between the frame and shoes, one of which thrust-bars is rigidly attached to the frame and jointed to the shoe, and the other of which thrust-bars is pivoted to the frame and rigidly attached to the other shoe and a joint between the latter shoe and the finger-bar in the line of the finger-bar, substantially as set forth.

7. The combination in a mowing machine of a frame, driving-wheels, a finger-bar located in front of the frame, thrust-bars connecting the frame with the finger-bar, a draft-frame and a seat-support pivoted to the draft-frame and having an arm running on a wheel pivoted on the rear of the main frame, substantially as set forth.

8. A joint between the finger-bar and shoe, consisting of a curved arm 16, a ball 16ª in line with the finger-bar and a socket for receiving the same in the shoe, substantially as set forth.

9. In a mowing-machine finger-bar-hoisting device, two shafts, heads secured on the adjacent ends of the shafts, an intermediate laterally-swinging lever adapted to engage either or both of the heads, combined, substantially as set forth.

10. In a mowing-machine finger-bar hoisting device, the two hoisting-shafts each provided with ratchet-heads including ratchet-teeth, an intermediate laterally-swinging lever adapted to act on both or either ratchet-head, and secering-pawls for engaging with the ratchet-teeth combined, substantially as set forth.

11. In a mowing-machine hoisting device the combination with the two hoisting-shafts 62 and 65 extending to opposite ends of the machine, of ratchet-heads 70 including ratchet-teeth secured upon the adjacent ends of the two shafts, an intermediate lever located between the parts 70 and adapted to engage simultaneously with both or to swing laterally so as to engage one only of the ratchet-heads and pawls combined, substantially as set forth.

12. The combination in a mowing-machine of a hollow axle-frame, driving-wheels, a knife, knife-driving mechanism consisting in part of an oscillating frame pivoted at one corner of the frame having a removable side and having one side extending through the drive-wheel, substantially as set forth.

13. In a mowing-machine driving mechanism a triangular frame having one corner secured by the split threaded sleeve 44, and yoke 45 engaging on the hooked end of one of the sides, substantially as set forth.

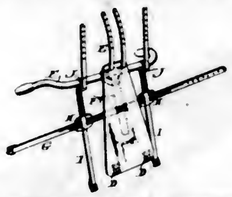
14. The combination in a mowing-machine of an axle, driving-wheels, a finger-bar and knife, a crank-shaft in the axial line of the driving-wheels, a bearing-ball at the end of the axle outside of driving-wheel, a connection between the crank-shaft and bearing-ball, and a connection between the bearing-ball and knife, substantially as set forth.

15. The combination in a mowing-machine of a hollow axle-frame, a driving-wheel, a knife, a knife-driving crank-shaft with crank located within the hollow frame, and a connection extending from the driving-crank through the axle to the knife, substantially as set forth.

16. In a mowing-machine a hollow axle-frame, a driving-wheel, a driving-crank and crank-shaft located within the frame in the axial line of the wheel and a connection from the crank to the knife, substantially as set forth.

17. The knife-bar of a mowing-machine having a hollow head adapted to receive and adjust the driving-bearing, consisting of a hollow fixed portion on the knife-bar open at top and one end, a hollow cap portion open at the bottom and one end and having an opposite inclined end, a securing-bolt acting on the inclined end, in combination with bearing-pieces received in the hollow of the head having a transverse movement within the head, substantially as set forth.

610,288. LUGGAGE-CARRIER FOR BICYCLES. DANIEL H. STREEPER, Morristown, Pa. Filed July 7, 1898. Serial No. 685,323. (No model.)



Claim.—1. In a bicycle luggage-carrier, the combination of an apron or girth A, adjustable straps E attached to one end thereof and adapted to loop about the handle-bar and the free end or ends to connect with the opposite end of the girth or apron, and connecting-straps attached to the middle part of the girth adapted for connection with the handle-bars on each side and at considerable distance from the center or point of connection therewith of the adjustable straps E.

2. In a luggage-carrier for bicycles, the combination of an apron or girth having straps arranged at one end for attachment to the bicycle handle-bars and buckles or equivalent fastening devices at the other end for attachment to the straps when the apron is bent into U shape, a transverse girth-strap attached to the apron intermediate of its ends and adapted to encircle the luggage and hold it laterally, two adjustable straps arranged one upon each side of the apron or girth and secured to the girth-strap so as to pass about the luggage substantially parallel to the girth and at an angle to the girth strap.

3. In a luggage carrier for bicycles, the combination of an apron or girth having straps arranged at one end for attachment to the bicycle handle-bars and buckles or equivalent fastening devices at the other end for attachment to the straps when the apron is bent into U shape, a transverse girth-strap attached to the apron intermediate of its ends and adapted to encircle the luggage and hold it laterally, two adjustable straps arranged one upon each side of the apron or girth and secured to the girth strap so as to pass about the luggage substantially parallel to the girth and at an angle to the girth-strap, and adjustable connections between the said adjustable straps for attaching them to the handle-bars.

4. In a luggage-carrier for bicycles, the combination of an apron or girth having straps arranged at one end for attachment to the bicycle handle-bars and buckles or equivalent fastening devices at the other end for attachment to the straps when the apron is bent into U shape, a transverse girth-strap attached to the apron intermediate of its ends and adapted to encircle the luggage and hold it laterally, and two adjustable straps arranged one upon each side of the apron or girth and secured to the girth-strap by adjustable connections permitting longitudinal adjustment of the adjustable straps relatively to the girth-strap and vice versa the said adjustable straps being constructed so as to pass about the luggage substantially parallel to the girth and at an angle to the girth-strap.

5. In a luggage-carrier for bicycles, the combination of a girth or apron adapted to be detachably secured to the handle-bar, a girth-strap connected to the apron or girth and extending laterally therefrom on both sides thereof, two adjustable straps arranged transversely to the girth-strap and located one upon each side of the apron or girth, and adjustable loops for connecting the adjustable straps to the girth-strap with provision for relative adjustment between the said straps.

6. In a luggage-carrier for bicycles, the combination of a girth or apron adapted to be detachably secured to the handle-bar, a girth-strap connected to the apron or girth and extending laterally therefrom on both sides thereof, two adjustable straps arranged transversely to the girth-strap and located one upon each side of the apron or girth, adjustable loops for connecting the adjustable straps to the girth-strap with provision for relative adjustment between the said straps, and means carried by the adjustable straps at a point above the girth-strap for attachment to the bicycle-handles.

7. In a luggage-carrier for bicycles, the combination of a girth or apron adapted to be detachably secured to the handle-bar, a girth-strap connected to the apron or girth and extending laterally therefrom on both sides thereof, two adjustable straps arranged transversely to the girth-strap and located one upon each side of the apron or girth, adjustable loops for connecting the adjustable straps to the girth-strap with provision for relative adjustment between the said straps, and means carried by the adjustable straps at a point above the girth-strap for attachment to the bicycle-handles consisting of flexible loops having slits at their ends through which the adjustable straps pass with freedom of longitudinal adjustment.

8. In a luggage-carrier, the combinaton of three straps comprising a horizontal or girth strap and two transverse parallel adjustable straps adjustably connected to the girth-strap, and adjustable loop connections carried by the adjustable straps for attachment to the bicycle handle-bars.

9. In a bicycle luggage-carrier, the combination of an apron or girth A, adjustable straps E attached to one end thereof and adapted to loop about the handle-bar and the free end or ends to connect with the opposite end of the girth or apron, a transverse girth-strap G connected to the apron intermediate of its ends, the transverse adjustable straps I, I, and adjustable loops H for connecting the straps G and I to permit adjustment of each longitudinally relatively to the other.

10. In a bicycle luggage-carrier, the combination of an apron or girth A, adjustable straps E attached to one end thereof and adapted to loop about the handle-bar and the free end or ends to connect with the opposite end of the girth or apron, a transverse girth-strap G connected to the apron intermediate of its ends, the transverse adjustable straps I, I, adjustable loops H for connecting the straps G and I to permit adjustment of each longitudinally relatively to the other, and adjustable loops J fitted to the free ends of the adjustable straps I for connection with the handle-bars.

11. In a luggage-carrier for bicycles, the combination of a girth or apron combined with retaining-straps connected at one end adapted for attachment to the handle bars and their free end or ends arranged to unite with the opposite end of said apron or girth, and lateral flexible extensions from the girth or apron provided with means for attachment to the handle-bars at a distance on each side of the upper end of the girth or apron.

610,289. CAR-SEAT. HENRY TENNEYMAN and JOHN KIRBY, Jr., Dayton, Ohio; said Tenneyman assignor to said Kirby. Filed Feb. 24, 1898. Serial No. 671,478. (No model.)



Claim.—1. In a car-seat of the class described, a seat-frame, shiftable cushion-carrying rockers carried thereby, a shiftable seat-back carried by the rockers, and arms which pivotally connect the seat-back and rockers, in combination with mechanism for imparting a forward and tilting movement to the rockers by the shifting of the seat-back, substantially as set forth.

2. In a car-seat of the class described, a seat-frame, shiftable cushion-carrying rockers carried thereby, a shiftable seat-back carried by the rockers, and arms which pivotally connect the seat-back and rockers in combination with mechanism for imparting a forward and tilting movement to the rockers by the shifting of the seat-back, and stops for limiting the movements of the seat-back and rockers, substantially as set forth.

3. In a car-seat of the class described, a seat-frame, shiftable cushion-carrying rockers carried thereby, a shiftable seat-back carried by the rockers, arms which pivotally connect the seat-back and rockers, and mechanism for imparting a forward and tilting movement to the rockers by the shifting of the seat-back, in combination with foot-rests rotatively connected with the seat-frame, and a device intermediate the rockers and the foot-rests whereby the latter are rocked by the movement of the rockers, substantially as set forth.

4. In a car-seat of the class described, a seat-frame, shiftable cushion-carrying rockers carried thereby, a shiftable seat-back carried by the rockers, arms which pivotally connect the seat-back and rockers, and mechanism for imparting a forward and tilting movement to the rockers by the shifting of the seat-back, in combination with foot rests rotatively connected with the seat-frame, a device intermediate the rockers and the foot-rests whereby the latter are rocked by the movement of the rockers, and stops for limiting the movement of the foot-rests, substantially as set forth.

5. In a car seat of the class described, the combination of a seat end having extensions, a cushion-carrying rocker movably supported on said extensions, a back-arm adapted to be attached to a seat-back, a plurality of lever-arms whose lower ends are pivoted to the rocker and whose upper ends are in pivotal connection with said back-arm and whereby the position of the back-arm is shiftable from one side of the seat end to the other; the said lever-arms and the said back-arms being carried by said rocker, and mechanism by which the said rocker is shifted by the movement of the back-arm in a reversed direction thereto, substantially as set forth.

6. In a car-seat of the class described, the combination of a seat end having extensions, a cushion-carrying rocker movably supported on said extensions, a back-arm adapted to be attached to a seat-back, a plurality of lever-arms whose lower ends are pivoted to the rocker and whose upper ends are in pivotal connection with said back-arm and whereby the position of the back-arm is shiftable from one side of the seat end to the other; the said lever-arms and said back-arms being carried by said rockcr, mechanism by which the said rocker is shifted by the movement of the back-arm in a reverse direction thereto, and stops for limiting the movements of the lever-arms and rocker, substantially as set forth.

7. In a car-seat of the class described, the combination of a seat end having extensions, a cushion-carrying rocker movably supported on said extensions, a back-arm which is adapted to be attached to a seat-back, a plurality of lever-arms whose lower ends are pivoted to the rocker and whose upper ends are in pivotal connection with said back-arm and whereby the position of the back-arm is shiftable from one side of the seat end to the other; the said lever-arms and said back-arm being carried by said rocker, mechanism by which the said rocker is shifted by the movement of the back-arm in a reverse direction thereto, a foot-rest bracket, and a device intermediate the rocker and said bracket whereby the latter is rocked by the movement of the former as the lever-arms are shifted, substantially as set forth.

8. In a car-seat of the class described, the combination of a seat end having extensions, a cushion-carrying rocker movably supported on said extensions, a back-arm which is adapted to be attached to a seat-back, a plurality of lever-arms whose lower ends are pivoted to the rocker and whose upper ends are in pivotal connection with said back-arm and whereby the position of the back-arm is shiftable from one side of the seat end to the other; the said lever-arms and said back-arm being carried by said rocker, mechanism by which the said rocker is shifted by the movement of the back-arm in a reverse direction thereto, a foot-rest bracket, and a device intermediate the rocker and the said bracket whereby the latter is rocked by the movement of the former as the lever-arms are shifted, and stops for limiting the movement of the bracket substantially as set forth.

9. In a car-seat of the class described, a seat-frame consisting of a pair of ends united by a pair of rails, cushion-carrying rockers supported by the rails, a seat-back adapted to be shifted to and fro across the seat, lever-arms in pivotal connection with the back and which lever-arms are pivoted to the rockers, and whereby the back is shiftably supported independently of operative connection with the seat-frame, in combination with mechanism cooperating with the lever-arms whereby the rockers are moved in an opposite direction thereto, substantially as set forth.

10. In a car-seat of the class described, a seat-frame consisting of a pair of ends united by a pair of rails, cushion-carrying rockers supported by the rails, a seat-back adapted to be shifted to and fro across the seat, lever-arms in pivotal connection with the back and which lever-arms are pivoted to the rockers, and whereby the back is shiftably supported independently of operative connection with the seat-frame, in combination with mechanism cooperating with the lever-arms whereby the rockers are moved in an opposite direction to the movement of the lever-arms, and stops for limiting the movements of the back and rockers, substantially as set forth.

11. In a car-seat of the class described, a seat-frame, cushion-carrying rockers supported thereby and rotatively movable thereon, a seat-back adapted to be shifted to and fro across the seat, lever-arms in pivotal connection with the back and with the rockers whereby the back is carried by the rockers independently of operative connection with the ends of the seat-frame, mechanism cooperating with the lever-arms to move the rockers in an opposite direction to the movemeot thereof: the lower pivoted ends of the said lever-arms being shiftable, with and in the direction of the travel of the rockers, substantially as set forth.

12. In a car-seat of the class described, a seat-frame, cushion-carrying rockers supported thereby and rotatively movable thereon, a seat-back adapted to be shifted to and fro across the seat, lever-

arms in pivotal connection with the back and with the rockers whereby the back is carried by the rockers independently of operative connection with the ends of the seat-frame, mechanism coöperating with the lever-arms to move the arms in the opposite direction to the movement thereof, and stops for limiting the movements of the lever-arms and rockers, the lower pivoted ends of the said lever-arms being shiftable with and in the direction of the travel of the rockers, substantially as set forth.

13. In a car-seat of the class described, a seat-frame, cushion-carrying rockers supported thereby and rotatively movable thereon, a seat-back adapted to be shifted to and fro across the seat, lever-arms in pivotal connection with the back and with the rockers and by which the back is carried by the rockers; the lower pivoted ends of the said lever-arms being shiftable in the direction of the travel of the rockers, movable foot-rests mounted below the seat, mechanism coöperating with the lever-arms to move the rockers in an opposite direction thereto, a device connecting the foot-rests with the rockers whereby the former will be rotated by the movement of the latter, and stops for limiting the movements of the lever-arms, the rockers and the foot-rests, substantially as set forth.

14. In a car-seat of the class described, a seat-frame consisting of a pair of ends united by a pair of inclined surfaced rails, a seat-back, a cushion-carrying rocker supported by said rails at each end of the seat-frame, a pair of lever-arms whose upper ends are pivotally connected with the seat-back at each end thereof on a line at right angles to the center vertical line of the back and equidistant therefrom, and whose lower ends are pivoted directly to the said rockers and shiftable therewith in the direction traveled thereby, and stops for limiting the movements of the lever-arms and rockers, in combination with a rock-shaft mounted in the rockers, and mechanism pivotally connecting the rock-shaft with the seat-back, whereby the shifting of the seat-back to and fro across the seat will move the rockers up and down the inclined surfaces of the seat-rails in an opposite direction to the movement of the seat-back, substantially as set forth.

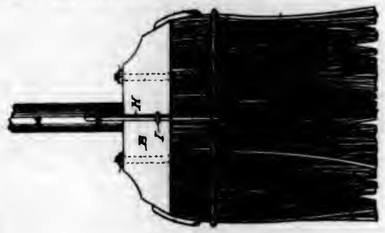
15. In a car-seat of the class described, a seat-frame, and shiftable cushion-carrying rockers carried thereby, in combination with a shiftable seat-back which is in pivotal connection with and carried by the rockers, and a rock-shaft mounted in the rockers and having operative connections between the seat-back and the frame, substantially as set forth.

16. In a car-seat of the class described, a seat-frame, and shiftable cushion-carrying rockers carried thereby, in combination with a shiftable seat-back which is in pivotal connection with and carried by the rockers, a rock-shaft mounted in the rockers and having operative connections between the seat-back and the frame, foot-rests mounted below the seat and means whereby the foot-rests are rotated by the movement of the rock-shaft caused by the shifting of the rockers, substantially as set forth.

17. In a car-seat of the class described, a seat-frame, and shiftable cushion-carrying rockers carried thereby, in combination with a pair of shiftable back-arms which are in pivotal connection with and carried by the rockers independently of operative connection with the ends of the seat-frame, a seat-back detachably supported by said back-arms, whereby the back can readily be removed and placed in position on the seat and shifted to and fro across the same, and mechanism for imparting a forward and tilting movement to the rockers, substantially as set forth.

18. In a car-seat of the class described, a seat-frame, shiftable cushion-carrying rockers carried thereby, a cushion-frame carried by the rockers, and pins projecting upwardly from the rockers and adapted to engage holes in the cushion-frame, in combination with a shiftable back which is in pivotal connection with and carried by the rockers, independently of operative connection with the ends of the seat-frame, and mechanism for imparting a forward and tilting movement to the rockers, substantially as set forth.

610,290. BROOM. HORACE THOMPSON, Concord, N. H. Filed Mar. 7, 1898. Serial No. 672,813. (No model.)



Claim.—A fiber broom provided with a clamp composed of a head-block and a form over which the fiber is placed, and bolts adapted to draw the form closely to the head-block, a handle entering the latter, a single wire passing around the lower portion of said form serving as a binder for the fiber, staples for securing the binder to said form, and a brace for said handle composed of a wire passing through the form below said binder and having its ends bent at an angle and driven into said handle, and secured to the handle and head-block by staples.

610,291. MECHANICAL MUSICAL TOY. HERMANN THORENS, St. Croix, Switzerland. Filed Apr. 30, 1897. Serial No. 634,630. (No model.) Patented in Germany July 29, 1890, No. 56,996, and in Switzerland Aug. 1, 1890, No. 2,460.

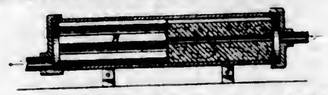


Claim.—1. In a mechanical musical toy, the combination of a sound-producing device, a note-barrel for operating said sound-producing device, a ratchet-wheel connected with said note-barrel, a lever carrying a pawl which is adapted to engage the ratchet-wheel, and a vibrating platform having a figure supported thereon, said platform being connected with the pawl-carrying lever to operate the note-barrel, substantially as described.

2. In a mechanical musical toy, the combination of a sound-producing device, a note-barrel for operating said sound-producing device, a ratchet-wheel connected with said note-barrel, a plurality of levers extending to opposite sides of said ratchet-wheel and each carrying a pivoted pawl, an operating-lever independent of the pawl-supporting lever directly connected to each of said pawls and with a vibratory piece, whereby a movement of each of said operating-levers in one direction will cause a pawl to be engaged with the ratchet-wheel while a movement thereof in the opposite direction will cause a pawl to be disengaged from and thrown out of contact with said ratchet-wheel, substantially as described.

3. In a mechanical musical toy, the combination of a sound-producing device, a note-barrel for operating the said sound-producing device, a ratchet-wheel connected with said note-barrel, a plurality of levers pivoted in line with the axis of the note-barrel and extending to opposite sides thereof, a slot in and a pivoted pawl carried by each of said levers, operating-levers, each of which is connected with a pin which connects with a pawl and projects into a slot in a pawl-carrying lever, a vibratory piece which is connected with said operating-lever to operate the sound-producing device, a figure and connections between portions of said figure and the vibratory piece, whereby a movement of the vibratory piece will cause a simultaneous operation of the sound-producing device, and a movement of parts of the figure, substantially as described.

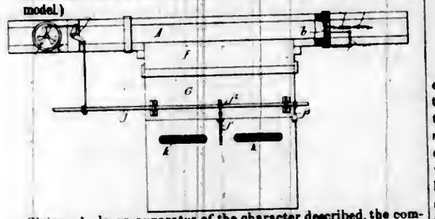
610,292. HEAT-STORAGE STEAM-RADIATOR. JAMES A. THORNTON, Baltimore, Md., assignor to Edward R. Gold, New York, N. Y. Filed May 10, 1894. Serial No. 510,723. (No model.)



Claim.—1. A radiator consisting of an outer conducting-casing, and a steam-pipe opening thereinto, combined with an inclosed heat-storage body of earthenware or analogous material filling said casing, the casing and storage body being relatively shaped to form steam-passages between them, substantially as set forth.

2. A radiator consisting of an outer conducting-casing, and a steam-pipe opening thereinto, combined with an inclosed heat-storage body of earthenware or analogous material filling said casing and formed with longitudinal grooves to form steam-passages between it and the casing.

610,293. AUTOMATIC COTTON ELEVATOR AND DISTRIBUTER. HOUSTON J. WHEELER, Hutchins, Tex., assignor of one-half to Benjamin D. Atwell, same place. Filed Mar. 4, 1898. Serial No. 672,578. (No model.)



Claim.—1. In an apparatus of the character described, the combination of a conduit having a passage for the material, and a side passage connected with an exhaust, a relief-valve at the exhaust end of the side passage, a pneumatically-controlled valve at its opposite end, a receptacle beneath the passage for the material having a screened passage leading to the side passage, a valve in said receptacle controlled by the exhaust, and a connection between said latter valve and the relief-valve, substantially as described.

2. In an apparatus of the character described, the combination of a conduit having a passage for the material, and a side passage connected with an exhaust, a relief-valve at the exhaust end of the side passage, a series of receptacles beneath the passage for the material having screened passages leading to the side passage, a pneumatically-controlled valve in the side passage at each receptacle, a valve in each receptacle normally raised by the action of the exhaust to afford a support for the material, and a connection between the receptacle-valve and the relief-valve, substantially as described.

3. In an apparatus of the character described, the combination of a conduit having a passage for the material, and a side passage connected with an exhaust, a relief-valve at the exhaust end of the side passage, a pneumatically-controlled valve at its opposite end, a receptacle beneath the passage for the material having a screened passage leading to the side passage, a hand-operated valve in said receptacle, a pneumatically-controlled valve in the receptacle below the hand-valve, and a connection between the relief-valve and the pneumatically-controlled receptacle-valve, substantially as described.

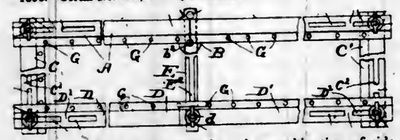
4. In an apparatus of the character described, the combination of a conduit having a central passage closed at one end and open at its other end for the reception of the material and side passages commonly connected at one end to an exhaust and provided at their other end with pneumatically-controlled valved openings, a relief-valve at one side of the exhaust end of the side passages, a hand-valve at the opposite side of said end, a receptacle beneath the conduit divided by removable screen-partitions into a central chamber opening into the central passage and into side chambers opening into the side passages, a pneumatically-controlled valve in the central chamber normally raised to afford a support for the material, and a connection between said latter valve and the relief-valve, substantially as described.

5. In an apparatus of the character described, the combination of a conduit having the three passages and the valves as set forth, of a receptacle beneath the conduit having removable screen-partitions dividing the same into three chambers which register with the conduit-passages, a hand-operated valve in the central chamber, a pneumatically-controlled valve in said chamber below the hand-valve and normally raised by the action of the exhaust to afford a support for the cotton, and screened openings for air below said valve, substantially as described.

6. In an apparatus of the character described, a conduit having a central passage closed at its inner end and open at its outer end to receive the material, and having two side passages merged at one end into a passage connected with an exhaust and having openings at their other end, valves at said openings normally closed by the action of adjustable springs, a rock-shaft carrying arms one of which is connected with a valve and the other of which is in normal engagement with a hook on the other valve, and a weight for the latter valve, substantially as described.

7. In an apparatus of the character described, the combination of a conduit having a passage for the material and a side passage connected with an exhaust, a relief-valve in said side passage consisting of a radially-slotted disk rotatably mounted on a radially-slotted plate, a receptacle for the cotton beneath the conduit, a hinged valve in said receptacle affording a support for the cotton, a rock-shaft, connections between the receptacle-valve and the shaft and between the shaft and relief-valve, and a weighted arm carried by the shaft substantially as described.

610,294. LACE-CURTAIN STRETCHER. JAMES C. WHIPPLE, Chicago, Ill., assignor to Riley T. Whipple, same place. Filed Mar. 9, 1898. Serial No. 673,207. (No model.)

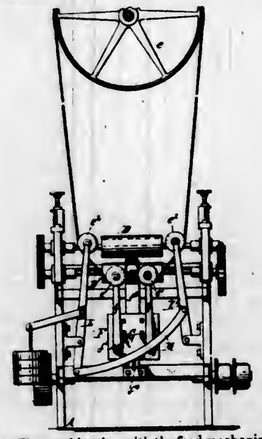


Claim.—1. In a curtain-stretcher, the combination of side and end bars, such bars having slots adjacent to one of the ends thereof, the slots in the end of each bar separated by an integral portion of the bar, bolts passing, respectively, through a bar and one of the slots in a second bar, pivotally securing the bars together at adjacent ends, a hinge secured to the side bars on one side of the stretcher, whereby such side bars are hinged together, a cross-bar forming a brace pivotally secured to such hinge, and thumb-nuts on the bolts, respectively, whereby the several bars may be rigidly secured together; substantially as described.

2. In a lace-curtain stretcher, the combination of side bars, a pivotal hinge secured to the side bars, pivotally securing adjacent ends of the side bars together, a projecting flange to one of the leaves of the hinge, and a cross-bar pivotally secured to such projecting flange; substantially as described.

3. In a curtain-stretcher, the combination of side and end bars, a pivotal hinge secured to the rails forming the side bar on one side of the curtain-stretcher at adjacent ends of such rails, transverse slots in the adjacent ends of the rails forming the other side bar, a projecting flange to one of the leaves of the hinge, a cross-bar pivotally secured to such projecting flange, and a bolt passing through the cross-bar and through the transverse slots in the adjacent ends of the rails forming the side bar on the opposite side of the curtain-stretcher; substantially as described.

610,295. FINISHING-MACHINE. CHARLES L. WIEDRICH, Buffalo, N. Y., assignor to the United Hame Company, same place. Filed June 17, 1898. Serial No. 683,681. (No model.)



Claim.—1. The combination with the feed mechanism which feeds the blanks in a predetermined path through the machine and holds the blanks against movement in a direction at right angles to the plane of said path, of a finishing-belt arranged on one side of said path and at right angles to the direction of the feed movement, a wrapping device bearing against the back of the belt on opposite sides of the blank, and mechanism whereby the wrapping device is moved to the opposite side of said path, thereby forming a bight in the belt and pressing the same against the blank while the latter is supported by the feed mechanism against the pressure of the belt, substantially as set forth.

2. The combination with the feed mechanism which feeds the blanks in a predetermined path through the machine and holds the blanks against movement in a direction at right angles to the plane of said path, of a finishing belt arranged on one side of said path and at right angles to the direction of the feed movement, wrapping-wheels which bear against the back of the belt on opposite sides of the blank, a carrier on which said wheels are mounted and which is movable toward and from the opposite sides of said path,

and means whereby said carrier is moved toward and from the opposite side of said path, thereby moving both wrapping-wheel, simultaneously in the same direction to bring the belt into and out of engagement with the blank, substantially as set forth.

3. The combination with the blank-feeding mechanism, of a finishing-belt normally arranged on one side of the path of the blank, a pair of wrapping-wheels engaging with the belt on opposite sides of the blank, a carrier on which said wheels are mounted and whereby the latter are simultaneously moved in the same direction for engaging the belt with the blank and disengaging the same therefrom, a friction-board connected with said carrier and a pair of friction-rollers which are engaged with opposite sides of the friction-board for shifting the board and the finishing-belt connected therewith into an operative position and disengaged therefrom to release the board and permit the belt to resume its normal position, substantially as set forth.

4. The combination with the blank-feeding mechanism, of a finishing-belt normally arranged on one side of the path of the blank, a pair of wrapping-wheels engaging with the belt on opposite sides of the blank, a carrier on which said wheels are mounted and whereby the latter are simultaneously moved in the same direction for engaging the belt with the blank and disengaging the same therefrom, a rock-lever connected with said carrier, a spring whereby the rock-lever is yieldingly held in its normal position a friction-board connected with the rock-lever and provided with a thick and a thin portion, a pair of friction-rollers which are adapted to engage with opposite sides of the friction-board and one of which is journaled in stationary bearings while the other is journaled in movable bearings, and a treadle whereby the movable roller is shifted, substantially as set forth.

5. The combination with the pairs of horizontal feed-rollers, and a finishing-belt arranged transversely between said pairs and normally above the lower feed-rollers, of a pair of wrapping-wheels engaging with the belt between the pairs of feed-rollers and a carrier on which said wheels are mounted and which is capable of vertical movement, substantially as set forth.

6. The combination with the blank-feeding mechanism, of a finishing-belt arranged on one side of the path of the blank, a pair of wrapping-wheels engaging with the belt on opposite sides of the blank, a shifting mechanism whereby the wrapping-wheels are moved simultaneously in the same direction for engaging the belt with the blank and disengaging the same therefrom, and a take-up wheel engaging with the finishing-belt and mounted on a movable support, substantially as set forth.

7. The combination with the blank-feeding mechanism, of a finishing-belt arranged on one side of the path of the blank, a pair of wrapping-wheels engaging with the belt on opposite sides of the blank, a shifting mechanism whereby wrapping-wheels are moved simultaneously in the same direction for engaging the belt with the blank and disengaging the same therefrom, take-up wheels engaging with the finishing-belt outside of the wrapping-wheels and mounted on movable supports, and connecting mechanism whereby the take-up wheels are caused to move together, substantially as set forth.

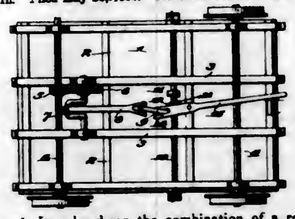
8. The combination with the blank-feeding mechanism, of a finishing-belt arranged on one side of the path of the blank, a pair of wrapping-wheels engaging with the belt on opposite sides of the blank, a shifting mechanism whereby wrapping-wheels are moved simultaneously in the same direction for engaging the belt with the blank and disengaging the same therefrom, take-up wheels engaging with the finishing-belt outside of the wrapping-wheels, rock-levers carrying the take-up wheels, a rod or bar connected at its ends with one lever above its fulcrum and with the other lever below its fulcrum, and a weight whereby said levers are normally turned for pressing the take-up wheels against the belt and drawing the latter taut, substantially as set forth.

610,296. SAGE-BRUSH GRUBBER. CLARENCE E. ALVORD, Denver, Colo., assignor to Marshall P. Getchell, Gunnison, Colo. Filed Apr. 22, 1897. Serial No. 633,265. (No model.)



Claim.—The combination with the frame comprising two parallel bars, a series of teeth extending from each of said bars, a gudgeon secured between said parallel bars at each end, locking projections on the outer end of said gudgeons, a side frame having an annular opening and a rearwardly-extending body portion, with integral upwardly-extending lugs, locking and operating dogs pivoted to said lugs, one of the gudgeons being journaled in the said opening in the side frame, one of said dogs having a rearwardly-extending operating-handle, a pair of runners secured to the respective parallel bars and extending in opposite directions from said bars respectively, and a controlling-handle secured rigidly to the side frame.

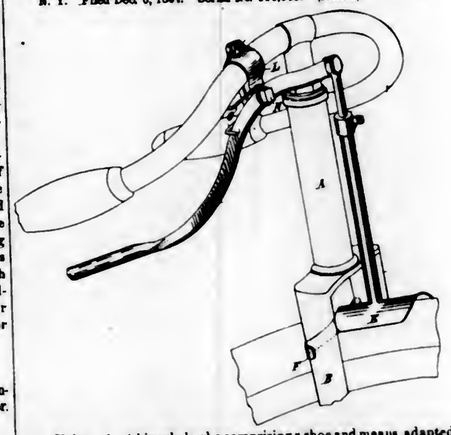
610,297. CONVERTIBLE HAND-CAR. PETER ARMSTRONG, Kankakee, Ill. Filed May 26, 1897. Serial No. 638,263. (No model.)



Claim.—1. In a hand-car, the combination of a rock-shaft, a clutch-collar rigidly secured to said shaft, a clutch-head to cooperate with the clutch-collar, a clutch-lever rigidly connected with the clutch-head for operating a pitman, and arms or levers rigidly connected with the opposite ends of the shaft arranged to pass outside the edges of the platform, and a shifting lever for throwing the parts of the clutch out of engagement with each other, substantially as described.

2. In a hand-car, the combination of a rock-shaft, a clutch-collar rigidly secured thereto, a clutch-head loosely mounted upon the shaft to engage the collar, a clutch-lever securely fixed to the clutch-head for operating driving-gear through a pitman, arms or handles for rocking the shaft, and means for throwing the parts of the clutch into and out of engagement, substantially as described.

610,298. BICYCLE-BRAKE. FREDERIC R. BALDWIN, New York, N. Y. Filed Dec. 6, 1897. Serial No. 660,905. (Model.)



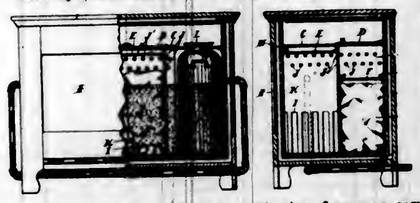
Claim.—1. A bicycle-brake comprising a shoe and means, adapted for attachment to the frame of a bicycle, for operating the brake and constituting its sole support, the shoe being formed or provided with extensions or hooks adapted, when the shoe is forced into contact with the wheel, to be brought into engagement with a rigid part of the frame by the forward movement of the shoe due to the drag or pull of the wheel.

2. The combination in a bicycle-brake of a handle or lever, adapted for attachment to a bicycle-frame, a rod and a shoe attached to and supported solely by the rod, the shoe being formed or provided with extensions or hooks, adapted, when the shoe is forced into contact with the wheel, to be brought into engagement with a rigid part of the frame, by the forward movement of the shoe due to the drag or pull of the wheel.

3. The combination with a bicycle-frame, of a brake-lever attached to the handle-bar, a brake-rod supporting a shoe, which is otherwise unattached to the frame, the said shoe being formed with extensions or hooks that engage with the side bars of the front fork when the shoe is subjected to forward drag or pull, as set forth.

4. The combination with a bicycle-frame, of a brake-lever attached thereto, a brake-rod and a brake-shoe supported thereby and otherwise unattached to the frame, the said shoe being formed or provided with extensions or hooks engaging with the side bars of the front fork and covered or coated with a sound-deadening material, as set forth.

610,299. MILK-COOLER. CLARE CARSON, Grand Rapids, Mich. Filed July 9, 1897. Serial No. 644,010. (No model.)



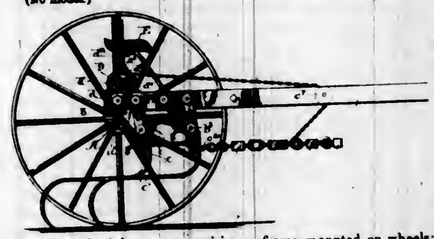
Claim.—1. In a milk-cooler the combination of a case, a compartment to contain water, and milk-cans partially submerged in the water, a compartment to contain ice having its walls contacted by the water, a drain-pipe in the bottom of said compartment, and a second ice-compartment having openings into the water-compartment to admit water from the same, substantially as described.

2. In a milk-cooler the combination of a case, a compartment at each end thereof for milk-cans, and two middle compartments, a drain-pipe in the bottom of one of said middle compartments, there being openings in the sides of the other of said compartments to admit water from the end compartments, substantially as described.

3. In a milk-cooler the combination of a case, a compartment at each end thereof and two middle compartments, a drain-pipe in the bottom of one of the middle compartments, there being openings in the walls of the other middle compartment to admit water from the end compartments, a drain-pipe from near the upper part of the end compartments, there being air-openings in the walls of said middle compartment and above the water-level, substantially as described.

4. In a milk-cooler the combination of a case having two end and two middle compartments, a drain pipe at the bottom of one of said middle compartments, there being openings in the sides of the other of said compartments near the bottom and top thereof, perforated covers in each of said middle compartments, one of said compartments being divided into two chambers thereby, and a removable cover above all of said compartments having openings for the milk-cans, and a door in said cover above one of said middle compartments, substantially as described.

610,300. WHEEL-HARROW. NAPOLEON FOURNIER, St. Germain de Grantham, Canada. Filed Dec. 10, 1897. Serial No. 661,437. (No model.)



Claim.—1. A harrow comprising a frame mounted on wheels; harrow-teeth pivotally connected to said frame, said teeth being arranged in sections, each section being movable independently of the remaining sections; and means, connected to said sections below the point of pivotal connection to said frame, for preserving an equalized pull on each of said sections, substantially as described.

2. A harrow comprising a frame mounted on wheels; harrow-teeth pivotally connected to said frame, said teeth being arranged in sections, each section being movable independently of the remaining sections; and means for preserving an equalized pull on each of said sections.

3. A harrow, comprising a frame mounted on wheels; teeth pivotally connected to said frame, said teeth being arranged in sections; each section being movable independently of the remaining sections and means connected to each of said sections for regulating the depth to which said sections will enter the ground.

4. A harrow comprising a frame mounted on wheels; rods connected to the front and rear portions of said frame; and harrow-teeth pivotally mounted on said rods, said teeth being arranged in sections each section being movable independently of the remaining sections.

5. A harrow comprising a frame mounted on wheels; rods connected to the front and rear portions of said frame; harrow-teeth pivotally mounted on said rods; and means for connecting said teeth in series each series being movable independently of the remaining sections.

6. A harrow comprising a frame mounted on wheels; rods connected to the front and rear portions of said frame; harrow-teeth pivotally mounted on said rods, said harrow-teeth being arranged in sections each section being movable independently of the remaining sections and each alternate section having a majority of its teeth mounted on said rear rod.

7. A harrow comprising a frame mounted on wheels; rods connected to the front and rear portions of said frame; bearings pivotally mounted on said front and rear rods, said bearings being arranged in sections; harrow-teeth secured to said bearings and extending rearwardly therefrom; and means, connected to said frame and to said bearings below their points of pivotal mounting for preserving an equalized pull on each of said sections, substantially as described.

8. A harrow comprising a frame mounted on wheels; rods connected to the front and rear portions of said frame; bearings pivotally mounted on said front and rear rods; means for connecting said bearings in sections; each section having a movement independent of the remaining sections and harrow-teeth secured to said bearings and extending rearwardly therefrom.

9. A harrow comprising a frame mounted on wheels; rods connected to the front and rear portions of said frame; bearings pivotally mounted on said front and rear rods, said bearings being arranged in sections, each section having a movement independent of the remaining sections and each alternate section having a majority of its bearings mounted on said rear rod; and harrow-teeth secured to said bearings.

10. In a harrow, the combination with a frame mounted on wheels; and harrow-teeth pivotally connected to said frame, said harrow-teeth being arranged in sections; of a draft-equalizer connected to said frame and having a positive and independent connection to each of said sections, substantially as described.

11. In a harrow; the combination with a frame mounted on wheels; and harrow-teeth pivotally connected to said frame, said harrow-teeth being arranged in sections; of a draft-equalizer having one end secured to said frame and having its other end connected to each of said sections, substantially as described.

12 In a harrow, the combination with a frame mounted on wheels; and harrow-teeth pivotally connected to said frame, said harrow-teeth being arranged in sections; of a draft-equalizer having one end secured to said frame and having its other end connected to each of said sections, said equalizer having a longitudinal movement independent of the movement of the harrow.

13. A harrow comprising a frame mounted on wheels; harrow-teeth pivotally connected to said frame, said teeth being arranged in sections; singletrees connected to said sections, the ends of said singletrees being connected to separate sections; a doubletree connected to said singletrees; and means for holding said doubletree suspended below said frame, substantially as described.

14. A harrow comprising a frame mounted on wheels; harrow-teeth pivotally connected to said frame, said teeth being arranged in sections; a roller pivotally mounted on said frame; and means for connecting said sections and said roller, whereby when said roller is rotated said teeth will be raised, substantially as described.

15. A harrow comprising a frame mounted on wheels; harrow-teeth pivotally connected to said frame, said teeth being arranged in sections; a roller pivotally mounted on said frame; means for connecting said sections and said roller; means for rotating said roller; a draft-equalizer connected to said sections; and means for connecting said draft-equalizer and said roller, whereby when said roller is rotated said teeth will be raised and said equalizer moved longitudinally below said frame, substantially as described.

610,301. OPTICIAN'S INSTRUMENT FOR ADJUSTING SPECTACLES. SILAS W. GRAY, Fort Dodge, Iowa, assignor to the Geneva Optical Company, Chicago, Ill. Filed Jan. 20, 1898. Serial No. 667,225. (No model.)

Claim.—1. An instrument of the class described consisting of a number of caliper-arms of different lengths pivoted upon a common axis, and means for registering the contour indicated by the relative positions of said caliper-arms, substantially as described.

2. An instrument of the class described consisting essentially of a series of pivoted caliper-arms arranged in pairs of different lengths, each arm being provided with a pin upon the end opposite the caliper end, whereby when a given surface is calipered, the pins may be caused to assume positions indicating a diagram corresponding to the contour of the surface calipered, substantially as described.



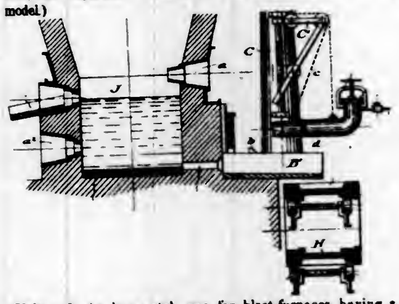
3. An instrument of the class described consisting essentially of a series of caliper-arms pivoted at a relatively corresponding point between the ends, said arms being arranged in pairs, the pairs being of different lengths, each of said arms being provided with an upwardly-projecting pin upon the end opposite the caliper end in combination with means for taking a paper or other impression from said pins, substantially as described.

4. The combination in an instrument of the class described of the centrally-pivoted caliper-arms i, provided with the contact-knobs *m* upon one end, and the pins *n* upon the other, means for securing said arms by frictional contact upon the pivoted point whereby each may be actuated independently of the others, and means, such as a hinged lid lined with a yielding material, for taking a paper or other impression from said pins, substantially as described.

5. An optician's instrument for the purpose set forth, consisting of a series of pairs of pivoted caliper-arms having pins or equivalent registering devices upon the ends opposite the caliper ends, means for maintaining said arms in whatever relative position they may be set by contact with the calipered surface a stationary stop for engaging one point upon the calipered surface, and stationary pins upon the opposite side of the pivotal point from said stop and holding a corresponding positional relation to the pins that the stop holds to the testing ends of the caliper-arms, substantially as described.

6. The combination of an instrument of the class described consisting of a series of calipers and a suitable frame with a spectacle testing-frame and means for indicating the angle of variation of the caliper-frame from a given predetermined line, substantially as described.

610,802. NOTCH-GUN FOR BLAST-FURNACES. JOHN M. HARTMAN, Philadelphia, Pa. Filed May 12, 1896. Serial No. 591,221. (No model.)



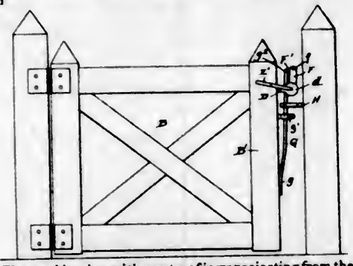
Claim.—1. An iron-notch gun for blast-furnaces, having a tapered nozzle and of sufficient length and size to hold enough plastic material to effectually plug the notch in a single discharge; in combination with means substantially as set forth for admitting fluid-pressure into the rear of said gun behind said plastic material and directly in contact therewith without the intervention of any piston, substantially as described.

2. An iron-notch gun for blast-furnaces, having a tapered nozzle and of sufficient length and size to hold enough plastic material to effectually plug the notch in a single discharge; in combination with means substantially as set forth for admitting fluid-pressure into the rear of said gun behind said plastic material and directly in contact therewith without the intervention of any piston; a removable door arranged at the rear end of said gun, substantially as described.

610,803. WITHDRAWN.

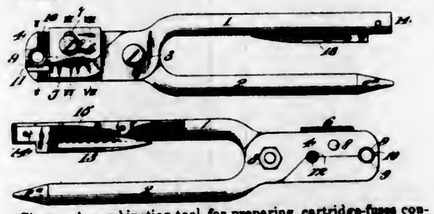
610,804. GATE-LATCH. CHRISTIAN S. MARTIN, Elizabethtown, Pa. Filed Dec. 14, 1897. Serial No. 661,822. (No model.)

Claim.—1. The combination, with a gate, of jaws projecting from the swinging edge of the gate, a rock-shaft journaled in the jaws, a handle connected with said shaft, an arm on the shaft, a spring-actuated latch having one end secured to said edge of the gate below the jaws and the other end extending upward between the jaws, a link connecting the vibrating end of the latch and the arm on the shaft, and a keeper adapted to be engaged by the latch, for the purpose specified



2. The combination, with a gate, of jaws projecting from the swinging edge of the gate, a rock-shaft journaled in the jaws, laterally-extending handles on the journals of said shaft and located outside of the jaws, an upright arm on the shaft and having its free end bifurcated, a spring-actuated latch having the lower end secured to said edge of the gate and the bifurcated free end extending up between said jaws, a link connecting the free ends of the latch and the upright arm and pivotally secured in the bifurcated ends thereof, and a keeper adapted to be engaged by the latch, substantially as and for the purpose specified.

610,805. BLASTING IMPLEMENT. JOSEPH MISO and WILLIAM DAY, Denver, Colo. Filed July 19, 1897. Serial No. 645,186. (No model.)

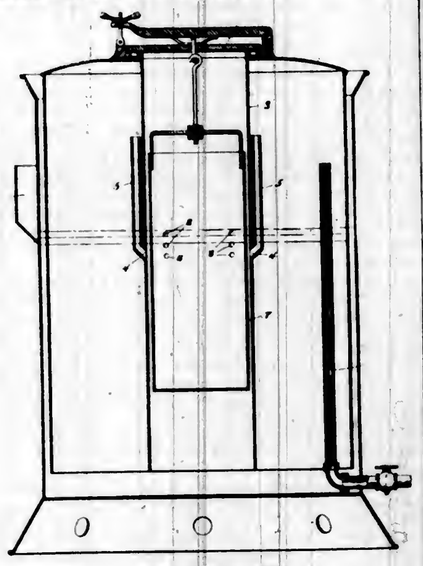


Claim.—A combination-tool for preparing cartridge-fuses constructed with a handle 1 provided with a short lower jaw 5 formed with a longitudinal recess 5^a, with a longitudinal slitting-groove 11 semicircular in cross-section, with a transverse semicircular cutting-cavity 12 at the inner portion of the lower jaw and with a semicircular ribbed crimping-recess 9, 10, at the outer end of the lower jaw, the handle 2 provided with a short upper jaw 4 formed with a longitudinal knife-recess 4^a, with a transverse semicircular cutting-cavity 12 at the inner portion of the upper jaw, and with a semicircular ribbed crimping-recess 9, 10, at the outer end of the upper jaw, a single short knife-blade having a slot and located in the knife-recess and registering with both the semicircular cutting-cavities and with the longitudinal recess of the lower jaw; substantially as described.

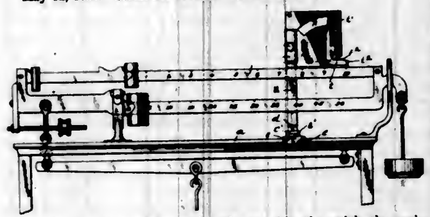
610,806. ACETYLENE-GAS GENERATOR. WILLIAM A. MCCUNE, Sterling, Ill. Filed Sept. 14, 1897. Serial No. 651,672. (No model.)

Claim.—1. In a gas-generator, the combination with a vertically-operating gas-holder provided with a pendent inner generating-cylinder open at both ends, and having a series of apertures through its walls normally below the water-level, of pipes extending upwardly from said apertures to a point above the water-level, a cover designed to close the upper end of the cylinder, and an apertured carbid-holder suspended within said cylinder, substantially as specified.

2. The combination with a water-tank provided with a supply-funnel upon its exterior and below its upper edge, of a gas-holder within the tank provided with an inner pendent generating-cylinder opening through the top of the gas-holder and provided with apertures normally in a lower plane than the bottom of the supply-funnel, pipes communicating at their lower ends with said apertures and extending upwardly close to the exterior of the cylinder, a cover above the gas-holder and closing the upper end of the generating-cylinder, a carbid-holder suspended within the cylinder from the cover and provided with a closed bottom and apertures adjacent to the apertures in the cylinder and a cock-controlled gas-pipe piercing the tank at its bottom and extending upwardly into the gas-holder to a point above the water-level, substantially as specified.



610,807. SCALE. CHARLES M. SCHENCK, Denver, Colo. Filed May 12, 1897. Serial No. 636,184. (No model.)



Claim.—1. In weighing-scales, the combination with the scale-beam, of a box supported on the frame, said box having an opening therein, an indicating-arm pivoted within said box, said arm extending without said box and in the path of said scale-beam, substantially as set forth.

2. In weighing-scales, the combination with the scale-beam, of a bracket on the frame, a box having a seat therein with which said bracket engages, a set-screw entering said seat, an indicating-arm pivoted within said box, a finger on said arm, said box having an opening therein to expose said finger, said arm being in the path of said scale-beam, substantially as set forth.

3. In an attachment for weighing-scales, the combination of a suitable bracket or support, a box or shelf mounted thereon having an opening at the lower end of same, an indicating-arm pivoted within said box and extending out of said opening, substantially as set forth.

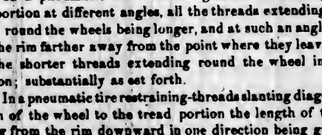
610,808. EXPANSION-ANCHOR. DANIEL C. SEAMAN, WILSON R. SEAMAN, and MILTON R. SEAMAN, Philadelphia, Pa. Filed Feb. 19, 1898. Serial No. 670,883. (No model.)



Claim.—1. An expansion-anchor consisting of a rod having threads thereon, a nut run upon said threads, said nut having an internal groove, anchor-blades having their inner ends secured within said groove, a wedge-plug fitted to slide upon the rod and adapted to force the blades open, and a pin projecting from the rod for causing the wedge-plug to travel relative to the blades, as specified.

2. The herein-described combination of a rod having threads formed thereon, a nut adapted to run upon said threads, said nut having an annular groove formed in the interior thereof, a chamfered section leading from said groove, two anchor-blades each having a bead upon one end adapted to fit within a groove, a wedge-plug arranged to slide upon the rod so as to expand the blades, and a pin set within the rod and projecting therefrom by means of which the wedge-plug may be moved longitudinally relative to the blades, as specified.

610,809. FURNITURE-CASTER. EDMOND B. SLATER, Meriden, Conn., assignor to the Foster, Merriam & Company, same place. Filed Mar. 19, 1898. Serial No. 674,472. (No model.)



Claim.—1. In a blank for forming horns, the arm-forming sections *a*, *a'*, having the holes a^4 and shoulders a^5, the pintle-forming supports a^3, a^4 having the shoulders a^5 and the holes a^7 and the integral connection a^6.

2. As an improved article of manufacture the caster herein described, the same comprising a horn B formed from a one-piece flat metal blank having a vertical rear wall *b*, forward-extending parallel roll-supporting arms *b'*, flat pintle-supporting plates b^3, b^3 extending forward from the upper and lower edges of said back wall *b*, the upper of which has both sides extended upon said arms *b'* and is supported thereby as well as by the back, the pintle D carried by said supporting-plates b^3, b^3, and the caster-roll attached by a pin to said arms.

3. In a caster-horn a vertical wall, roll-supporting horns extending from and integral with said wall, and having shoulders a^5, pintle-supports integral with said wall and parallel with each other, arranged to bear upon or against the edges of said wall, and provided with shoulders a^5 which cooperate with the shoulders a^5 of the horn, as and for the purposes set forth.

4. In a caster-horn a vertical wall, roll-supporting horns extending from and integral with said wall, having the shoulders a^5 and the roll-pin holes a^4, pintle-supports integral with said wall and parallel with each other arranged to bear upon or against the edges of said wall, and provided with the shoulders a^5 which cooperate with the shoulders a^5 of the horn and also having the pintle-holes a^7 and the pintle supported or carried by said pintle-supports.

610,810. PNEUMATIC TIRE. THOMAS SLOPER, Devizes, England. Filed July 20, 1897. Serial No. 645,257. (No model.) Patented in England Nov. 16, 1896, No. 26,742.



Claim.—1. A pneumatic tire formed on foundation material, and of oppositely-inclined restraining-threads, the threads inclined in one direction on one side of the tire being at a less angle to a given tangent of the wheel than those inclined in the opposite direction on the same side of the tire; substantially as described.

2. In a pneumatic tire restraining-threads of different lengths radiating from the tread portion of the tire the longer threads all extending in one direction and the shorter threads all extending in the other direction; substantially as set forth.

3. In a pneumatic tire restraining-threads radiating from the tread portion at different angles, all the threads extending in one direction round the wheels being longer, and at such an angle that they enter the rim farther away from the point where they leave the tread than the shorter threads extending round the wheel in the other direction; substantially as set forth.

4. In a pneumatic tire restraining-threads slanting diagonally from the rim of the wheel to the tread portion the length of the threads slanting from the rim downward in one direction being greater than the length of the threads slanting from the rim downward in the other direction; substantially as set forth.

5. In an endless tubeless pneumatic tire, the combination with restraining-threads converging from the rim to the tread in one direction from opposite sides of the tire, of threads converging from the rim to the tread in the other direction from opposite sides of the tire, the threads converging in one direction being set at a greater

angle from the tangent of the wheel than those converging in the opposite direction; substantially as set forth.

6. In a pneumatic tire the combination with approximately parallel threads slanting downward at an angle from the bottom of the wheel-rim on each side to the tread of a similar series of threads slanting downward from the rim to the tread in the reverse direction at a different angle substantially as set forth.

7. In a pneumatic tire, the combination with the restraining-threads incorporated therein slanting downward at an angle to the plane of the wheel from the lower part of the rim to the tread portion of the tire, of restraining-threads slanting in the reverse direction and at an angle to the plane of the wheel differing from that of the former threads; substantially as set forth.

8. In a pneumatic tire, the combination with a foundation material of oppositely-inclined restraining-threads, covered and interwoven with each other, the threads inclined in one direction on one side of the tire being at a different angle to a given tangent of the wheel from the threads inclined in the opposite direction on the same side; substantially as described.

9. In a pneumatic tire, the combination with a foundation material of bent threads extending diagonally across the said material the portion of each thread on one side of the tread being at a different angle to a given tangent of the tire to that portion on the other side of the tread; substantially as set forth.

10. In a pneumatic tire, the combination with a foundation material and a layer of bent threads extending in one direction diagonally across the foundation material of another layer of bent threads extending in an opposite direction across the said material the portion of each thread on one side of the tread being at a different angle to a given tangent of the tire to the portion on the other side of the tread; substantially as set forth.

11. In a pneumatic tire the combination with a foundation material of a number of bent threads each inclining in one direction toward the tread and outward from the tread in the opposite direction and at a different angle; substantially as set forth.

12. In a pneumatic tire having threads crossing diagonally from one side to the other such threads crossing over the center or tread portion of the tire at a position nearer to one end of the thread than the other end; substantially as set forth.

13. In a wheel-tire inelastic threads slanting from the rim downward across the tread and returning to the rim at a different angle on the other side of the tire; substantially as set forth.

610,811. **NON-REFILLABLE BOTTLE.** HALVAR STARCK, Davenport, Iowa. Filed June 21, 1897. Serial No. 641,666. (No model.)



Claim.—1. In a non-refillable bottle, the combination with a body portion provided with a pair of openings therein, one of said openings being located at the upper end of said body portion, and the other thereof being located in the lower part of said body portion, of means for permanently sealing the opening of the upper part of the body portion, a neck leading from the other opening, a ball held in said neck which is adapted to receive and hold the ball, diaphragms extended partially across said neck, a valve-seat formed in said neck, a lateral enlargement formed upon said neck, and an upturned end formed thereon.

2. In a non-refillable bottle, the combination with a body portion having a broadened base, an opening in the top thereof and an opening in the side thereof near said base, of means for hermetically and permanently sealing the first-mentioned opening, a neck leading from the other opening, a ball-valve held in said neck, and a seat therefor, an enlargement formed in one side of said neck clear of the passage therethrough, adapted to receive and hold the ball-valve when the contents of the bottle are being poured therefrom, diaphragms extending partially across said neck, and an upturned end formed thereon.

3. In a non-refillable bottle, the combination with a body portion provided with a pair of openings therein, one of said openings being located at the upper end of said body portion and the other thereof being located in the lower part of said body portion, of means for permanently sealing the opening in the upper part of the body portion comprising a pair of annular flanges surrounding said opening and a cap having an annular flange thereon adapted to fit between said pair of flanges and cover said openings, a neck leading from the other opening, a ball-valve held in said neck, a lateral enlargement formed upon said neck adapted to receive and hold the ball, diaphragms extended partially across said neck and an upturned end formed thereon.

4. In a non-refillable bottle, the combination with a body portion having a broadened base, an opening in the top thereof and an opening in the side thereof near said base, of means for hermetically and permanently sealing the first-mentioned opening comprising a pair of annular flanges surrounding said opening and a cap having an annular flange thereon adapted to fit between said pair of flanges and cover said openings, a neck leading from the other opening, a ball-valve held in said neck, and a seat therefor, an enlargement formed in one side of said neck clear of the passage therethrough, adapted to receive and hold the ball-valve when the contents of the bottle are being poured therefrom, diaphragms extending partially across said neck, and an upturned end formed thereon.

5. In a non-refillable bottle, the combination with a body portion provided with a pair of openings therein, of a permanent closure for one of said openings comprising a pair of annular flanges surrounding said opening and having cement-grooves therein and a cap having an annular flange thereon provided with cement-grooves to correspond with the grooves on the before-mentioned flanges and adapted to fit between said flanges and cover said opening, a neck leading from the other opening, a ball-valve held in said neck, a lateral enlargement formed upon said neck adapted to receive and hold the ball, and diaphragms extending partially across said neck, one of which is adapted to receive a portion of the liquid contained in the bottle.

6. In a non-refillable bottle, the combination with a body portion provided with a pair of openings therein, one of said openings being located at the upper end of said body portion and the other thereof being located in the lower part of said body portion, of means for permanently sealing the opening in the upper part of the body portion comprising a pair of annular flanges surrounding said opening and having cement-grooves therein and a cap having an annular flange thereon provided with cement-grooves to correspond with the grooves on the before-mentioned flanges and adapted to fit between said pair of flanges and cover said opening, a neck leading from the other opening, a ball-valve held in said neck, a lateral enlargement formed upon said neck adapted to receive and hold the ball, and diaphragms extending partially across said neck, one of which is adapted to receive and hold a portion of the liquid contained in the bottle.

7. In a non-refillable bottle, the combination with a body portion having a broadened base, an opening in the top thereof and an opening in the side thereof near said base, of means for hermetically and permanently sealing the first-mentioned opening comprising a pair of annular flanges surrounding said opening and having cement-grooves therein and a cap having an annular flange thereon provided with cement-grooves to correspond with the grooves on the before-mentioned flanges and adapted to fit between said pair of flanges and cover said opening, a neck leading from the other opening, a ball-valve formed in said neck, a seat therefor, an enlargement formed in one of said necks clear of the passage therethrough, adapted to receive and hold the ball of the ball-valve when the contents of the bottle are being poured therefrom, diaphragms extending partially across said neck, one of which is adapted to receive and hold a portion of the liquid contained in the bottle, and an upturned end formed thereon.

610,812. **SELF-CLEANING STAND-BOILER.** FRANK WALKER, Los Angeles, Cal. Filed July 2, 1897. Serial No. 643,211. (No model.)

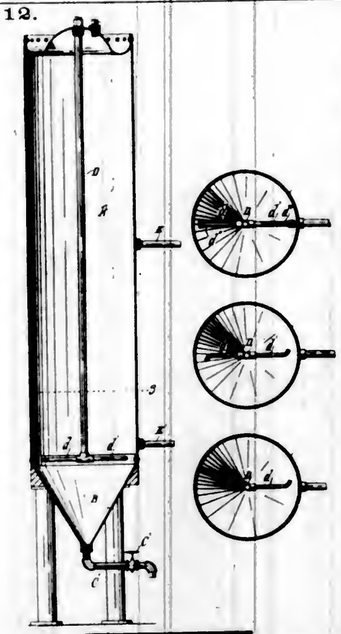
Claim.—1. A stand-boiler having an outlet in its bottom; a stationary inlet-pipe arranged with its opening near the bottom of the boiler and above said bottom and adapted to discharge tangentially into the boiler above the bottom thereof.

2. A stand-boiler having a tapering bottom provided with an outlet; a stationary inlet-pipe extending to near the bottom of the boiler and adapted to discharge tangentially against the side of the boiler.

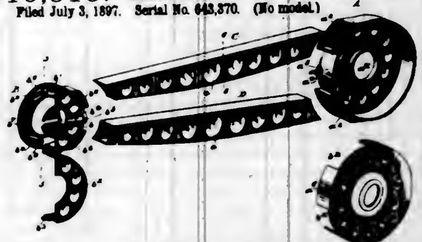
3. A stand-boiler having a tapering bottom provided with an outlet; a stationary inlet-pipe extending to near the bottom of the boiler and provided with a discharge adapted to produce a circular movement or rotation of the water in the boiler when water is discharged into the boiler through the inlet-pipe.

4. A stand-boiler provided at its bottom with an outlet; a stationary inlet-pipe arranged extending to near the bottom of the boiler and provided with two outwardly-projecting discharge members arranged to discharge tangentially in opposite directions against opposite sides of the boiler.

610,812.



610,818. **CHAIN-GUARD.** GEORGE A. WATERS, Troy, N. Y. Filed July 3, 1897. Serial No. 643,370. (No model.)



Claim.—1. In a bicycle-guard a front casing adapted to inclose the front gear and comprising an inner section having an annular flange and two necks opening therethrough, and an outer section comprising a plate to close the outer side of the inner section, and provided with an annular flange to fit within the inner section and cut away at points opposite the necks; whereby the outer section will be held securely to the inner section by friction, the cut-away portions of the flange permitting of the extension of the chain-inclosing tubes within the casing.

2. In a bicycle-guard the rear gear-casing formed with a hinged section and an adjustable plate b^7 applied to the inner side of said casing.

3. In a bicycle-guard the rear gear-casing consisting of the annular flanged body adapted to inclose the periphery of the gear and its outer side, a plate forming the inner side of said casing, and devices for securing said plate adjustably to the body portion of the casing.

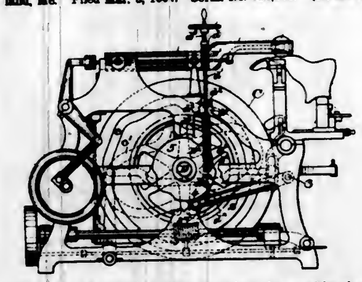
4. In a bicycle-guard the rear gear-casing consisting of an outer plate to cover the outer side of the gear, a connected annular flange to inclose its periphery, a semicircular flange extending in a plane parallel to the outer plate and connected to the annular flange, and an annular plate b^7 adjustably secured to the semicircular flange.

5. In combination with a bicycle, a rear gear-casing having its main portion fixed rigidly to the frame, the inner plate b^7 adjustable forward and backward on the main portion and having a central opening, the lining of packing or equivalent material applied to the plate b^7 around the opening therein, and the plate E, fixed to the bicycle-wheel adjacent to the casing and cooperating with the packing, on the plate b^7.

6. In combination with a bicycle, a rear gear-casing inclosing the rear gear and having an inner plate formed with an opening and a lining of packing or equivalent material applied to said plate and surrounding the opening, and a plate E fixed to the rear wheel of the machine adjacent to the inner plate of the casing and adapted to cooperate with the lining and close up the space within the lining; whereby the access of dust is effectually prevented to the interior of the casing.

7. As a new article of manufacture a chain-inclosing tube for bicycle-guards formed of laminated material fashioned in the form of a tube and provided at intervals in its sides with openings, and a transparent material applied over said openings with its edges extended and confined between the laminæ; whereby a light structure is produced and the inclosed chain exposed through the openings throughout its length.

610,814. **SOLE-LEVELING MACHINE.** ERASTUS B. WINSLEY, Lynn, Mass., assignor to the Goodyear Shoe Machinery Company, Portland, Me. Filed Mar. 3, 1897. Serial No. 626,370. (No model.)



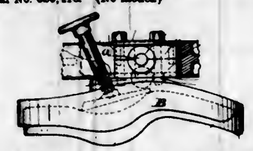
Claim.—1. In a sole-leveling machine, the combination with a leveling-roll and jack and their actuating mechanism, of means for securing pressure on the roll, and connected mechanism operating automatically upon the pressure-securing means to regulate the same during the leveling operation, substantially as described.

2. In a sole-leveling machine, the combination with a leveling-roll and jack and their actuating mechanism, of a spring arranged to secure pressure of the leveling-roll and means for automatically regulating the tension of said spring, substantially as described.

3. In a sole-leveling machine, the combination with a leveling-roll and jack, of a carrier for the leveling-roll, a spring secured at one end to said carrier, a lever to which the other end of the spring is secured and automatic means to actuate said lever to regulate the tension of the spring, substantially as described.

4. In a sole-leveling machine, the combination with a leveling-roll and jack, of means to impart thereto relative longitudinal movements, a swinging carrier for said leveling-roll, a lever, a cam for actuating said lever, and a spring connection between the leveling-roll carrier and said lever, substantially as described.

610,815. **MECHANISM FOR ADJUSTING FORMS OF SOLE-LAYING MACHINES.** ERASTUS B. WINSLEY, Lynn, Mass., assignor to the Goodyear Shoe Machinery Company, Portland, Me. Filed Mar. 26, 1897. Serial No. 629,410. (No model.)



Claim.—1. The combination with a suitable carrier, of a block supported on said carrier, a sole-pressing form secured to said block, means for laterally adjusting the block and form on said carrier, and adjustable connections between the form and block for longitudinally adjusting said form, substantially as described.

2. The combination with a suitable carrier, of a swinging block supported on said carrier, a sole-pressing form secured to said block, and adjustable connections between said block and form for longitudinally adjusting said form, substantially as described.

3. The combination with a suitable carrier provided with a shaft or cross-bar, of a sole-pressing form mounted for a lateral adjustment on said cross-bar, and means to fixedly secure said form in its adjusted position upon said bar, substantially as described.

4. The combination with a carrier provided with a shaft or cross-bar, of slotted bearing-blocks mounted upon said cross-bar, and a sole-pressing form longitudinally adjustable upon said bearing-blocks, substantially as described.

5. The combination with a carrier provided with a cross-bar or shaft, of bearing-blocks mounted upon said cross-bar or shaft, slots in said bearing-blocks, supporting-bolts arranged in the slots, a sole-pressing form supported by said bolts, and a rib upon said form engaging a groove in the lower face of one of the bearing-blocks, substantially as described.

610,816. SEEDING-MACHINE. WILLIAM D. ARNETT, Springfield, Ohio. Filed Feb. 21, 1898. Serial No. 671,043. (No model.)



Claim.—1. In a seeding-machine the combination with a drag-bar of the horizontally-adjustable shield connected thereto and a furrow-opening disk journaled on said shield.

2. In a seeding-machine the combination with a drag-bar of a vertical shield pivoted thereto on a vertical axis, means for holding the shield fixedly with relation to the bar and a furrow-opening disk journaled on the shield.

3. In a seeding-machine the combination with a drag-bar of a shield connected thereto and a furrow-opening disk journaled on the shield and adjustable vertically.

4. In a seeding-machine the combination with a drag-bar of a horizontally-adjustable shield sustained thereby and a vertically-adjustable furrow-opening disk journaled on the shield.

5. In a seeding-machine the combination with a drag-bar of a vertical shield connected thereto and provided on its lower edge with a horizontal lateral flange and a furrow-opening disk journaled to said shield on the side opposite the flange.

6. In a seeding-machine the combination with a drag-bar of a vertical shield connected thereto and provided on its lower edge with a horizontal lateral flange, a furrow-opening disk journaled on the shield and a depending plate extending below the flange and adapted to project into the furrow.

7. In a seeding-machine the combination with a drag-bar provided with a horizontally-extending runner and with a rearwardly-extending arm above the runner, of a shield provided with a lateral flange on its lower edge bearing against the runner and a forwardly-extending arm bearing against the arm on the drag-bar, pivots connecting the flange and arm on the shield respectively with the runner and arm on the drag-bar, an adjusting-bolt connecting the runner with the flange in rear of the pivots and a furrow-opening disk journaled to the shield.

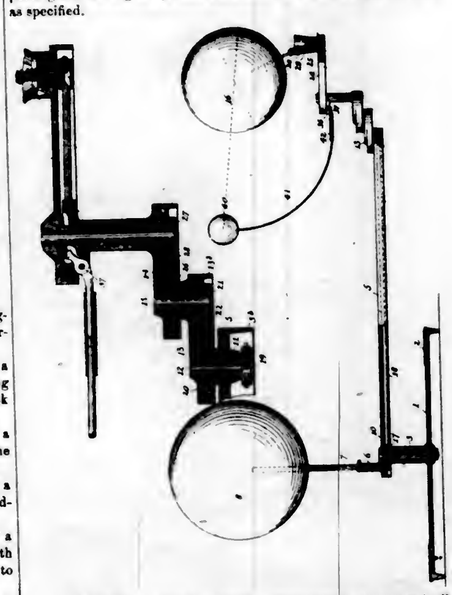
8. In a seeding-machine the combination with a drag-bar of a vertical shield connected thereto, a spindle provided with a base-plate applied to the shield, adjusting-bolts connecting the base-plate adjustably to the shield and a furrow-opening disk mounted on the spindle.

610,817. TELLURIAN. ALBERT M. BAKER, Lexington, Ky. Filed July 8, 1897. Serial No. 643,885. (No model.)

Claim.—1. A tellurian having a pivotal supporting-arm, eccentrically-connected compensating disks, one of which is mounted for rotary movement upon the supporting-arm and the other of which carries earth-globe-supporting devices, and operating connections whereby rotary motion in opposite directions is imparted to said compensating disks, to cause the earth-globe to reciprocate in alinement with the vertical plane of the supporting-arm during the rotation of the latter, substantially as specified.

2. A tellurian having a pivotal supporting-arm, pivotally-connected compensating disks, one of which is pivotally mounted upon the supporting-arm, an earth-globe-supporting spindle mounted upon the other or outer compensating disk, and connections between a fixed point contiguous to the fulcrum of the supporting-arm and said compensating disks, whereby the earth-globe-supporting spindle receives a reciprocatory movement in alinement with the supporting-arm, substantially as specified.

3. A tellurian having a pivotal supporting-arm, eccentrically-connected inner and outer compensating disks, the former of which is mounted upon the supporting-arm, connections between a fixed gear concentric with the fulcrum of the supporting-arm and a gear on the spindle of the inner compensating disk, an earth-globe-supporting spindle mounted upon the outer compensating disk, a fixed gear on the supporting-arm concentric with the spindle of the innermost compensating disk, and connections between said fixed gear and the spindle of the outer compensating disk, whereby the earth-globe-supporting spindle receives a reciprocatory movement in alinement with the supporting arm during the pivotal movement of the latter, substantially as specified.



4. A tellurian having a pivotal supporting-arm, eccentrically-connected inner and outer compensating disks, of which the former is mounted upon the supporting-arm and has its spindle operatively connected with a fixed gear concentric with the pivotal point of the supporting-arm, whereby reverse rotary movement is imparted to said inner compensating disk at an angular speed which is double that of the supporting-arm, operating connections for the outer compensating disk whereby it receives rotary motion in a forward direction at a speed which is double that of the supporting-arm, and an earth-globe-supporting spindle mounted upon the outer compensating disk and having a reciprocatory movement toward and from the fulcrum of the supporting-arm and in alinement therewith, substantially as specified.

5. A tellurian having a pivotal supporting-arm, eccentrically-connected compensating disks of which the former is pivotally mounted upon the supporting-arm with its spindle operatively connected with a fixed gear concentric with the fulcrum of said arm, whereby the inner compensating disk receives a reverse rotation at a speed which is double that of the supporting-arm, operating connections for the outer compensating disk whereby it receives a forward rotation at a speed double that of the supporting-arm, an earth-globe-supporting spindle mounted upon the outer compensating disk and adapted to be reciprocated in the plane of the supporting-arm toward and from the fulcrum thereof, and operating connections for said spindle whereby it receives a reverse rotation at a speed which is equal with that of the supporting-arm, substantially as specified.

6. A tellurian having a pivotal supporting-arm, eccentrically-connected compensating disks, the inner of which is mounted upon the supporting-arm, a spindle mounted upon the outer compensating disk, an earth-globe-supporting plate carried by said spindle, operating connections for the compensating disks and spindle, whereby the former receive reverse rotary movement to impart reciprocatory movement to said spindle, and whereby the latter receives rotary movement in a direction reverse to and at a speed equal with that of the supporting-arm, an earth-globe having an inclined spindle, and operating connections for said spindle whereby the earth-globe receives diurnal rotation, substantially as specified.

7. A tellurian having a pivotal supporting-arm, eccentrically-connected compensating disks supported by said arm, operating connections for said disks whereby they receive rotary motion in opposite directions, an earth-globe-supporting plate mounted upon the outermost compensating disk and having operating connections whereby it receives a rotary movement in a reverse direction thereto, and a moon-globe-carrying arm mounted upon said outer compensating disk, substantially as specified.

8. A tellurian having a pivotal supporting-arm, eccentrically-connected compensating disks supported by said arm, operating connections for said disks whereby they receive rotary motion in opposite directions, an earth-globe-supporting plate mounted upon the outermost compensating disk and having operating connections whereby it receives rotary movement in a reverse direction thereto, and a moon-globe-carrying arm pivotally mounted upon said outer compensating disk for oscillatory movement, substantially as specified.

9. A tellurian having a pivotal supporting-arm eccentrically-connected compensating disks supported by said arm, operating connections for said disks whereby they receive rotary motion in opposite directions, an earth-globe-supporting plate mounted upon the outermost compensating disk and having operating connections whereby it receives rotary movement in a reverse direction thereto, a moon-globe-carrying arm pivotally mounted upon the outer compensating disk, and means carried by the earth-globe-supporting plate for oscillating said arm, substantially as specified.

10. A tellurian having a pivotal supporting-arm, eccentrically-connected compensating disks supported by said arm, operating connections for said disks whereby they receive rotary motion in opposite directions, an earth-globe-supporting plate mounted upon the outermost compensating disk and having operating connections whereby it receives rotary movement in a reverse direction thereto, a moon-globe-carrying arm pivotally mounted upon the outer compensating disk, and a cam on the earth-globe-supporting plate for oscillating said carrying-arm, substantially as specified.

11. A tellurian having a pivotal supporting-arm, eccentrically-connected compensating disks supported by said arm, operating connections for said disks whereby they receive rotary motion in opposite directions, an earth-globe-supporting plate mounted upon the outermost compensating disk and having operating connections whereby it receives rotary movement in a reverse direction thereto, a moon-globe-carrying arm mounted for oscillatory movement upon the outer compensating disk, a moon-globe having a stem terminating in a sleeve to receive said carrying-arm, and means for intermittently depressing the heel of said arm to impart oscillatory movement thereto, substantially as specified.

12. A tellurian having sun-globe and earth-globe supporting devices, of an earth-globe spindle universally mounted upon said supporting devices and capable of angular adjustment to vary the point on the surface of the earth-globe which is nearest to the sun-globe, and a plurality of rests for the spindle, substantially as specified.

13. A tellurian having a sun-globe, earth-globe-supporting devices, an earth-globe spindle of sectional construction, the upper section carrying an earth-globe and being connected with the lower section by a flexible union, whereby the inclination of the axis of the earth-globe may be varied, a plurality of fixed rests for said upper section of the spindle, and means for imparting rotary motion to the lower spindle section to impart diurnal rotation to the earth globe, substantially as specified.

14. A tellurian having a sun-globe, earth-globe-supporting devices, a flexible angularly-movable earth-globe spindle carried by said supporting devices, and a cup having a plurality of seats, either of which is adapted to receive the contiguous portion of the earth-globe spindle, substantially as specified.

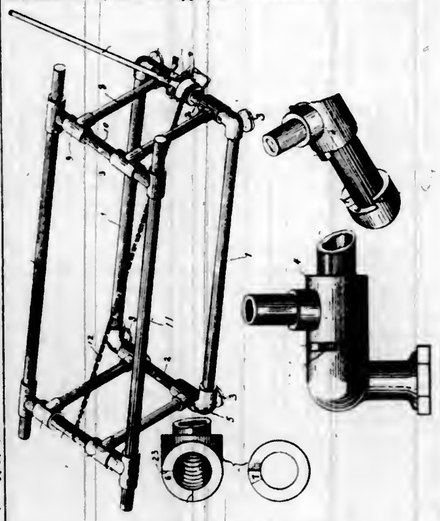
15. A tellurian having a sun-globe, an earth-globe-supporting arm, a flexible earth-globe spindle carried by said supporting-arm and means for imparting rotary motion to the earth-globe spindle, a cup arranged concentrically with the spindle and provided with a central and a plurality of lateral seats, and a thimble fitted to slide upon the spindle and adapted to fit in either of said seats, substantially as specified.

610,818. HOISTING APPARATUS. GEORGE A. BIDWELL, Pittsfield, Mass. Filed Oct. 12, 1897. Serial No. 654,920. (No model.)

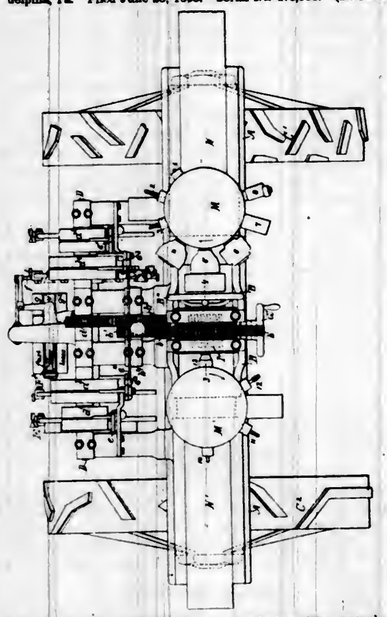
Claim.—1. A rectangular hoisting apparatus consisting of a base and an elevating-platform and end posts connecting said base and platform, all composed of tubes, right-angled collars at the corners of the base into which fit the base-tubes, said collars being provided with supporting-legs, and means carried by the base to limit the upward movement of the platform, all arranged as set forth.

2. A rectangular hoisting apparatus, composed of a tubular base having right-angled collars at its corners, a tubular platform, collars on the end tubes of the platform, vertical tubes fitting the collars on the end pieces and the right-angled collars and means to limit the upward movement of the platform, all arranged as set forth.

3. A rectangular hoisting apparatus consisting of a base an elevating-platform, collars at the corners of the base having limiting-stops, limiting-recesses in the base-corners in which the stop works, and means to operate the apparatus, all combined as set forth.



610,819. DOUBLE-TURRET LATHE. JOHN W. BROWN, Jr., Philadelphia, Pa. Filed June 23, 1893. Serial No. 478,590. (No model.)

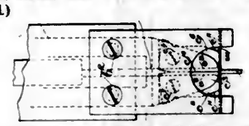


Claim.—1. The combination in a turret-lathe, of the central work chuck open at each end, means for revolving said chuck, a slide on each side of the chuck, a turret-head on each slide carrying tools, means for turning the turret-heads and means for moving the carriages in unison toward and from the work, substantially as described.

2. The combination of the turret-heads, the slides therefor, mechanism for operating said slides and turret-heads, a center chuck mounted between the heads, a driving-shaft geared to said chuck, belt-shifters, a shaft carrying shifting-wheels, operating upon the belt-shifters, a transverse shaft geared to said shifter-shaft and to the cam-shaft controlling the turrets, the whole combined substantially as described.

3. The combination of the central chuck, turrets on each side of said chuck, slides for said turrets, a cam-shaft, cam-wheels thereon controlling the slides, a worm-wheel on said shaft, a transverse driving-shaft, a worm thereon meshing with the worm-wheel, fast and loose pulleys and differential gearing through which a slow motion can be imparted to the shaft, substantially as described.

610,320. STAPLE MAKING AND DRIVING MACHINE. PETER A. COUPAL, Boston, Mass. Filed July 14, 1897. Serial No. 644,493. (No model.)



Claim.—1. In a staple making and driving machine, the combination with an anvil, of staple-bending jaws arranged to impart a preliminary bend to the crown of the staple, and to thereafter bring the legs of the staple substantially parallel with each other, said jaws when closed forming a driving-passage, substantially as described.

2. In a staple making and driving machine, the combination with a staple-driver and an anvil, of staple-bending jaws having a lateral movement toward and from each other and toward and from the anvil, said jaws in their closed position acting to hold and guide the staple while being driven substantially as described.

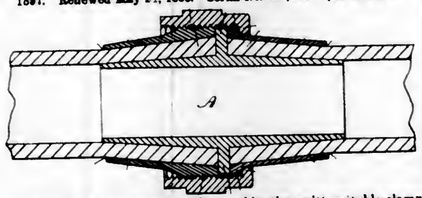
3. In a staple making and driving machine, the combination with an anvil, of staple-bending jaws the lower ends of which are movable laterally toward and from each other and toward and from the anvil, said jaws when closed forming a driving-passage substantially as described.

4 In a staple making and driving machine, the combination with an anvil, of freely-movable staple-bending jaws free to move outwardly along the wire blank upon contact therewith and means to force them toward each other, substantially as described.

5. In a staple making and driving machine, the combination with an anvil, of freely-movable staple bending jaws free to move toward and from each other, inclined faces on said jaws and fixed arms arranged to engage said faces and move said jaws toward each other to bring the legs of the staple parallel with each other, substantially as described.

6. In a staple making and driving machine, the combination with an anvil, of staple-bending jaws arranged to engage the wire blank upon opposite sides of the anvil, and to be moved laterally a limited distance by contact with said blank, means to impart relative movements to the bending-jaws and anvil to bend the blank into staple form, and means to close the jaws upon the staple, substantially as described.

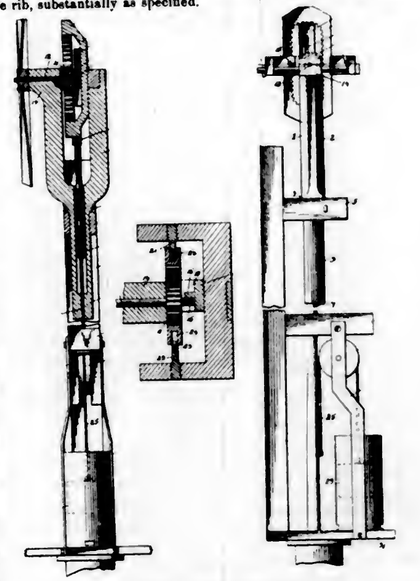
610,321. PIPE-COUPLING. THOMAS DAVEY, Lynn, Mass., assignor to the Plumber's Metallic Joint Company, of Maine. Filed June 4, 1897. Renewed May 21, 1898. Serial No. 681,359. (No model.)



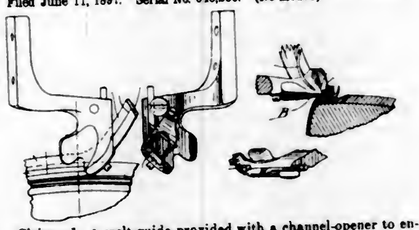
Claim.—In a pipe-coupling the combination, with suitable clamping means, of a bushing and sleeve, the outer wall of the bushing and inner wall of the sleeve tapering toward the medial line of the pipe, and converging toward each other throughout their tapered portions, in a direction from the middle of the coupling, substantially as described.

610,322. WINDMILL. WILLIAM S. DOUGLASS, Bellevue, Tex. Filed Aug. 5, 1897. Serial No. 647,237. (No model.)

Claim.—In a windmill, the combination with the stem having formed therewith a pair of spaced arms extending upwardly therefrom, a frame mounted on the upper portion of the arms, and having grooves with antifriction-rollers therein, of a vertically and laterally movable rack-bar interposed between the arms in loose contact with the rollers, the plunger-head being provided with a central slot or opening having teeth formed on the inner walls thereof, a plate connected to the rear portion of the rack-bar with a rib or guideway thereon, a shaft mounted in bearings on the front arms of the stem, the hub or free end of which contacts with the rib, and a pinion on the shaft meshing with the teeth of the rack-bar, whereby when motion is imparted to the mill, the free end of the shaft and the pinion are permitted to make a continuous circuit of the rib and teeth, the lateral or rocking movement of the rack-bar occurring when the free end of the shaft passes over and under the upper and lower ends of the rib, substantially as specified.



610,323. WELT-GUIDE. WILFRED J. DERY, Philadelphia, Pa. Filed June 11, 1897. Serial No. 640,280. (No model.)



Claim.—1. A welt-guide provided with a channel-opener to engage the channel of a channeled welt and raise the channel lip or flap as said welt is drawn through the guide, substantially as described.

2. A welt-guide provided with a lip-turner comprising a fixed part and a movable part, substantially as described.

3. A welt-guide provided with a lip-turner comprising a fixed part and a movable part, a slide carrying the movable part, a spring acting upon said slide and an adjustable stop to limit the movement of said slide in one direction, substantially as described.

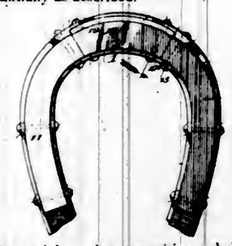
4. A welt-guide provided with a shield hinged to said guide at its outer end to swing in a plane at right angles to the plane of the guide, and means to hold the shield closed, substantially as described.

610,324. ELASTIC-TREAD HORSESHOE. FELIX GALLEY, Cleveland, Ohio, assignor of one-half to Preston Vaughn, Nashville, Tenn. Filed Feb. 4, 1898. Serial No. 669,121. (No model.)

Claim.—1. An elastic-tread horseshoe comprising a skeleton metallic shoe, an elastic cushion fitted to said skeleton shoe, a wear-plate interposed between the cushion and the toe portion of the shoe and held in place by the elasticity of the cushion, and means for attaching said cushion and the wear-plate to the shoe, substantially as described.

2. An elastic-tread horseshoe comprising a skeleton metallic shoe, an elastic cushion held therein, and a metallic wear-plate confined between the skeleton shoe and the elastic cushion and exposed to the pressure of said cushion, substantially as described.

3. The combination with a skeleton shoe and an elastic cushion held therein, of a metallic wear-plate attached loosely to the skeleton shoe at the toe thereof and subjected to the pressure of the elastic cushion to be held between said cushion and shoe against play or movement, substantially as described.

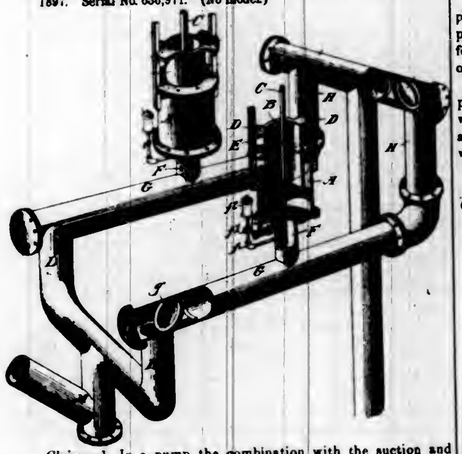


4. An elastic-tread horseshoe comprising a skeleton shoe, a divided, elastic cushion having its members fitted within said skeleton shoe and with its toe portion between the side portions thereof, means for fastening the side sections of the divided cushion to said shoe, separate means for attaching the toe-section of the cushion to the corresponding part of the shoe and a metallic wear-plate fitted between the toe portion of the shoe and the toe-section of the cushion and held loosely in place by the means which attach said toe-section of the cushion to the shoe, substantially as described.

5. An elastic-tread horseshoe comprising a skeleton shoe, a divided, elastic cushion fitted to said skeleton shoe and having its sections secured in place independently of each other, and a metallic wear-plate coextensive with the toe-section of the cushion and secured loosely in place between said cushion and the shoe, said wear-plate being subjected to the pressure of said cushion, substantially as described.

6. An elastic-tread horseshoe comprising a skeleton metallic frame provided on its outer edge with the recessed flanges, a divided, elastic cushion fitted in the skeleton shoe, means for fastening the side sections of the cushion to said shoe, a metallic wear-plate fitted in the recessed flanges of the shoe to be held thereby against endwise displacement, and fastening devices which attach the toe-section of the cushion to said shoe and loosely confine the wear-plate against edgewise displacement, substantially as described.

610,325. SAND-PUMP. VICTOR HARMON, Richmond, Va., assignor of one-half to James G. Whitlock, Hanover County, Va. Filed May 17, 1897. Serial No. 636,971. (No model.)

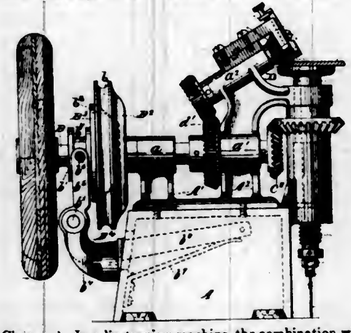


Claim.—1. In a pump, the combination with the suction and discharge pipes, an inverted-T-shaped main chamber on a lower level than said suction-pipe and on a higher level than the discharge-pipe, said suction and discharge pipes connected with the horizontal member of the chamber at diametrically opposite ends respectively, and suction and discharge valves at the points of connection between said horizontal member of the chamber and the suction and discharge pipes respectively; of a pump-cylinder connected with the vertical member of the pump-chamber, for the purpose set forth.

2. In a pump, the combination with the suction and discharge pipes, an inverted-T-shaped main chamber on a lower level than said suction-pipe and on a higher level than the discharge-pipe, said suction and discharge pipes connected with the horizontal member of the chamber at diametrically opposite ends respectively, and suction and discharge valves at the points of connection between said horizontal member of the chamber and the suction and discharge pipes respectively; of a pump-cylinder connected with the vertical member of the pump-chamber and means for supplying lubricant to said member, for the purpose set forth.

3. A shoe for suction-pipes comprising a chamber at one end of said pipe, a strainer across said chamber, a cylindrical element connected therewith and provided with perforations and cut-away portions, and a sleeve similar to said cylinder provided with like perforations and cut-away portions and adapted to be adjusted along said cylinder, for the purpose set forth.

610,326. LIP-TURNING MACHINE. MYRON L. KEITH, Brockton, Mass. Filed Apr. 1, 1897. Serial No. 630,263. (No model.)



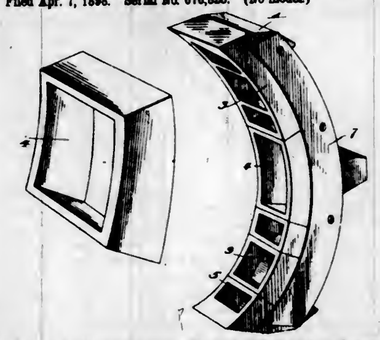
Claim.—1. In a lip-turning machine, the combination with a lip-turning plow and a lip-setting roll located adjacent thereto, of a work-support arranged to hold the work against said plow and roll, the lip-setting roll being inclined relatively to the surface of the work-support, substantially as described.

2. In a lip-turning machine, the combination with a work-support, of a lip-turning plow and a concaved lip-setting roll located adjacent the plow and arranged to follow it along the edge of the sole, said lip-setting roll being inclined relatively to the work-bearing surface of the work-support, substantially as described.

3. In a lip-turning machine, the combination with a lip-turning plow and a lip-setting roll arranged adjacent to and following the plow, of a work-support rotating in a horizontal plane and a rotating feed-wheel arranged to enter the angle between the feather and lip of the sole, substantially as described.

4. In a lip-turning machine, the combination with a lip-turning plow and a lip-setting roll, of a work-support, and a beveled feed-wheel mounted on an axis inclined relatively to the axis of the work-support so that its gripping-face will be parallel to the surface of the work-support, substantially as described.

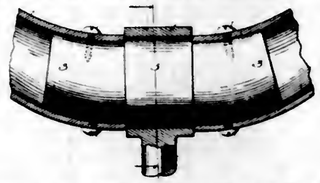
610,327. BRAKE-SHOE. GEORGE KELLY, Mineral Point, Wis. Filed Apr. 7, 1898. Serial No. 676,825. (No model.)



Claim.—1. The brake-shoe 1 formed with the integral transverse dovetail ribs 2, 2, in combination with the brake-boxes formed with the dovetail keys 6 and the guard-plates 7, 7 removably secured to the parallel sides of said shoe, substantially as shown and described.

2. The brake-shoe 1 formed with the integral ribs 2, 2, in combination with the removable brake-boxes 3, formed with the keys 6, and the parallel shoulders 8, 8, projecting over said ribs, substantially as shown and described.

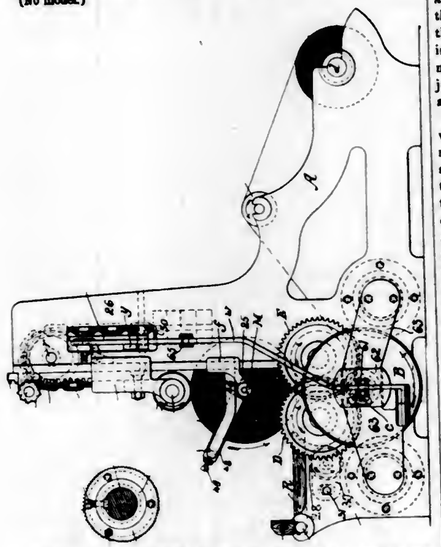
610,828. HANDLE-BAR. JOHN L MARTIN, Beaumont, Tex. Filed Dec. 18, 1897. Serial No. 662,459. (No model.)



Claim.—1. In a handle-bar for bicycles and the like, the combination of a coupling having its ends reduced, forming a central enlarged portion and stop-shoulders at each side thereof, separate handle-bar sections connected to the reduced ends of the coupling and fitting against the stop-shoulders, and a stem having a clamp encircling the enlarged portion of the coupling, substantially as shown and described.

2. As an improved article of manufacture, a handle-bar for bicycles and the like comprising horns, a wooden coupling having its middle portion made enlarged and its end portions made conformable to the irregularities of the inner ends of the horns and cemented therein, screws or like fastenings passing laterally through openings in the ends of the horns and into the wooden coupling, and a stem having a clamp fitted to the enlarged portion of the coupling between the opposing ends of the horns, substantially as set forth.

610,829. PAPER CUTTING AND WINDING MACHINE. FRANCIS MERRILL, Boston, Mass., assignor to the Kidder Press Manufacturing Company, same place. Filed Aug. 27, 1897. Serial No. 649,773. (No model.)



Claim.—1. In a machine for cutting and winding paper, the combination with a pair of positively-driven winding-cylinders both revolving in the same direction and a core-shaft on which the paper is wound by frictional contact with the said two winding-cylinders, of a vertically-sliding cross-bar located above the winding-cylinders and carrying a horizontal cutter-shaft mounted in suitable bearings in said bar; said cutter-shaft being provided with circular cutters and collars of a diameter slightly less than that of the cutters and adapted to rest upon the paper being cut to thereby limit the degree of penetration of the cutters, and the said cross-bar serving as a weight to press the collars down on the paper for tight winding and also preventing the cutter-shaft from springing, substantially as described.

2. In a machine for cutting and winding paper, the combination of a pair of positively-driven winding-cylinders both revolving in the same direction, a pressure-roll cooperating with one of said winding-cylinders to feed forward the paper, means for adjusting the pressure-roll toward and from said cylinder a core-shaft on which the paper is wound by frictional contact with the said two winding-cylinders, a vertically-sliding cross-bar located above the winding-cylinders and carrying a horizontal cutter-shaft mounted in suitable bearings in said cross-bar; said cutter-shaft being provided with circular cutters and collars adjustable longitudinally upon said shaft, and said collars being of a diameter slightly less than that of the cutters and resting upon the paper being cut to thereby limit the degree of penetration of the cutters, substantially as described.

3. In a machine for cutting and winding paper, the combination with a pair of positively-driven winding-cylinders both revolving in the same direction, and a core-shaft on which the paper is wound by frictional contact with the said two winding-cylinders, of a vertically-sliding cross-bar located above the winding-cylinders and carrying a horizontal cutter-shaft mounted in suitable bearings in said bar; said cutter-shaft being provided with circular cutters and collars adjustable longitudinally upon said shaft, and said collars being of a diameter slightly less than that of the cutters, and an automatic stop-motion actuated by the increase of diameter of the roll being wound whereby the machine is stopped when the roll of paper being wound up has attained the desired diameter, substantially as described.

4. In a machine for cutting and winding paper, the combination with the winding-cylinders, the core-shaft carrying the roll of paper being wound up, and the vertically-sliding cross-bar carrying the cutter-shaft, of an automatic stop-motion consisting of a friction pulley or clutch, a spring-actuated lever for operating the same, a catch-lever for holding the first-mentioned lever against the resistance of its spring, said catch-lever being provided with an adjustable toe or projection, and a projection on the cross-bar adapted to contact with said toe and thereby operate the catch-lever to stop the machine when the roll of paper has attained the desired diameter, substantially as described.

5. In a machine for cutting and winding paper, the combination with the two friction winding-cylinders and a core-shaft carrying the roll of paper being wound up, of a vertically-sliding cross-bar located above the winding-cylinders, a cutter-shaft mounted in bearings at the ends of the cross-bar and carrying circular cutters and collars, the latter resting on the paper being cut, and a hanger for supporting the cutter-shaft intermediate between its ends, said hanger being made adjustable horizontally on the cross-bar to permit of the adjustment of the cutters and collars on the cutter shaft, substantially as described.

6. In a machine for cutting and winding paper, the combination with the two friction winding-cylinders, and a core-shaft carrying the roll of paper being wound up, of a vertically-sliding cross-bar located above the winding-cylinders, a cutter shaft mounted in bearings at the ends of the cross-bar and carrying circular cutters and collars, the latter resting on the paper being cut, a driving-pulley on the cutter-shaft, a belt passing over said pulley and over pulleys above and below the same and allowing the cross-bar and cutter-shaft to rise and fall without changing its tension, and receiving motion through suitable gearing from the shaft of one of the winding-cylinders, whereby the collars on the cutter-shaft are caused to be rotated with the same surface velocity as the winding-cylinders, all constructed to operate substantially as described.

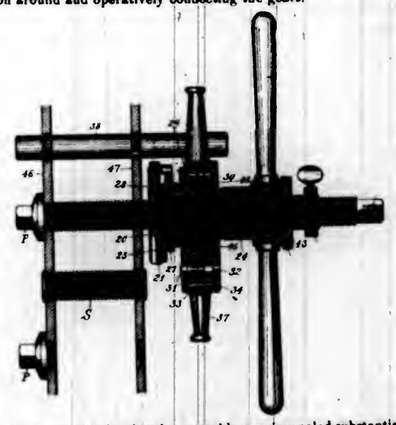
7. The combination with the paper-winding mechanism and cutting or slitting mechanism moved away from the rolls being wound by the increasing diameter of such rolls, of a stop-motion having a releasing member in the path of a part of the cutting or slitting mechanism and actuated thereby when such mechanism is moved a predetermined distance by the roll being wound, substantially as described.

8. The combination with the paper-winding mechanism and a cutting or slitting mechanism moved away from the rolls being wound by the increasing diameter of such rolls, of a stop-motion having an adjustable releasing member in the path of a part of the cutting or slitting mechanism and actuated thereby when such mechanism or a part thereof is moved into contact therewith by the roll of cut paper when it reaches a certain diameter, substantially as described.

9. The combination with a core-shaft and mechanism for winding the paper thereon, of a vertically-sliding cross-bar over the core-shaft and provided with intermediate and end bearings or brackets, and a cutter-shaft mounted in said series of bearings against springing and carrying a series of collars and cutters, substantially as described.

610,830. CUTTING-OFF APPARATUS. JOSEPH R. RENSHAW, Hartford, Conn. Filed July 7, 1897. Serial No. 643,713. (No model.)

Claim.—1. A rotatable head and a rotatable cam journaled substantially concentric therewith, differential driving-gears for the head and the cam respectively, and a pinion mounted for planetary revolution around and operatively connecting the gears.



2. A rotatable head and a rotatable cam journaled substantially concentric therewith, differential driving-gears for the head and the cam, a revoluble arm journaled concentrically with the gears, and a pinion rotatably mounted on the arm and operatively connecting the gears.

3. A rotatable head, and a rotatable cam journaled substantially concentric therewith, a pair of differential gears fixed respectively upon the head and upon the cam, a pinion operatively connecting the gears, and a rotatable casing for inclosing the gears and the pinion, and upon which the latter is rotatably mounted.

4. In combination with a rotatable tool-head, a tool-carrier mounted thereon and movable transversely thereto, a rotatable cam for the tool-carrier mounted substantially concentric with the tool-head, and connected therewith by differential gears, and a pinion operatively connecting the gears and mounted for planetary revolution around them.

5. The combination of a rotating head, a tool-carrying slide mounted thereon and extending transversely across the head, with a cam engaging the slide at a point thereof diametrically and constantly opposite to the location of the tool for drawing the latter to its cut.

6. The combination of a rotatable head, a tool-carrying slide mounted thereon and extending diametrically across the head, provided with an aperture for the insertion of the work and provided with means for clamping the tool in position, with a cam engaging the slide at a portion thereof diametrically and constantly opposite to the location of the tool for feeding the latter to its cut with a drawing movement.

7. The combination of a rotatable head, a rotatable feed-cam journaled substantially concentric therewith, each provided with a pair of gears having a slightly differing number of teeth, and a planetary pinion engaging with both of the gears, whereby differential relative movements are imparted to the head and its feed-cam, either by the rotation of the pinion on its axis, by its revolution around the gears, or by a combination of both movements.

8. A rotating head and a relatively rotatable cam journaled concentrically therewith, each provided with a threaded and shouldered portion for receiving its driving means, the direction of lead of the threaded portions being such as to cause their respective driving members to be tightened against the shoulders by the strain of rotating them in their respective directions.

9. A rotatable head, and a rotatable feed-cam journaled concentrically therewith, each being provided with threaded and shouldered extensions, a pair of driving-gears screwed upon the aforesaid extensions, the direction of lead of each of the threaded parts being such that the gears are screwed against their respective shoulders by the driving strains, substantially as described.

10. In a cutting-off device of the class specified, provided with differential gears, a casing therefor journaled concentrically with and inclosing the gears, provided with a pinion journaled and inclosed in the casing and engaging with the said gears, whereby the pinion is free to rotate upon its bearings in the casing, and to revolve with the casing concentrically with the gears.

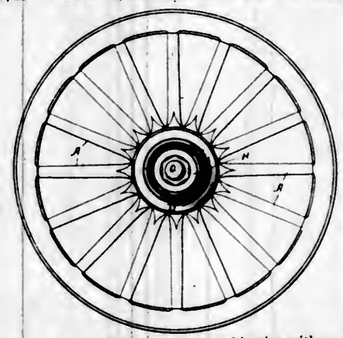
11. In combination with an apparatus of the class specified, a manually-operated driving device therefor consisting of a hub attached to the rotating head of the apparatus and provided with oppositely-disposed removable handles, the hub being recessed to receive a suitable end-bearing collar provided with a removable hand-ring for retaining the end-bearing collar in position, substantially as described.

12. In combination with a rotating cutting-off device for boiler-plate stay-bolts, a threaded checking-piece for engaging with and checking or jamming the threads of the leading end of the stay-bolt in and against its coinciding threads of the boiler-plate, thereby resisting the tendency of the cutting-off device to rotate the bolt.

13. In combination with a rotating cutting-off device for stay-bolts, a plug for resisting the rotative tendency of the bolt under the cutting operation.

14. In combination with a rotating cutting-off device for stay-bolts, a plug P, having a threaded portion fitted to screw into the boiler-plate at the end of the stay-bolt, and having an enlarged friction-shoulder to bear against the surface of the plate, whereby the rotative tendency of the stay-bolt under the strain of the cutting-off operation is resisted.

610,831. BEARING FOR WHEELS. CHARLES E. ROBERTS, Oak Park, Ill. Filed Nov. 13, 1897. Serial No. 658,493. (No model.)



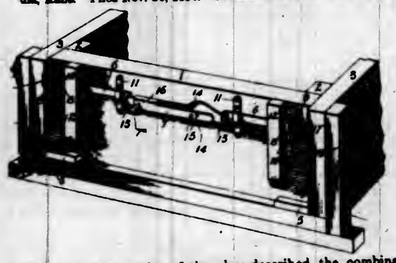
Claim.—1. In a ball-bearing, the combination with a recessed metal hub, the balls and the cone, of a cup and a ball-ring both located in the hub-recess and made fast thereto, said ring being located outside the balls, substantially as specified.

2. In a ball-bearing, the combination with a recessed hub, the cone, and the balls, of the cup and ball-ring both made fast in the hub-recess, with said ring located outside the balls, and a split spring-ring seated in the ball-ring, substantially as specified.

3. In a ball-bearing, the combination with a recessed hub, the cone, and the balls, of the cup and ball-ring both made fast in the hub-recess, with said ring located outside the balls, and a split spring-ring seated in the ball-ring, the bearing having an open space lateral of said spring-ring into which it may be moved to permit the removal of the balls, substantially as specified.

4. The ball-bearing for vehicle-wheels, comprising a metal hub-flange D recessed at its end, a cup F secured in the recess of said flange, a cone supported by the axle, balls moving between the cup and cone, the ring H, split ring H', and the axle, both said rings being located outside the balls, substantially as specified.

610,832. END-GATE FASTENER. ALBERT SCHLAPBACH, Scandia, Kans. Filed Nov. 20, 1897. Serial No. 660,255. (No model.)



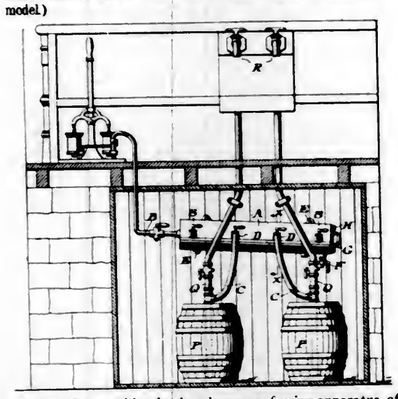
Claim.—1. In a device of the class described, the combination with a wagon-body provided with cleats and having inwardly-extending hooks, and an end-gate provided with slots to receive the said hooks and having guides, of a fastening device comprising a pair of oppositely-disposed bars slidingly mounted in the guides and provided at their outer ends with openings arranged opposite the slots

and engaging said hooks, said bars being provided at their inner ends with recesses and having angular bends forming stops to engage the guides, and a lever pivoted to the inner ends of the bars and composed of two sides connected at their upper ends and receiving the bars between them, substantially as described.

2. In a device of the class described, the combination with a wagon body provided at the inner faces of its sides with cleats, guide-plates provided with slots and secured to the inner faces of the sides of the body, hooks projecting from the inner faces of the sides of the wagon-body and having shanks arranged in said slots, nuts located on the exterior of the body and engaging the shanks, keepers mounted on the body and engaging the nuts, an end-gate fitting against the cleats and provided with slots to receive the hooks, and a locking device comprising the sliding bars having openings to engage the hooks, and a lever pivoted to the inner ends of the bars and forming a lock, substantially as described

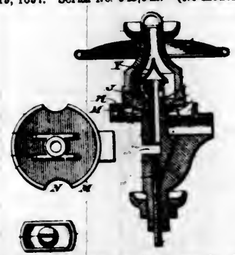
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610,333. TANK FOR PRESSURE APPARATUS. EDWARD SHERIDAN, Philadelphia, Pa. Filed July 1, 1896. Serial No. 597,800. (No model.)



Claim.—The combination in a beverage-forcing apparatus, of an air-supply, means for conducting the beverage to and dispensing it at a bar and a horizontal and fixed reservoir for compressed air provided with a trap for waste liquid, a removable lid at one end, a series of keg connections, in one side and above the bottom of said tank and means to drain the waste liquid, the whole arranged so that the lid may be readily removed, and the reservoir scoured by hand, without disturbing the pipe connections, substantially as set forth.

610,334. VAPOR-BURNER. HARPER F. SMITE, Philadelphia, Pa. Filed July 19, 1897. Serial No. 645,042. (No model.)



Claim.—1. A vapor-burner having a supply pipe with a vapor-tube, a valve-chamber with a pin-valve, a gas-tube directly over said valve-chamber with an air-inlet at its lower end, a reservoir surrounding said gas-tube, a sleeve surrounding the base of said reservoir, and a tip on said reservoir, said gas-tube having ports in its sides leading into said reservoir and other ports leading into the space withiu said sleeve below said reservoir.

2. A vapor-burner having a supply-pipe with a vapor-tube, a communicating valve-chamber with an adjustable valve therein, a gas-tube directly over the outlet of said valve-chamber and provided with an air-inlet at its lower end, a reservoir surrounding said gas-tube, and provided with a tip, a sleeve surrounding the base of said reservoir forming a chamber having a bottom adjacent said supply-pipe, and a collar below said tip, said gas-tube having ports communicating respectively with said reservoir and with the chamber within said sleeve.

3. In a vapor-burner, a vapor-tube with a supply-pipe and a valve-chamber with a valve, a gas-tube with an air-inlet at its lower end, a reservoir into which said tube discharges, and a sleeve surrounding the base of said reservoir, said gas-tube having a closed top and provided with ports below the base of said reservoir leading into the space within said sleeve.

4. A vapor-burner having a vapor-tube with an inlet-pipe and a valve-chamber with a valve, a gas-tube in communication with the outlet of said valve-chamber, a gas-reservoir surrounding and in communication with said gas-tube by ports in the sides of the latter, a sleeve surrounding the base of said reservoir and having openings in its rim, and upright plates by the side of said gas-tube.

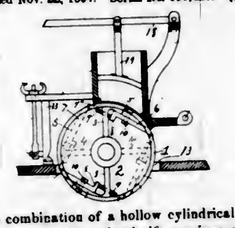
5. A gas-generator with a gas-tube having small ports therein, a protecting plate or disk attached to and surrounding said tube, a rim attached to said plate or disk, upright plates on said plate or disk, a supply-pipe, a vapor-tube, an air-chamber and a pin-valve also attached in combination therewith.

6. In a gas-burner, a supply-pipe, a vapor-tube and a valve, a gas-tube, a reservoir, a sleeve surrounding the base of said reservoir, said gas-tube having a closed top and provided with ports below the same leading into said reservoir, whereby gas enters the latter, said sleeve being also in communication with said tube, whereby it may also receive gas from said tube.

7. A gas-burner, a gas pipe, a reservoir surrounding the same, and having a tip above said pipe, ports in said pipe forming a communication between said reservoir and pipe, and a converging deflector closing the top of said pipe within said reservoir.

8. A gas-pipe, a reservoir surrounding the same, and in communication therewith, a sleeve around the base also in communication with said pipe, a hood on the upper part of said reservoir, a tip on the latter and a collar on said tip above said hood.

610,335. BONE-CUTTING MACHINE. CHRISTOPHER TRICK, Dayton, Ohio. Filed Nov. 22, 1897. Serial No. 659,429. (No model.)



Claim.—The combination of a hollow cylindrical knife-support formed with longitudinal alternating knife-openings, a central partition-disk comprising halves bent away from a common diameter toward the ends of the cylinder, longitudinal webs 3 and 4 extending from each side of said partition in planes at right angles to each other, knives formed with shoulders and projecting through said alternating openings and having their inner adjacent ends extending to or overlapping a common plane, knife-adjusting screws penetrating openings in the rim of the cylinder and the webs 3 4 and abutting against the knife-shoulders, and means for securing the knives to the cylinder; substantially as set forth.

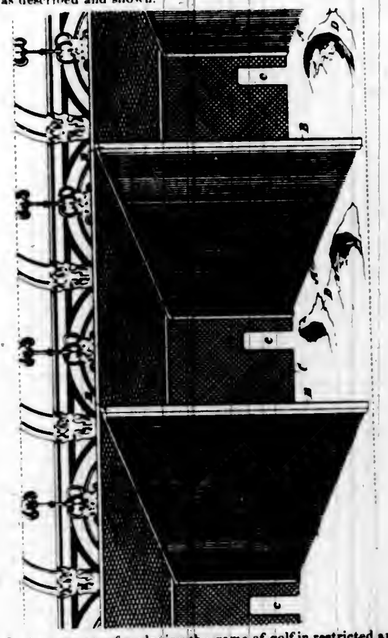
610,336. APPARATUS FOR PLAYING GOLF. WILLIAM H. WHITE, Edinburgh, Scotland. Filed Dec. 27, 1897. Serial No. 663,574. (No model.)

Claim.—1. An apparatus for playing the game of golf in restricted areas of ground, roofed or unroofed, comprising a number of frames arranged at suitable distances apart, and obstructing strings, strands, wires, strips or tapes of suitable material supported upon the frames for the purpose of retarding the progress of the ball when it is driven against or through them, substantially as described and shown.

2. An apparatus for playing the game of golf in restricted areas, comprising suitable frames, and strings, strands, wires, strips or tapes supported upon the frames and traversing the space outlined by the frames in vertical, horizontal or diagonal directions for the purpose of retarding the progress of the ball through said space, substantially as described and shown.

3. An apparatus for playing the game of golf in restricted areas, comprising suitable frames, obstructing strings, strands, wires, strips or tapes traversing the space outlined by each frame, and means for yieldingly attaching said obstructing strings, strands, wires, strips or tapes to the upright frame and holding them taut, substantially as set forth.

4. In apparatus for playing the game of golf in restricted areas of ground, comprising suitable frames carrying horizontally-arranged strings, strands wires, strips or tapes, an upright at each side to which the strings, strands, wires, strips or tapes are attached, and india-rubber bands or spiral springs interposed between the uprights and frames, whereby the strings, strands, wires, strips or tapes are kept taut, as described and shown.

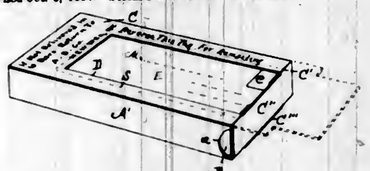


5. An apparatus for playing the game of golf in restricted areas, comprising suitable frames, rollers journaled in the frames, and strings, strands, wires, tapes or strips secured at their ends to the rollers, whereby the strings, strands, wires, strips or tapes may be kept taut and the required tension be given to them, substantially as set forth.

6. An apparatus for playing the game of golf in restricted areas, comprising suitable upright frames, strings, strands, wires, strips or tapes supported upon the frames and traversing the spaces outlined by each frame, and suitable division-walls confining the course and formed with passage-ways or doors through which the players may pass, substantially as set forth.

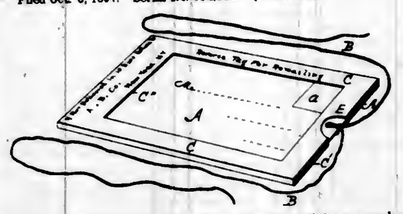
7. An apparatus for playing golf in restricted areas, comprising suitable frames supporting obstructing strings, strands, wires, strips or tapes, in combination with bunkers and hazards, substantially as set forth.

610,337. REMAILABLE BOX. HELEN A. AMES, Brookline, Mass. Filed Oct. 6, 1897. Serial No. 654,212. (No model.)



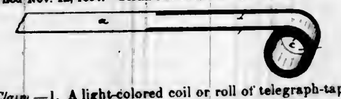
Claim.—In a remailable box, an outer box open at one end or side: an inner box adapted to slide into the outer box; the paper or pasteboard piece C provided with the opening D and adhesively secured to the upper side of the outer box around said opening leaving a small portion next said opening with a space or slideway between it and the box, said piece C being provided with the flap C' and tongue C'' for folding around and under the end of the inner box: and a reversible address-card having provision on one side for the address of the recipient and having the other side inscribed with the address of the sender, said address-card being adapted to slide between said piece C and the top of the box and exhibit its address through said opening D, substantially as set forth.

610,338. LABEL-HOLDER. HELEN A. AMES, Brookline, Mass. Filed Oct. 6, 1897. Serial No. 654,214 (No model.)



Claim.—The herein-described combined remailable tag and package-securing device, consisting of the flat sheath C open at one edge and closed at the other edges, provided on its upper or outer side with the opening C' and with sufficient surface around the edge of said opening for receiving directions to the postmaster and recipient, the rear or under side of said sheath being coated with adhesive substance whereby the same may be secured to the package; the reversible direction-tag A having provision on one side for the address of the recipient and with the other side having inscribed thereon the address of the sender, said tag being adapted to be inserted in and withdrawn from the sheath; and the cord B secured to the outer end of said tag and of sufficient length to securely tie up the package to which the sheath is adhesively applied and thus secure the tag to the package and at the same time hold it in position within the sheath, substantially as described.

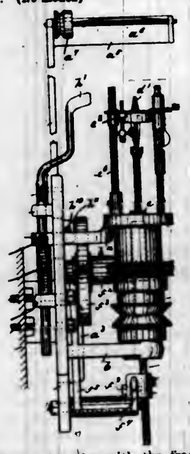
610,339. TELEGRAPH-TAPE. FRANK ATHERTON, Paterson, N. J. Filed Nov. 12, 1897. Serial No. 658,225. (No model.)



Claim.—1. A light-colored coil or roll of telegraph-tape having its inner convolutions glued or pasted together to form a bushing, said tape having the marginal portions only of one or both of its surfaces colored for a specified distance and near the free end of the inner convolutions of said coil or roll, in contrast with the remaining portions of said surfaces, substantially as described.

2. A light-colored coil or roll of telegraph-tape having its inner convolutions glued or pasted together to form a bushing, said tape having the marginal portions only of its receiving-surface colored for a specified distance from the free end of the inner convolution of said coil or roll, in contrast to the remaining portions of said surface, substantially as described.

610,340. WEFT-THREAD-WINDING AND QUILLING MACHINE. ROBERT ATHERTON, Paterson, N. J. Filed May 11, 1898. Serial No. 680,359. (No model.)



Claim.—1. The combination with the frame, of a vertical stationary shaft mounted on said frame, the vertically-reciprocating cop or quill carrying spindle penetrating said shaft, a sleeve-whirl revo-

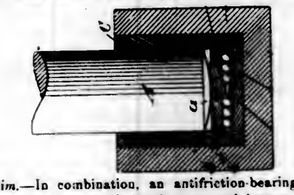
lubly mounted on said shaft, the thread-guide-carrier-supporting disk also revolubly mounted on said shaft and in frictional contact with the sleeve-whirl, a spring-controlled crank-shaft supported by the frame and vertically movable thereon, an arm projecting from said crank-shaft and extending below the thread-guide-carrier-supporting disk, a pin for holding said projecting arm and the crank-shaft in normal position, and means connected with the thread-guide carrier for operating the crank-shaft, substantially as and for the purposes described.

2. The combination with the frame, of a vertical stationary shaft supported by said frame, the vertically-reciprocating cop or quill carrying spindle penetrating said shaft, a sleeve-whirl revolubly mounted on said shaft, a thread-guide-carrier-supporting disk also revolubly mounted on the shaft and in frictional contact with the sleeve-whirl, a spring-controlled crank-shaft revolubly mounted on the frame and vertically movable thereon, an arm projecting from said crank-shaft and extending below the thread-guide-carrier-supporting disk, means carried by the frame for holding said crank-shaft and projecting arm in normal position against the action of the spiral spring, means connected with the thread-guide carrier for operating the crank-shaft, and means for reciprocating the cop or quill carrying spindle, substantially as and for the purposes described.

3. The combination with the frame, of a vertical stationary shaft mounted on said frame, the vertically-reciprocating cop or quill carrying spindle penetrating said shaft, a sleeve-whirl revolubly mounted on the shaft, a sleeve also revolubly mounted on said shaft and in frictional contact with the sleeve-whirl and provided with the thread-guide-carrier-supporting disk, a spring-controlled crank-shaft revolubly mounted on the frame and vertically movable thereon, an arm projecting from the crank-shaft and having its curved or eccentric free end in close proximity to the sleeve and the thread-guide-carrier-supporting disk, a pin projecting from the frame for holding said arm and crank-shaft in normal position, and means connected with the thread-guide carrier for operating said crank-shaft, substantially as and for the purposes described.

4. The combination with the stationary vertical shaft and with the vertically-reciprocating cop or quill carrying spindle penetrating said shaft, of a sleeve-whirl revolubly mounted on the shaft, a sleeve also revolubly mounted on said shaft and provided in its lower portion with a cylindrical chamber, a non-metallic bushing secured within said cylindrical chamber and normally in frictional contact with the sleeve-whirl, the thread-guide carrier supported by the sleeve, and means controlled by the thread-guide carrier for throwing said sleeve and its bushing out of frictional contact with the sleeve-whirl, substantially as and for the purposes described.

610,341. END-BEARING. GOVERNEUR G. BROWN, New York, N. Y. Filed Dec. 3, 1897. Serial No. 660,599. (No model.)



Claim.—In combination, an antifriction-bearing for upright shafts comprising a suitable bracket, top and bottom bearing plates located therein and a plurality of antifriction-balls interposed between the said plates, and an upright shaft entering said bracket and resting upon the top bearing-plate, its only point of bearing being at the center of its lower end, whereby the shaft rotates normally on the top plate and under undue weight or strain will cause the top plate to rotate on the antifriction-balls, substantially as set forth.

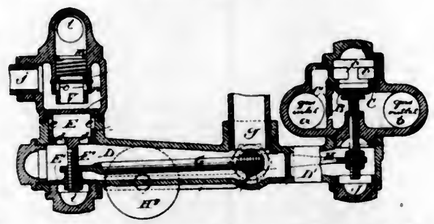
610,842. CURTAIN RING AND HOLDER. PHILIP CASEY, Jr., Paterson, N. J. Filed Dec. 13, 1897. Serial No. 661,664. (No model.)



Claim.—1. A combined curtain ring and fastener consisting of a single strip of elastic metal bent to form the curtain-ring proper, and a clasp comprising a second ring adjoining the meeting ends of the curtain-ring and a pair of coacting members projecting from said second ring, constituting the extremities of said strip and having their ends rebent upon themselves and in normal contact with each other, substantially as described.

2. A combined curtain ring and fastener consisting of a single strip of elastic metal bent to form the curtain-ring proper, and a clasp comprising a second ring adjoining the meeting ends of the curtain-ring and a pair of coacting members projecting from said second ring, constituting the extremities of said strip and having their ends rebent upon themselves and in normal contact with each other, said members being provided with coacting prongs, substantially as described.

610,843. MEANS FOR AUTOMATICALLY CONTROLLING SUPPLY OF GAS AND WATER, &c. JOHN S. COE, Paterson, N. J., assignor to the Supreme Combination Water Heater Company, of New Jersey. Filed Jan. 4, 1898. Serial No. 665,557. (No model.)



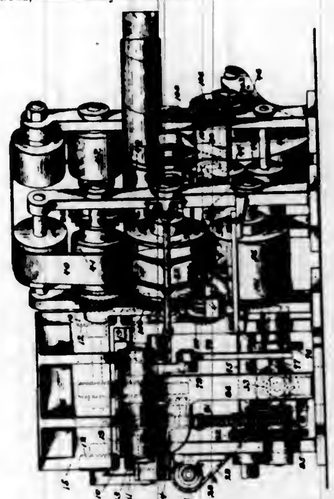
Claim.—1. In an apparatus for automatically controlling the supply of water and gas to a gas-heated water-heater, the combination of a gas-burner and a supply-valve therefor, a conduit for the water to be heated, a water-supply valve in said conduit to be operated by the draft of water therethrough a box communicating with said couduit, and a movable seat in said box for said water-supply valve, said box having besides its communication with the conduit three other openings, viz: one for cold water to the heater, a second for heated water from the heater and a third for the draft of heated water, the first and second openings being controlled by said water-supply valve, and a connection between said water and gas supply valves, substantially as herein described.

2. In an apparatus for automatically controlling the supply of water and gas to a gas-heated water-heater, the combination of a gas-burner and a supply-valve therefor, a conduit for cold water to be heated, a hollow cylindrical valve-seat in the outlet of said conduit, a water-supply valve consisting of a hollow side-ported piston having a closed head and capable of being moved within said seat by the pressure of the water in the conduit, a connection between said water and gas supply valves, a box at said outlet beyond said valve and a movable spring-borne annular valve-seat in said box, said box having, besides its communication with said outlet three other openings, one of which forms a passage for cold water to the heater controlled by the side passages in the valve, a second is an inlet for water from the heater and a third is for the draft of heated water, the head of said water-supply valve operating to close said movable seat and shut off communication between the cold-water conduit and the said second and third openings while the first-mentioned opening is open to the conduit through the side ports of the valve, substantially as herein described.

3. In an apparatus for automatically controlling the supply of water and gas to a gas-heated water-heater, the combination of a gas-burner and a supply-valve therefor, a conduit for cold water to be heated, a hollow cylindrical valve-seat in the outlet of said conduit, a water-supply valve consisting of a hollow side-ported piston having a closed head in which is a small vent and capable of being moved within said seat by the pressure of the water in the conduit, a connection between said water and gas supply valves, a box at said outlet beyond said valve and a movable spring-borne annular valve-seat in said box operating to open and close said vent, said box having, besides its communication with the conduit, three other openings one of which forms a passage for cold water to the heater controlled by the side passages in the valve, a second is an inlet for water from the heater and a third is for the draft of heated water, the head of said water-supply valve operating to close said movable seat and shut off communication between the cold-water conduit and the said second and third openings while the first-mentioned opening is open to the conduit through the side ports of the valve, substantially as herein described.

610,344. WRAPPING-MACHINE. LUTHER C. CROWELL, New York, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, same place. Filed Dec. 31, 1897. Serial No. 665,163. (No model.)

Claim.—1. The combination of means for supporting and advancing a succession of independent papers, and means for winding a succession of independent wrappers spirally about the papers as they are advanced, substantially as described.



2. The combination of means for supporting and advancing a succession of independent papers, means for delivering the papers successively to said supporting and advancing means, and means for winding a succession of independent wrappers spirally about the papers as they are advanced, substantially as described.

3. The combination of means for supporting and advancing a succession of independent papers, means for winding a succession of independent wrappers spirally about the papers as they are advanced, and pasting devices for applying a line of paste to one edge of the wrappers for securing together the successive windings of the wrappers, substantially as described.

4. The combination of means for supporting and advancing a succession of independent papers, and means for advancing a succession of wrappers spirally about the advancing papers by engagement with the outer surface of the wrappers, substantially as described.

5. The combination of paper-feeding devices, and means for advancing a wrapper spirally about a paper by engagement with the outer surface of the wrapper, substantially as described.

6. The combination of paper-feeding devices, and a wrapper-tube-forming belt running spirally about the path of the papers as they are advanced by the feeding devices, substantially as described.

7. The combination of paper-feeding devices, a wrapper-tube-forming belt running spirally about the path of the papers as they are advanced by the feeding devices, and means for guiding a wrapper to the forming-belt at an angle to the direction in which the papers are advanced by the feeding devices to form a spirally-wound wrapper-tube, substantially as described.

8. The combination of paper-feeding devices, means for severing a continuous wrapper-web in lines diagonal to the length of the web, means for advancing the independent wrappers thus formed at an angle to the direction of movement of the papers with their severed edges at right angles to the direction of movement of the paper, and means for winding the independent wrappers spirally about the papers, substantially as described.

9. The combination of a tubular former, means for winding a wrapper spirally about the former to form a wrapper-tube and for advancing the wrapper-tube longitudinally of the former, and means for advancing a paper through the former to engage the wrapper-tube as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

10. The combination of a tubular former, means for winding a succession of wrappers spirally about the former to form wrapper-tubes and for advancing the wrapper-tubes successively longitudinally of the former, and means for advancing a succession of papers through the former to engage the wrapper-tubes as the successive papers and wrapper-tubes are advanced from the end of the former, substantially as described.

11. The combination of a tubular former, means for winding a succession of independent wrappers about the former to form wrapper-tubes and for advancing the wrapper-tubes longitudinally of the former, and means for advancing a succession of papers through the former to engage the wrapper-tubes as the successive papers and wrapper-tubes are advanced from the end of the former, substantially as described.

12. The combination of a tubular former, means for advancing a succession of independent wrappers to the former at an angle to the former, means for winding the wrappers spirally about the former to form wrapper-tubes and for advancing the wrapper tubes successively longitudinally of the former, pasting devices for applying a line of paste to the edge of the wrappers as they are advanced to the former, and means for advancing a succession of papers through the former to engage the wrapper-tubes as the successive papers and wrapper-tubes are advanced from the end of the former, substantially as described.

13. The combination of a tubular former, means for advancing a succession of papers through the former, means for forming a succession of wrapper-tubes on the former of less length than the papers to be wrapped, and for advancing the wrapper-tubes longitudinally of the former at a speed less than that of the papers to engage the papers as the successive papers and wrapper-tubes are advanced from the end of the former, substantially as described.

14. The combination of a stationary tubular former, means for winding a wrapper spirally about the former to form a wrapper-tube and for advancing the wrapper-tube longitudinally of the former, and means for advancing a paper through the former to engage the wrapper-tube as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

15. The combination of a tubular former, means for advancing a wrapper about the former to form a wrapper-tube by engagement with the outer surface of the wrapper and for advancing the wrapper-tube longitudinally of the former, and means for advancing a paper through the former to engage the wrapper-tube as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

16. The combination of a tubular former, means for advancing a wrapper spirally about the former to form a spirally-wound wrapper-tube by engagement with the outer surface of the wrapper, and means for advancing a paper through the former to engage the wrapper-tube as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

17. The combination of a tubular former, a forming-belt running spirally about the former for advancing a wrapper about the former to form a wrapper-tube by engagement with the outer surface of the wrapper and for advancing the wrapper-tube on the former, and means for advancing a paper through the former to engage the wrapper-tube as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

18. The combination of a tubular former, a forming-belt running spirally about the former for advancing a wrapper about the former to form a wrapper-tube by engagement with the outer surface of the wrapper and for advancing the wrapper-tube on the former, means for advancing the wrapper-tube on the former beyond the forming-belt, and means for advancing a paper through the former to engage the wrapper-tube as the paper and wrapper tube are advanced from the end of the former, substantially as described.

19. The combination of a tubular former, a forming-belt running spirally about the former means for guiding a wrapper between the former and the forming-belt at an angle to the former to form a spirally-wound wrapper-tube about the former, and means for advancing a paper through the former to engage the wrapper-tube as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

20. The combination of a tubular former, means for applying a succession of wrappers about the former to form wrapper-tubes and for advancing the wrapper-tubes longitudinally of the former, a paper-receiving pocket, means for advancing papers successively into the pocket transversely to the direction in which they are fed from the pocket, and means for advancing the papers successively from the pocket and through the former to engage the wrapper-tubes as the successive papers and wrapper-tubes are advanced from the former, substantially as described.

21. The combination of a tubular former, a paper-receiving pocket, a folding-blade for folding a paper into the pocket, means for advancing the paper from the pocket and through the former, and means for applying a wrapper about the former to form a wrapper-tube and for advancing the wrapper-tube longitudinally of the former to engage the paper as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

22. The combination of a tubular former, a paper-receiving pocket, a folding-blade for folding a paper into the pocket, means for advancing the paper from the pocket and through the former, and means for advancing a wrapper-tube longitudinally on the former to engage the paper as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

23. The combination of a tubular former, a paper-receiving pocket, a folding-blade for folding a paper into the pocket trans-

versely to the direction in which the paper is fed from the pocket, means for advancing the paper from the pocket and through the former, and means for applying a wrapper about the former to form a wrapper-tube and for advancing the wrapper-tube longitudinally of the former to engage the paper as the paper and wrapper-tube are advanced from the end of the former, substantially as described.

24. The combination of a paper-receiving pocket, a folding-blade for folding a paper into the pocket transversely to the direction in which the paper is fed from the pocket, means for advancing the paper from the pocket, and means for applying a wrapper about the paper as it is advanced from the pocket, substantially as described.

25. The combination of a paper-receiving pocket, means for folding the papers successively into the pocket transversely to the direction in which the papers are fed from the pocket, means for advancing the papers from the pocket, and means for applying a succession of wrappers about the successive papers as they are advanced from the pocket, substantially as described.

26. The combination of the tube 26 having a paper-receiving slot 27, reciprocating folding-blade 15, feeding devices for advancing through the tube papers which have been folded through the slot 27, and a forming-belt 40 running spirally about the tube, substantially as described.

27. The combination of the tube 26 having a paper-receiving slot 27, means for advancing papers successively into the tube 26 through the slot 27, feeding devices for advancing the papers through the tube, and a forming-belt 40 running spirally about the tube, substantially as described.

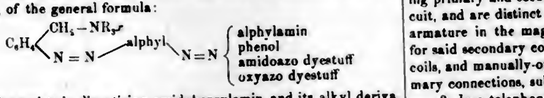
28. The combination with a former, of the forming-belt 40 running spirally about the former and turning on rolls 41 and 42 whose axes are set at an angle to the former and on rolls 44 and 43 whose axes are set at an angle to the axes of the rolls 41 and 42, respectively, substantially as described.

29. The combination with paper feeding devices for advancing a succession of papers, of the forming-belt 40 running spirally about the path of the papers as they are advanced by said feeding devices and turning on rolls 41 and 42 whose axes are set at an angle to the direction of movement of the papers and on rolls 44 and 43 whose axes are set at an angle to the axes of the rolls 41 and 42 respectively, substantially as described.

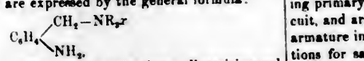
30. The combination with a former, of the forming-belt 40 running spirally about the former and turning on rolls 41 and 42 whose axes are set at an angle to the former, feeding and cutting rolls 50 and 51 whose axes are parallel with the axes of the roll 41, and guides 52, substantially as described.

610,845. RED ACID DYE AND PROCESS OF MAKING IT. BERNHARD DEICKE, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Nov. 5, 1897. Serial No. 657,538. (No specimens.)

Claim.—1. The process herein described of producing azo dyestuffs, of the general formula:



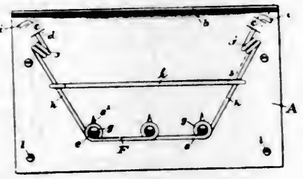
which consists in diazotizing amidobenzylamin and its alkyl derivatives, the salts of which are expressed by the general formula:



and combining with a primary aromatic amin, then rediazotizing and combining with an aromatic amin, phenol, (pyrazolon), amido or oxyazo dyestuff, substantially as set forth.

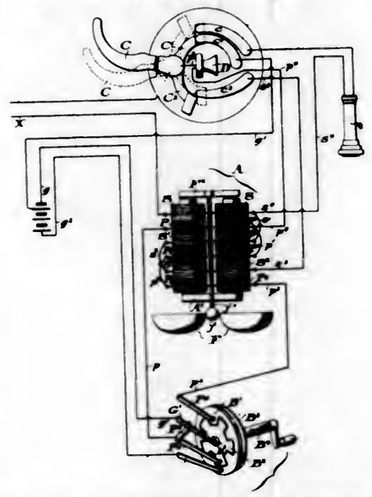
2. As a new product, the dyestuff derived from paramidobenzyldiethylamin, being a dark powder of greenish luster soluble in water and alcohol with a red color, almost insoluble in ether, benzene and ligroin, and dyeing half-wool red in an acid-bath, substantially as set forth.

610,846. LABEL-HOLDER. JOHN H. DOWNING, Portsmouth, Va. Filed Oct. 18, 1897. Serial No. 655,544. (No model.)



Claim.—A card-holder for attachment to freight-cars, comprising a sheet-metal back plate, A, having at its top a horizontal flange, *b*, projectiug forward, and having at two corners a loop, *c*, integral with the said plate—said loop formed by parallel slits and said plate being provided with prongs or spurs, *e*, whose point ends are punched from the plate and bent forward; a clamp-bar, F, having loop-eyes which take over the said prongs or spurs; and spring-arms, *h*, carrying the clamp-bar and the end of each spring-arm passed through one of the said loops with the projecting extremity bent laterally like a hook, as shown and described.

610,847. TELEPHONE. WILLIAM A. DREYDALE, Philadelphia, Pa. Filed Sept. 17, 1897. Serial No. 651,985. (No model.)



Claim.—1. In a telephone-station the combination with a converter having secondary and subdivided primary coils, which form part of the talking-circuit, and are distinct from the receiving instrument, of line connections for said secondary coils, current-supply connections for said primary coils, and manually-operative means to continuously reverse said primary connections, substantially as set forth.

2. In a telephone-station the combination with a converter having primary and secondary coils, which form part of the talking circuit, and are distinct from the receiving instrument, of a call-signal armature in the magnetic field of said cooverter, line connections for said secondary coils, current-supply connections for said primary coils, and manually-operative means to continuously reverse said primary connections, substantially as set forth.

3. In a telephone-station the combination with a converter having primary and secondary coils, which form part of the talking-circuit, and are distinct from the receiving instrument, of a bell-striker armature in the magnetic field of said converter, a bell, line connections for said secondary coils, current-supply connections for said primary coils, and manually operative means to continuously reverse said primary connections, substantially as set forth.

4. In a telephone-station the combination with a converter having primary and secondary coils, which form part of the talking-circuit, and are distinct from the receiving instrument, of line connections for said secondary coils, current-supply connections for said primary coils, manually-operative means to continuously reverse said primary connections, and means coöperative with the reversing element to alternately increase and diminish the current-supply to said primary coils, for the respective signaling and talking circuits, substantially as set forth.

5. In a telephone-station the combination with a converter having subdivided primary and secondary coils, of line connections for said secondary coils, current-supply connections for said primary coils, means to continuously reverse said primary connections, and means to alternately make connection with differing numbers of said subdivisions of the primary and secondary coils, for the respective talking and signaling circuits, substantially as set forth.

6. In a telephone-station the combination with a converter having primary and subdivided secondary coils, of a signal-armature for said converter, line connections for said secondary coils, current-supply connections for said primary coils, means to continuously reverse said primary connections, and a switch in the line-circuit adapted to alternately make connections with differing numbers of said subdivisions of the secondary coils, for the respective talking and signaling circuits, substantially as set forth.

7. In a telephone-station the combination with a converter having secondary and subdivided primary coils, of line connections for said secondary coils, current-supply connections for said primary coils, switch mechanism to continuously reverse said primary connections, and means coöperative with said reversing-switch whereby differing numbers of said subdivisions of the primary coils are included in the respective talking and signaling circuits, substantially as set forth.

8. In a telephone-station the combination with a converter having secondary and subdivided primary coils, of line connections for said secondary coils, current-supply connections for said primary coils, switch mechanism to continuously reverse said primary connections, and means coöperative with said reversing-switch whereby the entire number of subdivisions of the primary coils may be included in the signaling-circuit, and a predetermined number of said coils be cut out by the release of said switch, substantially as set forth.

9. In a telephone station the combination with a converter having subdivided primary and secondary coils, of line connections for said secondary coils, current-supply connections for said primary coils, switch mechanism to continuously reverse said primary connections, means coöperative with said reversing-switch whereby differing numbers of said subdivisions of the primary coils may be included in the respective talking and signaling circuits, and a switch in the line-circuit adapted to alternately make connection with differing numbers of said subdivisions of the secondary coils for the respective talking and signaling circuits, substantially as set forth.

10. In a telephone-station the combination with a converter having subdivided primary and secondary coils, of a signal-armature for said converter, line connections for said secondary coils, current-supply connections for said primary coils, switch mechanism to continuously reverse said primary connections, means coöperative with said reversing-switch whereby differing numbers of said subdivisions of the primary coils may be included in the respective talking and signaling circuits, and a switch in the line-circuit adapted to alternately make connections with differing numbers of said subdivisions of the secondary coils for the respective talking and signaling circuits, substantially as set forth.

11. In a telephone-station the combination with a converter having primary and secondary coils, of line connections for said secondary coils, current-supply connections for said primary coils, switch mechanism to continuously reverse said primary connections, and means coöperative with said reversing-switch, whereby the talking-circuit is autamatically broken during the operation of said reversing-switch and restored upon the termination of operation of said switch, substantially as set forth.

12. In a telephone-station the combination with a converter having primary and secondary coils, forming part of the talking-circuit, and distinct from the receiving instrument, of a call-signal armature in the magnetic field of said converter, line connections for said secondary coils, current-supply connections for said primary coils, rotary reversing-switch mechanism for said primary connections, an inclosing casing for said converter, and said switch mechanism, and an exterior handle for said switch mechanism, substantially as set forth.

13. In a telephone-station the combination with a converter having primary and secondary coils, of a signal-armature provided with a bell-striker, line connections for said secondary coils, current-supply connections for said primary coils, a rotary reversing-switch mechanism for said primary connections, an inclosing casing for said converter and said switch mechanism, an exterior operating-handle for said switch mechanism, a slot in said casing for said bell-striker, and a bell upon the exterior of said casing in adjustable relation with said striker, substantially as set forth.

14. In a telephone-station the combination with a converter having primary and secondary coils, distinct from the receiver-coils, of line connections for said secondary coils, current-supply connections for said primary coils, rotary reversing-switch mechanism for said primary connections, an inclosing casing for said converter and said switch mechanism, an exterior operating-handle for said switch mechanism, a tubular standard upon said casing, a transmitter upon said standard, and wiring connections between said converter said reversing-switch and said transmitter, extending through said standard, substantially as set forth.

15. In a telephone-station the combination with a converter having primary and secondary coils, of a call-signal armature in the magnetic field of said converter, line connections for said secondary coils, current-supply connections for said primary coils, rotary reversing-switch mechanism for said primary connections, an inclosing casing for said converter, and said switch mechanism, an exterior operating-handle for said switch mechanism, a tubular standard upon said casing, a transmitter upon said standard, and wiring connections between said converter said reversing-switch and said transmitter, extending through said standard, substantially as set forth.

16. In a telephone-station the combination with a pivoted transmitter-casing, of an automatic switch mounted within said casing, a receiver-supporting arm upon said switch extending through said casing, a spring within said casing adapted to raise said arm, a passage way from said transmitter-casing through said pivotal connection, and insulated wiring connections for said transmitter and switch concealed within said passage-way, substantially as set forth.

17. In a telephone-station the combination with a pivoted transmitter-casing, of an automatic switch mounted within said casing, a receiver-supporting arm upon said switch extending through said casing, an oscillatory hook upon said arm, and wiring connections for said transmitter and switch within said pivoted casing, substantially as set forth.

18. In a telephone-station the combination with a tubular standard, of a transmitter-casing pivotally mounted upon the extremity of said standard, an automatic switch mounted in said casing, a receiver-supporting arm upon said switch exterior to said casing, a spring within said casing, adapted to raise said arm, a passage-way through said pivotal connection, leading from said transmitter-casing to within said standard, and insulated writing connections for said transmitter-switch, extending in concealment from said casing through said passage-way and standard, substantially as set forth.

19. In a telephone-station the combination with a converter having primary and secondary coils, of a bell-striker armature for said converter, line connections for said secondary coils, current-supply connections for said primary coils, a switch mechanism for said primary connections, an inclosing casing for said converter and said switch mechanism, a slot in said casing for said bell-striker, a bell-standard extending through an aperture in said casing, a bell upon said standard, and means to adjust said standard relative to said striker, substantially as set forth.

610,848. ESTER OF PARAÄMIDOMETAOXYBENZOIC ACID. ALFRED EINHORN, Munich, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Höchst, Germany. Filed Nov. 10, 1897. Serial No. 658,033. (Specimens.) Patented in England May 17, 1897, No. 12,179, and in France July 8, 1897, No. 256,225.

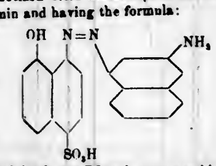
Claim.—1. Process for manufacture of the esters of paraämidometaoxybenzoic acids by heating the latter in alcoholic solution with mineral acids, substantially as described.

2. As a new product, the ester derived from paraämidometaoxybenzoic acid and methyl alcobol, being a white crystalline product, melting at 120° to 122° centigrade, easily soluble in hot water, alcohol and ether, but soluble with difficulty in cold water and benzene, substantially as set forth.

610,849. VIOLET AZO DYE AND PROCESS OF MAKING IT. OTTO ERMET, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Nov. 7, 1896. Serial No. 611,407. (Specimens.)

Claim.—1. The process of producing a new monoazo dyestuff which consists in combining diazotized 1.8.4 amidonaphtholmonosulfonic acid with alpha-naphthylamin, substantially as described.

2. As a new article of manufacture, the new monoazo dyestuff, derived from diazotized 1.8.4 amidonaphtholmonosulfonic acid and alpha-naphthylamin and having the formula:

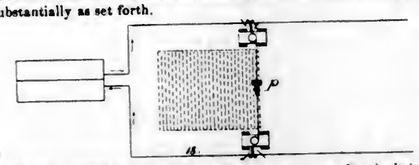


the sodium salt of the dyestuff forming a green-black powder of metallic luster, soluble with difficulty in cold, more easily in hot water, with a red-violet color, soluble in concentrated sulfuric acid with a gray-green color and giving by the addition of water a violet precipitate, dyeing wool violet in an acid-bath and producing by treatment with chromates or chromic acid an even, saturated brown color of beautiful shade fast to milling and light, substantially as set forth.

610,850. MEANS FOR SUPPLYING ELECTRIC CURRENTS TO AGRICULTURAL MACHINES. HUGO FORSTER, Gorsdorf, Germany. Filed Jan. 8, 1896. Serial No. 574,673. (No model.)

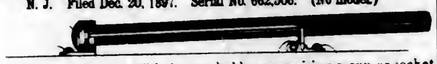
Claim.—1. In a system of electric supply for electromotors of agricultural machines, the combination with a plow and its draft-rope, of a primary generating-dynamo, and two electromotors for operating the plow or other machine, which electromotors are connected by a single line-wire with the dynamo and which are placed

in electrical connection with each other by the draft-rope of the plow, substantially as set forth.



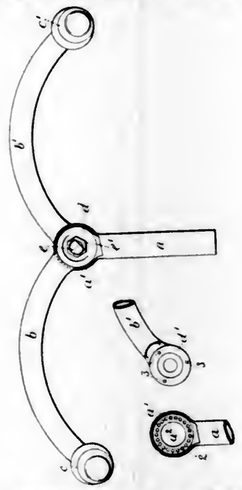
2. In a system of electric supply for electromotors of agricultural machines, the combination with the electromotors of each station, with a switch device for each motor, having in circuit two magnetic locking devices for the switch-lever, constructed to permit the switch-lever of one electromotor to be placed in short-circuiting position and to simultaneously prevent the switch-lever of the other electromotor from being placed in the short-circuiting position but permit it to be placed in any position on the resistance-contacts of the switch device, substantially as set forth.

610,351. BROOM-SUPPORT. ALBERT L. GALLAWAY, Morristown, N. J. Filed Dec. 20, 1897. Serial No. 662,506. (No model.)



Claim.—An invertible broom-holder comprising a cup or socket for the reception of the end of the broom-handle, a spring-clip suitably connected with the cup or socket and adapted to engage the handle between its ends, and a stop comprising a plate pivoted adjacent to the spring-clip and adapted to engage the broom-handle and arrest its inward movement and hold it in the grip of the spring-clip, substantially as set forth.

610,352. BICYCLE HANDLE-BAR. JAMES GRADY, New York, N. Y. Filed Aug. 11, 1897. Serial No. 647,850. (No model.)

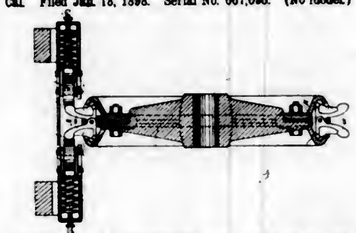


Claim.—1. The combination with the handle-bar stem having a band-head with a ring-center and similar recesses at opposite sides, of the handle-bar portions each having a disk end and the ends passing from opposite directions into the recesses within the band-head and setting against the ring-center, a central bolt passing through the parts for clamping them together, and pins passing into holes for preventing the handles turning on the bolt, substantially as set forth.

2. The combination with the handle-bar stem, the band-head therefor and the integral ring-center, of the handle-bar portions and their disk ends smaller than the band-head and fitting within the same and against the ring-center, a spring within the ring-center between the disk ends and a bolt passing through said parts, and a nut for clamping the parts, there being perforations and pins between and for locking the parts in the desired position, substantially as set forth.

3. The combination with the handle-bar stem, the band-head therefor and the integral perforated ring-center, of the handle-bar portions and the disk ends *d d'* thereto smaller than and fitting within the band-head *a'*, the opposing faces of said disk ends being recessed, a helical spring within the ring center and recessed faces of the disk ends, a bolt passing through said parts and through the spring and having a nut for clamping the parts, there being pins within and between the respective parts and passing through the perforations for locking the parts in the desired position of adjustment, substantially as set forth.

610,353. GRIP-PULLEY. ANDREW S. HALLIDIE, San Francisco, Cal. Filed Jan. 18, 1898. Serial No. 667,093. (No model.)



Claim.—1. The combination, with a grip-pulley and gripping-jaws connected therewith, of movable journaled pressure-rollers adapted to contact with the gripping-jaws, and springs whereby the rollers are caused to press upon and close the grips.

2. The combination, with a grip-pulley and gripping-jaws connected therewith, of movable pressure rollers adapted to contact with the gripping-jaws upon opposite sides of the pulley, and springs acting simultaneously upon said rollers to cause the latter to close the jaws.

3. The combination, with a grip-pulley and gripping-jaws mounted upon opposite sides of its periphery, of pressure-rollers contacting with said jaws, supports in which the rollers are journaled said supports being movable to and from the jaws and pulley, and devices by which a yielding pressure is applied to said supports to increase the pressure upon the jaws.

4. The combination, with a grip-pulley and gripping-jaws fulcrumed upon opposite sides of its periphery, of spring-pressed devices contacting with said jaws for causing the latter to press upon and grip the cable.

5. The combination of a pulley having gripping-jaws fulcrumed around its periphery, a rope or cable to be engaged by said jaws, a frame fixed with relation to said jaws, pressure-rollers adapted to engage said jaws and having their spindles or shafts journaled in said frame, springs acting upon the rollers, and adjusting-screws for regulating the tension of the springs.

6. The combination of a pulley having gripping-jaws fulcrumed around its periphery, a rope or cable to be engaged by said jaws, a frame, journal-boxes movable in said frame, pressure-rollers having their spindles or shafts journaled in said boxes, said rollers arranged in pairs so that their peripheries press successively upon the jaws as the latter pass between them, mechanism by which a yielding pressure is applied to the rollers, and means for regulating said pressure.

7. A pulley, having gripping-jaws fulcrumed in pairs around its periphery, movable to or from each other about their fulcrum-points, and pressure devices whereby a yielding pressure is applied to cause the jaws to grip a rope or cable passing between them with an increased pressure.

8. The combination of a pulley having gripping-jaws fulcrumed around its periphery, a rope or cable to be engaged by said jaws, yieldingly-mounted pressure-rollers adapted to engage the jaws and successively operate them to increase the gripping-pressure on the rope or cable, and an elastic medium adapted to separate the jaws after their release from the pressure-rollers.

9. The combination of a pulley having gripping-jaws fulcrumed around its periphery, a rope or cable to be engaged by said jaws, yieldingly-mounted pressure-rollers adapted to engage the jaws and successively operate them to increase the gripping-pressure on the rope or cable, and an elastic band surrounding the grip-pulley interior to the adjacent movable ends of the jaws and adapted to open said jaws.

10. The combination, with a grip-pulley and gripping-jaws fulcrumed around its periphery, of transversely-movable devices adapted to contact with the jaws and means whereby said devices press upon and close the grips with a yielding pressure.

610,354. JOINT FOR COMPASSES, &c. FREDERICK H. HEATH, Tacoma, Wash. Filed Sept. 22, 1897. Serial No. 652,509. (No model.)



Claim.—In a compass, a disk formed at the end of one leg, a ring wedge-shaped in cross-section arranged on one face of said disk, an extension formed on the end of the other leg, and fitting against the other face of said disk, a cap having an annular groove therein, a shank formed on the cap secured to the leg of the compass opposite the extension, the ring of the disk fitting in the groove of the cap, a screw threaded through the cap and disk into the extension, as and for the purpose described.

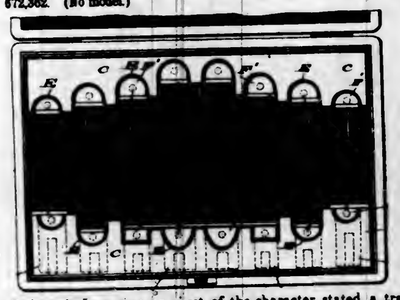
610,355. COMPRESSIBLE TUBE. THEODORE Y. KINNE and ALFRED GARTNER, Paterson, N. J. Filed May 31, 1898. Serial No. 682,221. (No model.)



Claim.—1. The combination of a compressible tube having means for closing one of its ends and having its other end flattened and compressed together, and a combined key and hermetical closure for the last-named end consisting of a metallic plate bent lengthwise upon itself to form substantially laminated members and clamped upon said end, and a handle integrally formed with and extending from one or both ends of one of said members, substantially as described.

2. The combination of a compressible tube having means for closing one of its ends and having its other end flattened or compressed together, and a combined key and hermetical closure consisting of a metallic plate bent lengthwise upon itself and clamped upon, and having its members in laminated arrangement with, said compressed end of the tube, the edge of said compressed end being uniformly in substantial contact with the inside of said closure at the bend therein, and a handle integral with and projecting from one or both ends of one of said members, substantially as described.

610,356. SILVERWARE CASE OR CHEST. EMIL F. KOLP and EUGENE A. KOLB, Philadelphia, Pa. Filed Mar. 3, 1898. Serial No. 672,362. (No model.)



Claim.—1. In a case or chest of the character stated, a tray having upright pieces on opposite sides thereof, vertical grooves in the inner sides of said pieces, vertically-adjustable beds in said grooves, and adjusting-screws passing through the bottom of said tray into said beds, the heads of said screws being below said bottom and there adapted to be concealed in the chest.

2. In a case or chest for articles of silverware, &c., a tray having grooves in the side pieces, laterally-adjustable blocks in said grooves and means mounted in the side of the tray and engaging said blocks for positively moving the latter in opposite horizontal directions.

3. In a case or chest for articles of silverware, &c., a tray having grooves in the side pieces thereof, vertically-adjustable beds and laterally-adjustable blocks in said grooves and means mounted on said tray and engaging said beds and blocks for positively moving said beds and blocks oppositely in their respective adjustable directions.

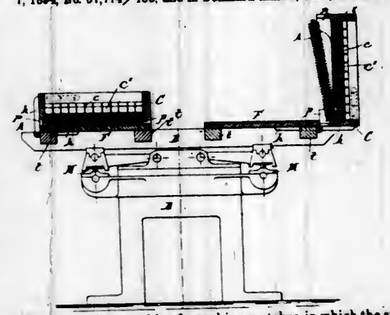
4. In a case or chest for articles of silverware, &c., a tray having grooves in the inner faces of its side walls, vertically and laterally adjustable holders in said grooves, and screws mounted in the sides and bottom of said tray fitted to said holders for positively operating the latter in their respective adjustable directions.

5. In a case or chest of the character stated, a tray having a piece with vertical grooves therein, vertically-adjustable beds in said grooves, and means on the bottom of said tray for guiding said beds in their vertical motions.

6. In a case or chest of the character stated, a tray having an adjustable holder fitted in a groove therein, and a screw for adjustably moving said holder, said screw being connected with the tray by means of a slotted plate, which is attached to the tray and freely embraces the neck of the screw.

7. In a case or chest of the character stated, a tray having laterally-adjustable blocks within the same on opposite sides thereof and adjusting-screws passing through the sides of the tray into said block, the heads of said screws being outside of said tray and there adapted to be concealed in the chest.

610,357. MANUFACTURE OF MATCHES. EMILE LAGNEAU, Lessines, Belgium. Filed Aug. 5, 1897. Serial No. 647,183. (No model.) Patented in Belgium Dec. 6, 1892, No. 102,418; in Switzerland Dec. 19, 1892, No. 6,456; in England Feb. 14, 1893, No. 3,267; in France Mar. 27, 1893, No. 228,938; in Germany Nov. 8, 1893, No. 73,450; in Norway Dec. 4, 1893, No. 3,540; in Sweden Dec. 7, 1893, No. 5,562; in Italy Dec. 7, 1894, No. 37,774/130, and in Denmark Mar. 3, 1897, No. 1,594.



Claim.—1. In a machine for making matches, in which the splints are held in frames simply perforated with holes, the combination of a suitable shaking mechanism with an auxiliary bottom plate, a pivoting-frame of pigeonholes, partitions dividing said pigeonholes in the center; but of less height than the sides of the pigeonholes, with the object of causing the splints to enter perpendicularly into the said pigeonholes and for facilitating the entrance of the ends of the splints into the holes in the frames, substantially as set forth.

2. In a machine for making matches, the combination of a dipping-tray having a fixed bottom of perforated metal covered with a sheet of porous felt, spring-bars on the sides of the tray on which the splint-holding frames rest, a paraffin-receptacle on which the tray pivots and in which it dips in order to saturate the felt, a paraffin-supply reservoir, a filtering-funnel and float-valve for automatically regulating the level of the paraffin, a steam-heated chamber under the reservoir for maintaining the paraffin in a fluid condition, and a folding flap pivoted on the frame of the paraffin-rat for pressing all the splints onto the saturated sheet of felt, the splint-holding frame remaining stationary and acting merely as a guide for the splints under the action of the flap, substantially as set forth

3. In a machine for making matches, the combination of a rotary annular reservoir K, containing the chemical paste for forming the match-heads, one or more frames K' having a wire-gauze bottom and pivoted on the framework of the reservoir K so as to allow of the paste passing through the porous bottom to a certain height when the frames are dipped in the said paste, a rotary roller R for pressing all the splints in a frame into the paste, means for setting this roller in rotation as the reservoir passes beneath it, means for adjusting said roller, a device for mixing the paste, pivoted in the center of the apparatus, and comprising an inclined blade raising and mixing the paste when turned down, means for rotating the said reservoir, and an annular steam-chamber beneath the reservoir for keeping the paste fluid, substantially as shown and set forth.

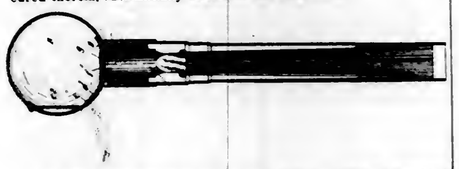
4. In a machine for making matches, the means for equalizing the match-heads, comprising a revolvable drying-frame with wings having horizontal bars, on which plates Q^2 are placed supporting the splint-holding frames A, said plates engaging with hooks at the ends of the bars in such a way as to allow of the said plates being suspended vertically therefrom, substantially as shown and set forth.

5. In a machine for making matches, means for discharging the splint-holding frames, comprising several trays fitting one in the other, the innermost of which receives a frame of pigeonholes and this latter the splint-holding frame which is to be discharged, the whole pivoting on a stand provided with a shaking apparatus; substantially as shown and set forth.

610,358. FAN ATTACHMENT FOR UMBRELLAS. KATHARINE E. LANDAU, New York, N. Y. Filed Dec. 17, 1897. Serial No. 662,288. (No model.)

Claim.—1. The herein-described device, comprising an umbrella

provided with a tubular handle, the end of which is screw-threaded, a knob or head detachable from said handle and adapted to serve as the handle of a fan, said knob or head being provided with a tubular shank, which is screw-threaded, whereby it is adapted to be connected with the end of the handle, a tubular thimble or socket adapted to be secured within the said shank of the knob and provided at one side with a longitudinal slot, and a fan provided with a stem which is adapted to be inserted into said thimble or socket and to be secured therein, substantially as shown and described.



2. The herein-described device, comprising an umbrella provided with a tubular handle, the end of which is screw-threaded, a knob or head detachable from said handle and adapted to serve as the handle of a fan, said knob or head being provided with a tubular shank, which is screw threaded, whereby it is adapted to be connected with the end of the handle, a tubular thimble or socket adapted to be secured within the said shank of the knob and provided at one side with a longitudinal slot, and a fan provided with a stem which is adapted to be inserted into said thimble or socket and to be secured therein, and the end of the handle into which the shank of the knob or head is inserted, being also provided with a casing or cover which conceals the screw-thread formed therein, substantially as shown and described.

3. The herein-described device, comprising an umbrella provided with a tubular handle, the end of which is screw-threaded, a knob or head detachable from said handle and adapted to serve as the handle of a fan, said knob or head being provided with a tubular shank, which is screw-threaded, whereby it is adapted to be connected with the end of the handle, a tubular thimble or socket adapted to be secured within the shank of the knob, and a fan provided with a stem which is adapted to be inserted into said thimble or socket and to be secured therein, substantially as shown and described.

610,359. COUPLING FOR PIPES AND HOSE. THEODORE F. LEES, New York, N. Y. Filed Oct. 6, 1897. Serial No. 654,278. (No model.) Patented in England Feb. 12, 1895, No. 3,074.



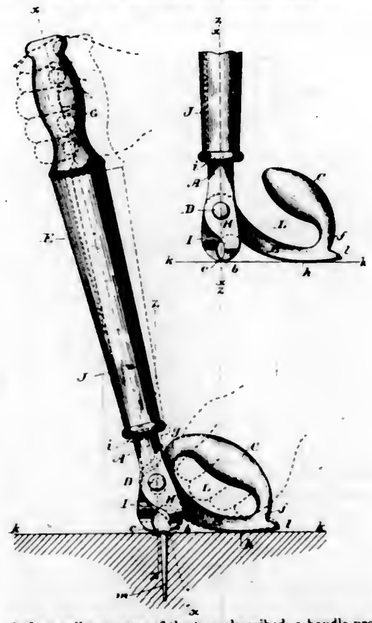
Claim.—1. In a coupling, the combination with the major, female member A, having formed in one with it the prolongation *a* for the hose, of the flanged sliding tube C, mounted in the major member, the spring D, arranged between shoulders on the major member and said tube C, the minor member B, adapted to fit over the said tube C and into the major member, a packing-ring at the joint and a locking device to secure the major and minor members together, substantially as set forth.

2. In a coupling, the combination, with the major member A, having formed in one with it the prolongation *a* for the hose, and having a locking-slot, *c*, of the flanged sliding tube C, mounted in the major member and furnished with a limiting-slot *i*, engaging a stud on the major member, the spring D, and the minor member B, provided with locking-studs, as set forth.

3. In a coupling, the combination with the member A, provided with a prolongation *a* and an internal shoulder *b*, the member B, and means substantially as described for locking the members together, of the flanged tube C in the said members, said tube having a flange *e*, the packing-ring *g*, between the flange e and the end of the member B, the packing ring *k* and washer *m*, adjacent to the shoulder *b*, and the spring C, between the shoulder *c* and washer *m*, substantially as set forth.

610,360. NAIL-EXTRACTOR. JULIET M. LE ROY and MASCHIL D. CONVERSE, New York, N. Y., assignors, by direct and mesne assignments, to John J. Tower, same place. Filed Aug. 25, 1897. Serial No. 649,420. (No model.)

Claim.—1. The combination with a lever-shank having a transverse gripping edge *b*, parallel to the pivotal axis, at the end and a fulcrum having a second transverse gripping edge *c*, also parallel to the pivotal axis, and a base-line bearing-point A suitably remote from the latter gripping edge, of a non-adjustable pivot located at the point of intersection of the transverse center line *z z* of the tool with the longitudinal center *x x* of said lever-shank, as respectively herein defined, the proportion and shape of the jaws being such that the jaws are closed when the lever-shank is vertical so that the lever-shank must be tilted forward to embrace the nail and so that, when it is so tilted, the lever-shank jaw will be above the base-line, substantially as and for the purposes shown and described.



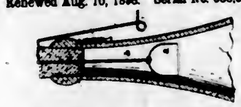
2. In a nail-extractor of the type described, a handle projected from one of the pivoted parts within the radial plane of their hub portions on the fulcrum side and overhanging said fulcrum longitudinally in a position diagonal to the lever-shank A and suitably removed from said fulcrum and said lever-shank and adapted to be independently embraced by one hand only exclusive of other parts of the tool, substantially as and for the purposes shown and described.

610,361. OXYCAMPHOR AND PROCESS OF MAKING IT. OTTO MANASSE, Munich, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Höchst, Germany. Filed Nov. 6, 1897. Serial No. 657,700. (No specimens.) Patented in Germany Aug. 11, 1896, No. 91,718, and in England Aug. 14, 1896, No. 18,085.

Claim.—1. The process herein described of producing oxycamphor $C_{10}H_{14}O_3$ which consists in treating camphorquinone with acetic acid and zinc-dust, substantially as set forth.

2. As a new product, the compound called oxycamphor, derived from camphorquinone and reducing agents, being a white crystalline substance melting at 203° to 205° centigrade, being easily solable in alcohol, ether and benzene, less easily soluble in petroleum ether and with difficulty soluble in water, volatile with steam vapor, and possessing a weak pepper-like taste, substantially as set forth.

610,362. BOTTLE. CALEB J. MOORE, Baltimore, Md. Filed Nov. 26, 1897. Renewed Aug. 10, 1898. Serial No. 688,315. (No model.)



Claim.—1. A gas-valve device for bottles comprising two united wire prongs projecting in the same direction; a flexible cup shaped valve attached to the end of one prong; a ring or collar; and a retracting spring to connect the said ring or collar with the end of the other prong.

2. The combination of a bottle having a ring or collar around its neck; a cork closing the bottle-mouth; two united wire prongs, one having position through the cork and within the bottle-neck and the other on the outer side of the neck; a flexible cup-shaped valve within the bottle-neck and attached to the prong therein; and a spring having one end attached to the said ring or collar and adapted to have its other end connected with the said outer prong.

610,363. FOOT-REST FOR BOOT-BLACKING STANDS. FRANK MULLER, New York, N. Y., assignor to Friederica Buchmüller, same place. Filed July 27, 1897. Serial No. 646,126. (No model.)



Claim.—1. In a foot-rest for boot-blacking stands, the combination, with toe and heel clamps, of a pivotal operating-lever therefor having a shiftable fulcrum, and suitable supports on which said fulcrum moves, substantially as set forth.

2. In a foot-rest for boot-blacking stands, the combination with a base having fulcrum-ledges, of a lever provided with fulcrum-lugs mounted upon said ledges, and toe and heel clamps connected with said lever and adapted to be operated thereby, substantially as set forth.

3. In a foot-rest for boot-blacking stands, the combination with the base provided with fulcrum-ledges, of a lever having a T-shaped head, pivot-pins on said head, toe and heel clamps connected to said pivot-pins, and fulcrum lugs located between said pivot-pins and adapted to rest upon said ledges, substantially as set forth.

4. In a foot-rest for boot-blacking stands, the combination with a base provided with a slot and fulcrum-ledges, of a lever having a T-shaped head, and working through said slot, fulcrum-lugs carried by said lever and adapted to rest upon said ledges, pivot-pins upon either side of said lugs, toe-clamps connected with the upper pivot-pins, and a heel-clamp connected with the lower pivot-pin, substantially as set forth.

5. In a foot-rest for boot-blacking stands, the combination with a base provided with a slot and fulcrum-ledges, of a foot-plate secured to said base, toe and heel clamps guided in ways beneath said foot-plate, a lever having a T-shaped head working through said slot, pivot-pins at the upper portion of the T-shaped head, a pivot-pin at the lower portion of said head, and operatively connected with said toe and heel clamps, and fulcrum-lugs located between said upper and lower pivot-pins and adapted to rest upon said fulcrum-ledges, substantially as set forth.

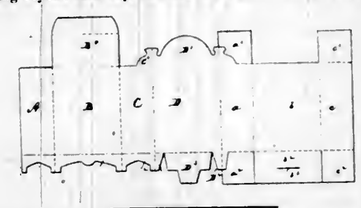
6. In a foot-rest for boot-blacking stands, the combination with the base provided with fulcrum-ledges, of a lever provided with fulcrum-lugs, mounted upon said ledges, toe and heel clamps connected with said lever and adapted to be operated thereby and means for locking said lever, substantially as set forth.

7. In a foot-rest for boot-blacking stands, the combination with a base provided with a slot having serrated sides, of a suitable clamping mechanism, a lever for operating said clamping mechanism extending through said slot, and a locking-key mounted upon said lever and adapted to engage with the serrated slot of the base, substantially as set forth.

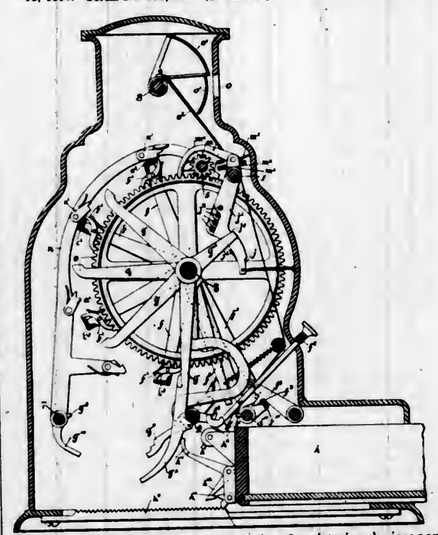
610,364. PAPER BOX. PHINEAS B. MYERS, New York, N. Y. Filed July 20, 1898. Serial No. 686,406. (No model.)

Claim.—1. A paper box having doubled sides, folding head-flaps formed at one or both ends of the inner sides, and flanges projecting beyond such flaps and formed on one or both ends of the outer sides, substantially as specified.

2. A paper box having three or more of its sides doubled, and having interlocking end flaps on some of the sides, and flanges projecting beyond such flaps on other sides, substantially as specified.



610,365. CASH REGISTER AND INDICATOR. JOHN H. MCCORMICK, Columbus, Ohio, assignor, by mesne assignments, to the Hallwood Cash Register Company, same place. Original application filed Oct. 6, 1894, Serial No. 525,185. Divided and this application filed Sept. 13, 1897. Serial No. 651,447. (No model.)



Claim.—1. In a cash-register, a series of registering devices normally inactive and independent, in combination with a total-adding registering device, said registering devices consisting of wheels rotating on a common axis, and a movable controlling-bar common to all of said wheels and journaled concentric thereto, and keys to determine the position of said bar, actuating devices connected to each of said registers and adapted to be controlled by said movable bar, substantially as specified.

2. In a cash-register, the combination of a series of normally-locked registering devices, a normally-unlocked total-adding device, a common operating mechanism adapted to operate any or all of the registering devices when the same are unlocked, a normally-locked independent registering device also adapted to be operated by said common operating mechanism, and means, as described, for locking the total-adding device when the independent device is unlocked, substantially as specified.

3. In a cash-register, a series of cash-keys, department-registering devices each consisting of a series of wheels journaled on a common axis, and a total-adding device journaled on the same axis with said department devices, a movable bar adjacent to said wheels and pivoted concentric therewith, said bar being controlled by said keys, registering mechanism actuating each of said wheels and controlled by said bar, a lock for each registering device, and an indicator indicating the actuating of each lock, substantially as specified.

4. In a cash-register, a series of department-registering devices, and a total-adding registering device, and actuating mechanism to operate said total-registering device when either of said department-registering devices is operated, controlling mechanism for each department-registering device, normally-locked keys for controlling said actuating mechanism, and means as described for unlocking said keys when either of said department-registering devices is thrown into operative position, substantially as specified.

5. The combination of a normally-unlocked total-adder, a normally-locked department-register, and a normally-locked independent register, a common actuating device adapted to actuate any of said registering devices which are unlocked, means for unlocking said department registering devices while said total-adder remains unlocked so that said total-adder and department-registering devices shall operate in unison, and a locking device for said total-adder, and means substantially as described for operating said locking device to lock said total-adder when the independent registering device is unlocked, substantially as specified.

6. The combination of a series of keys, and a series of intermediate devices controlled by said keys, a total-adder, and department-registers arranged between said total-adder and said keys, actuating devices for each of said registers controlled by said intermediate devices, and means for causing said department-registers to act in unison with said total-adder, independent registering devices on the opposite sides of said total-adder and adapted to be controlled by said intermediate devices, and a locking device adapted to be operated to lock said total-adder when said independent register is thrown into operative position, substantially as specified.

7. In a cash-register, cash-keys arranged in series, one series for each denomination, department-registers each having a series of wheels, one for each denomination, a series of intermediate controlling devices, one for each denomination, and controlled by said keys, an actuating device for each registering-wheel adapted to be controlled by the intermediate device of the same denomination, a common locking device for all of the registering devices of one department, and special keys for unlocking said registering devices to cause them to act in connection with said intermediate devices, substantially as specified.

8. In a cash-register, cash-keys arranged in series, one series for each denomination, registering devices, each consisting of a series of wheels, one for each denomination, a series of intermediate devices controlled by said keys and adapted to control said registering-wheels, one for each denomination, locking means to normally lock all of said registering devices except the one which constitutes a total-adding register, and special keys to unlock each of said locked registering devices to cause them to operate in connection with said intermediate devices and register in unison with said total-adder, substantially as specified.

9. In a cash-register, a keyboard having keys arranged in series, each series representing a different denomination, a series of registering devices, each registering device having a registering-wheel corresponding to each denomination of said keyboard, a series of pivoted bars extending along the entire series of registering devices, each of said bars being controlled by the keys in one series, the registering devices actuating the respective registering-wheels being adapted to be operated by said pivoted bars, the registering devices of one set of wheels being normally in position to be operated by said bars to form a total-adding device, the remaining registering devices being normally out of position to be operated by said bars, a controlling-key by which said remaining registering devices are adapted to be drawn into operative position, a locking device for normally locking all the keys on said keyboard, and means as described for unlocking said keys when any one of the registering devices is thrown into position to operate in unison with said total-adding device, substantially as specified.

10. In a cash-register, a keyboard having keys arranged in series, each series representing a different denomination, a series of registering devices, each comprising a registering-wheel corresponding to the denominations of said keys, a series of operating devices common to all of said registering devices, each of said operating devices being controlled by the keys of one denomination, and each of said operating devices being adapted under certain conditions to move the registering-wheel corresponding with the denomination in any of said registering devices, one of said registering devices being normally in operative position to be moved by said operating devices to form a total-adding device, the remaining registering devices being arranged on each side of said adding device, and means as described whereby the total-adding device is caused to operate in unison with each of the registering devices on one side thereof and is disconnected and remains inactive when the registering devices on the other side thereof are thrown into operative position, substantially as specified.

11. Cash keys arranged in denominational series, denominational actuating-bars one for each series of keys, coaxially-arranged registering-wheels, one for each denomination, and connections from said wheels to said denominational bars, a series of stop-levers normally engaging said bars, and a connection from each of said stop-levers to one series of said keys, and interengaging parts on said stop-levers to disengage said denomination parts in successive order when keys in two or more series are simultaneously depressed, substantially as specified.

12. The combination with the keys and the registering-wheels, intermediate operating devices controlled by said keys and adapted to operate said registering devices, supports for said intermediate operating devices each provided with a projecting arm, a pivoted lever for each of said supports having a notch or recess to engage with a projection on said arm, each of said levers having a connection to the series of keys corresponding to the denomination of said support, and engaging projections on said levers which cause said levers when moved simultaneously to disengage said supports in successive order, substantially as specified.

13. In a cash-register, a registering device consisting of registering-wheels, each wheel representing a different denomination and having teeth corresponding to the units in said denomination, a pinion engaging in the teeth of each of said wheels having a number of teeth corresponding to a unit of the next higher denomination, a pawl engaging in the teeth of the next higher denomination and connected to a pivoted arm, and a projection on said pinion adapted as said pinion is revolved to come in contact with an extended portion of said arm so as to cause said arm to oscillate and operate said pawl, substantially as specified.

14. In a cash-register, a normally-unlocked total-adding device and a series of normally-locked department-registering devices, said department-registering devices being arranged in groups as described, a common operating device adapted to operate any of the registering devices in any of the groups when unlocked, one group of said department-registers having independent locking devices which may be unlocked to cause one or more of said department-registering devices to operate in unison with said total-adding device, the other group of department-registering devices having locking devices with means connected therewith for locking the total-adding device whenever a department registering device of that group is unlocked, substantially as specified.

15. In a cash-register, a series of registering devices and a cash-receptacle, a pivoted pawl on said cash-receptacle adapted to operate in a rack as said receptacle is opened, a controlling device for said registering devices operated by the opening of said cash-receptacle, a pivoted catch for retaining said pawl in a fixed position, said retaining-catch being adapted, as the receptacle is opened, to be engaged by the register-operating devices so as to release said pawl and permit the drawer to be closed, substantially as specified.

16. The combination with the registering-wheels and their pawl-arms as described, laterally-extending bars to limit the movement of said pawl-arms, and supports for said bars, pivoted pawls in proximity to said bars normally held out of engagement therewith by said supports, but adapted to engage said bars when said supports are moved independently of said bars, substantially as specified.

17. In a cash-register, a series of normally-locked department-registering devices and a normally-unlocked total-adding device, an actuating device common to all of said registering devices adapted to actuate any or all of said registering devices which are unlocked, said department-registering devices being arranged in two groups, the locking devices of one group being independent and adapted to lock or unlock said department without reference to the condition of the total-adder, the locking devices of the other group having means connected therewith for operating the locking device of the total-adder to lock said total-adder when the locking device controlling said second-named group of registers is unlocked and to unlock said total-adder when all the registers in said second-named group are locked, substantially as specified.

18. In a cash-register, a series of registering devices, each consisting essentially of a set of toothed wheels representing different denominations, and a pivoted arm having a pawl to engage each of said wheels, a projection on each of said pawl-arms, and a pivoted latch common to each registering device to engage said projections, a keyboard having a series of keys representing different denominations and a series of operating-bars corresponding to the denominations of said keyboard extending in proximity to said registering devices and adapted to determine the movement of said pawl-levers in all the registering devices when said pawl-levers are released, a key for each of said registering devices engaging with the pivoted latch, and a connection from said key to an indicator corresponding to said registering device, substantially as specified.

19. In a cash-register, a keyboard having normally-locked keys arranged in series, each series representing a different denomination, a series of registering devices, each registering device consisting essentially of a set of wheels, one wheel for each denomination on said keyboard, a series of bars extending along the entire series of registering devices, one bar for each denomination and each bar controlled by the keys of one series, pawl-levers for each of said registering-wheels adapted when released to move the wheel with which it engages, the pawl-levers of each registering device but one being normally engaged by a pivoted latch which holds them in an inoperative position, all of said pawl-levers when disengaged being adapted to move to the position determined by the movement of said bars, controlling-keys for releasing the respective pawl-levers of the respective registering devices, and means as described for unlocking the keys of the keyboard when the controlling-key of any registering device is operated to release its pawl-lever, substantially as specified.

20. In a cash-register, a series of department-registering devices, each consisting of denominational registering-wheels, all of which are supported on a common shaft or support, one of said registering devices constituting a total-adder, said total adder being arranged between two independent groups of registering devices, common controlling devices consisting of bars extending across said wheels and journaled concentric therewith, keys for controlling said bars, special keys for controlling said department-registering devices, and means connected with the registering device on one side of the total-adder for locking said total-adder whenever any of the wheels of said registering device are thrown into operative position, substantially as specified.

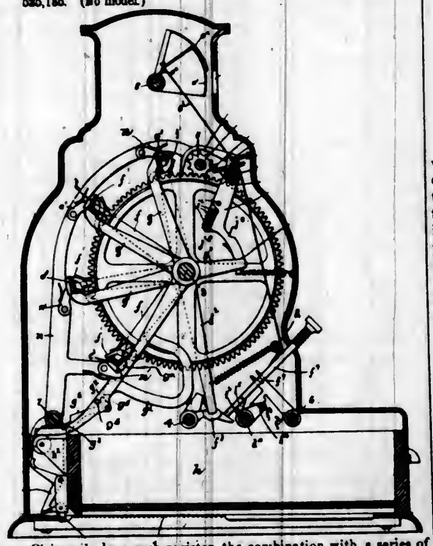
21. The combination with the department-registering devices, each consisting of denominational wheels having pawl-levers, pivoted bars common to all the registering-wheels and journaled concentric therewith, said pivoted bars being adapted when operated to control the pawl-levers of said registering-wheels, movable catches for normally retaining the pawl-levers of all the registering devices except the one which constitutes a total-adding device, special keys for operating said movable catches, and a connection from one or more of said special keys to a locking device adapted, when said special key or keys is operated, to lock the total-adding device, substantially as specified.

22. In a cash-register, a series of department registering devices, a series of indicators corresponding to said departments, special keys for controlling the movement of said department-registering devices, each of said keys being connected to the indicator corresponding to its department, and a zero-key adapted when operated to return all of said indicators to their normal positions, substantially as specified.

23. The combination with a series of department-registering devices, and special keys for controlling the same, an indicator corresponding to each department connected to the key corresponding to said department and adapted to be operated thereby, a zero-key, and a stationary indicator corresponding thereto, said stationary indicator being adapted to be displayed when the other indicators are released, and means connected with said zero-key to return all of said special keys to their normal positions when said zero-key is operated, substantially as specified.

24. In a cash-register, the combination with a common operating device, and a totalizing-register normally actuated thereby, of a normally inactive special register, and means for connecting said special register to the common operating device and preventing the operation of the totalizing-register by said mechanism, substantially as described.

610,366. CASH REGISTER AND INDICATOR. JOHN H. MCCORMICK, Columbus, Ohio, assignor, by mesne assignments, to the Hallwood Cash Register Company, of Ohio. Filed Oct. 6, 1894. Serial No. 525,185. (No model.)



Claim.—1. In a cash-register, the combination with a series of cash-keys representing different amounts, and a series of department-keys, and locking means controlled by the department-keys to prevent registration by the cash-keys until a department-key is operated, substantially as specified.

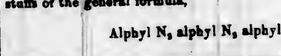
2. In a cash-register, a series of registering-keys, means for normally locking the same, a series of normally inactive registering devices, and department-keys for throwing the same in an operative position so as to operate in connection with said registering department-keys, said special keys being connected to said locking means and adapted to unlock said registering department-keys whenever any of said special keys are operated, substantially as specified.

3. In a cash-register, a series of registering-keys, an intermediate operating device controlled thereby, and a series of normally inactive registering devices, department-keys to control said registering devices, and a locking device for said registering-keys adapted to be operated to unlock said registering-keys when one of the department-keys is operated, substantially as specified.

4. In a cash-register, a series of registering-keys representing different amounts, a series of special keys, and locking means controlled by the special keys to prevent the operation of the registering-keys until a special key has been operated, and connecting devices between said special keys, adapted, when one of said special keys is operated, to return the other special keys to their normal positions, substantially as specified.

610,367. BASIC DISAZO DYE. ALFRED PHILIPS, Höchst, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Dec. 1, 1897. Serial No. 660,399. (Specimens.) Patented in Germany Oct. 27, 1896, No. 97,344; in England Dec. 7, 1896, No. 27,896, and in France Dec. 7, 1896, No. 261,968.

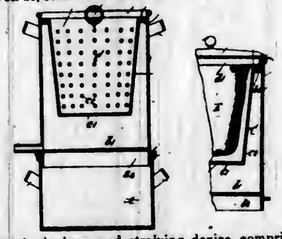
Claim.—1. A process for the manufacture of basic disazo dyestuffs of the general formula,



consisting in diazotizing amidoazo compounds and allowing them to act upon phenol-ammonium bases, substantially as set forth.

2. As a new product the dyestuff obtained by diazotizing amidoazo-benzene and treating it with 2.7 naphtholtrimethyl-ammonium, being a red powder, soluble in water and alcohol with a red color, soluble with difficulty in benzene, insoluble in ether and petroleum ether and dyeing wool and cotton cherry red in an acid-bath.

610,368. FRUIT-STRAINER. CARRIE F. PHILLIPS, Norfolk, Va. Filed Feb. 25, 1898. Serial No. 671,643. (No model.)

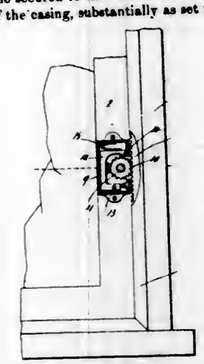


Claim.—1. An improved straining device, comprising the subvessel having an open top, a straining vessel having an annular flange extending downwardly from its bottom and received by the open top of the subvessel and provided with an exterior circumferential flange adapted to rest upon the top edge of the subvessel, said straining vessel being provided with a tubular outlet on approximately the plane of its bottom and with an interiorly-projecting flange or shoulder near its open top end, and a perforated strainer having a circumferential laterally-projecting flange at its top edge adapted to rest upon the interior top flange of the straining vessel, the subvessel and straining vessel and strainer being relatively mounted and detachable, substantially in the manner and for the purpose set forth.

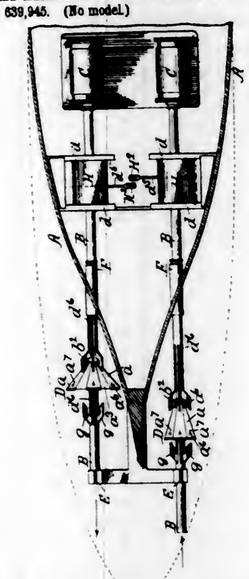
2. In an improved straining device, comprising the straining vessel having an interiorly-projecting flange or shoulder in its open top end, and a perforated strainer having a circumferential laterally-projecting flange at its top edge adapted to rest upon the interior flange of the straining vessel, the straining-cloth fitted within the perforated strainer and having its edge projected with respect to the open tops of the vessels, and a top or cover fitting within and closing the top end of the straining vessel and engaging the edge of the straining-cloth to bind the latter in position, substantially as and for the purpose set forth.

610,369. SASH-FASTENER. CHARLES H. RAYMOND, New Haven, Conn. Filed Dec. 17, 1897. Serial No. 662,298. (No model.)

Claim.—The combination with the frame having a rack-bar secured to the inner face of the inner stop, of a sliding sash having a plate provided with a lug or projection engaging the rear edge of said bar, a casing having a rotatable toothed wheel intermeshing with said toothed rack, a sliding detent having a tooth to engage said wheel, a spring pressing said tooth into engagement with the wheel, and a handle secured to the detent and extending through a slot in the plate of the casing, substantially as set forth.



610,370. RECIPROCATING PROPELLER FOR VESSELS. JOHN RITCHIE and HARVEY W. RITCHIE, Chicago, Ill. Filed June 9, 1897. Serial No. 639,945. (No model.)



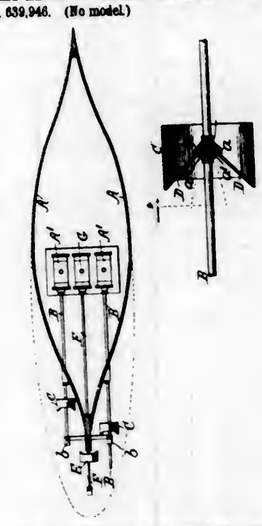
Claim.—1. A propeller, consisting of a number of double blades, having a space between and adjustably retained in proper relation by a number of bolts inserted therethrough, said double blades being arranged at intervals with a gap between adjacent edges, a series of single blades filling said gaps and forming an unbroken surface and having their edges inserted in the space between the double blades so as to conform to the opening and closing action of the propeller, substantially as described.

2. The combination with a propeller-shaft, of a propeller, consisting of a number of blades, adjustably secured together and hinged to said shaft and adapted to have an opening-out and closing-up action with reference to the reciprocating endwise movement of the propeller-shaft, and the series of braces limiting the opening movement of said blades, substantially as described.

3. The combination with a hollow propeller-shaft, of a reversing-shaft, inserted therein, of a shifting case, inclosing said shafts and adapted to have a lateral movement, a double ratchet-bar, secured to the reversing-shaft and having its toothed edges projecting through a slot in the propeller-shaft, the companion lugs d^2 d^3, the companion pawls, d^3 d^4, pivoted thereto, the springs, d^5 d^6, the stops, g^3, and the operating-lever, connected with said shifting case, substantially as described.

4. The combination with a hollow propeller-shaft, provided with a number of slots, d^1, of a reversing-shaft, inserted in the propeller-shaft, the series of braces, b^3 and g, rigidly secured to the reversing-shaft and projecting through said slots, and the propelling-blades, hinged to the propeller-shaft, and means for reversing the position of the same, substantially as described.

610,371. RECIPROCATING PROPELLER FOR VESSELS. JOHN RITCHIE and HARVEY W. RITCHIE, Chicago, Ill. Filed June 9, 1897. Serial No. 639,946. (No model.)

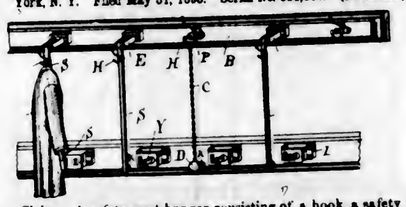


Claim.—1. The combination with a supporting-case, open at both ends, of a central hub, provided with a cross-bar, connecting with said case at opposite sides, the companion propeller-blades, hinged to the hub and its cross-bar, and the propeller-shaft, having a reciprocating endwise movement, substantially as described.

2. The combination with a propeller-shaft, having a reciprocating endwise movement, of a hub, rigidly mounted on said shaft and provided with a cross-bar extending from opposite sides thereof, a case, surrounding the propeller-shaft and supported on the ends of said cross-bar, and the companion propeller-blades, hinged to said hub and cross-bar, and having an opening and closing action, substantially as described.

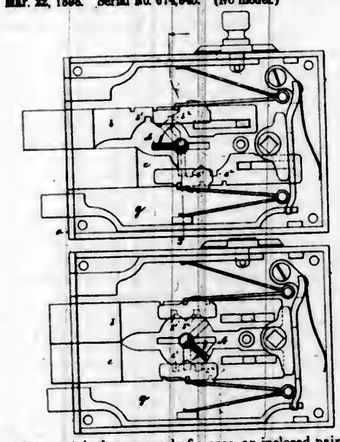
3. The combination with a propeller-shaft, having a reciprocating endwise movement, of a case, open at both ends and surrounding said shaft, a hub, rigidly mounted on said shaft, and provided with a cross-bar supporting said case in position, and companion propeller-blades, hinged to said cross-bar and hub and adapted to have an opening and closing action, the opening movement of which being limited by contact with said case and the closing movement by shoulders formed on said hub, substantially as described.

610,372. SAFETY COAT-HANGER. JOHN O. SANFORD, New York, N. Y. Filed May 31, 1895. Serial No. 551,077. (No model.)



Claim.—A safety coat-hanger consisting of a hook, a safety device substantially as shown and described adapted to pass through the arm-hole and sleeve of a coat and provided at its lower end with a keeper, and a lock for receiving and securing the keeper in a locked condition so that the coat cannot be removed without cutting through the sleeve and the body of the coat.

610,373. LOCK. MICHELE SIEBORASTEL, New York, N. Y. Filed Mar. 22, 1898. Serial No. 674,845. (No model.)



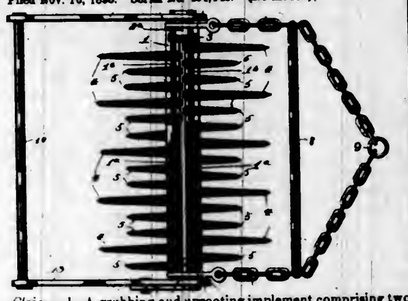
Claim.—A lock composed of a case, an inclosed pair of bolts, an inner guard plate having a key-slot between the bolts and forming a partition within the lock-case, combined with a key having a bit which is longer than half the distance between the bolts, all being so constructed that the key must be alternately rotated and reciprocated to open or close the lock, substantially as specified.

610,374. CARRIAGE-CURTAIN CATCH. HAYES YOUNG, Cable, Ohio, assignor of one-third to Wilbert Young, same place. Filed June 19, 1897. Serial No. 641,510. (No model.)



Claim.—The combination with an apertured curtain, of plates positioned on opposite sides of the curtain and apertured in line with the aperture thereof, said plates formed with a series of slots, a washer with flanges fitting in the apertures of the plates and the curtain, a spring arranged across the aperture of the plates, and a retaining-plate having prongs which extend through the slots of the plates and are clenched on the back of one of the plates, said prongs also extending through the open portion of the spring and retaining the same in position, substantially as shown and described.

610,375. SAGE-BRUSH GRUBBER. CLARENCE R. ALVORD, Crested Butte, Colo., assignor to Marshall P. Getchell, Gunnison, Colo. Filed Nov. 16, 1896. Serial No. 491,148. (No model.)



Claim.—1. A grubbing and uprooting implement comprising two oppositely-projecting series or sets of teeth formed to cause penetration of the ground and fixed in a centrally-disposed beam, a drag-frame in which said beam is revolubly mounted near the ground so as to present the series of teeth lengthwise to the ground in approximately the plane of travel, whereby the roots are impaled and gathered upon the teeth up against the beam until the implement is reversed to clear the teeth, shoes or runners at the ends of the beam's axis to raise the beam slightly from the ground and cause the teeth to travel through the earth and additional rear runners for regulating, in connection with the shoes, the angle of the teeth and the degree of penetration and a pawl and notched head mounted respectively on the frame and the beam, substantially as explained.

2. In a grubbing or uprooting implement, the combination of a trunnioned beam, two similar series of straight parallel teeth lying approximately in the plane of travel and projecting from opposite sides of said beam, a suitable frame in which the beam is trunnioned, runners on which the implement travels located in the frame at the axes of the trunnions, and rear runners for fixing the angle at which the teeth are held and regulating their penetration substantially as set forth.

3. An implement for grubbing or uprooting, comprising a beam formed of two I-beams, trunnions secured between the ends of said I-beams, bolts for holding the I-beams together, teeth secured in the webs of the I-beams and projecting from opposite sides of the main beam, and a suitable frame in which the beam is mounted, substantially as herein explained.

4. In a machine of the character described, the combination with the beam provided with teeth, the shoe or runner perforated to form a bearing for trunnions on the ends of the beam, a rearwardly-extending arm deflected downward near its center to form a rear runner, said arm being integral with the first-named shoe or runner, the rear end of the arm forming a handle.

5. In a machine of the character described, the beam provided with teeth projecting from opposite sides, the side members comprising a bar bent downward near its center to form a runner, and provided with a depending enlarged end perforated, a pawl pivoted on said arm, a trunnion secured to the beam and adapted to work in the perforation, and cams integral with said trunnion adapted to be engaged by said pawl.

610,376. AUTOMATIC FIRE-EXTINGUISHER. ANTON G. ANDERSON and FINN MOHN, Chicago, Ill. Filed Oct. 14, 1897. Serial No. 655,147. (No model.)



Claim.—1. In automatic fire-extinguishers, the combination of an extinguisher-head, a perforated cap closing the nozzle of the head, a sprinkler, main locking-plates interposed between the cap and the sprinkler and having their outer ends inclined or beveled, and notched supplementary locking-plates arranged on the outer ends of the main locking-plates, substantially as described.

2. In automatic fire-extinguishers, the combination of an extinguisher-head, a perforated cap closing the nozzle of the head, a sprinkler, a screw connecting the sprinkler with the head, and locking-plates interposed between the cap and the screw and closing the hole in the cap, substantially as described.

3. In automatic fire-extinguishers, the combination of an extinguisher-head, a cap closing the nozzle of the head, a sprinkler provided with a recess in its top, a screw connecting the sprinkler with the head and having its head countersunk in the recess in the sprinkler, means for closing the recess in the top of the sprinkler, and locking-plates interposed between the cap and the screw, substantially as described.

4. In automatic fire-extinguishers, the combination of an extinguisher-head, a perforated cap closing the nozzle of the head, a sprinkler, a screw connecting the sprinkler with the head and provided with a notch in its inner end, and locking-plates provided with centering-points interposed between the cap and the screw with one centering-point resting in the perforation of the cap and the other in the notch of the screw, substantially as described.

5. In automatic fire-extinguishers, the combination of an extinguisher-head, a perforated cap closing the nozzle of the head, a sprinkler, and locking-plates interposed between the cap and the sprinkler and provided respectively with teeth and notches to prevent lateral movement of the one plate on the other, substantially as described.

6. In automatic fire-extinguishers, the combination of an extin-

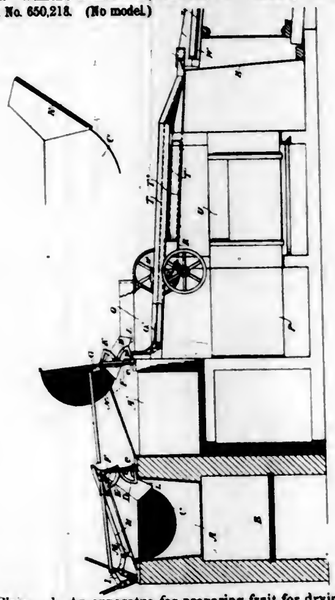
guisher-head, a cap closing the nozzle of the head, a sprinkler, main locking-plates interposed between the cap and the sprinklar and having their outer ends inclined or beveled, and notched supplementary locking-plates having one side of the notch shorter than the other and arranged on the outer ends of the main locking-plates with the short sides of the notches facing each other, substantially as described.

7. In automatic fire-extinguishers, the combination of an extinguisher-head, a cap closing the nozzle of the head, a sprinkler, locking-plates interposed between the cap and the sprinkler of which locking-plates one is provided with lateral arms having springs interposed between the ends of such arms and the arms of the head, substantially as described.

8. In automatic fire extinguishers, the combination of an extinguisher-head, a perforated cap closing the nozzle of the head, a sprinkler, main locking-plates interposed between the cap and the sprinkler and notched supplementary locking-plates arranged on the outer ends of the main locking-plates, substantially as described.

610,877. APPARATUS FOR PREPARING PRUNES FOR DRYING.

WILLIAM C. ANDERSON, San José, Cal. Filed Sept. 1, 1897. Serial No. 650,218. (No model.)



Claim.— 1. An apparatus for preparing fruit for drying consisting of baskets into which the fruit is received and immersed into dipping and washing tanks, means for causing the baskets to discharge from one to the other and an extension of the discharge ends of the baskets, having a channel for conveying the drip from the discharging fruit back into its own tank.

2. An apparatus for preparing fruit for drying consisting of dipping and washing tanks, baskets mounted therein and means for tilting the baskets so as to discharge the fruit therefrom, a table over which the discharging fruit passes and a pan below the table and separated therefrom, for conveying the drip from said table back into the tanks.

3. A fruit-preparing apparatus consisting of dipping and washing tanks, baskets and means for submerging them in said tanks, a combined table and drip-pan connected with each basket, for discharging the fruit from one basket to the other and returning the drip to the tanks, a dirt-separating device for the final basket, a grading mechanism beyond the dirt-separator, means interposed between said separator and grader for regulating the flow of the fruit from one to the other, carriers for the fruit and trays mounted thereon upon which the fruit is finally delivered and spread.

4. A fruit-preparing apparatus, consisting of dipping and washing tanks, baskets and means for submerging them in said tanks, a combined table and underlying drip-pan connected with the baskets for delivering the fruit from one to the other and for returning the drip to the tanks, a dirt-separating screen for the final basket, a perforator in line with and connected directly with the dirt-separator, a grader in line with and forming a prolongation of the discharge end of the perforator, a regulating-gate through which the fruit is delivered to the perforator and grader, means for oscillating the grader and a discharge and controlling gate through which the fruit passes and is delivered to the drying-trays.

5. In a prune-preparing apparatus, a furnace-heated tank adapted to contain caustic lye, a basket hinged upon one edge to the framework of the tank, having the opposite edge adapted to be supported so as to allow the basket to be submerged within the tank, a pinion at the hinge end of the basket and a second pinion having a lever mechanism connected with it whereby it may be rotated and the basket discharged, and a second basket into which the first-named basket discharges.

6. In a prune-preparing apparatus, a furnace-heated tank adapted to contain a dipping solution, a basket hinged at one side adapted to contain the fruit to be treated having the opposite edge so supported that the basket and contained fruit may be submerged in the tank, a mechanism whereby the basket may be tilted about this hinge-point to discharge its contents to the second part of the apparatus, a table over which the discharged fruit flows, and a pan situated beneath the table having upturned edges and a channel intermediate between it and the edge of the table whereby drippings from the fruit will pass through the channel and be arrested in the pan and returned to the tank when the basket is returned to its normal position.

7. An apparatus for preparing prune fruit consisting of a furnace-heated tank containing caustic alkali, a basket adapted to contain the fruit, hinged at one edge and having the other edge adapted to rest upon the opposite side of the tank whereby the basket and its contents may be submerged in said tank, segmental pinions, one connected with the basket, the other having a lever mechanism whereby it may be rotated and the basket discharged, and cushioned springs upon which the parts strike at the end of their movement in either direction.

8. An apparatus for preparing fruit for drying, consisting of a furnace-heated tank or tanks containing dipping and washing solutions, a basket hinged at one edge adapted to rest the opposite edge upon the framework of its tank whereby the basket and its contents are submerged, a discharge-table and drip-returning pan, a hinged segment and pinion and connected mechanism whereby the basket may be discharged and the contents delivered directly into the succeeding portion of the apparatus, a dirt-screen separator into which the fruit is received from the second basket, a receiver for the dirt and a regulating-gate through which the fruit is discharged from the dirt-cleaner.

9. In a fruit-preparing apparatus, a fruit-receiving basket having its discharge end formed or provided with a table and pan the latter separated from the table to form a channel to convey away the drip from the fruit.

10. In a prune-preparing apparatus, dipping and washing tanks, dipping-baskets having discharge-tables and drip-returning pans, a receiving-hopper with a regulating discharge-gate, a perforating-table over which the prunes are caused to pass from the hopper, and vertically-adjustable pendent gates extending across above the surface of the perforating-table.

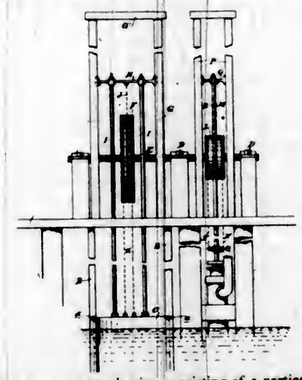
11. In an apparatus for preparing prune fruit for drying, a furnace-heated lye-containing tank, and a second dipping-tank succeeding thereto, baskets hinged with relation to each of the tanks, the first adapted to receive the fruit and dip it into the hot alkali of the first tank, mechanism by which said basket is turned and its contents delivered into the washing-basket, means for separating the dripping from the fruit and returning it to the first tank, similar mechanism for discharging the second basket into the dirt separating screen, a gate whereby the fruit is delivered from said screen upon the perforating or grading table, a mechanism for shaking said table consisting of inclined spring-arms, the upper ends of which are fixed to a permanent support, and a crank-arm and connecting-pitman whereby the tables are moved upwardly and forwardly and are returned backwardly and downwardly so as to advance the fruit over them.

12. In an apparatus for preparing prune fruit for drying, the dipping and washing tanks, automatically-operated dipping and discharging baskets and connected mechanism, a discharge-table and drip-returning pan carried by the hinged end of each basket, a dirt-separating screen, shaking tables with mechanism by which they are actuated as herein shown, said tables comprising an upper and central and lower screen of different meshes whereby the fruit is separated, said upper and second screens discharging through diverging chutes to right and left, and trays supporting carriers in line with each, whereby the fruit is automatically graded and successively delivered upon the drying-trays.

610,878. WAVE-MOTOR.

MICHAEL BARTHEL, San José, Cal. Filed Oct. 15, 1897. Serial No. 655,268. (No model.)

Claim.—1. In a wave-motor mechanism; a vertically-reciprocable float, an inclosed open-bottomed casing within which the float is freely movable and by which it is protected from the transverse movement of waves and acted upon by the vertical movement only, vertical guides fixed upon a stationary structure in line above the float, a cross-head freely slidable upon said guides, connecting-rods uniting the cross-head with the float, a drum mounted upon a journal-shaft having flexible ropes coiled about its periphery in opposite directions, one of said ropes passing around the center of the drum and extending upward to connect with the cross-head, and two other and separate ropes coiled upon either side of the central rope extending downward connecting with the float, whereby the vertical movements of the float are transmitted to produce a rotary oscillation of the drum, a second drum on the shaft and similar connections with the drum whereby said motion is transmitted to other mechanism.



2. A wave-power mechanism consisting of a vertically-reciprocating inclosed float, vertical parallel guides extending upwardly from a structure fixed with relation to the float and in line above it, a cross-head freely movable upon the guides, parallel rods connecting said cross-head with the float whereby they move in unison, a drum mounted upon a journal-shaft with its periphery essentially in line between the cross-head and the float, ropes coiled in opposite directions around the drum, one of said ropes connecting with the cross-head above and the others with the float below, whereby the vertical reciprocations of the drum are converted into a semirotary oscillatory motion of the drum, a second drum mounted upon the shaft and similar connections between said drum and a pump piston-rod whereby the latter is reciprocated in unison with the movements of the float.

3. In a wave-motor, an inclosed float guided to rise and fall with the movements of the waves, mechanism through which the rising and falling of the float is communicated to produce a rotary oscillatory movement of a drum mounted upon a shaft journaled on a structure fixed with relation to the float, a second drum mounted upon the second shaft receiving motion therefrom, a pump, the plunger-rod of which extends upwardly essentially tangent to the periphery of the drum, cross-heads fixed to said plunger above and below the drum, guides upon which said cross-heads are freely movable, a rope coiled about the central portion of the drum connecting with the center of the upper cross-head, other ropes coiling in opposite directions about the drum upon each side of the first-mentioned rope and connecting with the lower cross-head upon each side of the plunger-rod whereby reciprocating motion is transmitted to said plunger-rod and side draft prevented.

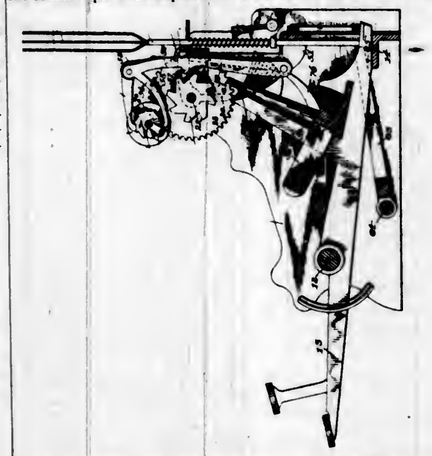
610,879. CASH-REGISTER.

ALLEN I. BLANCHARD, Chicago, Ill., assignor to the National Cash Register Company, Dayton, Ohio. Filed June 8, 1896. Serial No. 594,715. (No model.)

Claim.—1. In a cash-register, the combination with a series of keys, of a series of graduated cam-edged projections on said keys, a swinging registering-board arranged to be engaged by said cam edges and thus swung to a greater or less extent according to the inclination of said edges, a counter and means for transmitting the movements of the registering-board to said counter.

2. In a cash-register, the combination with a series of keys of a series of graduated cam-edged projections on said keys, a swinging registering-board arranged to be engaged by said cam edges and thus swung to a greater or less extent according to the inclination of said edges, a pawl carried by said registering-board, a gear engaged by said pawl, and a counter arranged to be operated by said gear.

3. In a cash-register, the combination with a series of keys arranged to operate a series of key-cams, of a counter, intermediate mechanism arranged to transmit the value of an operated key from its key-cam to the counter, a bar common to and actuated by the keys, and stops carried by said common bar and arranged to be thrown into engagement with said intermediate mechanism to lock the counter upon the completion of the stroke of any operated key.



4. In a cash-register the combination with a series of keys bearing graduated key-cams arranged to cooperate with a swinging board, of a counter, a gear-wheel arranged to transmit movement from said board to the counter, a bar common to and actuated by the keys, and a stop carried by said common bar and arranged to be thrown into engagement with said gear-wheel to lock the counter upon the completion of the stroke of any operated key.

5. In a cash-register of the class described, a counter comprising devices to effect the transfer from counter-wheels of lower denomination to a counter-wheel of higher denomination, consisting of a transfer-pawl, a cam-wheel to move said pawl in one direction, means for moving said pawl in an opposite direction, a bar common to all the keys and a spring-pressed plunger carried by the said bar and arranged to turn the cam-wheel a notch at each operation of a key.

6. In a cash-register, the combination with the pivoted transfer-pawl arm bearing the transfer-pawl and the transfer-hook also carried by the transfer-pawl arm, of the counter, means arranged to engage the transfer hook to move the transfer-pawl into engagement with one of the counter-wheels, and independent means for returning the transfer-pawl to normal position to complete the transfer.

7. In a cash-register having a five-cent key and other keys representing the odd multiples of five cents, the combination with the counter and registering-board, of the key-cams fixed to and carried by the keys, the supplemental keyboard having tines connecting with each of the before-mentioned keys except the five-cent key, a five-cent-key cam pivoted independently of the five-cent key, and having a shoulder extending across both the five-cent key and the supplemental key-coupler, for the purpose described.

8. In a cash-register of the class described, the combination with the counter and the registering-board of the key-cams carried by the keys, the supplemental keyboard having tines connecting with the keys, a five-cent-key cam pivoted independently of the five-cent key and having a slot-and-pin connection with the latter, and a shoulder secured upon said key-cam and operatively connecting the same with both the five-cent key and the supplemental keyboard.

9. In a cash-register of the class described, a series of keys a counter comprising devices to effect the transfer from counter-wheels of lower denominations to counter-wheels of higher denominations, consisting of a transfer-pawl, operating means for said pawl and an arm carrying a spring-pressed plunger for engagement with the operating means and arranged to be operated by any one of the keys.

610,880. SWINGING WINDOW-SASH.

LEWIS H. BROOKS, Jersey City, N. J. Filed Sept. 13, 1897. Serial No. 651,396. (No model.)



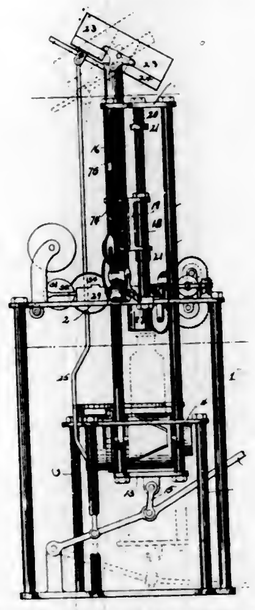
Claim.—1. The combination with the sash and sash-strip and the horizontal pivots for the same, of pivot-plates around the pivots and having interlocking projections with inclined surfaces and a spring for pressing the pivot-plates toward each other, whereby the swinging sash is held in the positions to which it may be swung, substantially as set forth.

2. The combination with the sash and horizontal pivots, of sash-strips, a rib upon the upper and outer portion of each sash-strip and the lower and outer portions of the sash at each side, there being recesses in the edges of the sash at the upper and outer parts and in the lower and outer parts of the sash-strips for receiving the ribs, so that the inner adjacent edges of the sash and sash-strips are straight, substantially as specified.

3. The combination with the sash and sash-strips, of horizontal pivots upon which the sash can be swung, pivot-plates with interlocking projections and a spring for pressing the pivot-plates toward each other and projecting ribs upon the sash and sash-strip, there being corresponding recesses in the edges of such sash and sash-strip for receiving the ribs, substantially as specified.

4. The combination with the sash and horizontal pivots, of sash-strips, a rib upon the upper and outer portion of each sash-strip and the lower and outer portions of the sash at each side, there being recesses in the edges of the sash at the upper and outer parts and in the lower and outer parts of the sash-strips for receiving the ribs, so that the inner adjacent edges of the sash and sash-strips are straight, saw-cuts in the adjacent surfaces of the sash and sash-strips respectively, and a metal strip within each saw-cut at the edge of the sash, and a handle to the same for drawing such strip inward or projecting the edge of such strip into the saw-cut in the sash-strip, substantially as set forth.

610,381. MACHINE FOR CORKING BOTTLES. GOVERNEUR G. BROWN, New York, N. Y. Filed Mar. 19, 1897. Serial No. 628,274. (No model.)



Claim.—1. A machine for corking bottles, comprising, in combination with a tubular feed-cylinder, a rocking hopper for the corks or stoppers pivotally mounted with relation to the feed-cylinder and embodying two independent receptacles having feed-channels from the inner ends of which the corks or stoppers are fed into the mouth of the cylinder, and means for actuating said hopper, substantially as and for the purpose set forth.

2. A machine for corking bottles, comprising, in combination with a tubular feed-cylinder, a rocking hopper for the corks or stoppers pivotally mounted with relation to the feed-cylinder, a main operating-lever, and a connecting-rod between said lever and the rocking hopper, substantially as and for the purpose set forth.

3. A machine for corking bottles, comprising a vertically-moving frame carrying the plunger, in combination with a mechanism for feeding a strip of tin-foil or other packing material in a plane below the plunger, said mechanism embodying feed devices actuated by mechanism meshing with the vertically-moving frame and carrying intermittently-operating mechanism whereby the movement of the vertical plunger-frame is communicated to the feed devices only during the stroke of said frame in one direction, substantially as and for the purpose set forth.

4. A machine for corking bottles, comprising a vertically-moving frame carrying the plunger, feed-rolls for operating a strip of tin-foil or other packing material with relation to said plunger, gear mechanism engaging a rack on said vertically-moving plunger-frame, and intermittently-operating governing mechanism whereby the movement of the gear mechanism is communicated to the feed-rolls only on the stroke of the plunger-frame in one direction, substantially as and for the purpose set forth.

5. A machine for corking bottles, comprising a vertically-moving frame carrying a plunger, and mechanism for feeding a strip of tin foil or other packing material with relation to the plunger, said mechanism comprising feed devices actuated by mechanism meshing with said vertically-moving plunger-frame and carrying intermittently-operating mechanism whereby the motion of the plunger-frame is communicated to the feed devices only on the stroke of the frame in one direction, in combination with a cutter mechanism contacting upon the strip of packing material, and mechanism meshing with the plunger-frame and operating to actuate the cutter devices by the stroke of said frame, substantially as and for the purpose set forth.

6. A machine for corking bottles, comprising a vertically-moving frame carrying the plunger, feed-rolls for operating a strip of tin-foil or other packing material in a plane with the stroke of the plunger, gear mechanism meshing with a rack upon said plunger-frame and connected with the feed-rolls, intermittently-operating mechanism for communicating the motion of the plunger-frame to the feed-rolls only on the stroke of said frame in one direction, a vertically-moving cutter operating with relation to the strip of packing material, and gear mechanism meshing with the cutter and plunger-frame and actuating the cutter by the stroke of the frame, substantially as and for the purpose set forth.

7. A machine for corking bottles, comprising a tubular extension through which the corks or stoppers are adapted to be forced by the plunger, mechanism for carrying a strip of tin-foil or other packing material across the top of said tubular extension, a collar mounted within said tubular extension and forming a cutter operating with relation to the strip of packing material, and means for operating said cutter, substantially as and for the purpose set forth.

8. A machine for corking bottles, comprising a vertically-moving frame carrying the plunger, a tubular extension through which the corks or stoppers are adapted to be forced by the plunger, mechanism for feedidg a strip of tin-foil or other packing material across said tubular extension, a collar mounted in the tubular extension and forming a cutter operating with relction to said packing material, a gear meshing with a rack upon said collar and devices upon the plunger-frame for actuating said gear, substantially as and for the purpose set forth.

9. A machine for corking bottles, comprising a vertically-moving frame carrying the plunger, a guide-frame through which the corks are fed into position with relation to the plunger, said guide-frame having an annular shoulder at its bottom, a tubular extension in line with the movement of the plunger, a collar mounted in said tubular extension and forming a cutter operating with relation to said annular shoulder upon the guide-frame, mechanism for feeding a strip of tin-foil or other packing material between said guide-frame and the top of said collar, and means for operating said collar, substantially as and for the purpose set forth.

10. A machine for corking bottles, comprising a vertically-moving frame carrying a plunger, a guide-frame through which the corks are carried into position with relation to the plunger, a sliding block operating in said guide-frame, and operating mechanism connected with said sliding block and engaging the vertically-moving plunger-frame, substantially as and for the purpose set forth.

11. A machine for corking bottles, comprising a vertically-moving frame carrying a plunger, a guide-frame through which the corks or stoppers are fed with relation to the plunger, mechanism for feeding a label-strip over said guide-frame on a plane with relation to the operation of the plunger, operating mechanism connected with said feed mechanism and with the plunger-frame, and intermittently-operating mechanism for actuating the feed mechanism only on the stroke of the plunger-frame in one direction, substantially as and for the purpose set forth.

12. In a machine for corking bottles, two relatively-arranged bottle-carrying belts one of which has a series of recesses for the reception of the individual bottles, in combination with a guide-track extending between the two belts, whereby the bottles are automatically guided during the operation of the belts from the initial belt into the recesses of the other belt, substantially as and for the purpose set forth.

13. In a machine for corking bottles, a carrying-belt provided with a continuous series of recesses in its surface, an initial carrying-belt arranged at the side of the recessed belt and with relation thereto, said initial belt being in front of the open end of the recesses, a curved guide-track extending from the initial belt to the recessed belt and embodying side rolls, whereby the bottles are automatically guided from the initial belt into individual position in the recesses of the recessed belt, and means for relatively operating said belts, substantially as and for the purpose set forth.

14. A machine for corking bottles, comprising a vertically-moving frame carrying the plunger, operating mechanism meshing with the vertically-moving plunger-frame, a carrying-belt for conveying the bottles into position, intermittently-operating mechanism connected with the belt and adapted to actuate the latter only on the stroke of the plunger-frame in one direction, said belt having recesses in one side adapted to receive and retain bottles, and devices connecting said intermittently-operating mechanism and the main operating mechanism, substantially as and for the purpose set forth.

15. A machine for corking bottles, comprising a vertically-moving plunger-frame, a plunger connected with and carried by said frame and having a limited independent movement with relation to the movement of the carrying-frame, and means for controlling the independent movement of the plunger, whereby the air exhaust in the operation of corking a bottle is permitted by the independent limited movement of the plunger, substantially as and for the purpose set forth.

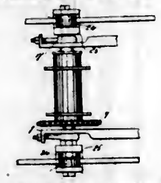
16. A machine for corking bottles, comprising a main frame, a supplementary lower frame in transverse relation to the main frame, a vertically-moving frame operating within the main and supplementary frames and carrying the plunger, cork-feeding mechanism mounted upon the main frame with relation to the vertically-moving plunger-frame, conveying mechanism for carrying bottles mounted in the transverse supplementary frame, operating mechanism respectively connecting the cork-feeding mechanism and the bottle-conveying mechanism with the vertically-moving plunger-frame, and means for operating said plunger-frame, whereby the complete operation is effected by the stroke of the vertically-moving plunger-frame, substantially as and for the purpose set forth.

17. A machine for corking bottles, comprising a main frame, a supplementary lower frame, a vertically-moving frame carrying the plunger and working within the main and supplementary frames, cork-feeding mechanism mounted upon the main frame with relation to the plunger-frame, mechanism mounted upon the main frame for feeding a label-strip and strip of packing material with relation to the plunger, conveying mechanism mounted in the supplementary frame for carrying the bottles, operating mechanism directly connecting the various supplementary mechanisms with the vertically-moving plunger-frame, and means for operating the plunger-frame, whereby a complete movement of the entire mechanism is effected by one complete movement of the plunger-frame, substantially as and for the purpose set forth.

18. A machine for corking bottles, comprising a main frame, a supplementary lower frame, a vertically-moving plunger-frame operating within the main and supplementary frames and carrying the plunger and embodying corner-rods provided with racks, cork-feeding mechanism mounted upon the main frame, gear mechanism connecting said cork-feeding mechanism with one of the rack-bars of the plunger-frame, conveying mechanism mounted in the supplementary frame for carrying the bottles into position, intermittently-operating gear mechanism connected with the conveyer mechanism and meshing with one of the rack-bars of the plunger-frame, and means for operating said rack-bar plunger-frame, substantially as and for the purpose set forth.

19. A machine for corking bottles, comprising a main frame, a supplementary lower frame in transverse relation thereto, a vertically-moving plunger-frame working within the main and supplementary frames and carrying the plunger and provided with corner-bars having racks, a cork-feed mechanism mounted upon the main frame with relation to the plunger-frame, gear mechanism connecting said cork-feed mechanism with one of the rack-bars of the plunger-frame, mechanism mounted upon the main frame for feeding a label-strip and a strip of packing material with relation to the plunger, intermittently-operating gear mechanism connecting said strip-feeding mechanism with one of the rack-bars of the plunger-frame, conveying-belt mechanism mounted in the transverse supplementary frame for carrying the bottles into position, intermittently-operating mechanism connecting said conveyer mechanism with one of the rack-bars of the plunger-frame, and means for operating said plunger-frame, whereby one complete movement of all the supplementary operating mechanisms is effected by one movement of the plunger-frame, substantially as and for the purpose set forth.

610,382. PROPELLING MECHANISM FOR BICYCLES OR SIMILAR VEHICLES. LOUIS BURGESS, Waterloo, N. Y. Filed July 13, 1897. Serial No. 644,403. (No model.)

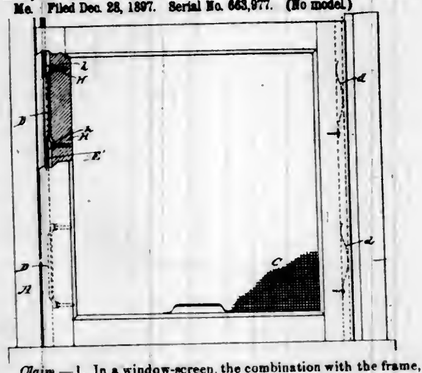


Claim.—1. In a propelling mechanism for bicycles and similar vehicles, the combination of a pedal-shaft, connections between said shaft and the drive-wheel, pedal-crank shafts connected with said pedal-cranks, annular collars on the outer ends of said shafts, sleeves rotating on said shafts and provided with a central inwardly-directed annular shoulder, ball-bearings between said collar and said shoulder, a collar on said shaft, ball-bearings between said collar and said annular shoulder, means whereby said collar may be secured against lateral motion, caps adapted to be secured to said sleeves and longitudinally movable thereon, and levers supported by said caps and longitudinally adjustable, one end of said levers being provided with suitable supports through which they are adapted to slide, and the other ends thereof being provided with pedals, substantially as described.

2. In a propelling mechanism for bicycles and similar vehicles, the combination with the pedal-shaft provided with the usual pedal-cranks, shafts connected with said cranks, revoluble sleeves mounted on said shafts, caps which are adapted to be connected with the outer end of said sleeves and to be longitudinally adjustable thereon, levers which pass through said caps and are longitudinally adjustable therein, said levers being provided at one end with supports through which they are longitudinally movable, and at the opposite end with pedals, substantially as described.

3. In a propelling mechanism for bicycles and similar vehicles, the combination with a pedal-shaft provided with the usual pedal-cranks, shafts connected with said cranks, revolable sleeves mounted on said shafts, caps which are adapted to be connected with the outer end of said sleeves and to be longitudinally adjustable thereon, levers which pass through said caps and are longitudinally adjustable therein, said levers being provided at one end with supports secured to the rear portion of the frame of the vehicle through which they are longitudinally movable, and said supports being provided with antifriction-rollers between which said levers pass, substantially as described.

610,383. WINDOW-SCREEN. EDWARD T. BURROWES, Portland, Me. Filed Dec. 28, 1897. Serial No. 663,977. (No model.)

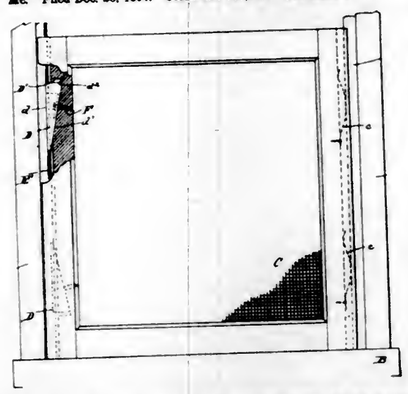


Claim.—1. In a window-screen, the combination with the frame, of justifying-shoes at the edge of the frame consisting of elongated plates and screws having exposed driving-heads loosely secured to the plates at opposite ends free to rotate, substantially as described.

2. In a window-screen, the combination with the frame, of adjusting-shoes at the edge thereof consisting of elongated bead-engaging portions, and an adjusting-screw having an exposed head secured to the shoes and located inward beyond the plane of the bead-engaging surface of the shoe, substantially as described.

3. An adjusting-shoe for window-screens consisting of an elongated bead-engaging portion and slotted ends, and adjusting-screws having exposed heads secured to the ends free to move, substantially as described.

610,384. WINDOW-SCREEN. EDWARD T. BURROWES, Portland, Me. Filed Dec. 28, 1897. Serial No. 663,978. (No model.)



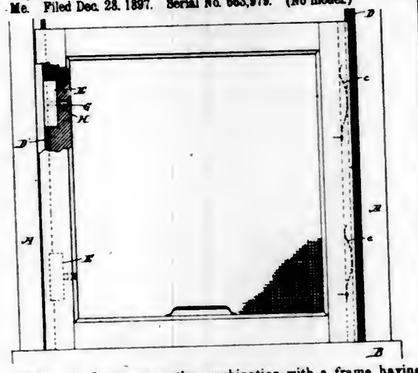
Claim.—1. In a window-screen, the combination with the screen-frame, of independent justifying devices at the edge thereof consisting of outwardly-movable shoes having elongated openings therein and set-screws passing through the openings for locking the shoes in their adjusted positions, substantially as described.

2. In a window-screen, the combination with its frame, of independent justifying devices at the edge of the frame, consisting of movable shoes having elongated slots therein, and set-screws passing through the slots into the frame for securing and locking the shoes in their adjusted positions, substantially as described.

3. In a window-screen, the combination with the frame, of a justifying device for the screen consisting of a transversely and longitudinally movable shoe secured to the frame, means for positively locking the shoe in its adjusted position, and abutment-springs on the opposite side of the frame, substantially as described.

4. A justifying-shoe for window-screens consisting of a block having an inclined inner edge, and an elongated longitudinal slot, and a securing device passing through the slot for positively locking the block in its adjusted position, substantially as described.

610,385. WINDOW-SCREEN. EDWARD T. BURROWES, Portland, Me. Filed Dec. 28, 1897. Serial No. 663,979. (No model.)

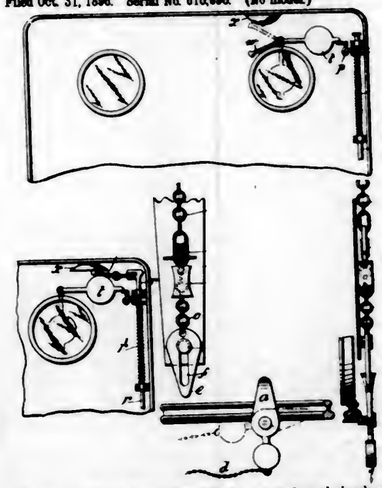


Claim.—1. In a screen, the combination with a frame having independent pockets formed in its edge, of justifying devices secured at the edge thereof, consisting of outwardly-movable shoes set into the pockets, and means for adjusting said shoes, substantially as described.

2. The combination with a screen-frame, of a justifying-shoe set into the edge thereof, a slot or perforation in the frame, a bushing in the slot, a screw having a threaded engagement with the shoe, and projections on the bushing engaging the head of the screw on opposite sides for preventing longitudinal movement thereof, substantially as described.

3. The combination with a frame, of independent justifying-shoes set into pockets formed in its edge, screws for adjusting the shoes, means for preventing longitudinal movement of the screws, and springs on the frame opposite the shoes, substantially as described.

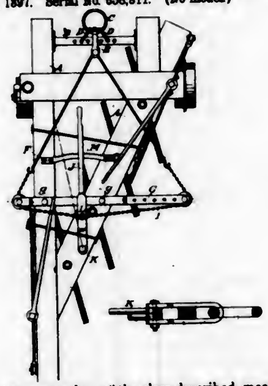
610,386. MECHANICAL SIGNAL-INDICATOR FOR USE ON RAILWAY LOCOMOTIVE-ENGINES. JOHN CRABTREE, Bracebridge, England, assignor of one-half to Richard Morris, Doncaster, England. Filed Oct. 31, 1896. Serial No. 610,690. (No model.)



Claim.—1. In a railway signal-indicator, a slotted chuck or pendulum adapted to be raised and lowered on its pivot and free to swing on its pivot and situated on the locomotive or car running on the rails and in a position corresponding to a projection on the permanent way and connected to indicator mechanism and capable of being operated in either direction.

2. The combination with a slotted chuck or pendulum capable of being deflected in either direction by engagement with a projection on the permanent way and of being raised out of engagement with the said projection of a signal-arm pivoted above a lookout, of a spring-catch holding the signal-arm up and of a chain with spring-link connecting the pendulum to the catch.

610,387. GANG-PLOW. GEORGE W. DE WITT, San Ardo, Cal. Filed Nov. 17, 1897. Serial No. 658,811. (No model.)



Claim.—1. In a gang-plow of the class described, means for connecting the draft-chain with the front of the plow and also divergingly with the rear portion thereof as described.

2. In a plow of the character described, a draft connection with the front beam of the plow, a transverse bar fixed to the plow-frame between the front and rear ends, diverging connecting rods or chains extending from the front draft to the ends of said intermediate transverse beam.

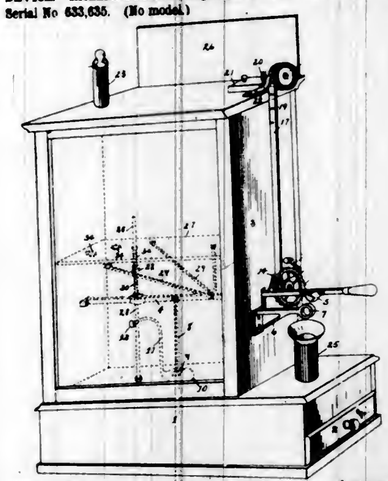
3. In a plow of the character described, means for connecting the draft-chain with the front beam of the plow, a transverse beam fixed across the plow-frame between the front and rear ends, diverging connecting rods or chains extending from the front draft-chain to the ends of the intermediate bar and means for transferring the draft to one end or the other of said bar.

4. In a plow of the character described, a draft-chain, means for connecting it with the front of the plow-frame, a transverse bar fixed to said frame intermediate between the front and rear ends, rods or chains connecting the front draft with the rear transverse bar at points upon either side of a central line of draft, and a lever whereby the draft appliance may be shifted so as to transfer the pull to either end of the cross-bar.

5. In a plow of the character described, a draft-chain and connections between it and the front of the plow, a transverse bar secured to the plow-frame intermediate between the front and the rear ends, said bar having rollers journaled in its ends, a chain passing around said rollers and connections between it and the front draft appliances, a lever fulcrumed upon the plow-frame and connected with the chain whereby by the movement of the lever, the chain is shortened upon one side and lengthened upon the other and the draft transferred to either end of the transverse bar.

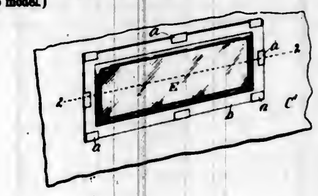
6. In a plow of the character described, a draft-chain, a ring with which it is connected, clevises by which said ring is adjustably attached to the front bar of the plow-frame, a clevis extending from the ring rearwardly, rods or chains connected with and diverging rearwardly from said clevis, a transverse bar fixed across the plow-frame intermediate between its front and rear ends having pulleys journaled at either side of the central line of draft, a chain connecting with the diverging draft-rods and passing around said pulleys, a lever fulcrumed to the frame connected with said chain so that by movement of the lever the draft is transferred from one side to the other of the plow-frame.

610,388. COMBINATION CIGAR-CUTTER AND ADVERTISING DEVICE. RICHARD DYKEMAN, Logansport, Ind. Filed Apr. 24, 1897. Serial No. 633,635. (No model.)



Claim.—The combination of a casing, a lever pivoted at one end therein and projecting through the same at its opposite end, a cigar-cutter carried by the outer end of the lever, a shelf movable within the casing and rings adapted to normally rest upon the shelf, a lighter, an igniting device for the lighter adapted to be operated by the lever, a post secured to the casing at one end and projecting at its opposite end through the shelf, a means for returning the shelf and lever to their normal positions after the lever has been depressed, the rebound of the shelf throwing the rings therefrom, which latter in their descent are adapted to engage the post, substantially as described.

610,389. CURTAIN-LIGHT FRAME FOR CARRIAGES. JAMES A. EDWARDS, Owosso, Mich. Filed Dec. 18, 1897. Serial No. 662,416. (No model.)



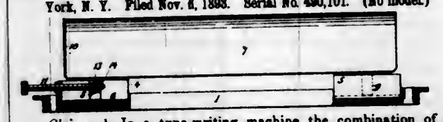
Claim.—1. In a curtain-light frame, the combination of the frame having a central aperture and provided with rectangular engaging feet or flanges projecting from the margin of said aperture over which the flies of the margin of the cloth-opening of the curtain are adapted to be folded, the complementary frame carrying the glass adapted to lie upon the folded feet or flanges which embrace the margin of the cloth-opening, and the prongs formed on one of said frames and folded onto the marginal edges of the other of said frames, to secure said parts together.

2. In a curtain-light frame, the combination of the inner frame having a central aperture therethrough, the engaging flanges or feet standing around said aperture, the marginal edges of the opening in the fabric of the curtain folded over the inner edge of said frame so as to conceal said edge and secured by said feet or flanges which fold thereon, the complementary frame carrying the glass, and the prongs on one of said frames folding onto the marginal edge of the other of said frames.

3. In a curtain-light frame, the combination of the inner frame having a central aperture and provided with engaging feet or flanges standing around the margin of said aperture, engaging prongs extending from the exterior margin of said frame, the curtain fabric having an aperture whose margins are folded over the inner edges of the central aperture in said frame and secured by said feet or flanges, the supplementary frame carrying the glass lying within the projecting prongs on the outer margin of said first-mentioned frame, said prongs being folded onto the face of said supplementary frame to secure said parts together.

4. In a blinded curtain-light frame, the combination of the outer and inner fabrics of the curtain, the inner frame located between said fabrics and having a central opening which registers with an opening through the fabrics of the curtain, said inner frame having projecting feet or flanges around the margin of the opening therethrough, the edges of the margin of the opening through the inner fabric of the curtain being folded over said feet or flanges and secured thereby, said inner frame also having the prongs projecting from the exterior margin thereof, which prongs pass through apertures in the exterior fabric of the curtain, the supplementary frame carrying the glass lying within said prongs of the inner frame, which prongs are folded inward onto the face of said supplementary frame substantially as set forth.

610,390. TYPE-WRITING MACHINE. JACOB FELBEL, New York, N. Y. Filed Nov. 6, 1893. Serial No. 490,101. (No model.)



Claim.—1. In a type-writing machine, the combination of a paper-carriage, a platen, and a paper-table of ordinary character supported upon said carriage and adjustable lengthwise of the platen; substantially as described.

2. In a type-writing machine, the combination of a paper-carriage, a platen, and a paper-table supported on said paper-carriage, and bodily adjustable longitudinally and lengthwise of said platen, and provided at one end with a margin-regulator operating as a gage for the paper supported on said paper-table; substantially as described.

3. In a type-writing machine, the combination of a paper-carriage, a platen, a longitudinally-adjustable paper-table supported on said paper-carriage and provided at one end with an integral lip or flange operating as a gage for the paper supported on said paper-table; substantially as described.

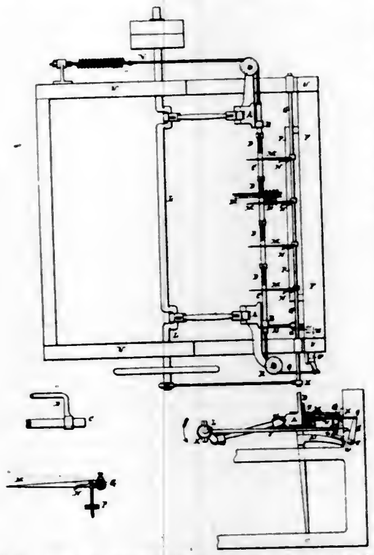
4. In a type-writing machine, the combination of a paper-carriage, a platen, a paper-table supported on said paper-carriage, and provided with a margin-regulator operating as a gage for the paper supported on said paper-table, and means for moving said paper-table bodily in the direction of the length of the platen; substantially as described.

5. In a type-writing machine, the combination of a paper-carriage, a platen, and a paper-table supported in a longitudinal groove on said paper-carriage and adjustable bodily in said groove longitudinally of said platen; substantially as described.

6 In a type-writing machine, the combination of a paper-carriage provided with grooved supports, a platen, a paper-table provided with a margin-regulator and with feet or projections, and an adjusting device on said carriage for moving said paper-table longitudinally of said platen; substantially as described.

610,391. LOOM FOR WEAVING FRINGES. JAMES FERGUSON, Dundee, Scotland. Filed Dec. 20, 1897. Serial No. 662,594. (No model.) Patented in England Jan. 18, 1894, No. 1,105.

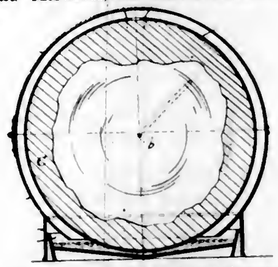
Claim.—1. In a loom for weaving fringes, the combination with a lathe and operating means therefor, of a horizontal weft-bar carried by the lathe with means to make the same reciprocate, of bent weft-fingers on the weft-bar having eyes at their points for the weft-threads, and a rocking spindle at the inner side of the breast-beam, having fingers to receive the loops of weft passed onto them by the beating-up action of the lathe and having combined with them cutting-blades which cut the loops to form fringe, substantially as set forth.



2. In a loom for weaving fringes, the combination with a lathe and operating means therefor, of a horizontal weft-bar carried by the lathe with means to make the same reciprocate, of bent weft-fingers on the weft-bar having eyes at their points to insert the weft-threads into the warp-sheds, and a rocking spindle at the inner side of the breast-beam, having fingers on the opposite side of the warps from the said weft-fingers to receive the loops of weft passed onto them by the beating-up action of the lathe, substantially as described.

3. In a loom, the combination with a lathe and operating means therefor, of a horizontal weft-bar carried by the lathe, bent weft-fingers on the bar having eyes for the weft-threads and means for reciprocating the bar in the lathe and devices to stop said reciprocation, or nearly so, during a portion of the movement of the lathe, as and for the purpose described.

610,392. PHOTOGRAPHIC DEVELOPING APPARATUS. MAX FERNEKES, Milwaukee, Wis., assignor of one-half to Walter Fernekes, same place. Filed Jan. 22, 1898. Serial No. 667,643. (No model.)



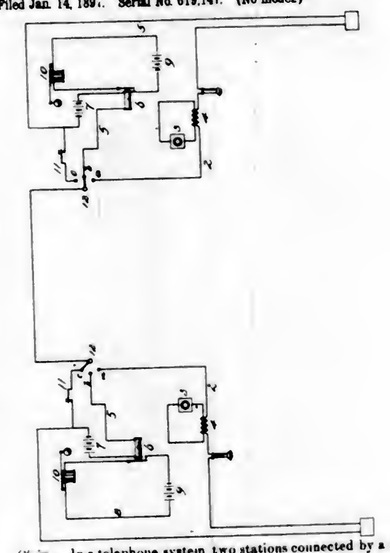
Claim.—1. An apparatus for developing photographic-negative films, the same comprising an open-bottom shell provided with means of support, a drum rotatably mounted in the shell so as to be exposed through the open bottom of the same, and means for securing a web of photographic-negative film on the periphery of the drum for progressive immersion in a developing-bath under said shell, the latter and its contents being transferable from one bath to another.

2. An apparatus for developing photographic-negative films, the same comprising an open-bottom shell provided with means of support, a drum peripherally flanged at both sides and rotatably mounted in the shell so as to be exposed through the open bottom of the same, and means for securing a web of photographic-negative film on the periphery of the drum between its flanges for progressive immersion in a developing-bath under said shell, the latter and its contents being transferable from one bath to another.

3. An apparatus for developing photographic-negative films, the same comprising an open-bottom shell provided with means of support, a cover for the shell, a drum rotatably mounted in said shell so as to be exposed through the open bottom of the same, and means for securing a web of photographic-negative film on the periphery of the drum for progressive immersion in a developing-bath under the aforesaid shell, the latter and its contents being transferable from one bath to another.

4. An apparatus for developing photographic-negative films, the same comprising an open-bottom semicircular shell provided with means of support, a drum rotatably mounted in the shell to have exposure through the open bottom of the same, and means for securing a web of photographic-negative film on the periphery of the drum; in combination with a bath tray having the bottom thereof inclined in opposite directions from the center toward the ends.

610,393. TELEPHONE. SYDNEY S. FISHER, San Francisco, Cal. Filed Jan. 14, 1897. Serial No. 619,147. (No model.)

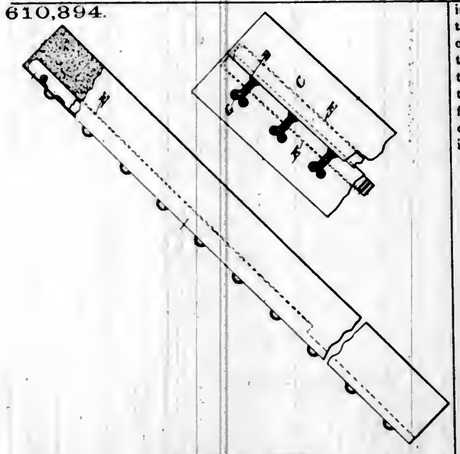


Claim.—In a telephone system, two stations connected by a line-wire whose ends are in electric connection with switch-points, each station having a grounded instrument-circuit terminating in a contact-point, a grounded signaling-circuit terminating in a contact-point and embracing a main battery and a relay wound to a resistance adapted to the line-wire circuit, a local circuit embracing a contact-point, the armature of the relay, a local battery and a signal, and a normally open ringing-up circuit leading from the grounded signaling-circuit, terminating in a contact-point and containing a circuit-closer, the three contact-points of the instrument, signaling and ringing-up circuits lying within the path of movement of the switch-points.

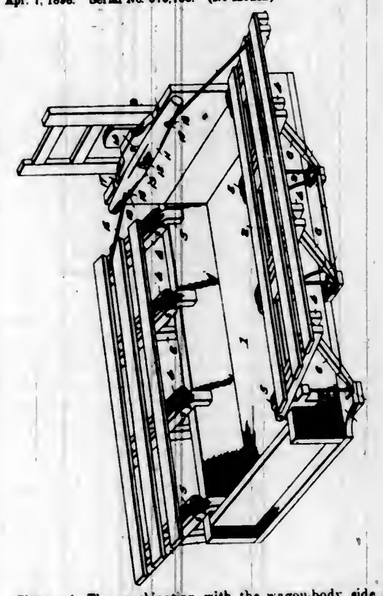
610,394. DRESS-FASTENER. HENRY A. FRANCIS, Niagara Falls, N. Y. Filed Nov. 11, 1897. Serial No. 658,143. (No model.)

Claim.—A dress-fastening composed of a hook portion and an eye portion, the hook portion adapted to overlap the eye portion, said eye portion consisting of a shield provided with a pocket, eyes and a flexible stay within said pocket, said eyes placed on the stay with their loop portion extended through the edge of said pocket, said shield united back of said pocket by a row of stitching and cement, the hook portion consisting of a shield provided with a pocket and a flexible stay, and united back of the pocket by a row of stitching and cement whereby the parts within said pockets are held together without other fastening, substantially as described.

610,894.



610,895. HAY-RACK. WARREN GAMBLE, Beebe, Mich. Filed Apr. 7, 1898. Serial No. 676,736. (No model.)

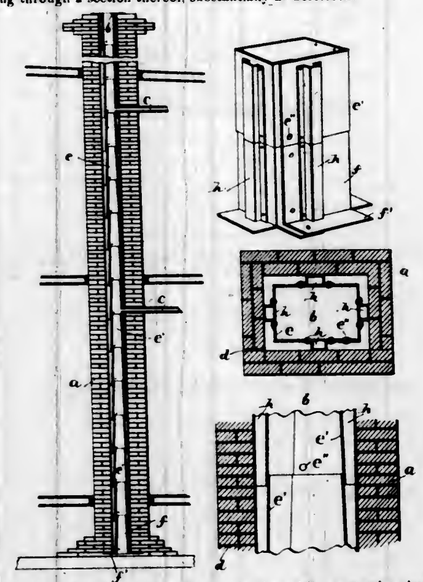


Claim.—1. The combination with the wagon-body, side racks hinged thereto, a lever, a screw projecting through said lever and through a vertical slot in the front end of the wagon-body, links connecting the lever with the side racks, and a crank-nut engaging said screw, substantially as described.

2. The combination with the wagon-body, side racks hinged thereto, a lever, a screw projecting through said lever and through a vertical slot in the front end of the wagon-body, links connecting the lever with the side racks, and a crank-nut engaging said screw, said end piece and lever being provided with vertical slots, an end rack-section, and pins projecting inwardly from said end rack-section and engaging said slots, substantially as set forth.

610,396. MASONRY CHIMNEY AND SMOKE-FLUE. CHRIST H. GANZEL, Sr., Boyd, Wis. Filed June 29, 1897. Serial No. 642,866. (No model.)

Claim.—1. A masonry chimney, in combination with a sheet-metal casing extending throughout the length thereof from the base of the chimney to the top thereof, said lining composed of telescoping sections in cross-section generally conforming to the interior of the chimney and having exterior means to engage the wall of the chimney and center the lining and form the surrounding air-space, the bottom or base section having the bottom lateral flanges f', entering the masonry of the chimney at the base thereof and closing the lower end of said air-space, the top section having the top lateral flanges approximately at the top of the chimney and closing the top of said air-space, and the smoke-pipe e, entering the sheet-metal lining through a section thereof, substantially as described.



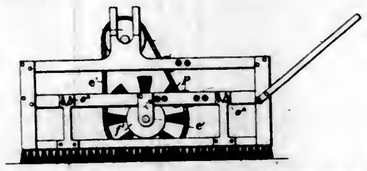
2. A masonry chimney, in combination with a protective sheet-metal lining forming the smoke-flue and built up of short telescoping sections extending throughout the length of the chimney, the lining of a size to leave an air-space around the same, each section formed with several exterior hollow ribs engaging the inner surfaces of the chimney, the corresponding hollow ribs of the several sections abutting and registering at their ends as described, the air-space and the ribs closed at the top of the chimney, whereby the construction of the chimney is not varied to receive the lining and the same can be built up with the chimney or inserted afterward.

3. A masonry chimney, in combination with a protective sheet-metal lining built up of sections forming the smoke-flue, and extending approximately throughout the length of the chimney with the surrounding air-space within the chimney, the bottom section having the lateral flanges closing the lower end of the air-space and the top section having the flanges resting on the top of the chimney and closing the top of the air-space, each section collapsible at one end only, as described, to fit in the end of the adjoining section, the section having the vertical exterior hollow abutting and registering ribs engaging the inner surfaces of the chimney.

4. A masonry chimney, in combination with a sheet-metal lining or flue therefor comprising telescoping sections, each section bent from sheet metal with straight overlapping ends pivotally secured together near one end only as by a rivet c'', so that the opposite end can collapse to enter the fixed end of the next section, substantially as described, whereby the lining can be built up with the chimney or inserted afterward, said lining extending approximately throughout the length of the chimney and in cross-section conforming to the interior thereof and centered to form the surrounding air-space closed at the top, thereby retaining the flame and smoke and preventing escape thereof through lateral crevices in the masonry of the chimney, as described.

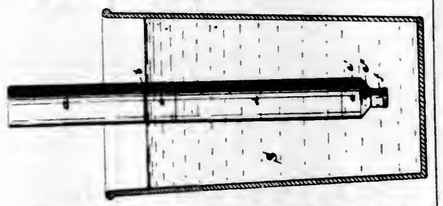
610,397. SCRUBBING-MACHINE. JAMES E. GEE and WILLIAM J. GEE, Middlesbrough, England. Filed Dec. 28, 1897. Serial No. 664,079. (No model.) Patented in England Feb. 11, 1896, No. 2,945, and Feb. 18, 1896, No. 3,624; in Austria Mar. 1, 1896, No. 21,470; in New South Wales Apr. 8, 1896, No. 6,497; in New Zealand Apr. 8, 1896, No. 8,392; in Victoria Apr. 10, 1896, No. 13,018; in Cape Colony June 3, 1896, No. 1,191; in France Aug. 17, 1896, No. 246,382; in Belgium Aug. 22, 1896, No. 123,158, and in Canada Nov. 17, 1896, No. 54,071

Claim.—1. In a machine for washing, scrubbing and cleaning floors, the combination with a frame, of rollers journaled in said frame, and means for controlling and straining transversely the slop-cloth, consisting of edging-cords on the cloth running behind detent-wheels secured to opposite parts of the machine, substantially as and for the purpose described.



2. In a machine for washing, scrubbing and cleaning floors, the combination with a frame, of rollers journaled in said frame, an endless slop-cloth, carried by said rollers, having thickened or beaded edges formed of cords, and detent-wheels engaging said cords and mounted upon the said frame substantially as described.

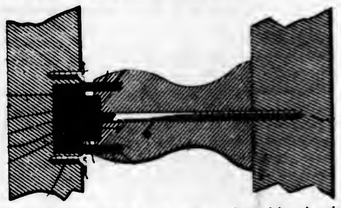
610,398. DEVICE FOR MANUFACTURING COMPRESSIBLE TUBES. HANNIBAL GOODWIN, Newark, N. J. Filed Dec. 30, 1895. Serial No. 573,783. (No model.)



Claim.—1. The combination with a supporter having a shoulder for limiting the endwise movement and gaging the position of the applied parts when placing the same upon the form-receiving portion of said supporter, of a form, of tabular shape to fit upon said form-receiving portion, and in length shorter than said form-receiving portion to permit the opposite tube end pieces to be arranged on said portion at opposite ends of the form and in alinement with said form, substantially as set forth.

2. The combination with the supporter having a shoulder or stop projecting from its periphery and a form-receiving portion at one side of said shoulder, of a form comprising a longitudinally seamless or unjointed piece of collapsible material formed to fit said form-receiving portion and shorter in length than said portion and end pieces of the tube to be applied to said portion at opposite ends of the form, substantially as set forth.

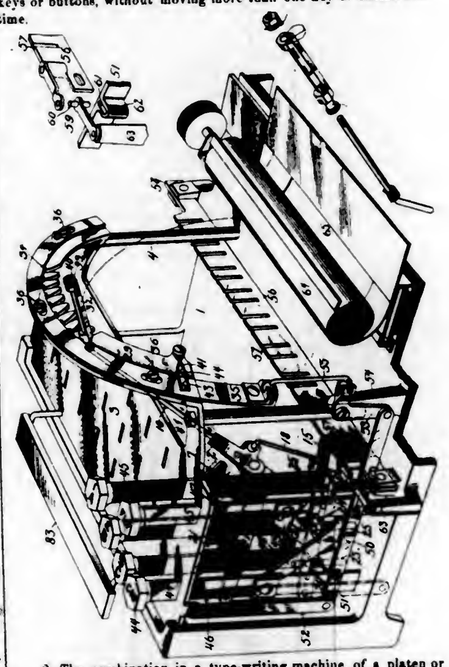
610,399. DOOR-HOLDER. GEORGE HALL, Richmond, Va. Filed May 18, 1897. Serial No. 637,081. (No model.)



Claim.—In a door-holder, the combination with a headed projection, of a cup-shaped member in which said projection is adapted to fit, provided with an external annular groove, substantially parallel wires extending across the open end of said cup-shaped member, adapted to engage said headed projection, and having their ends bent into loops which fit within said groove, and a band extending around said cup-shaped member, fitting within the groove therein, and adapted to retain said parallel wires in place.

610,400. TYPE-WRITING MACHINE. EDWARD B. HESS, New York, and JOSEPH M. STOUGHTON, Yonkers, N. Y. Filed Nov. 16, 1897. Serial No. 658,719. (No model.)

Claim.—1. In a type-writing machine, the combination of a type-bar provided with a plurality of type or printing characters; a movable support to which said type-bar is pivoted; and a plurality of finger keys or buttons, each adapted to act upon said type-bar and support and to make its own full movement independently of all other finger-keys of the keyboard, to swing the said type-bar about its pivot, and also to move it longitudinally; whereby the type-bar is caused to print different characters through actuation of the different finger keys or buttons, without moving more than one key or button at a time.



2. The combination in a type-writing machine, of a platen or paper-support; a series of type-bars each provided with a plurality of printing characters; a series of independently-movable supports to each of which is pivoted one of the type-bars; and a series of independent finger-keys arranged in groups of two or more, those of each group being adapted and arranged to act upon one and the same type-bar, to move the same longitudinally varying distances and to swing the same about its pivotal support; whereby each printing character of every type bar is carried to and caused to make an impression at a common printing-point.

3. In a type-writing machine, the combination of a series of type-bars, a series of type-bearing sleeves each carried by one of said bars and having a plurality of type-bearing faces, each face bearing a plurality of type or printing characters; a series of movable supports to each of which is pivoted one type-bar of the series; a plurality of finger keys or buttons each adapted to act upon one or another type-bar of the series and to swing the same about its pivot or to swing said bar and move the same longitudinally; and means for turning or partially rotating the several type-bearing sleeves simultaneously.

4. In combination with a longitudinally-movable type-bar having a plurality of printing characters and pivotally supported at or near one end: a plurality of independent and disconnected finger-keys, one adapted simply to swing the type-bar about its pivot without effecting longitudinal movement thereof, and the other or others adapted both to swing the type-bar about its pivot and to move the same longitudinally.

5. In a type-writing machine, the combination of a series of type-bars each provided with a rotatable type-bearing sleeve having a plurality of type-bearing faces and a plurality of type on each face; means for swinging the type-bars about their pivots; means for moving the type-bars longitudinally; and means for rotating the several type-bearing sleeves to bring corresponding faces thereof to printing position.

6. In a type-writing machine, the combination of a type-bar; a rotatable type-bearing sleeve mounted thereon; a spring bearing against said sleeve and tending to move the same longitudinally; a fixed washer or abutment toward which the sleeve is pressed by said spring, the sleeve and the abutment being adapted to interlock substantially as and for the purpose set forth.

7. In combination with type-bar 10 having collar or shoulder 31; type-bearing sleeve 32 swiveled upon said type-bar; spring 33 bearing against said sleeve and tending to move the same longitudinally away from the collar 31; and fixed washer or abutment 39 provided with tooth or projection 38 to enter one or another of a series of notches 37 formed in the sleeve 32.

8. In a type-writing machine, the combination of an oscillating plate 7 provided with a series of notches 19, 20 and 21; an oscillating standard 6; a bar 8 connecting the plate and standard; a type-bar pivotally attached to the bar 8; a lever 15 connected with the type-bar; and a series of finger-key stems 23 each provided with a stud or projection 22 adapted to enter one or another of the slots in the oscillating plate 7, and each provided with a toe or projection to engage with and move the lever 15.

9. In combination with oscillating standard 6 and oscillating plate 7, the latter provided with slots 19, 20 and 21; connecting-bar 8; a type-bar pivotally connected to said bar 8; spring-arms serving to hold the bar 8 and its connected parts normally in a medial position; and a series of independent finger-key stems or slides each provided with a projection to enter one of the slots of the plate 7 and adapted also to effect a depression or swinging of the type-bar.

10. In combination with a standard 6, slotted plate 7, connecting-bar 8 and type-bar 10 carried by the bar 8; double spring 12 having its branches arranged to bear on opposite sides of a stud or projection 14; and a fixed stop 13 serving to limit the movement of the arms of the spring, substantially as and for the purpose set forth.

11. In combination with oscillating standard 6 and slotted plate 7; connecting-bar 8; type-bar 10 carried by said connecting-bar; lever 15 pivotally connected to standard 6; link 18 connecting the lever 15 and the type-bar; spring 30 serving to elevate the lever 15 and the type-bar; and a series of finger-key stems 23 each provided with a stud or projection to enter a slot of the oscillating plate 7, and with a toe or projection to act upon and depress the lever 15.

12. In combination with the series of type-bars each provided with a rotatable type-bearing sleeve; a rack-bar meshing with the several sleeves and serving to impart rotary motion thereto; a reciprocating bar connected with and serving to move the rack-bar; a stud projecting from the reciprocating bar; a spring acting upon the rack-bar and serving to move the same in one direction; and a finger-key stem or slide having an inclined arm arranged to bear upon the stud of the reciprocating bar and to impart longitudinal motion thereto and to the connected rack-bar in opposition to the spring, substantially as set forth.

13. In combination with a series of type-bars each having a rotatable type-bearing sleeve; a rack-bar meshing with and serving to rotate said sleeve; a reciprocating bar provided with a stud or projection; two finger-key stems or slides each provided with an inclined arm to act upon the stud or projection and to move the same in one or the other direction; and intermediate connections between the rack-bar and the reciprocating bar substantially such as shown and described, whereby the movements imparted by the finger-key stems to the reciprocating bar are transmitted to the rack-bar.

14. In combination with guide-bar or comb 29 and type-bars 10 arranged to enter the notches of said comb and provided with rotatable type bearing sleeves 32; rack-bar 35 having teeth to engage with and rotate the type-bearing sleeves; spring-arms arranged to resist longitudinal movement of the rack-bar in either direction; reciprocating bar 51; intermediate connecting devices between the reciprocating bar and the rack-bar 35; and finger-key stems 44 and 45 provided respectively with inclined arms 48 and 49 arranged to bear on opposite sides of a stud or projection 50 of the bar 51.

15. In combination with a series of type-bars each provided with a rotatable type-bearing sleeve; means for rotating said sleeves; actuating-levers connected with and serving to swing the type-bars about their pivots; a notched bar located in the path of the actuating-levers and provided with a plurality of series of notches one series arranged to come into alinement with the actuating-levers when the type-sleeves are at their normal or medial adjustment, and another series arranged to come into alinement with said actuating-levers when the type-sleeves are turned their full distance in either direction from the normal position; a bar connected with and serving to rotate the type-sleeves; finger-key stems for moving said bar in one and the other direction; and connections between said finger-key stems and the notched bar, whereby said bar is moved longitudinally when said finger-key stems are actuated.

16. In a type-writing machine, the combination of a series of type-bars 10 each provided with a rotatable type-bearing sleeve; a series of actuating-levers 15 connected with said type-bars; a rack-bar 35 adapted to engage with and turn said type-sleeve; a reciprocating bar 51 connected with and serving to impart longitudinal motion to the rack-bar; finger-key stems 44 and 45 provided with inclined or oblique arms 48 and 49 for imparting longitudinal motion to bar 51; a bar 56 extending beneath the free ends of levers 15 and provided with two series of notches 57; and a connection between the reciprocating bar 51 and the notched bar 56 substantially as shown, whereby the bar 56 is caused to move longitudinally whenever either stem 44 or 45 is depressed and to carry one series of notches out of alinement with the levers 15, and to carry the second series of notches into alinement therewith, all substantially as set forth.

17. In combination with the actuating-levers 15 and notched bar 56; reciprocating bar 51; actuating key-stems 44 and 45 for effecting a reciprocation of said bar; and a toggle 59 having one end connected with the bar 56, its other end connected with a fixed support, and its intermediate joint-pin connected with the reciprocating bar, substantially as and for the purpose set forth.

18. In combination with a series of type-bars each provided with a rotatable type-sleeve; a rack-bar adapted to engage with and to rotate said sleeve; a two-armed spring 41 having its branches arranged to bear on opposite sides of a stud; and means for moving said rack-bar longitudinally.

19. In combination with a type-bar and its support arranged to move in the direction of the length of the type-bar; a shifter-plate connected with the type-bar support and having a series of slots formed therein at different angles; and a series of independent and disconnected finger-key stems each provided with a stud to enter a different notch of the shifter-plate.

20. In combination with the type-bars of a type-writing machine and with their actuating-levers 15; a carriage 65 provided with a rack-bar 68; a reciprocating frame 69 provided with dogs or pawls 75 and 76; elbow-levers 72 interposed between the actuating-levers 15 and a cross-bar of the frame 69; and a spring 71 serving to move the frame 69 toward the rack-bar.

21. In a type-writing machine, a series of type-bars, each provided with a multifaced type-bearing sleeve adapted to be rotated in action, each face containing a plurality of printing characters, and the several sleeves containing jointly but not severally, all the characters represented in the keyboard.

22. In combination with a series of type-bars each provided with a multifaced type-bearing sleeve 37, each face containing a plurality of printing characters; pinions or toothed members carried by the several sleeves; and a rack-bar 35 having teeth adapted to mesh with the pinions or toothed members and to turn the type-sleeves.

23. In combination with a series of swinging and longitudinally-movable type-bars 10, each provided with a rotatable type-bearing sleeve having a plurality of faces and a plurality of printing characters on each face; a notched plate or comb 29 serving to retain the type-bars in fixed position and relation; and a movable rack-bar 35 having teeth to mesh with teeth of the type-sleeves, whereby one or another type-bearing face of the sleeves may be brought to printing position preparatory to the swinging or swinging and longitudinal movement.

24. In a type-writing machine, a series of type-bars arranged to swing to a common printing position, each bar capable of longitudinal movement, and each sleeve capable of being turned to bring one or another printing-face toward the surface to be printed.

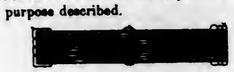
25. In a type-writing machine, the combination of a series of type-bars each provided with a rotatable type-bearing sleeve; a means for rotating said sleeves; and a lock or stop bar substantially such as described and shown, for preventing the movement of any type-bar to printing position while any type-sleeve is but partially turned from one printing adjustment to another.

26. In a type-writing machine, the combination of a series of type-bars, each provided with a rotatable type-bearing sleeve; a series of levers each connected with and serving to actuate a bar of said series; a bar adapted to engage with and to simultaneously rotate the several type-bearing sleeves; a shift-key serving to move said bar to effect rotation of the sleeves; and a comb-plate located in the path of the actuating-levers of the type-bars and connected with the bar by which the sleeves are rotated; said comb-plate serving through engagement of the actuating-levers therewith to prevent movement of the sleeve-rotating bar while any type-bar is at or on its way to or from the printing-point.

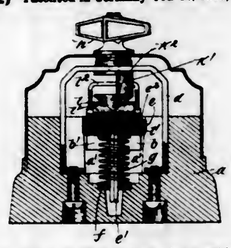
610,401. YARN SKEIN. OSWALD HOFFMANN, Neugersdorf, Germany. Filed Mar. 6, 1893. Serial No. 464,811. (No model.) Patented in France Feb. 23, 1891, No. 211,641, and July 30, 1891, No. 215,220; in Germany Mar. 11, 1891, No. 60,390; in England Mar. 25, 1891, No. 5,351, and Sept. 14, 1891, No. 15,563; in Belgium Aug. 24, 1891, No. 96,143; in Spain Sept. 15, 1891, No. 12,521; in Switzerland Sept. 28, 1891, No. 4,358; in Italy Oct. 12, 1891, No. 30,580, and in Austria-Hungary Dec. 6, 1891, No. 40,320 and No. 66,216, and July 1, 1892, No. 5,161, and No. 18,194.

Claim.—An improved yarn skein having the windings of yarn from the inside to the outside of the same length, and having said

windings extended from one edge of the skein to the other so as to uniformly cross each other all over the respective layer, substantially as and for the purpose described.



610,402. **ELECTRIC SWITCH.** RUDOLF L. L. HUNDHAUSEN, Wilmersdorf, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Dec. 31, 1897. Serial No. 665,077. (No model.) Patented in Germany Oct. 12, 1895, No. 90,490.



Claim.—1. In an electric switch, the combination with a movable contact part, of a second contact part with which it is adapted to engage, the relatively-movable actuating part *k* having an inclined face, the coacting roller *l* engaging said face and a spring *g* associated with said movable contact part and adapted to secure its sudden engagement with and its disengagement from the second contact part, substantially as described.

2. The combination in an electric switch with tilting contact part *e* adapted to be moved into and out of engagement with a terminal of the controlled circuit of an actuating part *k*, provided with inclined faces, associated with the tilting contact part, a spring *g* connected with said contact part and adapted to be placed under tension upon each movement of the contact part whereby the spring is caused to effect the sudden connection and disconnection of the tilting contact part with the circuit-terminal of the switch, substantially as described.

3. The combination with the movable contact part *e*, of a switch terminal or terminals with which it is adapted to close circuit, an actuating part *k* provided with inclined faces associated with said contact and a spring *g* connected with contact *e*, adapted to be placed under tension upon each movement of the contact part whereby the controlled circuit is suddenly opened or closed upon the rotation of the actuating part, substantially as described.

4. In an electric switch, the combination with the tilting contact *e*, of a spring *g* adapted to force the same upward, a rotatable actuating part *k* associated with the said contact part opposing the force of said spring, the said contact part *k* having an inclined face, the position of which controls the movement of the tilting contact, and a post *k'* or equivalent part adapted upon rotation of part *k* to direct the movement of the tilting contact part into or out of engagement with a circuit terminal, whereby the cootrol of the connected circuit is effected, substantially as described.

5. In an electric switch, the combination with the laterally-movable contact *e* adapted to be actuated into and out of engagement with the circuit-terminals of said switch, of a compression-spring *g* associated with the said contact, a rotatable actuating part *k* having inclined faces, the relative position of which controls the movement of the said contact part, a recess l^3 adapted to maintain said contact out of engagement with the circuit-terminals, and a post *k'* associated with part *k* adapted to direct said movement of the tilting contact *e* into and out engagement with the circuit-terminals of the switch, substantially as described.

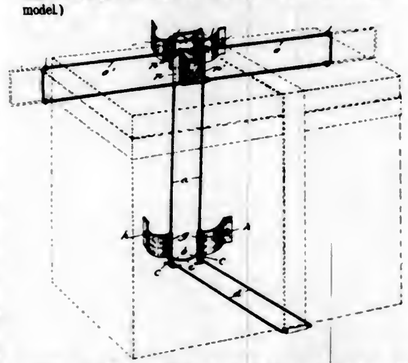
6. The combination in an electric switch with the vertically-disposed tilting contact part *e* of a rotatable actuating part *k* having inclined faces superposed above the contact part, a spring *g* adapted to force said contact part *e* upward and against the inclined faces and to be placed under tension upon each movement of the part whereby the latter is suddenly tilted toward or from the vertical and a circuit terminal or terminals adapted to be engaged and disengaged by the tilting contact upon successive movements thereof, substantially as described.

610,403. **HARNESS-SADDLE LOOP.** OSCAR KLAUSMAN, Bridgeport, Conn. Filed Jan. 4, 1898. Serial No. 665,553. (No model.)

Claim.—The combination with a harness-saddle, of a loop comprising a top plate *a* having extended ends with holes therethrough, a base-plate *d* beneath said loop-plate and provided with holes to register with those of the top plate, a yoke *f* bearing upwardly-extended threaded ends penetrating said harness-saddle and passing through the opening in said plates, nuts to fit on the threaded ends of said yoke and bearing shoulders to engage the holes of said plates in a manner to clamp the same, substantially as shown and described.



610,404. **PACKAGE-CARRIER FOR BICYCLES.** DAVID G. KEITEL, Pittsburg, Pa. Filed Sept. 13, 1897. Serial No. 651,427. (No model.)



Claim.—1. In a luggage-carrier, an upright frame, clamps secured to said frame whereby the same may be secured to a bicycle or the like, a sliding plate carried by said frame, extensible horizontal frames having one of their ends secured to plates, said plates being rotatably secured to the sliding plate whereby the said horizontal frames can be folded into aliuement with the upright frame, substantially as shown and described.

2. In a luggage-carrier, an upright frame having clamps for attaching the same to a bicycle or the like, a sliding plate carried by said frame, an extensible horizontal frame fulcrumed to said plate and a base-frame adapted to fold into alinement with the upright frame substantially as shown and described.

610,405. **SEAL.** FRANÇOIS R. LACOSTE, Bordeaux, France. Filed Dec. 24, 1897. Serial No. 663,420. (No model.) Patented in France July 28, 1896, No. 258,297.



Claim.—1. A seal for casks, barrels and the like, having teeth adapted to take hold of the article to which it is to be attached, said teeth being undulated or waving in cross section, substantially as described.

2. A seal for casks, barrels and the like, with an edge which is forced into the cask, having projections or teeth and a flange connecting and strengthening said teeth, said teeth and flange being of an undulated or waving cross-section, substantially as described.

610,406. **RESISTANCE AND CONTACT APPARATUS FOR ELECTRIC CURRENTS.** HENRY LYON, Glasgow, Scotland, assignor of one-half to the D. Stewart & Company, Limited, same place. Filed July 6, 1898. Serial No. 685,279. (No model.)

Claim.—1. In electric contact and resistance apparatus, combining two jars partly filled with a resistance liquid, and having at the bottom metal cups connected to a main conductor, with two cones, one in each jar, suspended from opposite sides of a pulley the turning of which raises one cone and lowers the other, the cones being connected by wire coils to separate conductors, substantially as and for the purposes herein set forth.



2. The combination comprising two or more pairs of jars, each jar being partly filled with a resistance liquid and having at the bottom a metal cup connected to a main conductor, also, a horizontal shaft extending above the jars and along midway betwsen the individual jars of the several pairs, the said shaft having on it pulleys, one for each pair of jars, also suspended from each side of each pulley a metal cone which by the turning of the pulley descends or rises in each jar, the cones being connected to separate conductors, also, a handle fitted to each pulley with means for fixing and loosening the pulley on the shaft, and also means for turning the shaft and thereby simultaneously turning all the pulleys on the shaft or as many as are fixed thereon, all substantially as and for the purposes herein set forth.

610,407. **GATE.** JACOB O. MAREE, Urbana, Ill. Filed Feb. 15, 1898. Serial No. 670,423. (No model.)



Claim.—1. The combination with a hinged gate and a keeper, of a pivoted latch to engage the keeper, having an arm connected with the gate-operating mechanism and a guide-arm embracing an upright of the gate, substantially as set forth.

2. The combination with a support and a gate, of a socket-piece projecting from one of said parts and a hollow shank projecting from the other part, said socket-piece having a lubricant-chamber therein below the hollow shank and adapted to communicate with said hollow shank said lubricant-chamber having a permanently-closed lower end, substantially as set forth.

3. The combination with a support and a gate, of an internally-screw-threaded socket on one part, a hollow externally-screw-threaded shank on the other part adapted to enter the socket and to receive lubricating material, substantially as set forth.

4. The combination with a gate-post and a gate hinged thereto, of a lever pivotally supported by the post and adapted to move horizontally, a bell crank lever pivotally attached to said first-mentioned lever, an arm on the latter to limit the movements of the bell-crank lever, operating-levers and rods connecting said operating-levers and the respective arms of the bell-crank levers, substantially as set forth.

5. The combination with a gate-post and a gate hinged thereto, of a horizontal lever pivotally supported by the post, a sleeve pivotally attached to the gate and adapted to loosely receive the end of the horizontal lever, an arm at the rear end of the horizontal lever, a bell-crank lever pivotally supported by the horizontal lever in proximity to said arm, an L-shaped latch-lever for the gate, a rod attached to said latch-lever, a guide for said rod, a spring encircling said rod and attached to said guide and to the rod, flexible connections between the rear end of said rod and the respective arms of the bell-crank lever, vertically-disposed operating-levers, and rods connecting said operating-levers with the respective arms of the bell-crank lever, substantially as set forth.

6. The combination with a gate-post and a gate hinged thereto, of a horizontal lever pivotally supported between its ends by said post and having a pivotal sliding connection with the gate, an upwardly-projecting arm at the rear end of said horizontal lever, a boss on said horizontal lever near said upwardly-projecting arm, a bell-crank lever pivotally attached at the juncture of its two arms, to said boss, an oil-chamber in said boss, for the bell-crank lever, operating-levers and connections between said operating-levers and the respective arms of the bell-crank lever, substantially as set forth.

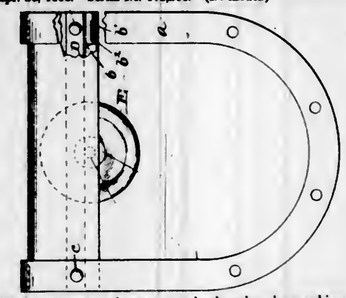
7. The combination with a gate-post and portions of hinges secured thereto, of a gate comprising a series of rods, unions securing said rods together, the unions at the inner end of the gate having the other parts of the hinges made integral therewith, and oil-chambers in said hinges having closed lower ends, substantially as set forth.

610,408. **STOPPER FOR JARS, BOTTLES, CANS, OR OTHER VESSELS.** EDWARD A. MATTHIAS, Liverpool, and WILLIAM H. HARRISON, Manchester, England. Filed June 21, 1898. Serial No. 684,053. (No model.)



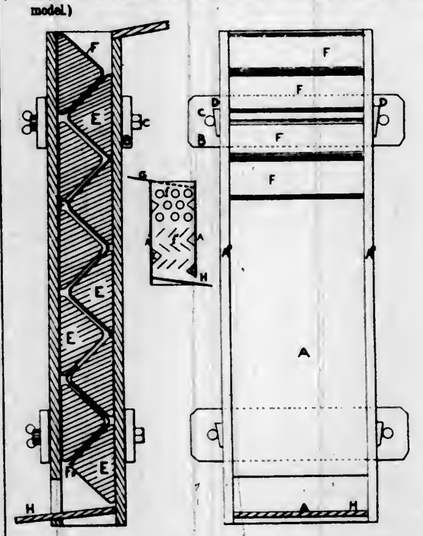
Claim.—A bottle-stopper having two parts, a ring *d* held by said two parts, one part (*b*) having a slot *g* and an extended portion passing through an aperture in the other part (*c*), and a spring in said slot, the ends of which are adapted to bear on the part *c* to bulge the ring *d*, substantially as described.

610,409. **DOOR-HANGER.** EDWARD Y. MOORE, Cleveland, Ohio, assignor to the Moore Manufacturing Company, same place. Filed Apr. 20, 1898. Serial No. 678,368. (No model.)



Claim.—In a door-hanger, a wheel and axle combined with a sheet-metal cover of an inverted-trough shape and bent near its bottom edges into the form of a channel, the intermediate portion of which is outward and receives the ends of the axle, but the end portions of which are separated by a transverse cut from said outward bend and are bent inward, whereby the rigidity of the cover is increased, and stops are formed by the inward bend to limit the travel of the wheel-axle, substantially as described.

610,410. **GOLD-SAVING APPARATUS.** WILLIAM MORTON, Dunedin, New Zealand. Filed Nov. 29, 1897. Serial No. 660,150. (No model.)



Claim.—1. In a gold-saving apparatus the combination with a box or casing formed in two substantially similar, separable portions, each having a series of triangular blocks arranged to alternate with a like series in the other part, an amalgamated plate of zigzag form arranged in the narrow passage formed between the angular faces of the alternating blocks by bringing the two portions of the apparatus together, thereby forming a zigzag, narrow channel on each side of said amalgamating-plate, and means for clamping the two parts of the box, substantially as described.

2. In a gold-saving apparatus, the combination with a box, or casing, formed in two similar parts, each provided with a series of triangular blocks arranged transversely across its inner face and arranged to alternate with the series in the other part the two exposed faces of said blocks being covered by gold-saving plates an intermediate gold-saving plate of zigzag form arranged in the channel formed between the two series of blocks by bringing the two parts of the box together, thereby forming a narrow zigzag passage on each side of the intermediate plate, removable sides for the box having their interior faces covered with cloth, and means for clamping the two parts of the box, substantially as described.

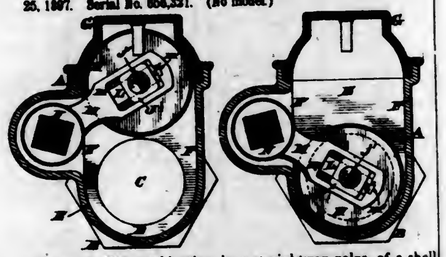
610,411. SHADE-ROLLER SUPPORT. FRANK PELAN, Sioux City, Iowa. Filed Mar. 21, 1898. Serial No. 674,643. (No model.)



Claim.—1. A device for supporting shade-rollers, consisting of the body portion having pivotal hooks as described, a sliding block mounted to travel longitudinally in an aperture in the said body portion, and the disks carrying hooks, one of which disks is stationary, the other mounted on the sliding block, as shown and described.

2. In a shade-roller bracket, the body portion, which has an elongated aperture near one end, the longitudinal edges of which are grooved, the sliding block, having tongues adapted to travel in said grooves, a hook-carrying disk secured to the said block, a spring connected at one end to the said block, the other end to the inner end of the apertured portion, and the stationary disk carrying a hook at the opposite end of the body portion, substantially as shown and described.

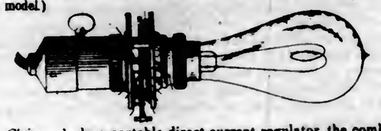
610,412. STRAIGHTWAY VALVE. JAMES POWELL, Cincinnati, Ohio, assignor to the William Powell Company, same place. Filed Oct. 25, 1897. Serial No. 656,321. (No model.)



Claim.—1. The combination, in a straightway valve, of a shell having a pair of channels, a chamber provided with a guide and a valve-seat, a longitudinally-slotted lever whose free end vibrates within said chamber, a slotted slide traversing the lever-slot and having a circular side opening; a detachable expander fitted within said slide and lever, and a valve having a pivot inserted in said side opening, and adapted to be forced outwardly by said expander, in the manner described, and for the purpose stated.

2. The combination, in a straightway valve, of a shell having a pair of channels C, C, a chamber E, provided with a pair of duplicate guides F, F, F', F', and valve-seats D, D', a vibrating lever M, slotted longitudinally at *m*, and having a groove *m'*, at one end of said slot; a slide J traversing said slot *m*, and provided with side openings *j*, *j'*, and a longitudinal slot K; a detachable expander L, *l*, *l'*, fitted within said slide and lever, and a pair of valves H, I, having pivots *h*, *i*, inserted within said openings *j*, *j'*, and bearing against said expander, for the purpose stated.

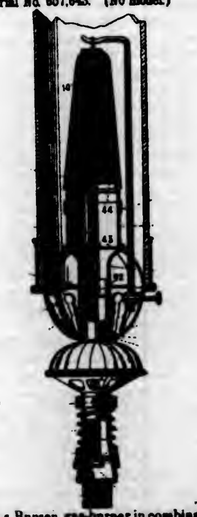
610,413. DIRECT-CURRENT REGULATOR. FREDERICK R. RAMSAY, Walsenburg, Colo. Filed Jan. 28, 1898. Serial No. 668,333. (No model.)



Claim.—1. In a portable direct-current regulator, the combination with a pair of insulating-disks, and a socket and tap extending oppositely from said disks, of a resistance-circuit spirally arranged upon one of the disks, a series of contact-plates constituting portions of the resistance-circuit, one of said plates being in direct electrical connection with one of the terminals of the socket, and a longitudinally-movable switch-rod in electrical connection with one of the terminals of the tap and designed to make electrical connection with either of the contact-plates in the resistance-circuit, substantially as specified.

2. In a portable direct-current regulator, the combination with a pair of insulating-disks, of a tap extending from one of the disks, a socket extending from the opposite disk, a contact-rod constituting one of the terminals of both the socket and tap, sleeves constituting the other terminals of the socket and tap, a resistance-circuit comprising a spirally-arranged resistance-coil upon the inner face of one of the disks, a radially-disposed series of contact-plates constituting portions of the resistance-circuit, the contact-plates located at the inner end of the series being in direct electrical connection with the sleeves of the socket, a longitudinally-movable push-rod provided with a contact-block designed to contact with the contact-plates, and a spring bearing upon the switch-rod and in direct electrical connection with the sleeves of the tap, substantially as specified.

610,414. GAS-BURNER. FRANK REHM, Bridgeport, Conn., assignor of one-half to The Bridgeport Brass Company, same place. Filed Nov. 6, 1897. Serial No. 657,643. (No model.)



Claim.—1. In a Bunsen gas-burner in combination a tubular conical burner-base, a non-integral diaphragm secured within said base,

apertures pierced through the wall of said base above and below said diaphragm, a recessed collar rotatable on said base and adapted to connect or close said apertures, a mixing-chamber above said base and a pilot-tube connected to said diaphragm and adapted to convey a continuous supply of gas to the point of ignition of mingled gas and air at the free end of said mixing-chamber, substantially as described.

2. In a Bunsen gas-burner in combination a tubular conical burner-base, a non-integral diaphragm secured within said base, apertures pierced through the walls of said base above and below said diaphragm, a recessed collar rotatable on said base and adapted to connect or close said apertures, a mixing-chamber above said base, a pilot-tube connected to said diaphragm and adapted to convey a continuous supply of gas to the point of ignition of mingled gas and air at the free end of said mixing-chamber, and means substantially as described for retaining said collar rotatably on said base.

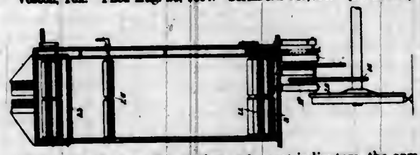
3. In a Bunsen gas-burner in combination a tubular burner-base, a diaphragm having a laterally-pierced depression secured in said base, apertures pierced in the wall of said base above and below said diaphragm, a recessed collar rotatable on said base and adapted to connect or close said apertures, a mixing-chamber above said base, a pilot-tube adapted to convey a continuous supply of gas to the point of ignition of mingled gas and air at the free end of said mixing-chamber adjustably secured in the recess in said diaphragm and means for adjusting said tube so as to partially cover the aperture in said recess, substantially as described.

4. In a Bunsen gas-burner in combination a burner-base, a chamber above said base having a vertical tubular portion, a removable mixing-chamber detachably engaging said tubular portion and a transversely-divided pilot-tube the lower part of which is secured within said base and said tubular burner portion and the upper part of which is secured within said removable mixing-chamber, the upper end of the lower part of said pilot-tube being below or substantially at the upper end of said tubular portion whereby said pilot-tube is protected from injury during the removal or replacement of said removable chamber, substantially as described.

5. In a Bunsen gas-burner in combination a tubular burner-base, a diaphragm secured within said base, apertures pierced through the wall of said base above and below said diaphragm, a recessed collar rotatable on said base and adapted to connect or close said apertures, a chamber above and secured to said base having a vertical tubular portion, a removable mixing-chamber detachably engaging said tubular portion and a transversely-divided pilot tube the lower part of which is secured within said base and said tubular burner portion and the upper part of which is secured within said removable mixing-chamber, the upper end of the lower part of said pilot-tube being below or substantially at the upper end of said tubular portion whereby said pilot-tube is protected from injury during the removal or replacement of said removable chamber, substantially as described.

6. In a Bunsen gas-burner in combination a tubular burner-base, a diaphragm secured within said base, apertures pierced through the wall of said base above and below said diaphragm, a recessed collar rotatable on said base and adapted to connect or close said apertures, a chamber above and secured to said base having a vertical tubular portion, a removable mixing-chamber detachably engaging said tubular portion, a transversely-divided pilot-tube the lower part of which is rotatably secured within said base and said tubular burner portion and the upper part of which is secured within said removable mixing-chamber, and means substantially as described for preventing the rotation of said removable chamber on said tubular portion while the parts of said divided pilot-tube are being engaged.

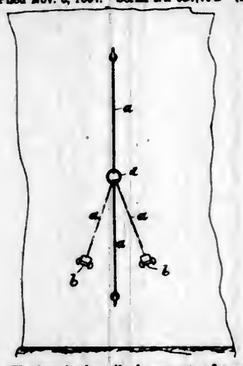
610,415. STATION-INDICATOR. ALEXANDER H. ROGERS, Galveston, Tex. Filed Aug. 26, 1897. Serial No. 649,360. (No model.)



Claim.—1. In automatic station and street indicators, the combination of a casing, an endless apron mounted within the casing, a gripping or pressing roller arranged above the glazed opening in the casing, means for releasing the apron from its driving-roller, and means as a crank or lever for turning the gripping-rollers above the opening for adjusting and properly placing the apron, substantially as described.

2. In a station and street indicator and advertising device, the combination of an endless apron carrying the directions and advertising matter, suitable supports upon which said apron is mounted, a rocking shaft having a projection arranged athwart the passage of the apron, brackets or projections on the apron, an alarm mechanism, and intermediate connections between the alarm mechanism and the rocking shaft, substantially as described.

610,416. EXERCISING-MACHINE. EUGEN SANDOW, London, England. Filed Nov. 8, 1897. Serial No. 657,794. (No model.)



Claim.—1. The herein-described apparatus for muscular or physical development, consisting of a plurality of cords, with counteracting devices attached thereto, and handles weighted to constitute dumb-bells connected to said cords whereby a combined strain acting simultaneously on the muscles can be obtained, partly such as that produced by a dumb-bell, and partly such as that produced by a cord exerciser, substantially as set forth.

2. The herein-described apparatus for muscular or physical development, consisting of a plurality of cords, with counteracting devices attached thereto, and handles provided with alterable weights thereon to constitute dumb-bells attached to said cords, substantially as and for the purpose set forth.

3. The herein-described apparatus for muscular or physical development, consisting of elastic cords, a central device to which said cords are attached, counteracting springs connected to and supporting said central device, and handles weighted to constitute dumb-bells attached to said cords, substantially as and for the purpose set forth.

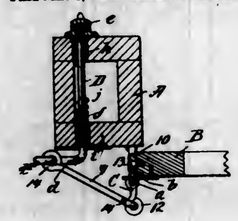
4. The herein-described apparatus for muscular or physical development, consisting of elastic cords, a central device to which said cords are attached, counteracting springs connected to and supporting said central device, and handles provided with alterable weights thereon to constitute dumb-bells attached to said cords, substantially as and for the purpose set forth.

610,417. GUNPOWDER AND PROCESS OF MAKING SAME. ARMERY SIDDLETON, Richland, Iowa. Filed Apr. 24, 1897. Serial No. 633,733. (No specimens.)

Claim.—1. A powder consisting of wood-dust, chlorate of potash, sugar, and paraffin put together in substantially the quantities specified.

2. A process for making powder consisting of first cutting soft wood into sawdust, then grinding said sawdust into a powder, then dissolving chlorate of potash in boiling water, then adding to the chlorate and water sugar and paraffin, dissolving the said sugar and melting the paraffin, then adding the powder from the wood-dust and boiling down to a thick pulp, then graining and drying by any suitable means.

610,418. SHUTTER-WORKER. HENRY SUMMERHOUTS, Jr., Holyoke, Mass. Filed June 1, 1898. Serial No. 682,283. (No model.)

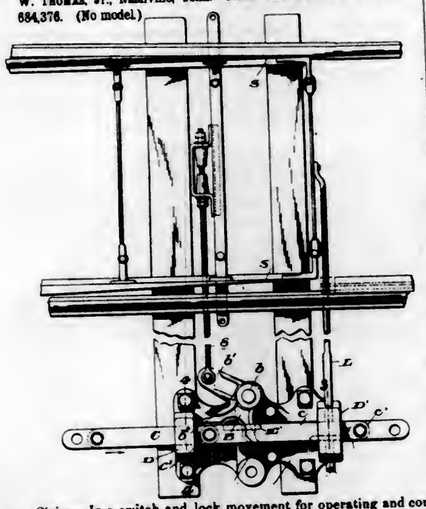


Claim.—1. The combination with the window-casing provided with a horizontal rock-shaft having at its outer end a lever-arm *d* adapted to swing in a vertical plane parallel with the outer side of the building, and provided at its inner end with a means for rocking it, of the hinged blind having at its inner edge the lever or lug C horizontally projecting substantially radially from the axis of the blind-hinge, the link *g* connecting the lever-arm and said part C, and a retracting-spring against the force of which said rock-shaft is oscillated, all whereby the opened or closed blind may, by the rocking motion manually imparted to the shaft in a given direction against the force of its spring, swing the blind to, and slightly past its position at right angles to the side of the building, the reaction of the spring through said connecting parts then completing the movements of the blind to the position the reverse of that which it originally occupied, substantially as described.

2. The combination with the window-casing provided with a horizontal rock-shaft having at its outer end a lever-arm *d* adapted to swing in a vertical plane parallel with the other side of the building, and provided at its inner end with a means for rocking it, of the hinged blind having secured at its inner edge the fixed eye-provided lever or lug C horizontally projecting substantially radially from the axis of the blind-hinge at right angles beyond the face of the blind, the plate *b* secured on the face of the blind through which an intermediate part of said lug C extends, the liuk *g* connecting the lever-arm and said part C and a retracting-spring against the force of which said rock-shaft is oscillated, all whereby the opened or closed blind may, by a rocking motion manually imparted to the shaft in a direction against the force of its spring, swing the blind, to, and by the momentum slightly past, its position at right angles to the outer side of the building, the reaction of the spring through said connecting parts, then completing the movement of the blind to the position the reverse of that which it originally occupied, substantially as described.

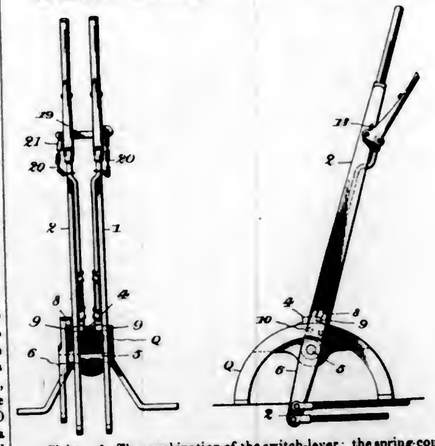
3. The combination with the window-casing having a shaft D mounted for a rocking motion therein, and extended from the inside to the outside thereof, and provided at its outer end with a lever extension terminating in an eye d^2, all integrally constituted by bent portions of the rock-shaft, and a retracting-spring applied to said rock-shaft, against the force of which the shaft has its rocking motion, of the hinged blind, the lever or lug C provided at its end with the eyes 10 and 12, the one 10 lying against the edge of the blind and having a confining-screw 13, whereby it is rigidly affixed to the blind, and said lever being extended beyond the face of the blind, the plate *b* secnred on the face of the blind, and projected beyond the edge, and serving as a steadying means for the said lever-like part C, which projects through said plate, and the link *g* having the end eyes 14, 14, respectively engaging the eye d^2 of the rock-shaft lever, and the eye 12 of said part C, all arranged for operation, substantially as shown and explained.

610,419. RAILWAY SWITCH AND LOCK APPARATUS. JOHN W. THOMAS, Jr., Nashville, Tenn. Filed June 24, 1898. Serial No. 684,376. (No model.)



Claim.—In a switch and lock movement for operating and controlling railway-switches, a slide composed of top and bottom bars secured together at a proper interval apart, and locking dogs or plungers mounted upon the upper face of the under bar of the slide, in the interval or space between the two bars, in combination with a base provided with solid end bearing-blocks formed with openings for the guidance and support of the slide which passes through them, one of said bearing-blocks being formed also with an additional passage crosswise of the path of movement of the slide to accommodate the locking-bar which is to be engaged by the locking-dogs on the slide, these parts being constructed and arranged together substantially as and for the purposes hereinbefore set forth.

610,420. MECHANISM FOR OPERATING RAILWAY-SWITCHES. JOHN W. THOMAS, Jr., Nashville, Tenn. Filed July 16, 1898. Serial No. 686,200. (No model.)



Claim.—1. The combination of the switch-lever; the spring-controlled latch-lever and its latch; the quadrant; the switch-points, the permanent spring-yielding connection between the switch-points and the switch-lever; the intermediate lever 6 provided with a notch or slot arranged in the path of movement of and adapted to be engaged by, the latch when the latter is lifted out of engagement with the quadrant; and a stiff connection between the switch-points and the intermediate lever 6, independent of and separate from the spring-yielding connection between the switch-points and the switch-lever, substantially as and for the purposes hereinbefore set forth.

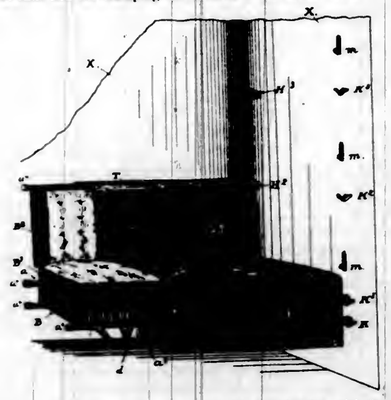
2. The combination of the switch-lever; the spring-controlled latch-lever and its latch; the quadrant; the switch-points; the intermediate lever 6 provided with a portion which overhangs the latch and is slotted or notched to receive and engage the latch when the latter is lifted out of engagement with the quadrant; and a connection between the intermediate lever 6 and the switch-points, substantially as and for the purposes hereinbefore set forth.

610,421. CONVERTIBLE BERTH AND SETTEE FOR SHIPS. THOMAS R. TURNER, San Francisco, Cal. Filed May 13, 1898. Serial No. 680,569. (No model.)

Claim.—1. The herein-described convertible berths and settee for ships, comprising the independent berth-frames A A' A^3 each having side rails with projecting ends, header-rails uniting the side rails, lee-rails adapted to fold down against the frame, and a yielding bed-bottom; the rear brackets H H' H^1 H^3, having each an enlarged recess or socket with a surrounding flange k and an opening in the top through said flange leading into the recess to admit the end of the side rail, said brackets being secured to the sides of the berth-room at distances apart as described; the front supports K K' K^3 K^4 secured in position in front of and opposite to the rear brackets and adapted to support the said berths at the front; and the sockets for the lee-rails of the berth frames arranged for operation as described; whereby the three berth-frames when placed in the brackets one over the other form three berths, or when assembled and stowed away in the sets of supports H K H' K', H^3 K^3 two of the berth-frames form the seat-frame, and the third berth-frame the back of the settee.

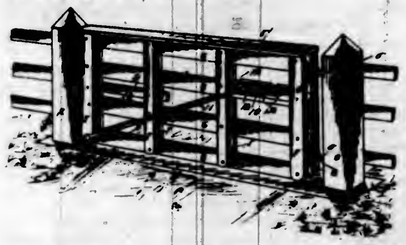
2. In convertible berths, a berth-frame having a straight side rail on one side, a drop-rail on the opposite side, header-rails at head and foot uniting the side rails, a yielding bed-bottom stretched between the header-rails and the spiral springs interposed between the drop-rail and the said bed-bottom along the edge thereof, as set forth.

3. The combination of the tubular metal side rails having slotted ends, header-rails of angle-iron having cut away portions fixed in the slotted ends of the side rails, the wire mattress stretched over the header-rails and the clamping-bars bolted to the header rails.



4. In convertible berths and settee the combination with the sets of rear brackets H H× H^4 and front sockets K K× K^3; of the two berth-frames each having one side rail of its frame provided with a downwardly-bent middle portion, whereby the frames are supported by the said sets of brackets and sockets in one position to form a double berth and in another position to form single berths one over the other.

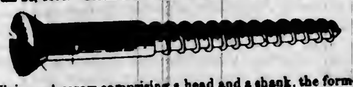
610,422. GATE. LORIN C. TYLER, Alexandria, Ohio. Filed Feb. 18, 1898. Serial No. 670,803. (No model.)



Claim.—1. A gate embracing in combination, longitudinally-disposed, horizontal bars, and vertical braces, one of the bars having notches formed therein at the rear portion thereof, reinforcing-pieces on the notched bar, hinges for supporting the gate, and a sustaining-loop having its front end pivoted to the lower front portion of the gate and its other end arranged to engage the notches in the notched bar and reinforcing-pieces, substantially as described.

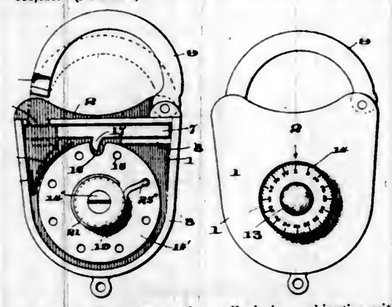
2. The combination of a gate composed of movably-connected parts and comprising longitudinally-disposed horizontal bars and vertical braces, the bar next to the topmost bar having notches formed therein at the rear portion thereof between the rear braces and the next succeeding ones toward the front, reinforce-pieces on the said notched bar, means for supporting the gate, and a sustaining-loop having its front end pivoted to the lower portion of the gate and its rear free end confined in the space over the notched bar by the adjacent braces and the uppermost bar, and adapted to engage the notches in said notched bar, substantially as described.

610,423. SCREW. JOHN VAN OSBERN, Evanston, Ill. Filed Jan. 26, 1898. Serial No. 668,063. (No model.)



Claim.—A screw comprising a head and a shank, the former having vertical slots on opposite sides of its center with a solid central portion between said slots forming a continuation of the shank and having straight vertical walls, and the latter provided with vertical grooves arranged in line with said slots and forming continuations thereof, substantially as described.

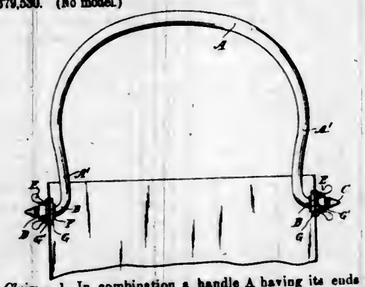
610,424. PERMUTATION-PADLOCK. WILLIAM F. WIBLE, Gettysburg, Pa. Filed Feb. 1, 1897. Renewed June 16, 1898. Serial No. 683,625. (No model.)



Claim.—1. In a permutation-padlock, in combination with the turning-knob and locking-bolt, a series of notched and perforated tumblers each provided with a hub, a spring coiled on each of said hubs and adapted to engage with the coil on the adjacent hub for the purpose of causing a proper alinement of the tumblers through the rotation of said knob, substantially as described.

2. The combination with the casing, its flange and the locking-bolt and means for actuating said bolt, of the removable cover-plate provided on its inner face with lugs which act as a guide for the locking-bolt, and as means for locking the said cover and bolt together, substantially as described.

610,425. HANDLE FOR KEROSENE-TINS OR THE LIKE. THOMAS B. ABBOTT, Sale, Victoria. Filed May 2, 1898. Serial No. 679,530. (No model.)



Claim.—1. In combination a handle A having its ends turned outwardly at right angles to portion A' such ends carrying fixed flange F and having threaded portion D beyond such flange and pointed extremities C, thumb-nut E substantially as and for the purposes set forth.

2. In combination a handle A, having its ends turned outwardly at right angles to portion A' such ends carrying fixed flange F, loose disk or strengthening-piece G, means for securing same to tin, threaded portion D beyond such disk and pointed extremities C, thumb-nut E substantially as and for the purposes set forth.

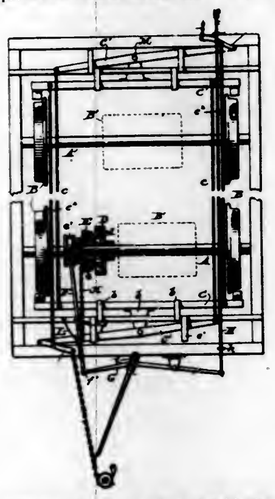
610,426. BRAKE. HARRY W. ALBRIGHT, York, Pa., assignor of one-half to Joseph A. Stoner, same place. Filed May 14, 1898. Serial No. 681,537. (No model.)

Claim.—1. The combination with a brake-staff, of a friction-clutch on one of the axles, brake levers and beams, and connections between said brake-staff, friction-clutch and brake-beams, whereby the manipulation of the brake-staff first actuates the brake-beams, and a further movement thereof throws the friction-clutch into action, causing the latter to react and apply the brakes with greater force, substantially as described.

2. The combination with an ordinary hand-brake, of a friction-clutch mounted upon one of the axles, a system of levers for simultaneously operating the clutch and brakes, toggle-levers arranged to actuate the clutch, and brake-rods having a loose connection and a limited play with respect to the operating-levers and toggle-levers, whereby the hand-brakes may be applied independently of the friction-clutch, substantially as described.

3. The combination with an ordinary hand-brake and a friction-clutch on one of the axles, of a system of levers for operating the clutch and brakes, a connection between the point of application of

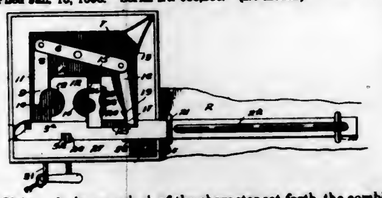
power and the brakes, a connection between said point and the clutch-operating levers, the latter connection having a limited play with respect to the clutch-operating levers and a loose connection therewith, and a chain connected to one of said levers and also to the movable part of the friction-clutch, substantially as described.



4. The combination with an ordinary hand-brake, of a friction-clutch on one of the axles, a system of levers for operating both the clutch and brakes, a connection between the brake-staff and one of the levers having a limited play and being loosely attached to said lever, a chain connected to one of said levers and to the movable part of the friction-clutch, a second chain connecting the brake-staff and one of said levers, and pawl-and-ratchet mechanism for holding the chain taut, substantially as described.

5. The combination with an ordinary hand-brake for cars, of a friction-clutch on one of the axles, comprising fixed and movable members, a system of levers for operating both the clutch and brakes, a rod having a loose connection and a limited play with respect to one of the levers, a chain connected to one of the levers and to the movable part of the friction-clutch, a second chain connecting the brake-staff and one of said levers, a pawl-and-ratchet mechanism for holding the chain taut, and a spring for holding the friction-clutch normally out of operation, substantially as described.

610,427. CAR-DOOR LOCK. JOHN M. BEDFORD, Millersburg, Ky. Filed Jan. 10, 1898. Serial No. 666,200. (No model.)



Claim.—1. In a car-lock of the character set forth, the combination with a sliding bolt attachable to a car-door, of a lock proper applicable to the car-body and comprising a suitable casing, a pivoted lever mounted therein, a sliding locking-bolt mounted upon one end of said lever to engage the said sliding bolt and hold it within said lock, and a dog pivoted to the opposite end of said lever and means for holding the said locking-bolt out of the path of the sliding bolt, substantially as described.

2. In a car-door lock of the character set forth, the combination with a sliding bolt attachable to a car-door and provided at one end with a bolt-receiving recess, of a lock proper applicable to a car-body and comprising a suitable casing, a lever pivoted therein, a locking-bolt mounted on one end of said lever and adapted to engage the recess in said sliding bolt, a dog pivotally mounted upon the opposite end of said lever a notched block for engagement by said dog to hold the pivoted lever in its adjusted position, and a key for releasing said locking-bolt, substantially as described.

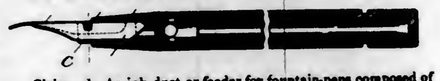
3. In a car-door lock of the character set forth, the combination with a suitable sliding bolt attachable to a car-door, of a lock proper applicable to the car-body and comprising a suitable casing, and a spring-pressed pivoted lever mounted in said casing, of a pivoted spring-pressed dog attached to said lever and adapted to hold it in its shifted position, a locking-bolt pivoted to said lever and adapted to engage the said locking-bolt to lock it in position within the casing, and means for releasing said locking-bolt from the sliding bolt, substantially as described.

4. In a car-door lock, the combination of a sliding bolt attachable to a car-door and formed with a bayonet-slot in one edge thereof, means for securing said bolt, a sealing device comprising a sealing-pin having a head to enter the bayonet-slot, and revoluble to lock said pin in the bolt, and an exterior sealing-head upon said pin, substantially as described.

5. In a car-door lock of the character set forth, the combination with a sliding bolt attachable to a car-door and provided with a locking-bolt-receiving recess, of a lock proper applicable to a car-body and comprising a suitable casing, a spring-pressed lever pivoted in said casing, a spring-pressed dog pivoted to one end of said lever, a notched block for engagement by said dog, a locking-bolt pivoted to the opposite portion of said lever and adapted to enter the recess in said sliding bolt to lock the latter in position, and a key for releasing the said locking-bolt, substantially as described.

6. In a car-door lock, the combination of a sliding bolt attachable to a car-door having an elongated recess in the upper portion thereof, means to engage the bolt and hold the same in position to prevent it from being revealed until properly released, sealing mechanism for said bolt, and an independent, supplemental locking bolt adapted to engage the recess in the upper portion of the slotted bolt to hold the bolt in locked position after the seal has been broken, substantially as described.

610,428. FOUNTAIN-PEN. CLARE W. BOSHAR, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed June 30, 1898. Serial No. 684,936. (No model.)



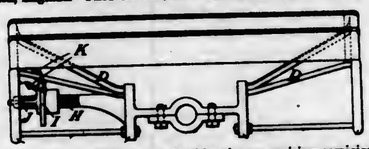
Claim.—1. An ink duct or feeder for fountain-pens composed of a longitudinally-slotted tube and a partition-like feed-tongue filling said slot and inserted in said tube, substantially as and for the purposes hereinbefore set forth.

2. An ink duct or feeder for fountain-pens composed of a longitudinally-slotted tube and a partition-like feed tongue filling said slot and inserted in said tube and dividing the interior of the latter longitudinally into a small channel *b*, and a relatively larger channel *c*, substantially as and for the purposes hereinbefore set forth.

3. An ink duct or feeder for fountain-pens composed of a longitudinally-slotted tube and a partition-like feed-tongue filling said slot and inserted in said tube, and having in its under edge a cross-cut or kerf *k*, substantially as and for the purposes hereinbefore set forth.

4. An ink duct or feeder for fountain-pens composed of a tube longitudinally slotted from its front end for a portion of its length, and a partition-like feed-tongue inserted in said tube filling said slot, and having a notched or cut-away rear and which passes beneath the uncut portion of the tube to the rear of the slot therein, substantially as and for the purposes hereinbefore set forth.

610,429. CYCLE-SADDLE. DOUGLAS M. R. H. COCHRANE, London, England. Filed Nov. 23, 1897. Serial No. 660,131. (No model.)



Claim.—1. A yielding seat for bicycles comprising semicircular ring-frames having a number of straps strained over them, a screw-threaded rod mounted on a seat-support, a sleeve sliding on said rod and operatively connected with the ends of said straps, and a nut on said rod engaging said sleeve whereby to adjust simultaneously the tension of all of the straps, substantially as described.

2. A yielding seat for bicycles comprising a supporting-rod having on opposite sides of its center a screw-threaded portion, sleeves slidably supported on either end of said rod and having extending upward therefrom ribs or bars supporting ring-frames, a series of straps strained over said ring-frames, and nuts engaging the screw-threads of said rod and bearing against said sleeves, whereby to adjust simultaneously the tension of all of the straps, substantially as described.

3. A yielding seat for bicycles comprising a supporting-rod having on opposite sides of its center a screw-threaded portion and beyond said screw-threads having squared ends, sleeves slidably supported on said squared portions and having cylindrical projections encircling said threads, ribs or bars extending upward from said sleeves and supporting ring-frames, a series of straps strained over said ring-frames, and nuts engaging the screw-threads of said rod and bearing against said sleeves, whereby to adjust simultaneously the tension of all of the straps, substantially as described.

610,430. CATTLE-GUARD. CHARLES G. CORBIN, Lawrenceburg, Ky., assignor of two-thirds to Jas. C. Vanzandell, same place, and John J. C. Bond, Harrodsburg, Ky. Filed May 23, 1898. Serial No. 681,600. (No model.)



Claim.—1. A cattle-guard for railways consisting of the tilting platform, a rod journaled beneath the rails, offsets in said rod, a figure secured to one of the offsets, and an angle-iron secured at one end to the platform, its other end resting under an offset, whereby as the platform is tilted, the figure is brought to an upright position, and allowed to fall by gravity, as set forth.

2. In combination with the tilting platform, the angle-iron secured thereto, the rod and figure mounted as set forth, the arms pivoted to the figure, bells carried by said arms, and means for throwing the arms out from the body of the figure as the latter is swung into an upright position.

3. In combination with the figure mounted as shown, and means for operating the same, the arms pivoted to the figure, the yoke and links pivoting the latter to the inner ends of the arms, and the cable connected at one end to the yoke, its other end to a fixed object, as set forth.

610,431. VALVE FOR PNEUMATIC TIRES. WILLIAM H. CROSSLEY, Bloomsburg, Pa., assignor of one-half to George W. Miffin, same place. Filed May 23, 1897. Serial No. 637,718. (No model.)



Claim.—1. The combination with a pneumatic tire, of a valve embedded in the center line of its tread, said valve having its inlet closed by a plug terminating flush with the outer surface of the tire, as set forth.

2. The combination with a pneumatic tire, of a valve provided at its outer end with an annular flange to engage the tread-surface of the tire and be flush therewith, a washer loosely fitting over the inner end of the valve to engage the inner face of the tire, and a nut threaded on the inner end of the valve to clamp the valve to the tire, substantially as described.

3. The combination with a pneumatic tire, of an inflating-valve consisting of a tube having an annular flange at its outer end to engage the tread portion of the tire and the inner end of the said tube being hemispherical and provided with an opening for the passage of air to the interior of the tire, said tube being interiorly threaded, an elastic ball supported within the tube at its lower end, and an adjustable plug within the tube above the ball to compress the latter, a stopper removably fitted in the outer end of the tube, and means to clamp the tube to the tire, substantially as described.

4. The combination with a pneumatic tire, of an inflating-valve firmly secured in the tire at its tread portion to be flush therewith, said valve having an interiorly-threaded tubular portion extending into the tire, the lower end of the tube being hemispherical in form and provided with an opening for the passage of air, a compressible ball supported within the tube at its lower end, and an adjustable threaded plug within the tube above the ball, said plug having a central air-passage and its lower end being concave to fit over the ball, and a removable screw-stopper to close the outer end of the valve, substantially as described.

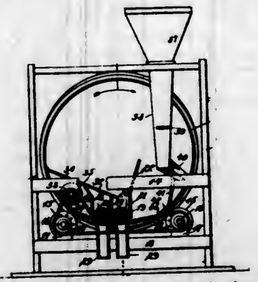
5. The combination with a pneumatic tire, of a valve secured in the tread portion of the tire, said valve consisting of a tube having an annular flange at its outer end to engage the outer face of the tire, and its lower end being hemispherical and provided with an opening for the passage of air, said tube being threaded interiorly and exteriorly, an elastic ball supported within the tube at its lower end, a threaded plug fitted in the tube above the ball and having its lower end concave to fit over the ball, said plug having a central air-passage and a transverse slot in its upper end, a screw-stopper to close the upper end of the tube, a washer to fit over the lower end of the tube and engage the inner face of the tire, and a nut on the inner end of the tube to engage the washer and clamp the valve in position, substantially as described.

6. The combination with a pneumatic tire, of a tubular valve-casing secured in the tread-surface of the tire to be flush therewith, a valve within the casing, and a solid plug removably secured within the outer end of the valve-casing to be flush with the outer end of the valve-case and the tread-surface of the tire and thus exclude dirt from the valve-casing, substantially as set forth.

7. The combination with a pneumatic tire, of a valve casing secured in an exposed part of the tire beyond the wheel rim and having its outer exposed part flush with said tire, a perforated valve-plug secured within the valve-casing, and a solid stopper-plug also secured wholly within the valve casing beyond the valve-plug therein and lying flush with the exposed edge of the valve-casing, whereby said stopper-plug excludes dirt from entering the valve-casing and it is prevented from protruding beyond the tire, as set forth.

8. The combination with a pneumatic tire, of a threaded valve-casing secured in a part of the tire exposed beyond the wheel-rim and having its flanged open mouth seated flush with said tire, a valve fitted within said casing, and a threaded, solid stopper-plug screwed into the valve-casing wholly within and independently of the valve therein to lie flush with the exposed flanged mouth of the valve-casing, and provided in its exposed face with means for the reception of a suitable tool to adjust the stopper-plug, substantially as and for the purposes described.

610,432. GRAIN-SEPARATING MACHINE. CLARENCE E. CULVER, Cashton, Wis. Filed Jan. 11, 1898. Serial No. 666,282. (No model.)



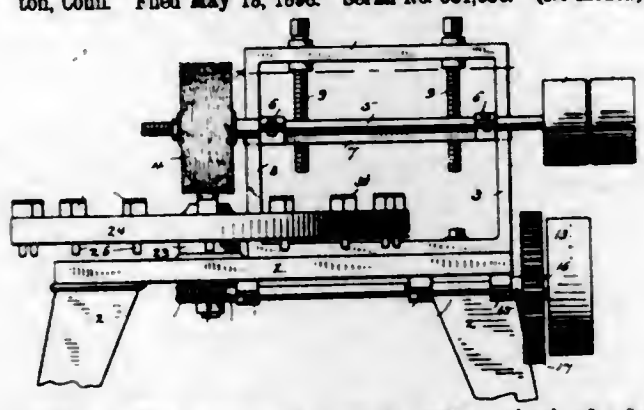
Claim.—1. In a machine for separating grain, the combination, with a cylinder mounted to rotate and having pockets formed in its inner face, a hopper provided with a delivery-spout, one end of which extends within the cylinder, and a packing-strip supported below the delivery end of the spout, the grain being adapted to be received between the packing-strip and the pocket-face of the cylinder, of a stationary trough located within the cylinder, a conveyer located within the said trough, an inclined table extending from a point near the inner face of the said cylinder into the said trough, a portion of the table being perforated or reticulated, a brush mounted to revolve below the said table and near the inner surface of the cylinder, and means, substantially as described, for driving the brush and conveyer, as and for the purpose specified.

2. In a machine for separating grain, the combination, with a cylinder mounted to rotate and having pockets formed in its inner face, a hopper provided with a delivery-spout, one end of which extends within the cylinder, and a packing-strip supported below the delivery end of the spout, the grain being adapted to be received between the packing-strip and the pocket-face of the cylinder, of stationary troughs located within the said cylinder, a screw conveyer mounted to revolve in each trough, a table extending from a point near the inner face of the cylinder over one of the troughs into the second trough, the said table being provided with a reticulated or

perforated surface where it passes over the first trough, a brush mounted to revolve below the said table and adjacent to the inner face of the cylinder, and means, substantially as described, for communicating motion to the brush and the said conveyer-shafts, as and for the purpose specified.

3. The combination with a frame or mount of a cylinder having pockets formed in its inner face carried to turn thereon, two stationary troughs projected into the cylinder and arranged in close proximity and parallel with each other, and a stationary table mounted in the cylinder and having one edge in close proximity with the inner surface of the cylinder, the table being inclined downward toward the troughs and being extended over the one trough so that the lower edge of the table discharges into the second trough and the table being perforated adjacent to the said first trough so that fine material may pass through the table into said first trough.

610,433. AUTOMATIC BUFFING-MACHINE. CHARLES H. CURTIS, Derby, Conn., assignor to the Birmingham Brass Company, Shelton, Conn. Filed May 18, 1898. Serial No. 681,036. (No model.)



Claim.—1. The combination with the buffing-wheel, of a feed-wheel, holders on the feed-wheel for articles to be buffed and means for raising each holder at the instant it passes under the buffing-wheel, said holders being also removably supported by the feed-wheel and adapted to be lifted therefrom or replaced during the rotation of said wheel.

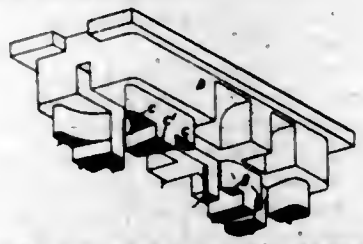
2. The combination with a buffing wheel, of a feed-wheel, holders by which the articles to be buffed are carried and which are provided with plungers extending through openings in the feed-wheel and a shoe adapted to be engaged directly by the lower end of each plunger at the instant the corresponding holder passes under the buffing-wheel so that an article upon the holder is placed in position to be acted upon by the buffing-wheel.

3. The combination with a buffing-wheel, of a feed-wheel having openings, holders provided with plungers which engage said openings and are guided thereby and an adjustable shoe lying in position to engage the plungers successively as the holders pass under the buffing-wheel.

4. In a machine of the character described the combination with a buffing-wheel, of a feed-wheel, removable holders on the feed-wheel by which the articles to be buffed are carried, each holder having a plunger extending through the feed-wheel, a shoe lying in position to be engaged by said plunger successively as the holders pass under the buffing-wheel, said shoe being provided with an ear which is pivoted to a plunger passing loosely through the bed and set-screws 34 by which either end of the shoe may be raised or lowered.

5. The combination with the buffing-wheel, of a feed-wheel lying at right angles thereto, holders in the feed-wheel each of which is provided with a clip to hold an article to be buffed, and an adjustable shoe by which the holders are raised in turn as they pass under the buffing-wheel, said holders being removably supported by the feed-wheel and adapted to be lifted therefrom or replaced during the rotation of said wheel.

610,434. MACHINE FOR MANUFACTURING WELDLESS CHAINS. JOSEPH M. DAVIS, Glasgow, Scotland. Filed June 9, 1897. Serial No. 640,091. (No model.)



Claim.—1. The combination of a pin mounted to move transversely, a pawl mounted to swing on the pin, and a link having a slot in which the pin is received and which permits the link to have limited independent movement on the pin, the link having connection with the free end of the pawl.

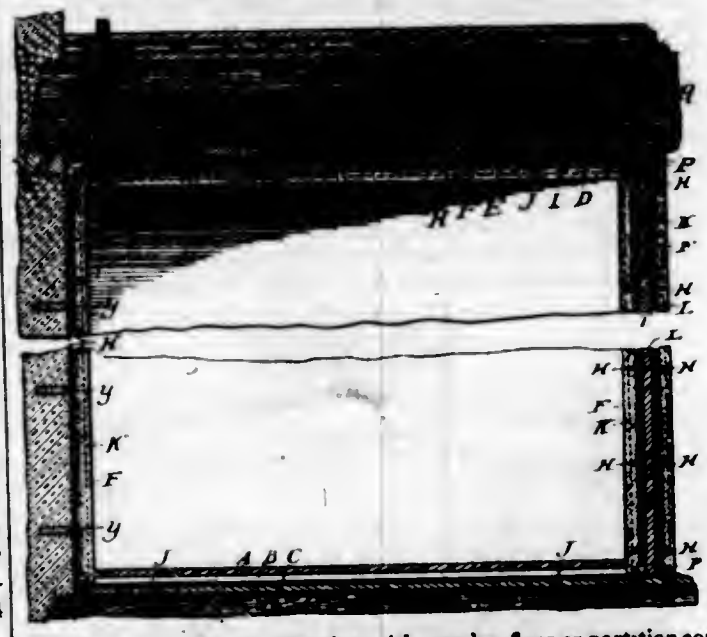
2. The combination of two sliding bars, a lever, the arms of which are respectively connected with the bars so that the bars move in unison, and a wheel mounted at the ends of the bars and provided with cam-like crown-teeth engaging the bars to reciprocate the same.

3. The combination with a bed, of bed-dies mounted thereon to move transversely toward and from each other, slide-bars mounted on the bed and having connection with the ties to move the same, a link in connection with the slide-bars, a work-advancing pawl carried to move with the slide-bars and having connection with the link to be operated thereby, a lever mounted on the bed and having connection with the link, a second link in connection with the lever, a ratchet wheel, a crank mounted to swing on the axis of the ratchet-wheel and serving to drive the ratchet-wheel, a series of cam-like crown-teeth carried by the wheel, and two reciprocal bars driven by the cam-teeth and serving to turn the work.

4. The combination with a bed or frame, of two bed-dies mounted thereon and adapted to move toward and from each other, longitudinally-reciprocal bars mounted on the bed and having connection with the dies to move the same, two bars sliding transversely to the first-named bars whereby to engage and turn the work on the bed-dies, and means for operating the several bars so that the dies move toward and from each other in unison with the turning of the work by the sliding bars.

5. The combination with a bed or frame, of two bed-dies movable toward and from each other, two sliding bars disposed transversely to the dies and adapted to turn the work on the dies, and means for operating the dies and bars so that the dies move toward and from each other simultaneously with the turning of the work by the sliding bars.

610,435. FIREPROOFING AND DEADENING FOR FRAME STRUCTURES. ALPHONSE DE MAN, Detroit, Mich. Filed Apr. 10, 1896. Serial No. 545,255. (No model.)



Claim.—1. The combination with wooden floor or partition construction and adjoining fireproof walls or floors between which said construction extends, of an insulation of fireproof sheeting extending over and completely covering both faces of said construction insulating the same from all adjoining partitions and forming a tight joint with said adjoining walls or floor.

2. The combination with wooden floor or partition construction and adjoining fireproof walls or floors, between which said construction extends, of an insulation of fireproof sheet extending over and completely covering both faces of said construction and the edges of all apertures therethrough, and forming a tight joint with said adjoining walls or floor.

3. The combination with wooden floor or partition construction of an insulation therefor, consisting of sheets of fireproof material secured over both faces of said construction with the adjoining edges of said sheets overlapped and extending uninterruptedly between the supporting walls or floors to exclude fire or air circulation.

4. The combination with wooden floor or partition construction of a facing therefor consisting of sheets of fireproof material secured over the same, and a metallic rib covering the adjoining edges of said sheets and adapted to press them against said construction.

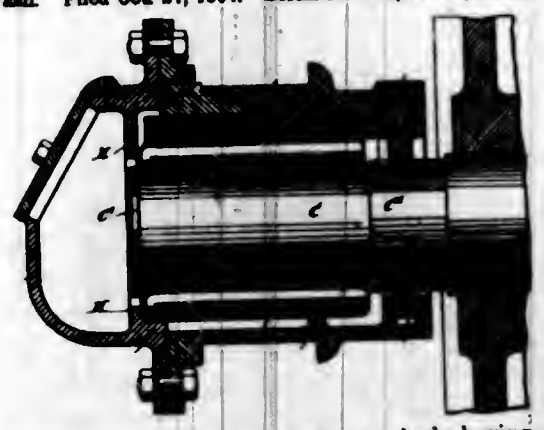
5. The combination with wooden floor or partition construction of a facing therefor consisting of sheets of fireproof material secured over the same, a metallic lathing secured to said construction and a

metallic furring-rib between said lathing and construction adapted to form an air-space therebetween and to press the adjoining edges of said sheets against said construction.

6. The combination with wooden floor or partition construction, a facing of fireproof material therefor, and a metallic lathing, of the metallic rib H of T form having single thick flanges and double thick web, substantially as and for the purpose described.

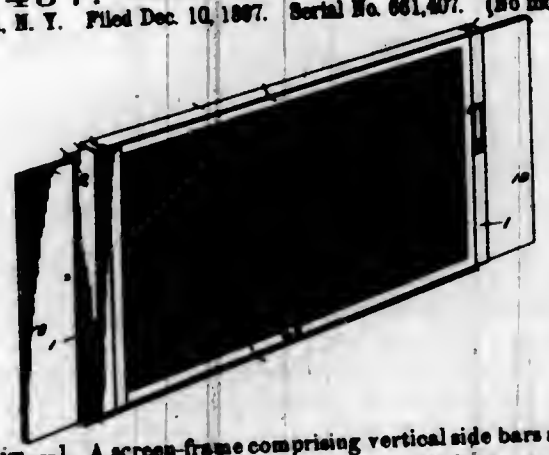
7. The combination with a hollow wooden floor or partition construction having facings of fireproof sheeting insulating the same, of a wooden thimble passing through an aperture in said construction, and a lining of fireproof material therefor forming a tight joint with said facings.

610,436. ROLLER-BEARING. GEORGE W. DICKINSON, Tacoma, Wash. Filed Oct. 27, 1897. Serial No. 656,536. (No model.)



Claim.—A journal-box, comprising a body having a rib in its bottom adjacent to the inner end thereof, a bearing-block in the upper part of the body, a cover provided with an inwardly-projecting annular flange near its inner end, and with a shoulder at the inner side of the lower portion of the said flange and below the same, the said shoulder being in the same horizontal plane as the rib of the body, and a series of rollers of a length greater than that of the body of the box, the lower rollers resting upon the rib of the body and the shoulder of the cover, substantially as and for the purpose set forth.

610,437. WINDOW-SCREEN. ALBERT L. DILLENBECK, Fort Plain, N. Y. Filed Dec. 10, 1897. Serial No. 661,407. (No model.)



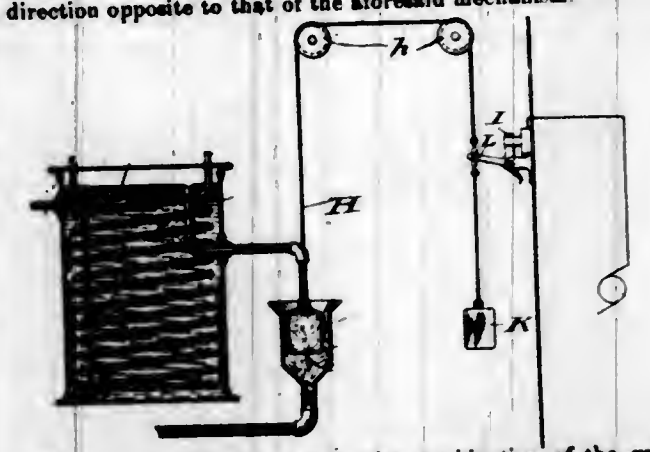
Claim.—1. A screen-frame comprising vertical side bars and connections between the same, in combination with the screen proper having its opposite side edges in sliding engagement with said side bars, and extension-wings mounted to slide past the side bars and in a plane parallel to and at one side of the screen, substantially as described.

2. A screen-frame, embodying side bars grooved upon their inner surfaces and having reversely-disposed notches at their upper and lower ends, and also provided with spurs arranged in said notches, in combination with a screen proper slidingly related to the screen-frame and moving in a plane slightly at one side of the window-sash beneath which the screen-frame is placed, substantially as described.

610,438. SAFETY DEVICE FOR REFRIGERATING SYSTEMS. JOHN M. DONTON, Cleveland, Ohio, assignor to the Cochran Company, Lorain, Ohio. Filed Dec. 15, 1897. Serial No. 661,966. (No model.)

Claim.—1. The combination with a starting and stopping device for the motive apparatus of a refrigerating system and the discharge-pipe for the condenser-cooling water of the said system, mechanism connected with and tending to move said starting and stopping device in one direction, and a member connected with and tending to move said starting and stopping device in an opposite direction, said member receiving the flow of the water from the discharge-pipe and enabled, by means of said flow, to overcome the tendency of the aforesaid mechanism.

2. In combination with a starting and stopping device for the motive apparatus of a refrigerating system and the discharge-pipe of the condenser-cooling water of the said system, mechanism connected with and tending to move the said device in one direction, a vessel having a restricted opening and receiving the water from said overflow-pipe and connections from said vessel to the said device so arranged that the vessel tends to act upon the controlling device in a direction opposite to that of the aforesaid mechanism.



3. In a refrigerating system, the combination of the gas-condenser, the water flowing therethrough, the discharge-pipe, a motor for operating the gas-compressor, a starting-switch for the same, a weight to open said starting-switch, a vessel having a restricted opening, receiving the water from said discharge-pipe and suspended by a connection from the starting-switch so that the weight of the water-filled vessel closes the switch by opposing the tendency of the aforesaid weight.

4. A safety device for refrigerating apparatus comprising, in combination, a starting-switch for the motive power thereof, a vessel suspended from the switch and receiving the discharged water from the condenser, a weight also suspended from the switch and tending to operate the same in opposition to the said vessel, said weight being heavier than the empty vessel but lighter than the combined weight of the vessel and its contents of water.

5. The combination of the discharge-pipe of the condenser, the drain-pipe, the enlarged opening at one end of the drain-pipe and beneath the end of the discharge-pipe, the vessel suspended in said opening by connections with a starting and stopping device, the restricted opening in said vessel, and mechanism tending to act upon the starting and stopping device so as to shut off the motive power of the system.

610,439. DESK. CHARLES FASOLDT, Grand Rapids, Mich. Filed Mar. 19, 1898. Serial No. 674,480. (No model.)

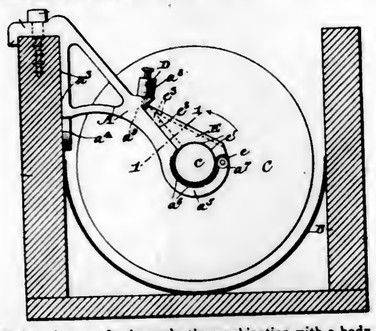


Claim.—1. In combination, a roll-top desk having a roll-top removable file-cases above the roll-top, a divided shelf for the support of said cases, the front portion of said shelf pivoted to the back portion and having an upwardly-projecting lip at the front edge, to engage the lower ends of the file-cases, and the roll-top of the desk arranged to raise and lower said front edge to lock said cases in place, or to unlock them, substantially as and for the purpose set forth.

2. In combination, a roll-top desk having a roll-top removable file-cases above the roll-top, a divided shelf for supporting said cases, the front portion of said shelf pivoted to the back portion and provided with an upwardly-projecting lip to engage said cases, antifriction-rollers on said pivoted portion, plane ways on the ends of the slats of the roll-top for the travel of said roller with the pivoted portion dropped down so that the cases may be removed and replaced, and an upward projection at the back slat to throw said pivoted portion up in position to lock the cases in place, substantially as and for the purpose set forth.

610,440. HANGER FOR JOURNALS. AUGUST FREDRICKSON, Meridian, Miss., assignor to John A. Lewis, same place. Filed Apr. 22, 1898. Serial No. 678,505. (No model.)

Claim.—1. In a hanger for conveyers, the combination with a supporting body portion, of a journal-bearing adapted to partially surround the journal, and a cap hinged to the said hanger having inclined upper faces and adapted to cover the remainder of the journal, the construction being such that the hinged cap will be kept in place over the journal by the material conveyed in addition to its own weight and will prevent the clogging of said material upon the hanger, substantially as described.



2. In a hanger for journals, the combination with a body portion having an upper attaching-flange, of a journal-bearing in its lower end, and a cap hinged to the said bearing and adapted to completely inclose the journal, the said cap being provided with an oil-channel for directing the oil to the bearing, and the weight of the cap being so disposed as to hold the same closed, substantially as described.

3. As a new article of manufacture, a journal-hanger having an attaching-flange at its upper end, a journal-bearing formed at its lower end, and a pivoted cap hinged to the said journal-bearing for covering the top of the journal, the construction being such that the material conveyed, the direction of the journal, and the weight of the cap will hold the cap in place, substantially as described.

4. As a new article of manufacture, a journal-hanger provided with an overhanging attaching portion at its upper end whereby it may be interchangeably placed upon either side of a conveyer or other support according to the direction the conveyer or shaft is run, a journal-bearing formed at its lower end, a hinged cap for covering the journal, the free end of the said hinged cap being provided with a covered oil-channel, and a lug formed upon the hanger for overhanging the open end of the said channel to further protect it from dirt and grit, substantially as described.

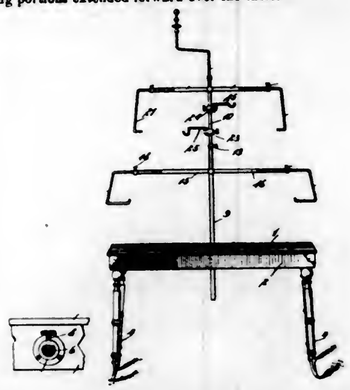
5. In a hanger for conveyers, the combination with a body portion having a bearing-surface for resting against the side of the conveyer, an attaching-flange for engaging the top of the said conveyer, an overhanging lip formed on the said flange for further securing the said conveyer in place, a bearing formed in the lower end of the said hanger, a cap hinged to the said bearing for covering the journal, having a beveled face for fitting against the body portion of the said hanger, the said cap being provided with an oil-channel in the said beveled face, and an overhanging lug formed upon the hanger for protecting the upper open end of the said channel, and having no bolts, nuts or other loose parts, substantially as described.

6. In a hanger for conveyers, the combination with a body portion having an upper attaching-flange, of a journal-bearing in its lower end, a cap hinged to said bearing and adapted to completely inclose the journal, the said cap being provided with a lubricant-channel upon its under face for directing the lubricant to the bearing, the weight of the cap being so disposed as to hold the same normally closed and a lug formed upon the hinge for overhanging the open end of the said channel, which will protect it from the entrance of dirt and grit, and a grease-cup secured in said lug for supplying lubricant to the journal, substantially as described.

7. In a conveyer, the combination with a suitable screw, of a hanger for supporting the same comprising a supporting body portion, a journal-bearing adapted to partially surround the journal and a cap hinged to the said hanger and adapted to fold back so as to cover the remainder of the journal, the construction being such that the hinged cap will be kept in place over the journal by the material passing in the conveyer in addition to its own weight, substantially as described.

610,441. TABLE AND DRAPERY-HOLDER. ROBERT S. GARROUS, Seneca Falls, N. Y. Filed Mar. 3, 1898. Serial No. 672,423. (No model.)

Claim.—The combination with a table adapted to support a burial-casket, of a sleeve attached to the back rail of the table, a rod adjustable through said sleeve, the said rod being flat on one side to engage a flattened portion in the sleeve, a standard adjustable vertically with relation to the sleeve and consisting of telescopic sections, a bracket on the upper section of the standard, the said bracket having a horizontal portion between two vertical portions whereby it is projected over the table and arms on the standard, the said arms having portions extended forward over the table.



610,442. CAR. MICHAEL J. GRIFFIN and PETER W. HOGAN, Island Pond, Vt. Filed Feb. 10, 1898. Serial No. 669,812. (No model.)

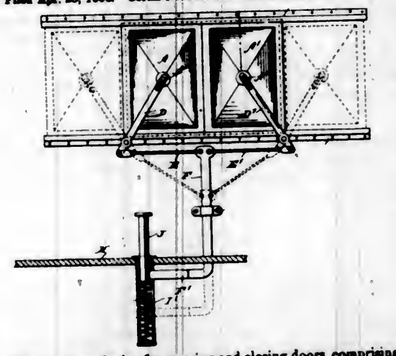


Claim.—1. The combination in a car having its body divided into bins extending from the middle to the side thereof and provided with sloping floors, the outer side of each bin being open, of a door for each bin, each of said doors being pivoted at its lower edge to the car to swing outwardly and downwardly, and side boards attached to each door, and of such length as to form a continuous extension of the side walls of the bins when the doors are open, there being provided a series of slots or openings in which are received the lower edges of said side boards when the doors are closed, as and for the purpose set forth.

2. The combination with a car having a coal-bin formed with a floor sloping toward and extending to a side of the car, the outer side of said bin being open, of a door pivoted by its lower edge to the outer edge of said floor and arranged to swing outwardly and downwardly, forming a continuation of the same, the said floor being formed with slots in the rear of each side edge of the door, and side boards attached to the said side edges of the door, and of such a length as to overlap the side walls of the bin when the door is at the outward and downward limit of its movement, the inner and lower ends of said boards being received in the said slots when the door is closed, as and for the purpose set forth.

3. A car-body consisting of end walls, two spaced apart, longitudinal partitions connecting said end walls, said partitions extending along the middle of the car, transverse double partitions extending at predetermined intervals from a longitudinal partition to the adjacent side of the car, floors sloping from a longitudinal partition to an adjacent side of the car and provided with slots or openings near their outer edges and between a double partition, doors pivoted at their lower edges to swing outwardly and downwardly and forming sides for the car and chutes for the bins formed by the partitions, cords attached to the outer edges of the doors each of said cords passing through the space of a double transverse partition back into the space between the longitudinal partitions and there provided with a weight, and side boards attached to the side edges of each door and of such a length that they will overlap the transverse partitions when the door is fully open, the said side boards when the door is closed entering the space between the double partitions and down into the said slots in the floor, as set forth.

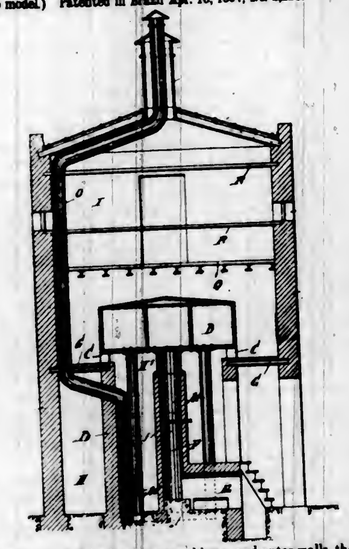
610,448. OPENING OR CLOSING DEVICE FOR FIRE-BOX DOORS. MICHAEL J. GRIFFIN and PETER W. HOGAN, Island Pond, Vt. Filed Apr. 25, 1898. Serial No. 678,744. (No model.)



Claim.—1. A device for opening and closing doors, comprising a lever connected with the door, a bar mounted to slide toward and from the door, a foot-piece rigidly connected with said bar and parallel to the main portion thereof, and separate guides for the said bar and foot-piece.

2. A device for opening and closing doors, comprising a lever connected with the door, a bar mounted to slide toward and from the door and provided with a transverse end or arm, a foot-piece rigidly connected with said bar and approximately parallel to the main portion thereof, and a spring for normally keeping the door closed.

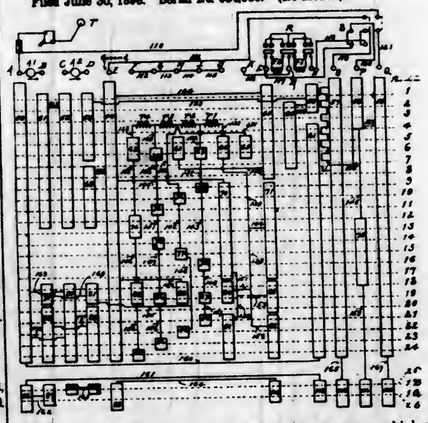
610,444. DRY-KILN. JOSES GUERRERO and JULIO URGENAGH, Buenos Ayres, Argentina. Filed Oct. 21, 1897. Serial No. 655,990. (No model.) Patented in Brazil Apr. 10, 1897, No. 2,228.



Claim.—1. A drier having spaced inner and outer walls, the outer wall being continued upwardly beyond the inner wall, and the inner wall being apertured to afford a communication from the central space of the drier to the space between the two walls, spaced supports such as blocks located on top of the inner wall a receptacle supported on said blocks so as to leave air-passages between the receptacle and the inner wall, a heater surrounded by the inner wall, a pipe extending upwardly from the heater to the receptacle, smoke-pipes extending downwardly from said receptacle, a pipe connecting the lower ends of said smoke pipes, and a discharge-pipe whose lower end communicates directly with said connecting-pipe, the said discharge-pipe extending upwardly first along the inner surface of the inner wall and then along the inner surface of the outer wall, substantially as described.

2. A drier having spaced inner and outer walls, the outer wall being continued upwardly beyond the inner wall, a receptacle supported above the top of the inner wall, a heater surrounded by the inner wall, a pipe extending upwardly from the heater to the receptacle, smoke-pipes extending downwardly from said receptacle, a pipe connecting the lower ends of said smoke pipes, and a discharge-pipe whose lower end communicates directly with said connecting-pipe, the said discharge-pipe extending upwardly first along the inner surface of the inner wall and then along the inner surface of the outer wall, substantially as described.

610,445. ELECTRIC RAILROAD. JOHN C. HENRY, Denver, Colo. Filed June 30, 1898. Serial No. 684,969. (No model.)



Claim.—1. A method of accelerating electric motors which are ordinarily independently excited, which consists of starting with the armature and field-magnets in series and gradually decreasing the motors' resistance by changing them to independently-excited machines.

2. A method of accelerating electric motors which are ordinarily independently excited, which consists of starting with the armature and field-magnets in series and gradually decreasing the motors resistance by changing them to independently-excited machines without breaking the armature-circuit.

3. A method of controlling motors where the armatures and field-magnets are ordinarily independently excited, which consists of first operating the armatures and field-magnets in series, then changing them dissimultaneously to independently-excited machines.

4. In combination with a pair of motors where the armatures and field-magnets are independently excited and regulated by variable resistance in the field-circuit, means substantially as described for utilizing the field-magnet resistance in parallel in the armature-circuit.

5. In an electric car, a non-inductive resistance arranged to be placed in parallel with the motors by a supplementary switch under the control of the motorman, substantially as and for the purpose set forth.

6. In an electric car in combination with the controller a non-inductive resistance arranged to be placed in parallel with the motors having a supplementary switch to complete its circuit when the motors are connected with the lines.

7. In an electric car, a non-inductive resistance, a supplementary circuit-closing switch, arranged in series with said resistance, a magnet in the motor-circuit arranged to close the resistance-circuit and place it in parallel with the motors while they are in connection with the line.

8. In an electric car having the controllers located on the platform substantially as shown and having removable handles capable of connection with said controllers so that they may be conveniently manipulated from either the inside or outside of the car.

9. In an electric car having the controllers located on the platform substantially as shown and having removable handles capable of connection with said controllers so that they may be conveniently manipulated from either the inside or outside of the car, and having means to prevent the removal of said handle except when the controller-cylinder is in the off position.

10. In a controller, in combination with a non-inductive resistance, means for closing said resistance in parallel with the field-magnet when the circuit through said field is to be broken and breaking said connection after said field-circuit is broken.

11. A method of controlling a pair of motors which are ordinarily independently excited which consists in operating one of them as an independently-excited machine, the other as a series machine and then changing the latter to an independently-excited machine.

12. A method of controlling electric motors which are ordinarily independently excited which consists of independently exciting the fields of one of the motors by placing it in shunt with both armatures, and exciting the fields of the other motor by connecting it in series with both armatures.

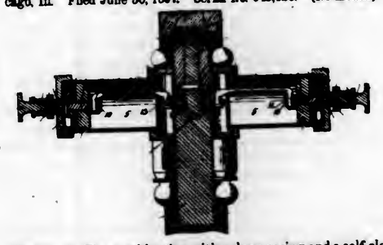
610,446. NUT-LOCK. JOHN R. HORN, Camden, Ark. Filed Jan. 18, 1898. Serial No. 667,038. (No model.)



Claim.—1. As an improved article of manufacture, the spring nut-locking device consisting of a steel bar or rod having approximately the form of the numeral 8, but its ends being both free and bent outward from the plane of the body portion of such device, and one of said ends being beveled on its inner side, as and for the purpose specified.

2. The combination, with a railroad-rail, angle or fish plate, and a bolt and nut for holding such parts together, of the spring locking device, having substantially the shape of the numeral 8, one loop embracing the bolt, and its free end projecting and bearing outward against the nut, while the other loop rests on the fish-plate shoulder and its free end projects outward and engages the side of the bolt, as and for the purpose specified.

610,447. PNEUMATIC DOOR-CHECK. JOHN HORSFIELD, Chicago, Ill. Filed June 30, 1897. Serial No. 643,023. (No model.)



Claim.—1. The combination with a door-casing and a self-closing door having a horizontal aperture therein and a vertical recess connected with said aperture, of an air-chamber secured thereto having a piston and means located within said aperture and recess and operatively connected with said piston and casing to actuate the piston, all arranged as set forth.

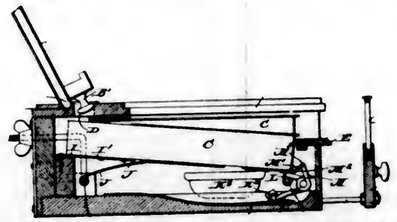
2. The combination with a door-casing and a self-closing door having a horizontal aperture therein and a vertical recess connected with the aperture, of brackets secured on each side of the aperture, an air-chamber secured to each side of said brackets, a piston in each of the air-chambers secured to each bracket and means located in said aperture and recess and operatively connected to said casing to operate the piston, as set forth.

3. The combination with a door-casing and a self-closing door having a horizontal aperture therein and a vertical recess connected with said aperture, of air-chambers having pistons therein, means to operate the pistons, located in said aperture and recess consisting of a rock-shaft provided with rigid arms and links connecting said arms and pistons and means for operatively connecting said shaft to the casing all arranged as set forth.

4. The combination with a door-casing and a self-closing door having a horizontal aperture therein and a vertical recess connected with the aperture, air-chambers having pistons therein secured to each side of said door and over said aperture, means to operate the pistons located in said aperture and recess, and a controlling-bar connected with said operative means at one end while the other end works in a groove in the door-jamb, all arranged as set forth.

5. In combination with a door, of air-chambers secured thereto provided with pistons, said door having a horizontal aperture and a vertical recess connected therewith, devices located in said aperture and recess and operating said pistons, a controller-bar connected to said devices at one end, the other end being provided with a friction-roller, guide-plates on the frame of the door forming a track for the friction-rollers, all combined as set forth.

610,448. MUTE CLAVIER. LOUIS ILLNER, Jr., Washington, D. C., assignor to Louis Illner, Sr., same place. Filed Sept. 28, 1897. Serial No. 653,348. (No model.)



Claim.—1. An exercising apparatus provided with keys and with a sounding device having a detent moving into engagement with the depressed key, substantially as described.

2. An exercising apparatus provided with keys and with a rocking sounding device having a detent which moves into engagement with the key when the latter is depressed, substantially as described.

3. An exercising apparatus provided with keys and with a sounding device having a detent which moves into engagement with the key when the latter is fully depressed and out of such engagement when the key is released whereby if one key is fully depressed before the previously-depressed key is released the first key will be held by the detent substantially as described.

4. The combination with the keys of a sounding device arranged to be acted on by all the keys and provided with a detent whereby to lock the key when depressed, substantially as described.

5. The combination of the keys, a detent, arranged for operation by the several keys, by which when the keys are depressed the detent will be set into engagement therewith whereby when one key is depressed and a second one is depressed prior to the release of the other the first key will be held by the detent and means for automatically readjusting the detent when pressure on the keys is removed substantially as described.

6. The combination with the keys of a depressible rail arranged to be depressed by and forming a stop for said keys and having a detent moving as the rail is depressed by the keys into engagement with the depressed key or keys and means for automatically readjusting the detent when pressure on the key is released, substantially as described.

7. An exercising apparatus comprising the keys and a rocking action having a crank-like rail forming a stop for the keys and a crank projection forming a detent movable into engagement with the keys when the latter are depressed substantially as described.

8. In an exercising apparatus, the combination of the keys, a detent operated by said keys and engaging the latter when they are depressed and moving out of said engagement as the key ascends whereby if a second key be depressed before the first is released, such first key will be held by the detent until the second key is released, substantially as described.

9. An exercising apparatus comprising the keys, a bell, a rocking action having a hammer to strike the bell a crank-like rail forming a stop for the keys and a means whereby such keys rock the shaft and a crank-like detent arranged to engage the keys when depressed, substantially as described.

10. An exercising apparatus, comprising the keys the springs exerting tension thereon, the shaft supporting said springs and having a bent crank-arm the nut threaded on the said arm and adapted to turn the shaft to vary the tension of the key-springs, and the case or frame having a slot through which the bent crank-arm extends substantially as described.

11. An apparatus substantially as described comprising the case having the ways and the socket, and the music-rack slidable in said ways and having a ball-like head to engage in the socket substantially as shown and described.

12. A case having ways for the combined music-rack and lid and a seat therefor combined with the keyboard and the combined music-rack and lid slidable in said ways to form a cover for the keyboard and removable from said ways and adapted to engage the seat when adjusted for use as a music-rack, substantially as described.

13. The case having the ways and the socket, and the groove adjacent to the latter, the keyboard and the music-rack slidable in said ways and provided with a ball to engage the socket and a rib to fit the groove, substantially as described.

14. In an exercising apparatus a hand-support comprising a main section having a set of deep sockets and a separate set of shallow sockets and the rest portion having depending rods fitting when in position for use, in the shallow sockets and in folded position in the deep sockets substantially as described.

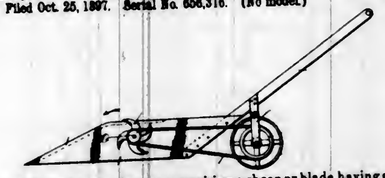
15. In an exercising apparatus a hand-support comprising the main section or cross-bar having in its upper side a longitudinal groove or recess and provided with a set of deep sockets and a separate set of shallow sockets and the rest portion having a cross-bar fitted to and resting in the groove of the main portion when in folded position and provided with depending rods fitted to the deep and shallow sockets of the main portion, substantially as described.

16. An exercising apparatus comprising the keys, a bell, a rocking action having a hammer to strike such bell and provided with a crank-like portion having a rail extended below and arranged to be operated on by the keys, substantially as described.

17. An exercising apparatus comprising the casing the keyboard and a sounding device having a rocking action provided with a crank-like rail which extends beneath and is arranged for engagement by the keys to rock the action and a spring actuating the action in opposition to the keys, substantially as described.

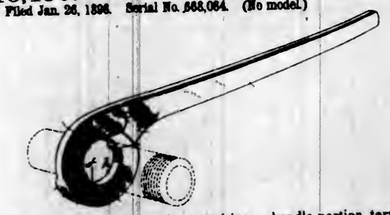
18. In an exercising apparatus substantially as described the combination with the keys of a plate having in one edge a series of slits or slots separating one edge of the plate into a series of similar tongues integral with each other and with the body of the plate whereby the tongues may all be secured by the same fastenings and may be secured in the desired relation and permanently held therein a rock-shaft to which said plate is fixed and means for adjusting said rock-shaft substantially as shown and described.

610,449. VINE-TRIMMER. GEORGE H. JEUNE, Deer Wood, Minn. Filed Oct. 25, 1897. Serial No. 656,316. (No model.)



Claim.—A vine-trimmer comprising a shear or blade having substantially horizontal top and bottom edges and having its front and rear edges inclined upwardly and rearwardly, the forward end being formed with a point and having a beveled chisel-edge on the inclined forward end, the said cutting edge also extending along a portion of the top of the blade, a handle secured to the rear inclined end of the blade, a depending bracket secured to the handle at the rear of the blade and forked at its lower end, a wheel journaled in the members of the said bracket, a revoluble cutter journaled on one face of the blade and operating in conjunction with the cutting edge at the top of the blade and means for rotating the cutter from the wheel, substantially as shown and described.

610,450. PIPE-WRENCH. DAVID C. JOHNSTON, Marietta, Ohio. Filed Jan. 26, 1898. Serial No. 668,054. (No model.)



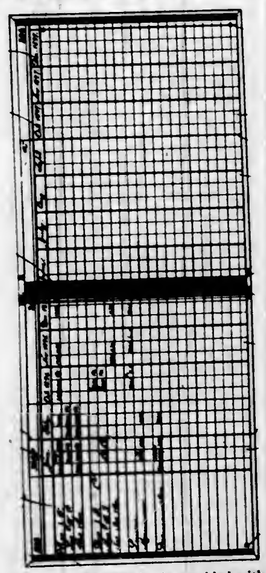
Claim.—1. A pipe-wrench comprising a handle portion terminating at its lower end in a stationary jaw adapted to partially embrace an object, an outer jaw pivoted to said stationary jaw at its outer end, and a shoulder on the stationary portion of the wrench adapted when the wrench is turned to engage said outer jaw and form a bearing therefor, substantially as described.

2. A pipe-wrench comprising a handle portion terminating at its lower end in a curved stationary jaw adapted to partially embrace an object, and having a lateral projection or shoulder the under side of which constitutes an engaging and bearing surface for the pivoted jaw, and a curved jaw pivoted to said stationary jaw at its outer end, and having on its outer edge a bearing-surface adapted to engage the said projection or shoulder when the wrench is turned, substantially as described.

3. A pipe-wrench comprising a handle portion terminating at its lower part in a curved stationary jaw adapted to partially embrace an object and having a projection or shoulder beveled outwardly and upwardly on its under side to constitute a bearing and engaging surface for the pivoted jaw, and a curved outer jaw pivoted to said stationary jaw at its outer end and also beveled on its outer edge or side and adapted to be engaged by the beveled surface of said shoulder, substantially as shown and in the manner described.

4. A pipe-wrench comprising a handle portion terminating at its lower part in a curved stationary jaw adapted to partially embrace an object and having at its outer end a clip or yoke, a lateral projection or shoulder beveled outwardly and upwardly at a suitable angle to constitute a bearing and engaging surface for the pivoted jaw, and a curved outer jaw pivoted to said yoke in a plane coincident with the plane of the stationary jaw, and also beveled on its outer side to be engaged by the correspondingly-beveled surface of said shoulder, substantially as described.

610,451. ACCOUNT-KEEPING BOOK. THOMAS G. KNIGHT, New York, N. Y. Filed Jan. 16, 1897. Serial No. 619,413. (Model.)



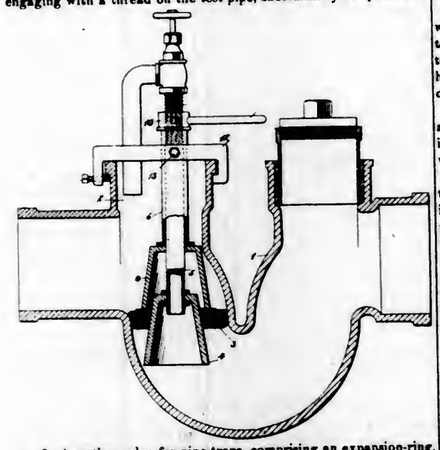
Claim.—An account-keeping book provided with a plurality of leaves ruled for forming an account for a given period, and divided into a column for the names of the customers, and successive equal monthly divisions subdivided for keeping account of the new business for the month, the total balance, and for remarks, each leaf being provided with transverse perforations to permit a portion of it to be torn out and with apertures at each end, and fasteners for attaching the removed portion to another page, substantially as shown and described.

610,452. TESTING-VALVE. GOTTLOB E. LOEBLE and FREDRICK KATZENBERGER, New York, N. Y. Filed Feb. 21, 1898. Serial No. 671,136. (No model.)

Claim.—1. A testing-valve for pipes, comprising an expansion-ring, an expanding-block therein, a pressure-block, engaging with the upper side of the ring, a test-pipe forming a stem for the expanding-block, means engaging with the test-pipe for drawing the expanding-block into the ring, and a valve-controlled pipe leading from the test-pipe and arranged to discharge into the pipe being tested, substantially as specified.

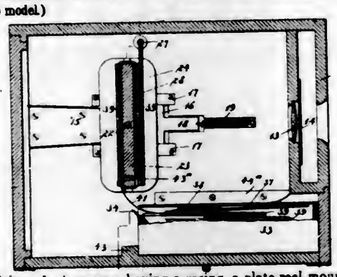
2. A testing-valve for pipe-traps, comprising an expansion-ring, a conical expansion-block in the ring, a test-pipe extended from said block and forming the stem thereof, a valve at the outer end of the

test-pipe, a pressure-block for engaging with the upper side of the expansion-ring, a tube extended upward from the pressure-block and surrounding the test-pipe, and a nut on the upper end of said tube engaging with a thread on the test-pipe, substantially as specified.



3. A testing-valve for pipe-traps, comprising an expansion-ring, an expansion-block therein, a tubular stem for the block and having a downwardly-extended valve-controlled outlet, a tube through which the stem passes, a pressure-block on the lower end of the tube, and a nut on the outer end of the tube engaging with a screw-thread on the stem, substantially as specified.

610,453. MAGAZINE-CAMERA. BENJAMIN MARX and HENRY GARDNER, New York, N. Y. Filed Jan. 6, 1896. Serial No. 665,821. (No model.)



Claim.—1. A camera having a casing, a plate-reel mounted to turn therein and capable of movement transverse to its axis, and a focusing-frame mounted to swing within the casing and capable of engaging the reel to push the same to proper position.

2. A camera having a casing, an adjustable plate-reel capable of holding the plates during the exposure, and means for adjusting said reel to individually focus the successive plates.

3. A camera having a casing, a reel adjustable therein and having a flat web against each side of which the photographic plates are carried and exposed, and means for adjusting the reel to focus the plates as they are successively wound on each side of the reel.

4. In a camera, the combination of a casing, a reel, bearings for adjustably mounting the reel, and a focusing-frame mounted to swing above or below the reel and capable of engaging the reel to focus the plates thereon.

5. In a camera, the combination of a casing, a reel, bearings for the reel, the bearings being adjustable toward and from the lens of the casing, springs tending to draw the bearings toward the lens, and a focusing frame mounted to swing above or below the reel and capable of pushing the reel away from the lens to focus the negatives as they are wound on the reel.

6. A photographic camera having a casing, a plate-box therein, a series of plates stacked in the box and attached to an opaque web, a reel to which the web is connected and on which the plates are wound, the reel being adjustable toward and from the lens, and means for adjusting the reel to focus the plates as they are successively wound on the reel.

7. The combination of a plurality of rigid photographic plates, and a flexible web on which the plates are arranged, each plate having a portion of its back attached to the web, and the remaining portion of the back being free of connection with the web.

8. A box for photographic plates having a body portion, a false wall arranged diagonally therein and leading to one end thereof, a tension-plate hinged to the false wall and lying in parallelism with the bottom of the box, a cover for the box, a spring-pressed follower hinged to the cover and moving into the box, and a door closing an orifice in the cover and adjacent to the false wall of the box.

9. A box for photographic plates, the box having a body portion, and a cover, the body portion being provided with a false wall leading diagonally to one end of the box and the cover being provided with a door arranged at the upper end of the said false wall.

10. A box for photographic plates, the box having a body portion, and a cover, the body portion being provided with a wall leading diagonally to one end of the body portion and the cover being provided with a door arranged at the upper end of said wall, and a tension-plate hinged to the bottom of the body portion.

11. A camera having an adjustable reel, means for focusing the reel, and a plate-box capable of containing the plates and of permitting the plates to be withdrawn under the action of the reel.

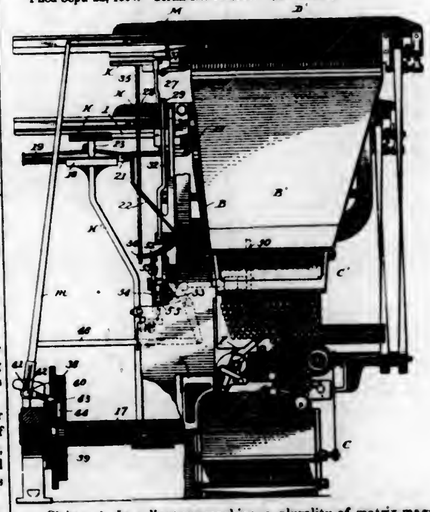
12. A camera having a removable plate-box separable from the camera and capable of being placed therein and displaced therefrom to charge and recharge the camera, plates carried in the box and connected to each other by a flexible web, and means mounted in the camera and capable of drawing the plates and web from the box to expose the plates.

13. A camera having a reel mounted therein and capable of carrying and holding for exposure photographic plates connected with each other by a flexible web, the reel being adjustable to admit of focusing the successive plates.

14. A camera having means capable of carrying a plurality of rigid photographic plates connected by a flexible web, and a reel mounted in the camera and capable of winding the plates and web on the reel and of holding the plates during exposure, the reel being adjustable to successively focus the plates.

15. A box for holding rigid photographic plates connected by a flexible web, the box having therein an inclined false wall leading upward from the bottom of the box at one end thereof, and the box having an opening at the upper edge of said false wall, and a hinged flap mounted to cover said opening and to permit the withdrawal of the plates and web.

610,454. LINOTYPE-MACHINE. CARL MUEHLEISEN, Baltimore, Md., assignor to the Mergenthaler Linotype Company, of New York. Filed Sept. 22, 1897. Serial No. 652,585. (No model.)



Claim.—1. In a linotype-machine, a plurality of matrix-magazines simultaneously operative and a distributer for each magazine, in combination with a corresponding plurality of series of matrices, and means for separating a line of matrices by series before said matrices pass to the distributers, substantially as described.

2. In a linotype-machine, a plurality of magazines, in combination with a corresponding plurality of series of matrices, means for separating a line of matrices by series before said matrices pass to the distributers, and means for distributing each series into its magazine, substantially as described.

3. In a linotype machine, a plurality of magazines and an individual distributing mechanism for each magazine, in combination with means for separating a line of matrices by series, and means for delivering the separated matrices to the distributing mechanisms of their respective magazines, substantially as described.

4. In a linotype-machine, a plurality of magazines superposed upon one another and arranged to deliver their matrices to a common assembling-belt, and means for automatically and simultaneously distributing matrices to each of said magazines, substantially as described.

5. In a linotype-machine, a plurality of fixed magazines superposed upon one another and arranged to deliver their matrices to a common assembling-belt in combination with means for separating matrices by series, and means for simultaneously distributing the matrices to their respective magazines, substantially as described.

6. The combination with a plurality of magazines, each having a number of tubes or receptacles and a distributing mechanism, of a plurality of series of matrices, the matrices of each series having distinct interlocking portions, and means for separating lines of matrices by series before said matrices pass to the distributers, substantially as described.

7. In a linotype-machine, the combination with a plurality of magazines, each having a number of tubes or receptacles and a distributer, of a plurality of series of matrices, the matrices of each series being provided with undercut notches and the said undercut notches of the respective series being differently located, and means for separating lines of matrices by series and delivering the matrices to their respective distributers, substantially as described.

8. In a linotype-machine, a plurality of series of matrices, the matrices of each series being provided with undercut or interlocking notches, and the matrices of each series being also provided with open or non-interlocking notches in line with the interlocking notches of the other series, and mechanism for engaging the interlocking notches to separate lines of matrices by series, substantially as described.

9. The combination with two series of matrices, each matrix having an interlocking and a non-interlocking notch so located that the interlocking notches of one series stand in line with the non-interlocking notches of the other series, of two rails adapted to interlock with the two series of matrices respectively, whereby when the rails are moved apart the matrices will be separated by series, substantially as described.

10. In a linotype-machine, the combination with two magazines each having a plurality of tubes or receptacles, of two series of matrices, each series having a distinctive interlocking portion, and two relatively-movable rails adapted to engage said interlocking portions respectively, and means for separating the rails to separate a line of matrices by series before distribution, substantially as described.

11. In a linotype-machine, the relatively-movable rails, I, K, provided respectively with the ribs 12 and 15, in combination with a series of matrices having shoulders 11 and a second series of matrices having undercut notches 14, substantially as described.

12. In a linotype-machine, the relatively-movable rails, I, K, provided respectively with the ribs 12 and 15, in combination with a series of matrices having shoulders 11 and open or non-interlocking notches 16, and a second series of matrices having interlocking notches 14 corresponding with the notches 16 and non-interlocking notches 13 corresponding with the shoulders 11, substantially as described.

13. In a linotype-machine, the combination with a magazine and its keyboard, with a second magazine superposed thereon, and a movable keyboard for said second magazine, said latter keyboard being movable to permit inspection of the matrix-guides and escapements, substantially as described.

14. In a linotype machine, the combination with a fixed magazine, an assembling-belt, and matrix-guides leading from the magazine to the belt, of a second fixed magazine superposed thereon, distributers in said machine for both magazines, and guides leading from the discharge-openings of the upper magazine to the matrix-guides of the lower magazine, whereby the matrices of both magazines are delivered to the assembling-belt through common guide-channels, substantially as described.

15. In a linotype-machine, an elevator constructed to carry the matrices to the distributing mechanism, in combination with an elevator-rail movable endwise thereon, substantially as described.

16. In a linotype-machine, an elevator-arm, a slide on the extremity of said arm movable laterally to the plane in which the arm travels, and an elevator-rail connected to said slide, substantially as described.

17. In a linotype-machine, the combination of an elevator-arm, the laterally-movable slide on the end of said arm, the cam for moving the slide, and the elevator-rail connected to said slide, substantially as described.

18. In a linotype-machine, the combination of the elevator-arm, the rail carried by said arm and movable laterally to the plane of movement of the arm, the spring urging said rail in one direction, and the cam arranged to move the rail in the opposite direction, substantially as described.

19. In a linotype-machine, the elevator-arm, the slide on the free end of said arm, the lever carried by said slide, and the elevator-rail carried by said lever, substantially as described.

20. In a linotype-machine, the combination with a plurality of magazines each having a number of tubes or receptacles and a like plurality of series of matrices, of means for separating lines of matrices into series consisting of two relatively-movable rails, means for interlocking the different series of matrices with their respective rails and then moving the rails apart to separate the matrices, and means to distribute the separated matrices to their respective magazines, substantially as described.

21. In a linotype-machine, a pair of fixed magazines, an elevator adapted to lift lines of matrices to one of said magazines, means for separating said matrices by series and conveying the matrices of one series to the second magazine, and automatic means for distributing matrices simultaneously to both magazines, substantially as described.

22. In a linotype-machine, the devices for separating matrices by series consisting of a stationary rail, a movable rail, parts on said rails adapted to interlock with different series of matrices, and means for transferring the matrices from said rails to different distributing mechanism, substantially as described.

23. In a linotype-machine, the means for separating matrices by series consisting of a stationary rail and a movable rail, means for carrying the movable rail into proximity to the stationary rail, means for transferring a line of matrices to said rails, and means for separating the rails, whereby the matrices are separated by series, substantially as described.

24. In a linotype-machine, the combination of a plurality of magazines, a distributing mechanism for each magazine, means for separating matrices by series and presenting the matrices of the different series to their respective distributers, and slides adapted to transfer the matrices to the distributers, substantially as described.

25. In a linotype-machine, the combination with a plurality of magazines, each provided with a distributing mechanism, of a corresponding plurality of slides for transferring matrices to said mechanism, and means for moving said slides independently whereby the matrices are fed independently to the several distributers, substantially as described.

26. In a linotype-machine, the combination of a plurality of magazines, each provided with a distributing mechanism, with a plurality of slides for transferring matrices to said mechanism, arms adapted to move said slides, a cam for throwing the slides out, and a second cam controlling in part their inward movement, substantially as described.

27. In a linotype-machine, the combination of a plurality of magazines, each provided with a distributing mechanism, with a plurality of slides for transferring matrices to said mechanisms, arms for moving said slides, said arms being mounted independently of each other, cam mechanism for throwing said arms outward and independent springs for moving said arms inwardly, substantially as described.

28. In a linotype-machine, an elevator and driving mechanism therefor constructed to lift lines of matrices to the distributing mechanism, devices for separating said matrices by series before said matrices pass to the distributers, and independent driving mechanism for said devices arranged to operate after the elevator-driving mechanism has come to rest, substantially as described.

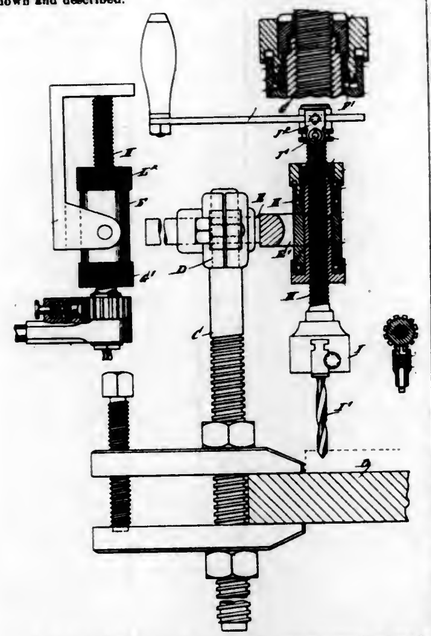
29. The combination with a plurality of magazines, of mechanism for simultaneously distributing matrices to said magazines, slides for transferring matrices to said distributing mechanisms, springs urging said slides and arms in one direction, and a cam arranged to control the movement of the slides in the opposite direction, substantially as described.

30. In a linotype-machine, the devices for separating lines of matrices by series and conveying the matrices to their respective distributing mechanisms, in combination with a cam-shaft for operating said devices, a clutch for said shaft, an elevator-arm, and means whereby the clutch is operated by said arm, substantially as described.

610,455. HAND-DRILL. JAMES MCSWEENY, Pittsfield, Mass., assignor to the H. D. Jones & Sons Company, same place. Filed Aug. 10, 1897. Serial No. 647,708. (No model.)

Claim.—1. A hand-drill comprising a casing, a nut mounted to turn in the said casing, a threaded spindle screwing in the said nut, a split clamping-collar held stationary in the said casing and engaging the said nut, and a second nut in the said casing and engaging

the said clamping-collar, to close or open the same, substantially as shown and described.



2. A hand-drill comprising a casing, a nut mounted to turn in the said casing, a threaded spindle screwing in the said nut, a split clamping-collar held stationary in the said casing and engaging the said nut, a second nut in the said casing and engaging the said clamping-collar, to close or open the same, and a retaining-collar held on the upper end of the spindle-nut, and resting on the clamping-collar, substantially as shown and described.

3 A hand-drill provided with a casing, a spindle-nut mounted to turn in the said casing, a split clamping-collar held stationary in the casing, and having a lining engaging the said nut, the outer face of the nut being made conical, and a conical nut screwing in the said casing, and engaging the said clamping-collar, to close the same upon the spindle-nut, substantially as shown and described.

610,456. PULVERIZER AND HARROW. ANDREW V. HELSON, Galesburg, Ill. Filed Sept. 7, 1897. Serial No. 650,823. (No model.)



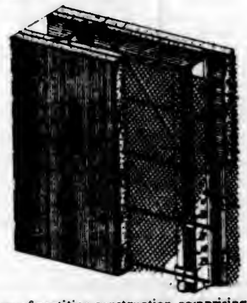
Claim.—1. The combination with square rotatable shafts, of harrow-teeth having shouldered shanks and the clamps composed of right-angular clips having apertures in their ends, and a bolt and nut arranged as shown and described.

2. The combination with the rotatable polygonal shafts having rounded journal portions, the flat transverse end and middle bars forming fixed portions of the frame in which the rotatable shafts are journaled, the fixed bars having semicircular notches in the under side, and the clip-bearings, composed of a semicircular notched bar having bifurcated and perforated ends adapted to embrace the fixed transverse bars, and bolts or rivets securing said bearings in place, as shown and described.

610,457. FIREPROOF CONSTRUCTION FOR PARTITIONS AND WALLS. FRANCIS ONEIL, Charleston, S. C. Filed Jan. 20, 1898. Serial No. 667,302. (No model.)

Claim.—1. The combination of a beam having divergent webs, with a wire clamping or securing device, comprising a plate or bar extending laterally across the face of said webs with its ends bent over the outer edges of the webs, said bar or plate having a slot extending laterally across its center, and a staple adapted to enter said slot and secure the wire to the plate by bending the inner ends of the staple to one side, substantially as described.

2. The combination of a beam having divergent webs, with a wire clamping or securing device, comprising a bar extending laterally across the face of the webs and having its ends bent over the edges of the webs, said bar having a slot extending laterally across its center, a staple adapted to enter said slot and to secure the wire to the plate, and an expanding-block between the webs and beneath the plate adapted to expand the sides of the staple to hold it in place, substantially as described.

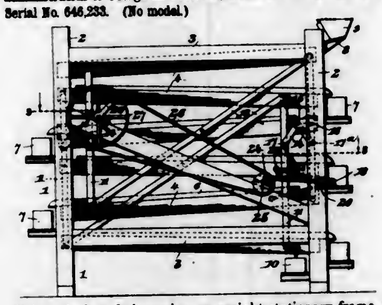


3. A fireproof-partition construction, comprising studding-beams having diverging webs with their edges toward the sides of the partition, clamps each comprising a bar extending laterally across said webs, with its ends bent over their edges and having a slot at its center, a staple entering said slot and adapted to have its ends bent sidewise, wires beneath the loops of said staples and extending between the beams, and a plaster-retaining web secured to said wires, substantially as described.

4. A fireproof-partition construction, comprising studding-beams having diverging webs with their edges toward the sides of the partition, wire-securing clamps each comprising a plate extending laterally across said webs, with its ends bent over their edges and having a slot at its center, a staple entering said slot, a block adapted to fit between the diverging webs and having sloping surfaces adapted to engage and spread the sides of the staple when driven through the slot, wires beneath the loops of said staples and extending between the beams, and a plaster-retaining web secured to said wires, substantially as described.

5. A fireproof-partition construction, comprising beams formed of curved plates united with their convex sides toward each other, wire-holding clamps comprising a plate extending laterally across the edges of the beam and with its ends bent over the edges of the beam, said clamp-plates having a central slot, staples adapted to enter said slots and to have their ends bent to one side, wires extending laterally across the faces of the beams and beneath said staples, and a plaster-retaining web fixed to said wires, substantially as described.

610,458. FRUIT-GRADER. MARTHA A. PETERSON, Salem, Oreg., administratrix of George M. Peterson, deceased. Filed July 23, 1897. Serial No. 646,233. (No model.)



Claim.—1. In a fruit-grader, an upright stationary frame, a series of superposed oppositely-inclined grading-shoes arranged within the said frame, framework rigidly connecting each set of alternate parallel shoes, a common swinging support for both sets of connected shoes, and means for simultaneously moving both sets of shoes in a longitudinal direction, the movement of said swinging supports serving to impart to the two sets of shoes a vertical vibration respectively in opposite directions, substantially as set forth.

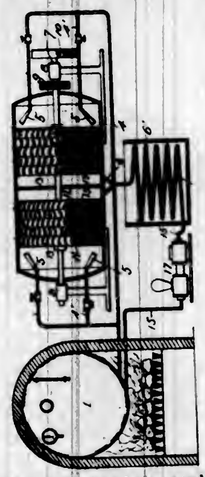
2. In a fruit-grader, an upright stationary frame, a series of superposed oppositely-inclined grading-shoes arranged within said frame, a framework rigidly connecting each set of alternate parallel shoes, and means for imparting a longitudinal vibration to all of the shoes and a simultaneous vertical vibration to the two sets of shoes, respectively, in opposite directions, substantially as set forth.

3. In a fruit-grader, an upright stationary frame, a series of superposed oppositely-inclined grading-shoes arranged within the frame, a framework connecting the alternate parallel shoes of each set, a common support for both sets of connected shoes, and means for imparting a longitudinal reciprocatory movement to both sets of shoes and a simultaneous up-and-down movement respectively in opposite directions, substantially as described.

4. In a fruit-grader, an upright stationary frame, a series of superposed oppositely-inclined grading-shoes arranged in said frame, a framework rigidly connecting the alternate parallel shoes of each set, bell-crank hanger-plates pivotally supported at the corners of the stationary frame and having their separate arms respectively connected with the separate sets of shoes, and operating connections with the two sets of shoes for swinging the same on the bell-crank hanger-plates, substantially for the purpose set forth.

5. In a fruit-grader, an upright stationary frame, a series of superposed oppositely-inclined grading-shoes arranged within the stationary frame, a framework of strips rigidly connecting the alternate parallel grading-shoes of each set, bell-crank hanger-plates pivotally supported at the corners of the stationary frame and having their separate arms respectively connected with the separate sets of grading-shoes, an oscillating operating-lever 18 pivotally supported intermediate its ends at one corner of the stationary frame, a pair of connecting-links 21 loosely connected at one end with the inner end of said lever, and at their other ends, respectively, connected with grading-shoes belonging to different sets, and a suitable pitman connection 23 with the outer end of the said operating-lever, substantially as specified.

610,459. APPARATUS FOR CONVERTING HEAT INTO POWER. WILLIAM R. PRALL and EDGAR F. PRALL, New York, N. Y., assignors, by direct and mesne assignments, to the Superheated Water Engine Company, of West Virginia. Filed Nov. 12, 1897. Serial No. 658,310. (No model.)

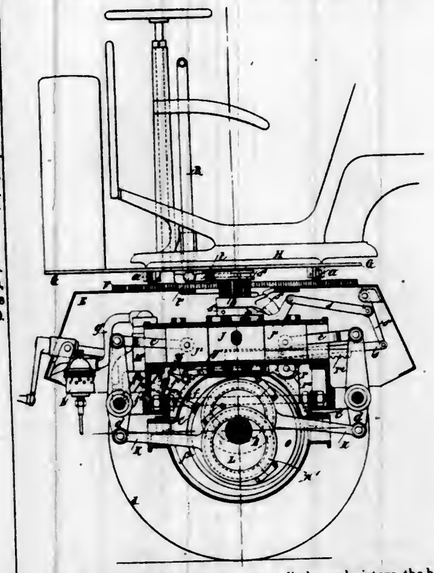


Claim.—1. The combination of a receptacle containing superheated water under high pressure, a cylinder containing power receiving and transmitting buckets or the like adapted to be rotated by the impact of water, and a conduit beginning below the water-level in the receptacle and terminating in the cylinder for direct charging of water into the cylinder by equal transmission of pressure through the water in the said receptacle whereby superheated water can be charged into the cylinder and projected together with steam generated in the cylinder against the buckets, and means for discharging water and steam from said cylinder, substantially as described.

2. The combination of a boiler containing highly-heated water under pressure, a cylinder containing power receiving and transmitting buckets or the like adapted to be rotated by the impact of water, a conduit beginning below the water-level in the boiler and terminating in the cylinder for direct charging of water into the cylinder by equal transmission of pressure through the water in the said receptacle whereby superheated water can be charged into the cylinder and projected together with steam generated in the cylinder against the buckets, means for discharging water and steam from said cylinder, a condenser, and a pump to convey exhaust to the boiler, substantially as described.

3. The combination of a receptacle containing highly-heated water under pressure, the cylinder containing power receiving and transmitting buckets or the like adapted to be rotated by the impact of water, a conduit beginning below the water-level in the receptacle and terminating in the cylinder for direct charging of water into the cylinder by equal transmission of pressure through the water in the said receptacle whereby superheated water can be charged into the cylinder and projected together with steam generated in the cylinder against the buckets, and means for discharging water and steam from said cylinder, comprising exhaust-ports around its periphery, substantially as described.

610,460. SELF-PROPELLING CARRIAGE. VICTOR E. PRÉVOT, Paris, France. Filed Feb. 26, 1897. Serial No. 625,159. (No model.)



Claim.—1. The combination of the cylinder and pistons, the hollow driving-shaft carrying eccentrics, operative connections between the pistons and the eccentrics, and the vehicle-axle passing loosely through said hollow driving-shaft, substantially as described.

2. In a horseless carriage, a hollow driving-shaft mounted loosely upon one of the carriage-wheel axles, and a motor for operating said shaft, substantially as described.

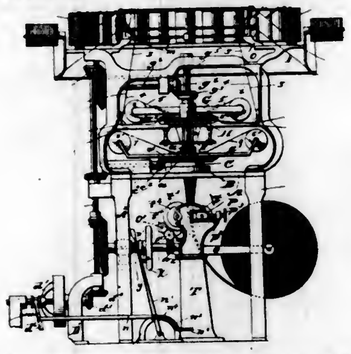
3. The combination of the driving-shaft, a series of pinions rigidly connected together and mounted to revolve with the driving-shaft, said pinions having different numbers of teeth and being mounted to rotate about an axis eccentric to that of the driving-shaft, a series of independent loose pinions concentric with the driving-shaft, and engaging the corresponding eccentric pinions, a driving mechanism connected to one of said concentric pinions, and fastening mechanisms whereby any one of the other concentric pinions may be held against rotation, as and for the purpose set forth.

4. The combination of the driving-shaft, a speed-changing mechanism comprising a series of gear-wheels having different numbers of teeth, whereby the speed may be changed without altering the number of revolutions of the driving-shaft, and a separate mechanism for changing the speed of the driving-shaft, substantially as described.

610,461. CIRCULAR-KNITTING MACHINE. ELIZABETH S. STETSON, West Hanover, Mass., executrix of Charles T. Stetson, deceased, assignor to James Bennett Forsyth, Boston, Mass. Filed Oct. 5, 1896. Serial No. 607,973. (No model.)

Claim.—1. In a circular-knitting machine for the production of tubular fabrics the combination with a suitable supporting-frame, of a series of stationary warp-thread bobbins mounted on said frame, a second series of stationary warp-thread bobbins carried by said frame in close proximity to the first-mentioned warp-thread bobbins, knit-

ting mechanism comprising a cam-cylinder and knitting-needles, means for rotating said cylinder, horizontal arms carried by said cylinder, weft-thread bobbins carried by said arms, so that said bobbins rotate in a plane above the knitting-point a vertical shaft depending from the top of the supporting-frame, means for rotating said shaft, horizontal arms secured to said shaft, knitting-thread bobbins carried by said arms, two arms carried by the main frame and projecting inwardly between the planes of rotation of the weft and knitting thread bobbins, vertical studs mounted in the inner ends of said inwardly-projecting arms, and guide-rings carried by said studs which control and direct the two lines of warps and the weft-threads to said knitting mechanism.



2. In a circular-knitting machine for the production of tubular fabrics, the combination with a suitable supporting-frame, of a series of stationary warp-thread bobbins mounted on said frame, a second series of stationary warp-thread bobbins carried by said frame in close proximity to the first-mentioned warp-thread bobbins, knitting mechanism comprising a cam-cylinder and knitting-needles, means for rotating said cylinder, horizontal arms carried by said cylinder, weft-thread bobbins carried by said arms, so that said bobbins rotate in a plane above the knitting-point a vertical shaft depending from the top of the supporting-frame, means for rotating said shaft, horizontal arms secured to said shaft, knitting-thread bobbins carried by said arms, two arms carried by the main frame and projecting inwardly between the planes of rotation of the weft and knitting thread bobbins, vertical studs adjustably mounted in the inner ends of said inwardly-projecting arms, and guide-rings carried by said studs which control and direct the two lines of warps and the weft-threads to said knitting mechanism.

3. In a circular-knitting machine for the production of tubular fabrics, the combination with a suitable supporting-frame, of a series of stationary warp-thread bobbins mounted on said frame, a second series of stationary warp-thread bobbins carried by said frame in close proximity to the first-mentioned warp-thread bobbins, knitting mechanism comprising a cam-cylinder and knitting-needles, means for rotating said cylinder, horizontal arms carried by said cylinder, weft-thread bobbins carried by said arms, so that said bobbins rotate in a plane above the knitting-point a vertical shaft depending from the top of the supporting-frame, means for rotating said shaft, horizontal arms secured to said shaft, knitting-thread bobbins carried by said arms, two arms carried by the main frame and projecting inwardly between the planes of rotation of the weft and knitting thread bobbins, vertical studs adjustably mounted in the inner ends of said inwardly-projecting arms, two guide-rings carried at the upper ends of said adjustable studs, sleeves sliding on the lower ends of said studs, a guide-ring carried by said sleeves, and nuts to hold said sleeves and ring in adjusted position.

4. In a circular-knitting machine for the production of tubular fabrics, the combination with a suitable supporting-frame, of a series of stationary warp-thread bobbins mounted on said frame, a second series of stationary warp-thread bobbins carried by said frame in close proximity to the first-mentioned warp-thread bobbins, knitting mechanism comprising a cam-cylinder and knitting-needles, means for rotating said cylinder, horizontal arms carried by said cylinder, weft-thread bobbins carried by said arms, weft-thread tension devices on said arms, so that said bobbins rotate in a plane above the knitting-point, a vertical shaft depending from the top of the supporting-frame, means for rotating said shaft, horizontal arms secured to said shaft, knitting-thread bobbins carried by said arms, tension devices on said arms, two arms carried by the main frame and projecting inwardly between the planes of rotation of the weft and knitting thread bobbins, vertical studs adjustably mounted in the inner ends of said inwardly-projecting arms, two guide-rings carried at the upper ends of said adjustable studs, sleeves sliding on the lower ends of said studs, a guide-ring carried by said sleeves, and nuts to hold said sleeves and ring in adjusted position.

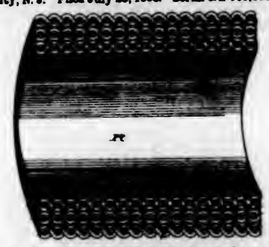
610,462. TUBULAR WOVEN FABRIC. BENJAMIN L. STOWE, Jersey City, N. J. Filed Mar. 31, 1898. Serial No. 675,885. (No model.)



Claim.—1. A tubular woven fire or hydraulic hose fabric, having incorporated in its structure leveling weft-strands laid on the interior surface of the tubular fabric in the furrows or corrugations between the usual filling-strands of said fabric, and warp-strands by which said additional leveling-strands are held, substantially as and for the purposes hereinbefore set forth.

2. Hydraulic or fire hose consisting of a tubular woven fabric having incorporated into its structure additional leveling weft-strands *c* laid on the interior surface of said fabric to fill the corrugations or furrows which otherwise would exist between the usual filling-strands of the fabric, warp-strands *d* for said additional leveling-strands, and a rubber lining applied and secured to the interior surface of said tubular fabric, substantially as and for the purposes hereinbefore set forth.

610,463. TUBULAR WOVEN FABRIC. BENJAMIN L. STOWE, Jersey City, N. J. Filed July 25, 1898. Serial No. 686,815. (No model.)



Claim.—1. Tubular woven fabric for fire or hydraulic hose having incorporated in its structure leveling weft-strands laid on the interior surface of the tubular fabric in the furrows between the usual filling-strands of said fabric, and warp-strands for holding said leveling-strands which stop short of, and do not extend through to, the exterior of said fabric, substantially as and for the purposes hereinbefore set forth.

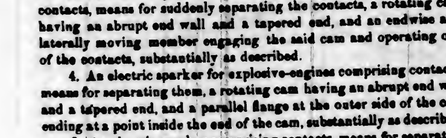
2. Tubular multiply woven fabric for hydraulic or fire hose having incorporated in its structure leveling weft-strands laid on the interior surface of the inner ply in the furrows between the usual filling-strands, and warp-strands for holding said additional leveling-strands, which stop short of, and do not extend into, the outer ply of said fabric, substantially as and for the purposes hereinbefore set forth.

610,464. COMBING-MACHINE. ALFRED WEHNERT and CHARLES H. GEBAUFF, Mulhouse, Germany, assignors to La Société Alsacienne de Constructions Mécaniques, same place. Filed Nov. 10, 1896. Serial No. 611,636. (No model.) Patented in France Aug. 22, 1896, No. 259,090; in Germany Aug. 23, 1896, No. 92,093, and in England Aug. 27, 1896, No. 18,967.

Claim.—1. The combination of two drawing-rollers, bearings therefor, pressure-exerting devices located at the ends of the rollers and tending to force said ends apart, and additional pressure-exerting devices engaging one of the rollers between its ends and tending to force said roller toward the other roller, substantially as described.

2. The combination of two drawing-rollers, and their bearings, a pressure-exerting device at each end of one of the rollers, and additional pressure-exerting devices between said end pressure devices, all of said pressure-exerting devices acting transversely of the rollers even when the said rollers are stationary, substantially as described.

3. The combination of two drawing-rollers, and their bearings, a pressure-exerting device at each end of one of the rollers, and additional pressure-exerting devices acting on the same roller between said end pressure devices, substantially as described.



4. The combination of two drawing-rollers and their bearings, a pressure-exerting device at each end of one of the rollers, and additional pressure-exerting devices acting on the same roller between said end pressure devices, and in the opposite direction thereto, substantially as described.

5. The combination of two drawing-rollers, bearings therefor, springs interposed between the bearings of different rollers and tending to force them apart, and additional pressure-exerting devices engaging one of the rollers between the bearings and tending to force said roller toward the other roller, substantially as described.

610,465. EXPLOSIVE-ENGINE. ALEXANDER WINTON, Cleveland, Ohio. Filed Sept. 18, 1897. Serial No. 652,175. (No model.)

Claim.—1. A sparker-actuating device for explosive-engines comprising a cam having an abrupt end wall, a tapered end, and a projecting flange ending at a point inside the abrupt end of the cam, substantially as described.

2. A sparker-actuating device for explosive-engines comprising a collar having a cam with one end beginning on a plane therewith and its opposite end having an abrupt tapered wall, the cam having a parallel projecting flange at its longest side with tapered ends, substantially as described.

3. An electric sparker for explosive-engines comprising electric contacts, means for suddenly separating the contacts, a rotating cam having an abrupt end wall and a tapered end, and an endwise and laterally moving member engaging the said cam and operating one of the contacts, substantially as described.

4. An electric sparker for explosive-engines comprising contacts, means for separating them, a rotating cam having an abrupt end wall and a tapered end, and a parallel flange at the outer side of the cam ending at a point inside the end of the cam, substantially as described.

5. An electric sparker comprising contacts, means for separating them, a rotating cam having an abrupt end wall and a tapered end, and a parallel flange at the outer side of the cam and extending parallel therewith having a tapered end ending at a point inside of the end of the cam, combined with an endwise and laterally movable actuating member engaging the cam and operating one of the contacts, substantially as described.

6. An electric sparker for explosive-engines comprising contacts, means for separating them, a rotating cam an end wall against which the face of the cam rotates, the cam having an abrupt end wall tapered outward, and a flange parallel with the outer face of the cam projecting outward therefrom, the ends of the flange being tapered and the end adjacent the tapered end of the cam ending at a point inside of the end of the cam, substantially as described.

7. An electric sparker comprising contacts, a rotating cam having an abrupt and diagonally-extending wall, a flange projecting from the cam and extending parallel therewith and having its end ending at a point inside the end wall of the cam, a rod having one end engaging the cam, a spring holding the rod normally downward, a spring holding the rod normally against the said flange, the opposite end of the rod connected with the movable contact, substantially as described.

610,466. MOTOR-VEHICLE. ALEXANDER WINTON, Cleveland, Ohio. Filed Jan. 12, 1898. Serial No. 666,439. (No model.)

Claim.—1. A motor-vehicle comprising a motor, a motor drive-shaft, a clutch carried thereby, drive-wheels, a connection between said clutch and drive-wheels, a counter-shaft actuated by the motor and carrying a brake member, a shaft extending parallel the counter-shaft, a coacting brake member actuated by said parallel shaft, and a connection between the parallel shaft and the clutch for operating the latter.

2. A motor-vehicle comprising a motor, a motor drive-shaft extending transverse the vehicle, a clutch carried by said shaft, a gear-wheel driven by the clutch, drive-wheels, a connection between said clutch, motor-shaft and drive-wheels, a counter-shaft parallel with said drive-shaft and driven by said clutch gear-wheel, a brake member carried by the counter-shaft, an oscillating shaft parallel with the counter-shaft, a connection between said oscillating shaft and clutch for actuating the latter, a coacting brake member actuated by the oscillating shaft, and a reciprocating operating-lever connected with the oscillating shaft, the parts operating for the purpose described.

3. The combination with the drive-shaft of a friction-plate fast thereto, a second coacting friction-plate keyed thereto but movable upon said longitudinal the shaft, intermediately-pivoted dogs having one end adapted to move the movable toward the rigid plate, and a member for separating the opposite ends of the dogs.

4. The combination of the motor, a drive-shaft, a friction-plate fast to said shaft, a second friction-plate keyed to the shaft but movable longitudinally thereon, a gear loose upon the shaft and situated between said friction-plates, and dogs adapted to move the movable plate in contact with the gear and thereby clamp it between said friction-plates.

5. A motor-vehicle comprising a motor, a drive-shaft carrying a "fast go-ahead" mechanism, a single counter-shaft operatively connected with the drive-shaft, the counter-shaft carrying a "slow go-ahead" and a "backing" mechanism, each driven by the drive-shaft, and means for controlling said mechanisms.

6. A motor-vehicle comprising a motor, a drive-shaft, a "fast go-ahead" mechanism carried by said drive-shaft, a single counter-shaft driven by said mechanism, said shaft carrying a "slow go-ahead" and a "backing" mechanism, each of the latter mechanisms adapted to be driven by the drive shaft, and controlling members for all of said mechanisms.

7. A motor-vehicle comprising a motor, a drive-shaft, a "fast go-ahead" mechanism carried by but normally loose thereon, a coun-

ter-shaft driven by the "fast go-ahead" mechanism and carrying a "slow go-ahead" a "backing" mechanism, and a brake-wheel, the mechanisms of the counter shaft driven by the drive-shaft independent of the "fast go-ahead" mechanism, and a cooperating brake member, whereby the brake is adapted to be used when either of the mechanisms is in operation.

8. A motor-vehicle comprising a motor, a "go-ahead" mechanism and a "backing" mechanism, a controller for each mechanism, and a member common to both mechanisms and adapted to apply one and by the same movement release the other for the purpose described.

9. A motor-vehicle comprising a motor, a drive-shaft connected therewith and carrying a "go-ahead" and a "backing" mechanism, a clutch for each mechanism, an actuating member situated between the clutches, a lever connected with the actuating member and adapted when at a central position to hold the actuating member out of contact with both clutches and to operate one clutch when moved in one direction and to release the applied clutch and apply the unapplied clutch when moved in the opposite direction beyond said central position.

10. A motor-vehicle comprising drive-wheels, separate shafts therefor and to which the wheels are attached, bevel gears attached to adjacent ends of the shafts, bevel-gears 16 fitting between and engaging opposite edges of said shaft-gears, a support rotatable around said wheel-shafts, the support carrying a driving-gear having the axis of the shafts the center of its rotation.

11. A motor-vehicle comprising a vehicle drive-shaft, a revolving gear-casing operatively connected therewith, a casing-gear, and a yielding connection between said casing and its gear-wheel.

12. A motor-vehicle comprising a drive-shaft, a propelling member operatively connected therewith, a gear having a cavity receiving said member, and having itself a coacting propelling member within said cavity, and rubber situated within said cavity and filling the spaces at opposite sides of said members and receiving the propelling force.

13. A motor-vehicle comprising a drive-shaft, a casing surrounding said shaft, a sprocket or belt wheel supported by said casing and operatively connected with the shaft, a motor, a sprocket chain or belt operatively connecting the motor and said sprocket or belt wheel, and means for adjustably moving said casing in respect to the motor connection for the purpose described.

14. In a motor-vehicle, a steering mechanism comprising a rigid axle having at its ends sockets with vertical bearings, short wheel-axles supported by said bearings and having laterally-extending arms, a member connecting said arms, a bell-crank lever intermediately pivoted and having one end flexibly connected with said connecting member, and an operating-handle operatively connected with the opposite end of said bell-crank lever.

15. In a motor-vehicle, the body provided with a seat and a portion extending rearward of the seat, a motor situated in this rear extension of the body, the rear extension having an open bottom and ventilated top, whereby there is a free upward circulation of air, and in rear of the occupant of the vehicle, substantially as described.

16. In a motor-vehicle, the body, the seat supported by the body, a steering mechanism, and a controlling-lever for the steering mechanism having its lower end pivoted in front of and below the plane of the seat, said pivoted lever extending rearwardly and upwardly, substantially as and for the purpose described.

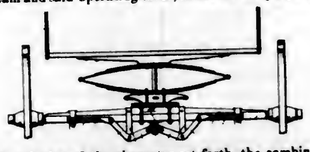
17. A motor-vehicle comprising a motor, the drive-wheels operatively connected with the motor, the body, a seat, the body having an entrance-way in front of the seat, controlling-levers for the propelling mechanism situated just in front of and at one end of the seat and in rear of the passage-way to be operated by one hand of the driver, and a steering-handle situated at a point inside of said levers at a point adapted to be operated by the other hand of the driver, substantially as described.

18. A motor-vehicle comprising a motor, the drive-wheels operatively connected with the motor, the body, a seat, the body having an entrance passage way in front of the seat, controlling-levers for the propelling mechanism situated just in front of and at one end of the seat and in rear of the passage-way to be operated by one hand of the driver, and an upwardly and rearwardly extending lever pivoted at its forward and lower end at a point in front of and inside of the controlling levers, substantially as described.

610,467. COMBINED THILL-COUPLING AND BRAKE. WILLIAM G. BARNHARDT, Tower City, Pa. Filed Dec. 1, 1896. Serial No. 614,079. (No model.)

Claim.—1. The combination with the axle of a vehicle, of a pair of simultaneously and oppositely movable pins, bell-crank levers pivoted to the inner ends of said pins and having their adjacent ends overlapped and provided with elongated slots, a lever disposed at right angles to said bell-crank levers and having one end located within said slots, and an operating-arm for said lever.

2. The combination with the axle of a vehicle, of a pair of simultaneously and oppositely movable pins, a pair of bell-crank levers pivoted to the inner ends of said pins and having their adjacent ends overlapped and provided with elongated slots, an operating-lever disposed at right angles to said bell-crank levers and having one end located within said slots, an operating-arm connected with said operating-lever, a movable brake-beam, and connections between said brake-beam and said operating-lever, as and for the purpose set forth.



3. In a device of the character set forth, the combination with releasing mechanism for the thills, comprising simultaneously and oppositely movable pins, and a pair of bell-crank levers pivoted respectively to the inner ends of said pins and having their adjacent ends crossed and provided with elongated slots, of an operating-lever disposed at right angles to said bell-crank levers and having one end located within said elongated slots, an operating-arm pivoted to the operating-lever, a bell-crank lever pivoted at one end to said operating-arm, a brake-beam carrying a brake, and connections between said beam and the other arm of said bell-crank lever, as and for the purpose set forth.

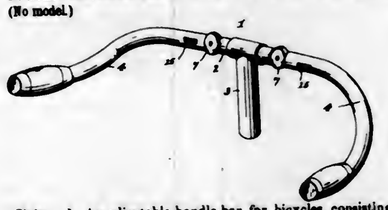
610,468. VEHICLE-WHEEL. JOSEPH BLAIS, Sherbrooke, Canada. Filed Sept. 15, 1897. Serial No. 651,746. (No model.)



Claim.—1. The combination of the rim having beveled ends and provided with a peripheral groove on its outer face at each end, the wedge located between said ends and provided on its outer or base end with a transverse groove registering with the grooves on the rim, a bar located in the said registering grooves and having a threaded eye at each end, a shoe engaging the inner surface of the rim and the sides thereof at the joint, and screws passing through the shoe and rim and engaging the threaded eyes of the bar, substantially as described.

2. A wheel comprising a cylindrical hollow hub, an axle-box fitted at one end tightly in the said hub, an interposed ring or washer at the other end of the axle-box, the outer end of the said hub being provided on its inner face with inwardly-projecting lugs, collars movable longitudinally of said hub, spokes converging outwardly from said collars and a rim secured to the outer end of the spokes, substantially as described.

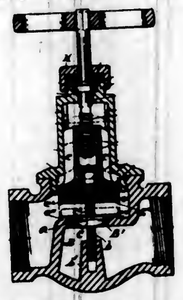
610,469. ADJUSTABLE HANDLE-BAR FOR BICYCLES. JAMES M. BLASHFIELD, Jackson, Mich. Filed Nov. 4, 1897. Serial No. 657,401. (No model.)



Claim.—1. An adjustable handle-bar for bicycles, consisting of a central section fixed to the head-tube post and provided at each end with a vertical joint cup or case section, two independent handle-sections each provided at its inner end with a vertical joint cup or case section adapted to receive the flange of the case-section on the contiguous end of the central section, a bolt uniting said case-sections, and a sliding bolt in each handle-section having an exterior thumb-piece and adapted to engage and hold the said joint case-sections locked, substantially as described.

2. An adjustable handle-bar for bicycles, comprising the central section 2 fitted in the sleeve of the T-shaped head-tube 3 and provided at each end with a vertical joint cup or case half 5 having its flange projecting inwardly and formed with the openings 6, in combination with the handle-sections 4 each provided at its inner end with a vertical joint cup or case half 7 adapted to receive the flange of the adjoining case-half 5, pivot-bolts 9 uniting said case-halves, the locking-bolts 10 sliding in the handle-bar sections and adapted to engage the openings 6, and the thumb-pieces 15 connected with each bolt and sliding in openings in the handle-bar sections, substantially as described.

610,470. COMBINED CHECK AND STOP VALVE. LOUIS BUEHLER, Detroit, Mich., assignor of one-half to Frank D. Wheeler, same place. Filed Apr. 15, 1897. Serial No. 632,208. (No model.)



Claim.—1. The combination with the valve-case having the horizontal diaphragm provided with an aperture, the check-valve seated over said aperture and having a depending stem, the vertical tube in said case which receives said stem, the vertically-movable plunger carrying on its lower end a disk which engages said valve to regulate the vertical play thereof and to force said valve to its seat, said disk being of greater diameter than said valve and adapted to make a closure on the valve-seat around the valve's perimeter.

2. The combination of the valve-case, the check-valve seated therein, the raised flange around said valve-seat, the movable plunger adapted to engage said valve and having a bearing upon said raised flange to make a closure around the valve-seat.

610,471. BICYCLE-HANDLE. HARRY L. CAVANAGH, Chicago, Ill., assignor of one-half to John T. Boyle, same place. Filed Feb. 5, 1897. Serial No. 622,076. (No model.)



Claim.—1. As a new and useful article of manufacture a grip for handle-bars consisting of a botton adapted to be secured to one end of the handle-bar, a coiled flexible resilient band adapted to surround the handle-bar and having one end secured to said button, and a collar rotatable independently of said button and being secured to the other end of said band and means for securing said collar in position, substantially as set forth.

2. As a new and useful article of manufacture a grip for handle-bars having in combination the handle-bar proper, a flexible resilient band coiled around said handle-bar and having its convolutions extending at a distance therefrom, and means for securing the said band in place and varying its tension, substantially as set forth.

3. As a new and useful article of manufacture a grip for handle-bars having in combination the handle-bar proper, a flexible resilient band coiled around said handle-bar and having some of its convolutions extending at a distance therefrom and one of its intermediate convolutions conforming to the handle-bar, substantially as set forth.

4. In combination with the handle-bar of a cycle, a grip therefor, made of flexible resilient wire coiled upon the bar so as to form an annular spheroidal arch, with collars clamping the bar and fitting against the opposite ends of the wire coil so as to support it equally upon all sides, one of the collars being adjustable for varying the stiffness of the arch, substantially as set forth.

610,472. FLASH-LIGHT APPARATUS. ISRAEL COHN, New York, N. Y. Filed Mar. 3, 1898. Serial No. 672,356. (No model.)

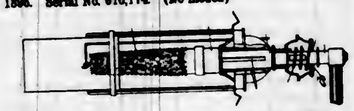
Claim.—1. A flash-light apparatus, comprising a magazine, a charge-nozzle adapted to be filled from the said magazine, and adapted to be cut off therefrom after filling, and an air-pipe adapted to register with the said nozzle at the time the latter is cut off from the magazine, the nozzle when turned, cutting off the air-pipe before the nozzle moves in register with the magazine, substantially as shown and described.



2. A flash-light apparatus, comprising a magazine formed in its bottom with a port, a charge-nozzle mounted to turn and having its bottom on the bottom of the magazine, the nozzle-bottom being provided with a port adapted to register with the port in the magazine-bottom, to permit of filling the nozzle from the magazine, and an air-pipe for forcing a blast of air into the nozzle at the inner end thereof, the said pipe being adapted to register with a second port in the nozzle after the port in the bottom of the nozzle is cut off from the magazine-port, substantially as shown and described.

3. A flash-light apparatus, comprising a magazine formed in its bottom with a port, a charge-nozzle mounted to turn and having its bottom on the bottom of the magazine, the nozzle-bottom being provided with a port adapted to register with the port in the magazine-bottom, to permit of filling the nozzle from the magazine, an air-pipe for forcing a blast of air into the nozzle at the inner end thereof, the said pipe being adapted to register with a second port in the nozzle after the port in the bottom of the nozzle is cut off from the magazine-port, and a fuse-holder carried by the said nozzle and adapted to form a stop for limiting the turning motion of the nozzle between fixed shoulders, substantially as shown and described.

610,473. WELSBACH LAMP. FRANK A. CORTIS, Meriden, Conn., assignor of one-half to Dwight T. Cortis, Boston, Mass. Filed Oct. 27, 1896. Serial No. 610,174. (No model.)



Claim.—1. In combination in a lamp having a fragile mantle over a flame and including a member supporting said mantle and having a loose mount, and a yielding cushion interposed between said member and its support, to resist lateral movement of said mantle supporting member.

2. In combination in a lamp having a fragile mantle over a flame and including a burner-section supporting said mantle, said burner-section having a shoulder resting on its support, and a cushion interposed between said burner-section and its support whereby lateral jars or shocks are prevented.

3. In combination in a lamp having a fragile mantle over the flame, a burner-tube comprising an upper section supporting the fragile mantle and loosely mounted on a lower section, the lower section of the burner-tube mounted on a support, the support and a yielding cushion interposed between the two sections of the burner-tube.

4. In combination with a bracket-arm or like support, forming a source of supply, a mixer-tube secured to said support, an air-shutter mounted on the mixer-tube, a sectional burner-tube mounted on a yielding cushion located within the air-shutter, the upper section of the burner-tube supporting the fragile mantle for the lamp and loosely mounted on the lower section of the burner tube, and a yielding cushion interposed between the sections of the burner-tube.

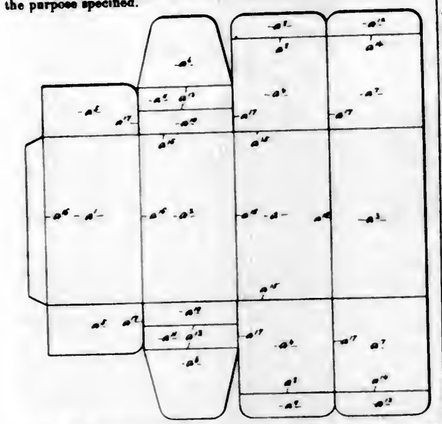
5. In combination with a bracket-arm or like support, a gas-pipe, a mixer-tube, an air-shutter inclosing a yielding cushion, the lower section of the burner-tube surrounding the mixer-tube and mounted on the yielding cushion and also, extending within the upper section of the burner-tube, the upper section of the burner-tube loosely mounted on the lower section by a central support, and a yielding cushion interposed between the two sections of the burner-tube.

6. In combination with a bracket-arm or like support, a mixer-tube, a sectional burner-tube supported on the mixer-tube, one of said sections bearing a fragile mantle over the flame of the lamp and loosely mounted on the lower section, and a cushion interposed between said sections.

610,474. BOX. ARTHUR R. COWLES, Rochester, N. Y., assignor to the Standard Lithographing Company of the City of New York, of New York. Filed Apr. 15, 1897. Renewed Feb. 5, 1898. Serial No. 669,579. (No model.)

Claim.—1. The herein-described box, consisting of angularly-arranged sides or walls, and flaps projecting from the ends of oppo-

site sides or walls, one flap having portions thereof extended inwardly and united at their inner edges for forming a pocket, and the other flap being lapped upon the first flap and provided with a tongue normally inserted into said pocket, substantially as and for the purpose specified.



2. The herein-described box, consisting of angularly-arranged sides or walls, a pair of flaps projecting from the ends of opposite sides or walls and lapped upon each other, a second pair of flaps projecting from the ends of additional opposite sides or walls and lapping upon the former flaps, one of the second pair of flaps having portions thereof extended inwardly at the lengthwise edges of the former flaps for forming a pocket, and the other of said second pair of flaps being provided with a tongue or inward extension normally inserted into said pocket, substantially as and for the purpose set forth.

3. The herein-described box, consisting of angularly-arranged sides or walls, and flaps projecting from the ends of opposite sides or walls, one of the flaps being formed with a transverse portion extended inwardly from the end of the side or wall provided with said flap, and a second transverse portion extended inwardly at the side of the first transverse portion and having its inner edge united to the corresponding edge of the first transverse portion, said flap having its extremity arranged at substantially right angles to said side or wall, and the other flap being lapped upon the first flap and provided with a tongue or inward extension normally arranged between the inwardly-extending transverse portions of the first flap, substantially as and for the purpose set forth.

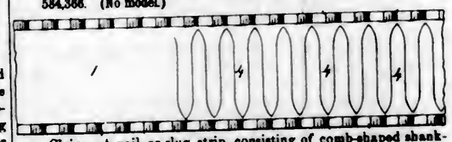
4. The herein-described box, consisting of angularly-arranged sides or walls, a pair of flaps projecting from the ends of opposite sides or walls and lapped upon each other, the inner flap being provided at its extremity with an inward extension or tongue arranged in close proximity to the opposite side or wall, and a second pair of flaps projecting from the ends of additional opposite walls, one of the second pair of flaps being formed with a transverse portion extended inwardly from the end of the wall provided with said flap, and a second transverse portion extended inwardly at the side of the first transverse portion and having its inner edge united to the corresponding edge of the first transverse portion, said flap having its extremity arranged at substantially right angles to said side or wall and lapped upon the first pair of flaps, and the other of said second pair of flaps being lapped upon the former flaps and provided with a tongue or inward extension normally arranged between the inwardly-extending transverse portions of the first additional flap, substantially as and for the purpose described.

5. The herein-described box, consisting of angularly-arranged sides or walls a' a^3 a^3, flaps a^4 a^4, a^5 a^5, projecting from the opposite ends of the sides or walls a a', the flaps a^4 a^4 being formed at their extremities with inward extensions or tongues a^8 a^8 normally arranged in close proximity to the side or wall a', and the flaps a^5 a^5 being formed of less length than the flaps a^4 a^4, and flaps a^6 a^6, a^7 a^7, projecting from the opposite ends of the sides or walls a^3 a^3, the flaps a^6 a^6 being formed with transverse portions a^{10} a^{11} extending inwardly at the longitudinal sides of the flaps a^4 a^4, a^6 a^6 and having their inner edges united, said flaps a^6 a^6 having their extremities lapped upon the flaps a^4 a^4, a^5 a^5, and the flaps a^7 a^7 being lapped upon the former flaps and provided at their extremities with tongues or inward extensions a^{12} normally arranged between the inwardly-extending transverse portions a^{10} a^{11} of the flaps a^6 a^6, substantially as and for the purpose specified.

6. As a new article of manufacture, the herein-described blank for boxes, the same consisting of a sheet of suitable material provided with longitudinal and transverse creases or scores a^{14} a^{15}, a^{15} a^{16} a^{16} a^{16} forming respectively the end and lengthwise edges of the sides or walls of the box, transverse slits a^{17} a^{17} a^{17} a^{17} extending outwardly from the lengthwise creases or scores a^{15} a^{15} for forming the end flaps a^3 a^3 a^7 a^7, lengthwise creases or scores a^{13} a^{13} arranged one in advance of the other between the inner ends of the slits a^{17} forming the end flaps a^6 a^6, and lengthwise creases or scores a^{14} arranged between the outer ends of the slits a^{17} forming the end flaps a^7 a^7, substantially as and for the purpose described.

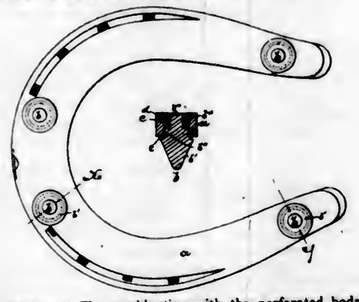
7. As a new article of manufacture, the herein-described blank for boxes, the same consisting of a sheet of suitable material provided with longitudinal and transverse creases or scores a^{13} a^{15}, a^{15} a^{16} a^{16} a^{16} forming respectively the end and lengthwise edges of the sides or walls of the box, transverse slits a^{17} a^{17} a^{17} a^{17} extending outwardly from the lengthwise creases or scores a^{15} a^{15} for forming the end flaps a^4 a^4, a^5 a^5, a^6 a^6, a^7 a^7, lengthwise creases or scores a^6 a^{14}, arranged between the outer ends of the slits a^{17} forming the end flaps a^4 a^4, a^7 a^7, and lengthwise creases or scores a^{13} a^{13} arranged one in advance of the other between the inner ends of the slits a^{17} forming the end flaps a^6 a^6, substantially as and for the purpose set forth.

610,475. NAIL OR SLUG STRIP. SOLOMON M. CUTTER, Nashua, N. H., assignor, by mesne assignments, to the Wire Grip Fastening Company of Maine, Boston, Mass. Filed Mar. 23, 1896. Serial No. 584,366. (No model.)



Claim.—A nail or slug strip, consisting of comb-shaped shank-forming portions, a continuous head-forming portion, a longitudinal rib on each side of the continuous head-forming portion, indentations in said ribs on the opposite sides thereof in line with the spaces between the teeth of the shank-forming portions and extending below the surface of the shank-forming portions leaving very thin metal joining the head portions so formed, and a continuous portion of the shank-forming portion immediately under the head portion joining the shank portions of even thickness with the shank portions and having unbroken surfaces on both sides, for the purpose set forth.

610,476. HORSESHOE. GEORGE W. DAVENPORT, Verona, N. J., assignor of one-half to Walter T. Crane, Newark, N. J. Filed Feb. 18, 1898. Serial No. 670,763. (No model.)



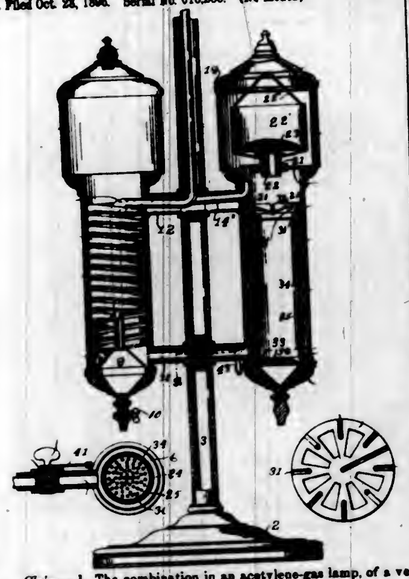
Claim.—1. The combination with the perforated body of the horseshoe, of a calk b, having a shank b'' lying in said perforation, and a reduced threaded extension b''', and a non-metallic washer arranged on said threaded extension, the said non-metallic washer being arranged between the inner walls of the said perforation and the threaded shank, substantially as set forth.

2. The combination with the perforated body of a horseshoe, of a removable calk having a shank inserted in said perforation, a portion of the length of said shank being directly in contact with the inner walls of the perforation and the other portion having a non-metallic collar lying between, substantially as set forth.

3. The combination with the perforated body of the horseshoe, of a calk having a shank fitting into the lower part of the perforation and a reduced extension extending into the upper part, and a collar of indurated fiber arranged upon said extension and being pressed between said extension and the walls of the perforation, substantially as set forth.

4. The combination with the perforated body of a horseshoe, of a calk having a shank lying in said perforation, the lower part of said shank fitting closely therein and the upper part being inclosed by a non-metallic washer which at its outer periphery is in contact with the walls of the perforation, substantially as set forth.

610,477. ACETYLENE-GAS-GENERATING LAMP. WILLIAM H. DEHNE, Minneapolis, Minn., assignor, by direct and mesne assignments, to the American Universal Lighting Company, Chippewa Falls, Wis. Filed Oct. 23, 1896. Serial No. 610,280. (No model.)



Claim.—1. The combination in an acetylene-gas lamp, of a vertical support with water and generator tanks or cylinders arranged on opposite sides of said support and connected by a water-duct leading from the water-tank to the upper part of the other tank or cylinder, the last-mentioned tank having a gas-outlet and having an open lower end, and a shell or holder adapted to be inserted in the open end of said tank and having a lower end, which when the said shell is in place forms the bottom of said tank, said shell being readily removable to permit the filling or emptying thereof, substantially as described.

2. The combination in an acetylene-gas lamp or generator of two tanks or cylinders suitably supported in substantially the same horizontal plane and having their lower ends connected by a valved duct, with a holder or shell removably arranged in the lower part of one of said tanks and having a lower end forming the bottom thereof, a water space or channel leading upward from said duct to deliver water from the other tank into the top of said holder or shell, and forming a column of water which will be depressed by an excess of gas-pressure, whereby the water-supply is interrupted and the lamp or generator made self-regulable, substantially as described.

3. The combination in a gas-generating lamp, of a pair of independent tanks or cylinders, one to contain water and the other being a generator, of a shell or holder movable in said generator-tank and adapted to contain gas-producing material, a water-duct connecting the two tanks, a valve provided therein and means whereby said shell being moved by gas-pressure, operates said valve, substantially as described.

4. The combination, with a gas cylinder or tank having a gas-outlet at its top, and also provided with water supply or distributing means in its upper portion, of a shell fitting in the lower portion of said gas-cylinder and having a lower end which closes or constitutes the bottom of the said gas-cylinder, shoulders provided on the lower ends of the cylinder and the said shell, and a flexible packing carried by one part and bound between said shoulders when the shell is inserted, substantially as described.

5. The combination, in a gas-lamp, of a vertical support or standard, with the two tanks or cylinders supported therefrom and connected by a duct, one of said tanks having an opening in its top and adapted to contain water, said cylinder also containing a gas-condenser having a connection with the upper part of the other tank, a gas burner or burners connected with said condenser, said other or the second tank being provided in its upper part with water supply or distributing means connected with said duct, the second tank having a gas tight or closed top and an open lower end, through which the material is inserted, and movable means for closing said lower end, substantially as described.

6. The combination in a gas-lamp, of the two separate tanks, one a generator having an open lower end, and the other a water-container, with a "material-shell" adapted to be inserted upward into the said generator, a duct between the tanks, a water-distributer in the generator, and a water-leg in the walls of the generator to cool the same and supplied from said water-tank, substantially as described.

7. The combination in a gas-lamp, of the two tanks or cylinders, one for water, and the other the generator, with a material shell or space within the latter, an annular water-leg provided between the walls of the cylinder and said shell or space and of less height than the cylinder, means for circumferentially feeding the water from said water-leg to said shell or space, and said water-leg being connected with said water-tank, substantially as described.

8. The combination in a gas-lamp of the two vertical tanks or cylinders, arranged side by side, one for water and the other the generator, with a material-space in said generator, a water-distributer in the upper part of the generator and above or over said space to drop water upon the contents thereof, a water-leg in the walls of the generator, to keep the lower outer walls of the generator cool, and means to supply both said distributer and said water-leg with water from the said water-tank; substantially as described.

9. In a gas-generating lamp, the combination, with the tank or chamber provided with a gas-outlet, of a water-leg surrounding or in the walls of the said tank means to supply water thereto, and said water-leg having an opening or openings at or near its top, through which the water may fall into the space between the inner walls of the water-leg, and whereby the surface of the water is exposed to the pressure of gas, to be forced down thereby and cut off the water feed or flow, substantially as described.

10. In a gas-generating lamp, the combination, with the tank having an open lower end, of a shell having a closed bottom and adapted to be inserted into said open lower end of said tank, a disk having drip-openings, troughs leading thereto, and means for supplying water to the same, substantially as described.

11. The water-distributer for gas-generating lamps comprising the concave disk having drip-holes and the troughs leading thereto, substantially as described.

12. In a gas-generating lamp, the combination with the tank or cylinder, of a movable shell provided therein and adapted to be forced out by pressure of gas within said tank, means for supplying water to said shell, a valve for controlling the flow of water, a valve-lever, and a lug upon said shell to engage the same, whereby when the shell is moved by gas-pressure said water-valve is closed automatically, substantially as described.

13. In a gas-generator, the tank or chamber having the removable top and the open bottom, and an intermediate partition, in combination with a removable shell, adapted to be inserted into said tank, through the open lower end thereof, means for supplying water to the interior thereof, and a perifier-basket above said partition and having a neck or sleeve projecting through the partition and communicating with the space beneath it, said basket being removable through the top of said tank or chamber substantially as described.

610,478. COMBINED CANE AND GAS-LIGHT. EDWARD H. DICKERSON, New York, N. Y. Filed Dec. 26, 1896. Serial No. 573,301. (No model.)

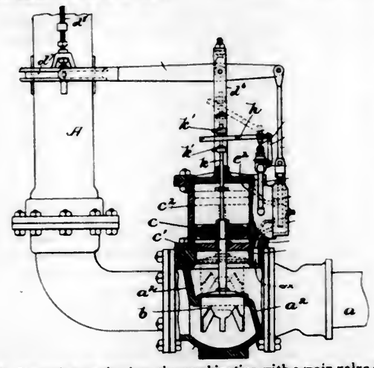


Claim.—The combination of a cane, consisting of a closed chamber for receiving an illuminant under pressure, a burner mounted on the top of said cane, and a valve attached and turned by the handle of the cane which serves both as a handle for such cane and as a key for the valve, substantially as described.

610,479. VALVE-CHECK. JOHN EWART, Lawrence, Mass., assignor to the Sheffield Car Company, Three Rivers, Mich. Filed Feb. 10, 1898. Serial No. 669,752. (No model.)
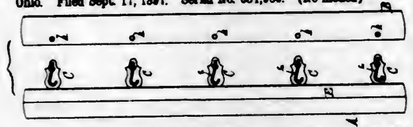
Claim.—1. In a valve mechanism, the combination with a main valve and a pressure-cylinder and piston for opening and closing said valve, of an exhaust-passage leading from the cylinder, and a valve in said passage controlled by the movements of the main valve and

piston, and adapted to obstruct the exhaust-passage during the closing movement of the main valve.



2. In a valve mechanism, the combination with a main valve and a pressure-cylinder and piston for opening and closing said valve, of an exhaust-passage leading from the cylinder, a sliding gate-valve arranged in said passage, and connections between said valve and the operating-piston, whereby the movement of said piston in closing the main valve causes a gradual closing of the gate-valve, as set forth.

610,480. CORSET-CLASP. JAMES A. FITZGERALD, Cleveland, Ohio. Filed Sept. 17, 1897. Serial No. 651,989. (No model.)



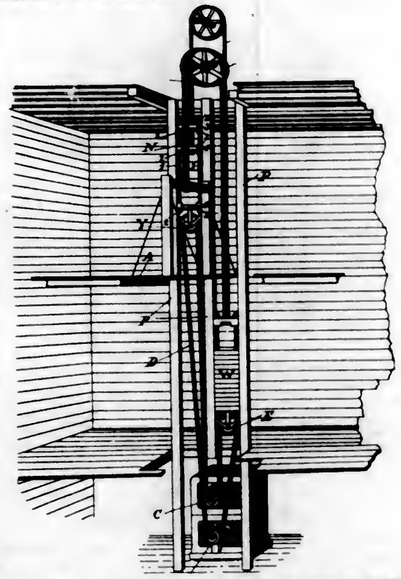
Claim.—1. In a corset clasp or fastening, the combination of a pair of corset steels or stays, one of which is provided, at proper intervals, with headed studs *b*, and the companion steel, provided with plates C, slidingly secured upon the member A, each plate being provided with a curved slot *c*, forming two stops upon different planes for engagement with its respective stud *b*, in the manner and for the purpose, substantially as described.

2. In a corset clasp or fastening, the combination of a pair of corset steels or stays, A, B, the latter being provided at proper intervals, with the headed studs *b*, plates C, slidingly secured upon the stay A, each plate being provided with a curved slot *c*, forming two stops for engagement with its respective stud *b*, and a covering-strip E, rigidly secured to the stay A, and bridged over the bases of the clasps or plates C, the parts being constructed, arranged and operating in the manner and for the purpose, substantially as set forth.

610,481. ELEVATOR. ETHELBERT M FRASER, San Francisco, Cal., assignor to John J. Mahony and Charles E. Green, same place. Original application filed Nov. 27, 1896. Serial No. 613,653. Divided and this application filed July 29, 1898. Serial No. 687,207. (No model.)

Claim.—1. An elevator having a car, cage, or platform and containing two driving-pulleys which are capable of being driven at the same and also at different relative rates of circumferential speed, and an endless cable that passes around both of said driving-pulleys and which is connected with said car, cage, or platform so as to control its actions, all of said parts being so arranged and combined that the said driving-pulleys and said endless cable will each run continuously in one direction and the said car, cage, or platform will remain stationary when the said driving-pulleys are running at the same relative rates of circumferential speed, but will move either upward or downward when the relative rates of circumferential speed of said driving-pulleys are changed so that one of them will run either faster or slower than the other, all substantially as herein set forth and described.

2. The combination in an elevator of two driving-pulleys which are capable of being driven at the same and also at different relative rates of circumferential speed a load that is to be raised or lowered, an endless cable provided with bights or loops that is connected with the load and controls its actions, two traveling pulleys the first of which pulleys is carried in one of said loops or bights of the endless cable and the second of which is carried in another of the loops or bights of the endless cable, a cable that is connected at one of its ends with the first of said traveling pulleys and after passing around a friction-pulley is connected at its other end with the second of said traveling pulleys, the said friction-pulley, and a tension apparatus, all of said parts being so arranged and combined that the driving-pulleys and endless cable will each run continuously in one direction and the load will remain stationary when the driving-pulleys are running at the same relative rates of circumferential speed but will move either upward or downward when the relative rates of circumferential speed of the driving-pulleys are changed so that one of them will run either faster or slower than the other, all substantially as herein set forth and described.



3. In an elevator the combination of a car, cage, or platform, two driving-pulleys that are capable of being driven at the same and also at different relative rates of circumferential speed, a counterweight, two stationary friction-pulleys, a cable or set of cables passing over one of said stationary friction-pulleys and connecting the counterweight with the car, cage, or platform, in such a manner that when the counterweight descends it will draw the car, cage, or platform upward, and when the counterweight ascends it will allow the car, cage, or platform to descend by its own gravity, another cable or set of cables passing over the other of said stationary friction-pulleys and being connected at one end to the said counterweight and at the other end to a traveling friction-pulley, two traveling friction-pulleys, one of which is the one that is connected to one end of said last-mentioned cable or set of cables and the other of which is attached to the bottom of said counterweight, and one or more endless cables that pass around both of the said driving-pulleys and also around both of the said traveling friction-pulleys, all combined and arranged substantially as herein set forth and described and so that the driving-pulleys and endless cable or cables will each run continuously in one direction and the car, cage, or platform will remain stationary when the driving-pulleys are running at the same relative rates of circumferential speed but will move either upward or downward when the relative rates of circumferential speed of the driving-pulleys are changed so that one of them will run either faster or slower than the other.

4. In an elevator the combination of a car, cage, or platform, two driving-pulleys that are capable of being driven at the same and also at different relative rates of circumferential speed, a counterweight, a tightening device, two stationary friction-pulleys, a cable or set of cables passing over one of said stationary friction-pulleys and connecting the counterweight with the car, cage, or platform in such a manner that when the counterweight descends it will draw the car, cage, or platform upward and when the counterweight ascends it will allow the car, cage, or platform to descend by its own gravity, another cable or set of cables passing over the other of said stationary friction-pulleys and being connected at one end to the said counterweight and at the other to a traveling friction-pulley, two traveling friction-pulleys one of which is the one that is connected to the end of said last-mentioned cable or set of cables and the other of which is attached to the bottom of said counterweight, and one or more endless cables that pass around both of said driving-pulleys and also around both of said traveling friction-pulleys, all combined and arranged substantially as herein set forth and described and so that the driving-pulleys and endless cable or cables will each run continuously in one direction and the car, cage, or platform will remain stationary when the driving-pulleys are running at the same relative rates of circumferential speed but will move either upward or downward when the relative rates of circumferential speed of the driving-pulleys are changed so that one of them will run either faster or slower than the other.

5. The combination, with independently-operated pulleys, of an endless cable thereon, a cage connected to and operated by said endless cable, and means for driving said pulleys at the same or relatively-different rates of circumferential speed.

610,482. COMPRESSED-AIR BURGLAR-ALARM. WARREN M FREBIS, North Baltimore, Ohio, assignor of one-eighth to William McElhiney, same place. Filed June 12, 1897. Serial No. 640,407. (No model.)



Claim.—1. The combination with a plurality of pipes located in the portion of the premises to be protected, of an operating-cylinder, a piston, alarm device connected to the piston, an air-compressor and a movable valve mechanism for cutting off a portion of the pipe system comprising a hollow sliding pipe, having apertures in a portion thereof, an air-chamber through which said pipe loosely passes, said chamber being contained within a surrounding inclosure, a spring-actuated bolt for locking said pipe in position, and a valve adapted to be operated by the movement of said pipe, substantially as described.

2. The combination with a door provided with a plurality of pipes, of an air-chamber connected to said pipes, a valve governing the inlet into said pipes, a sliding pipe mounted on the door and adapted to operate said valve, said sliding pipe having the outer end thereof formed with an annular projecting flange adapted to enter a groove formed in the pipe which terminates at the door-frame, and means for supplying compressed air to said pipe, substantially as described.

3. The combination with a door provided with a plurality of pipes, of an air-chamber formed in said door, a sliding pipe having a series of apertures therein communicating with said air-chamber, a valve for controlling the outlet from said air-chamber to the pipes of the door and adapted to be operated by the sliding pipe, a transversely-positioned spring-actuated bolt for locking said sliding pipe in its projected position, a lever for moving said pipe longitudinally to withdraw it within the circumference of the door, a key for releasing said transversely-positioned bolt, and means for supplying compressed air to the sliding pipe, substantially as described.

4. The combination with a door provided with a plurality of pipes, of an air-compressor, a cylinder connected to the same, an alarm device connected to said cylinder, pipes connecting said cylinder with the pipes of the door, a sliding pipe having an outer annular flanged end and mounted on said door and adapted to act as a bolt to secure the door and also open and close communication between the pipes of said door and the main piping system, the said annular flange at the outer end of the sliding pipe being adapted to enter an annular frame in the pipe which terminates at the door-frame, whereby the meeting ends of the bolt and said pipe are coupled firmly together when the door is closed, substantially as described.

5. The combination of a door having a plurality of communicating hollow pipes, a sliding pipe mounted on said door and communicating with the aforesaid pipes, a valve between said sliding pipe and the first-mentiond pipe, a wedge mounted on said sliding pipe and adapted to operate said valve, a lock for securing said sliding pipe, a toothed wheel adapted to move said pipe longitudinally, and means for supplying compressed air to said sliding pipe, substantially as described.

610,483. TOOL-HOLDER FOR DENTAL HANDPIECES. CHARLES P. PRITZ, Philadelphia, Pa., assignor to William M. Speakman, same place. Filed Dec. 28, 1897. Serial No. 663,956. (No model.)



Claim.—In a dental handpiece, the combination of a casing, a spindle mounted and adapted to rotate in suitable bearings in said casing, a hollow head formed at the end of said spindle, a spirally-coiled spring inclosed in said head adapted to receive the shank of the drill and having one end secured to said head, a sleeve mounted to slide on the exterior of the spindle-head and provided with a curved slot, a pin or screw secured to the free end of said spring adapted to work in a transverse slot formed in said spindle-head and connecting the spring to the slotted portion of the sleeve, and means controlled from the outside of the casing and adapted to slide said sleeve on the spindle-head, substantially as and for the purposes described.

610,484. HORSE-DETACHER. RUDOLPH L. GAUNTHER, Asheville, Pa., assignor of two-fifths to George A. Myers and M. H. Burget, same place. Filed Mar. 30, 1898. Serial No. 675,745. (No model.)

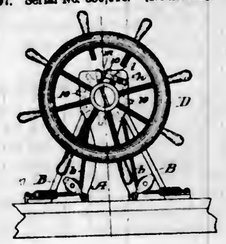


Claim.—1. In a device of the class described, the combination with a pair of shafts, of a whiffletree provided at its ends with sockets, and the rods extending along the shafts and having their rear ends projecting inward and provided with balls fitting in the sockets of the whiffletree, said rods being designed to be connected at their front ends with a harness, substantially as described.

2. In a device of the class described, the combination with a pair of shafts provided with guides, a whiffletree, and the reciprocating rods arranged in the guides and having their rear ends connected with the whiffletree, said rods being provided at their front ends with arms disposed in substantially a vertical plane at right angles to the rods and provided with spring-coils and having means for connecting them to a harness, substantially as described.

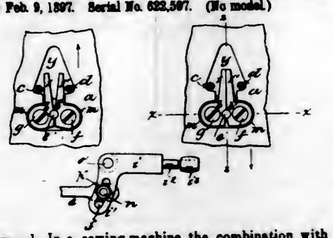
3. In a device of the class described, the combination of a pair of shafts, a whiffletree, rods extending along the shafts and connected to the whiffletree, vertical arms arranged at the front ends of the rods and provided with spring-coils, catches mounted on the ends of the arms, plates designed to be mounted on a harness and adapted to be engaged by the catches, and means for operating the catches to release the plates, substantially as described.

610,485. LOCKING DEVICE FOR STEERING APPARATUS. WILLIAM E. HAMMOND, Onset Bay, Mass., assignor of two-thirds to Robert A. Hammond and George T. McLaughlin, Sandwich, Mass. Filed Nov. 23, 1897. Serial No. 659,616. (No model.)



Claim.—In a steering apparatus for vessels, the combination of the steering-wheel shaft having a toothed wheel H immovably secured thereto, the supporting-standards A, B, the former provided at its top with a square notch *m* in close proximity with said toothed wheel H, and the locking-dog I, adapted when in engagement with said toothed wheel to lie within the notch *m* in the standard A, all operating substantially as described.

610,486. SEWING-MACHINE. HERBERT R. HAWES, New York, N. Y., assignor of one-fourth to Thomas Cooper Byrnes, same place. Filed Feb. 9, 1897. Serial No. 622,507. (No model.)



Claim.—1. In a sewing-machine the combination with stitch-forming and cloth-feeding mechanisms of a stitch-regulator or "last" consisting of members coacting to expand such regulator or "last" while there is tension or pull upon the thread during the making of the stitch and to collapse it thereafter and during the interval while the goods sewed are being fed and means to actuate said members, substantially as and for the purposes described.

2. In a sewing-machine the combination with stitch-forming and cloth-feeding mechanisms of a stitch-regulator or "last" consisting of two independently-rocking members having arms across and about which when expanded the thread or threads are tightened in forming the stitches, and means for rocking into said expanded position and alternately rocking in the opposite direction so as to draw together or collapse said arms during feed intervals, and back again in the opposite direction to reëxpand for another stitch, substantially as and for the purposes described.

3. In a sewing-machine the combination with stitch-forming and cloth-feeding mechanisms of a stitch-regulator or "last" consisting of two rocking members turning in one direction to expand and in the opposite direction to collapse, an actuating-pin engaging with said members to so rock them, and means for reciprocating said actuating-pin, substantially as and for the purposes described.

4. In a sewing-machine the combination with stitch-forming and cloth-feeding mechanisms of a stitch-regulator or "last" consisting of two members, each rocking in opposite directions, an actuating-rod engaging therewith, a two-armed rocker and means for connecting said rocker with said reciprocating rod and with a properly-moving part of the mechanism of said sewing-machine, substantially as and for the purposes described.

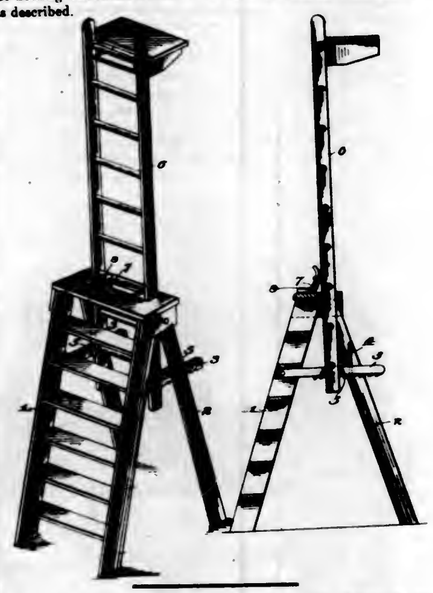
5. In a sewing-machine the combination with stitch-forming and cloth-feeding mechanisms of a stitch-regulator or "last" consisting of members coacting to alternately expand and collapse said "last," a reciprocating pin directly actuating said members, a two-armed rocker connected to said pin by a connecting rod, an adjustable connection between said connecting-rod and one of the arms of said rocker and means for actuating aforesaid parts, substantially as and for the purposes described.

6. In a sewing-machine the combination with stitch-forming and cloth-feeding mechanisms of stitch-supporter composed of pivoted members *b b'*, pin *e*, connecting-rod *e'*, rocker *i'*, having slot *j*, pin *n*, nut *p'*, stud i^2 stud-roller i^3 and grooved cam 69, substantially as and for the purposes described.

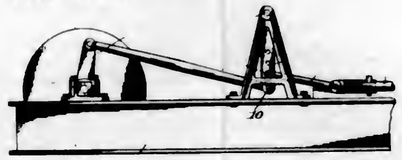
7. In a sewing-machine the combination with stitch-forming and cloth-feeding mechanisms of an adjustable alternately expanding and collapsing "last," adapted to receive at the time of stitch formation, the thread comprising each stitch, and to limit the size and tightness to which each stitch is drawn at completion and to collapse during feed intervals, and means for actuating said "last," substantially as and for the purposes described.

610,487. STEP-LADDER. GEORGE W. HOOVER, Belle Plain, Iowa. Filed July 3, 1897. Serial No. 643,366. (No model.)

Claim.—The combination of a folding step-ladder having arms or reaches for holding the legs or supports of the ladder at a desired angle with each other, said arms or reaches being provided with guide-shoulders, an extension-ladder projecting through the step-ladder and guided by the shouldered reaches, and a swinging, spring-actuated, fork-like part attached to the top step of the step-ladder for holding the extension-ladder in adjusted position, substantially as described.



610,488. DEVICE FOR INCREASING CRANK-THROW OF ENGINES. GEORGE M. HUGUS, Calumet, Pa., assignor of one-half to William P. Cunningham, same place. Filed June 28, 1897. Serial No. 642,659. (No model.)



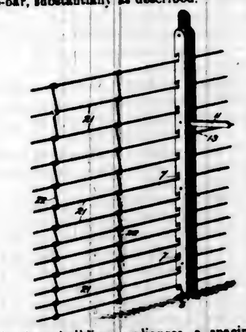
Claim.—In a device of the character described, the combination with an engine-bed, of a pair of uprights adapted to be rigidly secured thereon, and set at a distance apart, a rod or shaft connecting the upper ends of said uprights, a sleeve journaled on said rod or shaft, pendent arms rigid on said sleeve and extending in parallel relation to each other and provided with longitudinal series of transversely-alined openings, and a pair of pins removably fitted in said openings, one pin being designed to engage the end of the piston-rod and the other end of the crank-rod, whereby the piston-rod and crank-rod are both rendered adjustable at their point of connection with said arms, thus adapting the device as a whole to be adjusted to suit different engines, substantially as described.

610,489. WIRE-FENCE-BUILDING APPLIANCE. JOHN T. T. KNUDSEN, Stilwell, Kans. Filed Sept. 23, 1897. Serial No. 652,782. (No model.)

Claim.—1. In wire-fence-building appliances, a spacing and clamping member, comprising a clamp consisting of a pair of parallel stationary bars provided with registering notches and suitably spaced, a sliding member arranged between and parallel with said bars and provided with a corresponding series of notches, and means to reciprocate said member and thereby clamp the horizontal wires of the fence down upon the lower shoulders formed by the notches of the stationary bars, or to release said wires, substantially as described.

2. In wire-fence-building appliances, a spacing and clamping member, comprising a pair of parallel bars riveted or bolted together, provided in their front edges with registering notches, a slide-bar arranged centrally between said first-named bars and provided with slots engaging said rivets or bolts, and with a corresponding series of notches, a lever mounted upon one of said bolts, and a link pivotally connecting said lever with the slide-bar, substantially as described.

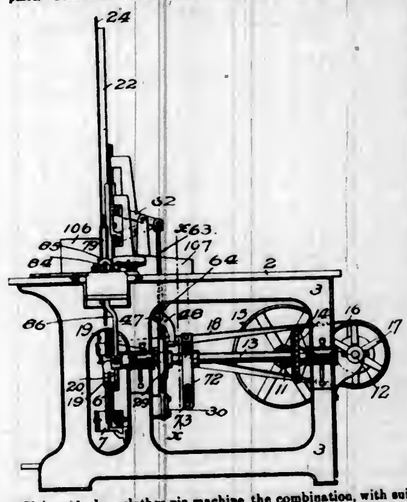
3. In wire-fence-building appliances, a spacing and clamping member, comprising a pair of parallel bars riveted or bolted together, provided in their lower ends with notches, and provided in their front edges with registering notches, a slide-bar arranged centrally between said first-named bars and provided with slots engaging said rivets or bolts, and with a corresponding series of notches, a lever mounted upon one of said bolts, and a link pivotally connecting said lever with the slide-bar, substantially as described.



4. In wire-fence-building appliances, a spacing and clamping member, comprising a pair of stationary bars provided with notches to receive the horizontal wires of the fence, a slide-bar arranged between the first-named bars and provided with a corresponding series of notches in its front edge; said notches having their upper sides or shoulders sloping upwardly and inwardly, and means to reciprocate said slide-bar, substantially as described.

5. In wire-fence-building appliances, a spacing and clamping member, comprising a pair of parallel bars connected at some distance apart, and provided with notches in their front edges, a slide-bar arranged centrally between the first-named bars, and provided with a corresponding series of notches, spacing-collars or their equivalents spacing the slide-bar from the first-named bars, and means to reciprocate the slide-bar, substantially as described.

610,490. MACHINE FOR MAKING CLOTHES-PINS. HENRY L. MANN, Minneapolis, Minn., assignor to the J. R. Clark Company, same place. Filed Mar. 7, 1898. Serial No. 672,573. (No model.)



Claim.—1. In a clothes-pin machine, the combination, with suitable saws or cutters, of a suitable feed mechanism and a clamping device, means for removing the pin from the clamping device, and a spring-ring-placing mechanism, substantially as described.

2. The combination, with the saw or cutter mechanism, of a clamp or holding mechanism, a ring-spindle, a ring-guide, and a drawing-out mechanism for placing the ring upon the pin, substantially as described.

3. The combination, with the saws or cutters, of the block holding or clamping device, means for carrying the block or pin out of said clamping device, a holder, guides thereon, a ring-feed device, a ring-drawing-out device, and means for discharging the pin from the said holder and thereby finally withdrawing and placing the ring, substantially as described.

4. The combination, with the saws or cutters, of the clamping device, the pin-holder whereto the pin is carried after it is sawed, the ring-drawing mechanism, the ring-striker, and means for expelling the pin from said holder and dropping the ends of said ring upon the sides of the pin as the same is expelled from said holder, substantially as described.

5. The combination, with means for preparing the pins, of the guide 58 to receive a pin, the spindle 79, the cutter, the guides for the ends of the ring, said guides terminating near the end of said holder or guide 58, the drawing-out hook, the yoke, the striker or knocker lifted by said yoke in its drawing-out movement, and adapted to strike down the ring upon the forward movement of said yoke, and the ram operating within said guide 58 to eject the pin and thereby place the ring thereon, substantially as described.

6. The combination, of the spindle 79 provided with the recess or opening in its lower part, with the guide or holder 58 having side guides for the ends of the ring that is taken from said spindle, and the drawing-out hook operated above said guide 58 and adapted to enter said recess to engage the lowest ring upon said spindle, substantially as described.

7. The combination, with the guide 58 and the means for placing the pin thereon, of the ring-spindle 79, the cutter, the dividing-fingers, means for operating said cutter and said fingers, the said guides for the end of the ring extending from said spindle to or near the end of said guide 58, means for drawing out and throwing down a ring, and means for ejecting a pin from said guide 58 to withdraw and place the spring-ring, substantially as described.

8. The combination, with the guide 58, of the ring-feed device provided at one end thereof, the shoulders or stops 105 provided at the opposite end thereof, the guides at the sides of said part 58, the drawing-out hook, the striker, and the means for expelling a pin from said part 58, substantially as described.

9. The combination, with the spindle 79, of the guide 58, with the ring-guides at the sides thereof, the dividing-fingers, the cutter, said fingers being operated by the movement of said cutter, and the drawing-out device for taking the rings from said spindle, substantially as described.

10. The combination with the movable saw-arbor and the clamp device, of the ring-placing mechanism, the slides 53 and 68, the dogs or rams provided upon said slides, and adapted to remove the pin from said clamp and from said ring-placing mechanism, respectively, means for positively operating one of said slides and for operating the other therefrom, substantially as described.

11. The combination, with the saws, of the plates 25 and 26, the blank-chute, the clamping-plates 39 and 40, means for operating at least one thereof, and the slide provided with the yielding ram adapted to drop beneath said plates 25 and 26 and to move forward above and between the same, substantially as described.

12. The combination, with the saw-arbor and its movable frame, of the blank feed or chute, the clamp, the fixed guide, the wire feeding and cutting mechanism, the drawing-out hook and the slide whereon the same is carried, said slide being operated in one direction with said arbor, substantially as described.

13. The combination, with the saw-arbor and the saws movable above the same, of the movable blank-chute, the plates whereon the lowest blank rests, the movable guide, means for successively raising said chute and said guide, means engaging the blank in said chute, the ring-placing mechanism, and the alternately-operating rams, as and for the purpose specified.

14. The combination, with the saw-table and the saws, of the blank-chute 22, the prick-points provided in the lower part thereof, means whereby said points are projected into the chute when the chute is raised, and means for moving the chute, as and for the purpose specified.

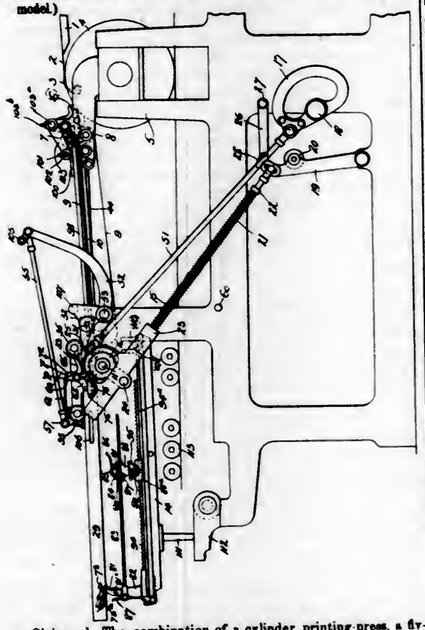
15. The combination, with the saw table and the horizontally-arranged saws, of the plates 25 and 26, one yieldingly arranged, the clamping-plates 39 and 40, one being stationary and the other yieldingly arranged, the stamp-plate, and the automatically-operating arm working said stamp-plate and permitting the forward movement of the yieldingly-arranged clamping-plate, and means for removing a pin from between said clamping-plate, as and for the purpose specified.

16. The combination, with the movable saws, of the chute, means for raising the chute during the backward movement of said saws, and means engaging blanks in said chute to lift the same and permit the removal of under-sized pieces, substantially as described.

17. The combination with the saw-table and the reciprocating saw-arbor frame, of the driving-shaft wherefrom the arbor in said frame is driven, the shaft 13 at right angles to the driving-shaft, means for driving said shaft 13, the blank-feed mechanism, and the

ring-placing mechanism, and means whereby the same are operated from said shaft 13, substantially as described.

610,491. SHEET-DELIVERY MECHANISM. ROBERT MIEHLE, Chicago, Ill., assignor to the Miehle Printing Press and Manufacturing Company, same place. Filed Sept. 3, 1896. Serial No. 604,778. (No model.)



Claim.—1. The combination of a cylinder printing-press, a fly-delivery and a reciprocating delivery arranged as described, and means for holding the fly-delivery below the plane of the sheet so that they act together in delivering the sheet printed side up, substantially as set forth.

2. The combination with a cylinder printing-press and delivery-tapes a fly frame or fingers suspended in normal position between said tapes and adapted to be rendered inoperative, and means for supporting the fly-fingers below the delivery-tapes, of a sheet-carrier movable to and from said fly-frame and tapes, to deliver the sheet with the printed side up on the receiving-table, substantially as set forth.

3. The combination of a cylinder printing-press, delivery-tapes and an oscillatory fly-frame, of a reciprocating sheet-carrier and means substantially as described for suspending operation of one or the other of said oscillating fly-frame or sheet-carrier and holding the fly-fingers below the said tapes, substantially as set forth.

4. The combination with a printing-press and delivery-tapes, of a fly-delivery having means whereby it may be rendered inactive during the operation of the press, a reciprocating delivery arranged at the delivery ends of said tapes and adapted to receive the sheet therefrom, said reciprocating delivery having means moving therewith for projecting under and supporting the sheet, substantially as set forth.

5. A sheet-delivery mechanism having in combination a fly-delivery device provided with oscillating fly-fingers, means for holding said fly-fingers substantially horizontal and below the line of travel of the sheet, and whereby they will assist in supporting the latter, guide-fingers supported over the line of travel of the sheet, and a reciprocating delivery arranged to receive the sheet from the said tapes and fly-fingers and deliver it upon the delivery-table with the printed side up, substantially as described.

6. A sheet-delivery mechanism having in combination a fly-delivery mechanism provided with fly-fingers, means for rendering said fly-fingers inoperative and holding them substantially horizontal, and a reciprocating delivery having sheet-supporting fingers reciprocating between said fly-fingers, substantially as set forth.

7. A sheet delivery mechanism having in combination sheet-conveying tapes, a fly-delivery mechanism provided with fly-fingers arranged between and below said tapes and serving in conjunction therewith to support the sheet, means for rendering said fingers inoperative and holding them substantially horizontal in position to support the sheet, and a reciprocating delivery having sheet-supporting fingers reciprocating between and below said fly-fingers, substantially as set forth.

8. A sheet-delivery mechanism having in combination a fly-delivery provided with fly-fingers, a driving-shaft, means for oscillating said fingers having disengageable connection with said driving-shaft and adapted to hold said fingers substantially horizontal and inactive, a reciprocating delivery and means for reciprocating said reciprocating delivery having detachable connection with said driving-shaft, substantially as set forth.

9. A sheet-delivery mechanism having in combination a fly-delivery mechanism provided with fly-fingers a rocker-shaft for oscillating said fingers, a driving-shaft, means having a cam for rotating said rocker-shaft, means for suspending operative relation between said rocker-shaft and said cam, a reciprocating delivery and a detachable connection between said reciprocating delivery and driving-shaft, substantially as set forth.

10. A sheet-delivery mechanism having in combination a fly-delivery device provided with oscillating fly-fingers, means for holding said fly-fingers inactive and substantially horizontal and below the line of travel of the sheet and whereby they will assist in supporting the latter, removable guide-fingers supported over the line of travel of the sheet, and reciprocating delivery-fingers arranged below the plane of said guide-fingers, substantially as set forth.

11. A sheet delivery mechanism having in combination a fly-delivery device provided with oscillating fly-fingers, means for holding said fly-fingers inactive and substantially horizontal and below the line of travel of the sheet and whereby they will assist in supporting the latter, guide-fingers supported over the line of travel of the sheet, and reciprocating delivery-fingers arranged below the plane of said guide-fingers, substantially as set forth

12. A sheet-delivery mechanism having in combination a fly-delivery device provided with oscillating fly-fingers, means for holding said fly fingers inactive and substantially horizontal and below the line of travel of the sheet, the notched brackets 103, a bar having squared or flattened ends resting in said notched brackets, guide-fingers secured to said bar and held thereby over the line of travel of the sheet, and reciprocating sheet-delivery fingers arranged below the plane of said guide-fingers, substantially as set forth.

13. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops moving with said carrier for limiting the independent movement of the sheet and means for moving said stops entirely from across the plane of the supporting-surface of said carrier at the finish of the stroke of the carrier, substantially as set forth.

14. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops having their ends turned down over the ends of said carrier for limiting the independent movement of the sheet, and means for moving said stops out of the way at the finish of the stroke of said carrier, substantially as set forth.

15. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops arranged to be struck by the sheet and to limit the independent movement of the latter, a rocker-shaft moving with said carrier and having means traveling with the carrier for limiting the downward movement of said stops, means for oscillating said shaft, means for holding said stops in position until the sheet has passed under the stops and means for moving the stops into position to limit the independent movement of the sheet, substantially as set forth.

16. A sheet-delivery mechanism having in combination reciprocating sheet-delivery fingers, means for conveying the sheet to said fingers, stops arranged to be struck by and to limit the independent movement of the sheet on said fingers, a rocker-shaft moving with said fingers and having means for limiting the downward movement of said stops, a shoe for oscillating said shaft, a projection at one end of the stroke of said fingers arranged to be engaged by the said shoe, means for holding said shoe in the position given it by said projection and a trip or projection arranged at the other end of the stroke for tilting said shoe to its former position, substantially as set forth.

17. A sheet-delivery mechanism having in combination reciprocating sheet-delivery fingers, means for conveying the sheet to said fingers, stops arranged to be struck by and to limit the independent movement of the sheet on said fingers, a rocker-shaft moving with said fingers and having means for elevating said stops, a shoe for oscillating said shaft, said shoe being provided with a projection, a spring engaging with said projection for holding the shoe in the position to which it is tilted, and projections arranged on or near opposite ends of the line of movement of said shoe and adapted to engage therewith for alternately tilting said shoe in opposite directions, substantially as set forth.

18. A sheet-delivery mechanism having in combination reciprocating sheet-delivery fingers, means for conveying the sheet to said fingers, stops arranged to be struck by and to limit the independent movement of the sheet on said fingers, a rocker-shaft having means for elevating said stops, a shoe moving with said fingers and connected to said shaft for rocking it, projections arranged at opposite ends of the line of movement of said shoe and adapted to engage therewith and to alternately tilt the shoe in opposite directions, the projections 69 on said shoe, a spring bearing against said projection 69 and having the inclined offset 70 and the portion 71, substantially as set forth.

19. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, and pushers for crowding the sheet from said carrier, guide-ways and adjustable supports thereon for said pushers substantially as described.

20 A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops for limiting the movement of said sheet and pushers for crowding the sheet from said carrier substantially as set forth.

21. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops for limiting the movement of said sheet, and pushers for crowding the sheet from said carrier, the said pushers being adjustable for different-sized sheets, substantially as described.

22. A sheet-delivery mechanism having in combination reciprocating sheet-delivery fingers, means for conveying the sheets to said fingers, a pair of rails, carriages supported upon said rails and carrying said fingers, stops carried by said carriages and projecting below the plane of said fingers, and means for holding said stops aloof at the finish of the stroke of said fingers, substantially as set forth.

23. A sheet-delivery mechanism having in combination reciprocating sheet-delivery fingers, means for feeding the sheet to said fingers, a pair of rails, a carriage supported on each of said rails and having grooved rollers embracing the upper edge of the same, a roller having an eccentric pivot or journal carried by each of said carriages and engaging under each of said rails, a shaft connecting said carriages together and carrying said fingers, and stops carried by said carriages for limiting the independent movement of the sheet on said fingers, substantially as set forth.

24. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier having fingers, means for conveying the sheet to said carrier, stops arranged at the ends of said carrier for limiting the independent movement of the sheet thereon, pushers for crowding the sheet from said carrier, means for automatically projecting said pushers between said fingers at the rear edge of the sheet, and means for holding said stops aloof from said fingers at the conclusion of the delivery stroke of the fingers, substantially as set forth.

25. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops arranged at the ends of said carrier for limiting the movement of the sheet thereon, means at the end of the delivery stroke of said carrier for moving said stops out of the way, pushers arranged out of the line of movement of said carrier, a rocker-shaft on which said pushers are mounted, and means for oscillating said rocker-shaft for projecting said pushers between the delivery-carrier, substantially as set forth.

26. A sheet delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops carried by said carrier and projecting over the end thereof for limiting the movement of the sheet, means for moving said stops out of the way at the completion of the delivery stroke, pushers arranged out of the line of movement of said carrier and adapted to be projected up through it, a rocker-shaft carrying said pushers, means for oscillating said rocker-shaft, said pushers being turned out of the way by the bar of the sheet-carrier, substantially as set forth.

27. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops for limiting the movement of the sheet upon the carrier grippers for impinging the sheet against said carrier, and being movable independently of said stops and means for holding said grippers out of the way to permit the sheet to be deposited upon and to leave the carrier, substantially as set forth.

28. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, grippers impinging the sheet against said carrier, stops arranged over and adapted to be raised by said grippers, for limiting the movement of the sheet upon said carrier, and means for moving said grippers out of the way, substantially as set forth.

29. A sheet-delivery mechanism having in combination a reciprocating sheet delivery carrier, means for conveying the sheet to said carrier, grippers for impinging the sheet against said carrier, a shaft carrying said grippers, a shoe for oscillating said shaft, an incline or cam at one end of the stroke for tilting said shoe in one direction and holding said grippers out of engagement with the sheet and means for pressing the grippers into engagement with the sheet when the shoe passes said cam or incline, substantially as set forth.

30. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, a rocker-shaft moving in unison with said carrier, grippers secured to said shaft and adapted to impinge the sheet upon said carrier, stops arranged over said grippers and adapted to be moved thereby, said grippers being capable of slight movement against said carrier independently of said stops for impinging the sheet, substantially as set forth.

31. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, a shaft moving in unison with said carrier, grippers carried by said shaft and arranged to impinge said fingers, loose stops arranged over said grippers and adapted to be elevated thereby, said grippers having a slight movement independently of said stops, a shoe secured to said shaft for rocking it, means at one end of the stroke of said carrier for tilting said shoe in one direction and raising said grippers and stops clear of said carrier, a projection at the other end of the stroke of said carrier for tilting said shoe in the opposite direction, a cam or incline for preventing said shoe from completing its tilting movement in the latter direction and thereby holding the grippers aloof from the carrier, and a spring bearing normally against said shoe for completing the said tilting movement thereof and forcing the grippers into contact with the carrier as soon as said cam is passed, substantially as set forth.

32. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, a shaft carried in unison with said carrier, grippers secured to said shaft and adapted to impinge said carrier, loose stops arranged over said grippers and adapted to be elevated thereby, said grippers being capable of slight movement independently of said stops, a shoe secured to said shaft and having the ends 65 66 and the projection 69, a spring moving in unison with said shaft and having the inclined offset 70 and the portion 71 adapted to engage with said projection 69, a projection at one end of the stroke of said fingers for elevating the end 65 of said shoe and forcing the projection 69 against the portion 71, a projection at the opposite end of the stroke of said fingers for elevating the end 66 and forcing the projection 69 into engagement with the offset 70 and causing said stops to descend into engagement with said carrier, and means for holding said grippers aloof from the carrier until the sheet has reached a position against said stops, substantially as set forth.

33. A sheet-delivery mechanism having in combination reciprocating sheet-delivery fingers, the carriages carrying said fingers, rails upon which said carriages travel, a rocker-shaft carried by said carriages, grippers secured to said rocker-shaft for impinging said fingers, stops arranged over said grippers and adapted to be lifted thereby, a shoe on said rocker-shaft, a dog arranged at one end of one of said rails for engaging with said shoe and elevating said grippers and stops, a projection arranged at the opposite end of said rail for tilting said shoe in the opposite direction and returning said grippers and stops to the fingers, means tending to continue the tilting movement of the shoe in the latter direction, a cam secured to said rail and engaging with a projection on said shoe for resisting the last said movement, substantially as set forth.

34. A sheet-delivery mechanism having in combination reciprocating sheet-delivery fingers, a rocker-shaft movable in unison with said fingers, carriages carrying said fingers and shaft, rails upon which said carriages travel, grippers secured to said shaft and impinging said fingers, stops arranged over said grippers and adapted to be elevated thereby, a shoe on said shaft, means for oscillating said shoe in opposite directions at each end of the travel of said carriages, and an adjustable cam for temporarily holding said shoe from completing its oscillation in one direction, substantially as set forth.

35. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, pushers arranged out of the plane thereof, and means for projecting said pushers through said carrier when the latter returns, and in the direction of the movement of the sheet substantially as set forth.

36. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, pushers arranged under the line of movement of said carrier, means for automatically projecting said pushers through said carrier while the latter is making its return movement, rack-bars extending lengthwise of the line of movement of said carrier, slides mounted upon said rack-bars and supporting said pushers, a rocker-shaft journaled in said slides and a pinion on each end of said shaft engaging said rack-bars for simultaneously adjusting said rock-shaft at each end, substantially as set forth.

37. A sheet-delivery mechanism having in combination a fly-delivery mechanism having oscillatory fly-fingers, a reciprocating-delivery mechanism having a pivoted frame adapted to be stood into an upright position and through which frame said fly-fingers are adapted to pass, substantially as set forth.

38. A sheet-delivery mechanism having in combination a fly-delivery mechanism provided with oscillatory fly-fingers, a reciprocating-delivery mechanism having a pivoted frame adapted to be stood into an upright position and through which frame said fly fingers are adapted to pass, said reciprocating-delivery mechanism having fingers provided with means for holding them out of the line of movement of said fly-fingers, substantially as set forth.

39. A sheet-delivery mechanism having in combination a fly-delivery mechanism provided with oscillatory fly-fingers, a reciprocating-delivery mechanism having a pivoted frame adapted to be stood into an upright position and being provided with a reciprocating delivery, means for holding said reciprocating delivery at substantially its outward movement and the same being adapted to be moved out of the line of movement of said oscillatory fingers, substantially as set forth.

40. A sheet-delivery mechanism having in combination a fly-delivery mechanism having oscillatory fly-fingers, a reciprocating-delivery mechanism having a pivoted frame adapted to be stood into an upright position, a lever for reciprocating said delivery mechanism, having operative connection therewith, and means for locking said lever and frame together and thereby holding said reciprocating-delivery mechanism substantially at the extremity of its outward movement, substantially as set forth.

41. A sheet-delivery mechanism having in combination fly-delivery mechanism provided with oscillatory fingers, a reciprocating-delivery mechanism having a pivoted frame adapted to be stood into an upright position, carriages on said frame, sheet-delivery devices carried by said carriages, levers having link connection with said carriages for reciprocating them, and means for locking said levers and frame together with the carriages at substantially the extremity of their outward movement, substantially as set forth.

42. A sheet-delivery mechanism having in combination fly-delivery mechanism provided with oscillatory fingers, a reciprocating-delivery mechanism having a pivoted frame adapted to be stood into an upright position, the reciprocating delivery-carrier and the levers for reciprocating said carrier, and means for locking the frame and levers together, substantially as set forth.

43. A sheet-delivery mechanism having in combination a reciprocating-delivery mechanism provided with a supporting frame, a hinged sheet-piling table arranged under said frame and being of less width than said frame and adapted to rise through said frame, and pushers supported over and movable bodily with the table substantially as set forth.

44. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops for limiting the movement of the sheet on said carrier adapted to engage the sheet until the extremity of the delivery stroke is reached, and means for raising said stops from said carrier at the beginning of the return stroke of the carrier, substantially as set forth.

45. A sheet-delivery mechanism having in combination a reciprocating sheet-delivery carrier, means for conveying the sheet to said carrier, stops for limiting the movement of the sheet on said carrier adapted to remain in their active engaging position until the delivery stroke of the carrier is completed and the return stroke of the carrier is about to commence, and means for raising said stops at the beginning of the return stroke of the carrier for allowing the sheet to pass through between the stops and the carrier and to fall by gravity upon the piling-table, substantially as set forth.

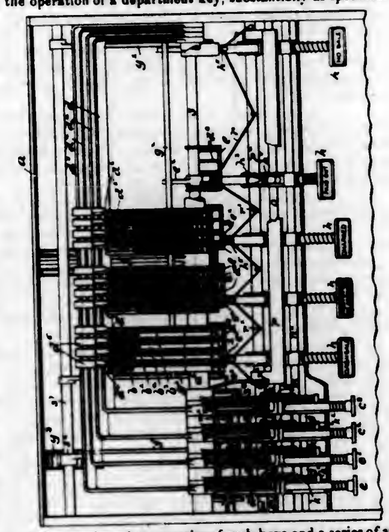
46. The combination in a cylinder printing-machine of a reciprocating carriage arranged in front of the impression-cylinder, for carrying the sheets forward over the delivery-table and for delivering the same on the delivery-table printed side uppermost, and a fly mechanism arranged to deliver the sheets on said table printed side down, and connections whereby the sheets may be delivered in either way, substantially as set forth.

610,492. CASH-REGISTER. JOHN H. MCCORMICK, Columbus, Ohio. Filed July 11, 1896. Serial No. 598,868. (No model.)

Claim.—1. A plurality of registers, cash-keys common to all of said registers, and special keys, one for each register, and intermediate locking devices between the special keys and cash-keys by which one set of said keys may be locked or unlocked by the operation of a single key in the other set, substantially as specified.

2. In a cash-register, the combination with a series of cash-keys, and a series of special or department keys, a locking device to normally lock said department-keys, and means for operating said locking device to unlock said department-keys when one of the cash-keys is depressed, and a locking device for said cash-keys adapted to be operated to lock said cash-keys when one of the special keys is depressed, substantially as specified.

3. In a cash-register, a series of cash-keys, and a series of special or department keys, and a locking device to normally lock said department-keys, and means for operating said locking device to unlock said department-keys when a cash-key is operated, and an auxiliary locking device operated by said cash-keys to lock said department-keys during the operation of the cash-key and to lock said cash-keys by the operation of a department key, substantially as specified.



4. In a cash-register, a series of cash keys and a series of special or department keys, a rotating rod or shaft having a series of notches corresponding to said department-keys, and solid portions adapted to be turned into corresponding notches in the said department-keys, and means for rotating said shaft by the operation of the cash-keys to lock or unlock said department-keys, substantially as specified.

5. The combination with a series of cash-keys, and a series of department keys, of one or more rods or shafts having notches corresponding to said department-keys which are also notched to correspond to said shafts, and intermediate devices operated by said cash-keys adapted to contact with projections on said shaft whereby the operation of one or more cash-keys serves to lock and unlock said department-keys, and the operation of a department-key serves to lock and unlock said cash-keys, substantially as specified.

6. In a cash register, a series of cash-keys and a series of registers, an actuating mechanism for the registers controlled by the cash-keys, special keys to control the registers, and an intermediate locking device between the special keys and cash-keys whereby the cash-keys are locked after a special key is operated, substantially as specified.

7. In a cash-register, a series of cash-keys, a series of registers, a common intermediate actuating device controlled by said cash-keys for operating said registers, special keys for controlling the movement of said registers and an intermediate locking device for locking said special keys until a cash-key has been depressed, substantially as specified.

8. The combination with a series of cash-keys, a series of registering-wheels and intermediate mechanism corresponding in denomination to each of said wheels and to said cash-keys, actuating devices for said registering-wheels controlled by said intermediate denominational devices, and special keys for unlocking said actuating devices, and an intermediate connection between said cash-keys and special keys whereby the special keys are locked until one or more cash-keys are operated, and the cash-keys locked after a special key is operated, substantially as specified.

9. In a cash-register, cash-keys and special or department keys, and intermediate locking devices between said cash-keys and special keys whereby one set of said keys is normally locked until one or more of the keys of the other set is operated and all of the keys locked after a key of the second or normally-locked set is operated, substantially as specified.

10. In a cash-register and in combination with registering devices arranged in groups or departments, a series of cash-keys common to all of said groups, and a series of department-keys, one for each group, and intermediate locking devices between the respective cash-keys and the department-keys, and means connected with each of said keys to operate said locking devices so that when a key of the first set is operated it will unlock the keys of the second set, and when a key of the second set is operated it will lock the keys of the first set, substantially as specified.

11. In a cash-register and in combination with a plurality of registering devices, a series of cash-keys common to all of said registers, and a series of special keys, one for each register, and intermediate locking mechanism between the respective cash-keys and special keys whereby one set of said keys is normally locked, and means connected with each of said keys to operate the locking mechanism so that when a key of the normally-unlocked set is operated it will unlock the keys of the normally-locked set, substantially as and for the purpose specified.

12. In combination with a plurality of normally-inactive registers a series of cash-keys common to all of said registers, and intermediate mechanism between said cash-keys and registers, special keys for controlling the operation of said registers by said intermediate mechanism, and a locking device between said cash-keys and special keys whereby one set of said keys is normally locked and is unlocked by the operation of the other set whereby the proper successive operation of the keys in each set is secured, substantially as specified.

610,493. PAPER-MAKING MACHINE. DENNIS R. MCMURRAY, Fitchburg, Mass., assignor of one-half to George R. Wallace, same place. Filed Feb. 26, 1898. Serial No. 671,518. (No model.)



Claim.—1. In a paper-making machine, a couch-roll, combined with a pressure-bar, guard-board or device, having at its acting edge an inflated tube, substantially as described.

2. In a paper-making machine, a couch-roll, combined with a pressure-bar, guard-board, or device having at its acting edge an inflated tube, said tube being inclosed by a covering, substantially as described.

3. In a paper-making machine, a couch-roll, combined with a pressure-bar, guard-board or device, having at its acting edge an inflated tube, said tube having a connected valve-stem, substantially as described.

4. In a paper-making machine, a couch-roll, combined with a pressure-bar, guard-board or device, having at its acting edge an inflated tube, said tube being provided at its ends with rigid blocks, substantially as described.

5. In a paper-making machine, a couch-roll, combined with a pressure-bar, guard-board, or device having at its acting edge an inflated tube, said tube being provided at its opposite ends with blocks, one of said blocks having a valve-stem, substantially as described.

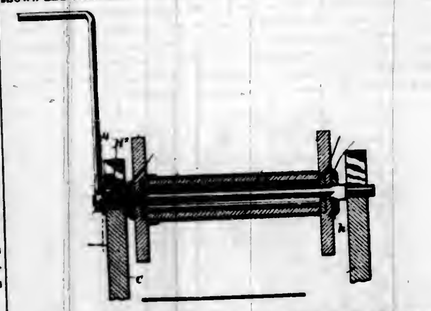
6. In a paper-making machine, a couch-roll, and means to sustain its shaft: combined with a pressure-bar, guard-board or device having at its acting edge parallel to said roll, a tube; and a fibrous covering inclosing said tube, said covering being connected with and carried by said pressure bar or device, substantially as described.

7. In a paper-making machine, a pressure-bar, guard-board, or device, provided at one edge with a concave; combined with an inflated tube seated in said concave, and a covering for said tube, substantially as described.

610,494. FENCE-WIRE TRUCK. WILLIAM NELSON, Woodford, Wis., assignor of one-half to James M. Divan, Monroe, Wis. Filed Mar. 21, 1898. Serial No. 674,583. (No model.)

Claim.—1. The combination with a shaft screw-threaded at one end and adapted to be inserted at the axis of a barbed-wire spool, of a plate attached to said shaft near one of its ends and provided with spurs adapted to enter the corresponding end bar of the spool, a plate and sleeve adapted to slip freely over the screw-threaded portion of the shaft and impinge upon the opposite end bar of the spool, and a crank screw-threaded to engage said screw-threaded portion of the shaft and to force said plate and sleeve inward, whereby the shaft may be rigidly connected with the spool, and said sleeve may cover said screw-threaded portion and form the journal at the corresponding end of the shaft.

2. The combination with the spool having the end bars G, G, of the shaft, E, provided with the plate, H, having spurs, h, h, the plate, H', and sleeve, H^3, and the crank, I, screw-threaded to engage the corresponding screw-threaded portion of the shaft; substantially as shown and described.



610,495. BICYCLE-BELL. LOUIS NOEL, Springfield, Mass., assignor of one-half to Henry Blodgett, Ludlow, Mass. Filed Oct. 12, 1897. Serial No. 654,936. (No model.)



Claim.—1. In an alarm-bell for bicycles, the combination with the stirrup-shaped support B, and means for pivotally supporting it on the bicycle, adjacent the wheel thereof, of the duplicated dish-shaped bells provided with the internal projections i and having the central internal hubs 20, and the journal-shaft, the bells being arranged in opposition with their hubs against the ends of said journal-shaft, and all within the opposite members of the stirrup-support, the screws A A passed through the extremities of said support, through the hub-provided portions of the bells, and with a screw engagement into the ends of the journal-shaft, clamping said bells against said shaft ends, a sleeve-hub *g* loosely surrounding said journal-shaft and free to rotate thereon provided with the central web or flange g^2 between the edges of the bells and extended diametrically outward beyond the bells, and adapted for rolling bearing on the vehicle-wheel, said web-flange carrying the laterally and oppositely extended springs provided at their free ends with the striker balls or knobs, and means for moving the stirrup-support toward and away from the bicycle-wheel, substantially as described.

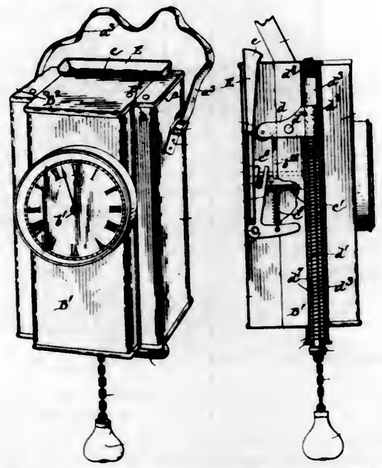
2. In an alarm-bell for bicycles, a stirrup-support B consisting of a strip of flat metal having its middle portion 14 doubled on itself, and having its extremities 15, 15, spread, a yoke or holder A provided with the clips *a a* and comprising the opposing forwardly and upwardly extended members 10 with the approached portions 12, 12, terminating in the upturned lugs 13, 13, between which the return-bent parts 14 of said stirrup-support B are intermediately arranged, the screw-bolt *d* passed through said parts 13, 14, and constituting a pivot for the latter upon the former, the springs *f f* confined by said screw-bolt and having their extremities engaging the stirrup for imparting an elevating pressure thereon, the bells or gongs supported immovably between said members 15, 15 and provided with the projections i the shaft G endwise held between the bells, and the roller rotatable on the shaft, between the bells, and edgewise or diametrically extended therebeyond, and provided with the strikers, substantially as described and shown.

610,496. TIME-RECORDER. LEWIS R. PADDACK, Duluth, Minn. Filed Aug. 26, 1897. Serial No. 649,577. (No model.)

Claim.—1. In a time-recorder, the combination with stamping-dies, of mechanism for actuating the same, a casing for completely inclosing the said mechanism, an auxiliary casing for inclosing the said stamping-dies and the rear portion of the said mechanism-inclosing casing, and means interposed between the said casings for inking the said dies and taking an impression therefrom, substantially as described.

2. In a time-recorder, the combination with stamping-dies, of mechanism for actuating the same, a casing for inclosing the said mechanism, the said casing being provided with engaging means upon its sides, exteriorly thereof, an auxiliary casing adapted to removably engage the said engaging means, for inclosing the said dies and the rear portion of the casing which incloses the actuating mechanism, an inking-roller and a platen, and means for operating the same interposed between the two casings, substantially as described.

3. In a time-recorder, the combination with stamping-dies, of mechanism for actuating the same, a casing for inclosing the said mechanism, but leaving the dies exposed, the said casing being provided exteriorly with guide-grooves, a second casing open at the front and having free edges adapted to engage the said grooves for removably securing it in place upon the first-mentioned casing so as to inclose the said stamping-dies, and means for inking and taking an impression from the same, substantially as described.



4. In a time-recorder, the combination with stamping-dies, of mechanism for actuating the same, a casing inclosing the said mechanism, a second casing adapted to inclose a portion of the first casing so as to cover the stamping-dies, tubes mounted in the second casing having longitudinal slots formed therein, arms projecting from the said slots and carried by rods working in the said tubes, an inking-roller for connecting the outer free ends of the said arms, means for holding the roller normally in its upper position, and means for taking an impression from the dies, substantially as described.

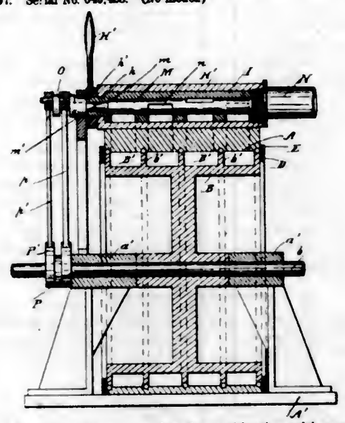
5. In a time-recorder, the combination with a suitable casing, of stamping-dies mounted therein, movable arms mounted in the said casing, an inking-roller connecting the said arms, engaging means mounted on the said arms, a platen also mounted in the said casing and provided with laterally-extending arms adapted to engage grooves formed interiorly of the casing, and bell-crank levers connected to the said arms, one end of each of the said levers being extended into the path of the engaging means upon the roller-supporting arms, the construction being such that upon the roller descending below the stamping-dies the bell-crank levers will be actuated to force the platen against the said dies, substantially as described.

6. In a time-recorder, the combination with a suitable casing, of an inking-roller provided with laterally-extending engaging means, a platen also mounted in the casing having laterally-extending arms adapted to engage grooves formed interiorly of the said casing, bell-crank levers pivotally mounted in the casing and adapted to engage the said arms at one of their ends and having their other ends extending into the path of the said engaging means connected with the inking-roller, springs for returning the bell-crank levers to their normal position, and a hopper for delivering tickets to the said platen, substantially as described.

7. In a time recorder, the combination with a suitable recording mechanism, of means for inking the same, a platen adapted to carry tickets placed therein, a hopper for delivering the tickets or cards to the said platen, the said hopper being mounted so as to rock in the casing whereby it can accommodate itself to the movement of the platen, and means for moving the platen against the said recording mechanism substantially as described.

8. In a time-recorder, the combination with a suitable time-indicating mechanism, of means for inking the same, a platen provided with retaining-grooves for receiving tickets or cards, a hopper mounted in the upper part of the casing of the time-recorder having a flange at its lower end, the said flange engaging a recess in the platen whereby the lower end of the said hopper is adapted to move with the platen, bell-crank levers mounted in the casing and engaging studs upon the said platen, springs for normally holding the levers and platen in their retracted positions, and means for actuating the said levers to force the platen forward, substantially as described.

610,497. ROTARY ENGINE. EDWARD PROBST, Terre Haute, Ind., assignor of two-fifths to William H. Hoff, same place. Filed Aug. 25, 1897. Serial No. 649,425. (No model.)



Claim.—1. In a rotary engine, the combination, with a cylinder, of a piston journaled in the cylinder and provided with a series of circumferential grooves, a series of slidable abutment-plates arranged in line with each other and carried by the cylinder, said abutment-plates being slidable in the said grooves respectively, a series of piston-plates arranged out of line with each other one in each groove of the piston, and a valve operating to admit steam to the grooves of the piston between each pair of slidable plates one after the other, substantially as set forth.

2. In a rotary engine, the combination, with a cylinder provided with a series of pairs of steam and exhaust ports, of a piston journaled in the cylinder and provided with a series of circumferential grooves communicating with the said pairs of ports, a series of slidable abutment-plates arranged in line with each other and carried by the cylinder between the said pairs of ports, said abutment-plates being slidable in the said grooves respectively, a series of piston-plates arranged out of line with each other one in each groove of the piston, and a valve operating to admit steam through the said steam-ports to the said grooves between each pair of slidable plates one after the other, substantially as set forth.

3. In a rotary engine, the combination, with a cylinder, a piston journaled in the cylinder and having a series of circumferential grooves each provided with a slidable piston-plate, and slidable abutment-plates carried by the cylinder, each said abutment plate being slidable in a separate groove of the said series; of a rotary valve controlling the admission and exhaust of steam to and from the said grooves, and driving mechanism operating to move the said valve in one direction continuously, substantially as set forth.

4. In a rotary engine, the combination, with a cylinder, and a piston journaled therein and provided with circumferential ribs, said ribs and cylinder having meeting semicircular grooves; of packing-rings formed of rifted tubes and operating to keep the said ribs steam-tight, substantially as set forth.

5. In a rotary engine, the combination, with a cylinder, and a piston journaled therein and provided with circumferential ribs, said ribs and cylinder having meeting semicircular grooves; of packing-rings formed of rifted tubes, and means for admitting steam to the interior of the said packing-rings, substantially as set forth.

6. In a rotary engine, the combination, with a cylinder, and a piston journaled therein; of a rigid flange secured to one of the said parts, and a ring secured to the other said part and provided with a spring-flange free to bend laterally and having a lip bearing against the said rigid flange and forming a steam-tight joint, substantially as set forth.

7. In a rotary engine, the combination, with a cylinder, and a piston journaled therein, said parts having meeting semicircular circumferential grooves; of a packing-ring formed of a tube of resilient material provided with a circumferential rift or split and arranged in the said grooves, substantially as set forth.

8. In a rotary engine, the combination, with a cylinder, and a piston journaled in the cylinder and provided with a circumferential groove; of a radially-slidable piston-plate carried by the said piston, a radially-slidable abutment-plate carried by the said cylinder, and wedges secured to the said piston and cylinder on each side of each of the said plates and extending one-half the depth of the said groove, substantially as set forth.

9. In a rotary engine, the combination, with a cylinder, and a piston journaled in the cylinder and provided with a circumferential groove; of a plate carried by one of the said parts and slidable crosswise of the said groove, and curved wedges secured one on each side of the said plate and provided with longitudinal grooves in their faces preventing the formation of compression and suction chambers, substantially as set forth.

10. In a rotary engine, the combination, with a cylinder, of an abutment-plate slidable in a socket in the cylinder and provided with recesses 8 at its upper edges, vertical grooves 7 in its side edges and cross-grooves 16 in the middle parts of its side edges; packing-plates 9 slidable in the recesses 8 and provided with grooves 11; and packing-strips 14 slidable in the grooves 7 and 11 and provided with projections 15 engaging with the grooves 16, substantially as set forth.

11. In a rotary engine, the combination, with a cylinder, of an abutment-plate slidable in a socket in the cylinder and provided with a groove 4 in its lower edge, and vertical grooves 7 and cross-grooves 16 in its side edges; a flanged packing-strip 2 slidable in the groove 4 and provided with grooves 5 in its ends; and packing-strips 14 slidable laterally in the grooves 7 and 5 and provided with projections 15 engaging with the grooves 16, said projections 15 preventing the packing-strips from sliding vertically in their grooves, substantially as set forth.

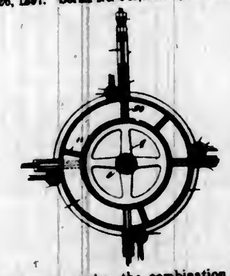
12. In a rotary engine, the combination, with a cylinder, and a valve-casing provided with a series of pairs of ports *j j'*, and two exhaust-ports *k k'* arranged crosswise of the cylinder; of an oscillatory reversing-valve journaled in the said casing and provided with a series of steam-passages *i* arranged in line with each other, and two exhaust-cavities *i'* arranged one on each side of the said steam-passages; and a rotary steam-distributing valve consisting of a hollow cylinder journaled in the reversing-valve and provided with a series of steam ports *n* arranged out of line with each other in its periphery and communicating with the said passages *i* respectively and one after another, substantially as set forth.

13. In a rotary engine, the combination, with a cylinder, and a valve-casing provided with a series of pairs of ports *j j'*, two exhaust-ports *k k'*, and two exhaust passages J J' arranged crosswise of the cylinder one on each side of the ports *j j'*, and passages K arranged between the pairs of ports *j j'* and connecting the passages J J'; of an oscillatory reversing-valve journaled in the said casing and provided with a series of steam-passages *i* arranged in line with each other, and two exhaust-cavities *i'* arranged one on each side of the said steam-passages; and a rotary steam-distributing valve consisting of a hollow cylinder journaled in the reversing-valve and provided with steam-ports *n* arranged out of line with each other in its periphery, substantially as set forth.

14. In a rotary engine, the combination, with a valve-casing provided with steam and exhaust ports; of a reversing-valve journaled in the casing and provided with an end portion *h* forming a steam-tight seat against the casing, and a stem projecting through the end of the casing; a hollow steam-distributing valve journaled in the said reversing-valve and provided with an end portion *m* forming a steam-tight seat against the reversing-valve, and a stem projecting through the aforesaid stem; and a steam-pipe connected to the casing at the other ends of the said valves from their stems and admitting steam to the interior of the said distributing-valve, substantially as set forth.

15. In a rotary engine, the combination, with a rotary steam-distributing valve, and a double crank secured to the said valve; of two eccentrics driven by the engine-shaft, and two eccentric-rods operatively connected with the arms of the said double crank, whereby the said valve is driven continuously and in the same direction as the said engine-shaft, substantially as set forth.

610,498. ROTARY ENGINE. FINLAY W. ROSS, Brittle, Canada. Filed Aug. 26, 1897. Serial No. 649,598. (No model.)



Claim.—In a rotary engine, the combination of a shaft having a band wheel or pulley at one end and a fly-wheel near the opposite end, a wheel mounted on the said shaft and carrying a piston-ring formed with three radially-projecting piston wings, a cylinder in which said parts are mounted having a circular steam-space through which the said wings have movement, and said cylinder also having a series of steam-chests which are provided with openings communicating with the said steam-space, the said openings being controlled by valves to admit and exhaust the steam, and also located adjacent to a series of exhaust-ports, a frame mounted on the cylinder having a laterally-extended portion, a gate or slide movably mounted in connection with the cylinder, a vertical rod attached thereto and adjustable in the said frame, a horizontal rod connected to the said vertical rod, a second vertical rod movably mounted in the laterally-extended portion of the frame and having its upper end attached to the said horizontal rod, a shoe on the lower end of the second vertical rod, a wheel on the shaft having cam projections engaged by the said shoe, an eccentric keyed to the shaft and provided with collars attached to a series of connecting-rods which are in turn secured to a series of short laterally-extending crank-arms of the valves in the cylinder, springs on the vertical rods in the frame and the extension thereof, and a similar smaller cylinder adjacent to the aforesaid cylinder having similar mechanism in connection therewith, substantially as and for the purposes specified.

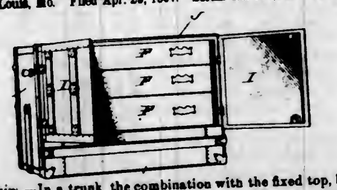
610,499. TRANSOM-LIFTER. WARREN R. SHELMIRE, Avondale, Pa. Filed June 9, 1897. Serial No. 640,027. (No model.)



Claim.—1. In a mechanism for operating the hinged sashes of a greenhouse or other structure for purposes of ventilation, the longitudinally-extending cable moving in guideways, a spring connected at one end with one end of said cable and at its other end with the structure at one end thereof, for holding the cable normally drawn toward said end of the structure and allowing the sashes to swing open, the opposite ends of the cable passing through a guide-pulley, a windlass for actuating said cable to overcome the tension of the spring for closing the sashes, means for holding the sashes normally open, transversely-arranged cords connected each to the sash at one end and at the opposite end to the longitudinal cable, and guide-pulleys for said transverse cords intermediate the sashes and the longitudinal cable, substantially as described.

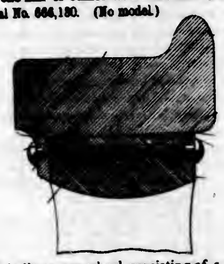
2. In a mechanism for operating the hinged sashes of a greenhouse or other structure for purposes of ventilation, the longitudinally-extending cable moving in guideways, a spring connected at one end with one end of said cable and at its other end with the structure at one end thereof, for holding the cable normally drawn toward the said end of the structure and allowing the sashes to swing open, the opposite ends of the cable passing through a guide-pulley, a windlass for actuating said cable to overcome the tension of the spring for closing the sashes, transversely-arranged cords connected each to the sash at one end and at the opposite end to the longitudinal cable, guide-pulleys for said transverse cords intermediate the sashes and the longitudinal cable, and springs for holding the sash normally raised or open, substantially as described.

610,500. TRUNK. BENJAMIN T. SMITH and ALFRED R. BAKER, St. Louis, Mo. Filed Apr. 29, 1897. Serial No. 634,349. (No model.)



Claim.—In a trunk, the combination with the fixed top, bottom, end, and rear walls, of a front fixed wall which extends partially up the front of the trunk to form a bottom compartment and strengthen the structure, cleats secured to the end walls for a series of drawers, double doors hinged to said end walls for closing the front of the trunk, flanges projecting laterally from said doors and extending over the top, end and front walls, and a reinforcing-strip J for strengthening the top wall at its front edge and protecting the doors, said strip extending forwardly beyond the plane of the doors substantially as described.

610,501. CAR-WHEEL. WILLIAM T. SNYDER, Catasauqua, Pa., assignor of one-half to James W. Fuller, same place. Filed Jan. 10, 1896. Serial No. 666,180. (No model.)



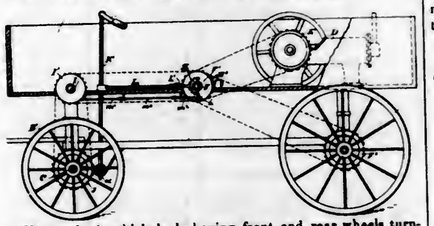
Claim.—A built-up car-wheel, consisting of a flanged steel tire provided with an inclined inner face united under heavy pressure to the oppositely-inclined face of a cast-iron body, the radius of which body is less on the inner side of the wheel subject to least thrust strain in use than on the outer side subject to the greatest thrust strain, and means for protecting said tire in its union with said body at the point of least thrust strain of the wheel, substantially as described.

610,502. MELTING APPARATUS FOR SOLDER. ARCHIBALD T. STURGESS, Madrid, Spain. Filed Jan. 4, 1898. Serial No. 665,593. (No model.)



Claim.—In a melting apparatus for soldering the joints of a line of pipes, the combination with a wheeled carriage supporting the fire-cage and crucible of a portable track for said carriage comprising the rails *e* suitably connected and braced and the brackets *g* supporting said rails and having the curved bases *h* adapted to rest on and conform to the curvature of the pipes, substantially as described.

610,503. MOTOR-CARRIAGE. WALTER E. TWICHELL, St. Helena, Cal. Filed Oct. 27, 1897. Serial No. 656,482. (No model.)



Claim.—1. A vehicle-body having front and rear wheels turnable upon their axles, a motor carried upon a vehicle, a counter-shaft journaled to the vehicle-body between the front and rear wheel axles, a sprocket-wheel upon the counter-shaft to which motion is communicated directly from the motor, a second counter-shaft journaled to the vehicle essentially in line above the front-wheel axle thereof, sprocket wheels and chain through which motion is communicated thereto from the first counter-shaft, hinged or jointed ends of the front-wheel axles and mechanism whereby they are turnable about their hinge-points to steer the vehicle, sprocket-wheels fixed upon the outer ends of the second counter-shaft, corresponding sprocket-wheels fixed to the front bearing-wheels essentially in line beneath the second counter-shaft, and chains whereby motion is communicated from the second counter-shaft to the front bearing-wheels and the latter allowed to turn so as to steer the vehicle.

2. A vehicle having mounted upon it a motor, rear wheels loosely turnable upon a fixed axle, front wheels turnable upon short hinged spindles, said spindles having their inner ends connected with a front axle and turnable about said hinges, a mechanism whereby said wheels are turned consisting of lever-arms fixed to the turnable sections connecting-rods extending from said levers to a common meeting-point, a steering-post having a turning handle at the upper end and a flattened portion in its length and a lever-arm uniting it with the meeting ends of the connecting-rods said lever-arm having an elongated opening in which the flattened portion of the post operates whereby the said arm is turned and the post may be moved back and forth.

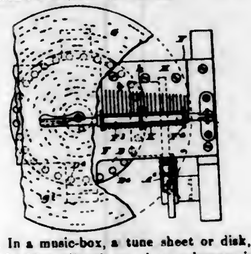
3. A vehicle having a motor carried upon it, rear wheels turnable upon a fixed axle having sprockets, wheels fixed to them, a counter-shaft with sprocket-wheels upon the ends and chains intermediate between it and the sprockets of the rear wheels, a sprocket wheel and chain through which motion is communicated from the motor to the counter-shaft, a reversing-gear connecting with said counter-shaft, front bearing-wheels turnable upon spindles, the inner ends of which are connected with a front axle and turnable about their hinge-points, levers projecting from said turnable spindles, connecting-rods extending from said levers to a common meeting-point, a steering-post having a lever-arm uniting it with said connecting-rods whereby the turning of the posts acts to turn the wheels and steer the vehicle, rods connecting the steering-post with the reversing-clutch mechanism of the counter-shaft, said steering-post being movable forward and back as well as turnable whereby the single post is employed to steer and reverse the movement of the vehicle.

4. A vehicle-body mounted upon bearing and steering wheels a motor carried upon said vehicle, intermediate counter-shafts and sprocket-wheels upon its ends through which motion is transmitted to the wheels, a second shaft journaled approximately in line above the front-wheel axle having sprocket-wheels upon its ends through which motion is transmitted to the front wheels of the vehicle and mechanism connecting with the said sprocket-wheels and controllable by a single actuating-lever whereby the sprockets upon one side may be engaged and those upon the other disengaged when the vehicle is turning corners.

5. In a vehicle of the character described, counter-shafts to which motion is communicated from a motor carried upon the vehicle, sprocket-wheels upon the ends of said shafts, and upon the vehicle-wheels with chains through which motion is transmitted, mechanism by which the counter-shaft sprockets are locked thereto or disengaged therefrom, said mechanism comprising flanges on the sprocket-wheels and pinions on the hubs thereof, and disks on the shafts opposing the sprocket-wheels, and provided with pawls, means for forcing said pawls into engagement with the pinions, and connections between said mechanism and an operating-lever.

6. In a vehicle of the character described, counter-shafts to which motion is transmitted from a motor carried upon the vehicle, sprocket wheels and chains through which motion is transmitted from the counter-shafts to the bearing and driving wheels of the vehicle, interlocking devices upon the counter-shafts and comprising flanges and pinions on the sprocket wheels and disks, with rocking pawls, on the shafts, and means for actuating the pawls, whereby the sprocket-wheels may be engaged to turn with their shafts, or disengaged upon one side so that only one set are operative in making turns, and connections between said interlocking devices and a lever through which they are simultaneously adjusted.

610,504. MUSIC-BOX. LOUIS F. VALIQUET, Hoboken, and ALFRED SUHR, Jersey City, N. J., assignors to Anna L. Valquet. Filed June 14, 1897. Serial No. 640,656. (No model.)



Claim.—1. In a music-box, a tune sheet or disk, and a comb-tongue provided with a vibrating spring or damper in combination with means controlled by said tune-sheet to actuate the said tongue.

2. In a music-box, a tongue, means, as a star-wheel to actuate said tongue, a smaller vibrating spring or damper, and means to shield, guard, or protect the same from injury from the device to strike the said tongue.

3. In a music-box, a tongue, a star-wheel to actuate said tongue, a small vibrating spring or damper, and means to shield, guard or protect the same from injury from the star-wheel.

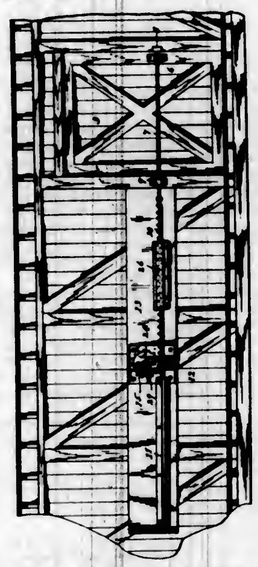
4. In a music-box, a tongue, a star-wheel to actuate said tongue, a smaller vibrating spring or damper, means to shield, guard or protect the same from injury from the star-wheel, a tune sheet or disk, a secondary plate or sheet, means to connect the two together, and means to drive the said secondary plate or sheet from the outer edge thereof consisting of a spring-drum provided with driving means as sprocket-teeth to engage the said secondary plate.

5. In a music-box, a comb, a bed-plate, means to support the same, and adjustable auxiliary means to also support the bed-plate intermediate of the ends thereof, a tongue, a star-wheel and an intermediate vibrating spring.

6. In a music-box, a comb, a bed-plate, means to support the same, and adjustable auxiliary means to also support the bed-plate, intermediate of the ends thereof, said means being provided with an adjustable device to raise and lower the same at will.

7. In a music-box, a tongue, a star-wheel to actuate said tongue, an intermediate smaller vibrating spring, means to shield, guard or protect the same from injury from the star-wheel, a tune sheet or disk, a secondary plate or sheet, means to connect the two together, means to drive the said secondary sheet or plate from the outer edge thereof consisting of a spring-drum provided with driving means as sprocket-teeth to engage the said secondary plate, a comb, a bed-plate, means to support the same, and adjustable auxiliary means to support the bed-plate intermediate of the ends thereof.

610,505. CAR-DOOR OPERATING AND LOCKING MECHANISM. ENOCH C. VANSTORM, Cambria, Wyo. Filed Nov. 29, 1897. Serial No. 660,154. (No model.)



Claim.—1. The combination, in a freight car, of a sliding door, a rack-bar connected with the inner side of the door, a hollow shaft extending through the wall of the car and carrying a gear meshing with said rack, and locking mechanism adapted to engage and hold the gear-wheel immovable, said locking mechanism being accessible through the bore of said shaft, substantially as described.

2. The combination, in a freight-car, of a sliding door, a rod connected with the inner side of the door, a grooved guide-rail, a rack-bar connected with said rod and flanged to fit and slide in the guide-rail, and a shaft extending through the side wall of the car and carrying at its inner end a gear meshing with said rack-bar and at its outer end a hand-grasp, substantially as described.

3. In door-operating mechanism, the combination with the door-frame carrying a keeper, and a sliding door, of a rod carrying an arm connected with the inner side of the door and having one end projecting beyond the arm and adapted to engage the keeper, and means for actuating the rod to close said door substantially as described.

4. The combination, in a freight-car, of a sliding door, a base-plate secured to the inner side of the side wall of the car, bearing-plates on the inner and outer sides of said wall, a shaft extending through said wall and having bearing in said plates, a rod connected with the inner side of the door, a rack-bar connected with the rod, and a gear-wheel mounted on the inner end of the shaft and meshing with said rack-bar, substantially as described.

5. The combination, in a freight-car, of a sliding door, a base-plate secured to the inner side of the side wall of the car, bearing-plates on the inner and outer sides of said wall, a shaft extending through said wall and having bearing in said plates, a rod connected with the inner side of the door, a rack-bar connected with the rod, a gear-wheel mounted on the inner end of the shaft and meshing with said rack bar, and a locking device adapted to engage the gear-wheel and hold it and the shaft immovable, substantially as described.

6. The combination, in a freight-car, of a sliding door, a rack-bar connected with the inner side of the door, bearing-plates on the inner and outer sides of the car-wall, a hollow shaft having bearing in said plates, a gear-wheel on the shaft provided with locking-orifices and meshing with said rack-bar, and a plunger-rod in said shaft carrying a bolt adapted to engage the said locking-orifices, substantially as described.

7. The combination, in a freight-car, of a sliding door, a rack-bar connected with the inner side of the door, a hollow shaft having bearing in the side wall of the car, a gear-wheel carried by the shaft and meshing with the rack, a plunger-rod fitted in the bore of said shaft and carrying a bolt adapted to lock said gear-wheel, and means for normally acting on the plunger-rod to hold the bolt projected, substantially as described.

8. The combination, in a freight-car, of a sliding door, a rack-bar connected with the inner side of the door, a hollow shaft having bearing in the side wall of the car, a gear-wheel carried by the shaft and meshing with the rack, a plunger-rod fitted in the bore of said shaft and carrying a bolt adapted to lock said gear wheel, and a spiral spring encompassing the plunger-rod and acting thereon to normally hold the bolt projected, substantially as described.

9. The combination, in a freight-car, of a sliding door, a rack-bar connected with the door, a hollow shaft carrying a gear-wheel meshing with the rack, a plunger in the shaft carrying a bolt adapted to engage the gear and hold it immovable, means for normally holding the bolt projected, and a key adapted to be inserted into the bore to retract said rod and bolt, substantially as described.

10. The combination, in a freight-car, of a sliding door, a rack-bar connected with the door, a hollow shaft carrying a gear-wheel meshing with the rack, a plunger in the shaft carrying a bolt adapted to engage the gear and hold it immovable, means for normally holding the bolt projected, and a seal adapted to be applied to the outer end of the shaft to prevent access to the bore thereof, substantially as described.

11. The combination, in a freight-car, of a sliding door, a rack-bar connected with the door, a hollow shaft carrying a gear-wheel meshing with the rack, a plunger in the shaft carrying a bolt adapted to engage the gear and hold it immovable, a spring for normally holding the rod and bolt projected, and a detent for holding said rod and bolt retracted against the tension of the spring, substantially as described.

12. A key for the purpose described, comprising a hand-wheel having a shank formed with left-hand threads and a concavity in its outer end, substantially as described.

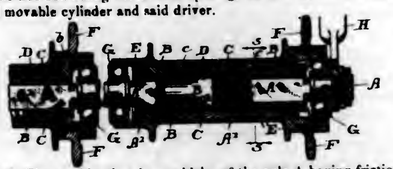
610,506. BOOT-TREE. WILLIAM W. WATTS, Birmingham, England, assignor to the Watts Patents Company, Limited, London, England. Filed Nov. 15, 1897. Serial No. 658,610. (No model.) Patented in England Sept. 22, 1891, No. 16,050.



Claim.—An apparatus for treeing, stretching or holding boots and shoes, consisting of the tongue A, having a toe-engaging portion and provided at its heel or back end with a screw-threaded opening, the screw-rod B engaging said opening and having its lower end dovetailed and provided with a saw-cut, and the heel-block C provided with a dovetailed recess, the dovetailed end of the screw-rod being adapted to be sprung into the recess in the heel-block, substantially as described.

610,507. BACK-PEDALING BRAKE. PAUL H. WHITE, Indianapolis, Ind., assignor to the Indiana Bicycle Company, same place. Filed Oct. 4, 1897. Serial No. 654,049. (No model.)

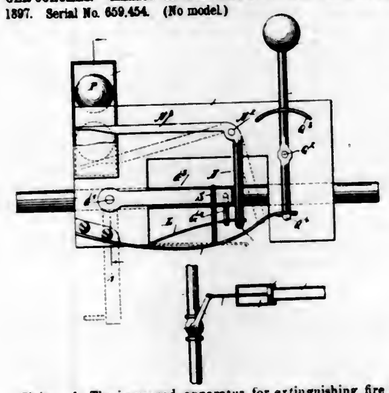
Claim.—1. The combination, in a vehicle, of an axle having a suitable friction-surface, a traction-wheel thereon, a driver loosely mounted on the hub of said traction-wheel, two eccentrically-shaped cylinders within the hub and surrounding the axle, one of which surrounds the other, one of said cylinders being also movable circumferentially in respect to the other, and one having a portion of its substance cut away leaving an opening in its side, a cam-wedge secured to the hub and fitting within said opening, and a connection between said movable cylinder and said driver.



2. The combination, in a vehicle, of the axle A having friction-sleeve A', the two eccentrically-formed cylinders B and C, the cam-wedge D positioned in an opening in the side of the cylinder B, the shell-like vehicle-hub within which said parts are contained, the driving-wheel F, and a connection between the inner cylinder and the driving-wheel, said parts being so arranged that the axis of the wheel is central to the combined structure when in normal position, substantially as set forth.

3. The combination, in a vehicle, of an axle having a friction-surface adapted to serve as a member of a brake, a traction-wheel mounted on said axle, a driver loosely mounted on said hub, two eccentrically-shaped cylinders located in the hub and surrounding the axle, one of which surrounds the other, one of said cylinders being also movable circumferentially in respect to the other and adapted to serve as the other member of the brake, and a connection between said movable cylinder and said driver, substantially as and for the purpose set forth.

610,508. AUTOMATIC FIRE-EXTINGUISHER FOR PASSENGER-COACHES. MARLON M. WILLIAMS, Rico, Colo. Filed Nov. 22, 1897. Serial No. 659,454. (No model.)

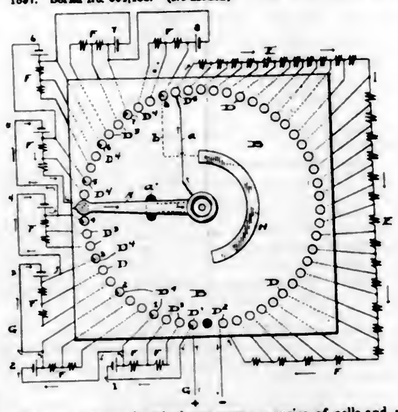


Claim.—1. The improved apparatus for extinguishing fire in a car, comprising a reservoir for compressed air, a pipe leading from the reservoir, a normally-closed valve in said pipe, an arm extended from the valve-shaft, two links pendent from the arm, springs connected with the respective links, two pivoted levers detachably connected with the free ends of the respective springs, and weights for coacting with the upper ends of said levers, in the manner shown and described.

2. An apparatus for extinguishing fire or lights in a car, comprising a reservoir for compressed air, a pipe leading from the reservoir, a normally-closed valve in said pipe, an arm extended from said valve, a link connected with the arm, a spring connected with said link, a vertically-disposed pivoted lever normally, but detachably, engaging the spring, and a weight on the upper end of said lever, to release it from engagement with the spring in case of accident to the car, substantially as specified.

3. A fire-extinguisher, comprising a pipe connected at one end with an air-reservoir and at the other end with means for extinguishing fire or illuminating devices in a car or coach, a valve in said pipe, arms extended from the stem of said valve, springs pressing on the said arms, levers for engaging with and normally holding said springs, and means for imparting motion to said levers to release the springs in case of accident to a coach or car, substantially as specified.

610,509. MEANS FOR CONTROLLING VOLTAGE AND VOLUME OF ELECTRICAL CURRENTS. HARRY WILLIAMS, Cleveland, Ohio, assignor to the Morrison Battery Company, same place. Filed Dec. 8, 1897. Serial No. 661,135. (No model.)



Claim.—1. In an electrical apparatus, a series of cells and resistances interposed between the cells and a line of separate resistances in the circuit beyond the cells, and a switch constructed and arranged to first travel over said cells and lastly over the outside resistances, substantially as described.

2. In an apparatus for controlling the voltage and volume of an electrical current, a series of cells and a series of resistances arranged consecutively and connected together, a series of contact points for the cells and said resistances, and a series of resistances outside of the cells and on the circuit, and a switch, substantially as described.

3. In means for controlling an electrical current, a rotary switch, a series of contacts, the cells and resistances in series between the cells connected to said contacts, a second series of contacts and resistance-coils arranged in series connected thereto, and means to keep said cells in circuit when the switch is cutting out the said last resistance-coils, substantially as described.

4. In means for controlling an electrical current, a rotary switch, a series of contact-points arranged in consecutive order for said switch, the first series of said contacts being connected to a series of cells and a series of resistances on the line between said cells, and the balance of said contacts being connected to resistance-coils arranged in series, and means to electrically connect said cells and switch when the said last resistance-coils are being cut out, substantially as described.

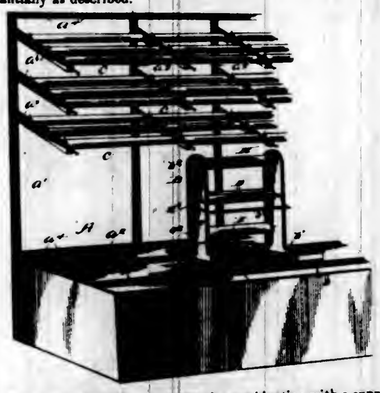
5. In a rotary switch for controlling an electrical current, a series of contacts electrically connected to a series of cells and resistance-coils, a spring-pressed plunger in the outer end of said switch and bearing on said contacts a plate electrically connected to the cells, and an arm on said switch constructed to come in working relation to said plate when the switch is rotated to cut out the resistances, substantially as described.

6. In means for controlling an electrical current, a rotary switch, A, a series of contacts, D, and cells connected in series to said contacts, a series of resistances F connected to said contacts and arranged on the line between said cells, a series of resistance-coils E connected to the contacts D after the last of the cell-contacts, and a plate H electrically connected to the cells and constructed to make a continuous contact with switch A while the coils E are being cut out, substantially as described.

610,510. ROLLER-SHELVING AND CLOTH-MEASURER COMBINED. THOMAS F. APPERSON and CHARLES H. DORSEY, Poetry, Tex. Filed Dec. 7, 1896. Serial No. 614,806. (No model.)

Claim.—1. In a cloth-holding apparatus, the combination with a main frame, of brackets mounted thereon and each provided with a journal-engaging wing adapted to turn up or down at will, spring-rollers having angular journal ends mounted in said brackets, and adapted to be engaged by said wings to cause the winding of the springs, or disengaged from the same to permit the free rotation of the rollers, substantially as described.

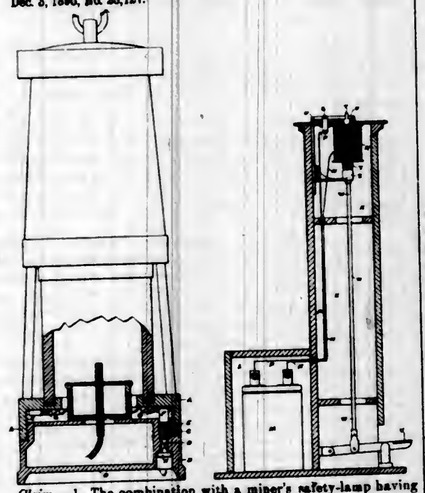
2. In a cloth-holding apparatus, the combination with a supporting-frame, of journal-brackets mounted thereon, pivot-rods having journal-engaging wings mounted in said brackets, spring-rollers having angular journal ends also mounted in said brackets, and pivot-rods having journal-engaging wings mounted on the ends of said rollers; the construction and operation being such that the pivoted rods may turn to permit the rollers to rotate freely in the supporting-brackets, or to rotate against the tension of the springs therein, substantially as described.



3. In a cloth-holding apparatus, the combination with a supporting-frame, of journal-brackets mounted thereon, spring-rollers having angular journal ends mounted in said brackets, pivot-rods having journal-engaging wings lying on the ends of said rollers, and means mounted upon the brackets and adapted to engage the angular journal ends of the rollers or be disengaged therefrom at will, substantially as described.

4. In a cloth measuring and bolting apparatus, the combination with a suitable main frame, of cloth-holding rollers mounted thereon, an auxiliary frame mounted on the main frame, measuring-rollers mounted on said auxiliary frame, measuring-gearing connected to said rollers, a movable index-carrying gear, means for throwing the same into or out of mesh with the measuring-gears, and a spring for returning said movable gear to its original position when disengaged from the measuring-gears, substantially as described.

610,511. MINER'S SAFETY-LAMP. WILLIAM BEST, Morley, England, assignor to the Ackroyd & Best, Limited, same place. Filed Dec. 23, 1897. Serial No. 663,119. (No model.) Patented in England Dec. 3, 1896, No. 23,127.

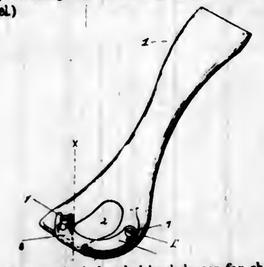


Claim.—1. The combination with a miner's safety-lamp having two parts connected together and a bolt for holding the parts in position, of a magnet-pole adapted to be brought into direct contact with the bolt, and means for giving motion to each magnet-pole and withdrawing the bolt, substantially as specified.

2. The combination with a miner's safety-lamp having the parts screwed together and a spring-bolt of magnetic material that prevents the parts unscrewing, of a magnet-pole adapted to be brought into direct contact with the bolt and a lever and rod for depressing the magnet-pole and withdrawing the bolt, substantially as specified.

3. The combination with a miner's safety-lamp, in which a spring-bolt is employed having a countersunk head, of an electromagnetic unlocking apparatus consisting of a box K, carrying a battery M, a ring U having a push-switch S and magnet T projecting in same, a coil R for electromagnetizing the magnet T, wires forming the required connections, and a sliding rod W operated by a treadle V for depressing the magnet T and withdrawing the bolt D in the lamp, substantially as set forth.

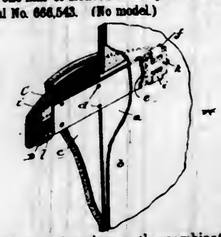
610,512. HEEL-SHAVER FOR SHOEMAKERS' USE. HENRY BRINKER, Pittsburg, Pa. Filed Aug. 26, 1897. Serial No. 649,629. (No model.)



Claim.—1. In a single-handed heel-shaver for shoemakers' use, the combination with the working face 1' and the radial cutter-knife 3 of the slots having inclined sides 6 and 6', screws 5 and 5' engaging with said slots and working face, the swinging side gage 8 pivoted upon screw 7' with open slot at its movable end for engaging with screw 7, all arranged and combined as shown and described.

2. In a single-handed heel-trimmer for shoemakers' use, the combination of the handle 1 and working-face portion 1' cast in one piece, the swinging side gage 8 with screws 7 and 7', the radial cutter-knife 3 with slots having inclined sides 6 and 6' and screws 5 and 5' whose heads engage within said slots flush with the surface of the knife, all combined and arranged substantially as shown and described.

610,513. SAFETY-POCKET. HARRY L. BROAD, Alpena, Mich., assignor of one-half to Reuben G. Levyn, same place. Filed Jan. 13, 1898. Serial No. 666,543. (No model.)

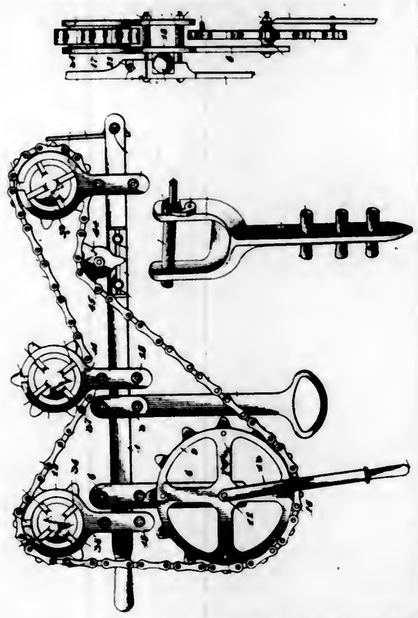


Claim.—1. In a pocket-closure, the combination of a garment having a pocket comprising an inner and an outer wall, a normally-curved resilient strip arranged at the inside of the inner wall of the pocket and suitably connected with the garment, and a piece of suitable flexible material connected throughout its length to the inner face of the outer wall of the pocket and having its ends extended through openings in the inner wall of the pocket and connected with the ends of the resilient strip, substantially as specified.

2. In a pocket-closure, the combination of a garment having a pocket comprising an inner and an outer wall and also having a lining at the inner side of said inner wall, a normally-curved, resilient strip arranged between the inner wall of the pocket and the lining thereof and connected by stitches to said lining, a piece of endwise-elastic material connected to the inner face of the outer wall of the pocket and having its ends extended through openings in the inner walls thereof and lapped over the ends of the resilient strip, the clips receiving the ends of the resilient strip and the ends of the elastic piece and having barbs engaging the latter and also having apertures *j*, and stitches taking through said apertures *j* and connecting the clips, the elastic piece and the resilient strip together and to the lining of the garment, substantially as specified.

610,514. WIRE-FENCE MACHINE. OSCAR H. OWENS, Cherryvale, Kans. Filed Sept. 16, 1896. Serial No. 606,033. (No model.)

Claim.—1. In a fence-machine, the combination with a wire-twister, of a regulator adapted for movement toward and away from the wire-twister and which regulates the length of the twist.



2. In a fence machine, the combination with a wire-twister, of fingers adjustable toward and away from the twister for regulating the length of the twist.

3. In a fence-machine, the combination with an adjustment-bar, of a wire-twister connected to the adjustment-bar, and fingers which are adjustably connected to the adjustment-bar by a slot-and bolt connection and adapted for movement toward and away from the twister.

4. In a fence-machine, the combination with an adjustment-bar, of a wire-twister connected thereto, and parallel fingers adjustably connected to the adjustment-bar and which regulate the amount of twist, said fingers being movable toward and away from the twister.

5. In a fence-machine, the combination with an adjustment-bar, of a twisting-wheel, and parallel fingers adjustably connected to the adjustment-bar and movable toward and away from the twister and adapted to regulate the amount of twist.

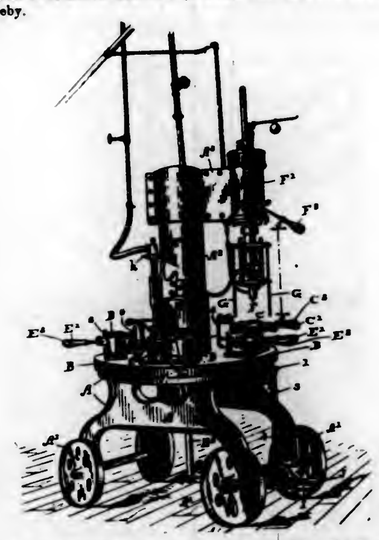
610,515. GLASS-BLOWING MACHINE. FRANK C. BALL, Muncie, Ind., assignor to the Ball Brothers Glass Manufacturing Company, same place. Filed Dec. 16, 1897. Serial No. 662,182. (No model.)

Claim.—1. The combination, in a glass-blowing apparatus, of neck-molds, pressing-molds, blowing-molds, a blowing head, and a pressing head or plunger, suitably arranged in relation to each other, hooks adapted to engage with the neck-molds and lift the same from the pressing-molds, and means for operating said hooks.

2. The combination, in a glass-blowing machine, of neck-molds, pressing-molds and blowing-molds arranged in sets on a suitable table, a vertically-movable plunger arranged above the pressing-molds and adapted to press the glass therein, and hooks carried by the plunger-head and adapted to engage with a neck-mold and lift the same from the corresponding pressing-mold as said plunger reascends, from whence said neck-mold is adapted to be transferred to a blowing-mold by hand.

3. The combination, in a glass-blowing apparatus, of neck-molds, pressing-molds, blowing-molds, a plunger arranged above the pressing-molds and adapted to press the glass therein, hooks adapted to engage with a neck-mold and lift the same from the pressing-mold, and means actuated from the plunger for operating said hooks.

4. The combination, in a glass-blowing machine, of a neck-mold, a plunger, hooks G carried by the plunger-head and adapted to engage with and lift said neck-forming mold, and springs *s* by which said hooks are normally held to a predetermined position, while adapted to be moved therefrom by contact with the part to be lifted thereby.



5. The combination, in a glass-blowing machine, of a pressing-mold, a blowing-mold, and a neck-mold adapted to be transferred from the pressing-mold to the blowing-mold, said blowing-mold and said neck-mold being each composed of parts hinged together, and a suitable stop or guide whereby said neck-mold is enabled to be easily positioned accurately upon said blowing-mold.

6. The combination, in a glass-blowing machine, of a blowing-mold composed of parts united by a vertical hinge-pivot, a neck-mold also composed of parts united by a vertical hinge-pivot and adapted to be placed upon said blowing-mold, the contacting surfaces of said molds having a ring-and-groove formation whereby they are brought into proper vertical relation with each other, and a stud or stop on said blowing-mold with which one side of said neck-mold is adapted to be brought into contact, whereby the hinge-pivots are caused to assume a position in line with each other, substantially as and for the purposes set forth.

7. The combination, in a glass-blowing machine, of a suitable framework, a rotating table thereon, a series of sets of molds each composed of a pressing-mold and a blowing-mold arranged alongside each other and attached to the table and a neck-mold transferable from one to the other, a pressing-head, and a blowing-head, carried by a standard of the frame, means for transferring the neck-mold from a pressing mold to a blowing-mold, and means for rotating the table and for stopping the same in predetermined positions, said stops, pressing-heads and blowing-heads being so arranged, relatively to each other, that when a pressing-mold is below the pressing-head a blowing-mold is below the blowing-head, substantially as shown and described.

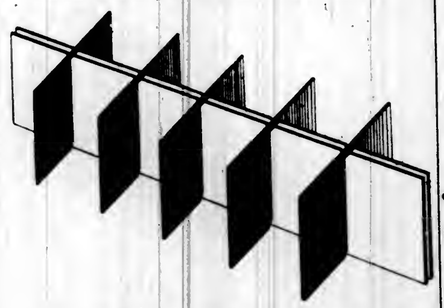
8. The combination, in a glass-blowing machine, of a suitable framework having a central standard, a rotating table mounted thereon, a series of pressing, blowing and neck-forming molds carried by said table, a pressing-head and a blowing-head carried by said standard, means for operating said pressing-head, and means, consisting of a treadle I, a lever H′ and suitable connecting-rods, for operating said blowing-head, substantially as set forth.

9. The combination, in a glass-blowing machine, of a suitable framework having a central standard, a rotating table mounted thereon, a series of pressing, blowing and neck-forming molds carried by said table, a pressing-head and a blowing-head carried by said standard, a suitable detent for locking said table at various points, a treadle for operating said detent, and a lever and a treadle for operating said blowing-head, said two treadles being located alongside each other, whereby they may be conveniently operated from a single point, substantially as shown and described.

10. The combination, in a glass-blowing apparatus, of neck-molds, pressing-molds, blowing-molds, a blowing-head, and a pressing head or plunger, suitably arranged in relation to each other, means adapted to engage with the neck-molds and lift the same from the pressing-molds, and mechanism for operating said lifting means, substantially as set forth.

DESIGNS.

29,299. CARTON FILLER. ROBERT J. BARKLEY, Chanute, Kans. Filed July 30, 1898. Serial No. 687,361. Term of patent 14 years.



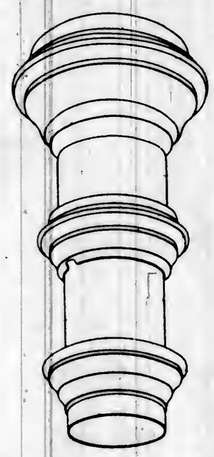
Claim.—The design for a carton filler substantially as herein shown and described.

29,300. CLOCK-FRAME. CHARLES A. HIRSCHI, Allegheny, Pa., assignor to the Pittsburg Lamp and Brass Company, Pittsburg, Pa. Filed July 6, 1898. Serial No. 685,283. Term of patent 3½ years.



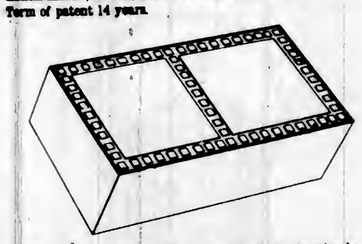
Claim.—The design for a clock-frame or similar article substantially as herein shown and described.

29,301. CASING FOR LAMPS. RICHARD FLEMING, Lynn, Mass., assignor to the General Electric Company, of New York. Filed Aug. 8, 1898. Serial No. 688,119. Term of patent 14 years.



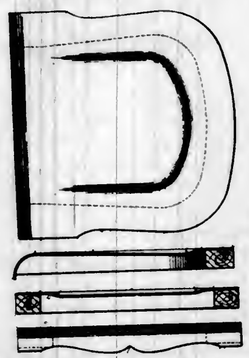
Claim.—The design for a casing for a lamp, substantially as shown and described.

29,302. BUTTER-STAMPING BLOCK. HARRY M. BRANDT and BLAINE BEELEY, Canton, Kans. Filed May 24, 1897. Serial No. 637,967. Term of patent 14 years.



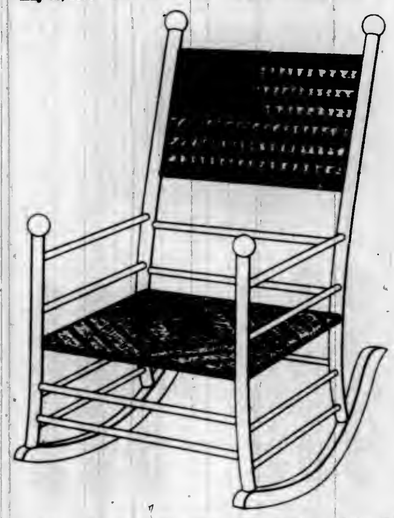
Claim.—The design for a stamping-block, as herein shown and described.

29,303. BENT-WOOD CHAIR-SEAT. JAMES H. COFFMAN, Columbus, Ohio, assignor to the Wisconsin Chair Company, Port Washington, Wis. Filed Aug. 10, 1898. Serial No. 688,310. Term of patent 14 years.



Claim.—The design for a bent-wood chair-seat, as herein shown and described.

29,304. CHAIR. JOSEPH H. PARKER, Jr., Woburn, Mass. Filed May 18, 1898. Serial No. 681,062. Term of patent 3½ years.



Claim.—The design for a chair, substantially as shown and described.

29,305. HEATING-STOVE. EDWARD G. GERBER, Erie, Pa. Filed Aug. 9, 1898. Serial No. 688,215. Term of patent 7 years.



Claim.—1. In a design for a heating-stove, the design for the base-skirting and stove-legs, substantially as shown and described.

2. In a design for a heating-stove, the design for the stove-base, substantially as shown and described.

3. In a design for a heating-stove, the design for the ash-pit section, substantially as shown and described.

4. In a design for a heating-stove, the design for the fire-pot section, substantially as shown and described.

5. In a design for a heating-stove the design for the combustion-chamber section, substantially as shown and described.

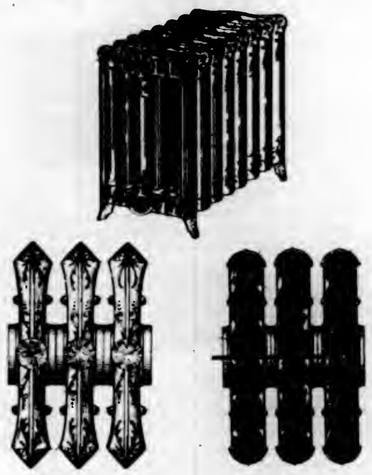
6. In a design for a heating-stove, the design for the subtop of the stove, substantially as shown and described.

7. In a design for a heating-stove, the design for the stove-top, substantially as shown and described.

8. In a design for a heating stove, the design for the urn surmounting the stove-top, substantially as shown and described.

9. The design for a heating-stove, substantially as shown and described.

29,306. RADIATOR. TIMOTHY HOLLAND, Chicago, Ill., assignor to Mary C. Holland, same place. Filed Aug. 1, 1898. Serial No. 687,446. Term of patent 14 years.



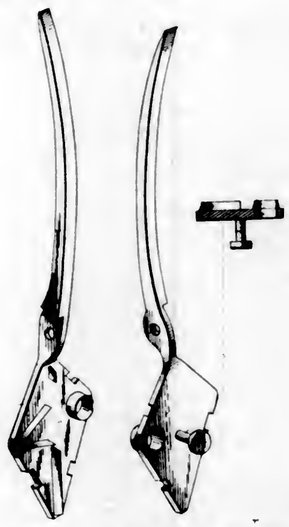
Claim.—The design for a radiator substantially as herein shown and described.

29,307. MEMBER OF A PAIR OF TONGS. LEVI M. KAPP and JOHN L. KAPP, La Grange, Ind. Filed Mar. 26, 1897. Serial No. 629,446. Term of patent 7 years.



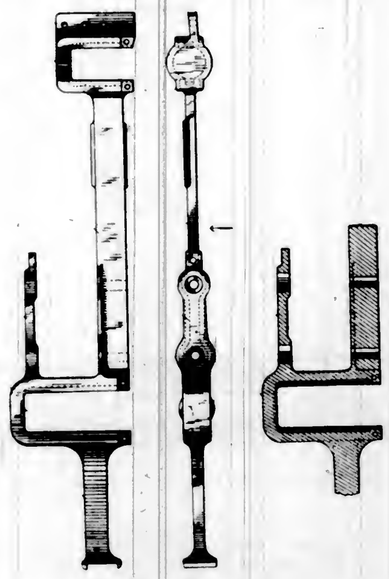
Claim.—The design for the member of a pair of tongs, substantially as herein shown and described.

29,308. MEMBER OF A STOCK-MARKING TOOL. JOHN P. SHAW, Aberdeen, Miss. Filed Mar. 27, 1897. Serial No. 629,616. Term of patent 7 years.



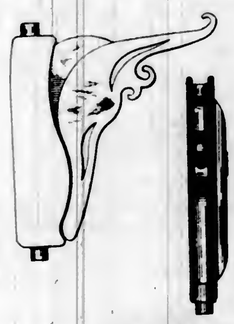
Claim.—The design for a member of a stock-marking tool, substantially as shown and described.

29,309. TRUCK SIDE-BAR. WALTER B. ADAMS, Philadelphia, Pa. Filed Aug. 8, 1898. Serial No. 688,123. Term of patent 14 years.



Claim.—The design for a truck side-bar, substantially as herein shown and described.

29,310. ROPE AND WIRE HOLDER. FRANK R. GOODE, Decatur, Ill., assignor to R. O. Burrous and W. M. Brewer, Pierson Station, Ill. Filed June 20, 1898. Serial No. 684,014. Term of patent 7 years.



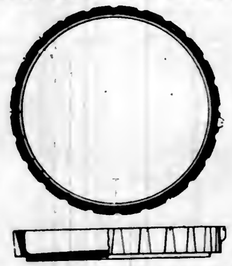
Claim.—The design for a rope and wire holder, substantially as shown and described.

29,311. TYPE-SPACE. CHARLES R. MURRAY, Chicago, Ill. Filed Feb. 24, 1898. Serial No. 671,535. Term of patent 14 years.



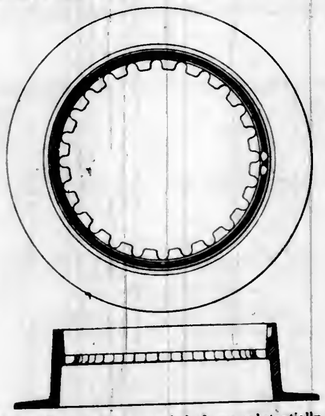
Claim.—The design for a type-space herein shown and described.

29,312. MANHOLE-COVER. THOMAS P. GERBER, Philadelphia, Pa. Filed Aug. 9, 1898. Serial No. 688,217. Term of patent 14 years.



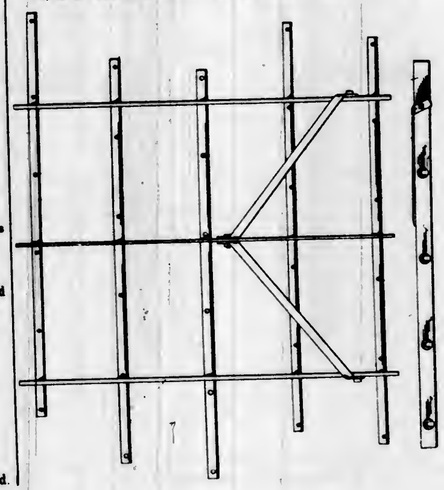
Claim.—The design for a manhole-cover, substantially as shown and described.

29,313. MANHOLE-FRAME. THOMAS P. GERBER, Philadelphia, Pa. Filed Aug. 8, 1898. Serial No. 688,121. Term of patent 14 years.



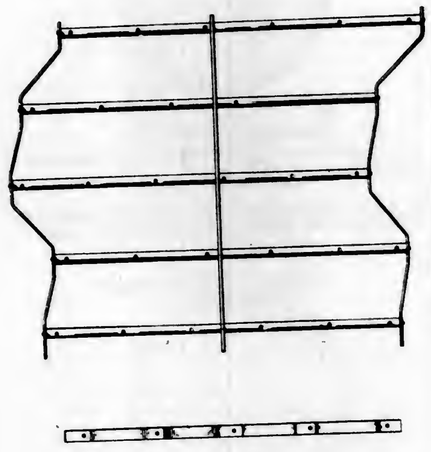
Claim.—The design for a manhole frame, substantially as shown and described.

29,314. HARROW-FRAME. GEORGE W. REAM, Canton, Ohio, assignor to the Bucher & Gibbs Plow Company, same place. Filed Aug. 3, 1898. Serial No. 687,647. Term of patent 14 years.



Claim.—The design for a harrow-frame as herein shown and described.

29,315. HARROW-FRAME. GEORGE W. REAM, Canton, Ohio, assignor to the Bucher & Gibbs Plow Company, same place. Filed Aug. 3, 1898. Serial No. 687,648. Term of patent 14 years.



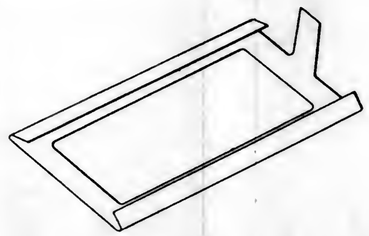
Claim.—The design for a harrow-frame, as herein shown and described.

29,316. FENCE-POST. HEDLEY J. DONAHOE, Chicago, Ill. Filed Aug. 6, 1898. Serial No. 687,990. Term of patent 7 years.



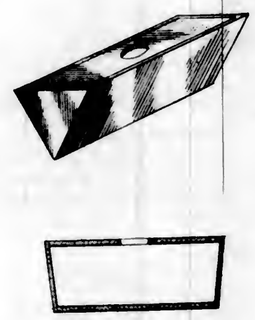
Claim.—The new and original design or useful shape for a fence-post substantially as herein shown and described.

29,317. FILM-HOLDER. EDWARD G. THOMAS, Boston, Mass. Filed Aug. 9, 1898. Serial No. 688,214. Term of patent 7 years.



Claim.—The design for a film-holder as herein shown and described.

29,318. BOTTLE. BENNETT ROBY PAINE, Hamden Junction, Ohio. Filed July 23, 1898. Serial No. 686,637. Term of patent 14 years.



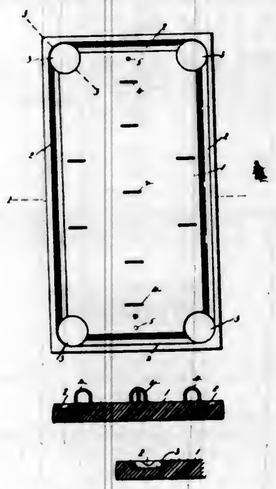
Claim.—The design for a bottle as herein shown and described.

29,319. JEWEL-CASE. DORA M. SMITH, Los Angeles, Cal. Filed Aug. 17, 1897. Serial No. 648,601. Term of patent 3½ years.



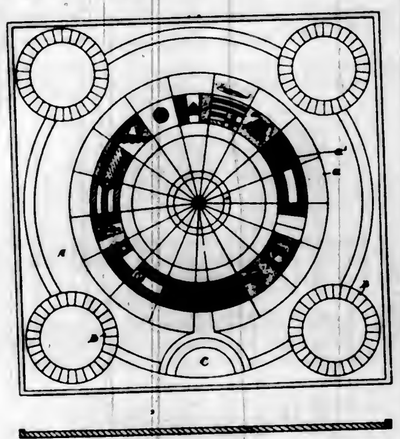
Claim.—The design for a jewel-case substantially as shown and described.

29,320. GAME-BOARD. MAJOR ROBERTS JEWELL, Seneca Falls, N. Y. Filed Feb. 28, 1898. Serial No. 671,260. Term of patent 7 years.



Claim.—The design for a game-board, substantially as herein shown and described.

29,321. GAME-BOARD. WILLIAM MILES, Toronto, Canada. Filed July 7, 1898. Serial No. 685,350. Term of patent 7 years.



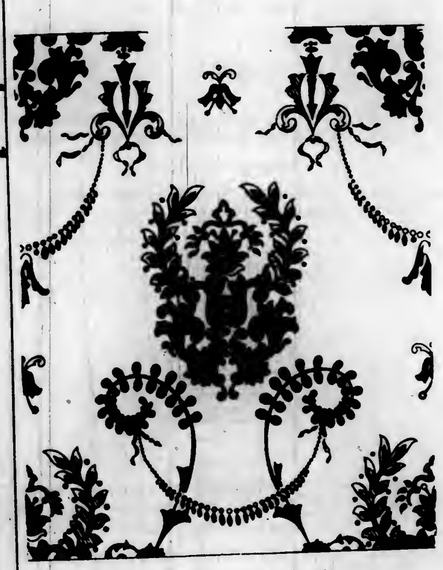
Claim.—The design for a game-board as herein shown and described.

29,322. BRAID. VALENTINE SCHOCK, New York, N. Y., assignor to the Steire Brothers Braid Company, same place. Filed July 14, 1898. Serial No. 685,956. Term of patent 14 years.



Claim.—The design for braid herein shown and described.

29,328. TEXTILE FABRIC. OTTO JAEGER and GEORGE SCHMIDT, New York, N. Y. Filed May 26, 1898. Serial No. 681,742. Term of patent 3½ years.



Claim.—The design for a textile fabric substantially as herein shown and described.

TRADE-MARKS

REGISTERED SEPTEMBER 6, 1898.

81,929. RUBBER GOODS AND ARTICLES MADE THEREFROM AND WATERPROOF OILED FABRICS AND ARTICLES MADE THEREFROM. GOODYEAR RUBBER COMPANY, New York and Buffalo, N. Y.; St. Louis and Kansas City, Mo.; Chicago, Ill.; Milwaukee, Wis.; Minneapolis and St. Paul, Minn.; San Francisco, Cal.; Portland, Oreg., and Washington, D. C. Filed July 14, 1898.



INDIAN

Essential feature.—The word "INDIAN," together with the representation of the head of an Indian. Used since November, 1897.

81,930. HOSE, BELTING, PACKING, VALVES, GASKETS, AND SPRINGS. REVERE RUBBER COMPANY, Boston, Mass. Filed June 16, 1898.



BLACK-HAWK

Essential feature.—The words "BLACK HAWK" with or without the picture of the Indian chieftain. Used since March 1, 1898.

81,931. GLOVES AND MITTENS. THE AMERICAN GLOVE COMPANY, Chicago, Ill. Filed Mar. 17, 1898.



Essential feature.—The representation of a fish with the letter "R" thereon. Used since March 5, 1898.

81,932. PINS. THE AMERICAN PIN COMPANY, Waterbury, Conn. Filed Aug. 3, 1898.

ADMIRAL

Essential feature.—The word "ADMIRAL." Used since June 2, 1898.

81,933. PERFUMERY, TOILET WATER, AND TOILET POWDER. HARRY K. BOOK, Philadelphia, Pa. Filed July 23, 1898.

COLONIAL

Essential feature.—The title "COLONIAL." Used since July 11, 1898.

81,934. CERTAIN FLAVORINGS AND TOILET ARTICLES. THE CUITOIT CO., Chicago, Ill. Filed July 5, 1898.

Cuitoit

Essential feature.—The word "CUITOIT." Used since March 15, 1898.

81,935. SACHET-POWDERS AND TOILET SOAP. THE C. B. WOODWORTH SONS COMPANY, Rochester, N. Y. Filed Mar. 25, 1898.



Essential feature.—A monogram of the script letters "W" and "S" and the representation of an arrow projecting on both sides of the same. Used since December, 1897.

81,936. SOAPS, PERFUMERY EXTRACTS, AND FACE AND TOOTH POWDERS, EXCLUDING PERFUMED WATERS. THE COURT PERFUMERY COMPANY, New York, N. Y. Filed June 20, 1898.

GLORIANA

Essential feature.—The word "GLORIANA." Used since June 1, 1897.

81,937. GREASE FOR THE MANUFACTURE OF SOAP AND CANDLES. EMANUEL S. KUH, New York, N. Y. Filed July 1, 1898.

D G

Essential feature.—The letters "D G." Used since July 1, 1897.

81,938. COMPOUNDS FOR CLEANING GLASS, METAL, HARTHENWARE, AND OTHER ARTICLES HAVING SMOOTH SURFACES. JESSE W. ALTON, Cleveland, Ohio. Filed Oct. 20, 1897.

GLEAMINE

Essential feature.—The word "GLEAMINE." Used since February 1, 1897.

81,939. CERTAIN NAMED LUBRICANTS. JOSEPH FAULKNER, New York, N. Y. Filed Feb. 17, 1898.

COOLERINE

Essential feature.—The word "COOLERINE." Used since May, 1897.

81,940. WASHING, CLEANING, AND POLISHING COMPOUNDS OR SUBSTANCES. FRANCIS J. UNDERWOOD, Hartford, Conn. Filed May 18, 1898.

PRISCILLA

Essential feature.—The word "PRISCILLA." Used since April 22, 1898.

81,941. AMMONIA CLEANSING COMPOUND. ZOLLER & LEVETT & LOEB COMPANY, New York, N. Y. Filed July 28, 1898.

KREMONIA

Essential feature.—The word "KREMONIA." Used since March, 1898.

81,942. CHEWING-GUM. EDWARD A. FRANK, Craig, Mo. Filed July 30, 1897.

TICKLE-ME

Essential feature.—The compound word "TICKLE-ME." Used since February 8, 1897.

81,943. CERTAIN BITTER MINERAL WATER. THE R. R. MINERAL SPRINGS COMPANY, Bowling Green, Mo. Filed May 20, 1898.



Essential feature.—A representation of two bees. Used since January 1, 1890.

81,944. COFFEE. E. LEVERING & CO., Baltimore, Md. Filed Apr. 30, 1898.

LORD CALVERT



Essential feature.—The words "LORD CALVERT" and a likeness of Cecilius Calvert. Used since April 20, 1898.

81,945. TEA, COFFEE, SPICES, FLAVORING EXTRACTS, AND SAUCES. CHARLES W. SNOOK, New York, N. Y. Filed July 26, 1898.

JOHN GREATWORTH

Essential feature.—The words "JOHN GREATWORTH." Used since June 15, 1898.

81,946. SUGAR, SORGHUM, MOLASSES, AND SYRUP. THE M. H. ALEXANDER COMPANY, Cincinnati, Ohio. Filed Aug. 1, 1898.

DOVE



Essential feature.—The word "DOVE" and the representation of a dove. Used since November, 1887.

81,947. COOKING-OILS. UNION OIL COMPANY, Providence, R. I., and New York, N. Y. Filed Aug. 5, 1898.



Essential feature.—A representation of two clasped hands. Used since July, 1898.

31,948. CRACKERS. THOMAS & CLARKE, Peoria, Ill. Filed June 29, 1898.

PURITAN



Essential feature.—The word "PURITAN" and a representation of wheat-stalks. Used since June 15, 1898.

31,949. WHEAT-FLOUR. R. O. STANARD MILLING COMPANY, St. Louis, Mo.; Alton, Ill., and Dallas, Tex. Filed Mar. 11, 1898.

AMERICAN BEAUTY

Essential feature.—The words "AMERICAN BEAUTY." Used since October 1, 1897.

31,950. DISINFECTING, ANTISEPTIC, AND ASCEPTICIZING PREPARATIONS. THE FIRM OF CARL RAPP, Weissensee, Germany. Filed May 9, 1898.

Menthoxol

Essential feature.—The word "MENTHOXOL." Used since July 31, 1897.

31,951. CERTAIN RHEUMATISM CURE AND BLOOD-PURIFIER. MATTHEW JOSEPH JOHNSON, Superior, Wis. Filed May 3, 1898.

6088

Essential feature.—The numeral "6088." Used since February 12, 1889.

31,952. REMEDY FOR CERTAIN NAMED DISEASES. EDOUARD MORIN, Quebec, Canada. Filed Mar. 12, 1898.

M C-P W

Dr Ed Morin

Essential feature.—The letters "M. C-P. W." and the facsimile signature "DR. ED. MORIN." Used since November, 1897.

31,953. BAND INSTRUMENTS. THE BUESCHER MANUFACTURING COMPANY, Elkhart, Ind. Filed July 14, 1898.



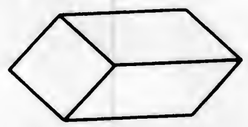
Essential feature.—The representation of a bell, tuning-fork, and triangle. Used since October 10, 1897.

31,954. TYPE-WRITING MACHINES. COMMERCIAL TYPEWRITER COMPANY, New York, N. Y. Filed May 12, 1898.

Commercial

Essential feature.—The word "COMMERCIAL." Used since November, 1897.

31,955. BINDER-TWINE. THE EDWIN H. FITLER COMPANY, Philadelphia, Pa. Filed May 26, 1898.



Essential feature.—The representation of a rectangular prism in perspective. Used since 1892.

31,956. YELLOW-PINE LUMBER. PARROTT & Co., Bay Point, Fla. Filed Mar. 17, 1898.

SEGHERIA

P

Essential feature.—The representation of a horseshoe, the word "SEGHERIA" appearing on the face of same, and the initial "P" inclosed by it. Used since March 15, 1898.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

CASLER *v.* ARMAT.

Decided May 26, 1898.

1. REHEARING—NEW EVIDENCE—CONSTRUCTION BY EXAMINERS-IN-CHIEF—SURPRISE.

The construction placed by the Examiners-in-Chief upon an issue is not such new evidence as would justify a rehearing of a motion to dissolve an interference granted on the ground that the issue is not patentable as to one count. It does not furnish ground for the allegation of surprise.

2. SAME—MOTION FOR DISSOLUTION—CHANGE IN PRACTICE.

In view of a recent change in the practice in regard to declaring interferences, from which it follows that facts not before pertinent might be considered upon a motion for dissolution, such motion, upon rehearing, was directed to be transmitted to the Primary Examiner.

APPEAL on motion.

VITASCOPE.

Application of Herman Casler filed February 26, 1896, No. 580,810. Application of Thomas Armat filed February 19, 1896, No. 579,901.

Messrs. E. M. Marble & Sons for Casler.

Mr. Julian C. Dowell for Armat.

GREELEY, *Assistant Commissioner:*

This is an appeal by Casler from the decision of the Examiner of Interferences refusing to transmit to the Primary Examiner his motion to dissolve the above-entitled interference.

It appears from the record that on April 17, 1897, Casler made a motion for dissolution on the ground that neither count of the issue was patentable, and this motion was granted by the Primary Examiner. On appeal the decision of the Examiner as to the first count was affirmed by the Examiners-in-Chief; but they held that the second count was patentable over the references. No appeal was taken by Armat, and on January 5, 1898, proceedings were resumed as to the second count. On January 12, 1898, the present motion for dissolution was filed, alleging that there is no interference in fact in view of the construction placed on the issue by the Examiners-in-Chief in deciding the question of patentability.

The Examiner of Interferences refused to transmit the motion on the ground that motions to dissolve should not be made in piecemeal, but that all reasons for dissolution which the appellant desired to urge should have been presented in the first motion.

The reason given by the Examiner is good as a general rule of practice and should be enforced; but it is, as urged by the appellant, subject to exception in a proper case. Both in the court practice and in the Office practice a rehearing is granted where material evidence is discovered which could not have been produced at the first hearing, and it follows, therefore, that a second motion for dissolution on the same grounds as the first is proper in exceptional cases. There is even more reason for permitting a second motion alleging different grounds from the first where those grounds could not have been known until after decision on the first motion.

It is urged by the appellant that the construction placed upon the issue by the Examiners-in-Chief is such new evidence; but there seems to be no good foundation for this holding. The issue was part of the appellant's evidence on the former motion and, like other evidence, was subject to examination and construction. The fact that the Office may not have placed the same interpretation upon the issue as the appellant does not furnish good ground for the allegation of surprise and, strictly speaking, does not constitute new evidence. (*Dewey* v. *Colby*, 75 O. G., 1360.)

Since the decision on the first motion to dissolve the practice in regard to declaring interferences has, however, been changed, and the facts which would be pertinent to the present motion would have had no bearing upon the question at the time of the original motion. (*Hammond* v. *Hart*, 83 O. G., 743.)

Under all of the circumstances of the case the motion for dissolution should be transmitted to the Primary Examiner, and therefore the decision of the Examiner of Interferences is reversed.

EX PARTE ATTERBURY.

Decided June 1, 1898.

1. WITHDRAWAL FROM ISSUE AFTER INTERFERENCE—NEW REFERENCE.

After an application has been examined, allowed, and been through a long interference it should not be withdrawn from issue for the citation of a new reference unless the Examiner is satisfied that such reference fully meets the claims.

2. SAME—SAME—APPEAL—SPEEDY HEARING.

When an application after interference and allowance is withdrawn for the citation of a new reference, every facility for speedy hearing on appeal should be furnished.

ON petition.

MANUFACTURE OF HOLLOW GLASSWARE.

Application of Thomas B. Atterbury filed October 1, 1892, No. 447,488.

Mr. J. Snowden Bell and *Mr. D. S. Wolcott* for the applicant.

GREELEY, *Assistant Commissioner:*

The facts in relation to this petition are substantially as follows: The application, with two allowed claims, was put into interference, the said claims being substantially the issue of the interference. The interference was prosecuted through the various tribunals of this Office and to the Court of Appeals of the District of Columbia, by which court priority was awarded in favor of this petitioner. Subsequently a claim not involved in the interference and which was under final rejection was canceled and the application was sent to issue. The application was afterward, with the approval of the then Assistant Commissioner, withdrawn from issue and the claims rejected upon new references. This was November 6, 1896, and this rejection was repeated August 31, 1897.

It seems that the application has during its time in the Office been in the hands of three Primary Examiners, the last of whom did not acquire a knowledge of it until after the termination of the interference.

The relief asked for is stated as follows:

That the approval heretofore given to the withdrawal of said application from issue should be withdrawn and the application be again allowed.

The petition also asks for the following general rulings:

That where the merits of a number of applications have been once settled and the applications placed in interference, which has been hotly contested through all tribunals of the Patent Office, the application of the successful party should not be again subjected to reëxamination, unless a clear and indubitable reference has been found.

That when an applicant has been defeated in an interference on a specific issue, such defeated party cannot be allowed, under any circumstances, a generic claim for the subject-matter of the issue of interference.

While the action of an Examiner allowing an application or any claim of an application is reviewable at any time before the issuance of the patent, claims once found allowable should not ordinarily be subsequently rejected unless a state of the art materially different from that known to the Examiner at the time of their allowance is found to exist. It is well settled that all doubts as to patentability should be resolved in favor of an applicant, and if upon careful examination claims are found allowable it may, unless it is clear that a mistake has been made, be safely presumed that there is at least a reasonable doubt as to their patentability such as would warrant their allowance. The presumption is still stronger where, in case of claims which subsequently to their allowance were placed in interference, the question of patentability could be raised by opposing parties. (*Ex parte Nealon*, 81 O. G., 1787.)

This was evidently fully recognized by the Examiner, for in his letter of November 6, 1896, he states with reference to the withdrawal of the application from issue that—

because of its allowance, and the delay and expense applicant has incurred in prosecuting it in an interference, the Examiner has withdrawn it with great reluctance, and only after mature reflection.

It must be presumed that the Examiner in recommending the withdrawal of this application from issue did so only because he was fully satisfied that the newly-discovered references fully met the claims. It cannot be held that the withdrawal was improper, even though it may subsequently appear that the references, new and old, do not in fact justify the rejection of the claims, and whether or not the withdrawal was proper under the circumstances the order of withdrawal cannot be canceled or changed. The question of withdrawal must be presumed to have been deliberately decided by the Assistant Commissioner and under Rule 144 is not open to reconsideration upon any ground here presented.

I see no way open to applicant to secure the allowance of his claims other than to take his appeal to the Examiners-in-Chief. On account of the special circumstances of the case I have no doubt that every facility will be afforded for a speedy hearing and decision should appeal be taken. The Examiner will also facilitate in every way possible the disposal of the questions of form which it is understood have been raised. (See Examiner's supplemental statement.)

It does not appear to be necessary to consider the second of the general questions raised by petition, for the reason that it is not a question directly arising in the case or on which the Examiner has upon the record made any ruling.

The petition must be denied.

TYLER *v.* ARNOLD.

Decided June 6, 1898.

INTERFERENCE—PUBLIC USE.

It is the established practice of the Office to refuse to suspend interference proceedings for the purpose of trying the issue of public use, since the determination of priority by means of the interference already established is of as much importance as the establishment of another statutory bar by means of public-use proceedings.

ON petition.

LAST.

Application of Abel D. Tyler, Jr., filed September 2, 1897, No. 650,410. Application of William B. Arnold filed June 22, 1896, No. 596,367.

Mr. Edw. S. Beach for Tyler.

Messrs. Crosby & Gregory for Arnold.

GREELEY, *Assistant Commissioner:*

This is a petition asking that the above-entitled interference be suspended for the purpose of instituting public-use proceedings.

There is nothing in the record to show that notice of this petition was served upon Tyler, as it should have been; but since the petition cannot be granted in any event the lack of notice becomes immaterial.

The question as to whether interference proceedings should be stopped for the purpose of trying the issue of public use has been repeatedly raised, and it is the established practice of the Office to refuse to suspend proceedings for that purpose. In *Thomson and Unbehend* v. *Hisley* (66 O. G., 1596) this general question was fully discussed, although in that case the question was raised on a motion

for dissolution instead of by petition, and the conclusion was announced that—

it is believed, then, to be proper practice to refuse to stop an interference to allow a party to try to create a bar upon the basis of a disclosure of the interference proceedings.

That case was even stronger than the present, since the question was raised by the preliminary statement of the opposing party instead of by *ex parte* affidavits of others, as in the present case.

Two years' public use, if established, is a bar to the grant of patent to a party, but so also is prior invention by another, if established. One bar is as complete as is the other, and therefore the public has as much interest in having the one question settled as the other. In the interference proceedings Arnold's right to a patent is raised just as in the proposed public-use proceedings Tyler's right to a patent would be raised. Even if the affidavits presented by Arnold make out a *prima facie* case of public use and under ordinary circumstances would warrant the institution of public-use proceedings they do not warrant the suspension of the interference for that purpose. Tyler's preliminary statement under the rules makes out as good cause for continuing the interference proceedings as do the affidavits filed by Arnold for the institution of public-use proceedings. The interference proceedings having been already instituted and being of as much importance as the public-use proceedings should be allowed to proceed to final decision.

The petitioner's argument that the trouble and expense of the proceedings will be less if public-use proceedings are now instituted is not well founded, for it cannot be decided in advance what the decision will be, and it is possible that whatever course is pursued it will be necessary to take testimony on both questions.

The petition is denied.

WRIGHT AND STEBBINS *v.* CHURCH.

Decided June 15, 1898.

INTERFERENCE—MOTION TO DISSOLVE INTERFERENCE SUBSEQUENT TO DECISION IN HAMMOND *v.* HART—TESTIMONY TAKEN.

Upon a motion to dissolve an interference after testimony has been taken, on the ground that there is no interference in fact, under the practice as indicated in the decision of *Hammond* v. *Hart*, (83 O. G., 743,) *Held* that after parties have been put to the delay and expense of taking testimony the Office should not dissolve an interference with the certainty that it will be redeclared upon another issue based upon the same subject-matter. (*O'Rourke* v. *Gillespie*, 84 O. G., 984, cited.)

APPEAL on motion.

TRUCK.

Application of R. C. Wright and F. E. Stebbins filed July 20, 1896, No. 599,835. Application of Arthur L. Church filed June 1, 1896, No. 593,841.

Mr. Frank E. Stebbins for Wright and Stebbins.

Messrs. Howson & Howson for Church.

GREELEY, *Assistant Commissioner:*

This is an appeal from the decision of the Examiner of Interferences granting a motion by Wright and Stebbins for the transmission of the files and papers to the Primary Examiner for his determination of a motion to dissolve. The ground of the motion to dissolve is that in view of the decision in *Hammond* v. *Hart* (83 O. G., 743) and other decisions no interference in fact exists.

This interference was declared September 29, 1897. Various delays have been asked for, chiefly to accommodate Wright and Stebbins. Both parties have taken testimony and Church has filed his printed copies, though Wright and Stebbins have not done so. Final hearing has been fixed for June 27, 1898. The *Hammond* v. *Hart* decision above specified appeared May 3, 1898. This motion was brought eight days later. Many of the facts recited above seem to indicate a disposition on the part of Wright and Stebbins to delay the case. A party in such a position is not entitled to great consideration. The main point to be considered is, however, the advisability of considering the question of interference in fact in view of the decision referred to.

After parties have been put to the delay and expense of taking testimony the Office should be reluctant to dissolve an interference with the certainty that the interference will be renewed upon another issue based upon the same subject-matter. This was the conclusion reached in *O'Rourke* v. *Gillespie*, (84 O. G., 984.)

It is deemed expedient and essential to substantial justice that the motion to transmit be denied. At the conclusion of the interference Church, if priority is awarded to him, may make under the rules a claim which embodies the issue.

The decision of the Examiner of Interferences transmitting the motion to dissolve is reversed.

RICHARDS *v.* NICKERSON.

Decided August 12, 1898.

INTERFERENCE—MOTION TO DISSOLVE INTERFERENCE SUBSEQUENT TO DECISION IN HAMMOND *v.* HART—TESTIMONY TAKEN.

The dissolution of an interference after testimony has been taken should not be permitted under the decision of *Hammond* v. *Hart* (83 O. G., 743) when another interference upon the same subject-matter would necessarily follow, even though the claims of the parties are not the same. (*O'Rourke* v. *Gillespie*, 84 O. G., 984, and *Wright and Stebbins* v. *Church*, 84 O. G., 1585, cited.)

APPEAL on motion.

WEIGHING-MACHINE.

Application of Francis H. Richards filed June 24, 1896, No. 596,731. Application of William E. Nickerson filed January 27, 1896, No. 577,083.

Mr. Francis H. Richards and *Mr. William H. Blodgett* for Richards.

Mr. Alex. P. Browne and *Mr. E. D. Chadwick* for Nickerson.

GREELEY, *Acting Commissioner:*

Judgment of priority in this case was awarded by the Examiner of Interferences to Nickerson. Though urged to do so by Richards, the Examiner of Interferences did not consider himself justified in expressing an opinion that no interference in fact existed between these applications and call-

ing the attention of the Commissioner thereto under Rule 126.

Appeal having been taken to the Examiners-in-Chief, they rendered a decision affirming the decision of the Examiner of Interferences awarding priority to Nickerson, but expressed the opinion that no interference in fact exists between the applications of the parties under the decision in *Hammond* v. *Hart* (83 O. G., 743) and called the attention of the Commissioner thereto under Rule 126.

Thereupon Richards filed a motion before the Examiner of Interferences to dissolve the interference and made a motion that it be transmitted to the Primary Examiner. The motion to transmit was denied by the Examiner of Interferences, and from his decision thereon this appeal is taken.

Rule 126 provides that the Examiner of Interferences or the Examiners-in-Chief may direct the attention of the Commissioner to any matter which in their opinion establishes the fact that no interference exists and that the Commissioner may suspend the interference and remand the case to the Primary Examiner for his consideration of the matters to which attention has been directed. I am satisfied that jurisdiction to remand under such circumstances is in the Commissioner and not in the Examiner of Interferences. Otherwise the rule would have provided that the Examiner of Interferences might remand certainly upon matters having come to his notice which in his opinion established the fact that no interference exists. Motion to remand to the Primary Examiner should be made before the Commissioner. This appeal will therefore be considered as a motion to remand brought before the Commissioner and not as an appeal.

It appears in the record that a motion to dissolve on the ground that no interference in fact exists was made by Richards before decision on the question of priority was made by the Examiner of Interferences, but after testimony was taken. From his refusal to transmit this motion appeal was taken to the Commissioner and heard and decided by me. I came to the conclusion that the Examiner of Interferences was right in refusing to transmit the motion, it not having been brought within the rules and no satisfactory reason for not bringing it at the proper time being shown. This decision was made under the practice then existing, before the decision in the case of *Hammond* v. *Hart*, above referred to.

The decision in the case of *Hammond* v. *Hart* would no doubt justify and require dissolution of this interference if no testimony had been taken, irrespective of the question whether both parties showed and described as of their invention the same invention; but it has been repeatedly held that in interferences declared before that decision was made in which the parties had gone to the delay and expense of taking testimony and in which dissolution would necessarily be followed by a redeclaration of interference between the same applications upon an issue based upon substantially the same subject-matter dissolution should not be granted merely because the parties did not each make claims in the words of the issue. (*Wright and Stebbins* v. *Church*, 84 O. G., 1585; *O'Rourke* v. *Gillespie*, 84 O. G., 984.)

In this case, while in the opinion of the Examiners-in-Chief no interference in fact exists, they state, after construing the issue, that "had Nickerson made any such claim (as the issue) there would be little question as to the existence of an interference in fact," and on the issue as drawn affirmed the decision of the Examiner of Interferences awarding priority to Nickerson.

It then appears that Nickerson was entitled to make the claim of the issue and to contest the question of priority thereon. It may be assumed that had the practice established by the decision in *Hammond* v. *Hart* been the practice prior to the declaration of this interference Nickerson would have been given an opportunity to make this claim, and it may also be assumed that should this interference be dissolved he would make the claim, with the necessary result of a redeclaration of the interference. The only result would then be that the parties would be put to the expense of retaking testimony.

The case appears to fall directly under the decision in the case of *Wright and Stebbins* v. *Church*, above referred to. I can reach no other conclusion than that the interferences should not be remanded to the Primary Examiner, and I so decide.

WETHEY *v.* ROBERTS.

Decided August 23, 1898.

1. INTERFERENCE, DISSOLUTION OF—JURISDICTION OF EXAMINER OF INTERFERENCES.

   The Examiner of Interferences cannot dissolve an interference except on the decision of the Primary Examiner upon a motion to dissolve brought under Rule 122 and transmitted as provided for by that rule.

2. SAME—TRANSMITTING MOTION TO DISSOLVE AFTER TAKING TESTIMONY—JURISDICTION OF EXAMINER OF INTERFERENCES.

   The Examiner of Interferences cannot transmit to the Primary Examiner a motion to dissolve an interference brought subsequent to the taking of testimony. Nor is such a motion, if based upon and requiring consideration of testimony taken in the case, within the jurisdiction of the Primary Examiner to determine, even if transmitted.

3. INTERFERENCE, DISSOLUTION OF AFTER PROCEEDING BEYOND TIME FOR MAKING MOTION TO DISSOLVE—RULE 126.

   A dissolution of an interference which has proceeded beyond the stage at which motions to dissolve may properly be made but in which it is clear that there is no interference in fact between the applications involved is provided for by Rule 126.

4. SAME—SAME—EXAMINER OF INTERFERENCES.

   Where the Examiner of Interferences refused to consider a question of interference on the ground that the action of the Primary Examiner in declaring the interference is binding upon him and that he "will not for a moment attempt to disturb his action or in any manner criticise it," *Held* that he took a position contrary to the purpose and intent of Rule 126, making the rule, so far as he is concerned, without force or effect.

5. SAME—SAME—DUTY OF THE EXAMINER OF INTERFERENCES.

   The functions of the Examiner of Interferences are not restricted to the consideration of the single question of priority as to the invention of the issue as drawn up by the Primary Examiner. Where the evidence shows that there is no legitimate interference between two applications, it is the duty of the Examiner of Interferences, under Rule 126, upon ascertaining the facts to call the attention of the Commissioner thereto. Whether this be done before decision on the question of priority or not, his decision upon that question is by the rule left to the discretion of the Examiner of Interferences.

APPEAL on motion.

ROASTING-FURNACE.

Application of Arthur H. Wethey filed January 24, 1896, No. 576,713. Application of William E. Roberts filed December 28, 1895, No. 573,587.

Messrs. Munn & Co. for Wethey.

Mr. William J. Johnston for Roberts.

GREELEY, *Acting Commissioner:*

In this interference the Examiner of Interferences on June 9, 1898, awarded priority to Wethey, the junior party. Thereupon Roberts, the senior party, brought the following motions before the Examiner of Interferences:

1. To set aside the judgment of priority rendered June 9, 1898, in favor of Wethey.
2. To dissolve the interference.
3. To transmit the motion for dissolution to the Primary Examiner.

The grounds for the motion to dissolve stated by Roberts are that—

1. The claims do not interfere.
2. Wethey's claims are not involved in the issues set up, and he has no right to make such claims.
3. There was such irregularity in declaring the same as will preclude a proper determination of the question of priority.

The Examiner of Interferences refused to transmit the motion to dissolve, and appears also to have denied the motion to set aside his decision on the question of priority. In effect he denied the several motions made by Roberts. From his denial of these motions this appeal is taken.

It appears from the record that this interference was declared January 5, 1897. No motion to dissolve was made within the time fixed by the rules. It may be assumed that on the face of the papers there was an apparent interference under the practice then existing, both parties claiming apparently the same invention, and that the interference was properly declared and would not have been dissolved on any showing which could have been made prior to the taking of the testimony.

The testimony taken on behalf of Roberts and the cross-examination of the witnesses for Wethey were largely directed toward ascertaining precisely what invention was made by the respective parties and what invention was intended to be covered by their claims. It was urged on the part of Roberts at final hearing that the testimony taken showed that the invention made by Wethey and intended to be claimed in his application was not the invention made by Roberts and intended to be claimed in his application; that the invention made by Wethey was not the invention of the issue, and that the evidence showed that there was no interference in fact between the two applications. The Examiner of Interferences was asked to dissolve the interference on the ground that it appeared from the testimony that there was no interference in fact between the two applications.

In so far as the decision of the Examiner of Interferences is a refusal to dissolve the interference it is beyond doubt in accordance with the practice under the rules. His decisions upon the motion to dissolve on the motion to transmit the motion to dissolve made by Roberts to the Primary Examiner are also in accordance with the practice under the rules. The Examiner of Interferences cannot dissolve an interference except on the decision of the Primary Examiner upon a motion to dissolve brought under Rule 122 and transmitted as provided for by that rule. He cannot under the rules transmit to the Primary Examiner a motion to dissolve brought subsequent to the taking of testimony and decision on the merits. Nor is such a motion, if based upon and requiring consideration of testimony taken in the case, within the jurisdiction of the Primary Examiner to determine even if transmitted. As was held in *Faure* v. *Bradley and Crocker* v. *Cowles and Cowles*, (44 O. G., 945,) the Primary Examiner has nothing to do with consideration of evidence, but the Examiner of Interferences has the exclusive right to determine the competency, construction, scope, and legal meaning of any evidence introduced.

How then is dissolution to be effected in an interference which has proceeded beyond the stage at which motions to dissolve may properly be made, but in which it is clear that there is no interference in fact between the applications involved—an interference in which an award of priority is impossible and in which further proceedings are unnecessary and involve only useless waste of the time of the Office and the time and money of the applicants? Such cases undoubtedly arise, and it may be that such a case arises in the present interference. There is but one way in which such interferences can be dissolved under the rules, and that is provided by Rule 126. There is no doubt that this rule was intended to provide for such cases, and it is believed to be sufficient for this purpose if proper action is taken under it.

In the present case, while the Examiner of Interferences could not under the rules dissolve the interference, as he was urged to do by Roberts, he could, if the facts warranted it, call the attention of the Commissioner under this rule to such facts as in his opinion established the fact that there was no interference in fact between the applications of the respective parties. He was bound under that rule to ascertain the facts from consideration of the whole record, particularly the testimony taken, but including also the files of the respective applications, and to ascertain them for himself.

In refusing to consider the question of interference on the ground that the action of the Primary Examiner in declaring the interference is binding upon him and that "he will not for a moment attempt to disturb his action or in any manner criticise it" the Examiner of Interferences took a position clearly contrary to the purpose and intent of this rule, making the rule, so far as he is concerned, without force or effect.

The functions of the Examiner of Interferences are not restricted to the consideration of the single

question of priority as to the invention of the issue as drawn up by the Primary Examiner. It is his duty under Rule 98, before the *pro forma* declaration of the interference, to ascertain whether the issue has been clearly defined, as well as whether the notices of interference prepared by the Primary Examiner are formally correct. He is to supervise the declaration of interferences, so far as the definition of the issue is concerned, as well as to consider testimony. This appears clearly from Rule 99, which provides for the settlement of any material disagreement between the Examiner of Interferences and the Primary Examiner, the rule plainly indicating that the Examiner of Interferences is not bound to accept the notices of interference except by direction of the Commissioner.

The Primary Examiner in declaring an interference is required to act according to his understanding of the applications before him—

> looking alone to the language of the applications, (*Faure* v. *Bradley and Crocker* v. *Cowles and Cowles*, above cited,) his jurisdiction being limited to the consideration of the sole question whether upon the face of the applications * * * of the respective parties there is a legitimate interference. (Same.)

Yet his declaration of the interference is not binding upon him when upon a motion duly brought it is made clear that no legitimate interference exists. In such case it is the clear duty of the Primary Examiner to dissolve the interference, even though it be an interference declared by another Examiner previously having jurisdiction of the matter, and the fact that the interference was deliberately declared should not control his action or cause the slightest hesitation in dissolving it if he is satisfied that no legitimate interference exists.

The decision of the Primary Examiner on a motion to dissolve is under Rule 122 binding upon the Examiner of Interferences; but as it is clear from the rule that only such motions can be transmitted to or decided by the Primary Examiner as are not "predicated upon something found in a preliminary statement or (on) anything *dehors* the application" (*Faure* v. *Bradley and Crocker* v. *Cowles and Cowles*, above cited) such decision is not binding upon the Examiner of Interferences upon a state of facts arising subsequently and which cannot be considered by the Primary Examiner.

If, as is urged on behalf of Roberts, the evidence in this case shows that there is no legitimate interference between his application and that of Wethey, it is the duty of the Examiner of Interferences under Rule 126 upon ascertaining the facts to call the attention of the Commissioner thereto. Whether this is to be done before decision on the question of priority or in his decision on that question is by the rule left to the discretion of the Examiner of Interferences. Whenever his attention is called to matters brought out in the testimony which it is urged show that no interference in fact exists, or that there has been irregularity in declaring the interference, or that there is a statutory bar to the grant of a patent to either of the parties, either at final hearing or by a motion duly brought before final hearing, it becomes the duty of the Examiner of Interferences to look into the question and if he finds facts which in his opinion warrant a conclusion that there is no legitimate interference to call the attention of the Commissioner to such facts.

In the present case, for reasons above stated, neither the motion asking that the Examiner of Interferences dissolve the interference nor the motion asking that he transmit the motion to dissolve to the Primary Examiner can be granted; nor can the motion to set aside the decision upon the question of priority be granted upon the grounds or for the purpose stated.

The ground on which the Examiner of Interferences should have been asked to set aside his decision is his refusal to consider the question whether in his opinion, as urged by Roberts, the fact that no interference in fact exists was established, and on this ground the motion is granted.

The decision of the Examiner of Interferences rendered June 9, 1898, is set aside and he is directed to determine whether or not in his opinion the matters to which his attention has been called establish the fact that no interference exists, as well as to determine the question of priority, if the latter question can properly be determined in the case. Whether or not a further hearing on the question whether the fact of no interference in fact is established should be had is left for the Examiner of Interferences to determine. If the facts as he finds them are sufficient in his opinion to establish the fact that no interference in fact exists, he will call the attention of the Commissioner to the facts found by him, as required by Rule 126. Should he hold that the facts do not warrant him in expressing such opinion, no appeal lies from such holding; but such holding will not prevent the Examiners-in-Chief, should appeal be taken, from taking such action under Rule 126 as in their opinion is warranted by the facts in the case as found by them.

[Vol. 84, No. 10.]

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 84—No. 11. TUESDAY, SEPTEMBER 13, 1898 PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., September 3, 1898.

SIR: The Secretary of the Interior has ordered that L. Cass Carpenter, of Denver, Colo., be not recognized after this date as agent or attorney in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

WM. H. DE LACY,
Acting Chief Clerk.

The Commissioner of Patents.

Revision of Laws Relating to Patents, Etc.

The act approved June 4, 1898, provides for the appointment of three commissioners, whose duty it shall be to revise and amend the laws of the United States concerning patents, trade and other marks, and trade or commercial names, which shall be in force at the time such commission shall make its final report, so far as the same relates to matters contained in or affected by the convention for the protection of industrial property concluded at Paris March 20, 1883, the agreements under said convention concluded at Madrid April 14, 1891, and the protocols adopted by the conference held under such convention at Brussels, 1897, and the treaties of the United States, and the laws of other nations relating to patents, trade and other marks, and trade or commercial names.

The commissioners appointed are Peter S. Grosscup, United States District Judge for the Northern District of Illinois, Francis Forbes, of New York, and Arthur P. Greeley, Assistant Commissioner of Patents.

All persons interested in the revision and amendment of the laws provided for in the act above referred to are invited to send to the commissioners such suggestions as they may wish to make in reference thereto before October 15, 1898. Communications should be in triplicate and may be addressed in care of the Assistant Commissioner of Patents, Washington, D. C.

Interference Notice—Decker v. Loosley.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 1, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

Notice is hereby given that times have been set as follows for taking testimony in this interference and for its final hearing, to wit:

Decker's testimony-in-chief to close November 8, 1898. Loosley's testimony-in-chief to close November 28, 1898. Decker's testimony in rebuttal to close December 18, 1898. Final hearing January 5, 1899. No testimony to be taken before October 18, 1898. Loosley will be restricted to his record date.

This notice will be published in the OFFICIAL GAZETTE for six weeks.

C. H. DUELL,
Commissioner.

CERTIFICATES OF REGISTRATION ISSUED SEPTEMBER 13, 1898.

Labels.

6,660.—Title: "GAME OF NAVAL WAR." (For a Game.) *McLoughlin Brothers*, New York, N. Y. Application filed August 9, 1898.

6,661.—Title: "THE MERRY GAME OF OLD MAID." (For a Game.) *McLoughlin Brothers*, New York, N. Y. Application filed August 9, 1898.

6,662.—Title: "GAME OF WAR AT SEA OR DON'T GIVE UP THE SHIP." (For a Game.) *McLoughlin Brothers*, New York, N. Y. Application filed August 9, 1898.

6,663.—Title: "THE ORIGINAL EXTRACT OF FIGS." (For Medicine.) *W. H. Briggs*, Northport, Wash. Application filed April 19, 1898.

6,664.—Title: "ARAB BALSAM." (For Balsam.) *Archibald Dakin*, Brockton, Mass. Application filed August 12, 1898.

6,665.—Title: "DR. MANY'S ANTISEPTIC TOOTH POWDER." (For Tooth-Powder.) *Edward P. Weed*, Norwalk, Conn. Application filed August 1, 1898.

6,666.—Title: "RED SEAL LAUNDRY SOAP." (For Soap.) *P. C. Tomson & Co.*, Philadelphia, Pa. Application filed August 15, 1898.

6,667.—Title: "COUSINS." (For Tea.) *W. J. Buttfield*, New York, N. Y. Application filed August 17, 1898.

6,668.—Title: "HO-TEA." (For Tea.) *W. J. Buttfield*, New York, N. Y. Application filed August 17, 1898.

6,669.—Title: "SHIELD CHOP." (For Tea.) *W. J. Buttfield*, New York, N. Y. Application filed August 17, 1898.

6,670.—Title: "SOCIAL SESSION." (For Whisky.) *The Gottschalk Company*, Baltimore, Md. Application filed August 15, 1898.

6,671.—Title: "FROM THORSBY ALA. TO MARKET." (For Grapes.) *The Concordia Land and Improvement Association*. Thorsby, Ala. Application filed August 8, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business September 6, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Under one month.			
88	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	Aug. 8	Aug. 22	108
	Between one and two months.			
102	XIX. Stoves and Furnaces	July 18	Aug. 27	180
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	July 30	Aug. 25	79
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	July 11	Aug. 22	160
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	July 12	Aug. 10	121
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 22	Aug. 6	165
	Between two and three months.			
153	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	June 17	Aug. 29	145
250	VIII. Furniture, Beds, Store Furniture, etc.	June 30	Aug. 23	256
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	June 27	Aug. 22	124
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 14	Aug. 20	180
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 6	Aug. 20	193
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 8	Aug. 19	294
255	XII. Mechanical Engineering, Store-Service, etc.	July 1	Aug. 18	156
253	X. Carriages and Wagons	July 5	Aug. 16	174
	Between three and four months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	May 23	Aug. 27	232
248	XVIII. Steam-Engineering, etc.	May 9	Aug. 25	306
139	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	May 28	Aug. 23	143
240	VII. Velocipedes	May 23	Aug. 23	461
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	May 7	Aug. 19	432
128	XXIV. Sewing-Machines, Apparel, and Toilet.	May 12	Aug. 8	264
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt. Surgery.	May 26	Aug. 3	355
	Between four and five months.			
106	II. Farm Stock, Products, etc.	Apr. 6	Aug. 22	502
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Apr. 9	Aug. 15	350
98	XXI. Textiles, etc	May 2	Aug. 2	267
	Between five and six months.			
221	XXIII. Registers, Fluid-Meters and Acoustics, etc.	Mar. 9	Aug. 23	212
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Mar. 9	Aug. 23	417
246	I. Tillage and Fences	Apr. 2	Aug. 19	195
25	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Mar. 15	Aug. 18	404
120	IX. Hydraulics, Fire-Extinguishers, etc.	Apr. 5	Aug. 16	275
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Mar. 8	Aug. 15	753
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Apr. 2	Aug. 8	373
	Between six and seven months.			
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Feb. 28	Aug. 26	418
215	XVII. Printing, Type-Writing Machines, and Linotyping.	Feb. 7	Aug. 11	414
	Between seven and eight months.			
217	XXXIII. *Trade Marks, etc., †Designs. Drafting, and Optics.	Feb. 4	Aug. 26	228

Applications Under Examination—Continued.

96	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	Jan. 13	Aug. 17	249
	Between nine and ten months.			
261	XXXVI. Weighing and Measuring Devices and Driers.	Nov. 29	Aug. 13	292

Total number of applications awaiting action 9,577

Under one month.			
Designs	Sept. 2	Sept. 3	14
Trade-Marks	Aug. 26	S pt. 2	44

ISSUE OF SEPTEMBER 13, 1898.

Patents	366	No. 610,516 to No. 610,881, inclusive.
Designs	20	No. 29,334 to No. 29,353, inclusive.
Trade-Marks	19	No. 31,957 to No. 31,975, inclusive.
Labels	12	No. 6,660 to No. 6,671, inclusive.
Prints	None.	
Reissues	2	No. 11,691 to No. 11,692, inclusive.
Total issue	428	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	1	New Hampshire	2	----
Arizona Territory	----	----	New Jersey	15	----
Arkansas	3	----	New Mexico Territory	----	----
California	11	----	New York	49	9
Colorado	8	----	North Carolina	2	----
Connecticut	8	1	North Dakota	1	----
Delaware	----	----	Ohio	24	1
District of Columbia	1	----	Oklahoma Territory	----	----
Florida	2	----	Oregon	----	----
Georgia	3	----	Pennsylvania	50	2
Idaho	----	----	Rhode Island	----	----
Illinois	27	1	South Carolina	----	----
Indian Territory	1	----	South Dakota	----	----
Indiana	12	1	Tennessee	2	----
Iowa	10	----	Texas	6	----
Kansas	3	----	Utah	----	----
Kentucky	6	1	Vermont	----	----
Louisiana	3	----	Virginia	5	----
Maine	----	----	Washington	1	1
Maryland	5	1	West Virginia	5	----
Massachusetts	24	3	Wisconsin	5	----
Michigan	11	----	Wyoming	2	----
Minnesota	3	----	U. S. Army	----	----
Mississippi	3	----	U. S. Navy	----	----
Missouri	11	1	Total to citizens of the United States	330	25
Montana	3	----			
Nebraska	1	----			
Nevada	----	----			

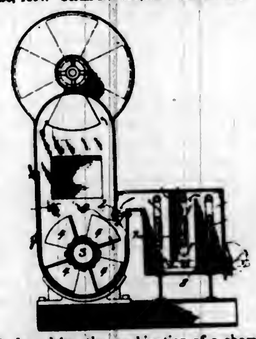
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	----	----	Italy	4	----
Australia	----	----	Mexico	----	1
Austria-Hungary	4	----	Netherlands	2	----
Barbadoes	----	----	Newfoundland	----	----
Belgium	1	----	New South Wales	2	----
Bermuda	----	2	New Zealand	----	----
Brazil	----	----	Norway	----	----
British Guiana	----	----	Portugal	----	----
Canada	13	----	Queensland	2	----
Cape Colony	----	----	Russia	1	----
Chile, Republic of	----	----	Scotland	----	----
China	----	----	South African Republic	----	----
Colombia	----	----	South Australia	----	----
Cuba	----	----	Spain	2	----
Denmark	1	----	Sweden	1	----
Egypt	----	----	Switzerland	----	----
England	21	2	Victoria	----	----
Finland	----	----	West Australia	----	----
France	1	----	Total to citizens of foreign countries	65	6
Germany	10	1			
Guatemala	----	----			
Ireland	----	----			

PATENTS

GRANTED SEPTEMBER 13, 1898.

610,516. DRIER. VALERIUS D. ARDERSON, Cleveland, Ohio. Filed Oct. 20, 1897. Serial No. 655,822. (No model.)

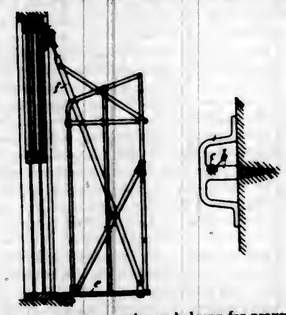


Claim.—1. In a drier, the combination of a chamber; a rotary shaft in the lower part of said chamber, provided with beaters; an air-inlet on the descending side of said shaft; and a guard covering said inlet and serving to direct the air downward toward the bottom of the chamber, and to exclude material from the inlet.

2. In a drier, the combination of a shell or casing; a rotary beater located within said casing; an air-inlet at one side of the casing; and a shield or guard extending downward from the upper side of the air-inlet to a point near the periphery of the beater; whereby air drawn in by the beater is directed downward into the mass of material in the lower part of the casing.

3. In a drier, a shell or casing having upright side walls connected at the top, and a curved bottom forming a continuation of one side wall but extending outward and upward beyond the lower edge of the other side wall substantially as shown, whereby an inlet-flue is formed, and the lower edge of the side wall is made to serve as a wall and guard for said flue.

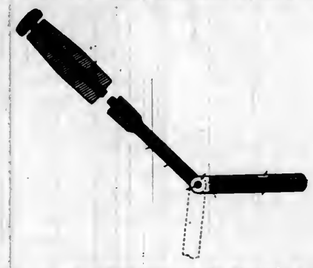
610,517. PORTABLE BALCONY. RUDOLF RAHDEN, Darmstadt, Germany. Filed Apr. 5, 1897. Serial No. 630,734. (No model.)



Claim.—1. A protecting device or balcony for preventing accidents when cleaning windows, consisting of a basket or framework provided with inclined rods extending upward therefrom and by which the basket is suspended, the lower portion of the basket resting loosely against the window-sill, substantially as described.

2. A protecting device or balcony for preventing accidents when cleaning windows, consisting of a basket or framework provided with upwardly-extending inclined arms, in combination with a cross rod placed across the window-opening and to which the said rods are adapted to be hooked, the basket being thus freely suspended from said rod and resting below against the window sill.

610,518. MOUTH AND THROAT MIRROR. HENRY RAUSCH, Rochester, N. Y., assignor to the Bausch & Lomb Optical Company, same place. Filed Feb. 15, 1898. Serial No. 670,408. (No model.)

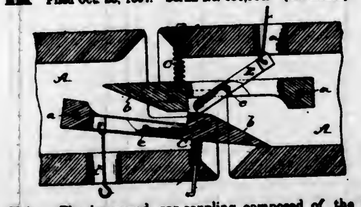


Claim.—1. The combination with the mirror-frame and the mirror held therein, of the handle hinged to the frame to permit the movement of the latter in a single plane only, and the clamping-screw on the handle, independent of the hinge connection with the frame and arranged to engage the ring-frame and lock it in adjusted position on its pivot.

2. The combination with the mirror-frame composed of the split ring having the ears and the mirror held therein, of the handle having the ears embracing those on the frame, the pivot passing through the ears, and the clamping-screw extending through the handle and engaging the ears on the frame, substantially as described.

3. The combination with the mirror-frame composed of the split ring having the ears and the undercut edges on opposite sides, and the two mirrors arranged in said frame, of the handle having the ears, the pivot passing through the ears on the handle and frame, and the clamping-screw extending through the handle and engaging the ears on the frame, substantially as described.

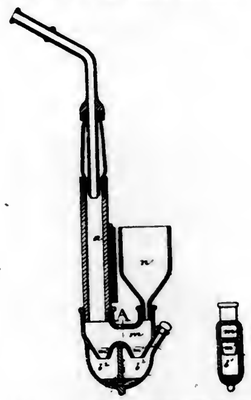
610,519. CAR-COUPLING. RICHARD C. BRINKEY, West Point, Miss. Filed Oct. 26, 1897. Serial No. 656,380. (No model.)



Claim.—The improved car-coupling composed of the hollow draw-heads having their ends halved and forming abutting shoulders, the beveled catches pivoted in the respective draw-heads, the spring attachments of said catches, which consist of hooked stop-rods secured to the free front portions of the catches and extend through adjacent holes in the draw-heads, and helical springs encircling such

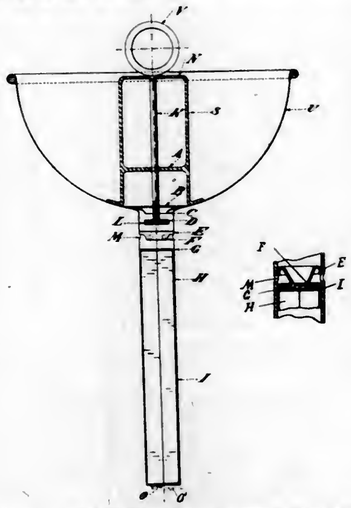
rods and seated in sockets in the draw-heads, and the lever-triggers composed of straight bars pivoted in a slot in the catches, and pull-rods extending through holes in the draw-heads, as shown and described.

610,520. TOBACCO-PIPE. GUSTAV BERGRAUB, Gummersbach, Germany. Filed Dec. 17, 1895. Serial No. 572,406. (No model.)



Claim.—In a tobacco-pipe, a cup having an upper direct smoke-passage, a pair of downwardly-extending nozzles beneath the same, a bowl and stem above the front and rear nozzle respectively, an accumulating-chamber beneath the nozzles, and a partition within said chamber which is open at the bottom, substantially as specified.

610,521. AUTOMATIC FUNNEL. CARLO BONAFEDE, Rome, Italy. Filed Dec. 18, 1897. Serial No. 662,369. (No model.) Patented in Italy May 29, 1897, No. 41,818.



Claim.—1. The combination in an automatic funnel, with the cup-like body and tube, of a float in the tube, a valve seat and port above the float, a valve operated by the float to close said port to automatically stop flow of liquid when the float rises, and a second valve-port and valve above the float-operated valve, and means for closing said upper valve manually.

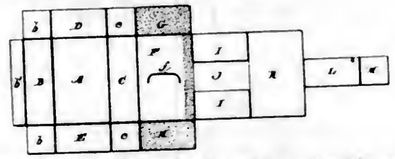
2. The combination with the cup, tube, and handle, of a funnel, of a float in said tube free to rise and fall, two valves for controlling escape of liquid from the cup one of said valves being closed by the rising of said float and opened by the lifting of the funnel, the other valve being connected to said handle, whereby it is closed by lifting said handle.

3. The combination with the cup, and tube of a funnel, of two valve-ports one below the other with space for liquid between them, an automatic valve for closing the lower port, and a manually-operated valve for the upper port.

4. The combination with the cup and tube of a funnel, of float H, valve G operated thereby, a ring fitting in the tube and having a valve-port F therein, valve L, D, port C therefor, and means for operating said valve L, D.

5. The combination with the cup and tube of a funnel, said tube having holes M near the top thereof, a ring in the tube just above said holes, said ring having a contracted valve-seat F below said holes, a float, and a valve operated thereby.

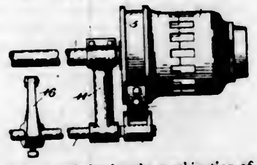
610,522. PAPER BOX. ROBERT P. BROWN, Philadelphia, Pa. Filed Apr. 16, 1897. Serial No. 632,430. (No model.)



Claim.—1. In combination with a paper box adapted for use as a mite-box a slotted extension-lap I formed integral with one of the box-folds, a lap K of breadth equal to that of lap I and extending from the outer edge of lap I, a lap L of length equal to breadth of laps K and I and of breadth somewhat less than that of slot J in lap I, said lap L extending out from edge of lap K and in line with slot J, and a lap M extending out from end of L and adapted to be secured to the box as specified.

2. In combination with a paper box having a fold or lap F with slit *f* formed in it, a folder-lid made up of the slotted lap I, lap K, tongue-lap L and anchoring-lap M folded upon each other and upon lap F of the box as described and formed integral with the folds of the box.

610,523. VEHICLE-BRAKE. FRANK W. CHADWICK, Quincy, Ill. Filed Feb. 21, 1898. Serial No. 671,168. (No model.)



Claim.—1. In a vehicle-brake, the combination of a brake-band firmly applied to a hub end of a vehicle-wheel, a friction or brake strap encircling the brake-band, a link having its end portions pivotally connected with the opposite ends of the friction-strap and mounting the latter upon the brake-band, a rod forming a support for the said block and having the latter detachably connected therewith, whereby the wheel carrying the brake-band, friction-strap and link may be removed from the axle without disturbing the relative position of the parts and means under the control of the driver for turning the said rod to apply the brake, substantially as set forth.

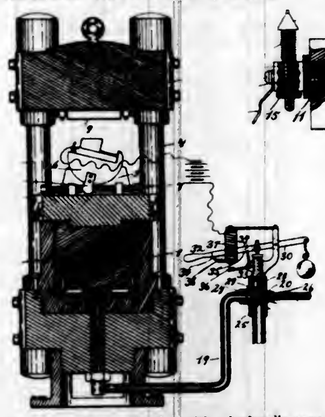
2. In a vehicle-brake, the combination with a hub reduced in diameter at its inner end, of a hub-band fitted flush on the reduced portion of the hub and having integral fingers extending between but having no connection with the spokes and partially bounding the walls of the spoke-sockets and being flush with the periphery of the enlarged portion of the hub, the outer end of the band being enlarged and provided with a groove in its periphery forming an annular seat, a brake or friction strap encircling the brake-band and fitted in the seat thereof, and means for drawing the ends of the strap together to apply the brake, substantially as set forth.

3. In a vehicle-brake, the combination of a friction or brake strap fitted into an annular seat or groove provided at the end portion of a vehicle-wheel, a link having its end portions pivotally connected with the ends of the friction-strap and formed with an angular opening, a rod having an end portion made angular to receive the aforesaid link, which latter has detachable connection therewith by a sliding movement, thereby admitting of the vehicle-wheel being removed from its axle-arm for any desired purpose, and a train of connections under the control of the driver for turning the rod and applying the brake, substantially as described.

4. In a vehicle-brake, the combination of a shaft, a foot-lever secured to the said shaft and within convenient reach of the driver's foot, an arm applied to the said shaft, a rod parallel with the rear axle of the vehicle and having an end portion made angular, an arm secured to the said rod, an adjustable connection between the front and rear arms, a brake-band applied to the inner end of the hub of a vehicle-wheel and having an annular seat, a brake or friction strap fitted in the said seat, and a link of approximately triangular shape having corresponding end portions pivotally connected with the terminals of the friction-strap and having an angular opening formed transversely of its opposite end to make detachable connection with the angular end of the aforesaid rod, substantially as and for the purpose set forth.

5. In a vehicle-brake, the combination of a brake-band carried by a hub, a friction or brake strap encircling the brake-band, and an angle-block secured at one end and upon the outer face of the brake-strap, with a link pivoted to the outer end of said block and to the other end of the strap whereby the ends of the strap are connected and the same is mounted upon the brake-band, a rod forming a support for said block and having the latter detachably connected therewith, whereby the wheel carrying the brake-band, friction-strap and link may be removed from the axle without disturbing the relative position of the parts, and means for turning the said rod to apply the brake, substantially as set forth.

610,524. ELECTRICALLY-CONTROLLED VALVE FOR HYDRAULIC PRESSES. WILLIAM B. CLEVELAND, Cleveland, Ohio. Filed Jan. 21, 1898. Serial No. 667,383. (No model.)



Claim.—1. In combination with a hydraulic press, a valve controlling the liquid under the plunger, and an electromagnet connected to said valve to control the same and having a source of electricity for its coil and having the contact-terminals of said coil respectively upon the stationary and moving element of the press, substantially as set forth.

2. In combination with a hydraulic press, a valve controlling the waste from said press, and an electromagnet connected to said valve to control the same and having a source of electricity for its coil and having the contact-terminals of said coil respectively upon the stationary and moving element of the press, substantially as set forth.

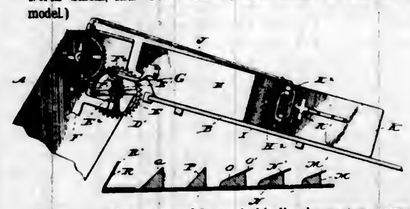
3. In combination with a hydraulic press, a valve controlling the liquid for the plunger and having means for automatically moving it to open the waste and for positively moving it to close the waste, a trigger connected to retain the valve in its waste-closing position, an electromagnet having one terminal of its coil connected to the press, an armature for said magnet and connected to the trigger to release the same when attracted, a contact insulated from the press and connected to the other terminal of the magnet-coil and supported to close the coil-circuit when the plunger is at the extreme of its pressure stroke, and a source of electricity in the coil-circuit, substantially as set forth.

4. In combination with a hydraulic press, a valve controlling the plunger-actuating fluid, an electromagnet connected to said valve to control the same and having a source of electricity for its coil, and a current-controlling contact device for the magnet-circuit supported upon one of the elements of the press to be actuated by the movable element of the press at the extremity of its pressure stroke, substantially as set forth.

5. In combination with a hydraulic press, a valve controlling the liquid for the plunger and having means for automatically moving it to open the waste and for positively moving it to close the waste, a trigger connected to retain the valve in its waste-closing position, an electromagnet having one terminal of its coil connected to the press, an armature for said magnet and connected to the trigger to release the same when attracted, a contact supported upon and insulated from the plunger and connected to the other terminal of the magnet-coil, and a source of electricity in the coil-circuit, substantially as set forth.

6. In combination with a hydraulic press, a valve which closes the waste for the liquid from beneath the plunger, a lever fulcrumed to have one arm movably connected to the valve and having a projection upon said arm and having means for automatically rocking it to raise the valve from its seat, a source of electricity, an electromagnet having one terminal of its coil connected to said source of electricity and having the other terminal connected to a stationary contact, a bell-crank trigger having a shoulder upon one arm engaging the projection upon the lever, and an armature for the magnet upon the other arm, a contact upon the lever and bearing against the stationary contact of the coil-terminal when the lever projection is engaged, and a contact supported upon and insulated from the plunger and connected to the source of electricity and constructed to form contact with the press-frame when the plunger is at the extreme of its pressing stroke, substantially as set forth.

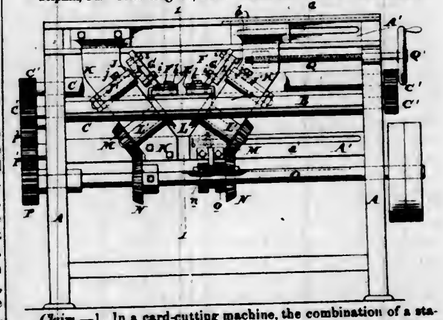
610,525. ATTACHMENT FOR HARVESTERS. ALDEN DAVIS, North Salem, Ind. Filed Jan. 20, 1898. Serial No. 667,227. (No model.)



Claim.—1. A butter-board for grain-binding harvesters, comprising a side board, a series of cleats on the interior of said side board increasing in depth as they approach the rear of said board, and the front half of said series being provided with serrations of different sizes, all constructed and arranged substantially as described.

2. The combination with the vibrating board H, of the cleats M, N, O of different depths carrying serrated strips M', N', O', the cleats P, Q and the cleat R provided with the serrated edges, all adapted to act on the butts of the grain for the purpose set forth.

610,526. CARD-CUTTING MACHINE. HENRY P. FENSTER, Philadelphia, Pa. Filed Aug. 17, 1897. Serial No. 648,506. (No model.)



Claim.—1. In a card-cutting machine, the combination of a stationary guide, in contact with which the card to be cut is fed, having its opposite sides formed to constitute stationary cutting edges, and rotating cutters having their cutting edges arranged to act in conjunction with the stationary cutting edges formed by the opposite sides of the guide to simultaneously cut the opposite sides or edges of the card as it travels in contact with said guide.

2. In a card-cutting machine, the combination of a stationary guide, in contact with which the card to be cut is fed, provided upon its opposite sides with projections, between which the opposite sides or edges of the card are received and guided, as the card travels in contact with said guide, and cutters to cut the edges of the card as it travels in contact with said guide.

3. In a card-cutting machine, the combination of a stationary guide, in contact with which the card to be cut is fed, provided upon its opposite sides with projections, located both at the front and rear,

between which the opposite sides or edges of the card are received and guided, as the card travels in contact with said guide, and cutters to cut the edges of the card as it travels in contact with said guide, located on each side between the projections of the guide.

4. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes composed of sections having provision for lateral adjustment with respect to each other, cutters arranged adjacent to said guide for cutting the edges of the card while it is passing under said guide-frame and having provision for lateral adjustment to correspond with the adjustment of the sections of the guide-frame, and feeding devices for feeding the card under said guide-frame.

5. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes, provided on its sides adjacent to the front with depending projections between which the card travels, and with depending and internally-beveled projections adjacent to the rear, and cutters having their cutting edges arranged at an angle so as to cut the edges of the card on a bevel and located on each side between the projections at the front and rear, whereby the beveled edges of the card will pass from said cutters between the beveled projections at the rear of the guide-frame.

6. In a card-cutting-machine, the combination of a guide-frame under which the card to be cut passes composed of two independent sections having provision for lateral adjustment with respect to one another and provided on their outer sides adjacent to the front with depending projections between which the card travels, and with depending and internally-beveled projections adjacent to the rear, and cutters having their cutting edges arranged at an angle so as to cut the edges of the card on a bevel and located adjacent to said sections on each side between the projections at the front and rear, whereby the beveled edges of the card will pass from said cutters between the beveled projections at the rear of the guide-frame.

7. In a card cutting machine the combination of a guide-frame, under which the card to be cut passes, composed of two sections having provision for lateral adjustment with respect to one another, cutters having their cutting edges arranged adjacent to the side edges of said sections so as to cut the edges of the card as it passes under said sections, a power-shaft, power-transmitting connections between the power-shaft and the cutters, and means for adjusting the cutters laterally to correspond with the adjustment of guide-frame.

8. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes, composed of two sections, an adjustable bracket supporting one of said sections, and cutters having cutting edges arranged adjacent to the sides of the sections of the guide-frame, one of said cutters being carried by said adjustable bracket, whereby said section and the corresponding cutter may be simultaneously and correspondingly adjusted.

9. In a card-cutting machine, the combination of a guide-frame under which the card to be cut passes, composed of two sections, an adjustable bracket supporting one of said sections, and cutters having their cutting edges arranged adjacent to the sides of the sections of the guide-frame, one of said cutters being carried by said adjustable bracket, whereby said section and the corresponding cutter may be simultaneously and correspondingly adjusted, a power-shaft, adjustable gearing between the power-shaft and the adjustable cutter, and a connection between the adjustable bracket and the adjustable gearing, whereby said gearing will be adjusted simultaneously with the adjustment of the guide-frame section and cutter by the movement of the adjustable bracket.

10. In a card-cutting machine, the combination of the longitudinal feeding-rollers, C, C, between which the cards are fed, the guide-frame located in the rear thereof under which the card passes from the guide-rollers C, C, composed of two sections having provision for lateral adjustment, and the cutters having their cutting edges arranged adjacent to the outer side edges of the sections of the guide-frame, and provided with provision for lateral adjustment to correspond with the adjustment of the sections of the guide-frame.

11. In a card-cutting machine, the combination of the longitudinal feeding-rollers C, C, between which the cards are fed, the guide-frame located in the rear thereof under which the card passes from the guide-rollers C, C, composed of two sections having provision for lateral adjustment, the cutters arranged adjacent to the outer edges of the sections of the guide-frame, and having provision for lateral adjustment to correspond with the adjustment of the sections of the guide frame, and the longitudinal delivering-rollers D, D, located in the rear of the cutters to deliver the cut card.

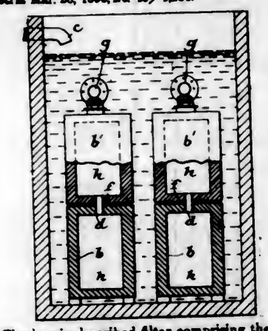
12. In a card-cutting machine the guide-frame under which the card passes while being cut, composed of the sections F, F, provided with the depending projections *f*, *f*, at the front, and the depending internally-beveled projections *g*, *g*, at the rear, for guiding the card as it passes to and from the cutters.

13. In a card-cutting machine, the combination of a series of guides under which the card passes while being cut, each composed of two sections having provision for lateral adjustment with respect to each other, and a series of cutters arranged in pairs with their cutting edges adjacent to the outer side edges of the sections of the guide-frames, and having provision for lateral adjustment to correspond with the adjustment of the guide-frame.

14. In a card-cutting machine, the combination of a series of guides under which the card passes while being cut, each composed of two sections having provision for lateral adjustment with respect to each other, and a series of cutters arranged in pairs with their cutting edges adjacent to the outer side edges of the sections of the guide-frames, and having provision for lateral adjustment to correspond with the adjustment of the guide-frames, a power-shaft, gearing between the power-shaft and series of cutters, and means for adjusting said gearing simultaneously with the cutters so as not to break the driving connection.

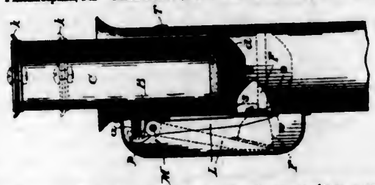
15. In a card-beveling machine, the combination of a flat guide-plate in contact with which the card to be beveled is passed presenting a lateral cutting edge and a burnishing-surface adjacent to the edge, means to feed the card in contact with the guide-plate, and an obliquely-arranged rotating beveling-cutter rotating at an angle to the plate and adapted to operate in conjunction with its lateral edge to trim the card simultaneously with the burnishing action of the guide-plate upon the face of the card adjacent to the edge being beveled.

610,527. FILTER. FRIEDRICH FISCHER, Worms, Germany. Filed Dec. 6, 1897. Serial No. 660,936. (No model.) Patented in England Aug. 31, 1895, No. 16,321; in Hungary Feb. 29, 1896, No. 5,643, and in Austria Mar. 28, 1896, No. 46/1,336.



Claim.—The herein-described filter comprising the outer receptacle, a water-supply therefor, an exit-pipe, and a series of filtering-bodies connected therewith, each of said bodies consisting of a plurality of porous bodies connected by a pipe and packing interposed between the adjoining ends of said bodies, substantially as described.

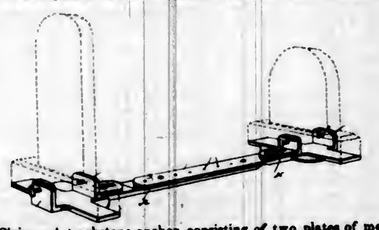
610,528. PNEUMATIC-DESPATCH TUBE. SAMUEL R. GAYTON, Philadelphia, Pa. Filed Oct. 28, 1897. Serial No. 656,676. (No model.)



Claim.—1. In a pneumatic-despatch-tube transmitter, a catch or finger projecting into the tube through an opening in its side and in advance of the entrance-opening for the carrier, and having sloping sides and a shoulder, *s*, whereby a carrier pointed or sloping at one end and approximately flat at the other, may be introduced point first only, substantially as shown and described.

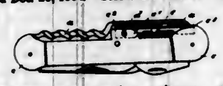
2. In a pneumatic-despatch tube, the combination of a bracket B, attached to the outside of the tube, a lever, L, pivoted in said bracket, a spring, *a*, adapted to keep said lever normally pressed against the side of the tube, an opening *o*, in the side of the tube, a finger, F, forming the end of said lever and normally passing through said opening into the tube, a bevel or slope, *c*, on the edge of said finger, a shoulder, *s*, on the edge of said finger next to said lever all combined and operated substantially as shown and described, whereby a carrier pointed or sloping at one end and approximately flat at the other may be introduced pointed end first only.

610,529. ANCHOR FOR TOMBSTONES. WINFIELD C. GILBERT, Union Bridge, Md. Filed Mar. 3, 1898. Serial No. 672,425. (No model.)



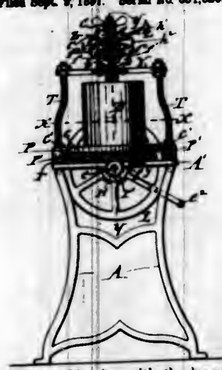
Claim.—A tombstone-anchor consisting of two plates of metal connected at their inner ends for longitudinal adjustment and provided on their outer ends with vertical flanges to embrace the outside of the head and foot stones, longitudinally-slotted brackets, one mounted near the outer end upon each of the metallic plates, and each provided with a vertical flange at its outer end to bear against the inner side of the head and foot stones, screws passing through the slots of the brackets into the metallic plates, and screws passing through the vertical flanges of the metallic plates and of the brackets and adapted to enter the bases of the head and foot stones, substantially as described.

610,530. POCKET-CORKSCREW. ERNST HAMMERFAHR, Foche, Germany. Filed Dec. 20, 1897. Serial No. 664,200. (No model.)



Claim.—In combination in a pocket-corkscrew, the handle, the intermediate part *c* pivoted thereto to stand at right angles to the handle and the corkscrew pivoted to the part *c*, said part *c* being in the form of a stem lying alongside the stem of the corkscrew substantially as described.

610,531. GRAIN-BOUND CUTTER. HENRY A. HANSON, Canaseraga, N. Y. Filed Sept. 9, 1897. Serial No. 651,026. (No model.)



Claim.—1. The combination with the hopper, cutter and the follower movable to and from said cutter, of a tubular feed-screw bearing on said follower, a shaft passing through said screw and rotating with the cutter, a driver mounted longitudinally movable on said shaft and provided with means for engaging and releasing the screw, a nut, on the end of said shaft, and a spring interposed between said nut and driver to force the cutter to yieldingly interlock with the screw as set forth.

2. The combination with a rotary hopper and a follower rotating with said hopper, and a stationary nut, of a tubular screw working in said nut and pressing on the follower, lugs projecting from the screw, a shaft fastened to the follower and extending longitudinally through the screw, a driver mounted longitudinally movable on said shaft and rotating therewith and provided with legs yieldingly interlocking with the legs of the screw, and a spring holding said driver in engagement with the lugs on the screw and yielding to a predetermined degree of resistance of the follower, as set forth.

3. In combination with a rotary hopper, the follower rotating with said hopper, and a stationary feed-nut, a tubular screw working in said nut and pressing on the follower with a revoluble bearing between them, a shaft fastened to the follower and extending longitudinally through the screw and screw-threaded on its upper end, arms fixed to and projecting radially from the screw, a hub embracing the aforesaid shaft and movable longitudinally thereon, means transmitting rotary motion from the shaft to said hub, rigid arms projecting from the hub and engaging the arms of the screw by vertically wedging bearings permitting said hub-arms to slip over the screw-arms, a nut on the screw-threaded end of the shaft, and a spring interposed between said nut and hub to hold the arms of the hub in engagement with the arms of the screw, as set forth.

4. In combination with the rotary follower and stationary feed-nut, a tubular screw working in said nut and pressing upon the follower and revoluble independently thereof, a collar fastened to the upper end of the screw and formed with radially-projecting arms terminating with ball-shaped ends, a shaft fastened to the follower and extending longitudinally through the screw and provided with screw-threads on its upper end, a hub mounted movably longitudinally on said shaft and provided with vertical slots and with fixed arms terminating ball-shaped to engage the balls of the subjacent collar, a pin passing transversely through the shaft and through the slots of the aforesaid hub, a nut on the upper end of the shaft, and a spring interposed between said nut and vertically-movable hub, substantially as described and shown.

610,532. APPARATUS FOR FORMING METAL CASKS. JOHANN HARMATTA, Szepesvaralja, Austria-Hungary. Filed June 30, 1897. Serial No. 642,976. (No model.)



Claim.—1. In combination in mechanism for forming barrels, the dies having annular steps of different sizes for stretching the metal successively, dies for smoothing out the metal means for corrugating or screw-threading the barrel-halves comprising the former having ribs with spaces between into which the metal of the barrel-sections is forced and means for compressing the interlocked portions of the barrel, substantially as described.

2. In combination in a machine for forming metal barrels, a former having ribs or projections for corrugating the barrel-sections and means for compressing the interlocked portions of the sections, substantially as described.

3. In combination in a machine for forming metal barrels, the former consisting of the elastic spirals, the disk f^2 carrying the same, the shaft d^3 carrying the disk, and the holdfast-disk for holding the blank at one end, substantially as described.

4. In combination in a machine for corrugating barrel-blanks, holding means a yielding former comprising ribs between which the metal of the blank is forced, and a device for pressing the blank between the spirals, the said former having a rotary movement to bring different parts of the blank in succession to the pressing device substantially as described.

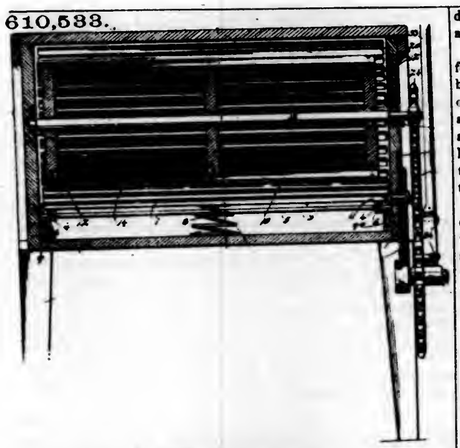
5. In combination in a machine for corrugating sheet-metal blanks, the rotary chuck b^4 provided with screw-threads at one end, a shaft d^4 carrying the chuck and two disks c^4 on the chuck relatively adjustable toward and from each other, the nut c^4 bearing against one disk, the adjacent edges of the disks being rounded to engage the corrugations for pressing the same, substantially as described.

610,533. WASHING-MACHINE. JOSEPH W. HELDRETH, Camp, Va. Filed Nov. 22, 1897. Serial No. 659,441. (No model.)

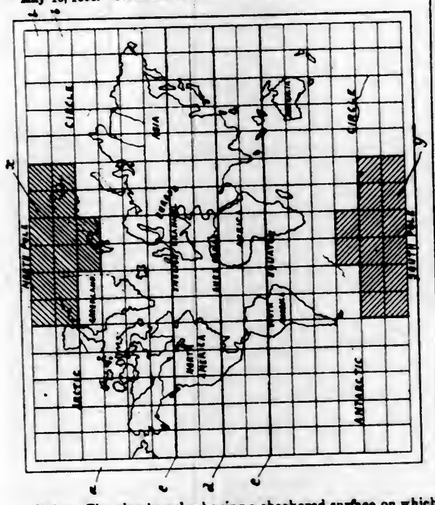
Claim.—1. In a washing-machine, the combination of a suds box having a recess or channel, 26, a slotted hanger fitted in said recess, a clamping-bolt for holding the hanger firmly in place on the suds-box, an oscillating cylinder, a sprocket-wheel journaled on the hanger for adjustment therewith and operatively connected to the cylinder-shaft, and an operating-lever clamped to the sprocket-wheel, substantially as described.

2. A washing-machine comprising a suds-box, the bearing-blocks secured at the ends of and within the suds-box and one block having a notch in the upper edge thereof, a hinge-rod fitted in both blocks and adapted to be readily lifted out of the notched block, a hanger fitted adjustably to the suds-box against the end thereof at which the notched block is arranged, a through-bolt passing through the hanger and suds-box and engaging with one end of the rod to hold the latter in place, a lever fulcrumed on the hanger, a gear actuated by the lever, and a cylinder journaled in the suds-box and operatively connected to said lever-actuated gear, substantially as described.

610,533.



610,534. GAME. HENRY G. HELLIER, London, England. Filed May 16, 1898. Serial No. 680,895. (No model.)



Claim.—The play-board *a* having a checkered surface on which is printed or otherwise displayed a map of the world on Mercator's projection and having fourteen separately-marked squares symmetrically disposed at the north and south poles of the board respectively and separately-marked lines drawn through the Equator Suez-canal and English-channel points and lettered correspondingly all substantially as herein shown and described.

610,535. STOPPER-GUARD FOR BOTTLES. JOSEPH A. HENKLER, Akron, Colo., assignor to the Common-Sense Patenting Company, of Colorado. Filed Feb. 14, 1896. Serial No. 670,255. (No model.)



Claim.—1. A stopper-guard for bottles consisting of a cap made separate from the neck of the bottle and adapted to slip over the neck and to be fastened thereto, provided with an opening through the top adequate to the passage of the stopper and with an interior shoulder adapted when the cap is in place to project over the lip of the bottle, and the herein-described diaphragm seated upon the shoulder and visible through the cap and adapted to obstruct the opening against the passage of the stopper.

2. A stopper-guard for bottles consisting of a cap made separate from the neck of the bottle and adapted to slip over the neck and to be fastened thereto, provided with an opening through the top adequate to the passage of the stopper and with an interior shoulder adapted when the cap is in place to project over the lip of the bottle and with perforations in its side opposite the diaphragm, and the herein-described diaphragm seated upon the shoulder and visible through the perforations and adapted to obstruct the opening against the passage of the stopper.

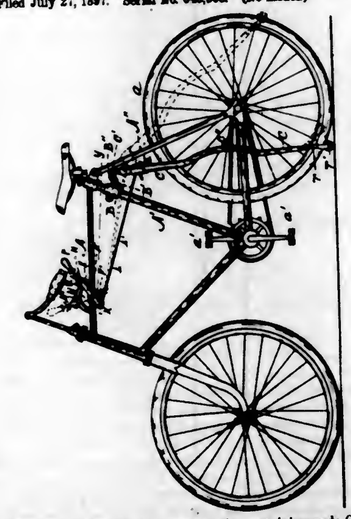
3. The bottle-neck having in it a stopper, the separately-formed cap slipped over the bottle-neck, provided with an opening through the top adequate to the passage of the stopper and with an interior shoulder projecting over the lip of the bottle, and the herein-described diaphragm located between the shoulder and the lip and obstructing the passage-way of the stopper, the several parts being so arranged and secured that only the obstructing portion of the diaphragm can be removed and that when removed there shall remain a telltale remnant of it visible to the eye.

4. The bottle-neck having in it a stopper, the separately-formed cap slipped over the bottle-neck, provided with an opening through the top adequate to the passage of the stopper and with an interior shoulder projecting over the lip of the bottle, the herein-described diaphragm held securely between the cap and the bottle-neck and obstructing the passage-way of the stopper, and means for immovably fastening the cap to the bottle-neck.

5. The bottle-neck having in it a stopper, the separately-formed cap slipped over the bottle-neck, provided with an opening through the top adequate to the passage of the stopper and with an interior shoulder projecting over the lip of the bottle, the herein-described diaphragm held securely between the cap and the bottle-neck and resting upon the stopper and obstructing the passage-way of the stopper, and means for immovably fastening the cap to the bottle-neck.

6 The bottle-neck having in it a stopper, the separately-formed cap slipped over the bottle-neck, provided with an opening through the top adequate to the passage of the stopper and with an interior shoulder projecting over the lip of the bottle, the herein-described diaphragm held securely between the shoulder and the lip and obstructing the passage-way of the stopper, and means for immovably fastening the cap to the bottle-neck.

610,536. BICYCLE-SUPPORT. GEORGE HIRWOOD, Boston, Mass. Filed July 27, 1897. Serial No. 646,063. (No model.)



Claim.—1. In a bicycle-support, the sustaining-rods C pivotally secured at their upper ends to the upper portion of the frame of the bicycle above the driving-wheel and substantially under the saddle and adapted when dropped to rest on the ground on opposite sides of the rear wheel and in front of the point of contact of the rear wheel with the ground, and being when in such dropped position substantially vertical, whereby a broad base having the effect of a tripod is provided for sustaining the bicycle, said rods C being provided centrally with the positive rearward curvatures or recesses C″ but being otherwise straight, substantially vertical and extending from the ground to a point well above the driving-wheel, whereby the rods may be well forward without interfering with the feet of the rider upon the pedals; and mechanism secured to the frame of the bicycle within reach of the rider whereby the sustaining-rods may be swung rearward and upward, substantially as set forth.

2. In a bicycle-support, in combination with a bicycle, the clip B rigidly secured to the portion A′ of the frame, said clip being provided with the rearward extensions B′ and each said extension being formed with the tubular supports B″ extending oppositely at substantially the upward and rearward angles described; the supporting-rods C bent at their upper ends at C′ inward at substantially right angles and with said ends extending into and swinging in said tubular supports B″; and mechanism secured to the frame within reach of the rider whereby the sustaining-rods may be swung from a substantially vertical dropped position in front of the axle of the rear wheel rearward, upward and at inward angles toward said wheel, substantially as set forth.

3. In a bicycle-support, in combination with a bicycle, the clip B secured to the portion A′ of the frame and provided with rearward extensions B′; the tubular supports B″ exteeding outwardly, rearwardly and upwardly therefrom at substantially the angles described; the sustaining-rods C swinging in said tubular supports by means of the right-angled upper portions C′; the jointed lever or brace D pivoted at its opposite ends to and connecting said sustaining-rods; a handle pivotally connected to the frame of the bicycle within reach of the rider; and rods L connecting said handles with the sustaining-rods, whereby the sustaining-rods are adapted to be swung from a substantially vertical position on the ground upward, and rearward at inward angles toward the driving-wheel, substantially as set forth.

4. In a bicycle-support, in combination, the sustaining-rods C pivotally secured at their upper ends to the frame of the bicycle; the curved or arc-shaped frame H provided with the groove H′ suitably perforated at A, said frame being secured to the frame of the bicycle within reach of the rider; the lever K pivotally connected with the bicycle-frame and set radially with relation to the curved frame H, said lever being provided with the stops or wings N; the handle P pivotally connected at P″ with the lever K and provided at its lower end with the engaging dog P′; the rocking pawl R pivotally secured to the lever K and adapted to drop into said perforations A; the spring S secured to the handle and bearing upon the pawl; and the rods L connecting the lower end of the lever K with the supporting-rods, substantially as set forth.

5. In a bicycle-support, the sustaining-rods C pivotally connected at their upper ends with the frame of the bicycle and adapted to be locked in a dropped position and swung rearward into a raised position; and casters hinged to the lower ends of said rods and set with the axle of the wheels slightly forward of the pivotal connection between them and said rods, substantially as and for the purpose set forth.

610,537. METALLIC CASKET. CHARLES H. HEBER and EDGAR H. LUPFER, Springfield, Ohio, assignors to the Springfield Metallic Casket Company, same place. Filed Mar. 5, 1897. Serial No. 626,109. (No model.)

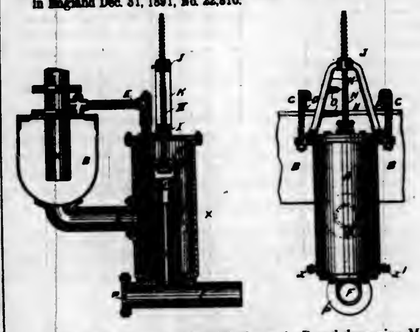


Claim.—1. The combination in a metallic burial-casket having ornamental sides which extend outwardly at their tops, and a shelf or flange formed independent of said sides but lying on the inside and below the tops of the sides of said casket, a top for said casket hermetically sealed to said flange or shelf with the joint thus formed lying entirely below the top of the sides of said casket, an outer detachable cover extending over the casket-top and secured to the tops of the sides and lying entirely above the joint between the casket-top and the supporting-flange, substantially as specified.

2 The combination in a metallic casket having its sides formed of metal as described, of an inner shelf or flange of sheet metal bent to form a sheath or socket, an inclosed bar within said sheath, the upper or supporting face of said shelf or flange lying entirely below the top of the sides of said casket, in combination with a casket-top adapted to rest on said flange or shelf, fastening-screws extending through said top and screwed into said bar, and a detachable cover connected to the tops of the sides of said casket and extending over said casket-top, substantially as specified.

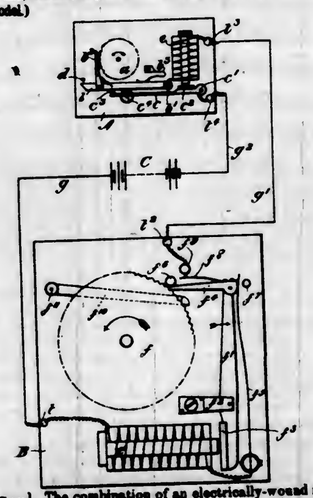
3. The combination with the casket sides formed of metal as described, of an inner shelf or flange of sheet metal bent to form a sheath or socket, and an inclosed bar within said sheath or socket, in combination with a casket-top adapted to rest on said flange or shelf, fastening-screws extending through said top and screwed into said bar and a detachable cover connected to the tops of the sides of said casket and extending over said casket-top, substantially as specified.

610,538. DIP-PIPE VALVE. GEORGE R. HISLOP, Paisley, Scotland. Filed Dec. 20, 1897. Serial No. 663,517. (No model.) Patented in England Dec. 31, 1891, No. 22,810.



Claim.—The combination with the main B and drop-pipe M, of bars D extending at one side thereof, vessel A suspended from said bars pipe E′ connecting the bottom of the main B with vessel A, pipe F′ extending into vessel A, about to the level of the bottom of main B, a hollow piston movable on pipe F′, said piston having an opening near its top, and being closed at the top, and means for moving the piston, as set forth.

610,539. ELECTRIC CLOCK. FRANK HOPE-JONES and GEORGE R. BOWELL, London, England. Filed Dec. 18, 1897. Serial No. 662,451. (No model.)



Claim.—1. The combination of an electrically-wound regulator, a secondary clock the hands of which are moved through the agency of an electric current, means in the regulator for making the electric circuit which operates the secondary clock, and means in the secondary clock for opening said circuit.

2. The combination of an electrically-wound regulator, a secondary clock the hands of which are moved through the agency of an electric current, means in the regulator for making the electric circuit which rewinds the regulator and at the same time operates the secondary clock, and means in the secondary clock for breaking said circuit.

3. The combination of an electrically-wound regulator, a second-

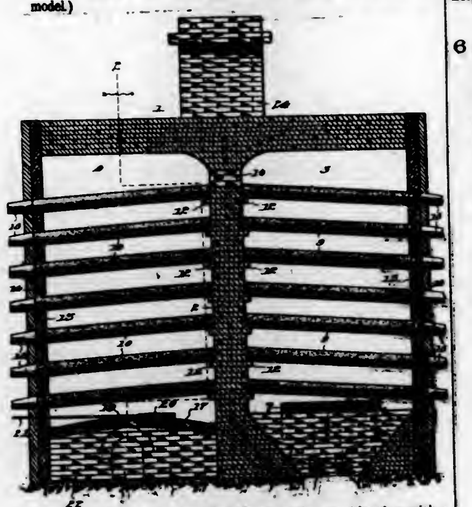
ary clock the hands of which are moved through the agency of an electric current, means in the regulator for making the electric circuit which operates the secondary clock, and means in the secondary clock whereby said circuit is broken during the operation of the secondary clock and made, when, but not until, said operation is completed.

4. The combination of an electrically-wound regulator, a secondary clock the hands of which are moved through the agency of an electric current, two levers in said regulator forming part of the electric controlling-circuit, said levers being adapted to make the circuit when the regulator has run down and remaining in connection until said circuit has been broken at another place, and means in the secondary clock for breaking the circuit.

5. In an electrically-controlled clock-movement the combination of a toothed wheel *f*, a click f^4 operating said wheel, an electromagnet which when energized causes said click to be withdrawn from engagement with said wheel, a contact-spring on said click, and an electric contact cooperating with said contact-spring to break the circuit through the operating-magnet when the click is withdrawn from the wheel as set forth.

6. In an electrically-controlled clock-movement the combination of a toothed wheel *f*, a click f^4 operating said wheel, a lever on which said click is pivoted, a spring acting on said lever, and an electromagnet which when energized moves said lever in opposition to its controlling spring, and thereby causes said click to be withdrawn from engagement with the wheel, as set forth.

610,540. FURNACE FOR SMELTING ORE. HERMAN KAHNWEILER, Girard, Kans. Filed Dec. 9, 1897. Serial No. 661,263. (No model.)



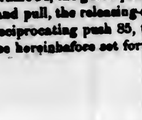
Claim.—1. In an ore-smelting furnace, the combination with a primary heating-chamber and a single combustion-chamber, of a secondary heating-chamber communicating with said primary chamber, two series of retorts in said chambers, a divided tunnel situated in the bottom of the secondary heating-chamber and having a series of damper-controlled openings which establish communication between said tunnel and the secondary chamber, and stacks or uptakes communicating at opposite ends with the respective compartments of the divided tunnel, substantially as described.

2. In an ore smelting furnace, the combination with a primary heating-chamber and a combustion-chamber discharging thereto, of a secondary heating-chamber communicating with said primary chamber, two independent series of retorts within the said chambers, a tunnel situated in the bottom of the secondary heating-chamber and divided by a transverse bridge-wall into non-communicating compartments, a series of damper-controlled openings from the secondary heating chamber to the respective compartments of the divided tunnel, and stacks or uptakes situated at opposite sides of the furnace and connected with the respective compartments of the divided tunnel, substantially as described.

3. In an ore-smelting furnace, the combination with a primary heating-chamber and a combustion-chamber discharging directly thereto, of a secondary heating-chamber separated by a partition-wall from the primary chamber, the transverse ports, 16, in the upper part of the partition-wall and establishing communication between the secondary and primary chambers, a smoke-tunnel arranged transversely of the furnace at the bottom of the secondary heating-chamber, a partition, 22, erected within said tunnel and dividing the same into non-communicating compartments, an arch over said tunnel having a series of vertical openings, dampers fitted to said arch to vary the area of said openings and control the passage of the waste gases from the secondary heating-chamber to the tunnel, and stacks or uptakes situated at opposite sides of the furnace and connected with the respective compartments of the divided tunnel, substantially as described.

610,541. BLACK DYE AND PROCESS OF MAKING SAME. GEORG KALLMORGEN, Frankfort-on-the-Main, Germany, assignor to Leopold Cassella & Co., same place. Filed Jan. 3, 1898. Serial No. 665,444. (Specimens.)

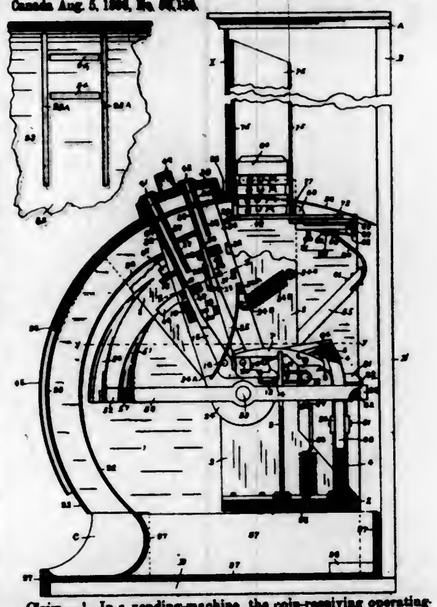
Claim.—1. The process of producing a black coloring-matter by heating the oxydinitrodiphenylamin of the constitution:



with sulfids and sulfur substantially as described.

2. The black coloring-matter derived from oxydinitrodiphenylamin and sulfur, which is a black mass, easily soluble in water with a blue-black color being precipitated from its solutions by acids and dyeing unmordanted cotton directly in an alkaline bath without the help of oxidizing agents a deep blue-black substantially as described.

610,542. VENDING-MACHINE. FRANK P. KERBY, Toronto, Canada, assignor of one-half to Duncan H. McDermid, London, Canada. Filed Dec. 9, 1897. Serial No. 661,318. (No model.) Patented in Canada Aug. 5, 1896, No. 50,136.



Claim.—1. In a vending-machine, the coin-receiving operating-lever, composed of the two perpendicular side plates 34, mounted upon the main shaft 33, the two guide-plates 35 36, the two locking-plates 37 and 38, secured to the side plates 34, the two coin-placers 15 and 25, having circular, ringed heads, and pivoted to side plates 34, the two cross-stays 19 29, secured to the side plates 34, the two coin-adjusting stops 20 30 secured to cross-stays 19 29, the four locking-pawls 45 secured to frame 34, the two adjusting-lugs 22, the two adjusting-lugs 31, the two pressure-studs 23, the two pressure-studs 32, all secured to the frame 34, the guide-plate 34^A, the removable cap 39, having coin-slots and pull, the releasing-shaft 10, the pawl 7, the tripping-plate 9, the reciprocating push 85, the pawl 81, substantially as and for the purpose hereinbefore set forth.

2. In a vending-machine, the tripping-plate 9, having slots 9^A and 9^B and having secured thereto the spring 12 and foot-rest 14, substantially as and for the purpose hereinbefore set forth.

3. In a vending-machine, the ejecting-lever composed of the main lever mounted upon the main shaft, the cross connecting-arms, secured to the main lever, the curved pointed arm fixed to the cross-arm, the auxiliary lever mounted upon the main shaft, and connected to the cross-arm, substantially as and for the purpose hereinbefore set forth.

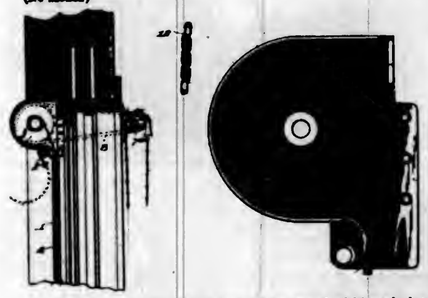
4. In a vending-machine the ejector, composed of the sliding plate, the spring journaled thereto, the spring-pressed pawls pivoted to the sliding plate and connected by the cross-plate, the adjusting-screw operating through the cross-plate, substantially as and for the purpose hereinbefore set forth.

5. In a vending-machine, the combination with the main frame, with the operating-levers, and with the ejecting-levers, of the auxiliary frame 4 having the curved projecting top, and two vertical slots with the middle projecting top piece slotted for a pawl-bearing, of pawl 7 pivoted therein substantially as and for the purpose hereinbefore set forth.

6. In a vending-machine, the combination with the main frame, with the auxiliary frame, and with the ejector lever, of the rubber cushions secured to the auxiliary frame substantially as and for the purpose hereinbefore set forth.

7. In a vending-machine the combination with the main frame, with the operating-lever, with the coin-placers, with the releasing-shaft 10, and with pawl 7, of the tripping spring-plate 9; substantially as and for the purpose hereinbefore set forth.

610,543. ROLLING FIREPROOF CURTAIN. WILLIAM R. KINNEAR, Columbus, Ohio. Filed July 26, 1897. Serial No. 645,152. (No model.)



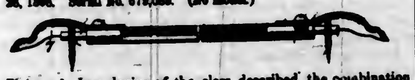
Claim.—1. A flexible rolling shutter composed of hinged slats movable longitudinally upon each other, combined with a shaft or drum upon which said curtain may be rolled, heads between which said shaft or drum is journaled, the inner sides of which are in line with the grooves of the window-frame, whereby the curtain-slats are held from longitudinal movement on each other, substantially as described.

2. In combination with a flexible rolling curtain, a shaft or drum around which the curtain is to be rolled, heads between which said shaft is journaled having rounded lateral projections cast or formed integral and stationary therewith and constituting guides for the edges of the curtain, substantially as described.

3. In combination with a flexible rolling curtain, a shaft or drum around which the curtain may be rolled, heads between which said shaft is journaled, and a cap or cover for inclosing said curtain hinged or pivoted to said heads, substantially as described.

4. A slat for flexible curtains and the like consisting of a strip of metal bent longitudinally to form two channels or grooves the middle portion of said slat being unbent and standing transversely across the mouth of both grooves or substantially at right angles to the plane of the slat so as to permit said slats to be slid upon each other longitudinally and to move upon each other with a hinge-like movement but to prevent their separation laterally, substantially as shown and described.

610,544. STAIR-ROD. BENJN H. KUTZ, Boston, Pa. Filed Apr. 26, 1898. Serial No. 679,099. (No model.)



Claim.—1. In a device of the class described, the combination with screw-eyes or their equivalents, of a rod proper having a sliding spring-actuated pin arranged at one end thereof and a stationary pin at the other end, and cap-plates for the ends of the rod, one of said cap-plates being carried by the sliding pin and providing an operating-handle therefor, substantially as set forth.

2. In a device of the class described, the combination with screw-eyes or their equivalents, of a rod proper, said rod having an adjustable extremity, comprising a sliding pin mounted within one end of the rod, and a spring incased within the rod and bearing against the inner end of the sliding pin to hold the same normally in extended position, an ornamental cap-plate carried by the sliding pin and secured thereto by a screw or rivet, a slot in the rod forming a guide for the latter screw, and a washer interposed between the sliding pin and the cap-plate to space the same apart, substantially as and for the purpose set forth.

3. In a device of the class described, the combination with screw-eyes or the like, of a rod proper having cap-plates provided upon the ends thereof, and a sliding spring-actuated pin arranged within one end of the rod, the latter end being provided with a longitudinal slot, and a screw connecting one of the cap-plates to the sliding pin and entering said slot, said cap-plate thereby forming an operating-handle therefor, substantially as set forth.

4. In a device of the class described, the combination with a hollow rod, of a removable pin, held stationary, provided at one end thereof, a removable and sliding spring-actuated pin at the other end of the rod, and cap-plates covering the pins, each cap-plate being secured to its respective pin by the same fastening means that holds the pin to the rod, substantially as set forth.

610,545. SUSPENDER-BUCKLE. CLARK W. LATIMER, Portage, Wis. Filed Sept. 12, 1897. Serial No. 651,498. (No model.)



Claim.—1. In a buckle, the combination with the frame, and an upper cross-bar having its lower edge toothed, of a slide having loose connection at its ends with the side bars of the said frame and comprising upper and lower transverse bars spaced apart and arranged in different planes with respect to each other and the buckle-frame, substantially as set forth for the purpose specified.

2. In a buckle, the combination with the frame, and an upper cross-bar having its lower edge toothed, of a slide applied to the buckle-frame and comprising upper and lower parallel bars, and a plate having connection with the upper portion of the slide and movable therewith, and having its upper portion coming in the space formed between the toothed cross-bar and the top bar of the buckle-frame, substantially as specified.

3. In a suspender-buckle, the combination of a hook having the terminals of its shank members bent, a loop receiving the bent terminals of the hook, and a casing inclosing the loop and shank members of the hook and having a pointed end to extend across the space of the hook and retain a ring or link in engagement therewith, substantially as set forth.

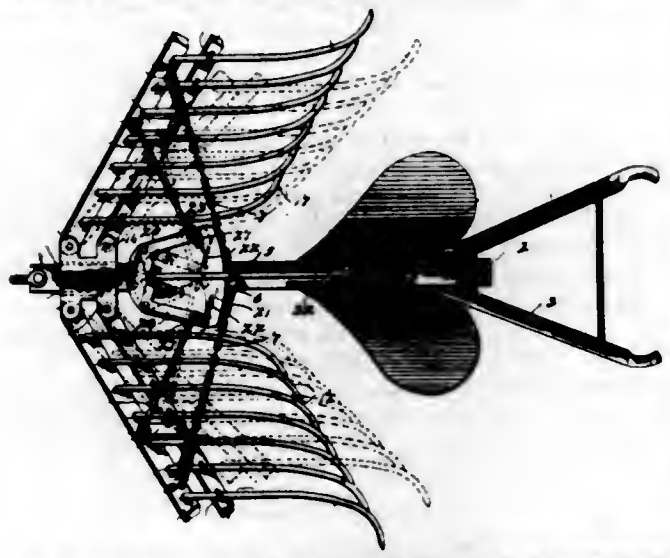
4. In a suspender-buckle, the combination of a hook comprising shank members having their terminals bent, a casing inclosing the said shank members, and a projecting portion forming an extremity of the casing projecting across the throat or space of the hook to retain a ring or link in engagement therewith, substantially as set forth.

5. In combination, a buckle-frame having a drop-loop, a hook having shank members formed with bent terminals engaging with the drop-loop, and a plate or blank having a portion formed into a roll and receiving the parts of the frame-bar upon opposite sides of the drop-loop, and having an end portion bent over and inclosing the said drop-loop, and having longitudinal edge portions of its opposite end bent to form a case, substantially as shown for the purpose set forth, said case having a pointed end to extend over the throat of the hook to retain a ring or part in engagement therewith.

610,546. CULTIVATOR. GEORGE LEWIS, Cobden, Ill., assignor of two-thirds to John R. B. Broadway and David A. Smith, same place. Filed Nov. 24, 1897. Serial No. 659,098. (No model.)

Claim.—1. In an implement of the variety specified, the combination of a longitudinal beam, parallel bars spaced apart and arranged

the one in advance of the other in substantially the same horizontal plane and pivotally connected with the beam to swing horizontally, rake-teeth having pivotal connection with one of the bars in a direction at right angles to the horizontal movement of said bars, and keepers applied to the other bar and confining the rake-teeth thereto and admitting of them having a sliding movement with reference to the said bars, substantially as set forth.



2. In an implement of the character described, the combination of a longitudinal beam, parallel bars spaced apart and disposed the one in advance of the other and having pivotal connection with the said beam to swing horizontally, a connection between the pivoted bars to cause them to move in unison at their outer ends, rake-teeth pivoted vertically at their front ends to the forward pivoted bar, and keepers confining the rake-teeth to the rear pivoted bar and admitting of them having a sliding movement with reference thereto when swinging the bars upon their pivots, substantially as and for the purpose set forth.

3. In an implement for the purpose set forth, the combination of a beam, a plate pivotally connected with the beam and adapted to swing vertically, bars arranged the one in advance of the other and spaced apart and having pivotal connection with said plate to swing horizontally, a link connecting the pivoted bars to cause them to move in unison and disposed parallel with the aforesaid beam, rake-teeth having pivotal connection with the forward pivoted bar, and keepers confining the rake-teeth to the rear pivoted bar and admitting of said teeth having a sliding movement with reference thereto, substantially as described.

4. In combination, a beam, a rake-head having loose connection with the beam, an elbow-lever, a rod connecting an arm of the lever with the rake-head, and an operating-lever having connection with the opposite arm of the elbow-lever, substantially as set forth.

5. In a cultivator or the like, the combination of a beam, an operative member having loose connection therewith, a plate, an elbow-lever pivoted upon said plate, connections between one arm of the elbow-lever and the operative member for moving the latter from the former, means under the control of the operator for throwing the other arm of the lever, and a cap-plate overlapping one of the lever-arms and forming a guide therefor; substantially as described.

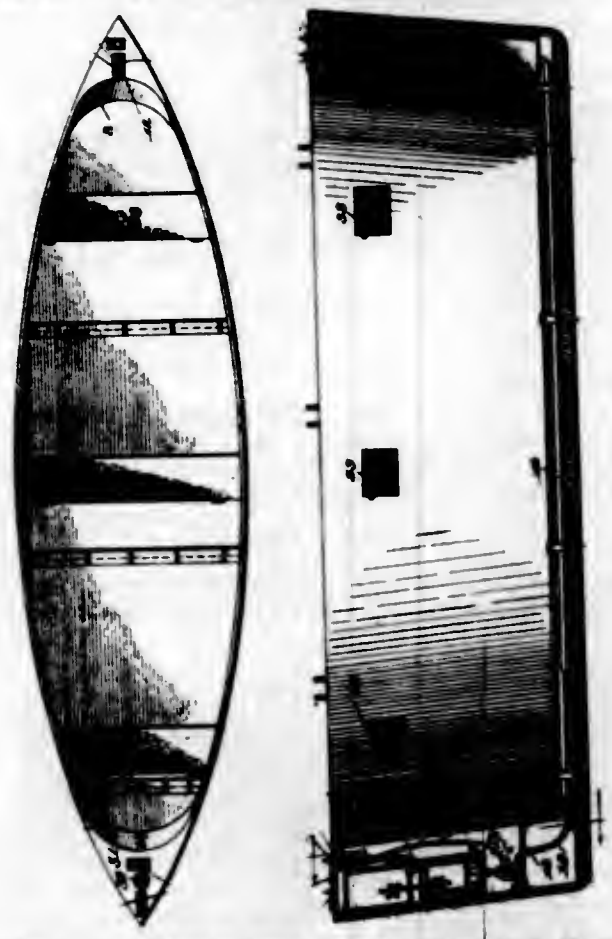
6. In a cultivator, the combination of a beam, a rake having loose connection therewith, a plate, an elbow-shaped lever fulcrumed to the plate and having its longitudinal arm in connection with the rake, an operating-lever having connection with the transverse arm of the elbow-lever, and a cap-plate secured to the aforesaid plate and overlapping the rear end of the elbow-lever, substantially as set forth.

7. In combination, a beam, rakes hinged to opposite sides of the beam, means for adjusting the outer ends of the rakes vertically, elbow-shaped levers having their horizontal arms in connection with the rakes, and an operating-lever having connection with the transverse arms of the elbow-levers for adjusting the free ends of the rakes in and out, substantially as described.

8. In a cultivator or the like, a beam, a plate hinged to the beam and having pairs of ears, a rake-head pivoted in one pair of ears, a bar pivoted in the other pair of ears, means for causing the head and the bar to swing upon their pivots in unison, guides upon the bar, tines pivoted to the rake-head and resting in the guides, means for swinging the plate vertically upon its hinge, and means for swinging the rake-head and the bar upon their pivots; substantially as described.

9. In combination, a beam, plates hinged to the beam and provided with pairs of ears, rake-heads and parallel bars pivoted to the said ears, tines passing through keepers of the bars and journaled at their front ends to the rake-heads, elbow-shaped levers having connection with the rake-heads for adjusting them laterally, means for operating the elbow levers and securing them in an adjusted position, a standard rising from the beam, and connections between the rake-heads and standard for holding the outer ends of the rakes at any required elevation, substantially as set forth.

610,547. LIFE-BOAT. FRED H. LYONS, Mendocino City, Cal.
Filed Nov. 17, 1897. Serial No. 658,876. (No model.)



Claim.—1. A life-boat having a compartment near one end, a reservoir for salt water within the compartment, a condensing-chamber above and in communication with the reservoir, and a lamp beneath the reservoir for vaporizing the water in the reservoir, said lamp being normally positioned beneath the reservoir and adapted to be drawn up to the deck of the compartment, substantially as shown and described.

2. A life-boat having a compartment near one end, a reservoir and a condensing-chamber within the compartment, a lamp beneath the reservoir, said lamp being adapted to be drawn upward to the upper end of the compartment to be lighted, and means for automatically returning the lamp to its proper position after being lighted, substantially as shown and described.

3. A life-boat having a compartment at each end, a reservoir, a condensing-chamber, and a lamp for heating the reservoir being located in one compartment, and a tank for alcohol or other suitable liquid located in the other compartment, said tank being in communication with the lamp through a suitable conduit, substantially as shown and described.

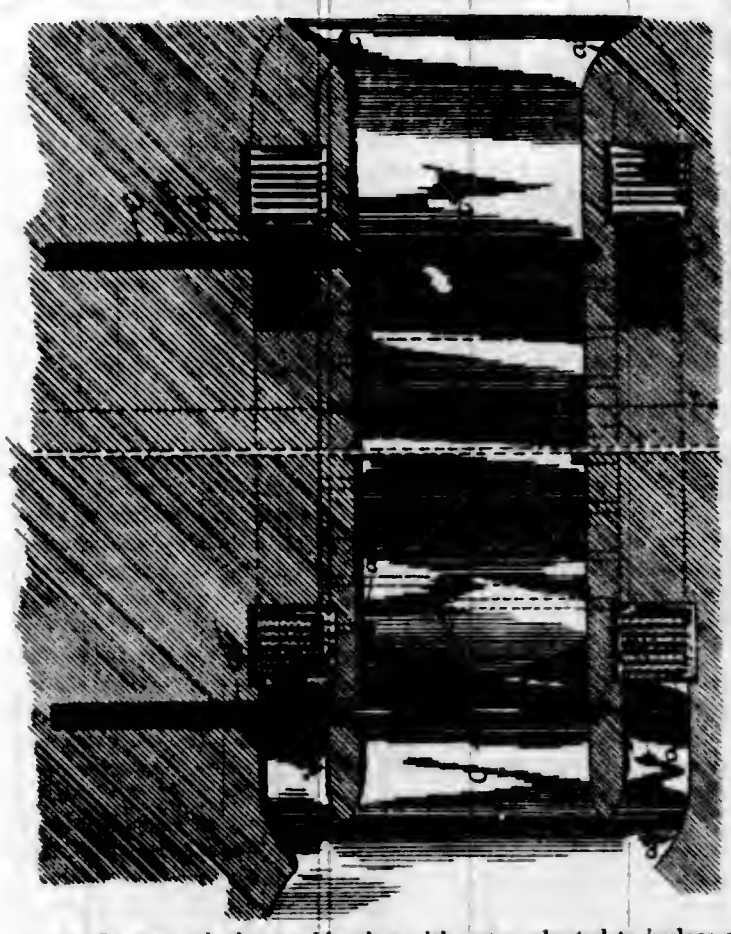
610,548. CANAL-LOCK. EMILIEN A. MANNY, Beauharnois, Canada, assignor to Delia Rochette, same place. Filed Oct. 21, 1897. Serial No. 655,953. (No model.)

Claim.—1. The combination with a canal; of auxiliary channels connected thereto; and connections between said channels and the lock portion of said canal, said connections being arranged to deliver water to and from said lock portion and on both sides thereof from said channels independently or collectively, substantially as described.

2. In a canal, the combination with gates adapted to inclose a portion of said canal; of channels connected with said canal but independent of said inclosed portion; means for connecting said channels and said inclosed portion, said connecting means being independent for each channel, said means also providing for the inlet and discharge of water to and from each of said channels to said inclosed portion on both sides thereof; valves for controlling the entrance of water to said channels; and valves for controlling the discharge of water from said channels, each valve being independent of the movement of the remaining valves.

3. In a canal, the combination with gates adapted to inclose a portion of said canal; of a channel connected with said canal but independent of said inclosed portion; and transverse channels connect-

ing said independent channel and said inclosed portion, the openings of said transverse channels within said inclosed portion being arranged at opposite sides thereof, in such manner that water will be admitted to said inclosed portion at both sides simultaneously.



4. In a canal, the combination with gates adapted to inclose a portion of said canal; of channels connected with said canal but independent of said inclosed portion; and means for admitting water to said inclosed portion from each of said channels simultaneously at opposite sides of said inclosed portion.

5. A canal-lock, comprising a series of gates located in said canal; auxiliary channels connected to said canal; a series of channels connecting each auxiliary channel and said portion between the gates, each series having its openings in said portion, arranged at opposite sides of the bottom thereof.

6. A valve for canal-locks, comprising a plate having perforations secured to said lock; a plate having similar perforations adapted to be movable against one side of said stationary plate; a truck arranged to support said movable plate; and means for moving said truck.

7. The combination with a canal; of auxiliary channels connected thereto; controllable ports to and from said channels, whereby said channels may be used independently or collectively; and connections between said channels and the lock portion of said canal, said connections from each channel being arranged to deliver water to and from said lock portion and on both sides thereof, whereby water will be admitted on both sides of said lock portion from either or both of said channels, substantially as described.

8. A gate for canal-locks, comprising a series of bars having great tensile strength interposed between layers of less tensile strength; and bars secured to the sides of said bars and said layers, in a direction at right angles to said bars and layers.

9. The combination with a canal having a lock portion; of an auxiliary channel having connection with said canal and said lock portion; and independently-operated valves located in said channel on a plane above the bottom of said lock portion, whereby said lock portion cannot be entirely emptied through the medium of said channel, substantially as described.

10. The combination with a canal; of an auxiliary channel connected therewith; a lock portion formed in said canal contiguous to said channel; and transverse channels connecting said channel and said lock portion, said channels having their openings in said lock portion arranged alternately on opposite sides of said portion, substantially as described.

11. The combination with a canal-gate; of a bar located in front of and extending entirely across said gate; and yielding buffers secured between said bar and said gate, substantially as described.

12. The combination with a canal-gate; of a bar located in front of and extending entirely across said gate; and a series of spring-buffers secured between said gate and said bar, substantially as described.

13. The combination with a canal; of auxiliary channels connected therewith; controllable ports, independently operated, between said canal and said channels; a lock portion formed in said canal contiguous to said channels; and transverse channels leading independently from each of said channels to said lock portion, each alternate transverse channel leading from the same channel, having its opening in said lock portion arranged on the same side of said portion, the remaining channels having their openings on the opposite side of said portion, substantially as described.

14. The combination with a canal; of auxiliary channels connected therewith; controllable ports, independently operated, between said canal and said channels; a lock portion formed in said canal contiguous to said channels; and a series of transverse channels connecting each of said channels to said lock portion, each series of channels leading from the same auxiliary channel, having their openings in said lock portion arranged alternately on opposite sides of said portion, whereby water will be admitted to said lock portion at both sides thereof regardless of the number of auxiliary channels used, substantially as described.

15. The combination with a canal having a lock portion; of a series of auxiliary channels having connection with said canal and said lock portion; and independently-operated valves located in each of said channels, each of said valves being located on a plane above the bottom of said lock portion, said valves being located on the same plane, whereby the water will be passed downward through said valves, and said lock portion will be prevented from becoming entirely empty through the medium of said channels, substantially as described.

610,549. **MOP-WRINGER.** WILLIAM D. MARTIN, Warsaw, N. Y. Filed July 14, 1898. Serial No. 685,943. (No model.)

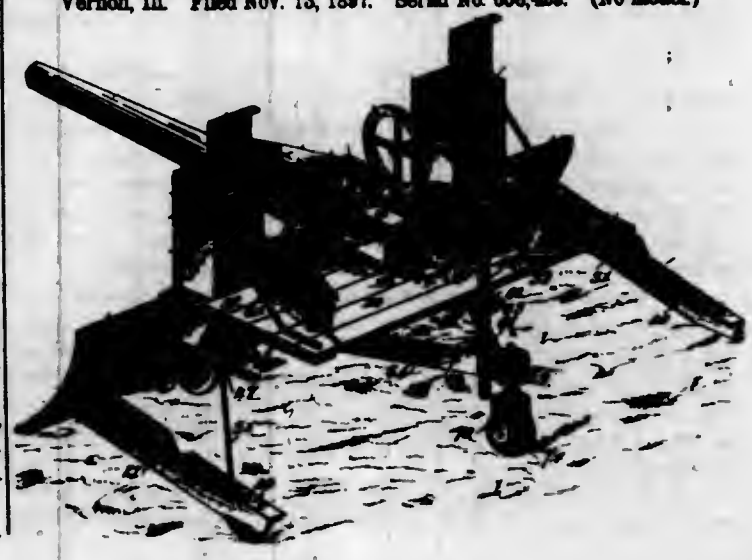


Claim.—1. Two brackets attached to a pail and having journal-bearings for one of the rollers, a bar pivoted to one of the brackets and having bearings for the other roller, and means for swinging this bar on its pivot so that the rolls may be at an angle to each other, or be brought into substantial parallelism, in combination substantially as described.

2. In a mop-wringer, the two brackets for attachment to a pail, each having a slot therein to serve as a journal-bearing, a wringer-roll having its journals in said slots in the brackets, springs bearing the said roll to one side of said slots, and a bar pivoted to one of the brackets and swinging toward and away from the said roll, said bar carrying a second roll, all combined.

3. In combination with a mop-pail, a pair of brackets, one at each side of said pail, a roller journaled in said brackets, a bar pivoted to one of the brackets and swinging toward and away from the second bracket and carrying a roller a pulley mounted on this second bracket, a chain connected to the bar and extending over the pulley, and a lever on the pail connected to the said chain, all combined substantially as described.

610,550. **ROAD-GRADING MACHINE.** JOHN V. MAXEY, Mount Vernon, Ill. Filed Nov. 13, 1897. Serial No. 658,429. (No model.)



Claim.—1. In a road-grading machine, the combination with the curved blade or share, of the tongue, adapted to be adjusted at an inclination to the share, and rear projecting guide-plates, hinged to the share and provided with means for adjusting them to parallelism with the tongue, substantially as described.

2. In a road-grading machine, the combination with the frame of the machine and the tongue pivoted thereto, of a curved rack, a spring-impelled slide-bolt, supported below the tongue in line therewith and having a grooved head to embrace the rear edge of the curved rack, substantially as described.

3. In a road-grading machine, the combination with the floor of the machine, the tongue pivoted thereto, a curved rack rigidly secured thereto beneath the tongue, having notches in its front edge, a hand-lever pivotally mounted on the tongue, tooth-bars secured to the foward end of said lever to engage in the notches, and a spring under the rear end of the lever to hold them normally in engagement, substantially as described.

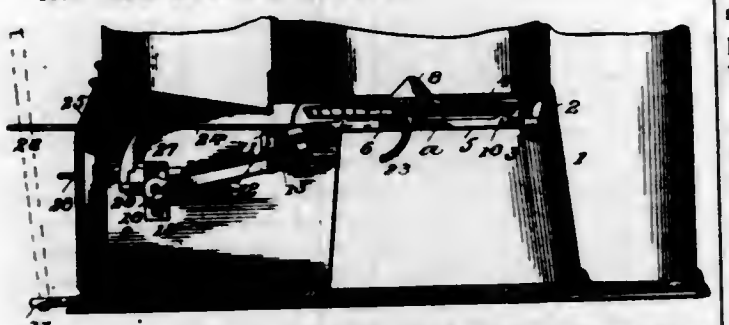
4. In a road-grading machine, the combination with the floor and the housings, of the hand-wheels and their shafts mounted in the housings, the treadle-bars pivoted to the housings and bearing upon the floor, and the brake-shoes connected with the treadle-bars and adapted to engage hand-wheels, substantially as described.

5. In a road-grading machine, the combination with the frame of the machine and the curved share, of guide-plates, pivoted to the rear of the share near its ends and having horizontal perforated flanges, and brace-rods, pivoted to the frame of the machine and having hooked ends to engage the perforations in the flanges of the guide-plates, substantially as described.

6. In a road-grading machine, the combination with the floor of the machine and the housings, of the converging brackets, pivotally secured at their front ends to the sides of the housings, a caster frame and wheel suspended between their outer ends, a block mounted between them near their outer ends, having a screw-threaded opening, a bracket projecting to the rear of the floor above the screw-threaded block, and a stool mounted upon a standard swiveled in said bracket and screw-threaded to engage in the screw-threaded opening in the block, substantially as described.

7. In a road-grading machine, the combination with the floor of the machine and the housings, of the shafts mounted in the housings, the hand-wheels on the inner ends of said shafts, the treadle-bars pivoted to the inner ends of the housings, the brake-shoes secured to the treadle-bars, and the stool mounted in the position to bring the feet of the driver in the proper position to operate the treadle-bars, substantially as described.

610,551. GRATE. RUDOLPH A. MAY, Akron, Ohio. Filed Apr. 7, 1897. Serial No. 631,108. (No model.)



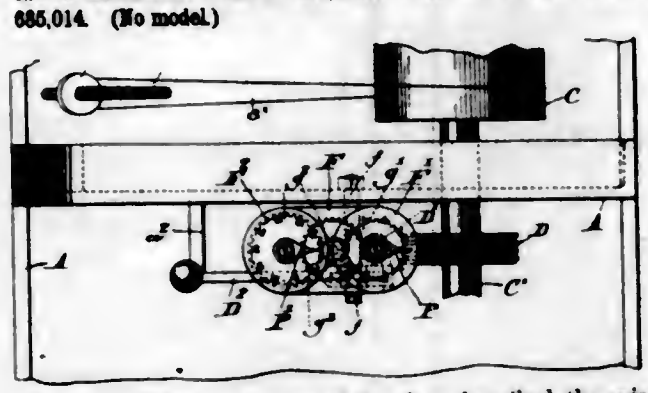
Claim.—1. The combination of a base and a grate-support, consisting of a rearward-extending arm or bar, and diverging forward-extending arms, levers 14 provided with the portions 16, said portions 16 connected together, links connected to the levers and to the diverging arms, a slotted head connected to one of the levers, the extension 29 and the gravity-catch, substantially as and for the purpose specified.

2. The combination of a base, a grate-support consisting of the arms 5 and 6, the arm 5 provided with a lip at its rear end, a fixed socket to engage the lip, levers 14 provided with angled portions and the levers connected together, links connected to the levers 14 and to the arms 6, said links provided with shoulders located between the pivoted ends of the links, and a grate located upon the grate-support, and means for holding the grate and its support in an elevated position, substantially as and for the purpose specified.

3. The combination of a base, the socket 2 provided with a recessed lip, said socket secured to the base 1, a grate-support carrying a grate, the arm 5 provided with a downward-extending portion or lip, forward-extending arms 6 supported upon pivoted bars, a slotted head located upon one or both of the pivoted bars, a gravity-catch and means for operating the pivoted bars, substantially as and for the purpose specified.

4. The combination of a grate formed in sections, and one of said sections provided with the bent or curved projections 38, and the other section provided with the open projections 39 the lugs 42 formed upon the curved projections and the keys or pins 43, substantially as and for the purpose specified.

610,552. TWIST-INDICATOR FOR SPINNING-MACHINES. JOHN T. MEATS and TRUMAN W. DEAN, Taunton, Mass., assignors to the Mason Machine Works, same place. Filed July 2, 1898. Serial No. 685,014. (No model.)



Claim.—1. In an apparatus of the class described, the spindle-driving drum having a worm rotatable therewith, speed-indicating mechanism, including a transmitting-shaft having an attached worm-gear, and means to throw said worm-gear and worm into or out of engagement.

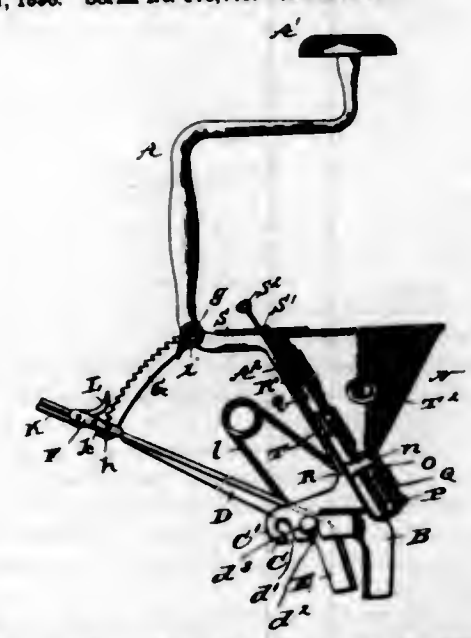
2. In an apparatus of the class described, the spindle-driving drum having a worm rotatable therewith, pivotally-mounted speed-indicating mechanism, including a transmitting-shaft having an attached worm-gear, a rocker-arm having an end bearing for said shaft pivoted upon it, and means to rock said arm to effect engagement or disengagement of said worm-gear or worm.

3. In an apparatus of the class described, the spindle-driving drum having a worm rotatable therewith, a frame having two dials and coöperating pointers, a shaft mounted in the frame and to which one of said pointers is attached, gearing intermediate said shaft and the other pointer, to operate the latter, a worm-gear on said shaft, means to move said worm-gear into or out of engagement with the worm, and a locking device for said means.

4. In an apparatus of the class described, the mule-carriage provided with a spindle-driving drum, a gear rotatable therewith, speed-indicating mechanism pivotally mounted on the carriage adjacent the drum, said mechanism including a transmitting-shaft having a gear thereon, means to effect engagement or disengagement of said shaft and drum-gears, and a locking device for said means.

5. In an apparatus of the class described, the spindle-driving drum having an attached worm, a dial and coöperating pointer, a shaft having a worm-gear, connections between said shaft and the pointer, to transmit rotation of the shaft to said pointer, and means to throw said worm and gear into or out of engagement.

610,558. WRENCH. WILLIAM R. MOORE, Eden, N. Y. Filed Apr. 7, 1898. Serial No. 676,773. (No model.)

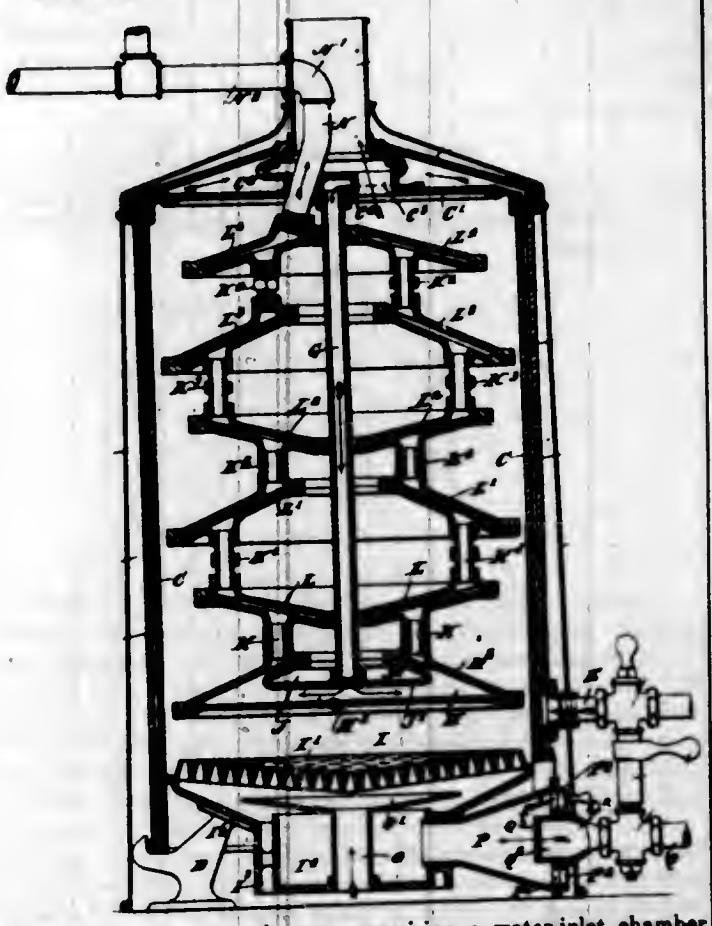


Claim.—1. In a wrench, the handle provided with the inclined portion A^5, terminating in the jaw B, and the ears C, the latter extended at right angles thereto beyond the normal position of the lever, and provided with the inclined slots upon its under edge, the free ends of said ears terminating in hooks formed by the outer slots, a detachable lever or arm having its lower end terminating in the jaw E, and

provided with headed pins, to take in the said slots, its upper end having a catch-pin, guide or keeper, the thumb-piece and foot secured thereto, whereby the jaw of said lever is adjusted relatively to the stationary or opposite jaw on the lower end of the inclined portion of the handle, substantially as described.

2. The combination with the handle having the inclined portion thereof, notched segment, breast-piece and interposed spring between handle and lever; of the jaw B, and ears C, the latter extended at right angles to jaw B, and beyond the normal position of the lever, and provided with the inclined slots upon its under edge, the free ends of said ears terminating in hooks formed by the outer slots, a detachable lever having its lower end terminating in the jaw E, and provided with headed pins to take in said slots, its upper end having a catch-pin, guide or keeper, thumb-piece and foot secured thereto, the oil-can rod provided with the coiled spring near its upper end, and cap or short cylinder having a slot or nozzle therein secured to the lower bent portion of the rod, and a valve secured to said rod for opening and closing the vent in the oil-can, substantially as described.

610,554. WATER-HEATER AND STEAM-GENERATOR. JAMES MCCARTNEY, Oakland, Cal. Filed Nov. 6, 1897. Serial No. 657,675. (No model.)



Claim.—1. A water-heater comprising a water-inlet chamber formed by vertically-disposed spaced walls, of which the inner wall forms a fire-box containing a burner or grate, the said walls being spaced to allow the water to rise from the chamber to the said space, a pipe depending from the top of the inner wall, to allow the water to pass from the space into the pipe and down the same, a conical water-chamber arranged with its base directly over the burning fuel in the said fire-box, and a spreader within the said chamber above the said base, and having a central inlet connected with the said pipe, to allow the water to enter the chamber, the sides of the spreader forming with the sides of the chamber an upwardly-extending outlet for the heated water, substantially as shown and described.

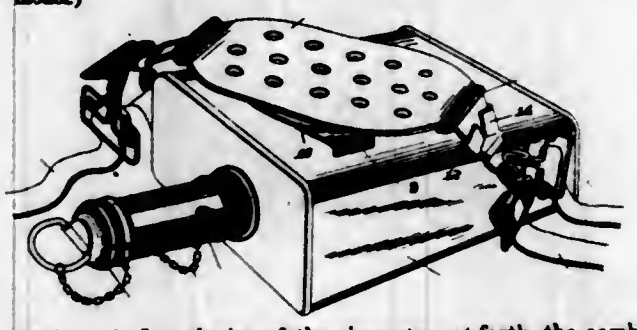
2. A water-heater comprising a water-inlet chamber formed by vertically-disposed spaced walls, of which the inner wall forms a fire-box containing a burner or grate, the said walls being spaced to allow the water to rise from the chamber to the said space, a pipe depending from the top of the inner wall, to allow the water to pass from the space into the pipe and down the same, a conical water-chamber arranged with its base directly over the burning fuel in the said fire-box, a spreader within the said chamber above the said base, and having a central inlet connected with the said pipe, to allow the water to enter the chamber, the sides of the spreader forming with the sides of the chamber an upwardly-extending outlet for the heated water, and dished sections arranged one above the other, and connected with each other by pipes, the lowermost section being connected with the upper end of the said chamber, to allow the water to circulate from the chamber up through the several sections, substantially as shown and described.

610,555. STOVE-FENDER. GEORGE T. MCNAMER, Roanoke, Va. Filed Oct. 22, 1897. Serial No. 656,041. (No model.)



Claim.—A stove-fender, comprising vertical standards provided with means for securing them at opposite sides and in rear of a stove, the straight rear sections 3 mounted on the standards and extending around the back and sides of the stove, and the curved front sections hinged at their rear ends to the side standards and extending around and meeting in front of the stove, said front sections being provided with means for connecting their front ends and adapted to be sprung apart to expose the stove, substantially as described.

610,556. CUSPIDOR AND ATTACHMENT. ARCHIBALD MCGUARRIE, Buffalo, N. Y. Filed June 12, 1897. Serial No. 640,447. (No model.)



Claim.—1. In a device of the character set forth, the combination of a receptacle or body, a tube-section connected to said body, and a support for said body or receptacle pivotally connected solely to the rear side of the latter, substantially as and for the purposes specified.

2. In a device of the character set forth, the combination of a receptacle or body, telescopic tube-sections connected thereto, and having a movable lid or cover and support for said receptacle or body pivotally connected to the rear side thereof, and suspending devices engaging said support.

3. In a device of the character set forth, the combination of a receptacle or body, telescopic tube-sections connected thereto and having a movable lid or cover, a bow-spring pivotally connected to said receptacle or body, a perforate pad carried by said bow-spring, and straps attached to said perforate pad, substantially as and for the purposes specified.

610,557. CLOSURE FOR OILING-NOZZLES. FRANK P. NOBLE, Waterbury, Conn. Filed Sept. 30, 1897. Serial No. 653,565. (No model.)



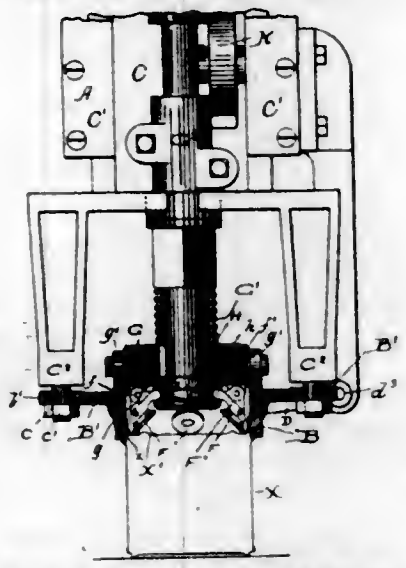
Claim.—1. The combination with an oiling device having a delivery-nozzle, of a closure for the latter, a connection leading from said closure and provided near its end with an elongated slot, a fixed pin on the device bent to form a retaining-loop and entering the slot, and a sliding bolt mounted on said connection and adapted to hold the pin in one end of the slot, to prevent accidental removal of the closure from the nozzle, substantially as described.

2. The combination with an oiling device having a delivery-nozzle, of a closure for the latter, an extension leading from said closure and loosely connected with the oiling device, and provided near its end with an elongated inclined slot, a fixed pin on the device and entering the slot, and a bolt movably mounted on said extension, to positively engage the pin and hold it in one end of the slot, to lock the closure from removal from the nozzle, substantially as described.

3. The combination with an oiling device having a delivery-nozzle, of a closure for the latter, an extension leading from said closure and having a cam-slot near its end, a pin on the oiling device and entering said slot, and a movable bolt on the extension, provided with a cam-head adapted to engage the pin and partially rotate said extension and closure, to thereby draw the latter tightly onto the nozzle, substantially as described.

4. The combination with an oiling device having a delivery-nozzle, of a closure for the latter, an extension leading from said closure and having a spirally-arranged slot near its end, a pin on the oiling device, and a cam member movably mounted on said extension, to bear against said pin and partially rotate said extension, to thereby draw the closure tightly onto the nozzle, substantially as described.

610,558. SHEET-METAL-SEAMING MACHINE. EDWIN NORTON, Maywood, Ill., assignor to the Norton Bros., Chicago, Ill. Filed Oct. 7, 1897. Serial No. 654,334. (No model.)



Claim.—1. In a machine for seaming covers on cans, the combination with an opening-and-closing clamping-ring, with mechanism for automatically closing the clamping-ring, seaming-rollers, and mechanism for automatically operating the seaming-rollers, substantially as specified.

2. In a seaming-machine, the combination with an opening-and-closing clamping-ring, mechanism for automatically closing the clamping-ring, seaming-rollers, operating arms or levers upon which the seaming-rollers are journaled, a rotating ring or frame to which the seaming-roller levers are pivoted, and a reciprocating head for operating said seaming-roller levers, substantially as specified.

3. In a seaming-machine, the combination with an opening-and-closing clamping-ring, mechanism for automatically closing the clamping-ring, seaming-rollers, operating arms or levers upon which the seaming-rollers are journaled, a rotating ring or frame to which the seaming-roller levers are pivoted, a reciprocating head for operating said seaming-roller levers, and a reciprocating slide and shaft, substantially as specified.

4. In a seaming-machine, the combination with an opening-and-closing clamping-ring, mechanism for automatically closing the clamping-ring, seaming-rollers, operating arms or levers upon which the seaming-rollers are journaled, a rotating ring or frame to which the seaming-roller levers are pivoted, a reciprocating head for operating said seaming-roller levers, and a reciprocating slide and shaft, said reciprocating slide being connected to said clamping-ring and having a slight independent reciprocating movement thereon, substantially as specified.

5. In a seaming-machine, the combination with an opening-and-closing clamping-ring, mechanism for automatically closing the clamping-ring, seaming-rollers, operating arms or levers upon which the seaming-rollers are journaled, a rotating ring or frame to which the seaming-roller levers are pivoted, a reciprocating head for operating said seaming-roller levers, a reciprocating slide and shaft, a cam and connecting mechanism for reciprocating said slide, said connecting mechanism being provided with a clutch and mechanism for disengaging the clutch after each rotation of the cam, substantially as specified.

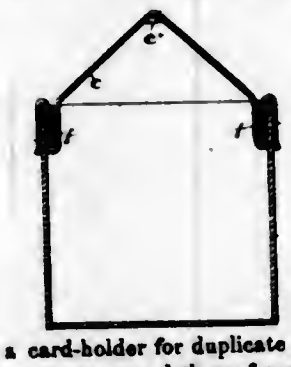
6. In a seaming-machine, the combination with a bodily-reciprocating split opening-and-closing clamping-ring adapted to receive and surround the upper end of the can-body, of a cam-lever D pivoted to one end of the split ring and engaging a pin or projection on the other end of the split ring for closing the same, and a chuck-disk for the can to rest upon, substantially as specified.

7. In a seaming-machine, the combination with an opening-and-closing reciprocating clamping-ring, of an operating-lever for closing the ring pivoted at one end to the stationary frame of the machine and connected at its other end to the meeting ends of the clamping-ring so that the ring may be automatically closed or opened by the reciprocating movement of the ring itself, substantially as specified.

8. In a seaming-machine, the combination with an opening-and-closing reciprocating clamping-ring, of an operating-lever for closing the ring pivoted at one end to the stationary frame of the machine and connected at the other end to the meeting ends of the clamping-ring so that the ring may be automatically closed or opened by the reciprocating movement of the ring itself, and seaming-rollers and mechanism for operating the same, substantially as specified.

9. In a seaming-machine, the combination with an opening-and-closing reciprocating clamping-ring, of an operating-lever for closing the ring pivoted at one end to the stationary frame of the machine and connected at the other end to the meeting ends of the clamping-ring so that the ring may be automatically closed or opened by the reciprocating movement of the ring itself, and seaming-rollers and mechanism for operating the same, said mechanism for operating the seaming-rollers having seaming-roller-carrying levers F', a ring or supporting-frame G for said levers, and an operating-head H, substantially as specified.

610,559. CARD-HOLDER FOR DUPLICATE WHIST. WILLIAM P. ORDWAY, Boston, Mass. Filed Jan. 3, 1898. Serial No. 665,343. (No model.)



Claim.—1. In a card-holder for duplicate whist, a case, and a separator mounted on the open end thereof and extended upwardly therefrom and crossing said case from side to side, the separator having middle and outer partitions of different height located substantially as described relative one to the other, to form stops for the ends of the separate hands being inserted into the case, the longitudinal edges of the inserted cards being freely exposed at their upper ends beyond the open end of the case and between the partitions.

2. In a card-holder for duplicate whist, a case, and a separator mounted on the open end thereof, having three parallel partitions with upwardly-converging sides, the apex of the middle partition extending beyond the ends of the outer partitions, to form a stop for the ends of the separate hands inserted at each side of said middle partition.

3. In a card-holder for duplicate whist, a case, and a separator mounted on the open end thereof, having three parallel partitions with upwardly-converging sides, the apex of the middle partition extending beyond the ends of the outer partitions, to form a stop for the ends of the separate hands inserted at each side of said middle partitions, the apices of the outer partitions being bent outwardly to project over the upper ends of and retain the outermost hands in place.

4. In a card-holder for duplicate whist, a case having an open end, a separator mounted thereon composed of wire bent to present a series of connected partitions with upwardly-converging sides, the apices of the middle and outer partitions being at different heights, the bases of the partitions continuing downward within the case.

5. In a card-holder for duplicate whist, a case having an open end, a separator mounted thereon composed of wire bent to present a series of connected partitions with upwardly-converging sides, the apices of the middle and outer partitions being at different heights, the wire at the bases of the partitions presenting retaining-loops to engage the walls of the case.

6. A separator for duplicate-whist card-holders, composed of a single piece of wire bent to present parallel partitions having inclined, converging sides, and attaching-loops at their bases, the outer members of said loops being substantially at right angles to the inner members thereof, said latter members projecting inward in the planes of the partitions.

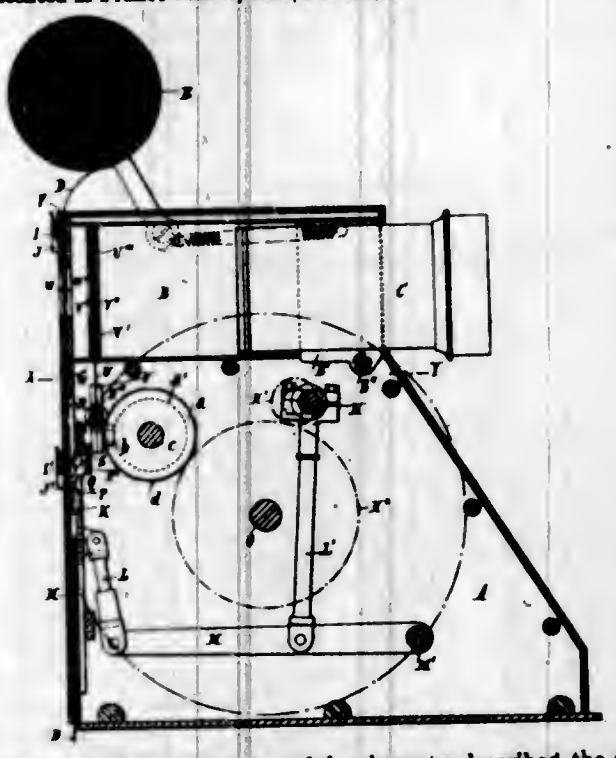
7. A separator for duplicate-whist card-holders, composed of wire bent to present three substantially A-shaped partitions, the apex of the middle partition extending beyond the apices of the outer partitions, the latter being bent over laterally, and attaching spring-bends at the bases of the partitions.

8. A separator for duplicate-whist card-holders, composed of wire bent to present three substantially A-shaped partitions, having their inclined sides of equal inclination, the apex of the middle partition extending beyond the ends of the outer partitions, to form stops for and to guide the ends of the separate hands inserted at each side of said middle partition.

9. A duplicate-whist card-holder, consisting of a case having a connected separator composed of wire bent to present a series of partitions of different height, said wire presenting at the ends of the partitions loops to engage the open end walls of the case.

10. In a card-holder for duplicate whist, a case, and a separator at the open end thereof, said separator comprising three parallel partitions, the top of the middle partition extending beyond the tops of the outer partitions to form a stop for the ends of the separate hands inserted at each side thereof, the tops of the outer partitions being bent outwardly to project over the upper ends of and retain the outermost hands in place in the case.

610,560. KINETOGRAPHIC CAMERA. AMBROISE F. PARNALAND, Paris, France. Filed July 6, 1896. Serial No. 598,152. (No model.) Patented in France June 9, 1896, No. 257,089.



Claim.—1. In an apparatus of the character described, the combination with a casing, and a vertically-arranged plate forming between it and the back plate of the casing a guide-passage for the film, of a slide K arranged upon the inner side of the back plate and adapted to reciprocate vertically, pawls pivotally connected with the slide, and springs acting upon the pawls to cause their free ends to normally project into the film-passage, and engage perforations in the film when the slide is moving downwardly and thereby move the film correspondingly, and said pawls adapted to free the perforations of the film when the slide is moving upwardly to permit the film to remain stationary during such movement.

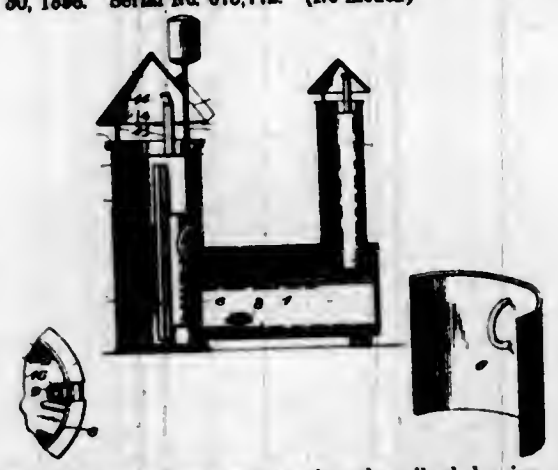
2. In an apparatus of the character described, the combination with a casing, and a vertically-arranged plate forming between it and the back plate of the casing a guide-passage for the film, of a slide K arranged upon the inner side of the back plate and adapted to reciprocate vertically, and being provided with an opening, pawls pivotally connected with the slide and projecting through said opening in the slide and through an opening in the back plate, springs acting upon the pawls to cause their free ends to normally project into the film-passage, and engage perforations in the film when the slide is moving downwardly and thereby move the film correspondingly and said pawls adapted to free the perforations in the film when the slide is moving upwardly to permit the film to remain stationary during such movement.

3. In an apparatus of the character described, the combination with a casing, and a vertically-arranged plate forming between it and the back plate of the casing a guide-passage for the film, the said vertically-arranged plate being movably supported, and springs bearing thereupon to cause the same to yieldingly bear upon the film, of a slide K arranged upon the inner side of the back plate and adapted to reciprocate vertically, pawls pivotally connected with the slide, and springs acting upon the pawls to cause their free ends to normally project into the film-passage, and engage perforations in the film when the slide is moving downwardly and thereby move the film correspondingly, and said pawls adapted to free the perforations of the film when the slide is moving upwardly to permit the film to remain stationary during such movement.

4. In an apparatus of the character described, the combination with a casing, and a vertically-arranged plate forming between it and the back plate of the casing, a guide-passage for the film, of a slide K arranged upon the inner side of the back plate and adapted to reciprocate vertically, pawls pivotally connected with the slide and springs acting upon the pawls to cause their free ends to normally project into the film-passage and engage perforations in the film when the slide is moving downwardly and thereby move the film correspondingly and said pawls adapted to free the perforations of the film when the slide is moving upwardly to permit the film to remain stationary during such movement, an objective arranged within the casing and means operating to cover the objective when the film is being moved and to uncover the objective when the film is stationary, all as and for the purposes specified.

5. The combination, with a casing and the oscillating shutter or plate, of a support for said plate, a roller on said support, and a rotatable disk or roller having a cam-groove within which the roller on the support engages all for the purpose specified.

610,561. TANK-HEATER. LYNN PHELPS, Kaneville, Ill. Filed Mar. 30, 1898. Serial No. 675,772. (No model.)



Claim.—A heating device of the class described, having a heat-chamber and communicating inlet and outlet flues provided with caps, the cap of the inlet-flue having a collar removably fitted in the flue and provided with a seat, and a burner removably located within the heat-chamber and having an attached feed-tube and tank, said feed-tube extending through said seat in the collar of the cap which is fitted upon the inlet-flue, and held by said seat to maintain the burner and tank in their operative positions, substantially as specified.

610,562. FIRE-ESCAPE. CAYETANO S. RAMOS, New York, N. Y. Filed July 22, 1897. Serial No. 645,564. (No model.)

Claim.—1. In a fire-escape, the combination with a building, of two upright hollow posts, sliding sleeves mounted upon said posts, hooks upon said sleeves, a car provided with eyes to receive said hooks, devices for elevating said sleeves upon the posts and devices for controlling the descent thereof, substantially as described.

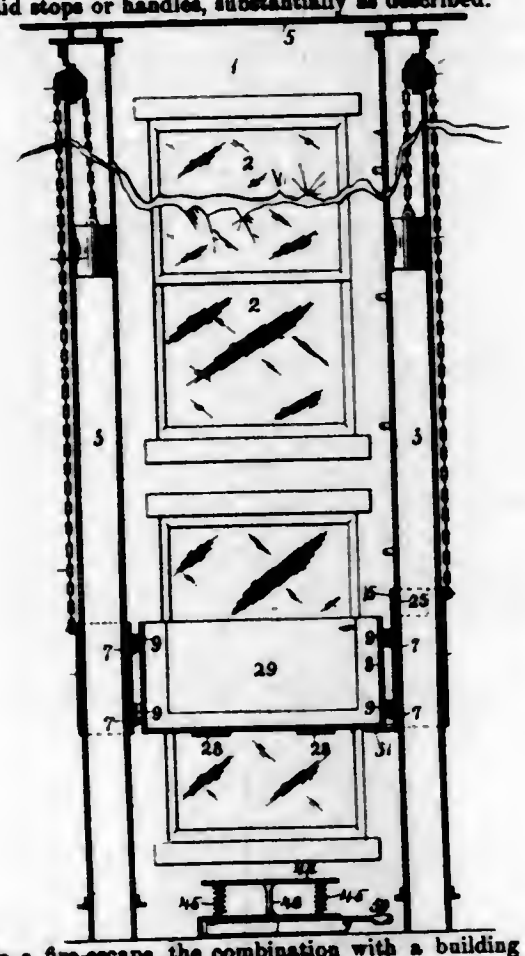
2. In a fire-escape, the combination with a building, of two upright hollow posts, sleeves mounted to slide upon said posts, a car carried by said sleeves, devices for elevating said sleeves, a brake carried by one of said sleeves and comprising a rigid member and a movable member, and devices for moving said members relatively, said movable member being provided on its inner face with a groove in which is situated a curved spring that is adapted to engage exterior grooves in said hollow posts, all the specified elements combined substantially as described.

3. In a fire-escape, the combination with a building, of two upright hollow posts, a car guided and movable upon said posts, counterbalance-weights for elevating said car, and handles upon said building situated adjacent said car, whereby an occupant of the car can raise his weight therefrom, substantially as described.

4. In a fire-escape, the combination with a building having window-openings, of a car supported in front of said windows and adapted to move vertically, means for elevating the car and causing the same to descend, a hinged door upon the side of said car adapted to swing outwardly and to rest upon the window, a spring for holding said door normally closed, and a catch for holding said door open against the action of the spring, substantially as described.

5. In a fire-escape, the combination with a building provided with a plurality of stops or handles, of an upright movable car pro-

vided with a plurality of spring-catches adapted to come in contact with the said stops or handles, substantially as described.



6. In a fire-escape, the combination with a building provided with a plurality of stops or handles, of an upright movable car provided with a plurality of spring-catches adapted to come in contact with the said stops or handles, and a catch-arm pivoted to the under side of the car whereby it can be swung inwardly, substantially as described.

7. In a fire-escape, a building provided with a plurality of projecting handles, and a car adapted to move vertically and adjacent to said handles, and provided with a catch-arm having at its outer end a spring finger that is adapted to engage the said handles, substantially as described.

8. In a fire-escape, the building, two upright hollow posts connected thereto, a car guided and movable upon said posts, counterbalance-weights within said posts, a chain connected to the car and weights over suitable pulleys, and a separate cable running over a pulley having geared connection to one of said weight-supporting pulleys and extending near the path of movement of the car, whereby the car may be supported by the counterbalance, or raised by manual power from within the car, operating on the pulley supporting the counterbalance-chain, all the specified elements combined, substantially as described.

9. In a fire-escape, the building having two hollow upright posts connected thereto, a car guided on said posts and connected by chains passing over suitable pulleys to counterbalance-weights within the posts, separate operating means connected to one of said pulleys and extending to the proximity of the car, whereby the car may be lifted by its occupants, and a brake connected to the car and engaging one of the posts, and in position to be applied by the occupant of the car, all the specified elements combined substantially as described.

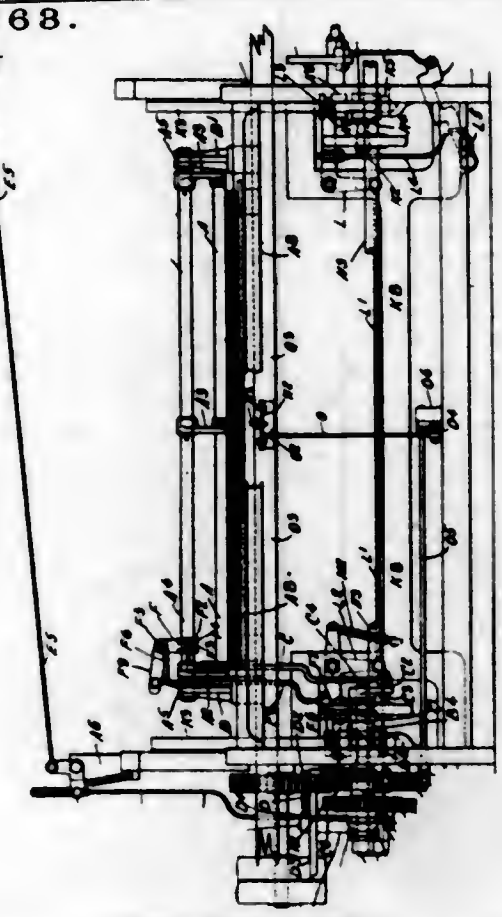
610,568. LOOM FOR WEAVING LOOPED-PILE FABRICS.

GEORGE H. SARGENT, RICHARD H. COUPE, and BENJAMIN WALKER, Bagley, England. Filed Sept. 3, 1896. Serial No. 604,695. (No model.)

Claim.—1. In a loom for weaving looped-pile fabrics, the combination with pile-forming mechanism and the weft stop-fork and its spindle, of means controlled by the pile-forming mechanism for holding the weft-fork out of action when a pick requires to be missed comprising a projection on the weft-fork spindle, a rod adapted to engage said projection when a pick is missed and hold the fork out of operation, and a vibrating shaft with which said rod has a jointed connection, adapted to be vibrated each time the comb of the pile-forming mechanism is operated.

2. In a loom for weaving looped-pile fabrics, the combination with the weft stop-fork, of the pile-forming mechanism, a device adapted to hold the weft-fork out of action when a pick requires to be missed, and connections between the said device and the pile-forming mechanism whereby the latter controls the said device, as described.

610,568.



610,564. GARMENT. JEREMIAH A. SCRIVEN, New York, N. Y.

Filed Jan. 5, 1898. Serial No. 665,669. (No model.)



Claim.—The improvement in garments comprising a garment having tubular members provided with one or more gores at the extremities thereof, spaces adjacent to the said gores and an elastic tubular member secured to the said gored extremity along the edges of the gores and covering the said gore or gores and filling the space or spaces adjacent to said gores.

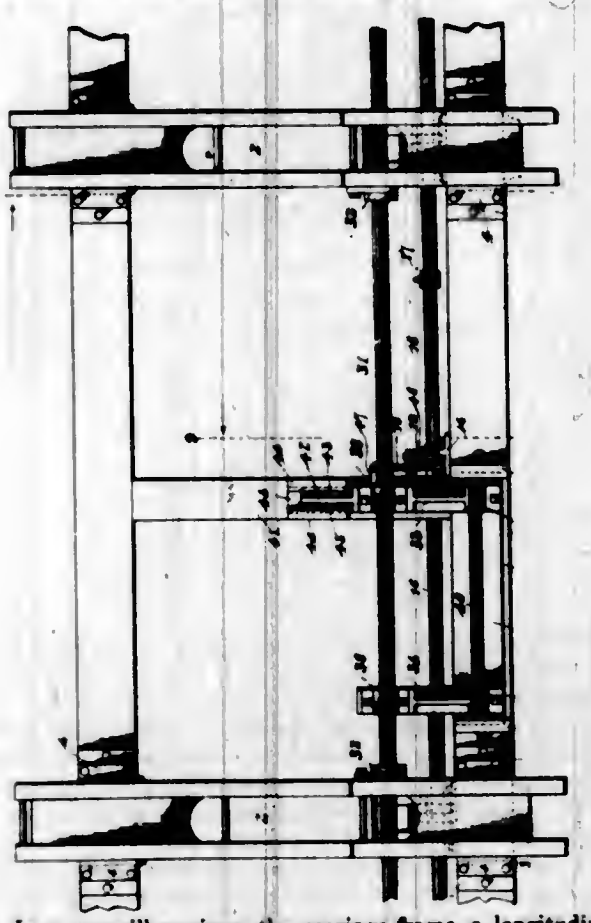
610,565. SAWMILL-CARRIAGE. NOAH SHAW, Eau Claire, Wis.

Filed Dec. 31, 1897. Serial No. 665,153. (No model.)

Claim.—1. In a sawmill-carriage, the carriage-frame, chairs mounted on the front and rear frame-bars and provided at their upper sides with wear-plates, a longitudinally-movable head-block arranged at its ends in said chairs and provided in its lower face with roll-recesses, metal wear-plates fitted in the roll-recesses at the base thereof, dust-guard strips arranged beyond the roll-recesses in the line of movement of the parts, and antifriction-rolls working in said recesses between the opposite wear-plates, substantially as set forth.

2. In a sawmill-carriage, the carriage-frame, a longitudinally-movable head-block arranged transversely above the carriage-frame and provided in its lower face above the frame-bars with roll-recesses disposed transversely of the head-block and open at their ends, a flat metal wear-plate fitting on the base of each recess and engaging with the walls thereof, said plate being adapted to slide laterally through the open ends of the recess, and antifriction-rolls arranged in the roll-recesses, substantially as set forth.

3. In a sawmill-carriage, the carriage-frame, a member supported transversely above the frame and movable independently thereof, an offset toggle mechanism disposed below the movable member, and respectively connected with said member and one of the frame side beams, and an offset-shaft extending longitudinally of the frame and supported by one of the side beams thereof in a plane below the toggle mechanism, said longitudinally-disposed shaft having an operating connection with the joint of said mechanism, substantially as set forth.



4. In a sawmill-carriage, the carriage-frame, a longitudinally-movable head-block supported transversely of the frame and movable independently thereof, a set of toggle-levers supported on one of the side beams of the carriage-frame and connected with the head-block, and an offset-shaft supported by the same side beam which supports the toggle-levers and having a connection with the joint of said toggle-levers, substantially as described.

5. In a sawmill-carriage, the carriage-frame, a longitudinally-movable head-block supported transversely of the frame and movable independently thereof, a set of toggle-levers supported on one of the side beams of the carriage-frame and connected with the head-block, said toggle-levers being arranged so as to aline and form a lock to prevent backward movement of the head-block, and an offset-shaft having a link connection with said toggle-levers to offset and onset the head-block, substantially as set forth.

6. In a sawmill-carriage, the carriage-frame, a longitudinally-movable head-block supported transversely of the frame, a hanger-bracket fitted to the forward side of the rear beam of the frame, the offset-shaft mounted in said bracket, a set of toggle-levers pivotally connected at their contiguous ends and respectively connected with the head-block at its under side and with said hanger-bracket above said offset-shaft, an adjusting-arm secured fast on the offset-shaft, and a link connection between said adjusting-arm and the pivotal joint of the toggle-levers, substantially as described.

7. In a sawmill-carriage, the carriage-frame, longitudinally-movable head-blocks arranged transversely of the frame and provided with bearings, the set-shaft journaled in said bearings, an auxiliary support for the set-shaft located between the head-blocks and comprising a pair of auxiliary supporting-brackets having a common sliding support arranged on the carriage-frame, and bearing-boxes for the set-shaft, and means for simultaneously reciprocating the head-blocks and the auxiliary support, substantially as set forth.

8. In a sawmill-carriage, the carriage-frame, longitudinally-movable head-blocks arranged transversely of the frame and provided with bearings, the set-shaft journaled in said bearings, an auxiliary support for the set-shaft located between the head-blocks and comprising a sliding base-plate mounted on top of the rear frame-beam, and a pair of auxiliary supporting-brackets extending forwardly from said base-plate and having bearings for the set lever-shaft and for the set-shaft, one of said supporting-brackets being provided beyond the bearing for the set-shaft with a slide-arm extension working in a stationary guide on the carriage-frame, and similar offset mechanism connected with the head-blocks and with the auxiliary support to provide for the simultaneous reciprocation of these parts, substantially as described.

9. In a sawmill-carriage, the carriage-frame, longitudinally-movable head-blocks having bearings for the set-shaft, and an auxiliary support for the set-shaft comprising duplicate bearings or brackets having a common sliding support on the carriage-frame, substantially as set forth.

10. In a sawmill-carriage, the carriage-frame, the movable head-blocks having bearings for the set-shaft, and an auxiliary support for the set-shaft arranged between the head-blocks and supported for movement on the upper face of the carriage-frame at the rear side, substantially as set forth.

11. In a sawmill-carriage, the carriage-frame, the movable head-blocks, and an auxiliary support for the set-shaft having a sliding engagement with the upper face of the rear carriage-beam, and one side of said support being extended forwardly and having a sliding engagement with the carriage-beam in advance of the set-shaft, substantially as set forth.

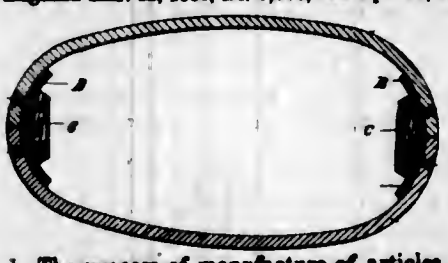
610,566. PYROXYLIN COMPOUND. JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, of New York, N. Y., a Corporation of New Jersey. Filed May 7, 1898. Serial No. 679,996. (No specimens.)

Claim.—1. A new composition of matter consisting of pyroxylin and a manganese salt of an acid of the volatile monatomic series of fatty acids, substantially as described.

2. A new composition of matter consisting of pyroxylin, a solvent of the same, and a manganese salt of an acid of the volatile monatomic series of fatty acids, substantially as described.

3. A new composition of matter containing pyroxylin and acetate of manganese.

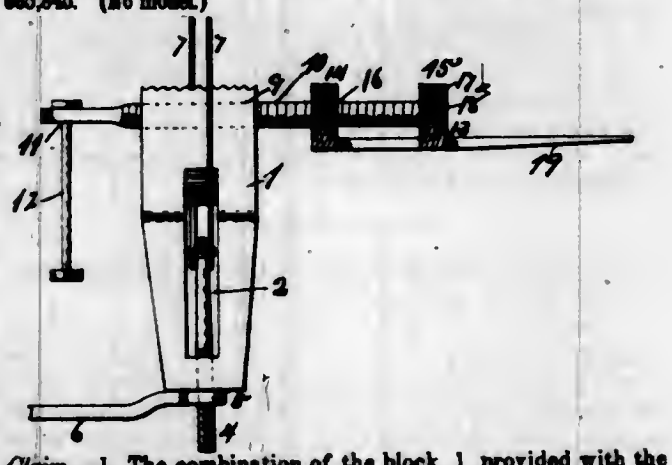
610,567. MANUFACTURE OF PULPWARE. HENRY THANE, London, England, assignor to Francis Swanny and William Cleaver, same place. Filed Apr. 28, 1897. Serial No. 634,252. (No model.) Patented in England Mar. 12, 1896, No. 5,606, and Apr. 30, 1896, No. 8,309.



Claim.—1. The process of manufacture of articles of pulp consisting of the impregnation of the pulp with boiled or linseed oil and rosin or equivalent gum; the treatment of the parts to be joined with a solution of rubber and sulfur in naphtha or other equivalent solvent, the application of a thin strip of india-rubber or gutta-percha or other vulcanizable gum or gums incorporated with thirty to fifty per cent. of sulfur to the parts to be joined the pressing of the said parts and the treatment of the articles under such pressure in a vulcanizing-furnace at a temperature of about 320° Fahrenheit to dry the linseed or boiled oil and to vulcanize the rubber forming the joint the said strip being free from treatment by a solvent and the vulcanizing treatment being performed under dry conditions to produce a hard-rubber joint.

2. An article of pulpware consisting of the separate pulpware parts and the joint between the parts consisting of the rubber strip vulcanized in place, and forming a hard-rubber joint substantially as described.

610,568. FLOORING AND CEILING SET COMBINED. SAMUEL A. THOMPSON, Rocky Comfort, Ark. Filed Jan. 6, 1898. Serial No. 665,845. (No model.)

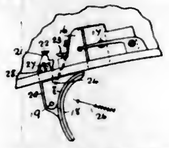


Claim.—1. The combination of the block, 1, provided with the slot, 2, perforation, 3, threaded perforation, 9, and corrugations, 8;

threaded rod, 4, working in slot, 2, and through perforation, 3; nut, 5, turning on the threaded part of bolt, 4, and against the upper end of block, 1, clutches, 7, pivoted to the lower end of rod, 4; threaded rod, 10, working through the threaded perforation, 9, lever, 12, working in perforation, 11, board-rest frame, 13, consisting of the perforated beam, 14, recessed beam, 15, and board-rest 19; substantially as shown and described, and for the purposes set forth.

2. A flooring and ceiling set combined, consisting of a block, its lower end corrugated and provided with a longitudinal slot, in which works a threaded bolt, having pivoted to its lower end clutches, and operated by a lever-nut, working against the upper end of the block; a threaded bolt working through a threaded perforation, and operated by a lever; a board-rest, secured to two cross-beams, both working on the last-mentioned bolt; substantially as shown and described, and for the purposes set forth.

610,569. SINGLE-TRIGGER DOUBLE-BARREL GUN. JOSEPH D. THOMPSON and WALTER THOMPSON, Birmingham, England, assignors to William Wellington Greener, same place. Filed Jan. 23, 1896. Serial No. 663,338. (No model.)



Claim.—1. The combination in a lock of a gun having double barrels, of the trigger-pull 18, pivoted upon the depending pivoted trigger-blade 16, such trigger-pull having the arm 20 and point 21, to selectively raise either of the sears of the lock, substantially as set forth and shown.

2. The combination of the movable cam-piece 28, upon the pivoted trigger-pull arm 20, with the fixed cam-piece 27, as set forth and shown and for the purposes specified.

610,570. HOE OR MATTOCK. WILLIAM WATKINS, Reedsville, W. Va. Filed July 21, 1897. Serial No. 645,427. (No model.)



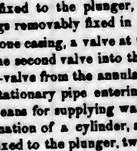
Claim.—1. In a device of the class described, the combination of a handle, a blade or tool provided with an eye embracing the handle and provided at opposite sides with perforations located adjacent to one of the faces or edges of the handle, a bolt passing through the perforations of the eye and adapted to cause the sides thereof to clamp the handle, and a fastening device mounted on the handle and forming an eye through which the said bolt passes, substantially as described.

2. A hoe comprising a handle, a pair of blades constructed of a continuous strip of metal doubled between its ends to form an eye to receive the handle, and having quarter turns or bends at the lower face of the handle to arrange the blades transversely thereof, said blades being separated by a slight intervening space, and means for securing the eye to the handle, substantially as described.

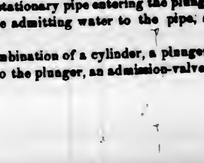
3. A hoe comprising a handle, a pair of blades constructed of a continuous strip of metal doubled between its ends to form an eye to receive the handle, and having quarter turns or bends at the lower face thereof, said blades being slightly separated, a bolt passing through the sides of the eye and arranged adjacent to the lower face of the handle, and a fastening device mounted on the handle at right angles to the bolt and forming an eye for the reception of the same, substantially as described.

610,571. JOURNAL-BOX. VICTOR WICKLUM, Scotia, Cal. Filed July 28, 1897. Serial No. 646,216. (No model.)

Claim.—In a journal-box, a chamber open on one side and having openings in the parallel walls thereof for the axle, a plate mounted in said chamber having an opening adapted to partially encompass the axle provided with upwardly-directed extensions thereon, and inwardly-directed projections on said extensions, an auxiliary plate presenting downwardly a curved surface adapted to partially encompass said axle, and having an extension thereon, and shoulders thereon on a substantially parallel plane with the above-mentioned projections, springs seated between said shoulders and said projections whereby both of said plates are held constantly in intimate contact with said axle, and a cap rigidly attached to the extensions on the first-mentioned plate whereby the clogging of said spring is prevented, said cap being provided with an opening to admit of a vertical movement of said auxiliary plate, substantially as described.



610,572. DUMPING END-GATE FOR WAGONS. WILLIAM S. WITTER, Eldott, Ill. Filed Jan. 17, 1898. Serial No. 666,894. (No model.)



Claim.—1. In an end-gate, for wagon-boxes, in combination, a wagon-box, an end closure therefor, having a hinged connection with the box and an independently-hinged portion, a cleat inserted within the ways provided for the ordinary end-gate and fixed with relation to the wagon-box, a hook on the closure, a link connection between the box and closure for engaging the hook and holding the closure in contact with the cleat, substantially as and for the purpose specified.

2. In an end-gate for wagon-boxes, in combination, a wagon-box, an end closure therefor having a hinged connection with the box and an independently-hinged portion, a cleat fixed with relation to the wagon-box, a screw-threaded rod extending through the cleat and having an end bent to embrace one side of the wagon-box and an eye intermediate its ends, a hook on the closure, a two-part, jointed rod extending between the eye and the hook on the closure for engaging the jointed rod, substantially as and for the purpose specified.

3. In an end-gate for wagon-boxes, in combination, a wagon-box, an end closure therefor having a hinged connection with the box, a vertical cleat fixed with relation to the box, a second vertical cleat affixed to the first-mentioned cleat, a jointed-rod connection between the wagon-box and the closure the rods of which connection are adapted to fold together when the closure is elevated and a hook on the closure for engaging the rods, substantially as and for the purpose specified.

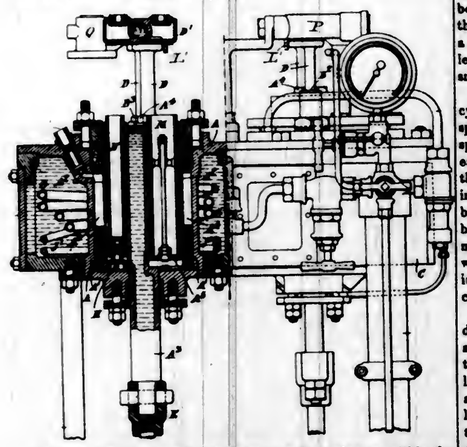
610,573. GAS-COMPRESSOR. ROGER WRIGHT, Newcastle-upon-Tyne, England. Filed Dec. 24, 1897. Serial No. 663,281. (No model.)

Claim.—1. The combination of a cylinder, a plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, two casings removably fixed in the passages, an admission-valve at the end of one casing, a valve at the end of the other casing, an opening from the second valve into the annular space around the plunger and an escape-valve from the annular space.

2. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, two casings removably fixed in the passages, an admission-valve at the end of one casing, a valve at the end of the other casing, an opening from the second valve into the annular space around the plunger, an escape-valve from the annular space, a stuffing-box fixed to the plunger, a stationary pipe entering the plunger through the stuffing-box and means for supplying water to the pipe.

3. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, two casings removably fixed in the passages, an admission-valve at the end of one casing, a valve at the end of the other casing, an opening from the second valve into the annular space around the plunger, an escape-valve from the annular space, a stuffing-box fixed to the plunger, a stationary pipe entering the plunger through the stuffing-box, a valve admitting water to the pipe, and an escape-valve from the pipe.

4. The combination of a cylinder, a plunger within the cylinder, a piston fixed to the plunger, an admission-valve to the space beneath the piston, an escape-valve from it into the annular space around the plunger, two smaller cylinders, a plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, and escape-valves from these spaces.



5. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, an admission-valve to the space beneath the piston, an escape-valve from it into the annular space around the plunger, two smaller cylinders, a hollow plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, escape-valves from these spaces, a stuffing-box fixed to each plunger, stationary pipes entering the plungers through the stuffing-boxes, and means for supplying water to the pipes.

6. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, an admission-valve to the space beneath the piston, an escape-valve from it into the annular space around the plunger, two smaller cylinders, a hollow plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, escape-valves from these spaces, a stuffing-box fixed to each plunger, a water-chamber, pipes fixed to the chamber and entering the plungers through the stuffing-boxes, a valve admitting water to the chamber, and an escape-valve from the chamber.

7. The combination of a cylinder, a plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, an admission-valve at the end of one passage, a valve at the end of the other passage, an opening from the second valve into the annular space around the plunger, two smaller cylinders, a plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, and escape-valves from these spaces.

8. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, an admission-valve at the end of one passage, a valve at the end of the other passage, an opening from the second valve into the annular space around the plunger, two smaller cylinders, a hollow plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, escape-valves from these spaces, a stuffing-box fixed to each plunger, stationary pipes entering the plungers through the stuffing-boxes, and means for supplying water to the pipes.

9. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, an admission-valve at the end of one passage, a valve at the end of the other passage, an opening from the second valve into the annular space around the plunger, two smaller cylinders, a hollow plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, escape-valves from these spaces, a stuffing-box fixed to each plunger, a water-chamber, pipes fixed to the chamber and entering the plungers through the stuffing-boxes, a valve admitting water to the chamber, and an escape-valve from the chamber.

10. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, an admission-valve to the space beneath the piston, an escape-valve from it into the annular space around the plunger, two smaller cylinders, a hollow plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, escape-valves from these spaces, a stuffing-box fixed to each plunger, stationary pipes entering the plungers through the stuffing-boxes, means for supplying water to the pipes, a water-jacket around the cylinders, and pipes in the water-jacket leading respectively from the exit from the larger cylinder to the smaller cylinders and from the exits from the smaller cylinders.

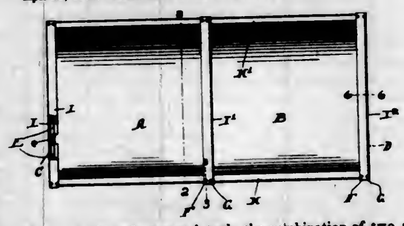
11. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, an admission-valve to the space beneath the piston, an escape-valve from it into the annular space around the plunger, two smaller cylinders, a hollow plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, escape-valves from these spaces, a stuffing-box fixed to each plunger, a water-chamber, pipes fixed to the chamber and entering the plungers through the stuffing-boxes, a valve admitting water to the chamber, an escape-valve from the chamber, a water-jacket around the cylinders, and pipes in the water-jacket leading respectively from the exit from the larger cylinder to the smaller cylinders, and from the exits from the smaller cylinders.

12. The combination of a cylinder, a plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, an admission-valve at the end of one passage, a valve at the end of the other passage, an opening from the second valve into the annular space around the plunger, two smaller cylinders, a plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, escape-valves from these spaces, a water-jacket around the cylinders, and pipes in the water-jacket leading respectively from the exit from the larger cylinder to the smaller cylinders, and from the exits from the smaller cylinders.

13. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, an admission-valve at the end of one passage, a valve at the end of the other passage, an opening from the second valve into the annular space around the plunger, two smaller cylinders, a hollow plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger-rods in the smaller cylinders, escape-valves from these spaces, a stuffing-box fixed to each plunger, stationary pipes entering the plungers through the stuffing-boxes, means for supplying water to the pipes, a water-jacket around the cylinders, and pipes in the water-jacket leading respectively from the exit from the larger cylinder to the smaller cylinders, and from the exits from the smaller cylinders.

14. The combination of a cylinder, a hollow plunger within the cylinder, a piston fixed to the plunger, two passages through the plunger, an admission-valve at the end of one passage, a valve at the end of the other passage, an opening from the second valve into the annular space around the plunger, two smaller cylinders, a hollow plunger in each, admission-valves from the annular space around the plunger of the larger cylinder into the annular spaces around the plunger rods in the smaller cylinders, escape-valves from these spaces, a stuffing-box fixed to each plunger, a water-chamber, pipes fixed to the chamber and entering the plungers through the stuffing-boxes, a valve admitting water to the chamber, an escape-valve from the chamber, a water-jacket around the cylinders, and pipes in the water-jacket leading respectively from the exit from the larger cylinder to the smaller cylinders, and from the exits from the smaller cylinders.

610,574. SHEET-METAL TANK. OSCAR J. ZIEGLER, Freeport, Ill., assignor to the Stover Manufacturing Company, same place. Filed Apr. 29, 1897. Serial No. 634,380. (No model.)



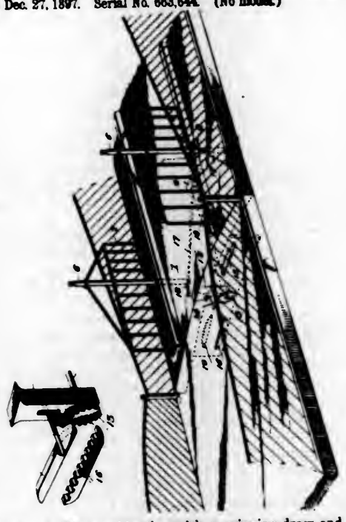
Claim.—1. In a sheet-metal tank, the combination of two sections of comparatively thin and flexible sheet metal having their ends contiguous to each other, an inner section of comparatively thick stiff metal overlapping the contiguous ends of the thin sections and two tie-rods encircling the ends of said thin sections, respectively,

and adapted to bind them independently against said inner thick section, thereby forming two independent and independently-separable joints; substantially as described.

2. In a sheet-metal tank, a joint made up of a stiff hoop, E, arc-shaped in form and having outturned ends each provided with a pair of notches, flexible metal sheets, A, B, overlapping the hoop, and tie-rods, F, upon the outside of the sheets and resting in the notches, said tie-rods being provided with means for tightening them upon the tank and jamming the metal sheets directly against the hoop; substantially as described.

3. A joint for metal tanks made up of a stiff arc-shaped hoop, E, corrugated to form an outwardly-extending rib, *e*, and having outturned ends notched at, e^1, e^2, flexible metal sheets overlapping said hoop from the opposite edges and tie-rods resting against the outside of the sheets and in the notches and provided with means for clamping them tightly against the same to crowd the sheets firmly and directly against the hoop; substantially as described.

610,575. DRAWBRIDGE. EARL C. AKERS, Port Huron, Mich.
Filed Dec. 27, 1897. Serial No. 663,644. (No model.)



Claim.—1. The combination with a swinging draw and the approaches thereto, gates journaled upon said approaches to swing across the same, a beveled wheel journaled to each approach, a longitudinal shaft journaled to the approach and provided at one end with a beveled pinion to engage the beveled wheel, and at the other end with a rack-wheel, connections between the beveled wheel and the posts of the gate, a locking-dog pivoted to engage the rack-wheel, a combined trip and rack-bar secured to the draw and adapted first to release the locking-dog, engage the rack-wheel above its axis and rotate it, a second rack-bar secured to the draw and adapted to engage the rack-wheel below its axis and rotate it, and a trip arranged above the last-named rack-bar and adapted to engage the catch and elevate it before the said last-named rack-bar engages the rack-wheel, substantially as described.

2. In combination, the swinging draw and the approaches thereto, swinging gates journaled upon said approaches and adapted to be swung across the same, a rack-wheel journaled in said approaches, intermediate mechanism connecting said rack-wheel with the gates, a pivoted catch to engage said rack-wheel and lock it against rotation, a combined trip and rack-bar secured to the draw and adapted first to release the locking-dog, engage the rack-wheel above its axis and rotate it, a second rack-bar secured to the draw and adapted to engage the rack-wheel below its axis and rotate it, and a trip arranged above the last-named rack-bar and adapted to engage the catch and elevate it before the said last-named rack-bar engages the rack-wheel, substantially as set forth.

610,576. PULLEY AND DEVICE FOR SECURING SAME TO SHAFTS. ZENAS AUGER, Middleborough, Mass. Filed Sept. 27, 1897. Serial No. 653,084. (No model.)

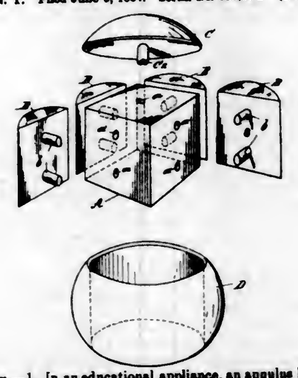
Claim.—1. The combination with a shaft having a keyway therein and a pulley having grooves in its hub which correspond in position with the keyway in the shaft, of keys inserted in opposite directions in said keyway and grooves, and set-bolts in the outer ends of said keys adapted to spring the keys outward at their outer ends whereby to lock the pulley securely to the shaft.



2. The combination with a shaft having a keyway therein, and a hub having grooves in its bore opposite the keyway, of keys inserted in said keyway and grooves, from opposite ends of the pulley inward, set-bolts in the keys and the ends of the hub for securing the pulley in position on the shaft.

3. The combination with a shaft having a keyway and a pulley having grooves in its hub, of keys adapted to enter the keyway and grooves, said keys having enlarged outer ends whereby to afford means for readily driving the keys out of the keyway and support for set-bolts, and set-bolts in said enlarged ends.

610,577. EDUCATIONAL APPLIANCE. ANNIE W. BALDWIN, New York, N. Y. Filed June 9, 1897. Serial No. 639,964. (No model.)



Claim.—1. In an educational appliance, an annulus having a cylindrical aperture extending therethrough from side to side, and segments of a sphere corresponding with the said cylindrical aperture and adapted in communication with said annulus to form a sphere, said parts being adapted to be assembled and disconnected as and for the purpose set forth.

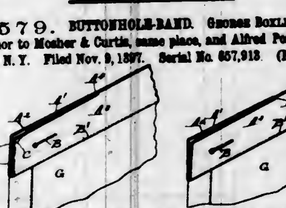
2. In an educational appliance, the combination with a cylinder, of two spherical segments, the bases of which are equal to, and adapted to be connected with the ends of the cylinder, and an annulus provided with a cylindrical aperture corresponding to, and adapted to receive said cylinder, and provided with a spherical outer surface, said parts constituting when united a sphere, said parts being adapted to be assembled and disconnected as and for the purpose set forth.

3. In an educational appliance, the combination with a cube or other prism, of segments of a cylinder which are adapted to be connected with the sides thereof, so as to form a cylinder, spherical segments which are adapted to be connected with the ends of the cylinder thus formed, and a ring or annulus into which said cylinder may be inserted, said ring or annulus being provided with a spherical outer surface, substantially as shown and described.

4. In an educational appliance, the combination with a cylinder composed of separate parts, of spherical segments adapted to be connected with the ends thereof, and a ring or annulus provided with a central aperture and adapted to receive said cylinder, the outer surface of said ring or annulus being spherical in form, substantially as described.

610,578. COIN-OPERATED LOCK MECHANISM. FRANZ X. BODNAR and SAMUEL L. KREPPEL, Vienna, Austria-Hungary. Filed Feb. 20, 1897. Serial No. 624,464. (No model.) Patented in England Aug. 23, 1896, No. 17,453; in Switzerland Sept. 23, 1896, No. 13,253; in France Nov. 18, 1896, No. 258,040; in Germany Apr. 21, 1897, No. 93,906, and in Austria May 20, 1897, No. 47/1,909.

Claim.—1. A coin-operated lock mechanism comprising a swinging bolt, a lock-hook adapted to be engaged thereby, a movable coin-carrier having a recess to receive the coin, a projection on the bolt adapted to be engaged by the coin and be moved thereby to unlock the bolt, and means for holding the swinging bolt in its retracted position, substantially as described



2. A coin-operated lock mechanism comprising a spring-pressed bolt, a lock-hook adapted to be engaged thereby, a movable coin-carrier having a recess to receive the coin, said spring-pressed bolt having a portion extending into the path of the coin whereby the movement of the coin and coin-slide will move the bolt, and a retaining-lever adapted to be operated by the coin-carrier to engage the bolt and hold it retracted, the said locking-hook in its final opening movement acting to release the retaining device from the locking-bolt substantially as described.

3. A coin-operated lock mechanism comprising the spring-pressed swinging bolt, the lock-hook adapted to be engaged thereby, the reciprocating coin-carrier having a recess to receive the coin, said swinging bolt having a portion extending into the path of the coin, and the spring-pressed oscillating retaining-lever having one end adapted to be operated by the coin-carrier and the other end adapted when so operated to engage the swinging bolt, substantially as described.

4. In combination the spring-pressed locking-bolt, the lock-hook, the movable coin-carrier adapted to receive a coin and carry it into contact with said locking-bolt to move the same, a projection carried by the locking-bolt, and a retaining-lever operated by the movement of the coin-carrier to hold the locking-bolt in its moved position, said retaining-lever having a notch adapted to engage the projection and hold the bolt against movement when no coin or an improper coin has been placed in the carrier, substantially as described.

5. In combination the swinging bolt under spring tension, the lock-hook, the reciprocating coin-carrier having a recess for the coin, the projection from the bolt extending into the path of the coin, the spring-pressed two-armed retaining-lever having one arm adapted to be moved by the coin-slide, the other arm of said lever having its end adapted to abut against a projection on the swinging bolt to hold it unlocked when the proper coin has been placed in the carrier, and having a V-shaped notch adapted to embrace said projection to hold the swinging bolt against movement when the carrier is improperly operated, substantially as described.

6. In combination with a movable receptacle, a lock mechanism comprising the reciprocating coin-carrier having slots, a spring-arm 30, a swinging arm carrying the bolt, the projection on the said swinging arm, the retaining-lever and the pin on the swinging arm to be engaged thereby, said retaining-lever having a notch to receive the pin in one position of the parts, substantially as described.

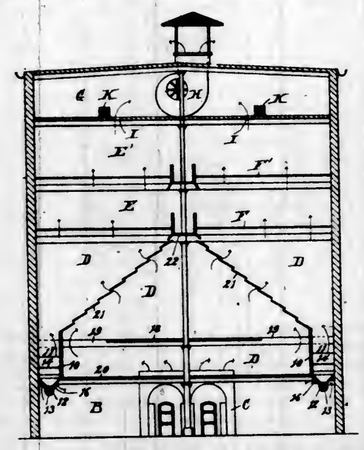
7. In combination with a portfolio, a casing carried by one cover, a locking-hook carried by the other and adapted to penetrate the casing, a spring-pressed locking-bolt adapted to engage the hook, a reciprocating coin-carrier having a recess for a coin, said locking-hook having a portion extending into the path of the coin, and a spring adapted to bear against the coin to hold it in the recess and acting also to drop behind the coin on the movement of the carrier to prevent its extraction, substantially as described.

610,579. BUTTONHOLE-BAND. GEORGE BOXLEY, Troy, N. Y., assignor to Mosher & Curtis, same place, and Alfred Poindexter, New York, N. Y. Filed Nov. 9, 1897. Serial No. 657,913. (No model.)

Claim.—1. The buttonhole-band having a plurality of plies, a fly-opening between said plies at one end thereof, and an inner facing for the said opening consisting of a folded piece integral with the plies and restraint between them, substantially as described.

2. A buttonhole-band for garments comprising inner and outer plies of fabric separated at one end to form a fly-opening, one of the outer plies having an integral restraint folded facing secured ...ong one of its edges to the outer and inner walls of the fly-opening, and having the end of one of said inner plies inclosed in the fold which connects said integral ply and facing, substantially as described.

610,580. MALT-KILN. JOHN F. DORNFELD, Chicago, Ill. Filed Apr. 24, 1897. Serial No. 633,615. (No model.)



Claim.—1. In a malt-kiln, the combination with a drying-floor, of one or more hopper-bins for malt below said drying-floor said hopper-bins having an inclined wall provided with an aperture therein having a valve disposed at an inclination and so supported as to close normally but to open for ventilating purposes only, under the weight of malt on and moving across it.

2. In a malt-kiln, a malt-receiving hopper-bin, having an inclined wall provided with a valve-aperture therein, and a valve hinged in said aperture and provided with a counterpoise adapted normally to close the valve but to permit it to open limitedly for ventilating purposes only, under the weight of malt thereon.

3. In a malt-kiln, the combination with the kiln-building and a cold-air and furnace room in its lower portion, of a hot-air room over the furnace-room, a deflecting-hood in the hot-air room directly above the furnace-flue to said hot-air room, and passages for air upwardly past the hood in the hot-air room.

4. The combination with a malt-kiln building provided with a dumping drying-floor, of malt-receiving hopper-bins below the drying-floor, and an inclined hopper-like open-slatted ventilating-wall beneath the drying-floor and leading downwardly to the hopper-bins.

5. The combination with a malt-kiln building having a furnace in its lower portion and a perforated drying-floor in a room above, of a ventilating inclined slat-wall below the drying-floor disposed and adapted for ventilating malt and conveying it from the drying-floor downwardly and laterally by gravity.

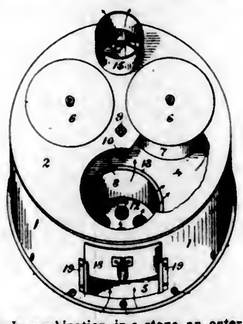
6. In a malt-kiln, the combination with a drying and malt-dumping floor, of a series of hopper-bins below the drying-floor adapted to receive and discharge malt into a conveyer, and a ventilating inclined slat-wall so constructed and disposed as with the hoppers to receive the malt dumped from the entire drying-floor above, the ventilating inclined slat-wall being adapted by gravity to convey the malt falling from the drying-floor on it, to the hopper-bins.

7. In a malt-kiln, the combination with a perforated and dumping floor for drying and discharging malt, of hopper-bins below into which the malt discharged from the drying-floor above is received, valves in the hopper-bins closed yieldingly and adapted to open automatically under the weight of malt discharged thereon from the drying and dumping floor and thereby to permit the passage of air therethrough while the malt is thereon to the drying-floor above.

8. In a malt-kiln, the combination with the kiln-building of a hot-air room arranged to receive hot air coming upwardly into it, of a deflecting-hood in the hot-air room above the hot-air flue or flues entering said room, and an inclined malt gathering and dicharging wall or floor over the deflecting-hood, provided with ventilating-apertures adapted to permit the passage of air upwardly through said floor.

9. In a malt-kiln, the combination with a perforated and dumping drying-floor, a hot-air room below the drying-floor provided with means for introducing hot air into the hot-air room at its lower part, and an inclined malt gathering and discharging wall or floor in the hot-air room, at a distance below the perforated drying-floor and above the hot-air inlet disposed and adapted for receiving and gathering finished malt thereon from the malting-floor, and provided with ventilating-apertures for the passage of hot air therethrough upwardly.

610,581. STOVE. ROBERT FLETCHER, Toronto, Canada, assignor to Amos Harrington, same place. Filed Mar. 3, 1898. Serial No. 672,363. (No model.)



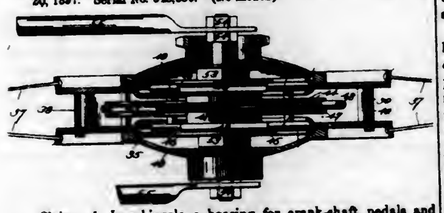
Claim.—1. In combination, in a stove, an outer casing having openings in the top thereof, fire-pots arranged below said openings, draft-passages communicating with said fire-pots, and tops adapted to cover said openings and close the communications between said pots and draft-passages, substantially as described.

2. In combination, the outer casing having openings in the top thereof, a deck arranged below said opening forming a draft-passage between the same and the top of the casing, fire-pots supported by said deck opening into said draft-passages and tops fitted to said openings in the stove-top having depending flanges adapted to surround the openings in the fire-pot and close the communication between the same and said draft-passage, substantially as described.

3. In combination, in a stove an outer casing, a deck located below the top thereof, fire-pots supported thereby and a vertical flue extending through the stove communicating intermediately thereof with the space between the stove-top and said deck, and an inlet below said space opposite to said flue and means for closing the communication between the said passage and the part of the flue extending above or below said passage, substantially as described.

4. In combination, the casing, the upper and lower decks, the fire-pots supported by the upper deck having perforations therein, said casing having an opening in the front thereof communicating with the space between the bottom of said pots and the lower deck, a vertical flue extending through the rear of the stove, the space between the upper deck and the top of the stove communicating with the intermediate part of said flue, and a cap adapted to close said flue below the upper space to cause a downdraft in said flue, or to close said flue below the passage to cause an updraft therein, substantially as described.

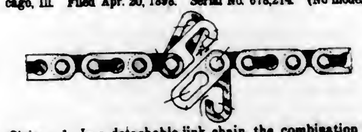
610,582. BICYCLE. JOHN F. FOSTER, Marceline, Mo. Filed Aug. 20, 1897. Serial No. 648,859. (No model.)



Claim.—1. In a bicycle, a bearing for crank-shaft, pedals and wheels, a shaft or pin, cones or sleeves mounted thereon and provided with grooved bearing-surfaces, male rollers traveling thereon and provided with circular shoulders, grooved rollers resting upon said shoulders and separating the first-named rollers, a ring encircling and fitting in the grooves of the said last-named series of rollers, companion series of rollers mounted upon the same shafts and at opposite sides of the first series and traveling upon said cones, plates provided with circular grooved ways embracing the outer sides of said companion series of rollers, and nuts to retain the cones in position, substantially as described.

2. In a bicycle, a bearing for crank-shaft, pedals and wheels, a shaft or pin, cones or sleeves mounted thereon and provided with grooved bearing-surfaces, male rollers traveling thereon and provided with circular shoulders, grooved rollers resting upon said shoulders and separating the first-named rollers, a ring encircling and fitting in the grooves of the last-named series of rollers, companion series of rollers mounted upon the same shafts and at opposite sides of the first series and traveling upon said cones, plates provided with circular grooved ways embracing the outer sides of said companion series of rollers, nuts to retain the cones in position, and rings secured to said plates and bridging the spaces between them and said cones, and a circular casing inclosing said plates, whereby dust is excluded.

610,588. DETACHABLE-LINK CHAIN. GEORGE W. FOX, Chicago, Ill. Filed Apr. 20, 1898. Serial No. 678,214. (No model.)



Claim.—1. In a detachable-link chain, the combination with a solid link having suitable knuckles at each end, of links consisting of two sets of independently-movable twin side plates, and a pivotal pin used in conjunction with each set of twin plates, to which corresponding ends of said twin plates are confined, and which are journaled in the knuckles of the solid links so that the free end can extend therefrom; one of the twin plates of a set having a longitudinal elongated opening in one end through which the free end of the pin of the other set of plates can be removably passed, and the other of the same set of twin plates locking and preventing the withdrawal of said pin from said elongated opening.

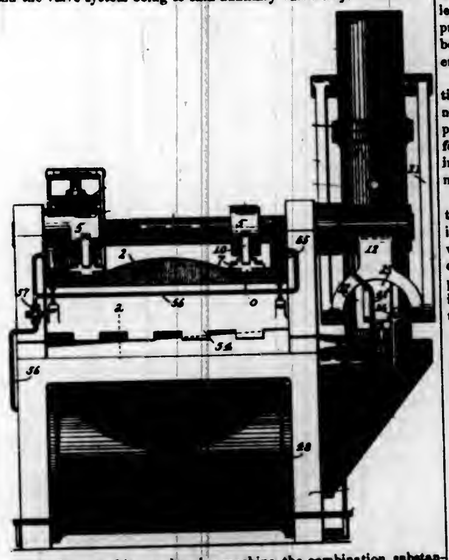
2. In a detachable-link chain, the combination with a solid link having a suitable knuckle at each end, of links consisting of two sets of independently-movable twin side plates, and pivotal pins having one end permanently secured to one end of the outermost of each set of twin plates and which are journaled in the contiguous knuckle of the solid link so that the unattached end thereof can extend beyond the same; one of the twin plates of each set having a longitudinally-elongated opening in the end opposite the pivotal pin the centrally-located terminus of which is wider than the remainder thereof, through which the free end of the pin of the other set can be removably passed, and the other of said set of twin plates adapted to lock and prevent the withdrawal of said pin from said elongated opening.

3. In a detachable-link chain, the combination with a solid link having a suitable knuckle at each end, of links consisting of two sets of independently-movable and separable twin side plates, and pivotal pins having one end permanently secured to one end of the outermost of each set of twin plates, and which are journaled in the contiguous knuckle of a solid link so that the unattached end thereof, which is provided with a neck of reduced diameter, can extend beyond the same; one of the twin plates of a set having a longitudinally-elongated opening in the end portion opposite the pivotal pin, the centrally-located terminus of which is wider than the remainder thereof, and is adapted to receive the initial insertion of the unattached end of the pin of the other set of twin plates, and the other plate of said set of twin plates adapted to lock and prevent the independent withdrawal of said pin from said elongated opening, as set forth.

4. In a detachable-link chain, the combination with a solid link having a suitable knuckle at each end, of links consisting of two sets of independently-movable and separable twin side plates, and pivotal pins having one end permanently secured to one end of the outermost of each set of twin plates, and which are journaled in the contiguous knuckle of a solid link so that the unattached end thereof, which is provided with a neck of reduced diameter, can extend beyond the same; one of the twin plates of each set having a longitudinally-elongated opening in the end portion opposite the pivotal pin the centrally-located terminus of which is wider than the remainder thereof, and receives the initial thrust of the unattached end of the other set when inserted therein, and the other plate of said pin having an elongated opening therein the innermost terminus of which is provided with a lateral offset or entrance thereto, which, together with said elongated opening of which it forms a part, is of a width corresponding to the diameter of the neck of the pins, as and for the purpose set forth.

610,584. PUNCHING AND SHEARING MACHINE. GEORGE GUILD and CHARLES A. BERTSCH, Cambridge City, Ind., assignors to Bertsch & Co., same place. Filed Sept. 20, 1897. Serial No. 652,315. (No model.)

Claim.—1. In a punching or shearing machine, the combination, substantially as set forth, of an oscillating power-arm, a power-cylinder having its piston connected therewith, a fluid-moved main valve controlling the flow of fluid to and from said power-cylinder, an auxiliary valve controlling the movements of said main valve, tappet connections between said auxiliary valve and said power-arm, a fluid-supply pipe open to said main valve, a fluid-supply passage to said auxiliary valve, a stop-valve in said last-mentioned passage, a treadle connected with said stop-valve and serving in opening the stop-valve, and a spring serving to hold the stop-valve normally in closed condition, the connection between said treadle and the valve system being to said stop-valve only, and the connection between said power-arm and the valve system being to said auxiliary valve only.



2. In a punching or shearing machine, the combination, substantially as set forth, of an oscillating power-arm, a power-cylinder having its piston connected therewith, a fluid-actuated main valve controlling the flow of fluid to and from said power-cylinder, an auxiliary valve controlling the movements of said main valve, a chest for said auxiliary valve, a cylinder formed in the wall of said chest and having a fluid-outlet port leading into said chest and having a fluid-inlet, a piston fitting within said cylinder and normally covering said outlet-port, a treadle connected with said piston, and a spring holding said piston in normal position.

3. In a punching or shearing machine, the combination, substantially as set forth, of a rock-shaft journaled in the top of the housing of the machine, a power-arm secured to the outer end of said rock-shaft outside the housing and having its outer end bifurcated, a bracket secured against the side of the housing below the bifurcated end of said power-arm, a vertical cylinder resting upon said bracket and having its body free from the housing and straddled by the bifurcated end of said power-arm, a piston-rod projecting upwardly from said cylinder, a cross-head on the upper end of said piston-rod, and links extending downwardly from said cross-head to the members of the bifurcated end of said power-arm.

4. In a punching or shearing machine, the combination, substantially as set forth, of a vertical power-cylinder, an oscillating power-arm having a bifurcated end straddling said cylinder, a top cylinder-head bored to fit the piston-rod of said power-cylinder, a pair of guides projecting rigidly upward from said cylinder-head and having a bore fitting said piston-rod, a cross-head at the top of said piston-rod and extending sidewise between said guides, and links connecting said cross-head with the bifurcation members of said power-arm.

5. In a punching or shearing machine, the combination, substantially as set forth, of a vertically-sliding gate, a rock-shaft mounted in the housings of the machine over the gate, arms fast on said rock-shaft and having downwardly-open concave knuckle-seats with their axes parallel with the axis of said rock-shaft and having apertures leading upwardly from said knuckle-seats, eyebolts in said knuckle-seats with their shanks secured in said apertures, and links having their lower ends pivoted to said gate and having their upper ends pivoted to said eyebolts and having their top surfaces engaging said knuckle-seats.

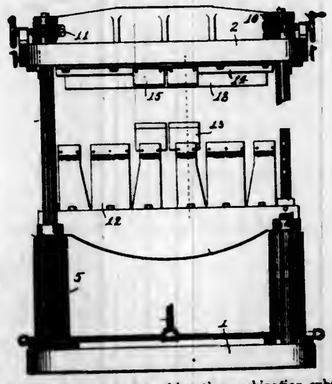
6. In a punching or shearing machine, the combination, substantially as set forth, of a vertically-sliding gate having transverse dovetail recesses in its upper edge, a rock-shaft mounted in the housings of the machine above the gate, arms fast on the rock-shaft, pivot-blocks bolted to the upper edge of said gate and having dovetail projections sliding in said dovetail recesses, and links connecting said pivot-blocks with said arms.

7. In a machine having a reciprocating part whose strokes in one direction are idle strokes, the combination, substantially as set forth, with such reciprocating part, of an air-compressor, mechanical connections between said reciprocating part and the piston of the air-compressor whereby said piston is given its compressing strokes by and during the idle strokes of said reciprocating part, and a conduit leading from said air-compressor and adapted to convey the compressed air to a point of utilization, whereby said reciprocating part becomes cushioned during its idle strokes and whereby available energy results from the idle strokes of said reciprocating part.

8. In a punching or shearing machine, the combination, substantially as set forth, of a vertically-sliding gate, an air-compressor, connections between said air-compressor and said gate to cause the compression of air during the idle or up stroke of said gate, a reservoir for the compressed air, a vertically-moving holddown-bar, an air-cylinder arranged to give movement to said holddown-bar, a pipe connecting said air-engine with said reservoir, and a valve in said pipe.

9. In a punching or shearing machine, the combination, substantially as set forth, of a vertically-sliding gate, a power-cylinder having its piston mechanically connected with said gate, valves and valve-gearing for controlling the operation of the power-cylinder, an exhaust-port opening near the beginning of the active stroke of the piston and an exhaust-port through the wall of said power-cylinder in position to be uncovered by the piston of the cylinder as it nears the end of its active stroke.

610,585. BENDING-MACHINE. GEORGE GUILD, Cambridge City, Ind., assignor to Bertsch & Co., same place. Filed Dec. 4, 1897. Serial No. 660,755. (No model.)



Claim.—1. In a bending-machine, the combination, substantially as set forth, of a sole-plate, a head-plate, rigid connections between these parts, a cylinder secured at each end of the sole-plate and projecting toward the head-plate, a ram projecting upwardly from each cylinder, a die-carrier having its opposite ends secured to the respective rams, a pipe connecting both cylinders with a source of pressure-supply, and suitable dies carried by the head-plate and die-carrier.

2. In a bending-machine, the combination, substantially as set forth, of a sole-plate, a head-plate, two pairs of columns rigidly connecting the sole-plate to the head-plate, a cylinder secured at each end of the sole-plate between the two columns of the pair and projecting toward the head-plate, a pipe connecting both cylinders with a source of pressure-supply a ram projecting upwardly from each cylinder, a die-carrier having its ends secured to said rams and having sliding engagement with said columns, and dies removably secured to the under surface of the head-plate and to the upper surface of the die-carrier.

3. In a bending-machine, the combination, substantially as set forth, of a head-plate, a die mounted thereon, a die-carrier arranged to move to and from the head-plate, a die carried by the die-carrier, means for forcibly moving the die-carrier toward the head-plate, studs projecting from the die-carrier toward the head-plate, stop-screws mounted in the head-plate in position to have their ends engaged by the ends of said steds, and arrest the advance of the studs and means for turning said stop-screws simultaneously.

4. In a bending-machine, the combination, substantially as set forth, of a head-plate, a sole-plate, rigid connections between the sole-plate and the head-plate, a die-carrier arranged to move toward and from the head-plate, means for forcibly moving said die-carrier,

a die supported by the head-plate, a die supported by the die-carrier, a gage-plate arranged for sliding motion on the head-plate at the rear of and parallel with the die supported by the head-plate, screws supported by the head-plate near each end of the gage-plate, and means for turning said screws simultaneously.

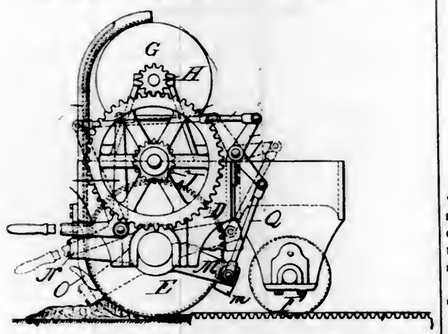
5. In a bending-machine, the combination, substantially as set forth, of a longitudinal die formed of sections separated by intervening notches, extending through the die and a counter-die coöperating therewith.

6. In a bending-machine, the combination, substantially as set forth, of a longitudinal die-holder provided with notches, sectional dies removably secured in said die-holder and separated from each other at the notches of the die-holder, and a counter-die coöperating with said dies.

7. In a bending-machine, the combination, substantially as set forth, of a longitudinal die formed of sections with intervening notches, and a counter-die formed of corresponding sections and with corresponding intervening notches.

8. In a bending-machine, the combination, substantially as set forth, of a longitudinal die formed of sections with intervening notches, a long counter-die adapted to coöperate therewith, and sectional counter-dies removably secured to said counter-die and having spaces between them.

610,586. MACHINE FOR ROLLING WIRE-GLASS. CHARLES C. HARTUNG, St. Louis, Mo., assignor to Edward Walsh, Jr., same place. Filed Aug. 6, 1897. Serial No. 647,289. (No model.)



Claim.—1. In a machine for rolling plate-glass, the combination with the embedding-roller, of a support for the panel of wire mesh, and means for operating said support to forcibly introduce one end of the panel of wire mesh into the sheet of molten glass; said means, also, operating to withdraw said support after the end of the panel is introduced into the molten glass substantially as described.

2. In a machine for embedding wire mesh in plate-glass, the combination with the embedding-roller, of a support for the panel of wire mesh, said support being located close to the periphery of said embedding-roller, and means for dipping said support to force one end of the panel of wire mesh through the mass of molten glass in front of the embedding-roller and partially under said embedding-roller; said means, also, operating to withdraw said support from the mass of molten glass after the end of the panel of wire mesh is introdnced into the molten glass substantially as described.

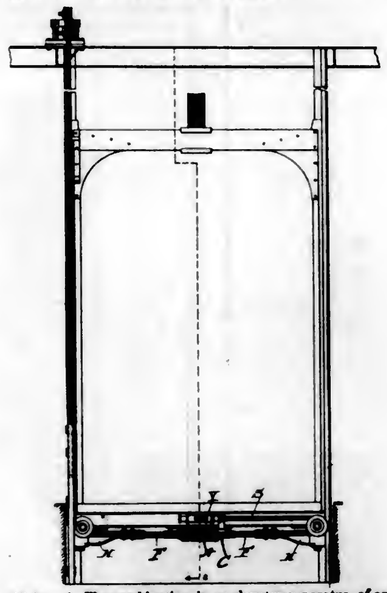
3. In a machine for embedding wire mesh into glass, the combination with the embedding-roller, of a series of knife-blades arranged in juxtaposition to the periphery of said embedding-roller, and means for operating said knife-blades to introduce a panel of wire mesh into the molten glass, which panel of wire mesh is supported by said knife-blades substantially as described.

4. In a machine for embedding wire mesh in plate-glass, the combination with the embedding-roller, of rocking levers, a knife-bar and knives carried by said rocking levers, and means for rocking said levers; substantially as described.

5. In a machine for embedding wire mesh into plate-glass, the combination with the embedding-roller, of a rocking knife-bar, a lever for rocking said knife-bar, and means for locking said lever in one of its positions; substantially as described.

6. In a machine for embedding wire mesh in plate-glass, the combination with the embedding-roller, of rocking levers mounted on each side of said embedding-roller and on the axis of said embedding-roller, a knife-bar and knives carried on the front ends of said rocking levers, a handle, means for locking said handle in one of its positions, and connected mechanism between said handle and one end of the rocking levers; substantially as described.

610,587. AUTOMATIC SAFETY-STOP. GEORGE H. REYNOLDS, Chicago, Ill., assignor to the Crane Elevator Company, same place. Filed Feb. 16, 1895. Serial No. 538,642. (No model.)



Claim.—1. The combination, in an elevator apparatus, of an elevator-car, spring-actuated pivoted gripping-jaws, devices for holding said jaws normally open, a governor supported independently of the car for releasing said devices to set the jaws, and means for temporarily rocking said jaws upon their pivots, thereby releasing said jaws, substantially as described.

2. The combination, in an elevator apparatus, of an elevator-car, spring-actuated pivoted gripping-jaws, devices for holding said jaws normally open, a governor supported independently of the car for automatically tripping said devices to set the jaws, and means, operated from the car, for rocking said jaws upon their pivots, thereby temporarily releasing the jaws after they are set, substantially as described.

3. The combination, in an elevator apparatus, of an elevator-car, a spring-actuated gripping mechanism on the car, and a tripping mechanism for automatically operating the same, comprising a trip-lever, a speed-governor supported independent of the car, and a rope or cable attached rigidly at one end to the elevator-car, and engaging at its opposite end with said trip-lever, substantially as described.

4. The combination, in an elevator apparatus, of an elevator-car, a spring-actuated gripping mechanism on the car, and a tripping mechanism for automatically operating the same, comprising a trip-lever, a speed-governor supported independent of said elevator-car, and a rope or cable connecting said governor and car, rigidly secured at one end to said car and movably secured at its opposite end to said car in position for operative engagement with said tripping-lever, substantially as described.

5. The combination, in an elevator apparatus, of a pair of guides, a pair of jaws adapted to grip each guide, a pair of movable abutments, lever connections between said abutments and pairs of jaws, respectively, a coil-spring adapted to act upon and normally force said abutments apart, means for holding said spring under compression between the abutments, and a governor for automatically tripping said holding means, substantially as described.

6. The combination, in an elevator apparatus, of a pair of guides, a pair of jaws adapted to grip each guide, a pair of movable abutments, levers connecting said abutments with the pairs of jaws, respectively, a coil-spring confined between said abutments and normally acting to force them apart, crank-arms pivoted to one of said abutments, a pair of horizontal links pivotally connected at their ends, respectively, to said crank-arms and to the other abutments, and a governor for automatically throwing said crank-arms past the dead center, substantially as described.

7. The combination, in an elevator apparatus, of a pair of guides, a pair of gripping-levers for each of said guides, gripping-jaws on each of said levers, a pair of movable abutments, a pair of toggle-links connecting each abutment with one pair of the gripping-levers, a coil-spring confined between said abutments and normally acting to force them apart, means for holding said spring under compression, and a governor for automatically tripping said holding means, substantially as described.

8. The combination, in an elevator apparatus, of an elevator-car, a pair of guides, a pair of jaws adapted to grip each of said guides, a pair of movable abutments connected with so as to operate said jaws, a coil-spring confined between said abutments and normally acting to force the same apart, a pair of crank-arms pivoted to one of said abutments, a pair of connecting-rods pivotally secured at their ends, respectively, to said crank-arms and to the other abutment, said crank-arms and rods serving as a means for holding the spring under compression when the arms pass the dead-center, a projection on one of said arms, a governor device, a rope or cable operatively connected therewith and rigidly secured at one end to said elevator-car, and a movable anchor for the other end of said cable also attached to the elevator-car, and a projection on said anchor adapted for engagement with the projection on the crank-arm, substantially as described.

9. In an elevator apparatus, pivoted gripping-jaws, means for holding said gripping-jaws in open position, a governor for automatically releasing said holding means to set said jaws, and means for temporarily rocking said jaws about their pivots thereby releasing said jaws, substantially as and for the purpose set forth.

10. In an elevator apparatus, gripping-jaws, means for holding the same in open position, a governor for automatically releasing said holding means to set said jaws, and means, operated from the car, for rocking said jaws about their pivots, thereby temporarily releasing the jaws after they are set, whereby the car can be eased down to a landing, substantially as and for the purpose set forth.

11. In an elevator apparatus, a guide, a gripping mechanism comprising a pair of spring-actuated pivoted jaws, a trip, an arm adapted to be held by said trip, connections between said arm and jaws whereby said jaws are held in open position, and a governor for automatically tripping said trip to release said arm, as and for the purpose set forth.

12. In an elevator apparatus, a guide, a pair of spring-actuated pivoted gripping-jaws, a trip, an arm adapted to be held by said trip, connections between said arm and jaws comprising a system of toggle-levers, and a governor for automatically tripping said trip, as and for the purpose set forth.

13. In an elevator apparatus, a pair of guides, a pair of spring-actuated jaws adapted to grip each guide, a trip, an arm adapted to be held thereby, a system of levers adapted to simultaneously set said jaws, connections between said arm and levers and a governor for automatically tripping said arm, as and for the purpose set forth.

14. In an elevator, a safety device consisting of the combination of pivoted gripping-jaws, toggles coöperating with, so as to operate, the jaws, a spring for operating the toggles, means for latching the spring with the gripping-jaws open, and a governor for unlatching the spring to apply the grip, substantially as described.

15. In an elevator apparatus, a safety device consisting of the combination of two gripping-jaws, toggles connecting them, a spring to operate the toggles and apply the gripping-jaws, means for holding the toggles with the spring under strain, and a governor to release the spring, substantially as described.

16. The combination, in an elevator apparatus, of a guide, a pair of gripping-jaws, a spring normally adapted to press said jaws against said guide a trip-lever, connections between said lever and jaws consisting of a system of toggle-levers and a rod connecting said trip-lever and toggle-levers, and a governor for automatically tripping said trip-lever, substantially as described.

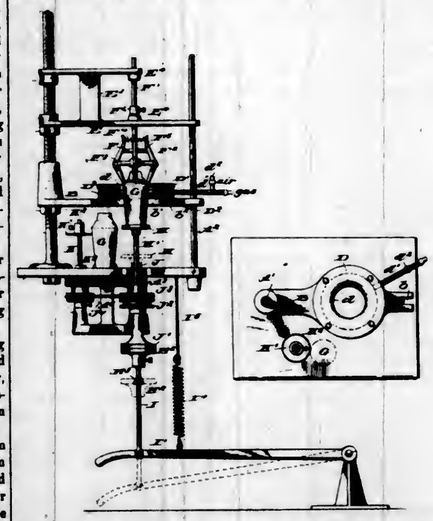
17. The combination, in an elevator apparatus, of a guide, a pair of spring-actuated pivoted gripping-jaws adapted to press against said guide, a trip-lever, connections between said lever and jaws consisting of a system of toggle-levers and a rod connecting said trip-lever and toggle-levers, and a governor for automatically tripping said lever substantially as described.

610,588. GLASS CUTTING-OFF OR SEVERING MACHINE. HENRY C. SCHRADER, Mount Pleasant, Pa. Filed Feb. 12, 1898. Serial No. 670,117. (No model.)

Claim.—1. In a device of the class described, the combination of an annular burner provided with a continuous jet-orifice at its inner periphery, a rotating work-holder adapted to support and rotate an article within said burner, and a centering-chuck to retain said article concentric to the jet-orifice of the burner; substantially as specified.

2. In a device of the class described, the combination of an annular burner provided with a continuous jet-orifice at its inner periphery, and a rotating work-holder adapted to support and rotate an article within said burner; substantially as specified.

3. In a device of the class described, the combination of an annular burner provided with a jet-orifice upon its inner periphery, a rotating work-holder adapted to support and rotate an article within said burner, and means for vertically reciprocating said work-holder; substantially as specified.



4. In a device of the class described, the combination of an annular burner provided with a jet-orifice upon its inner periphery, a rotating work-holder adapted to support and rotate an article within said burner, means for vertically reciprocating said work-holder, and a centering-chuck adapted to engage the article above said burner; substantially as specified.

5. In a device of the class described, the combination of an annular burner provided with a jet-orifice upon its inner periphery, a rotating work-holder adapted to support and rotate an article within said burner, means for vertically reciprocating said work-holder, a centering-chuck adapted to engage the article above said burner, a vertically-adjustable support for said chuck; and a vertically-adjustable support for said burner; substantially as specified.

6. In a device of the class described, the combination of an annular burner provided with a jet-orifice upon its inner periphery, a rotating work-holder adapted to support and rotate an article within said burner, means for vertically reciprocating said work-holder, a centering-chuck adapted to engage the article above said burner, a vertically-adjustable support for said chuck, a vertically-adjustable support for said burner, and means for automatically opening the jaws of said chuck; substantially as specified.

7. In a device of the class described, the combination of an annular burner provided with a jet-orifice upon its inner periphery, a rotating work-holder adapted to support and rotate an article within said burner, means for vertically reciprocating said work-holder, a centering-chuck adapted to engage the article above said burner, a vertically-adjustable support for said chuck, a vertically-adjustable support for said burner, means for automatically opening the jaws of said chuck, and means for limiting the opening movement of the jaws of said chuck; substantially as specified.

8. In a device of the class described, a base provided with a vertically-threaded standard, a burner-support adjustable thereon, an annular burner provided with a continuous jet-orifice at its inner periphery, a chuck-support vertically adjustable above said burner-support, and a rotatable chuck journaled in said chuck-support; substantially as specified.

9. In a device of the class described, an annular burner formed of removable separable members spaced to provide a continuous jet-orifice extending around the inner periphery thereof; substantially as specified.

10. In a device of the class described, a base provided with a vertically-threaded standard, a burner-support adjustable thereon, an annular burner provided with a continuous jet-orifice at its inner periphery, a chuck-support vertically adjustable above said burner-support, and a rotatable chuck journaled in said chuck-support; substantially as specified.

11. In a device of the class described, a base provided with a

vertically-threaded standard, a burner-support adjustable thereon, a chuck-support vertically adjustable above said burner-support, a rotatable chuck journaled in said chuck-support, an adjusting-nut beneath each of said supports, and a vertical guide engaging said supports; substantially as specified.

12. In a machine of the class described, a work-holder provided with a spindle, a clutch member carried by said spindle, and a driving-sleeve surrounding said spindle and carrying an engaging clutch member; substantially as specified.

13. In a machine of the class described, a work-holder provided with a spindle, a clutch member carried by said spindle, a guiding-sleeve surrounding said spindle and carrying an engaging clutch member; and a pivoted lever automatically held in an elevated position to engage said clutch members; substantially as specified.

14. In a device of the class described, a work-holder provided with a spindle, a clutch member located thereon, a rotatable sleeve provided with driving-pulleys, an opposite clutch member carried by said sleeve, a shaft driven from said pulleys, and a marking-disk carried by said shaft; substantially as specified.

15. In a device of the class described, the combination with a burner, a rotatable work-holder and its driving-shaft, of a base-plate provided with a seat, a shaft journaled in said plate adjacent to said seat and driven from the shaft of said work-holder, and a marking-disk carried by said shaft; substantially as specified.

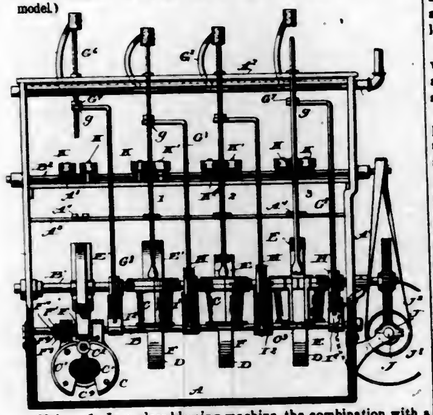
16. In a device of the class described, the combination with a burner, a rotatable work-holder and its driving-shaft, of a base-plate provided with a seat, a shaft journaled in said plate adjacent to said seat and driven from the shaft of said work-holder, and an adjustable marking-disk carried by said shaft; substantially as specified.

17. In a device of the class described, a burner provided with a jet-orifice at its inner periphery, a work-holder beneath the same, and a rotatable chuck above the burner composed of a plurality of pivoted arms adapted to engage the article to be severed; substantially as specified.

18. In a device of the class described, a burner, a work-holder beneath the same, a rotatable chuck above the burner composed of a plurality of pivoted arms adapted to engage the article to be severed, a spring connecting the upper ends of said arms, and a nut to limit the inward movement of the same; substantially as specified.

19. In a device of the class described, a reciprocating work-holder provided with a spindle, a bearing at the lower end of said spindle, a pivoted lever, a link pivoted to said lever and seated in said bearing, and means for normally holding said lever and spindle in an elevated position; substantially as specified.

610,589. GLASS-BLOWING MACHINE. HENRY C. SCHRADER, Mount Pleasant, Pa. Filed Feb. 21, 1898. Serial No. 671,127. (No model.)



Claim.—1. In a glass-blowing machine, the combination with a tank, of a pivotally-supported sectional mold, unitary rotary device engaging the mold-support for swinging said mold upon its pivot and for closing the parts of said mold by engagement therewith, means for automatically adjusting an air-pipe connection in relation to a blow-iron, and means for rotating said blow-iron; substantially as specified.

2. In a glass-blowing machine, the combination with a tank, of a pivotally-supported sectional mold, a unitary rotating cam adapted to engage and raise the support for the mold and to close the members of the mold by engagement therewith, means for automatically adjusting an air-pipe connection in relation to a blow-iron, and means for rotating said blow-iron; substantially as specified.

3. In a glass-blowing machine, the combination with a pivotally-mounted sectional mold, of a pivoted support for said mold, a cam rotatably mounted and adapted to engage the support for the mold to operate the same, and a track on the periphery of said cam adapted to engage the sectional members of the mold to close the same; substantially as specified.

4. In a glass-blowing machine, a sectional mold provided with arms extending beyond the pivotal point of the mold, and a rotating cam provided with a peripheral track adapted to engage said arms to operate the sections of the mold; substantially as specified.

5. In a glass-blowing machine, a sectional mold provided with arms extending beyond the pivotal point of the mold, a rotating cam adapted to engage said arms to operate the sections of the mold, and means carried by said arms to automatically open said mold; substantially as specified.

6. In a glass-blowing machine, a sectional mold provided with arms extending beyond the pivotal point of the mold, a rotating member adapted to engage said arms to operate the sections of the mold, means to automatically open said mold, and a yielding member located upon one of said arms; substantially as specified.

7. In a glass-blowing machine, a sectional mold provided with arms extending beyond the pivotal point of the mold, a rotating member adapted to engage said arms to operate the sections of the mold, means to automatically open said mold, and a spring-held member located upon one of said arms; substantially as specified.

8. In a glass-blowing machine, a sectional mold provided with arms extending beyond the pivotal point of the mold, a rotating member adapted to engage said arms to operate the sections of the mold, means to automatically open said mold, a projection located in a recess formed in one of said arms, a spring bearing upon said projection, and an adjusting-nut bearing upon said spring; substantially as specified.

9. In a glass-blowing machine, a sectional mold composed of pivoted members provided with laterally-projecting arms, separable mold-sections secured to said pivoted sections, and a base permanently located in relation to said movable members; substantially as specified.

10. In a glass-blowing machine, the combination with a support, of a sectional mold pivoted thereto, and a base to said mold secured against movement in said support relative to said pivoted sections; substantially as specified.

11. In a glass-blowing machine, a mold-support, a pivoted mold secured thereto, a projection formed upon said support, and a rotating cam adapted to bear upon said projection during a portion of its rotation; substantially as specified.

12. In a glass-blowing machine, a supporting-lever provided with an open bearing, a pivoted mold secured to one end of said lever, and a rotating cam adapted to bear against the opposite end of said lever; substantially as specified.

13. In a glass-blowing machine, a mold-operating cam provided with a flanged section extending along a portion of its periphery and a recessed portion opposite said flanged section; substantially as specified.

14. In a glass-blowing machine, the combination with an air-pipe, of a cap yieldingly connected thereto, a depending rod from said cap, a shifting rod for said cap, and a rotating cam adapted to actuate said shifting rod; substantially as specified.

15. In a glass-blowing machine, the combination with an air-pipe, of a cap yieldingly connected thereto, a depending rod from said cap, a shifting rod connected to said depending rod, a pivoted lever engaging at one end with said shifting rod, and a positively-driven cam adapted to act upon the opposite end of said lever; substantially as specified.

16. In a glass-blowing machine, the combination with a blow-iron, of oppositely-located friction-disks rotated in the same direction, gears below said disks on the shafts thereof, and a positively-driven shaft carrying driving means for said gears; substantially as specified.

17. In a glass-blowing machine, the combination with a blow-iron, of oppositely-located friction-disks positively rotated in the same direction and engaging said blow-iron, gears for driving said disks on the shafts thereof, and a positively-rotated worm-gear engaging each of said driving-gears; substantially as specified.

18. In a glass-blowing machine, the combination with the frame thereof, of a support, a mold-supporting lever located thereon, a sectional mold pivoted to the said lever, a power-shaft supported in said frame, a positively-driven cam located on said shaft, an air-pipe connection, a shifting rod and lever for operating said connection, and a cam located upon said power-shaft for operating said shifting lever; substantially as specified.

19. In a glass-blowing machine, the combination with the frame thereof, of a support, a mold-supporting lever located thereon, a sectional mold pivoted to the said lever, a power-shaft supported in said frame, a positively-driven cam located on said shaft, an air-pipe connection, a shifting rod and lever for operating said connection, a cam located upon said power-shaft for operating said shifting lever, and means for rotating a blow-iron; substantially as specified.

20. In a glass-blowing machine, the combination with the frame thereof, of a support, a mold-supporting lever located thereon, a sectional mold pivoted to the said lever, a power-shaft supported in the said frame, a positively-driven cam located on said shaft, an air-pipe connection, a shifting rod and lever for operating said connection, a cam located upon said power shaft for operating said shifting lever, means for rotating a blow-iron, and guides for centering said blow-iron within a mold; substantially as specified.

21. In a glass-blowing machine, the combination with the frame thereof, of a support, a mold supporting lever located thereon, a sectional mold pivoted to said lever, a power-shaft supported in the said frame, a positively-driven cam located on said shaft, an air-pipe connection, a shifting rod and lever for operating said connection, a cam located upon said power-shaft for operating said shifting lever, means for rotating a blow-iron, guides for centering said blow-iron within a mold, a gear located upon said power-shaft, a main driving-shaft provided with a gear engaging the gear on said power-shaft and with a band-pulley, and a belt extending from said pulley to the driving-shaft for the rotating means acting upon the blow-irons; substantially as specified.

22. In a glass-blowing machine, the combination with a frame-work, of a support located therein, a series of mold-supporting levers pivoted upon said support, a series of sectional molds pivoted upon said levers and provided with projecting arms, a power-shaft, a series of operating-cams adapted to act upon the mold-supporting levers and upon the projecting arms from the molds, said levers being located upon said shaft in position to successively perform the functions of raising, closing and permitting the opening and depression of said molds; substantially as specified.

23. In a glass-blowing machine, the combination with a frame-work, of a support located therein, a series of mold-supporting levers pivoted upon said support, a series of sectional molds pivoted upon said levers and provided with projecting arms, a power-shaft, a series of operating-cams adapted to act upon the mold-supporting levers and upon the projecting arms from the molds, said levers being located upon said shaft in position to successively perform the operation of raising, closing and permitting the opening and depression of said molds, a series of air-pipe connections, and means for successively moving said connections in relation to a blowpipe and corresponding position of the molds; substantially as specified.

24. In a glass-blowing machine, a power-shaft, a cam located thereon provided with a flanged section and a recessed portion terminating in a hooked end, a pivoted supporting-lever, a sectional mold secured to one end thereof and provided with arms to engage the flanged portion of said cam in its rotation, and a projection provided at the opposite end of said lever and adapted to ride upon the periphery of said cam during its rotation; substantially as specified.

25. In a glass-blowing machine, a power-shaft, a cam located thereon provided with a flanged section and a recessed portion terminating in a hooked end, a pivoted supporting-lever, a sectional mold secured to one end thereof and provided with arms to engage the flanged portion of said cam in its rotation, a projection provided at the opposite end of said lever and adapted to ride upon the periphery of said cam during its rotation, and means for automatically opening said mold-sections when the flange upon said cam has passed between the arms of the mold; substantially as specified.

26. In a glass-blowing machine, the combination with a blow-iron, of a mold, an air-main and connections with said iron, a pressure-reducing valve in communication with said main, and means acting upon said valve to increase the air-pressure upon said iron; substantially as specified.

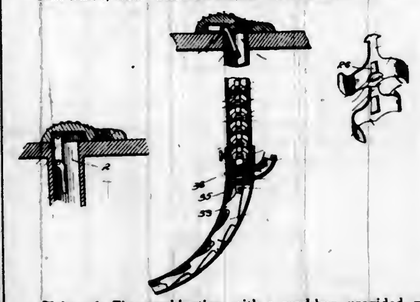
27. In a glass-blowing machine, the combination with a blow-iron, of a mold, an air-main and connections with said iron, a pressure-reducing valve in communication with said main, and an automatically-operated striker for opening said valve; substantially as specified.

28. In a glass-blowing machine, the combination with a blow-iron, of a mold, an air-main and connections with said iron, a pressure-reducing valve in communication with said main, an automatically-operated striker for opening said valve, and a cam carried upon a power-shaft for engaging and opening said valve; substantially as specified.

29. In a glass-blowing machine, the combination with a tank, of a pivotally-supported sectional mold, unitary means for swinging said mold upon its pivot and for closing the parts of said mold, means for automatically adjusting an air-pipe connection in relation to a blow-iron, means for rotating said blow iron, and means for increasing the air-pressure upon said blow-iron during the blowing operation; substantially as specified.

30. In a glass-blowing machine, the combination with a support, of a power-shaft, separable molds pivotally mounted adjacent thereto, means carried by said shaft for elevating said mold and for closing the members of the same, means for adjusting an air-pipe connection, means carried by said power-shaft for acting upon said air-pipe-adjusting device, an air-pressure-reducing device, and means carried by said shaft for controlling the operation of said air-pressure-reducing device; substantially as specified.

610,590. SAND-BOX. THOMAS J. STANTON, Little Rock, Ark. Filed Mar. 8, 1898. Serial No. 673,120. (No model.)



Claim.—1. The combination with a sand-box provided with openings in the bottom thereof, sand-pipes leading from said openings, and nozzles at the lower end of said sand-pipe, of valves controlling said openings in the bottom of the sand-box, an operating-rod for said valves, movable chain brushes and scrapers situated within said sand-pipes and nozzles and connected at their upper ends with the valves so as to be raised when the valves are open, and to be lowered when the valves are closed, and means for creating a blast in said nozzles.

2. The combination with a sand-box having an opening in the bottom thereof and a sand-pipe leading from said opening, of a valve pivoted to slide upon the bottom of said sand-box and to control said opening, means for sliding said valve, a recess in the lower side of said valve, a link having one end pivoted within said recess, and a chain brush situated within the sand-pipe and connected with the other end of said link.

3. The combination with a sand-box having a depending sand-pipe provided at its lower end with a nozzle, of a valve for controlling the upper end of the sand-pipe, a chain brush connected with said valve and extending into the sand-pipe and provided at its lower end with a scraper situated within the lower end of the nozzle, a spring for depressing said chain brush and scraper, and a blast-pipe communicating with said nozzle.

4. The combination with a sand-box having a sand-pipe and a nozzle at the lower end of the sand-pipe, a valve for controlling the upper end of said sand-pipe, a chain brush connected with said valve and extending into said sand-pipe, a scraper at the lower end of the chain brush extending to the lower end of the nozzle, a ring secured to the lower end of said chain brush, a spring situated within the nozzle and bearing at its opposite ends against said ring and the lower end of the sand-pipe, and a blast-pipe communicating with the lower end of the sand-pipe.

5. A chain brush for the purpose set forth comprising a plurality of links yieldingly connected together and provided with laterally-extending wings, the wings on one link extending at right angles to the body of the link and in the opposite direction from the wings of the adjoining links.

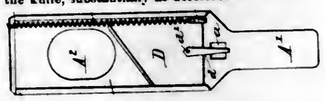
6. A chain brush for the purpose set forth comprising a plurality of links, each of said links comprising portions having a winged head at one end, a slot at the other end, and laterally-extending wings upon said body portion.

7. A chain brush for the purpose set forth comprising a plurality of links each of said links comprising a body portion having a winged head connected therewith by a shank and provided with rearwardly-extending lugs, a slot in the rear end of said body portion, and laterally-extending tapering wings upon said body portion.

610,591. HAND-GUILLOTINE FOR FOWLS. JOHN H. STEVENSON, Allegheny, Pa. Filed Feb. 6, 1897. Serial No. 622,308. (No model.)

Claim.—A hand-guillotine for fowls, comprising a plate having a handle at its rear end, its side edges folded over to form ways, and a stop at its front end, said plate having also an aperture near its front end through which the head of a fowl may be passed, and

another opening near its handle, a knife supported on the plate to slide in said ways, a finger-hold secured to the knife, a spiral spring connected at one end to the knife and at its other end to the front end of the plate, and a shouldered strap secured to the knife and projecting beyond its rear edge, the shoulder on the strap being adapted to engage the front edge of the said opening in the plate near its handle and hold the knife against the force of the spring, the engagement of said shoulder with the edge of the opening being controlled by the thumb and finger of the operator's hand which grasps the handle, and the stop serving to limit the forward movement of the knife, substantially as described.



610,592. BARREL-PRESS. ANDREW J. UNDERHILL, 2d, Gasport, N. Y., assignor of one-half to Herman Schnorr, same place. Filed Dec. 10, 1897. Serial No. 661,354. (No model.)



Claim.—1. A barrel-press comprising a pressing device, an operating-lever and a pair of substantially semicircular gripping-jaws, the ends of the lever and gripping-jaws being supported by common pivots, as set forth.

2. A barrel-press comprising a frame, a pressure-bar supported thereby, an operating-lever, and a pair of substantially semicircular jaws swinging loosely from common pivots and adapted to grip the barrel sides upon the operation of the pressing device.

3. A barrel press comprising a frame, means for attachment to the sides of the barrel, a pressure-bar supported in said frame, an operating-lever and arms pivotally connected to the frame and the lever and provided with slots through which the pivotal pins pass, thus allowing a certain range of movement to the operating-lever before actuating the pressure-bar, as set forth

4. In a barrel-press, the combination of a frame having two downwardly-depending side bars, a pressure-bar rigidly secured to the frame, two sliding arms mounted in slideways on the side bars of the frame, and having their lower ends bent outward to form pivots, a U-shaped lever having its ends secured to the pivots, arms pivoted at one end to said lever at a short distance above its ends and provided at its opposite ends with slots through which a bolt is passed to secure it to the frame, and a pair of semicircular gripping-jaws having their ends attached to the pivots, as set forth.

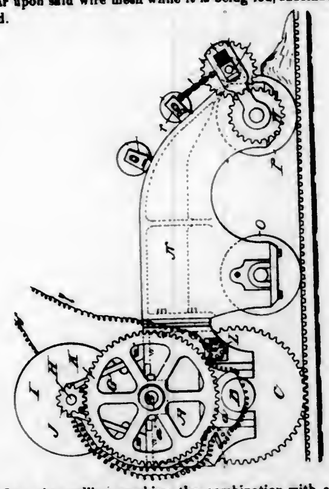
5. In a barrel-press, the combination with a pressing device, its supporting-frame and operating-lever, of a pair of substantially semicircular jaws swinging loosely from pivots on the frame and adapted when the press is seated on a barrel to swing against the sides thereof and to grip the same to lock the press to the barrel upon the downward movement of the frame incident to the operation of the press.

6. In a barrel-press, the combination with the pressing device and its supporting-frame and operating-lever, of a pair of automatically-operated semicircular folding jaws swinging loosely from common pivots and provided with a toothed edge for gripping the sides of the barrel, as set forth.

7. In a barrel-press, the combination with the pressing device and its supporting frame and operating-lever, of a pair of semicircular jaws swinging loosely from common pivots and provided with toothed edges whereby the movement of the lever necessary to press the barrel head into place, causes the jaws to grip the sides of the barrel and embeds the teeth therein, as set forth.

610,593. MACHINE FOR AND METHOD OF ROLLING WIRED GLASS. EDWARD WALSH, Jr., St. Louis, Mo. Filed Oct. 22, 1894. Serial No. 536,579. (No model.)

Claim.—1. In a glass-rolling machine the combination with a table, of a plain roller mounted in one end thereof, a corrugated roller mounted in the other end of said table, means for feeding a wire mesh from said table, and a lazy-roller which is mounted so as to bear upon said wire mesh while it is being fed, substantially as described.



2. In a glass-rolling machine, the combination with a table, of rollers mounted therein for embedding a wire mesh into a plate of rolled glass, and a feeding device on the table for positively feeding the wire mesh to the rollers, substantially as described.

3. In a glass-rolling machine, the combination with a carriage-table, of rollers mounted therein for embedding a wire mesh into a plate of glass while it is being rolled, and a feeding device which is driven by the movement of the carriage, for positively feeding the wire mesh to the molten glass by the action of the rollers, substantially as described.

4. The method of forming wired plate-glass consisting in subjecting the wire and a body of heated glass to compression, to level the glass and expand the wire, forcibly embedding the wire into the glass, and finally leveling and finishing the plate by subjecting the same to pressure, substantially as described.

5. In a glass-rolling machine, the combination with a carriage, of two leveling-rolls connected therewith, an interposed embedding-roll, and a wire-feeding device on the carriage in advance of the forward roll for positively feeding the wire to the molten glass, substantially as described.

6. In a machine for making wired plate-glass, the combination with a carriage, of two leveling-rolls connected therewith, a wire-feeding device on the carriage, and means for positively driving the feeding device, substantially as described.

7. The method of forming wired glass consisting in first forcibly embedding the wire in the surface of a heated body of glass, permitting the wire to remain in the surface until it is properly expanded and cleansed, embedding the wire into the body of the glass to a point below the surface thereof, and finally applying pressure to the upper surface of the glass, substantially as described.

8. In a glass-rolling machine, the combination with a carriage, of leveling-rolls, an intermediate embedding-roll, and means for positively feeding wire onto the glass in advance of the forward leveling-roll, substantially as described.

610,594. BICYCLE-TIRE-REPAIR KIT. ARTHUR J. WHITBECK, New Britain, Conn. Filed Feb. 9, 1898. Serial No. 669,643. (No model.)

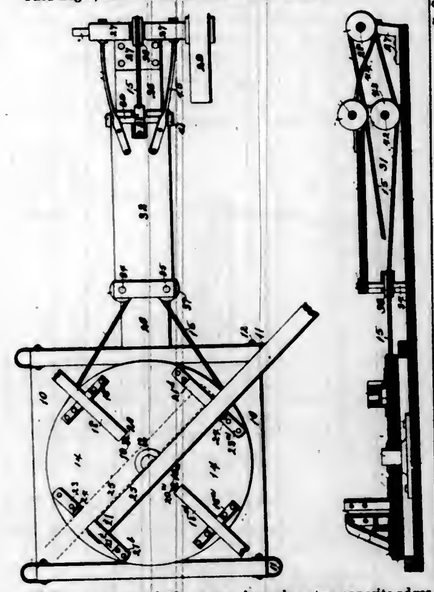


Claim.—1. An implement for mending punctured rubber tires and the like, consisting of the cement holding and ejecting mechanism having a nozzle with a discharge-orifice back of its end, and means for holding a rubber thread under tension on said nozzle, substantially as described.

2. A pump or syringe having the nozzle 8 flanged at its end for receiving a thread, a discharge-orifice back of said flanged end and a post or lug over which to wind the thread in conjunction with the flanged end of the said nozzle, substantially as described.

3. The repair-kit consisting of the pump or syringe, with devices upon which to stretch a rubber thread that extends in opposite directions from the discharge-orifice of the pump-nozzle, a thread-holding spool on said nozzle, and a cap covering the said nozzle and spool, substantially as described.

610,595. HORSE-POWER. LEMUEL R. WHITE, Hebron, Iowa. Filed Aug. 3, 1897. Serial No. 647,002. (No model.)

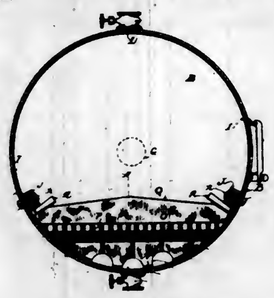


Claim.—A square platform, cross-bars along two opposite edges of said platform, clevises pivotally connected with the ends of said cross-bars, a shaft rising vertically from the center of said platform, a drum, having a grooved periphery, revolubly mounted on said shaft, brackets placed opposite each other on top of said drum near its periphery, each bracket provided with a socket to receive the end of a lever and with adjustable pins to secure another lever at the desired height, two levers extending side by side across said drum, each of said levers having one end in one of said sockets and secured by a pin to the opposite bracket, two levers secured on top of said drum and projecting radially from it on opposite sides between the first-mentioned levers, an arm rigidly connected with and extending from said platform on one side, said arm provided with a covered way for a portion of its length, a horizontal sheave mounted on a vertical shaft on each side the end of said covered way nearest said platform, vertical sheaves mounted on horizontal shafts one above the other at the farthest end of said covered way, a forked journal-bearing mounted on the outer end of said arm, a shaft, provided at its end with a pulley, mounted on said bearing, a driving-wheel mounted on said pulley-shaft in the fork of the bearing, braces from said bearing to the outer end of said covered way, an endless cable passing around said drum and the driving-wheel, guided by the horizontal and vertical sheaves, and means for operating the same, substantially as shown and described.

610,596. FILTER-FRAME. ROBERT AYRES, Colorado City, and DAVID J. NEVILL, Denver, Colo. Filed Jan. 20, 1898. Serial No. 667,330. (No model.)

Claim.—1. The combination with the filtering-barrel, of a frame composed of independent glass beams fitting a segment of the inside of a filter-barrel having laterally-extending wings with rabbeted ends or tongues and grooves interlocking with one another and having through their lower edges passages for the filtering medium and a rubber cushion on each edge of each beam of said frame, a glass perforated bed-plate resting on said glass frame, a filtering-diaphragm of any suitable material resting on said glass bed-plate, a glass grating resting on said filtering medium and means for removably securing the several parts in operative relation in said barrel, substantially as described.

2. In a filter-barrel, the combination of a rubber grating having a corrugated surface in contact with the curved inner lining and periphery of said filter barrel adapted to allow the filtering solutions to run along and down the lining of said barrel, a perforated bed-plate of glass or porcelain curved concentric with the inner periphery of said barrel and resting on said rubber grating, a filtering medium on said glass bed-plate, a curved glass grating resting on said filtering medium, two oppositely-disposed cleats secured lengthwise of said barrel to its inner periphery adjacent to the ends of said curved glass bed-plate and grating and wedge-keys between said ends and said cleats adapted to key said members against the barrel, substantially as described.



610,597. SMOKING-PIPE. JOHN BIGELOW, Minneapolis, Minn. Filed Dec. 28, 1897. Serial No. 663,827. (No model.)



Claim.—1. The combination, with a pipe having a suitable stem, of a mouthpiece secured thereto and provided with two ducts, one connected with the stem-duct and provided with a valve, and the other extending through the outer surface of the mouthpiece and its mouth-opening adapted to be opened and closed by the tongue, as set forth.

2. The combination of the pipe and its stem provided with a tapering end having a straight extension, with a cigar-holder mouthpiece having a bowl fitting the tapering part and said extension, and provided with a chamber between the end of said stem and the mouthpiece, as and for the purpose specified.

3. The combination of the pipe and its stem provided with a tapering part having a straight extension, with a cigar-holder mouthpiece having a bowl fitting the tapering and straight extension parts of said stem, a chamber being left between said stem and mouthpiece and said mouthpiece having independent smoke-inlet and smoke-discharge ducts the latter opening through the side of the mouthpiece substantially as described.

4. The combination of the holder or stem provided with independent smoke inlet and outlet ducts, the latter opening through the side of the stem or holder, with a valve adjustable by the smoker, to close said outlet-duct, whereby the holder is adapted for use in the ordinary manner, substantially as described.

5. The combination, of the pipe, with the mouthpiece, said mouthpiece having independent inlet and outlet ducts the latter opening through the side of said mouthpiece and said inlet-duct provided with a valve preventing the backward passage of smoke through the inlet-duct, substantially as described.

6. The combination of the bowl and stem, with independent smoke inlet and outlet ducts both opening through the end of the stem, one thereof adapted to be opened and closed by the tongue of the smoker, and a valve provided in the other, substantially as described.

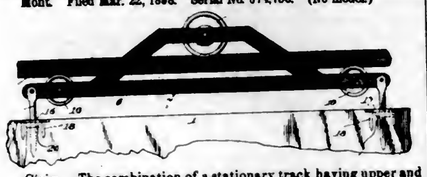
7. The combination, of the bowl and the stem, the latter provided with independent inlet and outlet ducts, with the removable end upon said stem through which said ducts open, and a valve upon said end for one of the ducts held by said removable end and removable therefrom, substantially as described.

8. The combination, of the bowl and the stem, the latter provided with independent inlet and outlet ducts, with the removable end upon said stem through which said ducts open, and a valve upon said end for one of the ducts, substantially as described.

9. The combination with a tobacco-pipe, of a cleaner, consisting of a shank, having a cleaner-head at one end and a handle at the other end, the pipe having in its mouthpiece an enlarged chamber in which the handle is located, the cleaner-head being located beyond

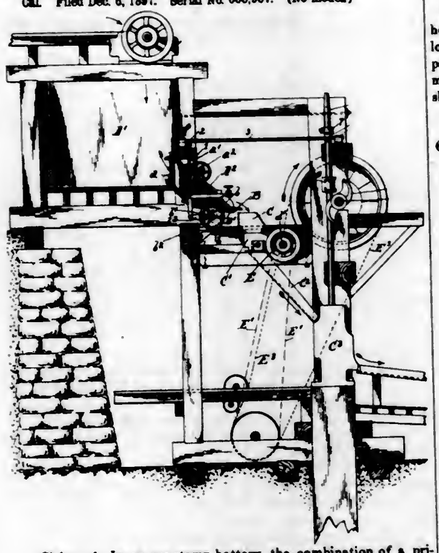
the smoke-passage from the bowl, said cleaner being of such length as to be held against longitudinal movement when the mouthpiece is in position, as and for the purpose set forth.

610,598. DOOR-HANGER. WILLIAM ST. CLAIR BOYER, Butte, Mont. Filed Mar. 22, 1898. Serial No. 674,756. (No model.)



Claim.—The combination of a stationary track having upper and lower tread-surfaces, of a roller-frame consisting of parallel bars one of which is bulged at its ends to form housings, rollers mounted in said housings and adapted to engage the lower tread of the track, an arched supplemental frame attached to the roller-frame, a laterally-bowed plate attached to the end of the arched frame, a roller journaled between the arched plate and the upper end of the supplemental frame, a door, and means for adjustably connecting the door with the roller-frame, substantially as set forth.

610,599. ORE-STAMP BATTERY. JOSIAH CHAMPION, Enterprise, Cal. Filed Dec. 6, 1897. Serial No. 660,907. (No model.)



Claim.—1. In an ore-stamp battery, the combination of a primary ore-crusher, a bin into which the ore falls from the crusher, a secondary crusher for crushing the partially-crushed ore from the bin, a feeder for delivering ore from the bin to the secondary crusher, a stamp, a chute for delivering the ore from the secondary crusher to the stamp, drive mechanism for the crushers and stamp, and connected mechanism between the stamp and the feeder whereby the feed of the ore from the bin to the secondary crusher is automatically regulated by the stamp.

2. In an ore-stamp battery, the combination of a primary ore-crusher, a bin which receives the ore from said crusher, a feeder leading from said bin, a stamp, a secondary ore-crusher interposed between said feeder and stamp and from which the ore passes to the stamp, and means regulated by the stamp for operating said feeder to feed the ore from the bin to the secondary crusher.

3. In an ore-stamp battery, the combination with the primary or coarse crusher for the ore, of the ore-bin which receives the ore from said crusher, the ore-feed leading from said bin, the secondary or fine-ore crusher interposed between the ore-feed and the mortar of the battery, the chute for conveying the fine-crushed ore to the mortar, the rotatable table or plate in the bottom of the ore-feed, a gear secured to the bottom thereof, a pinion meshing therewith, said pinion mounted upon a shaft, the arm eccentrically connected to the outer end of said shaft, the rock-shaft, the connecting-rod forming connection between the said arm and an arm projecting from the rock-shaft, the bifurcated arm secured to and projecting from the opposite end of the rock-shaft, the stamp which the said arm is operated by and the collar mounted upon said stamp so as to engage with said arm, and rock said rock-shaft in one direction, and means for returning the rock-shaft to its initial position.

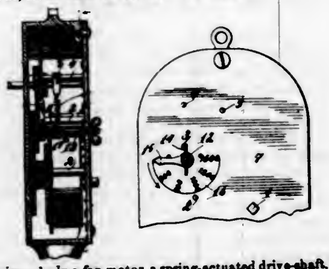
4. In an ore-stamp battery, the combination of a supply, a feeder, a stamp, means operated by the stamp for operating said feeder, and a crusher interposed between said feeder and stamp whereby the ore is delivered to the stamp in proper condition for operation.

610,600. TOY. DAVID W. DAVIS, Detroit, Mich. Filed July 24, 1897. Serial No. 645,786. (No model.)



Claim.—A toy consisting of two hollow balls having squared holes therein for the passage of air through said balls, the balls being loosely connected with the handle A by means of the strings B which pass through the same opening in said handle A whereby the balls may be swung in directions opposite to each other, substantially as shown and described.

610,601. FANNING DEVICE. HENRY DE TAMBLE, Aurora, Ill., assignor, by direct and mesne assignments, of two-thirds to Peter Weiland, same place, and George R. Ackerman, Yorkville, Ill. Filed Nov. 29, 1897. Serial No. 660,169. (No model.)

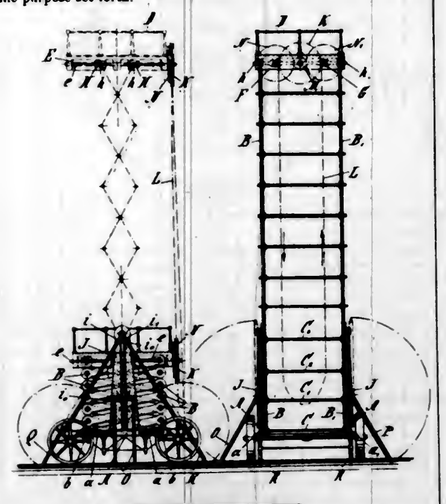


Claim.—1. In a fan-motor, a spring-actuated drive-shaft, gearing between the latter and a counter-shaft carrying a fan, said gearing including intermediary counter-shafts, and means for regulating the speed of said fan comprising a strap-brake trained over one of said counter-shafts and connected at one end to a reel, an indicating-finger on said reel adapted to register with a dial on said casing, and a spring interposed in said strap-brake, whereby by turning said reel the tension of said spring is varied, thus varying the friction on said counter-shaft and altering the speed of said fan, substantially as described.

2. In a fan-motor, a spring-actuated drive-shaft, gearing between the latter and a counter-shaft carrying a fan, said gearing including intermediary counter-shafts, and means for regulating the speed of said fan comprising a strap-brake trained over one of said counter-shafts and connected at one end to a reel, an indicating-finger on said reel adapted to register with a dial on said casing, a spring interposed between the ends of said strap-brake, and an arm on said reel adapted to interlock with one of said gear-wheels to lock the same against movement during one position of said reel, whereby by turning said reel in one direction said arm releases said gear-wheel and the tension of said spring is relieved, thus varying the speed of said fan, substantially as described.

610,602. VERTICALLY-LIFTING PLATFORM. JOHANN DOLDT, Ettlingen, Germany. Filed Apr. 13, 1896. Serial No. 678,079. (No model.)

Claim.—In combination, a truck, vertical slotted standards thereon, lazy-tongs mounted upon said truck and guided by said standards, a platform E, shafts having oppositely-threaded ends mounted upon said platform and engaging the uppermost links of said lazy-tongs, gear-wheels N, N, secured upon the ends of the threaded shafts, a pinion M engaging said gear-wheels, pulley K secured to said pinion, and flexible operating means depending from said pulley, as and for the purpose set forth.



610,603. CARPET-SWEEPER. RODERICK HASKELL, Grand Rapids, Mich. Filed Mar. 11, 1898. Serial No. 673,443. (No model.)



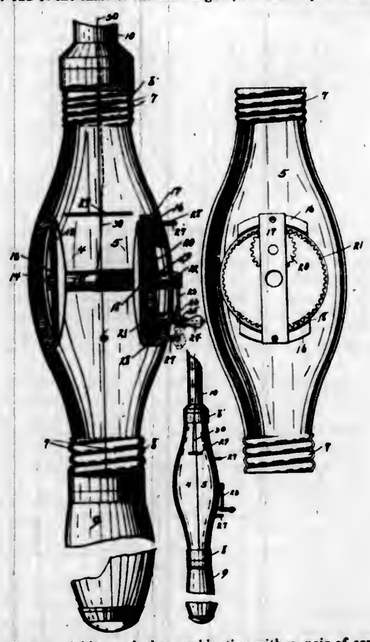
Claim.—1. The combination of a carpet-sweeper case having an opening for egress of air, a shaft having a pulley to engage a drive-wheel of the sweeper a fan on said shaft, a casing and air-passage formed by a continuous strip of sheet metal extending horizontally from the lower side of said opening to near the middle of the case, and thence in a curve about the axis of said shaft, and end plates having openings around said shaft, and a sponge in said passage, substantially as described.

2. In a carpet-sweeper, a case having an egress-opening and a door in its top, an air-passage below said door, screens at each end of said air-passage, a sponge in said passage, a fan-casing at the inner end of said passage having axial openings, a shaft in the axis of said casing having a pulley engaging the drive-wheel of the sweeper, and a fan on said shaft, substantially as described.

3. In a carpet-sweeper the combination of a case having an opening in one of its inclined sides, and a door in its top adjacent to said opening, a shaft journaled in said case, a fan and pulley on said shaft, a drive-wheel engaging said pulley and supporting the case, a strip of sheet metal less than the width of the case extending horizontally from the lower side of the said opening to near the middle of the case and thence in an incomplete cylinder around the shaft, end plates having openings around said shaft, a screen between the fan and the door, a screen in the opening of the case and a sponge in the air-passage and between said screens substantially as described.

610,604. FISHING-REEL. ALBERT W. HAZELRIGG, Indianapolis, Ind. Filed Jan. 20, 1898. Serial No. 668,370. (No model.)

Claim.—1. In a fishing-reel, the combination with a pair of separable hollow sections, arranged to form a portion of the rod, of a bearing carried upon the inside of each of said sections, a bobbin mounted between said bearings, one end of the axis of said bobbin extending through one of the bearings and provided with a gear at its outer end, an internal gear mounted inside of one of said hollow sections and having its shaft extending through the wall thereof, intermediate gearing between the two gears, and a crank secured to the outer end of the shaft of the second gear, substantially as described.



2. In a fishing-reel, the combination with a pair of separable hollow sections, a bearing carried by one of said sections for receiving one end of the axis of a bobbin, a bearing-plate 17 carried by blocks 16 upon the inside of the other hollow section and forming a bearing for the other end of the axis of the bobbin, a bobbin mounted between the two bearings and having an axis projecting through the plate 17, a gear formed upon said projecting end, a gear 20 mounted upon the bearing-plate and in mesh with the gear carried by the bobbin, a gear 21 in mesh with the gear 20 and provided with a shaft extending through the wall of the hollow section, and a crank secured to the outer end of the shaft, substantially as described.

3. A bobbin for fishing-reels, the said bobbin provided with a pair of studs forming the axis thereof, and a gear, of the same or less diameter than one of said studs, carried by said stud, the arrangement being such that the gear may be passed through an opening arranged to form a bearing for the inner end of the gear-carrying stud.

4. A bobbin for fishing-reels, the said bobbin being provided with a stud forming one end of the axis thereof and the said stud having a gear formed in said stud and of the same or less diameter, the arrangement being such that the gear may be passed through an opening arranged to form a bearing for the inner end of the stud, substantially as described.

5. In a fishing-reel, the combination with the bobbin and a support therefor, of a crank for operating the bobbin, a handle pivoted to said crank, a spring for holding said handle either at right angles to or parallel with the said crank, and one or more pins or projections carried by the bobbin-support in position to engage the handle when thrown parallel with the crank, substantially as described.

6. As an article of manufacture, a reel-support consisting of a pair of hollow ellipsoidal registering sections provided at the ends with means by which they may be secured in line with and form a part of a fishing-rod, and means carried upon the inside of said sections, for supporting a bobbin, the said bobbin being entirely surrounded by the said sections.

610,605. APPARATUS FOR APPLYING COP-TUBES TO SPINDLES. EDUARD HERZOG, Brisch, Austria-Hungary. Filed Apr. 15, 1897. Serial No. 633,263. (No model.) Patented in England June 23, 1896, No. 13,777, and in Germany June 26, 1896, No. 91,637.

Claim.—1. An apparatus for applying cop-tubes to the spindles of self-actors, consisting of a frame provided with a series of feeding-tubes, adapted to receive the cop-tubes, having supports adjacent to the ends thereof, and lateral openings in their faces, through which

the cop-tubes may pass laterally, when received on the spindles of the self-actor inserted in the ends of said feeding-tubes, when the frame is moved laterally.



2. An apparatus for applying cop-tubes to the spindles of self-actors, consisting of a frame provided with a series of feeding-tubes, adapted to receive the cop-tubes, having supports adjacent to the ends thereof, and lateral openings in their faces, through which the cop-tubes may pass laterally, when received on the spindles of the self-actor inserted in the ends of said feeding-tubes, when the frame is moved laterally, and guides carried by said frame for supporting it and guiding it on spindles of the self-actor when it is moved laterally.

3. An apparatus for applying cop-tubes to the spindles of self-actors, consisting of a frame provided with a series of feeding-tubes, adapted to receive the cop-tubes, having supports adjacent to the ends thereof, and lateral openings in their faces provided with spring-walls, through which the cop-tubes may pass laterally, when received on the spindles of the self-actor inserted in the ends of said feeding-tubes, when the frame is moved laterally.

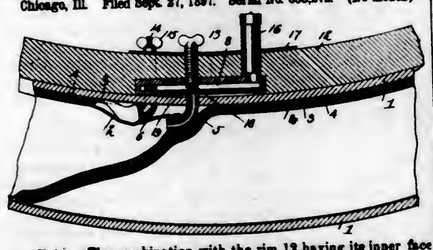
4. An apparatus for applying cop-tubes to the spindles of self-actors, consisting of a frame, and a series of feeding-tubes carried thereby and provided with supports adjacent to their ends, lateral openings in their faces, and guide projections *k* on their extremities, substantially as and for the purposes described.

5. An apparatus for applying cop-tubes to the spindles of self-actors, consisting of a frame, a series of feeding-tubes carried thereby and provided with supports adjacent to their ends and lateral openings in their faces, and guiding-fingers *f* carried by the frame adjacent to the ends of the feeding-tubes.

6. An apparatus for applying cop-tubes to the spindles of self-actors, consisting of a frame, a series of feeding-tubes carried thereby and provided with supports adjacent to their ends and lateral openings in their faces, and guides *s s* carried by the frame adjacent to each end and provided with projecting guiding-fingers *f*.

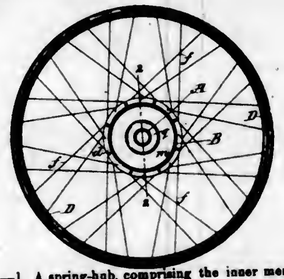
7. An apparatus for applying cop-tubes to the spindles of self-actors, consisting of a frame, a series of feeding-tubes carried thereby and provided with supports adjacent to their ends and lateral openings in their faces, and guides *s s* carried by the frame adjacent to each end and provided with projecting guiding-fingers *f* and with guides *r* on their extremities.

610,606. PNEUMATIC VEHICLE-TIRE. PHILIP KNORPP, Jr., Chicago, Ill. Filed Sept. 27, 1897. Serial No. 653,272. (No model.)



Claim.—The combination with the rim 12 having its inner face recessed, a flat valve-chamber embedded in said recess flush with the inner face of the rim and having the valved filling-tube 16 projecting through the outer side of the rim, an outer casing surrounding said rim, the nipples 6 7 projecting downwardly through said casing from the bottom of said chamber at each corner thereof and having their ends curved in the direction of the rim; the nipple 5 projecting downwardly through said casing from the bottom of said chamber at a point to the rear of and between said nipples 6 7 and being longer than said nipples 6 7 and having its end also turned in the direction of the curve of said nipples 6 7, the valve-stems 9 10 11 projecting through the rim and being threaded in said chamber and adapted to close said nipples respectively, and an independent inner tube secured to each of said nipples, substantially as set forth.

610,607. SPRING-HUB FOR VEHICLE-WHEELS. WILLIAM W. LACEY, Boston, Mass. Filed Oct. 7, 1897. Serial No. 654,494. (No model.)



Claim.—1. A spring-hub, comprising the inner member or hub proper, the outer larger tube, and a series of bowed springs arranged end to end between said hub and outer tube with their end portions secured together and their inner and outer sides secured to the hub and tube respectively, substantially as described.

2. A spring-hub, comprising the inner member or hub proper, the outer larger tube, and a series of bowed springs arranged end to end between the hub and outer tube, and secured at their inner and outer sides to said hub and tube respectively, each of said springs having therein a spring-leaf fixed to one side and sliding at its free end on the opposite side of the bowed spring, substantially as described.

3. A spring-hub, consisting of the inner member or hub proper, the outer larger tube, and a series of elliptical springs connected together at their abutting ends and arranged between said hub and outer tube and connected thereto at their inner and outer sides, each spring having an extension 10 extending from one side with its free end sliding on the opposite side, substantially as described.

4. A spring hub, consisting in the inner member or hub proper A, having both ends provided with internal and external screw-threads, the ball-bearing cups *b* screwed into the hub ends, the outer tube B, having spoke connections, annular heads *m* screwed into the ends of the tube B and through which project the ends of hub A, rings or washers *q* screwed on the ends of the hub A and resting against the outer faces of heads *m* and closing their central openings, and series of elliptical springs connected together at their abutting ends in the space between the hub members A, B, and secured at their inner and outer sides, respectively, thereto; each spring having an extension 10 extending from one side and its free end sliding on the opposite side, substantially as described.

610,608. AIR-INLET VALVE FOR AIR-COMPRESSORS. JOHN G. LEYNER, Denver, Colo. Filed Oct. 12, 1897. Serial No. 654,261. (No model.)



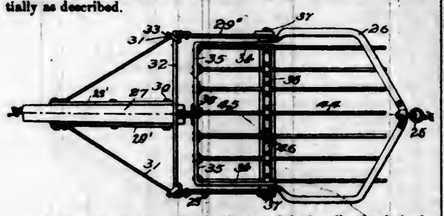
Claim.—1. In an air-inlet valve the combination of a stationary stem having an enlarged head portion at one end, a valve having a hollow shank mounted to slide reciprocatively on the head and body portion of said stem and having an enlarged chamber portion in its hollow body portion and a coiled spring in said chamber around said stem arranged to bear at one end against one end of said chamber and at its opposite end against said head portion of said stem and to hold said valve in an operative position, substantially as described.

2. In an air inlet valve the combination of the hood having the nut portion, the air-passages, the threaded open end and the valve-seat, with the stationary stem threaded axially in said hood to said nut portion, a check-nut in the end of said stem bearing against the end of said nut portion of said hood, a screw-slot in the threaded end of said stem, and with a valve slidably mounted on said stem, the washer in the open end of said valve and a retracting spring operatively mounted between said stem and valve to resiliently hold said valve in operative engagement with the valve-seat of said hood, substantially as described.

610,609. MANURE GATHERER AND LOADER. JOHN PETERSON, St. Peter, Minn. Filed Aug. 13, 1897. Serial No. 648,641. (No model.)

Claim.—1. The combination, with a mast and a boom pivoted thereto; of means for supporting said mast in a vertical position and

permitting same to rotate, a hoisting-tackle, a bailed fork or scoop pivoted upon a long handle, by which handle the movement of the same is directed, and means in connection with said handle for locking said fork, or scoop, and for unlocking same to permit the fork or scoop to tilt or rotate, and said fork being adapted to automatically return to its normal position after discharging its contents, substantially as described.



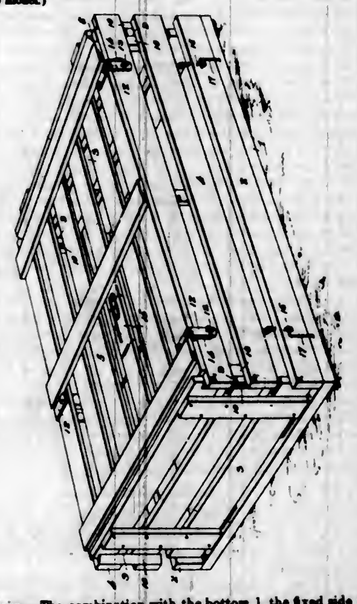
2. The combination, with the frame, of the handle, the fork pivoted in said frame and the strengthening-bar resting upon said handle and having its ends secured to said frame by suitable clips, substantially as described.

3. The combination, of the handle provided with the fork-frame, with the fork pivoted in said frame, and means upon the handle for locking said fork in said frame, said fork adapted to dump when loaded and released, and to automatically return when empty, substantially as described.

4. The combination, with a mast, and a boom pivoted thereto, of means for adjusting the elevation of said boom, a draft-rope or tackle provided in connection with said mast and boom, the fork or scoop provided with a bail connected with said draft-rope, means for locking the same, said fork being adapted to tilt or rotate to discharge its contents and to automatically return to its normal position, substantially as described.

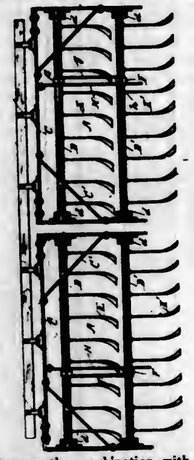
5. The combination, with the fork-frame and handle, of the arms 34 pivotally secured thereto, the cross bars or strips 35 and 36, the fork-teeth 44 secured thereto, and the rack 38 secured to said cross bars or strips, and means engaging said rack to lock the fork and to permit tilting of the same, substantially as described.

610,610. FOLDING CHICKEN-COOP. GEORGE W. ROBINSON and LOUIS STELZER, Walbert, Ma. Filed Feb. 26, 1898. Serial No. 672,044. (No model.)



Claim.—The combination with the bottom 1, the fixed side rails 2 2, the staples 16 and spring-hooks 17 fixed to the outer faces of said side rails, the hinged end pieces 3 3 having longitudinal grooves on their inner sides near their upper ends, eyes 7 secured to the inner sides of said end pieces, spring-hooks 8 secured at a point to one side of said eyes, side pieces 4 4 hinged to said side rails and provided at their ends with vertical grooves to receive the ends of the end pieces, the staples 13 and spring-hooks 14 fixed to the outside faces of said side pieces and in alinement with the corresponding staples and hooks on the fixed side rails, chains 11 secured to the inner faces of the side pieces and adapted to be engaged with the eyes 7 and held in place by the spring-hooks 8, the removable cover 5 having its ends engaged with the longitudinal grooves of the end pieces, and the hasps 12 pivoted to said cover and adapted to alternately engage the staples and hooks 12 13 and 16 17, substantially as set forth.

610,611. HARROW. PETER A. SCHUMACHER, Reynolds, N. D. Filed May 23, 1897. Serial No. 638,743. (No model.)



Claim.—In a harrow, the combination, with a frame provided with front and sides but open at the rear, of inwardly-projecting brackets *d* secured to the said sides, shafts journaled in the said brackets with their ends abutting against the said sides, harrow-knives projecting rearwardly from the said shafts and having laterally-curved end portions, and diagonal braces preventing the said sides from being spread apart by the end thrust of the said shafts due to the lateral curvature of the said knives, substantially as set forth.

610,612. MACHINE FOR BURNING SEEDS OF NOXIOUS WEEDS. JOHN J. SEFTER, Poplar Point, Canada. Filed Dec. 22, 1897. Serial No. 663,094. (No model.)

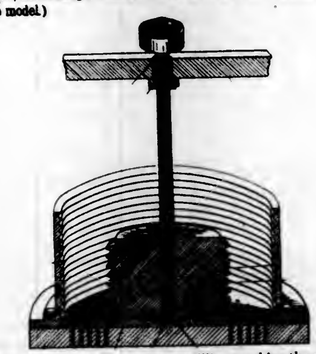


Claim.—1. A machine for burning the seed of noxious weeds embracing in its construction a skeleton frame, carrying-wheels supporting the skeleton frame, a fire-box suspended from the skeleton frame between the carrying-wheels, consisting of a top and two opposite sides extending downwardly from the top, two dampers pivoted to the opposite sides of the fire-box arranged one at each end thereof, and adapted to bear upon the surface over which the machine is traveling, colters connected to the frame in advance of the opposite sides, a blower or blowers mounted on the skeleton frame above the fire-box, a wind-trunk for each blower to convey the blast from the blower to the inside of the fire-box, a wind-spreader for each wind-trunk, a burner opposed to each wind-spreader, a fuel-supply tank for the burner, a connection between the fuel-supply tank and the burner, and means for operating the blower during the progress of the machine, substantially as specified.

2. A machine for burning the seed of noxious weeds embracing in its construction a skeleton frame, carrying-wheels supporting the skeleton frame, a fire-box suspended from the skeleton frame be-

tween the carrying-wheels, consisting of a top and two opposite sides extending downwardly from the top, two dampers pivoted to the opposite sides of the fire-box arranged one at each end thereof, and adapted to bear upon the surface over which the machine is traveling, colters connected to the frame in advance of the opposite sides, a blower or blowers mounted on the skeleton frame above the fire-box, a wind-trunk for each blower to convey the blast from the blower to the inside of the fire-box, a wind-spreader for each wind-trunk, a burner opposed to each wind-spreader, a fuel-supply tank for the burner, a connection between the fuel-supply tank and the burner, means for operating the blower during the progress of the machine, consisting of a cross-shaft journaled in bearings mounted on the skeleton frame, a sprocket-wheel loosely mounted on the cross-shaft, a sprocket-wheel rigidly mounted on the axle of the carrying-wheels, a sprocket-chain passing around the sprocket-wheels, a clutch member slidingly mounted on and revolving with the cross-shaft, adapted to mesh with a corresponding clutch member on the side face of the sprocket-wheel mounted on the shaft, a lever for throwing the clutch members into and out of engagement, a pulley rigidly mounted on the cross-shaft, a fanner-shaft for the blower or blowers, a pulley mounted on the fanner-shaft, a belt passing around the pulleys on the fanner-shaft and cross-shaft, substantially as specified.

610,618. LEATHER-DRESSING MACHINERY. WILLIAM S. SHAW, Bracebridge, Canada. Filed Nov. 13, 1897. Serial No. 658,659. (No model.)



Claim.—1. In a hide tanning or milling machine the combination of a bin, consisting of a perforated base, and a vertical wall surrounding the base having its inner face corrugated, a hammer centrally located within the bin having its outer face corrugated or provided with pins, a central pivot for the hammer fitting into a pivot-socket in the base of the bin, a vertical shaft passing centrally through the hammer, a cross-beam, bearings in the cross-beam for the vertical shaft, and means for imparting motion to the vertical shaft, and means for fastening the hammer to the shaft, substantially as specified.

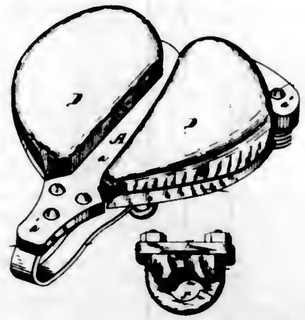
2. In a hide tanning and milling machine the combination of a bin, consisting of a circular-shaped perforated base a circular vertical wall extending upwardly from the base having its inner face corrugated, a central pivot-bearing fitted in the base, a hide-hammer having its outer face corrugated or provided with pins, a pivot for the under side of the hammer mounted in the pivot-bearings, a vertical shaft extending centrally through the hammer, means for fastening the hammer to the vertical shaft, a cross-beam, a vertical bearing mounted in the cross-beam for the shaft, a collar fitted to the shaft on the under side of the bearing, and a belt-pulley mounted on the shaft on the upper side of the cross-beam by means of which motion is imparted to it, substantially as specified.

610,614. BICYCLE-SADDLE. WILLIAM S. SMITH, Toronto, Canada. Filed Dec. 10, 1896. Serial No. 615,237. (No model.) Patented in Canada Jan. 22, 1897, No. 54,704.

Claim.—1. A bicycle-saddle consisting of a seat-plate, a saddle tree or frame having at its rear end branching or diverging arms extending one in rear of each side of the seat-plate, said seat-plate being independent of the saddletree and elastic supports secured at their front ends to the saddle tree or frame, and diverging rearwardly and secured to the arms of the frame.

2. A bicycle-saddle consisting of a saddle tree or frame, of a seat-plate independent of said frame and supported below the latter by spring-supports the rear ends of which are secured to the rear arms of the frame, while their forward ends are secured to the front end or horn of the saddletree.

3. A bicycle-saddle consisting of a saddletree, an independent seat-plate, elastic supports sustaining the seat-plate connected to the saddletree, each support consisting of a substantially V-shaped frame connected at the V end to the horn of the saddletree, and a coiled spring integrally formed with the outer end of each arm, the upper ends of the springs connected to the saddletree, substantially as specified.



4. A bicycle-saddle consisting of a saddletree, an independent seat-plate, elastic supports sustaining the seat-plate connected to the saddletree, each support consisting of a substantially V-shaped frame connected at the V end to the horn of the saddletree, a coiled spring integrally formed with the outer end of each arm, the upper ends of the springs connected to the saddletree, and seat-pads supported by the seat-plate, substantially as specified.

5. A bicycle-saddle consisting of a saddletree, substantially T-shaped, comprised of a stem, and two outwardly-branching arms at the rear end of the stem, a seat-plate located below the saddletree, the rear of the seat-plate shaped to correspond with the inner edge of the said arms, an upwardly-turned flange surrounding each side of the seat-plate to form pockets for the seat-pads, and springs connected to the arms and stem of the saddletree, to sustain the seat-plate substantially as specified.

6. A bicycle-saddle consisting of a saddletree, substantially T-shaped, comprised of a stem, and two outwardly-branching arms at the rear end of the stem, a seat-plate located below the saddletree, the rear of the seat-plate shaped to correspond with the inner edge of the said arms, an upwardly-turned flange surrounding each side of the seat-plate to form pockets for the seat-pads, springs connected to the arms and stem of the saddletree, to sustain the seat-plate, and seat-pads supported by the seat-plate, substantially as specified.

7. A bicycle-saddle consisting of a saddletree, substantially T-shaped, comprised of a stem and two outwardly-branching curved arms at the rear of the stem, an independent seat-plate below the saddletree consisting of two pockets integrally united at their forward end, elastic supports connected to the under side of the saddletree to sustain the seat-plate, each support consisting of a substantially V-shaped arm connected at the V end to the horn of the saddletree, and a coiled spring integrally formed with the outer end of each arm, the upper end of the springs connected to the under side of the outwardly-branching arms of the saddletree, substantially as specified.

8. A bicycle-saddle consisting of a saddletree, substantially T-shaped, comprised of a stem and two outwardly-branching curved arms at the rear of the stem, an independent seat-plate below the saddletree consisting of two pockets integrally united at their forward end, elastic supports connected to the under side of the saddletree to sustain the seat-plate, each support consisting of a substantially V-shaped arm connected at the V end to the horn of the saddletree, a coiled spring integrally formed with the outer end of each arm, the upper end of the springs connected to the under side of the outwardly-branching arms of the saddletree, and seat-pads supported by the seat-plate, substantially as specified.

610,615. PYROXYLIN COMPOUND. JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, of New York, N. Y., a Corporation of New Jersey. Filed Apr. 23, 1898. Serial No. 678,631. (No specimens.)

Claim.—1. A pyroxylin composition of matter consisting of pyroxylin and a lactophosphate substantially as described.

2. A pyroxylin composition of matter consisting of pyroxylin, a solvent of the same, and a lactophosphate substantially as described.

3. A pyroxylin composition of matter containing pyroxylin and lactophosphate of calcium.

610,616. EXTRACTION OF PRECIOUS METALS FROM THEIR ORES. HENRY L. SULMAN and FRANK L. TEED, London, England. Filed Nov. 6, 1894. Serial No. 528,061. (No specimens.) Patented in England Sept. 21, 1894, No. 18,008, Sept. 24, 1894, No. 18,146, and Oct. 1, 1894, No. 18,592, and in Germany Nov. 13, 1894, No. 83,282.

Claim.—1. The process herein described for dissolving precious metals from their ores in solution, the same consisting in combining with a suitable cyanid of the alkalies or alkaline earths, a suitable proportion of a halogen compound of cyanogen and then applying the solution to the crushed ore, as set forth.

2. The process herein described for dissolving precious metals from their ores in solution, the same consisting in combining with a suitable quantity of cyanid of potassium in water, a halogen compound of cyanogen in suitable proportions and then applying the solution to the crushed ore, as set forth.

3. The process herein described for dissolving precious metals from their ores in solution, the same consisting in combining with a suitable quantity of cyanid of potassium in water, a suitable proportion of bromid of cyanogen and then applying the solution to the crushed ore, as set forth.

4. The process herein described for dissolving precious metals from their ores in solution, the same consisting in combining with a suitable cyanid of the alkalies or alkaline earths a small proportion of a halogen so as to form a halogen compound of cyanogen, leaving an excess of cyanid undecomposed, and then applying the solution to the crushed ore.

610,617. FASTENING DEVICE FOR SCARF-PINS, HAT-PINS, &c. CHARLES E. TEUE, Muskegon, Mich. Filed Sept. 14, 1897. Serial No. 651,664. (No model.)



Claim.—1. A scarf-pin, hat-pin or similar device provided with a tube which is secured to the head end thereof and concealed by said head, said tube being open at its outer end and at one side of its inner end, and the inner end thereof, being slightly curved, outwardly in the direction of the open side, and a pin which is adapted to be inserted into said tube, and adapted to slide therein, said pin being provided at its inner end with a curved prong which is pivotally connected therewith, and which is adapted to turn outwardly through the opening at the side of the inner end of the tube, substantially as shown and described.

2. A scarf-pin, hat-pin or similar device provided with a tube which is secured to the head end thereof and concealed by said head, said tube being open at its outer end and at one side of its inner end, and the inner end thereof being slightly curved outwardly in the direction of the open side, and a pin which is adapted to be inserted into said tube, and adapted to slide therein, said pin being provided at its inner end with a curved prong which is pivotally connected therewith, and which is adapted to turn outwardly through the opening at the side of the inner end, said pin being provided at its outer end with a head and an annular groove adjacent thereto, and the outer end of the tube being provided with springs which are adapted to engage with said groove, substantially as shown and described.

3. A scarf-pin provided with a head which projects at an angle thereto, and a fastening device consisting of a short tube which is secured to the pin adjacent to said head and which is open at the outer end, and at one side of the inner end, and a pin which is adapted to be inserted into said tube from the outer end thereof, said pin being provided at its inner end with a pivoted curved prong, and the inner end of said tube being similarly beveled or curved in the direction of the opening in the side thereof, substantially as shown and described.

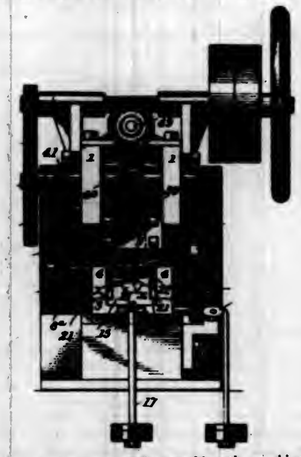
4. A scarf-pin provided with a head which projects at an angle thereto, and a fastening device consisting of a short tube which is secured to the pin adjacent to said head and which is open at the outer end, and at one side of the inner end, and a pin which is adapted to be inserted into said tube from the outer end thereof, said pin being provided at its inner end with a pivoted curved prong, and the inner end of said tube being similarly curved, in the direction of the opening in the side thereof, and the outer end of said pin being provided with a head and an annular groove adjacent thereto, and said tube being provided at its outer end with springs which are adapted to engage with said groove, substantially as shown and described.

5. A scarf or other pin provided at the head end thereof, with a short tube which is secured thereto and concealed by said head, and which is open at its outer end, and at one side of the inner end, and a pin which is mounted in said tube, and adapted to slide therein, said pin being provided with a pivoted curved prong at its inner end which is adapted to pass outwardly through the side opening at the inner end of said tube, substantially as shown and described.

6. A scarf-pin, hat-pin or similar device provided with a head, the face of which ranges approximately parallel to said pin, and a short tube mounted adjacent to the pin rearwardly of the face of the head, and substantially concealed by said head, and a pin working in said tube, substantially as shown and described, whereby the ends thereof may be forced out of the same to engage the fabric in which the main pin is inserted.

7. A scarf-pin, hat-pin or similar device provided with a head, the face of which ranges approximately parallel to said pin and a short tube mounted adjacent to the pin rearwardly of the face of the head, and substantially concealed by said head, the said tube being open near its lower end at the side opposite to or rearward of the face of the pin-head, and a pin inserted in said tube having a prong pivoted to the end thereof, which prong is curved and adapted to enter the fabric in which the pin is inserted to project rearwardly of said pin.

610,618. RASP-PUNCHING MACHINE. JAMES TURNER, Paterson, N. J., assignor to the Kearney & Foot Company, New York, N. Y. Filed Dec. 9, 1897. Serial No. 661,315. (No model.)



Claim.—1. In a rasp-cutting machine, the combination of a longitudinally-movable slide, means for intermittently moving the same, a transversely-reciprocating carriage upon which said slide is mounted, a rotary pattern-surface mounted upon the carriage with its axis at right angles to the line of movement of the slide, a bearing for said surface upon the frame, means for maintaining said surface in contact with said bearing, and a reciprocating punch and its operating means, substantially as described.

2. In a rasp-cutting machine, the combination of a longitudinally-movable slide means for intermittently moving the same, a transversely-reciprocating carriage upon which said slide is mounted, a pattern-surface having detachable portions, a bearing for said surface, means for maintaining the pattern-surface and bearing in contact and a reciprocating punch and its operating means, substantially as described.

3. In a rasp-cutting machine, the combination with an intermittently-movable slide, and its operating means, of a holder adapted to reciprocate at an angle to the face of the slide, a cutter pivotally supported upon the holder and provided upon one face with a solid bearing and upon its opposite face with a yielding bearing, and a detachable pivot for the cutter adapted to permit the cutter to be removed from the holder, substantially as described.

4. In a rasp or file cutting machine, the combination with a tool-holder provided with a recess, of a cutter pivoted within said recess and having one of its faces bearing against one wall thereof and a yielding bearing comprising a spring-pressed stud or block engaging the opposite face of the cutter, substantially as described.

5. In a rasp or file cutting machine the combination with a holder provided with a recess, of a cutter or punch within said recess having sockets formed in its opposite sides and pins engaging said sockets, one of the pins being retractable, substantially as described.

6. In a rasp or file cutting machine the combination with a holder provided with a recess of a cutter or punch within said recess having sockets formed in its opposite sides and pins engaging said sockets, one of said pins being spring-pressed and retractable, substantially as described.

7. In a rasp or file cutting machine, the combination with blank-feeding mechanism, of a reciprocating cutter-holder, a pivoted lever for moving the cutter-holder toward the blank-feeding mechanism, means for reciprocating the lever, devices for shifting the pivotal

point of the said lever, and springs for moving the cutter-holder from the blank-feeding mechanism, substantially as described.

610,619. APPARATUS FOR MERCERIZING. ALFRED WYSER, Aarau, Switzerland. Filed Jan. 3, 1898. Serial No. 665,443. (No model.)

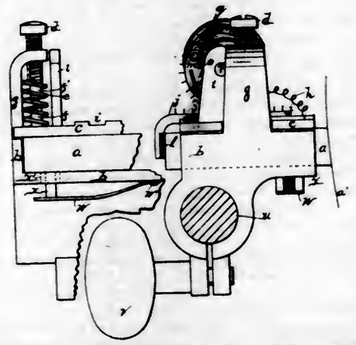


Claim.—1. An apparatus for mercerizing yarns, comprising an adjustable reel which is mounted revolubly on its axis in a vessel which is provided with a sprinkling device, substantially as described.

2. An apparatus for mercerizing yarn or yarns having an adjustable reel revolubly mounted on its axis in a vessel provided with a sprinkling device, the supports of the reel device being hinged both to a sleeve surrounding the spindle and also to the reel-bars and the upper part of the spindle being threaded on which threaded part a nut provided with a hand-wheel is mounted which carries in a groove a ring of hinge-pieces which are connected with the uppermost hinges by means of links, substantially as described.

3. An apparatus for mercerizing yarns having an adjustable reel which is mounted revolubly on its axis in a vessel provided with a sprinkling device, said sprinkling device consisting of annular pipes lying on the walls of the vessel and connected with a main pipe, said device being provided with small openings facing toward the middle of the vessel, substantially as described.

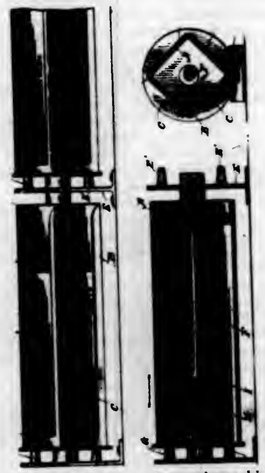
610,620. COMMUTATOR-BRUSH HOLDER. WILLIAM K. BAMFORD, Jr., Bound Brook, N. J. Filed Feb. 1, 1898. Serial No. 668,735. (No model.)



Claim.—1. A commutator-brush holder consisting of the combination of a base-plate, having a channel for containing the brush, a pressure-plate upon the brush to hold the same in the channel, a pusher bearing upon the end of the brush, and a motive device carried by the pressure-plate for driving the pusher.

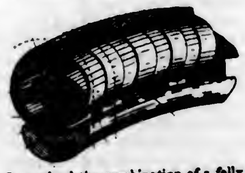
2. The combination with a commutator, of an electric conducting-block, a pusher for driving the block against the commutator, and an automatic device for retaining the block from the commutator against the action of the pusher.

610,621. MAIL-DISTRIBUTING INDICATOR. PETER BRANDELL, Council Bluffs, Iowa. Filed Sept. 29, 1897. Serial No. 653,462. (No model.)



Claim.—In a mail-indicator, a drum polygonal in cross-section, strips placed on each edge of said drum, and a strip adapted to be secured around said drum at one end thereof, said strip having tongues projecting therefrom and lying on the strips placed on the edges, each of said tongues having its sides bent inward to partially inclose the corner, producing guideways with the sides of the drum, as and for the purpose described.

610,622. METALLIC TIRE FOR WHEELS. EDWARD J. CHAMBERS, Woodstock, Canada. Filed Dec. 4, 1897. Serial No. 660,762. (No model.)



Claim.—1. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, a plurality of shields to protect the joints of the tire-sections, consisting of a semidivided annular plate to embrace two adjacent tire-sections, and a clip connected to the inner side of the annular plate to embrace the inner faces of two adjacent tire-sections, substantially as specified.

2. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, an apron connected to the felly extending beyond the sides of the flange to protect the opposite meeting edges of the tire-sections, a plurality of shields to protect the joints of the tire-sections, consisting of a semidivided annular plate to embrace the adjacent tire-sections, and a clip connected to the inner side of the annular plate to embrace the inner faces of two adjacent tire-sections, substantially as specified.

3. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, an apron connected to the felly extending beyond the sides of the flange to protect the opposite meeting edges of the tire-sections, a tubular cover to inclose the tire-sections, aprons, and flange, a plurality of shields to protect the joints of the tire-sections, consisting of a semidivided annular plate to embrace the adjacent tire-sections, and a clip connected to the inner side of the annular plate to embrace the inner faces of two adjacent tire-sections, substantially as specified.

4. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, a buffer connected to the perimeter of the flange and overhanging its sides to assist in preventing the displacement of the tire-sections, and to assist in protecting them against breakage by compression, a plurality of shields to protect the joints of the tire-sections, consisting of a semidivided annular plate to embrace the adjacent tire-sections, and a clip connected to the inner side of the annular plate to embrace the inner faces of two adjacent tire-sections, substantially as specified.

5. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, an apron connected to the felly extending beyond the sides of the flange to protect the opposite meeting edges of the tire-sections, a buffer connected to the perimeter of the flange and overhanging its sides to assist in preventing the displacement of the tire-sections, and to assist in protecting them against breakage by compression, a plurality of shields to protect the joints of the tire-sections, consisting of a semidivided annular plate to embrace two adjacent tire-sections, and a clip connected to the inner side of the annular plate to embrace the inner faces of two adjacent tire-sections, substantially as specified.

6. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, an apron connected to the felly extending beyond the sides of the flange to protect the opposite meeting edges of the tire-sections, a tubular cover to inclose the tire-sections, aprons, and flange, a buffer connected to the perimeter of the flange and overhanging its sides to assist in preventing the displacement of the tire-sections, and to assist in protecting them against breakage by compression, a plurality of shields to protect the joints of the tire-sections, consisting of a semidivided annular plate to embrace two adjacent tire-sections, and a clip connected to the inner side of the annular plate to embrace the inner faces of two adjacent tire-sections, substantially as specified.

7. A wheel embracing in its construction a felly, a central flange projecting radially from the perimeter of the felly, a tire consisting of a plurality of independent annular sections, the opposite meeting edges of which press against the sides of the radial flange, and by their compression hold the annular sections in position on the rim, and a plurality of shields to protect the joints of the tire-sections, each consisting of a semidivided annular plate, adapted to embrace two adjacent tire-sections, substantially as specified.

8. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, and a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, an apron connected to the felly extending beyond the sides of the flange to protect the opposite meeting edges of the tire-sections, and a plurality of shields to protect the joints of the tire-sections, each consisting of a semidivided annular plate, adapted to embrace two adjacent tire-sections, substantially as specified.

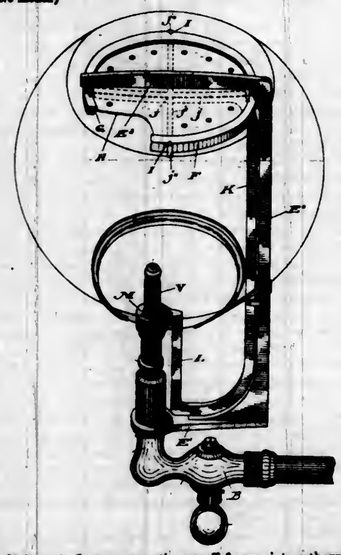
9. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, an apron connected to the felly extending beyond the sides of the flange to protect the opposite meeting edges of the tire-sections, a tubular cover to inclose the tire-sections, aprons, and flange, and a plurality of shields to protect the joints of the tire-sections, each consisting of a semidivided annular plate, adapted to embrace two adjacent tire-sections, substantially as specified.

10. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, a buffer connected to the perimeter of the flange and overhanging its sides to assist in preventing the displacement of the tire-sections, and to assist in protecting them against breakage by compression, and a plurality of shields to protect the joints of the tire-sections, each consisting of a semidivided annular plate, adapted to embrace two adjacent tire-sections, substantially as specified.

11. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, an apron connected to the felly extending beyond the sides of the flange to protect the opposite meeting edges of the tire-sections, a buffer connected to the perimeter of the flange and overhanging its sides to assist in preventing the displacement of the tire-sections, and to assist in protecting them against breakage by compression, and a plurality of shields to protect the joints of the tire-sections, each consisting of a semidivided annular plate, adapted to embrace two adjacent tire-sections, substantially as specified.

12. In a wheel the combination of a felly, having a central flange projecting radially from its perimeter, a tire consisting of a plurality of independent annular sections held in position by the compression of their opposite meeting edges against the sides of the radial flange, an apron connected to the felly extending beyond the sides of the flange to protect the opposite meeting edges of the tire-sections, a tubular cover to inclose the tire-sections, aprons, and flange, a buffer connected to the perimeter of the flange and overhanging its sides to assist in preventing the displacement of the tire-sections, and to assist in protecting them against breakage by compression, and a plurality of shields to protect the joints of the tire-sections, each consisting of a semidivided annular plate, adapted to embrace two adjacent tire-sections, substantially as specified.

610,628. AUTOMATIC CUT-OFF FOR GAS-BURNERS. PHILIP C. FOLWELL, Toronto, Canada. Filed Oct. 9, 1897. Serial No. 654,718. (No model.)



Claim.—1. In an automatic cut-off for gas-jets, a thermostat embracing in its construction a slowly-expansible ring suspended above the burner and provided with an annular flange, a quickly-expansible diaphragm loosely mounted in the ring in combination with a vertically-movable frame suspended below and supporting the diaphragm, and provided with an arm to operate the valve to open the passage when the diaphragm is heat-influenced, substantially as specified.

2. In an automatic cut-off for gas-jets, a thermostat embracing in its construction a slowly-expansible ring provided with an annular flange, a quickly and easily expansible diaphragm, loosely mounted in the ring in combination with a vertically-movable frame suspended below and supporting the diaphragm, and provided with diametrically opposite lugs embracing the sides of the ring, and an arm depending from the frame to operate the valve controlling the passage through the burner, substantially as specified.

3. An automatic cut-off for gas-jets embracing in its construction a cylinder connected to the gas-jet, a piston-valve within the cylinder, a hollow valve-stem connected to the piston-valve and projecting beyond the cylinder and provided with ports in close proximity to the piston-valve, a spring to normally hold the piston-valve against the valve-seat in the cylinder and close the passage from the gas-jet to the burner, a thermostat, an arm controlled by the thermostat when heat-influenced to hold the valve depressed and keep open the passage from the gas-jet to the burner, said thermostat provided with an eye encircling the burner, and an adjusting-nut fitted on the burner to support the eye of the heat-controlled arm and regulate the movement of the hollow valve-stem and burner, substantially as specified.

4. An automatic cut-off for gas-jets embracing in its construction a gas-jet, a supporting-frame consisting of a standard having

two horizontal arms, the lower horizontal arm fitted with an eye supported on the shoulder of the gas-jet, the upper horizontal arm holding a ring of slowly-expansible metal, a cylinder fitted on the gas-jet, binding the eye of the supporting-frame against the shoulder, a piston-valve within the cylinder, a spring pressing against the top of the gas-jet and the under side of the piston-valve, a hollow valve-stem connected to the piston-valve and having ports in close proximity thereto, a burner fitted to the top of the valve-stem, a diaphragm of quickly-expansible metal loosely held by the slowly-expansible ring, a vertically-movable frame below the diaphragm, an arm depending from the frame, an eye connected to the arm encircling the burner, and an adjusting-nut fitted on the burner to support the eye, substantially as specified.

610,624. DOOR-FASTENER. LESLIE J. GAMBLE, Moline, Ill. Filed June 7, 1897. Serial No. 639,657. (No model.)



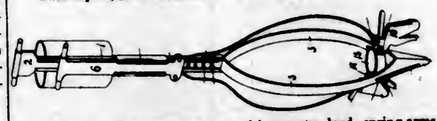
Claim.—1. A fastener of the character described comprising a hook-shaped catch adapted to be affixed to one of the parts to be locked together, a base-plate adapted to be affixed to the other of the parts to be locked together and having a straight edge to correspond with the edge of the same and flanged to take over the latter, said base-plate having a curved back edge raised to form a marginal depression, and a cam-plate pivoted to the base-plate having a curved marginal cam-flange to engage the hook-shaped catch and having a lug with a lip projecting into the marginal depression of the base-plate which forms a path for said lip, rotation of the cam-plate being limited by abutment of said lip against the flange on the straight edge of the base-plate.

2. A fastener of the character described comprising a hook-shaped catch adapted to be affixed to one of the parts to be locked together, a base-plate adapted to be affixed to the other of the parts to be locked together and having a straight edge to correspond with the edge of the same and flanged to take over the latter, said base-plate having a curved back edge raised to form a marginal depression, a cam-plate arranged over said base-plate having a marginal cam-flange to engage the hook-shaped catch and being recessed at the middle in the side next to the base-plate, said cam-plate having a lug with a lip projecting into the marginal depression of the base-plate, which forms a path for said lip, and rotation of the cam-plate being limited by abutment of said lip against the flange on the straight edge of the base-plate, a pivot-pin connecting the two plates and passing through the recess in the cam-plate, and a spiral spring occupying said recess and surrounding said pivot-pin and bearing against the cam-plate and base-plate, whereby it exerts itself to press the cam-flange into close engagement with the hook-shaped catch, substantially as described.

3. A fastener of the character described comprising a hook-shaped catch adapted to be affixed to one of the parts to be locked together, a base-plate adapted to be affixed to the other of the parts to be locked together and having a straight edge to correspond with the edge of the same and flanged to take over the latter, said base-plate having a curved back edge raised to form a marginal depression, and a cam-plate pivoted to the base-plate having a curved marginal cam-flange to engage the hook-shaped catch and having a lug with a lip projecting into the marginal depression of the base-plate which forms a path for said lip, rotation of the cam-plate being limited by abutment of said lip against the flange on the straight edge of the base-plate, and the cam-plate being cut away to terminate the low end of the cam-flange and permit complete disengagement of the catch and cam-plate by turning of the latter.

4. A fastener of the character described comprising a hook-shaped catch adapted to be affixed to one of the parts to be locked together, a base-plate adapted to be affixed to the other of the parts to be locked together and having a straight edge to correspond with the edge of the same and flanged to take over the latter, said base-plate having a curved back edge raised to form a marginal depression, a cam-plate arranged over said base-plate having a marginal cam-flange to engage the hook-shaped catch and being recessed at the middle in the side next to the base-plate, said cam-plate having a lug with a lip projecting into the marginal depression of the base-plate, which forms a path for said lip, and rotation of the cam-plate being limited by abutment of said lip against the flange on the straight edge of the base-plate and the cam-plate being cut away to terminate the low end of the cam-flange and permit complete disengagement of the catch and cam-plate by turning of the latter, a pivot-pin connecting the two plates and passing through the recess in the cam-plate, and a spiral spring occupying said recess and surrounding said pivot-pin and bearing against the cam-plate and base-plate, whereby it exerts itself to press the cam-flange into close engagement with the hooked-shaped catch, substantially as described.

610,625. TRANSPLANTER. WILLIAM D. GRIB, Venus, Nebr. Filed Sept. 3, 1897. Serial No. 650,455. (No model.)



Claim.—1. A transplanter comprising a standard, spring-arms attached thereto, jaws carried by the spring-arms, a ring movable between the jaws for the purpose of separating the same, and means for effecting said movement, substantially as described.

2. A transplanter comprising a standard, jaws secured thereto, an arm adapted to reciprocate upon the standard, spring-arms secured to said reciprocating arm, a ring carried by the lower ends of said arms and adapted to move between the jaws for separating the same, and means for limiting the movement of said ring, substantially as described.

3. A transplanter comprising a standard, spring-arms secured to the standard upon opposite sides thereof, jaws carried by the extremities of said arms and formed with longitudinally-extending slots, an operating-arm adapted to reciprocate upon the standard, spring-arms secured thereto and extending downwardly, a ring carried by the extremities of said arm and adapted to move between the jaws, pins carried by said ring and extending through the slots in the jaws in which they are adapted to move, and means for the movement of the operating-arm, substantially as described.

4. A transplanter comprising a standard, jaws carried by the lower end thereof, an operating-arm adapted to reciprocate upon the standard, spring-arms carried by the lower end of said operating-arm and extending downwardly, pressers pivoted to the extremities of said arms, and a ring movable between the jaws and formed with flanges to which the pressers are also pivoted, whereby when the operating-handle is moved downwardly the ring separates the jaws, and at the same time the pressers convey the loose soil about the plant and compress the same, substantially as described.

5. A transplanter comprising a standard, spring-arms secured at its lower end, jaws carried by the extremities of the spring-arms and adapted to be normally held together, said standard formed with a guideway, an arm movable in said guideway, a head formed upon the lower end of the arm, spring-arms secured within the head, pressers eccentrically pivoted to the extremities of the arms, said pressers formed with a shovel portion and pressing-fingers, a ring movable between the jaws and adapted to separate the same when moved downwardly, said pressers also pivoted to the ring, whereby the movement of the ring and pressers is simultaneous, and steps carried by the spring-arms adapted to receive the foot of the operator for operating the ring and pressers, substantially as described.

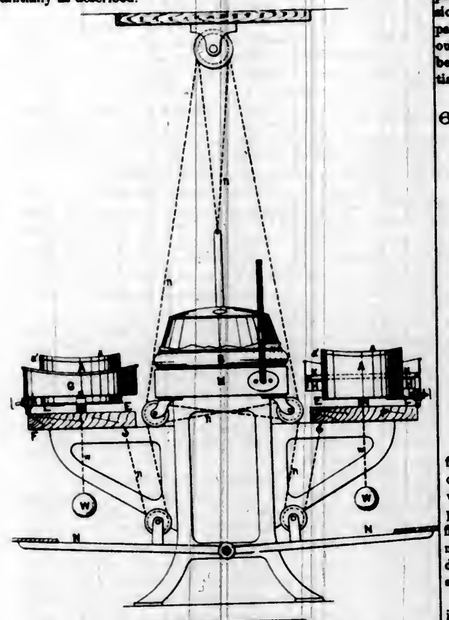
610,626. COMPOSITION CONTAINING CASEIN FOR ELECTRIC INSULATING OR OTHER PURPOSES. PETER H. HANSEN, Copenhagen, Denmark. Filed Feb. 7, 1896. Serial No. 669,465. (No specimens.)

Claim.—A composition consisting mainly of casein, india-rubber and asphalt substantially in the proportions set forth.

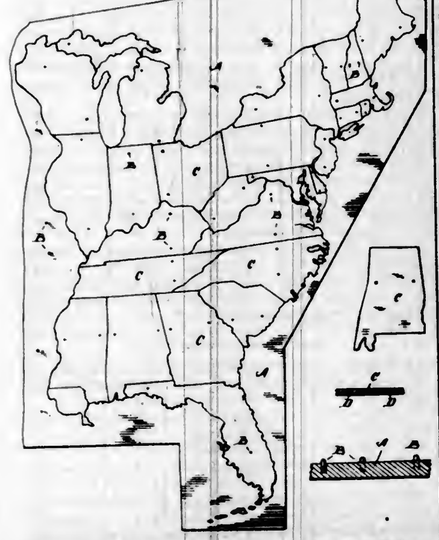
610,627. MANUFACTURE OF FELT HATS. JOSEPH B. HARRISON, Stockport, England. Filed Dec. 28, 1897. Serial No. 664,470. (No model.)

Claim.—1. A machine for curling the brims of felt hats comprising a loose block A for the hat a suspended platform upon which the block rests a shield inclosing the block to prevent the escape of steam, a flexible band to form a joint around the block a perforated steam-pipe to supply jets of steam to the edge of the brim and a pad to apply pressure to and protect the edge of the brim during the operation of steaming substantially as described.

2. In a machine for curling the brims of hats the combination with the block A and perforated steam-pipe K to apply steam to the extreme edge of the hat-brim of the suspended plate E upon which the hat-block rests, the weights W and chains w by which the plate is suspended, the shield G surrounding the block to prevent escape of steam, the flexible ring H to form a steam-tight joint around the hat-block below the steam-pipe, the tap k on the steam-pipe the lever L attached to the plate E by which the steam-tap is turned off and on by the rise and fall of the plate E and the heated flexible pad B forming a cover which incloses the upper side of the hat-brim and depresses the hat-block A and plate E, thereby forming a steam-chamber around the hat-block and turning on the steam-tap substantially as described.



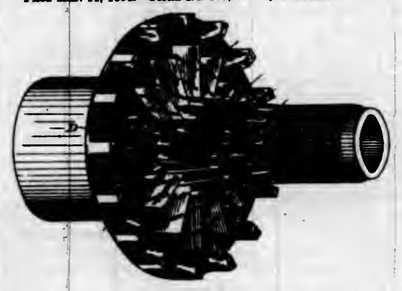
610,628. PUZZLE-MAP GAME. AUGUSTUS G. JACOBS, Jonestown, Miss. Filed May 28, 1898. Serial No. 682,081. (No model.)



Claim.—1. The puzzle-map game substantially as described, consisting of a board with pins therein arranged in pairs and at varying distances between the pins of a pair; and the sectional map, the sections having the outlines of various subdivisions, and each having a plurality of recesses or holes corresponding in distance apart to the pins in the board, whereby the sections may be assembled and held on the board, substantially as described.

2. The puzzle-map game described, consisting of a base-board with pins projecting therefrom, the pins being arranged as different pairs corresponding to each sectional subdivision, and the subdivisional sectional map having each a pair of holes corresponding to the pair of pins on the base-board and differing from other sections, the outline of said map being indicated on the base-board and the details being shown on not more than one side of the map-sections, substantially as described.

610,629. WHEEL-HUB. ELIJAH M. MIERS, Palmerston, Canada. Filed Mar. 11, 1896. Serial No. 673,471. (No model.)

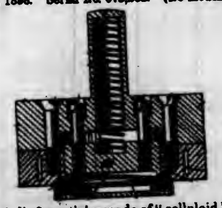


Claim.—1. A wheel embracing in its construction a hub, a fixed flange integrally formed with the hub, a frusto-conical enlargement on the hub converging from the inner side face of the flange outward, a series of longitudinal cavities formed in the enlargement, a plurality of expanding-wedges connected to the inner face of the flange, and extending radially outward from the enlargement, a removable flange fitted on the hub, and a series of spoke-partitions dividing the space between the flanges into sockets for the spokes, substantially as specified.

2. A wheel embracing in its construction a hub, a fixed flange integrally formed with the hub, a frusto-conical enlargement on the hub converging from the inner side face of the flange outward, a series of longitudinal cavities formed in the enlargement, a plurality of expanding-wedges connected to the inner face of the flange, and extending radially outward from the enlargement, the inner end of each expanding-wedge contiguous to its respective raised portion between two concavities, partition members connected to the inner side face of the fixed flange, the inner end of each partition member contiguous to the outer end of its respective expanding-wedge, a removable flange, a series of partition members corresponding in number and location with the partition members of the fixed flange, and adapted to interlock therewith, and a nut to lock the removable flange in position when assembled, substantially as specified.

3. A wheel-hub embracing in its construction a fixed hub-section having a central bore for the boxing of the axle, a spoke-retaining flange having a plurality of radial mortises in proximity to the edge of the flange, a central conical-shaped enlargement for the hub-section projecting from the inner side of the flange having a plurality of concavities corresponding in number and position with the spaces between the mortises, a plurality of expanding-wedges connected to the inner face of the spoke-retaining flange and located one between each mortise and the raised portion of its respective concavity, and a removable hub-section adapted to be fitted on the fixed hub-section having a central bore corresponding to the conical enlargement of the fixed hub-section, and a plurality of mortises and expanding-wedges corresponding to the mortises and expanding-wedges of the fixed hub-section, substantially as specified.

610,680. DIE FOR MAKING FRAMES FROM SHEETS OF CELLULOID, &c. HORACE E. MILLER, Newark, N. J., assignor to The Celluloid Company, of New York, N. Y., a Corporation of New Jersey. Filed Mar. 9, 1898. Serial No. 673,208. (No model.)



Claim.—1. A die for articles made of "celluloid" or similar plastic material having a curved rim; said die consisting of the combination

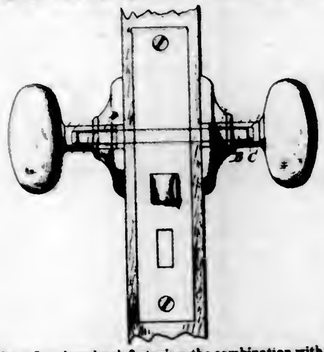
of a base-plate for supporting the article, a movable block of a smaller diameter than that of the article, and a forming-die having a groove in the bottom thereof adapted to turn over and under upon itself the upright edge of the article, and means for operating the same, substantially as described.

2. A die for articles made of "celluloid" or similar plastic material having a curved rim; consisting of the combination of a base-plate containing an elastic cushion for supporting the article, a movable block of a smaller diameter than that of the article, and a forming-die having a groove in the bottom thereof adapted to turn over and under upon itself the upright edge of the article, and means for operating the same, substantially as described.

3. A die for articles made of "celluloid" or similar plastic material having a curved rim; said die consisting of the combination of a base-plate for supporting the article, a movable spring-pressed block of a smaller diameter than that of the article, and a forming-die having a groove in the bottom thereof adapted to turn over and under upon itself the upright edge of the article, and means for operating the same, substantially as described.

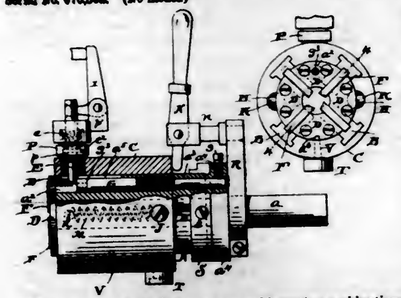
4. A die for articles made of "celluloid" or similar plastic material having a curved rim; said die consisting of the combination of a base-plate containing an elastic cushion for supporting the article, a movable spring-pressed block of a smaller diameter than that of the article, and a forming-die having a groove in the bottom thereof adapted to turn over and under upon itself the upright edge of the article, and means for operating the same, substantially as described.

610,681. DOOR-KNOB FASTENING. GEORGE R. MOORE, Philadelphia, Pa. Filed Sept. 16, 1897. Serial No. 651,952. (No model.)



Claim.—In a door-knob fastening, the combination with the socketed knob-stem and the spindle of an interposed wedging-strip, of thin metal, having a portion in contact with the end of the spindle, and extending from said portion along the spindle within the socket of the knob-stem, substantially as hereinbefore specified.

610,682. DIE-HEAD FOR SCREW-MACHINES. WILLIAM MORGAN, Cleveland, Ohio. Filed Apr. 17, 1897. Renewed Feb. 16, 1898. Serial No. 670,992. (No model.)



Claim.—1. In a die-head for screw-machines, the combination of a radially-slotted barrel, die-cases in said slots, a sleeve movable upon said barrel, and connections between the die-cases and sleeve whereby the former are moved radially by the longitudinal movement of the latter, with an adjustable screw G in the barrel, a spring-bolt carried by the sleeve and adapted to engage with the end of said screw, and springs for moving the sleeve rearward upon the barrel, substantially as specified.

2. In a die-head for screw-machines, the combination of a radially-slotted barrel, die-cases in said slots, a sleeve movable upon said barrel, and connections between the die-cases and sleeve whereby the former are moved radially by the longitudinal movement of the latter, with an adjustable screw G in the barrel which is unthreaded at both ends, a set-screw for preventing the rotation of said adjustable screw, a spring-bolt carried by the sleeve and projecting through a slot in the barrel into engagement with the adjustable screw, means for moving the sleeve forward upon the barrel, and springs for moving it rearward, substantially as specified.

3. In a die-head for screw-machines, the combination of a radially-slotted barrel, die-cases in said slots, a sleeve movable upon said barrel, and connections between the die-cases and sleeve whereby the former are moved radially by the longitudinal movement of the latter, with means for moving the sleeve forward upon the barrel, springs for moving it rearward, an automatic spring-latch for preventing this rearward movement, and means for withdrawing said latch, substantially as specified.

4. In a die-head for screw-machines, the combination of a radially-slotted barrel, die-cases in said slots, a sleeve movable upon said barrel, and connections between the die-cases and sleeve whereby the former are moved radially by the longitudinal movement of the latter, with an adjustable screw G in the barrel having its ends unthreaded, a radial spring-bolt carried by the sleeve, a bell-crank lever carried by the sleeve for withdrawing the spring-bolt, means for moving the sleeve forward, and springs for moving it rearward, substantially as specified.

5. In a die-head for screw-machines, the combination of a radially-slotted barrel, die-cases in said slots, a sleeve movable upon said barrel, and connections between the die-cases and sleeve whereby the former are moved radially by the longitudinal movement of the latter, with means for moving the sleeve forward upon the barrel, springs in longitudinal sockets formed partly in the barrel and partly in the sleeve, pins projecting outward from the barrel into said sockets in front of said springs, pins projecting into said sockets from the sleeve behind said springs, and a latch for temporarily preventing the rearward movement of said sleeve, substantially as described.

6. In a die-head for screw-machines, the combination of a radially-slotted barrel, die-cases in said slots, a sleeve movable upon said barrel, and connections between the die-cases and sleeve whereby the former are moved radially by the longitudinal movement of the latter, with means for moving the sleeve forward upon the barrel, springs for moving it backward, an automatic spring-latch for preventing this backward movement, means for withdrawing said latch, and a ring-segment removably secured to the barrel and adapted to serve as a stop to the backward movement of said sleeve, substantially as described.

7. In a die-head for screw-machines, the combination of a radially-slotted barrel, die cases in said slots, a sleeve movable upon said barrel, and connections between the die-cases and sleeve whereby the former are moved radially by the longitudinal movement of the latter, with sector-shaped plates which are secured to the front end of the barrel and overlap the ends of the die-cases but leave spaces between them through which dies carried by said cases are adapted to project, substantially as described.

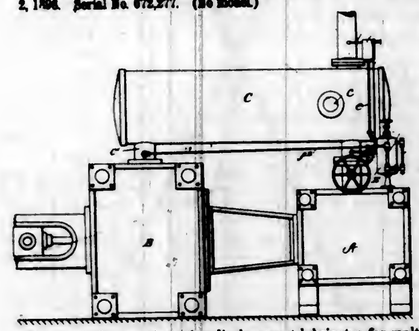
8. In a die-head for screw-machines, the combination of the die-cases having oblique lateral wings, a die-slot with a closed rear end, and a recess *b'*, with a die secured in said slot with its rear end against the rear wall of the case and having a lug *f* which enters said recess, substantially as described.

610,688. TIRE FOR VEHICLE-WHEELS. JAMES MORLEY, Bournemouth, England. Filed May 14, 1898. Serial No. 680,707. (No model.)



Claim.—An improved tire for the wheels of bicycles and similar vehicles, comprising an elastic or semi-elastic tube or cover and an interior rim or band which bears on the inner surface of the outer portion of said tube or cover, and is adapted to expand the same, said rim or band being segmental in cross-section and the convex surface thereof being directed outwardly and being provided centrally and longitudinally with an inwardly-directed groove, and said rim or band being provided at the inner surface thereof with a plurality of tangentially-arranged brace-rods which are connected therewith at each end and which are supported centrally by the rim of the wheel with which the tire is connected, substantially as shown and described.

610,684. LUBRICATOR. ELIJAH MCCOY, Detroit, Mich., assignor to the Detroit Sheet Metal and Brass Works, same place. Filed Mar. 2, 1898. Serial No. 672,277. (No model.)



Claim.—1. In a condensation displacement lubricator for multiple-expansion engines, the combination with the sight-feed tubes, of pipes or passages leading therefrom to the high and low pressure cylinders, respectively, and an auxiliary steam-pipe leading at its lower end into the pipe or passage from the sight-feed to the lower-pressure cylinder, and independent of the pipe leading to the high-pressure cylinder and at its upper end communicating with the main steam-pipe at a suitable point, substantially as described.

2. In a condensation-displacement lubricator for multiple-expansion engines, the combination with the sight-feed tubes each having an independent connection with the oil-reservoir, of pipes leading therefrom to the high and low pressure cylinders, respectively, and an auxiliary steam-pipe leading at its lower end into the pipe from the sight-feed to the lower-pressure cylinder, and independent of the pipe leading to the high-pressure cylinder and at its upper end communicating with the main steam-pipe at a suitable point, substantially as described.

3. In a condensation-displacement lubricator for multiple-expansion engines, the combination with the sight-feed tubes, of independent pipes leading therefrom to the main steam-pipe and to the intermediate and low pressure cylinders, respectively, and independent auxiliary steam-pipes, one for each of the pipes leading to the intermediate and low pressure cylinders, connecting with said pipes at their lower ends and at their upper ends communicating with the main steam-pipe at any suitable point above the point of introduction thereinto of the oil for the high-pressure cylinder, substantially as described.

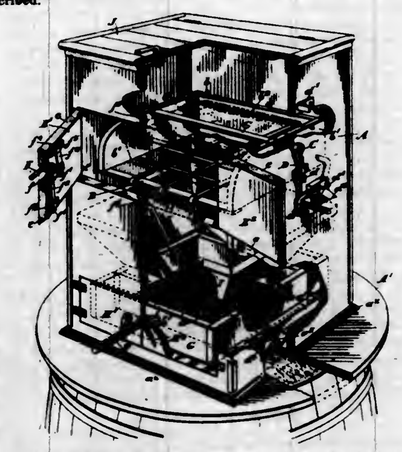
4. In a lubricator for multiple-expansion engines, the combination with the oil-feed passage into the main steam-pipe for the lubricant for the high-pressure cylinder, and an oil-feed pipe leading to each of the other cylinders, of an independent auxiliary steam pipe or pipes, one for each of said last-named feed-pipes, which auxiliary pipes communicate at the upper end with the main steam-pipe at a suitable point, and at their lower ends lead into the respective feed-pipes, substantially as described.

5. In a condensation-displacement lubricator for multiple-expansion engines, the combination with the sight-feed tubes, of feed-pipes, one for conveying oil into the main steam-pipe for the high-pressure cylinder, and another for conveying oil from the other sight-feed to the low-pressure cylinder, and a pipe for the water of condensation leading upwardly from the oil-reservoir into the bottom of a condensing-chamber connected with the main steam-pipe, and an auxiliary steam-pipe connecting at its upper end into the upper part of the condensing-chamber and at its lower end into the oil-feed pipe to the low-pressure cylinder and independent of the oil-feed pipe to the high-pressure cylinder, substantially as described.

6. In a condensation-displacement lubricator for multiple-expansion engines, the combination with two cylinders of different pressures, of an oil-reservoir, two independent oil-feed pipes for conducting oil from the reservoir to said cylinders respectively, and two independent auxiliary steam-pipes communicating with said oil-feed pipes, respectively, substantially as described.

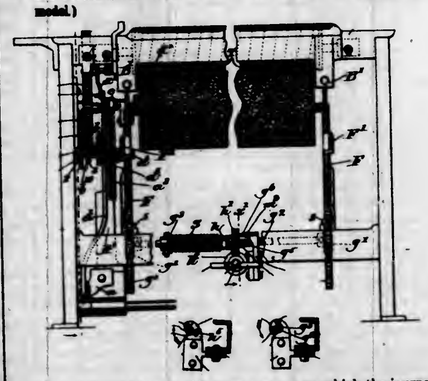
610,685. DUST-TIGHT SIFTER FOR ASHES. ALEXANDER MCKAY, Montreal, Canada. Filed June 30, 1897. Serial No. 642,017. (No model.)

Claim.—1. In combination, the box, the screen arranged near the bottom thereof, a platform pivotally supported within the casing above the screen adapted to receive an ash-pan, and having bottom, top, sides and rear retaining means for said pan, the front of said platform being permanently open, and means for turning said platform upside down, the open front of the platform moving upward in said movement, and means for preventing the lowering of the front of the platform below its normal plane, substantially as described.



2. In a sifting apparatus, the box, the screen, the platform and shaft, the crank-handle D, the stop-lugs *d d'* the hook d^3, pivoted intermediate of its ends and having its forward end engaging the handle D and the bevel-ended rearward extension d^3, substantially as described.

610,686. TAKE-UP MECHANISM FOR LOOMS. JAMES H. MORTIMER, Hopedale, Mass., assignor to the Draper Company, same place and Portland, Me. Filed Feb. 13, 1896. Serial No. 670,730. (No model.)



Claim.—1. In a loom, sliding supports upon which the journals of the cloth-roll are mounted, connections between said supports to effect their movement in unison, and means to control said movement with a variable resistance.

2. In a loom, sliding supports for the cloth-roll journals, fixed guides for the supports, having open portions to permit insertion and removal of the cloth-roll journals, and spring-controlled means connecting and to govern the movement of said supports in unison.

3. In a loom, fixed guides, rack-bars movable thereon and adapted to support the cloth-roll journals, a shaft having gears fast thereon, said gears meshing with the rack-bars, and a spring adapted to control the rotation of the shaft and thereby the movement of the rack-bars.

4. In a loom, sliding supports for the cloth-roll journals provided with rack-teeth, a shaft geared to said supports to effect their movement in unison, a controlling-spring attached at one end to the shaft and fixed at its other end, and means to manually vary the spring tension.

5. In a loom, fixed guides, rack-bars movable thereon and adapted to support the cloth-roll journals, a shaft having gears fast thereon, said gears meshing with the rack-bars, a worm-gear loose on the shaft, a meshing worm, to normally lock said gear, and a spring attached at its ends to said shaft and worm-gear respectively, to con-

trol the movement of the rack-bars, rotation of the worm-shaft acting to relieve the tension of the spring.

6. In a loom, fixed guides, rack-bars movable thereon and adapted to support the cloth-roll journals, a shaft having gears fast thereon, said gears meshing with the rack-bars, a worm-gear loose on the shaft, a meshing-worm shaft, to normally lock said gear, and a spring attached at its ends to said shaft and worm-gear respectively, to control the movement of the rack-bars, rotation of the worm-shaft acting to relieve the tension of the spring, combined with means to positively limit the rotative movement of said worm-shaft.

7. In a loom, toothed, sliding, cloth-roll supports, a rotatable shaft, gears fast thereon in mesh with said toothed supports, a worm-gear loose on said shaft and having a laterally-projecting lug, an adjacent collar loose on the shaft and having a projection in the path of said lug, and a fixed stop adapted to engage said projection and limit the rotative movement of the collar, combined with a spring connected at its ends to said shaft and worm-gear respectively, and a worm-shaft to manually rotate the worm-gear, the lug, projection and stop coöperating to limit the rotative movement of the worm-gear in either direction.

8. In a loom, the take-up roll, fixed stands below it, longitudinally slotted and having openings for the entrance and removal of the cloth-roll shaft, sliding supports for said shaft, movable on said stands within the slots thereof, connections between and to effect simultaneous movement of said sliding supports, and a single controlling-spring connected with said connections and adapted to maintain the cloth-roll yieldingly against the take-up roll, with a pressure which increases as the weight of the cloth-roll increases.

9. In a loom, connected, longitudinally-movable supports for the journals of the cloth-roll shaft, a controlling-spring for said supports, located and arranged to be wound up as the weight of the cloth-roll increases, to thereby increase the tension of the spring, and independent means to decrease the spring tension when the cloth-roll is to be removed from its supports.

10. In a loom, connected, longitudinally-movable supports for the journals of the cloth-roll shaft, a controlling-spring for said supports, located and arranged to be wound up as the weight of the cloth-roll increases, to thereby increase the tension of the spring, independent means to unwind or wind the spring, and a device to positively limit the effective operation of said means.

11. In a loom, longitudinally-movable cloth-roll supports provided with teeth, a connecting-shaft geared to said supports to effect their movement in unison, a spring attached at one end to said shaft, means to normally hold the other end of the spring fixed, and a controlling device for said means.

12. In a loom, longitudinally-movable cloth-roll supports provided with teeth, gears in mesh with said toothed supports, spring-controlled means connected with and to govern the rotation of the gears and thereby the longitudinal movement of the supports, and a governing device for said means.

13. In a loom, sliding supports for the cloth-roll journals, provided with rack-teeth, spring-controlled gears meshing with said rack-teeth, the resistance of the gears to rotation increasing as the weight of the roll of cloth increases, and normally-locked, manually-operated means to relieve the gears from the spring control, or vary the latter.

14. In a loom, a fixed guide, a longitudinally-movable rack-bar thereon and adapted to support a journal of the cloth-roll shaft, a gear meshing with said bar, a spring to control the rotation of the gear, and means to manually vary the spring tension.

15. In a loom, a fixed guide, a longitudinally-movable rack-bar thereon and adapted to support a journal of the cloth-roll shaft, a gear meshing with said bar, a spring to control the rotation of the gear, a worm-gear with which one end of the spring is connected, and a meshing-worm shaft, to normally lock said worm-gear.

16. In a loom, a fixed guide, a longitudinally-movable rack-bar thereon and adapted to support a journal of the cloth-roll shaft, a gear meshing with said bar, a spring to control the rotation of the gear, a worm-gear with which one end of the spring is connected, and a meshing worm, to normally lock said worm-gear, combined with means to positively limit the rotative movement of said worm-gear.

610,637. SHOCKING DEVICE. EDDIE R. POWELL, Hustonville, Ky. Filed Nov. 5, 1897. Serial No. 657,554. (No model.)

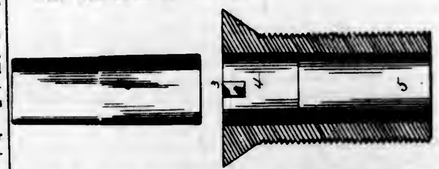
Claim.—1. A frame of the character herein described composed of two bars in the form of an X, a fastener uniting said bars, having at one end a loop, and a third bar supported by said former bars and having a ring extended through said loop, substantially as set forth.

2. A frame of the character herein described comprising two bars in the form of an X, a nail uniting said bars having a looped portion, the extreme end of said nail being countersunk in the face of one of said bars, a third bar resting in the crotch of said former bars, and a ring encircling said third bar and extended through the loop formed by said nail, substantially as set forth.

610,687.



610,688. BOLT. JAMES H. WILLIAMS, Philadelphia, Pa., assignor to the Remington & Sherman Company, same place. Filed Mar. 25, 1898. Serial No. 675,150. (No model.)



Claim.—1. The combination of a hollow bolt having a uniform external diameter below its head and having an internal diameter greater at the headed end than at the other end thereof, and a tapering plug smaller than the internal diameter of said headed end adapted to be driven into the bore of the bolt so that its larger end will terminate in the portion of the bore having the smaller diameter, whereby the bolt will be expanded beyond the head without subjecting the headed end of the bolt to undue strain, substantially as set forth.

2. The combination of a hollow bolt having a uniform external diameter and having a cylindrical bore of two different diameters and a tapering plug, the larger end of which is forced into the portion of the bore having the lesser diameter, substantially as set forth.

3. A bolt having a bore formed in two sizes, the one toward the point of the bolt being of the lesser diameter, in combination with a tapering plug the larger end of which enters the smaller diameter and causes the bolt to expand at that point and the smaller end upset to fill the larger bore at the outer end.

4. A split bolt having a uniform external diameter and a cylindrical bore having two different diameters, in combination with a tapering plug driven into said bore with its larger end terminating in the part of the bore having the smaller diameter, substantially as set forth.

5. A bolt having a bore cut on two different diameters, and split by a tangential kerf extending the entire length of the bolt, in combination with a tapering plug the larger end of which enters and expands the end of the bolt whose bore has the shorter diameter.

6. The combination with two or more plates, of a hollow bolt screwed into two or more of these plates, the bore of said bolt cut on a large and small diameter, and a plug tapering in form the larger end entering and expanding the portion of the bolt having the smaller bore.

610,689. REGISTERING APPARATUS FOR CYCLE-RACES. ARCHIBALD L. BAIRD, Sydney, New South Wales. Filed June 8, 1896. Serial No. 682,226. (No model.)



Claim.—1. An apparatus for registering the relative positions of cyclists at the finish of a race, comprising a series of marking devices

arranged in the track to contact with the wheels of the cycles, substantially as described.

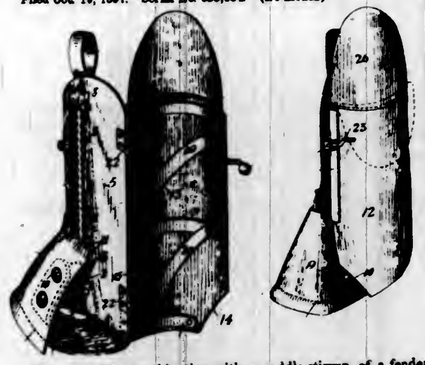
2. A registering apparatus for cycle-races, comprising a series of marking devices arranged in the track with controlling means therefor whereby they are thrown out of action successively by contact with the wheels.

3. A registering apparatus for cycle-races, comprising a series of marking-bars arranged in the track with holding and releasing mechanism for said bars, whereby they are thrown out of action successively by contact with the wheels of the cycles, substantially as described.

4. A registering apparatus for cycle-races, comprising a series of bars extending across the track, holding means adapted to positively hold all the active bars excepting one in position, a retaining and releasing device for the said remaining bar engaging the same by frictional contact and adapted to release the said bar when struck by a wheel, the said holding and releasing device having step-by-step movement to act on each bar in succession, substantially as described.

5. An automatic apparatus for registering the relative positions of cyclists at the finish of a race, in combination, a trench across the racing-track, a nest of bars or rods within the trench, two pivoted hangers to support the ends of the bars, each hanger being provided with a flanged foot, one end of which is notched or recessed, a retaining-bar for holding the rearmost elevated bar, above the notch or recess in the foot and a spring for governing the movements of the combined hanger and retaining-bar, as herein specified.

610,640. STIRRUP-FENDER. ROBERT C. BROOKES, Forest, Miss. Filed Oct. 19, 1897. Serial No. 655,684. (No model.)



Claim.—1. The combination with a saddle-stirrup, of a fender comprising a section secured to the stirrup, and provided with a hood, and a cover-section hinged to the stirrup-section and coöperating with the latter to inclose the leg of the rider.

2. The combination with a saddle-stirrup, of a fender comprising a section secured to the stirrup, and provided with a hood, and a cover-section hinged at one edge to the stirrup-section and provided at its other edge with means for locking it in closed position.

3. The combination with a saddle-stirrup, of a fender comprising a section secured to the stirrup and provided with a hood, and a cover-section hinged to the stirrup-section and consisting of a covered frame bent or curved outwardly, and means for detachably securing the two sections together.

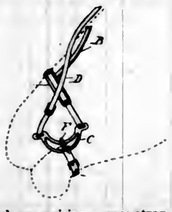
4. The combination with a saddle-stirrup, of a fender comprising a section secured to the stirrup, and provided with an outwardly-extending base below the stirrup, and a hood secured to said base, and a cover-section consisting of an outwardly-curved frame hinged to the stirrup-section, and having a leather covering, and a fastening device for securing the two sections together detachably.

5. The combination with a saddle-stirrup, of a fender consisting of two sections hinged together, one of said sections being bent or curved to fit over the rider's leg, and provided at its upper end with a supplemental flap adapted to be turned down when not in use.

6. The combination with a saddle-stirrup, of a fender comprising two sections hinged together, one of said sections being provided with a hood to protect the rider's foot, and with a vertically-arranged stop or guard, and the other section being curved to fit the leg of the rider, and a fastening device for securing the two sections together detachably.

610,641. OVERCHECK-BIT. WILLIAM H. CARLISLE, Detroit, Mich. Filed Sept. 19, 1897. Serial No. 651,198. (No model.)

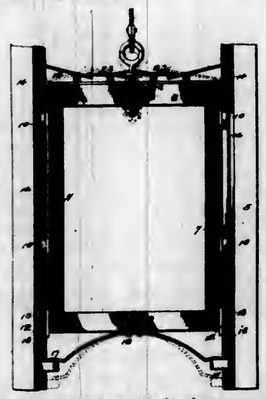
Claim.—1. An overcheck comprising a nose-strap, side levers to the upper ends of which said strap is connected, an overcheck-strap connected to the lower ends of the levers, and a chin-strap slidingly connected intermediate the ends of the levers.



2. An overcheck comprising a nose-strap, side levers to the upper ends of which said strap is connected, an overcheck-strap connected to the lower ends of the levers, a chin-strap slidingly connected intermediate the ends of the levers and the mouth-bar or bit similarly connected to the levers between the ends.

3. In an overcheck, the combination of the nose-strap, the curved side levers C slotted to form two side bars, the overcheck-strap bifurcated and having its ends connected to the lower ends of the levers, the chin-strap slidingly connected to the lower bar of the levers between the ends and the bit or mouth-bar slidingly connected to the upper bar of the lever between the ends, substantially as described.

610,642. SAFETY ATTACHMENT FOR ELEVATORS. GEORGE E. COOKE and CHARLES L. COOKE, Clarksville, Tenn. Filed July 7, 1897. Serial No. 643,751. (No model.)



Claim.—1. The combination with the elevator car and shaft, of an eccentric pivoted on the car adjacent to a surface of the shaft, and adapted to drop by gravity into engagement therewith, a rod connected with said eccentric on the side of its pivot farthest from the said shaft-surface, a sliding draft-bolt on the car, and connections between the same and said rod normally sustaining the latter and the eccentric through the weight of the car against gravitating tendency, said connections including provisions permitting movement of the rod and eccentric independently of the bolt, substantially as described.

2. The combination with the elevator car and shaft, of a gripping member of circular form eccentrically pivoted on the car with that portion of its periphery which is nearest the pivot, normally confronting a surface of the elevator-shaft, a rod pivotally connected with said eccentric on the side of its pivot normally farther from said shaft-surface, a sliding draft-bolt on the car, and suitable connections between the same and said rod.

3. The combination with the elevator car and shaft, of an eccentric pivoted on the car adjacent to a surface of the shaft, and adapted to drop by gravity into engagement therewith, a rod connected with said eccentric on the side of its pivot farthest from said shaft-surface, a sliding draft-bolt on the car, and levers slidingly engaging the said bolt and rod respectively and also in engagement with each other.

4. An elevator-shaft, the sides of which are provided centrally with vertical inwardly-directed ribs or guides, an elevator-car mounted in said shaft and provided at its opposite sides with rollers which are adapted to fit on said ribs or guides, said car being also provided at or near the bottom thereof with two eccentrically-mounted wheels or rollers, rods eccentrically and pivotally connected with said wheels

or rollers, and extending upwardly above the elevator-car, other rods eccentrically and pivotally connected with said wheels or rollers and extending downwardly below the car, a spring secured to the bottom of the car and adapted to operate in connection with said last-named rods at each side of the car, levers connected with the upper part of the car, and the outer ends of which are connected with the rods which extend upwardly at each side of the car, supplemental levers pivotally connected with the top of the car, the outer ends of which bear on the inner ends of said first-named levers, and a vertically-movable bolt connected with the top of the car, and with which the suspending-cable is connected, the inner ends of said supplemental levers being adapted to operate in connection with said bolt, substantially as shown and described.

5. An elevator-shaft the sides of which are provided with inwardly-directed ribs or guides, a car mounted in said shaft and provided with guide-rollers which operate in connection with said ribs or guides, said car being also provided at or near the lower end thereof, and at each side with a pair of eccentrically-mounted wheels or rollers which are also adapted to operate in connection with said ribs or guides, rods eccentrically connected with said wheels or rollers and extending upwardly above the car, other rods also eccentrically connected with said wheels or rollers, and extending downwardly below the car, a spring connected with the bottom of the car and operating in connection with the lower ends of said last-named rods to depress the same, and levers connected with the upper ends of the rods which extend upwardly, and adapted to operate in connection with a vertically-movable bolt connected with the top of the car, and with which the suspending-cable is connected, substantially as shown and described.

610,643. FIFTH-WHEEL. ISAAC CORNWELL, Northumberland, Pa. Filed Mar. 7, 1898. Serial No. 673,879. (No model.)



Claim.—The combination with the upper and lower members of a fifth-wheel, the upper member having laterally-projecting perforated lugs, of a clamp having socketed bosses at its ends embracing the lower member of the fifth-wheel, the upper flat faces of said bosses terminating below the under flat faces of the lugs on the upper member, the central portion of said clamp having laterally-projecting portions bearing against the under face of the lower member of the fifth-wheel, bolts passing through said lugs and bosses, coiled springs encircling said bolts within the sockets of the bosses, and nuts on said bolts, said nuts overlapping said sockets, substantially as set forth.

610,644. ARTIST'S EASEL. AMOS K. CROSS, Boston, Mass. Filed Sept. 15, 1896. Serial No. 605,886. (No model.)



Claim.—1. In an easel having legs composed of two sliding sections, the combination of two metal straps having a notch in each edge and secured to the lower end of the upper section, a metal plate provided with notches to engage those of the straps, and a tapering lever secured to said plate acting as a wedge for securing the lower to the upper leg-section.

2. In an easel having legs composed of two sliding sections, the combination of two metal straps secured to the upper leg-section provided with a notch in opposing sides, a metal plate having notches for receiving the straps, a tapering wedge or lever for frictional contact with a sliding leg-section, and a gib of thin metal placed between said section and the wedge-shaped lever, all substantially for the purpose described.

3. In an easel having legs composed of two sliding sections, a pivoted lever formed of sheet metal and provided at its side and at its outer edge with a V-shaped ridge gradually increasing in depth from end to end, said ridge acting as a wedge between the two sliding leg-sections, substantially for the purpose set forth.

4. In an easel, a head for pivotally connecting the legs composed of front and back plates riveted together and forming a socket for the reception of a vertically-sliding bar and provided with three pairs of ears for pivotally connecting the legs of the easel, and means for adjustably fastening the said bar therein.

5. In an easel, a head for connecting the pivoted legs composed of front and back plates riveted together and forming a socket for the reception of a vertically-sliding bar and provided with three pairs of ears for attaching the legs of the easel and a pair of ears to which is pivoted a cam-lever, substantially for the purpose set forth.

6. In an adjustable easel, a head for connecting the pivoted legs composed of two parts riveted together and forming a well or socket and provided with three pairs of ears for connecting the legs, said legs being formed of two sections connected by metal straps and secured at a desired adjustment by a cam-lever acting between said sections a jointed sliding bar fitting the well or socket of said head and provided with notches for receiving the top of a canvas and with a movable fastening device for securing said canvas, and adjustable supports for the bottom of a canvas adapted for ready attachment to either leg-section, all combined substantially for the purpose set forth.

610,645. CRYSTAL ALUMINIUM BRONZE. JOHN T. CUPPER, Lock Haven, Pa. Filed Jan. 20, 1898. Serial No. 667,323. (No specimens.)

Claim.—1. The herein-described crystal-aluminium-bronze composition consisting of powdered aluminium, powdered glass or "diamond-dust" and sulfate of zinc, mixed in suitable proportions, as set forth.

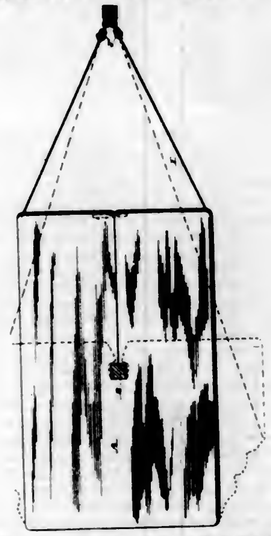
2. A crystal-aluminium-bronze composition containing powdered aluminium and powdered glass or "diamond-dust" in suitable proportions as set forth.

610,646. TROUSERS-GUARD. WILLIS H. DAVIS, Fitchburg, Mass. Filed Aug. 18, 1897. Serial No. 648,615. (No model.)



Claim.—A guard for trousers formed of a single piece of spring-wire bent to form the arms 2 and 5, one of said arms 5 being closer to one of the arms 2 at one side of the device than at the other, for the purpose substantially as described.

610,647. CARRIAGE-COVER. ORSON B. PUMM, Cherokee, Iowa. Filed Feb. 28, 1898. Serial No. 672,117. (No model.)



Claim.—1. The combination with a suitable cover, of a depending support therefor, one end of the support consisting of a pair of pivoted wings, a spring adapted to swing them apart, a latch to hold them when closed, and cords to close said wings and disengage the latch, respectively.

2. The combination with the cover, centrally divided some distance back from one end, and a supporting frame or skeleton therefor attached to a pendant secured to the ceiling, the skeleton consisting essentially in a base-plate attached to the pendant, a triangular bail attached to the base-plate and extending backwardly, a pair of pivoted, triangular bails extending forwardly, a spring adapted to spread the forward bails apart when released, a latch to hold them when closed, and cords connecting with the pivoted bails and with the latch, respectively, substantially as and for the purpose set forth.

3. A supporting-skeleton for a carriage-cover, consisting of a pendant attached to the ceiling of the carriage-house, a base-plate at the lower end thereof having diverging rear arms with grooves therein to take the end portions of a triangular bail and holes to take the terminal hooks thereof, and a forwardly-extending flange, a pair of socket-plates pivoted to the flange, said socket-plates being, like the diverging rear arms, adapted to hold triangular bails, a pair of triangular bails having terminal hooks attached to the socket-plates, and a single bail attached to the rear arms, substantially as and for the purpose set forth.

4. The combination with a partially-divided cover, of a suspended skeleton to support the same, that part of the skeleton coinciding with the divided part of the cover being composed essentially of a pair of pivoted wings adapted to swing apart and open the cover, and suitable means for opening and closing said wings.

5. The combination with a carriage-cover and its supporting-skeleton, substantially as described, a portion thereof consisting of two pivoted, horizontally-swinging wings, with suitable means for opening them, of a pair of cords connected with the respective wings, sheaves over which said cord passes, and a support for the sheaves, substantially as set forth.

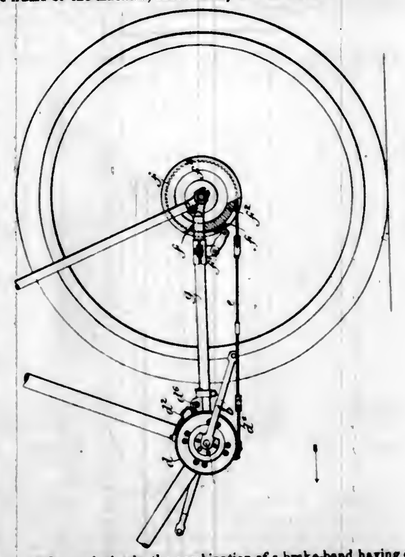
610,648. BAKER'S OVEN. JOHN M. FISCHER, Washington, D. C. Filed Nov. 3, 1897. Serial No. 657,269. (No model.)



Claim.—In a baker's oven, the combination with the casing, of the combustion-chamber, the chamber located above the same filled with sand, the oven, the chamber above the oven having a layer of sand on its bottom, the vertical flue at the front communicating with the said combustion-chamber and with the chamber above the oven and extending inwardly to about the center of said last-named chamber, the chamber at the top of the casing, the flue connecting the same and the chamber above the oven, the tortuous longitudinal and transverse flues or passages connected therewith and located in the chamber at the top of the casing and embedded in sand, substantially as described.

610,649. BACK-PEDALING BRAKE. JOHN HARRINGTON, Ryde, Isle of Wight, England. Filed May 8, 1897. Serial No. 635,697. (No model.)

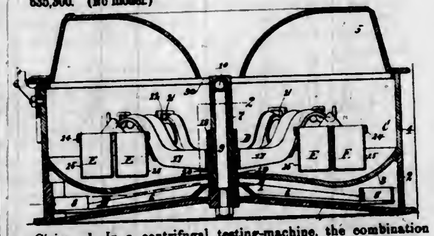
Claim.—1. In a velocipede, the combination of a spindle, cranks rigidly attached thereto, a main sprocket or chain wheel encircling said spindle, a clutch interposed between said spindle and main sprocket or chain wheel and acting to drive said main sprocket or chain wheel in one direction, a ring encircling said spindle independently of the main sprocket and its clutch, a clutch interposed between said ring and spindle and acting to rotate said ring in the contrary direction, a chain or band to prevent said ring rotating beyond a certain distance, a brake-band and a drum therefor, a band connected to said ring, an adjustable rod connecting said band and brake-band, and a movable link connecting the other end of said brake-band to the frame of the machine, substantially as described.



2. In a velocipede, the combination of a brake-band having one end attached to an operating-rod and the other end attached to a movable link pivoted to part of the frame, a rotatable ring and clutch for operating said brake-band, and a driving-clutch, with a brake-drum arranged concentrically to the spokes of the driving-wheel, and independent spoke-grips formed of two parts, each having a tubular portion for the passage of the spokes, and a web, the webs of said parts being adapted to overlap one another and provided with registering screw-holes, and binding-screws passing through said holes and engaging said brake-drum, thereby securing said brake-drum in place and binding the spokes together, substantially as described.

3. In a velocipede, spoke-grips formed in two parts, each having a tubular portion for the passage of the spokes, and a web, the webs of said parts being adapted to overlap one another and provided with registering screw-holes, and a binding-screw passing through said holes for securing said grips in place, substantially as and for the purpose described.

610,650. CENTRIFUGAL MILK-TESTER. MATTHEW L. HOYT, Brighton, and HARVEY FELDMEIER, Little Falls, N. Y., assignors to D. H. Burrell & Co., Little Falls, N. Y. Filed May 6, 1897. Serial No. 635,300. (No model.)



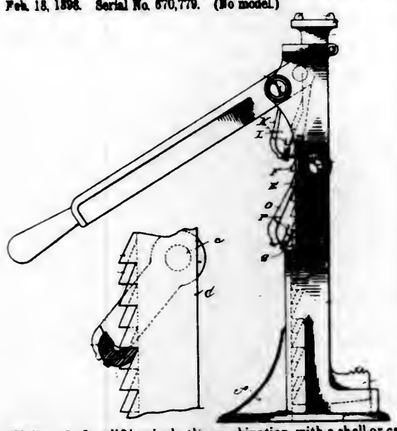
Claim.—1. In a centrifugal testing-machine, the combination with a lower chamber and a steam-motor arranged therein, of an upper chamber, a bottle-carrier arranged therein and connected with said steam-motor, and a steam-supply connected with said upper chamber independently of said steam-motor, substantially as set forth.

2. The combination with an inclosing casing composed of a lower and an upper chamber, of a steam-motor arranged in the lower chamber and provided with a hub which projects into the upper chamber, a suitable support for said steam-motor and a bottle-carrier arranged in said upper chamber and having a hub which surrounds the hub of said steam-motor and is rotated by the same, substantially as set forth.

3. The combination with a rotary bottle-carrier having its arms provided with side bars connected by a raised cross-bar, of a bottle-

holder having laterally-projecting trunnions which are supported on said side bars in rear of said cross-bar and which have downwardly-turned ends which engage under said cross-bar when the bottle-holder is swung out, substantially as set forth.

610,651. LIFTING-JACK. EDWARD HUBER, Marion, Ohio. Filed Feb. 18, 1898. Serial No. 670,779. (No model.)



Claim.—1. In a lifting-jack, the combination, with a shell or casing a lifting-bar having a double set of jack-teeth mounted therein and adapted to be raised within said shell or casing, a set of lifting-pawls for raising said lifting-bar, and a set of holding-pawls, one of said lifting-pawls acting at one time and one at another, one of the lifting-pawls and one of the holding-pawls operating together at one movement and the other lifting and holding pawls operating together at another movement.

2. In a lifting-jack, the combination with a shell or casing having a lifting-lever pivoted thereto, and also holding-pawls pivoted thereto, lifting-pawls carried by said lever at one side of its axis, said holding-pawls being also composed of a set, of a lifting-bar having a double set of jack-teeth thereon, one set being in advance of the other set, one of said sets being adapted to be engaged by one lifting and one supporting pawl at one movement and the other set to be engaged by the other holding and lifting pawl at another movement.

3. In a lifting-jack, the combination with a shell or casing, and a pair of holding-pawls pivoted thereto and having engaging lugs in the same horizontal plane, said pawls swinging downward on their pivots, of a lever pivoted to said shell or casing, a pair of swinging lifting-pawls pivoted to said lever at one side of its fulcrum and having engaging lugs in the same horizontal plane, and a lifting-bar slidingly mounted in said shell or casing and provided at one side with a double set of teeth alternating in position, one set of said teeth being adapted to be engaged at one movement by one lifting-pawl and one holding-pawl, and the other set of said teeth being adapted to be engaged at one movement by the other lifting-pawl and the other holding-pawl, said engagements being made by the engaging lugs.

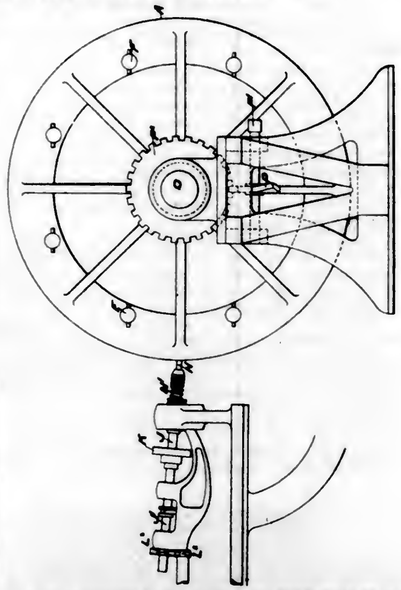
610,652. MACHINE FOR ASSEMBLING CYCLE OR SIMILAR WHEELS. EDWARD HURST and ARTHUR J. E. JONES, Birmingham, England. Filed Mar. 29, 1898. Serial No. 675,627. (No model.)

Claim.—1. In cycle and like wheel building machines, the combination with a spoke-tightening-tool-operating spindle formed by the two parts J J′ connected by a spring-clutch, of the withdrawing-lever O_1, rod O′, and lever O^2, and of the spring N′ acting upon the tool, substantially as described.

2. The combination with the two-part spoke-tightening-tool-operating spindle of a cycle and like wheel building machine, of a connecting-clutch comprising a drum secured upon the inner end of one spindle part and a cam-like disk secured upon the adjacent end of the other part, the drum and disk being connected by spring-arms K′ K^2, having the rollers *k k*, substantially as described.

3. The combination with the spring-arms K′ K^2 of the connecting-clutch of a two-part spoke-tightening-tool-operating spindle, of the adjustable springs *k′* k^3, substantially as described.

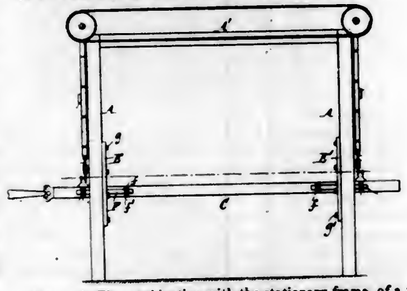
4. The combination with the spoke-tightening-tool-operating spindle of a cycle and like wheel building machine, of a supporting-framing Q rotatable within the bearings of a standard R, said spindle being arranged at an angle to the frame whereby upon rotating the frame the spindle's angular position will be changed to conform to that of the spoke, substantially as described.



5. The combination with the rotatable supporting-frame Q carrying the spoke-tightening-tool-operating spindle, of the sleeve L′ having the driving-pulley L at one end and the wheel L^3 at the opposite end, the said wheel L^3 gearing with the wheel L^2 secured to the spindle, the said frame Q being adjustable to different angular positions to suit the different angular positions of the spokes, substantially as described.

6. The combination with the rotatable supporting-frame Q carrying the spoke-tightening-tool-operating spindle, of the hand-wheel Q′ secured to the frame Q, and the stop S, the said frame Q being adjustable to different angular positions to suit the different angular positions of the spokes, substantially as described.

610,653. STONE-SAWING MACHINE. WILLIAM LAUTZ, Buffalo, N. Y. Filed May 13, 1897. Serial No. 636,945. (No model.)



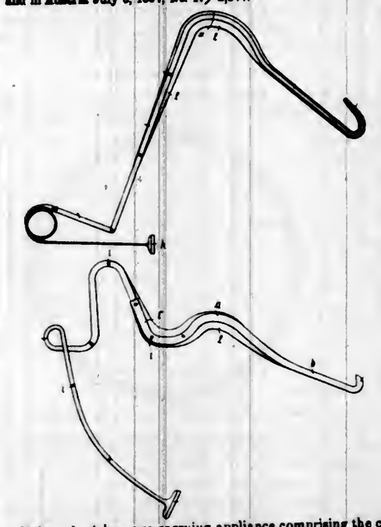
Claim.—1. The combination with the stationary frame, of a vibrating horizontal saw-frame which is vertically movable in the main frame and provided with a gang of saws which are rigidly secured side by side in the saw-frame, and a convex and a concave upright guide of equal curvature arranged on the stationary frame and causing the saw-frame to descend in a curvilinear path, whereby a plurality of like curved slabs are produced during one descent of the saw-frame, substantially as set forth.

2. The combination with the stationary frame of the machine, of a vibrating vertically-movable saw-frame capable of moving bodily in a lateral direction and having a gang of saws arranged side by side and held against lateral movement in the saw-frame, and curved upright guides arranged on the stationary frame on opposite sides of the saw-frame for causing the latter to descend in a curvilinear path, one of said guides having a convex face and the opposite guide having a concave face of the same radius as the convex guide, substantially as set forth.

3. The combination with the stationary frame of the machine, of a vertically-movable follower or frame, a saw-frame suspended from said follower by flexible connections and capable of moving bodily in a lateral direction and having a gang of parallel saws which are held against lateral movement in the saw-frame, and curved stationary guides arranged on the stationary frame on opposite sides of the saw-frame, whereby the saw-frame is shifted laterally and caused to descend in a curvilinear path, substantially as set forth.

4. The combination with the stationary frame of the machine, and a curved upright guide secured to the same, of a vibrating saw-frame capable of a compound vertical and lateral movement and provided at its side with a tube or cylindrical shoe bearing against said guide and capable of rotary adjustment on the saw-frame, whereby different portions of the tube or shoe may be presented to the guide, substantially as set forth.

610,654. LUGGAGE-CARRYING APPARATUS. NORBERT LEBNER, Vienna, Austria-Hungary. Filed Nov. 13, 1897. Serial No. 658,405. (No model.) Patented in Belgium June 30, 1897, No. 129,189, and in Austria July 6, 1897, No. 47/2,577.



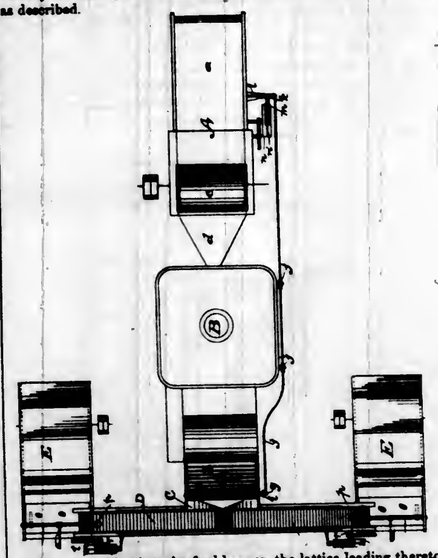
Claim.—1. A luggage-carrying appliance comprising the curved arms or portions adapted to fit the shoulders of the carrier, the downward and rearwardly inclined extensions adapted to support the load, the spring extensions carried by said downwardly and rearwardly inclined extensions, and the transverse strap connecting the ends of said spring extensions and adapted to rest against the back of the carrier, substantially as described.

2. A luggage-carrier comprising the curved arms or portions adapted to fit the shoulders of the carrier, the downward and rearwardly inclined extensions adapted to support the load, said extensions being bent to form spring portions and having eyes in their ends, and a transverse strap connecting said eyes, substantially as described.

3. In a luggage-carrying appliance in combination padded arms adapted to rest on the carrier's shoulders with handle at the forward end and connected at the rearward end by a belt or strap, bearings on said arms in which is pivoted a bed or stretcher and straps for varying the position of said bed or stretcher, substantially as described.

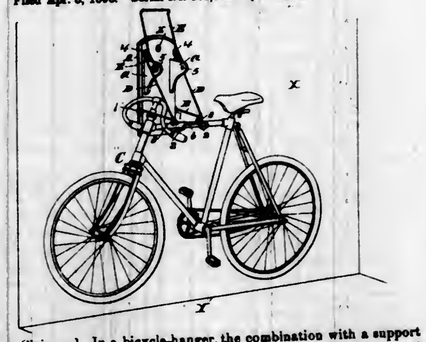
610,655. FEEDING MECHANISM FOR CARDING-MACHINES. THOMAS R. MARSDEN, Oldham, England. Filed Sept. 23, 1897. Serial No. 653,396. (No model.) Patented in England May 23, 1896, No. 11,283.

Claim.—1. In combination, the plurality of feed-hoppers, the lattices leading thereto, a bay or receptacle common to both hopper-feed lattices, means for feeding the material to the bay or common receptacle, the feed-board in the bay, the connections between the same and the feeder means of the bay, the feed-boards in each of the feed-hoppers, driving connections intermediate of the last-mentioned feed-boards and their corresponding lattices, the said feed-lattices by their action or inaction affecting the supply of material in the bay and through the connections the supply-feeder, substantially as described.



2. In combination, the feed-hopper, the lattice leading thereto, a bay or receptacle from which the lattice receives its supply, means for feeding the material to said receptacle, a feed or controlling board in the said bay, connections between the same and the said feeder means, a feed-board in the feed-hopper, connections between the same and the lattice, the said feed-board and connections and lattice controlling also the feed leading to the bay by means of the feed-board in said bay and its connections, substantially as described.

610,656. BICYCLE-HANGER. JOHN L. MARTIN, New York, N. Y. Filed Apr. 5, 1898. Serial No. 676,533. (No model.)



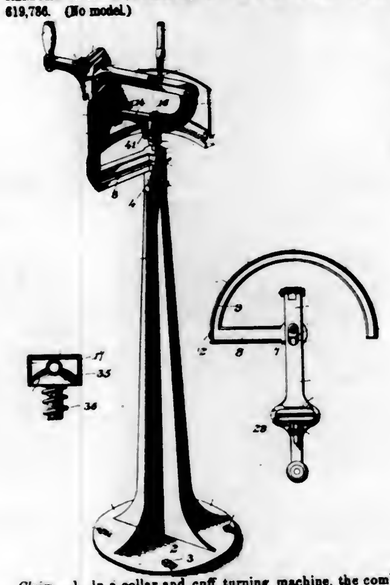
Claim.—1. In a bicycle-hanger, the combination with a support mounted to swing vertically and transversely to a wall and adapted to engage a bicycle and raise it from the floor as the support moves upward, of a vertically-swinging handle-lever and connections to the support for actuating the latter, said handle-lever being mounted to swing past the dead-center when the support is swung upward to position of use with the bicycle raised from the floor, substantially as described.

2. In a bicycle-hanger, the combination with a support for the bicycle, of a lever carrying the support at its outer end and mounted to swing vertically to move the support outward and upward and arranged to raise the bicycle off the floor when the lever is raised to substantially horizontal position, and a vertically-swinging handle-lever and connections for actuating the lever carrying the support and hinged to swing past the dead-center for locking said levers in position with the bicycle raised, substantially as described.

3. A bicycle-hanger consisting of the block A adapted to be secured to a wall or similar support, and having brackets *a*, lever B pivoted to the block to swing vertically and transversely to the wall and having a hooked bicycle-support at the outer end of the lever, handle-lever E pivoted in said brackets, and links D connecting said levers, said lever E being mounted to swing rearward past the dead-center when the lever B is raised, substantially as described.

4. The combination with lever B formed of a single piece bent to form two lever-arms with the loop at the outer end of the lever and hooks *b* inside the loop, of lever E formed of a single piece bent to form two lever-arms with the loop forming a handle at the outer end of the lever, and links D connecting lever E to the lever B inside the hooks *b*, substantially as described.

610,657. COLLAR AND CUFF TURNER AND EDGE-POLISHER. RANDOLPH N. MARTS, Frederick, Md. Filed Jan. 19, 1897. Serial No. 619,786. (No model.)



Claim.—1. In a collar and cuff turning machine, the combination with a supporting-standard and a pivot-pin at its upper end, of an arm mounted to turn on said pin, a lever pivoted to said arm, an ironing-plate supported by the standard and curved to form an arc of a circle with the pin for its center, an iron carried by the lever and provided with a groove curved to correspond with the curvature of the said plate, and means to heat the iron, substantially as described.

2. In a collar and cuff turning machine, the combination with a standard and a pivot-pin adjustably supported at its upper end, of an ironing-plate supported to turn on said pin and being curved to form an arc of a circle with the pin for its center, means to lock the plate against movement on the pin, an arm pivotally mounted on the pin, a lever pivoted at one end to said arm and having a handle at its opposite end, a hollow iron carried by said lever and provided in its lower face with a groove curved to correspond with the curvature of the plate, means to heat the iron, and a yielding device to hold the iron out of engagement with the plate, substantially as described.

3. The combination with a pivot-pin and an ironing-plate curved to form an arc of a circle with the pin for its center, of a sleeve pivotally mounted on said pin, a horizontal arm extending from said sleeve, an oppositely-disposed upwardly-curved arm also extending from the sleeve, a lever pivoted on the curved arm, an iron carried by said lever and adapted to engage the plate, and a spring interposed between the horizontal arm and the lever and normally tending to hold the iron out of engagement with the plate, substantially as described.

4. The combination with a pivot-pin and an ironing-plate, of a lever pivotally connected with said pin, a hollow iron carried by the lever to cooperate with the plate, said lever having a longitudinal groove in its lower face communicating with the chamber in the iron, and an opening in its upper face communicating with said groove, said opening being in substantially the same vertical plane as the pivot-pin, a conductor for a heating medium supported in the said groove and extending from the burner to and projecting upwardly through said opening, and a sleeve connection between the conductor and a conductor leading from the source of supply, substantially as and for the purpose specified.

5. In a machine for turning collars and cuffs, the combination with a standard and a vertically-adjustable pivot-pin supported in the upper end of the standard, of a curved supporting-arm pivotally mounted on the pin, means to lock said arm on the pin, an ironing-plate secured at its lower edge to said arm, said plate being curved to form an arc of a circle with the said pin for its center, a sleeve pivotally supported on said pin, means to prevent its vertical movement thereon, means to lock it against rotary movement on the pin, oppositely-disposed arms extending from said sleeve, a lever pivoted at one end to one of said arms, a headed pin adapted to have vertical movement through the other arm, a spring surrounding the pin and supported on said arm to hold the head of the pin in engagement with the lever and form a yielding support therefor, a hollow iron carried by the lever and provided with a groove curved to correspond with the curvature of the plate, and means to heat said iron, substantially as described.

6. In a collar and cuff turning machine, the combination with a supporting-standard, of a lever pivotally connected to said standard on both a vertical and horizontal axis, an ironing-plate supported by the standard and curved to form an arc of a circle with the vertical pivot of the lever for its center, an iron carried by the lever and provided with a groove curved to correspond with the curvature of said plate, and means to heat the iron, substantially as described.

610,658. EMBROIDERY-HOOP. WILLIAM C. MAYNARD, Canton, Ohio. Filed Mar. 23, 1897. Serial No. 628,892. (No model.)



Claim.—1. An embroidery-hoop having a transverse dividing-cut to form abutting ends, combined with a spring bent or bowed outwardly at its middle portion and secured at its ends to the hoop on opposite sides of the cut, with its outwardly-bowed portion extending across said cut, the said spring tending normally to hold the abutting ends in engagement with each other, substantially as described.

2. An embroidery-frame or broken ring having its ends connected by a bow-spring extending across the break in the ring, each end of the bow secured to the ring and the central part of the bow projecting outwardly when the ends of the ring are drawn together by said bow-spring, whereby upon pressing the central part of the bow-spring toward the body of the ring, the latter may be spread or expanded, substantially as described.

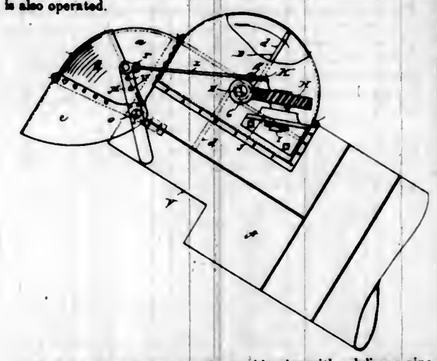
610,659. PNEUMATIC STRAW-STACKER. JACOB W. MILLER and EDWARD HUBER, Marion, Ohio. Filed May 26, 1896. Serial No. 681,662. (No model.)

Claim.—1. In a pneumatic straw-stacker, the combination with a pneumatic delivery-pipe, of a hood, and its operating device actuated by air-currents delivered by said pneumatic pipe, whereby said hood will direct the discharging straw to different places.

2. In a pneumatic straw-stacker, the combination with a pneumatic delivery-pipe, of a hood mounted thereon and adapted to direct the discharging straw in different directions, and operating devices for said hood including a fan arranged to receive operating air-currents from said pneumatic pipe.

3. In a pneumatic straw-stacker, the combination with a delivery-pipe, of a fan carried thereby and projecting within said pipe, a hinged hood extending over the end of said delivery-pipe, and mechanism between said fan and said hood whereby when the fan is operated said hood is also operated.

4. In a pneumatic straw-stacker, the combination with a delivery-pipe, of a fan having a shaft carried thereby and projecting within said pipe, a hood hinged to said pipe and adapted to extend across and be removed from the end of said pipe, and mechanism between said fan and said hood whereby when said shaft is operated said hood is also operated.



5. In a pneumatic stacker, the combination with a delivery-pipe, of a fan having a shaft carried thereby and projecting therein, a worm on said shaft, a worm-driven gear meshing with and driven by said worm, a swinging hood hinged to said pipe, and a pitman connecting said hood and said driven gear whereby motion is transmitted from said gear to said hood.

6. In a pneumatic stacker, the combination with a delivery-pipe, of a fan carried thereby having a worm on its shaft, a worm-driven gear meshing with said worm, a hood hinged to said pipe, a crank secured to said hood, and a pitman connecting said driven gear and said crank and adjustable on said crank, whereby when the fan is driven the hood is vibrated across the outer end of said delivery-pipe.

7. In a pneumatic stacker, the following instrumentalities: a pneumatic delivery-pipe, a fan and its casing carried thereby, said fan extending within said delivery-pipe, and having a shaft with a worm, a worm-driven gear meshing therewith and carried by said casing, a hood hinged to said pipe, a crank secured to said hood and having a series of holes, a pitman having a vertical joint and a horizontal joint therein connecting said crank and said driven worm-gear and adapted to engage with any one of said holes in said crank, substantially as shown and described.

610,660. CARTRIDGE-SHELL. CHARLES R. OVERBAUGH, Bayonne, N. J. Filed Mar. 19, 1894. Serial No. 504,138. (No model.)



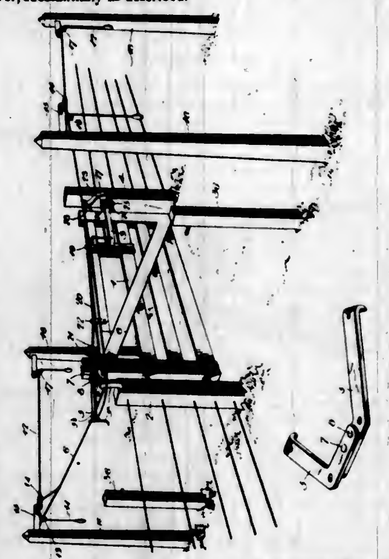
Claim.—A cartridge composed of an outer cylinder provided with an interior annular groove at the angle of the side wall and the end piece, a cartridge-body, and an inner cylinder, said inner cylinder being provided with a dished end the flattening of which forms an annular shoulder at the angle formed by the side wall and end piece thereof for holding the end of the body in the annular groove of the outer cylinder, substantially as described.

610,661. GATE. JOSEPH OBERNDORF, Middletown, Cal. Filed Mar. 19, 1896. Serial No. 674,495. (No model.)

Claim.—1. In a device of the class described, the combination with a swinging gate, of a latch mounted thereon, a horizontally-swinging lever fulcrumed on the gate and connected with the latch, said lever being composed of two sections forming arms and capable of adjustment to extend the arms in rear of the gate or in advance and in rear of the same, said sections being substantially L-shaped and adapted to clear the end bar of the gate and operating mechanism connected with the arms of the lever, substantially as described.

2. In a device of the class described, the combination with a swinging gate, of a latch mounted thereon, a substantially U-shaped reversible lever fulcrumed on the gate and having its arms extending rearward therefrom, said lever being adapted to have its arms arranged at each side of the gate and being composed of two sections, whereby it may be adjusted to extend one arm forward and the other rearward, connections between the lever and the latch, and operating mechanism connected with the arms of the lever, substantially as described.

3. In a device of the class described, the combination of a gate, a latch mounted thereon, a lever fulcrumed on the gate and composed of two reversible L-shaped sections, connections between the latch and the lever, said connections being provided with flexible branches 21 located at opposite sides of the rear end bar of the gate and attached to the sections of the lever at the angles thereof, and operating mechanism connected with the ends of the sections of the lever, substantially as described.



4. In a device of the class described, the combination of a swinging gate provided with a latch, a lever pivotally mounted on the gate at the back thereof and connected with the latch, the operating-ropes connected to the arms of the lever and extending from the gate in opposite directions, said operating-ropes being provided at their outer portions with branches 11 and 12, the branches 12 being extended across the roadway, and means for supporting the branches of the operating-ropes, substantially as described.

5. In a device of the class described, the combination with a gate, of a latch mounted thereon, a substantially U-shaped lever fulcrumed on the gate and having its arms extending rearward therefrom, connections between the latch and the lever, guides depending from the arms of the lever and having their lower portions extended outward, and the crossed operating-ropes arranged on the guides and connected with the same, substantially as described.

610,662. BUTTON. CHARLES RADCLIFFE, Newark, N. J. Filed Feb. 5, 1897. Serial No. 622,129. (No model.)

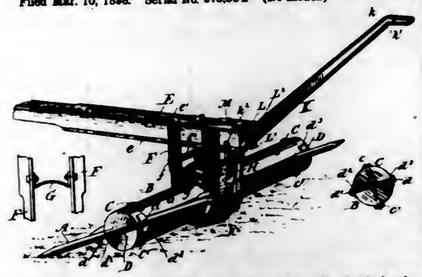


Claim.—1. As a new article of manufacture, a button, comprising, a face-plate or upper shell, and a hub secured thereto, a shoe or back-plate *c*, and a flat and pointed post *c'* thereon, adapted to puncture said hub and be forced therethrough to form a rectangular slot in said hub, to prevent the lateral movement of said hub upon said post *c'*, said flat post having a vertically-arranged slot, and the separable flat parts c^4 and c^5 contiguous to said slot, said parts c^4 and c^5 being bent or forced, in opposite directions at right angles to the flat sides of the said post, directly across the slot formed in said hub, and tightly closed down so that the flat sides of said parts c^4 and c^5 shall lie directly against and upon the inner curved surface of the portion *b'* of said hub, substantially as and for the purposes set forth.

2. As a new article of manufacture, a button, comprising, a face-plate or upper shell and a hub secured thereto, said hub having a curved portion *b'* provided with a centrally-arranged small hole or

perforation b^2, a shoe or back-plate c, and a flat and pointed post c' thereon adapted to be forced through said hole b^2 in the hub, to form a rectangular slot in said hub, and to prevent the lateral movement of said hub upon said post c', said flat post having a vertically-arranged slot, and the separable flat parts c^4 and c^5 contiguous to said slot, said parts c^4 and c^5 being bent or forced, in opposite directions at right angles to the flat sides of the said post, directly across the slot formed in said hub, and tightly closed down so that the flat sides of said parts c^4 and c^5 shall lie directly against and upon the inner curved surface of the portion b' of said hub, substantially as and for the purposes set forth.

610,663. HORSE-RAKE. JOHN H. RANDOLPH, Baton Rouge, La. Filed Mar. 10, 1898. Serial No. 673,384. (No model.)



Claim.—1. The combination of the longitudinally-divided rake-head, the hangers in which it is mounted, the hub surrounding the rake-head and arranged between the hangers and provided with inwardly-projecting lugs extending between the sections of the rake-head and secured thereto to revolve therewith.

2. The combination of the longitudinally-divided rake-head having the strips, I, I', secured to one section thereof, the hangers in which the rake-head is mounted, the hub arranged between the hangers and having lugs extending between the sections of the rake-head and between the strips, I, I', and a flange at one end of the hub, for the purpose specified.

3. The combination of the rake-head, divided longitudinally into two sections, the teeth arranged in transverse grooves in the rake-head between the sections, bolts passing through the sections of the rake-head at right angles to their dividing-line, other bolts arranged at right angles to the first-mentioned bolts passing between the two sections of the rake-head, and curved plates or washers on the ends of said last-mentioned bolts which extend across the dividing-line of the rake-head sections and bear against the edges of the opposing sections.

610,664. PROCESS OF REFINING CAMPHOR. WILHELM SCHMIDT, Arlington, N. J. Filed Dec. 29, 1890. Serial No. 376,110. (No specimens.)

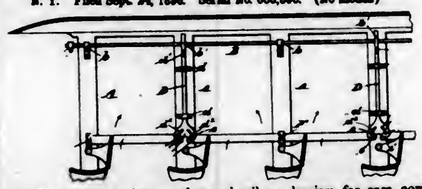
Claim.—1. The process described for the purification of crude camphor and its reduction to anhydrous granular camphor crystals, said process coosisting in dissolving crude camphor in a closed chamber in a solvent that does not mix with water and having a less specific gravity than water, withdrawing the solvent with the pure camphor in solution from off the stratum of water on which it floats in the dissolving-chamber, driving off the solvent and crystallizing the pure anhydrous camphor held in solution by it, substantially as described.

2. The process described for the purification of crude camphor and its reduction to anhydrous granular camphor crystals, said process consisting in dissolving crude camphor in a closed chamber in a hydrocarbon that does not mix with water such as benzin or naphtha, having a less specific gravity than water, separating the solution of pure camphor by allowing it to float upon the stratum of water set free from the crude camphor by solution, withdrawing the supernatant solution to a closed filtering-chamber, filtering the same and then separating the hydrocarbon solvent by distillation, and crystallizing the pure anhydrous camphor remaining, substantially as described.

3. The process described for purifying crude camphor and reducing it to anhydrous granular camphor crystals, said process consisting in dissolving the pure from the crude camphor by a solvent that does not mix with water and of less specific gravity than water, separating the water set free by the crude camphor from the supernatent solution of pure camphor, driving off the solvent by distillation and filtering the remaining concentrated solution, to separate the remainder of the solvent from the granular mass of crystals of pure anhydrous camphor, substantially as described.

4. The process described for purifying crude camphor and reducing it to anhydrous granular camphor crystals, which consists in dissolving crude camphor in a hydrocarbon that does not mix with water such as benzin or naphtha or other solvent having less specific gravity than water, separating the water yielded by the crude camphor from the supernatent solution of pure camphor by drawing off the latter, filtering said separated solution, driving off the solvent by distillation, crystallizing the pure anhydrous granular camphor, and separating any remaining solvent therefrom by filtering, substantially as described.

610,665. GUARD-RAIL. JOVINIANUS H. F. SIEBE, Middle Village, N. Y. Filed Sept. 24, 1896. Serial No. 606,890. (No model.)



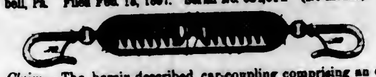
Claim.—1. An improved guard-rail mechanism for cars, comprising a rock-shaft carrying a segmental rack, a vertically-sliding bar or rod having a rack engaging with said segmental rack and provided at its lower end with a segmental slot, and a guard-rail pivoted at its inner end and provided with a pin or stud received by said segmental slot, substantially as and for the purpose set forth.

2. A guard-rail mechanism for cars, comprising a rock-shaft carrying a segmental rack, means for operating said rock-shaft, a vertically-sliding bar or rod having a rack engaging said segmental rack and provided at its lower end with oppositely-divergent segmental slots, in combination with a pair of guard-rails having their adjoining inner ends pivotally mounted and respectively provided with projecting pins or studs engaging said segmental slots, substantially as and for the purpose set forth.

3. The herein-described guard-rail mechanism for cars, comprising, in combination with the vertical posts of the car-frame, a longitudinal rock-shaft mounted in bearings at the tops of said posts and carrying segmental racks, the vertically-sliding bars or rods mounted in bearings upon the alternate posts and having a rack at their tops respectively engaging said segmental racks and provided with a plate or enlargement at the bottom having at each side the divergently-arranged segmental slots, and the pairs of guard-rails having their ends pivotally mounted upon the posts carrying the vertically-moving bars and respectively provided at said pivoted ends with pins or studs engaging the segmental slots, substantially as and for the purpose set forth.

4. In a guard-rail mechanism for cars, the combination, with a pair of guard-rails having their adjoining inner ends pivotally mounted and respectively provided with projecting pins or studs, of a vertically-sliding bar provided at its lower end with opposite divergent segmental slots engaging said pins or studs upon the respective guard-rails, and mechanism for operating said bar vertically, substantially as set forth.

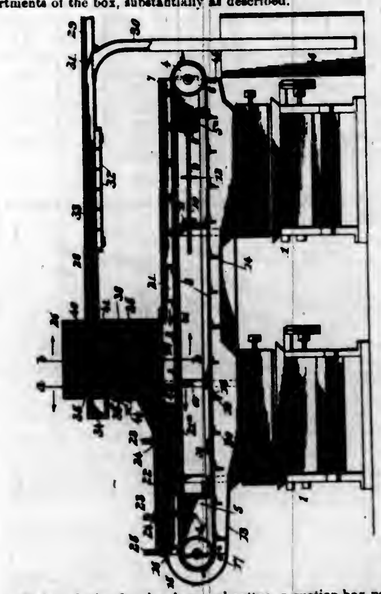
610,666. CAR-COUPLING. WILLIAM J. TREVORROW, Glen Campbell, Pa. Filed Feb. 16, 1897. Serial No. 624,014. (No model.)



Claim.—The herein-described car-coupling comprising an elongated terminally-rounded casing, revolubie and reciprocable rods projecting in opposite directions through terminal guides in the rounded extremities of the casing, and fitted within the casing with actuating-springs whereby they are normally held retracted, hooks carried by the rods for engagement with cars, and provided with means for preventing the accidental disengagement thereof, and pivotal rings connecting the shanks of the hooks with the outer extremities of the rods, and capable of swinging movement, to provide for transverse flexibility between said connected parts, whereby when connected cars come together the casing drops out of the path of the approaching bodies, substantially as specified.

610,667. SEED-COTTON DISTRIBUTER AND CLEANER. FRANK WALLA, Freisburg, Tex. Filed Mar. 10, 1897. Serial No. 626,813. (No model.)

Claim.—1. The combination with a conveyer-casing, and a suction-box communicating therewith, of the upwardly-inclined foraminous walls arranged within the section-box on opposite sides of the opening between the casing and box and said walls forming a central compartment and two side compartments within the suction-box, a suction-flue discharging into the central compartment of the suction-box between the foraminous walls therein, the elastic fingers supported within said central compartment of the suction-box in the plane of the discharge end of the suction-flue to intercept the cotton as it is discharged from the flue, an exhaust-fan, and a brauched exhaust-flue communicating with the side compartments of the suction-box to create a suction uniformly through the side and central compartments of the box, substantially as described.



2. In a device for cleaning seed-cotton, a suction-box provided with perforated walls which form between themselves a central chamber for the passage of cotton and also form with the walls of said box the side compartments, and the independent valve-controlled air-inlet openings formed in the suction-box to open directly into the central and the side compartments, combined with an exhaust-flue which is branched to communicate with both side compartments above the air-inlet openings therein and adapted to exhaust air uniformly through both side compartments, a suction-flue entering the central compartment on the opposite side of the suction-box from the branched exhaust-flue, a suction-fan, and a deflector situated adjacent to the mouth of the suction-flue and within the central compartment in the plane of the perforated walls, whereby the draft created by the exhaust-flue tends to draw the refuse upwardly through the perforated walls and the deflectors serve to direct the cotton into an irregular course and against said perforated walls, substantially as described.

3. In a device for cleaning seed-cotton, the combination of a suction-box provided with side compartments and with regulating devices for the inlet of air directly into said side compartments, a suction-flue discharging to a central passage of the suction-box, distributing fingers arranged in the central passage of the suction box and adjacent to the point of discharge of the suction-flue to lie in the path of the cotton delivered by said suction flue, an exhaust-flue connected with the suction-box to communicate with the side compartments thereof and an exhaust-fan, substantially as described, for the purposes set forth.

4. In a device for cleaning seed-cotton, a suction-box having a passage for the cotton to be cleaned, and having at the receiving end of the passage resilient fingers adapted to direct the cotton downward into said passage and provided adjacent to their points of attachment with spring-coils, substantially as set forth.

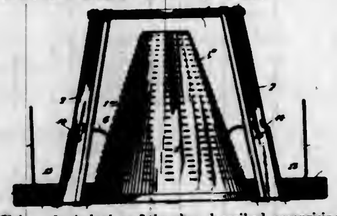
5. In a device for cleaning and distributing seed-cotton, a suction-box having an opening in its bottom, and having a passage through it for the cotton, a distributing-apron arranged beneath said opening and resilient fingers at said opening to prevent the choking of said apron, said fingers being provided with spring-coils substantially as set forth.

6. In an apparatus for distributing seed-cotton, the combination of a conveyer-casing having a channel, an endless distributing-conveyer arranged to move in said channel, a suction-box having a passage for the cotton and arranged to discharge the same to said apron, and a regulator arranged in the channel adjacent to said suction-box and comprising a plate arranged in line with the apron, guide-rods connected to the plate and playing in perforations in the top of the conveyer, and stops to limit the movement of said plate, substantially as set forth.

7. In a device for cleaning seed-cotton, a suction-box having an opening in its bottom and provided with opposite foraminous walls extending throughout its entire length and forming exhaust-chambers, said box being provided at its front with an air-inlet opening which communicates with a central space or chamber between the foraminous walls, and having means for regulating the size of the same, a supply-flue communicating with the central space or passage of the box at the back thereof, an exhaust-fan, and a flue connected with the exhaust-fan and provided with ports communicating with the exhaust chambers, substantially as described.

8. In an apparatus for distributing seed-cotton, the combination with a conveyer-casing having a channel, and an endless conveyer provided with wings or flights and situated in said casing, of the suction-box mounted on said casing for communication therewith and provided in one of its walls with an opening 27^a for the passage of cotton from the suction-box to the conveyer-casing, a series of yieldable fingers mounted in said suction-box to extend across the opening 27^a and to lie adjacent to the wings or flights of the endless conveyer, and an automatic choker-regulator movably mounted in the channel of the conveyer-casing above the conveyer therein and arranged adjacent to the opening 27^a and the yieldable fingers, substantially as described, for the purposes described.

610,668. TOASTER. GEORGE R. WILSON, Austin, Minn. Filed Dec. 24, 1897. Serial No. 663,287. (No model.)



Claim.—1. A device of the class described, comprising a base, a truncated conical radiator mounted on the base, standards rising from the base and extending above the radiator, and a top plate mounted on the standards and supported by the same above the upper end of the radiator, the space between the upper end of the radiator and the top plate being entirely open at the sides of the device, whereby the products of combustion are permitted to pass directly from the device, substantially as described.

2. A device of the class described, comprising a base, a conical radiator mounted upon the base and constructed of sheet metal, and provided with horizontal elongated perforations formed by puncturing the metal from the inner face to provide a smooth inner face and to form exterior flanges to prevent smoke and gas from passing through the perforations, and a top plate supported above the conical radiator to provide an open space above the same to permit the products of combustion to pass directly from the device at that point, substantially as described.

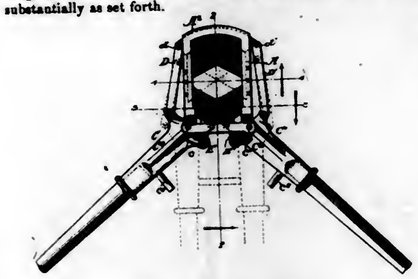
3. A device of the class described, comprising a base, a radiator mounted thereon, a top plate, supports for the same provided with openings, and the bread-supporting brackets provided at opposite sides with portions to engage the outer faces of the supports and having inwardly-extending L-shaped arms 14, detachably engaging the openings, the inner portions of the L-shaped arms being extended upward, whereby the bread-supporting brackets must be swung upward to disengage them from the supports, substantially as described.

4. A device of the class described, comprising a base, a top plate, supports for the same provided with openings, a radiator, and a bread-supporting bracket provided with means for detachably engaging the openings of the supports, said means being extended upward at the inner sides of the supports, whereby the bread-supporting bracket must be swung upward to detach it and is maintained in engagement by the weight of its contents, substantially as described.

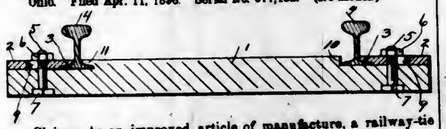
610,669. DEHORNING-CLIPPER. JOHN ARMS and CHESTER E. ARMS, South Lyon, Mich. Filed Mar. 30, 1898. Serial No. 675,330. (No model.)

Claim.—A dehorner comprising duplicate superposed frames having intermediate filling-pieces spacing them apart a proper distance, the frames being outwardly and oppositely deflected at one end, and

one of the frames being formed at its inner side edges near one end with ribs or tracks a^2, oppositely-disposed cutters slidably mounted between the frames and one of the cutters being provided at its opposite sides with projecting portions b' overlapping the other cutter and working against the inner sides of said filling-pieces, said other cutter being adapted to ride on said ribs when the implement is opened up for use, operating-handle heads fulcrumed to the corners of the frames at the deflected ends thereof and having oppositely-extending arms, elongated links arranged outside of the frames and connecting the outer arms of said heads with one cutter, and short links connecting the inner arms of the heads with the other cutter and arranged to work in the space between the deflected ends of the frames, substantially as set forth.

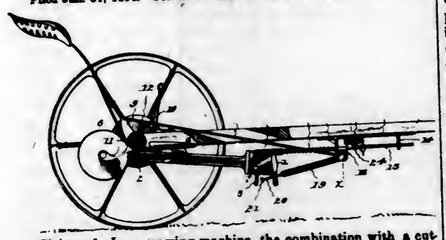


610,670. METAL RAILWAY-TIE. GEORGE W. CLINE, Canton Ohio. Filed Apr. 11, 1898. Serial No. 677,152. (No model.)



Claim.—As an improved article of manufacture, a railway-tie formed of metal and the top or upper side thereof provided with cut-out portions at its ends, one end of said cut-out portion at one end of the tie provided with the square shoulder 10, and the overlapping lip 11 formed upon the opposite end of the tie, locking-plates located upon the upper side of the tie and upon the cut-out portions, and provided with slots and beveled inner ends, and clamping-bolts having their heads seated into recesses formed in the bottom or under side of the tie and below the cut-out portions, said ties having a reverse arrangement alternately with respect to each other, substantially as and for the purpose specified.

610,671. MOWING-MACHINE. JOHN W. CYPHER, Benton, Ill. Filed Jan. 31, 1898. Serial No. 668,596. (No model.)

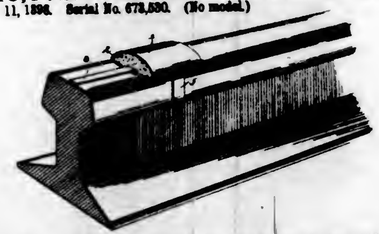


Claim.—1. In a mowing-machine, the combination with a cutting apparatus and the axle operatively connected therewith, of a lever loosely mounted upon the axle and having clutched engagement therewith, a plate secured to the pole and having offstanding brackets, and a guide between said brackets, a rod or bar, slidably mounted in the said brackets and having an extension entering the guide of the plate, a spring mounted upon the slidable rod between a stop thereof and one of the said brackets, a connection between the aforesaid clutch-lever and the slidable rod, and a draft-bar mounted upon the extension of the slidable rod, substantially as set forth.

2. In a mowing-machine, the combination with the cutting apparatus and the axle operatively connected therewith, of a lever loosely mounted upon the axle and in clutched engagement therewith, a longitudinally-slotted plate secured to the side of the pole and having offstanding brackets, a rod slidably mounted in the brackets and provided with an extension operating in the longitudinal slot of the plate, a connection between the slidable rod and the clutch-lever, a spring mounted upon the slidable rod and confined between a stop thereof and one of the said brackets, a contractile spring having its ends connected with the frame and the sliding rod and a draft-bar mounted upon the aforedescribed extension of the slidable rod, substantially as set forth.

3. In a mowing-machine, the combination with the cutting apparatus and the axle operatively connected therewith, and a lever loosely mounted upon the axle and in clutched engagement therewith, of a longitudinally-slotted plate secured to the bottom side of the pole and having pendent hangers, a rod slidably mounted in the hangers and having a vertical extension operating in the slot of the plate and provided with a pendent lug, a spring mounted upon the slidable rod and confined between a stop thereof and the rearmost hanger, a rod connecting the pendent lug with the clutch-lever, a contractile spring having connection with said pendent lug, and having loose and adjustable connection at its rear end with the frame, and a draft-bar mounted upon the vertical extension of the slidable rod, substantially as and for the purpose set forth.

610,672. SIGNAL. FRANK DUTCHER, Fostoria, Ohio. Filed Mar. 11, 1898. Serial No. 673,530. (No model.)



Claim.—1. A torpedo of the class described, having a shell of fibrous material fitted with terminal friable plugs, adapted to be disintegrated by the explosion of the contents of the shell, substantially as specified.

2. A torpedo of the class described, having a folded shell terminally fitted with plugs of cement, and exterior means for connecting the folded edges of the shell, substantially as specified.

3. A torpedo of the class described, having a folded shell constructed of a single blank with its edges overlapped at the under side of the torpedo, and a clip engaging said overlapped edges and arranged exteriorly thereof, substantially as specified.

4. A torpedo of the class described, having its shell constructed of a blank folded upon itself to form a semicylindrical tube fitted with terminal plugs of cement, and a clip arranged exteriorly of the folded extremities of the blank, and terminally engaged with the overlapped portions thereof, substantially as specified.

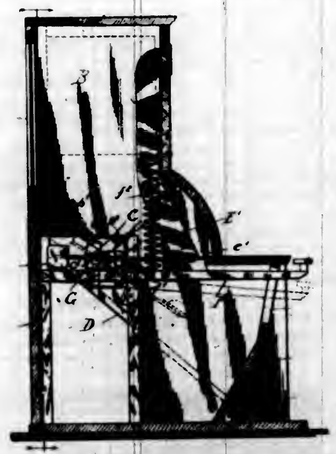
5. A torpedo of the class described, having its shell constructed of a blank of pliable material folded upon itself to form a semicylindrical tube, and overlapped at the flat side of the tube to form approximately coextensive flaps, and a securing-strap arranged at an intermediate point between, and held in place by, said flaps, and extending outwardly through a slit formed in the outer flap, substantially as specified.

6. A torpedo of the class described, having its shell constructed of a blank folded upon itself to form a semicylindrical tube with its contiguous edges overlapping to form approximately coextensive flaps, a clip disposed longitudinally of the flat side of the shell with its extremities upturned to engage the edges of said flaps, and a leader or tread strap having a terminal hook engaged with one upturned extremity of said clip, and projecting longitudinally from the flat side of the shell, substantially as specified.

610,673. VENDING-MACHINE. WALTER DYER, Chicago, Ill., assignor of one-half to Aurelius B. Stevens, same place. Filed Sept. 2, 1897. Serial No. 650,344. (No model.)

Claim.—1. The combination, in a vending-machine, of a hopper for the reception of merchandise, delivery apparatus actuated by the weight of the introduced coin for delivering definite parcels of said merchandise, a manually-controlled operating-lever, and locking mechanism between said delivery apparatus and the operating-lever whereby the delivery apparatus is held closed while the operating-lever remains at normal.

2. The combination, in a vending-machine, of a hopper for the reception of merchandise, a delivery mechanism for delivering definite parcels of said merchandise, a coin-actuated trip-lever actuating said delivery mechanism, an operating-lever, and locking mechanism between said operating-lever, and the trip-lever, whereby said trip-lever is held against movement until the operating-lever is depressed.



3. The combination, in a vending-machine, of a hopper for the reception of merchandise, a vibrating delivery-trap closing the spout of said hopper, a coin-actuated balanced trip-lever connected to the shaft of said trap, an operating-lever, and locking mechanism between said operating-lever and the trip-lever whereby the trip-lever is held against movement until the operating-lever is depressed.

4. The combination, in a vending-machine, of a hopper for the reception of merchandise, a vibrating delivery-trap closing the spout of said hopper, a coin-actuated balanced trip-lever connected to the shaft of said trap, an operating-lever, and a locking-shoe connected to said trip-lever and normally resting upon the operating-lever to hold said trap closed until the operating-lever is depressed.

5. The combination, in a vending-machine, of a hopper for the reception of merchandise, an oscillating trap closing the spout of said hopper, a balanced trip-lever connected to the shaft of said trap, a coin-chute delivering to the unweighted end of said lever, and a locking device holding said lever against movement until mechanically released.

6. The combination, in a vending-machine, of a hopper for the reception of merchandise, an oscillating trap closing the spout of said hopper, a balanced trip-lever connected to the shaft of said trap, a coin-chute delivering to the unweighted end of said lever, an agitator acting upon the contents of said hopper, an operating-lever for actuating said agitator, and locking mechanism between said operating-lever and the trip-lever whereby the latter is prevented from movement until the former is actuated.

7. The combination, in a vending-machine, of a hopper for the reception of merchandise, an oscillating trap closing the spout of said hopper, a balanced trip-lever connected to the shaft of said trap, an agitator acting upon the contents of said hopper, a spring-supported operating-lever for actuating said agitator, and a locking-shoe upon the trip-lever against which the operating-lever closes when at rest.

8. The combination with the hopper, having converging sides or bottoms with one lip below the other, of the oscillating trap pivoted upon an axis subjacent to the upper lip, closing against the lower lip and having a concentric guard that moves past the upper lip, and a jarrer or stirrer actuated to move up from the lower lip concurrently with the dumping movement of the trap.

9. The combination with the hopper having a spout with one lip depending below the other, of a trap pivoted subjacent to the shorter lip and closing against the lower lip, and a coacting cut-off plate moved from the lower lip toward the upper or shorter lip to intermit the feed.

10. The combination with the hopper having a spout with one lip depending below the other, of an oscillating trap closing against the lower lip, a concentric guard upon said trap moving past the upper lip, a cut-off plate working upward from said lower lip toward the upper lip, and mechanism for actuating said cut-off plate.

11. The combination with the hopper, of the trap closing the spout of said hopper, and the bodily-movable agitator actuated to move vertically and uniformly up from the bottom of said hopper to lift and jar the contents thereof.

12. The combination with the hopper and delivery mechanism, of means for moving the merchandise-receptacle away from and toward the hopper to shake the contents.

13. The combination with the fixed hopper and its delivery mechanism, of a box for the reception of merchandise, a false hopper fitting the open lower end of said box, a lever operated from the exterior of the casing, and connections between said lever and the false hopper whereby the false hopper and the superposed box are caused to move away from and toward the fixed hopper with the movements of the lever.

14. The combination with the fixed hopper, of the bodily-movable lifter or jarrer having a longitudinal rib adjacent to the angle between the proximate vertical wall of said hopper and its sloping bottom, and a bridge-bar arranged to be received in the pocket between said rib and wall as the jarrer rises.

15. The combination with the hopper and with the separating mechanism, of the bodily-movable lifter or jarrer having a longitudinal rib adjacent to the proximate vertical wall of the hopper, and a bridge-bar coacting with said rib and moving adversely to the movements of the jarrer.

16. The combination with the fixed hopper, of the lifter or jarrer and the false hopper movable in opposition to said lifter or jarrer.

17. The combination with the fixed hopper having converging bottoms, of the bodily-movable false hopper having a longitudinal rib, and the oppositely-movable false bottom having a coacting bridge-bar.

18. The combination with the lifter or jarrer and its tang, of the hopper having a series of slots for the reception of such tang.

19. The combination with the hopper and with the delivery mechanism, of the bodily and vertically movable inclined lifter or jarrer corrugated or stepped to facilitate the feed of the contents.

20. The combination with the hopper having one lip of its spout depending below the other, of a vertically-playing cut-off plate moving from the lower lip toward the upper or shorter lip, and means for the adjustment of said cut-off plate

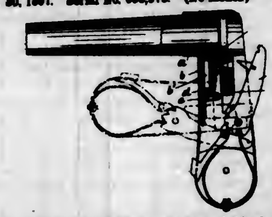
610,674. GRATE. WILLIAM EDGAR, Mobile, Ala. Filed Jan. 29, 1898. Serial No. 668,448. (No model.)



Claim.—1. In a grate, a rectangular supporting rib or web consisting of two longitudinal bars E and a plurality of transverse bars F, shoulders H extending upwardly from said bars at their points of intersection, and side brackets J formed on the outer side of each longitudinal bar E and contiguous to the ends of each transverse bar F, each side bracket having a shoulder extending upwardly the same distance as the shoulders H, all of which shoulders are adapted to engage and support the top plate of the grate, whereby spaces are provided between said top plate and supporting-web for the free circulation of air, and whereby at the same time sagging of the top plate is prevented, as and for the purpose set forth.

2. A grate, consisting of a top plate formed with a series of openings, a supporting rib or web formed of two longitudinal bars and a plurality of transverse bars, said web having shoulders extending from its upper edge at the intersections of the bars and on which the top plate rests with its edges overhanging the longitudinal bars and side brackets formed on the outer sides of the longitudinal bars and contiguous to the transverse bars, each of said brackets being formed on its upper edge with a shoulder engaging the overhanging side edge of the top plate, as and for the purpose set forth.

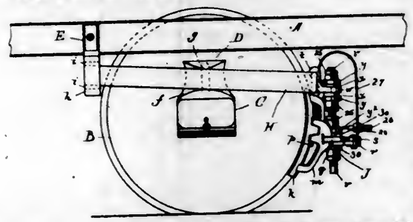
610,675. CANE-GUN. ERIC H. ERICSON, Oscarshamn, Sweden. Filed Oct. 20, 1897. Serial No. 656,079. (No model.)



Claim.—In a gun-cane, a handle and breech-block fastened to the barrel, by means of a pin running in a slot in a part of the handle fixed to the barrel, and suitable to be turned parallel with the barrel, a cartridge-extractor shaped as a two-armed lever pivoted to the said fixed part of the handle, and a shoulder on the movable part of the handle adapted to engage with one end of the said cartridge-ex-

tractor when the handle and breech-block is turned alongside the barrel, substantially as and for the purpose set forth.

610,676. BRAKE MECHANISM FOR RAILWAY-CARS. JOHN H. GRAHAM, Boston, Mass. Filed May 6, 1895. Renewed Feb. 12, 1898. Serial No. 670,145. (No model.)



Claim.—1. In a car-brake an approximately U-shaped lever fulcrumed on the axle-boxes and having its ends pivotally connected with the truck-body in combination with devices for supporting the brake-shoes from said lever.

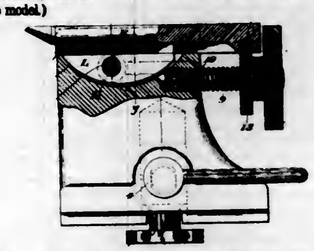
2. In a car-brake a lever fulcrumed on the axle-box and flexibly connected to the truck-body in combination with a hanger flexibly connected with said lever and carrying the brake-shoe.

3. In a car-brake the lever fulcrumed on the axle-boxes and connected with the truck-frame in combination with the hanger supported from said lever; the flexible seats for said hanger; the brake-beam carried by said hanger and the shoes connected to said beam.

4. In a car-brake the axle-box, C, having the lag, D, grooved to form a fulcrum in combination with the lever mounted in said groove to rock and having an end pivotally connected to the truck-body; and the shoe carried by said lever.

5. In a car-brake the axle-boxes and truck frame or sills in combination with the lever, H, pivoted to said frame and fulcrumed on said boxes; the brake-beam carrying shoes; the hangers attached to said lever; and the springs secured to said lever and tensioning said hangers all being arranged to operate substantially as set forth.

610,677. TAIL-STOCK FOR MILLING-MACHINES. CARL L. GROSMANN, Hartford, Conn. Filed Oct. 28, 1897. Serial No. 656,684. (No model.)



Claim.—1. The combination, with a tail-stock and its spindle adjustably mounted thereon, of a locker located in a socket below the spindle and movable in a direction transversely to the line of adjustment of said spindle and provided with a tongue connected to the spindle; and an actuator for the locker.

2. The combination, with a tail-stock and its spindle adjustably mounted thereon, of a locker located in a socket below the spindle and movable in a direction transversely to the line of adjustment of said spindle and provided with a wedge-shaped tongue loosely fitted in a correspondingly-shaped groove in the spindle, and a device for actuating said locker.

3. The combination, with a tail-stock and its spindle adjustably mounted thereon, of a locker located in a socket below the spindle and movable in a direction transversely to the line of adjustment of said spindle and provided with a wedge-shaped tongue loosely fitted in a correspondingly-shaped groove in the spindle; and an actuating-bolt on the tail-stock, having a cam portion passing through an opening in the locker.

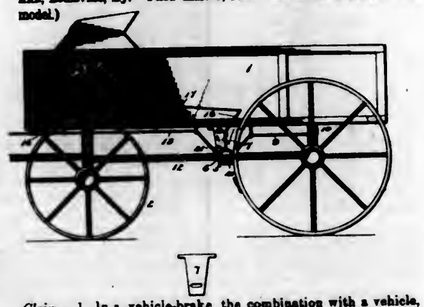
4. The combination, with a tail-stock, of a horizontally-adjustable spindle whose outer curved surface is adapted to fit against the correspondingly-shaped surface of a groove in the upper side of the tail-stock; a locker located in a socket below the spindle and movable in a vertical direction and provided with a wedge-shaped tongue loosely fitted in a correspondingly-shaped groove in the spindle; and a bolt mounted on the tail-stock and provided with a cam adapted to act against the locker.

5. The combination, with a tail-stock and its spindle adjustably mounted thereon, of a locker connected to said spindle, and a device carried by the tail-stock independently of the locker and serving to adjust the locker and spindle.

6. The combination, with a tail-stock, of an adjustable spindle; a locker connected to said spindle; an actuator for the locker; and a screw carried by the tail-stock and serving to impart an independent adjustment to said locker and spindle.

7. The combination, with a tail-stock, of a spindle and a locker for the spindle connected by a tongue-and-groove joint, the tongue being wedge-shaped in cross-section and the spindle being adjustable on the tail-stock, and the locker being located in a socket below the spindle for movement in a direction transversely to the line of adjustment thereof; a screw on the tail-stock, having a pointed end fitting in a seat with inclined walls in the locker; and a cam-bolt on the tail-stock, the cam portion extending through an opening in the locker.

610,678. HORSE-HITCH AND BRAKE. ARCHIBALD H. HARRYMAN, Louisville, Ky. Filed Mar. 5, 1897. Serial No. 626,013. (No model.)



Claim.—1. In a vehicle-brake, the combination with a vehicle, of a transverse shaft carrying at its opposite ends friction-rollers fast thereon for contact with the wheels, slotted hangers in which said shaft is mounted to roll when applied to wheels by the lever 16, flexible straps interposed between said shaft and a stationary axle, and other straps connected to said shaft and extending forward and having provision for their attachment to lines or straps forming a part of the harness of the animal, substantially as described.

2. In a vehicle-brake, the combination with a vehicle, of a transverse shaft carrying at its ends fixed friction-rollers for engaging the wheels, a flexible strap interposed between said shaft and one of the stationary vehicle-axles, and a second flexible strap connected to said shaft and extending forward and having provision for its attachment to the draft-animal, substantially as described.

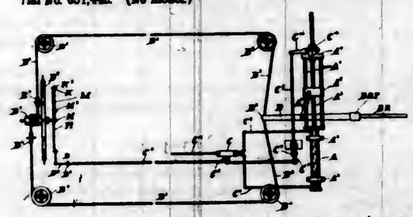
3. In a vehicle-brake, the combination with a vehicle, of a transverse shaft mounted in hangers on the body of the vehicle and adapted to move laterally toward and away from one of the vehicle-axles, friction-rollers fast on said shaft and arranged for contact with the wheels, a flexible strap interposed between and connected to said shaft and the vehicle-axle, a lever arranged within the reach of the driver, and connections between said lever and shaft, whereby the shaft may be moved laterally as indicated, substantially as described.

610,679. NUT-LOCK. ADDISON L. HOLMES and JAMES H. CAMPBELL, Alma, Colo. Filed Nov. 20, 1897. Serial No. 659,326. (No model.)



Claim.—In a nut-lock, the combination with a nut provided on its inner face with a plurality of notches, of a locking-washer having a spring-tongue secured thereto and adapted to engage said notches, the securing rivet, or screw of the spring-tongue projecting from the opposite face of the washer and adapted to engage the fish-plate, or other object to which the nut is applied, substantially as set forth.

610,680. MECHANISM FOR BRAKING STEERING APPARATUS. WILLIAM T. JOHNSTON, Newport, Ky. Filed Sept. 13, 1897. Serial No. 651,442. (No model.)



Claim.—1. In a steam apparatus for moving the steering apparatus of a boat, the combination of a lever at the pilot-wheel, adapted to control the mechanism for furnishing steam to said apparatus, and the brake adapted to engage the pilot-wheel, and connected to the wheel-lever by intermediate mechanism, for enabling the wheel-lever to work the brake, substantially as and for the purposes specified.

2. In a steam steering apparatus, the combination of a lever at the pilot-wheel, adapted to control the mechanism for supplying steam to said apparatus, and a brake adapted to engage the rod for moving the tiller, and intermediate mechanism for enabling the wheel-lever to loosen the brake, when it, the lever, is shifted to the right or left, and to apply the brake when this wheel-lever is located in its mid-position, substantially as and for the purposes specified.

3. In a steam steering apparatus, the combination of a lever, at the pilot-wheel, adapted to control the mechanism for supplying steam to said apparatus, and two cooperative brakes, one at the pilot-wheel and the other at the rod for moving the tiller, and mechanism for enabling the wheel-lever to loosen the brakes, when it, the lever, is shifted to the right or left, and to apply the brakes when this wheel-lever is located in its mid-position, substantially as and for the purposes specified.

4. In an apparatus in which steam is employed to steer the vessel, the combination of a lever at the pilot-wheel, and the connecting mechanism for regulating the supply of steam, and the rod L, lever M, lever N, and brake R, R^2, engaging the pilot-wheel, substantially as and for the purposes specified.

5. In an apparatus in which steam is employed to steer the vessel, the combination of a lever at the pilot-wheel, and the connecting mechanism for regulating the supply of steam, and the lever C^7, rod C^9, lever C^{10}, and clamp C^{12}, and rod A^2, substantially as and for the purposes specified.

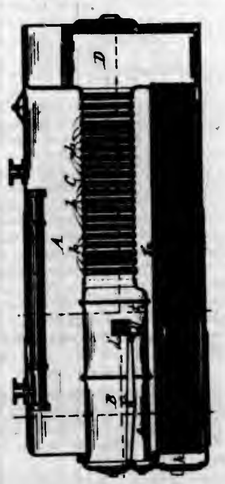
6. In an apparatus in which steam is employed to steer the vessel, the combination of a lever at the pilot-wheel, and the connecting mechanism for regulating the supply of steam, and the rod L, lever M, lever N, and brake R, R^2, engaging the pilot-wheel, and the lever C^7, rod C^9, lever C^{10}, and clamp C^{12}, and rod A^2, substantially as and for the purposes specified.

7. In a steam steering apparatus, the combination of a lever at the pilot-wheel, adapted to control the supply of steam to operate the rudder, the two wheel-levers F and K, connected by rod H, and in combination, as follows, the combination of the lever K, and rod L, levers M, N, and brake against pilot-wheel, and the combination of lever F with rod E, lever D, rod C^8, lever C^3, valve C, cylinder A with piston, conduits C^5 and C^6 thereto, rod A^2, and rod A^7, and tiller, and rudder and rudder-chains and pilot-wheel, the latter proximate to the levers F and K, substantially as and for the purposes specified.

8. In a steam steering apparatus, the combination of a lever, at the pilot-wheel, adapted to control the supply of steam to operate the rudder, the two wheel-levers F and K, connected by rod H, and in combination, as follows, the combination of lever K, and rod L, levers M, N, and brake against pilot-wheel, and the combination of lever F with rod E, lever D, rod C^8, lever C^3, valve C, cylinder A with piston, conduits C^5 and C^6 thereto, rod A^2, and lever C^7, rod C^9, rod C^{10}, clamp C^{12}, and rod A^7 and tiller, rudder, rudder-chains and pilot-wheel, at wheel-levers, substantially as and for the purposes specified.

610,681. STEAM-BOILER. ROBERT JOY, Oswego, N. Y. Filed Dec. 20, 1897. Serial No. 662,681. (No model.)

Claim.—1. A steam-boiler comprising a horizontal main shell, a fire-box in the rear end portion of said shell, a combustion-chamber in the opposite end of said shell, a direct fire-flue extending directly from the fire-box to the combustion-chamber, water-tubes extending across the interior of said fire-flue, and return fire-flues disposed beneath the aforesaid direct flue and extending from the combustion-chamber to a smoke-box on the rear end of the boiler as set forth.



2. A steam-boiler consisting of a horizontal main shell, a plurality of separate and distinct fire-boxes in the rear end portion of said shell, a combustion-chamber on the opposite end of said shell, a laterally-elongated direct fire-flue extending directly from the said fire-boxes to the said combustion-chamber, vertical water-tubes extending across the interior of said fire-flue, and return-flues disposed beneath the direct fire-flue and extending from the combustion-chamber to the smoke-box on the rear end of the boiler as set forth and shown.

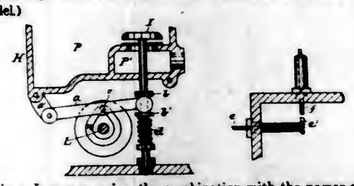
3. A steam-boiler consisting of a horizontal main shell, two fire-boxes disposed side by side inside of said shell and extending from the rear end of the boiler part way the length thereof, a combustion-chamber on the front end of the main shell, a laterally-elongated direct fire-flue extending from the inner ends of the fire-boxes to the combustion-chamber, vertical water-tubes extending across the interior of the direct flue, and return flues disposed beneath the direct flue and extending from the combustion-chamber to a smoke-box on the front of the boiler as set forth.

4. The combination with the horizontal main shell, of cylindrical fire-boxes disposed side by side inside of the main shell and extending from the rear end of said shell part way the length thereof, a combustion-chamber on the rear end of the main shell, a laterally-elongated direct flue extending from the inner ends of the fire-boxes to the combustion-chamber and having its bottom in a higher plane than the bottoms of the fire-boxes, water-tubes extending across the interior of the direct flue, and return-flues beneath said direct flue and extending from the combustion-chamber to a smoke-box on the rear end of the boiler as set forth.

5. The combination with the horizontal main shell, of two cylindrical fire-boxes disposed side by side inside of the main shell and extending from the rear end of said shell part way the length thereof, the fire-grates extending from the outer ends of said fire-boxes part way toward the inner ends thereof, a bridge-wall at the ends of said grates, a combustion-chamber on the front end of the main shell, a laterally-elongated direct fire-flue extending from the inner ends of the fire-boxes to the combustion-chamber and having its bottom in a higher plane than the bottoms of the fire-boxes and joined thereat with vertical offsets forming cinder-traps between said offsets and the bridge-walls, water-tubes extending across the interior of said direct flue, and return-flues beneath the direct flue and extending from the combustion-chamber to a smoke-box on the rear end of the boiler as set forth.

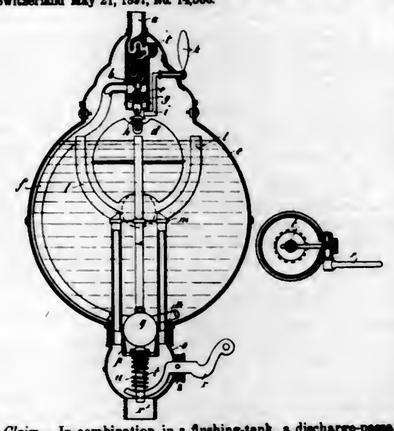
6. The combination with the horizontal main shell, of fire-boxes disposed side by side inside of said shell and extending from the rear end thereof part way the length of said shell, a combustion-chamber on the opposite end of the main shell, a laterally-elongated direct flue extending from the inner ends of the fire-boxes to the combustion-chamber and formed with horizontal top and bottom plates and convex sides extending past the outer sides of the fire-boxes, and vertical water-tubes extending across the interior of the said direct flue between the horizontal top and bottom thereof and leaving free fire-passages along the convex sides of the flue substantially as described and shown.

610,682. GAS-ENGINE. JOSEPH N. KELLY and WALLACE M. KELCH, Dayton, Ohio. Filed Mar. 31, 1897. Serial No. 630,065. (No model.)



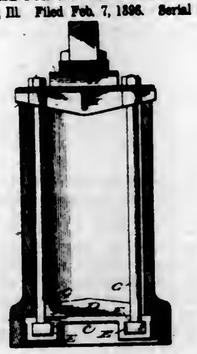
Claim.—In a gas-engine, the combination with the power-cylinder, and pistons, of puppet-valves located on opposite sides of said cylinder to admit and discharge thereto and therefrom, pivotal bars connected to the stems of said valves and controlling the movements of the valves in both directions, cams to actuate said pivotal bars, adjusting-collars *b* on the valve-stems by means of which the stroke of the pivotal bars may be regulated to vary the valve-opening, a compensating spring inclosing each of said valve-stems, and a loose and a fixed collar inclosing the ends of each of said springs, whereby any lost motion in the movement of the pivotal bars is avoided, substantially as described.

610,683. FLUSHING APPARATUS. PETER LIEBIG, Frankfort-on-the-Main, Germany, assignor to Louis Liebig, St. Louis, Mo. Filed Jan. 6, 1897. Serial No. 618,169. (No model.) Patented in Germany Aug. 21, 1895, No. 88,902; in France May 5, 1896, No. 256,094, and in Switzerland May 21, 1897, No. 14,586.



Claim.—In combination in a flushing-tank, a discharge-passage leading therefrom, a buoyant body closing the said discharge-opening, and normally held therein by the superposed water, mechanical means for displacing the said body at will, to cause flushing, and a plurality of overflow-pipes *l*, forming guides for the rise and fall of the said buoyant body, substantially as described.

610,684. BASE FOR SWITCH-STANDS, &c. ELISHA C. MATHEWS, Jacksonville, Ill. Filed Feb. 7, 1898. Serial No. 669,401. (No model.)

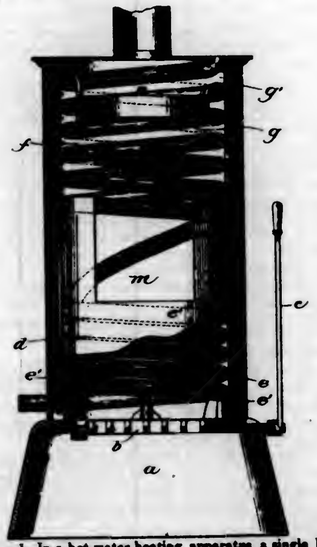


Claim.—1. The combination with a tile or pipe, having internal shoulders at its lower end, a cross-bar fitting against said shoulders and provided at its ends with transverse grooves having overhanging lips, bolts having their heads fitted in said grooves and under said lips and extending up to the upper end of the pipe, a cap-plate on the upper end of the tile held by said bolts, and means carried by the cap-plate for holding a fence post or other device.

2. The combination of a tile or pipe having notches in its upper end, a cap-plate having ribs engaging said notches, and bolts held in the lower end of the tile and securing the said cap-plate.

3. The combination with a tile or pipe, of a cap fitted on the upper end of the same and provided on its upper sides with parallel ribs having horizontal flanges at their upper edges, and means for securing the cap rigidly to the pipe.

610,685. HOT-WATER HEATING APPARATUS. WILLIAM J. MILLER, Boston, Mass. Filed Aug. 12, 1897. Serial No. 647,961. (No model.)



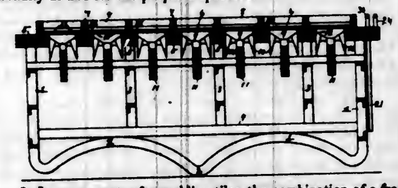
Claim.—1. In a hot-water heating apparatus, a single heating-coil of pipe comprising two groups of convolutions, the lower one forming the side wall of the fire-pot above the grate, and the upper one contained in the combustion-chamber, the convolutions of said upper group being more or less separated for the passage between them of the products of combustion, and a deflector *g*, supported by said coil at the top of the upper group of convolutions, which fits inside of and closes the upper end thereof, substantially as described.

2. In a hot-water heating apparatus, a single heating-coil of pipe comprising two groups of convolutions, the lower one forming the side wall of the fire-pot above the grate, and the upper one contained in the combustion-chamber, the convolutions of said upper group being more or less separated for the passage between them of the products of combustion, and a deflector at the top of said coil which fits inside of and closes the upper end thereof, and which has laterally-projecting lugs *g'* which overlie one of the convolutions of said coil, thereby suspending said deflector within and supporting it by said coil, substantially as described.

3. In a hot-water heating apparatus, a coil of pipe contained in the combustion-chamber, the convolutions of which are more or less separated, and a deflector at the top of said coil which substantially closes the opening thereat, and which is provided with laterally-extended lugs *g'* of varying length which overlie the coil, thereby suspending said deflector within and supporting it by said coil, substantially as described.

610,686. MOLD FOR FORMING TILES. THOMAS H. MCCOMBY, Dayton, Ohio. Filed Oct. 4, 1897. Serial No. 653,885. (No model.)

Claim.—1. In an apparatus for molding tiles, the combination of two continuous side pieces having their opposite ends vertical, and their intermediate parts projected down to form the tilting points of the frame, transverse braces between said side pieces, a series of uprights, a frame supported on said uprights and carrying longitudinal pieces 8 and transverse pieces 7 forming a series of molds thereon, a series of lifters movable in said molds, the said lifters each having a downwardly-extended rack, toothed segments geared to said racks, and means for simultaneously actuating said toothed segments, substantially as and for the purposes specified.



2. In an apparatus for molding tiles, the combination of a frame having two side pieces 1 1 the ends of which terminate vertically, and the intermediate parts of which project downwardly to form tilting points, longitudinal and transverse braces between said side pieces, a frame, a series of uprights supporting said frame, and carrying longitudinal pieces 8 and transverse pieces 7 forming a series of molds thereon, a series of lifters movable in said molds, each of said lifters having downwardly-projected guide-flanges 10 and a rack 11, a plate 6 carried by each of said lifters, a series of segment-gears provided with operating-handles and engaging with said racks, a bar lying across said handles, and means for operating said bar to simultaneously actuate said segment-gears, substantially as and for the purposes specified.

610,687. GRATE. DONGAL J. MCKENZIE, Chicago, Ill., assignor to the McKenzie Furnace Company, same place. Filed Jan. 5, 1898. Serial No. 665,863. (No model.)



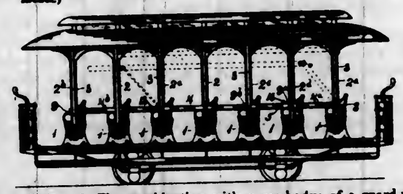
Claim.—1. In a grate-bar, the combination of a surface portion having double comb-shaped openings extending therethrough, a lower sustaining portion extending underneath and lengthwise with the grate-bar, so as to provide an air-space between it and the grate-surface and two or more ribs or partitions vertically and transversely disposed to connect the surface portion with the sustaining portion in one integral portion, substantially as described.

2. In a grate-bar, the combination of a surface portion provided with transverse ribs or bars, projecting teeth on each side of the transverse ribs and arranged to form comb-shaped openings through the grate, a sustaining portion arranged underneath the grate-surface so as to provide an air-space between it and the grate-surface longitudinally disposed, and a plurality of ribs or partitions transversely and vertically disposed to connect the surface and sustaining portions in one integral portion, substantially as described.

3. In a grate, several grate-bars each having a surface portion provided with a plurality of double comb-shaped openings extending therethrough, a lower wedge-shaped sustaining portion, arranged in line with and underneath the grate-surface so as to provide an air-space between it and the grate-surface and a plurality of vertically and transversely disposed ribs or partitions connecting the surface and sustaining portions in one integral piece, in combination with supporting rods or bars provided with tapered recesses to receive the sustaining portions of the bars and hold them in fixed operative position, substantially as described.

4. In a furnace-grate, the combination of several grate-bars formed of upper surface portions having a plurality of double comb-shaped openings transversely disposed and extending therethrough, lower wedge-shaped sustaining portions longitudinally disposed, and arranged underneath the grate-surface so as to provide an air-space between it and the grate-surface, a plurality of webs or partitions connecting the surface and sustaining portions in integral portions and concaved at either side so as to provide arched recesses between adjacent grate-bars into which air may circulate and be distributed, and side bars for the furnace provided with wedge-shaped recesses or pockets in their upper portions to receive the sustaining portions of the grate-bars and removably hold the grate-bars in fixed operative position, substantially as described.

610,688. GUARD-RAIL FOR OPEN TRAMWAY-CARS. JOHN G. MCLAUGHLIN, New York, N. Y., assignor of one-half to Robert W. Gleason, same place. Filed Oct. 27, 1897. Serial No. 656,562. (No model.)



Claim.—1. The combination with a car-body; of a guard-rail comprising a single bar formed with a short section and a long section located in the same plane as the short section, having their adjacent ends hinged together, abutting against and mutually supporting each other when in alinement, a pin whereby the outer end of the short section is pivoted to one end of the car-body, and means whereby the outer end of the long section is supported on the car-body when the sections are raised, to cause the inner end of the long section to be supported on the top of the short section; substantially as described.

2. The combination with a car-body; of a guard-rail comprising a single bar formed with a short section and a long section located in the same plane, having their adjacent ends hinged together, abutting against and mutually supporting each other when in alinement, a pin whereby the outer end of the short section is pivoted to one end of the car-body, a cross-pin whereby the outer end of the long section is supported on the other end of the car-body, and a pivoted link whereby the outer end of the long section is supported on the car-body when the sections are raised; substantially as described.

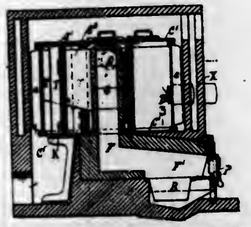
3. The combination with a car-body; of a guard-rail comprising a single bar formed with a short section and a long section located in the same plane, having their adjacent ends hinged together, a pin whereby the outer end of the short section is pivoted to one end of the car-body, a cross-pin whereby the outer end of the long section is supported on the other end of the car-body, intermediate cross-pins on the car-body whereby the adjacent ends of the sections are supported, and a pivoted link whereby the outer end of the long section is supported on the car-body when the sections are raised; substantially as described.

4. The combination with a car-body; of a guard-rail comprising a single bar formed with a short section having an eye at its outer edge, and a long section, said sections having their adjacent ends hinged together, a pin whereby the outer end of the short section is pivoted to one end of the car-body, a pivoted link whereby the outer end of the long section is supported on the car-body when the sections are raised, and the draw-bolt for engaging the eye, secured adjacent to the hinge of the sections when the sections are raised; substantially as described.

610,689. HOT-AIR HEATING APPARATUS. HENRI J. PIRON, Brussels, Belgium. Filed Oct. 16, 1896. Serial No. 609,139. (No model.) Patented in Belgium Oct. 26, 1891, No. 96,923; in France Jan. 27, 1892, No. 218,977; in Spain May 9, 1892, No. 14,578; in Switzerland Sept. 26, 1896, No. 14,244, and in Austria Oct. 2, 1896, No. 47/3228.

Claim.—1. A hot-air heating apparatus comprising the hearth converging laterally toward its rear end, the vertical central flue having a radial opening at the top and surrounding the rear end of the hearth, the isolated chamber surmounting the central flue having

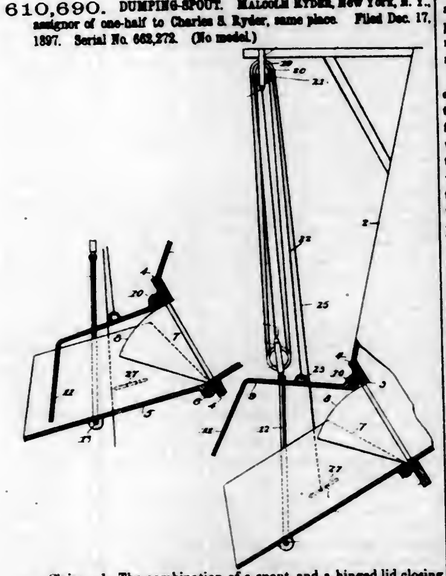
radial baffles open alternately at the bottom and at the top of the chamber, and the vertical air-tubes open at bottom and top of the chamber and located therein between the baffles; substantially as described.



2. A hot-air heating apparatus comprising the hearth converging laterally toward its rear end, the vertical central flue having a radial opening at the top and surrounding the rear end of the hearth, the isolated chamber surrounding the central flue having radial exterior gills, and radial interior baffles open alternately at the bottom and at the top of the chamber, and the vertical air-tubes and open at the bottom and top of the chamber and located therein between the baffles; substantially as described.

3. A hot-air heating apparatus comprising the hearth converging laterally toward its rear end, the vertical central flue having radial opening at the top and surmounting the rear end of the hearth, the isolated chamber surrounding the central flue having radial exterior gills, and radial interior baffles open alternately at the bottom and at the top of the chamber, and the vertical air-tubes having interior gills and open at the bottom and top of the chamber and located therein between the baffles; substantially as described.

610,690. DUMPING-SPOUT. MALCOLM RYDER, New York, N. Y., assignor of one-half to Charles S. Ryder, same place. Filed Dec. 17, 1897. Serial No. 663,272. (No model.)



Claim.—1. The combination of a spout, and a hinged lid closing within the spout at an angle thereto and traveling along the same toward its delivery end in closing

2. The combination of a spout and a lid each hinged independently of the other, means for swinging the spout and its lid away from each other to open the spout and discharge the material and then swinging them together to close the spout, the said lid being adapted in closing the spout to enter the spout at an angle thereto and move along the same toward its delivery end at the same time approaching the bottom thereof for cutting off the discharge of material.

3. The combination of a spout and a lid each hinged independently of the other, means for swinging the spout and its lid away from each other to open the spout and discharge the material and then swinging them together to close the spout, and a flexible connection secured between the spout and its lid, said connection passing over a guide between its points of connection with said spout and lid.

4. The combination of a hinged spout, a hinged lid therefor bent downwardly at one end so as to enter within the spout and close it, means for swinging the spout and its lid away from each other to open the spout and then swinging in together to close it, the end of said lid being adapted to enter the spout at a point a considerable distance within the discharge end thereof and to move outwardly through the spout along the bottom thereof, substantially as and for the purpose set forth.

5. The combination of a spout and a lid each hinged independently of the other, connections between the spout and its lid, an operating-cable attached by one end indirectly to said spout and passing thence over one or more palleys, whereby when the cable is drawn upon the spout and its lid may be swung together and upon releasing the cable the said parts may be swung away from each other.

6. The combination of a spout and a lid each hinged independently of the other, connections between the spout and its lid, a bail or frame swung to said spout and extending upwardly across the back of the lid and adapted to be engaged by the lid to limit the distance the lid and spout may be swung away from each other, and an operating-cable attached to said bail and passing thence over one or more pulleys, whereby when the cable is drawn upon the spout and its lid may be swung together and upon releasing the cable the said parts may be swung away from each other.

7. The combination of a spout and a lid each hinged independently of the other, connections between the spout and its lid, a bail or frame swung to said spout and extending upwardly across the back of the lid and adapted to be engaged by the lid to limit the distance the lid and spout may be swung away from each other.

8. The combination of a spout and a lid each hinged independently of the other, a flexible connection attached to said lid and passing over a guide and connected by its other end to said spout, a bail or frame swung to said spout and extending upwardly across the back of the lid and adapted to be engaged by the lid to limit the distance the lid and spout may be swung away from each other, and an operating-cable attached to said bail and passing thence over one or more pulleys, whereby when the cable is drawn upon the spout and its lid may be swung together and upon releasing the cable the said parts may be swung away from each other.

9. The combination of a spout and a lid each hinged independently of the other, the said lid being adapted to enter the spout when the two are swung together at a point within a considerable distance from the discharge end of said spout at the same time moving outwardly, the relative movement of the two parts causing their ends to approach each other, a bail attached to the spout extending upwardly across the back of the lid, a flexible connection attached between said lid and spout and passing over a guide, a pulley attached to the upper part of said bail, a second pulley attached to a fixed point above said spout, an operating-cable passing about said pulleys, whereby when the cable is drawn upon the spout and its lid may be swung together and upon releasing the cable the said parts may be swung away from each other.

10. The combination of a receptacle provided with a discharge-opening, a dumping-spout hinged at its inner end to a fixed point below said opening, a hinged lid for the spout, means for swinging the spout and its lid away from each other to open the spout and bringing them together to close it, and a wing projecting from each side of the discharge-opening outwardly lying within the spout to prevent the material discharged through the opening from escaping at the side of the spout, substantially as and for the purpose set forth.

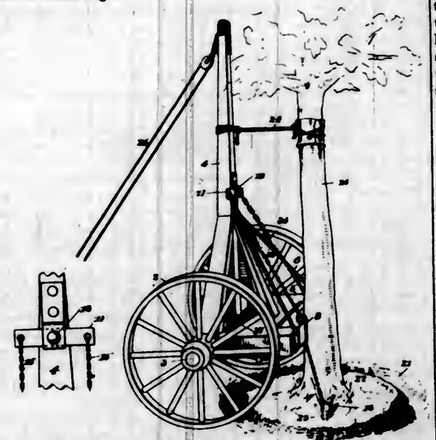
610,691. APPARATUS FOR EXTRACTING AND TRANSPORTING TREES. MALCOLM RYDER, New York, N. Y., assignor to the New York Large Tree Company, same place. Filed Feb. 26, 1898. Serial No. 671,751. (No model.)

Claim.—1. In an apparatus of the class described, a vehicle having a movable saddle mounted thereon, said saddle adapted to be engaged by the tree, the said saddle and vehicle having a relative shifting motion to prevent relative movement between the tree and saddle.

2. In an apparatus of the class described, a tilting truck provided with a movable saddle upon which the tree rests, the said saddle and truck having relative motion to prevent the tree and saddle from shifting on each other.

3. In an apparatus of the class described, the combination of chains or cables for engaging the roots to extract the tree, and equalizing mechanism for said chains or cables to maintain uniform tension on the same.

4. In an apparatus of the class described, a truck provided with a movable saddle on which the tree rests, said saddle and truck having relative motion to prevent relative movement between said saddle and the tree, a set of chains or cables attached to the truck and passing loosely through said saddle for engaging the roots of the tree in extracting it.



5. In an apparatus of the class described, a truck provided with a movable saddle on which the tree rests, said saddle and truck having relative motion to prevent relative movement between said saddle and the tree, a set of chains or cables attached to the truck and passing loosely through said saddle for engaging the roots of the tree in extracting it, and equalizing mechanism for said chains or cables to maintain uniform tension on the same

6. In an apparatus of the class described, the combination of a truck having a rocking saddle mounted thereon so that the truck and saddle rock relatively to each other in a plane extending transversely of the truck.

7. In an apparatus of the class described, the combination of a truck having a saddle mounted thereon and adapted to rock in different planes relatively to the truck.

8. The combination of a truck provided with a pole and having a bolster or bracket mounted upon the axle thereof for supporting the trunk of the tree, a prop mounted upon the pole of said truck for sustaining the upper end of the tree, and a second truck provided with a tongue and adapted to be attached to the pole of the first-mentioned truck for transporting the tree, substantially as and for the purpose set forth.

9. In a vehicle for transporting trees, the combination of a forward truck and a platform 28 attached thereto, a tilting rear truck provided with an arm or pole, a bolster mounted on said rear truck for supporting the tree, one or more pairs of hooks 37, 38 mounted upon said rear truck parallel with the pole thereof and located one to the rear side and the other to the forward side of the axle of said truck, a pair of detachable chains 35, 36 secured to the rear end of said platform 28 and adapted to be alternately engaged with the said hooks 37, 38, respectively, as the rear truck is tilted up and down for raising the rear end of the platform step by step to load the tree on the platform, substantially as and for the purpose set forth.

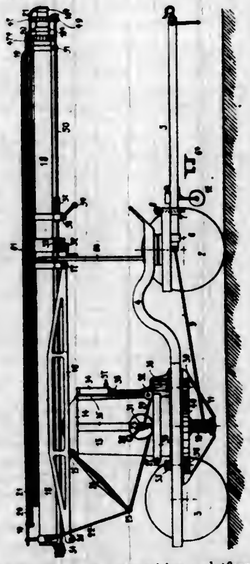
10 In an apparatus of the class described, a truck provided with a bolster, a saddle 8 formed with a seat 9 for receiving the trunk of the tree and having its under side curved and adapted to slide in a correspondingly-curved surface on said bolster, substantially as and for the purpose set forth.

11. In an apparatus of the class described, the combination of a two-wheeled truck provided with a pole 4, a bolster mounted directly above the axle of said truck for receiving the trunk of the tree and adapted to carry the same a considerable distance above said axle, and an attaching device mounted upon said pole for securing the upper part of the trunk of the tree in fixed relation to the pole, substantially as and for the purpose set forth.

12. In an apparatus of the class described, the combination of a two-wheeled truck provided with a pole, a bolster mounted upon the truck for receiving the trunk of the tree, a swinging equalizing-bar 17 mounted upon said pole, and a set of chains 15, 15 secured respectively to the ends of said equalizing-bar, whereby the tension on the pulling-chain may be maintained uniform, substantially as and for the purpose set forth.

610,692. FIRE-ESCAPE LADDER. RICHARD SCHAPLER, Frankfort-on-the-Main, Germany. Filed May 1, 1897. Serial No. 634,759. (No model.)

Claim.—1. A fire-escape apparatus comprising a platform, a tower pressure-receiver, a turn-table mounted on the tower pressure-receiver, a carriage surmounting the tower pressure-receiver and pivoted to the turn-table, the telescopic pipe-sections mounted on the carriage, the outer pipe-section being pivoted to the carriage, means for oscillating the carriage with the pipe-sections, and for oscillating the pipe-sections on the carriage, and a hose connecting the tower pressure-receiver with the telescopic pipe-sections for erecting the latter; substantially as described.



2. A fire-escape apparatus comprising a platform, a tower pressure-receiver, a turn-table mounted on the tower pressure-receiver, a carriage surmounting the tower pressure-receiver and pivoted to the turn-table, the telescopic pipe-sections mounted on the carriage, the outer pipe-section being pivoted to the carriage, means for oscillating the carriage with the pipe-sections and for oscillating the pipe-sections on the carriage connected with the tower pressure-receiver, and means for erecting the pipe-sections; substantially as described.

3. A fire-escape apparatus comprising a tower, a turn-table mounted on said tower, a carriage pivotally secured to the turn-table, telescopic pipe-sections pivoted to an end of the carriage distant from the pivot of said carriage on the turn-table, and means for erecting the carriage and pipe-sections and for locking the carriage in erected position while the pipe-sections are manipulated; substantially as described.

4. A fire-escape apparatus comprising a tower, a turn-table mounted on the tower, a carriage surmounting the tower and pivoted to the turn-table, the telescopic pipe-sections, the outer pipe-section being pivoted to the carriage, the flexible connection for erecting the carriage with the pipe-sections and the pendent guide secured to the pivot of the carriage for deflecting the flexible connection and maintaining the direction of pull at an efficient angle to the pipe-sections; substantially as described.

5. A fire-escape apparatus comprising a receiver, the cap rotatably mounted on said receiver, the pipe-sections and means for erecting the pipe-sections, and the hangers and ring suspended from the rotatable cap whereby the erecting means are supported; substantially as described.

6. A fire-escape apparatus comprising a tower pressure-receiver, a turn-table mounted on the tower pressure-receiver, a carriage surmounting the tower pressure-receiver and pivoted to the turn-table, the telescopic pipe-sections mounted on the carriage, the outer pipe-section being pivoted to the carriage, a drum, a rope or cable connecting the drum with the pipe-sections, the pulley for turning the drum, the cylinder having connections with the tower pressure-receiver for supplying pressure to it, a cylinder piston-rod, and a cord connecting the pulley with the piston-rod; substantially as described.

7. A fire-escape apparatus comprising a platform, a tower, the pipe-sections pivotally mounted on the tower, the winding-drum mounted on the tower, the rope or cable connecting the winding-drum on the tower with the pipe-sections, the winding-drum mounted on the platform and connected with the winding-drum on the tower, a windlass having working connections with the winding-drum on the

platform, and means for hitching a draft-animal to the windlass; substantially as described.

8. A fire-escape apparatus comprising a platform, a tower, the pipe-sections pivotally mounted on the tower, the winding-drum mounted on the tower, the rope or cable connecting the drum with the pipe-sections, the winding-drum mounted on the platform and connected with the drum on the tower, a windlass having working connection with the winding-drum on the platform, the clips secured to the platform, the releasable tongue mounted in the clips, and the rope or cable connecting the tongue with the windlass; substantially as described.

9. The combination of the operating-windlass, the draft-tongue connected to the rope of said windlass, and the clips 6 and 7 for receiving the tongue slotted on their under sides to permit the windlass-rope to drop through them as the tongue is removed; substantially as herein explained.

10. The combination of the operating-windlass, the tongue detachably secured to the vehicle and connected with the rope of said windlass, and the ground-wheel 10 carried by the tongue; substantially as herein explained.

11. The combination of a platform, a tower, the pipe-sections, the parts to be operated pivoted upon the tower, the windlass, the gear-wheel on the platform rotated by said windlass, and the gear-wheel carried by the pipe-sections and adapted to be brought into engagement with the gear-wheel on the platform by the erection of the pipe-sections; substantially as herein explained.

12. The combination of the telescoping pipe-sections, the screw-threads carried by the inner sections, the nuts carried by the outer ends of the sections and engaging the screw-threads, the shaft running longitudinally of the pipe-sections, means for rotating the shaft, and means for imparting rotary movement from the shaft to the nuts; substantially as described.

13. In combination with the pipe-sections; of an apparatus substantially as described, the nuts by which the pipe-sections are extended, the shaft running longitudinally of the pipe-sections and having means for rotating it, a pinion carried by the shaft for imparting movement to the nuts, and means for moving the pinion on the shaft into engagement with the nuts successively; substantially as herein explained.

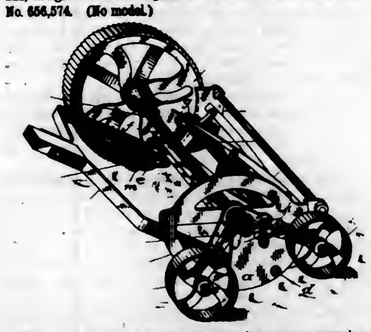
14. The combination of a suitable tower, a carriage hinged upon the tower, a pipe-section hinged to the carriage, the flexible connection, means for locking the carriage in erected position, and means for manipulating the flexible connection to change the angle of the pipe-section after the carriage is fixed; substantially as herein explained.

610,693. SELF-CLENCHING TUG-HOLDER. BENTON SCOTT and WILLIAM S. BENTON, Anderson, Ind. Filed Jan. 14, 1898. Serial No. 666,708. (No model.)



Claim.—The combination with a whiffletree of a flat tapered spring bent at its free end downward, then inward at an angle to the top plane of the whiffletree.

610,694. LAWN-MOWER. LEWIS H. SLAGHT, Waterford, Canada, assignor to ROZA Slaght, same place. Filed Oct. 27, 1897. Serial No. 656,574. (No model.)



Claim.—1. In a lawn-mower, the running-gear comprising an axle, a driving-wheel journaled on one end of said axle, a frame carried at the other end, and two ground-wheels journaled thereon one in front of the axle, in combination with a knife-frame journaled on the axle and extending in front thereof; and means for adjusting the relative position of the knife-frame and running-gear, substantially as and for the purpose specified.

2. In a lawn-mower, the running-gear comprising an axle, a driving-wheel journaled on one end of said axle, a frame carried at the other end, and two ground-wheels journaled thereon one in front of the axle and one behind, in combination with a knife-frame journaled on the axle and extending in front thereof; and means for adjusting the relative position of the knife-frame and running-gear, substantially as and for the purpose specified.

3. In a lawn-mower, the running-gear comprising an axle, a driving-wheel journaled on one end of said axle, a frame carried at the other end, and two ground-wheels journaled thereon one in front of the axle and one behind, in combination with a knife-frame journaled on the axle and extending in front thereof; and a clamp-screw and slot connection between the end of the knife-frame and the wheel-frame whereby the relative position of the knife-frame and the running-gear may be adjusted, substantially as and for the purpose specified.

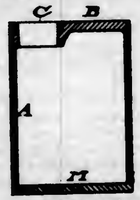
4. In a lawn-mower, the running-gear comprising an axle, a driving-wheel journaled on one end of said axle, a frame carried at the other end, and two ground-wheels journaled thereon one in front of the axle, in combination with a knife-frame journaled on the axle and extending in front thereof; and a clamp-screw and slot connection between the end of the knife-frame and the wheel-frame whereby the relative position of the knife-frame and the running-gear may be adjusted, substantially as and for the purpose specified.

5. In a lawn-mower, the running-gear comprising an axle, a driving-wheel journaled on one end of said axle; a frame carried at the other end, and two ground-wheels journaled thereon one in front of the axle and one behind, in combination with a knife-frame; a stationary knife or shear-plate connected thereto; a rotary knife journaled therein; a pinion on the axle of the rotary knife meshing with a gear formed within the driving-wheel and means for adjusting the relative position of the knife-frame and running-gear, substantially as and for the purpose specified.

In a lawn-mower, the running-gear comprising an axle, a driving-wheel journaled on one end of said axle; a frame carried at the other end, and two ground-wheels journaled thereon one in front of the axle and one behind, in combination with a knife-frame; a stationary knife or shear-plate connected thereto; a rotary knife journaled therein; a pinion on the axle of the rotary knife meshing with a gear formed within the driving-wheel; and a clamp-screw and slot connection between the end of the knife-frame and the wheel-frame whereby the relative position of the knife-frame and the running-gear may be adjusted, substantially as and for the purpose specified.

7. In a lawn-mower, the running-gear comprising an axle, a driving wheel journaled on one end of said axle, a frame carried at the other end and two ground-wheels journaled thereon one in front of the axle and one behind, in combination with a knife-frame; a stationary knife or shear-plate connected thereto; a rotary knife journaled therein; a pinion on the axle of the rotary knife meshing with a gear formed within the driving-wheel; a handle pivoted at each side of the knife-frame below the axle; and means for adjusting the relative positions of the knife-frame and running-gear, substantially as and for the purpose specified.

610,695. BOTTLE. JOHN VAN DEVENDER, Cleveland, Ohio, assignor of one-half to Herbert H. Hyman, same place. Filed June 11, 1897. Serial No. 640,230. (No model.)



Claim.—1. As a new article of manufacture, a paper bottle for containing liquids, consisting of two cylinders, one fitted within the other, one of said cylinders being provided with an integral plain bottom, and the other with a thickened head, plain on its outside and provided with a neck extending inward and adapted to receive a stopper, substantially as described.

2. A paper bottle for containing liquids consisting of two telescoping cylinders, one having a plain bottom M, and the other a thickened head B, smooth on its outside and provided with an inwardly-projecting neck C, adapted to receive a stopper, said bottle being coated on its inside with pitch, or equivalent substance, substantially as described.

610,696. BACK-PEDALING BRAKE. LINFRID L. WILLIAMS, Wyncote, Pa. Filed Sept. 30, 1897. Serial No. 653,617. (No model.)



Claim.—1. In a velocipede, the combination with the driving-wheel and a plate adapted to be secured to the frame of the machine, of a sprocket-wheel, a cam carried by the sprocket-wheel, pawls connected with the driving-wheel and adapted to be forced against said plate by said cam and shoulders at the ends of the cams to be engaged by said pawls when forward pressure is applied to the sprocket to propel the machine, substantially as set forth.

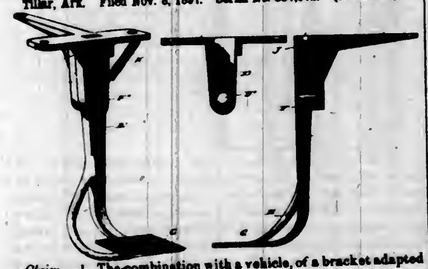
2. The combination with the hub of a driving-wheel and a plate to be secured to the frame of a velocipede, of a sleeve or shell secured to said hub, pawls pivotally connected to said sleeve or shell, a sprocket-wheel, cams carried by said sprocket-wheel and each having a shoulder at one end to be engaged by the ends of the pawls when the sprocket-wheel is driven forwardly, said cams being adapted to force said pawls against said plate when back pressure is applied to the sprocket-wheel in back-pedaling, substantially as set forth.

3. The combination with the hub of a wheel having right and left hand screw-threads thereon and a plate adapted to be secured to the frame of a velocipede, of a shell adapted to screw on said hub, a jam-nut adapted to enter said shell and screw onto said hub, pawls carried by said shell, a sprocket-wheel and cams carried by the sprocket-wheel and adapted to force said pawls against said plate when back pressure is applied to said sprocket-wheel, said cams each having a shoulder thereon which is engaged by the end of one of the pawls so that when the sprocket-wheel is driven forwardly it will revolve the wheel, substantially as set forth.

4. The combination with the hub of a driving-wheel and a plate adapted to be secured to the frame of a velocipede, of a shell secured to said hub, a flange on said shell, a ring surrounding the shell and connected with said flange, pawls pivotally attached between said flange and ring, a sprocket-wheel mounted on said shell, cams carried by said sprocket-wheel and disposed between said flange and ring, said cams adapted to force the pawls against the said plate when back pressure is applied to the sprocket-wheel, springs forcing said pawls against the cams and a shoulder at one end of each of said cams to be engaged by the free ends of the pawls, substantially as and for the purpose set forth.

5. The combination with the hub of the driving-wheel and a plate to be secured to the frame of a velocipede, of a shell secured to said hub and having a flange provided with elongated slots, pawls carried by said flange, a sprocket-wheel, cams carried by the sprocket-wheel and adapted to force the pawls into contact with said plate when back pressure is applied to said sprocket-wheel, shoulders on the cams adapted to be engaged by the pawls when forward pressure is exerted whereby to revolve the driving-wheel, and screws or pins secured to said cams and projecting through said elongated slots in the flange on the shell so as to have frictional contact with the walls of said slots and thus retain the pawls in contact with said plate should the driving-chain of the machine break when the brake is applied, substantially as set forth.

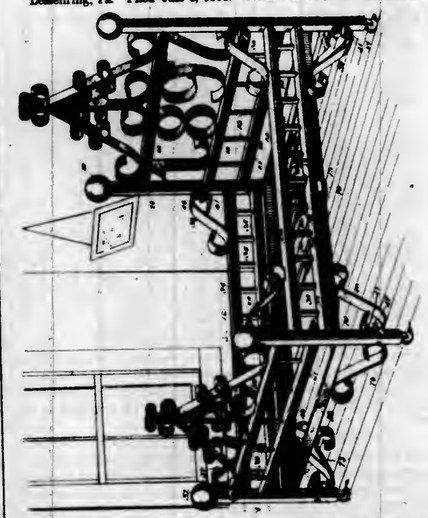
610,697. VEHICLE-STEP. ROBERT H. WOLFE and IRA B. WOLFE, Tillar, Ark. Filed Nov. 6, 1897. Serial No. 657,572. (No model.)



Claim.—1. The combination with a vehicle, of a bracket adapted to be secured thereto, and formed with a vertical slot open at its forward end, a standard pivoted to said bracket and carrying a step portion, said standard adapted at its upper end to swing within the slot, and a spring secured at one end to the standard and adapted to hold the same normally abutting against the rear end wall of the slot, substantially as described.

2. The combination with a vehicle, of a standard pivoted thereto and carrying a step portion, and a guard curved forwardly and downwardly and attached at one end to the standard, and at its opposite end to the step portion, substantially as described.

610,698. METALLIC BEDSTEAD. EDUARD ZAMBUSKY, West Leisenring, Pa. Filed Jan. 8, 1898. Serial No. 666,057. (No model.)



Claim.—1. The combination in a bedstead, of hollow corner-posts, side rails, fastening means to secure the side rails to the corner-posts, S-shaped brackets secured at one end to the side rails and provided with vertical slots in the opposite ends, and turn-buttons pivoted in the posts and adapted to engage in the slots in the S-shaped brackets, substantially as shown and described.

2. The combination in a bedstead of hollow posts having vertical slots in their sides, hollow side rails connected together by vertical spindles, plugs projecting from each end of the hollow side rails to engage in the slots in the posts, S-shaped brackets connected to the hollow side rails and having vertical slots in their free ends, and turn-buttons pivoted in the posts and adapted to engage in the slots in the brackets, substantially as described.

3. The combination in a bedstead, of head and foot bed-pieces or slat-supports, side rails connecting the head and foot boards, side bed-pieces or slat-supports independent of the side rails, each comprising the two sections of about one-half the length of the bed, pivoted together at their center, resting at their ends upon the head and foot bed-pieces, folding sectional slats pivoted to the head-section of one side bed-piece and adapted to engage the head-section of the other side bed-piece when stretched, like slats pivoted to the foot-section of the last-named side bed-piece and adapted to be engaged with the foot-section of the first-named side bed-piece when stretched, substantially as described.

4. The combination in a bedstead, of head and foot bed-pieces forming rigid portions of the head and foot boards and provided with horizontal flanges, side rails connecting the head and foot boards, side bed-pieces or slat-supports independent of the side rails, supported at their ends upon the horizontal flanges of the head and foot bed-pieces, horizontal corner-braces pivoted to the side bed-pieces near each end, vertically-arranged S-shaped brackets bolted to the inside of the corner-posts of the head and foot boards in line with the end bed-pieces or slat-supports, and a bolt for each corner-brace, passed through the corner-brace, the horizontal flange of the head and foot end pieces, and the upper inner ends of the S-shaped brackets, securing both the corner-braces and brackets to the horizontal flange of the head and foot-end pieces, substantially as described.

610,699. SASH-LOCK. JOHN L. BARNES, Milford, Ind. Filed Oct. 23, 1897. Serial No. 656,655. (No model.)

Claim.—A sash-lock, comprising front and rear sections provided with lugs tapering in width and presenting inclined side faces, and a link fulcrumed on the rear section and having rigid sides engaging the inclined side faces of the lugs, whereby the sashes of a window are adjusted laterally and forced into proper position, substantially as described.



610,700. ROTARY ENGINE. CHARLES R. EMMON, Chicago, Ill. Filed Oct. 27, 1897. Serial No. 656,506. (No model.)



Claim.—1. In a rotary motor, the combination of a casing, a rotatable ring in the casing, a hub rotatable in the ring and having deep-cut circular grooves in one end forming fluid-chambers, and ports connecting with the chambers located in the hub, all arranged as set forth.

2. In a rotary engine, the combination of a casing, a rotatable ring in the casing, a hub rotatable in the ring and having deep-cut concentric grooves in one end forming fluid-chambers and a piston having ports connecting respectively with said chambers, all arranged as set forth.

3. In a rotary motor, the combination with a casing of a rotatable ring in the casing, a hub rotatable in the ring and having circular grooves forming fluid-chambers in one end, and a piston having a port in each outer side thereof connecting respectively with each chamber, all arranged as set forth.

4. In a rotary motor, the combination of a casing, a rotatable ring in the casing, a hub rotatable in the ring and having concentric grooves in one end forming fluid-chambers, and a piston connected with the hub and having a port in each outer side registering respectively with the concentric chambers, as set forth.

5. In rotary motors, the combination of a casing, an eccentric rotatable hub solid at one end and having concentric grooves forming fluid-chambers in the other end, said hub having a piston with a port in each side thereof, one port communicating with the inner chamber and the other port with the outer chamber of the hub, all arranged as set forth.

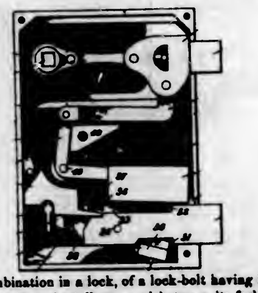
6. In rotary motors, the combination of a casing having ends provided with circular grooves, a ring rotatable in the casing and having ends fitting said grooves, an eccentric rotatable hub within said ring having circular fluid-chambers in one end, a piston having a port on each side connecting respectively with each chamber, an exhaust and inlet port registering respectively with each chamber, and means to reverse the motion of the engine, all arranged as set forth.

610,701. ART OF PRODUCING STEEL. JAMES BURNS, Verona, Pa. Filed Jan. 15, 1898. Serial No. 666,826. (No specimens.)

Claim.—The herein-described improvement in the art of producing steel, which consists of adding to every ninety-five (95) pounds of ordinary steel when in a liquid condition and prior to pouring the same, about three (3) ounces each of ground or powdered silicate of alumina and slippery-elm, substantially as herein set forth.

610,702. LOCK. JOHN C. COLTRIN, Denver, Colo., assignor of one-half to Archie Alexander, same place. Filed Feb. 21, 1896. Serial No. 671,111. (No model.)

Claim.—1. In a lock, the combination with the casing, of guideways formed thereon, a casting or block having arms projecting into the guideways, a latch-bolt swiveled in said block, a knob-receiving hub with a projecting arm, a ring connecting the said arm with the sliding block, an elbow-lever pivoted to the casing below the guides having its horizontal arm weighted, and an angular link connecting the upper end of its vertical arm with the sliding block, substantially as described.

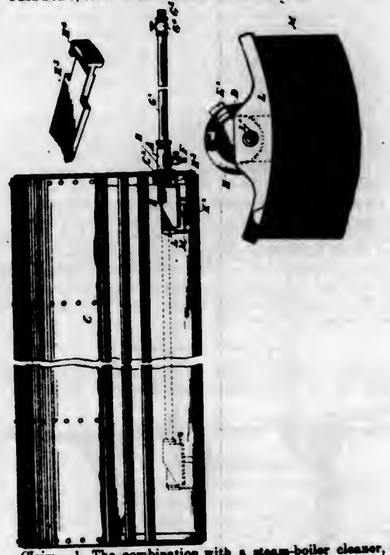


2. The combination in a lock, of a lock-bolt having its rear end forked, and a tumbler pivotally secured between its forks, provided at its forward end with a weight and near its rear end with a stop to engage a stationary pin in the case, substantially as described.

3. The combination in a lock, of the lock-bolt forked at its rear end, a stationary pin in the case, a weighted tumbler pivoted between the forks of the lock-bolt and carrying a stop to engage the stationary pin, and a pivoted dog above the keyhole and having a projecting end adapted to engage a shoulder in the lock-bolt, substantially as described.

4. In a lock adapted for use with a key having the usual wards and a longitudinal flange along the upper side of its spindle, the combination with the lock-bolt and a stationary pin in the casing, of a tumbler pivoted to the lock-bolt weighted at its forward end and provided near its rear end with a stop to engage the pin, a lug secured in the case, and a pivoted dog having projecting ends to engage a shoulder on the upper end of the lock-bolt near its rear end, said pivoted dog being arranged to be raised out of contact with the shoulder by the upper flange on the key while the wards of the key are operating upon the weighted tumbler, substantially as described.

610,703. BOILER-CLEANER. JOHN J. CRALL, Chauncey, Mo. Filed Dec. 3, 1897. Serial No. 660,867. (No model.)



Claim.—1. The combination with a steam-boiler cleaner, of a valve-block, a sliding foot secured thereto, a brush-head loosely pivoted thereon, a depending brush or scraper secured to said head, a gate-valve operating longitudinally upon said block between the bottom of same and a retaining-plate, a nipple screw-threaded through the mud-head of the boiler, said nipple being provided with an outer screw-threaded end and an inner shoulder, a sliding tubular sleeve projected through said nipple having its inner end exteriorly and its outer and interiorly screw-threaded and provided with a shoulder next the inner end, a catch-head upon said gate-valve adapted to be engaged by a slotted lug upon the annular shoulder of said nipple, a beveled lug upon the shoulder of the said sliding sleeve adapted to be engaged by another slotted lug upon the shoulder of said nipple, an outer sleeve having both its ends screw-threaded and adapted for attachment to said first-mentioned sleeve, a valve intercepting said outer sleeve, and a supplemental valve or cock in said nipple adapted to register with an aperture in the inner or first-mentioned sliding sleeve when the same is in its most outwardly-drawn position, all substantially as herein shown and set forth.

2. The combination with a steam-boiler, of a cleaner therefor, consisting of a nipple screw-threaded through the mud-head of the boiler, a sliding tubular sleeve projected through said nipple, an annular shoulder adjacent to the inner end thereof, a screw-threaded inner end having secured thereto a valve-block, a gate-valve secured within said block provided with a catch-head, a slotted lug projected from the inner portion of said nipple adapted to engage the catch-head of said valve when the said valve-block is rotated by means of the outwardly-projected sleeve, a beveled lug formed upon the periphery of the annular shoulder of said sleeve adapted to be engaged by another slotted lug on the inner portion of the said nipple, whereby the valve-block is locked in an abutting position against the inner end of the nipple, a recessed sliding foot secured to said valve-block, an oscillating brush-head also secured upon the inner end of said block, a depending brush, an outer screw-threaded tubular sleeve in connection with that first herein mentioned, a globe or other valve intercepting the same adjacent to its outer screw-threaded end, and an auxiliary exhaust-cock leading through said nipple adapted to register with an aperture in the first-mentioned sliding sleeve when the same is in its most outwardly-drawn position, the whole constructed, arranged, and adapted for operation substantially as herein shown and set forth.

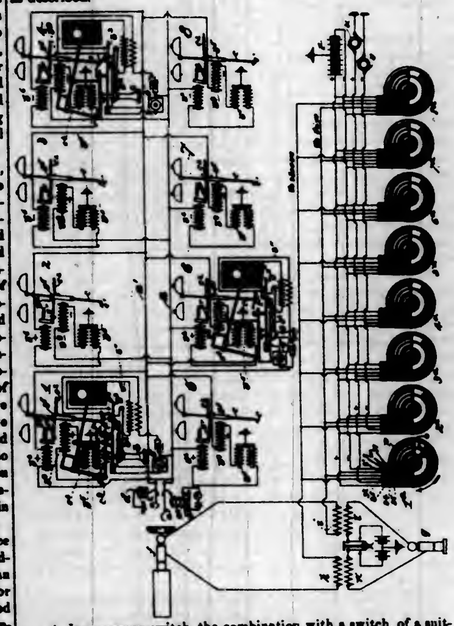
3. The combination with a steam-boiler, of a cleaning device therefor, consisting of a nipple A, projected through a head C, a sliding sleeve G, a valve-block H secured thereon, a gate-valve H^1, an oscillating brush-head L, a brush or scraper M, means as shown for operating said valve consisting of catch-head H^4 coacting with slotted lug E', means for securing said valve-block and nipple together consisting of lug I coacting with slotted lug E, an outer sleeve G', a globe-valve G^4, an exhaust-cock F adapted to register with an aperture F' when said sleeve G is in a certain position, the whole constructed, arranged, and adapted to operate substantially as and for the purpose herein set forth.

610,704. TELEPHONE SYSTEM. WILLIAM W. DEAN, St. Louis, Mo., assignor to the Bell Telephone Company of Missouri, same place. Filed Sept. 3, 1897. Serial No. 650,441. (No model.)

Claim.—1. The combination with a spring-switch for controlling the association of a telephone with a telephone-line, of an actuating device, as b^3, having separable engagement with the said spring-switch and which, when operated in one direction, serves to actuate the spring-switch to open the telephone-circuit, and means independent of the actuating device for directly engaging and maintaining the spring-switch in the position in which it has been placed by the actuating device, and an electromagnet for operating said means, whereby the circuit through the telephone may be maintained open and the actuating device, by reason of its separable engagement with said spring-switch, may be changed as to position independently of said electromagnet and spring-switch, substantially as described.

2. The combination with a switch for controlling the circuit through the telephone, of an actuating device for engaging said switch to move the same to open the circuit through the telephone, when actuated in one direction, said device being movable independently of said switch, when actuated in an alternative direction, means independent of said device for directly engaging and maintaining the switch in the position in which it has been placed by said actuating device, and an electromagnet for operating said means, the said actuating device being movable independently also of said electromagnet and means, whereby the circuit through the telephone may be maintained open and the said actuating device may be altered in its position independently of said electromagnet, means and switch, substantially as described.

3. In a secrecy-switch, the combination with a spring-switch for controlling the association of the telephone with the telephone-line, of a movable telephone-support having a separable engagement with the spring-switch, which support serves, when depressed, to actuate said switch to open the circuit through the telephone, a stop for directly engaging the spring-switch to hold the same stationary independently of the telephone-support, and electromagnetic means for bringing the stop into direct engagement with the spring-switch, whereby the operation of the spring-switch is prevented when said support is relieved of its weight and permitted to rise, substantially as described.



4. In a secrecy-switch, the combination with a switch, of a suitable circuit including the transmitting-telephone controlled thereby, a movable support for the receiving-telephone having a separable engagement with said switch and serving to actuate the same when depressed to open the circuit through the transmitter, said switch, when freed from the influence of the telephone upon the support, serving to close the circuit through the transmitter, means independent of the telephone-support for directly engaging and maintaining the switch in the position in which it has been placed by said telephone-support, and electromagnetic means acting independently of said support for operating said means, whereby the operation of the switch in a direction to close the transmitter-circuit may be prevented when said support is relieved of its weight and permitted to rise, substantially as described.

5. In a secrecy-switch, the combination with a spring-switch, of suitable circuits including the transmitter and receiver controlled thereby, a supporting-hook for the receiver having separable engagement with the spring-switch and serving when depressed to actuate said switch to open circuit through the receiver and transmitter, said switch when freed from the actuating influence of the telephone-support serving to close circuit through the receiver and transmitter, a detent adapted directly to engage the spring-switch and to maintain the same in a depressed position independently of the supporting-hook, and an electromagnet adapted to engage the detent with the spring-switch, the telephone-hook by reason of its separable engagement with the spring-switch being free to vibrate independently of said switch when the latter is engaged by said detent, substantially as described.

6. In a secrecy-switch, the combination with a spring-switch b^3 for controlling the continuity of the telephonic circuit or circuits at the subscriber's station, of a hook b^2 for supporting the receiver and having separable engagement with the spring-switch, said hook, through the influence of the receiver supported thereon, serving to actuate the spring-switch to open the telephonic circuit or circuits at the subscriber's station, a detent c^{11} directly engaging the spring-switch independently of said hook, a stop c', and an electromagnet for interposing said detent between said stop and spring-switch, whereby the spring-switch may be maintained in a position to which it has been actuated by said hook, in which position of the switch the continuity of the telephonic circuit or circuits is broken, the said hook, by reason of its separable engagement with the spring-switch, being free to vibrate independently of the spring-switch when the same is locked in position by the aforesaid stop and detent, substantially as described.

7. In a telephone apparatus, the combination with a spring-switch

b^3 for controlling the continuity of the telephonic circuit or circuits at the subscriber's station, of a telephone-hook b^3 having separable engagement therewith, and through the influence of the receiver when supported thereon adapted to open said circuit or circuits, a swinging arm c^4, an electromagnet b^4 for actuating said arm, a shelf c^{10}, a pin c^9 mounted upon the arm c^4 adapted to engage the shelf when the said pin is in an intermediate portion of its travel and thereby guide the arm c^3 in its travel, a detent c^{11} also carried by the arm c^4, a signal-bell having a clapper-supporting armature, an electromagnet for operating the same, a nose or extended portion c' of said armature normally in position to engage the arm c^3 when the same is actuated by the electromagnet b^3, a second electromagnet b^5 controlling a mechanical obstruction as b^7 normally disposed in the path of the armature b^4, the latter electromagnet when actuated being adapted to remove the obstruction from the path of the armature, thereby permitting the disengagement of the nose c' from the arm c^3 upon the actuation of the armature b^3, whereby the switch b^3 is permitted to close the telephonic circuit or circuits at the subscriber's station, substantially as described.

8. The combination with a switch for controlling the continuity of a telephonic circuit or circuits at the subscriber's station, of a signal-bell, a bell-magnet, an armature therefor supporting the bell-clapper, means for supporting the receiver, the receiver being adapted through the agency of said means to actuate said switch to open the telephonic circuit or circuits at the subscribers' stations, a detent, and an electromagnet adapted to interpose the same between said bell-armature or an extension thereof and said switch to prevent the operation of the switch upon the removal of the telephone from its support, substantially as described.

9. The combination with a telephone-switch, of means for supporting the receiver, said receiver being adapted through the agency of said means to operate the switch to open the telephonic circuit or circuits at the subscriber's station, a stop, as c', an electromagnet, a detent, as c^{11}, adapted to be interposed between said stop and switch by said electromagnet, a second electromagnet adapted to withdraw the stop from engagement with said detent, and means for withdrawing said detent from the path of said stop when thus disengaged, substantially as described.

10. The combination with a telephone-switch, of means for supporting the receiver, said receiver being adapted through the agency of said means to operate the switch to open the telephonic circuit or circuits at the subscriber's station, a stop, as c', an electromagnet, a detent, as c^{11}, adapted to be interposed between said stop and switch by said electromagnet, a bell, an electromagnet for operating said bell, an armature for the latter electromagnet carrying the stop c' which is disengaged from the detent upon the actuation of the bell-magnet, and a spring for removing the detent from the path of stop c' when thus disengaged, substantially as described.

11. The combination with a telephone-switch b^3, of a swinging arm c^3, a lever c^4 linked to said arm, an electromagnet for operating said lever, a swinging arm c' also actuated by said magnet, a spring c^5 adapted to draw the arm c' away from arm c^3, a stem c^7 removably engaging at its upper end the arm c', a post c^8 carried by arm c^3, a detent c^{11} carried by the arm c^3, a stop c', a shelf c^{10} adapted to engage post c^8 and thereby guide the detent into engagement with nose c' and at the same time actuate the arm c' in opposition to spring c^5 through the agency of stem c^7, a bell-actuating magnet, and an armature therefor which carries the stop c', the spring c^5 being adapted upon the withdrawal of said stop from engagement with detent c^{11} to elevate said detent from the path of stop c', said stop and shelf being relatively so disposed that a space is left between the same in which the post c^8 is adapted to be placed when the arm c^3 is actuated by the lever c^4, substantially as described.

12. In a signal-receiving apparatus or bell for party telephone-lines, the combination with a bell-magnet having an armature for operating the bell-clapper, said magnet being adapted to repeatedly actuate said armature when included in circuit with ringing-current, a second electromagnet operated by direct current, a mechanical obstruction, as b^7, controlled thereby and normally adapted to prevent the operation of the bell-magnet and adapted to be removed by its magnet from the path of the bell-magnet armature, the latter armature being provided with a catch, as b^{13}, disposed in the path of the obstruction, said catch and mechanical obstruction being adapted to engage each other when direct current to which both the aforesaid magnets are responsive is included in circuit therewith, whereby the bell-magnet is prevented from imparting a single stroke to the bell when it is energized by direct current, substantially as described.

13. In a signal-receiving apparatus or bell for party telephone-lines, the combination with a bell-magnet having a clapper-operating armature which is adapted to be repeatedly actuated by the magnet when included in circuit with signaling-current, a second electromagnet responsive to direct current, a mechanical obstruction b^7 moving with the armature of said magnet and normally interposed in the path of the bell-magnet armature, the armatures of said electromagnets being so adjusted relatively, or so constructed, that the bell-magnet armature will respond more quickly to direct current passing through its magnet than will the armature controlling the mechanical obstruction, whereby, when said magnets are included in circuit with direct current to which they are responsive, the bell-magnet armature is brought into firm engagement with the mechanical obstruction, whereby said obstruction is preserved in the path of the bell-magnet armature and the operation of the bell prevented, substantially as described.

14. In a telephone system, the combination with a party telephone-line extending from two substations to an exchange, of telephone-transmitters at the subscribers' stations, a centralized source of direct current for supplying current thereto, signal-bells in circuit with the telephone-line responsive to signaling-current of unlike sign, a source of ringing-current for operating each bell, switching mechanism for directing ringing-current through the selected bell, and switching apparatus for directing current from said centralized source over the telephone-line through the transmitter at the selected station in one direction or the other, according to the polarity of the bell at the unselected station, whereby the operation thereof may be prevented, substantially as described.

15. In a telephone system, the combination with a party telephone-line extending in two limbs from the central office to a plurality of subscribers' stations, transmitter-circuits at the subscribers' stations connected or adapted to be connected in circuit with the telephone-line, signal-bells at each station connected or adapted to be connected in circuit with the telephone-line, mechanical obstructions, one at each station, interposed in the paths of the armatures of the magnets of the bells, relays connected with the limbs of the telephone-line and in ground branches extending therefrom for controlling said mechanical obstructions, one relay being located at each station, the relays at the different stations being responsive to currents of unlike sign, a centralized battery having a ground connection at an intermediate portion thereof, switching mechanism at the central office adapted to include a portion of the battery between said ground connection and one pole of the battery in circuit with a limb of the telephone-line to actuate a relay at the selected station to remove the mechanical obstruction from the path of the armature of the bell-magnet, a source of ringing-current adapted to be directed over the line and through the selected bell to operate the same, and a switch for connecting the aforesaid portion of the battery with the other limb of the line and at the same time connecting the remaining portion of the battery with the first limb of the line, substantially as described.

16. In an operator's key, the combination with a rotating cylinder, contact-brushes s s' s^2 s^3 s^4 s^5, two of which are connected or adapted to be connected with the strands of the cord-circuit, a centralized battery having each pole connected with a brush, a source of calling-current connected with the remaining brush, insulated contact-plates suitably mounted upon a rotating element, said contact-plates being adapted when the key is in one position to include the source of ringing-current in the cord-circuit, the key in another position serving to disconnect the ringing-current from the cord-circuit, and to include the centralized battery in circuit with the strands of the cord-circuit, and in a third position to remove the centralized battery from circuit with the cord-strands, substantially as described.

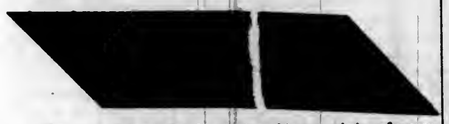
17. In an operator's key, the combination with a rotating cylinder having an eccentric or cam surface, brushes s s^2 s^3 and s^5 adapted to ride upon the cylinder, plates provided upon the concentric surface of the cylinder adapted to electrically connect brushes s with s^2 and s^3 with s^5, said brushes being brought suddenly into contact with said plates when the cam-surface upon the cylinder is passed, and a source of current connected or adapted to be connected with said brushes, substantially as described.

18. In a telephone system, the combination with a party-line extending from a plurality of subscribers' stations to the central office, of a switch at each subscriber's station for controlling the continuity thereat of a telephonic circuit or circuits, means at each station for locking said switches in position to prevent the actuation thereof to complete at any station or stations the continuity of the telephonic circuit or circuits, electromagnetic apparatus at each station for unlocking the switch thereat, switching apparatus at the exchange for uniting subscribers for conversation, and means for operating said electromagnetic apparatus at the selected station for releasing the switch thereat from its locking engagement, which means is controlled by said switching apparatus, said switching apparatus and the last-aforesaid means controlled thereby serving to maintain the switch at the selected station free, substantially as described.

19. The combination with a telephone-circuit, of a switch for opening and closing said telephone-circuit, means for actuating the same, an electromagnet acting independently of said means, and additional means for maintaining said telephone-circuit open operating independently of said actuating means and controlled by said electromagnet, substantially as described.

20. In a telephone system, the combination with a party-line extending from a plurality of subscribers' stations to the central office, of a switch at each subscriber's station for controlling the continuity thereat of the telephonic circuit, means at each station for locking said switches in position to prevent the actuation thereof to complete at any station or stations the continuity of the telephonic circuit, an electromagnet at each station for operating said means to unlock the switch thereat to permit of the completion of the telephonic circuit, cord-connecting apparatus at the exchange for uniting subscribers for conversation, a battery, suitable circuit connections therefor for including the battery in circuit with the magnet at the selected station, said cord-connecting apparatus being adapted to include said battery in circuit with the telephone-line to maintain the switch at the selected station unlocked, signals at the subscribers' stations of the party-line, a signaling-generator, and suitable apparatus at the exchange for including the signal at the selected station in circuit with the generator, substantially as described.

610,705. BRUSH FOR ELECTRICAL MACHINES. JOSEPH W. DICKEY, New York, N. Y., assignor of one-half to Charles R. Chegin, same place and Milford, Conn. Filed Dec. 8, 1894. Serial No. 531,268. (No model.)



Claim.—1. A brush for electrical machines consisting of successive layers of wire-gauze formed into the desired shape, and then compacted by pressure.

2. A brush for electrical machines consisting of successive layers of wire-gauze in which the wires are disposed diagonally to the length of the brush, compacted together by pressure.

3. A brush for electrical machines, having an exterior fold or layer terminating in an oblique or diagonal end enwrapping it and terminating at one end of the brush and there soldered in place, substantially as set forth.

4. A blank for a brush for electrical machines, consisting of a strip of woven-wire fabric cut on the bias, and of a width equal to the length of the brush to be formed and terminated in oblique ends having their points at the sides of the strip.

5. A brush for electrical machines formed from diagonally-cut woven-wire fabric wound and compressed into the form desired and into a practically solid but flexible mass.

6. A woven-wire dynamo-brush, consisting of several laps of wire-gauze, overwound and pressed into suitable shape, and having its final or outer lap obliquely disposed so that the extreme point of the said lap only is secured at about the end of the brush, whereby practically the entire brush may be utilized upon the commutator of a dynamo.

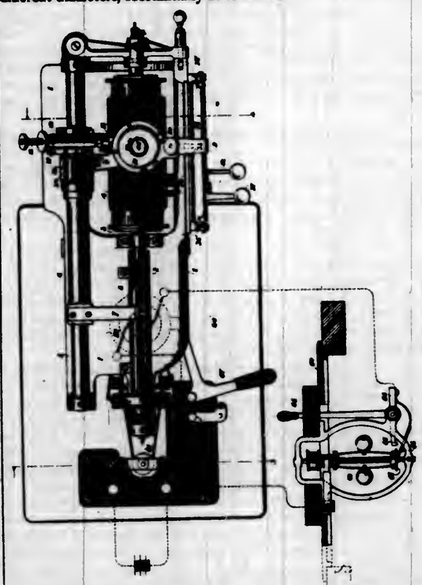
7. A wire-gauze blank for a dynamo-brush cut obliquely or bias to the parallel side of the strip or roll of wire mesh and having its ends oblique to the parallel sides of the said blank and forming points therewith, and in which the individual wires of the blank are disposed obliquely to the length and breadth of said blank, all constructed and arranged substantially as and for the purposes specified.

8. A dynamo-brush formed from a woven-wire blank, cut from a strip or roll of mesh and obliquely to its length and width, wound, compressed and molded into form substantially as specified.

9. A dynamo-brush formed from a strip or strips of woven-wire mesh, assembled and pressed into proper shape by sufficient force to form a compact mass, and having its wires running obliquely to the length of the brush all constructed and arranged to operate, substantially as and for the purposes specified hereinbefore.

610,706. PHONOGRAPH. THOMAS A. EDISON, Llewellyn Park, N. J. Filed Dec. 3, 1890. Renewed Feb. 4, 1897. Serial No. 622,022. (No model.) Patented in England Sept. 8, 1891, No. 15,906; in Belgium Sept. 8, 1891, No. 96,313; in France Sept. 8, 1891, No. 215,994; in Switzerland Sept. 8, 1891, Nos. 4,348, 4,371, and 4,372; in Italy Sept. 30, 1891, No. 30,353; in Spain Oct. 16, 1891, No. 13,486; in Norway Oct. 24, 1891, No. 2,527; in Austria-Hungary Feb. 14, 1892, No. 49,615 and No. 50,837; in Cape Colony Mar. 31, 1892, No. 738; in New South Wales Apr. 28, 1892, No. 3,733; in Victoria Apr. 29, 1892, No. 9,605; in South Australia May 4, 1892, No. 2,218; in Tasmania May 4, 1892, No. 1,058, and in Portugal Nov. 23, 1892, No. 1,726.

Claim.—1. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording or reproducing device carried by an arm adjustable for cylinders of different diameters, and means independent of the blank for supporting said arm in different positions to positively sustain the recording or reproducing device for engagement with cylinders of different diameters, substantially as set forth.



2. In a phonograph, the combination of a shaft having a tapering mandrel adapted to receive phonogram-cylinders of small diameter, a tapering shell adapted to be placed on said mandrel to receive phonogram-cylinders of large diameter, a driving connection for rotating said shaft, and a recording or reproducing device carried by an arm adjustable for cylinders of different diameters, substantially as set forth.

3. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording or reproducing device carried by an arm adjustable for cylinders of different diameters, means independent of the blank for supporting said arm in different positions to positively sustain the recording or reproducing device for engagement with cylinders of different diameters, and a feed-screw for moving said arm longitudinally of the phonogram-cylinder, substantially as set forth.

4. In a phonograph, the combination of a shaft having a tapering mandrel adapted to receive phonogram-cylinders of small diameter, a tapering shell adapted to be placed on said mandrel to receive phonogram-cylinders of large diameter, a driving connection for rotating said shaft, a recording or reproducing device carried by an arm adjustable for cylinders of different diameters, and a feed-screw for moving said arm longitudinally of the phonogram-cylinder, substantially as set forth.

5. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording or reproducing device carried by an arm traveling on a guide-rod, a feed-screw for moving said arm on said guide-rod, and means for positively sustaining the recording or reproducing device for engagement with cylinders of different diameters, substantially as set forth.

6. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording or reproducing device carried by an arm, a sleeve upon which said arm is adjustably mounted, whereby the same is adjustable for cylinders of different diameters, means for locking said sleeve in different positions, a guide-rod upon which said sleeve travels, and a feed-screw for moving said sleeve on the guide-rod, substantially as set forth.

7. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording or reproducing device carried by an arm, a sleeve upon which said arm is loosely mounted, a notched flange carried by said sleeve, and a locking device carried by the arm, whereby said arm is adjustable for cylinders of different diameters, a guide-rod on which said sleeve travels, and a feed-screw for moving said sleeve on the guide-rod, substantially as set forth.

8. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording

or reproducing device carried by an arm, a sleeve upon which said arm is adjustably mounted whereby the same is adjustable for cylinders of different diameters, a feed-screw for feeding the recorder or reproducer arm longitudinally of the phonogram-cylinder, a feed-arm carried by the sleeve and engaging said screw, a guide-rod upon which said sleeve travels and which sleeve is capable of partial rotation thereon to disengage the feed-arm from the feed-screw, and means for limiting the extent of rotation of the sleeve, substantially as set forth.

9. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording or reproducing device carried by a pivoted arm movable longitudinally of the cylinder, a guide-rest for supporting the free end of said arm, and means for varying the distance between said arm and guide-rest to adjust the arm for cylinders of different diameters, substantially as set forth.

10. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording or reproducing device carried by a pivoted arm movable longitudinally of the cylinder, a guide-rest for supporting the free end of said arm, and a pivoted presser-foot on said arm also adapted to bear upon said guide-rest, whereby the arm is adjusted for cylinders of different diameters, substantially as set forth.

11. In a phonograph, the combination of a rotating support adapted to receive phonogram-cylinders of different diameters, a recording or reproducing device carried by a pivoted arm movable longitudinally of the cylinder, a guide-rest for supporting the free end of said arm, means for varying the distance between said arm and guide-rest to adjust the arm for cylinders of different diameters, and a tilting bar for raising said arm to remove the recording or reproducing device from the surface of the cylinder, substantially as set forth.

12. In a phonograph, the combination with a recorder or reproducer carrying arm movable toward and away from a phonogram-cylinder, a tilting bar on which said arm rests, and which is tilted to raise said arm and remove the recording or reproducing device from the surface of the cylinder, a key-lever for operating said tilting bar, and a locking-key for holding said tilting bar in its tilted position, substantially as set forth.

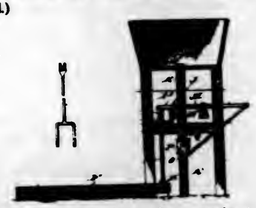
13. In a phonograph, the combination with a recorder or reproducer carrying arm movable toward and away from a phonogram-cylinder, a tilting bar on which said arm rests and which is tilted to raise said arm and remove the recording or reproducing device from the surface of the cylinder, and a retarding device for retarding the downward movement of the recorder or reproducer arm, substantially as set forth.

14. A tool for turning off phonogram-cylinders, comprising a tool carried by a shank working through a support, a locking device for holding the tool when adjusted relative to the cylinder, a device for limiting the length of movement of the shank through the holder when operating on cylinders of large diameter, and means for disengaging said limiting device to permit the operation of said tool on cylinders of much smaller diameter, substantially as set forth.

15. In a phonograph, the combination of an arm movable over a phonogram, a reproducing device rotatably carried by said arm, and a cam for partially rotating said reproducing device on said arm to adjust the point of the reproducing device relative to the record, substantially as set forth.

16. In a phonograph, the combination with a diaphragm provided with a recording and a reproducing point, of a support for the diaphragm adapted to be partially rotated, means carried by said support for receiving a speaking-tube which cooperates with said means to turn the diaphragm-support and bring either the recording or reproducing point into operative position, substantially as set forth.

610,707. AUTOMATIC WATERING-TROUGH. BENJAMIN F. HECKAMAN, Bremen, Ind. Filed Sept. 28, 1897. Serial No. 653,353. (No model.)

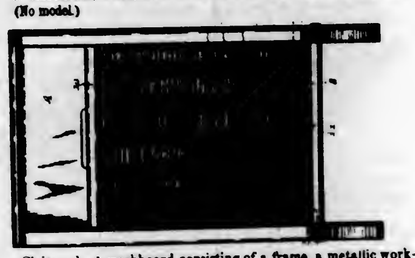


Claim.—1. The combination with a watering-trough, of a depressible platform, a forked bracket connected thereto, a pivoted lever connected at one end to said bracket, a supply-pipe leading to the trough, a valve in said supply-pipe, and a link connecting the valve with the other end of the pivoted lever, substantially as described.

2. The combination of a watering-trough, a pivoted platform, a forked bracket connected to said platform, a supply-pipe, a valve in said supply-pipe, a pivoted lever connected at one end to the upper end of the forked bracket, a link connecting the valve-handle with the other end of the pivoted lever, and a spring to normally retain the lever and platform in their raised positions and the valve in its closed position, substantially as described.

3. In a watering-trough for animals, provided with a suitable supply-pipe and a valve therein, the combination with a depressible platform adjusted to the trough, connections between the depressible platform and the valve whereby the valve is held normally closed but opened by depression of the platform, and a waste or discharge pipe in the supply-pipe near the valve whereby the trough and the supply-pipe from the valve to the trough is emptied, substantially as described.

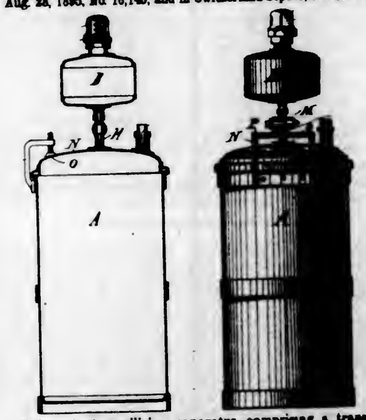
610,708. WASHBOARD. EDWARD F. HEDDERICK and LEANDER J. HEDDERICK, Flora, Ind. Filed Apr. 8, 1898. Serial No. 676,933. (No model.)



Claim.—1. A washboard consisting of a frame, a metallic working surface, and a metallic protector-strip made of a single length of metal and doubled upon itself to present a U-shaped appearance in cross-section and having its ends split or divided to provide clenchable prongs that are passed through openings in the frame and are bent into firm engagement therewith, substantially as described.

2. A washboard consisting of a suitable frame, a working surface formed of longitudinal strips which are interwoven with a series of weft-wires and have at their lower edges the short projecting ends, and a U-shaped strip inclosing the lower edge and projecting ends of the working surface and provided at its ends with prongs or lips which pass through the frame and are clenched against the outer faces thereof, substantially as described.

610,709. STERILIZING APPARATUS. EMIL HILGERS, Essen-on-the-Ruhr, Germany. Filed Jan. 26, 1898. Serial No. 676,801. (No model.) Patented in Germany Sept. 27, 1894, No. 86,518; in England Aug. 28, 1895, No. 16,145, and in Switzerland Sept. 5, 1895, No. 11,150.



Claim.—1. A sterilizing apparatus, comprising a transporting vessel having a pressure-cover provided with a filling-opening and a stop-cock, an overflow vessel having a valve closing automatically against pressure and secured to the stop-cock, and means for seating the cover; substantially as described.

2. A sterilizing apparatus comprising a transporting vessel having a pressure-cover provided with a filling-opening and a stop-cock, the overhanging brackets secured to the transporting vessel, the pressure-screws adjustable in the brackets, the overflow vessel secured to the stop-cock and having an automatic device closing against pressure, consisting of a ball-valve, a cap provided with ridges and with openings, and a spring located between the ball and the cap; substantially as described.

610,710. HOOK AND EYE. ELLERY A. JOHNSON, Rome, Ga. Filed Feb. 16, 1895. Serial No. 538,881. (No model.)



Claim.—1. In a hook and eye, a hook provided with a bill, a shank comprising parallel members, and guards formed by bending the rear ends of the shank members inwardly and extending them forwardly in the plane of the shank members, and having their free ends bent upward and outwardly turned to form curls or eyes at the point of nearest approach to the bill, the guards and shank members touching at their longitudinal edges, substantially as and for the purpose set forth.

2. In a hook and eye, a hook having a shank formed of parallel and separated members, guards lying side by side and occupying the space between the members of the shank, and oppositely-disposed rings or curls at the ends of the guards to act in conjunction with the bill, said rings or curls flaring outwardly from their inner edges and away from the plane of the shank, substantially as described for the purpose specified.

3. In a hook-and-eye fastener, the herein-described hook constructed of a single length of wire bent to form a shank having attaching-eyes at one end and a short outwardly-deflected bill at the opposite end, said shank comprising separated members or side bars, and parallel guards occupying the space between said members or side bars and formed by turning the side bars or members inwardly, in the plane of the latter, toward the bill, then extending outwardly away from the side bars, their free ends being bent laterally, forming rings which act in conjunction with the bill to retain the eye in engagement with the hook, substantially as set forth.

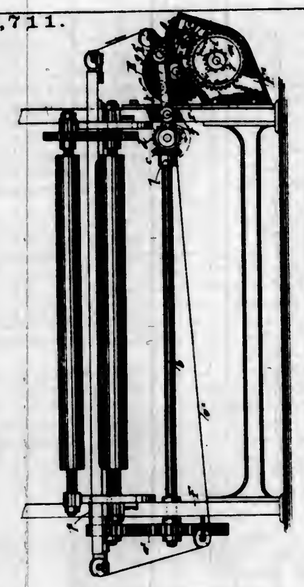
4. A garment-fastening hook to be used in connection with an eye of ordinary formation, constructed of a single length of wire bent to form a shank having attaching-eyes at one end and a short bill at the opposite end whose extremity curves abruptly, said shank comprising separated parallel members, and guards occupying the space between the said parallel members and having a portion at their free ends bent outwardly and forming rings which act in conjunction with the bill to retain the eye in engagement with the hook, said rings projecting beyond the sides of the shank members and inclining in opposite directions from their inner edges, substantially as set forth.

610,711. KNIFE-SLED MOTION FOR PLUSH OR VELVET LOOMS. JOHN KILLARS, Stonington, Conn. Filed Apr. 2, 1898. Serial No. 676,165. (No model.)

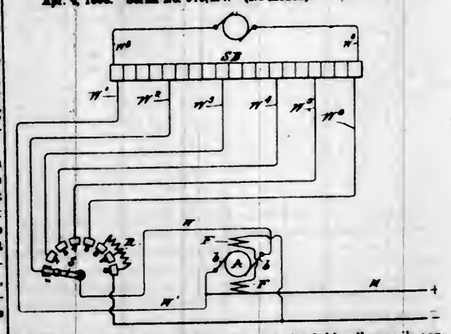
Claim.—1. The combination, with a knife-sled and its actuating-cord, of a knife-sled motion, comprising an intermediate shaft, means for rotating it at one-half the speed of the motion-transmitting crank-shaft, an intermediate crank-shaft, a bevel-gear transmission between it and said intermediate shaft, a segmental toothed wheel, a connecting-rod between said crank-shaft and wheel, a cord-pulley, to which the knife-sled-actuating cord is applied and intermediate gear-wheel transmission between the segmental toothed wheel and the cord-pulley, whereby reciprocating motion is imparted to the latter and thereby the knife-sled moved across the loom to the other side and back again, substantially as set forth.

2. The combination, with a knife-sled and its actuating-cord, of a knife-sled motion, consisting of an intermediate rotary shaft, means for rotating it at one-half the speed of the motion-transmitting crank-shaft, an intermediate crank-shaft, a bevel-gear transmission between it and said intermediate shaft, a segmental toothed wheel, a connecting-rod between the crank-shaft and the segmental toothed wheel by which rotary reciprocating motion is imparted to said wheel, a pinion meshing with said toothed wheel, an intermediate gear-wheel transmission, a cord-pulley driven thereby and guide-pulleys for the cord at opposite ends of the ways for the knife-sled, substantially as set forth.

610,711.



610,712. APPARATUS FOR STARTING AND CONTROLLING ELECTRIC MOTORS. THEODORE W. KLOMAN, New York, N. Y. Filed Apr. 4, 1898. Serial No. 676,497. (No model.)



Claim.—1. An electric motor having its field coil or coils connected permanently in circuit with a main source of current-supply, in combination with an independent source of current-supply and switching mechanism for varying the current flow therefrom through the armature of the motor in accordance with the demands put upon it, together with additional circuit connections whereby the independent source of current-supply may be disconnected from the armature and the main source of current-supply substituted therefor, the arrangement being such that the independent source of current-supply is never electrically connected with the main source of current-supply substantially as described.

2. An electric motor having its field-magnet coil or coils connected permanently in circuit with a main source of current-supply, in combination with an independent source of current-supply provided with means for connecting it in circuit with the armature of the motor and varying the current relations therethrough, in accordance with the load put upon it, the arrangement being such that the independent source of current-supply is never electrically connected with the main source of current-supply substantially as described.

3. An electric motor having its field-magnet coil or coils connected permanently in circuit with a main source of current-supply, in combination with an independent source of current-supply, having circuit connections with the armature of the motor together with additional circuit connections whereby the first-named circuit connections may be ruptured and the main source of current-supply operatively connected with the armature after it, the armature, has

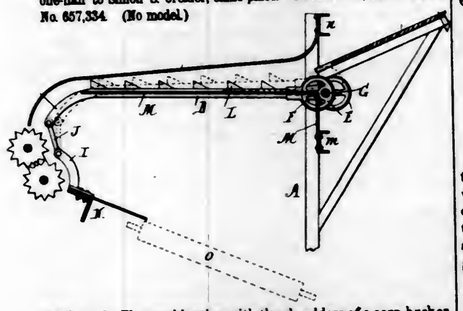
reached a definite speed, the arrangement being such that the independent source of current-supply is never electrically connected with the main source of current-supply substantially as described.

4. An electric motor having its field-magnet coil or coils connected permanently in circuit with a main source of current-supply and its armature temporarily connected with an independent source of current supply, in combination with switching mechanism and circuit connections for varying the current from the independent source, in accordance with the demands of the work put upon it, and circuit connections whereby the independent source of current-supply may be disconnected from, and the main source of current-supply connected to, the armature, substantially as described.

5. An electric motor having its field-magnet coil or coils connected permanently in circuit with a main source of current-supply and its armature temporarily connected with an independent source of current-supply, in combination with switch mechanism for varying the current-supply from the independent source and ultimately connecting the main source of current-supply with the armature, the arrangement being such that the independent source of current-supply is never electrically connected with the main source of current-supply substantially as described.

6. An electric motor having its field-magnet coil or coils connected permanently in circuit with a main source of current-supply and its armature connected with an independent source of current-supply, as a storage battery, in combination with a switch for varying the current relation thereof and ultimately connecting the main source of current-supply to said armature, together with an independent electrical generator adapted to keep the storage battery fully charged, substantially as described.

610,713. CORN-HUSKER. ISAAC KORB, Sterling, Ill., assignor of one-half to Simon S. Creider, same place. Filed Nov. 4, 1897. Serial No. 657,334. (No model.)



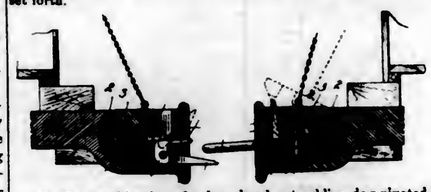
Claim.—1. The combination with the shredders of a corn-husker, of a driving-shaft, eccentric-operated feed-bars connected to said shaft at their rear ends and provided with projections on their upper sides, a support and a link connection between said support and the forward ends of said feed-bars adapted to force the material against the shredders as the feed-bars are moved to a forward position, substantially as described.

2. The combination with the shredders of a corn-husker, of a driving-shaft, eccentric-operated feed-bars secured to said shaft at their rear ends and having their forward ends curved downwardly adjacent to the shredders, a support, arms secured to said support and extending upwardly behind the shredders, and a link pivotally connected to the downturned forward end of each of the feed-bars and its corresponding arm and arranged to press the material against the shredders, substantially as described.

3. In a husking-machine, the combination with shredders and a driving-shaft, of eccentric-operated feed-bars connected to said shaft at their rear ends and having their forward ends downturned and pivotally supported in rear of, and adjacent to, the shredders, and supporting-fingers secured at their rear ends to the frame of the machine and arranged between the feed-bars, substantially as described.

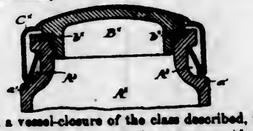
610,714. CAR-COUPLING. ALVY M. LABUR, Downey, Iowa. Filed May 4, 1898. Serial No. 679,704. (No model.)

Claim.—1. In an automatic car-coupling, the combination of a draw-head, a locking-dog pivoted therein upon a horizontal pivot and provided with lateral link-supporting shoulders, which when in a coupled position lie above the pivot, said dog being provided with two arms projecting forward from the pivot, the shorter arm being above the pivot of the dog and far enough from the lower longer arm to receive the link between them; and a detent in the draw-head and pivoted upon a horizontal pivot back of and above the dog, said detent being provided with a recess extending rearward from its front edge and adapted to receive the arms of the dog when the same is turned over, said recess forming depending side walls which normally rest upon and hold the dog in its uncoupled position and upon the inner end of the link and embrace and lock the two arms of the dog in a coupled position, substantially as and for the purposes set forth.



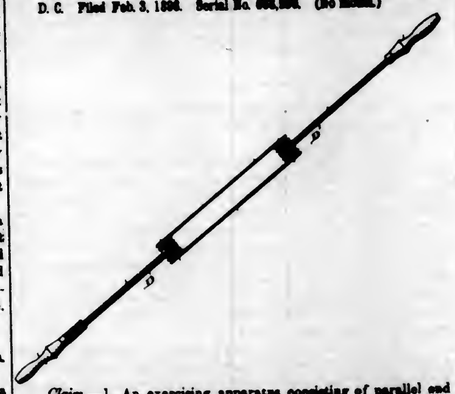
2. The combination of a draw-head, a tumbling dog pivoted in the forward end thereof near its mouth and provided with a pair of arms between which the incoming link strikes, means adapted to lie under the link when coupled and support it, and a locking-detent pivoted above the dog and normally resting upon and holding the same in position to receive the link, said detent being provided with a recess to receive and embrace and lock the arms of the dog when coupled, said recess forming walls which bear upon the inner end of the link and hold it in the crotch formed by the arms and upon the supporting means, whereby said detent performs the triple function of normally holding the coupling-dog in position when uncoupled and locking it when coupled and supporting the link in position to enter an approaching draw-head.

610,715. CAP FOR BOTTLES, JARS, &c. ANCIL R. LOWE and ALBERT A. JOHNS, Philadelphia, Pa. Filed Mar. 10, 1898. Serial No. 673,321. (No model.)



Claim.—In a vessel-closure of the class described, the combination with a vessel-neck, having a continuous recess A^1, and provided with an upper and a lower annular shoulder, of a cap provided at its continuous lower edge with integral struck-up and inwardly-bent tongues, the free extremities of which engage said upper annular shoulder, and the opposite extremities and lower edge of which engage said lower annular shoulder, substantially as set forth.

610,716. EXERCISING DEVICE. WILLIAM M. MARSHALL, Philadelphia, Pa., assignor of one-half to Clarence M. Busch, Washington, D. C. Filed Feb. 3, 1898. Serial No. 668,898. (No model.)



Claim.—1. An exercising apparatus consisting of parallel end portions, pairs of coils continuous thereof at the inner ends of said portions, central portions joining said coils, and handles on the outer ends of said end portions.

2. In an exercising apparatus, parallel end portions, pairs of coils continuous thereof at the inner ends of said portions, parallel central portions joining said coils, and handles at the outer ends of said end portions, said coils having their convolutions in reverse order.

610,717. INHALER. JAMES H. MUNYON, Philadelphia, Pa. Filed Feb. 10, 1898. Serial No. 669,795. (No model.)



Claim.—A bottle having a stopper, a mouthpiece, independent air-supply tubes entering said bottle, an auxiliary vessel in said bottle which is suspended therein by one of said air-supply tubes, which enter said vessel, a stopper in the mouth of said vessel and discharge-nozzle on said vessel opening into said bottle, the first-named stopper forming a common support for said mouthpiece and both air-supply tubes and the other named stopper forming a common support for said nozzle and the air-supplying tube which enters said vessel.

610,718. COTTON-PLANTER AND FERTILIZER-DISTRIBUTER. BALUS J. MCLEMORE, Reed Creek, Ga. Filed Aug. 17, 1897. Serial No. 648,584. (No model.)



Claim.—1. A combined cultivator and planter comprising a beam, the diverging shovel-bars bent laterally with respect to each other and fastened to the beam, the handles fastened to and braced by the shovel-bars, the hopper situated between the shovel-bars and contiguous to the rear extremity of the beam, an agitator-shaft journaled in the hopper and having at one end a ground-wheel, the divided bail having its members 16, 17, bent and spread laterally to embrace the front and sides of the hopper and united directly thereto, a single pivotal bolt attached to the divided bail members and the beam, a tie-bar 13 secured to the handles in rear of the hopper, and a loop-shaped keeper 22 secured to the rear wall of the hopper and embracing said tie-bar to prevent the hopper from tilting sidewise, whereby all the working parts of the implement are arranged compactly, substantially as described.

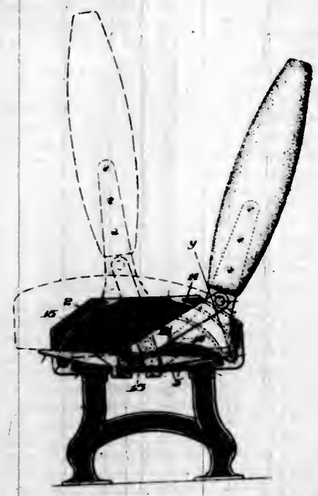
2. In a cotton-planter, the combination with a beam, a vertically-movable hopper, and the handles having a tie-bar, of a carrying-bail pivoted to the beam and fastened rigidly to the hopper, a ground-wheel carried by said hopper, and a longitudinal keeper fastened rigidly to the rear side of the hopper and engaging slidably with the tie-bar of the handles, substantially as described.

610,719. CAR-SEAT. WILLIAM M. HOSKINSON, Philadelphia, Pa. Filed Apr. 7, 1898. Serial No. 676,736. (No model.)

Claim.—1. In a car-seat, the combination, with the frame and the back, of a depending arm on said back, a lever pivoted to said frame and having a fixed pivotal connection with said arm, and a cam connection between said frame and arm, whereby as the back is swung upon the lever from side to side of the seat, said back is guided and adjusted in respect to the seat by said pivotal and cam connections.

2. In a car-seat, the combination with the frame provided with lateral camways, of a seat-back, an arm thereon provided with two cam-engaging portions adapted to coact alternately with said ways and travel in intersecting paths intermediate the latter, and a lever pivoted to said frame and having a fixed pivotal connection with said arm.

3. In a car-seat, the combination with the frame provided with lateral camways, of a seat-back, a depending arm thereon provided with two studs adapted to coact alternately with said ways, and a lever fulcrumed centrally to said frame and pivotally connected at its upper end to said arm at a fixed point below the back-section and above the studs.



4. In a car-seat, the combination with the frame provided with two reverse camways open at their upper ends and closed at their lower ends, of a seat-back, a depending arm thereon provided with studs adapted to coact with said camways, and a lever pivoted to said frame and having a fixed pivotal connection with said arm.

5. In a car-seat, the combination with the frame provided with two reverse camways open at their upper ends and closed at their lower ends, of a seat-back, a depending arm thereon provided with studs adapted to coact with said camways and provided also with shoulders adapted to abut against the frame, and a lever pivoted to said frame and having a fixed pivotal connection with said arm.

6. In a car-seat, the combination with the frame, the back, the rocker, and its cooperating parts, of a depending arm on said back, a lever pivoted to said frame and having a fixed pivotal connection with said arm, a cam connection between said frame and arm, whereby as the back is swung upon the lever from side to side of the seat said back is guided and adjusted in respect to the seat, and a connection between said lever and the rocker.

7. In a car-seat, the combination, with the frame, the back, the rocker, and its cooperating parts, of a depending arm on said back, a lever pivoted to said frame and having a fixed pivotal connection with said arm, a cam connection between said frame and arm, whereby as the back is swung upon the lever from side to side of the seat, said back is guided and adjusted in respect to the seat, a connecting-bar on the lower end of said lever, a detachable cap or section to hold said bar in place, and a connection between said cap or section and the rocker.

8. In a car-seat, the combination with the frame provided with two reverse camways open at their upper ends and closed at their lower ends, of a seat-back, a depending arm thereon provided with studs adapted to coact with said camways, a lever pivoted to said frame and having a fixed pivotal connection with said arm, the rocker, its supports, the seat on said rocker, and a connection between said lever and rocker.

610,720. CLOSURE FOR MILK-CANS. EDWARD M. PEACOCK, New York, N. Y., assignor to the Iron Clad Manufacturing Company, same place. Filed Mar. 8, 1898. Serial No. 673,103. (No model.)



Claim.—1. A receptacle having a relatively deep mouth-neck; a closure adapted to fit and depend into said relatively deep neck throughout the major portion thereof, whereby the bottom of said closure is in contact with the surface of the contents of said receptacle throughout the entire area of said receptacle-neck, and provided at its extreme upper edge with a flange adapted to engage the upper edge of said neck; and means carried on and rigidly secured to said flange and adapted to engage means carried by said neck for maintaining said closure in position in the mouth of the receptacle, substantially as described.

2. A receptacle having a relatively deep mouth-neck provided with a pair of recessed ears secured thereto; a closure having a relatively flat bottom and adapted to fit and depend into said relatively deep neck substantially the entire part of the vertical portion thereof, whereby the flat bottom of said closure is in contact with the surface of the contents of said receptacle throughout the entire area of said receptacle-neck, said closure having at its extreme upper edge an outwardly-extending flange adapted to extend over and engage the upper edge of said neck; means carried on and rigid with said flange, at the upper edge of said closure, for maintaining the closure in position, and comprising an oscillatory shaft supported in bearings, and provided with cam projections adapted to extend into the recesses of said ears.

3 A receptacle having a relatively deep mouth-neck provided with a pair of recessed ears secured thereto; a closure adapted to fit and depend into said relatively deep neck substantially the entire part of the vertical portion thereof, whereby the bottom of said closure is in contact with the surface of the contents of said receptacle, and provided at its extreme upper edge with an outwardly-extending flange adapted to engage the upper edge of said neck; a pair of lugs carried by said closure, each having a part thereof extending over and resting on said closure-flange; and means carried by said lugs for maintaining said closure in position relatively to the mouth of said receptacle, and comprising an oscillatory shaft carried by said lugs and having cam ends adapted to extend into the recesses of said neck-ears, and means for operating said oscillatory shaft.

4. The herein-described milk receptacle or can having a relatively deep mouth-neck provided with an enlarged upper edge and with a pair of recessed ears secured to said neck and projecting above the upper edge thereof; a cup-shaped closure depending into said neck substantially the entire part of the vertical portion thereof, and having a relatively flat bottom adapted to engage the surface of the milk throughout the entire area of said receptacle-neck, and provided at its extreme upper edge with an outwardly-extending curved flange adapted to fit over the enlarged upper edge of said neck; a packing carried by said flange at the under side thereof and adapted to engage the enlarged upper edge of said neck; a pair of apertured and recessed lugs secured to said closure at the inner sides thereof, and having a part thereof projecting over and resting on the outwardly-extending flange of said closure; an oscillatory shaft journaled in said apertured lugs and provided at each end with a cam-surface adapted to project into the recesses of said neck-ears; and means for operating said shaft, thereby to maintain said closure in position with the packing at its upper edge in contact with the enlarged upper edge of the receptacle-neck.

5. A receptacle having a mouth-neck; a closure for said mouth and having its extreme upper edge in juxtaposition to the upper edge of said neck; and means carried on and rigidly secured to the upper edge of said closure for engaging means carried by said neck, to thereby maintain the closure in position against displacement, and said closure edge and neck edge in close relationship to form a fluid-tight joint, substantially as described.

6. A receptacle having a mouth-neck provided with a pair of recessed ears; a closure for said mouth and provided with an outwardly-extending flange at its extreme upper edge adapted to extend over and engage the upper edge of said mouth-neck; a pair of apertured lugs carried by said closure and projecting above said flange and having a part thereof resting on the upper edge of said flange; and means carried by said lugs for engaging the neck-ears, thereby to maintain said closure in position relatively to said mouth-neck.

7. The herein-described milk-receptacle having a mouth-neck provided with a pair of recessed ears secured thereto and extending above the upper edge of said neck; a closure adapted to close the mouth of said receptacle, and having an outwardly-extending flange at its extreme upper edge adapted to extend over said neck edge; a packing carried by said flange at its under side in position to rest on and engage the upper edge of said neck; a pair of apertured and recessed lugs secured to said closure, a part of each projecting over and resting on the upper edge of said outwardly extending flange; an oscillatory spindle journaled in said lugs and having cam ends adapted to project into the recesses of said neck-ears; and a lever secured to said spindle for oscillating the same into position to maintain the closure in position relatively to the mouth of the receptacle.

610,721. BOTTLE-STOPPER. CHARLES DE GUILLFELDT, Amityville, N. Y. Filed June 10, 1898. Serial No. 683,042. (No model.)



Claim.—1. The combination of a locking-lever pivoted to the neck of the bottle, a bail pivoted to eyes of said lever, said bail being provided in its upper transverse portion with an approximately U-shaped portion having converging legs, and a stopper provided with an elastic gasket at its lower portion and a recessed shank in its head, which shank is adapted to be detachably engaged between said converging legs and the base of said U-shaped portion of the bail, substantially as set forth.

2. In a bottle-stopper, a bail for engaging the stopper-head, provided in its upper transverse portion with short forward bends and an approximately U-shaped portion having converging legs between said bends, substantially as set forth.

3. A bottle-stopper, comprising a locking-lever applied to the neck of the bottle, a bail connected with said locking-lever and provided with an approximately U-shaped transverse upper portion, and a stopper adapted to be detachably engaged by said bail and to permit the tilting of said transverse portion relatively to said stopper, whereby the stopper may be removed from the bottle-mouth without disengaging said bail therefrom, substantially as set forth.

610,722. COMBINED CYCLE HOLDER AND LOCK. FRANCIS H. RICHARDS, Hartford, Conn. Filed May 3, 1898. Serial No. 679,573. (No model.)



Claim.—]. The combination, with a receiver, of means for securing the same upon a support, and a locker constructed to hold a cycle-wheel or similar object in said receiver, and also, when in certain positions, to maintain the latter and its securing means in assembled relation, and against removal, upon said support.

2. The combination, with a receiver, of a carrier for the receiver, provided with means for securing the same to a support; a connector between the receiver and its carrier; and a locker constructed to retain a cycle-wheel or similar object in said receiver, and also to prevent the withdrawal of the connector when said locker is in certain positions, and also to permit the removal of said connector when in another position.

3. The combination, with a receiver, of means for securing the same upon a support, said means including a pivot, and a bolt constructed to hold a device in the receiver and also to lock said pivot against removal

4. The combination, with a receiver constructed to seat a cycle-wheel or similar object, of a carrier for said receiver, including two screws by which said carrier can be attached to a support; a connector between the receiver and its carrier; and a bolt constructed to lock said wheel in the receiver and also to secure the connector against removal when said bolt is in certain positions.

5. The combination, with a receiver, of carrying and attaching means for the receiver, including two screws, and means involving a locking-bolt for preventing the withdrawal of said screws when the locking-bolt is in certain positions, and for also locking an object in said receiver when in another position.

6. The combination, with a receiver, of a carrier for said receiver, including two separate brackets each of which is provided with a screw; a connector between the receiver and its carrier; and a bolt constructed to hold a device in the receiver and also to secure the connector against removal when said bolt is in certain positions.

7. The combination, with a socketed member, of means involving two screws by which to connect said socketed member to a support, and a bolt constructed to hold the two parts in assembled relation.

8. The combination, with a receiver for a cycle-wheel or similar object, of a carrier provided with means for attaching the same to a support; a notched pivot between the receiver and the carrier; and a locking-bolt a portion of which is located when said bolt is in certain positions in the notch in said connector.

9. The combination, with two separate brackets each provided with an eye and with a screw, of a receiver having corresponding eyes; a member passing through the several eyes and notched; and a locking-bolt mounted to coöperate with said parts and having a portion seated, when said bolt is in certain positions, in said notch.

10. The combination, with a plate having two holes adapted to fit against a support, of two brackets each provided with a screw adapted to pass through said holes and to be seated in the support; a receiver; a connector between the receiver and the said brackets; and a locking-bolt constructed to prevent the removal of said connector.

11. The combination, with two independent brackets provided with screws for attaching the same to a support, of a receiver; a connector for the receiver and the brackets; and a locking-bolt constructed to lock said connector in place when the bolt is in certain positions.

12. The combination, with two separate brackets each provided with a screw, of a receiver; a connector for the receiver and brackets; and a bolt supported for swinging movement by the receiver and constructed, when said bolt is in certain positions, to prevent the withdrawal of the connector.

13. The combination, in a lock, with a barrel and its casing, of two independent series of tumblers on one of said lock parts, and a series of tumblers upon the other lock part corresponding with one, but not with the other, of said two first-mentioned series.

14. The combination, in a lock, with a barrel and its casing, of two independent series of tumblers on one of said lock parts, and a series of tumblers upon the other lock part equal in number to one, but different from that of the other, of said two first-mentioned series.

15. The combination, in a lock, with a barrel having a catch-face, of a casing carrying two independent series of tumblers at least one tumbler in one of the series being disposed in the path of said catch-face, and means for operating said tumblers.

16. The combination, in a lock, with a barrel having a catch-face, of a casing carrying two independent series of tumblers at least one tumbler in one of the series being disposed in the path of said catch-face, and means upon the barrel for operating said series of tumblers.

17. The combination, in a lock, with a barrel having a catch-face, of a casing carrying two independent series of tumblers at least one tumbler in one of the series being disposed in the path of said catch-face, and a series of tumblers upon the barrel, corresponding in number with one, but not with the other, of said two first-mentioned series.

18. The combination, in a lock, with a barrel having a transverse slot, of a casing carrying two independent seies of tumblers at least one tumbler in one of the series being disposed in said slot.

19. The combination, in a lock, with a barrel and its casing, of two independent series of tumblers on one of said lock parts; a series of tumblers upon the other lock part, corresponding with one, but not with the other, of said two first-mentioned series; and two independent keys, one of which is constructed to operate certain of the tumblers of said barrel, and the other of which is adapted to operate all of the tumblers on said barrel.

20. The combination, with a receiver, of means for securing the same upon a support; a bolt constructed to hold a device in the receiver and also to maintain said receiver and its securing means in assembled relation upon a support; and a lock for the bolt, said lock involving a barrel and a casing, one of said lock parts being provided with two independent series of tumblers, and the other lock part being provided with a series of tumblers corresponding with one, but not with the other, of said two first-mentioned series.

21. The combination, with a receiver, of means for securing the same to a support, and a locker mounted relatively to said parts and constructed to hold a cycle-wheel in said receiver, and also to maintain the latter and its securing means in assembled relation upon a support, and mounted for movement in two distinct stages, at the end of one of which it is adapted to release said cycle-wheel or other part, and at the end of the other to permit the release of the receiver and its securing means.

22. The combination, with a lock-barrel and its casing, said lock-barrel being supported to have a working stroke comprising two distinct successive stages of movement, of tumblers on said lock-barrel, at least one of which is normally idle during the first stage of movement of the lock-barrel, and independent tumblers carried by the casing and controlling the operation of the tumblers of the lock-barrel, one of said tumblers on the casing being adapted to coöperate with said normally idle tumbler to permit the second stage of movement of the lock-barrel.

23. In a device of the class specified, the combination, with a receiver and with means for securing the same to a support, the receiver being constructed to seat a cycle-wheel or other object, of a locking-bolt mounted to coöperate with the receiver and constructed when in one position to lock a cycle in the receiver against removal, and when in another position to lock a check in place.

24. In a device of the class specified, the combination, with a receiver and with means for securing the same to a support, of a locking member coöperative with the receiver and having a slotted rearward extension, the slot producing a projection upon which a check can be suspended; and means located to maintain the locking member in position with the mouth of said slot opposite the solid portion of the device.

25. The combination, with a socketed member having a series of teeth, of a carrier; a pivot between said parts; and a spring-actuated locking-bolt upon the carrier, adapted to enter the space between two teeth on the receiver to hold the latter in its fixed position.

610,728. STOP-VALVE. HENRY H. RIEGEL, Altoona, Pa., assignor of one-half to the Watson & McDaniel Company, Philadelphia, Pa. Filed Feb. 2, 1898. Serial No. 668,814. (No model.)

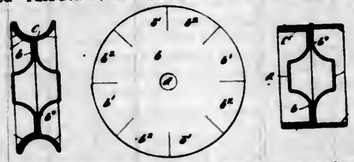


Claim.—1. A stop-valve having a body part with fluid and liquid inlet and outlet passages formed therein and intercepted by a rotatable disk-valve, a chamber above and around the valve, means of communication from the chamber to the inlet-passage when the valve is closed, means to seat the valve centrally over the passages, means to move the valve rotatably from without the valve-case, and means upon the valve-moving mechanism to introduce pressure from the chamber above the valve to a collar upon the moving mechanism, substantially as set forth.

2. A stop-valve having within its body part inlet and outlet passages terminating in a central flat seat, a disk-valve rotatably mounted upon the seat, a moving stem having a rectangular projection seated in the valve and an enlarged collar above the valve, a case secured to the body part and forming a chamber above and surrounding the valve, a seat within the case for the reception of the collar aforesaid, a groove in the upper annular part of the collar, means of communication from the groove to the chamber, an integral stem above the collar having means to receive an operating-handle, and a gland surrounding the stem, secured to the case, and having means to pack the stem, substantially as described.

3. In a stop-valve, a body part containing inlet and outlet passages, a disk-valve mounted above such passages, and means to control the valve and thereby the flow through the passages, an outer case forming a chamber above and around the valve, means to secure the case to the body part in manner to provide a packing-space between the body and case, means of communication from the inlet-passage within the body part to the chamber above and around the valve when the outlet-passage is closed, a collar forming an annular space on the valve-moving mechanism, a seat formed above the chamber to receive the collar, and means of communication from the chamber to the annular space aforesaid for the passage of pressure liquid or fluid such as passes through the valve, in manner and form substantially as set forth.

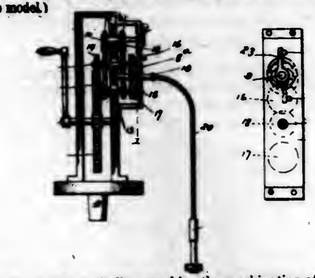
610,724. PULLEY. CHARLES ROCHOLL, London, England, assignor to the Westminster Manufacturing Company, Limited, same place. Filed Dec. 16, 1897. Serial No. 662,110. (No model.)



Claim.—1. As a new article of manufacture, a grooved pulley composed of a pair of sheet-metal disks provided with flanges bent upwardly and outwardly in opposite directions, the flange of one of said disks being extended so as to form the grooved face of the pulley and embrace and interlock with the flange of the other disk, substantially as described.

2. As a new article of manufacture, a grooved pulley composed of a pair of sheet-metal disks, one of said disks being provided with two series of tongues bent upwardly and outwardly in opposite directions and the other of said disks provided with an upwardly and outwardly bent flange extended so as to form the grooved face of the pulley and to embrace and interlock with the two series of tongues upon the other disk, substantially as described.

610,725. MACHINE FOR GRINDING HORSESHOE-CALKS. MYRON A. ROSS, Monterey, Mich. Filed Apr. 8, 1898. Serial No. 676,933. (No model.)



Claim.—1. In a grinding-machine the combination of a support, a driving wheel, rotating means therefor, a shaft carrying a rotary tool, means connecting said shaft with the driving-wheel, and means whereby the motion of the shaft carrying the rotary tool may be reversed without reversing the motion of the driving-wheel.

2. In a grinding-machine the combination of a support, a driving-gear, rotating means therefor, a shaft carrying a rotary tool, a gear thereon, a sliding frame, two sets of gears carried thereby, and means for shifting said frame to cause either of said sets of gears to connect the driving-gear and the gear on the tool-shaft whereby the motion of the tool-shaft may be reversed without reversing the motion of the driving-gear.

3. In a grinding-machine the combination of a support, a driving-gear, a shaft carrying a rotary tool, a gear on said shaft, a sliding frame, two sets of gears carried by said frame, a rock-shaft, means connecting said rock-shaft to the frame whereby said frame may be shifted to cause either of said sets of gears to connect the driving-gear and the gear on the tool-shaft, substantially as described.

610,726. ART OF BENDING ARMORED CONDUIT-TUBES. WILLIAM T. RUETH, New York, N. Y., assignor to the Interior Conduit and Insulation Company, same place. Filed Nov. 24, 1897. Serial No. 659,686. (No model.)



Claim.—1. The described method or process of forming a curved or bent armored conduit-tube having a flexible porous lining, consisting in first filling the tube with a mass of liquefiable insulating material and allowing the same to solidify, then subjecting the tube to a pressure sufficient to bend it to the desired degree of curvature, and finally subjecting the entire structure to a bath of molten or liquid insulating material sufficiently heated to liquefy the mass and cause it to impregnate the pores of the insulating-lining.

2. The described method or process of forming a curved or bent armored conduit-tube having a flexible raw or untreated lining, consisting in first filling the tube with a mass of liquefiable insulating material and allowing the same to solidify, then subjecting the tube to a pressure sufficient to bend it to the desired degree of curvature, and finally subjecting the entire structure to a bath or treatment of molten or liquid insulating material sufficiently heated to liquefy the mass and cause it to impregnate the pores of the insulating-lining.

610,727. MONEY PACKET OR HOLDER. PHILIPPINE SCHLESSER, Philadelphia, Pa. Filed June 21, 1898. Serial No. 684,050. (No model.)



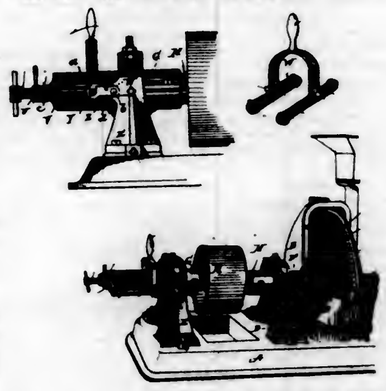
Claim.—A coin packet or holder, comprising two semicircular members each having closed ends, a strip c of yielding material secured to each member so as to form a hinge connection therefor, bands *d* and *d'* adapted to span the packet or holder in its closed condition and a strip *e*, placed over said bands and onto said hinge connection and to prevent displacement from a fixed position of said bands in connection with said packet or holder, substantially as and for the purposes described.

610,728. PYROXYLIN COMPOUND. JOHN H. STEVENS, Newark, and FRANK C. AXTELL, Short Hills, N. J., assignors to The Celluloid Company, of New York, N. Y., a Corporation of New Jersey. Filed May 16, 1898. Serial No. 680,838. (No specimens.)

Claim.—1. A pyroxylin composition of matter containing pyroxylin and an ester of carbonic acid, substantially as described.

2. A composition of matter containing pyroxylin, a solvent of pyroxylin, and an ester of carbonic acid, substantially as described.

610,729. GRINDING-MILL. JAMES F. WITCHELL, Springfield, Ohio, assignor to the Foos Manufacturing Company, same place. Filed June 4, 1897. Serial No. 639,380. (No model.)



Claim.—1. In a grinding-mill quick-releasing mechanism, the combination with a grinding-head and its shaft, of a slidable cross-head carrying a device to control the shaft, a hand-lever adapted to be quickly operated and links connecting said lever and said cross-head whereby when the lever is operated the cross-head will be adjusted with respect to the grinding-shaft.

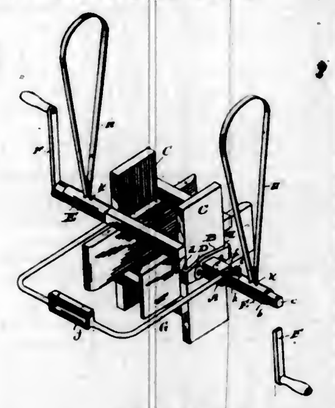
2. In a grinding-mill quick-releasing mechanism, the combination with a grinding-head and its shaft, of a slidable cross-head carrying a temper-screw adapted to adjust and control such shaft, a double-armed lever pivoted near the cross-head and links connecting the arms of said lever with the cross-head whereby when the lever is operated the cross-head will be adjusted with respect to the grinding-shaft.

3. In a quick-releasing mechanism for grinding-mills, the combination with its head and shaft, of a slidable cross-head, a temper-screw carried thereby, a double-armed bell-crank lever, pivoted near the cross-head, and links connecting the lever-arms with the cross-head, the normal position of the lever bringing the centers of the link-pivots out of line with the centers of the lever-pivots.

4. In a quick-releasing mechanism for grinding-mills, the combination with a grinding-head, its shaft and bearings, of pins extending from one of the bearings, and brackets extending from one of the bearing-standards, a slidable cross-head on the pins and stops on the brackets, a double-armed crank-lever pivoted in the brackets and limited by said stops, links pivoted to said arms and to the cross-head, and a temper-screw carried by the cross-head and adapted to adjust said shaft.

610,730. RESPOOLING WIRE. JAMES R. WRIGHT, Fall River, Wis. Filed Aug. 14, 1897. Serial No. 648,244. (No model.)

Claim.—The combination of a shaft having an angular central portion, journal reductions and angular extremities; clamp-jaws having slip engagement with the angular central portion of the shaft longitudinally of the same, spring-keys inserted in shaft-apertures to hold the clamp-jaws in engagement with a wire-spool on said angular central portion of the shaft, bearings having slip fit on the journal reductions of said shaft against shoulders of the same, cranks detachably held on the angular extremities of the aforesaid shaft against the bearings, eyes extending from these bearings, a yoke having a central slotted enlargement and provided with end hooks detachably engaging said eyes, other eyes extending from said bearings, and suspending-loops engaging the latter eyes.

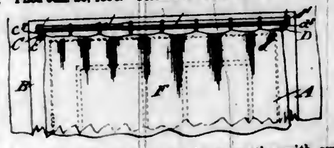


610,731. BALING-PRESS. WASHINGTON H. YOUSE, Indianapolis, Ind. Filed Mar. 11, 1898. Serial No. 673,492. (No model.)



Claim.—In a baling-press, the combination of the central press-section having the open end sections each provided with the open way S', the reciprocating press-head, the power mechanism, the dividing-heads having each the guide i at the upper edges thereof and the stop w centrally at the bottom thereof working in the open way S' and provided with the transverse grooves A, the stop-spring T, and the connecting foot-lever U, substantially as shown and described.

610,782. CURTAIN-FIXTURE. ANTHONY ARGRATI, New York, N. Y. Filed Jan. 29, 1898. Serial No. 668,405. (No model.)



Claim.—A curtain-fixture for use in connection with swinging doors comprising a bracket secured to the door-frame near the hinged end of the door, a second bracket secured to the door at or near its free end and an extensible and contractible curtain-pole having the inner end of one of its sections hinged to the first-named bracket and the outer end of its other section hinged to the second-named bracket, substantially as set forth.

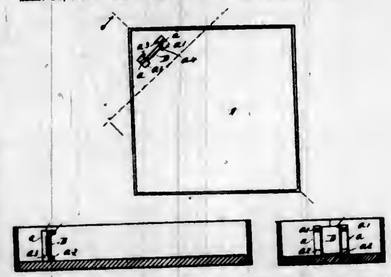
610,788. MEANS FOR SECURING TOOLS ON HANDLES. ALDEN BIGGS, Jr., Westhampton, N. Y. Filed May 6, 1898. Serial No. 679,950. (No model.)



Claim.—1. An ax, hatchet or similar tool provided with a handle one end of which passes therethrough in the usual manner, the end of the handle which passes through the tool being provided with a split or groove which communicates with an interior passage or groove, and a key-plate provided with a key-wedge which is adapted to be inserted into and through said first-named split or groove and which is provided at its inner end with a head which is adapted to turn in the interior passage or groove, and said key-wedge being provided on its opposite sides with serrations or teeth, substantially as shown and described.

2. An ax, hatchet or similar tool provided with a handle one end of which passes therethrough in the usual manner, the end of the handle which passes through the tool being provided with a split or groove which communicates with an interior passage or groove, and a key-plate provided with a key-wedge which is adapted to be inserted into and through said first-named split or groove and which is provided at its inner end with a head which is adapted to turn in the interior passage or groove, and said key-wedge being provided on its opposite sides with serrations or teeth, and said key-plate being also provided with a perforation or holder through which a nail is driven into the end of the handle, substantially as shown and described.

610,784. GAME APPARATUS. FRANK W. BRENNAN, New York, N. Y., assignor of one-half to Joseph C. Wickers, same place. Filed Mar. 11, 1898. Serial No. 673,506. (No model.)



Claim.—1. The herein-described game device, comprising an open box or casing having a flat bottom and vertical side and end walls, and two upright standards arranged adjacent to one corner thereof and transversely of said corner, and a swinging barrier supported between said standards and adapted to swing toward the center of the box or casing, substantially as shown and described.

2. The herein-described game device, consisting of an open box or casing, which is provided adjacent to one corner with two upright standards arranged transversely of the corner, and a swinging barrier supported between said standards and adapted to swing forwardly, said standards being provided with stops to prevent the backward movement of said barrier, substantially as shown and described.

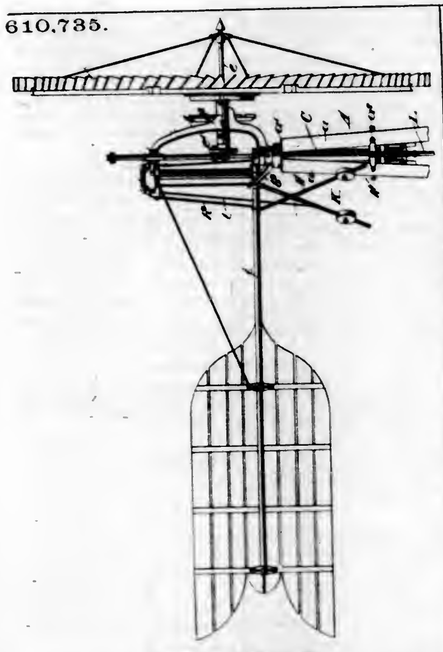
3. The herein-described game device, comprising an open box or casing which is rectangular in form, the bottom of said box or casing being provided adjacent to one corner with two upright standards, said standards being provided at the bottom and top with inwardly-directed projections, and a barrier pivoted between the top projections and adapted to swing inwardly, said standards being provided with stops to prevent the backward movement of said barrier, substantially as shown and described.

610,785. WINDMILL. ANDREW J. CORCORAN, Jersey City, N. J. Filed Oct. 23, 1897. Serial No. 656,640. (No model.)

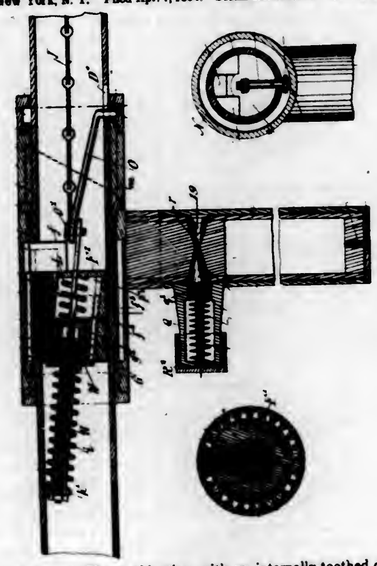
Claim.—1. The combination with a wind-wheel-supporting frame, a vane-supporting frame hinged thereto, a weighted lever for normally keeping the vane and wheel at right angles to each other, means for positively swinging the vane and wheel around into substantially parallel planes comprising a governor-rod and a flexible connection between the same and the lever, a pair of pulleys, the one pivoted on the wheel-supporting frame and the other upon the vane-supporting frame and means for keeping the pulleys in line as the vane-supporting frame is swung relatively to the wheel-supporting frame, substantially as set forth.

2. In combination a wind-wheel-supporting frame, a guide-pulley pivoted thereon, a vane-supporting frame hinged to the wheel-supporting frame, a guide-pulley pivoted upon the said vane-supporting frame and means for keeping the two pulleys in line as the vane-supporting frame is swung relatively to the wheel-supporting frame, said means comprising a guide-rod carried by one of the guide-pulley supports and having a sliding connection with the other pulley-support, substantially as set forth.

610,735.



610,736. HANDLE-BAR FOR BICYCLES. CHARLES G. DIETERICH, New York, N. Y. Filed Apr. 7, 1897. Serial No. 631,103. (No model.)



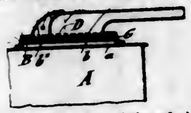
Claim.—1. The combination, with an internally-toothed casing or bearing at the upper end of the post of the handle-bar, of the handle-bar, a recessed guide-block arranged in the handle-bar, a slide-piece guided in the guide-block and provided with a radial extension for engaging with the toothed casing, said slide-piece being guided in an inclined opening in the guide-block, a returning-spring acting on the slide-piece, an actuating-rod for the slide-piece, a cushioning-spring for said rod, and a chain or the like connected with the rod and provided with suitable operating means, substantially as set forth.

2. The combination, with an internally-toothed casing or bearing at the upper end of the post of the handle-bar, of the handle-bar passing through said casing, a recessed guide-block connected with the handle-bar, and arranged within the casing, a slide-piece having a radial extension and guided in the inclined opening of the guide-block, a returning-spring acting on said slide-piece, an actuating-rod for the slide-piece, said rod being movable relatively to the slide-piece, a sleeve arranged upon the said rod and guided in a guide-hole of the slide-piece, a spring abutting at one end against the guide-block and at the other end against said sleeve, and means for pulling on said actuating-rod, substantially as set forth.

3. The combination, with the casing arranged at the upper end of the post of the handle-bar of the bicycle, of the longitudinally-slotted handle-bar passing through said casing, mechanism for adjusting said handle-bar on its axis relatively to said casing, said mechanism being contained within the casing and handle-bar, a cam-faced sleeve fixed to the casing, a rotatable cam-faced collar arranged on the handle and cooperating with said cam-faced sleeve, and a link extending through the slot of the handle-bar and connecting the collar with the adjusting mechanism so as to actuate the latter, substantially as set forth.

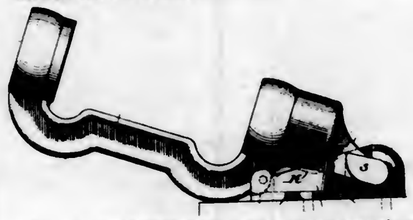
4. The combination, with the handle-bar provided with a post having radial sockets, of a supporting socket-piece in which said post is swiveled, said socket-piece having a screw-threaded opening at one side, a boxing extending laterally from the socket-piece and arranged over said opening, an externally-screw-threaded locking-pin adapted to screw into said screw-threaded opening and to enter one of the sockets of the post, a helical spring arranged within the said boxing and acting upon said locking-pin and a cap-shaped head on the locking-pin provided with wings, said cap being guided on the end of the boxing, substantially as set forth.

610,737. SPOUT FOR CANS. RICHARD DREYER, Sea Cliff, N. Y. Filed Mar. 30, 1898. Serial No. 675,777. (No model.)



Claim.—A spout for oil-cans, consisting of a base-plate provided with larger and smaller openings, respectively for the inlet or outlet of the liquid and for the inlet or outlet of air, a radially-projecting nozzle, the base portion of which fits over the larger opening and the rear wall of which base portion is located between the two openings, and a guard-hood having straight sides, parallel with the sides of said nozzle, and a convex back, said guard-hood being provided with a vent-orifice, said side walls being continuous with the side walls of the nozzle, said convex back extending from the rear wall of the nozzle down to the base-plate, and said rear wall forming the sole separating medium between the interior of the base portion of the nozzle and the interior of the hood substantially as set forth.

610,738. FLAGSTAFF-HOLDER. JOHN FINNEGAN, Philadelphia, Pa., assignor to Thomas Devlin & Co., same place. Filed May 27, 1898. Serial No. 681,880. (No model.)



Claim.—1. In a flagstaff-holder, a socket having an opening at the top and an overhanging wall at the rear and shoulders forward of said opening, the staff-receiving member having a tongue on the rear end adapted to pass under said wall, and shoes on said tongue adapted to ride on said shoulders and force said tongue rearward into engagement with said tongue.

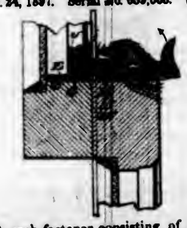
2. In a flagstaff-holder, a socket having an opening in its top, an overhanging wall on the rear, shoulders on its sides, forward of said opening and seats on said sides forward of said shoulders.

3. In a flagstaff-holder, a socket having an opening in its top, an overhanging wall on the rear, shoulders on its sides forward of said opening, seats on the sides forward of said shoulders, ears forward of said seats, and a cross-bar on said ears.

4. In a flagstaff-holder, a staff-receiving member formed of a ring, a cup, a web uniting said ring and cup, a tongue rearward of said cup and shoes on the sides of said tongue, said tongue and shoes being adapted to engage with an overhanging wall of the socket of the holder, said cup to rest on a seat on said socket, and said web to rest on a cross-bar of said socket.

5. In a flagstaff-holder, a socket for a staff-receiving member having a wall with which the rear end of said member is adapted to abut, ears forward of said socket on which said member may be seated, a cross-bar on said ears on which said member may rest, and a screw on either of said ears adapted to be tightened against said member.

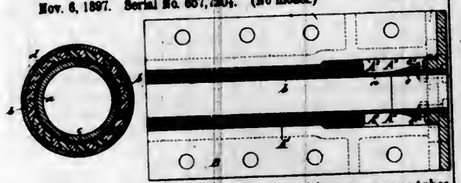
610,739. SASH-FASTENER. FRANCIS V. GREENE, Philadelphia, Pa. Filed Nov. 24, 1897. Serial No. 659,663. (No model.)



Claim.—1. A sash-fastener consisting of a plate, having a column rotatably mounted therein, a bolt or member mounted in a recess in said column, a finger-piece pivotally mounted in said column adjacent to said bolt, a stop for the latter, and a locking device for said finger-piece, the latter being unlocked by an upward movement.

2. A sash-fastener having a plate with a beveled or conical opening therein, a column with a beveled portion engaging said opening, a bolt projecting from said column, and headed against the latter, a finger-piece pivotally mounted in said column, a stop on said plate and recesses in the latter adapted to be engaged by a projection on said finger-piece.

610,740. MANUFACTURE OF FLEXIBLE METALLIC TUBES, &c. THEODORE GUILLEAUME, Mülheim-on-the-Rhine, Germany. Filed Nov. 6, 1897. Serial No. 657,730. (No model.)



Claim.—1. A flexible metallic tube comprising one or more tubes of soft ductile metal and, concentric therewith, one or more tubes of hard metal composed of a number of wires laid up in long spirals similar to the wires of a rope, substantially as herein described.

2. A flexible metallic tube consisting of an inner tube of soft metal and, concentric therewith, an outer tube composed of wires of hard metal arranged to interlock with one another and to form a closed layer, substantially as herein described.

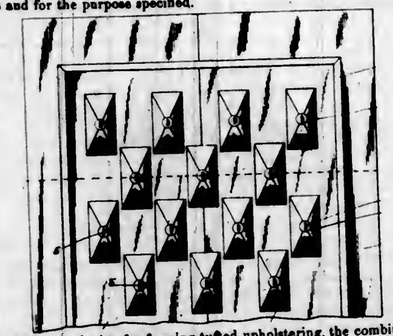
3. In a flexible metallic tube, the combination, with a soft-metal tube *a* and a hard-metal tubular layer of wires *b* of an intermediate layer *c* of fibrous material, substantially as and for the purposes set forth.

4. In a flexible metallic tube, the combination, with a soft-metal tube *a* and a hard-metal tubular layer of wires *b* of an intermediate layer *c* of fibrous material and an outer protective covering *d* of similar material, substantially as and for the purposes set forth.

5. For joining flexible metallic tubes of the kind herein referred to, a joint-piece comprising a shell divided longitudinally and having a bore enlarged at one end, for the reception of the turned-back portion of the outer layer of the tube, a sharp-edged tube inserted in said enlarged part of the bore, and to which the extremity of the inner layer of the soft-metal tube is soldered, means for uniting the two halves of the shell, same consisting of bolts which pass through longitudinal flanges formed on each half-shell, and means for securing the sharp-edged tube in position, said tube being carried by a flanged casting which is bolted to the end flange of the shell, substantially as set forth.

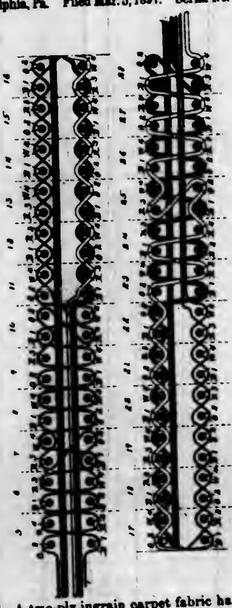
610,741. DEVICE FOR FORMING TUFTED UPHOLSTERING. EDWARD HAHN, Columbus, Ohio. Filed May 5, 1896. Serial No. 679,770. (No model.)

Claim.—1. In a device for forming tufted upholstering, the combination with a base-board, of a number of tuft-mold projections separately secured upon said base-board, each of said tuft-mold projections having its sides and ends inclined and concaved, substantially as and for the purpose specified.



2. In a device for forming tufted upholstering, the combination with a base-board, of a number of tuft-mold projections separately secured upon said base-board, each of said tuft-mold projections having its sides and ends inclined and concaved and a staple projecting from the upper end of each of said mold projections, substantially as and for the purpose specified.

610,742. TWO-PLY INGRAIN CARPET FABRIC. HARRY HARDWICK, Philadelphia, Pa. Filed Mar. 5, 1897. Serial No. 626,071. (Specimens.)



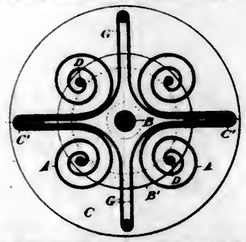
Claim.—1. A two-ply ingrain carpet fabric having wefts in sets, and light and heavy warp, and in which in places the weft on one or both faces is bound in whole or in part by the heavy warp.

2. A two-ply ingrain carpet fabric having wefts in sets and light and heavy warp, and in which in places the weft on one or both faces is bound in whole or in part by the heavy warp and a stuffer-warp lying between the plies throughout the fabric.

610,748. WHEEL FOR BICYCLES. GEORGE HAYES, New York, N. Y. Filed July 31, 1897. Serial No. 646,631. (No model.)

Claim.—1. A wheel for bicycles and other vehicles formed with a central axle-hub, having a set of eccentrically-coiled springs arranged at intervals in radiating lines therefrom, and resiliently connecting it with an encircling spoke-nave with which the interior ends of rigid spokes engage, essentially as set forth.

2. A wheel for bicycles and other vehicles, having a set of binary springs, each formed with two eccentric coils as termini and connecting the axle-hub resiliently with a special spoke-nave encircling it, and forming the center of a system of rigid spokes extending therefrom to the rim of the wheel, essentially as set forth.

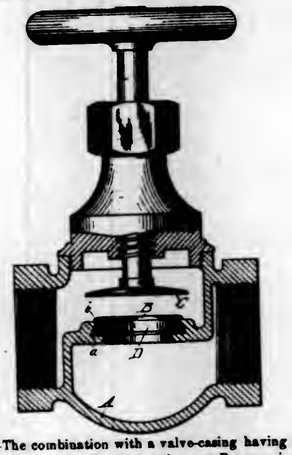


3. In a wheel for bicycles and other vehicles, between its axle-hub and an encircling spoke-nave, double sets of binary springs, each of which is formed with ends coiled eccentrically, and its midway web folded, essentially as set forth.

4. A wheel for bicycles and other vehicles, having an axle-hub resiliently suspended within an encircling spoke-nave, by a system of binary springs eccentrically coiled toward each end of its web, secured to a spindle of the spoke-nave at the center of each coil, and each engaging by a midway bend or fold with a spindle securing it to the axle-hub, essentially as set forth.

5. In a wheel for bicycles and other vehicles, the combination consisting of—first; an axle-hub formed with a flange at each end, between which extend spindles parallel to the axle-hub, arranged at intervals around the same—second; a spoke-nave formed as two cheeks or disks, encircling the axle-hub and united by cross-rods or spindles at intervals, and—third; double sets of binary springs, each having eccentrically-coiled ends engaging with spindles of the spoke-nave, and each formed with a U-shaped midway bend, engaging with a spindle of the axle-hub, essentially as set forth.

610,744. VALVE-SEAT. WARREN R. HEATON, Chicago, Ill. Filed Dec. 28, 1897. Serial No. 664,062. (No model.)

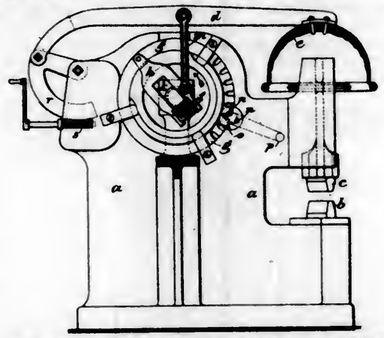


Claim.—The combination with a valve-casing having an undercut annular recess *a*, of an elastic annular seat B occupying said undercut recess, and an expanded metal ring D, embedded within said elastic seat and holding the same compressed within the recess.

610,745. ADJUSTING ARRANGEMENT FOR SPRING-POWER HAMMERS, &c. PER HOLMBERG, Ljusne, Sweden, assignor to the Ljusne Woxna Aktiebolag, same place. Filed Mar. 3, 1896. Serial No. 672,267. (No model.)

Claim.—1. The combination in spring-power hammer with the hammer-lever and actuating-crank, of a slotted arm upon which the crank acts, links connecting the slotted arm with the hammer lever, and a pivotal support for one end of the slotted arm and means for adjusting the same in an arc of a circle around the crank-shaft and varying the throw of the hammer, substantially as specified.

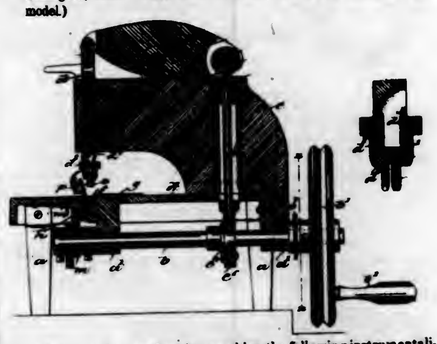
2. The combination in a spring-power hammer with the hammer-lever and actuating-crank, of a slotted arm upon which the crank acts, links connecting the slotted arm with the hammer-lever, a ring and its support around the crank-shaft, a pivotal connection between the ring and slotted arm and means for turning the ring around and varying the throw of the hammer, substantially as specified.



3. The combination in a spring-power hammer with the hammer-lever and actuating-crank, of a slotted arm upon which the crank acts, links connecting the slotted arm with the hammer-lever, and a pivotal support for one end of the slotted arm and means for adjusting the throw of the hammer, a sector and pivotal connection thereto of the hammer, and means for adjusting such sector and pivot to raise or lower the hammer-head, substantially as specified.

4. The combination in a spring-power hammer with the hammer-lever and actuating-crank, of a slotted arm upon which the crank acts, links connecting the slotted arm with the hammer-lever, and a pivotal support for one end of the slotted arm and means for adjusting the same in an arc of a circle around the crank-shaft and varying the throw of the hammer, a worm-wheel sector and pivotal connection thereto of the hammer and a worm-pinion for adjusting such sector and pivot to raise or lower the hammer-head, substantially as specified.

610,746. PERFORATING-MACHINE. MATTHEW H. MERRIAM, Lexington, Mass. Filed June 13, 1896. Serial No. 592,593. (No model.)



Claim.—1. In a perforating-machine the following instrumentalities viz: a work-support, a reciprocating bar provided with a punch, a presser to bear on the work, a feeding device, means to raise and move the said feeding device forward to feed the material being acted upon, a pattern-cam, means to actuate it, and means between said pattern-cam and said feeding device to control the extent of the backward movement of the latter, said means cooperating with said pattern-cam for automatically varying the said backward movement for punching in curves and maintaining the said backward movement unvarying for punching in straight lines, thereby insuring equal spacing of the perforations in curved as well as in straight lines, substantially as described.

2. In a machine of the class described, a table, a feeding device, means to positively move the same in one direction, a spring to return the same, a movable stop to vary the spring-controlled return movement of said feeding device and to and from which the latter is moved, a shaft, and a pattern-surface moved thereby, and connected with and to vary the position of said stop, substantially as described.

3. A perforating-machine, comprising a reciprocating tool carrier, one or more punches or perforating-tools carried thereby, means to reciprocate said tool-carrier, an intermittent-feed mechanism including a feed device, means intermittingly to move said feed device to engage in a new position the material to be fed prior to each change in extent of feed, and a pattern-surface to automatically vary the extent of intermittent feed of said feed device, substantially as described.

4. A perforating-machine, comprising one or more punching-tools, means to reciprocate them for perforating the work, a feed-bar, means to give a four-motion feeding movement thereto, a stop to be engaged by said feed-bar on the latter's return movement, a pattern to move said stop for shortening or lengthening the said return movement, and automatic means for giving said pattern a step-by-step motion for correspondingly varying the feed, substantially as described.

5. A perforating-machine, comprising one or more punching-tools, means to reciprocate them for perforating the work, a feed-bar, means to reciprocate the feed-bar longitudinally and to engage and disengage it with the work for feeding the latter when so engaged, said feed-bar invariably disengaging the work at the same point in its movement, and automatic means for varying the point of engagement of the feed-bar with the work, substantially as described.

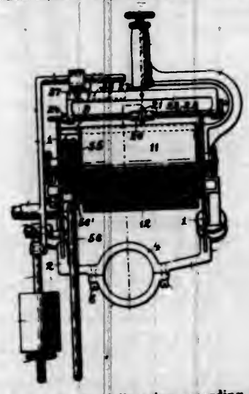
6. A perforating-machine, comprising one or more punching-tools, means to reciprocate them for perforating the work, a feed-bar, means to engage the feed-bar with the work and feed it during said engagement, means to disengage the feed-bar from the work and return it for another feed, and automatic means for varying the durations of said feeding engagements, substantially as described.

7. A perforating-machine, comprising one or more punching-tools, means to reciprocate them for perforating the work, a feed-bar, means to give a four-motion feeding movement thereto, a pivoted lever carrying a stop to be engaged by said feed-bar on the latter's return movement, a pattern to move said lever for varying the extent of movement of said feed-bar, and automatic means for moving said pattern, substantially as described.

8. In a machine of the class described, the combination with a tool-holder, of a tool-holding disk applied to the lower end thereof, and provided with one or more tubular tools, of a clamping-sleeve to engage the said disk near its periphery and attach the same to said tool-holder, and a passage leading from the lower end of said tool-holder, upwardly within the latter and terminating in a lateral discharge-opening above said clamping-sleeve, substantially as described.

9. The combination with a tool-holder, of a disk engaged at its periphery thereby and provided with one or more perforations, counterbored to receive and hold as many tubular tools, the latter being seated against the shoulders formed by the counterboring within said perforations, and means to attach said disk to said tool-holder, substantially as described.

610,747. GRADE-DELINEATOR. JOHN RIDDELL, Schenectady, N. Y. Filed Dec. 17, 1896. Serial No. 615,965. (No model.)



Claim.—1. A device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, and consisting of a mechanism for carrying and operating a movable recording-surface, a marker-supporting frame extending over the plane of the recording-surface and automatically vibratable, as the vehicle tilts endwise, to either side of its normal position, and a marker loosely mounted on said frame and automatically movable endwise thereon, when the vehicle is in a tilted position, as and for the purpose set forth.

2. A device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, and consisting of a mechanism for carrying and operating a traveling recording-surface actuated by the vehicle, a marker-frame automatically vibratable over the plane of said recording-surface to one side or the other of its normal position by the tilting endwise of the vehicle, a marker automatically movable endwise on its frame when the vehicle is tilted, and a fixed device for marking the central line of travel of the vehicle, as set forth.

3. In a device for delineating, recording and measuring the path of a route traveled over, an oscillating marker-frame and a marker automatically movable endwise on said frame, as set forth.

4. A device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle and embracing mechanism for carrying and operating a tape or traveling band of paper, an oscillating frame extending transversely over the plane of said tape and governed by a pendulum, and a roller-marker automatically movable endwise on said oscillating frame, as and for the purpose set forth.

5. In a device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, mechanism for carrying and operating a movable recording-surface, an oscillating frame extending across the plane of said recording-surface, a marker mounted and automatically movable endwise on said oscillating frame, and means connected with and automatically moving the latter from and to its normal position when the vehicle is tilted endwise from and back to its normal position, as set forth.

6. In a device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, mechanism for carrying and operating a movable recording-surface, an oscillating frame extending over the plane of said recording-surface, a marker mounted and automatically movable endwise on said oscillating frame, an automatic marking device arranged to mark and indicate on the recording-surface at intervals, graduated sections of the distance traveled over, and means connected with and governing the movements of the oscillating marker-frame by the endwise tilting of the machine, as set forth.

7. In a device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, a mechanism for carrying and operating a traveling recording tape or strip of paper, an oscillating frame extending across the plane of said recording-tape, and a roller-marker loosely mounted on said frame and automatically movable endwise thereon, as set forth.

8. In a device for delineating, recording, and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, a mechanism for carrying and operating a movable recording-surface, a fixed marker, an oscillating frame, and a marker mounted on said frame and automatically movable endwise thereon, as set forth.

9. In a device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, a mechanism for carrying and operating a movable recording-surface, an oscillating frame having a central arm and marker thereon, and a marker automatically movable endwise on said frame, as herein set forth.

10. In a device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, a mechanism for carrying and operating a movable recording-surface, an oscillating frame, a marker automatically movable endwise thereon, a pendulum controlling the movement of said oscillating frame, and means for retarding and governing the pendulum against undue vibration, as set forth.

11. In a device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, a mechanism for carrying and operating a movable recording-surface, an oscillating frame, a marker movable endwise on said frame, a pendulum controlling the movements of said frame, and a dash-pot governing the vibrations of said pendulum, as set forth.

12. In a device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, a mechanism for carrying and operating a movable recording-surface, an oscillating frame, a marker automatically movable endwise on said frame, and a pendulum connected to and governing said frame by a swiveled sliding connection, as set forth.

13. A device for delineating, recording and measuring the path of a route traveled over, adapted to be mounted on and operated by a vehicle, and comprising a mechanism for carrying and operating a traveling recording-surface, a fixed standard-marker, an oscillating frame, a marker automatically movable endwise on said frame, and a pendulum connected to and governing the movements of said frame, as set forth.

14. A device for delineating, recording and measuring the path of a route traveled over, comprising a mechanism for carrying and operating a movable recording-surface, a number of fixed markers, an oscillating frame and marker mounted on said frame and automatically movable endwise thereon when the device is in an endwise-tilted position, as set forth.

15. In a device for delineating, recording and measuring the path of a route traveled over, a mechanism for carrying and operating a movable recording-surface, an oscillating marker-frame, means connected with and governing the movements of said marker-frame, as the machine is tilted endwise, said endwise-tilting movement causing the marker-frame to oscillate, and a marker mounted on said marker-frame and automatically movable endwise thereon by the movable recording-surface, when the machine has assumed an endwise tilted position, as set forth.

16. A device for delineating, recording and measuring the path of a route traveled over, comprising a mechanism for carrying and operating a movable recording-surface, an oscillating frame movable by the endwise tilting of the machine, a marker adapted to bear against the recording-surface and mounted and automatically movable endwise on said oscillating frame by the movable recording-surface when the oscillating frame has assumed a position at an angle to its normal position, and means connected with and governing the movements of the oscillating marker-frame by the endwise tilting of the machine, as set forth.

17. A device for delineating, recording and measuring the path of a route traveled over, consisting of a machine comprising a mechanism for carrying and operating a movable recording-surface, a number of fixed markers adapted to bear on said recording-surface, an oscillating frame movable by the endwise tilting of the machine, a marker adapted to bear against the recording-surface and mounted and automatically movable endwise on said oscillating frame by the movable recording-surface when the oscillating frame has assumed a position at an angle to its normal position, an automatic marking device adapted to mark and indicate on the recording-surface at intervals graduated sections of the distance traveled over, and means connected with and governing the movements of the oscillating marker-frame by the endwise tilting of the machine, as set forth.

18. In a device for profiling a route traveled over, the combination of a marker, a support for the marker, and means for causing an angular movement of the marker across a recording-surface.

19. In a device for profiling a route traveled over, adapted to be mounted on a vehicle and operated thereby, the combination of means for continuously moving the recording-surface as the vehicle progresses, a marker, a support upon which the marker is movable, and means for changing the position of the support as the profile of the route varies, whereby the marker is permitted to travel across a recording-surface at an angle and indicate the profile of the route.

20. In a device for profiling a route traveled over, the combination of a marker, and means for causing the marker to travel across a recording-surface at an angle whenever a grade occurs in the route.

21. In a device for profiling a route traveled over, the combination of a marker, means for causing the marker to travel across a recording-surface at an angle whenever a grade occurs in the route, and means for adjusting the relation of the marker to the recording-surface whereby the vertical scale of the apparatus may be the same as or different from the longitudinal scale.

22. In a device for profiling a route traveled over, carried by a vehicle, the combination of means for imparting movement to a recording-surface, a marker adapted to travel across said surface at an angle, means for adjusting this angle when a grade occurs in the route, and means for making the vertical scale of the record greater than that of the horizontal.

23. In a device for profiling a route traveled over, adapted to be mounted on and operated by a vehicle, the combination of a marker adapted to move across a recording-surface at an angle whenever a grade occurs on the route, and means permitting the marker to be manually adjusted with respect to the recording-surface whenever the grade is of such extent that the marker tends to leave the recording-surface.

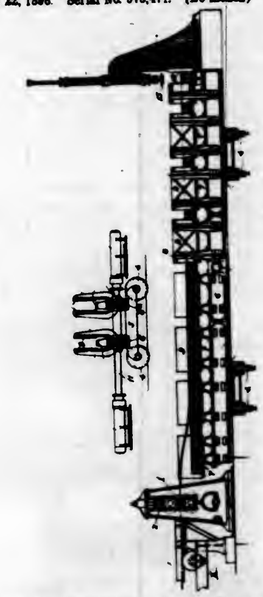
610,748. BICYCLE HANDLE-BAR. HERBERT M. RIDGWAY, Winthrop, Mass. Filed Nov. 23, 1897. Serial No. 659,295. (No model.)

Claim.—1. The combination with a handle-bar and its post, of an independent fluted bushing or annular ratchet rigidly fixed on the handle-bar, said post being provided with a cylindrical or thimble-like end snugly fitting over said annular ratchet, and threaded at its ends, annular caps threaded to engage said thimble-like end, a dog pivotally mounted in said post below said ratchet and engaging the latter at its upper end, said dog being provided with a thumb-piece projecting from said post to be engaged by the rider and at its lower end projecting within the post, and a spring normally holding said dog in engagement with said ratchet, substantially as described.

2. The combination with a handle-bar and its post, of an independent fluted bushing or annular ratchet rigidly fixed on the handle-bar, said post being provided with a cylindrical or thimble-like end snugly fitting over said annular ratchet, and threaded at its ends, annular caps internally threaded onto said thimble-like end against the ends of said ratchet, a dog pivotally mounted in said post below said ratchet and engaging the latter at its upper end, said dog being provided with a thumb-piece projecting from said post to be engaged by the rider, and at its lower end projecting within the post; and a spring normally holding said dog in engagement with said ratchet, said spring comprising a loop engaging said depending end of the dog and coils intermediate said loop and the ends of the spring, said ends bearing against one side of the post and said coils against the other side thereof, substantially as described.



610,749. BAR-PILING MECHANISM. LINCOLN A. TREAT, Youngstown, Ohio, assignor to the Ohio Steel Company, same place. Filed Apr. 22, 1898. Serial No. 678,471. (No model.)



Claim.—1. The combination of a bar-piling mechanism and a striking or pressing mechanism arranged in such relation to the bar-piling mechanism as to be operative to straighten and flatten down bars fed into the piling mechanism, substantially as set forth.

2. The combination of a bar-piling mechanism, a striking or pressing mechanism arranged in operative relation to the piling mechanism, and means for shifting one of said mechanisms, substantially as set forth.

3. The combination of one or more bar-receiving cages or frames, means for shifting the same, and a striking or pressing mechanism arranged in operative relation to the receiving cages or frames when in normal position, substantially as set forth.

4. The combination of a bar-receiving cage or frame, means for shifting the cage or frame, a striking or pressing mechanism and means controlled by the cage or frame for shifting the striking or pressing mechanism out of operative position, substantially as set forth.

5. The combination of a bar-receiving cage or frame, means for raising and lowering the cage or frame, a pivotally-mounted bracket provided with a toe projecting under the rear end of the cage or frame and adapted to automatically drop away from the frame, a striking or pressing head movably mounted on the bracket, an operating-motor and a flexible connection from the motor to the striking or pressing head, substantially as set forth.

610,750. BLACKING BRUSH OR DAUBER. JOSEPH C. WICKERS, New York, N. Y. Filed Feb. 10, 1898. Serial No. 669,830. (No model.)



Claim.—A blacking-brush composed of a reservoir having a hollow handle communicating therewith at one side, an annular flange formed on the lower side of said reservoir, a circular head arranged within said flange and provided with sockets in which the bristles are secured, a cover-plate arranged on top of said head and provided with a tubular flange extending downwardly therethrough, a leather disk mounted on said cover-plate and having a central opening corresponding with the opening in said tubular flange, a spindle adjustably mounted in the top of said reservoir and passing through and adapted to close said opening, and said tubular flange, a valve secured to the lower portion of said spindle and adapted to be seated upon said leather disk, stirrer-blades connected with said spindle above said valve, said reservoir being also provided with a vent-opening in the top thereof, and a spring-operated valve plate or lever loosely mounted on the said spindle above the reservoir, and a valve connected with said plate or lever for closing said opening, substantially as shown and described.

610,751. DRIVE-CHAIN. FRANK W. WOOD, Indianapolis, Ind. Filed June 14, 1898. Serial No. 683,406. (No model.)



Claim.—1. A bicycle-chain composed of the solid center links, the slotted side links with central enlargements to the slots, and connecting-pins with neck portions in said slots and having outside heads formed with a portion bent or broken to enter between the sides of said slots, substantially as set forth.

2. A chain composed of links and connecting-pins, said connecting-pins being formed with necks which engage slots in a portion of said links and with heads, one head of each pin having a portion bent or broken down into the slot it engages, substantially as set forth.

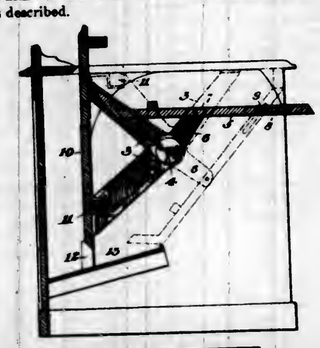
3. A chain composed of the solid center link A, the slotted side links B, the slots whereof are formed with enlarged centers to receive the pin-heads, and the connecting-pins C formed with central journal for the center links A, and with necks c to engage the slots of the side links B, and having heads one of which is formed with a portion extending to project between the sides of one of the slots, whereby it is held to move with said side links, all substantially as set forth.

610,752. TYPE-WRITER CABINET. EDWARD B. BAKER, Pittsburg, Pa. Filed Mar. 23, 1898. Serial No. 675,402. (No model.)

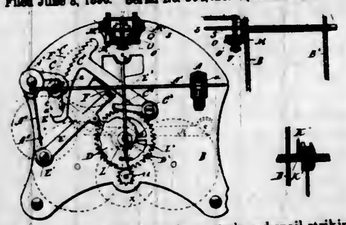
Claim.—1. A desk or cabinet having levers pivoted at the sides of the opening, a machine-table pivotally connected to the forward arms of the levers, and a top section rigidly secured to the rear arms of the levers in fixed relationship thereto; substantially as described.

2. A desk or cabinet having a suitable opening or recess, levers pivoted at the sides of the recess, a machine-supporting table pivotally connected to the forward shorter arms of the levers and having slotted plates secured to its edges, projecting pins entering the slots, and a top section rigidly secured to the rearward arms of the levers in fixed relationship thereto; substantially as described.

3. A desk or cabinet having levers secured at the sides of the opening, a machine-carrying table pivoted to the forward shorter arms of the levers and having loose supporting connections at the sides of the opening, said table being arranged to be thrust forward beyond the front of the desk, and a top section rigidly secured to the rear arms of the levers in fixed relationship thereto; substantially as described.



610,753. REPEATING CLOCK. ARCHIBALD BANNATYNE, Waterbury, Conn., assignor to the Waterbury Clock Company, same place. Filed June 8, 1898. Serial No. 594,720. (No model.)



Claim.—1. In a clock having a rack-and-snail striking mechanism, the combination with an arbor of the strike-train, of a gathering-pin carried by the said arbor, a hammer having a hammer-tail, and a rack, the said hammer-tail and rack being constructed and arranged to be simultaneously acted upon by the gathering-pin which lifts or "gathers" the rack at the same time it lifts the hammer into position for striking.

2. In a clock having a rack-and-snail striking mechanism, the combination with an arbor of the strike-train, of a gathering-pin carried by the said arbor, a rack, and a hammer having a hammer arm or wire, a hub to which the said arm or wire is secured, and a sheet-metal hammer-tail secured to the said hub, which is mounted for oscillation upon the rear or outer face of the rear face of the clock-movement, the said rack and hammer-tail being constructed and arranged to be simultaneously operated upon by the said gathering-pin which lifts or "gathers" the rack at the same time it acts through the hammer-tail to lift the hammer into its striking position.

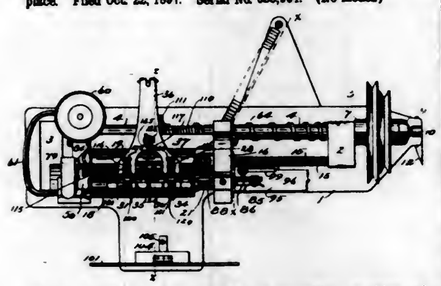
3. In a clock having a rack-and-snail striking mechanism, the combination with an arbor of the strike-train projecting at its rear end through the rear plate of the clock-movement, of a gathering-pin carried by the said projecting end of the said arbor, a rack located upon the outer face of the rear movement-plate, and a hammer also located upon the outer face of the said rear movement-plate and provided with a hammer-tail, the said rack and hammer-tail being constructed and arranged to be simultaneously acted upon by the gathering-pin which lifts or gathers the rack at the same time that it lifts the hammer into its striking position.

4. A pendulum-regulating device for pendulum-clocks, having a frame-plate, two vertically-arranged guiding-studs secured by their lower ends thereto, a pinion located between the lower ends of the said studs, supported upon the said plate and formed with an internally-threaded central opening, a vertically-movable threaded post passing through the said pinion, and raised and lowered by the revolution thereof, a suspension-plate secured to the upper end of the said post, guided by the upper ends of the said studs, and adapted to receive the upper end of the suspension-spring of a pendulum-rod, a fixed suspension-plate located in a horizontal plane below the said suspension-plate, supported by the said studs, and having a slit formed in it for the reception of the said spring, and means for rotating the said pinion for raising and lowering the post and hence the movable suspension-plate, whereby the pendulum-spring is raised and lowered with respect to the fixed suspension-plate.

5. In a clock having a rack-and-snail striking mechanism, the combination with the front and rear movement-plates thereof, of a center arbor mounted in the said plates and extending forward of

the front plate, and rearward through the rear plate, a snail and snail-wheel mounted upon the projecting rear end of the arbor, an hour-wheel mounted upon the projecting forward end of the arbor, a supplemental arbor mounted in the plates, and also projecting at its ends through the same, a snail-wheel pinion mounted upon the projecting rear end of the supplemental arbor, and meshed into by the snail-wheel, an hour-wheel pinion mounted upon the projecting forward end of the said supplemental arbor, and meshing into the hour-wheel, and a minute-wheel mounted upon the supplemental arbor and meshing into a cannon-pinion on the center arbor, substantially as set forth.

610,754. CIGAR-ROLLING MACHINE. JOHN BUNN, Binghamton, N. Y., assignor to the Bunn Cigar Rolling Machine Company, same place. Filed Oct. 22, 1897. Serial No. 655,991. (No model.)



Claim.—1. The combination, in a cigar-rolling machine, of a driving-shaft having a worm, a carriage having a lug to engage said worm, presser-rollers supported by said carriage, a shaft upon which the carriage is loosely mounted and about which it is adapted to turn, a spring connected with the carriage for holding the lug yieldingly engaged with the worm, means for tilting the carriage to disengage the lug from the worm, and a belt attached at one end of the carriage and having a spring-section, as and for the purpose set forth.

2. The combination, with the shaft having a worm, and a second shaft having a lengthened keyway, said shafts being geared together, of a carriage loosely mounted on the second shaft, presser-rollers mounted on shafts journaled in the carriage, gears on the ends of the roller-shafts, a gear movable with said carriage and keyed on said second shaft and intermeshing with said gears on the roller-shafts, a lug projecting from the carriage into engagement with said worm, means for turning the carriage on its shaft to disengage said lug from the worm, and means for returning said carriage to the starting-place when the lug is disengaged from the worm, as and for the purpose set forth.

3. The combination with the worm-shaft, a second shaft, and a carriage loosely mounted on said second shaft and having a lug engaged with said worm, of a pivotally-supported arm carried by said carriage, presser-rollers carried by said arm, and connections between the arm and carriage whereby when the arm is tilted it will raise the presser-rollers relatively to the carriage and also turn the carriage upon its shaft, as and for the purpose set forth.

4. The combination with the carriage and means for feeding the same, of a pivotally-supported arm carried by the carriage, presser-rollers carried by the arm, and connections between said arm and the carriage whereby when the arm is tilted it will turn the carriage to disconnect the feeding means and also raise the presser-rollers relatively to said carriage, as and for the purpose set forth.

5. The combination with the carriage, and means for feeding the same, of an arm having presser-rollers at one end, a second arm pivoted in said carriage and attached to the first-mentioned arm, a projection from the second arm, and a stop projecting from the carriage in the path of said projection whereby the turning of the arm upon its pivot operates to turn the carriage so as to disconnect the feeding means thereof and to raise the presser-rollers relatively to the carriage, as and for the purpose set forth.

6. The combination with the carriage, and means for feeding the same, of an arm having presser-rollers at one end, a shaft supported by the carriage, a second arm loosely mounted on the shaft and attached to the first-mentioned arm, a stop projecting from the carriage, a projection from the second arm located rearward of said stop and designed to engage the same when the second arm has been turned a short distance on its shaft, and a coiled spring encircling the shaft and secured at one end to the second arm and at its other end to the carriage, as and for the purpose set forth.

7. The combination with the driving-shaft, having a worm, a second shaft, a carriage loosely mounted on the second shaft and having a lug engaged with the worm, and a stop projecting from the carriage, of an arm, presser-rollers at one end of said arm, and a second arm pivotally mounted in the carriage and attached to the first-mentioned arm, the second arm having a projection so located with respect to the stop as that it will engage the same after it has turned a short distance, whereby tilting of the first-mentioned arm causes said presser-rollers to be lifted within the carriage and also disengages said lug from the worm, as and for the purpose set forth.

8. The combination with the driving-shaft, and a second shaft geared therewith, of a carriage movable on said second shaft, gearing to connect the driving-shaft and carriage to move the latter along the second shaft, a stop projecting from the carriage, an arm, presser-rollers at one end of said arm, a second arm pivotally mounted in the carriage and attached to the first-mentioned arm, the second arm having a projection so located with respect to the stop as that it will engage the same after it has turned a short distance, whereby tilting of the first-mentioned arm lifts the presser-rollers relatively to the carriage and disconnects the driving-gearing of the carriage, and means for automatically returning the carriage to the starting-place when its driving-gear is disconnected, as and for the purpose set forth.

9. The combination in a cigar-rolling machine, of a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other portion of said cavity, a movable rod carrying the latter plate, a spring to normally hold the plates in engagement, a pivoted arm, and connections between the pivoted arm and movable plate, operated by the arm to force the movable plate outward, as and for the purpose set forth.

10. The combination, in a cigar-rolling machine, of a pivotally-supported arm, presser-rollers supported by the arm, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other portion of said cavity, and connections between the arm and movable plate, whereby tilting of the former operates both to lift the presser-rollers and open the tip-forming cavity, as and for the purpose set forth.

11. The combination, in a cigar-rolling machine, of a pivotally-supported arm, presser-rollers carried thereby, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other portion of said cavity, a movable rod carrying said movable plate, a pivoted spring-pressed lever engaged with said rod, and a link connecting the upper end of said lever with the pivoted arm, as and for the purpose set forth.

12. The combination, in a cigar-rolling machine, of a pivotally-mounted carriage, rollers carried thereby, gearing for feeding said carriage from one end of the machine to the other, and an arm pivotally supported within the carriage presser-rollers carried by the arm, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other part of said cavity, connections between the pivoted arm and movable plate for causing the latter to be moved by the tilting of the former, and connections between the pivoted arm and carriage for causing said arm to tilt the carriage and thereby disconnect said feeding means, as and for the purpose set forth.

13. The combination in a cigar-rolling machine, of a feeding-worm, a pivotally-mounted carriage, having a lug engaged with the worm, rollers in the carriage, an arm pivotally supported in the carriage, presser-rollers at the forward end of the arm, a stop extending from the carriage, a projection movable with the arm and so arranged with respect to said stop as to engage the same after the arm has been tilted a certain distance, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other part of the cavity, connections between said pivoted arm and movable plate for causing the latter to be moved by the former whereby the tilting of the pivoted arm raises the presser-rollers carried thereby, opens the tip-forming cavity and disconnects the feeding-gear of the roller-carriage, and means for returning said carriage to the starting-place when the feeding-gear is disconnected, as and for the purpose set forth.

14. The combination, in a cigar-rolling machine, with a feeding-worm, a pivotally-mounted carriage having a lug engaged with the worm, rollers in the carriage, a stop 43 projecting from one end of the carriage, and a shaft 41 at the rear end of the carriage, of an arm loosely mounted on said shaft and having a projection arranged to engage said stop when the arm has turned a certain distance less than the full extent of its movement, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other part of said cavity, a movable rod carrying the movable plate, a pivoted lever attached at one end to the rod, a link connecting the other end of the lever with the arm, a second arm attached between its end to the first-mentioned arm, and presser-rollers at the forward end of said second arm, as and for the purpose set forth.

15. The combination, in a cigar-rolling machine, of rollers for supporting the bunch, an arm 36, a pivotally-supported frame connected with the forward end of said arm, means for adjusting the frame relatively to the arm, and a presser-roller journaled in said frame, as and for the purpose set forth.

16. The combination, in a cigar-rolling machine, of rollers for supporting the bunch, an arm 36 having an upwardly-projecting lug, a second arm 118 pivotally attached to the forward end of the arm 36 and having a lug in front of the lug on the same, an adjusting-rod threaded in one of said lugs and extending loosely through the other lug, a spring encircling the rod between the lugs, a frame supported by the second arm, and a presser-roller journaled in the frame, as and for the purpose set forth.

17. The combination, in a cigar-rolling machine, of rollers for supporting the bunch, an arm 36, a second arm pivotally attached to the forward end of the arm 36 and having a forwardly-projecting stud, a frame adjustably mounted on said stud, means for adjusting the inclination of the second arm relatively to the arm 36, and a presser-roller supported by said frame, as and for the purpose set forth.

18. The combination, in a cigar-rolling machine, with rollers for supporting the bunch, an arm having an elongated slot intermediate its ends and an upwardly-projecting lug near its front end, and a clamp-screw extending through said slot and serving to secure the arm adjustably to its support, of a second arm, pivotally attached to the forward end of said first-mentioned arm and having a forwardly-projecting stud and an upwardly-projecting lug, an adjusting-rod threaded in one of said lugs and extending loosely through the other lug, a spring encircling said rod between the lugs, a frame adjustably mounted on the stud, and a presser-roller journaled in the frame, as and for the purpose set forth.

19. The combination, in a cigar-rolling machine, with rollers for supporting the bunch, of a forwardly and rearwardly adjustable arm, a second arm pivotally mounted on said first mentioned arm, means for adjusting the inclination of the second arm relatively to the other arm, a frame carried by the second arm and adjustable forward and rearward thereon, and a presser-roller journaled in said frame, as and for the purpose set forth.

20. The combination, in a cigar-rolling machine, with the rollers for supporting the bunch, of a pivoted arm having a bifurcated front end, a shaft extending across said front end of the arm, adjustable arms 118 pivotally mounted on the ends of said shaft, means for holding the latter arms independently in adjusted position, separate frames independently adjustable forward and rearward on said arms 118, and rollers journaled in said frames, as and for the purpose set forth.

21. The combination, in a cigar-rolling machine, with a shaft 15, a carriage thereon, means for driving said shaft, two roller-carrying shafts journaled in said carriage, one being slightly above and rearward of the other, gears on the ends of said shafts, a gear on said shaft 15 meshing with each of the other gears, and a roller 20 frictionally engaged with a roller on one of said shafts, of a pair of rollers, 30 and 31 arranged end to end above the lower of said previously mentioned rollers and frictionally engaged with said roller 20, and a pivotally-supported arm carrying said rollers, 30 and 31, as and for the purpose set forth.

22. The combination, in a cigar-rolling machine, with the driving-shaft, a second shaft having a lengthened keyway, said shafts being geared together, a worm on the driving-shaft, a carriage loosely mounted on said second shaft and having a lug engaged with the worm, and a gear on said second shaft movable with the carriage and having a key traversing the lengthened keyway, of a pair of rollers mounted on shafts journaled in said carriage, gears on the ends of said roller-shafts, both of said gears intermeshing with the gear on said second shaft, a third roller frictionally engaged with one of said pair of rollers, a pair of rollers, arranged end to end and both in frictional engagement with said third roller, a pivoted arm supporting the latter pair of rollers, and connections between the pivoted arm and the carriage, whereby the tilting of the arm first raises the pair of rollers carried thereby and finally turns the carriage upon its shaft 15, as and for the purpose set forth.

23. In a cigar-rolling machine, means for supporting and rotating the bunch, said means containing a frictionally-driven roller, a normally stationary shaft having an eccentrically-set cylindrical part on which the roller turns, and means whereby the shaft may be turned in the bearing, as and for the purpose set forth.

24. In a cigar-rolling machine, the combination with bunch-supporting rollers, of a roller 20 driven by frictional engagement with one of such rollers, a roller driven by the roller 20, a normally stationary shaft having an eccentrically-set cylindrical portion on which the roller 20 turns, and means whereby the shaft may be turned in its bearing, as and for the purpose set forth.

25. In a cigar-rolling machine, means for supporting and rotating the bunch, said means containing a frictionally-driven roller, a shaft having an eccentrically-set cylindrical portion within the roller and on which the latter turns, a split sleeve supported on the machine and in which the shaft may be turned, and a screw to clamp the sleeve on the shaft and prevent the latter from turning in the former, as and for the purpose set forth.

26. In a cigar-rolling machine, the combination with a movable carriage, rollers 18 and 19 carried thereby and arranged one above and rearward of the other, rollers 30 and 31 arranged end to end, and a pivotally-supported arm 36 carrying said rollers 30 and 31, of a roller 20 frictionally engaged with each of said rollers 19, 30 and 31, a normally stationary shaft having an eccentrically-set cylindrical portion on which the roller 20 turns, and means whereby the shaft may be turned in its bearing to cause the roller 20 to bear with greater or less pressure upon the rollers 19, 30 and 31, as and for the purpose set forth.

27. In a cigar-rolling machine, the combination with the wrapping mechanism, of a severing-knife, an operating-lever to which said knife is pivoted, a spring connecting said lever and knife, and a stationary arm adjacent to the cutting-point of said knife whereby the knife will operate to make a draw cut, as and for the purpose set forth.

28. In a cigar-rolling machine, the combination with the wrapping mechanism, of a knife having an elongated slot at one end, a thumb lever having a vertical portion, a pivot for the vertical portion of the lever, said pivot extending through the elongated slot and the knife and vertical portion of the lever being pivoted together, a spring connection between the knife and lever, and relatively a stationary arm adjacent to the cutting portion of the knife, whereby the knife acts on said arm with a draw action, as and for the purpose set forth.

29. In a cigar-rolling machine, the combination with the wrapping mechanism, and a plate adjacent thereto at the header end of the machine said plate having a tip-forming cavity and being provided with a horizontally-projecting arm, of a knife having an elongated slot at one end, a thumb-lever having a vertical portion pivoted on a stud projecting through said slot into the plate, the knife and lever being pivoted together, a spring connecting the knife and lever together, as described, whereby the knife will operate on the horizontal arm of the plate with a draw action, as and for the purpose set forth.

30. In a cigar-rolling machine, the combination with the driving-shaft, the carriage carrying presser-rollers, and means for rotating said presser-rollers simultaneously with the rotation of the driving-shaft, of a worm on said driving-shaft and a lug projecting from the carriage, the worm and lug being normally out of engagement when the carriage is at rest at its starting-point, whereby the shaft will rotate before the worm is operatively engaged with the lug, as and for the purpose set forth.

31. In a cigar-rolling machine, the combination with the driving-shaft, and the carriage carrying presser-rollers, of a worm on said driving-shaft, and a spring-pressed movable lug projecting from said carriage and engaged by the worm, as and for the purpose set forth.

32. In a cigar-rolling machine, the combination of the pivotally-mounted carriage carrying presser-rollers, a worm, a spring-pressed movable lug projecting from said carriage and engaged with the worm, and means for tilting the carriage to disengage the lug from the worm, as and for the purpose set forth.

33. In a cigar-rolling machine, the combination of the pivotally-mounted carriage carrying the presser-rollers, a projection from the carriage having a grooved way, a lug having an arm movably mounted in said way, a spring engaging one end of the arm and a stop at the other end thereof, a worm engaged by said lug, means for tilting the carriage to disengage the lug from the worm, and means for returning the carriage to the starting-place when the lug and worm are disconnected, as and for the purpose set forth.

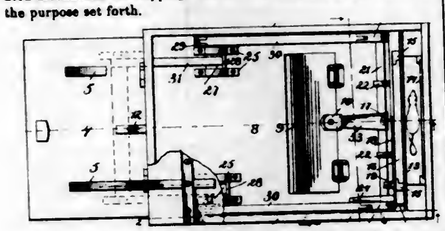
34. In a cigar-rolling machine, the combination with the roller-carriage, and means for feeding the same, of a wrapper-holder, a pivoted lever connected with said wrapper-holder on the carriage, and a stop-plate acting on said lever to withdraw and replace the wrapper-holder, as and for the purpose set forth.

35. In a cigar-rolling machine, the combination with the roller-carriage and means for feeding the same, of a wrapper-holder, comprising a longitudinally-movable rod supported in the carriage, a bent wire having one end journaled in the inner end of said rod, a lever pivoted between its ends on a support movable with the carriage and having its upper end adjustably attached to the rod and its lower end bifurcated and bent in reverse directions, and a longitudinally-adjustable plate on a fixed part of the machine having a bent end arranged in the path of the lower end of said lever and operating thereon to withdraw and replace said wrapper-holder, as and for the purpose set forth.

610,755. TRAP. EZRA CARPENTER, Fisherman's Bay, Cal. Filed Apr. 16, 1896. Serial No. 577,834. (No model.)

Claim.—1. In a trap, the combination with a body, an inlet-door at its front end, a partition within the body forming a decoy-chamber at its rear end and having an opening near its lower edge, upright guides adjacent said opening, and a gravity-door sliding in the guides; of devices for holding both said doors open, and victim-actu-

ated mechanism for tripping said devices simultaneously, as and for the purpose set forth.



2. In a trap, the combination with a body having a mirror across its rear end, a door near said mirror and forming a decoy-chamber within the body at its rear end, and an inlet-door at the front end of the body; of devices for holding both said doors open, and victim-actuated mechanism for tripping said devices simultaneously, as and for the purpose set forth.

3. In a trap, the combination with a body having a decoy-chamber at its rear end, a transverse partition forward of said chamber having an opening near its lower edge, upright guides alongside said opening, a gravity-door moving in said guides, and a pin in said door; of a lever pivoted between its extremities with its inner end adapted to engage the pin in the door, a fixed pin beneath which its outer end slides, an inlet-door in the front of the body, devices for holding this door open, and victim-actuated mechanism for tripping said devices and simultaneously moving the outer end of said lever to the rear to release the gravity-door, as and for the purpose set forth.

4. In a trap, the combination with a body having a decoy-chamber at its rear end, a transverse partition forward of said chamber having an opening near its lower edge, upright guides alongside said opening, a gravity-door moving in said guides, and a pin in said door; of a lever pivoted between its extremities with its inner end adapted to engage the pin in the door, a rock-shaft across the body forward of the partition, means for normally turning this shaft to the rear, a finger thereon adapted to strike the outer arm of said lever, victim-actuated mechanism for tripping said shaft, an inlet-door in the front end of the body, devices for holding it open, and connections between said shaft and devices, as and for the purpose set forth.

5. In a trap, the combination with a body having slatted sides and a false bottom with an opening in the latter, a trap door hinged in the opening and having a finger projecting from its hinge-line, a rock-shaft journaled across the body and having a trigger adapted to be engaged by said finger, and a spring turning the rock-shaft normally to the rear; of an inlet-door in the front of the body, devices for holding said door open, and connections between said rock-shaft and devices, for tripping the latter when the trap-door is depressed, substantially as described.

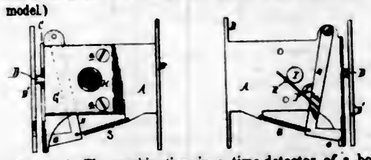
6. In a trap, the combination with a body having a manual door in its side and an inlet-door in its front end, a false bottom within the body, a trap-door hinged to said bottom and having a finger projecting over its hinge-line, a rock-shaft journaled across the body and having a trigger adapted to be engaged by said finger, and a spring beneath said trigger turning the shaft normally to the rear: of a catch between the true and false bottom projecting beyond its front to engage the inlet-door when closed, devices for holding said inlet-door open, and connections between the rock-shaft and said devices, for tripping the latter when the trap door is depressed, substantially as described.

7. In a trap, the combination with a body having an open front, an inlet-door hinged at its upper end therein and having a stop adjacent its hinge-line, springs for throwing said door normally closed, and a catch for holding it in closed position; of a trap-door hinged within the body remote from its front end and having a finger, a trigger adapted to be engaged by said finger when the trap door is raised, devices for holding the front door open against the tension of its spring, and connections between said trigger and devices, for tripping the latter when the trap-door is depressed, substantially as described.

8. In a trap, the combination with a body having a spring-actuated inlet-door in its front end, a trigger within the body near its rear end, a spring normally raising said trigger, and victim-actuated devices for holding said trigger depressed; of a cam journaled in bearings within the body and having a notch in its upper side, a push-bar on the door whose extremity engages said notch when the door is open, an elbow on one shaft of the cam, and connections between said trigger and elbow for moving the latter when the trigger is released, substantially as described.

9. In a trap, the combination with a body, a spring-closed door in its front end, a rock shaft journaled across the body near its rear end and provided with elbows at its extremities, a spring turning this shaft normally to the rear, and victim-actuated devices for holding the shaft against the tendency of its spring; of two pairs of bearings mounted within the body near its front end, a cam having stub-shafts journaled in each pair of bearings and a forwardly-facing notch in its body, push-bars pivoted to the interior of the door with their tips engaging said notches when the door is open, elbows rising from the outer stub-shafts on the cams, and links connecting these elbows with those on the rock-shaft, as and for the purpose set forth.

610,756. WATCHMAN'S TIME-RECORDER. ISAAC A. HERMANN, Cleveland, Ohio. Filed May 1, 1897. Serial No. 634,666. (No model.)



Claim.—1. The combination, in a time-detector, of a box provided with a door carrying a staple D, and a slotted plate D', a lock-case secured within the box, and provided with a partially-rotatable shaft I, carrying a locking hook or tumbler M, adapted to engage said staple D, a lance-arm N, pivotally secured to the lock-plate and provided with a spring-arm P, adapted to engage a pin R upon the inner end of the shaft I, and a coil-spring S for returning the lance-arm to its normal position, the parts being constructed, arranged and operating, in the manner and for the purpose, substantially as set forth.

2. In a lock of the character described, a partially-rotatable shaft I, a cap provided with a key-barrel H, and engaging the outer end of said shaft I, and a loose ring J, located within the barrel H, the parts being combined and operating substantially in the manner and for the purpose set forth.

610,757. TOBACCO-PIPE. PETER JOHNSON, Boston, Mass. Filed June 26, 1897. Serial No. 642,510. (No model.)



Claim.—In a tobacco-pipe, the combination with the mouthpiece and bowl, of a solid stem provided with a series of substantially parallel grooves connected together alternately at their upper and lower ends by cross-passages, one of said grooves being connected by a passage in the stem with the bowl and another groove being connected by a passage in the stem with the mouthpiece, an enlarged cell being formed in the stem at the lower end of each of the grooves below the cross-passages and adapted to receive and retain nicotine without obstructing the smoke-passages, the said enlarged cells being separated from each other by short partitions below the cross passages.

610,758. BUFFER FOR SHOE OR OTHER BUFFING MACHINES. THOMAS R. KEAVY, Philadelphia, Pa. Filed Jan. 5, 1897. Serial No. 618,036. (No model.)

Claim.—1 In a sandpapering and buffing machine the combination with a suitable body or support having an aperture extending from the back to the face thereof, of two strips of abrading material extending through said aperture and arranged therein with their abrading-surfaces adjacent to each other, substantially as described.

2. In a sandpapering and buffing machine the combination with a supporting-disk having an aperture in its supporting-face, of two strips of abrading material, passing through said aperture extending across the face of the disk in opposite directions and crimped to substantially conform to the perimeter of the disk, substantially as described.



3. In a sandpapering and buffing machine, the combination with a supporting-disk, of strips of abrading material extending across the face of said disk and means for crimping the ends of said material so as to conform to the periphery of said disk, substantially as described.

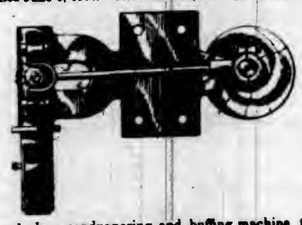
4. In a sandpapering or buffing machine, the combination with a disk or chuck, of a clamp arranged to clamp the ends of the abrading material, said clamp constructed and arranged to cause the folded edge of the abrading material to conform to the periphery of the disk, substantially as described.

5. In a sandpapering or buffing machine, the combination with a disk or chuck, of a clamp having means to force it into contact with the rear face of said disk, and cooperating elevations and depressions on said clamp and disk arranged to conform the abrading material to the periphery of the disk, substantially as described.

6. In a sandpapering or buffing machine, the combination with a disk or chuck, of a clamp arranged to have a sliding movement toward and from said disk, said disk having depressions and the clamp corresponding elevations arranged to engage the abrading material and conform the same to the periphery of the disk or chuck, substantially as described.

7. In a sandpapering or buffing machine the combination with a disk or chuck of a clamp arranged to clamp the abrading material on said disk or chuck said clamp having tapering elevations and depressions to engage the abrading material and crimp the same, substantially as described.

610,759. BUFFING-MACHINE. THOMAS R. KEAVY, Philadelphia, Pa. Filed June 3, 1897. Serial No. 639,263. (No model.)



Claim.—1. In a sandpapering and buffing machine, the combination with a buffing-tool having a working face extended to one side of its axis of motion, of a clamp for securing a continuous strip of abrading material to the working face of said tool and means to oscillate said tool, substantially as described.

2. In a sandpapering and buffing machine, the combination with an oscillating buffing-tool having a working face disposed at an angle to the axis of motion of the tool, of a strip of abrading material secured to the working face of said tool, and means to oscillate said tool, substantially as described.

3. In a sandpapering and buffing machine, the combination with a buffing-tool having a foot extended to one side of its axis of motion, of a pad carried by said tool, a strip of abrading material drawn across said pad, and a clamp for clamping the abrading material in position on said tool, substantially as described.

4. In a sandpapering and buffing machine, the combination with an oscillating buffing-tool having a foot extended to one side of its axis of motion, of a pad mounted upon the under face of said foot, a clamp-plate fulcrumed upon the upper surface of the foot, means for operating said plate and a roll of abrading material having its free end passed across the pad and clamped by the clamping-plate, substantially as described.

5. The herein-described combination of a frame, an oscillating spindle journaled therein, a buffing-tool carried by the lower end of said spindle, said buffing-tool having an outturned foot, a clamp carried by the buffing-tool, a reel upon which may be wound a continuous strip of abrading material for passage around the pad and to the clamp, means for manipulating the reel, a pawl, a ratchet for holding said reel against reverse rotation, an eccentric-rod coupled to the spindle, a shaft journaled in the frame, an eccentric carried by said shaft, an eccentric-strap embracing the eccentric and connected with the eccentric-rod, and a pulley carried by the shaft for transmitting power thereto from a suitable belt, substantially as and for the purpose set forth.

610,760. BUFFER FOR SHOE OR OTHER BUFFING MACHINES. THOMAS R. KEAVY, Philadelphia, Pa., assignor to the Standard Buffing Machine Company, Limited, same place. Original application filed Jan. 5, 1897, Serial No. 618,036. Divided and this application filed July 22, 1897. Serial No. 645,595. (No model.)



Claim.—1. In a sandpapering and buffing machine, the combination with a chuck comprising a disk, of a strip of abrasive material having its free end turned up over the periphery of said disk, and folded upon each side of its central portion to conform to the periphery of said disk, and a suitable clamp to hold said material in position on the disk, substantially as described.

2. In a sandpapering and buffing machine, the combination with a chuck comprising a disk, of a strip of abrasive material drawn across the face thereof, and having its end turned up over the periphery of the disk, and a clamp to engage the end of said strip, said clamp having independent clamping members, substantially as described.

3. In a sandpapering and buffing machine, the combination with a chuck comprising a disk, of a clamp movable toward and from the rear face of said disk, said clamp having independent clamping members, substantially as described.

4. In a sandpapering and buffing machine, the combination with a chuck comprising a disk, of a strip of abrasive material having its free end turned up over the periphery of said disk and a clamp having a central clamping member arranged to clamp the central portion of the end of said material, and side clamping members arranged to clamp the folded portion of the abrasive material at each side of the central clamping member, substantially as described.

5. In a sandpapering and buffing machine, the combination with a chuck comprising a disk, of a clamp movable toward and from the rear face of said disk, said clamp having rigid clamping members and hinged clamping members, and means to hold said clamp in clamping position, substantially as described.

6. In combination, a disk, a member which carries said disk, a clamp adapted to operate in conjunction with said disk, and secondary clamps located adjacent to the primary clamp for holding the ends of the abrasive material in position when approximately conformed to the periphery of the disk.

7. A buffer consisting of a chuck comprising a disk, a clamp fitted to the chuck and having central clamping members projecting therefrom, side clamping members hinged to the clamp and adapted to be swung downward into active position, means for operating the clamp, and means for holding the side clamping members in their active position, as and for the purpose set forth.

610,761. ROLL OF ABRADING MATERIAL. THOMAS R. KEAVY, Philadelphia, Pa. Original application filed Jan. 5, 1897, Serial No. 618,036. Divided and this application filed Sept. 13, 1897. Serial No. 650,491. (No model.)

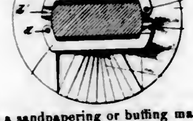
Claim.—1. A roll of abrasive material, comprising two strips of abrasive material arranged with their abrasive surfaces toward each other and rolled or coiled into a compact roll, substantially as described.

2. A roll of abrasive material comprising two strips of abrasive material arranged with their abrasive surfaces toward each other and a protective strip of non-abrasive material interposed between the abrasive surfaces, the whole rolled or coiled into a compact roll, substantially as described.

3. A roll of abrasive material comprising a spool or arbor, and two strips of abrasive material arranged with their abrasive surfaces toward each other, and closely rolled or coiled upon the spool or arbor, substantially as described.



610,762. BUFFING-PAD. THOMAS E. KEAVY, Philadelphia, Pa. Original application filed May 7, 1896, Serial No. 590,602. Divided and this application filed Oct. 22, 1896. Renewed June 30, 1898. Serial No. 684,800. (No model.)



Claim.—1. In a sandpapering or buffing machine, the combination with a rotating disk, of a strip of abrading material of less width than the diameter of the disk, extending across the face of the disk, and conforming at each end to the periphery of the disk, and means to retain said abrading material in position upon the disk, substantially as described.

2. In a sandpapering or buffing machine, the combination with a rotating disk, of a strip of abrading material of less width than the diameter of the disk, extending across and raised above the face of the disk and conforming at each end to the periphery of the disk, and means to retain said abrasive material in position upon the disk, substantially as described.

3. In a sandpapering and buffing machine, the combination with a suitable rotating pad or support, of a strip of abrading material having substantially parallel edges extending across the face of the pad or support, and having diagonally opposite portions of its abrading surface along said edges laterally inclined to its plane of rotation, substantially as described.

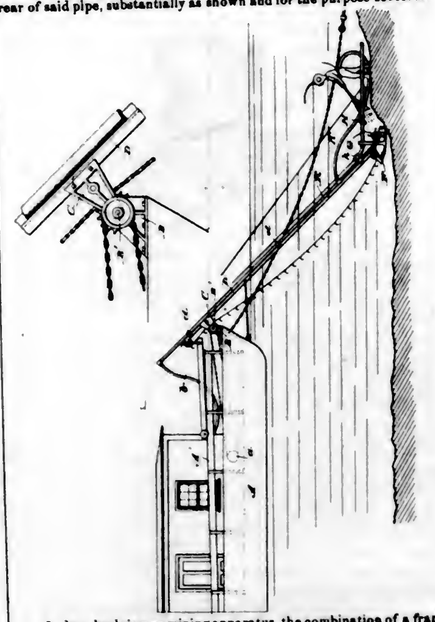
610,763. HYDRAULIC DREDGE FOR MINING PURPOSES. GEORGE F. KIBLING, Hanover, N. H. Filed Feb. 4, 1898. Serial No. 669,081. (No model.)

Claim.—1. In a mining or hydraulic excavating apparatus, the combination with a conveyer, pipes attached to the frame thereof and a shoe carried by the conveyer and pipes, means for forcing water through the pipes to loosen the soil in advance of the shoe, substantially as shown and for the purpose set forth.

2. In an excavating apparatus, the combination with the hydraulic pipes having forwardly-projecting nozzles, a shoe positioned below the discharge ends of the pipes and an endless conveyer operating above the shoe, substantially as shown and for the purpose set forth.

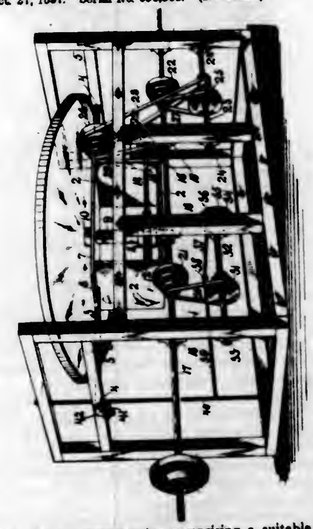
3. In an excavating apparatus, the combination with an endless conveyer-belt and its supporting and driving means, of pipes attached to the side bars of the conveyer-supporting frame the lower ends of said pipes being formed into forwardly-projecting nozzles, the conveyer-belt operating rear of said nozzles and a rotary excavator operated by the conveyer-belt, the same being positioned between the nozzles, for the purpose set forth.

4. In an excavating apparatus having hydraulic pipes, of a pipe H connected therewith said pipe having a series of rearwardly-projecting discharge openings or nozzles and a conveyer-belt positioned rear of said pipe, substantially as shown and for the purpose set forth.



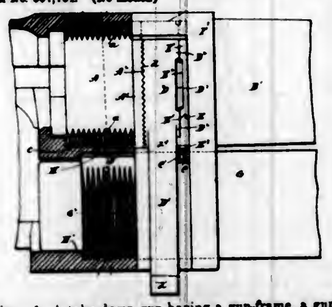
5. In a dredging or mining apparatus, the combination of a frame an endless conveyer, water-pipes attached to the conveyer-frame, auxiliary pipes with nozzles connected to the pipes carried by the frame of the conveyer, a shoe carried by the frame so as to extend below the same, a rotary excavator positioned above the shoe and rear of the rotary excavator; together with a screen in which the material carried by the conveyer-belt is deposited and a sluice beneath said screen, substantially as shown and for the purpose set forth.

610,764. CONCENTRATOR. JOSEPH MAIT, Los Angeles, Cal. Filed Oct. 27, 1897. Serial No. 656,563. (No model.)



Claim.—An ore-concentrator comprising a suitable framing, a swinging frame, a divided rod journaled on the framing, the supporting-frame mounted on the inner ends of the divided rod having a crank and whereby the swinging frame is suspended, the loose pulley mounted on the rod, the table mounted on the supporting-frame, having a discharge-tube provided with a worm-wheel within the swinging frame, the shaft journaled in the swinging frame and carrying a worm meshing with the worm-wheel, a pulley fixed to the worm-shaft and connected with the rod-pulley, the vertical rock-shaft having a fork engaging the crank on the rod, and provided with a lateral rod, an auxiliary shaft provided with a fixed pulley and a wheel having a wrist-pin, an arm connecting the wrist-pin with the lateral rod, a counter-shaft having a fixed pulley connected with the rod-pulley, and the driving-shaft having fixed pulleys connected with the pulleys of the auxiliary and counter shafts; substantially as described.

610,765. MEANS FOR DETACHABLY UNITING BARRELS TO STOCKS. WILLIAM MASON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Jan. 24, 1898. Serial No. 667,701. (No model.)



Claim.—1. A take-down gun having a gun-frame, a gun-barrel, an internally and externally threaded take-up sleeve mounted on the gun-barrel, and taking into the threads formed in the gun-frame, a coupling-ring mounted upon the gun-barrel, and adapted to be coupled in different positions of adjustment with the said sleeve, and a locking-ring also mounted upon the gun-barrel, and adapted to positively hold the coupling-ring coupled with the take-up sleeve.

2. A take-down gun having a gun-frame, a gun-barrel, an internally and externally threaded take-up sleeve mounted upon the gun-barrel, and taking into threads formed in the gun-frame, a coupling-ring mounted upon the gun-barrel, and adapted to be coupled in different positions of adjustment with the take-up sleeve, and a locking-ring also mounted upon the gun-barrel, and adapted to be normally coupled with the coupling-ring so as to rotate therewith.

3. A take-down gun having a gun-frame, a gun-barrel, an internally and externally threaded take-up sleeve mounted upon the gun-barrel, and having its forward end formed with a band of locking-teeth, a coupling-ring mounted upon the gun-barrel, and having its rear end formed with a band of locking-teeth corresponding to those of the take-up sleeve, and a locking-ring mounted upon the gun-barrel at a point forward of the coupling-ring, and constructed to normally keep the same crowded rearward, and thus coupled with the take-up sleeve.

4. A take-down gun having a gun-frame, a gun-barrel, a tubular magazine, a band having threaded openings for the reception of the threaded rear ends of the said barrel and magazine which it rigidly connects, an internally and externally threaded take-up sleeve mounted on the projecting butt end of the barrel, a coupling-ring mounted upon the barrel in position to be coupled with the said take-up sleeve, and a locking-ring mounted upon the barrel at a point forward of the coupling-ring, and constructed to normally hold the coupling-ring coupled with the take-up sleeve, the said coupling-ring and locking-ring being located within a deep recess formed in the upper end of the rear face of the said band.

5. A take-down, tubular-magazine gun, having a gun-frame provided with a magazine-receiving opening formed with interrupted threads, a tubular magazine formed with corresponding threads, and means for imparting positive lateral movement to the magazine so as to engage and disengage its threads with those of the frame, whereby the magazine may be inserted into and withdrawn from the gun-frame without rotating it and in a line parallel with the longitudinal axis of the gun-barrel which remains stationary while the magazine is being moved back and forth for its insertion into and withdrawal from the gun-frame.

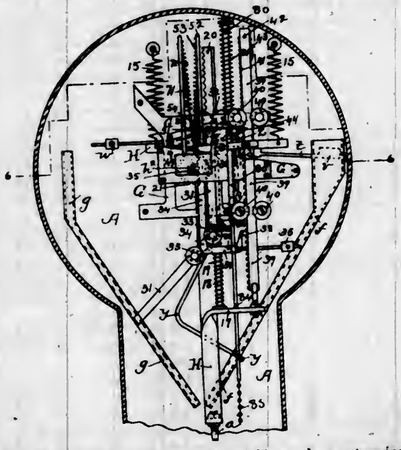
6. A take-down gun having a gun-frame, a barrel, and a tubular magazine, a band rigidly uniting the rear ends of the magazine and barrel, an internally and externally threaded take-up sleeve mounted on the projecting butt-end of the barrel, and having its external threads struck from an eccentric center for coaction with correspondingly-struck threads formed within the barrel-receiving opening of the gun-frame, means for rotating the said take-up sleeve, whereby the barrel, band and magazine are positively raised and lowered with respect to the gun-frame, and interrupted threads formed upon the magazine, and engaged with and disengaged from corresponding interrupted threads formed within the magazine-receiving opening of the gun-frame.

7. A take-down gun having a gun-frame, a gun-barrel, a take-up sleeve mounted on the gun-barrel, and a coupling-ring also mounted upon the gun-barrel, adapted to be coupled in different positions of adjustment with the said sleeve, and provided with a handle, adapted at its lower end to be snapped into a fixed part of the gun for holding the said ring in place.

8. A take-down gun having a gun-frame, a gun-barrel, a tubular magazine, a band uniting the rear ends of the barrel and magazine, a take-up sleeve mounted upon the gun-barrel, a locking-ring also mounted upon the gun-barrel and adapted to be coupled in different positions of adjustment with the said sleeve, and provided with a handle formed at its lower end with a retaining-lug adapted to be snapped into a retaining-recess formed in the lower portion of the band.

9. A take-down gun having a gun-frame, a gun-barrel, a tubular magazine, a band uniting the rear ends of the barrel and magazine, a take-up sleeve mounted upon the gun-barrel, and a coupling-ring also mounted upon the gun-barrel, and adapted to be coupled in different positions of adjustment with the said sleeve, and formed with a depending handle which engages with a stop-shoulder formed upon the band to stop the rotation of the sleeve when it reaches its full-open position.

610,766. COIN-CONTROLLED WEIGHING-SCALE AND GRIP AND LIFTING MACHINE. THOMAS G. S. MERRY, Boston, Mass., assignor to the Automatic Weighing, Lifting and Grip Machine Company, Portland, Me. Filed Jan. 12, 1898. Serial No. 666,411. (No model.)



Claim.—1. In a coin-operated weighing-scale, a rotary index-shaft, a coin-released locking mechanism therefor, and a second locking mechanism operated subsequently by the action of the same coin, substantially as specified.

2. In a coin-operated weighing-scale, the combination of a spring-scale balance; a rotary index-shaft, a gravity device for actuating said shaft, the movement of which is determined by said scale mechanism, and a spring for returning said gravity mechanism.

3. In a coin-operated weighing-scale, the combination of a spring-scale balance, a rotary index-shaft, a coin-released locking mechanism for the shaft, a gravity device for actuating the shaft when released, the movement of which is determined by the scale mechanism, and a device for locking the shaft after rotation, released by the action of the same coin, substantially as described.

4. In a coin-operated weighing-scale, the rotary index-shaft in combination with the coin-actuated lever, *l*, normally locking said shaft; the pawl, *k*, for locking said shaft after rotation, and the coin-actuated pawl-releasing lever, *y*, arranged to operate substantially as described.

5. In a coin-operated weighing-scale, the combination of the shaft, bearing the ratchet-wheels, *q*, *i*, with the coin-actuated locking-lever, *l*, engaging wheel, *q*, the locking-pawl, *k*, adapted to engage wheel,

i, the stop-lever, *y*, holding said pawl from engagement with said wheel, *i*, and adapted to be actuated by the same coin; and mechanism for rotating said shaft when released from said locking-lever, substantially as described.

6. In a coin-operated weighing-scale, the spring-scale balance comprising the bar, H, and its return-springs in combination with the index-shaft carrying a pinion; the gravity-rack, 20, provided with the spring-cushioned extension in position to be engaged by said bar on its return and thereby compressed whereby at a determined point in said return said rack may be actuated to reciprocate said shaft.

7. A coin-operated weighing and lifting machine comprising a dial, an index, and coin-controlled mechanism arranged to actuate said index to record the force expended in each of the two operations independently on said dial.

8. A coin-operated weighing, lifting and grip-testing machine, comprising a dial, an index and coin-controlled mechanism arranged to actuate said index to record the force expended in each of these three operations independently.

9. A coin-operated lifting and grip-testing machine comprising a dial, an index, and coin-controlled mechanism arranged to actuate said index to record the force expended in each of the two operations independently on said dial.

10. In a coin-operated weighing, lifting and grip-testing machine comprising a case provided with a single dial, and index therefor; two coin-chutes in said case; mechanism controlled by a coin in one chute for actuating the said index to record the weight applied, and by a coin in the other chute to record either the lifting or grip power applied.

11. The case, a lifting-handle, secured thereto against vertical movement, the spring-scale balance comprising the platform in combination with the index and a coin-controlled mechanism for actuating said index when said platform is depressed by the lifting strain, substantially as described.

12. The case, a grip-handle thereon, and a spring-scale balance comprising a platform in combination with an index, and a coin-controlled mechanism adapted to actuate said index to record when the grip power is applied, substantially as specified.

13. In a machine of the class described the swing-bar, 31, adapted to be actuated by the impact of a coin, a latch therefor, a sliding rack carried by said bar; an index-shaft; a pinion thereon meshing with said rack; a ratchet carried thereby, and adapted to drive said rack when moved in one direction and unlatch said swing-bar when moved in the opposite direction, substantially as described.

14. In a machine of the class described an index-shaft and coin-controlled actuating mechanism therefor, in combination with the friction-brake, 48, and its spring tensioned by connection with said shaft; the spriug-scale mechanism carrying the ratchet-bar, 39, provided with a projection for engaging and releasing said brake at a determined point in the passage of said bar.

15. In a machine of the class described the coin-actuated swinging bar, 31, and the latch therefor, in combination with the sliding rack carried by said bar, and fitted to drive the index-shaft; a spring-scale mechanism, the ratchet-bar, 39, a pawl actuated to operate said latch when the bar moves in one direction, and a pallet operating said rack when the bar moves in the opposite direction.

16. In a machine of the class described the case in combination with the swinging frame, K, pivoted thereon and the levers, 24, and, 25, fitted to slide and lock in said frame.

17. In a machine of the class described the spring-tensioned grip-actuated sliding rod in combination with the index-shaft and a coin-actuated mechanism adapted to be projected into the path of said rod whereby said shaft may be rotated substantially as described.

18. In a machine of the class described, the coin-actuated swing-bar and the shaft actuating rack carried thereby in combination with the grip-actuated sliding rod arranged to operate said rack substantially as described.

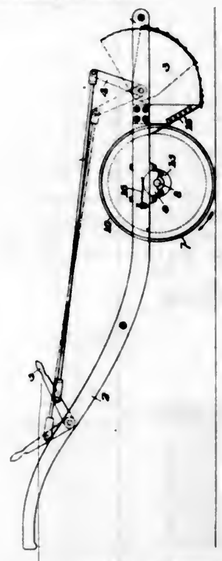
19. In a machine of the class described the coin-actuated swing-bar, 31, the shaft-actuating rack carried thereby; and a lock for said bar in combination with the grip-actuated bar, 80, adapted to operate said rack when its carriage is locked.

610,767. MAGNETIC SEPARATOR. AMBROSE MOWELL, Munhall, Pa. Filed Jan. 10, 1898. Serial No. 666,158. (No model.)

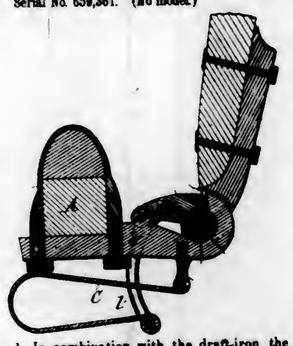
Claim.—1. A wheeled truck or barrow having a receptacle, a drum arranged to be rotated by the wheels of the truck or barrow and carrying electromagnets, and switches for said magnets arranged to be actuated by the rotation of the drum.

2. A wheeled truck or barrow having a drum secured between and concentric with its wheels a series of electromagnets mounted upon the drum, and a commutator arranged to successively supply the current to and cut it off from the magnets.

3. A wheeled barrow having a drum secured between and concentric with the wheels and of less diameter than said wheels, electromagnets set in recesses in said drum, and a cover-plate surrounding the drum and bearing upon its surface.



610,768. THILL-COUPLING. HARVEY A. MOYER and CHARLES J. GRAF, Syracuse, N. Y.; said Graf assignor to said Moyer. Filed Nov. 22, 1897. Serial No. 659,361. (No model.)



Claim.—1. In combination with the draft-iron, the stationary hook-shaped jaw on said bar, the coöperating jaw hinged to said bar back of the stationary jaw, the coupling-pin grasped between said jaws, and means for locking the hinged jaw in its closed position, the thill-iron formed with an integral rearwardly-projecting lip extending directly over the free end of the hinged jaw to arrest the accidental rising of said jaw to its open position, independent of the aforesaid locking means as set forth.

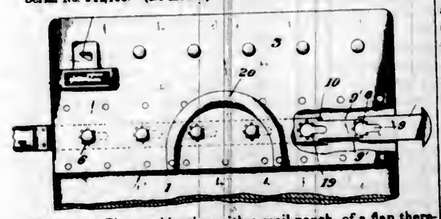
2. In combination with the draft bar formed with an integral hook-shaped jaw, the coöperating jaw hinged to the draft-bar back of the hook-shaped jaw, and means for locking said hinged jaw in its closed position, the thill-iron formed in one piece with the coupling-pin and with a tongue exteeding over the free end of the hinged jaw as set forth.

3. In a thill-coupling having the draft-bar formed with a hook-shaped stationary coupling-jaw and a coöperating coupling-jaw hinged to said draft-bar back of the stationary jaw, and terminated immediately back of the free end of the latter jaw, the adjacent end faces of said jaws disposed at an angle in relation to each other to permit the free end of the hinged jaw to pass across the end face of the stationary jaw and beyond the normal gripping position of the hinged jaw to invariably bear on the coupling-pin grasped between said jaws as set forth.

4. The combination with the coupling-pin formed tapering from its ends to its center, a flexible sheet provided in its central portion with slots disposed in parallel lines, said sheet being wrapped around the coupling-pin with the slots lengthwise of the pin to allow the central portion of the sheet to be compressed around the central portion of the pin, and jaws grasping said sheet with the inclosed pin and beveled corresponding to the tapers of the compressed sleeve as set forth.

5. The within-described blank for bushing for a double-tapered pin, which blank is rectangular-shaped and provided in its central portion with transverse excisions which are tapered from the centers of their lengths to the ends of the excisions as set forth and shown.

610,769. MAIL-POUCH. GENECA C. REESE, Knoxville, Tenn., assignor of one-half to Jesse R. Reese, Pana, Ill. Filed July 10, 1897. Serial No. 644,100. (No model.)



Claim.—1. The combination with a mail-pouch, of a flap therefor carrying a plurality of locking-pins adapted to pass through registering perforations in the body of the pouch, a locking-strap having projecting ends and which the locking-pins are adapted to engage, and a coacting lock carried on the projecting end of the strap, and a flap provided with a staple adapted to be engaged by the lock, substantially as described.

2. The combination with a mail-pouch, of an independent piece secured thereto and constituting the flap, a locking-strap movable between the body portion of the pouch and said piece, a plurality of locking-pins carried by the flap and adapted to extend through registering perforations in the body of the pouch and locking-strap, said locking-strap having projecting ends and adapted to move longitudinally to prevent the withdrawal of the locking-pin, and a coacting lock carried on the projecting end of the locking strap, and a flap provided with a staple adapted to be engaged by the lock, substantially as described.

3. The combination with a mail-pouch, of an independent piece secured thereto and constituting the flap, a locking-strap movable longitudinally between the body portion of the pouch and said piece, said locking-strap provided with perforations adapted to register with the perforations formed in the body portion of the pouch, cups or sockets carried by the independent piece and in line with the perforations of the pouch and locking-strap, a plurality of headed locking-pins carried by the flap and adapted to extend through the perforations of the pouch and locking-strap with their heads engaging the cups, said locking-strap being provided with slots communicating with the perforations, whereby when the strap is moved longitudinally the withdrawal of the locking-pins is prevented, and coacting locking means carried by the strap and flap, substantially as described.

4. The combination with a mail-pouch provided with perforations, of a locking-strap having projecting ends and movable longitudinally thereon and formed with perforations adapted to register with the perforations of the pouch, locking-pins carried by the flap and adapted to extend through the perforations of the pouch and strap, said strap being cut away on its edge, a pin carried by the pouch and engaging said cut away portion to limit the movement of the strap, and a coacting lock carried on the projecting end of the strap, and a flap provided with a staple to engage the lock, substantially as described

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610,770. RAZOR. FREDERIC SCHRADER, New London, Iowa. Filed Jan. 29, 1896. Serial No. 668,496. (No model.)



Claim.—1. In a razor, the combination with a handle, a knife-bar pivoted thereto and comprising a main portion cut away on one side from its outer end inward to an upright bevel which is dovetailed toward its center, a locking-bar for complementing this cut-away portion and having its inner end cut oblique to engage said dovetail, a transverse screw-pivot between the outer ends of these members whereby the locking-bar will move in a plane parallel with that of the knife-bar, and means for detachably fastening their inner ends; of a blade, and means for holding it between the members of the knife-bar, as and for the purpose set forth.

2. In a razor, the combination with a handle, a knife-bar having an upright slot with a pin across the same at its outer end, and a catch carried by the knife-bar and having a pin passing removably across the slot near its inner end; of a blade adapted to enter said slot, and longitudinally-opening notches in the blade spaced to engage said pins, as and for the purpose set forth.

3. In a razor, the combination with a handle, a knife-bar having an upright slot with a pin across its outer end, and a spring-catch attached at one end to the knife-bar and having a handle at the other end, the body of this catch carrying a pin projecting across said slot and having a beveled outer end; of a blade having openings in its body spaced to receive said pins, as and for the purpose set forth.

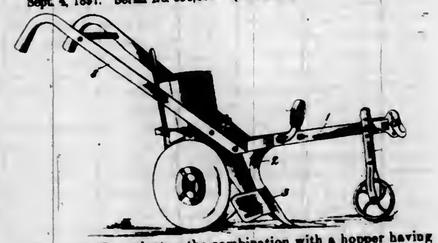
4. In a razor, the combination with a handle, a knife-bar having an upright slot through its body with a pin across its outer end, a spring-catch secured to the bar and having a pin also passing across said slot, and a lip on said catch passing over the bar; of a knife having openings spaced to receive said pins and remote from its upper edge the same distance as the pin stands from the lip, as and for the purpose set forth.

5. In a razor, the combination with a handle, a knife-bar having an upright slot through its body with a pin across its outer end, a spring-catch secured to the bar and having a pin also passing across said slot, and a lip on said catch passing over the bar and provided with a downturned tongue at its free end that portion of the bar forward of the slot having a notch in which said tongue moves; of a knife having openings spaced to receive said pins and remote from its upper edge the same distance as the pin stands from the lip, as and for the purpose set forth.

6. In a razor, the combination with a handle, a knife-bar having an upright slot in its body, and a spring-catch attached at one end to the rear of the body, having at its other end a handle standing opposite a thumb-notch in the back of the body and having at its center a pin projecting across said slot in the body and above the same a lip projecting over the body and carrying a downturned tongue moving in a notch in the front half of the body; of a blade, means for detachably connecting its outer end with the outer end of the body, and an opening in its inner end adapted to be engaged by said pin and remote from its upper edge the same distance as the pin stands from the lip, as and for the purpose set forth.

7. In a razor, the combination with a handle, a knife-bar consisting of a main portion cut away on its front half and a locking-bar adapted to complement said cut-away portion, and transverse screws removably connecting these parts at the ends of the locking-bar; of a blade adapted to fit between the parts of the knife-bar and having longitudinally-opening notches in its body one of which engages the outermost screw, and a pin removably passing through the parts of the locking-bar and through the inner notch in the blade, as and for the purpose set forth.

610,771. PLANTER. JAMES D. SCHOFIELD, Dallas, Tex. Filed Sept. 4, 1897. Serial No. 650,660. (No model.)



Claim.—1. In a planter, the combination with a hopper having a lower feed-opening at one side of its center, of a seed-disk rotatably supported in the bottom of the hopper and provided with a central upwardly-disposed stud, a transverse bridge-piece located in the hopper, a post depending from the said bridge-piece and having a bearing at its lower end for engaging the said stud of the seed-disk, and means for adjustably securing the bridge-piece to the wall of the hopper.

2. In a planter, the combination with a hopper having a lower feed-opening at one side of its center, of a seed-disk rotatably supported in the hopper-bottom and provided on its upper side with a bearing-cavity, a transverse bridge-piece located in the hopper and having a depending post immovably connected with the bridge-piece and terminating in a reduced bearing end entering said bearing-cavity of the seed-plate, and means for vertically adjusting the bridge-piece in the wall of the hopper.

3. In a planter, the combination with a hopper having a lower

feed-opening at one side of its center, of a seed-disk rotatably supported in the hopper-bottom and provided on its upper side with a bearing-cavity, a transverse bridge-piece located in the hopper and having the terminals at its ends bent at right angles and slotted, adjusting-bolts passed through the slotted angular ends of the bridge-piece and the walls of the hopper, and a post depending from the bridge-piece and having a reduced bearing end conforming to the bearing-cavity of the said disk.

4. In a planter, the combination with a hopper having a lower feed-opening and a central opening in its bottom, of an operating-shaft extending through the latter, means for rotating the shaft, a feed-disk carried by the shaft and located in the bottom of the hopper and provided with an annular encircling flange and lugs, a seed-disk having its under side provided with an annular hub adapted to receive the flange of the feed-disk and provided with notches for engaging the lugs thereof, and means for removably retaining the seed-disk in position upon the feed disk.

5. In a planter, the combination with a hopper having a central opening formed in its bottom, a vertical operating-shaft extending therethrough, and means for rotating the said shaft, of a feed-disk supported in the bottom of the hopper and having its under side provided with a toothed hub, a flanged ratchet-wheel mounted for vertical movement upon and adapted to rotate with the shaft, a spring for normally elevating the same into engagement with the toothed hub of the feed-disk, a shifting yoke loosely engaging the ratchet-wheel and provided with a radial arm, a yoke-operating rod located at the side of the hopper and provided with a slot having a lateral offset and at its lower end loosely engaging the said arm, and a headed stud projecting from the hopper-wall and through the said slot of the rod.

6. In a planter, the combination with the U-shaped frame or main yoke, a hopper supported thereby and having its bottom provided with a central opening and with a lower feed-opening, of an operating-shaft extending through the bottom, means for rotating the operating-shaft, a ratchet-wheel carried by the shaft below the hopper-bottom and free to move vertically on the operating-shaft and adapted to rotate therewith, a feed-disk located in the hopper-bottom upon the operating-shaft and having its under side provided with a toothed hub to engage the ratchet-wheel when the same is operated in one direction, a curved operating-yoke connected loosely to the ratchet-wheel and provided with opposite trunnions bearing in the terminals of the yoke-frame and with a lateral arm, an operating-rod loosely connected to the outer end of the arm and provided with a slot having an offset, a headed stud extending from the hopper-wall and engaging the slot of the rod, and a spring arranged on the operating-shaft for normally elevating the ratchet-wheel into engagement with the teeth of the hub of the feed-disk.

7. In a planter, the combination with a hopper and its supporting-frame, of a cylindrical gear-case supporting the frame, upper and lower rings swiveled on the gear-case and provided with lateral bearings, opposite axles journaled in the bearings and extending beyond the opposite ends of the same, bevel-gears at the inner ends of the axles (one of which is smaller than the other), covering-disks at the outer ends of the axles, a central operating-shaft journaled in the gear-case, large and small bevel-gears carried thereby, which respectively mesh with and are adapted to be driven by the large and small bevel-gears of the axles, a stud extending radially from the gear-case, a stud extending radially from each ring, a lever fulcrumed between its ends on the stud of and loosely connected to the studs of the rings at each side of the fulcrum-stud and feed devices connected to and operated by the operating-shaft.

8. In a planter, the combination with a cylindrical gear-case and a hopper supported thereabove, of upper and lower rings swiveled on the gear-case, each ring being provided with a radial bearing, opposite axles located in and extending beyond these bearings, covering-disks carried by the outer ends of the axles, a vertical operating-shaft journaled in the gear-case, a bevel-gear carried thereby, a similar gear carried by the inner end of one of the axles and meshing and driving the gear of the operating-shaft, studs extending from the gear-case and from the rings, a lever fulcrumed on the stud of the gear-case and at opposite sides thereof loosely engaging the studs of the rings, and feed devices operated by the rotations of the operating-shaft.

9. In a planter, the combination with a cylindrical gear-case, a superimposed hopper carrying a feed mechanism, an upper and a lower ring swiveled on the gear-case, each of said rings having a radial bearing, axles mounted in the bearings, covering-disks located at the outer ends of the axles, means for partially rotating the rings in opposite directions, a vertical operating-shaft, feed mechanism operated thereby, and means for conveying motion from one of the axles to said operating-shaft.

10. In a planter, the combination with a gear case, a superimposed hopper carrying a feed mechanism, of axles projecting radially from the gear-case, means for connecting them movably with the gear-case, covering-disks located on the outer ends of the axles, a vertical feed-shaft journaled in the gear-case and adapted to operate the feed mechanism, means for conveying motion from one of the axles to the feed-shaft, and means for securing said axles at a point of their radial adjustment.

11. In a planter, the combination with a gear case, of an operating-shaft journaled therein, a superimposed hopper carrying feed mechanism operated by the operating shaft, of covering-disks located at opposite sides of the gear-case, means for simultaneously angling or adjusting the same, and means for independently adjusting them with relation to each other, a gearing located in the gear-case for conveying motion from the covering-disks to the operating-shaft.

12. In a planter, the combination with a cylindrical gear-case upper and lower rings swiveled thereon and provided with studs, independent axles radiating from and journaled in said rings and carrying at their outer ends covering-disks, a stud projecting from the gear-case between the rings, an operating-shaft journaled in the gear-case, a superimposed hopper carrying feed mechanism operated by the operating-shaft, and gears within the gear-case for conveying motion from the axles to the operating-shaft, of a hand-lever fulcrumed on the stud of the gear-case and loosely connected at opposite sides thereof to the studs of the upper and lower rings, and means for securing the lever at any point of its adjustment.

13. In a planter, the combination with a cylindrical gear-case an operating-shaft journaled therein, a superimposed hopper carrying a feed mechanism operated by the operating-shaft, upper and lower rings swiveled on the gear-case and having bored radial bearings arranged out of the same horizontal plane with each other, axles located in the bearings, covering-disks secured to the outer ends of the axles, bevel gears at the inner ends of the axles within the gear-case, bevel and oppositely-disposed gears on the operating-shaft each meshing with one of the gears of the axles, of studs radiating from the rings and from the gear-case, a hand-lever fulcrumed on the stud of the gear-case and connected loosely to the studs of the rings at each side of said fulcrum-point, a spring mounted on the fulcrum-stud of the case and bearing on the lever, an upper transverse guide bar or frame, a clip connecting the lever slidably to the frame, and means for securing the lever at any point of its adjustment.

14. In a planter, the combination with a cylindrical gear-case having a radial fulcruming-stud, a superimposed hopper carrying a feed mechanism, an operating shaft journaled in the casing and adapted to operate the feed mechanism, opposite axles carrying covering-disks, rings swiveled on the casing and supporting the axles and studs extending from the rings, of a hand-lever fulcrumed on the stud of the gear-case and above the same provided with an opening for engaging the stud of the upper ring, a link loosely mounted on the stud of the gear-case at one side of the hand-lever and at opposite sides of its fulcrum-point slotted to loosely engage the studs of the upper and lower rings, and above the upper stud concentrically slotted with relation to said fulcrum-point, and a set-bolt passed through the aforesaid concentric slot and through an opening in the hand-lever.

15. In a planter, the combination with a cylindrical gear-case having a radial fulcruming stud, a superimposed hopper carrying a feed mechanism, an operating-shaft journaled in the casing and adapted to operate the feed mechanism, opposite axles carrying covering-disks, rings swiveled on the casing and supporting the axles and studs extending from the rings, of a hand-lever fulcrumed on the stud of the gear-case and above the same provided with an opening for engaging the stud of the upper ring, a link loosely mounted on the stud of the gear-case at one side of the hand-lever and at opposite sides of its fulcrum-point loosely slotted to engage the studs of the upper and lower rings, and means for adjustably securing the link to the hand-lever.

16. In a planter, the combination with the divided cylindrical gear-case, comprising the opposing cylindrical caps provided with annular beads at their opposite ends, the yoke-frame secured on the upper cap, the bolts passing through and connecting the caps and frame, said caps having their meeting edges provided with openings or recesses combining to form side slots, the upper cap having a depending threaded extension, a threaded bolt carrying a spring mounted adjustably therein, opposite rings for encircling the caps and swiveled between the beads thereof, each ring being provided with an inward extension carrying a radial bored stud and short studs, the bearing-studs being out of the same horizontal plane, axles mounted in the bored studs, covering-disks located on the outer ends of the axles and bevel-gears at the inner ends of the axles within the gear-case, of a vertical operating-shaft journaled in the gear-case, a superimposed hopper carrying feed mechanism operated by the operating-shaft, opposing bevel-gears carried by the operating-shaft and meshing each with one of the bevel-gears of the axles, a lever fulcrumed on the stud of the gear-case, and loosely connected at each side thereof with the studs of the rings, and means for securing said lever at the desired point of adjustment.

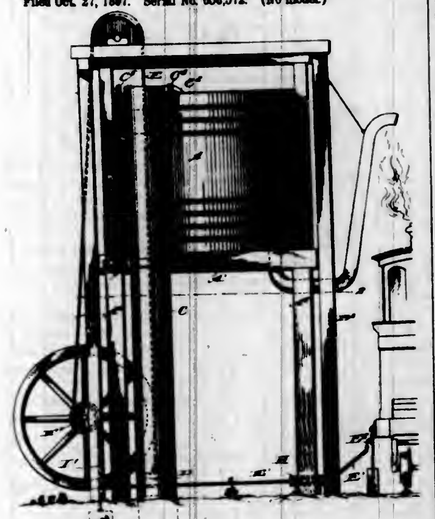
17. In a planter, the combination with a pair of radially-movable axles carrying covering-disks, of means for radially adjusting the disks with relation to each other, and scraper-blades supported at the sides of the disks and adapted to move therewith.

18. In a planter, the combination with a cylindrical gear-case upper and lower rings encircling the same and adapted to revolve thereabout, each of said rings being provided with a radial bored arm forming a bearing, opposite axles journaled in the arms and at their outer ends carrying covering-disks, and scraper-blades supported by the bored arms and adjustable thereon with relation to the disks, of a vertical operating-shaft, a superimposed hopper carrying feed mechanism, and means for conveying motion from one of the said axles to the said operating-shaft, and for adjusting the aforesaid axles with relation to each other.

19. In a planter, the combination with a hopper having lateral extensions at its bottom, and a subjacent U-shaped yoke-frame having its terminals laterally bent to agree with the extensions, and bolts connecting the extensions with the bent terminals of the frame, of a cylindrical gear-case located below the yoke-frame and secured thereto, a pair of axles supporting covering-disks at their outer ends located at opposite sides of the gear-case, means for rotatably supporting the axles on the gear-case, a lever for simultaneously moving the axles, and a guide-frame for the lever having its ends secured to the extensions of the hopper and the bent terminals of the yoke-frame.

20. In a planter, the combination with a hopper, a feed mechanism carried thereby, and means for operating the latter, of a pair of opposite covering-disks, means for simultaneously angling or adjusting the same with relation to each other and for angling one more than the other, or less, as the travel of the planter may require.

610,772. RAILWAY-TANK FEEDER. JOHN W. SKILTON, Daytona, Fla., assignor of two-thirds to Egbert R. Brown, Chicago, Ill. Filed Oct. 27, 1897. Serial No. 656,572. (No model.)



Claim.—1. The combination with a pipe provided with a valve at its lower portion and having a valved piston therein, of means for elevating said piston, and means for admitting air beneath said piston when it approaches the discharge at substantially the upward limit of its movement: substantially as specified.

2. The combination with a pipe provided with a valve at its lower portion and having a valved piston therein, of means for elevating said piston, and an air-vent beneath the discharge at the upper end of said pipe; substantially as specified.

3. The combination with a pipe having a valved piston therein, of a valved plate located at the lower portion of said pipe, means for elevating said piston in said pipe, and an air-vent at the upper portion of said pipe beneath a discharge-opening; substantially as specified.

4. The combination with a pipe provided with a valve at its lower portion and having a valved piston therein, of a power-shaft, a winding-wheel thereon provided with a cable adapted to connect with a source of motive power, a winding-drum on said shaft provided with a cable connected to said valved piston, a retracting-weight connected to said shaft to return the parts to their initial position and a vent device at the upper portion of said pipe; substantially as specified.

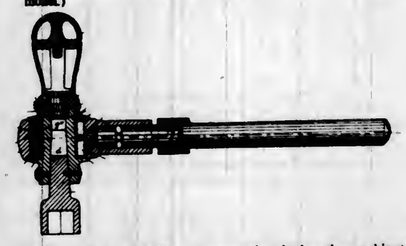
5. The combination with a pipe provided with a valve at its lower portion and having a valved piston therein, of a power-shaft, a winding-wheel thereon provided with a cable adapted to connect with a source of motive power, a winding-drum on said shaft provided with a cable connected to said valved piston, a vertically-pivoted hooked lever located on the source of motive power and connected to the cable leading from said winding-drum, means for oscillating said lever in a vertical plane when said piston has reached substantially the vertical limit of its movement, and a vent device adjacent to a discharge-opening for admitting air beneath said piston prior to the movement of said lever; substantially as specified.

6. The combination with a tank and its supporting-frame, of a pipe provided with a valve at its lower portion and located adjacent to said tank, a valved piston, a supplemental supporting-frame independent of the tank-frame and provided at its upper portion with a sheave and at its lower portion with a power-shaft, cables extending from said power-shaft to said valved piston and to a source of motive power and a retracting device connected to said shaft for returning said cables to their initial position; substantially as specified.

7. The combination with a pipe having at its lower portion a valved plate, of a valved piston operating within said pipe, means connecting said piston with a source of motive power, an air-vent at the upper portion of said pipe, and means to release the motive power for elevating said valved piston after the same has passed said air-vent; substantially as specified.

8. The combination with a tank, of a pipe located adjacent thereto and provided at its lower portion with a valved plate, air-vents at the upper portion of said pipe, a valved piston within said pipe, a power-shaft provided with a winding-drum, a cable extending from said winding-drum to said valved piston, a winding-wheel located on said power-shaft, a cable extending from said winding-wheel to a moving member, and a releasing device carried by said member and adapted to release said cable when the valved piston reaches substantially the upward limit of its movement, substantially as specified

610,778. HAND DRILLING-MACHINE. BENJAMIN F. SMITH, Somerville, Mass. Filed Feb. 21, 1898. Serial No. 671,054. (No model.)



Claim.—In a hand drilling or nut-turning device, the combination with the tool-holder and a lever journaled about said tool-holder and operating to turn the tool-holder in one direction, said tool-holder having a cylindrical recess in its upper end, an angular recess below the cylindrical recess and an inclined annular shoulder between said recesses, of a removable handle having a cylindrical shank corresponding to the cylindrical recess, a conical flange seating on the inclined shoulder, and an angular shank fitting the said angular recess, said shank having an annular groove formed between its cylindrical portion and conical flange, and a spring locking-pin arranged to project through the tool-holder into said groove, substantially as described and for the purpose specified.

610,774. GILL-BOX FOR PREPARING WOOL. JOSEPH SMITH and WILLIAM HOLDSWORTH, Halifax, England. Filed Jan. 29, 1898. Serial No. 668,473. (No model.)

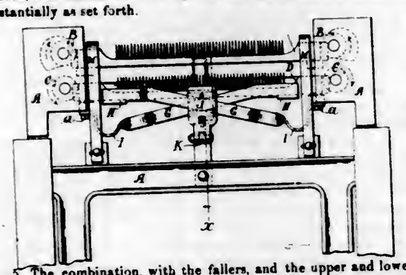
Claim.—1. The combination, with the fallers, and the upper and lower saddles; of a pivoted lever, means for oscillating the said lever periodically, and a support for receiving the fallers as they slide off the upper saddle, said support being operatively connected with and lowered by the said lever, substantially as set forth.

2. The combination, with the fallers, and the upper and lower saddles; of a spring-support for receiving the fallers as they slide off the upper saddle, and means for lowering the said support periodically, substantially as set forth.

3. The combination, with the fallers, and the upper and lower saddles; of a pair of crossed and pivoted bars which receive the fallers as they slide off the upper saddle, and means for lowering and raising the said bars periodically, substantially as set forth.

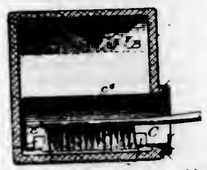
4. The combination, with the fallers, and the upper and lower

saddles; of a pair of crossed spring-bars which receive the fallers as they slide off the upper saddle, supports to which the said bars are secured, and means for lowering the said spring-bars periodically, substantially as set forth.



5. The combination, with the fallers, and the upper and lower saddles; of a pair of crossed and pivoted bars which receive the fallers as they slide off the upper saddle, a block engaging with the middle parts of the said bars, and means for lowering and raising the said block periodically, substantially as set forth.

610,775. TOOTH-POWDER RECEPTACLE. WILLIAM S. THOMPSON, Jr., Woodside, Md. Filed Jan. 15, 1898. Serial No. 666,791. (No model.)



Claim.—1. A tooth powder receptacle provided with a brush-charging chamber at the bottom thereof, an opening into said chamber through the front wall of the receptacle and a partition above said opening, and a space between said partition and one or both of the side walls of the receptacle for the passage of powder to the brush-charging chamber, substantially as described.

2. A tooth-powder receptacle provided with a brush-charging chamber at the bottom thereof, an opening into said chamber through the front wall of the receptacle, and a partition above said opening provided with depending portions which together with the side walls of the receptacle form powder-passages to said brush-charging chamber, substantially as described.

3. A tooth-powder receptacle provided with a brush-charging chamber at the bottom thereof, an opening into said chamber through the front wall of the receptacle, and a partition above said opening having depending portions which together with the side walls of the receptacle form powder-passages to said chamber, the said passages communicating with the charging-chamber at a point above the bottom thereof, substantially as described.

4. In a tooth-powder receptacle the combination of a powder-supply chamber and a brush charging chamber having one or more openings communicating with the supply chamber and an opening for the insertion of a tooth-brush, the latter having a cover hinged at its top and adapted to be swung open by a brush on entering the chamber and close of its own weight after removal of the brush therefrom, substantially as described.

5. A tooth-powder receptacle provided with an opening in its front wall at or near the bottom thereof, and a tubular structure inserted within said opening, having an open outer end for the insertion of a tooth-brush and an opening or openings at or near the under side thereof communicating with the interior of the receptacle, the sides of the tubular structure and the side walls of the receptacle forming powder-passages leading to the opening or openings at or near the bottom of the tubular structure, substantially as described.

6. A tooth-powder receptacle provided with a brush-charging chamber at the bottom thereof, an opening into said chamber through the front wall of the receptacle and a partition above said opening provided with depending portions which together with the side walls of the receptacle form powder-passages to said chamber, the side walls of the receptacle being curved or inclined for directing powder beneath said partition, substantially as described.

7. A tooth-powder receptacle provided with a brush-charging chamber at the bottom thereof, an opening into said chamber through the front wall of the receptacle, and a partition above said opening provided with depending portions which together with the side walls of the receptacle form powder-passages to said chamber, the bottom of the latter being curved or inclined downwardly from the sides of the chamber to the center thereof, substantially as described.

8. A tooth-powder receptacle provided with an opening in its front wall at or near the bottom thereof, a tubular structure inserted within said opening having an open outer end for the insertion of a tooth-brush, and an opening or openings at or near the bottom or under side thereof communicating with the interior of the receptacle and means for supporting said structure slightly above the bottom of the receptacle, the side walls of the tubular structure and the side walls of the receptacle forming powder-passages leading to the opening or openings at or near the bottom of said tubular structure, substantially as described.

9. A tooth-powder receptacle provided with an opening in its front wall at or near the bottom thereof, and a tubular structure inserted within said opening, having an open outer end and an opening or openings at or near the bottom or under side thereof communicating with the interior of the receptacle, the side walls of said structure and the side walls of the receptacle together forming powder-passages communicating with the interior of the tubular structure, the latter being provided with a guard at or near the mouth or entrance thereto, substantially as described.

10. A tooth-powder receptacle having a main powder-supply chamber and a brush-charging chamber communicating therewith by way of one or more openings, a tube of paper or other material inserted within the brush-charging chamber for temporarily closing the openings leading from the supply-chamber, substantially as described.

610,776. TILE. WILLIAM THOMSON, Manchester, England. Filed Apr. 23, 1898. Serial No. 678,632. (No model.)



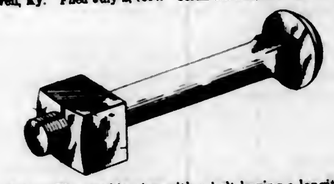
Claim.—1. The process of making tiles readily attachable, which consists in applying to the surface of the tile a solution of soluble glass mixed with an insoluble silicate and zinc oxid, embedding small pieces of hard material in said mixture, and heating the tile until the mixture forms an enamel-like coating.

2. A tile comprising a body or tile proper, a coating applied to the back of said body and containing soluble glass, an insoluble silicate and zinc oxid, and pieces of hard material embedded in said coating.

3. The process of making tiles and the like readily attachable, which consists in applying to the surface of the tile a solution of soluble glass mixed with an insoluble silicate and zinc oxid, and heating the tile to a temperature slightly above that of boiling water, causing the mixture to form an enamel-like coating.

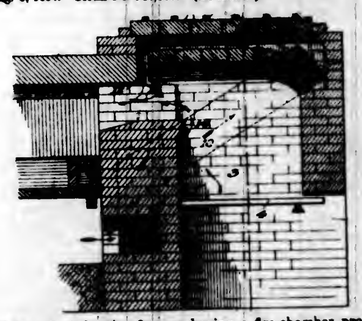
4. A tile or the like, comprising a body and an enamel-like coating applied to the back thereof and containing soluble glass, an insoluble silicate, and zinc oxid.

610,777. NUT AND BOLT LOCK. JOSEPH G. VENABLE, Broadwell, Ky. Filed July 2, 1897. Serial No. 643,271. (No model.)



Claim.—The combination with a bolt having a longitudinal slot or groove extending from its screw-threaded end across a portion only of its screw-threads, of a nut having a radial slot extending from its threaded bore to its periphery and from its outer face inward, and terminating at its inner end in an angular extension of the key-slot at right angles to the main portion thereof and forming a radial key-seat, and a rigid angular key adapted to be inserted in the slot in the nut, one arm of said key extending through the nut and engaging the angular key-seat therein, and the other extending outward from said angular key-seat through the groove in the bolt toward the screw-threaded end thereof, substantially as described.

610,778. FURNACE. ROBERT L. WALKER, Allegheny, Pa. Filed Aug. 6, 1897. Serial No. 647,299. (No model.)

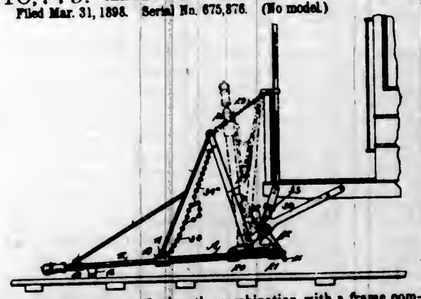


Claim.—1. A heating-furnace having a fire-chamber provided with a closed top, grate-bars in the chamber, a suitable side opening for charging fuel upon the bars, an air-heating chamber covering the major portion of the roof of the fire-chamber, a port leading from the air-chamber into the throat of the furnace, and a depending offset extending in front of and to a point lower than the mouth of the port and arranged to deflect the flame and fuel-gases and commingle them with the heated air.

2. A heating-furnace having a fire-chamber provided with a closed top, and having grate-bars and a suitable opening for charging fuel upon the bars, an air-heating chamber covering a major portion of the roof of the fire-chamber, a hollow bridge-wall having an air-inlet, a flue in the side wall of the furnace connecting the hollow bridge-wall with the air-heating chamber, a port leading from the air-chamber into the throat of the furnace, and a depending offset extending in front of and to a point lower than the mouth of the port and arranged to deflect the flame and gases and commingle them with the heated air.

3. A heating-furnace having an air-heating chamber in the roof of its fire-chamber, a port leading therefrom into the throat of the furnace, a depending offset extending in front of and to a point lower than the mouth of the port, and a bridge-wall having at its upper end a deflecting-lip which projects into the fire-chamber.

610,779. CAR-FENDER. WILLIAM T. WATSON, Victoria, Canada. Filed Mar. 31, 1898. Serial No. 675,876. (No model.)



Claim.—1. In a car-fender, the combination, with a frame comprising a main section having tubular side bars closed at their rear ends by removable plugs, and a sliding section the side bars whereof enter the side bars of the main section of the frame, springs intervening the rear ends of the side bars of the sliding frame-section and the plugs in the main frame-section, brackets secured to the rear portion of the main frame-section at its sides, and a cross-bar carried by the said brackets, of standards pivotally attached to the said brackets, a yielding bed attached to the said standards and the forward portion of the main section of the frame, and a second yielding bed attached to the forward portion of the sliding section of the frame and to the bed carried by the main frame-section, the attachment to the latter bed being near its center, as and for the purpose specified.

2. In a car-fender, the combination, with a frame comprising a main section, the side bars of which are tubular and are provided with removable plugs at their rear ends, and a sliding section the side bars whereof have movement in the side bars of the main section of the frame, springs interposed between the rear ends of the side bars of the sliding section and the plugs of the main section of the frame, brackets carried by the side bars of the main section of the frame, and a cross-bar carried by said brackets capable of use as a handle for the fender, of arms projected from the forward end of the sliding section of the frame, a cushioned bar attached to the said arms, uprights pivoted to the brackets of the main section of the frame, a bed of yielding material secured to the forward end of the main section of the frame and to the upper portion of the said uprights, a second bed extending from the bed of the main section of the frame from a point below its ends to the forward extremity of the sliding section of the frame, and spring-controlled fastening devices attached to the upper ends of the said standards, as and for the purpose specified.

3. In a car-fender, the combination, with a frame comprising a main section and a spring-controlled sliding section, the sliding section being provided with a yielding cushion at its forward end, brackets secured to the rear side portions of the main section of the frame, a pivot-bar extending through said brackets, and standards pivoted to the brackets forward of the pivot-bar, of a yielding bed attached to the forward end portion of the main section of the frame and to the upper portion of the standards, a second yielding bed attached to the forward end of the sliding section of the frame and to the bed of the main section between the ends of the latter bed, hangers adapted for attachment to a car, having open sockets for the reception of the pivot-bar of the frame, latch devices arranged to extend over the open portions of the sockets for the hangers, keepers for the said latches, and spring-controlled retaining devices attached to the upper portion of the fender at the rear, and adapted also for attachment to a car, for the purpose set forth.

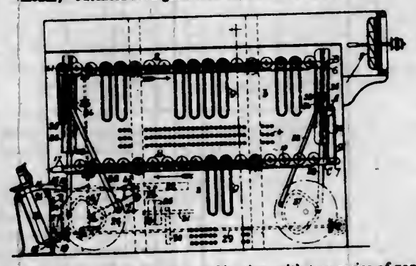
4. A car-fender, comprising a bed-supporting frame having a laterally-extending bar at its rear end adapted to form a pivot and extended at each end beyond the pivot-bearings to form handles, brackets or supporting-arms extending from the car and provided with means for releasably securing said pivot-bar, arms pivoted to the rear portion of the frame and extending upwardly, a guy or flexible connection leading from these arms to the car, and a yielding bed supported from these arms and the forward portion of the frame.

5. A car-fender, comprising a main frame having a pivotal support at its rear end, a sliding frame forward of and having a sliding support on the main frame, springs normally holding the sliding frame extended, arms near the rear of the main frame and extending upward, guys from said arms to the car, and two beds, one extending from the upper ends of the arms to the forward edge of the main frame and the other from a middle position of the first bed to the forward portion of the sliding frame.

610,780. EDGE-PROTECTOR FOR DRESS-SKIRTS. AARON M. WEBER, Oshkosh, Wis. Filed Oct. 6, 1897. Serial No. 654,216. (No model.)

Claim.—A combined dress-facing and edge-protector comprising a facing-strip of bias-cut waterproof cloth having along its lower edge a longitudinally-folded bias-cut waterproof binding, the lower edge of the facing-strip being within the folded binding and extending down to a point near the bottom of the fold of the binding, and a cord arranged between the lower edge of the facing-strip and the fold of the binding; substantially as described.

610,781. YARN-DRYING APPARATUS. WILLIAM WHEELWRIGHT, Huddersfield, England. Filed Dec. 31, 1897. Serial No. 668,908. (No model.) Patented in England Dec. 31, 1896, No. 34,976.



Claim.—1. In a drier, the combination, with two series of yarn-carriers arranged one above the other, and supports for the said carriers; of traversing mechanism operating to move the yarn-carriers of one series longitudinally in one direction and the yarn-carriers of the other series longitudinally in the reverse direction; and lifting and lowering mechanisms arranged at the ends of the said supports and operating to raise one end carrier from the lower to the upper

support and to lower one end carrier from the upper to the lower support, substantially as set forth.

2. In a drier, the combination, with a stationary pair of notched bars, and yarn-carriers carried by the said bars; of a movable pair of notched bars arranged adjacent to the aforesaid bars, and driving mechanism operating to move the said movable bars vertically and horizontally, whereby the yarn carriers are moved step by step along the said stationary bars, substantially as set forth.

3. In a drier, the combination, with a yarn-carrier, and stationary supports for the end portions of the yarn-carrier to rest on; of a movable jaw engaging with the middle part of the said carrier and lifting it onto the said supports, substantially as set forth.

4. In a drier, the combination, with a yarn-carrier comprising a central shaft and two reels for the yarn having a space between their adjacent ends at the middle part of the shaft; of stationary supports for the end portions of the said shaft, and a movable jaw which engages with the middle portion of the said shaft between the said reels and lifts the carrier onto the said supports, substantially as set forth.

5. In a drier, the combination, with a yarn-carrier, and a stationary support therefor; of a lever pivoted in front of the said support and provided with a jaw for engaging the said carrier, and a stop for limiting the rearward movement of the said lever, substantially as set forth.

6. In a drier, the combination, with yarn-carriers, and upper and lower supports therefor; of slides provided with stationary toothed racks and having their middle parts pivoted between the end portions of the said supports, toothed racks slidable longitudinally in the said slides and provided with lugs for transferring the yarn-carriers from one support to the other, toothed pinions engaging with the said stationary and slidable racks, and driving mechanisms operating to move the said pinions longitudinally of the slides and to oscillate the slides, substantially as set forth.

7. In a drier, the combination, with yarn-carriers, and upper and lower supports therefor; of slides provided with stationary toothed racks and having their middle parts pivoted between the end portions of the said supports, toothed racks slidable longitudinally in the said slides and provided with lugs for transferring the yarn-carriers from one support to the other, toothed pinions engaging with the said stationary and slidable racks, a driving-shaft, disks secured on the said shaft and provided with crank-pins, rods pivoted to the said crank-pins and carrying the said pinions, cams secured on the said shaft, and rods secured to the said slides and operatively connected with the said cams, substantially as set forth.

8. In a drier, the combination, with a yarn carrier, and a stationary support therefor; of a lever pivoted in front of the said support and provided with a jaw for holding the said carrier and depositing it on the said support, lifting devices and suitable actuating mechanism for raising the said carrier off the said support, and starting mechanism operatively connected with the said lever and operating to bring the said lifting devices into action when the said lever is moved rearwardly to deposit the carrier, substantially as set forth.

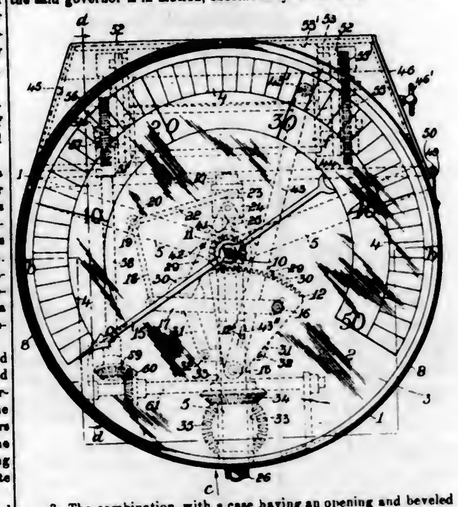
9. In a drier, the combination, with a yarn-carrier, and a stationary support therefor; of a lever pivoted in front of the said support and provided with a jaw for holding the said carrier and depositing it on the said support, lifting devices and suitable actuating mechanism for raising the carrier off the support, fast and loose pulleys for operating the said lifting devices, a belt-shifter, and rod and lever mechanism connecting the belt-shifter with the said pivoted lever and operating to start the said actuating mechanism when the said lever is moved rearwardly, substantially as set forth.

10. In a drier, the combination, with an upper and a lower stationary support, and a yarn-carrier; of lifting devices and suitable actuating mechanism for transferring the yarn-carrier from the lower to the upper support, automatic stopping mechanism, and a tappet operated by the said actuating mechanism and bringing the said stopping mechanism into action after the yarn-carrier has been transferred onto the said upper support, substantially as set forth.

610,782. SPEED AND DISTANCE INDICATOR AND RECORDER FOR VELOCIPEDES, &c. FERDINAND J. WICH, Didsbury, England. Filed Nov. 4, 1897. Serial No. 657,388. (No model.)

Claim.—1. The combination, with a case, a speed-indicating device, and a pivoted segment carried by the case and operatively connected with the said device; of a speed-governor carried by the said case; a stud 20 carried by the case; and a sleeve 19 pivoted on the said stud and provided with levers 18 and 22 arranged at an angle to each other and operatively connected with the said segment and governor respectively, whereby the said indicating device is moved in proportion to the speed of the governor, substantially as set forth.

2. The combination, with a case having an opening and guideways; of a frame slidable through the said opening and in the said guideways, rolls for supporting a recording-strip said rolls being carried by the said frame, a speed-indicating device provided with means for marking the recording-strip, a speed-governor operating and controlling the said device, and means for revolving the said rolls while the said governor is in motion, substantially as set forth.



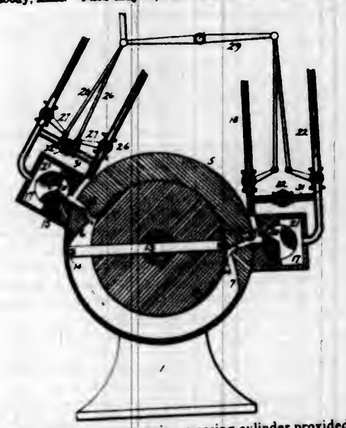
3. The combination, with a case having an opening and beveled guideways; of a frame slidable through the said opening and provided with a base-plate having beveled edges and slidable in the said guideways, rolls for supporting a recording-strip said rolls being carried by the said frame, a speed-indicating device provided with means for marking the recording-strip, a speed-governor operating and controlling the said device, and means for revolving the said rolls while the said governor is in motion substantially as set forth.

4. The combination, with a table for supporting a recording-strip; of two rolls 51 and 54 journaled under the said table and also carrying the said strip, means for preventing the roll 51 from revolving too quickly, driving mechanism connected to the roll 54, a pair of rolls 53 53' arranged between and to one side of the said rolls, said roll 53 being provided with projections which engage positively with the said strip, and driving devices connecting the said roll 53 with the roll 54, substantially as set forth.

5. In a speed indicator and register or recorder of the class described, the combination, with a dial-plate secured within an inclosing case or box having a glass top, a graduated scale on said dial, a pointer or index-finger coacting with said scale, a short shaft or arbor on which the pointer or index-finger is secured, a pinion fast on said arbor, a helically-coiled spring acting against the rotation of the pinion, a quadrant or sector engaging with the pinion, an arm secured to said quadrant or sector, a lever engaging with said arm and secured to a sleeve to which is also secured a second lever engaging the sides of an annular groove in a sliding collar, said sliding collar and a confined spiral spring acting thereon, a centrifugal governor connected with said sliding collar and with a sleeve by which it is revolved, a bevel-gear fast on said sleeve and meshing with a bevel-gear on the driving-shaft, of a stud secured to and depending from the quadrant or sector, an arm free to turn on the same stud on which the quadrant turns provided with a slot into which the stud projecting from the quadrant enters, a pencil or marker on the outer end of the pivoted arm, a platform or table against which the pencil or marker presses lightly, a roll for holding a recording-strip, a spring for retarding said roll, a pair of drawing or nipping rolls for drawing the recording-strip over the table, a take-up roll for winding on the strip after it leaves the nipping-rolls, the gearing intervening between the driven drawing-roll and the shaft on which the take-up roll is loosely mounted, a spring-plate fast on said shaft and pressing against one end of the take up roll to rotate same by frictional contact, a worm-wheel fast on the take-up-roll shaft, a worm-gear engaging with said worm-wheel and fast on a worm-gear shaft at whose opposite end is secured a bevel-gear in mesh with a bevel-gear on a cross-shaft, a worm-wheel gear fast on said cross-shaft, and a worm-gear meshing with the worm-wheel and secured on the driving-shaft of the instrument, substantially as set forth.

6. In a speed indicator and register or recorder of the class described, the combination of a centrifugal governor located within an inclosing case or box, gearing intermediate thereof and a suitable rotating or revolving part of a velocipede or vehicle for giving motion to said governor, the means intervening between the governor and an index-finger or pointer, which transmit the degree of movement of the governor outwardly under centrifugal action to said finger and cause it to advance over a graduated scale indicating the speed or mileage per hour or unit of time that the velocipede or vehicle is traveling, an arm or marker adapted to be actuated by a stud secured to the quadrant or sector and moved through the arc of a circle over a table or platform to varying extents and to trace or mark a line or diagram on a recording-strip drawn over said table and having longitudinal speed-divisions and horizontal distance-divisions marked off thereon, the diagram or zigzag line where it bisects the longitudinal divisions, giving the reading of the speeds attained during a run or drive and the distance traversed by the strip giving the mileage run, the platform or table over which the strip travels and is marked by the pencil, a raised piece pressed out of said table under which the recording-strip is caused to travel to guide and maintain it in a flat and extended condition, a drawer carrying the table and the series of rolls for paying out, drawing and taking up the recording-strip and means for rotating said rolls, and for positively traversing the recording-strip, the lower longitudinal edges of said drawer being beveled or inclined and taking into ways in the bottom of the inclosing box or case, and means for securing said drawer to the case or box, substantially as described.

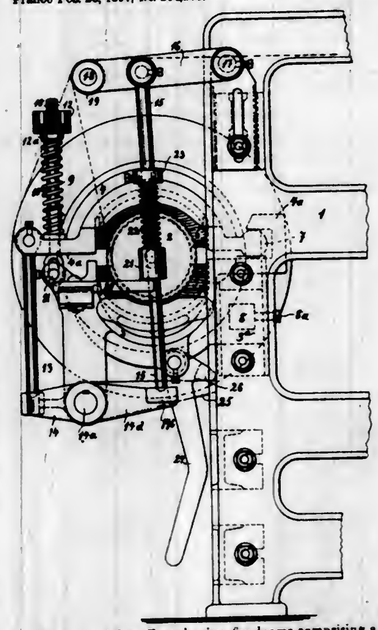
610,788. ROTARY ENGINE. ALVIN A. WISE and DANIEL WISE, Peabody, Kans. Filed May 15, 1897. Serial No. 636,723. (No model.)



Claim.—1. In a rotary engine, a casing-cylinder provided on one side with a wall forming a seat for the piston-head or drum and upon the opposite side with a wall removed from the drum to leave an intermediate steam-chamber, said walls being connected by inclines provided with steam and exhaust ports, in combination with a piston-head or drum fast upon a through-shaft, a diametrically-sliding piston extending through said drum and shaft and operated upon by the opposing inclines, steam-chests mounted upon the periphery of the casing-cylinder, upon opposite sides thereof, communicating with the steam and exhaust ports in said cylinder, said steam-chests being provided with steam and exhaust ports, rotary valves mounted within said steam-chests provided with through-ports and geared to the piston-shaft to be operated thereby to permit the passage of the steam through the valve twice in each revolution thereof, and valves for controlling the admission and exhaust of the steam, whereby when the steam is admitted to one of the steam-chests, the exhaust-port thereof will be closed, while the exhaust-port in the chest upon the opposite side will be opened and the steam-supply thereto cut off, substantially as described.

2. In a rotary engine, a casing-cylinder provided on one side with a wall forming a seat for the piston-head or drum and upon the opposite side with a wall removed from the drum to leave an intermediate steam-chamber, said walls being connected by inclines provided with steam and exhaust ports, in combination with a piston-head or drum fast upon a through-shaft, a diametrically-sliding piston extending through said drum and shaft and operated upon by the opposing inclines, steam-chests mounted upon the periphery of the casing-cylinder, upon opposite sides thereof, communicating with the steam and exhaust ports in said cylinder, said steam-chests being provided with steam and exhaust ports, rotary valves mounted within said steam-chests provided with through-ports and geared to the piston-shaft to be operated thereby to permit the passage of the steam through the valve twice in each revolution thereof, valves for controlling the admission and exhaust of the steam, whereby when the steam is admitted to one of the steam-chests, the exhaust-port thereof will be closed, while the exhaust-port in the chest upon the opposite side will be opened and the steam-supply thereto cut off, and connected levers for controlling the steam and exhaust pipes whereby when the steam-supply upon one side is opened and the exhaust-pipe on the same side is closed, the steam-supply upon the opposite side will be cut off and the exhaust opened by a single movement of the connected levers, substantially as described.

610,784. WARP-BEAM BRAKE. HERMANN WOLF, Lodz, Russia. Filed Dec. 24, 1897. Serial No. 663,372. (No model.) Patented in France Feb. 20, 1897, No. 264,278.



Claim.—1. A let-off mechanism for looms comprising a stationary and a movable brake-shoe adapted to act jointly upon a warp-beam, said movable shoe held to the beam under a yielding pressure, a whip-roll revoluble in swinging bearings, a resilient support for said roll and bearings, mechanism controlled by the whip-roll and controlling the movable brake-shoe, and means for adjusting the let-off mechanism transversely of the loom-frame, for the purpose set forth.

2. The combination with a warp-beam, a stationary brake-shoe, and a movable brake-shoe acting jointly on said beam, and a spring exerting its power on said movable shoe to press the same against the warp-beam; of a whip-roll, swinging bearings therefor, a resilient support for said roll a push-rod pivotally connected to one of said bearings, a two-armed rock-lever one of whose arms is engaged by said push-rod, an actuating-rod adapted to be moved by the other arm of said rock-lever, said actuating-rod connected with and adapted to move the movable brake-shoe against the stress of its spring, for the purpose set forth.

3. The combination with a warp-beam, a stationary brake-shoe, and a movable brake-shoe acting jointly on said beam, a spring exerting its power on the movable shoe to press the same against the warp-beam, and a regulating device for regulating the tension of said spring; of a whip-roll, swinging bearings therefor, a spring-support for said roll and bearings, a regulating device for regulating the stress of said supporting-spring, a push-rod pivotally connected to one of said bearings, a two-armed rock-lever one of whose arms is engaged by said push-rod, an actuating-rod adapted to be moved by the other arm of said rock-lever, said actuating-rod connected with and adapted to move the movable brake-shoe against the stress of its spring, for the purpose set forth.

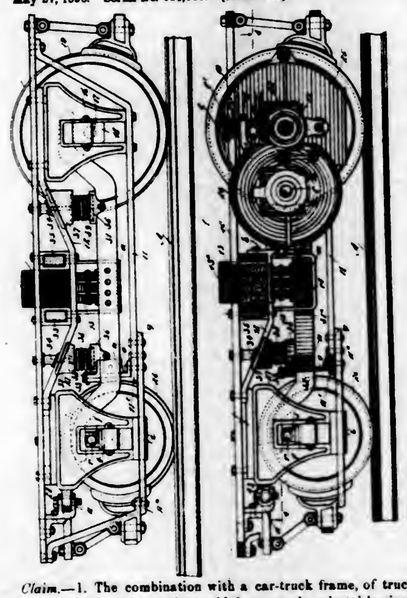
4. The combination with a warp-beam, a stationary and a movable brake-shoe acting jointly on said beam, the fixed rod 10 extending through an arm of the movable brake-shoe and carrying the spring 9 and nut 12 thereon, said spring having bearing on the aforesaid arm, and a lifter-rod pivotally connected thereto; of a whip-

roll, swinging bearings therefor, a push-rod 15 pivotally connected with one of said bearings, a spring and fixed abutments therefor, and a two-armed rock-lever adapted to be rocked by the push-rod and to act upon the aforesaid lifter-rod, substantially as and for the purpose set forth.

5. The combination with the brake adjustable transversely of the loom-frame, the push-rod 15 and lifter-rod 13; of the rock-lever 14 likewise adjustable transversely of the loom on its shaft 14^a, said lever having arms bent in opposite directions, one of said arms provided with a seat for the aforesaid lifter-rod and the other with a plurality of seats for the aforesaid push-rod, substantially as and for the purpose set forth.

6. The combination with the brake-shoe 6, the whip-roll-supporting arms 16, the actuating-rods 13 and 15 respectively connected with said brake-shoe and whip-roll-supporting arms; of the rock-lever 14 in arms of which said rods are stepped, the shaft 14^a to which said rock-lever is secured, the radial arm 25 on said shaft and the angle-lever 24 whose short arm has bearing on said radial arm, substantially as and for the purpose set forth.

610,785. CAR-TRUCK. BENJAMIN F. ALLEN, Mobile, Ala. Filed May 27, 1898. Serial No. 681,885. (No model.)



Claim.—1. The combination with a car-truck frame, of truck-pedestals revolubly supported on said frame, each pedestal having a box-receiving aperture between journal ends thereon, boxes in said apertures, axles journaled in the boxes, truck-wheels secured on the axles, and longitudinally-adjustable means to control the rotatable movement of the pedestals on the frame, substantially as described.

2. The combination with a truck-frame having upper and lower portions held spaced apart, of two pedestals swivel-connected at their upper and lower ends to said spaced portions of the truck-frame, and means to control the swiveling movement of the pedestals, substantially as described.

3. The combination with a truck-frame composed of upper and lower portions held spaced apart, and a ball-bearing device at each side of the upper frame portion, of truck-pedestals supporting axles and wheels thereon, and journaled at the lower ends of the lower portion of the truck-frame, the upper parts of said pedestals being adapted to engage with and rotate on ball-bearings, substantially as described.

4. The combination with a truck-frame, and equalizing-bars held thereon, of a rear axle, wheels thereon, swivel-supported front pedestals, axle-boxes therein, short axles journaled in said boxes, a wheel on each front axle, and rollers supported from the front axle-boxes and engaged by the forward ends of the equalizing-bars, substantially as described.

5. The combination with a truck-frame, and equalizing-bars held thereon, each equalizing-bar having two members that project in parallel planes at their forward ends, of a rear axle, wheels thereon, swivel-supported front pedestals, axle-boxes therein, short axles journaled in said boxes, a wheel on each front axle, and rollers supported from the front axle-boxes and engaged by the forward ends of the two-part equalizing-bars, substantially as described.

6. The combination with a truck-frame, pedestals supported thereon, car-axles and wheels thereon held to revolve on the pedestals, and means to swivel-connect the pedestals with the truck-frame, of spring-actuated means for controlling the swivel movement of the pedestals, substantially as described.

7. The combination with a truck-frame, pedestals supported thereon, car-axles and wheels thereon held to revolve on the pedestals, and means to swivel-connect the pedestals with the truck-frame, of a longitudinally-spring-controlled coupling-bar slidable on the truck-frame and jointed at its ends to the forward ends of the pedestals to adapt them to swivel together, substantially as described.

8. The combination with a truck-frame, pedestals supported thereon and adapted to swivel, car-wheels, and axles held to rotate on the pedestals, and journal-supports at the upper and lower ends of said pedestals, of a longitudinally-spring-controlled coupling-bar slidable on the truck-frame, means to adjust the length of said coupling-bar, and joints at the ends of the coupling-bar and on the forward projections of the pedestals, to adapt them to swivel together, substantially as described.

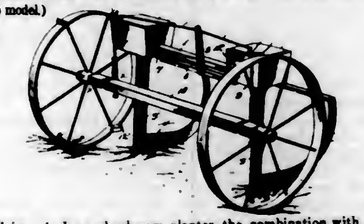
9. The combination with a truck-frame, pedestals supported at the forward end of said frame, car-wheels and axles held to revolve on the pedestals, and means to swivel-connect the pedestals with the truck-frame, of a coupling-bar slidable on the truck-frame and jointed at its ends to projections from the forward ends of the pedestals, and springs on the coupling-bar adapted to hold the forward wheels alined with the rear wheels of the truck when traversing a straight track, but adapted to yield to permit the forward wheels to swing laterally when running on curves of said track, substantially as described

10. The combination with a truck-frame adapted to loosely support pairs of truck-pedestals thereon, of upright truck-pedestals held to swivel on the truck-frame, means to control the swivel movement of said pedestals, and adjustable wear-plates on portions of the frame adjacent to the journal ends of the pedestals and loosely contacting therewith, substantially as described.

11. The combination with an elongated truck-frame, of pedestals held upright and free to swivel, by journal ends on the upper and lower ends of the pedestals which loosely contact with adjustable wear-plates on the truck-frame, truck-boxes in apertures of the pedestals, short axles journaled at ends in the boxes, wheels on said axles, gum cushion-springs between the tops of the boxes and the pedestals, rollers mounted on the cushion-springs, and bent equalizing-bars engaging the ends thereof with said rollers, substantially as described.

12. The combination with a truck-frame, pedestals thereon having upper and lower journal ends, adjustable wear-plates on the upper and lower portions of the truck-frame loosely engaging the journal ends of the pedestals that are thus held to swivel, adjustable means for controlling the swiveling movement of the pedestals, short axles in paired pedestals, car-wheels on said axles, boxes in apertures of the pedestals and engaged by journals on the ends of the short axles, of two substantially U-shaped equalizing-bars at the sides of the truck-frame extending their end portions into apertures of the pedestals over the boxes therein, gum cushion-springs on the boxes, and bracket-supported rollers mounted on the gum cushions and supporting the end portions of the equalizing-bars, substantially as described.

610,786. CHECK-ROW PLANTER. JOHN W. ALLEN and CROMWELL WEST, New Windsor, Ill. Filed July 23, 1897. Serial No. 645,992. (No model.)



Claim.—1. In a check-row planter, the combination with the machine-frame of a pair of rigidly-connected seedboxes provided respectively with pendent delivery-tubes having forwardly-extending runners connected to their lower ends, interdependent seed-dropping mechanisms carried by each of said boxes, an axle-bar mounted to yield in bearings on the frame, and wheels on said axle provided with means for actuating the seed-dropping mechanisms, substantially as specified.

2. The combination with the machine frame, of the yielding axle on which the carrying-wheels are secured provided with sleeve-bearings having perforated ears engaging vertical rods or arms on the machine-frame and adapted to yield or slide thereon, said rods extending above the seed-hoppers, bell-crank levers connected to the upper ends of said rods, an intermediate vertical lever pivoted to the machine-frame and connected to the seed-dropping devices, connections between said intermediate lever and the bell-crank levers, and projections on the wheels for alternately actuating the said bell-crank levers in opposite directions for actuating the seeding devices, substantially as described.

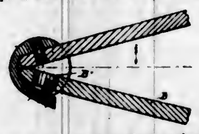
3. The combination in a check-row planter with the frame thereof, of the rigidly-connected seed-hoppers, the axle upon which the carrying-wheels are secured, the interposed vertical rods connecting the frame and axle, springs on said rods permitting the relative movement of the frame and axle, bell-crank levers on the upper ends of said rods, an intermediate, vertically-arranged lever pivoted to the machine-frame and connected with the seed-actuating devices, connections between said bell-cranks and said intermediate lever, and projections or cams on the carrying-wheels, arranged to actuate said bell-crank levers for operating the seed mechanism, substantially as described.

610,787. FOLDING BASKET. MAXIMILIAN RACH, Pittsburg, Pa. Filed June 15, 1897. Serial No. 640,830. (No model.)



Claim.—A folding basket comprising in its construction inclined walls, sides having flanged offsets upon their vertical edges, foldable ends hinged to said offsets, said ends being formed in two pieces hinged together centrally of the basket, cleats upon a side and upon the ends interior to said basket, and a rigid bottom hinged to a side and adapted to be forced down upon the cleats and against the inclined walls of said basket, substantially as described.

610,788. CARRIAGE-SPRING. SAMUEL R. BAILEY, Amesbury, Mass. Filed Apr. 7, 1898. Serial No. 676,721. (No model.)



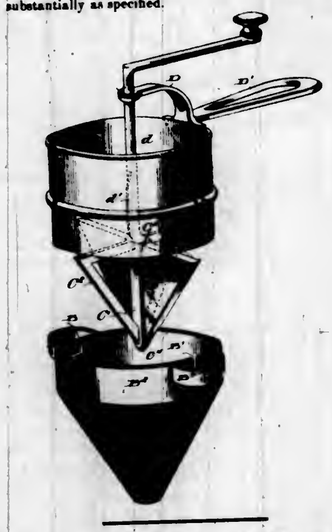
Claim.—The herein-described carriage-spring consisting of two members, one of which is provided with recesses or perforations at its opposite ends and the other member provided with socket-pieces which freely support the ends of the opposite member, and a projection on the interior lower portion of each socket-piece, said projections being adapted to enter the recesses or perforations in the aforesaid spring member, substantially as and for the purpose set forth.

610,789. COLANDER. EDWARD A. BEACH, Altoona, Pa. Filed Jan. 22, 1898. Serial No. 667,596. (No model.)

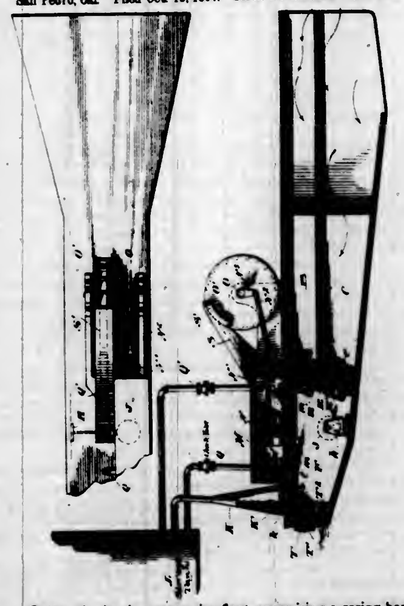
Claim.—1. A colander comprising a body portion provided with lugs at its lower portion, a conical sieve formed with a band at its upper portion having therein bayonet-slots, a stirrer formed with tapering blades adapted to lie within said sieve and having a bearing at the apex thereof, and a handle secured to the casing and having therein an upwardly and inwardly extending arm provided with a slotted recess to receive and removably retain the upper portion of said stirrer; substantially as specified.

2. A colander comprising a body portion, a detachable sieve secured thereto, a stirrer provided at its lower portion with bifurcated arms and skeleton blades extending therefrom, and a non-metallic block located between said arms and extending at substantially right angles to said blades; substantially as specified.

3. A colander comprising a body portion provided with a circumferential bead and oppositely-located lugs, a conical sieve having a band at its upper portion formed with oppositely-extending bayonet-slots, an upwardly and inwardly extending arm provided with a circular recess and an angular slot leading into the same, a stirrer formed at its lower portion with bifurcated arms carrying skeleton blades, a block located between said arms, an upwardly-extending shank from said arms provided with circular and angular portions, and an operating-handle located at the upper end of said shank; substantially as specified.



610,790. TIDE-WATER AIR-COMPRESSOR. DENIE BECKERS San Pedro, Cal. Filed Oct. 18, 1897. Serial No. 655,625. (No model.)



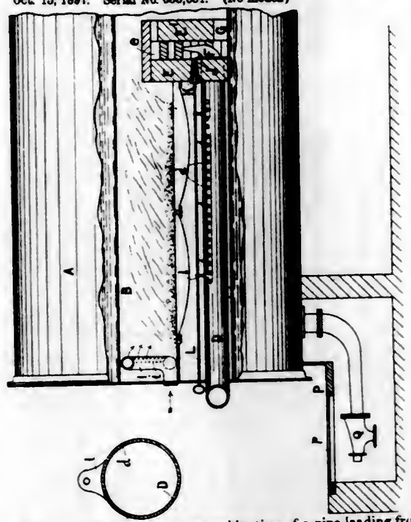
Claim.—1. An air-compressing float, comprising a casing having compartment-chambers open at their outer ends, an air-reservoir having valve-controlled, communicating apertures between the same and the said compartments, combined with a valve H and float secured thereto, whereby to allow the escape of the water that may enter the said reservoir as set forth.

2. In combination with a float as described the air reservoir, the cylinder mounted thereon, valve-controlled apertures communicating between the interior of the said cylinder and the air-reservoir, the plunger working in said cylinder, and the motor-wheel and connections with the said plunger, comprehending the casing S', the duct S

therein leading from the said cylinder in the circumference of the wheel, portions of the edges of the said casing extending over the ends of the motor-wheel, as set forth.

3. In combination with the float having the reservoir and compartments as described, the cylinder mounted over the air-reservoir and communicating with the same through valve-controlled apertures, a plunger working in said cylinder, a motor-wheel having offsets or pockets about its circumference, pitman and piston-rod connections between the crank of the said wheel and said plunger, an air-duct leading from the reservoir to a location adjacent to the path of the circumference of the wheel, and the pipes communicating between the said cylinder and the storage-tank, as set forth.

610,791. **FURNACE.** GEORGE BEESLEY, Sutton, England. Filed Oct. 13, 1897. Serial No. 655,051. (No model.)



Claim.—1. In a furnace, the combination of a pipe leading from the return flue of the boiler to the ash-pit or furnace-flue, one portion of such pipe being perforated and extending the whole length of the furnace and passing through a portion of the bridge forming the termination of the said pipe, whereby a quantity of the gases are withdrawn from the flue and passed again into the furnace for the purposes set forth.

2. In a furnace, the combination with the return-flue of the boiler and the furnace flue, of a pipe connecting both flues, the said pipe extending into the return-flue so as to take the lower strata of gases therefrom and direct them into the furnace-flue below the grate and a steam-jet in the said pipe for causing a circulation through the same, substantially as described.

3. In a furnace, the combination of a bridge consisting of two vertical walls, a cover, open brickwork in the space between the two walls, a pipe leading from the return flue of the boiler and terminating in a nozzle in the space between the vertical walls of the bridge, a passage in the bridge and means for regulating the supply of air therethrough.

4. In combination with a furnace, a pipe located at the back of the boiler having one end outside the flue and open to the atmosphere and the other end inside the flue, a nozzle connected to said pipe and pointing in the direction of the furnace-flue, and means at the outer end of the said pipe for regulating the supply of air drawn in through the pipe, substantially as described.

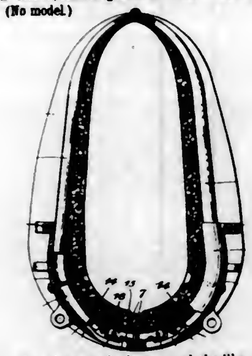
5. In the combination with a furnace a pipe located at the back of the furnace outside the rear wall thereof and having a loop extending through the rear wall into the furnace flue, one end of said pipe being provided with a nozzle which extends through the rear wall opposite the end of the boiler and the other end being provided with a means for regulating the supply of air passing through the same, substantially as described.

6. The combination with the furnace flue and return-flue of a boiler, of the pipe D, a hollow bridge, a passage J in the bridge and means for regulating the same, the semicircular perforated tube I, the fire-bars, the pipe M at the end of the boiler and means for heating and regulating the supply of air therethrough and the foot-plate P for protecting the front of the boiler, substantially as set forth.

7. In a furnace, the combination of the pipe D communicating both with the furnace-flue and the return-flue, the bridge, passage J in the bridge and means for regulating it, the pipe M at the back of the boiler and the pipe Q at the front of the boiler and means for heating and regulating the supply of air therethrough, the hollow chamber P and the arch U having passages u, substantially as described.

8. In a furnace, the combination with the return-flue of the boiler and the furnace-flue, of a pipe communicating with both and extending through the furnace-flue, the said portion in the furnace-flue being provided with perforations, the open ends of the said pipe extending into a hollow bridge-wall, an opening leading from the furnace-flue into the hollow portion of the bridge-wall, and a plug for regulating the said opening, the construction being such that atmospheric air may be discharged into the furnace-flue or into the combustion-chamber through the bridge-wall, substantially as described.

610,792. **COLLAR AND HAME AND FASTENING THEREFOR.** CHARLES E. BERRY, Cambridge, Mass. Filed June 25, 1897. Serial No. 642,294. (No model.)



Claim.—1. In a fastener for hames and the like, the combination of separate sections having their meeting end portions made tubular, a longitudinally-curved pin having an annular flange midway of its ends to engage with the meeting ends of the tubular sections and limit the movement of the pin when thrust therein, and adapted to have its end portions make detachable connection with the tubular ends of the said sections and be concealed thereby, and catches applied to the tubular ends of the aforesaid sections to make positive engagement with the end portions of the pin and secure the parts when in working relation, substantially as set forth.

2. The combination of a pair of tubular hames hinged together at their upper ends and having the bores at their lower ends countersunk, of a pin having a flange midway its length, the sections of the pin on opposite sides of the flange being adapted to fit in the lower ends of the respective hames, and the flange to fit in the countersinks of the bores, said pin having a recess near each end, and a pivoted latch in each hame, said latches having hooks to engage in the recesses in the ends of the pin, substantially as described.

3. The combination with a pair of tubular hames hinged together at their upper ends and having the bores at their lower ends countersunk, of a pin having a flange midway its length, the sections of the pin on opposite sides of the flange being adapted to fit in the lower ends of the respective hames, and the flange to fit in the countersinks of the bores, said pin having a recess near each end, a set-screw in each hame adapted to engage the pin and lock it against withdrawal, and a spring-actuated pivoted latch in each hame, said latches having hooks to engage in the recesses in the ends of the pin, substantially as described.

4. In combination, hames pivoted together at one end and adapted to be separated at the opposite end, the separable ends of the sections being tubular and provided with vertically-extending plates, a collar separable at one end and adapted to have the separable ends abut against the plates provided at the separable ends of the hames, a pin having a flange midway of its ends and adapted to have its end portions removably fitted within the tubular ends of the hames, catches applied to the said tubular ends of the hames and adapted to positively engage with the end portions of the pin and connect the parts, and other fastenings between the end portions of the pin and hames for positively connecting them, substantially as set forth.

610,793. **DRAFT APPARATUS.** CHARLES E. BERRY, Cambridge, Mass. Filed Sept. 18, 1897. Serial No. 652,127. (No model.)

Claim.—1. A draft apparatus having side whiffletrees mounted upon guides for transverse inward adjustment, to allow contraction of the width of said apparatus, said guides being diagonally disposed, whereby the whiffletrees are normally held, under strain, at the outer ends of the guides, substantially as specified.



2. A draft apparatus having side whiffletrees mounted for lateral adjustment upon diagonally-disposed guides, whereby when released they are adapted, under strain, to seek their extended or outwardly-adjusted positions, and means for temporarily securing the whiffletrees in an inwardly-adjusted position, substantially as specified.

3. A draft apparatus having side whiffletrees mounted upon inwardly and rearwardly inclined guides for lateral adjustment and adapted for outward adjustment thereon when strained forwardly, holding devices arranged in operative relation with the guides contiguous to their inner ends, to engage and temporarily secure the whiffletrees in their inwardly-adjusted positions, and shifting devices having a common operating means for releasing said whiffletrees, substantially as specified.

4. A draft apparatus having side whiffletrees mounted upon guides for lateral adjustment, pivotal holding devices or buttons arranged in operative relation with the guides to swing in planes parallel therewith, and having notches to engage slides carried by the whiffletrees, and means for securing said holding devices or buttons against swinging movement when in engagement with the whiffletree-slides, substantially as specified.

5. A draft apparatus having side whiffletrees mounted for lateral adjustment by means of attached slides, and cooperating guides upon which the slides are mounted, pivotal buttons having terminal notches arranged in operative relation with the guides to engage said slides, said buttons also having heels or trips arranged permanently in the paths of the inward movement of the slides, and means for securing the buttons in their operative positions, substantially as specified.

6. A draft apparatus having side whiffletrees mounted for lateral adjustment by means of slides carried thereby, and transverse guides upon which said slides are mounted, pivotal buttons arranged in operative relation with the guides for engaging the slides contiguous to the inner ends of the guides, operating-slides connected with the buttons, latches for engaging the operating-slides, to hold the buttons in engagement with the whiffletree-slides, and shifting mechanism for disengaging the latches, substantially as specified.

7. A draft apparatus having side whiffletrees mounted for lateral adjustment by means of slides carried thereby, and transverse guides upon which said slides are mounted, pivotal buttons arranged in operative relation with the guides for engaging the slides contiguous to the inner ends of the guides, operating slides connected with the buttons, latches for engaging the operating-slides, to hold the buttons in engagement with the whiffletree-slides, and shifting mechanism for disengaging the latches, said shifting devices consisting of a lever flexibly connected with the latches, substantially as specified.

8. A draft apparatus having a frame, and a pivotal tongue mounted upon the frame for vertical swinging movement, in combination with a supporting device for holding the tongue in an elevated position, the same consisting of a spring-arm carried by the tongue and provided with a movable stop, and a fixed stop arranged in the path of, for engagement by, said movable stop, the spring-arm being extended beyond the movable stop to bear upon the fixed stop, substantially as specified.

9. A draft apparatus having a frame, and a pivotal tongue mounted upon the frame for vertical swinging movement, in combination with a supporting device for holding the tongue in its elevated position, the same consisting of a spring-arm, attached to the tongue and provided contiguous to its free end with a revoluble stop projecting peripherally from the plane of the arm, and a fixed stop arranged in the path of said revoluble stop, the arm being extended beyond the revolable stop to bear against the front end of the fixed stop, substantially as specified.

10. A draft apparatus having a frame, a pivotal tongue mounted upon the frame for vertical swinging movement upwardly from its normal position, a securing-plate mounted upon the frame for arrangement in the path of the tongue, and means for locking said securing-plate in its normal position, in combination with a supporting device for holding the tongue in its elevated position, the same consisting of a spring-arm, attached to the tongue and provided contiguous to its free extremity with a revoluble stop projecting peripherally from the plane of the arm, and a fixed stop-plate arranged in the path of said stop, the arm being extended beyond the stop to bear against the front end of the stop-plate, substantially as specified.

11. A draft apparatus having a frame, a pivotal tongue mounted upon the frame for vertical swinging movement upwardly from its normal position, said frame being provided with a seat to receive the tongue at an intermediate point, a movable whiffletree-carrying securing-plate mounted upon the frame to close the open side of the tongue-seat, and locking devices for securing said plate in its operative position, substantially as specified.

12. A draft apparatus having a frame, a pivotal tongue mounted for swinging movement upwardly from its normal position and fitted at an intermediate point in a seat in said frame, a whiffletree-carrying securing-plate hinged at one end to the frame for upward-swinging movement at its free end, and adapted, when in its normal position, to close the open side of the tongue-seat, and means for securing said plate in its normal or operative position, substantially as specified.

13. A draft apparatus having a frame, a tongue mounted for pivotal movement and fitted at an intermediate point in a seat in the frame, a whiffletree-carrying securing-plate mounted upon the frame to cover the open side of the tongue-seat, a dog for engaging the securing-plate in its normal position, and means for operating the dog to engage and disengage the securing-plate, substantially as specified.

14. A draft apparatus having a frame, a pivotal tongue mounted for vertical swinging movement and fitted at an intermediate point in a seat in the frame, a whiffletree-carrying securing-plate mounted upon the frame to close the open side of the tongue seat, a plurality of connected pawls mounted upon the frame to engage and hold the securing-plate when in its normal position, and operating devices in connection with one of said pawls, substantially as specified.

15. A draft apparatus having a frame, a pivotal tongue mounted for vertical swinging movement, and fitted at an intermediate point in a seat in the frame, a securing-plate mounted upon the frame to close the open side of said tongue-seat, and locking devices for the securing-plate, including a dog or pawl, and a locking-lever operatively connected with the pawl and provided with means for engaging and supporting the securing-plate in its elevated or inoperative position, substantially as specified.

16. A draft apparatus having a frame, a pivotal tongue mounted for swinging movement in a vertical plane, and fitted at an intermediate point in a seat in the frame, a securing-plate for closing the open side of the tongue seat, and locking devices for the securing-plate, including a dog or pawl, a locking-lever operatively connected with the dog or pawl, and a supporting-spring carried by the locking-lever to engage and hold the securing-plate in its elevated or inoperative position, substantially as specified.

17. A draft apparatus having a frame, a pivotal tongue mounted for vertical swinging movement, and fitted at an intermediate point in a seat in the frame, a securing-plate mounted upon the frame to close the open side of the tongue-seat, and locking devices for securing said plate in its normal position, the same including a dog or pawl to engage the plate, a locking-lever operatively connected with the dog or pawl and extending through a slot in the securing-plate, and a supporting-spring carried by the locking-lever contiguous to its free end, to engage said slot in the securing-plate and support the latter in its elevated or inoperative position, substantially as specified.

18. A draft apparatus having a frame, a pivotal tongue mounted for vertical swinging movement, and fitted at an intermediate point in a seat in the frame, a securing plate mounted upon the frame to close the open side of the tongue seat, and locking devices for the securing-plate, including a dog or pawl to engage the securing-plate, a locking-lever having a cam arranged in operative contact with the dog or pawl and adapted to move the latter into engagement with said plate when the lever is moved in one direction, and trip devices on the lever for disengaging the dog or pawl from the plate when the lever is moved in the other direction, substantially as specified.

19. A draft apparatus having a frame, a pivotal tongue mounted for vertical swinging movement, and fitted at an intermediate point in a seat in the frame, a securing-plate mounted upon the frame to close the open side of the tongue-seat, and locking devices for the securing-plate, including a dog or pawl having a cam-face, a locking-lever having a cam arranged in operative relation with the rear side of the dog or pawl, and adapted when swung in one direction to move the dog into engagement with the securing-plate, and a trip-arm on the lever operatively engaged with the cam-face of the dog for disengaging the latter from the securing-plate, when the lever is swung in the opposite direction, substantially as specified.

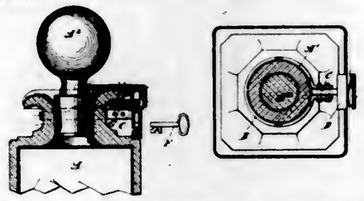
20. A draft apparatus having a frame, a pivotal tongue mounted for vertical swinging movement, and fitted at an intermediate point in a seat in the frame, a securing-plate mounted upon the frame to close the open side of the tongue-seat, and locking devices for the securing plate, including a dog or pawl having a cam-face, a locking-lever having a cam arranged in operative relation with the rear side of the dog or pawl, and adapted when depressed to move the dog into engagement with the securing-plate, and a yielding trip-arm op-

eratively engaged with the cam-face of the dog, and adapted, when the lever is depressed, to bear upon the upper end of the dog to maintain said lever in its folded or normal position, substantially as specified.

21. A draft apparatus having a frame, a pivotal tongue mounted thereon for swinging movement and fitted at an intermediate point in a stationary seat, a pivotal securing-plate for closing the open side of the tongue-seat, a locking-lever for engaging and supporting the securing-plate when in its elevated or inoperative position, and locking-pawls, for engaging and holding the securing-plate in its depressed or operative position, substantially as specified.

22. A draft apparatus having a frame, a pivotal tongue mounted thereon for swinging movement and fitted at an intermediate point in a stationary seat, a pivotal securing-plate for closing the open side of the tongue-seat, a locking-lever for engaging and supporting the securing-plate when in its elevated or inoperative position, and locking-pawls, for engaging and holding the securing-plate in its depressed or operative position, said pawls being operatively connected with the locking-lever for movement to engage or disengage the securing-plate by movements, in opposite directions, of the locking-lever, substantially as specified.

610,794. LOCK-BOTTLE. GEORGE W. BETJEMANN and WILLIAM CAVELAND, London, England. Filed May 9, 1896. Serial No. 680,183. (No model.)

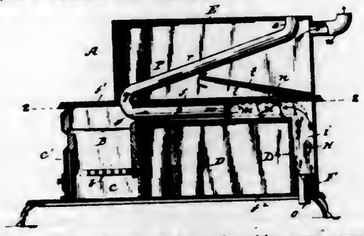


Claim.—1. A lock-bottle, provided with a lock having its casing secured on the neck of the bottle, and a lock-plate movable on the casing, and adapted to be engaged by the lock-bolt of the lock, to hold the plate against movement, the plate being also adapted to engage the stopper, to securely lock the same to the neck of the bottle at the time the plate is locked by the bolt, substantially as shown and described.

2. A lock-bottle, provided with a lock having its casing secured on the neck of the bottle, a lock-plate movable on the casing, and adapted to be engaged by the lock-bolt of the lock, to hold the plate against movement, the plate being also adapted to engage the stopper, to securely lock the same to the neck of the bottle at the time the plate is locked by the bolt, and a spring interposed between the plate and lock-casing, for moving the plate outward on releasing it or withdrawing the bolt, substantially as shown and described.

3. A lock-bottle, provided with a lock having a casing, a band for securing the said casing to the neck of the bottle, a tongue fitted to slide in said casing, and having a limited movement, the tongue being adapted to be engaged by the spring-bolt of the lock, and a spring-pressed locking-plate carrying said tongue and extending over the top of the bottle-neck, to engage with its inner end the bottle-stopper and securely lock the latter in place on the neck of the bottle, substantially as shown and described.

610,795. STOVE. LILLIE B. BOWERS, Grinnell, Iowa. Filed Mar. 28, 1898. Serial No. 675,431. (No model.)

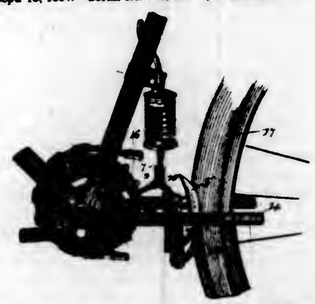


Claim.—1. A combined heating and cooking stove comprising in its construction a stove-body provided with an oven and compartments in rear thereof, a drum mounted on the stove, and air-heating pipes extending from said compartments above the oven and thence through the drum, substantially as described.

2. A stove comprising in its construction a body provided with a transverse division-wall arranged adjacent to and parallel with its back wall and a flue-passage above said division-wall, vertical partitions forming compartments between the division-wall and back of the stove, horizontal partitions forming a compartment above the division-wall and which is in communication with one of said vertical compartments, a drum in communication with the horizontal compartment, and air-heating pipes extending continuously from said vertical compartments, through the flue-passage and also through the drum, substantially as described.

3. In a stove, the combination of the stove-body A having the oven D and flue-passage *f*, the vertical partitions i i' forming the compartments F G H, the horizontal partitions *k k'* connected by the transverse partition *l* and forming the chamber M in communication with the compartment G, the drum E in communication with the said compartment M, and the two series of air-heating pipes O P arranged at opposite sides of the flue-passage and extending from the compartments F G, through said flue-passage and also through the drum, substantially as described.

610,796. BICYCLE AIR-BRAKE. JOHN H. BOWMAN, Hazleton, Pa., assignor of one-third to Charles L. Allen, Beaver Meadow, Pa. Filed Sept. 13, 1897. Serial No. 651,519. (No model.)



Claim.—1. In a bicycle or like machine, the combination of a brake-cylinder having pivotal connections and suspended from the diagonal or seat-post tube, toggle-levers having connection with the stem of the piston, means for connecting one terminal of a toggle-lever with the machine-frame, a brake-shoe applied to the terminal of the other toggle-lever, and means for charging the cylinder with air under pressure to set the brake, substantially as set forth.

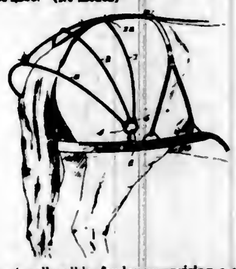
2. In a pneumatic brake for bicycles and the like, the combination of a brake-cylinder, means for pivotally connecting the brake-cylinder with the machine-frame, toggle-levers having connection with the stem of the piston, means for pivotally and adjustably connecting one of the toggle-levers with the machine-frame, a brake-shoe applied to the other toggle-lever, and means for charging the brake-cylinder with air under pressure to set the brake, substantially as described.

3. In a pneumatic brake for bicycles and similar vehicles, the combination with a brake-cylinder, means for attaching the brake-cylinder to a machine-frame, toggle-levers having connection with the stem of the brake-cylinder piston, means for adjustably connecting one of the toggle-levers with the machine-frame, a brake-shoe connected with the other toggle-lever, and means for charging the brake-cylinder with air under pressure to operate the brake-shoe, substantially as specified.

4. In a brake for bicycles and the like, the combination of a brake-cylinder pivotally connected with the machine-frame, toggle-levers having connection with the stem of the piston, a clip having pivotal connection with a part applied to the machine-frame, means for adjustably connecting a toggle-lever with the pivotal clip, a brake-shoe having connection with the other toggle-lever, hangers supporting the brake-shoe and having adjustable connection with the fork sides, and means for charging the cylinder with air under pressure to set the brake, substantially as described.

5. The herein-described pneumatic brake mechanism for bicycles and the like, comprising clips, a brake-cylinder having pivotal connection with one of the clips, toggle-levers having pivotal and adjustable connection with the other clip and having the stem of the piston attached thereto, a spring located within the brake-cylinder and acting upon the piston to hold the brake out of action, a brake-shoe having connection with the toggle-levers and provided with curved arms, and hangers having pivotal connection with the curved arms and provided with clips, substantially as shown for the purpose specified.

610,797. REIN-SHIELD. FRANK L. CAMPBELL, Pulaski, Va., assignor of one-third to R. J. Crawford, same place. Filed Oct. 6, 1897. Serial No. 654,235. (No model.)



Claim.—1. A collapsible fender comprising a series of foldable members suitably connected to attaching devices, a rod attached to one member and provided with loops and arranged to fit over one member and beneath another member to be held in interlocking engagement with said members by the elasticity of said parts, and means for firmly holding the rod in place and the part on which the rod is firmly held, substantially as described.

2. The combination with a breeching and back-strap of a harness, of a collapsible fender having a series of bow-shaped members loosely attached at a common point to the breeching and arranged to fold in a compact relation to each other, and a locking device loosely connected with one member of the fender and detachably attached to the other fender members and to the back-strap of a harness, substantially as described.

3. A collapsible fender comprising suitable attaching means, a series of bowed members loosely connected to said attaching means and adapted to fold into compact relation to the other members, and a locking-rod arranged to be firmly interlocked with the individual members of the fender, substantially as described.

4. A collapsible rein-fender comprising a series of bowed members or sections connected to a common attaching device adapted for connection with a harness, a locking-rod arranged centrally across said members and detachably connected thereto, and suitable holding means for maintaining the locking-rod in a fixed position, substantially as described.

5. The combination with a harness, of a foldable fender having its bowed members loosely attached to a part of the harness, a rod having interlocking engagement with the individual fender members, and a clamp mounted on the harness and engaging with the rod, substantially as described.

6. A rein-fender comprising suitable rings or loops, fender members connected with said rings or loops, a locking-rod attached to one member and adapted to be interlocked with the other members, and a clamp secured to the harness and engaging with said rod, substantially as described, for the purposes set forth.

7. The combination with a sectional fender, of a rod connected pivotally to one fender member and having interlocking engagement individually with the other fender members, a suitable supporting-plate having a socket for the rod, and a clamping device carried by said plate and engaging with said rod, for the purposes described, substantially as set forth.

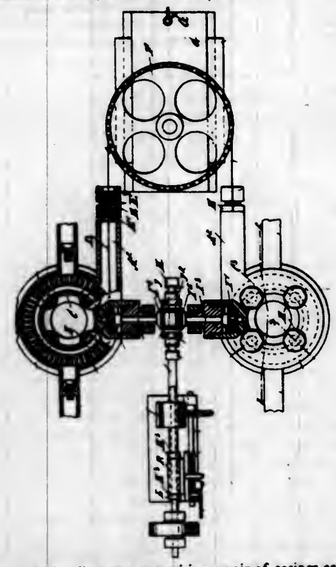
8. A collapsible fender comprising the members connected to enable them to fold together and with the front member provided with an offset, a locking-rod connected to the rear member and provided with an offset and with a seat for the intermediate and front members of said fender, and, a holder or clamp with which said rod is adapted to engage, substantially as described

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610,798. HYDRAULIC PUMP. CHARLES F. CARTY, Washington, D. C. Filed May 1, 1897. Serial No. 634,665. (No model.)

Claim.—1. A hydraulic pump comprising a pair of casings each having a suction pipe and discharge, reels mounted to turn in the casings, stuffing-boxes held on the casings, a band, wire or the like passing through said stuffing-boxes and connected at its ends with the said reels, so that on rotating the reels, one winds up the band while the other unwinds the same, and a pulley adjustably mounted outside the casing and over which passes the band on its passage from one casing to the other, the diameter of the said pulley corresponding to the distance between the centers of the stuffing-boxes, substantially as shown and described.

2. A hydraulic pump, comprising a pair of casings each having a suction-pipe and a discharge, a tube extending from each casing and provided in its end with a stuffing-box, a reel mounted to turn in each casing a band wire or the like passing through the said stuffing-boxes and connected at its ends with the said reels, so that on rotating the latter one winds up the band while the other unwinds the same, and a pulley outside the said casings and over which passes the band after leaving the stuffing-boxes, the diameter of the said pulley corresponding to the distance between the centers of the stuffing-boxes, substantially as shown and described.



3. A hydraulic pump, comprising a pair of casings each having a suction-pipe and a discharge, reels mounted to turn in said casings and provided at their top with beveled gear-wheels, a band wire or the like connected at its ends with the said reels so that on rotating the latter one winds up the band while the other unwinds the same, shafts mounted to turn in suitable bearings and provided at their outer ends with beveled pinions in mesh with the beveled gear-wheels on top of the reels, means connected with the inner ends of said shafts for driving the same simultaneously, and a reversing mechanism for the driving means, substantially as shown and described.

4. A hydraulic pump, provided with a reversing mechanism for the driving means, comprising a shaft adapted to be turned and to slide, a shifting-arm for shifting the shaft longitudinally and provided with pins, a wheel driven from the said shaft and carrying a spring-pressed arm normally resting on pins on the said wheel, the said spring-pressed arm being adapted to engage the pins on the said shifting-arm, and fixed pins adapted to be temporarily engaged by the said spring-pressed arm, substantially as shown and described.

5. A hydraulic pump comprising a pair of casings each having a suction-pipe and a discharge, friction-rollers conical in shape and journaled in each of said casings, reels arranged in the casings and each having its inner edge beveled to engage the said friction-rollers and turn thereon, a band wire or the like connected at its ends with the said reels so that on rotating the latter, one winds up the band while the other unwinds the same, and driving means for rotating the reels simultaneously, substantially as set forth.

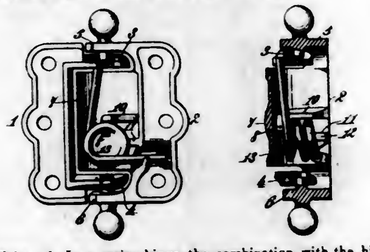
6. A hydraulic pump, comprising a casing having a suction-pipe and a discharge, a reel mounted to turn in said casing and provided on one of its flanges with a gear-wheel, a band wire or the like adapted to pass into the said casing and wind upon and unwind from the said reel, a shaft mounted to turn in suitable bearings and provided with a pinion in mesh with the gear-wheel on the flange of the reel, means for driving the said shaft, and a reversing mechanism for the driving means, substantially as shown and described.

7. A hydraulic pump provided with a casing having a suction-pipe and a discharge-pipe, friction-rollers conical in shape and journaled in the said casing in pairs, a reel in the said casing having its inner edge beveled to engage the said friction-rollers and turn thereon, and a band, wire or the like adapted to pass into the casing and wind upon and unwind from the said reel, substantially as shown and described.

8. A hydraulic pump, comprising a pair of casings, each having a suction-pipe and a discharge, a tube extending from each casing and provided in its ends with a stuffing-box, a reel mounted to turn in each casing, a band, wire or the like passing through the said stuffing-boxes and connected at its ends with the said reels, so that on rotat-

ing the latter one winds up the band while the other unwinds the same, a pulley over which the band passes after leaving the stuffing-boxes, the diameter of the said pulley corresponding to the distance between the centers of the stuffing-boxes, the said reels being each provided with a beveled gear-wheel, shafts mounted to turn in suitable bearings and provided with beveled pinions in mesh with the beveled gear-wheels on the reels, means for driving the said shafts simultaneously, and a reversing mechanism for the driving means, substantially as set forth.

610,799. SPRING-HINGE. JOHN K. CLARK and HENRY R. CLARK, Buffalo, N. Y., assignors to Mary K. Clark and Sara J. Clark, same place. Filed May 12, 1896. Serial No. 690,494. (No model.)

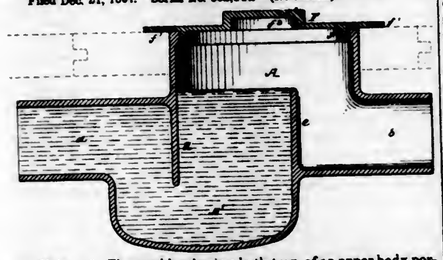


Claim.—1. In a spring-hinge, the combination with the hinge members, one of which is provided with a housing, of a lug projecting from the inner side of the housing, a flange extending at right angles to said lug, a second lug projecting from said housing, and a coiled spring having its free ends secured in opposite hinge members and its coils bearing against said flange and said lugs, substantially as described.

2. In a spring-hinge, the combination with the hinge members, one of which is provided with a housing, of a lug 8 projecting at right angles to the inner side of the housing, a flange extending at right angles to said lug, a second lug, 11, projecting from said housing, and a coiled spring having its free ends secured in opposite hinge members and its coils arranged at right angles to the axial line of the hinge and bearing against the under side of said flange and against the edges of said lugs, substantially as described.

3. As a new article of manufacture a hinge member having a housing, and a spring-seat cast integral therewith comprising a lug projecting at right angles to the inner side of the housing, a flange extending at right angles to said lug, and a second lug projecting from the inner side of the housing, substantially as described.

610,800. BATH-TRAP. WILLIAM H. CLOUD, Haddonfield, N. J. Filed Dec. 21, 1897. Serial No. 662,844. (No model.)

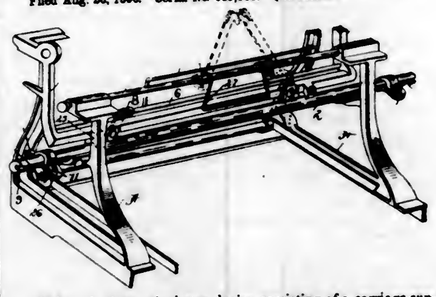


Claim.—1. The combination in a bath-trap, of an upper body portion having inlet and outlet pipes on or about the same horizontal plane, a deflecting-plate in front of the inlet-pipe, a bottom portion projecting below said pipes and laterally offset, in the direction of the inlet-pipe, with respect to said deflecting-plate so that a portion of the bottom extends beyond the deflecting-plate and under the top of the inlet-pipe, and a dam in front of the outlet-pipe, substantially as described.

2. The combination in a bath-trap, of a body portion having inlet and outlet pipes on or about the same horizontal plane, a deflecting-plate extending downwardly from said top portion in front of the inlet-pipe, the lower body portion projecting below the said pipes and laterally offset, in the direction of the inlet-pipe, with respect to said deflecting-plate so that a portion of the bottom extends beyond the deflecting-plate and under the top of the inlet-pipe, and a dam extending in front of the outlet-pipe above the top of the inlet-pipe, substantially as described.

3. The combination in a bath-trap, of an upper body portion having inlet and outlet pipes on or about the same horizontal plane, a deflecting-plate in front of the inlet-pipe, a bottom portion projecting below said pipes and laterally offset, in the direction of the inlet-pipe, with respect to said deflecting-plate so that a portion of the bottom extends beyond the deflecting-plate and under the top of the inlet-pipe, a dam in front of the outlet-pipe, and a cap removably secured to the upper body portion, substantially as described.

610,801. TYPE-WRITER. JAMES D. DAUGHERTY, Kittanning, Pa., assignor to The Daugherty Typewriter Company, same place. Filed Aug. 26, 1896. Serial No. 603,966. (No model.)



Claim.—1. A marginal stop device consisting of a carriage-supporting rod having a plurality of teeth, a freely-oscillating stop supported thereby, said stop having an inwardly-extending tooth adapted to engage the teeth upon said rod, the stop having a counterweight holding its tooth normally in contact with the bar-teeth when released, substantially as shown and described.

2. The combination with a type-writer carriage, of a rod extending longitudinal the carriage and provided with a plurality of teeth, a marginal stop device freely rotatable and longitudinally movable upon said rod, the stop device having a tooth adapted to interlock with the rod-teeth and also provided with a plurality of rigid shoulders, one projecting in advance of the other, the foremost shoulder adapted to arrest the carriage when the stop is in its normal position, and the succeeding shoulder adapted to arrest the carriage when the stop is oscillated, substantially as described.

3. The combination in a type-writer of the type-bars, a buffer movable in the path of the bars, a marginal stop, and an operative connection adapted to engage the stop and through the movement of the carriage move the buffer in the path of the type-bars, substantially as described.

4. The combination in a type-writer of the type-bars, a buffer movable in the path of the bars, a marginal stop, a movable member carried by the carriage and engaging the stop and the buffer, the movement of the carriage actuating the movable member and through it the buffer, substantially as described.

5. The combination of a movable buffer, a rock-shaft carried by the carriage, having at one side a member engaging and operating the buffer, and at the opposite side an arm, and a stop with which the arm engages through the movement of the carriage and actuates the rock-shaft, substantially as described.

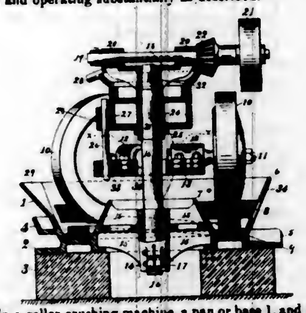
6. The combination of an oscillating buffer, the carriage carrying the rock-shaft, the rock-shaft having an elongated arm adapted to engage and operate the buffer, a stop, said rock-shaft provided with an arm engaging the stop and through the movement of the carriage rocking said shaft, substantially as described.

7. The combination of a movable buffer, an adjustable stop, a carriage, type-bars, and a movable member carried by the carriage having a portion engaging the stop and moved thereby through the movement of the carriage, and also adapted when moved to actuate the buffer, whereby the buffer is operated at any adjustment of the stop to the desired length of line, substantially as described.

8. The combination of an oscillating buffer having a projecting arm, the carriage carrying an oscillating shaft provided with an elongated member constructed to engage the buffer-arm, a stop having a cam-surface, said shaft provided with a projection adapted to engage the cam-surface of the stop, the parts operating substantially as described.

610,802. ROLLER CRUSHING-MACHINE. WILLIAM J. DYER, San Francisco, Cal. Filed Jan. 14, 1897. Serial No. 619,223. (No model.)

Claim.—1. In a roller crushing-machine, an annular pan to contain and confine the material to be crushed, a die-ring therein and rollers to revolve thereon, a central main shaft fastened in the center of the pan, and supporting at its top a main gear, and a frame with horizontal bearings carrying a cross-shaft and pinion engaging the main gear for driving the rollers, the whole within the pan's contour, combined and operating substantially as described.

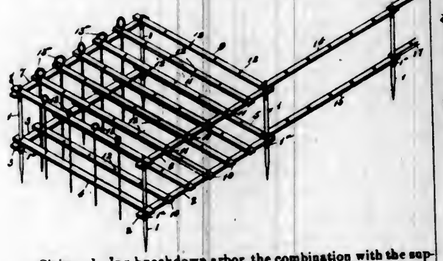


2. In a roller crushing-machine, a pan or base 1, and the central shaft 16 adjustably fastened therein, integral with this shaft or rigidly attached thereto, a top frame 18 forming a support for the shaft 19 and the driving elements thereon, a driving-wheel 23 and drum or frame 24, turning loosely on the shaft and communicating motion to the crushing-rollers, the whole combined and operating substantially as described.

3. In a roller crushing-machine, the combination of the annular pan, the main shaft having the driving-gear supported thereon, gear-wheel 23, drum 24, rollers 10, plate or frame 13, having flaring apertures 33, and the adjustable driving-stems 26, inserted in drum 24 and passing loosely through apertures in plate 13, whereby the latter with the attached rollers is impelled by the rotation of the drum, substantially as specified.

4. In a roller crushing-machine, a main supporting annular pan with flaring or conical inner and outer walls, a section of the said outer wall being detachable, a die-ring, crushing-rollers, and a central detachable shaft, supporting the gearing by which the rollers are revolved, substantially as and for the purpose specified.

610,803. VINE-SUPPORTER. THOMAS I. ELLIOTT, Hacker Valley, W. Va. Filed Mar. 9, 1898. Serial No. 673,103. (No model.)

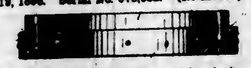


Claim.—1. In a knockdown arbor, the combination with the supporting corner-posts, of a series of bars provided with registering apertures designed to cooperate with said posts, and a series of vine-supporters designed to fit said registering apertures and remain substantially in a vertical position, whereby the vines will be held in an upright position, as and for the purpose set forth.

2. The herein-described knockdown arbor consisting of a series of supporting posts, each provided with a fixed collar near its central portion and with an upper beveled end, in combination with the outer frame-bars 2, 3, 4, 5, 6, 7, 8 and 9, each provided with two enlarged end apertures and a series of intermediate apertures, and two series of intermediate bars 10 and 11 having series of registering apertures, and suitable means for holding said bars in operative relationship to each other whereby the vines to be supported will be guided and held in the manner specified and for the purpose set forth.

3. In an adjustable vine-support, the combination with the supporting-bars, one bar being disposed above the other and parallel thereto, each bar being provided with a series of apertures, of vine-supporting rods designed to pass through said apertures, and supporting-posts having a tapered end, and further provided with an annular bracket or collar near the middle part thereof, the portion of the post below said collar being practically of the same diameter as above the same, substantially as specified and for the purpose set forth.

610,804. SOFT-TREAD HORSESHOE. RICHARD EVANS, Richmond, Va., assignor of one-half to George J. Hooper, Jr., same place. Filed Feb. 19, 1898. Serial No. 670,952. (No model.)



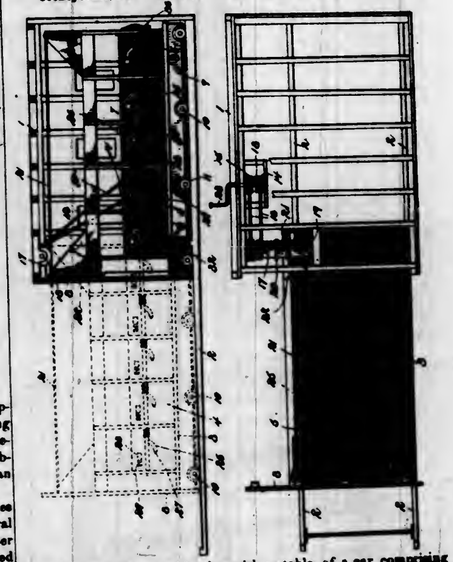
Claim.—A soft-tread horseshoe comprising in its construction a shoe proper provided in its lower face with a continuous channel corresponding to the shape of the shoe and with nail-holes and grooves in the inner and outer side walls of the channel, a horseshoe-shaped cushion or tread pad seated in said channel and provided with side flanges or tongues engaging said grooves and slots arranged in alinement with the nail-holes and also with transversely-extending passages, and rivets passing through the walls of the channel and the passages of the pad and securing the latter in position, substantially as described.

610,805. SASH-HOLDER. RUSSELL H. FERN, Leavenworth, Kans. Filed Dec. 30, 1897. Serial No. 664,499. (No model.)



Claim.—The herein-described sash-holder, comprising a plug adapted to be seated in a window-casing, in the manner substantially as described, and having an inner cylindric portion formed with fins, and an outer tapering portion, said plug having also an opening extending axially therethrough, and a lug at its inner end upon each side of the said opening, together with a toothed gravity-dog pivoted to said lugs and extending through the said opening and beyond the outer end of the plug, and a lever connected to said dog, substantially a specified.

610,806. STOCK-RELEASING DEVICE. SAMUEL J. GOVER, Cockeysville, Md. Filed Sept. 4, 1897. Serial No. 650,609. (No model.)



Claim.—1. The combination with a stable, of a car comprising a platform and a series of vertical partitions forming stalls, said car having an end wall forming one of the walls of the stable, fastening devices for securing animals in the stalls, said fastening devices being mounted on and carried by the car, whereby the animals may be carried out of the stable without releasing them from their stalls, operating mechanism mounted on the stable and connected with the car and arranged to be operated from the exterior of the stable so that the entire series of stalls and their contents may be carried out of the stable without entering the same, and means for simultaneously releasing the animals from the stalls, such means being independent of the operating mechanism for moving the car, substantially as described.

2. In stock-releasing apparatus, the combination with a building

having a track arranged within and without the same, of a platform or car mounted upon rollers moving on said track, stalls on said car or platform, a wall at one end of the series of stalls forming the end wall of the building, posts extending upwardly from each end of the platform or car, an overhead pulley or drum, a cable attached to one post and extending around the overhead pulley or drum and connected to the opposite post, and a windlass for rotating said overhead pulley or drum, all arranged for joint operation substantially as described.

3. The combination with a building, of a car provided with a series of stalls, means for moving the car into and out of the building for simultaneously removing the animals occupying the stalls, a series of plates 30 provided with recesses, the brackets 29 having arms secured in the recesses of the plates, a spring-actuated rod 25 disposed transversely of the series of stalls and mounted in suitable guides, said rod being provided with arms arranged to engage the said brackets, the cam-lever 33 engaging the rod and locking the same against accidental movement, and means for operating the rod, substantially as described.

610,807. CIGAR-BOX ATTACHMENT. JOSEPH R. GRIESFELDER, Spokane, Wash. Filed Apr. 13, 1896. Serial No. 677,415. (No model.)

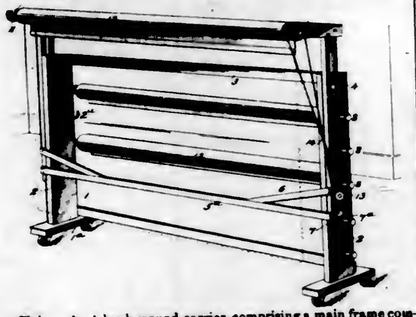


Claim.—1. An attachment for cigar-boxes, consisting of a body-plate bifurcated at its lower end, and provided with an integral tongue located between the members of the body-plate, a tongue extending upwardly and forwardly and away from the upper portion of the body-plate, and a lip forming a portion of the tongue, which lip at its upper portion extends beyond the vertical plane of the front portion of the tongue, substantially as described.

2. A cigar-box attachment constructed of a single piece of spring material and comprising a body-plate bifurcated at its lower end, its front face being convexed and its rear face concaved, each member of the body-plate terminating in a forwardly-extending foot, and a tongue extending from between the members of the body-plate and forwardly and longitudinally of the front face of the body-plate, the said tongue being pointed at its upper end and provided with a lip whose upper edge extends beyond the vertical plane of the front face of the said tongue, as and for the purpose specified.

3. A cigar-box attachment constructed of a spring material, comprising a body-plate having its back concaved and its front convexed, the lower portion of the body-plate being bifurcated, each member terminating in a forwardly and downwardly extended pointed foot, and a tongue extending from the body-plate between the members thereof, the said tongue being carried upwardly and inwardly, forming a lower or base clamping-section, the tongue being given an upward and outward inclination from the said clamping-section, and a lip formed from the said tongue, the free end whereof is out of the vertical plane of the front face of the said tongue, for the purpose specified.

610,808. PHOTOGRAPHIC-BACKGROUND CARRIER. MORRIS C. HARRIMAN, Cheboygan, Mich. Filed Feb. 3, 1896. Serial No. 668,987. (No model.)



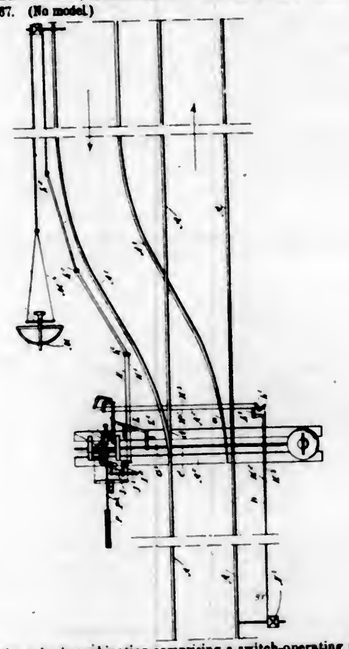
Claim.—1. A background-carrier, comprising a main frame composed of a base and vertical end members; a vertically-movable supplemental frame consisting of end bars slidingly mounted on the outer faces of the end members of the main frame, the connecting portions arranged to slide on the front edges of said end members, and the horizontal brackets projecting forward from the end bars and provided with bearings, a curtain-roller mounted in said bearings and provided at one end with a pulley, the pulley 13 mounted on the exterior of one of the end bars, and a belt connecting the pulleys, substantially as described.

2. A background-carrier, comprising a main frame; a supplemental curtain-carrying frame sliding and pivotally connected with the main frame, and means for securing the supplemental frame at the desired adjustment, substantially as described.

3. A background-carrier, comprising a main frame provided with a vertical series of stops arranged at intervals, and a vertically-adjustable curtain-carrying frame slidingly mounted on the main frame and capable of a pivotal movement, whereby it is adapted to swing into and out of engagement with the stops to adjust it to the desired elevation, substantially as described.

4. A background-carrier, comprising a main frame having vertical end members, stops arranged at intervals thereon, pivots mounted on the upper portions of the end members, the vertically-adjustable supplemental curtain-carrying frame, having longitudinally slotted end bars receiving the pivots and adapted to swing thereon, and the brackets mounted on the lower ends of the end bars and engaging the stops and adapted to be carried into and out of such engagement by the swinging of the supplemental frame, substantially as described.

610,809. COMBINED SWITCH AND SIGNAL MECHANISM. CHARLES E. HARRIS, Ellwood City, Pa. Filed Jan. 24, 1896. Serial No. 667,767. (No model.)



Claim.—1. A combination comprising a switch-operating mechanism, a signal-operating mechanism, and a common operating-lever, said switch and signal operating mechanisms each comprising toggle-levers for moving and locking the parts, and the operating-lever having taut connection with the signal-operating mechanism and slack connection with the switch-operating mechanism whereby the movement of the signal precedes that of the switch, substantially as described.

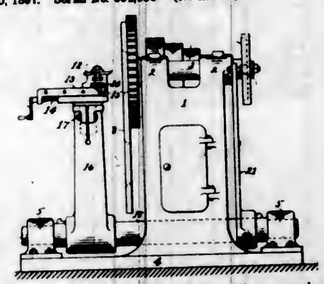
2. A switch and signal operating mechanism, comprising a bar mounted to slide longitudinally in bearings, a block mounted to slide on said bar, an operating-lever connecting with said block to slide it, stops upon the bar on each side of said sliding block permitting of a limited free movement of the block thereon, connections from the sliding block to the signal-operating means, and from the sliding bar to the switch-throwing mechanism, substantially as described.

3. A combined switch-operating and signaling mechanism, comprising an operating-lever, a switch-throwing mechanism having a slack connection with said lever, a signaling mechanism having a taut connection with the operating-lever, and a second signal and its operating mechanism having uprights connected with the switch-throwing mechanism, a spring interposed in said connection, a catch between said spring and the signal, and releasing means therefor operated by the switch-throwing mechanism at the completion of its throw, substantially as described.

4. A switch indicator or signal, comprising a vertical shaft having a target thereon, two radial arms projecting from the shaft at different angles and elevations, an extension of the rod connecting the switch-points lying adjacent said shaft and having projections at top and bottom adapted each to engage one of the arms upon said shaft to rotate it, substantially as described.

5. A switch indicator or signal, comprising a vertical shaft having a target thereon, two radial arms projecting from the shaft at different angles and elevations, an extension of the rod connecting the switch-points lying adjacent said shaft, and having projections at top and bottom adapted each to engage one of the arms upon said shaft to rotate it, and fixed stops engaged by said arms and limiting their sway, substantially as described.

610,810. MACHINE FOR CUTTING MARBLE OR OTHER STONE. M. J. HAWLEY and JOHN B. CLOT, San Francisco, Cal. Filed Dec. 15, 1897. Serial No. 661,994. (No model.)



Claim.—1. In combination, an upright stationary main pedestal, a horizontal revolvable spindle mounted thereon, bearing at one end a face-plate with clamping means attached, and at the other end a cam-faced pattern-wheel, means for rotating said spindle, a horizontal rock-shaft supported at the base of the machine, a rocking arm engaging with said pattern-wheel, a rocking standard 16, both sustained upon said rock-shaft, and a cutting tool or tools 12, borne on said rocking standard, with means for advancing and retracting said tool toward and from said face-plate, substantially as specified.

2. In combination, a main pedestal, a horizontal revolvable spindle mounted thereon, bearing a face-plate with means for clamping the material thereto, and a pattern-wheel with cam-grooves in its vertical face, means for rotating said face-plate and said pattern-wheel simultaneously, a rock-shaft bearing two oscillating arms, one engaging the cam-groove of the pattern-wheel, and the other serving as a tool-support, the two oscillating arms moving in unison, and a slide-rest borne on said tool-support, with means for carrying a tool and means for horizontal adjustment of said tool both longitudinally and laterally, substantially as specified.

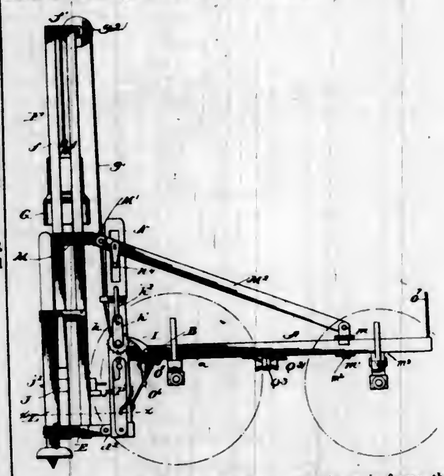
3. In combination, a main pedestal, a horizontal revolvable spindle mounted thereon, bearing a face-plate with clamps, and a removable pattern-cam, with means for rotating the same simultaneously, two rocking arms connected so as to oscillate in unison, one engaging with said cam, and the other bearing a slide-rest, a removable and adjustable tool borne on said rest, with means for adjusting the said tool in two directions, substantially as specified.

610,811. POST-DRIVER. ROLLA HEATON, Marceline, Ill. Filed Dec. 15, 1896. Serial No. 615,812. (No model.)

Claim.—1. In a post-driver, such as described, the combination with the frame, of the hoisting-drum journaled in bearings in rear of the main frame, the depending frame pivotally mounted on the drum-shaft, the slideways hinged to said frame, connection between the slideway and main frame and weight and means for actuating it; substantially as described.

2. In a post-driver, such as described, the combination with the main frame, the hoisting-drum, journaled in bearings in the rear ends of the main frame, the depending supporting-frame mounted to turn on the drum-shaft, the slideways hinged to the lower part of said frame by a universal-joint connection, the adjustable connection between the slideways and main frame, the weight and means for actuating it; substantially as described.

3. In a post-driver, such as described, the combination with the main frame, the hoisting-drum journaled in the rear ends of the main frame, the frame mounted to turn on said drum-shaft, the slideways supported on said frame, the slide movable on said main frame, the braces M^2 M^3 connected at one end to said slide, a detachable connection between the slideways and the other end of said braces, whereby the slideways may be folded down on the frame, the weight and means for actuating it; substantially as described.



4. In a post-driver the combination with the main frame, the sides of which constitute guideways, the slide-frame consisting of the upper and lower plates embracing said side pieces, the slideways adjustably connected to the main frame, the cross-bar swiveled to the slideways, the braces M^2 M^3 pivotally connected at one end to said cross-bar and at the other to the slide-frame, and the screw for clamping said slide-frame in adjusted position on the side pieces of the main frame; substantially as described.

5. In a post-driver, the combination with the main frame, the drum-shaft journaled in the rear ends of said frame, the yoke mounted on said shaft, the block carried by said yoke, the slideways, the braces M^2 M^3 connected to the slideways and main frame, and the screw-shaft journaled in said braces and working through the block in the yoke, as and for the purpose set forth.

6. In a post-driver, the combination with the main frame, the drum-shaft, the yoke mounted to turn thereon, and formed with guide-slots, the block working in said slots, the slide-frame, the braces connected at one end to said slide-frame, a detachable connection between the slideways and braces M^2 M^3 and the screw-shaft journaled in the braces and working through said block, whereby the slideways may be tilted to either side and folded down on the main frame; substantially as described.

7. In a post-driver the combination with the main frame, adapted to rest on the running-gear of a wagon, the slideways carried thereby, the plate carried by the rear bolster of the wagon, the arm rigidly secured thereto, the block carried by said arm, the screw-shaft working through said block, journaled at each end in boxes secured to the main frame, and means for preventing longitudinal movement of the shaft; as and for the purpose set forth.

8. In a post-driver, the combination with the slideways and weight traveling thereon, of the winding-drum, the pawls for holding the drum against backward rotation, the ratchet-lever mounted to turn on said shaft, the pawl pivoted on said lever coöperating with the ratchet-wheel to wind the drum when the lever is pressed forward, and which will strike the holding-lever and throw it out of engagement with the ratchet-wheel when the lever is swung about the shaft; substantially as described.

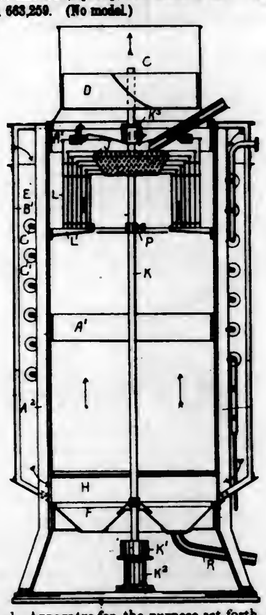
9. In a post-driver, the combination with the slideways and weight traveling thereon, of the post-guide consisting of a rim surrounding the top of the post and sliding in said slideways, and the lever for varying the size of the guide substantially as described.

10. In a device such as described, mounted on the running-gear of a wagon, the combination with the main frame, having the side pieces bent downward at the rear end, the arms hinged to the lower part of said side pieces, the reel-shaft supported in the ends of said arms, the friction-disks thereon, adapted to be held in frictional contact with the wheels, the pulley, the crank-pin thereon, the lever formed with a slotted end in which the crank-pin works, the arm carrying

the wire-guide connected to said lever, and the belt for transmitting motion from the reel-shaft to the pulley; substantially as and for the purpose set forth.

610,812. APPARATUS FOR TREATING OILS OR FATS.

CHARLES G. HEPBURN, Sydney, New South Wales. Filed Dec. 23, 1897. Serial No. 663,259. (No model.)



Claim.—1. Apparatus for the purpose set forth, consisting of a vertical chamber through which a current of air is made to pass upwardly, a spraying device in the upper part of said chamber, a distributer below the sprayer, a tray in the bottom of said chamber for collecting the treated liquid, an annular chamber in which said air is heated, and an annular chamber in which said air is dried, substantially as described.

2. An apparatus of the character described comprising a suitable chamber having a tray at the lower part thereof, means for creating an upward current of air through said chamber, a laterally-discharging sprayer at the upper part of the chamber, and a vertically-arranged distributer adjacent to said sprayer and adapted to receive matter ejected therefrom and to discharge the same in a shower down through the chamber in opposition to the ascending air-current, said distributer consisting of a nest of concentric rings or annuli of varying height surrounding the sprayer.

3. An apparatus of the character described comprising a suitable chamber, means for creating an upward current of air therethrough, a vertically-arranged distributer in the upper part of said chamber consisting of a nest of concentric rings or annuli of varying heights, and means for spraying the matter under treatment into the spaces between said rings.

4. An apparatus of the character described comprising a vertical chamber, a shaft or spindle extending therethrough, a centrifugal sprayer on said shaft, an exhaust-fan on the shaft above the sprayer, and a vertically-arranged distributer adjacent to the sprayer and adapted to receive matter ejected therefrom and to discharge the same in a shower down through the chamber in opposition to the air-current created by the fan.

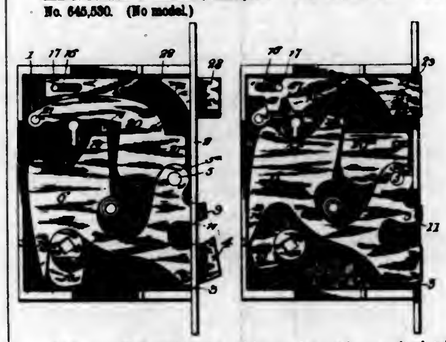
5. An apparatus of the character described comprising a suitable chamber, a heating-space around the same and communicating therewith at its lower end, a steam-coil in said heating-space, a drying-space around the heating-space and communicating with the same at the upper end thereof, a cold-pipe coil in said drying-space, means for creating an upward current of air through the chamber, and means for causing the matter under treatment to descend in a shower through the latter.

6. An apparatus of the character described comprising a suitable chamber, a heating-space around the same and communicating therewith at its lower end, a steam-coil in said heating-space, a drying-space around the heating-space and communicating with the same at the upper end thereof, a cold-pipe coil in said drying-space, a dead-air space between the heating and drying spaces, means for creating an upward current of air through the chamber, and means for causing the matter under treatment to descend in a shower through the latter.

7. An apparatus of the character described comprising a suitable chamber, means for creating an upward current of air therethrough, a laterally discharging sprayer at the upper part of the chamber, a vertically-arranged distributer around said sprayer, and a centrally-located baffle-plate below the distributer to direct the air through the same.

610,818. LOCK.

SCOTT HOUSER, Bellefonte, Pa., assignor of one-half to Francis S. Rhoades, same place. Filed July 22, 1897. Serial No. 645,530. (No model.)

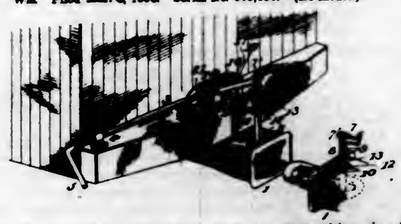


Claim.—1. The combination with a casing, and a gravity-latch pivotally hung therein and provided at its upper end with the locking-arm, 19, of a stop-bolt, 15, slidably fitted in the casing and provided with the depending locking-stud, 18, and with the longitudinal slot, 22, having the notch-seats, 24, and the gravity-tumblers arranged above the latch-bolt, on opposite sides of the slidable stop-bolt, and hung or pivoted in the casing independently of said stop-bolt and the latch-bolt, said tumblers having their weighted free ends disposed over the latch-bolt for their lugs, 21ª, to rest upon the latch-bolt hub, and said tumblers also provided with studs which enter the slot of the stop-bolt and are adapted to enter one or the other of the notch-seats therein accordingly as said stop-bolt is projected or retracted, substantially as described.

2. In a lock, the combination of a casing having its face-plate provided with terminal bolt-openings 3 and 29, and an intermediate opening 11, a pivotal bolt having its nose projecting through one of said openings in the face-plate, and provided with a repressing-stud 9 extending through the intermediate opening of the face-plate, an auxiliary bolt mounted for sliding movement in alinement with, for terminal extension through, the other bolt-opening, and having a projecting portion 18 for movement in a direction transverse to that of a contiguous portion 19 of the pivotal bolt, and adapted to occupy a position in the path of the latter when the auxiliary bolt is extended, means for securing the auxiliary bolt in either of its adjusted positions, and a reversible catch-plate provided with twin spaced bolt-openings and an intermediate opening for the reception of the repressing-stud, substantially as specified.

610,814. CAR-COUPLING.

ADOLPH F. KUHLMANN, La Crosse, Wis. Filed Mar. 4, 1896. Serial No. 673,056. (No model.)



Claim.—1. In a car-coupling, the combination, with a pin, of an uncoupling-lever having an upturned outer end, a soft-metal section welded onto the lever and having a substantially hook-shaped outer end, the bill of which laps over upon the end of the lever and forms in conjunction therewith an eye, and a connection between the pin and lever, said connection being suspended in said eye and adapted to be released by the outward bending of the said soft-metal eye-section when the pin is accidentally and forcibly carried away, substantially as described.

2. In a car-coupling, the combination, with a pin, of a lever having at its forward end an eye formed with a soft-metal section welded thereon, and a connection between the pin and eye, substantially as described.

3. In a car-coupling, the combination, with a pin, of a lever having at its forward end an eye formed with a soft-metal section welded thereon, a box having oppositely-arranged ledges of different widths for supporting the lever, a swinging bail suspended in the eye of the lever and formed with rigid arms terminating at their lower ends in eyes flared outwardly at their front ends to receive the flange at the base of the head of the pin, and a loose ring or link encompassing said arms and adapted to engage the link-head, substantially as described.

4. In a car-coupling, the combination with a draw-head 1 and coupling-pin 12, of a box or hood 14 provided with the chamber 17, ledges 18 19 separated by the slot 20 20′ and slot 21 in its side wall, a sliding shaft 3 having its inner end projecting through said slot 21 and provided with a lever-arm 6 extending through the front of the box, and a connection between the lever and pin, substantially as described.

610,815. NUT-LOCK.

CULLEN R. LARAWAY, Plaquemine, La. Filed May 4, 1898. Serial No. 679,672. (No model.)



Claim.—1. The combination of a nut-casing having a neck thereon and having a recess in the neck, a dog mounted loosely in the recess, and a locking-collar mounted to turn on the neck and having an inclined surface engaging the dog to throw the same.

2. The combination of a nut-casing, a dog mounted thereon, and a collar capable of turning loosely on the casing, the collar engaging the dog to throw the same to active and inactive positions.

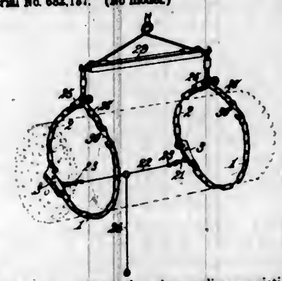
3. The combination of a member capable of connection with a nut, a dog mounted on the member and capable of engaging a bolt to lock the nut, and a locking-collar turning on said member and engaging the dog to throw the same to active and inactive positions.

4. The combination of a nut-casing having a cavity capable of receiving a nut and holding the same immovable with reference to said casing, a dog mounted loosely in the casing, and a locking collar mounted to turn on the casing and engaging the dog to throw the same into active and inactive positions.

5. The combination of a member capable of fast connection with a nut, a dog carried by said member and capable of engaging and disengaging a bolt, and a collar mounted to turn on said member and having two inclined surfaces acting on the dog, the one serving to throw the dog to engage the nut, and the other serving to retract the dog.

610,816. CANE-SLING.

JAMES MALLOY, New Orleans, La., assignor of one-half to James W. Bodley, same place. Filed May 31, 1898. Serial No. 682,157. (No model.)



Claim.—1. In a cane-sling, the trip-coupling consisting of a casing having a sling-chain attached to one end, a tumbler mounted in the other end of said casing and provided with a locking-lug and with a hooked projection to engage another sling-chain, a spring-pressed trigger fulcrumed in the said casing and having a locking-notch to normally engage the locking-lug of the tumbler, and a pull-rope for tripping the trigger to release the tumbler and cause its disengagement from the attached chain, substantially as described.

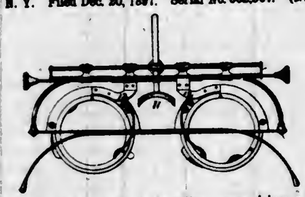
2. In a cane-sling, the trip-coupling consisting of a casing that is open along one edge and at its ends, a tumbler mounted in one end of said casing and provided with a locking-lug and with a hooked projection, a trigger fulcrumed in said casing and having a notch to normally engage the locking-lug of the tumbler, and a spring for normally holding the trigger in locking engagement with the tumbler, one end of the coupling being adapted for attachment of one sling-chain and the hooked projection of the tumbler being for detachable engagement with another sling-chain, substantially as described.

3. In a cane-sling, the combination with the sling-chains 1, 1, and 2, 2, of two trip-couplings 3, 3, for detachably connecting chains 1 and 2, each coupling being at one end attached to one of said sling-chains and having in its other end a tumbler 12 provided with a projection for detachable engagement with another sling-chain, and each coupling having a spring-pressed trigger 16 to normally engage and lock said tumbler, a chain or rope 22 detachably connecting the triggers of the two couplings, and a pull-cord 24, substantially as described.

4. In a cane-sling, the combination of the sling-chains 1, 1, and 2, 2, the trip-couplings 3, 3, for detachably connecting chains 1 and 2, and chain-buckles 25, 25, attached to one set of said chains, and provided with tongues 27 adapted to have a locking engagement with links of the sling-chains to confine the cane in a bundle, substantially as described.

610,817. TRIAL-FRAME FOR OCULISTS.

OLIVER T. MAY, Geneva, N. Y. Filed Dec. 20, 1897. Serial No. 662,567. (No model.)



Claim.—1. A trial-frame for oculists, comprising a bar having two sets of brackets slidingly mounted thereon, threaded eyes in said brackets, and temple-pieces secured to one set of said brackets and lens-holders secured to the other set, and right and left hand screws engaging the eyes on each set of brackets, for the purposes set forth.

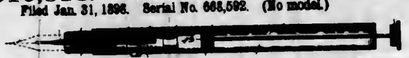
2. In a trial-frame for oculists, a lens-holder, comprising a base-ring having a portion of its face graduated and rings secured upon each side of said base-ring, all constructed from sheet metal, and means for yieldingly holding said lens upon said holder, as set forth.

3. A temple-joint comprising an internally-threaded tip having a recess in one edge, a washer having an arm adapted to engage with said recess, and a screw for holding the several parts together substantially as described.

4. A temple-joint, comprising an internally-threaded tip having a recess in one edge, a washer having an arm adapted to engage with said recess, a bow having one end perforated and provided with a shoulder adapted to engage with said arm on said washer, and a screw for holding all of the parts together, substantially as shown and described.

610,818. FOUNTAIN-PEN.

GEORGE H. MEARS, Frankfort, Ky. Filed Jan. 31, 1898. Serial No. 668,592. (No model.)



Claim.—1. A fountain-pen having a tubular pen-point feeder closed at its outer end and provided with a lateral orifice in permanent communication with the ink-reservoir, and a force-feed device for applying pressure to the contents of the reservoir, substantially as specified.

2. A fountain-pen having a tubular pen-point feeder closed at its outer end and provided with a lateral orifice in communication with the fountain, and a force-feed device, including a compressible bulb of tubular form in communication with the reservoir and surrounding and spaced from the portion of the feeder which is provided with said orifice and accessible means for compressing the bulb, substantially as specified.

3. A fountain-pen having a tubular pen-point feeder closed at its outer end and provided with a lateral orifice in communication with the fountain, and a force-feed device, including a compressible bulb of tubular construction surrounding and spaced from the portion of the feeder which is provided with said orifice, and being terminally open and in permanent communication with the interior of the fountain, and means for compressing the bulb, substantially as specified.

4. A fountain-pen having a pen-point-feeding device including a tubular feeder closed at its outer end and provided with a lateral orifice, and a compressible tubular bulb in communication with the interior of the fountain and surrounding the portion of the feeder

which is provided with said orifice, and an exposed pressure-button in operative relation with the compressible bulb in alinement with said orifice, and yieldingly held in its normal position by the elasticity thereof, substantially as specified.

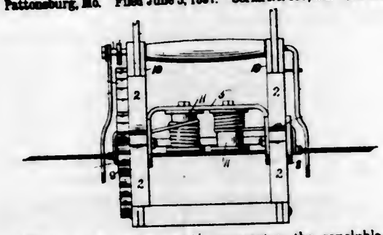
5. A fountain-pen having a pen-point feeding device including a tubular feeder closed at its outer end and provided with a lateral orifice, a compressible tube surrounding and spaced from the portion of the feeder having said orifice, and in communication with the interior of the fountain, and a separate terminally-exposed pressure-button in contact at its inner end with the exterior surface of said tube, and having said inner end flanged and concaved to fit the side of the tube, substantially as specified.

6. A fountain-pen having a tubular handle forming a reservoir, a pen-stock removably fitted in the lower end of the handle and carrying a reduced tubular feeder closed at its upper end and having a lateral orifice, a separate compressible open-ended tube snugly fitted in the handle, surrounding and spaced from the portion of the feeder having said orifice, and in communication with the interior of the handle, and a pressure-button mounted for radial movement in an opening in the wall of the fountain, bearing at its inner end against the exterior surface of the compressible tube, and yieldingly held in its normal position by the outward pressure of said tube, substantially as specified.

7. A fountain-pen having a pen-point-feeding device including a feeder having an orifice, a compressible tube surrounding and spaced from the portion of the feeder having said orifice, an inelastic tubular stretcher fitted in the open end of the tube to maintain a permanent communication with the fountain, and exposed means for compressing the tube, substantially as specified.

8. A fountain-pen having a tubular handle, a pen-stock removably fitted in the lower end of the handle and provided with a pen-point-feeding device, including a feeder having a reduced tubular extension arranged axially in the handle, closed at its outer end, and provided with a lateral orifice, a compressible tube snugly fitted in the bore of the handle surrounding said reduced extension of the feeder a tubular exteriorly-tapered incompressible spreader removably fitted in the upper end of said tube, a plunger fitted for reciprocatory movement in the bore of the handle above said spreader, a plunger-stem having a detachable engagement with the plunger, the spreader being in the path of downward movement of the plunger, whereby it may be forced to place by the plunger, and a cap removably fitted in the upper end of the handle and attached to the plunger stem, substantially as specified.

610,819. APPARATUS FOR APPLYING STAY-WIRES TO WIRE FENCING. SHERMAN G. MOONEY and WILLIAM J. MOONEY, Pattonsburg, Mo. Filed June 3, 1897. Serial No. 639,291. (No model.)



Claim.—1. In a wire-weaving apparatus, the revoluble shaft made in crank form and provided with slotted journals for the reception of the longitudinal wires and with longitudinal perforations for the stay-wires passing through said journals, in combination with stay-wire spools mounted on separate journals on said shaft substantially as described.

2. In a wire-weaving apparatus, the revoluble shaft or shuttle made in crank form and provided with slotted journals, and spool-spindles secured to the crank portion of said shuttle-shaft at right angles to and upon one side of the center of the axis of said shaft, substantially as described.

3. In a wire-weaving apparatus, the revoluble shaft or shuttle made in crank form and provided with slotted journals, the crank portions intermediate of said journals carrying stay-wire spools, and means for rotating said shaft, substantially as described.

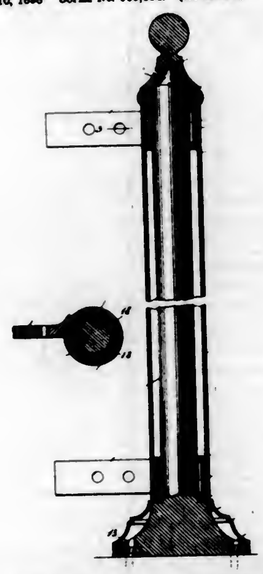
4. In a wire-weaving apparatus, the revoluble shaft or shuttle made in crank form and provided with slotted and perforated journals, spool-spindles secured to the crank portion of said shaft intermediate of said journals and at one side thereof, slotted bearings for said journals, a pinion fast on one journal, and means for actuating said pinion and shaft, substantially as described.

5. The combination in a wire-fence-weaving machine or apparatus, of the upright frame, the revoluble shaft journaled in divided bearings adjustable on said frame, said shaft journals and bearings being slotted to receive the longitudinal fence-wires, a pinion fast on one of said journals, a gear-wheel engaging said pinion, and a lever for actuating said gear-wheel, substantially as described.

6. A shuttle-shaft having slotted journals for engaging the longitudinal fence-wires and longitudinal perforations for the passage of stay-wires on opposite sides of the journal centers from the longitudinal wires, means for actuating said shaft, and pivoted arms for removing the longitudinal wires from the slotted shuttle-shaft journals, substantially as described.

7. The combination in a wire-fence-weaving machine, of a crank-axle provided with slotted and perforated journals for receiving the longitudinal and stay wires, stay-wire spools mounted on the crank portion of the said shuttle-shaft, a pinion fast on one journal of said shaft, a gear-wheel and lever for actuating said pinion, the arms for removing the longitudinal wires from the slots in said journals, and a pawl connected therewith for engaging the pinion-actuating gear-wheel and holding the same while the lever actuating said wheel is being retracted, substantially as described.

610,820. GATE-HINGE. HERMAN F. NEER, New York, N. Y. Filed Feb. 10, 1896. Serial No. 669,831. (No model.)



Claim.—1. In a hinge, the combination of the post, a cap mounted to rotate on the upper end of said post, a block of hard metal interposed between the said cap and post, and a casing surrounding said post and secured to said cap, the said casing being supported solely by the said cap, as and for the purpose set forth.

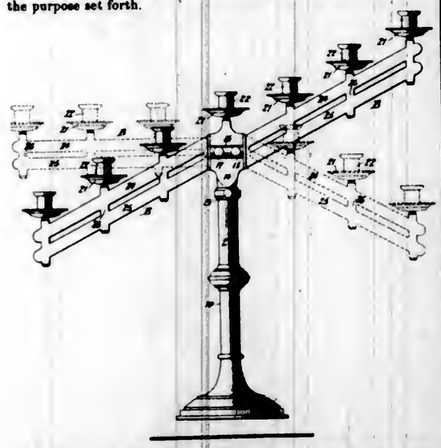
2. In a hinge, the combination with the post having a conical top and a base adapted for attachment to a support, of a cap mounted to rotate on said conical top, a casing attached to said cap, antifriction devices between said casing and post, and a block of hard metal inserted in the cap above the apex of the top of the post and provided with a recess by which it receives the said apex, as set forth.

610,821. CANDELABRUM. HERMAN F. NEER, New York, N. Y. Filed June 24, 1898. Serial No. 684,261. (No model.)

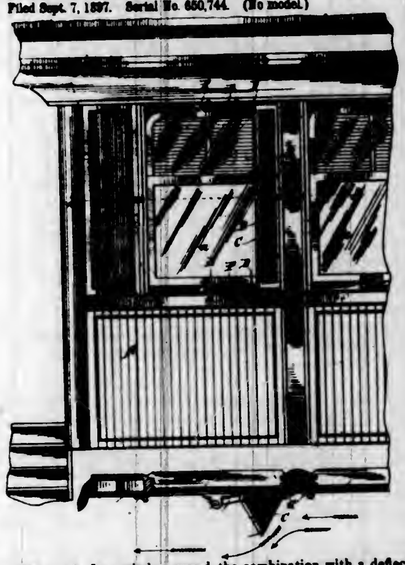
Claim.—1. A candelabrum consisting of a standard and arms reversibly and interchangeably connected with the said standard, the arms being provided with sockets at each longitudinal edge, said sockets being adapted to receive candlesticks, as and for the purpose specified.

2. A candelabrum consisting of a standard made in adjustable sections, reversible and interchangeable arms carried by one section of the said standard, means for securing the arms to the said section of the standard, each arm being provided with sockets located at its upper and its lower longitudinal surfaces, the said sockets being tapering, and candlesticks provided with tapering lugs arranged to fit in the sockets of the arms, as and for the purpose set forth.

3. In a candelabrum, the combination, with a telescopic standard, means for securing the sections of the standard in adjusted position, a head for one section of the standard, the said head being provided with a bearing extending from edge to edge, and locking devices extending into the said bearing, of candle-supporting arms provided with sockets at their upper and lower longitudinal surfaces, arranged to receive candlesticks, each arm being provided at its inner end with a pin adapted to enter the bearing in the said head, the pin of each arm being provided with opposing recesses adapted for the reception of the locking devices extending into the said bearing, for the purpose set forth.



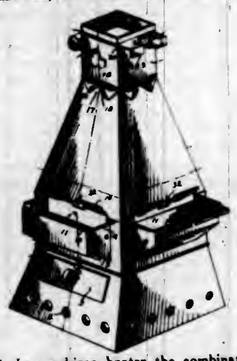
610,822. WINDOW-GUARD. MORRIS C. NEWMAN and LOUIS R. MAREK, Chicago, Ill., assignors of one-third to Charles May, same place. Filed Sept. 7, 1897. Serial No. 650,744. (No model.)



Claim.—1. In a window-guard the combination with a deflecting-plate having at each end a laterally-projecting U-shaped arm, of two link-bars pivoted one to the apex of each arm, a pair of brackets for attachment to a car-body or the like and to which the link-bars are pivotally attached, and a catch for attachment to a car-body or the like for securing the deflecting-plate.

2. In a window-guard the combination with a deflecting-plate having at each end a laterally-projecting arm, of two link-bars pivoted one to the free end of each arm, a pair of brackets for attachment to a car-body or the like and to which the link-bars are pivotally attached, and a catch for attachment to a car-body or the like for securing the deflecting-plate.

610,828. DEVICE FOR HEATING SAD-IRONS. FRANCIS W. NEWTON, Gainesville, Tex. Filed May 15, 1897. Serial No. 636,724. (No model.)



Claim.—1. In a sad-iron heater, the combination with a base having a body thereon with faces against which the irons are adapted to be placed and openings below the said faces, inclosing covers for the said openings one side of said covers being open, and a slide adjustably mounted on each cover and arranged to close the open side thereof, substantially as and for the purposes specified.

2. In a sad-iron heater, the combination of a body having heating-faces with iron supports thereon and provided with openings below said supports, inclosing covers for the said openings having upper ears to which the ends of wire rims are attached, slides mounted on the upper part of the said inclosing covers and held in place by the said rims and having inner bent edges to engage the upper edge of the front portion of the inclosing covering, and outer depending flanges with an upwardly-extending intermediate tongue, substantially as and for the purposes specified.

3. A sad-iron heater, consisting of a suitable base, a body on said base and provided with heating-faces and openings below said faces, covers for said openings, the said covers having one side open, and a closure for the open side of each cover, the said closures being pivotally and slidably connected to the covers, as and for the purpose set forth.

4. A sad-iron heater, consisting of a suitable base a body supported on said base and formed with heating-faces and draft-openings, and closures for said draft-openings, the said closures being formed with retaining edges, as and for the purpose specified.

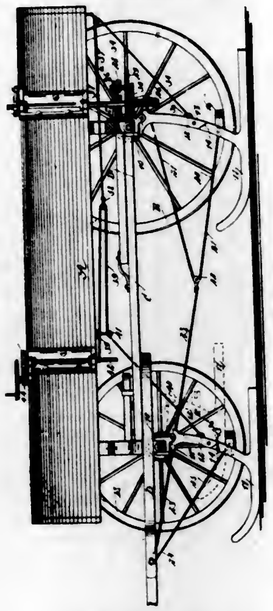
5. A sad-iron heater, consisting of a base, a body thereon and formed with a heating-face and a draft-opening, an inclosing cover over said openings, and having its upper side left open, a guide above said open side, and a closure for said open side and mounted to slide between the cover and guide, the said closure having a retaining edge by which it is pivoted to the upper edge of the cover when it is at the outward limit of its movement, as and for the purpose specified.

610,824. SLEIGH ATTACHMENT FOR VEHICLES. ANDREW C. NYGAARD, Rawlins, Wyo. Filed May 16, 1896. Serial No. 680,846. (No model.)

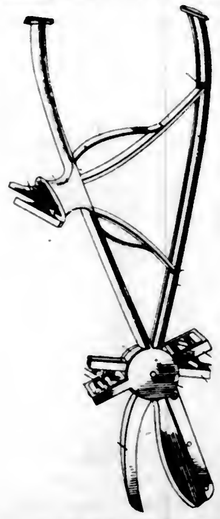
Claim.—1. A running-gear for vehicles, runners, knees for the runners pivotally attached to the running-gear, the knees being constructed in pivoted sections, flexing in a rearwardly and locking in a forwardly direction, spreaders for the knees, operating in like manner as the knees, and means, substantially as described, for exerting tension on the spreaders in a forwardly direction and tension on the knees in a rearwardly direction, as set forth.

2. A vehicle running-gear, knees pivotally attached to the axles of the running-gear, the said knees being constructed in pivotally-connected sections, one section being provided with a socket and the other with a tongue to enter the socket, the shoulders formed on the tongue and opposing surfaces of the sockets being inclined in a forwardly and downwardly direction, runners attached to the lower sections of the knees, spreaders pivotally attached to the lower sections of transversely-opposing knees, the said spreaders being constructed in pivotally-connected sections, one section being provided with a socket and the other with a tongue to enter the said socket, the shoulders formed by the tongue and the opposing surfaces of the sockets being inclined in a manner to cause the spreaders to flex in a rearwardly direction, winding-shafts, a flexible connection between one of the winding-shafts and the forward portions of the spreaders, and a flexible connection between the second winding-shaft and the rear portions of the upper sections of the said knees, as and for the purpose specified.

3. The combination, with the running-gear of a vehicle and the body thereof, a casing containing a train of gearing carried by the running-gear, a winding-shaft connected with the said train of gearing and a winding-post also connected with the said train of gearing, and a second winding-shaft, both winding-shafts being carried by the body of the vehicle, of runners, forwardly-curved knees pivotally attached to the axles of the running-gear, the said knees being constructed in pivotally-connected sections arranged to flex in a rearwardly direction and lock when carried in a forwardly direction and straightened, spreaders pivotally connected with the lower sections of transversely-opposing knees, the spreaders being rearwardly arched and constructed in pivotally-connected sections, flexing when carried in a rearwardly direction and locking when carried in a forwardly direction, tension devices connected with the forward edges of the spreaders at each side of their centers and with the winding-post of the said train of gearing, tension devices acting independently of the tension devices in the spreaders, connected with the upper sections of the knees at their rear and with the second winding-shaft carried by the wagon-body, for the purpose set forth.



5. An implement of the character described, comprising a pair of pivoted handles, one of which is provided with a longitudinal groove, and the other with a socket, a pair of pincers extending through said socket, and consisting of pivoted members provided with extended portions whose ends are adapted to fit and move within said groove, and springs for urging said extended portions outwardly and for opening said handles, as and for the purpose set forth.



6. In a combined docking and castrating device, the combination with a pair of shears having an opening through one of the handles thereof, of a pair of pincers pivotally mounted in said opening provided with ends flaring outwardly therefrom and resting upon the opposite handle of said shears, and a pair of pincers held upon the ends thereof one member of which is adjustable.

7. In a combined docking and castrating device, comprising two members pivotally joined, a blade carried upon one of said members, a blade formed upon the opposing members, holders held upon said members, dies adapted to be contained in one of said holders, punches adapted to be contained in the opposing holders, a pair of pincers pivotally mounted upon the handle of one of said members and provided with outwardly-extending ends, rollers held to rotate on said outwardly-extending ends, springs adapted to normally press said ends against the handle of the opposing member, a pincer member formed upon the extremity of one of said handles, and an adjustable pincer member carried upon the opposing extremity, substantially as described and for the purpose set forth.

610,825. COMBINATION-TOOL. ADDIEL F. OLSEN, Knowlton, Mont. Filed July 12, 1897. Serial No. 644,235. (No model.)

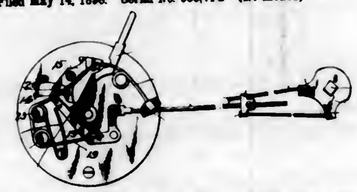
Claim.—1. An implement of the character described, comprising a pair of pivoted handles, a pair of pincers on one of said handles, consisting of pivoted members provided with extended portions adapted to bear against the other of said handles, and springs for urging said extended portions outwardly and for opening said handles.

2. An implement of the character described, comprising a pair of pivoted handles, one of which is provided with a longitudinal groove, and a pair of pincers on the other of said handles, consisting of pivoted members provided with extended portions whose ends are adapted to fit and move within said groove.

3. An implement of the character described, comprising a pair of pivoted handles, one of which is provided with a longitudinal groove, a pair of pincers on the other of said handles consisting of pivoted members provided with extended portions, whose ends are adapted to fit and move within said groove, and springs for normally urging said extended portions outwardly and for opening said handles, as and for the purpose set forth.

4. An implement of the character described, comprising a pair of pivoted handles, one of which is provided with a longitudinal groove, a pair of pincers on the other of said handles, consisting of pivoted members provided with extended portions, friction-wheels in the ends of said extended portions adapted to fit and move within said groove, and springs for urging said extended portions outwardly, holding said friction-wheels in said groove, and for opening said handles.

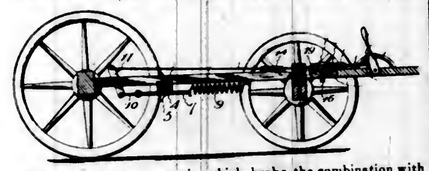
610,826. BURGLAR-ALARM. JOHN W. FARRIER, Milton, W. Va. Filed May 14, 1898. Serial No. 680,714. (No model.)



Claim.—1. In a door-alarm, the combination with a door-knob and spindle, of the removable plate on the said spindle, the headed rods, the block through which said rods loosely pass, the rod to which said block is adjustably secured, the set-screw for holding said block in its adjusted position, and the bell and connections, substantially as described.

2. The combination with the apertured plate adapted to be attached to a door-knob spindle, the headed rods connected therewith, the block through which said rods loosely pass and the rod to which said block is secured, of the plate adapted to be secured to a door, the elbow-lever to which said rod is pivoted, the pivoted dog, the pivoted arm having a notch and lug, the hammer-rod and hammer, the pivoted lever having a beveled inner end upon which said dog moves, the gong or bell and the springs, substantially as described.

610,827. AUTOMATIC VEHICLE-BRAKE. WILLIAM PEARL, Fairport, Mo. Filed May 27, 1898. Serial No. 681,903. (No model.)



Claim.—1. In an automatic vehicle brake, the combination with a running gear, of a pair of brake-levers fulcrumed on the running-gear and provided at their outer ends with brake-shoes arranged to engage the hind wheels, the toggle connection composed of outwardly-converging front and rear plates or bars pivoted together at their outer ends, the pivot 6 connecting the adjacent inner ends of the plates or bars and pivoting the same to the inner ends of the brake-levers, a coiled spring mounted on the reach and attached to the front of the toggle connection and adapted to apply the brake, a lever fulcrumed on the reach near the rear end thereof and having its lower end connected with the toggle connection, guides mounted on the running-gear in advance of the front axle, and a doubletree mounted in the guides and connected with the upper end of the said lever, substantially as described.

2. In an automatic vehicle-brake, the combination with a running-gear, of a pair of brake-levers fulcrumed on the running-gear and arranged to engage the hind wheels, a spring for applying the brake-lever, a doubletree mounted in the said guides and connected with the brake-levers, an operating-lever fulcrumed in advance of the doubletree and connected with the same, a curved ratchet, and a pawl mounted on the lever and arranged to engage the ratchet, whereby the brake is locked out of operation, substantially as described.

610,828. DEVICE FOR PREVENTING RAILWAY ACCIDENTS. CORNELIS PETERS, Nymwegen, Netherlands, assignor of two-thirds to Wilhelmus Schoondermark, Waspik, and J. A. A. Schoondermark, Leeuwarden, Netherlands. Filed Oct. 5, 1897. Serial No. 654,176. (No model.)



Claim.—1. A locomotive or railway carriage provided with a brake-pipe, a brake-cock having a projection on its plug, and an arm or lever loose on said plug and adapted when moved to engage the projection and carry the plug along with it to open the cock, said lever being also adapted for engagement with a projection on the track, substantially as described.

2. A locomotive or railway carriage provided with a brake-pipe, a brake-cock having a projection on its plug, and an arm or lever loose on said plug and arranged for engagement with an arm on the track, the said lever being adapted when moved in one direction to engage the projection on the plug and carry said plug along to open the cock, the said plug being arranged to move only in one direction and when the lever is bearing against the projection, whereby the lever must complete an entire revolution to return the cock to its normal position, as and for the purpose set forth.

3. A locomotive or railway carriage provided with a brake apparatus having a movable projection adapted to be engaged by an arm on the track so that said arm will apply the brake automatically, the said brake apparatus being provided with a readily-breakable temporary fastening to prevent accidental application of the brake, substantially as described.

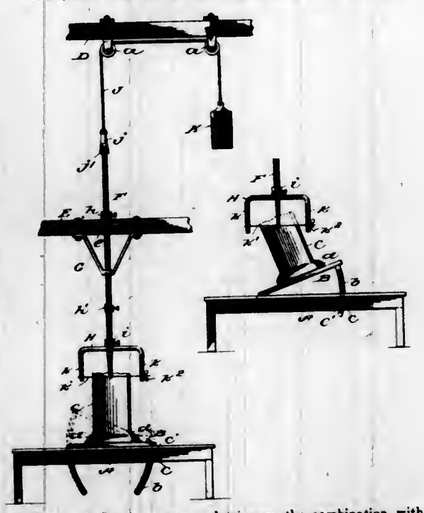
4. A locomotive or railway carriage provided with a brake-pipe, a brake-cock, an arm adapted to be engaged by a projection on the track and arranged to engage the plug of the brake-cock to open the same to apply the brake automatically, and a readily-breakable temporary fastening device for the said plug to prevent accidental opening of the brake-cock, substantially as described.

5. A locomotive or railway carriage, provided with a brake-pipe, a brake-cock having a projection on its plug, an arm or lever loose on said plug and adapted to engage the projection thereof, said lever being also adapted for engagement with a projection on the track, and a readily-breakable temporary connection between the said lever and the plug of the brake-cock, substantially as described.

6. A railway having a movable arm located on the track, mechanism connected with said arm for throwing it into either of two positions, a brake-pipe carried by a locomotive or railway carriage, a brake-cock having a segmental projection on its plug, an arm or lever loose on said plug and adapted to engage the projection and carry the plug along with it, the free end of the said lever being adapted for engagement with the movable arm on the track, and a readily-breakable temporary fastening device for the plug of the brake-cock, substantially as described.

7. The combination with a setting apparatus for a switch or signal, of a movable arm located on or near the track and operatively connected to said apparatus, and a brake apparatus carried by a railway or locomotive carriage and having a brake-cock provided with a projection on its plug, and an arm or lever loose on said plug and adapted when moved to engage the projection and carry the plug along with it, the said lever being adapted for engagement with the arm on the track, substantially as described.

610,829. PIPE TRIMMER AND CUTTER. JAMES L. RANEY, Toronto, Ohio. Filed Jan. 20, 1898. Serial No. 667,250. (No model.)



Claim.—1. In pipe cutter and trimmer, the combination, with the three following instrumentalities, to wit: a pipe-support, a shaft mounted in bearings to rotate and to have vertical adjusting movement, and a cutting and trimming device carried by said shaft; of means for adjusting one of the above-named instrumentalities to cause the said cutting and trimming device to extend at an angle to the upper end of a pipe mounted on said support, adjustable stop devices on the shaft above and below the bearings to limit the movement of the shaft in both directions, and a counterbalancing-weight connected with the upper end of said shaft, substantially as described.

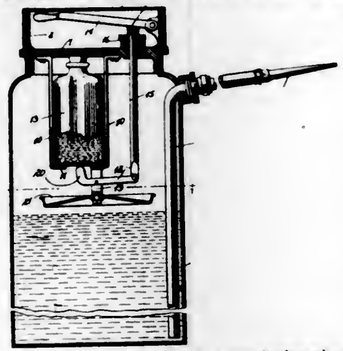
2. In a pipe trimmer and cutter, the combination with a girder carrying upper and lower bearings, of a shaft mounted in said bearings to rotate and have longitudinal adjusting movement, stop-collars on the shaft above and below said girder adapted to contact with the bearings, a cutting and trimming device on the lower end of the shaft, and a counterbalancing-weight connected with the upper end of said shaft, substantially as described.

3. In a pipe trimmer and cutter, a supporting-girder carrying upper and lower bearings, a shaft mounted to rotate and to have longitudinal adjusting movement in said bearings, stop-collars on the shaft above and below said girder, and a wire trimmer and cutter on the lower end of said shaft, in combination with a table provided with an adjustable pipe-support, substantially as described.

4. In a pipe cutter and trimmer, the combination of an upper girder D carrying pulleys *a*, a lower girder carrying bearings *e*, G, a shaft mounted to revolve in and slide freely through said bearings, adjustable stop-collars on the shaft above and below said lower girder, a wire trimmer and cutter on the lower end of the shaft, and a coun-

terbalancing device consisting of a cord or its equivalent passed over said pulleys on the upper girder and carrying at one end a counterweight and having at the other end a swivel connection with the upper end of the shaft, substantially as described.

610,830. FIRE-EXTINGUISHER. ALLAN M. RING, Arlington Heights, Mass. Filed Jan. 21, 1898. Serial No. 667,442. (No model.)



Claim.—1. The combination of a tank, a cover for the tank, a yoke projecting downward from the cover into the tank, a frangible vessel held by the yoke, a lever fulcrumed on the yoke and having a hammer-like formation capable of engaging and fracturing the vessel, a rod extending vertically and connected with the lever to move the same, and a lever supported on the cover and connected with the rod.

2. The combination of a tank, a cover for the tank, the cover having vertically-extending walls, a cap covering the walls, a lever fulcrumed on said walls and inclosed thereby, a rod extending through the cover and connected with the lever, a yoke depending from the cover and projecting into the tank, and a lever supported by the yoke and capable of fracturing a vessel held by the yoke.

3. The combination of a tank, a cover for the tank, a yoke depending from the cover and projecting into the tank, the yoke having an arm, a lever fulcrumed in the arm and capable of fracturing a frangible vessel held by the yoke, a rod connected to the lever and extending vertically through the cover, and a lever mounted on the cover and connected with the rod.

610,831. PIPE-WRENCH. OSIAS F. ROBERTS, Jacksonville, Fla. Filed Jan. 26, 1898. Serial No. 668,055. (No model.)

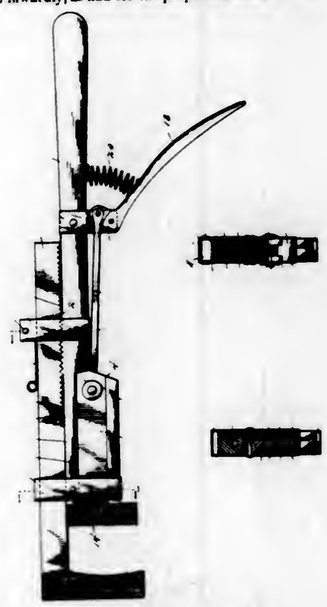
Claim.—1. In a wrench, the combination with the shank, of a main jaw longitudinally movable with relation thereto, a longitudinally-movable auxiliary jaw, and an operating-lever on said shank for moving said auxiliary jaw toward the main jaw and for returning it to its normal position.

2. In a wrench, the combination with the shank having longitudinally-extending grooves or recesses in its upper end, of a main jaw longitudinally movable with relation thereto, an auxiliary jaw having guide-fingers fitting and movable in said grooves or recesses, an operating-lever on said shank, and a pitman connecting said operating-lever and said auxiliary jaw, as and for the purpose set forth.

3. In a wrench, the combination with the shank having an offset at its upper end provided with longitudinally-extending grooves or recesses upon opposite sides thereof, of a main jaw longitudinally adjustable with relation to said shank, an auxiliary jaw having downwardly-extending parallel guide fingers or stems fitting and movable within said grooves or recesses, an operating-lever fulcrumed in a bracket on said shank and having a laterally-extending arm, a pitman connecting the arm on said lever with the guide-fingers on said auxiliary jaw, and a spring for urging said operating-lever outwardly, as and for the purpose set forth.

4. In a wrench, the combination with the shank having teeth along one edge thereof, of a main jaw having a stem provided with teeth along one edge adapted to engage the teeth on said shank, a guide-loop secured to said shank and embracing said stem, a spring engaging said stem for urging its free end outwardly, and a clamp for holding said stem inwardly against the pressure of said spring, as and for the purpose set forth.

5. In a wrench, the combination with the shank having on one edge thereof a longitudinally-movable auxiliary jaw, and means for operating the auxiliary jaw, of a main jaw having a stem extending downwardly therefrom and provided with teeth adapted to engage the teeth on said shank, guide-loops secured to said shank and embracing said stem, a leaf-spring secured to said shank, whose free end engages the inner surface of said stem, and tends to urge the same outwardly, and a clamp pivotally mounted in the lower of said guide-loops having an offset or shoulder formed thereon adapted to bear against the outer surface of said stem for forcing and holding the same inwardly, as and for the purpose set forth.



610,832. FIREPROOF STRUCTURE. WILLIAM R. ROBINSON, Cleveland, Ohio. Filed Jan. 11, 1898. Serial No. 666,329. (No model.)



Claim.—1. In a fireproof structure, the combination, with the I-beams and stirrups mounted thereon, of inverted-T-shaped bars supported by the stirrups, each bar being provided with a series of pins inserted transversely through the web.

2. In a fireproof structure, the combination, with I-beams and stirrups mounted thereon, of inverted-T-shaped bars supported by the stirrups and having the ends of their webs cut out so as to pass beneath the flanges of the I-beams, each of said T-bars being provided with a series of pins inserted transversely through the web.

3. In a fireproof structure, the combination, of an I-beam, and concrete surrounding its upper flange and a portion of the web, a casing for the bottom and the remainder of the web of the I-beam, said casing comprising oppositely-disposed slabs of plastic material shaped so as to leave an air-space around the greater portion of the beam, the upper portion of each slab extending beyond the concrete filling for the I-beam, and formed with a shoulder for supporting said concrete filling.

4. In a fireproof structure, the combination, with an I-beam and concrete surrounding its upper flange and a portion of the web, of two slabs of plastic material enveloping the remaining portion of the beam, each of said slabs being formed near its upper edge on the inner side with a shoulder for supporting the concrete surrounding the web of the I-beam and near its lower edge with a shoulder adapted to rest on the lower flange of the I-beam, the upper portion of the slab projecting beyond the concrete surrounding the web of the I-beam and entering the notch formed in said concrete.

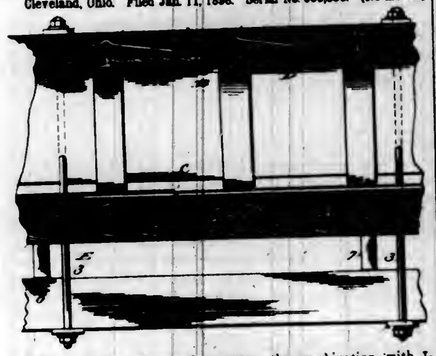
5. In a fireproof structure, the combination, with an I-beam and concrete surrounding the upper flange and a portion of the web, of a casing for the bottom and the remainder of the I-beam, said casing comprising oppositely-disposed slabs of plastic material shaped so as to leave an air-space around a greater portion of the beam, each of said slabs being formed near its upper edge on the inner side with a shoulder for supporting the concrete surrounding the web of the I-beam and near its lower edge with a shoulder adapted to rest on the lower flange of the I-beam, the upper portion of the slab projecting beyond the concrete surrounding the web of the I-beam and entering the notch formed in said concrete, and means for securing the lower ends of the slabs together.

6. A casing-slab for partially incasing an I-beam having one or more integral L-shaped strips of metal embedded therein, as and for the purpose stated.

7. The combination, with an I-beam, of a plurality of casing-slabs adapted to incase the greater portion of the I-beam, a key for securing the lower ends of adjacent slabs together, said key being also adapted to secure together the slabs on opposite sides of the I-beam, and a recess at the abutting ends of the slabs adapted to be filled with cement for securing the key in place.

8. In the construction of fireproof structures, a centering for temporarily supporting the concrete, said centering consisting of stringers adapted to rest on the lower flanges of the I-beams, and a suitable concrete-supporting platform erected on said stringers.

610,833. FIREPROOF STRUCTURE. WILLIAM R. ROBINSON, Cleveland, Ohio. Filed Jan. 11, 1898. Serial No. 666,330. (No model.)



Claim.—1. In a fireproof structure, the combination, with I-beams, of floor-bars connecting said beams, the ends of the bars being supported by the lower flanges of the I-beams, tie-rods looped over the upper edges of said floor-bars, a solid platform supported by the flanges of the bars and underlying the tie-rods, and a filling of concrete resting on said platform.

2. In a fireproof structure, the combination, with I-beams, of floor-bars connecting said beams, a solid platform connecting said bars, the floor-bars being turned downward at their ends and adapted to rest on and be supported by the lower flanges of the I-beams, a filling of concrete resting on said platform, ceiling-bars connecting said beams, being turned upward near their ends and adapted to rest on and be supported by the lower flanges of the I-beams, and a concrete filling entirely surrounding the ceiling-bars and embracing the ends of the floor-bars, whereby the concrete for the ceiling is adapted to aid in holding the floor-bars.

3. In a fireproof structure, the combination, with I-beams, of floor-bars connecting said beams and having their ends bent downward and resting on the lower flanges of the I-beams, a concrete filling between the floor-bars, ceiling-bars connecting the I-beams and having their ends bent upward and resting on the lower flanges of the I-beams intermediate the ends of the floor-bars, and a concrete filling surrounding and supported by the ceiling-bars, the concrete also surrounding the ends of the floor-bars.

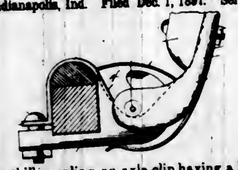
4. In a fireproof structure, the combination, with I-beams, of floor-bars connecting the beams, said bars being of inverted-T shape and having their ends bent downward and adapted to rest on and be supported by the lower flanges of the I-beams, tie-rods connecting the floor-bars at their upper edges, a plurality of slabs of plastic material adapted to be placed on and supported by the flanges of the floor-bars, and a filling of concrete supported by said slabs.

610,834. FRUIT-JAR. LEANDER K. ROYER, Anderson, Ind. Filed Jan. 26, 1898. Serial No. 667,865. (No model.)



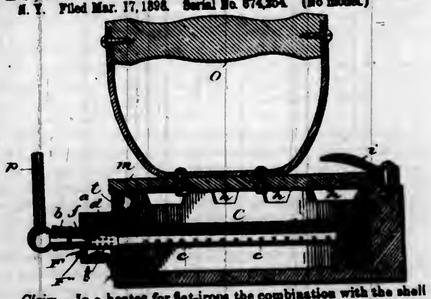
Claim.—The combination with a jar having a vertical inwardly-beveled rim or flange surrounding its orifice, of a cover for said jar, having a central convex portion adapted to fit within the said orifice, an outwardly-beveled bead surrounding said central portion and adapted to fit upon the inner portion of the inclined surface of said rim or flange, and a gasket seated around the said bead and upon the edge of said rim or flange, together with means for securing the cover to the jar, substantially as specified.

610,835. ANTIRATTLING THILL-COUPLING. GEORGE W. SPRINGER, Indianapolis, Ind. Filed Dec. 1, 1897. Serial No. 660,392. (No model.)



Claim.—In a thill-coupling, an axle-clip having a hook arranged in advance of the axle and provided with a rearwardly and upwardly inclined bill forming an oblique throat or slot, and also embodying a flat and substantially horizontal base-plate, in combination with a thill-iron comprising rearwardly-extending ears to straddle the hook, a coupling-pin connecting said ears, and a spring secured to the under side of the thill-iron and having a curved end which bears against the lower surface of the base-plate, whereby the tension of the spring is increased as the thill is lowered, substantially as described.

610,836. FLAT-IRON HEATER. JOHN D. SULLIVAN, Potsdam, N. Y. Filed Mar. 17, 1898. Serial No. 674,264. (No model.)

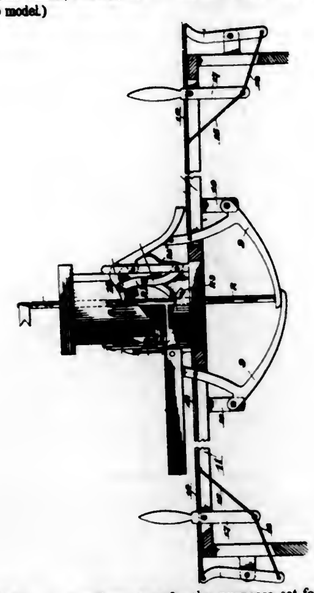


Claim.—In a heater for flat-irons the combination with the shell of the flat-iron, of the mixing-chamber *c* having a contracted end,

mounted in the apertured end of the flat-iron, and adapted to receive a perforated burner-tube, of the threaded nipple mounted in the end of the enlarged portion of the mixing-chamber, the perforated cylinder *k* about the inner end of said nipple, and extending through into the contracted end of the shell comprising said mixing-chamber, the rotary apertured disk E mounted on said nipple, of the union *b* with contracted threaded end designed to fit in the outer end of the nipple, the apertured disk in the union, and the pipe connection with the enlarged threaded end of said union, as shown and described.

610,837. AUTOMATIC GATE FOR RAILWAY-CROSSINGS.

HENRY VISSER, Overisel, Mich. Filed July 2, 1897. Serial No. 643,270. (No model.)



Claim.—1. A railway-gate for the purposes set forth, comprising a rotatably-mounted vertically-movable post to which the gate is connected, means for raising the gate and post operated by an approaching train, and pivoted guide-rails which act to move the gate at right angles to its former position, substantially as shown and described.

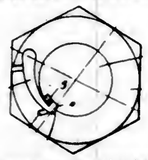
2. A railway-gate for the purposes set forth, comprising a vertically-movable gate-post carrying the gate, levers engaging the lower end of the gate-post, and operating-levers connected to the aforesaid levers; together with pivoted guide-rails consisting of curved sections, the upper one of which is automatically moved beneath the gate when the latter is elevated, substantially as shown and described.

3. In a railway-gate for the purposes set forth, the combination with the box-frame having slots which communicate with each other at their lower ends presenting inclined tracks, of a vertically-movable gate-post carrying the gate, means for elevating the gate, and curved guide-rails at the sides of the slots, each guide-rail comprising two sections pivoted to each other and to a support, one of the sections having a counterbalancing-weight, substantially as shown and described.

4. In a railway-gate for the purposes set forth, the combination of a box-frame having vertical slots communicating with each other at their lower ends, presenting inclined tracks, of a gate vertically movable within the box-frame and projecting beyond the same through the slots, means for elevating the gate from both sides of the same, and curved guide-rails located adjoining the slots, each guide-rail being made up of two sections pivoted to each other and to a link, one of the sections having a counterbalancing-weight; together with springs for returning the sections to a normal position against the action of the counterbalancing-weight, the guide-rail adjoining one of the slots being curved inward, substantially as shown and described.

5. In a railway-gate for the purposes set forth, the combination with the box-frame, of a vertically-movable gate supported therein, elbow-levers engaging the lower end of the gate-post, operating-levers connected to the elbow-levers by cables, and a supplemental lever for each operating-lever, said supplemental lever being connected at one end directly to the cable which extends from the elbow-levers and at its opposite end to the operating-lever; together with guide-rails upon which the gate rides when released, substantially as shown and described.

610,838. NUT-LOCK. WILLIAM C. WHITE, Danville, Va. Filed Dec. 21, 1897. Serial No. 662,794. (No model.)



Claim.—1. In a nut lock, the combination with a nut and bolt, the latter having a recess in its outer end and an inclined shoulder adjacent to said recess constituting a guide or track way, of a vertically-movable pawl carried by the nut, and a spring for holding the pawl normally in engagement with the bolt, as and for the purpose set forth.

2. In a nut-lock, the combination with the nut and bolt, the latter having a recess in its outer end adjacent to one of its side edges, one side of said recess being beveled forming a guide or track way, of a vertically-movable pawl carried by the nut, the head of the pawl being beveled on one side and adapted to bear against said guide, and a spring for holding the pawl normally in engagement with the end of the bolt, as and for the purpose set forth.

3. In a nut-lock, the combination with the nut and bolt, the nut being provided with a recess having a lateral extension, and also a vertical opening adjoining the recess, of a pawl connected to a pin having a vertical movement in the opening of the nut, a head which engages the recess and is adapted to be moved into the extension thereof, and a spring moving the pawl normally in engagement with the bolt, substantially as shown and for the purpose set forth.

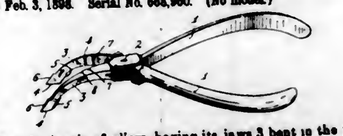
4. In a nut lock, the combination with the nut and bolt, the latter having one or more recesses in its outer end, while the nut is provided with an opening and with a recess having vertical and lateral extensions, a pawl having a head with an extension fitting the vertical and lateral extensions in the nut, a pin to which the bolt is connected, said pin having a play within the vertical opening in the nut, and a spring for returning the pawl to a normal position, substantially as shown and for the purpose set forth.

610,839. TOBACCO-PIPE. JAMES C. WRIGHT, Louisville, Ky. Filed Nov. 16, 1897. Serial No. 658,745. (No model.)



Claim.—In a tobacco-pipe, the combination with the bowl thereof, of a tobacco-holder and nicotine-retainer therefor, comprising a woven-wire basket open at both ends and adapted to hold the tobacco, a flange or collar secured rigidly about the upper end thereof and resting upon the rim of the bowl and holding the basket concentrically suspended therein so that a surrounding circulating-space is afforded for the smoke as it passes directly through the meshes of the basket to the bowl, a sheet-metal saucer-shaped receptacle rigidly secured to and closing the lower end of said basket, and spring-arms secured to the under side of and hanging pendent from the collar, said arms being bent inwardly at their lower ends and arranged to bear against the inner side of the wall of the bowl, substantially as described.

610,840. DENTAL PLIERS. EDWARD H. ANGLE, St. Louis, Mo. Filed Feb. 3, 1898. Serial No. 668,900. (No model.)



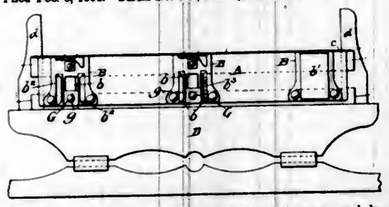
Claim.—1. A pair of pliers, having its jaws 3 bent in the plane of the biting-surfaces thereof, and provided with the terminal biting edges 4 and 5 that form acute angles to each other, located with their vertices projecting on the convex sides of said jaws, substantially as described.

2. A pair of pliers having its jaws 3 bent in the plane of the biting-surfaces thereof, and provided with the terminal biting edges 4 and 5 that form obtuse angles, located with their vertices projecting on the concave sides of said jaws, substantially as described.

3. The pair of pliers having the jaws 3, provided with the terminal biting edges 4, 5 and 6, said edges 4 and 5 forming obtuse angles and said edges 4 and 6 forming acute angles, substantially as and for the purposes set forth.

4. A pair of pliers having laterally curved or bent jaws provided at their intermediate portions with coöperating grooves that extend approximately on a radius of the curve on which said jaws are bent, substantially as and for the purposes set forth.

610,841. BOLSTER-SPRING. JOHN F. BOEHLER, Pandora, Ohio. Filed Feb. 8, 1898. Serial No. 669,514. (No model.)



Claim.—1. In a bolster-spring consisting of upper and lower bars with springs between, plates secured to the upper bar on either side and bolts secured to the lower bar and slidably arranged in slots in said plates, shields provided with slots adapted to register with the slots in said plates, said shields being firmly attached to said plates, substantially as shown and described.

2. In a bolster-spring consisting of upper and lower bars with springs between, plates secured to the upper bar on either side, bolts secured to the lower bar and slidably arranged in slots in said plates and shields attached to said plates, flaps of canvas secured between the tops of said shields and said plates, said flaps being of proper length and width to cover the slots in the shields, substantially as shown and described.

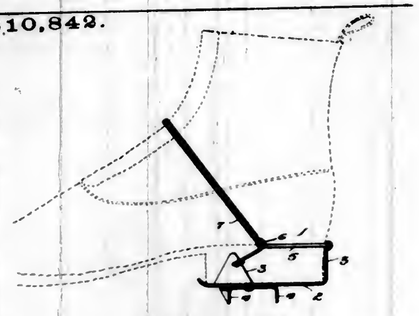
3. In a bolster-spring consisting of upper and lower bars with springs between, plates secured to the upper bar on either side and bolts secured to the lower bar and slidably arranged in slots in said plates, guides on either side of the said slots, said guides adapted to direct the head of the bolt, or nut, and prevent its turning, substantially as shown and described.

4. In a bolster-spring consisting of upper and lower bars with springs between, plates secured to the upper bar on either side and bolts secured to the lower bar and slidably arranged in slots in said plates, shields, provided with slots adapted to register with the slots in said plates, said shields having on either side said slots guides raised on the surfaces of the shields adapted to receive and direct the head of the bolt, or the nut, and prevent their turning, and said shields being firmly secured to said plates, substantially as shown and described.

5. In a bolster-spring consisting of upper and lower bars with springs between, plates secured to the upper bar on either side and bolts secured to the lower bar and slidably arranged in slots in said plates, shields provided with slots and guides secured to said plates, flaps secured between the tops of said shields and said plates, a graduated scale on the guide on one side the slot in the shield midway one of said plates, said scale adapted to measure the weight placed on said spring and coiled springs of varying size, elasticity and strength, arranged alternately, substantially as shown and described.

6. In a bolster-spring consisting of upper and lower bars with springs between, plates secured to the upper bar on either side and bolts secured to the lower bar and slidably arranged in slots in said plates, shields having slots adapted to register with the slots in said plates, said shields being securely attached to said plates, and flaps adapted to cover said slots, said flaps having their upper ends caught between the tops of said shields and said plates, substantially as shown and described.

610,842. ICE-CREEPER. JOHN W. BRAYMAN, Silver Springs, N. Y. Filed Apr. 7, 1897. Serial No. 631,051. (No model.)

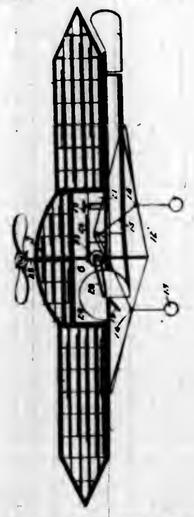


Claim.—1. In an ice-creeper, the combination of a resilient retaining-bail, and a yielding spring-rim, substantially as described.

2. The combination with an ice-creeper, of a resilient retaining-bail, and a yielding rim having eyes therein to which said bail is attached, substantially as described.

3. The combination with an ice-creeper, having upwardly-projecting devices, a yielding wire rim attached to said devices and having eyes therein, and a coiled spring retaining-bail attached to said eyes, substantially as described.

610,848. AERIAL SHIP. THOMAS J. BROWN, Sedalia, Mo. Filed Mar. 26, 1897. Serial No. 629,365. (No model.)



Claim.—1. In an aerial ship, the combination of a body provided with upper independent chambers having a series of independent cells or gas-receptacles constructed of balloon-silk, and opposite end cylinders in like manner supplied with similar independent cells, a horizontal propeller located above the two chambers at the center of the body, side propeller-wheels on the said body, a central propeller, and means for operating said propellers, substantially as described.

2. In an aerial ship, the combination of a body having two upper independent chambers separated by a partition and opposite end cylinders, each of the chambers and cylinders having individual inflatable gas-cells mounted therein, a conduit under the central portion of the ship and extending to the stern thereof, a rudder in line with the rear end of said conduit, a central propeller in the body for driving air into the conduit and also propelling the ship, an upper propeller above the chambers, propellers on opposite sides of the body, and means for operating said propellers, substantially as described.

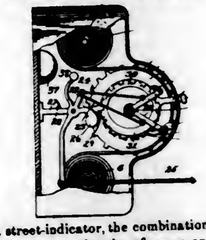
3. In an aerial ship, the combination with a body having opposite end cylinders and upper central chambers with a plurality of independent inflatable cells mounted therein, and means for propelling said ship, substantially as described.

4. In an aerial ship, the combination of a body having central upper chambers and end cylinders, the said chambers being independent of each other and of the cylinders and both having individual inflatable gas-cells mounted therein, a conduit along the bottom of the ship and extending to the rear thereof, a rudder in line with the rear end of said conduit, a propeller for driving air through the said conduit and means to regulate the position of the rudder, substantially as described.

5. In an aerial ship, the combination of a body having upper independent chambers and end cylinders, both the chambers and cylinders having individual inflatable gas-cells mounted therein, upper,

side and central propellers, and adjustable weights connected to the under side of the ship and adapted to be moved to balance the same or deflect it in descension, substantially as described.

610,844. STATION-INDICATOR. EDUARD C. CROSMAN, Allegheny, Pa. Filed May 20, 1897. Serial No. 637,336. (No model.)



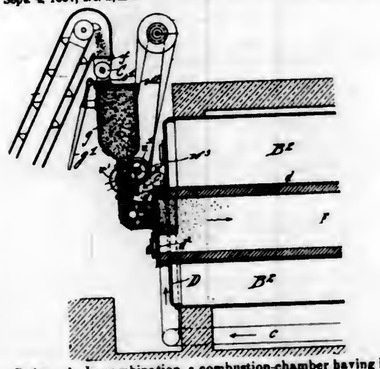
Claim.—1. In a street-indicator, the combination with an inclosing case having a sight-opening therein, of upper and lower spring-rollers, an indicating-band wound about the rollers and extending from one to the other and provided with perforations or openings adjacent to its edges, sprocket-wheels arranged in the ends of the case between the upper and lower rollers, a shaft upon which said sprocket-wheels are keyed, closely-arranged ratchet-wheels on the said shaft having their teeth pitched in opposite directions, levers mounted upon said shaft and carrying pawls engaging the said ratchet-wheels, a weighted lever supported in rear of said ratchet-wheels and connected to the said levers carrying the pawls, a pull-cord attached to the lower end of said weighted lever and an arm mounted on the support of the said weighted lever and having curved portions in advance thereof, and a front arm in connection with said curved portions projecting through a slot in the case, substantially as described.

2. In a street indicator, the combination with an inclosing case having a sight-opening therein, of spring rollers mounted within the case and spring-actuated in opposite directions, an indicating band or strip having its opposite ends connected with the respective spring-rollers, said indicating-band having perforations adjacent to its edges, a shaft extending longitudinally of the case between the rollers, sprocket-wheels mounted on the said shaft adjacent to its opposite ends and adapted to engage the perforations in the indicating band, closely-arranged ratchet-wheels near one of the sprocket-wheels and having their teeth pitched in opposite directions, a pair of levers mounted on the said shaft and carrying pawls adapted to engage the said ratchet-wheels, a rear weighted operating-lever having a pull-cord attached to the lower end thereof, and rods connected to the upper end of said weighted lever and to the separate levers carrying the pawls, substantially as described.

3. In a street-indicator, the combination with an inclosing case having a sight-opening therein, of spring-rollers located within the upper and lower portions of the said case, and spring-actuated in opposite directions, a shaft extending from end to end of the case intermediate of the said rollers and having thereon opposite sprocket-wheels, an indicating band or strip having perforations adjacent to the edge thereof and engaging the said sprocket-wheels, a scalloped wheel mounted on the shaft adjacent to one of the sprocket-wheels and having a spring-arm engaging the same, a pair of ratchet-wheels closely arranged near one of the sprocket-wheels and having their teeth pitched in opposite directions, a pair of levers mounted on the said shaft, each carrying a pawl to engage one of the sprocket-wheels, a weighted operating-lever in rear of the ratchet-wheels having a pull-cord attached to the lower portion thereof and adapted to be limited in its required movement and also to operate a gong or alarm, connections between the upper end of the operating lever and the said levers carrying the pawls, and an arm pivotally connected to the support of the operating-lever having curved portions, and a forwardly-projecting part extending through the casing and adapted to release the pawls, substantially as described.

4. In a street-indicator, the combination of an inclosing case, upper and lower, oppositely-movable, spring actuated rollers inclosed by the said case, a shaft intermediate of the said rollers having sprocket-wheels on opposite portions thereof, an indicating band or strip engaging the said sprocket-wheels and adapted to be wound upon the said rollers, closely-arranged ratchet mechanism having the teeth of opposite parts thereof pitched in opposite directions, adjacently-situated independent pawls engaging the said ratchet mechanism, an operating-lever connected to the said pawls and having a pull-cord attached thereto, and an arm pivotally mounted on the support of the said operating lever and having opposite curved portions and forwardly-extending ends projecting through the said case whereby the pawls may be released from the ratchet mechanism, substantially as described.

610,845. APPARATUS FOR BURNING PULVERULENT FUEL. CHRISTIAN A. FRENTAG, Amsterdam, Netherlands. Filed Apr. 17, 1897. Serial No. 632,592. (No model.) Patented in Germany Dec. 24, 1896, No. 95,375; in France Feb. 5, 1897, No. 263,757; in Belgium Feb. 5, 1897, No. 126,163; in England Feb. 5, 1897, No. 3,120; in Norway Feb. 5, 1897, No. 5,646; in Sweden Feb. 5, 1897, No. 8,760; in Switzerland Feb. 5, 1897, No. 13,958; in Hungary Feb. 5, 1897, No. 9,133; in Austria Feb. 24, 1897, No. 47/573; in Spain Mar. 6, 1897, No. 20,354; in Italy Mar. 31, 1897, XXXII, 43,789, LXXXV, 389; in Canada Apr. 20, 1897, No. 55,660; in Denmark July 29, 1897, No. 1,189, and in Portugal Sept. 4, 1897, No. 2,425



Claim.—1. In combination, a combustion-chamber having its inlet closed by a plate provided with outwardly-tapering openings, and means for forcing fuel-laden air through said openings, for the purpose set forth.

2. In combination, a combustion-chamber having its inlet closed by a plate provided with outwardly-tapering openings, means for forcing fuel-laden air through said openings, and means for preheating the blast, for the purposes set forth.

3. In combination, a combustion-chamber, a fuel-chamber connected therewith, reducing devices in said chamber for reducing the fuel to powder, a blast apparatus connected with the chamber, and means for breaking up the fuel-laden blast so as to flow into the combustion-chamber in the form of numerous jets or independent streams, for the purpose set forth.

4. In combination, a combustion-chamber, a fuel-chamber connected therewith, reducing devices in said chamber for reducing the fuel to powder, a blast apparatus connected with the chamber, means for preheating the blast, and means for breaking up the fuel-laden blast so as to flow into the combustion chamber in the form of numerous jets or independent streams, for the purpose set forth.

5. The combination with a combustion-chamber, of a pulverulent-fuel feeder comprising a feed-chamber opening into said combustion-chamber, a finely-perforated plate interposed between the two chambers, a revoluble shaft carrying beaters, or radial arms revolving therewith within the feed-chamber and means for admitting air to the last-named chamber, for the purpose set forth.

6. The combination with a combustion-chamber, of a pulverulent-fuel feeder comprising a feed-chamber opening into said combustion-chamber, a plate interposed between the two chambers and provided with fine perforations of increasing diameter in the direction of the combustion-chamber, a revoluble shaft carrying beaters or radial arms revolving therewith within the feed-chamber, and means for admitting air to the last-named chamber, for the purpose set forth.

7. The combination with a combustion-chamber, of a pulverulent-fuel feeder comprising a feed-chamber opening into said combustion-chamber, a finely-perforated plate interposed between the two chambers, a revoluble shaft carrying beaters or radial arms revolving therewith within the feed-chamber, a feed-duct connected with the last-named chamber, a feed-valve constructed to feed the fuel in predetermined charges to said duct and means for admitting air to the feed-chamber, for the purpose set forth.

8. The combination with a combustion-chamber, of a pulverulent-fuel feeder comprising a feed-chamber opening into said combustion-chamber, a finely-perforated plate interposed between the two chambers, a revoluble shaft carrying beaters, or radial arms revolving therewith within the feed-chamber, a feed-duct connected with the last-named chamber, a feed-hopper on said duct, a revoluble feed-valve between the hopper and duct, means for supplying air to the feed-chamber and mechanism for imparting continuous rotation to the aforesaid shaft and feed-valve, for the purpose set forth.

9. The combination with a combustion-chamber, of a pulverulent-fuel feeder comprising a cylindrical feed-chamber having a peripheral opening leading to the said combustion-chamber, a perforated plate in the form of a segment of a circle of less diameter than the interior diameter of the feed-chamber inserted in the opening thereof, a revoluble shaft carrying radial arms revolving therewith within said feed chamber, and means for admitting air to the last-named chamber, for the purpose set forth.

10. The combination with a combustion chamber, of a pulverulent fuel feeder comprising a fuel-reducer opening into said chamber, a finely-perforated plate interposed between said chamber and reducer and means for driving the crushed fuel through the perforations of the plate into the combustion-chamber, for the purpose set forth.

11 The combination with a combustion-chamber, of a fuel-crusher, comprising a crushing-chamber having serrated heads, and a revoluble shaft carrying radial crushing-arms cooperating with said heads, said crushing-chamber opening into the combustion-chamber, a finely-perforated plate interposed between the two chambers, and means for admitting air to the crushing-chamber, for the purpose set forth.

12. The combination with a combustion-chamber, of a pulverulent-fuel feeder comprising a fuel-reducer opening into said combustion-chamber, a finely perforated plate interposed between the two and means for admitting air to the reducing-chamber to carry the pulverized fuel through the perforations of said plate with air under the propelling action of the crushing-arms into the combustion-chamber, substantially as set forth.

13. The combination with a combustion-chamber, of a pulverulent-fuel feeder comprising a fuel reducer composed of a reducing-chamber having serrated surfaces, and a revoluble shaft carrying radial reducing-arms cooperating with said surfaces, said reducing-chamber opening into the combustion-chamber, a finely-perforated plate interposed between the two chambers, means for admitting air to the reducing-chamber, a feed-duct connected with the last-named chamber, and a valve constructed to feed the fuel in determined charges to said duct, for the purpose set forth.

14 The combination with a combustion-chamber of a pulverulent-fuel feeder, comprising a fuel-reducer composed of a cylindrical casing having a peripheral opening in communication with the combustion-chamber, and interior serrated surfaces and a revoluble shaft carrying radial reducing-arms cooperating with said surfaces, a finely-perforated plate inserted in said opening and having the form of a segment of a circle of less diameter than that of the interior of the casing, and means for admitting air to said casing, for the purpose set forth.

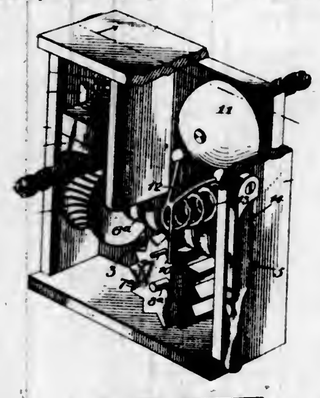
15. The combination with a combustion-chamber, of a pulverulent-fuel feeder, comprising a fuel-reducing chamber having interior reducing-surfaces and opening into the combustion-chamber, and a revoluble shaft carrying radial reducing-arms cooperating with said surfaces, a finely perforated plate interposed between the two chambers, a feed-duct connected with the reducing-chamber and terminating in a feed-hopper, a cylindrical revoluble valve in said duct between the hopper and reducing-chamber, said valve having peripheral pockets, means for admitting air to the reducing-chamber and mechanism for imparting continuous rotation to the crusher-shaft and feed-valve, substantially as and for the purpose set forth.

16. The combination with a combustion-chamber, of a pulverulent-fuel feeder, comprising a fuel-reducing chamber having interior reducing-surfaces and opening into the combustion-chamber, and a revoluble shaft carrying radial reducing-arms cooperating with said surfaces, a finely-perforated plate interposed between the two chambers, a feed-duct connected with the reducing-chamber and terminating in a feed-hopper, a cylindrical revoluble valve in said duct between the hopper and reducing-chamber, said valve having peripheral pockets, means for admitting air to the reducing-chamber, and mechanism for imparting continuous rotation to the crusher-shaft and feed-valve and for varying the speed of rotation of said valve, substantially as set forth.

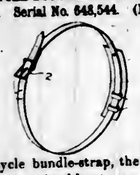
610,846. ROPE-MEASURING MACHINE. ELY Y SEALE HUBBARD, Rancho, Tex. Filed June 29, 1897. Serial No. 642,823. (No model.)

Claim.—1. In a machine for measuring rope, the combination of a casing having an opening extending entirely through it and adapted to receive a rope, a rope-receiving wheel mounted in the casing adjacent to the opening in position to be engaged and actuated by a rope, a gear-wheel provided with a projection and connected with and actuated by the rope-receiving wheel, a bell, a lever consisting of a V-shaped bell-hammer arranged to engage the bell when oscillated in either direction, and an arm 10 extending from the apex of the bell-hammer and arranged to be engaged by the said projection, and a coiled spring secured at one end and having its other end connected with the said lever at the apex of the bell-hammer, forming the sole support of the same and performing the double function of a spring and a pivot, substantially as described

2. In a machine of the class described, the combination with a bell, of a lever having one end forming a bell-hammer, and a coiled spring connected with the lever at a point between the ends thereof, forming the sole support for the same and performing the double function of a pivot and a spring, substantially as described.

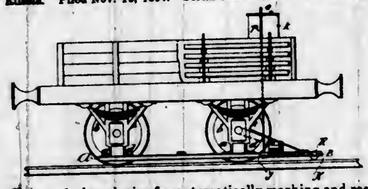


610,847. BICYCLE BUNDLE-STRAP. LEWIS LEVI, Newark, N. J. Filed Aug. 17, 1897. Serial No. 648,544. (No model.)



Claim.—In a bicycle bundle-strap, the combination of an elongated main strap having a buckle at one end and openings in the opposite end and a supplementary broader strap permanently secured at one end to the said elongated strap intermediate of the ends of the latter and having a loop at the opposite end through which the said elongated strap is passed, the said supplementary strap being freely adjustable at the end where the loop thereof engages the elongated strap to slip over a part of a bicycle.

610,848. APPARATUS FOR AUTOMATICALLY RECORDING UNEVENNESS IN RAILWAY-TRACKS. JOSEPH LIVTSCHAK, Wilna, Russia. Filed Nov. 19, 1897. Serial No. 659,190. (No model.)



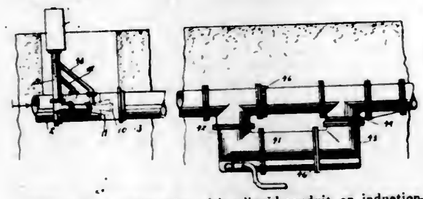
Claim.—1. In a device for automatically marking and recording depressions or other analogous defects in railway-lines, as described, the combination with a railway-truck having two axles, of spring-mounted conical rollers provided in suitable supports on both sides of said truck, bent levers fulcrumed in said supports, adapted to receive the vertical shocks thrown upon said rollers, due to defects on the line, a nozzle arrangement operated by said rollers through suitable intermediate means, said nozzle being in communication with a reservoir of a suitable colored fluid material, marking-levers X', Y', X^2, Y^2, adapted to be operated by means of a lever N, marking-rolls operated by said levers and suitable means to obtain a uniform feed of a paper strip to the marking-rolls, at a rate corresponding to the speed of the train, whereby an accurate record of existing defects in the road is obtained, substantially as described.

2. In a device for automatically marking and recording depressions or other analogous defects in railway-lines as described, the combination with a railway-truck having two axles, of a series of heavy weights provided on said truck having elastic layers superimposed between them, said weights being disposed over the rear axle of the truck; the rails A B provided on either side of said truck, suitable supports on said rails, shafts journaled in said supports, sep-

arable arms movably secured on said shafts, and springs tensioning said arms; and conical rollers provided in ball-bearings on the outer ends of said arms, adapted to be engaged with the track-rails, bent levers fulcrumed in said supports, adapted to receive the vertical shocks thrown upon said rollers due to defects in the line; a nozzle arrangement adapted to be operated by said rollers through suitable intermediate means, said nozzle being in communication with a reservoir of a suitable colored liquid material, marking-levers X', Y', X², Y², adapted to be operated by said bent levers; marking-rolls operated by said levers; and suitable means to obtain a uniform feed of a paper strip to the marking-rolls at a rate corresponding to the speed of the train, substantially as described and for the purpose specified.

3. In a device of the class described, the combination with a railway-truck, having two axles as described, of hangers depending from said axles and carrying rails on either side of said truck, suitable supports on said rails, shafts journaled in said supports, spring-actuated separable arms movably secured on said shafts and carrying at their outer ends conical rollers adapted to be engaged with the track-rails, bent levers N fulcrumed in said supports, adapted to receive the vertical shocks thrown upon said rollers; a nozzle arrangement mounted in said supports in operative relation to and adapted to be controlled by said rollers through suitable intermediate means, said nozzle being in communication with a reservoir of a suitable colored liquid material; levers X', Y', X², Y², in operative relation with levers N; marking-rolls operated by said levers; and suitable mechanism for uniformly feeding a paper strip to said marking-rolls at a rate corresponding to the speed of the train, whereby an accurate and permanent record of existing defects in the road is obtained, substantially as and for the purpose specified.

610,849. APPARATUS FOR PURIFYING WATER. SAMUEL MCELROY, New York, N. Y. Filed Oct. 20, 1897. Serial No. 655,794. (No model.)



Claim.—1. In combination with a liquid-conduit, an induction-valve comprising a casing, a plate mounted to swing in the casing, and means for directing air and an antiseptic into the casing, substantially as specified.

2. In combination with a water-conduit, an induction-valve comprising a casing contracted between its ends, a plate mounted to swing in the casing, means for adjusting said plate, and means for directing air and an antiseptic into the casing, substantially as specified.

3. In combination with a water-conduit, an induction-valve comprising a casing contracted between its ends, a pipe leading into the casing and having its outlet for air downstream of the contracted portion, a pipe leading into the casing and having its outlet for antiseptic material downstream of the contracted portion, and a plate adjustable transversely in the casing, substantially as specified.

4. The combination, with a water pipe or conduit, and an induction-valve, of an air-pipe having communication with the interior of the induction-valve, a valve eccentrically mounted in said air-pipe, a casing having a mixing-chamber for an antiseptic, and a pipe leading from said chamber and discharging into the induction-valve, substantially as specified.

5. The combination with a water pipe or conduit, of an induction-valve having connection with sections of the pipe or conduit, a casing arranged adjacent to the valve, the said casing having chambers for containing and mixing an antiseptic, and also having a chamber containing distributing-pipes, a valve-controlled air-pipe extending upward in a chamber of said casing and having communication with the interior of the induction-valve, and a pipe leading from the induction-valve and connecting with a valve-controlled pipe system in the circulating-pipe chamber, substantially as specified.

6. In combination with a water conduit or pipe and an induction-valve, a roil-pipe arranged below the water conduit or pipe and having branch connections therewith, a screen in the downstream branch of said roil-pipe, a screen in the main pipe adjacent to the upstream branch of the roil-pipe, the said roil-pipe having a sediment-chamber at its lower side, and a valve-controlled pipe leading from said sediment-chamber, substantially as specified.

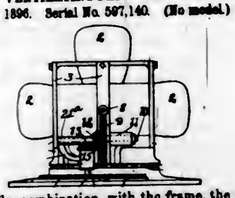
7. In combination with a water pipe or conduit, an induction-valve, a container for an antiseptic material, a pipe leading from said container to the induction-valve, a pipe leading from the induction-valve to the container, a valve actuated by a change of water-pressure in the conduit or pipe for controlling the pipe leading from the induction-valve into the container for antiseptic material, and an air-pipe leading into the induction-valve, substantially as specified.

610,850. DEVICE FOR HANGING CLOTHES, &c., ON LINES. GEORGE W. PRICE, Taylorsville, N. C. Filed Sept. 20, 1897. Serial No. 652,379. (No model.)



Claim.—The herein-described device for fastening articles on a line, which consists of a single piece of wire provided with legs depending from spring-coils formed at their upper ends, and intermediate arms depending from said coils and joined together at their lower extremities by a bend which is capable of being turned over the line to string the device thereon in such manner that said device is capable of being moved thereon to different points, of turning and swinging thereon and being readily removed therefrom, substantially as described.

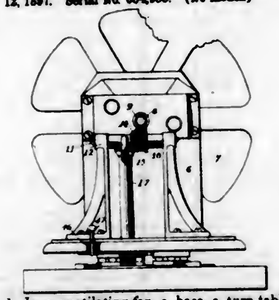
610,851. VENTILATING-FAN. MAX ROLLS, Philadelphia, Pa. Filed June 27, 1896. Serial No. 597,140. (No model.)



Claim.—1. The combination, with the frame, the revolable fan-arbor journaled in the frame, means for revolving the arbor, an endless screw on the arbor, a worm-wheel carried by the frame and meshing with said screw, and a beveled gear on said wheel, of a base pivotally supporting said frame, a vertical arbor, a pinion on each end of the vertical arbor, and a rack on said base engaged by one of said pinions, the other of said pinions meshing with the said beveled gear, to impart pivotal motion to the frame during the revolution of the fan-arbor, as set forth.

2. The combination with the frame, the revolable fan-arbor, means for revolving the arbor, and an endless screw on the arbor, of a base pivotally supporting said frame, a rack on the base, the tripping-blocks adjustably attached to the base, means connecting said screw to the rack to impart pivotal motion to the said frame, and a spring-controlled block to reverse said pivotal frame motion, as set forth.

610,852. VENTILATING-FAN. MAX ROLLS, Philadelphia, Pa. Filed Oct. 12, 1897. Serial No. 654,955. (No model.)



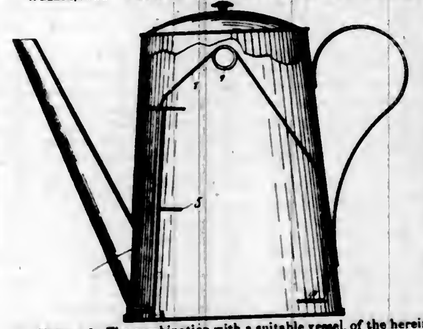
Claim.—1. In a ventilating-fan, a base, a turn-table rotatably supported thereon, a motor and fan attached thereto supported on the turn-table, an annular internally-toothed rack, and an annular externally-toothed rack, attached to the base, in combination with a pinion rotated by said motor, between said racks, a bearing supporting said pinion pendulously, and adjustable means of automatically engaging said pinion alternately in either rack substantially as set forth and described.

2. In a reversing mechanism for changing the direction of action of a ventilating-fan, an endless screw rotated constantly by the fan-arbor, a worm-wheel, an arbor and a beveled wheel turned by said screw, a bearing pendulously supported on the same axis as the bevel-wheel, a second beveled wheel turned by the first, a shaft turned thereby fitted in the pendulously-supported bearing, and having a pinion upon the lower end, annular stationary racks adapted to gear in said pinion, a forked lever provided with prongs engaging alternately in said pinion, to disengage said pinion from either rack, a spring and lever arranged to engage said pinion in the opposite rack, and adjustable stop arranged to actuate the forked lever as and for the purpose set forth.

3. In a gearing for adjusting and varying the direction of action of ventilating-fan mounted upon a turn-table, two annular racks, a pinion and means of rotating said pinion, a forked lever engaging said pinion, to disengage the pinion from either rack and a pointed lever and a spring having an opposite point arranged to engage the pinion in the opposite rack, in combination with a pin fitting through apertures in said pointed lever, and in the turn-table to hold the pinion out of engagement with the rack as set forth.

4. In a gearing for controlling the motion of ventilating-fans mounted upon a turn-table, adjustable stops secured to a stationary base, the reversing-gear, a lever controlling the reversing-gear and actuated by said stops, in combination with a hinged terminal section of said lever for suspending the reversing action, and causing continuous rotation, of the fan and turn-table as set forth.

610,853. ATTACHMENT FOR COFFEE-POTS. ANTON I. SANDBO, Waukon, Iowa. Filed Nov. 30, 1897. Serial No. 660,243. (No model.)



Claim.—1. The combination with a suitable vessel, of the herein-described straining apparatus, consisting of a perforated or meshed body, formed substantially as described, said body being provided with resilient arms designed to extend into engagement with the opposite sides of the vessel, and an anchoring-point secured to said body and designed to engage with one of the perforations in the usual spout-strainer, whereby the straining apparatus is held against vertical or lateral movement, substantially as specified and for the purpose set forth.

2. As a new article of manufacture, the herein-described strainer apparatus for coffee pots or the like consisting of a perforated or meshed body having end sections formed to fit the curved sides of the vessel to which it is applied and further provided with a perforated intermediate dam-section and with resilient arms designed to hold the body in an adjusted position, said body being further provided with an anchoring-stem designed to take into one of the perforations provided in the vessel, all formed substantially in the manner and for the purpose set forth.

610,854. BASKET FOR CATCHING SEWING FROM MACHINES. MARIAN C. ARRICK, Welcome, W. Va. Filed Dec. 31, 1896. Serial No. 617,588. (No model.)



Claim.—1. In a basket or receptacle of the character described, the combination with two relatively movable side frames, of folding sections constituting the bottom and front wall of the receptacle and designed to be folded by the movement of the movable side frames, substantially as specified.

2. In a basket of the character described, the combination with independent pivoted side frames, of a folding wall and a folding bottom supported within the pivoted side frames and designed to be actuated thereby, substantially as specified.

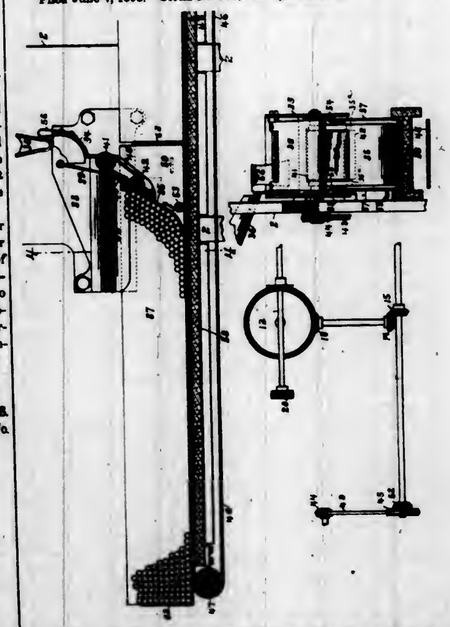
3. In a basket of the character described, the combination with a suitable support, of a pair of pendent brackets adapted to be removably secured to said support, independent swinging side frames carried by said brackets and having substantially vertical and parallel axes, a stationary wall connected to said brackets, a movable front wall and a folding bottom consisting of a plurality of longitudinally-extending sections supported at their opposite extremities by the side frames, said bottom and movable front wall being adapted to be folded against the stationary wall by the movement of the swinging side frames, substantially as specified.

4. In a basket or receptacle of the character described, the combination with a pair of brackets spaced apart and connected by one wall of the basket, of a pair of swinging frames pivotally connected to said brackets upon substantially vertical pivots and having inclined arms, an inclined folding wall and a folding bottom carried by the swinging frames and designed to be folded by the movement thereof, substantially as specified.

5. The combination with a pair of brackets spaced apart, of a side or wall connecting said brackets, a pair of swinging frames pivotally connected to said brackets and comprising oblique arms or portions, a folding side arranged within said swinging frames and adapted to rest against the oblique portions thereof, a longitudinally divided and jointed bottom connecting the two sides of the basket, and flexible limiting connections interposed between the brackets and folding side of the basket, substantially as described.

6. In a basket of the character described, the combination with a pair of brackets each formed of a piece of sheet metal folded longitudinally upon itself to comprise oppositely-located leaves and also having its end portions bent to form lips, of a side having its edges received between the folded portions of said brackets, swinging frames pivotally connected to said brackets and having inclined outer and lower portions, a folding side, and a jointed and folding or collapsible bottom hingedly connected to both sides of the basket, substantially as described.

610,855. CIGARETTE-MACHINE. DANIEL J. CAMPBELL, New York, N. Y., assignor to the American Tobacco Company, Newark, N. J. Filed June 7, 1895. Serial No. 551,961. (No model.)



Claim.—1. The combination with a machine for making cigarettes or other like articles, of a traveling receptacle for the articles,

an inclined way projecting into the receptacle for receiving the articles delivered from the machine and depositing them sidewise in the receptacle, a gate in said way for intercepting and positioning the articles, and side guides for engaging the ends of the articles sidewise, said gate being adapted to be moved out of intercepting position to permit the passage past it of the articles, substantially as described.

2. The combination with a machine for making cigarettes or other like articles, of a traveling receptacle for the articles, an inclined way projecting into the receptacle for receiving the articles delivered from the machine and depositing them sidewise in the receptacle, a yielding gate in said way for intercepting and positioning the articles sidewise, and side guides for engaging the ends of the articles, substantially as described.

3. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, an inclined way for receiving the articles delivered from the machine and depositing them sidewise in the receptacle, a yielding gate in said way for intercepting and positioning the articles sidewise, and means for moving the articles past the gate, substantially as described.

4. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles delivered, an inclined way for receiving the articles from the machine and depositing them sidewise in said receptacle, a yielding gate in said way for intercepting and positioning the articles sidewise, and a conveyer in said way moving toward the receptacle for moving the articles past the gate, substantially as described.

5. The combination with a machine for making cigarettes or other like articles, of a traveling receptacle for the articles, an inclined way projecting into the receptacle for receiving the articles delivered from the machine and depositing them sidewise in said receptacle, a gate in said way for intercepting and positioning the articles sidewise, said gate being adapted to be moved out of intercepting position to permit the passage past it of the articles, and guides on opposite sides of the way for engaging and centering the articles endwise, substantially as described.

6. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, an inclined way for receiving the articles delivered from the machine and depositing them sidewise in the receptacle, a yielding gate in said way for intercepting and positioning the articles sidewise, guides on opposite sides of the way for engaging and centering the articles endwise, and means for moving the articles past the gate, substantially as described.

7. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, an inclined way for receiving the articles delivered from the machine and depositing them sidewise in said receptacle, a yielding gate in said way for intercepting and positioning the articles sidewise, guides on opposite sides of the way for engaging and centering the articles endwise, and a conveyer in said way for moving the articles past the gate, substantially as described.

8. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, an inclined way for receiving the articles delivered from the machine and depositing them sidewise in said receptacle, a yielding gate in said way for intercepting and positioning the articles sidewise, a conveyer in said way moving toward the receptacle for moving the articles past the gate, and means for supporting the receptacle and feeding it past the discharge end of the way as the articles are deposited therein, substantially as described.

9. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, an inclined chute for receiving the articles from the machine and delivering them endwise therefrom, an inclined way arranged transversely to the chute for depositing the articles sidewise in the receptacle, a pocket at the receiving end of the way for receiving the articles from the chute and delivering them upon the way, and means in the way for intercepting and positioning the articles sidewise while passing along the way, substantially as described.

10. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, an inclined chute for receiving the articles from the machine and delivering them endwise therefrom, an inclined way arranged transversely to the chute for depositing the articles sidewise in the receptacle, a pocket at the receiving end of the way for receiving the articles from the chute and delivering them upon the way, means in the way for intercepting and positioning the articles sidewise while passing along the way, and means for feeding the receptacle past the discharge end of the way as the articles are deposited therein, substantially as described.

11. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, an inclined chute for receiving the articles from the machine and delivering them endwise therefrom, an inclined way arranged transversely to the chute for depositing the articles sidewise in the receptacle, a pocket at the receiving end of the way for receiving the articles from the chute and delivering them upon the way, a deflector in said pocket for deflecting the leading ends of the articles slightly forward as they are delivered thereto, and means in the way for intercepting and positioning the articles sidewise while passing along the way, substantially as described.

12. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles having an opening in its rear end, mechanism for conducting the articles delivered from the machine sidewise into the receptacle, said conducting mechanism extending downwardly into the receptacle and adapted to pass through the rear opening therein, and means for moving the receptacle in a uniform direction to advance the receptacle past the conducting mechanism as successive portions of the receptacle are filled substantially as described.

13. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles having an opening in its rear end, a conveyer for conducting the articles delivered from the machine sidewise into the receptacle, said conveyer projecting into the receptacle and adapted to pass through the rear opening therein, and means for moving the receptacle in a uniform direction to advance the receptacle past the conveyer as successive portions of the receptacle are filled substantially as described.

14. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles having an opening in its rear end, an inclined way for conducting the articles delivered from the machine sidewise into the receptacle, said way projecting downwardly into the receptacle and adapted to pass through the rear opening therein, and means for advancing the articles along the way, and means for moving the receptacle in a uniform direction to advance the receptacle past the way as successive portions of the receptacle are filled substantially as described.

15. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles having an opening in its rear end, means for advancing the receptacle, mechanism for conducting the articles delivered from the machine into the receptacle, said conducting mechanism extending downwardly into the receptacle and adapted to pass through the rear opening therein, and side guides for engaging the ends of the articles, substantially as described.

16. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles having an opening in its rear end, means for advancing the receptacle, a conveyer for conducting the articles delivered from the machine into the receptacle, said conveyer projecting into the receptacle and adapted to pass through the rear opening therein, and side guides for engaging the ends of the articles, substantially as described.

17. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles having an opening in its rear end, means for advancing the receptacle, an inclined way for conducting the articles delivered from the machine into the receptacle, said way projecting downwardly into the receptacle and adapted to pass through the rear opening therein, means for advancing the articles along the way, and side guides for engaging the ends of the articles, substantially as described.

18. The combination with a machine for making cigarettes and other like articles, of a chute for delivering the articles endwise from the machine, a receptacle for the articles having an opening in its rear end and movable transversely to the chute, means for so moving the receptacle, an endless conveyor also arranged transversely to the chute and projecting downwardly into the receptacle, and adapted to pass through the rear opening therein, and means for engaging the leading ends of the articles as they are delivered from the chute and arresting their endwise movement, substantially as described.

19. The combination with a machine for making cigarettes and other like articles, of a receptacle for the articles having an opening in its rear end, means for advancing the receptacle, a conveyer, and means within the receptacle in advance of the conveyer for receiving the articles therefrom and depositing them sidewise in the receptacle and adapted to pass through the rear opening in the receptacle, substantially as described.

20. The combination with a machine for making cigarettes and other like articles, of a receptacle for the articles having an opening in its rear end, means for advancing the receptacle, a conveyer, means within the receptacle in advance of the conveyer for receiving the articles from the conveyer and depositing them in the receptacle and adapted to pass through the rear opening therein, and means for engaging the sides of the articles to effect their deposit sidewise in the receptacle, substantially as described.

21. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, means for moving it, mechanism for conducting the articles into the receptacle, said mechanism comprising a yielding gate for engaging the articles sidewise and means for advancing the articles toward the gate, and side guides for engaging the ends of the articles, substantially as described.

22. The combination with a machine for making cigarettes or other like articles, of mechanism for delivering the articles endwise therefrom, a receptacle for the articles, and conducting mechanism having a moving conveyer arranged to advance the articles transversely to the delivery mechanism for conducting the articles sidewise to the receptacle, substantially as described.

23. The combination with a machine for making cigarettes or other like articles, of mechanism for delivering the articles endwise therefrom, a receptacle for the articles, a moving conveyer arranged to advance the articles transversely to the delivery mechanism for conducting the articles sidewise to the receptacle, and stationary side guides for engaging the ends of the articles, substantially as described.

24. The combination with a machine for making cigarettes or other like articles, of mechanism for delivering the articles endwise therefrom, a receptacle for the articles, conducting mechanism arranged transversely to the delivery mechanism for conducting the articles sidewise to the receptacle, and a pocket at the receiving end of the conducting mechanism provided with a deflector for engaging and guiding forward the leading ends of the articles, substantially as described.

25. The combination with a machine for making cigarettes or other like articles, of mechanism for delivering the articles endwise therefrom, a receptacle for the articles movable transversely to the delivery mechanism and having an opening at its rear end, means for advancing the receptacle, and means for conducting the articles sidewise into the receptacle comprising a conveyer also arranged transversely to the delivery mechanism, and means coacting therewith extending into the receptacle and adapted to pass through the rear opening therein, substantially as described.

26. The combination with a machine for making cigarettes or other like articles, of a plurality of receptacles for the articles having openings in their abutting ends, mechanism for conducting the articles delivered from the machine sidewise into the receptacle, said conducting mechanism extending downwardly into the foremost receptacle and adapted to pass through the openings in the abutting ends of the receptacles and means for moving the receptacles in a uniform direction to advance the receptacles past the conducting mechanism as successive portions of the receptacles are filled, substantially as described.

27. The combination with a machine for making cigarettes or other like articles, of a plurality of receptacles for the articles having openings in their abutting ends, mechanism, comprising an endless conveyer, for conducting the articles delivered from the machine sidewise into the receptacle, said conducting mechanism extending downwardly into the foremost receptacle and adapted to pass through the openings in the abutting ends of the receptacles and means for moving the receptacles in a uniform direction to advance the receptacles past the conducting mechanism as successive portions of the receptacles are filled, substantially as described.

28. The combination with a machine for making cigarettes or other like articles, of a plurality of receptacles for the articles arranged end to end and removable from the machine and having openings in their abutting ends, an inclined way for receiving the articles from the machine and delivering them into the receptacles, the discharge end of said way projecting into the foremost receptacle in proximity to the bottom thereof and adapted to pass through the openings in the ends of the receptacles, means for positioning the articles sidewise, and means for moving the receptacles in a uniform direction to advance the receptacles past the discharge end of the way as successive portions of the receptacles are filled, substantially as described.

29. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, mechanism for conducting the articles delivered from the machine sidewise into the receptacle, said conducting mechanism extending downwardly into the receptacle, and means for moving the receptacle in a uniform direction to advance the receptacle past the conducting mechanism as successive portions of the receptacle are filled, substantially as described.

30. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, a way for conducting the articles delivered from the machine sidewise into the receptacle, said way projecting downwardly into the receptacle, and means for moving the receptacle in a uniform direction to advance the receptacle past the conducting-way as successive portions of the receptacle are filled, substantially as described.

31. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, a way for conducting the articles delivered from the machine sidewise into the receptacle, said way projecting downwardly into the receptacle; means for advancing the articles along the way, and means for moving the receptacle in a uniform direction to advance the receptacle past the conducting-way as successive portions of the receptacle are filled, substantially as described.

32. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, a way for conducting the articles delivered from the machine sidewise into the receptacle, said way projecting downwardly into the receptacle, means for positioning the articles sidewise as they pass to the receptacle, and means for moving the receptacle in a uniform direction to advance the receptacle past the conducting-way as successive portions of the receptacle are filled, substantially as described.

33. The combination with a machine for making cigarettes or other like articles, of a receptacle for the articles, a conveyer projecting into the receptacle and delivering the articles to the receptacle sidewise, and means for moving the receptacle in a uniform direction to advance the receptacle past the conveyer as successive portions of the receptacle are filled, substantially as described.

34. The combination with the cigarette-rod forming and delivering mechanism of a continuous-rod-cigarette machine and cutting mechanism for severing the cigarette-rod into cigarettes, of delivery mechanism arranged to receive the cigarettes from the machine after they are cut from the cigarette-rod and successively advance them sidewise and deliver them uniformly into a packing-receptacle, substantially as described

35. The combination with the cigarette-rod forming and delivering mechanism of a continuous-rod-cigarette machine and cutting mechanism for severing the cigarette-rod into cigarettes, of a receptacle and packing mechanism arranged to deliver cigarettes into said receptacle in uniform position, and means for delivering cigarettes from the cutting mechanism to the packing mechanism, substantially as described.

36. The combination with a cigarette or similar machine, of a receptacle 37, inclined way 35, gate 39, a conveyer, and traveling apron 46 for feeding said receptacle past the discharge end of the way, substantially as described.

37. The combination with a cigarette or similar machine, of a receptacle 37, inclined way 35, gate 39, a conveyer, guides 54, 55, and traveling apron 46 for feeding said receptacle past the discharge end of the way, substantially as described.

38. The combination with a cigarette or similar machine of a receptacle 37, chute 36, inclined way 35, deflector 56, gate 39, a conveyer, and traveling apron 46 for feeding said receptacle past the discharge end of the way, substantially as described.

39. The combination with a cigarette or similar machine, of a plurality of receptacles 37 having openings in their abutting ends, chute 36, inclined way 35 adapted to pass through said openings, gate 39, and traveling apron 46 for moving said receptacles past the discharge end of the way, substantially as described.

40. The combination with a cigarette or similar machine, of a receptacle 37, chute 36, inclined way 35, curved pocket 34, deflector 56 in said pocket, gate 39, a conveyer, and means for feeding said receptacle past the discharge end of the way, substantially as described.

41. The combination with a machine for making cigarettes or other like articles, of delivery mechanism therefor comprising a pair of inclined arms and a conveyer between the arms for advancing the articles downwardly, substantially as described.

42. The combination with a machine for making cigarettes or other like articles, of delivery mechanism therefor comprising a pair of inclined arms and a conveyer between the arms for advancing the articles downwardly and guides at the sides of the arms for positioning the articles endwise, substantially as described.

43. The combination with a machine for making cigarettes or other like articles, of arms 35^a for receiving the cigarettes therefrom, a conveyer between the arms and yielding gate 39, substantially as described.

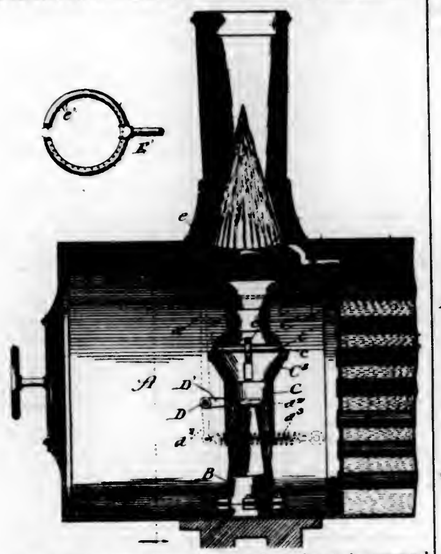
44. The combination with a machine for making cigarettes or other like articles, of arms 35^a for receiving the cigarettes therefrom, belt 40 between them and yielding gate 39 and guides 54, 55 at the sides of the arms 35^a, substantially as described.

610,856. LOCOMOTIVE. CHARLES A. COUCH, Chicago, Ill. Filed Nov. 13, 1897. Serial No. 658,833. (No model.)

Claim.—1. In a locomotive, the combination of an exhaust-nozzle arranged in the smoke-box in line with the stack, a hollow movable heat-deflector arranged in line with the exhaust-nozzle and the stack portion and having an upper funnel-shaped portion and an enlarged chamber intermediate the funnel portion and the inlet of the deflector, substantially as described.

2. In a locomotive, the combination of an exhaust-nozzle arranged in the smoke box and in line with the opening of the stack, a hollow heat-deflector movably mounted thereon provided with an upper funnel-shaped portion and an intermediate enlarged double-cone-shaped chamber the heat-deflector being divided so as to form an annular opening communicating with the smoke-box and the longitudinal passage in the deflector, substantially as described.

3. In a locomotive, the combination of an exhaust-nozzle arranged in line with the opening in the smoke-stack, a heat-deflector vertically and movably mounted thereon and interposed between the opening in the exhaust-nozzle and the smoke-stack having an upper funnel-shaped portion of a diameter larger than the opening of the stack and an intermediate double-cone-shaped portion providing an enlarged chamber between the outlet and inlet openings of the deflector such deflector being divided transversely at the double-cone-shaped portion so as to provide annular radial openings therein, and means for vertically moving the deflector so as to open and close the channel between the stack and smoke-box, substantially as described.



4. In a locomotive, the combination of an exhaust-pipe arranged in the smoke-box and in line with the opening of the stack, a heat-deflector arranged in line with the exhaust-pipe and the opening of the stack and provided with an enlarged chamber between the inlet and outlet openings of the deflector, substantially as described.

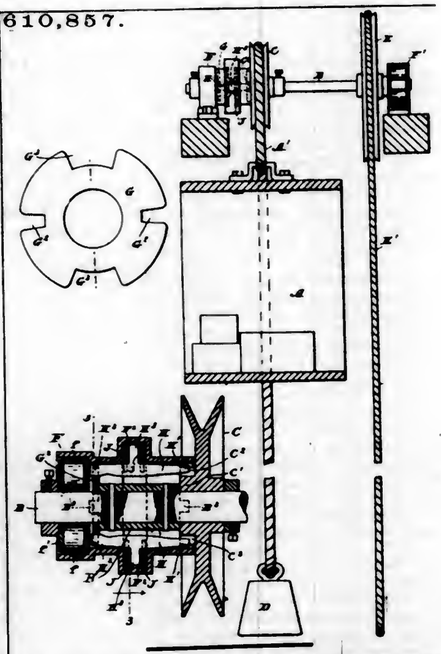
5. In a locomotive, the combination of an exhaust-nozzle arranged in line with the smoke stack, a divided hollow ring arranged at the base of the smoke-stack connected with a source of steam under pressure and having radial openings therein arranged at an angle so that steam may be projected into the smoke-stack and form a cone, a vertically-movable heat-deflector arranged on the nozzle of the exhaust-pipe and provided with an upper portion adapted to move up and inclose the divided ring the heat-deflector having radial and longitudinal openings, and means for moving the heat-deflector, substantially as described.

610,857. SELF-LOCKING CLUTCH FOR ELEVATORS, &c. CHARLES R. COX, New York, N. Y. Filed Dec. 31, 1896. Serial No. 617,678. (No model.)

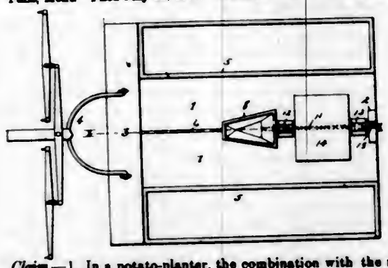
Claim.—1. The combination, with a shaft, of an operating-pulley, fixed on said shaft, a hoisting-pulley, loose on said shaft and provided with two narrow and two wider and deeper concentric recesses, a part connected with so as to be held against rotation on said shaft, and provided with lugs, to engage one set of said recesses, levers, provided with vertical portions, operatively engaging said part, and provided with narrowed rounding ends to work in the other set of recesses of said hoisting-pulley, and a brake consisting of plates, provided with beveled recesses, and controlled by said levers.

2. The combination, with a shaft B, of an operating-pulley E, fixed on said shaft, a hoisting-pulley C, loose on said shaft and provided with a shoulder having two narrow and two wider and deeper concentric recesses C^2, C^3, a plate G, on said shaft, and parallel with said hoisting-pulley and provided with recesses G^2, and smaller recesses G^3, a part B', connected with so as to be held against rotation on said shaft, and provided with lugs B^2, adapted to engage said recesses C^3, G^3, levers H engaging notches C^3, and G^3, in said shoulder and plate and having vertical portions H^2, a stationary box F, provided with a groove F^2, and a brake J, adapted to engage the groove of said box and adapted to be engaged by the vertical portions H^2, of said levers.

610,857.



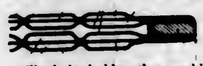
610,858. POTATO-PLANTER. WILLARD H. DARRAT, Great Falls, Mont. Filed July 23, 1897. Serial No. 645,046. (No model.)



Claim.—1. In a potato-planter, the combination with the main frame comprising platforms connected to each other to leave an intervening space at the forward end, a runner or shoe located between the platforms and pivoted at its forward end, a hopper located on the rear end of the shoe and communicating with an opening therein, a sliding rod engaging the hopper to hold the shoe out of contact with the ground, and a seat mounted upon the frame, substantially as described.

2. In a potato-planter, the combination of the platforms forming the frame and separated to present an intervening space, a runner or shoe pivoted within said space at its forward end, a hopper mounted upon the rear end of the shoe and communicating with a vertical opening through the same, a sliding rod engaging a recess in the hopper or shoe, and a lever for operating the rod; together with boxes located at opposite sides of the machine, and a seat between the boxes and in rear of the hopper, the parts being constructed and organized, substantially as herein shown and described.

610,859. SILK SKEIN HOLDER. JESSIE W. GLEASON, Chicago, Ill. Filed Jan. 27, 1898. Serial No. 668,165. (No model.)



Claim.—1. In a silk-skein holder, the combination of a frame portion provided with a flexible or yielding cover, a primary sheet secured thereto at its lateral edges and at intermediate points so as to form two or more individual pockets or chambers, a second sheet secured over the primary sheet and to the frame at its lateral edges and intermediate points so as to form individual holding-pockets in alinement with the first-named pockets, substantially as described.

2. In a silk-skein holder, the combination of a frame portion composed of relatively rigid bars and provided with a flexible covering, a primary sheet secured thereto at its lateral edges and intermediate parallel points so as to form individual holding pockets or chambers, and a second sheet secured to the frame portion over the first-named sheet and at its lateral edges and intermediate parallel points so as to form individual holding-pockets in alinement with the first-named pockets, substantially as described.

3. In a silk-skein holder, a book composed of two cover portions hinged together and at least two frames hinged thereto and composed of comparatively rigid bars provided with a flexible covering, a primary sheet secured thereto at its lateral edges and intermediate points or lines so as to form individual holding-pockets, and a second sheet secured thereto and above the first-named sheet at its lateral edges and intermediate parallel points or lines so as to provide a second set of holding-pockets in alinement with the first-named pockets, substantially as described.

610,860. CASTER. SOLOMON GLUCK, Temple, Tex. Filed July 31, 1897. Serial No. 646,650. (No model.)



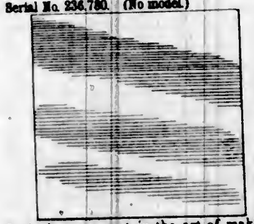
Claim.—1. In a device of the class described, the combination of a caster-frame provided at its upper face with an annular shoulder, a vertical shank or pivot mounted on the caster-frame, provided with a head and capable of a limited vertical movement independent of the caster-frame to carry its head to and from the bearing-shoulder, and a bearing-bracket adapted to be secured to a piece of furniture, provided at its bottom with an opening to receive the annular shoulder and having a side opening to permit the shank or pivot and its head to be introduced into the socket, the head of the shank or pivot being of greater diameter than the opening at the bottom of the socket, said annular shoulder being adapted to be interlocked with the opening at the bottom of the socket after the shank or pivot has been arranged therein, substantially as and for the purpose described.

2. A caster comprising a socket provided at one side with an opening and having an inwardly-extending flange forming an interior groove, a caster-frame provided with an annular shoulder adapted to fit in the socket, and a shank or pivot mounted on the caster-frame and provided with a head adapted to be introduced into the socket through the side opening thereof, said shank or pivot being capable of a limited longitudinal movement to permit the annular shoulder to fit into the socket after the head has been placed therein, substantially as and for the purpose described.

3. A caster provided with a cam-lever mounted on it beneath the frame and engaging the periphery of the roller to lock the latter against rotation, said lever being pivoted and adapted to be swung out of engagement with the roller to permit the latter to revolve freely, substantially as described.

4. A caster comprising a frame, a roller journaled on the frame, a shank or pivot having a portion depending from the frame adjacent to the roller, and a cam-lever fulcrumed on the depending portion of the pivot or shank and arranged to engage and lock the roller against rotation, substantially as described.

610,861. PHOTOGRAPHIC PELLICLE AND PROCESS OF PRODUCING SAME. HANNIBAL GOODWIN, Newark, N. J. Filed May 2, 1887. Serial No. 236,780. (No model.)



Claim.—1. An improvement in the art of making transparent flexible, photographic-film pellicles, the same consisting in dissolving nitrocellulose in a menstruum containing a hygroscopic element and an element which is non-hygroscopic, the non hygroscopic element being of itself a solvent of nitrocellulose, and of slower volatility than the hygroscopic element, depositing and spreading such solution upon a supporting-surface, and allowing it to set and dry and harden by evaporation, and spreading a photographically-sensitive solution on the hardened film, and drying the film, substantially as set forth.

2. An improvement in the art of making transparent, flexible, photographic-film pellicles, the same consisting in dissolving nitrocellulose in a menstruum containing an element whose boiling-point is above that of water as nitrobenzole, and an element whose boiling-point is below that of water as alcohol, the element having the higher boiling-point being of itself a solvent of nitrocellulose, spreading such solution upon a supporting-surface, and allowing it to set and dry and harden by evaporation, and applying photographically-sensitive matter thereto, substantially as set forth.

3. An improvement in the art of making transparent, flexible, photographic-film pellicles, the same consisting in dissolving nitrocellulose in a menstruum containing an element whose rate of volatility is higher than that of water, and an element whose rate of volatility is lower than that of water, the element of lower volatility being non-hygroscopic and itself a solvent, depositing and spreading such solution upon a supporting-surface, and allowing it to set and dry and harden by evaporation, and applying photographically-sensitive matter thereto.

4. An improvement in the art of making transparent flexible, photographic-film pellicles the same consisting in dissolving nitrocellulose in a menstruum containing elements having, respectively, high and low rates of volatility as compared with water, the elements having low rates of volatility being non-hygroscopic and solvents of nitrocellulose depositing and spreading such solution upon a supporting-surface, and allowing it to set and dry and harden by evaporation, and applying photographically-sensitive matter, substantially as set forth.

5. An improvement in the art of making transparent flexible, photographic-film supports, the same consisting in dissolving nitrocellulose in a menstruum containing an element which is hydrous and an element which is anhydrous, depositing and spreading such solution upon a supporting-surface and allowing it to set and dry and harden by evaporation, and applying photographically-sensitive matter, substantially as set forth.

6. An improvement in the art of making transparent flexible, and elastic photographic pellicles, the same consisting in dissolving nitrocellulose in an eventual cellulodial menstruum which is anhydrous and non-hygroscopic, spreading such solution upon a supporting-surface, allowing it to dry and harden, spreading photographically-sensitive matter, thereon and again drying and stripping the pellicle from said support, substantially as set forth.

7. The process of making photographic pellicles which consists in subjecting nitrocellulose to the action of nitrobensole, or its non-hygroscopic, non-greasy, celluloidal equivalent, applying the solution to or upon a supporting-surface and drying or setting the same to produce a smooth transparent supporting-film, then imposing upon said film a photographically-sensitive matter, and drying the same into a non-hygroscopic transparent, self-supporting, elastic and flexible photographically-sensitive pellicle, substantially as set forth.

8. The process of making photographic pellicles, which consists in subjecting nitrocellulose to the action of a menstruum combining fast and slow evaporating solvents, the slow evaporating solvent being non-hygroscopic and non-greasy in nature and quality and acting as an eventual solvent as described, spreading the solution upon a support and setting the same by evaporation, then applying photographically sensitive matter and stripping, all substantially as set forth.

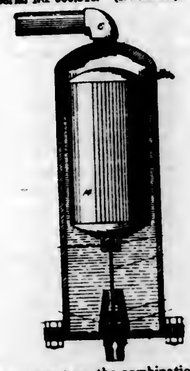
9. As a new article of manufacture, a film-support, for photographic purposes, the same consisting of a thin, transparent film, foil, or pellicle of a dried and hardened celluloidal solution of nitrocellulose, said film being coated on one side with a film of gelatin, and having on the other side a coating of photographically-sensitive matter as and for the purposes specified.

10. As a new article of manufacture, a transparent film-support for photographic purposes, the same consisting of a thin, non-greasy, film, foil or pellicle of a dried and hardened celluloidal solution of nitrocellulose, combining in addition to the following essential properties of glass-plate supports, viz., insolubility in developing fluids, insensibility to heat and moisture, imporosity of structure, and hardness, smoothness, and brilliancy of surface, the further desirable properties of exceeding thinness, lightness in weight, toughness in texture and elasticity in flexure; as and for the purposes specified.

11. The improved photographic pellicles, herein described, comprising a clearly and evenly transparent, elastic and dry residual efflux-ion, consisting of the evaporated thinly-spread flowage of nitrocellulose dissolved in one of the non-hygroscopic celluloidal solvents and dried, and a film of photographically-sensitive matter, substantially as set forth.

12. The process of manufacturing photographically-sensitive pellicles, consisting of flowing a non-photographically-sensitive solution of nitrocellulose dissolved in a non-hygroscopic liquid, or a liquid which is eventually non-hygroscopic, and drying and hardening such compound into a support for the photographically-sensitive emulsion and imposing on such support the said sensitive emulsion, substantially as set forth.

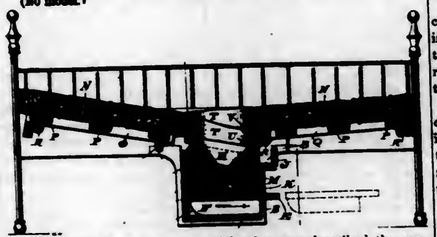
610,862. STEAM-TRAP. HENRY HELLING, Denver, Colo. Filed Feb. 7, 1896. Serial No. 669,310. (No model.)



Claim.—1. In a steam-trap, the combination of a casing having an opening in its top for the entrance of the water of condensation from the steam system or other apparatus, a float inclosed by the casing and provided with a stirrup-shaped bracket attached to its bottom and provided with an opening, an escape-opening formed in the bottom of the casing and surrounded by a valve-seat, a shield surrounding said valve-seat and projecting upward into the casing, a valve located in the shield, its lower extremity being provided with a guide-pin adapted to project below the valve-seat when the valve is open, a rod connected with the upper extremity of the valve, the upper extremity of the said rod being threaded and passing through the opening formed in the stirrup-shaped bracket attached to the bottom of the float, and a nut screwed upon the threaded extremity of the said rod and resting upon the bracket, as and for the purpose set forth.

2. In a steam-trap, the combination with a casing having an opening in its top for the water of condensation from the steam system or other apparatus, a float inclosed by the casing and provided with an apertured stirrup-shaped bracket attached to its bottom, an escape-opening being formed in the bottom of the casing and surrounded by a valve-seat, a shield surrounding said valve-seat and projecting upward into the casing a valve located within the shield and adapted to engage the valve-seat, a rod connected with the upper extremity of the valve, the upper extremity of the said rod being threaded and passing through the aperture formed in the stirrup-shaped bracket attached to the bottom of the float, and a nut screwed upon the threaded extremity of the said rod and resting upon the bracket.

610,863. COMMODE ATTACHMENT FOR BEDSTEADS. REUBEN HUMMEL, Philadelphia, Pa. Filed Oct. 5, 1897. Serial No. 654,101. (No model.)



Claim.—1. In an attachment of the character described, the combination of a mattress having an aperture therein, a box supported beneath said aperture, a chamber-pot vertically adjustable within said box, a funnel removably mounted in the upper end of said pot, and a sliding tray movably mounted between the bottom of said pot and box.

2. In an attachment of the character described, the combination of a mattress having an aperture therein, a box supported beneath said aperture, a chamber-pot adapted to be carried in said box and having one of its walls forming a splash-guard, and a funnel removably mounted in the upper end of said pot and below said guard.

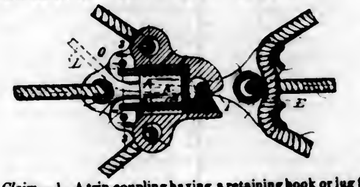
3. In an attachment of the character described, the combination of a mattress having an aperture therein, a box supported beneath said aperture, a chamber-pot vertically adjustable within said box and having one of its walls extended upward forming a splash-guard, a funnel removably mounted in the upper end of said pot, a padding on said guard and a movable tray interposed between the bottoms of said pot and box.

610,864. CARPET AND WEATHER STRIP. THEODORE A. LOBB, Harrisburg, Pa. Filed Aug. 27, 1897. Serial No. 649,730. (No model.)



Claim.—A weather-strip comprising a member or section of plano-convex cross-sectional contour, and a flat plate rectangular in cross-section and of a width slightly in excess of the width of the face of the plane side of the first-named member or section to which said plate is united to have one edge protrude beyond the convex face for a short distance, forming a reëntrant angle *x*, the lower edge of said protruding part of the plate being beveled at *c*, combined with a recessed door in which the weather-strip is hinged, an inclined lifting arm in the path of the strip, and means for depressing said strip, substantially as described.

610,865. TRIP-COUPLING. WILLIAM LOUDEN, Fairfield, Iowa. Filed Jan. 31, 1896. Serial No. 668,541. (No model.)



Claim.—1. A trip-coupling having a retaining hook or lug formed on one end of its main part, and pointing horizontally toward one side of the coupling, a trip-plate having a loop set at right angles to the hook and adapted to catch over it, and a horizontally-slidable trip-bolt adapted to close the open end of the hook and hold the loop within it, substantially as described.

2. A trip-coupling having one end of its main part forked, one of the forked ends being bent toward the other so as to form a hook or lug, a trip-plate having a loop adapted to pass in between the forked ends and catch over the hook, and a trip-bolt adapted to slide horizontally between the forks and close the opening between them, substantially as and for the purpose set forth.

3. A trip-coupling having one end of its main part forked, one of the forked ends being bent toward the other so as to form a hook or lug, a trip-plate having a loop adapted to pass in between the forked ends and catch over the hook, and a spring-pressed bolt adapted to slide horizontally between the forks and close the opening between them, substantially as and for the purpose set forth.

4. In a trip-coupling, the combination with a trip-plate of a main casting having a horizontal cavity in its body and means for connecting said trip-plate, a trip-bolt adapted to slide in said cavity and hold the trip-plate in position, and a separate guide-plate secured to the rear end of said casting and adapted to support a trip-cord, substantially as described.

5. In a trip-coupling, the combination with a trip plate of a main casting having a horizontal cavity in its body and means for connecting said trip plate, a trip-bolt adapted to slide in said cavity and hold the trip-plate in position, and a separate guide-plate secured to the rear end of said casting and adapted to support a trip-cord, and also the rear end of the trip-bolt, substantially as set forth.

6. In a trip-coupling, the combination with a trip-plate of a main casting having a horizontal cavity in its body, with a lip or lips on the edges thereof, and means for connecting said trip-plate, a trip-bolt adapted to slide in said cavity and rest on said lips and hold the trip-plate in position, and a separate guide-plate secured to the rear end of said casting and supporting the rear end of said trip-bolt, substantially as set forth.

7. In a trip-coupling, the combination with a trip-plate, of a main casting having a cavity in its body, trip mechanism in said cavity, means at one end for connecting said trip-plate, and an eye on each side for the attachment of a rope, said eyes being set below the horizontal center of the casting and permitting the rope to pass below the casing, and to draw on the horizontal center of the coupling, substantially as described.

8. In a trip-coupling, the combination with a trip-plate of a main casting having a cavity in its body, trip mechanism in said cavity, means at one end for connecting said trip-plate, and an eye on each side and on the other end for attachment of ropes, said side eyes being set below and the end eye above the horizontal center of the castings and permitting each and all of the ropes to draw on the horizontal center of the coupling, substantially as set forth.

9. In a trip-coupling, the combination with the main part of the coupling of a trip-plate adapted to connect at one end with said main part, and at the other end horizontally-disposed eyes for the passage of a rope therethrough, substantially as described.

10. In a trip-coupling, the combination with the main part of the coupling of a trip-plate adapted to connect at one end with said main part, and at the other end, one vertical and two horizontal eyes for the passage of ropes therethrough, and permitting each and all the ropes to draw on the horizontal center of the coupling, substantially as set forth.

11. In a trip-coupling, the combination with the main part of the coupling of a trip-plate having a vertically-disposed end connecting with said main part, and a horizontally-disposed end for the attachment of a rope, substantially as described.

12. In a trip-coupling, the combination with the main part of the coupling of a trip-plate having a vertically-disposed end connecting with said main part, and a horizontally-disposed end for the attachment of ropes, said end having two horizontal eyes and a vertical eye between them, substantially as set forth.

610,866. SURGEON'S SPLINT. JOSEPH G. MCBEE, Denver, Colo. Filed Mar. 21, 1898. Serial No. 674,504. (No model.)

Claim.—1. In a surgeon's splint, the combination of two parallel or approximately parallel side pieces, two separated bars connecting the side pieces near one extremity, a cross-head engaging the side pieces between the bars, a set-screw journaled in the bars and engaging a threaded opening in the cross-head, an upright piece attached to the forward bar, and a limb-support attached to the side pieces forward of the foot-piece.

2. In a surgeon's splint, the combination of two side pieces, a suitable connection between the side pieces near one extremity, a movable bar or cross-head connecting the side pieces in proximity to the said connection, suitable means for adjusting the cross-head, an upright foot-piece attached to the said connection between the side pieces, and a limb-support attached to the side pieces forward of the foot-piece.

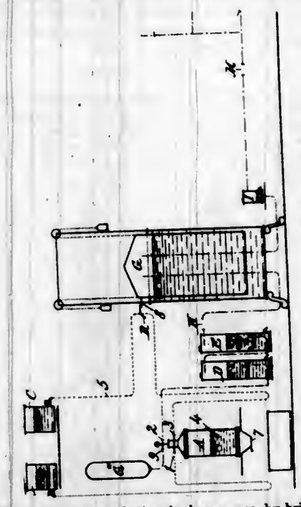
3. In a surgeon's splint, the combination of two side pieces, a connection between them, a cross-head adjustable between the side pieces, a stationary foot-piece, and a limb-support located forward of the foot-piece.

4. In a surgeon's splint, the combination of two parallel side pieces, two cross-bars connecting the side pieces near one extremity, a cross-head located between the two bars and connected with the side pieces by tongues and grooves, a set-screw journaled in the stationary bars and engaging a nut on the cross-head, an upright foot-piece attached to the forward stationary bar, and having a projection on its rear surface, a flexible perforated support for the limb located forward of the foot-piece and detachably connected with the side pieces, the forward extremities of the side pieces being apertured for the purpose set forth.

610,867. PROCESS OF AND APPARATUS FOR MAKING HYDROGEN GAS AND OTHER PRODUCTS. LEOPOLDO V. PRATH and PIETRO MARENGO, Turin, Italy. Filed July 15, 1897. Serial No. 644,701. (No model.) Patented in England July 23, 1896, No. 16,277, and June 20, 1897, No. 15,509; in Italy Jan. 26, 1897, No. 42,205; in Belgium Feb. 27, 1897, No. 126,277; in Luxemburg Mar. 12, 1897, No. 3,793, and in Spain Mar. 26, 1897, No. 20,497.

Claim.—1. The process of producing hydrogen gas, by bringing in contact with iron such proportion of sulfuric acid and water as to form in the generator at the end of the operation a pasty mass of iron, ferrous sulfate and water, that is to say the proportion of about equal parts by weight of iron, sulfuric acid of 50° Baumé and water, substantially as described.

2. The process of producing from iron and sulfuric acid, hydrogen gas and other products, more especially green vitriol and Nordhausen acid, either or both, by bringing in contact with iron such proportion of sulfuric acid and water as to form in the generator at the end of the operation a pasty mass of iron, ferrous sulfate and water, that is to say the proportion of about equal parts by weight of iron, sulfuric acid of 50° Baumé and water, and treating said pasty mass for the recovery of the other products, to wit by the addition of water and crystallization for the recovery of green vitriol, and by roasting for the recovery of Nordhausen acid, substantially as described.



3. The process of producing hydrogen gas, by bringing in contact with iron in a generator such proportions of sulfuric acid and water as to form in the generator at the end of the operation a pasty mass of iron, ferrous sulfate and water, and discharging such paste by gravitation so as to leave the generator empty for a new charge, the said proportions being about equal parts by weight of iron, sulfuric acid of 50° Baumé and water, substantially as described.

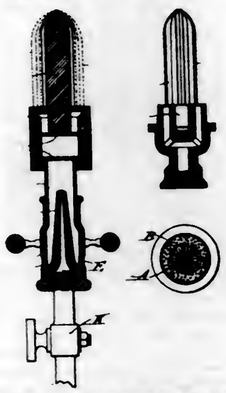
4. The combination with a gasometer provided with a cock-operating device, of a cock-key, a weighted lever connected with said key for shifting the same, and a hinged finger in the path of said cock-operating device so mounted on said lever as to carry the latter with it in one direction and to be movable independently of the same in the opposite direction, the movement of said gasometer back and forth within certain limits shifting the said cock-key positively in one direction and allowing the weighted lever to return it in the other, a sufficient movement of said lever being permitted for the said device to pass beyond said finger in the first-mentioned direction and thereby release the said lever when the movement of said gasometer is continued beyond the said limits, and the movement of said finger allowing the said device in such case to return past said finger in the opposite direction, substantially as described.

5. The combination with a hydrogen-generator supplied with oxidizable metal, an acid-supply pipe, and a gasometer connected by a pipe with said generator and provided with a cock-operating device, of a cock-key in said acid-supply pipe, a weighted lever connected with said key for shifting the same, and a hinged finger in the path of said cock-operating device so mounted on said lever as to carry the latter with it in one direction and to be movable independently of the same in the opposite direction, the movement of said gasometer back and forth within certain limits shifting the said cock-key positively in one direction and allowing the weighted lever to return it in the other, a sufficient movement of said lever being permitted for the said device to pass beyond said finger in the first-mentioned direction and thereby release the said lever when the movement of said gasometer is continued beyond the said limits, and the independent movement of said finger allowing the said device in such case to return past said finger in the opposite direction, substantially as described.

6. The combination of a cock-key, a weighted lever connected with said key for shifting the same, and a hinged finger so mounted on said lever as to carry the latter with it in one direction and to be movable independently of the same in the opposite direction, substantially as described.

7. The combination with a reciprocatory cock-operating device, of a cock-key, a weighted lever connected with said key for shifting the same, and a hinged finger in the path of said cock-operating device so mounted on said lever as to carry the latter with it in one direction and to be movable independently of the same in the opposite direction, the movement of said device back and forth within certain limits shifting the said cock-key positively in one direction and allowing the weighted lever to return it in the other, a sufficient movement of said lever being permitted for the said device to pass beyond said finger in the first-mentioned direction and thereby release the said lever when the movement of said device is continued beyond the said limits, and the independent movement of said finger allowing the said device in such case to return past said finger in the opposite direction, substantially as described.

610,868. **UTILIZING HYDROGEN GAS FOR PRODUCING LIGHT AND HEAT.** LEOPOLDO V. PRATH and PIETRO MARRIGO, Turin, Italy. Filed July 15, 1897. Serial No. 644,702. (No specimens.) Patented in England July 22, 1896, No. 16,277*; in Italy Jan. 26, 1897, No. 43,205; in Belgium Feb. 27, 1897, No. 126,377; in Luxemburg Mar. 12, 1897, No. 2,783, and in Spain Mar. 29, 1897, No. 20,497.



Claim.—1. A mantle-holder for an incandescent gas-lamp, composed of a refractory pencil provided, as by exterior grooving or fluting, with mantle-supporting points separated from one another by intermediate spaces, substantially as described.

2. An incandescent gas-lamp composed of a burner, a refractory pencil supported thereon and provided, as by exterior grooving or fluting, with mantle-supporting points separated from one another by intermediate spaces, and a refractory mantle fitting over said pencil and arranged to be heated to incandescence by gas from said burner, substantially as described.

3. The method of utilizing hydrogen gas for illuminating, which consists in raising to incandescence a mantle of refractory material by combustion of jets of hydrogen mixed with upward of two and a half times its volume of air, the hydrogen being lighted first and the air then admitted in the specified proportion within the burner-tube to the current of hydrogen on its way to the flame, and the hydrogen being subjected to such a pressure as would give with the burner used a velocity of over three meters (one hundred and eighteen and eleven one-hundredths inches) per second to a mixture of one volume of hydrogen and one and a half volumes of air, substantially as described.

4. An incandescent gas-burner for the combustion of hydrogen, having in addition to the incandescing mantle, a jet-nozzle for the gas extending into the air-tube beyond the air-inlets, a burner-top having a number of perforated plates, arranged for the combustion of the mixed air and hydrogen to take place above the top plate, and an air-tube contracted between said air-inlets and the tip of the jet-nozzle and arranged to deliver the air and gas into said burner-top, the contraction of said air-tube being so far below said tip that the induced air-current shall be parallel rather than transverse to the jet's axis, namely at a distance below said tip in excess of a quarter-diameter of the air-tube at the tip-level, whereby the ignition of the hydrogen back of the burner-top is insured against while at the same time the combustion of the mixture of air and hydrogen above the burner-top is suitable for making the mantle incandescent, substantially as described.

5. An incandescent gas-burner for the combustion of hydrogen, having in addition to the incandescing mantle, a jet-nozzle for the gas extending into the air-tube beyond the air-inlets, a burner-top having a number of perforated plates, arranged for the combustion of the mixed air and hydrogen to take place above the top plate, an air-tube contracted between said air-inlets and the top of the jet-nozzle and arranged to deliver the air and gas into said burner-top, and a valve for said air-inlets, the contraction of said air-tube being so far below said tip that the indueed air-current shall be parallel rather than transverse to the jet's axis, namely at a distance below said tip in excess of a quarter-diameter of the air-tube at the tip-level, whereby the ignition of the hydrogen back of the burner-top is insured against while at the same time the combustion of the mixture of air and hydrogen above the burner-top is suitable for making the mantle incandescent, substantially as described.

6. A gas-burner for the combustion of hydrogen having a jet-nozzle for the gas extending into the air-tube beyond the air-inlets, a burner-top, adapted for the combustion of the mixed air and hydrogen to take place above said top, and an air-tube contracted between said air-inlets and the tip of the jet-nozzle and arranged to deliver the air and gas into said burner-top, the contraction of said air-tube being so far below said tip that the induced air-current shall be parallel rather than transverse to the jet's axis, namely at a distance below said tip in excess of a quarter-diameter of the air-tube at the tip-level, whereby the ignition of the hydrogen back of the burner-top is insured against while at the same time the combustion takes place in a moderate manner above the burner-top, substantially as described.

7. A gas-burner for the combustion of hydrogen having a jet-nozzle for the gas extending into the air-tube beyond the air-inlets, a burner-top, adapted for the combustion of the mixed air and hydrogen to take place above said top, an air-tube contracted between said air-inlets and the tip of the jet-nozzle and arranged to deliver the air and gas into said burner-top, and a valve for said air-inlets, the contraction of said air-tube being so far below said tip that the induced air-current shall be parallel rather than transverse to the jet's axis, namely at a distance below said tip in excess of a quarter-diameter of the air-tube at the tip-level, whereby the ignition of the hydrogen back of the burner-top is insured against while at the same time the combustion takes place in a moderate manner above the burner-top, substantially as described.

8. An incandescent gas-burner composed of an incandescent mantle, a burner-top with perforated plates therein, an air-tube, and a jet-nozzle extending within the said tube beyond the air-inlets thereof into such proximity to said top that the pencil of gas will strike and pass through the said plates as a jet, before the gas is diffused by admixture with air, substantially as described.

9. A gas-burner, composed of a burner-top arranged for combustion above itself, an air-tube, and a jet-nozzle extending within said air-tube beyond the air-inlets thereof into such proximity to the said top that the pencil of gas will pass through the same in a jet before the gas is diffused by admixture with air, substantially as described.

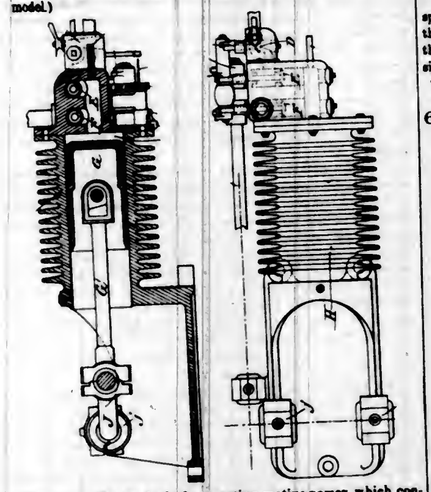
10. An incandescent gas-burner, composed of an incandescent mantle, a burner-top with perforated plates therein, an air-tube contracted between its air-inlets and the tip of the said nozzle at a distance below said tip in excess of a quarter-diameter of the air-tube at the tip-level, and a jet-nozzle extending within the said tube beyond the air-inlets thereof into such proximity to said top that the pencil of gas will strike and pass through the said plates as a jet, before the gas is diffused by admixture with air, substantially as described.

11. A gas-burner, composed of a burner-top arranged for combustion above itself, an air-tube contracted between its air-inlets and the tip of the said nozzle at a distance below said tip in excess of a quarter-diameter of the air-tube at the tip-level, and a jet-nozzle extending within said air-tube beyond the air inlets thereof into such proximity to the said top that the pencil of gas will pass through the same in a jet before the gas is diffused by admixture of air, substantially as described.

12. An incandescent gas-burner composed of an incandescent mantle, a burner-top with perforated plates therein, an air tube contracted between its air-inlets and the tip of the said nozzle at a distance below said tip in excess of a quarter-diameter of the air-tube at the tip-level, a valve for said air-inlets, and a jet-nozzle extending within the said tube beyond the air-inlets thereof into such proximity to said top that the pencil of gas will strike and pass through the said plates as a jet, before the gas is diffused by admixture with air, substantially as described.

13. A gas-burner, composed of a burner-top arranged for combustion above itself, an air-tube contracted between its air-inlets and the tip of the said nozzle at a distance below said tip in excess of a quarter-diameter of the air-tube at the tip-level, a valve for said air-inlets, and a jet-nozzle extending within said air-tube beyond the air-inlets thereof into such proximity to the said top that the pencil of gas will pass through the same in a jet before the gas is diffused by admixture with air, substantially as described.

610,869. **GAS-MOTOR.** LEOPOLDO V. PRATH and PIETRO MARRIGO, Turin, Italy. Filed July 15, 1897. Serial No. 644,703. (No model.)



Claim.—1. The method of generating motive power, which consists in subjecting a mixture of non-carbureted hydrogen with several times the proportion of air required for the formation of water, to wit with a volume of air from seventeen to twenty times that of the hydrogen, to a compression of not less than seven atmospheres, and igniting the so-compressed mixture, thereby producing a non-luminous nearly instantaneous combustion without fulmination, substantially as described.

2. In an explosive-gas engine, in combination with a gas-engine cylinder uncooled by a jacket of water, and a piston working in said cylinder, a source of non-carbureted hydrogen, means for admitting hydrogen from said source into said cylinder along with several times the proportion of air required for the formation of water, to wit a volume of air from seventeen to twenty times that of the hydrogen, means for compressing said mixture in said cylinder to a pressure of not less than seven atmospheres, means for igniting said mixture at the inner end of said piston's stroke, and means for retaining the burned gases in said cylinder during the forward stroke of said piston and for then discharging the same in an expanded condition, substantially as described.

3. In an explosive-engine, in combination with an engine-cylinder, a motor-piston movable therein, admission-valves comprising a hit-or-miss regulator-valve and a valve with holes for air and combustible gas respectively arranged to regulate both holes in the same sense by one movement of said valve, and an exhaust-valve, substantially as described.

610,870. **CARRIER OR HOLDER.** JOHN GUIGLEY, Bloomsburg, Pa. Filed Mar. 23, 1898. Serial No. 674,986. (No model.)



Claim.—1. A carrier of the character described, comprising a slotted tube having a handle, a plunger in the tube, a holder upon the outside of the tube and connected to the plunger through the said slot, a spring in the tube having one end connected to the latter and the other end attached to the plunger, and a stem secured to the plunger and projecting upon the outside of the tube.

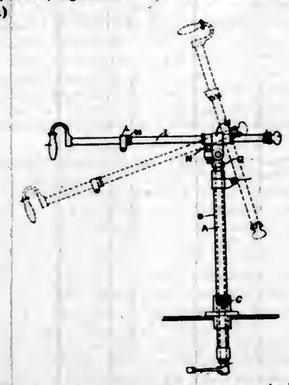
2. A carrier of the character described, comprising a slotted tube having a spring-handle, a stem projecting through the top of the tube, an elastic holder having one end secured upon the outside of the tube and the other end connected to the said stem upon the inside of the tube.

3. A carrier of the character described, comprising a slotted tube, a stem projecting from the tube, an elastic holder having one end secured to the tube and the other end connected to the stem upon the inside of the tube, and a spring in the tube connected to the latter and to the said stem.

4. The combination, with the slotted tube, and the spring-handle secured thereto, of an article-holder upon the outside of the tube, a spring-controlled plunger in the tube to which the said holder is connected, and a stem secured to the plunger and projecting from the tube for operating the holder, as set forth.

5. A carrier comprising a slotted tube having a spring-handle, a spring on the inside of the tube, a stem connected to the spring and the latter to the tube, an article-holder having one end connected to the stem and the other end to the tube, and the springs upon the outside of the tube, as set forth.

610,871. **STEERING-HANDLE FOR MOTOR-CARS.** MICHAEL H. SMITH, London, England. Filed Jan. 3, 1898. Serial No. 665,469. (No model.)

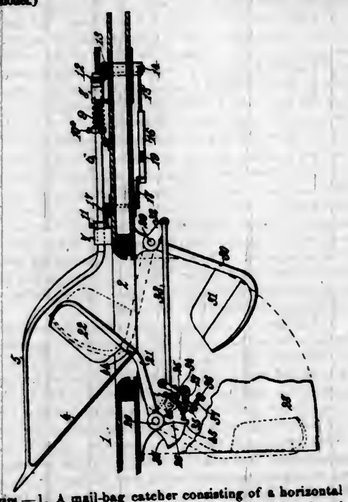


Claim.—1. In steering or controlling gear or the like the combination of a standard, a rocking and swiveling head and a sliding handle-bar substantially as and for the purpose described and illustrated.

2. In steering-gear such as described in claim 1, the adjustable cushions or their equivalent for regulating the slide and tilt of the handle-bar substantially as herein described and illustrated.

3. In steering-gear the combination of a standard and clamping-base as and for the purpose described and illustrated.

610,872. **MAIL-BAG CATCHING, RECEIVING, AND DELIVERING APPARATUS.** NELSON TINGLEY, Scranton, Pa., assignor to Melvin Tingley, Kingsley, Pa. Filed Jan. 29, 1898. Serial No. 668,480. (No model.)



Claim.—1. A mail-bag catcher consisting of a horizontal shaft mounted in bearings on the side of the car and provided at its forward end with an outwardly and forwardly projecting bracket-arm, and a catcher-arm projecting inwardly and rearwardly from the end of the bracket-arm and having a free, unattached end projecting into the doorway of the car, substantially as described.

2. A mail-bag catcher consisting of a horizontal shaft mounted

in bearings on the side of the car and provided at its forward end with an outwardly and forwardly projecting bracket-arm, and an elastic catcher-arm projecting inwardly and rearwardly from the end of the bracket-arm and terminating at its free end in the doorway of the car, substantially as described.

3. In a mail-bag catcher, the combination with a horizontal shaft longitudinally movable in bearings on the side of the car and provided at its forward end with an outwardly and forwardly projecting bracket-arm, and a catcher-arm projecting inwardly and rearwardly from the end of the bracket-arm, of a spring arranged to offer a yielding resistance to the rearward end thrust of the shaft, substantially as described.

4. In a mail-bag catcher, the combination with a horizontal shaft journaled in bearings on the side of the car and arranged to move longitudinally therein, said shaft being provided at its forward end with a catcher-arm for catching and guiding a mail-bag into the car, of a spring arranged to offer a yielding resistance to the rearward end thrust of the shaft and means for rotating the shaft to fold up and hold the catcher against the side of the car, substantially as described.

5. In a mail-bag catcher, the combination with a horizontal shaft journaled in bearings on the side of the car and arranged to move longitudinally therein, said shaft being provided at its forward end with a catcher-arm for catching and guiding a mail-bag into the car, of a spring arranged to offer a yielding resistance to the rearward end thrust of the shaft, a bevel-gear arranged on said shaft, a shaft arranged at a right angle to the first-named shaft and having fixed thereon a bevel-gear meshing with the first-named gear, a weighted lever fixed on the inner end of the transverse shaft, and a tripping-lever provided with two oppositely-projecting arms, one of said arms being adapted to engage a collar on the catcher-arm shaft, and the other arm being adapted to engage and hold raised the weighted lever, substantially as described and for the purpose specified.

6. The combination with the catcher-arm, of an oscillating receiver arranged to receive the bag as it is discharged from the catcher and be swung inward by the impact, of an oscillating ejector constructed to receive the bag to be discharged from the car, and mechanism operated by the movement of the receiver for swinging the ejector outward to discharge the bag, substantially as described.

7. The combination with the catcher arm, of an oscillating receiver arranged to receive the bag as it is discharged from the catcher and be swung inward by the impact, of an oscillating ejector constructed to receive the bag to be discharged from the car, mechanism operated by the movement of the receiver for swinging the ejector outward to discharge the bag, and a spring for returning the receiver and ejector to normal position just within the car, substantially as described.

8. In a mail-bag-catching apparatus, the combination with the catcher-arm, of the receiver consisting of a vertical shaft journaled to the inner side of the car, an arm fixed on said shaft and provided at its end with a basket, a coiled spring arranged on the shaft and operating to resist the inward movement of the receiver-arm, a ratchet fixed on the shaft, a pivoted pawl in engagement with the ratchet for preventing the recoil of the receiver-arm, means for engaging the pawl and a spring operating in opposition to the said coiled spring for returning the receiver-arm to normal position just within the car when the pawl is released, substantially as described.

9. In a mail-bag-catching apparatus, the combination with the catcher-arm, of the receiver consisting of a vertical shaft journaled to the inner side of the car, an arm fixed on said shaft and provided at its end with an open-sided basket having an inclined bottom, a coiled spring arranged on the shaft and operating to resist the inward movement of the receiver-arm, a ratchet fixed on the shaft, a pivoted pawl in engagement with the ratchet for preventing the recoil of the receiver-arm, the construction of the receiver-basket being such that when the basket is brought to a state of rest the bag will drop out by gravity, substantially as described.

10. In a mail-bag catching and delivering apparatus, the combination with the catcher-arm, of the vertical shaft journaled in bearings on the inner side of the car, an arm fixed on said shaft and provided at its end with a basket, an oscillating ejector, an arm loosely arranged on the shaft and connected with the ejector, a coiled spring on the shaft connected at one end to the said arm and at its other end to a collar fixed on the shaft, a ratchet fixed on the shaft, a pivoted hook arranged to engage the loose arm and hold the ejector against movement, and a pawl carried by the hook and engaging the ratchet to prevent the receiver-arm from rebounding, the construction being such that the impact of the bag swings the receiver-arm inward and discharges the bag and winds up the spring, and then forces the hook back out of engagement with the loose arm and the spring then oscillates said arm to swing the ejector outward to discharge a bag, substantially as described.

11. In a mail-bag catching and delivering apparatus the combination with the catcher-arm, of the vertical shaft 20, an arm 21 fixed on the shaft and provided at its end with a basket 22, an oscillating ejector-arm 30 provided at its end with a basket 31, an arm 25 loosely journaled on the shaft and connected at its end with an arm on the axis of the ejector-arm, a coiled spring 23 on the shaft, one end connected to the arm 25 and the other end to a collar fixed on the shaft, a ratchet fixed on the shaft a pivoted hook 34 arranged to engage the arm 25 and hold the ejector against movement, a spring arranged to force said hook into engagement with the arm, and a pawl 27 pivoted to the hook and engaging the ratchet to prevent the receiver-arm from rebounding, substantially as described and for the purpose specified.

12. In a mail-bag catching and delivering apparatus, the combination with the catcher-arm, of the vertical shaft 20, an arm 21 fixed on the shaft and provided at its end with a basket 22, an oscillating ejector-arm 30 provided at its end with a basket 31, an arm 25 loosely journaled on the shaft and connected at its end with an arm on the axis of the ejector-arm, a coiled spring 23 on the shaft, one end connected to the arm 25 and the other end to a collar fixed on the shaft, a ratchet fixed on the shaft, a pivoted hook 34 arranged to engage the arm 25 and hold the ejector against movement, a pawl 27 pivoted to the hook and engaging the ratchet to prevent the receiver-arm from rebounding a spring arranged to force the hook into engagement with the arm, and stops for limiting the movement of the hook and pawl, substantially as described.

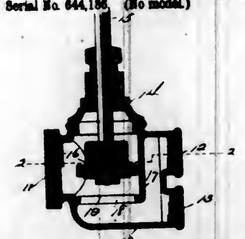
13. In a mail-bag catching and delivering apparatus, the combination with the catcher-arm, of the vertical shaft 20, an arm 21 fixed on the shaft and provided at its end with a basket 22, an arm 25 loosely journaled on the shaft, a vertical shaft 29, an ejector-arm 30 fixed thereon and provided at its end with a basket for the reception of the bag to be discharged, an arm 32 fixed on the shaft 29, a rod 33 connecting the arm 32 to the arm 25, a coiled spring 23 on the shaft 20, one end connected to the arm 25 and the other end to a collar fixed to the shaft, a ratchet fixed on the shaft a pivoted hook 34 arranged to engage the arm 25 and hold the ejector against movement, a pawl 27 pivoted to said hook and engaging the ratchet to prevent the receiver-arm from rebounding, and a spring arranged to force the hook into engagement with the arm, substantially as described.

14. In a mail-bag catching and delivering apparatus, the combination with the catcher-arm, of the vertical shaft 20, an arm 21 fixed on the shaft and provided at its end with a basket 22, an arm 25 loosely journaled on the shaft, a vertical shaft 29, an ejector-arm 30 fixed thereon and provided at its end with a basket for the reception of the bag to be discharged, an arm 32 fixed on the shaft 29, a rod 33 connecting the arm 32 to the arm 25, a coiled spring 23 on the shaft 20, one end connected to the arm 25 and the other end to a collar fixed on the shaft, a ratchet 26 fixed on the shaft, a pivoted hook 34 arranged to engage the arm 25 and hold the ejector against movement, a pawl 27 pivoted to said hook and engaging the ratchet to prevent the receiver-arm from rebounding, a sector 38 fixed on the shaft 20 beneath the ratchet and provided with lugs 39 40 projecting in the path of the arm 25 and having a lug 41 operating to release the pawl 27, substantially as described.

15. In a mail-bag catching and delivering apparatus, the combination with the catcher-arm, of the vertical shaft 20, an arm 21 fixed on the shaft and provided at its end with a basket 22, an arm 25 loosely journaled on the shaft, a vertical shaft 29, an ejector-arm 30 fixed thereon and provided at its end with a basket for the reception of the bag to be discharged, an arm 32 fixed on the shaft 29, a rod 33 connecting the arm 32 to the arm 25, a coiled spring 23 on the shaft 20, one end connected to the arm 25 and the other end to a collar fixed on the shaft, a ratchet 26 fixed on the shaft, a pivoted hook 34 arranged to engage the arm 25 and hold the ejector against movement, a pawl 27 pivoted to the hook and engaging the ratchet to prevent the receiver-arm from rebounding, a sector 38 fixed on the shaft 20 beneath the ratchet and provided with lugs 39 40 projecting in the path of the arm 25, a lug 41 formed on the sector and operating to release the pawl 27, a lug 45 carried by the ratchet and arranged to contact with the arm 25, and stops for limiting the movement of the hook and pawl, substantially as described and for the purpose specified.

16. In a mail-bag catching and delivering apparatus, the combination with the catcher-arm, of the vertical shaft 20, an arm 21 fixed on the shaft and provided at its end with a basket 22, an arm 25 loosely journaled on the shaft, a vertical shaft 29, an ejector-arm 30 fixed thereon and provided at its end with a basket for the reception of the bag to be discharged, an arm 32 fixed on the shaft 29, a rod 33 connecting the arm 32 to the arm 25, a coiled spring 23 on the shaft 20, one end connected to the arm 25 and the other end to a collar 34 fixed on the shaft, a ratchet 26 fixed on the shaft, a pivoted hook 34 arranged to engage the arm 25 and hold the ejector against movement, a pawl 27 pivoted to the hook and engaging the ratchet to prevent the receiver-arm from rebounding, a sector 38 fixed on the shaft 20 beneath the ratchet and provided with lugs 39 40 projecting in the path of the arm 25, a lug 41 formed on the sector and operating to release the pawl 27, a lug 45 carried by the ratchet and arranged to contact with the arm 25, a pin 44 on the collar 24, and a spring 42 attached at one end to a fixed support and provided at its other end with a hook 43 arranged to be engaged by the pin 44, substantially as described and for the purpose specified.

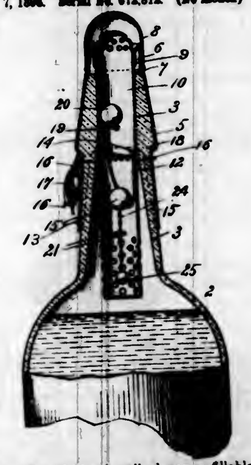
610,873. VALVE. JOHN COLLIN, Des Moines, Iowa. Filed July 12, 1897. Serial No. 644,186. (No model.)



Claim.—1. A pipe-coupling and valve-chamber having one end adapted to be connected with a radiator and at its other end provided with an inflow and an outflow opening, one adapted to be connected with a supply-pipe and the other with a return-pipe, a partition extending transversely of the shell near the end and extended at right angles to the opposite side of the chamber in a plane below the opening leading to a radiator and provided with a circular opening adapted to serve as a valve-seat in the plane of the outflow-opening and said partition so arranged as to separate the opening which leads to the radiator from the said inflow and outflow openings, a disk valve arranged to engage the said partition and valve-seat, and a valve-stem mounted for longitudinal movement in the valve-chamber and attached to the said disk valve, all arranged and combined substantially in the manner set forth and for the purposes stated.

2. A circulatory valve, comprising in combination, a pipe-coupling and valve, a chamber 10, having a screw-threaded opening 11 at one end thereof, and also having inflow and outflow openings 12 and 13 at the opposite end thereof, a stuffing-box 14 in a branch at the top of the shell, a valve-stem 15 mounted in the said branch and stuffing-box for longitudinal movement, a disk valve 16 on the said valve-stem, a partition 17 below the opening 11 having an opening 18 therein in the plane of the outflow-opening within the chamber and adapted to serve as a valve-seat, all arranged and combined substantially in the manner set forth, and for the purposes stated.

610,874. NON-REFILLABLE BOTTLE. LUIGI DE HUGO, Springfield, Mass., assignor of one-tenth to Giuseppe Santarsiero, same place. Filed Mar. 7, 1896. Serial No. 672,812. (No model.)



Claim.—1. The within-described non-refillable-bottle attachments comprising the jacket 5, having downhanging arms thereon, a fastening-wire surrounding and interlocking with said arms, a seal uniting the extremities of said wire, combined with the central tube 10, having perforated ends, the contracted inner tube 12, and the chain-connected spheres 20, 13, and 25, having limited movements within said tubes 10 and 12, and one thereof closing and opening a passage through said tube 12, substantially as described.

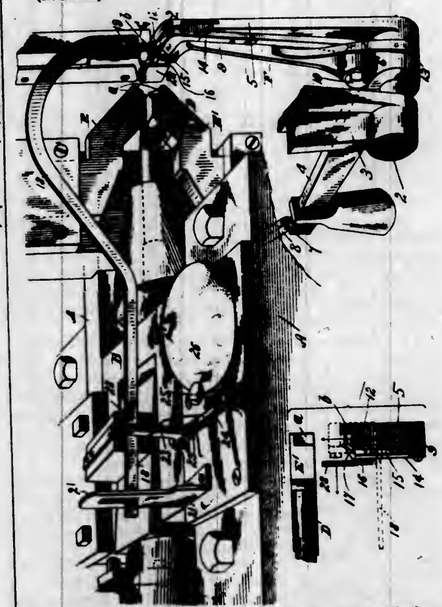
2. Safety devices for non-refillable bottles comprising the outer jacket 5, and means for locking said jacket to the bottle-neck combined with the tube 10, extending from within the bottle to the upper extremity of said jacket, the contracted inner tube 12, and the connected spheres 20, 13, and 25, having limited movements within the tube 10, whereby the passage through said tube 12, is opened and closed, substantially as described.

610,875. TEMPLE FOR SPECTACLE-FRAMES. SAMUEL B. HERST, Pueblo, Colo., assignor of one-half to Thomas J. Lewis, Denver, Colo. Filed Nov. 16, 1897. Serial No. 658,705. (No model.)



Claim.—In a spectacle-temple, the combination of a coupling-sleeve having an opening extending therethrough longitudinally, said opening being of two different calibers, the smaller portion and the adjacent part of the larger portion being unthreaded, while a part of the larger portion is threaded, and two temple parts connected by the said coupling-sleeve, one of the temple parts having an enlarged head adapted to engage the larger unthreaded portion of the opening in the coupling, but which will not pass through the smaller portion of the opening which is large enough to receive the body portion of the temple or the part extending beyond said head, the other part of the temple having a stud provided with a male thread adapted to screw into the larger portion of the opening in the coupling to engagement with the unthreaded head portion of the other temple part, whereby the movement of the head in the coupling may be more or less free as desired.

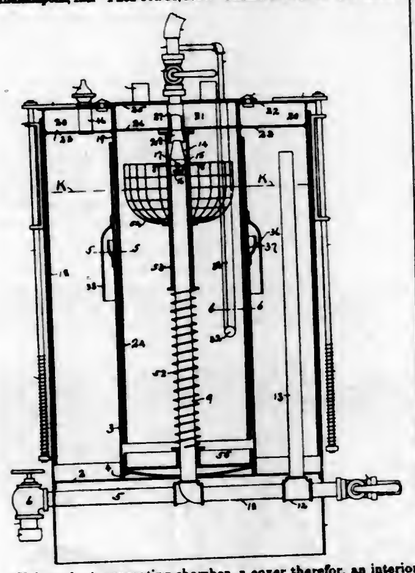
610,876. ALARM DEVICE FOR BUTTON-MACHINES. HERBERT T. JENKINS, Portsmouth, N. H., assignor to the Morley Button Manufacturing Company, same place. Filed Dec. 30, 1897. Serial No. 664,637. (No model.)



Claim.—1. In a machine for forming buttons from blanks, an alarm-bell, a striker for said bell, means connected with said striker for engagement with a moving part of said machine, combined with button-receiving jaws, a blank-conveyer carrying blanks to said jaws, and means interposed between said conveyer and said striker-engaging part of the machine, whereby said striker is rendered operative and an alarm is sounded when no button-blank is present in said conveyer, combined and operating substantially as set forth.

2. In a machine for forming buttons from blanks, jaws for receiving said blanks one by one, and a punch attached to a reciprocally-moving part of the machine acting against said blanks whereby the latter are formed, a vibratory blank conveyer receiving blanks one by one from a suitable feeding-tube, and carrying the same to said jaws, combined with an alarm-bell located on the machine, a striker hung to swing near said bell having a hammer-actuating arm 23 on the support thereof, extending near the said punch-moving part, a flexible arm 22, fixed on said last-named part for engagement with said arm 23, and a lever pivoted on a fixed part of the machine having one end engaging with said blank-conveyer when containing a blank, and the opposite end engaging said flexible arm 22, whereby the latter is held out of engagement with said arm 23, and the ringing of said bell is prevented while said conveyer contains a button-blank, substantially as set forth.

610,877. ACETYLENE-GAS GENERATOR. MATHIAS F. MONELLY, Chicago, Ill., assignor to the Monarch Manufacturing Company, Indianapolis, Ind. Filed Oct. 30, 1897. Serial No. 656,576. (No model.)



Claim.—1. A generating-chamber, a cover therefor, an interior valve and connecting-pipe for discharging gas therefrom, a waste-pipe passing through said cover and provided with a socket adapted to engage said valve, a second valve closing said waste-pipe, means for securing and releasing said cover by a rotary movement of itself, and means whereby said rotary movement will also operate to open and close said interior valve.

2. A generating-chamber consisting of a shell constructed to contain water and an inverted shell or bell telescoping therein, water within said chamber, a central discharge-pipe passing through the bottom of said chamber and extending to the space above said water, a carbid-holding basket surrounding said pipe and vertically guided thereby, a spring for supporting said basket above the water, and means whereby said vertical shell will, in descending, depress said spring so as to cause said basket to enter the water.

3. A generating-chamber consisting of a shell constructed to contain water and an inverted shell telescoping therein, water within said chamber, a central discharge-pipe passing through the bottom of said chamber and extending to the space above the water, a sleeve surrounding said pipe and vertically movable thereon, an annular basket secured to said sleeve, and a spring surrounding said pipe and adapted to elevate said basket above the surface of the water.

4. A generating-chamber consisting of a shell constructed to contain water and an inverted shell telescoping therein, water within said chamber, a central pipe extending from the bottom of said chamber to the upper part thereof, a sleeve surrounding said pipe and vertically movable thereon, a basket secured to said sleeve, means for elevating said sleeve so as to support said basket above the surface of the water, and means whereby the telescoping shell in descending will depress said sleeve so as to cause said basket to enter said water.

5. A generating-chamber consisting of a shell constructed to contain water and an inverted shell telescoping therein, similarly-constructed annular shells surrounding the first-mentioned shells, water within both spaces thus inclosed, a central pipe extending from the upper part of the generating-chamber to and through the bottom thereof and having connections for the discharge of gas into the annular space, an annular basket surrounding said pipe and vertically guided thereby, and means for intermittently immersing said basket in the water of the central chamber.

6. Stationary concentric shells furnishing central and annular spaces with closed bottoms, water within said shells, similar inverted shells telescoping into the former and vertically movable, a central pipe in the stationary part and provided with connections for the discharge of gas from the upper part of central space to the upper part of the annular space, a sleeve surrounding said central pipe and vertically movable thereon, a basket secured to said sleeve, a spring for supporting said basket above the surface of the water in the central space, and means whereby the inverted shells in descending will depress said spring and cause said basket to become immersed in said water.

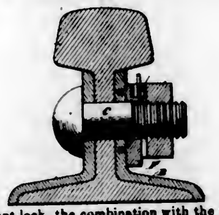
7. A generating-chamber constructed to contain water therein, a removable cover for said chamber provided with a sealing-flange adapted to be inserted in the water, means whereby said cover will rise and fall by the generation and discharge of gas, a central pipe passing through the bottom of said chamber and adapted to discharge gas therefrom, a carbid-holding basket surrounding said pipe and vertically movable thereon, a spring surrounding said pipe and adapted to elevate said basket above the surface of the water, and means whereby said cover will depress said basket to immerse it in said water.

8. An interior and an exterior shell furnishing a central and an annular space each with a closed bottom, an inverted shell telescoping into the first-mentioned shell and having a central opening therethrough, an upright pipe in the central space extending through the bottom and connected to a discharge-pipe, a valve on the top of the upright pipe, a cylinder inserted in the opening through the inverted shell, a head for said cylinder having a socket for engaging said valve, means for locking said cylinder to the inverted shell, and means whereby the movement required to lock and unlock said cylinder will open and close said valve.

9. Stationary concentric shells furnishing central and annular spaces with closed bottoms, water therein, similar inverted shells telescoping into the former and vertically movable, hollow heads on the inverted shells adapted to contain water, a central standard in the stationary part, a vertically-movable basket surrounding said standard and guided thereby, a spring for supporting said basket above the surface of the water, and means whereby said inverted shells serve to depress said basket so as to immerse in the water.

10. Stationary concentric shells secured to a plate serving as a bottom for both, water therein, similar inverted and movable shells telescoping with the stationary ones, a pair of plates connecting the movable shells and serving as a hollow head for the annular space between them, a removable head for central part of the inverted shells, a flange on the removable head immersed in the water located in the central space thereby inclosing a space serving as a generating-chamber, a carbid-holding basket supported in the generating-chamber, means for intermittently immersing said basket in the water of the central chamber, and means for conveying the generated gas from the central to the annular chamber.

610,878. NUT-LOCK. WILLIAM T. PENDLEY and CLEMON C. FINCHER, Milan, Ga. Filed Sept. 17, 1897. Serial No. 652,062. (No model.)



Claim.—In a nut-lock, the combination with the fish-plate, of a washer provided with a series of inwardly-projecting pins adapted to enter apertures formed in the bearing-surface of said fish-plate, said washer being provided on its outer surface with a recess having an inclined bottom, a plate-spring secured in said recess at its shallow end and having its free end bent at right angles and projected outwardly and beveled, a nut having an inner ratcheted face adapted to be engaged by the outwardly-projecting end of said spring, and an outwardly-projecting lug formed on said spring, whereby it may be pushed out of engagement with the nut, substantially as shown and described.

610,879. NUT-LOCK. WILLIAM H. HEBBITT, Roland, Canada. Filed Aug. 31, 1897. Serial No. 650,141. (No model.)



Claim.—1. In a nut-lock, the combination with a bolt having a longitudinal groove through the threads thereof, a nut and washer removably mounted on said bolt, a locking-nut having an annular collar with radial slots therein, and a spring-yoke having a tongue at the center thereof adapted to pass through one of the said slots and into the groove in the bolt, substantially as described.

2. In a nut-lock, the combination with a longitudinal grooved bolt, of a locking-nut having an annular collar with radial slots therein, and a spring-yoke provided with a central inwardly-extending tongue adapted to pass through one of the slots in the annular collar and engage the groove in the bolt, the said yoke being held on the collar solely by its spring tension, substantially as described.

610,880. FISHING-ROD. JOHN W. PERKINS, Boston, Mass. Filed Sept. 8, 1897. Serial No. 651,007. (No model.)



Claim.—1. In a sea and deep-water fishing-rod, in combination a tubular joint formed as described, provided with an elliptical frame, a rotatable reel in said frame, a holder to which the joint is pivoted and a screw-clamp carried by the holder, all substantially as described and for the purpose set forth.

2. In a sea and deep-water fishing-rod, in combination a tubular joint formed as described, provided with an elliptical frame, a rotatable reel in said frame, a holder to which the joint is pivoted and a screw-clamp carried by said holder, a tubular joint, having a sleeve joined with the tubular joint first described, and joined to another tubular joint, provided with a sheave at the upper end thereof all substantially as described and for the purpose set forth.

610,881. WIRE STRETCHER AND CUTTER. STEPHEN A. D. CLARK, Pasadena, Cal. Filed May 12, 1896. Serial No. 591,236. (No model.)



Claim.—1. A wire stretcher and cutter comprising a base; a movable jaw-carrying member pivoted to the base and provided with the jaw fixed thereto; the movable jaw carried by the jaw member; the lever, pivoted to the jaw member and arranged to operate the movable jaw and to actuate the jaw member; and the cutter pivoted to the base and adapted to be actuated by the movement of the movable jaw member to cut the wire after it has been gripped by the jaws.

2. The wire stretcher and cutter set forth comprising a base; a jaw member pivoted to the base and provided with a fixed jaw; a movable jaw pivoted to the jaw member provided with a lever and adapted to grip the wire against the fixed jaw; and a cutter pivoted to the base at one side of the pivotal point of the jaw member and arranged to shear past the two jaws when, by means of the lever, the jaw member is swung forward upon its pivot.

3. The wire stretcher and cutter set forth comprising a base; a jaw member pivoted to the base and provided with the jaw projecting from the upper face thereof; a movable jaw pivoted to the jaw member and provided with the lever; and a cutter, pivoted to the base at one side of the pivotal point of the jaw member and arranged to shear past the two jaws when, by means of the lever, the jaw member is swung forward upon its pivot.

4. The wire stretcher and cutter set forth comprising a base; a jaw member pivoted to the base and provided with stops, one arranged to engage the base and the other arranged to be engaged by a movable jaw-lever; a movable jaw pivoted to the jaw member and provided with the projecting lever; and a cutter pivoted intermediate of its ends to the base and arranged to engage the jaw member when such member is swung to the rear, to be thereby swung into position ready to shear past the junction of the two jaws when the jaw member is swung forward.

5. In a wire stretching and cutting device, the combination set forth of a base; a jaw member pivoted to the base and provided with a jaw-stem socket; a reversible jaw comprising a rectangular body provided with a stem fitted in the stem-socket in the jaw member to adapt the jaw to be turned when worn to bring a new gripping-face into use; a jaw-lever pivoted to the jaw member and provided in its front face with a rectangular jaw-seat; a jaw formed of a rectangular piece of tempered steel provided with a central perforation and seated in the jaw-seat; and a screw passing through the jaw and into the jaw-lever to hold the jaw in place.

6. A wire stretcher and cutter comprising a base; jaws secured to the base and adapted to grip the wire and to be actuated to stretch the wire while it is gripped; a cutter arranged to shear past the jaws to cut the wire when the jaws are actuated to stretch the wire; and means for actuating the jaws and operating the cutter.

REISSUES.

11,691. FERMENTED MILK FOOD AND METHOD OF PRESERVING SAME. MELKON L. ARAKELIAN, New York, N. Y. Filed May 14, 1898. Serial No. 680,758. Original No. 580,541, dated Apr. 13, 1897.

Claim.—1. The hereinbefore-described preparation of fermented milk food, composed of milk, starch, sugar, and sterilized labban, containing lactic acid as the result of fermentation, substantially as and for the purpose described.

2. The process of preparing fermented milk foods and method of preserving same, which consists in the addition of starch to boiling milk evaporating the mixture in a water-bath to about one to two-thirds, adding cane-sugar, reducing to about 130° Fahrenheit, adding labban thereto, and keeping the same at a temperature of about 50° to 90° Fahrenheit, then cooling and straining and preserving the same, substantially as set forth.

11,692. CAR-FENDER. MANUEL FERNANDES, Los Angeles, Cal. Filed May 11, 1898. Serial No. 680,427. Original No. 590,187, dated Sept. 14, 1897.



Claim.—1. In a car-fender, the combination set forth of a receiver having its front end arranged in substantially a horizontal plane; and a trough-shaped scoop pivotally secured to the front end of the receiver by a pivot at the apex of the trough, said trough having one member normally projecting forward to form an inclined receiving-platform, and having its other member normally projecting

upward above the plane of the receiving-platform; but when tilted forming the front floor of the receiver while the front member of the scoop forms a barrier at the front end of the receiver substantially as set forth.

2. In a car-fender, the combination set forth of a receiver and a tilting trough-shaped scoop pivoted to the front end of the receiver and having one member normally projecting forward to form an inclined receiving-platform, and having its other member normally projecting above the plane of the platform to form a yielding barrier at the front end of the receiver, and adapted and arranged to tilt back to rest upon the receiver to constitute the floor thereof to form a support for the body when such barrier is tilted downward into the receiver, and to thereby hold the other portion of the scoop rigidly in position to form a barrier at the front end of the receiver to hold the body therein.

3. In a car-fender, the combination set forth of a receiver; a tilting trough-shaped scoop pivotally secured to the front end of the receiver and provided with a forwardly-projecting nose forming an inclined receiving-platform, and also provided with a member projecting upwardly above the plane of the platform and adapted to tilt the scoop to raise the front member of the scoop to form a barrier to retain a body in the receiver.

4. In a car-fender, the combination set forth of a receiver; a tilting scoop pivotally secured to the front end of the receiver by a pivot arranged below the mid-line of the scoop, such scoop being provided with curved rods and sliding fenders arranged on the rods.

5. In a car-fender, the combination set forth of the fixed supporting-rods and sliding fenders arranged on top of the rods, to slide back and forth therealong.

6. In a car-fender, the tilting scoop having rearwardly-curved guide-rods and sliding cushion-fenders arranged on the rods.

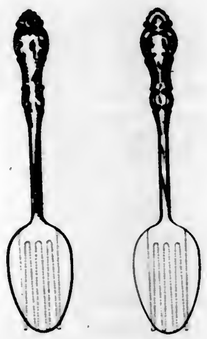
7. In a car-fender, the combination of a receiver; a tilting scoop pivoted to the front end of the receiver and provided with guide-rods and sliding cushion-fenders arranged upon the rods.

8. In a car-fender, the combination set forth of a receiver; a tilting scoop pivoted to the front end of the receiver and provided with rearwardly-curved guide-rods; and cushion-fenders arranged to slide back and forth on the rods.

9. In a car-fender, the combination set forth of a receiver; a tilting scoop pivoted to the front end of the receiver by a rod extending from side to side of the receiver, and provided with guide-rods curved toward the rear and arranged in front of the pivotal rod; and sliding cushion-fenders arranged on the guide-rods.

DESIGNS.

29,324. HANDLE FOR SPOONS, &c. WILLIAM A. JAMESON, Niagara Falls, N. Y. Filed Aug. 3, 1898. Serial No. 688,114. Term of patent 7 years.



Claim.—1. In the design for the handle of a spoon, fork or similar article, the obverse, substantially as herein shown and described.

2. In the design for the handle of a spoon, fork or similar article, the reverse, substantially as herein shown and described.

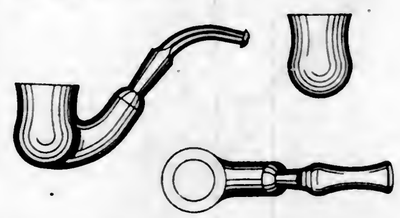
3. The design for the handle of a spoon, fork or similar article, substantially as herein shown and described.

29,325. MOUNT FOR DISHES. JEAN G. THEOBALD, North Attleborough, Mass., assignor to the Frank M. Whiting & Company, same place. Filed Aug. 15, 1898. Serial No. 688,696. Term of patent 3½ years.



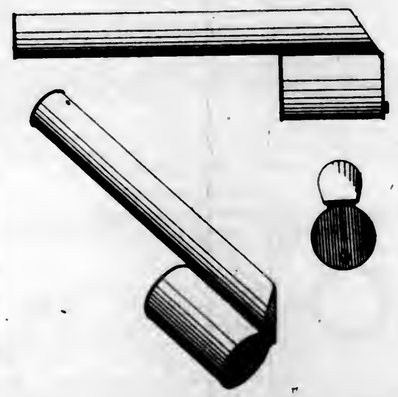
Claim.—The design for a mount for a dish or similar article as herein shown and described.

29,326. TOBACCO-PIPE. FERDINAND ABRAHAM, Boston, Mass. Filed Aug. 8, 1898. Serial No. 688,111. Term of patent 3½ years.



Claim.—The design for a tobacco-pipe substantially as herein shown and described.

29,327. BODY FOR SPRAYERS. DE WAHL R. SMITH, Deerfield, N. Y. Filed Aug. 3, 1898. Serial No. 687,650. Term of patent 3½ years.



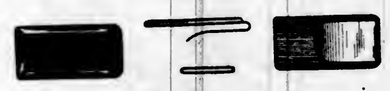
Claim.—The design for a body for sprayers as herein shown and described.

29,328. BUTTON-PLATE. SOLAS CARVER, Sharon, Pa. Filed Aug. 3, 1898. Serial No. 687,645. Term of patent 7 years.



Claim.—The design for a button-plate as herein shown and described.

29,329. TAG-HOLDER. GEORGE J. FLIENMANN, St. Louis, Mo., assignor of one-half to George Ittner. Filed July 30, 1898. Serial No. 687,367. Term of patent 3½ years.



Claim.—The design for a tag-holder as herein shown and described.

29,330. ROPE-CLEAT. JOSEPH GASKILL, Trenton, N. J. Filed Aug. 6, 1898. Serial No. 687,993. Term of patent 7 years.



Claim.—The design for a rope-cleat as herein shown and described.

29,331. BOTTLE. GEORGE A. FLAGGUS, Wheeling, W. Va. Filed Aug. 15, 1898. Serial No. 688,650. Term of patent 7 years.



Claim.—The design for a bottle, substantially as herein shown and described.

29,332. BROOM-SHIELD. GEORGE PIERUNG, Sr., and FELIX PIERUNG, Ravenswood, Ill. Filed Aug. 8, 1898. Serial No. 688,115. Term of patent 7 years.



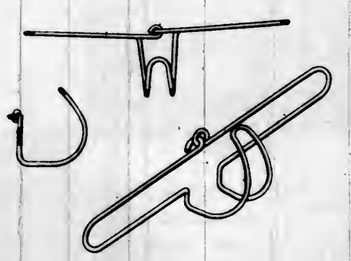
Claim.—The design for a broom-shield, as herein shown and described.

29,333. PACKAGE-HOLDER. WILLIAM S. SEYMOUR, Philadelphia, Pa. Filed Aug. 19, 1898. Serial No. 689,021. Term of patent 7 years.



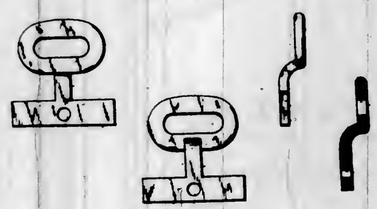
Claim.—The design for a package-holder, substantially as shown and described.

29,334. HOLDER FOR SHOE-RACKS. ERNEST R. CANEDY, North Adams, Mass. Filed Aug. 10, 1898. Serial No. 688,806. Term of patent 3½ years.



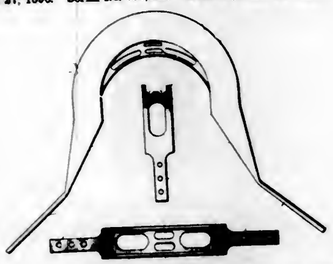
Claim.—The design for a holder for shoe-racks, substantially as herein shown and described.

29,335. HARNESS-D. SCOTT H. HULL, Onawa, Iowa. Filed Aug. 15, 1898. Serial No. 688,635. Term of patent 14 years.



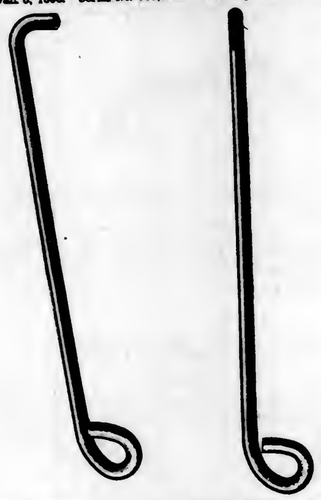
Claim.—The design for a harness-D, as herein shown and described.

29,836. ARCHED PLATE FOR PACK-SADDLES. LEOPOLD KAHN, Cheyenne, Wyo., administrator of Thomas Moore, deceased. Filed July 27, 1898. Serial No. 687,043. Term of patent 14 years.



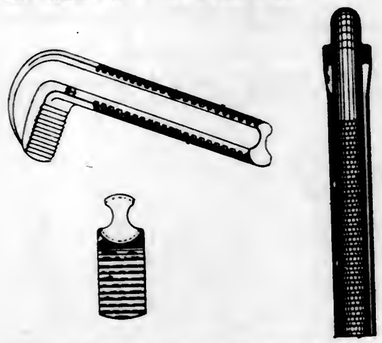
Claim.—The design for an arched plate for pack-saddles, substantially as herein shown and described.

29,837. SHUTTER-BRACE. CHARLES ZIMMERMAN, Frederick, Md. Filed Jan. 3, 1898. Serial No. 665,504. Term of patent 14 years.



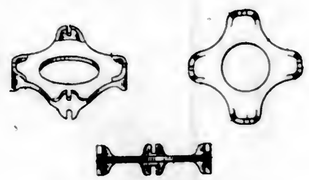
Claim.—The design for a shutter-brace, substantially as shown and described.

29,838. WRENCH-JAW. ROBERT R. HOUSE, Erie, Pa., assignor to The Hollands Manufacturing Company, same place. Filed July 15, 1898. Serial No. 686,042. Term of patent 14 years.



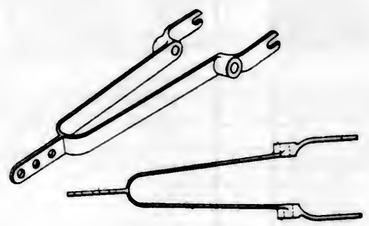
Claim.—The design for a wrench-jaw, substantially as shown and described.

29,839. SPOKE OR NIPPLE WRENCH. CHRISTIAN BERG, Buffalo, N. Y. Filed Aug. 17, 1898. Serial No. 688,815. Term of patent 7 years.



Claim.—The design for a spoke or nipple wrench, as herein shown and described.

29,840. LEVER ATTACHMENT FOR BICYCLES. JAMES R. WILSON, Bridgeport, Conn. Filed Aug. 2, 1898. Serial No. 687,565. Term of patent 14 years.



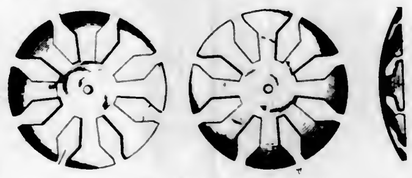
Claim.—The design for a lever attachment for bicycles, substantially as herein shown and described.

29,841. CULTIVATOR-BLADE. TRAN WHEAT, Wallville, Ind. Ter. Filed Aug. 18, 1898. Serial No. 688,937. Term of patent 7 years.



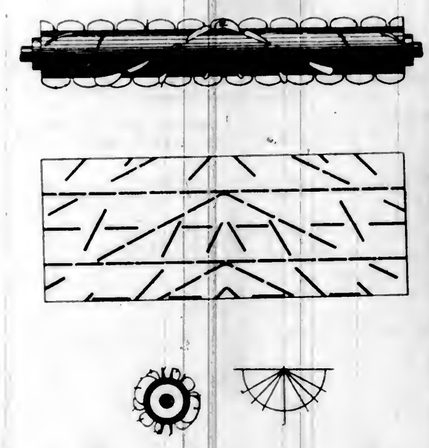
Claim.—The design for a cultivator-blade, herein shown and described.

29,842. AGRICULTURAL HOEING-WHEEL. JOHN A. MCGUIRE and RICHARD S. WILLIAMS, Celeste, Tex. Filed Aug. 16, 1898. Serial No. 688,794. Term of patent 14 years.



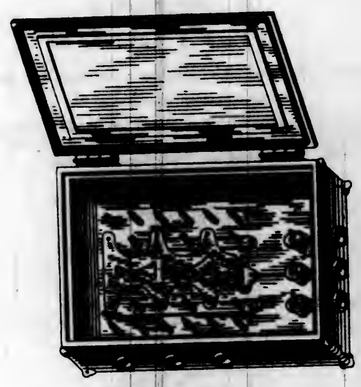
Claim.—The design for an agricultural hoeing-wheel, herein shown and described.

29,843. FINISHING ROLL OR CYLINDER. JOSEPH HALL, Leeds, England. Filed Aug. 11, 1898. Serial No. 688,400. Term of patent 14 years.



Claim.—The design for a finishing roll or cylinder, substantially as herein shown and described.

29,844. FUSE-BOX. WILLIAM F. BONNET, Utica, N. Y. Filed July 21, 1897. Serial No. 645,470. Term of patent 7 years.



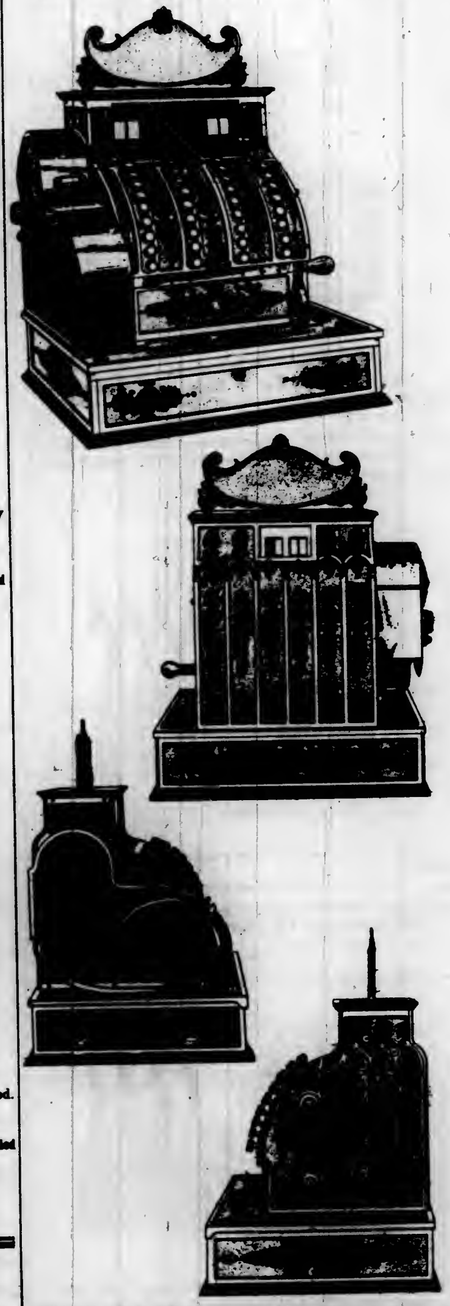
Claim.—The design for a fuse-box as herein shown and described.

29,845. BAR. CHARLES E. CHAMBERLIN, Detroit, Mich. Filed July 2, 1898. Serial No. 685,536. Term of patent 3½ years.



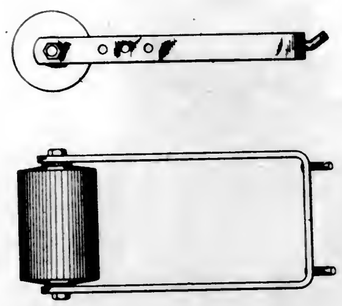
Claim.—The design for a bar substantially as herein shown and described.

29,846. CASH-REGISTER CABINET. ROWIN RINGOLD, Cincinnati, Ohio, assignor to the National Cash Register Company, Dayton, Ohio. Filed June 30, 1898. Serial No. 684,881. Term of patent 14 years.



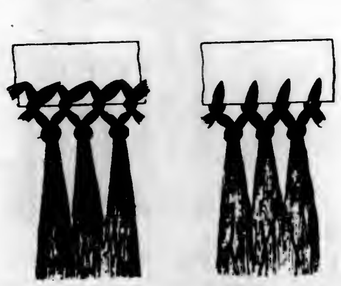
Claim.—The design for a cash-register cabinet herein shown and described.

29,847. HOME TRAINER ATTACHMENT. PHILIP A. MYERS, Ashland, Ohio. Filed May 3, 1897. Serial No. 634,950. Term of patent 14 years.



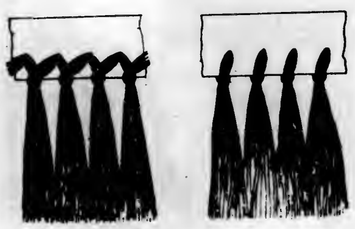
Claim.—The design for a home trainer attachment herein shown and described.

29,848. FRINGE. ALBERT CHRISTIAN OEHRLE, Philadelphia, Pa., assignor to Oehrle Bros. & Co. Filed Aug. 11, 1898. Serial No. 688,401. Term of patent 14 years.



Claim.—The design for fringe, substantially as shown and described.

29,849. FRINGE. ALBERT CHRISTIAN OEHRLE, Philadelphia, Pa., assignor to Oehrle Bros. & Co. Filed Aug. 11, 1898. Serial No. 688,402. Term of patent 14 years.



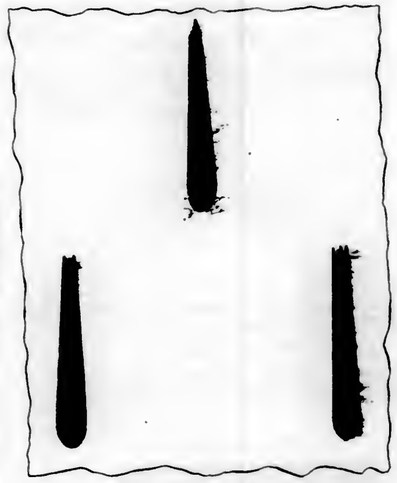
Claim.—The design for a fringe, substantially as shown and described.

29,850. SKIRT-BINDING. HARRY FEDER, New York, N. Y. Filed July 30, 1898. Serial No. 687,364. Term of patent 14 years.



Claim.—The design for a skirt-binding, substantially as herein shown and described.

29,851. FABRIC. ALICE A. AKERS, New York, N. Y. Filed Aug. 3, 1898. Serial No. 687,642. Term of patent 3½ years.



Claim.—The design for a fabric herein shown and described.

29,852. CARPET. GERHARD MARTIN FABRIS, New York, N. Y., assignor to Stephen Sanford & Sons, Amsterdam, N. Y. Filed July 21, 1898. Serial No. 686,541. Term of patent 3½ years.



Claim.—1. In a design for carpeting, the body substantially as shown and described.

2. In a design for carpeting, the border substantially as shown and described.

3. The design for carpeting, consisting of the body and the border, substantially as shown and described.

TRADE-MARKS

REGISTERED SEPTEMBER 13, 1898.

81,957. COPYING-BOOKS AND COPYING-PAPER. CHARLES J. COHEN, Philadelphia, Pa. Filed Aug. 11, 1898.

SATINETTE

Essential feature.—The title "SATINETTE." Used since 1871.

81,958. PENS. PERRY & COMPANY, LIMITED, Birmingham, England. Filed Nov. 20, 1897.



Essential feature.—The character, letter, and abbreviation "& P Co" within a diamond device and the representation of a dome and a triangle. Used since April 30, 1897.

81,959. DRESS-SHIELDS. KORA COMPANY, New York, N. Y. Filed June 14, 1898.

KORA

Essential feature.—The word "KORA." Used since May, 1898.

81,960. BOOTS AND SHOES. LYMAN G. BLOOMINGDALE, New York, N. Y. Filed Aug. 18, 1898.

Rough Rider.

Essential feature.—The words "ROUGH RIDER." Used since August 1, 1898.

81,961. RUBBER HEELS FOR BOOTS AND SHOES. FRANK W. WHITCHER & Co., Boston, Mass. Filed Aug. 4, 1898.

VELVET

Essential feature.—The word "VELVET." Used since August 2, 1898.

81,962. POWDER FOR CLEANING AND POLISHING THE TEETH. THOMAS HOLLIS, Boston, Mass. Filed Aug. 3, 1898.

Pearltooth

Essential feature.—The word "PEARLTOOTH." Used since April 1, 1898.

81,963. POWDERS, PILLS, TABLETS, PERLS, OINTMENTS, AND TINCTURES. PHARMACEUTISCHES INSTITUT LUDWIG WILHELM GANS, Frankfurt-on-the-Main, Germany. Filed Aug. 10, 1898.



Essential feature.—The representation of a coiled hydra with a human hand holding a dagger which is piercing the hydra. Used since January 24, 1898.

81,964. MEDICAL COMPOUND FOR THE REMOVAL OF HAIR FROM THE SKIN, AND FOR SKIN, SCALP, AND HAIR AFFECTIONS. HARRY W. CROLLEY, Covington, Ky. Filed Aug. 4, 1898.

B B

Essential feature.—The letters "B B." Used since December 12, 1897.

81,965. REMEDY FOR CERTAIN NAMED DISEASES. JAMES R. WASSON, Chicago, Ill. Filed Oct. 11, 1897.



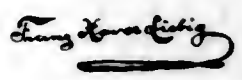
Essential feature.—A circular figure having a transverse band flaring in width toward both ends and elliptic spaces above and below said band, the letters "W W W" arranged on said band and conforming in height to the flaring width thereof, and the name "WASSON'S" and the words "WONDER WORKER" arranged, respectively, in the separate elliptic spaces. Used since August 16, 1897.

81,966. LINIMENT. LOUIS SCHUMEHAHN, St. Louis, Mo. Filed Mar. 17, 1898.



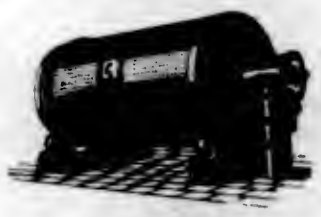
Essential feature.—The representation of a reindeer drawing a sleigh with a man in it. Used since May 3, 1897.

81,967. MEDICINAL TONICS. FRANZ XAVER LIEBIG, New York, N. Y. Filed June 20, 1898.



Essential feature.—The facsimile signature of "FRANZ XAVER LIEBIG." Used since February 1, 1898.

81,968. MALT FOR BREWERS' USE. ALBERT SCHWILL & CO., Cincinnati, Ohio. Filed June 24, 1898.



Essential feature.—A pictorial symbol consisting of a perforated cylinder and its accompaniments, or the representation of a malting apparatus, the characteristic features of which are a perforated drum revolubly mounted on rollers journaled in supports therefor arranged underneath the drum at each end and an imperforate drum of smaller size extending axially from the near end of the larger drum over the end of a cylindrical column or pipe rising vertically from the base on which the supports of the perforated drum rest. Used since July, 1895.

81,969. CIGARS. BALSA Y HERMANO, Vera Cruz, Mexico. Filed Aug. 17, 1898.

GLORIAS DE COLON.

Essential feature.—The words "GLORIAS DE COLON." Used since June 1, 1893.

81,970. BAKING-POWDER. JOSEPH STROUSE & CO., Terre Haute, Ind. Filed Aug. 13, 1898.

BC

Essential feature.—The letters "BC." Used since June 30, 1894.

81,971. CANNED SALMON. EUREKA AND EPICURE PACKING COMPANY, Astoria, Oreg. Filed Aug. 16, 1898.

PINE BURR

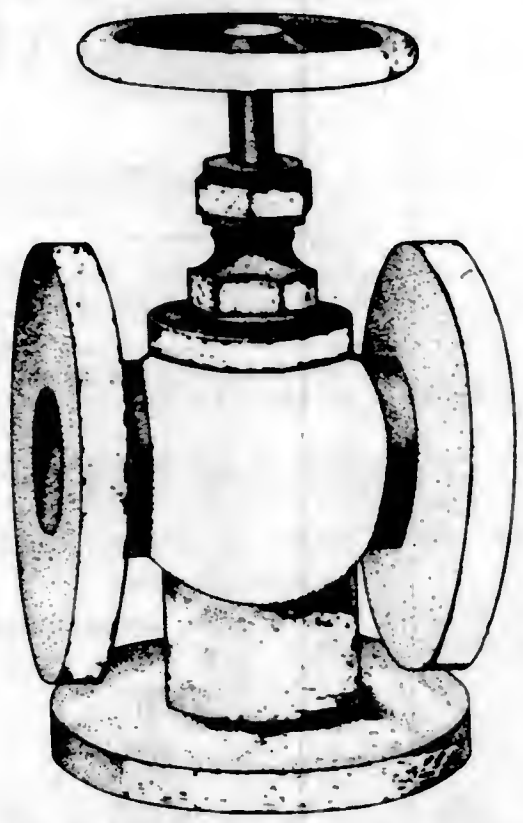
Essential feature.—The words "PINE BURR." Used since June 29, 1898.

81,972. CANNED SALMON. EUREKA AND EPICURE PACKING COMPANY, Astoria, Oreg. Filed Aug. 16, 1898.



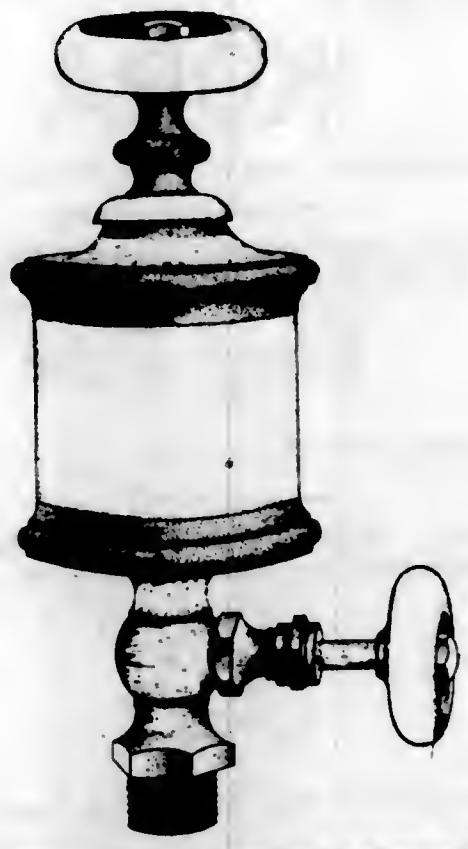
Essential feature.—The representation of a pine-bur. Used since June 29, 1889.

81,978. MINERAL LUBRICATING-OILS. DORLIDO MOURE & CO., Rio Janeiro, Brazil. Filed June 29, 1898.



Essential feature.—The representation of a globe-valve with flanged connections at the side and bottom and a hand-wheel at the top. Used since April 5, 1898.

81,974. MINERAL LUBRICATING-OILS. DORLIDO MOURE & CO., Rio Janeiro, Brazil. Filed June 29, 1898.



Essential feature.—The representation of an oil-cup or lubricator. Used since April 5, 1898.

81,975. BITS, SPURS, STIRRUPS, AND HARNESS-FITTINGS. EDWARD HENRY EGLINGTON, Walsall, England. Filed July 11, 1898.

EGLENTINE

Essential feature.—The word "EGLENTINE." Used since August, 1888.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

LEONARD v. CHASE.

Decided June 15, 1898.

1. INTERFERENCE—MOTION TO DISSOLVE—STAY OF PROCEEDINGS.

A motion to dissolve will not operate as a stay of proceedings in any case, and the pendency of such motion does not relieve the parties from the necessity for taking testimony within the time set.

2. SAME—MOTION FOR SUSPENSION.

A separate motion for suspension should be filed and should be supported by a showing as to why a suspension is necessary during the consideration of the other motion filed. Unless and until an order suspending proceedings is made the requirement that testimony be taken remains in force. (*Birrell* v. *Regan*, 62 MS. Dec., 149.)

3. SAME—SAME—EXTENSION OF TIME.

When a party relies on his motion being granted and thus fails to take testimony within the time set, he does so at his own risk, since he has no right to an extension of time if his motion is denied.

APPEAL on motion.

ELECTRICAL RESISTANCES.

Application of Harry Ward Leonard filed April 9, 1897, No. 631,410. Application of Harvey S. Chase filed January 11, 1897, No. 618,711.

Mr. Richard N. Dyer for Leonard.

Messrs. Lange & Roberts and *Mr. William H. Finckel* for Chase.

GREELEY, *Assistant Commissioner:*

This is an appeal by Leonard from the decision of the Examiner of Interferences denying his motion to vacate the decision awarding priority of invention to Chase and to set new times for taking testimony.

It appears that after certain extensions of time Leonard's time for taking testimony was set to expire February 23, 1898. On February 18 Leonard filed a motion for dissolution, requesting a suspension of proceedings, and on March 26 the Examiner of Interferences refused to transmit the motion to the Primary Examiner and suspended proceedings pending a final decision on that question. On April 1 Leonard filed an appeal to the Commissioner from that decision; but on April 14, before the day of hearing, that appeal was withdrawn, and on the same day the Primary Examiner requested a suspension of proceedings for the purpose of considering another application in connection with the interference. The interference was accordingly again suspended, and it was not until April 30 that proceedings were resumed. On that day the Examiner of Interferences rendered a decision stating that proceedings were resumed, but that—

> As the day of hearing has passed and Leonard has failed to file any testimony, it would seem to be only necessary to act under Rule 116. Leonard being the junior party, the provisions of said rule apply, and judgment of priority of invention of the matter in issue is awarded to Harvey S. Chase.

Leonard moves to vacate the judgment on the record on the ground that he had five days within which to take testimony remaining when the motion for dissolution was filed and that he is now entitled to have new times set covering that remaining time.

There was nothing to prevent Leonard's taking testimony during the time remaining to him even during the pendency of his motion for dissolution, since such motion did not of itself operate as a stay of proceedings. Rule 123 provides that—

> the filing of motions will not operate as a stay of proceedings in any case. To effect this, motion should be made before the tribunal having jurisdiction of the interference, who will, sufficient grounds appearing therefor, order a suspension of the interference pending the determination of such motion.

The motion for suspension should be separate from the other motion and should be supported by a showing as to why a suspension is necessary during the consideration of that motion. (*Birrell* v. *Regan*, 62 MS. Dec., 149.) Unless and until an order suspending proceedings is made the moving party is not relieved of the necessity to take testimony within the time set. He may rely on his motion being granted and thus fail to take testimony, but he does so at his own risk, since he has no right to further time if his motion is denied. In the present case Leonard was not ignorant of the fact that he would be expected to use diligence in prosecuting the case and that a further extension of time would not be granted except for good cause, for in granting a previous extension of time the Examiner of Interferences said:

> The Examiner is of the opinion that there is very much force in the argument of Chase in opposition to this motion, that, having sought the interference, Leonard is bound to great diligence in conducting the same.

In spite of this warning he allowed his time to expire without taking any testimony and without any stay of proceedings being granted. He apparently chose to rely entirely on his motion being granted instead of proceeding to take his testimony, as he should have done, within the time allowed him. That motion being denied he is now without any equities as against the rights of his opponent in the interference.

The decision of the Examiner of Interferences is affirmed.

DOOLITTLE v. HERDMAN.

Decided August 10, 1898.

APPEAL FROM FAVORABLE DECISION—ACQUIESCENCE IN DECISION.

No party can appeal from a decision favorable to himself, and the decision is no less favorable because rendered on a motion of his opponent similar to his own motion. Since acquiescence in a favorable decision cannot be considered acquiescence in the reasons given for it, no hardship results from a refusal to entertain an appeal.

APPEAL on motion.

HYDRAULIC-ELEVATOR SPEED-INDICATOR.

Application of William W. Doolittle filed May 29, 1897, No. 638,824. Application of Frank E. Herdman filed January 23, 1897, No. 620,323.

Mr. Paul Synnestvedt for Doolittle.

Mr. Geo. J. Harding for Herdman.

GREELEY, *Acting Commissioner:*

This is an appeal by Herdman from the action of the Primary Examiner dissolving the above-entitled interference.

Two motions for dissolution were made in this case, one by Doolittle and the other by Herdman, both alleging as one of the grounds for dissolution that there is no interference in fact. The Examiner granted both motions on this ground, and it is from this action that Herdman now appeals. It is apparent, therefore, not only that the Examiner has granted the thing which Herdman asked—namely, a dissolution of the interference—but has granted it upon the very grounds alleged. This action was no less favorable to Herdman because it was also granted on a similar request of his opponent.

This appeal seems to have been taken for the reason not that the appellant does not agree with the conclusion reached, but that he does not agree with the reasons given by the Examiner for holding that there is no interference in fact and that the interference should be dissolved. It is well settled that an appeal must be from the conclusion and not from the reasons given for reaching that conclusion and that no party can appeal from a decision favorable to himself. (*Breul* v. *Smith*, 84 O. G., 809.) Since acquiescence in a decision favorable to a party cannot be considered an acquiescence in the reasons given for that decision, no hardship to him will result from a refusal to entertain an appeal.

This appeal is dismissed.

EX PARTE BUDDINGTON.

Decided August 11, 1898.

1. PETITION—RULE 33.

The petition should contain a reference to the specification for a full disclosure of the invention, as is specifically required in Rule 33. It does not itself disclose the invention, and is therefore incomplete unless it refers to some paper which does disclose it.

2. OATH—KNOWLEDGE AND BELIEF.

The statement by an applicant in his oath that he does not *know* that the invention was ever before known or used and that it has not to his *knowledge* been in public use for more than two years prior to the filing of his application is not sufficient, since the statute and rule require that these statements be made upon belief as well as upon knowledge.

3. SAME—STATEMENT AS TO FOREIGN APPLICATION.

The oath must state that no foreign application has been filed before the filing of this application or give the data of any such applications which have been filed as required in Rule 46, and it is not sufficient to state that no foreign application has been filed more than seven months before this application.

4. FORMS—MISTAKE IN.

The forms given in the Rules of Practice for adoption by applicants are merely suggestive, and a mistake in them furnishes no ground upon which the requirements of the rules may be disregarded.

ON petition.

ADJUSTABLE PATTERN-DRAFTING APPARATUS.

Application of Frank E. Buddington filed January 5, 1898, No. 665,091.

Messrs. Peirce & Fisher for the applicant.

GREELEY, *Acting Commissioner:*

This is a petition from the action of the Primary Examiner making formal objections to the petition and oath in the above-entitled application.

The petition forming part of the application is objected to in that it does not refer to the specification for a disclosure of the invention. Rule 33 specifically requires that the petition shall "contain a reference to the specification for a full disclosure of such invention," and this rule is of binding authority and cannot be disregarded either by the Examiner or the Commissioner. (*Ex parte Mason*, 43 O. G., 627.) Aside from the requirements of the rule, however, it is obvious that a petition which does not itself disclose the invention is incomplete unless it refers to some other paper which does disclose it, since while asking for a patent it would leave it uncertain upon what specific thing a patent was desired. The petitioner's objection that the term "accompanying" cannot be used where the specification is not filed with the petition may be overcome by the use of some other terms of reference, the particular form of expression being immaterial.

The oath has been held defective in that the applicant does not state that "he does not know and does not believe" that his invention was ever before known or used or that it has not to his "knowledge and belief" been in public use for more than two years prior to the filing of his application. He does make these statements in so far as his knowledge is concerned, but fails to state his belief in regard to the matter. Section 4892 of the Revised Statutes distinctly requires that the applicant shall make oath in regard to his invention "that he does not know and does not believe that the same was ever before known or used," and this Office has no authority to waive any positive requirement of the statute. The statutory requirements in regard to the oath make no reference to the question of public use and sale; but by analogy to the wording of the statute noted above the rule requires that the applicant shall make oath that the invention has not to his "knowledge and belief" been in public use for more than two years prior to the filing of his application. This requirement not being contrary to the statute is as binding both upon the applicant and the Office as if it were embodied in the statute itself. (*Koechlin and Witt* v. *Marble, Commissioner*, 22 O. G., 1865.) It is true that the form of oath suggested by the Office for adoption by applicants contains no allegation as to the *belief* of the applicant in regard to the question of public use; but these forms are merely suggestive and a mistake in them furnishes no ground upon which the requirements of the rules may be disregarded.

Further objection is made to the oath in that it does not state that no foreign application has been filed before this application or give the data of any such applications which may have been filed, as is required in Rule 46, but merely states that no foreign application has been filed more than seven months before the filing of this application. This objection, like the others above noted, was proper, since the requirements of the rules must be enforced.

The formal objections, while proper, are not such as to prevent a consideration of the case on its merits, and therefore the Examiner will give such consideration, if response is made by the applicant to his last action thereon, pending a compliance by the applicant with the formal requirements noted.

The petition is denied.

EX PARTE THOMAS.

Decided August 12, 1898.

1. INTERFERENCE—DECLARATION—CLAIMS IDENTICAL IN SCOPE.

The present practice requires that interferences should be declared only when the claims involved are substantially identical in scope.

2. SAME—SAME—CONSTRUING CLAIMS—LIMITATIONS IN CLAIMS.

Where a claim has certain limitations introduced to satisfy the requirements of the Office as to its allowability over a reference and when in view of such limitations the claim is allowed, it cannot be said that such limitations are immaterial in order to declare an interference.

ON petition.

ELECTRODEPOSITION OF COPPER ON SHIPS.

Application of Eddy T. Thomas filed April 3, 1897, No. 630,588.

Mr. Harold Binney for the applicant.

GREELEY, *Acting Commissioner:*

This petition asks that the Examiner be restrained from declaring an interference between the claims of this application and any claim of a certain patent cited in the record, and particularly between claim 1 of said patent and claim 1 of the application.

This application is a division of a prior application which was pending when the patent was allowed. It seems that a claim identical with claim 1 of the patent was introduced into this application with the object of having an interference declared. The claim thus introduced was rejected upon references which do not appear to have been cited against the claim of the patent. In view of these references the applicant limited his claim in certain respects. The Examiner's position is that the two claims cover the same invention; that if the claim of the patent be interpreted by the specification the two are identical in scope, and that while the claim of the patentee, considered apart from the description, is met in terms by the references, yet the real invention covered thereby differs in no respect from that more clearly described in the first claim of this application.

The applicant contends that the claim of the patent is *res adjudicata* as regards this application; that the Examiner is not at liberty, under the ruling in *Wolfenden* v. *Price*, (83 O. G., 1800,) to regard differences between claims as immaterial and is not at liberty, under the ruling in *Hammond* v. *Hart* (83 O. G., 743) and *ex parte Whitney*, (83 O. G., 1659,) to select for interference with a patent (and with a claim in such patent which is held to be not patentable) a claim of an application which has been carefully distinguished from the prior art and formally decided by the Examiner to be allowable.

The present practice requires that an interference be declared only when the claims involved are substantially identical in scope. While the Examiner's construction of the claim of the patent as of the same substantial scope as that of the application may be a proper one and one which might be adopted by a court in order to sustain the validity of the patent, yet as a matter of fact the claim of the application has certain limitations which do not exist in the patent, and in the face of these limitations, imposed to satisfy the requirements of the Examiner with respect to references cited by him as meeting the claim before such limitations were introduced, he is not in a position now to deny their materiality by stating that a claim without them means the same thing as a claim with them.

The circumstances in this case are the converse of those referred to in *ex parte Baker* (64 MS. Dec., 71) in that in this case the patentee has the broad claim and in that the applicant made it; but the same principle applies—viz., that domination or infringement does not justify the declaration of interference. If the patentee desires an interference, he can probably obtain it by application for reissue. Furthermore, whatever may be the opinion of the Examiner as to the interpretation of the patentee's claim, he should follow the practice strictly. (See *ex parte Whitney*, *supra*.)

The petition is granted.

BERNARD v. HUEBEL.

Decided August 17, 1898.

1. INTERFERENCE—PRELIMINARY STATEMENT, AMENDMENT TO AFTER TESTIMONY HAS BEEN TAKEN—SHOWING.

After testimony has been taken the showing which would warrant an amendment to a preliminary statement changing the date of disclosure must be of the same kind as if the moving party were attempting to carry his date back of that of his opponent.

2. SAME—SAME—SAME.

Where an amendment to a preliminary statement is presented after testimony has been taken, the Office will not consider such testimony to determine what dates have been proved, but the possibility must be contemplated that the moving party may be attempting to carry his dates back of those which in his opinion have been established by his opponent.

3. SAME—SAME—NEGLIGENCE OF APPLICANT.

Where an applicant prepares his preliminary statement under the counsel and direction of an attorney, but through ignorance of the law fails to inform him of all of the material facts within his knowledge as to the disclosure of the invention, *Held* that it shows negligence on his part and furnishes no good ground for permitting an amendment to the statement.

APPEAL on motion.

COMBINED HOLDERS.

Application of William Bernard filed September 29, 1897, No. 653,434. Application of Otto H. Huebel filed September 25, 1897, No. 653,050.

Mr. H. A. Seymour for Bernard.

Mr. George H. Evans for Huebel.

GREELEY, *Acting Commissioner:*

This is an appeal by Huebel from the decision of the Examiner of Interferences denying his motion for leave to amend his preliminary statement.

Testimony has been taken and filed on behalf of both parties, and it is in view of facts alleged to have been brought out in this testimony that Huebel now wishes to amend his statement. His present statement alleges conception in April, 1896, and disclosure to others on or about August 13, 1897, and by the proposed amendment he wishes to take his date of disclosure back to April, 1896, sixteen months prior to the time originally alleged. Bernard alleges conception and disclosure to others in November or December, 1895.

The affidavits in support of the motion to amend set forth that Huebel prepared his original statement under the counsel and direction of his attorney, George H. Evans, and that at that time he was well aware that he had disclosed the invention to his partner, F. W. Mauger, in April, 1896, but did not disclose this fact to his attorney or mention it in his statement, for the reason that he thought that disclosures to his partner were of a private and confidential nature and that they did not come under the head of "disclosure made to others." Huebel alleges, further, that he believed that "disclosure to others" referred to the completed article and not to the mere description of how he proposed to make the same.

It is contended on behalf of Huebel that this case is analogous to that considered in *Maltby* v. *Miehle*, (82 O. G., 749,) since the alleged date of conception is not changed and the proposed change in the date of disclosure does not carry his date back of the corresponding date of his opponent. It cannot be admitted, however, that the cases are analogous, since the amendment in this case changes the date of disclosure, whereas it was stated in the case referred to that—

the proposed amendment does not change the date of conception, disclosure, or reduction to practice, and these are the vital allegations in any preliminary statement.

The Examiner of Interferences states, further, that it is not certain that the proposed amendment does not carry Huebel's date of disclosure back of the proved date of his opponent, although not back of his alleged date. In this statement he is correct. It is true, as contended by Huebel, that the testimony cannot be considered at this time to determine what dates have been proved; but without giving such consideration the possibility must be contemplated that the moving party may be attempting to carry his date back of that which in his opinion has been proved by his opponent. He has knowledge of his opponent's testimony, and to permit an amendment to the statement under such circumstances in the absence of a showing of good and sufficient reasons would be to establish a precedent by which a party could take advantage of his knowledge of his opponent's dates, as shown in his testimony, and carry his own dates back prior thereto. For these reasons the showing to warrant the amendment must be of the same kind as if the party were in fact attempting to carry his date back of the date of his opponent, whether such ultimately proves to be the case or not.

Under the circumstances the showing in the present case is not sufficient to warrant the amendment. Whether Huebel did or did not know that the disclosure to his partner was such disclosure as is contemplated by the rules, he knew of the fact, and his failure to disclose it to his attorney shows negligence on his part. He had employed an attorney familiar with the law to advise him on such subjects and to prosecute the case for the reason that he himself was not familiar with the subject, and therefore it was clearly his duty to inform such attorney of all of the facts and circumstances, so that he could advise him as to their materiality. He did not make such efforts and use such diligence as is required by the settled practice of the Office in ascertaining the facts upon which his rights depended and which he was required by the rules to set forth in his statement.

The decision of the Examiner of Interferences is affirmed.

EX PARTE SHEARMAN.

Decided August 20, 1898.

1. APPEAL—NEW MATTER—QUESTION FOR EXAMINERS-IN-CHIEF.

Reference having been made in the original application to spurs or cleats, they can be shown so long as the illustration of them does not involve a departure from the original disclosure; but the question as to whether a particular figure of the drawings illustrating them and covered specifically by the claims involves new matter is for the Examiners-in-Chief to decide.

2. SAME—ILLUSTRATION—MATTER CLAIMED.

Claims should cover specifically only what is illustrated in the drawings; but since it cannot be decided in this case whether the spurs or cleats are properly illustrated without passing upon the question of new matter involved in some of the claims this petition is dismissed.

ON petition.

SPRING-TIRES FOR BICYCLE AND VEHICLE WHEELS.

Application of Henry C. Shearman filed August 5, 1896, No. 601,746.

Mr. Henry C. Shearman for himself.

GREELEY, *Acting Commissioner:*

This is a petition from the holding of the Primary Examiner that certain matter made a part of the case by amendment involves a departure from the invention originally disclosed.

The matter referred to is stated by the Examiner to be disclosed in Figure 17 of the drawings and

covered by claims 45 and 48. These claims have been rejected on the ground of departure, and the petitioner recognizes the fact that an appeal to the Examiners-in-Chief and not a petition to the Commissioner is his proper remedy from such action, but states that this petition is filed merely for a ruling on the question—

Does the sentence "which tread-band may be provided with spurs or cleats to prevent tread-band from slipping on icy ground" occurring in original claim 13 constitute sufficient ground to warrant the insertion of a figure in the drawings to illustrate spurs or cleats on said tread-band?

It does not appear from an inspection of the record that the Examiner has made any ruling on this question or has held that all reference to spurs or cleats should be canceled, as alleged by petitioner. Reference having been made in the original application to spurs or cleats, they can of course be shown, so long as the illustration of them does not involve a departure from the original disclosure. The Examiner's position seems to be that the cleats should either be illustrated in accordance with the original disclosure or reference to them in the claims omitted. He has held that the present disclosure involves new matter and has rejected claims to it for that reason.

It is true that he has not rejected claim 13 for new matter, but has merely required the cancellation of the reference to spurs or cleats; but the correctness of this action cannot be passed upon without ruling upon the question as to whether Fig. 17 is properly in the case, and, as above indicated, that is a matter for the Examiners-in-Chief. Claims should cover specifically only what is illustrated in the drawings, and unless Fig. 17 is properly in the case or some other figure is added which does properly illustrate the cleats without involving new matter reference to them in the claims should be canceled.

For the above reasons the petition is dismissed.

STONE v. HUTIN AND LEBLANC.

Decided August 23, 1898.

1. INTERFERENCE—TESTIMONY—RIGHT OF PARTY TO USE IN ONE INTERFERENCE TESTIMONY TAKEN IN ANOTHER.

In considering a motion by a party after his time for taking testimony has expired that he be permitted to use in one interference testimony taken in another it must be decided not only whether the testimony itself is admissible, but whether the party has any right at that time to introduce any evidence whether in the form requested or any other form.

2. SAME—SAME—RULE 157.

Rule 157 relates merely to the form of the evidence and does not modify in any way the other rules in reference to the time within which testimony must be taken, and therefore evidence which is not admissible under such other rules cannot be admitted merely because presented in a different form under Rule 157.

3. SAME—SAME—SURPRISE—TAKING ADDITIONAL TESTIMONY.

A party must contemplate and guard against all ordinary attacks on his evidence, and where he introduces foreign patents and publications as disclosing the invention they are, like other evidence, open to consideration and explanation by his opponent in his rebuttal testimony, and the fact that he introduces evidence to show that they do not disclose the invention is no ground for the allegation of surprise. It furnishes no good reason for taking more testimony.

APPEAL on motion.

MULTIPLE TELEGRAPHY.

Application of John S. Stone filed October 25, 1894, No. 526,986. Application of M. Hutin and M. Leblanc filed May 9, 1894, No. 510,658.

Mr. William W. Swan and *Messrs. Pollok & Mauro* for Stone.

Messrs. Lyons & Bissing for Hutin and Leblanc.

GREELEY, *Acting Commissioner:*

This is an appeal by Hutin and Leblanc from the decision of the Examiner of Interferences denying their motion brought under Rule 157 that they be permitted to use in the above-entitled interference testimony taken in their behalf in interference No. 17,196.

Both parties are involved in that interference, although the issue is different and includes a different application of Stone. It appears from the record and the affidavit filed on behalf of Hutin and Leblanc that each party's time for taking testimony has expired and that under ordinary circumstances Hutin and Leblanc would have no right to take more testimony. In view of this fact, therefore, it must be decided not only whether Hutin and Leblanc would have the right to use in the present case testimony taken in the other case referred to in spite of the protest by Stone, but also whether they have the right at this time to introduce any evidence, whether in the form requested or in any other form.

Their time for taking testimony having expired, they must show good and sufficient reasons why the proposed evidence was not introduced at the proper time. On this subject the affidavit on their behalf alleges surprise at certain testimony on behalf of Stone alleging that certain devices covered by their testimony are inoperative and do not embody the issue. It is alleged that after Hutin and Leblanc had introduced in evidence certain foreign patents and publications as embodying the invention and had closed their testimony Stone introduced testimony in rebuttal going to show that some of these devices were inoperative, and, being the senior party, Hutin and Leblanc had no opportunity to reply to this testimony. In the companion interference, No. 17,196, Stone is the senior party, and therefore when the same objection was made to the patents and publications they had a chance to and did introduce testimony in reply to such objections. It is this testimony that they now desire to introduce.

Under the rules of the Office after the senior party has closed his testimony the junior party is given further time for the express purpose of rebutting the evidence introduced by him, and therefore it is the duty of such senior party to contemplate and guard against all ordinary attacks on his evidence. Having introduced the foreign patents and publications and alleged that they disclosed the invention, it was naturally to be presumed that his opponent would consider the question in his rebuttal testimony as to whether such exhibits did in fact disclose the invention. They, like any other evidence, were open to considera-

tion and explanation, and the fact that they were so considered is no ground for the allegation of surprise.

While the present motion is not definite as to what testimony in the other interference it is now desired to use, it seems to be admitted that some of the testimony in that case would be pertinent. This being the case, the parties being the same and the interferences being closely connected, there is no apparent reason why this evidence could not properly be admitted to the present case under Rule 157 in spite of the protest of Stone except for the fact that Hutin and Leblanc now have no right to introduce evidence of any kind. Stone's argument in opposition to this motion is in fact principally directed to the time when the motion was brought rather than to its substance.

Rule 157 relates merely to the form of the evidence and does not modify in any way the other rules in reference to the time within which testimony must be taken, and therefore evidence which is not admissible under such other rules cannot be admitted merely because presented in a different form under Rule 157.

The decision of the Examiner of Interferences is affirmed.

EX PARTE BLAUBACH.

Decided August 30, 1898.

FUGITIVE INK, ADMISSION OF PAPERS WRITTEN IN.

Papers written in ink which does not stand the tests used by the Executive Departments to determine the permanency of inks should be refused admission as part of the permanent records of the Patent Office.

ON reference.

FEEDING STUFFS.

Application of Paul Blaubach filed April 20, 1898, No. 678,304.

Mr. B. Singer for the applicant.

GREELEY, *Acting Commissioner:*

The Examiner has refused to enter in this case a type-written amendment submitted on July 16, 1898, on the ground that it is written in fugitive ink. The attorney for applicant urges the acceptance of the amendment on the ground that he purchased the ink as non-fugitive and has used it in writing papers which were subsequently filed in this Office and were received and entered without objection.

In referring the case here the Examiner states that the question of the use of fugitive inks has become important, and scarcely a day passes that objection on this ground does not have to be made to papers filed as part of the permanent record of applications for patent, and requests that such order be made as shall secure uniformity in the practice. The Examiner also submits a statement of the tests applied to determine the permanency of ink. These tests are understood to be those used by other Executive Departments to determine the permanency of inks. These tests are two in number—first, the application of the well-known Labarraque's solution, followed by a saturated solution of oxalic acid, to determine whether the ink will be faded by the action of light or chemicals, and, second, the application of a ten-per-cent. solution of nitric acid. The Examiner states that an ink which will not stand the latter test will rapidly fade and is absolutely unsuitable for public records.

Inks which have a foundation of lampblack or carbon are not materially affected by these tests, the carbon remaining even when coloring-matter used with the ink is removed.

These tests have been applied in the present case, and it appears that the writing is thereby not only rendered illegible but practically obliterated. The ink evidently has no foundation of lampblack or carbon. The paper is unfit to become a part of the permanent record and the Examiner was right in refusing to enter it as a part of such record.

The case here presented is precisely the case before the Commissioner in *ex parte Ritter*, (57 O. G., 1883,) and falls within Order No. 37, issued July 30, 1880, by Commissioner Marble, which reads as follows:

All applications, communications and other instruments in writing or print, which should properly constitute a permanent record in the Office, must be prepared with a substantially permanent *ink*.

Aniliu and other perishable inks will not be accepted.

This order and the decision in the case above referred to are still in full force in this Office. Papers written in ink which does not successfully stand the tests above described should be refused admission as part of the permanent records.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 84—No. 12. TUESDAY, SEPTEMBER 20, 1898. PRICE—$5 per year.

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Amendment to the Rules of Practice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 12, 1898.

Rule 199 of the Rules of Practice of the United States Patent Office (edition of June 18, 1897) is amended by inserting after the word *recorded*, in line 1 thereof, the words "which is not in the English language, and," so that the rule as amended shall read:

199. No instrument will be recorded *which is not in the English language, and* which does not, in the judgment of the Commissioner, amount to an assignment, grant, mortgage, lien, incumbrance, or license, or which does not affect the title of the patent or invention to which it relates. Such instrument should identify the patent by date and number; or, if the invention be unpatented, the name of the inventor, the serial number, and date of the application should be stated.

(Signed) C. H. DUELL,
Commissioner.

Department of the Interior, September 15, 1898.

Approved:
(Signed) THOS. RYAN,
Acting Secretary of the Interior.

Interference Notice—Decker v. Loosley.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 1, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

Notice is hereby given that times have been set as follows for taking testimony in this interference and for its final hearing, to wit:

Decker's testimony-in-chief to close November 8, 1898. Loosley's testimony-in-chief to close November 28, 1898. Decker's testimony in rebuttal to close December 13, 1898. Final hearing January 5, 1899. No testimony to be taken before October 18, 1898. Loosley will be restricted to his record date.

This notice will be published in the OFFICIAL GAZETTE for six weeks.

C. H. DUELL,
Commissioner.

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 14, 1898.

Hereafter coupons unless properly filled out will not be accepted in payment for copies of publications.

C. H. DUELL,
Commissioner.

War Revenue—Stamp Tax to Certificates.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 16, 1898.

The attention of persons having business before this Office is called to the following ruling of the Commissioner of Internal Revenue in relation to affixing revenue-stamps to trade-mark, print, and label certificates issued by this Office:

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF INTERNAL REVENUE,
Washington, D. C., September 3, 1898.

Hon. C. H. DUELL,
Commissioner of Patents, Interior Department.

SIR: I have the honor to acknowledge the receipt of your letter of current date, submitting three forms which are used by your Office and asking in regard to their liability to the internal-revenue tax under Schedule A of the War-Revenue Act of June 13, 1898.

These forms are as follows:

Exhibit "A" is a certificate of registration of trade-mark. Exhibit "B" is a certificate that there has been deposited in your Office for registration a print; and Exhibit "C" is a certificate that there has been deposited in your Office for registration a label.

These certificates are all required by law and are given for private use. In conformity with the opinion of the Attorney-General and the rulings of this Office, each of these certificates requires a ten-cent stamp.

Very respectfully,
W. B. SCOTT,
Commissioner.

The Commissioner of Internal Revenue has also ruled that a certificate of acknowledgment accompanying an assignment, in accordance with section 4898 of the Revised Statutes as amended March 3, 1897, requires a revenue-stamp to the value of ten cents to be affixed thereto.

C. H. DUELL,
Commissioner.

CERTIFICATES OF REGISTRATION ISSUED SEPTEMBER 20, 1898.

Labels.

6,672.—Title: "PORTO RICO SPECIAL." (For Beer.) *J. Ottman Lithographing Company*, New York, N. Y. Application filed August 29, 1898.

6,673.—Title: "SPECKLED CRACKER JACK." (For Cigars.) *The Lee Broom and Duster Company*, Lincoln, Nebr. Application filed August 22, 1898.

6,674.—Title: "LUCCHESI'S CURE FOR RHEUMATISM." (For Rheumatic Salve.) *Eugene Lucchesi*, Boston, Mass. Application filed August 5, 1898.

6,675.—Title: "READY FOR USE RAT CAKE." (For Rat-Poison.) *Frank C. Loomis*, Grand Rapids, Mich. Application filed August 19, 1898.

Print.

78.—Title: "ARMY AND NAVY PUZZLE." (For a Game.) *Spencer L. Davis*, Chicago, Ill. Application filed August 9, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business September 13, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears—Under one month.			
38	XXXV. Advertising, Baggage, Packing and Storing Vessels, Games and Toys, etc.	Aug. 18	Aug. 30	94
	Between one and two months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	July 20	Sept. 6	243
111	XXXII. Bottles and Jars, Carbonating Beverages, Shipping and Storing Vessels, etc.	July 15	Sept. 3	157
109	XIX. Stoves and Furnaces	July 25	Aug. 29	182
149	III. Metallurgy, Metal-Founding, Electro-Chemistry, etc.	Aug. 2	Aug. 25	100
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	July 15	Aug. 23	108
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	July 22	Aug. 11	153
	Between two and three months.			
158	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	July 2	Sept. 1	150
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 5	Aug. 31	117
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 14	Aug. 31	190
340	VII. Velocipedes	June 15	Aug. 30	441
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 15	Aug. 29	150
256	XII. Mechanical Engineering, Steam-Service, etc.	July 1	Aug. 18	173
253	X. Carriages and Wagons	July 9	Aug. 16	195
89	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 13	Aug. 13	318
	Between three and four months.			
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	May 28	Sept. 6	248
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 11	Aug. 29	179
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	May 26	Aug. 17	375
123	XXIV. Sewing-Machines, Apparel, and Toilet.	May 14	Aug. 12	305
	Between four and five months.			
248	XVIII. Steam-Engineering, etc	May 11	Sept. 1	305
106	II. Farm Stock, Products, etc.	Apr. 15	Sept. 1	504
246	I. Tillage and Fences	Apr. 26	Aug. 29	227
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	May 11	Aug. 27	420
98	XXI. Textiles, etc	May 7	Aug. 2	294
	Between five and six months.			
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Apr. 9	Sept. 2	343
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Mar. 17	Sept. 2	424
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Mar. 17	Aug. 31	409
231	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	Mar. 19	Aug. 29	222
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Apr. 12	Aug. 20	382
190	IX. Hydraulics, Fire-Extinguishers, etc.	Apr. 11	Aug. 16	279
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Mar. 15	Aug. 15	777
	Between six and seven months.			
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Mar. 7	Aug. 26	424
	Between seven and eight months.			
95	XXX. Paper Manufactures, Lamps, and Gas-Fittings.	Jan. 31	Aug. 31	201
217	XXXIII. *Trade-Marks, etc., †Designs, Drafting, and Optics.	Feb. 11	Aug. 26	232

Applications Under Examination—Continued.

215	XVII. Printing, Type-Writing Machines, and Linotyping.	Feb. 7	Aug. 11	404
	Between eight and nine months.			
261	XXXVI. Weighing and Measuring Devices and Driers.	Jan. 6	Aug. 25	277

Total number of applications awaiting action 10,002

Under one month.			
Designs	Sept. 8	Sept. 10	31
Trade-Marks	Aug. 27	Sept. 8	93

ISSUE OF SEPTEMBER 20, 1898.

Patents	345	No. 610,882 to No. 611,226, inclusive.
Designs	49	No. 29,353 to No. 29,401, inclusive.
Trade-Marks	21	No. 31,976 to No. 31,996, inclusive.
Labels	4	No. 6,672 to No. 6,675, inclusive.
Prints	1	No. 78.
Reissues	3	No. 11,693 to No. 11,695, inclusive.
Total issue	423	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	.....	New Hampshire	2	.....
Arizona Territory	.....	.....	New Jersey	7	.....
Arkansas	1	.....	New Mexico Territ'y	3	.....
California	12	.....	New York	77	7
Colorado	4	.....	North Carolina	1	.....
Connecticut	14	.....	North Dakota	.....	.....
Delaware	.....	.....	Ohio	29	.....
District of Columbia	1	.....	Oklahoma Territory	.....	.....
Florida	.....	.....	Oregon	.....	.....
Georgia	1	.....	Pennsylvania	29	2
Idaho	1	.....	Rhode Island	1	.....
Illinois	29	3	South Carolina	.....	.....
Indian Territory	1	.....	South Dakota	3	.....
Indiana	16	.....	Tennessee	7	.....
Iowa	5	.....	Texas	.....	.....
Kansas	2	1	Utah	2	.....
Kentucky	5	1	Vermont	1	.....
Louisiana	3	.....	Virginia	4	.....
Maine	2	1	Washington	4	1
Maryland	20	3	West Virginia	9	1
Massachusetts	9	2	Wisconsin	1	.....
Michigan	6	1	Wyoming	.....	.....
Minnesota	2	.....	U. S. Army	.....	.....
Mississippi	15	1	U. S. Navy	.....	.....
Missouri	1	.....	Total to citizens of the United States	339	25
Montana	4	1			
Nebraska	.....	.....			
Nevada	.....	.....			

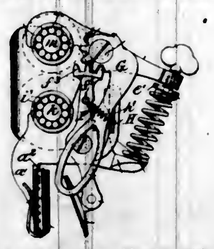
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	1	.....	Italy	1	.....
Australia	.....	.....	Mexico	.....	.....
Austria-Hungary	2	.....	Netherlands	.....	.....
Barbadoes	.....	.....	Newfoundland	.....	.....
Belgium	.....	.....	New South Wales	.....	.....
Bermuda	.....	.....	New Zealand	1	.....
Brazil	.....	.....	Norway	.....	.....
British Guiana	.....	.....	Portugal	.....	.....
Canada	5	.....	Queensland	.....	.....
Cape Colony	.....	.....	Russia	.....	.....
Chile, Republic of	.....	.....	Scotland	3	.....
China	.....	.....	South African Republic	.....	.....
Colombia	.....	.....	South Australia	.....	.....
Cuba	.....	.....	Spain	.....	.....
Denmark	2	.....	Sweden	.....	.....
Egypt	.....	.....	Switzerland	1	.....
England	17	.....	Victoria	2	.....
Finland	.....	.....	West Australia	.....	.....
France	3	1	Total to citizens of foreign countries	55	1
Germany	15	.....			
Guatemala	.....	.....			
Ireland	2	.....			

PATENTS

GRANTED SEPTEMBER 20, 1898.

610,882. CLOTHES-WRINGER. WILHELM AAR, New Ulm, Minn. Filed Mar. 29, 1898. Serial No. 675,609. (No model.)



Claim.—1. In a wringer, the combination, with a side plate having an upward-extending arm provided with an offset from which projects an outward-extending hollow stud, of a tension-lever fulcrumed on said stud, a clamp-operating lever also fulcrumed on said stud outside the tension-lever, and a screw threaded into the hollow stud and having its head countersunk into the clamp-operating lever.

2. In a wringer, the combination, with a side plate having a downward-extending foot provided with a flange, of a rubber shoe having a dovetailed groove arranged to receive said flange, and a spring secured to the shoe and projecting into engagement with the flange.

3. In a wringer, the combination, with a clamping-lever having a toothed segment at one end and provided with a rack, a clamp-operating lever provided with a handle and with a toothed segment engaging the segment on the clamping-lever, and a pawl-arm pivoted to the clamp-operating lever and provided with a pawl arranged to engage the rack on the clamping-lever, of means for holding the pawl in position to engage the rack.

4. In a wringer, the combination with a clamping-lever having a toothed segment at one end and a rack on one edge, a clamp-operating lever having a handle, and a toothed segment engaging the segment on the clamping-lever, and a pawl-arm pivoted to the clamp-operating lever and provided with a pawl arranged to engage the rack on the clamping-lever, of a spiral spring having one end connected to the pawl-arm and the other end to the clamping-lever.

5. In a wringer, the combination, with a side plate having a slot, a tension-lever fulcrumed on the side plate and also provided with a slot, and rolls provided with gudgeons, of cylindrical shells each having opposite recesses intermediate their ends and arranged to receive the portions of the side plates and tension-arms, respectively, adjacent to their respective slots, said shells to be arranged to receive the respective gudgeons, and antifriction-rolls between the gudgeons and their shells.

6. In a wringer, the combination, with a pair of rolls having gudgeons, of a guard-plate provided with a hole arranged to receive one gudgeon and with a slot arranged to receive the corresponding gudgeon of the other roll, a cylindrical shell surrounding the former gudgeon, and antifriction-rollers within the cylindrical shell and around the said gudgeon, the inner end of the cylindrical shell being open and in contact with the guard-plate whereby the latter serves to prevent the longitudinal movement inward of the antifriction-rollers.

610,883. RECEPTACLE FOR GOOD AND BURNED MATCHES. EMAR S. BACH, Colorado City, Colo. Filed Nov. 13, 1897. Serial No. 658,410. (No model.)

Claim.—1. A match-safe consisting of a receptacle for good matches, a receptacle consisting of a movable tray adapted to hold burned matches, the back of the safe being provided with a surface inclining forward at its lower edge, said inclined surface being opposite the movable tray and forming a part of the receptacle for the burned matches.



2. A match-safe consisting of a receptacle adapted to hold good matches, an inclined surface located in the back of said safe, the lower edge of said inclined surface terminating in a socket, a pivoted tray adapted to form a receptacle for the burned matches, said pivoted tray being located in front of the inclined section of the safe, the lower edge of the pivoted tray being extended and adapted to enter the socket at the lower edge of the inclined surface, thereby preventing the escapement of fine particles from the receptacle for the burned matches.

3. A match-safe consisting of a receptacle adapted to hold good matches, a receptacle adapted to hold burned matches said receptacle consisting of a pivoted tray, an inclined section located in the back of the safe opposite the pivoted tray, the lower edge of the pivoted tray being adapted to pass under the lower edge of the inclined section a roughened surface located below the inclined surface, said roughened surface being formed on the arc of a circle.

4. A match-safe consisting of a receptacle adapted to hold good matches, a tray adapted to hold burned matches, said tray being located below the said receptacle the back of the safe forming a portion of the receptacle for the burned matches, the sides of the tray being permanently fixed to the forward portion thereof, the upper rear corners of the sides of the tray being pivotally connected to the sides of the receptacle for the good matches.

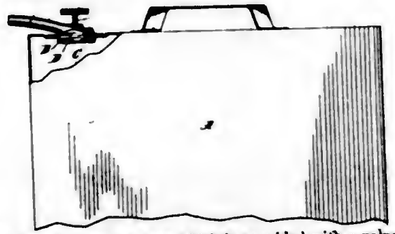
610,884. HOOK. GILBERT L. BAKER, Waterford, Cal. Filed Mar. 27, 1897. Serial No. 629,598. (No model.)



Claim.—In combination, a hook having the extremity of its bill carved inwardly toward the shank, and having the sides of the shank cut away or rabbeted, a guard pivoted to the outer end of the shank beyond the extremity of the bill and comprising an inner and an outer member, the latter extending over the bill and curving to form an outer and an inner flaring space with the end portions of the bill to facilitate the snapping and the unsnapping of the hook, and the inner member overlapping the shank and extending to the bight of the hook and grooved to form a matching joint with the shank, and a spring in the recessed butt-end of the guard, substantially as shown for the purpose described.

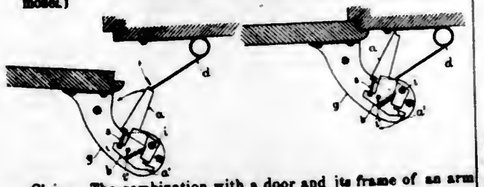
610,885. VENTED FAUCET FOR CANS, &c. GEORGE W. BARKER, Keene, N. Y. Filed Apr. 4, 1898. Serial No. 676,449. (No model.)

Claim.—1. A faucet having a cap which is provided with a valve-stem, valve, vent and spout, the vent opening directly into the can through the valve, and a shield on the cap which covers the vent and is so constructed as to intercept such liquid as escapes from the vent and direct it downwardly over the spout, for the purposes set forth.



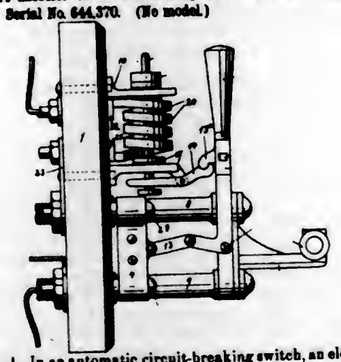
2. A faucet having a cap which is provided with a valve-stem, valve, vent and spout, the vent opening directly into the can through the valve, a shield on the cap which covers the vent and is so constructed as to intercept such liquid as escapes from the vent and direct it downwardly over the spout, and a gutter to direct the course of said liquid, for the purposes set forth.

610,886. DOOR-STOP. GUSTAV BORTMANN and REINHOLD MUNKWITZ, Leipsic, Germany. Filed May 29, 1897. Serial No. 638,805. (No model.)



Claim.—The combination with a door and its frame of an arm *g* on the former, a lever *a* having a tail *a'* pivoted in a horizontal plane at *i* on said arm, a second lever *b* pivoted at *i'* on said arm *g* and forming a detent for said lever *a* in either of two positions, a spring *d* on the door-frame adapted on the closing of the door to be met by the end of the lever *a* and be tensioned thereby to deflect the lever *a* until it is held by the detent-lever *b* in its second position, and afterward to trip the lever *a* and on further closure of the door to strike and deflect the detent-lever *b*, and a spring for returning the lever *a* and detent-lever *b* into their first position, after deflection of the lever *b* by the spring *d*, substantially as and for the purpose set forth.

610,887. AUTOMATIC CIRCUIT-BREAKING SWITCH. WILLIAM F. BOSSERT and WILLIAM D. POMEROY, Utica, N. Y., assignors to the Bossert Electric Construction Company, same place. Filed July 12, 1897. Serial No. 644,370. (No model.)



Claim.—1. In an automatic circuit-breaking switch, an electrical catch for securing the switch in open position, the said catch being operated by a normally open subcircuit closed by the switch in open position with reference to the main circuit, substantially as set forth.

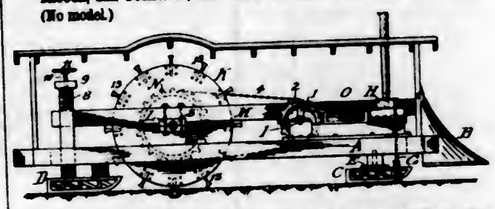
2. In an automatic switch, a main circuit and subcircuit both opened and closed by the same switch mechanism, a catch electrically controlled by mechanism in the main circuit for securing the switch closed in the main circuit, and a catch electrically controlled by mechanism in the subcircuit and securing the switch in open position with reference to the main circuit, and in closed circuit in the subcircuit, substantially as set forth.

610,888. SCAFFOLD-HANGER. CHARLES H. BOWIE, Lisbon Falls, Me. Filed Oct. 5, 1896. Serial No. 607,843. (No model.)



Claim.—In a scaffold-hanger, the combination with a platform having depending side rails, of inclined supporting-arms therefor, comprising slotted sections slidable upon each other, each section carrying a threaded pin which extends through the slot of the adjacent section and receives a clamping-nut, the lower sections having vertical hooks formed on their inner sides to engage the side rails of the platform, and a ring connecting the upper sections, substantially as described.

610,889. ICE-LOCOMOTIVE. LEWIS BOWLES and JOHN W. HARBROOKS, San Francisco, Cal. Filed Oct. 12, 1897. Serial No. 654,981. (No model.)



Claim.—1. In a locomotive a drive-wheel composed of two separate circular disks, united at their edges, said meeting edges being formed into sockets and a series of bits insertible in and removable from said sockets.

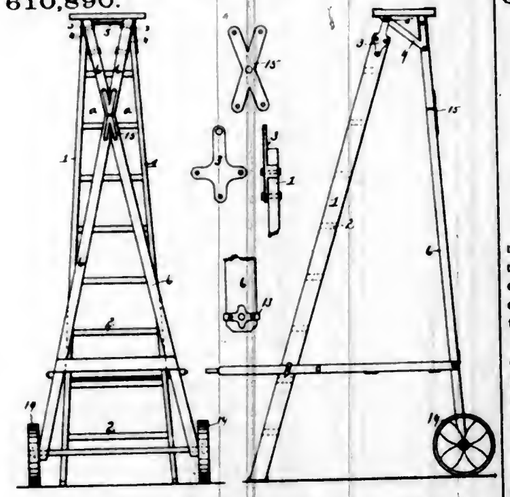
2. In combination, the main frame and runner, the engine, the bars M having rounded ends abutting against square portions of the main frame, clevises for holding said rounded ends in position, an axle journaled in said bars M, carrying driving-wheels and connections to the engine for driving said driving-wheels, substantially as described.

3. A wheel for ice-locomotives comprising the disks of sheet metal having radial opposing grooves or channels, bits seated in the openings formed by said channels, and clamping-bolts on each side of the bits connecting the disks, substantially as described.

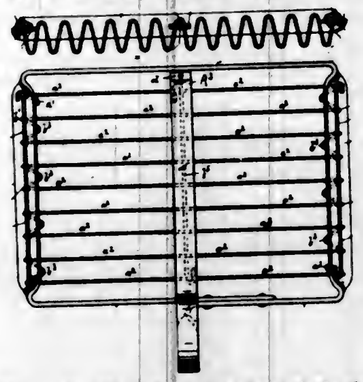
610,890. ORCHARD-LADDER. HARVEY BOWMAN, Forgy, Ohio. Filed Oct. 16, 1897. Serial No. 655,381. (No model.)

Claim.—A step-ladder comprising rear and front standards 1 and 6, the latter standards being crossed, an angle-plate to which said standards 6 are secured at their point of intersection, and the former standards being provided with steps, triangular brackets at the upper end of said ladder, a transverse rod connecting the rear ends of said triangular brackets and the upper ends of the step-standards, and ground-wheels and hand-bars mounted on said standards, as herein shown and described.

610,890.



610,891. CURRYCOMB. JULIUS D. BRAINARD, St. Paul, Minn. Filed Feb. 27, 1897. Serial No. 625,309. (No model.)



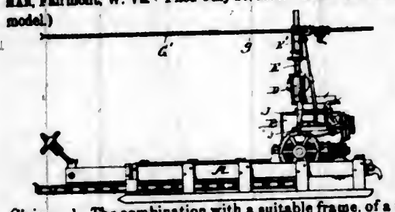
Claim.—1. In a currycomb, the teeth formed of a single piece of wire bent into V shape and arranged in parallel rows by bending back and forth, a frame having perforations in the members next the ends of the rows of teeth adapted to receive the upper bends of the teeth at the ends of the rows, and binding-wires passed through said bends above said end members, a cross-bar having perforations adapted to receive the upper bends of the central tooth of each parallel row, and a binding-wire passed through said bends above said cross-bar, substantially as hereinbefore set forth.

2. In a currycomb, the teeth formed of a single piece of wire bent into V shape and arranged in parallel rows by bending back and forth, a frame having perforations in the members next the ends of the rows of teeth adapted to receive the upper bends of the teeth at the ends of the rows, and binding-wires passed through said bends above said end members, the loops connecting the ends of the rows being crimped around the end members of the frame, substantially as hereinbefore set forth.

3. In a currycomb, the teeth formed of a single piece of wire bent into V shape and arranged in parallel rows by bending back and forth, a frame having perforations in the members next the ends of the rows of teeth adapted to receive the upper bends of the teeth at the ends of the rows, and binding-wires passed through said bends above said end members, a cross-bar having perforations adapted to receive the upper bends of the central tooth of each parallel row, and means for securing said teeth in said cross-bar, there being an extension of said frame connected to said cross-bar, substantially as hereinbefore set forth.

4. In a currycomb, the teeth formed of a single piece of wire, bent into V shape, and arranged in parallel rows by bending back and forth, the ends of the rows being secured in a supporting-frame, the end members of said frame being turned flatwise to enable the implement to be employed with greater efficiency upon the manes and tails of horses, substantially as hereinbefore set forth.

610,892. ROCK-DRILL. WILLIAM B. BROOKS and THOMAS ALTMAN, Fairmont, W. Va. Filed July 20, 1897. Serial No. 645,213. (No model.)



Claim.—1. The combination with a suitable frame, of a threaded upright bar hinged at its lower end thereto, a sliding sleeve on said upright, drilling mechanism carried by said sleeve, a threaded collar on said threaded upright below said sleeve, a telescopic rotary shaft extending up adjacent to said upright, and connections between said telescopic shaft and said drilling mechanism, substantially as set forth.

2. In a drill, the combination of an upright having threads thereon, a sleeve loosely mounted thereon, drilling mechanism carried by said sleeve, a collar engaging said upright below said sleeve, said collar having teeth formed therein around its circumference, a pawl engaging said teeth, and means for operating said drilling mechanism, substantially as set forth.

3. In a drill, the combination of an upright having threads thereon, a sleeve loosely mounted thereon, drilling mechanism carried by said sleeve, a collar engaging said upright below said sleeve, said collar having teeth formed therein, an arm on said sleeve, a plunger in said arm, said plunger having teeth engaging the teeth on said collar, and a spring acting on said plunger, substantially as set forth.

4. In a drill, the combination of an upright having threads thereon, a sleeve loosely mounted thereon, drilling mechanism carried by said sleeve, a collar engaging said upright below said sleeve, said collar having teeth formed therein, an arm on said sleeve, a plunger in said arm, said plunger having teeth engaging the teeth on said collar, a stem on said plunger, a spring interposed between said plunger and arm, and a lever for withdrawing said plunger, substantially as set forth.

5. In a drill, the combination of a suitable frame, an upright stem thereon, a sleeve journaled on said stem, a clamping-plate within said sleeve, an upright mounted on said sleeve, and drilling mechanism carried by said upright substantially as set forth.

6. In a drill, the combination of a suitable frame, an upright stem thereon, a sleeve journaled on said stem, a clamping-plate within said sleeve, a shaft extending out from said sleeve, a rotatable disk on said shaft, the inner end of said shaft being in contact with said clamping-plate and means for moving said shaft longitudinally, an upright mounted on said disk, and drilling mechanism carried by said upright, substantially as set forth.

7. In a drill, the combination of a suitable frame, an upright mounted thereon, a threaded drill-bar supported by said upright, mechanism for revolving said drill-bar, a two-part hinged sleeve encircling said drill-bar, said sleeve being threaded internally, and a wedge adapted to move between the inner ends of said parts composing said sleeve, and fingers on said wedge adapted to straddle said inner ends, substantially as set forth.

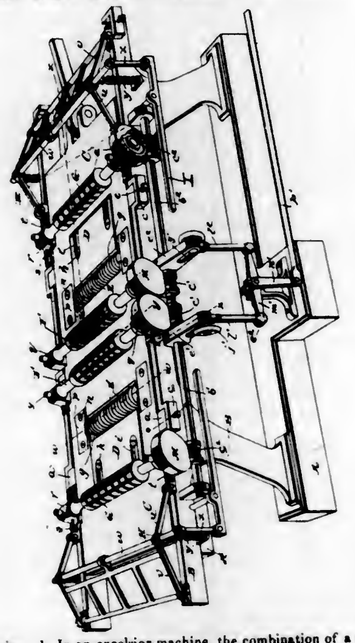
8. In a drill, the combination of a suitable frame, an upright mounted thereon, drilling mechanism carried by said upright, mechanism for raising and lowering said drilling mechanism on said upright, a gear carried by said upright, a rotatable telescopic shaft extending up from said frame, a swinging bracket supported by said upright, a supplemental shaft journaled in said bracket, a gear on said supplemental shaft meshing with the aforesaid gear, said shafts being connected by a universal joint, a rigid arm having a slot therein, said bracket engaging said slot, and means for clamping said bracket at different positions within said slot, substantially as set forth.

9. In a drill, the combination of a suitable frame, an upright mounted thereon, drilling mechanism carried thereby, a longitudinally-movable frame, a horizontal shaft journaled in said movable frame, a vertical shaft journaled in said movable frame, connections between said vertical shaft and the drilling mechanism, connections between said vertical shaft and a power-driven shaft, and means for moving said longitudinally-movable frame to make and break said last-mentioned connections, substantially as set forth.

10. In a drill, the combination of a suitable frame, an upright mounted thereon, drilling mechanism carried thereby, a longitudinally-movable frame, a horizontal shaft journaled in said movable frame, a vertical shaft journaled in said movable frame, connections between said vertical shaft and the drilling mechanism, a bevel-gear on said vertical shaft engaging a bevel-gear on said horizontal shaft, a second bevel-gear on said horizontal shaft engaging a bevel-gear on a power-driven shaft, and means for moving said longitudinally-movable frame to free said last-mentioned gears or throw same into engagement, substantially as set forth.

11. In a drill, the combination of a suitable frame, an upright mounted thereon, drilling mechanism carried thereby, a longitudinally-movable frame, a horizontal shaft journaled in said movable frame, connections between said vertical shaft and the drilling mechanism, connections between said vertical shaft and a power-driven shaft, and a spring interposed between the main frame and said longitudinally-movable frame, substantially as set forth.

610,893. **EXCELSIOR-MACHINE.** WILLIAM H. BROWN, Alpena, Mich., assignor of one-half to Donald Le Roy, same place. Filed Mar. 15, 1898. Serial No. 673,932. (No model.)



Claim.—1. In an excelsior-machine, the combination of a main frame, a reciprocatory cutter-head, rotary cutter-heads and oppositely-arranged cutting-blades carried by said head, stationary feed-rolls journaled in bearings fixed on the frame and carrying gear-wheels, movable feed-rolls journaled in bearings movable on the frame and also carrying gear-wheels, independent, alined feed-shafts journaled in bearings at one side of the main frame and each having a fixedly-connected worm-gear meshing with the gear-wheel of one stationary roll and a splined worm-gear meshing with the gear-wheel of one movable roll, ratchet wheels fixed on the feed-shafts, arms loosely mounted on the shafts and carrying pawls in engagement with the ratchet-wheels, a lever fulcrumed at an intermediate point of its length, connections between the opposite ends of said lever and the arms, and a suitable means for rocking said lever, whereby the feed-shafts are alternately actuated, substantially as specified.

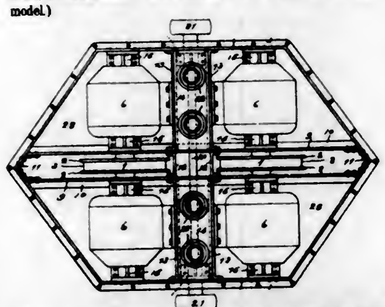
2. In an excelsior-machine, the combination of a main frame, a reciprocatory cutter-head, stationary feed-rolls journaled in bearings fixed on the frame and carrying gear-wheels, movable feed-rolls journaled in bearings movable on the frame and also carrying gear-wheels, feed-shafts journaled in bearings on the main frame and each having a fixedly-connected worm-gear meshing with the gear-wheel of one stationary roll and a splined worm-gear meshing with the gear-wheel of one movable roll, ratchet-wheels fixed on the shafts, arms loosely mounted on the shafts and carrying pawls in engagement with the ratchet-wheels, a lever fulcrumed at an intermediate point of its length, pitmen connected at one end to the opposite ends of the lever and having their upper ends adjustably connected to the arms on the feed-shafts whereby they may be fixed at various distances from said shafts, and a suitable means for rocking the said lever, substantially as specified.

3. In an excelsior-machine, the combination of a main frame, a reciprocatory cutter-head, an oscillatory lever connected with the cutter-head and adapted to be connected with a motor, feed-rolls journaled in suitable bearings on the main frame, two feed shafts journaled on the main frame and each connected by gearing with two feed rolls, ratchet-wheels fixed on said shafts, arms loosely mounted on the shafts and carrying pawls in engagement with the ratchet-wheels, a lever fulcrumed at an intermediate point of its length and having its ends connected with the arms on the feed-shafts, and a connection between said lever and the oscillatory lever, substantially as specified.

4. In an excelsior-machine, the combination of the main frame-sections having the pockets *c d* at intervals in their length, a reciprocatary cutter-head, of less width than the space between the frame-sections, arranged between the said sections and having its upper side flush with the upper edges thereof, guide-blocks arranged in the pockets *c* of the frame-sections and extending inwardly beyond said frame-sections and engaging the side edges of the cutter-head whereby the cutter-head is held free from the frame-sections and spaces formed between the head and frame-sections for the escape of dust, bearing-blocks arranged in the pockets *d* of the frame-sections and disposed below and forming slide-rests for the cutter-head, and adjusting-screws backing the guide and bearing blocks, substantially as specified.

5. In an excelsior-machine, the combination of a main frame, a reciprocatory cutter-head, a stationary feed-roll journaled in suitable bearings on the main frame, a movable feed-roll, bearing-boxes carrying said movable roll and adjustably connected with the main frame, a toggle-lever comprising an outer member connected with the main frame, and inner members connected to the adjustable bearing-boxes and pivotally connected to the outer member, a spring connected with the toggle-lever and frame and adapted to exert a downward pull on said lever, and suitable means for flexing the toggle-lever and thereby moving the movable feed-roll in a direction away from the stationary roll, substantially as specified.

610,894. **ELECTRIC-RAILWAY-CAR TRUCK.** GEORGE J. CAPEWELL, Hartford, Conn. Filed June 14, 1898. Serial No. 683,392. (No model.)



Claim.—1. A car-truck having a pair of central traction-wheels arranged one behind the other to run upon a single-rail track, an axle for each traction-wheel, motors arranged concentric of the axles on each side of each traction-wheel, and a truck-frame with central recesses for the traction-wheels and a closed chamber each side for each motor, supported by the axles, substantially as specified.

2. A car-truck having a pair of central traction wheels arranged one behind the other to run upon a single-rail track, an axle for each traction-wheel, motors arranged concentric of the axles on each side of each traction-wheel, a truck-frame supported by the axles, and retaining-wheels supported by the truck-frame and arranged to run on each side thereof in connection with a retaining-track of wide gage, substantially as specified.

3. A car-truck having central traction-wheels arranged to run upon a single-rail track, axles for the traction-wheels, motors arranged concentric of the axles on each side of the traction-wheels, vertically-arranged longitudinally-extending plates that are joined together near their ends supported by the axles, vertically-arranged transversely-extending plates bracing the longitudinal plates, and retaining-wheels supported by bearings attached to the longitudinal plates and arranged to run in connection with a retaining-track, substantially as specified.

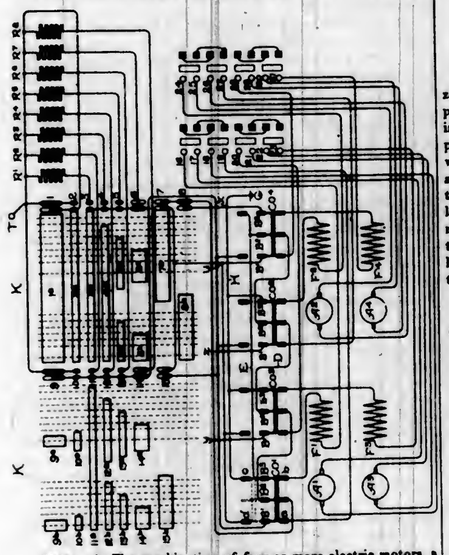
4. A car-truck having central traction-wheels arranged to run upon a single-rail track, axles for the traction-wheels, motors arranged concentric of the axles on each side of the traction-wheels, a closed truck-frame with parallel sides and pointed ends supported by the axles, and retaining wheels supported by the truck-frame and arranged to run in connection with a retaining-track, substantially as specified.

5. A car-truck having central traction-wheels arranged to run upon a single-rail track, axles for the traction-wheels, motors arranged concentric of the axles on each side of the traction-wheels, a truck-frame having a closed top supported by the axles of the traction-wheels, a protector-case having a closed bottom secured to the plates of the truck-frame, and retaining-wheels supported by the truck-frame and arranged to run in connection with a retaining-track, substantially as specified.

6. A car-truck having central traction-wheels arranged to run upon a single-rail track, axles for the traction-wheels, motors arranged concentric of the axles on each side of the traction-wheels, vertically-arranged longitudinally-extending side plates that converge and meet at the ends of the truck-frame, vertically-arranged longitudinally-extending center plates that are connected with the side plates near the ends of the truck-frame, vertically-arranged transverse plates bracing the longitudinal plates, horizontal plates in the opening between the transverse plates, springs supported by the horizontal plates, and a platform-plate supported by the springs, substantially as specified.

7. A car-truck having central traction-wheels arranged to run upon a single-rail track, axles for the traction-wheels, motors arranged on each side of the traction-wheels for rotating the axles, vertically-arranged longitudinally-extending plates that are joined together near their ends supported by the axles, vertically-arranged transversely-extending plates bracing the longitudinal plates, and retaining-wheels supported by bearings attached to the longitudinal plates and arranged to run in connection with a retaining-track, substantially as specified.

610,895. **CONTROLLER FOR ELECTRIC MOTORS.** FRANK E. CASE, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 2, 1898. Serial No. 676,154. (No model.)



Claim.—1. The combination of four or more electric motors, a switch for operating the motors in series or parallel as may be desired, and cut-out switches, one for each motor; the combination of contacts and connections being such that when the cut-out switch for any motor is operated, the remaining motors will be operated only in parallel.

2. The combination of a number of motors, a switch for operating the motors in pairs in series or in parallel and for cutting in or out resistances in any desired manner in effecting the changes in speed or connection, and a cut-out switch for each motor; the contacts and connections being so arranged that when any of the cut-out switches is operated, the remaining motors will be connected only in parallel and be regulated by the resistance-steps of the controller.

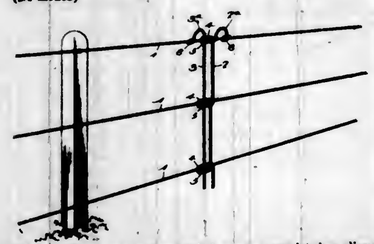
3. The combination of a number of motors driving a common load, a switch for operating the motors in series or in parallel as desired, cut-out switches for each motor, and contacts and connection arranged to be so changed by throwing any cut-out switch that the motors not cut out are operated only in parallel.

4. The combination of a number of motors operatively connected to the axles of a truck, car or train, a controlling device operating the motors in pairs in series or in parallel, and cutting in or out suitable resistance in affecting changes of speed, with cut-out switches, one for each motor, the contacts and connections of which are arranged to throw the remaining motors in parallel with each other and in series with the resistance upon the operation of any of the cut-out switches.

5. In a controller for electric motors operated in pairs in series and parallel, three-blade cut-out switches for each motor, two of the blades of which shift the motor connections, and the third blade of which opens a connection common to all the switches, as described.

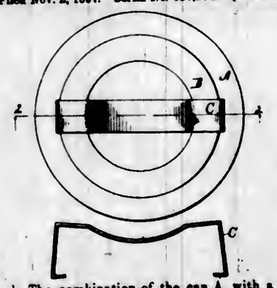
6. In a controller for electric motors operating them in pairs in series or id parallel, three-blade cut-out switches for each motor, the outer blades of which shift the motor connections so that the motor correspondlug to any switch operated is cut out at both ends, and the remaining motors are connected in parallel, and the middle blade of which opens a connection common to all the switches.

610,896. **WIRE FENCE.** THEOPHILUS R. CUSTER and CHARLEY T. CUSTER, Hillsborough, Ohio. Filed Feb. 28, 1898. Serial No. 672,217. (No model.)



Claim.—The combination with fence-runners having alined horizontal offsets, of a sectional stay intersecting the runners, and comprising a member 2 having a plurality of lateral loops, corresponding in number with the runners and through which said runner-offsets project, and also having a terminal arched loop extending parallel with and coiled at its extremity around the uppermost runner at a point remote from the uppermost lateral loop, and a member 3 threaded through said offset portions of the runners in front of the lateral loops of the member 2, and also provided with an arched terminal loop extending parallel with and coiled at its extremity around the uppermost runner, at a point remote from the uppermost lateral loop of the member 2, said arched loops extending in opposite directions from the body portions of the members, substantially as specified.

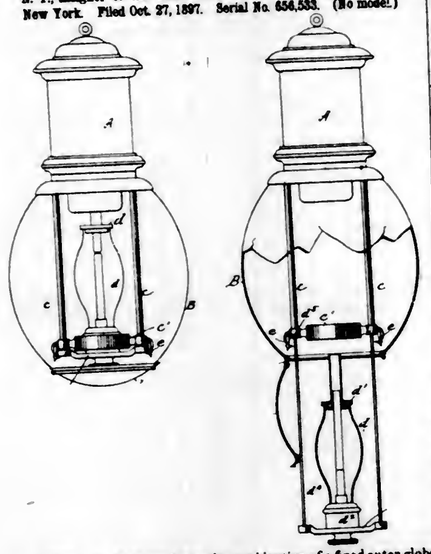
610,897. **FRUIT JAR OR CAN.** SAMUEL J. DUNKLEY, Kalamazoo, Mich. Filed Nov. 2, 1897. Serial No. 657,984. (No model.)



Claim.—1. The combination of the can A, with a flange A' at the top with a square shoulder on its under side and a shoulder on its upper side to receive a gasket; a gasket B resting thereon a cover B for said can that is convex toward its center and adapted to fit on the top of the can; and a spring-fastener C concave at the center with a straight portion toward each end and bended down terminating in a hook S at each end to engage under the square-shouldered flange at the top of the can for the purpose specified.

2. In the combination of a jar or can having suitable square shoulder or shoulders at the top for engagement of hooks; the can-cover which is convex at the center with a flat portion toward the periphery and a spring convex toward its center and folded to conform to the top of the can and terminating in hooks adapted to engage the shoulders or shoulder on the upper part of the jar or can for the purpose specified.

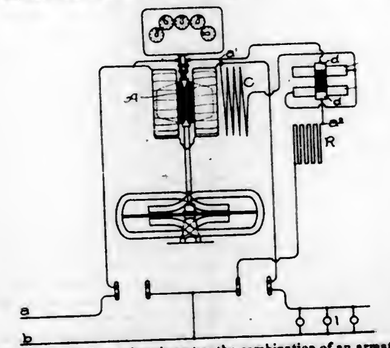
610,898. ELECTRIC-ARC LAMP. MAX HARRIS, New York, N. Y., assignor to the Manhattan General Construction Company, of New York. Filed Oct. 27, 1897. Serial No. 656,533. (No model.)



Claim.—1. In an arc-lamp, the combination of a fixed outer globe provided with an opening in its bottom, a cover, removably attached to said opening, a movable inner or arc-inclosing globe and a support for the same wholly inclosed within the outer globe, means for lowering the inner globe with its support through the opening in the outer globe, and means for sustaining it in its lowered position, substantially as described.

2. In an arc-lamp the combination of a fixed outer globe provided with an opening in its bottom, of two hollow side rods extending into the globe, an inner or arc-inclosing globe, a yoke or bracket supporting the same, a pair of rods attached to said yoke or bracket and telescoping the said hollow rods and means for lowering the inner globe and the parts supporting it through the opening in the bottom of the outer globe and for sustaining it in its lowered position, substantially as described.

610,899. ELECTRIC METER. CARYL D. HASKINS, Newton, Mass., assignor to the General Electric Company, of New York. Filed June 24, 1898. Serial No. 684,359. (No model.)

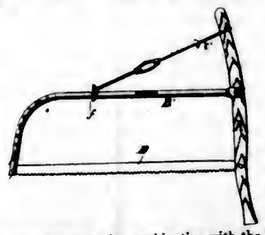


Claim.—1. In an electric meter, the combination of an armature in shunt to the mains and field-coils in series with the load, with a starting-coil also in series with the armature and in shunt to the mains, and means for changing the current flow in the starting-coil without affecting that in the armature-circuit.

2. In an electric meter, the combination of a field-coil in series with the work, an armature in which a sensibly-constant current is to be maintained, connected across the mains, a starting-coil in series with the armature and with an auxiliary high resistance, two resistances, one in series with the coil, the other in shunt thereto, and means for inversely regulating the two resistances.

3. The method of calibrating an electric meter, which consists in changing the current flow in the starting-coil to compensate for local errors without changing the current flow in the armature-circuit.

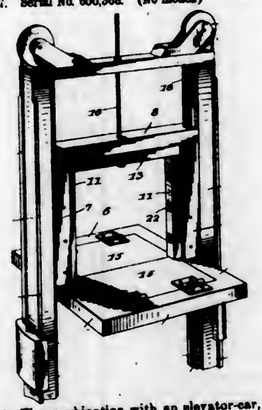
610,900. HANDSAW. JOHN W. HELTON, Waterloo, Iowa, assignor to Louis E. Hickelberg. Filed May 26, 1898. Serial No. 681,786. (No model.)



Claim.—1. In a handsaw, the combination with the handle, the blade pivoted at one end thereto, and the tubular frame-bar also pivoted at one end to the handle and at the other end to the remote end of the blade; of the clamp comprising a ring loosely surrounding said frame-bar when at right angles thereto and an eye at the top of the ring, and a tightening device substantially as described extending from the eye to the upper end of the handle, as and for the purpose set forth.

2. In a handsaw, the combination with the handle, the blade pivoted near one end thereto, and the tubular frame-bar also pivoted near one end to the handle and having its other end bent downward and pivoted to the blade near its remote end; of the clamp comprising a ring loosely surrounding said frame-bar and an eye at the top of the ring and bent outward beyond the plane thereof, a loop connected with the upper end of the handle, a two-part rod leading from said loop to said eye, and a turnbuckle connecting the adjacent ends of the parts of this rod, as and for the purpose set forth.

610,901. ELEVATOR. HENRY J. HERREN, Watson, Mo. Filed Sept. 2, 1897. Serial No. 650,368. (No model.)



Claim.—1. The combination with an elevator-car, and clutches carried thereby for engagement with fixed stops contiguous to the path of the car, of a clutch-frame mounted to slide upon the car-frame and operatively connected with said clutches, the car having a platform or floor-leaf mounted for vertical swinging movement, and the clutch-frame having a transverse rest supporting the free edge of said platform or floor-leaf, and a hoisting-rope connected with the clutch-frame, substantially as specified.

2. The combination with an elevator-car, and clutches for engaging fixed stops contiguous to the path of the car, of a clutch-frame mounted for vertical sliding movement upon the car-frame and operatively connected with the clutches, said clutch-frame having a transverse rest-bar arranged under the center of the car platform or floor, and the car having a floor including swinging leaves hingedly mounted at their remote edges and bearing at their free edges upon said rest-bar, and a hoisting-rope connected with the clutch-frame, substantially as specified.

3. The combination of parallel elevator-guides having rack-bars, an elevator-car mounted to slide upon said guides and provided with side uprights or slides, clutches mounted upon said uprights or slides for engagement with the racks, a clutch-frame mounted to slide upon the uprights of the car-frame, and having a limited upward movement, said clutch-frame being operatively connected with the clutches, and the car having a sectional floor, comprising swinging leaves mounted upon the car-frame and bearing at their free edges upon a cross-bar of the clutch-frame, and a hoisting-rope connected to the clutch-frame, substantially as specified.

4. The combination of parallel elevator-guides having rack-bars, a car-frame having an interlocking sliding connection with said guides, and provided with a sectional floor having leaves hinged at their remote edges to the car-frame, clutches carried by the car-frame for engagement with said rack-bars, a clutch-frame mounted upon the car-frame and having a cross-bar arranged beneath and supporting the free edges of the car-floor leaves, the car-frame being provided in the path of the upward movement of the clutch-frame with a transverse bar forming a stop to limit the upward movement of the clutch-frame, and a hoisting-rope connected with the clutch-frame for normally mounting the same in contact with said stop, substantially as specified.

5. The combination of parallel elevator-guides provided with countersunk rack-bars and inwardly-projecting guide-ribs, an elevator-car having a frame including side uprights channeled to receive said guide-ribs, and also having a floor frame and hingedly-mounted floor sections or leaves, clutches mounted upon the uprights of the car-frame for engagement with the racks, a clutch-frame mounted to slide upon the uprights of the car-frame and fitted in guide-channels in the inner sides of said uprights, the clutch-frame being operatively connected with the clutches and having a lower cross-bar arranged beneath and supporting the free edges of the car-floor sections or leaves and a hoisting-rope operatively connected with the clutch-frame, substantially as specified.

6. The combination of elevator-guides having racks, of an elevator-car mounted upon said guides and provided with counterbalancing devices, the car-frame having a sectional floor comprising swinging leaves, and also having a cross-bar, clutches mounted upon the car-frame for engagement with the racks, a clutch-frame mounted to slide in the car-frame, operatively connected with the clutches and having a cross-bar arranged to support the free edges of the car-floor sections or leaves, said cross-bar of the car-frame being arranged in the path of the upward movement of the clutch-frame, and a hoisting-rope connected with the clutch-frame, substantially as specified.

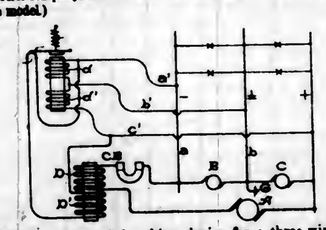
7. The combination with elevator-guides having racks, of an elevator-car mounted upon said guides, and having side uprights and hingedly-mounted floor-leaves, a clutch-frame mounted for vertical sliding movement upon the uprights of the car-frame, and having side bars connected at their lower ends by a rest-bar arranged beneath the free edges of the car floor leaves, said car-frame uprights and the side bars of the clutch-frame having registering openings, clutches arranged in said registering openings, pivoted at their inner ends to the clutch-frame and slotted to receive pivots on the uprights of the car-frame, the openings in the car-frame uprights having their walls constructed to form horizontal and inclined shoulders between which the clutches fit, respectively, in their normal and operative positions, and a hoisting device connected with the clutch-frame, substantially as specified.

610,902. MILK-CAN COVER. TORGER R. HEITLAND, Minneapolis, Minn. Filed Oct. 20, 1897. Serial No. 655,312. (No model.)



Claim.—The combination with a milk-can provided with a handle formed with slots at one edge, of the combined cover and measure consisting of a cup provided with a handle formed with slots at one edge adapted to engage with the slots of the can handle, and said cup having the open end made plane-surfaced to fit in the mouth of the can and provided with a peripheral flange and with a number of graduated ribs between said flange and the closed end, substantially as described.

610,908. CIRCUIT-BREAKER FOR THREE-WIRE SYSTEMS. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Sept. 7, 1897. Serial No. 650,759. (No model.)



Claim.—1. A circuit-breaking device for a three-wire system, comprising a main switch designed to act upon the circuit of a given dynamo, and a relay device connected across and to each of the outside mains of the three-wire system and in circuit with a coil upon the main switch, the relay device provided with contacts closing the circuit of the coil on the main switch on excess of load in either side of the three-wire system.

2. A circuit-breaking apparatus for use in a three-wire system, comprising a main switch having a plurality of coils, and a relay having differentially-wound coils connected in the two sides of the three-wire system, with a circuit controlled by the relay including one of the coils upon the circuit-breaker.

3. In combination with an actuating-coil upon a circuit-breaker in the main circuit of the station, a relay-magnet having differentially-wound coils connected respectively in the two sides of a three-wire system, and a circuit across the outside mains of the three-wire system including a shunt-coil upon the circuit-breaker and controlled by the relay-magnet.

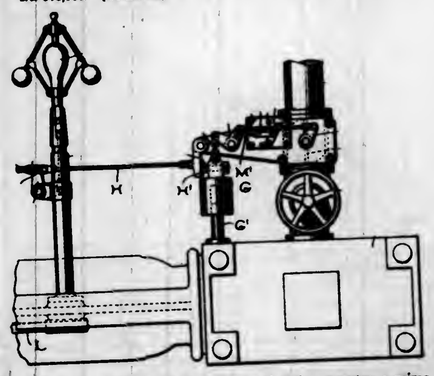
4. A circuit-breaker comprising a series coil opening the switch upon a definite overload, another normally idle coil also arranged to open the circuit when energized, a circuit including the second coil with a source of current, and a relay device for opening and closing the exterior circuit.

5. The combination, with a series or overload coil and the trip of a circuit-breaker, of an additional or auxiliary coil also acting to open the circuit, and included in another circuit controlled by a relay device.

6. The combination with a series coil carrying the main current and the trip of a circuit-breaker, of a shunt-coil acting to open the circuit and controlled by exterior contacts.

7. The combination with a series or overload coil and the trip of a circuit-breaker, of an additional coil acting to open the circuit and controlled by an exterior circuit.

610,904. SAFETY DEVICE FOR DYNAMO-ELECTRIC MACHINES. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 4, 1898. Serial No. 676,310. (No model.)



Claim.—1. The combination with an electric generator, a prime mover driving the generator, a governor for the prime mover, and means controlled by the governor for interrupting the circuit of the generator.

2. The combination with an electric generator, a steam-engine driving the generator, a governor for the engine, and means con-

trolled by the governor for interrupting the circuit of the generator when the engine tends to race.

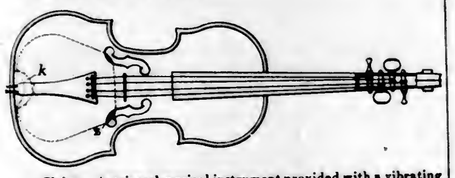
3. The combination with a dynamo and a prime mover, which drives said dynamo, of a mechanism electrically connected with said dynamo and mechanically connected with the governor of the prime mover, whereby upon an excessive speed being attained, the governor acts to automatically stop the prime mover and cut the dynamo out of circuit.

4. In an electric generating station, a number of dynamos in an electric circuit, in combination with one or more engines for driving them, one or more engine-governors, and a mechanism or mechanisms connected therewith and electrically connected with a source of current, whereby, upon the engine racing, the governor will operate said mechanism to automatically cut off the power-supply, and cut out the dynamo or dynamos from the circuit.

5. The combination with a dynamo, and a circuit-breaker in circuit therewith, of an engine driving the dynamo, a mechanism electrically connected with the dynamo and controlling a valve for the engine, a weight connected with the mechanism, and mechanism controlled by the governor of the engine normally holding the weight; whereby, upon the engine attaining excessive speed, the governor will act to drop the weight and operate the mechanism connected therewith to stop the engine, operate the circuit-breaker and cut the dynamo out of circuit.

6. In an electric generating station, generators electrically connected through a work-circuit, a circuit-breaker for each generator, branch circuits connecting a coil upon each circuit-breaker with a source of current, and a normally open switch in each branch circuit; in combination with an engine, a governor, a cut-off valve, and mechanism connecting the governor with the switch and the cut-off, whereby when the engine races, the cut-off and the circuit-breaker are simultaneously operated.

610,905. **STRINGED MUSICAL INSTRUMENT.** WILHELM HÖNINGS and FRITZ SOMMER, Neuss, Germany. Filed Aug. 17, 1897. Serial No. 648,517. (No model.)



Claim.—A stringed musical instrument provided with a vibrating plate which is of concave form in cross-section and projects from the rear end of the instrument into the resonance-box, substantially as specified.

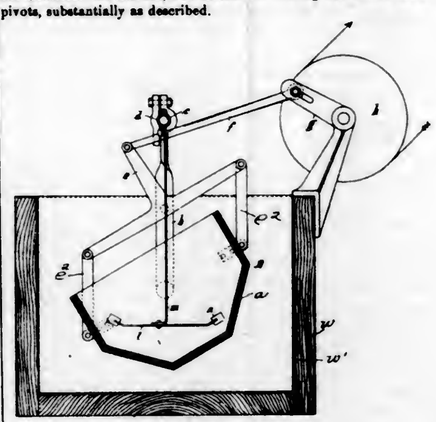
610,906. **PINLESS CLOTHES-LINE.** JESSE W. JACKSON, Winston, N. C. Filed Mar. 30, 1898. Serial No. 675,816. (No model.)



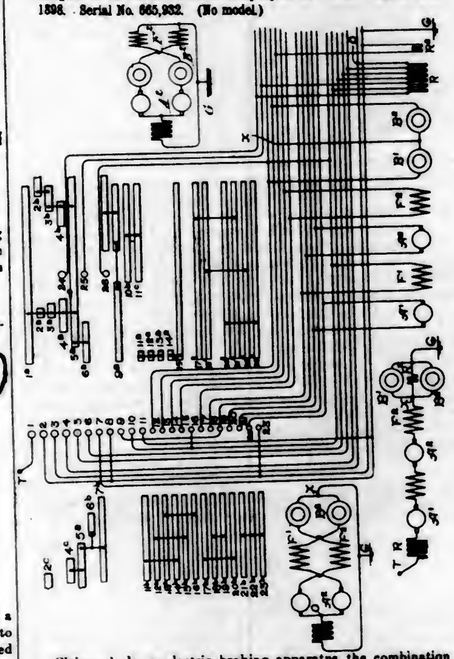
Claim.—A pinless clothes-line having a link constructed of a single blank of wire, doubled upon itself at intermediate points to form oppositely-extending alined loops having their sides intertwisted and being terminally separated to form clothes-receiving eyes, the extremities of the blank being extended inwardly beyond the center of the body portion of the blank, and wrapped in opposite directions around said body portion and the contiguous portion of the other extremity to form a plurality of coils completely encircling the doubled portions of the blank, substantially as specified.

610,907. **APPARATUS FOR ELECTROPLATING ARTICLES IN BULK.** GEORG LANGBEIN, Leipsic, Germany. Filed Jan. 22, 1898. Serial No. 667,581. (No model.)

Claim.—In combination, the tank, the open-top cradle, the bar *c*, the hangers *b* insulated from the bar *c* and extending down therefrom to pivotally support the cradle, the anodes extending down from the bar *c* into the open-top cradle the cathodes in the cradle, the electrical connections, and means for rocking the cradle on its pivots, substantially as described.



610,908. **ELECTRIC BRAKE.** JOHN R. LEE, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Jan. 7, 1898. Serial No. 665,932. (No model.)



Claim.—1. In an electric braking apparatus, the combination, with a number of dynamo-electric armatures and brake mechanisms upon common axles, of means for passing the current from one armature through the field of another of the dynamo-electric machines.

2. In an electric braking apparatus, the combination, with a number of dynamo-electric machines each provided with a magnetic brake-shoe controlling the axle connected to its armature, of means for passing through the field of any given dynamo the current from the armature and brake-circuit of another axle.

3. In an electric braking apparatus, the combination, with dynamo-electric machines, each having a magnetic brake-shoe controlling the axle connected to its armature, of a controlling device provided with contacts and connections for regulating the dynamo-electric machines as motors from rest to full speed, and with braking-contacts for cross-connecting the field of one machine to the armature of another while still passing the same current through the brake-shoe of the armature so connected.

4. In an electric braking apparatus, the combination, with two dynamo-electric machines having magnetic brake-shoes controlling the axles to which the respective armatures are connected, of a controller having contacts and connections for regulating the speed and torque of the dynamos as motors, and having also contacts and connections for connecting the field of each dynamo when used as a braking-generator in circuit with the armature and brake-shoe of the other dynamo, as described, and for the purpose set forth.

610,909. **RAIL-BOND.** JOHN R. LLOYD, New York, N. Y. Filed Nov. 13, 1896. Serial No. 611,616. (No model.)



Claim.—1. In a rail-bond, the combination with the rail and wire, of a flanged washer adapted to surround the wire and be inserted in the rail from one side, and means for forming a flange on said washer on the opposite side of the rail by drawing the wire into the washer, substantially as described.

2. In a rail bond, the combination with the rail and wire, of a flanged washer adapted to be inserted in the rail and provided with a passage tapering toward the flanged end thereof, said wire having a tapering or enlarged end to fit said passage, for the purpose set forth.

3. In a rail-bond, the combination with the rail and wire, of a washer adapted to be inserted in the rail and provided with a tapered passage having a plurality of tapers, said wire having a tapered or enlarged end to fit said passage, substantially as described.

4. In a rail-bond, the combination with the rail and wire, of a flanged washer adapted to be inserted in the rail and provided with a tapered passage having a plurality of tapers, said wire having a tapered end of slightly-larger diameter than said passage, substantially as described.

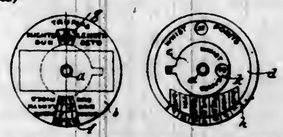
5. In a rail-bond, the combination with the rail and wire, of a flanged washer adapted to be inserted in the rail and provided with a tapered passage having inner and outer tapers, said wire having a tapered or enlarged end to correspond with said passage in such manner that the outer tapers of said washer and wire will fit each other before the inner tapers fit, substantially as described.

6. In a rail-bond, the combination with the rail, of a flanged washer provided with a passage tapering outward from the flange, said washer being adapted to be inserted in the rail, a wire having a tapering end to fit said passage, and means for preventing said wire from being drawn backward when once drawn into said passage, substantially as described.

7. In a rail-bond, the combination with the rail, of a washer provided with a tapering passage and adapted to be inserted in the rail, a wire having a tapering end to fit said passage, an annular rim upon said washer, and an annular groove in said wire, substantially as described.

8. In a rail-bond, the combination with the rail and wire, of a washer adapted to surround the wire and be inserted in the rail at an oblique angle thereto, and a shoulder upon said washer opposite to said angle adapted to rest against the rail, substantially as described.

610,910. **CALENDAR AND WHIST-COUNTER.** ALBERT W. MATHEWS, Boston, Mass. Filed May 28, 1897. Serial No. 638,056. (No model.)



Claim.—1. The combined calendar and whist-counter consisting of a disk *c*, having calendar names and numerals upon one face and numerals arranged around its periphery on the opposite face, a disk *b*, pivoted centrally thereon, having openings *g* and *f* to disclose the calendar names and figures, and a disk *d* also pivoted centrally upon the reverse side thereof, having openings *h* and *i*, to disclose the numerals on the disk *c*, substantially as described for the purpose specified.

2. The combination with the disk *c*, of the disk *b* having openings *f* and *g* therein; the disk *d*, having openings *h* and *i* therein and the disk *c* having an opening *k* therein, arranged to turn centrally upon a common pivot, substantially as described for the purpose specified.

610,911. **HOG-NOSE CUTTER.** SAMUEL H. MILLER, Nashville, Tenn. Filed Oct. 9, 1897. Serial No. 654,681. (No model.)

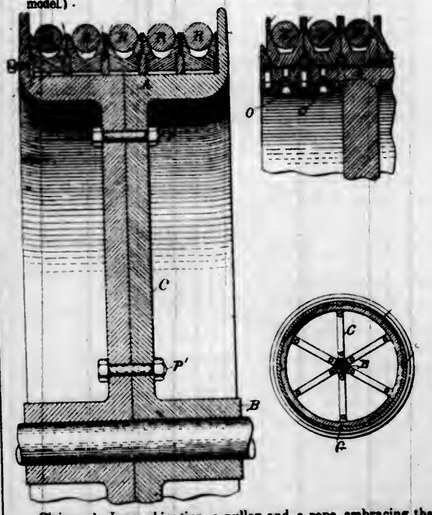


Claim.—1. A hog-nose cutter having cutting edges arranged in pairs extending in different directions from an intermediate point, with the members of each pair diverging toward their remote ends, to gash the snout upon lines forming a plurality of inwardly-extending tapered tongues, substantially as specified.

2. A hog-nose cutter having a main blade and a plurality of auxiliary blades which intersect the main blade contiguous to its center, and diverge laterally and rearwardly therefrom, to gash a snout upon opposite laterally-divergent lines to form inwardly-extending terminally-tapered tongues, substantially as specified.

3. A hog-nose cutter having jaws and operating devices, one of the jaws carrying an anvil-block, and main and auxiliary blades carried by the other jaw, the main blade being cross-sectionally concavo-convex with its convex side arranged toward the rear, and the auxiliary blades being arranged to intersect the main blade contiguous to its center and being cross-sectionally concavo-convex, and being rearwardly and laterally divergent from the main blade, substantially as specified.

610,912. **ROPE-DRIVING MACHINERY.** THOMAS S. MILLER, South Orange, N. J. Filed Oct. 8, 1897. Serial No. 654,498. (No model.)

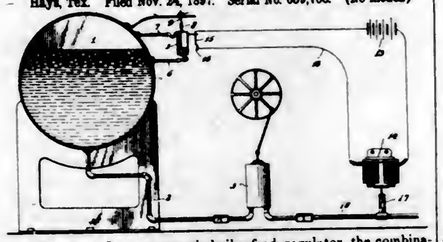


Claim.—1. In combination, a pulley and a rope embracing the same in power-transmitting relationship; the said pulley containing a plurality of grooved peripheral rings adapted to move on the surface of the pulley and an interposed ring adapted to move horizontally but not circumferentially on the pulley and means whereby the frictional contact between the rings may be adjusted whereby power is transmitted through the frictional contact between the grooved

rings and interposed ring but said frictional contact permits of slip between the said rings before the rope will slip in a groove, substantially as described.

2. In combination, a pulley and a rope embracing the same in power-transmitting relationship; the said pulley containing a plurality of grooved peripheral rings adapted to move on the surface of the pulley and an interposed ring stayed from circumferential movement whereby power is transmitted through the frictional contact between the grooved ring and interposed ring but said frictional contact permits of slip between the said rings before the rope will slip in a groove, substantially as described.

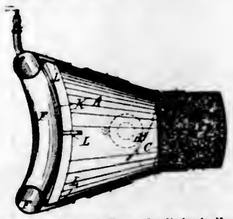
610,913. **BOILER-FEED REGULATOR.** CHARLES B. MITCHELL, Hays, Tex. Filed Nov. 24, 1897. Serial No. 659,700. (No model.)



Claim.—1. In an automatic boiler-feed regulator, the combination with a pump and the feed and suction pipes, of a suction-valve located in the suction-pipe and arranged to be opened for the admission of air to said pipe to break the suction to the pump, an electric circuit having a magnet in operative relation to the suction-valve for controlling the latter, a vertically-movable gravity vessel having connections with the steam and water spaces of a boiler, means for counterbalancing said vessel, and a circuit-closer movable with the vessel and arranged to close the electric circuit on the descent of the vessel due to the gravity of accumulated liquid therein, substantially as described.

2. In an automatic boiler-feed regulator, the combination with the pipes attached to a boiler to communicate with the water and steam spaces therein, of a gravity vessel having flexible connections with said pipes, a fixed support above the vessel, a suspending-spring attached to the support and the vessel and having means for regulating the tension thereof, an open electric circuit having a valve-magnet, a circuit-closer supported on the gravity vessel and arranged to close the circuit on the descent of the vessel, a feed-pump, pipe connections therefor, and a valve in operative relation to the valve-magnet of said electric circuit, substantially as described.

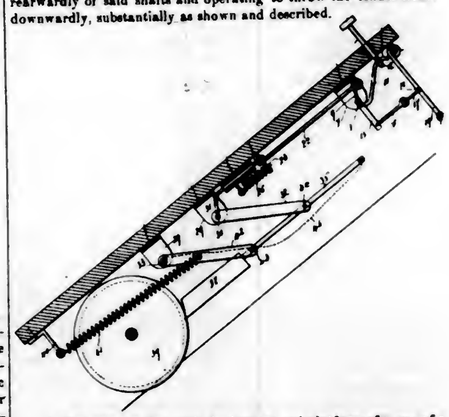
610,914. **RESPIRATOR.** ARTHUR R. MOODY, Stoke-on-Trent, England. Filed Dec. 31, 1897. Serial No. 664,883. (No model.) Patented in England May 19, 1896, No. 10,831.



Claim.—A respirator consisting of a light hollow shell, a pliable ring attached to one end of the shell, a flexible inflatable rim outside of the ring and adapted to closely and comfortably conform to the face of the wearer, an air-tight flexible strip connecting the end of the shell near the ring with the rim, means for attaching the respirator over the mouth and nose with the rim fitting the face of the wearer, a chamber containing filtering material open to the exterior and open to the interior of the shell, an inwardly-opening and outwardly-closing valve at the inner end of the filtering-chamber, and an outwardly-opening and inwardly-closing valve at an opening through the walls of the shell, substantially as specified.

610,915. **FENDER OR GUARD FOR CARS.** PETER J. POHLMAN, New Orleans, La., assignor of one-half to Chris Jacob, same place. Filed May 18, 1896. Serial No. 681,056. (No model.)

Claim.—1. The combination with the bottom and platform of a car, of a guard pivotally connected with the bottom of the platform and normally held in a vertical position, a shaft which forms a part of said guard, a sliding spring-operated bar mounted beneath the bottom of the car and connected with said shaft, transverse shafts mounted rearwardly of the rear end of said sliding bar, one of which is provided with an arm which abuts against the end of said bar, side arms connected with said shafts, a fender-frame pivotally connected with said side arms, and a spring secured to the bottom of the car rearwardly of said shafts and operating to throw the fender-frame downwardly, substantially as shown and described.



2. The combination with the bottom and platform of a car, of a guard pivotally connected with the bottom of the platform and normally held in a vertical position, a shaft which forms a part of said guard, a sliding spring-operated bar mounted beneath the bottom of the car and connected with said shaft, transverse shafts mounted rearwardly of the rear end of said sliding bar, one of which is provided with an arm which abuts against the end of said bar, side arms connected with said shafts, a fender-frame pivotally connected with said side arms, and a spring secured to the bottom of the car rearwardly of said shafts and operating to throw the fender-frame downwardly, said fender-frame being also provided with brakes which are adapted to operate in connection with the wheels of the car, substantially as shown and described.

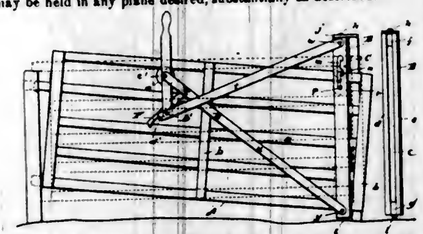
3. The combination with the bottom of a car and platform thereof, of a guard pivotally supported beneath the platform and normally held in a vertical position, a transverse shaft which forms a part of said guard, a vertically-movable pin passing through the platform and connected with said shaft, a sliding bar connected with an arm secured to said shaft, a supplemental bar pivotally connected with the rear end of said sliding bar, and mounted in a keeper secured to the bottom of the car, a spring for drawing said bars backwardly, transverse shafts mounted rearwardly of said keeper, one of which is provided with an arm which abuts against the rear end of said supplemental bar, side arms connected with said shafts, and a main fender connected with said side arms and normally held in a raised position, substantially as shown and described.

4. The combination with the bottom of a car and platform thereof, of a guard pivotally supported beneath the platform and normally held in a vertical position, a transverse shaft which forms a part of said guard, a vertically-movable pin passing through the platform and connected with said shaft, a sliding bar connected with an arm secured to said shaft, a supplemental bar pivotally connected with the rear end of said sliding bar, and mounted in a keeper secured to the bottom of the car, a spring for drawing said bars backwardly, transverse shafts mounted rearwardly of said keeper, one of which is provided with an arm which abuts against the rear end of said supplemental bar, side arms connected with said shafts, and a main fender connected with said side arms and normally held in a raised position, said fender being provided with brakes, and a spring which operates to draw the fender downwardly, substantially as shown and described

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610,916. **SWINGING AND SLIDING FARM-GATE.** JOHN PRATT, Chatham, Canada. Filed Jan. 7, 1896. Serial No. 665,936. (No model.)

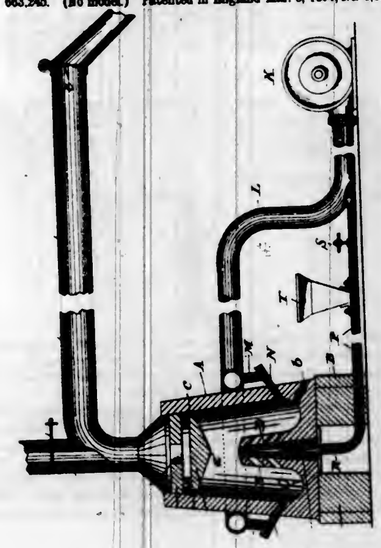
Claim.—1. In a combined sliding and swinging gate, the combination with said gate of a crane composed of two members arranged to extend forward from the upper and lower ends of the turning post, and having their forward ends crossing each other and pivoted to a lever at different points, a roller supported at the outer end of the lower member adapted to form a support and guide for the forward end of said gate, said members and lever being so arranged with relation to each other as to cause the forward end of said gate to be raised or lowered as said lever is operated; and means for securing said parts in a fixed relation, whereby the forward end of said gate may be held in any plane desired, substantially as described.



2. In a farm-gate, the combination of a slotted post adapted to receive said gate, and provided with journals at its upper and lower ends whereby said gate may be either swung or slid open; a supporting guide-wheel journaled in said post; means for adjusting said wheel vertically whereby the rear end of said gate may be elevated; an adjustable crane extending forward from said post; a supporting-wheel journaled at the forward end of said crane, said crane consisting of two members pivoted to a lever at their forward ends, whereby said crane is adjusted to raise and lower the forward end of said gate; and means for securing said crane in its position, substantially as described.

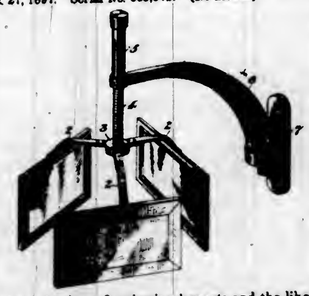
3. In a farm-gate, the combination of the gate proper A; the slotted post B adapted to receive the rear end of said gate; a wheel journaled at the upper end of said post; journal-notches provided in said post whereby said wheel may be adjusted to any plane; journal-pins at the upper and lower ends of said post; a fixed post located at an angle to said slotted post, having a holder secured to the top thereof within which the upper end of said slotted post is journaled; a short post at the lower end within the ground adapted to form a bearing for the lower journal; the crane D consisting of the members *l*, *u* pivoted at the upper and lower ends of said slotted post and having their forward ends arranged to cross each other; a lever E pivoted to the forward ends of said members, supporting a guide-wheel *c'* journaled upon the extended pivot *a'*; a locking-dog F pivoted to the member *u* and having its teeth arranged to engage with the pivot at the lower end of the lever E; and means for engaging the forward end of said gate, substantially as described.

610,917. **APPARATUS FOR TREATING REFRACTORY ORES.** JOHN E. PRESTON, London, England. Filed Dec. 23, 1897. Serial No. 663,245. (No model.) Patented in England Mar. 8, 1897, No. 6,051.



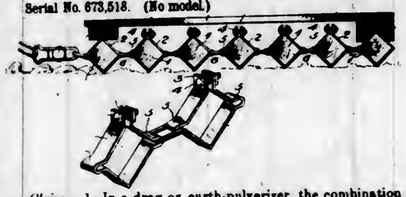
Claim.—An apparatus for treating powdered or pulverized ores comprising the furnace having a central opening in the bottom surrounded by a perforated annular wall, a deflector above of inverted-cone shape, a bustle-pipe twyers having communication with said bustle-pipe and leading into the furnace for supplying air thereto, an ore-supply pipe communicating with said central opening, an air-supply communicating with both the ore-pipe and bustle-pipe, and a discharge-pipe from the top of the furnace, substantially as described.

610,918. **MIRROR.** WILLIAM O. PREWITT, Chicago, Ill. Filed Dec. 27, 1897. Serial No. 663,572. (No model.)



Claim.—A mirror for viewing bonnets and the like consisting of a plurality of mirrors arranged with their reflecting-surfaces inward toward each other with open spaces between their adjacent edges, a spider-frame having arches 2 connecting the mirrors and an upwardly-extending screw 4, and a bracket 6 having a screw-threaded socket 5 to receive the screw 4, substantially as shown and described.

610,919. **PULVERIZER.** WILLIAM A. RAUDABAUGH, Pleasant Hill, and JOSHUA R. RAUDABAUGH, Celina, Ohio. Filed Mar. 11, 1898. Serial No. 673,518. (No model.)



Claim.—1. In a drag or earth-pulverizer, the combination of a series of bars arranged in parallel relation, clips applied to the bars and embracing and bearing against the sides thereof and having front and rear portions crimped or bent forming bearings, and links having their end portions fitted into the bearings of the clips and connecting them, substantially in the manner and for the purpose set forth.

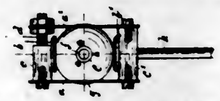
2. In a drag or earth-pulverizer, the combination of a series of bars arranged in parallel relation, clips applied to the bars and formed of metal strips bent between their ends, inclosing spaces to receive the bars, and having their end portions extending parallel and apertured, bolts passing through the apertured ends of the clips to secure them upon the bars, and means for flexibly connecting the clips, substantially as and for the purpose set forth.

3. In a drag or earth-pulverizer, the combination of a series of bars disposed in parallel relation and with their lower corners in engagement with the surface to be treated, clips embracing and bearing against the sides of the bars and having front and rear crimps or bends forming bearings, means for contracting the clips to cause them to grip the bars firmly, and links having their end portions fitted into the said bearings of the clips and connecting them in the manner described and for the purpose specified.

4. In a drag or earth-pulverizer, the combination of a series of bars arranged in parallel relation and with their lower corners in position to engage with the earth, angle or square clips applied to the bars and formed of metal strips bent into a square form, and having their end portions bent outward to extend about parallel, and having their front and rear corners crimped, bolts passing through the apertured ends of the clips, and links fitted in the crimps of the clips and flexibly connecting them and the bars, substantially as set forth.

610,920. **UNIVERSAL OR BALL JOINT.** FELIX RICHTER, Tschoepeln, Germany. Filed Jan. 20, 1898. Serial No. 667,268. (No model.)

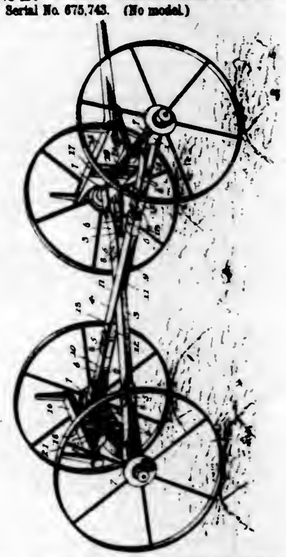
Claim.—1. In combination, the shaft *f*, the ball loose thereon, the shaft *h*, the side plates, *a*, *a'*, having openings for receiving the ball, the block *c'* connected with the shaft *h* and having a seat for the ball, said sides *a*, *a'*, being connected with the block *c'*, the block *c*, connected with one of the sides and an adjusting-screw connecting said block with the other side, substantially as described.



2. In combination, the shaft *f*, the ball thereon, the shaft *h*, and the connection between the shaft *h* and the ball comprising the plates *a a'* adjustable toward each other and the blocks *c*, *c'*, between the plates and also adjustable toward each other, substantially as described.

3. In combination, the shaft *f*, the ball thereon, the shaft *h* and the frame connecting the same with the ball, the said ball being made in two parts, one of which has a recess with a semicircular opening *p'* and the other has a pair of projections *k*, *k*, with an open *p* between them, substantially as described.

610,921. WAGON. FLOYD K. RICES, Canton, Ill. Filed Mar. 30, 1898. Serial No. 675,743. (No model.)



Claim.—1. A device of the class described comprising a pair of axles, boxes or sleeves provided with arms pivotally connected to the upper and lower faces of the axles, diagonally-disposed reaches adjustably arranged in the boxes or sleeves of the axles, and means for securing the reaches at the desired adjustment, substantially as described.

2. In a device of the class described, the combination of front and rear axles, diagonally-disposed reaches, and sleeves or boxes receiving the ends of the reaches and provided with arms pivotally connected with the axles, substantially as described.

3. In a device of the class described, the combination with front and rear axles of a continuous reach-bar 3 extending diagonally across the running-gear, the oppositely-disposed reach 4 composed of end bars, and a central section having a longitudinal opening to receive the reach-bar 3 and consisting of upper and lower bars, and sleeves or boxes arranged at the terminals of the upper and lower bars and receiving the end bars, and means for connecting the ends of the reaches with the axles, substantially as described.

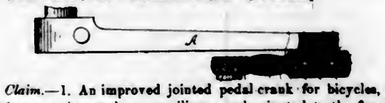
610,922. SAP-SPOUT. WILLIAM J. SAGER, Warren, Pa. Filed Mar. 30, 1898. Serial No. 675,664. (No model.)

Claim.—1. In combination, in a sap-spout, the main part 1, and a pair of wings located at the rear corners of said main part and having pivotal movement laterally in relation thereto, the said parts being adapted for adjustment to a tree and the wings being adapted to fit trees of different diameter, substantially as described.



2. In combination in a sap-spout with the curved main part 1, a pair of wings having a slot-and-pin connection at the rear corners of said main part, the said wings being laterally adjustable in relation to the main part and inclining upwardly therefrom, substantially as described.

610,923. PEDAL-CRANK. HUGO M. SOHERER, New York, N. Y. Filed Feb. 24, 1898. Serial No. 671,453. (No model.)



Claim.—1. An improved jointed pedal crank for bicycles, embodying a main crank, an auxiliary crank pivoted to the free end thereof, and a pedal threaded into the free end of said auxiliary crank and adapted to be threaded into the free end of the main crank in place of the auxiliary crank, substantially as shown and described.

2. An improved jointed pedal-crank for bicycles, embodying a main crank of the ordinary type, a pivot adapted to thread in the free end of said main crank, said pivot being provided with a fixed cone on the outer end thereof, an inner cone threaded upon said pivot, an auxiliary crank provided with a ball-bearing confined between said cones, and a pedal-axle adapted to thread into the free end of said auxiliary crank or into the free end of the main crank in place of said pivot, substantially as shown and described.

3. An improved jointed pedal-crank for bicycles, embodying a main crank having a threaded hole near the free end thereof, a pivot adapted to thread therein, said pivot being provided with an enlarged head forming a cone, a compound lock-nut and adjusting-cone threaded upon said pivot and provided with a hub upon its rear face adapted for contact with the main crank, an auxiliary crank provided at one end with a threaded hole adapted to receive the pedal-axle and at its other end with an enlarged head having a hole therethrough and an integral central annular rib therein, both walls of said annular rib being provided with a suitable channel adapted to act in combination with the said cone as ball-races, a double series of balls running in said channels, and means for lubricating said balls, substantially as shown and described.

610,924. CLOSURE-CAP, COVER, STOPPER, OR THE LIKE. THOMAS SLOPER, Devizes, England, assignor of one-half to Christian Hamilton Gray, Silvertown, England. Filed Sept. 21, 1897. Serial No. 652,455. (No model.)

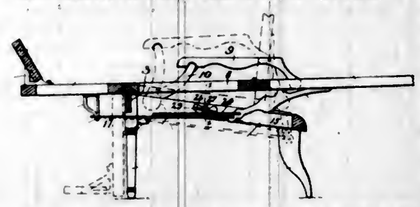


Claim.—1. A tether for a valve-cap consisting of a helical wire spring stiffened at its ends by the insertion of wires such as B' or B² the other ends of said wires being connected to the valve-stem and the cap respectively substantially as set forth.

2. A tether for a valve-cap consisting of a helical wire spring having loops with enlarged extensions such as B' B² inserted inside the ends thereof and caused to remain in place by a reduction in the size of the ends of the spring substantially as set forth.

3. A tether for a valve-cap consisting of a fine helical wire spring stiffened by and connected to stouter wires or metal loops at the ends where connected to the valve or valve-cap substantially as set forth.

610,925. RECLINING-CHAIR. MARCUS J. SPRIGHT, Boston, Pa., assignor of one-half to Jacob D. Updegrove, same place. Filed Mar. 13, 1897. Renewed Feb. 9, 1898. Serial No. 669,713. (No model.)

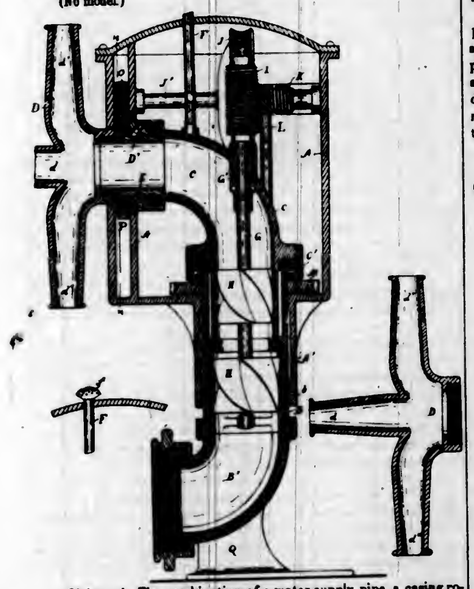


Claim.—1. In a reclining-chair, the combination with the frame, the seat hinged thereto, the hinged foot-rest and the hinged back, of the levers secured to said back, the wheels journaled thereto, the plates upon which said wheels work, and the bars connected with said levers and with the foot-rest, substantially as described.

2. In a reclining-chair, the combination with the frame, the seat hinged thereto, the hinged foot-rest and the hinged back, of the levers secured to said back, the wheels journaled thereto, the plates on which said wheels move, the bars connected with said levers and foot-rest, the rack-bars pivoted to said levers, the supporting-brackets, the shaft and the pawls secured thereto, substantially as described.

3. In a reclining-chair, the combination with the frame, the seat hinged thereto, the hinged foot-rest and the hinged back, of the levers secured to said back, the wheels journaled thereto, the plates on which said wheels travel, the bars pivotally connected with said levers, having notches in their front ends, and the pins connected with the foot-rest engaging therewith, whereby said foot-rest can be adjusted automatically by the movement of the seat and back or independently thereof, substantially as described.

610,926. AUTOMATIC DISTRIBUTING-NOZZLE. JOHN W. SUETTERLE, Milwaukee, Wis. Filed Mar. 15, 1898. Serial No. 673,942. (No model.)



Claim.—1. The combination of a water-supply pipe, a casing rotatably supported thereon, a rotary nozzle provided with divergent discharge-ducts located exterior to the casing, and in communication with the supply-pipe, a water-actuated propeller located in the supply-pipe, and connections located within the casing for communicating motion to the casing and nozzle therefrom, substantially for the purpose set forth.

2. The combination of a water-supply pipe, a curved nozzle-supporting pipe rotatably secured to the supply-pipe, a nozzle rotatably secured to said curved pipe and having divergent discharge-ducts, a water-actuated propeller located in the supply-pipe and connections for communicating motion from said propeller to said curved supporting-pipe and nozzle, substantially for the purpose set forth.

3. The combination of a water supply pipe, a curved nozzle-supporting pipe rotatably secured to the supply-pipe, a nozzle rotatably secured to said curved pipe and having divergent discharge-ducts, a water-actuated propeller located in the supply-pipe, connections for communicating motion from said propeller to said curved supporting-pipe and nozzle, and a casing inclosing said connections, substantially for the purpose set forth.

4. The combination of a water-supply pipe, a curved nozzle-supporting pipe rotatably secured to the supply-pipe, a nozzle rotatably secured to said curved pipe and having divergent discharge-ducts, a water-actuated propeller located in the supply-pipe, connections for communicating motion from said propeller to said curved supporting-pipe and nozzle, and a rotatable casing inclosing said connections, substantially for the purpose set forth.

5. The combination of a water-supply pipe, a nozzle-supporting pipe rotatably secured to the supply-pipe, a nozzle rotatably secured to said supporting-pipe, and means for automatically actuating said supporting-pipe and nozzle to cause both to rotate, substantially for the purpose set forth.

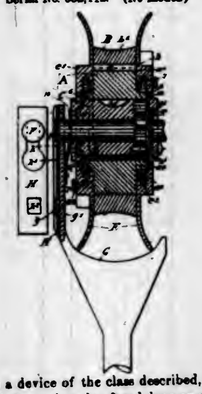
6. The combination of a water-supply pipe, a nozzle-supporting pipe rotatably secured to the supply-pipe, a nozzle rotatably secured to said supporting-pipe, a water-actuated propeller located in the supply-pipe, and connections for communicating motion therefrom to the nozzle supporting pipe, substantially for the purpose set forth.

7. The combination of a water-supply pipe, a nozzle-supporting pipe rotatably secured to the supply-pipe, a nozzle rotatably secured to said supporting-pipe, a water-actuated propeller located in the supply-pipe, and connections for communicating motion therefrom to the nozzle-supporting pipe and nozzle, substantially for the purpose set forth.

8. The combination of a water-supply pipe, a nozzle-supporting pipe rotatably secured to the supply-pipe, a nozzle rotatably secured to said supporting-pipe, a water-actuated propeller located in the supply-pipe, connections for communicating motion therefrom to the nozzle-supporting pipe, and a casing inclosing said connections, rotatable with the nozzle-supporting pipe, substantially for the purpose set forth.

9. The combination of a water-supply pipe, a nozzle-supporting pipe rotatably secured to the supply-pipe, a nozzle secured to the supporting-pipe, a water-actuated propeller located in the supply-pipe, connections for communicating motion therefrom to the nozzle-supporting pipe, a casing inclosing said connections, a branch water-discharge duct leading to the exterior of the casing, and a spray-nozzle adapted to direct a spray of water over the casing, substantially for the purpose set forth.

610,927. TROLLEY. OLOF W. SWANSON, Tacoma, Wash. Filed Sept. 18, 1897. Serial No. 652,112. (No model.)



Claim.—1. In a device of the class described, a center member carrying opposite hubs, and wedge-faced lugs on said hubs projecting beyond the periphery thereof, in combination with apertured side flanges adapted to engage the said lugs and to be secured between the wedge-faces thereof and the sides of said center member, substantially as specified.

2. In a device of the class described, a center member with opposite hubs formed integral therewith, and lugs on said hubs projecting over the sides of said member: said lugs having inclined or wedge faces at their inner sides substantially as and for the purpose specified.

3. In a device of the class described, a center member provided

with opposite hubs, squared at the outer extremities, and provided with an annular recess between said member and extremity; substantially as and for the purpose specified.

4. In a device of the class described, a center member, provided with opposite annular hubs, mounting a rectangular plate at the outer extremities thereof, the corners of said plates projecting beyond said hubs and having an under surface diverging from the upper; substantially as and for the purpose specified.

5. In a device of the class described, a center member carrying opposite hubs, with lugs thereon projecting beyond the face thereof, the under surface of said lugs diverging from the upper; substantially as and for the purpose specified.

6. In a device of the class described, a center member with opposite hubs having lugs opposed to the sides of said member, the under surface thereof diverging from the upper, a removable tire surrounding said center member, and side flanges adapted to engage said lugs and bind upon said tire and member; substantially as described.

7. In a device of the class described, a center member having opposite hubs, squared at the outer extremities, each provided with an annular recess between said member and extremity, the projecting corners of said extremities having the under surface diverging from the upper, a removable tire about said member, and side flanges adapted to engage between said diverging surfaces and member, and secure said tire; substantially as described.

8. In a device of the class described, the combination, with the locking-center carrying lugs mounted on opposite hubs thereof, and a removable tire thereon, of side flanges apertured to pass said lugs and receive said hub and to be turned to lock between said lugs and center, and secure said tire; substantially as described.

9. In a device of the class described, the combination with a center member having opposite hubs, and lugs projecting from said hubs over the adjacent sides of the member, said lugs on the respective hubs, having oppositely-diverging or wedge faces, of side members or flanges adapted to engage between said diverging faces and member and to be secured respectively by a right and-left hand turn thereof, substantially as specified.

10. In a device of the class described, a trolley, an axle, a yoke for the support thereof having lugs on the furcations thereof, lock-plates adapted to receive opposite ends of said axle and to drop and engage therewith and to receive said lugs when dropped, and lock said axle from rotation and end movement; substantially as described.

11. In a device of the class described, a trolley, an axle having opposite grooves at each end, a yoke supporting said parts and having lugs thereon below the ends of said axle, lock-plates apertured to receive said ends and slotted to drop and engage said grooves, and a second aperture therein to engage said lugs when said plates are lowered; substantially as described.

12. In a device of the class described, the combination with a locking-center of a center core having longitudinal ribs thereon fitting a central aperture in said locking-center with transverse depression thereof communicating with channels between said ribs, and oilways from said channels to the bore of said center, and means engaging said locking-center to secure said parts together and close the ends of said channels and form a chamber between said core and locking-center; substantially as described.

13. In a device of the class described, the combination with a locking-center, mounting lugs on opposite hubs thereof and having a central aperture, a removable tire about said center, a center core with longitudinal ribs fitting said aperture, centering-hubs thereon and a center bore, separable hubs with a similar bore and recessed to receive said centering-hubs and flanged to form a closure at the ends of said ribs to provide an oil-chamber about said center core; of side flanges apertured to pass said lugs and housings thereon recessed to receive the flanges of said separable hubs and apertured for the projection thereof, said flanges adapted for simultaneous but opposing rotation to engage said lugs and lock and bind said parts together; substantially as described.

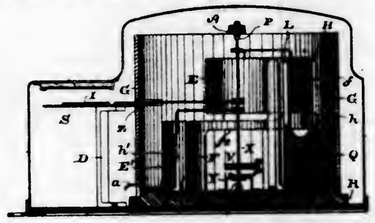
14. A device of the class described comprising a center member provided with locking-lugs, a removable tire thereon, a center core therein, separable hubs at the ends of said core, and side flanges with housings thereon, and adapted to engage said locking-lugs and interlock therewith and bind all of said parts together; substantially as shown and described.

15. A device of the class described comprising a center member provided with opposite hubs, and lugs on said hubs, a removable tire thereon, a center core with longitudinal ribs fitting a central aperture in said member, separable hubs at the ends of said core and ribs, and side flanges apertured to receive said lugs and adapted to be turned and engage therewith, and a housing thereon to engage said separable hubs, and a center bore through said core and separable hubs; substantially as shown and described.

16. In a device of the class described, the combination of an axle, means for locking the same against rotation, an annular center member carrying opposite hubs provided with wedge-faced lugs projecting beyond the periphery thereof, a tire detachably secured upon said member, a core detachably secured therein, and detachable side plates engaging the lugs of said center member and adapted to be secured between the wedge-faces thereof and the sides of said center member by a right-and-left-turning movement of the respective plates, substantially as specified.

17. In a device of the character described, the combination of an axle, means for carrying the same, and for securing it against rotation, an annular center member carrying opposite hubs provided with wedge-faced lugs projectiug beyond the periphery thereof, a central core constructed to form a lubricant-chamber within the center member, a tire surrounding said center member, and side flanges engaging the said lugs and adapted to be secured between the wedge-faces thereof and the sides of said center member, substantially as specified.

610,928. **ELECTROSTATIC MEASURING INSTRUMENT.** ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed Mar. 27, 1897. Serial No. 629,467. (No model.)



Claim.—1. In a static measuring and indicating instrument, the combination of stationary inductors and a vibrating needle, the vanes of the needle being segments of a cylinder, with a permanent magnet whose lines of force cross the path of one of the vanes of the needle substantially at right angles thereto.

2. In a static measuring and indicating instrument, the combination of fixed inductors and a vibrating needle having vanes in close proximity to said inductors, with an insulating dielectric between said vanes and inductors, and a permanent magnet whose lines of force cross the path of one of the vanes of the vibrating needle.

3. In a static measuring and indicating instrument, the combination of a vibrating needle having vanes and fixed inductors in close proximity to said vanes, the vanes and inductors being cylindrical in form, with an insulating dielectric between the vanes of said needle and said inductors, and permanent magnets so arranged that their arms are upon opposite sides of the path of one of the vanes.

4. In a static indicating instrument, the combination of outer and inner stationary inductors having upper and lower quadrants, as described, with a needle having vanes circular in outline, which move in the spaces between the different quadrants of the inductor, as described.

5. In a measuring and indicating instrument, the combination of a vibrating needle and stationary inductors separated from each other by an insulating medium, with a shield inclosing the moving parts of the instrument.

6. In a measuring and indicating instrument, the combination of a vibrating needle and stationary inductors separated from each other by an air-space, and a metal shield inclosing the moving parts of the instrument to protect them from extraneous inductive actions.

7. In a static measuring and indicating instrument, the combination of fixed and movable bodies in inductive relation to each other, a case surrounding the instrument, and a shield mounted between the surrounding case and the working parts of the instrument, connected to one side of the system with which the instrument is in circuit.

8. In a static measuring and indicating instrument, the combination of a vibrating needle, vanes for moving the needle, stationary inductors separated from each other by an insulating medium, and a cylindrical metal shield surrounding the operating parts of the instrument to prevent extraneous inductive actions from affecting the readings.

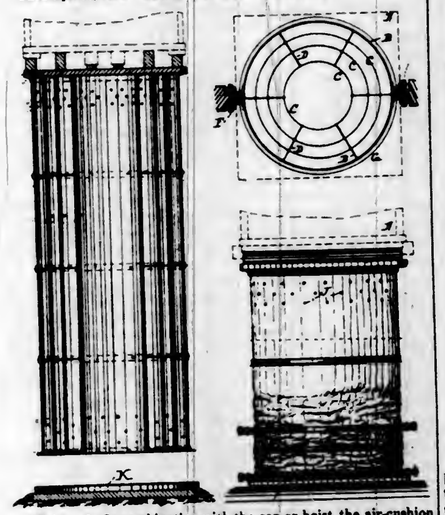
9. In a static measuring and indicating instrument, the combination of a vibrating needle and stationary inductors separated from each other by an insulating medium, a scale over which the needle moves, a case surrounding the instrument having a glass-covered opening, and means preventing any electrification of the glass from affecting the indications of the instrument.

10. In a static measuring and indicating instrument, the combination of a vibrating needle, and stationary inductors separated from each other by an insulating medium, a scale over which the needle moves, a case surrounding the instrument, having a glass-covered opening, and a metal screen covering the glass preventing any local electrification from affecting the indications of the instrument.

11. In a static measuring and indicating instrument, the combination of a vibrating needle, vanes for moving the needle, stationary inductors acting upon the vanes, a scale-plate over which the needle moves, a case surrounding the instrument having a glass-covered opening, and a wire screen electrically connected to the case located over the needle.

12. In a static measuring and indicating instrument, the combination of a stationary inductor mounted concentric with the shaft of the instrument, and having upwardly and downwardly extending quadrants, a second inductor similarly shaped mounted within the first, and vanes mounted on the shaft in such manner that one of them is affected by the upwardly-extending quadrant and the other by the downwardly-extending quadrant of both of the inductors.

610,929. **ELEVATOR.** EDWARD A. TRAPP, New York, N. Y. Filed Apr. 11, 1898. Serial No. 677,181. (No model.)



Claim.—1. In combination with the car or hoist, the air-cushion suspended therefrom and being of flexible or pliable material open at its lower end and composed of two or more concentric vertical cylinders or portions; substantially as set forth.

2. In combination with the car or hoist, the suspended air-cushion of flexible or pliable material and open at its lower end and applied to said car or hoist to be carried thereby, and means for maintaining said cushion in vertical alinement during the travel of the car; substantially as set forth.

3. In combination with the car or hoist, the vertical air-cushion of flexible or pliable material open at its lower end and secured to said car or hoist and the rim at the base of the elevator shaft or well to receive the lower edges of said air-cushion upon the falling of the car or hoist; substantially as set forth.

4. In combination with the car or hoist the air-cushion of flexible or pliable material suspended therefrom and open at its lower end and in its side walls provided with vent-apertures; substantially as set forth.

5. In combination with the car or hoist, the suspended air-cushion of flexible material secured to said car or hoist and provided with means for retaining its walls in alinement during the travel of the car and permitting said walls to collapse into folds upon the fall of the car and the contact of the lower end of the cushion with the base of the elevator shaft or well; substantially as set forth.

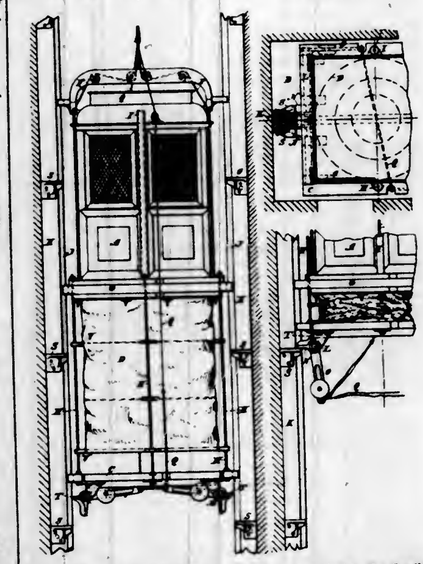
6. In combination with the car or hoist, the air cushion of flexible or pliable material secured to the lower end of the car or hoist and open at its lower end and the guiding-rollers carried by said cushion to engage the usual guideways for the car or hoist; substantially as set forth.

7. In combination with the car or hoist, the air-cushion suspended from the bottom of the car or hoist and composed of several concentric connected cylinders of flexible or pliable fabric open at their lower ends and substantially closed at their upper ends; substantially as set forth.

8. In combination with the car or hoist, a flexible or pliable air-receptacle suspended from said car or hoist and carried thereby, said receptacle being open to freely admit the air and adapted on the fall of the car or hoist to cushion the latter; substantially as set forth.

9. In combination with the car or hoist, a flexible or pliable air-receptacle subdivided into two or more compartments and carried by said car or hoist, said receptacle being open to freely admit the air and adapted on the fall of the car or hoist to cushion the latter; substantially as set forth.

610,930. **ELEVATOR.** EDWARD A. TRAPP, New York, N. Y. Filed June 4, 1898. Serial No. 682,541. (No model.)



Claim.—1. In combination with the car or hoist, the flexible or pliable air-receptacle suspended from said car or hoist and carried thereby, the platform or traveling bottom connected to travel with the car or hoist and suspended below said receptacle, and means for arresting said platform at several points to receive the car or hoist cushioned by said air-receptacle; substantially as set forth.

2. In combination with the car or hoist, the flexible or pliable air-receptacle below said car or hoist, the platform or traveling bottom carried by said car or hoist and below said receptacle, means for arresting said platform to receive the car or hoist cushioned by said air-receptacle, and means suspending said platform, but permitting said car to approach said platform; substantially as set forth.

3. In combination with the car or hoist, the platform or frame suspended from and directly carried by said car or hoist, and means for arresting said platform or frame, in case of accident, to receive said car or hoist; substantially as set forth.

4. In combination with the car or hoist, the platform or frame directly carried by said car or hoist, means for arresting said platform or frame, in case of accident, to stop the fall of said car or hoist, and a cushioning device to cushion said car or hoist on its fall toward said platform or frame; substantially as set forth.

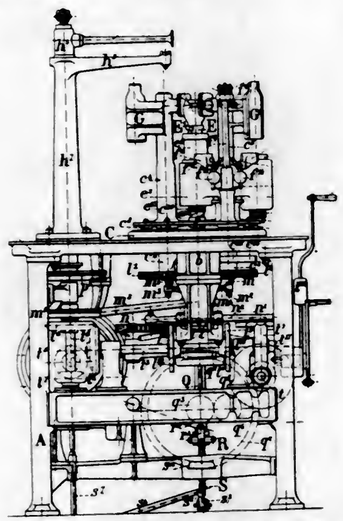
5. In combination with the car or hoist, the platform or frame suspended below and adapted to travel with the car or hoist, the series of stops provided along the elevator-shaft, the dogs secured to said platform and normally free of said stops, means retaining said dogs normally free of said stops, and means for moving said dogs outward to engage said stops upon the breaking of the hoisting-cable or other accident resulting in the fall of the car; substantially as set forth.

6. In combination with the car or hoist, the platform or frame suspended below said car or hoist and adapted to travel with the car, the series of stops provided along the elevator-shaft, the weighted dogs secured to said platform or frame, and the cable retaining said dogs normally free of said stops and adapted in case of an accident to permit said dogs to move outward into position to engage said stops and arrest said platform or frame; substantially as set forth.

7. In combination with the car or hoist, the platform or frame suspended below the car, the rods connected with said platform and

passing upward through free apertures in the base of the car, the series of stops provided along the elevator-shaft, the dogs carried by said platform or frame, means retaining said dogs normally free of said stops, and means for moving said dogs outward to engage said stops upon the fall of the car, said rods during the fall of the car toward said platform passing upward through said free apertures; substantially as set forth.

610,931. **MACHINE FOR MANUFACTURING BOTTLES, &c.** JEAN B. VERNAY, Paris, France. Filed Dec. 27, 1897. Serial No. 663,664. (No model.) Patented in France Feb. 5, 1897, No. 263,769, and in England Sept. 4, 1897, No. 20,388.



Claim.—1. In a machine of the character described, a casting-mold comprising two half-molds each mounted upon an axis, means for rotating each axis and half-mold in an alternate manner to close and open the casting-mold, a second axis for each half-mold at right angles to the first axis, and means for inverting the half-molds upon their second axis, substantially as and for the purposes described.

2. In a machine of the character described, a heading-mold comprising two separable portions, a sleeve to which the lower end of each portion of the heading-mold is pivoted, two weighted levers adapted when elevated to move the portions of the mold upon their pivots to close the upper end of the heading-mold, and a rotating central tube adapted when raised to impart rotary movement to the sleeve and to cause the levers to be elevated, said weighted levers adapted to normally assume a vertical position when not elevated and the portions of the mold adapted to rotate with the sleeve and to separate under centrifugal force when the levers are in vertical position, substantially as and for the purposes described.

3. In a machine of the character described, a parison-mold consisting of a bottom and two normally open shoulder portions, a rotating central tube, means for elevating said central tube into contact with the bottom of the parison-mold, whereby the parison-mold is first elevated and then rotated, and means for closing the shoulder portions of the mold when in its elevated position and prior to its rotation, substantially as and for the purposes described.

4. In a machine of the character described, a finishing-mold consisting of two symmetrical halves and a movable bottom, said halves each having an axis, means for alternately rotating the axis of each half to close and open said halves, and means for elevating and rotating the bottom of the mold when the halves are in closed position, substantially as and for the purposes described.

5. In a machine of the character described, a finishing-mold comprising two symmetrical halves and a perforated movable bottom, means for rotating each half in alternate directions to close and open the same, means for elevating and rotating the movable bottom when the halves are closed, and a punch adapted to be elevated through the perforations in the movable bottom and to rotate with said bottom, substantially as and for the purposes described.

6. In a machine of the character described, tongs having two branches, a support to which said branches are pivoted, means for opening and closing said branches, and means for turning said support and branches, substantially as and for the purposes described.

7. In a machine of the character described, a blowing apparatus comprising a box or chamber having an inlet and outlet, a spring-controlled valve normally closing the inlet to said pipe, a lever-arm adapted to open said valve, means for operating said arm, a pipe connecting the inlet of the box with a suitable source of air-supply, and a pipe connecting the outlet of said box with the blowing-tube, substantially as and for the purposes described.

8. In a machine of the character described, a conveyer comprising a series of cords of asbestos or suitable fireproof material and a series of pulleys over which the cords are adapted to travel, said pulleys and cords being so arranged as to form a trough-like receptacle for the bottle, substantially as and for the purposes described.

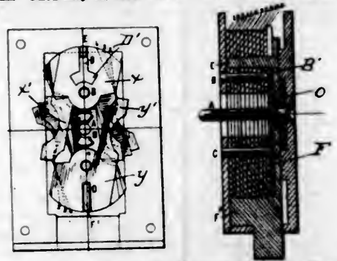
9. In a machine of the character described, a plate carrying a casting-mold, a head-forming mold, a parison-mold and a finishing-mold, a pinion carried by said plate, a sector meshing with said pinion, a circular disk, means for revolving said disk, and a rod connecting said disk with said sector, whereby alternate rotary motion may be imparted to the plate, substantially as and for the purposes described.

10. In a machine of the character described, a series of molds for performing the successive operations of the machine in combination with mechanism for bringing successive molds into operative position, said mechanism comprising a plate upon which the molds are mounted, a series of axes carrying the molds, a central pinion fixed to the plate, two wheels fixed to the mold-carrying axes and meshing with the central pinion, means for rotating said pinion, two levers, and operating mechanism for said levers to cause the same to successively arrest the movement of the central pinion, substantially as and for the purposes described.

11. In a machine of the character described, in combination with a head-forming mold, of a centrally-arranged neck-forming rod adapted to enter said mold and to close the same, and means for raising, lowering and rotating said rod, substantially as and for the purposes described.

12. In a machine of the character described, a central tube and means for rotating and for raising and lowering the same, in combination with a heading-mold, a finishing-mold having a rotatable bottom, and means for bringing said molds successively in alinement with the central tube, whereby upon the elevation of said tube, the heading-mold will be elevated to close the same and then rotated, and the movable bottom of the finishing-mold will be elevated and rotated, substantially as and for the purposes described.

610,932. **LOCK.** NICOLAS F. VETTER, Buenos Ayres, Argentina. Filed May 11, 1898. Serial No. 680,404. (No model.)

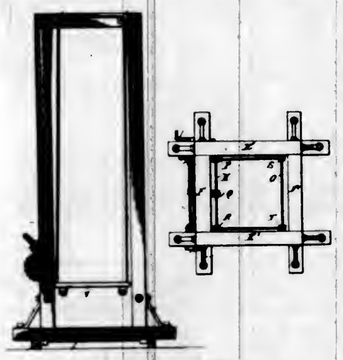


Claim.—1. In combination, the casing, the pivots B and C therein, the two sets of tumblers pivoted on the pivots B and C respectively and having their free ends extending from each other and facing in opposite directions, the tumblers having also tailpieces extending normally parallel with each other and on opposite sides of a line drawn through the pivots B, C, each set of tumblers having gatings and one set having the lateral extensions D' thereof, a lock-bolt having the fences E, F', a rotary cam-plate having a pin to operate the lock-bolt and having projections to be operated by the key and a key having double wards or bits, substantially as described.

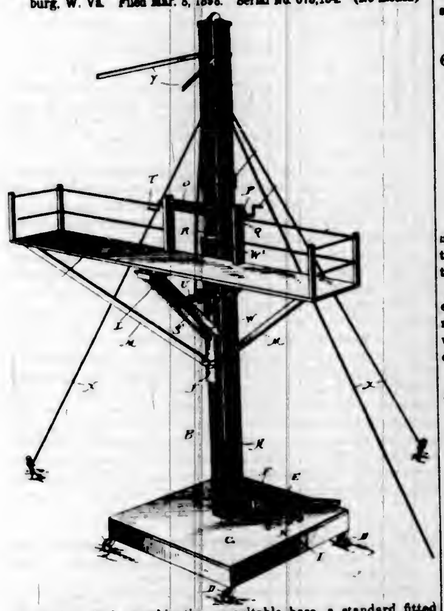
2. In combination, the casing, the tumblers having the gatings, the partition-plate having the pivot-support for the tumblers, the lock-bolt having a fence to engage the gatings, the cam-plate having the projection to be operated by the key and the pin to engage the lock-bolt and the key for operating the tumblers and cam-plate, said partition separating the lock-bolt from the tumblers, substantially as described.

610,933. **HOISTING-MACHINE.** JOHN M. WAGONER, Sparta, Wis. Filed June 24, 1897. Renewed Apr. 20, 1898. Serial No. 678,313. (No model.)

Claim.—In a hoisting apparatus the combination of four rectangularly-arranged uprights, a rectangular frame at the top thereof, consisting of four plates, a winding-drum mounted in bearings on the outside of two of the uprights, a shaft mounted parallel with the winding-drum between the sides of the top frame on the same side as the winding-drum, a second shaft mounted on the opposite side of the top frame, both of these shafts carrying a grooved pulley at each end and the first-named shaft carrying a grooved pulley at its center, a rope secured to the winding-drum at its center, two other ropes secured to the winding-drum at its ends, and a truck arranged inside the framework, the rope which is secured to the center of the winding-drum passing over the center pulley of the upper shaft and straight downward to the center of one side of the truck, and the ropes secured at the ends of the winding-shafts passing up and over the end pulleys of the upper shafts respectively, and down to the opposite side of the truck at its corners, substantially as described.



610,934. **PORTABLE SCAFFOLD.** LOUIS R. WEBBER, Parkersburg, W. Va. Filed Mar. 8, 1898. Serial No. 673,134. (No model.)



Claim.—1. In combination, a suitable base, a standard fitted thereto, a lever for raising and lowering said standard within certain limits, a block adapted to travel within a channel formed in the standard, a platform supported upon the block, a windlass journaled upon the platform, cranks for revolving said windlass, a ratchet and pawl for holding the windlass against retrograde movement, a band passed around the standard and block, teeth formed upon the back of the band, a guide-pulley passed around said pulley, a suitable pulley journaled at the top of the standard, over which the cable also passes, said cable being attached to the block and windlass, as and for the purpose set forth.

2. The herein-described combination of a platform, casters upon which said platform is mounted, a standard fitted within the platform, a lever fulcrumed upon the platform and pivoted to the standard whereby said standard may be raised or lowered within certain limits, and means for securing the lever when the standard is elevated, as shown and described.

610,935. **RAILROAD-TIE.** FRANCIS T. WRIGHT, Edinburg, Ind. Filed Dec. 21, 1897. Serial No. 662,913. (No model.)

Claim.—1. The herein-described composition of matter, consisting of wood particles, or wood fiber, glue, resin, red ocher, and water, substantially as described and for the purpose specified.

2. The herein-described composition of matter for constructing railroad-ties, consisting of wood, nine parts; glue, five parts; resin, four parts; red ocher, two parts; and water to reduce the whole to a pulp, substantially as described.

3. A railroad-tie, consisting of wood fiber, glue, resin, ocher, and water formed into the required shape under hydraulic or similar pressure, and coated with boiled linseed-oil mixed with charcoal, substantially as described.

610,936. **FILLING MATERIAL FOR MATTRESSES, &c.** GEORGE W. YEARICKS, Bridesburg, Pa. Filed Jan. 26, 1898. Serial No. 668,058. (Specimens.)

Claim.—1. The mode of preparing a filler for mattresses, pillows or the like, which consists in cutting or separating cornstalk into sections, with its joints and outer shell or fibrous covering removed, then shredding the pith so that the interior fibers of the same will be maintained intact, then artificially drying under required temperature without compressing the same, whereby the filling material is brought to a state or condition for use, as described and for the purposes set forth.

2. A filler for mattresses, pillows or the like, consisting of dried pith of cornstalks, from which the joints and outer shell have been removed, said pith cut or torn into small pieces in the direction in which the fibers of the pith extend so as to maintain said fibers intact, substantially as and for the purposes described.

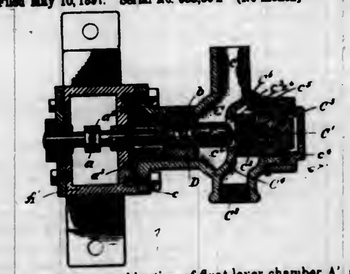
610,937. **ACETYLENE-GAS GENERATOR.** FRANK E. BUNDY, Elmira, N. Y. Filed Sept. 2, 1897. Serial No. 650,331. (No model.)



Claim.—1. In a generating-chamber, the combination of alternate layers of carbid and an absorbent material built up around a central stand-pipe, through perforations in which water is delivered to the several absorbent layers substantially as described.

2. A charge of carbid for a generating-chamber built up in layers around a central cylinder of absorbent material with absorbent material extending out from said cylinder between the layers, the whole being inclosed in a moisture proof envelop, substantially as described.

610,938. **REGULATING-VALVE DEVICE.** JOSEPH H. CRAMP, Cleveland, Ohio, assignor to the Bishop & Babcock Company, same place. Filed May 10, 1897. Serial No. 635,894. (No model.)



Claim.—1. The combination of float-lever chamber A', a valve-chamber C fastened to said chamber A', nut D clamped by and be-

tween said two chambers, threaded valve-stem B, valve, valve-seat, substantially as set forth.

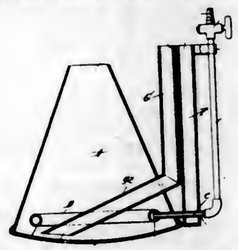
2. The combination of float-lever chamber A′, valve-chamber C having flange c, nut D clamped by and between said two chambers, threaded valve-stem B, valve, valve-seat, substantially as set forth.

3. The combination of float-lever chamber A′ having depression a^3, valve-chamber C having flange c fastened to said chamber A′, nut D having a part clamped in said depression by flange c, threaded valve-stem B, valve, valve-seat, substantially as set forth.

4. The combination of float-lever chamber A′ having its side formed with depression a^3, valve-chamber C having flange c fastened to said chamber A′, nut D having flange d clamped in said depression by said flange c, threaded valve-stem B, valve-seat C′ screw-threaded into an opening in said valve-chamber, valve loosely engaging with said valve-stem, substantially as set forth.

5. The combination of float-lever chamber A′ having its side formed with depression a^3, valve-chamber C having flange c bolted to said chamber A′, nut D having flange clamped in said depression by said flange c, rotary valve-stem B threaded in said nut, valve-chamber C having inlet C^2 and outlet C^3 and intermediate valve-opening c^4 bounded by wall C^4, valve-seat C′ screwed into opening c^7 and against said wall C^4 and having central inner end bore c' and peripheral perforations c^8 communicating with said bore and with said inlet C^2, guide-pin C^5 fastened to the center of said valve-seat and projecting longitudinally through said bore, valve E having central bore e in which said guide-pin is loosely fitted, said valve having free end engagement with said valve-stem and being smaller than said openings c^8 and c^7, substantially as set forth.

610,939. WATER-HEATER. MAX EDELMUTH, New York, N. Y.
Filed Feb. 15, 1898. Serial No. 670,760. (No model.)



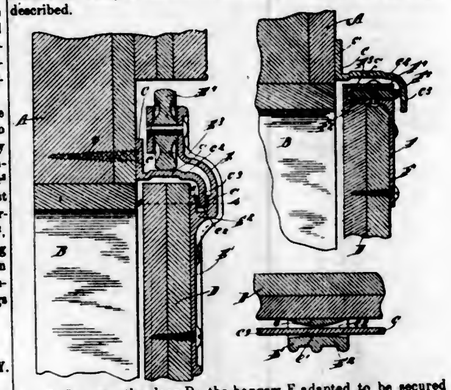
Claim.—1. The herein-described device for heating water, said device comprising a conical casing open at the top and closed at the bottom, a curved tube mounted in said casing adjacent to the bottom thereof, and provided with flame slots or openings in its bottom, a main gas-supply tube connected therewith and projecting through one side of the casing near the bottom thereof, and provided with an upwardly-directed extension, an upright air-tube, the lower end of which projects at an angle through the side of said casing and diagonally downwardly therein to near the bottom thereof, the upper end of said air-tube being above the top of said casing, substantially as shown and described.

2. The herein-described device for heating water in a tank or other vessel, said apparatus consisting of a conical casing provided with a convex and closed bottom, and an open top, a circular burner-tube supported adjacent to the bottom of said casing and provided with perforations or openings, a main gas-supply tube communicating therewith and extending through the side of the casing, an upright supplemental gas-supply tube connected therewith, said gas-supply tube being also perforated and provided with an upright air-supply tube through which it passes, and a supplemental air-supply tube which passes through one side of said casing, and diagonally downwardly thereinto, and the outer end of which terminates above the top of said casing.

610,940. CAR-DOOR. WILLIAM R. ELLIS, Chicago, Ill., assignor of one-half to James L. Mallory, same place. Filed Sept. 2, 1897. Serial No. 650,336. (No model.)

Claim.—1. In a car, the door D; the hangers E adapted to be secured to the upper portion of the outer side of the door, and provided with guide-surfaces, and with an arm E^3 carrying a contact-surface for supporting the weight of the door; and a track C, in section consisting of a single piece, secured to the car, extending completely over the door, and provided with a downwardly-extending flange in proximity to the guide-surfaces and below the top of the door, said track serving as a support for the contact-surface and as a protecting-covering for the top of the door, substantially as described.

2. In a car, the door D; the hangers E adapted to be secured to the upper portion of the outer side of the door, and with an arm E^3 carrying a contact-surface for supporting the weight of the door, said contact-surface being substantially over the center of the door; and a track C, substantially Z-shaped in section, secured to the car by one flange, and having the connecting-web extending completely over the door and serving as a support for the aforesaid contact-surface, and having the other flange extending downwardly below the surface of the top of the door, substantially as and for the purposes described.



3. In a car, the door D; the hangers E adapted to be secured to the upper portion of the outer side of the door, and provided with guide-surfaces, and with an arm E^3 carrying the roller E^4 for supporting the weight of the door; and the track C, in section consisting of a single piece and substantially Z-shaped, secured to the car, its central web extending completely over the door, and serving as a track for the roller E^4, and one of its flanges extending downward in proximity to the guide-surfaces and below the top of the door, substantially as and for the purposes described.

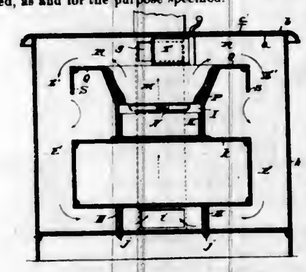
4. In a car, the door D; the hangers E adapted to be secured to the upper portion of the outer side of the door, and provided with arms E^3 carrying a contact-surface for supporting the weight of the door; and track C secured to the car and having a central web extending completely over the door and forming a support for the aforesaid contact-surface, and provided with a flange C^3 extending downwardly below the top of the door on the outer side thereof; and one or more rollers F^3 mounted on the upper edge of the door and adapted to bear against the inside of the flange C^3, substantially as and for the purpose described.

5. In a car, the door D; the hangers E adapted to be secured to the upper portion of the outer side of the door, and provided with the guide-surfaces e and e′, the surface e being convex, and with an arm E^3 carrying a contact-surface for supporting the weight of the door; and a track C, in section consisting of a single piece, secured to the car, its central web C^3 extending completely over the door and serving as a support for the contact-surface, and provided with a flange C^3 extending downwardly between the guide-surfaces e and e′ and below the top of the door, substantially as and for the purposes described.

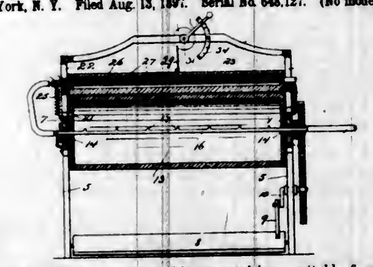
6. In a car, the door D; the hangers E adapted to be secured to the upper portion of the door, and provided with guide-surfaces, and with an arm E^3 carrying the roller E^4 for supporting the weight of the door; a track C substantially Z-shaped in cross-section secured to the door, with its central web extending completely over the door and serving as the support for the rollers E^4, and having a flange C^3 extending downward in proximity to the guide-surfaces and below the top of the door; and one or more rollers F^3 mounted upon the upper edge of the door adapted to bear against the inside of the flange C^3, substantially as and for the purpose described.

610,941. STOVE OR RANGE. JOHN ERBEN, Cleveland, Ohio, assignor to the H. Franke Steel Range Company, same place. Filed July 30, 1897. Serial No. 646,541. (No model.)

Claim.—The stove or range described comprising essentially a casing, the oven disposed above the bottom wall of the casing so as to form a low horizontal flue and having its side walls arranged at a distance from the side walls of the casing so as to form vertical flues E communicating with the lower horizontal flue, the ash-box of less width than the oven arranged above the middle of the same, the fire-box arranged above and corresponding in width at its bottom, the horizontal walls Q forming continuations of the side walls of the fire-box and serving in conjunction with the top of the casing to form upper horizontal flues R, and the skirts S depending from the outer edges of the walls Q; the said skirts serving in conjunction with the side walls of the casing to form vertical flues E′ disposed in a plane above the oven and coincident with the flues E, whereby the flame and products of combustion are conducted down to the lower horizontal flue and a direct passage of flame and products of combustion to the top wall of the oven and the deposit of soot and ashes thereon is prevented, as and for the purpose specified.



610,942. IRONING-MACHINE. KATHARIN E. LANDAU, New York, N. Y. Filed Aug. 13, 1897. Serial No. 648,127. (No model.)

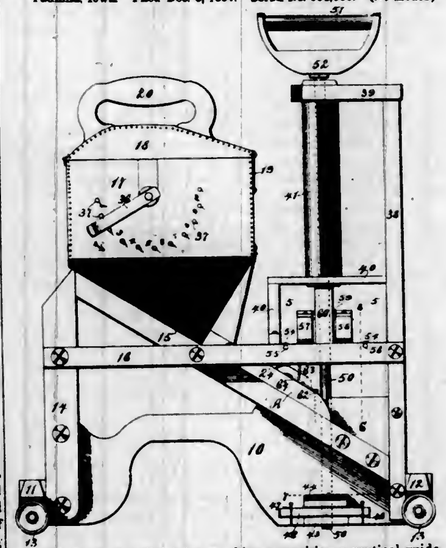


Claim.—1. An ironing-machine, comprising a suitable frame, a hollow cylindrical roller mounted therein and provided at each end with tubular hubs, a vertically-movable hollow pressing-iron mounted above said roller and adapted to rest thereon, the under surface of which conforms to the surface of said roller, said pressing-iron being substantially of the same length as said roller, and being also provided at its opposite ends with projections, one of which is tubular in form, springs by which said pressing-iron is depressed into contact with said roller, gas-burner tubes mounted in said pressing-iron and in said roller, and extending longitudinally thereof, the burner-tube in the pressing-iron being projected through one end thereof, and the burner-tube in the roller being projected through both ends thereof, said burner tubes being in communication at one end, and one of said tubes being provided with a gas-supply pipe at the opposite end, and means for revolving said roller and for preventing the movement of the gas-pipe therein, substantially as shown and described.

2. An ironing-machine, comprising a suitable frame, a hollow cylindrical roller mounted therein and provided at each end with tubular hubs, a vertically-movable hollow pressing-iron mounted above said roller and adapted to rest thereon, the under surface of which conforms to the surface of said roller, said pressing-iron being substantially of the same length as said roller, and being also provided at its opposite ends with projections, one of which is tubular in form, springs by which said pressing-iron is depressed into contact with said roller, gas-burner tubes mounted in said pressing-iron and in said roller, and extending longitudinally thereof, the burner-tube in the pressing-iron being projected through one end thereof, and the burner-tube in the roller being projected through both ends thereof, said burner-tubes being in communication at one end, and the burner-tube in the roller being provided with a gas-supply pipe at its opposite end, and means for revolving said roller, and for raising the pressing-iron against the operation of the springs by which it is depressed, substantially as shown and described.

3. An ironing-machine, comprising a suitable frame, a hollow cylindrical roller mounted therein and provided at each end with tubular hubs, a vertically-movable hollow pressing-iron mounted above said roller and adapted to rest thereon, the under surface of which conforms to the surface of said roller, said pressing-iron being substantially of the same length as said roller, and being also provided at its opposite ends with projections, one of which is tubular in form, springs by which said pressing-iron is depressed into contact with said roller, gas-burner tubes mounted in said pressing-iron and in said roller, and extending longitudinally thereof, the burner-tube in the pressing-iron being projected through one end thereof, and the burner-tube in the roller being projected through both ends thereof, said burner-tubes being in communication at one end, and one of said tubes being provided with a gas-supply pipe at the opposite end, and means for revolving said roller, and for raising the pressing-iron against the operation of the springs by which it is depressed, consisting of a pulley mounted in said frame above said pressing-iron, a chain mounted thereon and connected with said iron, and a lever connected with the shaft of said pulley and operating in connection with a locking device secured to said frame, substantially as shown and described.

610,943. SHINGLE-NAILING MACHINE. CHRIST J. LONDING, Paullina, Iowa. Filed Dec. 6, 1897. Serial No. 661,000. (No model.)



Claim.—1. A nail-driving machine comprising a vertical guide-way, a driving-rod mounted for reciprocation in said guideway, a handle secured to said rod for manual operation, means for feeding nails to said guideway singly and successively comprising a rotatably-adjustable magazine, trough and driving-rod-operated pickers, and means for propelling the machine comprising a handle on the receptacle or hopper containing the nail-magazine.

2. A shingle-nailing machine comprising a wheeled truck, a nail-magazine mounted on said truck and rotatably adjustable thereon, nail-driving mechanism mounted for manual actuation on said truck, and nail-feeding mechanism between said magazine and the driving mechanism.

3. A shingle-nailing machine comprising a wheeled truck, a hopper mounted on said truck, a slotted guideway for the nails leading from the hopper, a magazine rotatably adjustably mounted in said hopper and feeding the nails to said guideway, which magazine is formed of two semicylindrical sections hinged together, is slotted longitudinally in one section and has the periphery of the other section covered, a nail-driving mechanism, a carriage traversing the path of the nail-driving mechanism and actuated thereby in one direction, and spring-actuated in the other direction, picking-arms fixed to said carriage and traversing the guideway, and means whereby said picking-arms are caused to present the nails singly to the driving mechanism by a step-by-step movement.

4. In a machine of the class described, a hopper, a magazine mounted in said hopper and constructed of a shaft journaled in the hopper, and semicylindrical sections on said shaft and hinged together, one of which sections has its periphery covered and the other of which sections has its periphery slotted, and an arm on the shaft engaging one or another of a series of pins in the hopper.

5. In a machine of the class described, the wheeled truck, the hopper mounted thereon, the nail-magazine mounted for rotary adjustment in the hopper, the spring-held nail-guiding blocks mounted in said truck, the guideway for the nails leading from an aperture in the bottom of the hopper to and between said blocks, the vertically-

reciprocating hammer, pickers mounted for reciprocation across the guideway, a carriage mounted for reciprocation across the plane of reciprocation of the hammer and provided with an opening for the traverse of the hammer therethrough, which carriage supports said pickers, and a roller on the carriage arranged for engagement by the hammer to move the carriage in one direction, the carriage being spring-actuated in the other direction.

6. In a machine of the class described, the base 10 with the supporting-wheels at the corners thereof, standards 14, 38, rising from the corners of said base, brace-bars obliquely positioned and connecting the forward end of the base and the upper ends of the standards 14, horizontal bars 16 connecting the standards 14, 38, above the base, a hopper mounted on the brace-bars, apertured in its bottom and provided with a cover at its top, a pair of spring-held nail-guidjng blocks mounted at the lower end of a vertical aperture in the front end of the base, an inclined slotted guideway mounted on the brace-bars and leading from the aperture in the bottom of the hopper to the aperture in the base, a deflector mounted obliquely across said guideway, pickers traversing the guideway, and driving mechanism traversing the aperture in the base and operating the pickers.

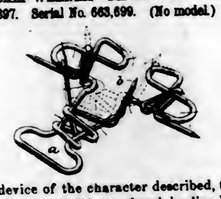
7. In a machine of the class described, the hopper having an aperture in its bottom, the inclined partition 21 in said hopper, the slats traversing the lower portion of the hopper and spaced apart and the nail-magazine in the hopper above the slats.

8. In a machine of the class described, the nail-magazine comprising the end disks mounted for rotary adjustment, the peripheral shield covering approximately one half the space between said disks, and the peripheral slats covering portions of the remaining space between the disks, which slats are spaced apart.

9. In a machine of the class described, the hopper, the shaft journaled in said hopper, the nail-magazine mounted on said shaft and slotted in a portion of its periphery, the pins mounted in and projecting outwardly from one side of the hopper and the leaf-spring fixed at one end to one end of the shaft and arranged for seating between any pair of said pins.

10. In a machine of the class described, a base apertured in a vertical plane in one end portion, blocks mounted in the base on opposite sides of the lower end of the aperture therein which blocks are grooved on their inner faces in alinement with said aperture, flanges formed on the upper edges of the outer faces of the blocks, loops 47, 48, mounted on the base near the ends of said blocks and springs mounted on the base and traversing and engaging the outer faces of the blocks below the flanges thereon which springs are loosely confined within the loops.

610,944. CALF-WEANER. BENJAMIN P. MERRY, Stryker, Ohio. Filed Dec. 27, 1897. Serial No. 663,699. (No model.)



Claim.—In a device of the character described, the member or wire, with a laterally-extended forward end leading-loop, branched into rearwardly-diverging arms, each arm, in turn, extended outward, laterally, and rebent inward, and formed into jaws to engage the septum or cartilage of the animal's nostrils, the same then being looped or bent upon itself and terminating in pricking-points, combined with a sliding member or clasp embracing the arms of the aforesaid member and terminating in upstanding pricking-points, substantially as set forth.

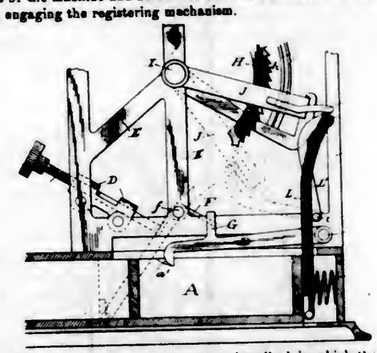
610,945. CASH-REGISTER. JOHN H. MCCORMICK, Dayton, Ohio, assignor to the National Cash Register Company, same place. Filed Nov. 26, 1897. Serial No. 659,830. (No model.)

Claim.—1. In a cash-register of the class described, the combination with a registering mechanism, of a cash drawer, and a toggle-lever attached to said drawer whereby the operation of the latter will impart a variable movement to the registering mechanism.

2. In a cash-register of the class described, the combination with a registering mechanism, of a cash-drawer, and a toggle-lever having a jointed connection with said drawer and arranged to engage and operate the registering mechanism.

3. In a cash-register of the class described, the combination with a registering mechanism, of a cash-drawer, and a toggle-lever pivoted at one end to said drawer and at the other to a stationary part of the machine and so located as to engage and operate the registering mechanism.

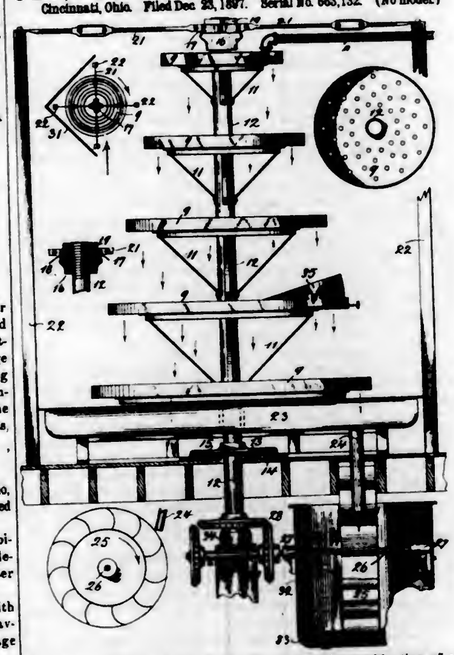
4. In a cash-register of the class described, the combination with a registering mechanism, of a cash-drawer, a toggle-lever pivotally connected at one end to said drawer and at the other to a stationary part of the machine and an antifriction-roller mounted on said lever and engaging the registering mechanism.



5. In a cash-register of the class described in which the cash-drawer is arranged to transmit motion to an operating part, the combination with the drawer and the operating part, of a toggle-arm pivoted to the drawer at one end and arranged to bear against and actuate the operating parts substantially as described.

6. In a cash-register of the class described in which the cash-drawer is arranged to transmit movement to an operating part, the combination with the cash-drawer and said operating part, of a toggle-lever pivoted at one end to the cash-drawer, its cooperating toggle-lever being pivoted at one end to a fixed point, and a roller carried by the knuckle of the toggle-levers and arranged to directly actuate the said operating part.

610,946. WATER-COOLING DEVICE. WILLIAM F. NIEBLING, Cincinnati, Ohio. Filed Dec. 23, 1897. Serial No. 663,132. (No model.)



Claim.—1. In a device for cooling water, the combination of a number of pans having perforated bottoms a water-pipe discharging into the uppermost pan, a central upright shaft on which they are supported, one below the other with a space between them and means to rotate said shaft.

2. In a device for cooling water, the combination of a number of pans with perforated bottoms, a water-pipe discharging into the uppermost pan, a central upright shaft on which they are supported, one below the other with a space between them, the size of such pans increasing and the perforations therein decreasing successively downwardly and means to rotate the upright shaft.

3. In a device for cooling water, the combination of a number of pans with perforated bottoms, a water-pipe discharging into the uppermost pan, a central upright shaft on which they are supported, one below the other with a space between them, a water-motor for rotating said shaft and means for directing the water discharged from the lowermost pan to actuate such motor.

4. In a device for cooling water, the combination of a number of pans with perforated bottoms supported one above the other with a space between them to permit access and passage of air, a water-pipe discharging into the uppermost pan and an angular partition 31 adjustably supported and adapted to surround a part of the stack of pans thereby restricting access of air to them only from the side left open by the partition.

5. In a device for cooling water, the combination of a number of pans with perforated bottoms, a water-pipe discharging into the uppermost pan, a central upright shaft capable of rotation and on which they are supported, one below the other with a space between them and an angular partition 31 adjustably supported and adapted to shield and inclose one-half of the stack of pans.

6. In a device for cooling water, the combination of a number of pans with perforated bottoms supported one above the other with a space between them, a water-pipe discharging into the uppermost pan and adjustable flaps adapted for closing a number of the openings in the perforated bottoms.

7. In a device for cooling water, the combination of a number of pans having perforated bottoms, a water-pipe discharging into the uppermost pan, a central upright shaft on which they are supported, one below the other with a space between, means to rotate said shaft, a journal 16 at the upper end of the latter, a bearing 17 within which it rotates, antifriction devices between the two and means to sustain bearing 17 in a central position.

8. In a device for cooling water, the combination of a number of pans having perforated bottoms, a water-pipe discharging into the uppermost pan, a central upright shaft on which they are supported, one below the other with a space between, means to rotate said shaft, a flange 13 near the lower end of the latter, a box 14 which receives it and antifriction devices between the two.

9. In a device for cooling water, the combination of a number of pans having perforated bottoms, a water-pipe discharging into the uppermost pan, a central upright shaft on which they are supported, one below the other with a space between them, a tank which receives the water from the lowermost pan, a water-motor which receives the concentrated discharge from said tank and is driven thereby and operative connection whereby said water-motor is enabled to rotate the upright shaft.

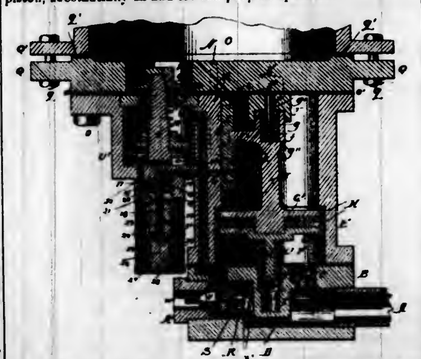
10. In a device for cooling water, the combination of a number of pans having perforated bottoms, a water-pipe discharging into the uppermost pan, a central upright shaft on which they are supported, one below the other with a space between them, a tank 23 which receives the water from the lowermost pan, a water-wheel 25 mounted upon a horizontal shaft 26, a pipe which guides the concentrated discharge from tank 23 upon said water-wheel, operative connection between shaft 26 and the upright pan-supporting shaft whereby the latter is rotated and a tank 32 which receives the cooled water after it has left the water-wheel.

610,947. AIR-BRAKE. HARVEY S. PARK, Chicago, Ill., assignor to the Westinghouse Air Brake Company, Pittsburg, Pa. Filed Mar. 7, 1890. Serial No. 343,046. (No model.)

Claim.—1. The combination in an air-brake mechanism, of a train-pipe, a port leading from the train-pipe into the main-valve piston-chamber, a valve having a vent-passage and controlling said port, a vent-chamber communicating with the train-pipe, a passage from the main-valve piston-chamber to the vent-chamber, a piston in the vent-chamber, and a valve operated by the piston and controlling a vent-passage from the vent-chamber, substantially as set forth.

2. The combination in an air-brake mechanism of a main-valve piston-chamber, a piston in such chamber, a slide-valve carried by the piston and controlling the grading-port, a chamber communicating with the train-pipe, a port between such chamber and the main-valve piston-chamber, a valve with a vent-hole controlling such port, a vent-chamber communicating with the main-valve piston-chamber and the train-pipe chamber, a piston in the vent-chamber, a valve carried by the piston, and a vent-opening controlled by the valve, substantially as and for the purpose specified.

3. The combination in an air-brake mechanism of a train pipe chamber, a port from said chamber to the main-valve piston-chamber, a vented valve controlling such port, a vent-chamber communicating with the train-pipe chamber and the main-valve piston-chamber, a piston in the vent-chamber, a valve carried by the piston, a vent-opening controlled by the valve, and a spring for advancing the piston, substantially as and for the purpose specified.



4. The combination in an air-brake mechanism of a train pipe, a chamber communicating with the train-pipe, a main-valve chamber, a port between the train-pipe chamber and the main-valve chamber, a valve controlling such port, a passage leading from the main-valve chamber, a passage communicating with the passage from the main-valve chamber and with a secondary chamber, a piston in said secondary chamber carrying a valve controlling a passage leading to the brake-cylinder, a passage leading from the connecting passage of the main-valve chamber and the secondary chamber into the secondary chamber back of the piston, and a valve electrically operated, for admitting train-pipe pressure to the brake-cylinder direct, substantially as and for the purpose specified.

5. The combination in an air-brake mechanism of a main-valve chamber, a passage leading from the main-valve chamber to a vent-chamber, a vent-chamber, a piston in the vent-chamber, a valve carried by the piston, a vent-opening controlled by the valve, a passage leading to a secondary chamber from the main-valve chamber, a piston in the secondary chamber, a valve carried by the piston and controlling the passage leading to the brake-cylinder, a passage leading to the secondary chamber back of the piston, and a valve electrically operated for controlling such passage, for admitting train-pipe pressure direct to the brake-cylinder, substantially as specified.

6. The chamber F, passage r' and passage r, in combination with the chamber U, having a piston therein, valve 8, controlling the release of fluid from the train-pipe passage 15, and valve 17, electrically controlled, substantially as and for the purposes specified.

7. The train-pipe A, chamber C, passage D, chamber F and vent-chamber R, in combination with the passage r', passage r, chamber U, having a piston therein, valve 8, controlling the release of fluid from the train-pipe passage 15, and valve 17, electrically controlled, substantially as and for the purposes specified.

8. The chamber U having a piston therein, valve 8, controlling the release of fluid from the train-pipe passage r and port 14 in combination with the passage 15, valve 17, electrically controlled, port 19, passage 20, and passage 22, substantially as and for the purposes specified.

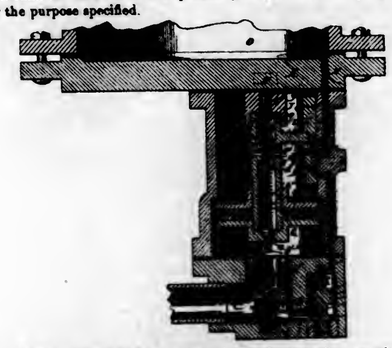
9. The chamber U having a piston therein, valve 8, controlling the release of fluid from the train-pipe port 14, and passage r, in combination with the passage 15, chamber 16, valve 17 with stem 18, port 19, passage 20, plug 21, and passage 22, substantially as and for the purposes specified.

10. The chamber U, having a piston therein, valve 8, controlling the release of fluid from the train-pipe port 14, and passage r, in combination with the passage 15, chamber 16, valve 17 with stem 18, port 19, passage 20, plug 21, passage 22, stationary armature 23, passage 24, chamber 25, and movable armature 26, substantially as and for the purposes specified.

610,948. AIR-BRAKE. HARVEY S. PARK, Chicago, Ill., assignor to the Westinghouse Air Brake Company, Pittsburg, Pa. Filed Mar. 7, 1890. Serial No. 343,047. (No model.)

Claim.—1. The combination in an air-brake mechanism of a vent-chamber communicating with the train-pipe, a piston therein, a passage leading to the vent-chamber from the main-valve chamber, and a passage leading from the brake-cylinder to the main-valve chamber, a main valve, a passage in the main valve connecting the vent-chamber passage and a vent-valve opened by the piston in the

vent-chamber and the brake-cylinder passage, substantially as and for the purpose specified.



2. The combination in an air-brake mechanism of a vent-chamber communicating with the train-pipe, a piston in the vent-chamber having a valve carried by the piston, a vent-opening closed by the valve, a passage between the vent-chamber and the main-valve chamber, a passage between the brake-cylinder and the main-valve chamber, a slide-valve, and a passage in the slide-valve connecting the vent-chamber passage and the brake-cylinder passage, substantially as and for the purpose specified.

3. In an automatic fluid-pressure brake system, the combination with a train-pipe, a brake-cylinder, a triple-valve piston and a supplemental movable abutment, of a passage for releasing fluid from the train-pipe, a release-valve controlling such passage, and operative by variations of fluid-pressure on opposite sides of the movable abutment, and a valve device operative on a reduction of train-pipe pressure to release pressure from one side of the movable abutment, substantially as set forth.

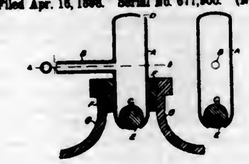
4. In an automatic fluid-pressure brake system, the combination, with a train-pipe, a brake-cylinder, and a triple valve, of a passage for releasing fluid from the train-pipe, a release-valve controlling the passage, a movable abutment for operating the release-valve and which is normally exposed to fluid-pressure on its opposite sides, and a valve device operated by a reduction of train-pipe pressure for releasing pressure from one side of the abutment and thereby opening the release-valve, substantially as set forth.

5. In an automatic fluid-pressure brake system, the combination, with a triple valve, of a release-passage through which fluid under pressure may be released from the train-pipe, a release-valve controlling the passage and operative by variations of pressure on opposite sides of a movable abutment, and a valve device for releasing fluid-pressure from one side of the movable abutment to the brake-cylinder, substantially as set forth.

6. In an automatic fluid-pressure brake system, the combination, with a triple valve, of a release-passage through which fluid may be released from the train-pipe, a release-valve normally closing the release-passage, a movable abutment for operating the release-valve, a passage controlled by the slide-valve of the triple valve and through which fluid under pressure may be released from one side of the movable abutment, and thereby effect opening movement of the release-valve, substantially as set forth.

7. In an automatic fluid-pressure brake system, the combination, with a triple valve, of a release-passage through which fluid may be released from the train-pipe, a release-valve normally closing the release-passage, a movable abutment for operating the release-valve, a passage controlled by the slide-valve of the triple valve and through which fluid under pressure may be admitted to one side of the movable abutment when the triple valve is in normal position, and released from that side when the triple valve is moved by a reduction of train-pipe pressure, substantially as set forth.

610,949. VALVE-STOPPER AND POURING-NOZZLE. ABNER B. POWERS, Denver, Colo., assignor of one-half to Jennie F. Andre, same place. Filed Apr. 16, 1898. Serial No. 677,900. (No model.)



Claim.—1. The combination, a valve-stopper and pouring-nozzle, for bottles, comprising a tube provided with an outlet-opening at the upper end and a circular inlet-opening in the lower end, forming a perfect valve-seat, a ball-valve in the tube, of less diameter than the tube, with a small side tube having an outlet-opening from the large tube, substantially as set forth.

2. In combination a valve-stopper, and pouring-nozzle, having the tube, A, with the small tube, B, the ball-valve C, the outlet-opening, D, the inlet-opening, or valve-seat, E, said tube, A, extending through the tapered cork F, fitting into the bottle G, or having the lower end of the tube, A, tapered so as to fit the internally-tapered bottle-neck, G, as, and for the purposes herein substantially as specified.

610,950. PAPER BOX. HOWARD F. SMITH, Elkhart, Ind. Filed Feb. 15, 1897. Serial No. 623,500. (No model.)



Claim.—1. In a paper box, a bottom A; side pieces B; end pieces C; and means for detachably locking the said side and end pieces; all adapted to permit the box to collapse into a flat form without unlocking or creasing said pieces.

2. In a knockdown paper box, a bottom A; side pieces B provided with flaps B'; end pieces C; and means for detachably interlocking the said flaps with the said end pieces; all adapted to permit the box to collapse into a flat form without disengaging or creasing the said pieces.

3. In a knockdown paper box, a bottom A; side pieces B; flaps B' provided with tongues B^3; and end pieces C provided with slots C^3 for receiving the tongues B^3; all adapted to permit the box to collapse into a flat form without disengaging or creasing the said pieces.

4. In a knockdown paper box, a bottom A; side pieces B; flaps B' cut along their outer edges B^3 at an angle of approximately forty-five degrees and provided with tongues B^3; and end pieces C provided with the slots C^3, disposed at an angle of approximately forty-five degrees to the base of the said end pieces, adapted to receive the tongues B^3; all adapted to permit the box to collapse into a flat form without disengaging or creasing said pieces.

5. In a knockdown paper box, a bottom A; side pieces B; flaps B' integral with the said sides, cut along their outer edges B^3 at an angle of approximately forty-five degrees and provided thereon with tongues B^3; and end pieces C beveled along their edges C' and provided with slots C^3 disposed at an angle, of approximately forty-five degrees to the base of said end pieces adapted to receive the tongues B^3; all adapted to permit the box to collapse into a flat form without disengaging or creasing said pieces.

6. In a knockdown paper box, the bottom A; the sides B; the flaps B' each cut along its outer edge at an angle of approximately forty-five degrees and carrying thereon a tongue B^3 provided with hooks *b* and *b'* at opposite ends thereof; and the end pieces C, each beveled along its edges, as at C', and provided with slots C^3 comprising a slit *c* formed at an angle of approximately forty-five degrees to the base of the end piece, curved recesses *c'* and c^4 at opposite ends and upon opposite sides of the slit *c*, and a diagonal branch c^4 at the lower end of said slit; all adapted to permit the box to collapse into a flat form without disengaging or creasing said pieces.

7. In a paper box, a bottom A; side pieces B; end pieces C; and means for detachably locking the said side and end pieces; in combination with a cover D hinged to one of the said side pieces B; all adapted to permit the box to collapse into a flat form without unlocking or creasing said pieces.

8. In a paper box, a bottom A; side pieces B; end pieces C; and means for detachably locking the said side and end pieces; in combination with a cover D hinged to one of the said side pieces B; end pieces E; the side piece F; and means for locking the said side piece and end pieces; all adapted to permit the box to collapse into a flat form without unlocking or creasing said pieces.

9. In a knockdown paper box, a bottom A; side pieces B; end pieces C; and means for detachably locking the said side and end pieces; all adapted to collapse into a flat form for shipment without unlocking or creasing said pieces; in combination with a filler G also adapted to collapse into a flat form, and to hold the parts of the box in position when the box is opened up and the filler inserted therein.

610,951. WHIFFLETREE ATTACHMENT. CHARLES W. SNYDER, Port Gibson, N. Y. Filed June 23, 1898. Serial No. 684,264. (No model.)



Claim.—1. In combination with a whiffletree formed or provided with perforated ears projecting from its outer end, a shield B, having a transversely-arranged plate secured across its inner face adjacent to its rear end, said plate being provided with perforated ears to engage over and aline with the ears on the whiffletree, a bolt projected through the ears to pivotally fasten the shield to the whiffletree, and a trace-keeper secured to the inner face of the shield adjacent to its outer end, substantially as and for the purposes set forth.

2. In combination with a whiffletree formed or provided at one end with upper and lower perforated ears, a shield B, made tapering from the rear to the front, a plate secured to the inner face of the shield formed with perforated ears to set over and aline with the ears on the whiffletree, a pivot pin or bolt to connect the ears and permit the shield to swing or move on the plane assumed by the trace, and a trace-keeper on inner face of the shield at its front end, substantially as and for the purpose set forth.

3. The combination with a whiffletree, of a shield composed of a flat piece of material having one end pivotally connected to the end of the whiffletree, and a trace-keeper on the inner face of the shield at its front end, substantially as described.

610,952. LEVEL. WILLIAM STRITTLER and THOMAS M. WILHELM, Allentown, Pa. Filed Oct. 11, 1897. Serial No. 654,820. (No model.)



Claim.—1. A leveling instrument having a rotary index mounted to traverse a graduated scale, a bubble-glass having an attached bracket mounted upon and coaxially with the index, and depending from the axis thereof for angular adjustment in a plane parallel with that of the index and independently of the same, and a set-screw carried by and arranged upon the central longitudinal line of the index and engaging a slotted ear of said bracket, substantially as specified.

2. A leveling instrument having a bar provided in opposite sides with recesses, one of which is open-sided, and the other of which is interiorly visible, an index mounted in the interiorly-visible recess to traverse a graduated scale and carrying a bubble-glass, the spindle of said index extending into said open-sided recess, and a spring-pressed finger-hold carried by the spindle of the index in the open-sided recess to provide for adjustment of the index by exposed means, substantially as specified.

3. A leveling instrument having a bar provided with a graduated scale, a pointer carrying a bubble-glass and mounted to traverse said scale, the pointer having a spindle, a finger-hold fitted upon the spindle of the index to facilitate rotary adjustment thereof, and a spring cooperating with the finger-hold to maintain the index in frictional contact with the surface of the scale, substantially as specified.

4. A leveling instrument having a bar provided in opposite sides with recesses, a scale-disk removably fitted in one of said recesses and a transparent wall removably fitted in the outer side of said recess, and held at an interval from the scale-disk by an interposed spacing-ring, detachable means, consisting of a ring countersunk in the surface of the bar, and overlapping said transparent wall for holding it in place, an index carrying a bubble-glass and mounted to traverse the scale-disk, and a finger-hold arranged in the opposite open-sided recess and connected with the index to facilitate adjustment thereof, substantially as specified.

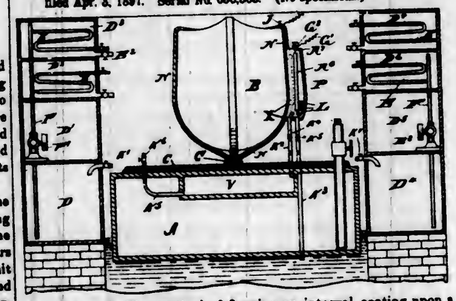
610,953. PYROXYLIN COMPOUND. JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 7, 1898. Serial No. 672,810. (No specimens.)

Claim.—1. A new composition of matter consisting of pyroxylin and a salt of hypophosphorous acid, substantially as described.

2. A new composition of matter consisting of pyroxylin, a solvent of the same, and a salt of hypophosphorous acid, substantially as described.

3. A new transparent composition of matter containing pyroxylin and hypophosphite of sodium.

610,954. METHOD OF FORMING INTEGRAL METALLIC COATINGS UPON SURFACES. EDDY T. THOMAS, New York, N. Y., assignor to Harold Binney, trustee, same place. Original application filed Apr. 27, 1892, Serial No. 430,676. Divided and this application filed Apr. 3, 1897. Serial No. 630,583. (No specimens.)



Claim.—1. The method of forming an integral coating upon a surface, which consists in depositing a layer of metal upon a portion of such surface of predetermined size and shape, and thereafter depositing upon the edge of such previously-deposited section and upon the adjoining uncoated portion of the surface, another section of predetermined size and shape, forming a plurality of sections overlapped in a definite and regular manner, substantially as set forth.

2. The method of forming an integral metallic coating upon a vertical or inclined surface, which consists in confining a body of liquid electrolyte laterally against a limited portion of such surface of predetermined size and shape, passing a current from an anode not in contact with the said surface through the electrolyte to the said surface, thereby depositing a section of plate, and thereafter confining liquid electrolyte against a limited unplated portion of the said surface and a portion of the edge of the previously-deposited section, both of predetermined size and shape and passing the current, as aforesaid, from the electrolyte partly into such unplated portion and partly into the edge of the previously-deposited section, thereby forming a continuous plating overlapping in definite and regular manner, substantially as set forth.

610,955. SEAL. EMIL TYDEN, Chicago, Ill. Filed Nov. 11, 1897. Serial No. 658,158. (No model.)



Claim.—1. In a seal-lock, a securing device and a device whose rupture or removal is necessary in order to unfasten the securing device, said lock comprising two relatively-movable parts and bearing on said parts a serial number or other arbitrary succession of characters, one or more of which is concealed at one position, and disclosed at another, in the range of relative movement of said parts.

2. In a seal-lock, a securing device and a device whose rupture or removal is necessary in order to unfasten the securing device, said lock comprising two relatively-movable parts and bearing on said parts a serial number or other arbitrary succession of characters, the range of relative movement of the parts and the location of the several characters thereon being such that at one position in said relative movement, a portion of said characters is concealed, and at another position in said movement, said portion is disclosed and another portion is concealed.

3. In a seal-lock, a securing device and a sealing or locking device adapted to retain it and yet allow it some range of movement, the lock bearing a serial number or other arbitrary succession of characters on one of the relatively-movable parts, the other of said parts

being adapted at one position in the range of movement to conceal part of the characters.

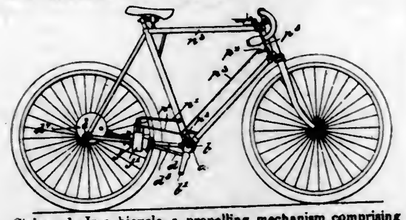
4. In a seal-lock, a securing device and a sealing or locking device adapted to retain it and yet allow it some range of movement, the lock bearing a serial number or other arbitrary succession of characters on one of the relatively-movable parts, the other of said parts being adapted to conceal part of the characters, and at another position to disclose the same and conceal the other part of the characters.

5. In a seal-lock, in combination with a body or case, a securing device adapted to be passed through the body or case and appear beyond it at both sides; a suitable locking or sealing device whose rupture or removal is necessary in order to disengage the securing device, and a serial number or other abitrary succession of characters, of which one portion is in position to appear at one side of the seal body or case and another portion is in position to appear at the other side, said securing device having a range of movement with respect to the case adapted to conceal at one limit one or more of the characters at one side, and at another limit one or more of the characters at the other side of the body or case.

6. In a seal-lock, in combination with the body or case and a securing device, an elastically-operating catch lodged within the seal-chamber adapted to react into locking position, and a detainer which holds the catch under tension ready to react upon being released, one of said parts being movable relatively to the other, and adapted to be actuated by the insertion of the securing device to effect such release.

7. In a seal-lock, in combination with a body or case and a securing device; an elastically-operating catch in the form of a ring and abutments on the case which engage the same back of its ends to hold it with its ends spread apart and under tension ready to react into closed and locking position upon being released from the abutments, the securing device being adapted, upon insertion, to encounter the ring to effect such release.

610,956. PROPELLING MECHANISM FOR BICYCLES OR SIMILAR VEHICLES. ZACHARIAH T. UHL, Oconta, Pa. Filed Feb. 25, 1898. Serial No. 671,546. (No model.)



Claim.—1. In a bicycle, a propelling mechanism comprising a crank-shaft, crank-arm, pedals for operating said crank-shaft, a connecting-rod pivotally connected at one end to the crank-arm, an internally-toothed ring carried by the connecting-rod and adapted to drive the rear axle of the vehicle, a cylinder mounted to oscillate in the frame of the vehicle, and traversed by the connecting-rod, a piston formed on said connecting-rod, and ports leading from the cylinder to the frame of the bicycle or other reservoir for storage of air compressed in said cylinder, substantially as and for the purposes described.

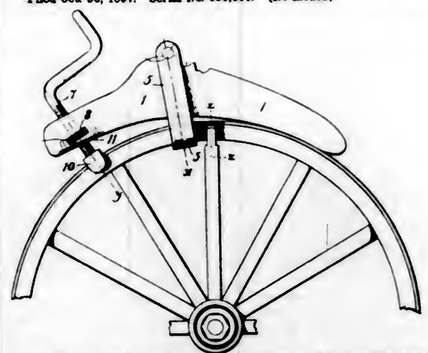
2. In a bicycle, in combination with the propelling mechanism consisting of the crank-shaft, connecting-rod, internally-toothed ring and driven shaft, of an oscillating cylinder traversed by said rod, a head or piston carried by said connecting-rod and adapted to traverse the cylinder during the operation of the propelling mechanism, ports leading from the cylinder to the frame or other reservoir to convey the compressed air from the cylinder, a valve controlling said ports and mechanism for operating said valve whereby the compressed air in said frame or reservoir may be utilized at will either as a motive power to operate the propelling mechanism or as a brake for said propelling mechanism, substantially as and for the purposes described.

610,957. PROCESS OF PRODUCING FIBROUS MATERIAL FROM PEAT. KARL A. ZECHÖRNER, Vienna, Austria-Hungary. Filed July 23, 1897. Serial No. 645,638. (No specimens.)

Claim.—1. The process of producing paper-stock from peat, which consists in reacting upon the same with a solution of a caustic alkali of normal or below normal temperature and of a strength not exceeding two per cent. under a pressure greater than atmospheric pressure for from about ten to fourteen hours, removing the lye from the fibrous material and reacting upon the latter with a solution of a hypochlorite of an alkali of normal or below normal temperature and of a strength not exceeding 2° Baumé under a pressure higher than atmospheric pressure, for the purpose set forth.

2. The process of producing paper-stock from peat, which consists in reacting upon the same with a solution of a caustic alkali of normal or below normal temperature and of a strength not exceeding two per cent., under a pressure greater than atmospheric pressure, repeating the operation with successively weaker lyes, then removing the lye from the fibrous material and reacting upon the same with a solution of a hypochlorite of an alkali of normal temperature and of a strength not exceeding 2° Baumé under a pressure higher than atmospheric pressure, for the purpose set forth.

610,958. TIRE-TIGHTENER. STEPHEN R. BURKE, Edon, Ohio. Filed Oct. 30, 1897. Serial No. 656,863. (No model.)



Claim.—1. In a tire-tightener, a lever adapted to extend lengthwise of the tire and to have its fulcrum on the tire to one side of the weight or member to be lifted and the power end of the lever at the opposite side of said point, means to pass beneath the felly and connect the lever thereto, and means connected with the lever and pressing against the tire for lifting the power end of the lever, substantially as and for the purposes described.

2. In a tire-tightener, the combination of a lever extending lengthwise of the tire and having its fulcrum to one side of the weight or member to be lifted, means applied to the opposite end of the lever for lifting the same and adapted to bear against the tire, and a yoke or clevis adapted to pass beneath the felly and having a part thereof resting on top of the lever, substantially as and for the purposes described.

3. In a tire-tightener, the combination of a lever adapted to bear at one point against the tire, power-applying means connected to the opposite end of the lever and adapted to press against the tire, and a yoke or clevis adjustable lengthwise of the lever and adapted to pass beneath the felly, substantially as and for the purposes described.

4. In a tire-tightener, the combination of a lever of varying thicknesses between its ends adapted to bear at one point against the tire, power-applying means connected to the opposite end of the lever and adapted to press against the tire, and a clevis or yoke adjustable lengthwise of the lever and adapted to pass beneath the felly, substantially as and for the purposes described.

5. In a tire-tightener, the combination of a lever adapted to bear at one point against the tire and formed on its upper side with stepped seats, power-applying means connected to one end of the lever and adapted to press against the tire, and a yoke or clevis adapted to pass beneath the felly and at its upper end provided with means to fit in the different seats, substantially as and for the purposes described.

6. In a tire-tightener, the combination with a lever, of a yoke or clevis fitted to the lever between its opposite ends and adapted to pass beneath the felly, means applied to one end of the lever to one side of the clevis for applying the power, and means to prevent that end of the lever slipping sidewise, substantially as and for the purposes described.

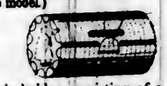
7. In a tire-tightener, the combination with a lever, of a yoke or clevis fitted thereto and adapted to pass beneath the felly, and an operating-screw applied to one end of the lever and adapted to bear upon the tire to adjust the lever, substantially as and for the purposes described.

8. In a tire-tightener, the combination with a lever, of a yoke or clevis fitted thereto and adapted to pass beneath the felly, a bur or nut connected to one end of the lever, and an adjusting-screw working in said bur or nut and adapted to bear upon the tire to adjust the lever, substantially as and for the purposes described.

9. In a tire-tightener, the combination with a lever, of a yoke or clevis fitted thereto and adapted to pass beneath the felly, an adjusting-screw applied to one end of the lever, and a plate at the lower end of the screw and adapted to fit upon the tire and lap the sides thereof, substantially as and for the purposes described.

10. A tire-tightener, comprising a lever adapted to extend lengthwise of the tire and having at its top stepped seats, a yoke or clevis adapted to pass beneath the felly and provided at its upper end with a pin to fit in the stepped seats, a bur or nut applied at the power end of the lever, and an adjusting-screw operating in said bur and adapted to bear upon the tire to operate the lever, substantially as and for the purposes described.

610,959. COIN-HOLDER. DANIEL J. CARLE, Pittsburg, Pa., assignor to Frank J. Kleber, Allegheny, Pa. Filed Oct. 28, 1897. Serial No. 656,686. (No model.)

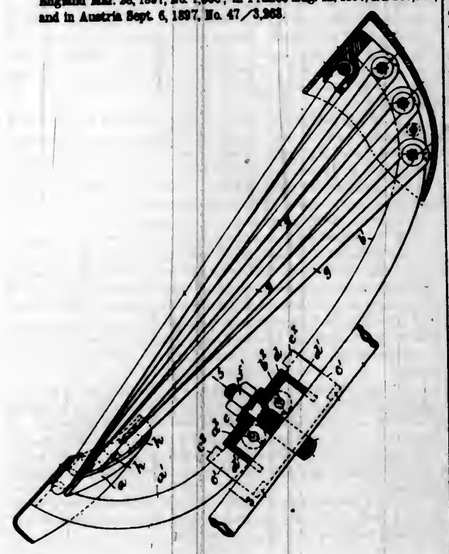


Claim.—1. A coin-holder consisting of a rectangular metallic plate adapted to be bent around the coins into cylindrical form, and provided on the sides forming the ends of the holder with extensions or scallops adapted to be bent inwardly against the end coins, the plate being cut away so as to form at the bottoms and between said extensions or scallops recesses inside the bending-line for the purpose of preventing buckling of the metal at the bending-line of the scallops.

2. A coin-holder consisting of a metallic plate adapted to be bent around a package of coins into cylindrical form, provided with individual separated extensions at each end adapted to be bent inwardly against the end coins, with intervening concave recesses between the extensions inside the bending-line for the purpose of preventing buckling of the metal at the bending-line of the extensions, a securing-tang projecting from one side, a receiving-slot for the tang at the opposite side, and an auxiliary slot immediately back of the tang overlapping the same at each side thereof, substantially as set forth.

3. A coin-holder consisting of a rectangular plate of metal of a length slightly less than the circumference of the coins designed to be contained therein, having a projecting tang at one side, a receiving-slot for the tang in the other side, and an auxiliary slot immediately adjacent to the tang and overlapping the same at each side thereof so as to form in effect a continuation of the space between the sides of the holder interrupted by the tang when the holder is placed around the coins, whereby the coins may be counted without disturbing the package.

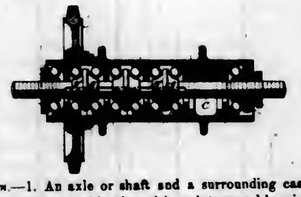
610,960. SPRING-SEAT. CHARLES A. CHAPMAN, Horley, England, assignor to Alfred Warren and Charles Fippard, same place. Filed Sept. 20, 1897. Serial No. 653,405. (No model.) Patented in England Mar. 26, 1897, No. 7,066; in France Aug. 12, 1897, No. 269,563, and in Austria Sept. 6, 1897, No. 47/3,963.



Claim.—1. In a saddle, the combination of front and back plates, supports for the plates, a joint between the supports so that the plates can move apart, pulleys pivoted to the plates and springs placed around the pulleys.

2. In a saddle, the combination of front and back plates, supports for the plates, pivots for the supports, stops limiting the travel of the supports, pulleys pivoted to the plates, and india-rubber cord laced around the pulleys.

610,961. BALL-BEARING. PRESTON DAVIES, London, England. Filed Aug. 15, 1896. Serial No. 602,832. (No model.) Patented in England June 12, 1894, No. 11,379, and in France May 8, 1896, No. 247,246.



Claim.—1. An axle or shaft and a surrounding casing, one of which is rotary, in combination with an interposed bearing comprising an annular member arranged within the casing and surrounding the axle, mounted upon one of said parts so as to rotate therewith and out of contact with the other, free to move longitudinally of the bearing, and having two inclined bearing-surfaces, one on each side of its diametric center, two other annular members, one on each side of said first-mentioned member, mounted upon that part with which said first-mentioned member is out of contact, and each having an inclined bearing-surface corresponding with and overlapping the adjacent bearing-surface on said first-mentioned member, bearing-balls running in the two channels formed by the four bearing-surfaces, and means whereby one of the two last-named members may be closed up toward the others to simultaneously adjust the bearing-surfaces to take up wear of both sets of bearing-balls.

2. An axle or shaft and a surrounding casing, one of which is rotary, in combination with an interposed bearing comprising two annular members arranged within the casing and surrounding the axle, one being mounted on the casing to move freely longitudinally and out of contact with the axle, and the other mounted on the axle to move freely longitudinally and out of contact with the casing, and both of said members having inclined ball-bearing surfaces, two other annular members one at each side of the pair of first-mentioned members and respectively mounted upon the axle and casing, and each having an inclined ball-bearing surface, bearing-balls running in the channels formed by the bearing-surfaces, and means whereby one of the two last-named members may be closed up toward the others to simultaneously adjust the bearing-surfaces of all the balls to take up wear.

3. An axle or shaft and a surrounding casing, one of which is rotary, in combination with an interposed bearing comprising annular members arranged within the casing and surrounding the axle and alternately connected with the casing and out of contact with the axle, and connected with the axle and out of contact with the casing, said members having inclined ball-bearing surfaces and being free to move longitudinally upon the part with which they are connected, a nut or abutment having a ball-bearing surface mounted upon one of said parts at one end of such assemblage of members, an adjusting-nut having also a ball-bearing surface at the other end thereof, and bearing-balls running in the several channels between the bearing-surfaces.

4. The combination of two parts, viz: an axle or shaft and a surrounding casing, one of which is rotary, and an interposed bearing comprising annular members arranged within the casing and surrounding the axle and respectively connected with the casing and out of contact with the axle, and with the axle and out of contact with the casing, said members having inclined ball-bearing surfaces and being free to move longitudinally upon the part with which they are connected, two abutments upon one of said parts, two other abutments upon the other of said parts, also having ball-bearing surfaces, and cooperating with the first-named abutments, bearing-balls running in channels formed by bearing-surfaces upon the abutments and other members of the bearing, and means whereby one of said abutments located at one end of the bearing may be adjusted to take up wear throughout the bearing.

5. An axle or shaft and a surrounding casing, one of which is rotary, in combination with an interposed bearing comprising annular members arranged within the casing and surrounding the axle and respectively connected with the casing and out of contact with the axle, and with the axle and out of contact with the casing, said

members having inclined ball-bearing surfaces and being free to move longitudinally upon the part with which they are connected, bearing-balls running between the bearing-surfaces of adjacent members, abutments for restricting endwise movement of the axle and casing, and means for adjusting the bearing, to take up wear throughout it, at one end of the bearing.

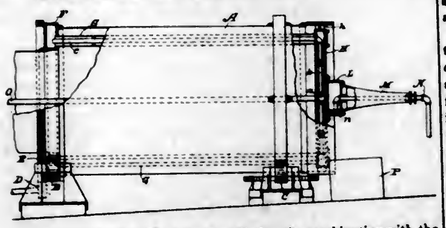
6. An axle or shaft and a surrounding casing, one of which is rotary, in combination with an interposed bearing comprising an annular member arranged within the casing and surrounding the axle, mounted upon one of said parts so as to rotate therewith, and out of contact with the other, free to move longitudinally of the bearing, and having two inclined bearing-surfaces, one on each side of its diametric center, two other annular members, one on each side of said first-mentioned member, mounted upon that part with which said first-mentioned member is out of contact, and each having an inclined bearing-surface corresponding with and overlapping the adjacent bearing-surface on said first-mentioned member, bearing-balls running in the two channels formed by the four bearing-surfaces, means whereby one of the two last-named members may be closed up toward the other to simultaneously adjust the bearing-surfaces to take up wear of both sets of bearing-balls, and abutments that restrict endwise movement of the axle and casing.

7. An axle or shaft and a surrounding casing, one of which is rotary, in combination with an interposed bearing comprising two annular members arranged within the casing and surrounding the axle, one being mounted on the casing to move freely longitudinally and out of contact with the axle, and the other mounted on the axle to move freely longitudinally and out of contact with the casing, and both of said members having inclined ball-bearing surfaces, two other annular members one at each side of the pair of first-mentioned members respectively mounted upon the axle and casing respectively, and each having an inclined ball-bearing surface, bearing-balls running in the channels formed by the bearing-surfaces, means whereby one of the two last-named members may be closed up toward the others to simultaneously adjust the bearing-surfaces of all the balls to take up wear, and abutments fixed respectively upon the axle and casing that restrict endwise movement of the axle and casing.

8. An axle or shaft and a surrounding casing, one of which is rotary, in combination with two annular abutments fixed to one of said parts and out of contact with the other, and a ball-bearing comprising annular members respectively in contact with the casing and out of contact with the axle and in contact with the axle and out of contact with the casing, and having inclined ball-bearing surfaces, two end nuts or abutments, one at each end of the bearing and bearing-balls running between adjacent bearing-surfaces, annular members of the bearing being free to move longitudinally on the adjustment of one of said nuts to adjust the bearing-surfaces throughout the bearing.

9. The combination, substantially as set forth, of a fixed shaft or axle, a rotary casing having internal annular abutment-flanges, and a ball-bearing comprising annular members having inclined ball-bearing surfaces connected respectively with the casing and out of contact with the axle and with the axle and out of contact with the casing, two of said members being in contact with said abutment-flanges, abutments or nuts on the axle at each end of the bearing, and bearing-balls running between adjacent bearing-surfaces, annular members of the bearing being capable of moving freely longitudinally, whereby on the adjustment of one of said nuts the bearing-surfaces throughout the bearing are adjusted.

610,962. STEAM-DRIER. HAROLD P. DYER, Cleveland, Ohio. Filed Jan. 24, 1898. Serial No. 667,743. (No model.)



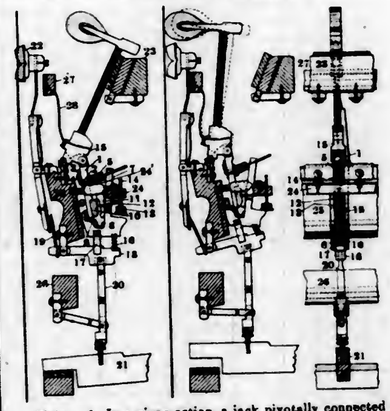
Claim.—1. In a steam-drying cylinder, the combination with the front head and a steam-supply therefor, of the rear head H, consisting of a hollow annular rim divided into compartments, steam tubes connecting said compartments to the front head, hollow arms and apertures connecting the rear head with a drum-shaped water-box attached to its hub, substantially as set forth.

2. The combination in a cylindrical steam-drier with the front head and a steam-supply therefor, of the hollow rear head H, the water-box L, attached to and communicating with the arms and compartments of the rear head, the hanger and stuffing-box M, fixed to the water-box, and the drain-pipe N, with its downward projection n, in the water-box, substantially as set forth.

3. The combination of the steam-pipe O, placed axially in the cylinder and communicating with the chamber *a*, in the hub of the rear head, with the branch pipes *b*, connecting with the chamber *a*, and passing through the hollow arms of the rear head, and the pipes *c*, within the tubes or steam-spaces of the cylinder, opening into the front head F, substantially as described.

4. The self-draining head H, consisting of a hollow annular rim divided into compartments communicating with the steam tubes or spaces of the cylinder, and connected by hollow arms and apertures with a drum-shaped water-box attached to its hub, substantially as set forth.

610,968. PIANO-ACTION. ADOLPH FERBER, Chicago, Ill. Filed Oct. 21, 1897. Serial No. 655,920. (No model.)



Claim.—1. In a piano-action, a jack pivotally connected at one end, to the hammer-butt; in combination with a jack-bed having thereon a shoulder for engaging the other end of the jack; a catch or hook secured to said jack-bed, for pulling the jack forward; and a stop secured to said jack-bed for pushing the jack back with reference to said shoulder; substantially as described.

2. In a piano-action, a jack pivotally connected at one end, to the hammer-butt and having a shoulder 10 near its other end; in combination with a jack-bed having thereon a shoulder for engaging said other end of the jack; a catch or hook secured to said jack-bed for pulling the jack forward; a stop secured to the jack-bed for pushing the jack back with reference to the shoulder on the jack-bed; and a catch 11, for engaging the shoulder 10; substantially as described.

3. In a piano-action, a jack pivotally connected at one end, to the hammer-butt; in combination with a jack-bed having thereon a shoulder for engaging the other end of the jack; a catch or hook secured to said jack-bed for pulling the jack forward; a stop secured to said jack-bed for pushing the jack back with reference to said shoulder; and a rocker 18 pivotally connected to the jack-bed, for actuating the same; substantially as described.

4. In a piano-action, a jack pivotally connected at one end, to the hammer-butt and having a shoulder 10 near its other end; in combination with a jack-bed having thereon a shoulder for engaging said other end of the jack; a catch or hook secured to said jack-bed for pulling the jack forward; a stop secured to the jack-bed for pushing the jack back with reference to the shoulder on the jack-bed; a catch 11, for engaging the shoulder 10; and a rocker 18 pivotally connected to the jack-bed, for actuating same; substantially as described.

5. In a piano-action, a jack having a combined swinging and longitudinal movement, and having thereon a shoulder 10; in combination with a tilting jack-bed, independent of the jack, and having thereon a hook for pulling the jack forward, a catch for engaging the shoulder 10 at the end of the forward travel of the jack, and a stop for pushing said jack free from the catch; substantially as described.

6. In a piano-action, a jack-bed having thereon the upward extension 7 with the hook 4 and stop 5 adjustably secured thereto, substantially as and for the purposes specified.

7. In a piano-action, a jack-bed having thereon the upward extension 7 with the hook 4 and stop 5 adjustably secured thereto and the jack-catch 11 secured thereto, substantially as and for the purposes specified.

8. In a piano-action, a jack-bed having thereon the upward extension 7 with the hook 4 and stop 5 secured thereto, and the jack-catch 11 adjustably secured thereto, substantially as and for the purposes specified.

9. In a piano-action, a jack-bed having thereon the shoulders 8 and 9, and the upward extension 7 with the hook 4 and stop 5 adjustably secured thereto, substantially as and for the purposes specified.

10. In a piano-action, a jack-bed having thereon the shoulders 8 and 9, and the extension 7 with the hook 4, and stop 5 and jack-catch 11, secured thereto, substantially as and for the purposes specified.

11. In a piano-action, a jack-bed having thereon the shoulders 8 and 9, and the upward extension 7 with the hook 4, stop 5 and jack-catch 11 adjustably secured thereto, substantially as and for the purposes specified.

12. In a piano-action, a jack-bed having thereon the shoulders 8 and 9, and the upward extension 7 with the hook 4 and stop 5 secured thereto, substantially as and for the purposes specified.

13. In a piano-action, a jack-bed having thereon the shoulders 8 and 9, and the upward extension 7 with the jack-catch 11 secured thereto; in combination with a rocker 18 pivotally secured to the jack bed, for actuating same; substantially as and for the purposes specified.

14. In a piano-action, a jack-bed having thereon the shoulders 8 and 9, and the upward extension 7 with the hook 4, stop 5 and jack-catch 11, secured thereto; in combination with a rocker 18 pivotally secured to the jack-bed, for actuating same; substantially as and for the purposes specified.

15. In a piano-action, a jack-bed having thereon the shoulders 8 and 9, and the upward extension 7 with the hook 4, stop 5 and jack-catch 11 adjustably secured thereto; in combination with a rocker 18 pivotally secured to the jack-bed, for actuating same; substantially as and for the purposes specified.

16. In a piano-action, a jack pivotally connected to the hammer-butt; in combination with means for imparting a longitudinal movement to the jack, in the direction of the hammer-butt; a hook or catch, independently of which, said jack is longitudinally movable, for simultaneously imparting a lateral movement to said jack; and means, independent of the hammer-butt; directly engaging the jack, at the end of said lateral movement, for limiting said longitudinal movement; substantially as described.

610,964. COMPOUND FOR RENDERING SUBSTANCES FIREPROOF. HUGO GALLISOWSKY, Long Beach, Miss. Filed Jan. 13, 1897. Serial No. 619,100. (No specimens.)

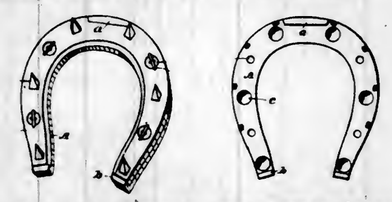


Claim.—1. A compound for rendering combustible substances fireproof which consists of magnesium oxid, magnesium chlorid, boracic acid and sal-ammoniac, substantially as described.

2. The herein-described fireproofing compound which consists of the following ingredients in substantially the following proportions, to wit: magnesium oxid one and one-half pounds, magnesium chlorid one and one-fourth pints, boracic acid one-half pint, and sal-ammoniac one-fouth pint.

610,965. COMBINATION-HORSESHOE. CHARLES H. GREENWELL, Indianapolis, Ind. Filed Jan. 27, 1898. Serial No. 668,155. (No model.)

Claim.—1. An ice-shoe comprising the upper or shoe proper having the screw-threaded holes, the sole or detachable member having the bolt-holes registering with said threaded holes, the retaining-bolts in said holes and having slotted heads the bolt-locks consisting each of metallic wire inserted in the slot of the screw-head and also inserted at each end thereof into an angular hole in said detachable member adjacent to said bolt-head, and the removable spikes each having a head interposed between said shoe proper and said sole and in a suitable recess, substantially as shown and described.



2. In a horseshoe, the combination of the upper or shoe proper having the screw-threaded holes, the sole or auxiliary shoe having the bolt-holes registering with said threaded holes and extending as an integrally-formed member from the toe to both heels of said upper shoe and interlocking with said toe and said heels, retaining-bolts in said holes, bolt-locks to prevent said bolts from turning in said holes, and the removable spikes each inserted in a suitable hole in said sole and having a head interposed between said upper shoe and said sole and in a suitable recess, substantially as shown and described.

3. In a horseshoe, the combination of the upper or shoe proper adapted to be secured to the hoof and having the toe and heel calks, the screw-threaded holes therein, the detachable sole or part adapted to extend between said toe and heel calks and having the recess engaging said toe-calk at its back and both ends and also having the bolt-holes registering with said screw-threaded holes, the connecting-bolts in said holes, the spike-holes in said sole having enlarged tapering or countersunk inner ends, the spikes in said holes and having broad heads to provide enlarged bearing-surface against said upper shoe, said spikes being inserted in said tapering holes, substantially as shown and described.

4. In a horseshoe, the combination of the shoe proper having the detachable sole, the spikes inserted in suitable holes in said sole and entering from the back thereof, said spikes being provided each with a head interposed between said shoe and said sole and retained in a suitable recess therein, the threaded connecting-bolts inserted in suitable holes, the slot in the top of each of said bolts, the bolt-lock in said slots and the holes in the front of said sole into which the ends of said lock are forced and secured, substantially as shown and described

5. In a horseshoe, the combination of the shoe proper having the screw-threaded vertical bolt-holes, the sole or detachable part formed as a continuous member to conform to the contour of said shoe proper and interlocking therewith at the toe and heels thereof, bolt-holes in said sole registering with said screw-threaded holes, the spike-holes in said sole, removable spikes in said spike-holes, and retaining-bolts in said bolt-holes, substantially as shown and described.

6. In a horseshoe, the combination of the upper or shoe proper having the screw-threaded holes, the sole or auxiliary shoe having bolt-holes registering with said threaded holes and provided with two angular holes disposed at opposite sides of each of said bolt-holes and extending from the outer face of said sole, the retaining-bolts in said bolt-holes and having each a slotted head, the ductile wire in the slot of said head and having ends inserted in said angular holes whereby said bolt is locked to said sole, and the removable spikes retained by said sole, substantially as shown and described.

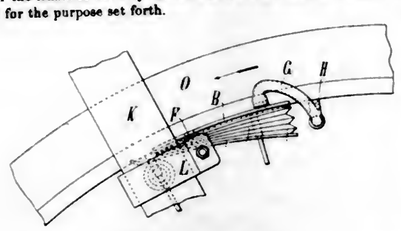
7. In a horseshoe, the combination of the upper or shoe proper provided with a series of nail-holes and provided also with a series of screw-threaded bolt-holes, the sole or auxiliary shoe having a series of bolt-holes registering with said screw-threaded holes and extending as a continuously-formed member from the toe to both heels of said shoe proper and interlocking with said toe and said heels, a series of spike-holes in said sole and removable spikes in said spike-holes, and retaining-bolts in said bolt-holes whereby said sole is detachably secured to said shoe proper, substantially as shown and described.

8. In a horseshoe, the combination of the upper or shoe proper having the screw-threaded bolt-holes, the sole or auxiliary shoe having the bolt-holes registering with said screw-threaded holes and extending as a continuously-formed member from the toe to both heels of said shoe proper and interlocking with said toe and said heels, spike-holes each having an enlarged upper or inner end, removable spikes in said spike-holes and having each a head retained in said enlarged end, and retaining-bolts in said bolt-holes, substantially as shown and described.

610,966. MEANS FOR INFLATING PNEUMATIC TIRES. JOHANN HEINANN, Cologne-Bayenthal, Germany. Filed July 16, 1898. Serial No. 686,116. (No model.)

Claim.—In pneumatic tires for bicycles the combination of a

plate B fixed to the inside of the tire, a hinged plate C both being connected by folded sides D to form wedge-shaped bellows, tubes G and H leading from the bellows to the interior of the tire with rollers M on pins N of brackets L, the latter being fixed adjustably to stays K of the frame of the bicycle, the whole as described and illustrated and for the purpose set forth.

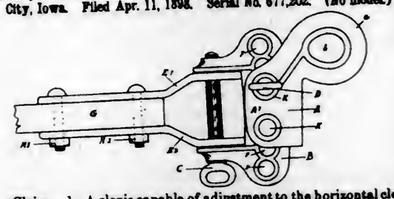


610,967. SPRING-CLASP. GEORGE HILL, Ledbury, England. Filed Sept. 23, 1897. Serial No. 653,710. (No model.)



Claim.—A clip consisting of a piece of elastic material bent approximately to an N shape; a support attached to one of the limbs; a pivoted locking-piece carried by said support and having a prolongation for the purpose of bringing the clipping ends together when the locking-piece is operated, substantially as described and illustrated herein.

610,968. CLEVIS FOR PLOWS. CHARLES A. JOHNSON, Sioux City, Iowa. Filed Apr. 11, 1898. Serial No. 677,202. (No model.)



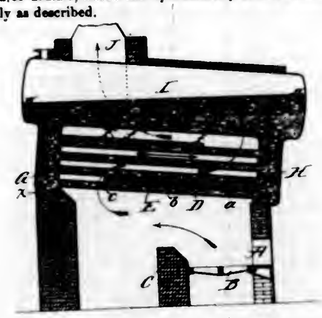
Claim.—1. A clevis capable of adjustment to the horizontal clevis of a plow by means of forked arms embracing said clevis and capable of being secured thereto by pins passing through openings in said arms and said horizontal clevis, another portion of the said clevis extending diagonally forward from said arms and having an opening therein for the insertion of a hook or other clevis connecting with the whiffletrees, substantially as described.

2. A clevis A, having forked arms, A' and A^2, adjustable to the horizontal clevis on the front of a plow, said arms having openings corresponding to said openings in said horizontal clevis, a pin, D, adapted to secure said clevis, A, to said horizontal clevis by insertion in said openings, a rounded portion, *a*, of said clevis, A, extending diagonally forward from said arms and having an opening, *b*, therein for the insertion of a hook or other clevis, substantially as described.

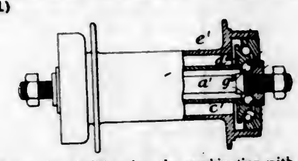
610,969. BOILER. EDWARD D. MEIER and HENRY G. TIDEMANN, St. Louis, Mo. Filed Mar. 14, 1896. Serial No. 673,747. (No model.)

Claim.—1. The herein-described arrangement of a subhorizontal water-tube boiler, said boiler comprising a drum, front and back water-legs, opening directly into the drum, and water-tubes opening at their ends into the water-legs, said water-tubes being inclined upwardly and rearwardly, the lower ends of said tubes being over the fire-box where the greatest heat exists, whereby, when steam is formed in said tubes, it travels rearwardly through the tubes, and passes upwardly through the rear water-leg and directly into the drum, substantially as described.

2. The herein-described arrangement of a subhorizontal water-tube boiler, said boiler comprising a longitudinally-arranged drum I, front and back water-legs G and H, which open directly into the ends of the drum, and longitudinally-disposed water-tubes D which open into the water-legs, said water-tubes being inclined upwardly and rearwardly, thereby locating the lower ends of the tubes over the fire-box, the hydrostatic pressure being greater at the front end of the boiler, forcing the water circulation rearwardly in the tubes, and forwardly in the drum, said water circulation being counter to the direction of movement of the products of combustion, with the exception of the circulation of the water in the lowest set of tubes which is parallel with that of the movement of the products of combustion, whereby, when bubbles are evolved in the tubes, they pass rearwardly through the tubes, whose inclination assists such action, and upwardly through the rear water-leg, flashing into steam at the rear end of drum I, where the hydrostatic pressure is smallest, substantially as described.



610,970. BALL-BEARING. JOHN MCALPINE, London, England, assignor of two-thirds to Edward Strong Torrey and Thomas Stamps Allden, same place. Filed Dec. 13, 1897. Serial No. 661,700. (No model.)



Claim.—1. In a ball-bearing, the combination with the shaft, of a sleeve surrounding said shaft and a cone at each end of the sleeve having an annular flange and a ball-race within and another ball-race surrounding said annular flange, the casing surrounding said sleeve, cups secured in the ends of said casing, cones secured to said shaft, and balls interposed between said cones and the inner ball-races of the said sleeve and between the outer ball-races of said sleeve and said cups, substantially as described.

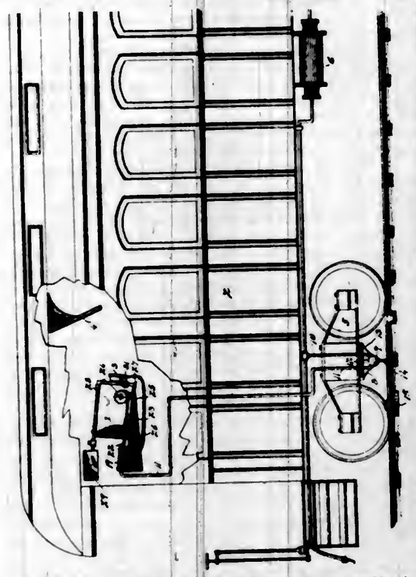
2. In a ball-bearing, the combination with the shaft, of a sleeve surrounding said shaft and a cone at each end of the sleeve having an annular flange and a ball-race within and another ball-race surrounding said annular flange, the casing surrounding said sleeve, cups secured in the ends of said casing, cones secured to said shaft, and balls interposed between said cones and the inner ball-races of the said sleeve, and between the outer ball-races of said sleeve and said cups, and bristles extending into engagement with said balls for cleaning the same, substantially as described.

3. In a ball-bearing, the combination with the shaft, of a sleeve surrounding said shaft and a cone at each end of the sleeve having an annular flange and a ball-race within and another ball-race surrounding said annular flange, the casing surrounding said sleeve cups secured in the ends of said casing, cones secured to said shaft, and balls interposed between said cones and the inner ball-races of the said sleeve, and between the outer ball-races of said sleeve and said cups, and a ring overlapping the adjacent edges of said cones and cups, and provided with bristles extending between the said parts into contact with the balls, for cleaning the same, substantially as described

4. In a ball-bearing the combination with the shaft, a sleeve surrounding said shaft and provided at each end with a ball-race, cones on said shaft, balls interposed between said cones and the ball-races on said sleeve, and bristles extending into engagement with the balls for cleaning the same, substantially as described.

610,971. PHOTOGRAPHIC REGISTER FOR RAILWAY-COACHES. NOAH M POWELL, Knox City, Mo., assignor of two-thirds to Fred B. Parsons and Orville D. Jones, same place. Filed July 12, 1897. Serial No. 644,228. (No model.)

Claim.—1. In a photographic register for railway-cars, the combination of a camera, an automatic valve having connections with a source of fluid-supply, shutter-controlling devices connected with automatic valve, and tappet devices by which the valve may be operated at suitable intervals to admit the motive fluid to the camera-controlling devices, as and for the purposes described.



2. In a photographic register for railway-cars, the combination with a camera, shutter-controlling mechanism therefor, a valve connected with a source of fluid supply and with said shutter-controlling mechanism, tappet devices for operating the valve, and a flash-light mechanism operated in synchronism with said shutter mechanism, as and for the purposes described.

3. In a photographic register for cars, the combination with a camera, of a pressure-cylinder having a piston, a pipe connected with said pressure-cylinder and with the shutter devices of the camera, and a feed mechanism operated by the piston-rod to regulate and control the sensitized film of said camera, as and for the purposes described.

4. In a photographic register for cars, the combination with a camera, of a pressure-cylinder having a piston and a rack on the rod thereof, a pipe connecting the pressure-cylinder with the camera-shutter, and a pawl-and-ratchet-controlled gear arranged to engage with the rack on the piston-rod and operatively connected with one of the film-spools of the camera, as and for the purposes described.

5. In a photographic register for railway-cars, the combination with a camera, of a pressure-cylinder, a spring-controlled piston therein having a rack-formed piston-rod, a feed mechanism for the sensitized film of the camera, and a flash light appliance with a controlling-valve having a pinion in the path of said rack of the piston, as and for the purposes described.

6. In a photographic register for railway-cars, the combination with a camera, of a pressure-cylinder having a piston and a protruding rod, a pipe connecting the cylinder with the shutter mechanism of the camera, and a flash-light appliance arranged in the path of said piston-rod to be operated thereby, as and for the purposes described.

7. In a photographic register for railway-cars, the combination with a camera, of a pressure-cylinder having a piston and a protruding, rack-formed rod, a pipe connecting said cylinder with the shutter mechanism of the camera, a ratchet-and-pawl-controlled gear on one of the film-spools of the camera and lying in the path of said rack on the piston-rod a flash-light burner, and a regulating-valve for said burner arranged in the path of the piston-rod to be operated thereby, as and for the purposes described.

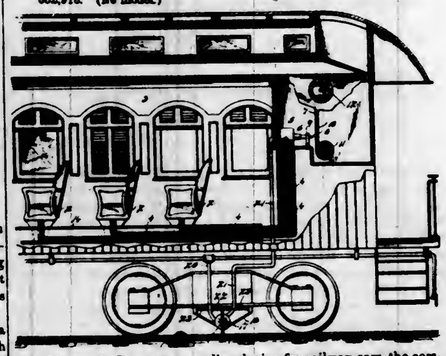
8. In a photographic register for railway-cars, the combination with a camera, and shutter-operating mechanism therefor, of an automatic valve connected with a source of fluid-supply and with said shutter-operating mechanism, a tappet, and a tappet arm connected with the valve and arranged to strike the tappet and open the valve, as and for the purposes described.

9. In a photographic register for railway-cars, the combination with a camera, and a shutter-operating mechanism therefor, of an automatic valve having an arm controlled by a spring or springs, to hold the valve normally in a closed position tappet devices associated with said valve to open the same at suitable intervals, and pipes connecting the valve with a source of fluid-supply and with the shutter-operating mechanism, as and for the purposes described.

10. In a photographic register for railway-cars, a camera sustained in an overhead position to have as its field the interior of a car, combined with mechanism, substantially such as described, whereby the camera may be operated at intervals to expose a part of the sensitized surface therein for the purposes described, substantially as set forth.

11. The combination with a source of fluid-supply, of an automatic controlling-valve, a pressure-cylinder having an exit-port, a pipe leading from said exit-port, a plunger fitted in said cylinder to travel past the exit-port therein, a pipe connecting the pressure-cylinder and the automatic valve to convey fluid from the latter to the pressure-cylinder, and tappet mechanism operatively connected with said automatic valve to open the latter and permit fluid under pressure to pass to the cylinder, whereby the pressure-fluid moves the plunger beyond the exit-port and escapes into the pipe leading therefrom, substantially as described.

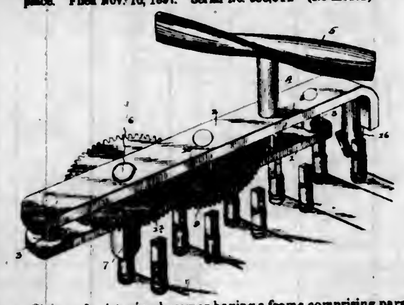
610,972. SEAT-RECORDING DEVICE FOR PASSENGER-CARS. NOAH M. POWELL, Edina, Mo., assignor of two-thirds to Fred B. Parsons and Orville D. Jones, same place. Filed Sept. 24, 1897. Serial No. 652,918. (No model.)



Claim.—1. In a seat-recording device for railway-cars, the combination of a marking device for engaging a movable record-sheet, a station-indicating device comprising a cylinder having a piston-rod arranged to engage the record-sheet and mark the same, and means for automatically operating the station-indicating device at intervals, substantially as described.

2. In a seat-recording device for railway-cars, the combination of upper and lower rolls adapted to carry a record-sheet, a series of marking devices arranged to engage the record-sheet, means for automatically operating the marking devices when the seats of a car are occupied, a station-indicating device arranged adjacent to the said marking devices and adapted to engage the record-sheet, and operating mechanism for automatically operating the station-indicator at intervals, substantially as described.

610,973. TUNING-HAMMER. NOAH M. POWELL, Edina, Mo., assignor of two-thirds to Fred B. Parsons and Orville D. Jones, same place. Filed Nov. 10, 1897. Serial No. 658,044. (No model.)



Claim.—1. A tuning-hammer having a frame comprising parallel plates provided at one end with a perpendicularly-disposed detent or foot for engagement with a tuning-pin to prevent rotary movement

of the frame, and provided adjacent to the other end with registering bearings, a rotary head having a pin-receiving socket and provided with a stem fitted in said bearings, a driven gear concentric with the stem of the head and having a detachable interlocking connection therewith, the head being detachable axially, and a driving-shaft mounted in the frame between said bearings and the detent or foot, and connected with the driven gear by a speed-reducing gearing, substantially as specified.

2. A tuning-hammer having a frame comprising parallel plates provided adjacent to one end with a perpendicularly-disposed detent or foot for engagement with a tuning-pin, to prevent rotary movement of the frame, and provided adjacent to the other end with alined bearings, of which one is provided with an offset 14, a rotary head having its spindle removably fitted in said alined bearings, and provided with a lateral feather adapted to pass through said offset 14, a driven gear mounted concentric with the spindle of the head and provided with a central opening to receive the spindle and an offset for engagement with said feather, a driving-shaft mounted in the frame between said detent or foot and said alined bearings, and speed-reducing gearing permanently connecting the driving-shaft with the driven gear, substantially as specified.

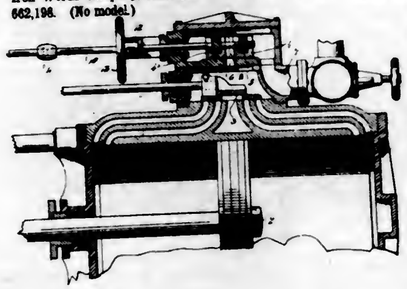
610,974. VEHICLE-BRAKE. JOSEPH RAMAGE, Wrightsborough, Tex., assignor of one-third to C. F. Goodenough, same place. Filed Apr. 6, 1898. Serial No. 676,659. (No model.)



Claim.—1. In a device of the class described, the combination of a running-gear having a pole adapted to swing upward and downward, a brake bar or beam suspended from the running-gear in advance of the hind wheels and located beneath the reach, brake-shoes carried by the brake bar or beam, a lever fulcrumed on the running-gear, adjacent to the rear axle and extending above and below the reach, an inclined connecting-rod 5 extending from the brake bar or beam to the upper end of the lever, an oscillating lever fulcrumed at its upper end on the running-gear and depending from the same in advance of the front axle, connections between the lower ends of the levers, and means for connecting the oscillating lever with the pole, substantially as described.

2. In a device of the class described, the combination of a running-gear having a tongue adapted to swing upward and downward, a strap or plate secured to the tongue at the lower face thereof and offset therefrom and receiving the pivot of the doubletree said pivot being extended, a brake bar or beam suspended from the running-gear in advance of the hind wheels and located beneath the reach, brake-shoes carried by the brake bar or beam, the lever 6 fulcrumed between its ends at the rear axle and extending above and below the reach, the inclined connecting bar 5 extending from the upper end of the lever to the brake bar or beam, the forked oscillating lever 9 straddling the tongue and depending from the pivot of the same, the rod 8 connecting the levers and located beneath the running-gear, and a chain extending from the oscillating lever to the pivot of the doubletree and adjustably connecting the said oscillating lever with the tongue, substantially as described.

610,975. ADJUSTABLE CUT-OFF FOR STEAM-PUMPS. VERNON H. ROOD, Jeansville, Pa., assignor of one-half to the Jeansville Iron Works Company, same place. Filed Dec. 16, 1897. Serial No. 662,198. (No model.)



Claim.—1. In an engine, the combination of a chest subdivided by a partition into two compartments, a main valve controlling the ports leading to the engine-cylinder, and a cut-off valve controlling the port in the said partition, said cut-off valve having a main opening and notches in the opposite walls of the opening leading into the latter, substantially as and for the purpose set forth.

2. The combination in an engine, of a steam-chest having a plate provided with a port, and a cut-off valve with means for reciprocating the same over the port, said valve having a main opening and notches in the body of the valve to the sides of the main opening and opening thereinto, whereby after the main opening of the valve has passed out of line with the port a limited amount of live steam is admitted to the said port; substantially as described.

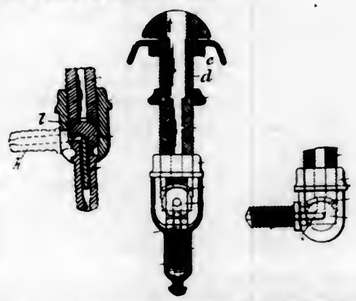
3. The combination in an engine, of a steam-chest having a plate provided with a port, and a cut-off valve with means for reciprocating the same over the port, said valve having a main opening and notches in the body of the valve to the sides of the main opening and opening thereinto, said notches decreasing in width from the main opening inwardly, whereby after the main opening of the valve has passed out of line with the port a limited amount of live steam is admitted to the said port; substantially as described.

4. The combination with an engine having a subdivided steam-chest, and having the subdividing partition formed with a port, of two cut-off valves having notches on inner edges to form openings for the admission of a limited amount of live steam into the main chamber of the chest should the cut-off valves have traveled so far as to have otherwise closed the aforesaid port, substantially as set forth.

5. The combination of an engine, two cut-off valves having notches on inside edges, and means for independently and adjustably connecting the said valves with the rod, substantially as described.

6. The combination in an engine, of a steam-chest having a plate provided with a port, a cut-off valve with means for reciprocating the same over the port, said valve being composed of two parts having an opening between them and each valve part being provided on its inner face with a notch opening into the opening between the parts and decreasing in width from the main opening inwardly, whereby after the main opening of the valve has passed out of line with the port a limited amount of live steam is admitted to the said port, said amount decreasing in the continued movement of the valve, and means for adjusting the valve parts toward and away from each other; substantially as described.

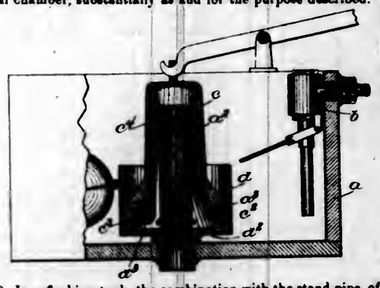
610,976. AIR-VALVE FOR PNEUMATIC TIRES. JULIUS SCHIÖNNING and MORTEN B. HANSEN, Copenhagen, Denmark. Filed Mar. 15, 1897. Serial No. 627,712. (No model.) Patented in England July 16, 1895, No. 13,640; in Denmark Feb. 27, 1896, No. 423; in Germany Feb. 23, 1896, No. 86,439; in Sweden Apr. 9, 1896, No. 6,771; in Norway Oct. 16, 1896, No. 4,433; in Belgium Feb. 27, 1897, No. 136,451, and in France May 31, 1897, No. 264,277.



Claim.—An air-valve for pneumatic tires having a closing element formed by a ball bored out at a right angle, placed directly outside the main piece *d* of the valve and having a tap A also bored out and exteriorly threaded, said tap being provided with a loose check-valve adapted to be closed by the pressure of air within the tire and to be opened by the pressure of air in the pump when the latter pressure exceeds the counter-pressure of the air in the tire.

610,977. FLUSHING DEVICE. WILLIAM SCOTT, Medford, Mass. Filed Mar. 28, 1898. Serial No. 675,361. (No model.)

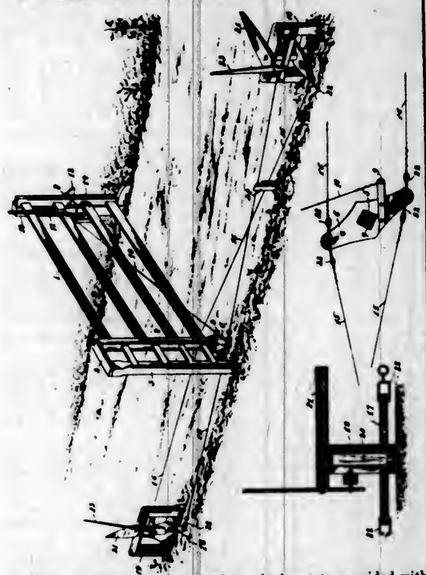
Claim.—1. In a flushing-tank, the combination with a stand-pipe, of an inclosing bell, means for producing siphonic action therein, an inlet to said bell from the main tank, means for supplying said tank, a supplemental chamber, and an inlet to said bell from said supplemental chamber, substantially as and for the purpose described.



2. In a flushing-tank, the combination with the stand-pipe, of an inclosing bell, means for lifting and dropping the said bell to produce siphonic action, means for supplying said main tank, a main inlet to said bell from the said main tank, a supplemental chamber for said bell, an inlet from said chamber to said bell, said inlet being below the normal water-level of said chamber, and a tubular passage within the bell extending from said inlet upward, substantially as and for the purpose described.

3. In a flushing device, the combination with the tank provided with a stand-pipe a^3, of the inclosing bell *c*, and means for producing a vertical movement thereof, the inlets d^1 and valve d^2, the supplemental chamber, the inlets c^3 and c^4 from said supplemental chamber to said bell, and the tube c^5 extending upward into the interior of the bell, substantially as described.

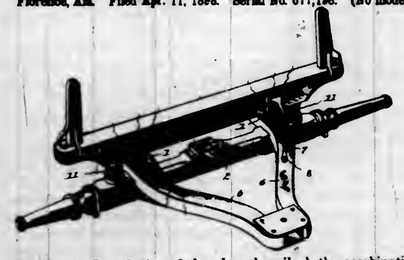
610,978. GATE. ADAM SMITH and JOHN SMITH, Ashley, Ill. Filed Apr. 23, 1898. Serial No. 678,605. (No model.)



Claim.—1. The combination of a swinging gate provided with a latch, a lever mounted on the pivot of the gate at the inner end thereof, extending from the same in opposite directions and having a limited movement thereon, said lever being connected with the latch of the gate, vertical shafts journaled in suitable bearings and located at opposite sides of the gate, the levers 17 and 18 mounted on the vertical shafts and projecting from opposite sides thereof, the crossed connections extending from the ends of the lever 17 to the ends of the lever of the gate, the parallel connections extending from the ends of the lever of the gate to the ends of the lever 18, and the horizontal operating-levers connected with the vertical shafts and arranged to be engaged by the wheels of vehicles, substantially as described.

2. The combination of a swinging gate provided with a latch, a lever mounted on the pivot of the gate at the inner end thereof, extending from the same in opposite directions and having a limited movement thereon, said lever being connected with the latch of the gate, vertical shafts journaled in suitable bearings and located at opposite sides of the gate, the levers 17 and 18 mounted on the vertical shafts and projecting from opposite sides thereof, the crossed connections extending from the ends of the lever 17 to the ends of the lever of the gate, the parallel connections extending from the ends of the lever of the gate to the ends of the lever 18, and the horizontal operating-levers connected with the vertical shafts and arranged to be engaged by the wheels of vehicles, substantially as and for the purpose described.

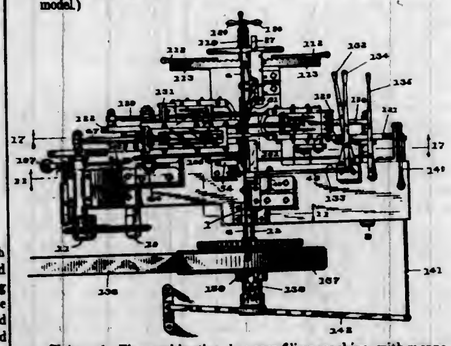
610,979. RUNNING-GEAR FOR WAGONS. DAVID H. TURNBULL, Florence, Ala. Filed Apr. 11, 1898. Serial No. 677,198. (No model.)



Claim.—1. In a device of the class described, the combination with an axle, of a bolster or sand-board having a transverse opening, a single continuous strip of metal bent between its ends to form a rectangular bracket and having its end portions inclined and extending upward to the tops of the sides of the bracket, the latter being mounted above the axle and receiving the bolster, and a horizontal fastening device connecting the sides of the bracket and arranged in the opening of the sand-board or bolster, substantially as described.

2. In a device of the class described, the combination with an axle, of a bolster or sand-board provided with a transverse slot or opening, a substantially rectangular bracket mounted above the axle and receiving the bolster or sand-board, plates secured to the sides of the bolster or sand-board and interposed between the same and the sides of the bracket and having vertical flanges at their side edges, said plates being provided with slots or openings registering with the said slot or opening, a fastening device connecting the sides of the bracket and passing through the said slots or openings, and an inclined brace connected with the top of the bracket and supporting the same, substantially as described.

610,980. SAW-FILING MACHINE. THOMAS L. WALLACE and JAMES A. REED, Indianapolis, Ind., assignors to the E. C. Atkins & Company, same place. Filed Feb. 7, 1898. Serial No. 669,329. (No model.)



Claim.—1. The combination, in a saw-filing machine, with means for supporting the saw, of a suitable strip adapted to be placed over the toothed edge of the saw, and an adjacent member or members overhanging said strip and against which said strip bears in operation, whereby the saw is guided from its toothed edge by means of said strip.

2. The combination, in a saw-filing machine, of suitable overhanging shoulders or abutments, a saw-support positioned below the

same, a strip mounted on the breast or toothed edge of the saw carried by said support and bearing against said abutments, and yielding means for carrying said saw-support and saw whereby said strip is held into contact with said overhanging shoulders or abutments.

3. The combination, in a saw filing machine, with the filing mechanism, of a yielding saw-support, overhanging shoulders above said support, and a suitable strip adapted to be placed over the toothed edge of the saw and rest against said overhanging shoulders, the saw being thus guided in its passage through the machine by its breast or toothed edge.

4. The combination, in a saw-filing machine, of saw-clamps having overhanging shoulders near their upper edges, a yielding saw-support positioned between and guided by said saw-clamps at a point below the upper edges thereof, means connected to and supporting said yielding saw-support, and a slitted strip the slits whereof are adapted to pass over the teeth of the saw, and the edges whereof are adapted to engage with the overhanging shoulders of the saw-clamps, substantially as and for the purpose set forth.

5. The combination, in a saw-filing machine, of the saw-clamps, a yielding support for the saw positioned between said clamps, supporting-rods extending up from said support and pivoted thereto, and a bar 6 pivoted to said rods 4 and provided with handle-like ends, whereby either end of said saw-support may be moved independently of the other, whenever desired.

6. The combination, in a saw-filing machine, of a main shaft, 8, three filing-mechanism shafts, 9 10 and 11, driven at uniform speeds from said main shaft, the said several filing mechanisms, a shaft 12 carrying cams and driven at a slower speed than the filing-mechanism shafts, and arms extending from the filing mechanisms into the paths of said cams, whereby said filing mechanisms are automatically raised out of operative position at predetermined intervals, all substantially as set forth.

7. The combination, in the feeding mechanism of a saw filing machine, of suitable pivoted pawls adapted to engage with the saw-teeth, a reciprocating base for said pawls, a pivoted lever engaging with said reciprocating base, a plunger adapted to operate said lever, and a cam, carried by the cam-shaft of the machine, for operating said plunger, whereby at each complete revolution of said cam-shaft the saw is fed forward.

8. The combination, in a saw-filing machine, with the main feeding-lever, of a plunger for operating said lever, a cam for operating said plunger, and a pivoted housing containing said plunger, which is adapted to be swung into or out of the path of said lever, whereby said lever may be either regularly intermittingly operated by said plunger or permitted to remain at rest, as may be required.

9. The combination, in the feeding mechanism of a saw-filing machine, with the feed-lever and its engaging means, of an actuating-plunger 15 for said feeding-lever, a housing 19 therefor, a pivot 20 for said housing, a lever 21 mounted on a pivot 22 alongside said housing and provided with a suitable cam-slot, and a pin 23 extending from a wing on said housing up through said cam-slot, substantially as shown and described.

10. The combination, in the feeding mechanism of a saw-filing machine, with the main feeding-lever, of a plunger 15 for operating said lever mounted in a suitable housing, a spring 16 whereby said plunger is normally held to the limit of its movement in one direction, a cam 14 by which, when the saw is to be fed forward, said plunger is moved in the other direction, and means whereby said plunger may be thrown into and out of its operative position, substantially as set forth.

11. The combination, in the feeding mechanism of a saw-filing machine, with the main feeding-lever, of a reciprocating plunger for operating said lever mounted in suitable ways and moving in a rectilineal path, said plunger being provided with an adjustable contact-point 24 whereby its length and stroke may be accurately adjusted, a suitable cam for operating said plunger in one direction, and a suitable spring whereby it is normally held to the limit of its movement in the other direction, substantially as set forth.

12. The combination, in the feeding mechanism of a saw-filing machine, with the main feeding-lever, of a plunger 27 mounted in suitable ways and moving in a rectilineal path therein and located at the upper end of said lever, pivoted pawls 31 carried by said plunger and adapted to engage with the teeth of the saw, and a spring 32 whereby said pawls are normally held into contact with said teeth, the rear sides of the pawl-points being inclined and the backward movement of the feeding mechanism thus permitted, substantially as shown and described.

13. The combination, in the feeding mechanism of a saw-filing machine, of the reciprocating plunger carrying the feeding-pawls, an adjustable mounting 35 for one of said pawls, and an adjusting-screw 36, whereby the position of said mounting may be adjusted and the distance between the pawls thus accurately determined.

14. The combination, in a saw-filing machine, with the saw and the feeding mechanism, of a stop for said saw, and means for automatically raising said stop as the saw is fed forward and for dropping said stop behind one of the teeth of the saw just prior to the cessation of the forward movement thereof, whereby said saw is always stopped accurately to exact position, substantially as set forth.

15. The combination, in a saw-filing machine, of a saw-feeding mechanism, a saw-stop, a cam-shaft, and two cams carried by said shaft one of which operates the feeding mechanism and the other of which raises the stop, said cams being relatively so positioned that said stop is raised just prior to the forward movement of said feeding mechanism and dropped just prior to the cessation of said forward movement, substantially as set forth.

16. The combination, in a saw-filing machine, of a stop for the saw consisting of a vertical rod 43 having an arm at its upper end adapted to extend out and engage with saw-teeth as they are successively fed forward, a contact-point at its lower end, and a revolving shaft having a cam which comes in contact with said contact-point, whereby said vertical rod is intermittingly raised and permitted to descend.

17. The combination, in a saw-filing machine, of a vertically-moving rod, a stop-arm carried by the upper end of said rod, an adjustable contact-point carried by the lower end of said rod, and a revolving cam adapted to operate said rod through said contact-point, substantially as set forth.

18. The combination, in a saw-filing machine, of a vertically-moving rod, means for operating said rod intermittingly, and an adjustable arm consisting of two sections 44 and 45 carried by the upper end of said rod and adapted to come behind and engage with certain of the saw-teeth as the saw is fed forward and thus stop the saw accurately to position, and to be adjusted for use with saws having various sizes of teeth, substantially as shown and described.

19. The combination, in a saw-filing machine, of a stop mechanism for the saw, means for intermittingly operating the same, and means, consisting of a reciprocating cam-rod 48, a support 49, and a contact-point 50, whereby said stop device may be held out of operation, substantially as set forth.

20 The combination, in a saw-filing machine, with the feed mechanism for the saw, of a stop device, means for regularly intermittingly operating said stop device, and means for holding said stop device out of operation, substantially as set forth.

21. The combination, in a saw-filing machine, of the pivoted clamping-arm 51 having an antifriction-roller 61 mounted in its lower or non-clamping end, sliding bearings in said end carrying said roller, rods extending out from said bearings, and a spring 63 bearing against said rods and thus holding said bearings and the roller carried thereby forward, substantially as and for the purposes set forth.

22. The combination, in a saw-filing machine, of a stationary clamping-jaw, a pivoted arm carrying the other clamping-jaw, a pivot 52 carrying said pivoted arm, a slide 53 carrying said pivot, and a lever for operating said slide, whereby said clamping-jaw can be thrown into and out of operative position.

23. The combination, in a saw-filing machine, with the clamping-jaws of a standard or frame part 54 having a slot and a way therein, a slide 53 mounted in said way, a pivot 52 mounted in said slide and passing through said slot, pins or projections 58 on the upper end of said standard alongside said slot, and a lever 57 having an oval end mounted on said pivot and bearing against said pins, whereby said slide may be given a slight reciprocating motion.

24. The combination, in a saw-filing machine, with the clamping-jaws of the rigid standard or frame part 54, the slide 53 mounted therein, adjustable stops 59 59 for limiting the movement of said slide, and a lever 57 for moving the same within the limit of its adjustment, substantially as set forth.

25. The combination, in a saw-filing machine, of the file-carriage, a file-holder bearing therein, a pivot on which said file-holder bearing is mounted, and set-screws one on either side of said bearing, whereby the relation of said bearing to said file-carriage may be adjusted and the point of the file thus elevated or depressed, substantially as set forth.

26. The combination, in a saw-filing machine, with a reciprocating file-actuating device and means for propelling said device and for raising it as a whole on its return stroke and thus freeing the file from contact with the saw-tooth on such return stroke, of a shifter for rocking said file-actuating device on its axis, whereby as the file is reciprocated, it is automatically turned from side to side and applied alternatively to both sides of the saw-teeth being filed.

27. The combination, in a saw-filing machine, of a reciprocating file-carrying device, means for propelling the same, means for raising the same on its return stroke, a pivoted V-shaped shifter, and a connection between said file-carrying device and said shifter whereby the latter is enabled to shift the former from side to side and cause the file to operate alternatively upon both sides of the saw-tooth being filed.

28. The combination, in a saw-filing machine, of a reciprocating file actuating device, a plate situated alongside said device containing two parallel slots united at one end, a V-shaped shifter pivoted to said plate between said slots, and an arm extending from the file-holder through said slots alongside the shifter and adapted to be actuated thereby, whereby the file is rocked from side to side.

29. The combination, in a saw-filing machine, of a rocking file-carriage frame, a reciprocating file-carriage mounted therein, a plate mounted on said frame and situated alongside said file-carriage and containing two slots, an arm extending out from the file-holder, and means for shifting said arm from one slot to the other in said plate as the file-carriage travels back and forth.

30. The combination, in a saw-filing machine, with the reciprocating file-holder provided with an arm or extension, of a pivoted V-shaped shifter having wings with which said arm on the file-holder is adapted to come in contact, whereby said shifter is actuated in one direction, a stop limiting the movement of said shifter, and a spring whereby said shifter is held against its stop when not forced therefrom by said extension on the file-holder.

31. The combination, in a saw-filing machine, of the file-carriage containing a file holder bearing, a file-holder mounted in said bearing, an arm on said file-holder, a plate on the file-carriage frame above the file-holder having slots therein with a tongue between them, a pivoted V-shaped shifter on said tongue, a spring carried by said plate, a connection between said pivoted shifter and said spring, and a stop by which the movement of said shifter is limited, whereby said file-holder and with it the file are rocked from side to side as the file-carriage reciprocates.

32. The combination, in a saw-filing machine, of a rocking file-carriage frame, a reciprocating file-carriage mounted therein, a file-holder mounted in said file-carriage and adapted to be rocked from side to side, whereby the file is adapted to be applied first to one side and then to another of a saw-tooth, an arm on said file-holder, and a shifter mounted upon the frame above the file-carriage with which said arm is adapted to come into contact and whereby said rocking is effected.

33. The combination, in a saw-filing machine, of a file-carriage, a file-holder carried thereby and adapted to rock from side to side, an arm projecting from said file-holder, and means adapted to tip said arm and rock said file consisting of a plate 76 having two slots between which is a central tongue, a V-shaped shifter 77 pivoted to said tongue, a stop whereby the movement of said shifter is limited, a spring 81, and a rod 83 connecting said shifter and said spring, said several parts being arranged and operating substantially as set forth.

34. The combination, in a saw-filing machine, of a reciprocating file-actuating device, a file-holder mounted and adapted no rock therein, an arm on said file-holder, a plate positioned alongside the path of travel of the file containing parallel slots united at one end, a pivoted shifter carried by the portion of said plate between said slots having ears thereon which are adapted to extend over said slots upon one side or the other as the same is shifted, a stop whereby the movement of said shifter is limited, and a spring whereby said shifter is normally held against one side or the other of said stop, as its position is shifted, the arm on the file-holder being adapted to operate the shifter and the shifter in turn adapted to shift the position of the arm.

35. The combination, in a saw-filing machine, of the rocking file-carriage frame, the reciprocating file-carriage mounted therein, a file-holder mounted in said file-carriage, a shifter located above said file-carriage, and an arm mounted on said file-holder and adapted to be operated by said shifter, said arm being composed of two parts adjustably secured together, substantially as described.

36. The combination, in a saw-filing machine, of a file-carriage frame supported and adapted to rock on a suitable bearing and supporting and guiding the file-carriage and file, an arm 92 rigidly secured to said file-carriage frame, one end whereof is adapted to be operated by a cam on the shaft which drives the file-carriage and the other end of which projects into the path of and is adapted to be operated by a cam on the cam-shaft, and said driving-shaft, and said cam-shaft, whereby, by means of the same arm, the file-carriage frame is rocked to raise the file out of contact upon every rearward stroke of the file, and also rocked to maintain it out of contact during the time the saw is being fed forward, substantially as shown and described.

37. The combination, in a saw-filing machine, of a rocking file-carriage frame, an arm whereby said frame is rocked, a spring 104 whereby the file is normally held in contact with the saw, a cam-wheel operating oppositely to said spring whereby the file is thrown out of contact, and an adjusting-screw 103 whereby undue contact is prevented, substantially as shown and described.

38. The combination, in a saw-filing machine, of the file-carriage frame, an arm 92 secured to said frame, cam adapted to operate said arm and rock said frame, a projection 100 on said arm, and a reciprocating cam rod or bar 101 adapted to be forced under said projection and thus rock the frame and hold the file out of contact whenever desired, substantially as set forth.

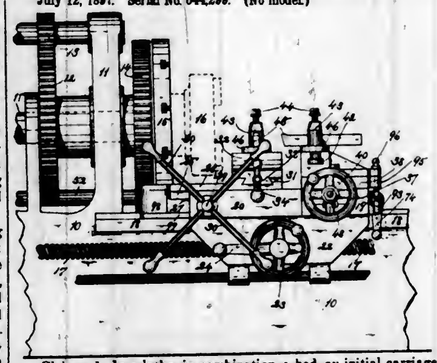
39. The combination, in a saw-filing machine, with a rocking file-carriage frame, of a rock-shaft 110 having a cam 111, and a spring 109 on the rocking file-carriage frame with which said cam comes in contact, a lever 112 on said shaft 110, and a rack-bar having numerous notches with which a suitable engaging point on said lever may engage, whereby the tension of said spring may be conveniently increased or diminished and the force of the file on its work thus regulated, substantially as shown and described.

40. The combination, in a saw-filing machine, of a rocking file-carriage frame, a bar 115 whereby the rocking of said frame is controlled, a sliding bar 116, a bearing 117 therefor, a reciprocating cam-bar 119 adapted to engage with the bar 116, and a lever 120 for operating said cam-bar, substantially as and for the purposes set forth.

41. The combination, in a filing-machine, of a rocking or rotatable file-holder, suitable clamping devices at the heel and point of said holder for holding the file, and a removable strip adapted to be placed between the file and the file-holder and to be removed therefrom, whereby additional wear is secured from the file, substantially as set forth.

42. The combination, in a filing-machine, of a filing mechanism for filing the cutting-teeth of the saw, means for rocking said filing mechanism from side to side, and a plate adapted to be inserted or removed from beneath the file, whereby the file is enabled to be shifted farther from or nearer to the axis of the file-holder on which it rocks, and the points of wear of the file thus varied, substantially as set forth.

610,981. LATHE. LUCIUS E. WHITON, New London, Conn. Filed July 12, 1897. Serial No. 644,299. (No model.)



Claim.—1. In a lathe, in combination, a bed, an initial carriage mounted to slide thereon, and provided with supplemental tool-carrying sliders mounted to travel on said initial carriage at a fixed angle with each other, and means for transmitting sliding motion from one to the other of said supplemental tool-sliders.

2. In a lathe, in combination, a bed, an initial carriage mounted to slide thereon and provided with supplemental tool-carrying sliders mounted to travel on said initial carriage at a fixed angle with each other, means for transmitting sliding motion from one to the other of said supplemental tool-sliders, and means for automatically stopping the sliding motion of said supplemental carriages upon the completion of the their required movements.

3. In a lathe, in combination, a bed, an initial carriage mounted to travel thereon and provided with supplemental tool-carrying sliders mounted to travel on said initial carriage at a fixed angle with each other, means for transmitting a portion only of the sliding motion of one supplemental slider to the other, and means for disconnecting the two supplemental sliders.

4. In a lathe, in combination, a bed, an initial carriage mounted to travel thereon and provided with supplemental tool-carrying sliders mounted to travel on said initial carriage at a fixed angle with each other, means for transmitting a portion only of the sliding motion of one supplemental slider to the other, means for disconnecting the two supplemental sliders and means for adjusting each of the supplemental sliders independently.

5. In a lathe-carriage, the combination of cross feed-screw 40 having the slidable worm-wheel clutch 55 splined thereon, with driving-shaft 52, gears 53 54 the latter provided with clutch-driver 54', and swinging frame 60 carrying worm 63 adapted to engage with said slidable worm-wheel clutch 55, substantially as described.

6. In a lathe-carriage, the combination of cross feed screw 40 having the slidable worm-wheel clutch 55 provided with annular groove 66 and annular flange 66' splined on said feed-screw, and movable frame 60 provided with projection 67 and carrying worm 63, said

projection 67 being adapted to engage with groove 66 when worm 63 and gear 57 are engaged and to abut against flange 66' when gear 57 is not in position to be engaged by worm 63.

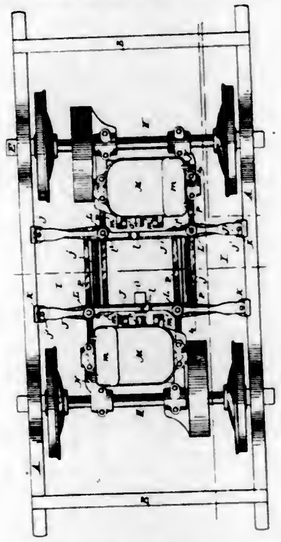
7. In a lathe-carriage, the combination of frame 19 provided with recess 70, and the worm-supporting swinging frame 60 having projection 67, the ends of which engage with walls of recess 70, substantially as specified.

8. In a lathe-carriage, in combination, a feed-screw 40, a worm-gear mounted on said screw, a movable frame carrying a worm adapted to engage with said worm-gear, means for moving, locking and releasing said worm-carrying frame, consisting of a suitably-mounted longitudinally movable rock-shaft provided with collar 87 and spring pressed clutches 81 82, the faces of which clutches are normally engaged, one of the said clutches being splined to said rock-shaft and its companion to the supporting-framework, and a connection between said rock-shaft and said movable worm-carrying frame.

9. In a lathe-carriage, in combination, a feed-screw 40, a slidable worm-wheel clutch mounted on said screw, a movable frame carrying a worm adapted to engage with said worm-wheel clutch, means for moving, locking and releasing said worm-carrying frame, consisting of a suitably-mounted longitudinally-movable tubular rock-shaft provided with collar 87 and spring-pressed clutches 81 82, the faces of which clutches are normally engaged, one of the said clutches being splined to said rock shaft, and its companion to the supporting-framework, a connection between said rock-shaft and said movable worm-carrying frame, a rod 92 mounted within said tubular rock-shaft and provided with enlargement 92' adapted to be engaged by the longitudinally-moving end of said tubular rock-shaft 71 and a connection between said rod 92 and said slidable worm-wheel clutch 55, substantially as described.

10. In a lathe, the combination of a frame 19, supplemental tool-carrying sliders 38, and 25, mounted to slide on said frame at a fixed angle with each other, rack 99 attached to said slider 25, rack 102 mounted to slide in said frame parallel with and adjacent to said slider 38, an adjustable stop mounted on rack 102 projecting into the path of slider 38 and a pinion 103 connecting racks 99 and 102, substantially as described.

610,982. ELECTRIC LOCOMOTIVE. WILLIAM S. G. BAKER, Baltimore, Md. Filed Nov. 24, 1894. Serial No. 529,825. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the truck-frame, a pair of wheels, their axle, a centrally-located electric-motor-supporting frame suspended solely by the side beams of the truck-frame, a motor centered on the axle, longitudinally-arranged motor-supporting bars supported by the central transverse frame and connected with the motor between its front and rear ends.

2. The combination, substantially as hereinbefore set forth, of the truck-frame, the wheels and axles, cross-beams secured to the side beams of the truck between the axles, longitudinally-arranged side bars, hangers suspending them from the cross-beams, a motor centered upon one of the axles and detachably connected with the ends of the side bars.

3. The combination, substantially as hereinbefore set forth, of a truck-frame, the wheels and axles, a motor centered on one of the axles, a transverse frame supported on the side beams of the truck between the axles, longitudinally-arranged side bars suspended from the transverse frame below the plane of the axles, and connected with the motor between its front and rear ends and below the armature-shaft.

4. The combination of a truck-frame, the wheels and axles, a motor centered on one of the axles, the transverse beams secured to the side beams of the truck and located between the axles, the side bars having their ends secured to the motor, and hangers suspending the longitudinal side bars from the transverse beams.

5. The combination, substantially as hereinbefore set forth, of the truck-frame, the wheels and axles, the transverse beams supported on the side beams of the truck, a motor centered on one of the axles, the ends of said side bars extending beyond the transverse beams and detachably connected with the motor.

6. The combination, substantially as hereinbefore set forth, of a truck-frame, the wheels and axles, a motor centered on each of the axles, a transverse frame supported on the side beams of the truck between the axles, a pair of side bars supported solely by the transverse frame, and connected with one of the motors at the sides thereof, and another pair of side bars similarly supported and connected with the other motor.

7. The combination, substantially as hereinbefore set forth, with the wheels, axles and axle-boxes, of a car-truck frame having a central transverse frame, a motor centered on one of the axles, and longitudinal supporting-bars each connected with the motor approximately in its vertical central line of gravity, and each also connected at two points with the central transverse frame of the truck.

8. The combination with an electric motor centered upon an axle of the vehicle, of trunnions upon the outside of the motor, vertically in line with the center of gravity, and side supporting-bars each of which is connected at one end with the trunnions at its opposite end removably connected with the central transverse frame of the truck and between its ends yieldingly connected with said central frame.

9. The combination of the main frame of the truck, a pair of wheels, their axle, an electric motor centered on the axle, side supporting-bars connected to trunnions on the sides of the motor-casing, bolts extending through the transverse frame of the truck and through the side bars, springs arranged in sockets in the side bars and in the truck-frame encircling the bolts and nuts on the bolts below the side bars, the organization being such that by removing a pair of nuts and lifting the bolts the side bars may be moved laterally and then swung downward to permit of the motor's being lowered.

10. The combination of the truck-frame having one or more transverse bars, a pair of wheels, their axle, an electric motor having bearing-brackets extending over the axle, side supporting-bars connected with the transverse frame of the truck and with trunnions projecting from the sides of the motor casing, and a sliding or movable connection between the inner side of the motor and the transverse frame of the truck, whereby the motor may be locked to the frame and supported by the sliding connection and by the transverse bars when the bearings are opened to remove a pair of wheels.

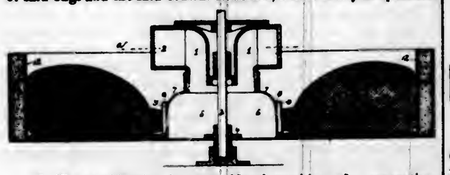
11. In an electric locomotive, the combination with a pair of wheels and their axles, of an electric motor having a shell or casing made in sections, with bearings in the lower section for the armature-shaft bearing-brackets extending from the lower section of the shell over the axle, and caps or lower bearing-sections bolted to the brackets.

12. The combination of the wheels, axles and axle-boxes, a truck-frame having side beams extending over the axle-boxes and provided with housings open at the bottom, removable cross-bolts or devices at the lower ends of the housings, an electric motor centered upon one of the axles and having bearing-brackets extending over the axle, caps or bearing sections removably secured to the brackets, longitudinal bars connected to trunnions at the opposite sides of the motor, and also removably connected to the central transverse frame of the truck.

610,983. CENTRIFUGAL FILTER. HENRY CHAPMAN, Philadelphia, Pa. Filed May 29, 1897. Serial No. 638,712. (No model.)

Claim.—1. A centrifugal machine having a central structure which first receives the material to be acted upon, bags contained within the drum of the machine, and connections between the mouths of said bags and said central structure, substantially as specified.

2. A centrifugal machine having a central structure which first receives the material to be acted upon, bags contained within the drum of the machine, and detachable connections between the mouths of said bags and the said central structure, substantially as specified.



3. The combination in a centrifugal machine, of a separating-drum having a central structure which first receives the material to be acted upon and is provided with external undercut sockets, and bags contained within said separating-drum and having nozzles fitted to said undercut sockets on the central structure of the same, substantially as specified.

4. A centrifugal machine having a separating-drum with central structure which first receives the material to be acted upon, perforated walls whereby said drum is divided into a series of independent chambers, a series of bags each adapted to one of said chambers of the separating-drum, and detachable connections between the mouths of said bags and said central structure of the drum, substantially as specified.

5. A centrifugal machine having a separating-drum with a central structure which first receives the material to be acted upon, perforated walls whereby said drum is divided into a series of independent chambers, a series of bags each adapted to one of said chambers of the separating-drum, and connections between the mouths of said bags and said central structure of the drum, substantially as specified.

610,984. MOLD FOR FIREPROOF CONCRETE FLOORS. HENRY FOUREAUX, Wamego, Kans. Filed Jan. 27, 1896. Serial No. 668,141. (No model.)



Claim.—The arched mold 3 provided with the parallel battens 6 6, the cleats 7 7, and the set-screws 8 8 adapted to adjustably secure said cleats in suitable slots in the ends of said mold, substantially as shown and described.

610,985. VALVE FOR INFLATION. JOHN H. GOSS, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed Feb. 17, 1898. Serial No. 670,705. (No model.)

Brief.—An inflation-valve comprised of a plunger having a thin flat head, an elastic washer encircling the stem next the head, and a cap placed over the head and secured about said head and contracted about the washer, said cap having a laterally-indented inner end projection.



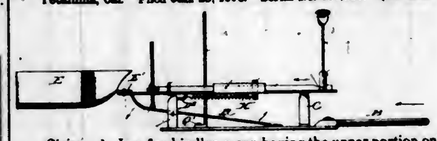
Claim.—1. A valve for inflation, comprising a plunger composed of a preferably thin, flat-headed rivet-like body, an elastic washer encircling the stem next the head, and a cap placed over the head and secured about said head and contracted about the washer, substantially as described.

2. A valve for inflation, comprising a plunger having a relatively thin stem, a thin, flat head, an elastic washer, encircling the stem next to the head, and a shell or cap placed over and firmly secured to the head and contracted about the washer, substantially as described.

3. A valve for inflation, comprising a plunger having a head, a stem, an elastic washer encircling the stem and arranged next to the head, a shell or cap inclosing the head and washer and contracted about the same, and having a laterally-indented inner end projection, substantially as described.

4. A valve for inflation, comprising a plunger having a head, a stem, an elastic washer encircling the stem and arranged next to the head, a shell or cap inclosing the head and washer and contracted about the same, and having a laterally-indented inner end projection, and a relatively stiff coiled spring which is seated upon said inner projection, substantially as described.

610,986. AUTOMATIC FIRE-KINDLER. GEORGE I. GREEN, Petaluma, Cal. Filed Jan. 25, 1898. Serial No. 667,886. (No model.)



Claim.—1. In a fire-kindler, a cup having the upper portion only of one side cut away and provided with parallel fingers projecting from the remaining portion of that side, substantially as set forth.

2. The combination with devices for holding and automatically advancing and igniting matches, of a cup pivotally mounted at the end of the path of the matches, having the upper part of only the side next said end cut away, and having its free end wedge-shaped.

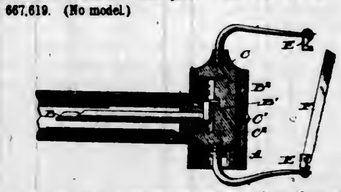
3. The combination with devices for holding a series of spaced matches vertical, of means for moving the matches forward while so held, means for igniting them in transit, and a series of combustible-supporting fingers in position to receive between them the middle portions of the matches so advanced.

4. The combination with automatic devices for lighting matches and advancing them to a certain point, of a combustible-containing cup pivoted at one end in position to have its contents ignited by the matches so advanced and having its free end pointed, substantially as set forth.

5. In a fire-kindler, the combination with a broad reciprocating bar having a series of spaced vertical match-receiving grooves in one end face, of a bail pivoted to the bar to swing over said face and simultaneously clamp a match in each groove.

6. The combination with the parallel plates rigidly connected by posts, of a match-carrying bar sliding upon the upper plate, a spring for advancing the bar, a detent for holding the bar retracted, automatic devices for actuating the detent, a centrally-pivoted counter-weighted bar between the plates and having a rough end bent across the path of the matches carried by said bar, and a combustible-carrying cup mounted in position to have its contents ignited by the matches carried by the bar.

610,987. DENTAL TOOL. LOREN R. HENDRICKSON and CHARLES H. READ, Ogden, Iowa, assignors to said Read, Clarence L. Thomas, and Orrin L. Sturtevant, same place. Filed Jan. 22, 1898. Serial No. 667,619. (No model.)



Claim.—1. The combination with a casing, of a reciprocating tool-holder, means to reciprocrte the same, arms extending from opposite ends of said holder, and a tool pivotally carried by said arms; substantially as specified.

2. The combination with a casing, of the reciprocating tool-holder, means to reciprocate the same, spring-arms extending from opposite ends of said holder, and a tool mounted to be rotatably adjusted within said arms; substantially as specified.

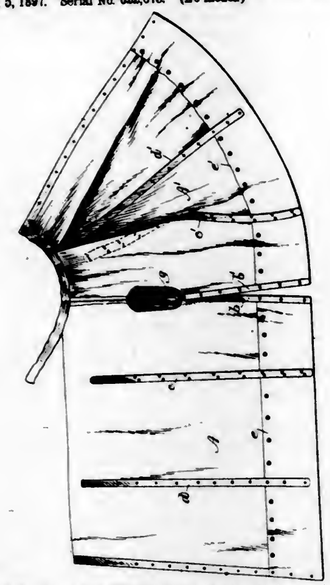
3. The combination with a casing, of a reciprocating tool-holder, means for reciprocating the same, arms extending from opposite ends of said holder, pivotally-mounted hooks carried by said arms, and a tool detachably connected to said hooks; substantially as specified.

4. The combination with a casing, of a reciprocating tool-holder, means to reciprocate the same, spring-arms located at opposite ends thereof, hooks formed with a slotted head and a seat and pivoted in said arms, and a tool detachably connected to said hooks; substantially as specified.

5. The combination with a casing, of a cylindrical reciprocating tool-holder provided upon one face with a slot adapted to receive a projection from the casing and upon its opposite face with a recess and a transverse slot, arms extending from the opposite ends of said tool-holder, and a tool removably and rotatably mounted upon the outer ends of said arms; substantially as specified.

6. The combination with a casing, of a reciprocating tool-holder, means to reciprocate the same, spring-arms extending from opposite ends of said tool-holder and provided at their outer ends with eyes or sockets, hooks provided with a pivoting-neck adapted to rotate in said sockets and provided at their inner ends with slotted seats, and a tool-blade having thereon projections adapted to rest in said seats; substantially as specified.

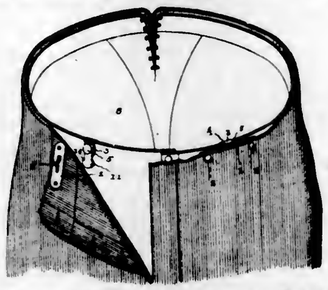
610,988. CYCLING-SKIRT. ELLEN M. HOSY, Lynn, Mass. Filed Feb. 5, 1897. Serial No. 622,073. (No model.)



Claim.—1. A cycling-skirt comprising a body portion divided at front and rear from the bottom edge upward, the division at the rear terminating at a point below the top of the skirt, the edges of the skirt at the division provided with complemental fastening means, and the body portion between the divisions provided with a vertical row of fastenings whereby the edge fastenings may be united to form a skirt, or the front edge fastenings be united to the intermediate rows of the fastenings to form a bifurcated garment, all as set forth, shown and described.

2. A cycling-skirt comprising a body portion divided at front and rear from the bottom edge upward, the division at the rear terminating at a point below the top of the skirt, the edges of the skirt at the division provided with complemental fastening means, and the body portion between the divisions provided with a vertical row of fastenings, whereby the edge fastenings may be united to form a skirt, or the front edge fastenings be united to the intermediate rows of the fastenings to form a bifurcated garment, and a pad or cushion secured to the garment at the termination of the division at the rear of the skirt, all as set forth, shown and described.

610,989. DRAWERS-SUPPORTER. THOMAS S. JAMES, Beaumont, Tex. Filed Sept. 15, 1897. Serial No. 651,818. (No model.)

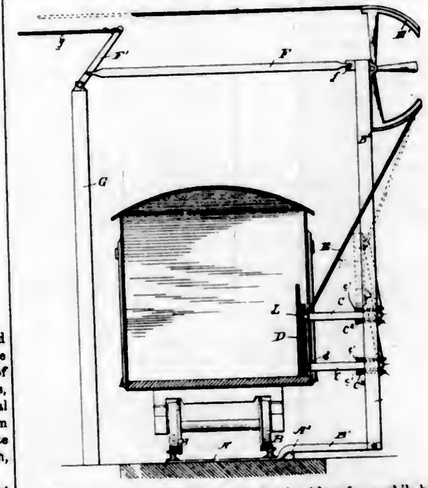


Claim.—1. The combination with a button applied to the waistband of a nether garment, of a plate placed against the inner side of the waistband of the trousers and having at an intermediate point an approximately T-shaped slot with a raised point opposite the opening, and suspender-buttons securing the plate at its ends to the waistband of the trousers, substantially as described.

2. In a clasp for garment-supporters, a strip of metal folded upon itself forming parallel members, one of which has a button applied thereto and formed at its edges with shoulders, and a catch-pin fulcrumed intermediate of its ends to the terminal portion of the other member and having its points adapted to engage over the aforesaid shoulders, substantially as described.

3. In a clasp for garment-supporters, a strip of metal doubled upon itself forming members, and having shoulders at the free end of one member and a roll at the outer terminal of the other member, a button or headed stud applied to one of the members, and a catch-pin journaled in the said roll and having points to engage over the aforedescribed shoulders, and provided with an extension forming a grip, substantially as and for the purpose set forth.

610,990. MEANS FOR PROTECTING CAR DOORS AND SIDES. JOB R. JONES and WILLIAM G. HODGE, Forbush, Iowa. Filed Aug. 14, 1897. Serial No. 648,206. (No model.)



Claim.—1. In a protecting device for the sides of cars while being loaded, the combination with suitable supporting members arranged at the side of the track, of an abutment, and means for securing the abutment to the supporting members comprising pivotal arms, substantially as described.

2. In a protecting-buffer for the sides of cars while being loaded, the combination with a support arranged at the side of the track, of a buffer member, and means for connecting and supporting the buffer member from the support comprising a series of pivoted members arranged to vary the position of the buffer relative to the supports upon the movement of the connecting members, substantially as described.

3. In a device for protecting the sides of cars while being loaded the combination with a support, of a series of arms pivoted thereto and a buffer member pivoted to the outer ends of the arms, substantially as described.

4. In a device for protecting the sides of cars while being loaded the combination with a support arranged at the side of the track, of a buffer member, and a pivotal yielding connection between the support and buffer member, substantially as described.

5. In combination with a support, of a series of toggle-arms secured thereto, and a buffer pivotally supported on the outer ends thereof, substantially as described.

6. In combination with a support, of a series of arms pivoted thereto, a buffer pivotally connected to the outer ends of the arms, and means for raising the arms and buffer, substantially as described.

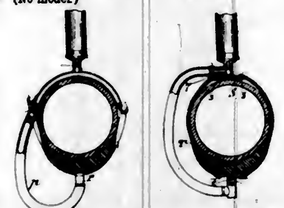
7. The combination with a support, of a series of journal-boxes yieldingly supported thereon, arms mounted in the boxes, and a buffer pivotally secured to the outer ends of the arms.

8 The combination with a scale, of a support extending out therefrom and supported thereby, uprights on the support and an adjustable buffer carried by the uprights, substantially as described.

9. The combination with a scale, of supports thereon extending out beyond the same, uprights carried by the supports, an adjustable buffer carried by the uprights, and an adjustable brace for the upper ends of the uprights, substantially as described.

10. In a device for protecting the sides of cars while being loaded, the combination with a track, of a buffer, means at the side of the track for supporting the buffer, and means for moving the buffer toward and from the plane of the track, substantially as described.

610,991. PUMP FOR INFLATING PNEUMATIC TIRES. CHARLES R. LEWIS, North Tonawanda, N. Y. Filed Aug. 20, 1897. Serial No. 648,884. (No model.)



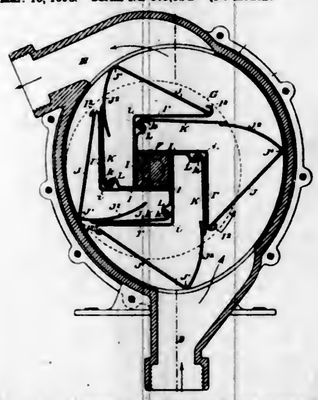
Claim.—1. The combination with an air-pump, of a yoke or shoe arranged at the front end of the pump and having an unobstructed front face or bearing-surface adapted to bear against a pneumatic tire, and a lateral delivery branch for the attachment of a hose arranged in rear or outside of the bearing-surface of the yoke, substantially as set forth.

2. An attachment for an air-pump consisting of a nipple adapted to be attached to the delivery end of the pump, a yoke or shoe arranged at the front end of said nipple and having an unobstructed concave face adapted to bear against a pneumatic tire, and a lateral discharge branch connected with said nipple, substantially as set forth.

3. An attachment for an air-pump, consisting of a nipple adapted to be attached to the delivery end of the pump, a concave yoke arranged at the front end of said nipple and adapted to bear against a pneumatic tire and containing an air-delivery passage which extends from said nipple to one end of the yoke, substantially as set forth.

4. An attachment for an air-pump consisting of a nipple adapted to be attached to the delivery end of the pump, a yoke or shoe arranged at the front end of said nipple and having an unobstructed concave face adapted to bear against a pneumatic tire, a lateral discharge branch connected with said nipple, and a retaining-band connected with the yoke and adapted to embrace the wheel-rim, substantially as set forth.

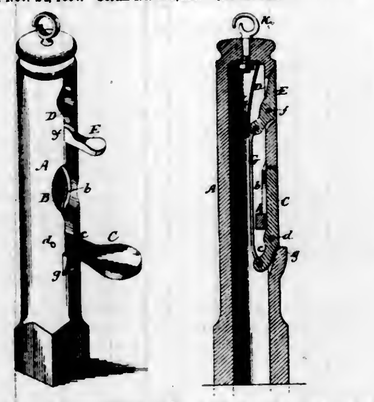
610,992. ROTARY SAND-PUMP. JOHN MANN, Butte City, Cal. Filed Mar. 10, 1898. Serial No. 673,324. (No model.)



Claim.—1. A sand-pump comprising an irregularly oval casing, a shaft extending through the sides of said casing having arms fixed to it and extending out tangentially, thence being bent at right angles and having hook-shaped ends formed upon them, in combination with angular plates, one end of each of which engages one of the hook-shaped ends of the axle-plates and the angles of said piston-plates adapted to travel in contact with the inner periphery of the rim of the casing.

2. A sand-pumping apparatus consisting of a casing in the form of an irregular oval having inlet and discharge passages at approximately opposite sides, a shaft extending through the sides of the casing journaled and having means by which it is rotated, plates fixed tangentially to the shaft extending outward, thence bent at right angles parallel with the body of the next adjacent plate having the outer ends turned into a hook shaped form, angular pistons, one end of which engages said hooks, the angles traveling against the interior of the casing and the other ends bent and extending interior to the axle-plates, intermediate plates lying between the ends of the piston-plates and the exterior portion of the axle-plates, the interior ends of said plates being bent over into hook form and engaging with bent hook-shaped plates having the inner ends fixed to the axle interior to the first-named plates.

610,993. HITCHING-POST. CLAYTON R. MARK, Lebanon, Pa. Filed Nov. 24, 1897. Serial No. 659,689. (No model.)

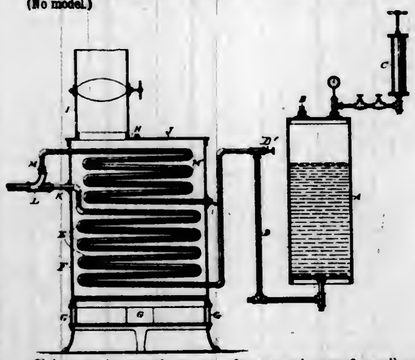


Claim.—1. In combination with a hitching-post having vertical slots in its side, a step hinged to said post and having its inner portion passing through one of said slots, a trigger hinged to said post and having its inner end passing through another one of said slots, and a rod connecting said trigger to the step substantially as described.

2. The combination of a post having vertical slots in its side, a step hinged to said post and having its inner portion passing through one of said slots, a trigger hinged to said post and having its inner end passing also through a slot, a rod connecting said trigger to the step and a spring bearing against the inner end of said trigger substantially as described.

3. In combination with a post having a hinged step and a trigger for said step, with a rod controlling said trigger and step, a hitching-hook K open on one side and having a retaining-stem with a spring upon said stem and bearing against the inner end of the trigger substantially as described.

610,994. APPARATUS FOR MAKING GAS FROM OIL. FRANCIS L. MARTINETTE, Chico, Cal. Filed Feb. 9, 1898. Serial No. 669,668. (No model.)



Claim.—An improved apparatus for generating gas from oil, consisting of a furnace, a heating-coil contained wholly therein, a chamber adapted to receive liquid to be vaporized, an air-forcing mechanism connecting with said chamber so as to exert a pressure therein to force the liquid from the chamber and through the coil, a pipe connecting the chamber with the coil, a delivery-pipe connected with the outlet end of the coil and a jet-nozzle connected with said pipe,

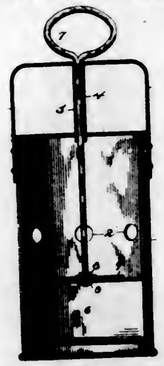
a second coil within the furnace directly above the first-named coil, having an air-inlet at one end and having the opposite end connected with a pipe which joins the discharge-pipe of the first-named coil proximate to the jet-nozzle.

610,995. HORSE-RELEASING DEVICE. JOSEPH R. MARTIN and CYRUS T. GAMBLE, Almy, Wyo. Filed June 18, 1898. Serial No. 683,876. (No model.)



Claim.—The combination with a singletree, the outer ends of which are reduced and provided with longitudinal bores intersected by longitudinal slots, coil springs arranged at the inner ends of said bores, metallic sleeves located within said bores and provided with registering slots, bolts having their reduced inner ends extending through the coils of said springs, ferrules located upon the reduced ends of the said singletree and provided with a registering slot, said ferrules having their outer ends formed with loops through which the outer ends of the bolts extend, posts secured to said bolts and projecting upwardly through the slots in the sleeve, singletree and ferrule, dust-guards carried by said bolts for covering said slots, pulleys journaled upon said singletree, ropes roved through said pulleys and connected with said posts and a rope leading from the aforesaid ropes to a point within convenient reach of the occupant of a vehicle, substantially as described.

610,996. WASHING-MACHINE. JESSE MILLER, Broadway, Ohio. Filed Apr. 22, 1897. Serial No. 633,262. (No model.)

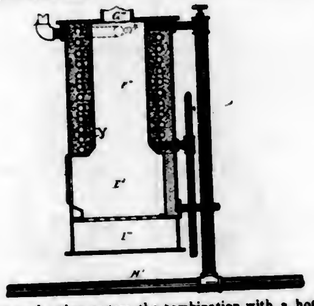


Claim.—A washing-machine comprising a cylindrical drum closed at its upper end and open at its lower end, and having a series of openings in its sides midway of its ends, an arched bar secured at its ends to the sides of the drum and having its horizontal portion centrally apertured, a tube connecting the middle portion of the arch with the closed end of the drum and projecting into the latter a short distance, a rod having a handle at its upper end and passing through the said tube and guided in its movements thereby, a hollow plunger open at its lower end and of less diameter than the drum, and adapted to reciprocate therein, and secured to the lower end of the said rod, and a reinforcing-plate secured to the lower end of the said rod for backing the head of the hollow plunger, substantially as set forth.

610,997. APPARATUS FOR HEATING CARS. JAMES F. MCELROY, Lansing, Mich., assignor, by mesne assignments, to The Consolidated Car-Heating Company, Wheeling, W. Va. Filed Mar. 10, 1897. Serial No. 230,339. (No model.)

Claim.—1. In a car-heating system, the combination with a car, of a water-receptacle within said car provided with a system of circulating hot-water pipes extending through the car, of a main steam-pipe extending from the locomotive to said car, a steam-coil inclosed within said receptacle and connected with the main steam-pipe to heat water in said receptacle, and a combustion-chamber within the receptacle, substantially as described.

2. In a car-heating system, the combination of a heater composed of an inner casing and an outer casing concentrically arranged, forming between them a space for water, said inner casing having within it a combustion-chamber in combination with circulating-pipes communicating with the space between the casings, a steam-coil passing through said space and a source of steam connected with the coil, substantially as described.



3. In a car-heating system, the combination with a hot-water-circulating system within the car, provided with a water-heater having a local source of heat within the same as a means of heating the water therein, of a main supply-pipe in the car, adapted to be connected with a distant source of steam, and an open branch pipe extending from the main pipe through the water in the heater, to a point below the bottom of the car to discharge the water of condensation, substantially as described.

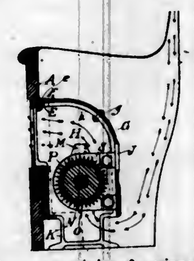
610,998. THERMOSTAT. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, Wheeling, W. Va. Filed Sept. 18, 1891. Serial No. 406,108. (No model.) Patented in England Feb. 16, 1892, No. 3,035; in France Feb. 22, 1892, No. 219,562; in Belgium Feb. 22, 1892, No. 96,466; in Germany Feb. 23, 1892, No. 72,164, and in Austria-Hungary June 21, 1893. No. 43/39.



Claim.—In a thermo-cell, the combination with an expansible cell of an actuating medium in the cell comprising a plurality of independent liquids, each having a boiling-point different from that of the others, the capacity of the cell being such that the same is expanded step by step upon the evaporation of each liquid and permits the evaporation of the liquids, substantially as described.

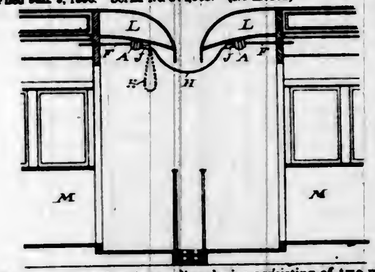
610,999. ELECTRIC HEATER. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed Mar. 18, 1895. Serial No. 542,225. (No model.)

Claim.—1. An electric heater consisting of a casing provided with a perforated portion adapted to fit in an aperture of the riser of a car-seat and having a recessed lower portion adapted to fit behind said riser and below the aperture therein, flanges adapted to secure the front edge of said perforated plate, a resistance placed within said heater, a casing inclosing said resistance at the top and back thereof, bracket-supports adapted to sustain said casing and perforated plate upon the floor of the car, with a car-seat riser entirely closed except for the apertures in which said perforated plate is placed and a car-body having a seat arranged with passages between said seat and the outer wall of the car, substantially as described.



2. An electric heater consisting of a casing provided with a metal front piece, the upper portion of which is perforated and projects through a perforation in the riser of the car-seat, a rabbeted portion extending behind and below said riser, a suitable support with openings therein to permit air to enter from below, a non-conductive lining at the back and top of said casing, a resistance placed therein, a car-body provided with a seat, a riser placed beneath said seat and entirely closed except where said perforated plate is inserted, said seat arranged to provide for an air-passage between the back of the seat and the outer wall of the car, substantially as described.

611,000. ELECTRIC COUPLING. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed Jan. 9, 1896. Serial No. 574,903. (No model.)



Claim.—1. An electric coupling device consisting of two members each of which is connected to a conductor, one of said members carrying a finger mounted in an opening formed in insulating material, said finger depressed below the ends of the insulating material said finger being electrically connected to the conductor, the opposite member being provided with the external insulating-wall and an internal metallic core electrically connected to the conductor, said insulating-wall extending beyond said core said core being adapted to engage with the finger of the opposite member, substantially in the manner and for the purpose set forth.

2. In an electric coupling device, the combination of two members, each member being formed with an external insulating-wall, one of said members carrying an internal contact-finger electrically connected with the conductor, the end of said finger being below the mouth of the external wall, the opposite member being adapted to enter within the wall of the first-named member and carrying within and protected by its insulating-wall an internal metallic core electrically connected to the corresponding conductor and adapted to fit over and form an electric contact with the finger of the first-mentioned member, substantially as described and for the purpose set forth.

3. In an electric coupling device, a coupling-section composed of a flexible insulated conducting-wire provided with an insulating-handle at each end, a metallic core within the opening in said handle, each core being electrically connected with the insulating conducting-wire and adapted to engage an electrically-insulated companion member upon the fixed conducting-wire, substantially as set forth and for the purpose specified.

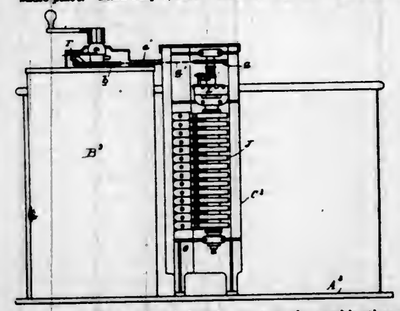
4. An electric coupling device for railway-cars, consisting of terminal pieces on the ends of the electrical conductors of said cars to be connected, a flexible section to connect said terminal pieces, and insulated couplings upon either end of said flexible section, adapted to engage said terminal pieces, said couplings being constructed with external insulated walls and internal metallic contact parts, substantially as described and for the purpose set forth.

5. In an electric coupling, the combination of two companion terminals, one carrying an external insulated cup-shaped wall, having therein an internal contact-finger, the end of which is depressed below the mouth of the external wall, the companion coupler being composed of the external cup-shaped insulating-wall, having therein an internal cup-shaped metallic core, the end of which is depressed below the mouth of the external wall electrically connected to the conductor and adapted to elastically engage the finger in the opposite or companion coupler-section, substantially as described and for the purpose set forth.

6. In an electric coupler, a block provided with two openings, a metallic plate secured within each of said openings, a metallic finger secured to each of said plates, a means for connecting said plates with a stationary core, a connecting-cable provided with a handle containing a metallic cylinder adapted to fit upon said finger, substantially as described and for the purpose set forth.

7. An electric coupling device, consisting of two members, each of which is connected to a conductor, each of said members consisting of a cup-shaped insulating-handle of insulating material, an internal metallic core protected by said insulating material, so arranged that electrical connection cannot be made except through the opening in said cup-shaped insulating material, substantially as described and for the purpose set forth.

611,001. ELECTRIC-HEATING SYSTEM. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed July 6, 1896. Serial No. 598,164. (No model.)



Claim.—1. In an electric-heating system, the combination of an electric motor, a controller in electrical connection with said motor, a switch, electric heaters, said switch adapted to regulate the intensity of the current carried to said heaters, connections between said switch and said controller, a handle, mechanism capable of being brought in contact with said switch or said controller, said handle adapted to operate said mechanism and through it said switch and said controller independently, substantially as described.

2. In an electric-heating system, an electric motor in combination with the running-gear of a car, a controller, a switch, electric heaters suitably connected, a handle or lever an idler-lever adapted to be operated by said handle, a switch-arm adapted to rotate said switch, a controller-arm adapted to rotate said controller, said idler adapted to engage with said switch-arm and with said controller-arm respectively, a guiding-support for said idler, the movement of said handle causing said idler to engage with said switch-arm or with said controller-arm, depending upon the direction of movement of said handle, substantially as described and for the purpose set forth.

3. A switch composed of a spindle, suitable metallic contact-plates placed thereon, brushes adapted to engage with said contact-plates, said switch adapted to rotate in either direction, an auxiliary spindle, a spring mounted thereon, said auxiliary spindle carrying a collar and a thimble, a post with which lugs on said collar and said thimble respectively engage, a latch adapted to engage with a notched plate, so connected that when the auxiliary spindle is revolved the tension on the spring will be increased until the latch leaves one of the notches and passes into another notch, breaking the contact between the brushes and the plates forcibly and abruptly, substantially as described and for the purpose set forth.

4. A switch, consisting of a series of metallic contact-plates placed on a spindle, a plate connected with said switch having in its periphery a series of notches, a latch connected with said spindle adapted

to engage with said notches, and means for forcing said latch from one notch to another forcibly and abruptly, substantially as described.

5. A cylindrical switch, suitable contact-plates thereon, brushes adapted to engage therewith, a plate connected thereto, notches in said plate, a latch adapted to engage with said notches, a spindle carrying a cam-shaped plate, and a spring on said spindle, connected at one end with a collar on the spindle and at the other with a thimble on said spindle, said collar and thimble adapted to engage with a post so arranged that the operation of said spindle will cause the cam-shaped plate to raise the lug from said notches, and force said lug into an adjoining notch, substantially as described, and for the purpose set forth.

6. The combination of a controller, an arm attached to the spindle thereof, a sprocket-wheel placed upon the spindle of said controller, an arm connected with said sprocket-wheel, an idler adapted to engage with the arm of said controller, also with the arm on said sprocket-wheel, a handle adapted to move said idler, with means for causing said idler to become automatically disengaged from one of said arms, and immediately make engagement with the other, substantially as described and for the purpose set forth.

7. The combination of a controller, an arm attached to the spindle thereof, a sprocket-wheel placed upon the spindle of said controller, an arm connected with said sprocket-wheel, an idler adapted to engage with the arm of said controller, also with the arm on said sprocket-wheel, a handle adapted to move said idler, means for causing said idler to become automatically disengaged from one of said arms, and immediately make engagement with the other, with a switch provided with a sprocket-wheel connected by a chain to the sprocket-wheel on said controller, the operation of said sprocket-wheels adapted to change the position of the switch, substantially as described.

8. A switch suitably connected, a brush consisting of a spring-plate, a finger secured thereto, said plate attached to a brush-frame, a bolt passing through said brush-frame and secured to the spring-plate in the rear of the finger, means for locking said bolt in such a manner as to regulate the movement of said brush-finger, with a bolt passing through said brush-frame in contact with said spring-plate adapted to regulate the intensity of the spring, substantially as described.

9. A switch mounted on a spindle, a plate secured thereto, a latch adapted to engage with notches in said plate, an auxiliary spindle, a spring mounted thereon, a means for raising the latch from notches in said plate and at the same time placing said spring under tension, by the movement of said auxiliary spindle causing the latch to be released from said plate and to jump forcibly and abruptly to the next notch thereon, causing a like movement in the switch, substantially as described.

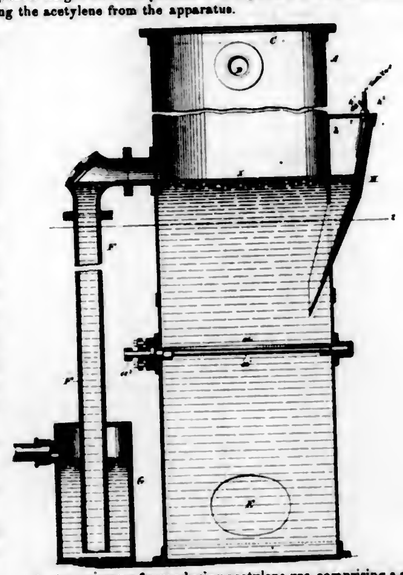
10. A switch composed of a spindle, metallic contacts thereon, brushes adapted to rest on said metallic plates, a notched plate secured to one end of the switch, one surface of said plate irregular in form and indented at intervals, a plate mounted on said spindle to which is hinged a latch adapted to engage in the indentations on said notched plate, a post projecting from said plate carrying said hinge, an auxiliary spindle, a cam-plate secured to said auxiliary spindle, the inclined surfaces of said cam-plate approaching each other at their lowest point and gradually rising to the right and left respectively, said cam-plate carrying a post, a collar mounted on said auxiliary spindle, a spring on said auxiliary spindle, one end of which is secured to said collar, a lug on said collar adapted to engage with said posts, a thimble mounted on said auxiliary spindle, a lug attached to said thimble, adapted to engage with the opposite sides of said posts from which the lug on the collar engages, one end of said spring attached to said thimble, all substantially as described and for the purposes set forth.

611,002. ACETYLENE-GAS GENERATOR. RICHARD PINTSCH, Berlin, Germany, assignor to The Safety Car Heating and Lighting Company, New York, N. Y. Filed Oct. 30, 1896. Serial No. 610,542. (No model.) Patented in Switzerland Sept. 19, 1896, No. 12,865, and in England Oct. 31, 1896, No. 20,602.

Claim.—1. In an acetylene-generator, the combination of a hollow liquid-containing body, a grate movably mounted therein, means for introducing carbid into the hollow body and conducting the same to the grate and means for maintaining the grate constantly immersed, whereby the carbid which rests upon the grate may be constantly immersed in a body of water.

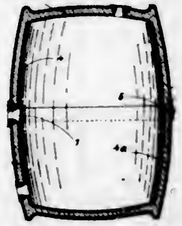
2. In an acetylene-generator, the combination of a hollow liquid-containing body, a grate reversibly mounted therein, means for introducing carbid into the hollow body and conducting the same to the grate and means for maintaining the movable grate constantly immersed, whereby the carbid which rests upon the grate may be constantly immersed in a body of water.

3. In an acetylene-generator, the combination of a hollow body A, a grate *a* mounted therein, a funnel or chute H for introducing carbid into the apparatus, a water-inlet pipe A^1 and a water-outlet pipe F arranged to maintain the water-level in the apparatus at a greater height than the position of the grate, and means for removing the acetylene from the apparatus.



4. An apparatus for producing acetylene gas, comprising a closed receptacle having therein a pivoted horizontal grating, a lever located outside of the casing and connected to the grating so as to rotate the same on its pivot, an overflow-pipe F for maintaining a constant water-level dipping into a water seal G and a laterally-charging hopper or chute H, the said parts being combined and operating, substantially as herein described.

611,003. KEG OR BARREL. JOSEPH C ROTH, Buffalo, N. Y. Filed Nov. 18, 1897. Serial No. 658,890. (No model.)



Claim.—A keg consisting of an outer metallic shell and an inner metallic shell each shell being formed in two sections with the edge of one section overlapping the other, a filling of asbestos or similar material interposed between the two shells, the inner shell having a series of circular openings provided with raised rings, supplementary annular ring portions each provided with a peripheral screw-thread terminating at its lower end in a peripheral enlargement or flange and brazed or otherwise rigidly secured to the top of one of the raised rings and the outer shell having a corresponding series of openings of larger circumference and adapted to register with the corresponding openings in the inner shell and annular portions each provided with an interior screw-thread and a top flange and adapted to be inserted in one of the openings in the outer shell and screwed upon the adjacent supplementary ring portion of the inner shell, as set forth.

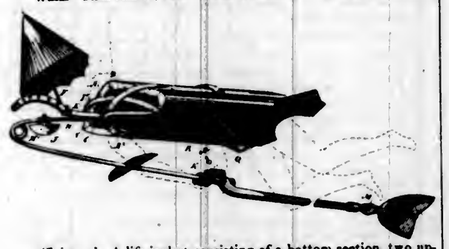
611,004. ORNAMENTAL RING. LOUIS E. SADLER, Attleborough, Mass., assignor to F. H. Sadler & Co., same place. Filed Jan. 20, 1898. Serial No. 667,211. (No model.)

Claim.—1. A ring formed of wire the ends of which are secured together by solder, and the jointed portion ornamented by dies; whereby the jointed portion of the ring is hardened by the dies as described.

2. In a ring, the combination with the wire *a*, the soldered joint *b*, and the ornamented center *c*, c^1 of the jewel-setting *f*, the perforated base *g*, of the setting and the tubular thimble *e* integral with the ring; whereby the setting is secured to the ring by the expansion of the end of the thimble without heating the metal, as described.



611,005. SWIMMING APPLIANCE. SAM STONE, Quillayute, Wash. Filed Jan. 21, 1898. Serial No. 667,363. (No model.)



Claim.—1. A life-jacket consisting of a bottom section, two upper sections hinged thereto at the sides and closable over the back of the wearer, means for securing them in position and an extension of the lower portion toward the front.

2. A life-jacket consisting of sections hinged and closable about the body of the wearer, an extension of the lower portion toward the front, an adjustable arm carried upon said extension and means for the attachment of a protecting awning and sail.

3. The combination with a life-jacket consisting of hinged sections closable about the body with a forward extension, of an arm supported by and adjustable upon said extension having a curved slotted front with pin holes therethrough, a handle adapted to fit the slotted portion and an awning or sail carried by said handle and adapted to open or close thereupon.

4. A life-jacket consisting of sections united and adjustable as shown, a flexible rod secured to the lower section extending forward, coiled and returning upon itself beneath the apparatus, and a propeller carried by said rod and means for operating said propeller.

5. The combination with a life-jacket adapted to be secured to the person of the wearer, of a flexible rod secured to the lower section extending forwardly and returning upon itself beneath the apparatus, a bar extending rearwardly from said rod and a clamp by which the two are adjustably secured together, a flexible section formed with or secured to the rear end of said bar and a propeller carried by said flexible section, and means for vibrating the bar and propeller.

6. A life-jacket composed of jointed sections with means for attaching them to the body of the wearer, a flexible rod secured to the lower section extending forwardly and returning upon itself beneath the apparatus, a flexible section at the rear end with a tail or propeller carried thereby, handles fixed to the rod and adapted to be grasped by the hands of the wearer so that the rod may be oscillated and the propeller caused to act.

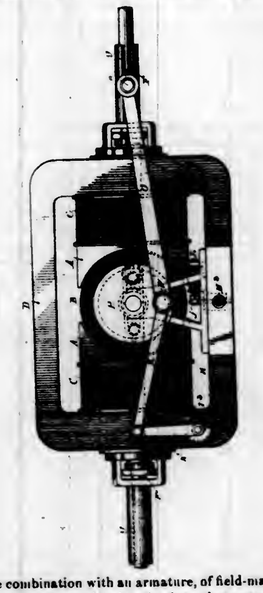
7. A life-jacket consisting of hinged sections and means for securing them to the body of the wearer, a propelling device connected with said jacket and means for actuating said device and adjustable balancing-fins connecting with the jacket substantially as described.

611,006. COMBINED GENERATOR AND STEAM-ENGINE. MARCY L. WHITFIELD, Memphis, Tenn., assignor to the American Dynamo Engine and Motor Lamp Company, of Tennessee. Filed Nov. 16, 1897. Serial No. 658,681. (No model.)

Claim.—1. A field-magnet or pole-piece having its interior hollowed so as to constitute a piston-chamber, and having valve-passages formed within said field-magnet or pole-piece, in combination with a piston and suitable valve mechanism, substantially as described.

2. A field-magnet or pole-piece of relatively large mass having its interior hollowed so as to constitute a relatively small piston-chamber, whereby the heat produced by steam within said chamber will be radiated by said pole-piece, and an armature rotatable with respect to said pole-piece, in combination with a piston, suitable valve mechanism, and connections between said piston and armature, substantially as described.

3. The combination with an armature, of a field-magnet hollowed so as to constitute a piston-chamber, and having valve-passages formed within said field-magnet or pole-piece, a piston within said piston-chamber, valves and valve mechanism for controlling ingress and egress to said piston-chamber, and mechanism for connecting said piston to said armature, whereby movement of one will cause corresponding movement of the other, substantially as described.



4. The combination with an armature, of field-magnets hollowed so as to constitute piston-chambers having valve-passages also formed within the same, a yoke holding said field-magnets in line with each other on opposite sides of said armature and also completing the magnetic circuit through said field-magnets, pistons within said piston-chambers, valve mechanisms for controlling ingress to and egress from said piston-chambers, and mechanism for connecting said pistons to said armature and thereby rotating said armature, substantially as described.

5. The combination with an armature, an armature-shaft, disks on both ends thereof, and field-magnets hollowed so as to constitute piston-chambers having valve-passages also formed within the same, of a frame adapted to hold said field-magnets in line with each other on opposite sides of said armature and also to complete the magnetic circuit through said field-magnets, pistons within said piston-chambers, valve mechanisms for controlling ingress to and egress from said piston-chambers, and driving-rods connecting said pistons and said disks, said driving-rods being on opposite sides of said field-magnets and being quartered with relation to each other, substantially as described.

6. The combination with an armature, of field-magnets hollowed so as to constitute piston-chambers having valve-passages also formed within the same, a frame holding said field-magnets in line with each other on opposite sides of said armature and also completing the magnetic circuit through said field-magnets, pistons within said piston-chambers, valve mechanisms for controlling ingress to and egress from said piston-chambers, mechanism for connecting said pistons to said armature and thereby rotating said armature, and means operated by each piston-chamber for operating the valve mechanism of the opposite piston-chamber, substantially as described.

7. The combination with an armature, an armature-shaft, disks on both ends thereof, and field-magnets hollowed so as to constitute piston-chambers having valve-passages formed within the same, of a frame adapted to hold said field-magnets in line with each other on opposite sides of said armature and also to complete the magnetic circuit through said field-magnets, pistons within said piston-chambers, valve mechanism for controlling ingress to and egress from said piston-chambers, driving-rods connecting said pistons and said disks, and valve-rods connecting the valve mechanism of each piston-chamber with the driving-rod of the opposite piston-chamber, substantially as described.

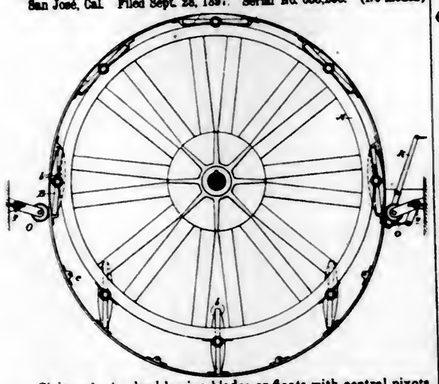
8. The combination with an armature, pole-pieces hollowed so as to constitute piston-chambers having valve-passages also formed within the same, and a frame adapted to hold said pole-pieces in line with each other on opposite sides of said armature, of pistons within

said piston-chambers, valve mechanism for controlling ingress to and egress from said piston-chambers, mechanism for connecting said pistons to said armature whereby movement of the one will cause corresponding movement of the other, a magnetic yoke connecting said pole-pieces, and an energizing-coil wound thereon, substantially as described.

9. The combination with an armature, two pole-pieces, each of said pole-pieces being interiorly hollowed so as to constitute a piston-chamber, and being formed with valve-passages, a yoke connecting said pole-pieces, said yoke having formed therein ingress and egress conduits, and valve mechanism for controlling ingress to and egress from said piston-chamber, of a piston within said piston-chamber, and mechanism connecting said piston and said armature whereby movement of the one will result in corresponding movement of the other, substantially as described.

10. The combination with an armature, pole-pieces, and a commutator, of commutator-brushes, magnetic fittings pivoted to said pole-pieces and adapted to change position relative thereto with variations of magnetic attraction of said pole-pieces, and mechanism connecting said brushes with said fittings, whereby the pressure with which the brushes bear against the commutator is dependent upon the magnetic attraction of said pole-pieces, substantially as described.

611,007. FEATHERING PADDLE-WHEEL. DANIEL ABBOTT, San José, Cal. Filed Sept. 28, 1897. Serial No. 653,296. (No model.)



Claim.—1. A wheel having blades or floats with central pivots, said pivots being journaled in the rims between which they extend, a band extending around the periphery of the floats having lugs projecting therefrom at intervals, slots formed with relation to said lugs so that the lugs alternately enter and engage the slots upon opposite edges of the floats and rollers fixed and contacting with the band near the horizontal plane of the wheel-axis.

2. A wheel consisting of rims mounted upon a driving-shaft, blades or floats having central end pivots journaled in said rims, bars extending transversely across the central portion of the floats forming channels upon opposite sides and slots formed upon the edges of the floats, a band surrounding the wheel adapted to engage and lie within the channels of the floats, said band having lugs projecting from it upon opposite sides of the floats at such a distance apart that when one lug engages the slot in one edge of the float, the other lug is disengaged from a slot upon the opposite edge, rollers journaled in spring-pressed frames near the horizontal axis of the wheel adapted to press against the band whereby the latter is advanced at a different rate of speed from that of the wheel, and the lugs are alternately engaged with and disengaged from the edges of the floats.

3. A paddle-wheel having floats with central end pivots about which they are turnable, a band extending around the wheel having lugs adapted to alternately engage slots upon the edges of the floats, said band traveling at a different rate of speed from that of the wheel whereby a lug on the band and the slot in the lower edge of each blade are engaged so as to retain the blade in a vertical position while passing through the water, and disengaged after the blade leaves the water, the lug in front of the blade being at the same time engaged with the corresponding slot therein, so that the blade lies flatwise while passing over the top of the wheel, and a roller or rollers journaled in frames adapted to press against the band as the wheel rotates.

4. A paddle-wheel consisting of rims, a paddle-shaft upon which they are mounted, floats having journals upon their ends turnable in bearings upon the wheel-rims so that the floats are revoluble thereon, channel-pieces fixed to the central portion of the floats having slots formed upon opposite edges of the floats, a band surrounding the wheel and guided by said channel-pieces, said band having lugs adapted to alternately engage the slots in the opposite edges of the floats during each revolution of the wheel, spring-pressed rollers forming contact with the band near the horizontal plane of the wheel-axis, and a mechanism whereby the roller from which the top of the wheel is at that instant revolving may be thrown out of contact with the band whereby the position of the floats upon the wheel is reversed.

5. A paddle-wheel having peripheral floats revoluble upon independent axes, a band surrounding the wheel, spring-pressed rollers journaled in the plane of rotation of, and pressing against the band, locking devices upon the band and upon the floats, said locks alternately engaging the front and rear edges of the floats, whereby the floats make a half-revolution upon their axes during each complete revolution of the wheel.

6. A paddle-wheel having peripheral floats revoluble upon independent axes, a band surrounding the wheel, spring-pressed rollers journaled in the plane of rotation of, and pressing against the band, locking devices upon the band and upon the floats, said locks alternately engaging the front and rear edges of the floats whereby the floats make a half-revolution upon their axes during each complete revolution of the wheel, and mechanism whereby the roller-pressure may be removed from the band, and the relative positions of the top and bottom floats are reversed.

611,008. CONTAINING VESSEL OR PACKAGE. ALBERT GERSTENDORFER and MAX GERSTENDORFER, New York, N. Y. Filed May 11, 1898. Serial No. 680,334. (No model.)



Claim.—1. In a package for exhibiting and storing a plurality of mixable ingredients such as a liquid and a solid, the combination of a transparent bottle adapted to contain the liquid, a receptacle separate from the bottle and removable therefrom and adapted to contain other of the ingredients and having one wall transparent through which wall the contents of the receptacle may be observed, the said wall being so located with respect to the bottle that the contents of the receptacle may be observed through the said bottle and means for maintaining the receptacle in position on said bottle, substantially as and for the purpose set forth.

2. In a package for exhibiting and storing a plurality of mixable ingredients, the combination of a transparent liquid-containing vessel adapted to contain one of the ingredients, a receptacle separate from the transparent vessel adapted to contain other of the ingredients and provided with an apertured wall through which its contents may be observed, the said receptacle and its aperture being combined with the vessel in such manner that the contents of said receptacle may be observed through the said vessel and aperture substantially as and for the purpose set forth.

611,009. FLASH-LAMP. CHARLES H. GOODMAN, Bucyrus, Ohio. Filed Mar. 4, 1898. Serial No. 672,515. (No model.)



Claim.—1. In a flash-lamp, a bowl to contain a charge of flash-powder said bowl made shallow and flaring outwardly and having a movable lid or cover to confine the charge in place, in combination with a hollow stem rigid with said bowl, a movable holder therein and a match carried by the holder and adapted to ignite the powder from below.

2. In a flash-lamp, a bowl to contain a charge of explosive powder, a hollow stem for said bowl, a match and a movable holder therefor, and means for limiting the initial insertion of the holder within the stem whereby the holder is held against accidental movement.

3. In a flash-lamp, a bowl to contain the charge of flash-powder, said bowl flaring outwardly, having a hinged lid or cover and an integral threaded nipple, a hollow stem to engage said nipple, a match-holder slidable within the stem and means carried by the stem and adapted to contact with and ignite a match carried by the holder.

4. In a flash-lamp, a bowl to contain a charge of flash-powder said bowl flaring outwardly and provided with a lid or cover, a hollow stem fitted to the bowl having its inner end provided with one or more blades within or contiguous to the base of the bowl, a holder slidable within the stem and adapted to carry the head of a match into contact with said blade or blades, a finger-piece on the stem and a thumb-piece on the holder whereby the latter is operated.

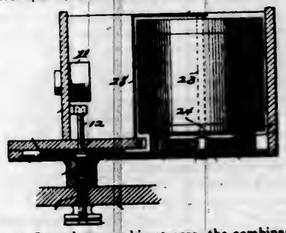
5. A flash-lamp comprising a bowl to contain the flash-powder, a hollow stem for the bowl, a match-holder slidable within the stem, means for igniting the match contiguous to the bowl-chamber, and a spring or plate on the holder having a spur or point to be forced through an opening in the holder so that it enters the match and thereby insures the burned match being withdrawn with the holder.

6. A flash-lamp comprising a bowl to contain the flash-powder, a hollow stem for the bowl, a slitted holder movable in the stem and provided with a spring-plate having a projecting spur or point, said plate being bowed or curved so that when the holder is inserted in the stem the plate is straightened out and the point or spur thereof is forced into the match, said plate frictionally holding the holder within the stem, and means for igniting the match contiguous to or within the bowl-chamber.

7. A flash-lamp comprising a bowl to contain flash-powder, a hollow stem for the bowl, a match-holder and means for igniting a match carried thereby, and a safety spring-plate on the holder adapted to contact with the stem to normally limit the insertion of the holder in the stem, said spring-plate yielding under pressure, to permit the holder to be shot forward to ignite the flash-powder.

8. An improved flash-lamp consisting of a shallow bowl flaring outwardly and provided with a hinged lid or cover and laterally-projecting nipple, a hollow stem to be fitted to said nipple and provided with a finger-piece, a slitted holder movable in the stem and adapted to contain a match, a bowed or curved spring on the holder having a spur or point to be pressed into the match, to positively secure the latter to the holder, a blade or blades at the inner end of the stem and in the path of movement of the match-head, and a spring-plate on the holder for limiting the initial position of the same within the stem, said plate yielding under pressure to enable the holder to be shot forward to ignite the match.

611,010. PANORAMIC CAMERA. FRED I. GREGORY, Chicago, Ill. Filed June 11, 1897. Serial No. 640,329. (No model.)



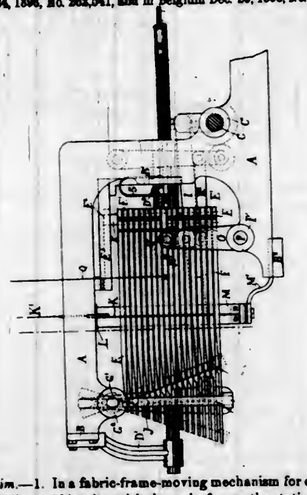
Claim.—1. In a photographic camera, the combination, with a box or casing, having a fixed axis whereon it is mounted to rotate and a lens located in the axis of rotation, of a fixed gearing concentric with said axis, a cylindrical film-holder rotatably mounted eccentric to said axis, and a gear connected with the film-holder to actuate the same and operatively connected with the fixed gear, substantially as set forth.

2. In a photographic camera, the combination, with a box or casing having a fixed axis whereon it is mounted to rotate and a lens located in the axis of rotation, of a fixed gear concentric with said axis, a cylindrical film-holder rotatably mounted eccentric to said axis, a movable gear connected with the film-holder and meshing with the fixed gear, and a coiled spring connected at one end with the box or casing and at the other with one of said gears to simultaneously rotate the box or casing and the film-holder, substantially as set forth.

3. In a panoramic camera, the combination, with a rotatable box or casing having a lens located in the axis of rotation, of a rotating disk or head adapted to receive and hold a film-holder, the box or casing being provided with an aperture opposite said disk or head, and a cylindrical film-holder adapted to be detachably connected with the disk or head and having a slip-cover to fit and close the aperture in the casing, substantially as set forth.

4. In a photographic camera, a box or casing made in two sections, a front section rotatably mounted, having a lens located in the axis of rotation and having internal grooves at its rear, and a detachable rear section carrying a rotatable film-holder and having tongues to engage the grooves of the front section, substantially as set forth.

611,011. JACQUARD MECHANISM FOR EMBROIDERING-MACHINES. HENRY HILL, Nottingham, England. Filed Jan. 28, 1897. Serial No. 621,102. (No model.) Patented in England Feb. 6, 1896, No. 2,751; in Germany Aug. 8, 1896, No. 91,184; in Switzerland Nov. 14, 1896, No. 13,399; in Austria Dec. 18, 1896, No. 47/335; in France Dec. 24, 1896, No. 262,541, and in Belgium Dec. 29, 1896, No. 125,419.



Claim.—1. In a fabric-frame-moving mechanism for embroidery-machines the combination with the main frame, the stationary frame, the hooked jacks pivoted to said frame, one above the other but in different vertical planes, connections between the said pivoted jacks and the fabric-frame the swinging frame having pins at varying distances from its fulcrum adapted to engage with the hooks on the jacks the vertical needles and connection between said needles and the vertical needles of the jacquard, substantially as described.

2. In a fabric-frame-moving mechanism for embroidery-machines the combination with the main frame, the two diagonal frames, each provided with a corresponding number of steps, the jacks pivoted to each of said steps arranged diagonally with respect to a vertical line, connections between said pivoted jacks and the fabric-frame, the swinging frame having openings to receive the jacks, said openings formed with steps corresponding to the steps of the diagonal frames, and each provided with a pin with which the hook on the corresponding jack is adapted to engage, said pins arranged diagonally with respect to a vertical line, the vertical needles and connections between said needles and the vertical needles of the jacquard; substantially as described.

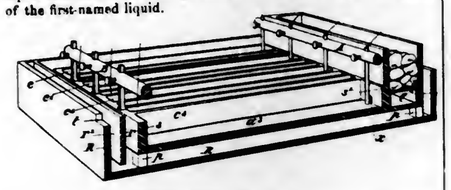
3. In a fabric-frame-moving mechanism for embroidery-machines the combination with the main frame, the diagonally-arranged frames, the hooked jacks pivoted thereto, arranged diagonally with respect to a vertical line the swinging frame having the pins at varying distances from its fulcrum said pins arranged diagonally with respect to a vertical line and the vertically-operating needles adapted to lift the jacks to engage the pins of the swinging frame: substantially as described.

4. In a fabric-frame-moving mechanism for embroidery-machines the main frame the diagonally-arranged frame, carrying the hooked jacks, arranged diagonally with respect to a vertical line the swinging frame having the pins, arranged diagonally with respect to a vertical line, the vertically-moving needles operated by the selector-needles, of the jacquard and springs interposed between the vertically-moving needles and the selector-needles of the jacquard; substantially as described.

611,012. ELECTRIC BATTERY. VICTOR JEANTY, Paris, France. Filed Oct. 21, 1897. Serial No. 655,954. (No model.) Patented in France Nov. 10, 1896, No. 261,421.

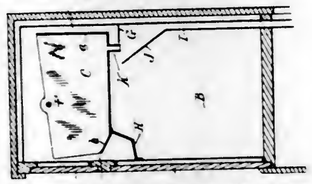
Claim.—1. An electric battery, comprising a receiver, an electrode in said receiver, a non-conducting and impervious trough located in the receiver, said trough being closed at the bottom and open at its upper portion, and another electrode in the trough, the upper edge portion of the trough being at approximately the same level with the upper edge of the electrode in the receiver.

2. An electric battery, comprising a supported body of liquid, an electrode in contact with said liquid, an impervious and non-conducting trough located in the said liquid, said trough being closed at the bottom and open at its upper portion below the surface of the liquid and at approximately the same level at which the top of said electrode is located, another electrode in said trough, and another liquid contained in the trough and in contact with the upper strata of the first-named liquid.



611,013. REFRIGERATOR. EDWIN J. KNEELAND, Lansing, Mich.

Filed June 17, 1897. Serial No. 641,137. (No model.)



Claim.—1. In a refrigerator, the combination with a provision-chamber and door for the same, of a movable ice-receptacle adapted to automatically cut off air circulation between the same and the provision-chamber, and means actuated by the door for moving the ice-receptacle to establish air circulation between the latter and the provision-chamber.

2. In a refrigerator, the combination with a provision-chamber and a door therefor, of a movable ice-receptacle, and means controlled by said door for permitting the movement of the ice-receptacle to cut off and establish air circulation between the provision-chamber and the ice-receptacle.

3. In a refrigerator, the combination with a provision-chamber and a door therefor, of a pivoted ice-receptacle, and means controlled by said door for permitting the tilting of said ice-receptacle to cut off and establish air circulation between the provision-chamber and the ice-receptacle.

4. In a refrigerator, the combination of the casing, the tilting ice-receptacle therein having air-circulating passages beside the same, a tilting movement of the ice-receptacle opening and closing these passages of the provision-chamber door, and mechanism, whereby the movement of the door controls the tilting of the ice-receptacle, for the purpose described.

5. In a refrigerator, the combination of the casing, of the ice-receptacle pivoted eccentrically so that the weight of the ice will normally tip it, of air-passages beside the ice-receptacle, an arm on the ice-receptacle extending into the path of the provision-chamber door, whereby the door controls the tilting movement of the receptacle to open and close the air-circulating passages.

611,014. PROCESS OF MAKING SALICYLO-ACETIC ACID.

LUDWIG LIMPACH, Berlin, Germany, assignor to Ludwig Friedrich Riedel, same place. Filed Dec. 1, 1897. Serial No. 660,428. (No specimens.) Patented in Germany June 14, 1896, No. 93,110.

Claim.—The process for the manufacture of salicylo-acetic acid which consists in causing monochloracetates to act on salts of salicylamid, and saponifying the product thus obtained, substantially as described.

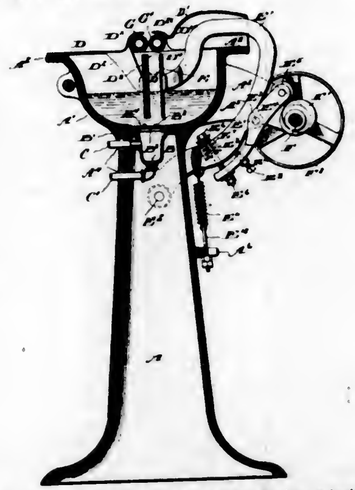
611,015. STARCHING-MACHINE. SIVERT MOE, EDWARD W. BUELL, GEORGE C. ROBERTS, and ALLEN COWLING, Chicago, Ill., assignors to the Troy Laundry Machinery Company, Limited, Troy, N. Y.

Filed Apr. 26, 1897. Serial No. 633,982. (No model.)

Claim.—1. In an organized starching-machine, starching mechanism, stripping mechanism and stripping-roll-shifting mechanism and a single device operatively connected with said mechanisms for controlling their successive operation.

2. In an organized starching-machine, belt-shifting mechanism, starching mechanism, separable stripping mechanism, and a unitary device for controlling the successive operations of said mechanisms.

3. In an organized starching-machine, the combination of starching mechanism and separable stripping mechanism, and a unitary means for bringing together and separating the stripping mechanism and for operating and separating the starching mechanism and for properly timing said operations.



4. In a starching-machine, starching mechanism, stripping mechanism, stripping-roll-separating mechanism, means for operating each of said mechanisms, and a single, unitary controlling-lever and suitable connections by which said mechanisms are brought into action in their proper order, substantially as specified.

5. In an organized starching-machine, belt-shifting mechanism, starching mechanism, positively-rotating stripping mechanism and a movable cover-section, and a single lever and suitable connections for both controlling said mechanisms and for opening and closing said cover-section.

6. In a starching-machine having a cover, starching mechanism and positively-rotating stripping mechanism, a member of each of which is mounted to move with a section of the cover of the machine, and unitary means for operating said mechanisms and controlling the movements of said cover-section.

7. In a starching-machine, starching mechanism, stripping mechanism and belt-shifting mechanism, and a unitary device and connections for gripping the work by the stripping mechanism, shifting the belt to operate the starching mechanism, separating the members of the starching mechanism to render it practically inoperative, rotating the stripping mechanism and separating the same whereby the machine is adapted to subsequently operate upon another article.

8. In a starching-machine, a power-shaft provided with belt-shifting mechanism, a starching-mechanism member operatively connected with said shaft and with power-conveying devices thereon, a sliding cover-section carrying an opposite member of the starching mechanism, and a lever operatively connected with means for successively operating and controlling the cover-section and the belt-shifting mechanism.

9. In a starching-machine, starching mechanism having a movable member and stripping mechanism comprising shiftable members, and a unitary device and connections for separating the members of the starching mechanism and simultaneously moving and retaining the stripping members together; substantially as specified.

10. In a starching-machine, starching mechanism and separable and rotatable stripping mechanism, and a unitary device and connections for stopping the rotation of and subsequently separating said stripping mechanism.

11. In a starching-machine, shiftable separable stripping mechanism, means for intermittently rotating the same, and means for shifting the same, both means being controlled through the medium of one and the same device.

12. In a starching-machine provided with shiftable stripping mechanism, starching mechanism, a power-shaft and power-conveying devices, a controlling-lever connected with mechanism for rendering the stripping mechanism operative in a different plane thereby simultaneously rendering the starching mechanism inoperative while the power-shaft is rotating.

13. In a starching-machine, a belt-shifting-lever-controlling device having operative and non-operative portions, means for connecting the said device with a controlling-lever operatively connected with means for rendering the stripping mechanism of the machine operative while the belt-shifting portion of said device is non operative.

14. In a starching-machine, a belt-shifting-lever-controlling device having operative and non-operative portions, and means for connecting the said device with a controlling-lever provided with means for operating a movable cover while an inoperative portion of the belt-shifting device is in use.

15. In a starching machine, a movable starching-paddle, a power-shaft and a lever carrying the paddle, and an interposed lever pivotally and yieldingly connected with the paddle-lever.

16. In a starching-machine, a movable starching-paddle, a power-shaft and a lever carrying the paddle, an interposed lever pivotally and yieldingly connected with the paddle-lever, and means for adjusting said yielding connection.

17. In a starching-machine, means for introducing steam therein at a substantially central point in the form of jets dispersed upwardly in various directions.

18. In a starching-machine, a steam-supply pipe communicating with an exterior chamber having communication with a starch-box at a substantially central point therein by means of dispersed jet-openings diverging upwardly from said central point.

19. In a starching-machine, stripping-rolls provided with means for rotating one of said rolls, a yoke having a latch and carrying gearing extending from and mounted at one end upon the power-shaft to a point adjacent to the stripping-rolls, and a lever constructed and arranged to move the yoke and its gearing toward the stripping-rolls, substantially as specified.

20. In a starching-machine, a sliding cover-section carrying one of a pair of stripping-rolls, a fixed cover-section provided with yielding bearings for the other stripping-rolls of the pair, a yoke carrying gearing for rotating one of said rolls, a lever and connecting devices for lifting the yoke to bring its gearing into mesh with gearing upon the stripping-roll during the movement of the lever in one direction, and a device for preventing this operation by a movement of the lever in the opposite direction, substantially as specified.

21. In a starching-machine, a movable cover-section provided with a track having a widened and a contracted portion, in combination with a lever operatively connected with a rock-arm projecting into said track and with devices for cooperating with other elements of the machine whereby said rock-arm is inoperative upon the cover-section when in the widened portion of the track, substantially as specified.

22. In a starching-machine, the combination with a fixed cover-section carrying a stripping-roll in yielding bearings, a movable cover-section carrying a stripping-roll and a starching-pad, a reciprocating starching-paddle, and mechanism comprising a unitary lever and connections for moving the cover-section and pad in a direction from the paddle and for rotating the stripping-rolls, substantially as specified.

23. A starching-machine comprising an integral column and starch-receptacle having a screw-threaded aperture, a lining seated in said aperture, and a flanged, screw-threaded steam-chamber threaded into the aperture, substantially as specified.

24. In a starching-machine, a steam-supply pipe communicating with the interior of the starch-box by a connection the opening of which is closed by a perforated plug, the perforations being divergent from its center substantially as specified.

25. In a starching-machine, a chamber or steam connection adapted to receive a steam-supply pipe and provided at its bottom with a drain-pipe and at its top with a cap or closure having perforations inclined with relation to the vertical axis of the chamber, substantially as specified.

26. In a starching-machine and in combination with the power-shaft thereof, a pivoted paddle-lever carrying a pivoted lever adapted to contact with a cam on the power shaft at one side of its pivot and connected at its other end with the paddle-lever through the medium of a spring encircled bolt, and adjusting devices arranged between the said bolt and the pivot of the lever, substantially as specified.

27. In a starching-machine, a movable cover-section secured in position by buttonhole slots and bolts, in combination with a controlling-lever operatively connected with said cover-section, the slots being proportioned in length to retain the cover in position during its movements when the machine is in use and to permit of the removal of the cover by an extended movement of the lever, substantially as specified.

28. In a starching-machine, the combination of a movable cover-section provided with brackets having tracks and carrying a stripping-roll, with a fixed cover-section carrying a stripping-roll, and with a controlling-lever provided with means operating in said tracks for closing and locking in a closed position the movable cover-section, substantially as specified.

29. In a starching-machine, the combination with a belt-shifting lever, of a sector operatively connected therewith and having non-operative portions slightly out of line with each other and an intermediate operative portion, a rock-arm, a movable cover-section, and means for operating the sector and rock-arm, substantially as specified.

30. In a starching-machine comprising belt-shifting, starching and stripping mechanisms, the latter including separable members, the combination with said mechanisms of a single unitary controlling-lever and suitable connecting devices by which the successive movements of said lever control the complete and successive functions of said mechanisms in their proper order, substantially as specified.

31. In a starching-machine, starching mechanism, stripping mechanism, tank-closing mechanism, means for successively operating each of said mechanisms, and a single unitary controlling-lever and suitable connections by which said successive operating means are brought into action in their proper order, substantially as specified.

32. In a starching-machine, comprising belt shifting, starching, and stripping mechanisms, the combination with said mechanisms of a single unitary controlling-lever and suitable connecting devices constructed and arranged to cause an article to be clamped and the commencement of the starching operation when said lever is at one extreme of its movement, and to cause the remaining functions of the machine to be performed in regular successive movements of said lever in one direction whereby contrary and diverse movements of the controlling-lever are obviated and the work of the operative is materially simplified.

33. In a starching-machine, the combination with the movable cover-section D, of the brackets K having the tracks K', the lever M, the shaft L, and the rock-arms M^3 and N', substantially as specified.

34. The combination of the yieldingly-mounted stripping-roll G', the roll G, the cover-section D having brackets K, the shaft L carrying the lever M, the rock-arms, and the sector having a non-operative portion, substantially as specified.

35. The combination of the movable cover-section carrying a pad and a stripping-roll, a cooperating vibrating paddle, the fixed cover-section carrying a yieldingly-mounted stripping-roll, the yoke J, the lever M, the shaft L, and the collar M' having a projection M^4, substantially as specified.

36. In a starching-machine, a starching-receptacle having an apertare for the reception of a steam connection, a lining for the receptacle seated in the aperture, a chamber or steam connection provided with a flange to retain said lining in position, a perforated plug at the upper portion of said chamber, a steam-supply pipe communicating with said chamber, and a drain-pipe at the lower portion of said chamber, substantially as specified.

37. In a starching-machine, a standard or column, a pivoted paddle-lever supported on said standard, a power-shaft provided with a cam, a lever pivoted to said paddle-lever, a bolt extending from said pivoted lever through the paddle lever, and a spring surrounding said bolt, substantially as specified.

38. In a starching-machine, a standard or column, a pivoted paddle-lever supported on said standard, a power-shaft provided with a cam, a lever pivoted to said paddle-lever, a bolt extending from said pivoted lever through the paddle-lever, a spring surrounding said bolt, and a set-screw passing through said pivoted lever and bearing against the paddle-lever, substantially as specified.

39. In a starching-machine, a standard or column, a pivoted paddle-lever supported on said standard, a power-shaft provided with a cam, a lever pivoted to said paddle-lever, a bolt extending through the paddle-lever from said pivoted lever, a sprieg surrounding said bolt, and a tension-spring extending from said paddle-lever to a support upon the standard, substantially as specified.

40. In a starching-machine, a pad, a power-shaft provided with a cam, a supporting-standard, a paddle-lever pivoted thereto and extending at an angle from its pivotal point, a yielding contact for said cam carried by said paddle-lever, and a spring connected to said lever and standard to exert a retractive tension on the lever, substantially as specified.

41. In a starching-machine, the combination with a stripping-roll yieldingly mounted in a cover-section and provided with a gear-wheel, of a pivoted yoke provided with a latch and with a gear-wheel to mesh with the gear upon the stripping-roll, power-transmitting means carried by said yoke, and pivoted means for lifting said yoke to bring said gear into mesh, substantially as specified.

42. In a starching-machine, the combination with a stripping-roll yieldingly mounted in a cover-section and provided with a gear-wheel, of a pivoted yoke provided with a gear-wheel to mesh with the gear upon the stripping-roll, power-transmitting means carried by said yoke, pivoted means for lifting said yoke to bring said gear into mesh, and a spring-actuated latch to engage said lifting means, substantially as specified.

43. In a starching-machine, the combination with a stripping-roll yieldingly mounted in a cover section and provided with a gear-wheel, of a pivoted yoke provided with a gear-wheel to mesh with the gear upon the stripping-roll, power-transmitting means carried by said yoke, pivoted means for lifting said yoke to bring said gear

into mesh, and a spring-latch provided with an inclined surface to permit the lifting means to move said latch in its movement in one direction, substantially as specified.

44. In a starching-machine, the combination with a stripping-roll provided with a driving-gear, of a yoke having a latch and carrying a meshing gear and provided at one end with a bifurcated portion, a power-shaft on which said bifurcated portion is journaled, a sprocket-wheel secured to said power-shaft between the arms of the bifurcated portion, a sprocket-wheel carried by said yoke, a sprocket-chain extending between said sprocket-wheels and a pivoted lever located at the free end of the yoke, substantially as specified.

45. In a starching-machine, the combination with a shiftable stripping-roll provided with a driving-gear and with means for shifting said stripping-roll, of a yoke carrying a latch and a meshing gear and adjustable to and from the gear on the stripping-roll, a power-shaft on which the yoke is pivoted, a sprocket-wheel carried by said yoke, a sprocket-wheel secured upon said power-shaft, and a chain extending between said sprocket-wheels, substantially as specified.

46. In a starching-machine, the combination with a shiftable stripping-roll carrying a gear, of a pivoted yoke provided with a latch and a meshing gear, means communicating with a driving-shaft to drive said gears, means for shifting said stripping-roll and a lever having a projection to engage said latch and move said yoke, substantially as specified.

47. In a starching-machine, the combination with a stripping-roll carrying a gear, of a pivoted yoke provided with a meshing gear, means communicating with a driving-shaft to drive said gears, a rotating collar carrying a projection to engage and move said yoke, and an extension from said yoke resting upon said collar to limit the movement of the yoke away from the stripping-roll, substantially as specified.

48. In a starching-machine, the combination with a stripping-roll carrying a gear, of a pivoted yoke provided with a latch and a meshing gear, means communicating with a driving-shaft to drive said gears, a rotating collar carrying a lifting projection to engage and move said yoke, and an extension from said yoke in a different vertical plane from said lifting projection and latch and resting upon said collar, substantially as specified.

49. In a starching machine, a rotating collar connected with a controlling-handle, a rock-arm carried by said collar and having a pin extending therefrom, a lifting projection carried by said collar, and a disk carried by said collar whereby in the rotation of the collar the several parts carried thereon will perform their respective functions, substantially as specified.

50. In a starching-machine, the combination with cover-operating, belt-shifting, starching and stripping mechanisms, of a unitary controlling-lever mounted to rotate a disk, and means to engage said disk to hold the same in its adjusted positions; substantially as specified.

51. In a starching-machine, a controlling-lever, a disk rotated thereby and provided with depressions in one face thereof, and a spring-detent adapted to seat itself in said depressions, substantially as specified.

52 In a starching-machine, a controlling-lever, a disk rotated thereby and provided with sockets having walls at different angles, and a spring-detent adapted to seat in said sockets and to offer varying degrees of resistance to the rotation of the disk and to indicate the progress of the lever, substantially as specified.

53. In a starching-machine, a controlling-lever, a disk rotated thereby and provided with sockets upon one face thereof, a bracket carried by said machine, and a spring-pressed detent bearing against said disk, substantially as specified.

54. In a starching-machine, the combination with cover-operating, belt-shifting, starching and stripping mechanisms, of a controlling-lever, means rotated thereby, and a device carried by the machine contacting with the rotated means at successive points to determine the successive positions of the lever for accomplishing the several functions of the machine during the movements of said lever; substantially as specified.

55. In a starching-machine, comprising a movable cover-section, stripping-rolls and belt-shifter a controlling-lever, means connected therewith and rotated thereby to move the cover-section, shift the belt, and to place the stripping-rolls in gear with the rotating means during the movement of the lever, substantially as specified.

56. In a starching-machine, a controlling-lever, a sector rotated thereby, a path or way upon the periphery of said sector and having inoperative portions, a belt-shifting lever connected to the sector so that in the movement of the sector a portion of the tract or way will not act upon the belt shifter, substantially as specified.

57. In a starching-machine, the combination with belt-shifting, starching and stripping mechanisms, of a unitary controlling-lever, a sector rotated by said lever and having a path portions of which are out of line with each other, a pivoted belt-shifting lever, a projection from said belt-shifting lever operatively engaging a laterally-disposed portion of said path on said sector, and belt-shifting means at the opposite end of said belt-shifting lever; substantially as specified.

58. In a starching-machine, a power-shaft provided with fast and loose pulleys, a sliding collar carrying a belt-loop, a belt-shifting lever for moving said collar, a cam secured on said shaft, a paddle-lever reciprocated by said cam, a sprocket-wheel secured to said shaft, shiftable stripping-rolls and gear, and means for transmitting the power from said sprocket-wheel to said stripping-rolls, substantially as specified.

59. In a starching-machine, a controlling-lever, a collar rotated by said lever and provided with means for moving a cover-section and for throwing into gear a stripping-roll, a shaft rotated by said lever and carrying belt-shifting means whereby the several parts will act in the progressive movement of the lever, substantially as specified.

60. In a starching-machine, a controlling-lever, rotating means connected thereto and extending to opposite sides of the machine, a movable cover-section provided with depending brackets, having expanded ways and rock-arms located upon said rotating means at opposite sides of the cover to travel in said ways to move, to lock closed, and to permit the removal of the cover, substantially as specified.

61. In a starching-machine comprising a movable cover-section carrying a positively-driven stripping-roll and starching mechanism, the combination with a power-shaft supported at one end thereof and carrying driving mechanism, a single unitary controlling-lever mounted upon a shaft located at the opposite side of the machine and carrying cover-operating devices, and intermediate mechanisms under the control of said lever for governing the transmission of power from said power-shaft to said stripping and starching mechanisms; substantially as specified.

611,016. ALUMINIUM ALLOY. WILLIAM A. MCADAMS, New York, N. Y. Filed Dec. 7, 1897. Serial No. 661,017. (No specimens.)

Claim.—A composition of matter consisting of aluminium, copper, zinc and nickel in substantially the following proportions, viz., aluminium one hundred and eight ounces, copper twelve ounces, zinc thirty-six ounces and nickel one ounce.

611,017. METHOD OF PREPARING DESICCATED POTATOES. JOHN G. NEUMANN, Indianapolis, Ind. Filed Apr. 18, 1898. Serial No. 678,058. (No specimens.)

Claim.—1. The process of preparing and preserving potatoes which consists in chemically disintegrating the vegetable tissues of the tubers, forming a pasty coat on the exterior and cooking the product, then cooling the same, reducing it to particles or small pieces, and finally desiccating it, substantially as set forth.

2. The process of preparing and preserving potatoes which consists in disintegrating the vegetable tissues of the tubers in the manner specified, forming a thin pasty coat on the exterior and cooking the product, next cooling the same, reducing it to particles or small pieces, and desiccating the latter, substantially as set forth.

3. The improved process of preparing and preserving potatoes, consisting in disintegrating the vegetable tissues of the tubers by treatment with a suitable compound of sulfur dioxid, producing a thin pasty coat on the exterior and cooking the product, allowing the same to cool, then reducing it to a vermicular or equivalent form, and desiccating it by baking, substantially as set forth.

4. The improved process of preparing potatoes which consists in disintegrating the vegetable tissues by soaking in a solution of sulfur dioxid, subjecting the product to a steam-bath, to form a pasty coat thereon, cooking in an alkaline bath, washing the product when cool, and desiccating it by baking, substantially as set forth.

611,018. BOX-COVER BRACE AND SUPPORT. NILS S NISSEN, Racine, Wis. Filed Sept. 15, 1897. Serial No. 651,460. (No model.)

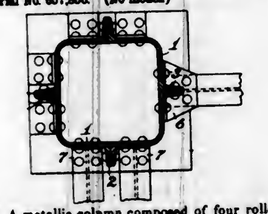


Claim.—1. A box-cover brace and support, comprising a plate having a slotted lower portion for engagement with the vertical walls of a box, and an outwardly-projecting upper portion bent inwardly at its lower edge only, whereby the cover of the box may be opened out and supported on said bent edge, and closed independently of manipulation or movement of said cover-support.

2. A box-cover brace and support, comprising a sheet-metal plate having a vertically-slotted lower portion, with strips of the metal bent in opposite directions on each side of said slot, and an outwardly-projecting upper portion having its lower edge bent inwardly, on a slightly-oblique upward line, the said plate being otherwise all in the same plane.

3. A box-cover brace and support, comprising a flat metal Γ-shaped plate having a vertical slot in its upright portion, with the edges of the plate at each side of said slot bent in opposite directions, and with the lower edge only of the horizontal portion bent inwardly to form a support, whereby, when the brace is in place upon a box, the cover of the latter may be opened out and supported on the said support, or closed, without manipulation or disturbance of position of said brace.

611,019. METALLIC COLUMN. ALEXANDER HURICK, Pittsburg, Pa., assignor to Jones & Laughlins, Limited, same place. Filed Nov. 8, 1897. Serial No. 657,850. (No model.)

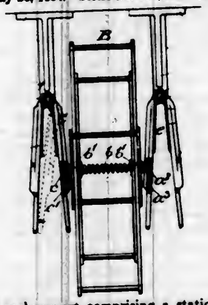


Claim.—1. A metallic column composed of four rolled flanged metal bars, bent at right angles about their longitudinal middle lines with flanges outwardly projecting, and with the central portions of their webs curved and the remainder flat surfaces, and connected by seams of rivets passing through their flanges, substantially as set forth.

2. A metallic column composed of four rolled-metal channels, bent at right angles about their longitudinal middle lines with their flanges outwardly projecting and with the central portions of their webs curved and the remainder flat surfaces, and connected by seams of rivets passing through their flanges, substantially as set forth.

3 The combination in a metallic column, of four rolled flanged metal bars bent at right angles about their longitudinal middle lines with their flanges outwardly projecting, and with the central portions of their webs curved and the remainder flat surfaces, and connected by seams of rivets passing through their flanges, and an angle-plate riveted to a flat side of the column for the attachment of a lateral connection thereto, substantially as described.

611,020. REEL AND SUPPORT. ISAAC R. PALMER, Middletown, Conn. Filed May 20, 1897. Serial No. 637,229. (No model.)



Claim.—1. A reel-support comprising a stationary arm having a socket in its outer face for receiving one end of a reel-spindle, a swinging arm hinged to the stationary arm and having a socket in its outer face for the reception of the end of an adjacent reel-spindle and means for yieldingly holding the swinging arm at the limit of its movement away from the stationary arm, substantially as set forth.

2. A reel-support comprising a stationary arm and a spring-actuated swinging arm hinged thereto held normally at the limit of its movement away from the stationary arm, the said arms having sockets upon their opposite faces for the reception of the adjacent ends of two reel-spindles, the said arms being further provided with guides or tracks for directing the ends of the spindles into position within the sockets, substantially as set forth.

611,021. LIFE-BOAT. ANDREW F. PENDLETON, Franklin, Mass. Filed Dec. 22, 1897. Serial No. 663,023. (No model.)

Claim.—1. An attachment for life-boats comprising an air-tight chamber made in two separable flexible parts with means for securing the parts together, substantially as described.

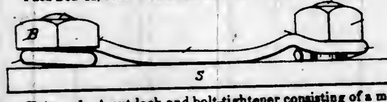


2. An attachment for life-boats comprising the sections A and A' having overlapping ends, the plug or cylinder within said ends and the clamping-ring surrounding the same, substantially as described.

3. An attachment for life-boats comprising the plug or cylinder, the section A overlapping the plug, the section A' overlapping the first section and having pulling-straps and the clamping-band surrounding said parts, substantially as described.

4. An attachment for life-boats comprising two overlapping sections, a plug or cylinder within the same at the point where the sections overlap, a clamping-band for clamping the sections to the plug, and a filling-valve in one of the sections, the said plug or cylinder having the passage forming a communication between the two sections, substantially as described.

611,022. NUT-LOCK. HOWARD R. PERRY, Wakefield, R. I. Filed Dec. 11, 1897. Serial No. 661,506. (No model.)



Claim.—1. A nut-lock and bolt-tightener consisting of a metallic bar bent into loops at each end to nearly surround the bolts, and having an outward and upward bend made in the main bar about opposite each of the free ends of said loops, and the part of the bar between the rises made with a downward and inward return-bend, substantially as described.

2. A nut-lock and bolt-tightener consisting of a metallic bar bent into a loop at one end to nearly surround the bolt, and having an outward and upward bend made in the bar about opposite the free end of said loop, and the part of bar outside of said outward and upward bend, made with a downward and inward return-bend, with means for preventing said loop from turning, substantially as described.

611,023. SURGICAL CASE. FERDINAND A. REICHARDT, New York, N. Y. Filed July 31, 1897. Serial No. 646,673. (No model.)



Claim.—1. In a surgical case, a thread-holder formed from resilient material and made arching or curved intermediate its ends and provided with expanded ends, for the purpose and substantially as described.

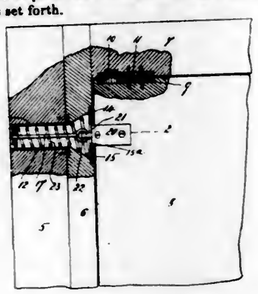
2. In a surgical case, a thread-holder composed of resilient material made arching or curved intermediate its ends and having depressed ends, in combination with retaining lugs or keepers in the case for engaging the ends of said holder, substantially as described.

3. In a surgical case, a removable thread-holder composed of resilient material and having expanded and depressed ends, in combination with the oppositely-disposed end lugs adapted to engage the ends of said holder or to release the same by a lateral movement of the holder relative to said lugs, substantially as described.

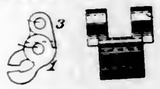
611,024. DOOR-SPRING. OSCAR VOIGTLANDER, Trenton, N. J. Filed July 21, 1897. Serial No. 645,336. (No model.)

Claim.—The combination, with a door-frame having the chamber or socket provided with the flaring or spreading outer end portion forming a supplementary chamber with respect to the bore of the main chamber or socket, a slotted plate closing the outer end of said flaring chamber, a coiled spring mounted in said socket or chamber and having the enlarged or flaring outer end portion seated in

said corresponding supplementary chamber and forming a broad base to said spring, and a connecting device bearing upon the reduced end of the spring and projecting to the enlarged or flared base, of a door carrying a yoke pivoted to said connecting device and projecting through the slotted plate and within the flaring base of the spring, substantially as set forth.



611,025. CAR-COUPLING. HENRY H. WARNER, Tacoma, Wash. Filed Aug. 9, 1898. Serial No. 688,195. (No model.)



Claim.—1. A substitute knuckle, adapted to be connected with a coupler-head of the Master Car-Builders' type and provided with means for being held in operative position by a positive clutching engagement with the outer surface of the wall of the coupler.

2. A substitute knuckle for a coupler-head of the Master Car-Builders' type, having a body insertible in the opening of a coupler-head, a coupling-arm of standard contour on one side of said body, and a stop-arm, adapted to bear against the outer surface of the wall of a coupler-head, on the opposite side of said body.

3. A substitute knuckle for a coupler-head of the Master Car-Builders' type, having a body insertible between the lugs of a coupler-head, provided with a passage for a knuckle-pin to connect it with said lugs, a coupling-arm of standard contour on one side of said body, provided with a passage for a link coupling-pin, and a stop-arm adapted to bear against the outer surface of the wall of a coupler, on the opposite side of said body.

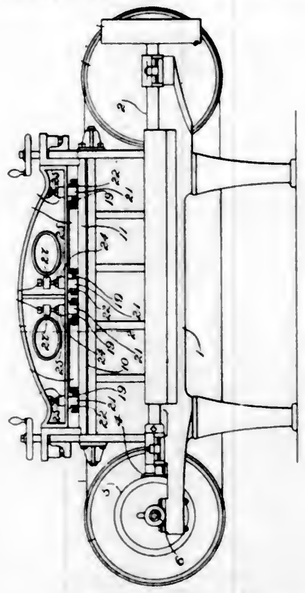
4. A substitute knuckle for a coupler-head of the Master Car-Builders' type, having a body insertible in the opening of a coupler-head, a coupling-arm of standard contour on one side of said body, a stop-arm adapted to bear against the outer surface of the wall of a coupler-head on the opposite side of said body, and a check-piece adapted to bear against the inner surface of the wall of a coupler-head.

5. The combination of a coupler-head of the Master Car-Builders' type, a substitute knuckle having a body fitting between the lugs of said coupler head, a coupling-arm of standard contour on one side of said body, and a stop-arm adapted to bear against the coupler on the opposite side of said head, and a knuckle-pin connecting the subtitute knuckle to the coupler-head.

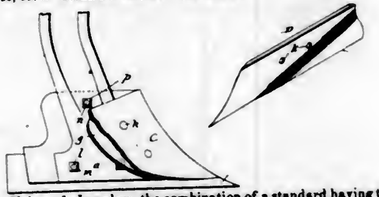
611,026. LEATHER-SPLITTING MACHINE. CHARLES H. ALLEN, Woburn, Mass., assignor of one-half to Eugene E. Wood, same place. Filed June 29, 1897. Serial No. 642,810. (No model.)

Claim.—1. The combination with the band-knife, and the gage-roll bearing against the upper surface of the material, of the friction-roll in contact with the said gage-roll, the said friction-roll having the tapering bearings formed in its ends, the tapering centers entering the said bearings and serving for the support of the friction-roll, the brackets in which the said centers are adjustable in the direction of the length of the friction-roll, and means to effect independent adjustment of the respective brackets vertically, substantially as described.

2. The combination with the band-knife, and the gage-roll bearing against the upper surface of the material, of the friction-roll in contact with the said gage-roll, the said friction-roll having the tapering bearings formed in its ends, the tapering centers entering the said bearings and each formed with the central oil-passage leading to the said bearings, and also communicating with the exterior of the stem or shank of the respective center, and the supporting-brackets each having the socket in which the corresponding center is fitted with capacity for longitudinal adjustment, the said brackets each having an oil-passage delivering to that of the corresponding center, substantially as described.



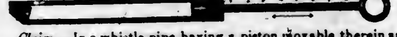
611,027. PLOW. PHILIP BAYER, Knight's Ferry, Cal. Filed May 10, 1897. Serial No. 635,906. (No model.)



Claim.—1. In a plow, the combination of a standard having transverse apertures, the cast-metal foot having the body provided with transverse apertures registering with those of the standard and also provided in its landside with the recess *e*, and the wing extending laterally from the forward end of the body and having bolt-holes, the moldboard, bolts detachably connecting the moldboard and the wing of the foot, a landside-bar arranged in the recess *e*, of the foot and having transverse apertures registering with those of the foot and standard and also having the rounded or convex protuberance E, on its onter side; said protuberance being tapered or gradually reduced in width from its rear end to its forward pointed end and having such forward end arranged at the lower edge of the landside-bar, and bolts extending through the apertures of the landside-bar, foot and standard and connecting the same, substantially as specified.

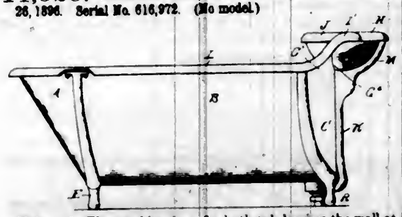
2. In a plow, the combination of a foot having a recess *e*, in its landside, and the landside-bar arranged in the recess *e*, and detachably connected to the foot and having the rounded or convex protuberance E, on its outer side; the said protuberance being tapered or gradually reduced in width from its rear end to its forward pointed end and having such forward end arranged at the lower edge of the landside-bar, substantially as specified.

611,028. WHISTLE-PIPE. JOSEPH BRYSCH, Skronskau, Germany. Filed Sept. 23, 1897. Serial No. 652,712. (No model.)



Claim.—In a whistle-pipe having a piston movable therein and a piston-rod to operate same, the combination of a series of notches on the said rod, corresponding to the notes of the tonic scale, into which notches the finger-nail of the player may be inserted to fix the position of the piston for a certain note substantially as described.

611,029. BATH-TUB. DAVID D. BUICK, Detroit, Mich. Filed Dec. 28, 1896. Serial No. 616,972. (No model.)



Claim.—1. The combination of a bath-tub having the wall at its discharge end extending above the plane of the top of the tub and having a bearing below its top, and a washbasin supported in said bearing.

2. In a bath-tub the combination of the tub having its vertical end wall extended above the top of the tub, a seat in the top of said end wall, a basin fitted into said seat, and a rim for the bath-tub, applied around the tub to the sides of the bowl, and a rim for the bowl into which said tub-rim connects at the top of the end-wall extension.

3. In a bath-tub, the combination of the tub, the wash bowl or basin supported on an end thereof, of a tubular standard secured to the tub and provided with a portion forming a supporting-bracket for the basin and communicating with the waste of the tub and bowl, and with the overflow of the tub.

4. In a bath-tub, the combination of the tub, the washbowl supported thereon, a tubular standard secured to the tub and provided with a portion forming a supporting-bracket for the washbowl, said standard extending from the overflow of the bowl to the waste-pipe of the tub, and connections thereinto from the overflow and waste of both the bowl and tub.

5. In a bath-tub, the combination of the tub, the washbowl supported thereon, a tubular standard of a shape to form a supporting-bracket for the washbowl, having screw-threaded apertures, of flanged screw-nipples connecting the waste-openings of the bowl and bath to the standard at these apertures and constituting means for securing the standard to the tub and to the bowl.

6. In a bath-tub, the combination of the tub, the bowl supported in the end wall thereof, a tubular standard extending beside the wall of the tub having a connection at the top into the waste of the bowl and the overflow of the tub, the branch R at the bottom having connection with the waste of the tub, a branch at the top extending beside the bowl to the overflow and having connection therewith and the diaphragm Q to cause the water of the bowl-overflow to enter the standard below the tub-overflow.

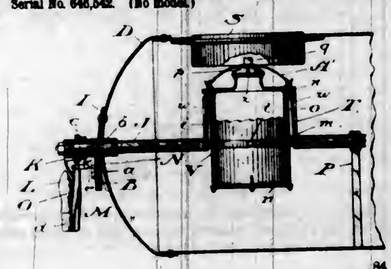
7. In a bath-tub, the combination of the sectional flanged tub, of the legs E, having the hollow extensions F covering the flanges on each side, and the curved connecting-plate G covering that part of the flange between the legs on the bottom, and connected to the legs at its ends.

8. The combination of a bath-tub and the wall at its discharge end having a bearing below the top and a washbasin supported in said bearing.

9. The combination with a bath-tub, of a washbasin set in below the top and supported by the wall thereof, a waste-pipe for the tub on the exterior thereof, and a discharge-pipe from the basin connecting into the top of said waste-pipe.

10. A bath-tub having a bearing-seat formed in its wall at its discharge end, a washbasin member supported in the seat and having a discharge-opening in its base, and a discharge-pipe with which the opening communicates, substantially as described.

611,080. CHEMICAL-ENGINE. THOMAS DOWN, Toronto, Canada, assignor of one-half to James Jeffrey, same place. Filed July 30, 1897. Serial No. 646,542. (No model.)



Claim.—1. In a chemical-engine, a stationary cylinder provided with a discharge-outlet and a recharging-opening closed by a suitable plug, in combination with a suitably-journaled rotatable shaft extending through one end of the cylinder; an acid-bottle inclosed in a skeleton jacket provided with one or more lugs; a cage supported by the said shaft and recessed to receive and support the said lugs; a spring-catch connected to the cage and adapted to engage the jacket of the acid-bottle to retain it in the cage; a cap for the bottle; a bail pivoted to the jacket and adapted to retain the cap in position; and a projection upon the cylinder with which the bail will engage when the shaft is rotated, substantially as and for the purpose specified.

2. In a chemical-engine, a stationary cylinder provided with a discharge-outlet and a recharging-opening closed by a suitable plug, in combination with a suitably-journaled rotatable shaft extending through one end of the cylinder; an acid-bottle inclosed in a skeleton jacket provided with one or more lugs; a cage supported by the said shaft and recessed to receive and support the said lugs; a spring-catch connected to the cage and adapted to engage the jacket of the acid-bottle to retain it in the cage; a cap for the bottle; provided with a teat to one side of the center; a bail pivoted to the jacket and adapted to retain the cap in position; and a projection upon the cylinder with which the bail will engage when the shaft is rotated, substantially as and for the purpose specified.

3. In a chemical-engine, a stationary cylinder provided with a discharge-outlet and a recharging-opening closed by a suitable plug, in combination with a suitably-journaled rotatable shaft extending through one end of the cylinder; an acid-bottle suitably supported by the said shaft; a cap for the said bottle; a pivoted bail adapted to retain the cap in position; and a projection upon the cylinder with which the bail will engage when the shaft is rotated, substantially as and for the purpose specified.

4. In a chemical-engine, the combination of the frame A, the cylinder D, the pillow-stays B depending from the frame, and the bearing-plates I, connected to the cylinder and provided with flanges *a*, said flanges being securely bolted to said stays, whereby the stays, cylinder, bolts, &c., act to "stay" the frame, substantially as and for the purpose specified.

5. In a chemical-engine, the combination of the frame A; cylinder D, pillow-stays B; bearing-plates I, provided with flanges *a* secured to the pillow-stays; sleeve *b*, extending through one bearing-plate; a suitably-journaled shaft J, extending through said sleeve; and the handle K, substantially as and for the purpose specified.

6. In a chemical-engine, the combination of the frame A; cylinder D, pillow-stays B; bearing-plates I, provided with flanges *a*, a sleeve *d* extending through one bearing-plate, a suitably-journaled shaft J extending through said sleeve, and handle K, the extension L, pivoted on the said handle; the latch N, centrally pivoted on said handle; the pitman O, pivotally connecting the latch N, and extension L, and the lugs *e*, upon the plate I, with which the said latch engages, substantially as and for the purpose specified.

7 In a chemical-engine, the combination of the frame A; cylinder D, pillow-stays B; bearing-plates I, provided with flanges *a*, secured to the pillow-stays; a sleeve *d* extending through one bearing-plate, a suitably-journaled shaft J extending through said sleeve, and handle K, the extension L, pivoted on the said handle; the latch N, centrally pivoted on said handle; the pitman O, pivotally connecting the latch N, and extension L; the lugs *e*, upon the plate I, with which the said latch engages; and a spring M, adapted normally to retain the extension in its closed position, substantially as and for the purpose specified.

8. In a chemical-engine, the combination of the frame A, the cylinder D, suitably secured thereto, the sleeve *b* extending through one end of the cylinder, a suitably-journaled shaft extending through the said sleeve, the handle K, connected to the end of the said shaft, the extension L, pivoted on said handle, the latch N, centrally pivoted on the said handle, the pitman O, pivotally connected to the latch N, and lugs *e* suitably carried upon the end of the cylinder with which the latch engages substantially as and for the purpose specified.

9. In a chemical-engine, the combination of the frame A, the cylinder D, suitably secured thereto, the sleeve *b* extending through one end of the cylinder, a suitably-journaled shaft extending through the said sleeve, the handle K connected to the end of the said shaft, the extension L, pivoted on the said handle, the latch N, centrally pivoted on the said handle, the pitman O, pivotally connected to the latch N, the extension L, lugs *e* suitably carried upon the end of the cylinder with which the said latch engages, and a spring M, adapted normally to retain the extension in its closed position, substantially as and for the purpose specified.

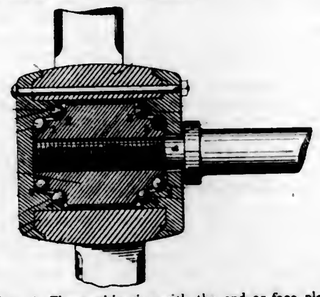
10. In a chemical-engine, the combination of a frame, having pillow-stays depending therefrom, a cylinder having bearing-plates I connected thereto and provided with flanges *a*, the said pillow-stays being secured to said flanges between them and the cylinder, substantially as and for the purpose specified.

611,081. WINDOW. OSCAR FROTSCHER, Philadelphia, Pa. Filed Mar. 19, 1897. Serial No. 628,331. (No model.)



Claim.—The combination in a window of a sash and a guide-strip, with a slotted plate *d* attached to the sash, having the walls of the slot in the plate increasing in thickness toward the edge of the sash, a screw *e* having its head between the plate and the sash, and its shank passing into said strip and the nut *e*, all arranged substantially as shown and described.

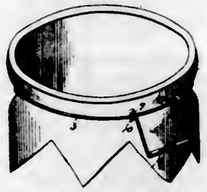
611,032. ANTIFRICTION-BEARING. THOMAS R. GARNIER, Los Angeles, Cal., assignor of one-half to William H Fuller, same place, and George W. Beck and Arthur H. Conger, Pasadena, Cal. Filed Mar. 17, 1898. Serial No. 674,213. (No model.)



Claim.—1. The combination with the end or face plates, each plate being provided with an inwardly-projecting circular shoulder and flange whereby a circular grooveway is formed, of the hub having outwardly-projecting end shoulders which fit within the circular grooveway formed by the projecting flange and shoulder of the end or face plates, the internally-screw-threaded bearing-sleeve located within the hub and which is adapted to be removably secured upon the reduced screw-threaded end of an axle, the bearing-balls interposed between the bearing-sleeve and the shoulder of the end or face plates, and of tie-rods for uniting the face or end plates.

2. The combination with the hub, of the end or face plates each provided with a circular grooveway between which the hub is secured, there being circular seats cut in said plates, the bearing-sleeve, the axle upon which the bearing-sleeve is removably secured, circular seats formed in each end of the said sleeve, and of the bearing-balls fitted within the seat of the end or face plates and the bearing-sleeve.

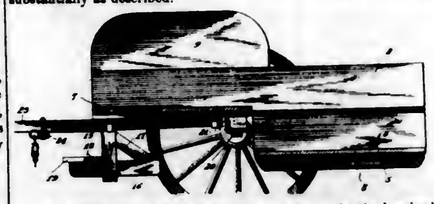
611,033. BAIL ATTACHMENT FOR STONE JARS. JAMES T. GILL, Herschel, Ky. Filed Oct. 30, 1897. Serial No. 656,942. (No model.)



Claim.—The combination of a jar having an annular lip or flange at its upper end and provided at opposite sides with recesses arranged in pairs and extending partially into said lip or flange, a pair of bail handles or gripe having hooks or eyes at their ends seated in said recesses, and a wire band threaded through the hooks or eyes of the handles or grips and fitting around the jar below the flange or lip, substantially as described.

611,034. CANE-PLANTER. MACK GOMEZ, Plaquemine, La. Filed May 13, 1898. Serial No. 680,596. (No model.)

Claim.—1. A cane-planter comprising the longitudinal sills, 2, 3, a platform, 7, secured thereto, the lower sills, 4, 5, arranged beneath the longitudinal sills at the rear end of the body, the inclined uprights joined rigidly to said sills, the lower platform secured to the sills, 4, 5, a standing-board secured to extensions from the platform, 7, and the side boards secured to posts which are fastened to the sills, substantially as described.



2. A sugar-cane planter comprising a body having its longitudinal sills arranged to form the support for the load-platforms which are arranged in different horizontal and vertical planes, a single transverse axle secured detachably to the sills of the body in a plane between the adjacent ends of the load-platforms for the body to balance itself on said axle, the front posts secured to the sills and the sides of the front compartment of which the highest platform forms a part, the short sills secured to the posts beneath the elevated platform, and a standing-board secured to the short sills at the front end of the body and below the elevated load-platform thereof, substantially as described.

611,035. HEEL FOR FOOTWEAR. JAMES GRIFFIN, Leominster, Mass. Filed Oct. 30, 1897. Serial No. 656,868. (No model.)



Claim.—The improved heel for boots, shoes, and other articles of footwear, having at the rear edge thereof a straight transversely-disposed line of bearing, substantially as described.

611,036. CULTIVATOR. FREDERICK A. HEAD and THOMAS L. REBSTER, Rock Island, Ill., assignors to the Rock Island Plow Company, same place. Filed Dec. 27, 1897. Serial No. 663,561. (No model.)



Claim.—1. In a cultivator, the combination, with the shovel-rig and its mast, of a support connecting the mast with the frame of the machine and serving to support the mast and shovel-rig in elevated position when raised thereto, an adjustable connection between such support and mast, and a lever located within reach of the driver for controlling said adjustable connection between the mast and its support, whereby the driver, by manipulating said lever, may regulate the limit of upward or downward movement of the mast and shovel-rig as desired.

2. In a cultivator, the combination, with the shovel-rig and its mast, of the support connecting the mast with the frame of the machine, an adjustable connection between such support and the mast, and a lever supported upon the shovel-rig, within reach of the driver, for controlling such adjustable connection, for the purpose described.

3. In a cultivator, the combination, with the shovel-rig and its mast, of the support connecting the mast with the frame of the machine, and an adjustable connection between said mast and support controlled by a lever upon the mast, for the purpose described.

4. In a cultivator, the combination, with the shovel-rig and its mast, of the support connecting the mast with the frame of the machine, such support having a vertically-adjustable connection with the mast, a lever independent of such support and fulcrumed upon the mast and coöperating with a rack thereon, and a connection between the lever and the support connecting the mast with the frame of the machine, for the purpose described.

5. In a cultivator, the combination, with the shovel-rig and its mast, of a sliding member mounted upon the mast, a support for the mast connected to said sliding member and to the frame of the machine, a lever fulcrumed upon a support within the driver's reach, and a connection between the lever and sliding member for adjusting the latter upon the mast, for the purpose described.

6. In a cultivator, the combination, with the shovel-beam K and its mast P, the sliding member R upon the mast P, the support S connected at its upper end to the member R and having a connection at its lower end with the frame of the machine, the rack Z' fixed upon the mast P, the lever Z fulcrumed upon the mast and coöperating with the rack, and the link T connecting the lever Z with the member R, for the purpose described.

7. In a cultivator, the combination, with the shovel-rig and its mast, and the lifting-arm and its spring, of an adjustable connection between the lifting-arm and mast controlled by a lever pivotally supported upon the shovel-rig within the driver's reach, for the purpose described.

8. In a cultivator, the combination, with the shovel-rig and its mast, and the lifting-arm and its spring, of a rack fixed upon the mast, a lever fulcrumed upon the mast and coöperating with the rack, and an adjustable connection between the mast and lifting-arm controlled by the lever on the mast, for the purpose described.

9. In a cultivator, the combination, with the shovel-rig and its mast, and the lifting-arm and its spring, of a sliding member mounted upon the mast and connected with the lifting-arm, a lever fulcrumed upon the mast and connected with the sliding member, and means for holding the lever in different adjusted positions, for the purpose described.

10. In a cultivator, the combination, with the shovel-rig and its mast, and the lifting-arm and its spring, of a sliding member mounted upon the mast, a rack fixed upon the mast, a lever fulcrumed on the mast and coöperating with the rack, a link connecting the lever with the sliding member on the mast, and a connection between the sliding member and the lifting-arm, for the purpose described.

11. The combination, with the shovel-rig and its mast P, and the lifting-arm and its spring U, of the rack Z' rigidly secured to the mast P, the lever Z fulcrumed upon the mast and provided with a latch coöperating with the rack Z', the link Y pivoted at its lower end to the lever Z, a connection between the upper end of the link Y and the lifting-arm T, and a suitable guide upon the mast P for supporting and guiding the upper end of the link Y, for the purpose described.

12. The combination, with the shovel-rig and its mast P, and the lifting-arm T and its spring U, of the slide R mounted upon the mast P, the bail S connecting said slide with the lifting-arm T, the lever Z fulcrumed upon the mast P and provided with a latch coöperating with the rack Z' fixed to the mast, and the link Y connecting the lever Z with the slide R, for the purpose described.

13. In a cultivator, the combination of the shovel-rig laterally adjustable upon the main frame at its forward end, the mast carried by the shovel-rig, and the support for the mast connected at its upper end to the mast and at its lower end having an adjustable connection with the frame of the machine by which the support may be adjusted to throw the upper end of the mast inward or outward for the purpose of accommodating the mast to the lateral adjustments of the forward end of the shovel-rig.

14. The combination, with the shovel-rig K laterally adjustable at its forward end, and its mast P, of the lifting-arm T provided with the two projecting arms *a b*, the latter having a plurality of connecting-eyes, and the rod S connected at its upper end to the mast P and having the lower end of its inner arm connected to the arm *b* and adjustable from one connecting-eye to another thereof, for the purpose described.

611,037. METALLIC RAILROAD-TIE. THOMAS G. JACKLIN, Inola, Ind. Ter., assignor of one-half to John J. Hendricks, Woodson W. Hubbard, and Curtis E. Collins, same place. Filed Mar. 31, 1898. Serial No. 675,921. (No model.)

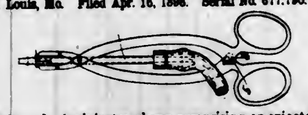


Claim.—1. A metallic rail and drain tie; comprising a trough-shaped body having bridge portions at the ends, said bridge portions having each a longitudinal dovetailed groove, and transverse depressed seats of a width slightly in excess of the base of the rail, said seats having one wall undercut; in combination with the clamps 8, slidable in the longitudinal dovetail grooves, and having transverse seats of a width corresponding to the transverse seats in the bridge portions, one wall of such clamp-seats being undercut; said clamps also having transverse grooves 13, and means for drawing the clamps to a locked position, whereby to bring one flange of the rail under the undercut portions of the bridge-seats, all being arranged substantially as shown and for the purposes described.

2. A metallic rail and drain tie; consisting of a U-shaped body having bridge portions at the ends provided with adjustable clamp devices for locking the rail thereto, said U-shaped body having lateral flanges disposed at the upper edge of the body at points between the bridge portions and extending diagonally downward in opposite directions from the ends of the upper or straight portion, substantially as shown and described.

3. The herein-described improved rail and drain tie, comprising, in combination; the U-shaped body, the bridge portions detachably secured to the ends of such body, said bridge portions having wedge-engaging edges 8^a; longitudinal dovetail grooves, and transverse depressed seats 10^a, having one edge 8^b undercut; the slide-clamps 8, having a transverse seat 8^c, having one edge 8^a undercut and having on its opposite and on the under face a transverse wedge-receiving groove 13, and the wedge 12, all being arranged substantially as shown and for the purposes described.

611,038. SURGICAL INJECTOR-CLAMP. BENJAMIN H. LOHMAN, St. Louis, Mo. Filed Apr. 16, 1898. Serial No. 677,790. (No model.)



Claim.—1. An injector-clamp comprising an injector-tube, movable arms mounted thereon, and carrying clamping-jaws embracing said tube, said arms having finger-grips constituting means for manipulating the instrument, substantially as and for the purpose set forth.

2. An injector-clamp comprising an injector-tube, spring-actuated arms mounted thereon and carrying clamping-jaws embracing said tube said springs being arranged to maintain said arms in normal position, substantially as and for the purpose set forth.

3. An injector-clamp comprising an injector-tube and spring-arms mounted thereon, said arms being crossed and carrying at their free ends clamping-jaws embracing said tube, substantially as and for the purpose set forth.

4. An injector-clamp comprising an injector-tube and crossed spring-arms mounted thereon, said arms carrying at their free ends clamping-jaws embracing said tube, and having finger-grips near their fixed ends, substantially as and for the purpose set forth.

5. An injector-clamp comprising an injector-tube and pivotal arms mounted thereon and carrying clamping-jaws at one end and having their other ends formed into handles for manipulating the instrument, substantially as and for the purpose set forth.

6. An injector-clamp comprising an injector-tube and pivotal arms mounted thereon and carrying clamping-jaws at one end and having their other ends formed into handles for manipulating the instrument, said handle ends carrying coöperating ratchet-teeth and being sufficiently resilient to permit of such operation, substantially as and for the purpose set forth.

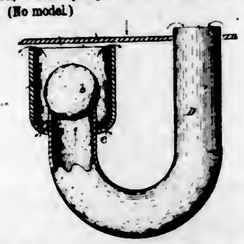
611,039. TOY WATCH AND COIN-RETAINER. SCOTT MACOMBER, Wethersfield, Conn. Filed Oct. 11, 1897. Serial No. 654,823. (No model.)

Claim.—1. A toy comprising a watch-like body portion of rubber having in one end a coin-receiving pocket and also having an annular channel outside the pocket, and a metallic disk adapted to be sprung into said annular channel and having an opening by which a coin may be discovered in said pocket.



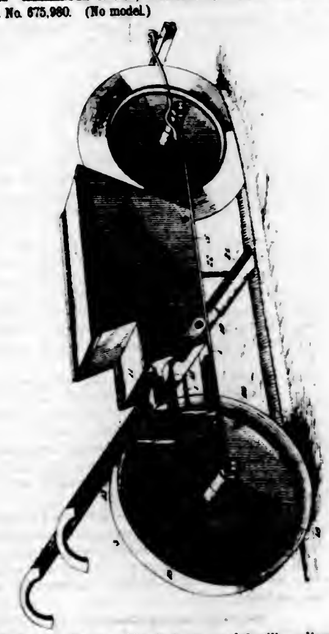
2. A toy comprising a watch-like body portion of rubber having in one side a coin-receiving pocket; a removable seal fitted to the body portion and adapted to hold a coin in place in said pocket; and an elastic cord connected with the body portion.

611,040. VENTING DEVICE FOR CLOSED VESSELS. JESSE D. MATHER, Clifton Springs, N. Y. Filed Jan. 24, 1898. Serial No. 667,813. (No model.)



Claim.—The combination with a vessel and its top, of a U-shaped tube supported from said top and having its longer leg extended through the top and its shorter leg terminating beneath the same, a ball-valve normally seated on the upper end of the shorter leg, and a cage sleeved upon said shorter leg and secured thereto forming a receptacle about the said leg below the valve-seat with its upper end open and extended into proximity to the top of the vessel and its lower portion provided with openings below said valve-seat, substantially as and for the purpose specified.

611,041. COMBINED PLANTER AND FERTILIZER-DISTRIBUTER. ALEXANDER C. NOE, Pikeview, Ky. Filed Mar. 31, 1898. Serial No. 675,980. (No model.)



Claim.—1. In a combined planter and fertilizer-distributer, the combination of separate compartments for receiving grain and fertilizer respectively, a mixing-compartment, means for simultaneously conveying a charge of grain and fertilizer from the first-mentioned compartments into the mixing-compartment, and a grain-spout in communication with the mixing-compartment for conveying the contents therefrom to the furrow, substantially as set forth.

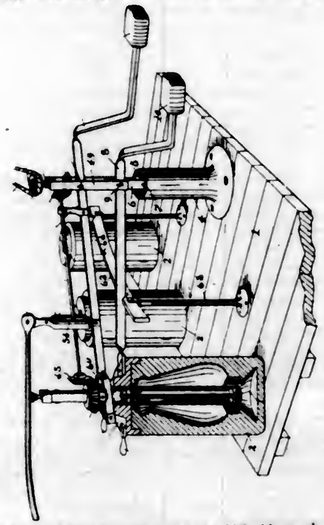
2. In a combined planter and fertilizer-distributer, the combination of juxtaposed compartments for receiving grain and fertilizer respectively, a mixing-compartment, and slides operating through the mixing-compartment and the fertilizer and grain compartments for simultaneously delivering a charge of grain and fertilizer from their respective compartments into the mixing-compartment, substantially as set forth.

3. In a combined planter and fertilizer-distributer, the combination of a hopper subdivided by a longitudinal partition into compartments for receiving grain and fertilizer respectively, a mixing-compartment in the rear of the hopper and having communication with the fertilizer and grain compartments, a grain-spout having communication with the lower portion of the mixing-compartment, and connected slides operating through openings in the walls of the hopper and mixing-compartment and adapted to simultaneously deliver a charge of grain and fertilizer from their respective compartments into the mixing-compartment, substantially as specified.

4. In a planter, the combination with a hopper subdivided into compartments, a pair of slides operating in the hopper and connected to operate simultaneously and having their outer ends bent vertically and spaced apart, a spring normally tending to move the slides outwardly, and a tappet-wheel operating in the space formed between the outer bent ends of the slides and adapted to have its tappets engage with the bent terminals of the slides, as and for the purpose set forth.

5. A combined planter and fertilizer-distributer, comprising a frame mounted upon a furrow-opening wheel and a covering-wheel, a hopper comprising a fertilizer and a grain compartment, a mixing-compartment in the rear of the hopper, connected slides operating through openings in the walls of the hopper and mixing compartment and having their rear ends coming upon opposite sides of the covering-wheel, a rod having a spring to move the slides rearwardly, and a grain-spout having connection with the mixing-compartment, substantially as set forth.

611,042. GLASS-FINISHING MACHINE. ISAAC N. PEARSON, Gas City, Ind. Filed July 23, 1897. Serial No. 645,734. (No model.)



Claim.—1. The combination with a mold for blown-glass articles, of a cutter-shaft that is inserted within the glass article, while in the mold, a disk carrying rotary cutters mounted in said cutter-shaft, and means for rotating the cutter-shaft.

2. The combination with a mold for blown-glass articles, of a removable lid that is centrally apertured, a cutter-shaft that is inserted through such aperture in the lid within the glass article while in the mold, a disk carrying rotary cutters mounted in said cutter-shaft, and means for rotating the cutter-shaft.

3. The combination with a mold for blown-glass articles, of a removable lid having a central aperture, a cutter-shaft that is inserted through said aperture within the glass article while in the mold, a cutter mounted in said shaft, means for rotating the cutter-shaft, and balance-levers for supporting said lid and cutter-shaft.

4. The combination with a mold for blown-glass articles, of a removable lid centrally apertured, a cutter-shaft inserted through the lid into the glass article while in the mold, a cutter mounted in said shaft, balance-levers for supporting the lid and cutter-shaft, and a vibrating support in which said balance-levers are pivoted.

5. The combination with a series of molds for blown-glass articles arranged in a curved line a turn-table support mounted at the center, a removable lid adapted to fit over any one of said molds, a cutter-shaft that is inserted through a central aperture in said lid within the glass article while in the mold, a cutter carried in said shaft, means for rotating the cutter shaft, and balance-levers mounted in the turn table support for said lid and cutter-shaft.

6. The combination with a series of molds for blown-glass articles arranged in a curved line, of a cutter-shaft that is inserted within the glass article while in the mold, a cutter mounted in said cutter-shaft, a balance-lever for supporting said cutter-shaft, a tilting turn-table or rotary support on which said balance-lever is pivoted, means for transmitting power from said turn-table or rotary support to the cutter-shaft for actuating it, and means for transmitting power from some suitable source to said cutter-shaft actuating the mechanism.

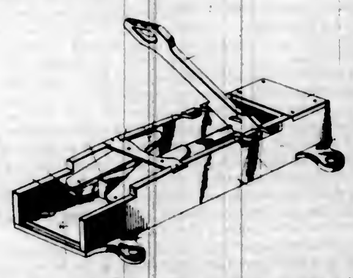
7. The combination with a series of molds arranged in a curved line, a removable lid adapted to fit over a mold and having a central aperture, a cutter mechanism that is inserted through said lid into the glass article while in the mold, means for actuating said cutter mechanism, a turn-table or rotary support located at the center of the curved line in which the molds are placed, a balance-lever for supporting the removable lid, and a guide-bar mounted between the series of molds and the turn-table for the balance-lever to be moved upon, said guide-bar having a notch opposite each mold to receive said balance-lever.

8. In a device for internally cutting blown-glass articles, a rotatable shaft provided with two sets of radial slots or grooves one at each end of the article to be cut, blocks or holders loosely mounted in such slots or grooves, cutting-disks rotatably mounted in the blocks or holders, the two sets of cutting-disks being beveled on opposite sides with relation to each other, and means for reciprocating the cutter blocks or holders, substantially as set forth.

9. In a device for internally cutting blown-glass articles, a rotatable tubular shaft provided with two sets of radial slots or grooves, one at each end of the article to be cut, blocks or holders loosely mounted in such slots or grooves and provided with pins extending therefrom, the disks rotatably mounted in the blocks or holders, a cam-disk for each set of cutter blocks or holders provided with cam-shaped grooves through which the pins on the cutter blocks or holders extend, the curvature of the cam-shaped grooves in each cam-disk varying so as to force the cutting-disks into engagement with a glass article whose ends vary in diameter, and means for actuating the cam-disks.

10. In a device for internally cutting blown-glass articles, a tubular cutter-shaft that is inserted within the glass article while in the mold, a cutter mounted in said tubular shaft, means for rotating said tubular shaft, a shaft mounted centrally in said tubular shaft, means carried on said central shaft for adjusting the cutter or knives, a pinion secured to the upper end of said central shaft, a gear mounted in the framework above the tubular shaft that meshes with said pinion, and reciprocating rods pivotally connected with said gear adapted to partially rotate it, and a hand-lever for actuating such reciprocating rod, substantially as set forth.

611,043. BOOTJACK. CHARLES F. SPAID, Lehew, W. Va. Filed July 20, 1897. Serial No. 645,273. (No model.)



Claim.—1. In a bootjack, pivoted and relatively-movable heel-clamping jaws, in combination with a sliding cam or wedge for operating said jaws, and an operating hand-lever having a jointed connection with said cam or wedge, substantially as described.

2. In a bootjack, a pair of relatively-movable heel-clamping jaws, in combination with a slide cooperating with said jaws to open and close the latter, and an operating-lever having a jointed connection with said slide, substantially as described.

3. In a bootjack, the combination with a pair of relatively-movable heel-clamping jaws, of a slide, cams thereon for actuating the jaws, and a hand-lever for reciprocating said slide, substantially as described.

4. In a bootjack, the combination with a pair of relatively-movable heel-clamping jaws having lugs at one end, of a slide having cams to operate on said lugs, and a hand-lever adjustably fulcrumed on the body of the jack and adjustably connected to said slide, substantially as described.

5. In a bootjack, the combination with relatively-movable heel-clamping jaws, of a slide cooperating therewith, and an operating-lever having an adjustable connection with said slide, substantially as described.

6. In a bootjack, the combination with relatively-movable heel-clamping jaws, of a lever adjustably connected to the body of the jack and provided with a toe-receiving recess and connections between said lever and jaws for operating the latter, substantially as described.

7. In a bootjack, the combination with relatively-movable heel-clamping jaws, of a combined toe-clamp and lever mounted on the body of the jack, and connections between said lever and the jaws for operating the latter, substantially as described.

8. In a bootjack, the combination with relatively-movable heel-clamping jaws, of a slide carrying means for operating said jaws, a lever fulcrumed on the body of the jack, and a link connecting one end of said lever with the slide, substantially as described.

9. In a bootjack, the combination with relatively-movable heel-clamping jaws, of a slide carrying means for operating said jaws, a lever fulcrumed on the jack, and a link connecting said lever and slide, said link having a plurality of grooves to interchangeably fit a pin on the slide, substantially as and for the purpose specified.

10. A device of the character described, comprising a suitable frame, a bar extending across said frame and secured to either side thereof, two clamping-jaws pivoted to said bar, and provided at their rear ends with downwardly-projecting pins or lugs, a slide below said jaws, and provided with means for rocking the jaws on their pivots, and reducing and increasing the space between their forward ends, a lever pivoted to the frame and provided with a recess for the reception of the toe of the boot, and a link connected to the slide and pivoted to the lever, whereby the slide is moved in one direction or the other when the lever is rocked to open or close the pivoted jaws and to lessen or increase the difference between the recess in the lever, and the clamping-jaws, and means for supporting the sole of the boot, substantially as and for the purpose set forth.

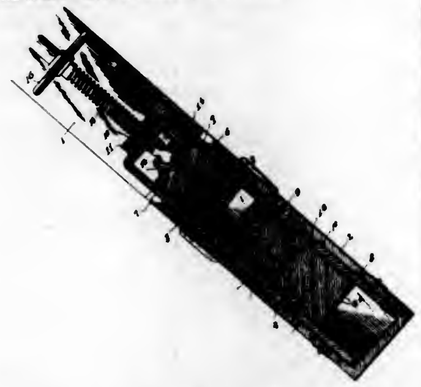
11. A bootjack comprising two side bars suitably braced, and adapted to be secured to the floor, a cross-bar secured to the side bars and having two clamping-jaws pivoted thereto, said jaws having their rear ends provided with pins or projections, a slide between the side bars and provided with inclined cam-surfaces adapted to lessen the space between the front ends of the clamping-jaws, when the slide is moved in one direction, and increase the width of said space when moved in the opposite direction, a lever removably pivoted to the side bars, and provided with a recess for the toe of the boot, and a link connected to the slide and pivoted to the lever, so that the said slide will be moved in one direction or the other, and means for supporting the sole of the boot, substantially as and for the purpose set forth.

12. The combination with a slide having a recess in its end, of a lever pivoted in the frame and provided with an opening or pocket for the reception of the toe of the boot, and a link pivoted to said lever and to the slide, said link being provided with a rest for the sole of the boot when the same is in position to be pulled off, substantially as and for the purpose set forth.

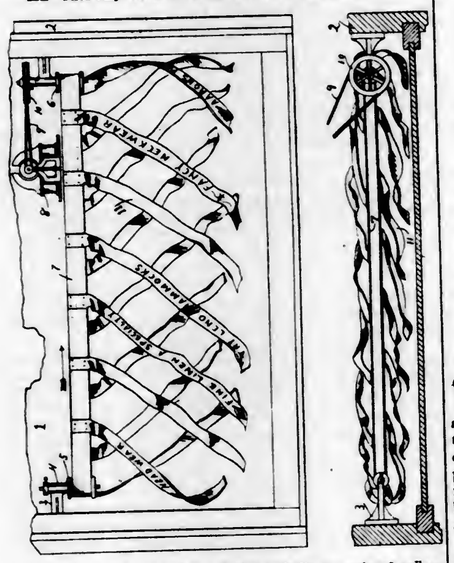
611,044. GRAIN-ELEVATOR. JOHN W. STARK and GEORGE H. DOYLE, West Nicholson, Pa. Filed Feb. 14, 1898. Serial No. 670,267. (No model.)

Claim.—A grain-elevator comprising the legs, the foot having the grooves, 8, and provided in its sides with the grooved hinged doors the grooves in which are in line with the grooves, 8, the exposed bearing-block, 6, fixed to the upper side of the foot between the legs and having the grooves, 7, which are in alinement with the grooves, 8, a socketed plate secured to the upper side of the bearing-block, a carrier-yoke having its legs slidably fitted in the grooves of the bearing-block, the foot, and the doors and provided in its head with a threaded opening, a longitudinal adjusting-shaft having a threaded portion screwed into the head of the yoke and stepped in the sock-

eted plate and provided with a series of hand-wheels, an idler-roller journaled in the yoke, a driving-roller, and an endless elevator-apron fitted to said rollers, substantially as described.



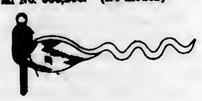
611,045. ADVERTISING DEVICE. GEORGE A. STOUT, Anderson, Ind. Filed July 12, 1897. Serial No. 644,349. (No model.)



Claim.—1. An advertising device including a pair of pulleys arranged with their axes in a vertical position, a belt carried on said pulleys in substantially a horizontal position, means for driving the same, and ribbons or strips suspended at intervals from the belt with their lower ends free.

2. An advertising device including brackets adapted to be secured at each side of a suitable frame, pulleys mounted in said brackets with their axes in a vertical position, means for driving one of said pulleys, a belt mounted on said pulleys in a substantially horizontal position, and ribbons or strips suspended at intervals from the belt with their lower ends free.

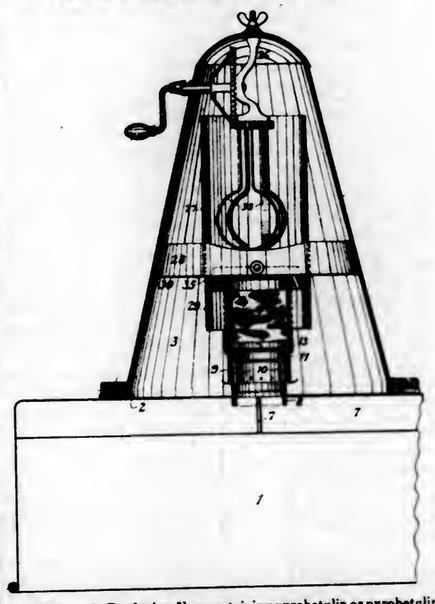
611,046. CORKSCREW. EDWIN WALKER, Erie, Pa. Filed Jan. 11, 1898. Serial No. 666,290. (No model.)



Claim.—1. The combination in a corkscrew, of a spiral screw, a head on the upper end of said screw having an opening therein, with a removable handle, comprising a stem adapted to pass up into the center of the screw, and a hollow sleeve-cap on one end of said stem adapted to cover the point of the screw, and also operating as a shoulder against one side of the corkscrew-head when the handle is in place therein, substantially as and for the purpose set forth.

2. The combination in a corkscrew, of a spiral screw, a head on the upper end thereof having an opening therein a removable handle, comprising a stem adapted to enter the opening in the corkscrew-head, and a sleeve-cap on one end of said stem adapted to engage one side of the screw-head, substantially as and for the purpose set forth.

611,047. METHOD OF AND APPARATUS FOR PRODUCING FILMS. JAMES WHEELER, Ilfracombe, England. Filed June 16, 1897. Serial No. 641,041. (No model.) Patented in Belgium Oct. 21, 1897, No. 131,391, and in France Jan. 24, 1898, No. 274,223.



Claim.—1. Producing films containing pyrobetulin or pyrobetulin anhydrid on articles by compressing together into small blocks or tablets a mixture comprising or containing finely-ground epidermis or outer rind of birch-bark and an oxygen-carrier such as nitrate of potassium, and exposing the said articles in a closed chamber to fumes produced by burning, without flame, a quantity of the said blocks or tablets bearing a suitable proportion to the area of the said chamber, substantially as hereinbefore described.

2. Producing films containing pyrobetulin or pyrobetulin anhydrid on articles by compressing together into small blocks or tablets a mixture comprising or containing finely-ground epidermis or outer rind of birch-bark and an oxygen-carrier such as nitrate of potassium, exposing the said articles in a closed chamber to fumes produced by burning, without flame, a quantity of the said blocks or tablets bearing a suitable proportion to the area of the said chamber, and agitating the said fumes so as to mix them together and with the air of the said chamber, substantially as hereinbefore described.

3. Producing films containing pyrobetulin or pyrobetulin anhydrid on articles by compressing together into small blocks or tablets a mixture comprising or containing finely-ground epidermis or outer rind of birch-bark and an oxygen-carrier such as nitrate of potassium, exposing the said articles in a closed chamber to fumes produced by burning, without flame, a quantity of the said blocks or tablets bearing a suitable proportion to the area of the said chamber, and filtering the said fumes before allowing them to form films on the articles treated, substantially as described.

4. Producing on articles films of pyrobetulin pervious to the action of an etching agent so that articles so filmed will, under the action of such an agent, be given a finely-pitted surface, the said films being produced by compressing together a mixture comprising

or containing finely-ground epidermis or outer rind of birch-bark and an oxygen-carrier such as nitrate of potassium, exposing the articles in a closed chamber to fumes produced by burning, without flame, a quantity of the said compressed mixture in the form of small blocks or tablets bearing a suitable proportion to the area of the said chamber and so arranged as to have an abundant supply of air, and agitating the said fumes so as to mix them together and with the air of the said chamber, substantially as hereinbefore described.

5. Apparatus for producing films on articles comprising a lower compartment for containing the articles to be filmed, an upper compartment communicating through an opening with the said lower compartment, a lamp supported within the said upper compartment, and a hollow cylinder extending upward from the said lamp to within a short distance from the top of said chamber, substantially as described and shown.

6. Apparatus for producing films on articles comprising a lower compartment for containing the articles to be filmed, an upper compartment communicating through an opening with the said lower compartment, a lamp supported within the said upper compartment, a hollow cylinder extending upward from the said lamp to within a short distance from the top of the chamber, agitating apparatus arranged within the said cylinder, and means for operating the said agitating apparatus from outside the said upper compartment, substantially as described and shown.

7. Apparatus for producing films on articles comprising a closed chamber having a conical cover, a lamp situated centrally as regards the said cover, and a hollow cylinder extending upward from the said lamp to within a short distance from the said cover, substantially as hereinbefore described.

8. Apparatus for producing films on articles comprising a closed chamber having a conical cover, a lamp situated centrally as regards the said cover, a hollow cylinder extending upward from the said lamp to within a short distance from the top of the said cover, an agitating apparatus above the said lamp, means for operating the said agitating apparatus from outside the said chamber, and a guide or deflector for directing into the said agitating apparatus fumes rising up from the said lamp, substantially as hereinbefore described.

9. Apparatus for producing films on articles comprising a closed chamber, a lamp therein adapted to burn combustible material without flame, and means for filtering the fumes produced by the partial combustion of the material as they are given off, substantially as hereinbefore described.

10. Apparatus for producing films on articles comprising a closed chamber, a lamp adapted to burn combustible filming material without flame, means for filtering the fumes produced by the partial combustion of the said material as they are given off, and means for effecting the uniform deposition of a film upon the articles to be filmed, substantially as hereinbefore described.

11. Apparatus for producing films on articles comprising a closed chamber, a lamp adapted to burn combustible filming material without flame, means for filtering the fumes produced by the partial combustion of the said material as they are given off, means for agitating the fumes after filtering, and means for effecting the uniform distribution of a film upon the articles to be filmed, substantially as hereinbefore described.

12. For producing films on articles, a lamp comprising a receptacle to receive combustible filming material and a chimney having walls and a cover of material adapted to filter fumes produced by the partial combustion of the said filming material substantially as hereinbefore described.

13. For producing films on articles, a lamp comprising a cup perforated in its lower part and provided in its upper part with means for supporting combustible filming material, and a chimney having walls and a cover of material adapted to filter fumes produced by the partial combustion of the said filming material, substantially as hereinbefore described.

14. For producing films on articles, a lamp comprising a cup perforated in its lower part and provided in its upper part with means for supporting combustible filming material in such a manner as to allow it an abundant supply of air, and a chimney having walls and a cover of material adapted to filter fumes produced by the partial combustion of the said filming material, substantially as hereinbefore described.

15. For producing films on articles, a lamp comprising a cup having its lower part perforated, means in the upper part of said cup adapted to support tablets of combustible filming material with an air-space around each tablet, and a chimney having walls and a cover of material adapted to filter fumes produced by the partial combustion of the said filming material, substantially as hereinbefore described.

16. For producing films on articles, a lamp comprising a receptacle to receive combustible filming material and comprising an open-work floor-plate adapted to support the lower edges of the tablets, a charge-plate having radial openings each adapted to receive a tablet, and a distance-piece between the said floor-plate and the said charge-plate, and a chimney having walls and a cover of material adapted to filter fumes produced by the partial combustion of the said filming material, substantially as hereinbefore described.

611,048. FOLDING CHAIR. ELMER E. ALLEN, Sunderland, Vt. Filed Aug. 30, 1897. Serial No. 649,978. (No model.)



Claim.—1. In a folding and convertible chair, the combination of a stand formed of legs crossed and pivoted together at their point of crossing, arm-rests having pivotal connection at their rear ends with the upper ends of the front legs, notched plates secured to the front ends of the arm-rests, headed studs applied to the upper ends of the rear legs to make detachable connection with the notched plates of the arm-rests, a leg-rest having pivotal connection with the arm-rests forward of the interlocking connection thereof with the rear legs, a back-rest having pivotal connection a short distance from its lower end with the arm-rests and front legs, and a seat having pivotal connection with the lower end of the back-rest and with the leg-rest a short distance from its upper end, substantially in the manner and for the purpose specified.

2. In a folding and convertible chair, the combination of a stand comprising crossed legs pivoted together at the point of crossing, arm-rests having interlocking connection with the rear legs, brackets firmly secured to the rear ends of the arm-rests and having their pendent ends cleft to receive the upper extremities of the front legs which are pivoted thereto and having the inner cleft portions extended and deflected inwardly, a back-rest, and plates secured to the back-rest and having pivotal connection with the inner deflected extensions of the cleft brackets, substantially as shown for the purpose specified.

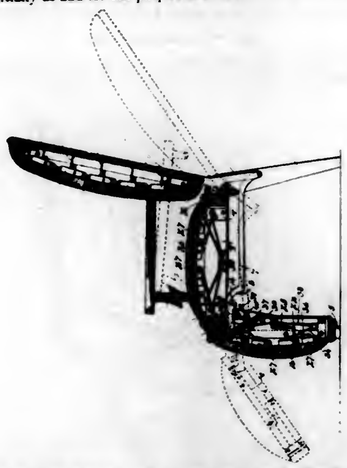
3. In combination, a leg-rest, a foot-rest having adjustable connection therewith, a frame pivoted to the leg-rest and adapted to have its lower end come in the rear of the foot-rest, springs interposed between the pivoted frame and leg-rest to hold the pivoted frame in a normal position, and laterally-extending pins applied to the pivoted frame and adapted to engage with the front edge of the side bars of the leg-rest to limit the rearward movement of the upper end of the said pivoted frame, substantially as described.

611,049. RECLINING-CHAIR. ELMER E. ALLEN, Sunderland, Vt. Filed Aug. 31, 1897. Serial No. 650,152. (No model.)

Claim.—1. In a reclining-chair, the combination of a back-rest pivoted to the chair-frame and having downward extensions, a leg-rest having pivotal connection with the front end of the chair-frame, horizontal bars below the seat having pivotal connection with the downward extensions of the back-rest and having their front ends bent vertically and having longitudinally-disposed slots, and pins passing through the said slots, and securing the said horizontal bars by a sliding and pivotal connection with the leg-rest, and a pin-and-hook connection between the leg-rest and horizontal bars, substantially in the manner set forth and for the purpose specified.

2. In a reclining-chair, the combination of a back-rest pivoted to the rear portion of the seat-frame, a leg-rest having pivotal connection with the front portion of the said seat-frame, arms projecting from the inner or rear side of the leg-rest and having lateral pins, and horizontal bars having pivotal connection with the back-rest and pivotal

and sliding connection with the leg-rest and having cam portions near their front ends to engage with the lateral pins of the aforesaid arms, substantially as and for the purpose set forth.



3. In a reclining-chair, the combination of a back-rest pivoted to the chair-frame, a movable leg-rest, arms extending from the rear side of the leg-rest and having lateral pins, and bars located below the seat and connecting the back-rest with the leg-rest, and having cam portions and forwardly-projecting parts at their front ends, and having shoulders at the juncture of the cam and forwardly-extending parts to receive the lateral pins of the aforesaid arms, substantially as described.

4. In a reclining-chair, the combination of a pivoted back-rest, pivoted bars, a leg-rest slidably mounted upon the pivoted bars, and horizontal bars connecting the back-rest with the leg-rest, whereby the latter is simultaneously turned and slid upon the pivoted arms, substantially as set forth.

5. In a reclining-chair, the combination of a pivoted back-rest having portions extending downwardly from its pivotal support, pivoted bars, a leg-rest slidably mounted upon the pivoted bars and having a limited movement thereon, and horizontal bars having pivotal connection with the said downward extensions of the back-rest and having a pivotal and sliding connection with the leg-rest, substantially in the manner set forth for the purpose described.

6. In a reclining-chair, the combination of a pivoted back rest, pivoted bars, arms extending inwardly from the pivoted bars and provided with lateral pins, a leg-rest slidably mounted upon the pivoted bars, and longitudinal bars connecting the back-rest with the leg-rest and having cam portions to engage with the lateral pins of the arms applied to the pivoted bars, substantially as set forth.

7. In a reclining-chair, the combination of a pivoted back-rest, irons having pivotal connection with the front portion of the chair-frame and provided with inwardly-extending arms having lateral pins, bars secured to the pivoted irons and having stops near their lower ends, a leg-rest slidably mounted upon the said bars and having grooves or ways in the inner faces of its side bars, plates extending over the said grooves or ways to retain the bars therein and adapted to engage with the stops of the said bars and limit the outward movement of the leg-rest, and horizontal bars connecting downward extensions of the back-rest with the leg-rest and having shouldered cam portions to engage with the lateral pins of the pivoted irons, substantially as and for the purpose set forth.

611,050. DUPLEX PEN. HORACE S. BREEDEN, Minneapolis, Minn. Filed Dec. 10, 1897. Serial No. 661,406. (No model.)



Claim.—1. In a duplex pen, the combination with an ordinary penholder and pen, of a sleeve mounted on the holder in rear of the pen and having guideways, a plate slidably supported on the sleeve in said guideways, a holder secured to the plate at its other end, and a supplemental pen supported in said holder, substantially as described.

2. In a duplex pen, the combination with an ordinary penholder and pen, of a sleeve mounted on the holder in rear of the pen and having guideways, a plate slidable on the sleeve in said guideways and provided with a series of perforations, and a supplemental pen carried by the plate at its front end, substantially as described.

3. In a duplex pen, the combination with an ordinary penholder and pen, of a sleeve mounted on the holder in rear of the pen and having guideways, a plate slidably supported on the sleeve in said guideways, a holder secured to the plate at its front end and provided with two recesses extending longitudinally thereof, and a supplemental pen and a fountain attachment supported in the respective recesses, substantially as described.

4. In a dupiex pen, the combination with an ordinary penholder and pen, of a sleeve mounted on the holder in rear of the pen and having guideways, a plate slidably supported on the sleeve in said guideways, a holder secured to the plate at its front end and provided with two curved recesses extending longitudinally thereof and open at both ends, and a supplemental pen and a fountain attachment adjustably supported in the respective recesses, substantially as described.

5. The combination with a pen-staff having a main writing-pen, of a guide-sleeve clamped firmly to said staff and provided with a longitudinal guideway, a slidable plate provided at its front end with a duplex holder and fitted to the guideway for endwise adjustment on said sleeve, an auxiliary pen fitted to said holder for adjustment with the slidable plate and adapted to be projected thereby beyond the main pen, and a fountain attachment also clamped in said holder independently of the auxiliary pen and maintained by the holder in operative relation at all times to the auxiliary pen, substantially as described.

6. In a duplex pen, the combination with an ordinary staff and a pen, of a carrier-plate slidably fitted to said staff, and a supplemental pen and fountain attachment separately fitted to the carrier-plate for movement therewith and adjustable independently of each other in said carrier-plate, substantially as described.

7. In a duplex pen, the combination with a staff and a pen, of a carrier-plate slidably mounted on said staff and provided with a double holder, a supplemental pen fitted to said holder, and a fountain attachment adjustably attached to the holder and arranged beneath the supplemental pen, substantially as described.

611,051. WIRE-CLOTH HOLDER AND MEASURER. DAVID W. BROOKS and WILLIAM J. VAN DYKE, Falls City, Nebr. Filed Oct. 7, 1897. Serial No. 654,436. (No model.)



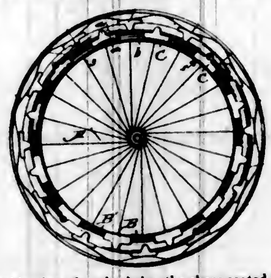
Claim.—1. In a holder for rolled material, a delivery-roll constructed in movable sections or members which are connected together at one end by plates which are pivoted together, a disk fastened to one of the roll-sections and provided with a slot and a catch-pin, and a spring-catch fastened to the other roll-section and fitted in the slotted disk to engage with the catch-pin, as and for the purposes described.

2. In a holder for rolled material, a bisected clamping-roll having its members connected at one end by plates and a journal-pin, a disk fastened to the other end of one of the roll members, and a spring-catch carried by the other roll member and engaging with the disk, as and for the purposes described.

3. In a holder for rolled material, a reel consisting of the heads, the box-like hub, the longitudinal bars, the catches or springs pivoted to the bars and arranged to extend across the spaces between said bars or to be folded parallel therewith, and roll holding shafts mounted in the heads of the reel, for the purposes described, substantially as set forth.

611,052. WHEEL-TIRE. FRANCIS BRÖCKER, Shelby, Ohio. Filed Jan. 11, 1896. Serial No. 696,319. (No model.)

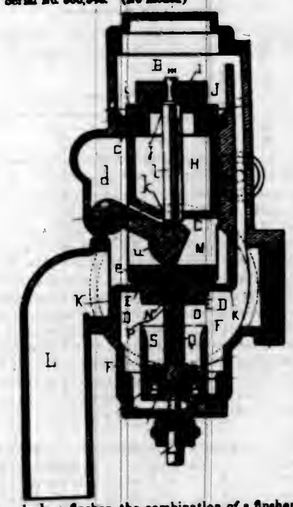
Claim.—1. In combination, the rim, the pneumatic tube supported therefrom, shoes carried upon the outer periphery of the tube, an outer metal tire concentric therewith, and the spring connection between said shoes and tire, substantially as described.



2. In combination, the wheel-rim, the shoes seated thereon, the pneumatic tube seated on the shoes, the outer shoes seated on the outer periphery of the tube, the outer metal tire and the spring connection between the outer shoes and metal tire, substantially as described

3. In combination, the wheel-rim, the shoes seated thereon, the pneumatic tube seated on the shoes, the outer shoes seated on the outer periphery of the tire, the link connections between adjoining inner and outer shoes, the outer metal tire, and the spring connection between the tire and outer shoes, substantially as described.

611,053. WATER-CLOSET VALVE. JOHN M. CAMERON, Philadelphia, Pa., assignor to William H. Doyle, same place. Filed Dec. 6, 1897. Serial No. 660,848. (No model.)

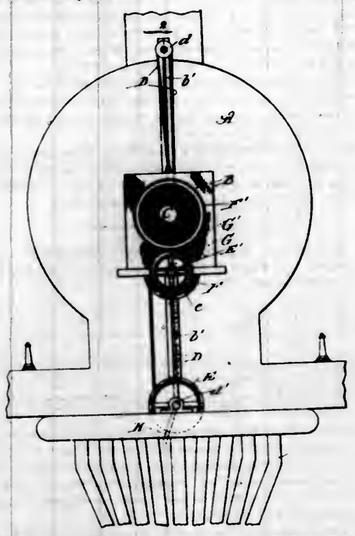


Claim.—1. In a flusher, the combination of a flusher-casing; an exterior lifting-toe chamber, a slow-closing valve, a slow-closing-valve chamber, an exterior water-channel for producing a water-pressure on the slow-closing valve, a puppet-valve of the slow-closing valve, and a vibrating toe for operating the slow-closing and puppet valves and which folds into the lifting-toe chamber out of the line of the valve travel when said valves are removed for repairs, for the purpose shown and described.

2. In a flusher, the combination of a flusher-casing, an exterior lifting-toe chamber, a slow-closing valve, a slow-closing-valve chamber, a puppet valve of the slow-closing valve, a water cushion piston-cylinder at the bottom of the flusher-casing, a water-cushion piston of the water-cushion cylinder, connecting-stem between the slow-closing valve and the water-cushion piston, and a vibrating toe which operates the slow-closing and puppet valves and folds into the exterior lifting-toe chamber, for the purpose shown and described.

611,054. THEATRICAL APPLIANCE. LINCOLN J. CARTER, Chicago, Ill. Filed Sept. 4, 1897. Serial No. 650,593. (No model.)

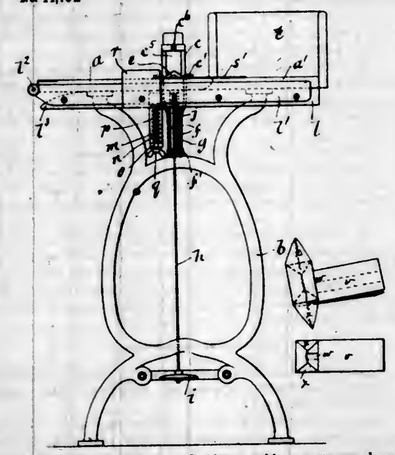
Claim.—1. The combination of a light-producing device, an opening through which the light from the light-producing device is displayed to the eye of a beholder, and means for gradually increasing and decreasing the size of the opening through which the light is displayed, substantially as described.



2. The combination of a light-producing device, a screen provided with an aperture arranged in front of the light-producing device, and means for gradually changing the quantity of light displayed to the eye of a beholder, substantially as described.

3. The combination of a light-producing device, a screen provided with an aperture arranged in front of the light-producing device, and means for gradually changing the quantity and vertical position of light displayed to the eye of a beholder, substantially as described.

611,055. MECHANISM FOR PASTING BOTTOMS OF PAPER BAGS. WILLIAM CARTER, Glasgow, Scotland. Filed Dec. 28, 1897. Serial No. 663,818. (No model.) Patented in England May 12, 1897, No. 11,784.



Claim.—1. In pasting mechanism, a table, a paste vessel secured to the table and a pasting-tongue with a roof-like top and working in the bottom of the paste vessel.

2. In pasting mechanism, a table, a paste vessel secured to the table, a tongue with a roof-like top fitted in the bottom of the paste vessel, a link secured to the tongue, a lever for operating the link and means for operating the lever, substantially as set forth.

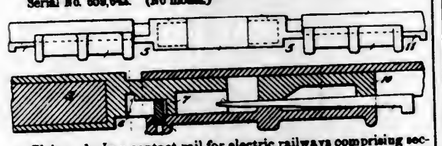
3. In pasting mechanism, a table, a paste vessel secured to the table, a tongue fitted in the bottom of the paste vessel, a link secured to the tongue, a lever for operating the link, a spring connected to the lever and treadle mechanism for depressing the lever, substantially as set forth.

4. In pasting mechanism, a table, a paste vessel secured to the table, a paste-regulating gate in the paste vessel, a tongue fitted in the bottom of the paste vessel and means for reciprocating the tongue, toward or from said gate, substantially as set forth.

5. In pasting mechanism, a table, a paste vessel secured thereto, a reciprocatory tongue with a roof-like top in the bottom of the paste vessel, means for moving the tongue, and a regulating-gate movable toward and from said tongue.

6. In pasting mechanism, a pressing device consisting of plate *l* having rounded end *l*' and hinged to the lower side of the table-top, a spring intended to raise said plate there being an opening in the table-top, and having a rounded edge a^2, as set forth.

611,056. ELECTRIC-RAILWAY CONSTRUCTION. WILLIAM CHAPMAN and PERCY W. DAVIES, Pittsburg, Pa. Filed Nov. 23, 1897. Serial No. 659,642. (No model.)



Claim.—1. In a contact-rail for electric railways comprising sections insulated from the ground and from each other, guide-clamps fastened to the ends of the rail-sections, and insulating-blocks having extensions and located between adjacent rail-sections, said guide-clamps having limiting-stops to prevent the complete withdrawal of the insulating-block extensions.

2. In a contact-rail for electric railways, comprising insulated sections, guide-clamps keyed to the ends of said sections and provided with removable limiting stop-pieces and insulating-sections having extensions located and movable longitudinally in said guide-clamps to a degree limited by said stop-pieces.

3. In a contact-rail for electric railways constructed in sections, guide-clamps fastened to the ends of the sections and provided with removable stop-pieces, insulating-blocks and sockets for the ends of said blocks provided with extensions which are located and movable longitudinally in the guide-clamps and have projections to engage the removable stop-pieces.

4. In a contact-rail for electric railways of inverted-trough shape and constructed in sections, a guide-clamp having jaws for gripping the rail edges, a block fitting the under side of the rail and located in the guide-clamps at or near one end, a wedge between the block and the guide-clamp, an insulating-block having extensions located in the adjacent guide-clamps and movable longitudinally with reference thereto, and means for limiting said movement.

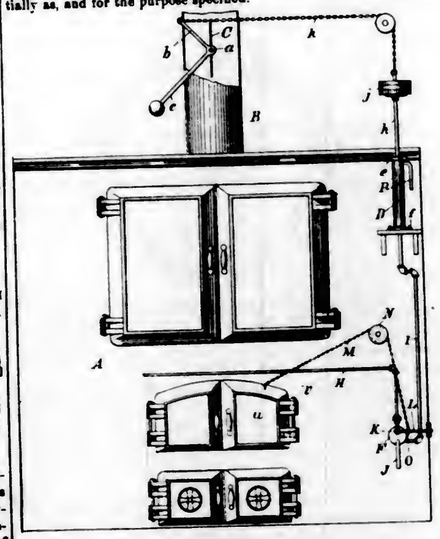
5. A contact-rail for electric railways of inverted-trough shape, in combination with a clamp having jaws for gripping the rail edges, a block provided with a socket for the supply-conductor, a plastic bond between the block and the rail and a wedge between the block and the clamp.

6. A contact-rail for electric railways of inverted-trough shape and constructed in sections and subsections, in combination with clamps for adjacent subsections each of which has a block, plastic bonds and wedges between it and the under sides of the abutting rail ends.

7 A contact-rail for electric railways of inverted-trough shape and constructed in sections and subsections, in combination with clamps for adjacent subsection ends each of which has a block provided with recesses in which are located copper plates or strips provided with plastic bonding material, and wedges between the bottom of the block and the adjacent face of the clamp.

611,057. OPERATING MECHANISM FOR CHIMNEY-DAMPERS. FRANK M. CLOTWORTHY, Baltimore, Md. Filed Nov. 27, 1897. Serial No. 659,957. (No model.)

Claim.—In combination with a furnace-door and a chimney-damper, a cylinder containing a weighted piston, a chain leading from the weighted piston to the damper, a pipe which connects the lower end of the cylinder with some source of supply of water under pressure, a cock in the said pipe having a key and an operating-lever, the said key being adapted to be turned so as to admit water to the cylinder and below the piston therein, or to cut off the admission of water and at the same time allow of the escape of the piston-supporting water in the cylinder, a chain which unites the lever of the cock to the furnace-door, and a weight on the said key-operating lever to turn the key as the furnace-door is opened, and the chain slackened, substantially as, and for the purpose specified.



611,058. BRAKE-HANDLE FOR CARS. EDWARD C. COLLINS, Taunton, Mass. Filed Jan. 5, 1898. Serial No. 665,687. (No model.)

Claim.—1. A brake-handle made in two parts connected together by a vertical hinge-pin, and each part provided with two stop-shoulders constructed and arranged to permit only a limited movement of one of said parts about said hinge-pin, and a pawl, to engage said ratchet, carried by the hub section of said handle, and acted upon by the other section of said handle to cause said engagement.

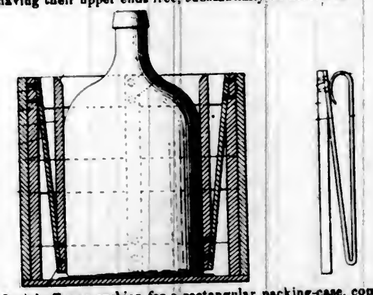
2. A brake-handle made in two parts connected together by a stop hinge-joint, the axis of the hinge-pin of which is vertical, said stop-joint being constructed and arranged to permit only a limited movement of one of said parts about said hinge-pin in either direction; in combination with a brake-shaft provided at its upper end with a series of ratchet-teeth and fitted to and revoluble in a bearing in the hub portion of said handle: and a pawl-plate fitted to and movable endwise in a bearing in said hub portion of said handle in position to be acted upon by the stop-shoulder of the other portion of said handle, at its outer end, and to engage said ratchet-teeth by its inner end.

3. The combination of the brake-shaft A provided with the ratchet-teeth *b* and annular groove *e*; a brake-handle composed of the two parts B and B' connected together by the vertical hinge-pin *c* and said parts being provided with the stop-shoulders *j j'* and *f f'* respectively, and the part B' with the oblique mortise g^2; the pawl-plate *h*; the set-screw *d* engaging the groove *e*; and the screw-plug C all constructed arranged and operating substantially as described.

4. In combination with a brake-shaft provided with a series of ratchet-teeth upon its upper end; a brake-handle made in two parts connected together by a stop hinge-joint and mounted loosely upon the upper end of said shaft; and a sliding pawl fitted to and movable endwise in a bearing in the hub portion of said handle in position to be moved into engagement with said ratchet-teeth by the movement of the outer portion of said handle about its hinge-pin in one direction, and to be disengaged from said teeth by the action of a tooth upon its inner end when the handle is moved in the opposite direction.

611,059. PACKING-CASE. THOMAS J. CRAVEN, Salem, N. J. Filed Mar. 16, 1898. Serial No. 674,018. (No model.)

Claim.—1. A buffer or cushion for a rectangular packing-case, comprising a supporting-strip in each corner thereof, spring-strips attached to said supporting-strips and inclined at an angle thereto, and guiding and clamping strips extending from the free ends of the spring-strips, substantially parallel to the sides of the packing-case, and having their upper ends free, substantially as described.



2. A buffer or cushion for a rectangular packing-case, comprising a post in each corner thereof, a spring-strip attached to each of said posts and inclined at an angle thereto, and guiding and clamping strips at their lower ends secured to the lower ends of said spring-strips, and having their upper ends free, substantially as described.

3. A buffer or cushion for a packing-case, comprising a spring-strip attached to said case by a beveled connection and inclined at an angle thereto, and a guiding and clamping strip substantially parallel to the sides of the packing-case, attached to the free end of the spring-strip by a beveled connection, substantially as described.

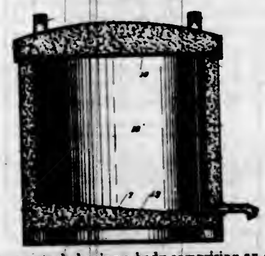
4. A packing-case, provided with posts beveled at their upper ends, and having inclined spring-strips secured to said ends, and guiding and clamping strips beveled at their lower ends and secured to the lower ends of said spring-strips, substantially as described.

611,060. WASHBOILER. GEORGE A. CROOKER, Crowley, La., assignor of one-half to R. R. Crooker, same place. Filed Mar. 18, 1897. Serial No. 628,180. (No model.)



Claim.—In a washing-machine, a body or boiler having a vertical stud rising centrally from its bottom, a series of pipes disposed in parallel relation beneath the bottom of the boiler and having their end portions in communication therewith, and a false bottom of skeleton form raised at the center and having a pendent tubular head making screw-thread connection with the aforesaid stud and having its edge in proximal relation to the extremities of the aforedescribed pipes, substantially as set forth.

611,061. HEAT-RETAINING STARCH-COOKER. JAMES R. DANE, New York, N. Y. Filed Feb. 5, 1896. Serial No. 669,201. (No model.)



Claim.—A receptacle having a body comprising an outer receptacle provided with a laterally-extending annular flange portion and an annular rim of larger diameter than the major portion of said receptacle, and an inner receptacle disposed within said outer receptacle and forming therewith an intermediate compartment, said inner receptacle also having a laterally-extending annular flange forming the top of said intermediate compartment and which rests on the annular flange of said outer receptacle, whereby said inner receptacle is supported by the flange of said outer receptacle; a cover having a chamber adapted to fit in said outer receptacle and rest on the laterally-extending flange of said inner receptacle, the diameter of said cover-chamber being equal to the diameter of the major portion of said outer receptacle, whereby the outer side walls of said cover-chamber are in alinement with the side walls of the major part of said outer receptacle, and heat-retaining material disposed in said compartment and chamber, whereby when said cover is in position the inner receptacle is entirely surrounded by said heat retaining material and a continuous compartment formed around the same.

611,062. RIFLE ATTACHMENT FOR SHOTGUNS. HERMAN A. DARMS, Napa, Cal. Filed Nov. 17, 1897. Serial No. 658,816. (No model.)



Claim.—1. The combination with a shotgun-barrel, of a rifle-barrel of smaller diameter having an enlargement at the rear to fit the cartridge-chamber, a collar in the front to fit the interior of the shotgun whereby the barrel is centered, a plate longitudinally slidable in a groove or channel in the rear enlargement of the rifle-barrel, having a lug coincident with the rear flange of the enlargement and fitted to be engaged by the extractor of the shotgun, whereby the slide is movable rearwardly, means for locking the slide in place whereby the movement of the extractor of the shotgun effects the removal of the rifle-barrel, and a lug normally coincident with the interior shoulder of the enlargement which serves as a support for the head of the rifle-cartridge, said lug acting to extract the rifle-cartridge when the slide is retracted.

2. The combination with a shotgun of a short interior barrel of less diameter, a collar fixed upon the muzzle of the interior barrel fitting the interior of the shotgun and centering a rifle-barrel therein, an enlargement at the rear of the supplemental barrel fitting the cartridge-chamber of the shotgun, having a flanged head corresponding to that of a shotgun-cartridge, an interior ledge or shoulder surrounding the opening of the rifle-barrel adapted to receive the head of the rifle-cartridge, a sliding plate fitting and longitudinally movable in a groove in the enlarged rear end of the rifle-barrel having an outwardly-projecting lug adapted to be engaged by the extractor of the shotgun, an interiorly-projecting lug adapted to engage the head of the rifle-shell whereby motion is transmitted from the extractor through the intermediate slide and its lugs to remove the rifle-cartridge, and means for locking the slide against movement whereby the extractor of the shotgun serves as the means for removing the rifle-barrel.

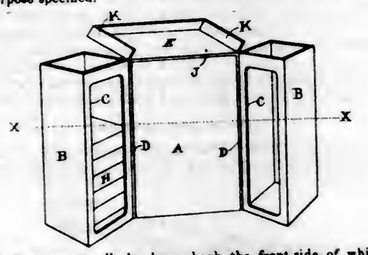
3. The combination with a shotgun-barrel of a short barrel of less diameter having enlarged ends fitting respectively the interior of the shotgun-barrel and the cartridge-chamber of the same whereby the interior barrel is centered, a chamber for the rifle-shell formed interior to the enlarged rear end, a longitudinally-slidable plate with lugs, one adapted to engage the rifle-shell and the other to be engaged by the extractor upon the shotgun, a segmental ring fitting a channel in the exterior portion of the rear enlargement of the rifle-barrel and turnable therein, the ends of the segment normally abutting against the extractor-slide, said slide having a transverse channel made in it into which the ring is turnable whereby the slide is locked so that the action of the extractor will withdraw the rifle-barrel from its seat in the shotgun.

4. The combination with a shotgun-barrel of a supplemental barrel of smaller diameter having enlargements or rings at opposite ends by which it is accurately centered therein, a slide longitudinally movable upon the rear end of the supplemental barrel having an exterior lug which is engaged by the extractor of the shotgun, and an interior lug adapted to engage the rifle-shell to remove it, a segment fitting the groove or channel formed around the rear enlargement of the rifle-barrel, the ends of said segment normally abutting against the sides of the slide so as to allow the latter to be moved by the extractor, the slide having a transverse groove or channel corresponding with that in which the segment is fitted, said segment having a lug projecting rearwardly whereby it may be turned so as to extend into or across the channel in the slide and lock the two together so that the extractor will operate to remove the interior barrel.

611,068. COUNTER DISPLAY-BOX. CLARENCE E. DAVIS, St. Joseph, Mo. Filed Nov. 22, 1897. Serial No. 659,404. (No model.)

Claim.—1. In a counter display-box, in a combination, a heavy card or pasteboard back the face of which is suitable for advertising

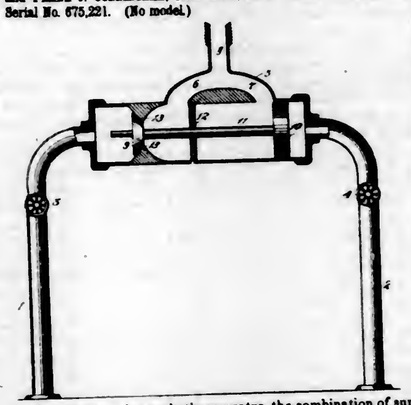
or ornamentation, two square open-top boxes or wings with open faces to permit display of goods, and a lid with rim, and strips attaching said wings and lid to said back, said lid and its rim when box is closed binding the parts securely together, substantially as set forth and for the purpose specified.



2. In a counter display-box a back the front side of which is adapted to advertising, in combination with two open-top square boxes with open faces adapted to display confections and other goods and a lid with rim, all suitably hinged to the edges of said back, substantially as described and for the purpose specified.

3. In a counter display-box a back A carrying a lid E with its rim K and hinge J and two wings B B having hinges D D and open tops and open or mica fronts C C, each of which wings may be swung to rear of A or at any intermediate angle and closed against face of A, substantially as set forth and for purpose specified.

611,064. VALVE FOR SHOWER-BATHS. WILLIAM DEMAREST and FRANK J. CUNNINGHAM, New York, N. Y. Filed Mar. 26, 1898. Serial No. 675,221. (No model.)



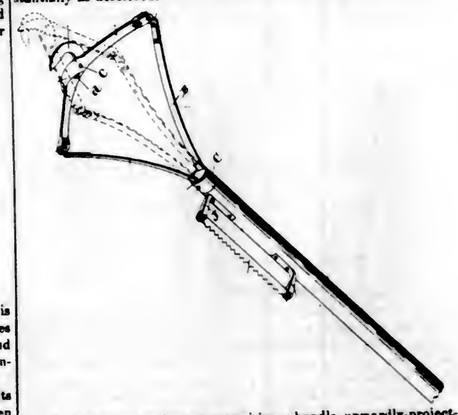
Claim.—1. In a shower-bath apparatus, the combination of supply-pipes; a discharge-pipe; a valve-chamber, or casing, between said supply and discharge pipes; and a differential valve within said casing, constructed and arranged so as to shut off, automatically, the supply of hot water, or steam, upon the cutting off of the supply of cold water.

2. In a shower-bath apparatus, the combination of supply-pipes; a discharge-pipe; a valve chamber or casing, between said supply and discharge pipes; and a differential valve within said casing, composed of two pistons or valves of unequal areas, the valve of larger area being opposed to the pressure of the cold water; for the purposes set forth.

3. In a shower-bath apparatus, the combination of a hot-water, or steam, supply pipe, as 1; a cold-water-supply pipe, as 2; a valve casing or chamber, as 5, provided with exit-ports, as 6, 7; a discharge-pipe, as 8; and a valve within said chamber, composed of a small valve or piston, as 9, and a larger valve or piston, as 10, connected by a stem or rod, as 11; for the purposes set forth.

611,065. PRUNING IMPLEMENT. LEVI H. DOBBIN, Chapel, W. Va. Filed Apr. 8, 1898. Serial No. 676,931. (No model.)

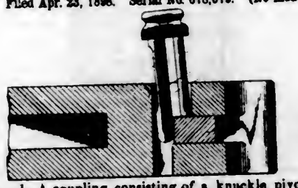
Claim.—1. A pruning implement comprising a handle, upwardly-projecting spring-arms having their lower ends connected with the handle, knife-arms having their outer ends connected to the upper ends of the spring-arms and extending inward and pivoted together, one of the arms having an upwardly-projecting hook-shaped cutting-knife and the other arm a cutting-blade lying thereunder, substantially as described.



2. A pruning implement comprising a handle, upwardly-projecting flexible arms having their lower ends connected to the handle, knife-arms having their outer ends pivotally connected with the upper ends of the spring-arms, one of the knife-arms having a hook-shaped knife, the said arms pivoted together below the hooked knife, the other arm having a blade lying below the hooked knife, and one of the knife-arms having a stop for the purpose of limiting the opening movement of the knife and blade, substantially as described.

3. A pruning implement comprising a handle, upwardly-projecting flexible arms having their lower ends rigidly connected with the handle, knife-arms having their inner ends pivoted together and provided with projecting cutting edges, the outer ends of the arms pivotally connected to the upper ends of the flexible arms, one of the arms having a projecting stop lying below the blade of the other arm for the purpose of limiting their opening movement, substantially as described.

611,066. CAR-COUPLING. ANTHONY DOUGHERTY, Waverly Mills, Minn. Filed Apr. 23, 1898. Serial No. 678,679. (No model.)



Claim.—1. A coupling consisting of a knuckle pivoted as described and having a rearwardly-projecting portion, a coupling-pin, adapted to be supported thereby when open and to be received by said rearwardly-projecting portion when closed, and a revoluble locking-pin for limiting the movement of said coupling-pin and having a cut-away portion to permit the withdrawal of said coupling-pin as described.

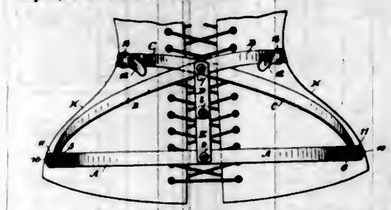
2. In a car-coupling, the combination of a pivoted knuckle having a rearwardly-extending portion operating as described; and a coupling-pin consisting of a perforated head and a long and short pin, said long pin having a cut-out portion adapted to receive a third pin operating as and for the purpose described, and said short pin being supported by or adapted to enter into, said rearwardly-extending portion of the knuckle, substantially as and for the purpose described.

611,067. BARREL. JEDEDIAH C. ESTABROOK, Keene, N. H. Filed Jan. 25, 1898. Serial No. 667,845. (No model.)



Claim.—In a barrel or the like, the band consisting of an entire ring of approximately V shape in cross-section and comprising two parts inclined to each other, the outer part fitting the staves and the inner part bearing on the head at a distance from the staves whereby the band may without chamfering of the staves be applied to those of different thicknesses or applied before they are finally closed together, and whereby the inner part of the band can be made to bear tightly on the head at an angle to the staves to more effectually guard the barrel-head joint, and to protect the end of the staves against transverse blows, substantially as described.

611,068. BUSTLE-CORSET. DANIEL KOPS, New York, N. Y. Filed May 19, 1898. Serial No. 681,105. (No model.)



Claim.—1. A bustle formed of a bottom spring A and two springs B and C united at their lower ends to the bottom spring and united together at the middle part of the bustle, the toggle brace-springs D and E for spreading apart the upper and lower springs of the bustle, the ends of the upper springs extending toward the waist of the wearer, and straps or other connections at such ends, substantially as set forth.

2. The bottom spring A and the upper springs B and C pivoted together and to the bottom spring near the ends thereof, in combination with the brace-springs D and E pivoted together so as to fold and pivoted to the upper and lower springs, the ends of the upper springs projecting, and buckles and fastenings for connecting said projecting ends to a corset, substantially as set forth.

3. The bustle composed of pivoted and crossing spring members having four free ends with fastening devices thereon and the corset having lacing at the back and four fastening devices at the opposite sides of the lacing (two at each side) for engaging the four fastening devices of the bustle in connecting the bustle thereto, whereby the bustle, attached only at the ends of the members, is projected by drawing up the corset-lace or made to lie flatter by letting out the corset-lace so that the distention of the bustle is automatically regulated as the corset is fitted to the person, substantially as set forth.

4. The corset having lacing at the back and fastening devices near the lower edge over the hip portions and at the back near the waist and a bustle composed of pivotally-connected and crossing spring members with the respective free ends provided with fastening devices for engaging the said fastening devices near the lower edge and back of the corset, the general or partial looseness of the lacing effecting the flattening of the springs, and the general or partial tightness of the lacing effecting the distention of the springs, the shape of the bustle being in this manner automatically modified and controlled by the wearer in causing the corset to conform to the figure, substantially as specified.

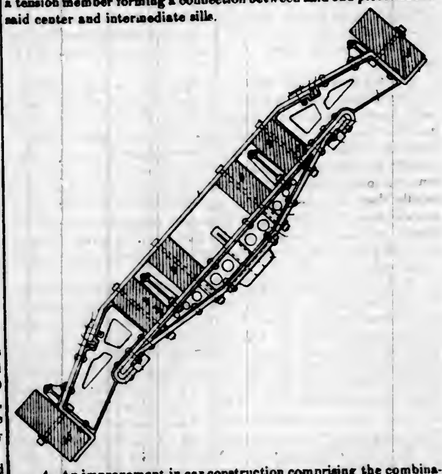
5. The corset having lacing at the back and fastening devices near the lower edge over the hip portions and at the back near the waist, and a bustle having a bottom spring with end connections engaging the fastenings at the hip portions, inclined crossing springs pivoted together at their intersection and to the bottom spring at their lower ends near the said hip fastening devices and connections at their upper ends for engaging the corset at the back, and a spring or resilient stay centrally located and pivoted at its respective ends to the bottom spring and to the intersection of the inclined springs whereby the springs composing the bustle are more or less distended by the general or partial loosening or tightening of the lacing as the corset conforms to the figure of the wearer, substantially as specified.

611,069. CAR CONSTRUCTION. ROBERT P. LAMONT, Chicago, Ill., assignor to the Simplex Railway Appliance Company, same place. Filed July 16, 1896. Serial No. 686,102. (No model.)

Claim.—1. An improvement in car construction comprising the combination with the center and side sills, of a bolster arranged below the center sills, end pieces forming supports for the side sills, and a tension member forming a connection between said end pieces above said center sills.

2. An improvement in car construction comprising the combination with the center, intermediate and side sills, of a bolster arranged below the center and intermediate sills, end pieces forming supports for the side sills, and a tension member forming a connection between said end pieces above said intermediate sills.

3. An improvement in car construction comprising the combination with the center, intermediate and side sills, of a bolster arranged below the center and intermediate sills, end pieces carried upon the extremities of said bolster and forming supports for the side sills, and a tension member forming a connection between said end pieces above said center and intermediate sills.

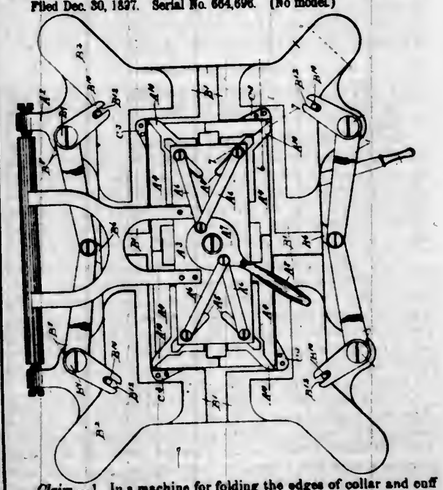


4. An improvement in car construction comprising the combination with the center and side sills, of a bolster arranged below the center sills, end pieces forming supports for the side sills, and a tension member forming a removable connection between said end pieces above said center sills.

5. An improvement in car construction comprising the combination with the center and side sills, of a bolster arranged below the center sills, end pieces forming supports for the side sills, a tension member forming a removable connection between said end pieces above said center sills, such removable connection being formed by the provision of recesses in the end pieces, and suitable projections upon the ends of the tension member adapted to engage said recesses.

6. An improvement in car construction comprising the combination with the center and side sills, of a bolster arranged below the center sills, end pieces carried upon the extremities of said bolster, a tension member forming a removable connection between said end pieces above said center sills, and a projecting strip secured upon the upper side of each of said end pieces and arranged to form seats for the support of the side sills.

611,070. FOLDING-MACHINE. MARTIN J. LOCKE, Troy, N. Y. Filed Dec. 30, 1897. Serial No. 664,696. (No model.)



Claim.—1. In a machine for folding the edges of collar and cuff blanks, the combination with a bed for receiving and supporting the

blank; and a former movable to and from the bed; of corner-folding plates movable inwardly and outwardly along the upper surface of the bed; slideways for the folder-plates severally and similarly inclined to the straight lines bisecting the corner-angles, respectively, whereby one arm of a corner-folding plate is movable to and from the blank more rapidly than the other: means for operating the former; and means for moving the corner-folding plates inwardly and outwardly along the respective inclined slideways, substantially as described.

2. In a machine for folding the edges of collar and cuff blanks; the combination with a bed for receiving and supporting the blank; and a former movable to and from the bed; of corner-folding plates movable inwardly and outwardly along the upper surface of the bed; slideways for the folder-plates severally and similarly inclined to the straight lines bisecting the corner-angles respectively, whereby one arm of a corner-folder plate is movable to and from the blank more rapidly than the other: a blank-engaging riser on the more slowly movable arm of the several folding-plates; means for operating the former; and means for moving the corner-folding plates inwardly and outwardly along the respective inclined slideways, substantially as described.

3. In a machine for folding the edges of collar and cuff blanks, the combination with a bed for receiving and supporting the blank; and a former movable to and from the bed; of corner-folding plates movable inwardly and outwardly along the upper surface of the bed; slideways for the folder-plates severally and similarly inclined to the straight lines bisecting the corner-angles respectively, whereby one arm of a corner-folding plate is movable to and from the blank more rapidly than the other; blank-engaging detaining-fingers, severally projecting from the several corners of the former, whereby each finger projects, when the former rests upon a blank horizontally, over one edge of the blank and over the more rapidly moving arm of a corner-folding plate; means for operating the former; and means for moving the corner-folding plates inwardly and outwardly along the respective inclined slideways, substantially as described.

4. In a machine for folding the edges of collar and cuff blanks having a bed, a collapsible former, and corner-folding plates, the combination with the folding-plates, of a riser on one arm of the folding-plates engageable with an edge of the blank forming one side of a blank corner, and a detaining-finger on the former engageable with the edge of the blank forming the other side of such blank corner, and means for operating the former and folding plates, substantially as described.

5. In a machine for folding the edges of collar and cuff blanks, having a bed, a collapsible former, and corner-folding plates, the combination with the folding-plates, of a movable riser pivoted upon one arm of the several folding-plates engageable with an edge of the blank, a riser-operating lever pivoted on the several folder-plates, and a detaining-finger on the several former corners engageable with an edge of the blank and with the riser-operating lever, whereby an inward movement of the angle-plate will cause the movable riser to move more rapidly than either arm of the plate, and means for operating the former and folding plates, substantially as described.

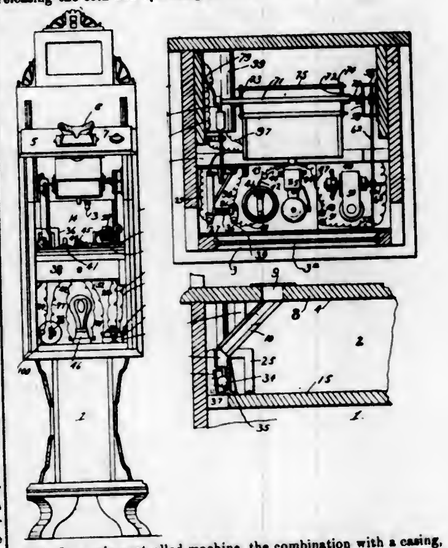
6. In a folding-machine, the combination with a two-armed corner-folder, and means for moving one arm more rapidly than the other, of a movable riser on the more slowly moving arm, and means for advancing the riser beyond the arm, substantially as described.

611,071. COIN-CONTROLLED MACHINE. JOHN G. MACPHERSON, Buffalo, N. Y. Filed Apr. 14, 1898. Serial No. 677,539. (No model.)

Claim.—1. In a coin-controlled picture-exhibitor, the combination with a casing, of the picture-exhibiting mechanism arranged therein, an electrical circuit for revolving the picture-exhibiting mechanism and lighting an electric light, and another electrical circuit for ringing an alarm, when the exhibitor is nearing its full revolution, said first-mentioned circuit being made by a coin and the last-mentioned circuit being made simultaneously with the release of the coin.

2. In a coin-controlled machine, the combination with a casing, of an electrical circuit caused by the coin to operate a motor, a picture-holding drum operated by said motor, an arm secured upon the shaft of said drum adapted to cause the release of the coin and complete another circuit to continue the revolution of the drum, another circuit working in connection with the aforesaid circuit to light an electric light, and an observation-window through which the pictures are observed during the revolution of the drum

3. In a coin-controlled machine, the combination with a casing, of an electrically-operated mechanism, a rod carrying at one end a worm-gear and at the other end a gear-wheel operated by said electrical mechanism, a frame having journaled therein the short shaft carrying a worm-gear adapted to mesh with the gear-wheel upon said rod, a removable shaft carrying disks between which are mounted movable picture-holders and having means secured on the shaft for releasing the coin and operating an alarm. .



4. In a coin-controlled machine, the combination with a casing, of a revoluble picture-exhibiting drum mounted therein, mechanism for revolving the drum, an electrical circuit for operating said mechanism, a second electrical circuit for lighting a lamp simultaneously with the revolving of the drum, said circuits being completed or formed by a coin, and a third electrical circuit for ringing an alarm when the exhibitor is nearing the end of a revolution.

5. In a coin-controlled machine, the combination with a casing, of a spring-bearing mounted upon one side of and upon the inside of the casing, a frame mounted upon the other side of the casing and carrying a revolving mechanism and a revolving bearing, a detachable picture-exhibiting drum having an arm on one end of its axle mounted between said spring-bearing and said revolving bearing, a motor for operating the mechanism in the frame and the drum, electrical circuits for operating the motor and lighting an electric light at the same time, circuits adapted to be made by the coin, and a coin-releaser set in operation by the said arm on the axle of the drum to release the coin and make another electrical circuit to ring an alarm and forming or continuing the other circuits also to continue the movement of the drum.

611,072. CAR-REPLACER. HENRY MILLER, Hannibal, Mo. Filed May 19, 1898. Serial No. 681,110. (No model.)



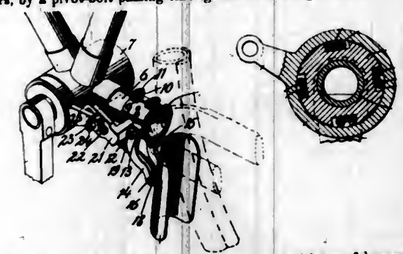
Claim.—1. As a new article of manufacture, a car-replacer consisting of an arc-shaped portion of the flanged rim of a locomotive-wheel tire, less than a semicircle, substantially as described.

2. As a new article of manufacture, a car-replacer consisting of an arc-shaped portion of the flanged rim of a locomotive-wheel tire, less than a semicircle, a metal base-plate or chord connecting the free ends of the replacer together, a filling of wood interposed between the base-plate and arc-shaped portion, and spikes inserted in the base-plate to assist in holding the replacer in position, substantially as described.

3. As a new article of manufacture, a car-replacer formed of a section of a locomotive-wheel tire having a small flanged rim at one peripheral edge thereof, a base-plate provided with spikes connecting the free ends of the segment together, and a filling of wood or similar material interposed between the rim and the base-plate, substantially as described.

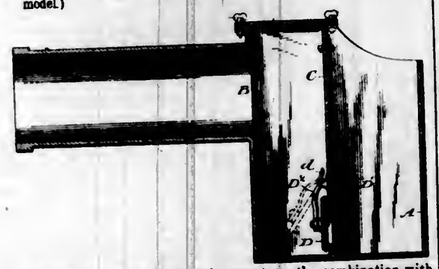
611,073. BACK-PEDALING BRAKE. ALEXANDER P. MORROW, Elmira, N. Y., assignor of one-half to H. H. Fulton, same place. Filed July 19, 1897. Serial No. 645,150. (No model.) Patented in England Aug. 3, 1897, No. 18,105.

Claim.—1. The combination with a cycle, of a pair of levers fulcrumed on the machine-frame in froot of the rear wheel, a brake pivotally secured between said levers, an arm projecting from one of said levers and provided with an elongated slot, and a clutch device arranged on the crank-shaft of the machine and provided with a projecting arm secured to the arm which projects from one of the brake-levers, by a pivot-bolt passing through the said elongated slot.



2. The combination with a cycle, of a pair of levers fulcrumed at their lower ends by a cross-bar, an arm 21 projecting from one of said levers, and provided with an elongated slot, a brake pivotally secured upon said cross-bar, a clutch device arranged on the crank-shaft of the machine and provided with a projecting arm pivotally secured to the arm 21, and a spring secured at one end to the machine-frame, and at its other end to said cross-bar.

611,074. CATCH-BASIN AND SEWER-TRAP. GEORGE H. MOWE, Watertown, N. Y. Filed Mar. 16, 1898. Serial No. 674,083. (No model.)



Claim.—In a catch-basin and sewer-trap, the combination with the basin, of the removable partition vertically disposed therein, the lower portion of said partition having an elongated opening therein, a flange about said opening at right angles to the face of the partition, of the hooks and bar loosely held thereon, of the valve-plate lugs thereon with threaded apertures therein, the arms D^3, carried by said rod, and secured to the lugs of the plate by means of screws, of the cover fitted over the removable partition and edge of the basin, a portion of the basin being left open at the top and cut away, as shown and described.

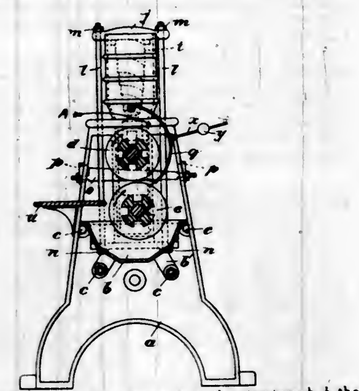
611,075. WRINGING AND MANGLING MACHINE. WILLIAM MCLEAN, Belfast, Ireland. Filed Mar. 14, 1898. Serial No. 673,688. (No model.)

Claim.—1. The combination, in a wringing or mangling machine, of a frame, rollers *d*, *e*, supported therein, a delivery-table on the front side of the machine, a guide pivoted above the roller *d* and extending at the rear of the machine to the entrance between the rollers, as set forth.

2. The combination in a wringing and mangling machine of a frame, rollers fitted in the frame, means for revolving the rollers and a sheet-metal guide pivoted above the top roller and extending to the rear entrance between the rollers and serving as a guide to the material fed in between the rollers, substantially as set forth.

3. The combination in a wringing and mangling machine of a frame, two rollers fitted therein the top roller being smaller than the bottom roller and having its center in advance of the center of the bottom roller, means for revolving the rollers, and a guide *q* pivoted above the upper roller and extending to the rear entrance between the rollers, substantially as set forth.

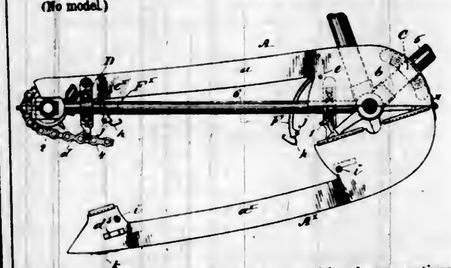
4. The combination in a wringing and mangling machine of two side frames *a*, *a*, connected together by a stay-trough *b*, rollers *d*, *e*, carried by the frames the axles of said rollers being out of line, bearings for the rollers, springs *i* pressing on the bearings, means for adjusting the tension of the springs, means for revolving the rollers, and a rear guide *q* pivoted above the upper roller, substantially as set forth.



5. The combination of the frames *a*, *a*, the stay-trough *b* the rollers *d*, *e*, the wedge-bars *o*, *o*, the guide *q*, the pressure-springs *i*, the casings *l* for the springs, means for adjusting the tension of the springs and means for revolving the rollers, substantially as set forth

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611,076. GEAR-CASE FOR BICYCLES. FREDERICK H. NIES and WILLIAM DUBS, New York, N. Y. Filed July 6, 1897. Serial No. 643,531. (No model.)



Claim.—1. A gear-case for a bicycle comprising the two sections, A and A×, hinged together at their front end, a separable housing B, adapted to embrace the free, rear ends of said sections when the gear-case is in place, slides in said housing to embrace the rear axle and permit of its adjustment. movable cover-plates adapted to close the peripheral openings about the aperture y in the gear-case, the end cover-plates being hinged to the upper, fixed section, and means for securing said upper section to the frame, substantially as set forth.

2. A gear-case for a bicycle comprising the two hinged sections A and A×, the removable housing adapted to embrace and inclose the free ends of said sections, the detachable cover-plates E and E×, closing the respective open channels for the chains, and the cover-plates F and F×, hinged to one of said sections of the gear-case and closing the respective housings, the said cover-plates having grooves along their edges to receive the edges of the plates forming the gear-case, substantially as set forth.

3. A gear-case for a bicycle comprising an upper section A, a lower section A×, and means for detachably securing them together, in combination with a clip mechanism for securing the upper section A to the member 6 of the bicycle-frame, said clip mechanism comprising a slotted base, *d*, fixed to the section A, overlapping the section A× and adapted to take under a keeper d^3 on the last-named section, the said keeper, the screw-posts d^4, mounted adjustably in the slot in said base, the jam-nuts d^5, for securing said posts in the base, the semicircular bands d^2 threaded on said posts, and the nuts d^6, on said posts, substantially as set forth.

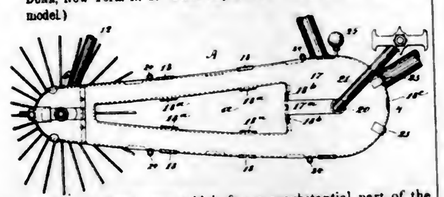
4. An adjustable clip mechanism for securing a gear-case to the frame of a bicycle, comprising a slotted base or base-plate, adapted to be secured to the gear-case, two screw-threaded posts mounted in said slot, the bodies of the posts engaging said slot and the heads thereof taking under the margins thereof, the clasping-bands mounted djustably on said posts, the jam nuts on said posts, substantially as set forth.

5. The combination with a gear-case, of a clip C for securing said case at its front and to an inclined member of the bicycle-frame, said clip comprising a base having in it a curved slot $c^\times$, the two

screw-posts c^7, mounted adjustably in said slot and provided with securing-nuts c^8, the clamping-bands, threaded on the said posts, and the nuts c^4, on the posts, for adjusting and securing said bands, substantially as set forth.

6. The combination with the sections of the gear-case, of the housing B, adapted to fit over, embrace and inclose the ends of said sections, and the means for securing said housing in place, said means comprising a leaf-spring m, fixed in a slot in the end of the section of the gear-case, and a cam n, mounted in a slot in the housing and adapted, when the housing is in place, to press upon said spring when rotated, substantially as set forth.

611,077. BICYCLE-FRAME. FREDERICK H. NIES and WILLIAM DUNN, New York, N. Y. Filed July 6, 1897. Serial No. 643,522. (No model.)



Claim.—1. A gear-case which forms a substantial part of the frame of a velocipede, said case consisting of an open-fronted housing for the main sprocket-wheel, two open fronted channels for the chain, a box-like housing for the rear sprocket-wheel, the latter housing having a fixed front plate slotted at front and back to receive the rear-wheel hub and spindle, and being open at its rear edge, a removable closing-plate at the back of the rear housing, a slide in the front plate of said housing through which slide the rear spindle passes, said slide being provided with a screw-threaded stem which extends back through the rear closing-plate and a nut on said stem, and an apertured, removable front plate for said gear case, said plate having an open slot to admit the passage of the crank-shaft and a slide to close said slot, substantially as set forth.

2. A gear-case which forms a substantial part of the frame of a velocipede, said case being open in front except as to the housing for the rear sprocket-wheel and comprising the sprocket-wheel housings, the chain-channels connecting said housings and provided at their outer and inner edges with securing devices to engage corresponding devices on the apertured front plate which closes the gear-case, and the said front plate, the rear end of which takes under the front plate of the rear housing, substantially as set forth.

3. A bicycle-frame having for one of its longitudinal members a gear-case with housings and channels to embrace and inclose the sprocket-wheels and chain, the housing 6 for the lesser sprocket-wheel, having fixed front and back plates and an open rear end, a removable plate 13, which closes said open end, a slide 15, embracing the rear-wheel spindle and provided with an operating screw and nut, and a slide 16, embracing the hub of the rear wheel, substantially as set forth.

4. A tapered gear-case for a bicycle having end housings 4 and 6, connected by open, trough-like channels 8 and 8^a for the runs of the driving-chain, clips 18, on the outer margins of the said channels, and lips 19 in the inner margins thereof, and a cover-plate 17, adapted to fit over the face of said gear-case and to engage the clips 18 at its outer edges, and provided at its inner edges with clips 18^a, which engage the lips 19 when the cover-plate is in place, substantially as set forth.

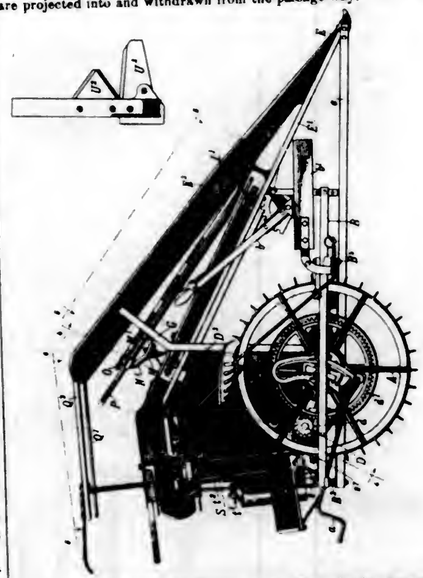
5. The combination with the gear-case A, of the cover-plate 17, adapted to fit over the open front of the same, and the spring securing devices on the case, each of said devices comprising a tube 24, fixed to the gear-case, a turn-button, rotatively mounted in said tube and consisting of the shank 24^a, its jaw 24^b, adapted to take over the cover plate, and the nicked head 24^c, and the spring 24^d, whereby the jaw of the turn-button is drawn up against the cover-plate, substantially as set forth

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611,078. CORN-HARVESTING MACHINE. HENRY E. PRIDMORE, Chicago, Ill., assignor to the McCormick Harvesting Machine Company. Filed May 24, 1895. Serial No. 550,484. (No model.)

Claim.—1. In a corn-harvesting machine, projecting prongs extending in front of the machine and slanting rearwardly and upwardly from their points, upright shafts, one upon each side of the row, which carry devices at the lower extremity to move the corn onward, and at their upper ends other forwarding devices to lift and straighten the corn, cranks mounted upon the upper ends of these shafts, with means for adjusting the cranks angularly on the shafts, and rakes mounted upon the cranks and reciprocated by them.

2. In a corn-harvesting machine, forwardly-projecting prongs, one on each side of the row, which prongs form a passage-way for the stalks, stalk-forwarding rakes located on either side of said passage-way and operated to project into said way, move rearward, and withdraw therefrom, and means for adjusting the throw of the rakes so as to regulate with respect to each other the time when said rakes are projected into and withdrawn from the passage-way.



3. In a corn-harvesting machine, forwardly-projecting prongs on opposite sides of the row forming a passage-way for the stalks, upright shafts located on opposite sides of said passage way, stalk-forwarding rakes operated by cranks on said shafts, and rosettes on the shafts whereby the angular adjustment of the crank on one shaft may be varied relatively to that of the crank on the other.

4. In a corn-harvesting machine, forwardly-projecting prongs on opposite sides of the row forming a passage-way for the corn, said prongs being continued toward the rear, traveling-chain butts-forwarding devices driven by sprockets on upright shafts journaled at their upper ends in the prongs on opposite sides of the passage-way, and traveling-chain tops-forwarding devices also on opposite sides of the passage-way and moving at a faster rate of speed than the butts-forwarding chains, the shafts having an outward inclination away from each other at their upper ends, whereby the tops-forwarding chains may be driven by larger sprockets on the shafts without the employment of idlers.

5. In a corn-harvesting machine that severs the corn and binds it while on end, the combination of gathering-prongs forming a passage-way for the stalks, forwarding devices carried by the prongs on either side of the passage-way, an upright binder located at the rear of the passage-way, said binder being inclined rearwardly from a vertical position, and a floor to the stalk passage-way in rear of the cutters that inclines upwardly toward the binder and downwardly therefrom, so as to afford room under the platform for the operative parts of the machine and to facilitate the discharge of the bound bundle; substantially as and for the purpose specified.

6. In combination to form a framework for a corn-harvesting machine, a rear sill extending across the full width of the machine, a cross-sill extending from the outer sill to the inner gathering-prong: girths, one on each side of the main wheel connecting the rear sill with the cross-sill; cross sills extending from the inner main-wheel girth across to the grain-wheel sill, forwardly-projecting inclined sills extending from the rear sill across the cross-sill and in front of the machine, one upon each side of the row, all substantially as and for the purpose specified.

7. In combination in a corn-harvesting machine, with the main frame the main shaft extending transversely and the forwardly-extending prongs and the forwarding device mounted thereon, a binder located on the main frame in an upright position inclined toward the rear from the vertical, the main shaft of the binder being practically parallel with the main drive-shaft and receiving motion therefrom, the space between the forwarding devices on the prongs and the back

of the needle being sufficient to accommodate cut stalks while the binder is tying the bundle without increasing the depth of the frame or the distance the butts have to travel.

8. In a corn-harvesting machine that severs the corn and binds it while it is still on end, in combination with the gathering-prongs and the forwarding devices carried by them, a binder positioned on the machine at the rear of the gathering-prongs and in line with the stalk passage-way formed by them, which binder is inclined rearwardly from a vertical position whereby an enlarged space is provided for the accumulation of stalks behind the needle while the binder is tying a bundle without increasing the distance the butts have to be carried.

9. In combination in a corn-harvesting machine that receives the corn between gathering-prongs and conducts it rearwardly on ends to a binder where it is bound and discharged, forwarding devices located on the prongs to carry the corn onwardly to the binder, the prongs being connected with the binder on each side of the stalk passage-way and forming a continuous passage-way for the stalks from the time they are severed until bound, the binder being inclined rearwardly, whereby the receptacle for the accumulation of the cut stalks during binding that is formed between the forwarding devices and the back of the needle, is enlarged without increasing the depth of the frame or the distance the butts of the stalks have to be carried.

10. In combination in a corn-harvesting machine with the gathering-prongs, vibrating, reciprocating rakes located on the prongs, inclined shields or guides positioned on the prongs above these rakes, the rear end of the rake being widened, whereby in the vibration of the rake the rear end does not pass from beneath the overlying guide, substantially as and for the purpose specified.

11. In combination in a corn-harvesting machine with the gathering-prongs and the forwarding devices mounted thereon, a binder positioned on end at the rear of the forwarding devices, a shaft in the binder that is driven from the main shaft of the machine, which shaft carries a bevel-gear that drives the packer-shaft and another bevel-gear that drives the knotter and discharge shaft, a clutch mechanism positioned on this shaft, and connections extending from the clutch to a finger located on the corn passage-way, substantially as and for the purpose specified.

12. In combination in a self-binding machine, a main shaft that gives motion to the packer-shaft by means of gearing, and to the knotter and discharge shafts, also by means of gearing, a clutch mechanism located on this shaft, a trip-stop pivoted on the machine-frame and formed of two members, a finger located in the corn passage-way and connected to one member of the trip-stop, a link-and-lever connection from the other member of trip-stop to a cam whereby the pressure of the corn upon the finger that is located in the corn passage way clutches the machine and further pressure acts upon the link-and-lever connection with an increased force, substantially as and for the purpose specified.

13. In combination in a self-binding machine, a main binder-shaft with beveled gearing thereon that gives motion to the packer and the knotter and discharging shafts, clutching mechanism, a trip-stop formed of two members and pivoted to the machine-frame in such a position that one of the members shall, when in normal position, be in the path of the trip-dog on the clutch; a spring between the members of the trip-stop, an elbow-lever pivoted on the machine, one arm of which is in the path of a cam positioned on a moving part of the binder, a spring-link connecting the other arm of the elbow-lever with the trip stop, a link connecting the trip-stop at a point farther from its pivot than the connection of the spring-link, with a finger that is located in the path of the stream of corn, substantially as and for the purpose specified.

14. In combination in a self-binding machine with the corn passage-way, trip and compressor fingers located in this passage-way, connections from these trip and compressor fingers to a trip-stop pivoted upon the machine, the trip-stop being formed of two members; a spring interposed between the members of the trip-stop; a spring-link connected to that member of the trip-stop that releases the clutch-dog at a point between the pivot of said stop and connecting-link and with a loop-lever pivoted upon the machine, one arm of which is within the path of the cam, substantially as and for the purpose specified.

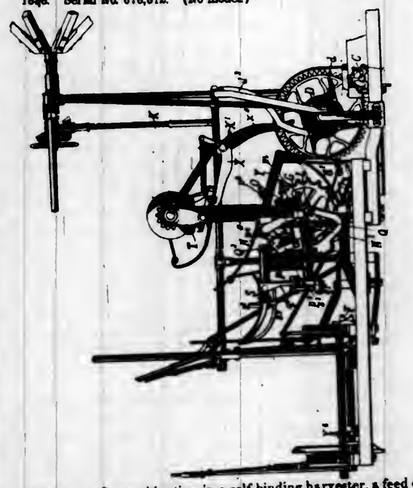
15. In combination in a corn-harvesting machine, a stationary knife located between the gathering-prongs and extending partly across the corn passage-way, a reciprocating knife at the rear of the stationary knife and moving across the space between the sill of the gathering-prong and the stationary knife, which reciprocating knife has a long section that extends forward of the main cutting portion of the knife.

16. In combination in a corn-harvesting machine to form the cutting apparatus, a stationary knife extending partly across the corn passage-way, a reciprocating knife moving across the passage-way that is left between the stationary knife and the sill of the machine; a long section upon the reciprocating knife that extends forward of the main cutting portion of the said knife, but which does not make a stroke entirely across the opening between the sill and the stationary knife.

17. In a corn-harvesting machine, forwardly-projecting prongs on opposite sides of the row forming a passage-way for the stalks, a binder positioned at the rear of the prongs and to which the passage-way formed by the prongs is continued, the binder being inclined rearwardly from the vertical, whereby an enlarged space is provided for the accumulation of corn behind the needle when it closes the passage-way, and the discharge of the bound bundle from the binder is facilitated.

18. In combination to form a cutting apparatus in a corn-harvesting machine, in which gathering-prongs pass upon each side of the row and conduct the stalks to the knife, a stationary knife extending nearly across the stalk passage-way formed between the gathering-prongs, a reciprocating knife having a blade that moves across the open space between the stationary knife and the gathering-prong, a longer blade attached to the reciprocating knife that moves from the gathering-prong toward the stationary knife, but does not, in its stroke, pass entirely across the opening between the stationary knife and the gathering-prong, substantially as and for the purpose specified.

611,079. MACHINE FOR HARVESTING GRAIN. HENRY E. PRIDMORE, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed July 3, 1895. Renewed Apr. 25, 1898. Serial No. 678,812. (No model.)



Claim.—1. In combination in a self-binding harvester, a feed device, clearer-bars extending from the feeding device upwardly toward the grain side of the machine to form a receptacle for the accumulation of the grain, a gate pivoted at its discharge side, its receiving side caused to vibrate across the receptacle by a link pivoted to the gate and connected with a cam on the binder the link having a spring interposed between the power and the gate whereby the gate is positively opened to form the receptacle but is yieldingly closed to deflect the grain toward the binder.

2. In combination in a self-binding harvester, a feeding device, clearer-bars extending from the feeding device upwardly and toward the grain side of the machine to form a receptacle for the grain, a gate pivoted at its discharge side, the receiving side of its fingers vibrating in slots in the clearer-bars, substantially as and for the purpose specified.

3. In combination in a self-binding harvester a feeding device, a receptacle into which the grain is forced by the feeding device when the binder is in operation, a gate pivoted at its receiving side and when actuated, sweeping across the receptacle to force the grain toward the binder, one end of the discharge side of the gate having a bearing in the breastplate of the machine and sliding freely therethrough when the binder is adjusted for the central binding.

4. In combination in a self-binding harvester a feed device, connections therefrom to form a receptacle, a gate pivoted at its discharge side, its receiving side vibrating across the receptacle, the pivoted side being supported at one end by the harvester-frame which prevents its sliding when the binder is adjusted for central binding and sliding freely through the breastplate and the arm which con-

trols the gate when the binder is slid for central binding, substantially as and for the purpose specified.

5. In combination in a self-binding harvester with an automatic binder located between the platform-apron and the main wheel, which receives the grain in a continuous stream from the harvester and separates from this stream portions which it forms into bundles and binds and discharges, a discharge-fork vibrating in a vertical plane from a position vertically behind the stream of grain to one that is beneath it, and then back again to its original position, whereby the grain carried into the binder and automatically formed into bundles and ejected from the binder, is discharged to the rear upon its butts.

6. In combination in a self-binding harvester, forwarding devices which carry the grain in a continuous stream from the platform to an automatic binder located between the platform and the main wheel of the machine, which binder receives and separates the grain into bundles which it binds and ejects upon a discharge-fork, a discharge-fork pivoted on the binder at the rear of the machine, a connection from this discharge-fork to a crank, also located on the binder, connecting mechanism between this crank and the machine whereby the discharge-fork begins its movement immediately upon motion being transmitted to the binder, and is disconnected when it has discharged the bundle to the rear.

7. In combination with a binder located between the main wheel and the platform, a discharge-fork pivoted thereto in a position when normally at rest that is inclined to the rear from the vertical, mechanism connecting with a moving part of the machine that starts the discharge-fork into action at the time the binder begins its movement of encircling and binding a bundle and that brings the discharge-fork to a position beneath the deck of the binder at the time the ejectors of the binder eject the bundle, and that continues the motion of the discharge-fork upwardly and rearwardly to discharge the bundle on its butts to the rear after the binding mechanism has come to rest.

8. In combination with an automatic binder that receives the stream of grain and apportions it into bundles of the same size, and binds and discharges these bundles, a discharge-fork pivoted upon the binder, a connecting-rod from this discharge-fork to a crank also located upon the binder, a gear mounted upon this crank and receiving motion from a companion gear loosely mounted upon the upright shaft of the binder, substantially as and for the purpose specified.

9. In combination with an automatic binder located between the platform-apron and the main wheel, a tripping mechanism positioned on the binder, through which motion is communicated from the stream of grain to a stop normally in the path of a pivoted spring-pressed dog, a ratchet in continuous motion in the path of the dog when relieved from its stop, continuously-acting connections between the clutched part and the discharge-fork and intermittently-acting connections to the bundle-forming and knot-tying and ejecting devices, whereby the motion of the discharge-fork is continuous until the device is unclutched and the motion of the bundle-forming and knot-tying and discharging devices is completed before the unclutching of the parts.

10. In combination in an automatic machine for receiving a stream of grain and apportioning it into bundles of the same size, binding and ejecting them upon a fork which throws them onto their butts in the rear of the machine, a continuously-driven element, a clutching device, a connection from this clutching device to the bundle-forming, knot-tying and ejecting devices, and another continuously-acting connection to the device that throws the bundle on its butts to the rear of the machine, the connection between the bundle-forming and knot-tying and ejecting mechanism being formed with a mutilated gear and delay-flange whereby these parts perform their operations and come to rest before the clutch mechanism is unclutched bringing the discharging mechanism to rest.

11. In combination in a self-binding harvester, of a binder positioned between the platform and the main wheel, a discharge-fork pivoted thereto on a horizontal pivot, a crank connected to the discharge-fork, a bevel-wheel on the shaft of the crank, and a companion wheel on the upright shaft of the binder in the path of a dog that is pivoted to the binder-shaft, a stop that normally holds this dog from the path of the constantly-rotating part, the stop being formed with an arm that is governed by a cam on the bevel-wheel of the crank-shaft, a mutilated gear connecting the upright shaft of the binder with the knotter-shaft whereby motion transmitted to the upright shaft will cause the discharge-fork to make its reciprocation and the other parts of the machine to perform their operations, the unclutching mechanism being controlled by the cam on the shaft of the crank that controls the discharge-fork.

12. In a bundle-discharging mechanism for binders, the combination substantially as hereinbefore described of a pivoted discharger oscillating in a plane lengthwise of the bundle, tines projecting from said discharger, the tine at the butt of the bundle being corrugated or roughened, and the tine nearer the head of the bundle having a vertical prong.

13. In a bundle-discharging mechanism for binders, the combination substantially as hereinbefore described, of the ejector-arms mounted on the knotter-shaft, a binder-deck, the discharge side of which curves outwardly and upwardly, practically concentric with the path of the end of the discharge-arms, a supplemental discharger oscillating in a plane lengthwise of the bundle and having tines which pass on both sides of the outwardly and upwardly extending deck to a point below said deck and beneath the discharge-line of the bundle.

14. In a bundle-discharging mechanism for binders, the combination substantially as hereinbefore described of the ejector-arms of the binder, a supplemental discharger, and mechanism for operating the discharger relative to the binder and ejector, so that the discharger will begin its oscillating movement concurrent with the movement of the ejector and continue this movement after the ejectors have come to rest.

15. In a bundle-discharging mechanism for binders, the combination substantially as hereinbefore described, of the ejector mechanism of the binder, a pivoted, oscillating, supplemental discharger, a mechanism for operating the discharger relative to the ejector, so that the bundle will be discharged from the binder by the ejectors onto the supplemental discharger, and thrown from the machine to the rear by the oscillation of the discharger after the ejectors have come to rest.

16. In a bundle-discharging mechanism for binders, the combination substantially as hereinbefore described of the binder-ejector, a supplemental discharger and mechanism for operating the discharger relative to the ejector, so that it will begin its movement practically in the same interval as the ejector, and fall beneath the line of the ejection of the bundle at the time the ejectors throw it from the machine, and continue its movement to discharge the bundle at angle to the line of ejection of the bundle after the ejectors and the binding mechanism have come to rest.

17. In combination in a self-binding harvester in which the bundle is discharged at an angle to the location of the binder, a constantly-rotating packer-shaft, a train of gearing connecting this shaft with the knotter-shaft, in which train a clutch is located, a branch train-gear connecting this last-mentioned train between the constantly-rotating packer-shaft and the needle-shaft, with a pivoted oscillating ejector, one set of the gearing between the constantly-rotating packer and shaft and the knotter-shaft, consisting of a mutilated gear and delay-flange, substantially as and for the purpose described.

18. The combination, substantially as hereinbefore set forth, of the gear on the constantly-rotating packer-shaft and its bevel-wheel, a trip-dog pivoted to the upright shaft on which this bevel-wheel is mounted, a trip-stop pivoted on the machine, one arm of which falls within the path of the trip-dog, a spring holding the trip-stop within the path of the trip-dog, a trip finger and its rock-shaft and the arms on said rock-shaft, one branch of which is in contact with the trip-stop and the other controlled by a cam, substantially as and for the purpose specified.

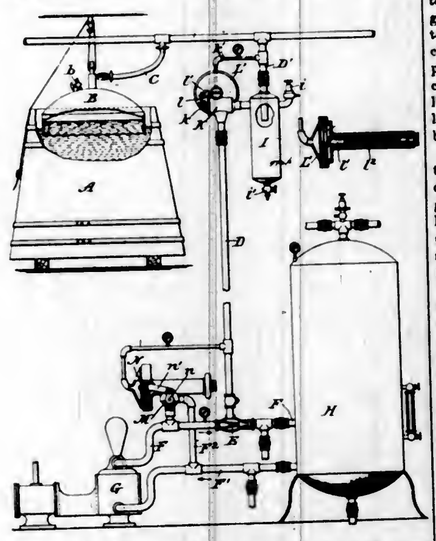
19. In combination substantially as hereinbefore set forth, with the trip-finger and its rock-shaft and the arm from said rock-shaft, one member of which is a cam that actuates the trip-stop and the other an arm that is acted upon by a cam-track on one of the train of gears that connects the constantly-rotating packer-shaft with the pivoted oscillating discharge-arm.

611,080. ROLLING-SHOE FOR COAL-BARRELS, &c. JOHN F. SCHNADEKE, New York, N. Y. Filed Oct. 26, 1897. Serial No. 656,443. (No model.)



Claim.—The combination with the bottom of a barrel and the beveled ends of the staves projected beyond the bottom, of a rolling-shoe having a beveled groove and a shoulder on its exterior upper edge which respectively receive and support the beveled edge and the ends of the staves, and of devices which fasten the shoe to the bottom of the barrel and wedge the ends of the staves in the groove and against the shoulder thereby strengthening and supporting the barrel, and forming a firm and even edge on which to tilt and roll the barrel, substantially as specified.

611,081. METHOD OF AND APPARATUS FOR COLLECTING AND PURIFYING GAS. JOSEPH SCHEIBLE, New York, N. Y. Filed June 11, 1895. Renewed Feb. 10, 1898. Serial No. 669,864. (No model.)



Claim.—1. The method of collecting gas which consists in supplying a continuous stream of liquid, causing the liquid to draw the gas from its source of supply and causing the variations in the supply of gas to vary the action of the liquid in drawing the gas, whereby a substantially constant tension is maintained on the gas and the conditions of the production of the gas are not interfered with.

2. The method of collecting gas which consists in conducting the gas from its source to a jet-pump or aspirator, forcing a stream of liquid through said jet-pump or aspirator and thereby drawing and mingling the gas with the liquid, causing the variations in the supply of gas to vary the action of the aspirator discharging the liquid and gas together into a closed vessel, permitting the gas to separate from the liquid in the closed vessel, discharging the gas from the upper part of the vessel and discharging the liquid from the lower part thereof.

3. An apparatus for collecting gas comprising a hood or collector to receive the gas, a jet-pump or aspirator, a pipe to conduct the gas from the collector to the jet-pump or aspirator, means to force a stream of liquid through the jet-pump or aspirator, a closed tank into which the gas and liquid are discharged by said jet-pump or aspirator, said tank having an outlet for the gas, and a return connection from said tank to said force-pump whereby the same liquid may be used over and over again, substantially as set forth

4. An apparatus for collecting gas comprising a hood or collector to receive the gas, a jet-pump or aspirator, a pipe to conduct the gas from the collector to the jet-pump or aspirator, a force-pump to force a stream of liquid through the jet-pump or aspirator, a closed tank into which the gas and liquid are discharged by said jet-pump or aspirator, said tank having an outlet for the gas, and a return connection from said tank to said force-pump whereby the same liquid may be used over and over again, substantially as set forth.

5. An apparatus for collecting gas comprising a hood or collector to receive the gas, a jet-pump or aspirator, a pipe to conduct the gas from the collector to the jet-pump or aspirator, means to force a stream of liquid through the jet-pump or aspirator, a valve to regulate the action of the aspirator, a diaphragm actuated by variations in the gas-supply and connections therefrom to said valve to vary the action of the jet-pump or aspirator and a closed tank into which the gas and liquid are discharged by said jet-pump, said tank having an outlet for the gas, substantially as set forth.

6. An apparatus for collecting gas comprising a hood or collector to receive the gas, a jet-pump or aspirator, a pipe to conduct the gas from the collector to the jet-pump or aspirator, means to force a stream of liquid through the jet-pump or aspirator, a valve to regulate the delivery of the liquid to the jet-pump or aspirator, a diaphragm adapted to move as the supply of gas varies and to shift said valve, whereby the action of the aspirator varies with the supply of gas, and a closed tank into which the gas and liquid are discharged by said jet-pump or aspirator, said tank having an outlet for the gas, substantially as set forth.

7. An apparatus for collecting gas comprising a hood or collector to receive the gas, a jet-pump or aspirator, a pipe to conduct the gas from the collector to said jet pump or aspirator, a force-pump to force a stream of liquid through the jet-pump or aspirator, a closed tank into which the gas and liquid are discharged by said jet-pump or aspirator, said tank having an outlet for the gas, a return connection from said tank to said force-pump, a branch from the delivery of said force-pump to said return connection, a valve to regulate the passage of liquid through said branch and means actuated by variations in the supply of gas to shift said valve.

8. An apparatus for collecting gas comprising a hood or collector to receive the gas, a pipe to conduct the gas therefrom, means to deliver a stream of liquid under pressure, a mixing device in which the gas and liquid are mingled, a closed tank into which the gas and liquid are delivered from said mixing device, said tank having an outlet for the gas and a device actuated by variations in the gas-supply to vary the delivery of liquid to said mixing device, substantially as set forth.

9. An apparatus for collecting gas comprising a hood or collector to receive the gas, a pipe to conduct the gas therefrom, means to deliver a stream of liquid under pressure, a mixing device in which the gas and liquid are mingled a closed tank into which the gas and liquid are delivered from said mixing device, said tank having an outlet for the gas, a valve to regulate the delivery of liquid to said mixing device and a diaphragm adapted to move as the supply of gas varies to shift said valve whereby the delivery of liquid to the mixing device varies as the supply of gas varies, substantially as set forth.

10. An apparatus for collecting gas comprising a hood or collector to receive the gas, a jet-pump or aspirator, a pipe to conduct the gas from the collector to the jet-pump or aspirator, means to force a stream of liquid through the jet-pump or aspirator, a closed tank into which the gas and liquid are discharged by said jet-pump or aspirator, said tank having an outlet for the gas, and a device interposed between the gas-collector and the aspirator adapted to be actuated by variations in the supply of gas to control the delivery of gas to the aspirator, substantially as set forth.

11 An apparatus for collecting gas comprising a hood or collector to receive the gas, a jet-pump or aspirator, a pipe to conduct the gas from the collector to the jet-pump or aspirator, means to force a stream of liquid through the jet-pump or aspirator, a closed tank into which the gas and liquid are discharged by said jet-pump or aspirator, said tank having an outlet for the gas, a valve interposed in the gas-conductor between the collector and the jet-pump or aspirator to control the flow of gas and a diaphragm adapted to move as the supply of gas varies and to shift said valve, substantially as set forth.

611,082. WAGON. WILLIAM O. SHADBOLT, New York, N. Y. Filed Feb. 5, 1898. Serial No. 669,178. (No model.)

Claim.—1. A four-wheeled dumping-wagon having its body pivotally mounted at about the middle of its length in a strong frame, and having its hind wheels wholly exterior to said frame and mounted on outwardly-projecting axle-arms, each of which has an upright attaching member secured to the side of said frame, said axle-arms being separate, and the dumping-body extending back beyond the axes of the hind wheels, substantially as set forth.

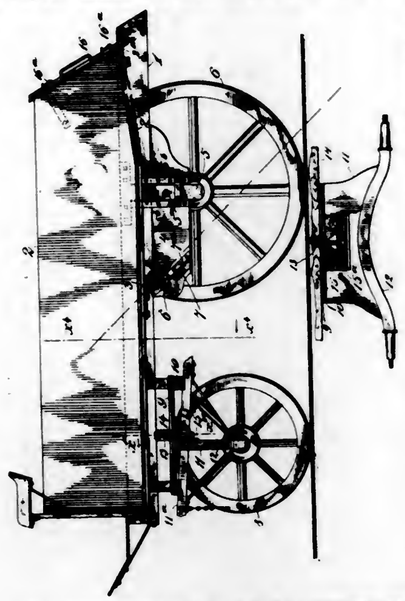
2. A dumping-wagon comprising a strong, rectangular, substantially horizontal frame provided with fixed blocks or bolster-pieces 4, a pair of front wheels and their axle under the front end of said frame, a pair of hind wheels, mounted on separate axle-arms each arm having an upright attaching member extending up to and secured to the face of said frame above the bolster-piece, and a body pivotally mounted inside of said frame and adapted to dump between the said hind wheels, substantially as set forth.

3. A dumping-wagon comprising a strong rectangular frame, a pair of front wheels and their axle under the front end of said frame, separate axle-arms for the hind wheels, each arm having an upright member fixed to the inner face of the side member of the frame and the arm on which the wheel turns projecting outwardly under said side member so that the wheel may be slipped thereon, and the hind wheels, on said arms exterior to the frame, substantially as set forth.

4. The combination in a wagon, of a strong frame 1, a body mounted pivotally in said frame at about the middle of its length, two axle-arms 5, each provided with an integral, upright, laterally-branched, securing member 5ª, fixed to the inner face of a side member of the frame and the arm 5 projecting outwardly from the frame, the rear wheels 6 on said arms exterior to the frame, and the front wheels and their axle, substantially as set forth.

5. A wagon having a bolster on the front axle, a fifth-wheel on said bolster, a block secured to the rear face of said bolster, said

block having in it a flared socket to receive the king-bolt, and the said king-bolt, substantially as and for the purposes set forth.

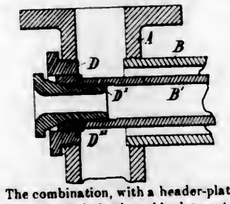


6. A wagon provided with a body which is substantially rectangular in cross-section and has a flat bottom the rear part of which has a slightly-upward slope toward the rear to a discharging-lip 2^a, whereby a shallow liquid-receptacle is formed in the body, the rear end of the body, above said lip, being sloped or inclined forward and provided with a tail-gate 16, whereby said tail-gate has a moderate inclination forward from a vertical plane, substantially as and for the purposes set forth.

7. In a dumping-wagon for garbage, the combination with the frame and running-gears, of a body 2, pivotally mounted on said running-gears and having an upwardly-sloping rear portion 2^a at its bottom to form a liquid-receptacle in the body, said body being sloped or inclined forward and upward at its rear end above the discharging-lip 2^b, and a tail-gate 16 closing said rear end, substantially as set forth.

8. In a dumping-wagon for garbage, the combination with the frame, the wheels thereunder, and the separate axle-arms for the rear wheels fixed to the sides of the frame above the axes of the wheels, of the body 2, pivotally mounted in the frame near its middle and having an upwardly-sloping rear portion 2^a at its bottom, said body being sloped forward and upward at its rear end, and a tail-gate closing said rear end, substantially as set forth.

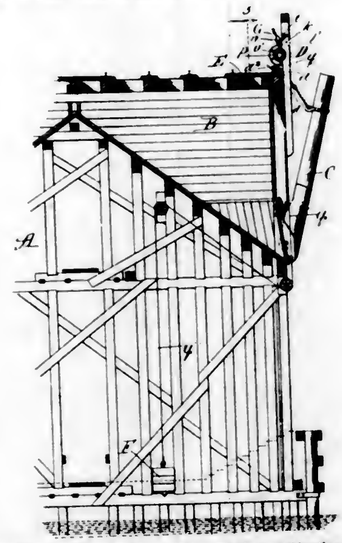
611,083. STEAM-BOILER. JOHN S. D. SHANES and ROBERT KELLY, Jr., Belfast, Ireland. Filed Mar. 26, 1898. Serial No. 675,217. (No model.)



Claim.—1. The combination, with a header-plate, of an external tubular plug secured in a hole in the said plate, a tube B' having a conical end, an internal tubular plug having a conical portion and screwed into the tube B', and a metallic packing-ring fitting inside the said external plug and bearing against the conical portions of the said tube and internal plug, said conical portions being inclined in opposite directions, substantially as described and shown.

2. The combination, with a hollow header having two tube-plates, of an outer tube B secured into one of the said plates, an external tubular plug secured in a hole in the other said plate, which hole is large enough for the tube B to pass through, a tube B' arranged inside the tube B and having a conical end, an internal tubular plug having a conical portion and screwed into the tube B', and a metallic packing-ring fitting inside the said external plug and bearing against the conical portions of the said tube and internal plug, substantially as described and shown.

611,084. HOISTING APPARATUS. AXEL A. STROM, Austin, Ill., assignor to the Strom Manufacturing Company, Chicago, Ill. Filed Apr. 18, 1898. Serial No. 678,006. (No model.)



Claim.—1. In a hoisting apparatus, the combination with the main shaft of a driving gear-wheel, and a reversing driving-gear comprising a counter-shaft longitudinally adjustable in its bearing and carrying pinions, and a rotary shaft carrying a pinion permanently meshing with said driving gear-wheel and a pinion to mesh with one of the pinions on said counter-shaft when the other pinion thereon is out of mesh with said driving gear-wheel, substantially as and for the purpose set forth.

2. In a hoisting apparatus, the combination with the main shaft of a driving gear-wheel, and a reversing driving-gear comprising a counter-shaft *n* longitudinally adjustable in its bearing and carrying the pinions *m* and *l*, a shaft *k* carrying the pinions *m'* and *l'*, a collar *n'* on said counter-shaft and a stop n^2 adjustable to engage said collar in either position of said counter-shaft, the whole being constructed and arranged to operate substantially as described.

3. In a hoisting apparatus, the combination with the main shaft of a driving gear-wheel, a reversing driving-gear adjustably engaging said gear-wheel to turn the main shaft in either direction by turning said reversing-gear in one and the same direction, a counter-shaft in said reversing-gear, and an operating-handle engaging said counter-shaft to turn it in one direction and leave the counter-shaft free to be turned in the same direction independently of said operating-handle, substantially as and for the purpose set forth.

4. In a hoisting apparatus, the combination with the main shaft of a driving gear-wheel, a reversing driving-gear adjustably engaging said gear-wheel to turn the main shaft in either direction by turning said reversing-gear in one and the same direction, a counter-shaft in said reversing gear carrying a ratchet, an operating-handle loosely mounted on said counter-shaft and a dog on said handle to engage said ratchet by turning the handle in one direction and leaving the counter-shaft free to be turned in the same direction independently of said handle, substantially as and for the purpose set forth.

5. In a hoisting apparatus, the combination with the main shaft of a driving gear-wheel, a reversing driving-gear adjustably engaging said gear-wheel to turn the main shaft in either direction by turning said reversing-gear in one and the same direction, a counter-shaft *n* in said reversing-gear, a ratchet *h* on said counter-shaft and an operating-handle G having a head G' by which it is loosely jour-

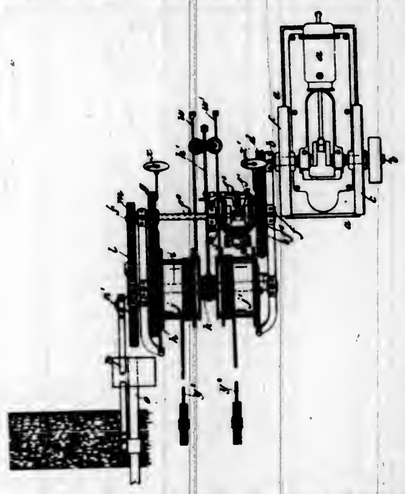
naled on said counter shaft and containing a spring-controlled dog engaging said ratchet, substantially as and for the purpose set forth.

6. In a hoisting apparatus, the combination with the main shaft of a driving gear-wheel, a reversing driving-gear adjustably engaging said gear-wheel to turn the main shaft in either direction by turning said reversing-gear in one and the same direction, and a dog engaging said driving-gear to prevent reverse turning of said main shaft, substantially as and for the purpose set forth.

7. In a hoisting apparatus, the combination with the main shaft of a driving gear-wheel, a reversing driving-gear comprising a counter-shaft *n* longitudinally adjustable in its bearing, pinions *m* and *l*, on said counter shaft, a shaft *k*, pinions *m'* and *l'*, on said shaft, and a dog engaging the pinion *l'*, substantially as and for the purpose set forth.

8. In a hoisting apparatus, the combination with the main shaft of a driving gear-wheel, a reversing driving-gear comprising a counter-shaft *n* longitudinally adjustable in its bearing, pinions *m* and *l*, on said counter-shaft, a shaft *k*, pinions *m'* and *l'*, on said shaft, and a dog i reversible to engage the pinion *l'* in either direction, substantially as and for the purpose set forth.

611,085. COMBINED PUMPING AND WINDING MACHINERY. JOHN SYMINGTON, Glasgow, Scotland. Filed Dec. 28, 1897. Serial No. 663,908. (No model.) Patented in England Feb. 27, 1897, No. 5,287.



Claim.—1. In a combined pumping and winding mechanism, the combination of an engine or motor, a shaft driven thereby, means operated by the shaft to work a pump, winding-drums driven from said shaft, and means for reversing rotation of the drums without reversing the pump.

2. The combination of an engine, a shaft *f* driven thereby in one direction, a crank-wheel *l*, pinion *m*, a pump, a pump-operating rod *n*, connected to the crank-wheel, a shaft *i*, a drum *j*, gear *h* thereon, a sleeve on shaft *f*, a pinion thereon in mesh with gear *h*, and means for reversing the sleeve and said drum without reversing the crank-wheel.

3. The combination of an engine, a shaft *f* driven thereby in one direction, a crank-wheel *l* and pinion *m*, a pump, a pump-operating rod connected to the crank-wheel, a shaft *i*, a gear *h* fixed to shaft *i*, two drums *j j'* on shaft *i*, means for connecting the drums to and disconnecting them from said shaft, a sleeve on shaft *f*, a pinion thereon in mesh with gear *h*, and means for reversing the sleeve and said drum without reversing shaft *f* and the crank-wheel.

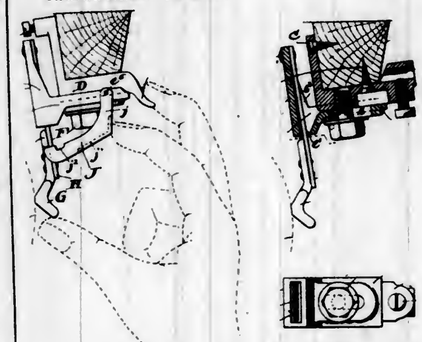
611,086. GAME. JOHN H. TICKNER and GEORGE L. TICKNER, Syracuse, N. Y.; said John H. Tickner assignor to said George L. Tickner. Filed June 24, 1898. Serial No. 684,345. (No model.)

Claim.—1. The combination with a box comprising sides, ends, bottom and transparent cover, of an intermediate movable partition or table dividing said box into two chambers, said table being provided with central recesses open on top, only arranged in a predetermined form or figure, and corner-apertures which are opened by moving the table in one direction, so that balls can pass through into the lower chamber, while being rolled upon said table to seat them in said recesses, whereby the hazard of the game is increased, and suitable balls normally placed in the upper chamber.



2. The combination with a box, having sides, ends, and transparent cover, of a bottom provided with recesses arranged in the form of a pyramid, substantially central to said bottom, balls upon said bottom, and recesses exterior to said pyramid, creating obstacles to the rolling of said balls into said pyramidal recesses and increasing the difficulty of the game, such rolling being effected by manually tilting the box.

611,087. CONTACT-FINGER FOR CONTROLLERS OR ELECTRIC SWITCHES. THORSTEN VON ZWIEDENECK, Cleveland, Ohio, assignor to the Walker Company, same place. Filed Feb. 23, 1898. Serial No. 671,289. (No model.)



Claim.—1. In a contact-finger, in combination, a base adapted to be secured to a suitable stationary block, a frame secured to said base, a spring held in place by said frame, suitable walls or stops carried by said frame and adapted to limit the movement of said spring in either direction, and a contact-knob carried by the spring, substantially as described.

2. In a contact-finger, in combination, a base adapted to be secured to a suitable stationary block, and means for securing an electric terminal to said base, a frame having an opening at its forward end, a spring-arm suitably secured on one side of said opening and projecting through the opening, and a contact knob secured to the spring-arm on the other side of the opening, substantially as described.

3. The combination, in a contact-finger, of a base adapted to be secured to a stationary block, means for securing an electric terminal to said base, a frame having an opening near its forward end, a spring formed in the shape substantially of an ox-bow having its bow part below said frame and having an end projecting through said opening having the other end lying on the back side of said frame, means for adjustably securing the frame to the base, and a contact-knob carried by the projecting end of said spring, substantially as described.

4. In a contact-finger, in combination, a suitable base and frame, means for adjustably securing the frame to the base, a plate at the forward end of said frame, an opening through the frame just back of the plate, a spring-arm held in place at one end by the frame and having an intermediate portion lying along the inside of said plate, and a contact-knob carried by the other end of said spring-arm, substantially as described.

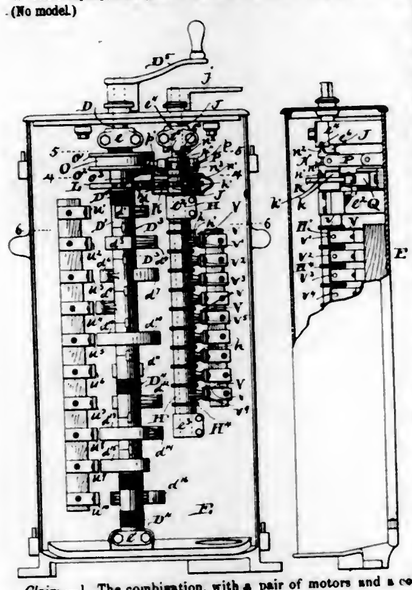
5. In a contact-finger, the combination of a frame, a spring-arm carried thereby, a contact-knob carried by the spring-arm and adapted to normally stand in position to be engaged by a controller-segment, and a hook pivoted to the frame and adapted to hook the knob back out of the path of the controller-segment, substantially as described.

6. The combination, in a contact-finger, of a suitable frame, a spring carried thereby, a contact-knob secured at its shank to said spring, wings projecting from said shank, a hook pivoted to the frame and adapted to engage with said wings and thereby hold the knob out of engagement with the controller-segment, substantially as described.

7. In a contact-finger, in combination, a suitable base adapted to be secured to a suitable block and receive an electric terminal, a frame adjustably secured thereto, a spring held in place at one end by said frame and having secured to it at its other end the shank of a contact-knob, a hook pivoted to said frame and adapted to engage with said shank and hold the contact-knob in position back of its normal position, substantially as described.

8. The combination, in a contact-finger, of a suitable frame, a spring arm secured thereto, a contact-knob carried by said spring-arm and a hook having at one end a pair of arms pivoted to opposite sides of the frame, and having at the other end a shoulder adapted to engage with a suitable projection movable with the contact-knob, and thus lock the latter back of its normal position, substantially as described.

611,088. GOVERNING, REVERSING, AND BRAKING CONTROLLER. THORSTEN VON ZWEIGBERGK, Cleveland, Ohio, assignor to the Walker Company, same place. Filed Feb. 23, 1898. Serial No. 671,370. (No model.)



Claim.—1. The combination, with a pair of motors and a controller, of a reversing-switch having contact-fingers and contact-plates adapted to connect the motors in one direction or in the reverse direction and having a contact-finger connected with the field of one motor and a contact-plate adapted to connect that finger with the field of the other motor, whereby a cross connection between the fields of the motor is adapted to be established by the movement of the reversing-switch, substantially as described.

2. The combination, with a pair of motors, and an electric brake, of a reversing-switch adapted to stand in four positions and having contact-fingers and suitable connections between the fingers and motors whereby when the switch is in the first position the motors are connected in one direction, when the switch is in the next position the motors are reversed and a cross connection established between their fields, when the switch is in the third position the motors are reversed without such cross connection, and when the switch is in the fourth position they are connected as originally except they have such cross connection, substantially as described.

3. In a controller, in combination, a switch, adapted to apply an electric brake, a reversing-switch having positions for the motor and for the electric brake, a lever adapted to move the reversing-switch from the motor ahead position to the motor reverse position, and vice versa, and connecting mechanism between the applying-switch and the reversing-switch, one member of said mechanism being rigid with the reversing-switch, said member having two engageable parts with one of which a member moved by the applying-switch must engage when that switch moves from the off to the electric-brake position, and vice versa, but the position in which the reversing-lever has left the reversing-switch determining with which one of said two engageable parts the other member engages, substantially as described.

4. The combination, in a controller, of a governing-cylinder, a reversing-cylinder, a plate secured to the shaft of the reversing-cylinder, an arm carried by the governing-cylinder and adapted to engage a shoulder on said plate when the governing-cylinder is turned to an electric-brake position if the reversing-switch is in the ahead position, and adapted to engage another shoulder on said plate when the governing-cylinder is so turned if the reversing-cylinder is in the reverse position, the movement of the governing-cylinder in either event swinging the reversing-cylinder to the corresponding electric-brake position, substantially as described.

5. The combination, in a controller, of a governing-cylinder, a reversing-cylinder, an operating-handle for the latter, a plate or other arm rigid with the shaft of the reversing-cylinder, an arm moved by the governing-cylinder and adapted to engage with said plate when the governing-cylinder moves from off to the electric-brake position in either of two positions according as the reversing-lever has left the reversing-switch in its ahead position or its reverse position, said two engageable positions of said plate being substantially the same angular distance apart as the ahead and the reverse positions of the reversing-switch, substantially as described.

6. The combination, in a controller, of a governing-cylinder, a reversing-cylinder, a projection carried by the governing-cylinder, a plate having two notches carried by the reversing-cylinder, one of said notches being adapted to be engaged by said projection when the governing-cylinder is turned to an electric-brake position if the reversing-cylinder is in its ahead position, and the other of said notches being adapted to be engaged by said projection when the governing-cylinder is so turned if the reversing-cylinder is in the reverse position, the movement of said projection, in either event, swinging the reversing-cylinder to the corresponding electric brake position, substantially as described.

7. The combination, in a controller, of a governing-cylinder adapted to move in one direction from its off position to govern motors, and in the other direction to apply an electric brake, a reversing-cylinder having positions for the motors ahead or reversed and for the electric-brake ahead or reversed, a notched indicator wheel or plate for each cylinder, a spring-pressed roller or detent for each cylinder adapted to take into said notches, the indicator-wheel of the governing-cylinder having a projection *l* which comes between the last electric-brake position and the last parallel position, and by impinging on one side or the other against the roller for that indicator-wheel forms a stop for the governing-controller in either direction, and the indicator-wheel of the reversing-switch having a pair of notches l^2 l^2 distinct from those used by the spring-pressed roller for that wheel and occupying such position that the projection *l*, when the governing-switch moves from the off to the first electric-brake position, will engage with the notch l^2 if the governing-switch is in the reverse position, or with the notch l^2 if the governing-switch is in the ahead position, and in either case will move the reversing-switch to set it at an electric-brake position for that direction of car movement for which the reversing-switch was set before the governing-switch moved to apply the brake, substantially as described.

8. The combination, with a pair of motors and an electric brake, of a cross connection between the two motors, said cross connection being by means of a contact-finger and a contact-plate which are brought into engagement at an electric-braking position of a controller and a cut-out for each motor and for the cross connection which may be operated independently of the position of the controller which establishes the cross connection, whereby when either motor burns out its cut-out and the cut-out of the cross connection may be opened and the electric brake operated by the other motor, substantially as described.

9. The combination, with a pair of motors and an electric brake, of a cross connection between the two motors, said cross connection being by means of a contact-finger and a contact-plate of a controller which are brought into engagement at an electric-braking position, said contact-finger being adapted when the controller is at an electric-brake position to stand withdrawn from the path of the surface of the contact-plate with which it normally contacts in such position, and mechanism for retaining the contact-finger in this withdrawn position whereby the cross connection may be cut out whenever a motor is cut out and thus the remaining motor used to operate the electric brake, substantially as described.

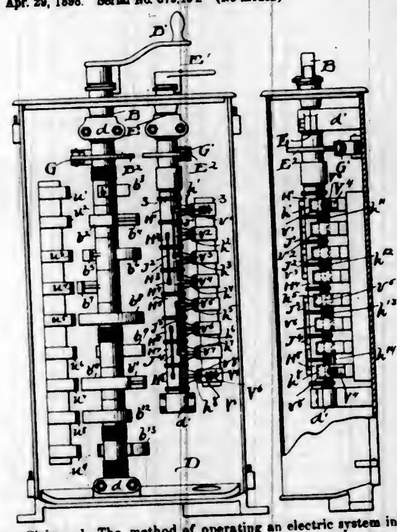
10. The combination with an electric brake, of a controller adapted to apply the brake and govern it by cutting out resistance, and an automatic switch included in the circuit between the controller and the brake and short-circuiting a resistance at the time the brake is applied, but adapted to open that short circuit when the current strength increases to a desired amount, substantially as described.

11. The combination with an electric brake and a controller adapted to apply the brake, of an automatic switch inserted in the circuit to the electric brake, and adapted to increase the resistance to the current in that circuit as the strength of the current increases, substantially as described.

12. The combination with a motor, an electric brake, and a resistance, of a controller adapted to apply and govern the motor and brake by means of that resistance, and an automatic switch in the circuit between the controller and electric brake adapted to counteract too great an increase of the current strength caused by too rapid a revolution of the motor or too quick a cutting out of resistance by the controller, substantially as described.

13. The combination, with a motor, a controller and an electric brake, of an automatic switch in circuit with the electric brake, said switch comprising a magnet, armatures therefor and a resistance, said armatures when drawn toward the magnet being adapted to cut out paths of less resistance than those thereafter remaining, the armature which cuts out the path of least resistance being operated by a less magnetic pull than the other, substantially as described.

611,089. METHOD OF AND MEANS FOR CONTROLLING AND CUTTING OUT ELECTRIC MOTORS. THORSTEN VON ZWEIGBERGK, Cleveland, Ohio, assignor to the Walker Company, same place. Filed Apr. 29, 1898. Serial No. 679,194. (No model.)



Claim.—1. The method of operating an electric system including two motors, and a series-parallel controller, when one of the motors is burned out, which consists in coupling the motors in parallel, opening the line to the burned-out motor without connecting that line with anything else, and operating the remaining motor on the parallel positions of the controller, whereby a single cut-out for each motor becomes sufficient and locks limiting the movement of the controller are unnecessary.

2. The combination of a series-parallel governing-switch, two lines leading from the governing-switch to the reversing-switch, and a cut-out in each of these lines, said cut-out being adapted to open the line without connecting it with any other line, and means for holding the cut-out in this open position, substantially as described.

3. A controller which is adapted to connect motors in series and in going from series to parallel grounds the first motor then opens the series line to the last motor and places that motor on a shunt around the first motor, in combination with two motors, two lines leading to the same from the controller, and an independent cut-out in each line adapted to open that line and adapted to remain in a position where it does not connect the line with any other line, whereby a single cut-out for each motor becomes sufficient and locks limiting the movement of the controller are unnecessary, substantially as described.

4. A reversing-switch, two lines leading therefrom to a series-parallel governing-switch which is adapted at series positions to connect one of said lines with the source of current and the other with a motor and in parallel positions to connect both of said lines with the source of current, in combination with such governing-switch and a cut-out in each of said lines, substantially as described.

5. The combination of a series-parallel governing-switch, two lines leading from the governing-switch to the reversing-switch without passing through a motor or being grounded, and a cut-out in each of these lines adapted to open the same, substantially as described.

6. The combination of a series-parallel governing-switch, a reversing-switch, each of said switches having contact-fingers and a relatively-movable body, two lines each connecting a contact-finger of the reversing-switch with a contact-finger of the governing-switch without passing through a motor, and mechanism for opening each of these lines otherwise than by the movement of the reversing-switch, substantially as described.

7. The combination of a series-parallel governing-switch, a reversing-switch, each of said switches having contact-fingers and a relatively-movable body, two of the contact-fingers of the reversing-switch being connected with certain fingers of the governing-switch, and means for retaining each of said two fingers of the reversing-switch out of the path of the switch-body, substantially as described.

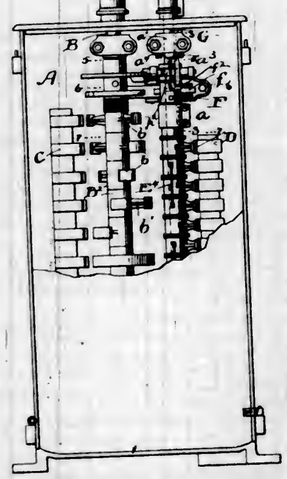
8. The combination of a series-parallel governing-switch, a reversing-switch, two motors, a terminal from one motor leading to the ground, a terminal from the other motor leading to the governing-switch and being adapted to be grounded by it, the other terminals of the motors leading to the reversing switch, two lines connecting the reversing-switch and the governing-switch, and cut-outs adapted to open said lines, substantially as described.

9. The combination with a controller having a series of contact plates and fingers and a motor suitably connected with the fingers, of mechanism adapted to hold a certain contact-finger out of the path of the plate, and thus cut out the motor, substantially as described.

10. The combination with a movable contact-plate and a contact-finger normally in the path of said plate, of a threaded nut loosely connected with the contact-finger and adapted normally not to interfere with the play of the finger but capable of withdrawing the finger out of the path of the contact-plate, substantially as described.

11. The combination with a movable contact-plate and a contact-finger adapted to normally stand in the path of the plate, of a threaded rod V^3, a stationary arm V^4, and a nut V^5, said rod being connected with the contact-finger and said out engaging with the rod and bearing against the arm and thus adapted to withdraw the finger out of the path of the contact-plate, substantially as described.

611,090. CONTROLLER. THORSTEN VON ZWEIGBERGK, Cleveland, Ohio, assignor to the Walker Company, same place. Filed Apr. 29, 1898. Serial No. 679,195. (No model.)



Claim.—1. In a controller, in combination, a governing-switch, a reversing-switch, a reversing-lever, and a disengageable connection between the reversing-lever and reversing-switch, and means whereby such connection is disengaged whenever the governing-switch is in an operating position, substantially as described.

2. In a controller, in combination, a governing-switch, a reversing-switch, a reversing-handle, an engaging device adapted to connect said handle to the reversing-switch, mechanism operated by the governing-switch for withdrawing said engaging device from such

connection with the reversing-switch when the governing-switch is moved from the off position to an operative position, substantially as described.

3. In a controller having a governing-switch, the combination of a reversing-cylinder, a reversing-lever, a shaft for the same, a connecting device adapted to lock said shaft to the reversing-cylinder or to a stationary member, mechanism controlled by said governing-switch for so operating said connecting device, substantially as described.

4. In a controller, in combination, a governing-switch, a reversing-cylinder, a reversing-lever, a shaft for the latter, sleeve on said shaft locked against rotating independently of the shaft but adapted to be moved longitudinally into or out of engagement with the reversing-cylinder, and means for allowing it to be in such engagement when the governing-switch is at the off position, but for withdrawing it from such engagement when the governing-switch is thrown into an operative position, substantially as described.

5. In a controller, in combination, a governing-switch, a reversing-switch, two independent operating-handles for said switches, a disengageable connection between the reversing-handle and the reversing-switch, and a cam operated by the governing-switch for governing said disengageable connection, substantially as described.

6. In a controller, in combination, a governing-cylinder, a reversing-cylinder, a reversing-lever, a shaft for the same independent of the shaft of the reversing-cylinder a sleeve on the shaft of the reversing-lever adapted to connect the same with the reversing cylinder, a cam on the governing-cylinder consisting of a plate having a depression in it, a roller or pin engaging said cam and operating to withdraw said connection from engagement with the reversing-cylinder, the depression in said cam being so placed with reference to the contact-segments of the governing-cylinder that said roller lies in said depression when the governing cylinder is in its off position, substantially as described.

7. The combination, with a governing-switch, a reversing-switch and a lever for the latter, of a disengageable connection between such lever and reversing-switch, and mechanism which prevents the movement of the governing-switch unless such connection is disengaged, substantially as described.

8. In a controller, in combination, a governing-switch, a reversing-switch, operating-handles therefor, means for rendering the handle of the governing-switch incapable of operating that switch when the reversing-switch is at an off position, and means for releasing the handle of the reversing-switch from that switch and rendering the two independent when the governing-switch is at an operative position, whereby without locking the reversing-switch the handle of the reversing-switch is rendered incapable of operating that switch, substantially as described.

9. In a controller, in combination, a governing-switch, a reversing-switch, an operating-handle for the latter, a disengageable connection between such handle and the reversing-switch, connecting mechanism between such disengageable connection and the governing-switch whereby such connection is disengaged when the governing-switch is at an operative position, and means for preventing the governing-switch coming to an operative position when the reversing switch is at an off position, substantially as described.

10. In a controller, in combination, a governing-cylinder, a reversing-cylinder, a reversing-lever, a disengageable connection between said lever and reversing-cylinder, adapted to lock the lever to the reversing-cylinder or to lock the lever in stationary position, and connecting mechanism between such disengageable connection and the governing-cylinder preventing the movement of that governing-cylinder when the reversing-lever stands at its off position, and causing said disengageable connection to lock the reversing-lever against movement when the governing-cylinder is at an operative position, substantially as described.

11. In a controller, in combination, a governing-switch, a reversing-cylinder, a reversing-lever, a shaft for the latter independent of the shaft of the reversing-cylinder, and a disengageable connection adapted to lock the shaft of the reversing-lever to the shaft of the reversing cylinder and operated by the movement of the governing-switch, substantially as described.

12. In a controller, in combination, a suitable casing, a reversing-cylinder within the same, a reversing-lever outside of the casing, a shaft for said lever independent of the shaft of the reversing-cylinder, a disengageable connection within the casing adapted to lock the shaft of the reversing-cylinder to the shaft of the reversing-lever, and mechanism located partly outside of the casing and independent of the reversing-lever and adapted to actuate said disengageable connection, substantially as described.

13. In a controller, in combination, a reversing-cylinder, a reversing-lever, a shaft for the latter independent of the reversing-cylinder, a locking device adapted to lock said shaft to the reversing-cylinder or to release the reversing-cylinder and lock said shaft to a stationary member, substantially as described.

14. In a controller, in combination, a reversing-cylinder, a reversing-lever, a shaft for the latter journaled in a suitable bearing in the axial line of the shaft of the reversing-cylinder but independently thereof, a sleeve on the shaft of the reversing-lever compelled to rotate with it but capable of an up-and down movement between the under side of the bearing and the upper side of the reversing-cylinder, cooperating projections and notches on the under side of the bearing and the upper side of the sleeve and on the under side of the sleeve and the upper side of the reversing-cylinder, whereby said sleeve may be in engagement with said cylinder and out of engagement with the bearing, or in engagement with the bearing and out of engagement with the cylinder, according as it is in its lowered or elevated position, and means for so lowering or elevating the sleeve, substantially as described.

15. In a controller, in combination, a reversing-cylinder, an indicator-wheel at the upper end thereof, a recess on the upper side of said indicator-wheel, a shaft having its foot in said recess, a lever adapted to engage with said shaft, a bearing in which said shaft is journaled above said indicator wheel, a sleeve on said shaft between the indicator-wheel and bearing, a connection between said sleeve and shaft by means of a projection and groove, cooperating notches and projections on proximate surfaces of said bearing and sleeve and said sleeve and indicator-wheel, and means adapted to raise or lower said sleeve but allow its rotation, substantially as described.

611,091. VISE. HENRY J. ABERNATHY, Socorro, N. Mex. Filed May 31, 1898. Serial No. 682,192. (No model.)



Claim.—1. An attachment for a carpenter's bench or the like comprising a bar adapted to be fixed to the bench, a bar adjustably connected with said fixed bar, means for fastening the movable and fixed bars together, and a clamping-jaw carried by the movable bar, substantially as described.

2. An attachment for a carpenter's bench or the like comprising a bar adapted to be fixed to the bench, a bar adjustably connected with said fixed bar, means comprising a rack and pawl for fastening the movable and fixed bars together, and a clamping-jaw carried by the movable bar, substantially as described.

3. An attachment for a carpenter's bench or the like comprising a bar adapted to be fixed to the bench, a bar adjustably connected with said fixed bar, means comprising a rack and pawl, said pawl having the form of a link and pivoted in the fixed bar for fastening the movable and fixed bars together, and a clamping-jaw carried by the movable bar, substantially as described.

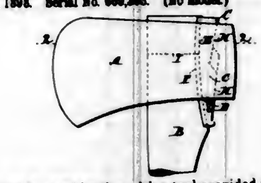
4. An attachment for a carpenter's bench or the like comprising a bar adapted to be fixed to the bench, a bar adjustably connected with said fixed bar, means for fastening the movable and fixed bars together, and a clamping-jaw carried by the movable bar, said jaw having operative connection with a screw supported to turn freely in bearings in the movable bar, substantially as described.

5. An attachment for a carpenter's bench or the like comprising a bar adapted to be fixed to the bench, a bar adjustably connected with said fixed bar, means for fastening the movable and fixed bars together, and a clamping-jaw carried by the movable bar, said jaw having operative connection with a screw supported to turn freely in bearings in the movable bar, and the bar provided with a mouth or recess below said bearings to hold the jaw when inoperative, substantially as described.

6. A board-clamping attachment for a bench comprising a bar to be fixed to the bench, and provided with an undercut rib, a movable jaw-carrying bar having a groove to receive the rib and having a rack on the opposite side, a link pivoted to the fixed bar and embracing the rib and movable bar and adapted to engage the rack, and devices for moving the jaw transversely to the bars, substantially as described.

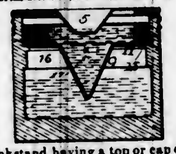
7. A board-clamping attachment for a bench comprising a bar to be fixed to the bench, and provided with an undercut rib, a movable jaw-carrying bar having a groove to receive the rib, means for holding the bars adjustably together, a clamping-jaw adapted to be operatively held above the bars, and means for moving it to and from a bench to which the device is attached, substantially as described.

611,092. MEANS FOR SECURING HEADS OF AXES, HAMMERS, &c., TO THEIR HANDLES. FREDERICK BAKER, Caulfield, Victoria, assignor of one-half to Agar Wynne, Melbourne, Victoria. Filed Feb. 7, 1898. Serial No. 669,868. (No model.)



Claim.—The combination with a tool provided with an eye having one edge constructed with an inclined plane, of the handle B inserted through the eye of the tool and constructed at the edge facing the aforesaid inclined plane with a longitudinal concaved edge E, and the locking-piece C inserted through the eye of the tool and formed at its opposite edges, respectively, with the convex face F and taper H, the convex face of the locking-piece fitting the concaved edge of the handle and the taper of said locking-piece fitting the inclined plane of the eye in the tool, all substantially as described and shown.

611,093. INKSTAND. STEPHEN G. BALDWIN, Marion, Ind. Filed Mar. 10, 1897. Serial No. 626,865. (No model.)



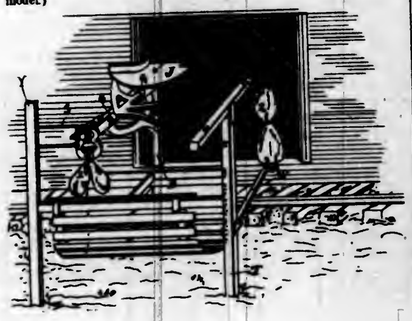
Claim.—1. An inkstand having a top or cap carrying an inverted conic frustum, an elastic packing between the top and the inkstand, and a fixed closed inverted conic ink-receptacle supported by the upper part of the inkstand and into which the conic frustum extends, passage-ways being formed between the inverted cone and the top of the inkstand whereby the ink may be thrown into the inverted cone by an upward toss of the inkstand, as set forth.

2. An inkstand comprising a cap or covering, means for securing and sealing said cap, there being a conical pen-opening therein, a rim formed in the interior of the inkstand, a box loosely resting on said rim, there being an opening in the top of said box slightly larger than the conical pen-opening into which said pen-opening extends a short distance and an inverted cone formed in the bottom of said box directly under the pen-opening forming a dip, substantially as described.

3. The combination in an inkstand of a top having a central inverted frustum open at its bottom, sealing means to make a tight joint between the top and the inkstand, an inverted frustum of a cone closed at its bottom and means entirely located near the top of the inkstand to support said frustum, all arranged as set forth.

4. The combination in an inkstand of a top having a central, inverted, conical frustum open at its bottom, a packing between said top and the inkstand to form a tight joint, an inverted frustum of a cone closed at its bottom, and means entirely located near the top of the inkstand to support said frustum, all arranged as set forth.

611,094. DEVICE FOR RECEIVING AND DELIVERING MAIL-POUCHES FROM MOVING TRAINS. JAMES BALE and AMOS R. LAPHAM, Paw Paw, Mich. Filed Mar. 5, 1898. Serial No. 672,711. (No model.)



Claim.—1. In a device for discharging mail-pouches from a moving car, the combination with a mail-car, of a crane pivoted to said car and adapted to swing outwardly carrying with it the mail-pouch, a pair of jaws adapted to close upon the ring of the mail-pouch and retain the same in position, one of said jaws made rigid with the crane, the other jaw adapted to be opened and release the ring of the mail-pouch, an extension on said movable jaw, a pivoted arm on the crane adapted to bear upon the extension of the movable jaw, and a stationary trip supported outside of the moving car adapted to come in contact with said stationary trip for the purpose of opening the jaws and releasing the mail-pouch, substantially as described.

2. In combination with a swinging crane adapted to be swung outwardly from a moving car, a pair of jaws carried by said crane and adapted to grasp the ring of the mail-pouch, one of said jaws rigid with the crane, the other jaw pivoted to the rigid jaw and adapted to open, a projection upon said movable jaw, a pivoted crane, and a trip located outside of the moving car adapted to come in contact with the pivoted arm for the purpose of opening the movable jaw, substantially as described.

3. In combination with a mail-car, a swinging crane adapted to swing outwardly from said car, a pair of jaws carried by the said crane, one of said jaws made rigid with the crane, the other jaw pivoted to the immovable jaw and adapted to open, a pivoted arm adapted to operate the movable jaw, a spring adapted to close said jaws and retain them closed, and a stationary trip supported outside the moving car adapted to come in contact with said pivoted arm and thereby separate the jaws, allowing the mail-pouch to be deposited in a receptacle, substantially as described.

4. In combination with a swinging crane, a pair of clamping-jaws, each jaw provided with an upper and a lower hook, said lower hook adapted to clasp the ring of the mail-pouch and said upper hook adapted to withdraw the ring from the supporting-hooks when the jaws are opened, substantially as described.

5. In combination with a moving car, a crane adapted to swing outwardly into position to receive a mail-pouch supported outside of the moving car, a pair of forks or arms pivoted to the crane adapted to receive the mail-pouch supported outside of the car and provided with a rearward projection, a stationary plate upon the mail-car beneath which the rearward projection or extension of the pivoted forks is adapted to pass in order to retain the forks in a horizontal position to receive the mail-pouch and allow the said forks to be dropped into a perpendicular position when the crane with the forks is turned or swung into the car, substantially as described.

6. In combination with a mail-car, a crane pivotally connected thereto and adapted to swing outwardly and having a horizontal arm, a pair of forks pivotally connected to said horizontal arm and adapted to be raised to a horizontal position when swung outwardly and to be dropped into a perpendicular position when the crane is turned or swung into the car, substantially as described.

7. In combination with the car, a crane adapted to be swung outwardly, a pair of jaws carried by the said crane, one of said jaws rigid with the crane and one pivoted to the rigid jaw and adapted to be opened, a spring adapted to close the jaws, a pivoted arm adapted to engage with the movable jaw to open the same, a stationary trip outside the moving car adapted to come in contact with said pivoted arm, and a receptacle adapted to receive the mail-pouch as it falls from the jaws of the crane, and friction-springs upon the said receptacle, substantially as and for the purpose described.

8. In a receptacle adapted to receive a mail-pouch from a moving car, the combination of the receptacle proper, a partition through the center of said receptacle, parallel ways supporting the receptacle, rollers traveling on said ways supporting the said receptacle, antifriction-springs connected to the receptacle and adapted to move on said parallel ways or in contact therewith, all substantially as described.

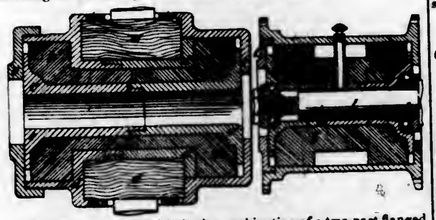
9. A receptacle for receiving a mail-pouch from a moving train, in combination with parallel ways supporting said receptacle, rollers between said receptacle and said ways, springs carried by the receptacle and adapted to move in contact with the said ways, and spring-buffers arranged at either end of the said receptacle for the purpose of breaking the stroke caused by the moving of the receptacle upon receiving the mail-pouch from a moving train, substantially as described.

611,095. SPRING-HUB FOR VEHICLE-WHEELS. CONSTANT C. BAILLIE, Paris, France. Filed Nov. 13, 1897. Serial No. 658,473. (No model.) Patented in France Dec. 21, 1896, No. 262,405; in England Dec 21, 1896, No. 5,527, and in Belgium Jan. 11, 1897, No. 126,089.

Claim.—1. In a vehicle-hub, the combination of a bushing formed by two sections having their inner ends engaging each other and each provided with a flange at its outer end, a casing, an elastic cushion between the casing and bushing, and a screw-threaded cap engaging the casing, substantially as described.

2. In a vehicle-wheel, the combination of a flanged bushing formed

of two sections having an interlocking engagement with each other, a casing formed of two sections having an interlocking engagement with each other, a cushion between the casing and bushing, and caps screwing on the casing, substantially as described.

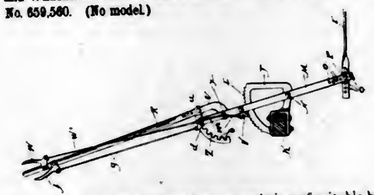


3. In a vehicle-wheel hub, the combination of a two-part flanged bushing screwing one onto the other, a two-part casing screwing one upon the other, a two-part cushion between the casing and bushing, and caps screwing on the casing, substantially as described.

4. The combination with a wooden hub, of a two-part flanged bushing, a two-part casing, one part of the casing projecting over the hub, a two-part cushion between the casing and bushing, a cap screwing onto the end of one section of the casing, and a second cap screwing onto the other section of the casing and projecting over the end of the hub opposite that over which the section of the casing projects, substantially as herein shown and described.

5 The combination of the wheel having a sleeve forming an inner lining for the hub, a cap screwing on said sleeve, an interior, transversely-divided sleeve whose ends are engaged respectively by the first-named sleeve and its cap, and an elastic cushion located between the two sleeves and between flanges on the interior sleeve, substantially as described.

611,096. BRAKE FOR HAY-FRAMES. CHARLES C. BARROW and WALTER L. BARROW, Shiloh Hill, Ill. Filed Nov. 23, 1897. Serial No. 659,560. (No model.)

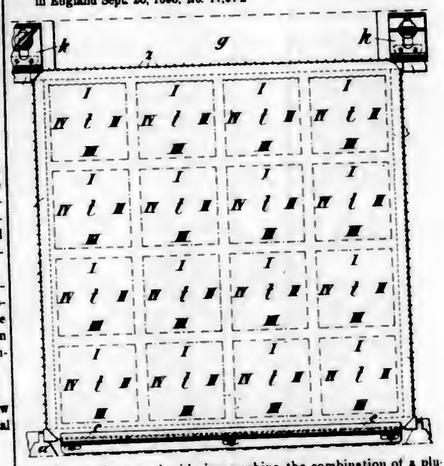


Claim.—1. A brake for hay-frames consisting of suitable brake-bars, shoes carried thereby, a rod connected therewith, a segmental rack-stand attached to the frame, a brake-lever pivoted to said stand, and attached at its lower end to said rod, a ratchet-dog pivoted to the brake-lever and adapted to engage the teeth of the stand, an operating-lever pivoted to the brake-lever, a segmental rack-bar pivoted to the operating-lever and adapted to engage the bolt carried by the brake-lever, and means for throwing the ratchet-dog and rack-bar into and out of activity, as specified.

2. A brake of the character described consisting of two brake-bars pivoted to the frame, shoes carried by the outer ends of said bars, a brake-rod, means for coupling said rod to the brake-bars, a segmental rack-stand secured to the frame, a brake-lever pivoted to said stand and attached at its lower end to the brake-rod, a ratchet-dog pivoted to the brake-lever, a spring for holding said dog in engagement with the segmental teeth, an operating-lever pivoted to the brake-lever, a rack-bar pivoted to the operating-lever and adapted to engage with a suitable bolt carried by the brake-lever, a hand-lever W, means for connecting said hand-lever with the ratchet-dog, a hand-lever *f* also pivoted to the operating-lever, and means for connecting the last-named hand-lever to the rack-bar, substantially as and for the purpose set forth.

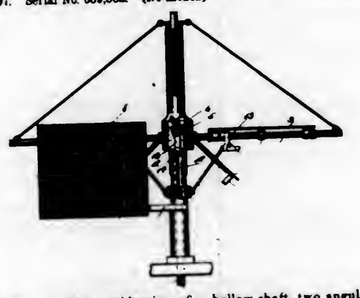
3. The herein-described combination of the brake-bars E pivoted to the under side of the frame, shoes carried by said bars and adapted to act upon the wheels, a brake-rod, links for connecting said rod to the brake-bars, a segmental stand secured to the frame, a brake-lever pivoted to said stand and attached to the brake rod, teeth formed upon the segmental portion of the stand, a ratchet-dog pivoted to the brake-lever and adapted to engage said teeth, a spring for normally holding said dog in engagement with said teeth, an operating-lever pivoted to the brake-lever, a rack-bar pivoted to the operating-lever, a spring adapted to normally hold said rack bar in engagement with a suitable bolt carried by the brake-lever, a hand-lever *f* pivoted to the upper end of the operating-lever, a wire connecting said hand-lever with the rack-bar whereby the latter may be disengaged from its bolt, a hand-lever W also pivoted to the upper end of the operating-lever, a wire and chain connecting the last-named haud-lever with the ratchet-dog, said chain passing through an eye located upon the axial line of the pivot-point of the operatiug lever, substantially as and for the purpose set forth.

611,097. EMBROIDERING-MACHINE. GEORG RAUH, Rorschach, Switzerland. Filed Feb. 4, 1896. Serial No. 578,058. (No model.) Patented in Switzerland Sept. 8, 1893, No. 7,284; in France Sept. 16, 1893, No. 232,861; in Germany Sept. 19, 1893, No. 76,353, and in England Sept. 20, 1893, No. 17,674.



Claim.—In an embroidering-machine, the combination of a plurality of embroidering mechanisms, the number of such mechanisms in each row corresponding with the number of rows thereof, and a square fabric-frame extending over all the embroidering mechanisms, whereby three turnings of the fabric-frame suffice for embroidering as many complete patterns as there are rows of embroidering mechanisms.

611,098. POWER-WHEEL. ALMER N. BLAZER, Mescalero, N. Mex., assignor of one-half to Frank I. Otis, same place. Filed June 5, 1897. Serial No. 639,582. (No model.)



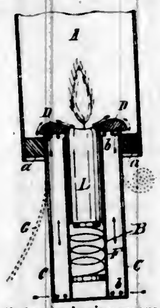
Claim.—1. The combination of a hollow shaft, two angularly-disposed shafts carried horizontally by the hollow shaft, two blades pivoted to each shaft, an arm adjacent to each blade, the arms being fixed to the shafts and serving to limit the movement of the blades, an arm carried by each blade, a finger sliding on each of said angularly-disposed shafts, and means for moving the fingers in and out to engage and disengage the respective arms on the blades.

2. The combination of a hollow shaft, a rod sliding through the hollow shaft, a collar sliding on the hollow shaft and connected with the rod, two angularly-disposed shafts carried horizontally on the hollow shaft, a finger sliding on each of said angularly-disposed shafts and connected with the collar, a blade pivoted to the outer portion of each angularly-disposed shaft, an arm carried by each blade and respectively coacting with the fingers and an arm fixed to said outer portions of each of said shafts and serving to limit the movements of the blades.

3. The combination of a shaft, a blade pivoted to the shaft, a sliding finger capable of engaging with the blade and means for supporting the finger to hold the blade.

4. The combination of a shaft, a blade pivoted on the shaft, an arm fixed to the shaft and limiting the movement of the blade, an arm fixed to the blade, and a sliding finger capable of being engaged by the arm on the blade, whereby to hold the blade raised.

611,099. CANDLE-BURNING LANTERN FOR VEHICLES, &c. ALEXANDER BOOK, Copenhagen, Denmark. Filed Jan. 25, 1897. Serial No. 620,637. (No model.) Patented in Austria Nov. 29, 1896, No. 4,781/46.



Claim.—1. A candle-burner having means for carrying the candle and for feeding the same as it is burned, and provided with a plate having a central orifice adapted to receive the burning end of the candle, the plate being carved upwardly from the outer edge and thence downwardly to form a continuation of the curve of the concavity which will exist at the burning end of the candle, substantially as described.

2. A candle-burner having a chimney, a tube held at the lower end of the chimney and projecting downwardly therefrom, the tube being capable of carrying the candle, means for feeding the candle upwardly in the tube, and a plate located at the upper end of the tube and having a central perforation adapted to receive the upper end of the candle, the plate curving from its outer edge upwardly and thence downwardly so as to run into the curve of the concavity at the upper end of the candle, the upper end of the tube having perforations through which all the air for supporting combustion passes into the base of the chimney at the outer edge of the plate, substantially as described.

3. A candle-burner having a plate with an orifice therein, the upper face of the plate being curved inwardly and downwardly toward the orifice to form a continuation of the curve of the concavity which will exist at the burning end of the candle, substantially as described.

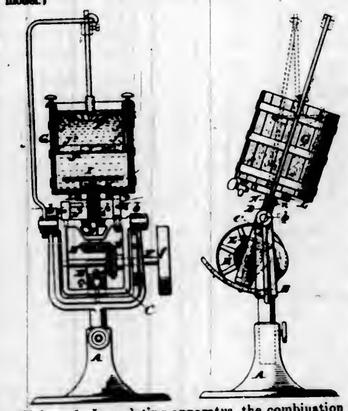
4. A candle-burner having a chimney, a mantle projected into the lower end of the chimney, a block fitted between the upper end of the mantle and the lower end of the chimney, means within the mantle for holding and feeding the candle upwardly into the chimney, and a plate secured at the upper end of the mantle and having a perforation, the upper side of the plate being curved downwardly toward the orifice so that said curve will run gradually into the curve of the concavity which will occur at the upper end of the candle, substantially as described.

5. A candle lamp or lantern, provided with a disk having its upper face concaved at the center and its margin rounded or curved downwardly to the lower face of the disk, and provided with a central aperture into which the end of a burning candle is adapted to project, the said disk being arranged with its upper face above the openings through which all the air for supporting combustion passes, substantially as described.

6. A candle lamp or lantern, comprising a candle-tube, a mantle surrounding the candle-tube and provided with perforations at its upper end, through which perforations air for supporting combustion passes, a disk on the upper end of the mantle and having its upper face concave at the center and its margin rounded or curved downwardly to the lower face of the disk and provided with a central aperture into which the burning end of the candle is adapted to project, and a chimney insulated from the said mantle, substantially as described.

7. A candle lamp or lantern, comprising a candle-tube, a mantle surrounding the candle-tabe and exteuding the length thereof, said mantle being provided with perforations at its ends, through which air for supporting combustion passes, a disk on the upper end of the mantle and having its upper face concave at the center and its margin rounded or curved downwardly to the lower face of the disk and provided with a central aperture into which the burning end of the candle is adapted to project, a chimney, and a ring of insulating material carried by the chimney between it and the mantle, substantially as herein shown and described.

611,100. ELECTROPLATING APPARATUS. HERMANN E. BOSSIER, New York, N. Y. Filed Jan. 14, 1898. Serial No. 666,595. (No model.)



Claim.—1. In a plating apparatus, the combination of a tub or tank rotatable upon an upwardly-arranged axis and containing the plating solution, a supporting-screen of conducting material for the work constituting the cathode and arranged at a distance below the surface of the liquid, two anodes one arranged above and the other arranged below the cathode, and means for rotating the tank and cathode.

2. In a plating apparatus, the combination of a tub or tank open at the top and containing the plating solution, a supporting-screen of conducting material for the work constituting the cathode and arranged at a distance below the surface of the liquid, two anodes one arranged above and the other arranged below the cathode and in which the anode arranged above the cathode is stationary and supported independently of the tub or tank and the anode below the cathode arranged within and supported by the tub, means to rotate the tub or tank upon an upright or oblique axis, and electrical circuits for maintaining connection with the anode and cathode during the rotation of the tub or tank.

3. In a plating apparatus, the combination of a tub or tank open at the top and containing the plating solution, a supporting-screen of conducting material for the work constituting the cathode and arranged at a distance below the surface of the liquid, two anodes one arranged above and the other arranged below the cathode and in which the anode arranged above the cathode is stationary and supported independently of the tub or tank and the anode below the cathode arranged within and supported by the tub, means to rotate the tub or tank upon an upright or oblique axis, electrical circuits for maintaining connection with the anode and cathode during the rotation of the tub or tank, and means for adjustably supporting the tub at different angles of obliquity.

4. In a plating apparatus, the combination of a tub or tank open at the top and containing the plating solution, a supporting-screen of conducting material for the work constituting the cathode and arranged at a distance below the surface of the liquid, two anodes one arranged above and the other arranged below the cathode, means to hold the tub or tank at an oblique angle, means for rotating the tub or tank while supporting the work, and electrical connections for maintaining the anodes and cathode in electrical circuit during the rotating movement.

5. In a plating apparatus, the combination of a tub or tank open at the top and containing the plating solution, a supporting-screen of conducting material for the work constituting the cathode and arranged at a distance below the surface of the liquid, two anodes one arranged above and the other arranged below the cathode, means to hold the tub or tank at an oblique angle, means for rotating the tub or tank while supporting the work, electrical connections for maintaining the anodes and cathode in electrical circuit during the rotating movement, and means to vary the angle of obliquity of the tub or tank and its supporting-screen for the work to vary the degree of "tumbling" action of the work upon itself.

6. In a plating apparatus, the combination of a tub or tank pivoted to rotate upon an oblique axis, a supporting-screen cathode for the work arranged within and electrically independent of the tub or

tank below the level of the solution, one or more anodes arranged within the tub or tank out of contact with the work, means to impart rotation to the tub or tank, and electrical connections to maintain electrical circuits with the cathode and anodes during the rotation.

7. In a plating apparatus, the combination of a tub or tank pivoted to rotate upon an oblique axis, a supporting-screen cathode for the work arranged within the tub or tank below the level of the solution, one or more anodes arranged within the tub or tank, means to impart rotation to the tub or tank, electrical connections to maintain electrical circuits with the cathode and anodes during the rotation, and means for adjusting the obliquity of the axis of rotation of the tub or tank.

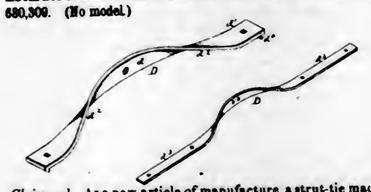
8. In a plating apparatus, the combination of a tub or tank movable about an upwardly-arranged axis, a cathode or supporting screen for the work arranged within the tub or tank and provided with upwardly-extending arms fitting over the upper edge thereof, a stationary anode arranged within the upper portion of the tub or tank, a support for holding the anode in position above the screen, means to rotate the tank and cathode, and electric circuits connecting with the cathode or screen and anode.

9. In a plating apparatus, the combination of a tub or tank, a supporting-screen cathode for the work arranged within the tub or tank adapted to be rotated about an upwardly-arranged axis, a stationary anode arranged within the upper portion of the tub or tank and under which the cathode rotates, a support for holding the anode in position above the screen, a second anode arranged in the lower part of the tub or tank below the screen, and electric circuits connecting the cathode-screen and anodes with a source of electrical energy.

10. In a plating apparatus, the combination of a tub or tank, a supporting-screen cathode for the work arranged within the tub or tank and provided with upwardly-extending arms fitting over the upper edge thereof, an anode arranged within the upper portion of the tub or tank, a support for holding the anode in position above the screen, a second anode arranged in the lower part of the tub or tank below the screen at a distance above the bottom of the tank and of less surface area than the cross-sectional area of the tank so as to leave access from above to a position under it, means to rotate the screen about an oblique axis and electric circuits connecting with the cathode-screen and anodes.

11. In a plating apparatus, a tub or tank containing a work-supporting cathode and movable about an upwardly-arranged axis, an anode above the cathode and supported independently of the tub or tank and cathode, and power devices to rotate the tub or tank.

611,101. STRUT-TIE FOR PREVENTING CREEPING OF RAILS. ADOLPHUS BOMANO, Philadelphia, Pa. Filed May 10, 1898. Serial No. 680,309. (No model.)



Claim.—1. As a new article of manufacture, a strut-tie made from a metal bar bent to form a central section and end sections connected to the central section by twisted members, substantially as described.

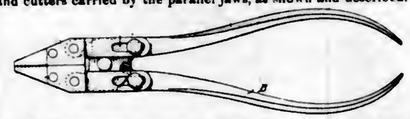
2. The combination of a rail, cross-ties on which it is mounted, a strut-tie having two members, said strut-tie being secured at or about the rail-center and the end of each member secured to a cross-tie, so that each end of the rail is free to expand or contract, substantially as described.

3. The combination of a rail, cross-ties on which the rail is mounted, a strut-tie having a central section secured to the web of the rail, end sections secured to cross-ties and twisted members connecting the end sections to the central section, said strut-tie being of such a length as to extend from one tie to another with a tie intervening, substantially as described.

611,102. COMBINED WIRE-SHEARS AND PARALLEL-JAW PLIERS. PETER BROADBOOKS, Batavia, N. Y. Filed Oct. 8, 1897. Serial No. 654,539 (No model.)

Claim.—1. In a pair of pliers, two levers pivoted together, parallel jaws having slotted shanks embracing said levers, said jaws being pivoted to the levers and also connected thereto by movable studs operating in slots, and cut-off jaws carried by the first-named jaws, as specified.

2. In combination, a pair of handle-levers let together and pivoted to each other, a pair of parallel jaws, slotted shanks formed therewith adapted to embrace the levers, said jaws being pivoted to the front portion of said levers, revolving studs set in the levers and having flattened portions projecting through slots formed in the shanks of the jaws, cut-off dies carried by the heads of the levers, and cutters carried by the parallel jaws, as shown and described.

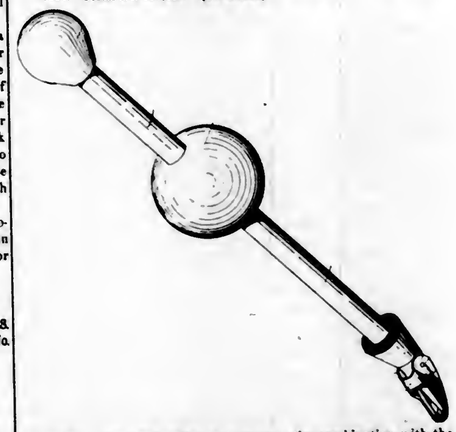


3. In combination with a pair of pliers of the character described, an overhanging arm formed with one of the handle-levers, and a die carried by one of the parallel jaws, substantially as and for the purpose set forth.

4. A pair of pliers consisting of two levers, plier-jaws hinged thereto and means for holding said jaws parallel with each other when the levers are operated.

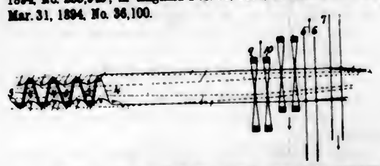
5. A pair of pliers consisting of two levers, jaws pivoted thereto having slotted shanks, and studs on the levers projecting through said slots, as and for the purpose described.

611,103. NAIL-PULLER. FREDERICK F. CRAFCEY, Milford, N. H., assignor of one-half to Fred B Bartlett, same place. Filed Nov. 8, 1897. Serial No. 657,802. (No model.)



Claim.—In a nail puller or extractor, the combination with the shank, the knob, the sliding weight, the stop at the lower end of said shank formed with the curved bifurcated claw, and the studs at opposite sides thereof, of the jaw or loop comprising the sides pivotally connected with said studs, the integral lip at the front ends of said sides and the cross-piece formed integral with said jaw or loop intermediate the inner and outer ends thereof and serving as a stop adapted to engage with the claw and prevent its dropping below and behind the same, substantially as described.

611,104. DOUBLE-PLUSH FABRIC. EMIL CLAVIEZ, Chemnitz, Germany. Filed May 14, 1895. Serial No. 549,303. (Specimens.) Patented in Austria Jan. 22, 1894, No. 44/1,062; in France Jan. 31, 1894, No. 235,945; in England Feb. 16, 1894, No. 3,374, and in Italy Mar. 31, 1894, No. 36,100.



Claim.—The double-plush-fabric blank comprising upper and lower grounds each composed of ground-warps and ground and stitching wefts, series of upper and lower pile warp-threads extending approximately parallel to each other from the upper ground to and from the lower ground and vice versa, and the stitching-wefts alternating with the ground-wefts in each ground and securing the pile-threads to the faces of the grounds; the ground-wefts and stitching-wefts of the upper fabric alternating in position with the ground-wefts and stitching-wefts respectively of the lower fabric and vice versa; substantially as described.

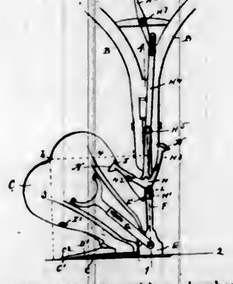
611,105. WIRE-FASTENER. ELISHA L. COWGILL, Fillmore, Ind. Filed May 21, 1898. Serial No. 681,310. (No model.)



Claim.—1. As an improved article, a fastener for the horizontal strands of wire fences, consisting of a single piece of wire bent to form a central inclined open coil or loop, the oppositely-inclined arms, and the eyes at the ends thereof, substantially as described.

2. In a wire fence, the combination with the post and the horizontal wires or strands, of the fastener consisting of a single piece of wire bent to form a central open loop, the oppositely-inclined arms, the ends of which are bent into eyes and the nails passing therethrough, and the loop then closed by bending or twisting the same, substantially as described.

611,106. PLOW. GEORGE A. CRANE, Worcester, Mass. Filed May 31, 1894. Serial No. 513,026. (No model.)



Claim.—1. The combination with a plow-beam of horizontal journal-bearings supported on said beam, a rocking rod journaled in said bearings and extending lengthwise said beam, a lever-handle attached to the rear end of said rod by which said rod is rocked, a shifting moldboard, a rocking latch by which said moldboard is locked in position and a pivoted lever intermediate between said rocking latch and said lever-handle, whereby said latch is operated simultaneously with the rocking motion of said rod, substantially as described.

2. The combination with a plow-beam, of a rod journaled in bearings and extending lengthwise said beam, a hand-lever attached to the rear end of said rod, a clevis capable of sliding in ways on said beam and transversely to the draft of the plow, a projection extending upwardly from said clevis and provided with a slot, a block J^4 attached to said rod and a crank-pin carried by said block whereby the lateral movement of said clevis is varied, substantially as described.

3 The combination with the beam of a plow, of a rod journaled in bearings and extending lengthwise said beam, a hand-lever attached to the rear end of said rod, a cutter-frame pivoted at its rear end to said beam and capable of lateral motion at its front end, lugs K^4, K^5 extending upwardly from said frame, and a cam attached to said journaled rod and arranged to act against said lugs and move said cutter-frame laterally, substantially as described.

4. The combination with a plow-beam and a shifting moldboard of a rocking latch by which said moldboard is held in position, a rod journaled in bearings lengthwise said beam, a hand-lever by which said rod is rocked, an intermediate lever between said rod and said latch, a shifting clevis, a crank-pin rotated by said rod and engaging said clevis, a movable cutter-frame and a cam attached to said rod and engaging said cutter-frame, substantially as described.

611,107. METHOD OF FORMING TOBACCO INTO WRAPPERS. PATRICK DULLON, Milford, Mass. Filed Oct. 23, 1897. Serial No. 656,181. (No specimens.)

Claim.—1. A method of forming refuse tobacco into wrappers, consisting in reducing the refuse tobacco to a pulp while in a solution of tobacco-juice, then adding the whites of eggs to give gloss, and subsequently forming the mass into a sheet or sheets.

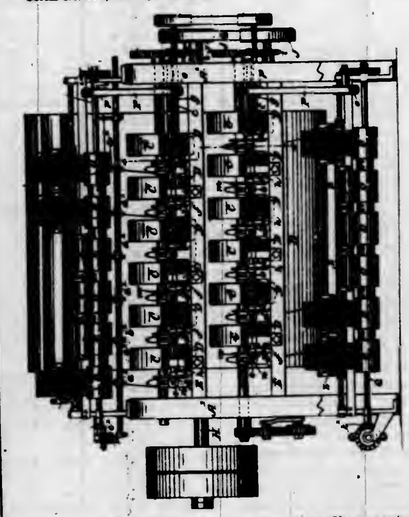
2. A method of forming refuse tobacco into wrappers, consisting in reducing the refuse tobacco to a pulp while in a solution of tobacco-juice, adding the whites of eggs to give gloss, adding extract of tea-leaves to give flavor, and subsequently forming the mass into a sheet or sheets.

3. A method of forming refuse tobacco into wrappers, consisting in reducing the refuse tobacco into a pulp while in a solution of tobacco-juice, adding a binder thereto, adding the whites of eggs to give a gloss, and subsequently forming the mass into sheets.

4. A method of forming refuse tobacco into wrappers, consisting in reducing the refuse tobacco to a pulp while in a solution of tobacco-juice, then adding the whites of eggs to give a gloss, adding extract of tea-leaves to give flavor, adding a binder fabric to the pulp, and then rolling the pulp into sheet form.

5. A method of forming refuse tobacco into wrappers, consisting in reducing the stems and stalks of tobacco to a pulp, reducing scraps and siftings to a pulp, mixing these two formed pulps, mixing a fiber of manila or the like with the pulp, mixing the whites of eggs with the pulp to give a gloss to the completed wrapper, and finally forming the pulp into sheets.

611,108. MANUFACTURING YARN FROM FIBROUS MATERIALS. WILLIAM H. DRURY, Waltham, Mass. Filed Nov. 19, 1897. Serial No. 659,104. (No model.)



Claim.—1. In machinery for making yarn from fibrous materials, the combination with means for carding or straightening the fibers of means to continuously subdivide the carding material definitely and on predetermined lines into numerous narrow and independent sections and to continuously form or roll up said sections severally into fibrous rolls and revolve said rolls; and mechanism to continuously draw said rotating fibrous rolls severally, as they form, lengthwise of themselves into strands of yarn, substantially as and for the purposes hereinbefore set forth.

2. In machinery for making yarn from fibrous materials, the combination with means for carding or straightening the fibers, of mechanism to continuously subdivide the carded material definitely and on predetermined lines into numerous narrow sections, and to continuously form or roll up said sections severally into fibrous rolls and revolve said rolls; mechanism to continuously draw said rotating fibrous rolls severally, as they form, lengthwise of themselves, into strands of yarn; and mechanism to compress or condense said strands while being so drawn, substantially as and for the purposes hereinbefore set forth.

3. In a machine for spinning or making yarn from fibrous materials, the combination with mechanism for continuously subdividing a web, sheet or width of carded fibrous material lengthwise into

many or numerous narrow and separate sections or strips, of mechanism for continuously forming or rolling up said sections or strips of material severally into fibrous rolls and revolving said rolls; mechanism whereby said rotating fibrous rolls, as they form, are severally and continuously drawn lengthwise of themselves into strands or yarn; condensing-straps between whose meeting surfaces said strands of material pass while being so drawn; and means for operating said straps to rub said strands of material in the same direction as that in which they are being revolved, substantially as hereinbefore set forth.

4. In a machine for spinning or making yarn from fibrous materials, the combination with a plural number of series of rings, having their surfaces arranged in relation to each other like ordinary doffer-rings of the same number of series, for receiving fibrous material in numerous narrow sections or subdivisions, of mechanism to coöperate with such rings to collect therefrom and form or roll up said sections or subdivisions of material severally into fibrous rolls and revolve said rolls; mechanism whereby said rotating fibrous rolls, as they form, are severally and continuously drawn lengthwise of themselves into strands of yarn; means whereby said strands of material are compressed or condensed while being so drawn; and means for operating said rings, substantially as hereinbefore set forth.

5. In a machine for spinning or making yarn from fibrous materials, the combination with a plural number of series of doffer-rings for receiving fibrous material in numerous narrow sections or subdivisions, of corresponding twisting and wipe rolls to accompany said rings respectively and to coöperate therewith to collect therefrom and form or roll up said sections or subdivisions of material severally into fibrous rolls and revolve said fibrous rolls; mechanism whereby said rotating fibrous rolls, as they form, are severally and continuously drawn lengthwise of themselves into strands of yarn; means whereby said strands of material are compressed or condensed while being so drawn; and means for operating said rings and said twisting and wipe rolls, substantially as hereinbefore set forth.

6. In a machine for spinning or making yarn from fibrous materials, the combination with a plural number of series of doffer rings for receiving fibrous material in numerous narrow and separate sections or subdivisions, of corresponding individual doffing-combs; mechanism to coöperate with such rings and combs to collect from said rings and form or roll up said sections or subdivisions of material severally into fibrous rolls and revolve said rolls; mechanism whereby said rotating fibrous rolls, as they form, are severally and continuously drawn lengthwise of themselves into strands of yarn; means whereby said strands of material are severally compressed or condensed while being so drawn; and means for operating said rings and combs, substantially as hereinbefore set forth.

7. In the herein-described machine for spinning or making yarn from fibrous materials, the combination of the doffer-rings for receiving the material in many or numerous narrow and separate sections or subdivisions; the twisting and wipe rolls for coöperating with said doffer-rings respectively to collect therefrom and roll up and compress the said sections or subdivisions of material severally into fibrous rolls and revolve said fibrous rolls; the side-drawing mechanism for drawing said rotating fibrous rolls severally, as they form, lengthwise of themselves into strands of yarn; the condensing mechanism for compressing or condensing said strands of material severally while being so drawn; and the means for operating said rings, said twisting and wipe rolls and said mechanisms, substantially as hereinbefore set forth.

8. In the herein-described machine for spinning or making yarn from fibrous materials, the combination of the doffer-rings for receiving the material in many or numerous narrow and separate sections or subdivisions; the individual doffing-combs for accompanying said rings and vibrating up and down across the surfaces thereof respectively; the twisting-rolls for coöperating with said rings and combs respectively to collect from said rings and roll up and compress said sections or subdivisions of material severally into fibrous rolls and revolve said fibrous rolls; the side-drawing mechanism for drawing said rotating fibrous rolls severally, as they form, lengthwise of themselves into strands of yarn; the condensing mechanism for compressing or condensing said strands of material severally while being so drawn; and the means for operating said rings, combs, twisting-rolls, and mechanisms, substantially as hereinbefore set forth.

9. In the herein-described machine for spinning or making yarn from fibrous materials, the combination of the doffer-rings for receiving the material in many or numerous narrow and separate sections or subdivisions; the twisting and wipe rolls for coöperating with said rings respectively to collect therefrom and roll up and compress the said sections or subdivisions of material severally into fibrous rolls and revolve said fibrous rolls; the winding mechanism for drawing said rotating fibrous rolls severally, as they form, lengthwise of themselves into strands of yarn and winding said yarn; the condensing mechanism for compressing or condensing said strands of material severally while being so drawn; and the means for operating said rings, said twisting and wipe rolls and said mechanisms, substantially as hereinbefore set forth.

10. In the herein-described machine for spinning or making yarn from fibrous materials, the combination of the doffer-rings for receiving the material in many or numerous narrow and separate sections or subdivisions; the individual doffing-combs for accompanying said rings and vibrating up and down across the surfaces thereof respectively; the twisting-rolls for coöperating with said rings and combs respectively to collect from said rings and roll up and compress said sections or subdivisions of material severally into fibrous rolls and revolve said fibrous rolls; the side-drawing mechanism for drawing said rotating fibrous rolls severally, as they form, lengthwise of themselves into strands of yarn; the condensing mechanism for compressing or condensing said strands of material severally while being so drawn; and the means for operating said rings, combs, twisting-rolls, and mechanisms, substantially as hereinbefore set forth.

11. In a machine for spinning or making yarn from fibrous materials, the combination of a doffer for receiving the material; a twisting and wipe roll for coöperating with such doffer to collect therefrom and roll up and compress the material into a fibrous roll and revolve such fibrous roll; side-drawing mechanism for drawing such rotating fibrous roll, as it forms, lengthwise of itself into yarn; condensing mechanism for compressing or condensing the material while being so drawn; and means for operating said doffer and said twisting and wipe roll, substantially as hereinbefore set forth.

12. In a machine for spinning or making yarn from fibrous materials, the combination of a doffer for receiving the material; a doffing-comb for accompanying said doffer and vibrating up and down across its surface: a twisting-roll for coöperating with such doffer and comb to collect from the doffer and roll up and compress the material into a fibrous roll and revolve said fibrous roll; winding mechanism for drawing said rotating fibrous roll, as it forms, lengthwise of itself into yarn and winding said yarn; condensing mechanism for compressing or condensing said material while being so drawn; and means for operating said doffer, comb and twisting and wipe roll, substantially as hereinbefore set forth.

13. In machinery for making yarn from fibrous material, the combination of means for carding the material, with cylinders clothed with numerous narrow rings of card-clothing, on each at predetermined intervals apart, to subdivide the carded material into numerous narrow and separate sections, and means for simultaneously drawing away from said rings respectively, sidewise thereof, the said sections of fibrous material, and spinning the same into yarn, substantially as hereinbefore described.

611,109. MACHINERY FOR MANUFACTURING YARN FROM FIBROUS MATERIALS. WILLIAM H. DRURY, Waltham, Mass. Filed July 22, 1898. Serial No. 686,600. (No model.)

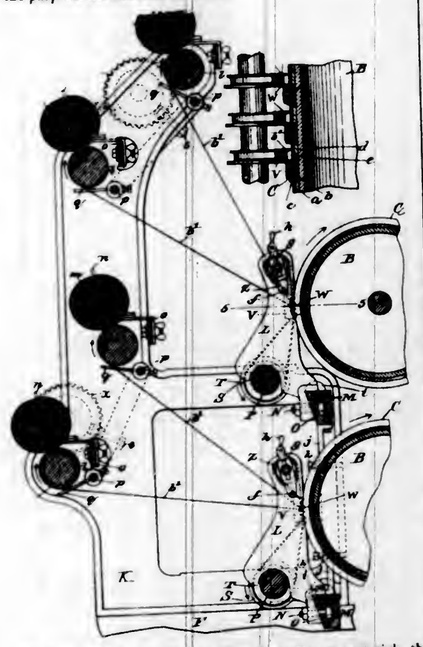
Claim.—1. In machinery for making yarn from fibrous materials, the combination with means for carding the material, of a plural number of series of doffer-rings, at predetermined intervals apart in each series, to subdivide the carded material into numerous narrow and separate sections; corresponding condensing devices accompanying said rings respectively to continuously remove therefrom the said fibrous sections, roll them up and revolve the fibrous rolls thus formed and condense and twist the yarn produced therefrom; means to simultaneously draw said rotating fibrous rolls, as they form, sidewise of said rings and through said condensing devices into yard; and means for operating said rings, and said condensing devices, substantially as and for the purposes hereinbefore set forth.

2. In machinery for making yarn from fibrous materials, the combination with means for carding the material, of cylinders clothed with numerous narrow rings of card-clothing at predetermined intervals apart on each cylinder to subdivide the carded material into numerous narrow and separate sections; corresponding condensing devices accompanying said rings respectively and continuously remove therefrom the said fibrous sections, roll them up and revolve the fibrous rolls thus formed and condense and twist the yarn produced therefrom: means to simultaneously draw said rotating fibrous rolls, as they form, sidewise of said rings and through said condensing devices into yarn; and means for operating said cylinders and condensing devices, substantially as and for the purposes hereinbefore set forth.

3. In machinery for making yarn from fibrous materials, the combination with means for carding the material, of a doffer; a condensing device to continuously remove the fibrous material from said doffer, roll it up and revolve the fibrous roll thus formed and condense and twist the yarn produced therefrom: means to simultaneously draw said rotating fibrous roll, as it forms, sidewise of said doffer and through said condensing device into yarn; and means for operating said doffer and said condensing device, substantially as and for the purposes hereinbefore set forth.

4. In machinery for making yarn from fibrous materials, the

combination with means for carding the material, of a plural number of series of doffer-rings at predetermined intervals apart in each series to subdivide the carded material into numerous narrow and separate sections; corresponding twisting-rolls to accompany said rings respectively; corresponding condensing devices accompanying said rings and said rolls and to coöperate therewith to continuously remove from said rings the said fibrous sections, roll them up and revolve the fibrous rolls thus formed and condense and twist the yarn produced therefrom; and means to simultaneously draw said rotating fibrous rolls, as they form, sidewise of said rings and through said condensing devices into yarn; and means for operating said rings, said twisting-rolls and said condensing devices, substantially as and for the purposes hereinbefore set forth.



5. In machinery for making yarn from fibrous materials, the combination with means for carding the material, of cylinders clothed with numerous narrow rings of card-clothing at predetermined intervals apart on each cylinder to subdivide the carded material into numerous narrow and separate sections; corresponding twisting-rolls to accompany said rings respectively; corresponding condensing devices accompanying said rings and said rolls and to coöperate therewith to remove from said rings the said fibrous sections, roll them up and revolve the fibrous rolls thus formed and condense and twist the yarn produced therefrom; means to simultaneously draw said rotating fibrous rolls, as they form, sidewise of said rings and through said condensing devices into yarn; and means for operating said rings, said twisting-rolls and said condensing devices, substantially as and for the purposes hereinbefore set forth.

6. In machinery for making yarn from fibrous materials, the combination with means for carding the material, of a doffer; a twisting-roll to accompany said doffer; a condensing device accompanying said doffer and a twisting-roll and to coöperate therewith to remove the fibrous material from said doffer, roll it up and revolve the fibrous roll thus formed; means to simultaneously draw said rotating fibrous roll, as it forms, sidewise of said doffer and through said condensing device into yarn; and means for operating said doffer, and twisting-roll and said condensing device, substantially as and for the purposes hereinbefore set forth.

7. In machinery for making yarn from fibrous materials, the combination with means for carding the material, of a plural number of series of doffer-rings at predetermined intervals apart in each series to subdivide the carded material into numerous narrow and separate sections; corresponding doffing-combs to accompany said rings respectively; corresponding condensing devices accompanying said rings and said combs and to coöperate with said combs to remove from said rings the said fibrous sections and to roll up said fibrous sections and revolve the fibrous rolls thus formed and condense and twist the yarn produced therefrom: means to simultaneously draw said rotating fibrous rolls, as they form, sidewise of said rings and through said condensing devices into yarn; and means for operating said parts, substantially as and for the purposes hereinbefore set forth.

8. In machinery for making yarn from fibrous materials, the combination with means for carding the material, of cylinders clothed with numerous narrow rings of card-clothing at predetermined intervals apart on each cylinder to subdivide the carded material into numerous narrow and separate sections; corresponding doffing combs to accompany said rings respectively; corresponding condensing devices accompanying said rings and said combs and to coöperate with said combs to remove from said rings the fibrous sections and to roll up said fibrous sections and revolve the fibrous rolls thus formed and condense and twist the yarn produced therefrom: and means to simultaneously draw said rotating fibrous rolls, as they form, sidewise of said rings and through said condensing devices into yarn, and means for operating said parts, substantially as and for the purposes hereinbefore set forth.

9. In machinery for making yarn from fibrous materials, the combination with means for carding the material, of a doffer; a doffing-comb; a condensing device to coöperate with said comb to remove the fibrous material from said doffer and to roll up said fibrous material and revolve the fibrous roll thus formed and condense and twist the yarn produced therefrom; means to simultaneously draw said rotating fibrous roll, as it forms sidewise of said doffer and through said condensing device into yarn: and means for operating said parts, substantially as and for the purposes hereinbefore set forth.

10. The combination with the ring-doffer of power-driven condensing-straps located in or opposite to the intervals between the doffer-rings, with their meeting faces in a plane tangential, or approximately so, to their respective doffer-rings, substantially as and for the purposes hereinbefore set forth.

11. The combination with the ring-doffer of power-driven condensing-straps located in, or opposite to, the intervals between the doffer-rings with their meeting faces in a plane tangential, or approximately so, to their respective doffer-rings, and guides for conducting the fibrous material from the several doffer-rings to and from the appropriate condensing-straps, substantially as and for the purposes hereinbefore set forth.

12. The combination with the ring-doffer of power-driven condensing-straps located in, or opposite to, the intervals between the doffer-rings, with their meeting faces in a plane tangential, or approximately so, to their respective doffer-rings, guides for conducting the fibrous material from the several doffer-rings to and from the appropriate condensing-straps, and means for adjusting said straps and guides, substantially as and for the purposes hereinbefore set forth.

611,110. APPARATUS FOR BURNING AND GRINDING LIME AND CEMENT. GEORGE DURYEE, Orange, N. J. Filed Aug. 22, 1896. Serial No. 603,502. (No model.)

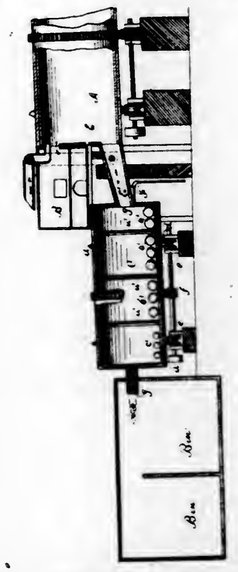
Claim.—1. An apparatus for burning and grinding lime and cement clinker, comprising a rotary burning-cyliuder, a rotary grinding-cylinder in line with the burning-cylinder, a connection by which the cylinders have direct communication, a pipe connecting with the grinding cylinder for injecting moisture thereinto, an elevated fuel-furnace mounted over the inlet end of the grinding-cylinder, at the discharge end of the burning-cylinder, and having an opening into the latter, and a hot-air-blast pipe extending through the crown of the fuel-furnace and through the opening thereof and discharging directly into the burning-cylinder; substantially as described.

2. The combination of a rotary burning-cylinder, an elevated fuel-furnace, a communication between said burning-cylinder and furnace, air-blast devices located at the adjacent portions of the burning-cylinder and furnace, a rotary grinding-cylinder, a connecting-pipe between the cylinders, a hot-air pipe connecting the blast devices with the connecting-pipe, and a pipe connected with the grinding-cylinder to inject moisture into the latter, substantially as set forth.

3. The combination of a rotary burning-cylinder, an elevated combustion-chamber or fuel-furnace, a communication between said burning cylinder and furnace, blast devices located at the adjacent upper portions of the burning-cylinder and furnace, a hot-air pipe connected with the blast devices and discharging at the outlet to the burning-cylinder, a rotary grinding-cylinder provided with a series of basins on its interior, having balls therein so arranged as to crush the hot and soft clinker, relatively heavy balls being located in the basin nearest the burning-cylinder and successively lighter balls in the following basins, a connection between the cylinders, a receiving-bin, and means for discharging the ground cement into the bin: substantially as described.

4. The combination of a rotary burning-cylinder, an elevated combustion-chamber or fuel-furnace, a communication between said burning-cylinder and furnace, blast devices located at the adjacent upper

portions of the burning-cylinder and furnace, a hot-air pipe connected with the blast devices and discharging at the outlet to the burning-cylinder, a rotary grinding-cylinder provided with a series of basins on its interior, having balls arranged therein so as to crush the hot and soft clinker, relatively heavy balls being located in the basin nearest the burning-cylinder and successively lighter balls in the following basins, a connection between the cylinders, a receiving-bin, and connections for blowing the ground cement into the bin; substantially as described.



611,111. BROWN DYE AND PROCESS OF MAKING IT. EMIL ELSAESSER, Barmen, Germany, assignor to Dahl & Co., same place. Filed Dec. 21, 1897. Serial No. 662,919. (No specimens.) Patented in Germany July 19, 1897, No. 95,758.

Claim.—1. The process of making a brown diazo dyestuff for dyeing cotton, by combining the sodium bisulfite compound of nitroso-beta-naphthol in an acetic-acid solution with a tetrazo compound, such as tetrazo-diphenyl and tetrazo-ditolyl, and then combining the intermediate product thus formed with an alkaline solution of beta$_1$ amido alpha$_4$ naphthol beta$_2$ sulfonic acid.

2. A brown dyestuff in the form of a dark powder derived from a combination of the sodium-bisulfite compound of nitroso-beta-naphthol with a tetrazo compound and beta$_1$ amido alpha$_4$ naphthol beta$_2$ sulfonic acid, the said dyestuff, readily dissolving in water, being soluble in sulfuric acid with a blue color and on the addition of water to its sulfuric-acid solution a brown-violet precipitate is thrown down, and dyeing unmordanted cotton in a neutral or alkaline bath dark brown.

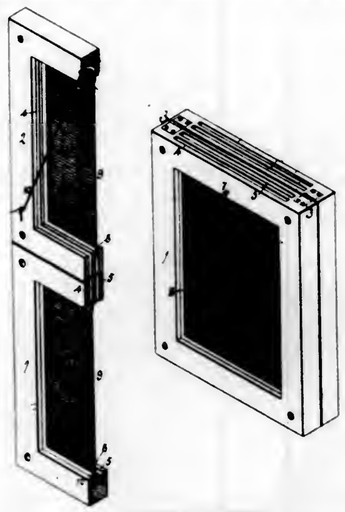
611,112. BLUE-BLACK DYE AND PROCESS OF MAKING SAME. EMIL ELSAESSER, Barmen, Germany, assignor to Dahl & Co., same place. Filed Dec. 31, 1897. Serial No. 665,070. (No specimens.)

Claim.—1. The process of making a direct-dyeing blue-black cotton dyestuff consisting in allowing sulfid of sodium to act upon alpha$_1$ alpha$_4$ dinitronaphthalene alpha$_2$ monosulfonic acid.

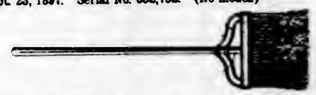
2. A blue-black dyestuff in the form of a dark powder derived from a combination of alpha$_1$ alpha$_4$ dinitronaphthalene alpha$_2$ monosulfonic acid with sulfid of sodium, the said dyestuff dyeing unmordanted cotton in an alkaline bath dark blue to blue black being readily soluble in water with a blue-black color and dissolving in concentrated sulfuric acid with a brown-black color which on diluting with water passes to brown, whereby a brown precipitate is separated off.

611,113. WINDOW-SCREEN. LUTE A. FIELD, Janesville, Wis. Filed Dec. 13, 1897. Serial No. 661,637. (No model.)

Claim.—A window-screen composed of two sections hinged together and each provided with two grooves coinciding with each other when the sections are in their extended position, a screen-frame for each groove, whereby the frames can be moved into either section.

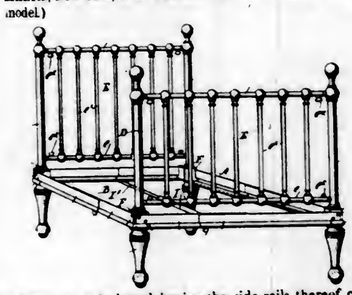


611,114. BRUSH. DRYDEN B. FORWARD, Alturas, Cal. Filed Sept. 23, 1897. Serial No. 652,752. (No model.)



Claim.—A brush, the bristles of which are formed in groups each group being composed of a plurality of strands of wire bent double at an intermediate point, the portion of the wires adjacent to the band being twisted spirally and the ends of the wires being free.

611,115. EXTENSION-BED. ALFRED W. FURNIVALL and HENRY MARTIN, New York, N. Y. Filed Oct. 13, 1897. Serial No. 655,058. (No model.)



Claim.—1. A bedstead having the side rails thereof composed of plates each having a vertical and a horizontal flange, the plates being fitted to slide one upon the other, and having interlocking engagement whereby side displacement is prevented, substantially as described.

2. A bedstead having the side and end rails thereof each composed of plates having a vertical and a horizontal flange, the plates at the angle being formed to slide one within the other and lock against side displacement, substantially as described.

3. A bed-rail formed of plates bent into angle shaped bars which at the angles form bulbs adapted to slide one within the other and to lock the two against side displacement, substantially as described.

4. A bed-rail consisting of plates each bent to form a vertical and a horizontal flange, and having the flanges joined by a bulb, the bulbs of the said plates sliding one within the other and locking against side displacement, the horizontal flange of the inner plate being narrower than that of the outer plate, for the purpose set forth.

5. A bed-rail consisting of plates each having a vertical and a horizontal flange and fitted to slide one upon the other, the horizontal flanges of said plates being provided with pins and the horizontal flange of the inner plate being narrower than that of the outer plate, substantially as described.

6. A bedstead having side and end rails, the end rails each consisting of angular plates having an interlocking engagement and fitted to slide one upon the other whereby the side rails are adjustable toward and from each other, the said side rails being provided with pins upon the inner part thereof, and springs composed of adjustable sections having eyes in their outer ends adapted to engage said pins, substantially as described.

7. A bedstead having side and end rails adjustable in length, the said rails each consisting of two plates having vertical and horizontal flanges, the plates being fitted to slide one upon the other and having an interlocking engagement whereby side displacement is prevented, the said side rails being provided with pins upon the horizontal flanges, and springs each composed of two adjustable sections having eyes in their outer ends to engage said pins, substantially as described.

8. A bed-spring consisting of a plurality of plates reversely curved or bent into an S shape and fitting one with the other, substantially as described.

9. A bed-spring consisting of a plurality of plates bent into an S shape and fitting one within the other, the edges of said plates being rolled over or beaded to prevent lateral displacement, substantially as described.

10. A bed-spring consisting of a plurality of plates reversely curved and fitting one within the other, the outer ends of said plates having holes therein by which they may be attached to the bed-rails, substantially as described.

11. A bed spring consisting of a plurality of plates reversely curved and fitting one within the other, one edge of each plate being rolled or beaded over the edge of the other plate to prevent lateral displacement, the outer ends of said plates having holes therein by which they may be attached to the bed-rails, substantially as described.

12. A bedstead having rails composed of two plates bent into angle form with the two flanges joined by a bulb, said bulbs sliding one within the other and locking the plates against lateral displacement, said plates having locking-holes, and a pin for securing them together, substantially as described.

13. A bedstead having side rails adjustable toward and from each other and springs therefor consisting of two sections, each composed of spring-plates reversely curved and telescoping one upon the other, means for securing the ends thereof to the side rails and a central support therefor extending longitudinally the bed, substantially as described.

14. A bedstead comprising side and end rails adjustable in length, adjustable springs each consisting of two plates reversely curved and fitting one within the other, means for securing the ends of the springs to the side rails, and an adjustable support for said springs consisting of two telescoping sections extending longitudinally of the bedstead and attached to the end rails, substantially as described.

15. A bedstead comprising side and end rails adjustable in length, each rail consisting of two plates bent into angle form with the two flanges joined by a bulb, the said bulbs sliding one within the other, and corner-supports attached to the said rails and provided with members for the attachment of head and foot pieces, substantially as described.

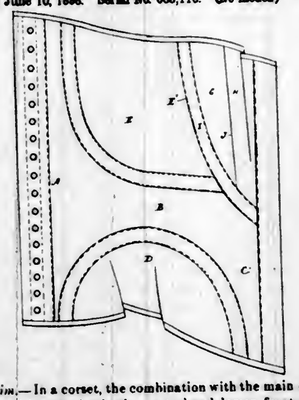
16. A bedstead comprising side and end rails adjustable in length, each rail consisting of angle-shaped plates forming flanges and having bulbs at the angle adapted to slide one within the other and to lock the plates against side displacement, corner-blocks secured to the said rails and provided with means for the attachment of head and foot pieces, the said corner-blocks being provided with beads engaging the ends of the bulb portion of the rails, substantially as described.

17. A bedstead having side and end rails, each end rail consisting of plates each having a vertical and a horizontal flange, and the plates being adapted to slide one upon the other, a portion of one plate engaging the other to lock the two against displacement, and corner-posts attached to the rails and having an adjustable connection with the head and foot pieces, substantially as described.

18. A bedstead comprising side and end rails each consisting of angle-shaped plates having bulbs at the angles adapted to slide one within the other, corner-blocks attached to the said rail, corner-posts carried by the said blocks, and head and foot pieces having adjustable connection with the said posts, substantially as described.

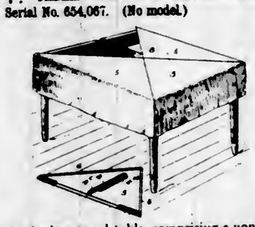
19. A bedstead comprising side and end rails adjustable in length, each rail consisting of angle-shaped plates fitted to slide one upon the other and having interlocking engagement whereby side displacement is prevented, corner blocks secured to the said rails and provided with legs, corner-posts carried by the said blocks, head and foot pieces having adjustable connection with the said posts, springs consisting of adjustable sections, means for securing the ends of the springs to the side rails, and an adjustable central support for said springs attached to the end rails, substantially as described.

611,116. CORSET. THOMAS S. GILBERT, New Haven, Conn. Filed June 10, 1896. Serial No. 683,118. (No model.)



Claim.—In a corset, the combination with the main or body portion comprising the back, the central and lower front section, of a hip-section, an upper side section, and a bust-gore secured to the forward edge of the upper side section and extending downward below the upper edge of the central or body portion, substantially as described.

611,117. TABLE. WILFRID M. GRACE, Chicago, Ill. Filed Oct. 4, 1897. Serial No. 654,067. (No model.)



Claim.—1. An improved table, comprising a non-extensible supporting-frame and a top, formed entirely of a series of detachably-held sections, each section having an independent cover detachably secured thereto and forming an independent top portion, said sections each having a locking means for holding it from outward movement, whereby when one section is fitted in place it is held nested with the other sections to form a complete table-top, said sections and their locking means being so arranged and constructed as to permit of the free removal of one or more sections or the replacing of one or more sections without disturbing the remaining sections, as specified.

2. A table, having a top formed of a series of sections, each having a separate cover, and the removable frames for securing the covers thereto, said frames having lock means whereby to be secured to the said sections as set forth.

3. A table-frame having guide-grooves provided with lock portions, of top sections, having guides to fit the grooves, and finger-released lock-catches to engage the said lock portions as specified.

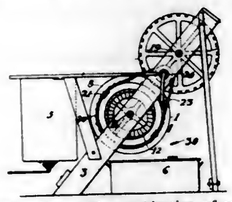
4. A table, having the top formed of a series of independent removable sections, each of said sections being provided with a removable cover, a removable hinged frame adapted to keep the said cloth in position, said hinged frame being provided at its ends with a lock-bolt adapted to engage with suitable locking mechanism on the said table-section.

5. The combination with the table-frame, provided with cross-bars, each of said cross-bars being provided with a channel-way terminating in a ratchet-lock, the sections each provided with pendent guides having grooves formed therein and a spring ratchet-lock at the end of said pendent guides.

611,118. POP-CORN PRESS. AARON C. GRUBE, Los Angeles, Cal., assignor of one-half to William J. Sofield, Peoria, Ill. Filed Sept. 3, 1897. Serial No. 650,426. (No model.)

Claim.—1. In a pop-corn press the combination, of a wheel having a series of molds, a series of plungers movably supported in said

wheel, a cam for giving outward direction to said plungers and means for connecting said plungers movably to each other, substantially as set forth.



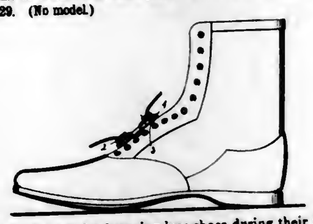
2. In a pop-corn press the combination, of an open wheel having a series of molds on its periphery, a series of radially-extending plungers, a cam upon which the inner ends of said plungers ride, and a flexible cord connecting said plungers with each other, substantially as set forth.

3. In a pop-corn press the combination of an open wheel having a series of molds, a series of movable plungers, flanges located on each side of said plungers, cross-rods extending through said flanges and between the plungers, and a cam for giving outward direction to said plungers, substantially as set forth.

4. In a pop-corn press the combination, of an open wheel, a series of plungers, a series of molds, means for moving said plungers, a pressure-wheel having a series of dies adapted to enter said molds and intervening spaces between said dies adapted to straddle the division-walls between the adjoining molds, substantially as set forth.

5. In a pop-corn press the combination, of a wheel having a series of plungers, a series of molds, division-strips between the molds, a pressure-wheel having a series of dies which decrease in width inwardly, and a series of spaces between said dies which increase in width inwardly and means for operating said mechanism, substantially as set forth.

611,119. LACER. WILLIAM H. HALL, Newton, N. J., assignor of one-half to John Toser, same place. Filed Jan. 29, 1898. Serial No. 668,429. (No model.)



Claim.—A lacer for fastening lace-shoes during their process of manufacture, consisting of a base or body portion having eyes or holes for the passage of the lace and provided near each end with a spirally-coiled elastic lace-grip secured to the base or body portion and serving to clamp or grip the lace when inserted between the elastic coils thereof, and the lace passed through the eyes or holes of the base or body portion, and subsequently inserted between the lace-grips, substantially as described.

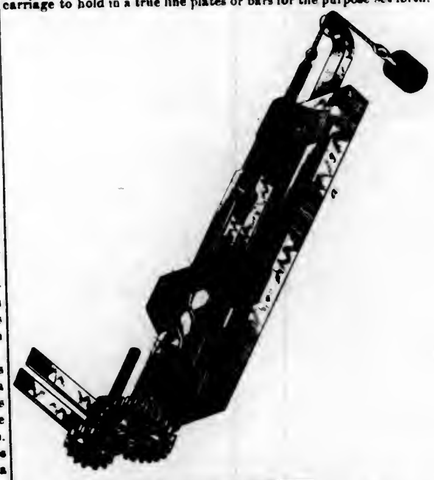
611,120. AUGER-TWISTING MACHINE. WILLIAM M. HAMILTON, Clinton, Ind. Filed Feb. 8, 1898. Serial No. 669,579. (No model.)

Claim.—1. A twisting machine having a frame, head-blocks at each end thereof, a revolving clamp working in one of said head-blocks, a laterally-moving weight-actuated clamp working in the other, the metal bar to be twisted being secured between said clamps, a traveling carriage having rollers bearing rotatably on said metal bar, and controlling the twist thereof and gearing graduated to operate the twisting-clamp and traveling carriage as desired, substantially as set forth.

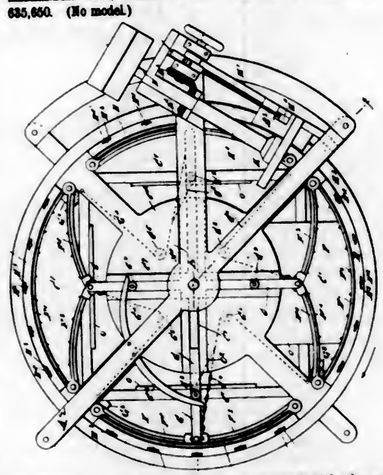
2. In a twisting-machine the combination of the frame, the clamps, a traveling carriage, a worm-screw carrying said carriage, rollers journaled within said carriage and adapted to hold and control the twist of the metal to be bent, substantially as set forth.

3. In a twisting-machine the combination of the frame, the guide-ribs formed longitudinally thereon, a traveling carriage running on said frame, rollers carried by said carriage adapted to guide and control the twist of the metal, a worm-screw moving said carriage and operated by the gearing arranged in the proper ratio to the twisting-gearing to form the desired pitch or thread, substantially as set forth.

4. A movable guide-carriage for twisting machines or the like, comprising the head having its base undercut holding a guide-toe, a downwardly central projection adapted to carry a screw, the upwardly-projecting jaws arranged to form a chamber between them, antifriction-rollers working in said chamber and journaled in said carriage to hold in a true line plates or bars for the purpose set forth.



611,121. GRAIN-BAGGING MACHINE. JAMES W. HENRY and ALEXANDER GUNN, Wallace, Idaho. Filed May 8, 1897. Serial No. 635,650. (No model.)



Claim.—1. A grain-bagging machine provided with a bag-carrier having bag-holders and mounted to rotate, a shaft having a rotary motion, an eccentric held on the said shaft, a reciprocating block connected with the eccentric-rod of the said eccentric, and a bell-crank lever engaged by the said block and provided with a tooth adapted to engage a gear-wheel on the said bag-carrier so as to rotate the latter, substantially as shown and described.

2. A grain-bagging machine provided with a bag-holder having a fixed jaw, pins extending through openings in the said jaw a block fitted to slide and carrying the said pins, a segment having pins engaging angular recesses or grooves on the said block, and means for imparting a sliding motion to the said segment, as set forth.

3. The combination of an eccentric, a rod driven thereby, a block reciprocated by the rod, a bell-crank lever having connection with the block so as to be oscillated thereby, a support whereon said bell-crank lever is mounted, and a gear engaged and driven by the bell-crank lever.

4. The combination of a support, a bell-crank lever mounted thereon, a reciprocal block carried adjacent to the support and engaging the bell-crank lever, a gear driven and engaged by the bell-crank lever, and a spring-pressed dog carried by the support and co-acting with the gear to prevent retrograde movement thereof.

5. In bag-holding jaws, the combination of a ring, a segmental block having a diagonal groove formed therein, the segmental block being movable laterally on the ring, a pin carried by the segmental block, a segment movable longitudinally on the ring and having a portion projected into the groove of the segmental block, and means for imparting movement to the segment.

6. The combination with a frame, of a bag-carrier turning thereon, jaws held by the bag carrier and capable of engaging the mouth of the bag, a sprig actuating one of the jaws, and a cam held by the frame and engaged by a portion of the jaws as the jaw swings whereby to move the spring-pressed jaw against the spring thereof.

7. The combination of a revoluble member having notches formed therein, a stationary casing adjacent to said revoluble member, two blocks sliding in the casing and having a pin-and-recess connection with each other, a bell-crank lever fulcrumed on one block and having connection with the other block, the bell-crank lever engaging in the notches of the said revoluble member, and means for reciprocating the last-named block.

8. The combination with a member to be driven, of a casing held stationary adjacent thereto, two blocks sliding in the casing and having a pin-and-recess connection, a bell-crank lever fulcrumed to one block and engaged to the remaining block, and means connected with said remaining block for reciprocating the same.

9. The combination with a member to be driven, of a casing adjacent thereto, two blocks slidable within the casing and having limited independent movement, a bell-crank lever fulcrumed in one block and engaged by the other, the bell-crank lever serving to engage said member to be driven, and means for reciprocating the last-named block.

10. The combination with a member to be driven, of a casing, two blocks sliding in the casing and having limited independent movement, and a bell-crank lever mounted on one block and engaged with the other, the bell-crank lever engaging said other member to be driven and being rocked and slid by the action of the two blocks.

11. In a grain-bagging machine, the combination of a frame having a base and columns mounted thereon and supporting a top plate, a revoluble shaft mounted vertically in the frame, a bag-carrier mounted on the shaft to turn therewith, the bag-carrier having a table and a top adjustably connected with each other, means for rotating the bag-carrier, a dumping-board carried by the bag-carrier and mounted to swing on the bag-carrier and serving to eject the bag from the same, means in connection with the dumping-board whereby to operate the dumping-board, and means held by the top of the carrier whereby to hold the bag during the filling thereof.

12. In a grain-bagging machine, the combination with a frame of a revolubly-mounted bag-carrier situate therein, a dumping-board mounted to swing on the bag-carrier and serving to eject the bag, a chain in connection with the dumping-board, an arm mounted to slide vertically on the bag-carrier and connected with the chain, and a foot-piece attached to the lower end of the arm whereby to operate the dumping-board.

13. A grain-bagging machine having a revoluble bag-carrier, provided with a table and with a top held above the table and turning therewith, a dumping-board mounted on the bag-carrier and between the table and top, and jaws mounted on the top above the dumping-board, the jaws serving to hold the bag during the filling thereof.

14. In a grain-bagging machine the combination with a frame, of a revoluble bag-carrier mounted on the frame and having a fixed segmental jaw, two movable segmental jaws pivotally mounted on the bag-carrier and coacting with the fixed jaw, a bar pivotally connected with the movable jaws and sliding radially on the bag-carrier, and a fixed cam carried by the frame and serving to reciprocate the bar on the bag-carrier to actuate the movable jaws.

15. In a grain-bagging machine, the combination of a frame, a cam carried thereby, a bag-carrier turning in the frame, a fixed jaw formed on the bag-carrier, a movable jaw mounted on the bag-carrier, and a radially-movable bar carried by the bag-carrier and connected with the movable jaw and reciprocated by the cam of the frame as the bag-carrier turns therein whereby to operate the movable jaw.

16. The combination of a movable and a stationary jaw, the latter comprising a ring, a segmental block mounted thereon and movable radially with reference to the ring, the segmental block having a diagonally-disposed slot therein, a segment fitted to slide circumferentially on the top of the ring and having a pin depending therefrom and extending into the slot of the first-named segmental block and movable with the same, the pin extending through a portion of the ring.

17. The combination of a movable jaw and a stationary jaw, the latter comprising a ring, a segmental block mounted thereon and movable radially with reference to the ring, a pin carried by the segmental block and extending through a portion of the ring and movable with the segmental block, the segmental block also having a diagonally-disposed slot therein, a segment mounted to slide circumferentially on the top of the ring and having a pin fitted in the slot of the first named segmental block whereby to move the block, and a rock-shaft having a crank engaging the segment by which to move the segment.

18. The combination of a movable jaw and a stationary jaw, the latter comprising a ring, a segmental block movable thereon, a pin carried by the segmental block and moving with the same relatively to the ring, and means having connection with the segmental block and serving to transmit movement thereto.

19. The combination of a movable jaw and a stationary jaw, the latter comprising a ring, a segmental block mounted and movable thereon, a pin carried by the segmental block and moving with the same relatively to the ring, and a segment movable circumferentially with the ring and having connection with the segmental block whereby to move the same.

20. A grain-bagging machine having a frame, and a revoluble bag-carrier mounted thereon, the bag carrier having a table and a top in connection with each other, the top having a ring, and the top also having a movable jaw and a stationary jaw, the latter comprising a jaw proper formed on the ring, a segmental block movable radially on the top of the ring, pins carried by the segmental block and moved with the same, and a segment mounted on the ring and movable circumferentially thereon, the segment having connection with the segmental block whereby to move the same.

21. A grain-bagging machine having a frame, and a revoluble bag-carrier mounted therein, the bag-carrier having a movable jaw and a stationary jaw, the latter comprising a jaw proper and a ring on which the jaw proper is formed, a segmental block mounted on the ring and movable radially with reference thereto, pins carried by the segmental block, the segmental block having a diagonally-disposed slot or groove formed therein, and a segment mounted to slide circumferentially on the ring, the segment being provided with a pin projecting into the slot or groove of the segmental block to move said block radially.

22. A grain-bagging machine having a frame, a revoluble bag-carrier mounted therein and comprising a table, and a top sustained adjustably above the table, a dumping-board mounted on the bag-carrier between the top and the table, means for operating the dumping-board to eject a bag from the table, a stationary jaw formed on the top of the bag-carrier at a point adjacent to the dumping-board, a movable jaw mounted adjacent to the stationary jaw and coacting therewith, a rod carried by the bag-carrier and connected with the movable jaw, a cam carried upon the frame and serving to mobilize the movable jaw, through the medium of the rod, the jaw serving to hold the bag in open and closed positions, and means for sewing the bag when held in closed position by the jaws.

23. In a grain-bagging machine, the combination of a frame, a revoluble bag-carrier mounted thereon, a dumping-board mounted on the bag-carrier, a stationary jaw located on the bag-carrier above the dumping-board, pins normally projecting inward from the stationary jaw, means for sliding the pins in and out of said jaw, and a second jaw carried by the bag-carrier and movable toward and from the stationary jaw, the second jaw being provided with pins and the two sets of pins serving to engage the bag, the pins of the stationary jaw being movable or retractable to permit the bag to be thrown outward by the dumping-board.

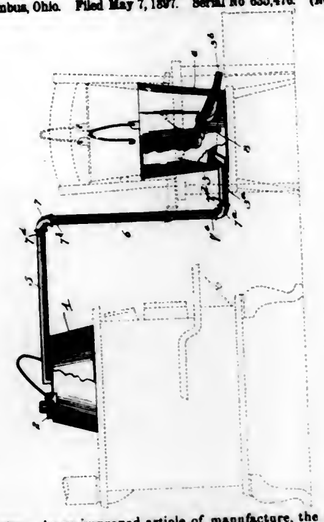
611,122. SCHOOL WASTE-POKE. RETTA HIMS and MARY H. CURTISS, Warsaw, Ind. Filed Dec. 20, 1897. Serial No. 662,772. (No model.)



Claim.—The herein-described waste poke or receptacle for use upon school-desks, said receptacle being open at its upper end, and

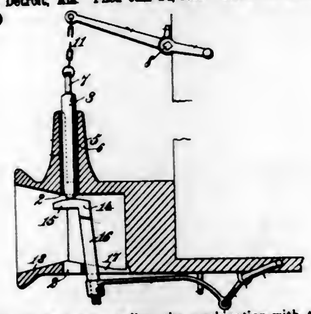
a wire inclosed by one side or flap of said poke or receptacle and having projecting ends, one of which is bent to form an S-shaped hook, and the other end to form a laterally-extending arm, substantially as specified.

611,123. DOMESTIC WATER-DISTILLER. JOHN R. HICKS, Columbus, Ohio. Filed May 7, 1897. Serial No. 635,476. (No model.)



Claim.—As an improved article of manufacture, the herein-described portable still for domestic or kitchen use comprising in combination the steam-tight boiler 1, adapted to be placed upon a kitchen-stove and having the metal pipe 5 connected with the top thereof and projecting considerably beyond the sides thereof, a cooler-bucket 4 having at the bottom thereof a cone-shaped condenser 3, a short horizontal metal pipe 3^a connected with the lower side of the larger end of said condenser for the purpose explained, and the metal pipe 6 threaded or swiveled to pipes 5 and 3^a so that the bucket and condenser may be swung or oscillated with respect to pipe 5 to raise or lower the condenser, the said pipe also being detachably connected with pipes 5 and 3^a, substantially as shown and described

611,124. CAR-COUPLING. WILLIAM H. HOPKINS and JAMES S. EVANS, Detroit, Ala. Filed Jan. 24, 1898. Serial No. 667,758. (No model.)

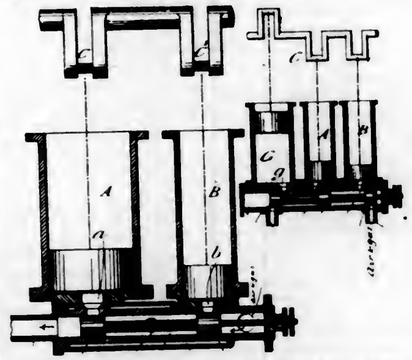


Claim.—1. In a car-coupling, the combination with the draw-head, of a block arranged to move both vertically and longitudinally therein, said block being provided at its front edge with a forwardly-projecting overhanging flange adapted to engage the end of the link or hold the pin elevated, an arm rigid with said block and projecting downward through a slot in the bottom of the draw-head, a lever rigidly attached at one end to said arm, and means for simultaneously rocking and reciprocating said lever, substantially as described and for the purpose specified.

2. In a car-coupling, the combination with the draw-head provided with a rearwardly and downwardly inclined bottom having an elongated slot formed therein, of a block arranged in the draw-head and provided at its front edge with a forwardly-projecting overhanging flange, an arm rigid with said block and projecting downward through said slot, a lever rigidly attached at its forward end to the lower end of said arm and curved downward at its rear end, a guide on the under side of the draw-head through which the lever passes, and means for moving the rear end of the lever in the arc of a circle, substantially as described, and for the purpose specified.

3. In a car-coupling, the combination with the draw-head having a rearwardly and downwardly inclined bottom having an elongated slot formed therein, of a block arranged in the draw-head and provided at its front edge with a forwardly-projecting overhanging flange, an arm rigid with said block and projecting downward through said slot, a lever rigidly attached at its forward end to the lower end of said arm and curved downward at its rear end, a guide on the under side of the draw-head through which the lever passes, and a rock-shaft provided with a crank loosely connected to the rear end of the lever, substantially as described

611,125. GAS OR OIL MOTOR ENGINE. HERBERT A. HUMPHREY, Northwich, England. Filed Nov. 30, 1897. Serial No. 660,261. (No model.) Patented in England Jan. 5, 1895, No. 347.



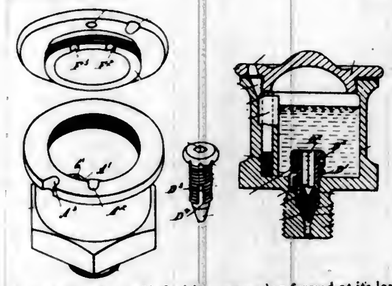
Claim.—1. The combination of a working cylinder, a pumping-cylinder, pistons therein, a crank-shaft to which both pistons are connected, a combined valve and combustion chamber communicating with each of said cylinders by separate ports and inlet and outlet ports leading into said chamber, with a pair of valves in said chamber adapted, when shifted in one position to simultaneously establish communication between the inlet-port and pump-cylinder, and between the working cylinder and space between the valves; and when shifted to another position to establish communication between the working cylinder and the outlet-port, and between the pumping-cylinder and the space between the valves between the pistons, for the purpose and substantially as described.

2. The combination of a pumping and a working cylinder, and a combined exploding and valve chamber communicating with each of said cylinders by separate ports, and having inlet and exhaust ports at its opposite ends, with a check-valve in said chamber intermediate the valves, and a pair of valves in said valve-chamber adapted to first establish communication between the inlet and the pumping cylinder, and between the space between the valves and the working cylinder, and then to establish communication between the working cylinder and the outlet, and between the pump-cylinder and the space between the valves; and means for opening the check-valves during part of the return stroke of the pistons, for the purpose and substantially as described.

3. The combination in a gas or oil motor engine, of a pumping-cylinder, a primary and secondary working cylinder, the pistons in said cylinders, and the crank-shaft to which all said pistons are connected substantially as described; with a combined exploding and valve chamber having single-port communication with one end of each cylinder, triple valves in said valve-chamber rigidly connected to a common rod, an inlet-port at one end of said chamber, and an outlet-port at the other end, and a valve arranged intermediate the first and second valves, and means for operating said valves, all for the purpose and substantially as described.

611,126. LUBRICATOR. WILLIAM HUNT, Winnipeg, Canada. Filed Sept. 11, 1897. Serial No. 651,330. (No model.)

Claim.—1. A lubricator provided with a cup formed with a discharge-passage, a screw-plug screwing in the said cup at the discharge-passage, and being formed at its lower end with a valve, the plug having a central bore a portion of which is filled with a fusible material and the upper non-filled portion of the bore being in communication with a transverse hole leading at its end to an external groove for conducting the lubricant to the said valve, substantially as shown and described.



2. A lubricator, provided with a screw-plug formed at its lower end with a valve and having a central bore, a portion of which is filled with a fusible material, the upper non-filled portion being in communication with a transverse hole leading at its ends to grooves, for conducting the lubricant to the said valve, substantially as shown and described.

3. A lubricator provided with a cup having an internal filling-opening, a cap screwing on the said cup having a filling-aperture adapted to register with the said opening for filling the cup with lubricant, the cap being also formed with an undercut adapted to register with the said opening to admit air to the cup, and a spring-pressed bolt held to slide on the said cup, and adapted to engage one of a plurality of notches on the cap to lock the latter in place, substantially as shown and described.

4. A lubricator provided with a cup having on its upper end an internal filling-opening, and an external recess, spaced from the said opening and a cap screwing on the said cup and having a filling-aperture adapted to register with the said opening for filling the cup with lubricant and adapted to register with the said recess for cleaning the filling-aperture, substantially as shown and described.

5. A lubricator provided with a cup having on its upper end an internal filling-opening, and an external recess spaced from the said opening and a cap screwing on the said cup and having a filling-aperture adapted to register with the said opening for filling the cup with lubricant and adapted to register with the said recess for cleaning the filling-aperture, the cap being also formed with an undercut adapted to register with the said opening to admit air to the cup, and a spring-pressed bolt held to slide on the said cup and adapted to engage one of a plurality of notches on the cap to hold the latter in position, substantially as shown and described.

611,127. RAKE-HEAD. SYLVESTER H. JONES, Richmond, Ind., assignor to the Hoosier Drill Company, same place. Filed Nov. 22, 1897. Serial No. 659,453. (No model.)



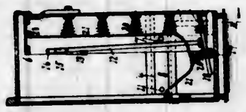
Claim.—1. In a rake-head, the combination of a base, an anchoring device provided on its inner face with a series of rectangular sockets, said base being adapted to lie against said anchoring device, hooks formed on the inner face of one edge of said device and adapted to engage over the edge of the base, means for clamping the other edge of the anchoring device to the other edge of the base, a series of rake teeth each provided with a bent-headed end adapted to lie within one of the rectangular sockets and to be clamped securely between said anchoring device and said base, substantially as described.

2. In a rake-head the combination of an angle-iron base, one or more anchoring-sections provided with hooks on the inner face at one edge of each section, said hooks being adapted to engage over an edge of the angle-iron base, and means for clamping the other edge of the section to the other edge of the angle-iron base, a series of angular sockets formed on the inner face of each section, a series of rake-teeth each provided with a bent end adapted to fit said sockets, whereby said teeth may be securely clamped in position between said sections and base, substantially as described.

3. In a rake-head the combination with an angle-iron base, one or more anchoring-sections provided with hooks adapted to engage over one edge of said base, bolt-holes provided in the other edge of said sections, bolts provided with hooks at one end adapted to be engaged over the other edge of said base, and to be secured within said bolt-holes, one or more angular sockets formed in the face of each section and adapted to lie against one face of said base, and rake-teeth having headed ends bent to fit said sockets, whereby they may be clamped in position between said sections and base, substantially as described.

4. In a rake-head, the combination of an angle-iron base, one or more anchoring-sections adapted to lie against one face of said base, hooks formed on said sections and adapted to engage over an edge of the base, means for clamping the sections in any desired lateral adjustment on said base, a series of tooth-sockets formed in the faces of said sections and adapted to hold a series of teeth nested in said sockets, substantially as described.

611,128. FOLDING BED. BERNARD KRELLENSTEIN, New York, N. Y., assignor of one-half to Moses Crystal, same place. Filed Apr. 8, 1898. Serial No. 676,953. (No model.)



Claim.—1. The combination with a case having each side provided with a vertical grooved guideway and with a horizontal grooved guideway located above and clear of the vertical guideway and extended out through the front of the case, of a folding portion having a pivoted connection with the vertical guide, and a slide-bar having a slidable engagement in the horizontal guide-groove and having a pivotal connection with the folding portion at a point toward the outer end of said slide bar so as to carry the said pivot connection forward outside the case on the opening of the folding part, substantially as described.

2. The combination with a case provided with a vertical guideway and with a horizontal guideway separate from and above the vertical guideway and extended to the front of the case, of a slide-bar movable in the horizontal guideway and adapted to extend beyond the same, and a folding part jointed to the said slide-bar toward its outer end and having a pivot movably engaged in the vertical guideway, substantially as described.

3. A case side having its front lower portion provided with a vertical guide or groove and a horizontal guide located above and clear of the vertical guide and extended out through the front of the case, a folding portion pivoted to the vertical guide, and a slide at the horizontal guide having a pivot connection with the folding portion, said slide being made to project beyond the horizontal guide to carry its pivot connection clear of the case on the folding portion being opened substantially as described.

4. A case side having its front lower portion provided with a vertical guide or groove and a horizontal guide located above and clear of the vertical guide and extended out through the front of the case, a folding portion pivoted to the vertical guide, and a slide at the horizontal guide having a pivot connection with the folding portion, said horizontal guide being extended across the case side, and said slide being of a length to fill or correspond to the horizontal guide and being made to project beyond the horizontal guide to carry its pivot connection clear of the case on the folding portion being opened substantially as described.

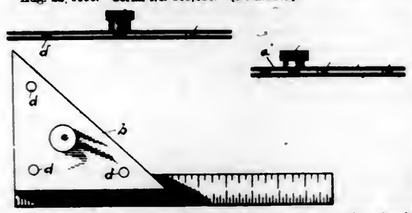
5. A case side having a vertical guide and a horizontally-traveling slide, combined with a folding portion jointed or pivoted to the guide and slide and having a lock made to engage the slide substantially as described.

6. A case side having a vertical guide and a horizontally-traveling slide, combined with a folding portion jointed or pivoted to the guide and slide, said slide having a locking-pin and said folding portion having a latch made to engage the locking-pin substantially as described.

7. A case side having a vertical guide and a horizontally-traveling slide, combined with a folding portion jointed or pivoted to the guide and slide, a pin on the slide, a latch on the folding portion, and a folding foot portion connected to the latch for actuating the latter substantially as described.

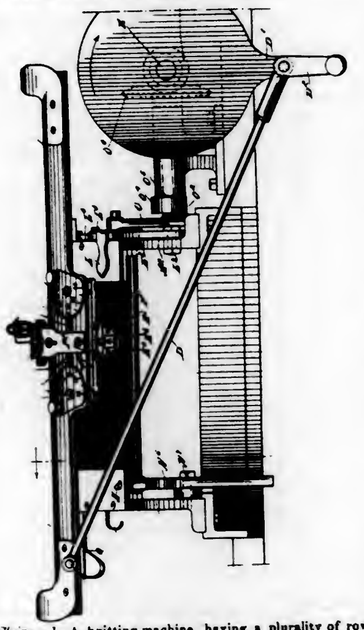
8. A case side provided with horizontal and vertical guides, a folding portion pivoted to the vertical guide, a slide at the horizontal guide having a pivot connection to the folding portion, a flexible bottom fixed to the rear part of the case and to the foot portion of the folding part, and a head-frame jointed to the folding portion and extended back into the case, said head-frame and folding portion having supporting-springs for the bottom substantially as described.

611,129. BEVEL-TOOL. FRANK LAFFERTY, Lorain, Ohio. Filed Aug. 22, 1896. Serial No. 603,630. (No model.)



Claim.—In a combination-tool, a rule, a triangular plate having pins secured to one face thereof, said pins being arranged parallel with the edges of the plate and forming bearing-surfaces for the rule, so that the edge of the rule will be held paralleled with the edges of the plate, a lug centrally arranged on said plate and provided with screw-threads, a second triangular plate provided with apertures to receive the pins and lug carried by the first-named plate, a thumb-nut engaging said screw-threaded lug whereby the plates are forced together to hold the rule firmly in position, substantially as herein shown and described.

611,130. KNITTING-MACHINE. ISAAC W. LAMB, Perry, Mich. Filed Apr. 1, 1897. Serial No. 630,200. (No model.)



Claim.—1. A knitting-machine, having a plurality of rows of needles, and a carriage, and provided with a set of cam-stops, one for each row of needles, and means for moving the stops in unison, said stops being mounted upon some stationary part independently of the carriage and being so connected that when one is in an upper position the other is in a lower position, and vice versa, in combination with middle cams movably mounted upon the carriage and adapted to be engaged periodically by said cam-stops, substantially as shown and described.

2. A knitting-machine, having a plurality of rows of needles, and a carriage, and provided with an oscillating arm carrying two cam-stops, one for each row of needles, means for moving the said arm, said stops being mounted upon some stationary part independently of the carriage and being so connected that when one is in the upper position the other is in the lower position, and vice versa, in combination with middle cams movably mounted upon the carriage and adapted to be periodically engaged by said cam-stops, the movement of the cam-stops being so arranged that when one stop is in the upper position, it engages the corresponding cam to push it downward, while the other stop, which is in the lower position, simultaneously engages the other cam to push it upward, substantially as shown and described.

3. A knitting-machine having a plurality of rows of needles, provided with a set of cam-stops, one for each row of needles, means for moving the stops in unison so that one of them will be in an upper position while the other is in a lower position, and vice versa, and a detachable connecting medium between the said stops and the means for moving them, whereby the stops may be rendered inactive notwithstanding the movement of said means, substantially as described.

4. A knitting-machine provided with a reciprocating carriage carrying sets of needle-cams provided with V-shaped heads, an intermittently-oscillating arm mounted upon the machine-frame independently of the carriage, cam-stops secured thereon and adapted to be engaged simultaneously by the V-shaped heads of the needle-cams to open one set and close the other and vice versa, and means for holding the arm in its resting positions, substantially as shown and described.

5. A knitting-machine provided with middle cams having diamond-shaped heads, V-shaped cam-stops adapted to act upon both the upper and the lower edges of the said heads, an arm carrying the said stops, a pitman connected with the said arm, a revolnble crank-disk engaging with its crank-pin a slot in the said pitman and a locking-hook for connecting the said crank-pin with the pitman to intermittently move the pitman and the arm by the said crank-disk, substantially as shown and described.

6. A knitting-machine provided with a gib-frame having two side arms, of which one is formed with a longitudinally-extending groove for receiving the friction-spring, substantially as shown and described.

7. A knitting-machine provided with a gib-frame having a longitudinally-extending groove, a carriage fitted to slide thereon and formed with a longitudinally-extending slot, a spring engaging the said groove and provided with a projection extending through the said slot, and a yarn-carrier on the said carriage and engaged by the said projection to shift the position of the yarn-carrier on reciprocating the carriage, substantially as shown and described.

8. A knitting-machine provided with a carriage having cams adapted to shift the needles, and a set of cam-stops movable in unison and mounted directly on the frame of the machine so as not to move with the carriage, said cam-stops being arranged to move alternately into the upper and the lower path of the middle cams, and being so connected that when one cam-stop is in the upper position in which it shifts the corresponding cam downward, the other cam-stop is in the lower position and in readiness to shift the other cam upward, substantially as described.

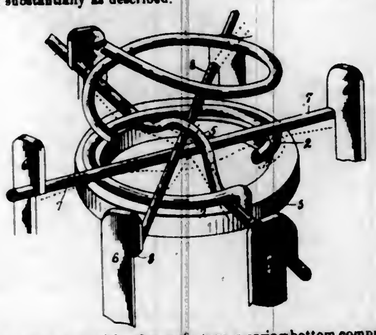
9. A knitting-machine provided with a carriage having side cams, middle cams movable on the carriage and adapted to shift the needles, projections on the said middle cams, and a set of cam-stops movable in unison and mounted upon the frame independently of the carriage so as not to travel therewith, said cam-stops being arranged to move alternately into the upper and the lower path of the projections on the middle cams, and being so connected that when one cam-stop is in the upper position in which it shifts the corresponding cam downward, the other cam-stop is in the lower position and in readiness to shift the other cam upward, substantially as described.

10. A knitting-machine provided with a needle-plate comprising sections for forming the needle-guideways, and having registering dovetails, and a frame provided with a back plate formed with a beveled shoulder, a bottom plate adjustably connected with the said back plate and formed with a gib opposite the said shoulder to form with the latter a dovetail groove, for the dovetails of the said sections, end plates removably connected with the said back plate and adapted to engage the outside sections, and an attaching-plate secured on the said end plates and projecting beyond the same, substantially as shown and described.

611,131. MANUFACTURE OF SPRING-BOTTOMS. JOSEPH P. LIGGETT, Carthage, Mo. Filed Dec. 4, 1897. Serial No. 660,780. (No model.)

Claim.—1. As an improvement in spring-bottoms for furniture, the combination of the volute spring and the cross bottom wires engaging on opposite sides of the coil of said spring; one of said wires being arched and kinked to form shoulders, and having its arch pressed down and the shoulders thereby brought into retaining engagement with the coil, and the other wire being deflected by pressure of the arch-wire to form retaining-kinks engaging the coil, substantially as explained.

2. As a new article of manufacture, a spring-bottom comprising volute springs, wires provided with arches projecting centrally into the respective springs and interlocking wires woven into the arched wires and attaching-coils of the springs; said arches and through them the interlocking wires and attaching-coils being pressed down beyond the limit of permanent set until the arches are expanded against the attaching-coils, and interlocking wires are kinked to form retaining-seats therein at points of intersection between the wires and coils and the coils are pressed into conformity with both sets of wires; substantially as described.



3 As a new article of manufacture, a spring-bottom comprising volute springs, wires formed with arches projecting centrally into the attaching-coils of the respective springs and with shoulders located to engage the outer sides of the attaching-coil and interlocking wires interwoven with the attaching-coils and arches; said arches being pressed down until the engaging shoulders project on the outer sides of the attaching-coil and the interlocking wires are deflected to form seats engaging with the attaching-coils, substantially as herein explained.

611,132. MACHINE FOR ATTACHING BED-SPRINGS TO CROSS-WIRE BASES. JOSEPH P. LIGGETT, Carthage, Mo. Filed Dec. 4, 1897. Serial No. 660,781. (No model.)



Claim.—1. In a machine for attaching coils to their retaining-wires in the manufacture of spring-bottoms, the combination of a suitable bed upon which to arrange the retaining-wires, retaining devices arranged in proper relation around the point for location of the spring, and means for pressing the engaging wires to bend them and forming kinks or the like for engagement with the springs, substantially as herein explained.

2. In a machine for attaching coil-springs to their retaining-wires in the manufacture of spring-bottoms, the combination of an anvil having intersecting ways for the reception of wires, a pressing-tool cooperating with said anvil to deflect the wires, and retaining means arranged around the anvil for engaging the respective wires on opposite sides of the anvil and holding them straight while deflection is taking place; the anvil and retaining devices being made yielding, substantially as and for the purposes set forth.

3. In a machine for fixing springs to their securing-wires in spring-bottoms, the combination of a depressible anvil upon which to compress the wires, a fixed seat surrounding the anvil to receive the coil of the spring, and means outside of said fixed seat for holding the wires, substantially as set forth.

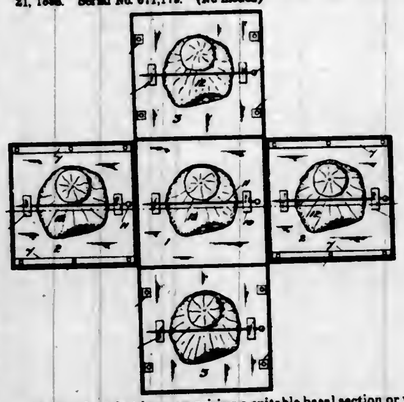
4. In a machine of the character described, the combination of the depressible anvil having transverse wireways, a fixed seat surrounding said anvil, and a cooperating compressing-tool, substantially as and for the purposes set forth

5. In a machine of the character described, the combination of the fixed seat, a depressible anvil within said seat, and retaining-hooks located outside of said seat and mounted to move into and out of engagement with the wires which they are to retain, substantially as explained.

6. In a machine of the character described, the combination of a depressible anvil having projecting horns with wire-passages between them, and a compressing-tool having sockets to receive said horns, substantially as and for the purposes set forth.

7. In a machine for attaching springs by compressing the attaching-wires of spring-bottoms; compressing devices suitably located at points where it is desired to attach the respective springs, and a mounting upon which the respective compressing devices are movably supported, whereby each compressing device may move bodily to maintain its position on the bottom-forming wires and compensate for changes in length of said wires incident to compression; substantially as explained.

611,133. HAT-BOX. SAMUEL LEVY, Memphis, Tenn. Filed Feb. 21, 1898. Serial No. 671,179. (No model.)



Claim.—1. A hat-box comprising a suitable basal section or wall, a series of leaves or sections hinged along the edges thereof, means for interlocking said sections along their meeting edges when folded to a closed position, and suitable blocks mounted in pairs along the inner surfaces of the sections for receiving a hat-pin and holding the hat between them to the section, substantially as set forth.

2. A hat box comprising a suitable basal section or wall, leaves or sections hinged along two opposite edges thereof, interior angle-bars disposed along two opposite edges of said section, the angle of the bar being adjacent to the edge of the leaf, leaves or sections hinged to the remaining or adjacent edges of the basal section, interior angle-pieces or clips disposed along the opposite edges of said latter leaves, the angle of each piece being adjacent to the edge of the leaf, rivets for securing the angle-bars to their leaves, the projecting members of the angle-pieces being adapted to interlock with the angle-bars by being passed between the leaf carrying the angle-bar and that member thereof which is directly secured to the leaf, a cover or lid for the box, the inner surface of the cover as well as the several sections being adapted to have mounted thereon a suitable hat, substantially as set forth.

611,134. MACHINE FOR DOUBLING AND SHEARING PLATES. THOMAS H. LEWIS, JAMES DORAN, BENJAMIN LEWIS, and EVAN J. LEWIS, Pittsburg, Pa. Filed Nov. 17, 1897. Serial No. 658,840. (No model.)



Claim.—1. A doubling and shearing machine, comprising two inclined tables, one of which carries a shearing-knife, and means for operating the said tables to bring the same to an inclined position, substantially as shown and described.

2. A doubling and shearing machine comprising two inclined tables which are adapted to be drawn toward each other until they assume a vertical position, and a shearing-knife operated by the tables assuming their vertical position, substantially as shown and described.

3. In combination with two inclined tables, of a shearing-knife operating in one of the tables, and operating mechanism for bringing the two tables into engagement with each other, substantially as shown and described.

4. In a shearing and doubling machine, the combination of the inclined tables supported by and operating in guides mounted on a suitable frame, a depressing-bar in one table and a head-block in the other table, means for closing the table together and for drawing the same downward in their guides and a shearing-knife operating in one of the tables, to be operated automatically by the downward movement of the tables substantially as shown and described.

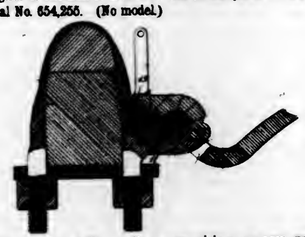
5. In a shearing and doubling machine the combination with the inclined tables, of the shearing-knife operating in one of said tables, means for closing the tables together and drawing the same downward, and a suitable frame having a receiving-plate for the scrap cut from the plate by the shearing-knife, substantially as shown and described.

6. A doubling and shearing machine, comprising two receiving-tables, means for operating said tables to bring the same to a vertical position and into close proximity to each other, one of said tables carrying a shearing-knife, said knife being automatically operated by the movement of the table, substantially as shown and described.

7. In a doubling and shearing machine, the combination with the supporting-frame, guides secured thereto and provided with stops, tables operated by said guides, the slots controlling the movement of the tables, and a shearing-knife carried by one of said tables, substantially as shown and described.

8. In combination with two inclined tables, of a shearing-knife operating in one of the tables, operating mechanism for bringing the tables into close proximity to each other, and an incline arranged below the tables to receive the offal, substantially as shown and described.

611,135. THILL-COUPLING. LOUIS R. MACOMBER, Ashland, Wis., assignor of one-half to Edwin H. Ellis, same place. Filed Oct. 6, 1897. Serial No. 654,255. (No model.)

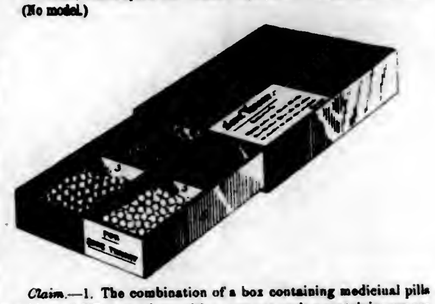


Claim.—1. A thill-coupling comprising an arm provided with means for attachment to an axle and having a recess adapted to form a seat for the cross-bar of the thill-iron, and a jaw adapted for locking engagement with said arm and provided with a recess which in the closed position of the jaw completes the cavity adapted to receive the cross-bar of the thill-iron, the jaw being further provided with a hook which in the open position of the jaw projects between the recess of the jaw and the recess of the arm, but does not project into the recess of the arm during the closing movement of the jaw so that the cross-bar of the thill-iron may either be placed directly into the recess of the arm, or placed in the recess of the jaw and pressed rearward toward the recess of the arm to cause the jaw to swing into the closed position, substantially as described.

2. A thill-coupling comprising an arm adapted for attachment to an axle and having a recess adapted to form a seat for the cross-bar of the thill iron, also a transverse groove and a transverse rib located between said recess and the attachment end or axle end of the arm, and a jaw pivoted to the free end of the arm and having a recess to fit the cross-bar of the thill-iron, the jaw having at its free end, a transverse rib and a transverse groove adapted to interlock with those of the arm.

3. A thill-coupling comprising an arm adapted for attachment to an axle and having a recess adapted to form a seat for the cross-bar of the thill iron, a jaw pivoted to the free end of the arm and having a recess to fit the cross-bar of the thill-iron, and a spring-latch consisting of side bars capable of a yielding movement longitudinally of the arm and secured to said arm between its recess and its attachment end or axle end, a cross-bar connecting the ends of said side bars and adapted to engage the jaw near its free end, and a fastening device, such as an eye, secured to the central portion of said cross-bar.

611,136. PACKAGE FOR MEDICAL PREPARATIONS. HENRY T. MASON, Philadelphia, Pa. Filed May 5, 1898. Serial No. 679,840. (No model.)



Claim.—1. The combination of a box containing medicinal pills or tablets of different colors, with a cover or casing containing spaces colored to correspond with the pills or tablets, each colored space containing information concerning its respective pills or tablets, substantially as specified.

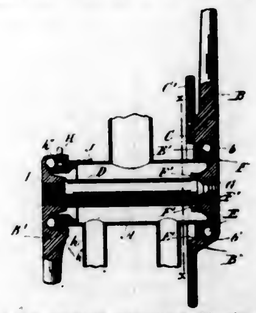
2. The combination of a compartment-box each compartment containing medicinal pills or tablets of a color distinguishing them from those in each of the other compartments, with a cover or casing having spaces colored to correspond with the different colors of the pills or tablets, each colored space corresponding as to position with the compartment containing the correspondingly-colored pills or tablets and having information concerning the latter, substantially as specified.

3. The combination of a compartment-box having in each compartment medicinal pills or tablets of a color distinguishing them from those in each of the other compartments, said box being combined with a cover or casing and having a wall or walls of each compartment colored to correspond with the color of the pills or tablets contained in said compartment, substantially as specified.

4. The combination of a compartment-box having in each compartment medicinal pills or tablets of a color distinguishing them from those in each of the other compartments, said box being combined with a cover or casing and having a wall or walls of each compartment colored to correspond with the color of the pills or tablets contained in said compartment and containing information relative to said pills or tablets, substantially as specified.

5. The combination of a compartment-box having in each compartment medicinal pills or tablets of a color distinguishing them from those in each of the other compartments, said box having a wall or walls of each compartment colored to correspond with the color of the pills or tablets contained therein, and being combined with a case or cover having spaces corresponding as to color and position with the colored portions of the box, substantially as specified.

611,137. BICYCLE CRANK-SHAFT BEARING. JOSIAH MORRISON, Anderson, Ind. Filed Sept. 22, 1897. Serial No. 652,622. (No model.)

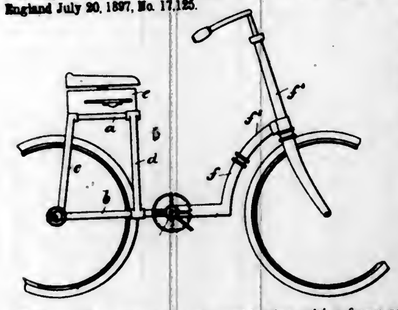


Claim.—1. In a crank-shaft bearing for bicycles and the like, the combination with a crank-shaft and its hanger having the large cones at its end portions, of the cranks having their inner end or hub portions annularly recessed or chambered and having the bottom walls of such chambers grooved or channeled to form ball-races, said hub portions also having integral ball-retaining flanges extending into the said chambers and provided each with a gate or opening, means for closing the said gates or openings, and the balls in said races and bearing upon the said cones, substantially as specified.

2. A crank for bicycles and the like, having its inner end portion or hub formed with an annular chamber therein and with an integral annular ball-retaining flange projecting into the said chamber and provided with a ball gate or opening therein, with means for closing said opening, substantially as specified.

3. In a crank-shaft bearing for bicycles and the like, the combination of the hanger, the crank-shaft, the adjustable cone I screwed into one end portion of said hanger and having a circumferential flange provided with a series of perforations or notches, a locking device adapted to engage any one of said notches, the crank B having the annular chamber A in its hub portion, the ball-race A″ in the bottom of said chamber, and the integral retaining-flange A′ projecting into the said chamber and having a ball gate or opening therein, an oil plug or cap for closing the said opening, substantially as specified.

611,138. VELOCIPEDE. GEORGE A. HUBERT, London, England. Filed Sept. 25, 1897. Serial No. 653,033. (No model.) Patented in England July 20, 1897, No. 17,125.



Claim.—1. In a velocipede, the combination, with a frame provided with a rectangular case at its upper part, of a longitudinally-movable block inclosed in the said case, rollers supporting the said block in the case, and a support for a saddle carried by the said block and projecting through the top of the case, substantially as set forth.

2. In a velocipede, the combination, with a frame provided with a rectangular case at its upper part, of a longitudinally-movable block for carrying a saddle inclosed in the said case and provided with lugs on its under side, axles mounted in the said lugs and movable vertically therein, springs interposed between the said block and axles, and rollers supporting the said block and carried by the said axles, substantially as set forth.

3. In a velocipede, the combination, with a frame provided with a rectangular case at its upper part, of a block provided with traveling rollers and arranged in the said case, a support for a saddle carried by the said block and projecting through the top of the said case, and means for locking the block, substantially as set forth.

4. In a velocipede, the combination, with a frame provided with a rectangular case at its upper part, of a block provided with traveling rollers and arranged in the said case, guide mechanism permitting the said block to have free movement in a longitudinal direction only, a saddle carried by the said block, and means for locking the block, substantially as set forth.

611,139. REGISTERING APPARATUS. LEONARD D. ORR, Pegram, Ill. Filed Mar. 23, 1898. Serial No. 674,896. (No model.)



Claim.—1. In a registering apparatus, the combination of a revolvable shaft, a registering-disk loose thereon, gearing driving the registering-disk continuously from the revolvable shaft, a stop-plate rigid with reference to the shaft, a second registering-disk loose on the shaft, a transmission-disk fixed to the shaft, a spring-bearing between the transmission-disk and the second registering-disk, and a dog carried by the second registering-disk and capable of engaging the stop-plate and of being thrown out of engagement therewith by the transmission-disk.

2. In a registering apparatus, the combination of a shaft, a rigid stop-plate, a transmission-disk fixed to the shaft, a registering-disk loose on the shaft, a spring-bearing between the transmission-disk and the registering-disk, and a dog carried by the registering-disk and capable of engaging the stop-plate, the dog being withdrawn from engagement with the stop-plate by the action of the transmission-disk.

3. The combination of a rigid stop-plate, a revolubly-mounted transmission-disk, a registering-disk, a spring-bearing between the transmission-disk and the registering-disk, and a dog carried by the registering-disk and engaging the stop-plate to hold the registering-disk, and being withdrawn from the stop-plate by the action of the transmission-disk.

4. The combination of two movable members, one of which is driven from the other, a stop-plate stationary with reference to said members, and a dog carried by the driven member and engaging the stop-plate to hold the driven member, and being releasable by the action of the driving member.

5. The combination of two movable members, one of which is driven from the other, a spring bearing between said members, and transmitting movement from one to the other, a stop plate mounted adjacent to one of the members, and a dog carried by the driven member and engaging the stop-plate to lock the driven member, the dog being releasable by the action of the driving member.

6. In a registering apparatus, the combination of a shaft, a registering-disk mounted loose thereon and having a concavity therein, a transmission-disk fixed to the shaft and seated in the concavity of the registering-disk, a spring-bearing between the transmission-disk and the registering-disk to transmit movement from the transmission-disk to the registering-disk, a stop-plate fixedly mounted adjacent to the registering-disk, and a dog carried by the registering-disk and engaging the stop-plate to hold the registering-disk, and being releasable by the action of the transmission-disk.

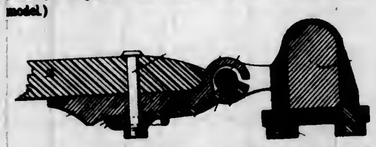
7. In a registering apparatus, the combination of a registering-disk having a concavity therein, a driven transmission-disk seated in said cavity, a spring transmitting movement from the transmission-disk to the registering-disk, a stop-plate mounted adjacent to the registering-disk, and a dog carried by the registering-disk and engaging the stop-plate to hold the registering-disk, and being releasable by the action of the transmission-disk.

8. In a registering apparatus, the combination of a stop-plate provided with a circular series of orifices and also with an arc-shaped slot or orifice, two registering-disks mounted to turn and located, one on each side of the stop-plate, one of the registering-disks having a concavity therein, a transmission-disk mounted loosely in the concavity and provided with a circular series of orifices, a spring-bearing between the transmission-disk and the adjacent registering-disk to transmit movement from the transmission-disk to the said adjacent registering-disk, a dog comprising means for retracting the same, the dog being carried by the registering-disk on the side of the stop-plate opposite the transmission-disk, and the dog being capable of projecting through the arc-shaped slot of the stop-plate to engage with the transmission-disk to impart movement thereto, and a second dog carried by the registering-disk having the concavity, the second disk engaging with the circular series of orifices in the stop-plate and being releasable by the movement of the transmission-disk.

9. In a registering apparatus, the combination of a block, a dog slidable therein, a spring pressing the block outward, and an elbow-lever mounted on the block and engaging the dog to move the dog against the action of the spring.

10. The combination of two movable members, one of which is driven by the other, a stop juxtaposed to said members, and a dog carried by the driven member and coacting with the stop to hold the driven member, and being released by the action of the driving member.

611,140. THILL-COUPLING. WILLIAM PEABOE, Southington, Conn., assignor of two-thirds to Merritt H. Woodruff and Norman A. Barnes, same place. Filed June 6, 1898. Serial No. 682,638. (No model.)



Claim.—1. In a thill-coupling, the combination with a clip having forwardly-projecting arms, of a shill-eye comprising a shank and a head adapted to pass between said arms, said head and arms having transverse holes for the entrance of a bolt, said head formed in

its under face with a chamber, and a spring secured to the shank and extending rearward into said chamber, substantially as described.

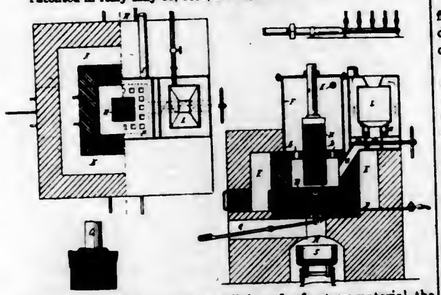
2. In a thill-coupling, the combination with a clip having forwardly-extending arms, of a thill-eye comprising a shank and a head, said head and arms having transverse holes for the entrance of a bolt, said head formed with a central chamber, a spring secured to said shank and extending rearward into said chamber, and formed at its outer end with a transverse groove, and a link resting in said groove, whereby it is clamped between the spring and the shank, substantially as described.

611,141. WINDOW-CURTAIN FIXTURE. WILLIAM W. PHILIPS, Glenshaw, Pa. Filed Mar. 25, 1897. Serial No. 629,163. (No model.)



Claim.—In a window-blind fixture, the two semicircular plates *l*, provided with projectiug lugs at their ends, and the rod *m* for connecting the two plates, the heads being screw-threaded at their ends, and provided with staples *g'*, combined with the nuts *s* placed upon the ends of the rod, and between which the plates are clamped in position, and the curtain *d'* which has the bearings of its rollers to pass through suitable openings in the plates, substantially as described.

611,142. ELECTRIC FURNACE. RICCARDO PIGNOTTI, FERDINANDO LORI, SCIPIONE RESNOLI, MARCO BEBBO, and MATTEO PANTALEONI, Rome, Italy. Filed June 27, 1896. Serial No. 597,258. (No model.) Patented in Italy May 13, 1896, No. 41,504.

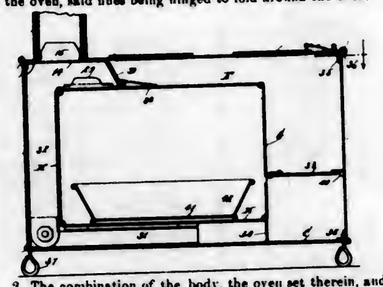


Claim.—1. A furnace, having a lining of refractory material, the same being a feeble conductor of electricity a removable carbon bottom for said furnace having an aperture through it, a carbon plug in said aperture, a lever on which said plug is mounted, a high-resistance electrode suspended in the furnace and having a portion extended upward into the chamber communicating with the furnace, a receptacle for material to be treated and having communication with the interior of the furnace, a screw for conveying material from said receptacle to the furnace, and gas-burners located in a chamber or space surrounding said receptacle, the said gas-burners being designed to heat the material in the receptacle prior to its transfer to the furnace, substantially as specified.

2. A furnace having a lining of refractory material, a removable carbon bottom for said furnace and having an opening through it, a carbon plug for said opening, a metal plate on which said carbon bottom rests, the said metal plate connecting with a source of electricity, a shell arranged above the furnace and having communication therewith, a gas-outlet pipe leading from said shell, a high-resistance electrode leading from the bottom of said shell into the furnace, a rod supporting said high-resistance electrode and extended through the top of the shell, a receptacle for material to be treated and having communication with the interior of the furnace, means for heating said receptacle and the material therein prior to the introduction of the material to the furnace, a tunnel and a carriage movable therein, whereby the material passing through the opening in the bottom carbon of the furnace may flow onto said carriage, substantially as specified.

611,148. KNOCKDOWN STOVE. JOHN F. PIERROU, West Point, Nebr., assignor to himself and C. W. Ackerman, same place. Filed Apr. 18, 1898. Serial No. 677,998. (No model.)

Claim.—1. The combination of the oven, the body surrounding the oven, and the flues located in the annular space between the body and the oven, said flues being hinged to fold around the oven.



2. The combination of the body, the oven set therein, and the flue-plates each comprising a member connected to the bottom of the oven by a horizontal hinge, and another member pivoted to the first-named member about an axis extending transversely of the axis of the hinge, substantially as described.

3. The combination of the body, the oven set therein, sockets upon the top of the oven, and flue-plates each comprising a lower member hinged to the bottom of the oven, and an angular member pivoted to the lower member and arranged to engage said sockets, substantially as described.

4. The combination of the body, the oven set therein, sockets upon the top of the oven, a damper adjacent to said sockets, and flue-plates arranged to be engaged by said damper and each comprising a lower member hinged to the bottom of the oven, and an angular member pivoted to the lower member and arranged to engage said sockets, substantially as described.

5. In a knockdown stove, a folding oven provided with a folding flue extending along the bottom to the top and across the top, a damper for the upper end of the flue, a bottom stop-plate at the end of the oven opposite that at which the flue is located, as specified.

6. In a knockdown stove, a folding oven, a folding flue located at the exterior of the oven, extending along the bottom to and across the top, a damper for the upper end of the said flue, and a grate having hinged connection with the said oven, as and for the purpose specified.

7. The combination of the stove-body, the oven set therein, and the flue-plates each comprising a lower member hinged to the bottom of the oven, and an upper member pivoted to said lower member, substantially as described.

8. A folding oven, consisting of a series of hinge-connected plates, a grate having a hinged connection with one of the end plates of the oven, sockets formed upon the upper plate of the oven, a damper located adjacent to the said sockets, flue-plates hinged to the bottom plate of the oven, and pivoted extensions of the flue-plates, capable of entering the said sockets and adapted for engagement by the said damper, for the purpose set forth.

611,144. COMBINATION FURNITURE. JOHN E. PLUMMER, Waterville, N. Y. Filed Mar. 7, 1898. Serial No. 672,912. (No model.)



Claim.—1. The combination with seat-rails, rockers connected therewith and legs connecting the forward ends of the seat-rails and rockers, of back-rails pivotally connected to the seat-rails and projecting beyond the same, and arms or props pivotally attached to said legs and adapted to engage the free ends of said back-rails, substantially as set forth.

2. The combination with seat-rails, rockers connected therewith and legs connecting the forward ends of the seat-rails and rockers, of back-rails pivotally connected to the seat-rails and projecting beyond the same, shoulders at the free ends of said back-rails, arms or props pivotally attached to said legs and adapted to engage the shoulders at the ends of the back-rails, and a metal plate between the free end of each prop and the shoulder at the free end of each back-rail, substantially as set forth.

3. The combination with seat-rails, rockers connected therewith and legs connecting the forward ends of the seat-rails and rockers, of back-rails pivotally connected with the seat-rails and extending beyond the same, props pivotally attached to said legs and adapted to engage the free ends of said back-rails and catches connecting said props and back-rails, substantially as set forth.

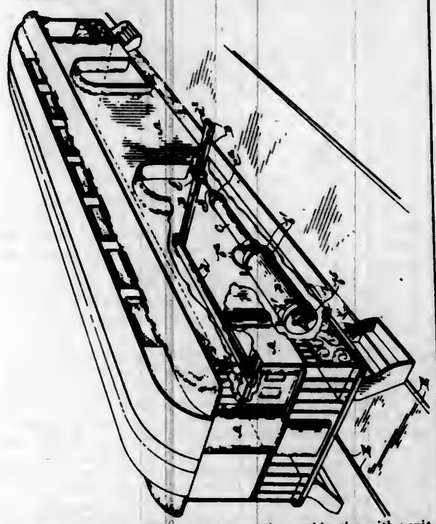
4. The combination with seat-rails, rockers connected therewith and legs connecting the forward ends of the seat and rockers, of back-rails pivoted to the seat-rails and projecting beyond the same, stops on the seat-rails for the end rails, props attached to said legs and stops on the legs for said props, substantially as set forth.

5. The combination with seat-rails, rockers secured thereto, and legs connecting the forward ends of the seat-rails with the forward ends of the rockers, of back-rails pivotally connected to the seat-rails, whereby said back and seat rails can be moved into alinement with each other to form a head and back rest, stops on the seat-rails for the back-rails, props pivotally attached between their ends to said legs, and stops on said legs for said props, substantially as set forth.

6. The combination with seat-rails terminating at their rear ends in legs, and legs depending from the forward ends of said seat-rails, of back-rails pivotally connected between their ends to the seat rails and terminating at their lower ends between the front and rear legs, and props pivotally connected with the front legs and adapted to engage the lower ends of said back-rails, substantially as set forth.

7. The combination with seat-rails, slats connecting said seat-rails, back-rails pivotally connected with the seat-rails, slats connecting said back-rails, and means for supporting the back and seat rails in alinement in a horizontal position, of a frame removably supported on said rails, said frame comprising end and side pieces hinged together, one of said end pieces being adapted to engage a slat at the free end of the seat portion, lugs or hooks on the other end piece adapted to engage a slat at the free end of the back portion, and bars on the sides of the frame and adapted to be seated on the back-rails over the pivotal connection thereof with the seat-rails, substantially as set forth.

611,145. PORTABLE AUTOMATIC WAY-STATION. THOMAS H. POLLOCK, Neligh, Nebr. Filed Oct. 14, 1897. Serial No. 655,233. (No model.)



Claim.—1. In a moving way-station, the combination with a suitable car or platform, of a bumper mounted thereon, air-cylinders for cushioning the movement of the said bumper, and means for controlling the pressure in the said cylinders, the construction being such that the movable station may be attached to a moving object or train without jar or unpleasant sensation, substantially as described.

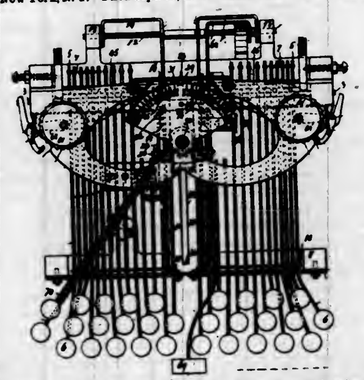
2. In a moving way-station, the combination with a suitable platform or car, of a pivoted bumper mounted thereon and projecting into the path of a moving object or train, a pivoted bar for securing the said bumper to the said station, pneumatic cylinders also mounted upon the said station, a piston mounted in one of the said cylinders and connected to the said bumper, and means for controlling the movement of the piston so as to cushion, by pneumatic pressure, the movement of the bumper whereby the moving station may be attached to a train in motion without jar or inconvenience, substantially as described.

3. In a moving way-station, the combination with a suitable platform or car, of a bumper mounted thereon and adapted to project at one end into the path of a moving train, a cylinder mounted upon the said station, a piston mounted in the said cylinder and connected with the said bumper, a second cylinder also mounted upon the said station and connected with the first cylinder, means for compressing air in the second cylinder, and means for permitting of the escape of the compressed air into the first cylinder for cushioning the stroke of the piston whereby the moving station may be attached to a moving train without concussion, substantially as described.

4. In a moving way-station, the combination with a platform or car adapted to run upon a track parallel with a moving train, of a bumper pivotally mounted upon the said station, a piston connected to the said bumper and moving in a cylinder, valves for controlling the admission and escape of air to one end of the said cylinder, means for connecting the said cylinder with a compression-cylinder, whereby the piston is adapted to compress air within the said compression-cylinder, and means for permitting the compressed air in the compression-cylinder to escape into the piston-cylinder whereby the movement of the bumper is adapted to be cushioned and the movement of the way-station is caused to equal that of the train without jar or inconvenience to the passengers, substantially as described.

5. An apparatus for transferring passengers or freight to and from a moving train, comprising a moving station, a bumper mounted thereon, pneumatic cylinders mounted upon the said station, a piston operating in one of said cylinders and connected to the said bumper, means for controlling the pneumatic pressure in the said cylinders for cushioning the movement of the piston, and means for disengaging the moving station from the moving train at any desired point, whereby sufficient time is given for the transfer of passengers and freight from the moving train, substantially as described.

611,146. TYPE-WRITING MACHINE. WILLIAM P. QUENTELL, New York, N. Y. Filed Sept. 16, 1897. Serial No. 651,929. (No model.)



Claim.—1. The combination with a main or carrying lever, of a secondary lever fulcrumed to the main lever and provided with an actuating or lifting spring and lug for such main lever, and with a stud or stop for arresting or holding the secondary lever at one point while leaving the fulcrum of the secondary lever free to move with the main lever substantially as described.

2. The combination with a main or carrying lever, of a secondary lever fulcrumed to and made to actuate or lift the main lever, a type-carrier and connections between such type-carrier and the secondary lever, an actuating spring or mechanism made to engage the secondary lever at one side of its fulcrum, and a stop or arm made to engage the secondary lever at the other side of its fulcrum substantially as described.

3. A main or carrying lever, combined with a secondary lever fulcrumed to the main lever, a type-carrier and connections between such type carrier and the secondary lever, a spring made to engage one arm of the secondary lever for holding said arm in engagement

with the main lever, and a stop made to engage the other arm of the secondary lever substantially as described.

4. A main or carrying lever and a first-class lever fulcrumed to the main lever, one arm of the first-class lever being provided with a stop or stud and its other arm being made to engage the main lever and being provided with a lifting or actuating spring, an arm for engaging or arresting the stop and a type-carrier and connections between such type-carrier and the first-class lever substantially as described.

5. A main or carrying lever and a first-class lever fulcrumed to the main lever, one arm of the first-class lever being provided with a stop or stud and its other arm being provided with a lug extended under the main lever for supporting or lifting the latter, and a lifting-spring made to engage said first-class lever substantially as described.

6. A type-actuating arm or lever, a stop for arresting said lever, a secondary lever connected to the type-actuating lever, a main lever to which the secondary lever is fulcrumed, and a spring connected to the secondary lever, and made to actuate or lift the main and secondary levers substantially as described.

7. A type-actuating arm or lever, a stop or arm for arresting said lever, a secondary lever, a main lever to which the secondary lever is fulcrumed and which is engaged or lifted by said secondary lever, and a spring connected to the secondary lever, said type-actuating lever and secondary lever being loosely connected or jointed to one another so as to allow play or motion of main and secondary levers after the type-actuating lever is stopped or arrested substantially as described.

8. A type wheel or segment, an actuating-lever for the segment, a stop for said lever and segment, a secondary lever for engaging the type-actuating lever, and a main lever to which the secondary lever is fulcrumed, said main and secondary levers being made to engage or actuate one another and a spring for returning the main and secondary levers substantially as described.

9. A type wheel or segment, an actuating-lever for the segment, a secondary lever having one of its arms pivoted directly to the segment-actuating lever, a main lever to which the secondary lever is fulcrumed, a key for actuating the main lever, and an arm or stop made to contact with the key for arresting the segment substantially as described.

10. A type wheel or segment, an actuating-lever for the segment, a secondary lever made to engage the actuating-lever, a main lever to which the secondary lever is fulcrumed, a key for actuating the main lever, and an arm or stop above which the key is normally located and into the path of which the key is depressed for arresting the segment substantially as described.

11. A series of keys, a main lever having an arm extended under the keys, a type wheel or segment, a segment-actuating lever, a secondary lever fulcrumed to the main lever and made to engage the segment actuating lever, and a segment stop or arm made to contact with the keys as the latter are depressed so as to arrest the segment at different degrees of rotation substantially as described.

12. A series of keys, a main lever having an arm extended under the keys, a type wheel or segment shaft, a segment-actuating lever, a secondary lever fulcrumed to the main lever and made to engage the segment-actuating lever, and a segment stop or arm made to contact with the keys as the latter are depressed so as to arrest the segment at different degrees of rotation, said segment-shaft having shoulders made to engage with the actuating-lever to rotate the segment from and to return the segment to the starting position and hold it at such starting position on the release of the keys substantially as described.

13. A series of keys, a main lever, a type wheel or segment shaft, a segment-actuating lever, a secondary lever fulcrumed to the main lever and made to engage the segment-actuating lever, a returning-spring 20, and a segment stop or arm made to contact with the keys as the latter are depressed so as to arrest the segment at different degrees of rotation, said segment-shaft having shoulders made to engage the actuating-lever to rotate the segment and to return the same to and hold the same at the starting-point.

14. A type-writing machine provided with a paper-carriage, a vibrating way for the carriage, a spacing-key for vibrating the carriage-way, and a lever actuated by said key for arresting the vibration of the carriage substantially as described.

15. A type-wheel combined with the lifting-arm, upper and lower guide-plates for the arm, a returning-spring for the arm, lifting-levers for the arm, stop-screws in the lower guide-plate for regulating the lifting movement, and a supporting-screw adjustably secured under the lifting-arm substantially as described.

16. A paper-roller carriage comprising a rack, sides and front on said rack, journal-slots extended through the back of the sides, a guide-rod above the roller, and springs for pressing said roller against the front, said front having a scale and cut-out portions bent to form guides substantially as described.

17. A type-writing machine provided with a vibrating paper-carriage way, a ribbon spool, a lever actuated by the way and provided with a pawl for engaging the spool, and a supporting-plate for the spool-shaft, said plate being cut away or shouldered at one point to allow the pawl to engage the spool at such point and to lift the pawl clear of the spool when passing beyond said point substantially as described.

18. A type-writing machine provided with type and with a carriage made to swing toward the type, a spacing-key for actuating the carriage, and a lever actuated by the spacing-key for preventing the carriage from contacting with the type substantially as described.

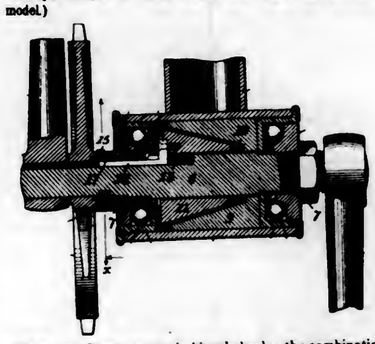
19. A type-wheel provided with a plurality of type-rows, a shaft on which said wheel is mounted, a stop-arm directly mounted on said shaft, means substantially as described for rotating the wheel, and key-levers made to arrest said stop-arm, said key-levers being non-radiatingly arranged, substantially as described.

20. The combination with a type-wheel, a shaft provided with shoulders, a hammer and a platen, of oppositely-located driving-levers made to engage the shoulders, a lever made to actuate each driving-lever, and a lever made to positively or directly engage and actuate the frame supporting the hammer or platen, and keys or key-levers for actuating the two last-named levers substantially as described.

21. The combination with a type wheel, a shaft provided with a stop-arm and with shoulders, a hammer and a platen, of oppositely-located driving-levers made to engage the shoulders, a lever made to actuate each driving-lever, a lever made to positively or directly engage and actuate the frame supporting the hammer or platen, and keys or key-levers for actuating the two last named levers and for directly arresting the stop-arm, substantially as described.

22. The combination with a type-wheel, a shaft provided with a stop-arm and with shoulders, a hammer and a platen, of oppositely-located driving-levers made to engage the shoulders, a lever made to actuate each driving-lever, a lever made to actuate the hammer or platen, and keys or key-levers for actuating the two last-named levers and directly arresting the stop arm, substantially as described.

611,147. BACK-PEDALING BRAKE. SHERMAN A. RANDALL, Honeoye Falls, N. Y. Filed Dec. 3, 1896. Serial No. 614,340. (No model.)

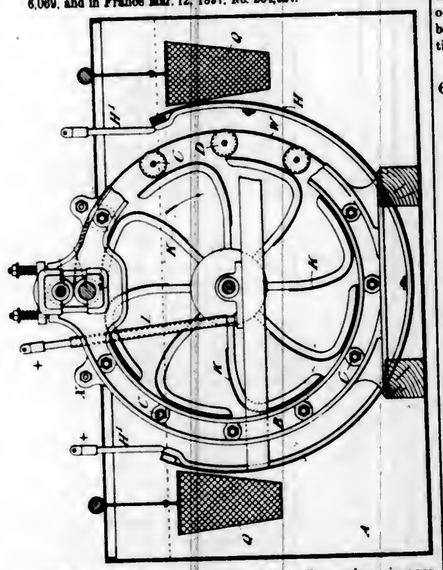


Claim.—1. In an automatic bicycle-brake, the combination with the crank-hanger, the bearings, and the crank-axle, of the male and female cones arranged within the hanger between the bearings, said female cone being fixed and said male cone being arranged to slide upon and turn with the axle, one or more splines connected to the male cone and extending out to the sprocket-wheel, and the sprocket-wheel having a limited movement of rotation upon said crank-axle and provided with cam-surfaces by means of which the splines are moved, substantially as described.

2. In an automatic bicycle-brake, the combination with the crank-hanger, the bearings and the crank-axle, of the fixed female cone within the crank-hanger between the bearings, the male cone adapted to slide upon and turn with the axle, the splines sliding in grooves in the axle and having their inner ends rigidly connected to the sliding cone, the sprocket-wheel arranged to have a limited movement of rotation upon said crank-axle, the hub upon said sprocket-wheel provided with inclined cam-slots and the outwardly-turned ends upon the splines engaging the cam-slots, substantially as described.

3. In a bicycle-brake, the combination with an axle and a cylindrical casing surrounding the axle, of male and female friction-cones within the casing and surrounding the axle, one of said cones being stationary and the other rotatable, a sprocket-wheel, and connections between said sprocket wheel and one of said cones whereby the cone is moved longitudinally when the bicycle is back-pedaled, substantially as described.

611,148. APPARATUS FOR ELECTRICALLY COATING WIRE. WILLIAM S. RAWSON, London, England. Filed Dec. 24, 1897. Serial No. 663,384. (No model.) Patented in England Mar. 13, 1896, No. 6,069, and in France Mar. 12, 1897, No. 264,927.

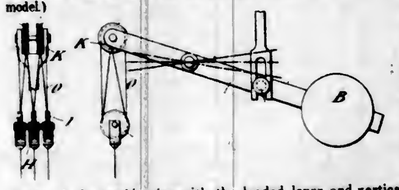


Claim.—1. An apparatus for electrolytically coating wire, consisting of a tank for containing the electrolyte liquid, an upright insulated frame arranged to be partly immersed in said liquid, a plurality of pulleys circularly arranged on the insulated frame, an anode outside the circular pulleys, an anode located in the space within the circularly arranged pulleys, and a cathode connection arranged to contact with the wire coiled about the pulleys, substantially as described.

2. An apparatus for electrolytically coating wire, consisting of a tank for containing the electrolyte liquid, an upright insulated frame arranged to be partly immersed in said liquid, a plurality of pulleys mounted in a circle on the insulated frame, an anode outside the circle of pulleys, a revolving anode in the space within the circle of pulleys, and a cathode connection arranged to contact with the wire coiled about the pulleys, substantially as described.

3. An apparatus for coating wire, consisting of a tank for containing the electrolyte liquid, a pair of rollers located above the tank and around which the wire to be coated is coiled in successive convolutions, a cathode connection for one of said rollers, an upright insulated frame arranged to be partly immersed in said liquid, a plurality of pulleys circularly arranged on the insulated frame and around which the wire to be coated is also coiled in successive convolutions, an anode outside the circularly-arranged pulleys, and an anode located in the space within the circularly-arranged pulleys, substantially as described.

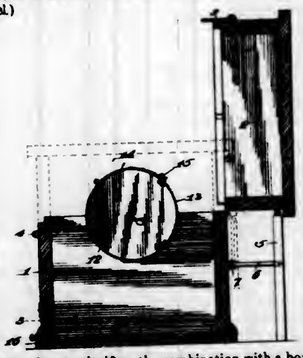
611,149. RAILWAY SIGNAL APPARATUS. WILLIAM F. REYNOLDS, Sheffield, England. Filed May 24, 1898. Serial No. 681,571. (No model.)



Claim.—1. In combination with the loaded lever and vertical rod employed for operating a semaphore railway-signal, a pulley mounted on the lever and a cord or chain passing over the pulley and having its ends attached to two separate signal pulls, the pin of the lever being engaged in a slot of the vertical rod of such length as to allow free stroke of the pin due to one of the pulls substantially as described.

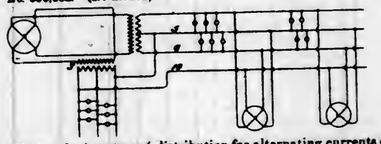
2. In combination with the loaded lever and vertical rod employed for operating a railway semaphore-signal a plurality of pulleys mounted on the lever, a cord or chain having its ends attached to the lever and passed over these pulleys and other pulleys in number one greater than the pulleys on the lever each of these latter pulleys being mounted in a yoke attached to a separate signal-pull, substantially as described.

611,150. COMBINED ASH SIFTER AND RECEIVER. JOHN M. RYAN, St. Louis, Mo. Filed Nov. 30, 1897. Serial No. 660,324. (No model.)



Claim.—In an ash-sifter, the combination with a box and the lid therefor, of the prop 5 pivotally connected to the top of the rear side of the lid, and the swinging bar 6 pivotally connected to said prop and to the rear side of the box, which prop automatically drops into position when the lid is opened, substantially as specified.

611,151. SYSTEM OF ELECTRICAL DISTRIBUTION. CHARLES F. SCOTT, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed Oct. 22, 1897. Serial No. 656,002. (No model.)



Claim.—1. A system of distribution for alternating currents comprising two circuits carrying currents differing in phase and each embodying two main conductors and a neutral or balancing conductor adapted to supply translating devices in multiple series, a fourth conductor for one of said circuits connected at one end to one of the main conductors of the other circuit and a connection between the other main conductor of the last-named circuit and the balancing-conductor of the four-wire circuit.

2. A system of distribution for alternating currents comprising two circuits supplied with currents from the secondaries of independent transformers and each having two main wires and a neutral or balancing wire, a fourth wire for one of said circuits connected at one end to one terminal of the transformer-secondary of the other circuit, a connection between the other terminal of the transformer-secondary of the last named circuit and the middle point of the transformer-secondary that supplies the first circuit.

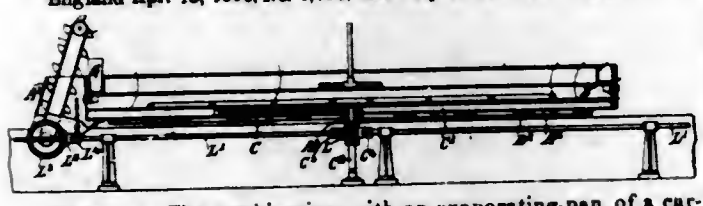
3. A system of distribution for alternating currents comprising two circuits carrying currents differing in phase and each embodying two main conductors and a neutral or balancing conductor adapted to supply translating devices in multiple series, a fourth conductor for one of said circuits connected at one end to one of the main conductors of the other circuit, a connection between the other main conductor of the last-named circuit and the neutral conductor of the four-wire circuit and a two-phase motor connected to the main conductors of the four-wire circuit for one phase and to the neutral wire and the fourth wire for the other phase.

4. A system of distribution for alternating currents comprising two circuits carrying currents differing in phase and each embodying two main conductors and a neutral or balancing conductor adapted to supply translating devices in multiple series, a fourth conductor for one of said circuits connected at one end to one of the main conductors of the other circuit, a connection between the other main conductor of the last-named circuit and the balancing-conductor of the four-wire circuit; single-phase translating devices connected be-

tween each of the main conductors and the balancing-conductor of each circuit and a two-phase motor connected to the main conductors of the four-wire circuit for one phase and to the balancing-conductor and the fourth wire for the other phase.

5. A system of distribution for alternating currents comprising two transformers supplying currents differing in phase, two three-wire circuits connected respectively to the secondaries of said transformers, a fourth wire for the first circuit connected to one terminal of the secondary of the second transformer, a connection between the other terminal of said secondary and the middle of the secondary of the first transformer, a second secondary for the first transformer, a fourth wire for the second circuit leading from one terminal of said secondary and a connection between the other terminal of said secondary and the middle of the secondary of the second transformer.

611,152. SALT-PAN. WILLIAM SHEDLOCK, London, England. Filed Dec. 15, 1897. Serial No. 662,035. (No model.) Patented in England Apr. 13, 1896, No. 7,796, and May 5, 1897, No. 11,240.



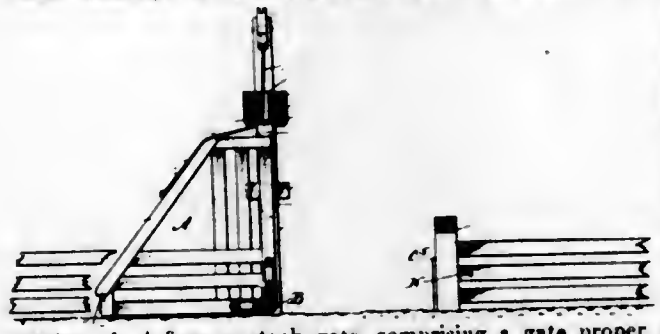
Claim.—1. The combination, with an evaporating-pan, of a carrier arranged over the liquid in said pan, molds supported by said carrier, an external well connected with said pan, scrapers in said pan for continuously removing the deposited crystals therefrom into said well, and means for elevating the crystals from said well and delivering them into said molds successively, substantially as, and for the purposes, hereinbefore described.

2. The combination, with a circular evaporating-pan, of an external well connected therewith, revolving scrapers in said pan for continuously removing the deposited crystals therefrom into said well, and an elevator for raising said crystals from said well and discharging them into molds supported above the level of the liquid in said pan, substantially as hereinbefore described.

3. The combination, with an evaporating-pan, of a carrier revoluble in a horizontal plane over the liquid in said pan and adapted to contain molds for the reception of the deposited crystals, an external well connected with said pan, scrapers for continuously removing the deposited crystals from said pan into said well, and elevating mechanism whereby the deposited crystals are raised from said well and delivered into the molds in said revoluble carrier, substantially as, and for the purposes, hereinbefore described.

4. The combination, with an evaporating-pan, of a circular mold-carrier revoluble in a horizontal plane, rollers for supporting said mold-carrier over the liquid in said pan, molds in said carrier, means for intermittently rotating said mold-carrier, and elevating mechanism whereby the deposited crystals from said pan are raised and delivered into the molds in said carrier, substantially as, and for the purposes, hereinbefore described.

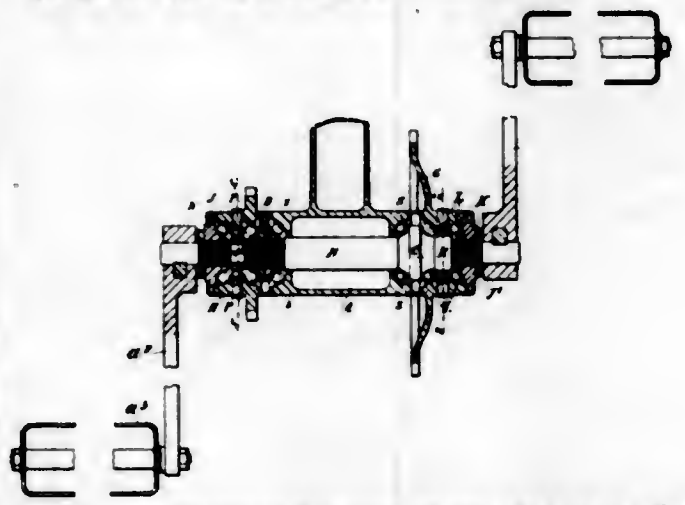
611,153. STOCK-YARD GATE. BENJAMIN F. STRANGE, Corvallis, Mont. Filed Apr. 26, 1898. Serial No. 678,867. (No model.)



Claim.—1. A farm or stock gate, comprising a gate proper, a transverse pivot for one lower corner of said gate, to permit the latter to swing in a transverse direction relatively to the gateway, a latch mounted to slide, and adapted to engage a shoulder at the upper end of the gate above said pivot, ropes connected with said latch, a rope connected with said gate, levers connected by branch ropes with said gate-rope, and rollers carried on the outer ends of said levers and engaged by the said latch-ropes for lifting the said latch prior to actuating the levers, substantially as shown and described.

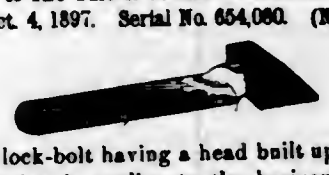
2. A farm or stock gate, comprising a post formed by uprights and mortised cross-bars, a gate proper having one lower corner hung on a transverse pivot carried by the said post, to permit the gate to swing in a transverse direction relative to the gateway, a latch mounted to slide vertically on the said cross-bars and normally supported thereby, the latch being adapted to engage a shoulder at the upper end of the gate above the said pivot, a rope for manipulating the said latch, and a lever mechanism for operating the gate and controlled by the said rope after the latch has been lifted out of engagement with the gate, substantially as shown and described.

611,154. BACK-PEDALING BRAKE. HENRY SYMES, Dunedin, New Zealand. Filed Mar. 23, 1897. Serial No. 628,913. (No model.) Patented in New Zealand Jan. 25, 1897, No. 9,222; in Victoria Mar. 5, 1897, No. 13,996; in South Australia Mar. 5, 1897, No. 3,582; in Queensland Mar. 8, 1897, No. 3,735; in New South Wales Mar. 9, 1897, No. 7,317; in Tasmania Mar. 9, 1897, No. 1,846; in West Australia Mar. 16, 1897, No. 1,569; in Canada Mar 22, 1897, No. 55,570; in England Mar. 29, 1897, No 8,084, and in France Apr. 17, 1897, No. 266,277.



Claim.—In combination in a bicycle, the pedal-shaft, the sprocket-wheel having a clutch connection therewith, the supplemental sprocket also having a clutch connection with said pedal-shaft acting reversely to the first clutch connection, the rocking lever pivoted to the frame of the bicycle and carrying a brake-shoe, and the chain passing around the supplemental sprocket, and having its ends connected with the rocking lever, substantially as described.

611,155. LOCK AND LATCH. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Oct. 4, 1897. Serial No. 654,060. (No model.)



Claim.—1. A lock-bolt having a head built up of laminæ, plates or sections, conforming in outline to the horizontal section of the head, and lapped upon and secured to the tail of the bolt in a position which presents their edges to the strike; substantially as explained.

2. A lock-bolt comprising a tail, one end of which conforms substantially to the horizontal section of the head, and laminæ, plates or sections also conforming to said section of the head, and built up on opposite sides of the end of the tail in sufficient numbers to provide a head of desired dimensions; as explained.

3. A lock-bolt constructed of a tail, and a head in which one end of the tail is inserted, said inserted end being presented edgewise in the head to form a friction-piece to receive wear imposed on the bolt by the lock-strike; substantially as set forth.

4. A latch-bolt comprising a beveled head, and a tail having one end shaped to conform to the bevel of the head, and incorporated in said head with the beveled edge presented on the striking-surface of the head in position to receive the friction of a strike; substantially as herein explained.

5. In a lock, a bolt having a tail lying flat with the lock casing, and with a quarter-turned outer end presenting its greater dimension in the direction of strain imposed upon it in service, and a head fixed to said end; substantially as herein set forth.

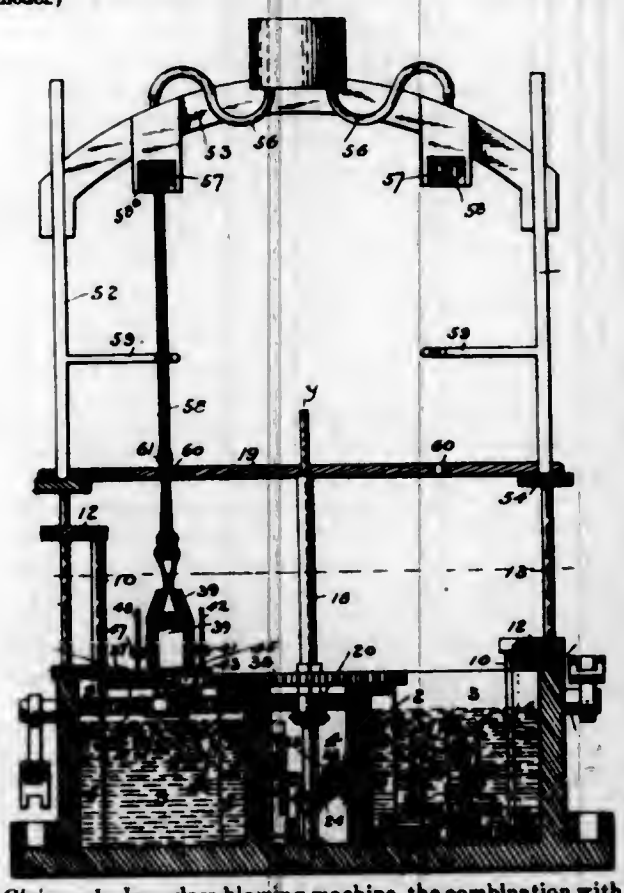
611,156. COW-TAIL HOLDER. EARL J. TRAPP and LEE M. TRAPP, Virgil, N. Y. Filed Oct. 11, 1897. Serial No. 654,914. (No model.)

Claim.—A wire cow-tail holder, having a coil at one end and inwardly spring-pressed arms adapted to embrace the main portion of the leg of the cow at the other end, the opposite ends of said arms converging toward each other, and a loop between said arms and said coil adapted to embrace the gamble-string of the leg, the meeting points of said arms and loop forming inwardly-extending

portions or offsets adapted to fit in the space between the main portion of the leg and the gamble-string, as set forth.



611,157. PASTE-MOLD GLASS-BLOWING MACHINE. JOHN C. TRIANCE, Rochester, Pa. Filed Nov. 19, 1897. Serial No. 659,209. (No model.)



Claim.—1. In a glass-blowing machine, the combination with the box provided with water-receptacles, of the alternately vertically reciprocating molds, rotatable upon their own vertical axes, substantially as described.

2. In a glass-blowing machine, the combination with the box provided with water-receptacles, of the alternately vertically reciprocating molds, rotatable upon their own vertical axes, and means substantially as described for automatically opening and closing the molds.

3. In a glass-blowing machine, the combination with the box provided with water-receptacles, of the alternately and intermittently vertically movable molds, rotatable upon their own vertical axes, substantially as described.

4. In a glass-blowing machine, the combination with the box provided with water-receptacles, of the molds and means for alternately and intermittently elevating and lowering the same, and means for continuously rotating said molds, when elevated, substantially as described.

5. In a glass-blowing machine, the combination with the box, the vertically and alternately movable carriers, the molds carried thereby, the vertical rods connected with said carriers, and the connecting-plates at the upper ends thereof, of the toggle-levers connected with said plates and with the bottom of the box, the toggle-levers connected therewith and the rock-shaft and means for oscillating the same, substantially as described.

6. In a glass-blowing machine, the combination with the box provided with a central compartment and end water-receptacles, of the vertically-movable carriers located in said water-receptacles, the cog-wheels journaled to said carriers and the molds secured to said cog-wheels, of the central rotatable shaft having a cog-wheel, which said cog-wheels are alternately adapted to engage, the bevel-gears for rotating said shaft, the bevel-gears on said shaft formed with a mutilated gear, the pinion meshing therewith, its shaft, the wheel secured thereto, the wrist-pin on said wheel, the pitman, the crank connected therewith, the rock-shaft to which said pitman is secured, and connections between said rock-shaft and carriers, for alternately reciprocating said carriers by the oscillation of the rock-shaft, substantially as described.

7. In a glass-blowing machine, the combination with the box provided with a central compartment and with end water-receptacles, the vertically-movable carriers located in said water-receptacles and the cog-wheels journaled to said carriers of the vertical rotatable shaft and the bevel-gears for operating the same, the bevel-gears on said shaft formed with a mutilated gear, the pinion engaging therewith, the wheel on the shaft of said pinion provided with a wrist-pin, the pitman connected therewith, the crank connected with said pitman, the rock-shaft to which said crank is secured, the toggle-levers connected with the ends of said rock-shaft and the toggle-levers connected therewith and pivotally connected with said carriers and the box, substantially as described.

8. In a glass-blowing machine of the character described, the combination with the box provided with water-compartments and the alternately and vertically movable mold-carriers, of the cog-wheels journaled in said carriers, the mold-sections connected therewith, the mold-sections hinged thereto, the lugs thereon, the vertical rods passing therethrough, the levers connected with said rods and pivoted to said cog-wheels, the coiled springs and the spring-arms connected with said carriers for tripping the levers and opening the molds, substantially as specified.

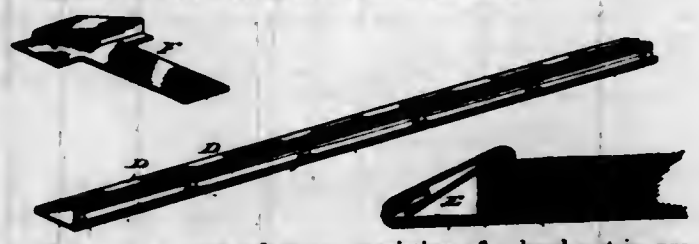
9. In a glass-blowing machine of the character specified, the combination with the alternately-reciprocating carriers, and the cog-wheels journaled thereto, having radial slots, of the adjustable blocks located in said slots, the pins or rods secured to said blocks, the mold-sections having a lug through which said rods pass, the section hinged thereto, and means for automatically opening and closing said mold-sections, substantially as described.

10. In a glass-blowing machine of the character described the combination with the box provided with water-receptacles, the alternately-reciprocating carriers, and the cog-wheels journaled thereto, of the two-part molds, one section of which is provided with a lug, the rod passing therethrough, and the adjustable block fitting in a slot in said cog-wheel, and the other section provided with a similar lug and rod, the lever secured to the lower end of this rod and pivoted to the cog-wheel, the coiled spring and the rod connected with said carrier for tripping the lever, substantially as described.

11. In a glass-blowing machine of the character described, the combination with the box and the alternately reciprocating and rotatable molds, of the frame, the air-reservoir, the hose, the valve-boxes and valves, and the spring-actuated lever, substantially as described.

12. In a glass-blowing machine of the character described, the combination with the box and the alternately reciprocating and rotatable molds, of the frame, the air-reservoir, the valve-boxes connected therewith, the valves, the pivoted levers, the coiled springs, the slotted guide-arms and the blowpipes formed with bulges intermediate the ends, substantially as described.

611,158. CARPET-FASTENER. ERNEST R. WEBB, Cadiz, Ohio. Filed Mar. 7, 1898. Serial No. 672,939. (No model.)



Claim.—1. A carpet-fastener consisting of a border-strip provided at its front edge with penetrating teeth or projections and bent upwardly and forwardly at its rear end to form a confining-flange, and an angular clamping-strip adapted to be slid longitudinally between the base-plate of said border-strip and its flange to retain the edge of the carpet in position, substantially as described.

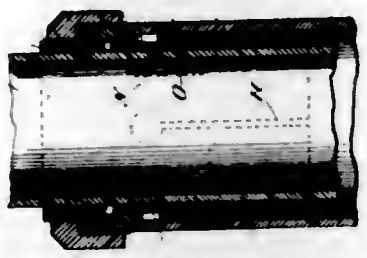
2. A carpet-fastener consisting, essentially, of a border-strip provided at its front edge with penetrating teeth or projections and bent upwardly and forwardly at its rear end to form a confining-flange extending at an acute angle thereto, an angular clamping-strip adapted to be slid longitudinally between the base-plate of said border-strip and its flange to retain the edge of the carpet in position, and clips having spring-hooks to receive and bear upon the confining-flange and clamping-strip, substantially as described.

3. In a carpet-fastener, a strip having one side bent at an acute angle and containing a series of depressions and the other turned upward, teeth on the second-named side, an angle-strip having one side

adapted to be engaged in the acute angle to hold the other in contact with the carpet, and spring-clips provided with hooked ends for securing strips to the floor, substantially as described.

4. In a carpet-fastener, strips adapted to engage the edge of the carpet, in combination with a clip formed of a T-shaped piece of sheet metal provided with a spring-strip bent upward at an acute angle and then downward forming a spring-hook to engage the strips, substantially as described.

611,159. JOINT FOR PARTS OF MACHINERY. GEORGE S. WEBB, Aurora, Ill. Filed Feb. 15, 1897. Serial No. 623,503. (No model.)



Claim.—1. In a clamp-joint for adjustably securing together two parts, one of which has a socket, the combination of a bushing occupying the socket, said bushing being made of elastic material so as to be of variable diameter, a wedge occupying the bushing, means whereby the wedge expands the bushing when moved longitudinally relatively thereto in one direction, a rotatable coupling disposed concentrically with relation to the bushing and wedge, and means whereby both the bushing and wedge engage the coupling upon opposite sides of its center, whereby the strains upon the coupling are distributed to opposite sides thereof and unbalanced lateral strains upon the parts are avoided, and whereby the bushing and wedge may be positively moved longitudinally, relatively to each other, in either direction, by rotating the coupling in one direction or the other, as may be necessary, substantially as set forth.

2. In a clamp-joint for adjustably securing together two parts, one of which has a cylindrical socket, the combination of a bushing, cylindrical on its exterior, occupying the socket, said bushing being made of elastic material so as to be of variable diameter and being flared on its interior, a wedge having a tapered exterior occupying the bushing, a rotatable coupling disposed concentrically with relation to the bushing and wedge, a means whereby the bushing and wedge engage the coupling upon opposite sides of its center, whereby the strains upon the coupling are distributed to all sides thereof and unbalanced lateral strains upon the parts are avoided, and whereby the bushing and the wedge may be positively moved longitudinally, relatively to each other, in either direction by rotating the coupling in one direction or the other, as may be necessary, substantially as set forth.

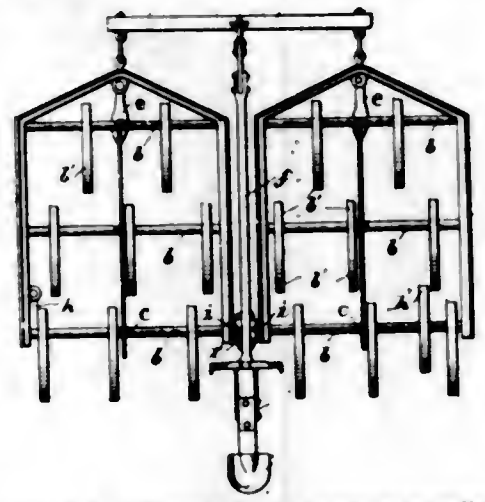
3. In a clamp-joint for adjustably securing together two parts, one of which has a cylindrical socket into which the other extends, leaving an annular space between them the combination of a bushing, cylindrical on its exterior, occupying the annular space, said bushing being made of elastic material so as to be of variable diameter and being flared on its interior, a wedge occupying the bushing and surrounding the inner one of the two parts to be secured together, said wedge having a tapering exterior fitting the flaring interior of the bushing, a rotatable coupling disposed concentrically with relation to the bushing and wedge, a means whereby adjacent ends of both the bushing and wedge engage the coupling upon opposite sides of its center, substantially as set forth.

611,160. SUPPORTING ATTACHMENT FOR HARROWS. EPHINGER E. WHIPPLE, Utica, N. Y. Filed Oct. 26, 1897. Serial No. 656,463. (No model.)

Claim.—1. A harrow having freely-movable sections, in combination with a wheeled support extending over the space between the sections, the inner sides of the sections having standards extending up and loosely confined to said support and provided with means to limit the downward movement of the standards and sections independently of the support, substantially as described.

2. A two-section harrow, in combination with a tongue extended forwardly about centrally of the harrow and receiving its draft from the harrow, plates secured to the rear portion of the tongue and depending therefrom, a supporting-wheel mounted between the plates, a seat mounted on the tongue, and independent supporting connections between the tongue and inner portions of said sections, substantially as described.

3. A harrow, in combination with a wheeled support or riding attachment comprising a tongue extending forwardly over the harrow and connected with the draft thereof and at the after part of the harrow mounted on a wheel, said tongue having a vertical opening, and a standard rigid with the harrow and passing loosely up through said opening, and means to lock the standard to the tongue or limit its downward movement therethrough, substantially as described.



4. A harrow, in combination with a tongue extending forwardly over the harrow and connected with the draft thereof and at its rear mounted on a wheeled support at the after part of the harrow, said tongue held against excessive lateral play independent of the harrow, and a supporting connection between the tongue and after part of the harrow permitting upward movement of the harrow independent of the tongue but limiting the downward movement of the harrow, said harrow having front and rear frame-supports independent of said tongue, substantially as described.

5. A curved spring-tooth lever-adjustment harrow having a certain rear portion provided with and carrying a depending ground-support, in combination with an independent wheeled riding attachment moving forward with the harrow and provided with a support limiting the downward movement of an opposite rear portion of the harrow whether the teeth are in or out of operative engagement with the soil, and a front frame-support, substantially as described.

6. A curved-spring-tooth lever-adjustment harrow having depending frame-supports at the front and outer side of the harrow carried by and moving with the same, in combination with an independent wheeled riding attachment moving forward with the harrow, and provided with a support for the opposite rear portion of the harrow limiting the downward movement thereof below a certain plane and permitting independent vertical play of the harrow with its frame-supports above said plane.

7. A two-section rocking-tooth-bar harrow having frame-supports at the front and rear outer portions of the sections carried by and moving with the frames and moving on the ground, in combination with a wheeled riding attachment moving with the harrow and provided with supports for the inner sides of the sections, substantially as described.

8. A lever-adjustment harrow having front and rear outer side supports traveling on the ground and carried by the harrow so that the weight thereof is on the harrow, in combination with an independent wheeled riding attachment arranged centrally of the harrow and loosely upholding the center thereof only, when in a certain plane and permitting independent movement above said plane with said front and outer rear side supports, thereby permitting the rider to raise and lower the teeth of the harrow by the levers without leaving his seat on the riding attachment.

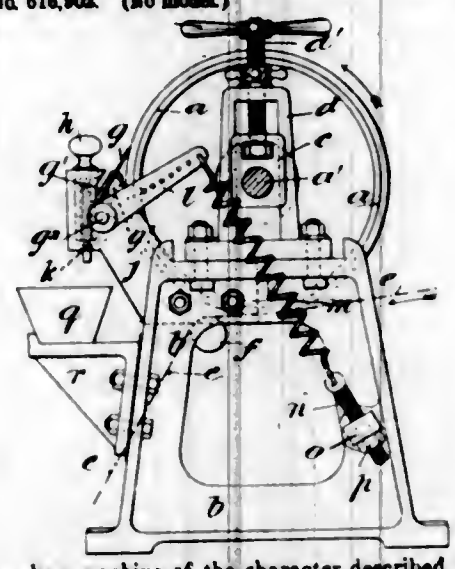
9. A rocking-tooth-bar lever-adjustment harrow having frame-supports, in combination with a tongue extending forwardly of the harrow and coupled at the front of the harrow to receive the draft therewith, a wheel-support at the after part of the harrow for the rear of said tongue, a seat carried by said tongue, a vertical standard confined to the frame of the harrow and loosely confined to said tongue to permit vertical reciprocation independently thereof, and a stop vertically adjustable on said standard to control the vertical movement of the standard independently of the tongue and consequently control the vertical movement of the harrow-frame independently of the tongue, substantially as described.

10. A several-section harrow, a front evener-bar to which the sections are coupled, and frame-supports carried by the sections, in combination with a tongue having a wheeled support at the after part of the harrow, said tongue extending forwardly centrally above the harrow with its front end forked or spread and confined to the evener-bar at separated points to hold the tongue against excessive lateral play, said tongue provided with depending supports attached to the section-frames and limiting the downward movement thereof below a certain plane and permitting limited lateral play of said sections independently of each other and the tongue, substantially as described.

11. A lever-adjustment harrow having frame-supports, in combination with an independent riding and supporting attachment consisting of a single tongue extending forwardly over the harrow and coupled with the draft thereof and at its rear provided with a depending frame provided with a wheeled support beneath the tongue, a depending support from an intermediate part of the tongue to the harrow-frame partially supporting the frame in a certain plane and permitting free independent vertical movement of the harrow and its attached parts above said plane, and a seat mounted on the tongue.

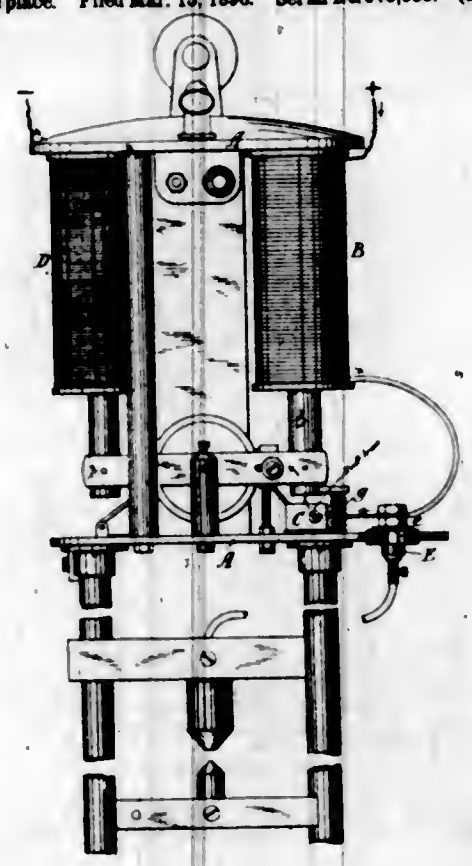
12. A several-section harrow, each section having supports depending from and attached to the front and outer sides of its frame, in combination with an independent riding and supporting wheeled attachment moving forward with the harrow and separate from said before-mentioned supports, said attachment provided with supports for the inner sides of said sections permitting play of said sections independent of the attachment and limiting the downward movement of the inner sides of said sections.

611,161. APPARATUS FOR WASHING PRINTERS' BLANKETS, &c. ABEL B. WIMPENNY, Hayfield, England. Filed Dec. 24, 1896. Serial No. 616,902. (No model.)



Claim.—In a machine of the character described, the combination of the roller *a*, the doctor *g* in contact with said roller, the clamp *g'* for holding said doctor, said clamp comprising two sections, the lower of which is provided with trunnions g^3, adjustable bearing-boxes *k* for receiving and supporting said trunnions, means for adjusting said boxes, an arm *l* secured to said trunnions, and an adjustable spring *m* connected to said arm, substantially as set forth.

611,162. ELECTRIC-ARC LAMP. FREDERIC S. WORSLEY, London, England, assignor to the British Blahnik Arc Light Company, Limited, same place. Filed Mar. 15, 1898. Serial No. 673,955. (No model.)



Claim.—1. An electric-arc lamp provided with short-circuiting devices comprising in combination with the main coil of the lamp and its core, a piece or block of magnetizable material with which said core is adapted to come into contact and short-circuit the carbons when their proper feeding is interrupted, substantially as described.

2. An electric-arc lamp provided with short-circuiting devices comprising in combination with the main coil of the lamp and its core, a piece or block of magnetizable material with which said core is adapted to come into contact and short-circuit the carbons when their proper feeding is interrupted, and a spring adapted to tend to keep the core and block apart, substantially as described.

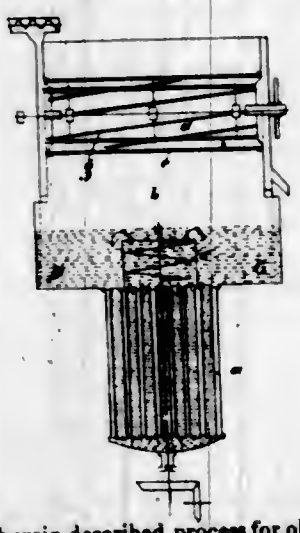
3. An electric-arc lamp having a frame and short-circuiting devices comprising, in combination with the main coil of the lamp and its core, a piece or block of magnetizable material insulated from said frame, said core being adapted to come into contact with said block and short-circuit the carbons when their proper feeding is interrupted, substantially as described.

611,168. CORSET ATTACHMENT. ELIZABETH YOUNG, Glasgow, Scotland, assignor of one-half to Robert Lindsay Young, same place. Filed Mar. 24, 1897. Serial No. 629,078. (No model.) Patented in England May 6, 1896, No. 9,598.



Claim.—A corset attachment, comprising a stiffener consisting of top and bottom sheaths adapted to be secured to the surface of the corset at the side thereof, a band formed with folded longitudinal wings provided with eyelets at their ends and also adapted to be secured on the waist-line to the surface of the corset at the side thereof, and a removable, reversible and replaceable strengthening-strip extending within the waistband and having its ends inserted in the sheaths; substantially as described.

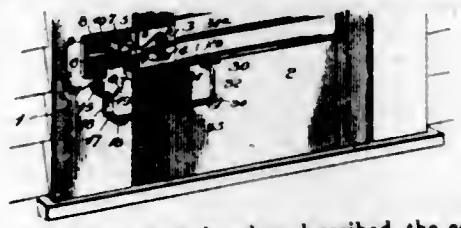
611,164. PROCESS OF OBTAINING LIME SUCRATE. MAX ZAHN, Artern, Germany. Filed Sept. 5, 1896. Serial No. 605,027. (No specimens.)



Claim.—The herein-described process for obtaining lime sucrate from aqueous solutions of molasses, at ordinary temperature, which consists in sifting uniformly upon the whole surface of said aqueous solution less than thirty parts of finely-divided caustic lime-dust to each one hundred parts of sugar in the solution, the said lime-dust being caused to settle in the form of a diffused cloud over the whole of the solution, and positively stirring the solution during the operation of evenly distributing the fine lime-dust on the surface of said

solution, whereby every particle of fine lime-dust is rapidly incorporated in the solution of molasses in such manner as to prevent foaming and formation of lime hydrate, the sucrate of lime being produced with a large percentage of saving in the use of lime, substantially as specified.

611,165. SHUTTER-OPERATING DEVICE. WILLIAM ZEENDER, Canal Dover, Ohio, assignor of one-half to George Weiss, Ragersville, Ohio. Filed Dec. 15, 1897. Serial No. 662,064. (No model.)



Claim.—1. In a device of the class described, the combination of the vertical and horizontal gears designed to be mounted respectively on a window-casing and a shutter, and provided respectively with flat wide cogs and long narrow cogs, said cogs meshing with each other and capable of rotation to swing the shutter when the vertical gear-wheel is operated and forming a lock when the vertical gear-wheel is at rest to prevent the shutter from swinging; substantially as described.

2. In a device of the class described, the combination of the hinge member attached to the shutter and provided with long narrow cogs on its lower face, a horizontal shaft supported to turn in the window-frame, and projecting at each end beyond it, a bevel-gear carried on the outer end of the shaft and having flat wide cogs of greater width than those of the hinge member and meshing with the latter, the spaces between the cogs on the gear being wider than the cogs on the hinge member and the meshing portions of the cogs on the gear being slightly narrower than the spaces between the cogs of the hinge member, the gearing being adapted to swing the shutter when the bevel-gear is operated and forming a lock when the bevel-gear is at rest to prevent the shutter from swinging, and a handhold on the inner end of the shaft to turn the latter, substantially as described.

3. The combination with a window-frame, and a shutter having pivoted slats and provided with a slat-connecting rod, of a rock-shaft journaled on the shutter and projecting beyond the inner and outer faces thereof and provided at its ends with arms, the inner arm being connected with the slat-connecting rod, an oscillating arm mounted on the window-frame, a horizontal rod connecting the oscillating arm with the outer arm of the rock-shaft, and means for oscillating the arm from the interior of the window-frame, substantially as described.

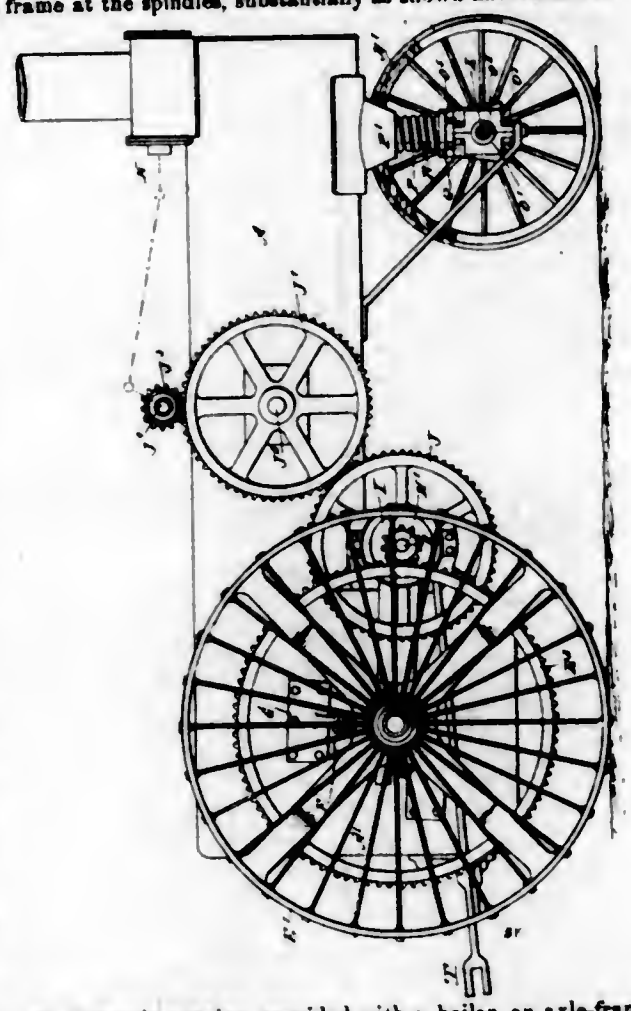
4. The combination with a window frame, a slatted shutter and the slat-connecting rod thereof, of a shaft mounted to turn in said shutter and projecting at each end beyond the inner and outer faces of the shutter, a horizontally-disposed arm connected to the inner end of said shaft and having a link connection to the slat connecting rod, a vertically-disposed arm connected to the outer end of the said shaft, a horizontal shaft supported to turn in the window-frame and projecting at its ends beyond the inner and outer face thereof, a vertically-disposed arm connected to the outer end of said shaft and having a link connection with the first-named vertically-disposed arm, and a handhold on the inner end of the shaft in the window-frame, substantially as described.

5. The combination with a window-frame and shutter, of a tube journaled on the window-frame and provided with an arm connected with the slat-operating rod of the shutter, a shaft passing through the tube-gearing connecting the shaft with the shutter and a handhold mounted on the shaft and arranged to interlock with either the shaft or the tube, substantially as described.

6. In a shutter-operating mechanism, the combination of the window-frame and shutter, of a tube supported for axial turning in the frame and having an open-ended slot in its inner end, a shaft supported for axial turning in the tube and projecting at its inner end beyond the inner end of the tube and having an angular surface near its inner end, a knob having a longitudinal bore angular at one end to fit the angular portion of the shaft, and cylindrical at its other end to fit over the tube, said knob being longitudinally movable on the shaft and tube, a set-screw in the shank of the knob to detachably engage in the slot in the tube, and independent connections between the tube and shaft and the shutter-slats and shutter-hinge, substantially as and for the purpose specified.

611,166. TRACTION-ENGINE. ROBERT J. ZERBAN, Jr., Belleville, Ill. Filed Apr. 27, 1898. Serial No. 679,023. (No model.)

Claim.—1. A traction-engine, provided with a boiler, an axle-frame approximately U-shaped, and fulcrumed at its middle portion on the boiler, and carrying at its ends alined spindles for the traction or rear wheels, and springs interposed between the boiler and the frame at the spindles, substantially as shown and described.

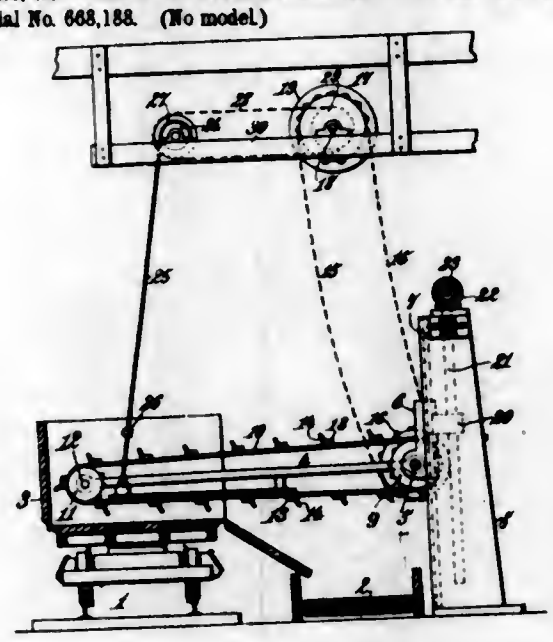


2. A traction-engine, provided with a boiler, an axle-frame approximately U-shaped, and fulcrumed at its middle portion on the boiler, and carrying at its ends alined spindles for the traction or rear wheels, springs interposed between the boiler and the frame at the spindles, a counter-shaft carried by the pivot portion of said axle-frame, intermeshing gears upon the counter-shaft and traction-wheels and connections from the counter-shaft to the engine, substantially as shown and described.

3. The combination of an axle, comprising a two-part sleeve having a vertical and longitudinal slot therein, means for clamping the two parts together, and wheel-journals held within the ends of the sleeve, with a king-bolt entering the slot, and a plate surrounding the king-bolt and having central ribs engaging the upper surface of the sleeve, substantially as shown and described.

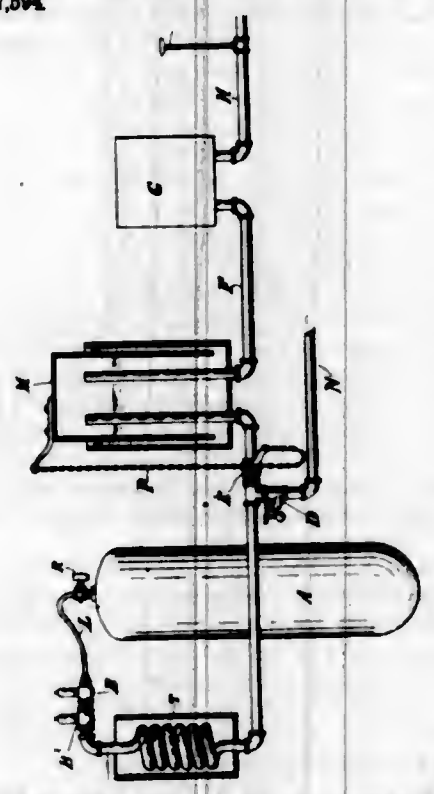
4. A traction-engine, provided with a boiler carrying a king-bolt, a sleeve carried by the front axle, a king-bolt plate on the king-bolt, and seated to rock on the bearing of said sleeve, and a spring on the king-bolt and interposed between the bolt and the king-bolt casting, substantially as shown and described.

611,167. APPARATUS FOR UNLOADING SUGAR-CANE FROM CARS, &c. JAMES W. BODLEY, Staunton, Va. Filed Jan. 27, 1898. Serial No. 668,188. (No model.)



Claim.—The herein-described apparatus for handling sugar-cane, and the like, consisting of an endless rake, or series of rake-sections, having a supporting and driving shaft at one end, vertically-movable carriages in which said shaft is journaled, standards having vertical guideways for said carriages, and operating mechanism connected with said carriages for simultaneously actuating the same to raise and lower the said rake, as specified.

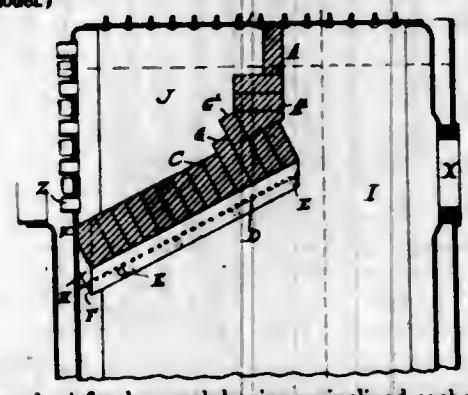
611,168. **AUTOMATIC GAS-SUPPLY APPARATUS.** EDWARD N. DICKERSON, New York, N.Y. Filed Dec. 20, 1894. Serial No. 532,425. (No model.) Patented in England June 18, 1895, No. 11,843B; in France June 18, 1895, No. 243,270; in Belgium June 18, 1895, No. 116,130; in Italy June 18, 1895, XXX, 39,163, LXXVI, 430, and in Spain June 19, 1895, No. 17,594.



Claim.—1. The combination of the gas-receiver A containing combustible gas in a liquefied condition, by reason of the pressure of said gas in the receiver, reducing-valve B, expansion-coil T, liquid-chamber S and governing-holder M, substantially as described.

2. The combination of the gas-receiver A containing combustible gas in a liquefied condition, by reason of the pressure of said gas in the receiver, reducing-valve B, governing-holder M, mixing device G, and safety-valve D and the connections as shown and described.

611,169. **ARCH FOR FURNACES OF LOCOMOTIVES.** ALFRED F. HACK, Melbourne, Victoria. Filed May 10, 1898. Serial No. 680,285. (No model.)

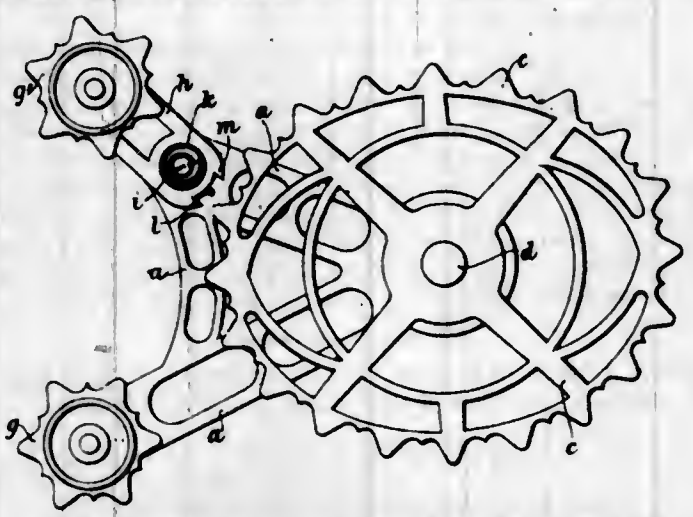


Claim.—1. A fire-box arch having an inclined arched bridge exteeding the full width of the fire-box, a part only of the bridge-front touching the tube-plate, and a space H being left between the tube-plate and the lower part of said bridge-front substantially as set forth.

2 In a fire-box, an upper combustion chamber, having as its base an inclined bridge the full width of the fire-box, and having as its rear a central vertical wall of less width extending from the fire-box top to the rear of said bridge, leaving passages upon the sides of said central wall, and a space between the forward end of the bridge and the tube-plate of the furnace, substantially as described.

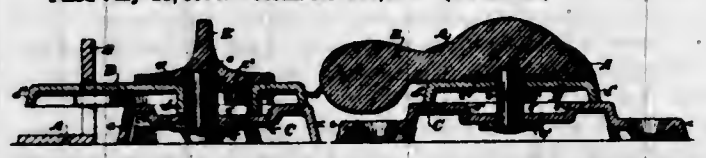
611,170. **DRIVING-GEAR FOR BICYCLES.** JAMES HOWARD, London, England. Filed Nov. 16, 1897. Serial No. 658,752. (No model.) Patented in England Apr. 10, 1897, No. 9,167.

Claim.—1. The combination with an axle, and an elliptical wheel, of an oscillatory frame carrying two chain-guide wheels, one of which is yieldingly mounted thereupon, substantially as described.



2. The combination with an axle, and an elliptical chain-wheel, of an oscillatory frame loosely mounted in operative relation to the chain-wheel and provided with a chain-guide wheel *g* and a pivoted spring-yielding arm *h* carrying a chain-guide wheel *g'*, substantially as and for the purposes described.

611,171. **SASH-FASTENER.** HOBART B. IVES, New Haven, Conn. Filed July 23, 1896. Serial No. 600,268. (No model.)



Claim.—1. In a sash-fastener, in combination with a base, stamped to give it a raised portion with a dependent stiffening-flange around it, and a recess formed in the raised portion by stamping down a part of such portion, to carry the top of the stamped-down part below the under face of the main part of the raised portion, so as to leave a stiffening-flange connecting the bottom of the recess with the main part of the raised portion of the base, such recess having its sides provided with one or more curved surfaces, with an offset or notch at the end of each curved surface, a latch-hook to swing and slide on such base, having one or more guiding and locking lugs, a rotary knob and eccentric connections between such knob and latch-hook, substantially as and for the purpose set forth.

2. In a sash-fastener, in combination with a base provided with a curved guiding-surface and a locking offset or notch, a stamped latch-hook having a guiding and locking lug formed on it by bending a portion of the latch-hook at an angle to its body, the plane of bending of such portion being such that the side edges of the lug produced are presented to the sides of the locking notch or offset, when such lug is seated in the latter, a rotary knob, and eccentric connections between such knob and latch-hook, for actuating the latter, substantially as and for the purpose described.

3. In a sash-fastener, in combination with suitable curved guiding-surfaces, and locking-offsets at the ends of such surfaces, a stamped latch-hook having the two guiding and locking lugs formed on it, by bending down portions of its body, the plane of bending being such that the lugs will, when in the locking-offsets on the base, present their opposite side edges to the opposite sides of such offsets, a rotary knob, and eccentric connections between such knob and the latch-hook for actuating the latter, substantially as and for the purpose described.

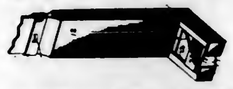
4. In a sash-fastener, in combination with a base provided with a curved guiding-surface and a shoulder, a stamped latch-hook having a dependent stiffening-flange around it, a longitudinal slot, an eccentric slot connected with the longitudinal slot, and a guiding and locking lug formed by bending down a portion of the latch-hook, at the end of the longitudinal slot, the bending down of such portion being in the same plane with the length of the slot, a rotary knob having an eccentric stud, and a pivot-pin connecting such knob with the base, passing through the longitudinal slot in the latch-hook, substantially as and for the purpose described.

5. In a sash-fastener, in combination with a stamped base having the raised portion, with dependent stiffening-flange around it, and the recess, formed by stamping down a part of such portion, having a curved guiding-surface with a locking notch or offset at the end thereof, the stamped latch-hook having the dependent stiffening-flange, to rest upon the raised portion of the base, a longitudinal slot, an eccentric slot, and a portion at the end of the longitudinal slot bent down in the same plane with the latter slot to form a lug ex-

tending into the recess in the base, a rotary knob having an eccentric lug, and a pivot-pin connecting such knob with the base, and passing through the longitudinal slot in the latch-hook, substantially as and for the purpose shown.

6. In a sash-fastener, in combination with a suitable base provided with a guiding-surface and a locking shoulder, a latch-hook having a longitudinal slot, an eccentric slot and a portion to engage the guiding-surface and shoulder on the base, a rotary knob, having a pin or stud to engage the eccentric slot in the base, a pivot-pin connecting the knob with the base, and passing through the longitudinal slot in the latch-hook, and a cupped spring-washer around the pivot-pin, between a portion of the knob and the latch-hook, connected with the knob so as to rotate with the latter, with reference to the latch-hook, substantially as and for the purpose described.

611,172. CARTRIDGE-CARRIER. THOMAS E. JACKSON, Brierfield, Ala. Filed Aug. 23, 1897. Serial No. 649,127. (No model.)



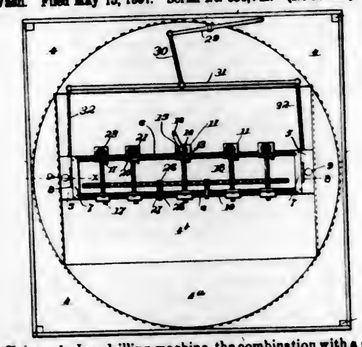
Claim.—1. The combination with a magazine provided with a downwardly-inclined discharge end, of a slide covering the discharge-opening therein, and a spring cooperating with the slide to hold the latter in position to normally close the discharge-opening, substantially as specified.

2. The combination with a belt, yoke, and suspension-straps, a magazine extending along one of said suspension-straps and connected thereto, a slanting discharge-casing at the lower end of said magazine having a discharge-opening in its upper side, and a spring-pressed slide normally covering the discharge-opening, substantially as specified.

3. In a magazine of the character described, the combination with an elongated casing, of a discharge-casing extending obliquely from one end thereof and having a transverse discharge-opening in its upper side, a slide designed to cover said opening, and a finger-aperture in the lower side of the casing opposite the slide, substantially as specified.

4. The combination with a suspension-strap designed to be supported upon the body of the wearer, of a vertical elongated magazine for cartridges, having a flexible strip extending upward from the upper end thereof and adjustably secured to the suspension-strap, and also extending lengthwise thereof, a sliding loop surrounding said strap and strip, and securing means for holding said sliding loop, for closing the upper end of the magazine, substantially as described.

611,173. DRILLING-MACHINE. JAMES L. JONES, Starbuck, Wash. Filed May 15, 1897. Serial No. 636,742. (No model.)



Claim.—1. In a drilling-machine, the combination with a stationary frame, of a frame movable therein, adjusting means therefor, bearing-plates independently adjustable longitudinally upon the movable frame, transverse shafts mounted in the bearing-plates and adjustable therewith and geared to horizontal pinions having axial openings, bits or boring-tools secured within said openings, and means for driving the several transverse shafts in unison, substantially as shown and for the purpose set forth.

2. In a drilling-machine, the combination with a stationary frame, of a frame movable therein and having guides, bearing-plates mounted upon the frame by engaging the guides, said bearing-plates being secured in adjustment by set-screws or equivalent devices, transverse shafts, supported in the adjustable bearing-plates and having sprocket-wheels mounted thereon, horizontal pinions also supported by the bearing-plates and geared to the sprocket-wheels, said horizontal pinions having axial openings to receive the bits or boring-tools, a sprocket-chain connecting the sprocket-wheels, and means for driving one of the sprocket-wheels, substantially as shown and for the purpose set forth.

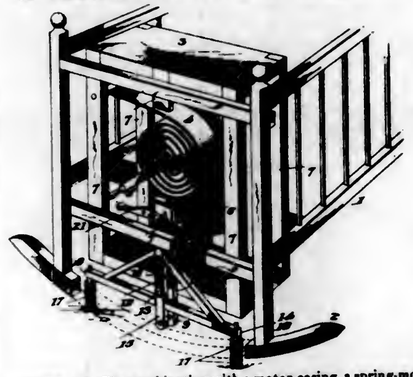
3. In a drilling-machine, the combination with a stationary frame, of a frame movable therein, and having a series of bearing-plates adjustable longitudinally upon the movable frame horizontal pinions supported in the boring-tools, means for driving the horizontal pinions in unison and from a single drive-wheel, together with a lever connected to the movable frame for raising and lowering the same, substantially as shown and for the purpose set forth.

4. In a drilling-machine, the combination with a stationary frame, of a frame movable therein and provided with bearing-plates adjustable longitudinally thereon, horizontal pinions supported in the bearing-plates and having axial openings to receive the bits or boring-tools, shafts geared to the pinions and having sprocket-wheels thereon, a sprocket chain connecting the several sprocket-wheels, one of said sprocket-wheels being driven from a suitable power; together with bearing-plates adjustably mounted on the movable frame and carrying supports having idle-pulleys which engage the sprocket-chain, substantially as shown and for the purpose set forth.

5. In a drilling-machine, the combination with a stationary frame, of a frame movable therein and having bearing-plates adjustable longitudinally thereon, shafts supported in the bearing-plates and having sprocket-wheels mounted thereon, horizontal pinions geared to the sprocket-wheels and having axial openings to receive the bits or boring-tools, set-screws for adjustably attaching the bits or boring-tools to the pinions, a sprocket-chain connecting the sprocket wheels, one of said sprocket-wheels being driven from a suitable power; and a lever fulcrumed upon the stationary frame and connected to the movable frame for raising and lowering the same, substantially as shown and for the purpose set forth.

6. In a drilling-machine, the combination with a stationary frame, having vertical slots in the end pieces thereof, of boxings guided in the slots and having openings or bearings, a frame located within the stationary frame and having trunnions or stub-axles which bear in the blocks or boxings and are secured by set-screws, the said movable frame having a series of bits or boring-tools adjustable thereon and geared to be turned in unison from a driving power, substantially as shown and for the purpose set forth.

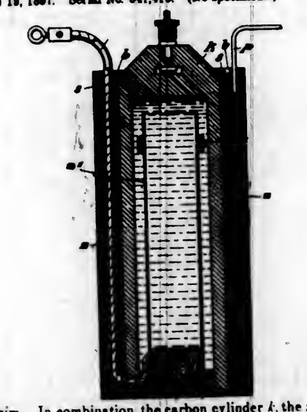
611,174. SELF-ROCKING CRADLE. RUFUS D. KING, Bowman, Ga. Filed Dec. 16, 1897. Serial No. 662,124. (No model.)



Claim.—1. The combination with a motor-casing, a spring-motor inclosed therein, of a drive-shaft actuated by said motor and provided with a crank, a pin projecting from said crank a pivoted walking-beam having a vertical post provided with an elongated slot through which said pin projects, and by means of which the walking-beam is operated, said walking-beam being provided with spring-actuated feet, substantially as set forth.

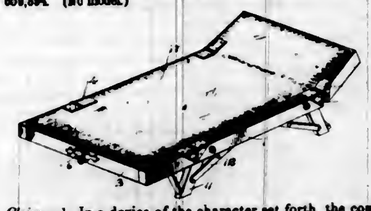
2. In combination with a cradle, a motor-casing secured to the end thereof and provided with a spring-motor, a crank-shaft rotated by said motor and provided with a pin, a walking-beam having a vertical post, the lower end of which is pivoted to an extension of the casing, and the upper end of which is provided with a vertical slot through which projects the pin of the crank-shaft, plugs secured at the outer ends of said walking-beam, springs coiled around the plugs and attached thereto, a winding-crank, and a brake, substantially as set forth.

611,175. GALVANIC ELEMENT. ROBERT KRAYN and CARL KOENIG, Berlin, Germany; said Krayn assignor to said Koenig. Filed June 19, 1897. Serial No. 641,416. (No specimens.)



Claim.—In combination, the carbon cylinder *k*, the zinc cylinder *z'* within the same and insulated therefrom by the plug *a* which extends up into the same and has a disk extension bearing upon the carbon cylinder, the electrolyte between the said cylinders *k* and *z'*, the outer zinc cylinder *z* about the carbon cylinder, the said outer zinc cylinder being insulated from the inner zinc cylinder and from the carbon cylinder, and the paste electrolyte between the outer zinc cylinder and the carbon cylinder, substantially as described.

611,176. FOLDING CAMP-BED. REUBEN LOWE, Mexia, Tex., assignor to R. W. Simmons, same place. Filed Nov. 26, 1897. Serial No. 659,894. (No model.)



Claim.—1. In a device of the character set forth, the combination of a main body-section, end sections hinged thereto, plates having laterally-extending flanges adapted to engage each other, carried by the main body and end sections, jointed end pieces for the said end sections, sliding keepers adapted to engage and cross the joints in the end sections, and folding legs, substantially as described.

2. In a cot or bed of the character set forth, the combination with a main body portion having hinged end extensions and jointed end pieces adapted to fold inwardly, of legs hinged to the main body-section, hinged braces connecting said legs to the body-section, and a series of arms extending across from one leg to the other, and adapted to fold to permit the legs to be drawn toward each other, substantially as described.

3. In a bed or cot of the character set forth the combination of a main body-section having end sections hinged thereto and all adapted to be contracted laterally and the end sections having jointed end bars adapted to fold inwardly, and provided with adjustable keepers and adjustable legs attached to the said main body-section, substantially as described.

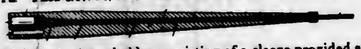
611,177. WASHBOILER. CAROLINE LOUIS, Pine City, Minn. Filed May 10, 1897. Serial No. 636,809. (No model.)

Claim.—The combination of a washboiler having an extended top flange arranged in a horizontal plane, an imperforate lid or cover for said boiler having on the lower side thereof a strip on one side of the center and provided with a series of openings extending therethrough, the said lid or cover being adapted to be inverted and arranged at an angle of inclination on the flange of the boiler, said strip being located far enough inward from the periphery of the cover to permit the latter to be placed on the boiler, and a cage having a bail, and removably mounted within the boiler, said cage being adapted to be placed on the inverted cover and rested against the strip for draining purposes, substantially as described.

611,177.



611,178. PENHOLDER. WILLIAM H. MAULTBY, Grand Valley, Pa. Filed Nov. 26, 1897. Serial No. 659,858. (No model.)

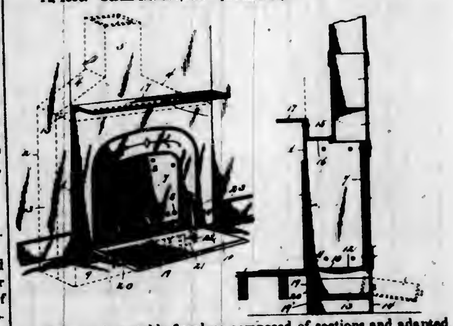


Claim.—1. A penholder consisting of a sleeve provided at its inner end with a cylindrical socket and with a central, longitudinal bore extending from said socket and opening through the outer end of the sleeve, said bore being disposed eccentric to the axis of the socket and provided adjacent thereto with a conical enlargement, and a staff having a reduced flexible stem fitted in said bore and a head fitted in said socket and bearing normally against one side of the wall of the socket, substantially as described.

2. A penholder consisting of a sleeve provided at its inner end with a cylindrical socket and with a longitudinal bore extending from said socket and disposed eccentrically to the axis thereof, said bore being of very small diameter so that the surrounding wall of the sleeve may be of the proper thickness and strength to prevent undue yielding or crushing of the sleeve, and provided adjacent to the socket with a conical enlargement opening thereinto, and a staff having a reduced flexible stem snugly fitting the bore and compensating for the material removed to form said bore, and a head completely inclosed in said socket, said head by reason of the eccentric disposition of the bore being normally arranged to bear against one side of the wall of said socket, substantially as and for the purpose described.

3. A penholder consisting of a sleeve provided at its inner end with a cylindrical socket and with a longitudinal bore extending from said socket and opening through the outer end of the sleeve, said bore being disposed eccentric to the axis of the socket and provided adjacent thereto with a conical enlargement, a pin extending across the socket and fixed in the walls thereof, a staff having a reduced flexible stem fitted in said bore and a head fitted in said socket and bearing normally against one side of the wall of the socket, and a segmental-shaped stop-lug on the stem in rear of said head adapted to coact with the pin, substantially as described.

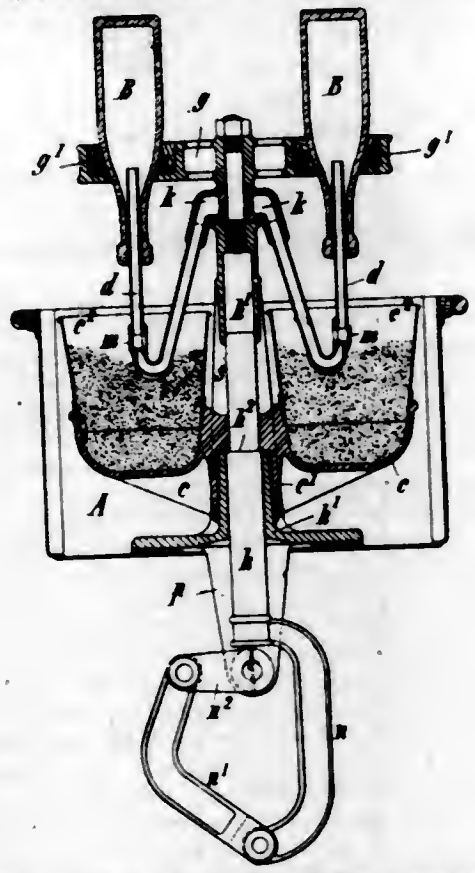
611,179. FIREPLACE. JOHN E. MAY, Rodgers, Tex. Filed Apr. 14, 1898. Serial No. 677,816. (No model.)



Claim.—A portable fireplace composed of sections and adapted to be projected through an opening in the wall of a house, and having an upward projection on its front wall in front of and removed from the smoke-flue for engaging the wall of the house and retaining the fireplace in position, and an ash-pit extension below the floor of the room to which the fireplace is applied, said fireplace being provided in rear of the wall of the house engaged thereby, with conver-

ging walls terminating in a smoke-flue also composed of sections built one upon the other, said ash-pit extension having draft-openings in its front wall and an opening in its rear wall permitting the removal of the ashes from said ash-pit from the outside of the house, all substantially as described.

611,180. **BOTTLE-WASHER.** Hugo W. R. Meister, Hamburg, Germany, assignor to Boldt & Vogel, same place. Filed Dec. 31, 1897. Serial No. 665,034. (No model.) Patented in Germany June 21, 1896, No. 92,131, and Oct. 21, 1896, No. 93,661; in France Sept. 16, 1896, No. 242,206; in England Oct. 14, 1896, No. 23,802; in Switzerland Oct. 24, 1896, No. 13,387; in Hungary Oct. 24, 1896, No. 7,744, and in Austria Nov. 12, 1896, No. 46/4,554.



Claim.—1. In a bottle-washing machine, a support for the bottles, a water-supply, a holder for granular material adapted to be raised and lowered, a link-motion for raising and lowering said holder, a bent pipe between the water-supply and the bottle, and an injector in the branch of the bent pipe leading to the bottle and above the bend in said pipe, substantially as and for the purpose set forth.

2. In a bottle-washing machine a suitable frame a support for the bottles thereon, a water-supply, pipes from said supply to the bottles and injectors in the pipes in combination with a support for a granular material and means for raising and lowering said support so as to immerse the injector-orifices in the granular material, substantially as described.

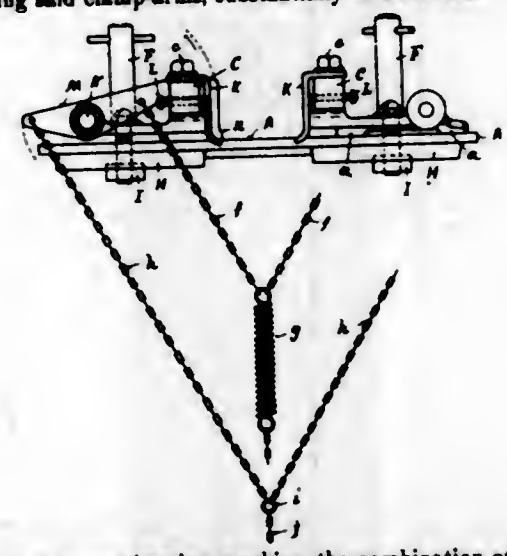
3. In a bottle-washing machine, a support for the bottles pipes for supplying water to the bottles, means for introducing a granular material into said pipes, a holder for the granular material, a rod supporting said holder, a crank and a link-motion connecting said rod and crank for elevating the holder, substantially as described.

4. In a bottle-washing machine jet-pipes for supplying water to the bottles, means for introducing a granular material into the jet-pipes, a holder for the granular material, means for reciprocating the holder and for simultaneously regulating the water-supply, substantially as described.

5. In a bottle-washing machine, a water-supply pipe, jet-pipes for feeding water to the bottle, means for introducing a granular material to said pipe, a holder for the granular material, a link-motion on said holder, a cut-off in the water-supply and a crank and shaft adapted to operate said cut-off and link-motion, substantially as described.

611,181. **TRACE-TRIMMER.** Louis L. Miller, Newport, Ky. Filed Nov. 22, 1897. Serial No. 659,464. (No model.)

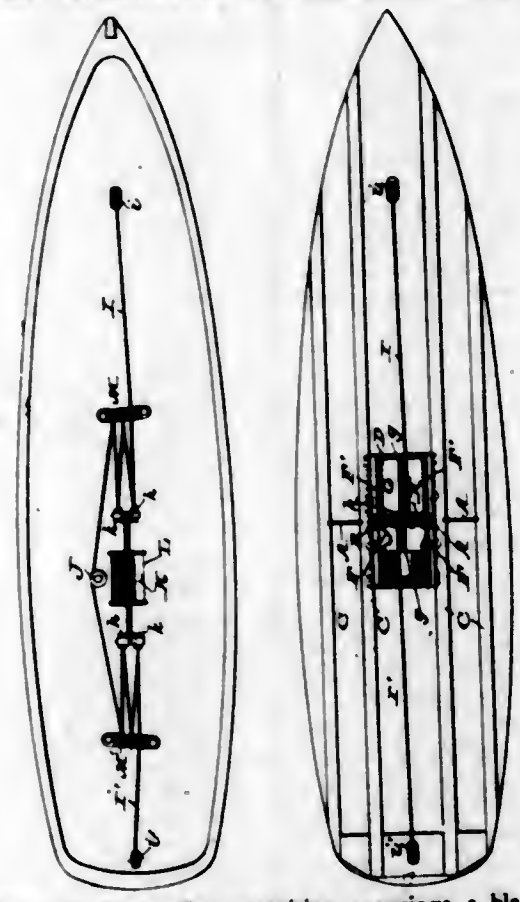
Claim.—1. In a trace-trimming machine, the combination of a bed-plate having in its top a longitudinally-arranged grooved way and provided with longitudinally-arranged slots, a pair of guide-stocks having depending flanges to slide in said way, vertical knife-posts carried on said guide-stocks, knives adjustable on said posts, a pair of vertical clamping-rods extended through said stocks and through the slots of the bed-plate and each having a flange bearing on the upper face of the guide-stock, nuts on the lower ends of said clamping-rods, swinging clamp-arms pivoted to the guide-stocks and having their inner ends provided with clamp-feet adapted to be swung into and out of the space between said guide-stocks, and means for controlling said clamp-arms, substantially as described.



2. In a trace-trimming machine, the combination of the slotted bed-plate A provided in its top with a grooved way B and having on its under side the grooved ways H, guide-stocks D carrying vertical knife-posts C and having flanges *a* slidingly engaged in the way B, knives K adjustable on the knife-posts, means for adjusting said knives horizontally and vertically, flanged clamping-rods F extended vertically through the guide-stocks and through the slots of the bed-plate, nuts I on the lower ends of said rods, clamp-arms M pivoted to the guide-stocks, and adjusting-screws E for the guide-stocks, substantially as described.

3. In a trace-trimming machine, the combination of the slotted bed-plate A provided with grooved ways B and H at top and bottom, guide-stocks D having flanges *a* slidingly engaged in the grooved way B, flanged clamping-rods F extended through the guide-stocks and through the slots of the bed-plate and provided with nuts I adapted to be engaged in the grooved ways H, adjusting-screws E for the guide-stocks, knife-posts C arranged vertically on the guide-stocks, knives K adjustable on said posts, swinging clamp-arms M pivoted to the guide-stocks, and mechanism for operating said arms to swing their inner ends into and out of the space between the guide-stocks, substantially as described.

611,182. **MARINE PROPULSION.** Edward W. Mitchell, Oberlin, Ohio. Filed Mar. 16, 1897. Serial No. 627,804. (No model.)



Claim.—1. A propeller comprising a carriage, a blade pivoted thereto, guys secured to and leading in opposite directions from said

blade, a movable support to which said guys are connected and devices by which to adjust said movable support substantially as described.

2. A propeller comprising a carriage, a pivoted blade, a support sliding with respect to the pivot of the blade, the braces or guys connecting the blade with the support on opposite sides of the pivot of the blade and means by which to slide said blade substantially as described.

3. A propeller comprising a pivoted blade, guys or braces leading in opposite directions from the blade, a support to which said braces or guys are connected, such support being movable with respect to the pivot of the blade, a drum geared with the said support and means by which to turn said drum to adjust the support substantially as shown and described.

4. In a propeller the combination with the blade, and the movable support by which to reverse said blade, such support having a rack, of the drum having a pinion meshing with the rack the cables on said drum and means for operating said cables substantially as shown and described.

5. A propeller substantially as described consisting of the carriage, the blade pivoted to the carriage, the support sliding in said carriage and extending on opposite sides of the blade and provided with a rack, the braces or guys connecting the support with the blade, the drum journaled to the carriage and having a pinion meshing with the rack of the support and the cable by which to turn the drum substantially as described.

6. In a propeller the combination with the carriage the blade, and devices by which the blade may be braced to act operatively in one or the other direction of the cable for operating said propeller, the ends of such cable being connected with the bracing devices of the blade whereby the same cable may serve to adjust the blade and also operatively move the propeller substantially as shown and described.

7. The combination of the pivoted blade, the carriage therefor, means by which to adjust the said blade to act operatively in one or the other direction such means including a drum, the cable wound at its ends on said drum and an adjusting means whereby one of such ends may be wound on and the other correspondingly wound off the drum to effect the desired adjustment of the blade substantially as described.

8. The combination of the sliding carriage, the pivoted blade, the braces or guys therefor, the supports to which the braces or guys are connected, the drum geared with said support, the cable wound at its ends on said drum and the capstan on which said cable is wound, and operating devices connected with said cable for moving the propeller, substantially as described.

9. The apparatus herein described consisting of the reciprocating propeller, the reciprocating operating device, the cable connecting said propeller and operating device, a plurality of pulleys being provided on the reciprocating device and pulley-blocks having a plurality of guide-pulleys and arranged between the operating device and the propeller substantially as shown and described.

10. In an apparatus substantially as described the combination of the reciprocating propeller, the reciprocating operating device, having at its ends the plurality of pulleys the pulley-blocks adjacent to said ends and having pulleys, the adjusting device, and the cable secured at its ends to the propeller, passed about the adjusting device and disposed through the pulleys of the blocks and operating device substantially as shown and described.

11. The apparatus herein described consisting of the reciprocating propeller, the reciprocating operating device having pulleys, the pulley-blocks adjacent to the ends of the reciprocating device, the capstan for adjusting the cable, and the cable secured at its ends to the propeller passed through the pulley-blocks and pulleys of the operating device and about the capstan substantially as described.

611,188. MUTE FOR STRINGED INSTRUMENTS. HUGH PARR, Rat Portage, Canada. Filed July 31, 1897. Serial No. 646,666. (No model.)

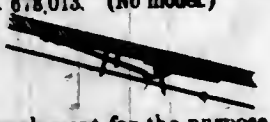


Claim.—1. As a new article of manufacture, the herein-described mute for the purpose named, comprising a base-plate 2, a pad-carrying arm 1 pivotally mounted upon said base-plate and provided with a seat 8, a spring for yieldingly holding the pad-carrying arm in its normal position, and a lever having a spindle portion, and perpendicularly-extending arms, one of which is fitted in said seat, substantially as specified.

2. A mute for the purpose named, having a pivotal pad-carrying arm, mounted upon the brace of a banjo-head, and yieldingly held in one of its adjusted positions, and an operating-lever mounted for swinging movement exteriorly of the banjo-head contiguous to the tailpiece, and extending perpendicularly beyond the front surface of the said head for lateral swinging movement by the forearm of the performer, substantially as specified.

3 A mute for the purpose named, having a securing-plate adapted to be fastened to the brace of a banjo-head, a pad-carrying arm pivotally mounted upon said plate and provided with an extension forming a looped seat, and an operating-lever mounted upon the banjo-head and provided with an arm arranged at its extremity in said seat, the other arm of the lever extending perpendicular to and being terminally disposed beyond the front surface of the banjo-head, substantially as specified.

611,184. FERTILIZER-DISTRIBUTER. EQUIELLER B. RAINEY, Glory, Tex., assignor of one-half to W. C. Cross, same place. Filed Apr 18, 1898. Serial No. 678,013. (No model.)



Claim.—1. In an implement for the purpose specified, the combination of a hopper having a straight side and a rounded bottom, the latter formed with a discharge-opening, of a plate applied to the rounded bottom and extending part way along the lower portion of the straight side and having a space between it and the adjacent parts, a keeper applied to the upper portion of said straight side, and a flexible cut-off plate operating through the keeper and in the space formed between the plate and the straight and curved portions of the hopper, and self conformable to the straight and curved parts of the hopper, substantially as set forth.

2. In combination with a hopper having a straight side and a curved bottom, the latter formed with discharge openings, a plate applied to the curved bottom and lower portion of the straight side of the hopper and forming a guide-space, independent keepers applied to the upper edge portion of the straight side of the hopper opposite the guide-spaces formed by the aforesaid plate, independent flexible cut-offs operating through the keepers and the said guide-spaces and bearing against the straight side of the hopper and self conformable to the curvature of the bottom and the straight side, and a cross-piece connecting the upper ends of the cut-offs, substantially as set forth.

3. The combination with a hopper having discharge-openings in its bottom, and spouts applied to the hopper and in communication with the said discharge-openings, of boots having their upper ends receiving the lower end portion of the spouts and having loose connection at their upper inner corners therewith, and means for adjustably connecting the lower outer corners of the boots with the hopper, substantially as set forth.

4. In a device of the nature indicated, a hopper having a discharge-opening therein, a valve for said opening, a bracket upon the hopper, said bracket having an opening therein, a bar supported by said bracket, pulleys upon said bar, a band upon said pulleys and passing through the opening in the bracket, whereby said band is guided, means between the band and the valve for operating the latter from the former, and means for imparting rotation to one of the pulleys, substantially as described.

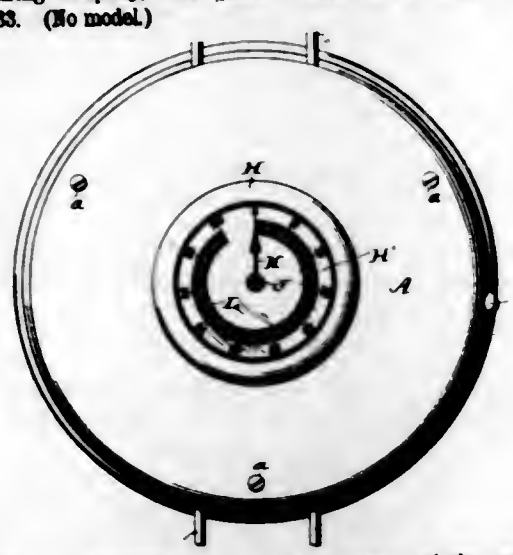
5. In a device of the nature indicated, a hopper having a discharge-opening therein, a stirrer-shaft journaled in said hopper, a valve for the discharge-opening, a bar supported from the hopper, pulleys upon said bar, a band upon said pulleys, means between the band and the valve for operating the latter from the former, a second bar extending from said hopper, a shaft journaled at one end upon said second bar and having its opposite end secured to a pulley upon the first-mentioned bar, driving connections between the stirrer-shaft and the last-mentioned shaft, and means for rotating the stirrer-shaft, substantially as described.

6. In a fertilizer-distributer, the combination with a hopper having discharge-spouts, a double-ended bracket secured to the bottom side of the hopper and having its end portions slotted, an upwardly and rearwardly inclined bar or plate secured to the end portions of the bracket, grooved pulleys located at the ends of the said inclined bar or plate, and an endless cord or rope supported by the grooved pulleys and provided at intervals in its length with knots or projections, of a rock-shaft journaled in bearings applied to the inclined bar and having valves at its ends for normally closing the discharge-spouts, a fork projecting from a side of the rock-shaft and receiving a portion of the cord or rope between its members, an arm project-

ing from the rock-shaft, and a spring engaging with said arm and serving to normally hold the valve closed, substantially as set forth

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611,185. RHEOSTAT. CHARLES H. RICHARDSON and LEWIS McMAKIN, Jr., Philadelphia, Pa., assignors to The S. S. White Dental Manufacturing Company, same place. Filed Feb. 3, 1898. Serial No. 669,033. (No model.)



Claim.—1. The combination, in a rheostat, of the case consisting of a base-piece, a side portion to which said base-piece is connected, and a top or cover of non-conducting material connected to said side portion and constituting the rheostat-plate, said plate being provided on its inner or under side with a resistance-track, a contact adapted to be moved over the surface of the resistance-track, the arm of said contact being pivotally mounted in said rheostat-plate, means outside of the case and above the rheostat-plate for moving the said contact, and means also outside of said case for indicating the position of said contact, substantially as and for the purpose herein set forth.

2. The combination, in a rheostat, of the case, the resistance-track, the movable contact-arm, the handle for turning said contact-arm provided with a dial-plate, and the index supported in fixed relation to the rheostat-case, substantially as and for the purpose herein set forth.

3. The combination, in a rheostat, of the case consisting of the base, the side portion, the top plate, the resistance-track, the movable contact-arm, the tubular hub of which is mounted to turn in the top plate, the handle or knob connected with the hub of the movable contact-arm, and provided with a dial movable with said handle or knob, a post supported in fixed relation to the case and projecting through and above the tubular hub of the contact-arm, and the index supported upon the said post, substantially as and for the purpose herein set forth.

4. The combination, in a rheostat, of the main resistance, current leads or wires electrically connecting the main resistance with the electric supply-circuit, the shunt-circuit, one conductor of which is connected to the main resistance at a point between the main current-leads, a movable contact in electrical connection with the main resistance, and means for limiting the movement of said movable contact relatively to the point of connection between the conductor of the shunt-circuit and the main resistance, whereby the current in the shunt-circuit may be started from zero and very gradually increased by movement of the movable contact, substantially as and for the purpose herein set forth.

611,186. FENCE. MARION STUTTER, Akron, Ohio. Filed Jan. 21, 1898. Serial No. 667,439. (No model.)

Claim.—1. The improved fence herein described comprising the main panels having end and intermediate battens, the bars at the lower portion of the panel, the wire strands, the top rail, the truss-wires extending below the top rail and the diagonal truss-wires extending between the bottom bar and the end battens, such panel being provided at its ends with lap extensions, substantially as described.

2. An improved fence comprising panels spaced apart, one of such panels being provided with guideways and the other with lap extensions projecting toward the first panel, the crossed stakes bracing the panel provided with guideways, the stakes crossed below one of the lap extensions of the other panel, and the slide-panel having its bars arranged to slide in the guideways of one panel and provided at its ends with lap extensions corresponding to those of the panel toward which the slide-panel is movable, substantially as set forth.

3. In a fence, a panel having end and intermediate battens and a top rail and provided with trusses extending below the top rail and between the end and intermediate battens, substantially as set forth.



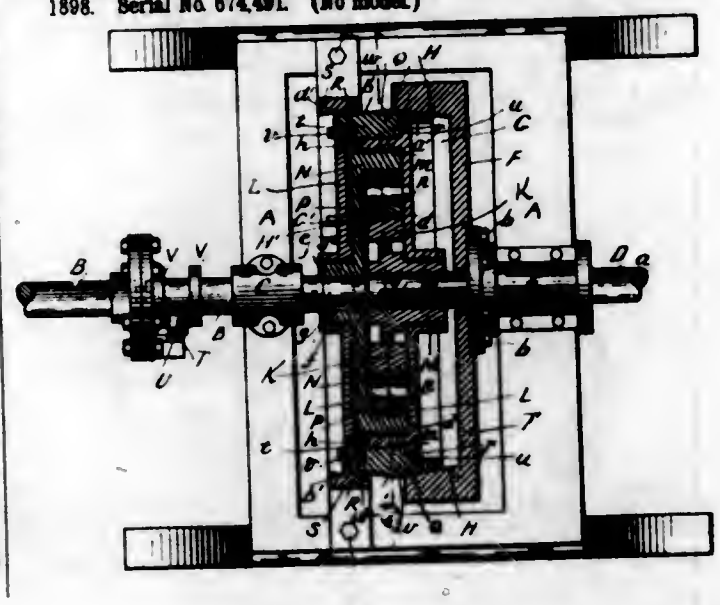
4. A fence having a panel composed of end battens, an intermediate batten, a top rail, cleats secured below said top rail and between the end and intermediate battens and truss-wires between the intermediate batten and the opposite end battens, substantially as set forth.

5. In a fence, a corner-batten comprising the bar-sections spaced apart at their adjacent ends, the wires connecting such ends of the bar-sections and the post to which said wires are secured midway between their ends, substantially as described.

6. In a fence, substantially as described, the combination with the meeting panels having lap extensions at their ends, a top rail and truss-wires held at their ends between the lap extensions and the top rail, of the stakes crossed below said lap extensions, substantially as described.

7. The improvement in fences herein described comprising the main panels having end battens and lap extensions and provided with top rails and with truss-wires bracing the same, the slide-panel, the panel having guideways for said slide-panel, the crossed stakes, and the corner-panel composed of the bar-sections, the wires connecting the same and the posts to which said wires are secured midway between the bar-sections, substantially as described.

611,187. DEVICE FOR REVERSING MOTION OF PROPELLER-WHEELS, &c. GEORGE R. TRESCOTHICK, Malden, Mass. Filed Mar. 19, 1898. Serial No. 674,491. (No model.)



Claim.—1. In combination, a power-shaft carrying a clutch-wheel, a gear on said shaft arranged to slide longitudinally thereon but to revolve therewith, a revolving casing surrounding said gear and adapted to move along the shaft, its periphery forming a clutch-surface adapted to engage with the clutch-wheel, a driven shaft, a gear fast on said driven shaft, one or more intermediate gears pivoted to said casing and engaging with the power-shaft gear and driven-shaft gear, a stationary clutch-ring with which the clutch-surface of said casing is arranged to engage and mechanism for moving said clutch-surface of said casing backward and forward along the power-shaft.

2. In combination, a power-shaft carrying a clutch-wheel, a gear on said shaft arranged to slide longitudinally thereon but to revolve therewith, a revolving casing surrounding said gear adapted to move along the shaft, its periphery forming a clutch-surface adapted to engage with the clutch-wheel, a driven shaft, an internal gear fast on said driven shaft, one or more intermediate gears pivoted to said casing and engaging with the power-shaft and internal gear, a stationary clutch-ring with which the clutch-surface of said casing is arranged to engage, and mechanism for moving said casing clutch-ring backward and forward along the power-shaft.

611,188. TUB. CHARLES WHEELY, Chicago, Ill. Filed Nov. 8, 1897. Serial No. 657,762. (No model.)



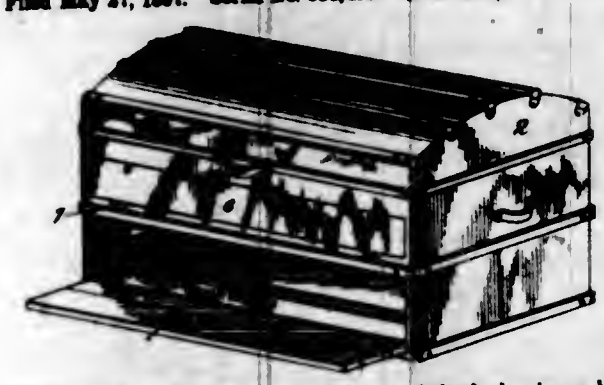
Claim.—1. A laundry-tub or analogous structure having sheet-metal side walls reinforced with hollow metal reinforcements at the top, bottom and corners, said reinforcements being filled with plastic hardening material, substantially as described.

2. A laundry-tub or analogous structure having sheet-metal side walls and hollow metal reinforcements at the top, bottom and corners, said reinforcements being provided with openings therein for the reception of plastic material, substantially as described.

3. A laundry-tub or analogous structure having sheet-metal side walls reinforced with hollow metal reinforcements at the top, bottom and corners in combination with wire sieving secured to the bottom of the side walls, and a cement bottom anchored thereto, substantially as described.

4. A laundry-tub or analogous structure having sheet-metal side walls reinforced with hollow metal reinforcements, said reinforcements being filled with plastic hardening material, wire sieving secured to the bottom of said side walls, a cement bottom anchored thereto, and a bottom lining composed of sheet metal, substantially as described.

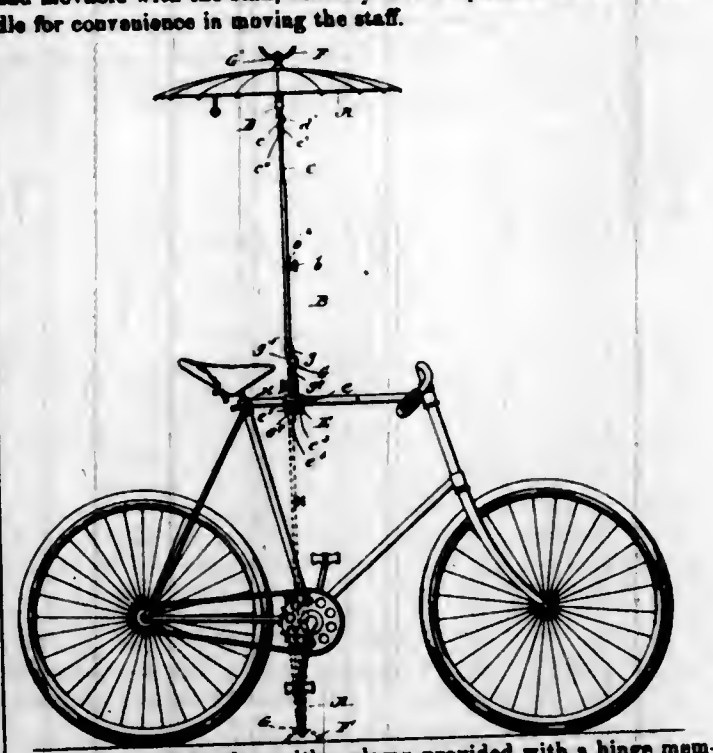
611,189. TRUNK. MARGARET A. WHITE, Southampton, N. Y. Filed May 27, 1897. Serial No. 638,451. (No model.)



Claim.—The combination with the trunk body having a hinged lid or cover and separate openings at the lower and intermediate portions of the front thereof, of cleats arranged at varying elevations and secured against the inner surfaces of the ends of the said body, a false bottom secured in position at a short elevation above the bottom of said body, a drawer movably mounted in the space between the said false bottom and the bottom of said body, a tray slidingly mounted in the body above the false bottom, a door hinged to the front of the body to cover the opening through which the said tray is movable, a strip hinged to the front edge of the bottom of the body, and a door hinged to the said strip whereby the door hinged to the strip may be opened independently of the latter and the tray, drawer and false bottom made independently accessible.

611,190. UMBRELLA-SUPPORT FOR BICYCLES. HENRY J. ABERNATHY, Socorro, N. Mex. Filed Nov. 10, 1896. Serial No. 611,619. (No model.)

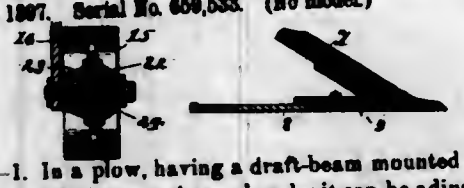
Claim.—1. The combination, with a clamp, a tubular supporting-rod, a two-hinged connection between the rod and clamp, a staff longitudinally movable in the supporting-rod, and a set-screw for securing the staff in the supporting-rod, the set-screw being secured to and movable with the staff, whereby it is adapted to serve as a handle for convenience in moving the staff.



2. The combination, with a clamp provided with a hinge member on its upper surface the plane of the face of which is at a right angle to the longitudinal axis of the clamp, of a tubular supporting-rod provided with a hinge member at its lower end, a hinge-link having a hinge member at each end, adapted to cooperate with the hinge members on the clamp and rod respectively to form hinges, set-screws for locking said hinges, and means for automatically forcing the hinge members apart when the set-screws are operated to release the members, substantially as described.

3. The combination, with a clamp provided with a hinge member on its upper surface the plane of the face of which is at a right angle to the longitudinal axis of the clamp, of a tubular supporting-rod provided with a hinge member at its lower end, a hinge-link having a hinge member at each end, adapted to cooperate with the hinge members on the clamp and rod respectively to form hinges, set-screws for locking said hinges, and springs intermediate the members of each hinge for forcing said members apart when the set-screws are operated to release the members, substantially as described.

611,191. PLOW. GEORGE BALDWIN, Indianapolis, Ind. Filed Nov. 22, 1897. Serial No. 659,533. (No model.)



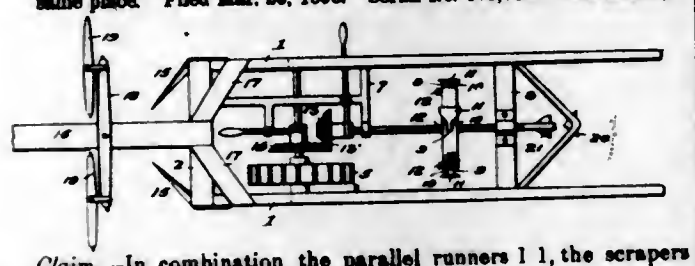
Claim.—1. In a plow, having a draft-beam mounted on suitable adjusting-bolts at different points, whereby it can be adjusted at such points so as to retain its same draft-line while being moved sidewise, the combination of the moldboard 7, formed straight from edge to edge upon any line parallel with its lower edge, the landside 8, having the depression near its front end, the share, having the depression upon its side, and the sod-cutter adapted to lie within the depressions in said landside and share, with the land-wheel 26, mounted upon the pivotal brace 27, and adjusted by means of the curved slotted arm 25, working in the casting 28, and the draft-wheel 15, mounted upon a pivotal casting 16, and adjusted by means of a lever 18, having a spring locking-bolt 19, working in a curved rack-bar 20, all as shown and described.

2. In a plow, the combination of a draft-beam mounted on suitable adjusting-bolts at different points, whereby it can be adjusted at such points so as to retain its same draft-line while being moved sidewise, a draft-wheel carried on the plow, and adjustable through a handle, said handle being adjustable to suit the adjustment of the draft-beam, and a land-wheel carried on the plow-beam, and adjustable through a slotted curved arm, as shown and described.

3. In a plow, the draft and land wheels carried by suitable adjusting means, said wheels having hubs provided upon each side with annular grooves, the close outer cap 22, having like grooves and ribs to fit against the outer face of said hub, the open inner guard or cap 23, adapted to fit against the inner face of said hub, said wheels and caps mounted upon the loose axle and having a space between each respectively, to receive the packing, as set forth.

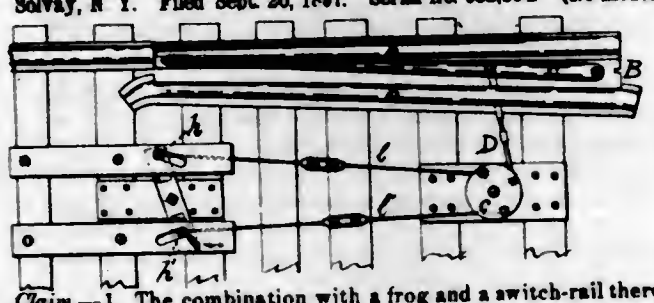
4. In a plow, the landside and the share having a depression formed in each, a sod-cutter fitting in said depression, flush with the face of said landside and share, in combination with the moldboard formed perfectly straight across, from its front to its rear edge, on any line parallel with its lower edge, as set forth.

611,192. COTTON-CULTIVATOR. JAMES R. BARRON, Crystal Springs, Miss., assignor of one-half to J. J. Hyland and L. W. Ketchley, same place. Filed Mar. 29, 1898. Serial No. 675,610. (No model.)



Claim.—In combination, the parallel runners 1 1, the scrapers 15 15 fixed to the forward lower ends of said runners, the transverse shaft journaled in said runners, the traction-wheel 5 fixed on said shaft and in the path of one of said scrapers, the miter-gear 14 carried by said shaft, the longitudinal shaft 6, the miter-gears 13 13' carried by said shaft and adapted to alternately mesh with the gear 14, the chopper-wheel 8 fixed on said longitudinal shaft 6 and the chopping-hoes 11 adjustably secured in said chopper-wheel, substantially as shown and described.

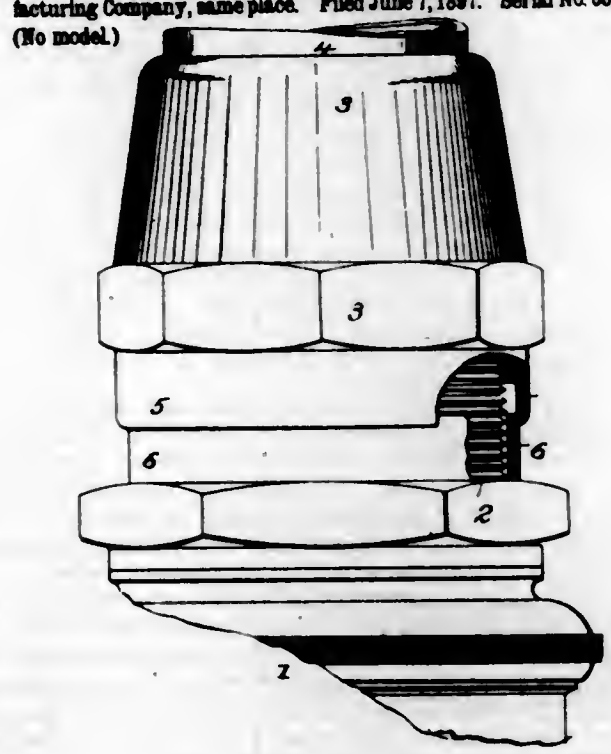
611,193. SWITCH-OPERATING DEVICE. LAWRENCE J. BENNETT, Solvay, N. Y. Filed Sept. 20, 1897. Serial No. 652,394. (No model.)



Claim.—1. The combination with a frog and a switch-rail thereon, of a two-part disk mounted at the side of the frog, a rod connecting said disk and switch-rail, studs adapted to engage with an arm on the car, suitably mounted and connected with said disk for the purpose of operating it and turning the switch-rail.

2. The combination with a frog and a switch-rail thereon, of a disk comprising two parts, having their adjacent faces corrugated or roughened, one of the parts of said disks being yieldingly mounted and a yielding rod connecting one of the parts of said disks with the switch-rail, studs adapted to engage with an arm on the car, suitably mounted and connected with said disk for the purpose of operating it and turning the switch-rail.

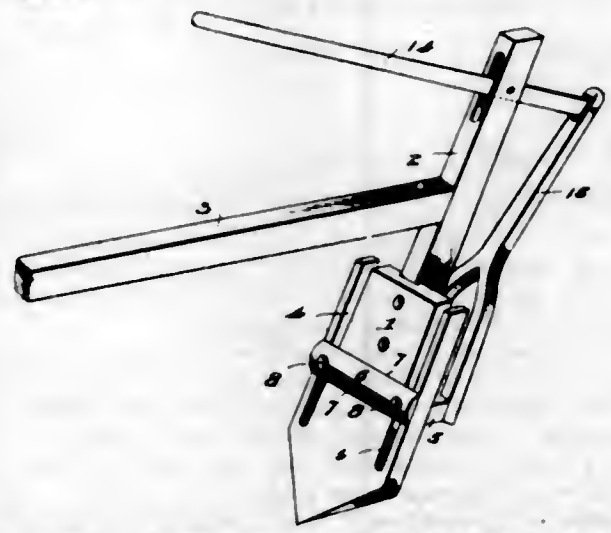
611,194. HOUSING FOR SCREW-THREADED CYCLE PARTS. CHARLES P. BIRNER, Chicago, Ill., assignor to the Monarch Cycle Manufacturing Company, same place. Filed June 7, 1897. Serial No. 639,767. (No model.)



Claim.—1. A housing for screw-threaded cycle parts, comprising in combination, the steering-fork stem screw-threaded at its upper end to receive the usual nut to effect an adjustment of the upper ball-cup of the bearing, a cap-nut screwing onto the upper end of said stem to clamp the handle-bar in place, a loose ring or collar inclosing and protecting the screw-threads of the fork-stem, and means upon such cap-nut for vertically guiding said ring or collar in an adjustment of the parts, substantially as set forth.

2. A housing for screw-threaded cycle parts, comprising in combination, the steering-fork stem screw-threaded at its upper end to receive the usual nut to effect an adjustment of the upper ball-cup of the bearing, a cap-nut screwing onto the upper end of said stem to clamp the handle-bar in place, a loose ring or collar inclosing and protecting the screw-threads of the fork-stem, and means upon such cap-nut for vertically guiding said ring or collar in an adjustment of the parts, the same consisting of a pendent annular skirt on the cap-nut, inside of which said ring or collar slides, substantially as set forth.

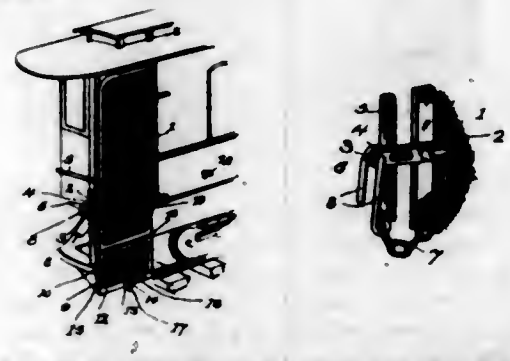
611,195. SCRAPER FOR CULTIVATORS. ALBERT C. BUTLER, Timpson, Tex., assignor of one-half to James B. Butler and Henry C. Butler, same place. Filed Mar. 8, 1898. Serial No. 673,123. (No model.)



Claim.—1. The combination with the blade, shovel or moldboard of a tilling implement provided with vertical slots, of a scraper, a sliding block, bolts extending through the scraper, the slots and the sliding blocks, springs for drawing the scraper against the face of the implement, and means for reciprocating the scraper, substantially as set forth.

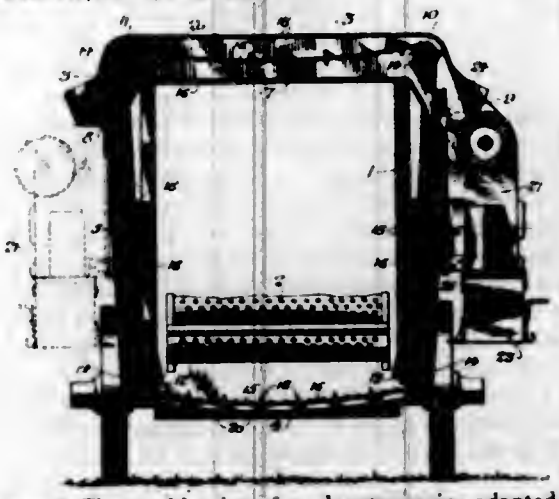
2. The combination with a tilling-shovel having vertical slots, a scraper, a sliding block having bolt-holes provided with counterbores, bolts connecting the scraper with the block, springs seated in said counterbores, nuts on said bolts between which and the shoulders of the counterbores the springs are confined, and nuts upon the extreme end of the bolts, an operating-lever, and a link connecting the operating-lever with the sliding block, substantially as set forth.

611,196. COMBINATION STEP AND PLATFORM GATE. ROBERT H. CATLETT, Trinidad, Colo. Filed Oct. 12, 1897. Serial No. 654,958. (No model.)



Claim.—The combination with a railway-coach and its hand rail 5 formed with an integral eye 4, the step 15, and the hasp 14, fixed to said step, of the hinged platform-gate 1, provided with the hasp 2 formed with the orifice 3 and the fixed staple 19, the step-gate 9, horizontally hinged to the lower end of said platform-gate 1 and provided with the transverse orifice 13, the bolt 17, fixed to said step-gate and adapted to engage said hasp 14 or staple 19 and the curved bolt 6 formed with the parallel arms 8 8 and adapted to simultaneously engage the hasp 2 and the eye 4, substantially as shown and described.

611,197. CONVEYER AND ELEVATOR FOR THRESHING-MACHINES. FRANK DEUTLER, Parkville, Mich. Filed Dec. 24, 1897. Serial No. 663,305. (No model.)



Claim.—1. The combination of an elevator-casing adapted to extend around a threshing-machine in the vertical plane of the cleaning-shoe thereof and having its legs inclined upwardly and outwardly from the lower horizontal length of said casing, the guide wheels or pulleys situated at the corners of the casing, delivery-spouts on the inclined legs of the casing at points below the upper guide wheels or pulleys, and formed by notches or breaks in the outer walls of the inclined legs, and an endless conveyer fitted to the guide wheels or pulleys and having the flights arranged to sweep close to the outer walls of the inclined casing-legs and across the notches or breaks and adapted to dump automatically when the conveyer-flights reach the notches or breaks, whereby the grain on said elevator-flights is effectively discharged into the delivery-spouts, substantially as described.

2. The combination of an elevator-casing having the inclined legs between its short and long horizontal lengths, a shaft, 10, at one upper corner of the casing and having a guide-wheel, another shaft, 11, carrying a guide-wheel and arranged at the opposite upper corner of said casing, the shafts, 12, 13, carrying other guide-wheels and located at the lower corners of the casing and in positions within the vertical planes of the upper guide-wheels, a driving-shaft geared to the shaft, 10, and adapted to be driven in either direction by power connections with a threshing-machine, the delivery-spouts situated on the inclined legs of the casing below the upper guide-wheels, and the endless elevator fitted to the guide-wheels and having its flights arranged to sweep close to the outer inclined walls of the casing-legs and to assume transversely-inclined positions toward the delivery-spouts, whereby automatic dumping is effected, substantially as set forth.

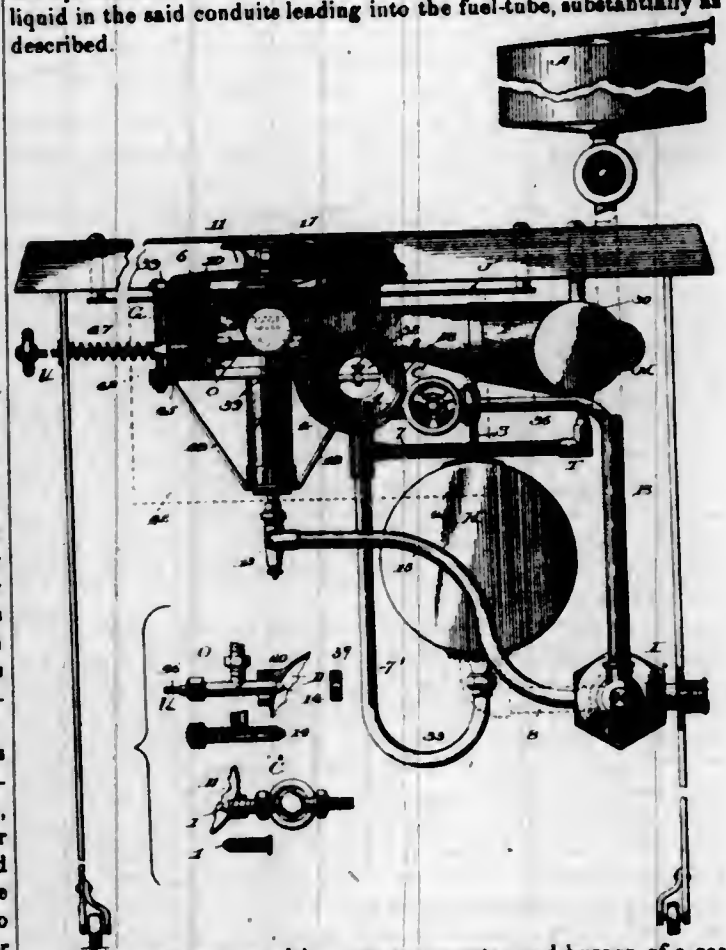
611,198. VAPOR-GENERATING AND HEATING APPARATUS. ETHELBERT S. GRIFFITH, Toledo, Ohio. Filed Jan. 29, 1896. Renewed July 14, 1898. Serial No. 685,973. (No model.)

Claim.—1. The process of generating and supplying inflammable vapor under elastic tension, which consists in the initial step of agitating a liquid hydrocarbon and air, then igniting the resulting combustible product, then vaporizing by said ignited product a second hydrocarbon-liquid supply, then utilizing the vaporous product created for the purpose of maintaining, continuing, and increasing the agitation and ignition for heating and lighting, substantially as described.

2. An improvement in the means of generating and supplying inflammable vapor under elastic tension which consists in the combination with a liquid-hydrocarbon supply of a chamber in which such liquid hydrocarbon and a current of atmospheric air are subjected to agitation to atomize the liquid, agitating means, a second liquid-supply, means for vaporizing the liquid, a conductor for conducting a jet of the vapor from the vaporizing means to said agitating-chamber, means for cutting off the liquid-supply to said chamber, means for conducting the said mingled air and vaporized product to a suitable consumer for heating or lighting, and said consumer, substantially as described.

3. In combination with a main liquid-hydrocarbon supply and suitable conduits, a chamber provided with means for agitating the liquid received therein, means for introducing a current of air to said chamber, a burner to which the inflammable vapor is conducted and where it is ignited, a supplementary hydrocarbon-liquid-supply vessel fed from the main supply and heated by said ignited vapor, means for cutting off the liquid-supply to said agitating-chamber and a conduit for conducting the heated vaporized liquid from said vessel to the said agitating-chamber, from which the mixed heated and inflammable gas and outer air are carried to a burner by the same means, substantially as described.

4. In combination with a hydrocarbon-liquid container, a main burner and cone, a vaporizing fuel-tube heated by said burner, conduits leading from said container to the upper end of the vaporizing-tube, a commingling-chamber, a main conduit provided with a cut-off and leading from said commingling-chamber to the burner-body, a smaller auxiliary cone, a pipe leading from the main conduit to the auxiliary cone, whereby when the main burner is extinguished by the operation of the cut-off, heat may be continued to vaporize the liquid in the said conduits leading into the fuel-tube, substantially as described.



5. In combination with a vapor generator and burner, of a casing or chamber provided with an air-inlet and a vapor-discharge orifice or conduit, a revoluble wheel provided with vanes and mounted within said casing or chamber, a liquid-supply pipe terminating in the jet-orifice within the casing in position to deliver a jet of liquid against the vanes of the wheel and cause its rotation, a liquid-receptacle and a conduit thereto from said chamber for receiving the excess of liquid fuel not vaporized by said wheel, whereby the accumulation of the liquid within the wheel-chamber is prevented and the free and rapid circulation of the wheel is maintained by the impact of the jet, substantially as described.

6. In a vapor generator and burner the combination with the liquid-supply and a conduit leading therefrom for supplying the liquid under pressure, of a receiver having an air-inlet, a burner supplied from said receiver, two independent conduits having jet-orifices and fed from said supply-conduit, one of said jet-conduits lying in close proximity to the burner whereby the liquid is volatilized, and a fan within the receiver for creating an elastic tension therein, said fan driven by the jet issuing from either or both of said orifices, substantially as described.

7. In a vapor generator and burner, the combination with a liquid-hydrocarbon supply and burner, of a receiver for supplying vapor to the burner, a fan-motor in said receiver for creating an elastic tension therein, a conduit from the supply having a jet-orifice discharging into the receiver, a drain-pipe provided with a trap and leading from the receiver, a liquid-receptacle into which said drain-pipe discharges, and a vapor escape or vent pipe leading from the top of the said liquid-receptacle to a point in proximity to the said jet-orifice, whereby gases generated in the liquid-receptacle are carried into the receiver by the action of said motor, substantially as described.

8. In a vapor generator and burner, the combination with the burner of a receiver for supplying vapor thereto, a mechanical agitator within the receiver, a liquid-hydrocarbon supply, a conduit having a jet-orifice in close proximity to said burner for directing a jet of volatilized product into said receiver to drive said agitator, a non-conducting packing interposed between the walls of the jet-orifice and the receiver, whereby the heat of the volatilized liquid is maintained, and the liquid-supply confined to said receiver, substantially as described.

9. A burner-cone having a raised dome-shaped under surface, a flaring upper termination and a suitable central opening forming an

air-passage, in combination with a plate to which the cone is secured having also a corresponding central opening, a fuel-tube placed in said central air-passage, a fuel-supply and a pipe connection with said supply and fuel-tube, said tube having an opening and a heat-conducting surface at its top, a vapor receiving chamber and a supply connection between said chamber and burner, substantially as described.

10. In a vapor generator and burner, the combination with a burner and cone, a vaporizing-retort placed within and extending through said burner and cone a fuel-supply, a pipe connection with said supply and retort, said retort having an opening and a heat-conducting surface at its top, a vapor-receiver, a fan within said receiver, and a conduit leading from said heat-conducting surface to said receiver, said conduit provided with a valve-controlled discharge-orifice terminating within said receiver, the said orifice discharging the vaporized product against said fan to impel it, substantially as described.

11. The combination in a vapor generator and burner of the burner having the circumferential outer wall, the cone having the under dome-shaped surface, a contracted neck and expanding top surface, the horizontal plate having a central opening through which the neck of the cone is passed, the lower end of said cone connected to the circumferential wall of the burner, whereby a burner-chamber is formed between the wall of the cone and the wall of the burner, a vapor receiving and distributing chamber, a conduit leading from said latter chamber to the burner-chamber, said conduit provided with a sliding gate opening into the burner-chamber on a line tangential with its wall whereby the current of vapor to the burner-chamber is first thrown to the periphery of the burner-cone, then to the central portion thereof, and its supply regulated and controlled, substantially as described.

12. In a vapor generator and burner, the combination with a liquid-hydrocarbon supply and a receiving-chamber, of a pipe connection of said supply and said chamber, said pipe provided with a valve consisting of an outer inclosing shell having two threaded opposing end sections, an intermediate internally-recessed chamber, a reciprocating valve-key inclosed by said chamber having a longitudinal bore and lateral side openings into said chamber and an imperforate inner end section, an apertured adjustable plug secured in said outer shell, said plug forming a seat to which the imperforate end section of the key may be forced on and off by the movement of said key and pipe connection and an intermediate or continuous flow of the liquid through said valve may be secured, substantially as described.

13. In combination with the vapor receiving and agitating chamber, of a burner and cone, a conduit from said cone to said chamber and a valve in said conduit consisting of a separable stem composed of an outer round section and an inner square section engaging each other and a spring-coil on the outer section arranged to keep the two sections in engagement, substantially as described.

14. In a vapor generator and burner in combination with one or more burner-cones, impinging flame-surfaces consisting of one or more radial arms such as 15, additional heat-conducting surfaces such as 17, fixed at and above the intersections of said radial arms with the said cones, substantially as described.

611,199. PROPAGATION OF OYSTERS. ANDREW B. HENDRYX, New Haven, Conn., assignor to the A. B. Hendryx Company, same place. Filed Feb. 7, 1898. Serial No. 669,407. (No model.)



Claim.—An improvement in the propagation of oysters in natural beds, comprising a brush, an anchor resting on the bed, and a flexible connection between the anchor and the brush whereby the brush when first anchored will float substantially upright in the water, and when loaded with the set will sink to the surface of the bed and become embedded therein, and so as to be held independent of the anchor, substantially as described.

611,200. ARTIFICIAL-STONE COMPOSITION. JOSEPH HOBSON and HARMON HOBSON, Goodson, Mo. Filed Nov. 30, 1897. Serial No. 660,268. (No specimens.)

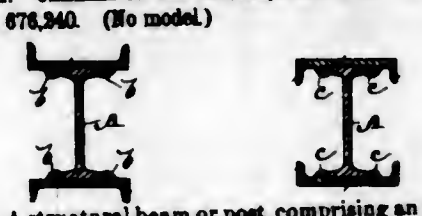
Claim.—An artificial-stone composition, composed of Portland cement, sand, white lead and chlorid of zinc, substantially as described.

611,201. NUT-LOCK. OSCAR HORNER and WILLIAM H. WIRE, Dubois, Pa. Filed Mar. 23, 1898. Serial No. 674,916. (No model.)



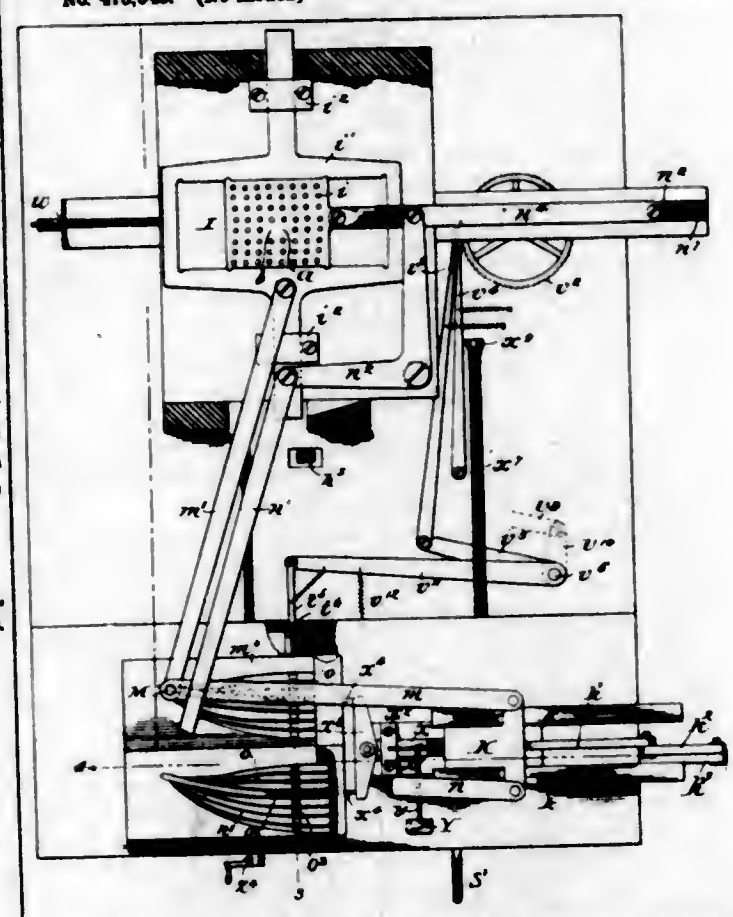
Claim.—In a nut-lock, the combination of a bolt having continuous threads thereon, a nut movably mounted on said bolt and having openings extending through the body thereof from one edge to the other on opposite sides of a central bolt-opening and provided with reversely-situated deflections diagonally arranged relatively to said bolt-opening and merging into the latter, and substantially triangular keys driven into said openings from opposite sides and having biting edges to engage the spaces between the threads of the bolt.

611,202. COMBINATION STRUCTURAL METAL BEAM, GIRDER, AND POST. CHARLES M. HORTON, Superior, Wis. Filed Apr. 2, 1898. Serial No. 676,240. (No model.)



Claim.—A structural beam or post, comprising an integral I-beam and one or more channel plates or beams having channel-walls for receiving the flanges of the I-beam and securing the parts rigidly together, substantially as described.

611,208. MACHINE FOR COMPOSING PRINTED MATTER. FRANK A. JOHNSON, Philadelphia, Pa., assignor to the Tachytype Manufacturing Company, Minneapolis, Minn. Filed June 23, 1893. Serial No. 478,649. (No model.)



Claim.—1. In a matrix-making or similar machine, the combination with a movable bank of dies, of two sets of die-selecting guides, each set of guides having a middle guide which is normally operative and guides upon both sides of said middle guide, and means for bringing any of the side guides into communication with the middle guide, substantially as described.

2. In a matrix-making or similar machine, a die-carrier frame movable in a plane, two sets of die-selecting guides, each set of die-selecting guides having a normally operative middle guide and normally inoperative guides on both sides thereof, means for bringing the side guides into communication with the middle guide, and connections between the die carrier frame and said guides, the guides on opposite sides of the middle guides being constructed to throw the die-carrier frame in opposite directions from the printing-point respectively, substantially as described.

3. In a matrix making or similar machine, a die-carrier frame movable in a plane, in combination with a pair of links, each link having its inner end connected to the die-frame, and two series of guides for controlling the movements of said links and die-frame, each of said series of guides having a middle guide normally operative upon the links and normally inoperative guides on both sides of the middle guide, and means for rendering said side guides operative upon the links, whereby the die-carrier frame may be moved in opposite directions from its central position, substantially as described.

4. In a matrix-making or similar machine, a die-carrier frame movable in a plane and normally located in a central position with relation to the impression-point, in combination with a pair of links, each link having its inner end connected with the die-frame, a series of guides for controlling the outer end of each link, said outer end being normally in engagement with the middle guide of the series, means for engaging the link with the side guides of the series, and means for vibrating the links with respect to the guides, the latter being stationary, substantially as described.

5. In a matrix-making or similar machine, a die-carrying frame movable in a plane and normally located in a central position with relation to the impression-point, in combination with a pair of vibrating links each link having its inner end connected with the die-frame and its outer end normally controlled by a circular guide having a radius equal to the length of the link, side guides, and means for bringing the links under control of the side guides, to shift the die-frame, substantially as described.

6. In a matrix-making or similar machine, a die-carrying frame movable in a plane and normally located in a central position with relation to the impression-point, in combination with a pair of links, each link having its inner end connected with said die-frame, and its outer end controlled by a set of guides, the middle guide of each set being circular with a radius equal to the length of the link, and the side guides being connectible with the middle guide by means of switches, substantially as described.

7. In a matrix-making or similar machine, a die-carrying frame movable in a plane and normally located in a central position with relation to the impression-point, in combination with a pair of links, each link having its inner end connected with the die-frame and its outer end connected with a constantly-reciprocating part by a second link, pins M, N, connecting said links, and two sets of grooves for guiding said pins, the middle groove of each set being circular and the side grooves of each set being connectible with the middle groove by means of switches, substantially as described.

8. The combination of a secondary frame sliding in guides in the main frame, a die-frame sliding in guides in the secondary frame, a pair of links, one connected with each of said frames, and two sets of grooves for guiding the outer ends of said links, the middle groove of each set being circular with a radius equal to the length of the links, and the side grooves of each series being connectible with the middle grooves by switches, substantially as described.

9. The combination with a constantly-moving impression-plunger, of a die-frame having a blank space at its center normally under said plunger and a group of dies surrounding said space, a pair of constantly-vibrating links having their inner ends connected with the die-frame and their outer ends normally guided in circular guides, switches, and guides upon both sides of each of said circular guides connectible with the same by means of said switches, whereby as the links are vibrated the die-frame remains stationary excepting when the switches of the side guideways are operated, substantially as described.

10. The combination with a constantly-reciprocating cross-head, of a pair of links connected to said cross-head, a die-frame movable within and with a secondary frame, a pair of links connected with the die-frame, guide-pins connecting the cross-head links with the die-frame links, two sets of grooves in which said guide-pins work, and switching devices to throw the guide-pins into any desired grooves, substantially as described.

11. The combination with the die-frame, the links connected with the frame and provided with guide-pins, of the grooves formed by movable switch-rails for guiding the pins on the links, and the switch-pins, and devices for projecting the switch-pins into the grooves to open the same, substantially as described.

12. In a machine of the class described, the combination with the dummy comprising a plate or block having a series of movable pins, of a flexible plunger arranged to be deflected by pins in their normal position and to complete the movement of pins which have been partially moved, substantially as set forth.

13. In a machine of the class described, the combination with a dummy having a step-by-step movement and provided with a series of rows of movable pins normally depressed, of a frame and a set of flexible plungers carried thereby, said plungers being arranged in line with and in the paths of the rows of pins in the dummy, substantially as set forth.

14. In a machine of the class described the combination with the sets of guides and the switch-pins for controlling said guides, of the dummy having movable pins and the flexible plungers arranged beneath the switch-pins, said dummy being adapted to move between the plungers and the switch-pins, substantially as described.

15. In a machine of the class described the combination with a dummy having movable pins, of the coiled-wire flexible plungers, substantially as described.

16. In a machine of the class described the combination with the dummy proper, of a series of removable and interchangeable duplicate dummies, each having parts capable of representing the characters and spaces of a line of print substantially as set forth.

17. In a machine of the class described the dummy having rows of pins adapted to represent proper spacing, said spacing-pins being arranged in transverse guide-grooves, of the feeding device having an arm adapted to be projected into said guide-grooves against the spacing-pins to limit the movement of the spacing device, substantially as set forth.

18. In a machine of the class described, the combination with devices for selecting types or dies, of a trip device for throwing parts out of action, and an equalizing-lever adapted to operate in conjunction with certain selecting devices and to remain inoperative when other selecting devices are in use, substantially as described.

19. In machines of the class described, the combination with a series of guides, of a trip device for throwing parts out of action, and an equalizing-lever adapted to be operated in connection with selected guides and to remain inoperative when other guides are in use, substantially as described.

20. In machines of the class described, the combination with two series of guides, switches for bringing selected guides into action, a trip device for throwing parts out of action, an equalizing-lever upon the trip device, and pins interposed between two of the guides and opposite ends of the lever, substantially as described.

21. In machines of the class described, the combination with the vibrating levers, the guide pins upon the outer ends of the levers, the sets of guide-grooves, and the pins in the normally open grooves, of the slide, the equalizing-lever on the slide, and devices connected with the slide for throwing the dummy feed-pawls out of action, substantially as set forth.

22. In machines of the class described, the combination of the constantly-rotating power-shaft, the dummy and matrix-feed pawls constantly operated thereby, the rock-shaft having arms adapted to raise said feed-pawls out of action, the arm x^4 upon said shaft, the slide x, the lever x^5 upon said slide adapted to contact with arm x^4, the fixed stop x^6 for said lever, and the starting-key for releasing said lever from said stop, substantially as set forth.

23. In a matrix-making or other composing machine, a movable font of dies arranged in rows and normally central with respect to the impression-point, in combination with a set of guides corresponding in number to the rows of dies, the middle guide being normally operative, means for rendering the side guides operative, and connections from the guides to the font of dies, substantially as described.

24. In a matrix-making or other composing machine, the combination with a movable die-carrier provided with a font of dies arranged in rows in two directions, of two sets of guides and connections between the guides and the die-carrier, the number of rows of dies in each direction being equal to the number of guides in each set respectively, substantially as described.

611,204. LADDER. HENRY W. KRYDER, Clintondale, Pa. Filed Sept. 8, 1897. Serial No. 650,965. (No model.)



Claim.—1. The combination with wheels and an axle, of supporting-pieces secured at one end to the axle, cross-braces connecting the opposite ends of the axle, respectively, with the opposite sides of the upper end of the supporting-pieces, a ladder extending from the upper end of the supporting-pieces to the ground, braces connecting the ends of the supporting-pieces to the ladder, and ter-

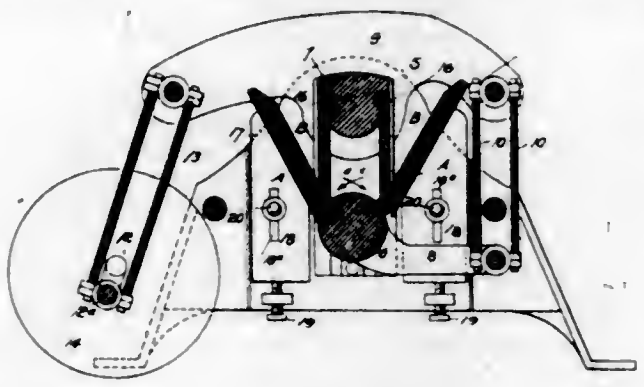
minating in handles, hounds, and a tongue uniting the axle to the ladder, substantially in the manner and for the purpose specified.

2. The combination with wheels and an axle, of supporting-pieces and cross-pieces firmly secured to the axle, braces connected to the axle, a ladder detachably secured to the supporting-pieces at their upper ends, said ladder being pivotally connected near its lower end to the braces, and means 20 for sustaining the ends of the ladder approximately in line with the braces, when the parts are closed or folded together substantially in the manner and for the purpose specified.

3. The combination with wheels and an axle, of supporting-pieces and cross-pieces secured at one end to the axle, a ladder detachably securable to the other end of the supporting-pieces, braces pivotally uniting the supporting-pieces to the ladder and terminating in handles, a tongue and hounds pivotally united to the axle, and means for uniting the tongue to the ladder, substantially as and for the purpose specified.

4. The combination with wheels and an axle, of uprights and cross-pieces secured at one end to the axle, a ladder detachably securable to the other end of the uprights, braces pivotally uniting the uprights and the ladder, and a supporting-ledge upon the axle for supporting the ladder in the closed position, substantially as and for the purpose specified.

611,205. ROCK BREAKER AND CRUSHER. JOHN R. MOFFITT, Denver, Colo. Filed June 22, 1897. Serial No. 641,830. (No model.)



Claim.—1. In an ore-pulverizer, the combination of two rock-shafts one located above the other, two pulverizing plates or jaws having their extremities movably connected with said shafts on opposite sides, the extremities of the two jaws engaging the same shaft, lying in a horizontal plane passed through the shaft to one side of its center, coöperating pulverizing-plates located in suitable proximity to said jaws, and suitable means for operating the rock-shafts.

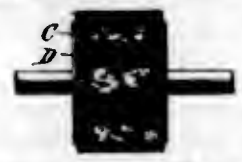
2. In an ore-pulverizer, the combination of two rock-shafts one located above the other, two vertical pulverizing plates or jaws having their extremities movably connected with the rock-shafts on opposite sides, the points of engagement of the two jaws on each shaft, lying in a horizontal plane passed through the shaft to one side of its center, two inclined pulverizing-plates located adjacent to said jaws, suitable means for the vertical adjustment of the inclined plates, and means for operating the rock-shafts.

3. In an ore-pulverizer, the combination of two rock shafts one located above the other, two vertical pulverizing plates or jaws having their extremities movably connected with the rock-shafts, the points of engagement of each two jaws with the same shaft, lying in a horizontal plane passed through the shaft to one side of its center, two inclined reversible pulverizing-plates having beveled extremities located adjacent to said jaws, suitable means for the vertical adjustment of the inclined plates, and means for operating the rock-shafts.

4. In an ore-pulverizer, the combination of two rock-shafts one located above the other, two vertical pulverizing plates or jaws having their extremities movably connected with the rock-shafts, two inclined pulverizing-plates located adjacent to said jaws, suitable means for the vertical adjustment of the inclined plates, and means for operating the rock-shafts, comprising an arm made fast to one of the shafts, a walking beam, a suitable connection between one extremity of the walking-beam and said arm, a crank-shaft, and a suitable connection between the opposite extremity of the walking-beam and the crank of said shaft.

5. In an ore-pulverizer, the combination of two rock-shafts, one located above the other, a pulverizing plate or jaw having its extremities rounded and engaging counterpart sockets formed in the respective shafts, the connection of each extremity of the jaw with its rock-shaft, lying in a horizontal plane passed through the shaft to one side of its center, a stationary pulverizing-plate located adjacent said jaw, and means for operating the rock shafts.

611,206. CIRCUIT-INTERRUPTING DEVICE. DANIEL M. MOORE, Newark, N. J., assignor to the Moore Electrical Company, New York, N. Y. Filed July 3, 1897. Serial No. 643,337. (No model.)



Claim.—1. A break-wheel of metal filled in between the contact-surfaces with vitreous insulating material.

2. In a break-wheel, a cylinder of metal provided with a circle of holes and plugs of insulating material fitted to said holes, and the cylinder and plugs ground down to expose the desired extent of the plugs.

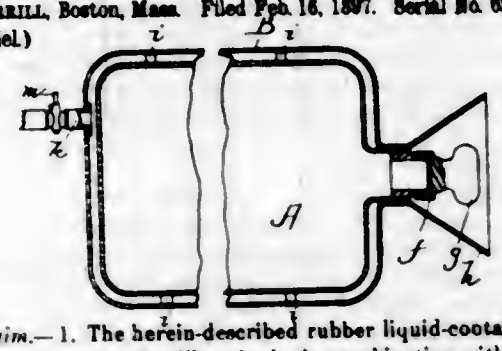
3. A break-wheel consisting of a metallic cylinder having plugs of glass or porcelain seated between the contact-surfaces longitudinally of the cylinder.

4. A break-wheel consisting of a metallic cylinder having slightly-tapered vitreous plugs driven into holes formed longitudinally of the cylinder, and plates secured to the ends of the cylinder and lapping onto the ends of the plugs.

5. For use in a vacuous receptacle exhausted to the highest possible degree, a break-wheel of metal having vitreous material filled in between the contact-surfaces, said wheel being mounted to rotate within said receptacle.

6. In a circuit breaker or controller, a metallic or conducting body or base having holes or channels in which are seated plugs of vitreous insulating material fitted to said holes, the metal body being cut away by grinding or otherwise to expose the plug of insulation, as and for the purpose described.

611,207. HOT-WATER BOTTLE OR ICE-COMPRESS. JOHN F. MORRILL, Boston, Mass. Filed Feb. 16, 1897. Serial No. 623,502. (No model.)



Claim.—1. The herein-described rubber liquid-containing receptacle provided with the filler-nipple, in combination with the expansible casing entirely inclosing said receptacle, and leaving an air-space between; and the air-valve for inflating said casing substantially as described.

2. The herein-described hot-water bottle comprising the flexible bag, A, provided with the filler-nipple *f*: the expansible casing, B, entirely inclosing said bag: flexible stays, *i*, connecting the walls of the casing to the walls of the bag whereby their relative position is maintained; and an air-valve for inflating and deflating said casing substantially as specified.

611,208. MACHINE FOR APPLYING COMPOUNDS FOR PROTECTING PILING, TIMBERS, &c. VERNON D. ROOD and HUGH R. ROOD, San Diego, Cal. Filed July 9, 1897. Serial No. 643,978. (No model.)

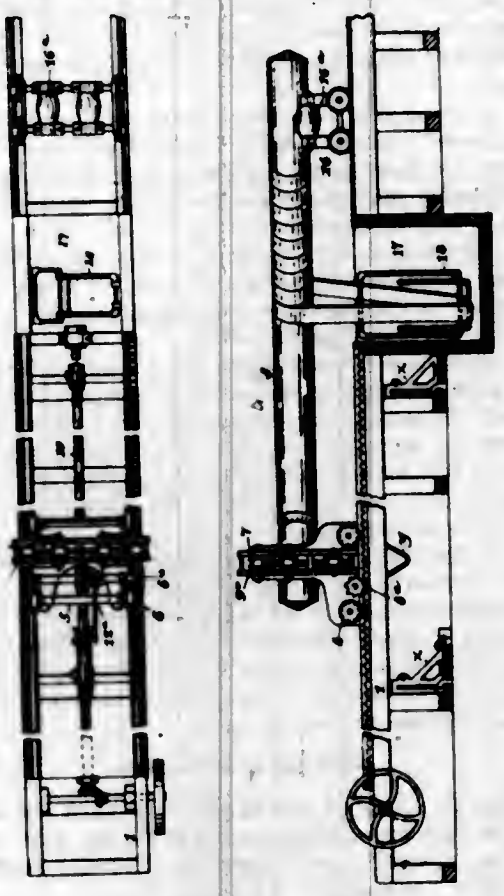
Claim.—1. In combination, the track, the shaft extending longitudinally thereof with means for rotating the same, the carrier for the pile operated from the shaft and adapted both to rotate the pile and move the same longitudinally of the track, and a device for feeding a coating-strip to said pile, substantially as described.

2. In combination, the track, the longitudinal shaft with means for rotating the same, the carrier-frame mounted to move longitudinally of the track, the pile-carrier rotatably supported in said frame, connections from the longitudinal shaft to the frame for moving it along the track, connections from said shaft to the rotary carrier for rotating the same, and devices for feeding the coating-strip to the pile, substantially as described.

3. In combination, the track, the carrier-frame movably mounted on said track, the supporting and guiding rollers journaled in said frame, the rotary carrier supported by said rollers, means for simultaneously moving the carrier-frame longitudinally and rotating the carrier, means for clamping the pile within the rotary carrier, and a device for feeding a coating-strip to the pile, substantially as described.

4. In combination the track, the carrier-frame adapted to travel thereon, a stationary rack, a transverse shaft having a gear engaging said rack, a longitudinal driving-shaft having a worm-gear connec-

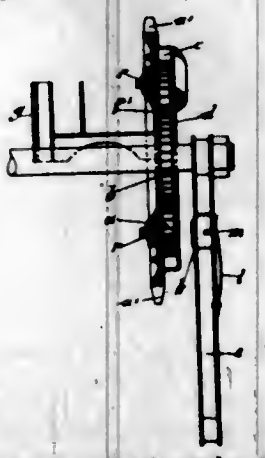
tion with said transverse shaft, a rotary carrier within the carrier-frame, a gear connection between the longitudinal shaft and the rotary carrier for rotating the latter, means for clamping the end of a pile or similar article within the rotary carrier, a support for the opposite end of the pile, and devices for feeding coating-strips to the pile, substantially as described.



611,209. WITHDRAWN.

611,210. DRIVING MECHANISM FOR CYCLES WITH ADJUSTABLE GEARING.

FRITZ H. VAGT, Wandsbeck, Germany. Filed Nov. 5, 1896. Serial No. 611,167. (No model.) Patented in England Oct. 9, 1896, No. 22,410



Claim.—1. In a driving-gear for cycles, the combination with a gear-wheel *b* fixed on the crank-shaft, of an adjustable casing *c* inclosing said gear-wheel and carrying an internal gear-wheel *a*, a sprocket-wheel *a'* on the periphery of the casing, a cover *d* on the casing having a recess i, means for adjusting the casing to throw said gear-wheels into and out of gear, a bolt *k* transversely movable in the pedal-crank, and a spring *l* operating to force said bolt into the said recess when the gear wheels are thrown out of gear, substantially as described.

2. In a driving-gear for cycles, the combination with a gear-wheel *b* fixed on the crank-shaft of a centrally-apertured, adjustable casing *c* inclosing said gear-wheel and carrying an internal gear-wheel *a*, a sprocket-wheel *a'* on the periphery of the casing, a slotted link *n* pivoted to the cycle-frame, a sliding support *g* pivotally connected to said link and carrying a disk *f* disposed in the central aperture in the casing, antifriction-rollers *r* journaled in bearings on the casing and having a rolling bearing on the periphery of the disk, a lever connected with the link *n* for raising and lowering the casing to throw the gear-wheels into and out of gear, and means for automatically locking the pedal-crank and casing together when the gear-wheels are thrown out of gear, substantially as described.

611,211. AIR-VALVE.

WILLIAM J. BULLOCK, Hartford, Conn., assignor of two-thirds to Frederick C. Rockwell and Frank S. French, same place. Filed Oct. 7, 1897. Serial No. 654,373. (No model.)



Claim.—1. An air-valve having a tube with a reduced opening through one end, a sleeve arranged to move onto and off from the end of the tube that has the reduced opening, a valve-disk located within the tube and having a stem adapted to be engaged by a part of the sleeve when the sleeve is moved off from the end of the tube and held so as to lock the valve-disk closed, and a cap turning on the sleeve and arranged to lock and unlock the sleeve, substantially as specified.

2. An air-valve having a tube with a reduced opening through one end, a sleeve arranged to move onto and off from the end of the tube that has the reduced opening, a valve-disk located within the tube and having a stem adapted to be engaged by a part of the sleeve when the sleeve is moved off from the end of the tube and held so as to lock the valve-disk closed, and a threaded cap arranged to be screwed onto the tube so as to seal the opening through the sleeve, substantially as specified.

3. An air-valve having a tube with a reduced opening through one end and an exterior thread around that end, a sleeve with an interior thread engaging the exterior thread on the end of the tube, a valve-disk located within the tube and having a stem adapted to be engaged by a part of the sleeve when the sleeve is turned so as to move off from the end of the tube and held so as to lock the valve-disk closed, and a cap turning onto and off from the sleeve and arranged to lock and unlock the sleeve, also the valve-disk, substantially as specified.

4. An air-valve having a tube with a reduced opening through one end and an exterior thread around that end, a sleeve with an interior thread engaging the exterior thread on the open end of the tube, a valve-disk located within the tube and having a stem adapted to be engaged by a part of the sleeve when the sleeve is turned so as to move off from the end of the tube and held so as to lock the valve-disk closed, and a threaded cap arranged to be screwed into position to seal the opening through the sleeve, substantially as specified.

5. An air-valve having a tube with a reduced opening through one end, a sleeve arranged to move onto and off from the end of the tube that has the reduced opening, a valve-disk located within the tube and having a stem adapted to be engaged by a part of the sleeve when the sleeve is moved off from the end of the tube and held so as to lock the valve-disk closed, and a cap having a thread arranged to engage a thread on the sleeve, said cap when turned so as to move toward the tube, sealing the opening through the sleeve and by engagement with a part of the tube locking the sleeve against movement, substantially as specified.

6. An air-valve having a tube with a reduced opening through one end, a sleeve with threads engaging threads on the end of the tube, a valve-disk located within the tube and arranged to be locked in a closed position by the rotation of the sleeve, and a cap having threads engaging threads on the sleeve in such manner that the turning on of the cap tends to cause the sleeve to more tightly hold the valve-disk locked closed and the turning off of the cap tends to move the sleeve so as to unlock the valve-disk, substantially as specified.

7. An air-valve having a tube, a valve-disk within the tube, a sleeve turning on the end of the tube and arranged to lock and unlock the valve-disk, and a cap turning on the sleeve and arranged to lock and unlock the sleeve, substantially as specified.

611,212. ALARM-LOCK.

EDWARD M. CASE, Chicago, Ill. Filed Dec. 10, 1897. Serial No. 661,879. (No model.)



Claim.—1. The combination with a lock-case, of a part which is yieldingly connected with and movable away from and toward the lock-case and through the medium of which the lock-case is connected with one of the two parts to be joined together by the lock, an alarm device within the lock-case, and actuating connections between the said part which is yieldingly connected with the lock-case and the said alarm device.

2. The combination with a lock-case provided with an alarm device, a keeper for attachment to one of the parts to be joined by the lock, and a locking means on the case detachably engaging the keeper, of a connecting part or plate which is yieldingly joined to the lock-case and through the medium of which the case is connected with the other of the parts to be joined by the lock, and actuating connections between said connecting part and the alarm device, whereby the alarm device will be operated when strain is brought on the case tending to separate it from the connecting part.

3. The combination with a lock-case provided with an alarm device, of a keeper, a locking member engaging the keeper, a tumbler or tumblers which control the actuation of the locking member, and operative connections between the tumbler or tumblers and said alarm device.

4. The combination with a lock-case and a keeper, adapted for attachment to one of the two parts to be secured together by the lock, of an alarm device in the lock-case, a rotative locking member which engages the keeper, and a tumbler or tumblers which control the actuation of the locking member, said tumbler or tumblers having operative connection with the said alarm device.

5. The combination with a lock-case, a keeper, a key-actuated locking member, tumblers which control the action of the locking member, an alarm device embracing a spring-pressed hammer, a detent for holding the hammer in its retracted position, said detent being constructed for actuation by either of said tumblers, and a connecting part or shank which is movably connected with the lock-case and is adapted to act on said detent and release the hammer when tension is brought thereon in a direction to withdraw it from the case.

6. The combination of a casing containing a locking device, and a shank, said parts having a constant yielding engagement with each other.

7. The combination of a casing containing a locking and an alarm device and a shank, said casing and shank having a constant yielding engagement, and the shank having a positive engagement with the alarm device.

8. An alarm-lock comprising a casing, an alarm device therein, a spring-pressed hammer in said casing, a tumbler, a detent engaging said hammer to hold the latter in its retracted position, and a pin on said detent engaging said tumbler.

9. An alarm-lock comprising a casing, a locking member therein, an alarm device in said casing embracing a spring-pressed hammer pivotally mounted in said casing, tumblers in the casing controlling the actuation of said locking member, means for locking said hammer in its retracted position, and operative connections between said tumblers and locking means.

10. An alarm-lock comprising a casing, an alarm device therein, a spring-pressed hammer in said casing, a key-actuated locking-cylinder, a tumbler adjacent said cylinder, a lever engaging said hammer to hold the latter in its retracted position, and a pin on said lever engaging the tumbler.

11. An alarm-lock comprising a casing, an alarm device therein, a hammer pivoted in said casing, a lug on said hammer, a spring attached rigidly at one end in the casing and connected at its free end with said lug, means for locking said hammer in its retracted position, key-actuated tumblers in said casing and operative connections between said tumblers and looking means.

12. An alarm-lock comprising a casing, an alarm device therein, a spring-pressed hammer pivotally mounted in the said casing, a rotative key-actuated cylinder in said casing, means for locking said hammer in its retracted position, and operative connections between said cylinder and locking means, said operative connection being constructed to permit the cylinder to rotate without releasing the hammer when a key of proper form engages the same, and to release said hammer and prevent the cylinder from rotating when said cylinder is engaged by a key of other form.

13. The combination with a stationary and a movable part of a lock comprising a shank and casing constituting a hasp which is pivoted to one of said parts, an alarm device in said casing, locking mechanism also in the casing, and a keeper attached to the other of said parts and adapted to have locking engagement with said locking mechanism, said shank being so connected with the alarm device as to release the same when force is applied to separate said parts.

14. An alarm-lock comprising a casing, an alarm device therein, a spring-pressed hammer pivotally mounted in said casing, means for locking said hammer in its retracted position, a spring-pressed rod projecting into said casing and engaging said locking means and acting to release the same when tension is brought thereon to withdraw the rod from the casing.

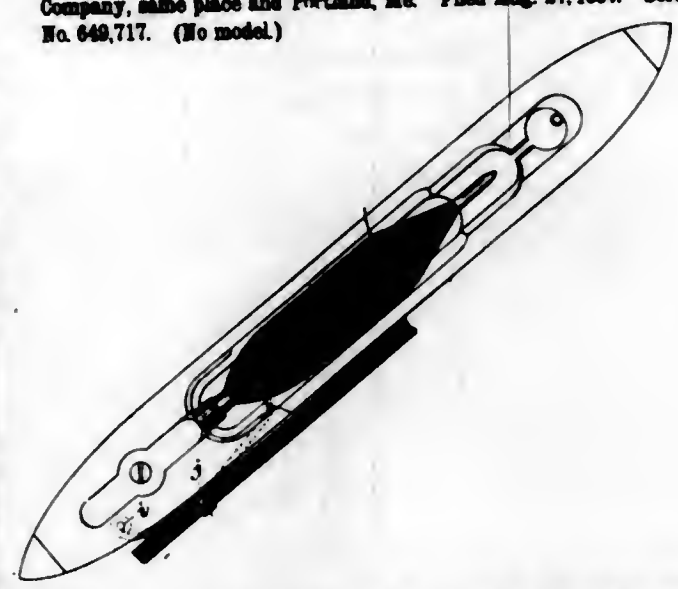
15. An alarm-lock comprising a casing, an alarm device therein, a spring-pressed hammer pivoted in said casing, means for locking said hammer in its retracted position, a rod projecting into said casing and engaging said locking means and acting to release the same when tension is brought thereon to withdraw the rod from the casing, a spring applied to said rod and acting to thrust the same into said casing, and means for adjusting said spring to vary the tension of the same.

16. An alarm-lock comprising a casing, an alarm device therein, a spring-pressed hammer pivoted in said casing, means for locking said hammer in its retracted position, a shank yieldingly connected with said casing, said connections consisting of a guide-rod rigidly attached to said casing and extending into said shank, a spring applied to said rod to hold the shank in yielding engagement with the casing, and an actuating-rod connected with said shank and operating to actuate said alarm device when force is applied to the shank to withdraw the same from the casing.

17. An alarm-lock comprising a casing, an alarm device therein, a spring-pressed hammer in said casing, a detent engaging said hammer to hold the same in its retracted position, a rod projecting into said casing and engaging said detent, and a spring applied to normally thrust said rod into said casing, said rod acting when tension is brought thereon to withdraw it from the casing to disengage said lever from the hammer.

18. An alarm-lock comprising a casing, an alarm device therein, a hammer pivoted in said casing, a lug on said hammer, a spring attached rigidly at one end to the casing and connected at its free end with said lug, a detent engaging said hammer to hold the same in its retracted position, and a spring-pressed rod engaging said detent and acting to disengage the same from the hammer when force is applied to withdraw it from the casing.

611,218. MISPICK AND SMASH PREVENTER FOR SHUTTLES. GEORGE FAIR, Boston, Mass., assignor to the Fair Loom Attachment Company, same place and Portland, Me. Filed Aug. 27, 1897. Serial No. 649,717. (No model.)



Claim.—1. A shuttle provided with a recess, *q*, in its face and a slot formed through the front wall of the body of the shuttle at the said recessed point, combined with a feeler-finger provided with a swell adapted to extend through the slot, the said feeler-finger being pivoted at one end to the body of the shuttle and adapted at a point in its free portion to rest upon the next to the last of the yarn to be drawn from the shuttle.

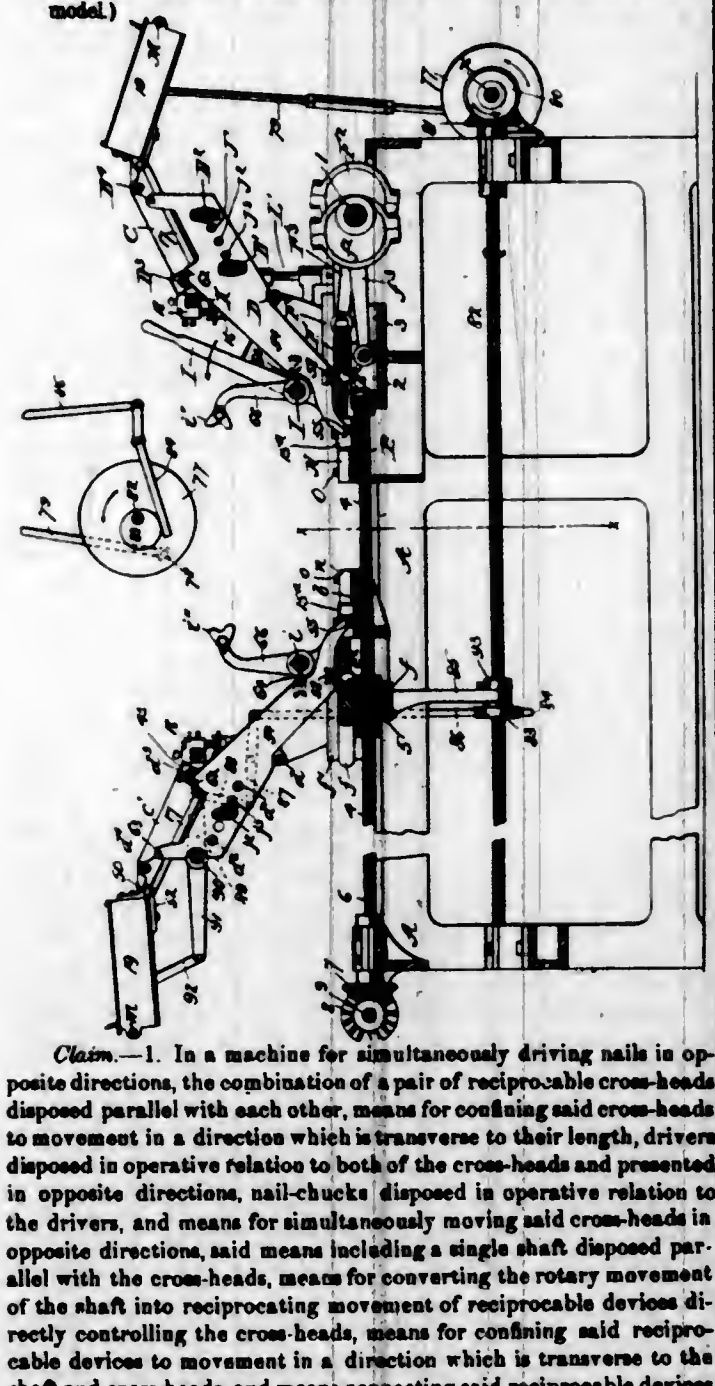
2. A shuttle provided with a slot formed through its front wall, combined with a feeler-finger provided with a swell adapted to extend through the slot, the said feeler-finger being pivoted at one end to the body of the shuttle and adapted at a point in its free portion to rest upon the next to the last of the yarn drawn from the shuttle, the shuttle-binder or swell, and a finger, *m*, arranged to extend up inside of the binder in the path of travel of the swell of the said feeler-finger to be directly acted upon by it, and means under the control of the finger *m* for stopping the loom.

3. A shuttle provided with a slot formed through its front wall, combined with a feeler-finger provided with a swell adapted to extend through the slot, the said feeler-finger being pivoted at one end to the body of the shuttle and adapted at a point in its free portion to rest upon the next to the last of the yarn drawn from the shuttle, the shuttle-binder or swell provided with longitudinal and vertical grooves, as described, and a finger *m* arranged to extend up inside of the binder in the path of travel of the swell of the said feeler-

finger to be directly acted upon by it, and means under the control of the finger *m* for stopping the loom.

4. A shuttle equipped with a split spindle, the split in the spindle extending horizontally therethrough and the shuttle being provided with a recess *q* in its face and a slot formed through its front wall at the said recessed point, combined with a feeler-finger provided with a swell adapted to extend through the slot, the said feeler-finger being pivoted at one end to the body of the shuttle, and adapted at its free end to move into the split of the spindle when the yarn is drawn off therefrom.

611,214. MACHINE FOR DRIVING NAILS. CHARLES M. GREEN, Highland Park, Ill. Filed Dec. 17, 1896. Serial No. 615,962. (No model.)



Claim.—1. In a machine for simultaneously driving nails in opposite directions, the combination of a pair of reciprocable cross-heads disposed parallel with each other, means for confining said cross-heads to movement in a direction which is transverse to their length, drivers disposed in operative relation to both of the cross-heads and presented in opposite directions, nail-chucks disposed in operative relation to the drivers, and means for simultaneously moving said cross-heads in opposite directions, said means including a single shaft disposed parallel with the cross-heads, means for converting the rotary movement of the shaft into reciprocating movement of reciprocable devices directly controlling the cross-heads, means for confining said reciprocable devices to movement in a direction which is transverse to the shaft and cross-heads, and means connecting said reciprocable devices with the cross-heads, substantially as set forth.

2. In a machine for simultaneously driving nails in opposite directions, the combination of a pair of reciprocable cross-heads disposed parallel with each other, drivers disposed in operative relation to both of the cross-heads and presented in opposite directions, nail-chucks disposed in operative relation to the drivers, and means for simultaneously moving the cross-heads in opposite directions, said means including but a single shaft disposed parallel with the cross-heads, pitmen disposed at right angles to the cross-heads and shaft, means for converting the rotary movement of the shaft directly into reciprocating movement of the pitmen, and means connecting the pitmen with the cross-heads, substantially as set forth.

3. In a machine for simultaneously driving nails in opposite directions, the combination of a pair of reciprocable cross-heads disposed parallel with each other, drivers disposed in operative relation to both of the cross-heads and presented in opposite directions, nail-chucks disposed in operative relation to the drivers, and means for simultaneously moving both of the cross-heads in opposite directions, said means including a single shaft disposed parallel with the cross-heads, pitmen disposed at right angles to the shaft and cross-heads, eccentrics carried by the shaft and disposed with their longest radii diametrically opposite, means for transmitting movement from the eccentrics to the pitmen, and means connecting the pitmen with the cross-heads, substantially as set forth.

4. In a machine for driving nails in opposite directions, the combination of a main frame, a driving-shaft supported thereby, a movable carriage supported by the main frame and movable in a direction which is transverse to the shaft, a pair of reciprocable cross-heads disposed parallel with each other and with the shaft, one of said cross-heads being mounted upon the main frame and the other upon the movable carriage, guides for confining said cross-heads to movement in a direction which is transverse to the shaft, drivers carried by each of the cross-heads and presented in opposite directions, nail-chucks arranged in operative relation to the drivers, and connections between the shaft and both of the cross-heads whereby movement is transmitted from the shaft to the cross-heads and the cross-heads simultaneously moved in opposite directions through equal distances, the connection between the shaft and the cross-head which is mounted upon the movable carriage being adjustable in order to permit of the adjustment of the movable carriage upon the main frame, substantially as set forth.

5. In a machine for driving nails in opposite directions, the combination of a main frame, a driving-shaft supported thereby, a movable carriage supported by the main frame and movable in a direction which is transverse to the shaft, a pair of reciprocable cross-heads disposed parallel with each other and with the shaft, one of said cross-heads being mounted upon the main frame and the other upon the movable carriage, guides for confining said cross-heads to movement in a direction which is transverse to the shaft, drivers carried by each of the cross-heads and presented in opposite directions, nail-chucks arranged in operative relation to the drivers, and connections between the shaft and both of the cross-heads whereby movement is transmitted from the shaft to the cross-heads and the cross-heads simultaneously moved in opposite directions through equal distances, the connection between the shaft and the cross-head which is mounted upon the movable carriage including a rod which is capable of endwise movement for the purpose of reciprocating the cross-head and of rotary movement for the purpose of adjusting the cross-head and means whereby when the rod is rotated the cross-head is adjusted, substantially as set forth.

6 In a machine for driving nails, the combination of a main frame, a driving-shaft supported thereby, a movable frame supported by the main frame, means for adjusting the movable frame upon the main frame, a reciprocable cross-head carried by the movable frame, a rod which is capable of both endwise and rotary movement, means for converting the rotary movement of the shaft into a reciprocating movement and transmitting it to the rod, means for transmitting the reciprocating movement of the rod to the cross-head, means for rotating the rod, and means for converting its rotary movement into reciprocating movement of the cross-head, whereby the latter may be adjusted with relation to the main frame when the movable frame is adjusted, substantially as set forth.

7. In a machine for driving nails, the combination with the drivers and a reciprocable cross-head by which they are carried, of a movable carriage upon which the cross-head is mounted, a rod capable of endwise movement for the purpose of reciprocating the cross-head and of rotary movement for the purpose of adjusting the cross-head, means for moving the rod endwise for the purpose of reciprocating the cross-head, means whereby when the rod is rotated the cross-head is adjusted, mechanism for adjusting the movable carriage and means for simultaneously rotating the rod and actuating the mechanism by which the movable carriage is adjusted, substantially as set forth.

8. In a machine for driving nails, the combination with the drivers and a reciprocable cross-head by which they are carried, of a rod having threaded engagement with the cross-head and being capable of both endwise and rotary movement, means for moving the rod endwise for the purpose of reciprocating the cross-head, a movable carriage upon which the cross-head is mounted, a screw engaging the carriage for moving it, and means for simultaneously rotating the screw and the rod whereby the carriage and the cross-head are moved together for the purpose of adjusting their positions with relation to other parts of the machine, substantially as set forth.

9 In a machine for driving nails, the combination with the drivers and a reciprocable cross-head, of rods having threaded engagement with the cross-head and being capable of both endwise and rotary movement, means for moving the rods endwise for the purpose of reciprocating the cross-head, gear-wheels, means connecting the gear-wheels and rods so that the rods are capable of endwise and incapable of rotary movement relatively to the wheels, a movable carriage upon which the reciprocable cross-head is mounted, a pair of screws having threaded engagement with the carriage, gear-wheels carried by the screws, and a shaft having gear-wheels meshing with all the gear-wheels aforesaid, whereby when said shaft is

rotated the reciprocable cross-head and movable carriage are simultaneously adjusted with relation to other parts of the machine, substantially as set forth.

10. In a machine for driving nails in opposite direction at the four corners of a rectangular frame, the combination of a pair of reciprocable cross-heads, means for simultaneously moving them in opposite directions, a pair of drivers carried by each of the cross-heads, the drivers of the two pairs being presented in opposite directions, means for adjusting the two pairs of drivers relatively to each other, means for adjusting the drivers of each pair relatively to each other, a pair of relatively adjustable rails disposed parallel with each other and with the cross-heads and forming the work-table, a pair of nail-chucks supported by and adjustable longitudinally upon each of said rails, said chucks being adapted to serve as gages, and a pair of gages supported by and adjustable longitudinally upon each of said rails, the gages being nearer the outer edges of said rails than are the chucks, whereby the chucks determine the positions of two sides of the frame and the gages determine the positions of the remaining two sides of the frame, thus enabling the placing of the last-named sides of the frame directly in lines between opposite nail-chucks, substantially as set forth.

11. In a machine for driving nails, the combination of a work-table having four parallel slots, gages disposed upon the table, bolts passing through and laterally adjustable in the inner slots of the table for adjustably securing the gages thereto, nail-chucks disposed upon the table in positions to serve also as gages, and bolts passing through and laterally adjustable in the outer slots of the table for securing the chucks thereto, substantially as set forth.

12. In a machine for driving nails, the combination of a frame which remains at rest during the driving operation, a plurality of carriers supported thereby and laterally adjustable thereon, independently of each other, a plurality of independent screws each engaging one of the carriers, said screws being adapted when independently operated to independently adjust the carriers, laterally, relatively to each other, and being adapted also to fixedly hold the carriers during the driving operation, means for independently operating the screws, a plurality of independent groups of nail feeding and nail driving mechanisms, and means connecting the parts of each of said groups with one of the carriers whereby said parts of each group are compelled to partake of the movement of the carrier with which they are connected for the purpose of adjusting the several groups laterally relatively to each other while at the same time the nail-driving mechanisms are left free to move independently of the carriers during the driving operation, substantially as set forth.

13. In a machine for driving nails, the combination of a frame which remains at rest during the driving operation, a plurality of carriers supported thereby so as to be laterally adjustable thereon, independently of each other, a plurality of independent screws each having engagement with one of the carriers, means for independently operating said screws whereby the carriers are independently adjusted upon the frame, said screws being adapted also to fixedly hold the carriers in place during the driving operation, a plurality of magazines, nail-chucks, and chutes for conducting the nails from the magazines to the chucks, all of said parts being supported by the frame and adjustable laterally thereon, the parts of like name being adjustable independently of each other, a reciprocable cross-head, a plurality of drivers, means whereby the drivers are compelled to partake of the reciprocating movement of the cross-head, and means for connecting each of the carriers with one of the magazines, chutes, chucks, and drivers, whereby said parts are compelled to partake of the movement of the carrier, while the cross-head and drivers are permitted to move independently of the other parts during the driving operation, substantially as set forth.

14. In a machine for driving nails, the combination of a frame which remains at rest during the driving operation, a plurality of carriers supported thereby so as to be laterally adjustable thereon, independently of each other, a plurality of screws, each having threaded engagement with one of the carriers, means for separately rotating said screws whereby the carriers are adjusted upon the frame and fixedly held in place during the driving operation, a plurality of magazines, nail-chucks, and chutes for conducting the nails from the magazines to the chucks, all of said parts being supported by the frame and adjustable laterally thereon, a reciprocable cross-head, a plurality of drivers slidably mounted upon the cross-head so as to partake of the movement thereof and at the same time be adjustable thereon, and means for connecting each of the carriers with one of the magazines, chutes, chucks and drivers whereby said parts are compelled to partake of the movement of the carrier, while the cross-head and drivers are permitted to move independently of the other parts, during the driving operation, substantially as set forth.

15. In a machine for driving nails, the combination with a driver, a nail-chuck, a chute for conducting nails to the chuck, a magazine for containing a number of nails, and a feeder for taking the nails from the magazine and delivering them to the chute, all of said parts being adjustable, of means for imparting the necessary reciprocating movement to the feeder, a carrier, means for connecting the carrier with the magazine, and means under the control of the operator for connecting the feeder with the carrier, substantially as set forth.

16. In a machine for driving nails, the combination with a number of drivers, chucks, chutes, magazines and feeders, arranged in groups which are adjustable relatively to each other, of a number of carriers, means connecting the driver, chuck, chute and magazine of each group with one of said carriers whereby said parts are compelled to move together, a rock-shaft common to all of said groups, clamping-levers mounted upon said rock-shaft so as to be capable of sliding but incapable of rotating thereon, and means connecting each of said levers with one of the carriers, substantially as set forth.

17. In a machine for driving nails, the combination of a plurality of magazines, a plurality of feeders, and means common to all of said feeders for simultaneously imparting to them to-and-fro reciprocating movement, each of the feeders having a pointing-off picker disposed in the general direction of the movement aforesaid, a socket in which said picker fits so as to be capable of endwise movement therein, and a spring for holding the picker in normal position so that the movement of the picker may be arrested without arresting the entire feeding mechanism, substantially as set forth.

18. In a machine for driving nails, the combination of a plurality of magazines, a plurality of feeders, an endwise-movable rod by which all of said feeders are carried, means for reciprocating the rod endwise, thereby imparting to all of the feeders to-and-fro reciprocating movement, each of the feeders having a pointing-off picker disposed in the general direction of the movement aforesaid, a socket in which said picker fits so as to be capable of endwise movement therein, and a spring for holding the picker in normal position so that the movement of the picker may be arrested without arresting the entire feeding mechanism, substantially as set forth.

19. In a machine for driving nails, the combination of a plurality of magazines, a plurality of feeders, and means common to all of said feeders for simultaneously imparting to them to-and-fro reciprocating movement, each of the feeders having a pointing-off picker disposed in the general direction of the movement aforesaid, a socket in which said picker fits so as to be capable of endwise movement therein, a spring for holding the picker in normal position so that the movement of the picker may be arrested without arresting the entire feeding mechanism, and a stem proceeding laterally from the socket, said stem being capable of both endwise and vertical adjustment, substantially as set forth.

20. In a machine for driving nails, the combination of a plurality of magazines, a plurality of feeders, a rod capable of endwise movement to which all of said feeders are connected, and means for reciprocating said rod whereby reciprocating movement is simultaneously imparted to all of the feeders, each of the pickers being provided with a stem disposed transversely to said rod, a block adjustably mounted upon the rod and having sockets in which the stems of the pickers fit so as to be capable of both rotary and endwise adjustment, and means for securing the stems of the pickers in said sockets, substantially as set forth.

21. In a machine for driving nails, the combination of a plurality of magazines, a plurality of feeders, an endwise-movable rod upon which all of said feeders are mounted so as to be capable of adjustment thereon, means under the control of the operator for securing the feeders to said rod whereby they are compelled to partake of its movement or disconnecting them therefrom whereby they may be adjusted thereon, and means for reciprocating the rod, substantially as set forth.

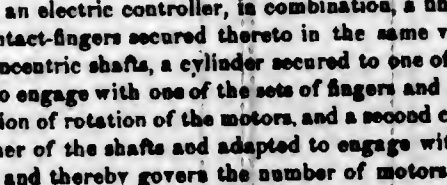
22. In a machine for driving nails, the combination of a plurality of magazines, an endwise-movable rod disposed opposite the delivery ends of said magazines, means for reciprocating the rod, a plurality of blocks slidably mounted upon said rod, means under the control of the operator for connecting said blocks to the rod or disconnecting them therefrom, and a pair of pickers carried by each of the blocks, each of said pickers having a stem, each of the blocks having sockets in which said stems fit so as to be capable of both rotary and endwise adjustment, and means for securing the stems of the pickers in the sockets of the blocks, substantially as set forth.

23. In a machine for driving nails, the combination of a plurality of magazines, means for adjusting them relatively to each other, a plurality of feeders, a reciprocating rod on which said feeders are mounted, means under the control of the operater for connecting said feeders to said rod or disconnecting them therefrom so as to permit them to slide thereon, and means under the control of the operator for connecting the feeders to the magazines, substantially as set forth.

24. In a machine for driving nails, the combination with a number of drivers, a reciprocable cross-head by which they are operated, and a number of feeders, of a movable rod by which all of said feeders are operated a shaft, means connecting it with the rod, an arm carried by the shaft, a pivoted latch carried by the arm and adapted to fall into the path of the cross-head whereby the rod is moved in

one direction, means for tripping the latch and disengaging it from the cross-head, and a spring for moving the rod in the other direction, substantially as set forth.

611,215. ELECTRIC CONTROLLER. SAMUEL HARRIS, Twinsburg, Ohio, assignor to the Steel Motor Company, of Ohio. Filed May 2, 1898. Serial No. 679,523. (No model.)



Claim.—1. The combination in an electric controller of a pair of concentric shafts, a pair of switch-cylinders carried thereby, two sets of fixed fingers engaging therewith, and a single mechanism arranged to actuate either of said shafts.

2. In an electric controller, a reversing-switch comprising a set of fixed contacts, a moving member carrying contacts adapted to engage with the fixed contacts, and a shaft to which the said moving member is secured, in combination with a motor cut-out switch comprising a set of fixed contacts, a moving member carrying contacts adapted to engage with the fixed contacts, and a shaft to which the last-mentioned moving member is secured, the said shafts being concentric with each other, and an operating-lever adapted to engage and actuate either of said shafts.

3. The combination in an electric controller of three rotatable shafts, a control-cylinder carried by one of said shafts, a reversing-cylinder carried by the second of said shafts, and a cut-out cylinder carried by the third of said shafts, the two last-mentioned shafts being concentric with each other.

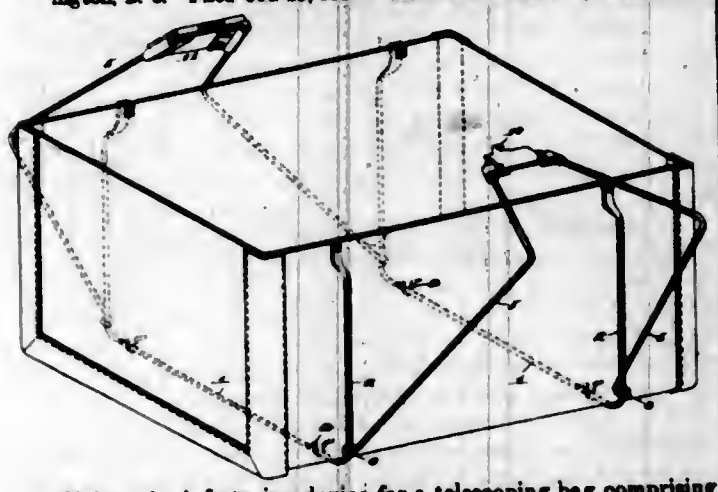
4. The combination with a pair of motors and their resistances, of a control-switch, a reversing-switch and a switch for cutting either motor out of circuit, a pair of concentric shafts to which the moving members of the two last-mentioned switches are secured, and a single actuating means for both of said shafts.

5. A cut-out switch comprising a series of stationary contacts, a contact-carrying cylinder and a shaft carrying the cylinder, in combination with a reversing-switch comprising a series of stationary contacts, a contact-carrying cylinder and a tubular shaft carrying said last-mentioned cylinder and surrounding the aforesaid shaft, and an operating-lever adapted to engage and actuate either of said shafts.

6. In an electric controller, in combination, a finger-board, two sets of contact-fingers secured thereto in the same vertical plane, a pair of concentric shafts, a cylinder secured to one of the shafts and adapted to engage with one of the sets of fingers and thereby govern the direction of rotation of the motors, and a second cylinder secured to the other of the shafts and adapted to engage with the other set of fingers and thereby govern the number of motors connected into the circuit.

7. In an electric controller, in combination, a finger-board, two sets of contact-fingers secured thereto in the same vertical plane, a pair of concentric shafts, a cylinder secured to one of the shafts and adapted to engage with one of the sets of fingers and thereby govern the direction of rotation of the motors, and a second cylinder secured to the other of the shafts and adapted to engage with the other set of fingers and thereby govern the number of motors connected into the circuit, and an operating-lever adapted to engage and actuate either of the said shafts.

611,216. LUGGAGE-CARRIER. ARTHUR W. HARRISON, Washington, D. C. Filed Oct. 25, 1897. Serial No. 656,293. (No model.)



Claim.—1. A fastening device for a telescoping bag comprising a lower section attached to the bottom thereof, and a closure for the cover, said closure being permanently connected with the lower section and adapted to slide thereon.

2. A fastening device for a telescoping bag, comprising a frame or section attached to the bottom of the bag, and two metallic sections adjustable thereon and adapted to be moved to and from positions over the cover of the bag and provided with means for securing them together over said cover.

3. A fastening device for a telescoping bag, comprising a plurality of metallic sections adapted to be separated from each other to permit of opening the bag and carrying locking mechanism for securing said sections together, said sections being adapted to extend over the cover of the bag.

4. A fastening means for a telescoping bag comprising in its construction a frame having two vertical rods on each side thereof, and a pair of bails adapted to be engaged with each other over the cover of the bag and provided with eyes or loops which are vertically adjustable on the said vertical rods.

5. A fastening means for a telescoping bag comprising in its construction a frame having two vertical rods on each side thereof, and a pair of bails adapted to be engaged with each other over the cover of the bag and provided with eyes or loops which are vertically adjustable on the said vertical rods, and means for locking the bails together.

6. The combination with a collapsible or telescoping bag, of a collapsible or telescoping frame inclosing the two parts of the bag and adapted to be opened to permit of the removal of the bag-cover.

7. A fastener adapted to inclose a telescoping bag and comprising in its construction upper and lower sections permanently connected together and adapted to be adjusted relatively to each other, and means whereby they may be locked in their relative positions when adjusted.

8. A telescope-bag having a metallic fastener inclosing the same and composed of a plurality of sections slidingly connected and a single lock for securing the sections together.

9. A telescope-bag having a metallic fastener attached thereto and composed of a plurality of sections adapted to inclose the upper and lower sections of the bag, and carrying locking mechanism.

10. A telescope-bag having a metallic fastener composed of a plurality of sections adapted to inclose the bag and having means for supporting the cover of the bag against downward movement.

11. The combination with a collapsible or telescoping bag, of a collapsible or telescoping frame surrounding the two parts of the bag and separable above the bag-cover to permit of the removal of said cover, and adapted to support the said cover against downward movement when the separable parts are connected.

12. A fastening device consisting of a base-band adapted to partly encircle a package and having notches near its ends, and an upper band having an eye and a catch at each end for loosely sliding upon said base-band and engaging with its notches.

13. A fastening device for an expansible package consisting of two base-bands suitably spaced apart and two upper bands connected by sliding eyes with said base-bands, and means for causing the parts to grip one upon another.

14. As a fastening means for a telescoping bag, a metallic frame adapted for attachment to the lower part of the bag, and bails adjustably connected with the frame and adapted to extend over the upper part or cover of the bag.

15. As a fastening means for a telescoping bag, a metallic frame adapted for attachment to the lower part of the bag, bands or bails adjustably connected with the frame and adapted to extend over the upper part or cover of the bag, and means for locking the bails in position relatively to the frame.

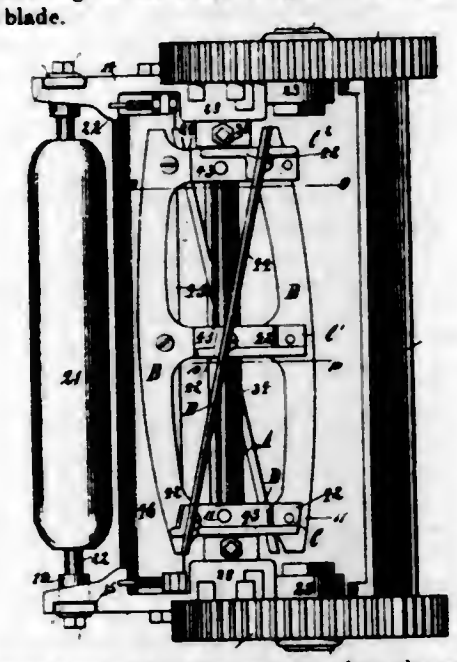
16. A collapsible or telescopic bag having a metallic frame permanently connected with the lower part thereof and bands or bails adjustably connected with the frame and adapted to be swung to and from a position over the cover of the bag.

611,217. LAWN-MOWER. HARRY JACKSON, Kingston, N. Y. Filed May 13, 1896. Serial No. 591,369. (No model.)

Claim.—1. In a lawn-mower, a frame, a support at the rear of the frame, and a roller journaled in said support, said roller in addition to its rotary movement being movable endwise sufficient to bring a preponderance of its contact-surface to one side of the longitudinal center of the mower, whereby the roller will be effective in assisting the turning movement of the mower, as specified.

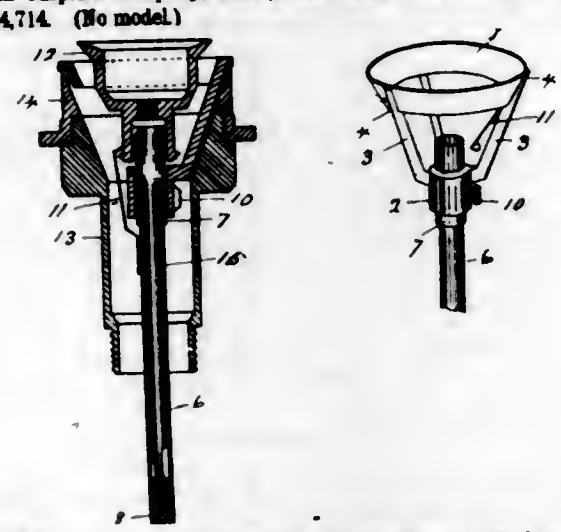
2. A lawn-mower having a frame, a driven shaft mounted in the frame, a blade formed of a plain metallic plate means carried by the shaft and holding the plate diagonally with reference to the shaft, the blade having a tapering flange at its outer edge, the said flange being at an angle to the blade, projecting beyond one side and running gradually from zero at one extremity of the blade to the greatest width of the flange at the opposite extremity of the blade, and a ledger-knife held in position to be engaged by the edge of the flange on the knife, substantially as described.

3. A lawn-mower having a frame, a ledger-blade held rigidly thereon, a rotary shaft mounted in the frame, and a knife carried by the shaft and arranged to move diagonally against the ledger-blade, the knife having its outer edge provided with a tapering flange inclined to the main portion of the blade, extending beyond one side and reaching gradually from zero at one extremity of the blade to the greatest width of the flange at the opposite extremity of the blade, the outer edge of the flange being beveled to form the cutting edge of the blade.



4. A lawn-mower blade formed of a plate the cutting edge of which is provided with a tapering flange disposed at an angle to the body portion of the blade, extending beyond one side thereof and running gradually from zero at one end to its greatest width at the opposite end of the blade.

611,218. SUPPORTING ATTACHMENT FOR CUSPIDOR-BOWLS. GEORGE R. JOHNSON, Fort Wayne, Ind., assignor to the Peerless Fountain Cuspidor Company, same place. Filed Dec. 30, 1897. Serial No. 664,714. (No model.)



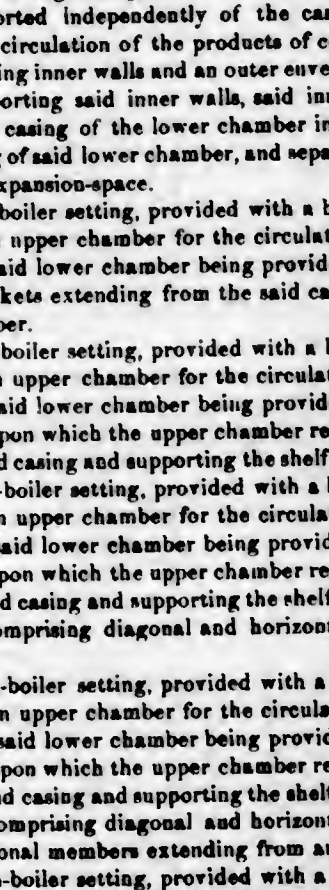
Claim.—1. In a dental cuspidor of the class specified a supporting-spider for the inner revoluble bowl, consisting of a ring and hollow hub in concentric relation, and integral oblique legs rigidly uniting said ring and hub, and whose outer faces are adapted to rest or bear upon the adjacent inclined face of the containing casting, the said spider having a holding-spring detachably connecting it with the pedestal of said bowl for the purpose specified, all substantially as described.

2. In a dental cuspidor of the class specified a supporting-spider for the revoluble bowl consisting of a ring and hollow hub rigidly united in concentric arrangement by a plurality of oblique legs; a plurality of oblique legs uniting said ring and hub, and having upon their outer face a longitudinal knife-edge-supporting flange; and means for detachably connecting said spider to the pedestal of said bowl for the purpose specified, all substantially as described.

3. In a dental cuspidor of the class described, the combination of a ring 1 and a hub 2 rigidly united in concentric relation by inclined legs; the inclined legs 3 integral with said ring and hub and having their outer face provided with a supporting knife-edge for the purpose specified; a bearing-sleeve 6, means for rigidly fixing said hub on said sleeve; and a spring-catch fixed upon the inner face of said ring and adapted to holdingly engage the pedestal of a proper revoluble bowl for the purpose specified.

4. In a dental cuspidor of the class described, the hollow casting 13; the collar 14 mounted upon said casting by a screw-threaded connection; the supporting spider consisting of a ring 1 and a hollow hub 2 rigidly connected in concentric relation by the inclined legs 3; the inclined legs 3, the bearing-sleeve 6 for the purpose specified; means for detachably securing said hub to said sleeve; and means for detachably connecting said spider with the pedestal of a proper revoluble bowl as described, all substantially as described.

611,219. STEAM-BOILER SETTING. EDWARD S. T. KENNEDY, Larchmont, N. Y., and JOHN H. WILLIAMSON, Bethel, Conn., assignors to the Hazelton Boiler Company, New York, N. Y. Filed Feb. 8, 1897. Serial No. 622,533. (No model.)



Claim.—1. A steam-boiler setting, provided with a lower or fuel chamber having an inclosing casing, and having a self-sustaining lining of brickwork supported independently of the casing, and an upper chamber for the circulation of the products of combustion, said upper chamber being supported independently of the brickwork of the lower chamber and having its walls over the brick lining of the lower chamber but separated therefrom by an intervening expansion-space.

2. A steam-boiler setting, provided with a lower or fuel chamber having an inclosing casing, and having a self-sustaining lining of brickwork supported independently of the casing, and an upper chamber for the circulation of the products of combustion, said upper chamber having inner walls and an outer envelop or casing inclosing but not supporting said inner walls, said inner walls being supported from the casing of the lower chamber independently of the brickwork lining of said lower chamber, and separated therefrom by an intervening expansion-space.

3. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, an upper chamber for the circulation of the products of combustion, said lower chamber being provided with an inclosing casing, and brackets extending from the said casing and supporting the upper chamber.

4. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, an upper chamber for the circulation of the products of combustion, said lower chamber being provided with an inclosing casing, a shelf upon which the upper chamber rests, and brackets extending from said casing and supporting the shelf and upper chamber.

5. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, an upper chamber for the circulation of the products of combustion, said lower chamber being provided with an inclosing casing, a shelf upon which the upper chamber rests, and brackets extending from said casing and supporting the shelf and upper chamber, said brackets comprising diagonal and horizontal members and uprights.

6. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, an upper chamber for the circulation of the products of combustion, said lower chamber being provided with an inclosing casing, a shelf upon which the upper chamber rests, and brackets extending from said casing and supporting the shelf and upper chamber, said brackets comprising diagonal and horizontal members and uprights, the diagonal members extending from angles of the casing.

7. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, an upper chamber for the circulation of the products of combustion, said lower chamber being provided with an inclosing casing, and brackets extending from the said casing and supporting

the upper chamber, said brackets being located in enlarged recesses of the brickwork, so as to be independent of expansion of the latter.

8. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, an upper chamber for the circulation of the products of combustion, a shelf upon which the upper chamber rests and brackets for supporting the shelf independently of the brickwork of the lower chamber, said brackets comprising diagonal and horizontal members and uprights and being located in enlarged recesses of the brickwork, so as to be independent of expansion of the latter.

9. A steam-boiler setting, provided with a brick-lined lower or fuel chamber provided with an inclosing casing, an upper chamber for the circulation of the products of combustion, a shelf upon which the upper chamber rests and brackets for supporting the shelf independently of the brickwork of the lower chamber, said brackets comprising diagonal and horizontal members and uprights joined to the inclosing casing of the lower chamber and being located in enlarged recesses of the brickwork, so as to be independent of expansion of the latter.

10. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, said lower chamber being provided with an inclosing casing angular in cross-section, and an upper chamber for the circulation of the products of combustion, said upper chamber being of general circular contour, a shelf upon which the upper chamber rests and diagonal shelf-supporting bracket-pieces extending from the angles of the casing of the lower chamber.

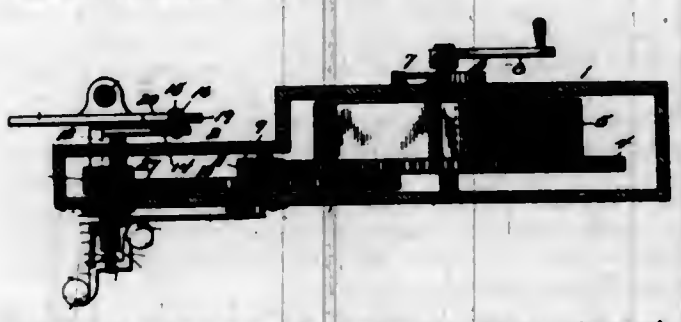
11. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, said lower chamber being provided with an inclosing casing angular in cross-section, and an upper chamber for the circulation of the products of combustion, said upper chamber being of general circular contour, a shelf upon which the upper chamber rests and shelf-supporting bracket-pieces extending from the angles of the casing of the lower chamber, one of said bracket-pieces being horizontal and one being diagonal, the said bracket-pieces being located in enlarged recesses of the brickwork, so as to be independent of expansion of the latter.

12. A steam-boiler setting, provided with a brick-lined lower or fuel chamber, said lower chamber being provided with an inclosing casing angular in cross-section and an upper chamber for the circulation of the products of combustion, said chamber being of general circular contour, a shelf upon which the upper chamber rests, diagonal shelf supporting bracket-pieces extending from the angles of the casing of the lower chamber, and an auxiliary shelf-supporting stringer or girder member, spanning the angles of the casing, said shelves-supporting bracket-pieces and auxiliary stringer being located in enlarged recesses of the brickwork so as to be independent of expansion of the latter.

13. A steam boiler setting, having a superstructure of substantially cylindrical contour, for the circulation of the products of combustion, and a subjacent deflecting-furnace having a substantially rectangular grate-surface and having an inclosing casing and an independently-supported brick lining, the superstructure being supported from the said inclosing casing independently of the said brick lining, and the deflecting-furnace having a rectangular front.

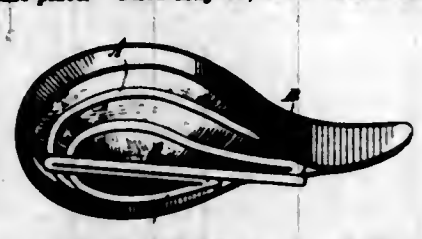
14. A steam-boiler setting, having a superstructure of substantially cylindrical contour, for the circulation of the products of combustion, and a subjacent deflecting-furnace having a substantially rectangular grate-surface and having an inclosing casing and an independently-supported brick lining, the superstructure being supported from the said inclosing casing independently of the said brick lining, and the deflecting-furnace having a rectangular front, and front and rear firing-doors.

611,220. MEANS FOR REGULATING CHURN-POWERS. JOHN C. MOORE and JOHN L. THURMAN, Newtown, Ky., assignors of one-third to Joseph Hawkins, Dolomite, Ala. Filed May 15, 1897. Serial No. 636,708. (No model.)



Claim.—In a churn motor, the combination with operating mechanism including a driven shaft and connections, of a governor cross-head fulcrumed upon said driven shaft and provided with outwardly and inwardly extending weighted arms, a sleeve mounted to slide upon said shaft and having connection by an intermediate link with the governor cross-head, a fixed friction-washer, a friction-disk carried by the sleeve for contact with said washer, a collar also carried by said sleeve and spaced from the friction-disk, a resistance-spring terminally arranged in the interval between said friction-disk and the collar, for yieldingly resisting the movement of the friction-disk toward the washer, and an adjusting-screw arranged in operative relation with said resistance-spring for varying the pressure of the extremity thereof upon the collar of the sleeve, substantially as specified.

611,221. BICYCLE-SADDLE. JOHN B. MCMANUS, Schenectady, N. Y., assignor of one-half to Albert B. Van Vorst and Horace S. Van Vorst, same place. Filed May 23, 1896. Serial No. 592,731. (No model.)

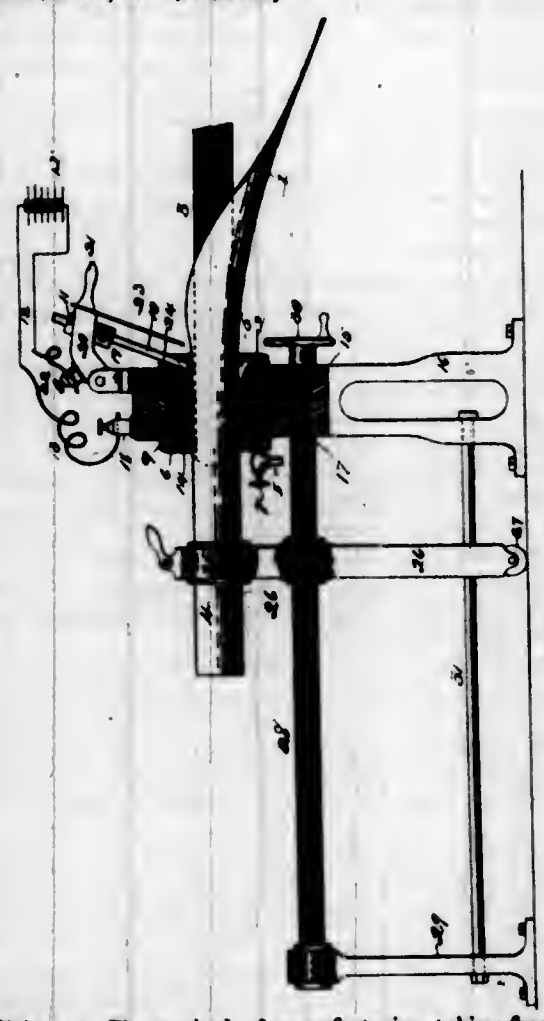


Claim.—1. A bicycle-saddle frame comprising a single resilient strip or wire coiled to the form of a distorted helix, and having its inner terminal doubled upon itself and extended in opposite directions longitudinally of the saddle to underlie and reinforce the inner turns of the coil and form an attaching-shank, substantially as described.

2. A seat formed of a length of resilient material curved helically and having one terminal run beneath the seat in the plane parallel to the plane occupied by the seat, such terminal being adapted to be engaged by the coils of the helix when the coils are depressed by the weight of persons seated thereon.

3. A seat formed of a resilient wire coiled into a helix, each convolution of the helix being distorted laterally at one side so as to form a forwardly-projected portion serving as a pommel for the seat and one terminal of the wire being extended beneath the saddle to underlie and reinforce the coils thereof.

611,222. METHOD OF AND MEANS FOR MANUFACTURING METAL TUBING. ELIAS E. RIES, New York, N. Y. Filed Jan. 18, 1896. Serial No. 576,006. (No model.)



Claim.—1. The method of manufacturing tubing from webs of metal, which consists in progressively folding the web into a tube, with the meeting edges in abutment and sprung together by the resiliency of the metal of the web, and progressively heating the contacting edges to a welding temperature, whereby the said edges are upset and welded by the spring of the tube, substantially as described.

2. The method of manufacturing tubing from webs of metal, which consists in progressively folding the web into a tube with the meeting edges pressed together by the resiliency of the metal of the tube, and progressively heating the meeting edges to a welding temperature by an arc established between the said meeting edges and a terminal of an electric circuit, whereby the resiliency of the tube is utilized to complete the weld, substantially as described.

3. In an apparatus for making tubes from webs of metal, the combination of a stationary mandrel, a tube forming and closing die surrounding the head of the same, a traveling clamp for the tube, and means substantially as described for electrically heating the tube along the line of the seam formed by the passage of the web between the mandrel and die, to a welding temperature, substantially as described.

4. In an apparatus for making tubes from traveling webs of metal, the combination of a stationary mandrel, a tube forming and closing die, a source of electric current having one of its terminals electrically connected with the tube-forming die, an electrode connected with the opposite terminal of said source and adapted to be brought into contact with the edges or seam of the traveling web or tube at or near the closing-die, and means substantially as described for imparting motion to the said web or tube while the same is being traversed by the current, substantially as and for the purpose described.

5. In an apparatus for making tubes from traveling webs of metal, the combination of a tube-forming die constituting one terminal of a source of electric heating-current, an electrode constituting the opposite terminal of said source and adapted to be brought into operative contact with the tube at a short distance from the forming-die, and a traveling clamp or clutch for moving the tube and thereby causing successive portions of the same to be traversed by the heating-current, substantially as described.

6. In an apparatus for making tubes from webs of metal, the combination, with the stationary tube-forming die, of an adjustable electrode-holder mounted upon the framework of said apparatus near said die, but insulated therefrom, and having one or more electrodes in connection with a suitable source of heating-current, said holder being adapted to be moved so as to bring its electrode or electrodes into and out of operative connection or proximity with the tube formed by said apparatus, substantially as described.

7. The method of manufacturing tubing from webs of metal, which consists in shaping or forming the web into a tube with the meeting edges abutting, condensing the metal of said tube concurrently with such shaping or forming process so as to produce in the same a spring-pressure tending to force the abutting edges firmly together, and in heating the abutting edges while under such pressure to a temperature suitable for welding or otherwise uniting the same, substantially as described.

8. The method of manufacturing tubing from webs of metal, which consists in shaping the web into approximately tubular form while the same is cold or practically cold, drawing or compressing the metal of said tube so as to impart thereto a spring-pressure tending to force together the opposing or abutting edges of the same, heating the said edges to a welding or brazing temperature without destroying the tension or appreciably drawing the temper of the main body of said tube, and in completing the welding or union of the said edges while so heated by virtue of the spring pressure or tension imparted to the walls of said tube during the drawing or compressing operation, substantially as described.

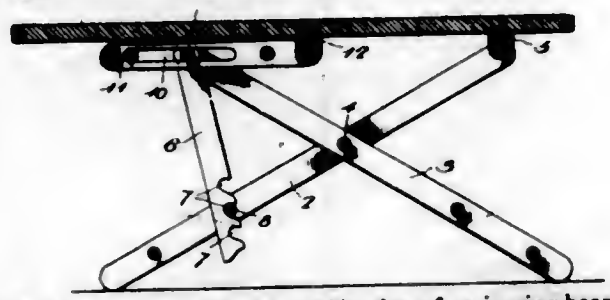
9. The method of manufacturing tubes from webs of metal which consists in progressively folding the web into a tube, with the meeting edges in abutment and sprung together by the resiliency of the metal of the web, progressively heating the contacting edges to a welding temperature, whereby said edges are upset and welded by the spring of the tube, and redrawing the said welded tube for finishing, substantially as described.

10. An apparatus for manufacturing tubes from webs of metal comprising the combination of a forming-die arranged to fold the web into a tube so as to spring the edges in abutment by the resiliency of the metal of the tube and a heating device for heating the contacting edges to a welding temperature whereby the said edges are upset and welded by the spring of the tube, substantially as described.

11. An apparatus for manufacturing tubes from webs of metal comprising the combination of a forming-die arranged to fold the web into a tube so as to spring the edges in abutment by the resiliency of the metal of the tube and an electric-heating device for heating the contacting edges to a welding temperature whereby the said edges are upset and welded by the spring of the tubes, substantially as described.

611,223. IRONING-TABLE. ROBERT L. RITCHIE, Walnut, Kans., assignor of one-half to T. F. Jones, same place. Filed Mar. 7, 1898. Serial No. 672,910. (No model.)

Claim.—1. In an ironing-table, the combination of an ironing-board, the oppositely-inclined legs connected together between their ends and arranged in pairs, one pair being permanently hinged to the ironing board near the rear end thereof, means for securing the legs at the desired adjustment, and a clamping-frame extending longitudinally of the lower face of the ironing-board, hinged at its inner end to the same and connected with the upper ends of the adjacent legs, substantially as described.

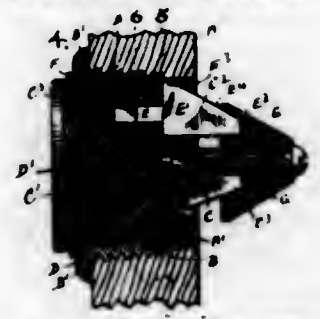


2. In an ironing-table, the combination of an ironing-board, oppositely-inclined legs pivoted together between their ends and hinged to the ironing-board at one end thereof, and a clamping-frame extending longitudinally of the lower face of the ironing-board and hinged at its inner end to the same and slidingly connected with the legs at the front end of the ironing-board, said frame permitting the ironing-board to be raised and adapted to clamp a garment between it and the board, substantially as described.

3. In an ironing-table, the combination of an ironing-board, oppositely-inclined legs pivoted together between their ends and arranged in pairs, the members of each pair being connected by rungs, a clamping-frame extending longitudinally of the ironing-board and hinged at its inner end to the same, said clamping-frame having longitudinally-slotted side bars, and a connecting-rung or cross-piece passing through the slots of the clamping-frame and extending between the legs at the front of the board, substantially as described

4. In an ironing-table, the combination of an ironing-board, the legs 2 and 3 pivoted together and hinged to the ironing-board at the rear end thereof, a clamping-frame hinged to the ironing-board and extending longitudinally thereof and provided with slots, a rung or pivot connecting the upper ends of the legs 3 and arranged in the slots of the clamping-frame, and an adjusting-frame extending from the rung or pivot to the lower portions of the legs 2 and provided with notches for engaging a rung thereof, substantially as described.

611,224. BUNG. MAURICE W. SHANNON, Worcester, Mass. Filed May 5, 1897. Serial No. 635,173. (No model.)



Claim.—1. In a bung, or stopper, the combination of a nut adapted to be inclosed in the orifice of a cask and held from turning therein, a screw-threaded spindle engaging said nut and provided with a head integral with said spindle and adapted to overlap the outside of the cask, radially-expanding plates carried by said nut and operatively connected with said spindle for engaging the inner side of the cask, whereby said nut is held from outward movement, substantially as described.

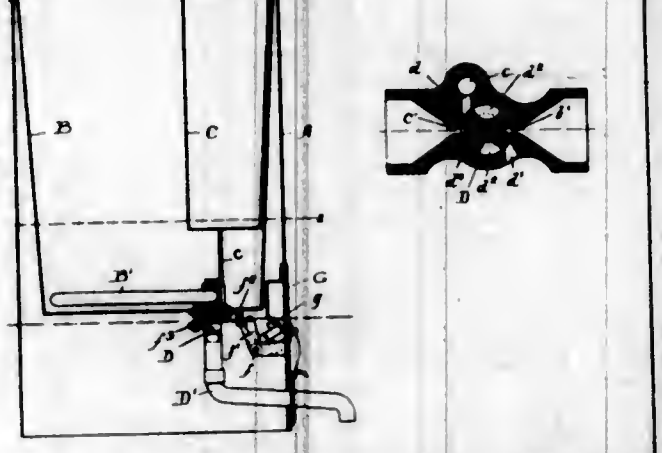
2. In a bung, or stopper, the combination of a nut adapted to be inclosed within the orifice of a cask and held from rotation therein, radially-moving plates carried by said nut and provided with shoulders adapted to engage the inner side of the cask and hold said nut from outward movement, a screw-threaded spindle in said nut provided with a tapered section by which said plates are crowded outwardly, a head carried by said spindle and arranged to overlap the outer side of the cask, whereby said head is drawn against the outside of the cask and the shoulders of said plates are drawn against the inner side of the cask as the spindle is screwed into said nut, substantially as described.

3. In a bung, or stopper, the combination of a nut D provided with T-shaped grooves D', plates E having T-shaped shanks E', held in said grooves and provided with shoulders E^3 adapted to engage the inside of the cask, a screw-threaded spindle held in said nut and provided with a head C^3 and a tapering section C^4, by which said plates are crowded radially outward, substantially as described.

4. In a bung or stopper the combination of a nut adapted to be inserted in the orifice of a cask, clamping-plates connected with said nut and capable of an outward movement to engage the interior of the cask, a screw-threaded spindle engaging said nut, a head carried by said spindle and arranged to overlap the outer surface of the cask and a hollow cone attached to said spindle and inclosing the ends of said clamping-plates whereby they are withdrawn from the cask by the rotation of said spindle, substantially as described.

5. In a bung, or stopper, the combination of a nut adapted to be inclosed in the orifice of a cask, means for holding said nut from rotation, a screw-threaded spindle held in said nut, plates carried by said nut capable of a radial movement and adapted to positively engage the inner side of the cask and hold said nut from outward movement, a screw-threaded spindle engaging said nut and operatively connected with said radially-moving plates, whereby they are engaged and disengaged from said cask, and a head carried by said spindle overlapping the outer side of the cask, substantially as described.

611,225. MACHINE FOR VENDING LIQUIDS. HENRY G. SWEENEY, Chicago, Ill. Filed Feb. 2, 1894. Serial No. 498,886. (No model.)



Claim.—1. In a liquid-dispensing apparatus, the combination of separate tanks adapted to contain separate liquids, measuring-chambers communicating with the tanks and a multipass valve simultaneously controlling the passage of the liquid into and from the chambers, substantially as specified.

2. In liquid-dispensing apparatus, the combination of separate tanks adapted to contain separate liquids, measuring-chambers in communication respectively therewith, and a multipass coin-actuated valve controlling the passage of liquid into and from the chambers and adapted to simultaneously discharge the chambers and at the same time cut off communication with the tanks.

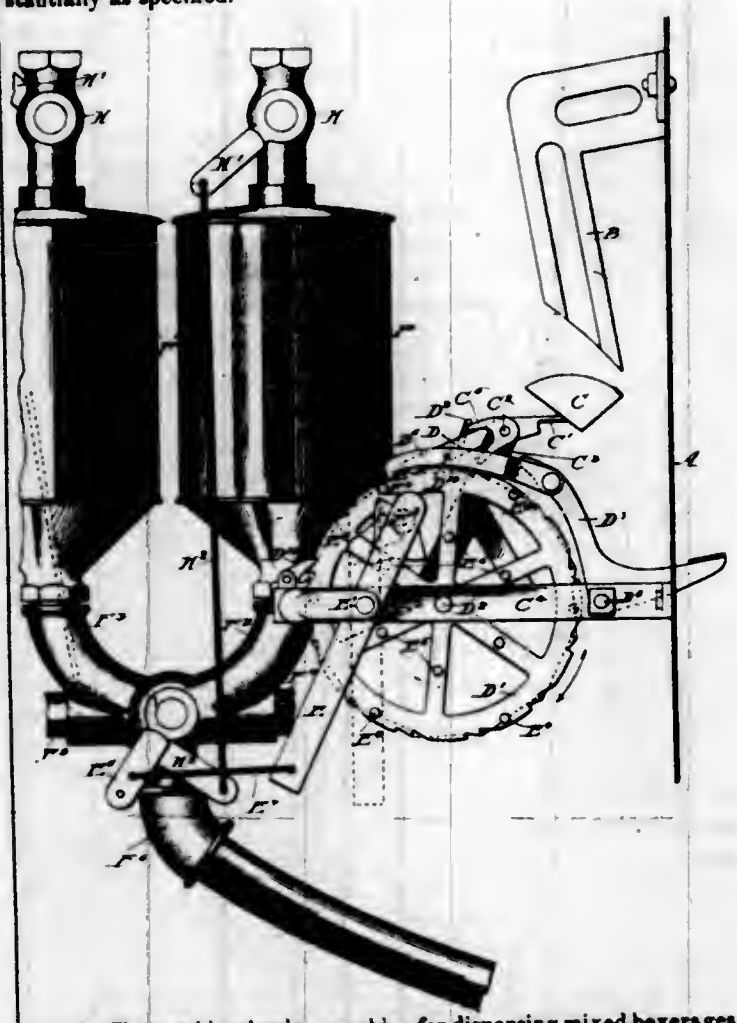
3. In liquid-vending apparatus, the combination of separate tanks adapted to contain separate liquids, a multipass valve controlling a simultaneous discharge of both liquids, means for measuring the liquids separately before discharging, and coin-controlled mechanism for permitting the operation of the valve

4. In liquid-vending apparatus, the combination of separate tanks adapted to contain separate liquids, measuring-chambers, passages between the tanks and their respective chambers, a multipass valve controlling said passages and permitting the liquids to be mixed in measured proportions and be discharged, and coin-controlled mechanism for permitting the operation of the valve.

611,226. VENDING-MACHINE. HENRY G. SWEENEY, Chicago, Ill. Filed Feb. 8, 1897. Serial No. 622,406. (No model.)

Claim.—1. The combination in a liquid-dispensing machine, of companion measuring-receptacles for the main liquid, both connected to the supply and discharge, companion measuring-receptacles for the flavoring-syrup also connected to the supply and discharge, an oscillating valve controlling all said receptacles and having two positions in each of which it permits the discharge from one of each pair of said receptacles and the filling of the others, and coin-controlled mechanism for operating said valve alternately in opposite directions, substantially as specified.

2. The combination in a machine for dispensing mixed beverages, of two companion measuring-receptacles for the main liquid, two companion measuring-receptacles for the flavoring-syrups, a valve provided with two cross-passages connecting with said main receptacles and with two other cross-passages connecting with the syrup-receptacles, and coin-controlled mechanism for operating said valve, substantially as specified.



3. The combination in a machine for dispensing mixed beverages, of two companion measuring-receptacles for the main liquid both having connections with a source of supply and with the discharge two companion measuring receptacles for the flavoring-syrup, also connected to a source of supply and to the discharge, and a single valve controlling all said connections to the sources of supply and to the discharge, substantially as specified.

4. The combination in a machine for dispensing mixed beverages, of two companion measuring-receptacles for the main liquid both having connections with a source of supply and with the discharge two companion measuring-receptacles for the flavoring-syrup, also connected to a source of supply and to the discharge, and a single valve provided with two cross fluid-passages controlling the admission and discharge from the main liquid-receptacles and two other cross fluid-passages controlling the admission and discharge from the syrup-receptacles, substantially as specified.

5. The combination in a machine for dispensing mixed beverages, of two companion measuring-receptacles for the main liquid, both having connections with a source of supply and with the discharge two companion measuring-receptacles for the flavoring-syrup, also connected to a source of supply and to the discharge, and a single valve controlling the admission and discharge from all the receptacles, and allowing one of each pair of them to fill while the others are emptying, substantially as specified.

6. In a liquid-vending machine, the combination with an oscillating valve controlling the delivery, of a lever projecting outside of the machine so it may be operated by the purchaser, a wheel receiving step-by-step movements in one direction from said lever and mechanical connections acting to carry power from the wheel to the valve and to actuate it alternately in opposite directions substantially as specified.

7. In a liquid-vending machine, the combination with an oscillating valve controlling the delivery, of a lever projecting outside of the machine so it may be operated by the purchaser, a wheel receiving step-by-step movements in one direction from said lever, coin mechanism controlling said wheel, and mechanical connections acting to carry power from the wheel to the valve and to actuate it alternately in opposite directions, substantially as specified.

8. The combination of a swinging coin-receiver, a forked dog fast upon the pivot of the receiver, a pallet D^6 having a pin D^{10} entering between the fork-arms of the dog, and a lever to be operated by the purchaser and actuating the pallet, substantially as specified.

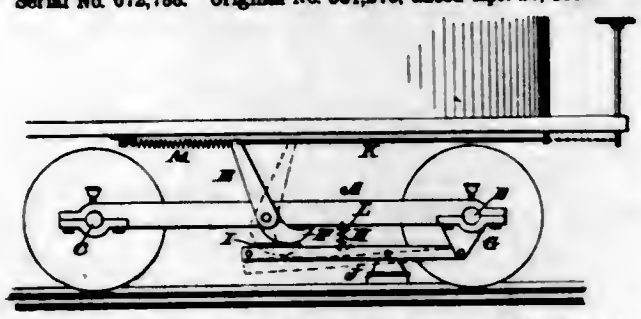
9. The combination with the lever E, of the wheel rotating step by step in one direction and having two series of pins E^4 and E^5 projecting from its side, and the cam E^3 fast to one end of said lever and engaging said pins, substantially as specified.

10. In coin-controlling mechanism, a pivotally-supported coin-receiver adapted to be swung over its axis in discharging the coin, in combination with a forked dog swinging with the receiver, a pin D^{10} entering between the arms of the dog, a movable support for said pin, and a lever operated by the purchaser in actuating said pin-support, substantially as specified.

11. In coin-controlling mechanism, a pivotally-supported coin-receiver adapted to be swung over its axis in discharging the coin, in combination with a forked dog secured upon the axis of the receiver, a pin D^{10} entering between the arms of the dog, a movable support for said pin, and means for actuating said support so as to cause the swinging of the receiver, substantially as specified.

REISSUES.

11,693. RAIL-BRAKE. DAVID W. DAVIS, Detroit, Mich., assignor to the Davis Rail Brake Company, same place. Filed Mar. 5, 1898. Serial No. 672,786. Original No. 581,270, dated Apr. 27, 1897.

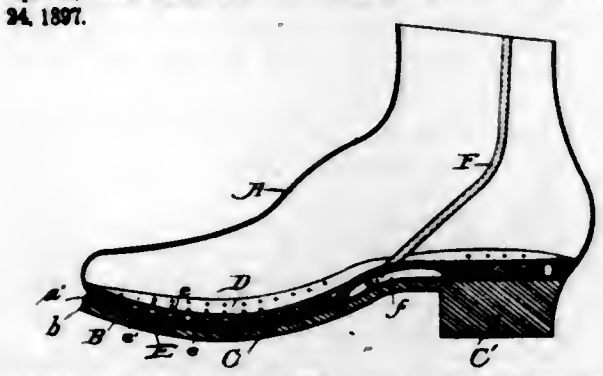


Claim.—1. A rail-brake for cars, having a rigid bifurcated frame, with the forward axle journaled through the two parallel limbs, and the rear axle journaled through the end of the single limb, in combination with a pair of horizontal levers hinged to the forward ends of the frame and having brake-blocks thereon and a single cam-lever operating the two horizontal levers, substantially as set forth.

2. In a car the combination with axles of a bifurcated frame journaled thereon, and brackets secured thereto, of levers pivoted to said brackets, depending brake-shoes pivotally connected with said levers, a transverse bar connecting the free ends of said levers, a cam-lever bearing upon said bar and means for normally holding the brake-shoes away from the rails, substantially as set forth.

3. In a car, the combination with axles of a bifurcated frame, journaled thereon, and brackets secured thereto, of levers pivoted to said brackets, depending brake-shoes pivotally connected with said levers, coiled retractile springs secured to said levers and to the frame, a transverse bar connecting the free ends of said levers, a rod secured to said brace, a cam-lever journaled thereon bearing on said bar, and a coiled spring secured to said lever, substantially as set forth.

11,694. SHOE-SOLE. JOHN R. KENNEDY, Montreal, Canada. Filed Apr. 21, 1898. Serial No. 678,354. Original No. 588,768, dated Aug. 24, 1897.



Claim.—1. A collapsible middle sole provided with corrugations *e* arranged alternately on opposite sides of it, holes *e'* connecting the upper and lower corrugations, and a longitudinal channel E' substantially as set forth.

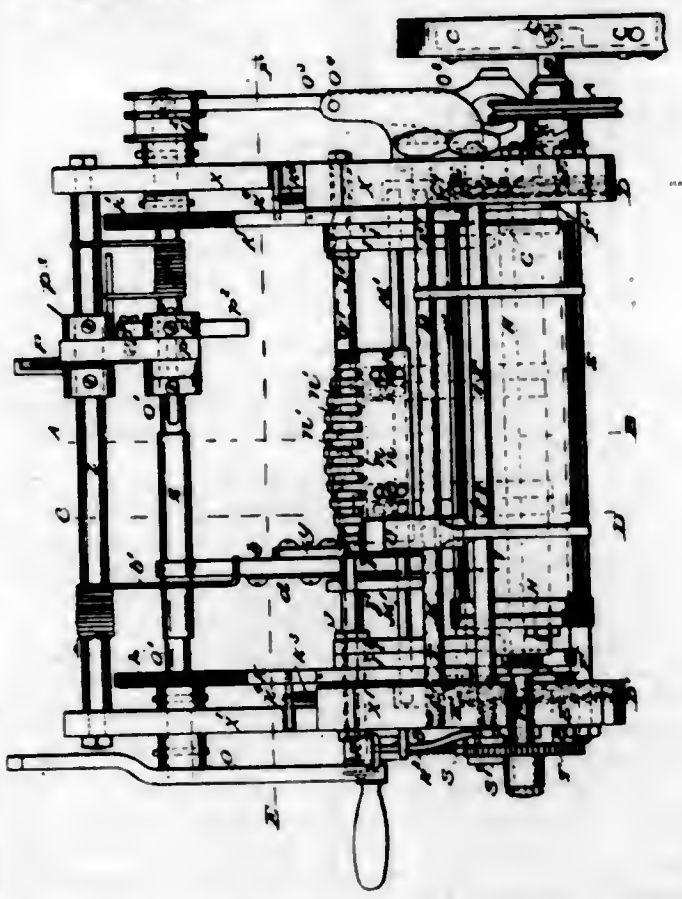
2. A collapsible middle sole provided with corrugations *e* across its sole and heel, a space *f* on its under side between its sole and heel, and a longitudinal channel E' connecting the corrugations of the sole with the said space, said corrugations being arranged alternately on opposite sides of it and connected by small holes *e'*, substantially as described.

3. A collapsible middle sole provided with corrugations *e* arranged across its sole and heel, a space *f* on its under side between its sole and heel, a longitudinal channel E' connecting the corrugations of the sole with the space *f*, and a curved channel connecting the corrugations of the heel with the space *f*, the said corrugations being arranged alternately on opposite sides of it and connected by small holes *e'* substantially as described.

4. A collapsible central sole having corrugated heel and sole portions, and an intermediate air-chamber, with air-channels leading from said chamber to the corrugations substantially as set forth.

5. A collapsible central sole having heel and sole portions corrugated on both sides and an intermediate air-chamber, and channels connecting said air-chamber with the corrugations on both the upper and lower sides of the sole substantially as set forth.

11,695. CIGAR-MACHINE. JEAN REUSE, Enghien, Belgium, assignor, by mesne assignments, to the Société Anonyme l'Exploitation des Brevets Reuse aux Etats Unis d'Amerique, Brussels, Belgium. Filed Dec. 30, 1897. Serial No. 664,763. Original No. 562,447, dated Dec. 31, 1895. Patented in Belgium May 19, 1892, No. 98,731, and Jan. 9, 1894, No. 106,013; in France Jan. 9, 1894, No. 235,405; in Spain Jan. 9, 1894, No. 15,356; in England Feb. 19, 1894, No. 3,572; in Turkey Apr. 21, 1894, No. 401; in Luxemburg May 31, 1894, No. 2,088; in Norway May 31, 1894, No. 3,701; in Portugal June 6, 1894, No. 1,889; in Switzerland June 9, 1894, No. 8,739; in India June 21, 1894, No. 181; in Austria July 14, 1894, No. 44/3,206; in Italy Sept. 30, 1894, No. 36,824; in Cape Colony Oct. 4, 1894, No. 380; in Victoria Oct. 9, 1894, No. 11,749; in Queensland Oct. 12, 1894, No. 2,793; in New Zealand Oct. 30, 1894, No. 7,237; in Tasmania Nov. 19, 1894, No. 1,263; in Congo Free State Nov. 30, 1894, No. 29; in Western Australia Dec. 19, 1894, No. 558; in South African Republic Jan. 10, 1895, No. 778; in Canada Jan. 21, 1895, No. 47,960; in South Australia Feb. 11, 1895, No. 3,740; in Mexico Feb. 12, 1895, No. 661; in Jamaica Feb. 18, 1895; in Hungary Mar. 21, 1895, No. 2,436; in Argentine Republic May 20, 1895, No. 1,662; in Guatemala June 3, 1895, No. 41; in Colombia June 14, 1895, No. 687; in Brazil Aug. 14, 1895, No. 1,729, and in Germany Nov. 2, 1895, No. 83,898.



Claim.—1. A cigar-making machine characterized by the combination of a mold formed of two crossed pairs of jaws with means for operating the said two crossed pairs of jaws to alternately open and close them for shaping the body of the cigar and wrapping the outer leaf thereon, a movable knife which cuts off the excess of tobacco at the point end of the fillings, a tip-former consisting of a fixed and a movable part for shaping and polishing the said end, a knife for cutting off the cigars to the desired length, a pump for conveying the gum to the tip, a device for removing the finished cigar from the jaws, and disconnecting mechanism allowing of the machine being almost instantaneously stopped the whole substantially as herein described and illustrated in the accompanying drawings.

2. The mechanism for actuating the jaws or manipulators characterized by the combination with the said manipulators of rotating plates F F', spindles H H' connecting said plates, levers N N' N^2 N^3 carrying the manipulators and guides I, I^2, and I' I^2, the said levers and guides having slots formed in their lower part through which pass and work the spindles H H', spindles M M' constituting the fulcra

of the levers N N' N² N³ and also passing through the guides I I³, and I'. I³, pivots J, J' on the uprights X X', carrying the said guides I, I³, and I' I³, and plates K K', mounted on the pivots J, J' and having curvilinear slots formed in them, in which the ends of the spindles M, M' rest. substantially as hereinbefore described and illustrated in the accompanying drawings.

3. The mechanism for opening one pair of jaws while the other is open and the machine is at rest characterized by the combination with the pair of jaws n n' which is closed at the time of stoppage, of a pair of guides I I³ having slots formed in their upper part, a spindle M passing through said slots, a pair of toothed cam-plates K K', cam-grooves L L' in the said cam-plates into which rest the ends of the spindle M and toothed wheels k k' gearing with the cam-plates K K', a shaft O', on which are keyed the toothed wheels k, k', and a crank-handle O, actuating the shaft O', substantially as hereinbefore described and illustrated in the accompanying drawings.

4. The mechanism for throwing out of gear and stopping the machine characterized by the combination of a wheel O² a shaft carrying said wheel, a crank-handle on said shaft a helicoidal groove being formed in the periphery of the said wheel, a lever O⁴ oscillating on a pivot O⁴ the upper arm of which lever is engaged in the said helicoidal groove and the lower arm of which said lever is furnished with a fork a driving-pulley A the upper part of which turns between the branches of said fork, a clutch one half of which is carried by the driving-pulley and the other half of which is keyed on the driving-shaft of the machine, a fly-wheel, spring-actuated crank-bars c' mounted in the said fly-wheel and forming projections upon its inner face, and vibratory catches or tumblers c^4 upon said inner face, pivots c^5 upon which turn the said catches, or tumblers and stops c^6 c^7 to limit the motion of said catches, or tumblers, substantially as hereinbefore described and illustrated in the accompanying drawings.

5. The mechanism for operating the knife which cuts off the excess of tobacco at the tip of the fillings characterized by the combination with the said knife of a vibratory lever x' carrying the said knife and having a slotted downward extension x^6, of a spindle M' passing through the slot in the said extension x^6, plates K K' having curvilinear slots formed in them in which rest the ends of the said spindle M', guides I' I³ on pivots J, J', carried by the uprights X X', and through which passes the spindle M', and means such as a spindle H' and rotating plates F' F' connected together by said spindle, connecting rotating plates F F' for imparting oscillatory motion to the guides I' I³ and spindle M' substantially as hereinbefore described and illustrated in the accompanying drawings.

6. The mechanism for operating the knife by which the thick end of the cigar is cut to the desired length characterized by the combination of a sleeve carrying the said knife, a shaft actuated by a crank handle on which the said sleeve is loosely mounted, a cam-shaped sleeve keyed on the same shaft by the side of the loose sleeve, a curved pawl pivoted to the side of the loose sleeve and engaging with the cam-shaped fixed sleeve, a stop for the said pawl and a spring for raising the knife again after it had been lowered substantially as hereinbefore described and illustrated in the accompanying drawings.

7. The mechanism for operating the movable part of the tip-former characterized by the combination of a vibratory lever carrying the said movable part, a spring for pressing the said lever in one direction, and a spindle H' connecting rotating plates F' F' against which bears a downward extension of the said lever for communicating motion thereto in the other direction substantially as hereinbefore described and illustrated in the accompanying drawings.

8. The mechanism for stopping the movable part of the tip-former characterized by the combination with the vibratory lever carrying the said movable part of an oscillating lever formed with a small shoulder, a spring for pressing the said shoulder upward against the said vibratory lever and as operating or governing lever for extending the said spring and lowering the said shouldered lever substantially as hereinbefore described and illustrated in the accompanying drawings.

9. The mechanism for extracting the finished cigar from the open jaws characterized by the combination with two crossed pairs of jaws, of a pair of levers located between the tongues of said jaws, a sleeve turning freely on a shaft and carrying the said levers, a lever fixed to the said sleeve, an oscillating cam-plate having a lug on its periphery for raising the said lever and a spring for lowering the said lever, substantially as hereinbefore described and illustrated in the accompanying drawings.

10. In a cigar-machine, manipulators consisting essentially of a plurality of pairs of jaws closing upon a common center, means for opening and closing said jaws, and means for swinging both pairs of jaws about their axis of closure, whereby material between the jaws is given a rotary movement, all combined.

11. In a cigar-making machine, the manipulators consisting essentially of a plurality of pairs of jaws, the pairs opening and closing alternately, the jaws of each pair having a swinging as well as an opening and closing movement, and means for actuating said jaws, substantially as described.

12. In a cigar-making machine the manipulators consisting essentially of a plurality of pairs of jaws provided with fingers, the fingers of one jaw extending through the spaces of the proximate jaw, the proximate fingers of the different pairs of jaws having an opening and closing, and a vibrating movement, combined with means for opening and closing and for vibrating said jaws, substantially as described.

13. A cigar-making machine characterized by the combination of a mold formed of two crossed pairs of jaws, with means to operate said jaws to alternately open and close them, and means to swing the pairs of jaws alternately about the common center, whereby material between the jaws is given a rotative movement, substantially as described.

14. A cigar-making machine having a plurality of pairs of pivoted jaws, means for opening and closing the jaws, and means for advancing or retracting the pivots of both pairs of jaws, in combination substantially as described.

15. In a cigar-making machine, a plurality of pairs of manipulator-jaws provided with curved fingers, a pair of guide-levers supporting the jaw fulcrums or pivots, means for opening and closing the jaws, and means for swinging the levers and thereby moving both the jaw fulcrums or pivots, substantially as described.

16. In a cigar-machine, a pair of slotted guide-levers swinging from fixed pivots, rotating disks and spindles carried thereby and extending into the slots in these guide-levers, a fulcrum-bar extending between the guide-jaws, manipulator-levers pivotally mounted on said fulcrum-bars, the extension of said manipulator jaws being in the path of movement of the spindles carried by the disks.

17. In a cigar-machine, the slotted guide-levers pivotally supported in the machine, and means for swinging the same, the fulcrum-bars connected to said guide-levers, a moving piece bearing on each of said fulcrum-bars to move it in the direction of the length of the guide-levers, and the manipulator-jaws pivoted on the fulcrum-bars, in combination substantially as described.

18. In a cigar-machine, two pairs of manipulator-jaws, means for opening and closing them, and means for swinging both the jaw-pivots toward and away from a common center.

19. In a cigar-machine, two pairs of jaws and means for opening and closing them alternately on the cigar, and means for swinging the pivots of said jaws about the center on which said jaws close.

20. In a cigar-machine, the two pairs of pivoted jaws, the movable fulcrums of said jaws, and the slotted jaw-levers with the moving spindles traveling therein, and means for operating said spindles all combined substantially as described.

21. In a cigar-machine, a plurality of pairs of jaws having intermeshing fingers all closing about a common center, means for opening and closing the jaws by pairs, and means for moving all the pairs about the center of closure, all combined.

22. In a cigar-machine, a plurality of pairs of holding-jaws, means for opening and closing the pairs of jaws on a cigar alternately, and means for rotating the cigar by the jaw movement of either pair when closed on the cigar, all combined substantially as described.

23. In a cigar-machine, compressing-jaws, mechanical means for opening and closing and for swinging said jaws about an operative center in which the cigar is contained, a stop mechanism by which the jaw-operating gear is disconnected, and a delivery-arm operated by the stop mechanism to lift the cigar from the jaws, in combination substantially as described.

24. In a cigar-machine, the compressing-jaws, means for operating the same, means for opening all the jaws, and a delivery device automatically operating to remove the cigar from the jaws, all combined.

25. In combination with the manipulator-jaws and their guide-levers, a spindle connecting said guide-levers and acting on a pair of jaws, cam-plates operating on said spindle, and a rotating shaft operated by a separate power to turn said cam-plates and thereby move the spindle relatively to the guide-levers and control the jaw movement, substantially as described.

26. In a cigar-machine, the pairs of manipulator-jaws, means for opening and closing them on a cigar and means for swinging the jaws, and a separate train of mechanism connected to one pair of the jaws and operating to simultaneously disconnect the normal opening and closing mechanism and to open this pair of jaws all combined substantially as described.

27. In a cigar-machine, the manipulator-jaws closing on the cigar, actuating means therefor, a separate actuating mechanism engaging the jaw-actuating means to disconnect the same and open the jaws, and a delivery device controlled by the actuator to deliver the cigar from the opened jaws, substantially as described.

28. In a cigar-machine, the manipulator-jaws, a delivery device

acting to remove the cigar from the jaws, and an actuator connecting to the delivery device, in combination.

29. The combination, in a cigar-machine, of cigar-forming jaws, means for operating and opening said jaws, and a delivery device acting to lift the cigar from said jaws when open.

30. In a cigar-machine, the manipulator or forming jaws, means for operating the same, delivery-levers entering between the manipulator-jaws, and an actuating-train operating to raise and depress said delivery-levers, in combination substantially as described.

31. In a cigar-making machine, a plurality of pairs of manipulator-jaws, means for opening and closing the same, and for turning the cigar by jaw movement, a delivery device, and an actuator connected thereto, and a clutch controlled by this actuator and operating to open the jaws and operate the delivery device, all combined substantially as described.

32. In a cigar-machine, the manipulator-jaws, driving-gear therefor, means for throwing the driving-gear out of operative connection with the jaws, and a brake operating to check the movement of the driving-gear when disconnected, the specified elements combined substantially as described.

33. In a cigar-machine, the manipulator-jaws, operating means therefor, an actuator having connection to the jaw-operating means to disconnect the same, and a brake operating to stop the jaw-operating means when disconnected, all combined substantially as described.

34. In a cigar-machine, the combination of the manipulator-jaws, and a cutter operating to sever the thick end of the cigar while in the jaws and a mechanical actuator for said cutter, substantially as described.

35. In a cigar-machine, the manipulator-jaws and means for operating them, a cutter operating to sever the cigar end while in the jaws, and an actuator for moving the cutter and at the same time disconnecting the driving means, substantially as described.

36. In a cigar-machine, the manipulator or forming jaws, the delivery device and the end-cutter, and the actuator and train of adjunctive mechanism operating on and serving to propel the end-cutter and then operate the delivery-lever, in combination substantially as described.

37. In a cigar-machine, a plurality of pairs of manipulating-jaws, means for opening and closing said jaws, and for rotating a cigar within the jaws by the jaw movement, and a tip-cutter in proximity to the jaws, and a mechanical actuator for such tip-cutter, all combined substantially as described.

38. The combination with the manipulator-jaws, means for opening and closing said jaws and for rotating a cigar in the jaws by jaw movement, of a tip-former at the end of said jaws, and means for closing the tip-former onto the cigar, all combined substantially as described.

39. In a cigar-machine, the tip former consisting essentially of a plurality of pieces composing a tip-mold, means for automatically closing this mold on the cigar, and means for rotating the cigar with its tip in such mold, all combined.

40. In a cigar-machine, a plurality of pairs of manipulating-jaws, means for opening and closing the pairs of jaws alternately onto an inclosed cigar, means for rotating the inclosed cigar by the jaw movement, a separable tip-mold, and means for closing one part of the tip-mold onto the other and onto the cigar-tip while the cigar is in the jaws, the specified mechanical elements in combination substantially as described.

41. In a cigar-machine, the cigar-holding jaws, the separable tip-former in proximity to such jaws and having one concave portion connected to a gum-duct, and having another concave portion supported by a lever and operated by power mechanism to close on the first-mentioned concave portion, the specified mechanical elements and their necessary adjunctive connections in combination, substantially as described.

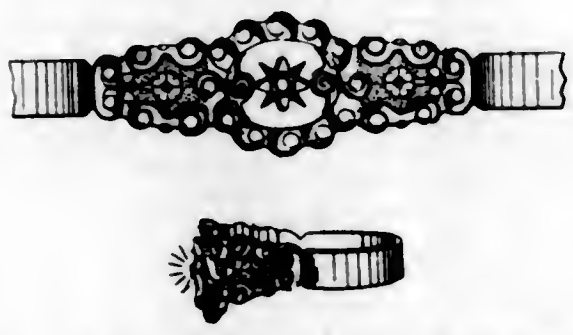
42. In a cigar-machine, a pair of jaws and means for opening and closing the same whereby the jaws may close onto the body of a cigar, a separate tip-former in proximity to the jaws and means for closing said tip-former onto the tip of a cigar while the cigar-body is in the manipulator-jaws, and means for moving the jaws to rotate a contained cigar while the tip of said cigar is in the tip-former, all combined substantially as described.

43. In a cigar-machine, the separable tip-former having one member connected to a gum-pump, another member connected to driving swinging jaws serving as means for closing it upon the cigar-tip, and means for rotating the cigar with its tip in the tip-former, the specified elements and their necessary adjunctive mechanism operating in combination substantially as described.

44. In a cigar-machine, the manipulator-jaws and means for operating them whereby the cigar is rotated by the jaw movement, the separable tip-former and means for moving it upon the cigar-tip, and the starter connecting to the tip-former to throw it into operation when impelled by the operator, substantially as described.

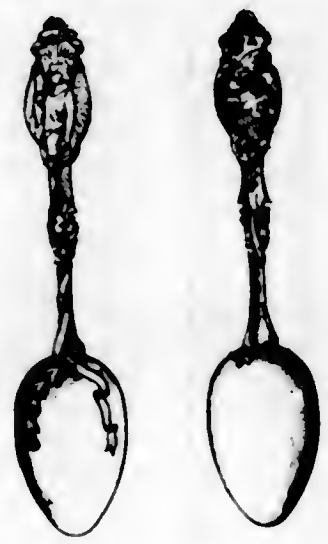
DESIGNS.

29,353. RING. MARTIN GERHARDT, New York, N. Y. Filed Aug. 12, 1898. Serial No. 688,454. Term of patent 7 years.



Claim.—The design for a ring as herein shown and described.

29,354. SPOON. WILLIAM A. BROWN, New York, N. Y. Filed Aug. 20, 1898. Serial No. 689,150. Term of patent 3½ years.



Claim.—1. In the design for a spoon the obverse, substantially as described and shown.

2. In the design for a spoon the reverse, substantially as described and shown.

3. The design for a spoon, substantially as described and shown.

29,355. SPOON. WILLIAM A. BROWN, New York, N. Y. Filed Aug. 20, 1898. Serial No. 689,151. Term of patent 7 years.

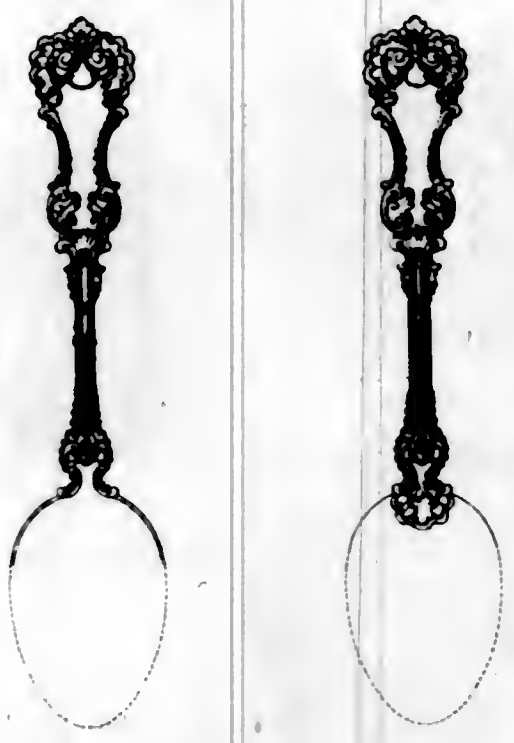


Claim.—1. In the design for a spoon the reverse, substantially as shown and described.

2. In the design for a spoon the obverse, substantially as shown and described.

3. The design for a spoon, substantially as shown and described.

29,356. HANDLE FOR SPOONS, &c. CHARLES OSBORNE, New York, N. Y., assignor to the Whiting Manufacturing Company, same place. Filed Aug. 17, 1898. Serial No. 688,817. Term of patent 7 years.



Claim.—1. In a design for a handle for spoons or similar articles, the obverse as herein shown and described.

2. In a design for a handle for spoons or similar articles, the reverse as herein shown and described.

3. The design for a handle for spoons or similar articles, herein shown and described.

29,357. BORDER FOR SILVERWARE OR SIMILAR ARTICLES. CHARLES OSBORNE, New York, N. Y., assignor to the Whiting Manufacturing Company, same place. Filed Aug. 17, 1898. Serial No. 688,816. Term of patent 3½ years.



Claim.—The design for a border for silverware or similar articles herein shown and described.

29,358. STATUETTE. FRIEDRICH GOLDSCHEIDER, Vienna, Austria-Hungary. Filed May 13, 1898. Serial No. 680,646. Term of patent 3½ years.



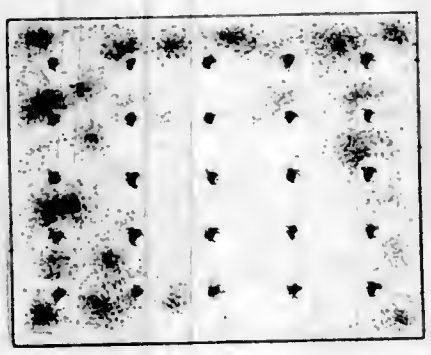
Claim.—The design for a statuette, or similar article, as herein shown and described.

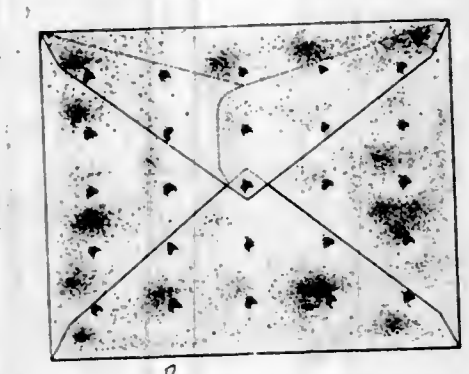
29,359. BOOK-COVER. JOSHUA R. JONES, Philadelphia, Pa. Filed Aug. 17, 1898. Serial No. 688,811. Term of patent 3½ years.



Claim.—The design for a book-cover substantially as shown and described.

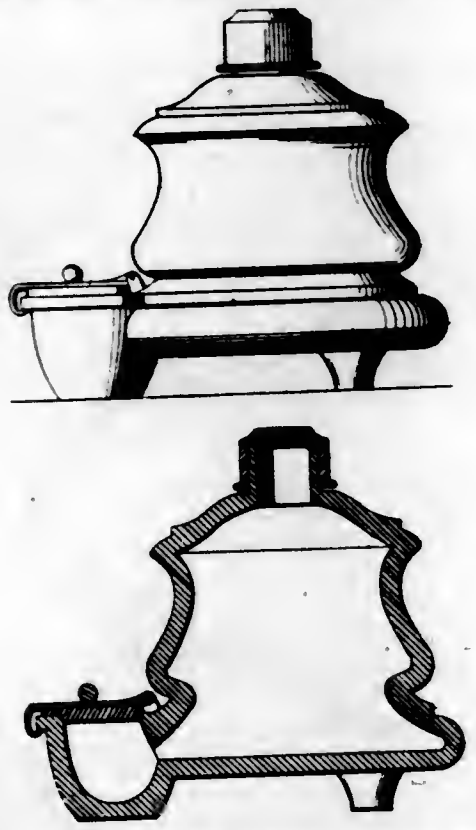
29,360. ENVELOP. JACOB M. HEASLEY, Pittsburg, Pa. Filed July 16, 1898. Serial No. 686,170. Term of patent 3½ years.





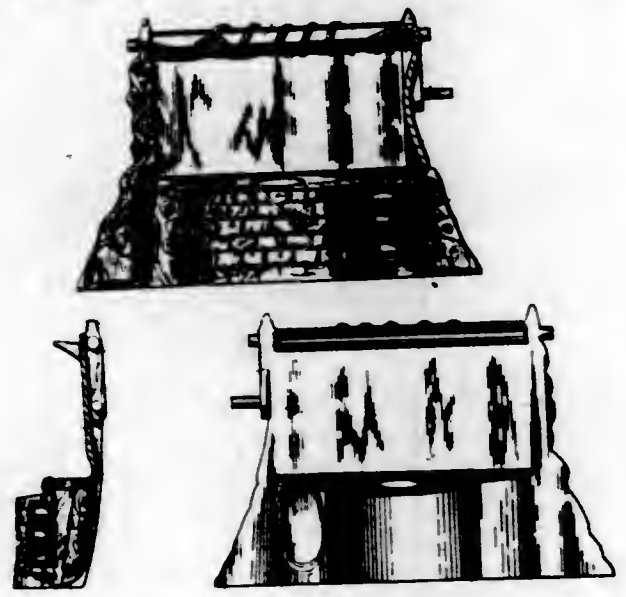
Claim.—The design for an envelop as shown and described.

29,861. INK-WELL. WILLIAM BOWMAN, Medicine Hat, Canada. Filed Aug. 19, 1898. Serial No. 689,049. Term of patent 7 years.



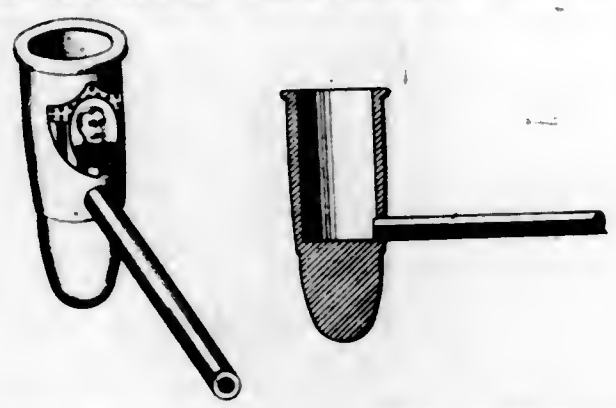
Claim.—The design for an ink-well as herein shown and described.

29,862. INK-WELL. GEORGE FRANCIS, Columbus, Ohio. Filed Apr. 18, 1898. Serial No. 678,017. Term of patent 7 years.



Claim.—The design for an ink-well substantially as shown and described.

29,863. PIPE. JOHN R. WENGLER, Allenton, Mo. Filed Aug. 17, 1898. Serial No. 688,812. Term of patent 7 years.



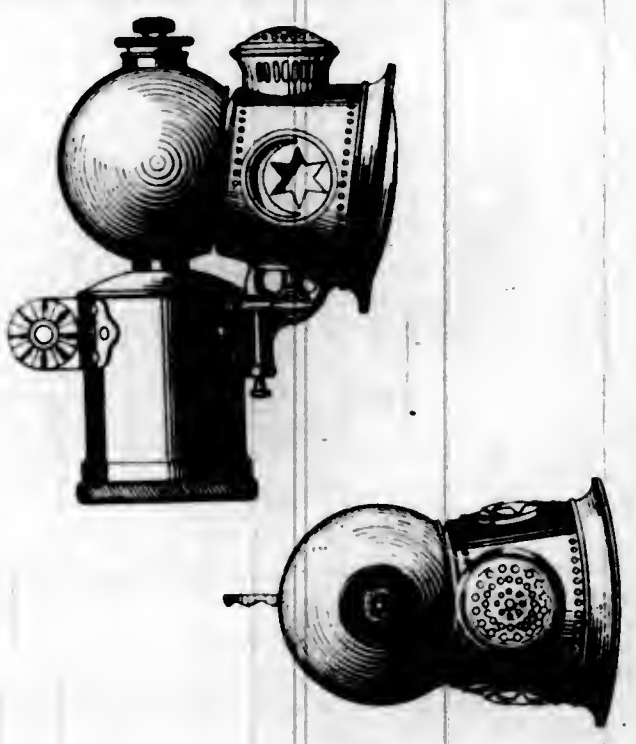
Claim.—The design for a pipe, substantially as herein shown and described.

29,864. PITCHER. JOHN HENRY CROSKEY, Dunkirk, Ind., assignor to the Beatty-Brady Glass Company, same place. Filed Aug. 22, 1898. Serial No. 689,369. Term of patent 14 years.



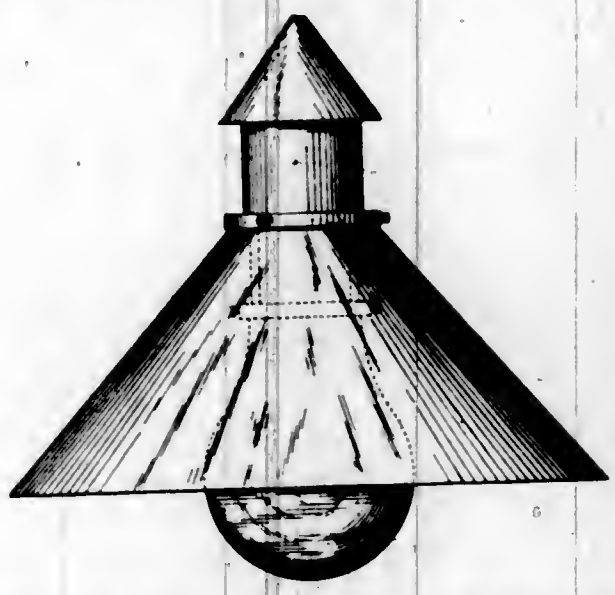
Claim.—The design for a pitcher or similar article substantially as herein shown and described.

29,365. LAMP-BODY. GEORG WEISS, Chicago, Ill. Filed Aug. 11, 1898. Serial No. 688,399. Term of patent 7 years.



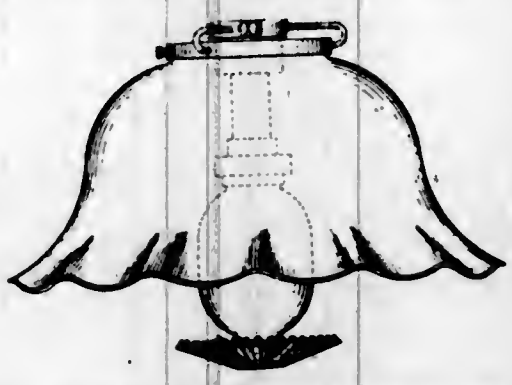
Claim.—The design for a lamp-body as herein shown and described.

29,366. ELECTRIC LAMP. GEORGE R. MACINTIRE, New York, N. Y., assignor of one-half to Elliott P. Gleason, same place. Filed Mar. 18, 1898. Serial No. 674,389. Term of patent 14 years.



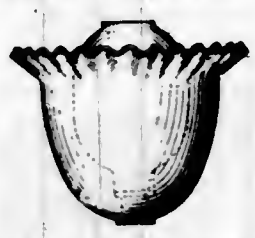
Claim.—The design for an electric lamp, substantially as shown and described.

29,367. ELECTRIC LAMP. GEORGE R. MACINTIRE, New York, N. Y., assignor of one-half to Elliott P. Gleason, same place. Filed Mar. 18, 1898. Serial No. 674,390. Term of patent 14 years.



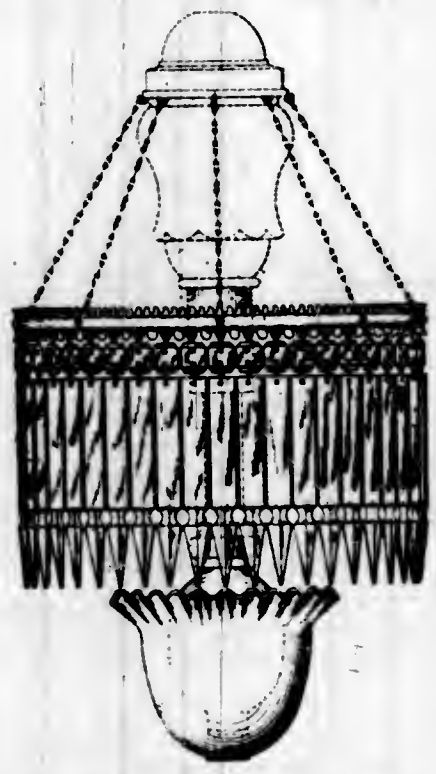
Claim.—The design for an electric lamp, substantially as shown and described.

29,368. ELECTRIC LAMP. GEORGE R. MACINTIRE, New York, N. Y., assignor of one-half to Elliott P. Gleason, same place. Filed Mar. 18, 1898. Serial No. 674,391. Term of patent 14 years.



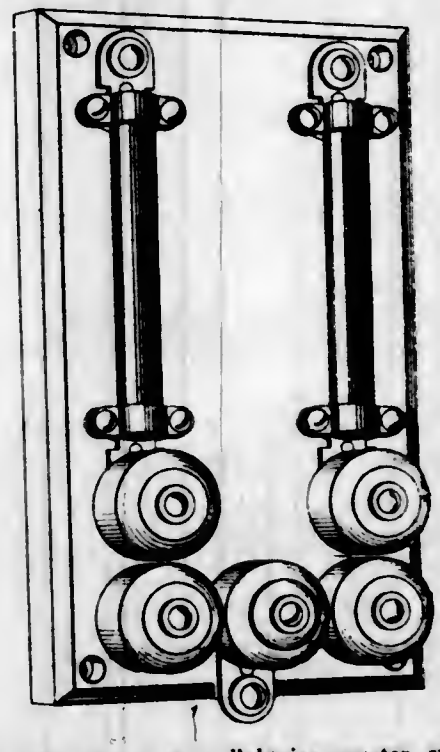
Claim.—The design for an electric lamp, substantially as shown and described.

29,369. ELECTRIC LAMP. GEORGE R. MACINTIRE, New York, N. Y., assignor of one-half to Elliott P. Gleason, same place. Filed Mar. 18, 1898. Serial No. 674,392. Term of patent 14 years.



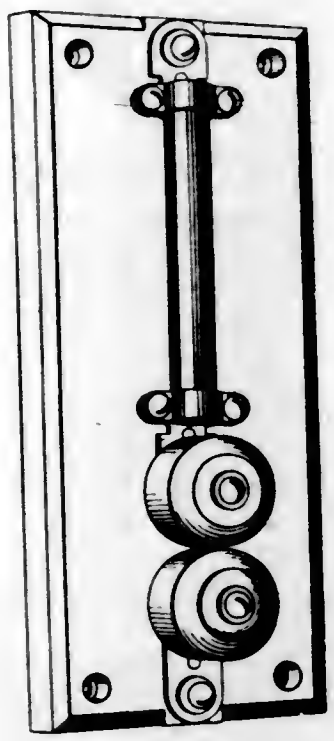
Claim.—The design for an electric lamp, substantially as shown and described.

29,370. LIGHTNING-ARRESTER. HERBERT C. WIRT, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 29, 1898. Serial No. 689,807. Term of patent 14 years.



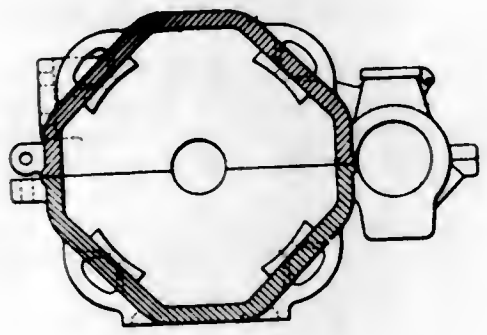
Claim.—The design for a lightning-arrester, substantially as shown and described.

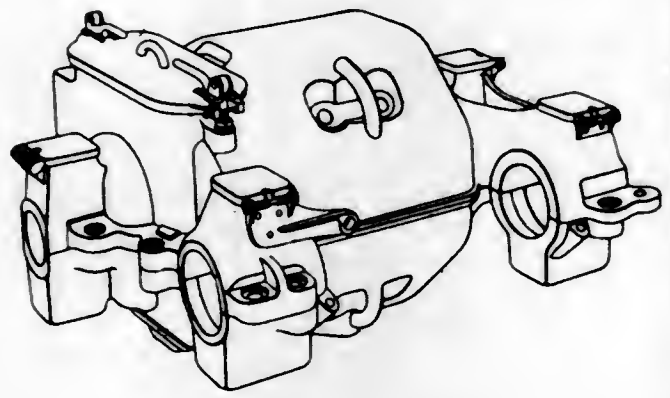
29,371. LIGHTNING-ARRESTER. HERBERT C. WIRT, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 29, 1898. Serial No. 689,808. Term of patent 14 years.



Claim.—The design for a lightning-arrester, substantially as shown and described.

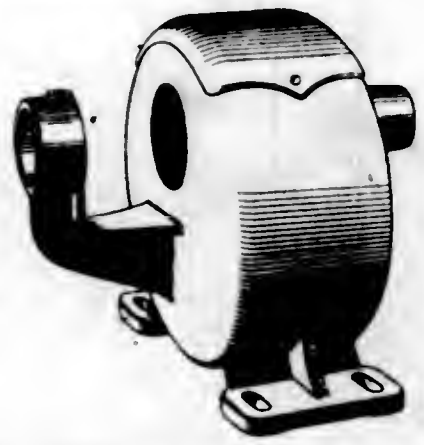
29,372. FIELD-MAGNET FRAME. EDWARD D. PRIEST, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 26, 1898. Serial No. 689,613. Term of patent 14 years.





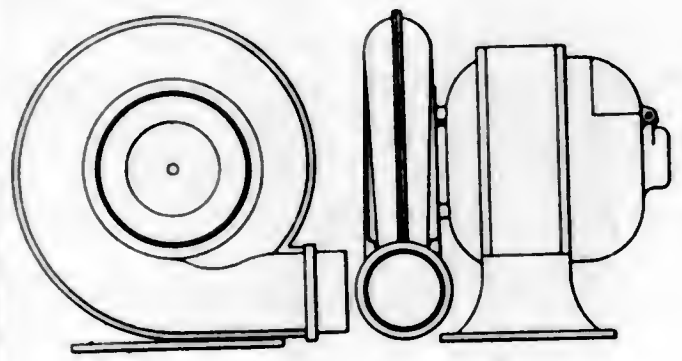
Claim.—The design for a field-magnet frame for a dynamo-electric machine, substantially as shown and described.

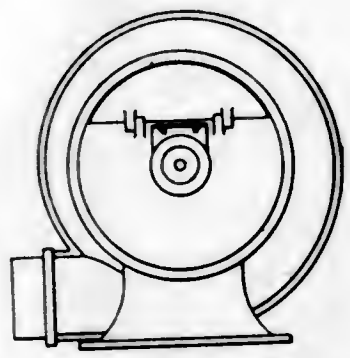
29,378. CASING FOR DYNAMO-ELECTRIC MACHINES. WALTER S. MOODY, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 8, 1898. Serial No. 688,120. Term of patent 14 years.



Claim.—The design for a casing for a dynamo-electric machine, substantially as shown and described.

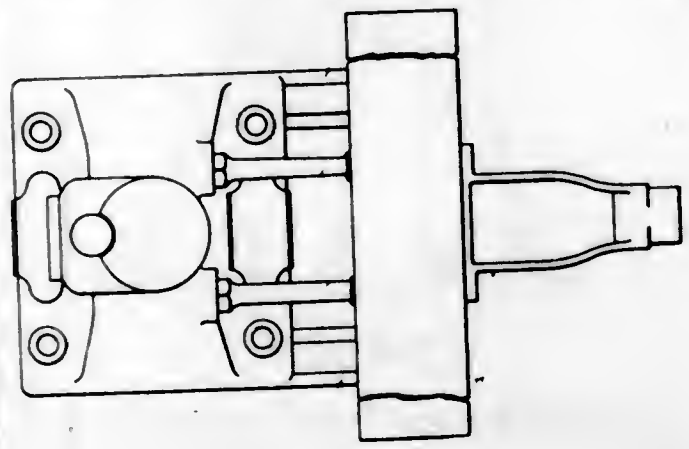
29,374. MOTOR AND FAN CASE. HERBERT A. BALCOME, Boston, Mass. Filed Aug. 18, 1898. Serial No. 688,938. Term of patent 14 years.



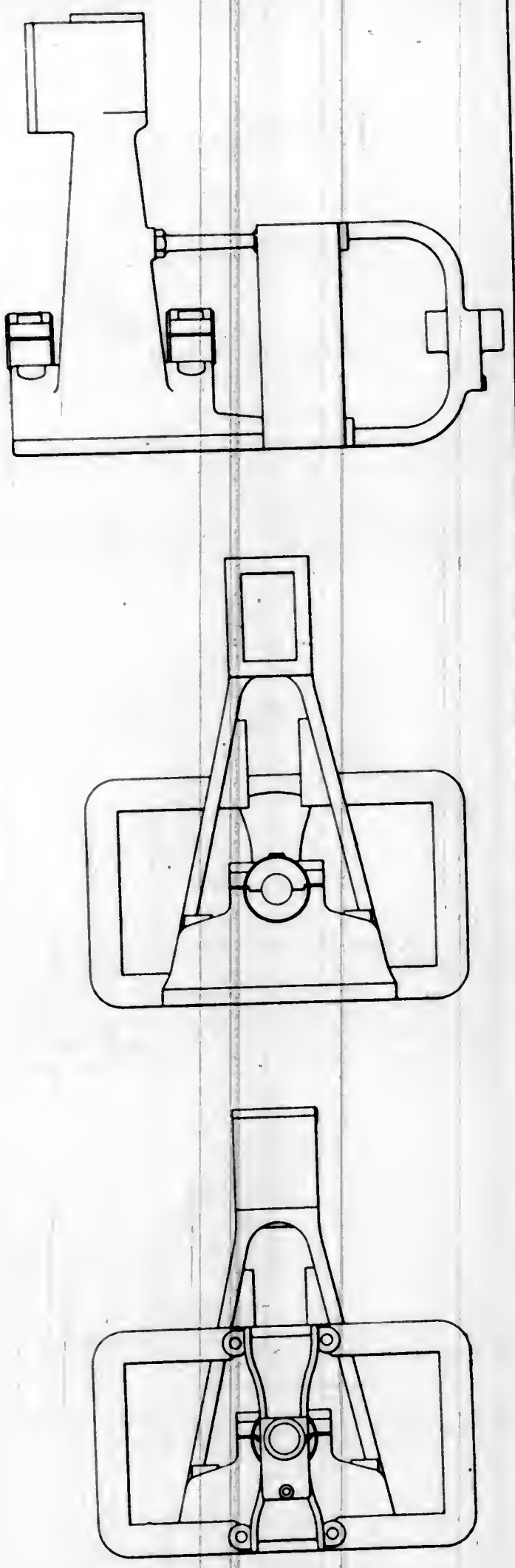


Claim.—The design for a motor and fan case, substantially as described.

29,375. FRAME FOR GENERATING SETS. FRITZ HANDEL, Boston, Mass. Filed Aug. 18, 1898. Serial No. 688,962. Term of patent 14 years.

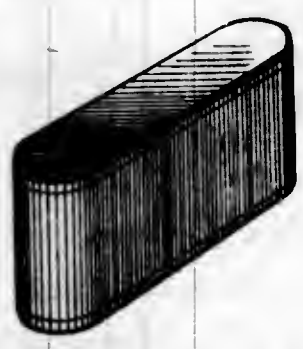


29,875.



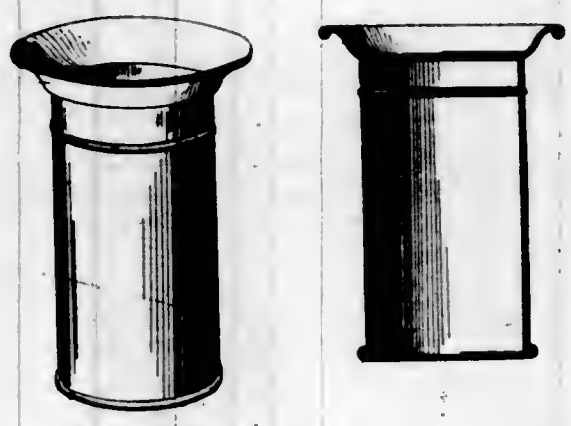
Claim.—The design for a frame for a generating set substantially as shown and described.

29,876. PHOTOGRAPHIC-CAMERA BODY. FRANK A. BROWNELL, Rochester, N. Y., assignor to the Eastman Kodak Company, same place. Filed Aug. 10, 1898. Serial No. 688,309. Term of patent 14 years.



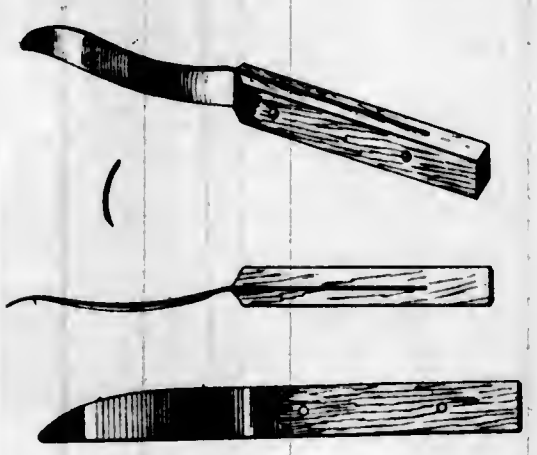
Claim.—The design for a photographic-camera body, substantially as herein shown and described.

29,877. COMBINED FUNNEL AND MEASURE. ANDREW BRUBAKER, Ashland, Ohio. Filed Aug. 23, 1898. Serial No. 689,357. Term of patent 14 years.



Claim.—The design for a combined funnel and measure, herein shown and described.

29,878. PARING-KNIFE. MAURICE R. HADDEN, Savannah, N. Y. Filed Aug. 19, 1898. Serial No. 689,090. Term of patent 7 years.



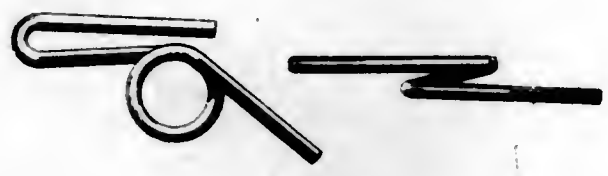
Claim.—The design for a paring-knife, as herein shown and described.

29,879. CORK-EXTRACTOR CASING. WILLIAM ROBERTSON, Buffalo, N. Y. Filed Apr. 15, 1897. Serial No. 632,323. Term of patent 7 years.



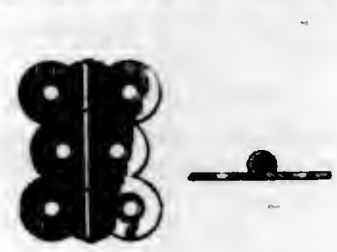
Claim.—The design for a cork-extractor casing as herein shown and described.

29,380. TIE FOR BAGS, &c. EPHRAIM L. SCHANCK, Delaware, Ohio. Filed Aug. 23, 1898. Serial No. 689,355. Term of patent 7 years.



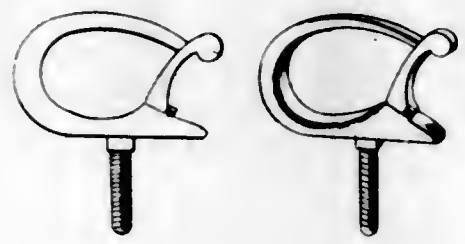
Claim.—The design for a tie for bags, bundles and the like herein shown and described.

29,381. BUTT-HINGE. WILLIAM H. ANDERSON, New York, N. Y. Filed Jan. 14, 1898. Serial No. 666,712. Term of patent 14 years.



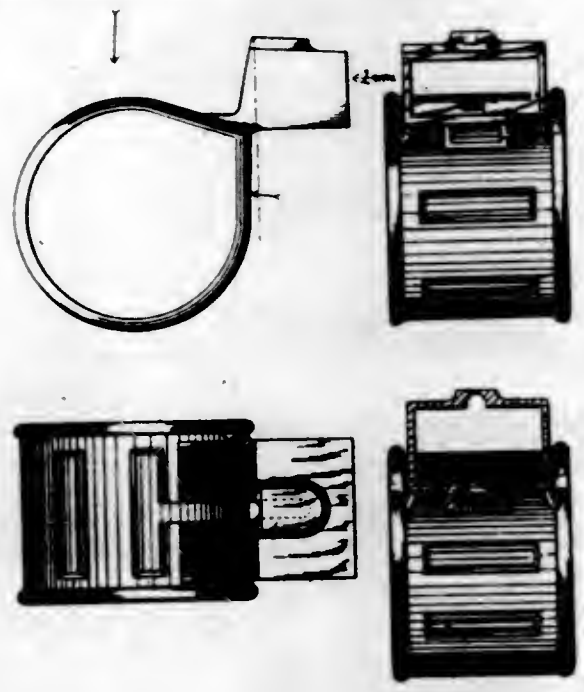
Claim.—The design for a butt-hinge as herein described and shown.

29,382. CHECK-HOOK. THOMAS NELSON MARTIN, Omaha, Nebr. Filed Aug. 16, 1898. Serial No. 688,948. Term of patent 14 years.



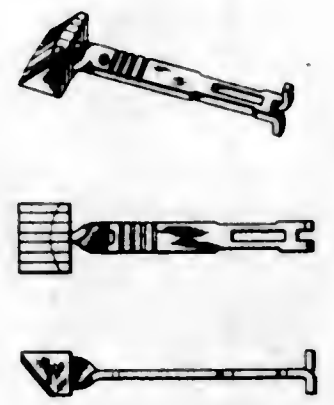
Claim.—The design for a check-hook herein shown and described.

29,383. SHAFT-TUG. THOMAS W. DAVIES, St. Louis, Mo., assignor to himself and Frank T. Long. Filed June 17, 1898. Serial No. 683,756. Term of patent 3½ years.



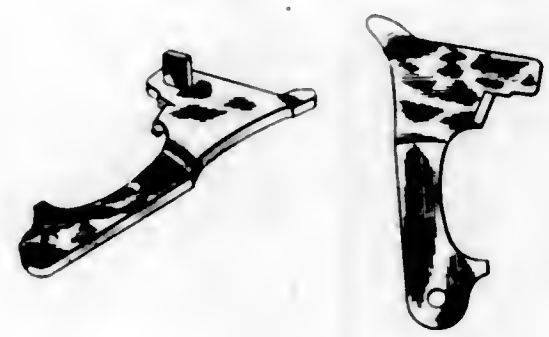
Claim.—The design for a shaft-tug substantially as herein shown and described.

29,384. LATCH-BOLT. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Aug. 24, 1898. Serial No. 689,438. Term of patent 7 years.



Claim.—The design for a latch-bolt, substantially as herein shown and described.

29,385. LATCH-OPERATING LEVER. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Aug. 24, 1898. Serial No. 689,439. Term of patent 7 years.



Claim.—The design for a latch-operating lever, substantially as shown and described.

29,386. LATCH-OPERATING LEVER. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Aug. 24, 1898. Serial No. 689,440. Term of patent 7 years.



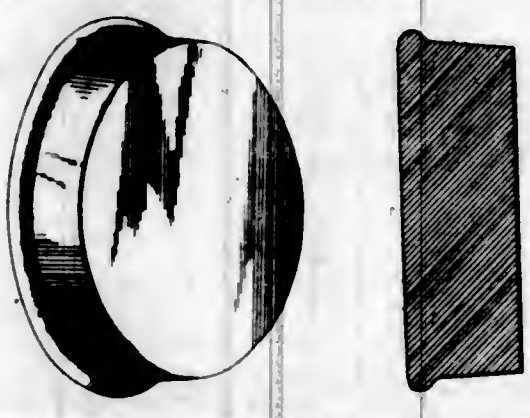
Claim.—The design for a latch-operating lever, substantially as herein shown and described.

29,387. SEAL-BODY. EMIL TYDEN, Hastings, Mich. Filed Aug. 10, 1898. Serial No. 688,305. Term of patent 14 years.



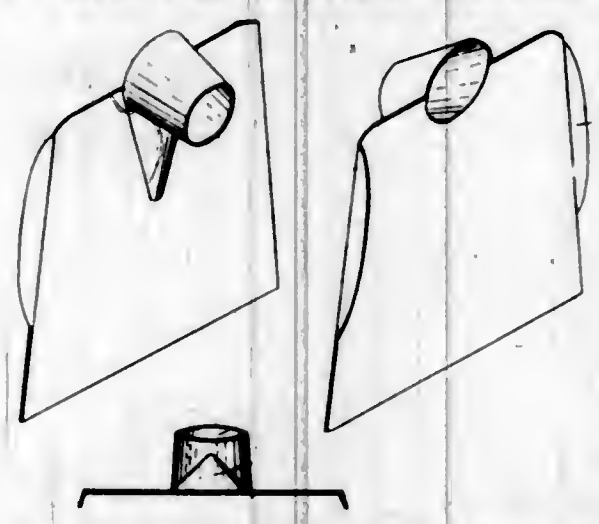
Claim.—The design for a seal-body herein shown and described.

29,888. CAR-WHEEL BLANK. JAMES A. FACER, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Facer Forged Steel Car Wheel and Locomotive Wheel Company, same place. Filed July 8, 1898. Serial No. 685,441. Term of patent 14 years.



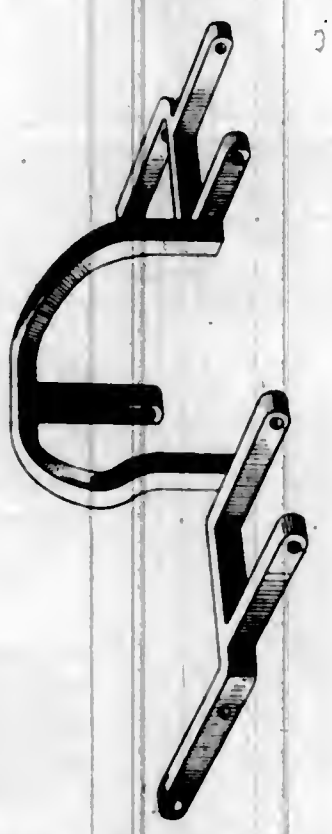
Claim.—The design for a car-wheel blank, herein shown and described.

29,889. WEEDING-HOE. MICHAEL REINHARDT VIBSON, Waldo, Ark. Filed July 15, 1898. Serial No. 686,039. Term of patent 7 years.



Claim.—The design for a weeding-hoe as herein shown and described.

29,890. BRACKET FOR SEWING-MACHINE STANDS. ISRAEL RUDENSKY, New York, N. Y. Filed Aug. 27, 1898. Serial No. 689,710. Term of patent 7 years.



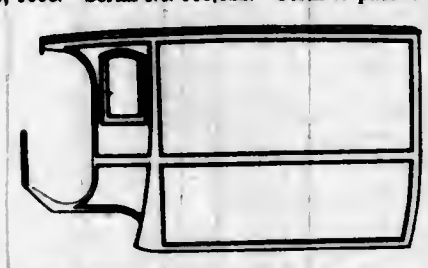
Claim.—The design for a bracket for sewing-machine stands, substantially as herein shown and described.

29,891. BOX-COVER BRACE. LOUIS DIESTERWEG, St. Louis, Mo., assignor, by direct and mesne assignments, of one-half to George J. Fliehmann and George Ittner, same place. Filed July 13, 1898. Serial No. 685,873. Term of patent 3½ years.



Claim.—The design for a box-cover brace substantially as herein shown and described.

29,892. AMBULANCE-BODY. FRANCIS G. DAVIS, Watertown, N. Y., assignor to the H. H. Babcock Company, same place. Filed Aug. 19, 1898. Serial No. 689,022. Term of patent 7 years.



Claim.—The design for an ambulance-body, substantially as herein shown and described.

29,893. HEATING-STOVE. THOMAS R. KENNEDY and EDWARD J. KING, Rochester, N. Y., assignors to the Cooperative Foundry Company, same place. Filed June 11, 1898. Serial No. 683,235. Term of patent 7 years.



Claim.—1. The design for a stove substantially as herein shown and described.

2. In a design for a stove, the design for the base, substantially as shown and described.

3. In a design for a stove, the design for the ash-pit door, substantially as shown and described.

4. In a design for a stove, the design for the side rail 10, substantially as shown and described.

5. In a design for a stove, the design for the stove-body D, substantially as shown and described.

6. In a design for a stove, the design for the top section E, substantially as shown and described.

7. In a design for a stove, the design for the cover F, substantially as shown and described.

29,394. COOKING-STOVE. WILLIAM W. WHEELS, Newark, Ohio. Filed Aug. 27, 1898. Serial No. 689,707. Term of patent 7 years.



Claim.—1. In a design for a cooking stove or range, the design for the skirting thereof, substantially as shown and described.

2. In a design for a cooking stove or range, the design for the oven-door, substantially as shown and described.

3. In a design for a cooking stove or range, the design for the reservoir, substantially as shown and described.

4. In a design for a cooking stove or range, the design for the door of the fire-pot, substantially as shown and described.

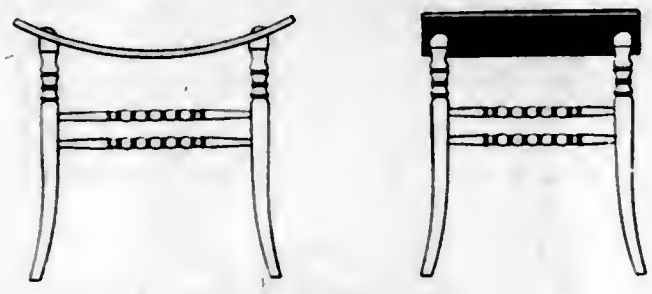
5. In a design for a cooking stove or range, the design for the front door thereof, substantially as shown and described.

6. In a design for a cooking stove or range, the design for the heating-oven, substantially as shown and described.

7. In a design for a cooking stove or range, the design for the support of the heating-oven, substantially as shown and described.

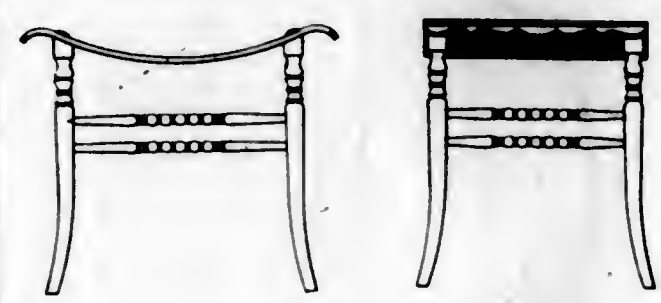
8. The design for a cooking stove or range, substantially as shown and described.

29,395. CHAIR OR STOOL. ARA D. CROCKER, Sheboygan, Wis., assignor to the Crocker Chair Company, same place. Filed Aug. 26, 1898. Serial No. 689,526. Term of patent 7 years.



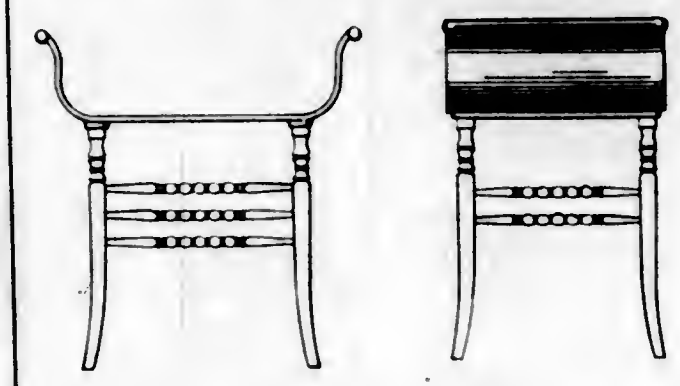
Claim.—The design for a chair or stool, substantially as herein shown and described.

29,396. CHAIR OR STOOL. ARA D. CROCKER, Sheboygan, Wis., assignor to the Crocker Chair Company, same place. Filed Aug. 26, 1898. Serial No. 689,527. Term of patent 7 years.



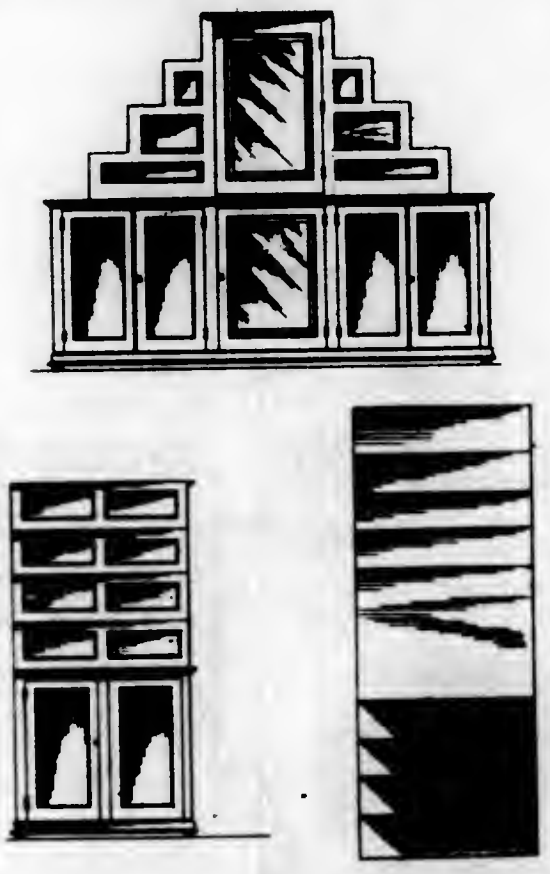
Claim.—The design for a chair or stool, substantially as herein shown and described.

29,397. CHAIR OR STOOL. ARA D. CROCKER, Sheboygan, Wis., assignor to the Crocker Chair Company, same place. Filed Aug. 26, 1898. Serial No. 689,528. Term of patent 7 years.



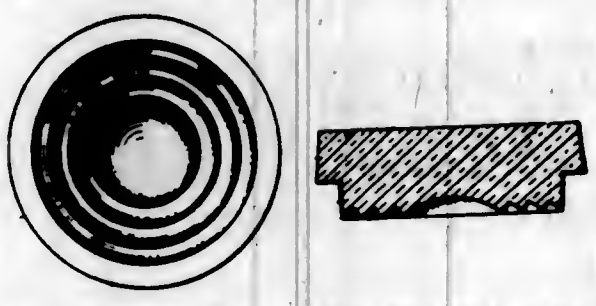
Claim.—The design for a chair or stool, substantially as herein shown and described.

29,398. CABINET. FRANK HEINIG, Winnetka, Ill. Filed July 18, 1898. Serial No. 686,262. Term of patent 14 years.



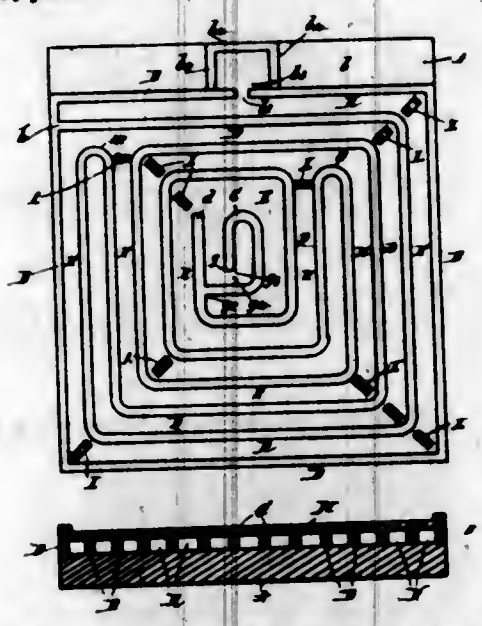
Claim.—The design for a cabinet, as herein shown and described.

29,399. VAULT-LIGHT. MICHAEL MAHONY, Troy, N. Y. Filed Aug. 4, 1898. Serial No. 687,751. Term of patent 14 years.



Claim.—The design for a vault-light substantially as shown and described.

29,400. PUZZLE BOX OR CASE. JOSEPH THOMAS SCHIRTZLER, Louisville, Ky. Filed Aug. 26, 1898. Serial No. 689,810. Term of patent 3½ years.



Claim.—The design for a puzzle box or case herein shown and described.

29,401. CARPET. EMIL S. SAHME, New York, N. Y., assignor to the Lowell Manufacturing Company, of Massachusetts. Filed July 27, 1898. Serial No. 687,940. Term of patent 3½ years.



Claim.—1. In a design for a carpet, the body A, substantially as herein described and shown.

2. In a design for a carpet, the border B, substantially as herein described and shown.

3. The design for a carpet consisting of the body A and the border B, substantially as herein described and shown.

TRADE-MARKS

REGISTERED SEPTEMBER 20, 1898.

31,976. MUSICAL INSTRUMENTS. MORGENSTERN & GOLDSMITH, New York, N. Y. Filed Nov. 9, 1897.



Essential feature.—The representation of an eagle with wings extended, a female figure clad in a gown and cap apparently seated upon the eagle and holding a flag in her hand, together with a tablet bearing the letters and character "M & G." Used since November 30, 1896.

31,977. CORSETS. OTTENHEIMER BROS., New York, N. Y. Filed June 16, 1898.

AUGUSTINE

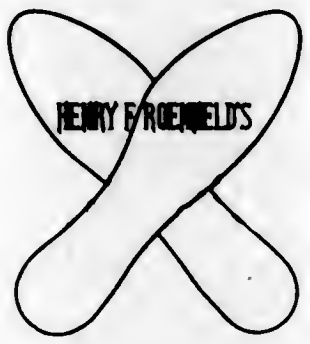
Essential feature.—The word "AUGUSTINE." Used since September 17, 1897.

31,978. SHOE-CLOTH. DELBERT W. NORTHROP, Boston, Mass. Filed Aug. 19, 1898.

QUEEN

Essential feature.—The word "QUEEN." Used since September 15, 1890.

31,979. FOOT-SOLES. HENRY F ROEMHELD, Milwaukee, Wis. Filed Mar. 4, 1898.



Essential feature.—The representation of two soles, crossed in substantially the form of a letter X, with the name "HENRY F. ROEMHELD" in a horizontal line above the point of intersection. Used since January 28, 1898.

31,980. LIGHT-WEIGHT LEATHERS. ROBERT H. FOERDERER, Philadelphia, Pa. Filed Mar. 28, 1898.



Essential feature.—The representation of a horseshoe. Used since January 1, 1886.

31,981. WALL-FINISH. THE MURALO COMPANY, New York, N. Y. Filed Aug. 24, 1898.

CALCIMO

Essential feature.—The word "CALCIMO." Used since July 1, 1896.

31,982. POLISH. J. L. PRESCOTT & Co., New York, N. Y. Filed May 11, 1898.



Essential feature.—The word "ENAMELINE," in connection with a device or design distinguished by a parallelogram having said word displayed thereon and surrounded by a circular border, the outer edge of which is serrated. Used since January 1, 1887.

31,988. PAINTS AND VARNISHES FOR STRAW AND RATAN GOODS. CARPENTER-MORTON COMPANY, Boston, Mass. Filed Aug. 2, 1898.

COLORITE

Essential feature.—The word "COLORITE." Used since July 26, 1898.

81,984. LYE AND POTASH. CHAMPION CHEMICAL WORKS, Chicago, Ill. Filed Aug. 22, 1898.

MAMMOTH

Essential feature.—The word "MAMMOTH." Used since January, 1897.

81,985. SOAP. THE LARKIN SOAP MANUFACTURING COMPANY, Charleston, W. Va., and Buffalo, N. Y. Filed Aug. 6, 1897.

HONOR BRIGHT SOAP.

Essential feature.—The words "HONOR BRIGHT" prefixed to the word "SOAP." Used since April 1, 1897.

81,986. WASHING-TABLETS. WILLIAM J. BAER, HENRY H. YARNELL, and JAMES A. ZIMMERMAN, Connellsville, Pa. Filed June 13, 1898.



Essential feature.—The representation of a figure in outline dressed in a shirt with large collars and cuffs, the arms of the figure being outstretched and the legs being bent as in dancing. Used since May 23, 1898.

81,987. DYSPEPSIA, CATARRH, LIVER AND KIDNEY, PAIN AND COUGH CURE, PILLS, AND LINIMENT. MONROE DR TAR, Kinsley, Kans. Filed June 14, 1898.

HEALTHINE

Essential feature.—The word "HEALTHINE." Used since May 1, 1893.

81,988. TABLETS AND POWDERS FOR CERTAIN NAMED DISORDERS. GEORGE R. DENHAM, Baltimore, Md. Filed Feb. 20, 1897.

ROYAL

Essential feature.—The word "ROYAL." Used since November, 1891.

81,989. WHEAT-FLOUR AND BREAD MADE THEREFROM. ROBINSON-DANFORTH COMMISSION COMPANY, St. Louis, Mo. Filed July 21, 1898.

BRAIN

Essential feature.—The word "BRAIN." Used since July 1, 1898.

81,990. SWEETENER. THE CHEMICALS AND DRUGS COMPANY OF AMERICA, New York, N. Y. Filed July 23, 1898.

RINSAC.

Essential feature.—The word "RINSAC." Used since April 1, 1898.

81,991. CHEWING AND SMOKING TOBACCO. HOFFMAN & CO., Red Hook, N. Y. Filed Aug. 12, 1898.



Essential feature.—The pictorial representation of a hook. Used since August, 1879.

81,992. BOURBON WHISKY. CHARLES WILLIAM JEFFERSON, Louisville, Ky. Filed June 30, 1898.

Kentucky Cardinal



Essential feature.—The words "KENTUCKY CARDINAL" and a picture of a redbird. Used since May 1, 1898.

81,998. PLANTS AND TREES. DANIEL SHANK, Clayton, Ill. Filed June 20, 1898.

MISSING LINK

Essential feature.—The words "MISSING LINK." Used since May 15, 1896.

81,994. BALED HAY. SAGINAW MILLING CO., Saginaw, Mich. Filed Aug. 15, 1898.

GREEN LEAF.

Essential feature.—The words "GREEN LEAF." Used since July 30, 1898.

81,995. CUTLERY AND CUTTING-TOOLS. DILLEMANN, FILS & Co., Paris, France. Filed Jan. 21, 1898.

EL CORREO

Essential feature.—The words "EL CORREO." Used since March, 1893.

81,996. PLOWS. MINNEAPOLIS PLOW WORKS, Minneapolis, Minn. Filed Aug. 10, 1898.

MONITOR

Essential feature.—The word "MONITOR." Used since August 10, 1875.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

CALM *v.* DOLLEY *v.* FINZELBERG AND SCHMIDT.

Decided September 10, 1898.

INTERFERENCE—MOTION TO DISSOLVE—NON-ALLOWABLE AND REJECTED CLAIM IN INTERFERENCE—IRREGULARITY IN DECLARING INTERFERENCE.

Where Finzelberg and Schmidt's application did not clearly describe the process which is the subject-matter involved in the interference, and no claim was made to it, and the application did not contain an allowed or allowable claim interfering, within the meaning of the law, with Dolley's claim, and their single claim was under rejection, *Held* that the interference should be dissolved because such irregularities preclude proper determination of the question of priority. (*Hammond* v. *Hart*, 83 O. G., 743, cited.)

APPEAL on motion.

PROCESS OF TANNING.

Application of Edward Calm filed November 19, 1896, No. 612,701. Application of Charles S. Dolley filed October 21, 1896, No. 609,600. Application of Hermann Finzelberg and Albrecht Schmidt filed March 28, 1894, No. 505,368.

Mr. C. L. Horack and *Mr. J. E. M. Bowen* for Calm.

Mr. Franklin H. Hough for Dolley.

Messrs. Wilhelm & Bonner for Finzelberg and Schmidt. (No appearance.)

DUELL, *Commissioner:*

This is an appeal from so much of the Primary Examiner's decision denying Dolley's motion to dissolve the interference as relates to the Finzelberg and Schmidt application. The appeal is taken from the following points of the decision of the Examiner, viz:

1. That there is a clear interference, each of the parties claiming the same subject-matter.
2. That there has been no such irregularity in declaring the interference as to preclude the determination of the question of priority.
5. That the application of Finzelberg and Schmidt was not an abandoned application.

This interference was declared at a time when it seemed to be the effort of the Office not to permit an application to pass to patent without an interference. Whatever may be here said is not intended as a criticism upon the Primary Examiner in declaring the interference. He was justified by the practice then in force.

The facts in the case, so far as they are material to the determination of the question before me on appeal, show that Finzelberg and Schmidt filed the application involved in this interference on March 28, 1894; that under date of April 28, 1894, an official letter was sent applicants criticising the substance of the specification, calling attention to a prior patent, and requesting them to furnish specimens of the product produced by the process described and claimed. This action in substance was a rejection of the application. An examination of the specification shows that the criticism was abundantly justified, and from a reading of the specification it is difficult to determine what supposed discovery had been made or what was desired to be secured by Letters Patent. To this action the applicants made no response, and on October 25, 1895, under Rule 65 then in force, they were notified that the objections theretofore made were repeated. To this second action no response was made. Under date of January 19, 1897, the application was again considered and notice given to the applicants that no patentable novelty appeared to be presented by the claim, and it was therefore rejected. To this third action there was no response.

Thereafter and on June 11, 1897, interference was declared. After stating the issue applicants were notified that the subject-matter "covers the claim of your application." No preliminary statement was filed by Finzelberg and Schmidt, and on August 10, 1897, they were notified that the interference had been suspended for the purpose of adding another application.

It would be a waste of time to enumerate the various subsequent proceedings up to the time when Dolley moved to dissolve this interference. Many proceedings were had, but none of them seems to have been of the slightest interest to Finzelberg and Schmidt. In short, it appears that since the letter of the Examiner under date of April 28, 1894, they have not taken any steps to prosecute their application nor taken the slightest interest in the proceedings connected with the interference. The Office has met with as little success in interesting Finzelberg and Schmidt in their rejected application or in the interference proceedings as one meets with in attempting to breathe the breath of life into a corpse.

At the time when motion to dissolve this interference was made by Dolley the rule of the Office, as stated in *Hammond* v. *Hart*, (83 O. G., 743,) was—

that an interference can only be instituted for the purpose of determining the question of priority of invention between two or more parties *claiming* substantially the same patentable invention; that of necessity there must be allowed claims to all parties before an interference can be declared, and that * * * two applications must claim in whole or in part the same invention before an interference can be declared.

The refusal of the Examiner to dissolve this interference is clearly contrary to the ruling referred to. Every opportunity had been accorded Finzelberg and Schmidt to place their application in condition for interference, and their neglect to do so fairly raises the presumption that they are not the inventors of the subject-matter of the interference. At the time when Dolley's motion to dissolve the interference was denied by the Examiner Finzelberg and Schmidt's application did not clearly set forth any description of the tanning process which is the subject-matter involved in the interference, and certainly no claim was made to it by them. At the time when Dolley made the motion to dissolve this interference Finzelberg and Schmidt's application did not contain an allowed or allowable claim interfering with, in the meaning of the law, Dolley's claim, and their single claim was at that time a properly-rejected claim, and therefore the interference should have been dissolved, because such irregularities precluded a proper determination of the question of priority.

In view of this conclusion it is unnecessary to pass upon the other reasons of appeal. The decision of the Examiner, so far as appealed from, is reversed.

EX PARTE HORLICK'S FOOD COMPANY.

Decided September 12, 1898.

TRADE-MARK—"MALTED MILK" FOR FOOD PREPARATION—DESCRIPTIVE WORDS.

The words "Malted Milk" refused registration as a trade-mark for a food preparation for infants and invalids, as they are so far indicative of the ingredients and characteristics of petitioner's preparation as to be descriptive.

ON petition.

TRADE-MARK FOR FOOD PREPARATIONS.

Application for registry filed March 29, 1897, No. 53,270.

Mr. H. G. Underwood for the petitioner.

DUELL, *Commissioner:*

The Examiner having refused to register the words "Malted Milk" as a trade-mark for a food preparation for infants and invalids, applicant seeks by petition to review his action.

The Examiner has refused registry upon the following grounds: first, because the words "Malted Milk" are descriptive of the article to which they are applied, and, second, because applicant has certain patents for the substance to which he applies the trade-mark.

The decisions of the United States Supreme Court are controlling upon this Office in its practice relative to the registry of trade-marks. By the decisions of that tribunal two propositions at least have been well established—first, that words which are merely descriptive of the character, qualities, or composition of an article cannot be monopolized as a trade-mark, and, second, that where during the life of a monopoly created by a patent an arbitrary name has by consent, either express or tacit, of the inventor become the identified and generic name of the thing patented this name passes to the public with the cessation of the monopoly which the patent created. (*Brown Chemical Co.* v. *Meyer*, 139 U. S., 540; *Singer Mfg. Co.* v. *June Mfg. Co.*, 163 U. S., 169.)

This Office has recently ruled that in view of the fact that a patent was granted for a limited term, while a trade-mark once registered may be reregistered without limit, the generic name of a patented thing ought not to be registered as a trade-mark. (*Ex parte F. H. Gilson Co.*, 83 O. G., 1992.) The question for consideration herein, therefore, is one of fact. Applicant admits that—

> no one disputes the fact that both malt and wheat have been used, both with and without the addition of milk, in the manufacture of prepared foods,

but strenuously denies that the words sought to be registered are descriptive, because the words cover an impossible compound, and therefore are purely arbitrary; that the words are meaningless, because it is impossible to malt milk.

I think applicant has lost sight of the fact that the term "malted" includes not only that which has been converted into malt, but that which has been acted upon by malt. That milk is acted upon by malt does not admit of successful contradiction. It is now well known that diastase is not the only ferment contained in malt, but that there is another which has been called "peptose," which tends to convert proteids of meat (albuminous substances) into peptones. That milk is susceptible to the action of malt the same as meat is, I believe, well established.

Without entering into any elaborate argument to prove the statements above made, attention is called to *A Handbook of Industrial Organic Chemistry*, by Sadtler, editions of 1891 and 1895, special reference being made to the clause beginning with line 18, page 180, of the edition of 1891, and page 190 of the edition of 1895. See also *Watts' Dictionary of Chemistry*, Vol. 2, page 545, and British Patent, No. 14,459 of 1887, lines 3 to 6, inclusive, page 2.

"Iron Bitters" would not have been held descriptive if literally read; but the court, speaking of these words, said they are—

> so far indicative of the ingredients, characteristics, and purposes of the plaintiff's preparation as to fall within the scope of these decisions.

I do not think that the petitioner's contention that the words cover an impossible compound is borne out by the facts. In my opinion any one putting on the market a preparation wherein milk has been subjected to the action of malt may refer to his article as "malted milk," taking care, however, in using the words not to deprive others of their right or to deceive the public and at the same time accompanying the words with indications that the article put upon the market is not the manufacture of any other party employing the same term.

Believing that the words are so far indicative of the ingredients and characteristics of petitioner's preparation as to be descriptive, I am compelled to hold that they are not properly registrable.

It will be unnecessary from the view which I take of the case to pass upon the second ground of

refusal to register the words. The Examiner has cited two patents and has referred to them as "applicant's patents." In reply thereto it is stated that the petitioner is not the owner of either of the patents referred to by the Examiner. An examination of the records of this Office, however, shows that the title to the 1875 patent is in Horlick's Food Company, of Racine, Wis. In reference to the second patent it is somewhat suggestive that the applicant states that it commenced the use of the words in question in January, 1882, which was just about the time when the application for the second patent referred to by the Examiner was filed, and the patent relates to a food for infants and a process of preparing the same, while this trade-mark is sought for a food preparation for infants and invalids. I apprehend that in order to bring the case within the authority of the *Singer Mfg. Co.* v. *June Mfg. Co.*, *supra*, it is not necessary that the patents should be owned by the party putting out the article under the identifying or generic name, but that it is sufficient if such name is given to the patented article with the consent, either express or tacit, of the inventor. It is not necessary, however, to decide that question at this time nor to institute an investigation into the fact of what connection, if any, there is between the patents referred to and the preparation put out by petitioner under the term "Malted Milk."

The action of the Examiner in refusing registry is affirmed.

EX PARTE OLIVE WHEEL COMPANY.

Decided September 13, 1898.

TRADE-MARK—"OLIVE" FOR BICYCLES—COLOR.

The word "Olive" refused registration as a trade-mark for bicycles, as the word simply indicates the color of the bicycles manufactured by the applicant.

ON petition.

TRADE-MARK FOR BICYCLES.

Application for registry filed April 16, 1898, No. 55,622.

Messrs. E. Laass & Co. for the petitioner.

DURELL, *Commissioner:*

Applicant seeks to register as a trade-mark for bicycles the word "Olive" and has taken an appeal from the action of the Examiner in refusing registration. The grounds given by the Examiner for refusing to register the mark are that the word is the salient feature of applicant's name and also that it is an ordinary surname.

Irrespective, however, of these objections, an examination of the record discloses a fatal objection to the registry. It is stated that the word "*Olive*" simply indicates the color of the bicycles manufactured by the applicant. It is well settled that color alone does not constitute a trade-mark. If a manufacturer were allowed to monopolize by trade-mark the color of the package in which his goods might be wrapped or the color of the paint or enamel applied to them, then legitimate competition would be seriously interfered with. A manufacturer of bicycles may paint or enamel his bicycles any color which he may select; but such selection will not take that color from out the public domain, and any other manufacturer will have an equal right to use the same color. This right being a common one, no manufacturer can exclusively hold the right to any color as against others, and if one paints or enamels his bicycles white, yellow, blue, green, or olive he has a right to designate them by the color employed. Attention is called to *ex parte Landreth* (31 O. G., 1441) and *Fleischmann* v. *Starkey*, (25 Fed. Rep., 127.)

The Examiner being correct in his action, it is affirmed.

EX PARTE RUSSELL.

Decided August 23, 1898.

1. DECISION OF THE EXAMINERS-IN-CHIEF—CONSTRUCTION OF.

The decision of the Examiners-in-Chief that a valid combination does not exist in a certain claim in a particular case between a cartridge-clip and the magazine of a gun is not a ruling that such combination exists in all cases where they are made elements of a claim, and the holding by the Examiner that a particular claim in another case covering them does not define a valid combination does not show any disposition on his part to disregard the rulings of the Examiners-in-Chief

2. DISCOURTEOUS LANGUAGE BY ATTORNEY.

Language which is even seemingly discourteous or in the nature of reflection upon an Examiner has no place in any paper which becomes a part of the record of an application and is always to be condemned. (*Ex parte Chambers*, C. D., 1873. 56.)

3. DUPLICATION OF CLAIMS.

The question as to whether two claims are substantially the same is reviewable on petition, not upon appeal to the Examiners-in-Chief. *Held* in this case that claims 8 and 9 contain material differences and are not duplicates.

4. EXAMINER'S ANSWER TO PETITION—JURISDICTION.

Although the Examiner holds that a petition is not the applicant's proper remedy, he should, in addition to raising the question of jurisdiction, set forth in his answer the reasons for his action, so that if the Commissioner reached a different conclusion on the question of jurisdiction he would have the benefit of the Examiner's views in passing on the question presented. (*Ex parte Sawn*, 54 O. G., 1561.)

ON petition.

CARTRIDGE-CLIPS.

Application of Andrew H. Russell filed November 12, 1897, No. 658,334.

Mr. W. A. Bartlett for the applicant.

GREELEY, *Acting Commissioner:*

This is stated to be a petition—

from the action of the Examiner in rejecting claims 7, 8, 9, 10 on the ground of aggregation, and from the ruling that claims 8 and 9 are substantially identical with each other.

It is well settled and is admitted by the petitioner that the question of aggregation is one going to the merits and is appealable to the Examiners-in-Chief; but it is contended that in view of the circumstances of this case jurisdiction of the matter should be taken on this petition. The petitioner alleges as a reason for this course that—

this same question has heretofore been considered on petition and on appeal in another application made by the same applicant and in such application a like action by the Examiner was overruled by the appellate tribunal.

He therefore asks the intervention of the Commissioner "to instruct the Examiner as to his duties in the premises and the proper respect paid to former decisions supposed to be authoritative."

It appears to be understood by the applicant that the Examiner takes the broad ground that

there cannot be a patentable combination between a gun and a cartridge-clip. It is with this understanding that applicant urges that as to this question the Examiner has been overruled by the Examiners-in-Chief on appeal in another case and that he refuses to accept the decision of the Examiners-in-Chief as decisive of the broad question.

I have examined the record of the case referred to (Russell, Patent No. 501,367, June 22, 1893) and find that in that case before appeal was taken the Examiner allowed a claim for a combination between the cartridge-package case and the magazine, the Examiner distinctly admitting that such a combination might exist and did exist in the claim referred to, while at the same time holding that in certain other claims no patentable combination between the cartridge-package case and the magazine existed. The position taken by the Examiner on this question is clearly expressed in his letter of March 16, 1893, as follows:

> Claims 16, 17, 18, 32, 38 and 39 are rejected on the ground that there is no combination expressed or defined between the magazine of the gun and the cartridge-feed clip or pack. In claim 31, the Examiner has allowed a claim for a combination between the case and the magazine because there is in that claim a series of *clearly-defined elements* which may be said to occupy a relation of a somewhat more intimate character than that expressed by the word *adaptation* and the Examiner has given the applicant the benefit of the doubt and allowed the claim; but the rejected claims do not, even remotely, define any combination whatever and are therefore rejected.

In the decision on appeal the Examiners-in Chief found it unnecessary to go into the broad question of patentable combination between a cartridge-packing case or clip and the magazine of a gun, since the Examiner had plainly admitted that such a combination might exist and did exist in the claim specified by the Examiner. They did, however, find a patentable combination between the cartridge-packing case or clip expressed in three of the claims rejected by the Examiner and as to these claims reversed his decision.

It thus appears that the question of the possibility of a patentable combination existing between a cartridge clip or package and the magazine of a gun was settled in the case referred to. I do not understand that the Examiner in the present case denies that such combination may exist or that he in any way refuses to be bound by his own decision in the case referred to or that of the Examiners-in-Chief so far as the broad question of possible combination is concerned.

What the Examiner does hold in the present case, and it is believed that his position has been clearly expressed in his letters of rejection, is that the claims rejected do not define a patentable combination. The principle is well settled that a claim for a combination must in order to be patentable clearly define the construction of the several elements by which they are adapted to coöperate to effect a unitary result.

The decision of the Examiners-in-Chief in the case referred to was in accord with this principle. They decided that certain claims held by the Examiner not to define patentable combinations did in fact sufficiently define such combinations and should be allowed. They did not hold that all claims which purport to define combinations between a cartridge clip or pack are patentable. Their decision was never intended to go to such length.

While the Examiner in holding that the claims rejected in this case do not define patentable combinations may or may not be correct, such holding is not inconsistent with the decision of the Examiners-in-Chief and does not indicate any hesitation on his part to give to that decision the full force and effect which it was intended to have.

The claims rejected in this case do not appear on their face to define the relative constructions of their elements so clearly and distinctly as do the claims found patentable by the Examiners-in-Chief in the case referred to, and the question whether they do in fact define such construction with sufficient clearness is plainly a question of merits, on which appeal lies to the Examiners-in-Chief. It is clear that no case is here presented calling for such instruction to the Examiner as applicant asks for.

As applicant seems to have misunderstood the position of the Examiner with reference to these claims and as there is clearly no conflict of opinion as to the broad proposition that there may be patentable combination between a cartridge clip or pack and the magazine of a gun, it seems that opportunity should be afforded, if desired by applicant, to further amend the rejected claims before the case is closed before the Examiner. Should applicant present an amendment for the purpose of more clearly expressing in these claims the combination which it is admitted may exist, such amendment may be entered and considered.

The Examiner in his statement calls attention to certain language found in the petition and considered by him to be rude, discourteous, and unwarranted. The language complained of in so far as it appears to reflect upon the good faith and fairness of the Examiner's actions is clearly unwarranted by the facts in the case. It appears from statements made orally by the attorney at the hearing that there was no intention on his part of reflecting upon the motives of the Examiner. In view of these statements no further action in reference to this matter seems to be necessary. It may, however, be said that language which is even seemingly discourteous or in the nature of reflection upon an Examiner has no place in any paper which becomes a part of the record of an application and is always to be condemned. (*Ex parte Chambers*, C. D., 1873, 56.)

In regard to the question as to whether claims 8 and 9 are or are not substantially the same the Examiner states that it is appealable to the Examiners-in-Chief and not reviewable on petition, and therefore fails to discuss the question. This holding is contrary to the settled practice of the Office; but even if there had been doubt in regard to it the Examiner should have set forth the reasons for his action, so that if the Commissioner reached a different conclusion on the question of jurisdiction he would have the benefit of the Examiner's views in passing upon the question presented. (*Ex parte Sawn*, 54 O. G., 1561.)

Claims 8 and 9 are as follows:

8. In combination, a gun-magazine having an inclined surface at the side of the cartridge-clip passage, and a cartridge-clip having a spring-detent with a trip-arm extending at the side, and engaging the incline of the gun so as to press the detent backward as the clip passes down in the magazine, substantially as described.

9. The combination with a sheet-metal clip having a spring-detent and a trip-arm connected thereto and projecting at the side thereof, of the gun-magazine having an incline with which said trip-arm engages and by which it is pressed backward, substantially as described.

The petitioner points out the differences between these claims, as follows:

Claim 8 locates the inclined surface of the gun *at the side* of the clip-passage. Claim 9 does not so locate it, and in fact the incline might be at the bottom of the clip-passage. Claim 9 limits to "a sheet-metal clip," while claim 8 has no such limitation.

These statements are correct, and therefore it cannot be held that these claims are merely different statements of the same thing.

This petition is granted in so far as the duplication of claims is concerned, but as to other matters it is dismissed.

HOLT *v.* INGERSOLL.

Decided August 24, 1898.

1. REHEARING—APPEAL.

It is doubtful if an appeal lies from the decision of the Examiner refusing to grant a rehearing in any case, and his action will certainly not be reviewed where he fully considers the points raised in his decision denying a rehearing.

2. INTERFERENCE—IRREGULARITY IN THE DECLARATION—RIGHT OF PARTY TO MAKE THE CLAIM—APPEAL.

Where it is contended on a motion to dissolve on the ground of irregularity in the declaration that a reissue application does not cover the same invention as the original patent and this motion is denied, *Held* that the question involves the right of a party to make the claim and no appeal lies from a favorable decision on that question.

3. SAME—REISSUE APPLICATION AND PATENT GRANTED ON SUBSEQUENT APPLICATION.

The rules do not expressly provide for an interference between an application for the reissue of an unexpired patent and a patent granted on an application filed subsequent to the grant of the patent sought to be reissued, and it is open to doubt whether such an interference should ordinarily be declared.

4. SAME—SAME.

Where, however, H.'s application was withheld from issue for long time in view of a probable interference with certain rejected claims in I.'s reissue application, but was finally passed to issue in view of I.'s unreasonable delay in taking an appeal from the rejection of his claims, *Held* that I. cannot take advantage of his own delay until H.'s patent issued and thus avoid a contest on the question of priority. Under the circumstances the interference was properly declared.

APPEAL on motion.

HARVESTERS.

Patent granted Benjamin Holt December 26, 1897, No. 596,446. Reissue application of George W. Ingersoll filed October 12, 1895, No. 565,526.

Messrs. Dewey & Co. and *Mr. T. Walter Fowler* for Holt.

Mr. A. Hubert Ste. Marie and *Mr. L. S. Bacon* for Ingersoll.

GREELEY, *Acting Commissioner:*

The present interference was declared March 16, 1898, between the application of Ingersoll, filed October 12, 1895, for the reissue of Letters Patent No. 531,535, granted to him December 25, 1894, on an application filed March 19, 1894, and the patent to Holt, No. 596,446, granted to him December 26, 1897, on an application filed November 25, 1895.

On April 26, 1898, Ingersoll filed a motion to dissolve on the ground of irregularity in declaring the interference, it being urged that interference cannot be declared under the rules between an application for reissue of an unexpired patent and a patent granted on an application filed subsequent to the grant of the patent sought to be reissued, the decision of the Commissioner in *Becker* v. *Throop* (8 O. G., 1; C. D., 1875, 87) being relied on in support of the motion. After hearing this motion the Examiner rendered a decision in which, on a careful review of the authorities, he came to the conclusion that the motion for dissolution must be granted.

On May 5, 1898, Holt filed a motion to dissolve on the ground that no interference in fact exists between count 1 of the issue and the claims of his patent (claims 5 and 6) said to be involved in that issue. This motion was granted by the Examiner.

On May 10, 1898, Holt filed a second motion to dissolve, the grounds stated for this motion being that no interference in fact exists, irregularity in declaring, and lack of right on the part of Ingersoll to make the claims involved in the issue. The main ground urged before the Examiner was lack of right on the part of Ingersoll to make the claims. The Examiner took up and decided this motion before deciding the motions above referred to, holding that so far as this motion was concerned there was no showing of lack of interference in fact or of irregularity in declaring and affirming Ingersoll's right to make the claims involved in count 2 of the issue. His decision denied this motion.

Subsequently Holt, on June 4, 1898, brought a motion for a rehearing of so much of this decision as related to Ingersoll's right to make the claims in question on the ground of error in law and newly-discovered evidence. Rehearing was denied by the Examiner.

Holt's appeals from the decision of the Examiner granting Ingersoll's motion to dissolve, from the decision of the Examiner denying his motion to dissolve, and from the decision of the Examiner denying rehearing are now before me for consideration. From the decision of the Examiner dissolving the interference as to the first count no appeal has been taken, and the decision is now final.

The decision of the Examiner on the motion to rehear reviews fully the alleged errors of law pointed out by Holt and considers fully the bearing of the so-called "newly-discovered evidence," which consists of a decision by the Court of Appeals of the District of Columbia in the case of *Denton* v. *Commissioner of Patents*, (83 O. G., 1347,) and which is clearly not in the nature of evidence, whatever bearing it may have on the question of error of law. This decision is substantially equivalent to a decision on rehearing, reaffirming the former decision after full consideration of all points raised by Holt against that decision. Even were I disposed to hold that appeal lies from the refusal of a lower tribunal to rehear a case once decided

by that tribunal, and I am by no means certain that I could properly so hold, I cannot hold that in the present case, where appellant has in effect had a full rehearing, I would be justified in reversing the decision of the Examiner denying a rehearing. The appeal on this question is denied.

The next appeal to be considered is that from the denial of Holt's original motion to dissolve on the ground of irregularity or want of interference in fact. The interference has already been dissolved as to count 1. The basis of the motion on the ground of no interference in fact and irregularity is found in the following from appellant's brief:

> We submit that this reissue is not for the same invention found in the original patent and that our authorities were a sufficient showing on this point to establish our claim of no interference in fact and irregularity in declaration, because for an interference to have existed and to have been properly declared both applications must be of an allowable character and the reissue application certainly cannot be allowed if it is not for the same invention as the original patent. We do not raise the question and do not deny in this appeal the right of the reissue applicant to make the claim in issue if the present invention is held by your honor to be for the same invention as the original patent; and because of this distinction we think it proper for your honor to entertain and decide this question.

It is not easy to see how this question can be considered here without considering the question of the patentability of Ingersoll's claim or of his right to make the claim, both of which have been decided in the Office by the Examiner in favor of Ingersoll and are not subject to review under the rules.

It remains to consider the appeal from the decision of the Examiner granting the motion made by Ingersoll to dissolve on the ground that an interference cannot under the rules be declared between an application for the reissue of an unexpired patent and a patent granted on an application filed subsequent to the grant of the patent sought to be reissued. Numerous authorities were cited by Ingersoll in support of his motion and were very fully and carefully considered by the Examiner. While there is considerable conflict between the authorities on this point, it must be admitted that the rules do not expressly provide for such an interference, and it is open to doubt whether such an interference should ordinarily be declared. But the question whether under all the circumstances of the case this interference should be dissolved and the reissue applicant be allowed to go out with claims which clearly interfere with the claims of his opponent's patent without a determination of the question of priority is a question to be considered.

Interference was declared between the parties to the present interference on January 23, 1896, Holt being then an applicant and Ingersoll being, as now, an applicant for reissue. That interference was on July 19, 1897, dissolved by my decision on appeal by Holt from a decision of the Primary Examiner refusing to dissolve on the ground of irregularity in the declaration, the decision containing a suggestion that if there is no patentable difference between the inventions an issue be drawn in terms broad enough to apply to the structures claimed by both parties. (*Holt* v. *Ingersoll*, 62 MS. Dec., 71.)

Thereafter Ingersoll amended his claims so that certain of them interfered with claims made by Holt. The interfering claims were rejected by the Examiner on the ground, in substance, that he had no right to make these claims in view of the record of his original application—substantially the same ground that was urged by Holt on his motion to dissolve on the ground that Ingersoll had no right to make the claims in issue.

Ingersoll was repeatedly notified to put his application in condition for allowance or take his appeal promptly in view of probable interference. He took his appeal September 7, 1897. Pending his appeal Holt's application was withheld from allowance. It does not appear that Ingersoll made any attempt to secure an early hearing of his appeal. On the contrary, by bringing a petition to have the case remanded to the Primary Examiner three days before the date of hearing set for his appeal, (November 8, 1897,) a petition in which it was asked that the Examiner be instructed to allow thirty days after each action in which to amend, a postponement of the date of hearing until December 20, 1897, was secured. This petition was denied. (*Ex parte Ingersoll*, 63 MS. Dec., 114.)

Holt was notified August 2, 1897, that his application was withheld from allowance on account of interference. The application continued to be withheld from allowance until on December 3, 1897, I decided, on a petition brought by Holt, that its allowance should not, in view of the delay of the other party, be longer withheld. (*Ex parte Holt*, 63 MS. Dec., 41.)

Under the circumstances Ingersoll, having had an opportunity to secure an interference with Holt's application and having failed to do so by reason of his own lack of diligence, cannot be permitted to now avoid the interference because his opponent, after being compelled to wait more than four months, finally had a patent issued to him.

The decision of the Examiner granting Ingersoll's motion to dissolve is reversed, and it is directed that the interference proceed.

THE

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[BY AUTHORITY OF CONGRESS.]

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Special Examination of Applications.

Applications for patents filed in this Office after April 30, 1898, will not be made special because the applicant has filed or caused to be filed in a foreign country an application for the same invention more than seven months prior to the date of filing the United States application.

Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 14, 1898.

Hereafter coupons unless properly filled out will not be accepted in payment for copies of publications.

C. H. DUELL,
Commissioner.

Interference Notice—Decker v. Loosley.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 1, 1898.

Heirs, executor, or administrator of Ernest A. Loosley, deceased, take notice:

Notice is hereby given that times have been set as follows for taking testimony in this interference and for its final hearing, to wit:

Decker's testimony-in-chief to close November 8, 1898. Loosley's testimony-in-chief to close November 28, 1898. Decker's testimony in rebuttal to close December 18, 1898. Final hearing January 5, 1899. No testimony to be taken before October 18, 1898. Loosley will be restricted to his record date.

This notice will be published in the OFFICIAL GAZETTE for six weeks.

C. H. DUELL,
Commissioner.

War Revenue—Stamp Tax to Certificates.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., September 16, 1898.

The attention of persons having business before this Office is called to the following ruling of the Commissioner of Internal Revenue in relation to affixing revenue-stamps to trade-mark, print, and label certificates issued by this Office:

TREASURY DEPARTMENT,
OFFICE OF THE COMMISSIONER OF INTERNAL REVENUE,
Washington, D. C., September 3, 1898.

Hon. C. H. DUELL,
Commissioner of Patents, Interior Department.

SIR: I have the honor to acknowledge the receipt of your letter of current date, submitting three forms which are used by your Office and asking in regard to their liability to the internal-revenue tax under Schedule A of the War-Revenue Act of June 13, 1898.

These forms are as follows:

Exhibit "A" is a certificate of registration of trade-mark. Exhibit "B" is a certificate that there has been deposited in your Office for registration a print; and Exhibit "C" is a certificate that there has been deposited in your Office for registration a label.

These certificates are all required by law and are given for private use. In conformity with the opinion of the Attorney-General and the rulings of this Office, each of these certificates requires a ten-cent stamp.

Very respectfully,

W. B. SCOTT,
Commissioner.

The Commissioner of Internal Revenue has also ruled that a certificate of acknowledgment accompanying an assignment, in accordance with section 4898 of the Revised Statutes as amended March 3, 1897, requires a revenue-stamp to the value of ten cents to be affixed thereto.

C. H. DUELL,
Commissioner.

CERTIFICATES OF REGISTRATION ISSUED SEPTEMBER 27, 1898.

Labels.

6,676.—Title: "ROSEDALE BRAND." (For Canned Fruits, Vegetables, and Wines.) *Armstrong & Co.*, Toledo, Ohio. Application filed August 24, 1898.

6,677.—Title: "PHYSIOLOGICAL NERVE AND TISSUE FOOD." For a Medical Compound.) *Boericke & Tafel*, Philadelphia, Pa. Application filed September 2, 1898.

6,678.—Title: "PHYSIOLOGICAL SALTS." (For a Medical Compound.) *Boericke & Tafel*, Philadelphia, Pa. Application filed September 2, 1898.

6,679.—Title: "PHYSIOLOGICAL TONICUM." (For a Medical Compound.) *Boericke & Tafel*, Philadelphia, Pa. Application filed September 2, 1898.

6,680.—Title: "DAVENPORT'S TASTELESS SULPHATE QUININE." *D. F. Davenport*, Americus, Ga. Application filed August 31, 1898.

6,681.—Title: "LIGHTNING POLISH." (For a Furniture-Polish.) *Joseph Voytek*, Topeka, Kans. Application filed August 22, 1898.

6,682.—Title: "SELECT STOCK." (For Beer-Bottles.) *Henry R. Wirth*, Providence, R. I. Application filed August 24, 1898.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business September 20, 1898.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
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250	VIII. Furniture, Beds, Store Furniture, etc.	Aug. 2	Sept 13	250
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251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	June 29	Sept. 10	158
158	XX. Builders' Hardware, Safes, Dentistry, Artificial Limbs, etc.	July 9	Sept. 7	133
240	VII. Velocipedes	June 29	Sept. 6	405
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	June 28	Sept. 6	168
253	X. Carriages and Wagons	July 15	Aug. 18	180
	Between three and four months.			
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	June 20	Sept. 12	132
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	May 31	Sept. 10	267
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	May 23	Sept. 8	427
248	XVIII. Steam-Engineering, etc	May 23	Sept. 1	301
39	XXXI. Gas, Painting, Hides, Skins, and Leather, Alcohol, Oils, Fats, and Glue, etc.	June 13	Aug. 30	326
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Sugar and Salt, Surgery.	May 26	Aug. 24	383
	Between four and five months.			
246	I. Tillage and Fences	May 11	Sept. 6	219
106	II. Farm Stock, Products, etc	Apr. 23	Sept. 6	492
256	V. Fine Arts, Harvesters, Book-Binding, Music, etc.	Apr. 22	Sept. 6	345
221	XXIII. Registers, Fluid-Meters, and Acoustics, etc.	Apr. 22	Sept. 6	227
122	XXIV. Sewing-Machines, Apparel, and Toilet.	May 14	Aug. 26	259
98	XXI. Textiles, etc	May 11	Aug. 24	274
	Between five and six months.			
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Mar. 24	Sept. 6	444
91	XVI. Telegraphy. Telephony, Electric Lighting and Signaling.	Apr. 20	Sept. 2	412
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	Mar. 21	Aug. 24	750
120	IX. Hydraulics, Fire-Extinguishers, etc.	Apr. 15	Aug. 20	263
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Apr. 13	Aug. 20	389
	Between six and seven months.			
243	XXV. Artesian and Oil Wells, Mills, Threshing, Vegetable Cutters and Crushers.	Mar. 15	Sept. 6	431
217	XXXIII. *TRADE-MARKS, ETC., †DESIGNS, Drafting, and Optics.	Feb. 21	Aug. 26	220
215	XVII. Printing, Type-Writing Machines, and Linotyping.	Feb. 21	Aug. 25	399
95	*Between seven and eight months.* XXX. Paper Manufactures, Lamps, and Gas-Fittings.	Feb. 18	Sept. 8	199
261	XXXVI. Weighing and Measuring Devices and Driers.	Feb. 1	Sept. 8	260

Total number of applications awaiting action 9,828

Under one month.			
Designs	Sept. 16	Sept. 16	27
Trade-Marks	Sept. 6	Sept. 17	73

ISSUE OF SEPTEMBER 27, 1898.

Patents	368	No. 611,227 to No. 611,594, inclusive.
Designs	30	No. 29,402 to No. 29,431, inclusive.
Trade-Marks	22	No. 31,997 to No. 32,018, inclusive.
Labels	7	No. 6,676 to No. 6,682, inclusive.
Prints	None.	
Reissues	1	No. 11,696.
Total issue	428	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	----	----	New Hampshire	----	----
Arizona Territory	----	----	New Jersey	6	1
Arkansas	2	----	New Mexico Territ'y	1	----
California	14	----	New York	68	7
Colorado	4	----	North Carolina	----	1
Connecticut	9	----	North Dakota	----	----
Delaware	3	----	Ohio	19	3
District of Columbia	4	----	Oklahoma Territory	----	----
Florida	1	----	Oregon	1	----
Georgia	2	1	Pennsylvania	39	5
Idaho	1	----	Rhode Island	6	2
Illinois	27	2	South Carolina	----	----
Indian Territory	----	----	South Dakota	1	----
Indiana	8	----	Tennessee	5	----
Iowa	9	----	Texas	10	----
Kansas	3	2	Utah	----	----
Kentucky	7	----	Vermont	----	----
Louisiana	4	----	Virginia	2	----
Maine	2	----	Washington	1	----
Maryland	3	1	West Virginia	3	----
Massachusetts	26	----	Wisconsin	9	----
Michigan	12	----	Wyoming	----	----
Minnesota	8	----	U. S. Army	----	----
Mississippi	1	----	U. S. Navy	----	----
Missouri	21	----			
Montana	4	----	Total to citizens of the United States	342	25
Nebraska	1	----			
Nevada	----	----			

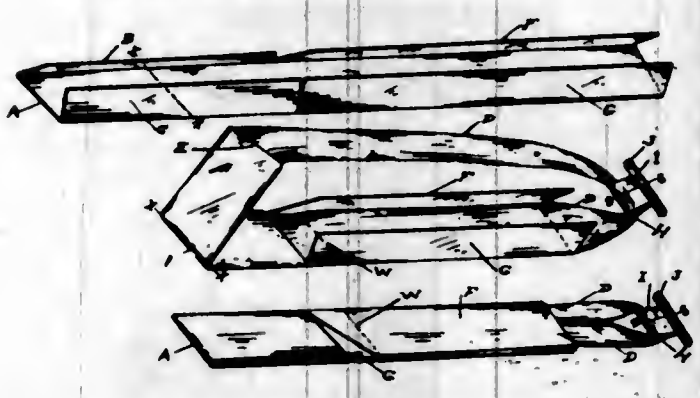
TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	----	----	Italy	----	----
Australia	----	----	Mexico	----	----
Austria-Hungary	2	----	Netherlands	----	----
Barbadoes	----	----	Newfoundland	----	----
Belgium	----	----	New South Wales	----	----
Bermuda	----	----	New Zealand	----	----
Brazil	----	----	Norway	1	----
British Guiana	----	----	Portugal	----	----
Canada	8	----	Queensland	1	----
Cape Colony	----	----	Russia	----	----
Chile, Republic of	----	----	Scotland	1	----
China	----	----	South African Republic	----	----
Colombia	----	----	South Australia	----	----
Cuba	----	----	Spain	----	----
Denmark	----	----	Sweden	1	----
Egypt	----	----	Switzerland	----	----
England	23	1	Victoria	----	----
Finland	----	----	West Australia	----	----
France	4	1			
Germany	14	2	Total to citizens of foreign countries	56	4
Guatemala	----	----			
Ireland	1	----			

PATENTS

GRANTED SEPTEMBER 27, 1898.

611,227. SILK-HOLDER. GEORGE S. ABRAHAM, Pittsburg, Pa. Filed Feb. 10, 1897. Serial No. 622,701. (No model.)



Claim.—A holder comprising the rectangular strip A, having the sides adapted to be folded inwardly, the edges of the sides when so folded overlapping, and each side divided by a slit into the portions B and C and F and G, and the end of the holder comprising the sides B and C folded over a skein being again folded over and beyond the slits, the sides F and G folded over this free end and overlapping at their edges, the skein D located in said holder with one end projecting therefrom, the paper loops engaging such projecting end, and the tube K telescoping over said holder, substantially as shown and described.

611,228. SHIPPING-CRATE. NATHAN P. BARCLAY and CHARLES M. DAYTON, Bowling Green, Ky. Filed Sept. 30, 1897. Serial No. 653,575. (No model.)



Claim.—1. A shipping-crate having a bottom wall, side and end walls hinged to fold inwardly, the end walls between the planes of of the side walls, and held from displacement by terminal stops on said side walls, a top wall terminally seated in rabbets in the upper edges of the end walls, engaging studs and sockets on the side and end walls and the edges of the top wall to prevent vertical displacement of the latter, and locks for preventing lateral displacement of the side walls, substantially as specified.

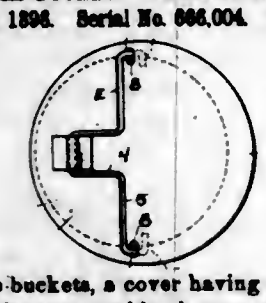
2. A shipping-crate having a bottom wall, side and end walls hinged to fold inwardly, the end walls between the planes of the side walls, and held from displacement by terminal stops on said side walls, a top wall terminally seated in rabbets in the upper edges of the end walls, engaging studs and sockets on the side and end walls and the edges of the top wall to prevent vertical displacement of the latter, and locks for preventing lateral displacement of the side walls, said locks consisting of hooks for connecting the contiguous edges of the side and top walls and mounted upon one of them, substantially as specified.

3. A shipping crate having a bottom wall, side and end walls hinged to fold inwardly, the end walls between the planes of the side walls, and held from displacement by terminal stops on said side walls, a top wall terminally seated in rabbets in the upper edges of the end walls, engaging studs and sockets on the side and end walls and the edges of the top wall to prevent vertical displacement of the latter, and locks for preventing lateral displacement of the side walls, the same consisting of hooks to engage contiguous bars of the side and top walls, and provided with eyes mounted to slide upon the slats of the side walls, substantially as specified.

4. A shipping-crate having a bottom wall, inwardly-folding hinged side and end walls, a top wall arranged in the space inclosed by the upper edges of the side and end walls and terminally fitted in seats in the end walls, studs in the side and end walls engaging sockets in the edges of the top wall to prevent vertical displacement of the latter, said top wall being provided with intermediate longitudinal frame-bars, and hooks mounted to slide upon the side walls to engage parallel frame-bars of the side and top walls, substantially as specified.

5. In a crate, the combination with a wall having a door-opening, of a door fitted in said opening and provided with bars of greater length than the opening and adapted to engage the inner surface of the wall at opposite ends of said opening, and a transversely-yielding hinge-rod of greater length than the width of the door and terminally secured to said wall, the door being mounted upon said rod and being capable of longitudinal movement in opposition to the tension of said rod to disengage the end edge, opposite to said hinge-rod, from the contiguous end of the door-opening, substantially as specified.

611,229. SAP-BUCKET. DECKER R. BEARDSLEY, Huntsburg, Ohio. Filed Jan. 8, 1898. Serial No. 666,004. (No model.)

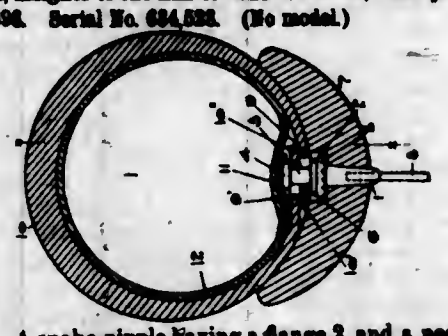


Claim.—1. In sap-buckets, a cover having a bail with side portions passing through the cover and having a central tongue pivotally connected with the cover, substantially as described.

2. A sap-bucket and a cover therefor, and a bail to secure the cover on the bucket having shouldered side portions extending through the edge of the cover and its extremities engaging the bail to the bucket, substantially as described.

3. The bucket and the cover therefor, in combination with the bail provided with a tongue at its middle pivotally connected with the cover and having vertical side portions passing through the cover and engaged with the bucket at their lower ends and shoulders at the tops of said side portions limiting the upward movement of the cover, substantially as described.

611,280. PNEUMATIC-TIRE FASTENER. JOSEPH A. BERGER, Chicago, Ill., assignor of one-half to John P. Larson, same place. Filed June 27, 1898. Serial No. 684,838. (No model.)



Claim.—1. A spoke-nipple having a flange 2, and a neck extending above said flange of sufficient length to pass through the outer

lap of a tire-jacket, and terminating in a head, substantially as and for the purpose specified.

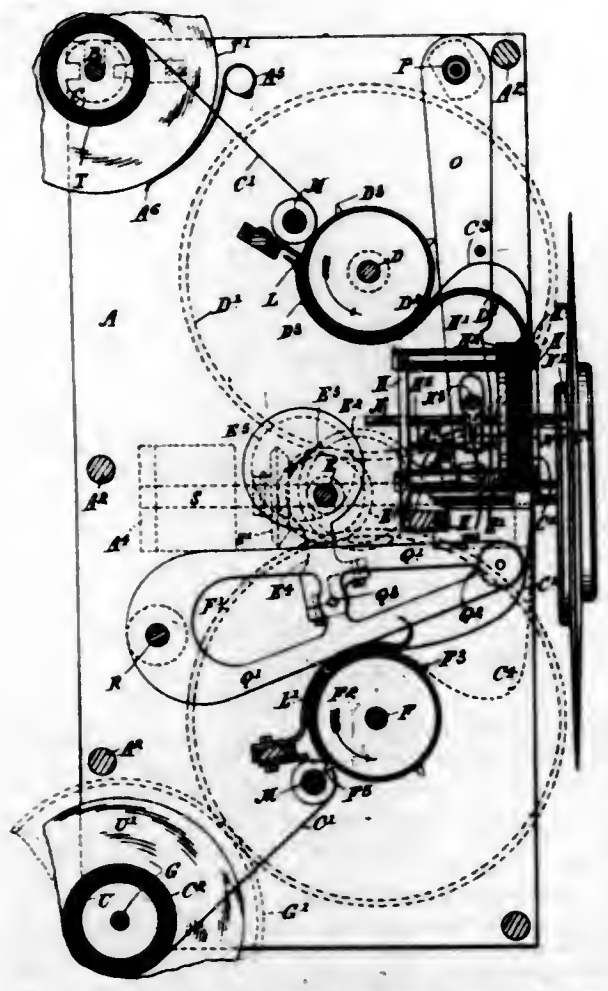
2. A spoke-nipple having a flange 2 and a neck, extending above said flange of sufficient length to pass through the outer lap of a tire-jacket, and terminating in a head; in combination with a tire-jacket having eyelets in the outer and inner laps for receiving such head; substantially as described.

3. A spoke-nipple having an integral flange 2, and an integral neck extending above said flange of sufficient length to pass through the outer lap of a tire-jacket, and terminating in a head, substantially as and for the purposes specified.

4. A spoke nipple having an integral flange 2, and an integral neck extending above said flange of sufficient length to pass through the outer lap of a tire-jacket, and terminating in a head, in combination with a tire-jacket having eyelets in the outer and inner laps, for receiving said head, substantially as described.

5. A spoke-nipple having an integral flange 2; an integral neck 3 exteading above same and terminating in an integral head 4; in combination with an inner pneumatic tube 12, and a tire-jacket having the eyelets 9, 9′ in its laps, adapted to pass entirely below said head and engage the neck and head when said inner tube is inflated; substantially as described.

611,281. KINETOGRAPHIC CAMERA. THOMAS H BLAIR, Northborough, Mass. Filed Nov. 2, 1896. Serial No. 610,884. (No model.)



Claim.—1. In a kinetographic camera, the combination with the continuous film-feeding mechanism, of the pins mounted in suitable supports, mechanism for advancing the pins to cause them to enter perforations in the film to arrest the movement of the film, and an intermittent film-feeding device; substantially as described.

2. In a kinetographic camera, the combination with the mechanism for feeding the film continuously, of the tapered pins, mechanism for intermittently advancing the pins to enter perforations in the film, whereby the film may be brought to the proper position for exposure and retained there, and intermittent film-feeding mechanism; substantially as described.

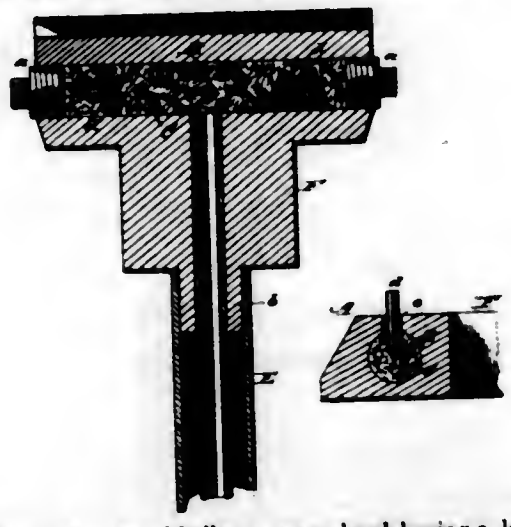
3. In a film-exposing apparatus of the kind described the combination with a support such as H^3 of pins N' tapered as at N^3 guide-bars H^4 and blocks N^2 so engaged with the pins and guides as to prevent the pins from turning about their own axes.

4. In a kinetographic camera, the combination with the continuous feed mechanism, the arms mounted on a shaft pivoted in the main frame, the frame mounted at the point of exposure, the pins carried in said frame, the blocks on said pins, the pins or studs projecting from the sides of the blocks and engaging in slots in the arms, whereby when the arms are reciprocated the pins will be moved back and forth, and mechanism for reciprocating the arms: substantially as described.

5. In a kinetographic camera, the combination with the continuous film-feeding mechanism, means for arresting the film, at the point of exposure, the pivoted horizontal frame, mechanism for reciprocating said frame vertically whereby in its downward movement it will strike the film and feed it forward; substantially as described.

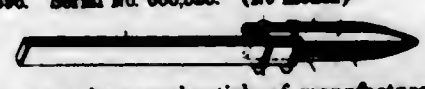
6. In a kinetographic camera, the combination with the continuous film-feeding mechanism, means for arresting the film at the point of exposure, the horizontal pivoted frame, the drive-shaft, the eccentric mounted on the drive-shaft, connection between the pivoted frame and eccentric, whereby the frame will be reciprocated in substantially vertical path and in its downward movement will strike the film sharply and feed it forward; substantially as described.

611,282. FIRE-KINDLER. SAMUEL L. BLIGH, Custard's, Pa. Filed Sept. 26, 1897. Serial No. 652,993. (No model.)



Claim.—In a fire-kindler, a cross-head having a longitudinal chamber B provided with openings *c* through its top; the plugs *a* for closing the ends of the chamber, a filling placed in the chamber to receive oil, an extension F projecting at an angle from the cross-head and provided at its end with an opening, and the supply pipe which is inserted in the opening in the extension, combined with an outer pipe E which protects the supply-pipe, and pins *d* which project from the openings *c* in the cross-head, and which have their inner ends embedded in the filling in the chamber, substantially as shown and described.

611,288. POST-BASE. GEORGE W. BROWN, Avoca, Mich. Filed July 25, 1896. Serial No. 600,523. (No model.)



Claim.—1. As an improved article of manufacture, the herein-described fence-post base having opposite flanges tapering to a common driving-point, one of said flanges terminating in a flat or horizontal upper end below the upper ends of the others, the upper end of the opposite flange also being flat or horizontal.

2. The combination with a fence-post of a base having opposite flanges tapering to a common driving-point, one of said flanges terminating in a flat or horizontal upper end below the upper ends of the others, the upper end of the opposite flange also being flat or horizontal, the faces of two of the flanges forming a lateral bearing against which the fence-post is secured, and the short flange forming a vertical support for the post, substantially as described.

611,284. KUMISS COMPOUND. JOHN CARRICK, New York, N. Y. Filed Oct. 5, 1891. Renewed Feb. 23, 1898. Serial No. 671,328. (No specimens.) Patented in England Dec. 7, 1891, No. 21,372.

Claim.—1. As an article of manufacture, a concentrated, dry, artificial kumiss compound, containing peptonized milk and adapted, upon the addition of water, to form a nutritious, easily-digested, and assimilable effervescent food beverage.

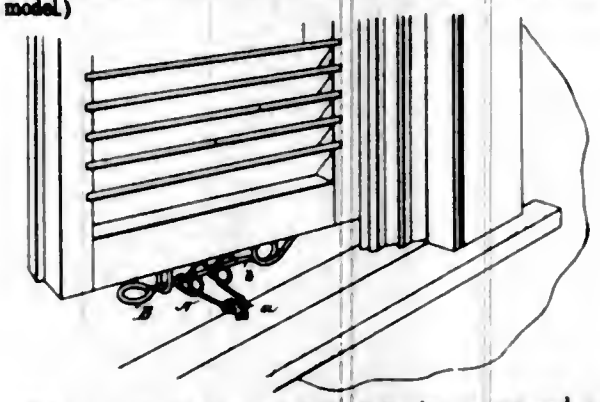
2. As an article of manufacture a concentrated, dry artificial kumiss compound, containing partially-digested milk and soluble casein and adapted, upon the addition of water, to form a nutritious, easily-digested and assimilable effervescent food beverage.

3. An artificial kumiss compound in dry form containing powdered milk, sugar, an alkaline carbonate, as carbonate of soda, and a suitable acid, and adapted, upon the addition of water, to form an effervescent food beverage.

4. An artificial kumiss compound in dry powdered form containing partially digested or peptonized milk, sugar, an alkaline carbon-

ate, as carbonate of soda and a suitable acid, and adapted, upon the addition of water, to form an effervescent food beverage.

611,235. SUPPLEMENTAL BLIND-LATCH. HENRY G. CLEAVELAND, Newton, Mass. Filed July 21, 1897. Serial No. 645,332. (No model.)



Claim.—1. An auxiliary blind-latch having at one end a cross-bar *a*, at the other end hooks or means for attaching the cross-bar to a blind latch or catch in a manner to permit the cross-bar to be swung vertically in relation thereto, and a spring in said latch which is noo-operative when the cross-bar is in its lowest or removed position and is made operative by the bringing of the cross-bar to operative or engaging position, and which then acts to hold the cross-bar in engaging position.

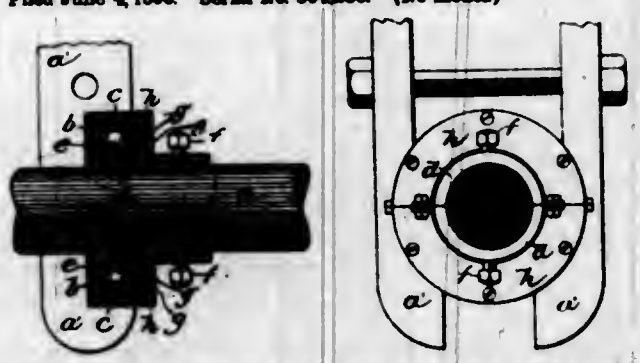
2. The combination of a blind-latch and a blind-catch adapted to make ordinary engagement with each other in locking the blind in its closed position, and an auxiliary blind-latch having at one end a cross-bar and at the other end means for detachably securing it to the blind latch or catch and arranged to permit of the engagement of the main latch and the catch to fully close the blind or the engagement of the auxiliary latch with the catch or latch to hold the blind partially open, or to be disengaged from the latch or catch to permit the free swinging of the blind.

3. An auxiliary blind-latch comprising a loop having at one end a locking-bar to engage a catch or latch and at the other end a means for securing it to a latch or catch comprising sections of the loop bent to form holding hooks or eyes having yielding entrances.

4. A blind-latch having a locking-bar, springs for permitting vertical movement of the bar and for holding it in engagement with a latch or catch, and means cooperating with sections of the springs to form attaching devices and having steadying extensions or stays therefrom.

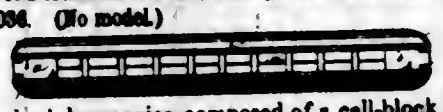
5. The blind-latch herein described, made of a single piece of metal and shaped to provide the arms a', a^2, the bar a, the springs a^3, the extensions a^4, the return-section a^5 bent inward and shaped as specified, as and for the purposes set forth.

611,236. BALL-BEARING. DANIEL CRANE, Seneca Falls, N. Y. Filed June 4, 1896. Serial No. 594,206. (No model.)



Claim.—In combination with a shaft, a cup *b* through which the said shaft extends, a collar *d* secured to the shaft and having an outer face with a concavity or groove surrounding the same about midway the distance between the shaft and the edge of the collar and an inner face with a groove therein, a cap fitting over the said collar and having an inwardly-extending portion with a groove therein corresponding with the groove in the inner face of said collar, and an outer portion at right angles to the inwardly-extending portion, said outer portion being parallel with the shaft and abutting against the outer edge of the cup, balls mounted in the cup and engaging in the concavity or groove in the outer face of the collar, and balls engaging the grooves in the inner face of the collar and the adjacent portion of the cap, whereby the said cap is held out of contact with the collar at any point and the collar prevented from contacting with the cup, and the said cup also held in its adjusted position by the balls engaging the groove thereof, substantially as and for the purposes specified.

611,237. HARMONICA. CHARLES L. CURTIS, New York, N. Y., assignor to Ferdinand Strauss, same place. Filed Apr. 1, 1898. Serial No. 676,036. (No model.)



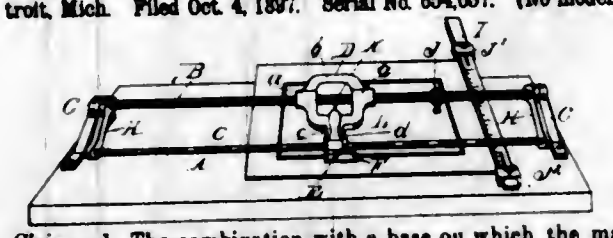
Claim.—1. A harmonica composed of a cell-block having transverse grooves at its ends, and of covers having flanged ends adapted to engage said grooves, substantially as specified.

2. A harmonica composed of a cell-block having transverse grooves at its ends, and of covers having inwardly-extending flanged ends adapted to engage said grooves, substantially as specified.

3. A harmonica composed of a cell-block having transverse grooves at its ends, and of covers having inwardly-extending flanged ends adapted to engage said grooves, and an inwardly-extending nose, substantially as specified.

4. A harmonica composed of a cell-block having transverse grooves at its ends, reed-plates having a longitudinal groove, and covers having end flanges adapted to engage the transverse grooves, and a spring-nose adapted to engage the longitudinal groove, substantially as specified.

611,238. PICTURE-MATTING CUTTER. PHILLIPP DRINKAUS, Detroit, Mich. Filed Oct. 4, 1897. Serial No. 654,057. (No model.)



Claim.—1. The combination with a base on which the matting or material to be cut may be laid, a guide-rod extending above the base and parallel thereto, and a knife-carriage slidingly secured thereon, of a presser-bar parallel to said guide-rod and a bearing on said knife-carriage adapted to slide upon said presser-bar and hold it against the work while the cut is being made.

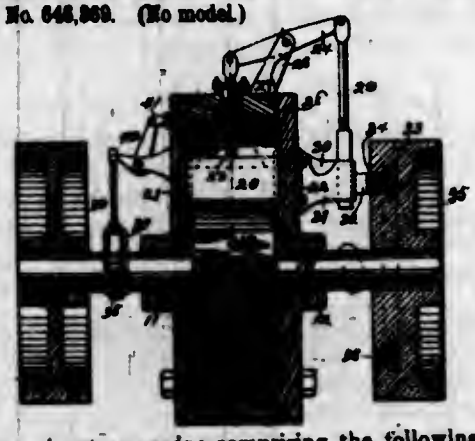
2. The combination with a base on which the matting or material to be cut is laid, and a guide-rod extending above the base, parallel thereto, of a presser-bar parallel to said guide-rod and a knife-carriage having a rotary and a sliding engagement with said guide-rod and slidingly secured to said presser-bar so as to have a limited vertical play thereon, permitting the bar to rest on the work while the knife is inserted therethrough and the carriage to then bear on said presser-bar while the cut is being made.

3. In a matting-machine, the combination with the traveling knife-holder, of a marker secured to said holder, having a bearing on the matting in a line parallel to the line of cut in front and rear of the knife and adapted to make a parallel border marking simultaneously to the making of the cut, but extending beyond said cut at each end.

4. In a matting-machine, the combination with the traveling knife-holder, of a marker secured to said holder having a bearing on the matting-stock in front and rear of the knife in a line parallel to the line of cut, and adapted to make a border-marking parallel to the cut and extending beyond the same at each end a distance equal to the space between said cut and marking.

5. In a matting-machine, the combination with a base and knife-carriage, of a scaled rod above the base on which said carriage is adapted to travel, a scaled stop-rod secured to the base at right angles to said rod and the adjustable stops J, J′ and J^1 respectively secured to said rod and stop-rod.

611,289. ROTARY ENGINE. ENOCH H. EATON, Moulton, Iowa, assignor of one-half to J. A. Payne, same place. Filed Aug. 3, 1897. Serial No. 646,869. (No model.)



Claim.—A rotary engine comprising the following elements in combination, to wit: a casing having ingress and egress ports; a con-

centric piston mounted within said casing; a gate 20 mounted for reciprocation transversely of the casing; a lever mounted for oscillation; a stem connecting one end of the lever with the gate 20; a pitman connected to the other end of the lever; guides mounted on the casing and laterally extended therefrom to receive and guide the pitman; a pin laterally extended from the lower end of the pitman and provided with a beveled head 33; a main shaft carrying the concentric piston; a wheel mounted on the main shaft and provided with a cam-groove in its face adjacent to the casing, which cam-groove is reamed out and undercut to receive the beveled head 33 and widened at the reëntrant portion thereof to permit removal and insertion of said head therein; a steam-chest mounted on the casing; a slide-valve in said steam-chest controlling the ingress-ports to the casing; a bell-crank lever mounted on the casing and connecting at one end to the slide-valve; an eccentric connected to the other end of the bell-crank lever; an eccentric wheel or disk mounted on the main shaft and connected with the eccentric; and a power-wheel mounted on the main shaft.

611,240. BRUSH. ALANSON C. BETTERBOOK, Northampton, Mass. Filed Sept. 7, 1895. Serial No. 561,791. (No model.)



Claim.—A brush having a handle of greater thickness than the body thereof, and comprising two metallic shells, bristles inserted in one of said shells and secured therein, a wooden reinforce of uniform thickness contained within the other of said shells, substantially filling said shell and having its surface cemented to the inner surface of said shell, and a strip of plastic composition extending lengthwise along and adjacent to the middle line of said reinforce, and molded to fit the interior contour of the adjacent portions of the shell, whereby it assists in connecting the reinforce to the shell and gives to the reinforce enlargements fitted to the interior enlargements of the shell, as and for the purposes set forth.

611,241. CUFF. JAMES F. FELLOWS, Troy, N. Y., assignor to Fellows & Co., same place. Filed Oct. 24, 1896. Serial No. 609,953. (No model.)



Claim.—A detachable link-cuff, provided near one end with a buttonhole-tab secured to the inner face thereof at a point slightly remote from one end of the cuff and projecting beyond the same, with a buttonhole in the projecting end of the tab and having in the opposite end of the cuff-body a corresponding buttonhole, substantially as described.

611,242. BOTTLE-SEAL. JOSEPH L. FOLLETT, New York, N. Y. Filed Mar. 18, 1895. Serial No. 542,084. (No model.)

Claim.—1. A bottle combined with a frangible cap or capsule, having an internal spring device adapting the cap or capsule to be forced over the outer end of the neck of the bottle and to be retained by the engagement of the spring device under a shoulder on said outer end.

2. The combination with the neck of the bottle or other package and the seal or cap thereon, the two provided on their meeting faces with matching recesses, of an automatically-operating spring-yielding lock or detent located in and projecting from the recess in the one, and adapted to also enter the recess on the other, when the two parts are fitted together with their recesses in register substantially as and for the purposes hereinbefore set forth.

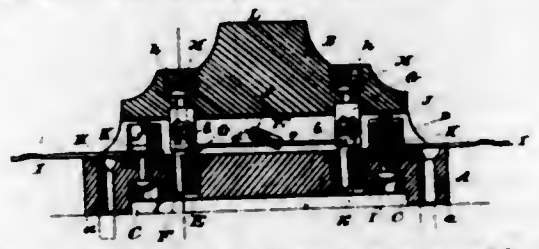


3. The cap or seal proper and the bottle neck provided on their meeting faces with matching annular grooves, in combination with an automatically-operating spring-yielding detent contained in the one groove and adapted to project partly therefrom into the other groove when the cap is fitted to the neck, as set forth.

4. The corrugated spring-annulus, in combination with the cap or seal proper and the bottle-neck provided on their meeting faces with matching annular grooves, substantially as and for the purposes hereinbefore set forth.

5. A bottle combined with a frangible cap or capsule, having an internal spring device adapting the cap or capsule to be forced over the outer end of the neck of the bottle and to be retained by the engagement of the spring device under a shoulder on said outer end, substantially as and for the purposes hereinbefore set forth.

611,248. SAFETY-FUSE FOR ELECTRIC CIRCUITS. GEORGE W. GARDANIER, Nyack, N. Y., assignor of three-fourths to David G. Black, Lake Hill, N. Y., and Thomas J. Smith, Roselle, N. J. Filed Dec. 16, 1897. Serial No. 662,153. (No model.)



Claim.—1. The fuse-holder comprising the upper and lower portions, one being removable from the other and said portions forming between them the inclosed chamber or space, combined with the fuse-supports carried by said removable portion and being in electrical connection with the main conductors, and the fuse connected with said supports and being within said inclosed space and comprising the wires *d*, *e*, in electrical connection with one another, the end of the wire *d* being attached to and wound around the end of the wire *e* to form a heat-coil *f*; substantially as and for the purposes set forth.

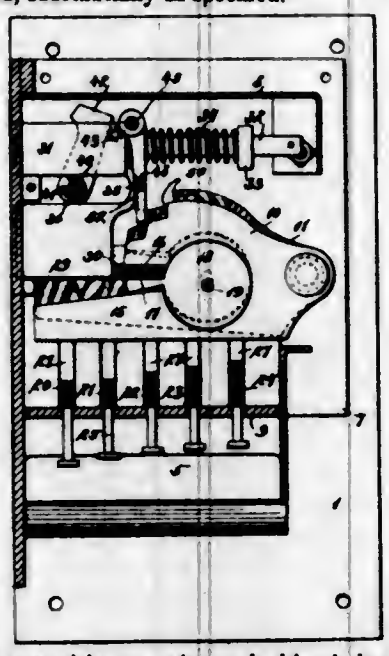
2. The fuse-holder comprising the portions forming an inclosed space between them, combined with the fuse in said space, and means connecting said fuse in the electric circuit, said fuse comprising the insulated resistance-wire *d* and soft wire *e* connected with one another, and the wire *d* forming the heat-coil *f* around said wire *e*; substantially as and for the purposes set forth.

3. The fuse-holder comprising the lower portion A of elongated form and having the sides D, D and apertures E, and the upper portion B having the handle L, and recesses *h*, *i*, and adapted to said lower portion A, combined with the metallic sleeves F fitting said apertures E and having the lateral extensions H included in the electric circuit, the plugs G fitting said recesses *i* at their upper ends, the screws M entering said recesses *h* and securing said plugs, and the fuse removably connected to said plugs, the lower ends of said plugs being formed of the spring-fingers snugly fitting said metallic sleeves, and said recesses *h* being filled above the screw-heads therein with plaster-of-paris or other suitable non-conducting material; substantially as set forth.

611,244. LOCK. ALFRED L. GARLOUGH, St. Paul, Minn. Filed Jan. 27, 1896. Serial No. 577,185. (No model.)

Claim.—1. A lock, comprising a casing, a locking-bolt movable therein, a latch-bolt movable in the casing, a series of tumbler-carriers mounted to swing in the casing, the said tumbler-carriers having openings at one side in line with a projection of the locking-bolt, tumblers adjustable across said openings, means for lifting the tumbler-carriers one independently of the other, and means for moving

the locking and latch bolts inward after said tumbler-carriers shall have been lifted, substantially as specified.



2. A lock, comprising a casing, a locking-bolt movable therein and having an upward projection, a latch-bolt movable in the casing and adapted to engage with said upward projection, a series of tumbler-carriers mounted to swing in the casing, each tumbler-carrier having an opening at its front in the line of movement of a shank-plate on the locking-bolt, tumblers adjustable across said openings, means for lifting the tumbler-carriers one independently of another, a shaft extending through the lock-casing, operating devices on the inner and outer ends of said shaft, and an arm on said shaft within the lock-casing adapted to engage with a projection on the latch-bolt, substantially as specified.

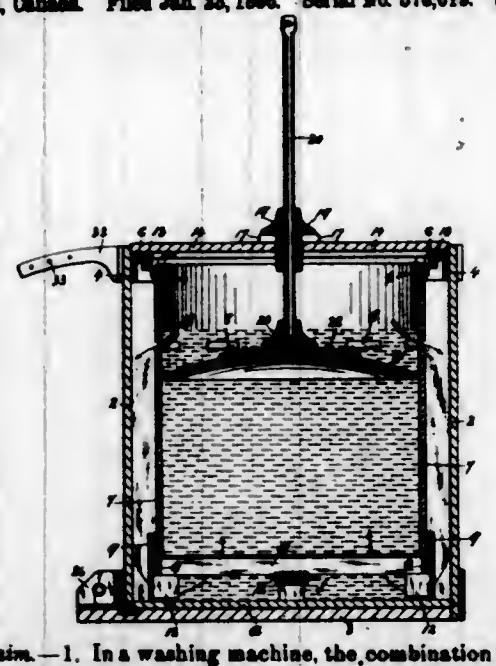
3. A lock, comprising a casing, a locking-bolt movable therein and having an upwardly-extended flange, a latch-bolt movable in the casing and adapted to engage with said flange, a series of tumbler-carriers mounted to swing in the casing, each having an opening in its forward portion in line with the shank-plate on the inner end of the locking-bolt, tumblers adjustable across said openings, a shaft extended through the lock-casing and having turning devices on the inner and outer ends, an arm on said shaft within the casing adapted to engage with a projection from the latch-bolt, another shaft extended through the casing and having turning devices on its inner and outer ends, and means carried by said other shaft for engaging with the locking bolt to move it to its locking position, substantially as specified.

4. A lock, comprising a casing, tumbler-carriers mounted to swing in the casing, means for moving said tumbler-carriers vertically from either the inner or the outer side of a door to which the lock may be attached, a locking-bolt movable in the casing and having a shank extended in the line of openings in the tumbler carriers, tumblers adjustable across the openings in said carriers, a latch-bolt movable in the casing and adapted to engage with an upward projection on the locking-bolt, a shaft extended through the lock-casing, an arm on said shaft within the casing and engaging with a pin extended from the latch-bolt, an operating-latch on the outer end of said shaft, a sleeve mounted on the inner end of said shaft and adapted to rotate relatively thereto, a latch on said sleeve, a hook carried by said sleeve within the lock-casing, another shaft extended through the lock-casing and having operating devices on its inner and outer ends, an arm depending from said shaft within the lock-casing, a plate on said arm extended transversely of the tumbler-carriers, and a projection on said arm adapted to be engaged with the hook on the sleeve to hold the plate in engagement with the upper sides of the tumbler-carriers, thus forming a safety-latch, substantially as specified.

5. A lock, comprising a casing, a locking-bolt movable therein, a spring-pressed latch-bolt movable in said casing, means for moving said latch-bolt and also for moving the locking-bolt, a series of tumbler-carriers mounted to swing in the lock-casing, the said carriers having openings in the line of movement of an extension on the locking-bolt, tumblers adjustable across said openings, plates movable in guides underneath the tumbler-carriers, the said plates having upward projections to engage with the tumbler-carriers, and pins extended downward from said plates through openings in the bottom plate of the lock-casing, each plate having two such pins, one pin being at one side of the partition and the other pin at the other side of the said partition, substantially as specified.

6. In a lock, a plate-like tumbler-carrier having an outward opening, a disk mounted to rotate relatively to said carrier, and a tumbler extended from the disk into the opening of the carrier, substantially as specified.

611,245. WASHING-MACHINE. WILLIAM F. GLIDDEN, Ingersoll, Canada. Filed Jan. 23, 1896. Serial No. 576,619. (No model.)



Claim.—1. In a washing machine, the combination with the reservoir, and an inclosed cylinder having a grate at its bottom and perforations in its sides; of a standard pivotally connected at one end to the reservoir and having a fork at its other end, a headed bolt pivoted in said fork, a swivel mounted on the bolt and having a bifurcated body, a lever pivoted in the bifurcation, an adjustable clip on the lever, a plunger-rod connected with the clip, and a plunger carried by the rod within the cylinder, as and for the purpose set forth.

2. In a washing-machine, the combination with the reservoir 2 having a raised bottom *a* forming a chime which is notched at a suitable point, a bed-plate 3 of the same thickness as the height of the chime and extending across the bottom through the notch and beyond the body, and a socket-block 26 secured on the projecting end of said plate; of a standard pivoted at its lower end to the block and having a swivel at its other end, an arm secured to the reservoir adjustably engaging the standard a lever pivoted in the swivel, a plunger carried by the lever, and a cylinder within the reservoir and within which said plunger reciprocates, as and for the purpose set forth.

3. In a washing-machine, the combination with an upright reservoir, a cylinder therein, a plunger within the cylinder, a plunger-rod, a lever having a clip by which the rod is attached thereto, a standard pivoted at one end to the reservoir, and a swivel-and-pivot connection between its other end and one end of said lever; of an arm 32 secured to and projecting from the reservoir through a hole 34 in the standard, said arm having a number of pin-holes 33, and a pin 35 removably passing through the standard and across its hole and engaging one of said holes 33, as and for the purpose set forth.

4. In a washing-machine, the combination with a cylindric reservoir having in its mouth an internal flange *c* provided with openings 5, a cover resting on said flange and having a guide, and means for securing the cover in place; of a cylinder 7 within the reservoir, flanges 13 of L shape secured to said cylinder with their horizontal members standing above its upper end and adapted to said openings 5, stops 6 pendent from the internal flange beneath its openings, a plunger within the cylinder whose rod passes through said guide, and means for reciprocating said rod, as and for the purpose set forth.

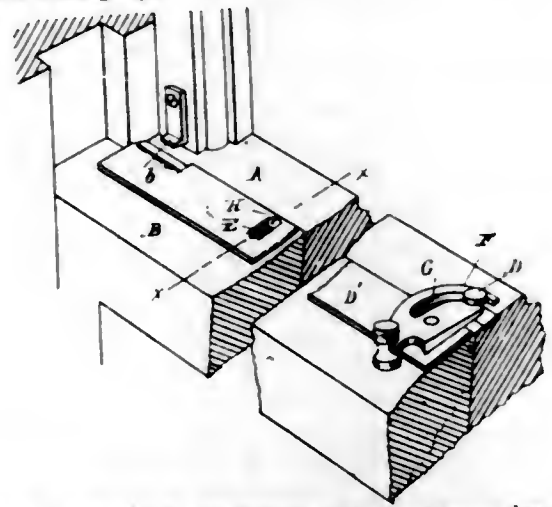
5. In a washing-machine, the combination with a reservoir, a cylinder therein, a plunger within the cylinder, and means for reciprocating said plunger; of straps 9 secured to the cylinder and projecting below the same with inturned lower ends, supporting-blocks 12 secured to the straps upon their inturned ends, a hoop *e* supported upon the blocks within the straps, a transverse bed-piece *f* connecting two of the blocks just beneath the hoop, and grate bars or slats 10 secured at their ends within the hoop, extending in parallel lines across the same and at right angles to the bed-piece, and notched on their under sides to receive the latter, all substantially as and for the purpose set forth.

611,246. SASH-LOCK. GEORGE W. GOLDEN, Detroit, Mich. Filed Feb. 26, 1898. Serial No. 671,744. (No model.)

Claim.—1. In a sash-lock for meeting-rails of sashes, the combination of a plate slidably secured to one sash, a cam pivoted on said plate, a stud on the second sash with which said cam engages for moving the plate, and locking-lugs carried by said second sash into engagement with which said plate is moved by said cam.

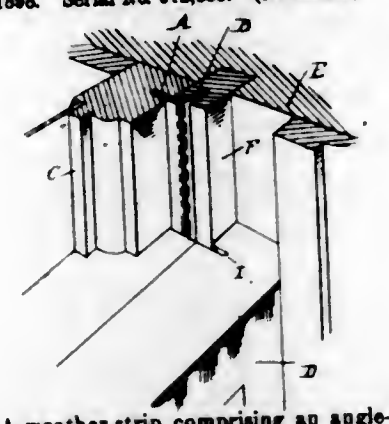
2. In a sash-lock for meeting-rails of sashes, the combination of a plate provided with a guide-slot, a stud secured to one sash work-

ing in said guide-slot, an inclined bearing on said plate engaging with a portion of said stud, locking-lugs on the second sash having faces adapted to engage with the face of said plate one of said faces being inclined, and means for moving the plate into locking engagement with said locking-lugs.



3. In a sash-lock for the meeting-rails of window-sashes, the combination with a plate having at each end a beveled edge and guide-slots having inclined bearings at the sides thereof, screws passing through said guide-slots into the lower sash having heads engaging said inclined bearings, locking-lugs secured to the upper sash adapted to engage said beveled edges, a stud D secured to the upper sash, and a cam pivoted to said plate having a slot in which said stud D works, substantially as and for the purposes described.

611,247. WEATHER-STRIP. GEORGE W. GOLDEN, Detroit, Mich. Filed Mar. 7, 1898. Serial No. 672,835. (No model.)

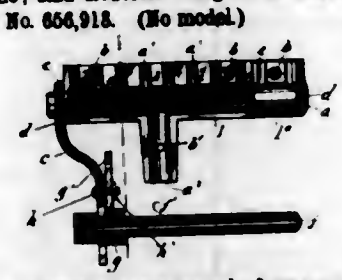


Claim.—1. A weather-strip comprising an angle-bar formed of sheet metal each wing thereof being doubled, a weather-strip formed of sheet metal bent centrally into an angle-bar and having the end portions of each wing doubled upon itself to form a loop, one wing being adapted to engage in a groove in the window-sash and the other to engage in a groove in the parting-strip, the wing in the parting-strip being so formed as to make a nailing-slot between the parts thereof.

2. A weather-strip formed of two angle-bars, joining at the meeting-rails of the sash and each angle-bar having a wing which engages a slot in the meeting-rail and a laterally-extending wing, the lateral wings upon the two sections extending in opposite directions.

3. In combination with a longitudinally-grooved parting-strip and an upper and lower sash having grooves in line with the outer face of the parting-strip, of a weather-strip formed of sheet metal bent to form an angle-bar, each wing of the angle-bar being looped, two sections being slotted and overlapping at the meeting-rail of the sash, arranged substantially as and for the purpose described.

611,248. GAS-BURNER. JAMES C. GRAY and THOMAS RODERICK, Columbus, Ohio; said Roderick assignor to said Gray. Filed Oct. 30, 1897. Serial No. 656,918. (No model.)



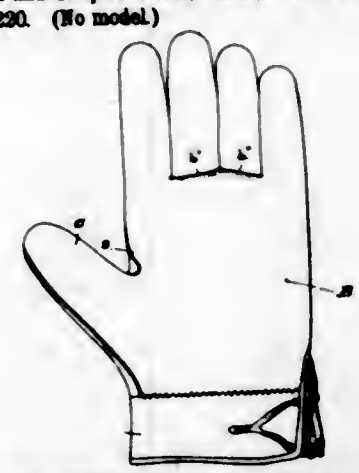
Claim.—A gas-burner constructed of two or more sections each of which is made of corresponding or matching halves, to form the horizontal tube *l* having jet-holes *a'* and mixing inlet-tube a^2, bolts *b* uniting the said matching halves, bolts *b'* passing through the inlet-tube a^2 and serving to mix the entrained gas and air, and the bolt *d* uniting the several sections and serving to spread the gas at the jet-holes, substantially as shown and described.

611,249. BRUSH. ROYAL L. HALL, Otsego, Wis. Filed Aug. 27, 1897. Serial No. 649,685. (No model.)



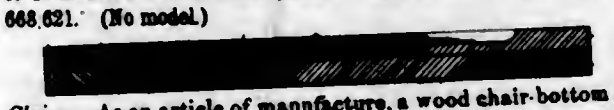
Claim.—A shampooing device, comprising a case formed at one end on a curve and having an aperture across the case in the curved portion thereof, the curve being concentric with the axis of an inclosed cylindrical brush, said cylindrical brush in the case journaled in its side walls and closely inclosed by the case except at said aperture where said brush is exposed through the aperture and except at the rear where there is a dust-chamber, said dust-chamber in said case at the rear of the brush, a door closing a door-aperture at the rear of the dust chamber, and means for rotating the brush.

611,250. GLOVE. HERBER L. HEATH, San Francisco, Cal., assignor to Harry Block and Leopold Block, same place. Filed Apr. 28, 1898. Serial No. 679,220. (No model.)



Claim.—A glove comprising the back A fashioned to form in one piece the back portion of the thumb and the back portions of all the fingers integral with the back; the front B fashioned to form the palm and the front and sides of the first finger and the fourth finger of the glove, the extension integral with the first finger on the edge thereof, and the quirk extending in a curve at the junction of the said extension with the crotch of the thumb; and the finger portions fashioned to form the insides of the third and middle fingers and united to the palm, as hereinbefore described.

611,251. CHAIR. WILLIAM H. HERBOLD, Chicago, Ill., assignor to F. Herbold & Sons, same place. Filed Jan. 31, 1898. Serial No. 668,621. (No model.)

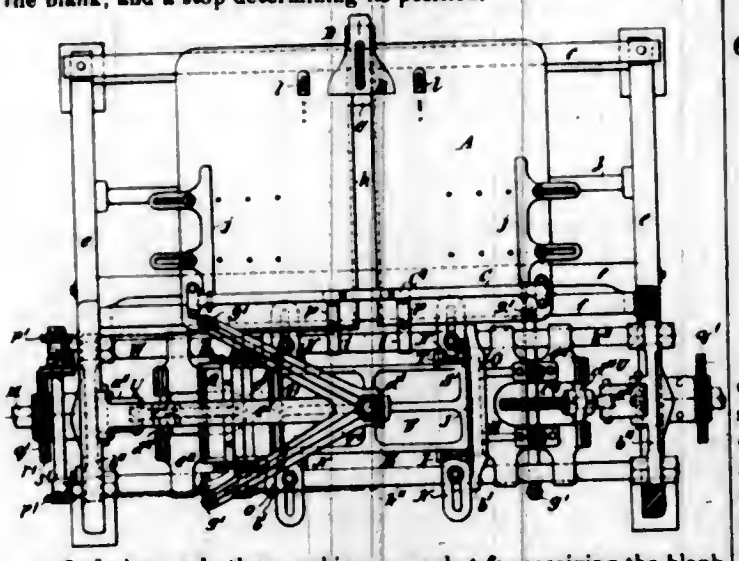


Claim.—As an article of manufacture, a wood chair-bottom built up of a plurality of layers cemented together, each layer being composed of a plurality of sections cemented together, the joints in adjacent layers being out of register and the grain of all contacting sections being parallel.

611,252. PAPER-BOX MACHINE. CHARLES M. HOLCOMB, New York, N. Y., assignor to Alfred Birnie, Springfield, Mass. Filed June 30, 1898. Serial No. 597,516. (No model.)

Claim.—1. In box and other machines, a feed-table, and box-forming mechanism, in combination with a gage permitting the feed of the lowermost of a pile of blanks, and having a vertically-movable portion, and a feed opposite the movable portion of said gage, moving the lowermost blank past said gage to said mechanism, a spring pressing said movable portion toward its working position, and a stop limiting its downward movement.

2. In box and other machines, a feed-table for holding a blank, a feed for moving the latter to a box-forming mechanism, and such mechanism, in combination with a gage, past which the blank is fed, having a yielding portion C', freely movable laterally of the direction of feed for the purpose set forth, a spring pressing such portion toward the blank, and a stop determining its position.



3. In box and other machines, a pocket for receiving the blank consisting of separate side plates N and adjustable end pieces O, the latter rigid and extending outwardly past said plates, a common support for both the plates and said pieces, a plunger for pressing the blank into such pocket, and pressers movable against the blank beneath said end pieces for pressing its gummed portions against said plunger.

4. In box and other machines, a forming pocket, and a plunger for pressing a blank therein, in combination with gummers for the blank normally withheld therefrom by the plunger and moving into contact with the blank for gumming it during the movement of the plunger toward it.

5. In box and other machinery, a pocket for receiving a blank, and a plunger pressing the blank into said pocket, in combination with a flap-folder at the corners of said pocket, moved by the plunger against the flap of the blank and folding it in between the plunger and the end of the blank as the plunger descends, and means in the path of the plunger and below the blank, operated by the plunger and operating the folder, consisting of a toe projecting into the pocket.

6. In box and other machines, a pocket, and a plunger for pressing a blank therein, in combination with pressers for pressing the blank against the plunger, and vertically-reciprocating pullers off carried by said pressers for removing the box-blank from the plungers.

7. In box and other machines, a gummer G, vertically movable and lifted above the surface to be gummed when inactive and falling by gravity thereon when active, means moving said gummer vertically, and a stop w' sustaining the gummer against contact with other than the surface to be gummed.

8. In box and other machines, a movable plunger, in combination with a pivotal frame R, and a gummer G carried thereby and movable up and down with the plunger, and means lifting and releasing said frame for its inactive and active periods, operating synchronously with the movement of said plunger.

9. In box and other machines, a movable plunger, in combination with a flap-folder I, comprising a finger S movable toward and from the flap, a box-forming pocket, and a projecting part T extending into said pocket, moving the finger, in the path of, underneath, and moved by, the plunger.

10. In box and other machines, a pocket E, having side plates N, pieces O, and pressers H, and bars K' adjustably carrying said parts.

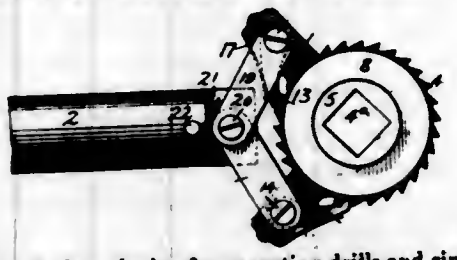
11. In box and other machines, the table A, gage C, feed D, pocket E, plunger F, a single shaft M operating said feed and plunger, and gumming and flap folding mechanism, and means operating said gumming and flap-folding mechanism from said plunger as it moves, substantially as and for the purpose set forth.

12. In box and other machines, the combination with the box-forming mechanism, and a presser for pressing the box, of a toggle operating said presser, consisting of two links, the one connected to the latter, and the other connected to the first and having a fixed laterally-projecting cam portion, an adjustable roller carried thereby, and a cam operating the toggle and engaging said roller carried by the latter link, and reacting thereagainst in a direction substantially approximating the direction of thrust of the toggle.

13. In box and other machines, the combination with the box-forming mechanism, of a pocket consisting of two end-folders and four rigid and adjustable side-folders for the blank, said side-folders each having a movable flap-folder therefor, carried by, and adjusted with the adjustment of, said side-folder.

14. In box and other machines, a box-forming mechanism, in combination with rigid arched end-folders for the box, having hollow under sides, bars carrying said folders and movable pressers below and within the hollows of said end-folders, and having slides embracing and sliding on said bars.

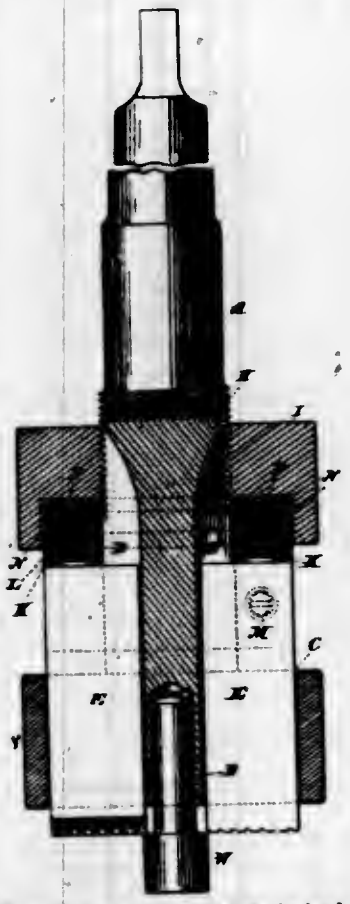
611,258. RATCHET-DRILL. JOHN HOULEHAN, Toledo, Ohio. Filed Dec. 9, 1897. Serial No. 661,223. (No model.)



Claim.—1. In a device for operating drills and similar tools, the combination of a frame or casing, a ratchet-wheel mounted within said casing, a collar surrounding the hub of the ratchet-wheel on each side of said wheel, an arm projecting radially from each collar and carrying a pawl, a handle adapted to slide lineally, and a toggle between said handle and the arms, by means of which, on the lineal reciprocation of the handle, the ratchet wheel and the tool-holder will be rotated, substantially as set forth.

2. In a device for operating drills and similar tools, the combination of a frame or casing, a ratchet-wheel mounted within said casing, a collar surrounding the hub of the ratchet-wheel on each side of said wheel, an arm projecting radially from each collar and carrying a pawl, a handle adapted to slide lineally, a toggle between said handle and the arms, by means of which, on the lineal reciprocation of the handle, the ratchet-wheel and the tool-holder will be rotated, and stops for limiting the lineal reciprocation of the handle, substantially as set forth.

611,254. TOOL FOR FACING CASTINGS. ALBERT R. JACKSON, Bound Brook, N. J. Filed Feb. 21, 1898. Serial No. 671,004. (No model.)



Claim.—1. The tool comprising the main body, the head at the lower end thereof, and the blade fixed in said head, combined with the collar freely fitting upon said body and adapted to have a direct longitudinal movement thereon, the blade fixed in said collar and extending through said head, the threaded nut engaging the thread on said body, and means connecting said nut and collar to compel the latter to travel longitudinally with said nut but without rotating; substantially as set forth.

2. The tool comprising the main body, the head at the lower end thereof, and the blades fixed in said head and projecting therefrom at opposite sides of the center of the tool, combined with the collar movable longitudinally on said body, the blades fixed in said collar

and extending through said head intermediate the said blades fixed therein, and the threaded nut engaging a male thread on said body and connected with said collar for moving the latter and its blades longitudinally but without rotating the same; substantially as set forth.

3. The tool comprising the main body, the head at the lower end thereof, and the blade fixed in said head, combined with the collar movable longitudinally on said body, the blade fixed in said collar and extending through said head, the nut for imparting longitudinal motion to said collar and the blade carried thereby, but without rotating the same and the pilot at the end of said tool to enter the casting to be acted on by said blades; substantially as set forth.

4. The tool comprising the main body, the head at the lower end thereof, and the blade fixed in said head, combined with the collar freely fitting said body, the blade fixed in said collar and extending through said head, the screw passing longitudinally through said collar and engaging the upper end of the blade carried thereby for adjusting said blade, the nut having the interior thread in engagement with the exterior thread on said body, and means connecting said nut and collar so as to compel said collar and its blade to follow said nut in a longitudinal direction but without rotating; substantially as set forth.

5. The tool comprising the main body the head at the lower end of said body, the blade fixed in a groove formed in said head, the transverse screw passing through said head to engage said blade, and the band or collar exterior to said head and closing the outer edges of the grooves therein, combined with the movable collar on said body, the blade carried thereby and extending downward through a groove formed in said head, a transverse screw extending into said movable collar to secure the blade therein, and the threaded nut engaging said body and movable collar for adjusting the latter and its blade; substantially as set forth.

6. The tool comprising the main body, the head at the lower end of said body, the blade fixed in a groove formed in said head, the transverse screw passing through said head to engage said blade, and the band or collar exterior to said head and closing the outer edges of the grooves therein, combined with the movable collar on said body, the blade carried thereby and extending downward through a groove formed in said head, a transverse screw extending into said movable collar to secure the blade therein, the threaded nut engaging said body and movable collar for adjusting the latter and its blade, and the pilot set in a recess in the lower end of the tool and having the exposed central head to enter the opening in the casting to be acted on; substantially as set forth.

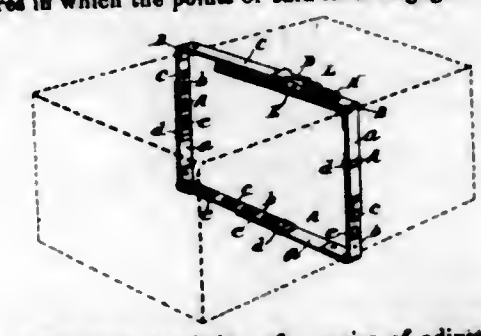
7. The tool comprising the main body portion having the vertical grooves and provided with the head at its lower end, said head being also grooved in line with the grooves in said body, combined with the blades secured in the grooves formed in said head and having their inner edges within the grooves formed in said body, the collar movable upon said body, the blades secured to said collar and extending downward through the grooves in said body and in said head, and the nut engaging said body and connected with said collar to effect the adjustment of the latter and the blades carried by it; substantially as set forth.

8. The tool comprising the main body having the male thread above its lower end and at its lower end the head, combined with the blades secured in said head, the collar movable upon said body and having the annular groove N, the blades secured to and carried by said collar and extending downward through said head, and the nut internally threaded to engage the aforesaid male thread on said body and provided with the screws entering said annular groove in said collar; substantially as set forth.

9. The tool comprising the main body, the head at the lower end of said body, the blades fixed in said head and projecting therefrom at opposite sides of the center of the tool, the transverse screws by which said blades are secured in position, and the vertical screws bearing upon the upper edges of said blades for their downward adjustment, combined with the collar movable upon said body, the blades secured in said collar, the transverse screws securing the blades in said collar, the vertical screws at the top of said collar and bearing upon the upper edges of the blades therein for adjusting the latter, and the internally-threaded nut engaging a male thread upon said body and connected with said collar for imparting to the latter longitudinal motion; substantially as set forth.

611,255. TRUNK-STRAP. ALFRED T. JONES, THOMAS B. SMITH, and CARL NILSSON, Pocatello, Idaho. Filed Nov. 29, 1897. Serial No. 660,125. (No model.)

Claim.—1. A trunk-strap consisting of three sections united by links permanently secured in the ends thereof, each of said sections consisting of two overlapping pieces adjustably united by a tongue-and-slot connection, and a locking-section consisting of two parts, one of which carrying an engaging locking-lever and the other part a series of apertures in which the points of said lever engage.



2. A trunk-strap consisting of a series of adjustable sections flexibly united by coupling-links, a locking section consisting of one part having a spring-detent depending therefrom, a lever carrying a staple to which the free end of said part is pivoted, said lever having lugs projecting therefrom below said point of pivot, a complementary section consisting of a perforated part lying under said part carrying the locking-lever having a series of apertures on opposite sides which register with the legs of the locking-lever and adapted to be engaged by said detent, and the lock for securing said lever when in horizontal position, substantially as set forth.

611,256. COMBINED SUPPORT AND LUGGAGE-CARRIER. CHARLES A. KENNEDY, Coaticook, Canada. Filed Apr. 2, 1897. Serial No. 630,433. (No model.) Patented in Canada Sept. 17, 1896, No. 53,502.



Claim.—1. A luggage-carrier comprising a receptacle designed to be mounted on a bicycle, and a hinged support mounted on the bicycle and arranged to swing beneath the receptacle to support the same, and adapted to swing downward and form a stand for the bicycle to maintain the latter in an upright position, substantially as described.

2. A luggage-carrier comprising a receptacle designed to be mounted on a bicycle at the front thereof, and a hinged support designed to be mounted on the front axle of the bicycle and arranged to swing upward beneath the receptacle in position for supporting the same and adapted to swing downward beneath the front wheel to provide a stand for the bicycle, and a fastening device for securing the support in its raised position beneath the receptacle, substantially as described.

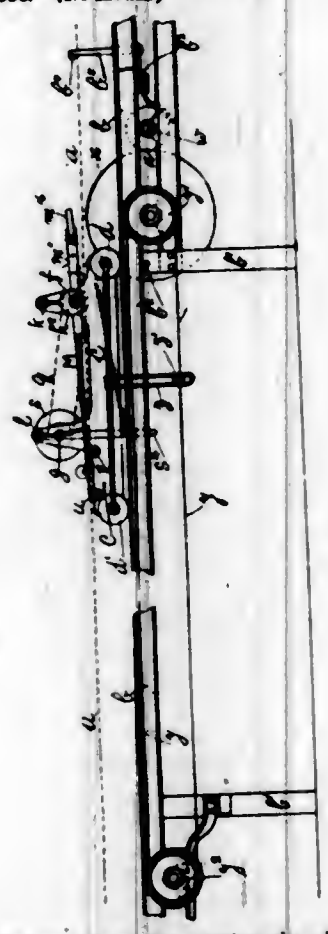
3. The combination with a bicycle, of a receptacle mounted thereon at the front thereof, a substantially triangular supporting-frame hinged to the front axle and arranged to swing upward beneath the receptacle for supporting the same and adapted to swing downward beneath the wheel to form a stand for the bicycle, and a spring-actuated catch mounted on the receptacle at the bottom thereof and provided at opposite sides with shoulders for engaging the supporting-frame when the latter is raised, substantially as and for the purpose described.

4. The combination with a bicycle, of a receptacle mounted thereon at the front thereof, a substantially triangular supporting-frame hinged to the front axle and arranged to swing upward beneath the receptacle for supporting the same and adapted to swing downward beneath the wheel to form a stand for the bicycle, and a substantially U-shaped spring-catch extending around the front and sides of the receptacle at the bottom thereof, provided at its ends with spring-coils and having at each side a series of bends forming shoulders for engaging the supporting-frame when the latter is raised, substantially as described.

5. The combination with a bicycle, of a luggage receptacle mounted thereon, a supporting-frame hinged to the front axle and arranged to swing upward beneath the receptacle to support the same and adapted to swing downward to form a stand for the bicycle, a spring-actuated catch mounted on the receptacle and arranged to engage the supporting-frame automatically when the same is swung upward, and a cord extending from the catch to the top of the receptacle for releasing the supporting-frame, the latter being arranged to swing downward automatically when released, substantially as described.

6. A bicycle-support comprising a supporting-frame, designed to be pivotally mounted on a bicycle at the front thereof and adapted to swing downward beneath the bicycle to hold the same in an upright position, said frame being bent at opposite sides to form eyes, plates arranged on the lower faces of the eyes, and fastening devices passing through the eyes, securing the plates to the frame and provided with points or spurs, substantially as and for the purpose described.

611,257. APPARATUS FOR CUTTING PILE OF VELVETS, &c. JOHN KERSHAW, Hebden Bridge, England. Filed Sept. 11, 1897. Serial No. 651,356. (No model.)



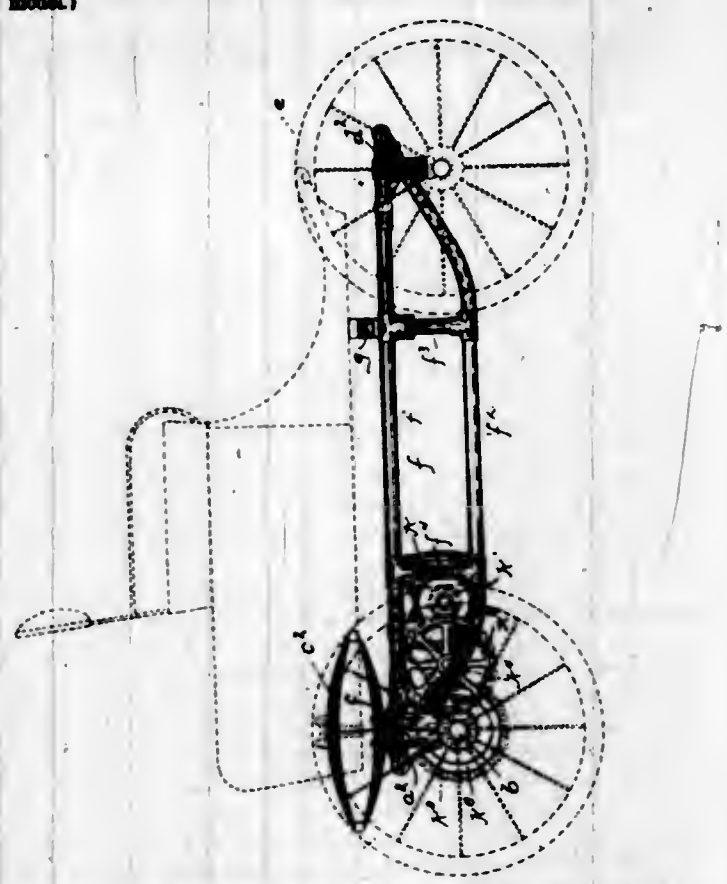
Claim.—1. In apparatus for cutting the pile of cords, velvets, and other weft pile fabrics, the combination of a reciprocating knife-carriage, wheels *d*, *d'* on which it is mounted, rails *b* on which the said wheels run, with cutting-knives M pivoted at *m* connections A^3 on each side of such pivot, sleeve *h* carrying such side connections, shaft *f* carrying such sleeve, said shaft being supported by the main framing of the carriage, together with the means for reciprocating such carriage, for the purpose and in manner substantially as herein set forth and shown in the drawings.

2. In apparatus for cutting the pile of cords, velvets, and other weft pile fabrics, the combination of the knife-carriage, and the knives M, with rods *k*, *l*, connections *h'*, *j'* sliding thereon, sleeves *h*, *j*, carrying such connections, bosses A^3 and forked piece j^3 carried by such sleeves, the screws *f*, *g* by which the said sleeves are moved, gearing *q* for forming a connection between the before-named screws, ratchet-wheel *r* attached to the end of one of the screws, pawls s', s^2, s^3, acting upon such ratchet-wheel, plate *s* carrying such pawls, leg extension s^4 from such plate, stop b^2 which, by contact, moves the said leg extension, all for the purpose and in manner substantially as herein set forth.

3. In apparatus for cutting the pile of cords, velvets, and other weft pile fabrics, the combination of the traveling knife-carriage, and the knives M, with the screw *g*, the sleeve *j* carried thereby, forked piece j^3 carried by such sleeve, projection j^3 forming part of such forked piece, rod *n* passing through such projection, rod *l* supporting rod *n*, lever *o* attached to rod *l*, cams *p* and *p'* with which the said lever comes in contact and whereby it is moved, together with the means for reciprocating the knife-carriage, for the purpose and in manner substantially as herein set forth and shown in the drawings.

4. In apparatus for cutting the pile of cords, velvets, and other weft pile fabrics, a knife M with vertical surface *m*, in combination with the spiked cylinder m^4, knife m^5 passing through such cylinder, spindle m^6 on which the said cylinder is eccentrically mounted, arms m^7 carrying such spindle, crank m^9, link m^{10} crank m^{11}, spindle m^{12} and catch m^{13} attached to such spindle, all forming a connected system for the purpose and in manner substantially as herein set forth.

611,258. TRUSS-FRAME FOR ELECTRIC VEHICLES. KARSTEN KNUDSEN, Chicago, Ill., assignor to the American Electric Vehicle Company, same place. Filed Oct. 20, 1897. Serial No. 655,835. (No model.)



Claim.—1. A frame for vehicles comprising front and rear transverse members each comprising two parallel tubes or bars lying in a horizontal plane and a pair of trussed reaches extending between and joining said transverse members, substantially as described.

2. A frame for vehicles comprising front and rear transverse members each comprising two parallel tubes or bars lying in a horizontal plane and a pair of trussed reaches extending between and joining said transverse members and each comprising a horizontal upper tube or bar and a lower tube or bar downwardly deflected at the intermediate portion and separated from the upper tube or bar by vertical posts, substantially as described.

3. A frame for vehicles comprising a pair of rear transverse members upon which the rear wheels are mounted, said members lying in a horizontal plane, a front transverse member, and a pair of trussed reaches extending between and joining said transverse members, substantially as described.

4. A frame for vehicles comprising a pair of rear transverse members, a front transverse member and a pair of trussed reaches extending between and joining the same and comprising each an upper bar or tube joining both rear transverse members and the front transverse member and a lower bar or tube joined at the ends with the front transverse member and with the rear transverse member of the rear pair and downwardly deflected at the intermediate portion and separated from the upper bar or tube by vertical posts, substantially as described.

5. A frame for vehicles comprising a rear transverse member, a pair of front transverse members lying in a horizontal plane, and a pair of trussed reaches extending between and adjoining the same, substantially as described.

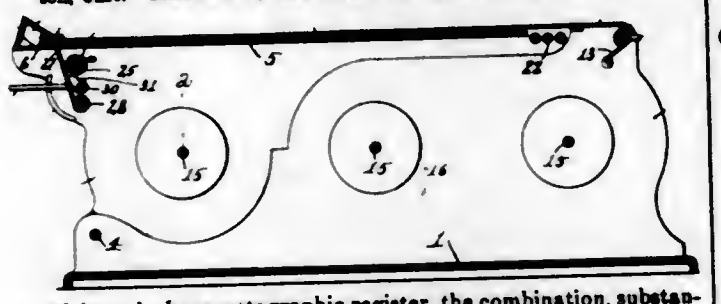
6. A frame for vehicles comprising a pair of rear and a pair of front transverse members and a pair of trussed reaches extending between and joining the same, and each comprising an upper tube or bar joining the four transverse members, and a lower downwardly-deflected bar or tube joined at the ends to the extreme rear and forward members and separated from the upper bar or tube by vertical posts, substantially as described.

7. A frame for vehicles comprising a pair of forward and a pair of rearward transverse members and a pair of longitudinal members all joined together and lying in a common plane, and a pair of deflected longitudinal members separated from the other longitudinal members by vertical posts, substantially as described.

8. A frame for vehicles comprising front and rear transverse members each comprising two parallel tubes or bars lying in a horizontal plane and trussed reaches joining the same, and intermediate motor-supporting bars or rods, substantially as described.

9. A frame for vehicles having a pair of rear transverse members lying in a horizontal plane, brackets carried thereon for supporting the rear axles, and a differential gearing between the ends of said axles, substantially as described.

611,259. AUTOGRAPHIC REGISTER. ALBERT KRAUTH, Hamilton, Ohio. Filed Jan. 3, 1898. Serial No. 665,491. (No model.)



Claim.—1. In an autographic register, the combination, substantially as set forth, of a casing, spindles therein for the support of paper-rolls, a tablet over the rolls and having a notch accessible to the finger from below in its forward end, a margin-frame over the tablet, a tearing-blade disposed across over the notched end of the tablet, a rocker carrying said blade and pivoted to the casing to the rear of the blade and below the tablet, and a spring connected with said rocker and urging the blade toward the tablet and from the vertical plane of the pivot of the rocker, whereby said blade moves rearwardly when rising.

2. In an autographic register, the combination, substantially as set forth, of a casing, spindles therein for the support of paper-rolls, a tablet over the rolls and having a notch in its forward end, a margin-frame over the tablet, a tearing-blade over the forward end of the tablet, a cross-bar rigidly supported over and free from the tablet to the rear of the tearing-blade, and a spring-pressed tension finger supported by the casing and having its end projecting through said notch to the under surface of said cross-bar.

3. In an autographic register, the combination, substantially as set forth, of a casing, spindles therein for the support of paper-rolls, a tablet over the rolls and having a notch in its forward end, a margin-frame over the tablet, a tearing-blade over the forward end of the tablet, a cross-bar rigidly supported over and free from the tablet to the rear of the tearing-blade, and a spring-pressed tension-finger supported in the casing and projecting forwardly and upwardly through said notch to said cross-bar.

4. In an autographic register, the combination, substantially as set forth, of a casing, spindles therein for the support of paper-rolls, a tablet over the rolls and having a notch in its forward end, a margin-frame over the tablet, a tearing-blade over the forward end of the tablet, a rocker pivoted to the casing and rocking said tearing-blade, a spring connected with said rocker and pressing said tearing-blade to the tablet, a cross-bar rigidly supported by the casing to the rear of the tearing-blade and above and free from the tablet, a spring-pressed tension-finger supported by the casing and having its end projecting through said notch to said cross-bar, and a cam-shaft with cams and a finger-lever arranged to raise the tearing blade from tablet and to depress the tension-finger from the cross-bar.

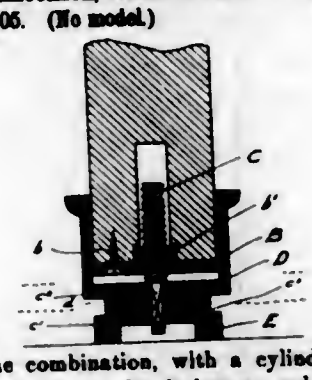
5. In an autographic register, the combination, substantially as set forth, of a casing having its side walls perforated, a spindle arranged for removable support in such perforations, a hub surrounding the spindle and projecting through the perforation in the side wall of the casing at one end of the spindle and sliding in said perforation, a handle on the outer end of said hub exterior to the casing, a flange on the inner end of said hub within the casing and of said hub exterior to the casing, a flange on the inner end of said hub adapted to engage the end of a roll of paper and press the opposite end of the roll against the opposite side wall of the casing, and a spring upon said hub urging said hub inwardly.

6. In an autographic register, the combination, substantially as set forth, of a casing, spindles mounted therein for the support of paper-rolls, a tablet having a notch accessible to the finger from below in its forward end, a pivot-shaft journaled in fixed position in the side walls of the casing to the rear of the forward end of the tablet and below the tablet, a rocker pinned to said shaft and carrying a blade resting across the notched end of the tablet, and a spring on said pivot-shaft and having one end secured to the shaft and the other end secured to a side wall of the casing.

7. In an autographic register, the combination, substantially as set forth, of a casing, a tablet supported thereby, a margin-frame hinged to the casing and having its rear end extending rearwardly beyond the tablet, a cover-latch pivoted to the casing and forming a rearward prolongation of the margin-frame and having its forward edge closing down over the rear edge of the margin-frame, and a spring urging said cover-latch downwardly upon the margin-frame.

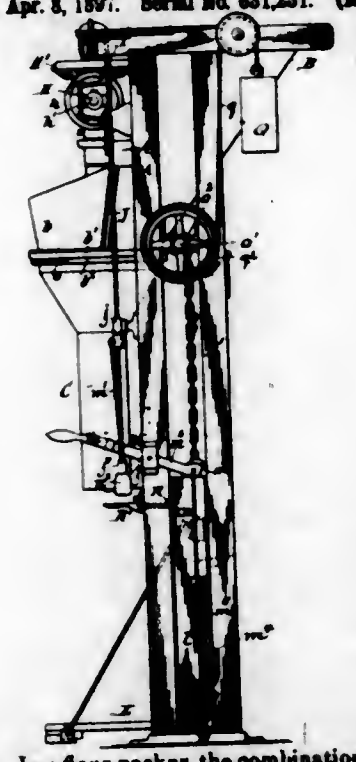
8. In an autographic register, the combination, substantially as set forth, of a casing, a tablet supported thereby, a holder for a roll of carbon-paper disposed at one side of the top of the casing, a margin-frame over said tablet and hinged at said carbon-paper holder, and a flexible flange upon the free edge of said margin-frame and arranged to cap down over the side wall of the casing opposite said carbon-paper holder and form a flexible clamp and tearing-blade.

611,260. LEG FOR BILLIARD, POOL, OR OTHER TABLES. AMÉDÉE F. LAMOUREUX, Montreal, Canada. Filed Sept. 12, 1897. Serial No. 651,505. (No model.)



Claim.—The combination, with a cylindrical table-leg, and a screw-threaded plate secured to its bottom end; of a thrust-plate resting on the floor and provided with a recess in its under side, a revoluble cylindrical cup encircling the said leg and having a nut portion *d* formed integral with its bottom and which rests on the said thrust-plate, a screw engaging with the said screw-threaded plate and provided with a shank which is secured in the nut portion of the said cup and which is revoluble in the said thrust plate, and a pin passed through the said shank in the said recess of the thrust-plate, substantially as set forth.

611,261. FLOUR-PACKER. CHAUNCEY A. LANPHERE, Silver Creek, N. Y., assignor to the Invincible Grain Cleaner Company, same place. Filed Apr. 8, 1897. Serial No. 631,231. (No model.)



Claim.—1. In a flour-packer, the combination with the feed-hopper provided on its front and rear sides with slots and a feed-shaft, of a front slide arranged in the front slot and provided with a slot which receives the feed-shaft, and a rear slide arranged in the rear slot and resting with its side portions on the front slide on opposite sides of its slot, and having at its inner end a lip which engages in the slot of the front slide, substantially as set forth.

2. In a flour-packer, the combination with the feed-shaft and the feed-hopper provided on its front and rear sides with slots, of a front slide arranged in the front slot and provided with a slot which receives the feed-shaft, and a rear slide covering the slot of the front slide and having at its inner end a lower stop which engages in the slot of the front slide and upper stops which are adapted to engage against the inner side of the feed-hopper, and a handle pivoted to the outer end of said rear slide, substantially as set forth.

3. In a flour-packer, the combination with the vertical feed-shaft, the horizontal driving-shaft, and the gear-wheels mounted on said shafts and adapted to be engaged and disengaged, of a vertical slide carrying the driving-shaft and provided with a gear-rack, a stationary bracket provided with a gear-rack, a gear-wheel having its opposite sides meshing with said gear-racks, and means for actuating said gear-wheel, substantially as set forth.

4. In a flour-packer, the combination with the vertical feed-shaft, the horizontal driving-shaft, and the gear-wheels mounted on said shafts and adapted to be engaged and disengaged, of a vertical slide carrying the driving-shaft and provided with a gear-rack, a stationary bracket provided with a gear-rack, a gear-wheel having its opposite sides meshing with said gear-racks and having on one side an annular flange engaging against one side of the gear-racks and on the opposite side a plate engaging against the opposite sides of the gear-racks, and means for actuating said gear-wheel, substantially as set forth.

5. In a flour-packer, the combination with the feed mechanism and the driving mechanism adapted to be coupled with or uncoupled from the feed mechanism, of a shifting-rod connected with the driving mechanism and provided at its lower end with a catch having a rounded head, a fixed stop adapted to be engaged by said catch, and a releasing-slide adapted to disengage the catch from said stop and provided with a cup into which said head enters and whereby the catch is directed toward said stop, substantially as set forth.

6. In a flour-packer, the combination with the feed mechanism and the driving mechanism adapted to be coupled with or uncoupled from the feed mechanism, of an upright shifting-rod connected with the driving mechanism and provided at its lower end with a catch, a stop adapted to be engaged by said catch, a releasing-slide adapted to disengage the catch from said stop, and an elbow-lever whereby said slide is operated, substantially as set forth.

7. In a flour-packer, the combination with the vertically-movable platform, the feed mechanism, and the driving mechanism adapted to be coupled with or uncoupled from the feed mechanism, of a shifting-rod connected with the driving mechanism and provided at its lower end with a catch, a stationary bracket provided with a stop adapted to be engaged by said catch, a releasing-slide guided on said bracket and adapted to disengage said catch from the stop, an elbow-lever pivoted on said bracket and having one of its arms connected with said slide, and a tappet on the platform adapted to engage with the other arm of the elbow-lever, substantially as set forth.

8. In a flour-packer, the combination with the vertically-movable platform and the feed mechanism of a driving mechanism adapted to be engaged with or disengaged from the feed mechanism, a shifting-rod connected with the driving mechanism and provided with a catch, a stop adapted to be engaged by said catch, a rock-lever connected with said shifting-rod for moving the same up or down, and a tappet on the platform adapted to engage the rock-lever, as the platform approaches the upward limit of its movement, and move the rock-lever and shifting-rod to throw the driving mechanism into gear, substantially as set forth.

9. The combination with the feed-shaft, the vertically-movable driving-shaft, the platform, and the shifting-rod connected with the driving-shaft and provided with a catch mechanism which is released for throwing the driving-shaft out of gear, of a pull-rod which is actuated by a tappet on the platform when said catch mechanism has been released as the platform approaches the limit of its downward movement and whereby the driving-shaft is positively moved out of gear after its shifting-rod has been released, substantially as set forth.

10. In a flour-packer, the combination with the vertically-movable platform and the feed mechanism, of a driving mechanism adapted to be engaged with or disengaged from the feed mechanism, a pull-rod connected with the driving mechanism, an eye or tappet arranged on the platform and moving lengthwise on said rod, and a spring interposed between said eye or tappet and a shoulder or rod, substantially as set forth.

11. In a flour-packer, the combination with the vertically-movable platform, the feed-shaft and the driving-shaft adapted to be engaged with or disengaged from the feed-shaft, of a shifting-rod, a rock-lever having one of its arms connected therewith, and a pull-rod connected with the other arm of the rock-lever and adapted to be operated by an eye or tappet on the platform, substantially as set forth.

12. In a flour-packer, the combination with the platform and the hoisting-chains, of a yoke consisting of two lower arms connected with the platform, two upper arms extending inwardly from the outer ends of the lower arms and connected with said chains, and a coupling connecting the inner ends of the upper arms, substantially as set forth.

13. In a flour-packer, the combination with the platform provided with an eye, and the hoisting-chains, of a yoke consisting of two lower arms connected by a seat which receives the eye of the platform, two upper arms connected at their outer end with the outer ends of the lower arms by seats which receive said chains, and coupling-blocks which are clamped by a bolt to the inner ends of the upper arms, substantially as set forth.

14. In a flour-packer, the combination with the brake-drum, the brake-band and the weighted brake-lever, of an adjustable stop which limits the braking movement of the lever and whereby the contact of the brake-band with the drum can be regulated independently of the pressure which is applied to the brake-lever, substantially as set forth.

15. In a flour-packer, the combination with the platform and its brake mechanism, of intermediate mechanism whereby the brake mechanism is automatically released after the package has been filled, for effecting the subsequent free downward movement of the platform, and again applied automatically during the last portion of the upward movement of the platform, substantially as set forth.

16. In a flour-packer, the combination with the platform and its brake mechanism, of intermediate mechanism whereby the brake mechanism is automatically released after the package has been filled, for effecting the subsequent free downward movement of the platform, and again applied automatically during the last portion of the upward movement of the platform, and a locking-bolt whereby the platform is locked down when it has reached its lowest position, substantially as set forth.

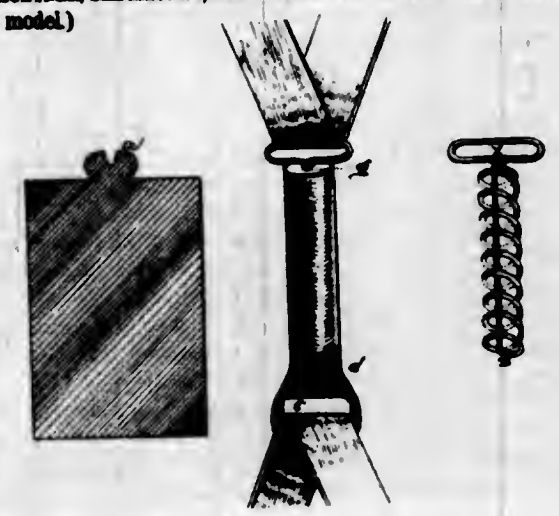
17. In a flour-packer, the combination with the movable platform and the feed mechanism, of a driving mechanism adapted to be engaged with or disengaged from the feed mechanism, a brake mechanism, connecting mechanism whereby the driving mechanism and the brake mechanism are simultaneously thrown out of action from the platform when the package has been filled, thereby allowing the platform to descend freely to its lowest position after the filling has been completed, and an automatic catch whereby the platform is locked in its lowest position and held against the upward pull of the platform-weights when the package has been removed, substantially as set forth.

18 In a flour-packer, the combination with the movable platform, the feed mechanism and the driving mechanism arranged in a movable support adapted to be engaged with or disengaged from the feed mechanism, of a brake mechanism arranged on one side of the platform, an upright shifting-bar arranged on the other side of the platform, mechanism connecting the shifting-bar with the movable support of the driving mechanism, and mechanism connecting said movable support with the brake mechanism, substantially as set forth.

19. In a flour-packer, the combination with the movable platform and the feed mechanism, of a driving mechanism adapted to be coupled with or uncoupled from the feed mechanism, a brake mechanism connected with the platform, and a slack connection between the driving mechanism and brake mechanism, whereby the driving mechanism during the initial portion of its uncoupling movement travels independent of the brake mechanism but the brake mechanism is compelled to move with the driving mechanism and release the platform during the last portion of the uncoupling movement of the driving mechanism, substantially as set forth.

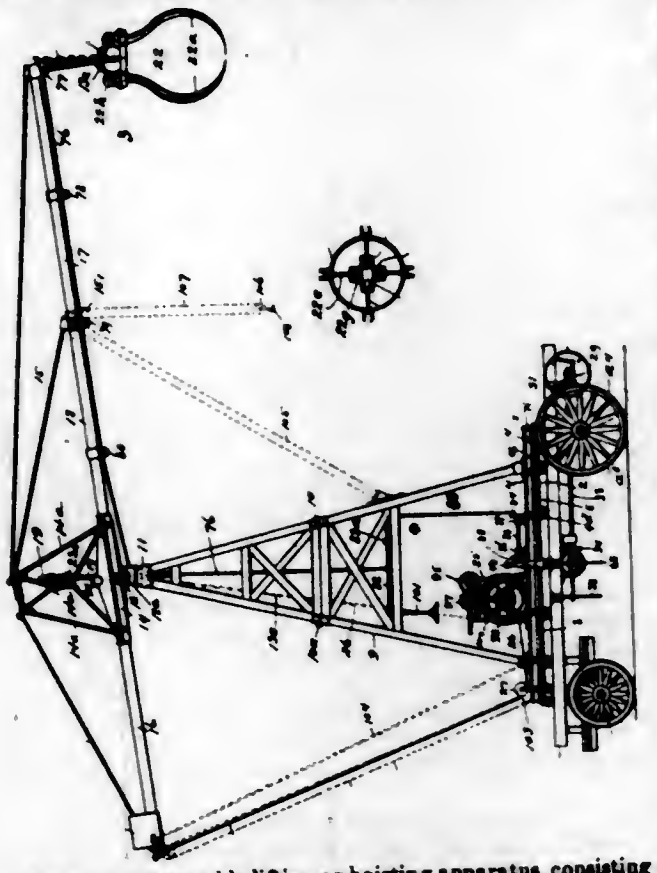
20. In a flour-packer, the combination with the movable platform and the feed mechanism, of a driving mechanism connected with the feed mechanism, a brake mechanism connected with the platform and provided with a brake-lever, a rock-lever connected with one arm to the driving mechanism, a rod connected with the other arm of the rock-lever and having a loop which receives said brake-lever, and an adjusting-screw arranged in said loop and adapted to engage with said brake-lever, substantially as set forth.

611,262. SPRING ATTACHMENT FOR SUSPENDERS. CHARLES E. LIENTHER, San Antonio, Tex. Filed Dec. 11, 1896. Serial No. 615,494. (No model.)



Claim.—A spring attachment for suspenders comprising a tubular casing, the walls of which are flattened or compressed below a certain point of the length thereof, a loop cut or formed in said flattened portion, a notched lobe adapted to be bent into a position to close the opposite open end of the casing, a spring having a central stem and an outer terminal loop, the latter forming a continuation of the stem, and serving to receive the suspender-braces, the stem of the spring being free to operate through the notch of the lobe, and the loop of the flattened extremity of the casing being adapted to receive the securing-straps, substantially as set forth.

611,268. HOISTING OR LIFTING APPARATUS. FEDOR LOUIS, New York, N. Y. Filed Apr. 27, 1897. Serial No. 634,089. (No model.)



Claim.—1. A portable lifting or hoisting apparatus, consisting of a stationary frame mounted on a truck, a pyramidal frame or support mounted thereon, a beam or crane mounted on said pyramidal frame or support, and adapted to swing in horizontal and vertical planes, one end of said beam or crane being longer than the other, a load-carrier connected with the longer end of said beam or crane, a windlass mechanism mounted on said truck-frame, a shaft which forms a part of said windlass mechanism, a brake-drum mounted on said shaft, a brake connected therewith, another drum mounted on said shaft and provided with a cord or rope which is wound thereon, said cord or rope being in operative connection with the shorter end of said beam or crane, another cord or rope connected with the load-carrier, and extending along the longer end of said beam or crane, and passing downwardly through said pyramidal frame or support, and devices for operating said brake, and the rope or cord connected with the load-carrier, substantially as shown and described.

2. A portable lifting or hoisting apparatus, consisting of a stationary frame mounted on a truck, a pyramidal frame or support mounted thereon, a beam or crane mounted on said pyramidal frame or support, and adapted to swing in horizontal and vertical planes, one end of said beam or crane being longer than the other, a load-carrier connected with the longer end of said beam or crane, a windlass mechanism mounted on said truck-frame, a shaft which forms a part of said windlass mechanism, a brake-drum mounted on said shaft, a brake connected therewith, another drum mounted on said shaft and provided with a cord or rope which is wound thereon, said cord or rope being in operative connection with the shorter end of said beam or crane, another cord or rope connected with the load-carrier, and extending along the longer end of said beam or crane, and passing downwardly through said pyramidal frame or support, and devices for operating said brake, and the rope or cord connected with the load carrier, and devices for turning said beam or crane horizontally, which are in operative connection with the windlass mechanism, substantially as shown and described.

3. A portable lifting or hoisting apparatus, consisting of a stationary frame mounted on a truck, a pyramidal frame or support mounted thereon, a beam or crane mounted on said pyramidal frame or support, and adapted to swing in horizontal and vertical planes, one end of said beam or crane being longer than the other, a load-carrier connected with the longer end of said beam or crane, a windlass mechanism mounted on said truck-frame, a shaft which forms a part of said windlass mechanism, a brake-drum mounted on said shaft, a brake connected therewith, another drum mounted on said shaft and provided with a cord or rope which is wound thereon, said cord or rope being in operative connection with the shorter end of said beam or crane, another cord or rope connected with the load-carrier, and extending along the longer end of said beam or crane, and passing downwardly through said pyramidal frame or support, and devices for operating said brake, and the rope or cord connected with the load-carrier, and devices for turning said beam or crane horizontally, which are in operative connection with the windlass mechanism, and said beam or crane being connected with a casing which is pivotally supported on said pyramidal frame or support, and said casing being provided with a frame consisting of upright braces with which are connected rods, which are connected with the opposite ends of said beam or crane, substantially as shown and described.

4. A portable hoisting or lifting apparatus, consisting of a truck, a stationary frame mounted thereon, a revoluble frame mounted on said stationary frame, a pyramidal frame or support mounted on said revoluble frame, a crane or beam pivotally supported on said pyramidal frame or support, and adapted to swing vertically thereon, and one end of which is longer than the other, a windlass mechanism mounted on said revoluble frame within the base of the pyramidal frame or support, a load-carrier connected with the longer end of said beam or crane, and provided with claws or arms, a shaft which forms a part of the windlass mechanism, and which is provided with two drums, one of which is provided with a cord or rope which is in operative connection with the shorter arm of said beam or crane, and the other with a brake, a cord or rope connected with the arms or claws of the load carrier, and extending downwardly into said pyramidal frame or support, and means for operating said shaft on which said drums are mounted, and devices connected with said windlass mechanism for turning said revoluble frame, substantially as shown and described.

5. A portable crane or hoisting apparatus, consisting of a truck, a main frame mounted thereon, a revoluble frame mounted on said main frame, a pyramidal frame or support mounted on said revoluble frame, a beam or crane mounted on said pyramidal frame or support, and adapted to swing in a vertical plane, and one end of which is longer than the other, a load carrier connected with the longer end of said beam or support, a windlass mechanism mounted on said revoluble frame, within the base of said pyramidal frame or support, and operative devices connected with said windlass mechanism, and said load-carrier, and devices connected with said windlass mechanism for turning said revoluble frame, substantially as shown and described.

6. A portable hoisting apparatus, consisting of a truck, a stationary frame mounted thereon, a revoluble frame mounted on said stationary frame, an upright frame or support mounted on said revoluble frame, a crane or beam mounted on said upright frame or support, and adapted to swing in a vertical plane, a windlass mechanism mounted on said revoluble frame within the base of said upright frame or support, a load-carrier connected with the longer end of said crane or beam, devices connected with said windlass mechanism for operating said load-carrier, and devices connected with said windlass mechanism and with said stationary frame for turning said revoluble frame, substantially as shown and described.

7. A portable hoisting apparatus, comprising a truck, a stationary frame mounted on said truck, a revoluble frame mounted on said stationary frame, an upright frame or support mounted on said revoluble frame, a crane or beam mounted on said upright frame or support, and adapted to swing in a vertical plane, and one end of which is longer than the other, a load-carrier connected with the longer end of said beam or crane, and provided with claws or arms which are adapted to close by gravity, and to which are secured cords by which they are opened, said cords being connected with another cord which extends along the longer end of said beam or crane, and which passes downwardly through said upright frame or support, a windlass mechanism mounted within the base of said upright frame or support, and on said revoluble frame, and a rope or cord connected therewith, and with the shorter end of said beam or crane, said parts being constructed, combined and operating, substantially as shown and described.

8. In a hoisting apparatus, a suitable supported stationary frame, a revoluble frame mounted thereon, an upright frame or support mounted on said revolable frame, a crane or beam mounted on said upright frame or support, and adapted to swing in a vertical plane, and one end of which is longer than the other, a windlass mechanism mounted on the revoluble frame, and operative devices connected with the windlass mechanism for operating said beam or crane, and devices connected with said revoluble frame, said windlass mechanism, and

said stationary frame for operating the revoluble frame, substantially as shown and described

9. A hoisting or lifting apparatus, comprising a truck, a stationary frame mounted thereon, a revoluble frame mounted on said stationary frame, an upright frame or support mounted on said revoluble frame, a beam or crane mounted on said upright frame or support and adapted to swing in a vertical plane, a load-carrier connected with one end of said beam or crane, a windlass mechanism mounted on said revoluble frame within the base of the said upright frame or support, and in operative connection with said load-carrier, said windlass mechanism being also in operative connection with the end of the beam or crane opposite that with which the load-carrier is connected, a shaft mounted at one end of the stationary frame, and adapted to be operated by a power apparatus connected therewith, and devices connected with said shaft and said windlass mechanism and with said stationary frame for operating the revoluble frame, and said windlass mechanism, substantially as shown and described.

10. A hoisting apparatus comprising a truck, a stationary frame mounted thereon, a revoluble frame mounted on said stationary frame, an upright frame or support mounted on said revoluble frame, a crane or beam mounted on said upright frame or support, and adapted to swing in a vertical plane, and one end of which is longer than the other, a load-carrier connected with the longer end of said beam, a windlass mechanism mounted on the revoluble frame within the base of said upright frame or support, operative devices connecting said windlass mechanism, and said load-carrier, and also connecting said windlass mechanism, and the shorter end of said beam or crane, a shaft connected with the stationary frame and in operative connection with said windlass mechanism and said revoluble frame, a brake device connected with said windlass mechanism, and devices also connected with said windlass mechanism whereby the apparatus may be operated by hand, substantially as shown and described.

11. A hoisting apparatus comprising a stationary frame, a revoluble frame mounted thereon, an upright frame or support mounted on said revoluble frame, a beam or crane mounted on said upright frame or support, and adapted to swing in a vertical plane, said upright frame or support being composed of two parts which are hinged together at one side, and adapted to be connected at the opposite side, said beam or crane being detachable from said upright frame or support, substantially as shown and described.

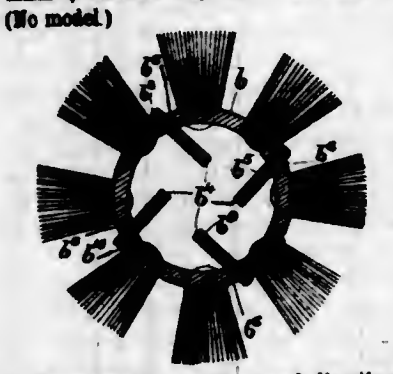
12. A hoisting apparatus comprising a stationary frame, a revoluble frame mounted thereon, an upright frame or support mounted on said revoluble frame, a beam or crane mounted on said upright frame or support, and adapted to swing in a vertical plane, said upright frame or support being composed of two parts which are hinged together at one side and adapted to be connected at the opposite side, said beam or crane being detachable from said upright frame or support, and one end of said beam or crane being longer than the other, and being provided with a load-carrier, and a windlass mechanism which is mounted on the revoluble frame, and which is in operative connection with said load-carrier, and with the shorter end of said beam or crane, and devices connected with said windlass mechanism and with the stationary frame for operating said revoluble frame and said windlass mechanism, substantially as shown and described.

13. A portable hoisting apparatus, consisting of a truck, a stationary frame mounted thereon, a revoluble frame mounted on said stationary frame and provided with a support for a crane or beam, and a windlass mechanism by which the crane or beam is operated, said stationary frame being provided at one end with a transverse shaft, a longitudinal shaft in operative connection therewith, a sectional transverse shaft, one section of which is longitudinally movable, said sections being also adapted to be geared in connection, and the longitudinally-movable section being adapted to be operated by said longitudinal shaft, a vertically-movable shaft in operative connection with said sectional shaft, and means connected with said sectional shaft and said vertically-movable shaft for turning the revoluble frame and for operating the windlass mechanism, substantially as shown and described.

14. In a hoisting apparatus, the combination with a stationary and a revoluble frame, and means for operating said revoluble frame, of a windlass mechanism mounted on said revoluble frame, a frame or support mounted on said revoluble frame, a beam or crane mounted on said frame or support, and adapted to swing in a vertical plane, a load-carrier connected with one end of said beam or crane, a drum which forms a part of said windlass mechanism and which is provided with a cord which is in operative connection with said load-carrier, and said windlass mechanism being also in operative connection with the end of the beam or crane opposite the end with which the load-carrier is connected, substantially as shown and described.

15. A hoisting apparatus consisting of a stationary frame, a revoluble frame mounted thereon, a support mounted on said revoluble frame, a beam or crane mounted on said support, and adapted to swing in a vertical plane, and a windlass mechanism mounted on said revoluble frame within the base of said support, said windlass mechanism consisting of a drum provided with a cord or rope, a brake-drum mounted on the same shaft, a gear-wheel mounted between said drums, and operative devices connected therewith, substantially as shown and described.

611,264. LIQUID SUPPLYING AND DISTRIBUTING MACHINE. WILLIS L. MARSH, Jefferson City, Mo. Filed Jan. 22, 1898. Serial No. 667,625. (No model.)



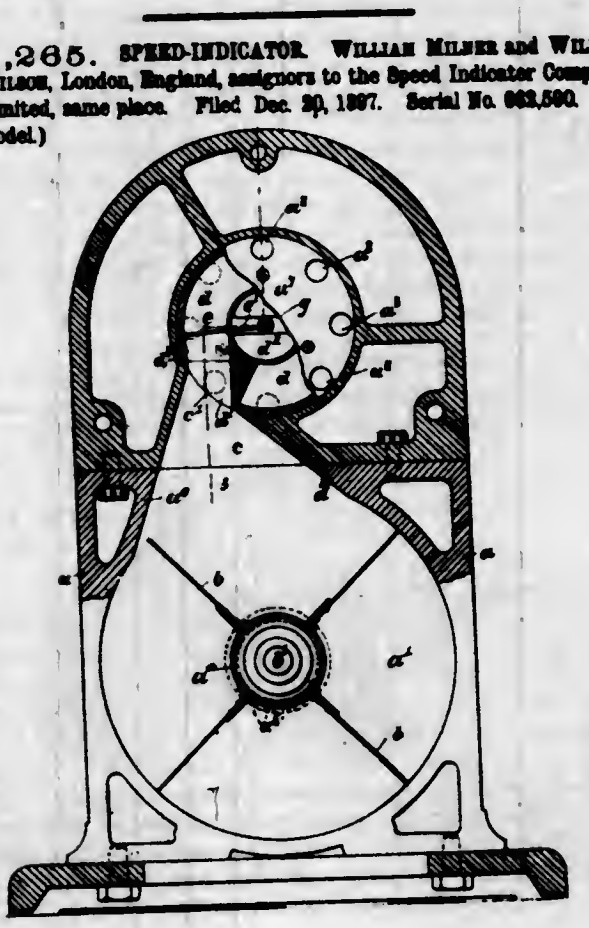
Claim.—1. In a liquid supplying and distributing machine, the combination with a rotary liquid-supplying element, comprising a hollow body portion, of liquid-supplying tubes secured in said hollow body portion and leading from the interior to the exterior thereof, said tubes being arranged tangentially with relation to the axis of rotation of the liquid-distributing element, substantially as described.

2. In a liquid supplying and distributing machine, the combination of the hollow brush and means to supply liquid to the interior thereof, of suitable liquid-supplying tubes arranged to conduct the liquid from the interior to the exterior of said brush, and suitable plungers arranged to reciprocate in said supply-tubes, as the brush is revolved to force the liquid along said tubes, substantially as described.

3. In a liquid supplying and distributing machine, the combination with a hollow brush and means to supply liquid to the interior thereof, of supply-tubes leading from the interior to the exterior of said brush and disposed tangentially with relation to the axis of rotation thereof, and suitable inlets and outlets in said supply-tubes, the inlets being removed from the ends of said tubes and suitable plungers located in said supply-tubes, and arranged to reciprocate therein as the brush is revolved, substantially as described.

4. In a liquid supplying and distributing machine, the combination with the supply tank or reservoir, of the hollow rotating brush, connected therewith, a supply-tube leading from the interior to the exterior of said brush arranged to supply liquid to the bristles of said brush, said supply-tube arranged tangentially with relation to the axis of rotation, and having a suitable inlet and outlet in opposite ends thereof, and a ball arranged to reciprocate along said supply-tube as said brush is revolved, and means to regulate the flow of liquid from the outlet of said tube, substantially as described.

611,265. SPEED-INDICATOR. WILLIAM MILNER and WILLIAM WILSON, London, England, assignors to the Speed Indicator Company, Limited, same place. Filed Dec. 20, 1897. Serial No. 662,590. (No model.)



Claim.—1. In a speed-indicator, the combination of a frame, a fan-blower chamber within said frame provided with downwardly-directed inlet-openings, a fan-blower, of shape to act equally well in both directions of rotation, mounted in said chamber, an outlet from the fan-blower chamber having inclined walls directed toward each other, a conducting-space hermetically connected to said outlet having inclined walls leading to an inlet-opening in the periphery of a cylindrical chamber in the frame, an annular chamber fitting closely the periphery of said cylindrical chamber, an inlet-opening in the periphery of the annular chamber communicating with the inlet-opening in the cylindrical chamber, an outlet-opening in the rear side of said annular chamber communicating with a space in the cylindrical chamber, a disk, blade or plate, working within the annular chamber and mounted on a spindle carrying the indicating-hand, an external chamber communicating with the rear of the cylindrical chamber by holes in rear wall of the latter, and a downwardly-directed outlet-opening in said external chamber, all substantially as herein set forth and for the purpose stated.

2. In a speed-indicator, the combination of a fan-blower chamber having protected inlet-openings, a fan-blower within said chamber capable of acting equally well in both directions, an outlet from said fan-blower chamber formed with walls inclined toward each other, and leading to an opening in a cylindrical chamber, an annular chamber fitting closely such cylindrical chamber and having in its periphery an inlet-opening communicating with the opening in the cylindrical chamber, a protected outlet from said cylindrical chamber, an outlet-opening in the rear of the annular chamber separated from the inlet-opening and communicating with a space in the cylindrical chamber, a disk, blade or plate, working within said annular chamber and operating the indicating-hand in one direction, and a spring acting in the contrary direction on said indicating-hand, all substantially as herein set forth.

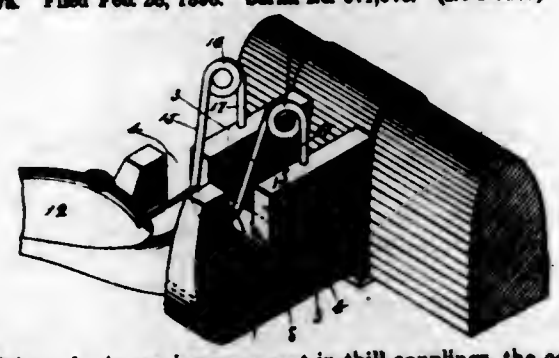
3. In a speed-indicator, the combination of a fan-blower acting equally well in both directions, a channel conducting the current of air into an annular chamber, a disk, blade or plate, working in said annular chamber and closely fitting without touching the walls thereof and operating the indicating-hand in one direction, and suitably-protected air inlets and outlets, all substantially as herein set forth.

611,266. SHOE. FRANK R. MOSES, Haverhill, Mass. Filed Sept. 10, 1897. Serial No. 651,180. (No model.)



Claim.—A shoe having its quarter provided with a gore-opening and having a series of slender tongues rising from the base of said opening, an elastic goring extending over the entire opening and sewed to the side edges of the same, the tongues being sewed to the outside of the said goring, and a shoe-lining sewed to the edge of the said goring and having points on its upper edge sewed to and reinforcing the bases of the tongues.

611,267. THILL-COUPLING. WILLIAM T. MCGUIRE, Rossville, Iowa. Filed Feb. 28, 1898. Serial No. 671,970. (No model.)



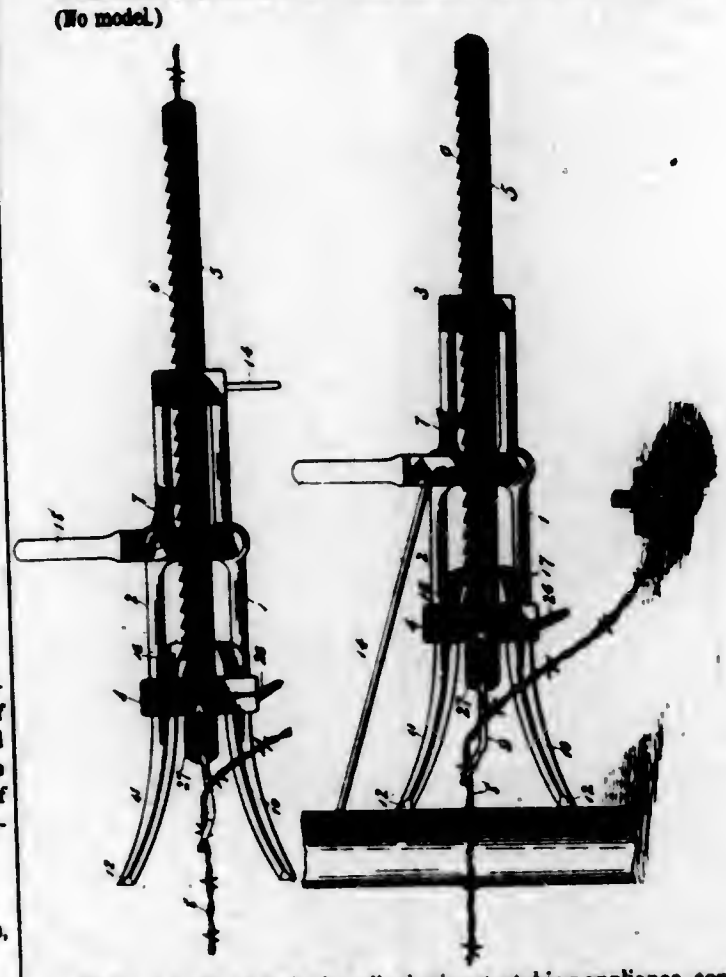
Claim.—1. As an improvement in thill-couplings, the combination with the axle-clip, the ears of which are provided with the vertically-disposed recess and the curved rearwardly-extending seat substantially as shown, of a pole or shaft stem having a head of the contour of said seat and designed to fit therein, and suitable means for preventing the vertical movement of said head, as described and for the purpose set forth.

2. The herein-described antirattling thill-coupling for vehicles, consisting of the clip provided with the forward-extending ears having at opposite points thereon the vertically-disposed recesses 4 and the curved rearwardly-extending seat 5; a shaft or pole stem having a transversely-disposed head consisting of the curved body 7ª and the rearwardly-extending lip, said head being further provided with the upward extension or shoulder 13; a spring carried by said ears and provided with a curved looped section 14 designed to bear against said shoulder when said head is in its operative seat, substantially as described and for the purpose set forth.

3. The herein described thill-coupling consisting of the clip provided with ears having oppositely-disposed recesses or seats, a shaft, or pole stem having a head with lateral extensions designed to fit into said seats, said head having a central enlargement forming a shoulder 13, in combination with a spring secured to said ears and having a loop to receive and bear against said shoulder for the purpose specified and as set forth.

4. As an improvement in thill-couplings, a pole or shaft stem having lateral extensions upon either side of the end thereof, said lateral extensions having upon their rear side throughout their entire length a curved lip or extension, in combination with a clip having ears provided with recesses or seats designed to receive said lateral extensions and the lip carried thereby, whereby said head will be prevented from vertical movement until the stem thereof is brought substantially into a vertical position, as described and for the purpose set forth.

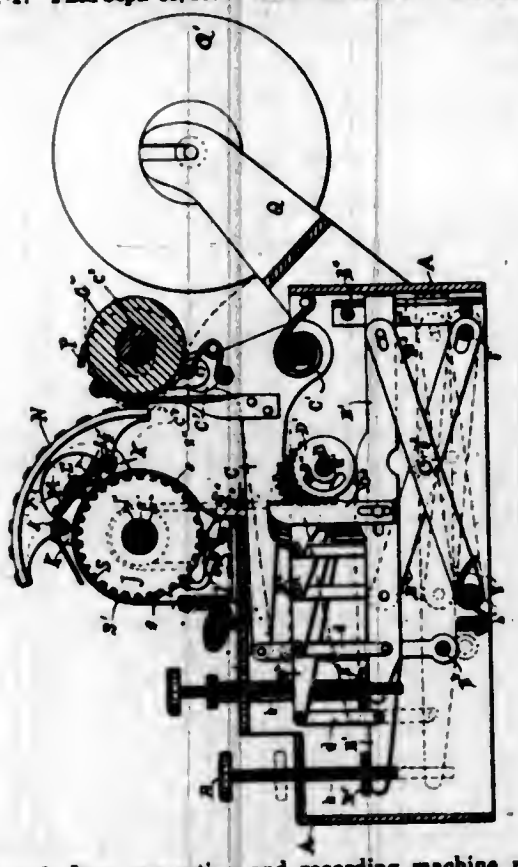
611,268. WIRE-STRETCHER. ABRAHAM MCINTURFF and HUGH J. STEWART, Eversonville, Mo. Filed June 25, 1898. Serial No. 684,493. (No model.)



Claim.—1. The herein-described wire-stretching appliance, consisting of the ratchet-bar, the frame designed to receive said ratchet-bar and permit the longitudinal reciprocation thereof; curved anchoring members carried by said frame; a lever adjustably mounted upon said frame and carrying a pawl; a pair of pawls oppositely disposed upon the frame and designed to engage said ratchet-bar and an anchoring brace or stem pivotally secured to the frame and designed to take into a fence-post upon which the stretcher is adjusted as and for the purpose set forth.

2. In a wire-stretching appliance, the combination with the ratchet-bar; a frame-section receiving said bar and permitting the free reciprocation thereof; pawls pivotally secured upon said frame; a controlling-lever adjustably mounted on the frame and suitable means, substantially as set forth, for anchoring the frame and the parts carried thereby upon the fence-post, and additional means for engaging the ends of the wires to be stretched, as and for the purpose set forth.

611,269. CALCULATING-MACHINE. JOHN C. MCLELAND, Buffalo, N. Y. Filed Sept. 19, 1896. Serial No. 606,384. (No model.)



Claim.—1. In a computing and recording machine, recording mechanism consisting of the combination of operating means, type, a suitable type-support, means for carrying a sheet, said type-support and sheet-carrying means relatively retractable, means for shifting said type-support on each movement of the operating means a distance equal to that between two digits in successive orders of the number to be recorded and computing mechanism, substantially as set forth.

2. In a computing and recording machine, recording mechanism consisting of the combination of operating means, type, a single type-segment on which said type are mounted, means for carrying a sheet, said type-support and sheet-carrying means relatively retractable and means for shifting said type-segment on each operation of the operating means a distance equal to that required to print the number in the next lower order of the number to be recorded, substantially as set forth.

3. In a computing and recording machine, recording mechanism consisting of the combination of operating means, a single type segment or carrier having a line of type-numbers arranged thereon, means for carrying a sheet, said type-segment and sheet-carrying means relatively retractable, said operating means capable of moving said segment in the direction of the said line of type and also a distance equal to that required to print the digit in the next lower order in the number to be recorded, substantially as set forth.

4. In a computing and recording machine, the combination of a plurality of operating keys and mechanisms, a series of type mounted upon a carriage capable of having a longitudinal and a transverse movement, said operating keys and mechanisms capable of imparting transverse movement to said type-carriage, and means for intermittently imparting said longitudinal movement to said carriage, substantially as set forth.

5. In a computing and recording machine, the combination of operating means, a series of type mounted upon a carriage, means for rotating said carriage about an axis and for intermittently advancing it in the direction of said axis, interdependent computing-disks, and means for actuating each disk successively from left to right on each operation of the operating means, substantially as set forth.

6. In a computing and recording machine, the combination of operating means, a plurality of interdependent computing-disks, a type-carriage having a rotary and a longitudinal motion and provided with means for engaging said disks, means for intermittently advancing said carriage from left to right and bringing said engaging means successively into operative communication with each disk, and means for actuating said carriage to have said rotary motion on each operation of the operating means, substantially as set forth.

7. In a computing and recording machine, the combination of operating means, a series of type mounted upon a carriage, means for rotating said carriage about an axis and for intermittently advancing it in the direction of said axis, and interdependent computing-disks, said carriage provided with means for actuating said computing means by engaging separately and successively from left to right said computing-disks, substantially as set forth.

8. In a computing and recording machine, the combination of operating means, a series of type mounted upon a carriage, means for rotating said carriage about an axis and for intermittently advancing it in the direction of said axis, and interdependent computing-disks, said carriage provided with a reversible dog for engaging and actuating said disks whereby said disks may be rotated in either of their two circumferential directions, substantially as set forth.

9. In a computing and recording machine, the combination of operating means, a series of type mounted upon a carriage, means for rotating said carriage about an axis and intermittently advancing it in the direction of said axis, and interdependent computing-disks, said carriage provided with a rotatable dog provided with a plurality of teeth having a pitch substantially equal to the distance from center to center of said disks, and capable of engaging and actuating said disks, substantially as set forth.

10. In a computing and recording machine, the combination of operating means, a plurality of interdependent computing-disks, a carriage, means for imparting to said carriage a rotary and a longitudinal motion, rotatable means for engaging said disks, means for intermittently advancing said carriage from left to right whereby said engaging means is successively brought into the vicinity of each disk, means for bringing said engaging means into operative communication with each disk, and means for actuating said carriage to have said rotary and longitudinal motion on each operation of the operating means, substantially as set forth.

11. In a computing and recording machine, the combination of operating means, a plurality of interdependent computing-disks, a carriage, means for imparting to said carriage a longitudinal and a rotary motion, a rotatable dog provided with a plurality of teeth adapted to engage said disks, said dog mounted upon an arbor on said carriage, substantially parallel with the axis of said disks, whereby said dog may be reversed, and means for rotating and advancing said carriage longitudinally from left to right on each operation of the operating means, substantially as set forth.

12. In a computing and recording machine, the combination with a series of interdependent computing-disks, of a type-carriage having an intermittently longitudinal and a revolving movement relatively to and in the vicinity of said disks, said carriage provided with means adapted to engage the peripheries of said disks, whereby said revolving motion may be communicated to said disks, said engaging means adapted to engage successively each of said disks from left to right on each intermittent longitudinal movement of the carriage, substantially as set forth.

13. In a computing and recording machine, the combination of a series of interdependent computing-disks, a carriage having a concomitant intermittent longitudinal and a revolving movement relatively to and in the vicinity of said disks, said carriage provided with a reversible dog adapted to successively engage said disks from left to right whereby said revolving motion may be successively communicated to said disks on each longitudinal and revolving movement of said carriage, substantially as set forth.

14. In a computing and recording machine, the combination of a series of computing-disks, a hollow sleeve forming the bearing for said disks and mounted in a suitable housing, a type-carriage, a hollow arbor journaled in said sleeve, a shaft mounted in said arbor; a guide adapted to guide said carriage and suitably secured to said arbor, and means adapted to rotate and reciprocate said shaft, said type-carriage being secured to said shaft, substantially as set forth.

15. In a computing and recording machine, the combination of a series of computing-disks, a sleeve forming the bearing for said disks, and mounted in a suitable housing, a shaft concentric with said sleeve, means for rotating and reciprocating said shaft, and a type-carriage secured to said shaft, substantially as set forth.

16. In a computing and recording machine, the combination of a sleeve secured to a suitable housing, a series of computing-disks mounted upon said sleeve, a hollow arbor journaled in said sleeve, a type-carriage, a carriage-guide secured to said arbor, a shaft rotatably and slidably mounted in said arbor, and means for reciprocating and rotating said shaft, said guide being operatively connected with said carriage, whereby said guide rotates with said carriage, substantially as set forth.

17. In a computing and recording machine, the combination of a shaft mounted in a suitable bearing and provided with projections, reciprocating means adapted to engage said projections to intermittently move said shaft in the direction of its axis, means for reciprocatively rotating said shaft, and operating means for actuating said reciprocating means and said rotating means, substantially as set forth.

18. In a computing and recording machine, the combination of a key-stem, crom-levers, and an operating-bar mounted upon said crom-levers, said levers adapted to move said bar, the initial and final positions of the latter being parallel with each other, substantially as set forth.

19. In a computing and recording machine, the combination of a key-stem, crom-levers, and an operating-bar mounted upon said

cross-levers, the latter journaled to said bar and to a stationary part of the machine, said levers adapted to move said bar, the initial and final positions of the latter being parallel with each other, substantially as set forth.

20. In a computing and recording machine, the combination of a key-stem, an operating-bar, and two cross-levers, one extremity of each being journaled on said bar, the other extremities journaled upon a stationary part of the machine, substantially as set forth.

21. In a computing and recording machine, the combination of a key-stem, an operating-bar, and two cross-levers, one extremity of each lever journaled on said bar and the other extremities journaled upon the frame of the machine, one journal of each lever being elongated, substantially as set forth.

22. In a computing and recording machine, the combination of a key-stem, an operating-bar, and two cross-levers, one extremity of each lever journaled on said bar and the other extremities journaled upon the frame of the machine, each lever having one elongated journal, and both said levers pinned to each other at their crossing, substantially as set forth.

23. In a computing and recording machine, the combination of operating-bars, a shaft, levers mounted upon said shaft, each lever adapted to be actuated by one of said bars, and means for controlling the computing mechanism, said levers each adapted to actuate said controlling means, substantially as set forth.

24. In a computing and recording machine, the combination of operating-bars, a shaft, a rocking rod mounted upon said shaft, and means for controlling the computing mechanism, said rod adapted to actuate said controlling means, said bars each adapted to operate said rod-actuating means, substantially as set forth.

25. In a computing and recording machine, the combination of a shaft, a rod supported upon supports journaled upon said shaft, computing mechanism, oscillating means journaled upon said shaft, and connecting means for operatively connecting said oscillating means with said computing mechanism, said rod adapted to actuate said oscillating means, substantially as set forth.

26. In a computing and recording machine, the combination of a shaft, a rod supported upon supports journaled upon said shaft, computing mechanism, a pulley journaled upon said shaft, and connecting means for transmitting motion from said pulley to said computing mechanism, said rod operatively connected with said pulley, substantially as set forth.

27. In a computing and recording machine, the combination of a shaft, an arm and pulley, a rod supported upon said arm and pulley, each of the latter being journaled upon said shaft, computing mechanism, and connecting means for transmitting motion from said pulley to said computing mechanism, said rod operatively connected with said pulley, substantially as set forth.

28. In a computing and recording machine, the combination of a shaft, an arm and pulley, a spring-actuated rod supported upon said arm and pulley, each of the latter journaled upon said shaft, computing mechanism, and connecting means for transmitting motion from said pulley to said computing mechanism, substantially as set forth.

29. In a computing and recording machine, the combination of a shaft, an arm and a spring-actuated pulley, each journaled upon said shaft, a rod supported upon said arm and pulley, computing mechanism, and connecting means for transmitting motion from said pulley to said computing mechanism, substantially as set forth.

30. In a computing and recording machine, the combination of a shaft, an arm and a pulley each journaled upon said shaft, a rod supported by said arm and pulley, computing mechanism, and elastic connecting means for transmitting motion from said pulley to said computing mechanism, substantially as set forth.

31. In a computing and recording machine, the combination of a shaft, an arm and a pulley each journaled upon said shaft, a rod supported upon said arm and pulley, computing mechanism, and connecting means for transmitting motion from said pulley to said computing mechanism said connecting means provided with a spring adapted to actuate said pulley, substantially as set forth.

32. In a computing and recording machine, the combination of a shaft, a rod supported upon supports journaled upon said shaft, computing mechanism, means for transmitting motion from said rod to said computing and recording mechanism, and a plurality of means independent of each other, each adapted to be operated to actuate said rod, substantially as set forth.

33. In a computing and recording machine, a platen mounted at one end and having the other end free, substantially as set forth.

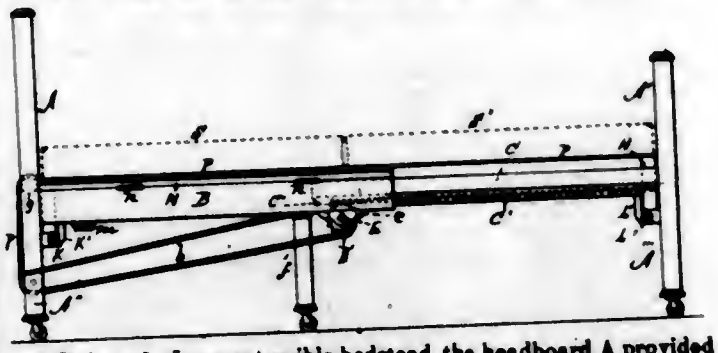
34. In a computing and recording machine, a platen supported at one end only and adapted to be extended at the free end, substantially as set forth.

35. In a computing and recording machine, a platen having one end free, substantially as set forth.

36. In a computing and recording machine, the combination with a platen of a platen-shaft for supporting said platen and mounted at one end only and having a removable portion at said unmounted end, substantially as set forth.

37. In a computing and recording machine, the combination of a platen, a platen-shaft for supporting said platen and supported at one end only, a secondary platen adapted to be secured at the free end of said first-named platen, whereby the length of the platen may be adjusted, substantially as set forth.

611,270. EXTENSIBLE BEDSTEAD. ANTON NILSON, Natick, Mass. Filed Mar. 16, 1898. Serial No. 674,082. (No model.)



Claim.—1. In an extensible bedstead, the headboard A provided with the horizontal openings *h* and legs A″; the footboard A′ and legs A‴; the extensible side rails each consisting of the two parts B and C sliding longitudinally with relation to each other, said parts C being formed on their under edges with the racks C′; the horizontal shaft E supported by the parts B of the rails and extending from one to the other; the gear-wheels D fast on said shaft and engaging with said racks; the sprocket-wheels D′ fast on said shaft; the horizontal roll *a* supported by the legs A″ and provided with suitable sprockets *d*; chains connecting the sprockets D′ and the sprockets on the roll *a*; the horizontal roll *g* supported in said opening in the headboard; the inner extensible frame F, H, F′, H′ adapted to be extended and contracted by and with the outer frame; and the bed-bottom consisting of the strip P secured at one end to the foot cross-piece H, and extending therefrom to and over said roll *g* and to the lower roll *a* to which its opposite end is secured, substantially as set forth.

2. In an extensible bedstead, the leg A″ provided with the recess *a*‴; the hollow rail B; the block T extending horizontally from the interior of said rail into said recess and rigidly secured to the rail; the plate U, secured to the outer surface of the leg opposite the recess; the staple V provided with the hollow internally-screw-threaded legs V′, said staple embracing the block T within the rail and with its legs extending horizontally to the outer surface of the leg A″; and screws extending through said plate and engaging with the threaded hollow legs of the staple, substantially as set forth

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611,271. ELECTRIC RAILWAY. OSCAR PERIL, Washington, D. C., assignor to the Wheless Induction Railway Company, same place. Filed Dec. 30, 1897. Serial No. 664,547. (No model.)

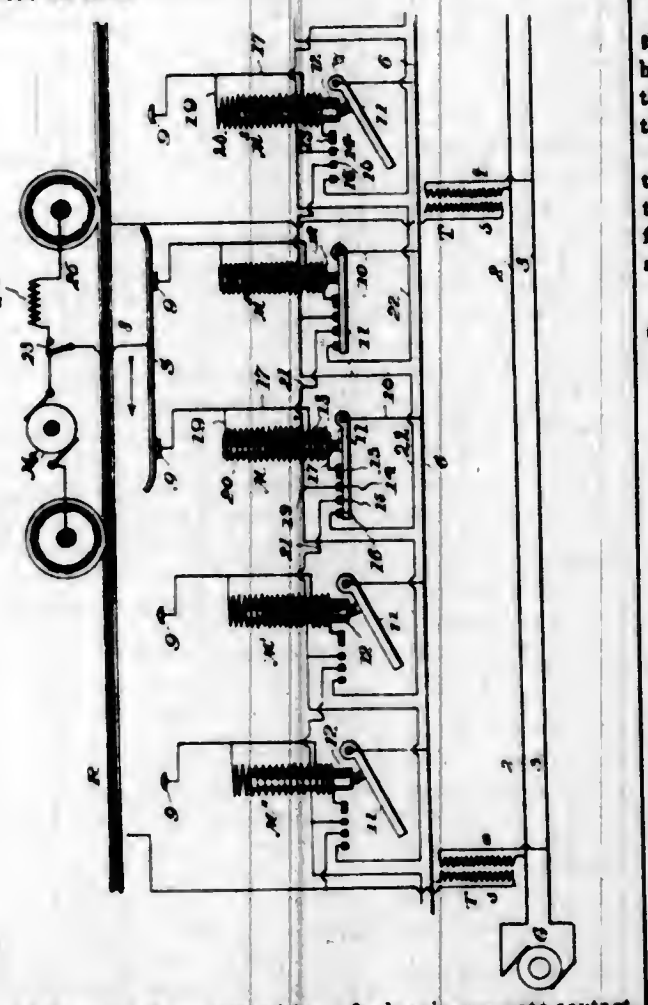
Claim.—1. An electric-railway system comprising a feed-main, separate contact-stations, circuit connections for the working current between each contact-station and the feed-main, each including a single electromagnet, switching devices controlled by such magnets whereby the working circuit is made and broken, and circuit connections at each station, controlled by such switching devices, and each connected with the magnet in the working circuit of another station, substantially as and for the purposes hereinbefore set forth.

2. An electric-railway system comprising a feed-main, separate contact-stations, an electromagnet and switching devices controlled thereby for each station, circuit connections for the working current including the said electromagnets, and extending directly between the feed-main and the contacts, such circuits being made and broken by the said switching devices, and shunt-circuits controlled by the said switching devices, and each including the electromagnet of a station other than the one through which the working current is passing, substantially as and for the purposes hereinbefore set forth.

3. An electric-railway system comprising a feed-main, separate contact-stations, an electromagnet having a high and a low resistance coil, for each station, switching devices operated by the magnets for controlling the circuits, circuits for the working current including the low-resistance coils of the magnets, and circuits including the high-resistance coils of the magnets, such circuits being controlled by the switching devices at stations beyond the magnets with which they are connected, substantially as and for the purposes hereinbefore set forth.

4. An electric-railway system comprising a feed-main, separate contact-stations, an electromagnet at each station, switching devices operated by each magnet for controlling the circuits, a circuit for the working current at each station, and shunt-circuits at each station

extending in either direction therefrom and including coils of the electromagnets at the stations both in advance and rear of the station where they are controlled, substantially as and for the purposes hereinbefore set forth.



5. An electric railway, comprising a feed-main, separate coutact-stations, an electromagnet at each station, switching devices actuated by the electromagnets, contacts arranged to be made when the switching devices are actuated and thereby brought into circuit with the feed-main, working-current circuits each from one of the said contacts through a coil of the electromagnet which controls the making and breaking of its circuit, to the contact for the collector carried by the cars, shunt-circuits each extending from one of the said contacts through a coil of the electromagnet at the station in advance, and other shunt-circuits, each extending from one of said contacts through the coil of the electromagnet at the station in rear, all the said shunt-circuits connecting with the contacts for the car-collector, substantially as and for the purposes hereinbefore set forth.

6. An electric railway comprising a feed-main, separate surface contact-stations, and the following described apparatus at each station: viz: an electromagnet having two coils 18 and 20, an armature-actuated switch connected with the feed-main, the contacts 13, 14, 15 and 16, which are made when the armature is attracted, a circuit for the working current extending from the contact 13 to the surface contact and including the coil 18 of the electromagnet, a shunt-circuit from the contact 14 to the surface contact including the coil 20 of the electromagnet, a shunt-circuit from the contact 15 to the surface contact of the station in advance and including the coil 20 of the electromagnet of such advance station, and a shunt-circuit from the contact 16 to the surface contact of the station in the rear, and including the coil 20 of the electromagnet of such rear station, substantially as and for the purposes hereinbefore set forth.

611,272. TIRE. MATTHEW PRIOR, Watertown, Mass., and THOMAS W. PRIOR, Philadelphia, Pa., assignors to Prior Cotton Gin Co., Philadelphia, Pa. Filed Apr. 26, 1898. Serial No. 678,178. (No model.)



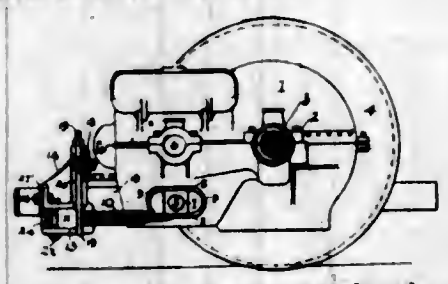
Claim.—1. In a device of the kind described, a tube having one or more layers of horsehair fabric embedded in rubber and vulcanized therein, and an outside layer vulcanized on said tube and consisting of a multitude of short sections of horsehair standing endwise radially at the surface of the tube, substantially as described.

2. The combination with a tube, of a surface therefor, composed of a layer vulcanized on said tube and consisting of a multitude of short sections of horsehair standing endwise radially at the surface of the tube, substantially as described.

3. The herein-described surface fabric, consisting of a relatively thin sheet or strip of rubber having a multitude of short sections of horsehair standing endwise transversely of the sheet or strip with their ends terminating in the surface of said sheet or strip, substantially as described.

4. The combination with a suitable backing, of a fabric secured thereto and composed of rubber and horsehairs vulcanized together, the horsehairs being in short sections extended transversely of the fabric with their ends constituting the exposed surface, substantially as described.

611,278. MEANS FOR SUPPORTING ELECTRIC MOTORS. LOUIS T. PIOTT, Philadelphia, Pa. Filed May 14, 1897. Renewed Feb. 23, 1898. Serial No. 671,331. (No model.)



Claim.—1. In a motor suspension, wheels, axles, a truck-frame and a motor-casing therefor, a cross-tie supported upon and secured to the framework, hangers attached to the cross-tie and secured thereto, flexible supports reaching outward and engaging lugs upon the motor-frame, substantially as described.

2. In a motor suspension, wheels, axles, a truck-frame and a motor-casing, a cross-tie upon the frame, hangers upon the cross-tie, means to secure flexible motor suspensions removably to the hangers and to lugs upon the motor-casing, substantially as described.

3. In a motor suspension, truck-wheels, axles, a truck-frame, a cross-tie upon the frame, brackets upon the cross-tie, flexible motor-supports secured at one end to the brackets for outward removal, and at their other end looped over and embracing a box around the motor-casing lugs, substantially as described.

4. In a truck-frame supported upon wheels and axles, and carrying a motor and its casing, the motor-casing being attached at one end to the axle and at a point near the armature-shaft, upon either side, having outwardly-projecting lugs, a box embracing each lug, a spring-plate embracing each box at the upper and lower sides of a loop formed thereon, reinforcing spring-plates supporting the plates forming the loop, a band near the opposite end of the plates, brackets having open-sided pockets wherein to place the bands and the spring ends, and means to secure the plates and the band removably to the bracket and the bracket to a cross-tie supported upon the framework of the truck, substantially as described.

5. In a motor suspension, truck-wheels, axles, a truck-frame, a motor-casing suspended at one end upon the axle, lugs upon the casing removed from the axle-supports, and yielding and flexible suspension members one end of which is removably attached to the lugs and the other end removably secured to hangers attached to a cross-tie supported upon the framework of the truck, substantially as described.

6. In an electric truck, a truck-frame, wheels and axles, a motor-casing one end being supported upon an axle, lugs upon the casing and thereto removably attached resilient supports removably secured at their opposite ends to brackets and a cross-tie carried by the truck-framework, substantially as described.

7. In a motor-truck, a framework, motor supported at one end upon an axle and having a cross-tie upon the framework, means to removably secure thereto one end of longitudinal flexible supports, passing by the motor-case and removably engaging lugs thereon at their opposite ends and below the armature-shaft, substantially as described.

8. An electric motor supported by and geared to an axle at one end, near the opposite end of its casing provided with flexible and resilient longitudinal side supports engaging lugs upon the casing and at their opposite end removably secured to hangers attached to a cross-tie resting on and secured to the framework, substantially as described.

9. In a motor-truck, in combination, a truck-frame, a cross-bar, hangers depending therefrom and removably holding longitudinal flexible and resilient supports extending beyond the cross-bar, and their outer end adapted to be removably secured to the motor-casing, substantially as described.

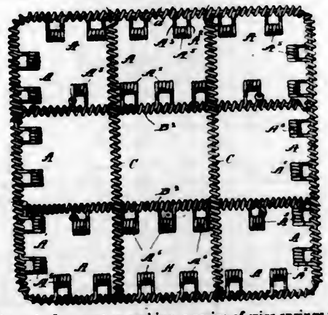
10. In a motor-support, the combination of flexible and resilient supports adapted to be removably connected at one end to the mo-

tor-casing and at the opposite end removably secured to pendent means from the truck cross-tie, substantially as described.

11. In a motor-truck having a frame and a cross-tie included therein, the combination with one of the truck-axles, of a motor geared thereto, resilient and flexible motor-supports removably suspended from the cross-tie in longitudinal position, reaching thereafter to a point near the armature-shaft and removably attached to said engaging lugs upon the motor-casing, substantially as described.

12. The combination in a motor-truck of wheels, and axles and a framing carried thereby, having a cross-tie secured to the framing within the wheel-base, a motor within a casing adapted to rest upon an axle at one end and flexible and resilient supports for the motor and its casing positively held at one end to the cross-bar and at their opposite end supporting the motor-casing and having means for their disengagement from the cross-tie and the motor-casing, substantially as described.

611,274. SEAT OR CUSHION. PATRICK F. QUINN, Somerville, Mass. Filed Apr. 19, 1897. Serial No. 632,759. (No model.)



Claim.—1. In a seat or cushion, a series of wire springs provided with arms for forming an edge of said seat or cushion, a coil between the ends of said wire springs, flexible supporting means located around said arms and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight.

2. In a seat or cushion, a series of wire springs having the upper arms thereof forming the upper edge of said seat or cushion, a coil between the ends of said wire springs, flexible supporting means consisting of coiled-wire springs located around said upper arms and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight, and a support for the lower arms of said wire springs.

3. In a seat or cushion, a series of wire springs having the upper and lower arms forming respectively the upper and lower edges of said seat or cushion, a coil between the ends of said wire springs, flexible supporting means located around said upper arms of said wire springs and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight, and flexible supporting means located around said lower arms of said wire springs and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight.

4. In a seat or cushion, a series of wire springs having the upper and lower arms forming respectively the upper and lower edges of said seat or cushion, a coil between the ends of said wire springs, flexible supporting means consisting of coiled-wire springs located around said upper arms and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight, and flexible supporting means consisting of coiled-wire springs located around said lower arms and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight.

5. In a seat or cushion, a series of wire springs having the upper arms thereof forming the upper edge of said seat or cushion, a coil between the ends of said wire springs, flexible supporting means located around said upper arms and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight, a support for the lower arms of said wire springs, and means for holding said upper arms and flexible supporting means in position with relation to one another.

6. In a seat or cushion, a series of wire springs having the upper and lower arms forming respectively the upper and lower edges of said seat or cushion, a coil between the ends of said wire springs, flexible supporting means located around said upper arms and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight, means for holding said upper arms and flexible supporting means in position with relation to one another, and flexible supporting means located around said lower arms and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight, and means for holding said lower arms and flexible supporting means in position with relation to one another.

7. In a seat or cushion, a series of wire springs having the upper and lower arms forming respectively the upper and lower edges of said seat or cushion and extending in opposite directions, a coil between the ends of said wire springs, flexible supporting means located around said upper arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight, and flexible supporting means located around said lower arms of said wire springs and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight.

8. In a seat or cushion, a series of wire springs having the upper and lower arms forming respectively the upper and lower edges of said seat or cushion and extending in opposite directions, a coil between the ends of said wire springs, flexible supporting means located around said upper arms and connecting the same together to form a continuous edge for the top of said seat or cushion and adapted to yield to the movement of said wire springs under the action of weight, and flexible supporting means located around said lower arms and connecting the same together to form a continuous edge for the bottom of said seat or cushion and adapted to yield to the movement of said wire springs under the action of weight.

9. In a seat or cushion, a series of wire springs having the upper and lower arms forming respectively the upper and lower edges of said seat or cushion and extending in opposite directions, a coil between the ends of said wire springs, flexible supporting means located around said upper arms and connecting the same together to form a continuous edge for the top of said seat or cushion and adapted to yield to the movement of said wire springs under the action of weight, means for holding said upper arms and flexible supporting means in position with relation to one another, flexible supporting means located around said lower arms and connecting the same together to form a continuous edge for the bottom of said seat or cushion and adapted to yield to the movement of said wire springs under the action of weight, and means for holding said lower arms and flexible supporting means in position with relation to one another.

10. In a seat or cushion, a series of wire springs provided with arms for forming an edge of said seat or cushion, a coil between the ends of said wire springs, coiled-wire springs located around said arms and connecting the same together to form a continuous edge of said arms and adapted to yield to the movement of said wire springs under the action of weight.

11. In a seat or cushion, a series of wire springs each having a V-shaped portion with an upper arm bent at an angle to said V-shaped portion, a coil at the apex of each V-shaped portion, flexible supporting means located around said upper arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight, and a lower support for said springs.

12. In a seat or cushion, a series of wire springs each having a V-shaped portion with an upper arm bent at an angle to said V-shaped portion, a coil at the apex of each V-shaped portion, flexible supporting means consisting of coiled-wire springs located around said upper arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight, and a lower support for said springs.

13. In a seat or cushion, a series of wire springs each having a V-shaped portion with an upper arm bent at an angle to said V-shaped portion, a coil at the apex of each V-shaped portion, flexible supporting means located around said upper arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight, a lower support for said springs, and means for holding said upper arms and flexible supporting means in position with relation to one another.

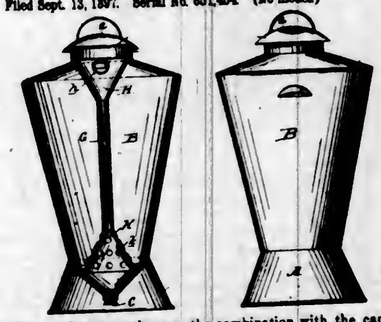
14. In a seat or cushion, a series of wire springs each having a V-shaped portion with an upper arm bent at an angle to said V-shaped portion, a coil at the apex of each V-shaped portion, flexible supporting means located around said upper arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight, a lower support for said springs, and means on said upper arms with which said flexible supporting means engages for holding said arms and flexible supporting means in position with relation to one another.

15. In a seat or cushion, a series of wire springs each having a V-shaped portion with an upper and a lower arm bent at an angle to said V-shaped portion, a coil at the apex of each V-shaped portion, flexible supporting means located around said upper arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight, and flexible supporting means located around said lower arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight.

16. In a seat or cushion, a series of wire springs each having a V-shaped portion with an upper and a lower arm bent at an angle to said V-shaped portion, a coil at the apex of each V-shaped portion, flexible supporting means consisting of coiled-wire springs located around said upper arms and connecting the same together and adapted to yield to the movement of said springs under the action of weight, and flexible supporting means consisting of coiled-wire springs located around said lower arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight.

17. In a seat or cushion, a series of wire springs each having a V-shaped portion with an upper and a lower arm bent at an angle to said V-shaped portion, a coil at the apex of each V-shaped portion, flexible supporting means consisting of coiled-wire springs located around said upper arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight, means for holding said upper arms and flexible supporting means in position with relation to one another, flexible supporting means consisting of coiled-wire springs located around said lower arms and connecting the same together and adapted to yield to the movement of said wire springs under the action of weight, and means for holding said lower arms and flexible supporting means in position with relation to one another.

611,275. CREAMING-CAN. JAMES A. RECTOR, Lancaster, Mo. Filed Sept. 13, 1897. Serial No. 651,454. (No model.)



Claim.—In a creaming-can the combination with the can body having a conical base formed with a discharge-opening in its apex, and a neck, of a distributing device located wholly within the can and consisting of a tube having a funnel-shaped upper end positioned in the neck and a perforated distributer at the lower end of the tube resting on the bottom, substantially as described.

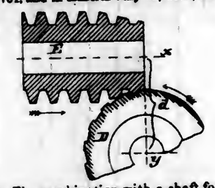
611,276. BARREL-TAP. JULIUS C. F. REINOLD, Metropolitan, N. Y. Filed Jan. 18, 1898. Serial No. 667,068. (No model.)



Claim.—1. In a bung and tap, the combination with the bung-casing having a valve-seat formed on its inner portion, of a valve, a spring to normally hold the valve in its seat, a faucet, spiral slots formed in said faucet, a bridge or cross-piece connecting the lips formed by the spiral slots, and pins on the interior of the bung-casing adapted to register with said spiral slots, so that by turning the faucet upon the same the bridge will engage and unseat the valve.

2. The combination in a bung and tap, of a metallic sleeve adapted to be inserted in a barrel, a casing adapted to be inserted in said sleeve, a gasket interposed between said sleeve and casing, perforations at the top of said casing and at one side thereof, pins on the interior of the casing, a faucet, spiral slots formed in said faucet and adapted to engage the pins in the casing, a shoulder or recess formed at the inner end of the grooves to receive and hold the pins, a bridge connecting the lips formed by the spiral slots, and a valve operating in the casing and adapted to be unseated by the bridge of the faucet.

611,277. APPARATUS FOR MANUFACTURING WORM-WHEELS. JOHANNES G. REINECKER, Gablenz, Germany, assignor to the Firm of J. R. Reinecker, same place. Filed Feb. 13, 1895. Serial No. 538,232. (No model.) Patented in Germany Oct. 27, 1894, No. 81,418; in France Dec. 4, 1894, No. 243,378; in Hungary Jan. 18, 1895, No. 1,989; in England Jan. 23, 1895, No. 1,613; in Switzerland Feb. 14, 1895, No. 9,781, and in Austria July 10, 1895, No. 2,521.

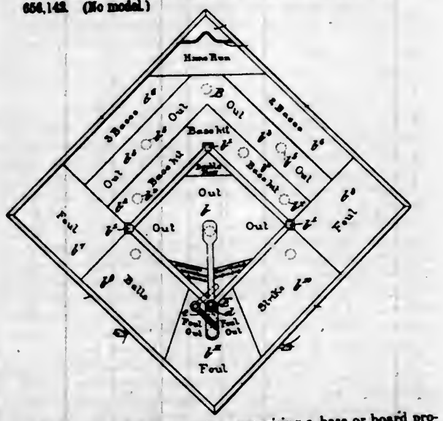


Claim.—1. The combination with a shaft for supporting and rotating the wheel to be cut, of a generating-wheel fixed to said shaft, a worm for engaging and rotating said generating-wheel, a cutter adjustable in a right line to and from the axis of rotation of said shaft into position to engage the wheel to be cut, means for rotating the worm and cutter, and means for axially displacing the cutter, substantially as described.

2. In a machine for cutting worm-wheels, the combination with a double-armed lever, of a cutter, a transverse slide carrying said cutter, a shaft for supporting and rotating the wheel to be cut, a worm and connections for rotating said shaft, a slide carrying said worm, connections between said slides and lever and means for rotating said cutter, substantially as described.

3. In a machine for cutting worm-wheels, the combination with a driving-worm and a cutter arranged on parallel shafts geared together, means for rotating said shafts, a third shaft for supporting and rotating the wheel to be cut, a generating-wheel fixed to said last-named shaft, said cutter being adjustable in a right line to and from the axis of rotation of the latter shaft and axially movable in a plane at right angles to its movement of adjustment, and means for rotating said parallel shafts and for axially moving said cutter, substantially as described.

611,278. GAME APPARATUS. ADEN W. RICH and FREDERICK R. FRENDENWEILER, Philadelphia, Pa. Filed Oct. 23, 1897. Serial No. 656,142. (No model.)



Claim.—1. A game apparatus, comprising a base or board provided with a divided field, a ball or marble adapted to be held in a pocket, a bat pivotally supported in an opening in said base or board and provided with a spring-controlled pawl adapted to be engaged and disengaged to and from a toothed locking-dog held under spring tension, a lever-arm slidable in guides for actuating said bat to thereby automatically cast said ball or marble over the field of said base or board and a back-stop or pin adapted to limit the range of movement of said spring-pawl with respect to its engagement with said locking-dog, substantially as and for the purposes described.

2. A game apparatus, comprising a base or board having flanged sides and ends and a cushioned corner and a divided field, a ball or

marble adapted to be seated in a pocket, a bat pivotally supported in an opening in said base or board and provided with a spring-controlled pawl adapted to be engaged and disengaged to and from a toothed locking-dog held under tension by a spring, a lever-arm slidable in guides for actuating said bat to thereby automatically cast said ball or marble over the field of said base or board and a back-stop or pin adapted to limit the range of movement of said spring-pawl with respect to its engagement with said locking-dog, substantially as and for the purposes described.

611,279. CROWN-SETTING FOR JEWELS. NATHANIEL I. RIPLEY, Newton, Mass. Filed Mar. 12, 1896. Serial No. 673,566. (No model.)



Claim.—A jewel-setting composed of a base having inwardly-directed arms provided with shoulders to form a seat, and a crown composed of a ring having upwardly-extended prongs, the ring being reinforced by the addition of metal thereto at the base of each prong, the said ring being soldered to the base at points between the said prongs, substantially as described.

611,280. TIRE. CHARLES G. ROBERTON, Glasgow, Scotland, and JAMES J. ROBERTON, Leeds, England, assignors of one-third to George E. Roberton, Montreal, Canada. Filed July 7, 1897. Serial No. 643,730. (No model.)



Claim.—1. In combination with a wheel, a resilient tire of greater diameter than the rim of the wheel-body, two or more rings intermediate of said tire and wheel-body and closely encircling said rim, and flexible means for connecting said tire to said rings.

2. In combination with the rim of a wheel, a resilient metallic tire of sufficiently greater diameter than the rim of the wheel-body to provide a free space between said tire and rim, two or more rings intermediate of said tire and rim and closely encircling said rim, and flexible textile means for connecting said resilient metallic tire to said rings.

3. In combination with the rim of a wheel, a resilient metallic wheel-tire of sufficiently greater diameter than the rim of the wheel-body, to provide a free, complete circumferential, space between said tire and rim; two or more rings intermediate of said tire and rim and closely encircling said rim, guy-strips formed of single strips of canvas, or the like, extending transversely of said tire and connecting same to said rings.

4. In combination with the rim of a wheel, a resilient metallic wheel-tire of sufficiently greater diameter than the rim of the wheel-body, to provide a free complete circumferential space between said tire and rim; two or more rings intermediate of said tire and rim and closely encircling said rim, guy-strips formed of single strips of canvas or the like, extending transversely of said tire and connecting same to said rings; and an independent tension device adapted to act upon each of said guy-strips for the purpose set forth.

5. A wheel-tire composed of a number of resilient rings arranged side by side and concentric with the wheel-hub, a flexible binding or cover for the rings; guy-strips extending from the tire to the rim of the wheel and formed of single strips of canvas or the like slitted to allow portions thereof to extend in different directions, an outer cover for the whole, and a tread of rubber or the like secured to such outer cover, for the purpose set forth.

6. A wheel-tire composed of a number of resilient rings of semi-tubular cross-section arranged side by side and concentric with the wheel-hub, a flexible binding or cover for the rings, guy-strips extending from the tire to the rim of the wheel, and formed of single strips of canvas or the like, slitted to allow portions thereof to extend in different directions, an outer cover for the whole, and a tread of rubber or the like secured to such outer cover for the purpose set forth.

7. A wheel-tire comprising a series of rings connected together at their adjacent edges, said rings and connections being formed integral with one another, and connected to the rim of the wheel by means of a series of tubular sections, a staple having its legs screw-threaded and taking through perforations in each of said tubular sections, a pair of interiorly-screw-threaded nipples taking through the rim of the wheel and adapted to receive the ends of said screw-threaded legs, for the purpose set forth.

8. In combination with the rim and spokes of a wheel, a tire comprising a series of rings, a nipple and washer mounted adjustably upon each of said spokes, a strap taking over and connected to said rings and connected to said washer, for the purpose set forth.

9. In combination with the rim and spokes of a wheel, a tire comprising a series of rings, a nipple and washer mounted adjustably upon each of said spokes, a strap taking over and connected to said rings and connected to said washer, and a tension-band 41, adapted to inclose said strap, for the purpose set forth.

10. In combination with the rim and spokes of a wheel a tire comprising a series of rings, a nipple and washer mounted adjustably upon each of said spokes, a strap taking over and connected to said rings and connected to said washer, and an adjustable tension-band 41, adapted to inclose said strap, for the purpose set forth.

611,281. SHIPPING-CRATE. OREN ROSE, Gibson, N. Y. Filed Oct. 25, 1897. Serial No. 656,306. (No model.)



Claim.—1. A crate having a bottom wall, side walls mounted upon the bottom wall to fold inwardly and provided with terminal transversely-alined guideways, and end walls fitted to slide at their edges in said guideways on the side walls, and adapted to be downwardly withdrawn therefrom to fold in places parallel with the bottom wall, substantially as specified.

2. A crate having a bottom wall, inwardly-folding side walls provided with transversely-alined guideways, end walls fitted at their side edges to slide in said guideways, and adapted, when withdrawn downwardly, to fold parallel with the plane of the bottom wall, and means for limiting the upward-sliding movement of the end walls, substantially as specified.

3. A crate having a bottom, side walls mounted upon the bottom to fold inwardly, and provided with terminal transversely-alined guideways, guideway extensions arranged below the plane of the bottom wall, end walls fitted to slide at their side edges in said guideways, and means carried by the end walls for pivotally supporting the same in said extensions of the guideways, substantially as specified.

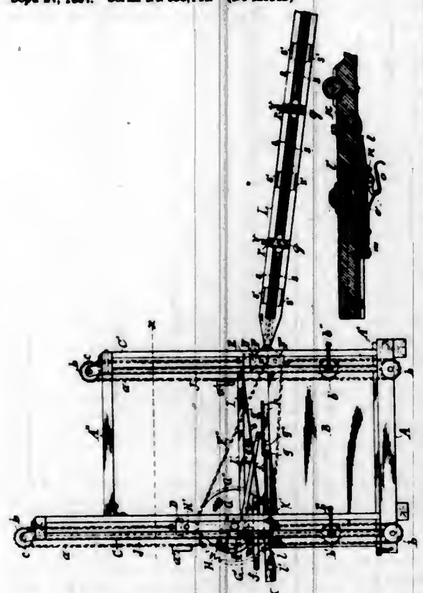
4. A crate having a bottom wall, inwardly-folding side walls provided with terminal transversely-alined guideways, end walls fitted to slide at their side edges in said guideways, and a T-head guide swiveled upon the end walls at each edge, to fit in alined grooves in the side walls of said guideways to prevent outward deflection of the side walls, substantially as specified.

5. A crate having a bottom wall, sectional side walls comprising inwardly-folding pivotal sections mounted upon the bottom wall, and fixed sections depending below the plane of the bottom wall, said pivotal sections being provided with terminal transversely alined guideways, end walls fitted at their side edges to slide in said guideways, and end-wall-pivoting devices carried by said end walls near their upper edges and adapted, when the side edges of the end walls are disengaged from the guideways of said pivotal sections, to pivotally support the end walls for upward folding parallel with the plane of the bottom wall, substantially as specified.

6. A crate having a bottom wall, side walls comprising fixed sections attached to the bottom wall and depending below the plane thereof, movable sections pivotally mounted upon the bottom wall to fold inwardly therefrom, said movable side-wall sections being provided with transversely-alined guideways, and the fixed side-wall sections being provided with guideway extensions, end walls fitted to slide at their side edges in said guideways, and pivoting means, consisting of antifriction-disks, and spindles carried by the side edges of the end walls, said disks engaging alined guide-grooves in the walls of the guideways, substantially as specified.

7. A crate having a bottom wall, side walls mounted upon the bottom wall to fold inwardly, and provided with terminal transversely-alined guideways, and end walls provided at their side edges, and contiguous to their upper edges with opposite guides fitting in said guideways for movement toward and from the plane of the bottom wall, the end walls having a pivotal movement, with their fulcrums in the horizontal planes of said guides, to adapt them to fold parallel with the bottom wall, substantially as specified.

611,282. PAPER-FEEDING MACHINE. JOHN H. RUSSELL, Amsterdam, N. Y., assignor of one-half to John H. Giles, same place. Filed Sept. 27, 1897. Serial No. 653,141. (No model.)



Claim.—1. In a paper-feeding machine, the combination with the frame, of followers adapted to slide vertically in the posts of the frame, feed-rollers between two of the followers, a connection between the other pair of followers, a swinging arm suspended from said connection, means connected to the said arm for engaging the upper sheet on a pile of paper and pushing it between the feed-rollers, a shaft to turn in the last-mentioned followers, a cam on the shaft for operating the swinging arm, and gearing between the said shaft and one of the feed-rollers, as set forth.

2. In a paper-feeding machine, the combination with the frame, of followers adapted to slide vertically in the posts of the frame, horizontal feed-rollers between one pair of the followers, a connection between the other pair of followers, a swinging arm suspended from the connection, means connected to the said arm for engaging the upper sheet at one edge, and pushing it between the said feed-rollers, a shaft below the said connection and turning in the followers, a cam on the shaft for operating the swinging arm, and gearing between the said shaft and one of the feed-rollers, as set forth.

3. In a paper-feeding machine, the combination with the frame having corner-posts with vertical guideways therein, of followers adapted to slide in the guideways, chains passing around sprocket-wheels on shafts at the top and bottom of the frame having their ends connected to the upper and lower ends of the followers, horizontal feed-rollers between one pair of the followers, a connection between the other pair of followers, a swinging arm suspended from the connection, means connected to the said arm for engaging the upper sheet at one edge, and pushing it between the said feed-rollers, a shaft below the said connection and turning in the followers, a cam on the shaft for operating the swinging arm, and gearing between the said shaft and one of the feed-rollers, as set forth.

4. The combination with a lining or other machine, of a pushing device to push the sheets from the pile successively and descend with the pile, a pair of feed-rollers for the sheets adapted to descend with the pile, and a conveyer extending between the lining-machine and the movable bearings of the feed-rollers, said conveyer being provided with pairs of feed-rollers geared together and guides between the rollers, and rollers on the frame of the lining-machine to support one end of the conveyer, its opposite end being pivoted to the said movable bearings, substantially as described and shown.

5. In a paper-feeding machine, the combination with the frame, blocks sliding vertically in the sides of the frame, a rod extending between the blocks, an arm suspended from the rod, projections on the arm, a horizontal shaft extending between and turning in said blocks, a cam on the shaft provided with a projection to engage the projections on the said arm, a pushing-block, *A*, to bear upon the pile of paper, a bar connecting the pushing-block, *A*, with the said arm, a pushing-block carrying a plate provided with a point to enter between the sheets and also a stop to engage the edge of the paper, and a connection between the pushing-block, *A*, and the other pushing-block, substantially as described and shown.

6. In a paper-feeding machine, the combination with the frame, blocks sliding vertically in the sides of the frame, a rod extending between the blocks, an arm suspended from the rod, projections on the arm, a horizontal shaft extending between and turning in said blocks, a cam on the shaft provided with a projection to engage the projections on the said arm, a pushing-block, *A*, to bear upon the pile of paper, a bar connecting the pushing-block, *A*, with the said arm, a pushing-block carrying a plate provided with a point to enter between the sheets and also a stop to engage the edge of the paper, a plate below and sliding upon the plate provided with the point, a spring to pull the sliding plate in one direction, a locking device provided with a lever to engage the pile, and a connection between the pushing-block *A*, and the other pushing-block, substantially as described and shown.

7. In a paper-feeding machine, the combination with the frame, blocks sliding vertically in the sides of the frame, a rod extending between the blocks, an arm suspended from the rod, projections on the arm, a horizontal shaft extending between and turning in said blocks, a cam on the shaft provided with a projection to engage the projections on the said arm, a pushing-block, *A*, to bear upon the pile of paper, a bar connecting the pushing-block, *A*, with the said arm, a pushing-block carrying a plate provided with a point to enter between the sheets and also a stop to engage the edge of the paper, a plate below and sliding upon the plate provided with the point, a spring to pull the sliding plate toward the pile, when the pushing-block is moving to cause the point to enter between the sheets, a bolt to lock the sliding plate, a lever pivoted to the sliding plate and adapted to engage the pile, a spring engaging the lever, and a connection between the pushing-block, *A*, and the other pushing-block, substantially as described and shown.

8. In a paper-feeding machine, the combination with the frame having posts with vertical guideways therein and a stationary vertical rod at a post, of blocks movable in the guideways and connected with the feeding devices resting on the pile, a frame supported by the feeding devices, a bar pivoted at one end in a projection on one of the blocks and adapted to grip the vertical rod, the opposite end of the pivoted bar resting on the frame supported by the feeding devices, and the feeding devices for feeding the sheets successively from the top of the pile, as set forth.

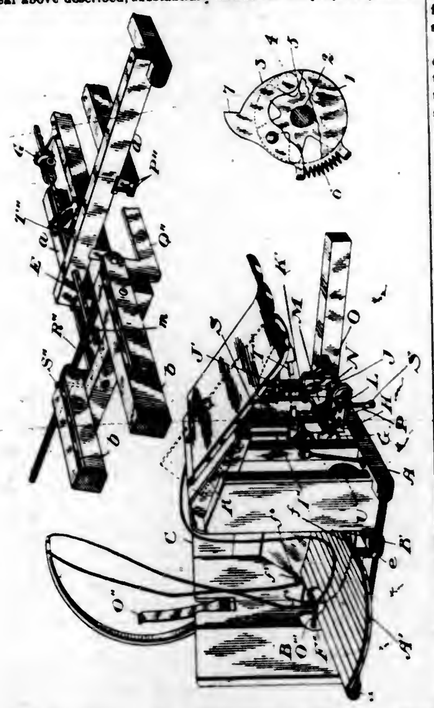
9. In a paper-feeding machine, the combination with the frame having corner-posts with vertical guideways therein, and stationary vertical rods at two of the posts, of blocks movable in the guideways, and connected to the feeding devices resting on the pile, a frame supported by the feeding devices, projections on two of the blocks through which the vertical rods extend, bars pivoted at one end in the projections and adapted to grip the vertical rods, the opposite end of one bar 1′ resting upon the frame supported by the feeding devices and the corresponding end of the other bar connected to the bar 1′ near the projection to which said bar is pivoted, and the feeding devices for feeding the sheets successively from the top of the pile, as set forth.

10. In combination with the feeding devices K and *l*, of a sliding block *h* to reciprocate upon the top of the pile of paper, pivoted ribs on the lower side of the block provided with points to engage the paper, and springs on the blocks to bear upon the ribs to turn them back when the block moves forward, substantially as described and shown.

611,288. MACHINE FOR SHOCKING GRAIN. WILLIAM RUSSELL, Hamilton, Canada, assignor of one-half to George Sheldon Bingham, Herbert Griffin, Robert Campbell, James Thompson, Dow Brothers, Janet Stonehaugh, and James Calder, same place, and William Millican, Galt, James Russell, Carluke, James Griffin, Lucan, and Archibald Henderson, Toronto, Canada. Filed Mar. 17, 1897. Serial No. 628,049. (No model.)

Claim.—1. In a machine of the class described, a receptacle for sheaves adapted to hold a sufficient number to form a shock, in combination with a sheaf-receiver located and arranged with respect to said receptacle to deliver sheaves on their sides in the latter, mechanism for operating said receiver to cause a sheaf to be retained during the binding and dumping of the shock and causing the deposit of two or more at the beginning of the next shock; binding mechanism adapted to bind the sheaves together, and mechanism for expelling the shock from the receptacle so that it will alight base down-

ward upon the ground during the time given by the retention of the sheaf above described, substantially as and for the purpose specified.



2. In a machine of the class described, a receptacle for sheaves adapted to hold a sufficient number to form a shock, and provided with stationary sides, a tiltable bottom and open end, in combination with binding mechanism connected to the sides of the receptacle and adapted to bind the sheaves together, and mechanism for tilting the bottom of the receptacle and expelling the shock, substantially as and for the purpose specified.

3. In a machine of the class described, a receptacle for sheaves adapted to hold a sufficient number to form a shock, and provided with stationary sides, a tiltable bottom and open end, in combination with a sheaf-receiver located and arranged with respect to said receptacle to deliver sheaves on their sides in the latter, and mechanism for operating said sheaf-receiver; binding mechanism connected to the sides of the receptacle and adapted to bind the sheaves together, and mechanism for tilting the bottom of the receptacle and expelling the shock, substantially as and for the purpose specified.

4. In a machine of the class described, a receptacle for sheaves with stationary sides and open at the top and one end, and adapted to hold upon their side a sufficient number of sheaves to form a shock, in combination with binding mechanism connected to the said stationary sides, and adapted to bind the sheaves together and mechanism for expelling the shock through the open end of the receptacle so that it will alight base downward upon the ground, substantially as and for the purpose specified.

5. In a machine of the class described, a receptacle for sheaves provided with stationary sides, open at the top and one end and adapted to hold upon their sides a sufficient number of sheaves to form a shock, in combination with a sheaf-receiver located and arranged with respect to said receptacle to deliver sheaves through the top of the latter, and mechanism for operating the sheaf-receiver; binding mechanism connected to the said stationary sides and adapted to bind the sheaves together, and mechanism for expelling the shock through the open end of the receptacle so that it will alight base downward upon the ground, substantially as and for the purpose specified.

6. In a machine of the class described, a receptacle for sheaves adapted to hold a sufficient number to form a shock and provided with stationary sides, a tiltable bottom and open end, in combination with mechanism adapted to receive sheaves from a harvester-binder and place them on their sides within the said receptacle; binding mechanism connected to the said stationary sides and adapted to bind the sheaves together, mechanism for tilting the bottom of the receptacle and expelling the shock; and means for withholding a sheaf from the receptacle during the binding and expulsion of the shock, substantially as and for the purpose specified.

7. In a machine of the class described, a shock-receptacle, in combination with an elevator hinged near the top of the said receptacle and adapted to receive sheaves from a harvester-binder; a continuously-running main driving-shaft; mechanism driven by the said shaft for operating the elevator; a clutch controlling the engagement and disengagement of the said mechanism; a movable rod controlling the said clutch; a pivoted lever adapted to move the said rod, and a suitably-carried cam adapted to rock the said lever and to be driven from any part of the binder revolving only during the binding and discharge of a sheaf; a suitably-journaled count wheel adapted to be moved by the said cam; and a cam projection on the side of the count-wheel adapted to push the said lever out of the path of the cam once every revolution, and means for returning the lever to its original position after the said cam projection has passed, substantially as and for the purpose specified.

8. In a machine of the class described, a sheaf-receptacle, in combination with a needle fast on a shaft journaled at one side of the said receptacle; a knotter and knotter-shaft located at the other side of the receptacle; a driving connection between the two shafts; a continuously-running main shaft; a driving connection between the main shaft and the knotter-shaft; a clutch adapted to put the said driving connection into and out of gear; a movable rod adapted to control the said clutch; a pivoted lever adapted to move the said rod; a spindle carrying a finger adapted to rock the said lever; a count-wheel adapted to revolve the said spindle, and means for revolving the said count-wheel every time a sheaf is received from the shocker, substantially as and for the purpose specified.

9. In a machine of the class described, a sheaf-receptacle, in combination with a shock-ejector hinged at one end within the receptacle; a shaft carrying a crank-arm; a pitman connecting the said crank-arm with the ejector; a continuously-running main shaft; a driving connection between the two shafts; a clutch adapted to put the said connection into and out of gear; a movable rod adapted to control the said clutch; a pivoted lever adapted to move the said rod, and the knotter-shaft carrying a finger adapted to rock the said lever, substantially as and for the purpose specified.

10. The combination with a harvester-binder, of a guide-rod connected to the rear of the frame; a shocker and L-shaped arms journaled on the said guide-rod with their vertical portions resting against the rear sill of the binder-frame and their horizontal portions secured to the sills of the shocker, substantially as and for the purpose specified.

11. The combination with a harvester-binder, of a guide-rod connected to the rear of the frame; a shocker and L-shaped arms journaled on the said guide-rod with their vertical portions resting against the rear sill of the binder-frame and their horizontal portions, secured to the sills of the shocker, and a clamping-collar and set-screw upon the said guide-rod, substantially as and for the purpose specified.

12. The combination with a harvester-binder, of a guide-rod connected to the rear of the frame; a shocker and L-shaped arms journaled on the said guide-rod with their vertical portions resting against the rear sill of the binder-frame, and their horizontal portions movable in guides upon the sills of the shocker, substantially as and for the purpose specified.

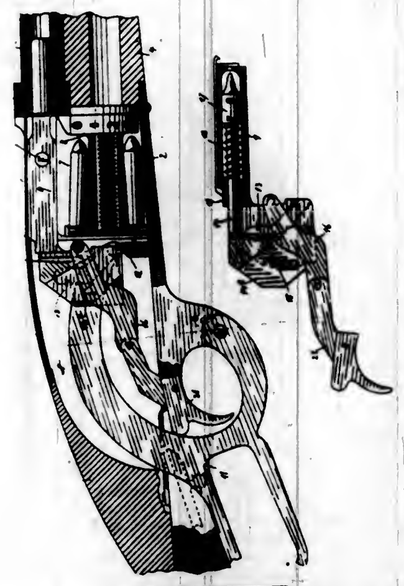
13. In a machine of the class described, a sheaf-receptacle provided with a suitable needle and knotter, and means for operating the same, in combination with a tiltable ejector at the bottom of the receptacle; an eye upon the said tiltable bottom and two eyes and a twine-tension device located upon the receptacle in proximity to the eye upon the ejector, substantially as and for the purpose specified.

14. In a machine of the class described, a shock-receptacle, in combination with an elevator hinged near the top of the said receptacle and adapted to receive sheaves from a harvester-binder, a pitman pivoted to the elevator and to a crank-arm upon a shaft, and means for revolving the said shaft whenever a sheaf is discharged from the harvester-binder upon the elevator, a weighted lever pivoted on the frame of the machine and a pitman pivotally connecting the lever with the said elevator, substantially as and for the purpose specified.

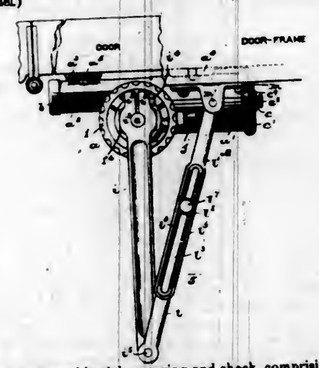
611,284. INDICATOR FOR FIREARMS. ARTHUR W. SAVAGE, Utica, N. Y., assignor, by mesne assignments, to the Savage Repeating Arms Company, same place. Filed Jan. 17, 1893. Serial No. 458,718. (No model.)

Claim.—The breech-bolt provided with an opening, a firing-pin provided with characters arranged to be exposed at the opening to indicate the position of the firing-pin combined, substantially as set forth.

611,284.



611,285. COMBINED DOOR SPRING AND CHECK. ADAM SCHEID and CARL SCHEID, Harrison, N. J. Filed Oct. 30, 1897. Serial No. 656,879. (No model.)



Claim.—1. A combined door spring and check, comprising a vertical cylinder forming a spring and shaft chamber and a horizontal air and piston chamber consisting of a horizontal cylinder having a reduced cylindrical portion and extending on either side of said vertical cylinder, the central longitudinal axes of the main part of said horizontal cylinder and the said reduced part being in different but parallel planes both to one side of the central vertical axis of said vertical cylinder, a rotatively-arranged spindle in said vertical cylinder, a spiral spring on said spindle, mechanism connected with said spindle for actuating the same and its spring, a toothed sector on said spindle, a piston and piston-rod in the main portion of said horizontal cylinder, a rearwardly and upwardly extending rod connected with said piston, and a toothed rack at the free end of the bent part of said rod fitting and sliding in the reduced portion of said horizontal cylinder, the teeth of said rack being in intermittent mesh with the teeth of said sector, substantially as and for the purposes set forth.

2. A combined door spring and check, comprising a vertical cylinder forming a spring and shaft chamber and a horizontal air and piston chamber consisting of a horizontal cylinder having a reduced cylindrical portion and extending on either side of said vertical cylinder, the central longitudinal axes of the main part of said horizontal cylinder and the said reduced part being in different but parallel planes both to one side of the central vertical axis of said vertical cylinder, a rotatively-arranged spindle in said vertical cylinder, a spiral spring on said spindle, mechanism connected with said spindle for actuating the same and its spring, a toothed sector on said spindle, a piston and piston-rod in the main portion of said horizontal cylinder, a rearwardly and upwardly extending rod connected with said piston, and a toothed rack at the free end of the bent part of said rod fitting and sliding in the reduced portion of said horizontal cylinder, said piston-rod having curved portions A^2 and A^3, and said sector having curved parts c^3 and c^4, all arranged to intermittently cause the active engagement and disengagement of said toothed rack with said toothed sector, substantially as and for the purposes set forth.

3. A combined door spring and check, comprising a cylinder having bearing portions, and a rotatively-arranged spindle therein, a spiral spring on said spindle, mechanism connected with said spindle for actuating the same and its spring, a toothed sector on said spindle, an air-cylinder connected with said spindle-carrying cylinder, a piston and piston-rod in said cylinder, a toothed rack connected with said piston, said piston-rod having curved portions A^2 and A^3 on said piston-rod, a sector portion c^2 on said spindle having curved parts c^3 and c^4, all arranged to intermittently cause the active engagement and the disengagement of said toothed rack with said toothed sector, substantially as and for the purposes set forth.

4. In combination, with an air-cylinder, a piston A having perforations A^{11}, and a flexible disk k thereon having holes K', said holes being alternately spaced with respect to said piston and the disk k, substantially as and for the purposes set forth.

611,286. SAFETY-RAZOR. ESON L. SCHMITT, New York, N. Y. Filed Mar. 1, 1898. Serial No. 672,157. (No model.)

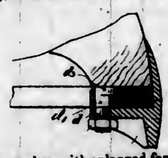


Claim.—1. In a safety-razor, a frame composed of a stationary main portion with incisions in the front edges of the sides of said frame, and blade-retaining lugs pivoted on the sides, said lugs in operation being arrested by the incisions and capable of being turned down, in combination with a hinged swinging blade-supporting front plate, substantially as described.

2. In a safety-razor, a frame composed of a stationary main portion with incisions in the front edges of the sides of said frame, and blade-retaining lugs pivoted on the sides, said lugs in operation being arrested by the incisions and capable of being turned down, and in the rear top center of said frame a blade-securing screw in combination with a hinged swinging blade-supporting front plate provided with a downward flange on which the securing-screw acts, substantially as described.

3. In a safety-razor, a frame composed of a stationary main portion with incisions in the front edges of the sides of said frame, and blade-retaining lugs pivoted on the sides, said lugs in operation being arrested by the incisions and capable of being turned down, and in the rear top center of said frame a blade-securing screw in combination with a hinged swinging blade-supporting front plate provided with a downward flange, and two small set-screws in the top corners, substantially as described.

611,287. HORSESHOE. LAZAR M. SERBÁN, Vienna, Austria-Hungary. Filed Dec. 31, 1897. Serial No. 665,194. (No model.) Patented in Germany Oct. 8, 1895, No. 83,381, and in Austria Nov. 30, 1897, No. 47/5,133.



Claim.—1. A horseshoe with enlarged fore-bent portion provided at the bend with a slot, a screw-bolt fitting in the slot, a changeable toe composed of the toe-body proper, an angle-plate with opening for the screw-bolt and resting on the lower side of the horseshoe and embracing the same by laps, and a securing-nut, as specified.

2. A horseshoe with enlarged fore-bent portion provided at the bend with a pyramidal slot, a screw-bolt with a truncated pyramidal head fitting in the slot, a changeable toe composed of the toe-body proper, an angle-plate with opening for the screw-bolt and resting on the lower side of the horseshoe and embracing the same by divided laps, a securing-nut, and nut-protecting ribs on the toe, as specified.

3. In combination with a horseshoe having a fore-bent portion with a pyramidal slot, a changeable toe composed of the toe-body proper carried by a plate provided with divided laps and an opening, a screw-bolt with a truncated pyramidal head fitting into the slot and passing through the opening in the plate, a securing-nut, and nut-protecting ribs with enlarged heads on the toe, as specified.

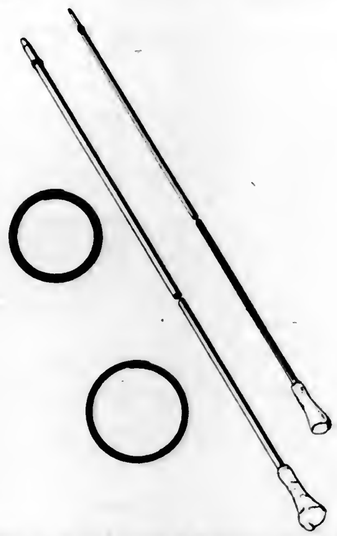
611,288. THREE-SIDED CALK. LAZAR M. SERBÁN, Vienna, Austria-Hungary. Filed Dec. 31, 1897. Serial No. 665,195. (No model.) Patented in Austria Aug. 22, 1896, No. 46/3,257, and in Hungary Aug. 21, 1897, No. 9,397.



Claim.—1. An improved calk consisting of a three-sided calk-body having pyramid-like converging side surfaces and forming at the lower end a second and short pyramid, and a threaded calk-bolt, as specified.

2. An improved calk consisting of a three-sided calk-body having pyramid-like converging, grooved or concaved side surfaces and forming at the lower end a second and short pyramid, and a threaded calk-bolt, as specified.

611,289. STICK OR ROD FOR UMBRELLAS OR PARASOLS. WILLIAM S. SEYMOUR, Philadelphia, Pa., assignor of one-half to Andrew J. Cohen, same place. Filed Feb. 18, 1898. Serial No. 670,804. (No model.)

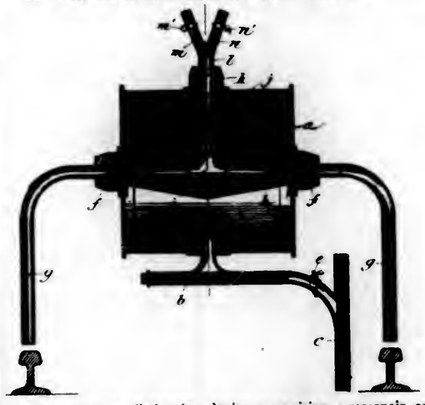


Claim.—1. As a new article of manufacture an umbrella stick or tube comprising two or more layers of metal, said metal being rolled very thin to present in the formed tube of minimum diameter in cross-section a maximum surface area in opposing layers for the application of the soldering metal, said layers being formed from a single sheet and wound in a direction transverse to its length, one layer wound upon the other in close proximity and fusible soldering metal provided between adjacent surfaces whereby the adjacent surfaces are made coherent, substantially as described.

2. As a new article of manufacture a tubular stick or rod for umbrellas and the like consisting of a strip of metal wound in a direction transverse to its length in the form of a tapering tube of greater diameter in cross-section at one end than at the other having two or more windings to form a plurality of layers, the adjacent surfaces of said layers being united by soldering metal provided between said adjacent layers, substantially as described.

3. A tubular stick or rod for umbrellas, parasols and the like consisting of a strip of metal the longitudinal central portion of which is crimped or corrugated, said strip being wound into tubular form in a direction transverse to its length, and having two or more windings so that one of the plain portions forms the inner walls of the tube and another the outer walls, the crimped central portion forming an intermediate layer between the two.

611,290. RAIL-CLEANING DEVICE. SAMUEL A. SHORT, Altoona, Pa. Filed June 26, 1897. Serial No. 642,540. (No model.)

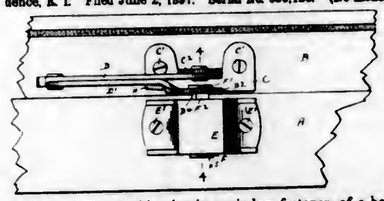


Claim.—1. A rail-cleaning device, comprising a reservoir, outlets therefor extending over the rails of the railroad-track, and means to supply water, steam and air or any combination thereof to the said outlets, substantially as described.

2. A rail-cleaning device, comprising a reservoir, a water-supply therefor, outlets leading from such reservoir to the rails, and steam and air inlets opening adjacent to said outlets, substantially as and for the purpose described.

3. A rail-cleaning device, comprising a reservoir having outlets leading to the rails, a water-supply, steam and air supplies, and means for controlling the supplies of water, steam and air, substantially as described.

611,291. WINDOW-FASTENER. ALDEN A. STEBBINS, Providence, R. I. Filed June 2, 1897. Serial No. 639,126. (No model.)



Claim.—1. The combination in a window-fastener, of a hooked lever pivotally connected to a plate adapted to be attached to one of the sashes, a sliding bolt supported by a plate adapted to be attached to the other sash, said bolt having a sliding motion at right angles to the plane of rotation of said hooked lever and arranged to be pushed endwise into the path of said lever in position to be engaged thereby, and a spring by which said bolt is withdrawn out of the path of said lever and also out of operative position, substantially as described.

2. The combination of a plate adapted to be attached to one of the sashes, a sliding bolt supported by said plate, and provided with a reduced neck at one end, a hooked lever pivotally connected with the other sash and capable of a swinging motion in a plane at right angles to the movement of said sliding bolt, whereby the sliding movement of the bolt in one direction will carry its neck into the path of said hooked lever in position to be engaged thereby and its motion in the opposite direction will carry it out of the path of said hooked lever, substantially as described.

3. The combination of a supporting-plate adapted to be attached to one of the sashes, a sliding bolt supported by said plate and provided with a reduced neck disposed in an oblique plane, a lever pivotally connected with the other sash and provided with a circular opening, and an inclined slot communicating with said circular opening, whereby the neck of said bolt is adapted to be engaged by said lever and locked therein, when the sashes are separated, substantially as described.

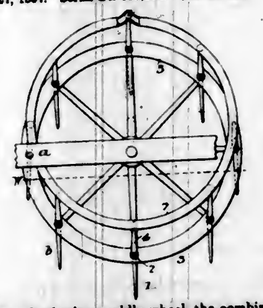
4. The combination of a hooked lever pivotally connected to a plate adapted to be attached to one of the sash and capable of a slight lateral motion, a lug projecting from said plate and having a cam-surface arranged in the path of said lever by which said lever is moved laterally, and means connected with the other sash for engaging said hooked lever, substantially as described.

611,292. APPARATUS EMPLOYED IN AERATING WATER OR OTHER LIQUIDS IN BOTTLES. EMILE STERRE, Paris, France. Filed Mar. 31, 1898. Serial No. 675,960. (No model.)



Claim.—In apparatus employed in aerating water and other liquids in bottles and the like, the combination with a stopper having a holder for a gas-containing capsule, means for liberating the gas from such capsule, and means for securing the stopper to the bottle-neck, of an air or safety chamber on the exterior of such stopper and having free communication with the interior of the bottle, whereby the gas liberated from the capsule enters the air or safety chamber, substantially as and for the purpose described.

611,298. PADDLE-WHEEL. JOHN S. TERRELL, Marshall, Mo. Filed Nov. 27, 1897. Serial No. 659,994. (No model.)



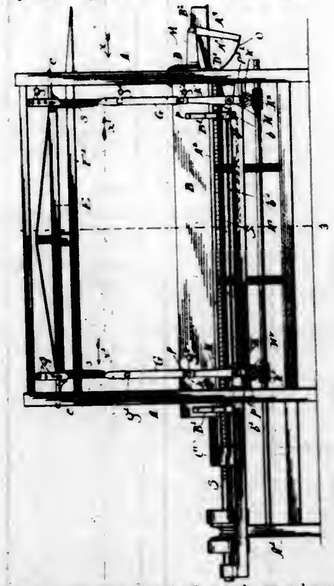
Claim.—In a feathering paddle-wheel, the combination of two identical, continuous, inwardly grooved or channeled cams, eccentric in shape, to each paddle-wheel; cams having short upward lateral bend in center of larger end curve; cams rigidly fixed to inner sides of wheel-house on opposite sides of paddle-wheel and upwardly eccentric thereto with lateral bend of cams exactly above shaft of paddle-wheel; cams adapted to receive within their grooves friction-rollers; rollers journaled on outwardly-extending horizontal journals; journals extending from upper ends of perpendicular arms; arms firmly fixed at lower ends to horizontal paddle-blade shafts; shafts journaled through and adapted to turn in rims of paddle-wheel; paddle-blades firmly fixed to said shafts between wheel-rims, parallel with before-mentioned arms and at a point a little above center of blades; all substantially as and for the purposes hereinbefore set forth.

611,294. MATTRESS-STUFFING MACHINE. ROBERT R. THOMPSON, Bloomington, Ill. Filed July 12, 1897. Serial No. 644,184. (No model.)

Claim.—1. The combination with a framework and top vertically guided therein, of a series of approximately vertical supporting-bars pivoted to the top and having a series of shoulders upon one side, a series of operating-levers pivotally mounted upon the frame and having means of engagement with said shoulders, means for retaining said bars in engagement with said lever and means for disengaging one of said shoulders from the lever at about the time at which said lever engages with the next succeeding shoulder; substantially as described.

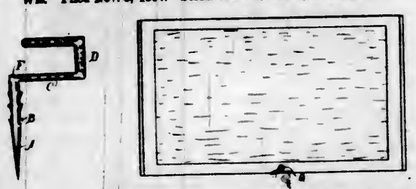
2. The combination with a framework and the press-box having laterally-adjustable sides supported therein, of extensions upon said sides provided with arc-shaped slots, brackets upon the framework and a segmental gate pivoted by means of suitable radial arms upon said brackets and adapted to swing in said slots whereby the press-box may be contracted laterally without adjustment of said gate; substantially as described.

3. In a mattress-stuffing machine the combination with a supporting-frame and a press-box having a suitable bottom and sides, of a top guided vertically in the frame, approximately vertical bars supporting the top, shafts journaled in the frame and provided with means for their rotation, and levers mounted on the ends of said shafts and each projecting on both sides of the shaft on which it is mounted, each of said levers being provided at both its ends with means for detachably engaging the corresponding supporting-bar and each bar and lever, at each point of mutual engagement being provided with means whereby the rotation of the lever may slightly vary the point of support of the bar upon the lever.



4. The combination with the frame, the press-box and the vertically-movable cover, of the bars, G, G, the shafts H, H, the levers, K, K, and the cams and eccentrics, *l*, *l'*, *k*, *k'*, the ends of each lever being adapted to detachably engage the corresponding bar at points contiguous to the cams, *l*, *l'*, and the cams being adapted to rest upon the eccentrics in suitable positions of the levers, thereby slightly shifting, in each case, the point of support of the bar upon the lever.

611,295. BOX-FASTENER. CARROLL M. TOWER, Milwaukee, Wis. Filed Nov. 8, 1897. Serial No. 657,756. (No model.)

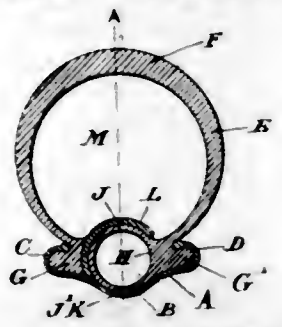


Claim.—1. A fastener for boxes and similar articles of manufacture comprising a shank, a laterally-projecting portion, a raised portion extending from the laterally-projecting portion, and a holding arm or part extending from the raised portion and adapted, when the fastener is rotated upon its shank, to engage the object to be held, substantially for the purpose set forth.

2. A fastener for boxes and similar articles of manufacture, comprising a shank, a laterally-projecting portion, a raised portion extending from the laterally-projecting portion, and a holding arm or part extending from the raised portion at an angle to the laterally-projecting portion, and adapted when the fastener is rotated upon its shank, to engage the object to be held, substantially for the purpose set forth.

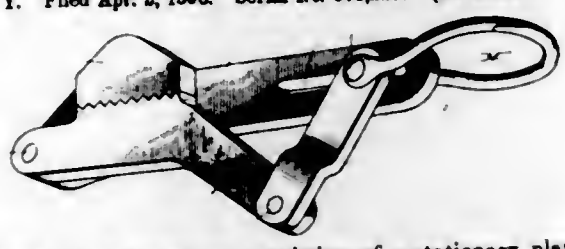
3. A fastener for boxes and similar articles of manufacture, comprising a barbed shank, a laterally-projecting portion, a raised portion extending from the laterally-projecting portion, and a holding arm or part extending from the raised portion at an angle to the laterally-projecting portion, and adapted, when the fastener is rotated upon its shank, to engage the object to be held, substantially for the purpose set forth.

611,296. PNEUMATIC TIRE. GEORGE TURNER and JAMES M. H. VENOUR, London, England. Filed Apr. 15, 1898. Serial No. 677,699. (No model.)



Claim.—A tubeless pneumatic tire having a tube H at one edge with openings J, J', the other edge of the tire having the flap L to fit over the opening J in the interior of the tire to act as a valve, substantially as described.

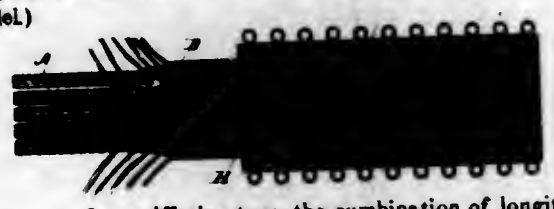
611,297. WIRE-STRETCHER. FREDERICK VOLK, Jr., New York, N. Y. Filed Apr. 2, 1898. Serial No. 676,223. (No model.)



Claim.—1. A wire-clamp consisting of a stationary plate provided with a side extension forming the fixed jaw and with a longitudinal slot in its outer end; a lever pivoted to the outer end of the main plate provided, between its ends, with a movable jaw adapted to engage the fixed jaw, a connecting-rod or pitman pivotally secured to the outer upper end of the pivoted lever, a pin passing through the outer lower end of the connecting-rod and the slot in the main plate, and a loop or clevis connected with said pin, substantially as described.

2. A windlass-pulley herein described, mounted at one end of a U-shaped metallic frame, and to the other end a suitable hook attached for securing the frame to a fixed object; on one end of the axis of the pulley, a ratchet-wheel mounted with a pawl pivoted to the side of the U-shaped frame and engaging the teeth of the ratchet-wheel, and the other end of the axis of the pulley formed to receive a crank or handle for turning the pulley, substantially as described.

611,298. STIFFENING TAPE OR FABRIC. EDWARD K. WARREN, Three Oaks, Mich. Filed Mar. 31, 1897. Serial No. 630,191. (No model.)



Claim.—1. In a stiffening-tape the combination of longitudinal composite stiffening-strands made up of stiff fibers bound together by a wrapping-thread; diagonal threads or strands braided together and over and under the alternate stiffening-strands and into a selvage on each edge thereof; a covering-ribbon secured by its edges to the edges of said tape by suitable stitching as specified.

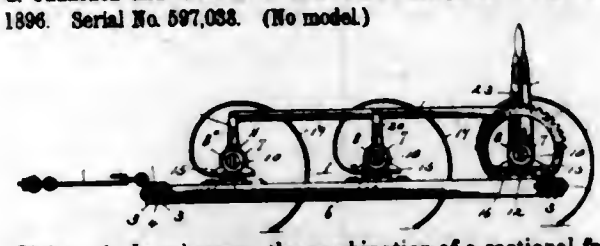
2. In a stiffening-tape the combination of longitudinal composite stiffening-strands made up of stiff fibers bound together by a wrapping-thread; diagonal threads or strands braided together and over and under the alternate stiffening-strands and into a selvage on each edge thereof; as specified.

3. In a stiffening fabric the combination of longitudinal composite stiffening-strands made up of stiff fibers bound together by a wrapping-thread; diagonal threads or strands braided together and over and under the alternate stiffening-strands as specified.

4. In a stiffening fabric the combination of longitudinal composite stiffening-strands made up of stiff fibers of quills of feathers bound together by a wrapping-thread; diagonal threads or strands braided together and over and under the alternate stiffening-strands as specified.

5. In a stiffening-tape the combination of longitudinal composite stiffening-strands made up of stiff fibers bound together by a wrapping-thread; diagonal threads or strands braided together and over and under the alternate stiffening-strands and into a selvage on each edge thereof; a covering-ribbon secured to one edge of said tape as specified.

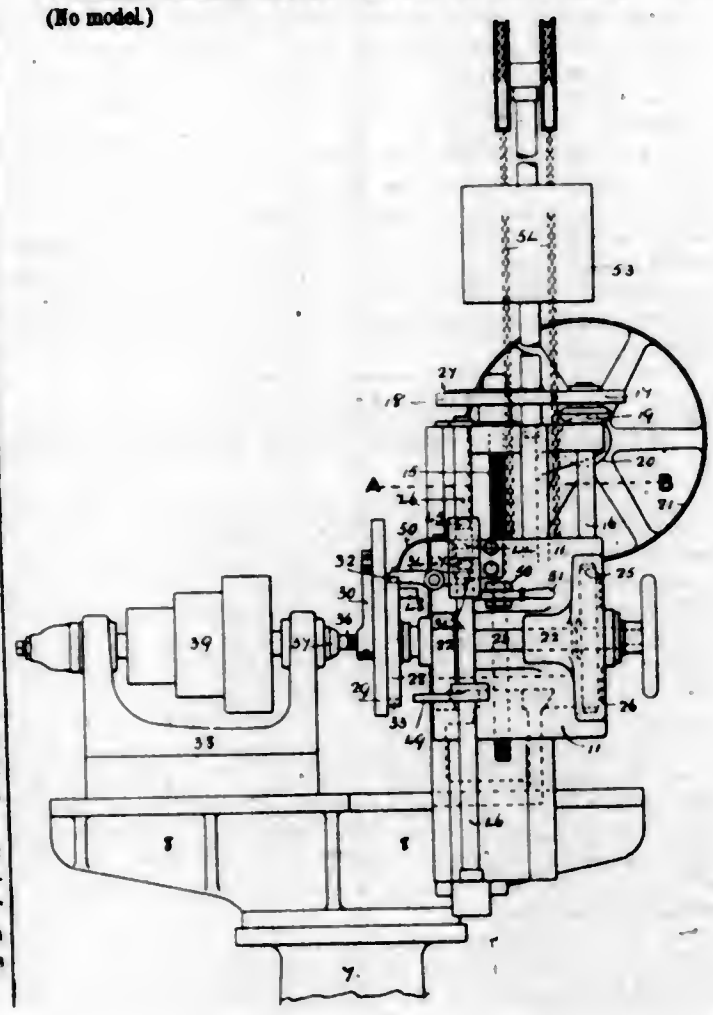
611,299. SPRING-TOOTH HARROW. HELON J. WASHBURN and EDGAR L. CUDABACK, Ransomville, N. Y., assignors of one-half to Clinton G. Cudaback and William G. Washburn, same place. Filed June 26, 1896. Serial No. 597,038. (No model.)



Claim.—1. In a harrow, the combination of a sectional frame of which the members are pivotally connected upon a medial line for folding into planes one above the other, each frame section having inner and outer side bars, of which the former are spaced apart to form a longitudinal interval, transverse tooth-bars mounted in bearings upon said side bars of the frame-sections, the tooth-bars of one frame-section being respectively alined with the tooth-bars of the other section, and one of the tooth-bars of each pair being extended inwardly beyond the inner side bar of the frame-section to occupy a position in said longitudinal space between the inner side bars, and teeth spaced at uniform distances upon each tooth-bar, with the innermost teeth on alined bars arranged at different distances from the medial line upon which the frame-sections are connected to fold, whereby when the frame-sections are folded, the adjacent teeth are arranged in different vertical planes, substantially as specified.

2. In a harrow, the combination with a supporting-frame and rocking tooth-bars, together with operating devices for said tooth-bars, of spring-teeth, each consisting of a complete spiral coil provided at its inner end with a straight flat portion, a saddle-plate provided with lateral upwardly-extending flanges cut away at their centers to form registering seats receiving and fitting the contour of a tooth-bar, and also provided at its under side with a longitudinal seat, approximately equal in depth and width with the straight flat inner portion of the teeth, and adapted to receive the same, a clip-plate arranged in contact with the under surface of said flat portion of a tooth and parallel with the tooth-bar, and provided near its ends with openings registering with diametrical openings in the tooth-bar, and securing-bolts extending upwardly through said registering openings in the clip-plate and tooth-bar and fitted at their upper ends with taps, said bolts being arranged upon opposite sides of the vertical plane of a tooth, and being adapted to hold the saddle-plate from longitudinal and rotary movement with relation to the tooth-bar, substantially as specified.

611,800. PROFILING-MACHINE. THOMAS WEBSTER and ARTHUR E. BENNETT, Coventry, England. Filed Dec. 13, 1897. Serial No. 661,687. (No model.)

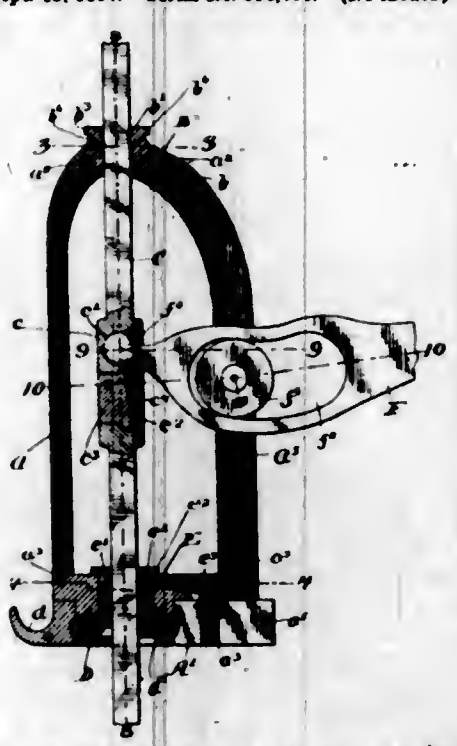


Claim.—1. In profiling-machines the combination with the horizontal sliding piece 10, of the vertical slide 11, carrying spindle 23 and former 29 with the latch 34 releasing stop 47 stop-piece 48 operating arm 49 and clutches 26 and 27 with their necessary driving and resisting mechanism the whole mounted upon suitable frame 7 bed 8 with head-stock 38 carrying tool 36 all substantially as set forth and shown and for the purposes specified.

2. The slide 11, with latch 34, and stop-bracket 44 engaging respectively with stops 47 and 45 for the simultaneous control of the vertical movement of slide and the rotation of spindle 23 substantially as shown and described.

3. The spindle 23, and chuck-plate 28, provided with a stop 48 in combination with the reversing-arm 49, bracket 44 and stop 45, all substantially as set forth and shown.

611,801. CONVERTIBLE PUMP-TOP. JOHN W. WEDDEL, Oregon, Ill. Filed Sept. 15, 1897. Serial No. 651,736. (No model.)



Claim.—1. The combination with a pump-top having a suitable opening, of a guiding-block fitted to said opening and having a slot for the pump-rod, said block having upon its outer surface a depression or cavity and an opening connecting said cavity with the slot whereby the depression together with the adjacent portions of the pump-top forms an oil-well for the reception of oil and waste and the opening therefrom conveys the oil to the pump-rod; substantially as described.

2. The combination with a pump-top having an opening therefor, of a guide-block fitted to said opening and having a horizontal flange above the same adapted to rest upon the pump-top, said block having a slot for the pump-rod, a depression or cavity in its side and an opening connecting the two, whereby when the block is in position said cavity together with the adjacent wall of the pump-top forms a closed oil-well adapted for the reception of waste and oil and the opening between the cavity and the slot conveys the oil to the pump-rod; substantially as described.

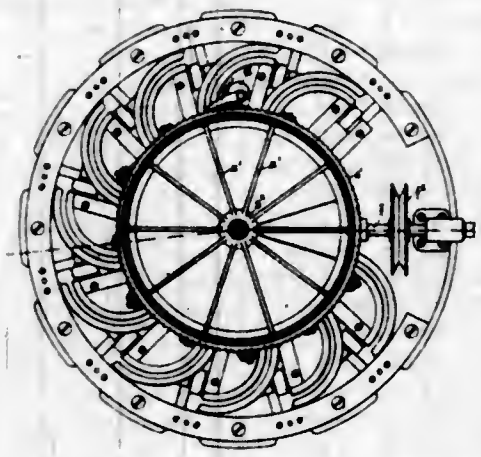
3. The combination with the pump-top, A, having the standards, *a'*, adapted for the support of a pivoted handle, of a detachable bracket, G, fitted between said standards and adapted to be secured thereto and the shaft, *h*, journaled therein and removable therewith having at one end suitable connections for reciprocating a pump-rod and at the other suitable gearing for connection with a mechanical motor; substantially as described

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611,802. FEEDING DEVICE FOR NUT-TAPPING MACHINES. GEORGE WEBB, Chicago, Ill. Filed Oct. 25, 1897. Serial No. 656,296. (No model.)

Claim.—1. In a feeding device, the combination with a stationary hopper having vertical compartments, of a movable bottom therefor with an opening therein, means for rotating said bottom to bring said opening successively opposite the compartments in said hopper and a rotating distributing-plate beneath the bottom of said hopper, substantially as described.

2. In a feeding device, the combination with a vertically-adjustable stationary hopper having vertical compartments, of a movable bottom therefor with an opening therein, means acting at the periphery of said bottom for rotating the same to bring said opening successively under the compartments in said hopper and a rotating distributing-plate beneath the bottom of said hopper, substantially as described.



3. In a feeding device, the combination with a stationary hopper having vertical compartments, of a rotating bottom therefor having an opening therein and carrying peripheral teeth, a propelling device engaging said teeth to rotate said bottom and a rotating distributing-plate beneath said hopper, substantially as described.

4. In a feeding device, the combination with a rotating distributing-plate, of a hopper adapted to feed blanks thereto, a wall surrounding said distributing-plate, chutes or guideways leading through said wall, and agitating-arms moving in proximity to the entrance of said chutes, substantially as described.

5. The combination with a rotating distributing-plate, of a hopper adapted to feed blanks thereon, a stationary wall surrounding said plate and having a series of openings therein for the passage of the blanks, movable agitating-arms adjacent to said openings and extending over said plate and means for actuating said agitating-arms, substantially as described.

6. The combination with a rotating distributing-plate, of a wall surrounding same and having a series of openings therein for the passage of blanks, movable agitating-arms in proximity to said openings and extending through said wall and over said plate, and means for advancing and retracting alternate agitating-arms at the same time, substantially as described.

7. The combination with a rotating distributing-plate, of a wall surrounding the same, a series of chutes or guideways leading therethrough, a centrally-located cam-wheel, reciprocating parts moved thereby, and a series of agitating-arms extending through said wall and moved in and out by said reciprocating parts, substantially as described.

8. The combination with a rotating distributing-plate and a series of outwardly-reciprocating pushers, of blank-feeding chutes or guideways starting radially from the periphery of the distributing-plate and extending therefrom downward and in a laterally-deflected direction, the outlet end of the feeding-chute extending transversely to the path of the pusher, substantially as described.

9. The combination with a rotating distributing-plate, and a series of radially-reciprocating pushers, of a series of chutes or guideways extending from the periphery of said distributing-plate downward and laterally and delivering the blanks into the path of the corresponding pusher from the side, substantially as described.

10. The combination with a rotating distributing-plate and a series of reciprocating pushers, of a series of blank-feeding chutes or guideways gradually curved laterally and starting radially from the periphery of the distributing-plate and extending downward and laterally and having the respective outlet ends thereof extending transversely to the paths of the corresponding pushers, substantially as described.

11. A stationary hopper having vertical compartments, a rotating bottom thereof having an opening therein, a rotating distributing-plate beneath the same, a wall surrounding the distributing-plate, downwardly-extending and laterally-deflected chutes or guideways leading from the periphery of said distributing-plate, agitating-arms moving over said distributing-plate in proximity to the entrances of said chutes, and reciprocating pushers moving across the lower ends of said chutes, substantially as described.

12. The combination with a rotating distributing-plate and a series of agitating-arms therefor, of an annular cam-wheel having an exterior cam-surface for reciprocating said arms and an interior set of ratchet-teeth, an oscillating plate upon which said cam-wheel is journaled to rotate a pawl engaging said teeth and carried on said oscillating plate, substantially as described.

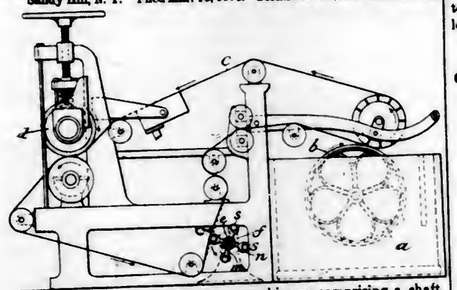
13. The combination with a rotating distributing-plate and a series of agitating-arms therefor, of an annular cam-wheel having an exterior cam-surface for reciprocating said arms and an interior set of ratchet-teeth, an oscillating plate upon which said cam-wheel is journaled to rotate, a pawl mounted thereon and a bar carrying a

shield which lifts said pawl out of engagement with said teeth during a portion of the stroke thereof substantially as described.

14. The combination with a rotating distributing-plate and a series of agitating-arms therefor, of an annular cam-wheel having an exterior cam-surface for reciprocating said arms and an interior set of ratchet-teeth, an oscillating plate upon which said cam-wheel is journaled to rotate, a pawl mounted thereon and an adjustable pivoted bar carrying a shield which lifts said pawl out of engagement with said teeth during a portion of the stroke thereof, substantially as described.

15. The combination with a rotating distributing-plate and a series of agitating-arms therefor, of an annular cam-wheel, having an exterior cam-surface for reciprocating said arms and an interior set of ratchet-teeth, an oscillating plate upon which said cam-wheel is journaled to rotate, a pawl mounted thereon, an adjustable pivoted bar carrying a shield which lifts said pawl out of engagement with said teeth during a portion of the stroke thereof, and a detent carried on said bar for preventing the backward rotation of said cam-wheel, substantially as described.

611,303. PAPER-MAKING MACHINERY. WILLIAM W. WELLS, Sandy Hill, N. Y. Filed Mar. 16, 1898. Serial No. 674,054. (No model.)

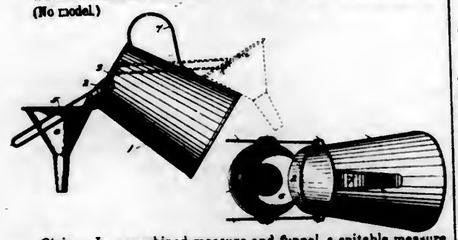


Claim.—1. A beater for paper machinery, comprising a shaft, spiders mounted upon the shaft and provided at their outer ends with forked arms forming beater-bar recesses, and beater-bars revoluble within said recesses, the contour of the recesses being such that the forked arms overlap the beater-bars and hold them against centrifugal expulsion.

2. A beater for paper-making machinery, comprising a shaft, spiders mounted upon the shaft and provided at their outer ends with forked arms forming beater-bar recesses, and beater-bars revoluble within said recesses, the beater-bars being cylindrical and the recesses being greater than a semicylinder.

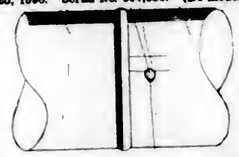
3. A beater for paper-making machinery, comprising a shaft, spiders mounted upon the shaft and provided at their outer ends with forked arms forming beater-bar recesses, and beater-bars revoluble within said recesses, the contour of the recesses being such that the forked arms overlap the beater-bars and hold them against centrifugal expulsion, and pins passing through the forked arms and beater-bars, to prevent the latter from shifting longitudinally.

611,304. FUNNEL ATTACHMENT FOR VESSELS. ADOLPH H. WERREMEYER, Jr., Central, Mo. Filed Sept. 18, 1897. Serial No. 652,148. (No model.)



Claim.—In a combined measure and funnel, a suitable measure, loops disposed diametrically opposite one another along the upper edge of the same on the outer surface of the measure, rigid slotted links loosely embracing the loops and adapted to slide along the same and be swung about the measure, and a funnel suspended from said links and adapted to be slidingly moved along the links whereby the spout or edge of the measure can be brought against the funnel, the whole being adapted to be swung about the measure and the handle carried thereby, substantially as set forth.

611,305. PIPE-LOCK. CHARLES O. WESCOTT, Farmington, Minn. Filed Jan. 25, 1898. Serial No. 667,856. (No model.)



Claim.—1. The combination, with a pipe-section having a pin or stud at or near its end, of a second pipe-section having a slot to receive said pin or stud when the sections are joined together, and means for closing said slot and locking said stud therein, substantially as described.

2. The combination, with a pipe-section having a pin or stud at or near its end, of a second pipe-section having a slot provided with a lateral extension, and a tongue adapted to close said slot and lock said pin within said extension, substantially as described.

3. The combination, with a pipe-section having a pin or stud at or near its end, of a second pipe-section having a slot to receive said pin or stud when the sections are joined together, and a tongue integral with said second section and adapted to close said slot and lock said pin therein, substantially as described.

611,306. WASHING-MACHINE. GEORGE T. WIBTERS Cameron, W. Va. Filed Apr. 7, 1898. Serial No. 676,791. (No model.)



Claim.—1. In a washing-machine, the combination of a frame or stand having oppositely-inclined standards arranged in pairs at each side of the frame, one of the standards of each pair being extended to form an arm, the upper ends of the arms being recessed, a washing-machine body journaled in the frame or stand, and a transverse wringer-supporting bar extending across the top of the body and supported in said recesses, one end of the bar being pivoted to one of the arms, substantially as described.

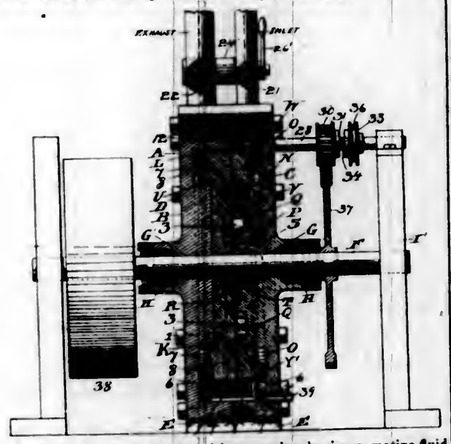
2. In a washing-machine, the combination of a frame or stand provided at opposite sides with inwardly-extending journals, a washing-machine body, bearing-plates mounted on the washing-machine body at opposite sides thereof and having outwardly-bowed portions, said bearing-plates being provided at their lower ends with bearing-slots receiving said journals, one of the bearing-plates forming a socket to receive a handle for operating the body, substantially as described.

611,307. ROTARY ENGINE. NELSON WITTE, Alma City, Minn. Filed Apr. 11, 1898. Serial No. 677,216. (No model.)

Claim.—1. A rotary engine comprising a casing having a motive-fluid space, a valve-chest provided with an abutment, inlet-openings, and outlet-openings, ports connecting the said inlet-openings with the outlet-openings, a rotatable valve for each of the inlet-openings, one of which is adapted to be continuously revolved while the other valve remains stationary, or vice versa, a valve for reversing the inlet and exhaust of steam to and from the motive-fluid space, and a piston-wheel in said casing provided with radially-movable pistons, adapted to be projected into and withdrawn from the motive-fluid space, substantially as described.

2. A rotary engine comprising a casing having a motive-fluid space, a valve-chest provided with an abutment, inlet-openings, and outlet-openings, ports connecting the said inlet-openings with the outlet openings, a rotatable valve for each of the inlet-openings, one of said valves adapted to be continuously revolved while the other valve remains stationary, or vice versa, a valve for reversing the inlet and exhaust of steam to and from the motive-fluid space, a cam-groove in the casing, a piston-wheel provided with radial pistons having antifriction-rollers, adapted to engage the cam-groove for

the purpose of projecting the pistons into and withdrawing the same from the motive-fluid space, substantially as described.



3. A rotary engine comprising a casing having a motive-fluid space, a valve-chest provided with an abutment, inlet-openings, and outlet-openings, ports for connecting the said inlet-openings with the outlet-openings, a rotatable valve for each of the inlet-openings, and means for continuously and automatically rotating one of said valves, while the other valve remains stationary, or vice versa, a valve for reversing the inlet and exhaust of steam to and from the motive-fluid space, and a piston-wheel in said casing provided with radially-movable pistons adapted to be automatically projected into and withdrawn from the motive-fluid space, substantially as described.

4. A rotary engine comprising a casing having a valve-chest provided with an abutment extending into the casing, a shaft revoluble in bearings in the casing, a piston-wheel on the shaft in said casing, a motive-fluid space around a portion of the piston-wheel, pistons movable radially on said piston-wheel, and means for projecting the pistons into the motive-fluid space as soon as they clear the abutment, and to retract said pistons before they reach the abutment again, inlet-openings, and outlet-openings in said valve-chest communicating with the motive-fluid space and a fluid-supply, a rotatable valve located in each of said inlet-openings, one of said valves adapted to be continuously revolved while the other remains stationary, or vice versa, and a combined inlet and outlet reversing-valve located in the inlet and outlet pipes, for the purpose of reversing the inlet and exhaust of steam, substantially as described.

5. A rotary engine comprising a casing having a wheel, a motive-fluid space, a valve-chest, inlet-openings, and outlet-openings, ports connecting the said inlet-openings with the outlet-openings, a rotatable valve for each of said inlet-openings adapted to be moved laterally into and out of operation, means for rotating said valves and throwing them into and out of operation, and means for reversing the inlet and exhaust of steam to and from the motive-fluid space, substantially as described.

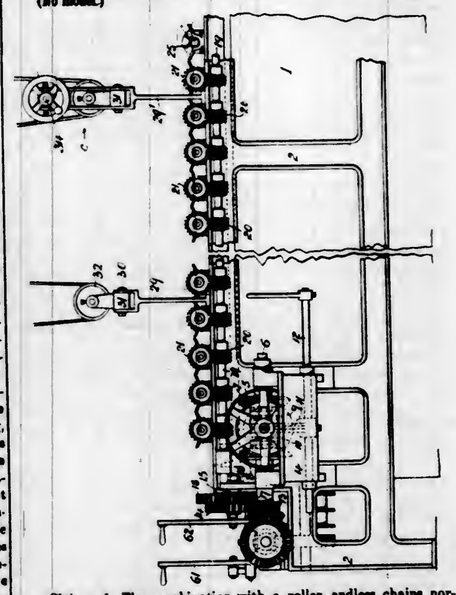
6. A rotary engine comprising a casing having a motive-fluid space, a valve-chest, inlet-openings, and outlet-openings, ports connecting the said inlet-openings with the outlet-openings, valves for the inlet-openings, means for reversing the inlet and exhaust of steam to and from the motive-fluid space, a drive-shaft mounted in said casing, a wheel in the casing mounted on said shaft, and means for communicating motion from said shaft to one of said check-valves for the purpose of rotating the same, while the other valve remains stationary, or vice versa, substantially as described.

7. A rotary engine comprising a casing having a drive-shaft mounted therein, a wheel in the casing mounted on said shaft, a cog-wheel mounted on said shaft outside the casing, a motive-fluid space, a valve-chest, inlet-openings, and outlet-openings, ports connecting the said inlet-openings with the outlet-openings, valves for the inlet-openings provided with stems having flanged pinions mounted loosely thereon, adapted to engage the cog-wheel on the drive-shaft, clutch mechanism rigidly secured on said stems adapted to engage said pinions and cause the same to turn therewith, and means for reversing the inlet and exhaust of steam to and from the motive-fluid space, substantially as described.

8. In a rotary engine, a casing having a drive-shaft, a valve-chest provided with inlet-openings, and outlet-openings, a rotatable valve in each of said inlet-openings, each having a stem adapted to be moved laterally to throw the valves into and out of operation, and means for communicating motion from the drive-shaft to said stems, and continuously revolving one of said valves while the other remains stationary, or vice versa, substantially as described.

9. A rotary engine comprising a casing having a drive-shaft with a piston-wheel, a valve-chest with inlet-openings, and outlet-openings, a rotatable valve in each inlet-opening, each having a stem with a two-part clutch thereon, one part of which is loosely mounted on said stem while the other part is fixed and adapted to slide the stem laterally in the other part, to engage therewith and cause it to turn with said stem when in operation, and means for communicating motion from the drive-shaft to the clutch, substantially as described.

611,308. MACHINE FOR DYEING, SIZING, AND WASHING YARN. WRIGHT WOODCOCK, JEREMIAH LONGTHORPE, and WALTER DARCUS, Copley, England. Filed Jan. 18, 1898. Serial No. 667,080. (No model.)



Claim.—1. The combination with a roller, endless chains normally suspended from the roller, the links of said chains having play longitudinally at their joints, and bars secured transversely to the said chains; of means for pushing together the links of the said chains, thereby permitting hanks of yarn to be slipped onto the said bars, substantially as set forth.

2. The combination, with a roller, endless chains normally suspended from the said roller, the links of the said chains having play longitudinally at their joints, and bars concavo-convex in cross-section and secured to the chains with their convex sides outward; of means for pushing together the links of the said chains, thereby permitting hanks of yarn to be slipped onto the said bars, substantially as set forth.

3. The combination, with a roller, endless chains normally suspended from the said roller, said chains being formed of plates having eyes arranged crosswise of them at their ends, and links connecting the adjacent eyes and having play longitudinally in them, and bars secured to the said plates; of means for pushing together the said eyes and links, thereby permitting hanks of yarn to be slipped onto the said bars, substantially as set forth.

4. The combination, with a series of stationary bearings, a series of shafts journaled in the said bearings and provided with angular sockets having openings on one side, said shafts being arranged so that all the said openings come uppermost simultaneously, and driving mechanism positively connecting the said shafts; of a series of removable rollers provided with angular end portions for engaging with the said sockets, and bearings for supporting the said rollers, substantially as set forth.

5. The combination, with a roller, of a bar arranged over the said roller, brackets carried by the said bar, bearings for the said roller carried by the said brackets, lifting mechanism supporting the said bar and brackets, and means for moving the said bearings apart, thereby releasing the said roller, substantially as set forth.

6. The combination, with a roller, of a bar arranged over the said roller, brackets having their middle portions pivoted to the said

bar, bearings for the said roller connected with the lower parts of the said brackets, and means for moving apart the said bearings, said means being connected to the upper parts of the said brackets, substantially as set forth.

7. The combination, with a series of rollers, and litter-rails provided with bearings for said rollers; of bars arranged crosswise over the said rails, brackets carried by the said bars and supporting the said rails, lifting mechanism connected to the said bars, and means for moving apart the said rails together with the said bearings, substantially as set forth.

8. The combination, with a tank, rollers arranged crosswise of the tank, and collapsible supports for hanks of yarn depending from the said rollers; of a carriage running outside the said tank longitudinally of the said rollers, and frames supported by the said carriage and provided with openings in which the said supports are collapsed when lowered so as to be partially supported by the said frames, substantially as set forth.

9. The combination, with a tank, rollers arranged crosswise of the tank, and collapsible supports for hanks of yarn depending from the said rollers; of a carriage running outside the said tank longitudinally of the said rollers, and frames pivoted to the said carriage and movable crosswise of the said rollers, said frames being provided with openings in which the said supports are collapsed when lowered so as to be partially supported by the said frames, substantially as set forth.

10. In a hank dyeing, sizing, or washing machine the combination with hank-carrying rollers of endless chains of bars or laths attached together by links and adapted to be traversed around said rollers when rotated, lifter-rails adapted to enter and rest in pockets secured to the top of the cistern, brackets with inclined faces attached to said lifter-rails, and provided with bearings for receiving the hank-carrying rollers, uprights secured to the lifter-rails to which cross-bars are centered, a right and left handed screw adapted, when rotated to work through nuts centered to one pair of said uprights and to move the uprights about the studs on which the cross-bars are centered to place the lifter-rails and bearings clear of the hank-carrying rollers or the reverse, the right and left handed worm and worm-wheel gearing for driving said hank-carrying rollers, square-sided sockets on the inner ends of the worm-wheel studs, square ends on the hank-carrying rollers adapted to engage in said sockets for rotating the said rollers, and the motor mechanism for giving motion to the worm-shaft, substantially as set forth.

11. In a hank dyeing, sizing, or washing machine, the combination with hank-carrying rollers, endless chains of bars or laths attached together by links and adapted to be traversed around said rollers when rotated, lifter-rails adapted to enter and rest in pockets secured to the top of the cistern, brackets with inclined faces attached to said lifter-rails and provided with bearings for receiving the hank-carrying rollers, uprights secured to the lifter-rails to which cross-bars are centered, a right and left handed screw adapted, when rotated, to work through nuts centered to one pair of said uprights and to move the uprights about the studs on which the cross-bars are centered to place the lifter-rails and bearings clear of the hank-carrying rollers or the reverse, the right and left handed worm and worm-wheel gearing for driving said hank-carrying rollers, square-sided sockets on the inner ends of the worm-wheel studs, square ends on the hank-carrying rollers adapted to engage in said sockets for rotating the said rollers, and the motor mechanism for giving motion to the worm-shaft, of the motor mechanism for raising and lowering the lifter-rails and parts and traversing them backward and forward over or away from the machine, and the arrangement of wire ropes for lifting, lowering and traversing the said parts substantially as set forth.

611,309. PORTABLE HOUSE. EDWARD S. YOUNG, Hartford, Conn. Filed Dec. 15, 1897. Serial No. 662,051. (No model.)

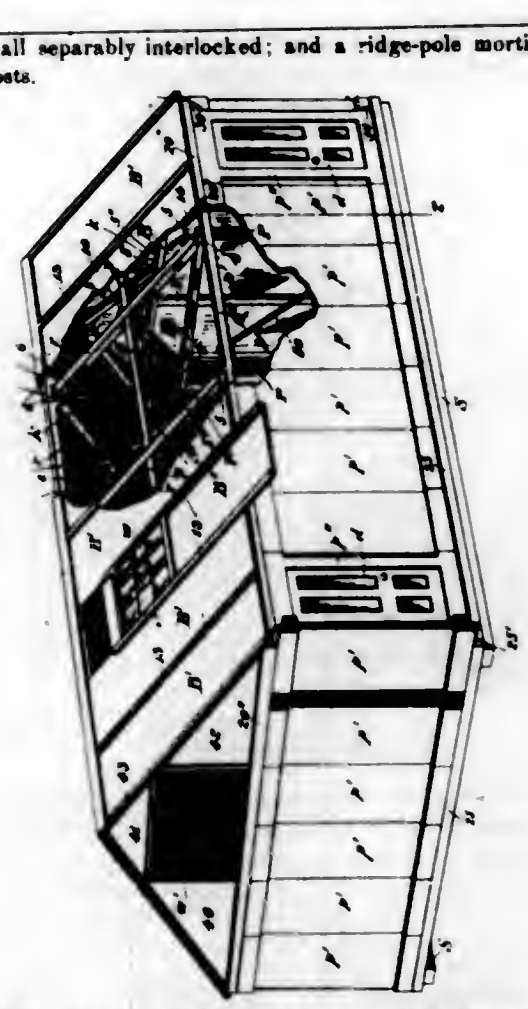
Claim.—1. In a portable house, a knockdown roof-truss embodying a tie-beam, a king-post, struts, and rafters all separably interlocked.

2. In a portable house, a knockdown roof-truss embodying a tie-beam, a king-post, struts, and rafters all separably interlocked, said tie-beam having steps for the feet of the king-post, the struts, and the rafters.

3. In a portable house, a knockdown roof-truss embodying a tie-beam, a king-post, struts, and rafters all separably interlocked, said rafters having mortises for the upper ends of the struts.

4. In a portable house, a knockdown roof-truss embodying a tie-beam, a king-post, struts, and rafters all separably interlocked, said tie-beam having steps for the feet of the king-post, the struts, and the rafters, and said rafters having mortises for the upper end of the struts.

5. In a portable house, a knockdown roof structure embodying a pair of roof-trusses each having a tie-beam, a king-post, struts, and rafters all separably interlocked; and a ridge-pole mortised to the king-posts.



6. In a portable house, a knockdown roof structure embodying a pair of roof-trusses each having a tie-beam, a king-post, struts, and rafters all separably interlocked; a ridge-pole connecting the king-posts; and purlins mortised to the rafters and connecting said trusses.

7. In a portable house, a knockdown roof structure embodying a pair of roof-trusses each having a king-post, struts, and rafters all separately interlocked; a ridge-pole connecting the king-posts of said trusses; and purlins connecting said trusses and also mortised to the rafters.

8. In a portable house, a knockdown roof structure embodying a plurality of roof-trusses each having a tie-beam, a king-post, and rafters separately interlocked; a ridge-pole, purlins, and stringers connecting said trusses, said stringers interlocking with said tie-beams; and interlocking roof-boards supported on the rafters and purlins.

9. In a portable house, a knockdown roof structure embodying a plurality of roof-trusses each having a tie-beam, a king-post, and rafters separately interlocked; a ridge-pole, a ridge-board, purlins, and stringers connecting said trusses, said stringers interlocking with said tie-beams; and interlocking roof-boards supported on the rafters and purlins and locked at their upper ends by the ridge-board.

10. In a portable house, a knockdown roof structure embodying a plurality of roof-trusses each having a tie-beam, a king-post, and rafters separately interlocked; a ridge-pole, a ridge board, purlins, and stringers connecting said trusses, said stringers interlocking with said tie-beams; and interlocking roof-boards supported on the rafters and purlins and locked at their upper ends by the ridge-board and having stops in position to be engaged by the purlins.

11. In a portable house, the combination, with sills and stringers, of posts interlocking the sills and the stringers and also supporting the latter; knockdown roof-trusses embodying king-posts and struts interlocked with the tie-beams and rafters and tie-beams interlocked at their ends with the stringers; and a ridge-pole connecting said trusses.

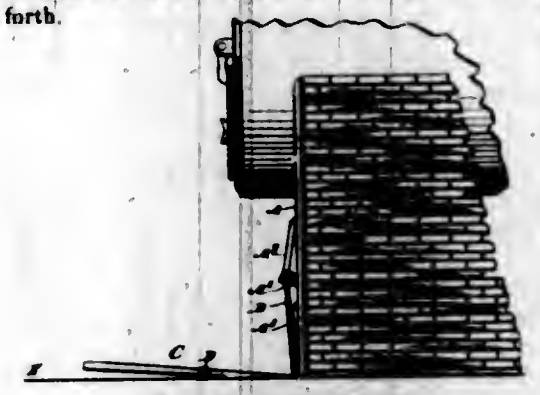
611,310. FURNACE-DOOR OPENER. JOHN G. ANTRIM, Traer, Iowa. Filed May 9, 1898. Serial No. 680,067. (No model.)

Claim.—1. The combination of a furnace-front having an inclined feed-door hinged thereto with a foot-lever pivoted on a suitable fulcrum and a connection of the inner end of the foot-lever with said furnace-door, whereby the door is opened by depressing the outer end of the lever, substantially as described.

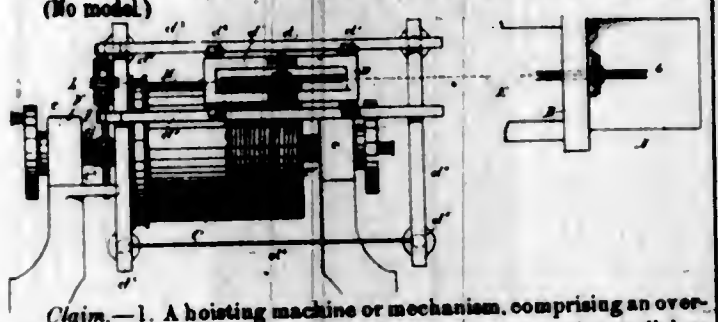
2. The combination of a furnace-front having an inclined outwardly-projecting stoke-hole, a door hinged adjacent thereto, and provided with a socket in the under edge thereof, a foot-lever fulcrumed near the floor, and a connection of one end of the foot-lever with said socket, substantially as and for the purpose set forth.

3. The combination of an inclined furnace-door adapted to close

wholly or partially by gravity, a foot-lever fulcrumed near the floor, and an extensible connecting-rod engaging a socket in the furnace-door and one end of the foot-lever, substantially as and for the purpose set forth.



611,811. HOISTING-MACHINE. HANS C. BERG and ROSS E. BROWNE, San Francisco, Cal. Filed Sept. 20, 1897. Serial No. 652,220. (No model.)



Claim.—1. A hoisting machine or mechanism, comprising an overhead sheave, a hoisting or winding drum having its axis parallel or approximately so, to the plane of rotation of said overhead sheave, a hoisting-rope leading from the load over said overhead sheave to the winding-drum, a guide-sheave interposed in the course of said rope, said sheave being above the winding-drum with its rope-leading face in the vertical plane of the winding side of said drum, and means for effecting the travel of said guide-sheave, to cause it to traverse the drum in a line to keep its rope-leading face in the said vertical plane of the winding side of said drum.

2. A hoisting machine or mechanism, comprising an overhead directing-sheave, a winding or hoisting drum having its axis parallel or approximately so, to the plane of rotation of said overhead sheave, a hoisting-rope leading from the load over the overhead sheave to the winding-drum, a guide-sheave interposed in the course of said rope, said sheave being mounted to rotate in the same, or approximately the same plane as the vertical sag of the rope from the overhead sheave, and lying above the winding-drum with its rope-leading face in the vertical plane of the winding side of said drum, and means for effecting the travel of said guide-sheave, to cause it to traverse the drum in a line to keep its rope-leading face in the said vertical plane of the winding side of said drum.

3. In a hoisting machine or mechanism, equipped with a winding or hoisting drum, a hoisting-rope and a sheave, such as a pit-head sheave, interposed to direct the rope from the load to the drum, a guide-sheave located above the winding or hoisting drum with its rope-leading face in the vertical plane of the winding side of said drum, and a traversing mechanism comprising a carriage on which the guide-sheave is mounted, said carriage being mounted to have a movement in a line parallel with the winding side of the drum, a small winding-drum, a line from said drum to the carriage, and gearing for operating the small winding-drum from the main hoisting-drum.

611,812. COMBINED PITCHFORK AND SHOVEL. GEORGE D. BELDIN, Marengo, Ill. Filed Mar. 5, 1898. Serial No. 672,797. (No model.)

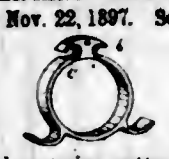


Claim.—1. A fork and a shovel hinged thereto, a notched device rigidly connected to the shovel and adapted to move therewith, and a spring-actuated latch adapted to engage the notched device to hold the shovel-blade in the two positions, substantially as and for the purpose set forth.

2. A fork, a shovel-blade hinged thereto, a notched guide and locking-ring upon the blade and movable therewith, and a spring-actuated latch adapted to engage the notches in the ring, substantially as and for the purpose described.

3. A fork and a shovel-blade hinged thereto, a notched guide and locking-ring rigidly secured to the blade and movable therewith, said ring extending through a slot in the shank of the fork, and a latch working in the hollow shank and adapted to engage the notches in the ring, a pin extending from the latch through a slot in the shank, and a spring bearing upon the rear end of the latch to hold it in engagement with the notch in the ring, substantially as and for the purpose specified.

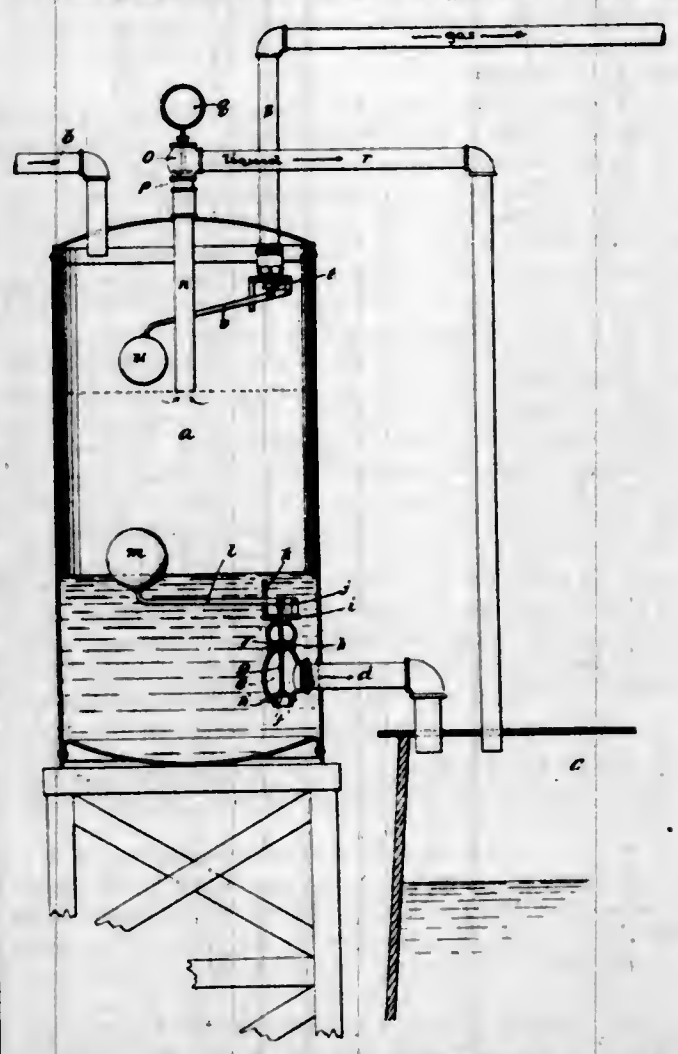
611,813. FINGER-RING TWINE-CUTTER. JACOB CRANDALL, Westport, Cal. Filed Nov. 22, 1897. Serial No. 659,383. (No model.)



Claim.—1. A thread or twine cutter consisting of a ring having a head projecting upon one side with arms projecting therefrom in the line of curvature of the ring, forming channels between themselves and the ring upon each side, a tapering or V-shaped knife having cutting edges upon each side adapted to fit a correspondingly-shaped channel made in the head of the ring whereby the cutting edges cross the openings upon each side of the head, a removable screw by which the cutter is held in place and means for preventing the ring from turning upon the finger consisting of the curved lugs formed integral with the ring and projecting upon each side substantially as described.

2. A ring fitted to the finger of the user having an exterior cutting-knife, and curved arms extending upon each side of the opposite portion of the ring and adapted to engage the inner part of the fingers adjacent to the one upon which the ring is worn.

611,814. GAS AND OIL SEPARATOR. JOSEPH S. CULLINAN, Washington, Pa. Filed Apr. 9, 1897. Serial No. 631,372. (No model.)

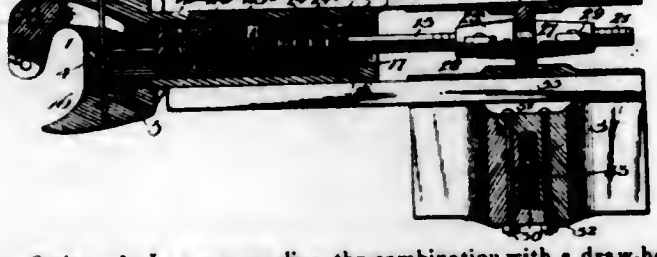


Claim.—1. In apparatus for separating liquids from gases, the combination of a suitable shell having inlet and outlet ports a valve controlling the liquid-outlet port, an overflow-pipe, and a weighted valve in said overflow-pipe, substantially as set forth.

2. In apparatus for separating liquids from gases, the combination of a suitable shell having inlet and outlet ports, an overflow-pipe extending into said shell, and a valve-controlled gas-outlet above the lower end of said overflow-pipe, substantially as set forth.

3. In apparatus for separating liquids from gases, the combination of a suitable shell having inlet and outlet ports, a valve controlling a liquid-outlet in the lower end of said shell and operated by a float, an overflow-pipe extending down into said shell, a gas-outlet above the lower end of said overflow-pipe, a valve controlling said gas-outlet and operated by a float, substantially as set forth.

611,815. CAR-COUPLING. WILLIAM D. EARL, Albany, N. Y. Filed Apr. 1, 1898. Serial No. 676,106. (No model.)



Claim.—1. In a car-coupling, the combination with a draw-head provided in one of its side walls with an L-shaped recess 10^a, and a swinging catch mounted within the draw-head and provided at one side with a lug 10 arranged in the L-shaped recess 10^a of the draw-head and limiting the upward swing of the catch, substantially as described.

2. In a car-coupling, the combination of a draw-head provided with a hollow shank forming a casing, a draft-rod extending into the same, cushioning-springs housed within the shank and connected with the draft-rod, a draw-plate arranged on the draft-rod, means for connecting the draft-rod with the draw-plate, and supports designed to be secured to the draft-timbers of a car, and provided with sockets receiving the draw-plate, substantially as described.

3. In a car-coupling, the combination of a draw-head having a hollow shank forming a casing, a draft-rod extending into the same, a cushioning-spring housed within the shank and connected with the draft-rod, supports designed to be secured to the draft-timbers of a car and provided with sockets, a draw-plate arranged in the sockets and provided with a perforation receiving the draft-rod, and nuts mounted on the draft-rod in advance and in rear of the draw-plates, substantially as described.

4. In a car-coupling, the combination of a draw-head having a hollow shank forming a casing and provided at the top and bottom of the shank with transverse slots, ribs arranged on the inner faces of the sides of the shank, a stop-plate fitting against the ribs, provided at its side edges with recesses and having upper and lower tongues fitting in said slots, fastening devices passing through the shank and arranged in the said recesses, a draft-rod passing through the stop-plate, and a cushioning-spring disposed on the draft-rod and bearing against the stop-plate, substantially as described.

5. In a car-coupling, the combination of a draw-head, a hollow shank provided with a removable top plate and having upwardly-extending lugs fitting in recesses of the top plate to support the same, a vertical stop extending transversely of the shank, ribs supporting the stop-plate, a draft-rod extending through the stop-plate and provided with a head, and springs housed within the shank and arranged in advance and in rear of the head, substantially as described.

6. In a device of the class described, the combination with a draft-rod, and a draw-plate, of supports provided with recesses or sockets receiving the draw-plate, said supports being composed of a pair of plates provided at the top and bottom of the recess or socket with oppositely-disposed lugs fitting in corresponding recesses and secured to the adjacent parts by fastening devices, substantially as described.

611,816. OIL-PRESS MAT. WILLIAM P. HARSE, New York, N. Y., assignor to the J. T. Perkins Company, same place. Filed Jan. 19, 1898. Serial No. 667,141. (No model.)

Claim.—1. As a new and useful article of manufacture, the herein-described oil-press mat having warp-threads and weft-threads the warp-threads at the middle portion of the fabric being in greater numbers per inch than the warp-threads at the edges of the fabric, whereby the fabric is strengthened at the point where the greatest strain is applied.

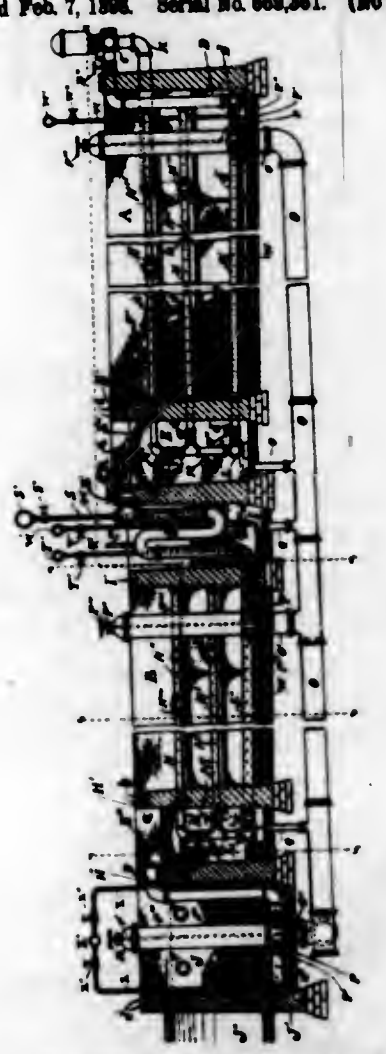
2. As a new and useful article of manufacture, the herein-described oil-press mat, comprising warp-threads and weft-threads, the warp-threads at the middle of the mat being in greater numbers per inch than at the edges of the mat, and gradually decreasing in numbers per inch from the middle of the mat toward the edges, substantially as described and for the purposes set forth.

3. An oil-press mat comprising a twill fabric composed of camel's-hair threads, the warp-threads of the fabric being in greater number per inch at the middle portion of the fabric than at the edges.



4. An oil-press mat comprising a twill fabric composed of camel's-hair threads, the warp-threads of the fabric being most numerous at the middle of the fabric and decreasing in numbers per inch gradually on both sides of the middle of the mat, substantially as described.

611,817. FILTERING PLANT FOR WATERWORKS. TOMEY C. HEFEL, Muncie, Ind., assignor of one-half to Charles H. Ruesey, same place. Filed Feb. 7, 1898. Serial No. 669,361. (No model.)



Claim.—1. In a filtering plant for waterworks, the combination with a filtering-basin having an inlet and outlet, a chamber at one end of the basin, flush-pipes leading from the chamber within the basin, and valves located within the chamber for controlling the pipes.

2. In a filtering plant for waterworks, the combination with a

filtering-basin, of a chamber at one end of the basin, an inlet-pipe located adjacent the bottom of the basin and leading into the chamber and connected to a high-pressure pipe, and valves at both ends of the inlet-pipe so that the inlet-pipe can be used also for flushing.

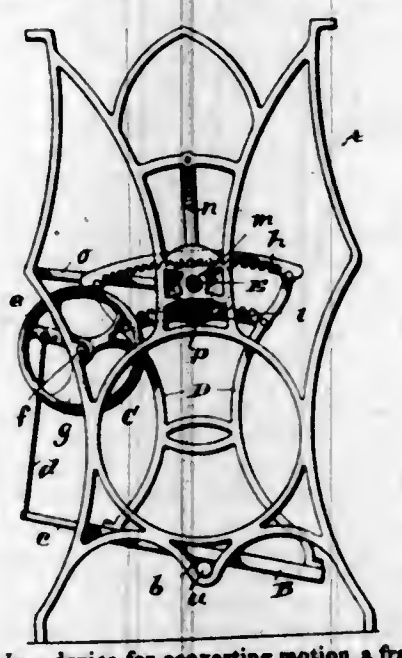
3. In a filtering plant for waterworks, the combination with a filtering-basin, filtering material in the basin, perforated plates separating the material into layers, and flush-pipes extending the length of the basin and located just above the plates.

4. In a filtering plant for waterworks, the combination with filtering-basins, pipes connecting the basins, means for heating the water as it passes from one basin to the other in the pipes, and a compressed-air pipe leading into the connecting-pipes for forcing the water through the said pipes.

5. In a filtering plant for waterworks, the combination with a filtering-basin, an inlet-pipe leading into the bottom of the basin, an outlet at the top of the basin leading into a basin Q, pipes leading from the said basin into the bottom of a second filtering-basin, means for heating the water in the said pipes, an outlet at the top of the second filtering-basin leading into the basin Q', pipes leading from the said basin into the settling-basin and an outlet from the settling-basin to the clear-water basin.

6. In a filtering plant for waterworks, the combination with a filtering-basin, of a settling-basin, pipes connecting the basins, charcoal placed in the settling-basin, and a compressed-air pipe leading into the settling-basin.

611,818. DEVICE FOR CONVERTING MOTION. EDWARD P. HERPIN, Baltimore, Md. Filed June 11, 1898. Serial No. 683,163. (No model.)



Claim.—1. In a device for converting motion, a frame, a treadle pivoted thereto, a pair of rack-bars mounted on the treadle, a shaft, and pinions engaging said rack-bars, in combination with a revoluble regulator connected to the treadle.

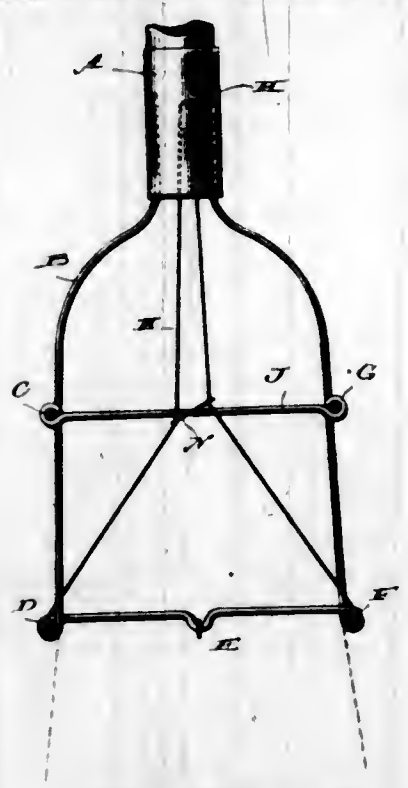
2. In a device for converting motion, a frame, a treadle pivoted thereto, a pair of rack-bars mounted on the treadle, a shaft, and pinions engaging said rack-bars, in combination with a revoluble regulator connected to the treadle and provided with means for varying the stroke of the treadle and the rack-bars.

3. In a device for converting motion, a frame, a treadle pivoted thereto, a supplemental frame mounted on the frame, a pair of rack-bars secured to said frame in different vertical planes, a shaft, and pinions engaging each rack-bar, in combination with a ratchet for each pinion.

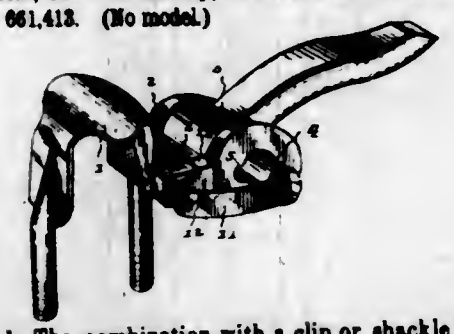
4. In a device for converting motion, the combination of a frame, a treadle pivoted thereto, a supplemental frame mounted on the treadle and having rack-bars thereon in parallel planes, a shaft having pinions thereon, the said rack-bars respectively extending over one pinion and under the other, and a revoluble regulator connected to and operated by the treadle.

611,819. BROOM-HEAD. JAMES L. HUDSPETH, Paragould, Ark., assignor to C. R. Waddell, same place, and G. W. Cox, Rogers, Ark. Filed Apr. 27, 1898. Renewed June 17, 1898. Serial No. 683,761. (No model.)

Claim.—As an improved article of manufacture a broom-head, consisting of two clamping-frames, each made of wire and held to the broom-handle, each wire of the frame B bent about four tightening-bolts as described, combined with a wire K, having its middle portion secured within a ferrule on the handle of the broom, its ends carried about the bolts D and F, and a ring N contracting the wire K and held about a cross-piece J, substantially as shown and described.



611,820. THILL-COUPLING. WILL S. JAMES, Mexia, Tex., assignor, by direct and mesne assignments, of three-fourths to J. D. Ham, W. R. Nabors, and J. L. Harvey, De Leon, Tex. Filed Dec. 10, 1897. Serial No. 661,413. (No model.)



Claim.—1. The combination with a clip or shackle having the disalined notches, and a grooved thill-iron, of a locking pivotal bolt provided with a long feather and a short stud or lug which is out of alinement with the long feather, and a spring in operative relation to said bolt to automatically impel the latter endwise and bring its long feather and short stud into locking engagement with the spaced notches of the clip or shackle, substantially as and for the purposes described.

2. In a thill-coupling, the combination with an axle-clip, a thill-iron, and a bolt adapted to have interlocking engagement with said iron and clip, of the holding-spring provided at one end with a clip engaging frictionally with one of the clip-plates to hold the spring in place thereon detachably and said spring deflected or bowed laterally from said clip to have its free end engage with the exposed end of the bolt, whereby the spring may be readily detached from the clip without disengaging any of the parts thereof, substantially as described.

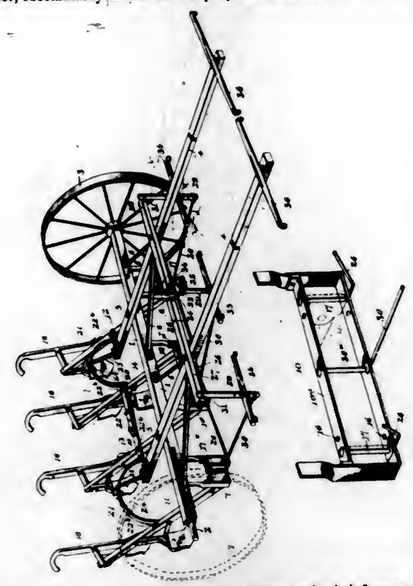
3. In a thill-coupling, the combination with clip or shackle provided with disalined notches, and a thill-iron having a transverse channel or groove, of a pivotal locking bolt having a head at one end, the long feather or spline, and a short stud or lug which is situated between the head and long feather and out of alinement with the latter, and a spring doubled upon itself to have one end in engagement with the headed end of the bolt and provided with the arms forming a clasp adapted to embrace the clip or shackle and hold said spring in position, substantially as described.

611,821. DOUBLE-ROW CULTIVATOR. PHILIP JARVIS, Cedar Rapids, Nebr. Filed Dec. 20, 1897. Serial No. 662,653. (No model.)

Claim.—1. In a cultivator, the combination with a carrying-axle, of the side stirrups rigidly fastened to said axle and provided with the cross-plates, the side beams pivoted individually in the side stirrups, a single central stirrup attached to the axle between the side stirrups and provided with a cross-plate, and a pair of shovel-beams pivoted individually in the single central stirrup, substantially as and for the purposes described.

2. In a cultivator, the combination with a carrying-axle, of the side stirrups rigidly fastened to said axle, a single central stirrup fas-

tened to said axle between the side stirrups, the side beams pivoted individually to the side stirrups and adjustable horizontally therein toward or from the middle beams, and a pair of middle beams pivoted in said central stirrup which is common to both beams and adjustable horizontally therein toward or from the side beams and each other, substantially as and for the purposes described.



3. In a cultivator, the combination with a wheeled frame, and depending stirrups, of the shovel-beams hung within the stirrups for adjustment horizontally therein and adapted to be lifted on their pivotal connections with the stirrups, an extensible coupling-bar having its members united rigidly to pairs of the shovel-beams and adjustably fastened together at a point between adjacent pairs of said beams, and crane-like arms mounted on the frame for engagement with the coupling-bar to suspend the shovel-beams in their raised positions, substantially as described.

4. In a cultivator, the combination with a wheeled axle, the draft-tongues, and the shovel-beams, of the side stirrups in which the side beams are individually hung, the center stirrups supporting the pair of middle beams, the doubletrees pivoted on the tongues, the side depending draft-bars pivotally connected to the ends of the doubletrees and linked to the side stirrups, a central draft-bar linked to the central stirrup, a guide-roller carried by the central draft-bar, and a chain passing around the roller and attached to the adjacent ends of the doubletrees, substantially as described.

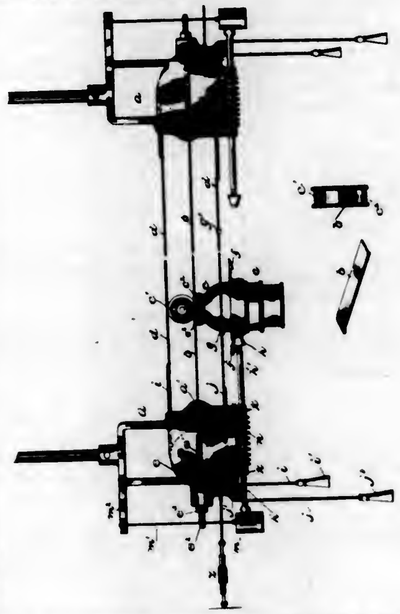
611,822. CASH-CARRIER APPARATUS. DANIEL JOHNSON, Ashland, Ohio. Filed Oct. 28, 1897. Serial No. 656,650. (No model.)

Claim.—1. In a cash-carrier apparatus, a propelling wire or cable, and a track extending above a stretch of the same and consisting of a flat, thin, flexible metallic strip or ribbon whereby it is prevented from moving downward past the wire, substantially as described.

2. In a cash-carrier apparatus, the combination with the track and the car, of propelling means comprising an endless line or cable extending longitudinally of the track and having shoulders or abutments in one of its stretches to come against the car to give it an impetus, and a pair of pulls at each station where the cable is supported, associated with different stretches thereof, whereby operation of one pull moves the cable in one direction and operation of the other pull moves the cable in the opposite direction, substantially as described.

3. In a cash-carrier apparatus, the combination with the track and the car, of propelling means comprising an endless line or cable extending longitudinally of the track and having shoulders or abutments in one of its stretches to act against the car to give it an impetus, and flexible connections fastened to the cable in the two stretches thereof and passing over suitable guiding-supports.

4. In a cash-carrier apparatus, the combination with the track and the car, of propelling means comprising an endless line or cable extending longitudinally of the track and having shoulders or abutments in one of its stretches to act against the car to give it an impetus, pulleys supporting said cable, a pair of operating-cords fastened to the latter in its two stretches respectively, one of said cords passing over the cable-pulley and depending therefrom for manipulation, and a separate pulley or sheave for the other cord which also depends therefrom for manipulation.



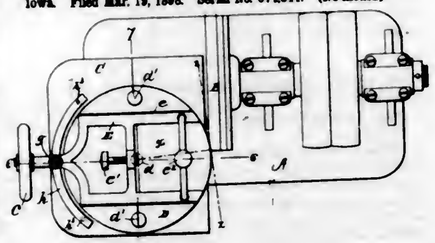
5. In a cash-carrier apparatus the combination with the track, catches at the ends of the same and the car having latches to automatically engage said catches; of an endless propelling line or cable extending along the track, and having shoulders or abutments in one of its stretches to act against the latches on the car to disengage them from the catches, and also to impart an impetus to the car, and means for moving the cable to a limited extent in either direction.

6. In a cash-carrier apparatus, the combination of a track, an endless propelling line or cable whose stretches extend above and below said track, a car suspended from the track and across the lower stretch of the said cable, the latter having abutments to act against the car, and means for imparting limited movement to the cable in either direction, substantially as described.

7. In a cash-carrier apparatus, the combination with the hanger having a projecting arm, of a buffer comprising a sliding rod in guides on the said hanger, and end-on in the path of the car, and a weight suspended, from the said arm of the hanger and behind the rod and adapted to be displaced thereby when the car encounters the rod.

8. In a cash-carrier apparatus a buffer comprising a sliding rod arranged end-on in the path of the car, a weight suspended behind the rod and adapted to be displaced thereby when the car encounters the rod, and a comparatively light restoring-spring associated with the rod, substantially as described.

611,828. GRINDING-MACHINE. ALLEN JOHNSTON, Ottumwa, Iowa. Filed Mar. 19, 1898. Serial No. 674,511. (No model.)



Claim.—1. In a grinding-machine, the combination with the grinding-wheel, of a movable work-holder, means for guiding said work-holder so that its line of travel in presenting the work to the action of the edge of the flat face of the grinding-wheel will form an angle of less than ninety degrees with said flat face, whereby the lateral curvature is imparted to the surface ground, and means—such as an inclined track—for tilting the work-holder during its feed movement, whereby the desired twist may be imparted to the surface ground, substantially as described.

2. In a grinding-machine, the combination with the grinding-wheel and a movable work-holder arranged approximately at right angles to the flat-face surface of the grinding-wheel, means for guiding the work-holder during its feed movement, and means for tilting the work-holder to impart the desired twist to the surface ground, substantially as described.

3. In a machine for grinding dies for the manufacture of table-knife blades, means for guiding the die across the grinding-surface of a suitable grinding-wheel and for imparting such movement to the die as to form a twisted surface thereon, substantially as described.

4. In a machine for grinding dies for shaping table-knife blades, means for guiding the die across the grinding-wheel and for imparting such movement to the die as will produce a concave and twisted surface thereon, substantially as described.

5. In a grinding-machine, the combination with the grinding-wheel, of a work-holder mounted to tilt on a suitable support at one end, and means—such as an inclined track—for raising or lowering the other end of the work-holder to tilt the same at a varying angle with reference to the grinding-wheel during the feed movement of the work-holder, substantially as described.

6. In a grinding-machine, the combination with the grinding-wheel, of a work-holder mounted to tilt on a suitable support at one end thereof adjacent to the grinding-wheel, and an inclined track on which the work-holder runs at its other end, and means whereby the work-holder may be moved to feed the work to the grinding-wheel, substantially as described.

7. In a grinding-machine, the combination with the grinding-wheel, of a work-holder mounted to rotate on a suitable axis and to tilt on a suitable support at one end thereof, of means—such as an inclined track—for raising or lowering the other end of the work-holder on rotation thereof, substantially as described.

8. In a grinding-machine, the combination with the grinding-wheel, of a work-holder mounted to rotate on an axis so located with reference to the flat grinding-face of the wheel that a line drawn through said axis and parallel to the axis of rotation of the grinding-wheel intersects the plane of the flat face of the grinding-wheel at a point outside of the periphery of said wheel, and means for tilting the work-holder during its rotary feed movement, substantially as described.

9. In a grinding-machine, the combination with a ring-shaped grinding-wheel, of a work-holder mounted to rotate on an axis so located with reference to the flat grinding-face of the wheel that a line drawn through the axis of rotation of the work-holder and parallel to the axis of rotation of the wheel intersects the plane of the flat grinding-surface of the latter at a point outside of said surface, and means for tilting the work-holder during its rotary feed movement, substantially as described.

10. In a grinding-machine, the combination with the grinding-wheel, of a movable work-holder mounted to tilt on a suitable support at one end thereof, and a pivoted track on which the holder moves at its other end adapted by movement on its pivot to be inclined in opposite directions, substantially as described.

611,824. MANUFACTURE OF TABLE-KNIVES. ALLEN JOHNSTON, Ottumwa, Iowa. Filed Apr. 1, 1898. Serial No. 676,075. (No specimens.)

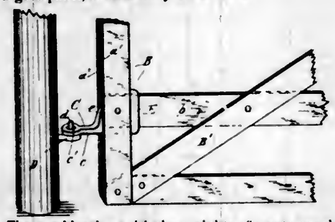


Claim.—1. The process of manufacturing knife-blanks, consisting in forming the bolster by hot-forging, then rolling the blade while hot to its approximate form and thickness, then annealing the blade for removing slag therefrom, then further forging the blade while cold, and then grinding the blade, as set forth.

2. The process of manufacturing knife-blanks, consisting in forming the bolster and a part of the blade next to the bolster by hot-forging, then rolling the blade while hot to its approximate form and thickness, then annealing the blade for removing slag therefrom, then further forging the blade while cold, and then grinding the blade, as set forth.

611,825. GATE-HINGE. JAMES C. JONES, Pine Village, Ind. Filed Mar 30, 1898. Serial No. 675,812. (No model.)

Claim.—1. A gate hinge member provided with an offset hook whereby it is adapted to be engaged with one of the longitudinal bars of a gate-panel, substantially as set forth.



2. The combination, with the uprights of a gate-panel, and a bar secured between them; of a hinge member arranged under the said bar between the uprights and having an upwardly-projecting hook which engages with the said bar, substantially as set forth.

3. The combination, with the uprights of a gate-panel, and a bar secured between them; of a hinge member arranged under the said bar between the uprights and having an upwardly projecting hook which engages with the said bar, and having also means for preventing the gate-panel from moving longitudinally, substantially as set forth.

4. A gate-hinge member provided with an offset hook at one end and a projection at its middle part whereby it is adapted to be engaged with one of the longitudinal bars of a gate and secure the hinge member to it, substantially as set forth.

611,826. HAY-PRESS FEEDING-FORK. WILLIAM T. JONES, Cedar Rapids, Iowa. Filed Feb. 28, 1898. Serial No. 672,113. (No model.)



Claim.—1. A fork for feeding hay-presses, and other purposes, having its tines provided, at some distance down from the head, with buttons or thimbles, substantially as described.

2. The combination with a hay-fork, of a series of conical buttons or thimbles secured to the tines some distance down from the head of the fork.

3. The combination with a hay-fork, of a series of conical thimbles or buttons attached to the tines at some distance from the fork-head, and with their bases downward.

611,827. FOOT-REST FOR CHAIRS. JOHN D. KELLY, Providence, R. I. Filed June 18, 1898. Serial No. 683,784. (No model.)



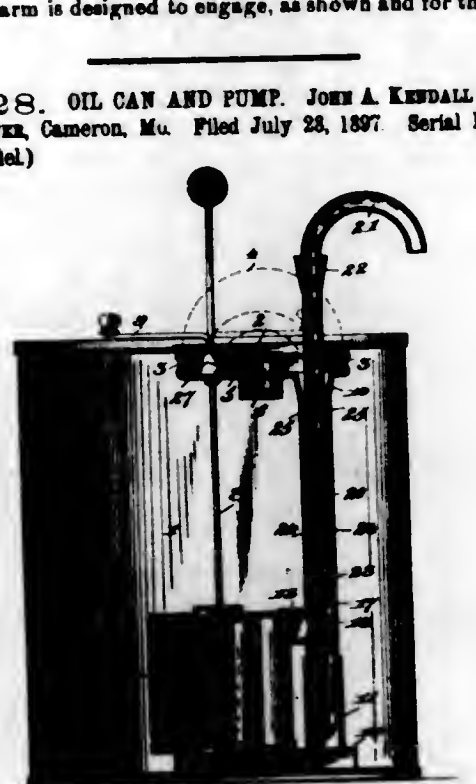
Claim.—1. A foot-rest for chairs, consisting of a bracket-arm apertured at one end and adapted to be carried on the threaded post of a chair, combined with a notched plate carried by the stool of the chair, in which notches the bracket is designed to engage, as set forth.

2. A foot-rest for chairs, comprising in combination with the

threaded post and stool supporting same, an apertured bracket-arm mounted on said post, a plate provided with a collar about its central aperture, in the outer circumference of which collar is a series of vertically-disposed notches, and the integral lug on the bracket-arm, adapted to engage in said notches, as set forth.

3 A foot-rest for chairs, comprising in combination with the threaded post mounted on a suitable stool, an apertured bracket-arm mounted loosely on said post, the outer end of said bracket-arm upwardly bent and carrying the foot-rest, the plate having a series of notches about its outer margin in which notches the under edge of the bracket-arm is designed to engage, as shown and for the purpose set forth.

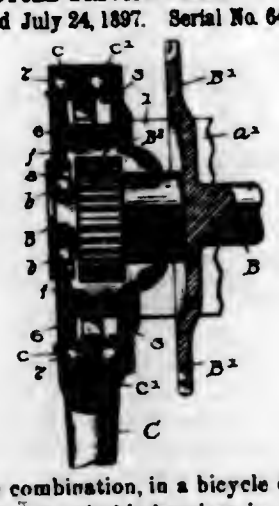
611,328. OIL CAN AND PUMP. JOHN A. KENDALL and JULIUS R. KESTER, Cameron, Mo. Filed July 28, 1897. Serial No. 646,217. (No model.)



Claim.—1. In combination, a can having a depression in its top, a pump located within the can, a tube having connection at its lower end with the discharge-outlet of the pump and having its upper end flaring and connecting with the bottom portion of the said depression and provided in its sides with openings just below the flaring portion, and a second tube telescopically fitted within the discharge-tube and having its upper end bent forming a discharge-nozzle and having an exterior conical enlargement to enter and close the flaring end of the discharge-tube, substantially as described.

2. The combination with an oil-can, of a rotary pump within the oil-can having its inlet and outlet openings at the upper end of its casing, a support interposed between the pump and the bottom of the can and secured to both, said support extending at one end beyond the pump, a sleeve projecting up from said extension, a casing leading from the inlet-opening of the pump to the bottom of the can, a casing extending laterally from the outlet-opening of the pump, a tube passing through the last-named casing and having an opening in its side communicating therewith, said tube being secured to the casing and having its lower end closed and fitted within the said sleeve, and its upper end flaring and secured in the top of the oil-can, a tube telescoping in the first-named tube and having its outer end bent, and a conical collar secured to the last-named tube and adapted to fit into the flaring end of the first-named tube, substantially as described.

611,329. BICYCLE DRIVING-GEAR. THOMAS J. LINDSAY, Lafayette, Ind. Filed July 24, 1897. Serial No. 645,784. (No model.)



Claim.—1. The combination, in a bicycle driving mechanism, of a pedal-shaft mounted in suitable bearings in a surrounding shell or casing forming part of the bicycle-frame and provided with pinions upon its ends and the usual sprocket or chain wheel, suitable ball-race-carrying structures carried on the hanger or frame, said ball-race structure including the plate composed of the parts 6, 7 and 8, said parts 7 and 8 forming ball-race halves and adjustable in a direction longitudinal of the shaft on said part 6, substantially as set forth.

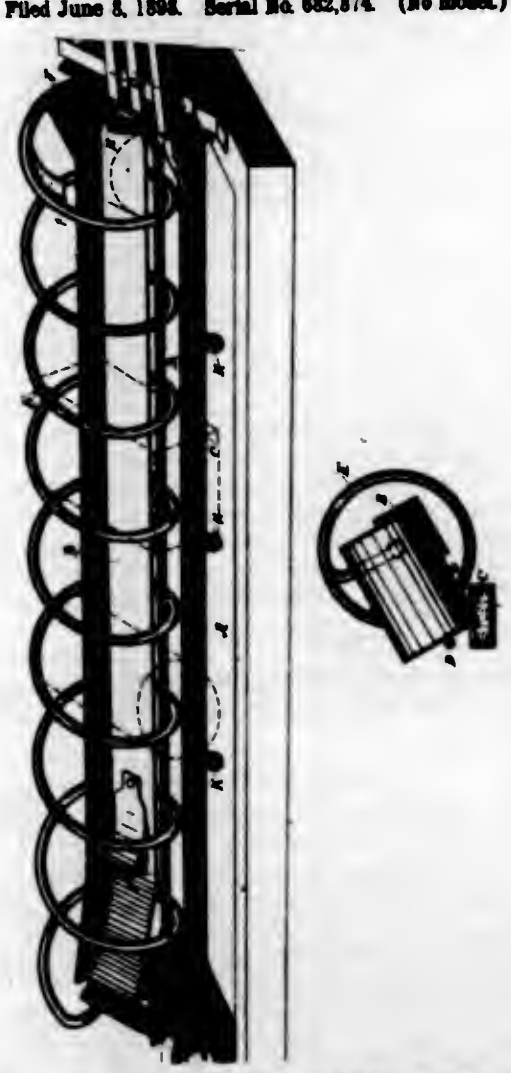
2. The combination, in a bicycle driving mechanism, of the shell or hanger, plates supported from the ends of said shell or hanger, bearings, as 8, carried by said plates at the extreme outer ends of the structure, and a pedal-shaft mounted in said bearings and thus carried by its extreme ends and at points outside the gearing, substantially as shown and described.

3. The combination, in a bicycle driving mechanism, with the pedal-shaft and driving-gear, of an outer plate 6 having an adjustable rim 7 which forms a ball-race half for an outer ball-bearing, a part 8 which forms a ball-race half for the inner ball-bearing, said parts 7 and 8 having projections and depressions and being respectively secured to and adjustable upon the part 6, and a detent whereby said parts are held in adjusted relation, substantially as shown and described.

4. The combination, in a bicycle driving-gear, of the hanger A, a shaft B inclosed within said hanger and carrying the sprocket-wheel B' and pinion B^3, pedal or crank arms C continued into rings which form rims for the outer portions of the gear structure and which are provided with internal gear-teeth which engage with the pinions on the shaft, and bearings for said rim and said shaft including the plates 3 and 6, the latter having the rim 7 and part 8, said parts 7 and 8 being adjustable in relation to said part 6, substantially as set forth.

5. In a bicycle driving-gear, the combination, of the frame or hanger, the separate structure attached to the side thereof having a bearing for the end of the shaft in its outside portion, said shaft mounted with its end in said bearing and provided with a gear-wheel within said structure alongside said bearing, the crank-arm formed with a rim on its inner end which is mounted on bearings on the periphery of said structure and is formed with internal gear which engages the gear-wheel on the shaft, all substantially as set forth.

611,880. CAN-SOLDERING MACHINE. ERIK MANULA, Astoria, Oreg. Filed June 8, 1898. Serial No. 682,874. (No model.)



Claim.—1. The combination in a soldering-machine of a solder-bath, an inclined track and support for the cans and an open spiral inclosing said support and between the turns of which the can-bodies are received, and means for rotating the spiral so that the cans are advanced from one end to the other of the solder-bath.

2. A solder-bath, an inclined support for the cans whereby the

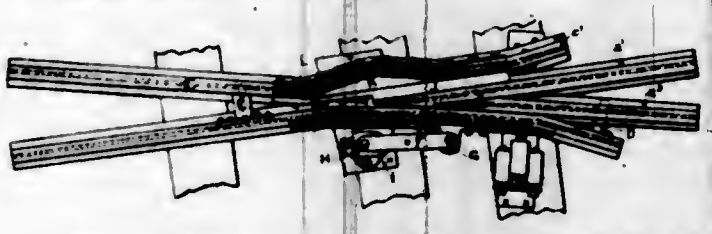
lower edge of the can is caused to dip into the solder, a rotatable open spiral essentially parallel with the can-support and solder-bath, said spiral inclosing said support and between the turns of which the bodies of the cans project, mechanism by which the spiral is rotated and guides by which the cans are admitted singly and successively between the turns of the spiral.

3. In a soldering-machine, a solder-bath, an inclined support, the body of which extends essentially parallel with the solder-bath so that the edges of the cans lying thereon will dip into the solder, an inclined end in connection with the feed-chute, down which the cans roll upon the horizontal portion, and an inclined end at the discharge by which the cans are raised out of the solder-bath, a rotary centrally-open spiral journaled essentially parallel with the solder-trough and can-support, and inclosing said support, devices at the receiving end whereby the cans are delivered successively between the turns of the spiral and the device at the discharge end by which they are delivered outwardly from the machine.

4. In a soldering apparatus, an essentially horizontal solder-trough, an inclined can-support parallel with the solder-trough upon which the cans are carried with their lower edges dipping into the solder, inclined receiving and discharge ends connected therewith, an open spiral journaled and rotatable essentially parallel with the solder-trough and can support with the can-bodies projecting between the turns of the spiral, and inclosing said support, and devices upon the can-support whereby the cans are straightened and kept in line during their progress from end to end.

5. In an apparatus of the character described, an essentially horizontal solder-trough, an inclined can-support parallel therewith adapted to receive and support the can-bodies with the lower edges dipping into the solder, an open spiral journaled and revoluble parallel with the can-support and solder-bath with the bodies of the cans projecting between the turns of the spiral, and stops disposed at intervals below the bodies of the cans whereby the lower edges of polygonal cans will be intercepted and the cans turned by the advance of the spiral so as to present all their edges successively to the solder-bath.

611,381. RAILWAY-FROG. GEORGE W. PARSONS, Steelton, Pa. Filed Nov. 12, 1896. Serial No. 611,884. (No model.)



Claim.—1. In a movable wing-rail frog, the combination of a frog-point, a movable wing-rail partly alined thereto and partly flared therefrom, and an arm attached to the flared part of the movable wing-rail, on side adjacent to the frog-point, by lugs above the flange of the movable rail; said arm extending beneath the frog point, by which the frog-point prevents the flared end of the movable wing-rail from rising, substantially as described.

2. In a movable wing-rail frog, the combination of a frog-point, an arm extending below the frog-point, dependent from the movable wing-rail through a slot in flange of flared part of said wing-rail, substantially as described.

3. In a movable wing-rail frog, the arm D, adapted to extend below point of the frog, and provided with lugs d^1 and attached by lugs d^2, substantially as described.

4. In a movable wing-rail frog, the combination of movable wing-rail B, and, attached thereto midway between the point of the frog and the toe end of the wing-rail, the combination-arm E, embodying an arm below the opposite fixed wing-rail, and unattached thereto, whereby rising of the movable wing-rail is prevented substantially as described.

5. In a movable wing-rail frog, the combination of movable wing-rail and combination-arm E, embodying arm e^4 and hollow body e^3, substantially as described.

6. In a movable wing-rail frog, the combination-arm E, placed between the wing-rails, embodying hollow body e^3 with recess for introduction of spring, and lugs e' for attaching to rail.

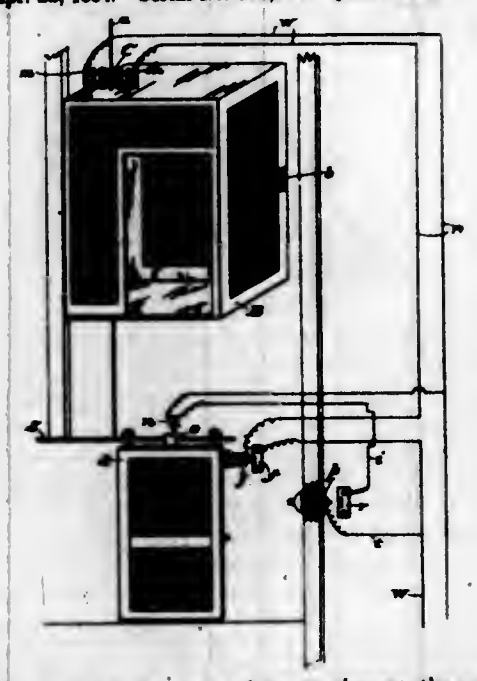
7. In a movable wing-rail frog, the rail-stop H, embodying an overhanging top h^2, closed end h^3, vertically-disposed side wall, and exterior flanges forming a base, in combination with trussed link F, movable wing-rail B, and arm G, substantially as described.

8. The combination of a frog-point, adjacent to an open flangeway, a fixed wing-rail bent out and recessed, proximately to end of the frog-point in combination with a hard-metal insert reinforcement, closing the recess, substantially as described.

9. The combination of a frog-point, adjacent to an open flangeway between the frog-point and a wing-rail, with a hard-metal insert reinforcement, supported on a side flange of the wing-rail, partially covered by head of the wing rail, and, forming part of the side of the flangeway, substantially as described.

10. The combination of a frog-point, with a fixed wing-rail having a part at one end bent out for a guard end, and the contiguous part thereof alined parallel to one side of the frog-point, and having the opposite end thereof with a contiguous part alined with the opposite side of the frog-point, with the intervening part of said wing-rail laterally disposed, to form a recess of width diminishing toward the ends, substantially as described.

611,382. ELEVATOR SAFETY ATTACHMENT. WILLIAM C. PRESTON, Providence, R. I., assignor to John B. Taft, Edgewood, R. I. Filed Apr. 22, 1897. Serial No. 633,298. (No model.)



Claim.—1. In an elevator safety attachment, the combination of eccentrics pivoted to the car and adapted to clamp and hold the starting-cord, springs for bringing said eccentrics into their clamping positions, electromagnets which when energized draw said clamps out of their clamping positions, an electric circuit in which are included said electromagnets, and circuit breakers in said circuits adapted to be operated by the opening of an elevator-shaft door so as to break said circuit and deënergize said magnets, substantially as described.

2. In an elevator safety attachment the combination of four eccentrics arranged to clamp and hold the starting-cord if pulled in either direction, springs to close each pair of clamps, an electric magnet held back of each eccentric to draw it from the cord when said magnets are energized, with wires to conduct an electric current to said magnets, substantially as described.

3. In an elevator safety attachment the combination of four eccentrics arranged to clamp and hold the starting-cord in either direction, springs to close each pair of clamps, an electromagnet held back of each eccentric to draw it from the cord when said magnets are energized, with wires to conduct an electric current to said magnets, a circuit-breaker arranged to open or close said current by the opening and closing of the shaft-door, substantially as described.

4. In an elevator safety attachment the combination of an eccentric arranged over the shaft-door to prevent the door from being opened, an electric magnet placed over said eccentric to draw it from contact with the door when said magnet is energized and wires to conduct an electric current to said magnet, a circuit-breaker arranged to close and open said current by the elevator coming to the door and leaving it, substantially as described.

611,388. WORK-BOX. DELIA RICHARD, Appleton, Wis. Filed July 19, 1897. Serial No. 645,078. (No model.)

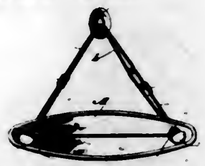


Claim.—1. In a work-box, the combination of a series of upwardly-projecting spindles, wire frames connected thereto, each presenting a series of eyes, a stationary strip attached to one side of the box, and a spring-actuated strip engaging the said stationary strip,

the side of the box having openings or holes in a line between the strips, substantially as shown and for the purpose set forth.

2. In a work-box, the combination of a series of upwardly-projecting spindles located within the box, wire frames mounted upon the spindles, each presenting a vertical series of eyes, a stationary strip secured to one side of the box, a spring-actuated strip normally bearing against the stationary strip, and a rod for moving the spring-actuated strip away from the stationary strip, the side of the box having openings or holes in a line between the strip; together with a plate secured to the outer side of the box and having a series of holes registering with the holes in the box, and a knife-blade secured to the plate, substantially as shown and for the purpose set forth.

611,884. PUZZLE. JAMES E. RICHARDSON, Baltimore, Md., assignor of one-half to Julian C. Dowell, Woodside, Md. Filed Dec 3, 1897. Serial No. 660,661. (No model.)

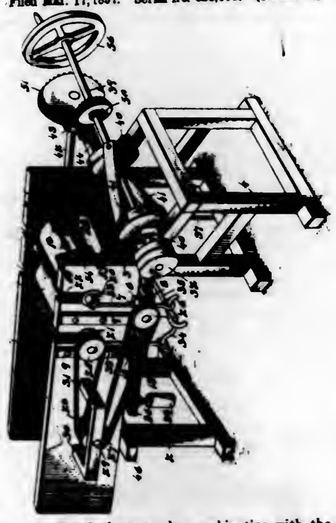


Claim.—1. In a puzzle, the combination of a suitable body having a pair of orifices, a cord or string extending along one side of said body between said orifices and passing through the same and thence back so as to form a loop on the opposite side; said loops being engaged with each other or interlocked and the ends of the cord being formed or provided with stops to prevent the passage thereof through the body, and an annulus on the looped portions of the cord.

2. In a puzzle, the combination of a suitable body having a pair of orifices, a cord or string extending along one side of said body between said orifices and passing through the same and thence back so as to form a loop on the opposite side; said loops being engaged with each other or interlocked and each end of the cord being formed or provided with a stop to prevent the passage thereof through the body, a bead on one limb of each loop of the cord arranged on the side of the body opposite said stops, and an annulus on said interlocked loops

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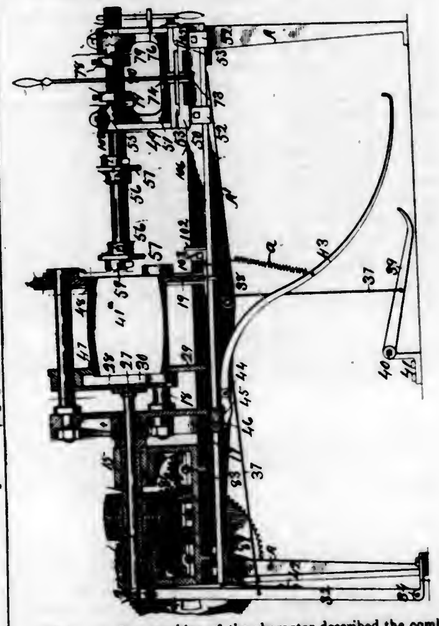
611,885. FEED-CUTTER. JOACHIM SCHILDHAUER, New Holstein, Wis. Filed Mar. 17, 1897. Serial No. 628,008. (No model.)



Claim.—1. In a feed-cutter, the combination with the box and its feed-rolls, one of them having a bevel-gear on its shaft, a trestle for supporting the rear end of the box, a main drive-shaft journaled in a frame which supports the front end of the box, the cutting mechanism on this shaft, and a bevel-wheel also thereon; of extensions from the sides of the box, a bearing carried by the forward extension, a longitudinal shaft journaled therein and having bevel-gears one of which is in constant mesh with that on the driving-shaft and the other of which is adapted to be thrown into or out of mesh with that on the feed-roll, a hand-lever pivoted to the other extension and having a bearing supporting the remote end of the longitudinal shaft, and a locking-pin removably passing through this bearing parallel with the shaft and into the extension, as and for the purpose set forth.

2. In a feed-cutter, the combination with the box having substantially parallel sides with its mouth cut off obliquely, and transverse upper and lower feed-rolls within the box; of a driving-shaft parallel with the mouth of the box, a cutter-cylinder mounted thereon, and spiral blades carried by the cylinder and arranged so that each commences its cut at the point nearest the rolls, as and for the purpose set forth.

611,886. MACHINE FOR WORKING OFF KEGS OR BARRELS. ANDREW J. SCHNEIDLER, Chicago, Ill. Filed Dec. 22, 1893. Serial No. 494,419. (No model.)



Claim.—1. In a machine of the character described the combination with the frame, of a tool-carrying shaft mounted in bearings on the frame, companion collars on the shaft adjacent to the respective bearings, oppositely-extending cam projections on the bearings extending into the paths of the projections on the collars, and notches in the bearings adapted to receive the last-named projections, the relative arrangement of projections and notches being such that when the shaft is rotated in either direction the projection on one collar coacting with the projection on the adjacent bearing will automatically move the shaft endwise, the projection on the other collar entering the notch in the bearing adjacent thereto.

2. In a barrel-machine, and in combination, the barrel-clamping mechanism, means for rotating the barrel on its axial center while in the clamps, a tool-carrying shaft supported on a carrier so as to enter said barrel longitudinally and in a line eccentric to the barrel-axis, and a chamfering-tool carried by said shaft projecting radially from the shaft a distance exceeding the radius of the barrel, but less than the barrel-radius plus the eccentricity of arrangement of shafts, and means for rocking the tool-shaft and holding it in rocked position, whereby the chamfering-tool may be passed entirely through the barrel, then rocked into position to engage the end thereof, and held while the rotation of the barrel effects the chamfering, substantially as described.

3. In a barrel-machine, the combination of suitable mechanism for clamping and rotating the barrel, a tool-carrying shaft supported eccentrically to the axis of the clamped barrel, a plurality of tools on said tool-shaft, one of said tools projecting radially to a greater distance than the radius of the barrel, but less than the barrel-radius plus the eccentricity of arrangement of shafts, means for moving the shaft lengthwise so that this tool may pass entirely through the barrel, and by the rocking of the shaft be brought in alinement with the

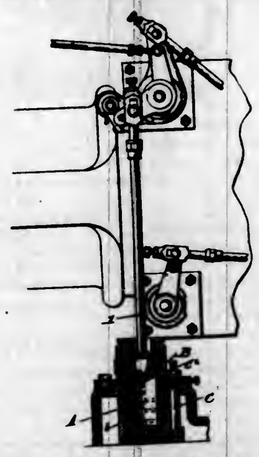
barrel end, and means for traversing the tool-shaft laterally, substantially as described.

4. In a barrel-machine, the barrel clamping and rotating mechanism, the tool-shaft arranged eccentrically to the axis of the barrel, the tool-support on said shaft having the crozing and howsing cutters arranged at nearly-opposite sides of the shaft and in position to be brought into operative position by the lateral movement of the shaft, and the chamfering-tool projecting radially from the shaft a distance greater than the radius of the barrel, but less than the barrel-radius plus the eccentricity of arrangement of shafts, and means for advancing, traversing, and rocking the tool-shaft in manner specified, all substantially as described.

5. In a barrel-machine suitable barrel clamping and rotating mechanism, a tool-carrying shaft supported eccentrically to the axis of the clamped barrel, two cutter-carrying heads arranged on said tool-shaft, each carrying a chamfering-cutter projecting radially from the shaft to a distance greater than the radius of the clamped barrel, but less than the barrel-radius plus the eccentricity of arrangement of shafts, means for advancing the tool-shaft to carry one of the chamfering-tools through the barrel in its described eccentric relation, means for rocking the shaft to bring the cutters into operative position, and automatic mechanism imparting the slight longitudinal movement to the shaft to shift the cutters alternately to working position, all combined substantially as described.

6. In a barrel-machine, the barrel clamping and rotating mechanism, the longitudinally-traveling carriage and means for traversing it, the bracket-stand on said carriage arranged for lateral movement thereon, the tool-carrying shaft on said stand having cutter-carrying heads for each end of the barrel, means for rocking said shaft and for holding it in rocked position, and automatic mechanism substantially as described whereby the shaft is slightly shifted lengthwise to bring the chamfering-tools to working position all combined substantially as described.

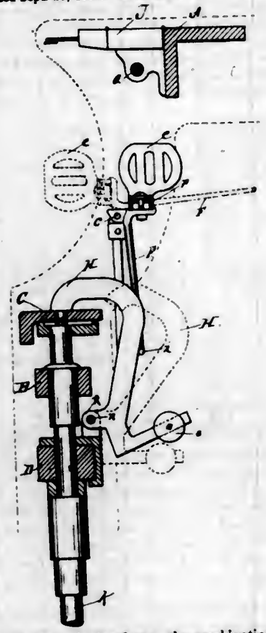
611,887. DASH-POT FOR VALVE-GEARS. CHARLES R. SHADALL, Milwaukee, Wis., assignor to the Frick Company, Waynesborough, Pa. Filed Mar. 19, 1898. Serial No. 674,473. (No model.)



Claim.—1. A dash-pot consisting of an open-top cylinder, a plunger mounted therein connected with the valve mechanism at its top, a port leading from the lower end of said cylinder beneath said plunger to the outside, a valve-seat formed on the outside around said port, an adjustable regulating-valve therein formed hollow and having a port communicating with said first-mentioned port, a valve-seat around the outer end thereof, a spring-mounted valve therein, and separate means for adjusting said two valves, both on the outside of the dash-pot, substantially as set forth.

2. In a dash-pot, the combination, of the open-top cylinder A, the plunger B therein connected to the valve mechanism, a port a^2 being formed leading from the lower end of cylinder A to the outside and having a valve-seat formed around its outer end, the valve C formed screw-threaded and mounted in a screw-threaded perforation in a part on the side of said cylinder A and seated in said valve-seat, said valve C being formed hollow and having a port which communicates with port a^2, the spring-mounted valve C' mounted in a seat formed at the outer end of said port, and the adjusting-screw C^2 for regulating the pressure of the spring on said valve, substantially as set forth.

611,888. SPINNING-FRAME. WILLIAM E. SHARPLES, Fall River, Mass. Filed Sept. 29, 1897. Serial No. 653,438. (No model.)



Claim.—1. In a spinning-frame, the combination with the ring-rail, of a curved catch pivoted to one of the stationary rails below the ring rail, and a movable rod or arm connected to the same moving part of the machine above the catch for pushing the hooked end of the catch over the ring-rail when that rail is depressed for the purpose of doffing, substantially as described.

2. In a spinning-frame, the combination with the ring-rail, of a curved catch pivoted to one of the stationary rails below the ring-rail, the separators and the separator-bar to which the separators are secured as arm attached to the separator-bar and arranged to push the hooked end of said catch over the ring-rail when the separators are turned up out of the way for doffing, substantially as described.

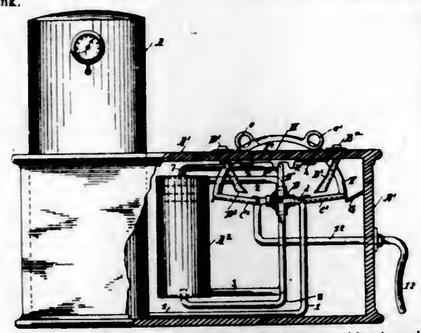
3. In a spinning-frame, the ring-rail, vertical rods upon which the ring-rail is placed, and a pivoted weighted catch having its upper end bent into a circular shape, and its lower end adapted to receive a weight, combined with the separator-bar, separators secured thereto, and an arm which extends downwardly from above the catch, and which by bearing against the catch holds its upper end pressed forward over the top of the ring-rail, substantially as set forth.

4. In a spinning-frame, the separator-bar, the pivoted arm upon which the separator-bar is secured, and which arm has its lower end adapted to engage with the catch, and the separators secured to the top of the bar, combined with the ring-rail, the rods upon which it is placed, and a pivoted weighted catch having its upper end adapted to catch over the top of the ring-rail, and which catch is operated by the pivoted arm, substantially as specified.

611,889. APPARATUS FOR INFLATING PNEUMATIC TIRES. CURTIS A. SHOFTALEN, San Francisco, Cal. Filed Feb. 16, 1898. Serial No. 670,768. (No model.)

Claim.—1. In an apparatus for inflating the tires of bicycles, the combination with the main tank or reservoir within which air is stored under pressure, of the supplemental tank or cylinder which holds a predetermined quantity of air, the outlet-pipes leading from the top and bottom of said supplemental tank, a valve-casing with which said pipes connect, a filling-pipe leading from said casing, a rotatable valve located therein, the air-inlet pipe leading from a valve-casing to the top and bottom of the supplemental tank, a pipe forming connection between the main tank or reservoir and said valve-casing, a rotatable valve located therein so as to control communication between the pipes, an air-actuated piston or head working in the supplemental tank, and of mechanism for imparting movement to the rotatable valves so as to open and close communication between the respective pipe connections.

2. In an apparatus of the described class, the combination with the main tank or reservoir, of a supplemental tank which is charged from the main tank or reservoir, valve mechanism for controlling the flow of air into the supplemental tank and from said tank to the filling tube or pipe which communicates with the tires of the bicycle, an air-actuated piston or head working in said supplemental tank, and of controlled mechanism for operating the valve mechanism in order to control the flow of air into and out of the supplemental tank.

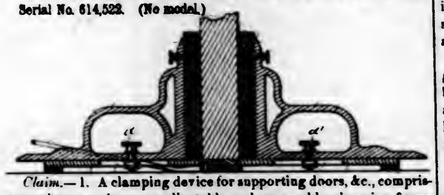


3. In an apparatus of the described class, the combination with the main tank or reservoir, of the supplemental tank, pipe connections consisting of air-inlet and air-outlet pipes leading from the top and bottom of the supplemental tank, an air-feed pipe leading from the main tank or reservoir communicating with the air-inlet pipes, a filling-pipe communicating with the air-outlet pipes, valve mechanism forming connection between the respective pipes, an air-actuated piston or head working in the supplemental tank, and of controlled mechanism which actuates the valve mechanism.

4. In an apparatus of the described class, the combination with the main tank or reservoir, of the supplemental tank, the casing, shaft working therein, the valves mounted thereon, ported valve-casings within which the valves work, air-inlet pipes leading from one of said casings to the top and bottom of the supplemental tank, air-outlet pipes leading from the top and bottom of said tank and communicating with the other valve-casing, a pipe connection between the first-named casing and the main tank or reservoir, a filling-pipe leading from the other valve-casing, an air-actuated piston or head working in the supplemental tank, and of controlled mechanism which imparts rotation to the shaft carrying the valves in order to establish communication with the respective pipes.

5. In an apparatus of the described class, the combination with the main tank or reservoir, of the supplemental tank, air-inlet and air-outlet pipes leading from the top and bottom of said tank, an air-actuated piston or head working therein, and of valve mechanism for opening the lower air-outlet pipe and the upper air-inlet pipe while closing the upper air-outlet pipe and lower air-inlet pipe, or vice versa.

611,840. CLAMPING DEVICE FOR SUPPORTING DOORS, &c. ORISON M. SMITH, Duluth, Minn., assignor of one-half to Charles H. Gilman, Boston, Mass. Filed Oct. 29, 1894. Renewed Dec. 4, 1896. Serial No. 614,522. (No model.)



Claim.—1. A clamping device for supporting doors, &c., comprising two base portions, an adjustable and removable clamping-frame mounted upon each of the base portions, and a connecting-link pivotally connecting the base portions, for the purpose set forth.

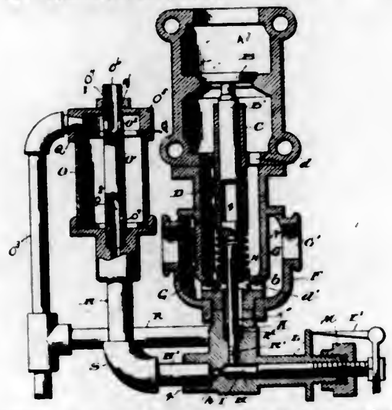
2. A clamping device for supporting doors, &c., comprising slotted base portions, a connecting-link for pivotally uniting said base portions, slidable and removable frames supported upon said base portions, and adjusting devices connecting the base portions and said frames together, substantially as described.

3. A clamping device for supporting doors, &c., comprising slotted base portions, a connecting-link between the inner ends of said base portions for pivotally uniting the same, adjustable and removable frames provided with upright dovetailed portions adapted to receive the clamping-block, said frames being supported upon the base portions, and adjusting devices connecting said base portions and frames together, substantially as described.

4. A clamping device for supporting doors, &c., comprising base portions, a connecting-link for pivotally uniting the inner ends of said portions, a lever connected to the said connecting-link, adjustable frames supported upon said base, and adjusting devices connecting the base portions and said frames together, substantially as described.

5. A clamping device for supporting doors, &c., comprising slotted base portions, a connecting-link for pivotally uniting the inner ends of said portions, a lever connected to said link, adjustable frames provided with dovetailed portions adapted to receive a clamping-block, said frames being supported upon the base portions, adjusting devices connecting the base portions and frames together, and means for securing the clamping-blocks to the dovetailed portion of the said frames, substantially as described.

611,841. MIXER AND VAPORIZER FOR EXPLOSIVE-ENGINES. GEORGE W. STARR and JOHN H. COGSWELL, Havana, Ill. Filed Aug. 10, 1897. Serial No. 647,730. (No model.)



Claim.—1. In a mixer or vaporizer for explosive-gas engines, the combination with the valve-chamber, valve and stem therein, the lower end of the said valve-stem hollowed out, of the gasolene-feed pipe, over which the lower end of the said stem telescopes, as and for the purpose set forth.

2. In a mixer or vaporizer for explosive-gas engines, the valve-chamber, valve and seat therefor, the valve-stem with its lower end hollowed out, the guide C, in which said stem works, the jam-nuts on the hollow end of the stem, and the spring interposed between the same and the lower end of the guide C, combined with the gasolene-feed pipe, over which the lower end of the stem works for the purpose set forth.

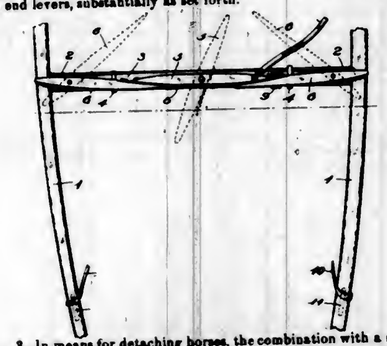
3. In a mixer or vaporizer for explosive-gas engines, the combination with the valve and chamber, the valve and stem with hollow end, of the shell D and member H, of the gasolene-feed tube mounted in the latter, and communicating with a valve-regulated duct, of the shell F, having screw-threaded connection with the said member, and casing D, as shown and described.

4. In combination with the vaporizing apparatus described, the gasolene-supply cup, the tube mounted therein, which tube has a bore at each end with lateral openings into the said bores, the bore at the upper end adapted to communicate with a supply-pipe, and its lower end communicating with a pipe leading to the mixing-chamber, as shown and for the purpose set forth.

611,842. HORSE-DETACHER. JOHN R. TAYLOR, Palmyra, Mo. Filed Nov. 22, 1897. Serial No. 659,440. (No model.)

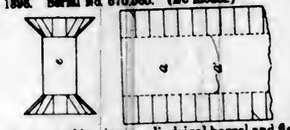
Claim.—1. In a mechanism for releasing a horse from a vehicle, the combination with a singletree, of levers fulcrumed near their outer ends to the end portions of the singletree and adapted to have the traces engaged therewith and having their inner ends spaced apart, and a middle lever fulcrumed to the singletree about midway of the space formed between the inner ends of the outer levers and having its end portions overlapping the said inner ends of the outer levers and under the control of the driver to release the outer levers and the animal hitched thereto, substantially as set forth.

2. In means for detaching horses, the combination with a series of three levers having their opposing ends overlapping, the middle lever being under the control of the driver, and the outer levers adapted to have the traces hitched thereto, of a spring secured to the said middle lever and having its free end engaging with one of the end levers, substantially as set forth.



3. In means for detaching horses, the combination with a singletree, of a middle and end levers fulcrumed to the singletree and having their opposing ends overlapping, a pull cord or strap applied to an end portion of the middle lever, a spring secured to the middle lever and engaging with the inner end of one of the outer levers, and a stop between the other outer lever and the singletree, substantially as set forth.

611,843. SPOOL. MARSHALL TILDEN, Willimantic, Conn. Filed Feb. 16, 1898. Serial No. 670,565. (No model.)



Claim.—1. A spool having a cylindrical barrel and flanged heads, said spool being formed of a single piece of paper having its edges slitted and wound a plural number of times upon itself.

2. A spool having a cylindrical barrel and solid flanged heads, said spool being formed of a single piece of paper having its edges slitted and wound a plural number of times upon itself, each layer of the slitted edges being made to overlap the intervening spaces of the preceding layer.

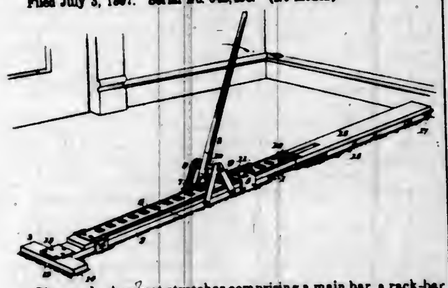
3. A spool having a cylindrical barrel and flanged heads, said spool being formed of a single piece of paper having its edges slitted and wound a plural number of times upon itself, combined with strengthening-pieces applied to the ends of the spool.

4. A spool or bobbin having a cylindrical barrel and a flanged head, said spool or bobbin being formed from a single piece of paper having a slitted edge and wound a plural number of times upon itself.

5. A spool having a cylindrical barrel and molded heads, said spool being formed from a single piece of paper having weakened edges and wound a plural number of times upon itself, the heads being formed simultaneously with the winding of the barrel.

6. A spool having a cylindrical barrel and flanged heads, said spool being formed of a single piece of paper having edges weakened, so as to form the flanged heads, and which piece of paper is wrapped a plural number of times upon itself.

611,844. CARPET-STRETCHER. CHARLES J. WAGNER, Alma, Mo. Filed July 3, 1897. Serial No. 643,436. (No model.)



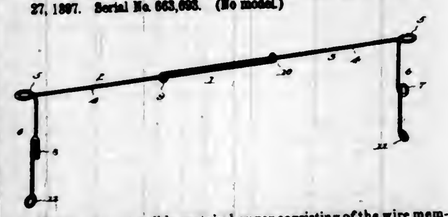
Claim.—1. A carpet-stretcher comprising a main bar, a rack-bar arranged on the upper face of the main bar and provided with depressions forming teeth, an extensible stretching-bar slidingly connected with the main bar, brackets mounted on the extensible bar, a lever fulcrumed on the bracket and having its lower end bifurcated and provided at the rear side of the bifurcation with an extension, an actuating-pawl pivoted between its ends in the bifurcation of the lever, the rear end of the pawl being arranged to be engaged by the said extension, whereby the lever is adapted to lift the pawl out of engagement with the rack-bar, and a check-pawl, substantially as described.

2. A carpet-stretcher comprising a main bar provided with ratchet-teeth, a sliding stretching-bar provided with a carpet-engaging head, the oppositely-disposed loops 4 and 5 connecting the main bar and the stretching-bar, the loop 5 being provided with integral ears formed by cutting the loop and bending the severed portions upward, a check-pawl pivoted between the perforated ears and engaging the ratchet-teeth, the brackets secured to the sliding bar at opposite sides thereof, and an operating-lever fulcrumed on the brackets and provided with a pawl for engaging the ratchet-teeth, whereby the sliding bar is actuated, substantially as described.

3. A carpet-stretcher comprising a main bar provided with ratchet-teeth, an extensible stretching-bar slidingly connected with the main bar, brackets rigidly mounted on the extensible bar and provided with bearing-openings having entrance-slots narrower than the bearing-openings, an operating-lever provided with a transverse pivot 10, recessed at opposite sides to pass through the entrance-slots of the brackets, whereby the lever is detachably fulcrumed thereon, an actuating-pawl carried by the lever, and a check-pawl, substantially as described.

4. A carpet-stretcher comprising a main rack bar, an extensible stretching-bar slidingly connected with the main bar, a lever fulcrumed on the extensible bar and provided at its lower end with a bifurcation and having an extension at the rear side of the bifurcation, an actuating-pawl pivoted between its ends in the bifurcation of the lever, the rear end of the pawl being arranged to be engaged by the said extension, whereby the lever is adapted to lift the pawl out of engagement, and a check-pawl, substantially as described.

611,845. WINDOW-SHADE FIXTURE. PARRISH C. WEEKS, Kansas City, Kans., assignor to Lucy L. Ahlborn, same place. Filed Dec. 27, 1897. Serial No. 663,693. (No model.)



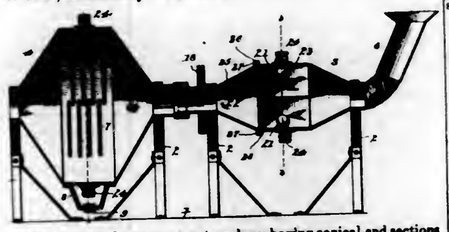
Claim.—An extensible curtain-hanger consisting of the wire members, 2, 3, slidably coupled together and each provided with a depending arm, 6, and bent to form a guide-loop, 5, between its shank and said depending arm and also provided with an oblique loop, 11, which lies at the lower free extremity of said arm and is in vertical alinement with the guide-loop, 5, one arm having the journal-eye, 7, at a point intermediate of its length and the other arm provided with an oblong loop, 8, which lies in the same horizontal plane as the eye, 7, combined with a shade-roller mounted in the eye and loop, 7, 8, of the hanger above the oblique loops, 11, thereof, and a running-cord threaded through the loops, 5, 11, and having its lower length carried and guided across the hanger below the shade, substantially as described.

611,846. AMALGAMATOR. ISAAC ANDERSON, Vulcan, Colo. Filed May 15, 1897. Serial No. 636,683. (No model.)

Claim.—1. In an amalgamator and concentrator, the combination of a rotary amalgamator-drum, an oscillating concentrator-drum movable independently of the amalgamator-drum and arranged substantially in alinement therewith to have one end communicate axially with the amalgamator-drum and provided at its other end with an axial exit-opening, a series of freely-movable amalgamated bodies confined within the amalgamator-drum, and a series of beaters fixed within the concentrator-drum to partake of the motion thereof and arranged to intercept the ore as it passes through the drum, whereby the ore is subjected to treatment continuously as it passes through the drums by the amalgamated bodies and the beaters and the desired particles are retained in the bottom of the oscillating concentrator-drum while the refuse is discharged from its axial exit, substantially as described.

2. In an amalgamator and concentrator, the combination of an amalgamator-drum carrying a series of freely-movable amalgamated

bodies, a concentrator-drum connected axially with the amalgamator-drum to receive therefrom and having an axial outlet, a series of beaters fixed to the concentrator-drum to partake of the motion thereof and arranged to intercept the ore as it traverses the drum, and a driving mechanism geared to the amalgamator-drum to rotate the latter and having link connections with the concentrator-drum to oscillate the same independently of the motion of the amalgamator-drum, substantially as described.



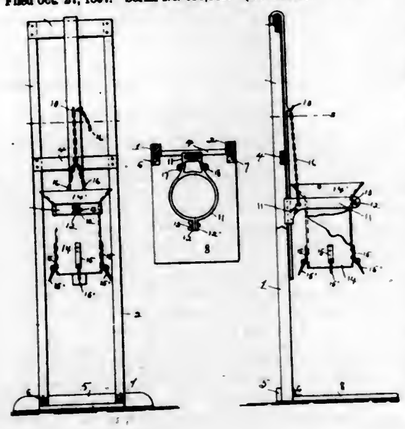
3. In an amalgamator, a rotary drum having conical end sections clamped to the cylindrical body thereof and forming axial inlet and egress openings for said drum, combined with a series of radial partitions fixed within the cylindrical body of the drum, a series of amalgamated bodies within the compartments formed by the radial partitions, and a transverse screen clamped within the drum and situated between the ore-outlet and the partitions, against the delivery ends of the latter, substantially as described.

4. In an amalgamator, an amalgamator-drum provided with a removable conical section at its delivery end and with an inlet at the opposite end, a series of radial partitions fixed within the drum at one side of the conical delivery-section, a screen clamped between the drum and its delivery-section to be confined in fixed relation adjacent to the radial partitions, and freely-movable amalgamated bodies loosely confined within compartments formed by the radial partitions and prevented from moving into the delivery-section of the drum by said screen, as and for the purposes described.

5. In an amalgamator, the amalgamator-drum having a series of radial partitions each bent to form a depression or pocket near the line where the partition joins with the drum, a screen between the partitions and the delivery end of the drum, and a series of freely-movable amalgamated bodies confined in the compartments formed by the radial partitions and by the screen, said bodies adapted to occupy the pockets or depressions in said partitions and to be carried upward thereby as the drum is rotated, as and for the purposes described.

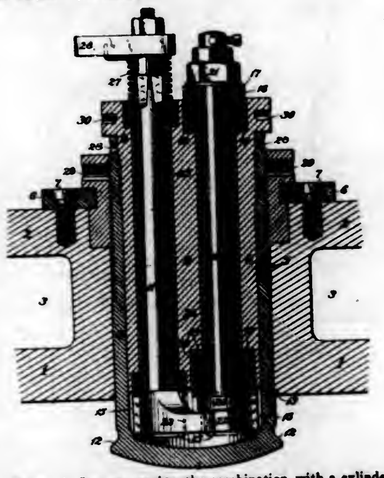
6. In an amalgamator, an amalgamating-drum and a concentrator-drum loosely coupled together by interfitting tubular trunnions which provide a conduit for the passage of the material from one drum to the other and enable each drum to move independently of the other drum, combined with a driving-shaft geared to the amalgamator-drum to rotate the latter, a crank-shaft linked to the concentrator-drum to rock the same, and operative connections between the driving-shaft and the crank-shaft, substantially as described, for the purposes set forth.

611,847. BAG-HOLDER. LEWIS R. BERRY, New Kensington, Pa. Filed Oct. 27, 1897. Serial No. 656,515. (No model.)



Claim.—In a bag-holder, the combination with the uprights, connected together at the top and bottom, by cross-bars, and the hanger formed with a hook at the upper end engaging with the upper cross-bar and provided intermediate its ends with a hook, of the bracket slidably mounted on said hanger, the lugs at the outer end thereof and the thumb-screw passing therethrough, the hopper having a flaring mouth supported by said bracket, the flat springs secured to the lower end of said hopper and the cams pivoted to the free ends of said springs, substantially as shown and described.

611,848. IGNITING DEVICE FOR GAS-ENGINES. WILLIAM A. BOLE and THOMAS J. HOGAN, Pittsburg, Pa. Filed June 30, 1897. Serial No. 643,463. (No model.)



Claim.—1. In a gas-engine, the combination, with a cylinder of the engine, of two electric igniters, each provided with a make-and-break device adapted to be operated to ignite the combustible gases, and means for cutting off communication between the cylinder and the spaces surrounding the make-and-break devices whereby one of the igniters may be removed while the other is being operated, substantially as set forth.

2. In a gas-engine, the combination, with a gas-engine cylinder, of a movable casing or bushing, mounted in the wall, or head of the cylinder, a fixed electrode and a movable electrode, an electric igniting device located within the casing, or bushing, means for moving the casing, or bushing, to cut off communication between the electrodes and the gases, and means whereby the electrodes may be removed, substantially as set forth.

3. An electric igniting device for gas-engines, comprising a valvular outer casing within which is located a fixed and a movable electrode for making and breaking an electric circuit and thereby effecting ignition of the combustible gases, substantially as set forth.

4. In an electric igniting device, a casing or bushing, a removable plug in the casing or bushing, a fixed and a movable electrode mounted in the plug, a port or opening in the casing, or bushing, through which admission of the combustible gases may be permitted to the electrodes, and means whereby the port or opening may be closed to prevent access of the gases to the electrodes, substantially as set forth.

5. In a gas-engine, the combination, with a gas-engine cylinder, of two electric igniting devices, each comprising a fixed and a movable electrode, means for actuating the movable electrodes, means whereby either of the movable electrodes may be disengaged from the actuating mechanism, and means whereby the corresponding igniting device may be removed from the engine, substantially as set forth.

6. In a gas-engine, the combination, with a gas-engine cylinder, of two electric igniters each adapted to be operated by a common actuating device, means for cutting off either igniter from the gases in the cylinder, and means whereby the actuating mechanism may be operatively engaged with the other igniter, substantially as set forth.

7. In a gas engine, the combination, with the engine-cylinder, of two electric igniters each comprising a fixed and a movable electrode, a reciprocating rod, or shaft, having a tappet for engaging with one of the movable electrodes, and means whereby the tappet may be shifted to engage with the other movable electrode, substantially as set forth.

8. In a gas-engine, the combination, with the engine-cylinder, of two electric igniters, each provided with a movable electrode, means for actuating the movable electrodes, and a reversible tappet adapted to engage with either of the movable electrodes, substantially as set forth.

9. In a gas-engine, the combination, with the engine-cylinder, of two electric igniters, each provided with a movable electrode, a reciprocating rod actuated from a moving part of the engine for actuating the movable electrodes, a sleeve mounted on the rod and carrying a tappet which is adapted to engage with either of the movable electrodes, and means for shifting the sleeve and tappet to engage with the other movable electrode, substantially as set forth.

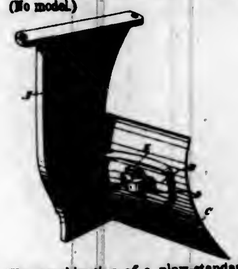
10. In an electric igniter for gas-engines, a removable plug, a fixed electrode and a movable electrode mounted in the opposite ends of the plug, a casing surrounding the plug, an opening in the casing through which the gases may have access to the electrodes, and means whereby the electrodes may be moved into position for inspection or repair without removing the igniter from the engine, substantially as set forth.

11. In a gas-engine, an electric igniting device comprising a fixed and a movable electrode located in a passage through which fluid is admitted to the cylinder of the engine, and means for cutting off communication between the passage and the electrodes, substantially as set forth.

12. In a gas-engine, a fixed and a movable electrode, located in a chamber, or cavity, communicating with the inlet-passage of a gas-engine cylinder, and in position to be swept by the incoming gases, and means for preventing access of the gases to the chamber, or cavity, substantially as set forth.

13. In a gas-engine, a fixed and a movable electrode, located in a chamber, or cavity, communicating with the clearance-space of the cylinder, and in position to be swept by the incoming gases, means for cutting off the chamber from the cylinder-space, and means whereby the electrodes may be removed without affecting the operativeness of the engine, substantially as set forth.

611,849. MOLDBOARD ATTACHMENT FOR PLOWS. FRANK BOSSE and JOSEPH R. CLARY, Newman, Cal. Filed Feb. 2, 1898. Serial No. 668,836. (No model.)



Claim.—1. The combination of a plow-standard having a lug projecting substantially at right angles from one side thereof, a reversible moldboard fitting said lug and means for locking the moldboard to the lug.

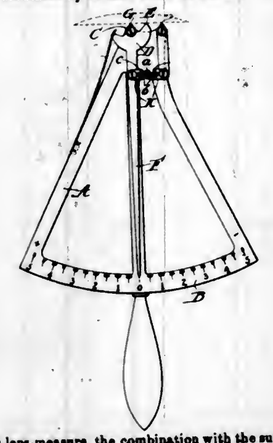
2. A plow-standard having a lug and support projecting substantially at right angles from one side thereof, and having an opening formed in it, in combination with a moldboard fitting said lug and having a slotted projection on its back adapted to be passed through the opening in the lug, and a means engaging the slotted projection and locking the moldboard to the lug.

3. A plow-standard having a lug or support projecting from one side with an opening made through it, a moldboard having a projection centrally upon the back with a slot therethrough, said projection fitting the opening in the standard-lug, and a key fitting the slot and locking the moldboard to the support.

4. The combination of a plow-standard having a lug projecting substantially at right angles from one side thereof, and provided with an opening, a moldboard fitted to said lug and having a slotted projection centrally placed upon its back and adapted to pass through the opening in the lug, and a key passed through the slot in the projection and adapted to detachably lock the moldboard to the lug, said moldboard having a rhomboidal form and adapted to be reversed so that either edge may be uppermost.

611,850. LENS-MEASURE. JAMES T. BRATTON, Chicago, Ill., assignor to the Geneva Optical Company, same place. Filed Jan. 14, 1895. Serial No. 534,969. (No model.)

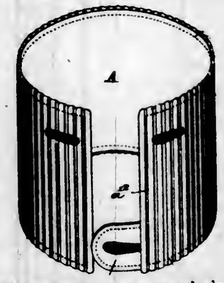
Claim.—1. In a lens-measure, the combination with a plurality of points arranged in a line, one of which is vertically movable with relation to the other points, of a lever carrying the middle and one of the other points and terminating in an index-finger moving over a dial or scale, said lever having an upwardly and outwardly projected portion, a spring secured to the frame and acting against the outer surface of said projected portion of the lever, and a lever carrying a single point, substantially as shown and described.



2. In a lens-measure, the combination with the supporting-frame of a plurality of points arranged in a line, one of said points being vertically movable with relation to the other points, a lever fulcrumed on the frame, and provided at one end with an index-finger moving over a dial or scale, while its opposite end effects the vertical movement of the said movable point, said lever having an upwardly and outwardly projected portion, a spring secured to the frame and acting against said projected portion of the lever, and a lever carrying a single point, substantially as described.

3. In a lens-measure having a plurality of points arranged in a line, the combination with a dial-frame, of a lever fulcrumed thereon and carrying at its upper end two of said points, and provided at its lower end with an index-finger, the fulcrum-point of said lever when in normal or vertical position being in the vertical plane of one of the points carried by it, an adjustable lever carrying a single point, and a spring bearing upon the upper end of the index-lever, substantially as described.

611,851. CUFF. JAMES A. BROGAN, Lawrence, Mass. Filed June 7, 1898. Serial No. 682,799. (No model.)

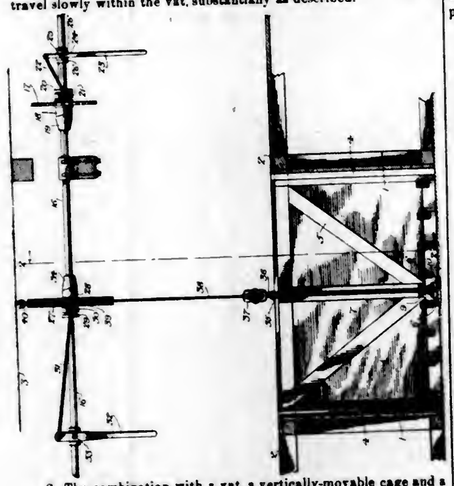


Claim.—A cuff comprising an inner smooth ply, an outer plaited ply, and one or more intermediate stiffening-plies, the plaits of said outer ply extending transversely to the length of the cuff, and the several plies being infolded at their edges, the outer ply and stiffening-plies being infolded together and stitched at the longitudinal edges of the cuff, and the several plies being stitched through and through at their infolded edges, substantially as described.

611,852. ELEVATOR FOR TANNING-VATS. JOSEPH H. BURNS, Munising, Mich., assignor of one-half to James Lightbody, St. Clair, Mich. Filed Oct. 16, 1897. Serial No. 655,406. (No model.)

Claim.—1. The combination with a vat, a traveling cage fitted therein, and a hoisting mechanism for said cage, of a mechanism for

controlling the descent of the cage comprising a vertical, non-rotatable spindle, and a check-nut fitted to rotate freely on the spindle and having ball-bearing connections with the cage, to allow the cage to travel slowly within the vat, substantially as described.



2. The combination with a vat, a vertically-movable cage and a hoisting mechanism adapted to raise said cage within the vat, of a check mechanism to control the continuous descent of the cage slowly, consisting of a central non-rotatable screw fixed within the vat, and a traveling nut connected with the cage and fitted to said screw; said check mechanism being connected with the cage under all conditions of service and controlling the same to insure a slow, continuous, traveling movement thereto within the limits of the vat, substantially as described

3. The combination with a tanning-vat, a vertically-movable cage therein and a hoisting mechanism adapted for connection to said cage to raise the same within the vat, of bearing-rails fixed to the cage to travel therewith, a non-rotatable screw-spindle fixed centrally within the vat and passing through said bearing-rails, and a traveling nut rotatably confined within the bearing-rails and fitted on the screw to rotate freely thereon and sustain the cage against rapid descent within the vat when said cage is free from the pull of the hoisting mechanism, substantially as and for the purposes described.

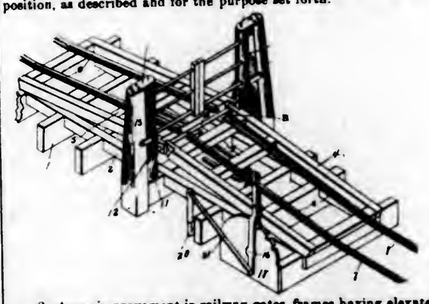
4. The combination with a tanning-vat, a vertically-movable cage therein, and a hoisting mechanism for said cage, of bearing-rails rigidly attached to the cage, the bearing-plates mounted on the bearing-rails to oppose each other, a traveling nut fitted between said plates, bearing-balls interposed between the plates and the ends of said nut and a single non-rotatable screw passing through the traveling nut and fixed within the vat in central relation to the cage, for the purposes described, substantially as set forth.

5. The combination with a tanning-vat and a vertically-movable cage therein, of a non-rotatable spindle fixed within the vat and passing through the cage, a rotary checking-nut connected with the cage and fitted to said spindle, an overhead driving-shaft, a sheave mounted on the shaft to be driven thereby, a sheave-block connected detachably to said cage, and a continuous hoisting-cable fastened at one end to a fixed support, extending through the sheave-block and attached at its other end to the sheave, whereby the cage may be freed from the hoisting-cable and allowed to descend slowly by the rotation of the check-nut on the screw-spindle within the vat, substantially as described.

6. The combination with a tanning-vat, and a vertically-movable cable therein, of a non-rotatable single screw-spindle fixed within the vat and passing centrally through said cage, a rotatable check-nut journaled in the cage and engaging with the screw-spindle to impart a slow, continuous traveling movement to the cage, an overhead driving-shaft, a sheave mounted loosely on said shaft, a clutch for making the sheave fast to or loose on the shaft, and a hoisting-cable connected with the cage and having its ends fastened to the sheave and to a fixed support, respectively, substantially as described.

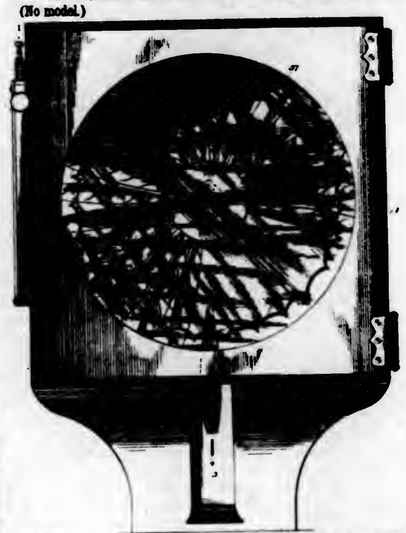
611,853. RAILWAY-GATE. FRANCIS M. CARDER and GEORGE J. PICKINPAUGH, Unionville, Mo. Filed Oct. 30, 1897. Serial No. 656,867. (No model.)

Claim.—1. In railway-gates, frames having elevated meeting ends supporting the rails, a two-leaved swinging gate, devices connecting each gate-leaf with the frames and hand-operated means to depress said frames and open the gate and lock the parts in that position, as described and for the purpose set forth.



2. As an improvement in railway-gates, frames having elevated meeting ends supporting the rails, a two-leaved swinging gate, devices connecting each gate-leaf with the elevated frames, a crank-arm mounted upon the base supporting said frames, a link attached to said crank-arm and an operating-lever pivotally connected to said link whereby said crank-arm may be manipulated by said lever and the frames depressed, and suitable means for holding the lever in an adjusted position, substantially as specified and for the purpose set forth.

611,854. VENDING-MACHINE. PATRICK H. CONNER and FRANK M. PODHASKI, Monticello, Iowa. Filed Nov. 22, 1897. Serial No. 659,461. (No model.)



Claim.—1. In a machine of the class described, the combination of a main coin-chute provided with a lateral outlet, an auxiliary coin-chute alined with the main chute and terminating at its upper end, contiguous to the plane of said outlet of the main chute, in a coin-rest, a movable trip for displacing a coin from the coin-rest and impelling it through said outlet, a coin-wheel having seats adapted for successive registration with said outlet, to receive a coin discharged therethrough, and a push-rod mounted for tangential movement with relation to the coin-wheel, substantially as specified.

2. In a machine of the class described, the combination of a coin-chute having a lateral outlet and a contiguous coin-rest, a coin-wheel having peripheral seats adapted for successive registration with said outlet, a push-rod for coöperation with a coin fitted in a coin-seat of said wheel, a trip having a tongue adapted to displace a coin from the coin-rest and discharge it through said lateral outlet, and means for actuating the trip, substantially as specified.

3. In a machine of the class described, the combination of a coin-chute having a lateral outlet and a contiguous coin-rest, a coin-wheel

having peripheral seats for successive alinement with said outlet, a push-rod for coöperation with a coin fitted in a coin-seat of said wheel, a pivotal trip having a tongue for operation contiguous to the coin-rest, and adapted to displace a coin therefrom and discharge it through said outlet, yielding means for normally maintaining the tongue in an extended position spanning the chute, and a terminally-exposed push-rod for actuating the trip, substantially as specified.

4. In a machine of the class described, the combination with a coin-chute having a lateral outlet and a contiguous coin-rest, a coin-wheel having peripheral coin-seats adapted for successive registration with said outlet, and a push-rod for coöperation with a coin fitted in a coin-seat in said wheel, of a spring-actuated trip having a tongue for displacing a coin from the coin-rest and discharging it through said lateral outlet, and also provided with a stop which is normally held in the path of a coin descending through the chute, and exposed means for moving the trip in opposition to its actuating-spring, substantially as specified.

5. A vending-machine having a rotary stock-wheel provided with compartments adapted to be arranged respectively in registration with an exposed delivery-pocket, a rotary coin-wheel operatively connected with said stock-wheel and having a peripheral series of open-sided coin-seats, a coin-chute having an outlet with which said coin-seats are adapted to register successively, a push-rod mounted parallel with a tangent of the coin-wheel, and between said wheel and the coin-chute, a trip for discharging a coin from the coin-chute into the registering seat of the coin-wheel in the path of said push rod, and for yieldingly maintaining the coin in said seat, yielding means for actuating the trip, and a terminally-exposed push-rod for temporarily withdrawing the trip from the path of a coin descending through the chute, substantially as specified.

6. In a vending-machine, the combination with a casing, and coin-controlled operating mechanism, of a stock-carrier having a conically-dished rotary disk provided on its concave side with radial compartments or seats for articles of stock, adapted to be arranged successively in registration with an outlet-opening of the casing, said stock-carrier being operatively connected with the coin-controlled mechanism, substantially as specified.

7. In a vending-machine, the combination with a casing and coin-controlled operating mechanism, of a stock-carrier having a conically-dished rotary disk, connected with said operating mechanism, and provided on its concave surface with outer and inner series of radially-alined keepers adapted for successive registration with an outlet-opening of the casing, substantially as specified.

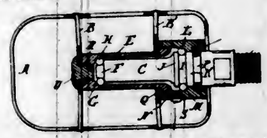
8. In a vending-machine, the combination with a casing and coin-controlled operating mechanism, of a stock-carrier having a rotary disk detachably connected with said operating mechanism, and provided with an inclosing lid-fitted receptacle, substantially as specified.

9. In a vending-machine, the combination with a casing, and coin-controlled operating mechanism including a rotary spindle, of a stock-carrier having a rotary disk removably fitted upon said spindle, and provided with an inclosing lid-fitted box or receptacle, substantially as specified.

10. In a vending-machine, the combination with a casing, and coin-controlled operating mechanism including a rotary spindle, of a stock-carrier having a rotary disk removably fitted upon said spindle, and a permanently-inclosing box in which said disk is mounted for rotation, and which is provided with a permanently-attached lid or cover, substantially as specified.

11. In a vending-machine, the combination with a casing, having a side transparent panel, a spindle, and coin-controlled mechanism for operating the spindle, of a stock-carrier having a rotary disk removably fitted upon said spindle, and provided with compartments for successive registration with an exposed delivery-pocket, and a box permanently inclosing said disk and provided with a sectional folding cover for arrangement parallel with a side wall of the casing, for exterior exposure through said transparent panel, substantially as specified.

611,855. PEDAL. LEWIS T. CORNELL, Chicago, Ill., assignor to Parkhurst & Wilkinson, same place. Filed Aug. 10, 1896. Serial No. 602,290. (No model.)



Claim.—1. The combination with a pedal-frame having the transverse braces, of a sleeve, a pedal-pin arranged in the sleeve, a collar around said pedal-pin adapted to engage one of the braces and connected to one end of the sleeve, and a screw adapted to be adjusted in the other end of the sleeve to draw the collar against one of said braces and having an enlarged head to bear against the other brace, substantially as described.

2. The combination with a pedal-frame having the transverse braces, of a pedal-pin, a sleeve surrounding one end of said pin and projecting through one of said braces, that portion of the sleeve between the braces being of less length than the actual distance between the braces before the parts are adjusted and secured together, a collar connected to said sleeve, said collar being outside of one brace and adapted to bear against it, inwardly-facing bearing-cups formed in the collar and sleeve, bearing-balls in said cup, and means bearing against the outside of the other brace for securing the sleeve, the collar and the pedal-pin to the pedal-frame and springing the braces inwardly to secure the parts rigidly together, substantially as described.

3. The combination with a pedal-frame having transverse braces, of a sleeve, a pedal-pin arranged in said sleeve, a collar connected to one end of the sleeve and adapted to bear against the outer side of one of said braces and means adjustably connected with the end of the sleeve and bearing against the outer side of the other brace for springing that brace against the end of the sleeve and springing the braces toward each other to secure and tighten the parts in the pedal-frame, substantially as described.

4. The combination with a pedal-frame having transverse braces, of a sleeve, a pedal-pin arranged in said sleeve, a collar on the sleeve between one brace and the adjacent end of the frame and adapted to bear against the outer side of said brace, inwardly-facing bearing-cups formed in the collar and sleeve, bearing-balls in said cups, and a screw bearing against the brace at the outer end of the sleeve and operating in the end of said sleeve for securing the sleeve, the collar and the pedal-pin in the frame, substantially as described.

5. The combination with a pedal-frame having the transverse braces B, B' within said frame and between its ends, of a sleeve arranged between said braces, that portion of the sleeve between the braces being of less length than the actual distance between the braces before the parts are adjusted and secured together, a collar located between one brace, B', and the adjacent end of the frame, said collar being connected to the end of the sleeve and bearing against the brace, a pedal-pin extending through the sleeve, the collar and the end of the frame adjacent to the brace B' and a screw bearing against said brace B at the outer end of the sleeve for springing the braces toward each other to tighten and secure the parts in the frame, substantially as described.

6. The combination with a pedal-frame having the transverse braces between its ends, of a sleeve arranged between said braces, that portion of the sleeve between the braces being of less length than the actual distance between the braces before the parts are adjusted and secured together, a pedal-pin arranged in said sleeve, a collar located between one brace and the end of the frame and around the pedal-pin, a row of balls between the end of the pedal-pin and the sleeve, another row of balls between the pedal-pin and the collar, and a screw operating through one brace and into the end of the sleeve and having an enlarged head bearing against the outer side of said brace to spring the braces toward each other and secure the parts in the pedal-frame, substantially as described.

7. The combination with a pedal-frame having the transverse braces, of a sleeve, a pedal-pin provided with a cone at its end, a row of balls operating in the race between said cone and a cup in the sleeve, a collar adjustably connected to one end of the sleeve and adapted to bear against one of the transverse braces, a cone formed on the pedal-pin and forming a race for a row of balls with a cup in the collar, a packing-ring between said collar and pedal-pin, and a screw adapted to be adjusted in the end of said sleeve and having an enlarged head adapted to bear against one of the braces to secure the parts in place, substantially as described.

611,856. CORN-PLANTER. JOHN C. COURTNEY, Streator, Ill., assignor of one-half to Fawcett Plumb, same place. Filed June 15, 1897. Serial No. 640,592. (No model.)

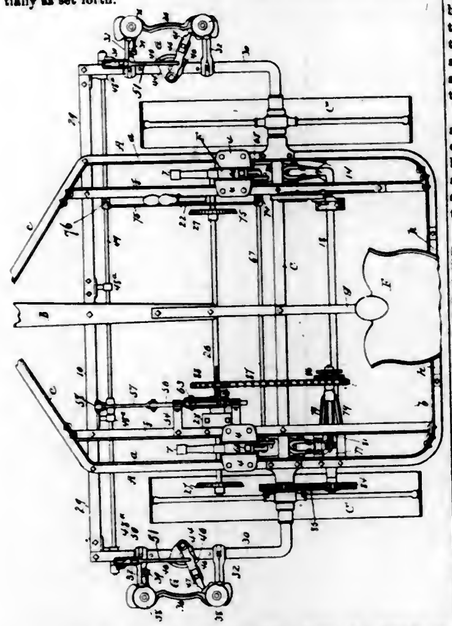
Claim.—1. In a corn-planter, the combination with a frame, an axle secured thereto and wheels on the axle, of a tongue secured to the front end of the frame and to the axle, a driver's seat over the rear end of the frame and standards secured to said seat, the rear of the frame and the axle, substantially as set forth.

2. A planting-leg consisting of telescoping sections, one section being hinged whereby it swings in the arc of a circle when it moves.

3. A planting-leg consisting of a rigid seed-tube and a furrow-opener or shoe telescoping over said seed-tube, and a pivotal connection between said seed-tube and furrow-opener or shoe, substantially as set forth.

4. A planting-leg consisting of a fixed seed-tube, and an arm projecting forwardly therefrom, a furrow-opener or shoe adapted to telescope over said seed-tube, and an extension on said furrow-opener or

shoe pivotally connected to said forwardly-projecting arm, substantially as set forth.



5. In a planter, the combination with a frame, of a planting-leg consisting of a rigid seed-tube, a shoe telescoping over the lower end thereof, a forwardly-projecting arm on the seed-tube pivoted to an extension of the shoe, and a brace extending from the free end of said arm and the frame, substantially as set forth.

6. In a corn-planter, the combination with a frame, of a planting-leg consisting of a rigid section and a telescoping section, a rock-shaft mounted on the frame and having a crank-arm, a connection between said crank-arm and the telescopic section of the leg, an operating-lever secured to said rock-shaft and a locking device for said operating-lever, substantially as set forth.

7. In a corn-planter, the combination with a planting-leg comprising a rigid and a telescopic section, of brackets secured to the telescopic section, an arm pivoted between said brackets, pintles at the free end of said arm, covering-disks on said pintles, and slotted bars connecting said pintle with the telescopic section, substantially as set forth

8. In a corn-planter, the combination with a planting-leg comprising a rigid and a telescopic section, of an arm adjustably connected with the telescopic section and having inclined pintles, and inclined covering-disks mounted on said pintles, substantially as set forth.

9. In a corn-planter, the combination with a frame, feed mechanism, and a shaft adapted to transmit motion to said feed mechanism of a check-rower lever, a ratchet-wheel on said shaft, a sliding bar, a dog on said sliding bar adapted to engage the ratchet-wheel, and connections between said sliding bar and the check-rower lever, substantially as set forth.

10. In a corn-planter, the combination with a frame, feed mechanism, a shaft adapted to transmit motion to the feed mechanism and a pivoted check-rower lever, of a ratchet-wheel on said shaft, a sliding bar, connections between said sliding bar and said check-rower lever, a dog pivoted to the sliding bar for transmitting motion to the ratchet-wheel, and another dog pivoted to the frame and adapted to prevent retrograde movement of the ratchet-wheel and shaft, substantially as set forth.

11. In a corn-planter, the combination with a frame, feed mechanism, a shaft to transmit motion to the feed mechanism, and a check-rower lever, of a ratchet-wheel on the shaft, a sliding bar, a dog attached to the sliding bar and adapted to propel the ratchet-wheel, and a plate or arm on the sliding bar adapted to engage the ratchet-wheel and prevent it from being turned too far, substantially as set forth.

12. In a corn-planter, the combination with a frame, feed mechanism, a shaft for transmitting motion to said feed mechanism, and a check-rower lever, of a ratchet-wheel on said shaft and having peripheral teeth on one face, a sliding bar, connections between said sliding bar and the check rower lever, a dog attached to the sliding bar and adapted to engage the peripheral teeth of the ratchet-wheel, to propel it, a dog pivoted to the frame and adapted to engage the side teeth of the ratchet-wheel to prevent retrograde movement thereof, and a plate or arm secured to the sliding bar and adapted to engage said side teeth of the ratchet-wheel to prevent the same from being turned too far, substantially as set forth.

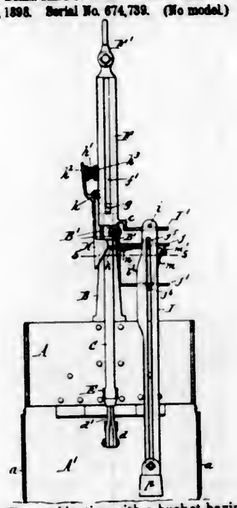
13. In a corn-planter, the combination with a frame, feed mechanism, a shaft to transmit motion to the feed mechanism, and a pivoted check-rower lever, of a ratchet-wheel on said shaft, a sliding bar, a dog pivoted to the sliding bar and engaging the ratchet-wheel, a crank-shaft mounted on the frame, a pitman between the crank-shaft and the sliding bar, and a pitman between the crank-shaft and the check-rowar lever, substantially as set forth.

14. The combination with a frame, an axle, wheels on the axle, grain-feeding mechanism, and a feed-shaft, of a counter-shaft made in sections, a clutch between said sections, gearing between one section of the shaft and one of the wheels, a cone of gears on the other section of the counter-shaft, an adjustable gear on the feed-shaft and a chain passing over said adjustable gear and one of the gears of the cone, substantially as set forth.

15. In a planter, the combination with a frame, an axle, wheels on the axle, a seed-hopper, feed mechanism and a feed shaft, of a plate secured to the frame and having arms provided with bearings, a two-part counter-shaft mounted in said bearings, a clutch between the sections of the counter-shaft and adapted to yield when retrograde motion is transmitted to one section of the shaft, a spring bearing against one section of the clutch, a lever attached to said clutch, gearing between one section of the counter-shaft and one of the wheels, and gearing between the other section of the counter-shaft and the feed-shaft, substantially as set forth.

16. In a planter, the combination with a hopper and feeding mechanism under the same, of a concave false bottom having a hole in its center, in said hopper above the feed mechanism, substantially as set forth.

611,857. DREDGING-BUCKET. JOSEPH DEMBINSKI, Buffalo, N. Y. Filed Mar. 22, 1898. Serial No. 674,739. (No model.)



Claim.—1. The combination with a bucket having movable bottom-sections hinged at their outer edges to the lower end of the bucket, of an upright rod provided with a stop and having its lower end connected with said bottom-sections on the inner sides of the hinges of the sections, whereby the sections are closed against the lower end of the bucket when said rod is raised and allowed to swing into a pendent position when the rod descends, a hanger sliding on said rod and adapted to engage against the stop thereof for elevating the rod and closing the bottom-sections, and a catch whereby said hanger is coupled to the body of the bucket when said rod is lowered, substantially as set forth.

2. The combination with a bucket having a movable bottom or scoop, of an operating device connected with said bottom or scoop for closing the same, a vertically-movable hanger having a sliding connection with said bottom-operating device, a catch or coupling arranged to connect said hanger with the body of the bucket, and a trip device arranged to strike the ground when the bucket is lowered and operating to disengage said catch from the bucket, substantially as set forth.

3. The combination with a bucket having downwardly-swinging bottom-sections or scoops pivoted to the bucket at their outer edges and each provided with a rigid actuating-arm extending upwardly from its inner side, of a vertically-movable operating-rod extending into the bucket and provided at its lower end with a cross-head, and links connecting said arms with opposite ends of said cross-head, substantially as set forth.

4. The combination with a bucket having downwardly-swinging bottom-sections or scoops pivoted to the bucket at their outer edges and each provided within the bucket with a rigid upwardly-extending arm, of a vertically-movable operating-rod extending above the bucket and provided at its lower end with a cross-head, links connecting said arms with said cross-head, and a hanger arranged to be coupled either to said operating-rod or to the body of the bucket, substantially set forth.

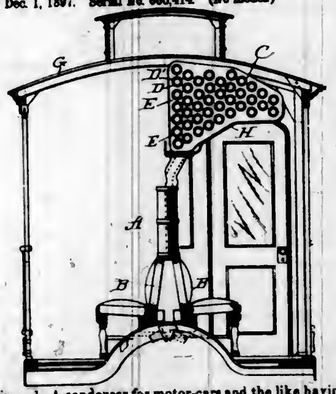
5. The combination with a bucket having a yoke and a movable bottom or scoop, of an operating-rod connected with said bottom and extending upwardly therefrom, a vertically-movable hanger having a sliding connection with said operating-rod, an automatic catch carried by said hanger and adapted to interlock with the bucket-yoke, when the hanger is lowered on the operating-rod, and a trip device for disengaging said catch from the bucket-yoke, substantially as set forth.

6. The combination with a bucket having a yoke and a movable bottom or scoop, of an operating-rod connected with said bottom and extending upwardly therefrom, a vertically-movable hanger having a sliding connection with said operating-rod, an automatic catch carried by said hanger and adapted to interlock with the bucket-yoke, when the hanger is lowered, a vertically-movable trip-bar adapted to strike the ground when the bucket is lowered and provided with a cam, and a slide operated by said cam and arranged to disengage said catch from the bucket-yoke, substantially as set forth.

7. The combination with a bucket having a yoke and a movable bottom or scoop, of an operating-rod connected with said bottom and extending upwardly therefrom, a vertically-movable hanger having a sliding connection with said operating-rod, an automatic catch carried by said hanger and adapted to interlock with the bucket-yoke, when the hanger is lowered, a slide mounted on the bucket-yoke and arranged to trip said catch out of engagement with the bucket-yoke, a spring for retracting said slide, and a vertically-movable trip-bar connected with said hanger and having a cam which operates against said slide, substantially as set forth.

8. The combination with the bucket having a yoke and a movable bottom or scoop, of an operating-rod connected with said bottom and extending upwardly therefrom, a vertically-movable hanger having a sliding connection with said operating-rod, an automatic catch carried by said hanger and adapted to interlock with the bucket-yoke when the hanger is lowered, a vertically-movable trip-bar connected with said hanger and having a cam, and a slide arranged to trip said catch out of engagement with the bucket-yoke and having a downwardly-yielding tongue or portion against which the cam of said trip-bar operates, substantially as set forth.

611,858. CONDENSER. ARTHUR P. DODGE, New York, N. Y. Filed Dec. 1, 1897. Serial No. 660,414. (No model.)



Claim.—1. A condenser for motor-cars and the like having a central depending portion, and side portions in a higher plane with tubes extending between the head-boxes and with a roof extending below the condenser, substantially as described.

2. A condenser comprising head-boxes, a series of tubes connecting them and a roof below the condenser, the center of the condenser and roof being lower than the sides, substantially as described.

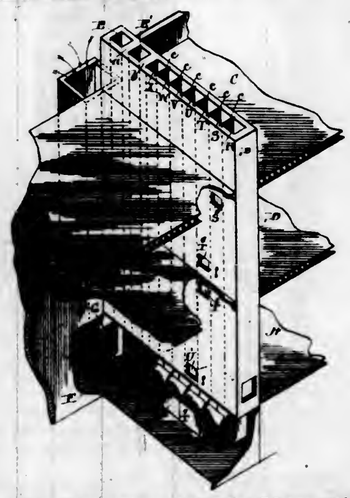
3. In combination in a motor-car, the seats arranged centrally thereof, a condenser having a depending central portion and elevated side portions to provide head-room over the aisle, substantially as described.

4. In combination in a car having the seats running longitudinally thereof, a condenser having a depending portion over the seats and elevated portions over the aisles, substantially as described.

5. In combination, the car and a condenser under the ordinary roof thereof comprising head-boxes and connecting-tubes and a main drainage-roof below the condenser, the upper car-roof being of open-work, substantially as described.

6. In combination, a condenser comprising head-boxes and connecting-tubes, a roof below the condenser comprising side portions with upturned flanges at their inner edges with a space between the said flanges, and a hood covering the said space, substantially as described.

611,859. SYSTEM FOR HEATING AND VENTILATING HOUSES. WILLIAM D. DICKSON, Peoria, Ill. Filed Apr. 30, 1892. Serial No. 431,229. (No model.)



Claim.—1. The combination of the flues T S, separated by means of the sheet-metal partition T^9, provided with the opening S^9, therein the flue S, having the register-opening S^3 and provided below with the compartment S^2, through which the heat is supplied from within or without, the flue T being provided for ventilation and provided with the register-opening T^3, so that the heat rising through the heat-flue S enters an adjacent room through the register S^3, circulates through the room, and the heated partition T^9, causing the air in the ventilating-flue T to be heated, the air therein rising produces a draft from the adjacent room through the register-opening T^3, thus bearing out of the room air therein contained, and producing a perfect circulation and consequent perfect ventilation, all substantially as described and set forth.

2. In a heating and ventilating system, the flues U, T, S separated by the thin partition of some ready heat-conducting medium, flue S for heat-flue, U for vent, and flue T divided vertically at or near the floor-line and the part below the floor for heat and the part above the floor for vent, in combination with two rooms one above the other into which the heated air is delivered from the heat-flues and from which the foul air passes into the vent-flues.

3. In a system for heating and ventilating, the combination with the heat-flue S, of the compartment or box S^2, provided with slide S^{14}, and the trap-door S^{11}, for regulating the supply of heat to the heat-flue, all substantially as described and shown.

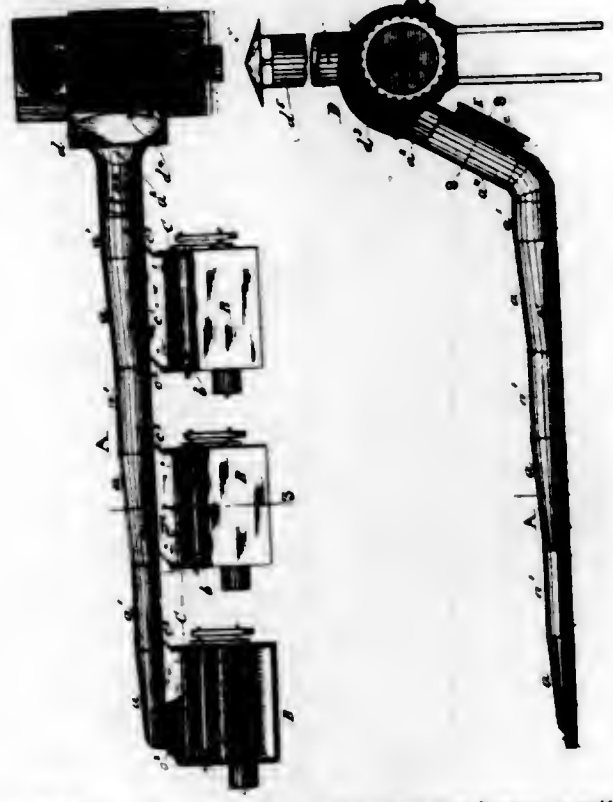
4. In a system for heating and ventilating, the combination with a heat-flue, of the compartment or box S^2, provided with the slide S^{14}, and the trap-door S^{11}, and the steam-coil contained within the said box or receptacle, all substantially as described and shown.

5. In a system for heating and ventilating, the combination of the air-shaft G, provided at its top with the trap-door G^2, provided with suitable means for raising and lowering the same, the hot-air room F, the compartment or box S^2, provided with slide S^{14}, and the

trap-door S^{11}, the heat-flues S' T' V' W', and the vent-flues T^3, U, W^4 and X separated by sheet-metal partitions, all substantially as described and shown.

6. In a system for heating and ventilating, the combination, with two compartments, arranged, one above the other, of three flues arranged side by side successively, and so that one outside flue will be for heat extending from below the first floor, up near the top of the second floor, the other outside flue for vent extending the full height of the two rooms and opening out at a point above, the intermediate flue divided horizontally by a partition at or near the floor-line between the compartments, the lower part for heat and the upper part for vent, each of said flues or sections thereof having suitable communication with said compartments or one of them.

611,860. APPARATUS FOR CONVEYING LINT-COTTON FROM GINS. JOHN R. FORDYCE, St. Louis, Mo., assignor to the Thomas Manufacturing Company, Little Rock, Ark. Filed Jan. 27, 1897. Serial No. 620,900. (No model.)



Claim.—1. The combination of a cotton-condenser; a cotton-flue substantially curved in cross-section on the inside, and a tangential inlet.

2. The combination of a cotton-flue substantially curved in cross-section on the inside, and a tangential inlet whose axis inclines forward.

3. The combination of a cotton-flue substantially curved in cross-section on the inside and a tangential inlet.

4. The combination of a cotton-flue substantially curved in cross-section on the inside, and a tangential inlet at which said flue enlarges from rear to front.

5. The combination of a cotton-flue substantially curved in cross-section on the inside, and an inlet for a lint-bearing current of air; said flue enlarging from rear to front and the inlet being tangential, and having a forwardly-inclining axis.

6. The combination of a cotton-flue substantially curved in cross-section on the inside, and a tangential inlet having forwardly-inclined sides.

7. The combination of a common flue substantially curved in cross-section on the inside, and a series of tangential inlets.

8. The combination of a common flue substantially curved in cross-section on the inside, and a series of tangential inlets at each of which said flue enlarges.

9. The combination of a common flue substantially curved in cross-section on the inside and a series of tangential inlets each having a forwardly-inclined axis, and at each of which inlets said flue enlarges from rear to front.

10. The combination of a cotton-flue substantially curved in cross-section on the inside, and a series of inlets, said inlets discharging into parts which enlarge from rear to front and there being in said flue between each pair of enlarging parts, a part of substantially uniform diameter throughout its length.

11. The combination of a cotton-condenser; a cotton-flue substantially curved in cross-section on the inside, and having a laterally-flaring mouth, and a tangential inlet.

12. The combination of a series of machines for removing lint from cotton-seed; a condenser; a common flue, substantially curved in cross-section on the inside, discharging into the condenser; and means for connecting each of said machines for removing lint from seed, with said common flue, and for introducing a lint-bearing current of air from each of said machines into said flue tangentially.

13. The combination of a series of machines for removing lint from cotton-seed; a common flue substantially curved in cross section on the inside; means for introducing tangentially from each of said machines a current of lint-bearing air into said flue, and causing it to assume on entering said flue a spiral course forward, means for the escape of dust from said flue; a condenser having a casing, and a condenser-drum arranged eccentrically in the casing nearer the front than the rear of the condenser, and with a space above it; and said flue discharging into the space between the condenser-drum and said casing, substantially as described.

611,861. MILK-CAN. JAMES F. FOSTER and ANTHONY FERBER, Buffalo, N. Y., assignors to Sidney Shepard & Co., same place. Filed Mar. 28, 1898. Serial No. 675,356. (No model.)



Claim.—1. The combination with the can-body, of the breast having at its lower end a rim or flange which surrounds the upper portion of the can-body and a reinforcing-band composed of an inner ring or hoop interposed between the upper portion of the can-body and the breast-flange and extending below the flange, an outer ring or hoop secured to the inner ring and having an offset upper portion which bears against the outer side of the breast-flange and is provided at its upper edge with an inwardly-turned lip which overlaps the shoulder of the breast, substantially as set forth.

2. The combination with the breast provided at its lower end with a depending rim or flange and at its junction with the flange with a shoulder or offset, of the can-body arranged within the breast-flange and abutting at its upper end against the shoulder thereof, and a reinforcing-band composed of an inner ring interposed between the can-body and the breast-flange, extending below said flange and abutting at its upper edge against the shoulder of the breast and an outer ring secured to the inner ring below the breast-flange and having its upper portion offset and bearing against the outer side of the breast-flange and provided with a lip which overlaps the shoulder of the breast, substantially as set forth.

611,362. WIRE-FENCE LOCK. LEON W. GREENE, Brooklyn, Mich. Filed Nov. 18, 1897. Serial No. 659,036. (No model.)



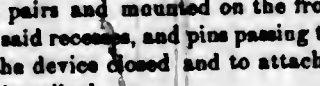
Claim.—1. In combination with intersecting members of a wire fabric, a lock having radial tubular exteriorly-unobstructed members engaging a wire member contiguous to the point of intersection, each tubular member having a radial joint arranged in the plane of the body portion of the lock and adapted to be closed by a pinching-tool swung around each tubular member as a center, substantially as specified.

2. In combination with the intersecting members of a wire fabric, a lock, struck from sheet metal and having radial arms, each of which is provided at one edge with a laterally-projecting ear, between the inner edge of which and the adjacent edge of the next arm the blank is cut away to form a notch, whereby when the ears are rolled around the fabric members, the extremity of each ear is

located in contact with the opposite edge of the arm integral with which said ear is formed, substantially as specified.

3. The herein-described lock for securing the intersecting members of a wire fabric, the same being struck from a single blank of sheet metal, of which the exterior contour is rectangular, and which consists of a plurality of radial outwardly-tapered flat arms, each of which is provided at one edge with a laterally-extending ear 5, separated at its inner edge from the adjacent edge of the next arm by a V-shaped notch, substantially as specified.

611,868. **BOUQUET-HOLDER.** ASA HASKELTON and CHARLES H. RICE, Middletown, Mo. Filed Mar. 28, 1898. Serial No. 675,464. (No model.)



Claim.—1. A device of the class described, comprising a frame provided at its edges with flanges and having an opening, said frame being adapted to receive a picture, a back plate hinged to the frame and arranged to clamp a bouquet between it and the same, and also arranged to engage and confine a picture in the frame, and means for holding the device closed and for securing it to a coat, substantially as described.

2. A device of the class described comprising a frame provided with an opening for displaying a picture and having marginal flanges with upper and lower bouquet-receiving recesses, a back hinged to the frame at one side thereof and adapted to clamp a bouquet in the recesses and hold a picture in the frame, and means for holding the device closed, substantially as described.

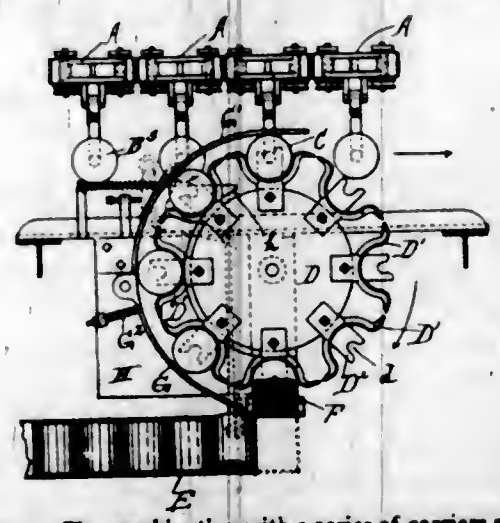
3. A device of the class described comprising a front plate or frame, a flat back hinged to the front plate or frame and adapted to clamp a bouquet between it and the same, and a bowed spring arranged within the device and presenting a convex face for yieldingly engaging and cushioning the stems of flowers, substantially as described.

4. A device of the class described comprising a front plate or frame, a back hinged to the front plate or frame at one side thereof, and transverse springs located at the top and bottom of the device, mounted on one of the parts thereof and bowed to provide cushions for engaging the stems, substantially as described.

5. A device of the class described comprising a front plate or frame provided at its top and bottom with eyes, a hinged back adapted to clamp a bouquet between it and the front plate or frame, and a removable fastening device passing through said eyes and serving to hold the device closed and secure the same to a coat, substantially as described.

6. A device of the class described comprising a front plate or frame provided at its top and bottom with recesses, a hinged back, eyes arranged in pairs and mounted on the front plate or frame at opposite sides of said recesses, and pins passing through the eyes and serving to hold the device closed and to attach the same to a coat, substantially as described.

611,864. **AUTOMATIC FEEDING MECHANISM.** EDWARD P. HOLDEN, Chicago, Ill. Filed Nov. 2, 1894. Serial No. 527,701. (No model.)



Claim.—1. The combination with a series of carriers adapted to carry through one or more operations a series of articles to be operated upon, of feeding mechanism for feeding the articles to the carriage consisting of a horizontally-revolving wheel provided with means for engaging and holding individually the articles to be operated upon, guard mechanism for holding the article in the wheel until clamped by the carriers, and a stationary plate on which the cans rest and along which they slide said wheel so located with respect to the carriers that a revolution of the wheel will deliver each article onto its respective carrier, said wheel revolved only by the engagement therewith of the train of carriers substantially as described.

2. In a machine of the class described the combination with the carriers, of a horizontally-revolving wheel provided with a series of individual recesses in which the articles to be operated upon are placed, guard mechanism for holding the articles in said recesses until clamped by the carriers and a stationary plate on which the cans rest and along which they slide and means on the wheel for engaging the carriers whereby the motion of the carriers revolves the wheel and brings the article to be operated upon onto the carriers, said wheel having no other means for revolving it substantially as described

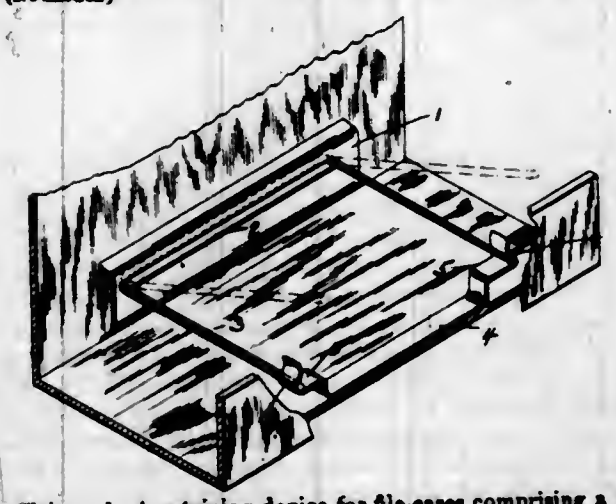
3. In a machine for operating upon a series of cans in which a series of can-carriers is employed, the combination with the carriers provided with clamping mechanism for engaging and holding the cans, of a horizontally-revolving wheel provided with a series of recesses for individually engaging the cans guard mechanism for holding the articles in said recesses until clamped by the carriers, said wheel also provided with a series of projections which are engaged by the carrier and the wheel by this means only revolved to deliver the cans to the clamping mechanism of the carriers, substantially as described.

4. The combination with a series of carriers of the horizontally-revolving wheel provided with a series of U-shaped arms into which the cans are placed, a stationary table on which the cans rest as they are moved a series of projecting arms adapted to engage the spindles of the carriers, and an arm or guide adapted to hold the cans in the U-shaped arms until engaged and clamped by the carrier, said wheel moved only by the engagement with the carriers substantially as described.

5. The combination with a revolving wheel for feeding the articles to be operated upon to the carriers and a chute for conveying the articles to the wheel, of a tilting-wing at the end of the chute for tilting the article onto the wheel and mechanism extending from the tilting-wing to a point adjacent to and in the path of the carrier whereby the movement of the carrier operates to tilt the wing, substantially as described.

6. The combination with the carriers of the wheel D for engaging and carrying the cans to the carriers, the chute E and the tilting-wing F for throwing the cans onto the wheel D, of a bell-crank lever pivoted to a stationary part, one end in the path of the carriers, a rod connecting the bell-crank lever to a crank-arm on the tilting-wing whereby a movement of the bell-crank lever operates to tilt the can onto the wheel, substantially as described.

611,865. **BINDER FOR FILE-CASES.** FREDERIC P. HUBBARD, Durham, Conn., assignor of one-half to the Merriam Manufacturing Company, of Connecticut. Filed Dec. 30, 1897. Serial No. 664,580. (No model.)



Claim.—1. A retaining device for file-cases comprising a longitudinally-slotted plate, secured to the said file-case, an independent spring device forming a frictional locking mechanism also secured to the said file-case opposite to the said plate, and a retaining-fork, one end of which is inserted in the slot in the said plate and the other held against displacement by the locking mechanism, substantially as set forth.

2. In a retaining device for file-cases, the combination of a longitudinally-slotted plate permanently secured to the file-case, an independent locking mechanism secured to said file-case opposite to the aforesaid plate and provided with rest portions and friction-catches for the retaining-fork and a retaining-fork, the opposite ends

of which are adapted to be supported and held against displacement by the said plate and locking mechanism, substantially as set forth.

3. In a file-case having a front side of less height than the back side, the combination therewith of a slotted plate secured to the side of said case, locking mechanism secured to the bottom of said case and terminating at either end in a rest and friction-catch, and a retaining-fork, the opposing ends of which are adapted to be held by the said plate and locking mechanism, substantially as set forth.

4. Retaining mechanism for file-cases, comprising a U-shaped binding fork constructed of pliable material, a slotted plate rigidly attached to the file-case and an independent locking device attached at its central portion to the said file-case and having rest portions near either end thereof which lie in substantially the same plane as the slot in the said slotted plate, and terminating at either end in a frictional catch, all constructed and operating substantially as set forth.

5. In a retaining device for file cases, the combination of a plate provided with a longitudinal slot of uniform width, the said plate being secured rigidly to the said case with the said slot substantially parallel to the bottom thereof, a locking mechanism terminating at either end in a friction-catch and secured to the bottom of said case opposite to the aforesaid plate and a removable fork adapted to be inserted in the slot in said plate and locked against disengagement by the said friction-catches, substantially as set forth.

6. In a retaining device for file-cases, the combination of the slotted plate 1 secured to said file-case, the independent locking mechanism 4 secured to said file-case opposite to said slotted plate and the U-shaped fork 3, all constructed and operating substantially as set forth.

611,866. FLOOR AND CEILING CONSTRUCTION. ADOLPH LUND, Chicago, Ill. Filed Dec. 10, 1897. Serial No. 661,356. (No model.)



Claim.—1. The combination with a series of floor-beams, of a series of stirrups resting upon the tops of said beams and having depending portions extending downward along the sides thereof and projecting outward at the bottom to furnish supporting-brackets for floor-arches, the depending portions being adapted to rest directly against the beams so as to transmit the lateral thrust of the arches thereto; substantially as described.

2. The combination with a series of floor-beams and a series of floor-strips, of a series of stirrups resting upon the floor-beams having upturned portions adapted to hold the floor-strips in place and downturned portions resting directly against the beams and having outwardly-extending ends adapted to support a series of arches; substantially as described.

3. The combination with a series of floor-beams, a series of floor-strips resting thereon and a series of ceiling-strips supported thereby, of a series of stirrups resting on the beams having upturned portions adapted to hold the flooring-strips in place and downturned portions provided with means for supporting the ceiling-strips, substantially as described.

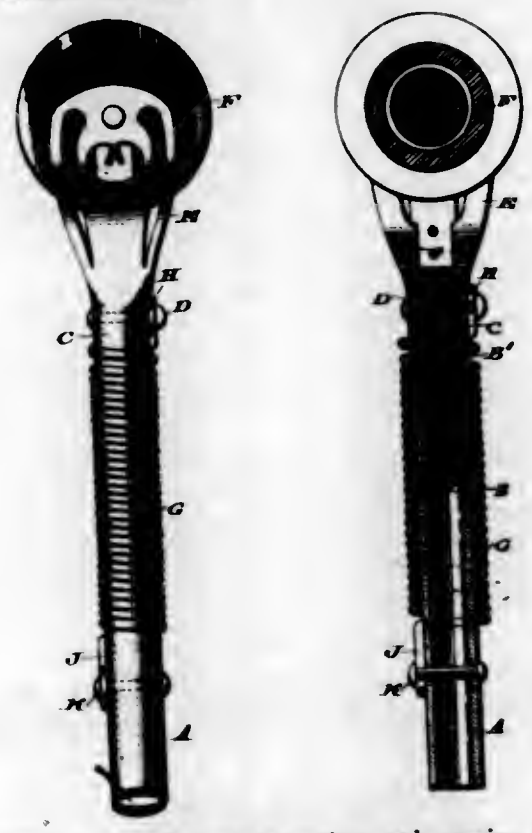
4. The combination with a series of floor-beams and a series of ceiling-strips supported therefrom, of a series of stirrups resting upon the floor-beams and having depending portions extending downward along the beams and projecting outward at the bottom to provide a bracket for the support of floor-arches, said depending portions of the stirrups resting against the beams to transmit the thrust of the arches thereto and being provided with suitable devices for supporting the ceiling-strips; substantially as described.

5. A bracket for the support of floor-arches upon flanged iron floor-beams consisting of a stirrup adapted to rest upon the top of one of the beams and having depending portions extending downward and inward sufficiently to rest against the web of the beam, said depending portions having outwardly-projecting shoulders upon which the arches may rest; substantially as described.

6. The combination with a series of floor-beams, of a series of stirrups resting thereon having depending portions extending downward against the beams and outward at the bottom, a series of angle-irons resting upon these outwardly-extending portions and a series of arches resting upon the angle-irons; substantially as described.

7. The combination with a series of floor-beams, a series of flooring-strips and a series of ceiling-strips, of stirrups resting upon the floor-beams having depending portions extending downwardly and outwardly at the bottom and resting against the beams, a series of angle irons upon the outwardly-extending portions, a series of arches resting upon the angle-irons, and a series of stirrups resting upon the floor beams, having upturned portions holding the floor-strips in place and downturned portions connected with and holding the ceiling-strips; substantially as described.

611,867. TROLLEY-POLE. ALBERT M. MEREDITH, Philadelphia, Pa., assignor, by direct and mesne assignments, to George Grant Armor, Baltimore, Md. Filed Mar 31, 1897. Renewed July 16, 1898. Serial No. 686,135. (No model.)



Claim.—1. A trolley-pole in sections, and a spring connecting said sections and allowing the end of one section to roll upon the adjacent section.

2. A trolley-pole having mounted in the upper extremity thereof the journal B, the latter being of reduced diameter, the collar C from which said journal depends, an ear carrying a trolley-wheel supported on said collar, a spring coiled around said collar and pole, and means for securing the ends of said spring to said collar and pole respectively.

3. A trolley-pole having mounted in the upper extremity thereof the journal B, the collar C to which said journal is secured, an ear carrying a trolley-wheel supported on said collar, a series of grooves in the latter, and a spring coiled around said collar and pole, the upper portion of said spring engaging said grooves and the lower portion thereof being suitably secured to said pole.

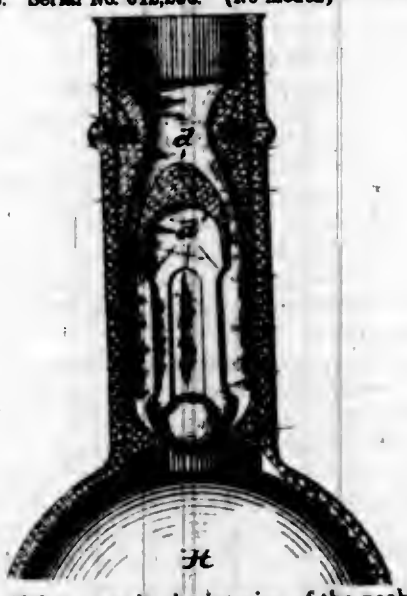
4. A trolley-pole having mounted in the upper extremity thereof the journal B, the collar C to which said journal is secured, an ear carrying a trolley-wheel which is supported on said collar, a series

of screw-threads on the latter, and a spring common to said collar and pole, the upper portion of said spring engaging said screw-threads.

5. The combination of a trolley-pole in sections, and a coil-spring connecting said sections and allowing the end of one section to roll upon the adjacent section.

6. A trolley-pole in sections, the upper section thereof having a trolley-wheel mounted therein, a coil spring encircling said sections, and means for securing each extremity of said spring to the adjacent section, whereby the upper of said sections is permitted to have an axial and also a rolling movement relative to the lower section.

611,368. BOTTLE. JAMES MERIGAN, Philadelphia, Pa. Filed Nov. 16, 1896. Serial No. 612,296. (No model.)



Claim.—1. Valve-seats in the interior of the neck of a bottle at oppcsite places, and a sliding guard within said neck having a loose valve in the bottom thereof, and a valve head on the upper end thereof, the loose valve being adapted for the lower seat in said neck and the valve-head for the upper seat therein.

2. In a non-refillable bottle, a sleeve within the neck thereof, having valve-seats in opposite portions and means for securing said sleeve to said neck, in combination with a sliding guard having a valve-head at its top, a perforation in its bottom, and openings in its sides, and a valve in said guard, said valve being adapted to pass through said perforation and be placed on the lower seat of said sleeve, and said head being adapted to be placed on the upper seat thereof.

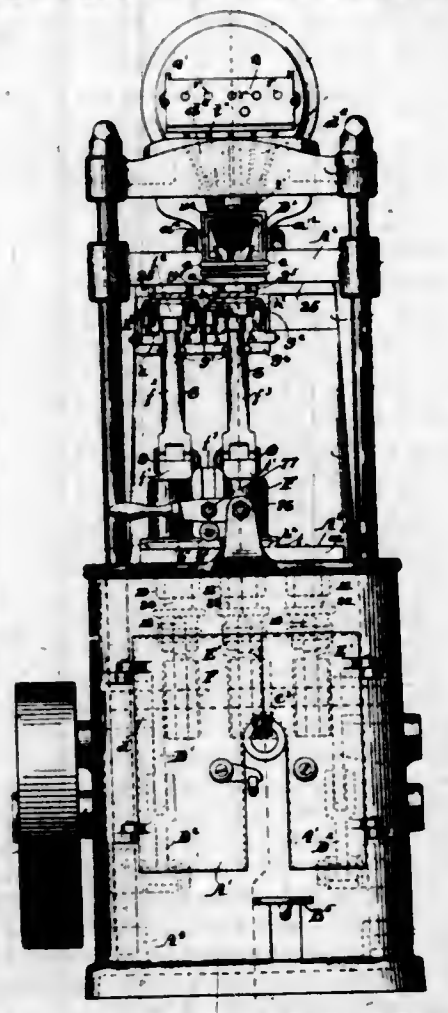
3. In a non-refillable bottle, a guard having a valve-head thereon at top and a perforation in the bottom, and a valve in said guard adapted to pass partly through said perforation said valve-head being adapted for a seat in the upper portion of said neck and said valve being adapted for a seat in the lower portion thereof while partly occupying said perforation.

611,369. COMBINED SCISSORS AND KNIFE SHARPENER. JAMES S. SHAFFER, Tuttletown, Cal. Filed Feb. 28, 1894. Serial No. 501,841. (No model.)



Claim.—As an improved article of manufacture, a scissor or shear and knife blade sharpener comprising a lower base plate on which a spring is mounted, having upwardly-extending arms which are so bent as to form a V-shaped opening and have their upper ends divergent and provided with notches 6 arranged in opposite edges of the said diverged portions of the arms, substantially as and for the purposes specified.

611,370. HEEL-NAILING MACHINE. HENRY W. WINTER, Boston, Mass. Filed Nov. 19, 1897. Serial No. 659,072. (No model.)



Claim.—1. In an apparatus of the class described, a heel-support; a shoe-holder; mechanism to effect a continuous relative movement of said parts and impart a predetermined fixed pressure to the heel and shoe, actuating means for said mechanism, having a definite and constant movement, and means controlled by the height and density of the heel to be compressed to automatically render said mechanism inactive after said fixed pressure has been attained, and while the actuating means completes its movement, whereby heels of different heights and density will be subjected to the same pressure, substantially as described.

2. In an apparatus of the class described, a heel-support; a shoe-holder; mechanism to effect a continuous relative movement of said parts and impart a predetermined fixed pressure to the heel and shoe, actuating means for said mechanism, having a definite and constant movement, and means controlled by the height and density of the heel to be compressed to automatically render said mechanism inactive after said fixed pressure has been attained, and while the actuating means completes its movement, whereby heels of different heights and density will be subjected to the same pressure, combined with nail-driving devices to drive nails into the heel while the latter is subjected to pressure, substantially as described.

3. In an apparatus of the class described, a heel-support; a shoe-holder; means to effect a relative movement of said parts and impart a predetermined fixed pressure to the heel and shoe, said means including a cam-carrier, and a cam thereon having a limited movement relative to the carrier, and means to actuate the cam-carrier positively, the cam moving with the carrier until the point of predetermined pressure is attained and thereafter being held while the carrier completes its movement, substantially as described.

4. In an apparatus of the class described, a heel-support; a shoe-holder; means to effect a relative movement of said parts and impart a predetermined fixed pressure to the heel and shoe, said means including a longitudinally-movable plunger, and a cam to move it, combined with cam-actuating mechanism having a definite movement, means to move said mechanism positively for a constant distance, and a friction-controlled connection between the cam and its said actuating mechanism, whereby the cam will be automatically held from further movement when a predetermined fixed pressure upon the heel has been effected, while the cam-actuating mechanism completes its movement, substantially as described.

5. In an apparatus of the class described, a heel-support; a shoe-holder; means to effect a relative movement of said parts and impart a predetermined fixed pressure to the heel and shoe, said means including a rotatable cam-carrier, a cam frictionally connected therewith and having a limited movement relative to the cam, combined with means to positively rotate the cam-carrier for a constant dis-

tance, the cam moving with the carrier until the pressure upon the heel overcomes the friction between said cam and carrier, substantially as described.

6. In an apparatus of the class described, a heel-support; a shoe-holder; means to effect a relative movement of said parts and impart a predetermined fixed pressure to the heel and shoe, said means including a cam-carrier, and a cam thereon having a limited movement relative to the carrier, means to actuate the cam-carrier positively, the cam moving therewith until the pressure upon the heel stops the movement of the cam, and a device to return the cam to normal position on its carrier during the reverse movement of the latter, substantially as described.

7. In a heel-nailing machine, a heel-support; a spanker-plate at each side thereof; two shoe-holders, a laterally-movable carriage in which said holders are vertically movable independently, and means to move the carriage laterally, combined with a series of reciprocating plungers located below said spanker-plates and heel-support respectively and beneath the path of movement of the carriage, whereby the shoe-holders may be moved into position to be acted upon simultaneously by two of said plungers, to nail a heel on one and spank a heel on the other of said holders, the latter being moved alternately into position below the heel-support, substantially as described.

8. In a machine of the class described, a shoe-holder; a coöperating positioning device for the shoe, comprising a support, upturned separable arms mounted to slide laterally thereon, an equalizing connection between said arms, clamping members pivotally mounted on said arms, to grasp the sides of the shoe, and connections between said members and the equalizing connection for the arms, whereby movement of the clamping members automatically effects corresponding movement of the arms, substantially as described.

9. In a machine of the class described, a shoe-holder; a coöperating positioning device for the shoe, comprising a support, upturned separable arms mounted to slide laterally thereon, and provided with opposed racks, a pinion in engagement therewith, a pinion-shaft rotatably mounted in the support, clamping members for the shoe, pivoted to swing laterally on said arms, and links eccentrically connected with said shaft and jointed to the clamping members, whereby swinging movement of the latter will rotate the pinion-shaft to move the arms, substantially as described.

10. In a machine of the class described, a vertically and laterally movable work-holder, a coöperating positioning device for the shoe held thereon, comprising a vertically and laterally movable support mounted on the main frame, upturned separable arms adapted to slide on said support, clamping members pivoted on the arms to grasp the sides of the shoe, means between said arms and members, whereby movement of the latter effects movement of the former, and a connection between the work-holder and positioning device, whereby they will be moved in unison, substantially as described.

11. In a machine of the class described, a work-holder, a coöperating positioning device for the shoe mounted on the holder, said device and holder being independently supported on the main frame and each having a vertical and lateral movement, and a connection between said holder and positioning device, whereby they will be moved in unison, substantially as described.

12. A nail-block comprising a plurality of superposed sections having registering series of nail-driving passages therein, the top section being cut away at the upper ends of the driving-passages therein, to permit the use of a decreased length of driver, and delivery-throats in said top section leading to the driving-passages and having their outer ends located above the said cut-away portion, substantially as described.

13. In a heel-nailing machine, a removable nail-block having nail-driving passages therein, delivery-throats leading to said passages, a series of nail-transmitting tubes connected at their lower ends with said throats, and a support for the upper ends of said tubes, mounted on and movable with the nail-block, combined with nail-separating mechanism adapted to be swung bodily to one side, and distributing-tubes leading therefrom and adapted to register at their lower ends with the upper ends of the said transmitting-tubes, to distribute nails thereto when the separating mechanism is in operative position, substantially as described.

14. In a heel-nailing machine, a stationary nail-block; nail-separating mechanism adapted to be swung bodily to one side; and stationary nail-distributing tubes mounted on the nail-block to deliver nails to the nail-block when the separating mechanism is in operative position, substantially as described.

15. In a heel-nailing machine, nail-driving mechanism; nail-separating mechanism adapted to be swung bodily out of operative position, and stationary connections between said driving and separating mechanisms, to deliver nails to the former to be driven while the separating mechanism is in operative position, substantially as described.

16. Nail-separating mechanism, a support therefor upon which it is pivotally mounted and adapted to be swung out of operative position, and an actuating-shaft for said mechanism, concentric with the pivot thereof and mounted in the said support, substantially as described.

17. Nail-separating mechanism, a support therefor upon which it is mounted and adapted to be swung laterally into inoperative position and also to be tipped, an actuating-shaft mounted in the said support and concentric with the upright fulcrum of said mechanism, an auxiliary shaft carried by the said mechanism, and a universal connection between said actuating and auxiliary shafts, substantially as described.

18. Nail-separating mechanism, a support therefor upon which it is pivotally mounted and adapted to be swung out of operative position, a track on the support, to sustain the said mechanism when swung to one side, and an actuating-shaft for the separating mechanism, mounted in said support concentric with the pivot of said mechanism, substantially as described.

19. Nail-separating mechanism, a turn-table upon which it is pivotally mounted to be tipped, a support for and upon which said turn-table has its bearing, and means to actuate the separating mechanism when in operative position, substantially as described.

20. In a nail-separating mechanism, a hopper to receive nails in bulk, and rotatable nail-lifting devices consisting of a series of open pockets of different depths and having their inner walls at different angles, to take nails from the lower portion of the hopper and discharge them at different points across the width of the hopper, substantially as described.

21. In a nail-separating mechanism, a hopper to receive nails in bulk, and rotatable nail-lifting devices including a series of open pockets to take nails from the bottom of the hopper, and having their mouths constructed to discharge the nails at different points across the width of the hopper, substantially as described.

22. In a nail-separating mechanism, a hopper to receive nails in bulk, and comprising fixed ends and a rotatable body portion, and nail-lifting pockets on the inner surface of the body, to take nails from the bottom of the hopper, the mouths of the pockets being constructed to discharge the nails at different points along the path of the body portion, substantially as described.

23. In a nail-separating mechanism, a double-compartment hopper, comprising fixed outer ends and a common intermediate wall, and rotatable body portions, nail-lifting devices for each compartment, whereby nails of different lengths may be separated, and a nail-raceway for each compartment, one raceway being open in one compartment and having a closed portion extended through the other compartment, to prevent entrance of nails from the latter to said raceway, substantially as described.

24. In a nail-separating mechanism, a hopper to receive nails in bulk, and comprising fixed ends, and a rotatable body portion having a normally-closed opening for insertion or withdrawal of the nails, and nail-lifting devices on the body portion, combined with an actuating-shaft, connections between it and the body portion, to rotate the latter, and means to disconnect said shaft, whereby the body portion may be reversely rotated by hand to quickly empty the nail-lifting devices, substantially as described.

25. In a nail-separating mechanism, a hopper to receive nails in bulk, an inclined raceway therein which supports the nails by their heads with their bodies depending below it, devices to lift the nails from the hopper to the raceway, a detent located below the raceway, to engage the body of and hold the endmost nail of the series in the raceway and maintain the nails upright, a coöperating rotatable pick-off to engage said endmost nail just below its head and take it from the raceway, and independent means to separate such nail from the series of nails while they are held in upright position and as the pick-off moves into operative position, substantially as described.

26. In a nail-separating mechanism, a raceway composed of two slightly separated parallel, oppositely-rotated rolls, to support the nails by the heads thereof with their bodies depending, a pick-off rotatable at the end of and concentric with one of said rolls, to take the endmost nail from the raceway, and means to hold the endmost nail of the series and to separate it from the next adjacent nail as the pick-off moves into operative position, substantially as described.

27. In a nail-separating mechanism, a raceway to support a series of nails with their bodies depending, means to separate the nails one by one at the delivery end of the raceway, a nail-receiver, a transferrer to transfer one or more nails from said raceway to the receiver, and controlling means for said transferrer, whereby one nail or a plurality of nails will be transferred, substantially as described.

28. In a nail-separating mechanism, a raceway to support a series of nails, means to separate the nails one by one at the delivery end thereof, a receiver from which the nails are distributed, an intermittingly-movable transferrer to transfer one or more nails from the raceway to the receiver, controlling means for said transferrer, to govern the number of nails to be transferred, and a retaining device

to prevent discharge of the nail or nails from the transferrer until its operative movement has been completed, substantially as described.

29. In a nail-separating mechanism, a nail-raceway a receiver from which the nails are distributed, an intermittingly-movable transferrer intermediate the raceway and receiver, nails being taken singly from the raceway and accumulated by the transferrer, and means to govern the movement of the transferrer and thereby determine the number of nails to be accumulated thereby prior to delivery to the receiver, substantially as described.

30. In a nail-separating mechanism, a nail-raceway, a rotatable transferrer provided with a pick-off, to take a nail from the raceway at each rotation of the transferrer, means to effect one or more rotations of the transferrer, to determine the number of nails to be transferred, and a receiver for the nails so transferred, substantially as described.

31. In a nail-separating mechanism, a nail-raceway, a rotatable spiral transferrer to receive nails singly therefrom, a retaining device coöperating with the transferrer, to form a stationary support along which the nails are moved by rotation of said transferrer, and means to withdraw the retaining device and thereby release the nails, substantially as described.

32. In a nail-separating mechanism, a nail-raceway, a rotatable spiral transferrer to receive nails singly therefrom, a retaining device coöperating with the transferrer, to form a stationary support along which the nails are moved by rotation of said transferrer, a nail-receiver located beneath the transferrer and having a series of nail-pockets normally open at one side, and means to move said receiver against the retaining device to close the pockets and also to move said device to release the nails from the transferrer, substantially as described.

33. In a nail-separating mechanism, a hopper for the nails in bulk, means to deliver separated nails therefrom at different points, and means to determine at will whether one nail or a plurality of nails shall be delivered at each of such points, substantially as described.

34. In a nail-separating mechanism, a hopper for nails in bulk, a plurality of raceways therein, lifting devices within the hopper, to lift nails and drop them on the several raceways, means to take the nails from each of said raceways, and means to determine at will whether one nail or a plurality of nails shall be delivered from each raceway, substantially as described.

35. In a nail-separating mechanism, a main and an auxiliary hopper, placed end to end, a nail-raceway for each hopper, one of said raceways extending from the auxiliary hopper through the main hopper, a guard to prevent entrance of nails from the main hopper to the raceway leading from the auxiliary hopper, a common distributing device for the nails, and means to transfer nails from said raceways to said device, whereby nails of different lengths may be distributed, substantially as described.

36. In a nail-separating mechanism, a raceway composed of two parallel and oppositely-rotated separated rolls, to support the nails by the heads thereof with their bodies depending, end-thrust ball-bearings for one of said rolls, a transferrer in axial alinement with the other roll, and separated therefrom by a series of antifriction-balls, end-thrust ball-bearings for the opposite ends of said roll and transferrer, and means to rotate them, substantially as described.

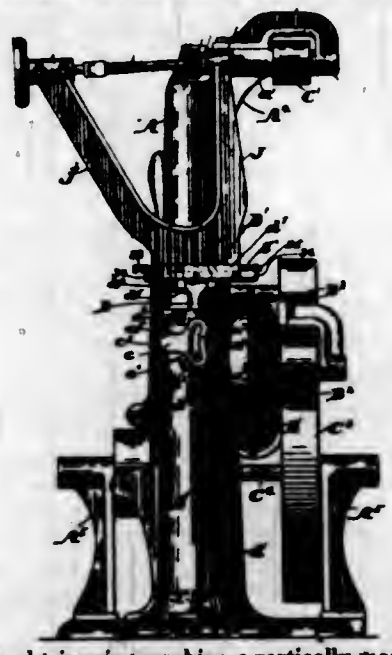
37. In a nail-separating mechanism, a hopper having a rotatable body portion and fixed ends, nail-raceways extended therethrough and each consisting of a pair of slightly-separated oppositely-rotated rolls, a slotted guide-plate through which the lower ends of the rolls extend, two parallel separated bearing-plates extended transversely across the lower ends of the raceways, ball-bearings in one of said plates for the longer roll of each raceway, a spirally-grooved transferrer in alinement with and separated from the end of the shorter roll by antifriction-balls, and end-thrust ball-bearings in the second bearing-plate for the outer ends of the transferrers, substantially as described.

611,871. HEEL-TRIMMING MACHINE. HENRY W. WEBBER, Boston, Mass. Filed Oct. 6, 1897. Serial No. 654,257. (No model.)

Claims.—1. In a heel-trimming machine, a rotary cutter, a vertically-movable jack, holding means for the boot or shoe, rotatable in the jack, said means including a pattern and a clamping device for the boot or shoe, a fixed rest to coöperate with the pattern, and means to automatically rotate the jack on its vertical axis during its vertical movement, to thereby vary the relative pitch of the side of the heel from breast to back, substantially as described.

2. In a heel-trimming machine, a rotary cutter, a vertically-movable jack, holding means for the boot or shoe, rotatable in the jack, said means including a pattern and a clamping device for the boot or shoe, a fixed rest to coöperate with the pattern, whereby the shape and size of the bottom of the heel is determined, and independent pattern mechanism to vary the contour of the side of the heel from breast to back and also to positively guide the top of the heel as it is presented to the cutter, substantially as described.

3. In a heel-trimming machine, a vertically-movable jack-spindle, a pivotally-mounted head to rock thereon independently of the spindle, a jack laterally movable on the said head and means to regulate the lateral movement of the jack on the head, substantially as described.



4. In a heel-trimming machine, a vertically-movable jack-spindle, a rocking head thereon, a jack laterally movable on the head, and means to regulate the lateral movement of the jack on the head, and a controlling device to automatically govern the rotation of the spindle during its longitudinal movement, substantially as described.

5. In a heel-trimming machine, a rotary heel and rand cutter, a jack mounted to rotate about a substantially vertical axis, and holding means for the boot or shoe permanently located at one side of a vertical plane passing through the cutter-axis and rotatably mounted in the jack and having its axis of rotation in a lateral plane intersected by the axis of the cutter, whereby when the boot or shoe is rotated in the jack the rand-cutter is prevented from entering the upper edge of the heel, substantially as described.

6. In a heel-trimming machine, a rotary cutter, a jack, holding means for the boot or shoe, rotatably mounted thereon, said means including an end rest for the heel, a clamping device, and a thin soft-metal trimmer-plate carried by said rest to bear against the bottom of the heel and coöperate with the cutter to finish the lower edge of the heel, substantially as described.

7. In a heel-trimming machine, a rotary cutter, a jack, holding means for the boot or shoe, rotatably mounted therein, said means including a clamping device, a trimmer-plate to bear against the bottom of the heel and coöperate with the cutter to finish the lower edge of the heel, and a pattern independent of said plate but rotatable in unison therewith, and a fixed rest to coöperate with the pattern and determine the size and shape of the bottom of the heel, substantially as described.

8. In a heel-trimming machine, a rotary cutter, rotatably-mounted holding means for the boot or shoe, including a clamping device, a pattern corresponding in cross-section to the contour of the cutter, a trimmer-plate concentric with the pattern and against which the bottom of the head bears, to coöperate with the cutter in finishing the lower edge of the heel, and a fixed rest against which the pattern bears, whereby the trimmer-plate is maintained in proper position relative to the cutter for heels of different thickness, substantially as described.

9. In a heel-trimming machine, a rotary cutter, a jack, holding means rotatably mounted thereon for the boot or shoe, including a clamping device, a substantially U-shaped plate to bear against the bottom of the heel outside of the nails therein and to coöperate with the cutter in finishing the lower edge of the heel, and a pattern to determine the shape and size of the heel-bottom, said plate and pattern being concentric to form an end rest for the heel, and a fixed rest against which the pattern bears, substantially as described.

10. In a heel-trimming machine, a jack, holding means rotatably mounted therein for the boot or shoe, including a clamping device, and an end rest against which the bottom of the heel bears, the face of the rest having a plurality of recesses therein to be entered by correspondingly-located projecting nails in the heel, to thereby position the latter in the holding means, substantially as described.

11. In a heel trimming machine, a jack, holding means rotatably mounted therein for the boot or shoe, including a clamping device, and an end rest against which the bottom of the heel bears, the face of the rest having a plurality of undercut recesses having converging openings, to be entered by correspondingly-located projecting nails in the heel, the heads of the nails acting to lock the heel in place when properly positioned, substantially as described.

12. In a heel-trimming machine, a jack, holding means rotatably mounted therein for the boot or shoe, said means including an end rest for the heel, having a plurality of undercut recesses in its face, said recesses having converging openings, to be entered by correspondingly-located projecting nails in the heels, the heads of the nails acting to lock the heel to the end rest when properly positioned thereon, substantially as described.

13. In a heel-trimming machine, a rotatably-mounted support for the heel of a boot or shoe, and means carried by said support to coöperate with projecting nails in the bottom of the heel to be trimmed, to positively lock the heel on the support, substantially as described.

14. In a heel-trimming machine, a rotary cutter, a vertically-movable jack, holding means for the boot or shoe, rotatably mounted therein, means to automatically rotate the jack during its vertical movement, to thereby vary the relative pitch of the heel side from breast to back, and an adjusting device for said means, whereby the pitch can be regulated, substantially as described.

15. In a heel-trimming machine, a rotary cutter, a vertically-movable jack, holding means for the boot or shoe, rotatable in the jack, said means including a pattern and a clamping device for the boot or shoe, a fixed rest to coöperate with the pattern, whereby the shape and size of the bottom of the heel is determined, independent pattern mechanism to vary the contour of the side of the heel from breast to back, and also to positively guide the top of the heel as it is presented to the cutter, and means to adjust said independent pattern mechanism, to change the bevel of the heel as a whole, while maintaining the relative variation in the contour of the side of the heel from breast to back, substantially as described.

611,872. WASHING-MACHINE. JOHN Q. ADAMS, Alexandria, La. Filed Jan. 27, 1898. Serial No. 668,177. (No model.)



Claim.—1. The combination of a washing-machine body provided with a transverse partition having openings, an oscillating agitator pivotally mounted in the washing-machine body and forming a receptacle for clothes, and provided with bottom bars passing through the openings of the partition and interlocking the latter and the agitator, the ends of the agitator being adapted to engage the clothes, and a cover carried by the agitator for retaining the clothes therein, substantially as described.

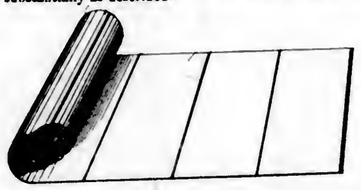
2. In a washing-machine, the combination of a washing-machine body provided at the inner face of its sides with rubbing-surfaces and having a transverse partition with openings, an oscillating agitator forming a receptacle for clothes and provided with bottom bars to pass through the openings of the partition and having pounding-faces at its ends, said agitator being open at its sides to expose the clothes to the rubbing-surfaces of the washing-machine body, substantially as described.

3. In a washing-machine, the combination of a washing-machine body provided at the inner faces of its sides with rubbing-surfaces, a central partition mounted in the washing-machine body and provided with openings, an oscillating agitator pivotally mounted in the washing-machine body, forming a receptacle for clothes and composed of upwardly-converging side pieces, ends connecting the side pieces and having inner pounding-faces, the horizontal side pieces connecting the converging side pieces, and the curved bottom bars arranged at intervals and passing through the openings of the partition and interlocking the agitator with the same, said agitator being open at opposite sides to expose the clothes to the action of the rubbing-surfaces, and a removable cover carried by the agitator and interlocked with the horizontal side pieces, substantially as described.

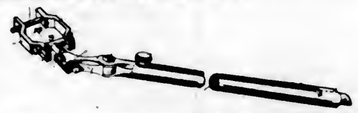
611,873. WRAPPING AND PACKAGE-CONTAINING PAPER. HORACE BLACKMAN, HENRY COSE, and BURTON J. HILL, San Francisco, Cal. Filed Dec. 6, 1896. Serial No. 614,941. (No specimens.)

Claim.—1. As a new article of manufacture, wrapping fabric having a series of bendable pieces secured thereto and located at intervals to permit the separation of portions of the fabric of various sizes, said bendable pieces being capable of remaining in any shape to which they are bent, substantially as described.

2. As a new article of manufacture, a roll or web of wrapping fabric having a series of parallel bendable pieces embedded therein and extending transversely across the fabric from one side to the other and located at intervals to permit portions of the fabric of various lengths to be severed from the main portion, the said bendable pieces being capable of remaining in any shape to which they are bent, substantially as described.



611,874. BICYCLE-SUPPORT. GEORGE R. BURDICK, Big Cane, La., assignor of seven-twentieths to J. R. O'Quinn, same place. Filed Dec. 6, 1897. Serial No. 660,883. (No model.)



Claim.—1. A bicycle-support comprising a coupling having a stem and a cross-head, a prop mounted upon the stem to swing in a plane at right angles thereto, and a member having adjustable connection with the cross-head of the coupling and adapted to be secured to a bar of the machine-frame, substantially as set forth.

2. A bicycle-support comprising a coupling having a stem and a cross-head, a coupling-head mounted upon said stem to swing in a plane at right angles thereto, a prop having hinged connection with the coupling-head to swing in the plane thereof, and a member having adjustable connection with the cross-head of the coupling and adapted to be applied to a bar of the machine, substantially as described.

3. In a bicycle-support, the combination of a clamp comprising corresponding members, a T-coupling having its cross-head adjustably connected with the members of the clamp, a coupling-head mounted upon the stem of the T-coupling to swing in a plane at right angles thereto and having a limited outward movement, and a prop having hinged connection with the coupling-head to swing in the plane thereof and limited in its outward movement, substantially as set forth.

4. A support for bicycles and the like, comprising a member for attachment to the bicycle-frame, a coupling having a stem and also having a cross-head adjustably mounted upon the attaching member, a prop having connected thereto a member provided with a transverse opening receiving the stem of the coupling, a lug extending laterally from the said member provided with the opening, and a projection upon the stem in the path of movement of the lug; substantially as described.

5. A support for bicycles and the like, comprising a member for attachment to the bicycle-frame, a coupling having a stem and also having a cross-head adjustably mounted upon the attaching member, a prop having connected thereto a member provided with a transverse opening receiving the stem of the coupling, a lug extending laterally from the said member provided with the opening, and a projection upon the stem in the path of movement of the lug, the said projection lying between the member provided with the opening for the stem and the free end of the stem; substantially as described.

611,875. VEHICLE-TIRE. ROBERT COWEN, Cambridge, Mass., assignor to the Boston Woven Hose and Rubber Company, Boston, Mass. Filed Dec. 6, 1897. Serial No. 660,874. (No model.)



Claim.—1. The combination with a vehicle-tire, of a retaining-wire, and a sleeve or carrier, said wire having its ends brought together in said sleeve or carrier, said sleeve or carrier having opposite perforations, and said wire having its ends bent back over the edges of the rear perforations, substantially as described.

2. A vehicle-tire, comprising a yielding body or tire proper, having embedded in it at intervals a plurality of bridge-pieces, said bridge-pieces having carriers adapted to receive one or more retaining-wires, and a wire or wires passed through said carriers, substantially as described.

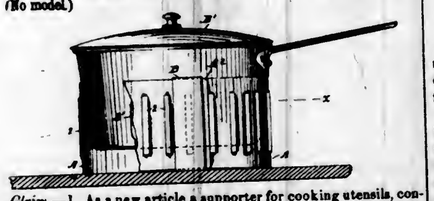
3. A vehicle-tire comprising a yielding body or tire proper having embedded in it at intervals a plurality of connected carriers adapted to receive one or more retaining-wires passing throughout the length of the tire, certain of said carriers having an intermediate opening, and means coöperating at said opening with the ends of the wire terminating in said carrier for fastening the wire in place, substantially as described.

4. A vehicle-tire, comprising a yielding body or tire proper, having embedded in it at intervals a plurality of bridge-pieces, flexibly connected together, said bridge-pieces having carriers adapted to receive one or more retaining-wires, a wire or wires passed through said carriers, certain of said carriers having transverse perforations adapted to receive a pin or tool, substantially as described.

5. A vehicle-tire comprising a yielding body or tire proper, having embedded in it at intervals a plurality of connected carriers adapted to receive one or more retaining-wires passing throughout the length of the tire, certain of said carriers having transverse perforations adjacent the contained ends of a wire or wires, and said ends being bent or hooked over the edges of said perforations, substantially as described.

6. A vehicle-tire, comprising a body portion having embedded in it a plurality of connected links, said links comprising one or more anchors to hold into the material of the tire, and carriers at their sides in the form of rolls or tubular edges, and wires run through said carriers throughout the length of the tire, certain of said carriers being perforated, and the ends of the wires terminating in said carriers being bent or hooked over the edges of said perforations, substantially as described.

611,876. SUPPORTER FOR COOKING UTENSILS. LEE D. CRAIG, San Francisco, Cal. Filed June 24, 1898. Serial No. 684,419. (No model.)



Claim.—1. As a new article a supporter for cooking utensils, consisting of a single piece of metal bent so as to form approximately a cylinder, the ends of which are constructed to interlock one with the other and of a slide-clamp for holding the said sections firmly together.

2. The combination with a supporter for cooking utensils which consists of a single piece of metal bent so as to form approximately a cylinder, of a series of vertical interlocking corrugations formed in each end of the sheet, and of a slide-clamp for holding the ends of the sheet firmly together.

611,877. PNEUMATIC BICYCLE-SADDLE. BENJAMIN W. DAVIS, Phillips, Wis. Filed Mar. 10, 1897. Serial No. 626,863. (No model.)



Claim.—1. In a pneumatic seat for bicycles, the combination of a supporting-frame, an elastic pneumatic cushion comprising two fluid-chambers, and means connected to said chambers for permitting the free passage of the fluid in one direction, and restricting its passage in the opposite direction, substantially as described

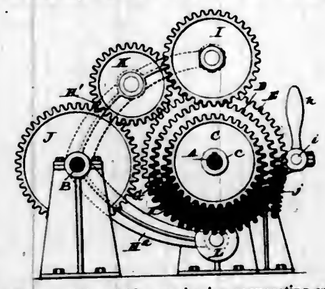
2. In a pneumatic seat for bicycles the combination with a seat, of an elastic support therefor comprising two fluid-chambers and an intermediate connecting-passage between the chambers, said passage provided with means for permitting free passage of the fluid in one direction and preventing its free passage in another direction from one of said chambers to the other, substantially as described.

3. In a pneumatic seat for bicycles, the combination with an elastic air-cushion, of a seat-frame supporting said cushion, an expansible air-receptacle attached to and communicating with said cushion by air-passages, valves mounted in said passages and adapted to admit the flow of air under pressure in said passages in one direction and retard its flow in the opposite direction, and means for inflating said cushion and air-receptacle, substantially as described.

4. In a pneumatic seat for bicycles the combination with a hollow cushion divided into compartments and capable of being inflated, of a seat-frame supporting said cushion, an expansible air-receptacle beneath said cushion; air-passages connecting the said cushion and air-receptacle, and means for admitting the flow of air under pressure from the cushion to the receptacle and restricting its return from the receptacle to the cushion, and means for inflating said cushion and reservoir, substantially as described.

5. In a pneumatic seat for bicycles, the combination with a hollow cushion divided into communicating compartment and capable of being inflated, of a seat-frame supporting said cushion, an expansible air-receptable beneath said cushion and also divided into communicating compartments, air-passages connecting the said cushion and air-receptacle, a perforated valve so arranged at one end of each of said air-passages as to allow free passage of air from said cushion to said air-receptacle, but to restrict the passage of the air in the reverse direction, and an inflating-valve attached to said cushion, substantially as described.

611,878. VARIABLE GEARING. RICHARD H. DYER, East Orange, N. J. Filed Apr. 23, 1896. Serial No. 678,587. (No model.)



Claim.—1. A variable gear having cooperating gear-wheel elements, one of such elements being provided with toothed wheels of different sizes having coincident portions at which the adjustment from one speed to another takes place, substantially as set forth.

2. A variable gear having coöperating gear-wheel elements and in which one of such elements is provided with two or more concentric gear-wheels of different diameters, and means for transferring the engaging wheel of the other element of the gear from one of the concentric gear-wheels to the other without interruption in the transmission of power through the gearing, substantially as set forth.

3. A variable gear having coöperating gear-wheel elements, and in which one of such elements is provided with two or more concentric gear-wheels of different diameters and one or more intermediate eccentric or cam gear-wheels for transferring the engaging wheel of the other element of the gear from one of the concentric gear-wheels to the other without interruption in the transmission of power through the gearing, substantially as set forth.

4. In a variable gear, the combination of one element of the gearing provided with gear-wheels of different sizes rotating together and having coincident portions, with the other element of the gearing provided with a toothed wheel engaging the gears of the first element and mounted so as to move toward and away from the axis of the first element, substantially as set forth.

5. In a variable gear, the combination of one element of the gearing provided with gear-wheels of different sizes rotating together and having coincident portions, with the other element of the gearing provided with a toothed wheel engaging the gears of the first element and mounted so as to move toward and away from the axis of the first element, and means for effecting a relative lateral shifting of the elements of the gear at the coincident portions, substantially as set forth.

6. In a variable gear, the combination of one element provided with two or more concentric gear-wheels of different diameters and one or more intermediate eccentric gear-wheels, all rotating together, the eccentric gear-wheels having portions coincident with the adjoining concentric gear-wheels and intermediate cam portions connecting the coincident portions, with the other element of the gear provided with a toothed wheel engaging the gears of the first element and mounted upon a swinging frame so as to be capable of movement toward and away from the axis of the first element, substantially as set forth.

7. In a variable gearing, the combination of one element provided with a number of gear-wheels of different sizes mounted to turn together and having coincident portions, of the other element provided with a toothed wheel mounted so as to move toward and away from the axis of the first element, and means for maintaining the engagement of the toothed wheels of the two elements, substantially as set forth.

8. In a variable gear, the combination of one element provided with gear-wheels of different diameters having coincident portions rotating together and also provided with another set of similarly-arranged wheels, with the second element of the gearing having a toothed wheel engaging the toothed wheels of the first set and mounted so as to move toward and away from the axis of the first element and provided with another wheel engaging the second set of wheels of the first element and maintaining the engagement between the two elements, substantially as set forth.

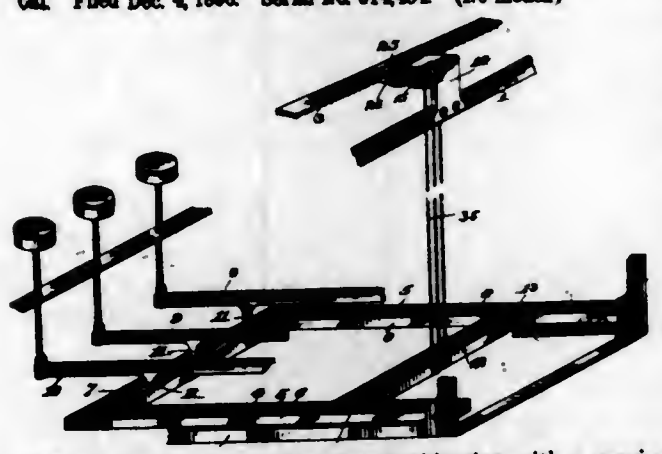
9. In a variable gearing, the combination of one element provided with gear-wheels of different diameters having coincident portions and provided with a second set of wheels similarly arranged, with the second element of the gearing having a toothed wheel mounted on a swinging frame, and another wheel mounted on the same frame and engaging the second set of wheels of the first element in such manner as to maintain the operative engagement of the two elements, substantially as set forth.

10. In a variable gearing, the combination of one element provided with two or more concentric gear-wheels and one or more intermediate eccentric gear-wheels having portions coincident with the concentric gear-wheels and cam portions connecting the coincident portions, and also provided with a second set of wheels similarly arranged, with the second element of the gearing having a toothed wheel mounted in a swinging frame and engaging with the concentric and eccentric wheels of the first element, and also provided with a wheel mounted on the swinging frame engaging the second set of wheels of the first element and maintaining the engagement of the two elements, substantially as set forth.

11. In a variable gearing, the combination of one element provided with gear-wheels of different diameters having coincident portions, with the second element provided with a toothed wheel engaging the wheels of the first element and mounted to move toward and away from the axis of the first element, and a cam arranged to move the first element laterally while the engagement between the two elements is at the coincident portions of the wheels of the first element, substantially as set forth.

12. In a variable gearing, the combination of one element provided with gear-wheels of different diameters having coincident portions and mounted to move laterally, with the second element having a toothed wheel engaging the wheels of the first element and mounted to move toward and away from the axis of the first element, a cam for shifting the first element laterally, and a fork engaging a comb-plate acting on the cam to produce the lateral shifting, substantially as set forth.

611,879. TYPE-WRITER. MOSUKE HIGUCHI, Sacramento, Cal. Filed Dec. 4, 1896. Serial No. 614,434. (No model.)



Claim.—1. In a type-writer, the combination with a carriage having a toothed rack, of a pivoted detent to engage said rack, a regulating-dog pivoted upon said detent, a stop upon said detent to limit the movement of the dog in one direction, a spring to limit the movement of the dog in an opposite direction, a finger-piece upon said detent connected with devices to be moved by certain key-levers, stops situated on opposite sides of said finger-piece, a spring to move said finger-piece opposite to the direction in which it is moved by the key-levers, pivoted operating levers having ends situated in the path of said regulating-dogs, connections between said operating-levers and devices to be operated by certain key-levers, springs to move said operating-levers in an opposite direction, and a stop to limit the movement of said operating-levers under the influence of said springs.

2. In a type-writer, the combination with a carriage having a toothed rack, of a pivoted detent to engage said rack, a regulating-dog situated upon said detent, a stop upon said detent to limit the movement of said dog in one direction, a spring to move said dog in an opposite direction, a plurality of pivoted operating-levers pivoted adjacent to said detent in a manner to turn said detent upon its pivot when the levers are turned upon their pivots, stops upon the ends of said operating-levers adapted to move into the path of said regulating-dog, a stop upon said detent to limit the movement of said dog under the influence of said spring, and a plurality of sets of key-levers, said sets of key-levers being connected with the detent and with the operating-levers.

3. In a type-writer, the combination with a carriage having a toothed rack, of a pivoted detent to engage said rack, slots in said detent, a regulating-dog pivoted upon said detent and provided with variable stop-faces, a stop upon said detent to limit the movement of the dog in one direction, a spring to move said dog in an opposite direction, a stop upon said detent to limit the movement of the dog under the influence of said spring, a plurality of pivoted operating-levers having end portions extending through the slots in said detent and into the path of the stop-faces upon said regulating-dog, and a plurality of sets of key-levers, said sets of key-levers being connected with the detent and with the operating-levers.

4. In a type-writer, the combination with a carriage having a toothed rack, of a pivoted detent to engage the same, devices for turning said detent upon its pivot, a regulating-dog pivoted upon said detent, stop-faces upon said regulating-dog, a stop upon said detent to limit the movement of said dog in one direction, a spring to move said dog in an opposite direction, a stop to limit the movement of said dog under the influence of said spring, and a plurality of sets of levers situated in the path of said stop-faces upon said dog and situated below said detent so as to move the same when said levers are turned upon their pivots, and devices for moving said operating-levers.

611,880. COLORED PICTURE. JOHN JACOBSON, Boston, Mass. Filed Nov. 23, 1896. Serial No. 613,078. (No specimens.)



Claim.—1. The herein-described method of reproducing pictures on a hard surface as that of metal or celluloid, which consists in first photographically obtaining a half-tone plate, and then molding the said surface by pressure in conjunction with said plate, and finally treating said molded surface with coloring-matter or pigment, which is retained in the depressions formed by the molding process, substantially as described.

2. The herein-described process of producing art reproductions on hard surfaces, which consists in producing a negative photographic plate in conjunction with the half-tone screen, obtaining a positive photographic plate therefrom, preparing a metal plate from said positive photographic plate by contact exposure and etching, and using said plate as a matrix for the production of a die, forming the surface upon which the reproduction is to be made, by means of said die, and applying ink or pigment to the surface thus formed, substantially as described.

611,881. PROCESS OF SEPARATING SUGARS FROM MOLASSES. GEORG KASSNER, Münster, Germany. Filed Dec. 27, 1896. Serial No. 573,525. (No specimens.)

Claim.—1. The process of separating sugar as lead sucrate from saccharine liquid which consists in mixing with the lead oxid used as a precipitant, a portion of preformed lead sucrate, and bringing said mixture into contact with said saccharine liquid.

2. In the separation, extraction or manufacture of sugar from aqueous solutions, the process herein described of producing sucrates which consists in mixing lead sucrate with oxid of lead and treating the mixture with such solution.

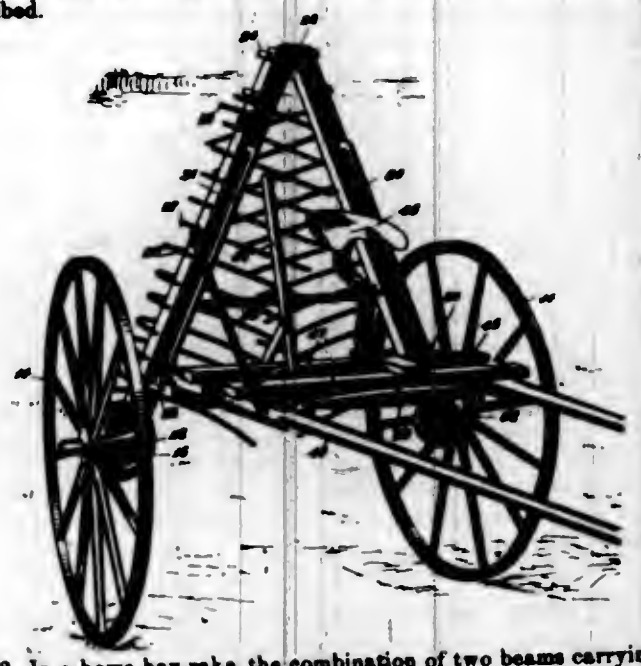
3. In the separation, extraction or manufacture of sugar from aqueous solutions, the process herein described of producing sucrates, which consists in mixing lead sucrate with powdered oxid of lead, forming blocks out of the mixture so produced, and treating this mixture with aforesaid solution.

4. In the separation, extraction or manufacture of sugar from aqueous solutions, the process herein described of producing sucrates, which consists in mixing lead sucrate with powdered oxid of lead, producing therefrom bodies of a porous nature, and treating the mixture with such aqueous solution.

611,882. HORSE HAY-RAKE. JOHN KERR, New Freedom, Pa. Filed Dec. 27, 1897. Serial No. 663,668. (No model.)

Claim.—1. In a horse hay-rake, the combination of two beams carrying rake-teeth, pivoted together at their center, end to end, wheels, spindles upon which said wheels are mounted, flat plates secured to or formed with the inner ends of the spindles, having central openings and curved slots, and pivotal bolts passing through the

ends of the beams and said slots, whereby the beams may be folded on their central pivot and turned upon the spindles, substantially as described.

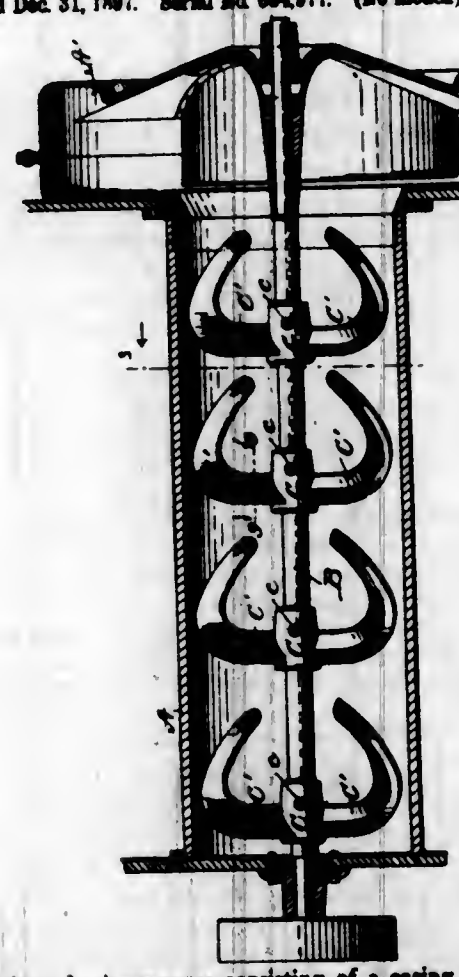


2. In a horse hay rake, the combination of two beams carrying rake-teeth, pivoted together at their center, end to end, wheels, spindles upon which said wheels are mounted, flat plates secured to or formed with the inner ends of the spindles, having central openings and curved slots, pivotal bolts passing through the ends of the beams and said slots, an arm connected to the beam, a pivoted handle-bar, and a rod connecting the arm and handle-bar, substantially as described.

3. In a horse hay-rake, the combination of two beams adapted to fold upwardly on a central pivot, and stripper-teeth beams adapted to fold horizontally under the thills, substantially as described.

4. In a horse hay-rake, the combination of the tooth-beams centrally pivoted together, the wheels and spindles, the spindle-plates pivotally connected to the ends of the beams, the guide-rods secured to the tooth-beams, sleeves fitted to slide on said rods, the thills, and the swivel connection between the sliding sleeves and thills, substantially as described.

611,888. CONVEYER. FRANK F. LANDIS, Waynesborough, Pa. Filed Dec. 31, 1897. Serial No. 664,977. (No model.)



Claim.—1. A conveyer consisting of a casing and a shaft with separate conveyer flights or sections secured thereon at intervals, each composed of arms extending out at right angles with the shaft and then spirally for a distance equidistant from said shaft throughout its length the distance between adjacent sections decreasing toward the discharge end of the conveyer, substantially as set forth.

2. A conveyer consisting of a casing and a shaft with conveyer-sections mounted thereon at intervals, said sections being formed of arms extending out from the shaft in a radial direction and then curved and extended forward in a substantially horizontal and spiral direction, substantially as set forth.

3. A conveyer consisting of a casing and a shaft with conveyer-sections thereon, said sections consisting of arms extending radially out from the shaft then curved and extending forward spirally, said several sections being arranged with the radial portions of said arms in line with each other, substantially as set forth.

4. A conveyer consisting of a casing and a shaft with conveyer flights or sections thereon, said sections consisting of arms extending out from said shaft and then forward spirally, the outer edges of said forwardly-extended portions being in advance of their inner edges.

5. A conveyer consisting of a casing and a shaft with conveyer-flights thereon portions of which extend substantially equidistant throughout their length from the shaft, the outer edges of which portions are in advance of the inner edges, substantially as set forth.

6. A conveyer consisting of a casing, and a shaft with conveyer-flights thereon, said flights consisting of radial arms with horizontal outer ends, the outer edges of said radial portions being behind their inner edges, and the outer edges of the horizontal portions being in advance of their inner edges, substantially as set forth.

7. A conveyer consisting of a casing and a shaft with conveyer-sections thereon, portions of which sections extend in a substantially horizontal plane, the outer edges thereof being substantially parallel with the shaft, and the inner edges being tapered away from the shaft toward the discharge end, substantially as set forth.

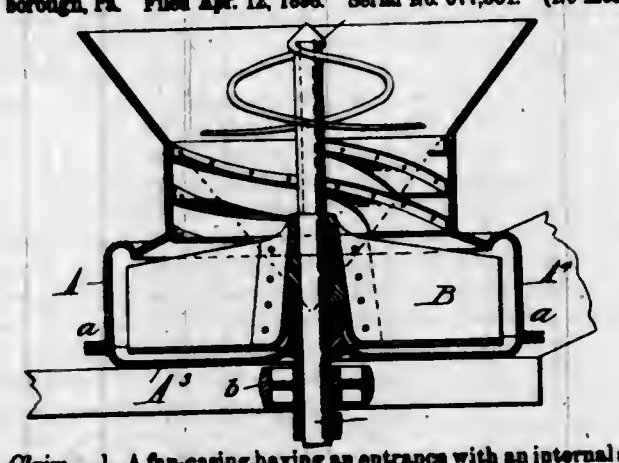
8. A conveyer consisting of a casing, a shaft, and conveyer flights or sections mounted on said shaft at intervals throughout its length, each of said sections consisting of two arms secured on opposite sides of the shaft, and each arm consisting of a radial portion extending out from the shaft, then a curved portion with a gradually-rounded outer edge, and then a horizontally-extending spiral portion, substantially as set forth.

9. A conveyer consisting of a casing and a shaft with a series of conveyer flights or sections mounted thereon at intervals throughout its length, each of said sections consisting of a hub adjustably secured to the shaft and carrying conveyer-arms which extend out from said hub radially and then are curved and extend horizontally, substantially as set forth.

10. A conveyer consisting of a casing, a shaft, and conveyer flights or sections mounted on said shaft at intervals throughout its length, each of said sections consisting of two arms secured on opposite sides of the shaft, and each arm consisting of a radial portion, then a curved portion with its outer edge rounded, then a horizontally-extending spiral, substantially as set forth.

11. A conveyer-flight comprising a horizontally and spirally extending arm with its outer edge in advance of its inner edge, substantially as set forth.

611,884. PNEUMATIC STACKER. FRANK F. LANDIS, Waynesborough, Pa. Filed Apr. 12, 1898. Serial No. 677,381. (No model.)



Claim.—1. A fan-casing having an entrance with an internal spiral web around the same, which increases in width from its outer to its inner end, substantially as set forth.

2. A fan-casing having an entrance formed with its cross area partly covered by a spiral web tapered in width from a narrow portion at its outer end to a wider portion at its inner end, substantially as set forth.

3. A fan or discharger casing formed with a cylindrical portion around its eye in which spiral webs are mounted, said webs being tapered from the outer end of said portion to greater width at its inner end, substantially as set forth.

4. A fan or discharger casing for pneumatic stackers having a cylindrical portion around its eye having spiral webs which start

from narrow points at their onter ends at the outer end of said portion to wider inner ends at the inner end of said portion, whereby the material in passing through said portion is given both a spiral whirling motion and a motion toward the center of the discharger, substantially as set forth.

5. The combination, in a discharger for pneumatic stackers, of the casing, the receiving-hopper thereof, the spiral web on the neck of said hopper, the fan-shaft extending through said casing into said hopper, the fan within the casing, and the double-pronged spiral reel on the outer end of said shaft in said hopper substantially as set forth.

6. The combination, in a discharger for pneumatic stackers, of the casing, the receiver therefor, the fan, the fan-shaft extending to within said receiver, the spiral reel on said shaft, and internal spiral webs below said reel extending to the eye of the fan-casing, substantially as set forth.

611,385. HANSOM-CAB. JOSEPH L. LAWRENCE, Boston, Mass., assignor of one-half to Chauncey Thomas & Co., same place. Filed Dec. 18, 1897. Serial No. 662,374. (No model.)



Claim.—1. A cab-body having separate slotted angular guideways secured within the cab-body, one at each side thereof, combined with a window-frame having devices coöperating with the said slotted guideways, and means accessible from the outside of the cab-body by which to move said window to open and close the same, substantially as described.

2. In a cab-body, angular guideways secured to the interior of the body, and a window-frame carrying at each side a plurality of roller-studs traveling between walls of the said guideways, the change of position of the rollers in the guideways determining the angular position of the window-frame, substantially as described.

3. In a cab, a cab-body having slotted guideways at its inner side, said guideways presenting walls 5, 6, which are contracted at the lower end of the said guideways, combined with a window-frame having connected rollers traveling in said guideways, and, when the window is in position to close the front of the cab, fitting both walls of the said guideway, to thereby prevent any back-and-forth motion and rattling of the window, substantially as described.

4. In a cab, a rock-shaft having oppositely-inclined ends, the front ends of said shaft having ball-like terminations; links having sockets to receive said ball-like terminations; a hinge, a leaf of which is provided with an ear to which said links are connected, combined with means to simultaneously operate said rock-shafts, substantially as described.

5. In a cab, a rock-shaft having oppositely-extending ends, a link pivotally secured to the forward end of said rock-shaft, a hinge for the cab-door, the forward leaf of said hinge having an ear to which said link is connected, and the rear leaf of said hinge having a recess extending with an opening to the rear edge of said leaf, to receive and guide the adjacent portion of the link, substantially as described.

6. In a cab, means extending from the rear of the cab to the front thereof, and terminating adjacent the cab-doors, for operating said cab-doors, said means being movably secured to the sides of the cab adjacent said doors, links connecting with said means at the forward extremities of the latter, hinge connections securing said doors to the cab, the forward leaves thereof having ears to which said links are pivoted, and the rear leaves thereof having recesses which open rearwardly to the rear edge of said leaves, and the hinge-knuckles projecting in the line of movement of said links, to constitute fulcra over which the links must bear when moved by the operating means to close the doors, substantially as described.

7. In a cab, means extending from the rear of the cab to the front thereof, and terminating adjacent the cab-doors, for operating said cab-doors, said means being movably secured to the sides of the cab adjacent said doors, links connecting with said means at the forward extremities of the latter, hinge connections securing said doors to the cab, the forward leaves thereof having ears to which said links are pivoted, and the hinge-knuckles projecting in the line of movement of said links, said links bearing on said knuckles as fulcra when in a position to close the doors, substantially as described.

8. In a cab, rock-shafts having oppositely-inclined ends, a link connected to the rear ends of each of said rock-shafts, two levers attached to said links, movable struts constituting the pivots for said levers, and means to move said levers simultaneously, said means being under the control of the driver at the rear part of the cab, substantially as described.

611,386. PACKING FOR VALVE-STEMS. JAMES H. MAURER, Hamburg, Pa., assignor of two-thirds to Wilson R. Schmick, same place, and George H. Gerber, Pottsville, Pa. Filed Dec. 3, 1897. Serial No. 660,664. (No model.)



Claim.—1. A valve-stem provided with a flexible packing surrounding the stem, part of which is secured to the stem and part free and a flange at its inner end to engage the valve-case.

2. A valve-stem provided with a flexible packing surrounding the stem, secured to a part thereof, extending outside the body of the valve and having a flange at its inner end to engage the valve-case.

3. A valve-stem provided with a flexible packing, part being secured to the stem and having a flange at its inner end to engage the valve-case, and a heat-protector on the inner surface of the flange.

4. A valve-stem having a portion thereof cylindrical and a portion non-cylindrical, in combination with a flexible packing surrounding said stem and provided with a flange at its inner end to engage the valve-case.

5. A valve-stem having a portion thereof cylindrical and a portion non-cylindrical, in combination with a flexible packing secured to the non-cylindrical portion and free on the cylindrical portion and having a flange at its inner end to engage the valve-case.

6. A valve-stem provided with a packing surrounding the stem, secured to a part thereof and having a flange at its inner end to engage the valve-case and the stem extending through the flange and constructed to engage with a valve.

7. A valve-stem provided with flat and cylindrical portions, and a right-angled extension at one end, in combination with a packing surrounding the stem and having a flange at its inner end to engage the valve-case.

8. A valve-stem provided with a packing surrounding the stem, part being secured thereto and having a flange at its inner end to engage the valve-case and a supplemental casing extending from the body of the valve and inclosing said packing.

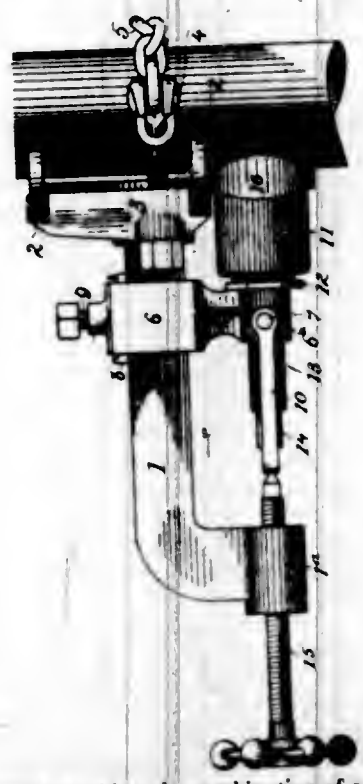
9. An article of manufacture, a packing for valve-stems consisting of an elongated cylindrical portion to surround the stem and a flange at its inner end to pack the joint between the valve-casing and its cap.

611,887. TAPPING-MACHINE. HENRY MUELLER, Decatur, Ill. Filed Mar. 14, 1898. Serial No. 673,828. (No model.)

Claim.—1. In a tapping-machine, the combination of a closure-cap adapted to contain the tool-head and fit against a pipe, a shiftable tool-guide adapted to bear against the cap on the end opposite the pipe, a bail swung on the tool-guide, a feed-screw adapted to engage the bail and apply pressure to the cap through the tool-guide, and a fastening to hold the tool-guide against the cap and maintain the pressure.

2 In a tapping-machine, the combination of a bar attachable to a pipe at right angles therewith, a feed-screw in an extension of the

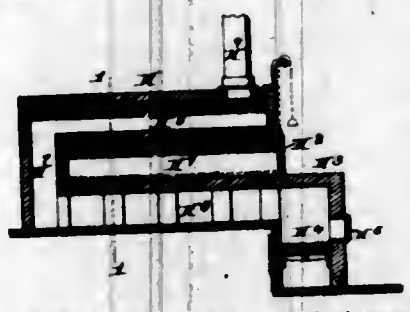
bar and pointing toward the pipe, a tool-guide shiftable on the bar to and from the pipe, a fastening to secure the tool-guide rigidly on the bar, a closure-cap adapted to fit against a pipe, and a tool head in the cap with its stem extended through the tool-guide and toward the feed-screw.



3. In a tapping-machine, the combination of a bar attachable to a pipe at right angles therewith, a feed-screw in an extension of the bar and pointing toward the pipe, a tool-guide shiftable on the bar to and from the pipe, a bail swung on the tool-guide, a fastening to secure the tool-guide rigidly on the bar, a closure-cap having a saddle-gasket adapted to fit against a pipe, a tool-head in the cap with its stem extended through the guide and toward the feed-screw, and a compressible washer around the tool-stem between the cap and the tool-guide.

4. In a tapping-machine, the combination of a closure-cap adapted to fit against a pipe at one end and having the other end contracted to fit the stem of a tapping-tool, an externally-threaded and internally-beveled neck formed on the contracted end of the cap, a washer in the beveled portion of the neck, an annular cap screwed onto the neck and engaging the outer edge of the washer, and a tool-guide adapted to bear against the washer inside the cap, substantially as set forth.

611,888. LEAD PIGMENT AND METHOD OF MANUFACTURING SAME. CARL V. PETRAEUS, Joplin, Mo., assignor to Oliver H. Picher, same place. Filed Mar. 23, 1896. Serial No. 584,519. (Specimens.)



Claim.—1. In the manufacture of a lead pigment, the method which consists in treating material containing lead and sulfur in such manner as to drive off some or all of the lead in the form of a fume made up of lead in combination with sulfur and with oxygen and in which the lead and sulfur compound are chiefly in the form of a sulfate and substantially free from carbon, sulfids, or other combustible substances, then collecting said fume, and then heating the collected fume to cause the particles of lead compounds to coalesce but without fusing the mass or substantially changing its chemical character.

2. In the manufacture of a lead pigment, the method which consists in treating material containing lead and sulfur in such manner as to drive off some or all of the lead in the form of a fume made up of lead in combination with sulfur and with oxygen and in which the lead and sulfur compounds are chiefly in the form of a sulfate and substantially free from carbon, sulfids, or other combustible substances, then collecting said fume, then heating the collected fume to cause the particles of lead compounds to coalesce but without fusing the mass or substantially changing its chemical character, and then grinding the cintered particles in order to adapt them for use as a pigment.

3. In the manufacture of lead pigment, the method which consists in treating material containing lead and sulfur in such manner as to drive off some or all of the lead in the form of a fume made up of lead in combination with sulfur and with oxygen, then collecting said fume, then reburning said fume to produce a fume compound consisting essentially of lead sulfate and lead oxid, and finally heating the said reburned fume to cause the particles of lead compounds to coalesce but without fusing the mass or substantially changing its chemical character.

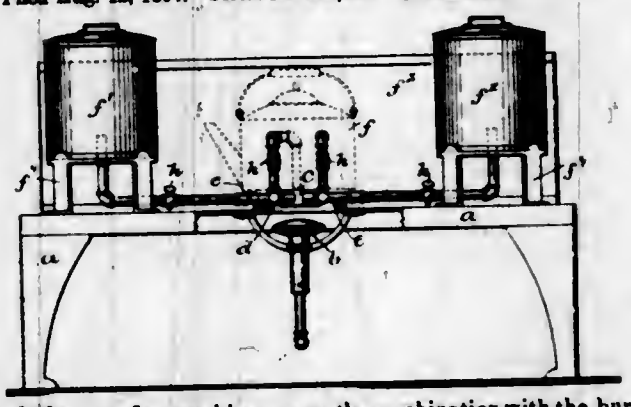
4. As a new article of manufacture the described pigment basis consisting in whole, or in part, of a sublimate of lead and sulfur, chiefly in the form of lead sulfate, the particles of the sublimate being hard, dense and cintered together, as specified.

611,889. LEAD PIGMENT AND METHOD OF MANUFACTURING SAME. CARL V. PETRAEUS, Joplin, Mo., assignor to Oliver H. Picher, same place. Filed Mar 23, 1896. Serial No. 584,520. (No specimens.)

Claim.—1. In the manufacture of a lead pigment the method which consists in treating material containing lead and sulfur in a furnace adapted to drive off some or all of the lead in the form of a fume made up of lead in combination with sulfur and with oxygen and in which the lead and sulfur compounds are chiefly in the form of lead sulfate, then collecting said fume by screening, then cintering the lead fume to cause the particles of lead sublimate to coalesce but without fusing the mass, then grinding the cintered sublimate and then treating the ground mass with a sulfuric-acid solution to convert the lead oxid contained in it into lead sulfate.

2. As a new article of manufacture a compound consisting essentially of sublimed and cintered lead sulfate in admixture with lead sulfate made from sublimed lead oxid.

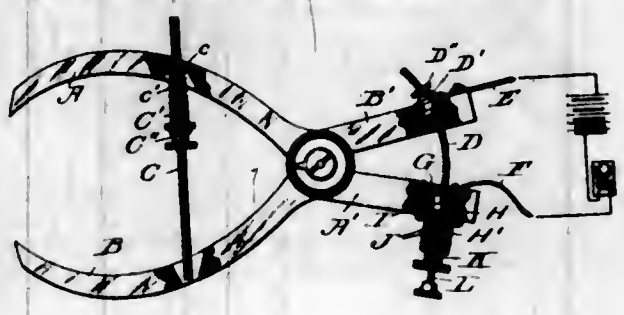
611,890. COOKING-RANGE. HORATIO PHINNEY, Providence, R. I. Filed Aug. 12, 1897. Serial No. 648,074. (No model.)



Claim.—1. In a cooking-range, the combination with the burner, of a spider adapted to support a vessel, said spider consisting of a hollow central chamber and a series of radially-disposed tubes, vessels, and connections between the ends of the radially-disposed tubes of the spider and the vessels; whereby the flame from the burner is diverted laterally by the central chamber to impinge on the radially-disposed tubes of the spider to heat the water of the vessels connected with the spider, as described.

2. In a cooking-range, the combination with the table, a circular opening in the table, a burner below the table centrally below the circular opening, and vessels supported on the table, of a spider adapted to form the support of a vessel and consisting of a central hollow chamber and a series of radially-disposed tubes, tubes connecting the ends of the radially-disposed tubes with the vessels, and valves in the tubes; whereby the several vessels are connected with the central chamber by the radially-disposed tubes, and the water heated in the spider may be utilized in either one or all the vessels, as described.

611,891. CALIPERS. HARVEY A. PIKE, St. Louis, Mo. Filed Sept. 10, 1897. Serial No. 651,209. (No model.)



Claim.—1. The combination with caliper-jaws, of electrical contacts mounted thereon, which coöperate with each other to make and break an electric circuit and indicate when the proper distance between the jaws has been reached, substantially as described.

2. The combination with spring-balanced caliper-jaws, of electric contacts mounted thereon which coöperate with each other to make and break an electric circuit and indicate when the proper distance between the jaws has been reached, substantially as described.

3. The combination with a pair of caliper-jaws, of an adjustable electric contact mounted on one of said jaws, and a contact arranged on the other of said jaws, said last-named contact being normally fixed relative to the jaw on which it is mounted, substantially as described.

4. The combination with a pair of caliper-jaws, of an adjustable electric contact mounted on one of said jaws, and a yielding contact arranged on the other of said jaws, substantially as described.

5. The combination with a pair of caliper-jaws, of an electric terminal arranged thereon, a movable contact which coöperates with said terminal, and an adjustable terminal arranged on the other of said jaws for coöperating with said movable contact, substantially as described.

6. The combination with a pair of caliper-jaws, of an electric terminal fixed thereon, a movable yielding contact which coöperates with said fixed terminal, and an unyielding contact or terminal adjustably mounted in the other of said jaws for coöperating with said movable contact, substantially as described.

7. The combination with a pair of caliper-jaws, of an electric terminal arranged thereon, a movable contact which coöperates with said terminal, means for locking said movable contact against said terminal, and an adjustable terminal coöperating with said movable contact, substantially as described.

8. The combination with a pair of caliper-jaws, of an adjustable terminal arranged on one of said jaws, a fixed terminal arranged on the other of said jaws, a movable contact for coöperating with both of said terminals, a spring whose normal tendency is to force said movable contact against said fixed terminal, and means for regulating the compression of said spring, substantially as described.

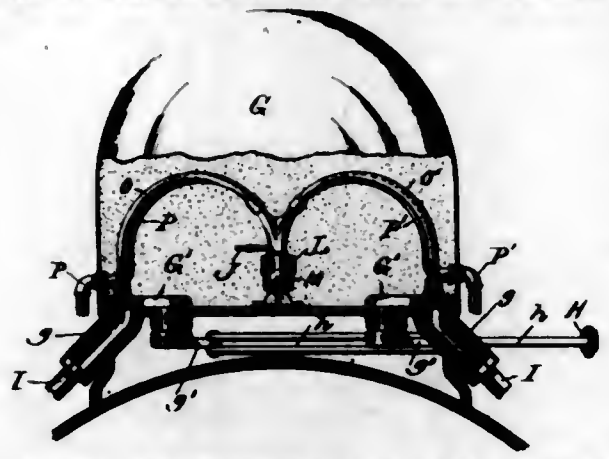
9. The combination with a pair of caliper-jaws, of an adjustable terminal arranged on one of said jaws, a fixed terminal arranged on the other of said jaws, a movable contact for coöperating with both of said terminals, a spring whose normal tendency is to force said movable contact against said fixed terminal, a locking-bolt for locking said movable contact against the fixed terminal when the caliper-jaws are being adjusted, and means for regulating the compression of said spring, substantially as described.

10. The combination with a pair of caliper-jaws, of a threaded rod arranged on one of said jaws, a micrometer adjustment for said rod, said rod forming one terminal of an electric circuit, and a terminal on the other of said jaws with which said micrometrically-adjusted rod coöperates, substantially as described.

11. The combination with caliper-jaws, of a spring which constantly tends to force the jaws toward each other, a spreading-rod, and circuit making and breaking devices mounted on the jaws, substantially as described.

12. The combination with caliper-jaws, of means which exert a constant tendency to close said jaws, a spreading-rod for forcing said jaws apart, said rod having a yielding connection with one of said jaws, and circuit making and breaking devices which are carried by the jaws, substantially as described.

611,892. TRACK-SANDING APPARATUS. HARVEY A. PIKE, St. Louis, Mo. Filed Oct. 25, 1897. Serial No. 656,314. (No model.)



Claim.—1. The combination with two blast-nozzles, of sand-delivery pipes leading to points above the rails in front of the front drivers and behind the back drivers, a distribution-valve for directing pressure to either of said nozzles, a pressure-pipe leading to said distribution-valve, and a valve for controlling the passage of pressure through said pipe, said valve being located within the reach of the engineer; substantially as described.

2. The combination with a sand-box and two blast-nozzles, of sand-delivery pipes leading to points above the rails in front of the front drivers and behind the back drivers, a distribution-valve arranged in the sand-box for directing pressure to one of said nozzles and shutting off pressure from the other of said nozzles, and vice versa a pressure-pipe leading to said distribution-valve arranged in the cabin of the locomotive, and a valve for controlling the passage of pressure in said pipe; substantially as described.

3. The combination with two blast-nozzles, of sand-delivery pipes leading to points above the rails in front of the front drivers and behind the back drivers, a distribution-valve for directing pressure to one of said nozzles and shutting off pressure from the other of said nozzles, and vice versa, a pressure-pipe leading to said distribution-valve, and a valve, having two passages of different sizes, for controlling the passage of pressure in said pipe; substantially as described.

4. The combination with two blast-nozzles, of sand-delivery pipes leading to points above the rails in front of the front drivers and behind the back drivers, a distribution-valve comprising a cylinder, bored to two diameters, and a piston operating therein, a pressure-pipe leading to said distribution-valve, connections between said distributing-valve and blast-nozzles and means for causing varying pressures in said pipe, before said pressures reach the distribution-valve; substantially as described.

5. The combination with a sand-box, of blast-nozzles arranged therein, sand-delivery pipes leading from said blast-nozzles to points above the rails, a distributing-valve for directing pressure to one of said nozzles and shutting off pressure from the other of said nozzles, and vice versa, a pressure-pipe leading to said distributing-valve, a valve for controlling the passage of pressure through said last-mentioned pipe, and means arranged in said valve for varying the pressure admitted to said pipe leading to said distributing-valve, substantially as described.

6. The distribution-valve comprising a cylinder, bored to two different diameters, a piston formed with heads operating in said bores, said cylinder being provided with an inlet-port which constantly opens into the cylinder between the two piston-heads, a duct which also opens between said heads when the piston is in its normal position, and a duct which is normally closed to pressure but which is opened when the piston is actuated, and means for normally holding the piston in a position in which said last-named duct is closed; substantially as described.

7. The distribution-valve comprising the following elements in combination: a cylinder bored to two different diameters, said cylinder being formed with an inlet-port, ducts *m* and *n*, and a by-pass *l'*; a cylinder-head formed with a concentric groove, and a central opening communicating with said concentric groove; a piston operating in the two bores of the cylinder, said piston closing the central opening in the cylinder-head, and the duct *n* when in its normal position, the duct *m* being normally open to the inlet-port, but closed when the piston is actuated; and a spring arranged behind the larger head of the piston; substantially as described.

8. The combination with a pressure-pipe, of a casting M, a diaphragm arranged in said casting, a valve attached to said diaphragm for closing a passage or duct in said casting, said passage or duct leading to two blast-openings, a Y-coupling secured to the casting above said blast-openings, and sand-delivery pipes leading from the branches of said Y-coupling, substantially as described.

9. The combination with a pressure-pipe, of a casting formed with a chamber, into which chamber said pressure-pipe leads, a diaphragm arranged in said chamber, a spring under said diaphragm, a valve secured on the upper side of said diaphragm, for closing a duct in the casting, said duct leading to two blast-openings, a Y-coupling secured to said casting, the two passages in said Y-coupling registering with the blast-openings and pipes leading from the branches of said Y-coupling for delivering sand to each rail; substantially as described.

10. The combination with a sand-box formed with an opening for the passage of sand, of a valve-closure for said opening, means for creating a blast of sand, and a pipe connected to said valve-closure for conveying said blast to and through said valve, substantially as described.

11. The combination with a sand-box formed with an opening for the passage of sand, of a valve for closing said opening, and means connected to, and movable with, said valve, for delivering sand through said valve, and into the passage controlled thereby; substantially as described.

12. The combination with a sand-box formed with an opening for the passage of sand, of a valve for closing said opening, a sand-blast apparatus, and a flexible pipe leading from said sand-blast ap-

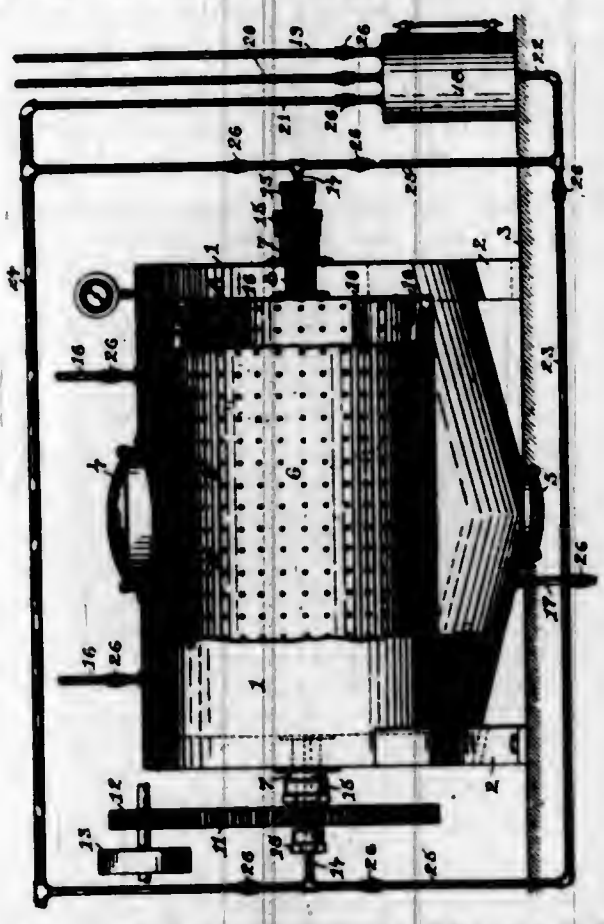
parates, and connected to, said valve, to deliver sand into the passage controlled by said valve; substantially as described.

13. The combination with a sand-box formed with openings in its bottom for the passage of sand, valves for closing said openings, said valves being formed with openings which register with the sand-delivery passages when the valves are closed, flexible pipes connected to said valves, and a sand-blast apparatus to which said flexible pipes are connected; substantially as described.

14. The combination with a sand-box having passages leading therefrom, manually-operated valves for closing said sand-passages against the entrance of gravitating sand, a pneumatic sanding apparatus, and flexible pipes connecting said apparatus with said manually-operated valves, to deliver sand through openings in said valves into the sand-passages; substantially as described.

15. The combination with a sand-box having sand-passages, and manually-operated valves for controlling said passages, of a source of air-pressure supply, a pipe leading therefrom, a valve for effecting varying pressures in said pipe, a distribution-valve to which said pipe leads, pneumatic sanding devices arranged in the sand-box, which devices are operated by pressure directed thereto by said distribution-valve, one of said sanding devices being piped to deliver sand to behind the back drivers, and flexible pipes connecting the other of said sanding devices with openings in the manually-operated valves, whereby, sand may be forced into the passages, to be delivered in front of the front drivers, or said valves may be manually operated to open said passages and permit the sand to fall by gravity; substantially as described.

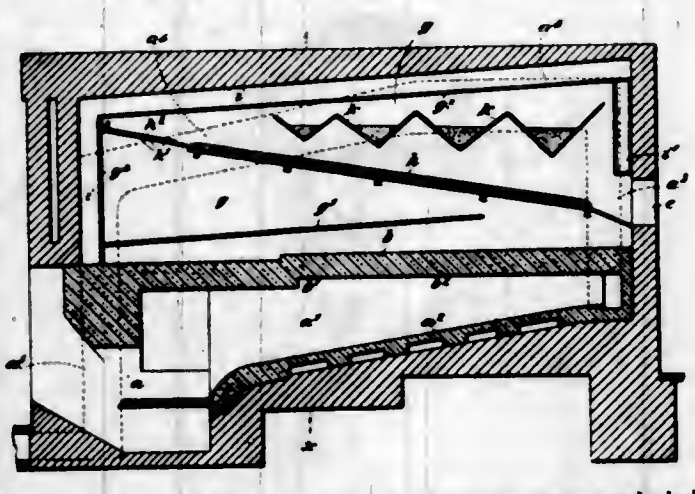
611,898. DIGESTER. JAMES PRIMLEY, Pawtucket, R. I. Filed Oct. 4, 1897. Serial No. 654,004. (No model.)



Claim.—1. In a digester the combination of the outer vessel having the sides of its bottom converging downwardly, an internal cylindrical chamber having perforated sides, sliding doors closing openings in said sides, horizontal journals on the two ends of the inner chamber, pipes extending through said journals, a steam and water supply chamber connected with the journal-pipes, a steam-supply pipe entering the periphery of the outer vessel and another steam-pipe leading out of said periphery, with mechanism for rotating the inner cylinder substantially as described.

2. In a digester the combination of the outer vessel 1, having the sides of its bottom converging downwardly toward its bottom manhole, the journal-bearings 7, 7, on the ends of said vessel, the steam-pipes 16, 16, in the top of said vessel and the drawing-off pipe 17 in the bottom, the perforated chamber 6 having sliding doors 9, the hollow journals 8 on the ends of the chamber 6, the pipes 14 extending through the journal 8, the steam and water supply chamber 18 having leading in its top a water-pipe 19 and a steam-pipe 20, and pipes 21 and 22 leading from its top and bottom into the inner cylinder, whereby steam or water may be injected through the journals substantially as and for the purpose described.

611,894. BAKER'S OVEN. ADOLPH RAUBER, Munich, Germany. Filed July 22, 1896. Serial No. 636,583. (No model.)



Claim.—1. A baking-oven comprising a baking-box *g*, and a baking-plate *k* being arranged in an inclined position rising from the rear to the front in the baking-chamber, with the object of avoiding an accumulation of heat in the rear part of the oven so that the heat shall be constantly conveyed toward the front and thereby an even baking temperature in all parts of the oven be obtained, substantially as described.

2. A baking-oven comprising a baking-box *g* rising in height toward the front and being surrounded by an air-space *i* which, corresponding to the position of the baking-box, rises toward the front and conveys heat from the rear part of the oven to the front part over the baking-box with the object of assisting the distribution of the heat toward the front, substantially as described.

3. In a baking-oven a baking-plate *k* being provided at its upper end with perforations *k'*, capable of being closed if desired, with the object of effecting a direct delivery of heat from the air beneath the baking-plate to that directly above it and thereby to facilitate the transference of heat to the front over the baking-plate, substantially as described.

4. In a baking-oven a zigzag-shaped intermediate cover *k* being arranged over the baking-plate *k* in the baking-box, with the object of retaining the heat in the front part of the baking-box in greater proximity to the baking-plate, substantially as described.

5. In a baking-oven two inclined flues a^4 rising obliquely toward the front from the rear part of the oven with the object of accumulating the fire-gases toward the front part of the oven and thereby of supporting the heat-distributing action toward the front, substantially as described.

6. In a baking-oven, a furnace or flue-passage having a horizontal top wall and an oblique sole inclining upwardly toward the front, said top wall being arranged with its forward portion at a higher elevation than the rear portion whereby a recess is provided in said forward portion, serving to retain the gases closely under the front end of the baking-chamber, substantially as described.

611,895. DOOR-HANGER. AUGUST ROCHWITZ, Wautoma, Wis., assignor of one-half to W. R. Hammond, same place. Filed Nov. 20, 1897. Serial No. 659,306. (No model.)



Claim.—In a door-hanger, the combination with a track, of carriers movable thereon, crank rods pivotally connected to said carriers and to the door and having their upper ends bent angular, and a rod pivotally connected to said angular ends, substantially as set forth.

611,896. EYE-SHIELD. CHARLES R. SHELDON, Kasson, Minn., assignor to the Celluloid Goggle Company, same place. Filed Oct. 30, 1897. Serial No. 656,958. (No model.)



Claim.—1. An eye-shield formed from a single piece of flexible transparent material and having its ends notched, and the portions on each side of the respective notches crossed and secured together, substantially as and for the purpose specified.

2. An eye-shield formed from a single piece of flexible transparent material and having a notch or recess formed in its lower edge to straddle the nose of the wearer and its ends being notched and the portions on each side of the respective notches being crossed and secured together, substantially as described.

3. An eye-shield formed from a single piece of flexible transparent material, having its ends notched and the portions on each side of the respective notches crossed and secured together, and a binding of flexible absorbent material secured to the edge of the shield entirely around it, substantially as described.

4. An eye-shield formed from a single piece of flexible transparent material having its ends notched, and the portions on each side of the respective notches being crossed, an eyelet to secure the respective crossed portions together, and an elastic band or similar securing device secured in said eyelets, substantially as and for the purpose specified.

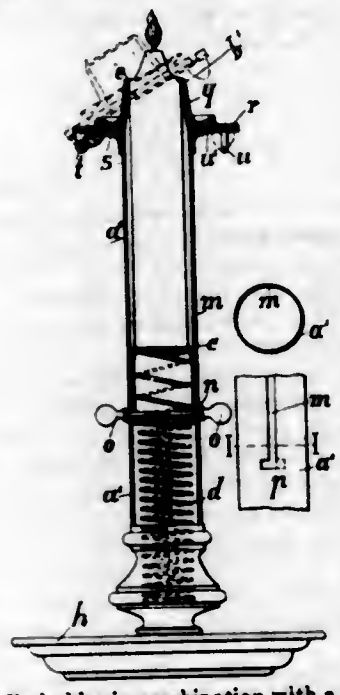
5. An eye-shield formed of a single continuous blank of flexible transparent material having its end portions folded inward and provided with attaching-eyelets, said blank being further provided at a central point in its lower edge with a notch for the nose, and between said notch and the inwardly-folded ends, with oppositely-located concavo-convex portions adapted to fit over and protrude outwardly from the eyes, substantially as set forth.

6. An eye-shield formed from a single piece of flexible transparent material, and having a notch or recess formed in its lower edge to straddle the nose of the wearer and its ends being notched and the portions on each side of the respective notches being crossed and secured together, a binding of flexible absorbent material secured to the shield and extending entirely around its edges, and said shield having a series of perforations formed therein to afford ventilation for the eyes of the wearer, substantially as described.

611,897. CANDLE-HOLDER. FRIEDRICH W. STEINENBÖRNER, Iserlohn, Germany. Filed Dec. 22, 1897. Serial No. 663,000. (No model.) Patented in Germany June 17, 1895, No. 92,649; in Austria Dec. 16, 1895, No. 45/4,901, and July 12, 1897, No. 47/2,687; in Belgium Jan. 24, 1896, No. 119,520, and Nov. 18, 1896, No. 124,640; in France Feb. 6, 1896, No. 253,743, and in England June 19, 1896, No. 13,585, and Oct. 8, 1896, No. 22,320.

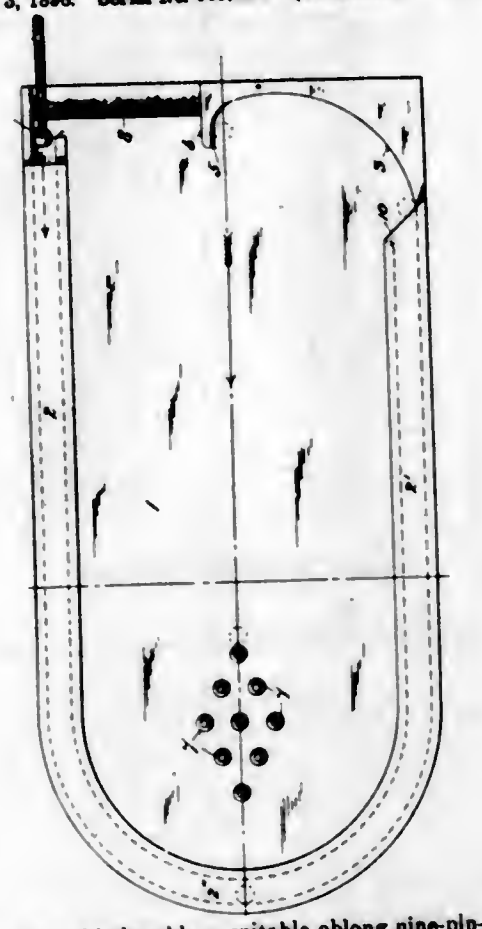
Claim.—1. In a candlestick, the combination of a candle-holding tube provided at its upper end with a conoidal cap having an inwardly-projecting flange at its upper edge, in combination with a conoidal candle bearer or follower, adapted to fit against the inner face of the said cap at a point below the said flange, and a spring which forces the said bearer upward to tighten the joint between the said conoidal faces and prevent the downward leakage of the material melted from the base or last piece of the candle when the rest of it is consumed, while allowing the said piece to be held in place against the flange substantially as set forth.

2. In a candle-holder in combination with a tube *a'* closed at one end and having longitudinal slots *m* at its sides, a flange *s* at the top of said tube *a'*, a slot *u'* in said flange, a cap *b'* having an inwardly-directed small flange *e* at the upper edge and a flange *r* at the lower edge corresponding with said flange *s* and connected to it by a hinge *t*, a swivel *u* on said flange *r* for holding both flanges together, a candle-bearer *c* corresponding in shape to the inner side of the cap *b'* and bored through horizontally, a pin *n* passing through the slots *m* and the boring in the candle-bearer; knobs *o* at the ends of the pin, a spiral spring *d* resting on the closed end of the tube *a'* and pressing said candle-bearer with its upper end into or against the seat in the cap *b'* and a dish-shaped foot *h* to which the tube *a'* is fixed at its bottom, the whole as illustrated and described and for the purpose set forth.



3. In a candle-holder in combination with a tube *a'* closed at one end and having longitudinal slots *m* at its sides, a flange *s'* at the top of said tube *a'*, a slot in said flange, a cap *b'* having an inwardly-directed small flange *e* at the upper edge and a flange *r'* at the lower edge corresponding with said flange *s'* and forming the bottom of a lantern-housing *k'* fixed on top of said flange *r'*, said lantern-housing being hinged to the flange *s'*, a swivel serving to lock both flanges *r'* and *s'* together, the whole as illustrated and for the purpose set forth.

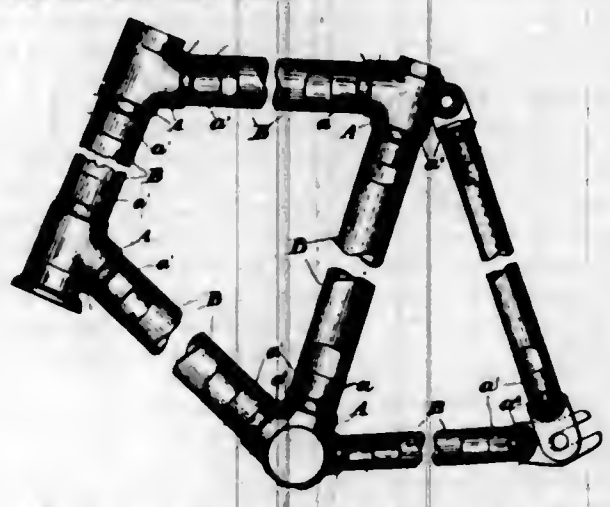
611,898. SKITTLE-TABLE. WENZEL STEPNER, St. Louis, Mo. Filed Jan. 3, 1898. Serial No. 665,407. (No model.)



Claim.—In a skittle-table, a suitable oblong nine-pin-supporting board, a conduit or tubeway bounding two longitudinal sides and the rear curved end of the board, and having walls raised above the plane thereof, the open end of one of the longitudinal sides or sections of the conduit being in advance of the opposite side or section, a curved wall forming a continuation of the inner surface of the outer wall of said opposite section, the open end of said opposite section being inclined to the plane of the outer wall thereof to prevent ricocheting of the ball at that point, an inwardly-projecting arm forming a continuation of said curved wall, a cushioning-strip against which the ball impinges carried by said arm, the deflecting-

surface of said strip being to one side of the medial longitudinal line of the board a distance approximately equal to the radius of the play-ball, whereby the axis of said ball when resting against said strip is in line with said longitudinal line of the board, and a ledge or strip located adjacent to the open end of one of the longitudinal sides of the conduit interposed between the arm and the adjacent side of the table for the support of the hand and cue, the supporting-surface of the strip being below the plane of the upper wall of the conduit, whereby the cue can be directed against the ball in a plane substantially parallel to the bed of the table, substantially as set forth.

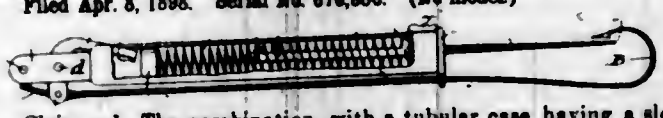
611,399. BICYCLE-FRAME. JOHN M. WEBSTER, Cincinnati, Ohio, assignor to MAX S. Goldsmith, same place. Filed Aug. 25, 1897. Serial No. 649,433. (No model.)



Claim.—1. The hereinbefore-described bicycle-frame having its coupling-pieces provided with branches formed with annular grooves at their inner portions and an overlapping flange, the tubular braces having their ends inturned by forcing them on said branches and into the annular grooves, thus forming a self-locking joint, substantially as shown and described.

2. The hereinbefore described coupling-pieces for bicycle-frames provided with branches formed with external annular grooves at their inner portions and having flanges overlapping the inner portions of said grooves to fold the ends of the tubes inwardly for the purpose of forming a self-locking joint, substantially as shown and described.

611,400. FISH-HOOK. SAMUEL M. WENGER, Farmersville, Pa. Filed Apr. 8, 1898. Serial No. 676,856. (No model.)

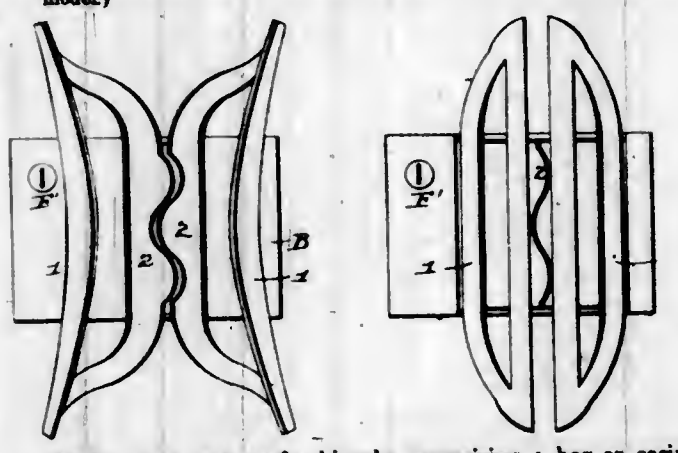


Claim.—1. The combination, with a tubular case having a slot therein, of a spear in said case and adapted to move longitudinally thereof, a spring having one end pressing against the spear from behind and the other end pressing against a stationary bearing, a trigger pivoted to the stem of the case and having an arm thereof adapted to engage the slot in the case, a fish-hook having its shank passing through an eye on said case and pivoted to an arm of the trigger, and a lip on the arm of the tripper adapted to engage the slot in the case and constructed to take over a shoulder on the spear, for the purpose specified.

2. The combination, with a tubular case having a slot in one side thereof and a centrally-located opening in its front end, of the stem of the case, having a slot therein ranging with the slot in said case, a spear passing through the opening in the front of the case, a head on the spear and located in the case, a handhold projecting outside of the case and connected with said head by a rib passing through the slot in the case, a rearwardly-extending stem on said head and having a shoulder thereon, a spring coiled around the stem of the spear and having one end pressing against said head and the other end against a stationary bearing located back of said head, a trigger pivoted in the slot in the stem of the case and having a lip on one arm thereof, adapted to engage the shoulder on the stem of the spear, a fish-hook in front of the case, and a stem on the fish-hook and passing through an eye on said case and pivotally connected with the other arm of the trigger, substantially as and for the purpose specified.

3. The combination, with a hollow case having a slot therein, of a cap screwed onto the rear end of the hollow case and having a stem thereon, a cap screwed onto the front end of said case and having an opening therein, a trigger pivoted to the stem of the case and having one arm provided with a lip, a fish-hook located in front of said case, a stem on the hook, passing through an eye on the case and pivoted to the other arm of the trigger, a spring-actuated spear in the hollow case, the spear passing through the opening in the front cap of the case and being adapted to be thrust toward the fish-hook, a shoulder on the spear and adapted to be engaged by the lip on the trigger, and means for retracting the spear, for the purpose specified.

611,401. LOCK AND SUPPORT FOR BICYCLES. FRANK W. WHITE, Marion, Ind. Filed Dec. 28, 1897. Serial No. 663,983. (No model.)

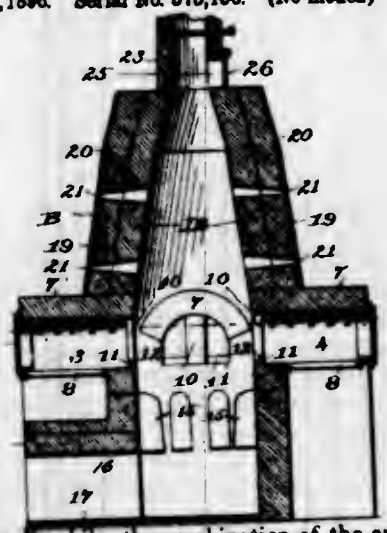


Claim.—1. A support for bicycles comprising a box or casing, having a lock thereon, and a pair of jaws pivoted in the box at points remote from each other, the interior shape of the jaws conforming to the shape of the tire and rim and their inner ends intermeshed at a point between the pivots where they are struck by the wheel of the machine to cause them to close and lock upon the rim of the wheel and the lock adapted to secure them in place

2. A support for bicycles comprising a box or casing, a pair of jaws pivotally supported therein, these jaws comprising two arms, the inner ends of the inner arms of curved or serpentine form and provided with intermeshing teeth, and means locking these jaws in their closed position.

3. A support for bicycles, comprising a box, a pair of jaws pivoted therein, the inner faces of the jaws made to conform to the cross-sectional shape of a wheel tire and rim, the jaws each comprising two arms, the outer angles of which are pivoted and the inner ends of the inside arms having teeth which intermesh with each other, one arm having a lug therein and a lock engaging said lug.

611,402. LIMEKILN. EDWIN V. WINGARD, Philadelphia, Pa. Filed Jan. 11, 1896. Serial No. 575,156. (No model.)

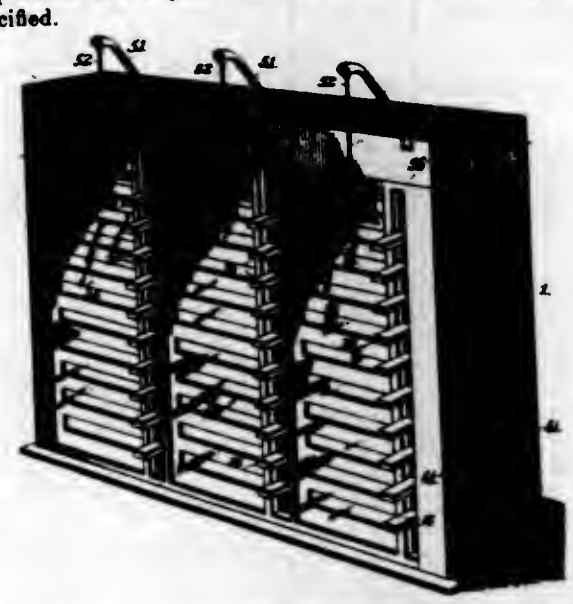


Claim.—In a limekiln, the combination of the cupola or stack, the furnaces at the base of the cupola, and a cooling-chamber below the furnaces, of elongated vertical projections 15 in the wall of the cooling-chamber extending into the chamber beyond the walls thereof and arranged at intervals parallel with each other, substantially as and for the purpose set forth.

611,408. VOTING-MACHINE. LENNA R. WILMLOW, Kansas City, Mo. Filed Mar. 26, 1897. Serial No. 629,441. (No model.)

Claim.—1. In a voting-machine, the combination with a series of voting-slides, and tally mechanisms operatively connected therewith, of replacing mechanism for simultaneously returning the slides to their normal positions, and including a movable member capable of continued movement after the slides have reached their normal positions, and an alarm mechanism having a member arranged in the path of said movable member of the replacing mechanism during the said continued movement thereof, whereby the alarm is sounded

subsequent to the complete replacement of the slides, substantially as specified.



2. In a voting-machine, the combination with a series of voting-slides, and tally mechanisms operatively connected therewith, of replacing mechanism for simultaneously returning the slides to their normal positions, the same including a movable member mounted for contact with the slides, and capable of continued movement after the slides have reached their normal positions, and an alarm mechanism having an actuating-arm arranged in the path of said continued movement of the movable member, whereby the arm is engaged to sound the alarm subsequent to the complete replacement of the slides, substantially as specified.

3. In a voting-machine, the combination with a series of parallel voting-slides, tally mechanisms operatively connected therewith, of replacing mechanism for simultaneously returning the slides to their normal positions, the same having a frame disposed in a plane perpendicular to the slides, and provided with parallel swinging supports, for carrying the frame in an arc-shaped path, the terminal portion of said path being perpendicular to the direction of movement of the slides, exterior means for actuating the swinging supports, and an alarm mechanism having an actuating-arm in the path of said frame at the limit of its said perpendicular movement, whereby the alarm is sounded subsequent to the complete replacement of the slides, substantially as specified.

4. In a voting-machine, the combination with a series of movable parts, and tally mechanisms operatively connected with said movable parts for actuation thereby, of replacing mechanism for simultaneously returning the parts to their normal positions, retaining devices normally disposed to secure the movable parts in their adjusted positions, trip mechanism arranged in operative relation with said retaining devices for disengaging them from the slides, and means for actuating the trip and replacing mechanisms, to release and return the slides, substantially as specified.

5. In a voting-machine, the combination with a series of movable parts, and tally mechanisms operatively connected with said movable parts, of replacing mechanism including a movable frame for simultaneously returning the adjusted movable parts to their normal positions, retaining devices normally positioned to engage and secure the movable parts in their adjusted positions, a trip-frame having members in operative relation with said retaining devices, and means for simultaneously operating the trip-frame and replacing mechanism, substantially as specified.

6. In a voting-machine, the combination with a series of movable parts, and tally mechanisms operatively connected with said movable parts, of replacing mechanism for simultaneously returning the movable parts to their normal positions, retaining devices normally positioned to engage and secure the movable parts in their adjusted positions, a trip-frame having its members arranged in operative relation with said retaining devices, and operating connections between said trip-frame and replacing mechanism, substantially as specified.

7. In a voting-machine, the combination with a series of movable parts, and tally mechanisms operatively connected with said movable parts, of replacing mechanism including a rock-shaft, retaining devices normally positioned to engage and secure the movable parts in their adjusted positions, a trip-frame having its members arranged in operative relation with said retaining devices, rocking levers supporting the trip-frame, and cams on said rock-shaft for actuating the rocking levers, substantially as specified.

8. In a voting-machine, the combination with a series of movable parts having ratchet-teeth, and tally mechanisms operatively connected with said movable parts, of retaining-pawls for engagement with the ratchet-teeth of the movable parts, a trip-frame having a plurality of trip-rods arranged respectively in operative relation with ears or projections on said pawls, a replacing device, and means for operating the same to engage and return the movable parts to their normal positions, and operating connections between the trip-frame and said replacing device, substantially as specified.

9. In a voting-machine, the combination with a series of tally mechanisms, of slides fitted in fixed guides in operative relation with said tally mechanisms, and provided with cam-faces, a transverse guide arranged contiguous to each series of tally mechanisms, and provided with openings through which said slides extend, slide-locking bolts mounted for movement in said guide and provided with terminal cam-faces arranged in the planes of, and adapted to coact with, the cam-faces of the slides, whereby the operation of one of the slides arranges the extremities of the locking-bolts in the paths of the cam-faces on the remaining slides of the series, the slides being provided in rear of their cam-faces with lateral extensions which overhang and rest upon the ends of the bolts to hold them against upward displacement, and replacing mechanism adapted to engage the projecting rear portions of the slides, substantially as specified.

10. In a voting-machine, the combination with a series of tally mechanisms, of a corresponding number of springless movable parts mounted for sliding movement, locking devices for engaging said movable parts successively at a plurality of spaced points, to prevent subsequent movement of said parts in the opposite direction, means for communicating motion from each movable part to the coöperating tally mechanism after the initial engagement of said movable part by its locking device, locking-bolts for actuation by a movable part during its initial movement, prior to its first engagement by a locking device, to secure the remaining movable parts in the same series against simultaneous or subsequent movement, and means for releasing and returning the movable parts to their normal positions, substantially as specified.

11. In a voting-machine, the combination with a series of tally mechanisms, of a corresponding number of springless movable parts mounted for sliding movement, locking devices for engaging said movable parts successively at a plurality of spaced points to prevent subsequent movement of said parts in the opposite direction, means operatively connected with each tally mechanism for engagement by the coöperating movable part after the initial engagement of said movable part by its locking device, slide-locking bolts arranged in operative relation with said movable parts, and adapted to be actuated by the movement of one movable part to prevent the movement of other movable parts in the same series, said actuation of the slide-locking bolts being accomplished prior to the initial engagement of the locking devices with the movable part, and connected releasing and returning mechanism for the movable parts, substantially as specified.

12. In a voting-machine, the combination with a series of tally mechanisms, and slides operatively connected therewith, of a straight-ticket-voting device including an operating-lever, a rod connected at one end to said operating-lever, a link supporting the other end of the rod, and arranged parallel with said lever, and projections on the slides arranged in the path of said rod, substantially as specified.

13. In a voting-machine, the combination with a series of tally mechanisms, and movable parts operatively connected therewith, of a straight-ticket-voting device including an operating-lever, a rod connected at one end to said operating-lever, a link supporting the other end of the rod and arranged parallel with the lever, and means in connection with said movable parts, arranged in the path of said rod for actuation thereby to advance the movable parts and actuate their respective tally mechanisms, substantially as specified.

14. In a voting-machine, the combination with slides arranged in a vertical series, tally mechanisms operatively connected with said slides for actuation thereby, the slides having upper and lower bevel or cam faces, slide-locking bolts arranged between contiguous slides, and having shoulders for engagement by the contiguous bevel or cam faces of the slides, the slides also having notches extending partly across the upper surface thereof to leave guide-ribs for preventing engagement of the slide-locking bolts with the notches, pawls for engaging the notches to prevent return movement of the slides, trip mechanism for disengaging the pawls from the notches, and replacing mechanism for returning the slides to their normal positions, substantially as specified.

15. In a voting-machine, the combination with a casing having a transparent front wall, and a plurality of tally mechanisms, each having inspection-openings adapted to be viewed through the transparent wall of the casing, and means for actuating said tally mechanisms, of an opaque shield common to a plurality of tally mechanisms, interposed between said transparent wall and the tally mechanisms, and provided with openings adapted to register with the several inspection-openings of the tally mechanisms, said shield being mounted in guides for vertical upward movement to secure such registration of its openings with those of the tally mechanisms, and means for moving the shield, including an exposed shifting-lever, located exte-

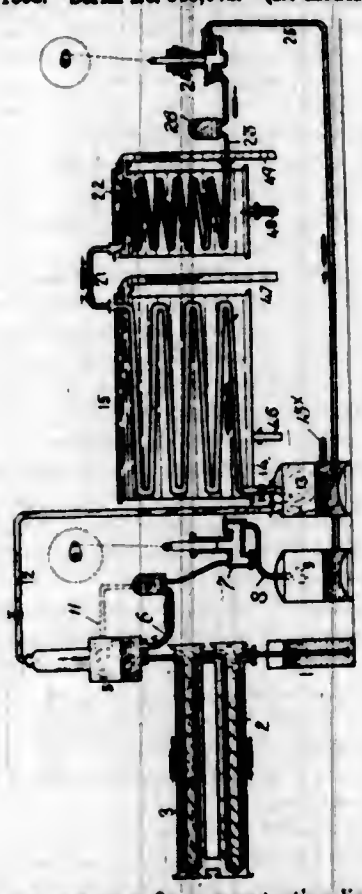
riorly of the casing, an arm 57 arranged within the casing and permanently connected with the shield and locking devices for securing said lever when the shield is in its normal position with its openings out of registration with those of the tally mechanisms, substantially as specified.

16. In a voting-machine, a tally mechanism having a plurality of ratchet-wheels, dials of different denominations operatively connected respectively with said ratchet-wheels, means for communicating motion from one dial to the next of higher denomination, actuating devices for the ratchet-wheel connected with the dial of lowest denomination, a resetting device consisting of a plurality of shifting pinions adapted to be arranged in operative relation with gears carried by the dials and normally arranged out of engagement therewith, substantially as specified.

17. In a voting-machine, a tally mechanism having a plurality of dials operatively connected, whereby motion is communicated from one dial to the next of higher denomination, and means for actuating the dial of lowest denomination, of a resetting device having a plurality of pinions, means for simultaneously actuating said pinions, and mutilated gears carried by the dials for engagement by said pinions, substantially as specified.

18. In a voting-machine, a tally mechanism having a plurality of dials, means for communicating motion from one dial to the next of higher denomination, and operating devices for the dial of lowest denomination, a resetting device having an adjustable frame, a plurality of pinions carried by said frame and operatively connected for simultaneous rotation, and mutilated gears carried respectively by the dials and adapted to be engaged respectively by said pinions when the shifting frame is advanced, substantially as specified.

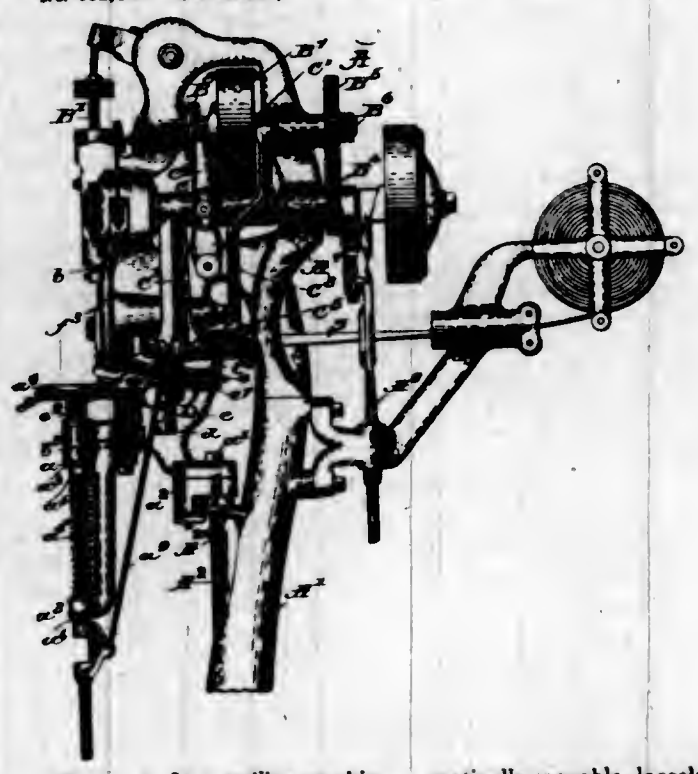
611,404. APPARATUS FOR CONCENTRATING LIQUIDS. LOUIS M. H. R. BAUDOIN, and PIERRE R. L. SCHRIBAUX, Paris, France. Filed Oct. 8, 1895. Serial No. 565,072. (No model.)



Claim.—1. An apparatus for concentrating liquids, consisting of a chamber in which the extract is separated from the volatile products of the wine, an alcoholic-vapor condenser connected with the separating-chamber to receive the alcoholic vapors therefrom, and an interposed separator for the steam carried off from the separating-chamber, said separator comprising a receiver through which the whole volume of vapor is passed, a retrograding device between the said receiver and the alcoholic-vapor condenser, said retrograding device being adapted to condense the steam without condensing the alcoholic vapors, and means for heating the receiver to reconvert the condensation water into steam to be again acted on by the retrograder, substantially as described.

2. In combination the sleeves 2, 3, arranged parallel having connection with a steam-supply, the wine-pipe extending circuitously through said sleeves, the separator 5, the receiving-chamber 9, connected with the lower part of said separator, the test-glass 10 arranged in the said extract-pipe, the pump for forcing the wine to and from the separator, the receiver 13, connected by a vapor-pipe with the receiver 5, means for heating said receiver 13, the retrograding apparatus comprising the pipe 14 connected with the chamber 13, and the water casing 15, the condenser for the alcoholic vapors connected with the pipe 14 and the connection from the condenser to the receiver 9, said heater of the receiver 13 serving to pass the alcoholic vapors from the said receiver while allowing the steam to condense therein, substantially as described.

611,405. MACHINE FOR UNITING WELTS OR BANDS TO SOLES OR HEELS. LOUIS A. CABRAIN, Winchester, Mass., assignor to James W. Brooks, principal trustee, Petersham, and Frank F. Stanley, associate trustee, Swampscott, Mass. Filed Apr. 16, 1897. Serial No. 632,465. (No model.)



Claim.—1. In a nailing-machine, a vertically-movable, loosely-supported table to sustain the work; a toothed gear located below said table and operatively connected therewith; a long-toothed pinion occupying a position substantially parallel to the center of rotation of said table; means to rotate said long-toothed pinion that it may rotate said table in unison with it and yet let said table rise and fall to adapt itself to any variation of thickness of the material lying upon it and between it and the feeding device employed to move the material over the surface of said table, substantially as described.

2. The spring-sustained work-support having an attached gear, a long pinion having its teeth in engagement with the teeth of the said work-support and provided with bevel-teeth at one end, and a feeding-wheel having bevel-teeth engaging the bevel-teeth of the said long pinion, combined with a shaft and means to rotate it, the said feed-wheel, and the said work-support, substantially as described.

3. The strip-carrying hub C^3, and its attached rack and the feed-wheel and its shaft, combined with a pawl and a pawl-carrier to actuate it, the said pawl-carrier being moved by the said rack, substantially as described.

4. In a nailing-machine, a spring-sustained work-support; a gear carried thereby and located below said support; a feeding device to act upon the material lying on said table; a long pinion parallel to the shaft carrying said work-support, and gearing between the shaft carrying said feed device and said long pinion, to rotate said long pinion and cause it to rotate said work-support whatever its position due to variations in the thickness of the material lying on said support, and between it and the said feeding device, substantially as described.

5. In a nailing-machine, a driver-bar and driver to drive a nail, a work-support on which the work to be nailed rests, combined with a welt-guide having a bottom plate on which the welt rests, and a pressing-finger resting on the top of the welt, and means to move the said finger away from said bottom plate to enable a welt to be laid on said bottom plate, substantially as described.

6 In a nailing-machine, a driver-bar and driver to drive a nail, a work-support on which the work to be nailed rests, combined with a welt guide having a bottom plate on which the welt rests, and a finger resting on the top of the welt, means to keep said finger pressed uniformly on said welt and means to swing said welt-guide toward and from the driver, substantially as described.

7. In a nailing-machine, a driver-bar and driver to drive a nail, a work-support on which the work to be nailed rests, combined with a welt-guide having a bottom plate on which the welt rests, and a pressing-finger having a pin or tooth to enter the upper side of the

welt, and means to move the said finger toward and from said bottom plate, substantially as described.

8. In a nailing-machine, a driver-bar and driver, a vertically-yielding work-support to sustain a sole and adapt itself to variations in the thickness of said sole; means to positively rotate said work-support in its varying positions; a rotatable feeding-wheel occupying a fixed position and acting on a welt lying on said sole; combined with means to rotate said feed-wheel positively at a faster surface speed than the surface speed of said work-support, whereby said feed-wheel is enabled to crimp the welt and lay it on the curved portions of the sole, preparatory to the action of the driver in driving a fastening into said welt to secure it to said sole, substantially as described.

9. In a nailing-machine, a driver-bar and driver; a vertically-yielding work-support; a welt-guide composed of a frame mounted on a vertical pivot and presenting a bottom plate, and a spring-pressed finger provided with teeth, to engage the upper side of said welt; and means to vibrate said frame about said pivot to aid in feeding said welt; combined with a feeding device acting on the welt being laid and nailed on the material sustained on said work-support, substantially as described.

10. In a nailing-machine, a driver-bar and driver; a vertically-yielding movable work-support to sustain the material; a welt-guide composed of a plate and a movable finger between which the welt is laid, an edge gage; a feeding device acting on the welt where it contacts with the material lying on the said work-support; and means to move said welt-guide in the arc of a circle toward and from the said edge gage; to force the edge of the welt against the edge gage preparatory to driving a nail in the welt, substantially as described.

611,406. HYDRAULIC MOTOR OR WATER-WHEEL. JARED R. DE REMER, Glenwood Springs, Colo., assignor of one-half to Louie Schwarz, same place. Filed July 20, 1897. Serial No. 645,215. (No model.)



Claim.—1. A wheel of the character herein described, having a series of buckets, each of said buckets consisting of a body attached at its inner end to said wheel, and having on the inner face of its outwardly-projecting portion a series of corrugations concentric with the periphery of the wheel, and also having concaved sides extending from the ends of said corrugations, as set forth.

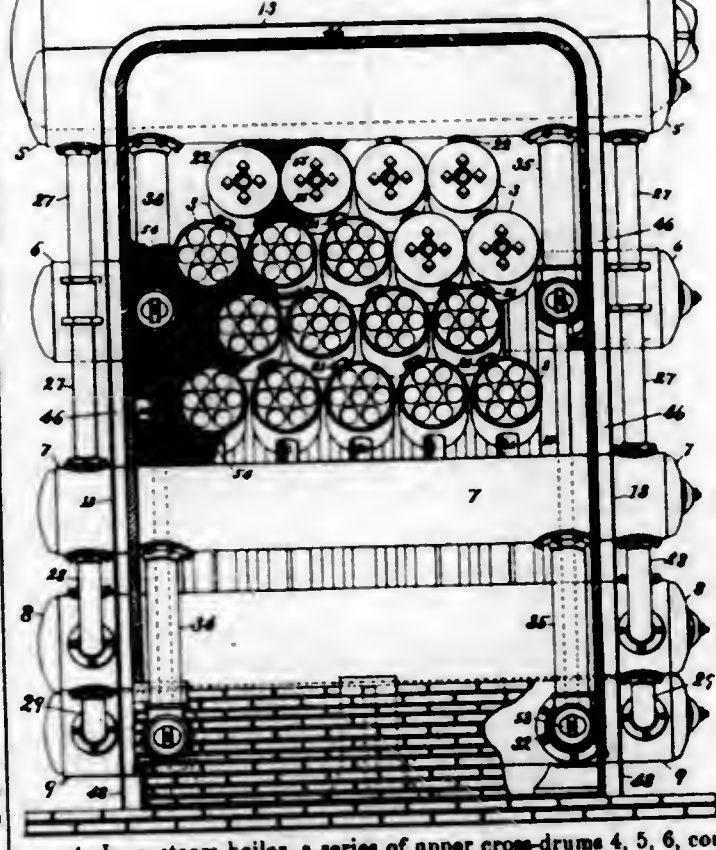
2. A wheel of the character herein described, having a series of buckets, each of said buckets consisting of a body attached at its inner end to said wheel, and having on the inner face of its outwardly-projecting portion a series of corrugations concentric with the periphery of the wheel, and also having concaved sides extending from the ends of said corrugations, and an outer end piece connecting said sides provided with a central concave or groove, as set forth.

611,407. STEAM-BOILER. PATRICK F. DUNDON, San Francisco, Cal. Filed Mar. 22, 1897. Serial No. 628,561. (No model.)

Claim.—1. In a steam-boiler, upper cross drums, 4 5 and 6 in combination with lower cross-drums 7, 8 and 9, located in positions successively descending from the front, one over the furnace-grates, one on the bridge-wall, and one at the lowest point, said drums being connected by pipes 28, 29, and also by vertical pipes with the said upper cross-drums, substantially as specified.

2. In a steam-boiler, upper cross-drums 4, 5 and 6, the middle one the higher, connected by pipes 23, 31, in combination with lower cross-drums 7, 8 and 9, located in positions successively descending from the front, one over the furnace-grates, one on the bridge-wall, and one at the lowest point, said drums being connected by pipes 28, 29 leading from the bottoms of drums 7 and 8 respectively to the sides of drums 8 and 9 respectively, and also connected by vertical pipes with the said upper cross-drums, substantially as specified.

3. In a steam-boiler, a series of upper cross-drums 4, 5 and 6, connected by pipes 23, 31, a descending series of lower cross-drums 7, 8, 9, connected by pipes 28, 29, vertical pipes connecting the drums of the upper with those of the lower series, in combination with a series of unit pipe-clusters 1 diagonally placed, each unit provided at each end with tube chambers or heads 3 inclosed at the outer ends by removable covers, the said unit clusters being in communication with the said upper and lower cross-drums, substantially as specified.



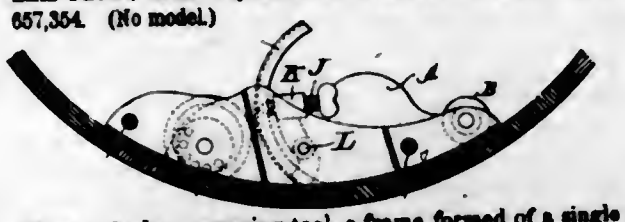
4. In a steam-boiler, a series of upper cross-drums 4, 5, 6, connected by pipes, a descending series of lower cross-drums 7, 8, 9, connected by pipes, the middle drum of the series located on the bridge-wall, vertical pipes connecting the upper with the lower series, horizontal pipes 32, 33, connected with drums 9 and 6 respectivsly, vertical pipes 34, 35, connecting said horizontal pipes with drums 5 and 7, and a series of vertical pipes 10, connecting said horizontal pipes 32, 33, substantially as specified.

5. In a steam-boiler, a series of upper cross-drums 4, 5, 6, connected by pipes, a descending series of lower cross-drums 7, 8, 9 connected by pipes, the middle drum of the series located on the bridge-wall, vertical pipes connecting the upper with the lower series, horizontal pipes 32, 33, connected with drums 9 and 6 respectively, vertical pipes 34, 35, connecting said horizontal pipes with drums 5 and 7, and a series of vertical pipes 10, connecting said horizontal pipes 32, 33, in combination with a series of unit clusters 1 diagonally placed, each unit provided at each end with tube chambers or heads 3 inclosed at the outer ends by removable covers, the said unit clusters being in communication with the said upper and lower cross-drums, substantially as specified.

6. In a steam-boiler of the water-tube type, multiple tubes arranged in groups terminated at the ends by tube chambers or heads 3 inclosing a clear area or space of the full diameter of the group, and closed at the outer ends by interiorly-screw-threaded and gasketed caps or covers 2, said chambers or heads being set in the refractory wall 54 whereby heat and moisture from the fire-chamber are cut off from the screw-threaded caps and access is afforded thereto, substantially as specified.

7. In a steam-boiler of the water-tube type, the cross-drum 8 set above the level of the grate, occupying the place of a bridge-wall, at the hottest portion of the furnace, in combination with cross-drums 7 and 9, at different levels, having horizontal connections therewith, and upper cross-drums with vertical connections communicating with the said lower cross-drums, substantially as specified.

611,408. CROZING OR GROOVING TOOL FOR BARRELS, &c. EMIL FRUEH, Cedar Rapids, Iowa. Filed Nov. 4, 1897. Serial No. 657,354. (No model.)



Claim.—1. In a grooving-tool, a frame formed of a single piece of metal curved longitudinally and slotted centrally and at each end, a leader-roll journaled in one end, a spindle extending across the slot

at the rear end, an eccentric bushing journaled thereon, a disk formed on the bushing, a screw threaded through one side of the frame into one of a number of holes in the side of said disk, a trailer-wheel journaled on said bushing, and a vertically-adjustable blade arranged in said central slot, as and for the purpose described.

2. In a grooving-tool, a frame formed of a single piece of metal curved longitudinally and slotted at each end, a leader-roll journaled in one end, a spindle extending across the slot at the rear end an eccentric bushing journaled thereon, a disk formed on the bushing a screw threaded through one side of the frame into one of a number of holes in the sides of said disk, and a trailer-wheel journaled on said bushing, as and for the purpose described.

611,409. MULTIPLE-COATED CARBON FILM AND PROCESS OF MAKING SAME. CORWIN GITCHELL, San Francisco, Cal. Filed Nov. 19, 1897. Serial No. 659,175. (No specimens.)

Claim.—1. The process herein described of producing photo-sensitive films for printing in different colors, tints, or tones, consisting in first obtaining particles of each pigment of a uniform size; then mixing such particles with a composition such as carbon tissue composition to produce a printing-film; and allowing the particles of the pigments to arrange themselves by gravitation, in different stratums; then coating paper with said composition containing the coloring-matter in suspension by flowing the mixture over the paper and allowing the particles to arrange themselves by gravity in different strata; and finally sensitizing the film, as set forth.

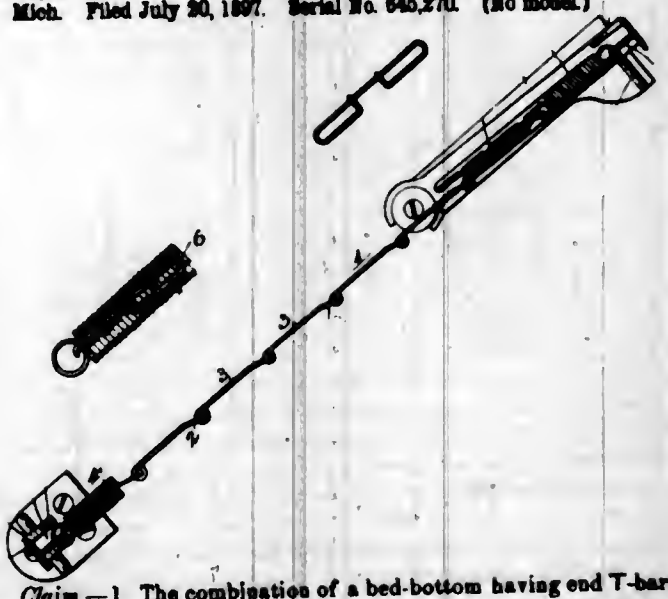
2. A photo-sensitive film or tissue for printing in different colors, tints, or tones composed of a single homogeneous film having the particles composing the color, tints, or tones, suspended and arranged in the body of the film in different stratums, as described.

611,410. TOOTH-POWDER RECEPTACLE. THOMAS O. HOLLAND, Philadelphia, Pa. Filed May 5, 1897. Serial No. 635,243. (No model.)



Claim.—A tooth-powder receptacle comprising a body portion, a foraminous partition secured near the top thereof, a cushion or gasket resting upon the partition and having its upper surface flush with the edges of the mouth of the receptacle, the sides and ends of the gasket being rounded from the said mouth downward to the partition, and operating, in use, to compress the hairs of the brush to prevent waste of the powder, a lid hinged to the receptacle, and having a packing formed to fit upon the gasket, when the lid is closed, to prevent escape of the contents of the receptacle, a hinged bottom also having a gasket to effect a dustproof closure at that point, and means for holding the top and bottom closed, the construction being such that a brush may be fitted into the opening and rest against the said partition, whereby both the partition and the box are kept free from wet powder, substantially as described.

611,411. BED-BOTTOM CASTING. LEMUEL R. IRISH, Greenville, Mich. Filed July 20, 1897. Serial No. 645,270. (No model.)



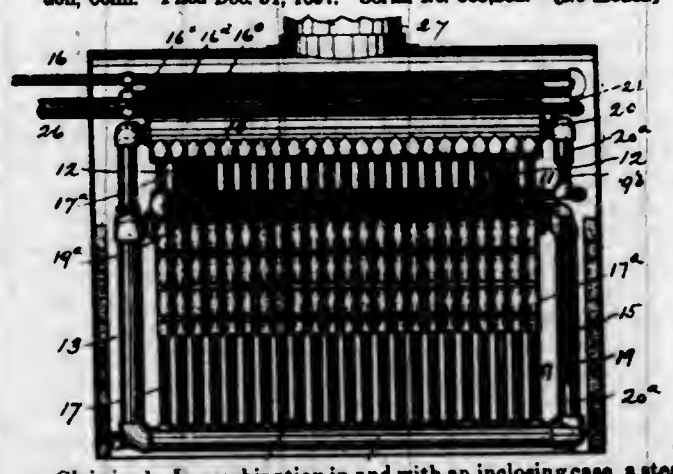
Claim.—1. The combination of a bed-bottom having end T-bars and pivoted castings at one end having slots at the inside of the outer ends and fixed castings at the other end having like terminals, the webs of the T-bars fitting said slots, all arranged as set forth.

2. The combination of a bed-bottom having T-bars at each end thereof, castings at one end including pivoted bars slotted in their outer ends and a fixed casting at the other end having like slots, the webs of the T-bars fitting said slots and being removable therefrom, and stops below the dead-center of the pivoted bars, all arranged as set forth, whereby the bed-bottom is sprung taut into position and is readily removed when the pivoted bars are lifted up.

3. The combination of a bed-bottom having end T-bars, castings at one end having slots into which the web of the T-bars fits, and recesses on the exterior of the castings in which the flanges of the T-bar rest, and castings at the other end having slots in which the web of the other T-bar fits, all arranged as set forth.

4. The combination of a bed-bottom terminating in T-bars, castings at one end having slots in their outer ends receiving the web of the T-bars, castings at the other end having a limiting-stop at their inner ends and a stop or rest at their outer ends below the dead-center line, said latter castings including pivoted bars having slots in their outer ends into which the web of the T-bar fits, all arranged as set forth.

611,412. STEAM-GENERATOR. CHARLES H. KENNEY, New London, Conn. Filed Dec. 31, 1897. Serial No. 665,232. (No model.)



Claim.—1. In combination in and with an inclosing case, a steam-drum, an independent water-drum located below said steam-drum, connections between said drums, downflow-pipes leading from the water-drum to and around the lower sides and rear of the generator, and pipes connecting said downflow-pipes with the said steam-drum, substantially as described.

2. In combination in and with inclosing case, superimposed independent steam and water drums and connections between said drums and a feed-water pipe arranged in superimposed coils or loops at the sides of said drums, substantially as set forth; said feed-water pipe being arranged to discharge into said water drum.

3. In combination with a pipe-boiler of the class referred to, an inclosing shell having a removable front composed of outwardly-flanged sections as set forth, and bolts connecting said flanges upon the outer face of said front, substantially as specified.

4. In combination in a boiler of the class referred to, superimposed independent steam and water drums and connections for the same as set forth, downflow-pipes extending downward from the water-drum and along the sides and rear of the generator, and pipes 17 connecting said downflow-pipes with the steam-drum, the pipes 17 being secured to the said downflow-pipes by right and left hand nipples, substantially as specified.

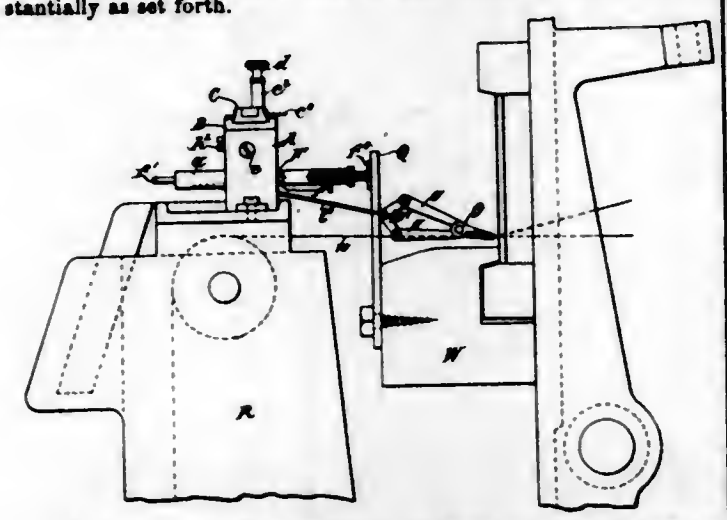
5. In a steam-generator of the class referred to, in combination with a steam-drum, a separator-plate located near the longitudinal center of said drum, inlet-pipes 17a discharging into said drum below said plate, and drip-pipes 12, all substantially as and for the purpose specified.

611,418. APPARATUS FOR INDICATING NUMBER OF WEFT-SHOTS IN WOVEN FABRICS. GEORG KOCHERHANS, Rötlein, Germany. Filed July 19, 1898. Serial No. 686,295. (No model.)

Claim.—1. The combination with a loom, of an apparatus for the purpose described connected therewith, said apparatus comprising a carriage to hold an indicator-card, means between the lathe of the loom and said carriage whereby the latter is propelled intermittently by the former, a marker for marking the card at intervals corresponding to the length of the fabric being woven on the loom, and means for operating said marker, controlled by the fabric being woven, substantially as set forth.

2. An apparatus for the purpose set forth, comprising a frame to support the mechanism, a carriage C mounted movably on said frame and adapted to receive and carry an indicator-card, means for securing said card in place, a rotatable screw E in the frame geared to

said carriage for moving the latter, a ratchet-wheel *d* on said screw E, a spring-retracted pawl-rod F, mounted in sliding bearings in the frame and carrying a pawl *f*, adapted to engage the teeth of said ratchet-wheel, the said pawl, a reciprocating marker for marking the indicator-card, and means for operating said marker adapted to be controlled by the fabric which is being woven on the loom, substantially as set forth.

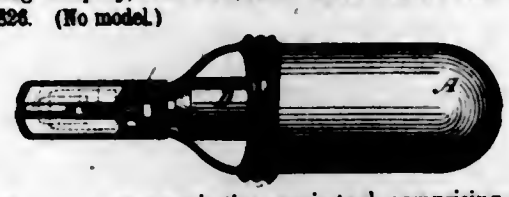


3. An apparatus for the purpose set forth, comprising a frame to support the mechanism, a carriage mounted movably on said frame and adapted to receive and carry an indicator-card, means for moving said carriage a predetermined distance at each weft-shot of the loom, and mechanism, controlled by the fabric being woven on the loom, for marking said indicator-card at predetermined intervals, said mechanism consisting of a marker adapted to be driven into contact with the indicator-card, a lever *i i'* for driving said marker, a spring J, adapted when permitted to act, to actuate said lever *i i'*, a lever K which holds the spring J inactive, a self-winding tape L under and supporting said lever K, said tape having shoulders *l'* and recesses *l²*, at predetermined intervals, whereby the marker is operated, and a nipper attached to the end of said tape for securing the latter to the fabric being woven in the loom, substantially as set forth.

4 In an apparatus for the purpose specified, the combination with the frame which supports the mechanism, the screw E, mounted rotatively therein and a pawl-and-ratchet mechanism for rotating said screw by intermittent impulses, of the sliding carriage C, mounted in guides on the frame, the hinged flap c, on said carriage and adapted to hold in place an indicator-card thereon, the upright socket c^2, on said carriage, the rod D mounted in said upright socket and provided with a foot *d'* having teeth which gear with the threads of the screw E, the spring d^2, which presses the rod D down elastically, and the nut *d*, on the upper end of the rod D, for raising the same, substantially as set forth.

5. In an apparatus for the purpose specified, the combination with the frame which supports the mechanism, the slotted, sliding carriage C, mounted on the frame, and mechanism for moving the carriage a predetermined distance at each weft-shot, of the pin H, having a pendent shank *h'*, and mounted in a bearing in the frame beneath the carriage C, the pin-operating lever *i i'*, having one arm *i* situated under the pin, the spring J, a hook on which takes over the other arm *i'* of the pin-operating lever, the transverse lever K, on which the spring J bears, the spring-barrel M, for winding up the metal tape L, the said tape, having in its upper edge ratchet-like teeth as described, means for limiting the extent of movement of said tape, and means for securing the said tape to the fabric which is being woven in the loom, substantially as set forth.

611,414. TOOL FOR REPAIRING PNEUMATIC TIRES. ELLIS R. MEEKER, Elizabeth, N. J., assignor to the New York Belting and Packing Company, New York, N. Y. Filed Feb. 24, 1897. Serial No. 624,826. (No model.)



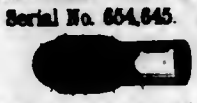
Claim.—1. A pneumatic-tire repair-tool, comprising a two-part separable hollow handle adapted for use as a receptacle, a nozzle attached to and extending from one end of the handle and having an exterior screw-thread around its base and adapted at its larger end to receive the open end of a cement-tube, and a recessed patch-inserting pin having a corresponding screw-thread fitting over the nozzle, screwing upon the thread thereon and serving as a cover for the nozzle, substantially as and for the purpose set forth.

2. A pneumatic-tire repair-tool, comprising a two-part separable hollow handle, serving as a receptacle, a nozzle attached to and extending from one end of the handle and adapted at its larger end to receive the open end of a cement-tube and having around its base two screw-threads of different diameter, one adapted to receive a correspondingly-threaded annular cutter, and a recessed patch-inserting pin screwing upon the other thread, fitting over the nozzle and serving as a cover therefor, substantially as and for the purpose set forth.

3. A pneumatic-tire repair-tool, comprising a two-part separable hollow handle serving as a receptacle, a nozzle attached to and extending from one end of the handle and adapted at its larger end to receive the open end of a cement-tube and having around its base two screw-threads of different diameter, one adapted to receive a correspondingly-threaded annular cutter, a recessed patch-inserting pin screwing upon the other thread, fitting over the nozzle and serving as a cover therefor, and a detachable cylindrical cap covering the opening and screwing upon the first-named screw-thread around the base of the nozzle, whereby a chamber is formed for holding the annular cutter, which may be placed over the patch-inserting pin and within the cylindrical cap, substantially as and for the purpose set forth.

4. A pneumatic-tire repair-tool comprising a two-part separable handle formed of sheet metal and adapted to serve as a receptacle, a nozzle formed in one piece with one of the sections of the handle, and the interior opening of the handle communicating with the nozzle being screw-threaded to receive the threaded neck of a cement-tube, one or more screw-threads on the exterior of the nozzle end of the handle adapted to receive correspondingly-threaded cylindrical cutters, another screw-thread adapted to receive the correspondingly-threaded cap of a recessed patch-inserting pin that covers the nozzle, and a cylindrical cap adapted to be secured in place to cover the patch-inserting pin.

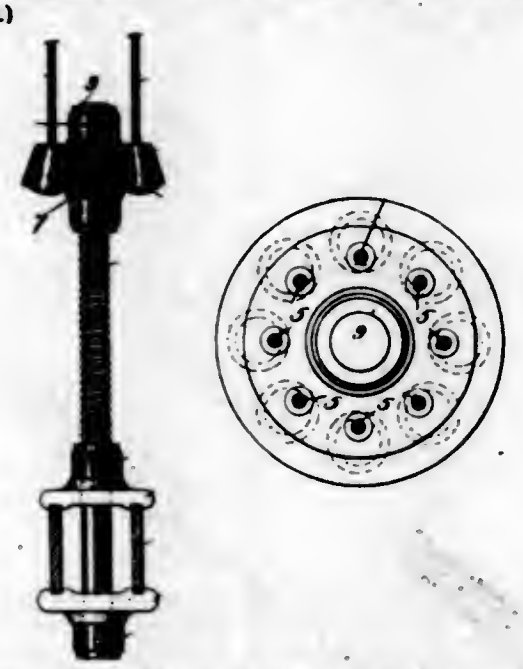
611,415. WHEEL-TIRE. WILLIAM W. OGDEN, Chatham, N. J. Filed Oct. 9, 1897. Serial No. 654,645. (No model.)



Claim.—In the manufacture of vehicle-wheels, the combination of a pair of continuous circumferential, single or multistranded wires passing through a solid rubber tire, the channel-formed rim having a convex bottom, the rubber tire having a concave surface fitting the said convex rim-bottom, crosswise right and left directed eye-bolts with nuts attached alternating with each other securing said tire and rim to the felly, substantially as illustrated and described, for the purposes set forth

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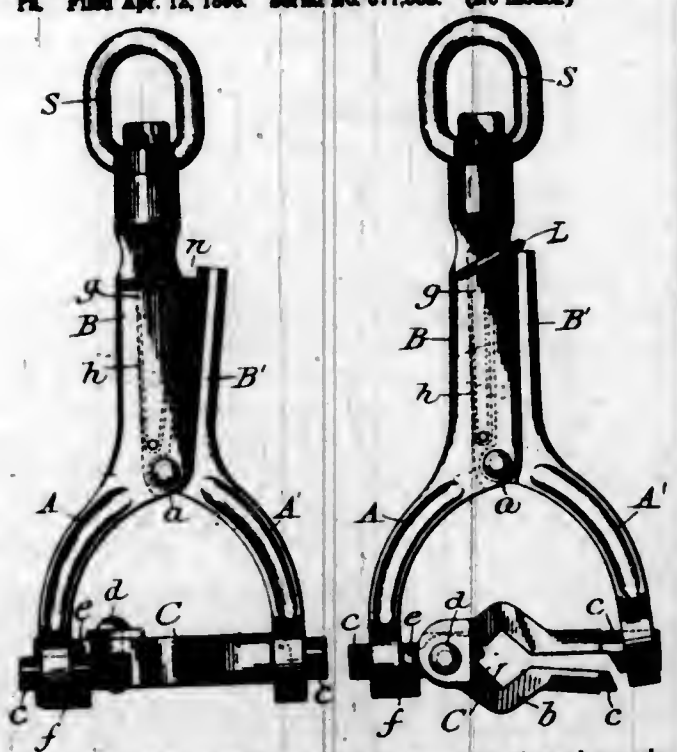
611,416. CABLE ATTACHMENT FOR ELEVATOR-CARS. GEORGE H. REYNOLDS, Chicago, Ill., assignor to The Crane Elevator Company, same place. Filed Apr. 30, 1897. Serial No. 634,548. (No model.)



Claim.—1. In an elevator the combination of a car; a plurality of hoisting-cables; and an anchor-block adjustably secured to said car and having the sockets of said cables arranged therein concentrically about the center, substantially as described.

2. In an elevator the combination of a car; a plurality of hoisting-cables; and an anchor-block adjustably secured to said car and having the sockets of said cables arranged therein concentrically about the center and equidistant from each other, substantially as described.

611,417. SUCKER-ROD LIFTER. CHARLES F. RICHEY, Franklin, Pa. Filed Apr. 12, 1898. Serial No. 677,333. (No model.)

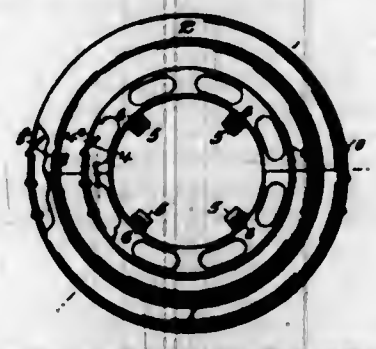


Claim.—1. The combination of the arms A, A', pivoted together at *a*, and having the upwardly-extending handles B, B', respectively, one of said handles having a recess adapted to receive the other, a spring *h* housed within the recess and operating to close the arms, and a gravity-stop L adapted to prevent the accidental opening of the arms.

2. The combination of the arms A, A', pivoted together at *a*, the clamp C journaled at its ends in the arms and having a fixed and a pivoted jaw, adapted to be opened and closed by the opening and closing of the arms, the pivoted jaw having a heel projection, and one of the arms A, A' having a projection or shoulder which engages the heel projection to open the jaw when the arms turn with respect to the clamp.

3. The combination of the arms A, A' pivoted together at *a*, and having the upwardly-extending handles B, B', respectively, and the clamp C journaled at opposite ends in openings in the arms, the movable jaw of the clamp having a heel extension adapted to be engaged by a projection or shoulder on the corresponding arm to open the jaw when the arms turn with respect to the clamp, and the free end of said jaw adapted to enter the opening in the opposite arm when the handles are separated, whereby the jaws of the clamp are locked together.

611,418. WALL, FLOOR, OR CEILING PLATE. WILLIAM A. RUSSELL, New York, N. Y. Filed May 13, 1897. Serial No. 636,322. (No model.)



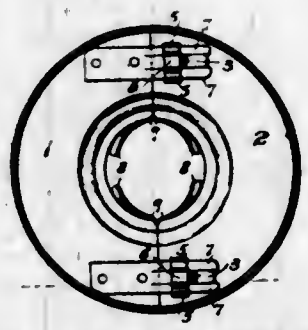
Claim.—1. A plate of the class described contracted at one end to embrace a pipe or the like and enlarged at its opposite end to engage the surface of a wall or the like, said plate comprising two separable sections one pair of meeting ends whereof is provided with self-locking devices comprising two catches located at different points longitudinally of the plate on one section and projecting beyond the edge thereof and two similarly-located members on the other section adapted to interlock with said catches as the meeting ends are brought together, the other pair of meeting ends being provided with suitable connecting means and one of said sections being laterally resilient whereby the sections may be locked or unlocked, substantially as described.

2. A plate of the class described contracted at one end to embrace a pipe or the like and enlarged at its opposite end to engage the surface of a wall or the like, said plate comprising two separable sections one pair of meeting ends whereof is provided with self-locking devices comprising two laterally-yielding spring-catches located at different points longitudinally of the plate on one section and projecting beyond the edge thereof into position to be embraced by the other section and two similarly-located members on the latter section adapted to interlock with the catches as the meeting ends are brought together, the other pair of meeting ends being provided with suitable connecting means, and the catch-bearing section being laterally resilient, whereby the sections may be locked or unlocked, substantially as described.

3. A plate of the class described contracted at one end to embrace a pipe or the like and enlarged at its opposite end to engage the surface of a wall or the like, said plate comprising two separable sections, one of said sections being provided at each end with a pair of catches projecting beyond the edge thereof into position to be embraced by the other section, and the latter section provided at each end with a pair of similarly-located members adapted to interlock with the catches as the two sections are brought together, said catch-bearing section being laterally resilient, whereby the sections may be locked or unlocked, substantially as described.

4. A plate of the class described having a broadened base and of decreasing width vertically and comprising two separable sections, one of said sections being provided at each end with a pair of spring-catches having outward locking projections and the other section provided at each end with a pair of corresponding openings adapted to interlock with said projections as the sections are brought together, said catch-bearing section being laterally resilient whereby the sections may be locked or unlocked, substantially as described.

611,419. WALL, FLOOR, OR CEILING PLATE. WILLIAM A. RUSSELL, New York, N. Y. Filed Nov. 1, 1897. Serial No. 657,001. (No model.)



Claim.—1. A plate of the class described comprising two separable sections and provided with self-locking devices for meeting ends thereof comprising a loop projecting from the face of one section, and means on the other section and projecting beyond the edge thereof into position to enter the loop and engage the face and ends thereof and the face of the loop-carrying section as the two sections are brought together, said locking means including a spring-catch provided with a locking projection adapted to take in behind the loop, substantially as described.

2. A plate of the class described comprising two separable sections and provided with self-locking devices for meeting ends thereof comprising a spring-catch provided with a locking projection on one section and projecting beyond the edge thereof into position to be embraced by the other section, a loop on the latter section and integral therewith adapted to interlock with said locking projection as the two sections are brought together, and a strip carried by said first-named section projecting beyond the edge thereof on one side of the catch into position to interlock with said loop and the inner face of the opposite section, substantially as described.

3. A plate of the class described comprising two separable sections and provided with self-locking devices for meeting ends thereof comprising a spring-catch provided with a locking projection on one section and projecting beyond the edge thereof into position to be embraced by the other section, a loop on the latter section and integral therewith adapted to interlock with said locking projection as the two sections are brought together, and strips carried by said first-named section projecting beyond the edge thereof on opposite sides of the catch into position to interlock with said loop and the inner face of the opposite section, substantially as described.

4. A plate of the class described comprising two separable sections and provided with locking devices for meeting ends thereof and with means for connecting the plate to a pipe or the like consisting of a plurality of spring-arms arranged in pairs and borne by the plate, the spring-arms of each pair extending endwise of the plate and inwardly toward each other in a spiral direction into position to engage the pipe or the like, substantially as described.

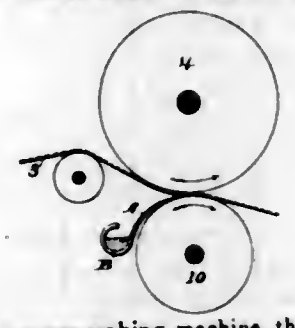
5. A plate of the class described comprising two separable sections of sheet metal provided with locking devices for meeting ends thereof, each of said sections being provided with means for connecting the plate to a pipe or the like consisting of a pair of spring-arms integral with the section and extending endwise thereof and inwardly

toward each other in a spiral direction into position to engage the pipe or the like, substantially as described.

6. A plate of the class described comprising a section 1, provided with spring-catches 3 having locking projections 4 and stripe 7 on the sides of the catches and a section 2 provided with loops 5 adapted to embrace and interlock with said catches 3 and stripe 7 as the sections are brought together, substantially as described.

7. A plate of the class described comprising two separable sections of sheet metal provided with locking devices for meeting ends thereof, each of said sections being provided with means for connecting the plate to a pipe or the like consisting of a pair of spring-arms 8 integral with the section and extending endwise thereof toward each other in a spiral direction and into position to embrace the pipe, each of said spring-arms being provided with a shoulder 9 and with a bearing portion beyond said shoulder, substantially as described.

611,420. PAPER-MAKING MACHINE. THOMAS H. SAVERY, Wilmington, Del. Filed Nov. 14, 1896. Serial No. 612,098. (No model.)



Claim.—1. In a paper-making machine, the combination with cylindrical surfaces between which wet stock is carried and from which stock liquid is discharged by the action of the said surfaces into the recess between them, of means extending into the recess between the rolls sufficiently far to tap the space in which the liquid may accumulate, whereby the liquid is drawn off from the said space, substantially as described.

2. In a paper-making machine, the combination with a traveling support, of cylindrical surfaces between which wet stock is carried by the said support and from which stock liquid is discharged by the action of the said surfaces into the recess between them, and means extending into the recess between the rolls sufficiently to tap the space in which the liquid may accumulate, whereby the liquid is drawn off from the said space, substantially as described.

3. The combination with cylindrical surfaces between which wet stock is passed to express therefrom the liquid which it contains, of a conductor extending into the recess on the entrance side of the surfaces sufficiently far to tap the space in which the liquid may accumulate whereby the liquid is drawn off from the said space, substantially as described.

4. The combination with a traveling support, of unbroken cylindrical surfaces between which wet stock is carried by the traveling support in order to express the liquid therefrom, and a conductor extending into the recess sufficiently far to tap the space in which the liquid may accumulate and operating to convey or remove the liquid therefrom, substantially as described.

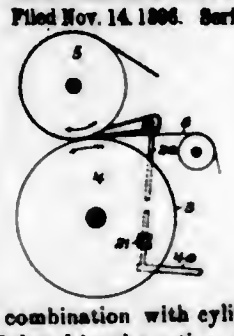
5. The combination with a traveling support, of cylindrical surfaces between which wet stock is carried by the support in order to express the liquid therefrom, and a conductor consisting of a plate extending into the recess at the entrance side of the said surfaces sufficiently far to tap the space in which the liquid may accumulate and operating to convey the liquid therefrom, substantially as described.

6. In a paper-making machine the combination with a traveling support, of cylindrical surfaces between which the stock or stuff is carried by the traveling support and from which water is discharged into the recess at the entrance side of said surfaces, and a conductor consisting of a plate curved to span a part of the roll and enter its front edge into said recess to discharge the water therefrom, substantially as described.

7. In a paper-making machine, the combination with cylindrical surfaces between which the stock or stuff is passed to express liquid it contains, and from which stock or stuff such liquid is discharged into a recess at the entrance side of said surfaces, of a conductor consisting of plates forming a box-like structure open at its forward end the front plate whereof is entered into said recess, substantially as described.

8. In a paper-making machine, the combination with a traveling support, of cylindrical surfaces between which the stock or stuff is carried by the traveling support and from which water is discharged into a recess at the entrance side of said surfaces, and a conductor consisting of plates forming a box-like structure open at its forward end, the front plate whereof is entered into said recess, substantially as described.

611,421. PAPER-MAKING MACHINE. THOMAS H. SAVERY, Wilmington, Del. Filed Nov. 14, 1896. Serial No. 612,099. (No model.)



Claim.—1. The combination with cylindrical surfaces between which wet stock is fed and by the action of which the liquid is expressed from the stock into the recess between the surfaces, of a pneumatic appliance exterior to said surfaces and operating to remove the liquid directly from the said recess, substantially as described.

2. The combination with a traveling support, of cylindrical surfaces between which wet stock is fed by the traveling support whereby the liquid is expressed from the stock into the recess between the surfaces, and a pneumatic appliance exterior to said surfaces and operating to remove the liquid directly from the said recess, substantially as described.

3. The combination with cylindrical surfaces between which wet stock is fed whereby the liquid is expressed from the stock into the recess between the surfaces at the entrance side thereof, of a pneumatic suction appliance exterior to said surfaces and acting to remove the liquid directly from the said recess, substantially as described.

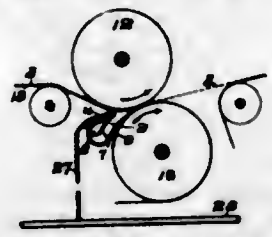
4. In a paper-making machine, the combination with a traveling support, of cylindrical surfaces between which wet stock is fed by the support whereby the liquid is expressed from the stock into the recess between the surfaces at the entrance side thereof, and a pneumatic suction appliance exterior to said surfaces and operating to remove the liquid directly from the said recess, substantially as described.

5. In a paper-making machine, the combination with cylindrical surfaces between which wet stock is fed and by the action of which the liquid is expressed from the stock into the recess between the surfaces at the entrance side thereof, of a pneumatic appliance consisting of a chamber provided with a mouth or orifice, the said mouth or orifice being located exterior to said surfaces and acting to remove the liquid directly from said recess, substantially as described.

6. In a paper-making machine, the combination with a traveling support, of unbroken cylindrical surfaces between which wet stock is fed by the support whereby the liquid is expressed from said stock into the recess between the surfaces at the entrance side thereof, and a pneumatic appliance consisting of a chamber provided with a mouth or orifice, said mouth or orifice being located exterior to the surfaces and operating to remove the liquid directly from said recess, substantially as described.

7. In a paper-making machine the combination with a traveling support, of cylindrical surfaces between which wet stock is fed by the support whereby the liquid is expressed from the stock into the recess between the surfaces at the entrance side thereof, and a pneumatic appliance consisting of a chamber divided by partitions into subchambers each subchamber being provided with a mouth or orifice which is exterior to said surfaces and which operates to remove the liquid directly from said recess, and connections whereby a different degree of air force is exerted in some chambers to that which is exerted in other chambers, substantially as described.

611,422. PAPER-MAKING MACHINE. THOMAS H. SAVERY, Wilmington, Del. Filed Nov. 14, 1896. Serial No. 612,100. (No model.)



Claim.—1. In a paper-making machine the combination with cylindrical surfaces between which the forming paper, its stock or stuff is carried and from which water is discharged into a recess between these surfaces at the entrance side thereof, of means, exterior to said surfaces, cooperating with said recess to direct a blast of air therein and expel said water therefrom, substantially as described.

2. In a paper-making machine the combination with a traveling support of cylindrical surfaces between which the stock or stuff is accompanied or carried by the traveling support and from which water is discharged into a recess between these surfaces at the entrance side thereof, and means, exterior to said surfaces, cooperating

with said recess to direct a blast of air therein and expel said water therefrom, substantially as described.

3. In a paper-making machine, the combination with cylindrical surfaces between which wet stock is fed in web-like form, of means for directing a blast of air into the recess between the surfaces on the entrance side thereof, said blast acting in the general direction in which the stock is moving and operating to expel the liquid which accumulates in said recess by reason of the action of the surfaces on the wet stock, substantially as described.

4. In a paper-making machine, the combination with a traveling support, of cylindrical surfaces between which wet stock is fed in web-like form, and means for directing a blast of air into the recess between the surfaces on the entrance side thereof, said blast acting in the general direction in which the stock is moving and operating to expel the liquid which accumulates in said recess by reason of the action of the surfaces on the wet stock, substantially as described.

5. In a paper-making machine the combination with a traveling support of cylindrical surfaces between which the stock or stuff is accompanied or carried by the traveling support and from which water is discharged into a recess between these surfaces at the entrance side thereof, and means, exterior to said surfaces, for directing a blast of air into impingement upon one wall of said recess and thus operating to drive or carry said water from the recess, substantially as described.

6. In a paper-making machine the combination with a traveling support of cylindrical surfaces between which the stock or stuff is accompanied or carried by the traveling support and from which water is discharged into a recess at the entrance side of said surfaces, and a hollow or box-like structure provided with an air nozzle or passage and a guiding-conduit, between which it has a mouth or orifice that connects with or taps said recess, said conduit connecting with a discharge-opening, substantially as described.

7. In a paper-making machine, the combination with cylindrical surfaces between which wet stock is fed in web-like form, of a blast device operating to direct a blast of air into the recess between the surfaces in the general direction of the travel of the stock, said blast device including means for guiding and delivering air into the recess between the surfaces, and means for guiding the liquid expelled by the air out of said recess, substantially as described.

8. The combination with cylindrical surfaces between which wet stock is fed in web-like form, of a blast device operating to direct the blast of air into the recess between the surfaces in the general direction of the travel of the stock, said blast device including a conduit or conduits for directing the air into the recess between the surfaces and a wall acting to guide the liquid expelled by the blast out of said recess, substantially as described.

9. In a paper making machine the combination with a support of cylindrical surfaces between which the stock or stuff is accompanied or carried by the support and from which water is discharged into a recess at the entrance side of said surfaces, and a hollow or box-like structure provided with an air nozzle or passage and a guiding-conduit, between which it has a mouth or orifice that connects with or taps said recess, said conduit connecting with a discharge-opening and being provided with an abutment to prevent the return of said water, substantially as described.

10. In a paper-making machine the combination with cylindrical surfaces between which the stock or stuff is carried and from which water is discharged into a recess at the entrance side of said surfaces, of an air-blast nozzle connected with its source of supply by a universal joint for directing a blast of air into said recess and thus operating to expel said water from the recess, substantially as described.

11. In a paper-making machine the combination with a support of cylindrical surfaces between which the stock or stuff is accompanied or carried by the support and from which water is discharged into a recess at the entrance side of said surfaces, and an air-blast nozzle connected with its source of supply by a universal joint for directing a blast of air into said recess and thus operating to drive or carry said water from the recess, substantially as described.

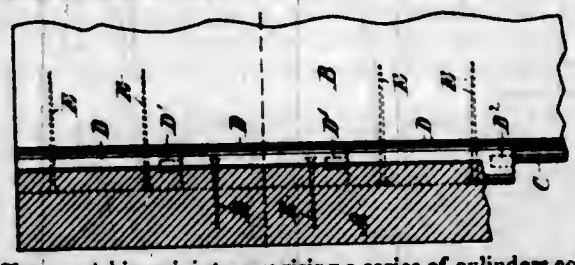
12. In a paper-making machine the combination with a traveling support of cylindrical surfaces between which the stock or stuff is accompanied or carried by the traveling support and from which water is discharged into a recess at the entrance side of said surfaces, and a series of air-blast nozzles, the outer ones of which are provided with universal joints for directing a blast of air into said recess and thus operating to drive or carry said water from the recess, substantially as described.

13. In a paper-making machine the combination with a support of cylindrical surfaces between which the stock or stuff is accompanied or carried by the support and from which water is discharged into a recess at the entrance side of said surfaces, and a series of air-blast nozzles capable of vertical adjustment in sections, the outer nozzles being provided with universal joints for directing a blast of air into said recess and thus operating to drive or carry said water from the recess, substantially as described.

14. In a paper-making machine the combination with a support of cylindrical surfaces between which the stock or stuff is accompanied or carried by the support and from which water is discharged into a recess at the entrance side of said surfaces, and a blast-emitting appliance divided into two or more independent sections whereby the water is discharged from said recess by an air-current differing in force at various parts of said recess, substantially as described.

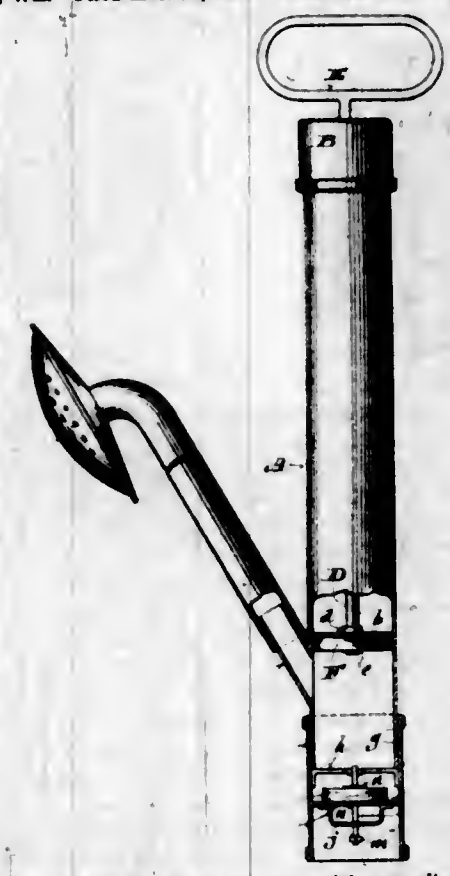
15. In a paper-making machine the combination with press-rolls between which the web of wet unfinished paper is carried, and with the recess at the entrance side of said rolls, of means cooperating with said recess to direct a blast of heated air therein and remove dampness from said web, substantially as described.

611,428. BOX-HINGE. THOMAS S. USHER, Brantford, Canada. Filed Oct. 22, 1897. Serial No. 656,001. (No model.)



Claim.—A hinge-joint comprising a series of cylinders connected pivotally at the ends and fastened alternately to the parts to be hinged, as set forth.

611,424. CONVERTIBLE PUMP. FRANKLIN J. WENKER, Watertown, Wis. Filed Mar. 14, 1898. Serial No. 673,712. (No model.)

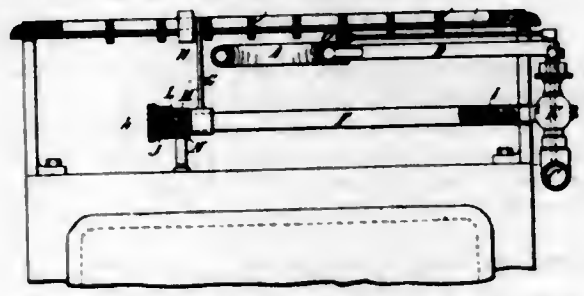


Claim.—A convertible pump, comprising a cylinder, a piston movable therein, and a reversible valve-casing adapted for engagement with the lower end of said cylinder, and containing a vertically-guided check-valve, together with suitable inlets and outlets, whereby said pump is adapted for use as an air-pump or a liquid force-pump, according to the position of the said reversible valve-casing.

611,425. MEANS FOR AUTOMATIC CONTROL OF GAS-SUPPLY IN GAS COOKING-STOVES. JOHN WYNN, Cardiff, England. Filed Feb. 2, 1897. Serial No. 621,675. (No model.) Patented in England Sept. 23, 1896, No. 21,050; in France Jan. 9, 1897, No. 262,924; in Belgium Jan. 11, 1897, No. 125,674; in Canada Feb. 24, 1897, No. 55,093; in South Australia Mar. 2, 1897, No. 3,575; in Victoria Mar. 3, 1897, No. 13,987; in New South Wales Mar. 5, 1897, No. 7,306; in Queensland Mar. 6, 1897, No. 3,777; in Tasmania Mar. 8, 1897, No. 1,842; in West Australia Nov. 30, 1897, No. 1,883, and in New Zealand Dec. 3, 1897, No. 10,180.

Claim.—1. In a gas cooking-stove, the combination of a supply cock or tap, a tube connected to the plug of said tap, a lever fastened to the tube and having its free end projecting through the bars of the stove, and a spring within the tube, one end of which is con-

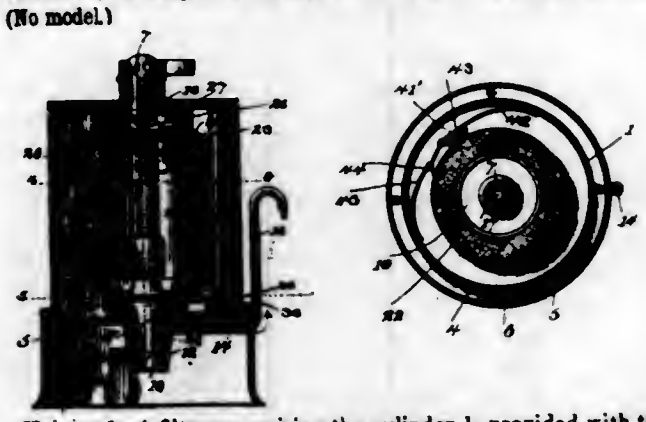
nected to the supply cock or tap and the other end to a fixed element, substantially as described and for the purpose stated.



2. In a gas cooking-stove, the combination of a supply cock or tap, a tube connected to the plug of said tap, a lever fastened to the tube and having its free end projecting through the bars of the stove, a spring within the tube connected at one end to the supply cock or tap and at its other end with a fixed element, and means for regulating the tension in the spring, substantially as described and for the purpose stated.

3. In a gas cooking stove the combination of a supply cock or tap, a tube connected to the plug of said tap, a lever fastened to the tube and having its free end projecting through the bars of the stove, a spring within the tube and connected to the plug of the tap, a cap loosely mounted on the tube and connected to the spring, and a pin for engaging such cap with some fixed part, to prevent rotation of said cap by the spring, substantially as and for the purposes specified.

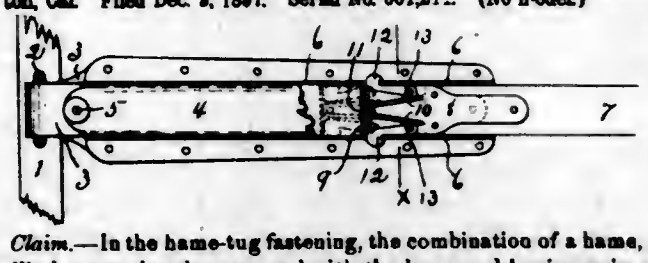
611,426. WATER-FILTER. DWIGHT J. BLISS and EDWARD J. RICHMOND, Carthage, Mo. Filed Nov. 12, 1897. Serial No. 658,309. (No model.)



Claim.—1. A filter comprising the cylinder 1, provided with the valve-casing 12 having the water inlet and outlet in combination with the central tubular shaft 7, provided with the radial orifices 18, and the plug-cock 10 having corresponding inlet and outlet passages, the concentric porous cylinder 22 and the air-chamber 30, and means, substantially set forth, for simultaneously operating said plug-cock and porous cylinder, as and for the purpose set forth.

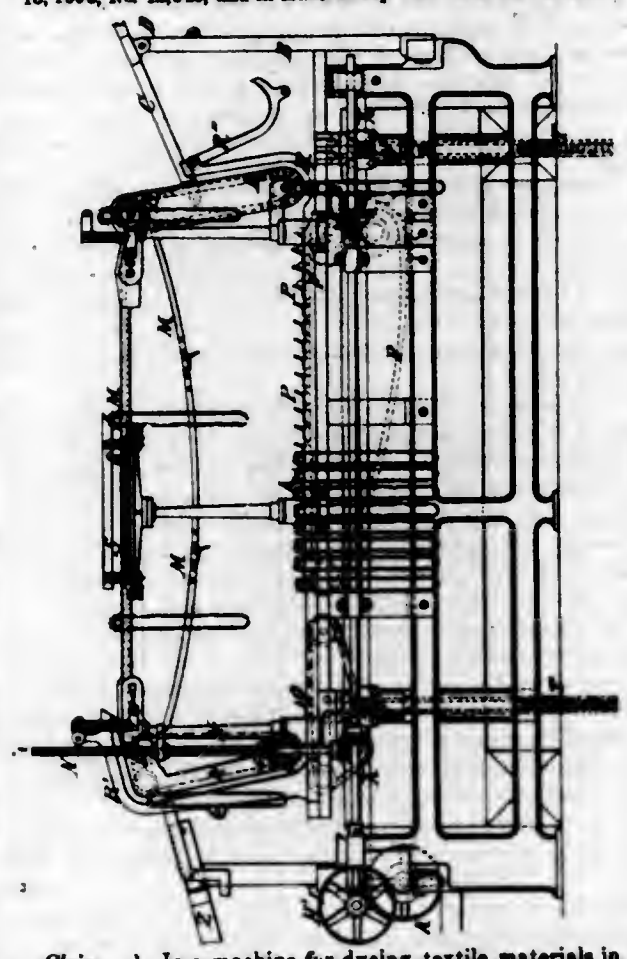
2. A filter comprising the cylinder 1, provided with the valve-casing 12 formed with the inlet 13 and the outlet 14, the retaining-spring 34, and the notched plate 31, in combination with the spring-actuated scraper 44 and abrading bar 43; the vertical tubular shaft 7 provided with the orifices 18, the plug-cock 10 fixed to the lower end of said shaft, the flanged disk 19 and the hand-lever 8, pivotally secured to said shaft and adapted to engage the notched plate, the porous cylinder 22 and the connected air-chamber 30 removably secured to said shaft, concentric with the cylinder 1, substantially as described.

611,427. HAME-TUG FASTENER. SYLVESTER R. DAVIS, Stockton, Cal. Filed Dec. 9, 1897. Serial No. 661,211. (No model.)



Claim.—In the hame-tug fastening, the combination of a hame, a metallic loop or sheath connected with the hame and having pairs of alined openings in its opposite walls at intervals in its length, and the trace comprising the U-shaped piece of metal 8, the outer, doubled strip of leather covering the U-shaped piece of metal, the inner leather strip with one end interposed between the parallel arms of the piece of metal 8, catches pivotally mounted between the parallel arms of the piece of metal 8 and adapted to take into the apertures in the loop or sheath, the pin 11 arranged in the piece of metal 8, the V-shaped spring having arms bearing against the catches and also having its bight interposed between the pin 11 and the bight of the piece of metal 8, and rivets connecting the metal piece 8 and the outer and inner strips of leather, substantially as specified.

611,428. APPARATUS FOR DYEING. EDOUARD DROOCK, Roubaix, France. Filed Dec. 16, 1897. Serial No. 662,161. (No model.) Patented in France Oct. 2, 1890, No. 208,508; in Germany Apr. 11, 1891, No. 61,232; in England Apr. 30, 1891, No. 7,511; in Switzerland June 13, 1896, No. 12,640, and in Austria Sept. 22, 1896, No. 46/3,671.



Claim.—1. In a machine for dyeing textile materials in hanks, the combination with a dye-vat, of two sets of endless traveling chains, O and P, arranged in a substantially horizontal plane over the vat to carry the hanks through the dye, both of said sets of chains adapted to move in the same direction and the first set, O, moving at a greater speed than the last set, P, substantially as and for the purposes set forth.

2. In a machine for dyeing textile materials in hanks, the combination with the vat and the horizontal and upright traveling chains which carry the hanks, of the chute Z, for receiving and delivering the hanks from the upper horizontal chains, and the hinged, curved guides R', whereby the hank-bearers may be directed onto the chains, N, or onto the chute Z, at will, substantially as set forth.

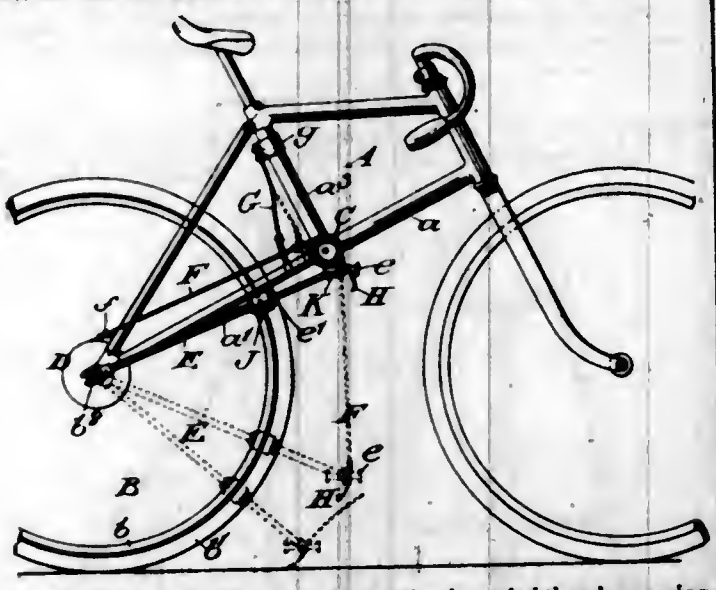
3. In a machine for dyeing materials in hanks, the combination with traveling chains for the hank-bearers, and means for rotating the latter, of the said hank-bearer consisting of the spindle *e*, and a frame adapted to move along the spindle, said frame comprising the bars *a*, *a'*, connected at their ends by slotted end caps, whereby when rotated the said frame slides laterally thereon, substantially as set forth.

4. In a machine for dyeing materials in hanks, the combination with an endless carrier for the hank-bearers, and the said hank-bearers, each having a spindle *e*, and a frame which slides laterally thereon, of curved cam-plates T', situated at intervals along the path of the moving carrier, and pivoted, cranked stops U', one at each of said cam-plates, in position to be engaged by the moving bearer, by which the frame of the latter is turned, substantially as set forth.

611,429. BICYCLE. ALEXANDER W. HALL, New York, N. Y. Filed Jan. 4, 1898. Serial No. 665,549. (No model.)

Claim.—1. In a bicycle, a suitable frame, a driving-wheel, a clutch mounted on the hub of the wheel, an idler-pulley mounted on the frame, a swinging guide-bar pivoted to the axle of the rear wheel, a driving-strap connecting the free end of the guide-bar with the clutch and passing over said idler-pulley and a cushioned stop carried by the guide-bar in position to come in contact with the idler-pulley when the said guide-bar is at the limit of its upward movement, substantially as set forth.

2. In a bicycle, a driving-wheel, a clutch carried thereby, an idler-pulley, a pedal, a driving strap or cord connecting the pedal with the clutch, a projection carried by the said strap or cord, and a spring-actuated yielding stop carried by the frame in position to engage the said projection before the pedal reaches the limit of its downward movement, the said stop being arranged to engage the frame to limit the downward movement of the pedal whereby the weight of the rider may be supported upon the pedal without straining the said spring-actuated stop, substantially as set forth.



3. In a bicycle, a driving-wheel, a clutch carried thereby, a swinging guide-bar, a strap or cord connecting the guide-bar with the clutch and a shoe carried by the guide-bar in position to travel along the ground if the cord or strap should break for preventing the further downward swinging movement of the guide-bar, substantially as set forth.

4. A roller-brake comprising a bar having a pair of collars permanently secured against outward movement thereon, a spool mounted to rotate on said bar between the said collars the said spool being divided transversely into two members having their adjacent ends beveled whereby the members may be moved outwardly away from each other, against the faces of the said collars by an inward pressure at the center of the spool, and a flexible cylindrical casing embracing the said spool, substantially as set forth.

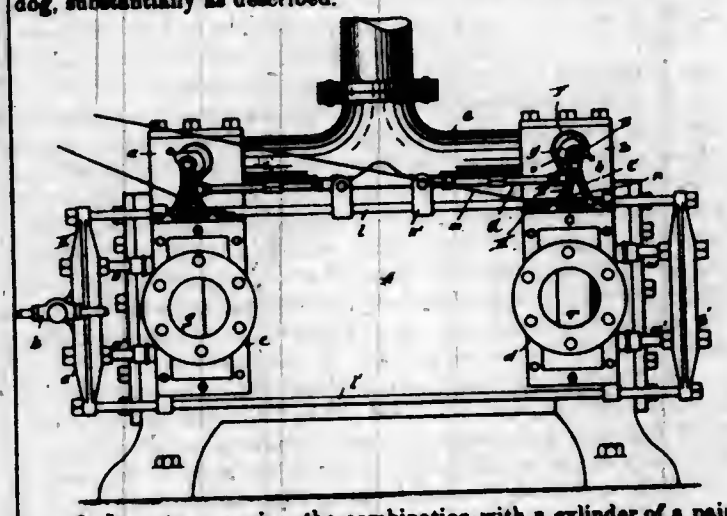
5. A roller-brake comprising a bar having a pair of collars thereon fixed against outward movement relative to each other, a spool mounted to rotate upon the bar between the said collars, the spool being divided transversely into two members having their adjacent ends beveled whereby the members may be forced outwardly away from each other against the faces of the collars by an inward pressure at the center of the spool, the said spool being further divided longitudinally into sections and a flexible casing embracing the said spool for holding the parts assembled, substantially as set forth.

6. A spring-actuated yielding stop comprising a collar adapted to be secured to the frame of the bicycle, a pair of spring-bars having their upper ends secured to the collar and their lower ends provided with loops through which the driving cords or straps of the bicycle are adapted to pass, the said bars being further provided with cushioned stops for engaging the frame of the bicycle for limiting the movement of the stop in one direction, substantially as set forth.

7. A spring-actuated yielding stop comprising a collar adapted to be secured to the frame of the bicycle and a pair of downwardly-extended spring-bars having their lower ends provided with loops through which the driving cords or straps of the bicycle are adapted to pass, substantially as set forth.

611,480. VALVE-GEAR FOR ENGINES. ROBERT S. HILL, Detroit, Mich. Filed Nov. 29, 1897. Serial No. 660,085. (No model.)

Claim.—1. In a steam-engine, the combination of a cylinder having a steam-chest thereon and a port communicating therewith, a slide-valve adapted to cross the port, and to reciprocate within said steam-chest, a rock-shaft journaled within the walls of said steam-chest, levers secured to said rock-shaft, and loosely connected to said valves, a rock-lever upon one end of said valve-stem, a weight adjustably mounted upon the end of said lever, a spring secured at its lower end and having its upper end arranged to engage freely with the short end of said lever, whereby said valve is closed, a ratchet mounted upon the opposite end of said rock-shaft, a second lever secured upon said shaft, a dog pivotally secured to the free end of said second lever, and having its nose arranged to engage with said ratchet, a spring having one end secured to said second lever, and its opposite free end adapted, to bear against the nose of said dog, whereby it is held into engagement with said ratchet, means connecting said second lever with the eccentric-rod of said engine, and an adjustable tripping-block adapted to engage with the tail of said dog, substantially as described.

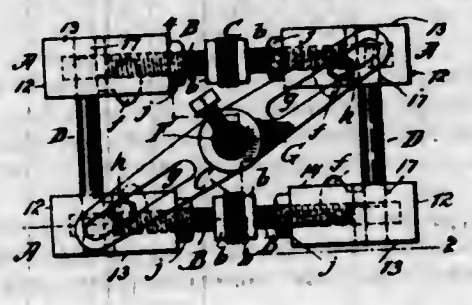


2. In a steam-engine, the combination with a cylinder of a pair of supply-steam chests, valve-stems arranged to journal within the walls of said chest and to extend therethrough, a frame consisting of yokes and yoke-rods adapted to reciprocate in the bearings at the ends of said cylinder, ratchets rigidly mounted upon said valve-stems, rocker-arms loosely journaled upon said valve-stems, dogs pivoted to the free ends of said rocker-arms, links adapted to connect said rocker-arms to one of said yoke-rods, said steam-chests having ports therethrough communicating with said cylinder, concaved slide-valves adapted to close said ports and to overlap the edges thereof when in their opened condition, whereby the steam is admitted below said valves, means connecting said valve-stems to said valves whereby the rotation thereof is transmitted to the valves in the form of a reciprocating motion, means for engaging said dogs whereby they are disengaged from said ratchets, and means for actuating said valves to cut off the steam-supply, substantially as described.

3. In a steam-engine the combination of a cylinder having a steam-chest thereon and a port communicating therewith, a concaved slide-valve adapted to close the port and to reciprocate within said steam-chest, a rock-shaft journaled in the walls of said steam-chest, levers secured to said rock-shaft and loosely connected with said valve, a rock-lever upon one end of said valve-stem, a weight adjustably mounted upon one end of said lever, a flat spring secured at its lower end and having its upper end arranged to engage freely with the short end of said lever, whereby said valve is closed, and means for opening said valve whereby it is released substantially as described.

4. In a steam-engine, the combination of a cylinder, independent exhaust and supply steam chests secured upon two sides of said cylinder, a frame comprising yokes and yoke-rods adapted to reciprocate in bearings at each end of said cylinder, caps having diaphragms arranged to cover said exhaust-steam chests, short stems arranged to reciprocate through the walls of said chest and to engage with the valves and yokes, said valves being adapted to seat upon that side of the diaphragms lying nearest the cylinders, whereby the steam-pressure causes said valves to snugly engage their seats, valve-stems extending through and journaled in the end walls of said supply-steam chests, ratchets rigidly mounted upon one end of said stems, rock-arms loosely journaled upon said shaft at one end and having their free ends pivotally linked to one of said yoke-rods, dogs pivoted to the lower free ends of said rock-arms, having their upper ends engaging with said ratchets and their lower ends extending downward to be actuated by a trip mechanism, tripping-blocks slidingly supported upon the cylinder adapted to engage within the paths of the lower ends of said dogs, a rock-lever secured upon the opposite end of said valve-stem, and means arranged to engage with said rock-lever whereby the valve is closed to cut off the steam-supply, substantially as described.

611,481. PLUNGER FOR PAPER-BOX MACHINES. CHARLES M. HOLCOMB, New York, N. Y., assignor to Alfred Birnie, Springfield, Mass. Filed July 30, 1897. Serial No. 646,434. (No model.)



Claim.—1. An extensible and contractible former-plunger consisting of four blocks or sections, the front and rear side pairs being respectively screw-engaged by right and left hand screw-shafts, the blocks at one side having transversely-extending dowels which play through sockets therefor which are provided in the opposing pair of said blocks, and set-screws for confining said blocks and dowels.

2. An extensible and contractible folder-plunger comprising four blocks or sections arranged at the corners of a rectangle, means whereby the opposite end pairs are supported and adjustably confined in suitably approached or distended relation, means whereby the opposite side pairs of the blocks are supported and adjustably confined in approached or distended relations, the plunger-shaft having the bar G, the ends of which are longitudinally slotted and which ranges over and between diagonally-opposing pairs of said blocks and the headed bolts A A adjustably confining said bar G upon said diagonally opposite blocks, substantially as described.

3. An extensible and contractible folder-plunger comprising opposite end sections, upper and lower pairs of right and left hand screw-shafts engaging said sections, means for turning one of said screw-shafts and means whereby, from the rotation thereof, the other of said shafts will be also turned, for the purpose set forth.

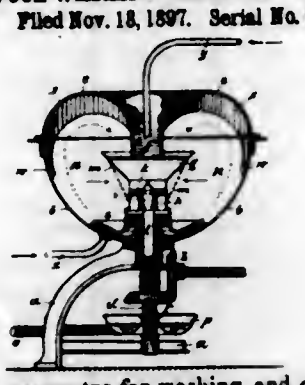
4. An extensible and contractible folder-plunger comprising four sections arranged at the corners of a rectangle, the opposite side pairs thereof having combined therewith screw-shafts in pairs, the turning of which draw or distend the said screw-united side pairs of the sections, means whereby one side pair of the sections is adjustably guided transversely relative to and connected with the other side pair, and means whereby, from the rotation of the one screw-shaft of each side pair of the sections, the other screw-shaft for said side pair will also be rotated, for the purposes set forth.

5. An extensible and contractible folder-plunger comprising opposite end sections, upper and lower pairs of right and left hand screw-shafts, screw engaging said sections, each having at its middle a gear-wheel, supports mounted on said screw-shafts adjacent the gear-wheels and supporting intermediate gearing and means for turning one of the gears, for the purpose set forth.

6. An extensible and contractible folder-plunger comprising opposite end sections, upper and lower pairs of right and left hand screw-shafts engaging said sections both having gear-wheels at their middle portions the plate *b* having perforations, whereby it engages for its support, the portions of the screw-shafts adjacent the gear-wheel, and having mounted thereon the intermediate gear-wheels *d*, one of said intermediate gear-wheels having the projection d^3 whereby to turn it, substantially as and for the purposes set forth.

7. In a contractible and extensible former-plunger in combination, the four blocks or sections A A having the longitudinal screw-sockets in pairs, the transverse horizontal sockets 17, and the dowels D engaging therein, the set-screws *f* for said dowels, the upper and lower pairs of right and left hand screw-shafts for each side pair of said blocks which screw-engage in said threaded sockets therefor and which shafts have at their middle portions the gear-wheels C C and the hubs *a*, the plates *b* which are apertured and supported upon said hubs *a* and on which are supported the intermediate gear-wheels *d d*, the lock-nuts *j j* on said screw-shaft adapted to be set against the inner end faces of the said blocks, the plunger-shaft F having the bar G horizontally ranging between and over the diagonally opposite pairs of the blocks and having their ends longitudinally slotted, and the headed bolts *k k* adjustably confining said blocks to said bar, substantially as described.

611,482. WOOL-WASHING MACHINE. GUSTAV KATZENSTEIN, Berlin, Germany. Filed Nov. 18, 1897. Serial No. 658,912. (No model.)



Claim.—1. An apparatus for washing and cleaning fibrous material, which consists of a stationary vessel provided with an arched cover, a rotary agitator for imparting centrifugal motion to the washing liquid, and radial vanes or ribs at the under side of the cover for returning the solution back toward the center of the vessel, substantially as set forth.

2. An apparatus for washing and cleaning fibrous material, consisting of a stationary vessel, an arched cover having a central downwardly-extending spout, radial vanes at the under side of the cover, a rotary motor for imparting centrifugal motion to the washing liquid, means for agitating the solution, and means for drawing off the washing-water, substantially as set forth.

611,488. PISTON-PACKING. JOHN W. KENNEDY, Willingham, Ga., assignor of one-half to M. A. Saxton, same place. Filed Sept. 9, 1897. Serial No. 651,118. (No model.)

Claim.—A packing for the purpose set forth consisting of strings provided with a serving of separated rubber flakes, and saturated in a solution of graphite and lubricating-oil, substantially as and for the purpose set forth.

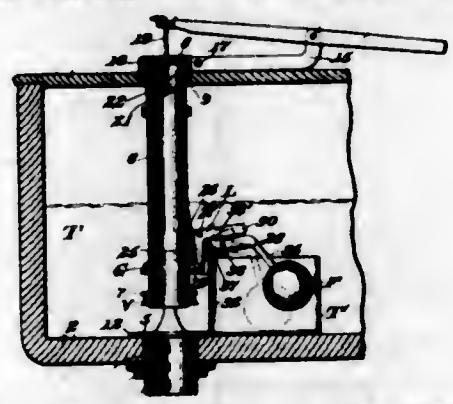
611,484. PORTABLE FOLDING MIRROR-STAND. SOPHIE A. LANE, Waco, Tex. Filed Dec. 27, 1897. Serial No. 663,696. (No model.)



Claim.—1. A folding mirror stand or easel, comprising the side rails connected at their upper ends by the arched top 1 and cross-brace 2 and having their lower beveled ends provided with the recesses 18, in combination with the sections 4, provided with the orifices 20, and the pockets 22, and hinged at their upper ends to the said rails, the legs 5, the sliding bolts 21 adapted to engage said recesses and orifices in the contiguous ends of the rails, sections and legs, and the hinged brace 6, connecting the legs 5, 5, substantially as shown and described.

2. The combination with the rails 3, 3, arched top 1, and brace 2, the sections 4, 4, hinged to said rails, the legs 5, 5, hinged to said sections, and the hinged brace 6, connecting said legs of the diagonal brace 9 hinged to the cross-brace 2, the section 10 and the leg 12, and the screw-pins 14 adapted to clamp the legs 5 and 12 to the front portion of the stand, substantially as shown and described.

611,485. TANK-VALVE-CONTROLLING MEANS. CHARLES G. MILLER, Hartford, Conn.; Etta C. Farnam administratrix of said Miller, deceased. Filed Aug. 9, 1897. Serial No. 647,537. (No model.)



Claim.—1. The combination of a main tank; an auxiliary tank supported in the main tank and having sockets, and also having a discharge-outlet; a valve controlling the discharge of the main tank; a guide for the valve, provided with pins fitting in said sockets; and means for operating the valve.

2. The combination, with a main tank, of an auxiliary tank supported in the main tank and having sockets, and also having a discharge-outlet; a valve controlling the discharge of the main tank; a guide for the valve, provided with lugs equipped with pins entering said sockets; a detent supported between said lugs and adapted to engage the valve, and also for operating the detent, and having at one end a float disposed in the auxiliary tank; and means for raising the discharge-controlling valve.

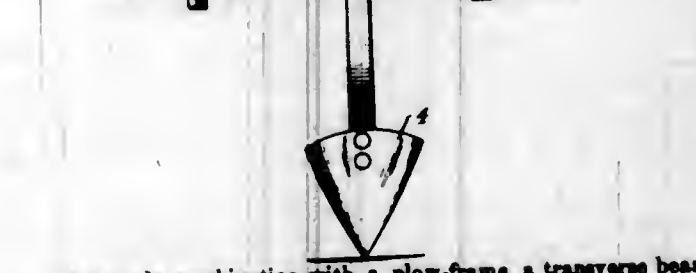
3. The combination, with a main tank, of an auxiliary tank supported in the main tank and having sockets and also having a discharge-outlet; a valve controlling the discharge of the main tank; a guide for the valve, provided with pins fitting in said sockets; a

valve-operating lever; and a support for the valve-operating lever, embracing and mounted to turn upon the valve-guide.

4. The combination, with a main tank, of a valve therefor; an auxiliary tank and a valve-guide located in the main tank, one of said parts being provided with a device located to enter a socket in the other part, and the auxiliary tank having a discharge-outlet; and valve-operating means.

5. The combination, with a tank and its discharge-valve, of a guide for the valve, extending through the top of the tank and having a valve-operating lever; a support to which the valve-operating lever is fulcrumed and embracing, and turning on, the valve-guide.

611,486. OAR-LOCK. JAMES A. MCGINLEY, Springfield, Mass. Filed Feb. 14, 1898. Serial No. 670,168. (No model.)

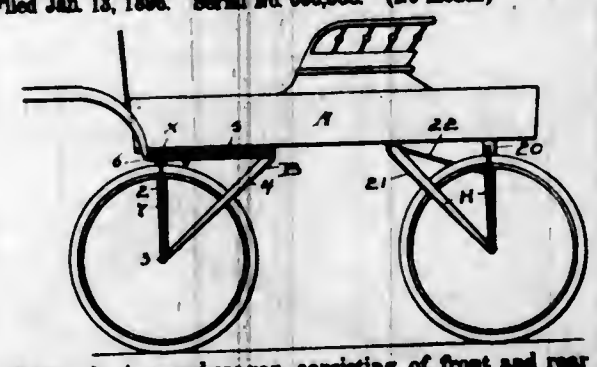


Claim.—The combination with the rail of the boat having a hole bored therein, of the socket-bushing B externally and also internally screw-threaded and provided with the bottom web d^3 having the slot d^3, and screw-engaged in said hole, and the oar-lock having the U-shaped top with the base-shoulder *b* and the screw-threaded stem screw-engaging in said internally-threaded bushing, substantially as described.

611,487. CULTIVATOR. JOHN H. OWENS, Hillsborough, Tex. Filed Apr. 25, 1898. Serial No. 678,775. (No model.)

Claim.—In combination with a plow-frame, a transverse beam having an eye formed at each end, cranked standards each having one end fitting in bearings of the frame, the upper ends of the standards fitting in the eyes of the beam, as and for the purpose described.

611,488. SPEED-WAGON. FRANK W. PHILIPS, Cleveland, Ohio. Filed Jan. 13, 1896. Serial No. 666,500. (No model.)



Claim.—1. A speed-wagon consisting of front and rear truss-frames carrying the wheel-spindles, each frame extending upward perpendicularly from the spindles, an arched brace for each frame and its set of spindles arranged at an angle of substantially forty-five degrees to the said frame, and a wagon-body connecting said frames and having said arched braces bearing against the bottom of the same, said braces having substantially straight portions at their bearing against the body, substantially as described.

2. In running-gear for speed-wagons, the truss-frame and wheel-spindles on the extremities thereof, said frame built up between two vertical planes from said spindles, the inwardly and upwardly inclined arched brace for said frame and spindles having a straight portion at its top and on the same plane substantially as the top of the said truss-frame, and rigid connections between the tops of said frame and said arched brace, substantially as described.

3. In running-gear for speed-wagons, separate frames for the front and rear having each a truss-support carrying the wheel-spindles, and an inclined brace engaging the ends of the spindles, substantially as described.

4. A speed-wagon having running-gear with an independent arched supporting-frame for the wagon-box and wheel-spindles thereon, an arched and inclined brace engaging said spindles, and a thill connection on said frame above said spindles, substantially as described.

5. In running-gear for speed-wagons, arched supports and spindles thereon, and inclined braces for said spindles, a fifth-wheel on the front frame, and thill connections centrally above the tread of the front wheels, substantially as described.

6. A speed-wagon having running-gear with arched supports and an inclined brace for each support, wheel-spindles at the extremities of said supports and connected with the extremities of said braces, connections for the thills and braces therefor between said arched support and the said spindles, substantially as described.

7. A gear for speed-wagons consisting of an arched frame and spindles thereon, arched and inclined braces for said spindles and a fifth-wheel supported across said arched frame and said inclined brace and rigidly connecting the same, substantially as described.

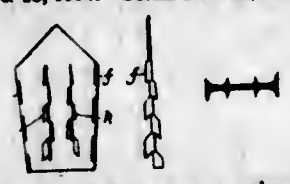
8. A gear for speed-wagons constructed with an arched frame, spindles at the extremities of said frame, lateral arched braces connecting the ends of said spindles to said frame, an arched and inclined brace connecting the ends of said spindles, and said inclined brace and arched frame having the lower member of a fifth-wheel connecting the same and supported thereon, substantially as described.

9. A front gear for speed-wagons constructed with an arched frame, spindles at the extremities of said frame, lateral arched braces connecting the extremities of said spindles to said frame, thill connections on said lateral braces, an inclined and arched brace connecting the extremities of said spindles, said inclined brace and arched frame having a fifth-wheel connecting the two and supported thereon, and a king-bolt bearing for said fifth-wheel connected and supported by braces on said inclined brace and truss-frame, substantially as described.

10. The combination of the arched front frame and its inclined brace, with the fifth-wheel, the wagon-body and the king-bolt supported thereon substantially midway between the sides of the fifth-wheel and the sleeve through which said bolt projects, and lateral braces for said sleeve from the said frame and inclined brace, substantially as described.

11. The front arched frame and the inclined brace, B, in combination with the fifth-wheel, the sleeve for the king-bolt arranged centrally within the said fifth-wheel and brace-supports for said wheel, substantially as described.

611,489. KEY FOR JOINTS. WILLIAM R. PLIMPTON, Watford, England. Filed Dec. 13, 1897. Serial No. 661,653. (No model.)



Claim.—1. A key for securing miter or other joints comprising a piece of metal having entering and driving ends and furnished with serrated or indented projecting ribs approaching one another and increasing in height from the entering end toward the driving end, substantially as described.

2. A key for securing miter or other joints comprising a piece of metal having entering and driving ends and furnished with projecting ribs approaching one another toward the driving end and having a number of flanges or branches, each with ribs, in proportion to the number of pieces of material to be joined substantially as described.

611,440. GRATE-BAR. ALFONSO A. RICHARDSON, New York, N. Y. Filed Nov. 10, 1897. Serial No. 658,018. (No model.)

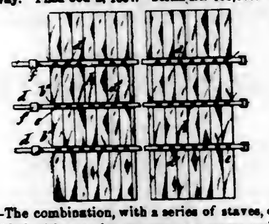
Claim.—1. A hollow grate-bar, consisting of a plurality of lon-

gitudinal ribs spaced at suitable intervals apart and arranged around a central longitudinal air-passage through the grate-bar, said ribs being each provided with two series of solid teeth or lugs arranged respectively on two adjacent sides of the rib, so as to be set at an angle with respect to each other, and abutments between the ribs for separating them, said abutments being formed with the ribs themselves, whereby the central air-passage through the grate is permitted to be free and unobstructed, substantially as set forth.



2. A hollow grate-bar, consisting of a plurality of longitudinally-extending ribs arranged around a central air-passage through the grate bar, and abutments between the ribs for separating the same and providing air-inlets into the central air-passage, said ribs being each provided with two series of teeth or lugs arranged respectively on adjacent sides of each rib so that they extend at right angles with relation to each other, the lugs or teeth of one series alternating with the lugs or teeth of the other series, so that, in the complete grate-bar, the adjacent series of lugs or teeth on the adjacent ribs alternate also with each other and extend in the same direction, parallel with each other, whereby the ends of the same form a coal-supporting surface, substantially as set forth.

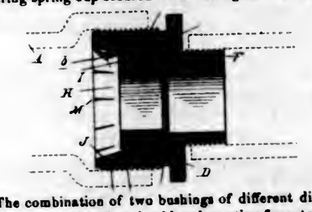
611,441. KNOCKDOWN BARREL, &c. GEORGE ROSS-LUND, Bergen, Norway. Filed Oct. 2, 1897. Serial No. 653,573. (No model.)



Claim.—The combination, with a series of staves, of which each stave is provided with exterior transverse recesses and with a croze at each end, rivets, nails or the like projecting outwardly from the staves, and heads set into the crozes of the staves, of bands or straps placed into the recesses of the staves and provided with narrow slots into which said rivets or nails project, and fastening devices or ties consisting of a buckle attached to one end of each strap and a loop for each strap, one end of each strap being passed through said buckle and being returned and passed through the loop on the strap, substantially as set forth.

611,442. SWIVEL PIPE-COUPLING. CHARLES W. VAUGHAN, Hillsdale, Mich., assignor of one-fourth to John R. Sutton, same place. Filed Mar. 23, 1898. Serial No. 674,892. (No model.)

Claim.—1. In a swivel pipe-joint, the combination with the female member having an internal terminal flange or shoulder, and an inclined face having its smallest diameter at the outer end, of the male member having a corresponding external flange or shoulder and a flaring spring-cup secured to its end against the inclined face.

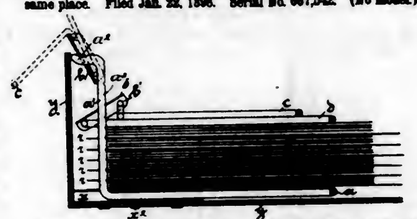


2. The combination of two bushings of different diameter, one within the other and having shouldered meeting faces to allow turning but to prevent endwise disengagement, an incline on the inner face of the outer bushing, a spring-cup and a packing pressed by the spring-cup against the inclined face of the outer bushing and means for securing the spring-cup and packing in place.

3. The combination in a swivel pipe-coupling, of two pipes having their adjoining ends of different diameter, bushings in the ends of the pipes adapted to fit one within the other and having meeting shoulders to prevent endwise disengagement, an inclined face on the inside of the outer bushing tapering inwardly toward the outer end thereof, a flanged nipple in a recess in the end of the inner bushing, a flaring spring-cup having its inner edge turned inward, and a correspondingly-shaped packing-ring around the outside of the cup, the packing and cup being secured to the inner bushing by the flanged nipple.

4. In a swivel pipe-joint, two intereengaging members having shoulders to prevent endwise separation, a flaring flexible packing extending beyond the inner end of the inner member and a corresponding flaring bearing on the outer member against which said packing is secured and adapted to bear.

611,443. FILE FOR LOOSE SHEETS, PAPERS, &c. BARNETT ABT, Frankfort-on-the-Main, Germany, assignor to Gustav Menke, same place. Filed Jan. 22, 1898. Serial No. 667,542. (No model.)



Claim.—1. In a file for loose sheets and the like, the combination of the standards a', the plate b engaging the standards and the loops c d pivoted to the plate.

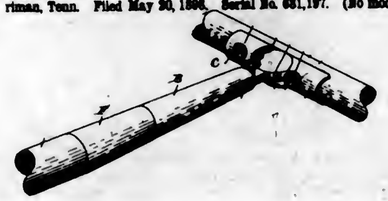
2. In a file for loose sheets and the like, the combination of the standards a', the plate b and the loop c having its free ends pivoted in the plate.

3. In a file for loose sheets and the like, the combination of the standards a', the plate b and the levers c d pivoted to the said plate on opposite sides of the said standards.

4. In a file for loose sheets and the like, the combination of the standards a', the plate b engaging the standards and the loops c d pivoted to the plate, combined with a casing and means for securing the uprights a' to the casing.

5. In a file for loose sheets and the like, the combination of the main loop a provided with uprights, the plate b, the levers c d pivoted to the plate on opposite sides of the uprights, substantially as described and for the purposes set forth.

611,444. NECK-YOKE CONNECTION. GEORGE BRYANTON, Harriman, Tenn. Filed May 20, 1898. Serial No. 681,197. (No model.)



Claim.—1. A neck-yoke connection comprising a socket, the said socket provided with a recess at its inner side and with a slot passing therethrough and communicating with the recess and with an opening at one side of the slot larger in diameter than the width of the slot, combined with an arm carrying a ball having a reduced portion at a point inside thereof, whereby the ball is adapted to be inserted through said opening and carried through the slot to its recess, substantially as described.

2. A neck-yoke connection comprising a socket, said socket provided at its inner side with a spherical recess and with a horizontal slot extending across the outer end of the socket, combined with an arm having at its outer end a head or ball provided with a reduced portion at a point inside of the head or ball, the said socket also provided with an opening larger than the said slot and at one side of the recess, the opening being of a size adapted to permit the head to pass therethrough, the parts operating substantially as and for the purpose described.

3. A neck-yoke connection comprising a socket provided with a recess at its inner side and with a bolt-opening and with a slot extending across the socket and passing therethrough and communicating with the said recess, the bolt-opening communicating with said slot and being larger in diameter than the width of the slot, combined with a tongue having a head or ball of a size adapted to pass through the said bolt-opening and to be seated in the said recess, and a washer fitting over the bolt-opening through which the clamping-bolt passes, the parts adapted to operate as described.

4. A neck-yoke connection comprising a socket provided at its inner side with a spherical recess, combined with an arm carrying a ball or head adapted to fit in the recess, the arm having a reduced portion at a point inside the head or ball, the socket provided with a slot therethrough communicating with the said recess, and also provided at one side of the slot with an opening larger in diameter than the width of the slot, the socket having at a point inside of said recess a bearing-block recess, a bearing-block fitting within the recess, the bearing-block having at its outer side a spherical opening registering with the spherical opening in the socket, the parts adapted to coöperate as described.

5. A neck-yoke connection comprising a socket, an arm having a ball seated within the socket, the arm having a socket, the pole, the end of the pole provided with a tongue fitting loosely in the said arm-socket, substantially as and for the purpose described.

611,445. BOX-FASTENER. CHARLES V. CARTER, Siloam Springs, Ark. Filed Nov. 8, 1897. Serial No. 657,805. (No model.)



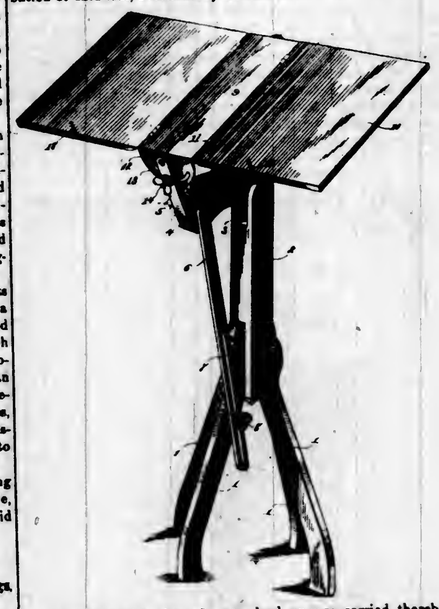
Claim.—The combination with a box and its cover, of a fastener composed of spring-arms having eyes at their upper ends and secured to the side of the box, a loop having cranks, said loop pivoted in said eyes, and a bail pivoted to said cranks and provided with a detent or toe, and a staple secured to the edge of the box to receive said detent or toe, the construction being such that when the loop is depressed the detent or toe will be disengaged from the staple and thrown forwardly, and when the loop is elevated and pressed inward, the detent or toe will be thrown inward and be drawn down vertically into said staple, substantially as set forth.

611,446. COMBINED READING, WRITING, AND MUSIC STAND. DAVID R. COTNER, Bardwell, Ky. Filed June 1, 1897. Serial No. 638,841. (No model.)

Claim.—1. The combination of a vertical standard provided with supporting-legs, a supporting-arm pivoted to the legs and provided with uprights at its ends, a leaf consisting of a central section pivoted to the uprights at the ends of the supporting-arm, side sections hinged to the central section, levers pivoted to the supporting-arm, one end of each lever being pivoted to the inner edge of one side section, and to the outer edge of the other side section, and means, substantially as described, for locking said sections together to prevent movement of the same, as set forth.

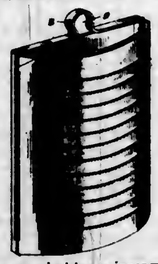
2. In a table the combination of a standard, an arm intermediately pivoted thereto, a slotted adjusting-arm pivoted at one end to said arm, a locking-screw engaging the slotted arm for holding it in the desired position, a leaf carried by the intermediately-pivoted arm, and hooks carried by said leaf for use when the device is used as a music-stand, substantially as described.

3. The combination of supporting-legs, a slotted standard supported thereby, an arm intermediately pivoted in said slotted standard, uprights carried by the ends of said arm, transversely-extending arms secured to said arm, levers intermediately pivoted to said transversely-extending arms, a leaf comprising sections, the central section being pivoted between the uprights, the side sections pivoted to the central section, one end of one lever being pivoted to one section near its outer edge, and the corresponding end of the other lever being pivoted to the other section, and means for varying the inclination of said leaf, substantially as described.



4. The combination of a standard, an arm carried thereby, a sectional leaf, the central section thereof being pivoted to the supporting-arm, and the side sections hinged to the central section, a plate secured to one end of the central section and having a curved slot therein, and a locking-screw carried by the arm and engaging said slot to hold the sections of the table rigid, substantially as described.

611,447. GRATER. WILLIAM J. CURRY, Nanaimo, Canada. Filed Dec. 30, 1897. Serial No. 664,650. (No model.) Patented in Canada Apr. 16, 1898, No. 59,647.



Claim.—1. A grater, comprising an inner member, an outer member provided with a series of slots, a series of grating-ridges carried by said inner member and projecting through said slots, a retaining-flange formed on said outer member and adapted to receive the inner member, and a locking-spring adapted to engage said inner member for retaining the latter in the outer member, substantially as described.

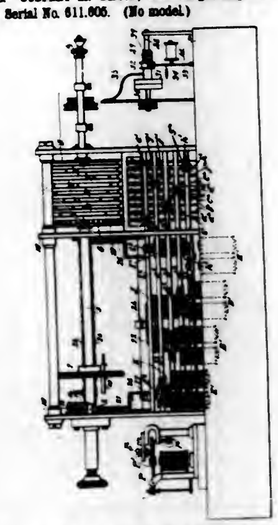
2. A grater, comprising an inner member, an outer member provided with a series of slots, a series of serrated grating-ridges carried by said inner member and projecting through said slots, a retaining-flange formed on said outer member and adapted to receive the inner member, an engaging strip carried by the inner member, and a locking-spring adapted to contact with said engaging strip for

retaining the inner member in the outer member, substantially as described.

3. A grater, comprising an inner member, an outer member provided with a series of slots, a series of grating-ridges carried by the inner member and projecting through said slots, a retaining-flange formed on one end of the outer member and adapted to receive one end of the inner member, an engaging strip carried by the inner member, and a locking-spring also carried by the outer member and adapted to contact with said engaging strip for retaining the inner member within the outer member, substantially as described.

4. A grater, comprising an inner member, an outer member provided with a series of slots, a series of serrated grating-ridges carried by the inner member and projecting through said slots, a retaining-flange formed on one end of the outer member and adapted to receive one end of the inner member, an engaging strip carried by the inner member, a spring locking-strip also carried by the outer member and adapted to contact with said engaging strip for retaining the inner member within the outer member, and a finger-loop formed in said locking-strip, substantially as and for the purpose described.

611,448. APPARATUS FOR PRINTING TELEGRAPHIC MESSAGES. GODFREY M. GIMSON, Chulmleigh, England. Filed Nov. 10, 1896. Serial No. 611,605. (No model.)



Claim.—1. The combination of a type-wheel tending constantly to revolve, rings of pins revolving with it and pins, one for each ring of pins operated by the signals and each engaging with the pins of one of the rings.

2. The combination of a type-wheel tending constantly to revolve, rings of pins revolving with it, the number of such pins being greater than the number of rings, and pins of the same number as there are rings each engaging with the pins of one of the rings.

3. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve and means for connecting and disconnecting the screw and the sleeve.

4. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, a spring tending to force the pin outward, an inclined slide carried by the type-wheel and acting on the pin, abutments for the slide at each end of the machine, and means for connecting and disconnecting the screw and the sleeve.

5. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means for turning the lever when the type-wheel reaches the zero-point.

6. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, a spring tending to force the pin outward, an inclined slide carried by the type-wheel and acting on the pin, abutments for the slide at each end of the machine, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means of turning the lever when the type-wheel reaches the zero-point.

7. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins operated by the signals each engaging with the pins of one of the rings, and means for connecting and disconnecting the screw and the sleeve.

8. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins operated by the signals each engaging with the pins of one of the rings, a spring tending to force the pin on the type-wheel outward, an inclined slide carried by the type-wheel and acting on the pin, abutments for the slide at each end of the machine, and means for connecting and disconnecting the screw and the sleeve.

9. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins operated by the signals each engaging with the pins of one of the rings, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means for turning the lever when the type-wheel reaches the zero-point.

10. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins operated by the signals each engaging with the pins of one of the rings, a spring tending to force the pin on the type-wheel outward, an inclined slide carried by the type-wheel and acting on the pin, abutments for the slide at each end of the machine, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means for turning the lever when the type-wheel reaches the zero-point.

11. The combination of a type-wheel, means for rotating it, for advancing it step by step along the line and for bringing it back to the commencement of the line, a printing-bar over which the paper passes, two rods fitting above and below the printing-bar and holding the paper to it, and means for gripping the paper and separating the rods from the bar before the commencement of each new line.

12. The combination of a type-wheel, means for rotating it, for advancing it step by step along the line and for bringing it back to the commencement of the line, a printing-bar over which the paper passes, two rods fitting above and below the printing-bar and holding the paper to it, pivoted arms carrying the bar and the rods, electromagnets tending to turn the arms about their pivots, means for closing a circuit through the one magnet to effect the printing and means for closing a circuit through the other magnet and for gripping the paper before the commencement of each line.

13. The combination of a type-wheel, two sets of electromagnets controlling it, local-battery circuits engaging the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and electromagnets whereby each successive signal transfers the circuit of the opposite polarity to the next magnet of its series.

14. The combination of a type-wheel tending constantly to revolve, rings of pins revolving with it, and pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits engaging the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and electromagnets whereby each successive signal transfers the circuit of the opposite polarity to the next magnet of its series.

15. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and electromagnets whereby each successive signal transfers the circuit of the opposite polarity to the next magnet of its series and means for connecting and disconnecting the screw and the sleeve.

16. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and electromagnets whereby each successive signal transfers the circuit of the opposite polarity to the next magnet of its series, a spring tending to force the pin on the type-wheel outward, an inclined slide carried by the type-wheel and acting on the pin, abutments for the slide at each end of the machine, and means for connecting and disconnecting the screw and the sleeve.

17. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and electromagnets whereby each successive signal transfers the circuit of the opposite polarity to the next magnet of its series, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means for turning the lever when the type-wheel reaches the zero-point.

18. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw, through a slot in the sleeve, rings of pins carried by the sleeve, pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and electromagnets whereby each successive signal transfers the circuit of the opposite polarity to the next magnet of its series, a spring tending to force the pin on the type-wheel outward, an inclined slide carried by the type-wheel and acting on the pin, abutments for the slide at each end of the machine, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means for turning the lever when the type-wheel reaches the zero-point.

19. The combination of a type-wheel, two sets of electromagnets controlling it, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or by corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal a third set of electromagnets on the circuits, means for passing a weak current (only broken by the act of printing) through the latter magnets, pivoted armatures, springs tending to draw the armatures away from the magnets, pairs of contacts between which the armatures move and connections between the magnets armatures and contacts such that each successive signal transfers the circuit of the opposite polarity to the next magnet of its series.

20. The combination of a type-wheel tending constantly to revolve, rings of pins revolving with it, and pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and a third set of electromagnets on the circuits, means for passing a weak current (only broken by the act of printing) through the latter magnets, pivoted armatures, springs tending to draw the armatures away from the magnets, pairs of contacts between which the armatures move and connections between the magnets armatures and contacts such that each successive signal transfers the circuit of the opposite polarity to the next magnet of its series.

21. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and a third set of electromagnets on the circuits, means for passing a weak current (only broken by the act of printing) through the latter magnets, pivoted armatures, springs tending to draw the armatures away from the magnets, pairs of contacts between which the armatures move and connections between the magnets armatures and contacts such that each successive signal transfers the circuit of the opposite polarity to the next magnet of its series, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means for turning the lever when the type-wheel reaches the zero-point.

22. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and a third set of electromagnets on the circuits, means for passing a weak current (only broken by the act of printing) through the latter magnets, pivoted armatures, springs tending to draw the armatures away from the magnets, pairs of contacts between which the armatures move and connections between the magnets armatures and contacts such that each successive signal transfers the circuit of the opposite polarity to the next magnet of its series, a spring tending to force the pin on the type-wheel outward, an inclined slide carried by the type-wheel and acting on the pin, abutments for the slide at each end of the machine, and means for connecting and disconnecting the screw and the sleeve.

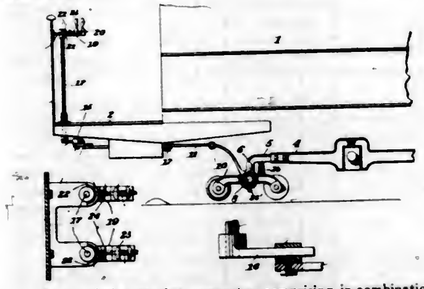
23. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and a third set of electromagnets on the circuits, means for passing a weak current (only broken by the act of printing) through the latter magnets, pivoted armatures, springs tending to draw the armatures away from the magnets pairs of contacts between which the armatures move and connections between the magnets armatures and contacts such that each successive signal transfers the circuit of the opposite polarity to the next magnet of its series, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means for turning the lever when the type-wheel reaches the zero-point.

24. The combination of a screw tending constantly to revolve, a sleeve on the screw, a type-wheel on the sleeve and free to slide along it, a pin carried by the type-wheel and engaging with the screw through a slot in the sleeve, rings of pins carried by the sleeve, pins each engaging with the pins of one of the rings, two sets of electromagnets operating the pins, local-battery circuits energizing the magnets, contact-makers actuated by the line-signals or corresponding punched paper and closing the circuit through the first magnet of one set for a first positive signal and through the first magnet of the other set for a first negative signal and a third set of electromagnets on the circuits, means for passing a weak current (only broken by the act of printing) through the latter magnets, pivoted armatures, springs tending to draw the armatures away from the magnets, pairs of contacts between which the armatures move and connections between the magnets armatures and contacts such that each successive signal transfers the circuit of the opposite polarity to the next magnet of its series, a spring tending to force the pin on the type-wheel outward, an inclined slide carried by the type-wheel and acting on the pin, abutments for the slide at each end of the machine, arms fixed to the sleeve and the screw, a lever pivoted to one of the arms and bearing against the other and means for turning the lever when the type-wheel reaches the zero-point.

611,449. SWITCHING APPARATUS FOR STREET-CARS. JOHN G. GROSHEIM and GEORGE L. SHAMAN, Cincinnati, Ohio. Filed Apr. 27, 1898. Serial No. 679,085. (No model.)

Claim.—1. A switch-actuating apparatus comprising in combination a switch-actuating lever adapted for engagement with the switch-point to be moved, an operating-lever pivotally mounted under the car with one end coupled to the switch-actuating lever and arranged, when moved pivotally, to move said actuating-lever laterally into and out of position to engage the cam or projection on the track, a staff extending above the platform and having below the

platform a crank-arm coupled to said operating-lever and arranged to move the same when the staff is turned, a bracket wherein the upper end of the staff is held, a crank-handle on the staff, and a locking device carried by the crank-handle and adapted for engagement with the bracket to hold the staff against turning, substantially as set forth.



2. A switch-actuating apparatus comprising in combination a switch-actuating lever adapted for engagement with the switch-point to be moved, an operating-lever pivotally mounted under the car and arranged when moved pivotally, to move the switch-actuating lever into and out of position to engage the cam or projection on the track, a staff extending above the platform and having a crank-arm below the same, a bracket wherein the upper end of the staff is held, a crank-handle on the staff, a locking device carried by the crank-handle and adapted for engagement with the bracket to hold the staff against turning, and an adjustable connection between the crank-arm on the staff and the operating-lever beneath the car, substantially as set forth.

3. A switch-actuating apparatus comprising in combination a switch-actuating lever adapted for engagement with the switch-point to be moved, an operating-lever pivotally mounted under the car with one end coupled to the switch-actuating lever and arranged, when moved pivotally, to move said actuating-lever laterally into and out of position to engage the cam or projection on the track, a staff extending above the platform and having below the platform a crank-arm, a slide mounted for movement endwise along said crank-arm, a set-screw for holding said slide in adjusted position, said set-screw also forming a pivot-point for the connection of said link with the crank-arm, a bracket wherein the upper end of the staff is held, a crank-handle on the staff, and a locking device carried by the crank-handle and adapted for engagement with the bracket to hold the staff against turning, substantially as set forth.

4. A switch-actuating apparatus comprising in combination a switch-actuating lever adapted for engagement with the switch-point to be moved, an operating-lever pivotally mounted under the car with one end coupled to the switch-actuating lever and arranged, when moved pivotally, to move said actuating-lever laterally into and out of position to engage the cam or projection on the track, a staff extending above the platform and having below the platform a crank-arm coupled to said operating lever and arranged to move the same when the staff is turned, a bracket wherein the upper end of the staff is held, a crank-handle on the staff, a pin arranged lengthwise on said crank-handle and provided with a handle, a spring for operating said pin, and an apertured flange on the bracket adapted to be engaged by said pin to hold the staff against turning, substantially as set forth.

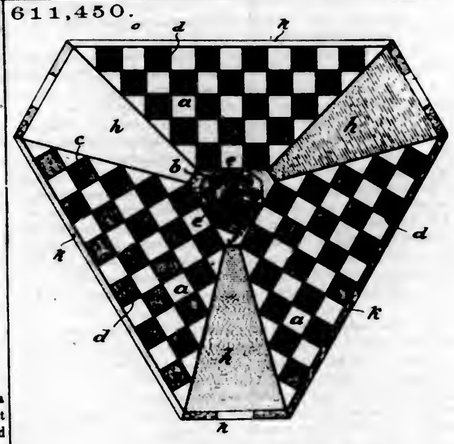
5. In a switch-actuating device, the combination of brackets secured to and projecting from the truck-frame and having depending ends provided with vertical slots, a shaft having its ends formed with flattened sides to fit in and slide along said slots, a switch-actuating lever mounted on said shaft and provided with operating mechanism, and adjusting-screws mounted in the depending ends of said brackets and arranged to bear above and below the ends of the shaft to hold the same in position, substantially as set forth.

611,450. TRIPARTITE GAME-BOARD. GEORGE F. GRUVER, Covington, Ky. Filed Mar. 3, 1898. Serial No. 672,360. (No model.)

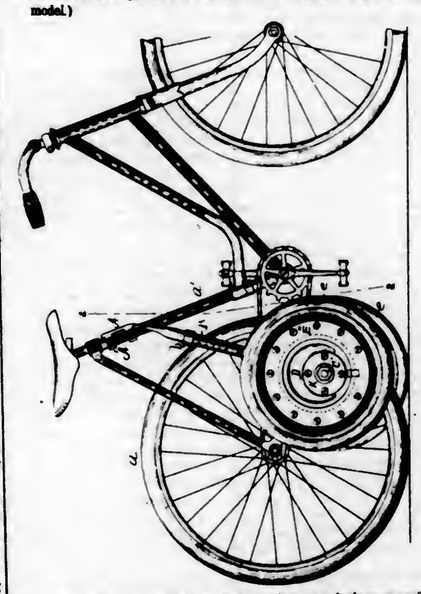
Claim.—1. A game to be used in connection with markers having the three sections *a*, *a*, *a*, divided in squares, the section *b*, which connects all three sections and contains fields *c*, *f* and *g* all as and for the purpose described.

2. A game to be used in connection with markers having the three sections *a*, *a*, *a*, each subdivided into fields, the spaces *h* between them, the center section which connects them also subdivided and the border which surrounds the whole, all subdivided spaces, parts and fields of the whole embellished with contrasting colors.

611,450.



611,451. ATTACHMENT FOR TRAVELING WHEELS. SAMUEL HODGMAN, Medway, Mass. Filed Nov. 1, 1897. Serial No. 656,995. (No model.)



Claim.—1. A wheel adapted to travel over and along a surface; a frame connected therewith; and an eccentrically-hung wheel or cam supported by the frame at a short distance above said surface and on one side of the traveling wheel, said wheel being normally held with its short radius down, whereby the inclination of the traveling wheel causes the eccentric wheel or cam to rotate and thereby restore the traveling wheel to an upright position.

2. A wheel adapted to travel over and along a surface; a frame connected therewith; an eccentrically-hung wheel or cam supported by the frame at a short distance above said surface on one side of the traveling wheel, whereby the inclination of the traveling wheel toward that side causes the eccentric wheel or cam to rotate and thus restore the traveling wheel into an upright position; and a spring or its mechanical equivalent operating to normally hold the said protuberating peripheral edge in a position above the axle or shaft supporting the eccentric wheel or cam, substantially as described.

3. A wheel adapted to travel over and along a surface; a frame connected therewith; a disk supported eccentrically by the frame at a short distance above said surface and on one side of the traveling wheel; and a wheel supported on the periphery of said eccentric disk and operating when the traveling wheel inclines toward that side to rotate by its contact with the ground and to impart rotation to said eccentric disk, substantially as set forth.

4. A wheel adapted to travel over and along a surface; a frame connected therewith; a disk supported eccentrically by the frame at a short distance above said surface and on one side of the traveling wheel; a wheel supported on the periphery of said eccentric disk, the inner surface of the wheel and the periphery of the eccentric disk being coincidently recessed, but the recess in the eccentric being deeper than that in the wheel and being located in the short side of the eccentric; a ball adapted to play in said recesses and lock the wheel and eccentric together when said recesses are below the axis of the latter but drop wholly into the recess in the eccentric when said recesses are above said axis; and a spring or its mechanical equivalent operating to return the eccentric to its normal position in which its short radius is down, substantially as described.

5. A wheel adapted to travel over and along a surface; the frame B, B′ supported by said wheel and extending on opposite sides thereof; horizontal shafts or axles supported by said frame on opposite sides of the wheel; the disk D supported eccentrically upon one of said axles or shafts and provided with the recess H; a spring within said recess secured at its opposite ends to the wheel and shaft and normally holding the protuberating or wider portion of the eccentric wheel above the shaft; the wheel E loose on the periphery of the eccentric disk but prevented from sidewise movement thereon; the periphery of the short side of said disk D being recessed as described and the inner surface of the wheel E being coincidently recessed; a ball adapted to play in said recesses and thereby lock said wheel and disk together when the portions containing the recesses are down; the flange C extending from the supporting frame or axle next the inner face of the eccentric wheel and provided with the shoulders F; and the pin *d* extending from the eccentric wheel next the recessed portion of the periphery of the flange between said shoulders, substantially as set forth.

611,452. COLUMN-SHOE. JAMES M. HOOVER, Homestead, Pa. Filed Oct. 25, 1897. Serial No. 656,875. (No model.)

Claim.—1. In combination with a hollow supporting-column, a shoe having a recess to receive the lower end of the column, said shoe having a central opening registering with the opening in the column and grooves communicating with said opening to secure a free circulation of air around the base, said shoe being further provided with a groove extending around the opening and communicating with the grooves leading to the central opening, and means for holding the shoe in position, substantially as shown and described.

2. A shoe for supporting-columns and the like, having a central opening *f*, a groove *e* extending around the central opening, grooves *g* connecting the groove *e* with the central opening *f*, a recess formed in the top of the shoe to receive the column, and lugs *h* formed on the lower face of the shoe whereby the same is held in position, substantially as shown and described.

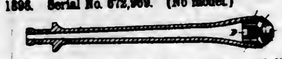
3. In combination with a hollow supporting-column, a shoe having a recess to receive the end of the column, and provided with a central opening, a longitudinal opening *b* in said column and registering with the opening in the plate, a vertical opening *b′* in said column communicating with said longitudinal opening *b*, whereby a free circulation of air is obtained through said column, and means carried by the shoe, whereby the same is held in position, substantially as shown and described.

611,453. GAME-BOARD. CHARLES M. HYATT, Albany, N. Y. Filed Apr. 15, 1898. Serial No. 677,911. (No model.)



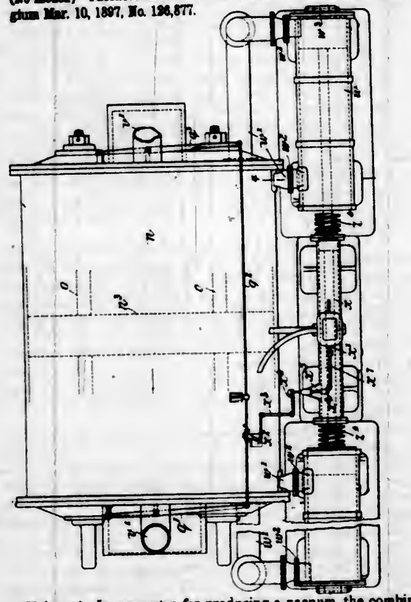
Claim.—A game-board consisting of two members, adapted when not in use as a game-board, to be arranged telescopically in reference to each other, forming a closed receptacle, in combination with detachable spring-clasps, adapted to secure together side by side the two members of the said game-board, the resiliency of said clasp tending to hold the edges of the adjacent members, securely and positively together, substantially as described.

611,454. SYRINGE-TUBE. CHARLES E. LOSEBEE, New Haven, Conn., assignor to the Seamless Rubber Company, same place. Filed Mar. 7, 1898. Serial No. 672,969. (No model.)



Claim.—A syringe-tube comprising a tube partially closed near its outer end by a web forming a concave seat, said web formed with a central threaded opening, and an annular series of perforations around said central opening, a screw entered into said opening and having a head corresponding substantially in diameter to the external diameter of the outer end of the said tube, and formed with a convex under face adapted to enter the outer end of the tube, and also formed with a convex outer face projecting beyond the end of the tube so as to provide a rounded end therefor, substantially as described.

611,455. VACUUM-PRODUCING APPARATUS. WILLIAM R. MAY, London, England, assignor to the Ellis May Vacuum Steel Syndicate, Limited, same place. Filed Aug. 12, 1897. Serial No. 648,062. (No model.) Patented in France Mar. 3, 1897, No. 264,642, and in Belgium Mar. 10, 1897, No. 126,877.



Claim.—1. In apparatus for producing a vacuum, the combination with a main exhauster having a reciprocating piston, of an auxiliary pump communicating with the main exhauster, operating mechanism for said auxiliary pump and means for controlling said operating mechanism by the movements of the main-exhauster piston, substantially as described.

2. In an apparatus for producing a vacuum, the combination with the main exhauster and its reciprocating piston, of an auxiliary pump communicating with the main exhauster, operating mechanism for the auxiliary pump and controlling devices for said operating mechanism having a part extending into the path of the main-exhauster piston, substantially as described.

3. In apparatus for producing a vacuum, the combination with the main exhauster and its reciprocating piston, of an auxiliary pump communicating therewith, a check-valve interposed between the main exhauster and the auxiliary pump, independent operating mechanism for said auxiliary pump and controlling devices for said mechanism, operated by the piston of said main exhauster, substantially as described.

4. In apparatus for producing a vacuum, the combination with the main exhauster having a reciprocating piston, of an auxiliary pump communicating with the main exhauster on opposite sides of its piston, an operating device for said auxiliary pump and controlling devices for said operating device operated by the piston of the main exhauster, substantially as described.

5. In apparatus for producing a vacuum, the combination with the main exhauster having a reciprocating piston, of an auxiliary pump provided with two cylinder and a piston in each cylinder, said cylinders communicating with the main exhauster on opposite sides

of its piston, a single operating device for said auxiliary-pump pistons, and controlling devices for said operating device, operated by the main-exhauster piston, substantially as described.

6. In a vacuum-producing apparatus, the combination with a main exhauster provided with a reciprocating piston, of an auxiliary pump having two cylinders connected independently to said exhauster at opposite sides of its piston, and a piston in each of said cylinders, a single operating device intermediate said pistons and connected to each of the same, and controlling devices for said operating device having a part extending into the path of the main-exhauster piston, substantially as described.

7. In apparatus for producing a vacuum, the combination with a main air-pump or exhauster, of an auxiliary pump comprising two cylinders with pistons arranged in alinement with one another and having a steam-cylinder between them the piston of which is connected to the pistons of the two cylinders and of means whereby the movement of the steam-cylinder piston is controlled by the movement of the piston of the main exhauster, substantially as described.

8. In apparatus for producing a vacuum, the combination of a main pump or exhauster and of an auxiliary exhauster comprising two cylinders, the pistons of which are connected to the piston of an intermediate steam-cylinder, of valve-controlled pipes by means of which each pump-cylinder is placed in communication with each end of the cylinder of the main exhauster and of means whereby the motion of the steam-piston is controlled through the medium of the piston of the main exhauster, substantially as described.

9. In apparatus for producing a vacuum, the combination with an auxiliary air-pump or exhauster, of a main air-pump or exhauster consisting of a pair of cylinders arranged in alinement with one another, a steam-cylinder arranged between the two pump-cylinders, the piston of which steam-cylinder is connected to the two pistons of the pump-cylinders, and operative connections between said main exhauster and the auxiliary pump whereby the said auxiliary pump is controlled by the movements of the main exhauster, substantially as described.

10. In apparatus for producing a vacuum, the combination of a main exhauster, comprising two air-pumps and an intermediate steam-cylinder the piston of which is connected to the two pistons of the said air-pumps, with an auxiliary exhauster also consisting of two cylinders, the pistons of which are connected to the pistons of an intermediate steam-cylinder, the pumps of the main exhauster being each connected with one of the cylinders of the auxiliary exhauster, and operative connections between the main exhauster and the steam-cylinder of the auxiliary exhauster, whereby the said steam-cylinder is controlled by the movements of the main exhauster substantially as described.

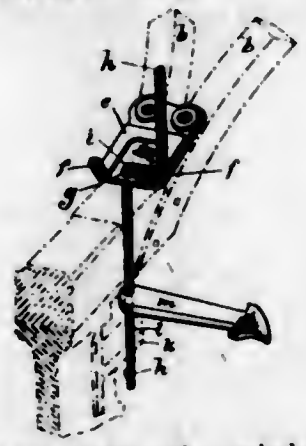
11. In a vacuum-producing apparatus, the combination with the main exhauster comprising two cylinders, a piston in each, an intermediate steam-cylinder, and a piston therein connected with the exhauster-pistons, of an auxiliary pump connected with the exhauster-cylinders, an operating device for said pump, and controlling devices for said pump operated by the pistons of the main exhauster, substantially as described.

12. In a vacuum-producing apparatus, the combination with the main exhauster comprising two cylinders, a piston in each, an intermediate steam-cylinder, and a piston therein connected with the exhauster-pistons, of an auxiliary pump comprising two pumping-cylinders each communicating with one of the main-exhauster cylinders, and provided with a piston, and an intermediate steam-cylinder provided with a piston connected with said auxiliary-pump pistons, and controlling devices for said auxiliary steam cylinder and piston having parts extending into the paths of the main-exhauster pistons, substantially as described.

13. In apparatus for producing a vacuum, the combination with a main exhauster comprising two pump-cylinders the pistons of which are connected to the piston of an intermediate steam-cylinder, of an auxiliary exhauster also comprising two pumps, the pistons of which are connected to the pistons of an intermediate steam-cylinder, of valve-controlled pipes placing one end of each of the main cylinders in communication with one end of each corresponding auxiliary cylinder, of means whereby the motion of the steam-piston of the main exhauster is controlled by the motion of the pistons of the auxiliary exhauster and of means whereby the motion of the auxiliary steam-piston is controlled by the movement of the pump-pistons of the main exhauster, substantially as described.

14. Apparatus for producing a vacuum consisting of a main exhauster having two cylinders n n, the pistons of which are connected to the piston of an intermediate steam-cylinder p and of an auxiliary exhauster also consisting of two cylinders w w, the pistons of which are connected to the piston of an intermediate steam cylinder x and one end of each of which is connected to one end of the corresponding cylinder of the main exhauster, of the levers and rods q q^2, y whereby the auxiliary steam-piston is controlled by the motion of the main pistons n^2 and of the rods and levers s, s' s^2, s^3 whereby the motion of the steam-piston is reversed by the pistons of the auxiliary pump-cylinders, substantially as described.

611,456. PLOW. FREEMAN C. MERRILL, Paris, Me. Filed Aug. 27, 1897. Serial No. 649,677. (No model.)



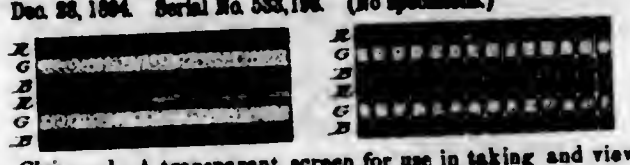
Claim.—1. In combination with a swivel-plow, loops upon the upper and lower edges of the moldboard, an arm suited to engage and hold either of said loops, a rod fixed to said arm, an offset upon said rod and an inclined plane having studs at the lower corners thereof, substantially as described.

2. In combination with a swivel-plow an arm with barbed end fixed to a rod having an offset resting upon an inclined plane, substantially as described.

3. The combination of the moldboard, the loops upon the upper and lower edges thereof, the barbed arm and rod with offsets, and the inclined plane with stops at its base, substantially as described.

4. In combination with a swivel-plow an arm with barbed end fixed to a rod having an offset resting upon an inclined plane whereby the weight of said arm upon said inclined plane causes the barbed end of said arm to engage with the loop on the moldboard, thus holding it firmly in place, substantially as described.

611,457. ART OF PRODUCING PHOTOGRAPHS IN COLOR. JAMES W. MCDONOUGH, Chicago, Ill., assignor, by mesne assignments, to the International Color Photo Company, Jersey City, N. J. Filed Dec. 28, 1894. Serial No. 533,198. (No specimens.)



Claim.—1. A transparent screen for use in taking and viewing a photograph bearing a pattern symmetrical as to a plane in the primary or approximately primary colors used, and in such dyes or pigments as have suitable selective light-absorption properties, substantially as described.

2. A screen or plate for photographic purposes provided with differently-colored substances arranged according to regularly-recurring patterns—as dots, lines, figures—of such colors and proportions as to cause each to absorb such colors as are transmitted by each and all the others, substantially as described.

3. A screen or plate for photographic purposes provided with differently-colored substances arranged according to regularly-recurring patterns—as dots, lines, figures—of such colors and proportions as to cause each to absorb such colors as are transmitted by each and all the others and transmit colors in inverse ratio to the actinic action of the colors on the sensitive photographic plate, substantially as described.

4. A screen or plate for photographic purposes having on its surface red, green and blue colored particles arranged according to regularly-recurring patterns—as dots, lines, figures—symmetrical as to a plane, substantially as described.

5. A screen or plate for photographic purposes having on its surface differently colored substances corresponding to complementary colors of the spectrum, as red and green, blue and yellow, arranged according to regularly-recurring patterns—as dots, lines, figures—symmetrical as to a plane, substantially as described.

6. A white or light-colored material—as paper—bearing a pattern symmetrical as to a plane in the primary or approximately primary colors used, and in such dyes or pigments as have suitable selective light-absorption properties, substantially as described.

7. A white or light-colored material—as paper—provided with colored substances arranged according to regularly-recurring patterns—as dots, lines, figures—of such colors and proportions as to cause each to absorb such colors as are transmitted by each and all the others, substantially as described.

8. A white or light-colored material—as paper—provided with red, green and blue colored substances, arranged according to regularly-recurring patterns—as dots, lines, figures—symmetrical as to a plane, such colors being of such kinds and in such proportions as to present to the eye a white or neutral tint, substantially as described.

9. A white or light-colored material—as paper—provided with red, green and blue colored substances arranged according to regularly-recurring patterns—as dots, lines, figures—in regularly-recurring alternate order and symmetrical as to a plane, such colors being of such kinds and in such proportions as to present to the eye a white or light-colored neutral tint, the patterns being covered with a photographic sensitive material, substantially as described.

10. A white or light-colored material—as paper—provided with differently-colored substances corresponding to complementary colors of the spectrum, as red and green, blue and yellow, arranged according to regularly-recurring patterns—as dots, lines, figures—in regularly-recurring alternate order and symmetrical as to a plane, such colors being of such kinds and in such proportions as to present to the eye a white or light-colored neutral tint, the patterns being covered with a photographic sensitive material, substantially as described.

11. The process of making colored pictures, which consists in making a photographic negative in regular patterns—as dots, lines, figures—by the action of red, green and blue colored lights upon the sensitive plate in such patterns, then making therefrom a corresponding half-tone plate, printing type or surface, then printing from such printing-surface upon material prepared to correspond in colors and to register in form and dimensions with the patterns of colored lights acting upon the negative and with the patterns upon the printing-surface, whereby the colors corresponding to those that do not act upon the negative will be obscured or covered, while such proportion of colored patterns as corresponds to the action of colored lights upon the negative sensitized plate will be left visible, substantially as described.

12. The process of making colored pictures, which consists in printing upon a material prepared to correspond in colors and register in form and dimensions with the patterns of red, green and blue colored lights acting upon a negative, whereby the colors corresponding to those that do not act upon the negative will be obscured or covered, while such proportion of colored patterns as corresponds to the action of the colored lights upon the negative sensitized plate will be left visible, substantially as described.

13. The process of making colored pictures, which consists in covering or obscuring by means of a positive picture the colors upon a material prepared to correspond in color and to register in form and dimensions with the patterns of red, green and blue colored lights acting upon a negative, whereby the colors corresponding to those that do not act upon the negative will be obscured or covered, while such proportion of the colored patterns as corresponds to the action of colored lights upon the negative sensitized plate will be left visible, substantially as described.

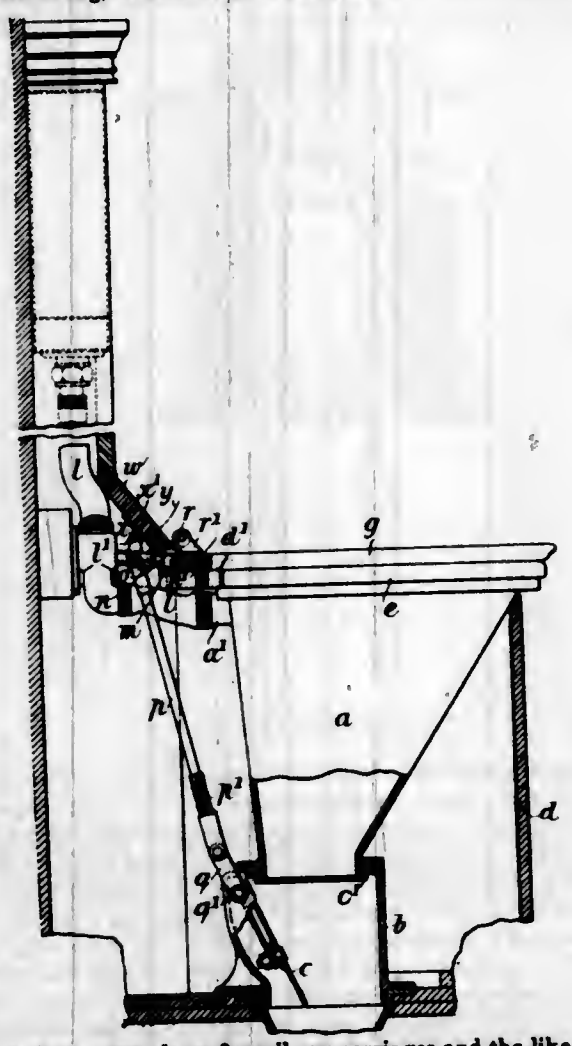
611,458. AUTOMATIC WATER-CLOSET FOR RAILWAY-CARRIAGES, &c. WILLIAM McLAREN, London, England. Filed Mar. 7, 1898. Serial No. 672,945. (No model.)

Claim.—1. In a water-closet for railway-carriages and the like, the combination with the pivoted lid, of a valve for closing the bottom of the pan, a bracket secured to the lid, an arm pivoted to said bracket and operatively connected with said valve to raise the valve when the lid is raised, and a removable pin passing through said bracket and engaging said arm at a distance from its point of pivoting, whereby by removing said pin the said arm and valve will not be operated by the bracket in raising the lid, substantially as described.

2. In a water-closet for railway-carriages and the like, the combination with the pivoted lid, of a valve for closing the bottom of the pan, a flushing device provided with a controlling-valve operated by the raising of the lid to flush the pan, a bracket upon the lid, an arm pivoted to said bracket and operatively connected with the valve for closing the pan to cause the same to move into closed position when the lid is raised, and a removable pin connecting said arm and said bracket at a distance from the point of pivoting of said arm whereby by removing said pin, said arm and the valve for closing the pan will not be operated when the lid is raised while the flush-pipe-controlling valve will be operated, substantially as described.

3. In a water-closet for railway-carriages and the like, the combination with the pan, the pivoted lid, the flush-pipe provided with a valve operated by said lid, and a flush tank or reservoir provided within the same with a compartment separate from the rest of the tank communicating with the flush-pipe, said compartment communicating with the other part of the tank by a minute opening, substantially as described.

4. In a water-closet for railway-carriages and the like, the combination with the pan, the pivoted lid, the flush-pipe provided with a valve operated by said lid, and a flush tank or reservoir provided within the same with a compartment separate from the rest of the tank communicating with the flush-pipe, a casing extending to the outside of the tank, communicating with the main portion of the tank and having a small opening communicating with the said compartment, and a removable plug for closing the outer end of said casing, whereby said plug can be removed to discharge sediment from said casing, substantially as described.



5. In a water-closet for railway-carriages and the like, the combination with a pan, the pivoted lid, a flush-pipe connected with said pan and a valve in said pipe adapted to be operated by said lid, of a flush-tank provided with a measuring-compartment, communicating with said flush-pipe and with said tank by a small opening of less diameter than said pipe, and an independent device for holding the valve in the flush-pipe continually in open position, substantially as described.

6. In a water-closet for railway-carriages and the like wherein the discharge-valve at the bottom of the pan is interlocked with the lid or cover of the closet in such a manner that when the lid is raised the valve is closed and vice versa, a casing inclosing the mechanism of the said closet and having one portion *w* thereof hinged, a tongue *x* upon the said hinged portion of the cover and a horn upon the back of the lid of the closet, the said parts being arranged and operating to prevent the unauthorized opening of the said hinged part *w* of the casing, substantially as described.

611,459. COMPOUND FOR PRESERVING BELTS. MAURICE J. O'DONNELL, Fall River, Mass. Filed Jan. 25, 1898. Serial No. 667,877. (No specimens.)

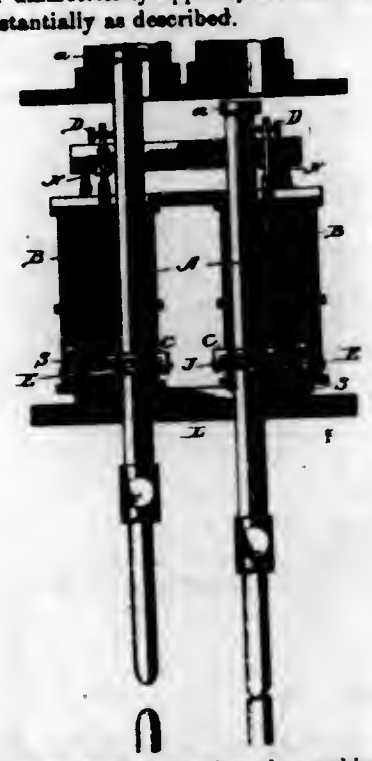
Claim.—The herein-described compound for dressing and preserving belts for machinery, consisting of the following ingredients: cod-liver oil, flour, tallow, and soot, in the proportions, substantially as described.

611,460. ELECTRIC-ARC LAMP. TIMOTHY H. PETTINGILL, Amsterdam, N. Y. Filed Sept. 4, 1897. Serial No. 650,841. (No model.)

Claim.—1. In an arc-lamp feed mechanism, the combination with a suspending-rod adapted for connection to the armature or rocker, of a head secured to said rod having an opening for the loose reception of the carbon-carrier, and provided with an apertured ear diametrically located in relation to the suspending-rod, a ring-clutch having one end loosely received in the apertured ear and an adjusting trip-screw carried by the free end of the ring-clutch and adapted to engage the lamp-frame when lowered sufficiently.

2. In an arc-lamp feed mechanism, the combination with an armature or rocker, and a carbon-carrier, of a suspending-rod depend-

ing from the armature closely adjacent to the carbon-carrier, a head secured to the lower end of the suspending-rod which has an enlarged opening through which the carbon-carrier passes, and is provided with a depending apertured ear located on the opposite side of the carbon-carrier from the suspending-rod, a ring-clutch having a rounded end which is loosely received in the aperture of the ear, an adjusting thumb trip screw-threaded through the other end of the ring-clutch and diametrically opposite the ear, and a check-nut for said screw, substantially as described.

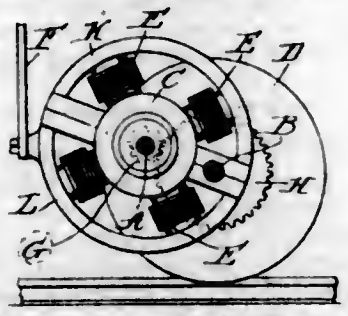


3. In an arc-lamp feed mechanism, the combination with a rocker or armature, and a carbon-carrier having a stop, of a suspending-rod connected to armature and having its upper end extended above the latter in position to engage the stop when the carbon has been consumed, and a carbon-carrier clutch carried by the suspending-rod.

4. In an arc-lamp feed mechanism, the combination with a rocker or armature and a carbon-carrier having a stop, of a suspending-rod connected to the armature and having its upper end extended above the latter, a catch screw-threaded through said extended upper end in position to engage the stop when the carbon has been consumed and a carbon-carrier clutch carried by the lower end of the suspending-rod.

5. In a double-carbon arc-lamp, the combination with an electromagnet, an armature therefor, and independent movable carbon-holders each carrying a stop device, of independent clutch mechanisms, for the respective carbon-holders, each clutch mechanism comprising a suspending-rod hung from the armature and having an upward extension constituting a stop, and a carbon-holder clutch carried by the suspending-rod; the construction and arrangement of said parts being such that a carbon-holder clutch of one clutch mechanism is inactive when the other carbon-holder clutch is in operation, and the stop devices on the respective carbon-holders are arrested by the upward extensions on the suspending-rods of the clutch mechanisms when the carbons carried by said holders have been consumed, whereby, during the operation of the lamp, first one carbon-holder and then the other is directly suspended from the armature and the weight of both carbon-holders is always borne by the armature.

611,461. MOTOR-MOUNTING FOR ELECTRIC CARS. SIDNEY H. SHORT, Cleveland, Ohio. Filed June 26, 1897. Renewed May 19, 1898. Serial No. 681,175. (No model.)



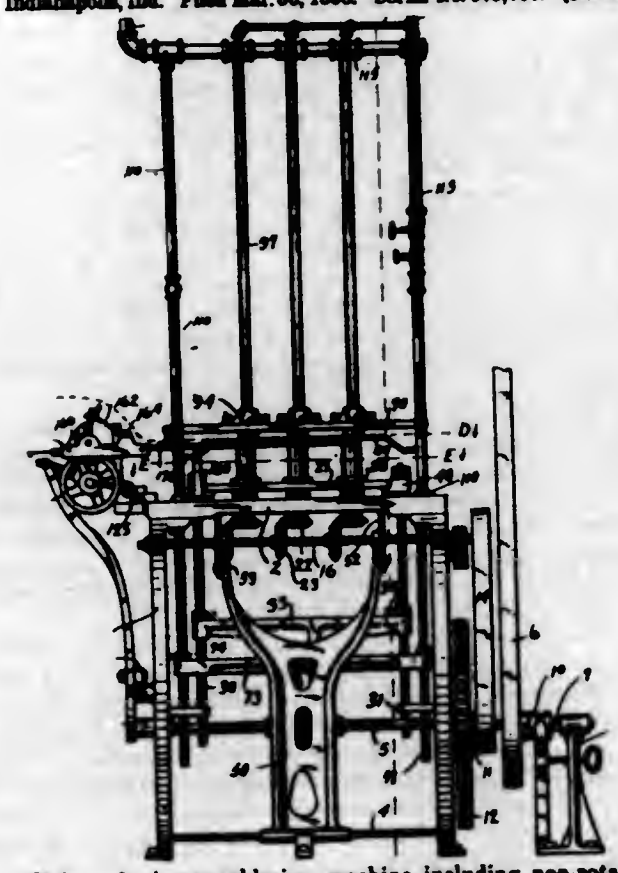
Claim.—1. In a motor-mounting for electric cars, the combination with a multipolar motor and an axle, and gearing connecting the same, said axle arranged to pass within the magnetic ring of the motor-field, as and for the purpose set forth.

2. The combination with a motor armature and shaft, a supporting-frame for multiple magnetic poles of the motor-field, said frame having bearings formed within the magnetic ring of such field, an axle arranged to be received in said bearings, and intermeshing gears mounted respectively on said shaft and axle, as and for the purpose set forth.

3. The combination with a motor armature and shaft, a sectional supporting-frame for the motor-field, bearings formed in the sections of said frame within the periphery thereof, an axle arranged to be received in said bearings and gearing connecting said shaft and axle, as and for the purpose set forth.

4. In a motor-mounting for electric cars, the combination of a multipolar motor and an axle, arranged to pass within the magnetic ring of the field of such motor the shaft of said motor being arranged in a higher plane than said axle, and intermeshing gears respectively mounted on said motor shaft and axle, as and for the purpose set forth.

611,462. CAN-SOLDERING MACHINE. GEORGE VAN CAMP, Indianapolis, Ind. Filed Mar. 30, 1896. Serial No. 675,760. (No model.)



Claim.—1. A can-soldering machine including non-rotary soldering-irons removably mounted in the machine, gas-tubes leading to the irons for heating them and means for rotating the cans while being soldered.

2. A can-soldering machine including a soldering-iron frame, independent stationary soldering-irons resting loosely thereon, and means for rotating the cans while being soldered.

3. A can-soldering machine including a soldering-iron frame, soldering-irons thereon, a cap-holding device, and means for elevating the soldering-frame first and then the cap-holding device.

4. A can-soldering machine including a soldering-iron frame mounted on vertically-movable rods, soldering-irons on said frame, a cap-holding device so connected with such rods that it will be elevated in the highest movement of the rods, and a cam substantially as shown for elevating the rods.

5. A can-soldering machine including soldering-irons mounted loosely therein provided with a fire-box, a soldering-point at the lower end thereof, means for introducing gas into each fire-box and handles for readily removing or replacing said soldering-irons independently.

6. A can-soldering machine including soldering-irons with a fire-box, an annular soldering-point at the lower end thereof, small conduits from the fire-box to the soldering-point, and means for introducing gas into the fire-box.

7. A can-soldering machine including soldering-irons comprising a body portion, a stem extending upward therefrom whose upper end is tubular and adapted to have a gas-supply tube connected therewith, a fire-box and an inflexible tube extending from the tubular stem to the fire-box.

8. A can-soldering machine including a frame for soldering-irons having a pair of parallel bars, a pair of seats oppositely located on said bars, soldering-irons whose points extend between said bars and provided with bearing portions to rest in said seats, and handles on said irons.

9 A can-soldering machine including a finger for holding the cap on the can a soldering-iron provided with a concavity surrounded by an annular soldering-point with a recess on one side to receive the cap-holding finger, and means for vertically moving the soldering-irons into and out of engagement with the cans.

10. A can-soldering machine including a bar provided with a series of cap-holding fingers, one for each can to be soldered, a series of soldering-irons provided with a concavity surrounded by an annular soldering-point with a recess on one side of it to receive the cap-holding fingers, and vertically-moving guide-rods on which both are so mounted that the soldering-irons will be above and movable independent of the cap-holders.

11. A can-soldering machine including a tray, a track therefor through the machine whose outer sections are stationary and the inner section is vertically movable, and means for elevating such inner section to make it aline with the stationary section when desired.

12. A can-soldering machine including rotatable spindles vertically stationary, a tray provided with rotatable can-holders that register with the spindles, means for lowering the can-holders into and elevating them out of engagement with the spindles, a series of soldering-irons registering with the cans on the tray, and means for lowering the soldering-irons into and elevating them out of engagement with the cans.

13. A can soldering machine including rotatable spindles vertically stationary, a tray provided with rotatable can-holders, means for lowering the can-holders into and elevating them out of engagement with the spindles, a series of fingers for holding caps on the cans, means for lowering them into and out of engagement with the caps, a series of soldering-irons, and means for lowering them into engagement with the cans after the cap-holders have been lowered in place and elevating them from the cans before the cap-holders are elevated.

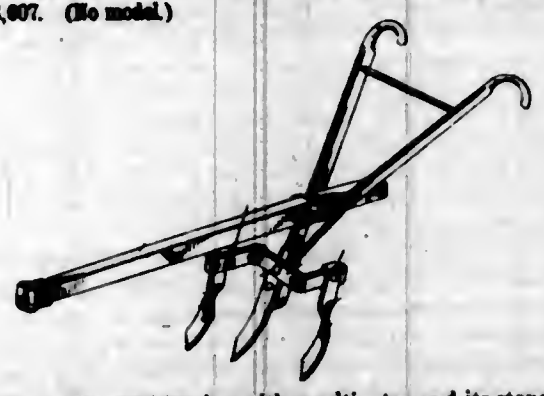
14. A can-soldering machine including guides or tubes for guiding the solder to the soldering irons pivoted near the ends that receive the solder, and means for elevating the other ends of said guides or tubes.

15. A can-soldering machine including a frame for carrying the solder-feeding mechanism, a bar rotatably mounted therein, guides or tubes for guiding the solder to the soldering-irons mounted in said bar, and means for elevating the free ends of said guides or tubes.

16. A can soldering machine including guides or tubes for guiding the solder to the soldering-irons pivoted near the ends that receive the solder, a vertically-movable track or support for the tray that carries the cans to be soldered, and an arm secured to said track or support that engages said guides or tubes so that they will be elevated when the cans are elevated.

17. A can-soldering machine including soldering-irons, guides or tubes for guiding the solder to the irons means for elevating the soldering-irons from the guides or tubes after the cans are soldered and means for subsequently elevating said guides or tubes from the can.

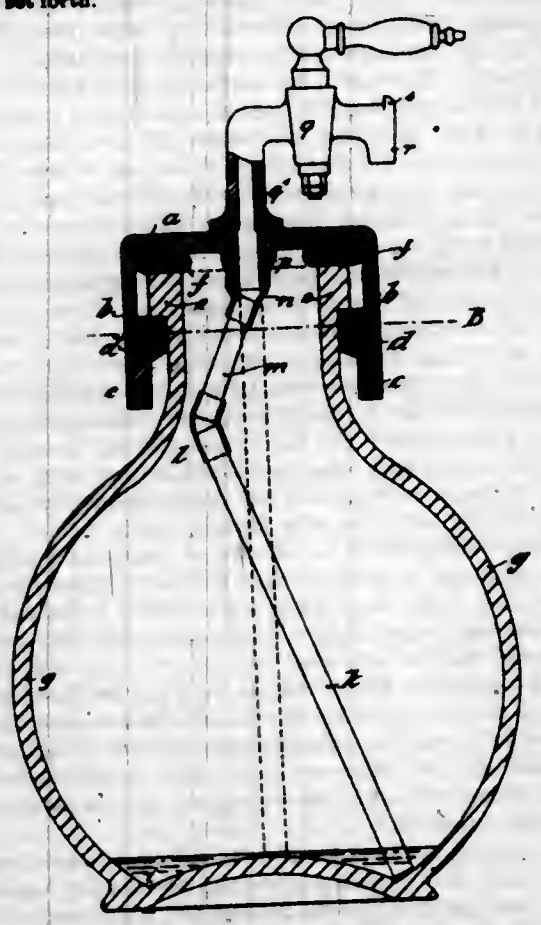
611,468. CULTIVATOR ATTACHMENT. CHRISTOPHER C. WARREN, Chunkey's Station, Miss. Filed June 16, 1898. Serial No. 683,607. (No model.)



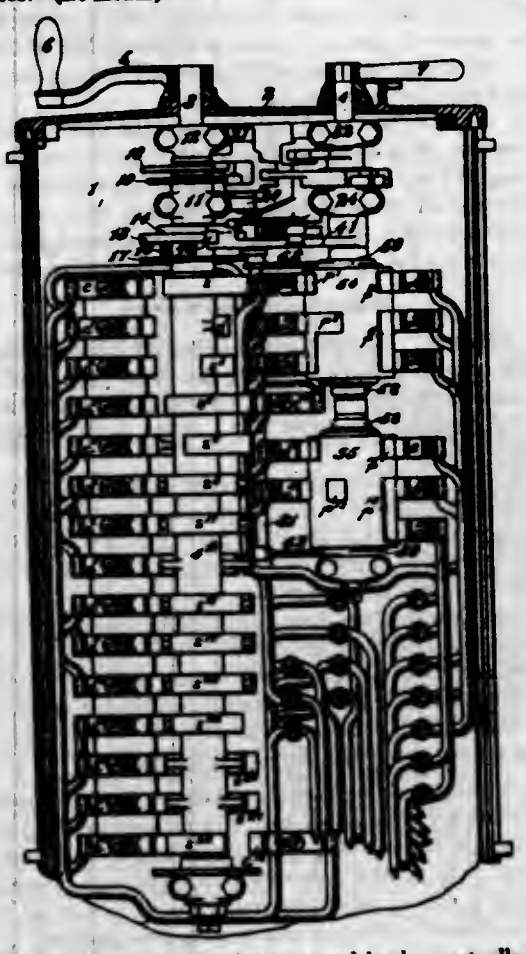
Claim.— The combination with a cultivator and its standard and tooth, of the detachable and reversible Z-shaped bar at its central portion secured to the standard and having the laterally-bent end flanges or lips, and the teeth secured to the ends of the bar and held by said lips and having the bent ends engaging the top edge of said bar.

611,464. VESSEL FOR RETAILING AERATED BEVERAGES. JOSEPH BAER, Berlin, Germany. Filed June 22, 1898. Serial No. 684,156. (No model.)

Claim.—A vessel for retailing aerated beverages or other liquids, comprising a stopper *c* having two or more arms *b* provided with inwardly-projecting notched ends *c*, pressed downward by the action of independent wedges, each movable axially to the center line of the vessel, and bearing against a collar or enlargement *e* on the neck of said vessel and against the said notched arm ends, said stopper having fixed on it an outlet cock or valve *g*, serving also to admit both liquid and gas and being provided below with an upright tube consisting of two or more parts flexibly jointed together, all substantially as set forth.



611,465. CONTROLLER FOR ELECTRIC MOTORS. HARRY P. DAVIS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed Apr. 19, 1898. Serial No. 678,185. (No model.)



Claim.—1. In a combined power and brake controller, the combination with a main drum and coöperating contact-fingers, of a reversing-switch, mechanism intermediate its movable member and the main-drum shaft whereby said member is moved as the main drum moves into the first braking position, and adjusting means for setting said mechanism to throw the movable member of the reversing-switch in either direction as said braking position is reached, said adjusting means being both structurally and operatively independent of the reversing switch.

2. In a combined power and brake controller, the combination with a main drum and coöperating contact-fingers, of a reversing-switch comprising a drum and coöperating contact-fingers, mechanism intermediate said drums, means moving with the main-drum handle and serving to actuate said intermediate mechanism to turn the reversing-switch drum as the main drum passes to and from the first braking position and then only, and structurally and operatively independent means for setting the intermediate mechanism so as to effect the movement of the reversing-switch drum in either direction.

3. In a controller for electric motors, the combination with the main controlling-drum and coöperating contact-fingers, comprising means for varying the circuit connections of the motors and the resistance in said circuits, and means for connecting the motors in parallel in a closed local circuit having equalizing connections and for varying the resistance in said local circuit, of a switch for reversing the motors, and actuating mechanism therefor operated in one direction by the normal movement of the main controller-handle simultaneously with the making of the local circuit and in the other direction simultaneously with the breaking of said circuit, a guide for said actuating mechanism and means for adjusting said guide laterally to insure a reversal of the movements of the reversing-switch with reference to those of the main drum.

4. A reversing-switch for two electric motors comprising two movable members, an actuating device therefor, means for locking either or both of said members to said actuating device and for detaching the same therefrom at will and stationary contacts coöperating with said movable members.

5. In a controller for two electric motors, a combined reversing and cut-out switch comprising two rotatable members, an actuating-shaft therefor, means for connecting either or both of said members to said shaft and for disconnecting the same at will, stationary reversing-contacts, and stationary cut-out contacts coöperating with said rotatable members.

6. In a series-parallel controller for railway-motors, a rotatable contact-drum and coöperating stationary contacts, in combination with a reversing and cut-out switch comprising two drums, an actuating-shaft therefor, means for connecting each of said drums to and disconnecting it from said shaft, stationary contacts coöperating with said drums and a device actuated by said disconnecting means to prevent the rotation of the controller-drum beyond the series contacts.

7. A reversing and cut-out switch for either or both of two electric motors comprising stationary contacts, a shaft, two contact-bearing drums journaled upon said shaft and normally locked thereto and means for unlocking either of said drums and moving it to the cut-out position independently of the other.

8. In a controller for electric motors, the combination with a contact bearing drum and coöperating stationary contacts, of a pair of reversing and cut-out drums and coöperating stationary contacts, an actuating-shaft to which either or both of said drums may be locked and means for locking the controller-drum against rotation when the said actuating-shaft is in an intermediate position.

611,466. ALTERNATING-CURRENT-MEASURING INSTRUMENT. HARRY P. DAVIS, Pittsburg, and FRANK CONRAD, Wilkinsburg, Pa., assignors to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Filed May 7, 1898. Serial No. 680,095. (No model.)

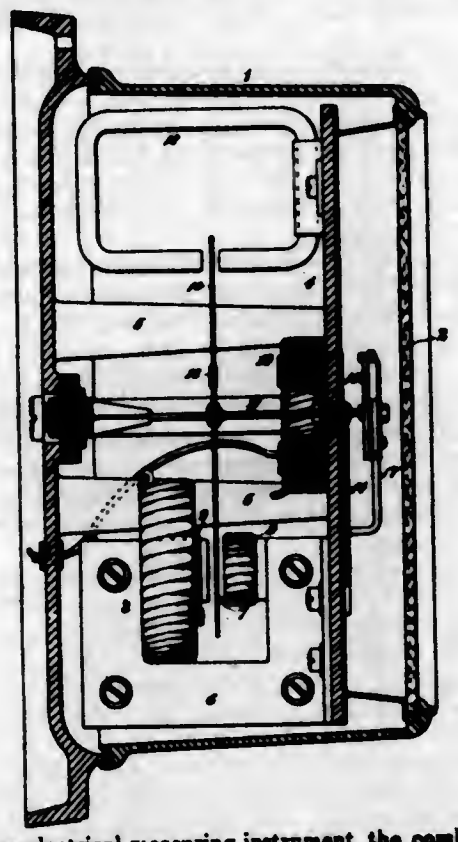
Claim.—1. In an electrical measuring instrument, the combination with a laminated core having an air-gap, of a primary actuating-coil, a secondary coil, a disk armature having radii of different length, an indicating hand or pointer and a spring tending to hold said armature and pointer at the zero position.

2. In an electrical measuring instrument, the combination with a laminated core having an air-gap, of a primary coil, a closed secondary coil, a rotatable disk armature having radii of different length and projecting into said air-gap a maximum distance when in its zero position, means tending to hold the armature at the zero position, and means for indicating the degree of rotation.

3. In an electrical measuring instrument, the combination with a laminated core having an air-gap, of a primary coil and a secondary coil adjacent to such air-gap, a rotatable disk armature having a periphery in the form of one turn of a spiral and projecting into said air-gap, means for indicating the degree of movement of the armature, and means tending to hold it in its zero position.

4. In an electrical measuring instrument, the combination with a primary coil and a closed secondary coil, of a disk armature having a spiral periphery and projecting into the shifting magnetic field produced by the currents in said coils, means for indicating the degree of movement of the armature and means for opposing such movement.

5. In an electrical measuring instrument, the combination with a primary coil and a relatively-displaced closed secondary coil, of a rotatable disk armature, means for opposing such movement, and means for adapting the instrument to differences in current frequencies.



6. In an electrical measuring instrument, the combination with a primary coil and a relatively-displaced closed secondary coil, of a rotatable disk armature in inductive relation to said coils, means for indicating the degree of movement of said armature, and a non-inductive resistance-coil for adapting the instrument to different frequencies.

7. In an electrical measuring instrument, the combination with actuating-coils constructed and arranged to produce a shifting magnetic field, of an armature or secondary member consisting of a disk having a periphery in the form of one turn of a spiral and projecting into said shifting field, and means for indicating the degree of movement of said armature.

8. In an electrical measuring instrument, the combination with actuating-coils constructed and arranged to produce a shifting magnetic field, and a disk armature having a spiral periphery and provided with balancing means, of means for indicating the degree of movement of the armature.

9. In a measuring instrument for alternating electric currents, the combination with a closed-circuit movable member and means for indicating the extent of its movement, of an actuating-magnet and a non-inductive resistance in shunt to said magnet whereby the instrument is adapted to different frequencies of alternations.

10. In a measuring instrument for alternating electric currents, the combination with a closed-circuit movable member and means for indicating the extent of its movement against an opposing force, of an actuating-magnet and a non-inductive resistance having a temperature coefficient at least as great as that of the movable member and connected in shunt to the actuating-magnet to compensate for changes in current frequency and in temperature.

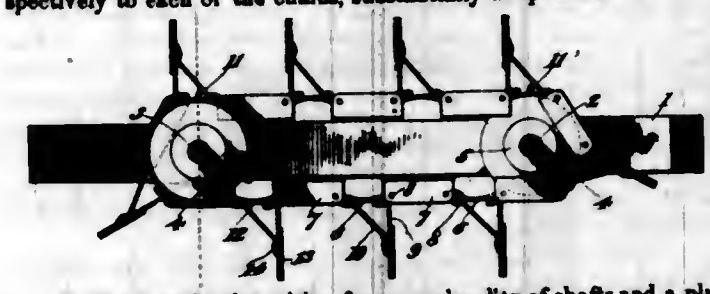
11. In an electrical measuring instrument, the combination with a laminated core having an air-gap, of a primary actuating-coil and one or more closed secondary coils on said core, the secondary coil or coils being laterally displaced with reference to said primary coil, a disk armature projecting into said air-gap, an indicating device and means tending to hold said armature and indicating device at the zero position.

12. In an electrical measuring instrument, the combination with a laminated core having an air-gap, of a primary coil surrounding one arm of the core adjacent to the air-gap, a closed secondary coil surrounding a portion of each arm of the core, a disk armature projecting into the air-gap, an indicating device and means tending to hold the armature and the indicating device at the zero position.

611,467. CHAIN PROPELLER. WALTER DODGE, Monterey, Cal. Filed Aug. 25, 1897. Serial No. 649,470. (No model.)

Claim.—1. In a propelling device for steamboats and the like, the combination with a frame, a pair of shafts and a plurality of pulleys upon each shaft provided respectively with peripheral projections, of a chain for each set of pulleys on the respective shafts, each chain consisting of alternate curved plates designed to conform to

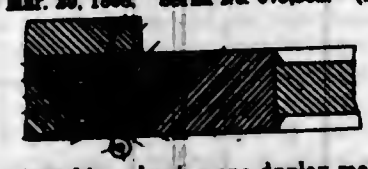
the curvatures of the pulleys and apertured for the reception of the projections, and parallel plates united in pairs extending against the opposite sides of the pulleys and pivoted at their outer corners to the contiguous ends of the curved plates, and paddles secured respectively to each of the chains, substantially as specified.



2. The combination with a frame, a plurality of shafts and a plurality of pulleys upon each shaft, of a chain for each set of pulleys on the shafts, said chains being composed of alternate links consisting of a longitudinally-curved plate and of two parallel plates beyond the side faces of the curved links, paddles located at the extremities of the curved plates and bracing the parallel plates at their outer corners whereby the curved links lie flat against the faces of the pulleys and the parallel plates lie flat against the sides of the pulleys, uprights extending outwardly from one end of each of the curved links, braces secured at their opposite ends to the opposite ends of each of the curved links and to the uprights, and paddles secured respectively to the corresponding uprights of each of the chains, substantially as specified.

3. A chain designed for use as an element of a propelling device for steamboats, composed of alternate longitudinally-curved plates having their extremities bent back and secured upon the body of the plate to form terminal sleeves for the reception of pintles, parallel plates intermediate of each of the curved plates and beyond the edges thereof, pintles passed through the terminal sleeves of the curved plates and piercing the parallel plates adjacent to their outer corners, and mechanism upon each of the curved plates for supporting the paddles, substantially as specified.

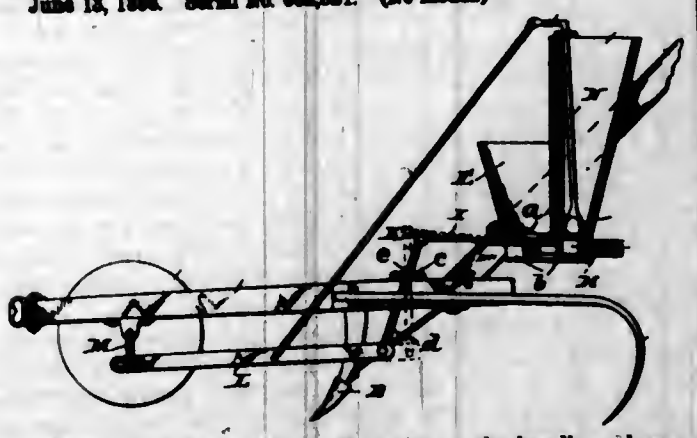
611,468. ADJUSTABLE HINGE. CHARLES M. ELKINS, Wakefield, Mass. Filed Mar. 29, 1898. Serial No. 675,532. (No model.)



Claim.—1. A butt-hinge having one duplex member comprising a fixed portion having a transverse central opening and rigid lugs with unthreaded perforations in alinement at the ends of such opening, and a sliding portion formed with a rearward protuberance extending through said opening and internally threaded in line with the perforations in said lugs, in combination with a screw engaging centrally in said threaded protuberance, turning freely in said lugs and headed at each end to prevent longitudinal movement, substantially as set forth.

2. In a butt-hinge, a duplex member consisting of a fixed portion with a transverse central opening, rearward lugs at the ends of said opening and forwardly-extending terminal flanges, in combination with a sliding portion fitting the face and between the flanges of the fixed part and having a threaded hub or protuberance working within and of less length than said opening, and with an adjusting-screw engaging within said protuberance, passing through perforations in said lugs and headed at each end, substantially as set forth.

611,469. PLANTER. WILLIAM A. FOWLER, Carruth, Ga. Filed June 13, 1898. Serial No. 683,331. (No model.)



Claim.—1. A planter comprising a beam, the handles, a hopper supported by the handles with its bottom in a plane above the upper face of the beam, and an operating-lever intermediately pivoted to the beam one end projecting thereabove and connected directly with a slide-valve, an operating-wheel carried by the beam, and a pitman connecting the wheel and the lever, substantially as described.

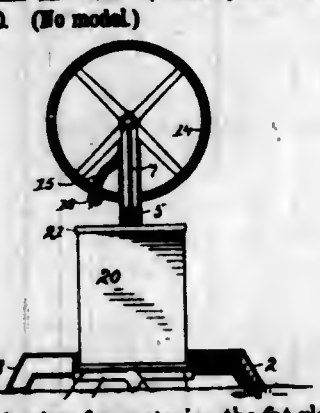
2. A planter comprising a beam, the handles, a hopper supported by the handles with its bottom in a plane above the upper face of the beam, an operating-wheel at the forward end of the beam carrying a crank, a sliding valve at the bottom of the hopper projecting forward over and above the upper face of the beam, and a lever having its upper end U-shaped, the lower wall of the U shape journaled to the beam and its upper wall connected with the slide-valve, and a pitman connecting the lower ends of the lever and the crank-arm of the operating-wheel, substantially as described.

3. A planter comprising a supporting-frame, a hopper, a driving-wheel, a crank pivoted intermediate its ends, and a slide-valve in the lower end of the hopper having a projecting flexible end connected with one end of the operating-lever, and a pitman connecting the opposite end of the operating-lever and the operating-wheel, substantially as described.

4. A planter comprising a beam, the handles, two hoppers supported by the handles one in rear of the other, the rear hopper projecting above the forward hopper, the forward hopper adapted to contain seed and the rear hopper to contain fertilizer, a slide-valve passing through the lower end of the hoppers and common to both of said hoppers, the forward end of the slide-valve projecting over and above the beam, a lever intermediately pivoted to the beam having its upper end connected with the forward end of the slide, an operating-wheel, and a pitman connecting the operating-wheel and the lower end of the said lever, substantially as described.

5. A planter comprising a beam, the handles, two hoppers supported by the handles with their bottoms above the plane of the beam, a driving-wheel, a forwardly-projecting slide-valve for the lower end of the hoppers, a lever pivoted to the beam having its upper end connected with the slide-valve, a pitman connecting the operating-wheel and the opposite end of the lever, a rod vertically journaled within the fertilizer-hopper with its lower end adjacent the lower end thereof, the upper end of the rod provided with a crank-arm, and a rod connecting the pitman and the crank-rod, substantially as described.

611,470. CHURN. WILLIAM F. GATEWOOD, Decatur, Ill., assignor of one-half to Finis M. Johnson, same place. Filed Nov. 15, 1897. Serial No. 658,550. (No model.)



Claim.—1. Mechanism for rupturing the fat globules of milk and coalescing the fat, comprising a prismatic receptacle, a vertical, rotatable shaft in the receptacle, and a hollow cylinder with perforated bottom and no top fixed on the shaft above the bottom of the receptacle whereby the milk is made to pass downward through the perforations, upward outside the cylinder and over the top of the cylinder, substantially as described.

2. Mechanism for rupturing the fat globules of milk and coalescing the fat, comprising a prismatic receptacle, a vertical rotatable shaft in the receptacle, and a hollow telescoping cylinder with perforated bottom and no top fixed on the shaft above the bottom of the receptacle, substantially as described.

3. Mechanism for rupturing the fat globules of milk and coalescing the fat, comprising a prismatic receptacle, a vertical rotatable shaft in the receptacle and a hollow cylinder with a bottom but no top fixed on the shaft above the bottom of the receptacle, the bottom of the cylinder having a set of perforations near its perimeter and also having another set of perforations nearer its center, substantially as described.

4. In mechanism for rupturing the fat globules of milk and coalescing the fat, the combination of the tripod-formed frame, having the triangularly-disposed seat-bosses, the prismatic receptacle seated on the bosses, the gear-wheel journaled in the frame above the receptacle, the longitudinally-shiftable vertical shaft having a pinion and a clutch-head, the vertical shaft in the receptacle adapted to engage the clutch-head and a hollow cylinder having a perforated bottom and no top fixed on the vertical shaft above the bottom of the receptacle.

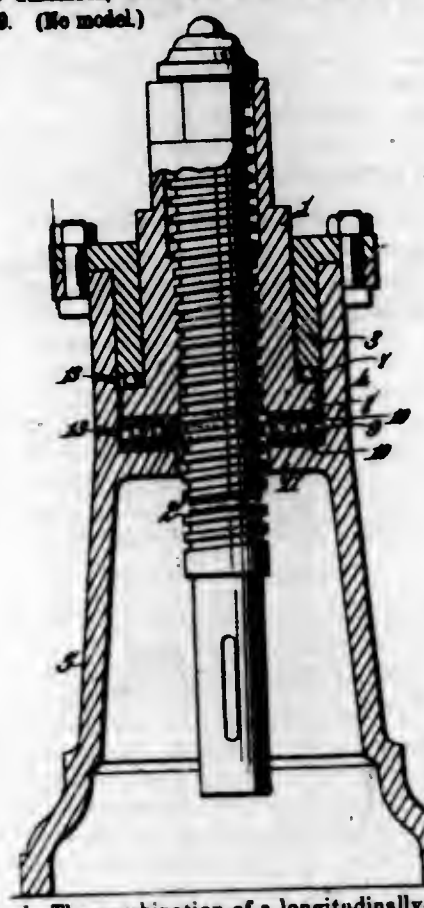
611,471. REGULATOR FOR GAS-BURNERS. ROBERT GILCHRIST, Louisville, Ky. Filed Nov. 19, 1897. Serial No. 659,133. (No model.)



Claim.—1. The herein-described device for regulating the flow of gas in gas-burners, said device comprising a small solid plug adapted to fit within an ordinary gas-burner tip, said plug being of increasing diameter toward its base, and partially cut away upon one or more of its sides to form gas-passages, together with means whereby the said plug may be adjusted longitudinally in the tip and secured in its different adjustments for the purpose of changing the area of the said passages, substantially as specified.

2. The combination with a gas-burner tip, having opposite pin-holes in its lateral walls, of a regulating or retarding device comprising a small tapered plug inserted into the lower end of said tip and formed with two or more pin-holes extending diametrically therethrough either one of which may be brought to register with the holes of the tip, said plug also having one or more of its sides shaped to provide a gas-passage thereby, substantially as and for the purpose set forth.

611,472. MECHANISM FOR OPERATING SLUICE-GATES, &c. RICHARD S GILLESPIE, New York, N. Y. Filed Feb. 16, 1898. Serial No. 670,569. (No model.)



Claim.—1. The combination of a longitudinally-movable screw-shaft, a rotatable nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same, a fixed bushing placed around said nut, antifriction-balls in annular series intermediate the said nut and bushing to take the thrust of the nut, the said balls having their bearings in concaved annular grooves, and means for rotating the nut, substantially as described.

2. The combination of a longitudinally-movable screw-shaft, a rotatable nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same and provided with an external annular flange or collar, a fixed bushing placed around said nut, a pedestal or frame for supporting the said nut and bushing, and antifriction-balls arranged in one or more annular series on opposite sides of the nut flange or collar and working in concaved annular grooves, substantially as described.

3. The combination of a longitudinally-movable screw-shaft, a rotatable nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same and provided with an external annular flange or collar, a fixed bushing placed around said nut, an annular series of antifriction-balls intermediate said bushing and one side of the said nut collar or flange, and antifriction-balls in a plurality of annular series on the opposite side of said nut collar or flange, all the balls being arranged to work in concaved annular grooves, substantially as described.

4. The combination of a longitudinally-movable screw-shaft, a rotatable nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same and provided with an external annular flange or collar, a fixed bushing placed around said nut, an annular series of antifriction-balls intermediate said bushing and one side of the said nut collar or flange, antifriction balls in a plurality of annular series on the opposite side of said nut flange or collar, and annular hardened-steel plates between which the last-named balls are placed, all the balls being arranged to work in concaved annular grooves, substantially as described.

5. The combination of a longitudinally-movable screw-shaft, a rotatable nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same and provided with an external annular flange or collar, an annular series of antifriction-balls above the said collar, antifriction-balls in a plurality of annular series below the said collar, annular hardened-steel plates between which the balls are placed and having concaved annular grooves for the balls to travel in, and a fixed bushing or cap placed around said nut and balls, substantially as described.

6. The combination of a longitudinally-movable screw-shaft, a rotatable nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same and provided with an external annular flange or collar, a fixed bushing placed around said nut, and antifriction-balls in a plurality of annular series on opposite sides of said nut flange or collar and the said balls being proportioned in size to the radius of the path in which a series of said balls is to travel, substantially as described.

7. The combination of a longitudinally-movable screw-shaft, a rotatable nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same and provided with an external annular flange or collar, a fixed bushing placed around said nut, antifriction-balls in annular series on opposite sides of said nut flange or collar, and reservoirs for mercury to immerse said balls, substantially as described.

8. The combination of a longitudinally-movable screw-shaft, a nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same, a fixed bushing placed around said nut, and antifriction-balls immersed in mercury and arranged to take the thrust of said nut, substantially as described.

9. The combination of a longitudinally-movable screw-shaft, a nut or internally-threaded cylinder engaged with said screw-shaft to actuate the same and provided with an external annular flange or collar, antifriction-balls in a plurality of annular series on each side of said nut flange or collar, a fixed bushing placed around the nut, a pedestal supporting the said nut and bushing and provided with an internal annular flange below the nut, and a pipe secured in contact with the said pedestal-flange to form a reservoir for a heavy fluid to immerse the balls, substantially as described.

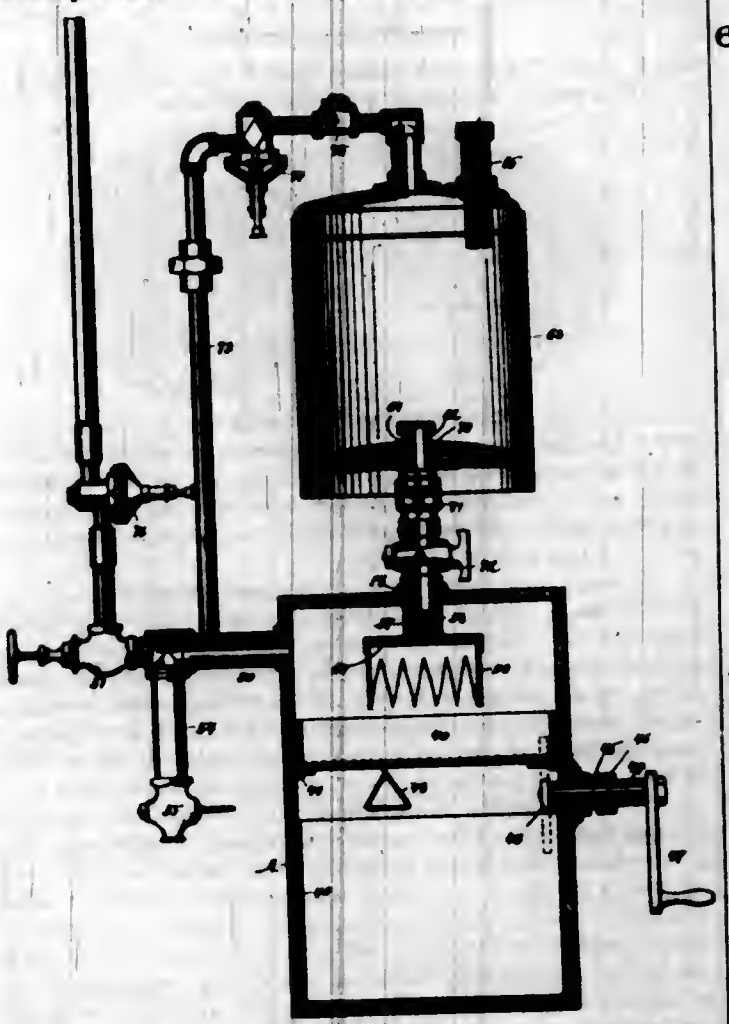
611,478. METHOD OF AND APPARATUS FOR GENERATING ACETYLENE GAS. CLARENCE R. GILLETT, Chicago, Ill., assignor to Henry W. Leeman, same place. Filed Aug. 26, 1898. Serial No. 689,543. (No model.)

Claim.—1. The method of generating acetylene from metallic carbids which consists in establishing a definite, uniform gas-pressure upon the confined water-supply, and when such pressure exceeds that present at the carbid charge, injecting the water thence under the resultant superpressure onto said charge, intermittently checking the inflow under extra normal pressure of the evolved gas and, as evolution proceeds, automatically maintaining such definite pressure on the confined water-supply to keep the same essentially even despite the variations in pressure of the evolved gas, substantially as described.

2. The combination with the carbid-retort and with the line-pipe leading therefrom to the distribution-circuit, of the close water-supply tank, the feed-tube intermediate said tank and retort and having a stop-valve to check the flow of water from tank to retort through said tube and suitable means for establishing a definite, uniform gas-pressure at the water-tank so as to inject the water thence by such pressure when the same exceeds that present in the retort, and for automatically maintaining the definite gas-pressure at said tank despite the variations in pressure at the retort, substantially as described.

3. The combination with the carbid-retort and with the line-pipe leading therefrom to the distribution-circuit, of the close water-supply tank, the feed-tube intermediate said tank and retort, the stop-valve to check the flow of water from tank to retort through said tube, a pressure-pipe leading into said tank and the reducer and

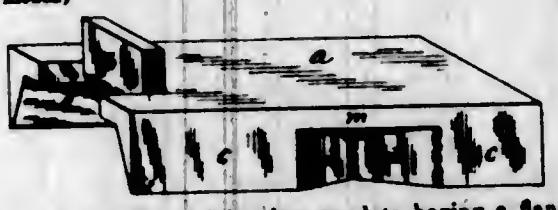
check-valve mechanism to allow delivery of gas at definite tension by said pipe into said tank and to there detain it under practically uniform pressure, substantially as described.



4. The combination with the water-supply tank and with the carbid-retort, of the intermediate feed-tube, the stop-valve to check the flow of water from tank to retort through said tube, the pressure-pipe in communication between retort and tank, and the reducer and check-valve mechanism to deliver gas at definite tension by said pipe from retort to tank and there detain it under practically uniform pressure, substantially as described.

5. The combination with the carbid-retort and with the water-supply tank, of the intermediate feed-tube having one-way check-valve therein, the line-pipe leading from the retort to the distribution-circuit and furnished with a reduction-valve, and the pressure-conduit interposed between the retort and tank, discharging into said tank and having a reduction-valve and separate check-valve therein, substantially as described.

611,474. RAIL-SUSTAINING BAR AND PLATE. WILLIAM GOLDIE, Wilkinsburg, Pa. Filed Oct. 22, 1897. Serial No. 655,992. (No model.)



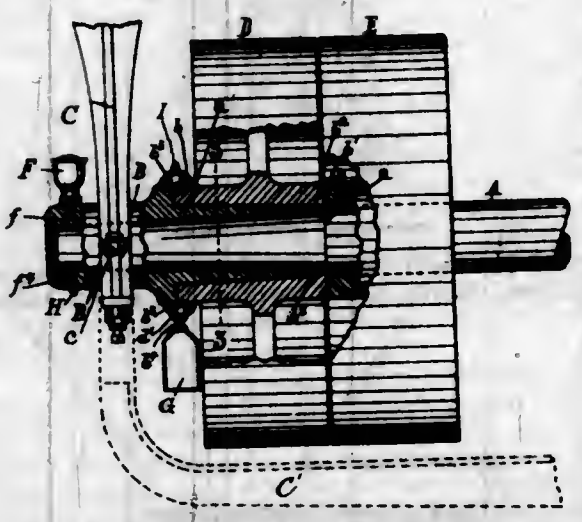
Claim.—1. A rail-sustaining bar or plate having a flange extending longitudinally thereof, and having between the ends of such flange portions bent at an angle to the main body thereof, said angle portions extending toward and at opposite angles to each other, substantially as set forth.

2. A rail-sustaining bar or plate having flanges extending longitudinally along the outer edges thereof, and having between the ends of the flanges portions thereof bent inwardly at an angle to each other and to the main bodies of the flanges so that the bent portions of each flange extend under the body of the bar toward the bent portion of the other flange, substantially as set forth.

3. A rail-sustaining bar or plate having a flange extending longitudinally thereof and having between the ends of the bar portions of said flange bent at an angle to the main body thereof, said portions extending at opposite angles to each other, and the inner ends of said angle portions being united, substantially as set forth.

4. A rail-sustaining bar having flanges extending longitudinally thereof and having at one end a shoulder bent upwardly out of the body of the bar, while the flanges extend parallel with each other beyond said shoulder, substantially as set forth.

611,475. LUBRICATOR. JOHN GREENWOOD, Rochester, N. Y. Filed Mar. 24, 1898. Serial No. 674,964. (No model.)



Claim.—1. The combination of a shaft; a non-rotatable box formed internally to fit the shaft and having an external tapered bearing-surface; a loose pulley having a hub tapered internally and fitting the external bearing-surface of the box; said box having an orifice connecting the interior of the box with the exterior thereof and located at or near the smaller end of the tapered box; and an oil-supply to the outer end of the shaft.

2. The combination of a shaft having a tapering end; a non-rotatable box tapering internally to fit the shaft, and having an external reverse taper; a loose pulley fitting the external taper of the box; said box having an orifice connecting the interior of said box with the exterior thereof, located at or near a point where the interior and exterior surfaces are nearest together; and an oil-supply to the end of the shaft.

3. The combination of a shaft having a tapering end; a non-rotatable box tapering internally to fit the shaft, and having an external reverse taper; a loose pulley fitting the external taper of the box; said box having an orifice connecting the interior of said box with the exterior thereof, located at or near what is the lowest part of the interior of said box when the said shaft is horizontal; said box having also a longitudinal channel in the interior surface of the box leading from said orifice to the end of the shaft; and an oil-supply to the end of the shaft.

4. The combination of a shaft having a tapering end; a non-rotatable box tapering internally to fit the shaft, and having an external reverse taper; a loose pulley fitting the external taper of the box; said box having an orifice connecting the interior of said box with the exterior thereof, located at or near a point where the interior and exterior surfaces are nearest; an oil-supply to the end of the shaft; and a drip-cup at the outer end of the reverse external taper of said box.

5. The combination of a shaft having a tapering end; a non-rotatable box tapering internally to fit the shaft and having an external reverse taper; a loose pulley fitting the external taper of the box; said box having an orifice connecting the interior of said box with the exterior thereof, located at or near a point where the interior and exterior surfaces are nearest together; an oil-supply to the end of the shaft; a chamber around the said box above the outer end of the reverse external taper of said box; and a drip-cup beneath said chamber.

6. The combination of the shaft A having a tapering end; the non-rotatable box B' tapering internally to fit the shaft and having an external reverse taper; the loose pulley D, fitting the external taper of the box; said box having the orifice b' connecting the interior of said box with the exterior thereof, located at or near the point where the interior and exterior surfaces are nearest together; said box having also the longitudinal channel b' in the interior surface of the box leading from said orifice to the end of the said shaft; and an oil-supply to the end of the shaft.

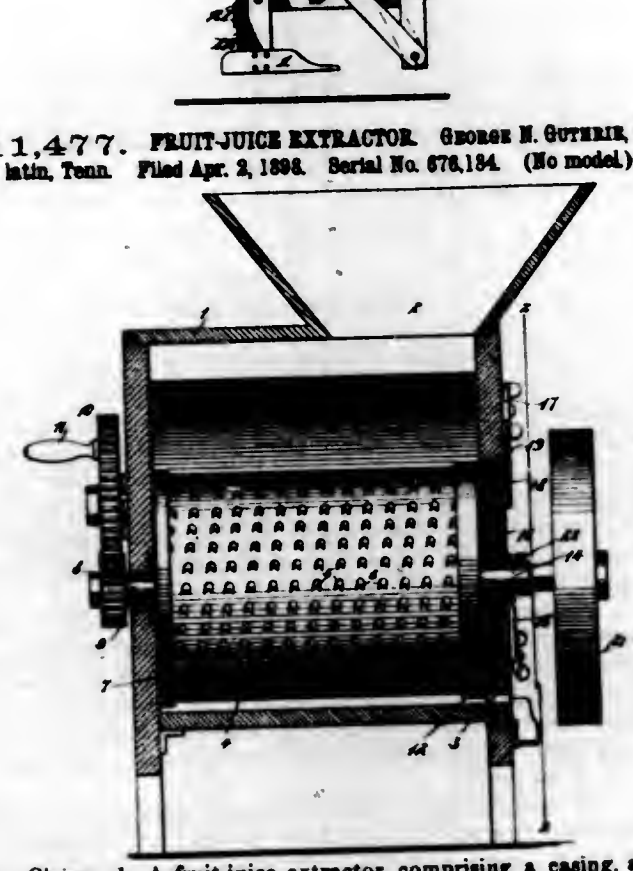
611,476. COMBINED CLOTHES-RACK, IRONING-BOARD SUPPORT, AND RECEPTACLE. ERNEST C. GROTHEER, St. Louis, Mo. Filed Jan. 31, 1898. Serial No. 668,567. (No model.)

Claim.—In an article of the character described, the combination of standards, slats on said standards, uprights, slats on said uprights, cross-bars, pivotally connecting said standards and uprights, slats on the lower cross-bars, bars pivoted to said uprights and a bar connect-

ing the outer ends of said last-mentioned bars; substantially as described.



611,477. FRUIT-JUICE EXTRACTOR. GEORGE M. GUTHRIE, Gallatin, Tenn. Filed Apr. 2, 1898. Serial No. 676,184. (No model.)



Claim.—1. A fruit-juice extractor, comprising a casing, a perforated cylinder having cutters for reducing fruit to pomace and mounted to rotate in the casing, a screw-shaft extended through the cylinder, and a presser-plate in the cylinder adapted to be moved by the screw-shaft, substantially as specified.

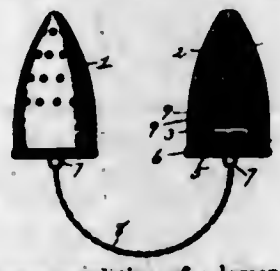
2. A fruit-juice extractor, comprising a casing, a perforated cylinder having cutters spirally arranged for reducing fruit to pomace, a presser-plate in the cylinder, and means for moving the presser-plate in the cylinder, substantially as specified.

3. A fruit-juice extractor, comprising a casing having a hopper at one end, a perforated cylinder in the casing, cutting-teeth extended outward from the cylinder and spirally arranged and designed to reduce fruit to a pomace, a perforated presser-plate in the cylinder, and a screw-shaft for moving the presser-plate in the cylinder, substantially as specified.

4. A fruit-juice extractor, comprising a casing having a removable end wall, a perforated fruit-reducing cylinder in the casing, a head secured to one end of the cylinder, a ring secured to the other end of the cylinder, a disk removably secured to said ring and having a tubular trunnion, a screw shaft having a bearing through said trunnion, and a presser-plate operated by the screw-shaft, substantially as specified.

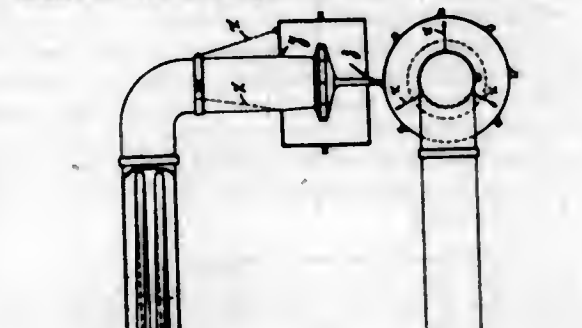
5. A fruit-juice extractor, comprising a casing, a fruit-reducing cylinder mounted to rotate in the casing, a presser-plate movable in the cylinder and means for moving said plate, substantially as specified.

611,478. RESPIRATOR. SAMUEL L. HANNON and MARY A. JORDAN, Washington, D. C. Filed Dec. 3, 1897. Serial No. 660,665. (No model.)



Claim.—A respirator consisting of a lower cylindrical imperforated shell and an upper conical multiperforate portion integral therewith, a removable multiperforated plug adapted to close the end of the receptacle, the device being adapted to be retained within the nostril by frictional contact.

611,479. NUT-LOCK. CARL E. HARLING, New York, N. Y. Filed Jan. 29, 1898. Serial No. 668,446. (No model.)

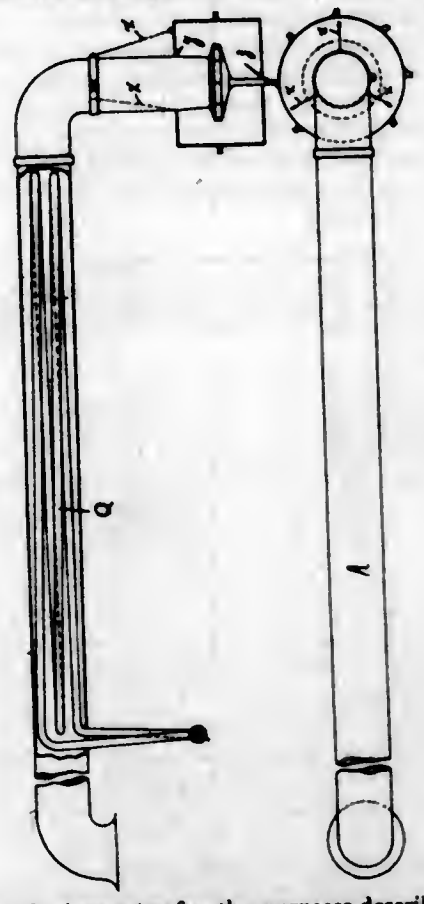


Claim.—1. A nut consisting of a wrench-engaging portion and a circumferential flange having a cavity therein, in combination with a spring mounted in said cavity, a catch carried by the free end of said spring, and a stud connected to said catch and projecting through and working in a radially-disposed slot in said flange, substantially as and for the purpose described.

2. A nut consisting of a wrench-engaging portion and a circumferential flange having a cavity therein, in combination with a spring located in said cavity and fixed at one end, a catch connected to the free end of said spring and working through a radial extension of said cavity and projecting into the bore of the nut, and a stud connected to said catch and projecting through and working in a radially-disposed slot in said flange and located to one side of the plane of the wrench-engaging portion of the nut, substantially as described.

3. A nut consisting of a wrench-engaging portion and a circumferential flange having a segmental cavity therein, in combination with a curved leaf-spring having one end fastened in said cavity, a catch carried by the free end of said spring and working through a radial extension of said cavity and projecting into the bore of the nut, and a stud connected to said catch and working through a radial slot in the flange and projecting at one side of the wrench-engaging portion of the nut so as to be engaged by the wrench and for throwing the catch out of action, substantially as described.

611,480. APPARATUS FOR VENTILATING. JOHN A. HART, Blackburn, England. Filed Apr. 27, 1897. Serial No. 634,118. (No model.) Patented in England Jan. 20, 1894, No. 1,272.

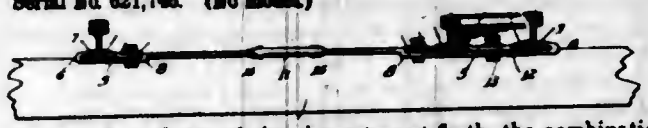


Claim.—1. Apparatus for the purposes described, consisting of a fan or equivalent apparatus for inducing currents of air and an air-inlet therefor, in combination with a cage or casing around the said fan, and having free air-outlets into the apartment in a horizontal, or approximately horizontal direction, for air-currents of high speed, and means for discharging diffused currents of air into the apartment

in proximity to the said outlets, whereby the currents of air induced by the high-speed air-currents are wholly or in the main part the said diffused currents of air, thereby preventing objectionable air-currents in the apartment, substantially as hereinbefore explained.

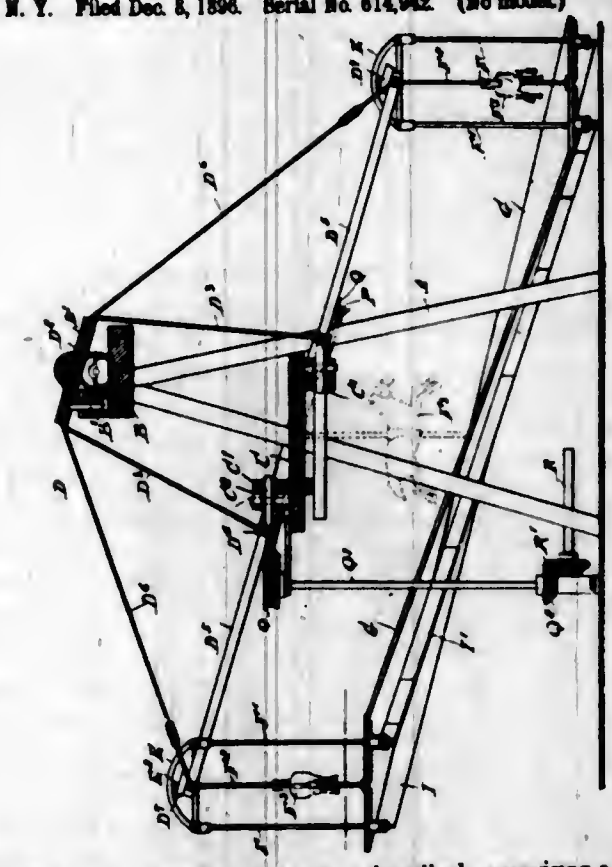
2. In apparatus for the purpose described, a fan or equivalent means, for inducing currents of air, and an air-inlet therefor, in combination with a cage having openings through which the air is caused to pass into the apartment, the said cage being supported so as to be free to vibrate or oscillate, substantially as hereinbefore described.

611,481. RAIL-CLAMP. JOHN M. HENIGAN, Uvalde, Tex., assignor of one-half to Charles W. Watt, same place. Filed Feb. 3, 1897. Serial No. 621,746. (No model.)



Claim.—In a clamp of the character set forth, the combination of a shank provided at its outer portions with outwardly-facing shoulders formed by striking the said shank downwardly at said points and from which continues opposite stationary jaws having outer upturned ends to engage the outer portions of the base-flanges and railway-rails, the one jaw from the position of the shoulder being longer than the other, movable members having their inner ends fitted against the shoulders and their outer portions flared upwardly to pass over the inner parts of the base-flanges of the rail and detachably secured by bolts, another removable member having its opposite ends flared upwardly and adapted to be placed upon the longer jaw between closely-arranged rails, and a turnbuckle at about the central portion of the shank, substantially as described.

611,482. MERRY-GO-ROUND. WILLIAM HERFURTH, New York, N. Y. Filed Dec. 8, 1896. Serial No. 614,942. (No model.)



Claim.—1. A device of the class described, comprising a revoluble frame having its axis inclined for the frame to rotate in an inclined plane, levers hung on the outer ends of the said frame, a flexible platform suspended from the said levers, and supporting devices carried by the suspending devices of the platform above said platform, substantially as shown and described.

2. A device of the class described, comprising a tower, a revoluble frame mounted to turn on the said tower in an inclined plane, means for imparting a rotary motion to the said frame, levers hung on the outer ends of the said frame and adapted to carry a load, and a flexible platform suspended from the said levers under the load, substantially as shown and described.

3. A device of the class described, comprising an inclined frame mounted to turn, beam-levers hung on the outer ends of the frame, links carried by the said beams and supporting the load, rings connected with the said links, and a platform made in sections and carried by the said rings, substantially as shown and described.

4. A device of the class described, comprising a revoluble inclined frame, beams hung on the outer ends of the said frame, links carried by the said beams, rings pivotally connected by the said links and arranged concentric to one another, with the inner ring in sections loosely connected with each other, to permit of expanding and contracting, and a platform made in sections and carried by the said rings, substantially as shown and described.

5. A device of the class described, comprising a revoluble inclined frame, beams hung on the outer ends of the said frame, links carried by the said beams, rings pivotally connected by the said links and arranged concentric to one another, with the inner ring in sections loosely connected with each other, to permit of expanding and contracting, a platform made in sections and carried by the said rings, and intermediate devices held on the said rings for supporting the sections of the platform, substantially as shown and described.

6. In a device of the class described, the combination with a sectional platform, of a support for the same, consisting of clips, rings carried by the clips, one of the rings being formed in sections, transverse bars formed of jointed sections, plates at the joints of the transverse bars, rods connecting the said plates, and brackets secured to the said rings between the transverse bars and connected with each other, substantially as described.

7. In a device of the class described, the combination with a revoluble inclined frame, and links suspended therefrom, of clips on the lower ends of the links, rings carried by the clips, one of the said rings being formed in sections, transverse bars formed of pivotally-connected sections, plates at the joints of said bars, rods connecting the plates, brackets secured to the rings intermediate of the transverse bars and connected together, and a platform formed of sections, substantially as described.

8. A device of the class described, comprising a tower having an upper and lower bearing, the upper bearing being provided with vertically-disposed wheels and the lower bearing with horizontal wheels, a revoluble frame held in an inclined position and supported on the said bearings, the said frame being provided with a cap-plate having an annular groove on its under face engaging the vertically-disposed wheels of the upper bearing, a ring connected with the said cap-plate and engaged at its inside by the horizontal wheels of the lower bearing, arms extending outwardly from the said ring and connected by stays with the cap-plate, a flexible platform suspended from the said arms, and seats above the platform and traveling therewith, substantially as shown and described.

9. A device of the class described, provided with a circular flexible platform mounted to turn in an inclined plane, and supporting devices extending longitudinally above the said platform and traveling with the same and extending at varying angles to the platform during the revolution thereof, substantially as shown and described.

10. A device of the class described, comprising a frame mounted to revolve in an inclined plane, a platform suspended from the frame and traveling therewith in an inclined plane, and seats carried by the supports of the platform and held in a horizontal position above the said platform, substantially as described.

11. A device of the class described, comprising a frame mounted to turn in an inclined plane, rocking supports carried by the frame, a platform suspended from said supports, and seats carried by the suspending devices of the platform and held in a horizontal position above the said platform, substantially as described.

12. A device of the class described, comprising a revolving frame having its axis inclined, a flexible platform, means for suspending the platform from the frame, and seats carried by the suspending means above the platform, substantially as described.

13. A device of the class described, comprising a revolving frame having its axis inclined and provided with radial arms, bails pivoted to the arms, a platform, rods connecting the bails with the platform, and intermediate rods secured to the bails and platform and carrying supporting devices, substantially as described.

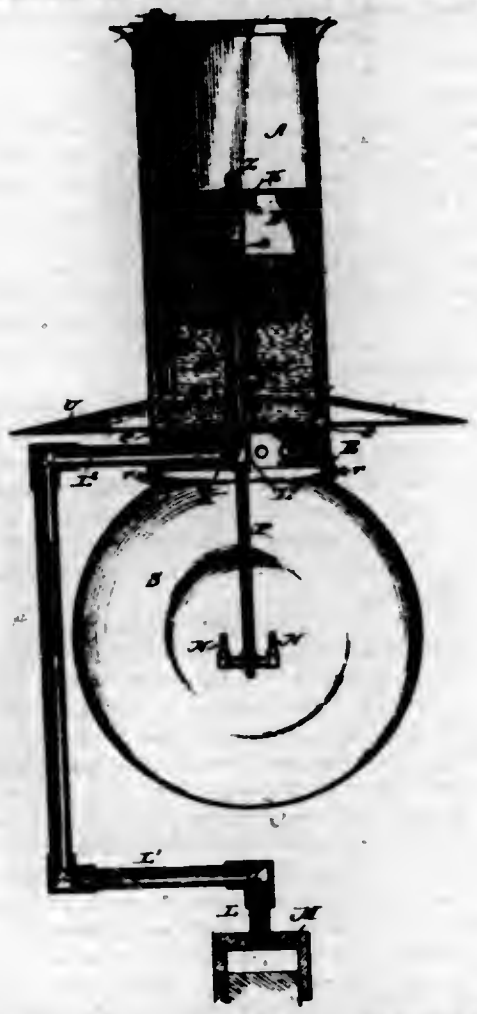
14. A device of the class described, comprising a revolving frame having its axis inclined and provided with radial arms having sockets at their ends, bails provided with arms having balls at their ends fitting in the said sockets, a platform, rods connecting the bails with the platform, an intermediate rod for each bail, and supporting devices carried by the said intermediate rods, substantially as described.

15. The combination with a support, of an approximately circular frame mounted on the support off its axis of rotation and so arranged relatively thereto as to hang therefrom in an inclined position, means for rotating the frame, and a platform loosely suspended from said inclined frame, substantially as described.

16. The combination with a support, of an approximately circular frame mounted on the support off its axis of rotation and so arranged relatively thereto as to hang therefrom in an inclined position, means for rotating the frame and a platform constructed in jointed sections and loosely suspended from said frame, substantially as described.

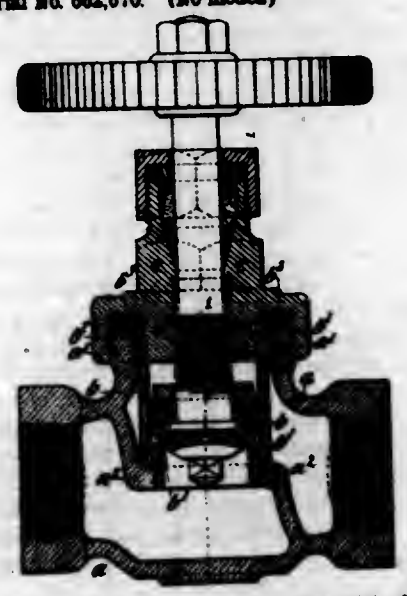
611,488. ACETYLENE-GAS GENERATOR. GEORGE L. HOGAN, Baltimore, Md. Filed Apr. 12, 1898. Serial No. 677,442. (No model.)

Claim.—1. In an acetylene-gas generator, the combination of a water-tank, and a floating gasometer; of a pipe extending vertically through the top of the gasometer and opening into the same near the bottom, and extending also above the same, a guide for said upward extension, and a device for locking said pipe rigidly in said guide when desired substantially as and for the purpose described.



2. In an acetylene gas generator, the combination of a water-tank having a vertical stationary and central gas-discharge pipe opening through the bottom of the same, and a rising-and-falling gasometer, provided with a basket for calcium carbid; and a downwardly-projecting pipe attached thereto and telescoping over the stationary discharge-pipe, an ash-pan wholly disconnected from the gasometer and having a hole through its middle with a standing flange around the same and also around its outer edge, said pan being detachably arranged in the bottom of the water-tank and around the central discharge-pipe and arranged to receive in its central opening the downwardly-projecting pipe of the basket substantially as shown and described.

611,484. STOP-VALVE. JOSEPH HOPKINSON, Huddersfield, England, assignor to J. Hopkinson & Co., Limited, same place. Filed Dec. 20, 1897. Serial No. 662,670. (No model.)

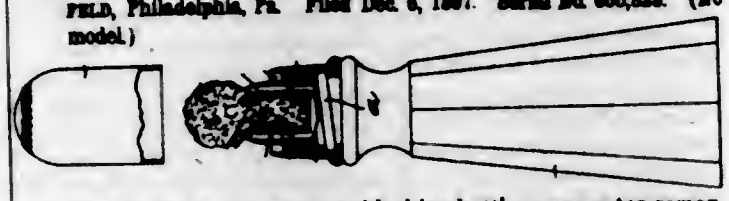


Claim.—1. In a stop-valve the combination with the valve-cover of a removable seat frame or cage having at its upper end conical surfaces to engage respectively with conical surfaces on the valve-cover and on the valve-casing and having at its lower end a seating-surface to bear against a shoulder on the valve-casing whereby fluid-tight joints are insured at both ends of the cage, substantially as described.

2. In a stop-valve the combination with a cover through which passes the screw-spindle carrying the valve; of an inwardly-projecting conical boss on said cover; of a removable seat frame or cage having two conical surfaces at its upper end, one of which bears against the conical boss on the cover and the other of which bears against a conical surface on the valve-casing, the said cage also having at its lower end a seating-surface to bear against a flange or shoulder on the valve-casing, substantially as described.

3. In a stop-valve the combination with the cover through which passes the screw-spindle carrying the valve, of a removable cage having two conical surfaces at its upper end adapted to engage respectively with a conical boss on the cover and a conical surface on the valve-casing, of a flange (such as b^2) at the upper end of the cage for enabling the latter to be lifted when desired by a suitable tool, and of a seating-surface at the inner end of said cage to bear against a shoulder on the valve-casing, substantially as described.

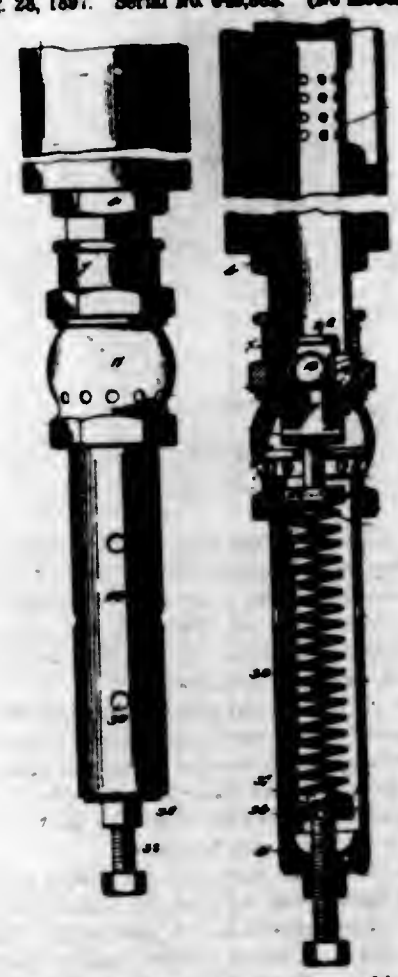
611,485. MUCILAGE OR BLACKING BOTTLE. ALFRED HOSFELD, Philadelphia, Pa. Filed Dec. 6, 1897. Serial No. 660,823. (No model.)



Claim.—1. In a mucilage or blacking bottle, a cap or top removably fitted to the neck of the bottle, an inner pocket or receptacle for a sponge or the like secured in said pocket or receptacle by spurs or prongs formed on said pocket and said pocket or receptacle separated from the body of said cap or top by openings and partitions, substantially as and for the purposes described.

2. In a mucilage or blacking bottle, a cap or top removably secured to the neck of said bottle, an inner pocket or receptacle with concentrically-arranged prongs or spurs, a sponge or the like mounted in said pocket or receptacle and held by said prongs or spurs therein and said pocket or receptacle separated from the wall of said cap or top by crescent-shaped openings and partitions, substantially as and for the purposes described.

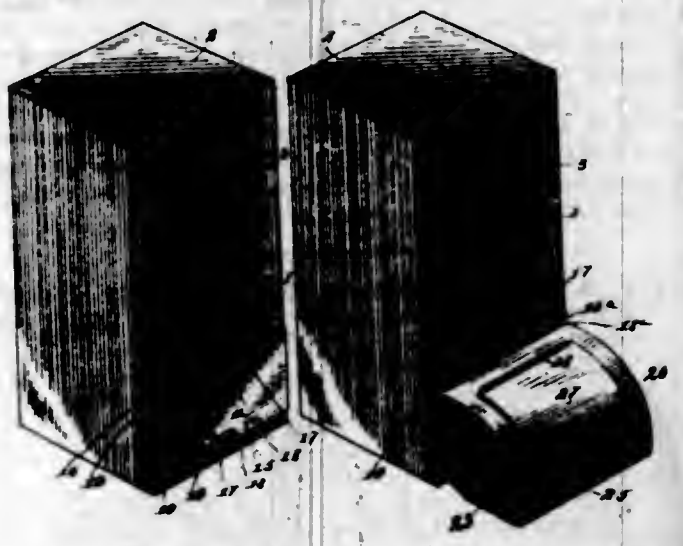
611,486. SWAB-VALVE. FREDERICK JACKSON, Karns City, Pa. Filed Aug. 23, 1897. Serial No. 649,382. (No model.)



Claim.—In an oil-well swab-valve, the combination with a swab proper, of a valve-casing secured to the lower end of the same, a

compound valve mounted in said casing and comprising a lower valve normally held closed against the seat above the same, and a gravitating valve on the said lower valve and opening into and from the said lower valve and preventing a downward flow of a predetermined weight of fluid above the valve, a tube connected to the lower end of the valve-casing, a coil-spring mounted in said tube and engaging the bottom of the lower valve, and having a resistance sufficient to overcome the predetermined weight of a column of liquid above the said valve, and devices for adjusting the tension of said spring and engaging the lower termination of the latter, substantially as described.

611,487. SHIPPING AND DISPENSING CANISTER. FRANK F. JAQUES, Chicago, Ill. Filed May 16, 1896. Serial No. 630,847. (No model.)



Claim.—1. A canister comprising a body having a combined filling and dispensing opening located at one side near the bottom thereof and formed with an inwardly-projecting L-shaped upper flange, with an inwardly-projecting horizontal lower flange bent downwardly to provide an incline which is joined to the bottom of the body, and with trough-shaped side pieces located between the upper and lower flanges, the upper and lower sockets located above and beneath the opening respectively, a closure having flanges entering the opening and upper and lower sockets, located between the first-named sockets and the upper and lower staples whereby the upper and lower sockets respectively are coupled together; substantially as described.

2. A canister comprising a body having a combined filling and dispensing opening located at one side near to the bottom thereof, a vertical flange beneath the opening, the upper and lower superposed sockets secured above and beneath the opening respectively, a detachable dispensing-front having its bottom on a level with the bottom of the body, formed with an incline between the bottom of the front and the edge of the vertical flange, the upper socket on the front, the lower socket in the recess formed by the incline, and the upper and lower staples whereby the upper sockets and lower sockets respectively are coupled together; substantially as described.

3. A canister comprising a body having a combined filling and dispensing opening located at one side near the bottom thereof and formed with an inwardly-projecting upper flange, with an inwardly-projecting horizontal lower flange bent downwardly to provide an incline which is joined to the bottom of the body, and with trough-shaped side pieces located between the upper and lower flanges, and the removable front having a bottom resting on the plane of the bottom of the body, an incline extending upward to the bottom of the body opening, and upper, lower and side flanges; substantially as described.

4. A canister comprising a body 1 formed with an opening 4, with a front wall 3 above the opening, with a vertical flange 10 beneath the opening and with inwardly-projecting flanges 5, 6 and 7 surrounding the opening, the upper and lower sockets 17, the detachable front 20, formed with inwardly-projecting flanges 12ª, 13ª and 14ª and with an incline 22 leaving a recess beneath the front, the upper and lower sockets on the front, and the upper and lower staples whereby the upper sockets and lower sockets respectively are coupled together; substantially as described.

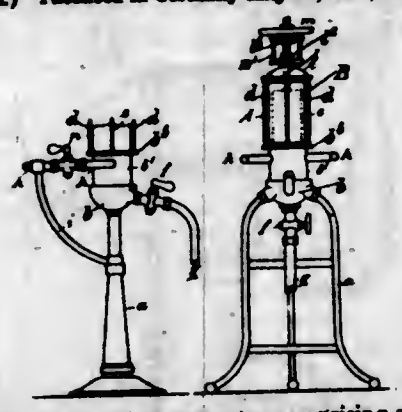
611,488. FILTER. GUSTAV KATHENSTEIN, Berlin, Germany. Filed Nov. 15, 1897. Serial No. 658,599. (No model.)

Claim.—1. In a filter, the combination of a suitable casing, a number or series of filtering walls or columns arranged therein so as to form passages or channels between them and the outer wall of the casing, a supply-pipe having a series of branch pipes leading therefrom to the central passages of the casing, a discharge-pipe, branch pipes leading from the discharge-pipe to the casing, valves arranged in the branch pipes leading from the supply-pipe and a valve located in the central branch pipe leading from the discharge-pipe, and suitable means for operating said valves whereby the water may be made to pass through one or more of the filtering walls or columns; substantially as described.



2. In a filter, the combination of a suitable casing, a number or series of filtering walls or columns arranged therein so as to form passages or channels between them and the outer wall of the casing, a supply-pipe having a series of branch pipes leading therefrom to the central passages of the casing, valves located in said branch pipes, a discharge-pipe, branch pipes leading from the discharge-pipe to the casing, a valve located in the central branch pipe leading from the discharge-pipe, suitable means for simultaneously changing the position of the valves in the branch supply-pipes during the operation of the filter whereby the water may be made to pass through one or more of the filtering walls or columns, as desired, and means for operating the single valve in the central branch discharge-pipe; substantially as described.

611,489. DECANTING APPARATUS FOR FILTERS. GUSTAV KATHENSTEIN, Berlin, Germany. Filed Nov. 15, 1897. Serial No. 658,600. (No model.) Patented in Germany May 25, 1897, No. 91,300.



Claim.—1. A decanting apparatus comprising an air-drum having an extension and an inlet and outlet for the liquor or liquid, a filter in connection with the air-drum and its extension, and means for causing the liquor or liquid to pass either through the extension and filter to the outlet or through the air-drum to the outlet without passing through the filter; the extension providing a chamber whereby such operation can be accomplished, substantially as described.

2. In combination with a filter for liquors or liquids, a decanting apparatus connected therewith adapted to have the liquor or liquid pass therethrough, said apparatus consisting of a suitable drum, having inlet and outlet openings, and a filter adjustably located therein; substantially as described.

3. In a decanting apparatus, the combination of the drum having suitable inlet and and outlet openings, a filter located in said drum, and means in connection with said filter for raising and also lowering it so as to have the liquor or liquid entering the apparatus pass through it; substantially as described.

4. In a decanting apparatus, the combination of a suitable drum having inlet and outlet openings, a hollow filter located within said drum and having its lower end open, means in connection with said filter for raising it and also lowering it over the inlet-opening so as to have the liquor or liquid entering the apparatus pass through it and a valve adapted to control the open lower end of the filter; substantially as described.

5. In a decanting apparatus, the combination of a drum having

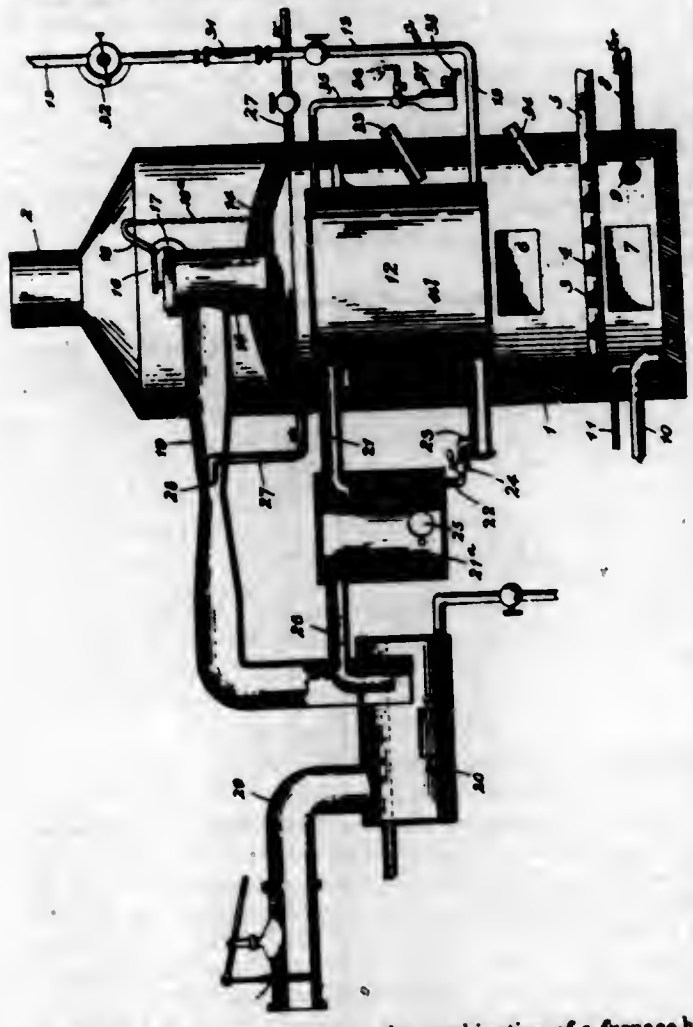
inlet and outlet openings, a hollow filter located therein having its lower end open, means in connection with said filter of raising and lowering it over the inlet-openings, and a valve for controlling the open end of said filter, said valve being adapted to open when the filter is lowered and to close when it is raised; substantially as described.

6. In a decanting apparatus, the combination of a drum having inlet and outlet openings, a hollow filter located within said drum, means in connection with said filter for raising it and also lowering it over the inlet-opening of the drum and a packing-ring provided on the lower end of said filter adapted to bear against the bottom of the filter around the inlet-opening when the filter is lowered; substantially as described.

7. In a decanting apparatus, the combination of the drum and the movable filter located therein, said drum being composed of the bottom having an inlet-opening, the top, and an intermediate portion formed of two parts, and a ring provided with the outlet-openings interposed between the two parts of the intermediate portion; substantially as described.

8. The combination of a receptacle containing a liquor or liquid to be drawn from the receptacle, and a decanting apparatus, said decanting apparatus being composed of a drum having inlet and outlet openings and a filter adapted to be moved into and out of the passage of the liquor or liquid through the apparatus; substantially as described.

611,490. GAS-GENERATOR. HENRY KELLER, New York, N. Y., assignor of one-half to Albert A. Meyer, same place. Filed Mar. 19, 1897. Serial No. 628,243. (No model.)



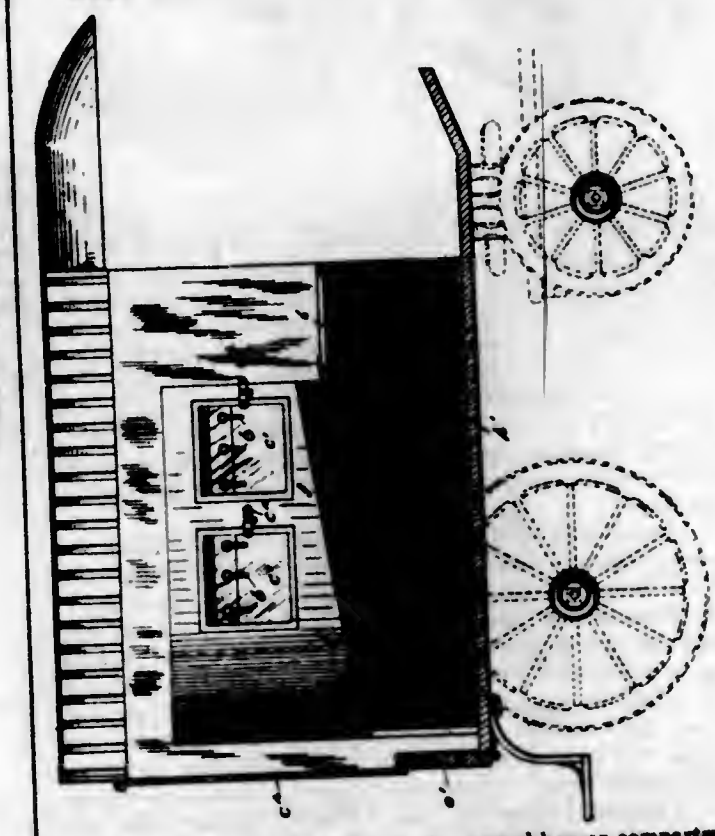
Claim.—1. In gas-generators, the combination of a furnace having a central division-wall or diaphragm separating it into two compartments, a flue-opening through said division-wall, a retort below the division-wall and immediately above the furnace-grate, a hydrocarbon-supply for the retort, a valve controlling the flue-pipe leading from the division-wall, a condenser on the exterior and in communication with the retort, a water seal chamber having a pipe connection with the condenser, and an exhaust-pipe communicating between the said flue and the water-seal chamber, substantially as and for the purpose described.

2. In a gas-machine, the combination of the furnace provided with a valve controlled exhaust-passage, a retort contained therein and provided with a hydrocarbon-supply pipe, a condensing-chamber on the exterior and provided with a discharge for the condensed oil into the retort and in communication with the latter to receive the gas therefrom, and a water-seal chamber in communication with the said condenser and exhaust-pipe, substantially as described.

3. In gas-generators, the combination of a furnace having a central division-wall or diaphragm separating it into two compartments, a flue rising from said diaphragm and provided with a valve, a retort having position immediately below the division-wall and above the furnace-grate, a water-seal chamber, a condensing-chamber having supply and discharge connections with the said retort and a discharge pipe leading into the said water seal, and an exhaust-pipe in the furnace leading from the said flue to the water-seal chamber, substantially as described.

4. In gas-generators, the combination of a furnace having a central division-wall or diaphragm separating it into two compartments and a smoke-stack above the same, a flue projecting from said division-wall and arranged in a direct vertical line below the said smoke-stack, said flue having a valve to prevent the gas from the furnace passing out of said stack, a retort or generator located in the lower chamber of the furnace between the said diaphragm and the grate, a hydrocarbon-supply to said retort, a water-seal chamber, a valve-controlled discharge-pipe leading therefrom, a condensing-chamber interposed between the said water-seal chamber and the retort and provided with a discharge-pipe leading into said water-seal chamber and having supply and discharge connections with the said retort, and a discharge-pipe leading from the flue in the diaphragm and having its outer end opening into the water-seal chamber, substantially as and for the purpose described.

611,491. REFRIGERATOR FOR MEAT-WAGONS. HENRY J. KELLEY, Carnegie, Pa. Filed Aug. 19, 1897. Serial No. 648,752. (No model.)



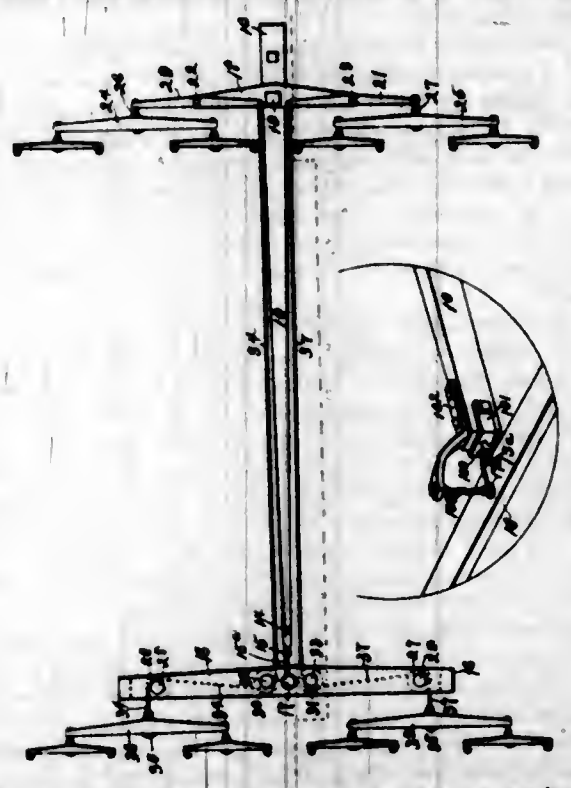
Claim.—The combination with the central box or compartment having a top or cover, of side compartments or cooling-boxes rising above the top of the central compartment and provided with doors in their inner walls, an ice-compartment at the rear end of each cooling-box, a provision-compartment in front of the cooling-boxes, and separated from the latter by a screen, whereby the cold air from the cooling-boxes will freely pass to the special compartment, but the contents of the latter will not be exposed to the outer air by the opening of the doors of the cooling-boxes; and a cover for said special compartment constituting the seat of the wagon.

611,492. EIGHT-HORSE EVENER. ALLISON W. KNEE and JAMES W. ROBINSON, Humboldt, Iowa; said Knee assignor to H. S. Sanders, Fort Dodge, Iowa. Filed Dec. 21, 1897. Serial No. 662,962. (No model.)

Claim.—1. In an evener a lever whereby one pair of draft-animals is balanced against another pair abreast thereof, another lever whereby the draft of one pair of animals is balanced against another pair abreast thereof and cable connections between said levers whereby the draft of one set of animals is balanced against the draft of another set of animals in traveling alinement therewith.

2. An eight-horse equalizer in combination with a draft-tongue, which equalizer comprises an axial evener-bar centrally pivoted on the rear end portion of the tongue, short evener-bars axially pivoted on the end portion of the axial evener-bar, doubletrees attached to

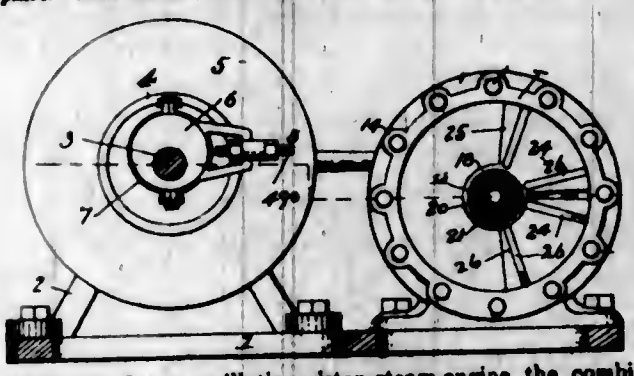
the opposite and extreme ends of the short evener-bars, a draft-rod having an eye, a long evener-bar slotted longitudinally and horizontally and axially attached to said eye of the draft-rod, draft-cables attached at their rear ends to the inner or mean ends of the short evener-bars, sheaves mounted for rotation in the slot of the long evener-bars, through which sheaves the forward end portions of the draft-cables are rove, and doubletrees attached axially to the forward end portions of the draft cables and in front of the long evener-bar.



3. In a device of the class described a long evener-bar slotted longitudinally horizontally, sheaves 26, 27, mounted for rotation in the end portion of the slot of the long evener-bar, sheaves 30, 31, mounted for rotation adjacent to each other in the slot and near the axis of the long evener-bar, draft-cables fastened back at their rear ends and extending between and in opposite directions in front of the sheaves 30, 31, also extending along the slot in opposite direction to and in the rear of and around the sheaves 26, 27, and also extending forwardly in parallel planes from the sheaves 26, 27, to a point of attachment to doubletrees.

4. The combination of a tongue, an eye on the forward end thereof, a clevis in said eye, an evener-bar, an eye-pin pivotally connecting said clevis and evener-bar, an arched bracket 102 fixed to said tongue and a chain connecting said arched bracket and eye-pin.

611,498. OSCILLATING-PISTON STEAM-ENGINE. OLE L. KROGSTAD, Hudson, Wis., assignor of one-half to Anton Hovland, same place. Filed Oct. 20, 1897. Serial No. 655,831. (No model.)



Claim.—1. In an oscillating-piston steam-engine, the combination with the cylinder, the cylinder-heads, one of which is formed with opposite steam-ports, the oscillating pistons, the hubs thereof, and connections with the driving-shaft, of the valve-chest secured to said cylinder, formed with an exhaust-opening in the lower part and with opposite steam-passages, the oscillating valve located in said chest, comprising the wings formed with steam-ports extending therethrough, and their lower sides cut away or beveled, and means for oscillating said valve, substantially as described.

2. In an oscillating-piston steam-engine, the combination with the cylinder-heads, one of which is provided with opposite steam-ports, the oscillating pistons located in said cylinder, the hubs and tubular extensions connected therewith, the driving-shaft and means connected therewith and with said pistons, for rotating said shaft, of the valve-chest having a segmental steam-chamber therein, with a steam-passage at each end, coinciding or registering with the ports in said head, and with an exhaust-opening at the lower end, the oscillating valve located in said chest, comprising two opposite integral wings formed with ports, and the lower sides of said wings cut away to form a ledge or beveled portion, the crank connected with said valve, the connecting-rod and the eccentric on said driving-shaft, substantially as described.

3. In an oscillating-piston steam-engine, the combination with the cylinder, the cylinder-heads, one of which is formed with opposite steam-ports, the oscillating pistons located in said cylinder, the hubs formed therewith, the driving-shaft and means connected therewith and with said pistons for rotating said shaft, of the valve-chest having a segmental steam-chamber in its outer face, and with steam-passages at each end thereof, coinciding with the ports in the cylinder-head, the cover-plate, the oscillating valve located in said chest, comprising two wings provided with opposite ports, and the lower sides of said wings cut away or beveled, and means for oscillating said valve, substantially as described.

4. In an oscillating-piston steam-engine, the combination with the cylinder, the cylinder-heads, one of which is formed with opposite steam-ports, the oscillating pistons, the hubs thereof, the driving-shaft, and means connected therewith and with the pistons, for rotating the said shaft, of the valve-chest secured to said cylinder formed with an exhaust-opening in the lower part, and with opposite steam-passages provided with circular grooves in the inner sides, the ring provided with a flange, the stem, the coiled spring, the ring seated in said groove, the oscillating valve located in said chest, comprising the opposite wings having steam-ports passing therethrough, and said wings cut away or beveled at the lower sides, and means for oscillating said valve, substantially as described.

5. In an oscillating piston steam-engine, the combination with the cylinder, the cylinder-heads, one of which is formed with opposite steam-ports, the valve-chest bolted to said cylinder, having a recess in its outer side, and passages at the ends formed with grooves in the inner sides, the ring provided with a flange, the stem, the coiled spring, the ring seated in said groove, the cover-plate for said recess, the oscillating valve having opposite ports, the crank, the connecting-rod and the eccentric, of the pistons located in said cylinder, the hubs and extensions the cranks secured to said extensions, the cranks, the pitmen, the crank-wheels and the wrist-pins, substantially as described.

6. In an oscillating-piston steam-engine, the combination with the cylinder, the oscillating overlapping pistons, the hubs and extensions, the shaft upon which they are journaled, the standards provided with bosses having recesses in the inner sides, the coiled springs seated in said recesses, the washers interposed between said extensions and springs, the piston cranks secured to said extensions, the collars, and the washers on said shaft, substantially as described.

7. In an oscillating-piston steam-engine, the combination with the cylinder, the oscillating pistons, the hubs and extensions, the hollow shaft upon which they are journaled formed with holes or apertures, the standards provided with bosses having recesses in the inner sides, the coiled springs located therein, the piston-cranks secured to said extensions, the driving-shaft provided with oppositely-disposed cranks, and the pitmen connected therewith, substantially as described.

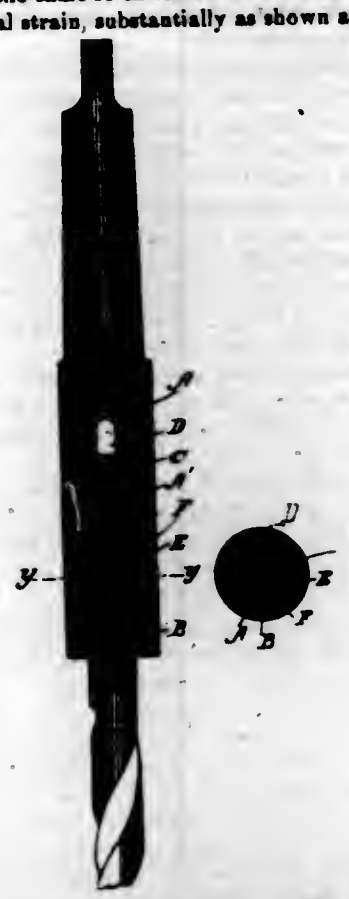
8. In an oscillating-piston steam-engine, the combination with the cylinder, the cylinder-heads, one of which is provided with opposite ports, the segmental overlapping pistons located in said cylinder, formed with grooves in the ends and sides, the L-shaped packing-strips located in said grooves, with their meeting ends cut away and overlapping each other, the hubs and extensions formed integral with said pistons, the standards provided with bosses, having recesses in the inner faces, the coiled springs seated therein, and the cranks secured to said extensions, of the valve-chest secured to said cylinder provided with opposite steam-passages, in register or coincidence with the ports in the cylinder-head, the oscillating valve located in said chest, provided with steam-ports extending therethrough and cut away or beveled at the lower side, and means connected therewith for oscillating said valve, substantially as described.

611,494. TWIST-DRILL AND SOCKET. GEORGE F. LEONARD, Fairmont, W. Va. Filed Apr. 30, 1898. Serial No. 679,341. (No model.)

Claim.—1. The combination with a socket having a bore circular in cross-section, the socket being formed with a transverse slot intermediate the ends of the circular bore, one side of the slot being coincident with the bore, and a key fixed in the slot and having a flat surface which interrupts the circular contour of the bore, of a drill having a circular shank formed with a longitudinal flat extending to a point beneath the flat transverse key when in position in the socket-bore, substantially as shown and described.

2. The combination with a socket having a circular longitudinal bore terminating in transverse slot D having flat sides, the socket being formed beneath slot D with transverse slot E at one side of the longitudinal center of the socket but coincident with one side of

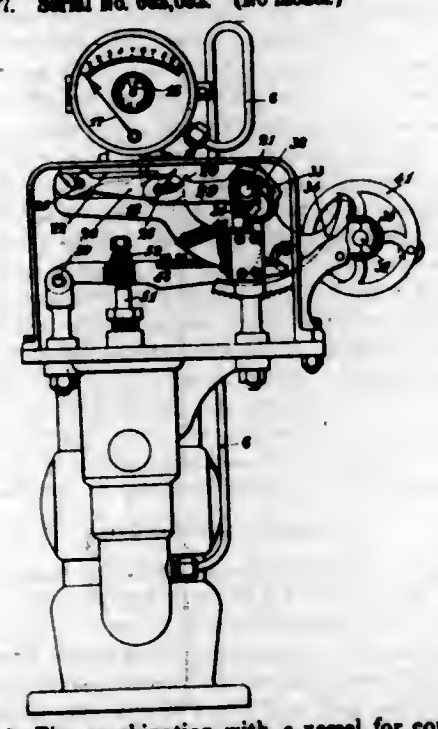
the socket-bore, and key F secured in slot E, of the drill having tang C at the extremity of its shank to enter slot D, the drill-shank being flattened downward from its extremity on one side to pass key F, but flatly engage the same so as to relieve the drill-shank and tang C thereof of torsional strain, substantially as shown and described.



611,495. PROCESS OF MAKING ARTIFICIAL BUTTER. MATHIAS H. O. LIEBREICH, Berlin, Germany. Filed June 15, 1898. Serial No. 684,513. (No specimens.)

Claim.—The herein-described process of manufacturing artificial butter from fats which consists in producing an emulsion of the fats by combining therewith a suitable admixture of an aqueous solution containing emulsin, substantially in the proportions described, and subsequently subjecting the emulsion to the ordinary finishing steps, substantially as described.

611,496. SAFETY-VALVE. ERNEST LUX, Paris, France. Filed Dec. 15, 1897. Serial No. 662,062. (No model.)



Claim.—1. The combination with a vessel for containing fluid under pressure, of a relief valve arranged to be opened by the pressure of the fluid to permit the latter to escape from the vessel, mechanism for holding the relief-valve closed against the pressure of the fluid, a pressure-gage connected with the vessel, and means operated by the gage for releasing the valve-holding mechanism when a predetermined pressure is reached, and permitting the relief-valve to open and relieve the pressure, substantially as described.

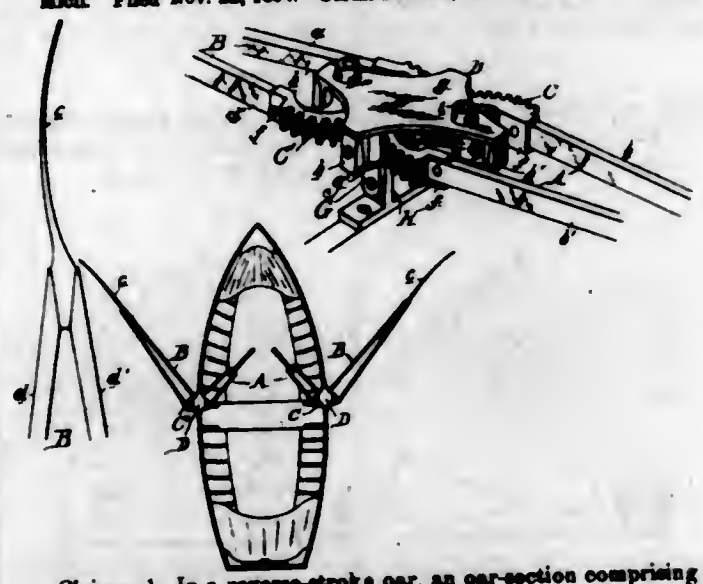
2. The combination with a vessel for containing fluid under pressure, of a relief-valve arranged to be opened by the pressure of the fluid to permit the latter to escape from the vessel, mechanism for holding the relief-valve closed against the pressure of the fluid, a pressure-gage connected with the vessel, means operated by the gage for releasing the valve-holding mechanism when a predetermined pressure is reached, and means for adjusting the releasing mechanism to release the valve-holding mechanism at any desired pressure, substantially as described.

3. The combination with a vessel for containing fluid under pressure, of a relief-valve arranged to be opened by the pressure of the fluid to permit the latter to escape from the vessel, mechanism for holding the relief-valve closed against the pressure of the fluid, a lever for controlling said mechanism, a pressure-gage connected with the vessel, a rod provided with a projection engaging said controlling-lever to normally hold the relief-valve closed, and mechanism operated by the pressure-gage for actuating said rod to release the controlling-lever and permit the relief-valve to open, substantially as described.

4. The combination with a vessel for containing fluid under pressure, of a relief-valve arranged to be opened by the pressure of the fluid to permit the latter to escape from the vessel, mechanism for holding the relief-valve closed against the pressure of the fluid, a lever for controlling said mechanism, a pressure-gage connected with the vessel, a rotatable rod provided with a headed projection passed through a correspondingly-shaped aperture in the controlling-lever and engaging the under side of the lever to hold the latter elevated to keep the valve closed, a wedge-shaped cam adjustable vertically on said rod, a pivoted lever arranged to be oscillated by the steam-gage and provided with a stud engaging the inclined face of the cam and operating to turn the rod to release the lever and permit the valve to open, and means for adjusting the cam on the rod to release the valve-holding mechanism at any desired pressure, substantially as described.

5. A relief-valve comprising a casing having oppositely-arranged discharge-ports, an inwardly opening valve controlling one of said ports, a cylinder arranged in the other port and having outlets formed in its discharge end, a piston-valve arranged in said cylinder and adapted to uncover said outlets to permit the escape of the fluid therethrough, said valves being connected together, a duct leading from the opposite sides of said valves, a valve arranged in said duct and arranged to be opened by the pressure of the fluid, means operated by said valve for opening the discharge-valves, and mechanism for normally holding the said valves closed, substantially as described.

611,497. BOW-FACING OAR. THEOPHILUS LOCHER, Detroit, Mich. Filed Nov. 22, 1897. Serial No. 659,463. (No model.)



Claim.—1. In a reverse-stroke oar, an oar-section comprising a gear-segment and a loom secured thereto consisting of separated bars secured to said segment at one end, connected to a single section at their opposite ends, in combination with a second oar-section provided with an intermeshing gear-segment, and means for securing the two sections together.

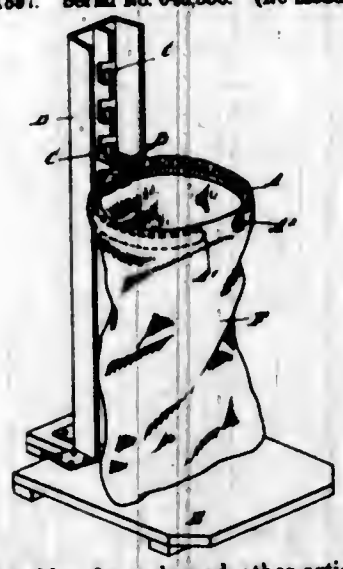
2. In a reverse-stroke oar, an oar-section comprising a gear-segment having sockets formed thereon, and a loom consisting of separated bars engaging with said sockets at one end and connected to a single section at their opposite ends, in combination with a second oar-section provided with an intermeshing gear-segment, and means for securing the two sections together.

3. A reverse-stroke oar, comprising separate handle and blade sections bifurcated at their adjacent ends, intermeshing gear-segments secured to the bifurcations of said handle and blade sections respec-

tively, and a connecting-frame to which said segments are pivotally secured adapted to be pivotally secured to the gunwale of the boat.

4. A reverse-stroke oar comprising separate handle and blade sections bifurcated at their adjacent ends, intermeshing gear-segments secured to the bifurcations of said handle and blade sections respectively, and a connecting-frame to which said segments are pivotally secured comprising plates on opposite sides of said segments and connecting-lugs or cross-bars therefor extending between the bifurcation of said oar and blade sections.

611,498. SACK-HOLDER. MONTY A. LYON, Wisdom, Mont. Filed Aug. 17, 1897. Serial No. 648,560. (No model.)



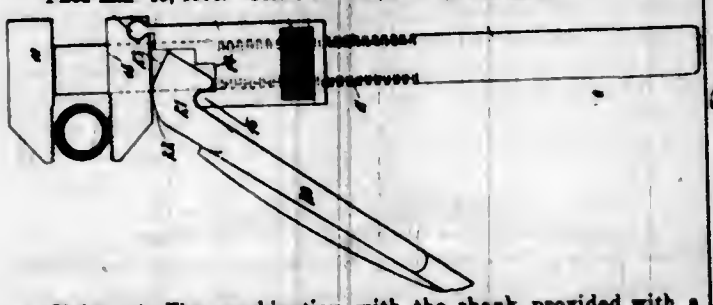
Claim.—1. A holder for sacks and other articles, comprising a standard having a central support and side members between which said support is located, and a holder proper consisting of a band adapted to engage a sack or the like at the mouth and engaging the side members of the standard, said holder proper being provided with an attaching device adapted to engage the support.

2. A sack-holder comprising a channeled standard provided with supports located one above the other between the members of the standard, and a spring-band having a hook adapted to engage one of the said supports, with the spring-band in contact with the members of the said channeled standard, substantially as shown and described.

3. A holder for sacks and other articles, comprising a standard having upright side members and supports located above one another in the space between the said members, and a holder proper consisting of a band engaging said side members and provided with an attaching device adapted to engage one of said supports.

4. A sack-holder, consisting of a channeled standard provided with hook-like supports arranged one above the other in the channel of the standard, and a spring-band for engaging the mouth of a sack to hold it open, said band being provided at its middle with a hook for engaging one of the supports of the standard, the hook being first bent inwardly and then upwardly and outwardly, substantially as herein shown and described.

611,499. WRENCH. CHARLES S. METCALFE, Silver City, N. Mex. Filed Mar. 15, 1898. Serial No. 673,900. (No model.)



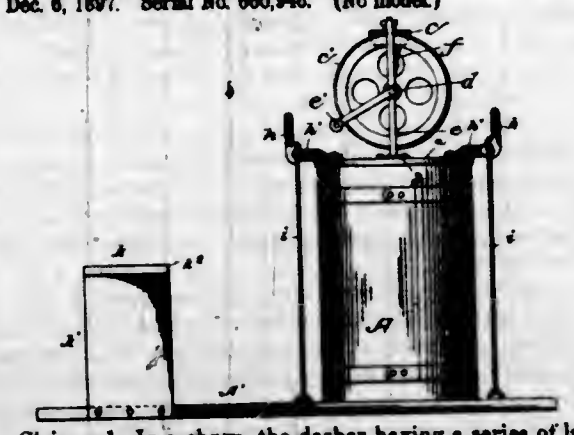
Claim.—1. The combination, with the shank provided with a fixed jaw, and the traveler adjustable upon said shank, of a movable jaw fitted upon said shank and pivotally mounted at its heel upon said traveler, and a lever interposed between the front of said movable jaw and said traveler and fulcrumed on the latter, said lever having a cam-surface in engagement with said movable jaw at the front thereof, as and for the purpose set forth.

2. The combination with the shank provided with a fixed jaw and the traveler adjustable upon said shank, of a movable jaw fitted upon said shank and pivoted at its heel upon one side of said traveler and a lever fulcrumed upon the opposite side of said traveler and engaging the front of said movable jaw to move the same, as and for the purpose set forth.

3. In a wrench, the combination, with a shank provided with a fixed jaw, of a traveler held to slide on the said shank, a jaw pivoted at its heel end upon the said traveler, the jaw being also mounted to slide on the shank, and a lever fulcrumed upon the traveler beneath the free end of the pivoted jaw, the lever being provided with a cam-surface for engagement with the jaw and with a straight surface adjacent to the cam-surface and likewise adapted for engagement with the pivoted jaw, for the purpose specified.

4. In a wrench, the combination, with a shank provided with a thread and a fixed jaw, of a traveler held to slide on the shank, provided with a nut adapted for engagement with the threaded surface of the shank, the said traveler being provided with a bearing-surface at the upper portion of its front and with a second and more elevated bearing at the upper portion of its back, a jaw mounted to slide on the shank and provided at its back or heel end with an opening arranged to receive the rear bearing of the said traveler, and a lever having a hook-shaped head, which head is fulcrumed on the front bearing of the traveler, the said head being provided with a cam-surface at its upper forward portion and with a connecting straight surface at its upper rear portion, both the cam and the straight surfaces being adapted for engagement with the movable jaw, as specified.

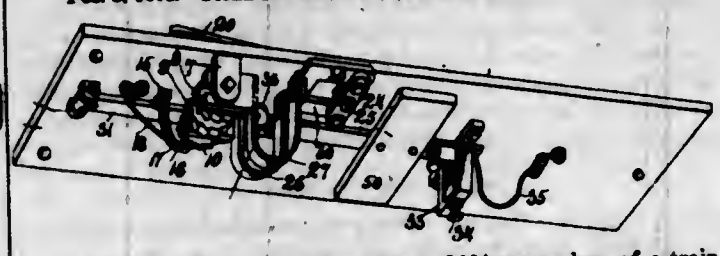
611,500. CHURN. STEPHEN G. MILLS, Wichita, Kans. Filed Dec. 6, 1897. Serial No. 660,946. (No model.)



Claim.—1. In a churn, the dasher having a series of lateral oppositely-extending flanges, the series of top oppositely-arranged flanges, and the two series of intermediary oppositely-projecting flanges inclined from the center downward, to throw the cream to the bottom and to provide for the collecting of the buttermilk thereon, substantially as set forth.

2. In a churn, the dasher having the series of lateral oppositely-extending flanges, the series of top oppositely-arranged flanges, and the two series of intermediary oppositely-projecting flanges inclined from the center downward, said series of intermediary flanges and said top series of flanges being bowed or flexed laterally in opposite directions, respectively, the maximum divergence between said flanges being adapted to provide for the reception between them of the dasher staff or shaft, and its attachment thereto, substantially as set forth.

611,501. MECHANISM FOR IMPARTING SUCCESSIVE OR ALTERNATING MOVEMENTS. ELISHA MOORE, Meductic, Canada. Filed Feb. 3, 1898. Serial No. 669,012. (No model.)



Claim.—1. The combination with a shifting member, of a train of alternately-operating wheels, dogs cooperating with said wheels, means connecting the dogs with the shifting member and means for operating the whole.

2. The combination with a shifting member, of a train of integral ratchet-wheels with teeth cut to alternate, dogs cooperating with said wheels, and means connecting the dogs with the shifting member, and a magnet with its armature suitably connected to operate the whole.

3. The combination with a shifting member, of a train of integral ratchet-wheels provided with teeth cut to alternate, a dog engaging one of said wheels, a magnet with its armature, means connecting said dog with said armature, dogs cooperating with the other ratchet-wheels, and means connecting the latter dogs with the shifting member.

4. The combination with a shifting member of a train of inte-

gral ratchet-wheels each provided with teeth cut to alternate with the teeth on the other wheel, a dog coöperating with one of said ratchet-wheels, a magnet having operative connection with said dog, dogs resiliently mounted and coöperating with the other two ratchet-wheels, and means for connecting the said dogs with the shifting member, substantially as described.

5. In an electric switch, the combination with the switch-tongue, of resilient yokes connected with said tongue, dogs mounted respectively on one end of said yokes, integral ratchet-wheels having their respective teeth cut to alternate, and adapted to engage the dogs on the said yokes, and means for operating said ratchet-wheels, substantially as described.

6. In an electric switch, the combination with the switch-tongue, of integral ratchet-wheels cut with teeth to alternate respectively, coöperating dogs, resilient yokes connecting said dogs with said tongue, and a magnet with its armature connected with said ratchet-wheels; substantially as described.

7. The combination with a train of integral ratchet-wheels and their coöperating dogs, one of said wheels having a greater number of teeth than the other two, and means for connecting the dog of the last-named ratchet-wheel with a suitable source of power and means for connecting the first-named ratchet-wheels with a member to be operated, substantially as described.

8. The combination with a train of integral ratchet-wheels, one of which has a greater number of teeth than the other two, of resiliently-mounted dogs adapted to engage the other two ratchet-wheels alternately, and a slotted plate connected to said dogs and adapted to have bearing and slide on the axis of said train of wheels, substantially as described.

9. In an electric-railway switch, the combination with the switch-tongue, resilient yokes connected with said tongue, dogs mounted on one end of the respective yokes of a train of integral ratchet-wheels with teeth cut to alternate, another integral ratchet-wheel, an operating-dog engaging the same, and means to operate said dog, substantially as described.

10. In an electric-railway switch, the combination with the switch-tongue, a cross-arm rigidly connected with said switch-tongue, of spring-yokes, one end of which is connected to said cross-arm, a dog and a slotted plate secured to the other ends respectively of said yokes, a train of ratchet-wheels with teeth cut to alternate, said dogs adapted to alternately engage said ratchet-wheels and guided in their engagement by the slotted plate working on the axis of said train of wheels of another ratchet-wheel having a greater number of teeth than the train of wheels, a magnet with its armature, a pivoted bar carrying said armature and a dog pivoted to said carrying-bar adapted to engage the last-named ratchet-wheel, substantially as described.

11. In an electric-railway switch, the combination with the switch-tongue, a pin depending from said tongue, a cross-arm rigidly mounted on said pin, arms pivotally connected with said cross-arm and spring-yokes connected respectively to the last-named arms, a dog and a slotted plate mounted on the other ends of the respective yokes, of a train of integral ratchet-wheels, two of which have teeth cut to alternate and adapted to be engaged by the dogs on the resilient yokes, said slotted plates working on the axis of said train, an operating-dog coöperating with the other ratchet-wheel, and pivoted arm on which said dog is mounted, said armature being secured to the above-named carrying-bar, substantially as described.

12. In an electric-railway switch, the combination with the switch-tongue, of a train of integral ratchet-wheels with teeth cut to alternate, dogs adapted to engage said train, a resilient connection between the switch-tongue and said dogs, an integrally-operating ratchet-wheel, a pivoted carrying-bar provided with a dog pivotally mounted on the same and adapted to engage the operating ratchet-wheel, a magnet and its armature, said armature being mounted on said carrying-bar, substantially as described.

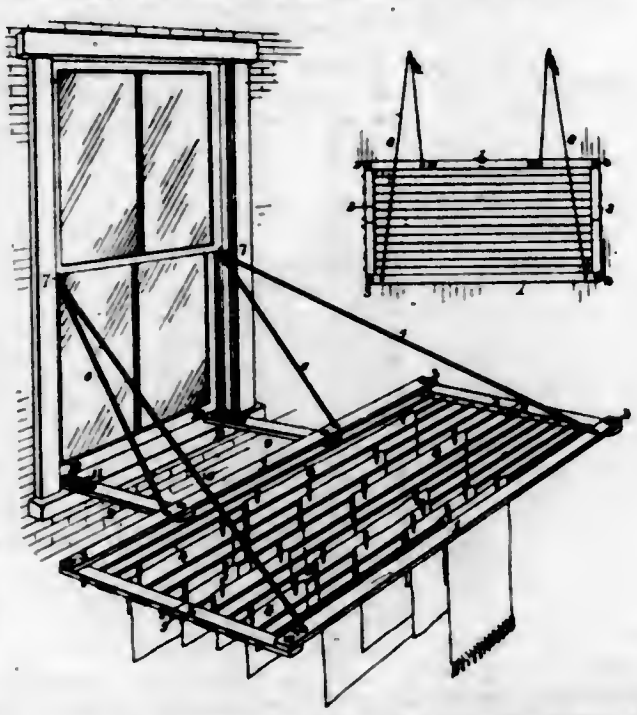
611,502. HAT-PIN. JOHN MCCOY, New Orleans, La. Filed Sept. 13, 1897. Serial No. 651,561. (No model.)



Claim.—1. A pin-clasp consisting of a body having a central transverse aperture therein, and spring-arms integral with said body and converging from their points of connection with the body, said arms being externally threaded to receive a nut and adapted to frictionally engage the pin and retain the clasp thereon.

2. A triangular pin-clasp consisting of a body having a central transverse aperture therein, and externally-screw-threaded converging spring-arms integral with said body, the free ends of said arms being deflected in opposite directions, and a nut upon the threaded portion of said arms.

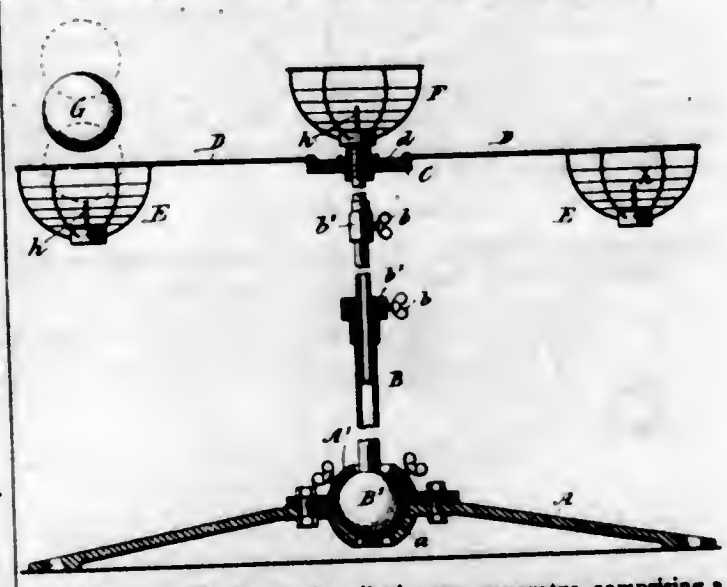
611,503. CLOTHES-DRIER. JOSEPH H. PARKER, Philadelphia, Pa. Filed Mar. 15, 1897. Serial No. 627,591. (No model.)



Claim.—1. A suspension-rack consisting of pivoted side and end bars and looped suspension-ropes connected at one end to the inner side bar of the rack, and at the other end to the outer side bar of the same, the points of connection of the ropes to the outer bars being closer to the ends of the same than on the inner bars, substantially as specified.

2. The combination of the rack and suspending-ropes with struts pivoted to the inner bar of the rack so as to be turned at right angles thereto, said struts being slotted for the reception of retaining loops or eyes and provided with hooks or other fastenings for engaging said retaining loops or eyes, substantially as specified.

611,504. GAME APPARATUS. HENRY D. PERRY, Worcester, Mass. Filed June 12, 1897. Serial No. 640,486. (No model.)



Claim.—1. The herein-described game apparatus, comprising a base, a standard loosely connected to the said base and angularly adjustable with respect thereto, a number of arms supported by said standard, open baskets supported by the said arms, and light balls adapted to be tossed into the air and caught in the said baskets, substantially as specified.

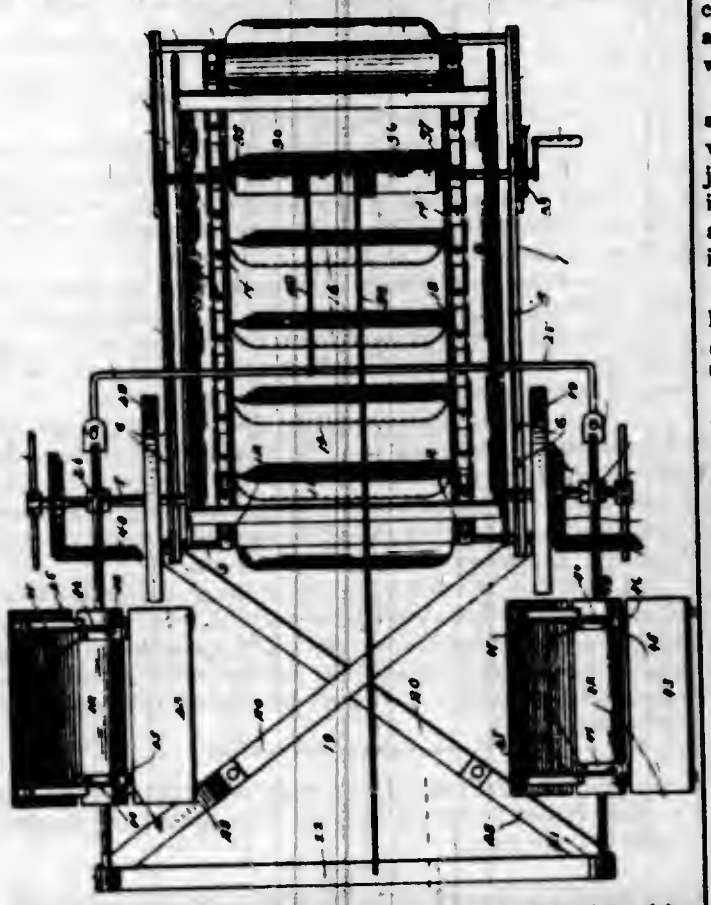
2. In game apparatus, a stand or base, a standard loosely connected thereto and angularly adjustable, said standard being formed in telescoping sections, a number of arms supported from said standard, and open baskets suspended from the said arms, all substantially as described.

3. In game apparatus, a stand or base, a standard loosely connected thereto and angularly adjustable, a number of horizontal arms

supported from said standard, open baskets suspended from said arms, and wires or the like projecting into the said baskets, substantially as specified.

4. The herein-described game apparatus, comprising a base, a standard having a ball-and-socket connection therewith and formed in a number of telescoping sections, means for securing the adjustment of the said sections with respect to each other, a hub or disk secured to the upper section thereof, a number of horizontal arms secured to said disk and extending therefrom, open baskets suspended from the said arms; and light balls adapted to be tossed in the air and caught in the said baskets, substantially as specified.

611,505. IRRIGATING-MACHINE. GEORGE PETERSON, Browning, Mont. Filed Feb. 12, 1898. Serial No. 670,115. (No model.)



Claim.—1. In an irrigating apparatus, the combination with a conveyer-frame and conveyer, of a wheel-frame, a water-wheel carried thereby and operatively connected with the conveyer, and means for adjusting the wheel-frame, substantially as specified.

2. In an irrigating apparatus, the combination with a conveyer, of a swinging conveyer-frame, a wheel-frame, a water-wheel carried by said wheel-frame and operatively connected with the conveyer, means for adjusting the water-wheel upon the frame, and means for elevating said wheel-frame, substantially as specified.

3. In an irrigating apparatus, the combination with suitable supports, of a conveyer-frame adjustably carried by the supports, a conveyer upon the conveyer-frame, a wheel-frame, a water-wheel carried by the wheel-frame and operatively connected with the conveyer, and means for elevating the wheel-frame, substantially as specified.

4. The combination with a suitable support, of a conveyer-frame, an endless conveyer carried by the frame, a swinging wheel-frame, a water-wheel carried thereby and operatively connected with the conveyer, a windlass supported by the conveyer-frame, and a flexible piece connecting the outer end of the wheel-frame to said windlass, substantially as specified.

5. The combination with a conveyer-frame and conveyer thereon, of a power-shaft operatively connected with the conveyer, journal-boxes loosely mounted upon said power-shaft, a wheel-frame, wheel-shafts journaled in said bearing-boxes, and gearing intermediate of the power-shaft and wheel-shaft, substantially as specified.

6. The combination with a suitable supporting-frame, of a conveyer-frame and a conveyer thereon, a power-shaft operatively connected with the conveyer, a wheel-frame pivotally connected to the supporting-frame, journal-boxes carried by the power-shaft and wheel-frame, a wheel-shaft journaled in said boxes, gearing intermediate of the wheel-shaft and power-shaft, and a water-wheel upon the wheel-shaft, substantially as specified.

7. The combination with a supporting-frame, conveyer-frame and conveyer, of a power-shaft operatively connected with the conveyer, a wheel-frame pivoted to the supporting-frame, journal-boxes carried by the power-shaft and wheel-frame respectively, a water-wheel carried by the wheel-shaft, adjustable mechanism for supporting the front extremity of the wheel-shaft, gearing intermediate of the shafts, and mechanism for elevating the wheel-frame, substantially as specified.

8. The combination with a supporting-frame, of a conveyer-frame adjustable thereon, an adjustable wheel-frame secured thereto, a conveyer carried by the conveyer-frame, a wheel carried by the wheel-frame, and means for operatively connecting the conveyer and water-wheel, substantially as specified.

9. The combination with a conveyer-frame provided with wheels, of a supporting-frame adjustable with respect to the conveyer-frame, and designed to support the wheels out of contact with the ground or to permit them to be lowered into contact therewith for the purpose of transporting the apparatus, substantially as specified.

10. A wheel-frame pivotally carried by the supporting-frame, a water-wheel carried by the wheel-frame, a conveyer carried by the conveyer-frame and operatively connected with the water-wheel, and mechanism carried by said conveyer-frame for elevating the wheel-frame, substantially as specified.

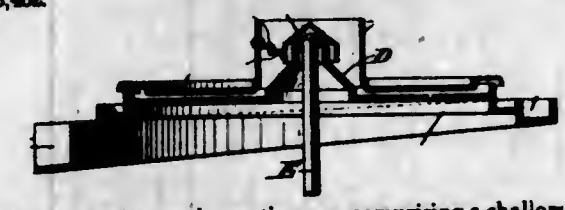
11. The combination with a supporting-frame provided with a series of bearing-recesses and with a series of apertures, of a conveyer-frame, a power-shaft carried thereby and designed to be adjustably journaled in the bearing-recesses, a conveyer-frame, supporting-rods adjustable upon the supporting-frame and engaging the apertures, a conveyer carried by the conveyer-frame, and conveyer irrigating mechanism, substantially as specified.

12. The combination with a conveyer-frame and conveyer, of a power-shaft operatively connected with the conveyer, a wheel-shaft geared to the power-shaft, and mechanism for vertically adjusting said shafts, substantially as specified.

13. The combination with a conveyer-frame and conveyer, of a wheel-frame, longitudinally-extensible standards constituting a portion of the wheel-frame, a power-shaft operatively connected with the conveyer, a wheel-shaft operatively connected with the power-shaft, and supported by the wheel-frame, and a water-wheel carried by the wheel-shaft, substantially as specified.

14. In a water-wheel, the combination with a hub, of a plurality of bearing-bands carried thereby and provided with loops, of blades provided with oppositely-disposed hooks engaging the loops, and braces secured at their opposite ends to the blades, and to the bands, substantially as specified.

611,506. AMALGAMATING-PAN. EDMUND H. T. PLANT and SAMUEL DELLOW, Charters Towers, Queensland. Filed Sept. 2, 1897. Serial No. 650,413. (No model.) Patented in Queensland June 18, 1896, No. 3,402.

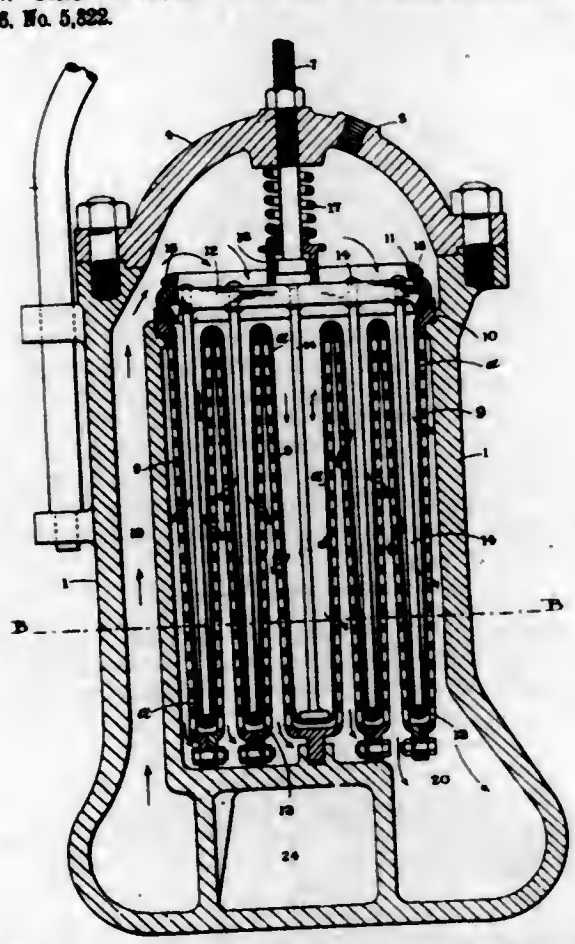


Claim.—1. An amalgamating-pan comprising a shallow, annular receptacle for mercury having a central opening over which rises a cone-shaped center portion, a conical hood having a flange hanging below the truncated open top of the center portion, a central shaft rising through the latter and rigidly secured to the hood, a muller consisting of a flat, annular plate floating freely upon the surface of the mercury in the pan, its inner edge, which surrounds the base of the conical center portion, being provided with a circular casing which rises around the conical hood and a connection between said casing and hood consisting of inwardly and outwardly extending arms on one or the other of said parts, those on one having eyes or loops which loosely engage vertical pintles, or pivot-pins rising from the ends of the arms on the other part, whereby the muller is rotated and permitted to rise and descend with the surface of the mercury in the pan, substantially as described.

2. An amalgamating-pan comprising a shallow, horizontal, annular receptacle having an opening at the center through a conical central portion, a surrounding, concentric mercury-ripple having its bottom at a lower level than that of the pan, and an outer, annular concentric trough having its highest point on one side of the pan below the bottom of the mercury-ripple and inclining uniformly from said point to a discharge-chute on the opposite side, a shaft rising through the central conical portion and projecting above its truncated top, a conical hood rigid on the end of said shaft and having a flange that drops below the open top of the central portion, a muller consisting of a flat, annular plate having a circular casing rising from its inner edge and surrounding the central portion and conical hood, and a connection formed by arms projecting from the inner face of said casing and provided with eyes, or loops and arms projecting from the flange on the conical hood and provided with upright pintles, or pivot-pins, which enter the eyes in the arms on the casing, substantially as described.

3. An annular-plate amalgamating-pan having a muller which consists of a flat, annular plate, having a diameter somewhat less than that of the pan to expose a narrow, annular portion of the mercury, the outer edge of the muller being provided with an annular strip of metal secured to the outer edge of the muller and projecting outward over the edge of the pan to cover said exposed portion of mercury, a central shaft extended upward through a central opening in the table its upper end having a conical hood, and arms on the inner face of the casing and projecting from the outer face of a flange on the conical hood, one set of said arms having upright pintles, or pivot-pins, and the other set having eyes or loops adapted to engage said pintles, whereby the muller is enabled to float upon the mercury in the pan and to rise and fall therewith without interfering with the rotary movement, substantially as described.

611,507. FILTER FOR FEED-WATER FOR STEAM-GENERATORS. DANIEL A. QUIGGIN, Blundellsands, England. Filed Dec. 24, 1897. Serial No. 663,354. (No model.) Patented in England Mar. 16, 1896. No. 5,822.



Claim.—1. In a filter, in combination; a casing having an inlet and an outlet; a series of concentric reversely-set conical gratings placed in the said casing across the waterway; filtering material of conical configuration adapted to conform with said gratings and to lie across the waterway; and holding means extending down into the annular recesses between the gratings to hold the filtering material down in said recesses, substantially as described.

2. In a filter, in combination; a casing having an inlet and an outlet; filtering material formed in the shape of a conical bag of axial length greater than that of the casing, said bag being reversely folded as at *w*, *x*, *y*, and *z*; and holding means extending down into the recesses or channels between the gratings and adapted to hold the folds of the filtering material therein, substantially as described.

3. In a filter, in combination; a casing with an inlet and an outlet; the series of reversely-set conical gratings formed in sections which fit together at the apices of the cones; the filtering material adapted to conform with said gratings; and means for securing the filtering material in position across the waterway; substantially as described and illustrated.

4. In a filter, in combination; a casing with an inlet and an outlet; the series of concentric reversely-set conical gratings formed in sections which fit together at the top by faced joints at the apices and which are secured together at the bottom by flanges adapted to be bolted together, the structure so formed fitting as a whole in a bored recess in the casing; the filtering material adapted to conform with said gratings; and means for securing the filtering material in position across the waterway; substantially as described and illustrated.

5. In a filter, in combination; the casing having an inlet and an outlet; the reversely-set conical gratings; the filtering material adapted to conform with said gratings; the guard for securing the said material in position which consists of a ring to which the edge of the material is attached, and a series of rings carried therefrom adapted to press the said material into the apices of the gratings; and means for holding the guard in position; substantially as described and illustrated.

6. In a filter, in combination; the casing, the gratings, the filtering material, the guard, and means attached to the cover of the filter and adapted to elastically press the guard into position; substantially as described and illustrated.

7. In a filter, in combination with the casing and the gratings; the filtering material and the guard, the former being formed to fit the gratings and being attached by its periphery to one of the rings of the guard and held in shape by the other rings and being adapted to be inserted into and removed from position with the attached guard; substantially as described and illustrated.

8. In a filter in combination with the casing, the gratings, and the guard; the filtering material consisting of a bag such as *a*, *a*, *a*, *a*, folded as at *w*, *x*, *y*, and *z* to form a series of reversely-set concentric cones; substantially as described and illustrated.

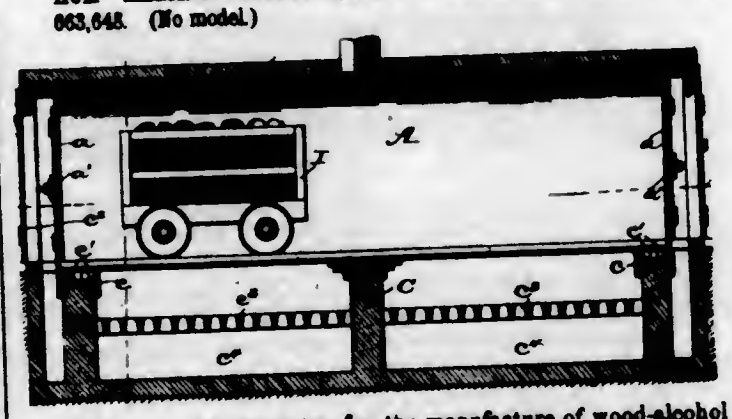
9. In a filter in combination with the gratings, the filtering material, and the guard; a casing having inlet, outlet, and by-pass valves at one end and a removable cover at the opposite end provided with a spring adapted when the cover is in position to press the guard into position; substantially as described and illustrated.

10. In a filter, in combination with the gratings, the filtering material and the guard; a casing having inlet, outlet and by-pass valves at one end and a cover at the opposite end, said cover being connected by a screw and tapped hand-lever to a pivoted davit, carried from the casing; substantially as described and illustrated.

11. In a filter, in combination; the casings; the gratings; the filtering material; the guard, one of the rings of which is adapted to hold the edge of the said material and form a taper-shoulder which presses the material against a taper-seating on the grating; and means consisting of a presser-piece and spring adapted to elastically press the guard; substantially as described and illustrated.

12. In a filter, in combination; the gratings; the filtering material; the guard; and the casing provided with inlet, outlet and by-pass valves, the latter being provided with a spring which normally tends to close it and a screw-spindle between which and the valve there is a limited relative movement; substantially as described and illustrated.

611,508. APPARATUS FOR MANUFACTURING WOOD-ALCOHOL. MARTIN F. QUINN, Straight, Pa. Filed Dec. 27, 1897. Serial No. 663,648. (No model.)



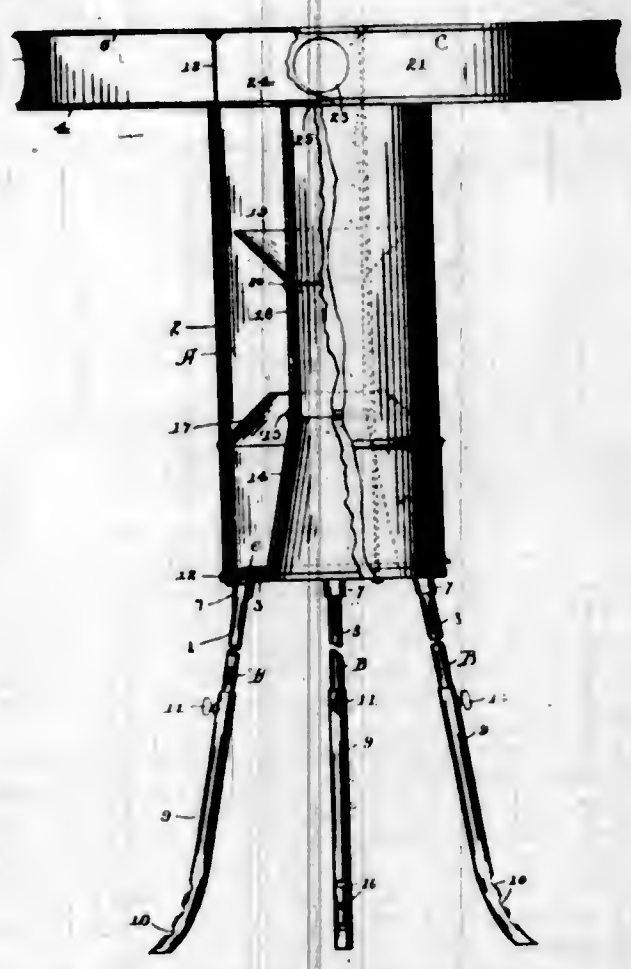
Claim.—1. An apparatus for the manufacture of wood-alcohol and acetate of lime, provided with a retort, a housing for the retort and spaced therefrom upon all sides, a central pier rising from the bottom of said housing, and to which the bottom of the retort is rigidly secured, piers located between the central pier and the end walls of the housing and on which the retort loosely rests at its ends, one side wall of the housing being formed with openings, and discharge-pipes leading from the side of the retort adjacent said side wall, through the openings and directly down into the condenser, each opening in the wall being larger than the diameter of the pipe it receives, as and for the purpose set forth.

2. An apparatus for the manufacture of wood-alcohol and acetate of lime, provided with a retort, a housing for the retort and spaced therefrom upon all of its sides, a central pier and intermediate piers rising from the bottom of the housing, and arranged to support the retort so that it will expand and contract from its middle toward each end, a discharge-pipe leading from the side of the retort, the adjacent side wall of the housing being formed with an opening larger than the diameter of the said discharge-pipe and through which said pipe is inserted, and a plate of non-combustible material surrounding said pipe and of a size sufficient to cover the opening in the wall, as and for the purpose set forth.

3. An apparatus for the manufacture of wood-alcohol and acetate of lime, provided with a housing, a retort in said housing and arranged to expand and contract only from its middle toward each

end, and discharge-pipes leading from the side of the retort, through the adjacent side wall of the housing and directly down into the condenser, the wall where each pipe goes through it being spaced from said pipe on the side of the latter nearest the adjacent end of the retort, as and for the purpose set forth.

611,509. HEATING-DRUM FOR LAMPS. CARL H. R. RANDLETT, St. Paul, Minn., assignor, by direct and mesne assignments, to Robe C. White, trustee, same place. Filed June 5, 1897. Serial No. 639,630. (No model.)



Claim.—1. In combination with the lamp heating-drum, made up of an outer inclosing wall, the inner wall, constituting a conduit to receive the heated gases from the lamp, the air-inlet standards opening into the space between said outer and inner walls, and the air-distributers separating said inlet-standards from said space.

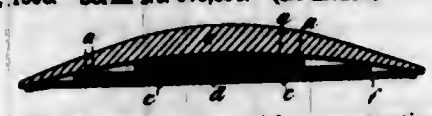
2. In an apparatus of the class described, the combination with the drum, of the hollow air-conducting standards communicating therewith, the axially-arranged pipe in said drum adapted to be fitted over a lamp-chimney, and the deflectors arranged in the space between the drum and pipe.

3. In an apparatus of the class described, the combination with the cylindrical drum, of the hollow, air-conducting standards supporting and communicating with the same, the conical pipe for the inlet of the heated gases arranged axially in the drum, the deflectors arranged in the space between the drum and pipe, the constricted openings above the funnel and the annular space between the funnel and drum, and the drum of larger diameter arranged above, and in communication with said openings, and provided with lateral outlets.

4. In an apparatus of the class described, the combination with the cylindrical drum, of the annular base formed with double walls constituting an annular chamber or conduit, the upper wall being formed with perforations serving as distributing-outlets for the chamber, the openings in the bottom wall to connect with hollow, supporting, air-conducting standards, the conical axially-arranged pipe within said drum, the connecting cylindrical pipe serving as a continuation of said conical pipe, and the deflectors intermediate of said pipes and drum.

5. In an apparatus of the class described, in combination, the cylindrical drum, its chambered annular base having its upper wall perforated, the hollow air-conducting standards opening into the chamber in said base, the axial pipe arranged in said drum adapted to receive and conduct the products of combustion from the lamp-chimney, the deflectors intermediate of said pipe and drum, the head upon said drum having constricted outlets for the air in the space between the pipe and drum, and for the gases passing through said pipe, and the drum of larger diameter superposed upon said first drum, and having a closed top and lateral vents.

611,510. PNEUMATIC TIRE. JOSEPH ROBINSON, Ipswich, England, assignor to Eugene Wells and Percy Crossman, same place. Filed Mar. 14, 1898. Serial No. 673,856. (No model.)

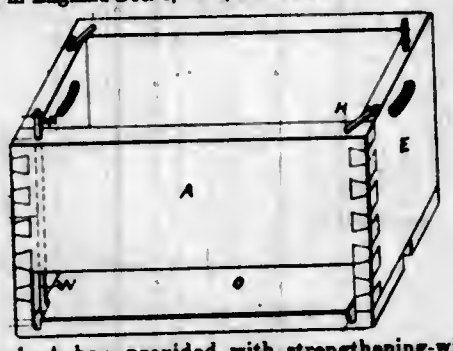


Claim.—1. The combination with a pneumatic tire, of a series of superimposed strips of fabric impregnated with celluloid, such strips being of different widths, and the wider strips being arranged nearest the air-chamber, substantially as and for the purpose specified.

2. The combination with a pneumatic tire of a plurality of superimposed strips of fabric impregnated with celluloid, and of one or more strips of solid celluloid arranged between the strips of impregnated fabric, substantially as and for the purpose specified.

3. The new article of manufacture for employment with a pneumatic tire consisting of a plurality of strips of fabric impregnated with celluloid and inclosed in the folds of another strip of fabric, substantially as and for the purpose specified.

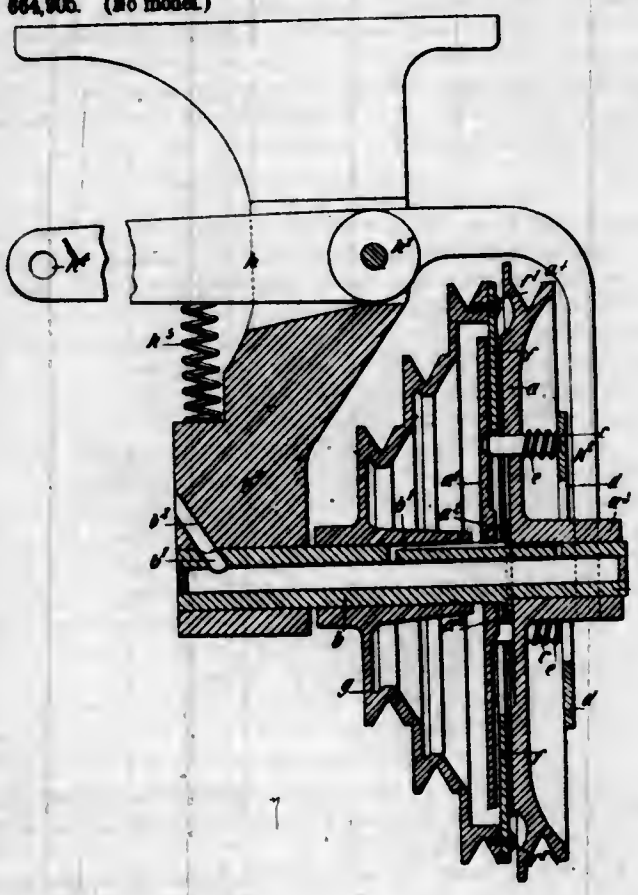
611,511. CONSTRUCTION OF BOXES. RUPERT ROBINSON, Sheffield, England. Filed Nov. 8, 1897. Serial No. 657,797. (No model.) Patented in England Dec. 6, 1892, No. 22,300.



Claim.—1. A box provided with strengthening-wire which is embedded in its bottom, passed vertically up through the side and fastened to the end pieces, the said wire in each instance passing through previously-prepared, continuous holes and being at all times concealed from view for the purpose set forth.

2. In a box, the combination of a bottom piece, side pieces and end pieces with two lengths of wire on opposite sides of the said box, each length being embedded longitudinally in the said bottom piece and extending up through the ends of the side pieces and having its ends embedded in the top of the end pieces, the said wire in each instance passing through previously-prepared, continuous holes and being at all times concealed from view substantially as set forth.

611,512. FRICTION-CLUTCH. THOMAS R. ROSSITER, Knowle, and DONALD NOBLE, Bristol, England. Filed Dec. 31, 1897. Serial No. 664,905. (No model.)

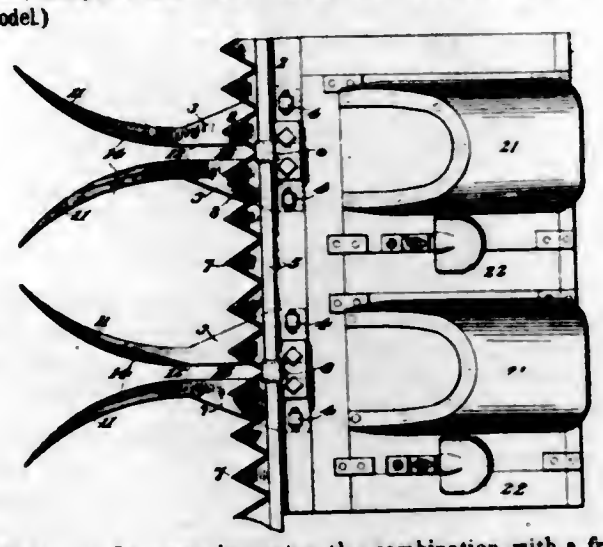


Claim.—1. A friction-clutch, consisting of a friction disk or ring, two sections in rotary connection at opposite sides of the friction-ring, means for constantly pressing one of the rotary sections toward the other for gripping the opposite sides of the friction disk or ring, and means for separating the said two sections to disengage the clutch, substantially as and for the purposes described.

2. A friction-clutch, consisting of a friction disk or ring, two sections in rotary connection at opposite sides of the friction-ring, means for constantly pressing one of the rotary sections toward the other for gripping the opposite sides of the friction disk or ring, and a lever for separating the said two sections to disengage the clutch, substantially as and for the purposes described.

3. A friction-clutch, consisting of a pulley to be driven, two rigidly-connected disks located, respectively, at the inner and outer sides of said pulley, a driving-pulley having a friction disk or ring attached thereto, carried solely thereby and located between the driven pulley and the inner disk, springs acting to press the inner disk in a direction toward the pulley to be driven for causing said pulley and said disk to grip the friction disk or ring, and means for moving the inner disk in a direction away from the pulley to be driven, substantially as and for the purposes described.

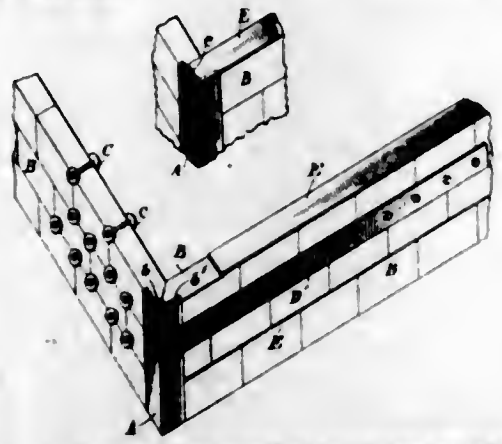
611,513. CORN-HARVESTER. CHARLES G. SCHERER and EDWARD HILT, Lafayette, Ind. Filed Feb. 26, 1897. Serial No. 625,161. (No model.)



Claim.—1. In a corn-harvester, the combination with a frame, of combined knives and guards arranged in pairs thereon, two sets of cutting edges upon each of the guards arranged upon opposite sides thereof, a reciprocatory sickle-bar working upon the knives, and cooperatively with the second set of cutting edges, the forward set of cutting edges adapted to partially sever the corn, and the second set of cutting edges, with the sickle-sections, adapted to completely sever it, substantially as set forth.

2. As a part of a corn-harvester, a combined knife and guard consisting of a body part and curved finger, of a cutting edge near the juncture of the finger and body part, and a second cutting edge in the body part located upon the opposite side from the first-named cutting edge, substantially as set forth.

611,514. TILE PARTITION, WALL, OR CEILING. JACOB SCHRATWIESER, New York, N. Y., assignor to Christian Schratweiser, same place. Filed Aug. 20, 1897. Renewed Sept. 2, 1898. Serial No. 690,148. (No model.)



Claim.—1. A tile or brick wall or partition comprising bricks having mitered edges truncated at the points thereof and means for securing the said bricks together.

2. A tile or brick wall or partition comprising bricks having mitered edges and angle-iron secured in a vertical position to the angle formed by the meeting of said mitered edges; the said bricks being provided with notches at the point where the angle-iron is applied for the reception of cement, and means for securing the said bricks together.

3. In a wall, partition or ceiling, the combination of bricks having a metallic core interposed between each course thereof and a clamp upon either side of the said wall bearing upon the said bricks and core.

4. The combination in a wall, partition or ceiling of tiles having bolts passing through one or more of their joints and washers or strips located at either end of the said bolts and adapted to be pressed into contact with the said bricks or tiles by the said bolts and metallic strips or cores interposed between said tiles.

611,515. MEANS FOR EXTRACTING PRECIOUS METALS. JOHN P. SCHUCH, Jr., Cripple Creek, Colo. Filed Sept. 28, 1897. Serial No. 653,312. (No model.)



Claim.—1. An ore-treating plant comprising an ore-charging chute, an ore-discharging chute, and a tiltable tank situated between said chutes to receive from one chute and discharge to the other chute, said tank having its body pivoted upon a suitable support and provided with a hinged end gate, a drain-cock in the bottom thereof, and a filter confined within the body above the drain-cock, substantially as described.

2. An ore-treating plant comprising an ore-charging chute, an ore-discharging chute situated at a suitable distance from said charging-chute, a portable tank having its tiltable body pivoted on a wheeled truck and provided with a hinged gate and with a filter which is confined in place above a drain-cock, and a hoisting mechanism situated adjacent to the discharging-chute and arranged to lift the tank-body after the same shall have been dumped to empty the refuse into the discharging-chute, substantially as described.

3. In a metallurgical apparatus for treating ore by a cyanid solution, a dumping-tank provided with an offstanding flange around its delivery end, a double-flanged closure adapted to fit within said tank and to present one flange thereof adjacent to the flange on the tank, a hinge-rod supported on the tank and connected to said closure, a double-flanged packing fitted to the flanged tank and the flanged closure, and means for clamping the closure and tank together to compress the packing, substantially as described.

4. In a metallurgical apparatus for treating ore by a cyanid solution, a tiltable tank comprising a suitable support, a tank-body having a discharge-gate at its rear end and pivoted to the support at a point between its center and the front end, a drain device in the bottom of the tank for drawing off the cyanid solution, holding-springs mounted on the support and engaging with the tank-body at points between its discharge end and the pivotal connection thereof with the support, and means for retracting the holding-springs from engagement with the tank-body, substantially as described.

5. In a metallurgical apparatus for the treatment of ore by a cyanid solution, the combination with a suitable support, of a dumping-tank provided at its rear with a delivery-opening and a closure therefor and pivoted to the support at points between its center and front end, a hoisting-bail attached to the tank in rear of its pivotal connection to the support, and a suitable hoisting appliance adapted for connection with said bail to raise the tank after its contents have been dumped, substantially as described.

6. In a metallurgical apparatus for treating ore by a cyanid solution, the combination of a portable tank having a tiltable tank-body pivoted to a wheeled truck and provided with a drain for drawing off the cyanid solutions from the tank-body and with means for sustaining said tank-body in its normal position on the truck, a bail pivoted to the rear end of the tank-body, and a hoisting mechanism adapted for connection to said bail and to raise the tiltable tank-body for engagement with the sustaining devices therefor, substantially as described

7. An ore-treating tank comprising a truck, a body pivoted at one side of its center to said truck and provided in its bottom with a drain-cock, a hinged gate at one end of said body, a filter confined within said body over the drain-cock therein, a lifting-bail pivoted

to the body at a point between its pivotal attachment to the truck and the end gate, and holding devices mounted on the truck for engagement with the body to sustain the latter in its normal position, substantially as described.

8. An ore-treating tank comprising a body open at its rear end and provided with the offstanding flange, 14, an end gate having the right-angular flange, 15, arranged to fit within said body to have one portion of its flange bear against the body and the other portion of said flange abut against the flange, 14, the Z-packing interposed between the body, the gate and the abutting flanges, and the bolts passing through said abutting flanges and the packing, substantially as described.

611,516. DISCHARGE-VALVE FOR ASH-PITS. JOSEPH SEDLMAYER, New York, N. Y. Filed Apr. 15, 1898. Serial No. 677,761. (No model.)



Claim.—1. The combination of the chute, the hinged wings therein, and the sliding hinge-bolt having a sleeve provided with a wedge-shaped end adapted to engage the lower surface of the wings to raise them.

2. The combination of the chute, the hinged wings therein, and the sliding hinge-bolt, having above its axis a sleeve provided with a wedge-shaped end adapted to engage the upper surface of the wings to lower or open them, and means for raising or closing the wings.

3. The combination of the chute, the hinged wings therein, and the sliding hinge-bolt, having above its axis a sleeve provided with a wedge-shaped end adapted to engage the upper surface of the wings to lower or open them, and another sleeve secured to the bolt below its axis and provided with a wedge-shaped end adapted to engage the lower surface of the wings to raise or close them.

4. The combination of the chute, the hinged wings therein, and the sliding hinge-bolt having operating projections secured thereto on opposite sides, to open and close the wings, respectively.

5. The combination of the chute, the hinged wings therein, means for actuating the wings, and the shield extending longitudinally over the hinge.

611,517. LATHE-TOOL AND HOLDER THEREFOR. OSCAR SELDEN, Boston, Mass. Filed Aug. 14, 1897. Serial No. 648,263. (No model.) Patented in Germany Aug. 22, 1895, No. 83,211.



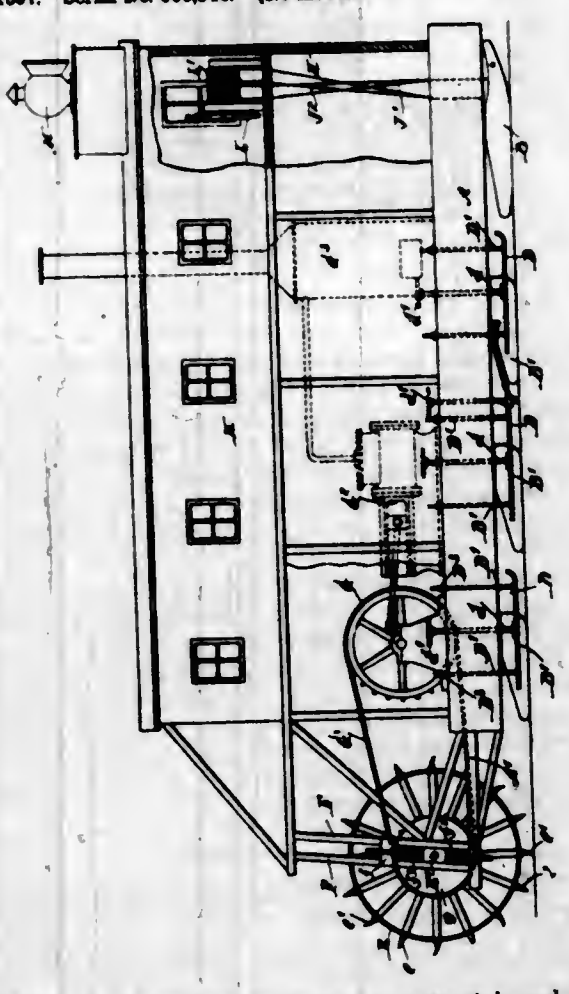
Claim.—1. A tool-holder, consisting of a stock provided with a head having a hole through it, a bolt passing through said hole having a nut on one end and a transverse hole through the other end, a wedge-shaped tool therein, a collar rotatably mounted on said bolt having an oblique end which bears against said tool, substantially as described.

2. A tool-holder, consisting of a stock provided with a head having a hole through it made tapering at one end, a bolt passing through said hole having a nut on one end and a transverse hole through the other end, a wedge-shaped tool therein, a tapering collar rotatably mounted on said bolt and formed with an oblique end adapted to bear against the tool, and by adjustment thereof to adjust said tool to different inclinations, substantially as described.

3. A tool-holder, consisting of a stock provided with a head having a hole therein, a bolt passing through said hole having a nut on one end and a transverse hole through the other end, a wedge-shaped tool therein, a reciprocating and rotatable movable collar on said bolt formed with an oblique end adapted to bear against the tool, and by adjustment thereof to adjust said tool to different positions, substantially as described.

4. A tool-holder, consisting of a stock provided with a head having clamping-jaws adapted to receive and hold a tool, and also having a hole therein, a bolt passing through said hole having a nut on one end and a transverse hole through the other end, a movable collar on said bolt formed with an oblique end adapted to bear against the tool and by adjustment thereof to adjust said tool to different positions, substantially as described.

611,518. ICE-STEAMBOAT. ANTONE L. SHERMAN, Punta Gorda, Fla., assignor of one-half to Albion K. Demere, same place. Filed Dec. 2, 1897. Serial No. 660,516. (No model.)



Claim.—1. An ice-boat having runners beneath it, and provided with propelling and steering means, combined with a series of broad runners or toboggans beneath the boat-frame, and means for raising and depressing the same, substantially as described.

2. An ice-boat having runners beneath it, and provided with propelling and steering means, combined with a series of broad runners or toboggans beneath the boat-frame, rods attached to said toboggans and sliding in vertical guides in the boat-frame, means for raising and depressing said toboggans, and means for engaging said rods to lock them in their lower position, substantially as described.

3. An ice-boat having runners beneath it, and provided with propelling and steering means, a series of broad runners or toboggans beneath the said frame, rods attached to each end of the toboggans and sliding in vertical guides in the boat, a screw-threaded rod attached to each toboggan and to the boat-frame and by which the toboggan may be raised and lowered, and means for locking the rods in their lower position, substantially as described.

4. An ice-boat having runners beneath the same, propelling and steering means, a series of broad runners or toboggans beneath the boat, rods attached thereto and sliding in vertical guides upon the boat, said rods having upper notched ends, staples projecting from the boat-floor in line with said rods, a bar adapted to engage the notched ends of the rods and said staples, and means for raising and lowering a toboggan at will, substantially as described.

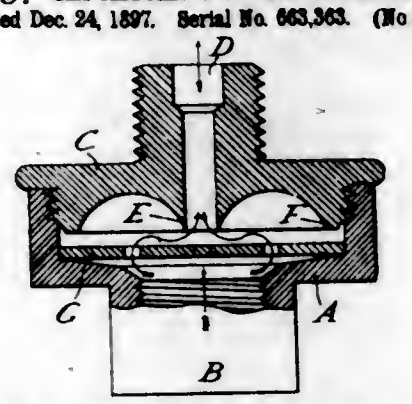
5. An ice-boat, comprising a frame having runners thereunder mounted upon vertical pivots, a steering-wheel, connections therefrom to certain of said runners, whereby they may be used as rudders, propelling mechanism carried upon said frame, comprising a rotating wheel having teeth engaging the ice, and a series of broad runners or toboggans adjustably attached beneath the frame, whereby they may be raised or lowered, substantially as described.

6. An ice-boat, comprising a frame having runners thereunder mounted upon vertical pivots, a steering-wheel, connections therefrom to certain of said runners whereby they may be used as rudders, propelling mechanism carried upon said frame, comprising a rotating wheel having teeth engaging the ice, a brake-bar pivoted beneath the frame having downwardly-projecting spurs on its rear ends, and means for depressing it at will, substantially as described.

7. An ice and snow boat having series of narrow runners beneath the body thereof and a series of broad runners or toboggans

which are adjustable vertically, a propelling-wheel mounted on the boat-frame having a series of projecting teeth and also a series of removable spades or paddles attachable to its rim, and means for turning said wheel, substantially as described.

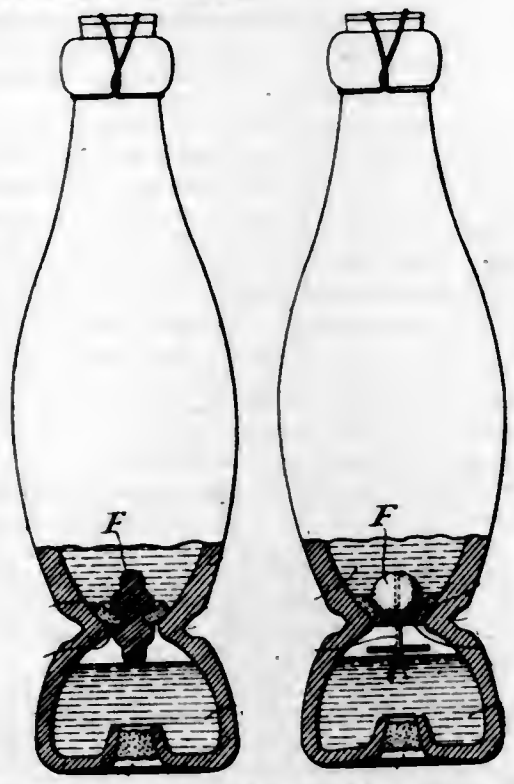
611,519. GAS-REGULATOR. JOHN F. SIMMANCE, London, England. Filed Dec. 24, 1897. Serial No. 663,363. (No model.)



Claim.—1. In a gas-regulator, the combination with the cup A, of the cover C fitted to said cup and having a downwardly-projecting central nipple E and similarly-projecting circumferential lip F surrounding said nipple and lying in the same plane therewith, a disk freely supported by the cup and lying directly below the said nipple and circumferential lip and a passage or passages leading from the cup below the disk to the cover above the disk, substantially as described.

2. In a gas-regulator, the combination with the cup A, of the cover C, fitted to said cup and having a downwardly-projecting central nipple E, and similarly-projecting circumferential lip F surrounding said nipple and lying in the same plane therewith, a disk freely supported by the cup and lying directly below the said nipple and circumferential lip, a normally open by-pass formed in the body of the cup below the disk, leading upward above the disk and discharging outside of the circumferential lip, and a plug K for controlling said by-pass, substantially as described.

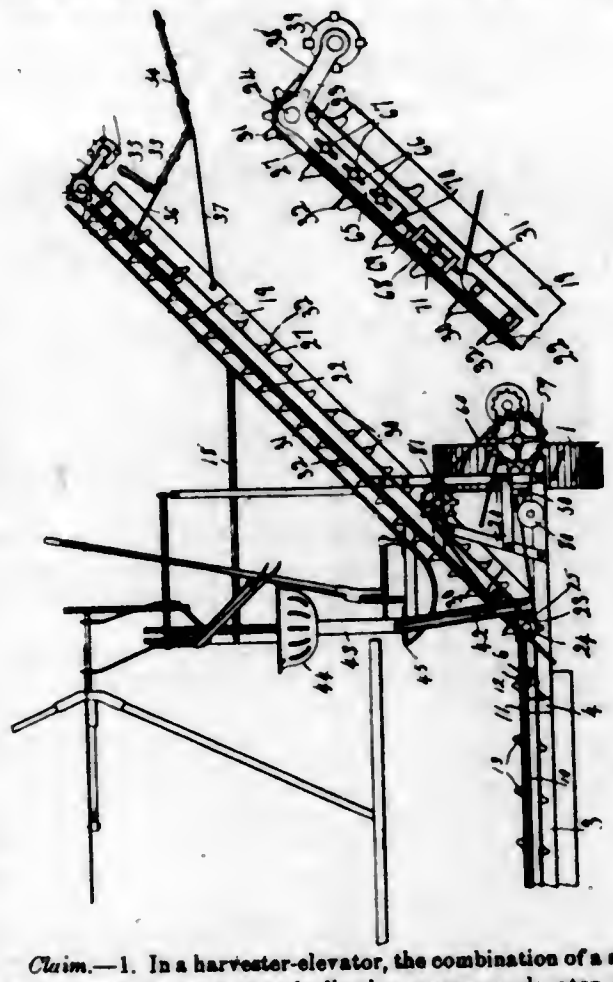
611,520. BOTTLE FOR HOLDING SPIRITS OR OTHER LIQUIDS AND AERATED WATERS SEPARATED UNTIL BOTTLE IS OPENED. CHARLES S. SMITH, Shipley, England. Filed Mar. 14, 1898. Serial No. 673,848. (No model.)



Claim.—1. As a new article of manufacture, a bottle annularly contracted between its upper and lower ends to form a contracted opening and provide two separate chambers, one above the other, for containing two liquids separated from each other, a valve closing the said contracted opening, which is formed by the annularly-contracted part of the bottle, said lower chamber having its bottom provided with an opening constructed to be closed by a stopper, substantially as described.

2. A bottle annularly contracted between its upper and lower ends to form a contracted opening and to provide two separate chambers, one above the other, for containing two liquids separated from each other, a valve closing the contracted opening formed by the said annular contraction of the bottle, means for holding the said valve in a closed position in said contracted opening, the upper chamber of the bottle having an open neck, and the bottom of the lower chamber having a filling-opening constructed to be closed by a stopper, substantially as and for the purposes described.

611,521. HARVESTER-ELEVATOR. ARCHIBALD F. SPOONER and JOHN H. CASE, Richville, N. Y. Filed Dec. 27, 1897. Serial No. 663,510. (No model.)



Claim.—1. In a harvester-elevator, the combination of a substantially horizontal conveyer, an inclined conveyer or elevator, an elongated roller supported beyond and immediately beneath the upper end of said elevator for carrying the corn free therefrom, and arranged beneath and extending beyond said roller a trough-shaped table for temporarily receiving the corn delivered from the upper end of said elevator.

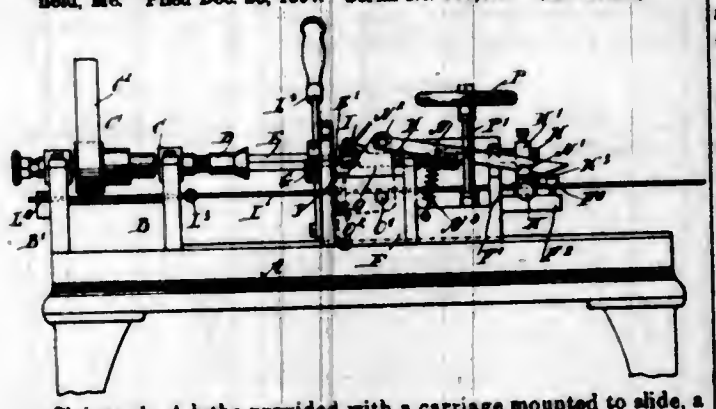
2. In a harvester-elevator, in combination a substantially horizontal platform for receiving the cut corn or grain, an endless conveyer for continually carrying the corn to the foot of the elevator, an elevator composed of an inclined floor and of a series of endless chains provided with cross-slats and projections for receiving the grain and carrying it up said incline to a sufficient height to be loaded onto a wagon, beyond and immediately beneath the upper end of said elevator an elongated roller suitably supported and journaled and provided with integral ribs, for feeding the corn onto the receiving-table, and secured immediately below and extending beyond said roller a trough-shaped receiving-table of greater length than the width of the elevator for receiving the corn temporarily, before delivering it into the wagon.

3. In combination in a harvester-elevator for silo-corn, a substantially horizontal conveyer for receiving the cut corn or grain and carrying it across the machine to the foot of the elevator, an inclined elevator provided with endless chains carrying cross-slats for engaging with the corn and elevating it to a sufficient height for delivery into the wagon, guard-arms secured by their lower ends to a suitable portion of the harvester and having their free ends extending upwardly, parallel and adjacent to the conveyer, an elongated roller provided with integral ribs journaled to turn freely and supported beyond and immediately beneath the upper end of the elevator, and secured beyond and immediately beneath said roller a temporary receiving-table composed of two bottom plates arranged at an obtuse angle to each other, and an inner side substantially at right angles to said inner bottom plate, said table being longer than the entire width of the elevator so as to receive all the corn that is delivered.

4. In combination in a harvester-elevator, means for adjustably supporting the elevator chains and slats, consisting of brackets se-

cured to the lower ends of the side plates, a shaft journaled therein, sprocket-wheels keyed on said shaft, of brackets secured to the upper ends of the side plates, in which are journaled a corresponding shaft and sprocket-wheels, said upper brackets being provided with outwardly-extending arms for supporting the loading-roller, and of downwardly-extending slotted arms for receiving securing-bolts, said slotted arms being provided with lugs, and of supplemental brackets secured below said upper brackets to the side plates of the elevator provided with adjusting-screws bearing against the respective lugs on said slotted arms.

611,522. WOOD-TURNING LATHE. NELSON R. SPRINGER, Dixfield, Me. Filed Dec. 28, 1897. Serial No. 663,891. (No model.)



Claim.—1. A lathe provided with a carriage mounted to slide, a lever for imparting a sliding movement to the said carriage, a toothed bar adapted to be engaged by the lever to move the carriage forward a predetermined distance, and a cutter-head movable in the carriage and adapted to face off the end of the stick, the said cutter-head being controlled from the said lever, substantially as shown and described.

2. A lathe provided with a carriage mounted to slide, a cutter-head movable in the carriage, and adapted to face off the end of the stick, a lever for imparting a sliding movement to the said carriage, a toothed bar adapted to be engaged by the lever to move the carriage forward a predetermined distance, and a cut-off device controlled from the said lever, to cut off the article from the end of the stick, substantially as shown and described.

3. A lathe provided with a carriage mounted to slide, a lever connected with the said carriage, a toothed bar adapted to be engaged by the lever to move the carriage forward a predetermined distance, a cutter-head movable in the carriage and adapted to face off the end of the stick, the said cutter-head being controlled from said lever, and a cutter fixed on the carriage for turning the end of the stick round previous to facing it, substantially as shown and described.

4. A lathe provided with a movable carriage, a cut-off knife or cutter on said carriage, for cutting off the end of the stick, a lever for imparting movement to the said knife or cutter, an arm connected with the said lever, and a hand-lever fulcrumed on the carriage, and adapted to engage the said arm to actuate the lever and knife, substantially as shown and described.

5. A lathe provided with a movable carriage, a cut-off knife or cutter on said carriage, for cutting off the end of the stick, a lever for imparting movement to the said knife or cutter, an arm connected with the said lever, a hand-lever fulcrumed on the carriage, and adapted to engage the said arm to actuate the lever and knife, and a stop on the carriage, and adapted to be engaged by the said arm to move the latter out of engagement with the said hand-lever, substantially as shown and described.

6. A lathe provided with a movable carriage carrying a turning cutter for rounding the stick, a lever for imparting movement to the carriage, a cutter for facing the stick and controlled from the said lever, and a cutter for cutting off the finished end of the stick and also controlled from the said lever, the said cutters being arranged to act successively, substantially as described.

7. A lathe provided with a slidable block adapted to carry a cutter, a spring-pressed lever, a link carried by the said lever and connected with the said block, an arm fulcrumed on said lever and provided with a shoulder, and a hand-lever provided with a lug adapted to engage the shoulder of the said arm whereby a sliding motion is imparted to the said block, substantially as shown and described.

8. A lathe provided with a movable carriage, a toothed bar fulcrumed at one end, a lever fulcrumed on the carriage and arranged for engagement with the teeth of the said bar to shift the carriage forward, cutters carried by the said carriage and controlled from the said lever, a spring for holding said toothed bar in engagement with the lever, and means for swinging the said bar out of engagement with the lever to permit of returning the carriage, substantially as described.

611,528. FLOWER-POT DRAINER. WILLIAM F. SPRINGER, Edwardsville, Ill. Filed Dec. 15, 1897. Serial No. 662,089. (No model.)



Claim.—1. A device of the class described consisting of an imperforate disk provided at its lower face with a series of gutters, and having lugs or feet located between the gutters and adapted to rest upon the bottom of the flower-pot, said feet or lugs being provided at their lower faces with a series of short grooves, substantially as described.

2. A device of the class described, consisting of an imperforate plate designed to rest upon the bottom of a flower-pot and cover the opening thereof and provided with a depending stud adapted to fit in the said opening and prevent the plate from becoming displaced, said plate being provided with passages extending to the stud, substantially as described.

3. A device of the class described consisting of an imperforate plate provided at its lower face with a depending stud and having a recess extending around the same, said plate being provided with a series of gutters or grooves extending from the said recess over the bottom and side faces, substantially as described.

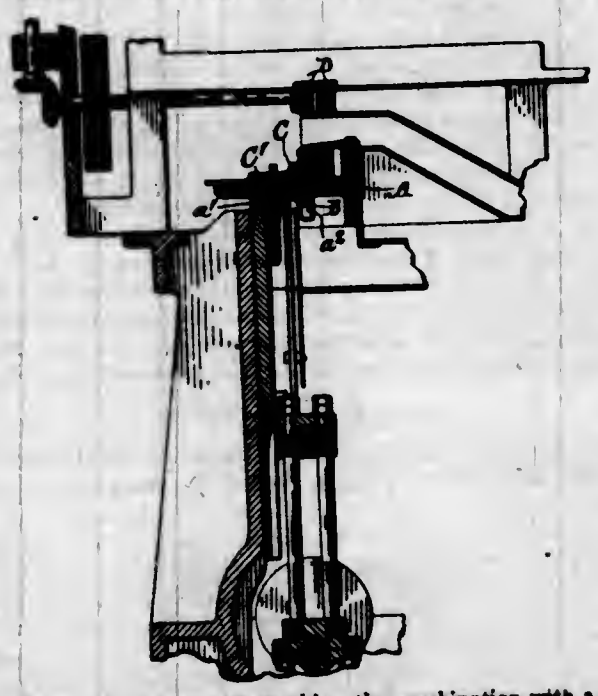
4. A device of the class described consisting of an imperforate disk having a convex upper face and provided with inclined side edges extending inward from the upper face to the lower face, said lower face having a central recess and provided with radial gutters or grooves, substantially as described.

5. A device of the class described, consisting of an imperforate disk or plate provided at its lower face with a central recess and having a series of radial grooves or gutters, said plate being provided at intervals between the radial grooves or gutters with an outer series of short grooves and an inner recess, substantially as described.

6. A device of the class described consisting of an imperforate disk or plate having a convex upper face and inclined side edges and provided at its lower face with a central recess and with gutters or grooves extending radially from the same, said plate having a stud depending from the said recess and adapted to fit in the opening in the bottom of a flower-pot, substantially as and for the purpose described.

7. A device of the class described consisting of an imperforate plate provided at its top with a projecting flange and having gutters or grooves extending inward from its side edges to the center of its lower face, substantially as described.

611,524. MATCH-MACHINE. BERNARD T. STEBER, Utica, N. Y. Filed Nov. 13, 1897. Serial No. 658,415. (No model.)



Claim.—1. In a match-machine, the combination with a cutter-head, of an abutment-block pivoted upon the said cutter-head, and adapted to rock into and out of the line of cut, substantially as described.

2. In a match-machine, the combination with a cutter-head, of a rocking abutment-block, pivoted upon the said cutter-head, and means for rocking the said abutment-block into and out of the line of cut, substantially as described.

3. In a match-machine, the combination with a cutter, of a rocking abutment-block pivoted near the line of cut and adapted to have one of its edges fall or drop opposite the ends of the match-splints, substantially as described.

4. In a match-machine, the combination with a cutter-head, of an abutment-block pivoted thereon, and springs for pushing the free edge of the said block into the line of cut, substantially as described.

5. In a match-machine, the combination with a cutter, of a rocking abutment-block pivoted near the line of cut, and means for rocking the said block into and out of the line of the cut, substantially as described.

6. In a match-machine, the combination with a cutter, of a rocking abutment-block pivoted near the line of cut, means for rocking the said block into the line of cut, and a cam-surface for forcing it back again, substantially as described.

7. In a match-machine, the combination with an overhanging cutter, of a rocking abutment-block pivoted near the line of cut, and adapted to be moved into and out of the line of cut, and a knife-edge below the said abutment-block for trimming the shavings from the block of wood operated upon, substantially as described.

8. In a match-machine, the combination with an overhanging cutter, of a rocking abutment-block pivoted near the line of cut, and adapted to be moved beneath the match-splints for supporting them, and rotating cams to push it back again, substantially as described.

9. In a match-machine, the combination with a cutter, of a rocking abutment-block pivoted upon the cutter-head, means for forcing the abutment-block outwardly beneath the cutter, and a cam-surface for forcing it back again, substantially as described.

10. In a match-machine, the combination with a suitable cutter-head, of a rocking abutment block pivoted thereon, and provided with a series of supporting prongs or projections, and means for bringing the said projections into the line of cut for supporting the match-splints, substantially as described.

11. In a match-machine, the combination with a suitable cutter-head, of an overhanging cutter carried thereby, a rocking abutment-block pivoted upon the said cutter-head near the line of cut and below the said cutter, a projection formed upon the said abutment-block beneath the pivotal point thereof, and a spring interposed between the said projection and the cutter-head for forcing the said abutment-block forward, substantially as described.

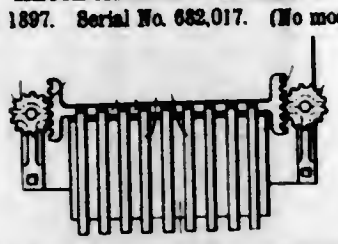
12. In a match-machine, the combination with a cutter-head of a rocking abutment-block pivoted near the line of cut but below the range of the cutter so that it may rock from a position slightly back of said line forward to intercept such line, substantially as described.

13. In a match-machine, the combination with a cross-head, of an overhanging cutter mounted thereon, a rocking abutment-block pivoted upon the said cutter-head near the line of cut and adapted to be moved into and out of said line of cut, the construction being such that when the said abutment-block is rocked into the line of cut, the splints in the cutter will be supported thereby, the strain upon the abutment-block being almost directly against the pivotal point thereof, substantially as described.

14. In a match-machine, the combination with means for cutting match-splints, of a carrier-chain for receiving them, the said carrier-chain comprising slats having a series of match-receiving apertures cut into their opposite edges, the said slats forming links in the chain, and links for connecting the said slats, the construction of the slats being such that the matches will be retained in the apertures without additional holding means, substantially as described.

15. In a match-machine, the combination with a cutter for cutting match-splints, of a carrier-chain for receiving the same, comprising a series of slats having apertures let into their opposite edges, said apertures being adapted to receive and hold matches without other means, links for connecting the said slats, said slats forming themselves links of the chain, substantially as described.

611,525. MATCH-MACHINE. BERNARD T. STEBER, Utica, N. Y. Filed May 28, 1897. Serial No. 682,017. (No model.)

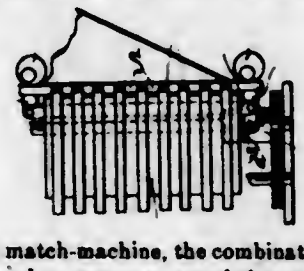


Claim.—1. In a match-machine, the combination with a suitable frame, of a cutter-head, a cutter mounted thereon, an abutment-block arranged below the cutter, and racks and pinions for moving the abutment-block out beneath the cutter to support the splints while they are being forced into the carrier, and to move the abutment-block back out of the way of the cutter while the splints are being cut, substantially as described.

2. In a match-machine, the combination with an overhanging or projecting cutter, of a rocking abutment-block pivoted near the line of cut, racks and pinions for rocking the said block into the line of cut for supporting the match-splints while they are being forced into the carrier, and to rock it back again out of the way of the cutter while the splints are being cut, substantially as described.

3. In a match-machine, the combination with a suitable frame, of a cutter mounted thereon, an abutment-block arranged below the cutter and provided on its outer ends with a rack, pinions arranged on either side of the machine and engaging the racks and permitting the abutment-block to have a reciprocating movement thereon, and means for moving the abutment-block outwardly beneath the cutter while the matches are being forced into the carrier and to move the abutment-block back out of the way of the cutter while the splints are being cut, substantially as described.

611,526. MATCH-MACHINE. BERNARD T. STEBER, Utica, N. Y. Filed May 28, 1896. Serial No. 682,018. (No model.)



Claim.—1. In a match-machine, the combination with a suitable frame, of a cutter-head, a cutter mounted thereon, a rocking abutment-block pivoted below the cutter, means for rocking the abutment-block outwardly beneath the cutter and oscillating eccentric cams for rocking the abutment-block back out of the way of the cutter, substantially as described.

2. In a match-machine, the combination with a suitable frame, of a cutter-head, a rocking abutment-block, pivoted on the cutter-head beneath the cutter, springs for forcing the abutment-block outwardly beneath the cutter and oscillating eccentric cams for rocking the abutment-block out of the way of the cutter, substantially as described.

3. In a match-machine, the combination with a suitable frame, of a cutter-head, a cutter mounted thereon, a rocking abutment-block pivoted below the cutter, means for rocking the abutment-block outwardly beneath the cutter, oscillating eccentric cams for rocking the abutment-block back out of the way of the cutter and a knife-edge below the said abutment-block for trimming the shavings from the block of wood operated upon, substantially as described.

4. In a match-machine, the combination with a suitable frame, of a cutter-head, a cutter mounted thereon, a movable abutment-block mounted below the cutter, means for moving the abutment-block outwardly beneath the cutter, and oscillating eccentric cams for moving the abutment-block back out of the way of the cutter, substantially as described.

611,527. INCANDESCENT-MANTLE SUPPORT. LEOPOLD STIASNEY, New York, N. Y. Filed Feb. 24, 1898. Serial No. 671,514. (No model.)



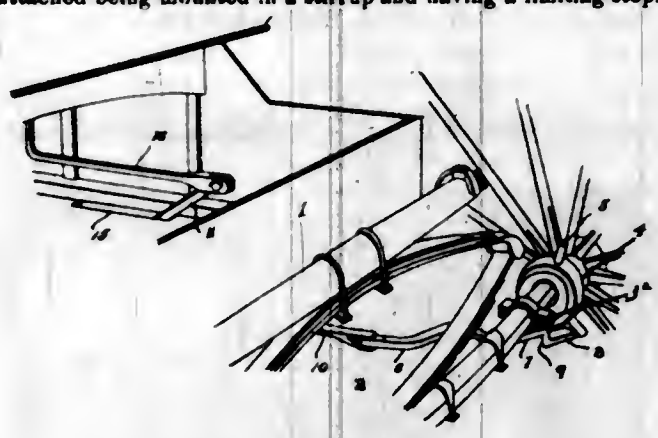
Claim.—1. The combination with supporting-arms having a ring, of a mantle-carrying ring flanged about the first-named ring substantially as described.

2. The combination with supporting-arms having a ring, of a mantle-carrying ring having a shoulder for the support of and flanged about said first-named ring, and a main carrier about which the arms are bent substantially as described.

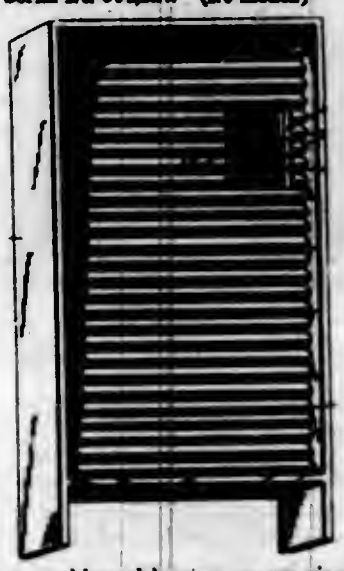
3. A mantle carrying ring provided with two horizontal arms extending radially in opposite directions, in combination with a supporting-ring provided with depressions at its opposite sides, the ends of said arms being bent around the depressed portions of said supporting-ring, substantially as described.

611,528. SAFETY HITCHING DEVICE. EBBOLLED SUTTER and THOMAS REYNOLDS, Reynoldsville, Pa. Filed July 31, 1897. Serial No. 646,667. (No model.)

Claim.—In a device of the character set forth, the combination with a wheel of a vehicle, of a band or collar on the hub thereof provided with sprocket-studs, a bell-crank lever mounted on the adjacent axle and having the rear arm thereof at the free end formed with a shouldered engaging tongue, an arm located within the vehicle-body, and having a front hooked end with a guard adjacent thereto adapted to receive the reins, a lever to which the said arm is pivotally attached, and a connecting-rod between the lower end of the said lever and the said bell-crank lever, said lever to which the arm is attached being mounted in a stirrup and having a limiting-stop.



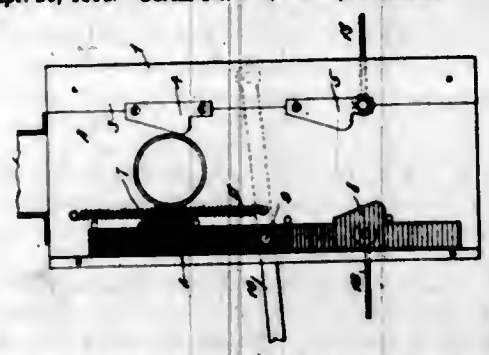
611,529. WASHBOARD. AUGUST C. SWARTZ, Chicago, Ill. Filed May 14, 1896. Serial No. 591,887. (No model.)



Claim.—1. In a washboard having an opening in the rubbing-surface thereof, a soap-holding box or receptacle upon the rear side of said board communicating with said opening, a positively-movable plunger in said opening, and a plurality of looped wires constituting engaging portions for the soap upon the end of said plunger.

2. In a washboard having an opening in the rubbing-surface thereof, a soap-holding box or receptacle upon the rear side of said board communicating with said opening, a positively-movable plunger in said opening, and a plurality of looped wires constituting engaging portions for the soap upon the end of said plunger, the said looped wires being arranged at an angle one to the other so as to prevent independent movement of the soap with respect to the plunger.

611,530. COIN-CHUTE. CHARLES J. TAYLOR, Shelbyville, Ill. Filed Apr. 29, 1898. Serial No. 679,259. (No model.)



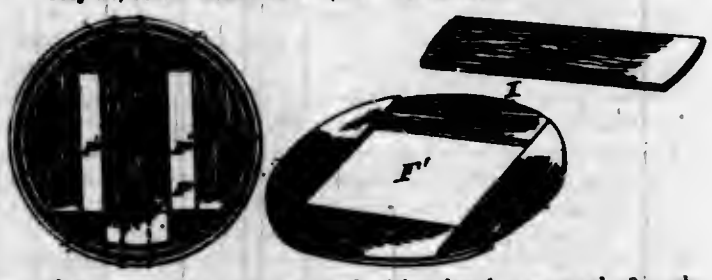
Claim.—A coin-chute, comprising a casing, fixed stops in said casing at one side, one above the other and insulated one from the other, a vertically-moving plate at the opposite side of the casing, two stops on said plate, one above the other, the two lower stops being in an electric circuit designed to be closed by a coin engaging with the lower stops, and a lever having connection with the movable plate, the movable stops being so related to the fixed stops that when the lever is held downward the two upper stops will retain a coin, and when the lever is raised the coin will be released from the upper stops and caught and held by the two lower stops until the lever is moved downward releasing the coin from the lower stops, substantially as specified.

611,581. DENTAL PLUGGER. JOHN W. TENNY and RALPH T. MCCRACKEN, New Orleans, La. Filed Dec. 4, 1897. Serial No. 660,806. (No model.)



Claim.—In a dental mallet, the combination with a rotary shaft, and a disk fixed thereon and having rounded lugs upon its opposite faces; of a plunger; a yoke fixed upon said plunger and adapted to inclose said disk, the said yoke having a pair of straight horizontal arms upon either side of said disk, provided with rounded faces adjacent said disk; the said lugs on either side of said disk being adapted to strike the rounded faces of the corresponding arms of said yoke and impart a thrust to said plunger corresponding in direction to the direction of the blow of said lugs, substantially as described.

611,582. BARREL. MERRILL H. TILGHMAN, Norfolk, Va. Filed July 27, 1898. Serial No. 687,006. (No model.)



Claim.—1. A barrel provided with a head composed of a plurality of sections overlapped at their ends, curved on their outer sides to fit the barrel and having an open space between their inner edges adapted to permit the insertion of truck and to be closed by a cross-slat substantially as set forth.

2. A barrel having a head composed of segmental sections secured together and in the barrel-body and spaced apart at their inner edges forming a central opening and the closure-strip crossing such opening, suitably and practically closing the opening in the head substantially as set forth.

611,583. DISH-DRAINER. HENRY M. TSCHOPP, Pickerington, Ohio. Filed Nov. 23, 1897. Serial No. 659,579. (No model.)



Claim.—1. A dish-drying tray having a lever fulcrumed to the bottom thereof, one end of the lever being formed into a jaw and the other end of the lever having a hook thereon, and a leg fulcrumed to the bottom of the tray and engaging the hook of the lever whereby to hold the leg in operative position, and whereby also to hold the lever with its jaw in operative position.

2. A dish-drying tray having an open end adapted to lead to a pan, a pocket secured to the inner side of one wall of the tray, a leg pivoted to the bottom of the tray, and a lever fulcrumed to the bottom of the tray and having a hook at one end adapted to be engaged by the leg, whereby to hold the leg in operative position, and a jaw formed on the other end of the lever, such jaw being also held in operative position by the engagement of the lever with the leg.

3. A dish-drying tray having a lever fulcrumed to the bottom thereof, one end of the lever having a jaw and a leg movably mounted on the tray, the lever being capable of holding the leg in operative position, and the leg serving to hold the lever with its jaw in operative position.

611,584. UNICYCLE. VERNON D. VENABLE, Farmville, Va. Filed May 18, 1897. Serial No. 637,053. (No model.)

Claim.—1. A unicycle having an outer and an inner rim rotatable on each other, seat-supporting and driving mechanisms mounted upon the inner ring, the seat-support being pivoted to swing in the

plane of the ring and the driving mechanism being movable upon the inner rim, and connections interposed between the driving mechanism and the seat whereby the seat swings in unison with the driving mechanism.



2. A unicycle, comprising a rim or spokeless wheel composed of two parts, one sliding upon the other, a seat-support pivoted upon the inner part of the rim to swing in the plane thereof, a drive-wheel carried by the inner rim and engaging the outer and having a limited movement relative to the inner rim, supporting connections from the drive-wheel to the seat-post whereby the seat is swung forward and backward according to the action of the drive-wheel, and means for turning the said drive-wheel, substantially as described.

3. In a unicycle, a spokeless wheel constructed in two sections, the outer section being held to turn upon and around the inner section, the outer section being provided with a series of pins projected from its side, a saddle-post pivoted upon the inner section, a frame secured to the inner section, a drive-wheel adjustably mounted in said frame, having recesses to receive said projections, a pedal-shaft carried by the upright, a driving connection between the pedal-shaft and the shaft on which the driving-wheel is mounted, and a tension device normally holding the upright in a vertical position.

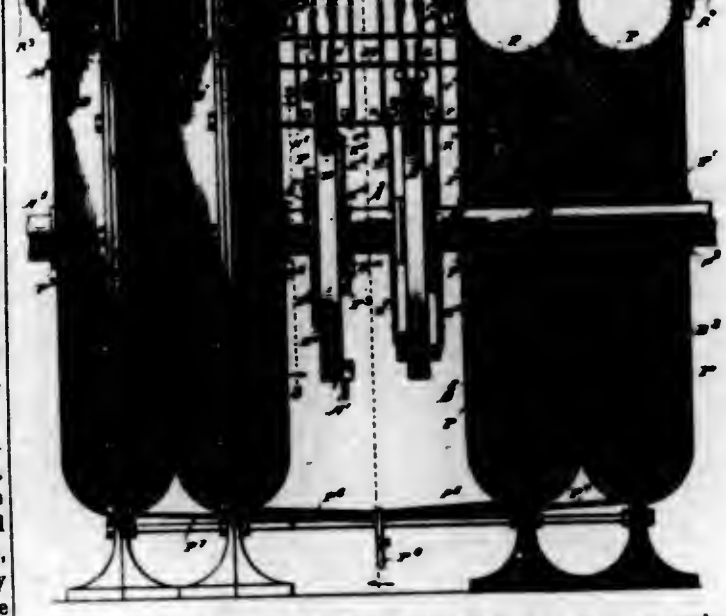
4. The combination, with a unicycle, the wheel whereof is spokeless and constructed of an inner section and an outer tire-section, the tire-section being mounted to turn upon and around the inner section, said tire-section being also provided with pins extending from one of its sides, of an upright pivoted to the inner section of the wheel, adapted to receive a saddle, a pedal-shaft carrying a sprocket-wheel journaled in said upright, a frame secured to the inner section of the wheel in advance of the upright, a driving-wheel adjustably mounted in the said frame and provided with peripheral recesses to receive said projections from the tire-section of the main wheel, a driving connection between the shaft of the driving-wheel and the pedal-shaft, links in which the pedal-shafts and the shaft of the driving-wheel are loosely mounted, and a spring device connected with the inner section of the main wheel, being passed beneath said upright to an attachment therewith.

611,585. ROTARY ENGINE JAMES C. WALKER, Waco, Tex. Filed Dec. 27, 1897. Serial No. 663,783. (No model.)

Claim.—1. In a rotary engine of the character described; the combination with the sliding abutment; the steam-chest, and the throttled valve operating therein; of a disk rotatable with the drive-axle; abutment-shifting-lever devices; cams fixedly held on the rotatable disk for operating such abutment-lever devices to lift the abutment; the throttled-valve-shifting devices and the centrifugally-operated automatically-adjustable cams arranged on the rotatable disk for shifting the throttled-valve-operating devices, all being arranged substantially as shown and for the purposes described.

2. A rotary engine, comprising a fixed annular chamber, a sliding abutment therefor, a drive-shaft having a concentric piston, a steam inlet and exhaust, arranged at each side of the abutment, opening into the chamber, a shifting valve mechanism for simultaneously closing the steam-inlet at one side, an exhaust at the other side, and opening the alternate inlet and exhausts, and a supplemental cut-off valve, operated over the steam-inlet, and mechanism operated from the drive-shaft for imparting a reciprocating action to the said supplemental cut-off valve.

3. A rotary engine, comprising a fixed annular chamber, a sliding abutment, the drive-shaft having a concentric piston, shaft-operated means for lifting the abutment, a steam-chest for the chamber having a duplex set of steam-ports, one set being at each side of the abutment, a hand-operated sliding valve for opening and closing the inlet of one set and the exhaust of the other set of ports, said chest having independently and automatically operated supplemental valves movable over the inlets and ports; fixed cams carried by the shaft to move the said supplemental valves in one direction, centrifugal adjustable cut-offs for moving them to their reverse direction, and means for setting either of such supplemental valves out of engagement with the shaft, cam and cut-off devices, for holding such valve to close off its respective steam-inlets, as specified.



4. The combination with the fixed cylinder, having an annular steam-chamber provided with a sliding abutment; the drive-shaft having a concentric piston and a fixed disk, said disk having means for raising the sliding abutment; a steam-chest having an inlet-port and exhaust-port opening into the steam-chamber at each side of the abutment; a hand-operated slide-valve for opening and closing the steam-inlet, at one side of the abutment, and the exhaust at the other side of such abutment; independently-operated slide-valves movable over the steam-inlets, operating mechanism for such valves, such mechanisms including a lever adapted to be projected in the path of the fixed disk, means for simultaneously setting such operating mechanism to alternately bring one of said levers in an operative position as the other is moved out of line with its adjusting devices, and means mounted on the fixed disk for imparting an alternate opening and closing movement on the said lever as specified.

5. A rotary engine, comprising a plurality of fixed annular chambers, a drive-shaft having a series of concentric pistons projected in diametrically opposite directions, said pistons fitting to travel one in each steam-chamber, each chamber having a sliding abutment, such abutments projecting radially from the chamber in the same alinement; a cam mechanism on the shaft, having means for alternately lifting the abutments at predetermined intervals; an exhaust and inlet port at each side of the abutment-shaft, of the cylinder slide-valves for alternately opening and closing the inlet at one side and the exhaust at the other side of the abutment; supplemental valves operating over the inlet-ports, said valves having operating means adapted to engage and be set to alternate positions by the cam-disk, means for simultaneously setting both valve-operating means, one set of valve-operating means to the position to be engaged by the operating-cam, and the other set of operating means to be set in position out of engagement with the aforesaid operating-cam, all being arranged, substantially as shown and described.

6. In a rotary engine, substantially as described, the combination with the annular chamber; the drive-shaft; the steam inlets and exhaust; of the reciprocating inlet-valve, a rock-lever connected to and adapted to impart a shifting motion thereto; a disk secured on the shaft, having a fixed cam for engaging and moving the said rock-levers in one direction, and a cam automatically adjustable by centrifugal action for engaging and moving the said lever to its reverse position as specified.

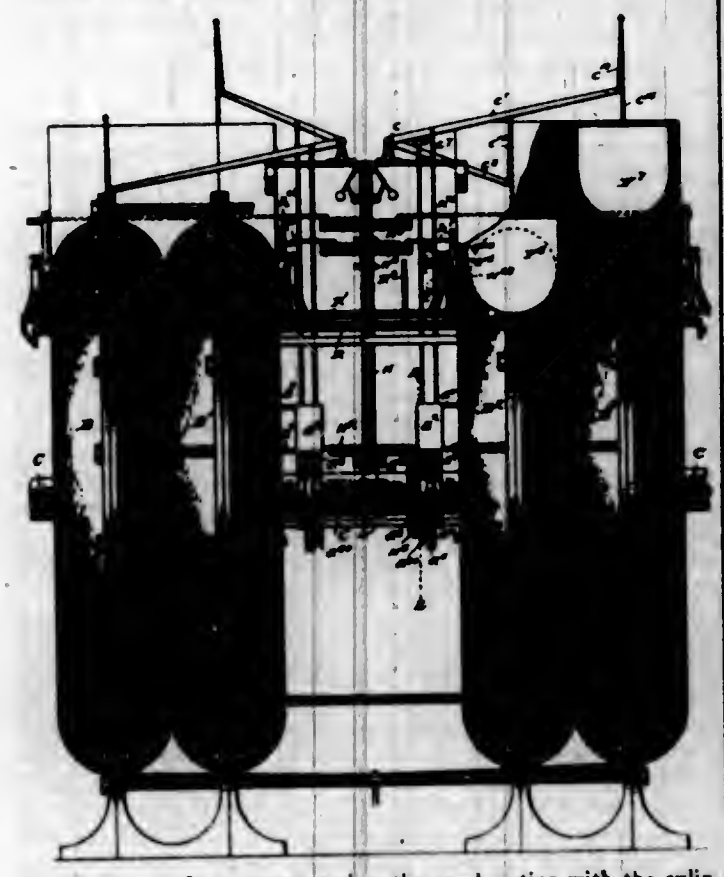
7. In a rotary engine as described, the combination, with the an-

nular steam-chamber, the sliding abutment, the steam-chest having a duplicate set of inlet and exhaust ports, the adjustable valve devices H^{23}, the supplemental valves for the steam-inlets, and the pivotal levers for operating such valves; of the drive-shaft having the concentric piston; the disk D fixedly held on such shaft, the cams A and A' fixedly secured to the disk, the pivotal cut-offs F and F', the sliding blocks E and E', the springs E^7 and E^8, the slide-block E^4 E^5 and the lever connections joining the blocks E^4, E^5 E' and F', all being arranged substantially as shown and for the purposes described.

8. The combination of the cylinders B and B', each having an annular chamber, the drive-shaft having oppositely-disposed concentric pistons, such chambers having steam-chests, each provided with an inlet and exhaust port at each side of the abutment; the slide-valves H^{23}, the rock-shafts R and R', having cranks connected with the slide-valves H^{23}, the slide-frames movable with the valves H^{23}, having exhaust-port-covering members, the supplemental cut-off valves, the levers H^4, H^5, H^3 and H^2, connected thereto, the levers H and H', abutments M and M^4, the shafts H^6 and L, connected to the levers H and H', the rock-shafts K, K', K^9 and K^4, having lift-rods connected with the abutments, and crank members, the rods H^8, L^3, L' and H^7, connecting the crank members and the shafts H^9 and L, and the disk D having fixed cams A and A' and adjustable cut-offs F, F', F^3 and F^4, all being arranged substantially as shown and described.

9. In a rotary engine, the combination with the cylinder, the sliding abutment, the shaft having a concentric piston; the steam-chest for the cylinder having inlet and exhaust port opening to the cylinder at each side of the abutment; independently and alternately operating valves for the inlets to the steam-chests; mechanism operated by the shaft for automatically operating the said independent and alternate operating valves and for lifting the abutment; and a supplemental shifting valve mechanism for alternately opening and closing the inlet and exhaust ports to the cylinder, all being arranged substantially as shown and described.

611,586. ROTARY ENGINE. JAMES C. WALKER, Waco, Tex. Filed Dec. 27, 1897. Serial No. 663,784. (No model.)



Claim.—1. In a rotary engine, the combination with the cylinders; the drive-shaft; the abutment-slides, and means for automatically operating such slides; of a cut-off-valve mechanism for the cylinders; lever devices for operating a reciprocating action of the said valve mechanisms; the drive-shaft H, geared with the main drive-shaft C; the centrifugally-operating cut-off devices mounted on the shaft H, and held to engage and impart a reciprocating action to the valve-shifting-lever devices, all being arranged as shown and described.

2. In a rotary engine of the character described; the combination with the cylinder; the drive-shaft; the automatically-operated sliding abutment and the reciprocating valve mechanism for the cylinder; a rock-shaft having a crank member connected to the reciprocating valve, said rock-shaft also having a second crank member; an operating-rod connected with said second crank member; a rotary disk geared with the main drive-shaft, said disk having positive means for intermittently engaging the rod and pulling it in one direction; and speed-governed means for moving such rod to a reverse direction, substantially as shown and for the purposes described.

3. In a rotary engine as described, a reciprocating valve-operating mechanism, comprising a rock-shaft connected with the valve, a supplemental shaft geared with and driven by the main drive-shaft, a disk held upon such shaft to turn therewith, said disk having a fixed inlet cut-off member a^{12}, and centrifugally-operated cut-offs a^6, a^{11}, and a lever having a crank member connected with the valve-operating crank-shaft, and a pendent portion adapted to be alternately engaged by the fixed inlet member a^{12} and movable cut-off members a^6 and a^{11}, of the rotary disk, all being arranged substantially as shown and for the purposes described.

4. In a rotary engine as described; the combination with the drive-shaft and the reciprocating cut-off-valve devices; of the shaft H, geared with the drive-shaft; the disks H^3 H^7 having fixed inlet cut-off members and pivotal cut-offs; means for holding the said cut-offs normally against centrifugal movement, and the centrifugal governor devices carried on the end of the shaft H and connected with the pivotal cut-offs, all being arranged substantially as shown and described.

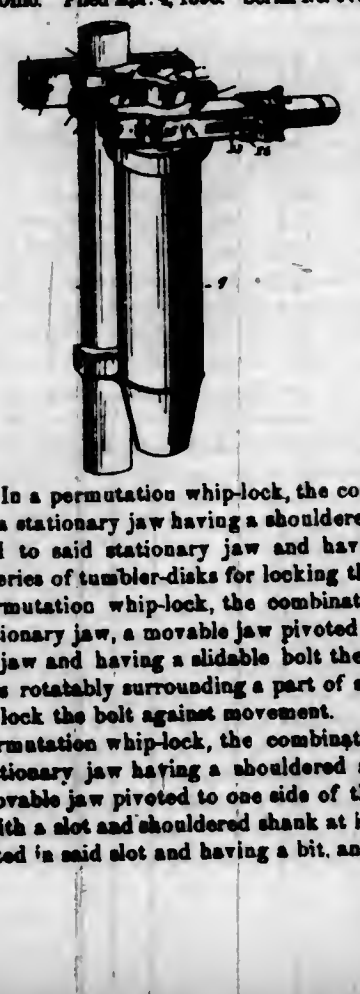
611,587. PLIERS. CHARLES C. WARD, Pendleton, Ky. Filed Apr. 13, 1898. Serial No. 677,418. (No model.)



Claim.—1. A pair of pliers consisting of a handle and jaw made of one piece, recessed between the inner ends of the handle and the jaw and leaving a connecting-plate of about one-third the thickness of the handle or jaw, a second handle and jaw, in separate pieces, provided with centrally-located flanges on their inner ends of a shape and size, when brought together edge to edge, to fill the recess between the fixed jaw and handle, and a cap-plate of about one-third the thickness of the jaws and handles adapted to be secured in position upon the top of the matched flanges of the separated jaw and handle, substantially as described.

2. The combination with the jaw A and handle C, made in one piece and connected by the plate E, of the jaw B and handle D, made separate and provided with the centrally-located flanges B' and D', adapted to fit together and fill the recess between the jaw A and handle C, and the cap-plate F adapted to fit over the matched flanges and fill the balance of the space in the recess between the jaw A and handle C, substantially as described.

611,588. PERMUTATION WHIP-LOCK. ALFRED F. WEIMER, Loudonville, Ohio. Filed Apr. 4, 1898. Serial No. 676,396. (No model.)



Claim.—1. In a permutation whip-lock, the combination with a whip-socket, of a stationary jaw having a shouldered striker, a movable jaw hinged to said stationary jaw and having a sliding bolt therein, and a series of tumbler-disks for locking the bolt closed.

2. In a permutation whip-lock, the combination with a whip-socket, of a stationary jaw, a movable jaw pivoted at one end to the said stationary jaw and having a slidable bolt therein, and a series of tumbler-disks rotatably surrounding a part of said movable jaw and adapted to lock the bolt against movement.

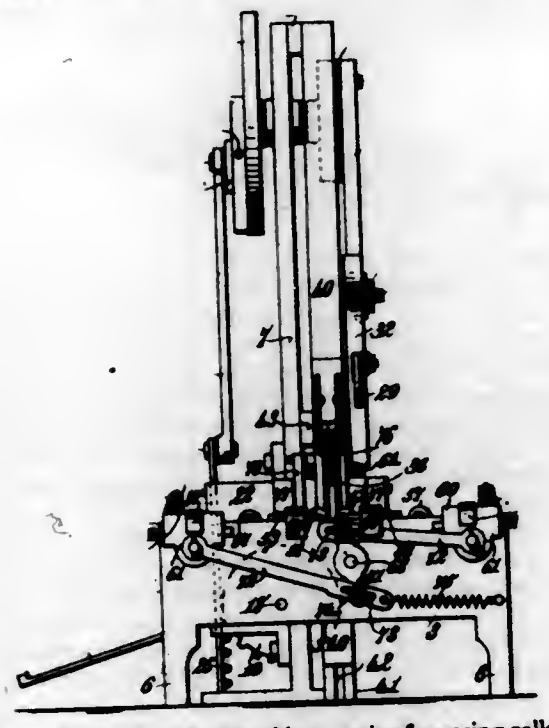
3. In a permutation whip-lock, the combination with a whip-socket, of a stationary jaw having a shouldered striker projecting therefrom, a movable jaw pivoted to one side of the stationary jaw and provided with a slot and shouldered shank at its free end, a slidable bolt mounted in said slot and having a bit, and a series of tum-

bler-disks rotatably mounted on the said shouldered shank and having inner slots to aline with the bit edge

4. In a permutation whip-lock, the combination with a whip-socket, of a stationary jaw having a shouldered striker thereon, a movable jaw hinged to said stationary jaw and having a slotted free end and also formed with a shouldered shank, a bolt slidable in said slotted end of the movable jaw and having an inner nose and bit and an outer stem, a series of rotatable tumbler-disks rotatably mounted on said shouldered shank and having outer nibs and inner slots, a coil-spring surrounding the stem and pressing against the bolt, a cap fitted over the spring and stem and through the outer end of which the said stem projects, and a head attached to the stem outside of the cap.

5. In a permutation whip-lock, the combination with a whip-socket, of a stationary jaw having screws adjustably projecting therefrom, and a movable jaw engaging portions of said screws, and carrying combination locking devices, whereby the said movable jaw may be regulated relatively to the stationary jaw to lock different sizes of whips.

611,589. MACHINE FOR DOUBLING METAL PLATES. FELIX WESTWOOD, Wheeling, W. Va. Filed Mar. 29, 1898. Serial No. 675,622. (No model.)



Claim.—1. In a doubling-machine, a pair of creasing-rolls adapted to support the metal plate to be doubled and a vertically-reciprocating creasing-blade coöperating therewith and designed to force the metal plate between said rolls whereby said plate is doubled, substantially as described.

2. In a doubling machine, a pair of spring-pressed creasing-rolls, and a vertically-reciprocating creasing-blade designed to pass between said rolls, substantially as described.

3. In a doubling-machine, a pair of creasing-rolls, a vertically-reciprocating creasing-blade coöperating therewith, and a swinging platform arranged beneath said rollers and actuated to receive and deliver the doubled plate, substantially as described.

4. In a doubling-machine, a table designed to support the metal plates to be doubled, creasing-rolls journaled in said table, a vertically-reciprocating creasing-blade coöperating with said rolls, gage-plates slidably supported on either end of said table and means for drawing the gage-plates toward each other coincidently with the downward motion of the creasing-blade, substantially as described.

5. In a doubling-machine, a pair of creasing-rolls, a vertically-reciprocating creasing-blade coöperating therewith, a tilting platform arranged beneath said rollers and designed to receive and deliver the doubled plates, and means for raising and lowering the free end of said platform in unison with the rise and fall of the creasing-blade, substantially as described.

6. In a doubling-machine, a table designed to support the metal plates to be doubled, creasing-rolls journaled in said table, a vertically-reciprocating creasing-blade coöperating with said rolls, a tilting platform arranged beneath said rollers, means for turning said platform to a lower inclined position coincidently with the fall of the creasing-blade to receive the doubled plate from said blade, means for turning said platform to an upper inclined position whereby to permit the doubled plate to slide from the rear end of said platform, and an inclined receiving-table located in the table in operative relation with said tilting platform, substantially as described.

7. In a doubling-machine, a pair of creasing-rolls, a vertically-reciprocating creasing-blade coöperating therewith, a tilting platform arranged beneath said rollers and designed to receive and deliver the doubled plates, means for raising and lowering the free end of said platform in unison with the rise and fall of the creasing-blade, and means for imparting an upward movement to the creasing-blade in advance of the upward movement of the tilting platform, substantially as described.

8. In a doubling-machine, a table designed to support the plate to be doubled and having grooves in its upper surface, spring-pressed slide-blocks located in said grooves, creasing-rolls journaled at their ends in said blocks, stops to limit the inward movement of said blocks, and a vertically-reciprocating creasing-blade coöperating with said creasing-rollers, substantially as described.

9. In a doubling-machine, a table designed to support the metal plates to be doubled, creasing-rolls journaled in said table, a vertically-reciprocating creasing-blade coöperating with said rolls, gage-plates slidably supported on either end of said table, guides on said gage-plates terminating in friction-rollers, and means for drawing the gage-plates toward each other coincidently with the downward motion of the creasing-blade, substantially as described.

10. In a doubling-machine, a table designed to support the metal plates to be doubled, a vertically-reciprocating creasing-blade, uprights affording guideways for said creasing-blade, the outer upright being cut away to permit of the plates being placed on the table, downwardly-curved guide-fingers secured on the front of said table and an upwardly-curved guide-finger slidably supported on the lower end of said cut-away upright, substantially as described.

11. In a doubling-machine, a pair of creasing-rolls, a vertically-reciprocating creasing-blade coöperating therewith, a swinging platform arranged beneath said rollers and actuated to receive and deliver the doubled plate, and a catch-plate carried by the outer free end of said platform, substantially as described.

12. In a doubling-machine, a table designed to support the metal plates to be doubled, a shaft journaled in said table carrying a tilting platform, and having secured thereon a pinion, a rack-bar for operating said pinion, a drive-pulley having a crank-pin, a vertically-movable creasing-blade, means operatively connecting said creasing-blade and drive-pulley, and a connecting-rod pivotally connected at one end to said rack-bar and at its opposite end having a slotted connection with the crank-pin on the drive-pulley, substantially as described.

13. In a doubling-machine, a table designed to support the metal plates to be doubled, a shaft journaled in said table carrying a tilting platform and having secured thereon a pinion, a rack-bar for operating said pinion, a drive-pulley having an adjustable crank-pin, a vertically-movable creasing-blade, means operatively connecting said creasing-blade and drive-pulley, and a connecting-rod pivotally connected at one end to said rack-bar and at its opposite end having a slotted connection with the crank-pin on the drive-pulley, substantially as described.

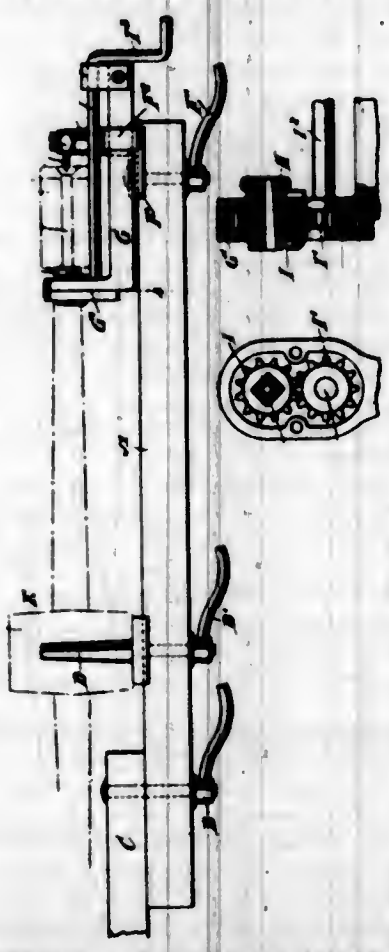
14. In a doubling-machine, a table designed to support the metal plates to be doubled, gage-plates slidably supported on said table, a shaft journaled in said table carrying crank-plates, a pair of connecting-rods at either side of the table having, respectively, their outer ends connected to said gage-plates and their inner ends connected to opposite sides of said crank-plates, coiled springs each of which is connected at one end to the table and at its other end to one connecting-rod of each pair, and means for turning said shaft against the resistance of said springs, substantially as described.

15. In a doubling-machine, a table designed to support the metal plates to be doubled, gage-plates slidably supported on said table, a shaft journaled in said table carrying crank-plates and having a crank-arm, a pair of connecting-rods at either side of the table having respectively, their outer ends connected to said gage-plates and their inner ends connected to opposite sides of said crank-plates, coiled springs, each of which is connected at one end to the table and at its other end to one connecting-rod of each pair, a trip-lever having an outer free end and an inner end pivotally connected by a link with the crank-arm of said shaft, a vertically-movable creasing-blade, a lever-arm connected at one end to said creasing-blade and having an outer free end adapted to contact with the outer end of said trip-lever, and means for operating said lever-arm, substantially as described.

611,540. TIRE-BOLTING MACHINE. JOSEPH R. WHITAKER, Wilmington, Ohio. Filed Mar. 30, 1898. Serial No. 675,781. (No model.)

Claim.—1. A tire-bolting machine, comprising a support, a hub-pin adjustable on said support, means for holding the hub-pin in place on the support, a slide adjustable on the support and formed with a bearing, means for holding the slide in position, a frame mounted to move in said bearing of the slide, and carrying at its inner end a casing a gearing in said casing, and a nut-jaw carried by one of the

gear-wheels of said gearing, and adapted to engage the nut of a tire-bolt, substantially as shown and described.



2. A tire-bolting machine, comprising a slotted beam provided at one end with means for securing it to a suitable support, a hub-pin held adjustable on said beam, a clamping device for holding said hub-pin in place, a slide adjustable on the outer end of said beam, the said slide being provided with a post and also formed with a bearing, a frame movable in the said bearing and carrying a casing at its inner end, meshing gear-wheels held in said casing, one of which is provided with a central tapered opening, a nut-jaw removably fitted in said opening in the gear-wheel and adapted to engage the nut of a tire-bolt, a shaft connected with the other gear-wheel, and a lever fulcrumed on the post of the said adjustable slide and carrying a tool adapted to engage the slot in the head of the bolt, substantially as shown and described.

3. A tire-bolting machine provided with a support, a post adjustable on said support, a lever fulcrumed on said post and carrying a tool for engagement with the head of a tire-bolt, a sliding frame, and a gearing carried by the sliding frame, one of the gear-wheels of said gearing having an aperture forming a socket adapted to receive a nut-jaw, substantially as shown and described.

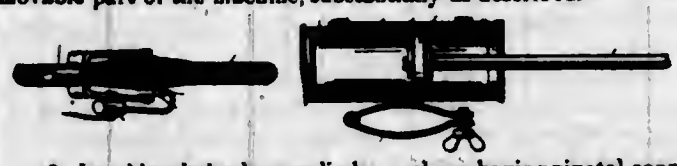
4. A tire-bolting machine provided with a support, a post adjustable on said support, a lever fulcrumed on the upper end of said post, and a tool carried by said lever and adapted to engage the slot in the head of a tire-bolt, substantially as described.

5. A tire bolting machine provided with an adjustable slide, a post carried by the said slide, a lever fulcrumed on the post and carrying a tool adapted to engage the head of a tire-bolt, a frame having movement in the said adjustable slide, a gearing journaled on the said frame, one of the gear-wheels of said gearing being provided with a shaft journaled at its outer end in a bearing carried by the said frame, and provided at its extreme outer end with a crank-arm for driving the shaft and also for shifting the frame in its bearings, the other gear-wheel being provided with an aperture, and a nut-jaw removable fitted into the said aperture, substantially as shown and described.

6. A tire-bolting machine, comprising a slotted bar, means for attaching one end of said bar to a suitable support, a hub-pin adjustably held on said slotted bar, a slide adjustable on the free end of said slotted bar and formed at one side with an upwardly-extending post and a laterally-projecting slotted lug forming a bearing, a frame movable in the said bearing, a gearing journaled on the frame, a nut-jaw carried by one of the gear-wheels of said gearing, the other gear-wheel being provided with a shaft, and a lever fulcrumed on the upper end of the post of the adjustable slide, and carrying a tool for engagement with the head of a tire-bolt, substantially as shown and described.

611,541. BICYCLE-BRAKE. JAMES T. WILEY, Preston, Ill. Filed Sept. 24, 1897. Serial No. 652,999. (No model.)

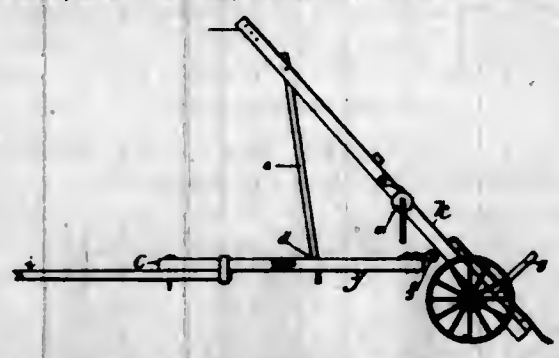
Claim.—1. In a bicycle-brake, a cylinder having ports at or near each end, a slide-valve for simultaneously opening and approximately closing said ports, an operating-rod for said valve, a piston within the cylinder, and a piston-rod having provision for its connection to a movable part of the machine, substantially as described.



2. In a bicycle-brake, a cylinder, a clamp having pivotal connection therewith and adapted to embrace a part of the machine, a slide-valve for simultaneously covering loosely the ports at the opposite ends of the cylinder, an operating-rod for said valve, a piston within the cylinder, a piston-rod connected thereto, and an eccentric-strap at the outer end of said piston adapted to be actuated by an eccentric on one of the machine-axles, substantially as described.

3. In a bicycle-brake, the combination with the front fork of the machine, of a cylinder pivotally mounted thereon and having ports at its opposite ends, a slide-valve for simultaneously opening and approximately closing said ports, a valve-operating rod having connection with an operating hand-lever on the machine, a piston within the cylinder, a piston-rod having an eccentric-strap at its lower end, and an eccentric on the front wheel of the machine for moving said piston-rod, substantially as described.

611,542. CART FOR TRANSPORTING FODDER, &c. CHARLES S. WILSON, near Macomb, Ill., assignor of one-half to Amos L. Wilson, Keokuk, Iowa. Filed July 20, 1897. Serial No. 645,235. (No model.)



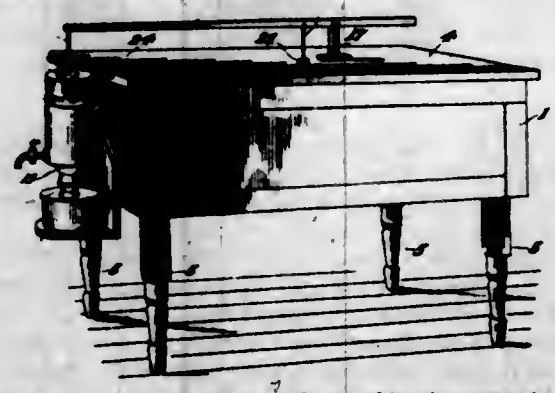
Claim.—1. In a fodder-cart the combination with a wheeled frame, the rear of which extends back of the axle so as to rest upon the ground in the act of loading and means for binding a load to said frame as it rests upon the ground, of a draft-frame pivoted to said wheeled frame, substantially as shown and described.

2. In a fodder-cart the combination with a wheeled frame, the rear of which extends back of the axle so as to rest upon the ground and elevate the wheels therefrom in the act of loading and means for binding a load to said frame as it rests upon the ground, of a draft-frame pivoted to said wheeled frame, substantially as shown and described.

3. In a fodder-cart the combination with a wheeled frame having its rear extend back of the axle to rest upon the ground, and having a folding support, and winding mechanism, of a draft-frame pivoted to said wheeled frame, substantially as shown and described.

4. In a fodder-cart the combination with a wheeled frame having a rear ground-support, a swinging catch or support, a winding device and deflecting roller in the rear thereof, of a draft-frame pivoted to the wheeled frame, substantially as shown and described.

611,548. INCUBATOR. CURTIS R. WILSON, Forest, Ohio. Filed Sept. 21, 1897. Serial No. 652,472. (No model.)



Claim.—1. In an incubator, the combination with its shell, and hot-water-heating compartment contained therein, of tubular projections extending from the floor of the heating-compartment, an air-supply tube establishing communication between the outside atmos-

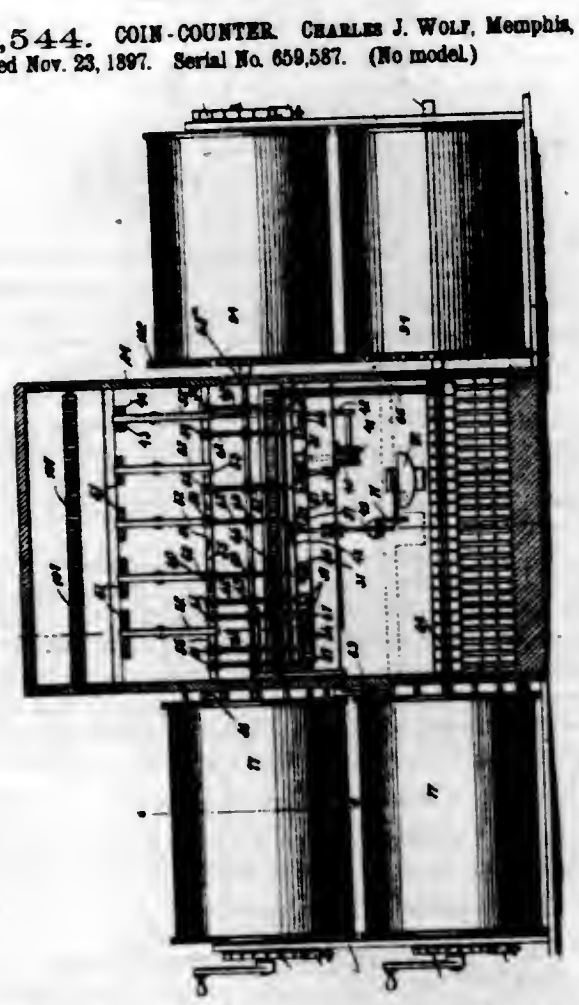
phere and the interior of the shell, there being apertures therein in operative proximity to the tubes in the floor of the heating-compartment, whereby, in operation, the latter, extending into the space within the heating-compartment, supply a heated current of fluid around the apertures of the air-supply tube into the interior of the shell or incubating-compartment, substantially as and for the purpose specified.

2. In an incubator, the combination with a water-circulating compartment and heater communicating therewith, of a plurality of independent alternately-operative passages through the heater for the products of combustion, one of said passages making contact with a limited area of heater-wall, and the other making contact with a more extensive area, and means for rendering the passages alternately operative, substantially as set forth.

3. The combination with an incubator-heater provided with an interior air-space, of an extension supported above the heater by tubes communicating with each, a funnel within the air-space of the heater and passing through the extension thereof, and means for opening and closing the funnel whereby, when the funnel is closed, the products of combustion pass up by direct draft in contact with the inner walls of the heater, and impinge against the bottom of the extension, and when it is open they pass up through the funnel and make contact only with the extension through the funnel, substantially as set forth.

4. In an incubator, the combination with an incubating-compartment, of a heater operatively connected with said compartment and adapted to promote therein the circulation of a heating medium, a source of heat, a plurality of direct passages for the products of combustion through the heater, said passages making contact, respectively, with a limited and extensive area of heater-wall, a cap adapted to alternately open and close the said passages, respectively, a thermostat within the incubating-compartment, and mechanism operatively connecting the thermostat and cap, substantially as set forth.

611,544. COIN-COUNTER. CHARLES J. WOLF, Memphis, Tenn. Filed Nov. 23, 1897. Serial No. 659,587. (No model.)



Claim.—1. The combination of a plurality of coin-stacks, an ejector-plate in each coin-stack, a carriage-bar, and means for connecting and disconnecting the ejector-plates with and from the carriage-bar, such means being actuated by the coin.

2. The combination of a coin-stack, a bed-plate, an ejector-plate sliding on the bed-plate and through the coin-stack, a box in connection with the ejector-plate, a lock-pin carried by the box, a carriage-bar movable over the bed-plate and capable of being engaged by the lock-pin to connect the ejector-plate with the carriage-bar, and means for actuating the lock-pin, such means being controlled by the coin.

3. The combination of a push-rod having a projection thereon, a lock-plate normally engaging the projection to hold the push-rod, and a key having connection with the lock-plate whereby to actuate the lock-plate upon the movement of the key.

4. The combination of an ejector-plate, a lock-pin for the ejector-plate, a dog spring-pressed to hold said lock-pin, a carriage-bar movable to operate the ejector-plate, and fingers carried by the carriage-bar and capable of operating the dog.

5. The combination of two note-receptacles, a gear in fixed connection with one note-receptacle, a second gear loose on the remaining note-receptacle, an arm fixed to said note-receptacle, and a pawl carried by the arm and engaging the second gear.

6. The combination of a plurality of coin-stacks, ejectors working therein, a box in connection with each ejector, a locking-pin working in each box, a bed-plate with which the locking-pins may be made to engage, a sliding carriage normally engaged by the locking-pins, a tubular frame-bar above the carriage, a series of rods mounted in the frame-bar and capable respectively of engaging the locking-pins to move them out of engagement with the carriage and into engagement with the bed-plate, and means for moving the rods and for moving the carriage.

7. The combination of a series of coin-stacks, a bed-plate below the same, ejectors sliding on the bed-plate and through the coin-stacks, a box carried by each ejector, locking-pins respectively carried in the boxes, a carriage located above the boxes and normally engaged by the locking-pins, the locking-pins being capable of engagement with the bed-plate when moved downward out of engagement with the carriage, means for pushing the locking-pins downward out of engagement with the carriage, and means for sliding the carriage.

8. The combination of a plurality of coin-stacks, a slide-plate in the top of each coin-stack, ejectors in the bottoms of the coin-stacks, a box carried by each ejector, a locking-pin working in each box, a bed-plate on which the ejectors are slidable and with which the locking-pins may engage to hold the bed-plate immovable, a carriage above the boxes and normally engaged by the locking-pins thereof so that the bed-plate may be moved with the carriage, a tubular frame-bar above the carriage, rods carried in the frame-bar and respectively capable of downward movement to push the locking-pins from engagement with the carriage, a plurality of sleeves mounted to turn and having mortised connection, and arms attached to the sleeves and respectively engaging the slide-plates and the rods.

9. The combination of a coin-stack, a bed-plate below the same, an ejector sliding on the bed-plate and working in the coin-stack, a carriage slidable over the ejector, means for locking the ejector with the carriage, a vertically-movable rod held above the carriage and capable of releasing said locking means, a slide-plate in the top of the coin-stack, and means for transmitting movement from the slide-plate to the rod.

10. The combination of a coin-stack, a bed-plate at the bottom thereof, ejectors sliding on the bed-plate and through the coin-stack, a carriage movable over the ejectors, means for locking the ejectors with the bed-plate or with the carriage, vertically-movable rods held above said locking means and capable of actuating the same, key-levers, tumblers actuated thereby, and additional levers for transmitting movement from the key-levers to the rods.

11. The combination with a casing, of a bed-plate mounted therein, a series of coin-stacks mounted on the bed-plate, ejectors sliding on the bed-plate and into the coin-stacks, slide-plates mounted respectively in the upper portions of the coin-stacks, a carriage movable over the bed-plate, means for locking the ejectors with the carriage or with the bed-plate, vertically-movable rods actuating said locking means, a series of rocking sleeves having mortised connection with each other, arms attached to said sleeves and respectively engaging the slide-plates and the vertically-movable rods, levers engaging the vertically-movable rods to impart movement thereto, a series of tumblers serving to impart movement to the levers, and key-levers serving to operate the tumblers.

12. The combination of a plurality of coin-stacks, a bed-plate mounted beneath the same, ejectors working in the coin-stacks and on the bed plate, a carriage slidable over the bed-plate, means for locking one of the ejectors with the carriage or with the bed-plate, a slide-plate mounted in one of the coin-stacks and having a cam thereon, a vertically-reciprocal rod moved by the cam, a lever actuated by the rod, and a sliding pin held in the bed-plate and pushed by the lever, the pin serving to throw the locking means from engagement with the bed-plate and into engagement with the carriage.

13. The combination of two coin-stacks, an ejector working in the first coin-stack, a bed-plate on which the ejector rests, a carriage, means for locking the ejector either with the bed-plate or with the carriage, such means being normally engaged with the bed-plate, a slide-plate working in the second coin-stack, and means actuated by the slide-plate for controlling the locking device of the ejector.

14. The combination of a coin-stack, a bed-plate, a plurality of ejectors sliding on the bed-plate and movable through the coin-stack, a carriage, means for individually locking the ejectors either with

the bed-plate or with the carriage, key-lever-actuated devices for controlling said locking means, and additional devices for controlling said locking means, such additional devices being set in motion by the insertion of a coin into the coin-stack.

15. The combination with a casing or rigid frame structure, of a coin-stack, ejectors working in the coin-stack, a carriage, means for locking the ejectors either with the carriage or with the frame structure, key-lever-actuated devices for controlling said locking means, and additional devices for controlling said locking means, such additional devices being actuated by the insertion of a coin in the coin-chamber.

16. In a cash-register, a receptacle for notes of different denominations, the receptacle comprising two rigid exterior shells forming casings, a drum mounted in each shell and provided with boxes respectively for the notes, and gearing connecting the drums to turn in unison.

17. In a cash-register, the combination with devices for handling the coin, of note-receptacles comprising two rigid exterior shells, a drum mounted to turn in each shell, the drums having boxes respectively for the notes, gearing connecting the drums to turn in unison, and means for transmitting movement from the drums to the coin-handling devices

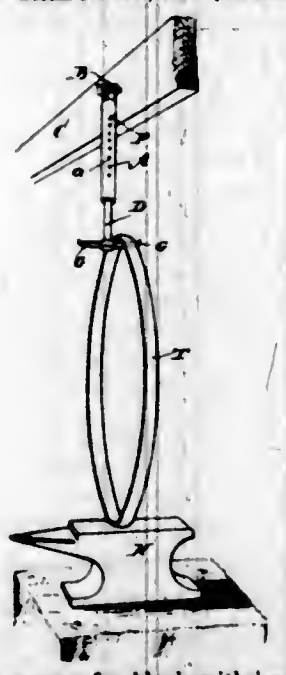
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611,545. SLATE. JOHN F. YARNALL, Altoona, Pa. Filed June 2, 1897. Serial No. 639,166. (No model.)



Claim.—As an article of manufacture, the educational toy comprising a single frame or casing provided with a cross bar or rail, the transparent and ground-glass panes arranged in the same horizontal plane within, and secured to, the frame and its cross-bar, the partition or platform 5, arranged beneath the transparent pane, magnetizable objects thereon, and guide-board 12 also secured so as to form the slot 13 between the end of the board and the cross-bar and the slot 13' between the end of the board and top wall of the frame, the spools journaled within the casing below the guide-board and the partition and provided with exposed knobs, the film or carrier passing from one spool through the slot 13 over the guide-board, beneath the ground-glass pane and through the slot 13' to the other spool, and a magnet, substantially as described.

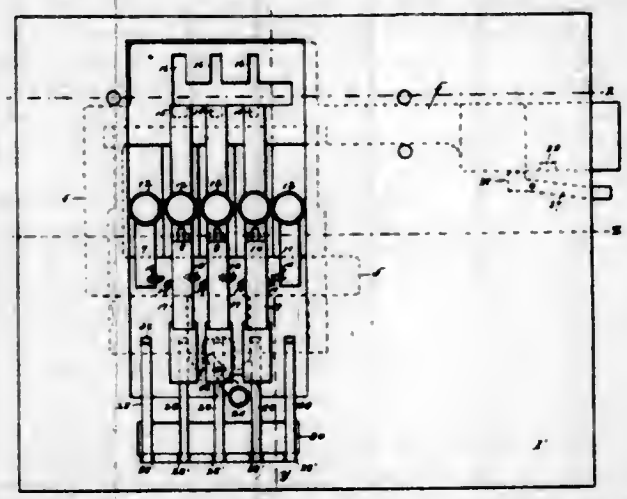
611,546. TIRE-HOLDER. JOHN D. AITKEN, Northport, N. Y. Filed Dec. 23, 1897. Serial No. 663,343. (No model.)



Claim.—1. A tire-support for blacksmiths' use, comprising two bars, a spring connecting said bars, the attachment of said spring to the bars being adjustable longitudinally of the bars, a hook attached to the lower end of one bar and means for suspending the other bar, substantially as described.

2. A tire-support for blacksmiths' use, comprising a tube having a series of lateral pin-receiving holes, a bar slidable within said tube and having a side-extending hook upon its lower end, a spring attached to the upper end of said bar, and a pin adapted to pass through the holes in the tube and engage the upper end of the spring, substantially as described.

611,547. KEYLESS LOCK. THOMAS G. A. ALEXANDER, New York, N. Y. Filed Sept. 18, 1896. Serial No. 606,233. (No model.)



Claim.—1. In a lock the combination with a lock-bar, of tumblers, each having a movable piece grooved at each end, and sliding in the tumbler and which may be placed in as many positions as there are tumblers, and means for operating said tumblers and lock-bar, substantially as described.

2. In a lock the combination with a lock-bar, of tumblers, each tumbler having a rod of different length attached to it bearing the stump, so that all the rods terminate at the same distance from the tumblers, and means for moving said tumblers and lock-bar, substantially as described.

3. In a lock the combination with a lock-bar, of tumblers, each tumbler having a detachable rod of different length bearing the stump, and means for attaching same so that all the rods terminate the same distance from the tumblers, and means for moving said tumblers and lock-bar, substantially as described.

4. In a lock the combination with a lock-bar, of tumblers having overlapping catches which are capable of passing one another so that each tumbler must be moved with reference to its neighbor, and means for operating said tumblers and lock-bar, substantially as described.

5. In a lock the combination with a lock-bar, of tumblers, having detachable overlapping catches which are capable of passing one another, and means for attaching same to said tumblers, so that the catches on any tumbler may be made to overlap the catches on any other tumblers desired, and means for operating said tumblers and lock-bar, substantially as described.

6. In a lock the combination with a lock-bar having notches of different widths, of tumblers, having stumps of different widths to correspond with the notches in the lock-bar, and means for operating said tumblers and lock-bar, substantially as described.

7. In a lock the combination with a lock-bar, having notches of different widths, of tumblers, having detachable stumps of different widths to correspond with the notches in the lock-bar, and means of attaching said stumps to the tumblers so that any stump may be attached to any tumbler without changing its position relative to the lock-bar or the other stumps, and means for operating said tumblers and lock-bar, substantially as described.

8. In a lock the combination with a lock-bar, of tumblers, having beveled faces attached to the stump, and means for operating said lock-bar and tumblers, substantially as described.

9. In a lock the combination with a lock-bar, of tumblers having detachable beveled faces, and means for operating said lock-bar and tumblers, substantially as described.

10. In a lock the combination with a lock-bar having notches of different widths, of tumblers, having overlapping catches so that each tumbler must be moved with reference to its neighbor, and stumps of different widths corresponding with the notches in the lock-bar, and means for operating said tumblers and lock-bar, substantially as described.

11. In a lock the combination with a lock-bar having notches of different widths, of tumblers, having overlapping catches so that each tumbler must be moved with reference to its neighbor and detachable stumps of different widths to correspond with the lock-bar and means for attaching said stumps so that any stump may be attached to any tumbler without changing its position relative to the lock-bar or the other stumps, and means for operating said tumblers and lock-bar, substantially as described.

12. In a lock the combination with a lock-bar having notches of different widths, of tumblers, having detachable overlapping catches and means for attaching same, so that the catches on any tumbler may be made to overlap the catches on any other tumblers, and stumps of different widths to correspond with the notches on the lock-bar, and means for operating said tumblers and lock-bar, substantially as described.

13. In a lock, the combination with a lock-bar, having notches of different widths, of tumblers having detachable overlapping catches, and detachable stumps of different widths corresponding to the notches in the lock-bar means for attaching said catches and stumps to the tumblers so that the catches on any tumbler may be made to overlap the catches on any other tumblers, and any stump may be attached to any tumbler without changing the position of said stump relative to the lock-bar or the other stumps; means for operating said lock-bar and tumblers, substantially as described.

14. In a lock, the combination with a lock-bar, having notches of different widths, of tumblers having detachable overlapping catches, and detachable stumps of different widths corresponding with the notches in the lock-bar, and means for attaching said catches and stumps to the tumblers, so that the catches on any tumbler may be made to overlap the catches on any other tumblers, and any stump may be attached to any tumbler without changing the position of said stump relative to the lock-bar or the other stumps, said means to consist of a movable piece in each tumbler capable of taking as many positions as there are tumblers, to each of which is attached by suitable means a detachable rod, said rods being of different lengths so that they all terminate at an equal distance from the nearest tumbler, and on the ends of the said rods are attached by suitable means the said stumps and catches; and means for moving said tumblers and lock-bar, substantially as described.

15. In a lock the combination with a lock-bar and tumblers, having points 20, of shoulders 21 and 22 on the stationary framework of the lock which will catch the points 20 when moved, and hold the tumblers in position, substantially as described.

16. In a lock, the combination with a lock-bar of tumblers 2 having movable pieces 3 capable of taking as many positions as there are tumblers with hollow rods 6 of different lengths, attachable to the movable pieces 3, all terminating at an equal distance from the tumblers, and pieces 8, having stumps 15, also a hinged portion 17 with overlapping catches 13, 14, 18, 19, and also points 20 and beveled faces 23, all held together by screw 12, substantially as shown for the purpose specified.

17. In a lock the combination with a lock-bar and tumblers, of means for moving said tumblers and lock-bar, said means to consist of a movable bar square in one portion and round in another with an arm attached at right angles which may be brought under any tumbler desired, or the lock-bar, and revolved under same, by means of grooves cut in the square portion, when the arm impinges against said tumblers or lock-bar, moving same, means for holding said tumblers in position when moved, means for returning said tumblers to position collectively, and means for returning said tumblers to position individually, substantially as described.

18. In a lock the combination with a lock-bar and tumblers, of means for moving said tumblers, means for holding said tumblers in position when moved, said means to consist of pieces attached to the movable parts of the tumblers, having points which shall catch in a shoulder provided on the lock-frame, and remain there until released, and means for returning said tumblers to position collectively and individually, substantially as described.

19. In a lock the combination with a lock-bar and tumblers having points 20, of means for moving said tumblers, means for holding said tumblers in position when moved, and means for returning said tumblers to position collectively, said means to consist of a plate with pins moving through the lock-frame and operated by a projection on the lock-bar, which when moved will push against the pieces of tumblers having points caught in shoulders provided, and will push the points out of the shoulders, and so release the tumblers, and means for returning said tumblers to position individually, substantially as described.

20. In a lock the combination with a lock-bar and tumblers having overlapping catches and beveled faces 23 and points 20 of means for moving said tumblers and lock-bar, means for holding said tumblers in position when moved, means for returning said tumblers to position collectively, means for returning said tumblers to position individually, said means to consist of as many interchangeable bars 28, as there are tumblers, one of which being moved will push against one of the beveled faces 23 of the tumblers and release the point 20 from the shoulder 22, and allow that one tumbler to return to its original position, and means for moving said bars, substantially as described.

21. In a lock the combination with a lock-bar and tumblers having detachable overlapping catches and detachable beveled faces and points 20 and means for attaching same so that the catches on any tumbler may be made to overlap the catches on any other tumblers, said means to consist of a movable piece in each tumbler capable of taking as many positions as there are tumblers, and detachable bars suitably attached to the movable portions of the tumblers, and all terminating at an equal distance from the tumblers, of as many interchangeable movable bars as there are tumblers, each with a beveled upright at a different distance on the bars, means for operating said lock-bar and tumblers and bars, substantially as described.

22. In a lock the combination with a lock-bar and tumblers having detachable overlapping catches and detachable beveled faces and points 20 and means for attaching same so that the catches on any tumbler may be made to overlap the catches on any other tumblers, said means to consist of a movable piece in each tumbler capable of taking as many positions as there are tumblers, and detachable bars suitably attached to the movable portions of the tumblers, and all terminating at an equal distance from the tumblers; of as many interchangeable movable bars as there are tumblers, each with a beveled upright at a different distance on the bars, means for operating said lock-bar and tumblers and bars, said means to consist of a bar running between the bellies of the tumblers and the other bars, round in one portion and square in another, with an arm attached at right angles capable of being brought under the bar or any of the tumblers, and over any of the beveled uprights on the bars, and capable of being revolved in any of these positions by means of grooves cut in the square portion, which will cause the arm to impinge against the lock-bar or any of the tumblers or any of the beveled uprights on the bars 28, and so move any one desired, substantially as described.

23. In a lock the combination with a lock-bar and tumblers having points catching in shoulders provided on the lock-frame of a plate working through the lock-bar operated on by a projection in the lock-bar, which when the lock-bar is moved will push the points from the shoulder and means of operating said lock-bar and tumblers, said means to consist of a bar square in one portion and round in another, with an arm at right angles capable of being brought under the lock-bar or any of the tumblers, and of being revolved in any of these positions by means of grooves cut in the square portion when the arm will impinge against the lock-bar or any of the tumblers as may be desired, substantially as described.

24. In a lock the combination with a lock-bar having notches of different widths and tumblers having detachable overlapping catches, detachable stumps, and points 20, and means for attaching same so that the catches on any tumbler can be made to overlap the catches on any other tumblers and any stump can be attached to any tumbler without changing its position relative to the lock-bar or the other stumps, said means to consist of a movable piece in each of the tumblers capable of taking as many positions as there are tumblers and detachable rods of different lengths, suitably attached to the movable pieces of the tumblers, so that all the rods terminate the same distance from the tumblers; of a plate working through the lock-bar operated on by a projection in the lock-bar which when the lock-bar is moved will push the points from the shoulder and means of operating said lock-bar and tumblers, said means to consist of a bar square in one portion and round in another with an arm at right angles capable of being brought under the lock-bar or any of the tumblers, and of being revolved in any of these positions by means of grooves cut in the square portion when the arm will impinge against the lock-bar or any of the tumblers as may be desired, substantially as described.

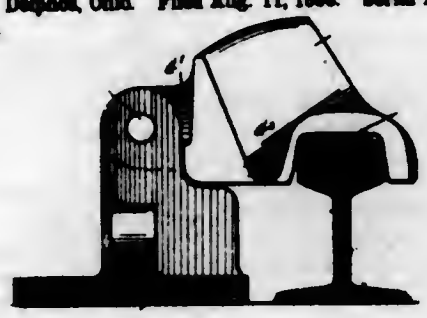
25. In a lock the combination with a lock-bar and tumblers of a bar 24 square in one portion and round in another with the arm 27 at right angles capable of moving the tumblers and likewise the lock-bar and the grooves 26 in the square portion substantially as shown for the purpose specified.

26. In a lock the combination with a lock-bar and tumblers of a bar 28 having an upright 29 with a beveled face, and a point 32, substantially as shown for the purpose specified.

27. In a lock the combination with tumblers of the lock-bar 5 with stump-notches 16 of different widths, and notches 42 and 39, substantially as shown for the purpose specified.

28. In a lock the combination with a lock-bar and tumblers operated by a bar square in one portion and round in another with an arm at right angles, capable of moving the tumblers and likewise the lock-bar, with grooves in the square portion, of a clicker shaped so as to enter the grooves without hindering their progress, enabling the lock to be operated by sound, substantially as described.

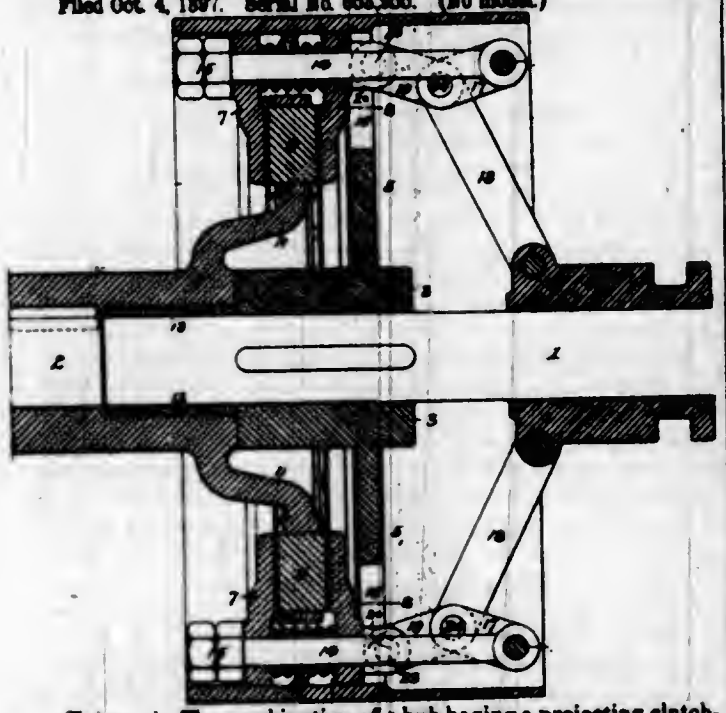
611,548. DERAILING DEVICE. DAVID ANDERSON and DAVID BEVAN, Delphos, Ohio. Filed Aug. 11, 1898. Serial No. 688,378. (No model.)



Claim.—1. A derailing device consisting of a base adapted to be fastened to a railroad-tie, a flange pivotally connected to said base and having its free end formed with a trough arranged to fit down over the head of the rail, the said flange being formed with a diagonal groove commencing at one end at the inside of said trough and below the upper wall of the same and extending over said trough to the outside thereof, and an abutment following the line of said groove on the inside thereof, the upper edge of said abutment being considerably above the upper surface of the free end of the flange above the trough, as and for the purpose set forth.

2. A derailing device consisting of a base adapted to be fastened to a railroad-tie and formed with spaced-apart lugs, and a lug A^2, and a flange pivoted at one end between said lugs and being formed at its free end with a trough arranged to fit over the head of the rail, a diagonal groove commencing at one end at the inside of said trough and below the upper wall of the same and extending over said trough to the outside thereof, an abutment following the line of said groove on the inside thereof, the upper edge of said abutment being considerably above the upper surface of the free end of the flange above the trough and a lug registering with the lug A^2 when the flange is in position over the rail, the said lugs being adapted to receive a lock, as and for the purpose set forth.

611,549. CLUTCH. GUSTAVE R. ANDERSON, Philadelphia, Pa., assignor of one-half to the Fairmount Machine Company, same place. Filed Oct. 4, 1897. Serial No. 653,955. (No model.)



Claim.—1. The combination of a hub having a projecting clutch-flange, a second hub having a rim with internally-projecting lugs, a pair of clutch-rings mounted in said rim, and recessed for the reception of the lugs of the same, whereby they will turn with, but can move longitudinally and independently of, the rim, bolts passing through said rings, and toggle mechanism acting upon the bolts and upon the rings, substantially as described.

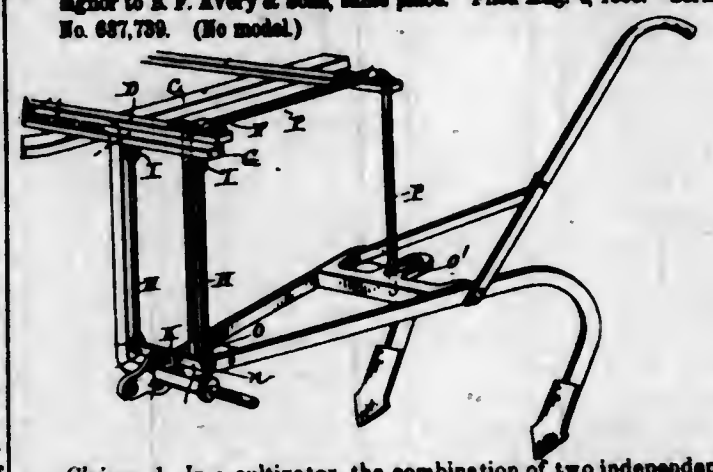
2. The combination of a hub having a projecting clutch-flange, a second hub having a rim with internally-projecting lugs, a pair of clutch-rings mounted in said rim and recessed for the reception of the lugs of the same, whereby they will turn with, but can move longitudinally and independently of, the rim, bolts passing through said rings, a pair of toggle-links on each side of each bolt, one of said toggle-links being hung to the outer end of the bolt, and the other to one of the clutch-rings, a radial link connected to each pair of toggle-links, and a sliding sleeve connected to said radial links, substantially as described.

611,550. NUT-LOCK. EDWARD ASHMAN, McKeesport, Pa. Filed July 18, 1896. Serial No. 599,623. (No model.)



Claim.—As a new article of manufacture, a nut-lock consisting of a plate having apertures therein for the reception of the end bolts of a series, located adjacent to the opposite ends of said plate, lips on the ends of said plate adapted to be bent upwardly forming flanges for preventing the turning of the nuts on said end bolts, and a series of intermediate open slots leading from the lower edge of said plate upwardly and flanges upon the opposite sides of said slots, the nuts on the intermediate bolts of the series being adapted to fit within said slots, as and for the purpose set forth.

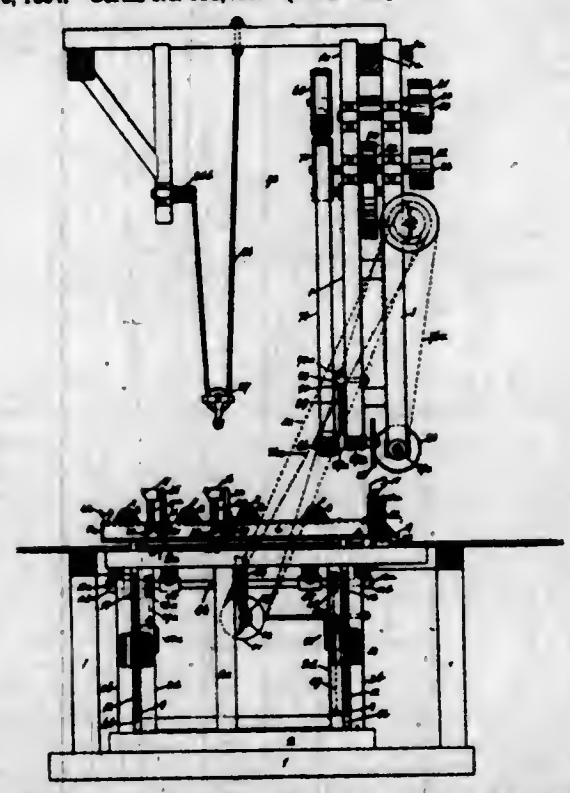
611,551. CULTIVATOR. GEORGE C. AVERY, Louisville, Ky., assignor to B. F. Avery & Sons, same place. Filed Aug. 4, 1896. Serial No. 601,739. (No model.)



Claim.—1. In a cultivator, the combination of two independent plow-beams carrying shovels, a frame, vertical suspension-rods connecting the forward ends of the plow-beams with the said frame, the plow-beams being provided with longitudinal slots, and with a vertical slot through which the axle portion of the frame loosely passes, and laterally-swinging bails pivotally connected at their upper ends to the frame of the cultivator, and having their lower ends extended through the longitudinal slots on the plow-beam, the construction and arrangement being such that when either of the plow-beams is shifted, the said plow-beam moves up and down on the bail, and the bails have no vertical movement, substantially as described.

2. In a wheel-cultivator, the combination of two independent plow-beams carrying shovels, and provided with longitudinal slots, an arched axle, a frame mounted on the axle-arch, a casting at the forward end of each plow-beam, each casting being provided with a vertical slot through which the axle portion of the arch loosely passes, the said casting being also provided with laterally-extending arms and with a longitudinal slot, vertical suspension-rods arranged to swing transversely, and connected at their upper ends to the frame and at their lower ends to the arms of the casting, and bails pivoted at their upper ends to the frame and having their lower ends extended through the slots on the plow-beam, the construction and arrangement being such that when the line of draft is shifted both ends of the plow-beam will move simultaneously and in substantial parallelism, and during such shifting the plow-beam will move up and down on the bails, and the draft is always directly on the gang, substantially as described.

611,552. TENONING-MACHINE. MARTHA A. BALLANTYNE, Lead, S. D., administratrix of Alexander Ballantyne, deceased. Filed Nov. 16, 1897. Serial No. 658,711. (No model.)



Claim.—1. The combination, in a tenoning-machine, of vertical rip-saws; means for lateral adjustment of the rip-saws; vertical cross-cut saws; means for vertical alinement and lateral adjustment of the cross-cut-saws; driving mechanism for said saws; a vertically-movable carriage-frame carrying adjustable heads for leveling and supporting a stick of timber thereon; a vertically-swiveled yoke carried

by the movable frame to reverse the timbers thereon; and a throw-off that limits the upward and downward movement of the carriage-frame, substantially as described.

2. The combination, in a tenoning-machine, of a carriage-frame having vertical movement; movable heads carried by the carriage-frame; a vertically-swiveled yoke carried by the carriage for reversing a timber thereon; a throw-off to limit the upward and downward movement of the carriage; and a fixed overhanging frame that carries the saw mechanism, said saw mechanism embodying vertical rip-saws; means to give the rip-saws lateral adjustment; crosscut-saws, means for alining the crosscut-saws to a vertical plane, and means for adjusting the crosscut-saws laterally to the rip-saws, substantially as described.

3. In a tenoning-machine, a main frame; a carriage-frame inclosed within the main frame and having vertical movement therein; reversible driving mechanism for moving the carriage up and down; movable heads on the carriage for lining up timbers thereon, and a vertically-swiveled yoke for reversing timbers on the carriage, substantially as described.

4. In a tenoning-machine, a main frame provided with guideways; a carriage-frame having vertical movement in said guideways; counterweights for the carriage-frame; movable heads carried by the carriage-frame for lining up logs thereon, and reversible driving mechanism for moving said carriage, substantially as described.

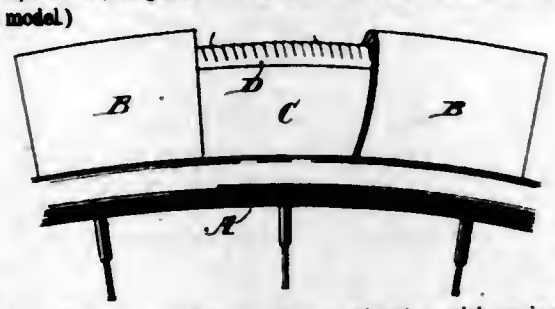
5. In a tenoning-machine, a main frame; a carriage-frame having movement vertically of the main frame; vertically-adjustable heads carried by the carriage-frame, and reversible driving mechanism for moving the carriage-frame up and down, substantially as described.

6. In a tenoning-machine, a vertically-movable carriage-frame; guides for the carriage-frame; vertically-adjustable heads upon the carriage-frame, and reversible driving mechanism for operating the carriage-frame, substantially as described.

7. In a tenoning-machine, a main frame provided with guideways; a carriage-frame adapted to move vertically in said guideways; movable heads carried by the carriage-frame for lining up logs thereon; a driving-shaft provided with reverse driving-pulleys and clutch mechanism; a lever pivoted centrally thereof to the main frame and having bends at its ends, said lever being in operative engagement through an intermediate connecting-link and friction-clutches with the driving-shaft, and an arm carried by the carriage-frame to give the said pivoted lever a rocking movement to reverse the driving mechanism, substantially as described.

8. In a tenoning-machine, a vertically-movable carriage-frame; guides for the carriage-frame; vertically-adjustable heads upon the carriage-frame; reversible driving mechanism for operating the carriage-frame, and a safety device to limit the upward and downward movement of the carriage-frame, substantially as described.

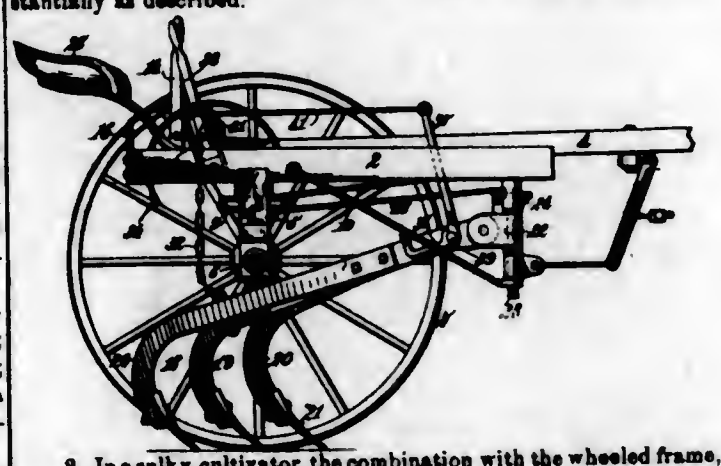
611,558. PNEUMATIC TIRE FOR VEHICLES. HENRY BANCROFT, Church, England. Filed Apr. 29, 1898. Serial No. 679,232. (No model.)



Claim.—In pneumatic tires, the combination with an inner air-tube and an inclosing tube, of an interposed strip of leather, segment-shaped in cross-section, encircling said air-tube along its tread portion and having its concave side secured to said air-tube, said strip having its outer convex side provided throughout its length with transverse sloping, or inclined, slits, or incisions, whereby to afford the proper resiliency, and whereby, in practice, said slits will close in the direction of movement of the wheel and present a solid, non-punctureable surface, substantially as described.

611,554. SULKY-CULTIVATOR. SAMUEL N. BESTLINE, Andersonburg, Pa. Filed Dec. 20, 1897. Serial No. 662,642. (No model.)

Claim.—1. In a sulky-cultivator, the combination with the wheeled frame, of vertically-depending shafts carried by said frame, swivels journaled on said shafts, plow-gang frames pivotally connected at their forward ends to said swivels whereby said plow-gangs may be raised and lowered and swung laterally from side to side, inwardly-projecting arms fixed to said swivels, a foot-lever pivoted between its ends to the machine-frame, and rods connected at their rear ends to said foot-lever on opposite sides of its fulcrum and at their front ends to the inner ends of the said arms, whereby said plow-gangs may be simultaneously shifted to either side of the line of draft, substantially as described.



2. In a sulky-cultivator, the combination with the wheeled frame, of vertically-depending shafts carried by said frame, swivels journaled on said shafts, plow-gang frames pivotally connected at their forward ends to said swivels whereby said plow-gangs may be raised and lowered and swung laterally from side to side, inwardly-projecting arms fixed to said swivels, a foot-lever pivoted between its ends to the machine-frame, rods connected at their ends to said foot-lever on opposite sides of its fulcrum and at their front ends to the inner ends of said arms, and means for raising and lowering said plow-gangs, substantially as described.

3. In a sulky-cultivator, the combination with the wheeled frame, of vertically-depending shafts carried by said frame, swivels journaled on said shafts, plow-gang frames pivotally connected at their forward ends to said swivels whereby said plow-gangs may be raised and lowered and swung laterally from side to side, inwardly-projecting arms fixed to said swivels, a foot-lever pivoted between its ends to the machine-frame and rods connected at their rear ends to said foot-lever on opposite sides of its fulcrum and at their forward ends adjustably connected to the inner ends of the said arms, substantially as described.

4. In a sulky-cultivator, the combination with the wheeled frame, of vertically-depending shafts carried by said frame, swivels journaled on said shafts, plow-gang frames pivotally connected at their forward ends to said swivels whereby said plow-gangs may be raised and lowered and swung laterally from side to side, inwardly-projecting arms fixed to said swivels, and each provided at its inner ends with a plurality of apertures, a foot-lever pivoted between its ends to the machine-frame, and rods provided at their forward ends with hooks interchangeably engaged with the apertures in the said arms and connected at their rear ends to said foot-lever on opposite sides of the fulcrum of the latter, substantially as described.

5. In a sulky-cultivator, the combination with the wheeled frame, of the vertically-adjustable plow-gangs, spring-arms 37 pivotally connected to the plow-frames and provided with rearwardly-projecting yokes or saddles 38 straddling said plow-frames, and means for flexing said spring-arms rearwardly to yieldingly depress the plow-gangs, substantially as described.

6. In a sulky-cultivator, the combination with the wheeled frame, of the drag-bars 19 pivotally connected at their forward ends to supports carried by the frame and each carrying shovels, of the spring-arms 37 provided at their lower ends with yokes or saddles 38 straddling said drag-bars, said yokes or saddles being pivoted at their forward ends to drag-bars and bearing at their rear ends thereon, and means for flexing said spring-arms rearwardly to yieldingly depress the drag-bars, substantially as described.

7. In a sulky-cultivator, the combination with the wheeled frame, of the drag-bars 19 pivotally connected at their forward ends to supports carried by the frame and each carrying shovels, of the spring-arms 37 provided at their lower ends with yokes or saddles 38 straddling said drag-bars and provided at their forward ends with eyes 40 journaled on pivot-pins 39 carried by the drag-bars, said yokes or saddles bearing at their rear ends on the upper side of the drag-bars, and means for flexing said spring-arms rearwardly to yieldingly depress the drag-bars, substantially as described.

8. In a sulky-cultivator, the combination with the wheeled frame, of the drag-bars 19 pivotally connected at their forward ends to supports carried by the frame and each carrying shovels, the spring-arms 37 provided at their lower ends with yokes or saddles 38 straddling said drag-bars, said yokes or saddles being pivoted at their forward ends to the drag-bars and bearing at their rear ends thereon, a rock-shaft journaled in the rear end of the frame, an arm fixed on said rock-shaft and connected to the said spring-arms, and means for rocking said rock-shaft, substantially as described.

9. In a sulky cultivator, the combination with the wheeled frame, of the drag-bars 19 pivotally connected at their forward ends to sup-

ports carried by the frame and each carrying shovels, the spring-arms 37 provided at their lower ends with yokes or saddles 38 straddling said drag-bars, said yokes or saddles being pivoted at their forward ends to the drag-bars and bearing at their rear ends thereon, a rock-shaft journaled in the rear end of the frame, an arm fixed on the rock-shaft and connected to the said spring-arms, arms fixed on the rock-shaft and connected to the drag-bars, and means for rocking and holding said rock-shaft, substantially as described.

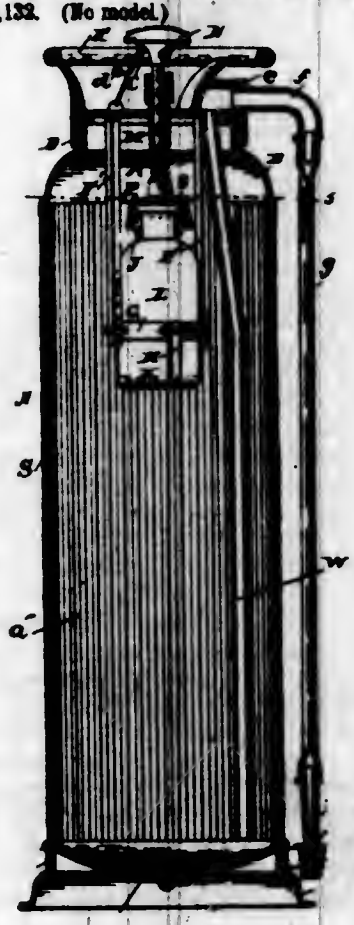
10. In a sulky-cultivator, the combination with the wheeled frame, of the drag-bars 19 pivotally connected at their forward ends to supports carried by the frame and each carrying shovels, the spring-arms 37 provided at their lower ends with yokes or saddles 38 straddling said drag-bars, said yokes or saddles being pivoted at their forward ends to the drag-bars and bearing at their rear ends thereon, a rock-shaft journaled in the rear end of the frame, an arm fixed on the rock-shaft and connected to the said spring-arms, arms fixed on the rock-shaft and connected to the drag-bars, an oscillating hand-lever fixed against rotation on the rock-shaft, a rack, and a spring for throwing said hand-lever into engagement with the rack to prevent the rock-shaft from turning, substantially as described.

11. In a sulky-cultivator, the combination with the frame and the gangs of shovels carried thereby, of the axle having downwardly-extending ends provided with vertically-depending pivot-pins, axle-spindles journaled on said pins and provided with inwardly-extending arms, rods attached to the inner ends of said arms and connected to the opposite ends of a centrally-pivoted lever, a hand-lever, a rod connecting said hand-lever to the centrally-pivoted lever, and a rack adapted to be engaged by the hand-lever, substantially as described.

12. In a sulky-cultivator, the combination with the frame and the gangs of shovels carried thereby, of the axle having downwardly-extending ends provided with vertically-depending pivot-pins, axle-spindles journaled on said pins and provided with inwardly-projecting arms normally in alinement with the spindles, a centrally-pivoted lever normally parallel with the axle, rods attached to the inner ends of said arms and to the opposite ends of the centrally-pivoted lever, a hand-lever journaled on a stud carried by the frame, a rack, a coiled spring arranged on said stud and operating to cause said lever to engage the rack, and a rod connecting the hand-lever and one end of said centrally-pivoted lever, substantially as described.

13. In a sulky-cultivator, the combination with the wheeled frame, of the drag-bars 19 pivotally connected at their forward ends to supports carried by the frame and each carrying shovels, of the arms 37 provided at their lower ends with yokes or saddles 38 straddling said drag-bars and provided at their forward ends with eyes 40 journaled on pivot-pins 39 carried by the drag-bars, and springs 43 arranged between the rear ends of the saddle and the drag-bars, substantially as described and for the purpose specified.

611,555. CHEMICAL FIRE-EXTINGUISHER. WILLIAM B. BLAKE and SCHUYLER HUBBARD, Bedford, Ohio. Filed Oct. 5, 1897. Serial No. 654,132. (No model.)



Claim.—1. A chemical fire-extinguisher consisting of a cylinder composed of thin sheet metal having a plurality of longitudinal ribs extending from end to end thereof, and an external transverse wrapping of wire engaging directly the projecting corrugations throughout their entire length, whereby the cylinder is strengthened longitudinally, and transversely from end to end, substantially as described.

2. A fire-extinguisher comprising a cylinder, an outlet-pipe having a nozzle, and a socket transversely adjustable upon said cylinder for the purpose described and adapted to receive said nozzle.

3. A bottle-supporting rack for fire-extinguishers comprising a ring G having pintles G', a U-shaped band H to receive the bottom of the bottle, an upwardly-extending arm I carrying at its upper end a clasp J adapted to engage the mouth of the bottle, whereby the bottle can be attached and detached at will, substantially as described.

611,556. FILLING-PIECE FOR CAMS. EDWARD A. BLANTON, Jr., Ridley Park, Pa. Filed Jan. 17, 1898. Serial No. 666,935. (No model.)



Claim.—1. A filling-piece adapted to be interposed between a shaft and sleeve said filling piece having self-tightening bosses on its engaging surfaces, substantially as described.

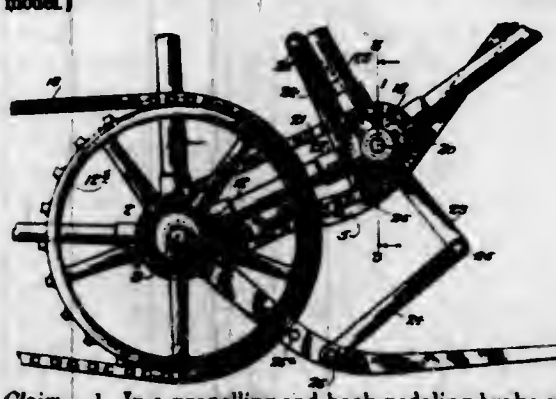
2. A filling-piece adapted to be interposed between a shaft and sleeve said filling-piece having self-tightening bosses on its engaging surfaces, the number of bosses on its inner and outer engaging surfaces corresponding, substantially as described.

3. A filling-piece adapted to be interposed between a shaft and sleeve said filling-piece comprising sections having self-tightening bosses on their engaging surfaces, substantially as described.

4. The combination with a shaft and sleeve, of a series of filling-pieces adapted to be interposed between the shaft and sleeve, the filling-pieces having self-tightening bosses on their engaging surfaces, substantially as described.

5. The combination with a shaft and sleeve having bosses, of a filling-piece adapted to be interposed between the shaft and sleeve and having bosses on its engaging surfaces, the shaft, sleeve and filling-piece being tightened by turning, substantially as described.

611,557. PROPELLING MECHANISM FOR BICYCLES. WILLIAM W. BROOKS, Memphis, Tenn., assignor of one-half to Thomas W. Carter, same place. Filed Dec. 6, 1897. Serial No. 660,894. (No model.)



Claim.—1. In a propelling and back-pedaling brake mechanism for bicycles, the combination with a treadle-shaft, and treadle-levers with means for clutching the same to said shaft, of a crank-shaft operatively connected with the treadle-levers, gearing between the crank-shaft and treadle-shaft, and clutch devices for making the gears fast with their respective shafts, substantially as described.

2. In a propelling and back-pedaling mechanism for bicycles, the combination with a treadle-shaft, and treadle-levers having clutch devices for making the same fast with the treadle-shaft, of a crank-shaft having link connections with said treadle-levers, sprocket-pinions fitted to the treadle and crank-shafts, and said pinions provided with clutch devices for making the same fast with their respective shafts, a sprocket-chain connecting said sprocket-pinions, and means for operatively connecting the treadle-shaft with a rear wheel, substantially as described.

3. In a propelling mechanism for bicycles, the combination with a treadle-shaft and treadle-levers, of a crank-shaft journaled in the bicycle-frame in advance of said treadle-shaft, sprocket-pinions provided with clutch devices and mounted on the treadle-shaft and the

crank-shaft, a sprocket-chain connecting said sprocket-pinions, and driving connections between the treadle-levers and the crank-shaft, substantially as described.

4. In a propelling mechanism for bicycles, the combination with a shaft or sleeve, of a divided hinged clutch embracing said sleeve and having rollers which are confined within the clutch members and arranged to bind against the sleeve, and a treadle-lever operatively connected with the clutch members to close the latter and make the rollers grip the sleeve, for the purpose described, substantially as set forth.

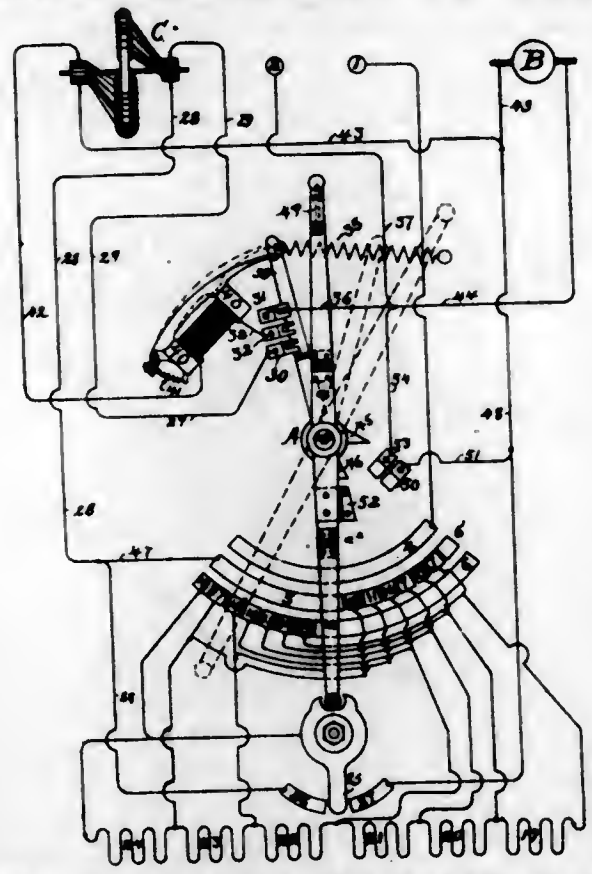
5. In a propelling mechanism for bicycles, the combination with a shaft or sleeve, of a divided clutch which embraces said shaft or sleeve, and has its members hinged together to open or close a limited distance, clutch-rollers mounted loosely in one or both members of said clutch and arranged to have contact with the shaft or sleeve, and a treadle-lever fulcrumed on one member of the clutch and connected with the other clutch member, substantially as and for the purposes described.

6. A divided clutch consisting of overlapping members one of which carries a series of gripping-rollers, a hinge-pintle for uniting the members pivotally together, and a lever fulcrumed in one clutch member and loosely connected with the clutch member which sustains the gripping-rollers, substantially as described.

7. A divided clutch having its members pivoted together and with one member formed at its free end with a jaw, a lever fulcrumed in the other member and provided with a projection that fits in said jaw, and gripping-rollers carried by the jaw-formed clutch member, substantially as described.

8. The combination with a shaft or sleeve, of a divided clutch having its members loosely fitted to, and hinged together at one side of, said shaft or sleeve and one of said members carrying a series of spring-pressed rollers arranged to bind on the shaft or sleeve, and a lever pivoted at a point intermediate of its length to one clutch member and loosely connected to the free end of the clutch member which sustains the gripping-rollers, substantially as described.

611,558. APPARATUS FOR STARTING MOTORS. JAMES BURKE, New York, N. Y., assignor to the Bullock Electric Manufacturing Company, of Ohio. Filed Apr. 4, 1898. Serial No. 676,336. (No model.)



Claim.—1. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a converter in circuit with the motor and with the supply-circuit, and means for breaking the converter-circuit at an intermediate speed of the motor, substantially as described.

2. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a converter in circuit with the motor and with the supply-circuit, and means for automatically breaking the converter-circuit at an intermediate speed of the motor, substantially as described.

3. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a controlling-rheostat in said supply-circuit, a converter in circuit with the motor and with said supply-circuit, and means for breaking the converter-circuit at an intermediate speed of the motor, substantially as described.

4. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a controlling-rheostat in said circuit, a converter, means for interposing said converter in said circuit intermediate the rheostat and motor, and means for withdrawing said converter from the circuit, substantially as described.

5. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a converter in circuit with the motor and with the supply-circuit, means for varying the strength of the current from the converter, and means for cutting the converter out of circuit at an intermediate speed of the motor, substantially as described.

6. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a converter in circuit with the motor and with the supply-circuit, and means for varying the relative values of the current from the supply-circuit and converter-circuit, substantially as described.

7. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a converter in circuit with the motor and with the supply-circuit, means for varying the relative values of the currents from the supply-circuit and converter-circuit, and means for cutting said converter out of circuit, substantially as described.

8. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a converter in circuit with the motor, a source of current-supply connected with the converter, and means for breaking the converter-circuit, substantially as described.

9. The combination with an electric motor, of a supply circuit, a local circuit induced from said supply-circuit, means for combining the current from the induced circuit with that from the supply-circuit, and means for supplying said combined currents to the armature of the motor, substantially as described.

10. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a converter in circuit with the motor, a source of current-supply connected with the converter, means for combining the current from the converter-circuit with that from the supply-circuit, and means for supplying said combined currents to the armature of the motor, substantially as described.

11. The combination with an electric motor, of a supply-circuit, a local circuit induced from said supply-circuit, means for directing current from said induced circuit into the armature of the motor, means for directing the current from the supply-circuit into the armature of the motor, and means for varying the relative values of the currents from the induced circuit and from the supply-circuit, substantially as described.

12. The combination with an electric motor, of a supply-circuit, a local circuit induced from said supply-circuit, means for combining the current from the induced circuit with that from the supply-circuit, means for varying their relative values, and means for supplying said combined currents to the armature of the motor, substantially as described.

13. The combination with an electric motor, of a supply-circuit, a local circuit induced from said supply-circuit, both of said circuits being connected with the armature of the motor, a rheostat in the supply-circuit, and a switch adapted to open and close said induced circuit, substantially as described.

14. The combination with an electric motor, of a supply-circuit, a local circuit induced from said supply-circuit, both of said circuits being connected with the armature of the motor, and an automatic switch adapted to open said induced circuit at an intermediate speed of the motor, substantially as described.

15. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a local circuit induced from said supply-circuit and connected with the motor, a rheostat in the supply-circuit, a switch adapted to open said induced circuit, a magnet controlled by said induced circuit and adapted to hold said switch closed, means for varying the relative values of the currents from the supply-circuit and from the induced circuit, and means for opening said switch when the strength of said magnet falls below a predetermined point, substantially as described.

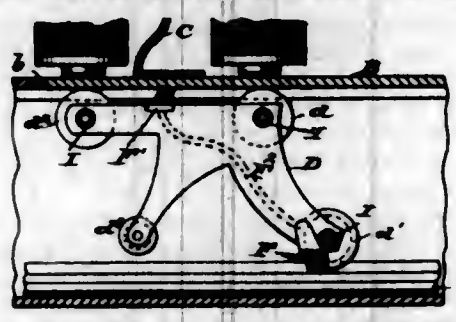
16. The combination with an electric motor, of a supply-circuit, a converting device, two sets of resistances, one in circuit with the motor and the other in circuit with the converting device, and a switch connected with the supply-circuit and adapted to make contact with the respective sets of resistances, substantially as described.

17. The combination with an electric motor, of a supply-circuit, a converting device, two sets of resistances, one in circuit with the motor and the other in circuit with the converting device, a switch

connected with the supply-circuit and adapted to make contact first with the resistance in circuit with the converting device and then with the resistance in circuit with the motor, and means for cutting the converting device out of circuit, substantially as described.

18. The combination with an electric motor, of a supply-circuit, means for connecting the motor with the supply-circuit, a local circuit induced from said supply-circuit, a controlling device comprising a rheostat in said supply-circuit, an operating-lever adapted to control the same, and a switch in said induced current adapted to be closed by the action of said lever and released when the induced current falls below a predetermined strength, substantially as described.

611,559. ELECTRIC-RAILWAY SYSTEM. GEORGE L. CAMPBELL, Dunbore, Pa. Filed Oct. 29, 1897. Serial No. 656,772. (No model.)



Claim.—1. In an electric-railway system, the combination with a closed conduit having a sectional insulated conductor in its upper face and provided with a continuous conductor within the body thereof, of a tilting traveler or trolley mounted in the conduit and provided with contacts for engaging the said conductors, said traveler or trolley being adapted to be held in its normal position and to be moved by the influence of an electromagnet on the car, whereby when the influence of the magnet is withdrawn, the traveler or trolley will tilt and break the circuit, substantially as described.

2. In an electric railway the combination with a closed conduit having a sectional insulated conductor in its upper face, and provided with a continuous conductor within the body thereof, of a tilting traveler or trolley mounted in the conduit and provided with contacts for engaging the said conductors, and with a brake which is applied upon the tilting of the traveler or trolley, said traveler or trolley being adapted to be held in its normal position and to be moved by the influence of an electromagnet on the car, substantially as described.

3. In an electric-railway system, the combination with a closed conduit having a sectional insulated conductor in its upper face and provided with a continuous conductor within the body thereof, and with a guide-rail, of a traveler or trolley mounted in the conduit to be moved by the influence of an electromagnet on the car and having two wheels engaging the sectional conductor, and one wheel traveling on the guide-rail of the conduit, the said wheels being insulated from their support, and contacts carried by the frame and engaging the said conductors, substantially as described.

4. In an electric-railway system, the combination with a closed conduit having a sectional insulated conductor in its upper face and provided with a continuous conductor within the body thereof, and with a guide-rail, of a traveler or trolley mounted in the conduit to be moved by the influence of an electromagnet on the car and comprising a frame having two wheels in its upper portion for engaging the sectional conductor, and one wheel in its lower portion engaging the guide-rail, said wheels being insulated from the frame, said frame being provided with contacts for engaging the said conductors and with a brake-wheel having a roughened surface and normally held out of contact with the guide-rail, substantially as described.

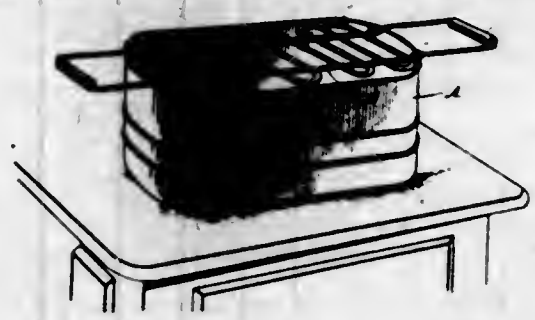
5. An electric-railway system, comprising a closed conduit, a continuous conductor therein, a conductor composed of short insulated sections forming a part of the conduit-wall, a trolley or traveler mounted to traverse said conductor and having brushes adapted to engage both of said conductors, said traveler dropping by gravity to frictionally engage the stationary guide, a conductor connecting the brushes of the traveler, a brake carried by the traveler, and a magnet upon the car adapted to raise said traveler and cause it to traverse the conduit, substantially as described.

611,560. MEDICINAL VAPORIZER. ARTHUR M. CHAMBERS, Thorncliffe, England. Filed Mar. 1, 1898. Serial No. 672,170. (No model.)

Claim.—A vaporizer consisting of a base having a circular opening in its center for the reception of a lamp or candle holder, of a hollow cylindrical body portion, provided with a handle, open at its upper end to receive an evaporating-pan, and provided at its lower end with a vertical opening for the introduction of a lamp or candle; an annular rib around the upper portion of said cylinder above said vertical opening; a series of vertical slots cut in said cylinder above said annular rib, and a movable circular band, surrounding the upper portion of the said cylinder, resting on said annular rib and provided with a series of vertical slots, adapted to register with the slots in the upper portion of the said cylinder, substantially as described.



611,561. WASHBOILER-STRAINER. LEMUEL T. COOK, Atlanta, Ind. Filed Feb. 16, 1897. Serial No. 623,633. (No model.)



Claim.—A strainer for a washboiler, consisting of a frame composed of two parallel longitudinal bars successively crossed by a wire secured thereon, ears carried by said wire at the respective corners of the frame, lugs pivotally mounted in said ears and adapted to support said frame upon the upper edge of the boiler, and handles pivoted to the ends of said bars at each end of the frame for lifting said frame, substantially as shown and described.

611,562. MATCH-MACHINE. WILLIAM R. COOK, Ogdensburg, N. Y. Filed Jan. 28, 1898. Serial No. 668,327. (No model.)

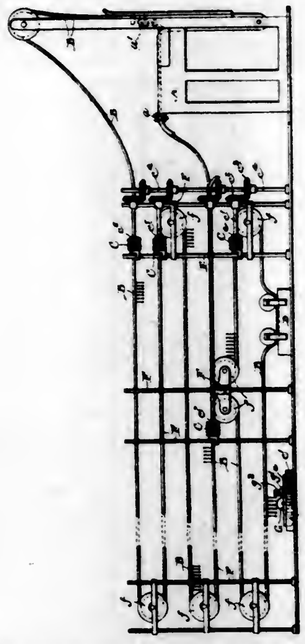
Claim.—1. In a match-machine, the combination with a match-splint carrier, of continuous worms for imparting motion to the main portion of the said carrier for feeding it at a uniform speed, and intermittent worms also engaging said chain where it passes through the splint-cutting mechanism, for imparting to it an intermittent movement at that point, sufficient slack being allowed in the chain to permit of the varied feed, substantially as described.

2. In a match-machine, the combination with a splint-cutting mechanism and a drying-frame, of a match-splint carrier, adapted to pass through the same, uniform continuous worms mounted in the drying-frame for imparting motion to the greater portion of the chain and giving a uniform movement thereto, intermittent worms mounted upon the splint cutting and discharging mechanism and engaging a small portion of the chain for imparting to it an intermittent movement at that point, sufficient slack being left in the chain between the splint-cutting mechanism and the drying-frame to accommodate this movement, substantially as described.

3. In a match-machine, the combination with a match-splint carrier, of a series of uniform continuous worms for imparting motion to the greater portion of the said carrier to feed it at a uniform speed, intermittent worms engaging a small portion of the chain for feeding it intermittently at that point, sufficient slack being left in the carrier to allow this varied feed, and gearing for actuating all of the uniform worms simultaneously, substantially as described.

4. In a match-machine, the combination with a splint-carrier, of a composition-vat for applying igniting-heads to the said splints comprising in its construction a roller adapted to revolve in a suitable composition for applying it to the splints, an auxiliary roller also adapted to revolve in the said composition to one side of the main roller and so as not to come in contact with the splints, the said auxiliary roller assisting in feeding the composition to the applying-

roller, and means for revolving the said rollers, substantially as described.

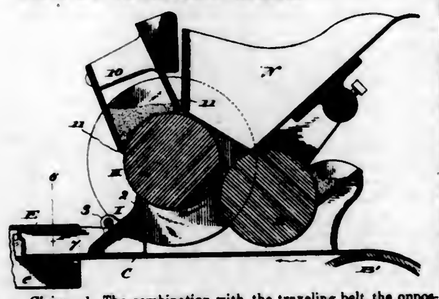


5. In a match-machine, the combination with a splint-carrier, and means for applying the igniting-heads to the splints, comprising a vat for holding a suitable composition, an applying-roller mounted thereon and rotating in the said composition, an auxiliary roller also mounted in the vat and adapted to be rotated in the composition, the said auxiliary roller being arranged so as to assist in feeding and grading the composition upon the applying-roller, but not touching the match splints, and a scraper interposed between the rollers and adapted to throw the composition from the auxiliary roller upon the applying-roller, substantially as described.

6. In a match-machine, the combination with a suitable splint-carrier, of a composition-vat for applying the igniting material to the splints, an applying-roller and auxiliary roller mounted upon the vat so as to rotate in the composition, the said auxiliary roller being smaller than the applying-roller so as not to engage the match-splints, a scraper mounted between the rollers and adapted to throw the composition from the auxiliary roller upon the applying-roller, and means for adjusting the scraper to throw a greater or less quantity of composition back upon the said applying-roller, and means for rotating the said rollers, substantially as described.

611,563. MACHINE FOR WORKING AND SHAPING DOUGH.

WILLIAM S. CORBY and CHARLES I. CORBY, Washington, D. C. Filed Jan. 18, 1898. Serial No. 667,040. (No model.)



Claim.—1. The combination with the traveling belt, the opposing pressure-board, and the curler, of a shield arranged adjacent to the curler to prevent the material from working over the curler, substantially as set forth.

2. The combination with the traveling belt, the opposing pressure-board, the feed-rollers and the curler, of a shield arranged between the curler and the feed-rollers, substantially as set forth.

3. The combination with the traveling belt, the opposing pressure-board, the feed-rollers and the curler, of a shield arranged between the rollers and the curler and having its edge bearing on one of the rollers whereby it operates both as a shield to prevent the material from working over the curler, and also as a scraper for the roller, substantially as set forth.

4. The combination with means for advancing a sheet of dough, and a pressure-board, of a curler, and means arranged adjacent to the curler and operating to prevent the dough from moving out of its prescribed path and thereby escaping the curler, substantially as set forth.

5. In a machine for working dough, the combination of the dough sheeting and feeding rollers, a curler arranged to engage with the forward edge of the dough, and move toward and away from the dough-path, means arranged between the curler and the feeding-rollers and adapted to prevent the dough from moving out of its prescribed path and thereby escaping the curler, and means for advancing the dough, substantially as set forth.

6. The combination of the rollers for forming the dough into sheets, means for advancing such sheets of dough, the pressure-board, a curler, side guides arranged between the rollers and the curler, and means for preventing the dough from moving out of its prescribed path and escaping the curler, substantially as set forth.

7. In a machine adapted to shape dough the combination with a traveling belt and an opposing pressure-board, of guides 7 arranged near the feed end of the machine, and adapted to engage with the ends of the masses of material being treated, substantially as set forth.

8. In a machine adapted to shape dough, the combination with a traveling belt, and an opposing pressure-board, of a curler near the feed end of the machine, and guides 7 for the ends of the dough masses, extending beyond the curler in the direction of the movement of the belt, substantially as set forth.

9. In a machine adapted to shape dough, the combination with a traveling belt, and an opposing pressure-board, having side flanges, of the guides 7 secured to the pressure-board inside of the said flanges, and near the feed end thereof, substantially as set forth.

10. In a machine adapted to shape dough, the combination of a traveling belt, a pressure-board, E opposed thereto and having side flanges *e*, guides 7 secured to the board between the flanges *e*, and means for adjusting and securing such guides, substantially as set forth.

11. In a machine adapted to shape dough, the combination of means for advancing the masses of sheeted dough, a pressure-board opposite thereto, a curler, and means arranged to properly center the masses of dough as they enter the space between the said pressure-board and the means for advancing them, substantially as set forth.

12. In a machine for making bread-loaves of dough, the combination of means for advancing the dough masses, a pressure-board, a curler, and guides arranged to engage with the side edges of the dough masses and prevent them from unduly spreading while they are being first curled and rolled or coiled up, substantially as set forth.

13. In a machine adapted to shape dough, the combination of a traveling belt, an opposing pressure-board, feed-rollers, a curler in advance of the feed-rollers, and guides 7 extending from the sides of the feed-rollers past and beyond the curler, substantially as set forth.

14. The combination of means for advancing the dough mass, a pressure-board, a curler, and a shield separate from the curler and arranged to prevent the dough from moving out of its prescribed path and escaping the curler, substantially as set forth.

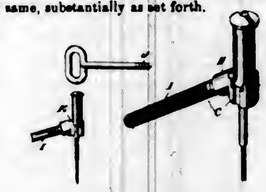
15. The combination of sheeting-rollers, a curler, a belt for moving the sheet of dough from the rollers to the curler, a shield independent of the curler and arranged to prevent the dough sheet from moving out of its prescribed path and escaping the curler, and means for molding the dough mass into a loaf after it has been acted on by the curler, substantially as set forth.

16. The combination with means for advancing a mass of dough and a pressure-board opposed thereto, these parts being separated, whereby there is a dough-passage between their working faces, of a curler situated near the entrance to such passage, means for feeding sheets of dough to the curler, and a shield arranged adjacent to the feed end of the pressure-board to prevent the dough masses from passing over the pressure-board and thereby failing to enter the space between it and the means for advancing and working the dough, substantially as set forth.

611,564. SPOKE-GRIP.

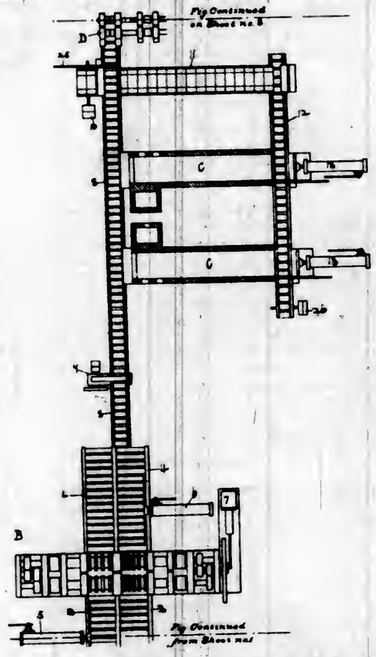
JOHN M. CRUMP, South Prairie, Wash. Filed Dec. 31, 1897. Serial No. 665,004. (No model.)

Claim.—In a spoke-grip, the combination of a head having a nipple-receiving opening formed with a shoulder to engage the shoulder of the nipple and having a vertical slot communicating with said nipple-receiving opening, whereby it may be positioned upon the spoke, and a clamping-lever for securing the head to the nipple and rotate the same, substantially as set forth.



611,565. ROLLING-MILL PLANT.

FRED H. DANIELS, Worcester, Mass. Filed Nov. 7, 1895. Serial No. 568,164. (No model.)



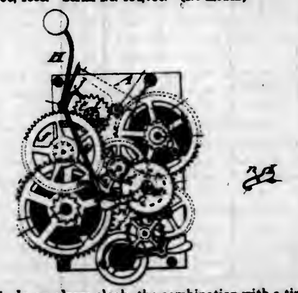
Claim.—1. A rolling-mill plant, substantially as hereinbefore described, comprising a primary set of rolls, a conveyer, leading from said rolls, a shear in the line of said conveyer, a furnace adjacent to said conveyer, lateral transfer mechanism to deliver the billets to a conveyer at the opposite end of said furnace, mechanism for transferring a billet into said furnace, and returning said billet to the first-named conveyer, whereby it may be carried to the second set of reducing-rolls, substantially as described.

2. A rolling-mill plant, substantially as hereinbefore described, comprising a primary set of rolls, a conveyer, leading from said rolls, a shear in the line of said conveyer, a furnace adjacent to said conveyer, lateral transfer mechanism to deliver the billets to a conveyer at the opposite end of said furnace, mechanism for transferring a billet into said furnace, and returning said billet to the first-named conveyer, a second set of rolls, a third set of rolls, for finishing rods of coarser size, and a set of rolls intermediate the second and third sets of rolls for finishing rods of smaller size, substantially as described.

3 A rolling-mill plant, substantially as hereinbefore described comprising a primary heating-furnace, a set of primary reducing-rolls and roller feed-tables and hydraulic pushers whereby the bloom may be fed forward and backward through said primary rolls, and reduced to a billet of the required size, a conveyer leading from said rolls, a shear in the line of said conveyer, a furnace adjacent to said conveyer, a movable gate to arrest the forward progress of the billet, lateral transfer mechanism to deliver the billets to a conveyer at the opposite end of said furnace, an hydraulic pusher whereby the billets may be directed into the furnace and returned to the first-named conveyer, a second set of rolls, a third set of rolls for finishing rods of coarser size, a set of rolls intermediate the second and third sets of rolls for finishing rods of smaller size, a switch for diverting the product of the second set of rolls, and reels for receiving the product of the finishing-trains, substantially as described.

611,566. REPEATING ALARM-CLOCK.

WALTER D. DAVIES, New York, N. Y., assignor to the Ansonia Clock Company, same place. Filed June 30, 1896. Serial No. 596,736. (No model.)

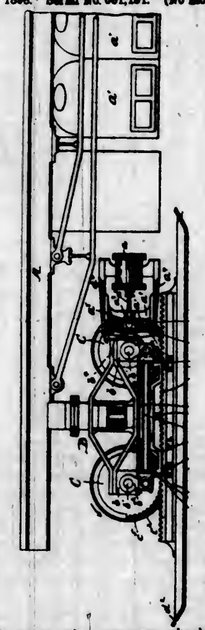


Claim.—1. In an alarm-clock, the combination with a time-train and an alarm-train, of a striking-escapement in said alarm-train, a toothed interrupting-wheel in the time-train, a projection from the verge of said escapement, and a tripping-piece pivoted to said projection for alternately engaging with the teeth of said interrupting-wheel and vibrating uninterruptedly between the teeth of said wheel, substantially as herein described.

2. In an alarm-clock, the combination with a time-train and an alarm-train, of a striking-escapement in the alarm-train, a toothed interrupting-wheel in the time-train, a rigid projection from the verge of said escapement, a tripping-piece pivoted to the said projection for engagement with said interrupting-wheel and a spring applied between said tripping-piece and said projection, substantially as and for the purpose herein described.

611,567. TRANSPORTING APPARATUS.

WALTER R. DEBEL, Pittsburg, Pa., assignor of one-half to Walter Lyon, Allegheny, Pa. Filed May 19, 1898. Serial No. 681,131. (No model.)



Claim.—1. In transporting apparatus, wheels for supporting the object to be transported, longitudinally-movable track-sections, means

for supporting and driving said wheels on one set of said track-sections, and mechanism for advancing the other set, alternately, substantially as set forth.

2. In transporting apparatus, wheels for supporting the object to be transported, longitudinally-movable track-sections, means for supporting and driving said wheels on one set of said track-sections, and mechanism for elevating and advancing the other set, alternately, substantially as set forth.

3. In transporting apparatus, wheels for supporting the object to be transported, longitudinally-movable track-sections, said wheels having segmental treads at opposite portions of their peripheries adapted to engage with said track-sections, alternately, and mechanism for driving said wheels and advancing the track-sections not engaged by said treads, substantially as set forth.

4. In transporting apparatus, wheels for supporting the object to be transported, longitudinally-movable track-sections, said wheels having segmental treads at opposite portions of their peripheries adapted to engage with said track-sections, alternately, said track-sections having rack-faces thereon, a horizontal gear-wheel depending from the truck, said gear-wheel meshing with said rack-faces, and mechanism for driving said first-mentioned wheels, substantially as set forth.

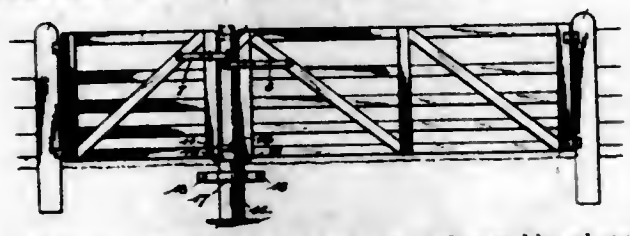
5. In transporting apparatus, wheels for supporting the object to be transported, longitudinally-movable track-sections, said wheels having segmental treads and cogs at opposite portions of their peripheries adapted to engage with said track-sections, alternately, said track-sections having rack-faces thereon engaged by said cogs, a longitudinally-movable bearing, a horizontal gear-wheel depending from said bearing, said gear-wheel meshing with corresponding rack-faces on said track-sections, and mechanism for driving said first-mentioned wheels, substantially as set forth.

6. In transporting apparatus, wheels for supporting the object to be transported, longitudinally-movable track-sections, said wheels having segmental treads and cogs at opposite portions of their peripheries adapted to engage with said track-sections, alternately, said track-sections having rack-faces thereon engaged by said cogs, a rod supported by the truck, a sliding sleeve on said rod, springs interposed between the ends of said sleeve and the support for said rod, a horizontal gear-wheel depending from said sleeve, said gear-wheel meshing with corresponding rack-faces on said track-sections, and mechanism for driving said first-mentioned wheels, substantially as set forth.

7. In transporting apparatus, wheels for supporting the object to be transported, axles on which said wheels are mounted, cranks on said axles, connecting-rods, said wheels having segmental treads at opposite portions of their peripheries, longitudinally-movable track-sections adapted to be engaged alternately by said treads, mechanism for advancing the free set of track-sections, and mechanism for driving said cranks, substantially as set forth.

8. In transporting apparatus, wheels for supporting the object to be transported, longitudinally-movable track-sections, means for supporting and driving said wheels on one set of said track-sections, and mechanism for advancing the other set, alternately, a yoke depending from the truck, horizontal rollers journaled in said yoke and adapted to engage projections on said track-sections, said rollers being vertically movable in their bearings, and means for lifting same, substantially as set forth.

611,568. GATE-POST. CHARLES A. DOHME, Steivideo, Ohio. Filed Apr. 6, 1898. Serial No. 676,654. (No model.)



Claim.—1. The combination with a pair of gates hinged at their outer ends, of a latch-post interposed between the free ends of the gates and common to both of them, said post being removable and adapted to be detached when it is desired to clear the entire space between the hinge-posts of the gates, substantially as described.

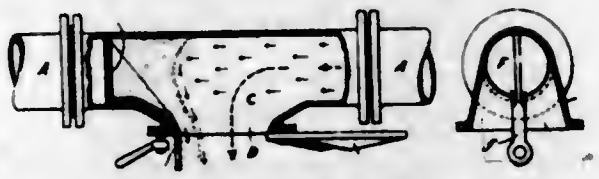
2. The combination with a pair of gates hinged at their outer ends, of a base having a socket, and a latch-post interposed between the gates, common to both of them and detachably fitted within the socket of the base, whereby it may be readily removed when it is desired to clear the entire space between the hinge-posts of the gate, substantially as described.

3. The combination with a pair of gates hinged at their outer ends, of a base having a socket and provided with notches, a post interposed between the free ends of the gates, fitting in the socket of the base and provided with projections interlocking with said notches, and collars or bands mounted on the post and provided with projections forming stops to limit the swing of the gates, substantially as described.

4. The combination with a pair of gates hinged at their outer ends, of a base having a socket, an anchor mounted on the base and consisting of a collar or band provided with arms, a latch-post arranged between the free ends of the gates and detachably interlocked with the base, a keeper arranged at one side of the post, collars or bands arranged on the post and provided with projections forming stops to be engaged by the gates, and latches mounted on the gates and engaging the keeper, substantially as described.

5. The combination of a base provided at its lower end with a stop, the lower anchor consisting of a horizontal plate provided with an opening to receive the base and supported upon the said stop, and the upper anchor provided with horizontal arms arranged in vertical planes, substantially as described.

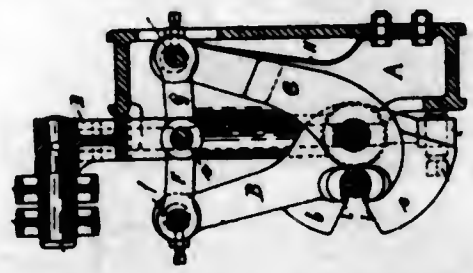
611,569. METHOD OF AND MEANS FOR DELIVERING PNEUMATICALLY-CONVEYED GRAIN, &c. FREDERIC H. DUCKHAM, London, England. Filed May 11, 1897. Serial No. 636,085. (No model.) Patented in England July 27, 1896, No. 14,283.



Claim.—1. A terminal nozzle, of a pneumatic grain-conveying pipe, for gently depositing the grain from the forced current of air by which it is conveyed, the said nozzle consisting of a length of tube of larger diameter than the conveying-pipe, closed at the end and provided with an outlet-aperture in its under side of about the same diameter as the nozzle itself, substantially as specified.

2. A pneumatic conveyer having a pipe provided with a discharge-orifice, and a baffle situated in the pipe at one side of the orifice and distant from the orifice, whereby to form a closure in the pipe at a point adjacent to or beyond the orifice, whereby material pneumatically conveyed through the pipe will be ejected through the discharge-orifice at approximately right angles to the pipe by the formation of a body of air and grain situate between the baffle and orifice and pressing against the baffle.

611,570. GRIPPING MECHANISM. WILHELM DÜRRDAU, New York, N. Y. Filed Nov. 20, 1897. Serial No. 660,217. (No model.)



Claim.—1. In combination, the rigid frame, the gripping-jaws pivoted therein upon a common center, the yoke movable upon said frame, a pair of links connecting said yoke with the gripping-jaws, and a contact member carried by the yoke adapted to contact with stationary inclines to raise and lower the yoke and thus automatically close and open its jaws, substantially as described.

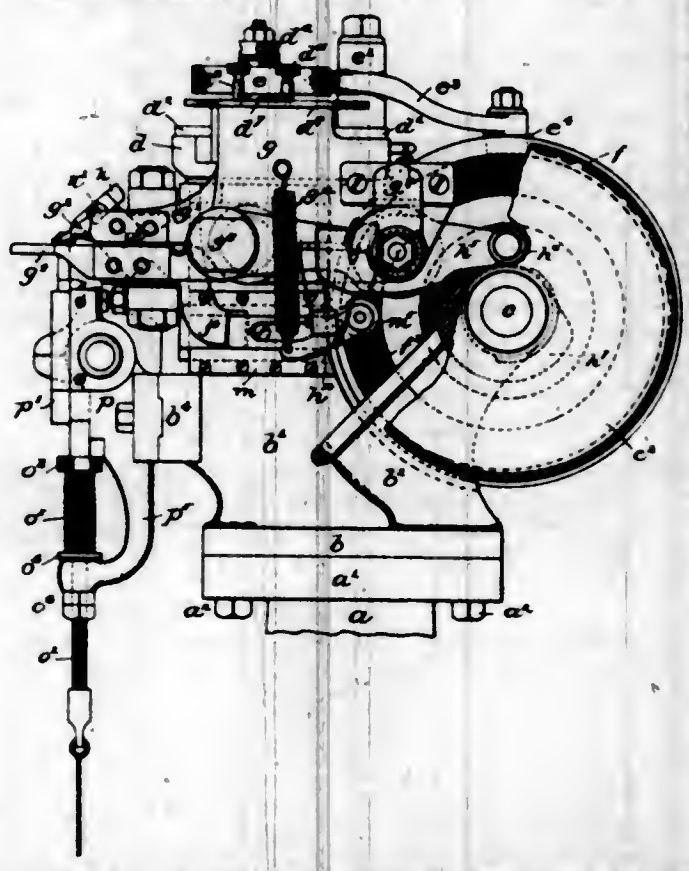
2. In combination, the frame having the hollow posts, the pair of gripping-jaws pivoted upon a common center between said posts, the rods sliding in the posts, the cross-head or yoke connecting said rods, a pair of links connecting said yoke with the gripping-jaws, and a roller carried by the cross-head adapted to contact with a stationary incline to raise and lower the yoke and open and close the jaws, substantially as described.

3. In combination with the pair of jaw-levers of a gripping mechanism for traction-rope, and with a reciprocating piece for opening and closing the same, a pair of links connected to said levers by eccentric-pins, and set-screws, substantially as described.

4. In a gripping mechanism for a traction-rope, a frame, a pair of jaws pivoted thereon on a common center, means for opening and closing said jaws, and a set-screw adapted to form a bearing between one jaw and the frame when the jaws are closed, and to take the weight of the rope, substantially as described.

611,571. STITCH SEPARATING AND INDENTING MACHINE.

ANDREW EPPLER, Jr., Newton, Mass. Filed Feb. 1, 1897. Serial No. 621,446. (No model.)



Claim.—1. In a machine for separating the stitches in boot and shoe soles after the sewing has been completed, the combination with means for clamping and feeding the work positively in one direction only, of an indenting-tool movably mounted above the work and constructed and arranged to descend between two stitches and be carried along with the work and means for actuating the tool to indent the work.

2. In a machine for separating the stitches in boot and shoe soles the combination of means for feeding the work, an operating-lever, an indenting-tool independent of said feeding means pivoted in the lever to swing freely in the line of feed by the engagement of the work therewith, and means for actuating the lever to cause the tool to indent the work.

3. In a machine for separating the stitches in boot and shoe soles, the combination of means for feeding the work, an indenting-tool mounted loosely to swing laterally by the engagement of the work therewith, means for actuating the tool to indent the work, and means for laterally positioning said tool after it has been operated.

4. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool constructed and arranged to move in the line of feed and means for moving said tool toward and from the work, of means for positively positioning said tool after it has indented the work.

5. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool movable in the line of feed, of means for depressing and raising said tool, and additional means for positioning said tool after each operation.

6. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool movable in the line of feed, of means for depressing and raising said tool, and a slide for engaging and positioning said tool.

7. In a machine for separating the stitches in boot and shoe soles, the combination with an operating-lever, an indenting-tool, and a tool-holder pivoted to said lever to be swung freely by the work, of means for positioning said tool-holder after it has swung with the work in the line of feed.

8. In a machine for separating the stitches in boot and shoe soles, in combination, an indenting or separating tool, a tool-holder pivoted to swing in the line of feed, means for raising and depressing said tool-holder, and additional means positively positioning the tool-holder.

9. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool constructed and arranged to locate the stitches and separate them, of two movable reciprocatory jaws for clamping the work and feeding it positively underneath the indenting-tool.

10. In a machine for separating the stitches in boot and shoe soles, the combination with a work support or table and an indenting-tool constructed and arranged to locate and separate the stitches and temporarily clamp the work against the work-support, of two movable jaws constructed and arranged to feed the work between the indenting tool and the work-support, and means for operating said jaws to feed the work and then return.

11. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool, of a gage, and a presser-foot, both forming a part of the feeding devices, and means for positively moving said feeding devices forward with the work and backward without it.

12. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool, of a gage, and a presser-foot, both forming a part of the feeding devices, means for positively moving said feeding devices in one direction and then in the opposite direction, and means for locking the gage and presser-foot together during one movement and unlocking them during the opposite movement.

13. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool, of a feed-slide, and two locking-jaws reciprocatory in the lines of feed for feeding the work, said jaws being both mounted to move with the said feed-slide.

14. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool, of a feed-slide operated by a movable part of the machine, and two gripping-jaws mounted upon the feed-slide and constructed and arranged to grip the work to feed it under the indenting-tool, and to release it during their backward movement.

15. In a machine for separating the stitches in boot and shoe soles, the combination with an indenting-tool, and a reciprocating feed-slide, of two gripping-jaws mounted upon the feed-slide, and a cam-actuated lever constructed and arranged to coact with said gripping-jaws to cause the work to be gripped and moved in one direction and released when the jaws are moved in the opposite direction.

16. In a machine for separating the stitches in boot and shoe soles, the combination with the indenting-tool, and the feeding devices for the work, of a work support or table, comprising a depressible rack, a shaft having a pinion meshing with the rack, and a clutch constructed and arranged to lock the shaft against rotation when the indenting-tool is being depressed.

17. In a machine for separating the stitches in boot and shoe soles, the combination with the indenting-tool, and the depressible work-support, of the reciprocatory jaws for clamping and feeding the work, means for depressing said work-support and means for separating said jaws whereby the work may be placed in the machine.

18. In a machine for separating the stitches in boot and shoe soles, the combination with a work-support, and feeding devices for the work, of an indenting-tool having provision for moving it forward under the bulging part of the upper, then allowing it to descend between the stitches to be carried along with the work, and then depressing it to separate the stitches.

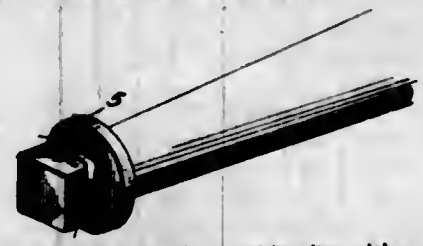
19. A stitch locating and indenting machine comprising an indenting-tool, means for operating the same, and mechanism for causing the positioning of the work after the tool has indented it.

20. A stitch locating and indenting machine comprising an indenting-tool, means for operating the same, and mechanism for positioning the tool and the work, after the tool has indented the work.

21. A stitch locating and indenting machine comprising an indenting-tool, means for operating the same, means for feeding the work under the tool whereby the tool may drop between two stitches and be carried along with the work, and mechanism for positioning the tool and the work after the indentation has been made.

611,572. NUT-LOCK.

EDMUND J. RETEY, Apponaug, R. I. Filed Apr. 30, 1897. Serial No. 634,586. (No model.)



Claim.—1. In a nut-lock, the combination with a washer, of a laterally-movable key thereon separate from said washer, a nut, and means on the nut for holding said key in engagement with the part to which the nut is applied.

2. In a nut-lock, the combination with a washer, of a laterally-movable key thereon separate from said washer and adapted to intersect the bolt-opening in said washer, a nut, and means on said nut for holding said key in contact with the part to which said washer and nut are applied.

3. In a nut-lock, the combination with a washer, of a movable engaging portion thereon, a nut, and a spring carried by said nut and adapted to engage said key for holding the same in contact with the part to which said washer and nut are applied.

4. In a lock-nut of the class described, the combination with a

washer, of a slidingly-mounted locking-key carried thereby but separate therefrom, a nut, and suitable connections between said nut and the locking-key, whereby the latter is adapted to be held in engagement with an object upon which the washer and the nut are placed, substantially as described.

5. In a lock-nut of the class described, the combination with a washer, of a slidingly-mounted locking-key carried by said washer but separate therefrom, a nut, and a connecting-strip between said nut and the locking-key, whereby the locking-key is held in engagement with an object upon which the nut and the washer are placed, substantially as described.

6. In a lock-nut of the class described, the combination with a washer, of a lockiog-key carried thereby, a locking-flange carried by said key, a nut and a connecting-strip carried by the nut and adapted to engage the locking-key, whereby the locking-flange carried by said key is adapted to be engaged with an object upon which the washer and the nut are placed, to prevent the nut and the washer being displaced therefrom, substantially as described.

7. In a lock-nut of the class described, the combination with a washer provided with a transverse slot, of a locking-key arranged within said slot and adapted to work therein, a nut, and a spring connecting-strip carried by the nut and suitably connected to said locking-key, said strip being adapted to force the locking-key into engagement with an object upon which the washer and the nut are placed, whereby the same are retained on said object and prevented being displaced therefrom, substantially as described.

8. In a lock-nut of the class described, the combination with a washer provided with a transverse slot having communication with the central opening of the washer, of a locking-key arranged within said slot and provided with a locking-flange adapted to be moved into and out of said transverse slot so as to enter and recede from the central opening of the washer, a nut, a spring connecting-strip carried by the nut and engaged by the locking-key, said strip being adapted to force the locking-flange of said key into engagement with an object upon which the nut and washer are placed, whereby the same are retained thereon and prevented being displaced therefrom, substantially as described.

9. In a nut-lock, the combination with a spindle or other analogous device, having a threaded end, of a washer adapted to fit thereon provided with a transverse slot extending therethrough and intersecting the bolt-opening therein, and with an elongated slot extending through the washer at right angles to said transverse slot, a key slidingly mounted in said transverse slot and provided with an aperture registering with the elongated slot in said washer, a nut adapted to engage the threaded end of said spindle, and a spring-strip secured to said nut whose free end extends through the elongated slot in said washer and the aperture in said key, as and for the purpose set forth.

10. The combination with a spindle or other analogous device having a threaded end and a peripheral groove or recess adjacent thereto, of a washer adapted to fit thereon provided with a transverse slot extending therethrough and intersecting the bolt-opening therein and with an elongated slot extending through the washer at right angles to said transverse slot, a key slidingly mounted in said transverse slot provided with an aperture registering with the elongated slot in said washer, and with a flange adapted to project inwardly within the bolt-opening in said washer and to engage the peripheral recess in said spindle, a nut adapted to engage the threaded end of said spindle, and a spring-strip carried by said nut whose free end extends through the elongated slot in said washer, and the aperture in said key, as and for the purpose set forth.

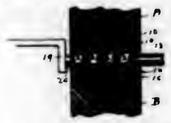
611,573. ALARM MAIL-BOX. CYRUS R. FUREY, Logansport, Ind., assignor of one-half to John H. Kornmann, same place. Filed Aug. 21, 1897. Serial No. 649,020. (No model.)



Claim.—1. The improved alarm mail-box comprising the body A, having the lateral extension or sounding-box B, the gong located in such extension, the wheel 10 arranged facing and close to said gong, and provided with a series of curved teeth, the spring 12 having its free end arranged for contact with the teeth and provided with a clapper adapted to strike the gong, the hinged box-lid, and a rod connecting it with that side of the wheel toward which its teeth are curved, as shown and described, to operate as specified.

2. The improved alarm mail-box, comprising the body A, having a hinged lid, and the lateral extension or side chamber, the bar attached to its side and curved laterally into such chamber, the gong attached to and supported by said bar, a spring secured alongside the bar and projecting upward beside the wheel, a clapper projecting from the spring into striking proximity to said gong, a toothed wheel journaled on or extending from the gong-support, and arranged vertically adjacent to the gong, and the connecting-rod pivoted to the lid and to the side of the wheel toward which the teeth of the latter curve, as shown and described.

611,574. DIE FOR AND METHOD OF SWAGING METALLIC BALLS. JOHN B. F. GAY, Fitchburg, Mass., assignor to the Fitchburg Steel Ball Company, same place. Filed Aug. 16, 1897. Serial No. 648,348. (No model.)



Claim.—1. A pair of dies for simultaneously swaging a series of metallic balls from a rod, each of said dies having a series of opposing oval recesses in the working faces of the dies arranged with their minor axes in alinement, each pair of adjacent recesses being separated by a dividing-wall presenting a wedge-shaped edge by which the rod is grooved and upset longitudinally, substantially as described.

2. A pair of dies for simultaneously swaging a series of metallic balls from a rod, each of said dies having a series of opposing oval recesses in the working faces of the dies, arranged with their minor axes in alinement and approximately equal to and with their major axes greater than the diameter of the ball to be swaged to provide for the lateral expansion of the ball as it is compressed between the dies, substantially as described.

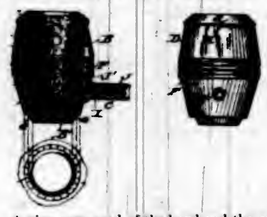
3. A pair of dies for simultaneously swaging a series of balls from a rod, each of said dies having a series of opposing oval recesses in the working faces of the dies, with their minor axes in alinement, each pair of adjacent recesses being separated by a wedge-shaped wall, by which a groove is formed in the rod, each of said wedge-shaped walls being slightly hollowed to form a lenticular space for the neck of the ball when the dies are brought together, substantially as described.

4. A pair of dies for simultaneously swaging a series of metallic balls from a rod, said dies having a series of opposing oval recesses in their working faces, with their minor axes in alinement and approximately equal to the diameter of a ball, with the bottom of each recess semicircular in the cross-section of its minor axes and curved in the cross-section of its major axes, whereby a spherical form is imparted to the ball by the rotation of the rod as it is successively compressed by the dies without the formation of a fin, substantially as described.

5. A pair of dies for simultaneously swaging a series of balls from a rod, each of said dies having a series of opposing oval recesses arranged in the working faces of the dies, with their minor axes in alinement and approximately equal to, and with their major axes greater than the diameter of the ball to be swaged, with each adjacent pair of recesses separated by a wedge-shaped wall slightly hollowed to present a curved edge, shorter than the major axes of the recesses, said recesses having curved bottoms, whereby a spherical shape is imparted to the balls, substantially as described.

6. The within-described method of simultaneously swaging a series of balls from a rod, and consisting in swaging a rod of less diameter than the required diameter of the balls to be swaged between a pair of dies, having a series of opposing oval recesses in their working faces, with their minor axes in alinement and approximately equal to, and with their major axes greater, than the required diameter of the swaged ball, said recesses having curved bottoms, with each pair of adjacent recesses in each die separated by a wedge-shaped wall slightly hollowed to form a lenticular space, when the dies are brought together, and rotating said rod a partial revolution between successive blows of the dies, whereby the rod is upset longitudinally by the formation of V-shaped grooves and expanded laterally into spaces provided by said oval recesses which shape the metal between the wedge-shaped walls into a spherical form, substantially as described.

611,575. TOBACCO-PIPE. THOMAS M. GILL, Mexico, Mo. Filed Dec. 20, 1897. Serial No. 662,598. (No model.)



Claim.—1. A pipe composed of the bowl and the casing formed in sections inclosing the bowl, having their inner meeting ends adjustably interlocked whereby their outer ends may be set toward and from each other and having at such outer ends portions engaging the bowl whereby the same may be clamped between the end portions of the casing-sections substantially as set forth.

2. A bowl-casing for pipes consisting of sections corrugated forming threads connecting at their meeting ends whereby they are detachably and adjustably connected and whereby the casing is strengthened, substantially as shown and described.

3. A pipe comprising the bowl or body, the casing therefor, the stem-tube, and the stem-casing binding the stem and having a tongue engaging the bowl-casing substantially as shown and described.

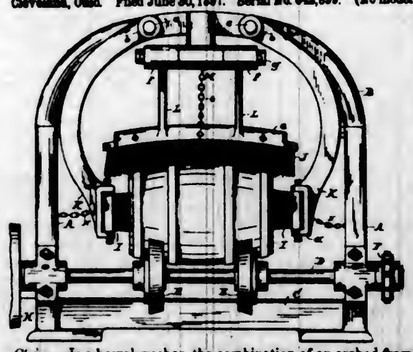
4. In a pipe, a bowl-casing combined with a stem-casing having a spring-tongue to engage the bowl-casing, substantially as described.

5. In a pipe, the combination of the bowl or lining having a stem-opening and the casing having a stem-opening registering with that of the bowl-opening and formed in sections adjustably interlocking with each other, substantially as described.

6. A pipe comprising the bowl or lining and the casing therefor formed in sections meeting at their ends midway between the ends of the bowl and having such ends threaded together, substantially as described.

7. The pipe herein described consisting of the bowl or lining, the stem-tube, the bowl-casing formed in sections interlocking substantially as described and provided at their ends with portions engaging the ends of the bowl whereby to clamp the same, and the stem-casing of spring material arranged at its outer end to bind or grip the stem and provided at its inner end with a spring-tongue to engage the bowl-casing, substantially as described.

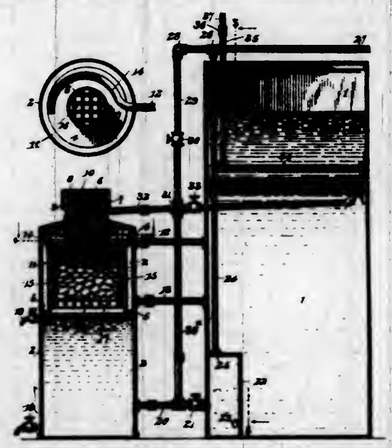
611,576. BARREL-SCRUBBING MACHINE. ANDREW GRIESEL, Cleveland, Ohio. Filed June 30, 1897. Serial No. 642,859. (No model.)



Claim.—In a barrel-washer, the combination of an arched frame, roller-supports for the barrel carried thereby, links pivoted to the top of the frame and flexibly connected with the sides and provided with brushes adapted to operate upon the ends of the barrel, an arm projecting from the frame, links pivoted thereto and flexibly connected to the top of the frame and provided with a brush adapted to operate upon the sides of the barrel, substantially as described.

611,577. ACETYLENE-GAS GENERATOR. ALVAN M. GRIFFIN, Marysville, Kans., assignor to the Griffin Gas Company, same place. Filed Oct. 9, 1897. Serial No. 654,664. (No model.)

Claim.—1. In an acetylene-gas generator, a main water-supply tank, a generating-tank arranged exterior to the water-tank, and having a water-feed-pipe connection therewith, a chemical-holding receptacle fitted within the upper portion of the generating-tank and smaller in size than the latter, said chemical-holding receptacle having a gas-chamber extension or neck projected through the top of the generating-tank, and having its lower edge meeting the inner sides of said generating-tank in a closed joint to form a closed and isolated water-jacket surrounding the sides and top portion of the receptacle, a gas delivery-pipe connection with said gas-chamber extension or neck, and separate water-circulating pipes connecting said water-jacket with the water-supply tank, substantially as set forth.



2. In an acetylene-gas generator, a main water-supply tank, a generating-tank having a feed-water-pipe connection with the water-tank, a gas-delivery pipe having a connection with the generating-tank, an interior vent-hood fitted within the water-tank over the connection of the feed-water pipe therewith, and a gas-vent pipe connected at one end to the vent-hood, and leading to a point exterior to the water-tank, substantially as set forth.

3. In an acetylene-gas generator, a main water-supply tank, a separate generating-tank arranged exterior to the water-tank and having a water-feed-pipe connection therewith, a closed condensing retort or cylinder supported within the water-tank and having a gas-service-pipe connection, a gas-delivery pipe leading from the exterior generating tank to the retort or cylinder within the water-tank, an interior vent-hood fitted within the water-tank over the connection of the water-feed pipe therewith, a gas-vent pipe connected at one end to the vent-hood and leading to a point exterior to the water-tank, and an air-vent pipe coupled with the exterior end of the gas-vent pipe, and also connected with said gas-delivery pipe leading from the generating-tank to the retort or cylinder, substantially as set forth.

4. In an acetylene-gas generator, a main water-supply tank, a generating-tank having a feed-pipe connection with the supply-tank, a chemical-receptacle fitted within the generating-tank and having a gas-chamber extension, a condensing retort or cylinder supported within the supply-tank, a gas-delivery pipe leading from said gas-chamber extension to the retort within the supply-tank, a drain-pipe connection between the water-feed pipe and said gas-delivery pipe, an air-vent pipe connected with said gas-delivery pipe, and a draw-off cock connected with the generating-tank immediately below the plane of the chemical-receptacle therein, substantially as set forth.

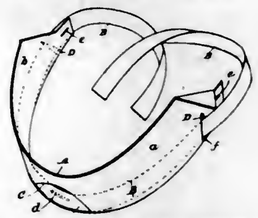
5. In an acetylene-gas generator, a main water-supply tank, a generating-tank having a feed-pipe connection with the supply-tank, a chemical-receptacle fitted within the generating-tank, a gas-delivery pipe having a connection with said chemical-receptacle, an interior vent-hood fitted within the lower end of the water-supply tank over the connection of the feed-pipe therewith, and a gas-vent pipe connected at one end to the upper side of the vent-hood and leading to a point exterior to the water-supply tank, substantially as set forth.

6. In an acetylene-gas generator, a generating-tank having water-supply and gas-delivery pipe connections therewith, and a chemical-supporting grate supported within the tank and comprising a plurality of intersecting flat sheet-metal strips arranged edgewise with their flat sides in vertical planes and assembled together to form vertically-disposed meshes or cells within which the water maintains a washing action, as it rises and falls, one series of said strips having their upper edges project above the plane of the corresponding edges of the other strips, substantially as set forth.

7. In an acetylene-gas generator, a main water-supply tank, a generating-tank having a feed-pipe connection with the water-tank, a gas-delivery pipe having a connection with said generating-tank, an interior vent-hood fitted within the water-tank over the connection of the feed-pipe therewith, a gas-vent pipe connected at one end to the vent-hood and leading to a point exterior to the water-tank, and a drain-pipe connection between the water-feed pipe and said gas-delivery pipe, substantially as set forth.

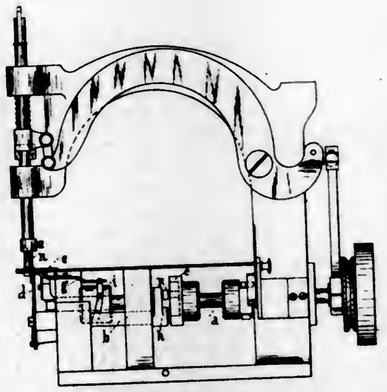
8. In an acetylene-gas generator, a main water-supply tank, a generating-tank having a feed-pipe connection with the supply-tank, a gas-delivery pipe having a connection with said generating-tank, an interior vent-hood fitted within the lower end of the water-supply tank over the connection of the feed-pipe therewith, and provided in its side and near the lower end thereof with a plurality of circulating-openings, and a gas-vent pipe connected at one end to the upper side of the vent-hood and leading to a point exterior to the water-supply tank, substantially as set forth.

611,578. TIE-HOLDING COLLAR. MATTHEW B. KENDRICK, Newport, Ky., assignor of one-half to Frank B. Rampe, Cincinnati, Ohio. Filed May 9, 1898. Serial No. 680,129. (No model.)



Claim.—The herein-described collar consisting of the inner and outer portions, and the intermediate lining portion folded longitudinally and stitched at one bottom edge to the inner portion and at the other bottom edge to the outer portion, said outer portion and its lining having a slit near each end thereof and being stitched to said inner portion between said slit and the adjacent end thereof and having the cut-away portion at the back or longitudinal center, said part which is cut out being stitched to said inner portion and its lining as a reinforcement, said inner portion and its lining being stitched together at the fold of said lining, substantially as shown and described.

611,579. SEWING-MACHINE. GUSTAV E. KOTT, Chemnitz, Germany. Filed Apr. 5, 1897. Serial No. 630,817. (No model.) Patented in Germany July 29, 1896, No. 91,630, and in England Aug. 7, 1896, No. 17,476.



Claim.—In a sewing-machine, a driving-shaft, carrying a cam-groove, an oscillating looper, a reciprocating needle, a lever as *g* pivotally supported at one end and carrying at the other end a spreader, and provided with means intermediate of the ends for engaging said cam-groove, whereby the lever is oscillated to operate the spreader; substantially as described.

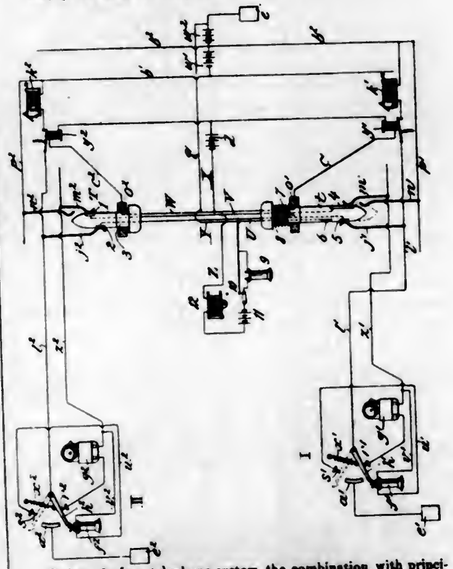
611,580. PROCESS OF TREATING GARBAGE AND FERTILIZERS OBTAINED THEREFROM. LUDWIG REISSMÜLLER, Newark, N. J., assignor, by mesne assignments, to the General American Reduction Company, New York, N. Y. Filed Oct. 20, 1896. Serial No. 609,410. (No specimens.)

Claim.—1. The process of treating garbage, consisting in, first, boiling the garbage until it is converted into a uniform fluid mass, in which the structure of the garbage has been destroyed and the greases rendered therefrom, and, second, separating the ingredients of said mass by centrifugal action according to their respective specific gravities, and removing substantially all of the greases from the mass.

2. The process of treating garbage, consisting in boiling the garbage with acid until converted into a uniform fluid mass in which the structure of the garbage has been destroyed and the greases rendered therefrom, and, second, separating the ingredients of said mass by centrifugal action according to their respective specific gravities, and removing substantially all of the greases from the mass.

3. The new grease-freed fertilizer, having available ammonia and resulting from the subjection of waste matters to the herein-described process, substantially as described.

611,581. TELEPHONE SYSTEM. GEORG RITTER, Stuttgart, Germany. Filed Feb. 23, 1895. Serial No. 539,521. (No model.) Patented in Germany Aug. 31, 1893, No. 78,755; in Sweden Aug. 13, 1894, No. 7,390; in France Aug. 18, 1894, No. 240,815; in Norway Aug. 20, 1894, No. 3,972; in England Aug. 23, 1894, No. 16,473; in Belgium Sept. 5, 1894, No. 111,634; in Hungary Oct. 17, 1894, No. 1,400, and in Austria Apr. 19, 1895, No. 1,378/45.



Claim.—1. In a telephone system, the combination, with principal and subordinate line conductors, a call-bell in the subordinate line conductor, a branch circuit around the call-bell and having one end connected to the subordinate conductor, a contact device connected to the ground, and a switch-lever arranged when in one position to connect the line conductors through the call-bell, when in its other position to connect said line conductors through the branch circuit, and when moving from one of said positions to the other to connect the principal line conductor with the ground through said contact device, of telephone apparatus in the branch circuit, a battery at the central station having one pole connected to the ground and the other pole connected to the principal line conductor, and an annunciator in said principal line conductor at said central station, substantially as set forth.

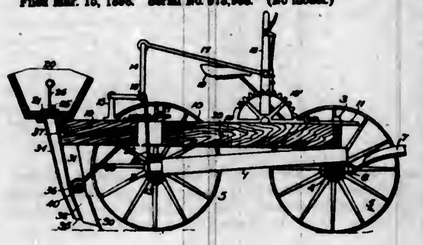
2. In a telephone system, the combination, with principal and subordinate line conductors, a call-bell in the subordinate line conductor, a branch circuit around said call-bell and having one end connected to the subordinate line conductor, a contact device connected to the ground, a switch-lever arranged when in one position, to connect the line conductors through the call-bell; when in its other position to connect said line conductors through the branch circuit, and, when moving from one position to the other, to connect the principal line conductor with the ground through said contact device, a telephone apparatus in the branch circuit, a battery at the central station having one pole grounded and the other pole connected to the principal line conductor, and an annunciator in said principal line conductor, of means at the central station for cutting out the annunciator, reversing the battery connection with the principal line conductor and closing the circuit over the subordinate line conductor.

3. In a telephone system, the combination, with principal and subordinate line conductors, a call-bell in the subordinate line conductor, a branch circuit around said call-bell and having one end connected to the subordinate line conductor, a contact device connected to the ground, a switch-lever arranged when in one position, to connect the line conductors through the call-bell; when in its other position to connect said line conductors through the branch circuit, and, when moving from one position to the other, to connect the principal line conductor with the ground through said contact device, a telephone apparatus in the branch circuit, a battery at the central station having one pole grounded and the other pole connected to the principal line conductor, and an annunciator in said principal line conductor, of means at the central station for cutting out the annunciator, reversing the battery connection with the principal line conductor and closing the circuit over the subordinate line conductor.

4. In a telephone system having a plurality of substations, the combination, with principal and subordinate line conductors between the central station and each substation, a call-bell in each subordinate line conductor at its respective substation, a branch circuit at each substation around its call-bell and having one end connected to its subordinate line conductor, a contact device at each substation connected to the ground, a switch-lever at each substation arranged when in one position to connect its respective principal and subordinate line conductors through the call-bell; when in its other position, to connect said line conductors through the respective branch circuits, and when moving from one position to the other to ground its principal line conductor through the contact device, telephone apparatus in each branch circuit, annunciators at the central station, each annunciator being connected to its respective principal line conductor and a battery at the central station, having one end grounded and its other end connected to all the principal line conductors, of means at the central station for connecting the line conductors from one substation with the corresponding line conductors from any other substation, and simultaneously cutting out the battery and the respective annunciator, whereby the substations are put in telephonic communication with each other.

5. In a telephone system having a plurality of substations, the combination, with principal and subordinate line conductors between the central station and each substation, a call-bell in each subordinate line conductor at its respective substation, a branch circuit at each substation around its call-bell and having one end connected to its subordinate line conductor, a contact device at each substation connected to the ground, a switch-lever at each substation arranged when in one position to connect its respective principal and subordinate line conductors through the call-bell; when in its other position to connect said line conductors through the respective branch circuit, and when moving from one position to the other to ground its principal line conductor through the contact device, telephone apparatus in each branch circuit, annunciators at the central station, each annunciator being connected to its respective principal line conductor, and a battery at the central station, having one end grounded and its other end connected to all the principal line conductors, o means at the central station for connecting the line conductors from one substation with the corresponding line conductors from any other substation, and simultaneously cutting out the battery and the respective annunciators, a telephone apparatus at the central station, and means for including said telephone in the circuit formed by the connected substation line conductors.

611,582. GRAIN-DRILL. JAMES TRAVIS, Jr., Cascade, Mont. Filed Mar. 15, 1898. Serial No. 673,968. (No model.)



Claim.—1. The combination with a wagon running-gear of ordinary construction; of a seeder supported by a main frame adapted to rest on said running gear and having an opening for the king-bolt, uprights detachably connected with the rear axle and projecting through said main frame, and connections between said uprights and frame, as and for the purpose set forth.

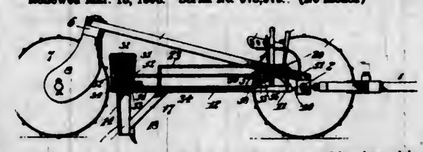
2. The combination with a wagon running-gear of ordinary construction; of a seeder supported by a main frame adapted to rest on said running-gear and having an opening for the king-bolt, uprights detachably connected with the rear axle and having pivots in their upper ends, such uprights projecting through said main frame, eyes on said frame, an L-shaped lever whose body is pivoted in said eyes and whose angle is connected to the pivots of the uprights, and a hand lever for adjusting the position of the L-shaped lever, as and for the purpose set forth.

3. In a seeder, the combination with the running-gear whose front axle carries the shafts or pole; of a main frame mounted on said gear and having an eye at its front end to which the draft-power is attached, and plows and seeders carried by said frame, as and for the purpose set forth.

4. In a grain-drill, the combination with the main frame slotted at its rear end; of a series of colters having L-shaped bodies and whose lower ends are deflected forward, their horizontal portions being seated in the slots of the frame, shares carried by their lower ends, a seedbox, drills leading therefrom, braces connecting the upright and horizontal portions of the colters, washers between their upright portions, and transverse bolts extending through the colters, washers, and lower ends of the braces, and also through the horizontal portions of the colters, the frame, and upper ends of the braces, substantially as described.

5. In a seed-planter, the combination with the seedbox having a perforated bottom, a perforated damper-plate adjustable thereover, and a comb-shaped agitator mounted therein with its back journaled in the ends of the box and its fingers depending therefrom and bent at their lower ends into horizontal tips standing over said plate, one end of said journal being cranked outside the box; of a trip-lever connected with said crank, a spring for moving the lever suddenly in one direction, and means for moving it in the other direction and releasing it, as and for the purpose set forth.

611,588. COMBINED SOD-CUTTER, HARROW, AND SEED-PLANTER. JAMES TRAVIS, Jr., Cascade, Mont. Filed Jan. 27, 1896. Renewed Mar. 15, 1898. Serial No. 673,979. (No model.)



Claim.—1. In a sod-cutter or the like, the combination with an axle having wheels at its opposite extremities, the main framework consisting of two beams bolted upon opposite ends of said axle and converging upward to the rear, a block secured beneath their meeting upper ends, a fork journaled therein, and a caster-wheel carried by the fork; of eyebolts in the rear of the axle, a gang of knife-bars pivotally supported by said eyebolts, knives depending from the rear ends of said bars, and means for raising and lowering the bars at will, as and for the purpose set forth.

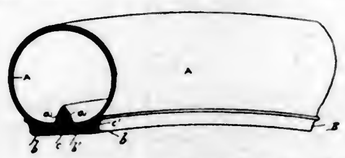
2. In a sod-cutter and seed-planter, the combination with an axle having wheels at its opposite extremities, the main framework consisting of two beams bolted upon opposite ends of said axle and converging upward to the rear, a block secured beneath their meeting upper ends, a fork journaled therein, and a caster-wheel carried by the fork; of a gang of knife-bars pivotally supported at their front ends by the axle and having depending knives at their rear ends and seed-drills in rear of the knives, means for raising and lowering said bars at will, a seedbox mounted on the rear end of the gang of knife-bars and extending across the same beneath said main framework, set-screws holding this box removably in place, seed-droppers within the box, and removable connections between said droppers and one of the main wheels, as and for the purpose set forth.

3. In a seed-planter, the combination with the main framework supported on solid wooden wheels, the seedbox having delivery-openings in its bottom, seed-drills below said openings, seed-droppers above said openings, and a plate connecting said droppers and extending beyond one end of the box; of a crank-shaft journaled in bearings just inside and radial of one main wheel, a pitman connecting its crank with said plate, a wheel splined on this shaft and having spurs engaging the inner face of the adjacent main wheel, a grooved hub on the spur-wheel, a fork engaging such groove, and a hand-lever for moving the fork, as and for the purpose set forth.

4. In a seed-planter, the combination with the main framework and drills, and a seedbox carried by the latter and having holes in its bottom communicating therewith: of a number of droppers within the box each consisting of a T-shaped body having the extremities of the cross-bar at its upper end journaled in the sides of the box and having its upright bar provided with a cross-pin at about the center of its length, a plate at its lower end moving over the hole in the box, a narrow plate extending longitudinally of the box and having holes surrounding the upright bars of said droppers just above and resting on their pins, and means for reciprocating this narrow plate from one of the main wheels of the machine, as and for the purpose set forth.

5. In a seed-planter, the combination with the main framework and drills, a hopper carried by the latter and having holes in its bottom communicating therewith, and a number of seed-droppers within the hopper each consisting of a T-shaped body having the extremities of its cross-bar journaled in the sides of the hopper and carrying a narrow plate at its lower end moving over one of the holes in the bottom thereof, of a narrow plate moving longitudinally through the hopper and having holes embracing the bodies of said droppers, a crank-shaft whose crank is connected with said plate, a spur-wheel splined on this shaft with its spurs engaging one of the main wheels of the machine, and a clutch and clutch lever for adjusting the spur-wheel on said shaft and radially of said main wheel, as and for the purpose set forth.

611,584. PNEUMATIC TIRE. JOHN T. TRENCH, Kenmare, Ireland, assignor to the Trench Tubeless Tyre Company, Limited, London, England. Filed May 11, 1896. Serial No. 591,026. (No model.)



Claim.—1. The combination, with a flanged wheel-rim, of a single-tube pneumatic tire divided on its under side and provided with heels *b* for engaging with the flanges of the rim, and having inwardly-projecting lips *a* wedge-shaped in cross-section, the meeting surfaces of the said lips being arranged at an angle to each other when their points only are in contact and becoming radial of the tube when pressed together, thereby sealing the joint and securing the said heels in the rim before inflation substantially as set forth.

2. The combination, with a wheel-rim provided with flanges at its side edges; of a single-tube pneumatic tire divided on its under side and provided with tread portions *b'* for bearing on the wheel-rim, a heel *b* at one end of each tread portion for bearing against one of the rim-flanges, and a wedge shaped inwardly and upwardly projecting lip at the other end of each tread portion, said lips operating to seal the joint and lock the tire in the rim before inflation, substantially as set forth.

611,585. PNEUMATIC MATTRESS. JOHN R. ANDRES, Denver, Colo. Filed Nov. 23, 1897. Serial No. 659,567. (No model.)

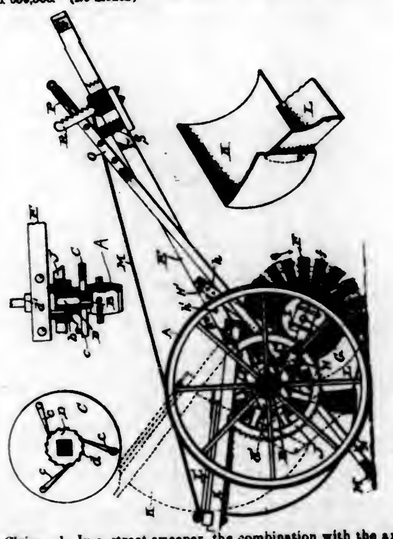


Claim.—1. In a ventilated pneumatic mattress, the combination with the fabric comprising the top and bottom of the mattress, of a piece of fabric located between the top and bottom parts and inclosed thereby, its edges being free from the outer mattress fabric, apertures being formed in the outer mattress fabric and the interposed piece of fabric, and ventilating-eyes inserted in said apertures and fastened to the said parts.

2. In a pneumatic mattress, the combination with the outer mattress fabric, of crossed strips interposed between the top and bottom of the mattress, apertures being formed in the top and bottom parts and the interposed strips at the intersection of the latter, and ventilating eyes or rings inserted in said openings and fastened to the said parts.

3. In a pneumatic mattress, the combination with the fabric comprising the top and bottom of the mattress, of a piece of fabric located between the top and bottom parts, its edges being free from the outer mattress fabric, and suitable fastening devices passed through the top, bottom and intermediate parts whereby the said parts are securely fastened together.

611,586. STREET-SWEEPER. MARLON B. ATKINSON, Washington, D. C., assignor of three-fourths to LAWRENCE S. NICOLAI, Charles D. Nicolai, and John Fitzmorris, same place. Filed Nov. 22, 1897. Serial No. 659,500. (No model.)



Claim.—1. In a street-sweeper, the combination with the axle, the driving and supporting wheels loosely mounted thereon, and the pawl and-ratchet connections between the said wheels and the axle, of the brush-supporting arms loosely hung on the axle and extending downwardly and rearwardly therefrom, the brush journaled therein, the gear connection between the axle and the brush-shaft the handle-bars pivoted on the axle, and connections between the handle bars and the brush-supporting arms, substantially as specified.

2. In a street sweeper, the combination with the axle, the supporting and drive wheels, the handle-bars, and the brush, of the transverse scraper-blade in advance of the brush, and the pivoted levers which carry the said blade, substantially as specified.

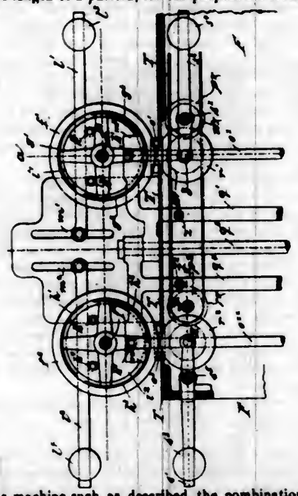
3. In a street-sweeper, the combination with the axle, the supporting and drive wheels, the handle-bars, and the brush, of the transverse scraper-blade in advance of the brush, the pivoted levers which carry the said blade, said levers extending upwardly and back along the handle bars and united at their upper end portions, and a spring arranged to exert a downward pressure upon said blade, substantially as specified.

4. The herein-described street-sweeper, consisting essentially of an axle, supporting and drive wheels loosely mounted thereon and carrying pawls, sleeves fixed to the axle and having pawl-teeth which are engaged by said pawls upon the forward movement of the machine, the handle-bars pivotally engaging the said sleeves, the rearwardly and downwardly extending brush-supporting arms, the brush-shaft journaled therein, the brush, the adjustable bars which connect the handle-bars to the brush-supporting arms, the gear connection between the axle and the brush-shaft, the dirt-receptacle pivotally supported in front of the brush, and the shoe pivoted in the lower rear portion of the receptacle, substantially as specified.

5. The herein-described street-sweeper, consisting essentially of an axle, supporting and drive wheels loosely mounted thereon and carrying pawls, sleeves fixed to the axle and having pawl-teeth which are engaged by said pawls upon the forward movement of the machine, the handle-bars pivotally engaging the said sleeves, the rearwardly and downwardly extending brush-supporting arms, the brush-shaft jobrnaled therein, the brush, the adjustable bars which connect the handle-bars to the brush-supporting arms, the gear connection between the axle and the brush-shaft, the dirt-receptacle pivotally supported in front of the brush, and the shoe pivoted in the lower rear portion of the said receptacle, together with a scraper-blade working in advance of the brush, and means whereby the said blade may be thrown into and out of operation, substantially as specified.

611,587. STAVE-JOINTING MACHINE. CHARLES R. BRATT, Stockholm, Sweden, assignor to the Bratt's Stave and Cask Syndicate, Limited, London, England. Filed Feb. 17, 1897. Serial No. 623,571. (No model.) Patented in England Nov. 16, 1896, No. 26,780.

Claim.—1. In a machine such as described, the combination with a pair of cutters and a revoluble pattern-wheel adapted to receive and support a plurality of patterns; of setting appliances adapted to set the pattern-wheel at each partial revolution equal to or about equal to the length of a pattern, for the purpose set forth.



2. In a machine such as described, the combination with two revoluble pattern-wheels, of a swinging cutter-shaft on each side of said wheels, a bearing for each of said shafts, a spindle to which the cutter-shaft bearings on one side of the pattern-wheels are pivoted and a second spindle to which the cutter-shaft bearings on the opposite side of said wheels are pivoted, for the purpose set forth.

3. In a machine such as described, the combination with two revoluble pattern-wheels, of a swinging cutter-shaft on each side of said wheels, a bearing for each of said shafts, a spindle to which the cutter-shaft bearings on one side of the pattern-wheels are pivoted, a second spindle to which the cutter-shaft bearings on the opposite side of said wheels are pivoted, and an adjustable resilient coupling for oppositely-arranged cutter-shaft bearings, for the purpose set forth.

4. In a machine such as described, the combination with a revoluble pattern-wheel adapted to receive and support a plurality of patterns and provided with laterally-projecting pins equal in number to the number of patterns on the wheel; of a setting-lever in the path of said pins, the latter so disposed on the pattern-wheel as to set the same whenever said wheel has revolved a distance equal or substantially equal to the length of a pattern, for the purpose set forth.

5. In a machine such as described, the combination with a revoluble pattern-wheel adapted to receive and support a plurality of patterns and provided with laterally-projecting pins equal in number to the number of patterns carried by the wheel; of a one-armed weighted lever in the path of said pins the latter so disposed on the pattern-wheel as to set the same when said lever bears on two of the pins, substantially as and for the purpose set forth.

6. The combination with the cutter shafts $o^{\times}$ $o^{\times}$, the vibratory bearing-standards q' q^4 for said shafts, the cutter-shafts $o^{\times\times}$ $o^{\times\times}$ and their I-shaped vibratory bearing-standards q^3 q^3; of the fixed standards q^3 q^3 to which the bearing-standards q' q^4 and the like standards q^3 q^3 are respectively pivoted, substantially as and for the purpose set forth.

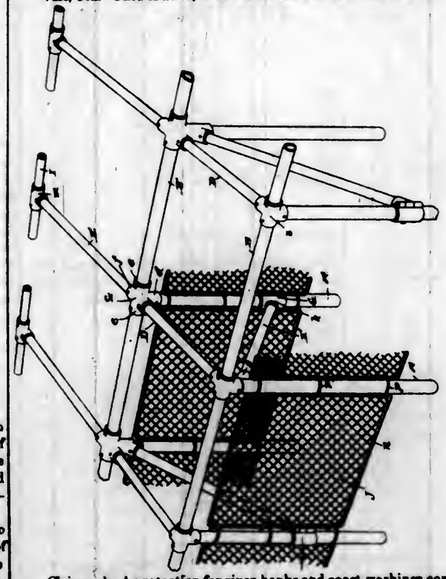
7. The combination with the cutter-shafts $o^{\times}$ $o^{\times}$, the vibratory bearing-standards q' q^4 for said shafts, the cutter-shafts $o^{\times\times}$ $o^{\times\times}$ and their I-shaped vibratory bearing-standards q^3 q^3; of the fixed standards q^3 q^3 to which the bearing-standards q' q^4 and the like standards q^3 q^3 are respectively pivoted, the coupling-bolts s' s^3, and a coiled spring thereon between the head thereof and one of the bearing-standards, said bolts coupling oppositely-arranged standards in pairs, substantially as and for the purpose set forth.

8. The combination with a vibratory cutter-shaft and a swinging bearing therefor, a crank-pin extending through said bearing proximate to the cutter on the shaft, and a roller loosely mounted on the crank of said pin; of a revoluble pattern-wheel the pattern whereof moves in contact with said roller, for the purpose set forth.

9. The combination with a revoluble pattern-wheel, and a feed-wheel cooperating therewith to feed a stave between them; of a weighted lever on one end of which said feed-wheel is mounted, and a suitable driving mechanism for said wheel.

10. The combination with a revoluble pattern-wheel and a feed-wheel cooperating therewith to feed a stave between them; of a weighted lever on one end of which said feed-wheel is mounted, said lever adjustable lengthwise of its fulcrum-spindle, and a suitable driving mechanism for said wheel.

611,588. PROTECTING SHORES. SAMUEL W. BROOKS, Brownsville, Tex. Filed Mar. 31, 1898. Serial No. 675,949. (No model.)



Claim.—1. A protection for river-banks and coast-washings comprising a frame made up of piles, rails connecting the piles and braces connected with the piles and having anchors, a grillage secured to the piles, and a suitable filling, substantially as specified.

2. A frame composed of pipe or tubing and comprising piles filled with cement or the like, rails connecting the piles at their upper ends, cross-ties connecting the rails and piles, diagonal braces also connecting said piles, bank-braces secured at one end to the rails and carrying anchors at their opposite ends, in combination with a grillage secured to the piles and a suitable filling on the inside of the grillage, substantially as specified.

3. The combination with two vertical rows of piles; of diagonal braces for said piles, and the hinged cuff adapted to clamp the piles and provided with an obliquely-disposed socket to receive the brace, substantially as specified.

4. In a protection for river-banks and coast-washings, the combination with piles composed of pipe or tubing and having a filling of cement or the like; of a grillage formed in sections and secured to the piles, substantially as specified.

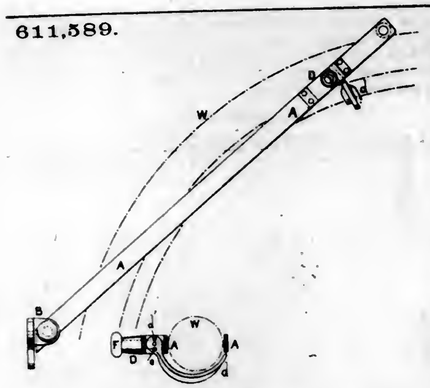
5. A protection for river-banks and coast-washings made up of piles, rails and cross-ties connecting the piles, and extended braces E connected with the piles and having anchors grillage-sections interposed between and connected to the piles, and a suitable filling on the inside of the grillage, substantially as specified.

611,589. SUPPORTING AND LOCKING APPLIANCE FOR BICYCLES, &c. GEORGE BROWNING, Bootle, England, assignor of one-third to Joseph Hiram Parker, Waterfoot, England. Filed Aug. 9, 1897. Serial No. 647,641. (No model.)

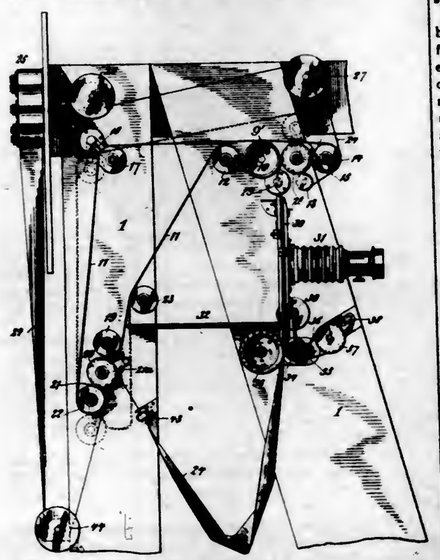
Claim.—1. In a supporting and locking appliance for securing cycles the combination with the pivoted arm A to engage the wheel and latch-lever *d* to embrace the under side, of the locking-bolt *c*, the rotatable cam G for controlling the bolt, a casing provided with the slot M to receive a coin, a pivoted tumbling-lever K to engage the cam G and the pivoted lever N which holds the coin until the cam G is moved.

2. In a supporting and locking appliance for securing cycles the combination with the pivoted arm A, of the latch-lever *d* and lock D, the slotted coin-receiver M, the pivoted tumbler-lever K, the pivoted discharge-lever N, and the receptacle to receive the coins, substantially as described.

611,589.



611,590. WEB-FEEDING MECHANISM. HERMAN CASLER, Canastota, N. Y., assignor to the American Mutoscope Company, New York, N. Y. Filed Dec. 10, 1896. Serial No. 615,189. (No model.)



Claim.—1. In a web-feeding mechanism, the combination, with main feeding and take-up pulleys, a single feed-belt passing around said pulleys, and means for driving the belt and pulleys, of means for passing the web between the belt and said main feeding and take-up pulleys, whereby the web is fed by friction, substantially as described.

2. In a web-feeding mechanism, the combination, with main feeding and take-up pulleys, a single feed-belt passing around said pulleys, the outer surface of said belt being in proximity to said pulleys guides for the belt, and means for driving said belt and pulleys, of means for passing the web between the belt and said main feeding and take-up pulleys, whereby the web is fed by friction, substantially as described.

3. In a web feeding mechanism, the combination, with a feeding-pulley, a feed-belt passing around said pulley the outer surface of said belt being in proximity to said pulley, suitable guide-pulleys for the belt, and means for driving said belt and pulleys, of web-guiding devices arranged to cause the web to pass over the belt and one of the guide-pulleys, and then between said belt and the feeding-pulley, whereby the web is fed by friction, and a movable support for the pulley over which the web passes, arranged to permit said pulley to be moved out of the path of the web, thereby permitting more direct threading thereof, substantially as described.

4. In a web-employing apparatus, the combination, with the web, of main feeding and take-up mechanisms, each having a plurality of pulleys around and over which the web passes in tortuous course, and a driving-belt common to said main feeding and take-up mechanisms and likewise passing around and over the pulleys thereof in tortuous course, thereby being brought into driving contact with the web, and means for driving said belt, substantially as described.

5. In a web-feeding mechanism, the combination, with the web, a series of pulleys around and over which the web passes in tortuous course, a belt likewise passing around and over the pulleys in tortuous course, whereby it is brought into driving contact with the web, and means for driving said belt, of a movable support for one of said pulleys in the path of the web and about which both web and belt pass, said support being arranged to permit said pulley to be moved out of the path of the web and in the direction of pull of the belt, thereby slackening the belt and permitting more direct threading of the web, substantially as described.

6. In a consecutive-view apparatus, the combination, with a flexible view-carrying strip, main feeding and take-up mechanisms for feeding the strip to and taking it from the field of the apparatus, each having pulleys around and over which the strip passes in tortuous course, a single driving-belt for said main feeding and take-up mechanisms, likewise passing in tortuous course around and over said pulleys, whereby it is brought into driving contact with the strip, and means for driving said belt, of movable supports for the pulleys of said mechanisms in the path of the strip and about which said strip passes, arranged to permit said pulleys to be moved out of the path of the strip and in the direction of pull of the belt, thereby slackening the belt and permitting direct threading of the strip, substantially as described.

7. In a consecutive-view apparatus, the combination, with a flexible view-carrying strip, main feeding and take-up mechanisms for feeding the strip to and taking it from the field of the apparatus, each having pulleys around and over which the strip passes in tortuous course, a single driving-belt for said main feeding and take-up mechanisms, likewise passing in tortuous course around and over said pulleys, whereby it is brought into driving contact with the strip, and means for driving said belt, of an auxiliary intermittently-acting feeding mechanism for feeding the strip through the field of the apparatus, substantially as described.

8. The combination in a web-employing apparatus, of a main feeding mechanism, an intermittently-acting auxiliary frictional feeding mechanism, which runs at a constant speed, and means for changing the speed of the main feeding mechanism with respect to the speed of the auxiliary feeding mechanism, substantially as described.

9. In a consecutive-view apparatus, the combination, with a picture-carrying strip, and a continuously-acting main feeding mechanism for feeding the strip to the field of the apparatus, of an intermittently-acting auxiliary frictional feeding mechanism for feeding the strip through the field of the apparatus, which operates at a constant speed, and tends to feed the strip faster than the main feeding mechanism, and means for varying the speed of the main feeding mechanism with respect to the speed of the auxiliary feeding mechanism, substantially as described.

10. In a consecutive-view apparatus, the combination, with continuously acting main feeding and take-up mechanism for feeding a flexible strip to and taking it from the field of view, comprising feeding-pulleys, a single feed-belt passing around said pulleys, means for passing the strip between the belt and feeding-pulleys, whereby the strip is fed forward and taken up by friction, and means for driving the belt and pulleys, of an intermittently-acting auxiliary feeding mechanism for feeding said strip intermittently through said field, comprising two coacting and continuously-revolving rollers between which the strip passes, and which press against the strip, one of the rollers having a portion of its face cut away so as to have the strip free during a portion of the revolution of said roller, substantially as described.

611,591. CONSECUTIVE-VIEW APPARATUS. HERMAN CASLER, Canastota, N. Y., assignor to the American Mutoscope Company, New York, N. Y. Filed Dec. 10, 1896. Serial No. 615,190. (No model.)

Claim.—1. In a consecutive-view apparatus, the combination, with supply and winding reels, and feeding mechanism for drawing a flexible strip from the supply-reel, passing it through the field of the apparatus, and delivering it to the winding-reel, of a worm-wheel having driving connection with the winding-reel, a worm meshing therewith, a shaft to which said worm is rigidly secured carrying a friction-wheel contacting with a friction-disk, said shaft being free to move in the direction of its length, and means for rotating the friction-disk, substantially as described.

2. In a consecutive-view apparatus, the combination, with supply and winding reels, and feeding mechanism for drawing a flexible strip from the supply-reel, feeding it intermittently through the field of the apparatus, and delivering it to the winding-reel, of a worm-wheel having driving connection with the winding-reel, a worm meshing therewith, a shaft to which said worm is rigidly secured carrying a friction-wheel contacting with a friction-disk, said shaft being free to move in the direction of its length, and means for rotating the friction-disk, substantially as described.

3. In a consecutive-view apparatus, the combination, with supply and winding reels, and feeding mechanism for drawing a flexible strip from the supply-reel, feeding it intermittently through the field of the apparatus, and delivering it to the winding-reel, of a worm-wheel having driving connection with the winding-reel, a worm meshing therewith, a shaft to which said worm is rigidly secured carrying a friction-wheel contacting with a friction-disk, said shaft being free to move in the direction of its length, means for rotating the friction-disk, and means for communicating motion from said disk to the main feeding mechanism, substantially as described.

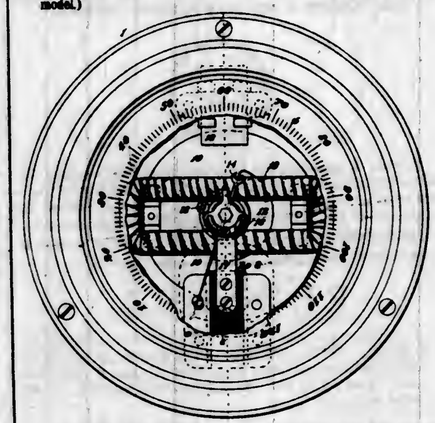
4. In a consecutive-view apparatus, the combination, with supply and winding reels main feeding and take-up mechanisms for drawing the film from the supply-reel and delivering it to the winding-reel, and an auxiliary intermittently-acting feeding mechanism for feeding the film intermittently through the field of the apparatus, of a revolubly-mounted shaft carrying a friction-disk, means for rotating said shaft, means for driving the auxiliary intermittently-acting feeding mechanism from said shaft, friction-wheels contacting with said friction-disk and mounted upon two revolubly-mounted and longitudinally-movable shafts, worms upon said shafts engaging worm-wheels connected with the winding-reel, and a driving member of the main feeding and take-up mechanisms, respectively, the latter of said worms being rigidly secured to its shaft and means for adjusting longitudinally the position of that friction-wheel by which said main feeding and take-up mechanisms are driven, substantially as described.

5. In a consecutive-view apparatus, the combination, with a friction-disk, feeding mechanism, and means for transmitting variable motion to the feeding mechanism from the disk, of a winding-reel, a worm-wheel on the axis of said reel, a worm meshing therewith, and rigidly secured to a longitudinally movable shaft, a friction-wheel on said shaft and coacting with said friction disk, and means for continuously exerting a force tending to give said shaft an endwise motion of translation away from the center of the friction-disk, substantially as described.

6. The combination with a winding-drum having a segment of its circumference hinged to the adjacent portion thereof, and an adjustable latch for forcing said segment away from the center of the drum, and of a flexible circular envelop for said drum of such size that it will slip off when the hinged section is released, but will be locked in place when said segment is forced out by the latch, substantially as described.

7. The combination, with a winding drum having a variable periphery, of a flexible circular envelop for said drum of such size that it will slip off from the drum when the periphery thereof is reduced, but is held in place when the periphery is increased, substantially as described.

611,592. ALTERNATING-CURRENT VOLTMETER. HARRY P. DAVIS, Pittsburg, and FRANK CONRAD, Wilkinsburg, Pa., assignors to the Westinghouse Electric and Manufacturing Company, of Pennsylvania. Original application filed May 7, 1896, Serial No. 590,035. Divided and this application filed June 18, 1898. Serial No. 683,840. (No model.)



Claim.—1. In an electrical measuring instrument, the combination with a closed-circuit movable member and means for indicating the extent of its movement against an opposing force, of an actuating-magnet and a non-inductive resistance having a low-temperature coefficient and connected in series with the main coil of the actuating-magnet to compensate for changes in current frequency.

2. In a voltmeter for alternating-current circuits, the combination with a closed-circuit armature, and means for indicating the extent of its movement against an opposing force, of primary and secondary actuating-coils and a non-inductive resistance having a low-temperature coefficient and connected in series with the primary actuating-coil to compensate for changes in current frequency.

3. In a voltmeter for alternating-current circuits, the combination with a closed-circuit armature and means for indicating the extent of its movement against an opposing force, of primary and secondary actuating-coils and a demagnetizing secoodary coil having a high-temperature coefficient and compensating for changes in temperature.

4. In an electrical measuring instrument, the combination with a closed-circuit movable member, means for indicating the extent of its movement, and an actuating-magnet having a primary coil, one or more secondary actuating-coils and a demagnetizing-coil having a high-temperature coefficient, of a non-inductive resistance having a low-temperature coefficient and connected in series with the primary actuating-coil to compensate for changes in current frequency.

611,598. MEANS FOR CLOSING SHOT-HOLES IN WAR-SHIPS. ISAIAH MACDONALD, San Francisco, Cal. Filed Aug. 23, 1897. Serial No. 649,268. (No model.)



Claim.—1. A ship having its sides provided with inner and outer walls, and a stuffing therebetween of loose unspun fibrous material and a sufficient proportion of tar intermingled therewith to flow when the side of the ship is pierced and to carry the fibrous material into the hole to close the same, the inner and outer walls being spaced sufficiently apart to permit the tar and fibrous material carried thereby to flow between said walls, substantially as described.

2. A stuffing for the sides of ships, consisting of loose fibrous material, tar, and balls of wood or the like material, substantially as specified.

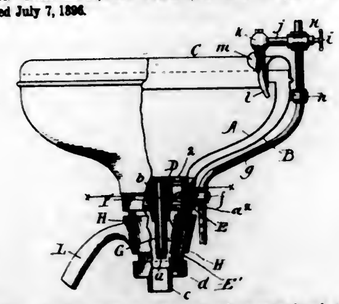
611,594. PNEUMATIC TIRE. ELEAZER KEMPSHALL, Newton, Mass. Filed June 15, 1898. Serial No. 683,483. (No model.)



Claim.—A pneumatic tire comprising an air-tube, a sponge-rubber cushion, a suitable covering for the said tube and cushion, and a strip of non-extensible air-proof material interposed between the cushion and air-tube and adapted to prevent the compression of the cells of the cushion by the pressure of air in the tube.

REISSUES.

11,696. DENTAL SPITTOON. FRANK HURLBUT, Chicago, Ill., assignor, by direct and mesne assignments, to Albert C. Clark, same place. Filed Mar. 19, 1898. Serial No. 674,548. Original No. 563,664, dated July 7, 1896.



Claim.—1. In a spittoon, an inner and an outer bowl, the inner bowl being revoluble; and a water-injector adapted to direct a jet of water against said revoluble bowl to revolve the same.

2. A dental spittoon having an outer and an inner bowl, the inner bowl being revoluble within the outer bowl; a water-injector adapted to throw a stream of water against the inner surface of the inner bowl; and an adjustable fixture carrying the injector by which it is made removable from the inner bowl.

3. In a dental spittoon, an inner bowl and an outer bowl, the inner bowl being revoluble; a water-injector held to direct water against the inner surface of the inner bowl to revolve the same; and a fixture which holds the water-injector, the water-injector being adjustable in the fixture to change the direction of the stream which it directs against the revoluble bowl to modify the speed of the revolution of the bowl.

4. In a dental spittoon, an outer and an inner bowl, the inner bowl being revoluble in the outer bowl; the water-injector for directing the stream of water against the surface of the inner bowl to revolve the same; and a removable cap placed over the upper edges of the two bowls secured to the outer bowl.

5. In a dental spittoon, the combination of an outer bowl and an inner bowl having a space located between them and open at its top and bottom, the inner bowl supported at its bottom and having an always-open outlet or drain, a removable cap arranged above the upper edges of the two bowls and over said space and means for supplying water to the inner surface of the inner bowl and continually maintaining a thin sheet of water upon such inner surface.

6. In a dental spittoon, the combination of an outer bowl and an inner bowl having a space located between them and open at its top and bottom, the inner bowl supported at its bottom and having an always open outlet or drain, means for supplying water to the inner surface of the inner bowl and continually maintaining a thin sheet of water upon such inner surface and a removable cap arranged above the upper edges of the two bowls but providing communication between the inner bowl and said space.

7. In a dental spittoon, the combination of an outer bowl and an inner bowl having a normal air-space located between them and open at its top and bottom, the inner bowl supported at its bottom and having an always-open outlet at its lowest point, means for supplying water to the inner surface of the inner bowl and continually maintaining a thin sheet of water upon such inner surface and a cap secured to the outer bowl, out of contact with the inner bowl and adapted to cover the space between the bowls but leaving a space between it and the top of the inner bowl.

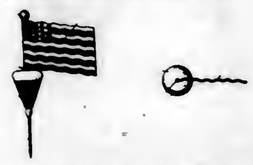
8. In a spittoon, a bowl A with a perforated bottom D; a centrally-disposed downward extension D' adapted to receive a spindle G; an annular projection a'' inclosing the upper end of the cylindrical post F; and a post F forming a bearing for the said spindle G.

9. In a spittoon, the upright waste-pipe *e*, and an enlargement E'; a perforated top upon the said enlargement; a hub J in the said top; a hollow cylindrical post F in the said hub; a spindle G mounted in the said post, carrying the bowl A; and a chamber formed by an annular rim E upon the said enlargement E'.

10. In a spittoon, the waste-pipe *e*; and an enlargement E'; a perforated top upon the said enlargement; a hub J in the said top; a hollow cylindrical post F in the said hub; a spindle G mounted in said post carrying the bowl A; a chamber formed by an annular rim E upon the said enlargement E'; an outer bowl B mounted upon the rim E, so that the annular space between the said bowls communicates with the said chamber.

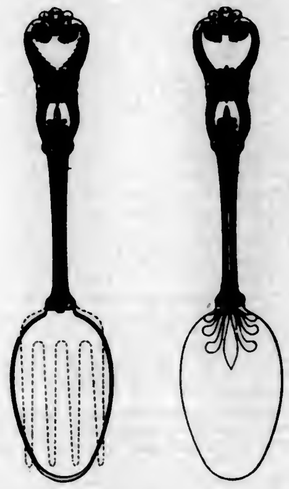
DESIGNS.

29,402. SCARF-PIN. JUDAH POLAK, New York, N. Y. Filed May 10, 1898. Serial No. 680,331. Term of patent 3½ years.



Claim.—The design for a scarf-pin herein shown and described.

29,408. SPOON, FORK, OR SIMILAR ARTICLE. PAULDING FARNHAM, Great Neck, N. Y., assignor to the Tiffany & Company, New York, N. Y. Filed Mar 5, 1898. Serial No. 672,758. Term of patent 7 years.

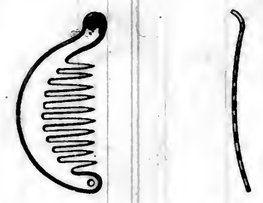


Claim.—1. In a design for a spoon, fork or similar article, the front face A, substantially as shown.

2. In a design for a spoon, fork or similar article, the rear face B, substantially as shown.

3. The design for a spoon, fork or similar article, consisting of the faces A and B, substantially as shown.

29,404. MEMBER OF COMBS. ROBERT FRED. TOENTERMANN, Munich, Germany. Filed July 16, 1898. Serial No. 686,153. Term of patent 14 years.



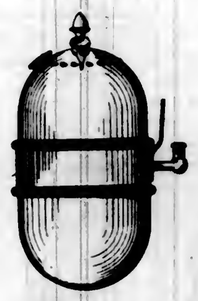
Claim.—The design for a member of a comb herein shown and described.

29,405. BELT HOOK OR STAPLE. GEORGE W. WEBB, Ilion, N. Y. Filed Aug. 30, 1898. Serial No. 689,873. Term of patent 14 years.



Claim.—The design for a belt hook or staple, substantially as herein shown and described.

29,406. LAMP-BODY. FREDERICK L. WHITE, Waterbury, Conn., assignor to George H. Clowes, same place. Filed July 30, 1898. Serial No. 687,365. Term of patent 14 years.



Claim.—The design for a lamp-body, substantially as shown and described.

29,407. LAMP-BRACKET. WILLIAM F. GORLIN, Waterbury, Conn., assignor to George H. Clowes, same place. Filed Mar. 14, 1898. Serial No. 673,871. Term of patent 14 years.



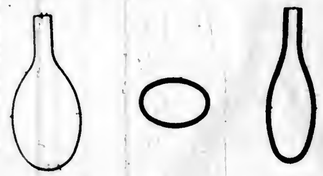
Claim.—The design for a bracket-arm, substantially as herein shown and described.

29,408. PESSARY. WILLIAM C. HALLECK, New York, N. Y., assignor of one-half to Albert G. Kalb, same place. Filed Aug. 23, 1898. Serial No. 689,524. Term of patent 7 years.



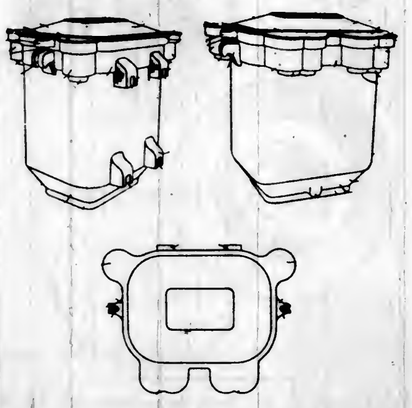
Claim.—The design for a pessary substantially as herein shown and described.

29,409. SYRINGE-BULB. ARTHUR BENJAMIN CRUICKSHANK, London, England, assignor to himself and John Frace, San Francisco, Cal. Filed Aug. 30, 1898. Serial No. 689,875. Term of patent 14 years.



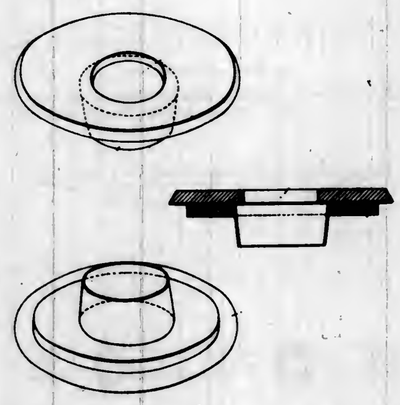
Claim.—The design for a syringe-bulb, substantially as described and shown.

29,410. TRANSFORMER-CASE. FREDERICK C. SUTTER, Swissvale, Pa. Filed Aug. 6, 1898. Serial No. 687,992. Term of patent 14 years.



Claim.—The design for a transformer-case, as herein shown and described.

29,411. COVER FOR ICE-CREAM TUBS. ARTHUR H. IVES, Minneapolis, Minn. Filed June 20, 1898. Serial No. 684,005. Term of patent 7 years.



Claim.—The design for a cover for ice-cream tubs, substantially as shown and described.

29,412. CLOTHES-POUNDER. HERMAN D. CROCKER, Alvin, Tex. Filed Aug. 23, 1898. Serial No. 689,358. Term of patent 14 years.



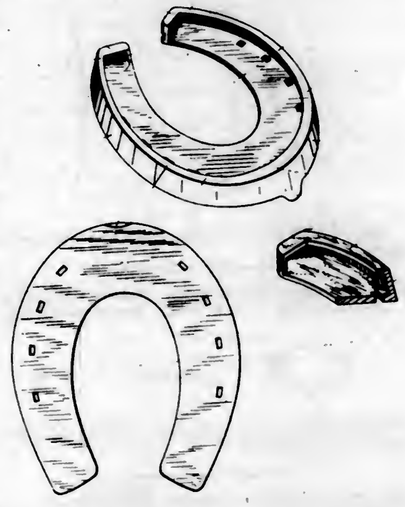
Claim.—The design for a clothes-pounder, herein shown and described.

29,413. SEAL. EMIL TYDEN, Hastings, Mich. Filed Aug. 10, 1898. Serial No. 688,306. Term of patent 14 years.



Claim.—The design for a seal herein shown and described.

29,414. HORSESHOE. HENRY PAAR, Canton, Ohio. Filed Aug. 12, 1898. Serial No. 688,453. Term of patent 3½ years.



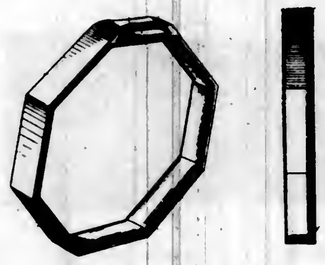
Claim.—The design for a horseshoe as herein shown and described.

29,415. STIRRUP. FREDERICK W. BARTS, Dallas, Tex., assignor to W. C. Padgitt and J. D. Padgitt, same place. Filed Aug. 31, 1898. Serial No. 689,957. Term of patent 14 years.



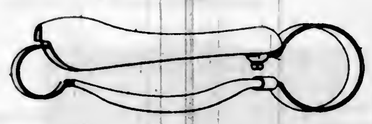
Claim.—The design for a stirrup herein shown and described.

29,416. STIRRUP. JOHN C. BURTON, Mitchellville, Tenn. Filed Feb. 28, 1898. Serial No. 672,104. Term of patent 7 years.



Claim.—The design for a stirrup, substantially as shown and described.

29,417. VELOCIPEDE-SADDLE. THOMAS J. KIRKPATRICK, Springfield, Ohio. Filed Feb. 21, 1898. Serial No. 590,262. Term of patent 14 years.



Claim.—The design for a velocipede-saddle substantially as shown and described.

29,418. VEHICLE-SPRING. HENRY A. MUCKLE, St. Paul, Minn. Filed July 12, 1898. Serial No. 685,790. Term of patent 14 years.



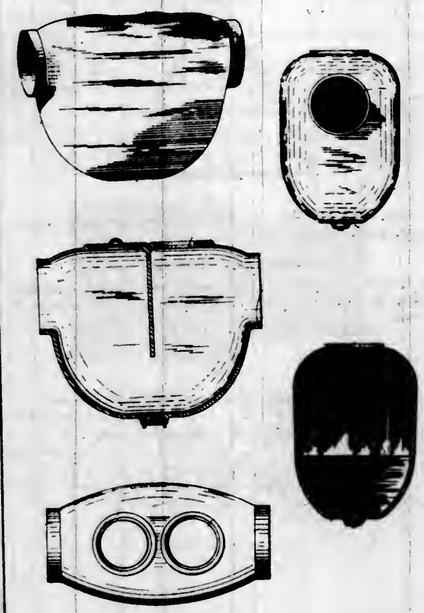
Claim.—The design for a vehicle-spring, as herein shown and described.

29,419. PLATE FOR BUGGY-TOPS. DANIEL COSBOY, Toronto, Canada. Filed Feb. 17, 1898. Serial No. 670,714. Term of patent 7 years.



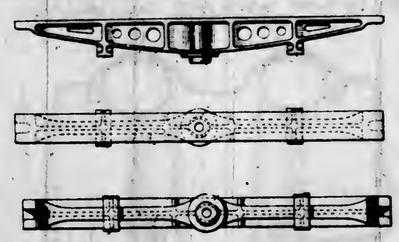
Claim.—The design for an ornamental plate, substantially as herein shown and described.

29,420. TRAP FOR SEWERS. THOMAS J. O'BRIEN, Buffalo, N. Y. Filed June 4, 1898. Serial No. 682,607. Term of patent 14 years.



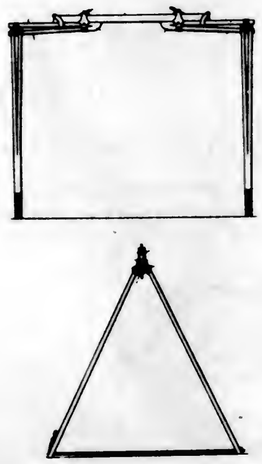
Claim.—The design for a trap for sewers or similar articles, substantially as herein shown and described.

29,421. CAR-BODY BOLSTER. EDWARD F. GOLTRA, St. Louis, Mo. Filed Aug. 18, 1898. Serial No. 688,933. Term of patent 14 years.



Claim.—The design for a car-body bolster substantially as herein shown and described.

29,422. HAMMOCK-SUPPORT. ISAAC R. PALMER, Middletown, Conn. Filed Aug. 31, 1898. Serial No. 690,954. Term of patent 14 years.



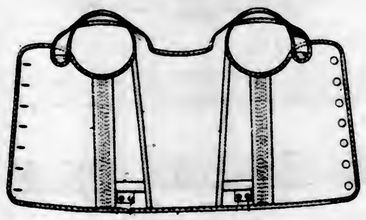
Claim.—The design for a hammock-support substantially as herein shown and described.

29,423. HEAD OR FOOT FOR BEDSTEADS. JOHN M. ADAMS, Chicago, Ill. Filed Oct. 9, 1897. Serial No. 654,736. Term of patent 7 years.



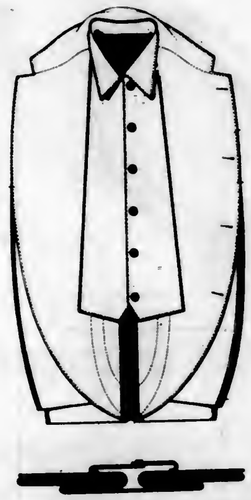
Claim.—The design for the head or foot of a bedstead, substantially as herein shown and described.

29,424. UNDERWAIST. CHARLES R. DE BEVOISE, New York, N. Y. Filed Aug. 16, 1898. Serial No. 688,723. Term of patent 7 years.



Claim.—The design for an underwaist, substantially as shown and described.

29,425. COMBINATION-GARMENT. JACOB H. FLEISCH, New York, N. Y. Filed Aug. 30, 1898. Serial No. 690,872. Term of patent 7 years.



Claim.—The design for a combination-garment, as herein shown and described.

29,426. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed July 22, 1898. Serial No. 686,663. Term of patent 3½ years.



Claim.—1. In a design for carpeting, the body substantially as shown and described.

2. In a design for carpeting, the border substantially as shown and described.

3. The design for carpeting, consisting of the body and the border, substantially as shown and described.

29,427. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed July 22, 1898. Serial No. 686,664. Term of patent 3½ years.



Claim.—1. In a design for carpeting, the body substantially as shown and described.

2. In a design for carpeting, the border, substantially as shown and described.

3. The design for carpeting, consisting of the body and the border, substantially as shown and described.

29,428. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed July 22, 1898. Serial No. 686,665. Term of patent 3½ years.



Claim.—1. In a design for carpeting, the body substantially as shown and described.

2. In a design for carpeting, the border substantially as shown and described.

3. The design for carpeting, consisting of the body and the border, substantially as shown and described.

29,429. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed July 22, 1898. Serial No. 686,666. Term of patent 3½ years.



Claim.—1. In a design for carpeting, the body substantially as shown and described.

2. In a design for carpeting, the border substantially as shown and described.

3. The design for carpeting, consisting of the body and the border, substantially as shown and described.

29,430. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed July 22, 1898. Serial No. 686,667. Term of patent 3½ years.



Claim.—1. In a design for carpeting, the body substantially as shown and described.

2. In a design for carpeting, the border substantially as shown and described.

3. The design for carpeting, consisting of the body and the border, substantially as shown and described.

29,431. CARPET. NELSON SANFORD STEWART, Amsterdam, N. Y., assignor to Stephen Sanford & Sons, same place. Filed July 22, 1898. Serial No. 686,668. Term of patent 3½ years.



Claim.—1. In a design for carpeting, the body substantially as shown and described.

2. In a design for carpeting, the border substantially as shown and described.

3. The design for carpeting, consisting of the body and the border, substantially as shown and described.

TRADE-MARKS

REGISTERED SEPTEMBER 27, 1898.

81,997. LADIES' STRAW AND FELT HATS. CHAMBRE SYNDICALE DES FABRICANTS DE CHAPEAUX DE PAILLE ET FEUTRES POUR DAMES ET FOURNITURES POUR MODES, Paris, France. Filed Aug. 17, 1898.



Essential feature.—A representation of Atlas supporting the world. Used since January 1, 1890.

81,998. CORN-PLASTER. WILLIAMSON & WATTS, Baltimore, Md. Filed June 23, 1898.



Essential feature.—Two scrolls having pictorial representations of ears of corn intermediate their ends, one of the scrolls having pictorial representations of feet projecting from its opposite ends and pictorial representations of feet arranged between the scrolls. Used since April 1, 1896.

81,999. SURGICAL INSTRUMENTS AND APPLIANCES. FERDINAND ALFRED REICHARDT, New York, N. Y. Filed Jan. 5, 1898.

FARNY

Essential feature.—The word "FARNY." Used since July 1, 1862.

82,000. CERTAIN NAMED MEDICINAL PREPARATIONS AND MEDICINAL TOILET ARTICLES. THE R. T. BOOTH COMPANY, Ithaca, N. Y. Filed May 27, 1898.

HYOMEI

Essential feature.—The word "HYOMEI." Used since February 2, 1895.

82,001. MEDICINE. LOUIS MOSER, Pittsburg, Pa. Filed June 29, 1898.



Essential feature.—The representation of a false or abnormal growth resembling the heart and lungs of a rabbit. Used since March 1, 1896.

82,002. CHEMICAL AND MEDICINAL PREPARATION. THE FIRM OF E. MERCK, Darmstadt, Germany. Filed Aug. 15, 1898.

BROMIPIN.

Essential feature.—The word "BROMIPIN." Used since December 30, 1897.

82,003. CHEMICAL AND MEDICINAL PREPARATION. THE FIRM OF E. MERCK, Darmstadt, Germany. Filed Aug. 15, 1898.

IODIPIN.

Essential feature.—The word "IODIPIN." Used since December 26, 1897.

82,004. REMEDIES FOR INDIGESTION, FLATULENCY, AND DYSPEPSIA. HANUS BROS. & WHITE, Philadelphia, Pa. Filed Aug. 26, 1898.



Essential feature.—The representation of a flaming heart. Used since July 1, 1898

82,005. LOZENGES FOR ALLAYING THIRST. GREGORY & Co., Northampton, England. Filed July 28, 1898.

Cobo

Essential feature.—The word "COBO." Used since June 1, 1898.

82,006. RYE WHISKY. ASPELL & COMPANY, New York, N. Y. Filed Aug. 11, 1898.

KING RICHARD

Essential feature.—The words "KING RICHARD." Used since June 1, 1898.

82,007. SCOTCH WHISKY. ASPELL & COMPANY, New York, N. Y. Filed Aug. 11, 1898.

KING RICHARD

Essential feature.—The words "KING RICHARD." Used since June 1, 1898

82,008. OLD TOM GIN. ASPELL & COMPANY, New York, N. Y. Filed Aug. 11, 1898.

RABBIT FOOT

Essential feature.—The words "RABBIT FOOT." Used since June 1, 1898.

82,009. HOLLAND GIN. ASPELL & COMPANY, New York, N. Y. Filed Aug. 11, 1898.

RABBIT FOOT

Essential feature.—The words "RABBIT FOOT." Used since June 1, 1898.

82,010. COTTON-SEED OIL. UNION OIL COMPANY, Providence, R. I., and New York, N. Y. Filed Aug. 5, 1898.

UNION

Essential feature.—The word "UNION." Used since May, 1867.

82,011. COLD-WATER PAINT. MOSEY BROS., Paterson, N. J. Filed July 13, 1898.

AQUARINE

Essential feature.—The word "AQUARINE." Used since May 1, 1898.

82,012. PLUG AND TWIST TOBACCO. PERHAM & PERH, Madison, N. C. Filed May 19, 1898.

WHOLE CHUNK.

Essential feature.—The words "WHOLE CHUNK." Used since June, 1883.

82,013. WHEAT-FLOUR. PEARL ROLLER MILL COMPANY, Oswego, Kans. Filed Aug. 19, 1898.



Essential feature.—The pictorial representation of a lady wearing a yellow shirt-waist and holding a loaf of bread in her hand. Used since August, 1897.

82,014. CERTAIN NAMED METAL ARTICLES. THE TURNER BRASS WORKS, Chicago, Ill. Filed June 18, 1898.



Essential feature.—The representation of an athlete performing on a horizontal bar. Used since February 15, 1896.

82,015. HORSESHOES. HENRY B. HAIGH, New York, N. Y. Filed Aug. 18, 1898.

ROUGH RIDER

Essential feature.—The words "ROUGH RIDER." Used since June 10, 1898.

82,016. SEWING-MACHINES. THE DAVIS SEWING MACHINE COMPANY, Dayton, Ohio. Filed Aug. 26, 1898.

VICTORY

Essential feature.—The word "VICTORY." Used since July 1, 1898.

82,017. SEWING-MACHINE. THE DAVIS SEWING MACHINE COMPANY, Dayton, Ohio. Filed Aug. 26, 1898.

THE PEARL.

Essential feature.—The words "THE PEARL." Used since March 11, 1893.

82,018. HEATING AND COOKING STOVES. WILLIAM STONE SMITH, Troy, N. Y., and Chicago, Ill. Filed June 13, 1898.

JUNIOR

Essential feature.—The word "JUNIOR." Used since January 1, 1886.

THE NORRIS PETERS CO. PHOTO-LITH.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

FITZGERALD v. GUILLEMET.

Decided May 20, 1898.

1. INTERFERENCE—UNAMBIGUOUS ISSUE.

For the speedy and orderly conduct of interference proceedings, it is desirable that there should be the least possible room for dispute as to the meaning of the interference issue.

2. SAME—SAME—DISSOLVING INTERFERENCE.

Where the meaning of the interference issue was not clear and not free from ambiguity, the interference was dissolved and remanded to the Primary Examiner for redeclaration should the parties make interfering claims. (*Hammond* v. *Hart*, 83 O. G., 743, cited.)

APPEAL on motion.

AIR-BRAKE.

Application of Richard Fitzgerald filed July 28, 1897, No. 646,204. Application of Francis L. Guillemet filed June 3, 1896, No. 594,094.

Messrs. Coburn, Hibben & McElroy for Fitzgerald.

Mr. J. Snowden Bell for Guillemet.

DURELL, *Commissioner:*

This is an appeal by Fitzgerald from the decision of the Primary Examiner refusing to dissolve the above-entitled interference. The ground of the appeal is that the Examiner erred in holding that an interference in fact exists.

The issue is thus stated:

The combination, in a triple-valve device, of a movable abutment, exposed on one side to auxiliary-reservoir pressure and on the other side to train-pipe pressure, a valve operated thereby and controlling the exhaust of fluid from the brake-cylinder, an independent movable abutment, and a graduating-valve operated thereby for controlling the flow of fluid from the auxiliary reservoir to the brake-cylinder, substantially as set forth.

This issue is the second claim of Guillemet's application and is said to cover claims 11 and 13 of the application of Fitzgerald. These claims read as follows:

11. In a device for actuating fluid-pressure brakes, the combination of a casing having two chambers, a piston-actuated valve in one of the chambers for controlling the brake-release, and for controlling the feed to the auxiliary reservoir, and a piston-actuated service-valve in the other chamber controlling the admission of auxiliary-reservoir air to a brake-cylinder, the service-valve being separate and independent of the brake-release.

13. In a device for actuating fluid-pressure brakes, the combination of a slide-valve controlling communication between a brake-cylinder and the atmosphere, a piston operating the slide-valve and controlling communication between a train-pipe and an auxiliary reservoir, and a valve controlling admission of air from the auxiliary reservoir to the brake-cylinder, the latter being separate and independent of the slide-valve.

It will be seen upon a comparison between these claims and the issue that Fitzgerald's claim 11 is broader than the issue, and this fact is admitted by counsel for Guillemet. In his brief he states that Fitzgerald's claim 11 is broader than Guillemet's claim 2 (the issue) and dominates the latter, as it does not include the limitation as to the exhaust-valve piston—

exposed on one side to auxiliary-reservoir pressure and on the other side to train-pipe pressure.

He adds that the drawings and specification show that this condition exists, and the limitation should be read into Fitzgerald's claim 11. It is further claimed on behalf of Guillemet that Fitzgerald's claim 13 is incomplete, not specifying—

a piston for actuating the valve controlling admission of air from the auxiliary reservoir to the brake-cylinder.

He would have this element read into the claim, and states that if this is done the claim is dominated by Guillemet's claim 2.

If he is correct in these statements, I do not think the interference was correctly declared under the then existing Office practice. However this may be, in view of the recent decision in *Hammond* v. *Hart* (83 O. G., 743) I think the interference should be dissolved and remanded to the Examiner for a redeclaration, should the parties make interfering claims, as indicated in the decision above referred to.

Furthermore, there is considerable ambiguity about the issue, and the Examiner in his decision denying the motion to dissolve the interference states that there are three limitations in the issue, and I gather from his decision that in order that the issue be patentable he deems that one of the elements of the issue, "an independent movable abutment," should be construed to mean that this movable abutment, which operates the graduated valve for controlling the flow of fluid from the auxiliary reservoir to the brake-cylinder, is not only an "independent" one, as that term is broadly used, but means in the issue both physically and operatively independent. I think that such a limitation must be placed upon the term in view of the patent to Park, No. 555,877.

It is strenuously contended on the part of counsel for Fitzgerald that when that element of the issue is so limited the issue cannot be found in Guillemet's structure, as the movable abutment of his device is only physically independent. In view of the first reason given by me for the dissolution of the interference it is unnecessary to pass upon this question; but in view of the statement contained in the Examiner's decision I desired to call attention to it in order that if the interference be redeclared the issue should not only be substantially the claims of the applicants, but should be

clear and unambiguous. The proceedings in this case, to my mind, emphasize not only the necessity but the desirability for the speedy and orderly conduct of interference proceedings, that there should be the least possible room for dispute as to the meaning of the issue.

The decision of the Primary Examiner is overruled, and it is directed that the interference be dissolved.

SHERWOOD *v.* HORTON, CATO & COMPANY.

Decided May 28, 1898.

1. TRADE-MARK—INTERFERENCE—DATE OF ADOPTION AND USE SET UP IN STATEMENT—WEIGHT TO BE GIVEN TO TESTIMONY SHOWING EARLIER USE.

Where a registrant sets up in his statement that he has used a trade-mark from a certain date and the testimony offered in an interference proceeding shows an earlier date, *Held* that such testimony may be considered and such weight given to it as may be proper under the circumstances of the case.

2. SAME—REGISTERING MARK IN FACE OF PRIOR REGISTERED MARK.

The Patent Office should not register a trade-mark in the face of a prior registration of the same mark for exactly the same class of goods unless the proofs are so clear and convincing that to refuse to do so would work an injustice to the applicant.

3. SAME—POWER OF PATENT OFFICE IN REFERENCE TO TRADE-MARK.

The Patent Office cannot confer the right to a trade-mark upon any one, nor, on the other hand, can it take away such right. Its powers in reference to trade-marks are very limited and entirely different from its powers in reference to the grant of patents. That difference is clearly set forth by the Court of Appeals of the District of Columbia in the case of *Einstein v. Sawhill*, (65 O. G., 1918.)

4. SAME—INTERFERENCE—"ROYAL" FOR SALAD-DRESSING—PRIORITY.

As the proofs do not show beyond a reasonable doubt that Sherwood was the first to adopt and use the word "Royal" as a trade-mark for salad-dressing, the decision of the Examiner of Interferences in awarding priority to him is reversed.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR PICKLES, ETC.

Application of Charles K. Sherwood filed May 19, 1897, No. 53,675. Trade-Mark No. 11,633 registered to Horton, Cato & Company November 11, 1884.

Mr. W. B. Hutchinson and *Messrs. Davis & Davis* for Sherwood.

Messrs. Parker & Burton and *Mr. L. S. Bacon* for Horton, Cato & Company.

DUELL, *Commissioner:*

This is an appeal by Horton, Cato & Company from the decision of the Examiner of Interferences awarding priority of adoption and of right to the mark in issue to Sherwood. The mark in dispute is the word "Royal" for salad-dressing, and the question to be determined is which of the parties in controversy has the paramount claim to the rights created by the statutes of the United States relative to the registration of trade-marks.

In determining the question of priority of adoption and the right to the mark we are met on the threshold with the question whether or not the registrants are in their proofs held to the date of adoption alleged in the statement filed with the application upon which the trade-mark was registered. It appears that on October 9, 1884, Horton, Cato & Company registered the mark under the No. 11,633. Their statement filed with the application set forth a use in their business "since 1882." The Examiner of Interferences held that by reason of a certain ruling of the Assistant Commissioner they are restricted to that date. It appears that after the institution of these proceedings they moved to amend the statement as to the date of adoption and use of the trade-mark which accompanied the application for registration. Their motion was denied by the Examiner of Interferences, and on appeal to the Commissioner that ruling was affirmed upon the grounds that the certificate of registration could not be amended and that the showing made did not afford a sufficient basis for then holding that the proposed amended statement be received as a basis for the acceptance of testimony showing an earlier date of adoption and use.

I think the Assistant Commissioner properly held that a certificate of registration given under the seal of the Office is not open to amendment. His further holding that upon a proper showing applicants for the registration of trade-marks should be permitted to amend their statements is equally sound. I do not, however, consider that his refusal to allow an amendment to the statement, based upon the ground that no sufficient showing to warrant the amendment was made, precludes me from considering the testimony adduced on behalf of the Horton-Cato Manufacturing Company, the present owners of the registered mark, showing an earlier date of adoption and use of the trade-mark by their predecessors than that set forth in the original statement.

Trade-marks are often registered in this Office which have been in use for many years prior to the date of application for registration, and very often such applications are made not by the original parties, but by those who have lawfully acquired all rights to the use of the trade-mark. In such cases it is often difficult to give the earliest date of adoption and use, and there is no question but that in suits pending in courts of equity to restrain the alleged infringement of a trade-mark the parties to the controversy would be permitted to prove the earliest date of such adoption and use, and, if necessary, be allowed to amend their pleadings to conform to the proofs. Whatever courts of equity of the United States would permit in such controversies must be permitted by this Office, because it is so expressly provided by the act of 1881. Section 3 of that act in part reads as follows:

> • • • and in any dispute between an applicant and a previous registrant, or between applicants, he (referring to the Commissioner of Patents) shall follow, so far as the same may be applicable, the practice of courts of equity of the United States in analogous cases.

I am aware that Rule 13 of the rules adopted by this Office for the registration of trade-marks under the act of March 3, 1881, states:

> • • • but each applicant and registrant will be held to the date of adoption alleged in the statement filed with his application.

The Assistant Commissioner in the decision of

the motion above referred to, referring to this rule, thus construed it:

> Rule 13 was intended merely as pointing out what paper should be looked to in determining the date which a party would be permitted to prove, just as Rule 110 of the Rules of Practice refers to the preliminary statement in applications for patents, and not as prohibiting any change in that date by amendment.

If the rule were construed to mean that there was no right to amend the statement in any event, then the rule would be in conflict with the statute. I am clearly of the opinion that the registrants are not limited to a date "since 1882," but that the testimony offered by them showing an earlier date may be considered and such weight given to it as may be proper under the circumstances of the case.

The testimony offered on behalf of the Horton-Cato Company is claimed by their counsel to show that the word "Royal" as a trade-mark used with "Worcestershire Sauce" was adopted in 1876; that in 1878 Mrs. Cato, the wife of Cato, who was one of the partners of Horton & Cato, one of the predecessors of the present owners of the registered mark, moved from Canada to Detroit and there soon after personally took part in the manufacture by Horton & Cato of salad-dressing, which was offered for sale and sold by them under the trade-mark "Royal." She testifies that the first labels, reading "Royal Salad Dressing," were printed by themselves on a hand-press and that she continued her connection with the business until some time in 1896. Mr. Horton withdrew in 1879 and Mr. Cato died in 1884, and soon after Mrs. Cato formed a partnership with a Mr. Eichhorn and continued in partnership with him until 1893, when the Horton-Cato Manufacturing Company was organized to continue and has since continued the business. Mrs. Cato testifies that very little was sold at first; that it was put up in an experimental way; but that the sales increased, and that to her personal knowledge down to the time the corporation was formed the salad-dressing was put on the market, she helping to bottle and label it.

On cross-examination she testified that she moved to Detroit about August, 1878, and some two or three months thereafter the manufacture of the salad-dressing was begun. It was put up in small bottles marked "Royal Salad Dressing," and some of it was sold to the trade in Detroit, but none outside of Detroit until, speaking from memory, the early part of 1882. From 1884 to 1897, inclusive, Horton, Cato & Company and their successors in business sold over thirty-seven thousand cases.

Mrs. Caroline S. Hunter testified that in 1878 she knew the Catos and that during that year she had from them some of the salad-dressing. This salad-dressing was put up in small bottles, of which she thinks she had three or four. The date of 1878 is fixed by the fact that during that year her husband had the steamer *Keweenaw*, and the year that he had it was the one in which the Catos moved next to them. On cross-examination she testified that the labels on the bottles contained the word "Royal" on "little narrow labels." Her husband testified that he owned the *Keweenaw* from about February to about September, 1878, and took his wife a trip on the boat, as stated by her.

S. J. Kenyon testified that he had known the Catos for about sixteen years; that Cato was making the salad-dressing when he first knew him; that the labels in use were ordinary bottle-labels, printed by a hand-press, and bore the words "Royal Salad Dressing, manufactured by Horton, Cato & Co., Detroit, Mich.;" that being a printer he particularly noticed the labels.

Corroborative of the other testimony is that of J. Charles Eichhorn, who testified that when he became acquainted with the business of the Catos in the fall of 1882 he saw bottles of salad-dressing labeled with the word or mark "Royal." His testimony, however, mostly relates to the business after he became interested in it in 1884.

While recognizing the fact that testimony relating to the dates of remote events is very apt to be unreliable where no writing is produced tending to refresh the memory, I am more inclined to give weight to such testimony when it is given to support a long-established and largely-developed business than when it is given for the purpose of overthrowing vested interests. Taken as a whole, I believe that the testimony warrants me in finding that the owners of the registered mark are entitled to a date of adoption and use of the mark in controversy for salad-dressing not later than the latter part of 1878.

The proofs on behalf of Sherwood as to the use of the mark for salad-dressing are very meager. Aside from his own testimony there is nothing showing the use of the mark by him for salad-dressing before the latter part of 1882, and that does not clearly show more than that the salad-dressing was sold as "Royal." It is true labels were purchased in the spring of 1882, but no sufficient proof of their use at that time is given.

Giving Sherwood the benefit of every doubt, he does not claim an earlier use of the mark "Royal" for salad-dressing than April 13, 1882, and as to the use of the mark at that time he is not corroborated. This early date depends entirely upon his own testimony, and the first corroboration as to the sale of any salad-dressing is what may be gathered from the testimony of E. T. Estabrook, who testifies as to the purchase of the "Royal Salad Dressing" from Sherwood on September 5, 1882; but he does not testify that the goods were so labeled, and it is only gathered from his testimony that they were so billed. The proofs show that the use of the mark by Sherwood in connection with salad-dressing has been very limited. Covering the period of sixteen years the sales aggregated less than two hundred cases. The Examiner of Interferences in his decision seems to give weight to a statement made by Sherwood's counsel and from that statement infers that other sales could have been shown; but the fact remains that no other sales were shown. Sherwood's case must stand on testimony, not on statements by counsel.

Upon the whole, I am not persuaded that Sherwood's proofs are sufficient to overcome the pre-

sumption arising from the early registry of Horton, Cato & Company. Sherwood waited nearly thirteen years after that registry before seeking to register the mark, and during eight of those years Sherwood had knowledge of the claimed right of Horton, Cato & Company, if the testimony of Eichhorn is to be believed.

Eichhorn testifies to a conversation with Sherwood in which he told Sherwood that they had the brand "Royal Salad Dressing." Sherwood does not deny that the conversation detailed by Eichhorn occurred, but says that he does not remember it. Furthermore, the proofs offered by Sherwood do not show such use of the mark as leads me to conclude that the public at large, even where his goods have been sold, have any settled conviction that the goods so marked are manufactured by him. In other words, his right at best is limited to use arising from selection rather than from actual occupation of the market.

I do not think that the Patent Office should register a trade-mark in the face of a prior registration of the same mark for exactly the same class of goods unless the proofs are so clear and convincing that to refuse to do so would work an injustice to the applicant. In the case at bar the proofs of adoption and use are not so clear and convincing as to warrant me in granting the registration to Sherwood; certainly not until he has proved his common-law right to the trade-mark in a court of competent jurisdiction. So far as the record shows he has made no such attempt, and when he has, and has proved his right, will be time enough for this Office to register his mark. The Patent Office cannot confer the right to a trade-mark upon any one, nor, on the other hand, can it take away such right. Its powers in reference to trade marks are very limited and entirely different from its powers in reference to the grant of patents. That difference is clearly set forth by the Court of Appeals of the District of Columbia in the case of *Einstein* v. *Sawhill*, (65 O. G., 1918,) in which the court said:

> Patent-rights are practically the creation of the Federal Constitution and of Federal legislation based upon it. Hence it is important that the Federal Government should determine, not only by the administrative processes of the Patent Office, but likewise by judicial investigation and review at as early a stage as possible, whether such rights actually exist, and to which of the rival contestants they actually appertain. On the other hand, if the subject of trade-marks is at all within the scope of Congressional legislation, even under the modified form of the act of 1881, it is plain that no such legislation can oust the States and the State tribunals of their general jurisdiction of that subject. Such controversy as may be carried on in the Patent Office under the act of 1881 is controversy as to the evidences of the right, not as to the right itself. The right is not created by the Federal Government, and does not emanate from it, as do patent-rights, and all that Congress has sought to do is to provide a recording act of a very limited character, the better to evidence the ownership of the right. There is, therefore, a very great difference in the relative value and importance of patents for new and useful inventions and the scarcely more than ministerial business of the registration of trade-marks; and there is good reason why Congress should have authorized judicial action by way of appeal in reference to the former and denied it with reference to the latter.

In the view which I take of the case at bar it becomes unnecessary to pass upon any other question presented and ably discussed by counsel. Not being convinced that the proofs show beyond a reasonable doubt that Sherwood was the first to adopt and use the word "Royal" as a trade-mark for salad-dressing, the decision of the Examiner of Interferences in awarding priority to Sherwood is reversed.

NEWTON *v.* WOODWARD.

Decided June 1, 1898.

1. INTERFERENCE IN FACT—IDENTICAL CLAIMS.
   An interference does not exist merely because the parties have claims in identical words, since to interfere those words must mean and refer to the same thing.
2. SAME—ORIGINAL DISCLOSURE—AMENDMENT TO.
   Terms of reference copied by a party from an opponent's application after it is open to his inspection cannot change the invention and must be considered as meaning the same things as those originally employed. If there was no interference as to the invention originally disclosed a mere change in the words of reference will not produce it.
3. INTERFERENCE—ISSUE.
   An issue which is not a claim made by either party is not a proper issue. (*Hammond* v. *Hart*, 83 O. G., 743.)

APPEAL on motion.

KNITTING-MACHINE NEEDLE.

Application of Elmer E. Newton filed February 16, 1897, No. 623,735. Application of Stephen Woodward filed April 13, 1896, No. 587,282.

Mr. W. H. Finckel for Newton.

Messrs. Crosby & Gregory for Woodward.

GREELEY, *Assistant Commissioner:*

This is an appeal by Newton from the decision of the Primary Examiner denying his motion to dissolve the above-entitled interference.

The interference originally declared between these applications was upon the following issue:

> A knitting-machine needle, of the class described, having a collar applied to its heel between the limbs of the heel and embracing such limbs.

This is claim 1 of Newton's application.

Motion to dissolve on the ground of no interference in fact brought by Newton was denied by the Examiner, and upon appeal his decision was reversed and the interference dissolved.

Woodward having been permitted by the Examiner to amend his application to the extent of introducing a claim in the precise words of the issue of the dissolved interference, the Examiner has declared a new interference with the following issue:

> A knitting-machine needle of the class described having a collar or thickening member applied to its heel between the limbs of the heel and embracing such limbs.

On motion by Newton to dissolve on the ground of no interference in fact the Examiner refused to dissolve, holding that there is interference in fact, and from this decision this appeal is taken.

In his decision refusing Newton's motion the Examiner explains the issue, which differs from the issue of the dissolved interference only in the substitution of "collar or thickening member" for "collar." He states that the terms "collar" and "thickening member" do not mean different things, but are explanatory of each other and mean one and the same thing.

The issue is then, while open to the objection that it is not a claim made by either party and therefore not a proper issue, (*Hammond* v. *Hart*, 83 O. G., 743,) in effect the issue of the dissolved interference.

The Examiner holds that the question of interference is not *res adjudicata*, for the reason that while the parties are the same the subject-matter is not the same, since the *claims* which were then held not to interfere are not the *claims* now made by the respective parties.

It is true that, so far as words are concerned, one of the claims now made by Woodward is identical with one of Newton's claims; but more than mere identity of words is necessary to warrant declaration of an interference. The word "collar" in Newton's claim means, as clearly and unmistakably set forth in his specification and drawings, something which surrounds the heel—a strip of metal "wound about and between the limbs of the heel." The word "collar" in Woodward's application, which is not found in the application as originally filed and was introduced into the application only after Newton's application had been laid open to his inspection, does not and cannot have any such meaning. His "thickening member," originally described as a "stud or pin," is nowhere shown as "wound about" the heel or shank; nor is there any description of such construction. The Examiner has permitted Woodward to expand his original description to state that the "thickening member (originally stud or pin) is sufficiently long to have its ends bent *into a collar to embrace the limbs of the shank or heel*, this being accomplished by bending its projecting ends in opposite directions, one covering *at least* two sides of one portion and the other covering *at least* two sides of the other portion of the shank, so that when it is bent in proper form it will look *like a letter* S, as represented in Fig. 3," the matter in italics being inserted after the dissolution of the original interference.

This is, no doubt, permissible if by such expansion no new matter is inserted—in other words, if the specification and claims as thus amended include no construction not properly within the original disclosure. If it means anything more, it is not permissible and is directly contrary to the law, as construed in *Railway Co.* v. *Sayles*, (15 O. G., 243,) in which the court says:

> The law does not permit such enlargement of an original specification which would interfere with other inventors who have entered the field in the meantime, any more than it does in the case of reissues of patents previously granted. Courts should regard with jealousy and disfavor any attempts to enlarge the scope of an application once filed, or of a patent once granted, the effect of which would be to enable the patentee to appropriate other inventions made prior to such alteration, or to appropriate that which has, in the meantime, gone into public use.

If, then, the description and claims now in Woodward's application describe and cover nothing more than was described and intended to be covered by the application as originally filed, there is no interference, whatever the wording of the description or claims may be, and there is no interference in fact as to the present issue or the issue of the original interference.

As it is not to be presumed that Woodward intended or the Examiner would have permitted an unlawful expansion of his description or claims to interfere with another inventor, it must be concluded that there is no interference in fact, and the interference will accordingly be dissolved.

EX PARTE RUSSELL.

Decided August 9, 1898.

1. DATE OF APPLICATION—DRAWING.
   Where the application is drawn to cover a process and discloses the invention sufficiently to permit of examination on the merits, although no drawing is furnished, *Held* that it must be given the time of filing as the date of application, although a drawing is subsequently found to be desirable and is required not to show the invention, but as showing some means for carrying it into practice.
2. SAME—SAME—CONSTRUCTION OF DECISION.
   This case is different from that considered in *Palmer and Thompson* v. *Bailey*, (83 O. G., 1207,) since in that case without a drawing the invention could not have been understood or examined upon its merits. That decision is to be read as all decisions of the Commissioner or the courts are to be read with reference to the case in which the decision was rendered.
3. PATENTABILITY—APPEAL.
   Although the necessity of refusing to one applicant what has been allowed to another is always to be regretted, the question as to whether the claims in one case are allowable over the prior state of the art must be decided without regard to the fact that similar claims have been allowed and patented to another on a copending application. From a rejection in such case appeal lies to the Examiners-in-Chief.
4. INTERFERENCE—REJECTED CLAIMS.
   So long as the claims of an applicant stand rejected they cannot be placed in interference with similar claims of a patent, although that patent was granted during the pending of the application.

ON petition.

PROCESS OF PURIFYING AND PRESERVING MILK AND CREAM.

Application of John Russell filed March 23, 1896, No. 584,538.

Messrs. Dewey & Co. and *Mr. T. Walter Fowler* for the applicant.

GREELEY, *Acting Commissioner:*

The statement made in the petition is as follows:

> Your petitioner avers—
> 1. That he is the applicant above named.
> 2. The said application was filed on the 23d day of March, 1896.
> 3. That during the pendency of said application and without any notice to this applicant Patent No. 602,096, dated April 12, 1898, was issued for a similar process and with claims in conflict with the claims of said application.
> 4. That thereupon this applicant, with a view of complying with the present practice of the Patent Office, embodied in his application claim 1 of said patent and a second claim subetantially similar thereto, and requested an interference with said patent.
> 5. That the Examiner has a second time refused to declare said interference, to applicant's great injury and irreparable wrong.

On this statement the petition asks that the Examiner be advised that the facts warrant the immediate declaration of the interference and that he be directed to take such action.

In the Examiner's statement the point is raised that the application was not filed complete until the filing of the drawing on June 15, 1898, citing as authority for this holding the case of *Palmer and Thompson* v. *Bailey*, (83 O. G., 1207.) Consideration of this question is not necessary to a decision upon this petition; but as the question is raised it seems best to consider and decide it. The decision referred to is to be read, as all decisions of the Commissioner or the courts are to be read, with refer-

ence to the case in which the decision was rendered. The invention of the application of Thompson was a bicycle-saddle spring. The nature of the case plainly admitted of a drawing, and a drawing was necessary to show the invention claimed. Without a drawing the invention could not have been understood or examined upon its merits.

The invention of the application herein is a process. The apparatus by which this process may be executed is no part of the invention as originally described and claimed. The application as originally filed disclosed the invention sufficiently to permit of examination on the merits, and in fact it was examined on the merits and rejected on references. The Examiner was right in requiring a drawing; but he required it not as being necessary to show the invention, but as showing some means for carrying the invention into practice. It was expressly stated that no claim could be made to any apparatus which was shown. The drawing furnished must be considered in the same light as additional illustration in a case in which a drawing was originally filed or as additional description. It has no other function in the case than to make more clear the disclosure before made sufficiently clear to enable the invention to be understood and examined.

Drawings of apparatus are many times desirable in applications in which the invention is a process and in which the desirability of a drawing cannot be determined until examination of the applications by the expert examiner. To hold that by filing a drawing an applicant would lose the date of filing originally given to him and perhaps thereby lose his right to a patent would make it necessary for the applicant to refuse to furnish a drawing in every case in which it could by any possibility be avoided, and the Office would be precluded from requiring drawings in many cases where though highly desirable for many reasons they cannot be said to be absolutely essential to a sufficient disclosure of the invention claimed. This holding of the Examiner is not justified by the decision cited by him and cannot be sustained.

The question of the correctness of the Examiner's action in allowing the application on which Patent No. 602,006 was granted April 12, 1898, during the pendency of this application, involves consideration of the question whether or not the present applicant disclosed in his application as originally filed the invention of the patent and whether he can make the claims, or any of them, of the patent and whether such claims, if made by him, are patentable.

It appears that applicant has filed an amendment containing claims which are substantially identical in wording with certain claims of the patent. If these claims are allowable over the prior state of the art, and while this question must necessarily be considered independently of the consideration of any other application, the necessity of refusing to one applicant what has been allowed to another is always to be regretted, if they are allowable in this application as properly based on the disclosure originally made and if read in connection with the specification they are for the same invention as the claims of the patent, an interference should be declared. These claims now stand rejected, and so long as they stand rejected no interference can be declared. Whether they are properly rejected is a question of merits on which there is no other remedy under the rules but by appeal to the Examiners-in-Chief.

The petition must be and is dismissed.

EX PARTE WOLSKI *et al.*

Decided August 11, 1898.

OATH—JUDGE OF AUSTRIAN COURT.

An oath executed before a judge of the Imperial Royal District Court of Austria and filed in this Office as part of an application for patent cannot be accepted, as it is not a legal oath under the statutes. (*Ex parte Gruson and Schumann*, 26 O. G., 274, cited.)

ON petition.

ECCENTRIC WELL-BORING TOOLS.

Application of Waclaw Wolski and Kasimir Odrzywolski filed March 18, 1898, No. 674,305.

Messrs. Gartner & Co. for the applicants.

GREELEY, *Acting Commissioner:*

The oath filed as a part of this application was executed before a judge of the Imperial Royal District Court in Lemberg, Austria. The Examiner objects to this oath on the ground that it is not a legal oath under the statutes, and requires that a new oath executed before the proper officer be furnished. From this objection and requirement this petition is taken.

It is urged on behalf of petitioner that as the statute (sec. 4892 of the Revised Statutes) relating to the oath to applications for patent does not say that the oath *must be* made before one of the officers therein named, but that the oath *may be* made before any of the officers named, it is merely directory, and that the oath may be administered by any other officer having authority to administer oaths.

This is precisely the contention urged in the case of *ex parte Gruson and Schumann*, (26 O. G., 274.) In that case, for the reasons stated in the decision, it was held that an oath taken before a judge of a royal Prussian court was not sufficient.

Following this decision, which has governed the practice of the Office since 1884, I hold in the present case that the oath taken before a judge of an Imperial Royal District Court of Austria is insufficient.

The petition is denied.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, ETC.

OFFICIAL GAZETTE—JULY-SEPTEMBER, 1898.

VOL. 84—O G—8

DIGEST OF DECISIONS.

[Decisions of the United States courts are indicated by an asterisk (*).]

ABANDONED APPLICATIONS.

(See Interference, 1; Joint and Sole Inventors.)

RECORD.

The abandoned application of Hill having been specifically mentioned by him in a motion to shift the burden of proof, which motion was decided, is a part of the record and necessarily open to his opponent's inspection.

[McGuire *v.* Hill, 968.

ABANDONED EXPERIMENTS.

(See Reduction to Practice, 5, 6, 8.)

ABANDONMENT, PRESUMPTION OF.

The fact that the construction of a device has not been followed within a reasonable time by practical use or application for patent affords a strong inference that what had been done was regarded by the inventor as experimental only and not a completion of the invention, and this would be reinforced if in the meantime the machine had been dismantled or destroyed.

[*Mason *v.* Hepburn, 147.

ABANDONED INVENTIONS.

(See Interference, 2.)

ABANDONMENT AFTER COMPLETION OF AN INVENTION.

An abandonment after completion of an inventive act applies in a case where the right of the public to the use is involved and not in one where the contention is between rival claimants merely of a monopoly. The ground for this doctrine lies in the spirit and policy of the patent laws and in the nature of the equity that arises in favor of him who gives the public the benefit of the knowledge of his invention, who expends his time, labor, and money in discovering, perfecting, and patenting in perfect good faith that which he and all others have been led to believe has never been discovered by reason of the indifference, supineness, or willful act of one who may, in fact, have discovered it long before.

[*Mason *v.* Hepburn, 147.

ACQUIESCENCE.

(See Appeal to the Commissioner of Patents.)

AFFIDAVITS.

UNDER RULE 75—FOREIGN PATENT—PRINTED PUBLICATION—RECEPTION AND CONSIDERATION OF THE AFFIDAVIT BY PRIMARY EXAMINER.

An affidavit tending to show that an invention shown but not claimed in a German patent was derived from the applicant and that it is in fact nothing more than a printed publication of applicant's invention and not the invention of another is competent evidence for the consideration of a Primary Examiner and should be received and considered by him. (*Ex parte Pagen*, 43 MS. Dec., 73, cited.)

[*Ex parte* Grosselin, 1284.

AMENDMENTS.

(See Correspondence with the Patent Office; Interference, 20, 24.)

1. AFTER FINAL REJECTION.

Where an amendment is filed in good faith after second rejection and for the purpose of securing what the attorney believes to be the inventor's rights, an Examiner may be justified in admitting and considering such amendment.

[*Ex parte* Horstick, 981.

2. ALTERNATIVE SPECIES—ELECTION OF SPECIES BINDING.

An applicant has no right to have an allowable claim drawn to a species alternative to that of other claims and presented by amendment after the rejection of such other claims considered. He is bound by his election of species.

[*Ex parte* Noble, 1144.

3. APPEAL—PETITION—NEW MATTER—PROPER PROCEDURE.

Where an amendment was objected to by the Examiner on the ground that it contained new matter and the claims which depended on the disclosure contained in the amendment for their support were rejected and no reconsideration of the Examiner's action was asked for by the applicant, but petition was taken to the Commissioner. *Held* that the question raised by the petition is one affecting the merits, and applicant's course under the rule is to ask reconsideration of the Examiner's action, and if upon reconsideration the Examiner adheres to the rejection appeal lies to the Examiners-in-Chief, as the question is one which may not be brought to the Commissioner by petition.

[*Ex parte* Cousens, 1433.

4. AFTER FINAL REJECTION—SHOWING REQUIRED.

An additional claim presented after final rejection should not be admitted without the showing of "good and sufficient reasons why it was not earlier presented" required by Rule 68.

[*Ex parte* Maynard, 1433.

AMENDMENTS TO PRELIMINARY STATEMENTS.

(See Interference, 46, 47; Preliminary Statement.)

ANALOGOUS USE.

INVENTION—POTTS *v.* CREAGER.

The application of a device designed for lifting sheets of paper by exhausting the air in hollow points of contact therewith to the lifting and holding of pills while dipping them in a gelatin-bath considered to be a mere analogous use where no substantial change in the device was necessary. (*Potts & Co. v. Creager*, 70 O. G., 494; 155 U. S., 597, distinguished.)

[*Frederick R. Stearns & Company *v.* Russell, 1434.

APPEAL FEES.

1. APPEAL TO THE COMMISSIONER—SECTION 4934 OF THE REVISED STATUTES—FEE.

The requirement of the statute is clear and unmistakable that a fee of $30 must be paid upon every appeal to the Commissioner from the Examiners-in-Chief and makes no distinction between the first and other appeals in the same case. (*Ex parte Arkell*, 45 MS. Dec., 25.)

[*Ex parte* Arms, 1142.

2. APPEAL TO EXAMINERS-IN-CHIEF—SECTIONS 4909 AND 4934 OF THE REVISED STATUTES—FEE.

No fee is required in case of a second appeal to the Examiners-in-Chief in the same case, the fee for the first appeal having been paid.

[Id.

APPEAL FROM THE EXAMINER OF INTERFERENCES.

(See Interference, 17.)

APPEAL TO THE COMMISSIONER OF PATENTS.

(See Interference, 58; Rehearing, 2.)

APPEAL FROM FAVORABLE DECISION—ACQUIESCENCE IN DECISION.

No party can appeal from a decision favorable to himself, and the decision is no less favorable because rendered on a motion of his opponent similar to his own motion. Since acquiescence in a favorable decision cannot be considered acquiescence in the reasons given for it, no hardship results from a refusal to entertain an appeal.

[Doolittle *v.* Herdman, 1738.

APPEAL TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

(See Appeal to the Examiners-in-Chief, 1.)

APPEAL TO THE COURTS.

(See Appeal to the Examiners-in-Chief, 1.)

1. BASIS OF.
It is well settled that an appeal must be from a decision and not from the grounds thereof.
[Breul v. Smith, 809.

2. SUSPENDING INTERFERENCE—MOTION TO TAKE ACTION ON SUGGESTION OF EXAMINERS-IN-CHIEF.
Hearing on an appeal in an interference will not be suspended to permit a contestant to be heard on a motion to compel his opponent to take prompt action upon a recommendation of the Examiners-in-Chief. [Id.

APPEAL TO THE EXAMINERS-IN-CHIEF.

(See Amendments, 2; Designs, 1, 5; Rejected Claims.)

1. INTERFERENCE—APPEAL DISMISSED—JUDGMENT ON THE RECORD—AN ADJUDICATION ON THE MERITS—APPEAL LIES TO EXAMINERS-IN-CHIEF.
Appeal from the decision of the Examiner of Interferences granting a motion for judgment on the record dismissed for the reason that such decision was an adjudication on the merits of the controversy and appeal lies to the Examiners-in-Chief and not to the Commissioner. Otherwise there would be no right of appeal to the Court of Appeals under *Westinghouse* v. *Duncan*, (66 O. G., 1009.)
[McGuire v. Hill, 988.

2. NEW MATTER—QUESTION FOR EXAMINERS-IN-CHIEF.
Reference having been made in the original application to spurs or cleats, they can be shown so long as the illustration of them does not involve a departure from the original disclosure; but the question as to whether a particular figure of the drawings illustrating them and covered specifically by the claims involves new matter is for the Examiners-in-Chief to decide.
[*Ex parte* Shearman, 1730.

3. DECISION OF THE EXAMINERS-IN-CHIEF—CONSTRUCTION OF.
The decision of the Examiners-in-Chief that a valid combination does not exist in a certain claim in a particular case between a cartridge-clip and the magazine of a gun is not a ruling that such combination exists in all cases where they are made elements of a claim, and the holding by the Examiner that a particular claim in another case covering them does not define a valid combination does not show any disposition on his part to disregard the rulings of the Examiners-in-Chief.
[*Ex parte* Russell, 1871.

4. DUPLICATION OF CLAIMS.
The question as to whether two claims are substantially the same is reviewable on petition, not upon appeal to the Examiners-in-Chief. *Held* in this case that claims 8 and 9 contain material differences and are not duplicates. [Id.

5. PATENTABILITY—APPEAL.
Although the necessity of refusing to one applicant what has been allowed to another is always to be regretted, the question as to whether the claims in one case are allowable over the prior state of the art must be decided without regard to the fact that similar claims have been allowed and patented to another on a copending application. From a rejection in such case appeal lies to the Examiners-in-Chief.
[*Ex parte* Russell, 2021.

APPLICATIONS.

(See Date of Filing Application; Designs, 3; Division of Application, 1; Interference, 1.)

ATTORNEYS.

(See Interference, 48.)

1. POWER OF ATTORNEY, REVOCATION OF—DEATH OF APPLICANT.
The death of an applicant acts as a revocation of the power of attorney given by him.
[*Ex parte* Woodworth, 811.

2. COURTESY REQUIRED OF EXAMINERS.
Examiners should observe toward attorneys the same courtesy that is required of attorneys in the prosecution of cases before the Office.
[*Ex parte* Horstick, 961.

BAR TO MECHANICAL PATENT.

(See Designs, 9.)

BURDEN OF PROOF.

(See Abandoned Applications.)

CERTIFICATE OF DEPOSIT IN PAYMENT OF FINAL FEES.

(See Fees.)

CLAIMS.

(See Appeal to the Examiners-in-Chief, 3, 4, 5; Interference, 22, 44, 45, 58, 59; Petition to the Commissioner of Patents, 5.)

COMMISSIONER OF PATENTS.

(See Appeal to the Commissioner of Patents; Interference, 9, 11, 12, 30, 40; Petition to the Commissioner of Patents.)

CONSTRUCTION OF CLAIMS.

(See Construction of Specifications and Patents, 4.)

CONSTRUCTION OF RULES.

(See Interference, 10, 12, 27, 28, 29, 40, 50; Oath, 2, 3; Petition to the Commissioner of Patents, 4; Reconsideration.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Analogous Use; Designs, 4.)

1. INVENTION—ANALOGOUS USE.
Where it requires substantially no change in an old device to adapt it to a new use, such adaptation cannot be the subject of a patent no matter how remote and unthought of the new use may be, provided no new force or mode of application be necessary in carrying on such use.
[*Frederick R. Stearns & Company v. Russell, 1434.

2. SAME—PRIOR ART, ASSUMPTION THAT INVENTOR KNOWS.
In estimating the amount of invention in a patented device the court is bound to assume that the history of prior patents and machines having a bearing on the subject was known to the patentee, though in fact he may have been ignorant thereof and actually exercised inventive faculty. [*Id.

3. COMBINATION.
A pill-dipping bar with nipples against which the pills are held by suction created by exhaustion of the air from the interior of the bar and which is manipulated by hand in dipping the pills has no such relation to the pills and the gelatin-bath as to form with them a patentable combination or mechanism.
[*Id.

4. CONSTRUCTION OF CLAIMS—IMPLYING ELEMENTS NOT NAMED IN CLAIM.
To imply as elements of a claim parts not named therein for the purpose of limiting its scope, so that it may be accorded novelty, is contrary to a well-settled rule of patent law.
[*Id.

CONTINUOUS APPLICATIONS.

(See Interference, 1.)

CORRESPONDENCE WITH THE PATENT OFFICE.

DISCOURTEOUS LANGUAGE BY ATTORNEY.
Language which is even seemingly discourteous or in the nature of reflection upon an Examiner has no place in any paper which becomes a part of the record of an application and is always to be condemned. (*Ex parte Chambers*, C. D., 1873, 98.)
[*Ex parte* Russell, 1871.

COURTESY.

(See Attorneys, 2; Correspondence with the Patent Office.)

DATE OF FILING APPLICATION.

(See Division of Application, 1.)

1. DATE OF APPLICATION—DRAWING.
Where the application is drawn to cover a process and discloses the invention sufficiently to permit of examination on the merits, although no drawing is furnished, *Held* that it must be given the time of filing as the date of application, although a drawing is subsequently found to be desirable and is required not to show the invention, but as showing some means for carrying it into practice.
[*Ex parte* Russell, 2021.

2. SAME—SAME—CONSTRUCTION OF DECISION.
This case is different from that considered in *Palmer and Thompson* v. *Bailey*, (82 O. G., 1207,) since in that case without a drawing the invention could not have been understood or examined upon its merits. That decision is to be read, as all decisions of the Commissioner or the courts are to be read, with reference to the case in which the decision was rendered.
[Id.

DELAY IN FILING APPLICATION.

(See Reduction to Practice, 6.)

DEPOSITIONS.

(See Interference, 6.)

1. WITNESS TESTIFYING IN FOREIGN LANGUAGE—SWEARING NOTARY PUBLIC AS INTERPRETER.
Rothe, who is a German, was not conversant with the English language. The notary public before whom Rothe's testimony was adduced acted as commissioner and took down the answers of Rothe in the English language, after having interpreted the interrogatories to him in German, without being sworn as an interpreter. *Held* that the deposition so taken was admissible and that it was not necessary to swear the notary as interpreter.
[*Meyer *et al.* v. Rothe, 649.

2. SAME—SAME.
The uniform tenor of the decisions is to the effect that when an interpreter is required he shall be sworn as a witness, but that no interpreter is required when the officer taking the deposition is himself conversant with the language of the witness, and when no interpreter is required there can be no requirement of an oath to interpret faithfully. Unless error or unfairness is affirmatively shown the official character of the officer taking the deposition and his official certificate thereto conformably with the requirements of law are sufficient guarantee that the duty imposed upon him by law has been faithfully performed. [*Id.

3. SAME—SAME.
While there may be cases where it would be proper that the officer should be specially sworn as an interpreter, yet a deposition should not be rejected merely because it does not appear affirmatively that the officer has been sworn to report correctly the answers of a witness given in a foreign language with which the officer is himself familiar. [*Id.

4. SAME—WITNESS SIGNING DEPOSITION.
Our depositions are required to be in the English language, and in that language alone is the officer required to take them down and return them. There can be no objection to a deposition signed by a witness not conversant with the English language. Such a deposition is not different in principle from one signed by a witness who cannot read or write and who signs by mark. [*Id.

DESIGNS.

1. REJECTION—APPEAL.
Where it is held that the device disclosed does not constitute proper subject-matter for a design patent, the Examiner should reject the claim for that reason, and from such action appeal lies to the Examiners-in-Chief.
[*Ex parte* Adams, 311.

2. PATENTABILITY—MACHINES.
The several articles of manufacture of peculiar shape which when combined produce a machine or structure having movable parts may each separately be patented as a design; but the machine itself cannot be so patented. [Id.

3. FORMAL APPLICATION—REFUSAL TO CONSIDER.
This Office has no authority to refuse to consider any formal application and require the applicant to substitute therefor an application for a mechanical patent or any other patent than that which he wishes. [Id.

4. TITLE OF INVENTION—LIMITING APPLICATION TO WHAT HAS BEEN PRODUCED AND SHOWN AND DESCRIBED.
On petition from the action of the Examiner requiring applicant to limit the title of the application—a "design for banners, badges, buttons, and other decorative devices and displays"—to a design for a flag or banner, the thing shown and described, *Held* that applicant should confine the application to what he has produced and shown and described in his application, leaving to the courts the question as to whether he may use the design on any other article than a banner or flag or whether any other party using it on other devices would infringe his design.
[*Ex parte* Amberg, 507.

5. REQUIREMENT TO REMOVE WORDS FROM THE DESCRIPTION AND DRAWING—COURSE OF APPEAL.
On petition from the requirement that applicant remove the words "Steady Progress" and "Milwaukee" from the description and drawing because they form no part of the design, *Held* that this is a question that affects the merits of the design and should be passed upon by the Examiners-in-Chief before it is brought to the Commissioner. [Id.

6. REQUIRING OF OATH—CONSTRUCTION OF STATUTE AS AMENDED MARCH 3, 1897.
The act of Congress, approved March 3, 1897, amending sections 4929 and 4937, Revised Statutes, so that an invention which has been described in a patent or printed publication more than two years prior to the application for a patent or which has been patented in a foreign country on an application filed in the foreign country more than seven months prior to filing the application in this country cannot be patented, apply to design inventions, and an oath to a design application must comply with the statute as amended.
[*Ex parte* Hartman, 648.

7. LIMITING THE APPLICATION TO DESIGN PRODUCED.
The Examiner required applicant to limit the title of the invention and the description and claims to a design for a rug or carpet instead of to a design for a mat or rug. It was not apparent from the drawing what was intended to be shown. The claims, however, were drawn to cover a design for a mat or carpet. *Held* that applicant should limit his case to the particular thing on which the design has been produced, whether this thing be a mat, a rug, or a carpet, leaving the courts to decide whether these things are equivalents or whether a design applied to one would be infringed by a design applied to either one of the other two. [Id.

8. SAME—PATTERN OR ORNAMENTATION—SHAPE OR CONFIGURATION.
Where applicant's design was a pattern or ornamentation applied to an article of manufacture and was not a shape or configuration of the article, *Held* that the description should be limited to and set up in relation to the design produced.
[Id.

9. NOT A BAR TO THE GRANT OF A MECHANICAL PATENT—DESIGN PATENT.
A design patent and a mechanical patent are the subjects of two distinct monopolies, and the grant of one does not preclude the grant of the other. A design patent is therefore not a statutory bar to the grant of a mechanical patent covering the structure of a device the shape or configuration of which is the subject of the design patent. (*Ex parte Palmer*, 21 O. G., 1111, cited, and *Miller* v. *Eagle Mfg. Co.*, 66 O. G., 845, distinguished.)
[*Ex parte* Jones, 1281.

DILIGENCE.

(See Abandoned Inventions; Interference, 4; Reduction to Practice, 3, 4, 5, 6.)

DISCLOSURE.

(See Interference, 46, 47, 48, 51, 59; Petition to the Commissioner of Patents, 4; Reduction to Practice, 3.)

DISCLOSURE TO THE PUBLIC.

(See Abandoned Inventions; Interference, 3, 4.)

DIVISION OF APPLICATION.

1. FILING DATE OF—CONSTRUCTION OF ACT OF MARCH 3, 1897.
A divisional application takes the benefit of the filing date of its original. An application filed on and after January 1, 1898, as a division of an application filed prior to said date should take the date of the original application and be governed by the statute under which said original application was filed.
[*Ex parte* Vidal, 808.

2. DISTINCT AND INDEPENDENT INVENTIONS.
The action of the Examiner in requiring division between a set of claims covering subject-matter classified and examinable in Division I under "Fences, gate-openers, cab-doors" and another set of claims relating to a distinct and independent invention which is examinable in Division XX under "Builders' Hardware, hinges, coach" affirmed.
[*Ex parte* Lawrence, 1141.

3. SEPARATE PARTS OF A BICYCLE—DISTINCT AND INDEPENDENT INVENTIONS.
When an applicant had no claim covering the fundamental organization of the bicycle, but each claim was drawn to an improvement on some specific part of it—viz., first, the crank-shaft covered by claim 1; second, the handle-bar-stem clamp covered by claim 2; third, the wheel-hub formation covered by claim 3; fourth, the axle-wheel and cone formation covered by claim 4; fifth, the seat-post clamp covered by claim 5; sixth, the crown-fork formation covered by claims 6 and 7, and, seventh, the handle-bar grip covered by claims 8 and 9, *Held* that these separate improvements are distinct and independent inventions, which should be presented in separate applications. (*Ex parte Wilcox and Bertea*, 48 O. G., 455; *ex parte Stearnes*, 80 O. G., 1768; *ex parte Cook*, 84 O. G., 1680; *ex parte Speckbauch*, 84 O. G., 1926; *ex parte Burgess*, 80 O. G., 1759; *ex parte Rose*, 69 MS. Dec., 266, and *Simons* v. *Romadka*, 59 O. G., 989, cited.)
[*Ex parte* Healey, 1261.

DRAWINGS.

(See Appeal to the Examiners-in-Chief, 2; Designs, 5, 7, 8; Interference, 3; Petition to the Commissioner of Patents, 5; Reduction to Practice, 2.)

ENGLISH LANGUAGE.

(See Depositions.)

EVIDENCE.

(See Interference, 50, 51.)

EXAMINATION OF APPLICATIONS.

(See Amendments, 1; Petition to the Commissioner of Patents, 1; Reopening of Cases.)

EXAMINER OF INTERFERENCES.

(See Appeal to the Examiners-in-Chief, 1; Interference, 13, 15, 17, 28, 30, 31, 36, 37, 39, 40.)

EXAMINERS.

(See Appeal to the Examiners-in-Chief, 3; Attorneys, 2; Correspondence with the Patent Office; Interference, 10, 12, 18, 20, 31, 32, 36, 37, 39, 40, 57; Petition to the Commissioner of Patents, 1, 2, 3, 6.)

EXAMINERS-IN-CHIEF.

(See Appeal to the Courts, 2; Appeal to the Examiners-in-Chief; Interference, 9, 12, 13, 31; Rehearing, 1.)

FEES.

(See Appeal Fees.)

CERTIFICATE OF DEPOSIT, DELAY IN FORWARDING TO PATENT OFFICE.

An application was allowed December 16, 1895, twenty dollars was paid to the Assistant Treasurer of the United States at Philadelphia, and a certificate of deposit obtained June 15, 1896, which was not filed in the Patent Office until June 18, 1898, with a request that the certificate be applied to the said application and a patent issued thereon. *Held* that as the certificate was not promptly forwarded to the Office, as required by the rules, it should not be applied to the application, but returned to applicant.

[*Ex parte* Stevenson, 147.

FILES OF THE OFFICE.

(See Correspondence with the Patent Office.)

FINAL FEES.

(See Fees.)

FOREIGN APPLICATIONS.

(See Oath, 2.)

FOREIGN OATHS.

(See Oath, 4.)

FOREIGN PATENTS.

(See Limitation of United States Patent by Foreign Patent Previously Granted.)

FOREIGN PATENTS AND PUBLICATIONS.

(See Designs, 6; Interference, 51.)

FORMER DECISIONS CONSTRUED.

(See Date of Filing Application, 2.)

FORMS OF OATH PRESCRIBED BY THE PATENT OFFICE.

(See Oath, 3.)

FUNCTIONS.

(See Rejected Claims, 2.)

GENERIC CLAIMS.

(See Interference, 23.)

GRANTING PATENTS.

(See Patents.)

HEARING.

(See Appeal to the Courts, 2.)

IDENTIFICATION OF INVENTION.

(See Interference, 7.)

INCOMPLETE DEVICE.

(See Reduction to Practice, 7.)

INFRINGEMENT.

(See Designs, 4, 7.)

INKS REQUIRED IN THE PREPARATION OF PAPERS FOR THE FILES OF THE PATENT OFFICE.

FUGITIVE INK, ADMISSION OF PAPERS WRITTEN IN.

Papers written in ink which does not stand the tests used by the Executive Departments to determine the permanency of inks should be refused admission as part of the permanent records of the Patent Office.

[*Ex parte* Blaubach, 1732.

INTERFERENCE.

(See Abandoned Applications; Abandoned Experiments; Abandoned Inventions; Appeal to the Courts; Appeal to the Examiners-in-Chief, 1; Depositions; Preliminary Statement, 1, 2; Reduction to Practice; Rehearing, 1; Trade-Marks, 13, 16.)

1. CONTINUING APPLICATION—REDUCTION TO PRACTICE.

Park filed an application on May 8, 1895, which disclosed and claimed substantially the subject-matter of the interference. This application was allowed, but became abandoned. Park filed a second application, the one involved in this interference, before the first became abandoned, containing substantially the claim of the allowed and abandoned application. *Held* that Park is entitled to claim a constructive reduction to practice as of May 8, 1895, as in the first application there was not only clearly disclosed the issue of the interference, but a claim was allowed which was repeated in the application in interference and which became the issue thereof.

[Park *v.* Davis, 146.

2. NO INTERFERENCE IN FACT—DISSOLUTION.

While there is no interference in fact between Park's application and Davis's patent, yet in view of the fact that the interference has proceeded to final hearing and that Davis is a patentee whose patent cannot be recalled by the Patent Office *Held* that it is best not to direct that the interference be dissolved, but to award priority on the issue in controversy to Park. [Id.

3. REDUCTION TO PRACTICE—ABANDONMENT—PRIORITY.

Hepburn's date of invention is his record date, April 3, 1894. Mason conceived of the invention and made a complete drawing June 28, 1887. He reduced the invention to practice soon after. The device was then stored away in the model-room of his company, and it was not produced until the institution of the interference proceedings. No devices of the kind were manufactured for any purpose, and no exhibit of the device was made to the public, and no one saw it, except Mason and one or two other employees of his company. *Held* that Mason had abandoned the invention, and priority was awarded to Hepburn.

[*Mason *v.* Hepburn, 147.

4. PRIORITY—FIRST INVENTOR FAILING TO DISCLOSE THE INVENTION TO THE PUBLIC.

Considering the interest of the public, it is *Held* that a subsequent inventor of a new and useful manufacture or improvement who had diligently pursued his labors to the procurement of the patent in good faith and without any knowledge of the preceding discoveries of another shall as against that other who has deliberately concealed the knowledge of the invention from the public be regarded as the real inventor and as such entitled to his reward. [*Id.

5. PRIORITY—FAILURE TO FULLY DEVELOP PROCESS.

After reviewing the testimony, *Held* that while Schmertz may have come very near to developing the process of the issue prior to the date of Appert's constructive reduction to practice he lacked at least the final step that would have demonstrated the thoroughness of his conception and crowned his labors with success, and priority awarded to Appert.

[*Appert *v.* Schmertz, 508.

6. OBJECTION TO DEPOSITION FOR IRREGULARITY AFTER HEARING COMES TOO LATE.

The rule that if a deposition is in any respect open to irregularities the objection must be taken before the cause goes to hearing is as salutary and as necessary in interference proceedings in the Patent Office as it is in the ordinary courts of justice.

[*Meyer *et al.* *v.* Rothe, 649.

7. IDENTIFYING INVENTION—PRIORITY.

Held that the position taken by Meyer *et al.*, that the testimony on behalf of Rothe does not sufficiently identify the invention in issue, is not well founded, and the decision of the Acting Commissioner awarding priority to Rothe affirmed.

[*Id.

8. NOTICE TO REPRESENTATIVE OF DECEASED INVENTOR.

Legal notice not having been given to representative of a deceased inventor and such representative not having waived notice, he is not bound by interference proceedings or by an adverse decision on the question of priority.

[*Ex parte* Woodworth, 811.

9. STATUTORY BAR—SUGGESTION BY EXAMINERS-IN-CHIEF—APPEAL.

The question of apparent grounds for refusing Letters Patent to a party in interference is not directly a part of the question of priority, and failure on the part of the Examiners-in-Chief to call attention to such grounds is not reviewable by the Commissioner.

[Stupakoff *v.* Johnson, 992.

10. CONSIDERATION OF REFERENCE—AFFIRMATIVE HOLDING UNDER RULE 124 NOT REVIEWABLE.

It is not to be presumed that an Examiner failed to consider a reference cited by a previous Examiner. By such consideration and the subsequent declaration of an interference the second Examiner practically decided the issue patentable in view of the reference, and his decision on this point is not reviewable under Rule 124. [Id.

11. NOT TO BE CONTINUED AFTER PRIORITY IS DETERMINED—AUTHORITY OF COMMISSIONER.

The Commissioner has authority under the statute to institute interference proceedings to determine the question of priority of invention; but he has no authority, when that question is determined, to continue the proceedings for any other purpose. The Commissioner would not be justified in arbitrarily putting a party who in his judgment is entitled to priority to the trouble and expense of taking testimony on the mere possibility that some other tribunal might disagree with him and thus render the taking of testimony necessary. It is not to be presumed that the Commissioner's decision will be overruled on appeal.

[McGuire *v.* Hill, 988.

12. RULE 126—REMANDING TO PRIMARY EXAMINER.

While under Rule 126 the Commissioner may before judgment on the question of priority suspend the interference and remand the case to the Primary Examiner for consideration of any matter to which his attention is called by the Examiners-in-Chief as establishing the fact that no interference in fact exists, neither the rule nor the practice contemplates such action unless the ground therefor is entirely clear.

[O'Rourke *v.* Gillespie, 984.

13. PRACTICE UNDER HAMMOND *v.* HART DECISION—DISSOLUTION NOT JUSTIFIABLE WHEN BOTH PARTIES HAVE ACCEPTED THE ISSUE AND PRIORITY HAS BEEN DECIDED BY EXAMINERS-IN-CHIEF.

While, notwithstanding that under the present practice as defined in *Hammond* v. *Hart* (88 O. G., 743) the interference should not have been declared upon the present invention until both parties directly and definitely claimed the precise subject-matter, the issue has been accepted by the parties, no motion to dissolve having been made and no question as to interference in fact raised before the Examiner of Interferences or the Examiners-in-Chief, it not being clear that the issue does not fairly well define the invention intended by each of the parties, and dissolution would necessarily be followed by declaration of a new interference better defined, perhaps, but yet in real subject-matter substantially the issue on which testimony was taken, the dissolution is not necessary or justifiable. [Id.

14. ADMISSIBILITY OF EVIDENCE—MOTION TO STRIKE OUT TESTIMONY.

While each tribunal must decide for itself what of the evidence presented to it is pertinent and admissible, decision on a motion to strike out certain testimony, coupled with a motion for leave to introduce evidence in reply should such testimony be held pertinent and admissible, should be rendered at such period in the proceedings that neither party shall be deprived of rights which justly belong to him. [Id.

15. DECISION ON ADMISSIBILITY AND PERTINENCY OF EVIDENCE.

As the effect of refusing to decide upon the pertinency and admissibility of evidence prior to final hearing would deprive the party who moves to strike out testimony taken by his opponent of the right to offer evidence in reply practically without a hearing and without possibility of appeal, the Examiner of Interferences is directed to determine the question before final hearing. [Id.

16. REBUTTAL EVIDENCE.

It is a matter of grave doubt whether a junior party having before him at the time of taking his testimony-in-chief the application file of his opponent is not bound, if he is to attack this in any way, to attack it at such period of the proceedings that his opponent may have an opportunity to reply. When the senior party relied on his application file and introduced no additional evidence after the closing of the testimony-in-chief of the junior party, it is difficult to see what there was for the junior party to rebut. [Id.

17. MOTION TO STRIKE OUT TESTIMONY—APPEAL DISMISSED.

Appeal from decision of Examiner of Interferences denying motion to strike out testimony dismissed, the moving party having been given opportunity to introduce evidence in reply, the question having been decided prior to final hearing only because if deferred until such hearing the moving party would then be unable to offer evidence in reply. It being necessary to the independent judgment of each tribunal that it should determine such questions for itself, its decision is not reviewable in advance of final hearing. [Id.

18. MOTION TO DISSOLVE—NO INTERFERENCE IN FACT.

The issue of the interference is in substantially the words of claim 1 of Latham's application, and if said claim is allowed to Latham it would dominate the apparatus of Casler's application. On a motion by Casler to amend the issue *Held* that as Casler does not claim the issue there is no interference under the practice as laid down in *Hammond* v. *Hart* (88 O. G., 743) and the interference should be dissolved, and it is therefore not necessary to review the decision of the Examiner on the motion to amend, as Casler after the dissolution of the interference will be at liberty to make such claim as his application will support, and the interference may then be redeclared, provided he claims the subject-matter of the present issue.

[Casler *v.* Latham, 1141.

19. JUDGMENT ON THE RECORD.

Judgment cannot be rendered on the record against a party whose alleged date of conception is prior to the record date of his opponent merely because his reduction to practice is subsequent thereto.

[Kane *v.* Brill and Adams, 1142.

20. INTERFERENCE IN FACT—NEW MATTER.

There being no appeal from the Examiner's holding that an amendment does not involve new matter, the application must be considered in its amended form in determining the question of interference in fact. [Id.

21. SUPPLEMENTAL OATH—EX PARTE MATTER.

The question as to whether a supplemental oath should or should not be furnished is an *ex parte* matter not open to argument in interference proceedings. [Id.

22. ISSUE.

One claim cannot properly be included under two separate issues, since it must necessarily be broader or narrower than one of those issues. (*Hammond* v. *Hart*, 88 O. G., 743.) [Id.

23. INTERFERENCE IN FACT—GENERIC CLAIMS.

Interference in fact exists where both parties make generic claims, although their structures may be specifically different.

[Miller *v.* Kelley, 1144.

24. SAME—DISSOLUTION.

While under the decision in the case of *Hammond* v. *Hart* (88 O. G., 743) and *Grimm* v. *Dolan* (88 O. G., 1209) it would be irregular to declare an interference until both parties made the claims in issue, *Held* that in an interference in which decision on priority had been rendered and in which the party not making the claims in issue could make them and had submitted an amendment containing such claims the interference should not be dissolved. [Id.

25. PRELIMINARY STATEMENT, OPENING.

A preliminary statement having been filed by a party through his regularly-appointed attorney and opened, a second preliminary statement filed through another attorney will not be opened at the instance of the other party, it appearing that it was not intended that the second statement should be filed.

[Converse *et al.* *v.* Kerst, 1146.

26. MOTION TO DETERMINE STATUS OF PARTIES.

Motion to define the status of the parties as to seniority in advance of final hearing denied. [Id.

27. Motion for Dissolution—Rule 114 Construed.
Under Rule 114 motion for dissolution must not only be filed, but must also be noticed for hearing within the limit of appeal in order to operate as a stay to the running of the time limited. (*Meyrose* v. *Jahn*, 56 O. G., 1447, cited.)
[Trevette *v.* Dexter, 1288.

28. Motions, Transmission of.
The Examiner of Interferences is bound to transmit proper motions noticed for hearing within the limit of appeal, if in proper form; but after that time he will exercise his discretion under the circumstances of each case in determining whether the motion shall be transmitted. [Id.

29. Limit of Appeal, Extension of.
The Office is not bound by the strict rules of practice that obtain in the courts and may extend the limit of appeal in a proper case even after the time first set has expired.
[Id.

30. Same—Jurisdiction of Examiner of Interferences.
The Examiner of Interferences may himself extend the limit of appeal in a proper case, and it is not necessary to first make a motion before the Commissioner to restore to him jurisdiction of the interference. The decisions in *Garrison* v. *Hübner* (54 O. G., 1889) and *Guerrant* v. *Cable* v. *Coffee* (61 O. G., 285) modified. [Id.

31. Transmitting Motion—Jurisdiction of Examiner of Interferences and Primary Examiner.
The transmission of a motion provided for by the rules by the Examiner of Interferences to the Primary Examiner for his decision does not give the Primary Examiner jurisdiction for all purposes, but only for consideration of the motion transmitted. Jurisdiction as to all other matters respecting the interference clearly remains with the Examiner of Interferences and he has authority to entertain motions to dissolve or any other motions which may under the rules be made. (*Hutt and Phillips* v. *Foglesong*, 60 O. G., 1477, and *Jenne and Brown* v. *Booth*, 45 MS. Dec., 88, cited.)
[Crocker *v.* Allderdice, 1434.

32. Motion for Dissolution—Change in Practice.
In view of a recent change in the practice in regard to declaring interferences, from which it follows that facts not before pertinent might be considered upon a motion for dissolution, such motion, upon rehearing, was directed to be transmitted to the Primary Examiner.
[Casler *v.* Armat, 1583.

33. Public Use.
It is the established practice of the Office to refuse to suspend interference proceedings for the purpose of trying the issue of public use, since the determination of priority by means of the interference already established is of as much importance as the establishment of another statutory bar by means of public-use proceedings.
[Tyler *v.* Arnold, 1584.

34. Motion to Dissolve Interference Subsequent to Decision in Hammond *v.* Hart—Testimony Taken.
Upon a motion to dissolve an interference after testimony has been taken, on the ground that there is no interference in fact, under the practice as indicated in the decision of *Hammond* v. *Hart*, (83 O. G., 743,) *Held* that after parties have been put to the delay and expense of taking testimony the Office should not dissolve an interference with the certainty that it will be redeclared upon another issue based upon the same subject-matter. (*O'Rourke* v. *Gillespie*, 84 O. G., 984, cited.)
[Wright and Stebbins *v.* Church, 1585.

35. Same—Same.
The dissolution of an interference after testimony has been taken should not be permitted under the decision of *Hammond* v. *Hart* (83 O. G., 743) when another interference upon the same subject-matter would necessarily follow, even though the claims of the parties are not the same. (*O'Rourke* v. *Gillespie*, 84 O. G., 984, and *Wright and Stebbins* v. *Church*, 84 O. G., 1585, cited.)
[Richards *v.* Nickerson, 1585.

36. Dissolution of—Jurisdiction of Examiner of Interferences.
The Examiner of Interferences cannot dissolve an interference except on the decision of the Primary Examiner upon a motion to dissolve brought under Rule 122 and transmitted as provided for by that rule.
[Wethey *v.* Roberts, 1586.

37. Transmitting Motion to Dissolve after Taking Testimony—Jurisdiction of Examiner of Interferences.
The Examiner of Interferences cannot transmit to the Primary Examiner a motion to dissolve an interference brought subsequent to the taking of testimony. Nor is such a motion, if based upon and requiring consideration of testimony taken in the case, within the jurisdiction of the Primary Examiner to determine, even if transmitted. [Id.

38. Dissolution of After Proceeding Beyond Time for Making Motion to Dissolve—Rule 126.
A dissolution of an interference which has proceeded beyond the stage at which motions to dissolve may properly be made but in which it is clear that there is no interference in fact between the applications involved is provided for by Rule 126. [Id.

39. Same—Examiner of Interferences.
Where the Examiner of Interferences refused to consider a question of interference on the ground that the action of the Primary Examiner in declaring the interference is binding upon him and that he "will not for a moment attempt to disturb his action or in any manner criticise it," *Held* that he took a position contrary to the purpose and intent of Rule 126, making the rule, so far as he is concerned, without force or effect. [Id.

40. Same—Duty of the Examiner of Interferences.
The functions of the Examiner of Interferences are not restricted to the consideration of the single question of priority as to the invention of the issue as drawn up by the Primary Examiner. Where the evidence shows that there is no legitimate interference between two applications, it is the duty of the Examiner of Interferences, under Rule 126, upon ascertaining the facts to call the attention of the Commissioner thereto. Whether this be done before decision on the question of priority or not, his decision upon that question is by the rule left to the discretion of the Examiner of Interferences.
[Id.

41. Motion to Dissolve—Stay of Proceedings.
A motion to dissolve will not operate as a stay of proceedings in any case, and the pendency of such motion does not relieve the parties from the necessity for taking testimony within the time set.
[Leonard *v.* Chase, 1727.

42. Motion for Suspension.
A separate motion for suspension should be filed and should be supported by a showing as to why a suspension is necessary during the consideration of the other motion filed. Unless and until an order suspending proceedings is made the requirement that testimony be taken remains in force. (*Birrell* v. *Regan*, 62 MS. Dec., 149) [Id.

43. Same—Extension of Time.
When a party relies on his motion being granted and thus fails to take testimony within the time set, he does so at his own risk, since he has no right to an extension of time if his motion is denied. [Id.

44. Declaration—Claims Identical in Scope.
The present practice requires that interferences should be declared only when the claims involved are substantially identical in scope.
[*Ex parte* Thomas, 1729.

45. Same—Construing Claims—Limitations in Claims.
Where a claim has certain limitations introduced to satisfy the requirements of the Office as to its allowability over a reference and when in view of such limitations the claim is allowed, it cannot be said that such limitations are immaterial in order to declare an interference. [Id.

46. Preliminary Statement, Amendment to After Testimony Has Been Taken—Showing.
After testimony has been taken the showing which would warrant an amendment to a preliminary statement changing the date of disclosure must be of the same kind as if the moving party were attempting to carry his date back of that of his opponent.
[Bernard *v.* Huebel, 1729.

47. Same—Same.
Where an amendment to a preliminary statement is presented after testimony has been taken, the Office will not consider such testimony to determine what dates have been proved, but the possibility must be contemplated that the moving party may be attempting to carry his dates back of those which in his opinion have been established by his opponent. [Id.

48. Same—Negligence of Applicant.
Where an applicant prepares his preliminary statement under the counsel and direction of an attorney, but through ignorance of the law fails to inform him of all of the material facts within his knowledge as to the disclosure of the invention, *Held* that it shows negligence on his part and furnishes no good ground for permitting an amendment to the statement. [Id.

49. Testimony—Right of Party to Use in One Interference Testimony Taken in Another.
In considering a motion by a party after his time for taking testimony has expired that he be permitted to use in one interference testimony taken in another it must be decided not only whether the testimony itself is admissible, but whether the party has any right at that time to introduce any evidence, whether in the form requested or any other form.
[Stone *v.* Hutin and Leblanc, 1731.

50. Same—Rule 157.
Rule 157 relates merely to the form of the evidence and does not modify in any way the other rules in reference to the time within which testimony must be taken, and therefore evidence which is not admissible under such other rules cannot be admitted merely because presented in a different form under Rule 157. [Id.

51. Same—Surprise—Taking Additional Testimony.
A party must contemplate and guard against all ordinary attacks on his evidence, and where he introduces foreign patents and publications as disclosing the invention they are, like other evidence, open to consideration and explanation by his opponent in his rebuttal testimony, and the fact that he introduces evidence to show that they do not disclose the invention is no ground for the allegation of surprise. It furnishes no good reason for taking more testimony. [Id.

52. MOTION TO DISSOLVE—NON-ALLOWABLE AND REJECTED CLAIM IN INTERFERENCE—IRREGULARITY IN DECLARING INTERFERENCE.

Where Finzelberg and Schmidt's application did not clearly describe the process which is the subject-matter involved in the interference, and no claim was made to it, and the application did not contain an allowed or allowable claim interfering, within the meaning of the law, with Dolley's claim, and their single claim was under rejection, *Held* that the interference should be dissolved because such irregularities preclude proper determination of the question of priority. (*Hammond* v. *Hart*, 83 O. G., 743, cited.)

[Calm *v.* Dolley *v.* Finzelberg and Schmidt, 1869.

53. IRREGULARITY IN THE DECLARATION—RIGHT OF PARTY TO MAKE THE CLAIM—APPEAL.

Where it is contended on a motion to dissolve on the ground of irregularity in the declaration that a reissue application does not cover the same invention as the original patent and this motion is denied, *Held* that the question involves the right of a party to make the claim and no appeal lies from a favorable decision on that question.

[Holt *v.* Ingersoll, 1873.

54. REISSUE APPLICATION AND PATENT GRANTED ON SUBSEQUENT APPLICATION.

The rules do not expressly provide for an interference between an application for the reissue of an unexpired patent and a patent granted on an application filed subsequent to the grant of the patent sought to be reissued, and it is open to doubt whether such an interference should ordinarily be declared. [Id.

55. SAME.

Where, however, H's application was withheld from issue for long time in view of a probable interference with certain rejected claims in I's reissue application, but was finally passed to issue in view of I's unreasonable delay in taking an appeal from the rejection of his claims, *Held* that I cannot take advantage of his own delay until H's patent issued and thus avoid a contest on the question of priority. Under the circumstances the interference was properly declared.

[Id.

56. ISSUE MUST BE UNAMBIGUOUS.

For the speedy and orderly conduct of interference proceedings it is desirable that there should be the least possible room for dispute as to the meaning of the interference issue.

[Fitzgerald *v.* Guillemet, 2017.

57. SAME—DISSOLVING INTERFERENCE.

Where the meaning of the interference issue was not clear and not free from ambiguity, the interference was dissolved and remanded to the Primary Examiner for redeclaration should the parties make interfering claims. (*Hammond* v. *Hart*, 83 O. G., 743, cited.) [Id.

58. INTERFERENCE IN FACT—IDENTICAL CLAIMS.

An interference does not exist merely because the parties have claims in identical words, since to interfere those words must mean and refer to the same thing.

[Newton *v.* Woodward, 2020.

59. SAME—ORIGINAL DISCLOSURE—AMENDMENT TO.

Terms of reference copied by a party from an opponent's application after it is open to his inspection cannot change the invention and must be considered as meaning the same things as those originally employed. If there was no interference as to the invention originally disclosed a mere change in the words of reference will not produce it. [Id.

60. ISSUE.

An issue which is not a claim made by either party is not a proper issue. (*Hammond* v. *Hart*, 83 O. G., 743.) [Id.

61. REJECTED CLAIMS.

So long as the claims of an applicant stand rejected they cannot be placed in interference with similar claims of a patent, although that patent was granted during the pending of the application.

[*Ex parte* Russell, 2021.

INTERPRETER.

(See Depositions.)

INVENTION DESCRIBED BUT NOT CLAIMED.

(See Affidavits.)

INVENTOR.

(See Patents; Reduction to Practice, 3, 4, 5, 6.)

ISSUE IN INTERFERENCE CASES.

(See Interference, 13, 18, 22, 56, 60.)

JOINT AND SOLE INVENTOR.

NO PRESUMPTION AGAINST SOLE APPLICATION WHEN FILED PROMPTLY AND JOINT APPLICATION ABANDONED.

No presumption arises against a sole applicant by reason of his having previously made application as joint inventor with another for the same invention, the joint application having been abandoned and the sole application filed promptly upon ascertaining that the invention was in fact sole.

[Stupakoff *v.* Johnson, 982.

JUDGMENT ON THE RECORD.

(See Interference, 19.)

JURISDICTION.

(See Interference, 9, 30, 31; Petition to the Commissioner of Patents, 6.)

LACHES.

(See Interference, 8.)

LIMITATION OF CLAIMS.

(See Interference, 45.)

LIMITATION OF UNITED STATES PATENT BY FOREIGN PATENT PREVIOUSLY GRANTED.

FOREIGN PATENT—GERMAN GEBRAUCHSMUSTER—LIMIT OF TERM OF PATENT.

While it has never been decided by the courts whether a patent granted in this country for an invention previously made the subject of a *Gebrauchsmuster* is limited in term under section 4887 of the Revised Statutes, the data as to such *Gebrauchsmuster* should be given in the specification, the question of limitation being left to the courts.

[*Ex parte* Gillie, 1143.

LIMIT OF APPEAL.

(See Interference, 28, 29, 30.)

MACHINES.

(See Designs, 2.)

MECHANICAL PATENT.

(See Designs, 3.)

MISTAKE IN OATH.

(See Oath, 3.)

MODEL.

(See Reduction to Practice, 2.)

MOTION TO DISSOLVE INTERFERENCE.

(See Interference, 13, 18, 27, 28, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 52, 53, 57; Rehearing, 1.)

MOTION TO STRIKE OUT TESTIMONY.

(See Interference, 14, 15, 16, 17.)

NEGLIGENCE.

(See Interference, 48.)

NEW EVIDENCE.

(See Rehearing, 1.)

NEW MATTER.

(See Amendments, 3; Appeal to the Examiners-in-Chief, 2; Interference, 20; Petition to the Commissioner of Patents, 1, 5.)

NEW USE.

(See Construction of Specifications and Patents, 1.)

OATH.

(See Depositions; Designs, 6; Interference, 21.)

1. KNOWLEDGE AND BELIEF.
The statement by an applicant in his oath that he does not *know* that the invention was ever before known or used and that it has not to his *knowledge* been in public use for more than two years prior to the filing of his application is not sufficient, since the statute and rule require that these statements be made upon belief as well as upon knowledge.
[*Ex parte* Buddington, 1728.

2. STATEMENT AS TO FOREIGN APPLICATION.
The oath must state that no foreign application has been filed before the filing of this application or give the data of any such applications which have been filed, as required in Rule 46, and it is not sufficient to state that no foreign application has been filed more than seven months before this application.
[Id.

3. FORMS—MISTAKE IN.
The forms given in the Rules of Practice for adoption by applicants are merely suggestive, and a mistake in them furnishes no ground upon which the requirements of the rules may be disregarded.
[Id.

4. JUDGE OF AUSTRIAN COURT.
An oath executed before a judge of the Imperial Royal District Court of Austria and filed in this Office as part of an application for patent cannot be accepted, as it is not a legal oath under the statutes. (*Ex parte Gruson and Schumann*, 26 O. G., 274, cited.)
[*Ex parte* Wolski *et al.*, 2022.

PARTICULAR PATENTS.

RUSSELL—DEVICE FOR HOLDING AND DIPPING PILLS—No. 389,485—VOID.
Letters Patent No. 389,485, granted September 11, 1888, to John B. Russell, for a device for holding and dipping pills, consisting of a hollow bar having a number of seats for the reception of pills and adapted to have the air exhausted from its interior, so as to hold the pills to the seats by atmospheric pressure, is void for want of invention in view of the prior use of similar devices for analogous purposes.
[*Frederick R. Stearns & Company *v.* Russell, 1434.

PATENTEE AND APPLICANT.

(See Interference, 2.)

PATENTS.

GRANTING PATENTS—CONSIDERATION OF THE RIGHTS OF THE PUBLIC AND INVENTORS.
In granting patents the interests of the public are the primary consideration, and to these the privileges granted to inventors are secondary and subordinate.
[*Warner *v.* Smith, 311.

PETITION TO THE COMMISSIONER OF PATENTS.

(See Amendments, 3; Appeal to the Examiners-in-Chief, 2, 4.)

1. PETITION TAKEN FROM AN ACTION WHICH HAS NOT BEEN REPEATED PREMATURE.
Petition asking that the Examiner be directed to allow an application without further delay or else reject the claims on the prior state of the art or on some statutory ground and that he be advised that certain amendments required by him be not insisted on dismissed, it appearing that the question involved is one of new matter and it further appearing that as the Examiner has neither twice acted nor twice refused to act the petition is premature.
[*Ex parte* Schulze, 981.

2. PRACTICE.
Proper practice requires that an applicant should present fully before the Examiner the reasons why objections made should be withdrawn, and only after the position taken by the applicant is clear to the Examiner should petition be taken. It is not the duty of the Commissioner to act upon questions which could be and should be settled before the Examiner.
[*Ex parte* Appel, 1145.

3. PETITIONS—WITHDRAWAL OF EXAMINER'S OBJECTION.
Proper practice requires that reasons for the withdrawal of an Examiner's objections should be fully presented to the Examiner before petition to the Commissioner is taken.
[*Ex parte* Maynard, 1433.

4. PETITION—RULE 33.
The petition should contain a reference to the specification for a full disclosure of the invention, as is specifically required in Rule 33. It does not itself disclose the invention, and is therefore incomplete unless it refers to some paper which does disclose it.
[*Ex parte* Buddington, 1726.

5. ILLUSTRATION—MATTER CLAIMED.
Claims should cover specifically only what is illustrated in the drawings; but since it cannot be decided in this case whether the spurs or cleats are properly illustrated without passing upon the question of new matter involved in some of the claims this petition is dismissed.
[*Ex parte* Shearman, 1730.

6. EXAMINER'S ANSWER TO PETITION—JURISDICTION.
Although the Examiner holds that a petition is not the applicant's proper remedy, he should, in addition to raising the question of jurisdiction, set forth in his answer the reasons for his action, so that if the Commissioner reached a different conclusion on the question of jurisdiction he would have the benefit of the Examiner's views in passing on the question presented. (*Ex parte Sawn*, 54 O. G., 1561.)
[*Ex parte* Russell, 1871.

PRACTICE IN THE PATENT OFFICE.

(See Attorneys, 2.)

PRELIMINARY STATEMENT.

(See Interference, 25, 46, 47, 48.)

1. AMENDING PRELIMINARY STATEMENTS AFTER TAKING TESTIMONY.
A motion for leave to amend a preliminary statement brought by the senior party after testimony-in-chief has been taken may be granted when notice of such intended motion has been given and when any statements in the testimony may be met by rebuttal testimony.
[Webb *v.* Levedahl, 810.

2. AMENDING PRELIMINARY STATEMENT—NOTICE.
Notice of intention to move for amended statement given at the beginning of testimony-in-chief is sufficient notice.
[Id.

PRINTED PUBLICATIONS.

(See Affidavits.)

PRIORITY OF INVENTION.

(See Interference, 3, 4, 5, 11; Oath, 1.)

PUBLIC USE AND SALE.

(See Interference, 33; Oath, 1.)

REBUTTAL TESTIMONY.

(See Interference, 16.)

RECONSIDERATION.

RULE 60.
A mere request for second consideration without explanation or argument and without "distinctly and specifically pointing out the supposed errors in the Examiner's action" (Rule 60) is not sufficient to entitle an applicant to reconsideration.
[*Ex parte* Appel, 1145.

RECORDS OF THE PATENT OFFICE.

(See Inks Required in the Preparation of Papers for the Files of the Patent Office.)

REDUCTION TO PRACTICE.

(See Abandoned Experiments; Interference, 1, 3, 5.)

1. ACTUAL USE—TESTS.
What is successful construction is a matter the determination of which must largely depend upon the nature and purpose of the device in the particular case, as well as upon the special circumstances surrounding the alleged construction and use. Some devices are so simple and their purpose so obvious that the complete construction of one of a size and form capable of practical use might be regarded as a sufficient reduction to practice without actual use or test in an effort to demonstrate their complete success or probable commercial value.
[*Mason *v.* Hepburn, 147.

2. DRAWING—MODEL.
A drawing perfect in every detail and plainly demonstrating the principle and practical utility of an invention is not reduction to practice, nor is a model, designed, constructed, and intended merely as a model.
[*Id.

3. DILIGENCE IN—PUBLIC WITHDRAWING PRIVILEGES FROM AN INVENTOR.
When an inventor in any manner or for any reason refuses to give to the public the benefit of his invention, the public are entitled to withdraw from him the special protection accorded to him for his invention. On this principle an inventor is required to be diligent in reducing his conception or invention to practice.
[*Warner *v.* Smith, 311.

4. FAILURE TO PROMPTLY DISCLOSE INVENTION AFTER ITS REDUCTION TO PRACTICE—CONTRAVENING INTERESTS OF THE PUBLIC—INJURING RIVAL INVENTOR.
One who has made an invention and who has locked it up in the secrets of his own exclusive knowledge and who produces it only when a rival inventor has entered the field cannot be held to have acted in accordance with the policy of the law or with the spirit and purpose of the Constitutional provision relating to promoting "the progress of science and useful arts." Such inaction not only contravenes the interests of the public, but also operates to injure a rival inventor who in the meantime enters the field of invention upon the faith of the conditions as they appear to exist and upon which he is entitled to rely.
[*Id.

5. PRESUMPTION AS TO ABANDONED EXPERIMENT—PROVING CASE BEYOND REASONABLE DOUBT.
Probably one who makes an invention and keeps it within his knowledge and fails to lay claim to it until a rival has entered the field is not barred by any statute from making his claim, and if he proves his case he and not his rival will be entitled to a patent; but such conditions make it imperative upon him that he should prove his case beyond all reasonable doubt, and the Patent Office and the courts are justified in presuming in such cases that what is claimed to be reduction to practice is no more than mere experiment until the contrary is clearly shown.
[*Id.

6. SAME—SAME.
Where Smith claims to have reduced the invention to practice in January, 1892, and thereafter did nothing and remained silent for three years and nine months, although there were several occasions when he might and should have spoken if his invention was such as he now claims it to have been, and he made no movement, either through the Patent Office or otherwise, to give the public the benefit of it in any way, and during this time there was a demand for the invention, and there is no explanation of the delay in filing an application, *Held* that under these circumstances the presumption is in favor of the theory that he did not have a completed invention in January, 1892, or at any time prior to the filing of his application in the Patent Office.
[*Id.

7. DEVICE CAPABLE OF USE.
A device that could be used and might to some extent serve the purpose for which it was designed *Held* to be not necessarily a reduction to practice.
[*Id.

8. ABANDONED EXPERIMENT.
Killinger stood on his record date of July 25, 1892. Guilbert claimed to have conceived the invention and reduced it to practice in November, 1891. *Held* that the exhibit offered by Guilbert to show reduction to practice was at best nothing more than a mere experimental model abandoned or laid aside and recalled afterward by the publication of Killinger's patent. The decision of the Commissioner awarding priority to Killinger affirmed.
[*Guilbert *v.* Killinger, 313.

REFERENCES.

(See Interference, 10; Reopening of Cases; Withdrawal of Case from Issue.)

REHEARING.

(See Reconsideration.)

1. NEW EVIDENCE—CONSTRUCTION BY EXAMINERS-IN-CHIEF—SURPRISE.
The construction placed by the Examiners-in-Chief upon an issue is not such new evidence as would justify a rehearing of a motion to dissolve an interference granted on the ground that the issue is not patentable as to one count. It does not furnish ground for the allegation of surprise.
[Casler *v.* Armat, 1583.

2. APPEAL.
It is doubtful if an appeal lies from the decision of the Examiner refusing to grant a rehearing in any case, and his action will certainly not be reviewed where he fully considers the points raised in his decision denying a rehearing.
[Holt *v.* Ingersoll, 1873.

REISSUES.

(See Interference, 54, 55.)

REJECTED CASES.

(See Amendments, 4; Reconsideration; Reopening of Cases.)

REJECTED CLAIMS.

(See Amendments, 3; Designs, 1; Interference, 55, 61.)

1. IRREGULAR ACTION—REJECTION.
Where the Examiner's action was irregular but was in effect a rejection and was so recognized by the applicant, the case is in condition for appeal and will not be remanded for further action by the Examiner.
[*Ex parte* Adams, 311.

2. FUNCTION IN CLAIMS—OBJECTION—REJECTION.
Claims which, while including sufficient mechanical elements to effect a function expressed in the claims, depend upon that statement of function to distinguish them from the prior art are not to be objected to, but are subject to rejection.
[*Ex parte* McMullen, 507.

REOPENING OF CASES.

REFERENCE AFTER REJECTION.
An additional reference cited after final rejection in effect reopens a case.
[*Ex parte* Horstick, 981.

RIGHTS OF THE PUBLIC.

(See Patents; Reduction to Practice, 3.)

SCOPE OF CLAIM.

(See Interference, 44.)

SENIORITY OF PARTIES TO INTERFERENCE.

(See Interference, 26.)

SOLE INVENTOR.

(See Joint and Sole Inventors.)

SPECIAL EXAMINATION.

(See Petition to the Commissioner of Patents, 1.)

STATE OF THE ART.

(See Appeal to the Examiners-in-Chief, 5; Construction of Specifications and Patents, 2.)

STAY OF PROCEEDINGS.

(See Interference, 41.)

SURPRISE.

(See Interference, 51; Rehearing, 1.)

TAKING TESTIMONY.

(See Interference, 34, 35, 37, 42, 43, 46, 47, 49, 50.)

TESTIMONY.

(See Depositions; Interference, 11, 14, 15, 16, 49; Trade-Marks, 13.)

TRADE-MARKS.

1. REPRESENTATION OF A CAT, WORDS "OLD TOM," FOR GIN.
A trade-mark consisting in the pictorial representation of a cat in a crouching position, three of its legs resting on the ground and the fourth being in an elevated position, the whole being printed in gold on a red background, generally arranged as shown in the drawing, in which the colors, excepting black and white, are omitted, and the words "Old Tom" inclosed in a border surmounting the same, and the words "Celebrated Cordial Gin" appearing beneath the same, refused registration as a trade-mark for gin on a mark consisting of a cat standing upon a barrel on which are placed the words "Old Tom," on the ground that while there are differences in the details, the salient features of both marks being the representation of a cat, the minor differences are not such as to sufficiently differentiate the two marks.
[*Ex parte* Kaufmann & Blache, 145.

2. REGISTRATION OF INTERFERING OR DECEPTIVE TRADE-MARKS CONDEMNED.
The Patent Office should not register trade-marks which would have a tendency to mislead or deceive the public or which would be held to be an infringement upon prior registered or unregistered marks. [Id.

3. "P-I-T-T-S-B-U-R-G-H P-U-M-P"—GEOGRAPHICAL AND DESCRIPTIVE WORDS.
The words "P-I-T-T-S-B-U-R-G-H P-U-M-P," arranged in letter-hyphenated form, refused registration as a trade-mark for pumps on the ground that the word "Pittsburgh" being geographical and "Pump" descriptive and the petitioner carrying on the business of the manufacture of pumps at Pittsburg, Pa., it follows that it has no right to monopolize the words, at least as against every other manufacturer of pumps in Pittsburg.
[*Ex parte* Pittsburgh Pump Company, 309.

4. SAME—SAME—HYPHENATING WORDS—ESSENTIAL FEATURE.
By hyphenating the words the essential feature of the trade-mark has not been changed to a degree that would warrant registration. The geographical and descriptive words still remain, notwithstanding the form in which they are shown in the *facsimile*, the essential features of the trade-mark, and it would be a very close observer who would pay any heed to the manner in which the letters were separated. [Id.

5. AMENDMENT—CHANGING DATE OF ADOPTION.
Applicant applied for the registration of the words "Pittsburgh Pump" on April 16, 1897, and upon registration being refused he amended the application by setting forth that the essential feature "is the words P-I-T-T-S-B-U-R-G-H P-U-M-P, arranged in letter-hyphenated form," and amended the statement to set forth that the mark had been used since March 22, 1896. *Held* that the amendment ought not to have been received, as it is not good practice to permit such a change to be made in what is set forth as the essential feature of a trade-mark as might make the statement as to the period of use not apply to the new mark. [Id.

6. SHAPE OF BOTTLE—DESIGN PATENT.
Applicant sought to register as a trade-mark for mixtures of liquids containing celery a bottle of peculiar and original form. *Held* that registration should be refused, as the form of a package alone can rarely be the subject of trade-mark protection. If the form is peculiar enough to be protected, it should be the subject of a design patent.
[*Ex parte* Dunkley Celery and Preserving Company, 310.

7. "VELVRIL"—NAME OF PATENTED ARTICLE.
The word "Velvril" refused registration as a trade-mark for a nitrocellulose compound, as it is the name of a patented compound which will become public property at the expiration of the patent.
[*Ex parte* Velvril Company, Limited, 807.

8. REGISTERING MARKS THAT BECOME PUBLIC PROPERTY BEFORE EXPIRATION OF TIME FOR WHICH THEY ARE REGISTERED.
In view of the fact that under the trade-mark act of 1881 a certificate of registry remains in force for thirty years from its date, (with certain exceptions,) *Held* that the Patent Office should not register trade-marks which, though lawful trade-marks at the date when registry is sought, will become public property before the expiration of the thirty years. [Id.

9. SIMILARITY OF LABEL.
The appellant adopted for its packages a label bearing as a central figure a symbolical representation of Columbia, having the word "Columbia" on its pedestal and surrounded by a rectangular border or framing having a star at each corner and bearing at each side edge of the package the word "Columbia" in fanciful design and at each end of the package the words "Pure Tissue." The appellees adopted for their packages a label having printed in large letters diagonally across the face the word "Columbia," surrounded by a rectangular border, within which are fanciful corner designs, a peculiar design near the middle of the left-hand side, a conspicuous figure of a stork in the lower part of the right-hand side, the printed words "Medicated Toilet Paper," and the figures and words "1000 sheets—Wire Looped." *Held* that save in the common use of the word "Columbia," which is open to both parties, the labels are wholly unlike. (81 O. G., 1615, reversed.)
[*Morgan Envelope Company *v.* Walton *et al.*, 811.

10. "COLUMBIA"—GEOGRAPHICAL TERM.
Following the decision of the Supreme Court in *Columbia* v. *Alcorn*, (65 O. G., 1916; 150 U. S., 460,) that a word in common use as designating a locality or section of country cannot be appropriated by any one as his exclusive trade-mark, *Held* that the appellees' claim or right to the exclusive use of the word "Columbia" as a designation of tissue or toilet paper cannot be maintained. [*Id.

11. "MALTED MILK" FOR FOOD PREPARATION — DESCRIPTIVE WORDS.
The words "Malted Milk" refused registration as a trade-mark for a food preparation for infants and invalids, as they are so far indicative of the ingredients and characteristics of petitioner's preparation as to be descriptive.
[*Ex parte* Horlick's Food Company, 1870.

12. "OLIVE" FOR BICYCLES—COLOR.
The word "Olive" refused registration as a trade-mark for bicycles, as the word simply indicates the color of the bicycles manufactured by the applicant.
[*Ex parte* Olive Wheel Company, 1871.

13. INTERFERENCE—DATE OF ADOPTION AND USE SET UP IN STATEMENT—WEIGHT TO BE GIVEN TO TESTIMONY SHOWING EARLIER USE.
Where a registrant sets up in his statement that he has used a trade-mark from a certain date and the testimony offered in an interference proceeding shows an earlier date, *Held* that such testimony may be considered and such weight given to it as may be proper under the circumstances of the case.
[Sherwood *v.* Horton, Cato & Company, 2018.

14. REGISTERING MARK IN FACE OF PRIOR REGISTERED MARK.
The Patent Office should not register a trade-mark in the face of a prior registration of the same mark for exactly the same class of goods unless the proofs are so clear and convincing that to refuse to do so would work an injustice to the applicant. [Id.

15. POWER OF PATENT OFFICE IN REFERENCE TO TRADE-MARK.
The Patent Office cannot confer the right to a trade-mark upon any one, nor, on the other hand, can it take away such right. Its powers in reference to trade-marks are very limited and entirely different from its powers in reference to the grant of patents. That difference is clearly set forth by the Court of Appeals of the District of Columbia in the case of *Ernstein* v. *Sawhill*, (65 O. G., 1918.) [Id.

16. INTERFERENCE—"ROYAL" FOR SALAD-DRESSING—PRIORITY.
As the proofs do not show beyond a reasonable doubt that Sherwood was the first to adopt and use the word "Royal" as a trade-mark for salad-dressing, the decision of the Examiner of Interferences in awarding priority to him is reversed. [Id.

VOID PATENTS.

(See Construction of Specifications and Patents, 3; Particular Patents.)

WITHDRAWAL OF CASE FROM ISSUE.

1. AFTER INTERFERENCE—NEW REFERENCE.
After an application has been examined, allowed, and been through a long interference it should not be withdrawn from issue for the citation of a new reference unless the Examiner is satisfied that such reference fully meets the claims.
[*Ex parte* Atterbury, 1583.

2. SAME—APPEAL—SPEEDY HEARING.
When an application after interference and allowance is withdrawn for the citation of a new reference, every facility for speedy hearing on appeal should be furnished. [Id.

WITNESSES.

(See Depositions.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING SEPTEMBER 30, 1898.

[Claims and drawings of Designs do not appear in the Monthly Volumes or the Gazette. Separate indexes for Designs, Trade-Marks, Labels, and Prints follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
A. B. Farquhar Company. (See Eisenhart, Henry W., assignor.)						
A. B. Hendryx Company. (See Hendryx, Andrew B., assignor.)						
A. Featherstone & Company. (See Binns, William H., assignor.)						
A. G. Spalding & Bros. (See Robinson, James E., assignor.)						
A. I. Root Company. (See Weed, Edward B., assignor.)						
A. R. Milner Seating Company. (See Milner, Albert R., assignor.)						
Aab, Wilhelm, New Ulm, Minn. Clothes-wringer	610,882	Sept. 20	1337	306	84	1735
Abbee, Leslie H., S. A. Sewall, and A. J. Bennwitz, Denver, Colo. Stopper or closure	608,502	Aug. 2	500	132	84	772
Abbott, Daniel, San José, Cal. Feathering paddle-wheel	611,007	Sept. 20	1554	358	84	1776
Abbott, Henry W., Chicago, Ill., assignor of one-half to W. L. Reed, Stockton, Cal. Refrigerating apparatus	607,321	July 12	1286	274	84	265
Abbott, Thomas B., Sale, Victoria. Handle for kerosene-tins or the like	610,425	Sept. 6	536	118	84	1541
Abbott, William O., assignor of two-thirds to C. J. Coon, Buffalo, N. Y., and W. R. Zulich, Cincinnati, Ohio. Car-signal	607,561	July 19	1904	393 394	84	406
Abel, Karl, Berlin, Germany. Table	609,765	Aug. 30	2955	691	84	1289
Abernathy, Henry J., Socorro, N. Mex. Ter. Vise	611,091	Sept. 20	1711	393	84	1806
Abernathy, Henry J., Socorro, N. Mex. Ter. Umbrella-support for bicycles	611,190	Sept. 20	1884	435	84	1839
Abraham, George S., Pittsburg, Pa. Silk-holder	611,227	Sept. 27	1980	457	84	1877
Abrams, Lovina J., *et al.* (See Thurber, Charles F., assignor.)						
Abrams, William M., Jr., *et al.* (See Thurber, Charles F., assignor.)						
Ackerman, C. W. (See Pjerrou, John F., assignor.)						
Ackerman, George E., *et al.* (See De Tamble, Henry, assignor.)						
Ackerman, Michael, Howard, S. D. Fly-brush for screen-doors	607,206	July 12	1064	280	84	222
Ackroyd & Best. (See Best, William, assignor.)						
Acme Machinery Company. (See Bruch, Frederick W., assignor.)						
Acme Staple Co. (See Michener, Elwood H., assignor.)						
Adams, Alma H., Irvington, N. J. Badge	608,357	Aug. 2	340	74	84	723
Adams, Calvin T., New York, N. Y. Vehicle-tire	609,318	Aug. 16	2162	511	84	1106
Adams, Calvin T., New York, N. Y. Vehicle-tire	609,319	Aug. 16	2163	511	84	1106
Adams, Calvin T., New York, N. Y. Vehicle-tire	609,320	Aug. 16	2165	511	84	1106
Adams, Ernest K., New York, N. Y. Compensating pendulum	606,753	July 5	223	48	84	45
Adams, Ernest K., New York, N. Y. Device for recording and reproducing music	608,415	Aug. 2	448	100	84	745
Adams, Frederick G., London, England. Chain-wheel for velocipedes	607,322	July 12	1288	275	84	265
Adams, John C. (See Kay and Adams.)						
Adams, John Q., Alexandria, La. Washing-machine	611,372	Sept. 27	2266	523 524	84	1080
Adams, Marcellus, West Plains, assignor of one-half to J. C. Diss, Kansas City, Mo. Finger-ring exhibitor	608,946	Aug. 9	1433	337	84	950
Adams, Samuel H., London, England. Apparatus for raising sewage	609,321	Aug. 16	2165	512	84	1106
Adamson, Edward, assignor to Excelsior Loom Reed Works, Incorporated, Pawtucket, R. I. Reed for looms	610,911	Aug. 30	3404	788	84	1377
Adde, Charles A., assignor of one-half to T. H. and A. A. Harmon, Lock Haven, Pa. Sizing composition	606,951	July 5	547	.....	84	109
Addicks, John E., *et al.* (See Kelley, Alexander, assignor.)						
Adell, Henry D., Columbus, Ohio. Ball-caster	609,568	Aug. 23	2605	609	84	1207
Adrian Box Company. (See Gilliland, James F., assignor.)						
Advance Thresher Company. (See McCutcheon, John B., assignor.)						
Aermotor Company. (See Dyer and Noyes, assignors.)						
Agard, Charles F., Hartford, Conn. Sliding-door guide and closer	609,605	Aug. 23	2673	624	84	1220
Agerter, William T. (See Woodman, George A., assignor.)						
Aglar, Francis B., assignor to Interchangeable Brake Beam Company, St. Louis, Mo. Brake-beam	609,396	Aug. 23	2293	543	84	1140
Ahearn, William F., assignor of one-half to P. Gagnon, Two Rivers, Wis. Net-lifting machine	608,631	Aug. 9	880	192	84	887
Ahern, Denis, New York, N. Y. Boat	608,555	Aug. 9	708	159	84	815
Ahern, Thomas F., Detroit, Mich. Telephonic transmitter	606,862	July 5	408	86	84	81
Ahlborn, Lucy L. (See Weeks, Parrish C., assignor.)						
Aht, Babette, assignor to G. Menke, Frankfort-on-the-Main, Germany. File for loose sheets, papers, &c.	611,443	Sept. 27	2397	550	84	1952
Aichele, Christian, assignor to North Brothers Manufacturing Company, Philadelphia, Pa. Dasher for ice-cream freezers	609,392	Aug. 16	2167	512	84	1106
Aigner, Alexander, Buda-Pesth, Austria-Hungary. Parallel motion for drawing-boards	607,814	July 26	2377	505	84	515

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Aiken, Benjamin F., Freetown, Mass. Device for cleaning paint and varnish from surfaces	608,907	July 5	487	105	84	97
Aikin, Adelaide A., Stockton, Ala. Copying-press	609,397	Aug. 23	2298	543	84	1150
Aitken, John D., Northport, N. Y. Tire-holder	611,546	Sept. 27	2582	595	84	1989
Akerlind, Gustaf A., and J. T. Carroll, Chicago, Ill. Car-transom	609,323	Aug. 16	2168	512	84	1107
Akers, Earl C., Port Huron, Mich. Drawbridge	610,575	Sept. 13	804	184	84	1610
Akins, Ralph L., Newark, N. J., assignor to Whitehead & Hoag Company, of New Jersey. Removable cover	609,071	Aug. 16	1684	401	84	1013
Akins, Ralph L., Newark, N. J., assignor to Whitehead & Hoag Company, of New Jersey. Removable book-cover	609,072	Aug. 16	1686	401	84	1014
Alberger, John L., Buffalo, N. Y. Process of and apparatus for gasing beer or similar liquids	608,744	Aug. 9	1028	236	84	876
Albright, Harry W., assignor of one-half to J. A. Stoner, York, Pa. Brake	610,426	Sept. 6	537	118	84	1541
Alexander, Archie. (See Coltrin, John C., assignor.)						
Alexander, Arthur H., London, England. Indexing-machine	606,853	July 5	408	87	84	81
Alexander Smith & Sons Carpet Company. (See Tymeson, Eugene, assignor.)						
Alexander, Thomas G. A., New York, N. Y. Keyless lock	611,547	Sept. 27	2583	595 596	84	1989
Alexandroff, Warsanophy, assignor of one-half to A. Coumbary, St. Petersburg, Russia. Means for increasing lifting capacity of floating bodies	607,815	July 26	2378	505	84	515
Allden, Thomas S., *et al.* (See McAlpine, John, assignor.)						
Allen, Aaron B., Pueblo, Colo. Metallic cross-tie and rail-fastening	607,906	July 26	2566	544	84	550
Allen, Benjamin F., Mobile, Ala. Car-truck	610,785	Sept. 13	1163	268 269	84	1684
Allen, Charles H., assignor of one-half to E. E. Wood, Woburn, Mass. Leather-splitting machine	611,026	Sept. 20	1587	364	84	1782
Allen, Charles L. (See Bowman, John H., assignor.)						
Allen, David H., Miamisburg, Ohio. Combined reading stand and table	608,503	Aug. 2	591	132	84	773
Allen, Elmer E., Sunderland, Vt. Folding chair	611,048	Sept. 20	1625	371	84	1789
Allen, Elmer E., Sunderland, Vt. Reclining-chair	611,049	Sept. 20	1627	372	84	1789
Allen, Everett P., assignor of one-half to J. H. Egelston, Chicago, Ill. Automatic air-valve for radiators	609,191	Aug. 16	1906	454	84	1052
Allen, Frederic S., New York, N. Y. Tricycle for propulsion by hand-power	606,952	July 5	547	120	84	109
Allen, George H., Clinton, N. Y. Decorating wood in imitation of marquetry	606,953	July 5	548	121	84	109
Allen, George L., Bradford, Pa. Machine for making mud-guards for bicycles	608,313	Aug. 2	252	57 58 59	84	705
Allen, John F., New York, N. Y. Portable drilling-machine	607,816	July 26	2379	505	84	515
Allen, John H., Keyser, W. Va. Combination-tool	607,907	July 26	2568	544	84	550
Allen, John R., Idlewood, Ill. Spark-arrester	606,637	July 5	1	1	84	3
Allen, John V., Philadelphia, Pa. Puncture-band for pneumatic tires	608,166	Aug. 2	1	1	84	655
Allen, John W., and C. West, New Windsor, Ill. Check-row planter	610,786	Sept. 13	1168	269	84	1684
Allen, Jot S., assignor of one-fifth to M. M. Ham, Gainesville, Ga. Coffee or tea pot	609,073	Aug. 16	1688	402	84	1014
Allen, Leslie B., Springfield, Mass. Illuminating apparatus	608,745	Aug. 9	1032	236	84	877
Allen Tripoli Company. (See McLean, Horace G., assignor.)						
Allen, William E., Salem, Mass., assignor to Draper Company, Portland, Me., and Hopedale, Mass. Warp stop-motion for looms	608,971	Aug. 9	1475	349	84	959
Allgoever, August, New York, N. Y. Skirt-protector	607,633	July 19	2040	423	84	432
Allsup, George, and G. D. Barry, Barneston, Nebr. Mechanism for lifting pipes or rods from wells	609,398	Aug. 23	2299	543	84	1150
Almstead, Gaston W., Bridgeport, Conn. Fire-extinguisher	607,562	July 19	1906	394	84	407
Almy, Elmer E., *et al.* (See Bell, Harold J., assignor.)						
Almy, William H., *et al.* (See Bell, Harold J., assignor.)						
Alshouse, Franklin E., Markle, Ind. Disk-harrow truck	608,167	Aug. 2	2	1	84	655
Althouse, Albert C., Pineville, Pa. Lamp-chimney holder	609,399	Aug. 23	2300	544	84	1151
Altman, Thomas. (See Brooks and Altman.)						
Alvord, Clarence E., Denver, assignor to M. P. Getchell, Gunnison, Colo. Sage-brush grubber	610,296	Sept. 6	302	65	84	1500
Alvord, Clarence E., Crested Butte, assignor to M. P. Getchell, Gunnison, Colo. Sage-brush grubber	610,375	Sept. 6	452	99	84	1525
Amazeen Machine Company. (See Bayley, Charles H., assignor.)						
Ambler, Russell P., De Funiak Springs, Fla. Bicycle	609,722	Aug. 23	2890	675	84	1263
American Automatic Banjo Company. (See Reed, William S., assignor.)						
American Ball Bearing Company. (See Baker, Walter C., assignor.)						
American Bell Telephone Company. (See Dean, William W., assignor.)						
American Bell Telephone Company. (See Stone, John S., assignor.)						
American Cash Register Company. (See Hoffman and Norton, assignors.)						
American Clay Working Machinery Company. (See Wallace, William W., assignor.)						
American Cotton-Bale Company. (See Heath, Mark A., assignor.)						
American Cotton Company. (See Graves, John W., assignor.)						
American Cotton Company. (See Swenson, Magnus, assignor.)						
American Dynamo Engine and Motor Lamp Company. (See Whitfield, Marcy D., assignor.)						
American Electric Heating Corporation. (See Chase, Harvey S., assignor.)						
American Electric Meter Company. (See Marks, William D., assignor.)						
American Electric Vehicle Company. (See Knudsen, Karsten, assignor.)						
American Engineering Company. (See Wood, Charles F., assignor.)						
American Fastener Company of Baltimore City. (See Mahon, Ormsby L., assignor.)						
American Graphophone Company. (See Macdonald, Thomas H., assignor.)						
American Incandescent Gas Company. (See Hennessy, Thomas, assignor.)						
American Indicator Company. (See Turner, Herbert C., assignor.)						
American Indicator Company. (See Turner, William A., assignor.)						
American Mutoscope Company. (See Casler, Herman, assignor.)						
American Pegamoid Company. (See Oliver, Frederick W., assignor.)						
American Soda Fountain Company. (See Lippincott, Fisher H., assignor.)						
American Stoker Company. (See Wood, Wilfred R., assignor.)						
American Tobacco Company. (See Campbell, Daniel J., assignor.)						
American Tool and Machine Company. (See Arnold, Henry F., assignor.)						
American Universal Lighting Company. (See Dennis, William H., assignor.)	610,337	Sept. 6	380	81	84	1513
Ames, Helen A., Brookline, Mass. Remailable box	610,338	Sept. 6	381	81	84	1513
Ames, Helen A., Brookline, Mass. Label-holder	608,746	Aug. 9	1034	236	84	878
Ames, John F., Portland, Oreg. Type and type-holder for box-printing						
Amm, James. (See Dingman, Allen H., assignor.)						
Ammonia Refrigerating and Supply Company. (See Landis, Frederick B., assignor.)						
Amory, William N. (See Binney, Charles R., assignor.)						
Amos, Alexander M., Buffalo, N. Y. Cooking-stove	607,976	July 26	2680	572	84	572

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Anderson, Anton G., and F. Mohn, Chicago, Ill. Automatic fire-extinguisher	610,376	Sept. 6	453	99	84	1525
Anderson, Charles, assignor to Heath-Quimby Company, Minneapolis, Minn. Swivel connection	609,383	Aug. 16	2258	534	84	1124
Anderson, David, and D. Bevan, Delphos, Ohio. Derailing device	611,548	Sept. 27	2587	596	84	1990
Anderson, Edward, Elgin, Ill. Bicycle-handle	608,566	Aug. 9	704	159	84	815
Anderson, Edward, assignor to J. A. McNaught, Sundance, Wyo. Hat-clip	608,821	Aug. 9	1201	281	84	907
Anderson, Edward H., and D. P. Thomson, Schenectady, N. Y., assignors to General Electric Company, of New York. Armature for dynamo-electric machines	608,277	Aug. 2	184	44	84	691
Anderson, Francis T. (See Middaugh, Hoevet, and Anderson.) (Reissue.)						
Anderson, Gustaf A., *et al.* (See Lundquist, Frank A., assignor.)						
Anderson, Gustave, assignor of one-half to Fairmount Machine Company, Philadelphia, Pa. Clutch	611,549 611,346	Sept. 27 Sept. 27	2588 2199	596 597 508	84 84	1991 1917
Anderson, Isaac, Vulcan, Colo. Amalgamator	607,323	July 12	1289	275	84	266
Anderson, James W., Philadelphia, Pa. Cornice-ladder	607,534	July 19	1851	385	84	398
Anderson, James W., Chrisman, Ill. Flood-gate						
Anderson, John, *et al.* (See Lundquist, Frank A., assignor.)						
Anderson, John, assignor of one-half to F. Hardart, Philadelphia, Pa. Butter cutting and feeding machine	608,016	July 26	2771	589	84	592
Anderson, John A. (See Jackson and Anderson.)						
Anderson, John J., Ellensburg, Wash. Adjustable table	608,094	July 26	2895	620	84	617
Anderson, Oscar, Newark, N. J. Bearing for vertical shafts	607,535	July 19	1852	385	84	398
Anderson, Valerius D., Cleveland, Ohio. Drier	610,516	Sept. 13	709	160	84	1591
Anderson, William C., San José, Cal. Apparatus for preparing prunes for drying	610,377	Sept. 6	455	99	84	1526
Andlauer, Raymond. (See Fink and Andlauer.)						
Andre, Jennie F. (See Powers, Abner B., assignor.)						
Andreoli, Emile, London, England. Apparatus for manufacturing ozone	607,007	July 12	669	145	84	153
Andres, John B., Denver, Colo. Pneumatic mattress	611,585	Sept. 27	2605	614	84	2004
Andrews, Frank T., Cleveland, and W. R. Johnson, Burton, Ohio. Boiler-cleaner	609,400	Aug. 23	2302	544	84	1151
Angell, Joseph T. N., New York, N. Y. Metallic packing	609,752	Aug. 23	2934	686	84	1271
Angle, Edward H., St. Louis, Mo. Dental pliers	610,840	Sept. 13	1255	289	84	1702
Anglo American Reduction Company. (See James and Jordan, assignors.)						
Ankarstolpe, Nels, Lund, Tex. Plow	607,207	July 12	1065	231	84	222
Annable, Warren W., Grand Rapids, Mich., assignor to Consolidated Car Fender Company, Providence, R. I. Car-fender	607,977	July 26	2682	572	84	572
Ansley, Charles L., assignor of one-fourth to C. G. Arthur, Atlanta, Ga. Air-brake	608,095	July 26	2896	620	84	617
Ansley, George W., Medical Lake, assignor of one-half to G. B. Jordan, Spokane, and A. L. Smalley, Davenport, Wash. Stapling-machine	610,116	Aug. 30	3561	825	84	1409
Ansonia Clock Company. (See Davies, Walter D., assignor.)						
Anthon, Johann, Flensburg, Germany. Machinery for making crozes for curved cask-headings	610,012	Aug. 30	3404	789	84	1377
Anthon, Johann, Flensburg, Germany. Machinery for hooping casks, barrels, or the like	610,221	Sept. 6	149	33, 34	84	1471
Anthony Wayne Manufacturing Company. (See Wichman, Albert C. F., assignor.)						
Antico, Ercole. (See Magini, Folli, and Antico.)						
Antrim, John G., Traer, Iowa. Furnace-door opener	611,310	Sept. 27	2138	494	84	1906
Apperson, Elmer. (See Haynes and Apperson.)						
Apperson, Thomas F., and C. H. Dorsey, Poetry, Tex. Roller-shelving and cloth-measurer combined	610,510	Sept. 6	695	156 157	84	1572
Appert, Leon, Paris, France. Manufacture of glass with metallic netting embedded therein	608,096	July 26	2899	621	84	618
Apthorp, Octavie L., Boston, Mass. Collapsible clothes and waste receptacle	608,998	Aug. 16	1551	369	84	989
Arakelian, Melkon L., New York, N. Y. Fermented milk food and preserving same. (Reissue)	11,691	Sept. 13	1333	.....	84	1719
Arbaugh, Leonard. (See Pearce and Arbaugh.)						
Arbuckle Brothers. (See Smyser, Henry E., assignor.)						
Arldt, Conrad, Berlin, Germany. Electrical signaling apparatus for transmitting commands	608,246	Aug. 2	138	34	84	682
Armor, George G. (See Meredith, Albert M., assignor.)						
Arms, Chester E. (See Arms, John and C. E.)						
Arms, John and C. E., South Lyon, Mich. Dehorning-clipper	610,669	Sept. 13	964	220	84	1641
Armstrong, Andrew, *et al.* (See Little, Alexander F., assignor.)						
Armstrong, Ernest, Camden, N. J., assignor to J. S. Latta and J. J. Mulconroy, Philadelphia, Pa. Stuffing-box	606,754 607,673	July 5 July 19	223 2110	48 440 441	84 84	46 444
Armstrong, James, and W. Heywood, Manchester, England. Combined filter and cooler	606,831	July 5	369	77, 78	84	78
Armstrong, James P., Port Byron, N. Y. Weighing-machine	607,817	July 26	2382	506	84	516
Armstrong, John, London, England. Treating complex ores	610,013	Aug. 30	3405	789	84	1377
Armstrong, John E. and W., Santa Cruz, Cal. Wave-power pumping apparatus	610,297	Sept. 6	303	65	84	1500
Armstrong, Peter, Kankakee, Ill. Convertible hand-car						
Armstrong, William. (See Armstrong, John E. and W.)						
Armstrong, William R. (See McGowan, John A., assignor.)						
Arner, William H., Groveland, and E. L. Hendershott, Penfield, N. Y. Milk-can	609,074	Aug. 16	1689	402	84	1014
Arnett, William D., Springfield, Ohio. Seeding-machine	610,316	Sept. 6	336	72	84	1506
Arno, Louis F., Jackson, Mich. Screen-door and window-screen	609,723	Aug. 23	2891	676	84	1263
Arnold, Daniel J. C., New London, Ohio. Metal wheel	609,958	Aug. 16	2054	487	84	1064
Arnold, Frank M., Grand Rapids, Ohio. Axle	609,925	Aug. 30	3232	757	84	1343
Arnold, Harry I., assignor to K. W. Arnold, Columbia, Tenn., A. Christiansen, and M. L. Arnold, Watervliet, N. Y. Rotary engine	610,161	Sept. 6	1	1	84	1443
Arnold, Henry F., Hyde Park, assignor to American Tool and Machine Company, Boston, Mass. Pulley	606,908	July 5	488	105	84	97
Arnold, Katye W., *et al.* (See Arnold, Harry I., assignor.)						
Arnold, Mary L., *et al.* (See Arnold, Harry I., assignor.)						
Arnold, Thomas E., Florence, assignor of one-half to C. B. Tozier, Cleveland, Ohio. Brush	607,908	July 26	2569	544	84	551
Arnold, William B. (See Pope, Charles H., assignor.)						
Arnold, William B., Abington, Mass. Last	607,978	July 26	2685	572	84	573
Arrick, Mariam C., Welcome, W. Va. Basket for catching sewing from machines	610,854	Sept. 13	1277	295	84	1707
Arrowsmith, Mary A., Freehold, N. J. Skein-holder	607,674	July 19	2110	441	84	445
Arthur, Charles G. (See Ansley, Charles L., assignor.)						
Arthur, John F., New York, N. Y. Milling and gear-cutting attachment	608,823	Aug. 9	1301	281	84	907
Asbell, Henry, assignor of one-half to J. J. Baker, Huntsville, Mo. Gate	609,926	Aug. 30	3233	757	84	1343
Ashburner, William G., Dalton-in-Furness, England. Disinfecting apparatus for water-closets, &c.	607,818	July 26	2384	506	84	516
Aschermann, Heinrich C., Cassel, Germany. Extracting metals from metallic oxids	610,014	Aug. 30	3407	.....	84	1378
Ashley, Edward L., assignor to Scovill Manufacturing Company, Waterbury, Conn. Tack-fastened button	607,909	July 26	2569	544	84	551
Ashley, Ralph, Port Republic, assignor to Guarantor Electric Company, Camden, N. J. Storage or secondary battery. (Reissue)	11,676	July 5	663	144	84	131

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Ashley, Rivingston. (See Skinner, John, assignor.)						
Ashman, David, Baltimore, Md. Power-transmitting device	610,151	Aug. 30	3619	841	84	1421
Ashman, Edward, McKeesport, Pa. Nut-lock	611,550	Sept. 27	2590	597	84	1991
Ashwell, Benjamin W., Manchester, England. Bicycle-brake	609,766	Aug. 30	2956	691	84	1299
Ashwell, Richard P., Newark, N. J. Folding crib	609,491	Aug. 23	2480	579	84	1184
Assorati, Antenor, New York, N. Y. Wrench	608,358	Aug. 2	342	75	84	724
Assorati, Antenor, New York, N. Y. Curtain-fixture	610,732	Sept. 13	1059	243	84	1663
Athearn, William E., Brooklyn, N. Y. Lightning-arrester	606,954	July 5	550	121	84	109
Atherton, Frank, Paterson, N. J. Telegraph-tape	610,339	Sept. 6	392	81	84	1513
Atherton, Robert, Paterson, N. J. Thread-spooling or quilling machine	610,162	Sept. 6	3	1, 2	84	1443
Atherton, Robert, Paterson, N. J. Weft-thread-winding and quilling machine	610,340	Sept. 6	392	82	84	1513
Atkinson, Edward E., assignor of one-third to H. W. Shaw, Ada, Ohio. Device for raising or lowering vehicle-curtains	608,314	Aug. 2	257	59	84	706
Atkinson, John H., Winnebago, Minn. Wrench	609,324	Aug. 16	2169	512	84	1107
Atkinson, Mahlon B., assignor of three-fourths to L. S. and C. D. Nicolai and J. Fitzmorris, Washington, D. C. Street-sweeper	611,586	Sept. 27	2666	614	84	2004
Atlantic Rubber Company. (See Doughty, Henry J., assignor.)						
Atwell, Benjamin D. (See Wheeler, Houston J., assignor.)						
Atwood, George F., Orange, N. J., assignor of one-half to F. M. Hoyt, Stamford, Conn. Mean-pressure indicator or power-gage	607,819	July 26	2385	506, 507	84	516
Atwood, Irving H., Amesbury, Mass. Coin-controlled apparatus for inflating tires	609,259	Aug. 16	2056	488	84	1084
Atwood, Lewis J., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Bicycle-lamp	608,097	July 26	2901	621	84	618
Atwood, William H., Lincoln, Nebr. Plumb-level	609,395	Aug. 16	2288	541	84	1130
Auger, Zenas, Middleborough, Mass. Pulley and device for securing same to shafts	610,576	Sept. 13	806	184	84	1610
Aurora Automatic Machinery Company. (See Levedahl, Axel, assignor.)						
Ausführungen für Eisenbahn-Oberbau-Abtheilung Stossfangschiene Siegm Eppenstein. (See Vietor, Alwin, assignor.)						
Austin, Frederick C. (See Clark, Joseph H., assignor.)						
Austin, Frederick C. (See Rhodes, Jay B., assignor.)						
Austin, Stephen J., Terre Haute, Ind. Railway oblique crossing	607,324	July 12	1290	275, 276	84	266
Authier, Peter, Jefferson, S. D. Device for holding hogs	608,632	Aug. 9	892	192	84	888
Automatic Gem and Gold Separator Syndicate. (See Lockhart, William S., assignor.)						
Automatic Weighing, Lifting, and Grip Machine Company. (See Merry, George G. S., assignor.)						
Avery, George C., assignor to B. F. Avery & Sons, Louisville, Ky. Cultivator	611,551	Sept. 27	2590	597	84	1991
Axene, David W., Kansas City, Mo. Coat and vest holder	608,633	Aug. 9	893	192	84	888
Axtell, Frank C. (See Stevens and Axtell.)						
Ayer, Albert E., Boston, Mass., assignor, by mesne assignments, to Justice Leather Measuring Machine Company, of Maine. Leather-measuring machine	608,538	Aug. 2	649	146, 147	84	784
Aymer, Robert, Colorado City, and D. J. Nevill, Denver, Colo. Filter-frame	610,506	Sept. 13	846	194	84	1619
Ayotte, Eugene. (See Nicol and Ayotte.)						
Ayrhart, John H., Dedham, Iowa. Riding and folding harrow	607,008	July 12	671	145, 146	84	153
B. F. Avery & Sons. (See Avery, George C., assignor.)						
B. F. Goodrich Company. (See Dunn, John W., assignor.)						
Baatz, Albert. (See Baatz, August and A.)						
Baatz, August and A., Butternut, Wis. Horse-detacher	609,724	Aug. 23	2893	676	84	1263
Babbidge, Frederick W., Rockland, Me. Toy	606,955	July 5	551	121	84	109
Bach, Elnar S., Colorado City, Colo. Receptacle for good and burned matches	610,883	Sept. 20	1339	306	84	1735
Bach, Maximilian, Pittsburg, Pa. Folding basket	610,787	Sept. 13	1170	270	84	1685
Badeker, John, Omaha, Nebr., assignor to T. W. Mitchell, Missouri Valley, Iowa, and W. Everett, Lyons, Nebr. Metallic packing	606,638	July 5	2	1	84	3
Badische Anilin and Soda Fabrik. (See Bohn, René, assignor.)						
Badische Anilin and Soda Fabrik. (See Julius, Paul, assignor.)						
Badische Anilin and Soda Fabrik. (See Schmid and Rey, assignors.)						
Baer, Joseph, Berlin, Germany. Vessel for retailing aerated beverages	611,464	Sept. 27	2436	560, 561	84	1961
Bagshawe, Bernal, Headingly, England, assignor to Fox Solid Pressed Steel Company, of Illinois. Wearing-liner for car-trucks	609,178	Aug. 16	1887	449	84	1048
Bahnsen, Rudolf, Barmstedt, Germany. Portable balcony	610,517	Sept. 13	709	160	84	1591
Bailey, Charles A., Cromwell, Conn. Pipe-threading implement	607,726	July 19	2187	462	84	460
Bailey, John A., Atlanta, Ga. Lathe attachment	609,767	Aug. 30	2958	692	84	1299
Bailey, John M., Boston, Mass. Process of and apparatus for treating crude oil in manufacturing gas and lubricating-oil	607,417	July 19	1467	311	84	317
Bailey, Reginald, Ellwood City, Pa. Rider or carriage for metal-rolling mills	610,015	Aug. 30	3408	790	84	1378
Bailey, Samuel R., Amesbury, Mass. Carriage-spring	610,788	Sept. 13	1171	270	84	1685
Baird, Archibald L., Sydney, New South Wales. Registering apparatus for cycle-races	610,689	Sept. 13	911	209	84	1632
Baker, Albert M., Lexington, Ky. Tellurian	610,317	Sept. 6	337	72, 73	84	1506
Baker, Alfred E. (See Smith and Baker.)						
Baker, Cyrus N., Nicholasville, Ky., assignor to C. H. Harnell and W. H. Hearn, Crawfordsville, Ind. Hand seed-planter	607,208	July 12	1068	231	84	223
Baker, Edward E., Pittsburg, Pa. Type-writer cabinet	610,752	Sept. 13	1091	250	84	1669
Baker Forge Company. (See Baker, James H., assignor.)						
Baker, Frederick, Caulfield, assignor of one-half to A. Wynne, Melbourne, Victoria. Means for securing heads of axes, hammers, &c., to their handles	611,092	Sept. 20	1712	393	84	1807
Baker, Gilbert L., Waterford, Cal. Hook	610,884	Sept. 20	1340	306	84	1735
Baker & Hamilton. (See Cowley, William A., assignor.)						
Baker, J. J. (See Asbell, Henry, assignor.)						
Baker, James C., Blue Grass, Iowa. Soap-holder	609,725	Aug. 23	2894	676	84	1263
Baker, James E., assignor of one-half to G. C. Kollock, Madison, Wis. Water-heater	609,866	Aug. 30	3130	731	84	1324
Baker, James H., Allegheny, assignor to Baker Forge Company, Ellwood City, Pa. Brake-lever for railway-cars	607,595	July 19	1970	409	84	419
Baker, James H., Allegheny, assignor to Baker Forge Company, Ellwood City, Pa. Connecting end for brake-rods	607,596	July 19	1971	409	84	419
Baker, John, Pasadena, Cal. Bicycle hub and bearing	607,727	July 19	2189	462	84	460
Baker, Lorenzo B. (See Phillips, William E., assignor.)	609,648	Aug. 23	2777	647	84	1240
Baker, Walter C., Cleveland, Ohio. Antifriction-bearing	608,017	July 26	2773	589	84	598
Baker, Walter C., assignor to American Ball Bearing Company, Cleveland, Ohio. Antifriction-bearing	608,823	Aug. 9	1908	281	84	907
Baker, Walter S., Newark, N. J. Kite	608,947	Aug. 9	1434	338	84	950
Baker, William R., assignor to Hitchcock Lamp Company, Watertown, N. Y. Shower-bath apparatus	608,308	Aug. 2	414	90	84	738
Baker, William S. G., Baltimore, Md. Adjustable collar for shafts						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Baker, William S. G., Baltimore, Md. Electric locomotive	610,982	Sept. 20	1515	347, 348	84	1768
Balch, Lewis, *et al.* (See Bergh, Jefferson L., assignor.)						
Baldwin, Annie W., New York, N. Y. Educational appliance	610,577	Sept. 13	807	184, 185	84	1610
Baldwin, Frederic E., New York, N. Y. Sprocket-chain gearing	609,927	Aug. 30	3235	757	84	1344
Baldwin, Frederic E., New York, N. Y. Bicycle-brake	610,296	Sept. 6	394	96	84	1500
Baldwin, George, Indianapolis, Ind. Plow	611,191	Sept. 20	1885	435	84	1839
Baldwin, Rollin A., assignor of one-half to H. Rowland, South Norwalk, Conn. Electric switch	610,016	Aug. 30	3410	790	84	1378
Baldwin, Stephen G., Marion, Ind. Inkstand	611,098	Sept. 20	1714	393, 394	84	1807
Baldwin, William W., assignor to Cleveland Co-Operative Stove and Hollow Ware Foundry Company, Cleveland, Ohio. Stove	609,768	Aug. 30	2959	692	84	1299
Bale, James, and A. E. Lapham, Paw Paw, Mich. Device for receiving and delivering mail-pouches from moving trains	611,094	Sept. 20	1715	394	84	1807
Ball Brothers Glass Manufacturing Company. (See Ball, Frank C., assignor.)						
Ball Brothers Glass Manufacturing Company. (See Bingham, Alvah L., assignor.)						
Ball, Frank C., assignor to Ball Brothers Glass Manufacturing Company, Muncie, Ind. Glass-blowing machine	610,515	Sept. 6	702	158, 159	84	1574
Ball, Philip D., St. Louis, Mo. Valve	609,726	Aug. 23	2895	676	84	1264
Ballantyne, Alexander, deceased; M. A. Ballantyne, Lead, S. D., administratrix. Tenoning-machine	611,552	Sept. 27	2592	598, 599	84	1991
Ballantyne, Martha A., administratrix. (See Ballantyne, Alexander.)						
Ballard, William O. (See Bright and Ballard.)						
Balliette, Charles H., Carlisle, assignor of one-half to A. B. Dunkle, Steelton, Pa. Railway	609,727	Aug. 23	2896	677	84	1264
Ballin, Constant C., Paris, France. Spring-hub for vehicle-wheels	611,095	Sept. 20	1718	394	84	1807
Baltruweit, Charles, New York, N. Y. Combined wagon, sleigh, and boat	609,649	Aug. 23	2778	647, 648	84	1240
Baltzley, Henry H. (See Clark and Baltzley.)						
Balzer, Stephen M., New York, N. Y., assignor of one-half to W. H. Humphrey, Norfolk, Conn. Type-writing machine	608,634	Aug. 9	895	193, 194	84	888
Bammann, Johann, and M. Ulrich, assignors to Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Blue-black azo dye	608,999	Aug. 16	1551	.....	84	989
Bancroft, Henry, Church, England. Pneumatic tire for vehicles	611,553	Sept. 27	2595	599	84	1992
Bandeen, Andrew and L. E., New Rochester, Ohio. Crusher and pulverizer	607,418	July 19	1469	311	84	317
Bandeen, Lloyd E. (See Bandeen, Andrew and L. E.)						
Bane, James O., Waseca, Minn. Spring attachment for pumps	609,000	Aug. 16	1553	369	84	989
Banker, George W., Keene, N. Y. Vented faucet for cans, &c	610,885	Sept. 20	1341	307	84	1735
Banks, George L. (See Kirkpatrick and Banks.)						
Banks, Thomas L., London, England. Construction of fireproof floors	608,098	July 26	2904	622	84	618
Bannatyne, Archibald, assignor to Waterbury Clock Company, Waterbury, Conn. Repeating clock	610,753	Sept. 13	1092	250	84	1669
Barber Asphalt Paving Company. (See Richardson, Clifford, assignor.)						
Barbour, Charles C., Grand Rapids, assignor of one-fourth to N. E. Staples, Cadillac, Mich. Heating and drying system	608,564	Aug. 2	697	158	84	794
Barclay, Nathan P., and C. M. Dayton, Bowling Green, Ky. Shipping-crate	611,228	Sept. 27	1979	457	84	1877
Bard, George P., Norwich, Conn. Bushing for die-stocks	606,774	July 5	268	56	84	54
Bardeen Paper Company. (See Simpson, Samuel W., assignor.)						
Barker, Henry. (See Greenleaf and Barker.)						
Barker, Rubeu F., and M. Corry, Marinette, Wis. Steam set-works for sawmills	608,018	July 26	2775	590	84	598
Barker, William H., Hartford, assignor to Bevin Brothers Manufacturing Company, East Hampton, Conn. Bicycle-bell	608,146	July 26	2977	639	84	632
Barlow, Howard E. (See Benham and Barlow.)						
Barnaby, Charles W., assignor of one-half to Phœnix Iron Works Company, Meadville, Pa. Steam-engine	610,017	Aug. 30	3411	791	84	1378
Barnard, Arthur W., and W. E. Butler, New York, N. Y. Removing paint and varnish	608,948	Aug. 9	1435	338	84	951
Barnard, Gardner P. (See Kinney and Barnard.)						
Barnard, Heman A., assignor to Barnard & Leas Manufacturing Company, Moline, Ill. Rice hulling and polishing machine	606,909	July 5	489	106, 107	84	97
Barnard, Henry R., New York, N. Y. Tobacco-pipe	609,260	Aug. 16	2058	488	84	1085
Barnard & Leas Manufacturing Company. (See Barnard, Heman A., assignor.)						
Barnes, Burr F., Circleville, Ohio. Separable frame for bicycles	607,325	July 12	1292	276	84	267
Barnes, John L., Milford, Ind. Sash-lock	610,699	Sept. 13	1001	232	84	1651
Barnes, Norman A., *et al.* (See Pearce, William, assignor.)						
Barney, Everett H., Springfield, Mass. Skate	608,416	Aug. 2	452	101	84	745
Barnhardt, William G., Tower City, Pa. Combined thill-coupling and brake	610,467	Sept. 6	613	137	84	1556
Barnhart, Orrin E. (See Evans and Barnhart.)						
Barnick, Frank L., New York, N. Y. Roller spring-hinge	607,728	July 19	2190	462	84	461
Barr, Lewis, Dayton, Ohio. Arm-rest	607,675	July 19	2111	441	84	445
Barr, William A., Washington, D. C. Eraser. (Reissue)	11,682	July 26	3014	648	84	639
Barr, William H., Bury, England. Domestic or other filter	609,769	Aug. 30	2961	692	84	1299
Barr, William J., Ashtabula, Ohio. Telephone-transmitter arm and its attachment	608,504	Aug. 2	593	132	84	773
Barreaux, Jules, Pittsburg, Pa. Elevator	607,326	July 12	1293	276	84	267
Barrett, Albert, assignor of two-thirds to A. Burt and B. C. Haldeman, Kansas City, Mo. Advertising device	607,327	July 12	1295	277	84	267
Barron, Hugh J., New York, N. Y. Apparatus for regenerating exhaust-steam	607,582	July 19	1944	404	84	414
Barron, James E., assignor of one-half to J. J. Hyland and L. W. Kethley, Crystal Springs, Miss. Cotton-cultivator	611,192	Sept. 20	1887	436	84	1840
Barrow, Charles C. and W. L., Shiloh Hill, Ill. Brake for hay-frames	611,096	Sept. 20	1719	395	84	1808
Barrow, Walter L. (See Barrow, Charles C. and W. L.)						
Barry, George D. (See Allsup and Barry.)						
Barry, Jefferson D., assignor of one-half to A. L. Branson, Marlin, Tex. Tool-handle	606,956	July 5	552	121	84	110
Barth, William L. (See Kinney and Barnard, assignors.)						
Barthel, Michael, San José, Cal. Wave-motor	610,378	Sept. 6	459	100	84	1526
Bartholomew, William A., Quincy, Ill. Dust receptacle or pouch	608,635	Aug. 9	845	194	84	841
Bartlett, Charles H., New Portland, Me. Lathe-chuck for woodworking machinery	608,636	Aug. 9	847	194	84	841
Bartlett, Charles H., Bristol, England. Apparatus for mixing tea	610,018	Aug. 30	3418	791	84	1379
Bartlett, Charles H., Bristol, England. Mill for cutting tea	610,019	Aug. 30	3419	792	84	1380
Bartlett, Fred B. (See Chancey, Frederick F., assignor.)						
Bartley, William A., Boston, Mass. Supporting-clip for overhead electric conductors	608,637	Aug. 9	848	195	84	842
Barto, Frank, New York, N. Y. Bicycle-steadying device	608,539	Aug. 2	651	147	84	784
Barton, Henry B. (See Smith and Barton.)						
Bascom, A. W. (See Kellum, Seth, assignor.)						
Bass, W. Alexander, *et al.* (See Sterne, Alfred J., assignor.)						
Bassett, George B., Buffalo, N. Y. Water-meter	608,168	Aug. 2	3	1	84	655

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bassett, Liston B., and E. E. Castle, Norwich, N. Y.; said Castle assignor to said Bassett. Sleeping-car	608,910	July 5	491	107	84	98
	610,620	Sept. 13	879	202	84	1626
Bassford, William K., Jr., Bound Brook, N. J. Commutator-brush holder	609,867	Aug. 30	3131	731 732	84	1324
Bastian, Charles L., Chicago, Ill. Carbonating apparatus	607,820	July 26	2388	507	84	517
Batcheller, Birney C., Philadelphia, Pa. Pipe-boring machine						
Batchelor, N. T. (See Brown, William, assignor.)						
Bates, George A., New York, N. Y., assignor to Mergenthaler Linotype Company, of New York. Linotype-machine	609,770	Aug. 30	2963	693	84	1290
	607,536	July 19	1854	385 386	84	399
Bates, Madison F., Lansing, Mich. Gas-engine						
Baudoin, Louis M. H. R., and P. E. L. Schribaux, Paris, France. Apparatus for concentrating liquids	611,404	Sept. 27	2326	536	84	1941
Bauer, William. (See Bickelberger, Frank M., assignor.)						
Bault, William. *et al.* (See Greenwood, John T., assignor.)						
Baum, Edward F. (See Jordan and Baum.)						
Baum, Frank W., Springfield, Mass., assignor to F. Wesel Manufacturing Company, New York, N. Y. Make-ready press	609,650	Aug. 23	2780	648	84	1241
	611,097	Sept. 20	1721	395	84	1808
Baum, Georg, Rorschach, Switzerland. Embroidering-machine	609,771	Aug. 30	2965	693	84	1290
Bauman, Henry G., Pittsburg, Pa. Steam and hot-water boiler	606,639	July 5	4	1	84	3
Baumann, Gerhard, Monmouth, N. J. Trace-holder	607,010	July 12	677	147	84	154
Baumann, Gustave A., Philadelphia, Pa. Weighing-receptacle	608,747	Aug. 9	1085	237	84	878
Baumann, Rudolf, Oerlikon, Switzerland. Self-heating crucible-furnace						
Baumeister, Leopold, assignor of one-half to J. F. Seifert, Bridgeport, Conn. Cooler for beverages	608,169	Aug. 2	4	1, 2	84	655
Bausch, Henry, assignor to Bausch & Lomb Optical Company, Rochester, N. Y. Mouth and throat mirror	610,518	Sept. 13	709	161	84	1591
Bausch, John J., assignor to Bausch & Lomb Optical Company, Rochester, N. Y. Lens-cutting machine	607,009	July 12	673	146 147	84	153
Bausch & Lomb Optical Company. (See Bausch, Henry, assignor.)						
Bausch & Lomb Optical Company. (See Bausch, John J., assignor.)						
Bauschlicher, August, Zbirow, Austria-Hungary, assignor to Roessler & Hasslacher Chemical Company, New York, N. Y. Process of and apparatus for making acetone	608,019	July 26	2776	591	84	593
Baxter, Edgar I. (See Dailey, Charles E., assignor.)						
Bay State Shoe Machinery Company. (See Bertrand, Joseph E., assignor.)						
Bayer, Philip, Knight's Ferry, Cal. Plow	611,027	Sept. 20	1589	364	84	1782
Bayley, Charles H., Boston, Mass., assignor to Amazeen Machine Company, Portland, Me. Leather-skiving machine	609,868	Aug. 30	3134	732	84	1325
Bayne, James, *et al.* (See Lisle, Myron C., assignor.)						
Beach, Edward A., Altoona, Pa. Colander	610,789	Sept. 13	1172	270	84	1695
Beardsley, Decker R., Huntsburg, Ohio. Sap-bucket	611,229	Sept. 27	1981	457	84	1877
Beasley, William F., Baltimore, Md. Seal	607,821	July 26	2391	508	84	517
Beasley, William F., Baltimore, Md. Seal-lock	607,822	July 26	2392	508	84	518
Beastow, William H., assignor to S. H. Brooks and R. A. Doxey, Manchester, England. Gear-cutting machine	606,700	July 5	116	5, 6	84	25
	607,910	July 26	2571	545	84	551
Beau, Henri, Paris, France. Hydraulic hammer or stamp	608,824	Aug. 9	1205	281	84	907
Beccaro, Giovanni, Acqui, Italy. Demijohn						
Bechmann, Heinrich. (See Koser, Georg, assignor.)						
Bechtoldt, Edward. (See Flindt, Carl J. H., assignor.)						
Beck, George W., *et al.* (See Garnier, Thomas R., assignor.)	607,209	July 12	1070	231	84	223
Beck, Thomas, Watsonville, Cal. Fruit-drier						
Becker, Charles G., and M. Osborn, Westfield, Mass. Treating rawhide for use in manufacturing whips	608,315	Aug. 2	259	59	84	706
Becker, Heinrich. (See Popp and Becker.)						
Becker, Nicholas F., Cincinnati, Ohio, assignor to C. Dickinson, Chicago, Ill. Automatic sack filling and sewing machine	608,567	Aug. 9	705	160 161	84	815
	608,638	Aug. 9	850	195	84	842
Becker, Nicholas F., Cincinnati, Ohio, assignor to C. Dickinson, Chicago, Ill. Bag-holder.						
Becker, Nicholas F., Cincinnati, Ohio, assignor to C. Dickinson, Chicago, Ill. Sack-sewing machine	608,639	Aug. 9	851	195 196	84	842
	610,790	Sept. 13	1173	270 271	84	1685
Beckers, Denie, San Pedro, Cal. Tide-water air-compressor	610,519	Sept. 13	710	161	84	1591
Beckett, Richard C., West Point, Miss. Car-coupling						
Beckfield, John C., assignor to Monarch Water Heater Company, Pittsburg, Pa. Water-heater	608,972	Aug. 9	1477	349	84	959
	609,134	Aug. 16	1810	430 431	84	1035
Beckwith, Grove R., and W. F. McCollum, Minneapolis, assignors to T. Cochran, Jr., St. Paul, Minn. Window-screen	610,427	Sept. 6	539	118	84	1542
Bedford, John M., Millersburg, Ky. Car-door lock	608,748	Aug. 9	1086	237	84	878
Bedoret, Victor, Havay, Belgium. Ridge-drill	607,328	July 12	1296	277 278	84	208
Beebe, Dillon, Newark, N. J. Racking or barrel-filling apparatus	609,869	Aug. 30	3137	733	84	1325
Beebe, Samuel S., Wisner, Nebr. Bicycle-support	607,329	July 12	1308	278 279	84	270
Beebe, Walter H., New York, N. Y. Truck	609,651	Aug. 23	2781	648 649	84	1241
Beekman, Gerard, New York, N. Y. Back-pedaling brake	609,652	Aug. 23	2783	649	84	1241
Beekman, Gerard, New York, N. Y. Safety device for bicycles						
Beeman, Joseph S., assignor to C. E. Lambert, C. and W. Butler, London, England. Can-opener	606,701	July 5	119	26	84	26
	609,001	Aug. 16	1554	369	84	989
Beer, Walter, London, England. Construction of metal bridges	609,223	Aug. 16	1978	470	84	1068
Beers, Philo M., Bridgeport, Conn. Needle-grooving machine	610,791	Sept. 13	1175	271 272	84	1685
Beesley, George, Sutton, England. Furnace	611,311	Sept. 27	2139	494 495	84	1907
Behr, Hans C., and R. E. Browne, San Francisco, Cal. Hoisting-machine						
Beighler, Henry E. (See Dodds, Horace G., assignor.)						
Beisel, Charles P., Wilkes-Barré, Pa. Skate	609,401	Aug. 23	2304	544	84	1152
Beldin, George D., Marengo, Ill. Combined pitchfork and shovel	611,312	Sept. 27	2142	495	84	1907
Belding, Austin M., and C. A. Rice, Osakis, Minn. Washing-machine	610,117	Aug. 30	3563	826	84	1410
Beler, Adolf, Allegheny, assignor to Monarch Water Heater Company, Pittsburg, Pa. Gas-burner	608,540	Aug. 2	652	147	84	784
	609,402	Aug. 23	2307	544 545	84	1152
Belknap, Frank D., New York, N. Y. Stencil-printing machine	609,606	Aug. 23	2675	624 625	84	1220
Bell, Charles P., Staunton, Va. Copying-press	610,253	Sept. 6	204	45	84	1481
Bell, Frank M., assignor of one-half to W. Pollack, New York, N. Y. Valve						
Bell, Harold J., Niagara, Canada, assignor to himself, E. E. and W. H. Almy, Rochester, N. Y. Acetylene-gas generator	608,541	Aug. 2	653	148 149	84	784

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Bell Telephone Company of Missouri. (See Dean, William W., assignor.)						
Bell, William F., *et al.* (See Morse, Frederick H., assignor.)						
Bell, William G., Boston, Mass. Apparatus for making meat-packages	607,676	July 19	2112	441	84	445
Bellis, Daniel A. (See Weddel, Jewett, Taylor, and Bellis.)						
Bellis, Thomas K. (See Hewett, Thomas, assignor.)						
Belmer, Charles G., Revere, Mass. Sole-edge-trimming tool	607,391	July 12	1414	302	84	290
Bem, Francisco V. de, Gloucester, Mass. Signaling at sea	608,387	Aug. 2	391	86, 87	84	733
Bemis, Harry E., York, Pa., assignor to Castelberg National Jewelry Company, Baltimore, Md. Eyeglass-case	608,640	Aug. 9	854	196	84	843
	608,316	Aug. 2	260		84	707
Beneké, George, Southport, England. Explosive and making same						
Benes, John J., Boston, Mass. Automatic railway-switch	609,753	Aug. 23	2936	686 687	84	1271
Bengert, John F., Brooklyn, N. Y. Bicycle-stand	607,330	July 12	1307	279	84	270
Benham, Elijah B., Mystic, Conn., and H. E. Barlow, Providence, R. I.; said Barlow assignor to F. F. Tripp, Boston, Mass. Machine for making toothpicks	609,075	Aug. 16	1692	403	84	1015
Benicke, Georg, Offenbach-on-the-Main, Germany. Protective cover for emery-wheels	608,417	Aug. 2	453	101	84	746
Benjamin, John H., Smith's Landing, N. Y. Match-box	607,537	July 19	1858	396	84	399
Benner, Ernest W. (See Bosca and Benner.)						
Bennett, Abijah B., Opelika, Ala. Invalid-bed	607,011	July 12	678	147	84	154
Bennett, Arthur E. (See Webster and Bennett.)						
Bennett, Fredrick R. (See Noble and Bennett.)						
Bennett, Herbert O. (See Johnston, Jonathan, assignor.)						
Bennett, Lawrence J., Solvay, N. Y. Switch-operating device	611,193	Sept. 20	1888	436	84	1840
Bennik, Hendrik, Hamburg, Germany. Door-operating appliance	606,640	July 5	5	1, 2	84	4
Bennwitz, Aurel J. (See Abbee, Sewall, and Bennwitz.)						
Benolt, Joseph F., assignor of one-half to G. B. Goodall and H. J. Hope, Sanford, Me. Picker-staff for looms	608,542	Aug. 2	656	149	84	785
Benscheidt, Herman, *et al.* (See Stephenson, John R., assignor.)						
Benson, Andrew, assignor to Rouse, Hazard & Company, Peoria, Ill. Rear-wheel-adjusting device	609,403	Aug. 23	2309	545	84	1152
	610,700	Sept. 13	1002	232 233	84	1652
Benson, Charles B., Chicago, Ill. Rotary engine						
Benson, John H., and L. Greenwald, Leadville, Colo. Damper-fastener for stoves or stovepipes	609,135	Aug. 16	1813	431	84	1036
	608,278	Aug. 2	186	45	84	691
Benson, Peter, Minneapolis, Minn. Capo tasto	608,279	Aug. 2	187	45	84	692
Benson, Peter, Minneapolis, Minn. Guitar						
Benstead, Thomas. (See Fowler and Benstead.)						
Bentley, William, assignor to Rex Cash Register Company, Limited, Toronto, Canada. Cash-register	609,384	Aug. 16	2259	534 535	84	1124
Bentley, William H., and J. E. Roberts, Jamestown, N. Y. Vehicle-hub	608,099	July 26	2905	622	84	619
Benton, Francis E., Stoughton, Mass. Wooden clothes-pin	609,261	Aug. 16	2059	488	84	1085
Benton, William S. (See Scott and Benton.)						
Bentz, Charles. (See Brobst, Ulysses S. G., assignor.)						
Bentz, Olivier, Paris, France. Photographic finder	607,583	July 19	1947	404	84	415
Berchtold, Anton, Innsbruck, Austria-Hungary. Cooking vessel	609,569	Aug. 23	2606	609	84	1208
Berck, George, Boelus, Nebr. Scoop-handle attachment	607,154	July 12	978	211	84	206
Berg, Anton, Chicago, Ill. Mold for brick-machines	607,787	July 19	2297	485	84	480
Berg, Clarence A. F., Providence, R. I. Bicycle saddle-post	606,775	July 5	269	56	84	54
Berg, Ludvig H., Brigham City, Utah. Vulcanizing apparatus	607,823	July 26	2395	508	84	518
Berg, Sven O., St. Louis, Mo. Smoke-consuming furnace	608,435	Aug. 2	480	108	84	751
Bergener, Charles, assignor to C. T. Ham Manufacturing Company, Rochester, N. Y. Bicycle-lamp	609,192	Aug. 16	1908	454	84	1053
Bergener, Charles, assignor to C. T. Ham Manufacturing Company, Rochester, N. Y. Lamp	609,193	Aug. 16	1910	455	84	1053
Bergener, Charles, assignor to C. T. Ham Manufacturing Company, Rochester, N. Y. Bicycle-lamp	609,222	Aug. 16	1976	469	84	1068
Berger, Joseph A., assignor of one-half to J. P. Larson, Chicago, Ill. Pneumatic-tire fastener	611,230	Sept. 27	1982	458	84	1877
	610,020	Aug. 30	3422	792	84	1380
Bergeron, Célestin, New York, N. Y. Awning						
Berkh, Jefferson L., Cobleskill, assignor of two-thirds to G. H. Thacher and L. Balch, Albany, N. Y. Process of and apparatus for clarifying milk	607,109	July 12	891	192	84	191
	610,520	Sept. 13	711	161	84	1592
Berghaus, Gustav, Gummersbach, Germany. Tobacco-pipe	607,588	July 19	1860	397	84	400
Bergman, John A., Chicago, Ill. Combined chair and bed						
Bergmann, Frederick. (See Henneberg and Bergmann.)						
Bergqvist, Axel F., Fairfield, Iowa. Plow	609,492	Aug. 23	2481	579 580	84	1184
Bergstrom, John H., Danbury, Conn. Bicycle	606,854	July 5	414	88	84	82
Beringer, Carl. (See Scheele, Walter T., assignor.)						
Berkey, William A., *et al.* (See Lisle, Myron C., assignor.)						
Berkstresser, John E., Sylacauga, Ala. Horse-detacher	609,194	Aug. 16	1912	455	84	1054
Berliner, Emile. (See Jenkins, Charles F., assignor.)						
Bernard, William, New York, N. Y. Match-holder	609,404	Aug. 23	2310	545	84	1153
Berninghaus, Eugene, Cincinnati, Ohio. Barber's chair	609,002	Aug. 16	1555	370	84	989
Berry, Charles E., Cambridge, Mass. Collar and hame and fastening therefor	610,792	Sept. 13	1177	272	84	1686
Berry, Charles E., Cambridge, Mass. Draft apparatus	610,793	Sept. 13	1178	272	84	1686
Berry, Daniel A., Northampton, England. Heel and toe tip	607,729	July 19	2192	462	84	461
Berry, Joseph, Tacoma, Wash. Charcoal-kiln	607,831	July 12	1308	279	84	270
Bertolett, Edwin F., assignor to Bertolett Manufacturing Company, Philadelphia, Pa. Metal window frame and sash	609,984	Aug. 30	3361	780	84	1368
Bertolett Manufacturing Company. (See Bertolett, Edwin F., assignor.)						
Bertrand, Joseph E., Boston, Mass., assignor to Bay State Shoe Machinery Company, Boston, Mass., and Portland, Me. Thread-waxing device for sewing-machines	607,392	July 12	1310	280	84	270
Bertrand, Joseph E., Boston, Mass., assignor to Bay State Machinery Company, Boston, Mass., and Portland, Me. Sewing-machine	607,404	July 12	1439	306	84	294
Bertsch, Charles A. (See Guild and Bertsch.)						
Bertsch & Co. (See Guild, George, assignor.)						
Bertsch & Co. (See Guild and Bertsch, assignors.)						
Besso, Marco. (See Pignotte, Lori, Regnoli, Besso, and Pantaleoni.)						
Best, William, Sr., Abingdon, Ill. Display-rack	610,163	Sept. 6	6	2	84	1444
Best, William, assignor to Ackroyd & Best, Limited, Morley, England. Miner's safety-lamp	610,511	Sept. 6	607	157	84	1573
	606,818	July 5	342	73	84	68
Best, William J., Grand Rapids, Mich. Bicycle-saddle	610,794	Sept. 13	1183	273	84	1688
Betjemann, George W., and W. Candland, London, England. Lock-bottle						
Betts, George J., *et al.* (See Thurlow and Hignett, assignors.)						
Betts, Henry C., Middletown, Cal. Gate	607,333	July 12	1311	280	84	271
Beutelspacher, Henry, Bridgeport, Conn. Air-purifier for beer-pumps	609,498	Aug. 23	2484	580	84	1185

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Bevan, David. (See Anderson and Bevan.)						
Bever, Augustus, Dewsbury, England. Valve-gear	609,772	Aug. 30	2967	694	84	1291
Bevin Brothers Manufacturing Company. (See Barker, William H., assignor.)						
Bevington, James H., and H. M. Fisher, Akron; said Fisher assignor, by mesne assignments, to G. C. Nott, Cleveland, Ohio. Railway-torpedo	608,020	July 26	2779	591	84	594
Beyer, Gustav M., Milwaukee, Wis. Slate-frame cushion	608,247	Aug. 2	140	35	84	682
Bickel, Louis, Akron, Ohio. Wire-tightener	609,405	Aug. 23	2311	545	84	1158
Bickelberger, Frank M., Hyde Park, assignor of one-half to W. Bauer, Oakley, Ohio. Folding car-step	609,136	Aug. 16	1814	431	84	1086
Biddle, Robert, Jr., and E. J. Frost, Philadelphia, Pa. Hydrocarbon incandescent burner	609,653	Aug. 23	2784	649	84	1242
Bidwell, George A., Pittsfield, Mass. Hoisting apparatus	610,318	Sept. 6	342	73	84	1507
Bieber, George G., Philipsburg, Mont. Bicycle	608,825	Aug. 9	1207	282	84	908
Biele, Charles F., New York, N. Y. Show-case	606,911	July 5	493	107 / 108	84	98
Bierwirth, William H., Torrington, Conn. Photographic-plate washer	607,677	July 19	2113	442	84	445
Biery, Lewis E., New Kensington, Pa. Bag-holder	611,347	Sept. 27	2201	508	84	1918
Bigelow, Frank A., *et al.* (See Hall, Ezra M., assignor.)						
Bigelow, John, Minneapolis, Minn. Cigar-holder and tobacco-pipe	608,170	Aug. 2	6	2	84	656
Bigelow, John, Minneapolis, Minn. Smoking-pipe	610,597	Sept. 13	848	194	84	1619
Bigelow, Volney A., *et al.* (See Hall, Ezra M., assignor.)						
Biggs, Alden, Jr., Westhampton, N. Y. Basket	606,798	July 5	307	64	84	61
Biggs, Alden, Jr., Westhampton, N. Y. Means for securing tools on handles	610,733	Sept. 13	1060	243	84	1668
Biggs, Lester E. (See Biggs, Lester M., assignor.)						
Biggs, Lester M., assignor to L. E. Biggs, Akron, Ohio. Toilet appliance	609,870	Aug. 30	3139	733 / 734	84	1326
Bille, Numa A., assignor of one-half to F. Müller, Philadelphia, Pa. Bicycle handle-bar	608,021	July 26	2780	591	84	594
Bille, Numa A., assignor of one-half to F. Muller, Philadelphia, Pa. Adjustable grip for handle-bars of bicycles	610,254	Sept. 6	205	46	84	1482
Billing, Kaspar. (See Doflein and Billing.)						
Billings, Charles E. (See Wilson, Thomas B., assignor.)						
Bingham, Alvah L., assignor to Ball Brothers Glass Manufacturing Company, Muncie, Ind. Glass-blowing machine	608,022	July 26	2781	591 / 592 / 593	84	594
Bingham, George S., *et al.* (See Russell, William, assignor.)						
Binney, Charles R., London, England, assignor to W. N. Amory, New York, N. Y. Means for preventing vibration in vehicles	608,505	Aug. 2	594	133	84	778
Binney, Harold, trustee. (See Thomas, Eddy T., assignor.)						
Binns, William H., Chicago, Ill. Retainer for ball-bearings	607,584	July 19	1949	404	84	415
Binns, William H., assignor to A. Featherstone & Company, Chicago, Ill. Sprocket attachment for cycles	610,152	Aug. 30	3020	841	84	1422
Bird, Earle. (See Ryland, Thomas J., assignor.)						
Bird, Ralph, Jersey City, N. J. Cradle	609,654	Aug. 23	2786	649	84	1242
Bird & Son, F. W. (See Marshall, Lewis C., assignor.)						
Birdsall, Benjamin S., Raceland, La. Liquid-elevating wheel	609,655	Aug. 23	2787	650	84	1242
Birely, Charles, Shelbyville, Ind. Wood-finishing device	608,171	Aug. 2	7	2	84	656
Birkicht, George E., *et al.* (See Neeley, George S., assignor.)						
Birmingham Brass Company. (See Curtis, Charles H., assignor.)						
Birner, Charles P., assignor to Monarch Cycle Manufacturing Company, Chicago, Ill. Housing for screw-threaded cycle parts	611,194	Sept. 20	1889	436	84	1840
Birnie, Alfred. (See Holcomb, Charles M., assignor.)						
Bishop & Babcock Company. (See Champ, Joseph H., assignor.)						
Bishop & Co., George H. (See Wuest, Frederick, assignor.)						
Bishop, Jane E. (See Wells, Arthur W., assignor.)						
Bisler, Gustav A., Philadelphia, Pa. Paper box	610,255	Sept. 6	206	46	84	1482
Bistline, Samuel N., Andersonburg, Pa. Sulky-cultivator	611,554	Sept. 27	2596	509	84	1992
Bixby, John L., Arlington, assignor to N. Conant, Brookline, Mass. Annunciator gas-fixture	608,100	July 26	2907	622	84	619
Black, Crosby M. (See Dougherty, William, assignor.)						
Black, David G., *et al.* (See Gardanier, George W., assignor.)						
Black, Henry C., Oakland, Cal. Drawing beer or similar liquids	607,979	July 26	2696	573	84	573
Blackford, Atwell J., Cleveland, Ohio. Oil-burner	607,641	July 19	2051	427	84	435
Blackford, William H., assignor to Detroit Casket Company, Detroit, Mich. Burial-casket	609,262	Aug. 16	2059	489	84	1085
Blackman, Horace, H. Cone, and B. J. Neill, San Francisco, Cal. Wrapping and Package-containing paper	611,373	Sept. 27	2208	524	84	1930
Blackmarr, Frederick S., Minneapolis, Minn. Washing-machine	607,911	July 26	2572	545	84	551
Blackwood, Andrew J., Stirling, Kans. Attachment for tops of vessels used in making tea or coffee, &c	608,641	Aug. 9	855	197	84	843
Blair, Thomas H., Northborough, Mass. Kinetographic camera	611,231	Sept. 27	1984	458	84	1878
Blais, Joseph, Sherbrooke, Canada. Vehicle-wheel	610,468	Sept. 6	614	137 / 138	84	1556
Blake, John H., New York, N. Y. Magaziue bolt-gun	608,023	July 26	2787	593 / 594	84	595
Blake, William B., and S. Hubbard, Bedford, Ohio. Chemical fire-extinguisher	611,555	Sept. 27	2600	600	84	1998
Blanchard, Allen I., Chicago, Ill., assignor to National Cash Register Company, Dayton, Ohio. Cash-register	610,379	Sept. 6	460	100 / 101	84	1527
Blanton, Edward A., Jr., Ridley Park, Pa. Filling-piece for cans	611,556	Sept. 27	2602	600	84	1998
Blashfield, James M., Jackson, Mich. Adjustable handle-bar for bicycles	610,469	Sept. 6	615	138	84	1556
Bláthy, Otto T., and K. de Kandó, Buda-Pesth, Austria-Hungary. Means for preventing disturbances in telephonic circuits	606,912	July 5	494	108	84	98
Blauvelt, Orlando W. (See Rudy, William W., assignor.)						
Blazer, Almer N., assignor of one-half to F. I. Otis, Mescalero, N. Mex. Ter. Power-wheel	611,098	Sept. 20	1722	395	84	1808
Bleakly, Hugh, and F. L. Vesseriat, Alliance, Ohio. Filter	607,155	July 12	979	211 / 212	84	206
Blechynden, Alfred, Barrow-in-Furness, England. Feed-water regulator for boilers	608,568	Aug. 9	710	161 / 162	84	816
Blekkink, Evert J., Amsterdam, N. Y. Detachable hinge	607,156	July 12	980	212	84	206
Blenkner, Fred C., Columbus, Ohio. Die for producing jewel-receiving pins	607,597	July 19	1972	409	84	419
Blessing, Louis. (See Likins, William H., assignor.)						
Bligh, Samuel L., Custards, Pa. Fire-kindler	611,232	Sept. 27	1987	458	84	1878
Bliss, Dwight J., and E. J. Richmond, Carthage, Mo. Water-filter	611,426	Sept. 27	2370	544	84	1948
Block, Carl, St. Louis, Mo. Horse-collar	609,328	Aug. 16	2178	513	84	1108
Block, Harry, *et al.* (See Heath, Heber L., assignor.)						
Block, Leopold, *et al.* (See Heath, Heber L., assignor.)						
Blodgett, Harrison H., Omaha, Nebr. Wood-preserving composition	606,702	July 5	121	.....	84	26

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Blodgett, Henry. (See Noel, Louis, assignor.)						
Blom, Tage, Copenhagen, Denmark. Lubricator	610,222	Sept. 6	150	34	84	1471
Blood, Charles W. H., assignor to S. A. Woods Machine Company, Boston, Mass. Self-oiling bearing	607,980	July 26	2688	573	84	573
Blood, George B., Pittsburg, Pa. Reflector-holder	609,004	Aug. 16	1558	371	84	990
Blossom, Herbert, New York, N. Y. Saddle for velocipedes	607,651	July 19	2072	432	84	436
Blum, Leon, *et al.* (See Labatt and Lewis, assignors.)						
Blye, Harry C. (See Koch, Gustave, assignor.)						
Boalt, William L. (See Holzhausen, Friedrich von, assignor.)						
Board, James L. (See Holden and Board.)						
Boas, Moritz, *et al.* (See Choquette, Joseph, assignor.)						
Boasso, Eugene D., assignor of one-half to H. M. Cotten, Charenton, La. Weighted nut-lock	609,325	Aug. 16	2170	513	84	1107
Bock, Alexander, Copenhagen, Denmark. Candle-burning lantern for vehicles, &c	611,099	Sept. 20	1724	396	84	1809
Bodley, James W. (See Mallon, James, assignor.)						
Bodley, James W., Staunton, Va. Apparatus for unloading sugar-cane from cars, &c	611,167	Sept. 20	1849	426	84	1832
Bodnar, Franz X., and S. L. Kreppel, Vienna, Austria-Hungary. Coin-operated lock mechanism	610,578	Sept. 13	808	185	84	1610
Boehner, William, Chicago, Ill. Bookbinding	607,012	July 12	680	148	84	155
Boehringer & Soehne, C. F. (See Fischer, Emil, assignor.)						
Bogani, Arthur H., assignor to Foot Manufacturing Company, New York, N. Y. Composition for buffing-wheels	609,326	Aug. 16	2171	.....	84	1107
Bogart, Charles V., Fitchburg, Mass. Centering-gage	610,021	Aug. 30	3423	793	84	1381
Bogel, Henry F., assignor of two-thirds to H. Stelling and G. M. Lawton, San Francisco, Cal. Curtain-hanger	609,179	Aug. 16	1888	449	84	1048
Boggis, Elizabeth, Philadelphia, Pa. Stamp and envelop moistener	608,642	Aug. 9	856	197	84	843
Bogisch, Alfred, assignor to Firm of J. Hauff, Feuerbach, Germany. Photographic developer	608,147	July 26	2978	.....	84	683
Bohler, John F., Pandora, Ohio. Bolster-spring	610,841	Sept. 13	1256	290	84	1703
Böhm, Ludwig K., New York, N. Y., assignor to Electro Gas Company, of West Virginia. Acetylene-gas generator	609,494	Aug. 23	2486	581	84	1185
Bohn, René, Mannheim, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Blue-black dye and making same	609,327	Aug. 16	2171	.....	84	1107
Boig, James H., Liverpool, England. Game apparatus	607,013	July 12	681	148	84	155
Boimare, Pierre, Paris, France. Furnace	608,826	Aug. 9	1208	282	84	908
Boissier, Hermann R., New York, N. Y. Electroplating apparatus	611,100	Sept. 20	1725	396	84	1809
Boland, John, Decatur, assignor of one-half to C. E. Peebles, Raymond, Ill. Acetylene-gas-generating apparatus	608,643	Aug. 9	857	197	84	843
Boldt & Vogel. (See Mentze, Hugo W. E., assignor.)						
Bole, William A., and T. J. Hogan, Pittsburg, Pa. Igniting device for gas-engines	611,348	Sept. 27	2202	508 / 509 / 510	84	1918
Boleman, Sidi K. (See Oden and Boleman.)						
Bolinder, Erik A., Stockholm, Sweden. Self-closing cock or tap-valve	607,210	July 12	1072	232	84	223
Bolinski, Herman J., New London, Wis. Stock feeder and waterer	609,728	Aug. 23	2897	677	84	1264
Bolsom, A. J. (See Savage, Alexander J., assignor.)						
Boman, Claes W., assignor to Eagle Pencil Company, New York, N. Y. Fountain-pen	610,428	Sept. 6	542	119	84	1542
Bomford, Benjamin. (See Bomford and Evershed.)						
Bomford, Raymond, Salford Priors, B. Bomford, Harrington, and H. Evershed, Salford Priors, assignors to Road Breaking Company, (Voysey and Hosacks Patents,) Limited, London, England. Apparatus for scarifying and breaking roads	606,641	July 5	8	2	84	4
Bonafede, Carlo, Rome, Italy. Automatic funnel	610,521	Sept. 13	712	161 / 162	84	1592
Bond, John J. C., *et al.* (See Cozine, Charles G., assignor.)						
Bond, Walker J., Atoka, Ind. Ter. Lumber-wagon	608,644	Aug. 9	859	198	84	844
Bone, William L., Manchester, England. Low-water-alarm and safety valve	606,832	July 5	371	79	84	74
Bonet, Leopold, Chicago, Ill. Velocipede-saddle support	609,076	Aug. 16	1698	403	84	1015
Böniger, Melchior, assignor to Chemische Fabrik, vormals Sandoz, Basle, Switzerland. Brown azo dye	608,024	July 26	2794	.....	84	597
Bonnell, Bertrand L., Donnellson, Iowa. Railway-switch	608,569	Aug. 9	711	163	84	817
Bonwell, William H., Jr., Whitcomb, Ind. Car-coupling	607,334	July 12	1313	280	84	271
Bonzano, Adolphus, Philadelphia, Pa. Strut-tie for preventing creeping of rails	611,101	Sept. 20	1728	396	84	1810
Boorman, David, A. P. Sharp, and J. O'Neil, Altoona, Pa. Apparatus for removing snow	608,827	Aug. 9	1209	282	84	908
Boos, Joseph B., Carroll, Iowa. Suspenders	609,329	Aug. 16	2175	513	84	1108
Booth, Irving E., *et al.* (See Hatfield, Charles B., assignor.)						
Booth, John, Terre Haute, Ind. Bicycle-support	608,749	Aug. 9	1037	238	84	878
Booth, Joseph, New York, N. Y. Automatic playing-card shuffler	609,729	Aug. 23	2899	678	84	1265
Booth, Joseph, New York, N. Y. Apparatus for shuffling cards	609,730	Aug. 23	2900	678	84	1265
Booth, Quentin W., *et al.* (See Hatfield, Charles B., assignor.)						
Booth, T. W. (See Sachse, Paul C., assignor.)						
Borden, Herbert E., and C. A. Niederstadt, Saginaw, Mich. Bulletin-board	607,419	July 19	1471	311	84	317
Borelli, Peter, Wapinitia, Oreg. Projectile	609,008	Aug. 16	1557	370	84	990
Borge, Frank, and J. E. Clary, Newman, Cal. Moldboard attachment for plows	611,849	Sept. 27	2307	510	84	1919
Boring, William A., New York, N. Y. Building-truss	607,335	July 12	1315	281	84	271
Borios, Alphonse. (See Haigh and Borios.)						
Bortmann, Gustav, and R. Munkwitz, Leipsic, Germany. Door-stop	610,886	Sept. 20	1342	307	84	1736
Borton, George W., *et al.* (See Nazel, John, assignor.)						
Borton, J. Harvey, *et al.* (See Nazel, John, assignor.)						
Borton, Stockton, assignor to Wilcox & Gibbs Sewing Machine Company, New York, N. Y. Sewing machine	608,317	Aug. 2	261	59, 60	84	707
Bosca, Anadore B., and E. W. Benner, Lowell, Mass. Apparatus for unwinding cylindrical cotton-bales	608,399	Aug. 2	415	91	84	738
Boska, Henry. (See Brooks, John J., assignor.)						
Bossert Electric Construction Company. (See Bossert and Pomeroy, assignors.)						
Bossert, William F., and W. D. Pomeroy, assignors to Bossert Electric Construction Company, Utica, N. Y. Automatic circuit-breaking switch	610,887	Sept. 20	1343	307	84	1736
Bostock, Ralph. (See Cheetham and Bostock.)						
Boston Woven Hose and Rubber Company. (See Cowen, Robert, assignor.)						
Bostwick, Chauncey B., Pittsburg, Pa. Power mechanism for traction-engines	607,014	July 12	682	148 / 149	84	155
Botelho, Antonio M., Cintra, Portugal. Portable furnace or stove	607,642	July 19	2054	427	84	435
Botulinski, Dmitro M., Boston, Mass. Bale or box hook	608,172	Aug. 2	8	2	84	656
Bouchet, John P. (See Manning and Bouchet.)						
Boudreaux, Louis, Paris, France. Manufacturing printing-blocks in copper, nickel, &c	608,948	Aug. 2	140	.....	84	682
Boughton, William G., Frostburg, Md. Sad-iron	606,642	July 5	11	3	84	5
Bougleux, Alberto. (See Bougleux, Eugenio and A.)						
Bougleux, Eugenio and A., Livorno, Italy. Sterilizing corn for making dough	607,981	July 26	2690	.....	84	574

Alphabetical list of patentees, July to September, inclusive—Continued.

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Bouhey, Philippe. (See Roux, Charles, assignor.)						
Bovensiepen, Gustav, Mettmann, Germany. Process of and apparatus for hardening points of cards	610,022	Aug. 30	3425	793	84	1380
Bowden, Ernest M., London, England. Mechanism for transmitting motion or power	609,570	Aug. 23	2606	609 610	84	1208
Bowell, George B. (See Hope-Jones and Bowell.)						
Bowen, George M., assignor to M. Bowen, Talbott, Tenn. Wagon-seat	609,607	Aug. 23	2677	625	84	1220
Bowen, Mary. (See Bowen, George M., assignor.)						
Bowen, Shelby, Poppa, W. Va., assignor of one-half to S. Herald and J. T. Vinson. Lock	609,224	Aug. 16	1981	471	84	1069
Bowen, William J., and C. A. Federer, assignors to L. Sands, Cleveland, Ohio. Automatic cut-out for magneto-generators	610,023	Aug. 30	3426	793 794	84	1381
Bower, Elijah C., Milwaukee, Wis. Cell-case	606,913	July 5	495	109	84	98
Bower, Frederick T., *et al.* (See Thurlow and Hignett, assignors.)						
Bower, Harry A., Chelsea, assignor to W. P. Lee and W. H. Breen, Boston, Mass. Heating and illuminating attachment for gas-burners	609,656	Aug. 23	2790	650	84	1248
Bowers, Anna E., Wilkinsburg, Pa. Curtain-pole	608,101	July 26	2908	622	84	619
Bowers, Lillie B., Grinnell, Iowa. Stove	610,795	Sept. 13	1184	273	84	1688
Bowie, Charles H., Lisbon Falls, Me. Scaffold-hanger	610,888	Sept. 20	1345	308	84	1736
Bowles, Lewis, and J. W. Hansbrough, San Francisco, Cal. Ice-locomotive	610,889	Sept. 20	1346	308	84	1736
Bowley, Joseph H., Washington, D. C., assignor of one-half to J. W. Stockwell, Marengo, Ill. Electric-circuit controller. (Reissue)	11,689	Aug. 30	3635	845	84	1425
Bowman, Daniel W., and E. R. Kinney, assignors to said Bowman and E. W. Kohne, Toledo, Ohio. Hydrocarbon-burner	608,025	July 26	2796	594	84	597
Bowman, Harvey, Forgy, Ohio. Orchard-ladder	610,890	Sept. 20	1348	308	84	1736
Bowman, John H., Hazelton, assignor of one-third to C. L. Allen, Beaver Meadow, Pa. Bicycle air-brake	610,796	Sept. 13	1186	273	84	1688
Bowman, Lewis H., assignor of one-fourth to R. McGahey, Walla Walla, Wash. Sash-fastener	608,102	July 26	2910	623	84	619
Bowman, Newton K., Lawrence, assignor to A. Hurford, Canton, Ohio. Mine-gate	608,436	Aug. 2	481	108 109	84	751
Bowman, Newton K., Lawrence, assignor to A. Hurford, Canton, Ohio. Mine-gate	608,506	Aug. 2	595	133 134	84	774
Bowman, Newton K., Lawrence, assignor to A. Hurford, Canton, Ohio. Mine-gate	608,645	Aug. 9	861	198	84	844
Box, Alfred E., Egremont, England. Coin-freed apparatus	608,750	Aug. 9	1088	238	84	878
Boxley, George, assignor to Mosher & Curtis, Troy, and A. Poindexter, New York, N. Y. Buttonhole-band	610,579	Sept. 13	811	185	84	1011
Boyd, Peter, assignor to Riverside Iron Works, Wheeling, W. Va. Apparatus for wiping pipe	609,263	Aug. 16	2061	480	84	1085
Boyer, Richard M. (See Weaver, Ira A., assignor.)						
Boyer, William S., Butte, Mont. Door-hanger	610,598	Sept. 13	850	195	84	1620
Boyle, John T. (See Cavanagh, Harry L., assignor.)						
Braddock, Edward I., Medford, Mass. Apparatus for manufacturing composite non-corrodible pipe	610,223	Sept. 6	151	34, 35	84	1472
Braddock, Edward I., Medford, Mass. Composite pipe	610,224	Sept. 6	155	35	84	1473
Bradley, Andrew J., St. Louis, Mo., assignor to Bradley Stencil Machine Company, of Missouri. Blank for making dies	610,024	Aug. 30	3427	794	84	1382
Bradley, Charles S., Avon, N. Y. Alternating-current motor	610,025	Aug. 30	3428	794	84	1382
Bradley, Charles S., Avon, N. Y., assignor to General Electric Company, of New York. Alternating-current induction-motor	608,249	Aug. 2	141	35	84	682
Bradley, Christopher C., Syracuse, N. Y. Thill-coupling	609,928	Aug. 30	3236	757	84	1344
Bradley, Francis W., Sharpsburg, Pa. Boiler-tube cleaner	608,418	Aug. 2	454	101	84	746
Bradley, John J. (See Maguire, Thomas R., assignor.)						
Bradley Stencil Machine Company. (See Bradley, Andrew J., assignor.)						
Brady, Charles N., Washington, Pa. Apparatus for making articles of glassware	608,828	Aug. 9	1210	282	84	908
Brady, John, New York, N. Y. Can-opener and ice-pick	609,406	Aug. 23	2312	546	84	1153
Brady, John, New York, N. Y. Elevated railway	609,407	Aug. 23	2312	546	84	1153
Bragger, John W., assignor to Hitchcock Lamp Company, Watertown, N. Y. Clamp for ball-and-socket joints	606,914	July 5	496	109	84	99
Brahm, Adam. (See Mechwart and Brahm.)						
Brainard, Julius D., St. Paul, Minn. Currycomb	610,891	Sept. 20	1349	309	84	1737
Brainard, Walter A. (See Smith and Brainard.)						
Brainerd, Fred E., Carbondale, Ill. Rotary engine	607,678	July 19	2114	442 443	84	445
Braley, William E., Fall River, Mass. Guard for shutter-fasteners	608,318	Aug. 2	266	60	84	708
Braly, Louis. (See Syssoyeff and Braly.)						
Bramwell, Joseph W., Philadelphia, Pa. Bicycle	609,005	Aug. 16	1559	371	84	990
Branagan, James, Mayview, Kans. Weed-cutter	610,164	Sept. 6	7	2, 3	84	1444
Branch, W. W. (See Wilson, Samuel T., assignor.)						
Brande, Frank L. (See Harvey, James E., assignor.)						
Brandell, Peter, Council Bluffs, Iowa. Mail-distributing indicator	610,621	Sept. 13	880	202	84	1626
Brandt, John, Chicago, Ill. Head-piece for stringed instruments	609,531	Aug. 23	2540	595	84	1195
Branson, A. L. (See Barry, Jefferson D., assignor.)						
Branson, James L. (See Groupe, Andrew V., assignor.)						
Bratt, Charles E., Stockholm, Sweden, assignor to Bratt's Stave and Cask Syndicate, Limited, London, England. Stave-jointing machine	611,587	Sept. 27	2668	614 615	84	2004
Bratton, Henry C., Lafayette, Tenn. Singletree	608,949	Aug. 9	1436	336	84	951
Bratt's Stave and Cask Syndicate. (See Bratt, Charles E., assignor.)						
Bray, Mellen N. (See Lizotte, Joseph, assignor.)						
Brayman, John W., Silver Springs, N. Y. Ice-creeper	610,842	Sept. 13	1258	290	84	1708
Brayton, James T., assignor to Geneva Optical Company, Chicago, Ill. Lens-measure	611,350	Sept. 27	2308	510	84	1919
Breckenridge, Hugh, Lynden, Wash. Polishing-machine for broom-handles	607,730	July 19	2192	463	84	461
Breeden, Horace S., Minneapolis, Minn. Duplex pen	611,060	Sept. 20	1629	372	84	1790
Breen, William H., *et al.* (See Bower, Harry A., assignor.)						
Breithut, Oscar P., assignor of one-half to M. J. Reinhold, Williamsport, Pa. Bicycle-support	608,543	Aug. 2	657	150	84	785
Brennan & Co. Southwestern Agricultural Works. (See Christman, Edward, assignor.)						
Brennan, Dennis, J. R. Wirley, and E. Goldthwait, Elkhart, Ind. Device for bending angle-bars	608,929	Aug. 9	1211	283	84	909
Brennan, Frank W., assignor of one-half to J. C. Wickers, New York, N. Y. Game apparatus	610,734	Sept. 13	1061	243	84	1668
Bresnahan, Maurice V. (See Heys, John J., assignor.)						
Brewer, J. H. (See Buchanan, Robert H., assignor.)						
Brice, Thomas S. (See Calkins, James S., assignor.)						
Bridgeport Brass Company. (See Rhind, Frank, assignor.)						
Brien, James T. and T. R., assignors of one-half to H. W. Stone, Hoosick Falls, N. Y. Hot-air furnace	607,798	July 19	2306	486 487	84	482

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Brien, Theodore R. (See Brien, James T. and T. R.)						
Brigg, Thomas H., Bradford, England. Bicycle	609,006	Aug. 16	1559	371	84	990
Briggs, Thomas A., Arlington, Mass., assignor to Standard Machinery Company, Mystic River, Conn. Paper feeding machine	609,954	Aug. 30	3291	767 768	84	1356
Brigham, Ernest A., Cincinnati, Ohio, assignor to Wyckoff, Seamans & Benedict, of New York. Type-writing machine	607,405	July 12	1442	307	84	294
Bright, Charles M., and W. O. Ballard, Fancy Farm, Ky.; said Bright assignor to said Ballard. Transom fastener and pivot	608,544	Aug. 2	659	150	84	785
Brightmore, Arthur W., Knighton, England. Steering mechanism for motor-vehicles	609,955	Aug. 30	3299	768 769	84	1357
Brightwell, Joseph W., Milton, W. Va. Cattle-guard	609,657	Aug. 23	2791	650	84	1248
Brill, George M., and S. M. Curwen, assignors to J. A. Brill, Philadelphia, Pa. Pivotal truck	610,118	Aug. 30	3564	826 827	84	1410
Brill, George M., and S. M. Curwen, assignors to J. A. Brill, Philadelphia, Pa. Pivotal truck	610,119	Aug. 30	3573	827	84	1413
Brill, John A. (See Brill and Curwen, assignors.)						
Brinckerhoff, Francis M., *et al.* (See Rowell and Brinckerhoff.)						
Briney, Charles E., Allegheny, Pa. Smoke-consuming device	609,225	Aug. 16	1982	471	84	1069
Brinker, Henry, Pittsburg, Pa. Heel-shaver for shoemakers' use	610,512	Sept. 6	698	157	84	1573
Brinton, William F., Washington, Iowa. Bicycle	607,500	July 19	1793	473	84	387
Brisben, William W., Cleveland, Ohio. Machine for making steel balls	607,015	July 12	683	149	84	155
British Blahnik Arc Light Company. (See Worsley, Frederic S., assignor.)						
Britten, Percy J. (See Jackson and Britten.)						
Broad, Harry L., assignor of one-half to R. G. Levyn, Alpena, Mich. Safety-pocket	610,513	Sept. 6	699	157	84	1573
Broadbooks, Peter, Batavia, N. Y. Combined wire-shears and parallel-jaw pliers	611,102	Sept. 20	1729	396 397	84	1810
Broadway, John B. B., *et al.* (See Lewis, George, assignor.)						
Brobst, Ulysses S. G., assignor of one-third to C. Bentz, Columbus, Ohio. Safety-envelop	607,336	July 12	1315	281	84	271
Brock, Andrew L., Lockhart, Tex. Disk cultivator	608,830	Aug. 9	1213	283 284	84	909
Brogan, James A., Lawrence, Mass. Cuff	611,351	Sept. 27	2211	511	84	1919
Brogan, Jesse, Meservey, Iowa. Pneumatic grain-elevator	606,885	July 5	458	98	84	90
Broichgans, Stephen, assignor of two-thirds to W. and H. Saefke, Milwaukee, Wis. Gas apparatus	606,703	July 5	121	27	84	26
Brolich, Johann, Ips, assignor to A. Gans, Kemmlbach, Austria-Hungary. Blowing-fan	609,571	Aug. 23	2607	610	84	1208
Brooke, Isaac, Pottstown, assignor to Floyd, Wells & Co., Royersford, Pa. Wood-stove	610,026	Aug. 30	3430	794	84	1382
Brooker, Charles F., Ansonia, assignor to Coe Brass Manufacturing Company, Torrington, Conn. Edging attachment for rolling-mills	607,110	July 12	803	193	84	191
Brookes, Henry J., Cape Hill, and A. B. Davis, Winson Green, England. Manufacture of wheel-hubs and machinery therefor	608,950	Aug. 9	1437	338 339	84	951
Brookes, Robert C., Forest, Miss. Stirrup-fender	610,640	Sept. 13	912	209	84	1633
Brooks, Byron A., assignor to Union Typewriter Company, New York, N. Y. Type-writing machine	608,881	Aug. 9	1214	284	84	909
Brooks, David W., and W. J. Van Dyke, Falls City, Neb. Wire-cloth holder and measurer	611,051	Sept. 20	1630	372	84	1790
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Company, New York, N. Y. Seal	609,495	Aug. 23	2487	581	84	1186
Brooks, James W., *et al.*, trustees. (See Casgrain, Louis A., assignor.)						
Brooks, James W., *et al.*, trustees. (See Mayo, Benjamin F., assignor.)						
Brooks, John, *et al.*, trustees. (See Mayo, Benjamin F., assignor.)						
Brooks, John J., assignor of one-half to H. Books, Athens, Ohio. Curtain-hanger	609,180	Aug. 16	1889	449	84	1049
Brooks, Leonard B., Independence, Iowa. Clothes-washer	610,120	Aug. 30	3575	828	84	1413
Brooks, Robert A., Chicago, Ill. Hot-water cylinder and valve mechanism and connections therefor	608,148	July 26	2979	689	84	633
Brooks, Samuel H., *et al.* (See Beastow, William H., assignor.)						
Brooks, Samuel W., Brownsville, Tex. Protecting shores	611,586	Sept. 27	2671	615 616	84	2005
Brooks, William B., and T. Altman, Fairmont, W. Va. Rock-drill	610,802	Sept. 20	1350	309 310	84	1737
Brooks, William W., assignor of one-half to T. W. Carter, Memphis, Tenn. Propelling mechanism for bicycles	611,557	Sept. 27	2604	600 601	84	1998
Broome, Lewis H., Jersey City, N. J. Swinging window-sash	610,380	Sept. 6	465	101	84	1527
Brosnihan, Thomas H., Livermore Falls, Me. Rowlock	609,957	Aug. 30	3303	769	84	1358
Brosnihan, Thomas H., assignor to Millett & Brosnihan, Livermore Falls, Me. Row-boat	609,956	Aug. 30	3301	769	84	1357
Brower, Carrie E. and D. W., Paterson, N. J. Reclining high-chair	608,359	Aug. 2	344	75	84	724
Brower, Daniel W. (See Brower, Carrie E. and D. W.)						
Brown & Bailey Company. (See Craw, Joseph T., assignor.)						
Brown, Channing J. (See Moss, Jasper H., assignor.)						
Brown, David A. (See Durfee and Williams, assignors.)						
Brown, Egbert B. (See Skilton, John W., assignor.)						
Brown, George, New York, N. Y. Elevator-brake	610,256	Sept. 6	207	46, 47	84	1482
Brown, George W., Avoca, Mich. Post-base	611,333	Sept. 27	1988	459	84	1878
Brown, Goveurneer G., New York, N. Y. End-bearing	610,341	Sept. 6	384	82	84	1514
Brown, Goveurneer G., New York, N. Y. Machine for corking bottles	610,381	Sept. 6	466	103 108	84	1528
Brown, Horace F., Chicago, Ill. Ore-roasting furnace	607,420	July 19	1472	311 312 313 314	84	818
Brown, James H. (See Gilman and Brown.)						
Brown, John H., *et al.* (See Sheriff, James E., assignor.)						
Brown, John H., *et al.* (See Sherwood, William E., assignor.)						
Brown, John H., Horton, Kans. Heating-stove	609,773	Aug. 30	2968	694 695	84	1291
Brown, John R., Harrison Hot Springs, Canada. Rock-drill	607,337	July 12	1317	281	84	272
Brown, John W., Jr., Philadelphia, Pa. Double-turret lathe	610,319	Sept. 6	343	73, 74	84	1507
Brown, Lewis S., assignor to himself and J. C. Jennings, Columbus, Ohio. Pneumatic railway-signal	607,338	July 12	1320	282	84	273
Brown, Mary R., Swedesborough, N. J. Device for keeping lids on boilers	608,103	July 26	2911	623	84	620
Brown, Philip C., New Albany, assignor of one-half to J. I. Irwin, Columbus, Ind. Car-coupling	607,731	July 19	2195	463 464	84	468
Brown & Sharpe Manufacturing Company. (See Burnham, William G., assignor.)						
Brown, Robert P., Philadelphia, Pa. Paper box	610,552	Sept. 13	713	169	84	1592
Brown, Thomas J., Sedalia, Mo. Aerial ship	610,843	Sept. 13	1258	290	84	1708
Brown, Walter, Cresco, Iowa. Gasolene-stove	608,388	Aug. 2	393	87	84	733

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Brown, William, assignor of one-half to N. T. Batchelor, Como, Tex. Wire-tightener	606,833	July 5	375	80	84	75
Brown, William F., Maquoketa, Iowa. Lawn-sprinkler	608,646	Aug. 9	803	190	84	844
Brown, William H., assignor of one-half to D. Le Roy, Alpena, Mich. Excelsior-machine	610,993	Sept. 20	1355	310	84	1738
Brown, Wilson, Galveston, Tex. Bicycle-gearing	609,077	Aug. 16	1694	403	84	1015
Browne, Arthur W., Prince's Bay, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Dental-engine handpiece	606,755	July 5	224	48	84	46
Browne, Ross E. (See Behr and Browne.)						
Brownell, Frank A., Rochester, N. Y. Photographic camera	610,153	Aug. 30	3621	842	84	1422
Brownell, Frank A., Rochester, N. Y. Photographic shutter	610,154	Aug. 30	3624	842 843	84	1423
Browning, George, Bootle, assignor of one-third to J. H. Parker, Waterfort, England. Supporting and locking appliance for bicycles, &c	611,589	Sept. 27	2672	616 617	84	2005
Bruce, William C. (See Dippo, Bruce, Semple, and Powell.)						
Bruch, Frederick W., assignor to Acme Machinery Company, Cleveland, Ohio. Bolt-heading machine	607,157	July 12	981	212	84	206
Brucker, Francis, Shelby, Ohio. Wheel-tire	611,052	Sept. 20	1633	373	84	1790
Brune, Gustav H., Lawrence, Kans. Weed-cutting implement	607,392	July 12	1415	302	84	290
Brunelle, George, Red Lake Falls, Minn. Windlass	609,871	Aug. 30	3142	734	84	1326
Bruno, Frans, New York, N. Y. Window raising and locking device	608,173	Aug. 2	9	3	84	656
Brunson, Hartwell L. (See Brunson, Wesley B. and H. L.)						
Brunson, Wesley B. and H. L. Fleming, Ga. Rail-brace for railway-tracks	608,507	Aug. 2	598	134	84	774
Brush, Egbert, Smithtown, N. Y. Thill-coupling	609,181	Aug. 16	1890	450	84	1049
Bryant, Henry E., Boston, Mass. Roll-holding camera	608,026	July 26	2798	594 595	84	597
Bryanton, George, Harriman, Tenn. Neck-yoke connection	611,444	Sept. 27	2398	550	84	1952
Brysch, Joseph, Skronskau, Germany. Whistle-pipe	611,028	Sept. 20	1590	364	84	1782
Buchanan, George, Philadelphia, Pa. Artificial tooth	607,211	July 12	1073	232	84	223
Buchanan, Robert H., assignor of one-half to J. H. Brewer, Swifton, Ark. Folding crib	609,496	Aug. 23	2489	581	84	1186
Bucher & Gibbs Plow Company. (See Ream, George W., assignor.)						
Buchmüller, Friederica. (See Müller, Frank, assignor.)						
Buck, Sterling P., and C. L. Meaker, Abilene, Tex.; said Meaker assignor to W. R. Buck, Front Royal, Va. Fire-escape	608,419	Aug. 2	456	102	84	746
Buck, William R. (See Buck and Meaker, assignors.)						
Buckham, George T. (See Vickers, Dawson, and Buckham.)						
Buckley, John P., New Orleans, La. Electric sounding device for ships	608,104	July 26	2912	623	84	620
Buckley, Michael G. F., assignor of one-half to B. F. Schwartz, New York, N. Y. Plaster-board	608,570	Aug. 9	714	163	84	817
Bueb, Julius. (See Reichardt and Bueb.)						
Buehler, Louis, assignor of one-half to F. D. Wheeler, Detroit, Mich. Combined check and stop valve	610,470	Sept. 6	616	138	84	1557
Buek, Charles E., Richmond, Va. Sectional feed-roll for gang-edgers	606,896	July 5	459	98	84	90
Buell, Edward W. (See Moe, Buell, Roberts, and Conkling.)						
Buell, Edward W., assignor to Troy Laundry Machinery Company, Limited, Chicago, Ill. Mechanical feed device	607,212	July 12	1074	232	84	223
Buhles, William C. (See Carter and Buhles.)						
Buick, David D., Detroit, Mich. Bath-tub	611,029	Sept. 20	1590	365	84	1783
Bukoutz, Mehin E., Lamoille, Ill. Incubator	608,508	Aug. 2	599	134	84	774
Bull, Edward A., London, England. Apparatus for saving life from fires, &c	607,912	July 26	2575	545 546	84	552
Bullock Electric Manufacturing Company. (See Burke, James, assignor.)						
Bullock, William F. (See Collyer and Bullock.)						
Bullock, William J., assignor of two-thirds to F. C. Rockwell and F. S. French, Hartford, Conn. Air-valve	611,211	Sept. 20	1919	444	84	1845
Bundick, George E., assignor of seven-twentieths to J. E. O'Quinn, Big Cane, La. Bicycle-support	611,374	Sept. 27	2268	524	84	1990
Bundy, Frank E., Elmira, N. Y. Acetylene-gas generator	608,571	Aug. 9	714	163	84	817
Bundy, Frank E., Elmira, N. Y. Acetylene-gas generator	610,987	Sept. 20	1423	327	84	1751
Bundy, Harry. (See Young and Bundy.)						
Bungay, George J., Paterson, N. J. Bicycle handle-bar	608,572	Aug. 9	716	164	84	818
Bunn Cigar Rolling Machine Company. (See Bunn, John, assignor.)						
Bunn, John, assignor to Bunn Cigar Rolling Machine Company, Binghamton, N. Y. Cigar-rolling machine	610,754	Sept. 13	1095	251	84	1670
Burden, James A., Troy, N. Y. Mechanism for converting continuous rotary motion into intermittent rotary motion	608,573	Aug. 9	717	164	84	818
Burger, Franz, assignor of three-fourths to H. M. Williams, Fort Wayne, Ind. Elastic tire and rim	607,824	July 26	2396	508	84	519
Burger, Franz, assignor of three-fourths to H. M. Williams, Fort Wayne, Ind. Sand-blast	607,825	July 26	2397	509	84	519
Burger, Franz, and H. M. Williams, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Self-closing faucet	607,732	July 19	2198	464	84	462
Burger, Franz, and H. M. Williams, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Cigar-moistener and pressure device	607,826	July 26	2400	510	84	519
Burger, Franz, and H. M. Williams, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Regulator or power-generating attachment for elevators	607,827	July 26	2401	510	84	519
Burger, Franz, and H. M. Williams, Fort Wayne, Ind.; said Burger assignor of one-half to said Williams. Fuel-feeding mechanism for furnaces	607,828	July 26	2402	510	84	520
Burger, Heinrich, Lichtenthal, and T. Lutz, Baden-Baden, Germany. Bandage	609,497	Aug. 23	2490	581	84	1186
Burgess, Charles T. and W. B., Brentwood, England. Bicycle	606,704	July 5	124	27	84	27
Burgess, James R., Port Huron, Mich. Cook-stove	609,264	Aug. 16	2063	490	84	1086
Burgess, Louis, Waterloo, N. Y. Propelling mechanism for bicycles or similar vehicles	610,382	Sept. 6	471	108	84	1529
Burgess, Luther C., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	606,756	July 5	228	49	84	47
Burgess, Luther C., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	607,016	July 12	684	149	84	156
Burgess, Luther C., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake-beam	607,421	July 19	1480	315	84	319
Burgess, William B. (See Burgess, Charles T. and W. B.)						
Burget, M. H., *et al.* (See Gauntner, Rudolph, assignor.)						
Burgin, Alfred, Springfield, Mass. Water supplying and controlling apparatus for water-closet tanks	607,652	July 19	2075	438	84	438
Burke, James, New York, N. Y., assignor to Bullock Electric Manufacturing Company, of Ohio. Apparatus for starting motors	611,558	Sept. 27	2609	601 602	84	1994
Burke, Stephen E., Edon, Ohio. Tire-tightener	610,958	Sept. 20	1464	334	84	1758
Burkhart, Henry A. (See Welch and Burkhart.)						
Burkhart, Holliday H., Tuscumbia, Ala. Safety-bridge for cars	608,751	Aug. 9	1040	239	84	879
Burland, William H., Punta Gorda, Fla. Newspaper or book protector	607,389	July 12	1322	292	84	273

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Burlingame, Edward A., Clayton, N. Y. Reversible envelop	608,752	Aug. 9	1041	239	84	879
Burner, Allen C., Green Bank, W. Va. Gate	609,774	Aug. 30	2970	695	84	1291
Burnett, Henry M., San Francisco, Cal. Laying-out or lining device	607,158	July 12	988	213	84	207
Burnley, James A. (See Burnley, William, assignor.)						
Burnley, William, Miamisburg, Ohio, assignor to J. A. Burnley, Cottonwood Falls, Kans. Soldering-flux	608,978	Aug. 9	1479	.....	84	960
Burnham, William G., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Gear-cutting machine	607,982	July 26	2691	573 574 575	84	574
Burns, Dennis H., Chicago, Ill. Furnace	608,105	July 26	2913	623	84	620
Burns, Edward L., *et al.* (See Culbertson, Andrew J., assignor.)						
Burns, George J., Ayer, Mass. Child's waist	608,149	July 26	2981	640	84	633
Burns, James, Verona, Pa. Producing steel	610,701	Sept. 13	1003	.....	84	1052
Burns, Joseph H., Munising, assignor of one-half to J. Lightbody, St. Clair, Mich. Elevator for tanning-vats	611,352	Sept. 27	2211	511	84	1919
Burns, Matthew A. (See King and Burns.)						
Burrell & Co., D. H. (See Hoyt and Feldmeier, assignors.)						
Burrell, Frederick J., Thetford, England. Furniture-caster	609,137	Aug. 16	1817	431	84	1096
Burrell, Frederick J., Thetford, England. Tube-cutter	609,138	Aug. 16	1817	432	84	1096
Burridge, Lee S., New York, N. Y. Cash register and indicator	608,509	Aug. 2	600	134 135	84	774
Burroughs, Alonzo N., A. K., and T. O., Mechanicsville, Iowa. Marker-gage for corn-planters	609,775	Aug. 30	2971	695	84	1291
Burroughs, Arthur K. (See Burroughs, Alonzo N., A. K., and T. O.)						
Burroughs, Thomas O. (See Burroughs, Alonzo N., A. K., and T. O.)						
Burrowes, Edward T., Portland, Me. Window-screen	610,257	Sept. 6	210	47	84	1483
Burrowes, Edward T., Portland, Me. Window-screen	610,383	Sept. 6	472	108	84	1529
Burrowes, Edward T., Portland, Me. Window-screen	610,384	Sept. 6	474	108	84	1530
Burrowes, Edward T., Portland, Me. Window-screen	610,385	Sept. 6	475	104	84	1530
Burt, Alonzo, *et al.* (See Barrett, Albert, assignor.)						
Burt, Charles A., Baltimore, Md. Machine for lacquering cans	610,165	Sept. 6	9	3	84	1444
Burt, Oren C. (See McGenniss, David, assignor.)						
Burton, Charles S., trustee. (See Crook, Charles M., assignor.)						
Burton, Charles S., Oak Park, Ill. Automatic acetylene-gas machine	609,226	Aug. 16	1984	471	84	1069
Burton, Smith P., Jr. (See Cave, Edward S., assignor.)						
Busch, Clarence M. (See Marshall, William M., assignor.)						
Busch, Francis X., *et al.* (See Pugh, William J., assignor.)						
Bush, Alden, Elyria, Ohio. Dental plugger	608,150	July 26	2983	640	84	634
Bush, George W., Turtle Creek, Pa. Switch-keeper	608,832	Aug. 9	1219	284	84	910
Bush, Martin L. (See Upshaw, Foy, assignor.)						
Bush, Robert S., Greensburg, Pa. Switch-lever lock	608,833	Aug. 9	1220	285	84	910
Busse, Annie, San Antonio, Tex. Toy	607,159	July 12	985	213	84	207
Butler, Albert C., assignor of one-half to J. B. and H. C. Butler, Timpson, Tex. Scraper for cultivators	611,195	Sept. 20	1890	436	84	1840
Butler, Charles, *et al.* (See Beeman, Joseph S., assignor.)						
Butler, Eugene H., Grayson, assignor of one-third to M. L. Butler, Ashland, Ky. Quilting-frame	606,915	July 5	497	109	84	99
Butler, Henry C., *et al.* (See Butler, Albert C., assignor.)						
Butler, James B., *et al.* (See Butler, Albert C., assignor.)						
Butler, James W. (See Lawrason, Louis O., assignor.)						
Butler, Martin L. (See Butler, Eugene H., assignor.)						
Butler, Michael, Dallas, Tex. Adjustable rack for railway-cars	608,487	Aug. 2	488	109 110	84	751
Butler, Walter, *et al.* (See Beeman, Joseph S., assignor.)						
Butler, William E. (See Barnard and Butler.)						
Butler, William H., Harrison, N. Y. Cutting and printing mechanism	609,007	Aug. 16	1561	371 372	84	991
Butterfield, Samuel W., Three Rivers, Canada. Bark-cutter	609,330	Aug. 16	2176	514	84	1108
Buyer, Jacob, Sandusky, Ohio. Sharpening device	609,078	Aug. 16	1695	404	84	1015
Byck, David A., *et al.* (See Gardner, Jacob N., assignor.)						
Byck, Moses S., *et al.* (See Gardner, Jacob N., assignor.)						
Bye, Olaves I., Hillsborough, N. D. Music-holder	608,488	Aug. 2	484	110	84	752
Byers, Martin L., Hagerstown, Md. Shoe-lace fastener	610,225	Sept. 6	158	35	84	1473
Byram, Theodore P., Detroit, Mich. Cupola	607,501	July 19	1794	373	84	388
Byrne, James H. (See Keith and Byrne.)						
Byrne, Owen, Granite Butte, Mont. Sampling-machine	608,884	Aug. 9	1221	285	84	910
Byrnes, Thomas C. (See Hawes, Herbert E., assignor.)						
Byrnes, William E., Cleveland, Ohio. Repair connection for water-closet bowls	608,174	Aug. 2	10	3	84	657
Byron, S. A. (See St. John, William W., assignor.)						
C. R. Remington & Son Company. (See Remington, Charles H., assignor.)						
C. T. Ham Manufacturing Company. (See Bergener, Charles, assignor.)						
Cable, Daniel J., Pittsburg, assignor to F. J. Kleber, Allegheny, Pa. Coin-holder	610,959	Sept. 20	1466	335	84	1759
Cady, Richard, Los Angeles, Cal. Railway-switch. (Reissue)	11,697	Aug. 16	2289	542	84	1130
Cahill, James P. J., Worcester, Mass. Closet-cistern	609,079	Aug. 16	1696	404	84	1015
Cahoon, Clare, Grand Rapids, Mich. Milk-cooler	610,299	Sept. 6	305	66	84	1501
Calame, Justin L., St. Louis, Mo. Automatic switch for railways	608,647	Aug. 9	863	199	84	845
Calder, James, *et al.* (See Russell, William, assignor.)						
Caldwell, James P., Winnsborough, S. C. Cotton-seed planter	607,502	July 19	1796	374	84	388
Calkins, Albert C. (See Lonergan and Calkins.)						
Calkins, James S., assignor of one-half to T. S. Brice, Hastings, Mich. Device for purifying feed-water	608,250	Aug. 2	143	35	84	682
Callanan, William A., Colorado Springs, Colo. Hat-fastener	606,799	July 5	308	64	84	61
Calver, William, *et al.* (See Cottle, Henry F., assignor.)						
Calvert, Arthur W., Leeds, England. Metallic wheel	608,951	Aug. 9	1439	340	84	951
Cameron, John M., assignor to W. H. Doyle, Philadelphia, Pa. Water-closet valve	611,053	Sept. 20	1634	373	84	1791
Camp, Paul R., Marietta, Ga. Trunk, sample-case, &c	607,539	July 19	1861	387	84	400
Campbell, Daniel J., New York, N. Y., assignor to American Tobacco Company, Newark, N. J. Cigarette-machine	610,855	Sept. 13	1279	296	84	1707
Campbell, Douglas M., assignor of one-fourth to S. Taliaferro, Houston, Tex. Bale-tie	609,872	Aug. 30	3144	735	84	1827
Campbell, Frank L., assignor of one-third to R. J. Crawford, Pulaski, Va. Rein-shield	610,797	Sept. 13	1187	274	84	1689
Campbell, George L., Dushore, Pa. Electric-railway system	611,559	Sept. 27	2612	602	84	1995
Campbell, James H. (See Holmes and Campbell.)						
Campbell, James H., San José, Cal. Penholder	607,918	July 19	1078	233	84	224
Campbell, John B., Cincinnati, Ohio. Electric extraction of poisons	606,867	July 5	461	98	84	90
Campbell, John E., Gaines, Pa. Pulley for use on bridles	607,788	July 19	2300	485	84	481
Campbell, Leon J., Chicago, Ill. Oil-burner	607,422	July 19	1482	315	84	319

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Campbell, Milton T., assignor of one-half to W. H. Thomas, Indianapolis, Ind. Bicycle	609,498	Aug. 23	2491	582	84	1186
Campbell, Milton T., assignor of one-half to W. H. Thomas, Indianapolis, Ind. Bicycle	610,157	Aug. 30	3630	844	84	1424
Campbell, Robert, *et al.* (See Russell, William, assignor.)						
Campbell, Robert, South Haven, Mich. Lifting-jack	609,873	Aug. 30	3145	735	84	1327
Campbell, Robert J., *et al.* (See Freeman, Warren P., assignor.)						
Campbell, Thomas H., Ashland, Va. Railway-signal	608,280	Aug. 2	188	45	84	692
Campen, Henry C., Baltimore, Md. Roller-machine for forming round can-bodies	606,855	July 5	418	89	84	83
Campen, Henry C., Baltimore, Md. Round tin can	606,856	July 5	418	89	84	83
Canady, Lorin W., Toyah, Tex. Throttle-lever	610,027	Aug. 30	3431	795	84	1382
Cancienne, Ema, Albemarle, La. Sling-trip	607,679	July 19	2116	443	84	445
Candland, William. (See Betjemann and Candland.)	606,800	July 5	309	64	84	61
Canfield, Nathan T., Lynxville, Wis. Bob-sled	609,408	Aug. 23	2314	546	84	1153
Canty, William A. (See Simkin, Frank R., assignor.)						
Capen, Thomas W., assignor to Gates Iron Works, Chicago, Ill. Stamp-mill	609,776	Aug. 30	2973	695 / 696	84	1292
Capewell, George J., Hartford, Conn. Roller-bearing	609,777	Aug. 30	2975	696	84	1293
Capewell, George J., Hartford, Conn. Roller-bearing	609,778	Aug. 30	2977	696	84	1293
Capewell, George J., Hartford, Conn. Truck for railway-cars	609,779	Aug. 30	2979	697	84	1293
Capewell, George J., Hartford, Conn. Railway-car truck	609,780	Aug. 30	2982	698	84	1293
Capewell, George J., Hartford, Conn. Car-truck	609,781	Aug. 30	2984	698 / 699	84	1294
Capewell, George J., Hartford, Conn. Railway-car truck	609,782	Aug. 30	2987	699	84	1295
Capewell, George J., Hartford, Conn. Truck for railway-cars	609,783	Aug. 30	2989	700	84	1295
Capewell, George J., Hartford, Conn. Railway-car truck	609,784	Aug. 30	2991	700	84	1295
Capewell, George J., Hartford, Conn. Railway-car truck	609,785	Aug. 30	2993	700	84	1296
Capewell, George J., Hartford, Conn. Air-resistance device for railway-vehicles	609,786	Aug. 30	2995	701	84	1296
Capewell, George J., Hartford, Conn. Window-cleaner	609,787	Aug. 30	2997	701	84	1296
Capewell, George J., Hartford, Conn. Railway-car truck	609,788	Aug. 30	2998	702	84	1296
Capewell, George J., Hartford, Conn. Air-resistance device for railway-vehicles	609,789	Aug. 30	3001	702 / 703	84	1297
Capewell, George J., Hartford, Conn. Railway	609,790	Aug. 30	3003	703	84	1298
Capewell, George J., Hartford, Conn. Electric-railway-car truck	610,894	Sept. 20	1358	311	84	1738
Cappellini, Alfredo, Florence, Italy. Boat-launching device	609,592	Aug. 23	2542	595 / 596	84	1196
Card, Albert S., Canton, Ohio. Toy	608,835	Aug. 9	1223	285 / 286	84	911
Carden, John, Carpenteria, Cal. Currycomb	607,733	July 19	2199	464	84	462
Carder, Frances M., and G. J. Pickinpaugh, Unionville, Mo. Railway-gate	611,353	Sept. 27	2214	511	84	1920
Carey, Arthur. (See Driffield, Carey, and Wright.)	609,227	Aug. 16	1987	471 / 472	84	1070
Carey, Newton J., Oskaloosa, Iowa. Heat-generator	607,829	July 26	2405	511	84	520
Carey, William M., Boston, Mass. Unicycle	610,641	Sept. 13	913	209	84	1633
Carlisle, William N., Detroit, Mich. Overcheck-bit	608,027	July 26	2800	595	84	597
Carlson, Aron M., Pierre, S. D. Windmill	608,319	Aug. 2	267	61	84	708
Carleton, Henry G., New York, N. Y. Electromechanical lock	608,320	Aug. 2	272	61	84	709
Carleton, Henry G., New York, N. Y. Electric combination-lock	608,321	Aug. 2	277	62, 63	84	710
Carleton, Henry G., New York, N. Y. Electric lock	608,322	Aug. 2	282	63	84	712
Carleton, Henry G., New York, N. Y. Combination mechanism for electric locks	609,731	Aug. 23	2001	678	84	1265
Carley, Allen J., assignor of one-half to B. T. Locke, Belmont, La. Hoe-sling	608,953	Aug. 9	1442	341	84	952
Carley, Oliver F., *et al.* (See Thurber, Charles F., assignor.)						
Carlinet, John G., Philadelphia, Pa. Pneumatic tool	611,234	Sept. 27	1988	------	84	1878
Carlton, William F. (See Locke, Harvey W., assignor.)						
Carmichael, Henry. (See Schwartz, John, Jr., assignor.)						
Carnrick, John, New York, N. Y. Kumiss compound	610,755	Sept. 13	1108	252	84	1671
Caroe, Johannes, *et al.* (See Teraling, Hilmar, assignor.)						
Carpenter, Charles W., *et al.* (See Crowell, Luther C., assignor.)						
Carpenter, Charles W., *et al.* (See Read, George F., assignor.)						
Carpenter, Ezra, Fisherman's Bay, Cal. Trap	610,226	Sept. 6	159	35	84	1473
Carr, Lawrence P., assignor of one-third to R. Hanson, Concordia, Kans. Disk-sharpener	608,753	Aug. 9	1042	239	84	879
Carr, William P., Nevada, Ohio. Fence-post	607,340	July 12	1324	288	84	274
Carrico, Charles H., Salt Lake City, Utah. Flue-cleaner	609,009	Aug. 16	1564	372	84	991
Carrington, Albert B., deceased, New York, N. Y.; E. Carrington, administratrix. Optical-illusion cabinet						
Carrington, Elizabeth, administratrix. (See Carrington, Albert B.)						
Carroll, John T. (See Akerlind and Carroll.)	607,214	July 12	1079	233	84	224
Carroll, William R., Keatchie, La. Lumber-stacker	610,227	Sept. 6	160	36	84	1473
Carrothers, Elizabeth I. B., Tiro, Ohio. Match-box	609,409	Aug. 23	2315	546	84	1154
Carrothers, James, Epworth, Ohio. Loading apparatus	608,836	Aug. 9	1226	286	84	911
Carson, Leonidas W., Elma, Iowa. Motor	607,215	July 12	1081	233	84	225
Carson, William W., Knoxville, Tenn. Riprap	608,648	Aug. 9	865	199	84	845
Carter, Elsworth G., Coal Bluff, Ind. Railway-tie						
Carter, James R. (See Crowell, Charles H., assignor.)	607,913	July 26	2576	546	84	552
Carter, John R., Cincinnati, Ohio. Washing-machine	608,574	Aug. 9	720	165	84	819
Carter, John R., assignor to E. H. Huenefeld, Cincinnati, Ohio. Heating-stove	611,054	Sept. 20	1635	373	84	1791
Carter, Lincoln J., Chicago, Ill. Theatrical appliance	606,995	July 5	606	132	84	130
Carter, Silas W., and W. C. Buhles, San Francisco, Cal. Propeller						
Carter, Stewart F., assignor to Windsor Company, North Adams, Mass. Producing white effects on fabrics	606,776	July 5	271	------	84	54
Carter, Stewart F., assignor to Windsor Company, North Adams, Mass. Producing white effects on fabrics	606,777	July 5	272	------	84	54
Carter, Thomas, Pittsburg, Pa. Device for applying wall-paper	609,008	Aug. 16	1563	372	84	991
Carter, Thomas W. (See Brooks, William W., assignor.)						
Carter, William, Glasgow, Scotland. Mechanism for pasting bottoms of paper bags	611,055	Sept. 20	1637	374	84	1791
Cartier, Paul A., Darnetal, France. Machine for making paper boxes	606,916	July 5	499	109 / 110	84	99
Carty, Charles F., Washington, N. C. Hydraulic pump	610,798	Sept. 13	1189	274	84	1689
Carver, George W., Brookline, Mass. Chimney-holder for lamp-burners	609,139	Aug. 16	1819	432	84	1037
Cary, James H., Springfield, Mass. Device for operating electric switches	607,880	July 26	2407	511	84	521
Cary, John B., assignor of one-half to M. C. Delavy, Baltimore, Md. Electrical cooking apparatus	608,952	Aug. 9	1441	341	84	952
Case, Cromwell O., assignor to P. & F. Corbin, New Britain, Conn. Transom-center	606,643	July 5	13	3	84	5
Case, Edward N., Chicago, Ill. Alarm-lock	611,212	Sept. 20	1921	444	84	1845
Case, Edward N., assignor of one-half to S. M. Fischer, Chicago, Ill. Alarm-padlock	607,831	July 26	2409	512	84	521
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company, of New York. Trolley	608,281	Aug. 2	190	46	84	692

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company, of New York. Controller for electric motors	610,895	Sept. 20	1360	311	84	1739
Case, Henry, and I. C. Young, Gloversville, N. Y. Window-cleaner	608,140	July 26	2968	696	84	634
Casey, Philip, Jr., Paterson, N. J. Curtain ring and holder	610,342	Sept. 6	385	82	84	1514
Casgrain, Louis A., Winchester, assignor to J. W. Brooks, Petersham, and F. F. Stanley, Swampscott, Mass., trustees. Jack for slugging and nailing heels	609,874	Aug. 30	3147	735	84	1327
Casgrain, Louis A., Winchester, assignor to J. W. Brooks, Petersham, and F. F. Stanley, Swampscott, Mass., trustees. Machine for uniting welts or rands to soles or heels	611,406	Sept. 27	2328	537	84	1941
Casket Lowering Company. (See Lester and Smart, assignors.)						
Casler, Alonzo A., Little Falls, N. Y. Washing-machine	608,251	Aug. 2	144	36	84	683
Casler, Alonzo A., Binghamton, N. Y. Washing-machine	608,400	Aug. 2	419	91	84	739
Casler, Herman, Canastota, N. Y. Reciprocating electric drill	608,175	Aug. 2	12	3	84	657
Casler, Herman, Canastota, assignor to American Mutoscope Company, New York, N. Y. Web-feeding machine	611,590	Sept. 27	2673	617 / 618	84	2006
Casler, Herman, Canastota, assignor to American Mutoscope Company, New York, N. Y. Consecutive-view apparatus	611,591	Sept. 27	2678	618 / 619	84	2006
Cason, William H., Renaker, Ky. Broom-clasp	608,510	Aug. 2	608	135	84	775
Cass, John H. (See Spooner and Cass.)						
Cassady, John. (See McCaffery, William, assignor.)						
Cassella & Co., Leopold. (See Kalischer, George, assignor.)						
Caster, Charles V., Siloam Springs, Ark. Box-fastener	611,445	Sept. 27	2399	550	84	1953
Castelberg National Jewelry Company. (See Bemis, Harry E., assignor.)						
Castle, Elmer E. (See Bassett and Castle.)						
Castleberry, B. H. (See Hazel, Peter H., assignor.)						
Caswell, Thomas, Cherokee, Iowa. Combined hay-rake and baling-press	607,216	July 12	1085	234 / 235	84	225
Cather, Leonard R., Chicago, Ill. Hand-truck	609,985	Aug. 30	3363	781	84	1369
Catherall, Thomas H., London, England. Linotype-machine	610,228	Sept. 6	161	36	84	1473
Catlett, Robert H., Trinidad, Colo. Combination step and platform gate	611,196	Sept. 20	1890	437	84	1840
Cavanagh, Harry L., assignor of one-half to J. T. Boyle, Chicago, Ill. Bicycle-handle	610,471	Sept. 6	618	138	84	1557
Cave, Edward S., assignor of one-half to S. P. Burton, Jr., Reading, Mass. Milk-pail	607,393	July 12	1416	303	84	291
Cazin, Francis M. F., Hoboken, N. J. Penstock and supply-pipe	608,176	Aug. 2	13	4	84	657
Celluloid Company. (See Miller, Horace E., assignor.)						
Celluloid Company. (See Stevens, John H., assignor.)						
Celluloid Company. (See Stevens and Axtell, assignors.)						
Celluloid Goggle Company. (See Sheldon, Charles R., assignor.)						
Chadwick, Frank W., Quincy, Ill. Vehicle-brake	610,523	Sept. 13	714	162	84	1592
Chalmers, James, Jr., Pittsburg, assignor to Union Switch and Signal Company, Swissvale, Pa. Switch and signal mechanism	606,801	July 5	310	65	84	61
Chamberlin, Spencer C., New Bedford, Mass. Shirt	607,734	July 19	2200	465	84	463
Chambers, Arthur M., Thorncliffe, England. Medicinal vaporizer	611,560	Sept. 27	2614	602	84	1995
Chambers, Edward J., Woodstock, Canada. Metallic tire for wheels	610,622	Sept. 13	882	202	84	1626
Champ, Joseph H., assignor to Bishop & Babcock Company, Cleveland, Ohio. Regulating-valve device	610,938	Sept. 20	1424	327	84	1751
Champion, Josiah, Enterprise, Cal. Ore-stamp battery	610,509	Sept. 13	851	195	84	1620
Champlin, Fred H., Long Meadow, Mass. Egg crate or box	607,423	July 19	1484	315	84	320
Chancey, Frederick F., assignor of one-half to F. B. Bartlett, Milford, N. H. Nail-puller	611,103	Sept. 20	1731	397	84	1810
Chandler, John A., assignor to Standard Filter Company, Kansas City, Mo. Filter	609,754	Aug. 23	2938	687	84	1271
Chapin, Andrew P., Springfield, assignor of one-half to F. E. Lay, Westfield, Mass. Automatic feed-reservoir	609,755	Aug. 23	2940	687	84	1272
Chapin, Charles E. (See Dickey, Joseph W., assignor.)						
Chapman, Charles A., assignor to A. Warren and C. Fippard, Horley, England. Spring-seat	610,960	Sept. 20	1467	335	84	1759
Chapman, Henry, Philadelphia, Pa. Centrifugal filter	610,983	Sept. 20	1518	348 / 349	84	1768
Chapman, Leo M., and J. M. Gelatt, Louisville, Ky. Nut-lock	607,585	July 19	1949	405	84	415
Chapman, William, and P. W. Davies, Pittsburg, Pa. Electric-railway construction	611,056	Sept. 20	1638	375	84	1792
Chapman, William A., Cleburne, Tex. Liquid for exterminating grass or similar growths	606,644	July 5	14	------	84	5
Charles, Henry L., Butte, Mont. Reverberatory smelting-furnace	608,887	Aug. 9	1227	286	84	911
Charlier, Andrew C. J., Glasgow, Scotland. Manufacturing lead sulfite	608,028	July 26	2801	596	84	598
Chase, George N., *et al.* (See Sill, Richard V., assignor.)						
Chase, Harvey S., assignor, by mesne assignments, to American Electric Heating Corporation, Boston, Mass. Electrical resistance	607,540	July 19	1865	387 / 388	84	400
Chase, Jesse, Omro, Wis. Pneumatic-tire cover	606,705	July 5	126	28	84	27
Chase, Joseph H., Meriden, Conn. Self-playing organ	608,252	Aug. 2	145	36	84	683
Chasseigne, Louis F. (See Debize and Chasseigne.)						
Chatwood, Samuel, London, and S. R. Chatwood, Bolton, England. Steam-superheater	609,499	Aug. 23	2493	582 / 583	84	1187
Chatwood, Samuel R. (See Chatwood, Samuel and S. R.)						
Cheape, John A., Charlottesville, Va. Actinometer	610,028	Aug. 30	3432	795	84	1382
Cheetham, Frank A., Rastrick, and R. Bostock, Brighouse, England. Apparatus for signaling on locomotives	609,732	Aug. 23	2902	679	84	1265
Cheevers, Matthew F., Holyoke, Mass. Mail-box	608,490	Aug. 2	458	102	84	747
Chemische Fabrik, vormals Sandoz. (See Böniger, Melchior, assignor.)						
Cheney, George K., New York, N. Y. Coin-operated device	609,791	Aug. 30	3005	704	84	1298
Chenoweth, John H., Paris, Ill. Gate	610,121	Aug. 30	3577	828	84	1413
Chesney, Cummings C. (See Kelly, John F., assignor.)						
Chew, James S., What Cheer, Iowa. Coal-chute	609,658	Aug. 23	2792	651	84	1243
Chicago Railway Equipment Company. (See Burgess, Luther C., assignor.)						
Chicago Railway Equipment Company. (See Huntoon, Charles F., assignor.)						
Chicago Time Register Company. (See Deübner, John W., assignor.)						
Chickering, Kenton, Oil City, Pa. Sucker-rod joint	607,614	July 19	2003	415	84	425
Chickering, Kenton, Oil City, Pa. Fly-wheel	607,615	July 19	2004	415	84	425
Chickering, Kenton, Oil City, Pa. Mechanical movement	607,616	July 19	2005	415 / 416	84	425
Chisholm, John A. (See Scott and Chisholm.)						
Chitwood, Aaron B., Little Rock, Ark. Wagon-brake	607,341	July 12	1325	283	84	274
Choquette, Joseph, assignor of two-thirds to M. Boas, St. Hyacinthe, Canada, and W. A. Torrance, Harrison, N. J. Fiber-treating machine	607,832	July 26	2413	512	84	522
Christensen, Niels A., Milwaukee, Wis. Means for suspending air-pumps	607,317	July 12	1091	235	84	227
Christenson, Hans, Crystal Falls, Mich. Railway-switch	609,659	Aug. 23	2793	651	84	1244
Christiaansen, Isaac. (See Fenner, Algar T., assignor.)						
Christiansen, Alfred, *et al.* (See Arnold, Harry I., assignor.)						
Christiansen, John, assignor to Pratt & Whitney Company, Hartford, Conn. Automatic weighing-machine	607,488	July 19	1764	367 / 368	84	361
Christiansen, Ludwig, Seaside, Oreg. Tumbler, jug, or similar article	608,649	Aug. 9	866	199	84	845

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Christie, John, Irvine, Pa. Draft-rigging for car-couplings	609,410	Aug. 23	2318	547	84	1154
Christman, Edward, assignor to Brennan & Co. Southwestern Agricultural Works, Louisville, Ky. Seeding-machine	607,914	July 26	2577	546	84	552
	609,080	Aug. 16	1698	404	84	1016
Churchill, Robert W., Peabody, Mass. Bicycle-tire						
Cincinnati Coffin Company. (See Hoefle, Francis J., assignor.)						
Clair, Edward A., Camden, N. J. Non-refillable bottle	608,650	Aug. 9	867	200	84	845
Clanton, H. C. (See Watkins, George H., assignor.)						
Clark, Albert C. (See Hurlbut, Frank, assignor.) (Reissue.)						
Clark, Charles S., and H. H. Baltzley, Assumption, Ill.; said Baltzley assignor to said Clark. Foot-warmer	607,160	July 12	987	213	84	207
	609,958	Aug. 30	3304	770	84	1358
Clark, Daniel W., Tionesta, Pa. Thill-coupling	610,029	Aug. 30	3434	795	84	1388
Clark, Ernest C., Detroit, Mich. Powder-compressor						
Clark, Henry R. (See Clark, John K. and H. R.)	609,533	Aug. 23	2545	596	84	1196
Clark, John H., assignor to Whittier Machine Company, Boston, Mass. Elevator						
Clark, John K. and H. R., assignors to M. K. and S. J. Clark, Buffalo, N. Y. Spring-hinge	610,799	Sept. 13	1192	274	84	1690
Clark, Joseph H., assignor to F. C. Austin, Chicago, Ill. Ditching-machine	606,987	July 5	607	132 / 133	84	120
Clark, Mary K., *et al.* (See Clark, John K. and H. R., assignors.)						
Clark, Robert W., Clinton, Minn. Pipe clamp and holder	609,534	Aug. 23	2547	596	84	1197
Clark, Sara J., *et al.* (See Clark, John K. and H. R., assignors.)						
Clark, Stephen A. D., Pasadena, Cal. Wire stretcher and cutter	610,881	Sept. 13	1331	305	84	1719
Clark, William. (See Shank, Augustus W., assignor.)						
Clark, William A., assignor to Weyburn & Briggs Company, Rockford, Ill. Upsetting-machine for plowshares	609,265	Aug. 16	2065	490	84	1066
	607,833	July 26	2415	512 / 513	84	522
Clarke, Henry, Chicago, Ill. Check-writing machine						
Clarke, Henry B., *et al.* (See Sultemeyer, Carl F., assignor.)	609,875	Aug. 30	3148	736	84	1328
Clarke, Marian N., Wilkes-Barré, Pa. Electrode for medical purposes	609,228	Aug. 16	1991	472	84	1071
Clarke, Walter H., St. Louis, Mo. Paper-roll holder						
Clarke, William R., assignor to United Alkali Company, Limited, Liverpool, England. Apparatus for making chlorates and bleaching liquor	609,608	Aug. 23	2679	625	84	1221
Clarkson, John W., Worcester, Mass., assignor, by mesne assignments, to Crompton & Knowles Loom Works, Worcester, Mass., and Providence, R. I. Comb-dabbing mechanism	609,385	Aug. 16	2264	535	84	1125
Clary, Joseph E. (See Borge and Clary.)						
Clauss, Arthur, *et al.* (See Pugh, William J., assignor.)	611,104	Sept. 20	1731	397 / 398	84	1810
Claviez, Emil, Chemnitz, Germany. Double-plush fabric	609,572	Aug. 23	2608	610	84	1208
Clawson, Clement C., Newark, N. J. Powder-distributer	609,573	Aug. 23	2611	611	84	1209
Clawson, Clement C., Newark, N. J. Powder-distributer						
Clayton, Augustus L. (See Mehl, Andrew, assignor.)						
Clayton, Fred. (See Meldrum and Clayton.)						
Clayton, James. (See Clayton, Thomas G., assignor.)						
Clayton, Thomas G., Normanton, England, assignor to J. Clayton, New York, N. Y. Steam-engine	608,421	Aug. 2	459	102	84	747
Cleal, Joseph P., assignor to National Cash Register Company, Dayton, Ohio. Coin-display	609,411	Aug. 23	2319	547 / 548	84	1154
	611,235	Sept. 27	1990	459	84	1879
Cleaveland, Henry G., Newton, Mass. Supplemental blind-latch						
Cleaver, William, *et al.* (See Thame, Henry, assignor.)						
Clerk, William B., *et al.* (See Kelley, Alexander, assignor.)						
Cleveland Co-Operative Stove and Hollow Ware Foundry Company. (See Baldwin, William W., assignor.)						
Cleveland, Roswell W. C., assignor of one-half to S. P. Wharton, Philadelphia, Pa. Machine for grinding backs of button-blanks	609,140	Aug. 16	1820	432	84	1087
Cleveland, William B., Cleveland, Ohio. Electrically-controlled valve for hydraulic presses	610,524	Sept. 13	715	162	84	1593
	608,651	Aug. 9	868	200	84	845
Cliff, Edward, Newark, N. J. Hose-rack	606,802	July 5	312	65, 66	84	62
Cline, George A., Toronto, Canada. Automatic vending-machine	610,670	Sept. 13	955	221	84	1642
Cline, George W., Canton, Ohio. Metal railway-tie						
Clodfelter, Noah J., *et al.* (See Miller, John F., assignor.)	607,598	July 19	1973	409	84	419
Closz, Charles, Webster City, Iowa. Grain-separating screen for threshing-machines						
Clot, John B. (See Hawley and Clot.)	611,057	Sept. 20	1640	375	84	1702
Clotworthy, Frank M., Baltimore, Md. Operating mechanism for chimney-dampers	610,800	Sept. 13	1193	274	84	1690
Cloud, William H., Haddonfield, N. J. Bath-trap	607,111	July 12	894	193 / 194	84	192
Clunies, Arthur B., assignor to Sill Stove Works, Rochester, N. Y. Stove						
Coates, Frank R., Stamford, Conn., and O. M. Shepard, New York, N. Y. Emergency-crossover	609,660	Aug. 23	2795	651	84	1244
	607,680	July 19	2117	443	84	446
Cobb, Benjamin P., Bozeman, Mont. Meat-holding device						
Cobb, Delphin M. (See Sprouls, Robert A., assignor.)	607,218	July 12	1092	235	84	228
Cobb, Norman P., assignor of one-half to A. C. Perry, Chicago, Ill. Gearing for bicycles	608,177	Aug. 2	16	4, 5	84	657
Cobb, Ruric E., assignor of one-half to C. H. S. Jackson, Hephzibah, Ga. Piano-action	610,090	Aug. 30	3436	796	84	1388
Cobb, Samuel C., Janesville, Wis. Cultivator	609,661	Aug. 23	2797	652	84	1244
Cobenzl, Albert S., Höchst, Germany. Photographic developing apparatus						
Coburn, Lemuel, assignor to Coburn Metallic Bed and Pneumatic Tube Mattress Company, Holyoke, Mass. Bedstead	608,545	Aug. 2	661	150	84	786
Coburn, Lemuel, assignor to Coburn Metallic Bed and Pneumatic Tube Mattress Company, Holyoke, Mass. Bedstead	608,546	Aug. 2	663	150	84	786
Coburn, Lemuel, assignor to Coburn Metallic Bed and Pneumatic Tube Mattress Company, Holyoke, Mass. Cot-bed	608,547	Aug. 2	664	151	84	787
Coburn Metallic Bed and Pneumatic Tube Mattress Company. (See Coburn, Lemuel, assignor.)						
Cochran, Andrew. (See Cochran, James S., assignor.)						
Cochran Company. (See Dortch, John M., assignor.)	609,792	Aug. 30	3009	705	84	1299
Cochran, Henry R., Bearden, Ark. Automatic car-coupling	610,258	Sept. 6	213	------	84	1483
Cochran, James S., assignor to A. Cochran, Philadelphia, Pa. Cattle-food						
Cochran, Thomas, Jr. (See Beckwith and McCollum, assignors.)	607,661	July 19	2117	443	84	446
Cochrane, Douglas M. B. H., London, England. Ammunition-holder for machine-guns	610,429	Sept. 6	543	119	84	1542
Cochrane, Douglas M. B. H., London, England. Cycle-saddle	608,178	Aug. 2	18	5	84	656
Cock, William R., Plainfield, N. J. Electrical rail-bond and securing same in place						
Cockburn, Robert R. (See Hunter, Marjory, assignor.)						
Coe Brass Manufacturing Company. (See Brooker, Charles F., assignor.)	607,406	July 12	1446	307	84	295
Coe, John S., Paterson, N. J. Thermostatic gas-regulator						
Coe, John S., Paterson, N. J., assignor to Supreme Combination Water Heater Company, of New Jersey. Means for automatically controlling supply of gas and water, &c	610,348	Sept. 6	386	82	84	1514

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Coe, Walter H., Providence, R. I. Gilding-tool	608,106	July 26	2915	624	84	620
Coes, Frederick L., assignor to Coes Wrench Company, Worcester, Mass. Screw-wrench	608,439	Aug. 2	485	110	84	752
Coes, Loring, assignor to Coes Wrench Company, Worcester, Mass. Wrench	610,259	Sept. 6	213	48	84	1483
Coes Wrench Company. (See Coes, Frederick L., assignor.)						
Coes Wrench Company. (See Coes, Loring, assignor.)						
Coffey, Henry D., Gays, Va. Churn	609,412	Aug. 23	2322	548	84	1155
Coffey, John F., Omaha, Nebr. Stop-cock and waste	608,179	Aug. 2	19	5	84	658
Cogswell, John H. (See Starr and Cogswell.)						
Cohalan, Daniel F., *et al.* (See Sill, Richard V., assignor.)						
Cohalan, Timothy, *et al.* (See Sill, Richard V., assignor.)						
Cohen, Andrew J. (See Seymour, William S., assignor.)						
Cohen, Sarah Z. (See Munday, William S., assignor.)						
Cohn, Israel, New York, N. Y. Flash-light apparatus	610,472	Sept. 6	619	139	84	1557
Coker, James L., Jr., Hartsville, S. C. Digester and protecting same	609,733	Aug. 23	2904	680	84	1266
Coker, Willie P., Oakdale, Okla. Ter. Churn	607,342	July 12	1326	283	84	274
Coldwell, Thomas, Newburg, N. Y. Grass-collector for lawn-mowers	608,029	July 26	2802	596	84	598
Cole, David, Chicago, Ill., assignor to Gates Iron Works, of Illinois. Steam ore-stamp	608,422	Aug. 2	460	103	84	747
Cole, David, Chicago, Ill., assignor to Gates Iron Works, of Illinois. Steam ore-stamp	608,423	Aug. 2	463	103 / 104	84	748
Cole, Robert W. (See Porteous and Cole.)						
Colegrove, Charles E., assignor to White Sewing Machine Company, Cleveland, Ohio. Bicycle-bearing	610,166	Sept. 6	11	3	84	1445
Coleman, Clyde, assignor, by mesne assignments, of two-thirds to G. P. Jones, Chicago, Ill. Alarm system	607,407	July 12	1447	307	84	296
Coleman, Joseph H., Tottenham, assignor of one-half to J. Steel, Montreal, Canada. Fare-box	608,107	July 26	2915	624	84	620
Coleman, Thomas, Jr., C. Runyon, Rochester, and F. Zahn, Freedom, Pa. Apparatus for manufacturing glassware	608,734	Aug. 9	1043	239 / 240	84	880
	609,876	Aug. 30	3149	736	84	1328
Coles, Walter S., Cincinnati, Ohio. Tray for duplicate whist	607,017	July 12	686	------	84	156
Colin, Theodore F., Jersey City, N. J. Desulfurizing petroleum						
Collat, Isidore, *et al.* (See Gardner, Jacob N., assignor.)						
Collat, Lilly, *et al.* (See Gardner, Jacob N., assignor.)						
Collen, Robert, London, England. Trussing-machine	606,957	July 5	553	122	84	110
Collen, Robert, London, England. Machinery for manufacturing casks or barrels	607,219	July 12	1094	236	84	228
Collier, David R., and C. C. Rathburn, Gardner, Mass., assignors to Heywood Brothers & Wakefield Company, Jersey City, N. J. Hub-holding device	610,167	Sept. 6	12	4	84	1445
Collins, Curtis E., *et al.* (See Jacklin, Thomas G., assignor.)						
Collins, Edward C., Taunton, Mass. Brake-handle for cars	611,058	Sept. 20	1642	376	84	1792
Collins, Mary C., Minneapolis, Minn. Skirt-cutting rule	606,706	July 5	128	28	84	27
Collins, Reuben J. C., assignor to A. G. Hartley, London, England. Puzzle	609,081	Aug. 16	1699	404	84	1016
Collis, John, Des Moines, Iowa. Valve	610,873	Sept. 13	1320	303	84	1717
Collyer, William C., and W. F. Bullock, Lynn, Mass. Combined guard and step for street-cars	609,082	Aug. 16	1700	405	84	1016
Coltrin, John C., assignor of one-half to A. Alexander, Denver, Colo. Lock	610,702	Sept. 13	1004	233 / 234	84	1652
Columbus, Charles, and C. R. Hesseltine, Creston, Wash. Drill	608,548	Aug. 2	666	151	84	787
Comer, Harris, Philadelphia, Pa. Valve and fluid-dispenser	607,019	July 12	690	150	84	156
Common Sense Bolster Company. (See Thompson, Frank, assignor.)						
Common Sense Patenting Company. (See Hensler, Joseph A., assignor.)						
Comstock, Chester, assignor to Ironclad Manufacturing Company, New York, N. Y. Apparatus for distributing color	609,010	Aug. 16	1565	372 / 373	84	992
Conant, Frederick O. (See Smith, Frank W., assignor.)						
Conant, Nathaniel. (See Bixby, John L., assignor.)						
Conaway, Albinus, Laurel, Md. Fire-escape	607,161	July 12	988	213	84	208
Cone, Henry. (See Blackman, Cone, and Neill.)						
Conger, Arthur H., *et al.* (See Garnier, Thomas R., assignor.)						
Conkling, Allen. (See Moe, Buell, Roberts, and Conkling.)						
Conkling, Nannie B., and J. H. Lee, St. Louis, Mo. Dress-skirt supporter	610,081	Aug. 30	3437	796	84	1388
Conn, W. A. (See Dunn, George A. and R. F., assignors.)						
Connell, Horatio P., Philadelphia, Pa. Kumiss and making same	607,634	July 19	2040	------	84	433
Connolly, Thomas, Chicago, Ill. Underground electric conduit	607,018	July 12	689	149	84	156
Conner, Patrick H., and F. M. Podhaski, Monticello, Iowa. Vending-machine	611,354	Sept. 27	2216	512	84	1920
Connett, Matthew F., Jr., Memphis, Tenn. Can-opener	609,413	Aug. 23	2324	548	84	1155
Connett, Matthew F., assignor to L. Y. Hancock, San Antonio, Tex. Fabric-turfing implement	606,707	July 5	129	28	84	28
Connett, Matthew F., San Antonio, assignor to L. Y. Hancock, Bexar county, Tex. Can-opener	608,575	Aug. 9	721	165	84	819
Conrad, Frank. (See Davis and Conrad.)						
Consolidated Car Fender Company. (See Annable, Warren W., assignor.)						
Consolidated Car Fender Company. (See Range, John W., assignor.)						
Consolidated Car Fender Company. (See Woodworth, Albert C., assignor.)						
Consolidated Car-Heating Company. (See McElroy, James F., assignor.)						
Consolidated Fastener Company. (See Dowse, William B. H., assignor.)						
Consolidated Fastener Company. (See Lord, Almon, assignor.)						
Consolidated Fastener Company. (See Upton, Samuel, assignor.)						
Constant, Boston S., Bloomington, Ill. Grain feeder and conveyer	608,180	Aug. 2	20	5, 6	84	658
Conti, James T. F., Paris, France. Rotary engine	608,401	Aug. 2	420	92	84	739
Converse, Maschil D. (See Le Roy and Converse.)						
Converse, Oliver E., St. Louis, Mo. Type-writing or printing machine	608,440	Aug. 2	487	110	84	752
Conway, John P., New York, N. Y. Switchboard and alarm mechanism	607,343	July 12	1327	283 / 284	84	274
Cook, Francis H., Spokane, Wash. Rock-breaker and ore-crusher	610,122	Aug. 30	3578	828 / 829	84	1414
Cook, Giles H., Des Moines, Iowa. Legging	608,258	Aug. 2	147	36, 37	84	688
Cook, Lemuel T., Atlanta, Ind. Washboiler-strainer	611,561	Sept. 27	2615	602	84	1995
Cook, William E., Ogdensburg, N. Y. Match-machine	611,562	Sept. 27	2615	603	84	1995
Cooke, Charles L. (See Cooke, George E. and C. L.)						
Cooke, George E. and C. L., Clarksville, Tenn. Safety attachment for elevators	610,642	Sept. 13	914	210	84	1688
Cooke Locomotive and Machine Company. (See Murphy, John F., assignor.)						
Coon, Clarence J., *et al.* (See Abbott, William O., assignor.)						
Cooper, Charles. (See Hurley, Daniel, assignor.)						
Cooper, George T., assignor of one-half to H. F. Jacobs, Natick, Mass. Sanitary trap	607,988	July 26	2695	575	84	574
Cooper, Harry H., *et al.* (See Thayer, Julius W., assignor.)						
Cooper, Herbert, Jersey City, N. J., assignor of eleven-twentieths to I. Stern, New York, N. Y. Dop for diamond cutting and polishing	609,141	Aug. 16	1821	432	84	1087

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cooper, Isom W., *et al.* (See Thayer, Julius W., assignor.)						
Cooper, John A., assignor of one-half to A. C. Savage, Adair, Iowa. Gun-sight	607,344	July 12	1329	284	84	275
Copland, Virginia I., Washington, D. C. Can-opening nozzle	609,500	Aug. 23	2495	583	84	1187
Coppens, Peter J., Grand Rapids, Mich. Heating-stove	609,692	Aug. 23	2798	652	84	1244
Copperfield, James D., Philadelphia, Pa. Barrel-head	609,798	Aug. 30	3010	705	84	1299
Corbin, Clark, Carbon Cliff, Ill. Computing-scale	608,441	Aug. 2	488	111	84	752
Corby, Charles I. (See Corby, William S. and C. I.)						
Corby, William S. and C. I., Washington, D. C. Machine for working and shaping dough	611,563	Sept. 27	2618	603 604	84	1996
Corcoran, Andrew J., Jersey City, N. J. Windmill	610,735	Sept. 13	1062	244	84	1663
Corey, James B., Braddock, Pa. Voting apparatus	607,503	July 19	1797	374	84	398
Corey, William W., Jr., St. Louis, Mo. Valve for steam-pumps	608,181	Aug. 2	22	6	84	658
Corneil, Lewis T., assignor to Parkhurst & Wilkinson, Chicago, Ill. Pedal	611,355	Sept. 27	2219	513	84	1921
Cornwall, George R., Port Chester, N. Y. Intaglio printing	607,915	July 26	2578	------	84	552
Cornwell, Isaac, Northumberland, Pa. Fifth-wheel	610,643	Sept. 13	916	210	84	1634
Cornwell, Richard W. (See Torney, John H., assignor.)						
Corrington, Murray, New York, N. Y. Air-brake	606,708	July 5	132	28	84	28
Corrington, Murray, New York, N. Y. Air-brake	608,080	July 26	2904	596	84	598
Corron, César, Lyons, France. Apparatus for dyeing, &c	607,834	July 26	2420	513 514	84	523
Corry, Michael. (See Barker and Corry.)						
Cortis, Dwight T. (See Cortis, Frank A., assignor.)						
Cortis, Frank A., Meriden, Conn., assignor of one-half to D. T. Cortis, Boston, Mass. Welsbach lamp	610,473	Sept. 6	620	139	84	1557
Costello, Joseph A., Cleveland, Ohio. Nut-tapping machine	606,645	July 5	15	3	84	5
Cotner, David R., Bardwell, Ky. Combined reading, writing, and music stand	611,446	Sept. 27	2400	551	84	1953
Cotten, Herbert M. (See Boasso, Eugene D., assignor.)						
Cottle, Henry F., Boston, Mass. assignor of two-thirds to W. Calver, Washington, D. C., and J. J. Pratt, Revere, Mass. Apparatus for storing and using solar heat	608,755	Aug. 9	1046	240	84	880
Cotton, C. E. (See Tubbs, George W., assignor.)						
Cottrelly, Ernestine, New Rochelle, N. Y. Bicycle-skirt	610,092	Aug. 30	3458	796	84	1364
Couch, Charles A., Chicago, Ill. Locomotive	610,856	Sept. 13	1285	296	84	1709
Couch, Lizzie, Forreston, Tex. Meat-hanger	609,414	Aug. 23	2325	549	84	1156
Coudert, Frederic R., Jr., administrator. (See Villon, Aime M.)						
Coughlin, Edward W., Baltimore, Md. Railway switch-box	607,916	July 26	2580	547	84	553
Coughlin, Edward W., Baltimore, Md. Railway-switch	607,917	July 26	2581	547	84	553
Coulbourn, William R., and J. J. Lankford, Roanoke, Va. Nipple for nursing-bottles	609,415	Aug. 23	2326	549	84	1156
Coulston, Earl V., Royersford, Pa. Hot-air radiator	608,360	Aug. 2	345	75	84	724
Coumbary, Alexander. (See Alexandroff, Warsanophy, assignor.)						
Coupal, Peter A., Boston, Mass. Staple making and driving machine	610,320	Sept. 6	345	74	84	1508
Coupal, Prosper, assignor of one-half to J. L. Leclaire and P. Legris, Bourbonnais, Ill. Gate	607,682	July 19	2118	444	84	446
Coupe, Richard H. (See Sargent, Coupe, and Walker.)						
Couper, James C. (See Greenleaf, Latham W., assignor.)	608,756	Aug. 9	1048	240	84	881
Courtenay, William, New York, N. Y. Artificial stone	609,083	Aug. 16	1701	405	84	1016
Courtney, Cyrus W., Doniphan, Idaho, assignor to C. K. Henkelman, Baltimore, Md. Puzzle	611,356	Sept. 27	2221	513 514	84	1921
Courtney, John C., assignor of one-half to F. Plumb, Streator, Ill. Corn-planter	609,877	Aug. 30	3151	736	84	1328
Courtney, Joseph M. (See Lewis and Courtney.)						
Cousens, Alfred C., Newark, N. J., assignor of one-half to G. W. Gregory and J. C. Edwards, Boston, Mass. Tension-regulator for electrical transmission of speech	608,182	Aug. 2	25	6	84	659
Cousins, James, Jr. (See Neu, Louis J., assignor.)						
Cousy, Constant E., New York, N. Y. Pencil holder and sharpener	611,375	Sept. 27	2270	524	84	1990
Cowen, Robert, Cambridge, assignor to Boston Woven Hose and Rubber Company, Boston, Mass. Vehicle-tire	611,105	Sept. 20	1734	398	84	1811
Cowgill, Elisha L., Fillmore, Ind. Wire-fastener	610,474	Sept. 6	622	139 140	84	1557
Cowles, Arthur B., Rochester, N. Y., assignor to Standard Lithographing Company of the City of New York, of New York. Box						
Cowles, Frederick L. (See Jones, Charles B., assignor.)						
Cowles, William B., assignor to "Long Arm" System Company, Cleveland, Ohio. Hydraulic system for operating reciprocating mechanism	608,888	Aug. 9	1227	286 287	84	911
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Conveying apparatus	608,576	Aug. 9	723	165	84	819
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Conveying apparatus	608,577	Aug. 9	724	166 167	84	819
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Conveying apparatus	608,578	Aug. 9	728	167	84	820
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Conveying apparatus	608,579	Aug. 9	730	168	84	820
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Conveying apparatus	608,580	Aug. 9	733	168	84	821
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Conveying apparatus	608,581	Aug. 9	735	168 169	84	821
Cowley, James T., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, Newark, N. J. Cable-carrier	608,954	Aug. 9	1443	342	84	952
Cowley, William A., Benicia, assignor to Baker & Hamilton, San Francisco, Cal. Dumping-vehicle	609,182	Aug. 16	1891	450	84	1049
Cox, Carey S., Fresno, assignor of one-half to Phœnix Raisin Seeding and Packing Company, Fresno county, Cal. Raisin-seeder	608,108	July 26	2917	624 625	84	621
Cox, Charles B., New York, N. Y. Self-locking clutch for elevators, &c	610,857	Sept. 13	1287	297	84	1710
Cox, G. W., *et al.* (See Hudgepeth, James L., assignor.)						
Cox, Samuel A., *et al.* (See Moore, Llewellyn C., assignor.)						
Cozens, Ella M. (See Trott, George V., assignor.)						
Cozine, Charles G., assignor of two-thirds to J. C. Vanarsdell, Lawrenceburg, and J. J. C. Bond, Harrodsburg, Ky. Cattle-guard	610,430	Sept. 6	544	119 120	84	1543
Crabtree, John, Bracebridge, assignor of one-half to R. Morris, Doncaster, England. Mechanical signal-indicator for use on railway locomotive-engines	610,386	Sept. 6	476	104	84	1530
Crahen, Patrick H. (See Holcomb, Clifford A., assignor.)						
Craig, David, Melrose, Mass. Pump	608,361	Aug. 2	346	75	84	724
Craig, Joseph W., Paulding, Ohio. Washing-machine	607,424	July 19	1485	316	84	320
Craig, Lee D., San Francisco, Cal. Supporter for cooking utensils	611,376	Sept. 27	2272	524	84	1931
Crall, John J., Chauncey, Mo. Boiler-cleaner	610,708	Sept. 13	1006	234	84	1652
Cramer, Howard, Williamsport, Pa. Magazine for firearms	610,128	Aug. 30	3560	829	84	1414
Crandall, Albert L., Phelps, N. Y. Thill-coupling	609,663	Aug. 23	2799	652	84	1245
Crandall, Jacob, Westport, Cal. Finger-ring twine-cutter	611,318	Sept. 27	2143	495	84	1907

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Crane, Daniel, Seneca Falls, N. Y. Ball-bearing	611,236	Sept. 27	1991	459	84	1879
Crane Elevator Company. (See Reynolds, George H., assignor.)						
Crane, George A., Worcester, Mass. Plow	611,106	Sept. 20	1734	398	84	1811
Crane, Harry O., *et al.* (See Crane, Uzal O., assignor.)						
Crane, Richard T., Chicago, Ill. Automatic elevator safety-stop	606,857	July 5	419	89, 90	84	88
Crane, Uzal O., assignor to H. O. Crane, New York, N. Y., and G. W. Judson, Jersey City, N. J. Bottle	607,345	July 12	1331	284	84	275
Crane, Walter T. (See Davenport, George W., assignor.)						
Crary, Ned B., Canisteo, N. Y. Puzzle	607,735	July 19	2201	465	84	463
Crary, William P., Brooklyn, N. Y. Lamp	607,162	July 12	989	214	84	908
Craven, Thomas J., Salem, N. J. Packing-case	611,059	Sept. 20	1643	376	84	1792
Craw, Joseph T., Jersey City, N. J., assignor of one-half to Brown & Bailey Company, Philadelphia, Pa. Paper plant-box	607,346	July 12	1331	285	84	275
Crawford, R. J. (See Campbell, Frank L., assignor.)						
Creamer, Addison C. (See Frost, James C., assignor.)	607,984	July 26	2696	575	84	575
Crean, Gerald J., Montreal, Canada. Magnetic ore-separator	609,011	Aug. 16	1567	373	84	992
Creider, Simon S. (See Korn, Isaac, assignor.)						
Crigkal, John E., Newark, N. J. Wire-coiling machine	609,501	Aug. 23	2495	584	84	1187
Crisler, Joseph L. (See Flesher and Crisler.)						
Critchfield, Rush D., Coffeyville, assignor of one-half to J. W. Glass, Independence, Kans. Vehicle-spindle						
Crompton & Knowles Loom Works. (See Clarkson, John W., assignor.)						
Crompton & Knowles Loom Works. (See Goodline and Wyman assignors.)						
Crompton & Knowles Loom Works. (See Gordon, Albert A., assignor.)						
Crompton & Knowles Loom Works. (See Hutchins, George F., assignor.)						
Crompton & Knowles Loom Works. (See Wyman and Crompton, assignors.)						
Crompton, Randolph. (See Wyman and Crompton.)	608,442	Aug. 2	490	111	84	753
Cronmiller, George, Welland, Canada. Casket-stand	610,229	Sept. 6	162	36	84	1474
Crook, Charles M., Elgin, assignor to C. S. Burton, trustee, Oak Park, Ill. Electric clock-train	611,060	Sept. 20	1644	376	84	1793
Crooker, E. R. (See Crooker, George A., assignor.)	607,112	July 12	895	194	84	192
Crooker, George A., assignor of one-half to E. R. Crooker, Crowley, La. Washboiler	607,736	July 19	2202	465 466	84	463
Cropp, Andrew J., Chicago, Ill. Corn cutter and shocker	610,644	Sept. 13	917	210	84	1634
Crosby, Hanford T., Boston, Mass. Sole-rough-rounding machine	609,734	Aug. 23	2906	680	84	1266
Crosby Steam Gage and Valve Company. (See Reed, Samuel G., assignor.)						
Crosland, William. (See Mackenzie and Crosland.)						
Cross, Anson K., Boston, Mass. Artist's easel	607,586	July 19	1951	405	84	415
Cross, Frank G. (See Parker and Cross.)	609,195	Aug. 16	1914	456	84	1054
Cross, W. C. (See Rainey, Equieller H., assignor.)	608,582	Aug. 9	737	169 170	84	822
Crosser, Simon, *et al.* (See Moore, Llewellyn C., assignor.)						
Crossley, William H., assignor of one-half to G. W. Miffiin, Bloomsburg, Pa. Valve for pneumatic tires	610,431 610,844	Sept. 6 Sept. 13	546 1260	120 291	84 84	1543 1704
Crossman, Eduard C., Allegheny, Pa. Station-indicator						
Crossman, Percy, *et al.* (See Robinson, Joseph, assignor.)						
Crosthwait, Charles O., administrator. (See Tyler, William H.)						
Crouse, John N. (See Wilkens, John D., assignor.)						
Crowden, Charles T., Leamington Spa, England. Apparatus for making tubular joints	609,734	Aug. 23	2906	680	84	1266
Crowell, Charles H., Lynn, assignor to J. R. Carter, Boston, Mass. Machine for cutting cloth	607,586	July 19	1951	405	84	415
Crowell, John S., Springfield, Ohio. Rubber tire for vehicle-wheels	609,195	Aug. 16	1914	456	84	1054
Crowell, Luther C., assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Cutting and delivery mechanism	608,582	Aug. 9	737	169 170	84	822
Crowell, Luther C., assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Newspaper-seal	609,735	Aug. 23	2907	681	84	1266
Crowell, Luther C., assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Wrapping-machine	610,344	Sept. 6	389	83, 84	84	1514
Crown Cork and Seal Company. (See Painter, William, assignor.)						
Crowther, David, Huddersfield, England. Solder	607,504	July 19	1799	374	84	388
Crowther, David, Huddersfield, England. Machine employed in brazing	607,505	July 19	1801	375	84	388
Crowther, David, Huddersfield, England. Rubber tire	609,794	Aug. 30	3012	705	84	1300
Crump, John M., South Prairie, Wash. Spoke-grip	611,564	Sept. 27	2021	604	84	1996
Crystal, Moses. (See Krellenstein, Bernard, assignor.)						
Cuckson, Fredrick C., Malone, N. Y. Safety-envelop	608,583	Aug. 9	743	171	84	822
Cudaback, Clinton G., *et al.* (See Washburn and Cudaback, assignors.)						
Cudaback, Edgar L. (See Washburn and Cudaback.)						
Culbertson, Andrew J., assignor to J. W. Strough, San Andreas, and E. L. Burns, Copeto-Gargadennes, Cal. Pneumatic propelling means for vessels	608,757	Aug. 9	1050	240	84	881
Cullen, John M., Chicago, Ill. Nut-lock	609,084	Aug. 16	1702	405	84	1016
Cullinan, Joseph S., Washington, Pa. Gas and oil separator	611,814	Sept. 27	2144	495	84	1907
Culter, Richard A., Peoria, Ill. Heating-stove	610,260	Sept. 6	214	48	84	1484
Culver, Clarence E., Cashton, Wis. Grain-separating machine	610,432	Sept. 6	548	120	84	1543
Culver, Frederick S., Taunton, Mass. Adjustable roll-frame for spinning-machines	607,635	July 19	2041	423	84	433
Cummings, William E., Orange, N. J. Hat-finishing machine	607,653	July 19	2077	433	84	438
Cummius, J. W. (See Sisson, Fred, assignor.)	608,758	Aug. 9	1051	241	84	881
Cunneen, John T., Fall River, Mass. Roving-frame	608,081	July 26	2905	596	84	599
Cunningham, Frank J. (See Demarest and Cunningham.)						
Cunningham, George T., Boston, Mass. Railway signal system	606,757	July 5	230	49	84	47
Cunningham, William. (See Herr, Cunningham, and Herr.)						
Cunningham, William J., Philadelphia, Pa. Bottle-washer	610,645	Sept. 13	919	------	84	1634
Cunningham, William P. (See Hugus, George M., assignor.)						
Cupper, John T., Lock Haven, Pa. Crystal aluminium bronze	606,834	July 5	376	80	84	75
Curl, Charles A., assignor of one-third to J. D. McAnlis, Beaver Falls, Pa. Extension-table						
Currie, James. (See Orewiler, Benjamin F., assignor.)	609,756	Aug. 23	2941	687	84	1272
Curry, Lewis M., Chicago, Ill. Adjustable jamb-hinge	611,447	Sept. 27	2401	551	84	1953
Curry, William J., Nanaimo, Canada. Grater	608,371	Aug. 2	361	79	84	727
Curtice, William H., Louisville, Ky. Cabinet-sifter	607,290	July 12	1097	236	84	229
Curtis, Andrew J., assignor of one-half to F. L. Palmer, Monroe, Me. Fastening for blinds	610,433	Sept. 6	550	120 121	84	1544
Curtis, Charles H., Derby, assignor to Birmingham Brass Company, Shelton, Conn. Automatic buffing-machine	611,237	Sept. 27	1992	459	84	1879
Curtis, Charles L., assignor to F. Strauss, New York, N. Y. Harmonica	606,868	July 5	461	99	84	91
Curtis, William F., Miller's Falls, Mass. Log-dumper	607,281	July 12	1099	237	84	229
Curtis, William G., San Francisco, Cal. Joining railway-bars						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Curtiss, Mary H. (See Hess and Curtiss.)						
Curwen, Samuel M. (See Brill and Curwen.)						
Custer, Charley T. (See Custer, Theophilus B. and C. T.)						
Custer, Theophilus B. and C. T., Hillsborough, Ohio. Wire fence	610,896	Sept. 20	1362	312	84	1739
Cutler, Otis H. (See Lindenthal, Gustav, assignor.)						
Cutler, Willie E., Lewiston, Me., assignor to Draper Company, Portland, Me., and Hopedale, Mass. Selvage-motion for looms	607,985	July 26	2098	575 576	84	575
Cutter Electrical and Manufacturing Company. (See Cutter, Henry B., assignor.)						
Cutter, Henry B., Philadelphia, Pa., assignor to Cutter Electrical and Manufacturing Company, of New Jersey. Rheostat	606,646	July 5	18	3, 4	84	6
Cutter, Solomon M., Nashua, N. H., assignor, by mesne assignments, to Wire Grip Fastening Company of Maine, Boston, Mass. Nail or slug strip	610,475	Sept. 6	624	140	84	1558
	606,647	July 5	20	4	84	6
Cuttingham, Christopher F., New York, N. Y. Cuspidor for cars, &c	608,323	Aug. 2	286	63	84	712
Cypher. Albert D., New York, assignor of one-half to S. L. Fowler, Peekskill, N. Y. Condensed-milk cup	610,671	Sept. 13	956	221	84	1642
Cypher, John W., Benton, Ill. Mowing-machine						
Czermak, John W. (See Erickson, Peter E., assignor.)						
D. M. Osborne & Company. (See Sharp, Charles S., assignor.)						
D. Stewart & Company. (See Lyon, Henry, assignor.)						
D'Huart, Emile. (See Glaesener and D'Huart.)						
D'Urban, Charles J., Johannesburg, South African Republic. Device for propelling ships, &c	606,653	July 5	30	7	84	8
	609,012	Aug. 16	1570	373	84	993
Dagley, Thomas, Agee, Tenn. Means for transmitting power	609,142	Aug. 16	1825	432	84	1038
Dagoneau, Jules C., Beaufort, France. Combined battery and electric cell						
Dahl & Co. (See Elsaesser, Emil, assignor.)						
Daigle, Napoleon. (See Vincent, Hilaire, assignor.)						
Dailey, Charles E., assignor of one-half to E. I. Baxter, East Liverpool, Ohio. Car-replacer	608,324	Aug. 2	287	63	84	713
	608,658	Aug. 9	872	201	84	846
Dain, Joseph, Jr., assignor to Dain Manufacturing Company, Carrollton, Mo. Hay-stacker.						
Dain Manufacturing Company. (See Dain, Joseph, Jr., assignor.)						
Dake, Charles W. (See Knape and Dake.)						
Daley, Michael R., Fall River, Mass. Cash-holder	608,654	Aug. 9	875	201 202	84	847
	608,839	Aug. 9	1235	287	84	914
Daly, John P., Savannah, Ga. Bicycle-tire shield	609,416	Aug. 23	2327	549 550	84	1156
Damon, George L., Boston, Mass. Safe-boltwork						
Dana, Frederick I., assignor to Thomas Phillips Company, Providence, R. I. Tentering-machine	609,574	Aug. 23	2613	611 612	84	1209
Dana, Frederick I., assignor to Thomas Phillips Company, Providence, R. I. Clip for tenter-machines	609,575	Aug. 23	2615	612	84	1210
Danckwardt, Paul, assignor of two-thirds to H. Harms, New York, N. Y. Apparatus for producing alkali metals from their chlorids	607,506	July 19	1805	375	84	389
Danckwardt, Paul, assignor of two-thirds to H. Harms, New York, N. Y. Process of and apparatus for making ferrocyanids	607,507	July 19	1806	376	84	389
	607,347	July 12	1333	285	84	275
Daniele, Vaninetti, San Francisco, Cal. Mowing-machine	608,840	Aug. 9	1236	288	84	914
Daniels, Fred H., Worcester, Mass. Bale-tie	611,565	Sept. 27	2022	604 605	84	1997
Daniels, Fred H., Worcester, Mass. Rolling-mill plant						
Daniels, Robert E., assignor of one-half to H. Huffstot, Youngstown, Ohio. Metallic lathing	608,759	Aug. 9	1053	241	84	881
Daniels, Robert E., assignor of one-half to H. Huffstot, Youngstown, Ohio. Metallic lathing	608,760	Aug. 9	1053	241	84	882
Danielson, Charles J., *et al.* (See Parmley, Lemuel D., assignor.)						
Dann, James E., New York, N. Y. Heat-retaining starch-cooker	611,061	Sept. 20	1645	376	84	1793
	610,858	Sept. 13	1289	297	84	1710
Dannat, Willard H., Great Falls, Mont. Potato-planter	609,996	Aug. 30	3365	781 782	84	1369
Danziger, Benno, Mannheim, Germany. Apparatus for drawing off liquids containing air or other gases						
Dargue, Walter. (See Woodcock, Longthorpe, and Dargue.)						
Darling, William A., Condon, Oreg. Machine for separating gold	608,841	Aug. 9	1237	288	84	914
Darlington, Frederick. (See Stanley and Darlington.)						
Darms, Herman A., Napa, Cal. Rifle attachment for shotguns	611,062	Sept. 20	1646	377	84	1793
Daugherty, James D., assignor to Daugherty Typewriter Company, Kittanning, Pa. Type-writer	610,801	Sept. 13	1194	275	84	1690
Daugherty Typewriter Company. (See Daugherty, James D., assignor.)						
Davenport, George W., Verona, assignor to W. T. Crane, Newark, N. J. Horseshoe	610,476	Sept. 6	625	140	84	1558
	608,955	Aug. 9	1445	342	84	953
Davey, Foriest A., assignor of one-half to J. G. Patterson, Detroit, Mich. Steam-whistle.						
Davey, Thomas, Lynn, Mass., assignor to Plumber's Metallic Joint Company, of Maine. Pipe-coupling	610,321	Sept. 6	347	74	84	1508
	608,761	Aug. 9	1054	242 243	84	882
Davidson, Charles, and R. D. Stacey, New Hagerstown, Ohio. Rotary engine						
Davidson, Frank B., assignor to Howe & Davidson, Incorporated, Chicago, Ill. Paper box	609,266	Aug. 16	2066	490 491	84	1086
	608,389	Aug. 2	395	87	84	734
Davies, Charles L., London, England. Rapid telegraphic transmission on cable-lines						
Davies, Percy W. (See Chapman and Davies.)						
Davies, Preston, London, England. Ball-bearing	610,961	Sept. 20	1468	336	84	1759
Davies, Walter D., New York, N. Y., assignor to Ansonia Clock Company, Ansonia, Conn., and New York, N Y Repeating alarm-clock	608,424	Aug. 2	465	104	84	748
Davies, Walter D., assignor to Ansonia Clock Company, New York, N. Y. Repeating alarm-clock	611,566	Sept. 27	2623	605	84	1997
Davies, William H., *et al.* (See Dinsmore, John H. R., assignor.)						
Davis, Alden, North Salem, Ind. Attachment for harvesters	610,525	Sept. 13	717	163	84	1598
Davis, Alfred B. (See Brookes and Davis.)						
Davis, Benjamin W., Phillips, Wis. Pneumatic bicycle-saddle	611,377	Sept. 27	2273	525	84	1931
Davis, Charles E., assignor to Link-Belt Machinery Company, Chicago, Ill. Crossover for trolley systems	607,918	July 26	2583	547	84	553
	609,609	Aug. 23	2681	626 627	84	1221
Davis, Charles W., near Peotone, Kans. Cultivator	609,610	Aug. 23	2687	627 628	84	1223
Davis, Charles W., near Peotone, Kans. Cultivator and soil-stirring implement	609,611	Aug. 23	2692	628 629 630	84	1224
Davis, Charles W., near Peotone, Kans. Cultivating and soil-stirring device						
Davis, Clarence E., St. Joseph, Mo. Counter display-box	611,063	Sept. 20	1648	377	84	1793
Davis, David W., Detroit, Mich. Toy	610,600	Sept. 13	852	195	84	1620
Davis, David W., assignor to Davis Rail Brake Company, Detroit, Mich. Rail-brake. (Reissue)	11,693	Sept 20	1966	453	84	1854

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Davis, Greer W., New Albany, Ind. Center-finding register-calipers	608,183	Aug. 2	26	7	84	659
Davis, Harry P. (See Terry and Davis.)						
Davis, Harry P., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Contact device for electrically-propelled vehicles	606,819	July 5	343	73	84	68
Davis, Harry P., Pittsburg, Pa., assignor to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Electric brake	606,917	July 5	500	110	84	99
Davis, Harry P., Pittsburg, Pa., assignor to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Controller for electric motors	610,124	Aug. 30	3581	829, 830, 831	84	1414
Davis, Harry P., Pittsburg, Pa., assignor to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Controller for electric motors	611,465	Sept. 27	2437	561, 562	84	1961
Davis, Harry P., Pittsburg, and G. Wright, Wilkinsburg, Pa., assignors to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Regulating-switch for electric circuits	607,617	July 19	2006	416, 417	84	425
Davis, Harry P., Pittsburg, and F. Conrad, Wilkinsburg, Pa., assignors to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Electric meter and motor	608,842	Aug. 9	1238	288, 289	84	914
Davis, Harry P., Pittsburg, and F. Conrad, Wilkinsburg, Pa., assignors to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Alternating-current-measuring instrument	611,466	Sept. 27	2442	562, 563	84	1962
Davis, Harry P., Pittsburg, and F. Conrad, Wilkinsburg, Pa., assignors to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Alternating-current voltmeter	611,592	Sept. 27	2681	619, 620	84	2007
Davis, Henry E., Brunner, assignor of one-half to W. J. Rohde, Houston, Tex. Saw-filing machine	608,282	Aug. 2	192	46	84	692
Davis, Hugh L., Braymer, Mo., assignor to De Kalb Fence Company, De Kalb, Ill. Wire-fence machine	609,535	Aug. 23	2548	596	84	1197
Davis, Isaac P., Hungerford, Tex. Harness-hame attachment	610,125	Aug. 30	3585	831	84	1415
Davis, Joseph M., Glasgow, Scotland. Machine for manufacturing weldless chains	610,434	Sept. 6	551	121, 122	84	1544
Davis, Orin C., assignor of one-half to W. R. Thorsen and H. W. Leonard, Manistee, Mich. Shaft or pole coupling for vehicles	607,222	July 12	1100	237	84	229
Davis Rail Brake Company. (See Davis, David W., assignor.) (Reissue.)						
Davis, Sylvester B., Stockton, Cal. Hame-tug fastener	611,427	Sept. 27	2372	545	84	1948
Davis, Willis H., Fitchburg, Mass. Trousers-guard	610,646	Sept. 13	920	210	84	1634
Davy, Alfred, and T. G. S. Rogers, London, England. Grip-pulley	607,986	July 26	2700	576	84	575
Dawson, Arthur T. (See Vickers, Dawson, and Buckham.)						
Day, Charles, London, England. Varnish	607,348	July 12	1334	.....	84	275
Day, Erastus, Lakewood, Ohio. Device for handling railway-rails	609,417	Aug. 23	2332	550	84	1157
Day, George. (See Day, John and G.)						
Day, John and G., Maesteg, England. Diving apparatus	609,418	Aug. 23	2333	550, 551	84	1157
Day, William. (See Mino and Day.)						
Daylight Incandescent Mantle Company. (See Puchmüller, Gerhard B., assignor.)						
Dayton, Charles M. (See Barclay and Dayton.)						
De Camp, Alfred H., deceased, Trenton Junction, N. J.; E. A. and C. A. De Camp, executors. Hoisting and conveying apparatus	609,959	Aug. 30	3306	779	84	1358
De Camp, Alfred H., deceased, Trenton Junction, N. J.; E. A. and C. A. De Camp, executors. Hoisting and conveying apparatus	609,960	Aug. 30	3309	771	84	1359
De Camp, Alfred H., deceased; E. A. and C. A. De Camp, Boonton, N. J., executors. Hoisting and conveying apparatus	609,961	Aug. 30	3314	771	84	1360
De Camp, Clarence A., *et al.*, executors. (See De Camp, Alfred H.)						
De Camp, Estelle A., *et al.*, executors. (See De Camp, Alfred H.)						
De Forest, Charles D., assignor of five-eighths to J. Kenna, Pittsburg, and J. H. Roney, Allegheny, Pa. Collar-and-socket machine	608,584	Aug. 9	744	171	84	823
De Kalb Fence Company. (See Davis, Hugh L., assignor.)						
De La Mar, Joseph R. (See Waldstein, Martin E., assignor.)						
De Man, Alphonse, Detroit, Mich. Fireproof construction	606,988	July 5	611	133	84	121
De Man, Alphonse, Detroit, Mich. Artificial slab	607,223	July 12	1102	237	84	229
De Man, Alphonse, Detroit, Mich. Fireproof floor construction	607,224	July 12	1104	237	84	230
De Man, Alphonse, Detroit, Mich. Fireproof structure	609,795	Aug. 30	3013	706	84	1300
De Man, Alphonse, Detroit, Mich. Fireproofing and deafening for frame structures	610,435	Sept. 6	553	122	84	1544
De Quillfeldt, Charles, Amityville, N. Y. Bottle-stopper	610,721	Sept. 13	1042	240	84	1660
De Remer, Jared R., assignor of one-half to L. Schwarz, Glenwood Springs, Colo. Hydraulic motor or water-wheel	611,406	Sept. 27	2330	537	84	1942
De Tamble, Henry, assignor of two-thirds to P. Weiland, Aurora, and G. E. Ackerman, Yorkville, Ill. Fanning device	610,601	Sept. 13	853	195	84	1620
De Wallace, Harry, St. Paul, Minn., assignor to H. Walker & Sons, Limited, Walkerville, Canada. Score-counter	608,586	Aug. 9	748	172	84	824
De Witt, George W., San Ardo, Cal. Gang-plow	610,387	Sept. 6	477	104	84	1530
Dean, John C., Indianapolis, Ind. Steam-pump regulator	609,386	Aug. 16	2265	535	84	1125
Dean, Millard F., and T. McCoy, Poca, W. Va. Rotary engine	608,762	Aug. 9	1056	243	84	882
Dean, Truman W. (See Meats and Dean.)						
Dean, William W., assignor to American Bell Telephone Company, Boston, Mass. Telephonic measured-service system	609,331	Aug. 16	2177	514	84	1108
Dean, William W., assignor to Bell Telephone Company of Missouri, St. Louis, Mo. Telephone system	610,704	Sept. 13	1008	234, 235	84	1653
Dearborn, Fred S. (See Jones and Dearborn.)						
Debize, François A., and L. F. Chasseigne, Paris, France. Manufacture of wooden matches	606,648	July 5	21	4	84	6
Decock, Edouard, Roubaix, France. Apparatus for dyeing	611,428	Sept. 27	2373	545	84	1948
Dederick, Peter K., Loudonville, N. Y. Baling-press	610,168	Sept. 6	12	4	84	1445
Deem, Miller M., assignor of one-half to P. & F. Manufacturing Co., Reading, Pa. Saddle for velocipedes	608,443	Aug. 2	491	111	84	753
Defiance Machine Works. (See Ensign, George A., assignor.)						
Defiance Machine Works. (See Seymour, Charles, assignor.)						
Degge, Kate P., St. Louis, Mo. Ice-creeper	607,508	July 19	1808	376	84	390
Degner, Herman. (See Sievers, Henry, assignor.)						
Deicke, Bernhard, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Red acid dye and making it	610,345	Sept. 6	394	.....	84	1516
Deimel, Manning A. (See Quackenbush, Henry M., assignor.)						
Deis, Philip H., Washington, D. C. Cover for chambers, commodes, &c	608,032	July 26	2808	597	84	598
Deitsch, Isaac N., New York, N. Y., and H. E. Dorn, Newark, N. J. Tool-box for bicycles or other vehicles	607,599	July 19	1974	410	84	490
Delavy, Marie C. (See Cary, John B., assignor.)						
Delette, Eugène, Lure, France. Combing-machine	607,643	July 19	2055	427, 428	84	435

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dellow, Samuel. (See Plant and Dellow.)						
Delorme, Pierre, Jr., Paris, France. Automatic mold for pieces in glass, &c	608,141	July 26	2969	637	84	631
Demarest, John, Malden, Mass. Heater	606,649	July 5	23	5	84	7
Demarest, William, and F. J. Cunningham, New York, N. Y. Valve for shower-baths	611,064	Sept. 20	1649	377	84	1794
Dembinski, Joseph, Buffalo, N. Y. Dredging-bucket	611,357	Sept. 27	2236	514 515	84	1922
Demere, Albion K. (See Sherman, Antone I., assignor.)						
Dennis, Decatur D., St. Louis Mo. Truss	608,444	Aug. 2	492	111	84	753
Dennis, Robert A., Dayton, assignor of one-half to C. B. Oglesby, Middletown, Ohio. Skirt-guard for bicycles	607,225	July 12	1105	238	84	230
Dennis, William H., Minneapolis, Minn., assignor to American Universal Lighting Company, Chippewa Falls, Wis. Acetylene-gas-generating lamp	610,477	Sept. 6	626	141	84	1559
Dentler, Frank, Parkville, Mich. Conveyer and elevator for threshing-machines	611,197	Sept. 20	1891	437	84	1841
Dentler, Wesley C., Eagle, Nebr. Adjusting means for delivery-spouts	608,585	Aug. 9	746	171 172	84	823
Derbyshire, John and R., Loughton, England. Piston-packing	608,184	Aug. 2	28	7	84	660
Derbyshire, Reuben. (See Derbyshire, John and R.)						
Detrick Cigarette Machine Company of Baltimore City. (See Detrick, Jacob S., assignor.)						
Detrick, Jacob S., Baltimore, Md., assignor, by mesne assignments, to Detrick Cigarette Machine Company of Baltimore City, of Maryland. Machine for making all-tobacco cigarettes	610,261	Sept. 6	217	49	84	1484
Detroit Casket Company. (See Blackford, William H., assignor.)						
Detroit Sheet Metal and Brass Works. (See McCoy, Elijah, assignor.)						
Detwiler, Alfred E., assignor to Milwaukee Gas Stove Company, Milwaukee, Wis. Valve for gas-heaters	608,974	Aug. 9	1480	350	84	960
Detwiler, Clinton A., Palmyra, Pa., assignor of one-tenth to A. G. Stauffer. Nut-lock	607,163	July 12	991	214	84	208
Deübner, John W., assignor to Chicago Time Register Company, Chicago, Ill. Workman's time-recorder	610,169	Sept. 6	15	5,6	84	1445
Deübner, John W., assignor to Chicago Time Register Company, Chicago, Ill. Workman's time-recorder	610,170	Sept. 6	26	6,7,8	84	1447
Deveau, Louis, assignor of one-half to P. Ellenburg, Springfield, Mo. Poultry-coop	609,612	Aug. 23	2704	530	84	1226
Devine, James J., Clifton Heights, Pa. Diving-armor	609,085	Aug. 16	1703	405 406	84	1017
Devlin & Co., Thomas. (See Finnegan, John, assignor.)						
Dewitt, John, and L. C. Jolly, Cooperstown, Ill. Wire-fence machine	610,126	Aug. 30	3586	881	84	1415
Dexter Folder Company. (See Dexter, Talbot C., assignor.)						
Dexter, Talbot C., Pearl River, assignor to Dexter Folder Company, New York, N. Y. Paper-folding machine	608,843	Aug. 9	1243	290	84	915
Dial, Wilbur F. (See Dimond and Dial.)						
Diamond Drill and Machine Company. (See Templin, Joseph H., assignor.)						
Diatto, Alfredo, Turin, Italy. Electric tramway	607,919	July 26	2584	548	84	553
Dibble, Morton A., assignor of one-half to H. L. Smith, Jackson, Mich. Multiple gearing for bicycles	609,664	Aug. 23	2800	652 653	84	1245
Dick, Franklin P., Bucyrus, Ohio. Hanger and screen attachment for eaves-troughs	608,844	Aug. 9	1246	291	84	916
Dickerson, Edward N., New York, N. Y. Process of and apparatus for generating power from compressed gases	607,655	July 19	2081	434	84	439
Dickerson, Edward N., New York, N. Y. Carbid-cartridge for acetylene gas	610,171	Sept. 6	34	8	84	1448
Dickerson, Edward N., New York, N. Y. Combined cane and gas-light	610,478	Sept. 6	629	141	84	1559
Dickerson, Edward N., New York, N. Y. Automatic gas-supply apparatus	611,168	Sept. 20	1851	427	84	1833
Dickey, Alexander, Trenton, N. J., assignor of one-half to R. W. Dickey, Philadelphia, Pa. Chimney-cowl	610,033	Aug. 30	3439	797	84	1384
Dickey, Joseph W., New York, N. Y., assignor of one-half to C. E. Chapin, New York, N. Y., and Milford, Conn. Brush for electrical machines	610,705	Sept. 13	1016	235	84	1655
Dickey, Robert W. (See Dickey, Alexander, assignor.)						
Dickinson, Albert. (See Timewell, Arthur T., assignor.)						
Dickinson, Charles. (See Becker, Nicholas F., assignor.)						
Dickinson, Francke W., *et al.* (See Walkins, Louis E., assignor.)	610,436	Sept. 6	535	122	84	1545
Dickinson, George W., Tacoma, Wash. Roller-bearing	607,835	July 26	2492	514	84	528
Dickinson, Henri D., assignor to Meyer-Sniffen Company, Limited, New York, N. Y. Sanitary fixture for water-closets, &c	606,958	July 5	535	123	84	110
Dickson, John, New York, N. Y. Feed-water heater for steam-boilers	609,929	Aug. 30	3257	758	84	1344
Dickson, John, New York, N. Y. Feed-water heater for steam-boilers	608,763	Aug. 9	1060	243	84	883
Dickson, John A., Deport, Tex. Back or lining for fireplaces	611,359	Sept. 27	2230	515 516	84	1923
Dickson, William D., Peoria, Ill. System for heating and ventilating houses	607,987	July 26	2701	576	84	575
Diehl, Emil, F. Ruppert, and F. Löser, assignors to Werkzeug Maschinenfabrik "Union," (vormals Diehl,) Chemnitz, Germany. Ellipse-cutting mechanism for planers	611,567	Sept. 27	2025	605 606	84	1997
Diehl, Walter R., Pittsburg, assignor of one-half to W. Lyon, Allegheny, Pa. Transporting apparatus						
Diesel Motor Company of America. (See Diesel, Rudolf, assignor.)						
Diesel, Rudolf, Berlin, Germany, assignor, by mesne assignments, to Diesel Motor Company of America, of New York. Internal-combustion engine	608,845	Aug. 9	1247	291	84	916
Dieterich, Charles G., New York, N. Y. Handle-bar for bicycles	610,736	Sept. 13	1004	244 245	84	1664
Dietz, Charles. Chicago, Ill. Door-hinge	609,878	Aug. 30	3154	736	84	1329
Dietz & Co., George W. (See Rosenstar, Anders P. A., assignor.)						
Dietz, Conrad, Cincinnati, Ohio. Self-locking coupling or bearing	606,778	July 5	273	56,57	8r	55
Dighton Furnace Company. (See Leonard, Fred P., assignor.)						
Dikeman, Charles S., Torrington, Conn. Tubular bar	610,202	Sept. 6	219	49	84	1485
Dill, Charles H., assignor of one-half to E. P. Dill, Danville, Ind. Corn-planter	607,600	July 19	1976	410	84	420
Dill. Enoch P. (See Dill, Charles H., assignor.)						
Dillenbeck, Albert L., Fort Plain, N. Y. Window-screen	610,437	Sept. 6	556	123	84	1545
Dillon, Patrick, Milford, Mass. Forming tobacco into wrappers	611,107	Sept. 20	1736	.....	84	1811
Dillon, Peter, assignor of one-half to H. C. King, Lawrence, Mass. Paper-cutter	608,549	Aug. 2	668	151 152	84	788
Dilworth, Porter & Co. (See Morrison, Andrew, assignor.)						
Dimock, Ira, New London, Conn., assignor to Nonatuck Silk Company, Northampton, Mass. Thread-package	607,587	July 19	1954	406	84	416
Dimond, George H., and W. F. Dial, assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Machine for sewing with hem or open-work stitch	608,151	July 26	2985	640 641	84	634
Dimond, George H., and W. F. Dial, assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Hemstitch or open-work sewing-machine	608,152	July 26	2987	641	84	635
Dines, Henry B., *et al.* (See Sheer, Walter B., assignor.)						
Dingman, Allen H., De Haven, Pa., assignor of one-half to J. Amm, Buffalo, N. Y. Gas-engine	610,034	Aug. 30	3440	797	84	1384

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dinsmore, John H. R., Liverpool, assignor to W. H. Davies, Manchester, and J. E. Lees, Romiley, England. Fire-extinguishing sprinkler	607,988	July 26	2702	577	84	576
Dippo, George H., W. C. Bruce, W. T. Semple, Chagrin Falls, and W. M. Powell, assignors to Ferrosteel Company, Cleveland, Ohio. Sad-iron	607,349	July 12	1335	285	84	275
Dirigo Ball Manufacturing Company. (See Hathorn, George H., assignor.)						
Diss, Joseph C. (See Adams, Marcellus, assignor.)						
Diss, Louis P., Ilion, assignor to Wyckoff, Seamans & Benedict, New York, N. Y. Typewriting machine	607,226	July 12	1107	238 239	84	230
Dittbenner, Hermann G., assignor to H. H. Smith, Minneapolis, Minn. Cushion-stop for nigger-bars	608,975	Aug. 9	1481	350	84	960
Dittmar, Gustave, Washington, D. C. Speed-signal for bicycles	608,511	Aug. 2	604	135	84	775
Dittrich, Robert, Pittsburg, Pa. Stop-cock-box cleaner	607,350	July 12	1336	285	84	276
Divan, James M. (See Nelson, William, assignor.)						
Dixon, Frank A., San José, Cal. Automatic cooking apparatus for canneries	607,656	July 19	2083	435	84	439
Dixon, John C., assignor to P. Sheridan, Montreal, Canada. Celluloid-press and vulcanizer	608,512	Aug. 2	606	136	84	776
Dixon, Patrick, Bloomington, Ill. Flue-cutter	609,536	Aug. 23	2550	597	84	1197
Dobbins, Levy N., Chapel, W. Va. Pruning implement	611,065	Sept. 20	1650	377	84	1794
Docteur, Eugene, Brussels, Belgium. Boiler-furnace	609,613	Aug. 23	2705	630 631	84	1226
Dodds, Horace G., assignor of one-half to H. E. Beighler, New Castle, Pa. Non-refillable bottle	609,736	Aug. 23	2900	681	84	1267
Dodge, Arthur P., New York, N. Y. Condenser	611,358	Sept. 27	2229	515	84	1923
Dodge, Burton R., Post Mill Village, Vt. Telephone system	606,803	July 5	322	67	84	64
Dodge, Walter, Monterey, Cal. Chain-propeller	611,467	Sept. 27	2445	563	84	1962
Dodge, William W., Burlington, Iowa. Game apparatus	607,020	July 12	991	150	84	157
Dodson, Harry E., assignor to P. P. Mast & Company, Springfield, Ohio. Cultivator	608,402	Aug. 2	422	98	84	740
Doflein, Philipp, and K. Billing, Philadelphia, Pa. Non-refillable bottle	606,758	July 5	231	49	84	47
Dohm, Louis, and C. H. Schlundt, Rahway, N. J. Bicycle-lock	606,650	July 5	24	5	84	7
Dohme, Charles A., Stelvideo, Ohio. Gate-post	611,568	Sept. 27	2027	606	84	1998
Doldt, Johann, Ettlingen, Germany. Vertically-lifting platform	610,602	Sept. 13	854	196	84	1620
Doldt, John E., Providence, R. I. Locking device	608,185	Aug. 2	29	7,8	84	660
Doldt, John E., East Orange, N. J. Locking device for vehicles, &c	608,186	Aug. 2	33	8	84	661
Donaldson, Fred H., E. H. Owen, and C. N. Williams, Garvanza, Cal. Gyroscopic toy	609,332	Aug. 16	2181	514	84	1109
Donaldson, William R., *et al.* (See Worth, William O., assignor.)						
Donalty, William R., *et al.* (See Lapaugh, Louis T., assignor.)						
Donne, Ernest F., London, England, assignor to Kursheedt Manufacturing Company, New York, N. Y. Plaiting-machine	606,651	July 5	26	5,6	84	7
Donnelly, Henry P., Cincinnati, Ohio. Telegraph-repeater	608,846	Aug. 9	1251	291	84	917
Donnelly, Patrick, Norwich, Conn. Bouquet-holder	607,686	July 19	2042	423	84	433
Donnelly, Samuel A., Chicago, Ill. Bicycle crank-shaft	608,445	Aug. 2	493	112	84	754
Donohue, Thomas E. (See Falardeau, Dennis L., assignor.)						
Donovan, James, assignor to Roberts, Throp & Company, Three Rivers, Mich. Foot-guard for railway-switches	609,267	Aug. 16	2067	491	84	1087
Doolittle, Perry E., Toronto, Canada. Water-jacket for vehicle-brakes	606,959	July 5	556	123	84	110
Doran, James. (See Lewis, Doran, and Lewis.)						
Dorau, John P., Lark, Wis. Engine	607,836	July 26	2423	514 515 516	84	523
Dorau, John P., Lark, Wis. Valve-gear for engines	607,837	July 26	2431	516	84	524
Dorn, Herman E. (See Deitsch and Dorn.)						
Dornfeld, John F., Chicago, Ill. Malt-kiln	610,580	Sept. 13	812	186	84	1611
Dorrance, Ralph G., Chicago, Ill. Inkstand	608,288	Aug. 2	197	47	84	694
Dorsey, Charles H. (See Apperson and Dorsey.)						
Dortch, John M., Cleveland, assignor to Cochran Company, Lorain, Ohio. Safety device for refrigerating systems	610,438	Sept. 6	557	123	84	1545
Dotson, Ira M., Sanborn, Minn. Pulley-block	610,172	Sept. 6	35	8	84	1448
Doty & Co., W. W., *et al.* (See Doty, MacKnight, and Grauten, assignors.)						
Doty, James, Syracuse, N. Y. Electrical appliance for assisting anatomical organs	609,614	Aug. 23	2706	631	84	1226
Doty, William W., New York, J. A. MacKnight, Mount Vernon, and C. Grauten, assignors, by mesne assignments, to W. W. Doty & Co. and W. Reinhart, New York, N. Y. Electric railway	607,351	July 12	1337	286	84	276
Dougherty, Anthony, Waverly Mills, Minn. Car-coupling	611,066	Sept. 20	1651	378	84	1794
Dougherty, William, assignor of one-third to C. M. Black, Chester, Pa. Boiler-cleaner and filter	607,004	July 5	657	143	84	130
Doughty, Henry J., Providence, R. I., assignor to Atlantic Rubber Company, of Maine. Pneumatic tire	608,187	Aug. 2	36	9	84	662
Doughty, Henry J., Providence, R. I., assignor to Atlantic Rubber Company, of Maine. Pneumatic tire	608,188	Aug. 2	38	9	84	662
Douglas, Benjamin F., Mount Union, Pa. Grave-vault	606,652	July 5	29	6	84	8
Douglas, Robert, Ravena, N. Y. Filtering apparatus	608,055	Aug. 9	878	202	84	848
Douglas, William A., Bronson, Mich. Wheel-cultivator appliance	606,835	July 5	378	80	84	75
Douglas, William E., *et al.* (See Sherwood, William E., assignor.)						
Douglas, William M., Fletcher, Ohio. Corn-row marker	607,021	July 12	992	150	84	157
Douglass, William S., Bellevue, Tex. Windmill	610,322	Sept. 6	349	75	84	1508
Dover, George W., Providence, R. I. Gem-setting	608,362	Aug. 2	348	76	84	725
Dow Brothers, *et al.* (See Russell, William, assignor.)						
Dow, Fred F., assignor, by mesne assignments, to Dow Machinery Manufacturing Company, Lynn, Mass. Machine for felling trees	610,230	Sept. 6	166	37,38	84	1474
Dow Machinery Manufacturing Company. (See Dow, Fred F., assignor.)						
Dow, Willard E., Braintree, Mass. Electric light for surgical purposes	608,109	July 26	2919	625	84	621
Dowell, Albert L., assignor of one-half to J. Garlick, Paterson, N. J. Gas-burner	610,363	Sept. 6	220	50	84	1485
Dowell, Julian C. (See Richardson, James E., assignor.)						
Dowlen, James, and N. Michaelsen, Oceanic, N. J. Merchandise-lifter	609,013	Aug. 16	1571	374	84	993
Dowling, Robert H., assignor of one-half to W. H. Snyder, Newark, Ohio. Car-coupling	608,764	Aug. 9	1062	244	84	883
Down, Thomas, assignor of one-half to J. Jeffrey, Toronto, Canada. Chemical engine	611,030	Sept. 20	1592	365	84	1783
Downer, William S., Coal Centre, Pa. Clothes-rack	607,668	July 19	2120	444	84	447
Downes, William A., assignor to Penberthy Injector Company, Detroit, Mich. Injector	607,227	July 12	1130	240	84	233
Downing, George H., New York, N. Y. Portable fire-extinguisher	607,113	July 12	968	195	84	199
Downing, John H., Portsmouth, Va. Label-holder	610,846	Sept. 6	395	84	84	1416
Downs, Charles K., Seymour, Iowa. Thread-cutting attachment for thimbles	610,264	Sept. 6	221	50	84	1485
Downs, Richard, and A. M. Johnston, Lima, Ohio. Automatic steam-boiler feeder	607,509	July 19	1809	376	84	390
Dowse, William B. H., Newton, Mass., assignor to Consolidated Fastener Company, Portland, Me. Corset-fastening	607,022	July 12	994	150	84	157
Dowse, William B. H., Newton, Mass., assignor to Consolidated Fastener Company, Portland, Me. Corset	607,023	July 12	995	151	84	157

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Doxey, Richard A., *et al.* (See Beastow, William H., assignor.)						
Doyle, George N. (See Stark and Doyle.)						
Doyle, John, Hoboken, N. J., assignor of one-half to E. I. Horsman, New York, N. Y. Kite	606,960	July 5	558	123	84	111
Doyle, William H. (See Cameron, John M., assignor.)						
Dozier, James C., Louisville, Ky. Crate	609,879	Aug. 30	3156	737	84	1328
Dozier, James N., Lexington, Mo. Wire-stretching machine	609,086	Aug. 16	1704	406	84	1017
Draper Company. (See Allen, William E., assignor.)						
Draper Company. (See Cutler, Willie E., assignor.)						
Draper Company. (See Draper, George O., assignor.)						
Draper Company. (See Littlefield, Charles A., assignor.)						
Draper Company. (See Marcy, Frank M., assignor.)						
Draper Company. (See Nicol and Ayotte, assignors.)						
Draper Company. (See Northrop, James H., assignor.)						
Draper, George O., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Spindle-bearing	608,976	Aug. 9	1483	350	84	960
Draper, George O., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Spindle and bearing	609,757	Aug. 23	2942	688	84	1272
Draper, George O., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Spindle and bearing	609,758	Aug. 23	2943	688	84	1273
Draper, George O., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Spindle and bearing	609,759	Aug. 23	2943	688	84	1273
Draper, George O., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Spindle and bearing	609,760	Aug. 23	2944	688	84	1273
Draper, Sutton H., Missoula, Mont. Rotary engine	607,684	July 19	2121	444 445	84	447
Draper, William F., and J. H. Northrop, Hopedale, Mass., assignors to Northrop Loom Company, Hopedale, Mass., and Saco, Me. Loom	607,838	July 26	2434	517	84	525
Draver, Emil R., assignor, by mesne assignments, of one-half to M. L. Draver, Stillwater, Minn. Dust-collector	608,587	Aug. 9	749	172 173	84	824
Draver, Marie L. (See Draver, Emil R., assignor.)						
Drawbaugh, Daniel, Eberly's Mill, assignor of one-half to H. B. Eberly, Shiremanstown, Pa. Pneumatic tool	606,961	July 5	559	123 124	84	111
Drew, Herbert H., Waterloo, Wis. Elevated carrier	608,656	Aug. 9	880	202	84	848
Drey, Wilfred J., Philadelphia, Pa. Welt-guide	610,223	Sept. 6	350	75	84	1508
Dreyer, Richard, Sea Cliff, N. Y. Spout for cans	610,787	Sept. 13	1067	245	84	1664
Driffield, Vero C., Widnes, A. Carey, Liverpool, and F. W. Wright, Widnes, assignors to United Alkali Company, Limited, Liverpool, England. Process of and apparatus for making bleaching-powder	610,265	Sept. 6	222	50	84	1485
Drinkaus, Phillipp, Detroit, Mich. Picture-matting cutter	611,228	Sept. 27	1998	460	84	1879
Driscoll, William, Brockville, Canada. Sash-balance	609,930	Aug. 30	3239	758	84	1345
Drouvé, Gerhard F., Bridgeport, Conn. Valley for roofs	607,425	July 19	1486	316	84	320
Drury, William H., Waltham, Mass. Manufacturing yarn from fibrous materials	611,108	Sept. 20	1737	399 400	84	1811
Drury, William H., Waltham, Mass. Machinery for manufacturing yarn from fibrous materials	611,109	Sept. 20	1745	400 401	84	1812
Drysdale, Stephen H., Gravois Mills, Mo. Wagon-bed raiser	609,796	Aug. 30	3015	706	84	1300
Drysdale, William A., Philadelphia, Pa. Telephone	610,347	Sept. 6	396	84, 85	84	1516
Du Bois, Dallas, Montclair, N. J. Passage-way for bulkheads and partitions	608,189	Aug. 2	39	9	84	662
Du Cane, Herbert, Darwen, England. Composition of matter for closing punctures in tires	608,956	Aug. 9	1447	------	84	953
Du Pont, Antoine B., Detroit, Mich., assignor to Steel Motor Company, Johnstown, Pa. Electric-line switch	607,688	July 19	2045	425	84	434
Dubbs, Jesse A., assignor of one-half to J. H. White, Pittsburg, Pa. Asphaltum and manufacturing same	608,372	Aug. 2	362	------	84	727
Ducas, Salomon, San Francisco, Cal. Voting-machine	609,576	Aug. 23	2616	612 613	84	1210
Ducat, Walter M., London, England. Purifying sewage, &c., by bacterial action	607,426	July 19	1487	316	84	320
Duckham, Frederic E., London, England. Method of and means for delivering pneumatically-conveyed grain, &c.	611,569	Sept. 27	2629	606	84	1998
Duddleston, Christopher J. (See Kramer, George N., assignor.)						
Duden, Hans, Indianapolis, Ind. Making fertilizers	609,797	Aug. 30	3016	------	84	1300
Duff, Robert D., assignor of one-fourth to J. E. Johnson, Tacoma, Wash. Sash-lock	610,155	Aug. 30	3028	843	84	1424
Duffy, William, East Hartford, Conn. Anvil attachment for repairing horseshoe-calks	609,014	Aug. 16	1572	374	84	998
Dugan, George H. (See Frederick and Dugan.)						
Dukes, John C., Ellston, Iowa. Floor-laying machine	608,847	Aug. 9	1252	292	84	917
Dull, Calvin J. (See Gwinner, William H., assignor.)						
Dundon, Patrick F., San Francisco, Cal. Steam-boiler	611,407	Sept. 27	2331	587 588	84	1942
Dunkle, Abraham B. (See Balliette, Charles H., assignor.)						
Dunkley, Samuel J., Kalamazoo, Mich. Fruit jar or can	610,897	Sept. 20	1363	312	84	1739
Dunlap, John S., Chicago, Ill. Means for making infusions	607,352	July 12	1340	286 287	84	276
Dunlevy, David W., *et al.* (See McDonald, Robert A., assignor.)						
Dunlop, George H., Hollywood, Cal. Device for attaching implements to handles	608,110	July 26	2020	625	84	622
Dunn, George A. and R. F., Dinuba, assignors of one-third to W. A. Conn, Fresno, Cal. Spraying apparatus	609,188	Aug. 16	1898	450	84	1049
Dunn, John F., New York, N. Y. Button-fastening device	608,588	Aug. 9	758	173	84	824
Dunn, John W., assignor to B. F. Goodrich Company, Akron, Ohio. Pneumatic tire	609,962	Aug. 30	3317	772	84	1360
Dunn, Robert F. (See Dunn, George A. and R. F.)						
Dunn, William. (See Nies and Dunn.)						
Durafort, Victor, Paris, France. Apparatus for containing compressed carbonic acid and charging water therewith	610,127	Aug. 30	3587	839	84	1415
Durel, Paul S., New Orleans, La. Car-brake	609,143	Aug. 16	1825	452	84	1038
Durfee, Charles B., and F. M. Williams, Belleville, N. Y.; said Durfee assignor to said Williams; said Williams assignor of one-half to D. A. Brown, Woodbridge, N. J. Bicycle-holder	607,084	July 12	997	151	84	157
Durham, Henry, Sylvania, Ind. Broom	609,665	Aug. 23	2802	653	84	1245
Durham, Shiloh W., Bushnell, Ill. Non-refillable bottle	608,957	Aug. 9	1447	343	84	953
Duryee, George, Orange, N. J. Apparatus for burning and grinding lime and cement	611,110	Sept. 20	1753	402	84	1813
Düsedau, Wilhelm, New York, N. Y. Gripping mechanism	611,570	Sept. 27	2630	606 607	84	1998
Dussair, John C., *et al.* (See Sheer, Walter B., assignor.)						
Dutcher, Frank. (See Wood and Dutcher.)						
Dutcher, Frank, Fostoria, Ohio. Signal	610,672	Sept. 13	957	221	84	1642
Dutrow, William B., Harrisonburg, Va. Connecting device for springs	609,577	Aug. 23	2693	613	84	1211

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Dutton, Chauncey N., New York, N. Y. Air-compressor	609,087	Aug. 16	1705	406 407	84	1017
Dutton, Chauncey N., New York, N. Y. Air-compressor	609,088	Aug. 16	1710	407	84	1018
Dutton, Chauncey N., New York, N. Y. Fluid-actuated valve	609,089	Aug. 16	1712	407 408	84	1019
Duval, Ernst, Hamilton, Canada. Window frame and sash	607,427	July 19	1490	317	84	321
Duval-Pihet, Nicolas, Paris, France. Adjustable spring-bearing	607,353	July 12	1342	287	84	277
Dyer, Beverly A. (See Scharnweber, William, assignor.)						
Dyer, Eben H., Alvarado, Cal. Boring implement for frozen earth	607,229	July 12	1123	240	84	233
Dyer, Harold P., Cleveland, Ohio. Machine for crystallizing sugar	607,228	July 12	1121	240	84	233
Dyer, Harold P., Cleveland, Ohio. Steam-drier	610,962	Sept. 20	1471	336	84	1760
Dyer, John T. (See Lewis, Harry A., assignor.)						
Dyer, Richard N., East Orange, N. J. Variable gearing	611,378	Sept. 27	2275	595 596	84	1981
Dyer, Robert M., and L. W. Noyes, assignors to Aermotor Company, Chicago, Ill. Windmill	608,057	Aug. 9	881	202	84	848
Dyer, Walter, assignor of one-half to A. E. Stevens, Chicago, Ill. Vending-machine	610,673	Sept. 13	959	222	84	1642
Dyer, William J., San Francisco, Cal. Roller crushing-machine	610,802	Sept. 13	1196	275	84	1690
Dykeman, Richard, Logansport, Ind. Combination cigar-cutter and advertising device	610,388	Sept. 6	479	104 105	84	1531
E. C. Atkins & Company. (See Wallace and Reed, assignors.)						
E. D. Jones & Sons Company. (See McSweeny, James, assignor.)						
E. J. Brooks & Company. (See Brooks, Edward J., assignor.)						
Eagle Lock Company. (See Judson, Charles W., assignor.)						
Eagle Lock Company. (See Noack, Carl O., assignor.)						
Eagle Pencil Company. (See Boman, Claes W., assignor.)						
Eagle Pencil Company. (See Kraus, Samuel, assignor.)						
Eagleston, Joseph B., Orient, Ohio. Machine for weaving cross-wires in fences	607,230	July 12	1124	240	84	233
Eames, Charles B., *et al.* (See Talley, William H., assignor.)						
Eardly, James W., Cascade, Mich. Bag-holder for mail-bag cranes	609,419	Aug. 23	2335	551	84	1158
Earhart, John S., and C. Miller, Millersville, Ill. Planter	609,666	Aug. 23	2802	653	84	1245
Eari, William D., Albany, N. Y. Car-coupling	611,315	Sept. 27	2145	496	84	1908
East, Lewis F., Melbourne, Victoria. Jug-lid	607,354	July 12	1343	287	84	277
Eastman, Olaf, Chicago, Ill. Water-filter	606,804	July 5	323	67	84	65
Eastwick, Edward P., Jr., New Orleans, La. Sugar-crystallizer	608,446	Aug. 2	494	112	84	754
Eastwood, Asa B., Newcastle, Cal. Adjustable hydraulic nozzle	609,578	Aug. 23	2624	614	84	1211
Eastwood, John E., assignor of one-half to Springville Manufacturing Company, Rockville, Conn. Warping-reel	609,667	Aug. 23	2804	653 654	84	1246
Eaton, Leonard F., assignor of one-half to T. B. Eaton, Sullivan, Ind. Ball-caster	608,111	July 26	2021	625	84	622
Eaton, Enoch H., assignor of one-half to J. A. Payne, Moulton, Iowa. Rotary engine	611,289	Sept. 27	1994	460	84	1879
Eaton, Thomas B. (See Eaton, Leonard F., assignor.)						
Eberly, H. B. (See Drawbaugh, Daniel, assignor.)						
Echols, Frank G., Hartford, Conn. Tool for cutting screw-threads	610,158	Aug. 30	3630	844	84	1424
Eckart, John H., Joplin, Mo. Nut-lock	607,025	July 12	998	151	84	158
Eckman, William H., Plumtree, Ind. Corn-planter	609,490	Aug. 23	2336	551	84	1158
Ecob, John R., Lawrence, Mass. Apparatus for stretching yarn while mercerizing	608,033	July 26	2809	597	84	599
Economy Broom Company. (See Middaugh, Hoevet, and Anderson, assignors.) (Reissue.)	610,989	Sept. 20	1425	328	84	1752
Edelmuth, Max, New York, N. Y. Water-heater	610,173	Sept. 6	37	8, 9	84	1448
Edgar, John, Rochester, Minn. Fifth-wheel	608,190	Aug. 2	41	9, 10	84	663
Edgar, Robert, Jr., Glasgow, Scotland. Manu-pedal and hand-steering velocipede or other vehicle	610,674	Sept. 13	962	222	84	1643
Edgar, William, Mobile, Ala. Grate	610,035	Aug. 30	3446	798	84	1385
Edgington, George W., assignor of one-fifth to A. Eldredge, Coalville, Utah. Automatic stop-valve for hose-couplings	607,588	July 19	1956	406	84	416
Edison, Thomas A., Llewellyn Park, N. J. Phonograph	609,268	Aug. 16	2068	491	84	1067
Edison, Thomas A., Llewellyn Park, N. J. Phonograph	610,706	Sept. 13	1017	235 236	84	1655
Edison, Thomas A., Llewellyn Park, N. J. Phonograph						
Edward P. Allis Company. (See Hinkley, George M., assignor.)						
Edwards, Charles G., Albert Lea, Minn. Device for attaching or detaching electric-lamp bulbs	609,421	Aug. 23	2340	552	84	1158
Edwards, Elias, Rural Hill, Miss. Trunk-lifting device	606,858	July 5	421	90	84	83
Edwards, Isaac L., Aurora, Ill. Ice-tongs	608,848	Aug. 9	1254	292	84	917
Edwards, James A., Owosso, Mich. Curtain-light frame for carriages	610,389	Sept. 6	480	105	84	1531
Edwards, John C. (See McLaughlin, George G., assignor.)						
Edwards, John C., *et al.* (See Cousens, Alfred C., assignor.)						
Edwards, John R. (See Wood, Alfred F., assignor.)						
Edwards, Levi M. (See Steiner, Elmer E., assignor.)						
Edwards, Richard J., London, England. Machine for making emery or glass cloth or paper	610,128	Aug. 30	3589	839	84	1415
Egan, Charles E., B. L. Lawton, and E. C. Wilcox, Meriden, Conn. Telephone system	609,229	Aug. 16	1992	473	84	1072
Ege, Alexander H. (See Richardson, John T., assignor.)						
Egelston, James H. (See Allen, Everett P., assignor.)						
Eggert, William, Jr., Bloomfield, Conn. Fertilizer attachment for cultivators	609,502	Aug. 23	2496	584	84	1187
Ehrengart, Carl C. F., Nienstedten, Germany. Barrel-washer	609,981	Aug. 30	3341	758 759	84	1345
Ehrler, Edwin H. (See Todd, Vernon C., assignor.)						
Elben, Andrew. (See Kundtz and Elben.)						
Eichelbaum, Georg, Konigsberg, assignor to F. Hornig, Taucha, Germany. Making adhesives	608,368	Aug. 2	349	76	84	725
Eickelberg, Louis E. (See Helton, John W., assignor.)						
Eickemeyer, Carl, Yonkers, N. Y. Carrier for bicycles	607,355	July 12	1344	287 288	84	277
Eickemeyer, Rudolf, Yonkers, N. Y. Electric elevator	609,015	Aug. 16	1573	374	84	998
Eickemeyer, Rudolf, Yonkers, N. Y. Electric elevator	609,016	Aug. 16	1579	375 376 377	84	994
Eickmann, Christian, Indianapolis, Ind. Buckle for tire-cases	607,356	July 12	1347	288	84	278
Eigner, Adolf G., St. Petersburg, Russia, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Dynamo-electric machine	607,737	July 19	2207	466	84	463
Ellers, Bernerd, assignor of one-half to W. A. Murphy, Rochester, N. Y. Wood-grinder for pulp-making	607,026	July 12	999	151 152	84	158
Ellers, Bernerd, assignor of one-half to W. A. Murphy, Rochester, N. Y. Wood-grinder for pulp-making	607,164	July 12	988	214 215	84	909
Ellers, Bernerd, assignor of one-half to W. A. Murphy, Rochester, N. Y. Paper-machine	608,849	Aug. 9	1255	292	84	917

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Einhorn, Alfred, Munich, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst, Germany. Ester of paraämidometaoxybenzoic acid	610,348	Sept. 6	401	.....	84	1517
Eisenhart, Henry W., assignor to A. B. Farquhar Company, Limited, York, Pa. Harrow	609,333	Aug. 16	2183	514, 515	84	1109
Eisenhart, Henry W., assignor to A. B. Farquhar Company, York, Pa. Harrow	609,334	Aug. 16	2185	515	84	1109
Eisenmann, Richard, Detroit, Mich. Satchel-handle	608,254	Aug. 2	148	37	84	683
Eldredge, Alma. (See Edgington, George W., assignor.)						
Electric Third Rail and Signal Company. (See Seaton, Benjamin C., assignor.)						
Electro Gas Company. (See Böhm, Ludwig K., assignor.)						
Elkins, Charles M., Wakefield, Mass. Adjustable hinge	611,408	Sept. 27	2446	563	84	1963
Ellenburg, Paul. (See Deveau, Louis, assignor.)						
Ellingson, Minnie D., *et al.* (See Parmley, Lemuel D., assignor.)						
Elliot, Mary F. (See Ward, David R., assignor.)	607,839	July 26	2436	517	84	525
Elliott, George W., Dronfield, England. Scissors or shears						
Elliott, R. T., *et al.* (See Elliott, William J., assignor.)	610,808	Sept. 13	1198	275	84	1091
Elliott, Thomas I., Hacker Valley, W. Va. Vine-supporter	607,920	July 26	2585	548	84	554
Elliott, Walter E., Denver, Colo. Brake mechanism for railway-cars	608,977	Aug. 9	1484	350, 351	84	961
Elliott, William J., assignor of one-half to V. C. Walker and R. T. Elliott, Wilmington, Del. Friction-clutch						
Ellis, Edwin H. (See Macomber, Louis E., assignor.)						
Ellis May Vacuum Steel Syndicate. (See May, William E., assignor.)	610,940	Sept. 20	1427	328	84	1752
Ellis, William R., assignor of one-half to J. L. Mallory, Chicago, Ill. Car-door	608,658	Aug. 9	1483	208	84	849
Ellis, William W., Edgewood, Tex. Corn-planter	607,357	July 12	1349	288	84	278
Elliott, Thomas I., Hacker Valley, W. Va. Vine-supporter	609,987	Aug. 30	3367	782	84	1370
Ellison, William T., Irlam's-O'th-Height, England. Pulsating steam-pump	607,788	July 19	2208	467	84	464
Ellithorpe, Frederick T., Newark, N. J. Elevator-door-opening apparatus						
Elms, Edwin J., Chelsea, Mass. Steam-boiler furnace	607,921	July 26	2587	549	84	554
Elphinstone, George K., London, and A. C. Heap, Penn, England. Electrical measuring implement	607,408	July 12	1450	.....	84	296
Elsaesser, Emil, assignor to Dahl & Co., Barmen, Germany. Blue dye for wool	611,111	Sept. 20	1754	.....	84	1814
Elsaesser, Emil, assignor to Dahl & Co., Barmen, Germany. Brown dye and making it						
Elsaesser, Emil, assignor to Dahl & Co., Barmen, Germany. Blue-black dye and making same	611,112	Sept. 20	1755	.....	84	1814
Elvidge, Charles. (See Kenfield and Elvidge.)						
Ely, E. W. (See Lannon, Owen, assignor.)						
Ely, John C. (See Loree, Perry E., assignor.)	609,537	Aug. 23	2552	597	84	1197
Emerick, George S., Philadelphia, Pa. Air-separator	608,364	Aug. 2	350	76	84	725
Emerick, George W., Montandon, Pa. Hub-attaching device	609,737	Aug. 23	2910	681	84	1267
Emerson, Charles H., Marshalltown, Iowa. Draw-bar stop						
Emmitt, Cornelia H. (See Emmitt, Floyd R., assignor.)	609,738	Aug. 23	2911	681, 682	84	1267
Emmitt, Floyd R., assignor to C. H. Emmitt, Chillicothe, Ohio. Coupling						
Empire Type Setting Machine Company. (See McClintock, Frank, assignor.)						
Empire Type Setting Machine Company. (See Moxley, Richard J., assignor.)	609,335	Aug. 16	2186	516	84	1110
Englisch, Otto B., Oakfield, N. Y. Railway system	609,761	Aug. 23	2945	689	84	1274
English, Peter, Benton Harbor, assignor of one-half to G. H. Paine, Detroit, Mich. Gas-producer						
Ensign, Ely. (See Maxon, Thomas, assignor.)						
Ensign George A., assignor to Defiance Machine Works, Defiance, Ohio. Machine for making skewers, pins, &c.	609,336	Aug. 16	2188	516, 517	84	1110
Ensign, George A., assignor to Defiance Machine Works, Defiance, Ohio. Tread-sanding machine	610,036	Aug. 30	3448	798	84	1385
Enslee, David S. (See Gallaway, Albert I., assignor.)						
Enyart, Ralph C., assignor to P. H. & F. M. Roots Company, Connersville, Ind. Journal-box for rotary pumps	607,114	July 12	900	195	84	193
Epple, Herman, assignor of one-half to P. Stauder, Belleville, Ill. Cut-off for water-spouts or other conduits	608,765	Aug. 9	1064	244	84	883
Eppler, Andrew, Jr., Newton, Mass. Guide for shoe-sewing machines	608,373	Aug. 2	363	79, 80	84	728
Eppler, Andrew, Jr., Newton, Mass. Stitch separating and indenting machine	611,571	Sept. 27	2632	607, 608	84	1999
Erbach, Valentine, Scranton, Pa. Car-coupling	608,112	July 26	2922	626	84	622
Erben, John, assignor to H. Franke Steel Range Company, Cleveland, Ohio. Stove or range	610,941	Sept. 20	1428	328	84	1752
Erickson, Eric E. and F. W., Boston, Mass. Interior conduit	607,989	July 26	2704	577	84	576
Erickson, Frederick W. (See Erickson, Eric E. and F. W.)						
Erickson, John. (See Walstrom and Erickson.)						
Erickson, Peter E., assignor to J. W. Czermak, Port Chester, N. Y. Saw set and sharpener	610,266	Sept. 6	223	50	84	1486
Ericson, Eric H., Oscarshamn, Sweden. Cane-gun	610,675	Sept. 13	963	223	84	1643
Ericson, Eric W., Florence, Wis. Bicycle propulsion	610,129	Aug. 30	3591	832	84	1416
Erlanger, Mitchell L. (See Koenig and Erlanger.)						
Ernst, Otto, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Violet azo dye and making it	610,349	Sept. 6	401	.....	84	1517
Erwin, James L., Burlington, N. C. Folding pedestal	608,659	Aug. 9	884	203	84	849
Erwin, Joseph M., Denver, Colo. Package-carrier for bicycles	607,792	July 19	2284	482	84	478
Esmond, Ernest R., New York, N. Y. Furniture	607,657	July 19	2085	435	84	440
Esmond, William V., assignor to M. Kahn, New York, N. Y. Roll-holding camera	607,428	July 19	1491	317	84	321
Estabrook, Alanson C., Northampton, Mass. Brush	611,240	Sept. 27	1996	460	84	1890
Estabrook, Jedediah C., Keene, N. H. Barrel	611,067	Sept. 20	1652	378	84	1794
Estelle, Rhodes, Lexington, Tex. Milk-cooler	608,113	July 26	2924	626	84	622
Estey, Edmund J., Apponaug, R. I. Nut-lock	611,572	Sept. 27	2636	608	84	1999
Etheridge, Harry, McKeesport, Pa. Trap for pumping-wells	609,309	Aug. 16	2070	491	84	1087
Eulass, Thomas H., Mason City, Ill. Adjustable curtain-bracket	606,962	July 5	563	124	84	111
Evans Brothers. (See Evans, John W., assignor.)						
Evans, Charles E., and O. E. Barnhart, Thayer, Kans. Rotary steam-engine	607,922	July 26	2588	549	84	555
Evans, Clement L. V., trustee. (See Noack and Grossman, assignors.)						
Evans, Hiram M., Philadelphia, Pa. Painting	608,589	Aug. 9	754	173	84	824
Evans, James S. (See Hopkins and Evans.)						
Evans, John, Philadelphia, Pa. Hot-air furnace	610,087	Aug. 30	3450	799	84	1396
Evans, John W., assignor to Evans Brothers, Greenville, Mo. Box-fastener	606,918	July 5	504	110	84	100
Evans, Kyrle S., Milwaukee, Wis. Dual-stairway system for flats	610,174	Sept. 6	89	9, 10	84	1449
Evans, Richard, assignor of one-half to G. J. Hooper, Jr., Richmond, Va. Soft-tread horseshoe	610,804	Sept. 13	1199	276	84	1091
Eveleth, Clarence M., Plymouth, N. H. Weather-strip	609,798	Aug. 30	3017	706	84	1301
Everett, Walter, *et al.* (See Badeker, John, assignor.)						
Everhart, Logan W., assignor of one-half to Z. T. and A. W. Postlethwaite, Chanute, Kans. Wrench	609,762	Aug. 23	2947	689	84	1274

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Everitt, Walter E., Buffalo, N. Y. Machine for spreading paris-green, &c	609,337	Aug. 16	2191	517	84	1111
Evershed, Henry. (See Bomford and Evershed.)						
Eversmann, Henry, Cincinnati, Ohio. Automatic fire extinguishing and alarm apparatus	607,027	July 12	701	152	84	158
Evinghaus, Hermann, and M. Herbener, Barmen, Germany. Skirt-protector	607,840	July 26	2437	517	84	525
Ewart, John, Lawrence, Mass., assignor to Sheffield Car Company, Three Rivers, Mich. Valve-check	610,479	Sept. 6	631	141, 142	84	1559
Excelsior Loom Reed Works. (See Adamson, Edward, assignor.)						
Eynon-Evans Manufacturing Company. (See Gamble, Joseph W., assignor.)						
F. Wesel Manufacturing Company. (See Baum, Frank W., assignor.)						
Faas, Rudolph, and H. S. Gray, assignors to No-Puncture Tire Company, Chicago, Ill. Armor for pneumatic tires	607,006	July 5	661	143	84	181
Fackner, Edward, New York, N. Y. Lock	609,422	Aug. 23	2342	552	84	1159
Fair, George, Boston, Mass., assignor to Fair Loom Attachment Company, Boston, Mass., and Portland, Me. Mispick and smash preventer for shuttles	611,213	Sept. 20	1926	444, 445	84	1846
Fair Loom Attachment Company. (See Fair, George, assignor.)						
Fairhurst, Alfred, Lexington, Ky. Non-refillable bottle	607,923	July 26	2592	550	84	555
Fairhurst, Joseph. (See Whitley, Ralph, assignor.)						
Fairmount Machine Company. (See Anderson, Gustave E., assignor.)						
Falardeau, Dennis L., assignor of one-third to T. E. Donohoe, Albany, N. Y. Combination kitchen utensil	607,409	July 12	1450	307, 308	84	296
Farbenfabriken of Elberfeld Company. (See Hock, Karl, assignor.)						
Farbenfabriken of Elberfeld Company. (See Thun, Karl, assignor.)						
Farbenfabriken, vormals Fr. Bayer & Co. (See Bammann and Ulrich, assignors.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Deicke, Bernhard, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Einhorn, Alfred, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Ernst, Otto, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Manasse, Otto, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Phillips, Alfred, assignor.)						
Farington, Charles W., *et al.* (See Satterwhite, Emmett J., assignor.)						
Farington, Fred E., *et al.* (See Satterwhite, Emmett J., assignor.)	609,338	Aug. 16	2193	517, 518	84	1111
Farley, Jeptha L., De Soto, Mo. Animal-trap	607,429	July 19	1494	317	84	422
Farley, John P., assignor of one-fourth to J. Hollinger, Kansas City, Mo. Self-closing faucet	610,130	Aug. 30	3592	833	84	1416
Farmer, Charles H. (See Putnam and Farmer.)						
Farmer, Nathan M., Empire, Colo. Journal-box	609,988	Aug. 30	3368	783	84	1370
Farnam, Charles N., assignor of five-eighths to A. Harbison and W. S. Steele, Hartford, Conn. Bottle filler-guard						
Farnam, Etta C., administratrix. (See Miller, Charles G.)						
Farrall, George A., and E. Pridmore, assignors to Johnston Harvester Company, Batavia, N. Y. Grain-harvester	608,325	Aug. 2	288	64	84	713
Farrand, James W., El Paso, Tex. Billiard-cue	610,131	Aug. 30	3593	833	84	1416
Farrar, Mont R., Greensborough, N. C. Sectional sash-weight	608,114	July 26	2925	626	84	622
Farrell, John, and P. J. Hoar, Freedom, Pa. Wringer-holding device	608,447	Aug. 2	496	112	84	754
Fasoldt, Charles, Grand Rapids, Mich. Desk	610,439	Sept. 6	550	123	84	1545
Faunce, Ira, Williamsville, Ill. Ball-bearing	609,503	Aug. 23	2497	584	84	1187
Faust, Henry J., Denmark, S. C. Axle-lubricator	609,423	Aug. 23	2343	552	84	1159
Fay, Charles P., *et al.* (See Ingram, Harry, assignor.)						
Federer, Charles A. (See Bowen and Federer.)						
Fee, H., *et al.* (See Miller, Gustof J., assignor.)						
Feely, Jeseph J. (See Negbaur and Feely.)						
Feeny, John L. (See Gordon, Minthorne T., assignor.)						
Feister, Henry P., Philadelphia, Pa. Card-cutting machine	610,526	Sept. 13	719	163	84	1593
Felbel, Jacob, New York, N. Y. Type-writing machine	610,390	Sept. 6	482	105	84	1531
Feldmeier, Harvey. (See Hoyt and Feldmeier.)						
Fellows & Co. (See Fellows, James F., assignor.)						
Fellows, James F., assignor to Fellows & Co., Troy, N. Y. Cuff	611,241	Sept. 27	1997	460	84	1890
Felmlee, John H., assignor to Felmlee & Long Manufacturing Company, Pittsburg, Pa. Machine for wrapping soap, caramels, &c.	606,919	July 5	504	111	84	100
Felmlee & Long Manufacturing Company. (See Felmlee, John H., assignor.)						
Felten & Guilleaume. (See Husham, Carl, assignor.)						
Feltham, George, Waycross, Ga. Sash-fastener	607,685	July 19	2123	445	84	447
Fenn, Russell H., Leavenworth, Kans. Sash-holder	610,805	Sept. 13	1200	276	84	1091
Fenner, Algar T., assignor of one-half to I. Christiaansen, Rochester, N. Y. Supporting attachment for bicycles	609,504	Aug. 23	2498	584	84	1187
Fenton Metallic Manufacturing Company. (See Hood, Arthur F., assignor.)						
Fenwick, Albert D., Philadelphia, Pa., assignor to Fenwick Collar and Cuff Machine Company, Portland, Me. Collar	606,859	July 5	422	90, 91	84	84
Fenwick, Albert D., Philadelphia, Pa., assignor to Fenwick Collar and Cuff Machine Company, Portland, Me. Standing collar	606,963	July 5	563	124	84	112
Fenwick, Albert D., assignor to Fenwick Collar and Cuff Machine Company, Philadelphia, Pa. Collar, &c. (Reissue)	11,683	July 26	3015	648	84	639
Fenwick Collar and Cuff Machine Company. (See Fenwick, Albert D., assignor.)						
Fenwick Collar and Cuff Machine Company. (See Fenwick, Albert D., assignor.) (Reissue.)						
Ferber, Anthony. (See Foster and Ferber.)						
Ferguson, James, Dundee, Scotland. Loom for weaving fringes	610,391	Sept. 6	483	105	84	1531
Ferguson, James H., assignor to Lovejoy Company, New York, N. Y. Routing-machine for electrotype-plates	608,550	Aug. 2	671	152	84	788
Ferguson, William P., New York, N. Y. Fulminate-cap for dynamite-cartridges	609,963	Aug. 30	3317	772	84	1360
Ferland, Joseph E., Lawrence, Mass. Hair-cutter	609,090	Aug. 16	1715	408	84	1019
Fernandez, Manuel, Los Angeles, Cal. Car-fender. (Reissue)	11,692	Sept. 13	1334	305	84	1719
Fernekes, Max, assignor of one-half to W. Fernekes, Milwaukee, Wis. Photographic developing apparatus	610,392	Sept. 6	485	106	84	1532
Fernekes, Walter. (See Fernekes, Max, assignor.)						
Ferner, Adolph, Chicago, Ill. Piano-action	610,963	Sept. 20	1472	336	84	1760
Feroe, William E., Madolin, assignor to Plattsburgh Filter and Process Company, Plattsburg, N. Y. Filter for malt beverages	608,034	July 26	2810	597, 598	84	599
Ferraloli, Louis, New York, N. Y. Device for ornamenting cakes, &c.	608,958	Aug. 9	1448	343	84	953
Ferrata, Giuseppe, Greenville, S. C. Pipe for smoking-tobacco	607,601	July 19	1979	411	84	420
Ferree, William W., assignor to J. F. Floyd, Hardin, Mo. Draft-equalizer	610,267	Sept. 6	225	51	84	1486
Ferrosteel Company. (See Dippo, Bruce, Semple, and Powell, assignors.)						
Fichtl, Charles J., Jersey City, N. J. Combination-chair for children	606,654	July 5	31	7	84	8
Fiegehen, Edward G. (See Fiegehen, John G. and E. G.)						
Fiegehen, John G. and E. G., Bedford, England. Apparatus for producing traversing motion of overhead traveling cranes	608,191	Aug. 2	44	10, 11	84	663

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Field, Lute A., Janesville, Wis. Window-screen	611,113	Sept. 20	1756	402	84	1814
Field, Seymour, Quincy, Mass. Eyeleting-machine	606,964	July 5	565	125	84	112
Fielding, Harriet C., New York, N. Y. Spool-holder attachment for sewing-machines, &c.	608,035	July 26	2811	598	84	600
Fields, Lucien B., Kansas City, Mo. Scrubbing-machine	608,326	Aug. 2	289	64	84	713
Fincher, Clemon C. (See Pendley and Fincher.)	606,759	July 5	232	.....	84	47
Finerty, Joseph W., Milford, N. H. Stone-cleaning composition	608,600	Aug. 9	885	208	84	849
Fink, Joseph H., Kansas City, Mo., and R. Andlauer, Kansas City, Kans. Rocker-cushion.	607,005	July 5	660	143	84	181
Finkbohner, Charles. (See Lawson, Charles B., assignor.)	610,738	Sept. 13	1069	245	84	1664
Finkenbiner, John S., St. Louis, Mo. Lap-seam feller						
Finnegan, John, assignor to T. Devlin & Co., Philadelphia, Pa. Flagstaff-holder						
Fippard, Charles, *et al.* (See Chapman, Charles A., assignor.)						
Fire Extinguisher Manufacturing Company. (See Steck, Ernst F., assignor.)						
Firth, Thaddeus, Jr., *et al.* (See Ingram, Harry, assignor.)						
Firth, William. (See Ulbrich, Richard C., assignor.)						
Fischer, Emil, Berlin, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Making purin derivatives	607,028	July 12	708	.....	84	159
Fischer, Emil, Berlin, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Adenin and making same	607,029	July 12	711	.....	84	159
Fischer, Friedrich, Worms, Germany. Filter	610,527	Sept. 13	723	164	84	1594
Fischer, John M., Washington, D. C. Baker's oven	610,648	Sept. 13	922	211, 212	84	1635
Fischer, Peter G., Homestead, N. J. Combined laundry-tub cover and draining-board	610,038	Aug. 30	3453	799	84	1386
Fischer, S. M. (See Case, Edward N., assignor.)	608,086	July 26	2812	598	84	600
Fischhaber, Manfred, Philadelphia, Pa. Hair-curler						
Fisher, George P., Jr., Chicago, Ill., and J. Relf, Jr., Hebron, Ind., assignors to Hercules Woodenware Company, Chicago, Ill. Machine for making slat-and-wire fabric	609,387	Aug. 16	2268	535, 536, 537, 538, 539	84	1126
Fisher Governor Company. (See Wallace, William M., assignor.)						
Fisher, Henry M. (See Bevington and Fisher.)	607,358	July 12	1350	288	84	278
Fisher, John, Matlock Bath, England. Fish-plate for rails	610,393	Sept. 6	486	106	84	1532
Fisher, Sydney S., San Francisco, Cal. Telephone						
Fitchburg Steel Ball Company. (See Gay, John B. F., assignor.)	610,480	Sept. 6	632	142	84	1560
Fitzgerald, James A., Cleveland, Ohio. Corset-clasp						
Fitzgerald, Richard. (See Hibbard, Maury W., assignor.)	608,661	Aug. 9	887	204	84	850
Fitzgerald, Richard, Chicago, Ill. Device for actuating fluid-pressure brakes						
Fitzmorris, John, *et al.* (See Atkinson, Mahlon B., assignor.)						
Fivè, Lèon, assignor to La Société des Plaques Lithographiques, Paris, France. Production of lithographic plates	606,709	July 5	135	.....	84	28
	609,091	Aug. 16	1716	408, 409	84	1019
Fixler, Edgar L., Delta, Ohio. Grain separator and cleaner						
Flagg Brothers Company. (See Flagg, Elisha, assignor.)						
Flagg, Elisha, assignor to Flagg Brothers Company, New York, N. Y. Machine for attaching glove-fasteners to garments	608,978	Aug. 9	1487	351	84	961
	609,270	Aug. 16	2072	492	84	1088
Flaherty, James F., Philadelphia, Pa. Device for mixing liquids, &c.						
Flanagan, Charles H., Southville, and E. Martin, Potsdam, N. Y.; said Martin assignor to said Flanagan. Fence	607,410	July 12	1452	308	84	296
	607,841	July 26	2458	518	84	525
Flegel, Harrison, Racine, Wis. Work-bench						
Fleischmann, Ferdinand, Mödling, Austria-Hungary. Stoppering device for bottles, jars, &c.	607,842	July 26	2439	518	84	526
	609,880	Aug. 30	3158	737	84	1329
Fleming, James A., Danville, Ill. Scale-beam	608,959	Aug. 9	1449	343	84	964
Flesher, Albert, and J. L. Crisler, Alert, Okla. Ter. Gate	609,881	Aug. 30	3160	737	84	1330
Flesher, Paul, Hoyt, Kans. Hand-car	610,581	Sept. 13	814	186	84	1612
Fletcher, Robert, assignor to A. Harrington, Toronto, Canada. Stove						
Flickinger, George, assignor of thirty-three fiftieths to C. A. Hager and G. Steinwachs, Buffalo, N. Y. Molding-machine	606,779	July 5	276	57	84	55
	610,175	Sept. 6	40	10	84	1449
Flindall, John, Chicago, Ill. Velocipede pedal-crank	610,089	Aug. 30	3454	800	84	1386
Flindt, Carl J. H., assignor to E. Bechtoldt, New York, N. Y. Propeller	609,799	Aug. 30	3019	707	84	1301
Flinn, William T., Jamestown, Ark. Device for salting meat	609,388	Aug. 16	2278	539	84	1128
Flint, William C., Glastonbury, Conn. Wrench	607,563	July 19	1908	394	84	407
Flöring, William C., Waterbury, Conn. Water-level indicator						
Floyd, George G., Sedalia, assignor to Western Railway Equipment Company, St. Louis, Mo. Draft-rigging	607,843	July 26	2441	518	84	526
Floyd, J. F. (See Ferree, William W., assignor.)						
Floyd, Wells & Co. (See Brooke, Isaac, assignor.)						
Fobes, Orson B., Cherokee, Iowa. Carriage-cover	610,647	Sept. 13	921	211	84	1634
Focke, Hans, Radeberg, Germany. Carrier for abrasive hand-tools, files, &c	608,513	Aug. 2	608	136	84	776
Foerster, Hugo, Gorsdorf, Germany. Means for supplying electric current to agricultural machines	610,350	Sept. 6	402	85, 86	84	1517
	606,655	July 5	32	7	84	8
Fogarty, James H., New York, N. Y. Float-valve						
Fogler, George L., assignor of one-half to O. D. Swett, Washington, D. C. Smoke-burning furnace	607,166	July 12	1000	217	84	211
	611,242	Sept. 27	1998	.....	84	1680
Follett, Joseph L., New York, N. Y. Bottle-seal						
Folli, Silvestro, *et al.* (See Magini, Folli, and Antico.)	608,850	Aug. 9	1257	293	84	918
Folmer, William F., New York, N. Y. Tripod	610,623	Sept. 13	884	202	84	1637
Folwell, Phillip C., Toronto, Canada. Automatic cut-off for gas-burners	607,167	July 12	1002	218	84	211
Fontneau, Frank, Attleborough, Mass. Registering cigar-tip cutter						
Foos Manufacturing Company. (See Winchell, James F., assignor.)						
Foot Manufacturing Company. (See Bonani, Arthur H., assignor.)	608,766	Aug. 9	1065	244	84	883
Foote, Edward H., Somerville, Mass. Garment-hanger						
Forbes, Henry M. (See Richards and Forbes.)						
Forch, Fred. (See Smith, Robert F., assignor.)	606,920	July 5	509	112	84	101
Ford, Edward L., Youngstown, Ohio. Stop-gate	610,040	Aug. 30	3454	800	84	1387
Ford, Henry, assignor to W. C. Maybury, trustee, Detroit, Mich. Carbureter	610,176	Sept. 6	46	11	84	1450
Ford, Jesse S., Westerfield, Ky. Cultivator				516, 517	84	1924
Fordyce, John R., St. Louis, Mo., assignor to Thomas Manufacturing Company, Little Rock, Ark. Apparatus for conveying lint-cotton from gins	611,360	Sept. 27	2235			
Forrer, Joseph D., Johnstown, Pa., assignor to Steel Motor Company, of Ohio. Electric controller	609,092	Aug. 16	1718	409	84	1020
	607,359	July 12	1351	289	84	278
Forrest, Albert J., Seattle, Wash. Stringed musical instrument	606,836	July 5	380	81	84	75
Forsyth, Daniel M., Franklin, Ind. Horse check and hitching device						
Forsyth, James B. (See Stetson, Charles T., assignor.)	611,114	Sept. 20	1756	402	84	1814
Forward, Dryden B., Alturas, Cal. Brush	606,710	July 5	136	29	84	28
Fosgate, Alfred, Auburn, N. Y. Picture-hanger	609,017	Aug. 16	1583	377	84	994
Foss, William J., Jersey City, N. J. Automatic match-box						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Foster, Charles E., Washington, D. C., assignor to National Tooth Company, York, Pa. Artificial tooth	607,231	July 12	1125	241	84	233
	611,361	Sept. 27	2238	517	84	1924
Foster, James F., and A. Ferber, assignors to S. Shepard & Co., Buffalo, N. Y. Milk-can.	610,582	Sept. 13	815	186, 187	84	1612
Foster, John F., Marceline, Mo. Bicycle	608,662	Aug. 9	891	204	84	851
Foster, Lucian M., Boston, assignor to B. Poole, Topsfield, Mass. Ballot-box						
Foster, Merriam & Company. (See Slater, Edmond B., assignor.)	609,505	Aug. 23	2499	585	84	1188
Foster, Orra I., Haverhill, Mass. Shoe	608,851	Aug. 9	1258	293	84	918
Foster, Thomas, Dunedin, New Zealand. Roller-tooth variable gear	608,960	Aug. 9	1451	344	84	954
Foulois, Henry, Washington Depot, Conn. Siphon	610,300	Sept. 6	306	66, 67	84	1501
Fournier, Napoleon, St. Germain de Grantham, Canada. Wheel-harrow						
Fout, Marshall, *et al.* (See Martz, Randolph N., assignor.)	610,984	Sept. 20	1520	349	84	1769
Foveaux, Henry, Wamego, Kans. Mold for fireproof concrete floors						
Fow, Oscar A., *et al.* (See Fraley, George B., assignor.)	609,739	Aug. 23	2915	682	84	1268
Fowler, Allen, and P. N. Green, Union City, Tenn. Burglar-alarm						
Fowler, Arthur H., assignor to Fowler & Wolf Manufacturing Company, Norristown, Pa. Radiator	609,800	Aug. 30	3020	707	84	1301
Fowler, Joseph L., assignor of one-half to J. L. Humphrey, Coal Creek, Tenn. Vehicle-wheel	609,424	Aug. 23	2345	552	84	1159
	608,514	Aug. 2	610	136, 137	84	777
Fowler, Robert H., and T. Benstead, Leeds, England. Apparatus for steam cultivation.	611,469	Sept. 27	2447	564	84	1963
Fowler, S. Lothrop. (See Cypher, Albert D., assignor.)	608,663	Aug. 9	895	204	84	852
Fowler, William A., Carruth, Ga. Planter						
Fowler, William M., Stamford, Conn. Filter	610,583	Sept. 13	817	187	84	1612
Fowler & Wolf Manufacturing Company. (See Fowler, Arthur H., assignor.)						
Fox, George W., Chicago, Ill. Detachable-link chain						
Fox Machine Company. (See Fox, William R., assignor.)						
Fox Solid Pressed Steel Company. (See Bagshawe, Bernal, assignor.)	607,739	July 19	2209	467	84	464
Fox, William R., Grand Rapids, Mich. Sash-cord guide						
Fox, William R., assignor to Fox Machine Company, Grand Rapids, Mich. Bicycle-bearing	608,961	Aug. 9	1452	344	84	954
	608,115	July 26	2926	626	84	622
Frahm, Hans, Omaha, Nebr. Folding window-bracket						
Fraley, George B., assignor, by mesne assignments, to O. A. Fow and D. W. Van Tine, Philadelphia, Pa. Composition of matter for electric heaters	606,921	July 5	510	.....	84	101
	610,394	Sept. 6	487	106	84	1532
Francis, Henry A., Niagara Falls, N. Y. Dress-fastener	607,644	July 26	2442	519	84	526
Francisco, Charles F., Lakeside, and E. E. Shaffer, San Diego, Cal. Snap-hook	609,184	Aug. 16	1895	451	84	1050
Frank, Isaac, Cincinnati, Ohio. Animal-trap						
Fraser & Chalmers. (See Sederholm, Edward T., assignor.)						
Fraser, Ethelbert M., assignor to J. J. Mahony and C. E. Green, San Francisco, Cal. Elevator	610,481	Sept. 6	633	142	84	1560
Frazee, Joseph M. (See Peugh and Frazee.)	608,515	Aug. 2	612	137	84	777
Frazee, Walter F., Fruit Hill, Ohio. Book-support	609,339	Aug. 16	2195	518, 519	84	1112
Frazer, Lewis, London, England. Boot-tree						
Frederick, John H. (See Whippo, John K., assignor.)						
Frederick, Lott, and G. H. Dugan, North Summit, Pa.; said Dugan assignor to said Frederick. Wrench	608,767	Aug. 9	1006	245	84	884
	610,440	Sept. 6	560	123	84	1545
Frederick, S. S. (See Knupp, Michael, assignor.)	608,664	Aug. 9	897	205	84	852
Fredrickson, August, assignor to J. A. Lewis, Meridian, Miss. Hanger for journals	607,924	July 26	2593	550, 551	84	555
Free, Allison N., assignor of one-third to L. R. Ninnemann, Milwaukee, Wis. Flower-pot.						
Freeman, Edwin T., Halifax, Canada. Nailing-machine	609,579	Aug. 23	2625	614	84	1211
Freeman, Herbert H., Pierre, S. D. Rotary steam-engine	607,794	July 19	2308	488	84	482
Freeman, Warren P., New York, N. Y. Apparatus for cleaning paint from ships						
Freeman, Warren P., assignor to R. J. Campbell, New York, and F. Larkin, Jr., Sing Sing, N. Y. Electrodynamic apparatus for operating clipping, brushing, or other mechanisms	608,768	Aug. 9	1068	245	84	884
	607,165	July 12	996	215, 216, 217	84	210
Freese, Francis J., Montreal, Canada. Sole-cutting machine	607,990	July 26	2706	577, 578	84	576
Freese, Francis J., Lowell, Mass. Sole-channeling machine	610,845	Sept. 13	1262	291, 292	84	1704
Freitag, Christian A., Amsterdam, Netherlands. Apparatus for burning pulverulent fuel	607,430	July 19	1495	318	84	322
French, Frank S., *et al.* (See Bullock, William J., assignor.)	609,588	Aug. 23	2554	597	84	1198
French, Henry A., Lansing, Mich. Windmill						
Frerich, John W. and J. H., Alvord, Iowa. Ankle-brace	608,590	Aug. 9	755	174	84	825
Frerich, Joseph H. (See Frerich, John W. and J. H.)						
Freund, Gustave A., Hermann, Mo. Flower-pot and hanging basket						
Freudenweiler, Frederick R. (See Rich and Freudenweiler.)						
Frick Company. (See Shadall, Charles E., assignor.)	610,041	Aug. 30	3456	800	84	1387
Friedheim, David, New York, N. Y. Fire-escape	606,327	Aug. 2	292	64, 65	84	713
Friel, Augusta B., Los Angeles, Cal. Dress or garment form	609,197	Aug. 16	1918	457	84	1055
Fries, Joseph, Marion, Ind. Window-screen fastener	609,018	Aug. 16	1584	377	84	994
Frink, Holland V., Carthage, N. Y. Milk-can						
Frisbie, Warren M., assignor of one-eighth to W. McElhiney, North Baltimore, Ohio. Compressed-air burglar-alarm	610,482	Sept. 6	637	143	84	1561
Fritz, Charles P., assignor to W. M. Speakman, Philadelphia, Pa. Tool-holder for dental handpieces	610,483	Sept. 6	639	143	84	1561
Frost, Edward J. (See Biddle and Frost.)						
Frost, James C., assignor of one-third to A. C. Creamer, Athens, Ohio. Fence-post	610,042	Aug. 30	3456	800, 801	84	1387
	611,031	Sept. 20	1594	366	84	1784
Frotscher, Oscar, Philadelphia, Pa. Window	611,408	Sept. 27	2334	538	84	1942
Frueh, Emil, Cedar Rapids, Iowa. Crozing or grooving tool for barrels, &c						
Fugh, George H. (See Orr and Fugh.)						
Fuller, Harry, assignor to King Bridge Company, Cleveland, Ohio. Carriage mechanism for hoisting and conveying machines	609,615	Aug. 23	2707	631, 632	84	1296
Fuller, Henry D., *et al.* (See Jordan and Baum, assignors.)						
Fuller, James W. (See Snyder, William T., assignor.)						
Fuller, William H., *et al.* (See Garnier, Thomas R., assignor.)						
Fullerton, George A., Boston, assignor to J. E. Maynadier, trustee, Taunton, Mass. Pin-bridge for string instruments	609,882	Aug. 30	3161	738	84	1330
Fulton, H. H. (See Morrow, Alexander P., assignor.)						
Funck, Philipp. (See Moseley and Funck.)						
Funk, Alexander W., assignor of one-half to W. E. Saunders, Cleveland, Ohio. Automatic brake and safety-guard for vehicles	607,080	July 12	718	152, 153	84	159
Furber, Frank O., and W. A. Mitchell, Saco, Me.; said Furber assignor to said Mitchell. Sanding device for street-cars	609,506	Aug. 23	2500	585	84	1186

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Furey, Cyrus R., assignor of one-half to J. H. Kornmann, Logansport, Ind. Alarm mail-box	611,573	Sept. 27	2639	609	84	2000
Furnivall, Alfred W., and H. Martin, New York, N. Y. Extension-bed	611,115	Sept. 20	1757	402	84	1814
Gabler, Ferdinand, Topeka, Kans. Center-wheel car-brake	609,098	Aug. 16	1720	410	84	1020
Gadd, Charles J., Philadelphia, Pa., assignor to H. W. Butterworth & Sons Company, of Pennsylvania. Tentering-machine	606,780	July 5	280	58	84	55
Gaertner, Richard, Milwaukee, Wis. Running-gear for motor-cycles	610,177	Sept. 6	46	11	84	1450
Gagnon, Peter. (See Ahearn, William F., assignor.)						
Gaitzsch, Karl J., Knauthain, Germany. Reversible calk	608,665	Aug. 9	897	205	84	852
Gale, Horace B., San Francisco, Cal., assignor to C. C. Worthington, Irvington, N. Y. Valve-movement for pumps	607,845	July 26	2443	519	84	526
Gallagher, Thomas G., Philadelphia, Pa. Steam-trap and boiler-feeder	607,740	July 19	2211	467, 468	84	464
Gallaway, Albert I., Morristown, N. J. Broom-support	610,351	Sept. 6	405	86	84	1518
Gallaway, Albert I., assignor of one-half to D. S. Enslee, Morristown, N. J. Bicycle-support	607,795	July 19	2310	489	84	482
Galley, Felix, Cleveland, Ohio, assignor of one-half to P. Vaughn, Nashville, Tenn. Elastic-tread horseshoe	610,324	Sept. 6	352	75	84	1508
Gallinowsky, Hugo, Long Beach, Miss. Compound for rendering substances fireproof	610,964	Sept. 20	1474	336	84	1761
Gallinowsky, Hugo, assignor to Lithosite Manufacturing Company, St. Louis, Mo. Method of and apparatus for making electrical-insulation conduits	609,094	Aug. 16	1721	410	84	1020
Gally, Merritt, Brooklyn, N. Y. Machine for making swage-locked type-bars and product produced by such machine	606,656	July 5	34	8	84	9
Gally, Merritt, Brooklyn, N. Y. Swaged type-bar and apparatus for constructing same	606,657	July 5	35	8, 9	84	9
Gally, Merritt, New York, N. Y. Type-making machine	610,231	Sept. 6	170	38, 39	84	1475
Gamble, Cyrus T. (See Martin and Gamble.)						
Gamble, Joseph W., Philadelphia, Pa., assignor to Eynon-Evans Manufacturing Company, of Pennsylvania. Injector	609,801	Aug. 30	3022	707, 708	84	1302
Gamble, Leslie J., Moline, Ill. Door-fastener	610,624	Sept. 13	896	208	84	1628
Gamble, Warren, Beebe, Mich. Hay-rack	610,395	Sept. 6	488	106, 107	84	1533
Gano, Charles P., Bowling Green, Ohio. Pumping-jack	607,925	July 26	2597	551	84	556
Ganoung, Robert S., Seneca Falls, N. Y. Table and drapery-holder	610,441	Sept. 6	502	124	84	1546
Gans, Albert. (See Brolich, Johann, assignor.)						
Gans, Peter, Salem, Ohio. Bag-fastener	609,989	Aug. 30	3370	783	84	1371
Ganswindt, Hermann, Mariendorfer Weg, Schoeneberg, Germany. Bearing for rotary disks	610,282	Sept. 6	174	39	84	1475
Gants, George, Greenfield, Ohio. Dinner-pail	608,501	Aug. 9	756	174	84	825
Ganzel, Christ H., Sr., Boyd, Wis. Masonry chimney and smoke-flue	610,396	Sept. 6	489	107	84	1533
Gardanier, George W., Nyack, assignor of three-fourths to D. G. Black, Lake Hill, N. Y. and T. J. Smith, Roselle, N. J. Safety-fuse for electric circuits	611,243	Sept. 27	1999	461	84	1880
Gardenier, James. (See Van Vliet and Gardenier.)						
Gardner, Jacob N., assignor to I. Collat, M. S. Byck, Savannah, D. A. Byck, and L. Collat, Chatham county, Ga. Nut-lock	607,741	July 19	2213	468	84	465
Gardner, Richard B. G., Philadelphia, Pa. Appliance for enabling the deaf to hear	608,255	Aug. 2	149	37	84	684
Garland, George A., Medford, Mass. Chair	609,389	Aug. 16	2279	599	84	1128
Garlick, Jew. (See Dowell, Albert L., assignor.)						
Garlough, Alfred L., St. Paul, Minn. Lock	611,244	Sept. 27	2001	461	84	1880
Garnier, Thomas R., assignor of one-half to W. H. Fuller, Los Angeles, G. W. Beck and A. H. Conger, Pasadena, Cal. Antifriction-bearing	611,082	Sept. 20	1595	366	84	1784
Gartner, Alfred. (See Kinne and Gartner.)						
Gartner, Charles J., Shelbyville, Ind. Clamp for carvings	609,539	Aug. 23	2555	598	84	1198
Garrett, Frank, Shipston-on-Stour, England. Weapon of defense	608,666	Aug. 9,	898	205	84	852
Gaskill, Henry S., Battle Creek, Mich. Windmill-governor	609,340	Aug. 16	2196	519	84	1112
Garford Manufacturing Company. (See Smith, James C., assignor.)						
Gasper, Frank W., Wayne, N. Y. Fence	607,431	July 19	1497	318	84	322
Gassner, Henry. (See Marx and Gassner.)						
Gates, Caleb C., assignor of one-half to J. S. Hopkins and W. W. McDonald, Forsyth, Mont. Railway-tie distributer	608,962	Aug. 9	1453	344	84	954
Gates Iron Works. (See Capen, Thomas W., assignor.)						
Gates Iron Works. (See Cole, David, assignor.)						
Gates Iron Works. (See Gates, Philetus W., assignor.)						
Gates, Olus, Estherville, Iowa. Cattle-tie	606,922	July 5	511	112	84	101
Gates, Philetus W., Chicago, Ill., assignor to Gates Iron Works, of Illinois. Automatic feeder for stamp-mills	609,425	Aug. 23	2346	553	84	1160
Gates, Verner R., assignor of one-half to V. C. Wall, Sherman, Mich. Rotary engine	609,802	Aug. 30	3025	708	84	1302
Gatewood, William F., assignor of one-half to F. M. Johnson, Decatur, Ill. Churn	611,470	Sept. 27	2448	564	84	1963
Gauntner, Rudolph, assignor of two-fifths to G. A. Myers and M. H. Burget, Ashville, Pa. Horse-detacher	610,484	Sept. 6	641	143	84	1561
Gauthier, Ernest V., Westborough, Mass. Fastening device for bicycle-cranks	608,448	Aug. 2	497	112	84	754
Gauthier, Ernest V., Westborough, Mass. Screw-machine chuck	608,449	Aug. 2	498	113	84	755
Gay, John B. F., assignor to Fitchburg Steel Ball Company, Fitchburg, Mass. Die for and method of swaging metallic balls	611,574	Sept. 27	2640	609	84	2000
Gays, Henry W., St. Louis, Mo. Carline	607,846	July 26	2446	519, 520	84	527
Gayton, Samuel R., Philadelphia, Pa. Pneumatic-despatch tube	610,528	Sept. 13	734	164	84	1594
Gedeon, Joseph. (See Kundtz and Gedeon.)						
Gee, James E. and W. J., Middlesbrough, England. Scrubbing-machine	610,397	Sept. 6	491	107	84	1533
Gee, William J. (See Gee, James E. and W. J.)						
Gégauff, Charles H. (See Wenning and Gégauff.)						
Gelabert, William P., Sweet Springs, Mo. Sash holder and lock	607,926	July 26	2509	551	84	557
Gelatt, James M. (See Chapman and Gelatt.)						
General American Reduction Company. (See Riesmuller, Ludwig, assignor.)						
General Electric Company. (See Anderson and Thomson, assignors.)						
General Electric Company. (See Bradley, Charles S., assignor.)						
General Electric Company. (See Case, Frank E., assignor.)						
General Electric Company. (See Haskins, Caryl D., assignor.)						
General Electric Company. (See Hewlett, Edward M., assignor.)						
General Electric Company. (See Linn, John B., assignor.)						
General Electric Company. (See Potter, William B., assignor.)						
General Electric Company. (See Rice, Edwin W., Jr., assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.)						
General Electric Company. (See Thomson, Elihu, assignor.)						
General Electric Company. (See Willard, Ben, assignor.)						
Geneva Optical Company. (See Brayton, James T., assignor.)						
Geneva Optical Company. (See Gray, Silas W., assignor.)						
Genoud, Eugene X., Jersey City, N. J. Cash-register	608,116	July 26	2928	627	84	623

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
George A. Ohl & Company. (See Ohl, George A., assignor.)						
George Washington Lighting Company. (See Washington, George, assignor.)						
Gerandal, Charles, Mustapha, France. Printing of music and apparatus for exposing same to readers	607,789	July 19	2301	485	84	481
Gérard, Louis L. H., assignor to La Société des Appareils a Changement de Vitesse, Paris, France. Variable-speed gearing	610,178	Sept. 6	48	11	84	1451
Gerber, George H., *et al.* (See Maurer, James H., assignor.)						
Gerber, Samuel N. (See Swisher, Charles M., assignor.)						
Gerstendorfer, Albert and M., New York, N. Y. Containing vessel or package	611,008	Sept. 20	1556	358	84	1776
Gerstendorfer, Max. (See Gerstendorfer, Albert and M.)						
Getchell, Marshall P. (See Alvord, Clarence E., assignor.)						
Gibbs, Edward F., Birmingham, Ala. Lathe-chuck	609,019	Aug. 16	1585	377	84	994
Gibson, Godfrey M., Chulmleigh, England. Machine for punching telegraphic paper	606,658	July 5	38	9	84	9
Gibson, Godfrey M., Chulmleigh, England. Apparatus for printing telegraphic messages	611,448	Sept. 27	2403	552	84	1954
Gibson, Joseph H., Egremont, England. Gear-cutting machine	606,837	July 5	381	81	84	76
Giesey, James H., Highland City, Ohio. Hinge	607,432	July 19	1499	318, 319	84	323
Gilbert-Cooper, William. (See Rose and Gilbert-Cooper.)						
Gilbert, S. Eldred, *et al.* (See Werner, Ernest E., assignor.)						
Gilbert, Thomas S., New Haven, Conn. Corset	611,116	Sept. 20	1760	403	84	1815
Gilbert, William, Albany, Mo. Game apparatus	607,031	July 12	716	153	84	160
Gilbert, Winfield C., Union Bridge, Md. Anchor for tombstones	610,529	Sept. 13	725	164	84	1595
Gilchriest, Robert, Louisville, Ky. Regulator for gas-burners	611,471	Sept. 27	2450	564	84	1964
Giles, John H. (See Russell, John H., assignor.)						
Gilfillin, James, *et al.* (See Russell, William, assignor.)						
Gilkerson, Curtis H., and D. Glasby, Minneapolis, Minn. Automatic measuring-tank	609,096	Aug. 16	1724	410	84	1021
Gill, Edwin R., Englewood, N. J., assignor to Invention Developing Company, of New Jersey. System of control of electric motors	609,274	Aug. 16	2078	494	84	1089
Gill, James T., Herschel, Ky. Ball attachment for stone jars	611,033	Sept. 20	1597	366	84	1784
Gill, Thomas M., Mexico, Mo. Tobacco-pipe	611,575	Sept. 27	2643	610	84	2001
Gillespie, Richard S., New York, N. Y. Mechanism for operating sluice-gates, &c	611,472	Sept. 27	2451	564, 565	84	1964
Gillet, Aloysius J., and G. Rutter, Fall River, Mass. Loom	607,360	July 12	1353	289	84	279
Gillett, Clarence R., assignor to H. W. Leman, Chicago, Ill. Method of and apparatus for generating acetylene gas	611,473	Sept. 27	2454	565	84	1964
Gillett, Leonard C., Brownsdale, Minn. Steam heater and cooker	609,740	Aug. 23	2916	682	84	1268
Gilliland Cigarette Machine Company. (See Gilliland, Ezra T., assignor.)						
Gilliland, Ezra T., New York, N. Y. Recorder for conveyances	610,268	Sept. 6	226	51	84	1486
Gilliland, Ezra T., New York, N. Y., assignor to Gilliland Cigarette Machine Company, of New Jersey. Mouthpiece-cigarette	609,741	Aug. 23	2918	682	84	1268
Gilliland, James F., assignor to Adrian Box Company, Adrian, Mich. Box-making machine	609,803	Aug. 30	3027	708, 709	84	1302
Gilman, Charles A., assignor of one-half to F. Tucker, Weare, N. H. Scalloping-machine	608,390	Aug. 2	398	88	84	734
Gilman, Charles H. (See Smith, Orison M., assignor.)						
Gilman, George H., and J. H. Brown, Tacoma, Wash. Emergency-knuckle for car-couplings	609,095	Aug. 16	1723	410	84	1021
Gilman, Willard H., Boston, Mass. Aerial conveyer	609,273	Aug. 16	2076	493, 494	84	1089
Gilmer, Tazewell, New York, N. Y. Device for locking or securing bicycles	608,769	Aug. 9	1070	245, 246	84	884
Giordano, Geremia, Turin, Italy. Non-refillable bottle	609,507	Aug. 23	2542	585, 586	84	1188
Gipe, Emanuel C., Freeport, Ill., assignor of one-fourth to G. W. Tassell, Waukesha, Wis. Elevated carrier	609,275	Aug. 16	2086	494	84	1090
Girod, Ernest, London, England, assignor to Mergenthaler Linotype Company, New York, N. Y. Mold for linotype-machines	609,883	Aug. 30	3161	738	84	1330
Girrens, Nicholas, and J. H. Weitz, Buffalo, N. Y. Lock	608,592	Aug. 9	757	174	84	825
Gissing, George J., London, England. Buttonhole-casing	608,593	Aug. 9	759	175	84	825
Gitchell, Corwin, San Francisco, Cal. Multiple-coated carbon film and making same	611,409	Sept. 27	2535	------	84	1943
Glaesener, Georges. (See Glaesener and D'Huart.)						
Glaesener, Michel and G., Chatillon, and E. D'Huart, Luxemburg, Belgium. Process of and apparatus for purifying water	607,361	July 12	1354	289	84	279
Glasby, De Cloise. (See Gilkerson and Glasby.)						
Glass, Herbert G. H., Detroit, Mich. Protecting-plate for shoes	610,043	Aug. 30	3457	801	84	1387
Glass, J. W. (See Critchfield, Rush D., assignor.)						
Glazier, John T. and P. F., Indianapolis, Ind. Universal nozzle for fires, lawns, &c	608,192	Aug. 2	46	11, 12	84	664
Glazier, Peter F. (See Glazier, John T. and P. F.)						
Gleason, Frederick L., *et al.* (See Thurber, Charles F., assignor.)						
Gleason, Homer A. (See Wells and Gleason.)						
Gleason, Jennie W., Chicago, Ill. Silk-skein holder	610,859	Sept. 13	1290	296	84	1710
Gleason, Robert W. (See McLaughlin, John G., assignor.)						
Glenn, Daniel, Del Rio, Tex. Ball-bearing screw-jack	610,044	Aug. 30	3458	801	84	1388
Glenn, Daniel, Del Rio, Tex. Screw-jack head	610,045	Aug. 30	3459	801	84	1388
Gliddon, William F., Ingersoll, Canada. Washing-machine	611,245	Sept. 27	2008	462	84	1881
Glorieux, Henry, Roubaix, France. Jacquard-machine for looms	608,087	July 26	2813	598, 599	84	600
Glover, Henry G., Jackson, Mich. Bicycle-saddle	609,616	Aug. 23	2708	632	84	1227
Glück, Max, New York, N. Y. Combination window-shutter and awning	607,232	July 12	1126	241	84	233
Gluck, Solomon, Temple, Tex. Caster	610,860	Sept. 13	1291	298	84	1711
Goddin, Edgar A., London, England. Lock-nut	609,144	Aug. 16	1829	433	84	1089
Godfray, Ernest H., Quanah, Tex. Gearing for bicycles	608,770	Aug. 9	1072	246, 247	84	885
Godfrey, William, New York, N. Y. Sewer-trap	608,450	Aug. 2	500	113	84	755
Goebel, Christian H., assignor to W. Plish, trustee, Philadelphia, Pa. Non-refilling bottle	609,271	Aug. 16	2074	492	84	1088
Goehring, Fridolin, Union, N. J. Brush	608,365	Aug. 2	351	76	84	725
Goergen, Charles, St. Louis, Mo. Mud-guard	608,451	Aug. 2	508	113	84	755
Goerk, Jacob. (See Leibe and Goerk.)						
Goessling, William, St. Louis, Mo. Sign	606,923	July 5	512	112	84	101
Goggan, John, *et al.* (See Labatt and Lewis, assignors.)						
Gold, Edward E. (See Thornton, James A., assignor.)						
Golden, Dominic, Washington, D. C. Game-board and educational appliance	610,046	Aug. 30	3460	802	84	1388
Golden, George W., Detroit, Mich. Sash-lock	611,246	Sept. 27	2006	462	84	1881
Golden, George W., Detroit, Mich. Weather-strip	611,247	Sept. 27	2007	463	84	1882
Goldie, William, Wilkinsburg, Pa. Rail-sustaining bar or tie-plate	607,847	July 26	2448	520	84	527
Goldie, William, Wilkinsburg, Pa. Tie-plate	610,179	Sept. 6	50	11	84	1451

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Goldie, William, Wilkinsburg, Pa. Rail-sustaining bar and plate	611,474	Sept. 27	2458	565	84	1965
Golding, William, Withington, England, assignor, by mesne assignments, to Morgan & Wright, Chicago, Ill. Pneumatic tire for wheels	606,999	July 5	612	133	84	121
Goldsmith, Max S. (See Webster, John M., assignor.)						
Goldthwait, Everett. (See Brennan, Wirley, and Goldthwait.)						
Goldthwaite, Warren P., Burlington, Iowa. Attachment for punches	608,256	Aug. 2	150	37	84	684
Gomez, Mack, Plaquemine, La. Cane-planter	611,034	Sept. 20	1597	360, 367	84	1784
Gooch, Athelston E., South Braintree, Mass. Inner sole	606,800	July 5	424	91	84	84
Good, John, assignor to J. E. Good, New York, N. Y. Hackling-machine	608,979	Aug. 9	1489	351, 352	84	962
Good, John, assignor to J. E. Good, New York, N. Y. Hackling-machine	608,980	Aug. 9	1491	352, 353	84	962
Good, John, assignor to J. E. Good, New York, N. Y. Feeding apparatus for machinery for preparing fibrous materials	608,981	Aug. 9	1493	353, 354	84	962
Good, Julia E. (See Good, John, assignor.)						
Goodall, George B., *et al.* (See Benoit, Joseph F., assignor.)						
Goodenough, C. F. (See Ramage, Joseph, assignor.)						
Goodfellow, John H., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, of New Jersey. Store-service apparatus	607,092	July 12	718	153	84	160
Goodfellow, John H., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, of New Jersey. Store-service apparatus	608,594	Aug. 9	759	175	84	826
Goodfellow, John H., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, of New Jersey. Store-service apparatus	608,595	Aug. 9	761	175	84	826
Goodfellow, John H., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, of New Jersey. Store-service apparatus	608,596	Aug. 9	763	175	84	826
Goodfellow, John H., Lowell, Mass., assignor to Lamson Consolidated Store Service Company, of New Jersey. Store-service apparatus	608,597	Aug. 9	765	176	84	827
Goodline, George, Paterson, N. J., and H. Wyman, Worcester, Mass., assignors to Crompton & Knowles Loom Works. Take-up mechanism for looms	609,272	Aug. 16	2075	498	84	1088
Goodlett, Joseph E. J., Memphis, Tenn. Weighing and filling apparatus	608,117	July 26	2930	627, 628	84	624
Goodman, Charles H., Bucyrus, Ohio. Flash-lamp	611,009	Sept. 20	1557	359	84	1776
Goodridge, James F., Boston, Mass. Adjustable handle-bar for bicycles	610,132	Aug. 30	3594	883	84	1416
Goodson, George A., assignor to Goodson Type Casting and Setting Machine Company, Minneapolis, Minn. Composing-machine	609,097	Aug. 16	1726	411, 412	84	1021
Goodson, George A., Minneapolis, Minn., assignor to Goodson Type Casting and Setting Machine Company, Providence, R. I. Type casting and setting machine	609,098	Aug. 16	1732	412, 413, 414, 415, 416, 417, 418	84	1022
Goodson Type Casting and Setting Machine Company. (See Goodson, George A., assignor.)						
Goodwin, Hannibal, Newark, N. J. Device for manufacturing compressible tubes	610,398	Sept. 6	492	108	84	1534
Goodwin, Hannibal, Newark, N. J. Photographic pellicle and producing same	610,861	Sept. 13	1292	298	84	1711
Goodyear Shoe Machinery Company. (See Winkley, Erastus E., assignor.)						
Gorden, Isom A., Blue Mound, Ill. Gate	609,617	Aug. 23	2711	632	84	1227
Gordon, Albert A., assignor to Crompton & Knowles Loom Works, Worcester, Mass. Shuttle-binder spring	608,098	July 26	2814	599	84	600
Gordon, John, Rio Janeiro, Brazil. Dephosphorizing steel or other metals	609,341	Aug. 16	2196	.....	84	1112
Gordon, Max, Waterbury, Conn. Gage for watch-crystals	609,580	Aug. 23	2627	615	84	1212
Gordon, Minthorne T., assignor of one-half to J. L. Feeny, New York, N. Y. Derrick for raising or lowering telegraph-poles	608,193	Aug. 2	48	12	84	664
Gore, Edward E., Newburg, N. Y. Non-refillable bottle	608,118	July 26	2932	628	84	624
Gorman, Patrick O., Jerseyville, Ill. Gate for wire fences	608,328	Aug. 2	204	65	84	714
Gorton, Robert, Newton, Mass. Hose-supporter	607,742	July 19	2214	468	84	465
Gosling, John, New York, N. Y. Window-seat	608,366	Aug. 2	351	77	84	725
Goss, John H., assignor to Scovill Manufacturing Company, Waterbury, Conn. Right-angle swivel connection	608,852	Aug. 9	1259	293	84	918
Goss, John H., assignor to Scovill Manufacturing Company, Waterbury, Conn. Pump-plunger	609,185	Aug. 16	1896	451	84	1050
Goss, John H., assignor to Scovill Manufacturing Company, Waterbury, Conn. Valve for inflation	610,985	Sept. 20	1520	349	84	1769
Gossart, Emile, Bordeaux, France. Acetylene-gas generator	606,861	July 5	425	91	84	84
Gould, Edwin J. (See Smith and Gould.)						
Gourrier, Hilaire M. (See Leconte and Gourrier.)						
Gover, Samuel J., Cockeysville, Md. Stock-releasing device	610,806	Sept. 13	1201	276	84	1691
Gowen, Frank E., Norrie, Colo. Can-opener	606,805	July 5	324	67	84	65
Graber, Ellis, and L. Hepworth, Tunbridge Wells, England. Ruling-machine	609,884	Aug. 30	3164	738, 739, 740, 741	84	1330
Grace, Wilfred M., Chicago, Ill. Table	611,117	Sept. 20	1760	408	84	1815
Grady, James, New York, N. Y. Bicycle handle-bar	610,352	Sept. 6	406	87	84	1518
Grady, William S. (See Weichelt, Grady, and Jones.)						
Graeff, Friedrich W. H., Berlin, Germany, assignor to M. S. Wormser, of New York. Effervescent milk beverage and making same	607,362	July 12	1357	289	84	279
Graf, Charles J. (See Moyer and Graf.)	608,425	Aug. 2	466	.....	84	748
Graf, Conrad, Banning, Cal. Preserving fruit-juices	609,099	Aug. 16	1755	418	84	1094
Grafstrom, Edward, Columbus, Ohio. Railway-switch stand	607,927	July 26	2601	551	84	557
Graham, Albert A., Topeka, Kans. Spark-arrester	610,676	Sept. 13	964	223	84	1644
Graham, John H., Boston, Mass. Brake mechanism for railway-cars	610,133	Aug. 30	3595	883	84	1417
Graham, Lucie A., Denver, Colo. Skirt-supporter						
Grand Rapids Cycle Company. (See Knape and Dake, assignors.)						
Grandy, Edward F., Everett, Mass. Hand tack-driving machine	609,426	Aug. 23	2348	553	84	1160
Grant, Dora A., Patten, Me. Salt-shaker	608,516	Aug. 2	613	137	84	777
Grauten, Charles. (See Doty, MacKnight, and Grauten.)						
Graven, Henry, Rochester, N. Y. Gage for cutting and trimming machines	609,199	Aug. 16	1920	457	84	1055
Graves, Frederick S., Hancock, Me. Clothes-pin	609,198	Aug. 16	1919	457	84	1055
Graves, John W., Little Rock, Ark. Cotton-press	608,992	Aug. 9	1495	354, 355	84	963
Graves, John W., Little Rock, Ark., assignor to American Cotton Company, New York, N. Y. Cotton-press	608,667	Aug. 9	899	205, 206	84	852
Graves, John W., Little Rock, Ark., assignor to American Cotton Company, New York, N. Y. Cotton-press	608,668	Aug. 9	903	206, 207	84	853

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Graves, John W., Little Rock, Ark., assignor to American Cotton Company, New York, N. Y. Cotton-press	608,669	Aug. 9	906	207, 208	84	854
Graves, Lewis H. (See James, Ulysses S., assignor.)						
Graves, William D., St. Ansgar, Iowa. Bag-holder	608,853	Aug. 9	1261	293	84	918
Gravier, Henri J. B., Ithaca, N. Y. Green-corn cutter	607,363	July 12	1359	290	84	280
Gray, Astor G., Emporia, Kans. Burglar-alarm	606,862	July 5	426	92	84	84
Gray, Christian H. (See Sloper, Thomas, assignor.)						
Gray, Edwin D., *et al.* (See Lapaugh, Louis T., assignor.)						
Gray European Telautograph Company. (See McPherson, Leon O., assignor.)						
Gray, Herbert S. (See Faas and Gray.)						
Gray, James C., and T. Roderick, Columbus, Ohio; said Roderick assignor to said Gray. Gas-burner	611,248	Sept. 27	2008	463	84	1882
Gray, Joshua G. (See Swan and Gray.)						
Gray, Silas W., Fort Dodge, Iowa, assignor to Geneva Optical Company, Chicago, Ill. Optician's instrument for adjusting spectacles	610,301	Sept. 6	309	67	84	1501
Gray, Stephen B., Jacksonville, Ill. Traction-engine	608,517	Aug. 2	614	138, 139	84	777
Gray, William, Lincoln, Nebr. Sizing-machine for gold or like metals	607,564	July 19	1911	395	84	407
Gray, William, Lincoln, Nebr. Gold and ore separator	609,540	Aug. 23	2556	598	84	1198
Green, Aleck H., Owensborough, Ky. Combined cultivator and planter	607,364	July 12	1360	290	84	280
Green, Charles E., *et al.* (See Fraser, Ethelbert M., assignor.)						
Green, Charles M., Highland Park, Ill. Machine for driving nails	611,214	Sept. 20	1930	445, 446, 447	84	1847
Green, Edward, Wakefield, England. Heating apparatus	610,134	Aug. 30	3597	894, 895	84	1417
Green, George I., Petaluma, Cal. Automatic fire-kindler	610,986	Sept. 20	1521	349	84	1709
Green, Henry, Hartford, Conn. X-ray apparatus	607,233	July 12	1128	241, 242	84	234
Green, John L., *et al.* (See Miller, John F., assignor.)						
Green, Peyton B., Wytheville, Va. Self-closing gate	609,668	Aug. 23	2806	654	84	1247
Green, Pleasant N. (See Fowler and Green.)						
Green, Robert G. (See Murphey, Frank P., assignor.)						
Green, Robert G., *et al.* (See Johnston, John S., assignor.)						
Green, William H., Elizabeth, N. J. Sash-lift	610,135	Aug. 30	3598	895	84	1417
Greene, Francis V., Philadelphia, Pa. Sash-fastener	610,739	Sept. 13	1070	245	84	1665
Greene, Leon W., Brooklyn, Mich. Wire-fence lock	611,362	Sept. 27	2239	517	84	1924
Greene, Wallace. (See Williams, William E., assignor.)						
Greener, William W. (See Thompson, Joseph D. and W., assignors.)						
Greenerd, Robert C., Boston, Mass. Apparatus for handling coal	609,020	Aug. 16	1587	378	84	995
Greenidge, Vivian, Newton, Mass. Collar-adjuster	609,932	Aug. 30	3249	759	84	1347
Greenig, Joseph B., Philadelphia, Pa. Apparatus for melting snow	610,180	Sept. 6	52	12	84	1451
Greenleaf, Latham W., assignor of one-half to J. C. Couper, Terre Haute, Ind. Wheel-wright-machine	608,452	Aug. 2	504	113, 114	84	756
Greenleaf, Silas N., Seattle, and H. Barker, Hoquiam, Wash. Chart-table	609,669	Aug. 23	2809	654	84	1247
Greenlee Brothers & Company. (See Lattimore, Daniel J., assignor.)						
Greenwald, Louis. (See Benson and Greenwald.)						
Greenwell, Charles H., Indianapolis, Ind. Combination-horseshoe	610,965	Sept. 20	1475	337	84	1761
Greenwood, Daniel R., *et al.* (See Greenwood, John T., assignor.)						
Greenwood, Horace T., *et al.* (See Greenwood, John T., assignor.)						
Greenwood, John, Rochester, N. Y. Lubricator	611,475	Sept. 27	2459	566	84	1965
Greenwood, John T., assignor to himself, D. R. and H. T. Greenwood, and W. Bault, Philadelphia, Pa. Mercerizing apparatus	608,194	Aug. 2	51	12	84	665
Gregory, Fred L., Chicago, Ill. Panoramic camera	611,010	Sept. 20	1559	359	84	1777
Gregory, George W., *et al.* (See Cousens, Alfred C., assignor.)						
Gregory, John F., St. John, Canada. Support for type-writers or the like	606,889	July 5	462	99	84	91
Gregory, Joseph, New York, N. Y. Lamp-burner	608,284	Aug. 2	198	47	84	694
Gregson-Ellis, Richard G., *et al.* (See Jones, Robert O., assignor.)						
Gregson-Ellis, William S., *et al.* (See Jones, Robert O., assignor.)						
Grempler & Hermann. (See Hermann, Johann E., assignor.)						
Gresty, John E., Huddersfield, England. Metal tube	607,083	July 12	720	153	84	161
Griebel, Andrew, Cleveland, Ohio. Barrel-scrubbing machine	611,576	Sept. 27	2644	610	84	2001
Griffin, Alvah M., assignor to Griffin Gas Company, Marysville, Kans. Acetylene-gas generator	611,577	Sept. 27	2645	610	84	2001
Griffin Gas Company. (See Griffin, Alvah M., assignor.)						
Griffin, Herbert, *et al.* (See Russell, William, assignor.)						
Griffin, James, Leominster, Mass. Heel for footwear	611,035	Sept. 20	1599	367	84	1784
Griffin, Michael J., and P. W. Hogan, Island Pond, Vt. Car	610,442	Sept. 6	562	124	84	1546
Griffin, Michael J., and P. W. Hogan, Island Pond, Vt. Opening or closing device for fire-box doors	610,443	Sept. 6	564	124	84	1547
Griffith, Edward A. (See Quidas, Frederick W., assignor.)						
Griffith, Ethelbert S., Toledo, Ohio. Vapor-generating and heating apparatus	611,198	Sept. 20	1804	437, 438	84	1841
Griffith, James P., Johnstown, Pa. Coat-lifter	609,427	Aug. 23	2348	554	84	1160
Griffith, Robert, Elizabeth, Pa. Sash-fastener	609,428	Aug. 23	2350	554	84	1160
Griffith, Thomas R., Pittston, Pa. Coal-crusher	610,136	Aug. 30	3599	896	84	1417
Grim, William D., Venus, Nebr. Transplanter	610,625	Sept. 13	888	203	84	1628
Grimmel, John G., Chicago, Ill. Spring-scale	606,518	Aug. 2	622	140	84	778
Grinsfelder, Joseph R., Spokane, Wash. Cigar-box attachment	610,807	Sept. 13	1203	277	84	1692
Griscom, Walter, Philadelphia, Pa. Scraper for sieves	608,089	July 26	2815	599	84	600
Grist, Ebenezer, Spielerville, Ark. Gate	608,670	Aug. 9	908	208	84	854
Groebli, Joseph A., assignor to Kursheedt Manufacturing Company, New York, N. Y. Jacquard mechanism for embroidering-machines	607,234	July 12	1133	242	84	234
Groebli, Joseph A., assignor to Kursheedt Manufacturing Company, New York, N. Y. Embroidering-machine	607,848	July 26	2450	520	84	528
Groebli, Joseph A., assignor to Kursheedt Manufacturing Company, New York, N. Y. Festoon apparatus	609,429	Aug. 23	2351	554	84	1161
Grohmann, Carl L. (See Harper and Grohmann.)						
Grohmann, Carl L., Hartford, Conn. Tail-stock for milling-machines	610,677	Sept. 13	965	223	84	1644
Grootenboer, Huibert, Paterson, N. J. Car-fender-supporting means	606,965	July 5	566	125	84	112
Gropley, Frank M., and E. H. Peters, Cincinnati, Ohio. Sprayer	608,391	Aug. 2	399	88	84	734
Grosheim, John G., and G. L. Seaman, Cincinnati, Ohio. Switching apparatus for street-cars	611,449	Sept. 27	2409	553	84	1955
Grossman, Lorenz S. (See Noack and Grossman.)						
Grothier, John W., Sackett's Harbor, N. Y. Delivery-sheet holder	607,084	July 12	720	154	84	161

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Grotpeter, Ernest C., St. Louis, Mo. Combined clothes-rack, ironing-board support, and receptacle	611,476	Sept. 27	2461	566	84	1965
Groupe, Andrew V., Moore, assignor to J. L. Branson, Philadelphia, Pa. Knitting-machine	608,040	July 26	2816	599 600	84	600
	609,342	Aug. 16	2198	.....	84	1112
Grove, Edwin W., St. Louis Mo. Preparing medicinal compounds	608,453	Aug. 2	508	114	84	756
Grove, Frank G., and F. E. Stover, Luray, Va. Folding umbrella	606,711	July 5	138	29	84	29
Grover, Charles, Kansas City, Mo. Trolley-head	609,186	Aug. 16	1897	451	84	1050
Grubb, William I., Pottstown, Pa. Bottom bracket for bicycles	611,118	Sept. 20	1762	404	84	1815
Grube, Aaron C., Los Angeles, Cal., assignor of one-half to W. J. Sofield, Peoria, Ill. Pop-corn press	611,450	Sept. 27	2411	553	84	1956
Gruver, George F., Covington, Ky. Tripartite game-board	608,598	Aug. 9	768	177	84	827
Guarantor Electric Company. (See Ashley, Ralph, assignor.) (Reissue.)						
Guarino, Domenico, New York, N. Y. Car-fender	609,430	Aug. 23	2352	554	84	1161
Guattari, Carlo, assignor to New Motive Power Syndicate, Limited, London, England. Generation of motive power						
Guény, Joseph. (See Moulard and Guény.)						
Guerrero, Jorge, and J. Ungemach, Buenos Ayres, Argentina. Dry-kiln	610,444	Sept. 6	505	124 125	84	1547
Guild, George, assignor to Bertsch & Co., Cambridge City, Ind. Hydraulic shearing-machine	608,195	Aug. 2	53	13	84	665
Guild, George, assignor to Bertsch & Co., Cambridge City, Ind. Bending-machine	610,385	Sept. 13	822	188	84	1213
Guild, George, and C. A. Bertsch, assignors to Bertsch & Co., Cambridge City, Ind. Punching and shearing machine	610,534	Sept. 13	819	187 188	84	1612
Guiles, Daniel W., Portland, Oreg. Bicycle-gear	607,658	July 19	2087	436	84	440
Guiles, James A., Hadley, Mich. Anvil attachment	610,137	Aug. 30	3601	836	84	1417
Guiley, Milton M., Hartville, Ohio. Hearse attachment	608,519	Aug. 2	625	140	84	779
Guilford, Charles C., Boston, Mass. Musical notation	608,771	Aug. 9	1073	247	84	885
Guilleaume, Theodore, Mülheim-on-the-Rhine, Germany. Manufacture of flexible metallic tubes, &c	610,740	Sept. 13	1071	246	84	1665
Guillemet, François L., San Francisco, Cal., assignor to Westinghouse Air Brake Company, Wilmerding, Pa. Air-brake	606,712	July 5	141	29	84	29
Guillemet, François L., San Francisco, Cal., assignor to Westinghouse Air Brake Company, Wilmerding, Pa. Air-brake	608,599	Aug. 9	770	177	84	828
Guillemet, François L., San Francisco. Cal., assignor to Westinghouse Air Brake Company, Wilmerding, Pa. Air-brake	608,600	Aug. 9	773	177	84	828
Gulick, Thomas H., St. Louis, Mo. Brush	606,713	July 5	143	30	84	30
Gulland, Charles, Pittsburg, Pa. Valve	608,454	Aug. 2	511	115	84	757
Gunn, Alexander. (See Henry and Gunn.)						
Guocchi, Eugenio. (See Kost and Guocchi.)						
Guthrie, Alexander. (See Guthrie, Thomas and A.)						
Guthrie, George N., Gallatin, Tenn. Fruit-juice extractor	611,477	Sept. 27	2462	566 567	84	1966
Guthrie, Thomas and A., South Shields, England. Apparatus for making pneumatic tires	607,991	July 26	2709	578	84	577
Gutmann, Ludwig, Peoria, Ill. Alternating-current dynamo	606,863	July 5	428	92	84	85
Gwinner, William H., Easton, Pa., assignor of one-fourth to C. J. Dull, Phillipsburg, N. J. Combined meat saw, tenderer, and chopper	608,455	Aug. 2	512	115	84	757
Gwynn, Edward F., Delaware, Ohio. Device for removing scale from boiler-tubes	607,168	July 12	1003	218	84	211
Gwynn, Edward F., Delaware, Ohio. Boiler-tube cleaner	607,169	July 12	1004	218	84	211
H. Franke Steel Range Company. (See Erben, John, assignor.)						
H. H. Palmer Company. (See Yates, Alexander, assignor.)						
H. W. Butterworth & Sons Company. (See Gadd, Charles J., assignor.)						
Haas, Charles. (See McGee, Augustus M., assignor.)						
Haberman, Frederick. (See Regan, Cornelius, assignor.)						
Hack, Alfred F., Melbourne, Victoria. Arch for furnaces of locomotives	611,169	Sept. 20	1852	427	84	1833
Hacker, Georg, Cannonsburg, Pa. Broom-case	608,671	Aug. 9	909	208	84	855
Hadaway, John B., Brockton, Mass. Stitch separating and indenting machine	609,100	Aug. 16	1756	418 419	84	1024
Hadlich, Henry J. (See Wagner, George, assignor.)						
Haegelin, Richard A., St. Joseph, Mo. Combined pencil-holder, spectacle-case, &c	609,290	Aug. 16	1995	473	84	1072
Haeseler, Charles H. (See Keller and Haeseler.)						
Hager, Charles A., *et al.* (See Flickinger, George, assignor.)						
Hahn, Charles H., and C. E. Salewsky, New Haven, Conn. Supporting-bracket	609,933	Aug. 30	3251	759	84	1347
Hahn, Edward, Columbus, Ohio. Device for forming tufted upholstering	610,741	Sept. 13	1072	246	84	1665
Haigh, Armitage, Huddersfield, England, and A. Borios, Vevey, Switzerland. Carding-engine	610,188	Aug. 30	3602	836	84	1418
Haigh, Henry B., assignor to Iron Clad Manufacturing Company, New York, N. Y. Milk-can	607,433	July 19	1501	319	84	328
Hain, Ralph B., assignor to Monitor Vapor Engine and Power Company, Grand Rapids, Mich. Igniter for gas-engines	607,992	July 26	2711	578	84	578
Haines Electric Company. (See Haines, John H. J., assignor.)						
Haines, John H. J., New York, N. Y., assignor to Haines Electric Company, Jersey City, N. J. Electric-arc lamp	607,589	July 19	1957	406	84	417
	609,670	Aug. 23	2808	655	84	1247
Haines, Samuel A., Garrett, Tex. Wrench	607,170	July 12	1006	219	84	212
Halbert, William G., Westville, Ill. Mining-machine	606,714	July 5	144	30	84	30
Haldeman, B. C., *et al.* (See Barrett, Albert, assignor.)						
Halden, Frank E., Winthrop, Minn. Display-cabinet	606,924	July 5	513	112	84	102
Hale, Caleb D., Alpha, Md. Music-book holder	606,864	July 5	431	92	84	85
Hale, Orlando C. (See Huff and Hale.)						
Halfpenny, Martin, assignor to R. D. Scott, Pontiac, Mich. Fifth-wheel	611,429	Sept. 27	2375	546	84	1948
Hall, Alexander W., New York, N. Y. Bicycle	607,365	July 12	1363	291	84	280
Hall, Ezra M., assignor of one-half to F. A. and V. A. Bigelow, La Crosse, Wis. Combined cigar-tip cutter and match-safe	607,115	July 12	901	195	84	193
Hall, Fred J., Wallingford, Conn. Tool-handle	610,399	Sept. 6	494	108	84	1534
Hall, George, Richmond, Va. Door-holder	611,249	Sept. 27	2009	463	84	1882
Hall, Royal L., Otsego, Wis. Brush	609,200	Aug. 16	1922	.....	84	1056
Hall, William A., Bellows Falls, Vt. Waterproofing compound	611,119	Sept. 20	1764	404	84	1816
Hall, William H., assignor of one-half to J. Tozer, Newton, N. J. Lacer	609,804	Aug. 30	3028	709	84	1303
Hallett, Samuel I., Aspen, Colo., assignor of one-half to D. M. Hyman, Cincinnati, Ohio. Ore-concentrator	610,353	Sept. 6	407	87	84	1518
Hallidie, Andrew S., San Francisco, Cal. Grip-pulley	606,781	July 5	282	58	84	56
Hallwood Cash Register Company. (See McCormick, John H., assignor.)						
Halperin, Robert L., Chicago, Ill. Dental jaw-brace						
Ham, J. D., *et al.* (See James, Will S., assignor.)						
Ham, John, *et al.* (See Hanson, Joseph, assignor.)						
Ham, M. M. (See Allen, Jot S., assignor.)	607,366	July 12	1366	291	84	281
Hameetman, Cornelius, Paterson, N. J. Clothes-stick						

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Hamilton, John C., *et al.* (See Miller, John F., assignor.)						
Hamilton, William M., Clinton, Ind. Auger-twisting machine	611,120	Sept. 20	1765	404, 405	84	1816
Hammarstrom, Olaf, Worcester, Mass. Clothes-washing machine	608,257	Aug. 2	151	38	84	688
Hammell, James, Jr. (See Platt, Patterson, and Hammell.)						
Hammer, Conrad, Buffalo, N. Y. Tap-hole bushing	608,196	Aug. 2	54	13	84	665
Hammesfahr, Ernst, Foche, Germany. Pocket-corkscrew	610,530	Sept. 13	726	164	84	1595
Hammond, John. Buena Vista, Ohio. Safety-bridle	608,672	Aug. 9	910	209	84	855
Hammond, Robert A., *et al.* (See Hammond, William E., assignor.)						
Hammond, Robert A., Sandwich, Mass. Wire rope or hawser	608,673	Aug. 9	911	209	84	855
Hammond, W. R. (See Rochwite, August, assignor.)						
Hammond, William E., Onset Bay, assignor of two-thirds to R. A. Hammond and G. T. McLaughlin, Sandwich, Mass. Locking device for steering apparatus	610,485	Sept. 6	642	144	84	1561
Hampson, William, London, England. Refrigerating apparatus	607,849	July 26	2453	521	84	528
Hampton, Calvin G., Ryde, Cal. Draft-regulator for plows	609,187	Aug. 16	1898	451	84	1051
Hanckel, J. E. M. (See Wentworth, Charles C., assignor.)						
Hancock, Eddie W., Epping, Ga. Car-axle lubricator	608,329	Aug. 2	296	65	84	714
Hancock Inspirator Company. (See Park, William R., assignor.)						
Hancock Inspirator Company. (See Park and Williston, assignors.)						
Hancock, Layton Y. (See Connett, Matthew F., assignor.)						
Handover, Charles M., New York, N. Y. Clothing-protector for bicycles	609,508	Aug. 23	2505	586	84	1189
Hanes, Erastus W., assignor to W. J. Payne, Candor, N. Y. Bicycle-brake	609,742	Aug. 23	2920	683	84	1268
Hanger, Jacob A., Staunton, Va. Churn	606,986	July 5	569	125	84	113
Hanger, Jacob A., Staunton, Va. Stovepipe attachment	606,987	July 5	572	125	84	114
Hannan, John R., assignor of two-thirds to J. and J. A. Hart, Middlesbrough, England. Liquid-sealed valve for air and gases	607,035	July 12	721	154, 155	84	161
Hanner, Martin, Duisburg, Germany. Cut-off-valve-regulating mechanism	610,047	Aug. 30	3461	802	84	1388
Hannon, Samuel L., and M. A. Jordan, Washington, D. C. Respirator	611,478	Sept. 27	2403	567	84	1906
Hannum, Henry A., Cazenovia, N. Y. Green-bone cutter	610,531	Sept. 13	727	165	84	1595
Hano, Philip. (See Turck, Frederick M., assignor.)						
Hansbrough, John W. (See Bowles and Hansbrough.)						
Hanse, William F., assignor to J. T. Perkins Company, New York, N. Y. Oil-press mat	611,316	Sept. 27	2147	496	84	1908
Hansen, Hans P. (See Morrison and Hansen.)						
Hansen, Morton B. (See Schiöunning and Hansen.)						
Hansen, Peter H., Copenhagen, Denmark. Composition containing casein for electric insulating or other purposes	610,626	Sept. 13	889	.....	84	1628
Hansen, William, assignor to himself and A. Nydegger, Chicago, Ill. Car-truck	608,983	Aug. 9	1499	355	84	964
Hanson, Joseph, assignor of three-fourths to J. Ham, C. E. Richards, and J. S. Harbour, Crystal Falls, Mich. Lock for dumping-car doors	609,021	Aug. 16	1591	378, 379	84	995
Hanson, Robert. (See Carr, Lawrence P., assignor.)						
Hanson, Victor, Richmond, assignor of one-half to J. G. Whitlock, Hanover county, Va. Sand-pump	610,325	Sept. 6	354	75	84	1509
Hanson, Winfield E., assignor of one-half to O. M. Shaw, Boston, Mass. Dental plugger	608,984	Aug. 9	1500	355	84	964
Hara, Zipporah G., Bayonne, N. J. Skirt	609,023	Aug. 16	1594	379	84	996
Harbison, Alexander, *et al.* (See Farnam, Charles N., assignor.)						
Harbour, James S., *et al.* (See Hanson, Joseph, assignor.)						
Hardart, Frank. (See Anderson, John, assignor.)						
Hardman, James, Jr., Belleville, N. J. Water bag or bottle	607,235	July 12	1136	243	84	235
Hardman, James, Jr., Belleville, N. J. Water bag or bottle	607,236	July 12	1138	243	84	236
Hardman, Richard B., Bury, England. Apparatus for extracting oil	607,367	July 12	1367	291, 292	84	281
Hardwick, Harry, Philadelphia, Pa. Two-ply ingrain carpet fabric	610,742	Sept. 13	1073	246	84	1665
Hardy, Frederick, assignor of one-half to J. H. Means, Birmingham, Ala. Casting apparatus	609,671	Aug. 23	2809	655, 656	84	1247
Hardy, Hugh, Hawarden, Iowa. Car-mover	609,541	Aug. 23	2557	598	84	1198
Hardy, John J., Columbia, Pa. Hydrant	609,805	Aug. 30	3031	709, 710	84	1303
Hariman, George V., Denison, assignor of one-third to O. P. W. Michael, Gainesville, Tex. Railway-rail	609,024	Aug. 16	1595	379	84	996
Harling, Carl E., New York, N. Y. Nut-lock	611,479	Sept. 27	2464	567	84	1906
Harmatta, Johann, Szepesváralja, Austria-Hungary. Metal barrel	608,772	Aug. 9	1075	247	84	885
Harmatta, Johann, Szepesváralja, Austria-Hungary. Apparatus for forming metal casks	610,532	Sept. 13	729	165, 166	84	1595
Harmon, Arthur A., *et al.* (See Adde, Charles A., assignor.)						
Harmon, Nathaniel B., New York, N. Y. Pneumatic tire	610,233	Sept. 6	175	39	84	1475
Harmon, Thomas H., *et al.* (See Adde, Charles A., assignor.)						
Harms, Henry. (See Danckwardt, Paul, assignor.)						
Harnell, Charles H., *et al.* (See Baker, Cyrus N., assignor.)						
Harper, Daniel W., assignor of one-half to R. L. Matthews, Memphis, Tenn. Dipper	609,431	Aug. 23	2352	555	84	1161
Harper, Lewis E., and C. L. Grohmann, assignors to Pratt & Whitney Company, Hartford, Conn. Ball-bearing	608,854	Aug. 9	1262	294	84	919
Harriman, Moses C., Cheboygan, Mich. Photographic-background carrier	610,808	Sept. 13	1204	277	84	1692
Harrington, Amos. (See Fletcher, Robert, assignor.)						
Harrington, Emma A., *et al.* (See Woodward, Walter J., assignor.)						
Harrington, John, Ryde, Isle of Wight, England. Back-pedaling brake	610,649	Sept. 13	923	212, 213	84	1635
Harrington, Samuel H., New York, N. Y. Electric bond for railway-rails	608,258	Aug. 2	152	38	84	684
Harrington, Sterling P., Farley, Mo. Gate	609,806	Aug. 30	3033	710	84	1304
Harris, Charles E., Ellwood City, Pa. Combined switch and signal mechanism	610,809	Sept. 13	1206	277, 278	84	1692
Harris, Charles R., Williamsport, Pa. Bicycle	609,581	Aug. 23	2628	615	84	1212
Harris, Elmo G., Rolla, Mo. Electric controlling apparatus for switch-valves	607,086	July 12	723	155	84	161
Harris, George H., Wadebridge, England. Hydraulic ram	606,715	July 5	146	30, 31	84	30
Harris, Louis G., Toronto, Canada. Process of and composition for making gas	609,582	Aug. 23	2630	615	84	1212
Harris, Max, New York, N. Y., assignor to Manhattan General Construction Company, of New York. Electric-arc lamp	610,898	Sept. 20	1364	312	84	1740
Harris, Rutledge, Cedar Falls, Iowa. Rod-guide for dowel-machines	607,087	July 12	725	156	84	162
Harris, Samuel, Twinsburg, Ohio, assignor to Steel Motor Company, of Ohio. Electric controller	611,215	Sept. 20	1939	447	84	1849
Harris, W. W. (See Pearson, Swain, assignor.)						
Harris, William E., Niles, Ohio. Apparatus for treating sheet-iron and tin-plate	608,119	July 26	2933	698, 699	84	694
Harris, William G., Newton Abbot, assignor of one-half to F. Pertwee, London, England. Adjusting device for ball-bearings	608,041	July 26	2819	600	84	601
Harris, Zera W., Champaign, Ill. Mold for ice-cream, confections, &c.	609,085	Aug. 16	1596	380	84	996
Harrison, Arthur W., Washington, D. C. Luggage-carrier	611,216	Sept. 20	1942	448	84	1849

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Harrison, Joseph B., Stockport, England. Manufacture of felt hats	610,627	Sept. 13	890	203, 204	84	1628
Harrison, Thomas. (See Papps, John H. and L. F., assignors.)						
Harrison, William F., assignor to Pratt & Cady Company, Hartford, Conn. Throttle-valve.	608,197	Aug. 2	56	13	84	666
Harrison, William H. (See Matthias and Harrison.)						
Harrity, Michael P., Clinton, Mass. Bicycle-gearing	609,344	Aug. 16	2202	520	84	1113
Harryman, Archibald H., Louisville, Ky. Horse-hitch and brake	610,678	Sept. 13	967	223, 224	84	1644
Harshner, Darius L., Etna Green, Ind. Bicycle-gear	608,674	Aug. 9	912	209	84	855
Harster, Georg, Speyer, Germany. Preventing closing of cut flowers of the order Nymphæaceæ	607,038	July 12	726	.....	84	162
Hart, Charles W. (See Worst and Hart.)						
Hart, George B., Paducah, Ky. Singletree-hook	609,022	Aug. 16	1593	379	84	996
Hart, Hubert C., Unionville, Conn. Wrench	609,146	Aug. 16	1832	434	84	1039
Hart, James A., *et al.* (See Hannan, John R., assignor.)						
Hart, John, *et al.* (See Hannan, John R., assignor.)						
Hart, John A., Blackburn, England. Apparatus for ventilating	611,480	Sept. 27	2466	567, 568, 569	84	1966
Hart, Orlando W., Fall River, Mass. Police-patrol system	606,865	July 5	431	92	84	85
Hartley, Algernon G. (See Collins, Reuben J. C., assignor.)						
Hartman, John M., Philadelphia, Pa. Notch-gun for blast-furnaces	610,302	Sept. 6	310	67	84	1502
Hartman, Joseph E., Cleveland, Ohio. Door-hanger	606,659	July 5	40	10	84	10
Hartung, Charles C., assignor to E. Walsh, Jr., St. Louis, Mo. Machine for rolling wire-glass	610,586	Sept. 13	824	189	84	1614
Harty, John. (See Maycock, William A., assignor.)						
Harvey, Charles, South Yardley, England. Machinery for making joints between parts of cycle or like framings	609,343	Aug. 16	2199	519, 520	84	1112
Harvey, Charles J., Kidderminster, England. Carpet-sweeper	609,145	Aug. 16	1832	434	84	1039
Harvey, J. L., *et al.* (See James, Will S., assignor.)						
Harvey, James E., Readfield, assignor of one-half to F. L. Brande, Starke, Me. Grinding-machine	608,285	Aug. 2	201	47	84	695
Harvison, Robert B. (See Heston and Harvison.)						
Haskell, Broderick, Grand Rapids, Mich. Brake-rod	608,392	Aug. 2	400	88	84	735
Haskell, Broderick, Grand Rapids, Mich. Carpet-sweeper	610,603	Sept. 13	854	196	84	1621
Haskins, Caryl D., Newton, Mass., assignor to General Electric Company, of New York. Electric meter	610,899	Sept. 20	1365	312	84	1740
Hassler, Ferdinand A., Santa Ana, Cal. Word-register for type-writing machines	610,181	Sept. 6	53	12	84	1451
Hastings, Charles H., Chicago, Ill. Note-book	608,286	Aug. 2	208	48	84	695
Haszinger, George E., Vicksburg, Miss. Tack or nail hammer	609,672	Aug. 23	2811	656	84	1248
Hatch, James, San Francisco, Cal. Shaping-cutter	607,394	July 12	1417	303	84	291
Hatfield, Charles B., Utica, assignor, by mesne assignments, to Q. W. and I. E. Booth, Rochester, N. Y. Beading-machine	607,637	July 19	2043	424	84	433
Hathaway, Edward, Marblehead, Mass. Saddle-support for bicycles	609,964	Aug. 30	3318	772	84	1360
Hathorn, George H., Bangor, Me. Machine for grinding and polishing	607,368	July 12	1367	292	84	281
Hathorn, George H., assignor to Dirigo Ball Manufacturing Company, Bangor, Me. Machine for grinding and polishing	607,369	July 12	1369	292, 293	84	282
Hathorn, George H., assignor to Dirigo Ball Manufacturing Company, Bangor, Me. Swaging-machine	609,201	Aug. 16	1924	457, 458	84	1056
Hathorn, George H., assignor to Dirigo Ball Manufacturing Company, Bangor, Me. Swaging-machine	609,202	Aug. 16	1927	458	84	1056
Hatmaker, James R. (See Hennig, Charles T., assignor.)						
Hauff, Firm of J. (See Bogisch, Alfred, assignor.)						
Hausman, Ward B., Philadelphia, Pa. Tobacco-pipe cleaner	606,716	July 5	147	31	84	31
Hawes, Herbert E., assignor of one-fourth to T. C. Byrnes, New York, N. Y. Sewing-machine	610,486	Sept. 6	643	144	84	1562
Hawkins, Frank W., assignor to Vickers Sons & Co., Limited, Sheffield, England. Apparatus for charging heavy breech-loading guns	609,345	Aug. 16	2203	521	84	1113
Hawkins, Joseph. (See Moore and Thurman, assignors.)						
Hawley, M. J., and J. B. Clot, San Francisco, Cal. Machine for cutting marble or other stone	610,810	Sept. 13	1208	278	84	1693
Haycock, Edward B. (See Haycock, Samuel H. and E. B.)						
Haycock, Samuel H., Iroquois, and E. B. Haycock, Ottawa, Canada. Apparatus for mining in frozen ground	610,048	Aug. 30	3462	803	84	1389
Hayden, Martha P., Joliet, Ill. Rubber flower-holder	607,411	July 12	1453	308	84	296
Hayden, Zerah L., Cedar Rapids, Iowa. Vaginal syringe	609,432	Aug. 23	2353	535	84	1161
Hayes, George, New York, N. Y. Wheel for vehicles	607,039	July 12	727	156	84	162
Hayes, George, New York, N. Y. Wheel for bicycles	609,542	Aug. 23	2558	599	84	1199
Hayes, George, New York, N. Y. Wheel for bicycles	610,743	Sept. 13	1074	247	84	1665
Haynes, Elwood, and E. Apperson, Kokomo, Ind. Motor-vehicle	607,116	July 12	902	196	84	193
Haynes, Thomas, Edna, Tex. Colter attachment for plows	607,743	July 19	2215	468	84	465
Hays, James T. and T. C., Emmetsburg, Md. Acetylene-gas-generating apparatus	609,673	Aug. 23	2815	656	84	1249
Hays, Thomas C. (See Hays, James T. and T. C.)						
Hazel, Peter H., assignor of one-half to B. H. Castleberry, Salem, Ark. Cattle-guard	608,426	Aug. 2	467	105	84	748
Hazelrigg, Albert W., Indianapolis, Ind. Fishing-reel	610,604	Sept. 13	855	196	84	1621
Hazelton, Asa, and C. H. Rigg, Middletown, Mo. Bouquet-holder	611,363	Sept. 27	2241	517	84	1925
Hazelton Boiler Company. (See Kennedy and Williamson, assignors.)						
Hazlet, John D., Cincinnati, Ohio. Taper attachment for lathes	607,744	July 19	2216	469	84	465
Head, Frederick A., and T. L. Regester, assignors to Rock Island Plow Company, Rock Island, Ill. Cultivator	611,036	Sept. 20	1600	367	84	1784
Healy, William P. (See Rosback, Frederick P., assignor.)						
Heap, Arthur C. (See Elphinstone and Heap.)						
Hearn, Walter H., *et al.* (See Baker, Cyrus N., assignor.)						
Hearson, Thomas A., London, England. Fastening for cranks	609,433	Aug. 23	2354	555	84	1162
Heath, Frederick H., Tacoma, Wash. Suction-dredge	607,237	July 12	1139	243	84	236
Heath, Frederick H., Tacoma, Wash. Joint for compasses, &c	610,354	Sept. 6	410	87	84	1518
Heath, Heber L., assignor to H. and L. Block, San Francisco, Cal. Glove	611,250	Sept. 27	2010	463	84	1882
Heath, Mark A., assignor to American Cotton-Bale Company, Providence, R. I. Metallic bale-covering	608,042	July 26	2820	600	84	601
Heath-Quimby Company. (See Anderson, Charles, assignor.)						
Heaton, John S., Philadelphia, Pa. Garment-hanger	609,743	Aug. 23	2921	668	84	1269
Heaton, Rolla, Marcelline, Ill. Post-driver	610,811	Sept. 13	1210	278, 279	84	1693
Hebdon Machine and Cloth Finishing Company. (See Hebdon, William, assignor.)						
Hebdon, William, Boston, Mass., assignor to Hebdon Machine and Cloth Finishing Company, Portland, Me. Machine for pressing cloth or fabric	607,796	July 19	2312	489	84	488

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Heberger, John F., Cincinnati, Ohio. Washing-machine	606,782	July 5	283	58	84	56
Hecht, Albert S., Chicago, Ill. Parcel-elevator	607,850	July 26	2455	521	84	529
Heckaman, Benjamin F., Bremer, Ind. Automatic watering-trough	610,707	Sept. 13	1021	236	84	1656
Hedderick, Edward F. and L. J., Flora, Ind. Washboard	610,708	Sept. 13	1022	236	84	1656
Hedderick, Leander J. (See Hedderick, Edward F. and L. J.)						
Hedgeland, Frederick W., Chicago, Ill. Acetylene bicycle-lamp	608,403	Aug. 2	424	93	84	740
Heeren, William, Pittsburg, Pa. Sign	608,963	Aug. 9	1456	345	84	955
Hefel, Toney C., assignor of one-half to C. H. Russey, Muncie, Ind. Filtering plant for waterworks	611,317	Sept. 27	2148	496, 497	84	1908
Heffner, S. Anna. (See Heffner, William E., assignor.)						
Heffner, William, Benton Harbor, Mich. Nut-wrench	608,120	July 26	2936	629	84	625
Heffner, William E., assignor to S. A. Heffner, Canton, Ohio. Store-service ladder	610,234	Sept. 6	176	39	84	1476
Hefley, Jefferson D., Cameron, Tex. Advertising device	608,855	Aug. 9	1263	294	84	919
Hegeler, Herman, La Salle, Ill. Apparatus for applying grease to sheet-zinc	608,675	Aug. 9	913	210	84	856
Heil, Albrecht, Fränkisch Crumbach, Germany. Galvanic cell	607,590	July 19	1960	407	84	417
Heimann, Johann, Cologne-Bayenthal, Germany. Means for inflating pneumatic tires	610,966	Sept. 20	1477	337	84	1761
Heine, Arthur, Leipsic, assignor to I. T. Müller, Dresden, Germany. Striking apparatus for string instruments	607,434	July 19	1503	320	84	323
Heine, August, and G. S. Mack, Silver Creek, N. Y.; said Mack assignor to said Heine. Confectioner's separating and filling machine	609,583	Aug. 23	2631	615, 616	84	1213
Heineke, Martin. (See Sattley and Heineke.)						
Heineken, Theodore S., Burlington, N. J. Clamping and pivot-supporting device	606,866	July 5	434	93	84	85
Heins, Charles L. (See Patten and Maver, assignors.)						
Heins, John J., New York, N. Y. Can or receptacle for fruit	606,838	July 5	386	82	84	77
Heinz, William H., Dayton, Ohio. Scrubber	607,040	July 12	729	157	84	162
Heinzman, George, New York, N. Y. Head for stringed instruments	608,856	Aug. 9	1264	294	84	919
Heiser, Michael, Euclid, Ohio. Heel-plate for men's shoes	607,686	July 19	2124	445	84	447
Heisey, John H., Monticello, Iowa. Wire-stretcher	606,760	July 5	233	50	84	47
Held, August S., assignor to Stover Manufacturing Company, Freeport, Ill. Detachable hinge	606,925	July 5	514	113	84	102
	610,533	Sept. 13	731	166, 167	84	1595
Heldreth, Joseph W., Camp, Va. Washing-machine	610,534	Sept. 13	734	167	84	1596
Helios Carbide Specialty Company. (See Wells, Henry W., assignor.)						
Hellier, Henry G., London, England. Game	610,802	Sept. 13	1296	298	84	1712
Helling, Henry, Denver, Colo. Steam-trap	610,900	Sept. 20	1366	313	84	1740
Helton, John W., Waterloo, Iowa, assignor to L. E. Eickelberg. Handsaw						
Hendershott, Elward L. (See Arner and Hendershott.)						
Henderson, Archibald, *et al.* (See Russell, William, assignor.)						
Henderson, John C., New York, N. Y. Gas heating and expanding device	606,660	July 5	42	10	84	11
Henderson, John C., New York, N. Y. Heating or cooling apparatus	606,661	July 5	43	10	84	11
Henderson, John C., New York, N. Y. Pipe-joint packing	606,662	July 5	44	10	84	11
Henderson, John C., New York, N. Y. Apparatus for refining oils	606,783	July 5	285	58	84	57
Henderson, Mary E., Columbia, Mo. Can-top	610,049	Aug. 30	3464	803	84	1389
Hendricks, John J., *et al.* (See Jacklin, Thomas G., assignor.)						
Hendrickson, Loren E., and C. H. Read, assignors to said Read, C. L. Thomas, and O. L. Sturtevant, Ogden, Iowa. Dental tool	610,987	Sept. 20	1523	350	84	1769
Hendryx, Andrew B., assignor to A. B. Hendryx Company, New Haven, Conn. Propagation of oysters	611,199	Sept. 20	1902	438	84	1842
Henigan, John M., assignor of one-half to C. W. Watt, Uvalde, Tex. Rail-clamp	611,481	Sept. 27	2469	569	84	1967
Henion, Wakeman B., Chicago, Ill. Valve-seat	610,744	Sept. 13	1075	247	84	1666
Henkelman, Charles K. (See Courtney, Cyrus W., assignor.)						
Henneberg, Gustav, and F. Bergmann, New York, N. Y. Sash-fastener	608,601	Aug. 9	775	178	84	828
Hennessy, James F., assignor to Winona Wagon Company, Winona, Minn. Vehicle running-gear	609,276	Aug. 16	2087	495	84	1090
Hennessy, James F., assignor to Winona Wagon Company, Winona, Minn. Bolster-stool	610,050	Aug. 30	3465	803	84	1389
Hennessy, Thomas, Excelsior Springs, Mo. Apparatus for producing acetylene gas	608,985	Aug. 9	1502	356	84	964
Hennessy, Thomas, Excelsior Springs, assignor to American Incandescent Gas Company, Kansas City, Mo. Heating and ventilating system	606,717	July 5	148	31,32	84	31
Hennig, Charles T., Buffalo, assignor to J. R. Hatmaker, New York, N. Y. Means for utilizing fuel	609,744	Aug. 23	2922	683	84	1269
Henry Disston & Sons. (See Smith and Shaw, assignors.)						
Henry, James W., and A. Gunn, Wallace, Idaho. Grain-bagging machine	611,121	Sept. 20	1766	405, 406	84	1816
Henry, John C., Denver, Colo. Electric railway	606,663	July 5	45	11	84	11
Henry, John C., Denver, Colo. Electric railway	606,664	July 5	50	11	84	12
Henry, John C., Denver, Colo. Electric railway	606,990	July 5	613	133, 134	84	121
Henry, John C., Denver, Colo. Electric railway	606,991	July 5	616	134	84	122
Henry, John C., Denver, Colo. Electric railway	610,445	Sept. 6	566	125, 126	84	1547
Hensel Colladay Company. (See Poyet, John B., assignor.)						
Hensler, Joseph A., assignor to Common Sense Patenting Company, Akron, Colo. Monkey-wrench	608,520	Aug. 2	626	141	84	779
Hensler, Joseph A., Akron, Colo., assignor to Common Sense Patenting Company, of Colorado. Stopper-guard for bottles	610,535	Sept. 13	735	167	84	1596
Hepburn, Charles G., Sydney, New South Wales. Apparatus for treating oils or fats	610,812	Sept. 13	1212	279, 280	84	1694
Hepworth, Lewis. (See Graber and Hepworth.)						
Herald, Stephen, *et al.* (See Bowen, Shelby, assignor.)						
Herbener, John H., Northville, Mich. Chicken-brooder	608,043	July 26	2821	600, 601	84	601
Herbener, Max. (See Evinghaus and Herbener.)						
Herchert, Edwin J., Garnavillo, Iowa. Rotary engine	609,543	Aug. 23	2559	599	84	1199
Hercules Woodenware Company. (See Fisher and Reif, assignors.)						
Herfurth, William, New York, N. Y. Merry-go-round	611,482	Sept. 27	2470	569, 570	84	1967
Herhold & Sons, F. (See Herhold, William H., assignor.)						
Herhold, William H., assignor to F. Herhold & Sons, Chicago, Ill. Chair	611,251	Sept. 27	2011	464	84	1852
Hermann, Isaac A., Cleveland, Ohio. Watchman's time-recorder	610,756	Sept. 13	1106	252	84	1672
Hermann, Johann E., assignor to Grempler & Hermann, New York, N. Y. Metal-beater hammer	607,510	July 19	1811	376, 377	84	390
Hero Fruit Jar Company. (See Lamb, George B., assignor.)						
Herold, Carl. (See Herold, Josef and C.)						
Herold, Josef and C., assignors to Rundwebstuhlfabrik, Herold & Richards, Braun, Austria-Hungary. Circular loom	608,676	Aug. 9	915	210, 211	84	856

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Herpin, Edward P., Baltimore, Md. Device for converting motion	611,318	Sept. 27	2151	497	84	1909
Herr, Frank. (See Herr, Cunningham, and Herr.)						
Herr, George, W. Cunningham, and F. Herr, Atwater, Minn. Harrow	608,121	July 26	2087	629 630	84	625
Herr, Homer A., Philadelphia, Pa. Adding-machine	609,885	Aug. 30	3169	741 742	84	1331
Herren, Henry J., Watson, Mo. Elevator	610,901	Sept. 20	1367	313	84	1740
Herrett, Clarence J. (See McDonald, Frank, assignor.)						
Herz, Emanuel, Berlin, Germany. Heat-generating gas-burner	607,541	July 19	1869	388	84	401
Herzog, Eduard, Erlach, Austria-Hungary. Apparatus for applying cop-tubes to spindles	610,605	Sept. 13	857	196	84	1621
Hescox, Charles O. (See Leonard and Hescox.)						
Hess, Edward B., New York, and J. M. Stoughton, Yonkers, N. Y. Type-writing machine	610,400	Sept. 6	495	108 109	84	1534
Hess, Retta, and M. H. Curtiss, Warsaw, Ind. School waste-poke	611,122	Sept. 20	1771	406	84	1817
Hessel, Quintin R. (See Kuss, Henry F., assignor.)						
Hesseltine, Charles R. (See Columbus and Hesseltine.)						
Hester, Thomas N. (See Murray, Kenneth S., assignor.)						
Heston, Frank E., and R. B. Harvison, Rushland, Pa. Air-compressor	608,964	Aug. 9	1457	345	84	955
Heston, William, assignor, by mesne assignments, to Homestead Valve Manufacturing Company, Homestead, Pa. Valve	607,238	July 12	1141	243	84	236
Hetland, Torger R., Minneapolis, Minn. Milk-can cover	610,902	Sept. 20	1369	313	84	1741
Heusch, Anton, assignor of one-half to W. Zimmerman, Chicago, Ill. Twine-holder	609,934	Aug. 30	3252	759	84	1347
Heverly, Edward H., Centre Point, Iowa. Window-shelf	608,259	Aug. 2	155	38	84	685
Hevner, Peter, Philadelphia, Pa. Permanent way for railways	606,908	July 5	573	126	84	114
Hewett, Thomas, assignor of one-half to T. K. Bellis, London, England. Wheel for chain-gearing	609,346	Aug. 16	2204	521	84	1114
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company, of New York. Circuit-breaker for three-wire systems	610,903	Sept. 20	1370	314	84	1741
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company, of New York. Safety device for dynamo-electric machines	610,904	Sept. 20	1371	314	84	1741
Hewlett, Richard T., London, England. Milk-sterilizer	608,198	Aug. 2	58	14	84	666
Hewson, John, Waldwick, N. J. Propelling mechanism for boats	609,026	Aug. 16	1397	380	84	997
Hey, Robert H., Philadelphia, Pa. Woven fabric	610,051	Aug. 30	3466	804	84	1389
Heyman, Philip W. (See Sörensen, Sören P., assignor.)						
Heys, John J., assignor of one-half to M. V. Bresnahan, Lynn, Mass. Sole-molding machine	607,370	July 12	1372	293	84	282
Heywood Brothers & Wakefield Company. (See Collier and Rathburn, assignors.)						
Heywood, William. (See Armstrong and Heywood.)						
Hibbard, George E., Chicago, Ill. Sprinkler-head for automatic fire-extinguishers	608,677	Aug. 9	918	211	84	857
Hibbard, Maury W., assignor to R. Fitzgerald, Chicago, Ill. Device for actuating fluid-pressure brakes	610,052	Aug. 30	3467	804	84	1389
Hicks, Edwin J., Falls City, Nebr. Gate	608,330	Aug. 2	298	65	84	715
Hicks, George C., Boston, Mass. Stove-lining	607,928	July 26	2603	.....	84	557
Hicks, James J., and G. H. Zeal, London, England; said Zeal assignor to said Hicks. Means for indicating a ship's roll	609,231	Aug. 16	1996	473 474	84	1072
Hicks, John E., Columbus, Ohio. Domestic water-distiller	611,123	Sept. 20	1772	406	84	1818
Hiett, John, Highland, Tenn. Broom-clamp	608,773	Aug. 9	1075	247	84	885
Higbee, Edwin W. (See Neff, Elijah, assignor.)						
Higgins, Charles M. (See Phillips, Henry L., assignor.)						
Higgins, Charles M., New York, N. Y. Ink stand or bottle	607,993	July 26	2712	578	84	578
Higgins, Charles M., New York, N. Y. Adhesive compound	610,182	Sept. 6	55	.....	84	1452
Higgins, Charles M., New York, N. Y. Compound for adhesive paste	610,183	Sept. 6	59	.....	84	1452
Hignett, Percy N. (See Thurlow and Hignett.)						
Higuchi, Monnosuke, Sacramento, Cal. Type-writer	611,379	Sept. 27	2278	526 527	84	1932
Hilberg, Emil, Essen-on-the-Ruhr, Germany. Sterilizing apparatus	610,709	Sept. 13	1024	296	84	1656
Hildburgh, Leo W., New York, N. Y. Telegraph	607,239	July 12	1142	244	84	236
Hildreth, Le Roy M., New Haven, Conn. Bicycle-saddle	608,857	Aug. 9	1265	294 295	84	919
Hill, Ahron. (See Sussman and Hill.)						
Hill, Edgar A., *et al.* (See Hill, Edward A., assignor.)						
Hill, Edward A., assignor of two-thirds to J. L. Mallory and E. A. Hill, Chicago, Ill. Car-door bracket	607,511	July 19	1813	377	84	390
Hill, Edward W., Corte Madera, Cal Writing-tablet and note-book	606,718	July 5	152	33	84	31
Hill, Elijah W., Covington, Ohio. Land-anchor for posts	610,184	Sept. 6	63	13	84	1452
Hill, George, Ledbury, England. Spring-clasp	610,967	Sept. 20	1478	337	84	1762
Hill, Harrison A., Huntsville, Kans. Post-brace	607,435	July 19	1504	320	84	323
Hill, Henry, Nottingham, England. Thread foundation for incandescent mantles	606,719	July 5	153	33	84	32
Hill, Henry. Nottingham, England. Jacquard mechanism for embroidering-machines	611,011	Sept. 20	1561	359 360	84	1777
Hill, Henry H., Chicago, Ill. Optical instrument	607,171	July 12	1008	219	84	212
Hill, John K., London, England. Water-meter	608,602	Aug. 9	777	178	84	829
Hill, Robert S., Detroit, Mich. Valve-gear for engines	611,490	Sept. 27	2378	546	84	1949
Hill, Wilber H. (See Schneider and Hill.)						
Hilles, Jesse. (See Huff, Slaughter W., assignor.)						
Hilliker, Elmer E., Kearney, Nebr. Carriage-wrench	607,436	July 19	1505	320	84	324
Hillman, William, Coventry, England. Manufacture of velocipede-frames	608,678	Aug. 9	921	211 212	84	857
Hilt, Edward. (See Scherer and Hilt.)						
Hilton, Arthur G. (See Wallace and Hilton.)						
Hilton, Arthur G., and J. H. Wallace, Fort Fairfield, Me. Compound rotary engine	609,027	Aug. 16	1509	380 381	84	997
Hinchliffe, Robert, Chicago, Ill. Rail-joint	609,101	Aug. 16	1759	419	84	1025
Hinde, William L. B. (See Mackay, Edith M. M., assignor.)						
Hines, Andrew, Dublin, Ky. Gate	608,331	Aug. 2	299	66	84	715
Hinken, John H., Louisville, Ky., assignor to J. E. Turney Drying Machinery Company, Chicago, Ill. Filter-press	607,929	July 26	2603	552	84	557
Hinkley, George M., assignor of one-half to Edward P. Allis Company, Milwaukee, Wis. Roll for saw-stretching machines	608,774	Aug. 9	1077	248	84	886
Hinzelmann, Max, Munich, Germany. Adhesive compound and producing same	608,044	July 26	2823	.....	84	602
Hipp, Preston O., Warren, Ark Automatic feed-water regulator for steam-boilers	609,544	Aug. 23	2562	600	84	1200
Hipwell, Harry H. and T. S., Allegheny, Pa. Metallic coin-wrapper	608,521	Aug. 2	628	141	84	779
Hipwell, Thomas S. (See Hipwell. Harry H. and T. S.)						
Hipwood, George, Boston, Mass. Bicycle-support	610,536	Sept. 13	736	167 168	84	1596

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hirst, Samuel E., Pueblo, assignor of one-half to T. J. Lewis, Denver, Colo. Temple for spectacle-frames	610,875	Sept. 13	1322	303	84	1717
Hirst, William, Trenton, N. J. Air-brake	607,371	July 12	1374	293, 294	84	282
Hirt, Louis J., Brookline, Mass. Coking-oven	607,437	July 19	1506	320, 321	84	324
Hirt, Louis J., Brookline, Mass. Mechanism for automatically placing cables in cable-railway grips	608,858	Aug. 9	1266	295, 296	84	919
Hirth, Carl A. (See Junghans and Hirth.)						
Hiser, Charles H., and E. N. Lupfer, assignors to Springfield Metallic Casket Company, Springfield, Ohio. Metallic casket	610,537	Sept. 13	738	168	84	1597
Hislop, George R., Paisley, Scotland. Dip-pipe valve	610,538	Sept. 13	740	169	84	1597
Hitchcock, Arthur G., Honolulu, Hawaii. Ball-bearing	609,674	Aug. 23	2816	657	84	1249
Hitchcock Lamp Company. (See Baker, William R., assignor.)						
Hitchcock Lamp Company. (See Bragger, John W., assignor.)						
Hite, Charles E., assignor to Hite Manufacturing and Navigation Company, Philadelphia, Pa. Air-ship	607,240	July 12	1147	244, 245	84	237
Hite Manufacturing and Navigation Company. (See Hite, Charles E., assignor.)						
Hitz, Henry B., Milwaukee, and C. A. M. von Syburg, South Milwaukee, Wis. Rotary engine	609,618	Aug. 23	2712	633	84	1227
Hoar, Patrick J. (See Farrell and Hoar.)	607,241	July 12	1149	245	84	237
Hobron, Charles B., Boerne, Tex. Ball-bearing axle-box	611,200	Sept. 20	1903	.....	84	1842
Hobson, Harmon. (See Hobson, Joseph and H.)						
Hobson, Joseph and H., Goodson, Mo. Artificial-stone composition	607,172	July 12	1008	.....	84	212
Hock, Karl, Aschaffenburg, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Pharmaceutical compound and making same	607,797	July 19	2314	489, 490, 491, 492	84	483
Hocker, John W., Philadelphia, assignor of one-half to H. K. Walker, Fort Washington, Pa. Brush-machine	610,053	Aug. 30	3471	805	84	1390
Hodge, Alfred, New York, N. Y. Game apparatus	607,851	July 26	2458	522	84	529
Hodge, John, Topeka, Kans. Car-door bracket	610,269	Sept. 6	228	51	84	1486
Hodge, William G. (See Jones and Hodge.)						
Hodgkins, Curtis H., Northeast Harbor, Me. Folding table	608,287	Aug. 2	205	48, 49	84	695
Hodgson, John G., Maywood, assignor to Norton Bros., Chicago, Ill. Automatic sheet-metal-rolling mill	611,451	Sept. 27	2412	553	84	1956
Hodgson, Samuel, Medway, Mass. Attachment for traveling wheels						
Hoe, Robert, *et al.* (See Crowell, Luther C., assignor.)						
Hoe, Robert, *et al.* (See Read, George F., assignor.)						
Hoefer, August G. (See Hoefer, Frederick W. and A. G.)						
Hoefer, Frederick W. and A. G., assignors to Stover Novelty Works, Freeport, Ill. Machine for forming interlocking eyes	607,372	July 12	1382	294, 295	84	284
Hoefle, Francis J., assignor to Cincinnati Coffin Company, Cincinnati, Ohio. Handle for caskets	610,054	Aug. 30	3471	805	84	1390
Hoetzl, Ferdinand, Philadelphia, Pa. Journal-box for railway-cars	608,332	Aug. 2	300	66	84	715
Hoevet, Alfred T. (See Middaugh, Hoevet, and Anderson.) (Reissue.)	610,988	Sept. 20	1524	350	84	1770
Hoey, Ellen M., Lynn, Mass. Cycling-skirt	608,374	Aug. 2	365	80	84	728
Hoff, John A., Chicago, Ill. Autograph cash-register	608,776	Aug. 9	1079	248	84	886
Hoff, William H. (See Probst, Edward, assignor.)						
Hoffman, Godfrey S., Minneapolis, Kans. Draft-equalizer	608,551	Aug. 2	673	153, 154	84	789
Hoffman, Jules G., and W. B. Norton, assignors to American Cash Register Company, Detroit, Mich. Cash-register	608,775	Aug. 9	1077	248	84	886
Hoffmann, Adolph G., assignor of one-half to A. Schwarz, Berlin, Germany. Heating and evaporating liquids	608,333	Aug. 2	302	67	84	716
Hoffmann, Bernhard, Paris, France, assignor to Société the International Telescriptor Syndicat, Limited, London, England. Telegraphic transmitting and receiving apparatus	607,745	July 19	2217	469	84	465
Hoffmann, Ernst W. G. C., Charlottenburg, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Electric buoy	607,852	July 26	2460	522	84	530
Hoffmann, Ernst W. G. C., Charlottenburg, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Brake	610,401	Sept. 6	502	109, 110	84	1595
Hoffmann, Oswald, Neugersdorf, Germany. Yarn-skein	606,992	July 5	619	135	84	122
Hofstatter, Adolph G., New York, N. Y. Spring-back for furniture	611,483	Sept. 27	2473	570	84	1967
Hogan, George L., Baltimore, Md. Acetylene-gas generator	608,045	July 26	2823	601	84	602
Hogan, James T., Jersey City, N. J., assignor to National Machine Company, Troy, N. Y. Cloth-clamp for sewing-machines						
Hogan, Peter W. (See Griffin and Hogan.)						
Hogan, Thomas J. (See Bole and Hogan.)						
Högfeldt, Richard. (See Keunen and Högfeldt.)						
Holt, Jacob R., assignor to Holt Specialty Company, Des Moines, Iowa. Duplex clothes-pin	608,986	Aug. 9	1506	356	84	965
Holt Specialty Company. (See Holt, Jacob R., assignor.)						
Holbrook, Zepaniah S. (See Sherwood, Alexander B., assignor.)						
Holcomb, Charles M., New York, N. Y., assignor to A. Birnie, Springfield, Mass. Paper-box machine	611,252	Sept. 27	2012	464, 465	84	1882
Holcomb, Charles M., New York, N. Y., assignor to A. Birnie, Springfield, Mass. Plunger for paper-box machines	611,431	Sept. 27	2381	547	84	1949
Holcomb, Clifford A., assignor of one-half to P. H. Crahen, Beloit, Wis. Rotary steam-engine	609,808	Aug. 30	3037	711	84	1304
Holden, Edward P., Chicago, Ill. Automatic feeding mechanism	611,364	Sept. 27	2242	518	84	1925
Holden, Edward P., and J. L. Board, Chicago, Ill. Can-testing machine	609,232	Aug. 16	1998	474, 475	84	1073
Holdsworth, William. (See Smith and Holdsworth.)						
Holland, Henry W., and T. Woodward, London, England; said Woodward assignor to said Holland. Double-barrel single-trigger firearm	608,046	July 26	2824	601	84	602
Holland, James T., near Memphis, Tenn. Bottle	606,665	July 5	54	12	84	13
Holland, Luther W., Fulton, Mo. Heating-drum	609,935	Aug. 30	3253	700	84	1347
Holland, Thomas O., Philadelphia, Pa. Tooth-powder receptacle	611,410	Sept. 27	2396	538	84	1943
Hollick, Thomas D., assignor of one-third to J. C. Howell, London, England. Gearing for transmission of power	609,809	Aug. 30	3038	711	84	1305
Holliday, Thomas, Huddersfield, England. Apparatus for producing acetylene gas	610,055	Aug. 30	3472	805	84	1391
Hollinger, Job. (See Farley, John P., assignor.)	609,545	Aug. 23	2563	600	84	1200
Hollingsworth, Daniel H., New York, N. Y. Pipe-wrench						
Hollstein, Carl, New York, N. Y., assignor to Hollstein Novelty Company. Game apparatus	609,390	Aug. 16	2281	539	84	1128

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Hollstein Novelty Company. (See Hollstein, Carl, assignor.)						
Holmberg, Per, assignor to Ljusne Woxna Aktiebolag, Ljusne, Sweden. Adjusting arrangement for spring-power hammers, &c.	610,745	Sept. 13	1076	247	84	1666
	610,679	Sept. 13	968	224	84	1644
Holmes, Addison L., and J. H. Campbell, Alma, Colo. Nut-lock						
Holmes, Britain. (See Holmes, Edward and B.)						
Holmes, Edward and B., Buffalo, N. Y. Machine for flaring and bending metal hoops	609,807	Aug. 30	3034	710	84	1304
Holmes, Lawrence. (See Holmes, Thorvald and L.)						
Holmes, Lyman S., Schoharie, N. Y. Rotary motor	607,373	July 12	1387	295, 296	84	285
Holmes, Philip H., Gardiner, Me. Bill-file	608,122	July 26	2039	630	84	626
Holmes, Thorvald, Los Angeles, Cal., and L. Holmes, Chicago, Ill. Egg-boiler	607,930	July 26	2005	552	84	557
Holt, Albert A., Fitchburg, Mass. Vehicle running-gear	606,850	Aug. 9	1269	296	84	920
Holton, Thomas J., Philadelphia, Pa. Circular-knitting machine	607,853	July 26	2461	522, 523	84	530
Holton, Winfred B., assignor to Keyless Lock Company, Indianapolis, Ind. Keyless lock. (Reissue)	11,679	July 19	2999	502	84	495
Holtz, Max L., assignor to L. Holtz & Sons, Rochester, N. Y. Pocket for garments	608,375	Aug. 2	367	80	84	728
Holtz & Sons, Louis. (See Holtz, Max L., assignor.)						
Holzhausen, Friedrich von, assignor to W. L. Boalt, Graz, Austria-Hungary. Game apparatus	609,347	Aug. 16	2205	522	84	1114
Homestead Valve Manufacturing Company. (See Heston, William, assignor.)						
Hönings, Wilhelm, and F. Sommer, Neuss, Germany. Stringed musical instrument	610,905	Sept. 20	1373	314	84	1742
Hood, Arthur F., Hopkinton, Mass., assignor to Fenton Metallic Manufacturing Company, Jamestown, N. Y. Bicycle	607,438	July 19	1507	321	84	324
Hood, Thomas. (See Manire and Hood.)						
Hooker, Harry. (See Jaquet, Jules, assignor.)						
Hooker, William H., Arlington, N. J. Match-safe	608,603	Aug. 9	779	179	84	829
Hooley, Edwin S., *et al.* (See Sterne, Alfred J., assignor.)						
Hooper, George J., Jr. (See Evans, Richard, assignor.)						
Hoosier Drill Company. (See Jones, Sylvester H., assignor.)						
Hoover, Edwin G., Pottsville, Pa. Thill-coupling	610,185	Sept. 6	64	13	84	1452
Hoover, George W., Belle Plain, Iowa. Step-ladder	610,487	Sept. 6	645	144	84	1502
Hoover, James H., Phœnix, Pa. Lock-rod for wagon-brakes	607,687	July 19	2125	445	84	448
Hoover, James M., Homestead, Pa. Column-shoe	611,452	Sept. 27	2415	554	84	1957
Hoover, Walter I., Aurora, Ill. Valve	606,867	July 5	434	93	84	85
Hope, Charles H., Providence, R. I. Combination music stand, case, and folio	607,374	July 12	1390	296	84	286
Hope, Herbert J., *et al.* (See Benoit, Joseph F., assignor.)	610,539	Sept. 13	741	169	84	1597
Hope-Jones, Frank, and G. B. Bowell, London, England. Electric clock	608,165	July 26	3013	648	84	639
Hopkins, George C., and H. M. Sines, Gallop, Mont. Sled-brake						
Hopkins, James S., *et al.* (See Gates, Caleb C., assignor.)						
Hopkins, William H., and J. S. Evans, Detroit, Ala. Car-coupling	611,124	Sept. 20	1773	406	84	1818
Hopkinson & Co., J. (See Hopkinson, Joseph, assignor.)						
Hopkinson, Joseph, assignor to J. Hopkinson & Co., Limited, Huddersfield, England. Stop-valve	611,484	Sept. 27	2475	571	84	1968
Horn, John R., Camden, Ark. Nut-lock	610,446	Sept. 6	570	126	84	1548
Horn, Schooler C., Bladensburg, Ohio. Fence-post	608,288	Aug. 2	208	49	84	696
Horner, Oscar, and W. H. Wise, Dubois, Pa. Nut-lock	611,201	Sept. 20	1903	439	84	1842
Hornig, Friedrich. (See Elchelbaum, Georg, assignor.)						
Horsfield, John, Chicago, Ill. Pneumatic door-check	610,447	Sept. 6	571	126	84	1548
Horsman, Edward I. (See Doyle, John, assignor.)						
Horst, Henry W. E., Rock Island, Ill. Motor	606,926	July 5	515	113	84	102
Horton, Charles M., Superior, Wis. Metal box-beam, box-girder, and box-post	608,861	Aug. 9	1272	297	84	920
Horton, Charles M., Superior, Wis. Combination structural metal beam, girder, and post	611,202	Sept. 20	1905	439	84	1842
Horton, Edwin H., Elkton, Mich. Apparatus for ascertaining length and bevel of rafters	609,391	Aug. 16	2281	540	84	1129
Horton, Peter D., Oakland, assignor to E. L. Sullivan, W. M. Madden, and C. M. Wilson, San Francisco, Cal. Bubble-blower	608,860	Aug. 9	1271	297	84	920
	611,485	Sept. 27	2476	571	84	1968
Hosfeld, Alfred, Philadelphia, Pa. Mucilage or blacking bottle	608,604	Aug. 9	780	179	84	829
Hostetter, Amos B., Lancaster, Pa. Grating-machine	609,546	Aug. 23	2563	600	84	1200
Hough, Amanda, Jacob's Creek, Pa. Bread-raiser	608,679	Aug. 9	922	212	84	857
Hough, Edward S., Oakland, Cal. Engine feed-water supply	609,233	Aug. 16	2002	475	84	1074
Houghton, Lewis T., Worcester, Mass. Safety device for firearms	611,253	Sept. 27	2016	465	84	1883
Houlehan, John, Toledo, Ohio. Ratchet-drill	608,605	Aug. 9	781	179	84	829
House, James T., Talala, Ind. Ter. Stirrup	606,839	July 5	387	82	84	77
Housel, George W., Bloomsbury, N. J. Match-box	610,813	Sept. 13	1214	280	84	1694
Houser, Scott, assignor of one-half to F. S. Rhoades, Bellefonte, Pa. Lock	611,170	Sept. 20	1853	427	84	1883
Hovland, Anton. (See Krogstad, Ole L., assignor.)						
Howard, James, London, England. Driving-gear for bicycles	609,547	Aug. 23	2564	600, 601	84	1200
Howard, Samuel I., Worcester, Mass. Machine for cleaning bricks	608,376	Aug. 2	368	80, 81	84	729
Howden, James, Glasgow, Scotland. Furnace-front for steam-boilers	609,494	Aug. 23	2355	555	84	1102
Howe & Davidson. (See Davidson, Frank B., assignor.)						
Howes, Eleanor E., Bridgeport, Conn. Corset	606,969	July 5	574	126	84	114
Howe, Martin V. B., Gardner, Mass. Rotary steam-engine						
Howe, Oliver I., Beverly, Mass., assignor, by mesne assignments, to Morley Finishing Machine Company, of Maine. Fore part for boot or shoe trees	610,235	Sept. 6	177	40	84	1476
Howell, John C. (See Hollick, Thomas D., assignor.)						
Howell, John W., Johnstown, Pa. Thill-coupling	608,690	Aug. 9	923	212	84	857
Howell, Thomas J., London, England. Microphone	607,994	July 26	2714	579	84	578
Howells, John, Sagon, Pa. Mail-bag fastener	607,375	July 12	1392	296	84	286
Howgate, Joseph W., Wilmington, Del. Harness suspending and releasing apparatus	609,675	Aug. 23	2819	657	84	1249
Hoyt, Frederick M. (See Atwood, George F., assignor.)						
Hoyt, Matthew L., Birchton, and H. Feldmeier, assignors to D. H. Burrell & Co., Little Falls, N. Y. Centrifugal milk-tester	610,650	Sept. 13	924	213	84	1635
Hoyt, Rufus L., assignor of one-half to W. H. McMullen, Minneapolis, Minn. Band-saw mill	607,981	July 26	2607	553	84	556
	607,376	July 12	1394	297	84	296
Hoyt, William E., New York, N. Y. Sad-iron	610,846	Sept. 13	1266	292	84	1705
Hubbard, Ely y Seale, Rancho, Tex. Rope-measuring machine						
Hubbard, Frederic P., Durham, Conn., assignor of one-half to Merriam Manufacturing Company, of Connecticut. Binder for file-cases	611,365	Sept. 27	2244	518	84	1925
Hubbard, Schuyler. (See Blake and Hubbard.)						
Hubbard, Woodson W., *et al.* (See Jacklin, Thomas G., assignor.)	608,153	July 26	2991	641, 642	84	635
Huber, Berthold, Taunton, Mass. Printing-machine						
Huber, Edward. (See Miller and Huber.)						
Huber, Edward, Marion, Ohio. Lifting-jack	610,651	Sept. 13	926	213	84	1636

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Hübner, Harry, Philadelphia, Pa. Clothes-line reel	606,666	July 5	56	12	84	13
Huckey, Benjamin J., Gorin, Mo. Farm-gate	608,307	Aug. 2	353	77	84	726
Hudgepeth, James L., assignor of one-half to C. E. Waddell, Paragould, and G. W. Cox, Rogers, Ark. Broom-head	611,319	Sept. 27	2152	497	84	1909
	607,041	July 12	730	157	84	162
Hudson, Alexander A., Haverhill, Mass. Feed for heel-cutting machines						
Huenefeld, Ernest H. (See Carter, John R., assignor.)						
Huestis, Jacob L., Stockton, Cal. Kitchen-cabinet table	608,260	Aug. 2	155	38	84	685
Huff, Chauncey F. H., and O. C. Hale, Cincinnati, Ohio. Photographic shutter	607,242	July 12	1150	246	84	287
Huff, Slaughter W., assignor of one-half to J. Hilles, Baltimore, Md. Bond for electric conductors	607,746	July 19	2220	469, 470	84	466
	607,243	July 12	1152	246	84	238
Huff, William C., St. Paul, Ark. Ankle-brace						
Huffstot, Hosea. (See Daniels, Robert E., assignor.)						
Hughendubel, Ernst, Stuttgart, Germany. Combined umbrella and cane	609,435	Aug 23	2356	556	84	1162
Hughes, Joseph H., and J. T. Musgrove, Birmingham, England. Gear-case	606,840	July 5	398	82, 83	84	77
Hugunin, Robert B., Hartford, Conn. Sash-fastener	608,606	Aug. 9	782	180	84	829
Hugus, George M., assignor of one-half to W. P. Cunningham, Calumet, Pa. Device for increasing crank-throw of engines	610,488	Sept. 6	646	144	84	1562
	606,720	July 5	154	33, 34	84	32
Hulett, George H., Cleveland, Ohio. Loading or unloading machine	608,123	July 26	2940	630	84	626
Humble, Stephen, London, England. Self-detaching hook for winding purposes	610,863	Sept. 13	1298	299	84	1712
Hummel, Ernest, Philadelphia, Pa. Commode attachment for bedsteads	608,965	Aug. 9	1458	345	84	956
Humphrey, Arthur L., Colorado City, Colo. Car-coupling	607,747	July 19	2221	470	84	466
Humphrey, Charles, Almond, N. Y. Attachment for locomotive-engines	611,125	Sept. 20	1774	407	84	1818
Humphrey, Herbert A., Northwich, England. Gas or oil motor engine						
Humphrey, J. L. (See Fowler, Joseph L., assignor.)						
Humphrey, William H. (See Balzer, Stephen M., assignor.)	606,667	July 5	57	12	84	13
Humphreys, Franklin E., Mason City, Iowa. Smoke-consuming fireplace	607,688	July 19	2126	446	84	448
Humphreys, James W., Iroquois, Ill. Ditching-machine						
Humdhausen, Rudolf L. L., Wilmersdorf, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Electric switch	610,402	Sept. 6	508	110	84	1536
	608,124	July 26	2941	630	84	626
Hunt, Charles W., New York, N. Y. Rope-coupling	610,056	Aug. 30	3474	806	84	1391
Hunt, Elisha J., New York, N. Y. Car-axle box	610,270	Sept. 6	229	51	84	1487
Hunt, Henry M., Indianapolis, Ind. Back-pedaling brake	607,365	July 19	1913	395, 396	84	408
Hunt, Jonathan A., Westborough, Mass. Bicycle-saddle	609,234	Aug. 16	2004	476	84	1074
Hunt, Jonathan A., Westborough, Mass. Bicycle-saddle post and clamp	607,748	July 19	2222	470	84	466
Hunt, Leonard, St. Louis, Mo. Sunshine-recorder	611,126	Sept. 20	1776	407	84	1818
Hunt, William, Winnipeg, Canada. Lubricator						
Hunt, William B. (See Prescott, Charles H., assignor.)	607,395	July 12	1418	303	84	291
Hunt, William E., Montreal, Canada. Bicycle-support	608,456	Aug. 2	513	115	84	757
Hunter, David H., La Grange, Ga. Cotton-planter						
Hunter, Lytle J., Covington, Ky., and W. F. Peters, Cincinnati, Ohio; said Peters assignor to said Hunter. Station-indicator	610,271	Sept. 6	230	52	84	1487
Hunter, Marjory, Edinburgh, assignor to R. R. Cockburn, Leith, Scotland. Bulkhead for ships, &c	608,047	July 26	2926	602	84	602
	606,668	July 5	59	12	84	14
Hunter, Silas H., Cleveland, Ohio. Fog-whistle						
Huntoon, Charles F., assignor to Chicago Railway Equipment Company, Chicago, Ill. Brake connection-rod	607,854	July 26	2467	523	84	531
	609,102	Aug. 16	1762	419	84	1025
Hurd, Samuel B., Earlville, Ill. Hay-rack						
Hurford, Alvin. (See Bowman, Newton K., assignor.)	11,696	Sept. 27	2685	620, 621	84	2008
Hurlbut, Frank, assignor to A. C. Clark, Chicago, Ill. Dental spittoon. (Reissue)	607,798	July 19	2326	493, 494	84	485
Hurley, Daniel, assignor to C. Cooper, Bennington, Vt. Circular-knitting machine	610,652	Sept. 13	927	214	84	1636
Hurst, Edward, and A. J. E. Jones, Birmingham, England. Machine for assembling cycle or similar wheels	608,125	July 26	2942	631	84	626
Hurst, Harris P., Summit, Miss. High-explosive shell and fuse therefor	607,932	July 26	2610	553	84	558
Husham, Carl, Osnabrück, assignor to Felten & Guilleaume, Mülheim-on-Rhine, Germany. Flexible metallic tube-conduit	606,970	July 5	576	127	84	114
Hussey, George H., Providence, R. I. Brush-holder	609,348	Aug. 16	2206	522	84	1114
Hutches, Benjamin F., Jr., Galveston, Tex., assignor of one-fourth to H. M. Weaver, Mansfield, Ohio. Game apparatus	607,377	July 12	1395	297, 298	84	286
Hutchins, George F., assignor to Crompton & Knowles Loom Works, Worcester, Mass. Loom-temple	608,966	Aug. 9	1460	345, 346	84	956
Hutchison, Ephraim K., Denver, Colo. Damper-regulator	606,761	July 5	235	50	84	48
Hutin, Maurice, and M. Leblanc, assignors to Société Anonyme pour la Transmission de la Force par l'Électricité, Paris, France. Method of and apparatus for generating alternating currents	606,762	July 5	241	51	84	48
Hutin, Maurice, and M. Leblanc, assignors to Société Anonyme pour la Transmission de la Force par l'Électricité, Paris, France. Alternating-current dynamo	608,457	Aug. 2	514	115	84	758
Hutzel, Benedict, New York, N. Y. Billiard-cue	611,453	Sept. 27	2416	554	84	1957
Hyatt, Charles M., Albany, N. Y. Game-board	608,681	Aug. 9	934	213	84	857
Hyde, Alfred L., Newark, N. J. Gate-valve	608,987	Aug. 9	1507	356	84	965
Hyde, John W., assignor of one-half to W. F. Lawley, Bankston, Ala. Whiffletree						
Hyde, Mary B (See Lindh, Charles E., assignor.)						
Hyland, J. J., *et al.* (See Barrow, James E., assignor.)						
Hyman, David, *et al.* (See Jordan and Baum, assignors.)						
Hyman, David M. (See Hallett, Samuel I., assignor.)						
Hyman, Herbert H. (See Van Deveide, John, assignor.)	609,676	Aug. 23	2821	658	84	1250
Hyslop, Peter S., Walmer, England. Heat-exchanger for fluids						
Illinois Refrigerator Company. (See Rainbow, Fred L., assignor.)	610,448	Sept. 6	573	126, 127	84	1548
Illmer, Louis, Jr., assignor to L. Illmer, Sr., Washington, D. C. Mute clavier	608,962	Aug. 9	1274	297	84	921
Imhof, John, and S. Spring, Allegheny, Pa. Smoke-consuming furnace	608,458	Aug. 2	515	116	84	758
Indiana Bicycle Company. (See White, Paul H., assignor.)						
Indiana Manufacturing Company. (See McCutcheon, John B., assignor.)						
Ingersoll, Edwin C., Philadelphia, Pa. Floor-clamp	607,542	July 19	1870	398	84	401
Ingersoll, Frederick, *et al.* (See McKean, Samuel G., assignor.)	609,810	Aug. 30	3040	711	84	1305
Ingersoll, Le Grand, *et al.* (See McKean, Samuel G., assignor.)						
Ingle, Jacob O., Thorp Spring, Tex. Coffee-pot	607,799	July 19	2342	494	84	489
Inglet, Andrew J., Winnfield, La. Sash-holder	607,855	July 26	2468	593, 594	84	531
Ingram, Harry, assignor of one-half to C. P. Fay and T. Firth, Jr., New York, N. Y. Hat-fastener	608,863	Aug. 9	1275	297	84	921
Ingrey, Charles, London, England. Weighing and recording apparatus for coal						
Innis, Alonzo A., Milroy, Ind. Feeding-trough						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Interchangeable Brake Beam Company. (See Aglar, Francis B., assignor.)						
Interior Conduit and Insulation Company. (See Lundell, Robert, assignor.)						
Interior Conduit and Insulation Company. (See Ruete, William T., assignor.)						
International Color Photo Company. (See McDonough, James W., assignor.)						
Invention Developing Company. (See Gill, Edwin R., assignor.)						
Inventor's Novelty Manufacturing Company. (See Mersereau, Charles H., assignor.)						
Invincible Grain Cleaner Company. (See Lanphere, Chauncey A., assignor.)						
Ireson, Absalom S., Kelly, Va. Washboard	608,289	Aug. 2	209	49	84	696
Ireson, Charles L., Boston, Mass. Steam-packing	607,244	July 12	1153	------	84	238
Irish, Lemuel E., Greenville, Mich. Bed-bottom casting	611,411	Sept. 27	2338	539	84	1943
Ironclad Manufacturing Company. (See Comstock, Chester, assignor.)						
Iron Clad Manufacturing Company. (See Haigh, Henry B., assignor.)						
Iron Clad Manufacturing Company. (See Peacock, Edward M., assignor.)						
Irwin, Joseph I. (See Brown, Philip C., assignor.)						
Isaacson, Francis A., Omaha, Nebr. Waterproof trousers	608,126	July 26	2044	631	84	627
Isachson, Norman, Marion, Idaho. Churn	608,404	Aug. 2	427	94	84	741
Isenberg, Hermann H. (See Shelton, John J., assignor.)						
Isidor, Joseph S., New York, N. Y. Trunk-hinge	609,277	Aug. 16	2088	495	84	1090
Islev-Petersen, Jens P., New York, N. Y. Filter	608,127	July 26	2045	631 / 632	84	627
Ismay, Charles D., Newcastle-upon-Tyne, England. Making paint	609,936	Aug. 30	3255	760	84	1347
Ives, Hobart B., New Haven, Conn. Sash-fastener	611,171	Sept. 20	1854	427 / 428	84	1833
Ivins, Ellwood, Philadelphia, Pa. Machine for manufacturing seamless drawn tubes	609,147	Aug. 16	1833	434	84	1089
J. E. Turney Drying Machinery Company. (See Hinken, John H., assignor.)						
J. R. Clark Company (See Mann, Henry L., assignor.)						
J. T. Perkins Company. (See Hanse, William F., assignor.)						
Jacklin, Thomas G., assignor of one-half to J. J. Hendricks, W. W. Hubbard, and C. E. Collins, Inola, Ind. Ter. Metallic railway-tie	611,087	Sept. 20	1604	367	84	1785
Jackson, Albert E., and P. J. Britten, London, England. Bicycle-support	608,393	Aug. 2	401	89	84	735
Jackson, Albert R., Bound Brook, N. J. Tool for facing castings	611,254	Sept. 27	2017	465 / 466	84	1883
Jackson, Ambrose F., Oklahoma, Okla. Ter. Lock for wagon-brakes	607,749	July 19	2225	471	84	467
Jackson, C. H. S. (See Cobb, Ruric E., assignor.)						
Jackson, Frederick, Karns City, Pa. Swab-valve	611,486	Sept. 27	2478	571	84	1968
Jackson, Harry, Kingston, N. Y. Lawn-mower	611,217	Sept. 20	1944	448	84	1849
Jackson, Herbert E., and J. A. Anderson, Barrow-in-Furness, assignors to W. H. Jackson, Bradford, England. Device for facilitating lighting of cycle or other lamps	608,154	July 26	2002	642	84	635
Jackson, Jessee W., Winston, N. C. Pinless clothes-line	610,906	Sept. 20	1374	315	84	1742
Jackson, John, London, England, assignor of one-half to A. S. Vose, Boston, Mass. Pressure and vacuum gage	608,199	Aug. 2	60	14	84	666
Jackson, John H., assignor to Staples & Hanford, Newburg, N. Y. Spring-bed work	608,048	July 26	2027	602	84	603
Jackson, Thomas E., Brierfield, Ala. Cartridge-carrier	611,172	Sept. 20	1857	428	84	1834
Jackson, William, Traverse City, Mich. Basket-machine	607,689	July 19	2127	446 / 447 / 448	84	448
Jackson, William A., Elizabeth, N. J. Nut-lock	608,777	Aug. 9	1080	248	84	886
Jackson, William E., Jr., Augusta, Ga. Automatic device for returning carriages for type-writing machines	606,669	July 5	60	13	84	14
Jackson, William H. (See Jackson and Anderson, assignors.)						
Jackson, William H., assignor to himself and W. F. Martin, Indianapolis, Ind. Automatic-locking switch	609,436	Aug. 23	2357	556	84	1162
Jacob, Chris. (See Poelman, Peter J., assignor)						
Jacob, Frederick, Newark, N. J. Water-wheel	607,042	July 12	732	158	84	163
Jacobs, Augustus G., Jonestown, Miss. Winding-indicator for watches	609,235	Aug. 16	2006	476	84	1075
Jacobs, Augustus G., Jonestown, Miss. Puzzle-map game	610,628	Sept. 13	891	204	84	1629
Jacobs, Herman F. (See Cooper, George T., assignor.)						
Jacobson, Charles, Erie, Pa. Gas-engine	607,566	July 19	1915	396 / 397	84	408
Jacobson, John, Boston, Mass. Colored picture	611,380	Sept. 27	2281	527	84	1932
Jacquin, Emil, Morrison, Mo. Wood-sawing attachment for portable engines	607,618	July 19	2011	417	84	426
Jaenty, Victor, Paris, France. Electric battery	611,012	Sept. 20	1563	360	84	1777
James, John W. H., and T. R. Jordan, New York, N. Y., assignors to Anglo American Reduction Company, of West Virginia. Apparatus for treating auriferous or other ores	606,670	July 5	64	13	84	15
James, Thomas S., Beaumont, Tex. Drawers-supporter	610,989	Sept. 20	1525	350	84	1770
James, Ulysses S., assignor to L. H. Graves, Helena, Mont. Ore-feeder	606,971	July 5	577	127	84	114
James, Will S., Mexia, assignor of three-fourths to J. D. Ham, W. E. Nabors, and J. L. Harvey, De Leon, Tex. Thill-coupling	611,320	Sept. 27	2153	498	84	1909
James, William H., Tulse Hill, England. Pneumatic tire	607,043	July 12	734	158	84	163
Jamieson, Robert W., Rochester, N. Y. Cycle-saddle	608,642	Aug. 9	926	213	84	858
Janes, George J. L., Chicago, Ill. Beverage compound	607,173	July 12	1010	------	84	212
Jaques, Frank F., Chicago, Ill. Shipping and dispensing canister	611,497	Sept. 27	2480	572	84	1969
Jaquet, Jules, assignor of one-half to H. Hooker, Milwaukee, Wis. Fluid-receptacle	608,864	Aug. 9	1276	298	84	921
Jarvis, Philip, Cedar Rapids, Nebr. Double-row cultivator	611,321	Sept. 27	2155	498	84	1909
Jeanesville Iron Works Company. (See Rood, Vernon H., assignor.)						
Jeffery, Jefferson, New Castle, Pa. Car-coupling	608,128	July 26	2047	632	84	627
Jeffery, Thomas B., Chicago, Ill. Pneumatic tire	607,245	July 12	1154	246	84	238
Jeffrey, James. (See Down, Thomas.)						
Jenkins, Charles F., assignor of one-half to E. Berliner, Washington, D. C. Device for obtaining stereoscopic effects in exhibiting pictures	606,998	July 5	620	135	84	122
Jenkins, Herbert T., assignor to Morley Button Manufacturing Company, Portsmouth, N. H. Alarm device for button-machines	610,876	Sept. 13	1323	308	84	1717
Jenkins, Jay, Chicago, Ill. Supply-tank for gasolene-stoves	607,044	July 12	735	158	84	164
Jenkins, Warner H., assignor, by mesne assignments, of one-half to V. W. Waters, Philadelphia, Pa. Construction of concrete floors for buildings	610,139	Aug. 30	3603	837	84	1418
Jennings, Jacob C. (See Brown, Lewis S., assignor.)						
Jensen, Frederik, Seattle, Wash. Folding bed	610,057	Aug. 30	3475	806	84	1391
Jensen, Vilhelm A., Glasgow, Scotland. Means for coupling small pipes	609,509	Aug. 23	2506	586	84	1189
Jessup, Robert W., assignor of one-half to F. H. Wheelan, San Francisco, Cal. Separator	608,049	July 26	2028	603	84	603
Jester, John R., Church Creek, Md. Toy cannon	608,200	Aug. 2	61	14	84	667
Jeune, George N., Deer Wood, Minn. Vine-trimmer	610,449	Sept. 6	575	127	84	1549
Jewett, George M., *et al.* (See Walkins, Louis E., assignor.)						
Jewett, Harvey. (See Weddel, Jewett, Taylor, and Bellis.)						
Jillson, Edwin M., West Carrollton, Ohio. Paper-feeding machine	609,437	Aug. 23	2360	556	84	1162

Alphabetical list of patentees, July to September, inclusive—Continued.

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John V. Rice, Jr., Company. (See Rice, John V., Jr., assignor.)						
Johnsen, Adolf, Adelby, Germany. Velocipede driving-gear	610,236	Sept. 6	179	40	84	1476
Johnson, Charles A., Sioux City, Iowa. Clevis for plows	610,968	Sept. 20	1479	338	84	1762
Johnson, Charles M., New York, N. Y. Motor-vehicle	609,811	Aug. 30	3042	711 / 712	84	1305
Johnson, Chloe E., Springfield, Mass. Trunk-tray	609,349	Aug. 16	2209	522	84	1114
Johnson, Daniel, Ashland, Ohio. Cash-carrier apparatus	611,322	Sept. 27	2157	408 / 409	84	1910
Johnson Electric Service Company. (See Johnson and Winkenwerder, assignors.)						
Johnson, Ellery A., Rome, Ga. Hook and eye	610,710	Sept. 13	1025	237	84	1657
Johnson, Finis M. (See Gatewood, William F., assignor.)						
Johnson, Frank, Seattle, Wash. Ship's galley	608,050	July 26	2831	603	84	604
Johnson, Frank A., Philadelphia, Pa., assignor to Johnson Typesetter Company, Portland, Me. Type setting and justifying machine	607,045	July 12	737	159 / 160 / 161 / 162 / 163	84	164
Johnson, Frank A., Philadelphia, Pa., assignor to Johnson Typesetter Company, Portland, Me. Type-justifying machine	607,046	July 12	751	163 / 164 / 164	84	166
Johnson, Frank A., Philadelphia, Pa., assignor to Johnson Typesetter Company, Portland, Me. Type setting and justifying machine	607,047	July 12	755	165 / 166 / 167 / 168	84	166
Johnson, Frank A., Philadelphia, Pa., assignor to Tachytype Manufacturing Company, Minneapolis, Minn. Machine for composing printed matter	611,203	Sept. 20	1906	439 / 440 / 441	84	1842
Johnson, Franklin L., Valley Springs, Cal. Washing-machine	607,619	July 19	2012	417 / 418	84	426
Johnson, George E., assignor to Peerless Fountain Cuspidor Company, Fort Wayne, Ind. Supporting attachment for cuspidor-bowls	611,218	Sept. 20	1947	449	84	1850
Johnson, George H., Sisson, Cal. Momentum water-wheel bucket	607,246	July 12	1156	247	84	238
Johnson, Gustaf, assignor of five-sixths to C. C., R. R., and M. D. Wentworth and P. Munson, Milwaukee, Wis. Vapor-burner	606,721	July 5	156	35	84	32
Johnson, Isaac L. (See Webb and Johnson.)						
Johnson, James, Birmingham, England. Slip-hook	608,683	Aug. 9	928	213	84	858
Johnson, James H., Hattiesburg, Miss. Vehicle-wheel	607,378	July 12	1896	298	84	287
Johnson, James T. (See Wantling and Johnson.)						
Johnson, John A., Madison, Wis. Sled-runner	609,812	Aug. 30	3045	712	84	1306
Johnson, John E. (See Duff, Robert D., assignor.)						
Johnson, Joseph D., *et al.* (See West, Wharton L., assignor.)						
Johnson, Peter, Downer's Grove, Ill. Door-hanger	608,129	July 26	2049	632	84	627
Johnson, Peter, Boston, Mass. Tobacco-pipe	610,757	Sept. 13	1107	253	84	1672
Johnson, Thomas C., assignor to Winchester Repeating Arms Company, New Haven, Conn. Safety device for bolt-guns	606,972	July 5	579	127 / 128	84	115
Johnson, Thomas C., assignor to Winchester Repeating Arms Company, New Haven, Conn. Box-magazine lever-gun	609,678	Aug. 23	2823	659	84	1250
Johnson Typesetter Company. (See Johnson, Frank A., assignor.)						
Johnson Typesetter Company. (See McGrath, Patrick H., assignor.)						
Johnson, Warren S., and H. Winkenwerder, assignors to Johnson Electric Service Company, Milwaukee, Wis. Electric motor	607,247	July 12	1157	247	84	239
Johnson, William A., Kahoka, Mo. Truck	607,048	July 12	771	169	84	168
Johnson, William R. (See Andrews and Johnson.)						
Johnson, William R. (See Rettew and Johnson.)						
Johnston, Allen, Ottumwa, Iowa. Grinding-machine	611,323	Sept. 27	2160	499 / 500	84	1910
Johnston, Allen, Ottumwa, Iowa. Manufacture of table-knives	611,324	Sept. 27	2163	500	84	1911
Johnston, Augustus M. (See Downs and Johnston.)						
Johnston, David C., Marietta, Ohio. Pipe-wrench	610,450	Sept. 6	576	127	84	1540
Johnston, Edward A., Chicago, Ill. Machine for cutting and lighting cigars	606,820	July 5	345	73	84	69
Johnston Harvester Company. (See Farrall and Pridmore, assignors.)						
Johnston, John S., assignor of one-half to F. Sachse, New York, N. Y. Apparatus for developing photographic films	609,677	Aug. 23	2822	658	84	1250
Johnston, John S., Anniston, Ala., assignor of seven-twelfths to R. G. Green and F. P. Murphey, Chicago, Ill. Change-delivering device	608,778	Aug. 9	1081	249	84	886
Johnston, Jonathan, Morgan Park, assignor to H. O. Bennett, Chicago, Ill. Oil-burner	606,784	July 5	286	59	84	57
Johnston, Jonathan, Morgan Park, assignor to H. O. Bennett, Chicago, Ill. Hydrocarbon-burner	608,290	Aug. 2	211	50	84	697
Johnston, Samuel J., Leesburg, Va. Wrench-jack	607,489	July 19	1508	321	84	324
Johnston, William T., Newport, Ky. Mechanism for braking steering apparatus	610,680	Sept. 13	969	224	84	1645
Jolly, Leslie C. (See Dewitt and Jolly.)						
Jolly, Morgan, Wynne, Ark. Railway time-indicator	609,619	Aug. 23	2716	634	84	1228
Jones, Albert A. (See Long and Jones.)						
Jones, Alfred T., T. B. Smith, and C. Nilsson, Pocatello, Idaho. Trunk-strap	611,255	Sept. 27	2020	466	84	1884
Jones, Arthur. (See Welchelt, Grady, and Jones.)						
Jones, Arthur J. E. (See Hurst and Jones.)						
Jones, Charles B., assignor of one-half to F. L. Cowles, New Haven, Conn. Vehicle-brake	608,665	Aug. 9	1277	298	84	921
Jones, David S. (See Young, Josiah N., assignor.)						
Jones, Dexter J., Cleveland, Ohio. Tool for making fences	606,821	July 5	346	74	84	69
Jones, Ellis T., Hoboken, N. J. Gas-burner	607,049	July 12	772	169	84	169
Jones, Frank R., and F. S. Dearborn, Worcester, Mass. Hinge	607,050	July 12	774	169	84	169
Jones, Frederick G., Bristol, England. Centrifugal creamer	610,058	Aug. 30	3478	807	84	1392
Jones, George P. (See Coleman, Clyde, assignor.)						
Jones, Graham P., Chicago, Ill. Car-door	609,813	Aug. 30	3046	712	84	1306
Jones, Howard C. (See Scherer, Loephus T., assignor.)						
Jones, James C., Pine Village, Ind. Gate-hinge	611,325	Sept. 27	2164	500	84	1911
Jones, James L., Starbuck, Wash. Drilling-machine	611,178	Sept. 20	1858	428	84	1834
Jones, Job E., and W. G. Hodge, Forbush, Iowa. Means for protecting car doors and sides	610,990	Sept. 20	1527	351	84	1770
Jones, Joseph L., Rossburg, Fla. Wrench	608,866	Aug. 9	1278	298	84	921
Jones, Joseph R., Philadelphia, Pa., assignor to Union Switch and Signal Company, Swissvale, Pa. Compensating device for railway-signals, &c.	607,800	July 19	2343	494	84	489
Jones & Laughlins. (See Nurick, Alexander, assignor.)						
Jones, Luzerne, Denver, Colo. Hand rock-drill	607,412	July 12	1453	308 / 309	84	296

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Jones, Milton L., Troy, assignor of one-half to R. N. Page, Biscoe, N. C. Rotary steam-engine	609,028	Aug. 16	1602	381 382	84	997
Jones, Nathaniel M. (See MacCall, Charles R., assignor.)						
Jones, Orville D., *et al.* (See Powell, Noah M., assignor.)						
Jones, Robert O., assignor to himself, R. G. and W. S. Gregson-Ellis, Ruthin, England. Fitting for aerated-water siphons	609,392 609,896	Aug. 16 Aug. 30	2284 3172	540 742	84 84	1129 1332
Jones, Rollin R., East Bethlehem, Pa. Plow-cultivator	611,127	Sept. 20	1777	407	84	1819
Jones, Sylvester H., assignor to Hoosier Drill Company, Richmond, Ind. Rake-head						
Jones, T. F. (See Ritchie, Robert L., assignor.)						
Jones, Thomas R., Sacramento, Cal. Pneumatic dredger	609,350	Aug. 16	2209	523	84	1115
Jones, Walter M., Santa Monica, Cal. Repair-kit for single-tube bicycle-tires	607,379	July 12	1398	298	84	287
Jones, William H., Liberty, assignor to A. L. and D. M. Kitselman, Ridgeville, Ind. Wire-stretcher	607,750	July 19	2227	471	84	467
Jones, William M. C. (See Wiehl, Joseph H., assignor.)						
Jones, William T., Cedar Rapids, Iowa. Hay-press feeding-fork	611,326	Sept. 27	2165	500	84	1911
Jonte, Peter N., Cincinnati, Ohio. Hoisting and conveying apparatus for excavating, &c.	608,405	Aug. 2	427	94,95	84	741
Jordan, George B., *et al.* (See Ansley, George W., assignor.)						
Jordan, Mary A. (See Hannon and Jordan.)						
Jordan, Oliver S., Newark, N. J., and E. F. Baum, Harrisburg, Pa., assignors of one-half to H. D. Fuller, New York, and D. Hyman, Rochester, N. Y. Envelop-sealing machine	607,174	July 12	1011	220	84	212
Jordan, Thomas R. (See James and Jordan.)						
Jordan, Wallace, assignor of one-half to S. E. Lindifield, Emerald, Wis. Board-clamp	607,567	July 19	1918	397	84	408
Joseph, S. L. (See Love, John A., assignor.)						
Joseph, Sheldon, Pataskala, Ohio. Fire-extinguisher	609,584	Aug. 23	2636	617	84	1213
Joy, Robert, Oswego, N. Y. Steam-boiler	610,681	Sept. 13	971	224 225	84	1645
Joy, Sam S., New Market, N. H. Horse-hitching device	609,548	Aug. 23	2566	601	84	1201
Joyce, John. (See Muslar, Nelson, assignor.)						
Joyner, Isaac, Anderson, Ind. Mop-wringer	609,351	Aug. 16	2211	523	84	1115
Judson, Charles W., assignor to Eagle Lock Company, Terryville, Conn. Mirror-hinge	608,459	Aug. 2	517	116	84	758
Judson, George W., *et al.* (See Crane, Uzal O., assignor.)						
Julius, Paul, assignor to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Blue dye	609,352	Aug. 16	2212	298	84	1115
	608,867	Aug. 9	1279	299	84	922
Junghans, Arthur, and C. A. Hirth, Schramberg, Germany. Alarm-clock						
Justice Leather Measuring Machine Company. (See Ayer, Albert E., assignor.)						
Kaemmerling, Herman, Girard, Kans. Furnace for smelting ore	610,540	Sept. 13	743	169	84	1598
Kafader, Charles D. (See Kafader, James O. and C. D.)						
Kafader, James O. and C. D., Fort Bidwell, Cal. Nut-lock	608,607	Aug. 9	785	180	84	830
Kahn, Felix, New York, N. Y. Heat-retainer	608,684	Aug. 9	929	213	84	859
Kahn, Maximilian. (See Esmond, William V., assignor.)						
Kail, Wilbert S., Scio, Ohio. Syringe	609,353	Aug. 16	2213	523	84	1115
Kailor, John N. (See Reeves and Kailor.)						
Kalischer, Georg, assignor to L. Cassella & Co., Frankfort-on-the-Main, Germany. Black dye and making same	610,541 608,130	Sept. 13 July 26	746 2050	633	84 84	1598 628
Kandle, Furman M., Philadelphia, Pa. Drawer attachment						
Kandó, Koloman de. (See Bláthy and Kandó.)	609,278	Aug. 16	2089	495	84	1091
Kane, William, Philadelphia, Pa. Automatic flue-opening device						
Kappler, Carl R., Gochsheim, and F. Schunk, Schweinfurt, Germany. Machine for grinding cast-steel balls	610,059 609,029	Aug. 30 Aug. 16	3480 1604	807 362	84 84	1392 988
Karns, William E., Parker's Landing, Pa. Forming-die	609,679	Aug. 23	2826	660	84	1251
Karraker, Calvin, Dongola, Ill. Grader and scraper						
Karyscheff, Alexander, St. Petersburg, Russia. Method of and apparatus for reducing oxid of iron	608,779	Aug. 9	1082	249 250	84	887
Kaselowsky, Emil, Berlin, Germany. Automatic steering device for torpedoes	607,440	July 19	1510	321 322	84	325
Kassner, Georg, Münster, Germany. Separating sugars from molasses	611,381	Sept. 27	2283		84	1932
Kastle, Joseph H., M. L. Ravitch, and A. S. Lowenhart, Lexington, Ky. Vaporizer	608,967	Aug. 9	1463	346	84	957
Katzenberger, Fredrick. (See Loeble and Katzenberger.)						
Katzenstein, Gustav, Berlin, Germany. Wool-washing machine	611,432	Sept. 27	2283	547	84	1950
Katzenstein, Gustav, Berlin, Germany. Filter	611,488	Sept. 27	2481	572	84	1969
Katzenstein, Gustav, Berlin, Germany. Decanting apparatus for filters	611,489	Sept. 27	2483	572 573	84	1969
Kauffmann, Nickolas, Dubuque, Iowa. Catch-basket for lawn-mowers	607,280	July 12	1400	298 299	84	287
Kaufholz, John N., Cleveland, Ohio. Brick-machine	607,856	July 26	2472	525	84	532
Kaufmann, Sophie, Jeannette, Pa. Cooking utensil	608,868	Aug. 9	1280	299	84	922
Kaulhausen, Wilhelm, Aachen, Germany. Machine for scarf-jointing leather	609,549	Aug. 23	2567	601 602	84	1201
Kay, William, and J. C. Adams, Jonesborough, Ind. Reheating and finishing machine for glass articles	608,427	Aug. 2	468	105 106	84	748
Kaylor, Jacob F. (See Kaylor, John and J. F.)						
Kaylor, John, Decatur, and J. F. Kaylor, Pekin, Ill. Bicycle-brake	607,857	July 26	2478	526	84	533
Kearney & Foot Company. (See Turner, James, assignor.)						
Keating, Robert M., Springfield, Mass. Wheel	607,175	July 12	1012	220	84	213
Keating, Robert M., Springfield, Mass. Adjustable handle-bar	607,543	July 19	1871	389	84	401
Keavy, Thomas E., Philadelphia, Pa. Buffer for shoe or other buffing machines	610,758	Sept. 13	1106	253	84	1672
Keavy, Thomas E., Philadelphia, Pa. Buffing-machine	610,759	Sept. 13	1110	253	84	1673
Keavy, Thomas E., Philadelphia, Pa. Roll of abrading material	610,761	Sept. 13	1114	254	84	1673
Keavy, Thomas E., Philadelphia, Pa. Buffing-pad	610,762	Sept. 13	1115	254	84	1674
Keavy, Thomas E., assignor to Standard Buffing Machine Company, Limited, Philadelphia, Pa. Buffer for shoe or other buffing machines	610,760	Sept. 13	1112	254	84	1673
Keeble, Arthur J. (See Moulton and Keeble.)						
Keeler, Henry C., Waterville, Wash. Current-motor	608,131	July 26	2051	633 634	84	628
Keenan, William J. (See Perrin, Summerfield M., assignor.)						
Keene, George A., Saugus, Mass. Combined measure and funnel	608,927	July 5	516	113	84	102
Keene, Joseph, Chicago, Ill. Spring-hinge	609,585	Aug. 23	2638	617	84	1214
Keesee, Frank P., Toronto, assignor of one-half to D. H. McDermid, London, Canada. Vending-machine	610,542	Sept. 13	747	170	84	1598
Kell, Francis and H. F., New York, N. Y. Combined door hinge and check	607,858	July 26	2479	526	84	533
Kell, Francis and H. F., New York, N. Y. Combined hinge and door-check	608,334	Aug. 2	307	68	84	717
Kell, Henry F. (See Kell, Francis and H. F.)						
Keith, Alexander, and J. H. Byrne, Toronto, Canada. Acetylene-gas generator	608,460	Aug. 2	518	116	84	758
Keith, Charles D., Cherokee, Ark. Corn-planter	609,354	Aug. 16	2214	523	84	1115
Keith, Myron L., Brockton, Mass. Machine for reinforcing inner soles	609,103	Aug. 16	1763	420	84	1095

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Keith, Myron L., Brockton, Mass. Lip-turning machine	610,326	Sept. 6	356	76	84	1509
Kelch, Wallace M. (See Kelly and Kelch.)						
Keller, David K., Montgomery, Ohio. Pipe-coupling	609,080	Aug. 16	1606	382	84	998
Keller, Henry, assignor of one-half to A. A. Meyer, New York, N. Y. Gas-generator	611,490	Sept. 27	2485	573	84	1970
Keller, Julius, and C. H. Haeseler, Philadelphia, Pa. Engine	607,850	July 26	2481	526 527 535	84	533
Kelley, Alexander, assignor of two-thirds to W. B. Clerk, Wilmington, and J. E. Addicks, Claymont, Del. Match-making machine	606,994	July 5	621	136 137 138	84	123
Kelley, Henry J., Carnegie, Pa. Refrigerator for meat-wagons	611,491	Sept. 27	2487	573 574	84	1970
Kelley, John R., Reelfoot, Tenn. Hoe	609,355	Aug. 16	2215	524	84	1116
Kellogg, Henry W., *et al.* (See Worth, William O., assignor.)						
Kellum, Seth, Milford, assignor of one-third to A. W. Bascom, Dickinson county, Iowa. Hay-rack loader	609,148	Aug. 16	1834	434 435	84	1040
Kelly, Charles, Passaic, N. J., assignor to Read Holliday & Sons, Limited, New York, N. Y. Acetylene-gas generator	608,869	Aug. 9	1282	299	84	922
Kelly, David L., Buffalo, N. Y. Fork for bicycles	609,937	Aug. 30	3256	761	84	1348
Kelly, George, Mineral Point, Wis. Brake-shoe	610,327	Sept. 6	358	76	84	1509
Kelly, John D., Providence, R. I. Foot-rest for chairs	611,327	Sept. 27	2165	501	84	1911
Kelly, John F., Pittsfield, Mass. Electrostatic measuring instrument	608,132	July 26	2953	634	84	628
Kelly, John F., Pittsfield, Mass., assignor to Stanley Electric Manufacturing Company, of Massachusetts. Means for preventing stray magnetism in dynamo-electric machines	608,133	July 26	2954	634	84	628
Kelly, John F., assignor of one-half to C. C. Chesney, Pittsfield, Mass. Lightning-arrester	608,685	Aug. 9	930	213	84	859
Kelly, John L., *et al.* (See Roure, Edmond V., assignor.)						
Kelly, Joseph N., and W. M. Kelch, Dayton, Ohio. Gas-engine	610,682	Sept. 13	973	225 226	84	1646
Kelly, Michael, Bloomington, Ill. Draft device for locomotives	608,870	Aug. 9	1284	300	84	923
Kelly, Robert, Jr. (See Shanks and Kelly.)						
Kelsey, Frank W., New York, N. Y. Holdback for curtains	609,965	Aug. 30	3320	772	84	1361
Kemp, Clarence M., Baltimore, Md. Water-heater	608,291	Aug. 2	213	50	84	697
Kemp, William A., Toronto, Canada. Pipe-elbow-bending machine	606,785	July 5	288	59	84	57
Kemp, William A., Toronto, Canada. Corrugated-pipe-compressing machine	606,786	July 5	290	60	84	58
Kemp, William A., Toronto, Canada. Pipe-elbow	607,620	July 19	2013	418	84	427
Kempshall, Eleazer, Newton, Mass. Pneumatic tire	611,594	Sept. 27	2684	620	84	2008
Kendall, John A., and J. B. Kester, Cameron, Mo. Oil can and pump	611,328	Sept. 27	2167	501	84	1912
Kendrick, Arthur B., assignor to J. R. Kendrick, Philadelphia, Pa. Elastic stocking	609,031	Aug. 16	1607	383	84	998
Kendrick, James R. (See Kendrick, Arthur B., assignor.)						
Kendrick, Matthew B., Newport, Ky., assignor of one-half to F. B. Rampe, Cincinnati, Ohio. Tie-holding collar	611,578	Sept. 27	2649	611	84	2002
Kendrick, Thomas, Glenwood Springs, Colo. Folding car-step	608,335	Aug. 2	309	68	84	717
Kenfield, Stephen B., and C. Elvidge, San Francisco, Cal. Loading appliance	608,142	July 26	2970	687 688	84	631
Kenna, John T., *et al.* (See De Forest, Charles D., assignor.)						
Kennard Manufacturing Company. (See Knobeloch, Frank, assignor.)	611,256	Sept. 27	2021	466	84	1884
Kennedy, Charles A., Coaticook, Canada. Combined support and luggage-carrier	611,219	Sept. 20	1948	449 450	84	1850
Kennedy, Edward S. T., Larchmont, N. Y., and J. H. Williamson, Bethel, Conn., assignors to Hazelton Boiler Company, New York, N. Y. Steam-boiler setting	11,604	Sept. 20	1968	454	84	1854
Kennedy, John E., Montreal, Canada. Shoe-sole. (Reissue.)						
Kennedy, John W., assignor of one-half to M. A. Saxton, Willingham, Ga. Piston-packing	611,433	Sept. 27	2384		84	1950
Kenney, Charles H., New London, Conn. Steam-generator	611,412	Sept. 27	2340	539	84	1943
Kenny, George F., Hyde Park, Mass. Self-oiling loose pulley	607,690	July 19	2133	448	84	449
Kentch, George, Stilwell, Kans. Wire-fence-building appliance	608,608	Aug. 9	786	180	84	830
Kepner, Solomon, Pottstown, Pa. Device for preventing bagging of trousers at the knee	610,000	Aug. 30	3481	807	84	1398
Kerl, John, New Freedom, Pa. Horse hay-rake	611,382	Sept. 27	2286	527 528	84	1932
Kershaw, Charles S., Sherburne, N. Y. Block and tackle	609,488	Aug. 23	2361	557	84	1163
Kershaw, John, Hebden Bridge, England. Apparatus for cutting pile of velvets, &c.	611,257	Sept. 27	2024	467	84	1885
Kerstetter, Charles W., assignor to Niagara Fire Extinguisher Company, Akron, Ohio. Duplex induction-valve for automatic sprinklers	606,787	July 5	292	60	84	58
Kesselring, Friedrich, Sterling, N. J. Spindle for quilling-machines	606,890	July 5	464	99	84	91
Kester, Julius B. (See Kendall and Kester.)						
Ketelhodt, Hans F. von, Ober Ehrenbreitstein, Germany. Lamp-holder for bicycles	609,149	Aug. 16	1835	435	84	1040
Kethley, L. W., *et al.* (See Barron, James E., assignor.)						
Keukelaere, Gustave de, Alost, Belgium. Machine for depliating skins	607,654	July 19	2079	433 434	84	439
Keunen, Everard, Eindhoven, Netherlands, and R. Högfeldt, Dusseldorf, Germany. Box-making machine	608,201	Aug. 2	62	15 16 17	84	667
Key, John T., Sandal Magna, England. Process of and apparatus for manufacturing coke	609,150	Aug. 16	1836	435 436	84	1040
Keyes, Frank R., Binghamton, N. Y. Cigar-bunch-rolling machine	607,051	July 12	775	169 170	84	169
Keyes, James A., New York, N. Y. Fare-register	609,988	Aug. 30	3257	761	84	1348
Keyless Lock Company. (See Holton, Winfred B., assignor.) (Reissue.)						
Keystone Electric Company. (See Powell, William H., assignor.)						
Keystone Watch Case Company. (See Mink, Fritz, assignor.)						
Kibling, George F., Hanover, N. H. Hydraulic dredge for mining purposes	610,763	Sept. 13	1116	255	84	1674
Kidder Press Manufacturing Company. (See Meisel, Francis, assignor.)						
Kilduchevcky Mega-Telephone Syndicate. (See Kilduchevcky, Paul de, assignor.)						
Kilduchevcky, Paul de, assignor to Kilduchevcky Mega-Telephone Syndicate, Limited, London, England. Long-distance telephone	607,801	July 19	2345	494 495	84	490
Kile, William A., Putnam, Tex. Combined cotton-seed and corn planter	609,279	Aug. 16	2090	495	84	1091
Killars, John, Stonington, Conn. Knife-sled motion for plush or velvet looms	610,711	Sept. 13	1027	237	84	1657
Killeen, Michael, Braddock, Pa. Blast-furnace casting apparatus	608,143	July 26	2974	638	84	632
Killen, Edward B., Belfast, Ireland. Driving apparatus for cycles	609,151	Aug. 16	1838	486 487	84	1041
Kimsey, James C., Little Rock, Ark., assignor to Philadelphia Camera Company, Limited, Philadelphia, Pa. Photographic-plate carrying and transferring case	607,052	July 12	778	170	84	170
Kimsey, James C., assignor to Philadelphia Camera Company, Limited, Philadelphia, Pa. Photographic-plate magazine	607,053	July 12	780	170	84	170
Kimsey, James C., assignor to Philadelphia Camera Company, Limited, Philadelphia, Pa. Photographic-plate holder	607,054	July 12	783	171	84	171

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Kincaid, Joseph W., assignor to Reading Crane and Hoist Works, Reading, Pa. Chain hoist	609,989	Aug. 30	3261	762	84	1349
Kinch, Lewis E., *et al.* (See Smith, Frank S. and S. J., assignors.)						
Kindermann, Friedrich, Oregon, Ill. Attachment for pianos	609,966	Aug. 30	3321	773	84	1361
King Bridge Company. (See Fuller, Harry, assignor.)						
King, Charles N., *et al.* (See Walkins, Louis E., assignor.)	609,280	Aug. 16	2091	496	84	1091
King, Ferdinand, New York, N. Y. Syringe-nozzle						
King, Henry C. (See Dillon, Peter, assignor.)	607,381	July 12	1401	299	84	287
King, Joseph D., and M. A. Burns, Menominee, Mich. Key-fastener	611,174	Sept. 20	1861	429	84	1834
King, Rufus D., Bowman, Ga. Self-rocking cradle	609,550	Aug. 23	2569	602	84	1201
King, William T., Tallapoosa, Ga. Washing-machine	609,188	Aug. 16	1899	452	84	1051
Kingsland, William, Llandudno, England. Electrical traction	608,609	Aug. 9	788	181	84	830
Kinnard, Frederick G., Paterson, N. J. Brush attachment for bicycle-chains	610,355	Sept. 6	411	88	84	1519
Kinne, Theodore Y., and A. Gartner, Paterson, N. J. Compressible tube	610,543	Sept. 13	751	171	84	1599
Kinnear, William R., Columbus, Ohio. Rolling fireproof curtain						
Kinney, Edwin R. (See Bowman and Kinney.)						
Kinney, Richard R., and G. P. Barnard, assignors of one-third to W. L. Barth, Coldwater, Mich. Burial apparatus	606,722	July 5	157	35	84	82
Kinraide, Thomas B., Boston, Mass. Electric break for induction-coils	607,176	July 12	1013	220	84	213
Kinraide, Thomas B., Boston, Mass. Electric break and induction apparatus	607,177	July 12	1016	221	84	213
Kinsman, Thomas H., St. Louis, Mo. Ironing-board	606,788	July 5	294	61	84	59
Kinyon, Alonzo G., Chicago, Ill. Triple valve for air-brakes	610,237	Sept. 6	179	40	84	1476
Kirby, John, Jr. (See Tesseyman and Kirby.)						
Kirby, John, Jr., Dayton, Ohio, assignor to United States Head-Light Company, Utica, N. Y. Glass-holder	608,610	Aug. 9	788	181	84	830
Kirchmer, Jacob, Jr., Cincinnati, assignor of one-third to H. C. Staps, Elmwood Place, Ohio. Window-cleaner	606,995	July 5	639	138	84	127
Kirkham, John, assignor of one-half to J. von Wyl, Oakland, Cal. Acetylene-gas generator	609,189	Aug. 16	1902	453	84	1051
Kirkpatrick, Otto B., and G. L. Banks, Colorado Springs, Colo. Seal-lock	607,512	July 19	1814	377	84	391
Kirkpatrick, Percy W., Belleair, Fla. Bicycle-stand	610,051	Aug. 30	3482	807	84	1398
Kirkwood, John, Lenox, Mass. Photographic-plate washer	608,871	Aug. 9	1285	300	84	923
Kirkwood, John, Lenox, Mass. Nut-lock	608,872	Aug. 9	1287	300	84	923
Kisinger, John T. T., Stilwell, Kans. Wire-fence-building appliance	610,489	Sept. 6	646	145	84	1562
Kitchin, Samuel B., Scotland Neck, N. C. Automatic flexible coupling for train-pipes	608,406	Aug. 2	430	95	84	742
Kitselman, Alva L., *et al.* (See Jones, William H., assignor.)						
Kitselman, Alva L., Ridgeville, Ind. Wire-stretcher	607,751	July 19	2229	471	84	468
Kitselman, Davis M., *et al.* (See Jones, William H., assignor.)						
Kitson, Arthur, Philadelphia, Pa., assignor to Kitson Hydrocarbon Heating and Incandescent Lighting Company, of West Virginia. Vapor-burning apparatus	607,995	July 26	2716	579	84	578
Kitson, Arthur, Philadelphia, Pa., assignor to Kitson Hydrocarbon Heating and Incandescent Lighting Company, of West Virginia. Vapor-burning apparatus	607,996	July 26	2717	579	84	579
Kitson, Arthur, Philadelphia, Pa., assignor to Kitson Hydrocarbon Heating and Incandescent Lighting Company, of West Virginia. Vapor-burning apparatus	608,051	July 26	2892	608	84	604
Kitson Hydrocarbon Heating and Incandescent Lighting Company. (See Kitson, Arthur, assignor.)						
Kittredge, Charles H. (See Wilson, Volney M., Jr., assignor.)	608,292	Aug. 2	215	50	84	697
Kitzelman, Gustave, Chicago, Ill. Wheel	608,611	Aug. 9	790	181, 182, 183	84	831
Klahn, Emil, West Hoboken, N. J., assignor to Manufacturers and Merchants Warehouse Company, Chicago, Ill. Machine for assembling ball-retainers for ball-bearings	609,439	Aug. 23	2363	557	84	1163
Kiar, August A., Cincinnati, Ohio. Automatic cut-off and strainer for cisterns	610,403	Sept. 6	505	110	84	1536
Klausman, Oscar, Bridgeport, Conn. Harness-saddle loop						
Kleber, Frank. (See Cable, Daniel J., assignor.)	608,202	Aug. 2	65	17	84	668
Kleckner, Asaph M., Findlay, Ohio. Pipe-wrench	609,680	Aug. 23	2428	660	84	1251
Klein, Steven J., Pittsburg, Pa. Gate	608,612	Aug. 9	793	-----	84	831
Klever, Friedrich W., Cologne, assignor to E. T. Pearson, Hamburg, Germany. Ointment-base and making same	610,712	Sept. 13	1028	237	84	1657
Kloman, Theodore W., New York, N. Y. Apparatus for starting and controlling electric motors	606,891	July 5	465	99, 100	84	92
Klotz, Sidney, assignor of one-half to M. B. Simon, Chicago, Ill. Color-printing press						
Kluge, Paul F. (See Kühn and Kluge.)						
Knape, John, and C. W. Dake, assignors to Grand Rapids Cycle Company, Grand Rapids, Mich. Crank-shaft bearing for bicycles	607,055	July 12	785	171	84	171
Knee, Allison W., and J. W. Robinson, Humboldt; said Knee assignor to H. S. Sanders, Fort Dodge, Iowa. Eight-horse evener	611,492	Sept. 27	2488	574	84	1970
Kneeland, Edwin J., Lansing, Mich. Refrigerator	611,013	Sept. 20	1565	360	84	1778
Kniffin, Allen J., Schenectady, N. Y. Router	609,681	Aug. 23	2329	661	84	1251
Knight, Edward M., New York, N. Y. Combined filter and cooler	607,513	July 19	1815	377, 378	84	391
Knight, Thomas G., New York, N. Y. Account-keeping book	610,451	Sept. 6	578	128	84	1540
Knittel, David G., Pittsburg, Pa. Package-carrier for bicycles	610,404	Sept. 6	506	110	84	1536
Knobeloch, Frank, assignor, by mesne assignments, to Kennard Manufacturing Company, Dayton, Ohio. Paper box	606,671	July 5	66	14	84	15
Knobloch, Johann F. R., Hamburg, Germany. Tidal motor	608,203	Aug. 2	66	17, 18	84	668
Knoll, Jonas L., Lebanon, Pa. Bicycle-support	610,186	Sept. 6	65	13	84	1453
Knoop, Josiah, Casstown, Ohio. Animal-trap	607,691	July 19	2134	448	84	449
Knorpp, Philip, Jr., Chicago, Ill. Pneumatic vehicle-tire	610,606	Sept. 13	858	197	84	1622
Knowles, Edward R. (See O'Connor and Knowles.)						
Knox, Bryce M., Kilbirnie, Scotland. Winding machinery for thread, yarn, &c	607,692	July 19	2135	449	84	449
Knudsen, Karsten, assignor to American Electric Vehicle Company, Chicago, Ill. Truss-frame for electric vehicles	611,258	Sept. 27	2026	467, 468	84	1885
Knupp, Michael, assignor of one-half to S. S. Frederick, Toledo, Ill. Thill-coupling	609,510	Aug. 23	2507	586	84	1189
Koch, Alphonse, *et al.* (See Plaut, Louis, assignor.)						
Koch, Elias, *et al.* (See Plaut, Louis, assignor.)						
Koch, Gustave, assignor to H. C. Blye, New York, N. Y. Stopper for bottles or other receptacles	608,407	Aug. 2	433	95	84	742
Koch, Gustave, assignor to H. C. Blye, New York, N. Y. Stopper for bottles or other receptacles	608,408	Aug. 2	435	96	84	742
Koch, Valentin, Geneva, Switzerland. Inhaling apparatus	608,873	Aug. 9	1288	300, 301	84	924
Kocherhans, Georg, Rötteln, Germany. Apparatus for indicating number of weft-shots in woven fabrics	611,413	Sept. 27	2342	540	84	1943
Koehler, Emil, New York, N. Y. Tile molding	609,940	Aug. 30	3364	768	84	1349
Koenig, Carl. (See Krayn and Koenig.)						
Koenig, Emil, and M. L. Erlanger, New York, N. Y. Automatic carbonating apparatus	610,002	Aug. 30	3484	808	84	1393

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Koetschet, Joseph, St. Fons, assignor to La Société Chimique des Usines du Rhône, anciennement Gilliard P. Monnet et Cartier, Lyons, France. Making aldehydo-benzoic acid	607,056	July 12	786	-----	84	172
	607,441	July 19	1512	322	84	325
Kohl, Hugo, Dusseldorf, Germany. Separator for steam and water						
Kohne, Edward W. (See Bowman and Kinney, assignors.)	610,356	Sept. 6	412	88	84	1519
Kolb, Emil F. and E. A., Philadelphia, Pa. Silverware case or chest						
Kolb, Eugene A. (See Kolb, Emil F. and E. A.)	607,178	July 12	1018	221	84	214
Kolb, Jacob, Wichita, Kans. Combined plow and harrow						
Kollock, George C. (See Baker, James F., assignor.)						
Koons, David, *et al.* (See Snider, Gabriel F., assignor.)						
Koons, Henry, *et al.* (See Snider, Gabriel F., assignor.)	607,382	July 12	1403	299	84	288
Koons, John H., Seattle, Wash. Screen for doors or windows	608,686	Aug. 9	931	214	84	859
Koontz, John A., Centreville, Iowa. Ice-loader	608,261	Aug 2	157	39	84	685
Koopman, John, Falmouth, Mich. Swarm-preventer for beehives	606,723	July 5	160	-----	84	93
Koorie, Hanna, New York, N. Y. Hair-tonic	610,063	Aug. 30	3487	808	84	1394
Kops, Daniel, New York, N. Y. Corset	611,008	Sept. 20	1654	378	84	1795
Kops, Daniel, New York, N. Y. Bustle-corset	610,713	Sept. 13	1030	238	84	1658
Korn, Isaac, assignor of one-half to S. S. Crelder, Sterling, Ill. Corn-husker	607,802	July 19	2347	495, 496	84	491
Kornmann, John H. (See Furey, Cyrus R., assignor.)						
Kortüm, Wilhelm, Berlin, Germany. Device for sterilizing milk, &c	609,814	Aug. 30	3047	712	84	1306
Koser, Georg, Geislingen, assignor to H. Bechmann, Bamberg, Germany. Producing ice	609,815	Aug. 30	3048	713	84	1306
Kost, Luigi, and E. Guocchi, Milan, Italy. Fastening device for stoppers of bottles, &c	611,579	Sept. 27	2650	611	84	2002
Kott, Gustav E., Chemnitz, Germany. Sewing-machine	610,064	Aug. 30	3488	808	84	1394
Köttgen, Karl A. B. D., Charlottenburg, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Controlling device	609,682	Aug. 23	2880	661	84	1251
Krah, Armin, Berlin, Germany. Machine for perforating paper, &c	608,874	Aug. 9	1289	301	84	924
Krall, Bartolomay, Boston, Mass. Draft-cock						
Kramer, George N., assignor of one-half to C. J. Duddleston, Terre Haute, Ind. Collar and cuff edger	607,179	July 12	1019	221	84	214
	609,816	Aug. 30	3049	713	84	1306
Kramer, Philip, New York, N. Y. Dumping truck or car	609,356	Aug. 16	2216	524	84	1116
Krantz, Hubert, New York, N. Y. Electrical-conduit box	606,841	July 5	390	83	84	78
Kraus, Samuel, assignor to Eagle Pencil Company, New York, N. Y. Penholder	611,259	Sept. 27	2028	468	84	1886
Krauth, Albert, Hamilton, Ohio. Autographic register						
Krayn, Robert, and C. Koenig, Berlin, Germany; said Krayn assignor to said Koenig. Galvanic element	611,175	Sept. 20	1862	429	84	1835
	611,128	Sept. 20	1779	408	84	1819
Krellenstein, Bernard, assignor of one-half to M. Crystal, New York, N. Y. Folding bed						
Kreppel, Samuel L. (See Bodnar and Kreppel.)	607,997	July 26	2719	580, 581	84	579
Krieger, Louis, Paris, France. Electrically-self-propelling vehicle	610,065	Aug. 30	3490	809	84	1394
Kroeger, Bernard, White Plains, N. Y. Piano	611,493	Sept. 27	2489	574, 575	84	1971
Krogstad, Ole L., assignor of one-half to A. Hovland, Hudson, Wis. Oscillating-piston steam-engine	609,440	Aug. 23	2367	558	84	1164
Kromm, Louis H., Baltimore, Md. Fertilizer-distributer						
Kroscher, Charles. (See Therien, Nelson, assignor.)	607,752	July 19	2232	472	84	468
Krummel, Louis C., Chicago, Ill. Bicycle-chain	611,204	Sept. 20	1911	441	84	1843
Krumsoy, William E. (See Neuhs, Werner, assignor.)	610,814	Sept. 13	1217	280	84	1694
Kryder, Henry W., Clintondale, Pa. Ladder						
Kuhlmann, Adolph F., La Crosse, Wis. Car-coupling	609,887	Aug. 30	3173	742, 743	84	1332
Kühn, Paul A., and P. F. Kluge, Burgstadt, Germany. Multiple sewing-machine	607,860	July 26	2484	527	84	534
Kundtz, Theodor, Cleveland, Ohio. Sewing-machine cabinet						
Kundtz, Theodor, and J. Gedeon, Cleveland, Ohio; said Gedeon assignor to said Kundtz. Sewing-machine table	607,861	July 26	2485	527	84	534
Kundtz, Theodor, and A. Eiben, Cleveland, Ohio; said Eiben assignor to said Kundtz. Sewing-machine table	607,862	July 26	2487	527	84	535
	609,104	Aug. 16	1766	420	84	1026
Kunz, Henry M., New York, N. Y. Hose-hydrant	609,105	Aug. 16	1769	421	84	1027
Kunz, Henry M., New York, N. Y. Hydrant						
Kunzel, Charles A., Jr., Hoboken, N. J. Apparatus for burning hydrocarbon or other oils	607,863	July 26	2490	528	84	535
	609,441	Aug. 23	2369	558	84	1164
Kurrie, George R., Philadelphia, Pa. Combined cap and girder-support						
Kursheedt Manufacturing Company. (See Donne, Ernest F., assignor.)						
Kursheedt Manufacturing Company. (See Groebli, Joseph A., assignor.)						
Kursheedt Manufacturing Company. (See Waltzfelder, Albert S., assignor.)	607,998	July 26	2723	581	84	579
Kurtzig, Heinrich, Inowrazlaw, Germany. Safety device for lifts	610,066	Aug. 30	3491	809	84	1394
Kuser, Fred, assignor of one-half to R. L. Ward, New York, N. Y. Grain-chute						
Kuss, Henry F., assignor to himself and Q. R. Hessel, Escanaba, Mich. Spout-hoisting apparatus	609,688	Aug. 23	2832	661	84	1252
	610,544	Sept. 13	752	171	84	1599
Kutz, Erwin E., Easton, Pa. Stair-rod	608,978	July 5	582	128	84	115
La Poer, George P., and C. E. Walker, York, Pa. Thill-coupling						
La Société Alsacienne de Constructions Mécaniques. (See Wenning and Gégauff, assignors.)						
La Société Chimique des Usines du Rhône, anciennement Gilliard P. Monnet et Cartier. (See Koetschet, Joseph, assignor.)						
La Société Chimique des Usines du Rhône, anciennement Gilliard P. Monnet et Cartier. (See Weintraub-Schnorr, Naura, assignor.)						
La Société des Appareils a Changement de Vitesse. (See Gérard, Louis L. H., assignor.)						
La Société des Plaques Lithographiques. (See Five, Léon, assignor.)						
Labatt, Henry J., *et al.* (See Labatt and Lewis, assignors.)						
Labatt, Joseph A., and G. H. Lewis, assignors of one-half to J. Goggan, L. Blum, and H. J. Labatt, Galveston, Tex. Vehicle-wheel	607,057	July 12	788	171	84	172
	607,864	July 26	2491	528	84	535
Lacey, Fred, Valleyfield, Canada. Stop-motion for spinning-machines	610,607	Sept. 13	860	197	84	1622
Lacey, William W., Boston, Mass. Spring-hub for vehicle-wheels						
Lackawanna Lubricating Company. (See Lewis, John F., assignor.)	608,336	Aug. 2	310	68	84	718
Lackey, William, Sherwood, Tex. Kitchen-cabinet	610,405	Sept. 6	507	111	84	1536
Lacoste, François R., Bordeaux, France. Seal	609,967	Aug. 30	3322	773	84	1361
Ladd, Wyllys C., Bristol, Conn. Tool-holder						
Ladewich, George. (See Sladek, Johann, assignor.)	606,672	July 5	68	14, 15	84	16
Laffas, Jean M., Paris, France. Safety apparatus for railway-lines	611,129	Sept. 20	1780	408	84	1820
Lafferty, Frank, Lorain, Ohio. Bevel-tool	607,644	July 19	2067	499	84	436
Lagneau, Emile, Lessines, Belgium. Match-making	610,357	Sept. 6	413	88, 89, 90	84	1519
Lagneau, Emile, Lessines, Belgium. Manufacture of matches	607,808	July 19	2349	496	84	491
Lagrange, Frank B., Hastings Centre, N. Y. Holdback						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lahr, Harry I., Lafayette, Ind. Machine for making cell-cases	609,684	Aug. 23	2882	661, 662, 663	84	1252
Laird, Edgar N., El Toro, Cal. Portable folding tent	607,933	July 26	2610	554	84	558
Lamb, Carrie, Bradner, Ohio. Combination kitchen-table and ironing-board	606,928	July 5	517	113	84	108
Lamb, George B., Waterbury, Conn., assignor to Hero Fruit Jar Company, Philadelphia, Pa. Glass-press	608,204	Aug. 2	67	18	84	668
Lamb, Isaac W., Perry, Mich. Knitting-machine	611,130	Sept. 20	1781	408, 409, 410	84	1820
Lambert, Albert L., Cleveland, Ohio. Stop and waste cock	607,865	July 26	2492	528	84	536
Lambert, Charles E., *et al.* (See Beeman, Joseph S., assignor.)						
Lambert, Frank. (See Pastre and Lambert.)						
Lamme, Benjamin G., Pittsburg, Pa. System of electrical distribution	607,621	July 19	2014	418	84	427
Lamme, Benjamin G., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Means for controlling non-synchronous alternating-current motors	609,990	Aug. 30	3372	783	84	1371
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Method of and means for securing constant torque in polyphase motors	609,991	Aug. 30	3374	783	84	1371
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric and Manufacturing Company, of Pennsylvania. Induction-motor	610,067	Aug. 30	3402	809	84	1395
Lamont, Robert P., assignor to Simplex Railway Appliance Company, Chicago, Ill. Car construction	611,069	Sept. 20	1656	378	84	1795
Lamoureux, Amédeé F., Montreal, Canada. Leg for billiard, pool, or other tables	611,260	Sept. 27	2031	469	84	1886
Lampl, Luis, *et al.* (See Stephenson, John R., assignor.)						
Lamson Consolidated Store Service Company. (See Cowley, James T., assignor.)						
Lamson Consolidated Store Service Company. (See Goodfellow, John H., assignor.)						
Lancaster, John, and C. Witteck, New York, N. Y. Cloth-ornamenting apparatus	609,190	Aug. 16	1904	453	84	1052
Landau, Katharin E., New York, N. Y. Ironing-machine	610,942	Sept. 20	1430	328	84	1753
Landau, Katharine E., New York, N. Y. Fan attachment for umbrellas	610,358	Sept. 6	418	90	84	1519
Landis, Frank F., Waynesborough, Pa. Centrifugal grain-separator. (Reissue)	11,680	July 19	2371	502, 503	84	496
Landis, Frank F., Waynesborough, Pa. Conveyer	611,383	Sept. 27	2288	528	84	1933
Landis, Frank F., Waynesborough, Pa. Pneumatic stacker	611,384	Sept. 27	2290	529	84	1933
Landis, Frederick B., assignor to Ammonia Refrigerating and Supply Company, St. Louis, Mo. Pipe-coupling	607,180	July 12	1020	222	84	214
Landtved, Lauritz P., Copenhagen, Denmark. Hydraulic press	607,442	July 19	1512	322	84	325
Lane, Cornelius A., *et al.* (See Roure, Edmond V., assignor.)						
Lane, Hattie E., Colfax, Ind. Scrubbing-machine	608,052	July 26	2833	604	84	604
Lane, Sampson W., Waco, assignor of one-half to C. L. W. Sherar, Temple, Tex. Marking attachment	607,248	July 12	1160	248	84	239
Lane, Sophie A., Waco, Tex. Portable folding mirror-stand	611,434	Sept. 27	2385	547	84	1950
Lang, Benjamin P. M., assignor of one-half to J. M. Roesch, Buffalo, N. Y. Non-slipping horseshoe	609,551	Aug. 23	2571	602	84	1201
Lang, Lincoln A., Yule, N. D., assignor of one-half to E. F. Walsh, St. Paul, Minn. Valve-gear	607,058	July 12	789	171, 172	84	172
Langbein, Georg, Leipsic, Germany. Apparatus for electroplating articles in bulk	610,907	Sept. 20	1375	315	85	1742
Langdale, Rupert H., Cincinnati, Ohio. Supplementary horseshoe	607,659	July 19	2099	436	84	441
Lange, George C. O., Cresskill, N. J., assignor to Manhattan Optical Company, New York, N. Y. Photographic shutter	608,875	Aug. 9	1292	301	84	924
Langfield, John, Manchester, England. Means for heating, drying, and ventilating	610,140	Aug. 30	3604	837	84	1418
Lankford, Jerome J. (See Coulbourn and Lankford.)						
Lanius, Henry, Galion, Ohio. Wrench	608,876	Aug. 9	1295	302	84	925
Lannon, Owen, assignor of one-half to E. W. Ely, Lee, Mass. Pipe-wrench	608,293	Aug. 2	216	50	84	698
Lanphere, Chauncey A., assignor to Invincible Grain Cleaner Company, Silver Creek, N. Y. Flour-packer	611,261	Sept. 27	2031	469, 470	84	1886
Lanzit, Joseph J., Chicago, Ill. Paper vessel	608,687	Aug. 9	934	215	84	860
Lapaugh, Louis T., Utica, N. Y. Bicycle-lock	610,008	Aug. 30	3498	810	84	1395
Lapaugh, Louis T., assignor of two-thirds to E. D. Gray and W. R. Donalty, Utica, N. Y. Nursing-bottle	608,053	July 26	2834	604	84	604
Lapham, Anson F. (See Bale and Lapham.)						
Lappin Brake Shoe Company. (See Pickring, Charles, assignor.) (Reissue.)	610,815	Sept. 13	1218	281	84	1695
Laraway, Cullen E., Plaquemine, La. Nut-lock	609,552	Aug. 23	2572	603	84	1201
Larkin, Francis, Jr., *et al.* (See Freeman, Warren P., assignor.)						
Larkin, George H., San Francisco, Cal. Retort oil-burner	609,968	Aug. 30	3323	773, 774	84	1361
Larson, Emil, Chicago, Ill. Sheet-separator	610,714	Sept. 13	1032	238	84	1658
Larson, John P. (See Berger, Joseph A., assignor.)						
Larue, Alvy M., Downey, Iowa. Car-coupling	607,443	July 19	1514	323	84	326
Larue, Charles, Brussels, Belgium. Driving-gear for velocipedes, autocars, or other vehicles	609,817	Aug. 30	3050	713	84	1307
Lash, John F., Linneus, Mo. Buggy-boot	610,141	Aug. 30	3604	837	84	1418
Lateulere, Albert A., London, England. Music-recording mechanism	606,739	July 5	295	61	84	59
Lathrop, James W., Mystic, Conn. Distilling extracts	610,545	Sept. 13	753	171	84	1509
Latimer, Clark W., Portage, Wis. Suspender-buckle	608,698	Aug. 9	986	215	84	860
Latour, Marie E. de, New York, N. Y. Lady's waist	607,999	July 26	2723	582	84	580
Latta, Griffin T., Ludlow, Ky. Earth-boring and pipe-laying apparatus						
Latta, John S., *et al.* (See Armstrong, Ernest, assignor.)						
Lattimore, Daniel J., St. Louis, Mo., assignor to Greenlee Brothers & Company, Chicago, Ill. Abrading-wheel	608,877	Aug. 9	1296	302	84	925
Lauckert, Eduard F. H. H., assignor to Siemens Brothers & Co., Limited, London, England. Switch for varying electrical resistance	608,878	Aug. 9	1297	302	84	925
Lauder, Isaac N., Binghamton, N. Y. Latch	607,866	July 26	2498	526	84	536
Lauritsen, John, Tyler, Minn. Tension device for twine-binders	609,106	Aug. 16	1720	421	84	1027
Lautz, William, Buffalo, N. Y. Stone-sawing machine	610,653	Sept. 13	929	214, 215	84	1636
Lavigne, Joseph P., New Haven, Conn. Turret-lathe	607,698	July 19	2137	449, 450	84	449
Lavigne, Joseph P., New Haven, Conn. Turret-lathe. (Reissue)	11,660	Aug. 30	3640	845, 846, 847	84	1496
Law, Prentis E., Wilmette, Ill. Fireplace-screen	609,286	Aug. 16	2008	476	84	1075
Law, Prentis E., Wilmette, Ill. Car-fender	609,818	Aug. 30	3051	713, 714	84	1307
Lawley, William F. (See Hyde, John W., assignor.)						
Lawrason, Louis O., assignor of one-half to J. W. Butler, London, Canada. Sanitary ejector	607,758	July 19	2283	472	84	468

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Lawrence, John, Columbus, Ohio. Bed	609,819	Aug. 30	3054	714, 715	84	1307
Lawrence, Joseph L., assignor of one-half to C. Thomas & Co., Boston, Mass. Hansom-cab	611,385	Sept. 27	2292	529, 530	84	1934
Lawrence, William, London, England. Apparatus for purifying water	607,059	July 12	791	172	84	172
Lawson, Charles B., assignor of one-half to C. Finkbohner, Stockton, Cal. Vegetable-slicer	608,368	Aug. 2	355	78	84	726
Lawton, Andrew L., and D. L. Macaffree, Colorado Springs, Colo.; said Macaffree assignor to said Lawton. Car-fender	607,514	July 19	1817	378	84	891
Lawton, Burton L. (See Egan, Lawton, and Wilcox.)						
Lawton, George M., *et al.* (See Bogel, Henry F., assignor.)						
Lay, Fred E. (See Chapin, Andrew P., assignor.)						
Laybourne, Richard. (See Price, Marsh, and Laybourne.)						
Le Blanc, Alfio, New Orleans, La. Cane-cutter	610,069	Aug. 30	3495	810	84	1395
Le Bron, Adolphe W., assignor of two-thirds to F. F. Visscher, Montgomery, Ala., and O. K. Le Bron, Chattanooga, Tenn. Combined match-box, cigar-cutter, &c	610,142	Aug. 30	3606	838	84	1419
Le Bron, Otto K., *et al.* (See Le Bron, Adolphe W., assignor.)						
Le Roy, Donald. (See Brown, William H., assignor.)						
Le Roy, Juliet M., and M. D. Converse, assignors to J. J. Tower, New York, N. Y. Nail-extractor	610,360	Sept. 6	421	91	84	1529
Lea, Leander, Franklinton, La. Plow	607,934	July 26	2611	554	84	558
Leach, David W., and O. Turner, Truckee, Cal. Portable fire-escape apparatus	609,281	Aug. 16	2092	496	84	1091
Leach, Henry E., Bedford, Ohio. Sash-fastener	608,461	Aug. 2	521	116, 117	84	759
Leak, Tilman F., and R. West, Montgomery, Ala. Tire-tightener	606,929	July 5	518	114	84	108
Leatherman, Franklin T., and J. Metzler, assignors of one-third to H. D. McLallen and W. F. McNagny, Columbia City, Ind. Pipe-coupling	608,000	July 26	2725	582	84	580
Lebioda, Georg F., Paris, France. Apparatus for drying and hardening wood	608,780	Aug. 9	1087	250	84	887
Lebioda, Georg F., Paris, France. Apparatus for dyeing and impregnating wood	609,442	Aug. 23	2370	559	84	1164
Leblanc, Alfredo, Stamford, Conn. Stud and eyelet for same	609,512	Aug. 23	2509	587	84	1189
Leblanc, Maurice. (See Hutin and Leblanc.)						
Leclaire, Joseph L., *et al.* (See Coupal, Prosper, assignor.)						
Leconte, Hippolyte J. and H. M. Gourrier, Paris, France. Manufacture of stamped wheels for toys or the like	609,820	Aug. 30	3068	715	84	1311
Lederer, Leonhard, Munich, Germany. Obtaining hydroxylized phenyl ethers	606,930	July 5	519		84	103
Ledreux, Florent P., Paris, France. Machine for making beaded trimmings	609,152	Aug. 16	1839	437, 438	84	1041
Lee, Charles H. (See McCormack, Charles H., assignor.)						
Lee, George S., Hawthorne, N. J. Cotton-harvester	608,689	Aug. 9	937	215, 216	84	860
Lee, Henry M., *et al.* (See Remsen, Timothy A., assignor.)						
Lee, Janie H. (See Conkling and Lee.)						
Lee, Wendell P., *et al.* (See Bower, Harry A., assignor.)						
Lees, John E., *et al.* (See Dinsmore, John H. R., assignor.)						
Lees, Theodore F., New York, N. Y. Coupling for pipes and hose	610,359	Sept. 6	420	90	84	1520
Leggett, Joseph P., Carthage, Mo. Manufacture of spring-bottoms	611,131	Sept. 20	1787	410, 411	84	1820
Leggett, Joseph P., Carthage, Mo. Machine for attaching bed-springs to cross-wire bases	611,132	Sept. 20	1789	411	84	1821
Legrand, Albert, Manchester, N. H. Preserve-jar and cover therefor	606,922	July 5	347	74	84	69
Legrand, Anton M., Milwaukee, Oreg. Non-refillable bottle	608,879	Aug. 9	1298	303	84	926
Legrand, Paul E., Pau, France. Railway signal-alarm	607,754	July 19	2234	472	84	469
Legris, Peter, *et al.* (See Coupal, Prosper, assignor.)						
Lehman, John P., *et al.* (See Smith, Frank S. and S. J., assignors.)						
Lehman, Joseph H., assignor to Lehman Manufacturing Company, Philadelphia, Pa. Bicycle-lantern	607,544	July 19	1872	389	84	401
Lehman Manufacturing Company. (See Lehman, Joseph H., assignor.)	610,238	Sept. 6	182	41	84	1477
Lehrer, Harry, New York, N. Y. Car-fender	607,645	July 19	2059	429	84	496
Leibe, Henry L., Newark, and J. Goerk, Irvington, N. J. Case for spectacles or eye-glasses	609,082	Aug. 16	1608	333	84	998
Leigh, Alfred, Gognac, Kans. Staple	609,620	Aug. 23	2718	634	84	1228
Leist, William, Norwood, Ohio. Field-spool-winding machine	609,941	Aug. 30	3264	762	84	1349
Lejeune, Henry E., Thibodeaux, La. Toy						
Leman, Henry W. (See Gillett, Clarence R., assignor.)						
Lennart, Pehr J., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Door-check	608,462	Aug. 2	523	117	84	759
Lenormand, Joseph, San Francisco, Cal. Safety attachment for demijohns	607,935	July 26	2612	555	84	558
Lentz, Charles B., North Tonawanda, N. Y. Pump for inflating pneumatic tires	610,991	Sept. 20	1529	351	84	1771
Leonard, Elof R., New York, N. Y. Fireproof partition	609,685	Aug. 23	2688	663	84	1253
Leonard, Fred P., assignor to Dighton Furnace Company, Taunton, Mass. Furnace for heating buildings	608,054	July 26	2836	604	84	605
Leonard, Gardner C., Albany, N. Y. Muff	610,187	Sept. 6	66	13	84	1453
Leonard, George F., Fairmont, W. Va. Twist-drill and socket	611,494	Sept. 27	2492	575	84	1971
Leonard, Henry W., *et al.* (See Davis, Orin C., assignor.)						
Leonard, Sylvester S., Chicago, Ill. Clamp for electric wires	609,888	Aug. 30	3176	744	84	1332
Leonard, William E., and C. O. Hescox, assignors to Washington Dishwasher Company, Tacoma, Wash. Dish-cleaner	607,515	July 19	1819	378, 379	84	891
Leonhardt, Herman. (See Wunderlich, Herman, assignor.)						
Leonhardt, William, Baltimore, Md. Dumping-wagon	607,249	July 12	1161	248	84	239
Leppik, Eduard, Warsaw, Russia. Centrifugal steam and water separator	608,463	Aug. 2	525	117	84	760
Lernet, Norbert, Vienna, Austria-Hungary. Luggage-carrying apparatus	610,654	Sept. 13	931	215, 216	84	1637
Lessing, Otto. (See Schirm, Carl C., assignor.)						
Lester, Allen H., assignor to Torrey Roller Bushing Works, Bath, Me. Bicycle-bell	607,936	July 26	2613	555	84	559
Lester, William H., Wethersfield, and G. E. Smart, Hartford, Conn., assignors to Casket Lowering Company, of Connecticut. Casket-lowering apparatus	609,586	Aug. 23	2639	617, 618	84	1214
Leuckert, William, Brooklyn, N. Y. Lamp for bicycles	606,974	July 5	583	128	84	116
Levalley, Christopher W., Milwaukee, Wis. Drive-chain	609,153	Aug. 16	1841	438	84	1041
Levedahl, Axel, assignor to Aurora Automatic Machinery Company, Aurora, Ill. Bicycle crank-shaft	608,369	Aug. 2	356	78	84	727
Levi, Lewis, Newark, N. J. Bicycle bundle-strap	610,847	Sept. 13	1267	292	84	1705
Levy, Samuel, Memphis, Tenn. Hat-box	611,133	Sept. 20	1791	411, 412	84	1821
Levyn, Reuben G. (See Broad, Harry L., assignor.)						
Lewis, Abraham W., Asbury Park, N. J. Bicycle-support	608,464	Aug. 2	527	117, 118	84	760

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lewis, Benjamin. (See Lewis, Doran, and Lewis.)						
Lewis, Evan J. (See Lewis, Doran, and Lewis.)						
Lewis, George, assignor of two-thirds to J. B. B. Broadway and D. A. Smith, Cobden, Ill. Cultivator	610,546	Sept. 13	755	172	84	1509
Lewis, George E. M., Truro, Canada. Machine for cutting shoe-shank stiffeners	607,002	July 19	1080	411	84	420
Lewis, George E. M., Truro, Canada. Veneer-cutting machine	609,513	Aug. 23	2510	587	84	1190
Lewis, George H. (See Labatt and Lewis.)						
Lewis, George W., Chicago, Ill. Vehicle-motor	609,443	Aug. 23	2371	559	84	1164
Lewis, Harry A., assignor of three-fifths to J. T. Dyer, Norristown, Pa. Electric cut-out	607,250	July 12	1102	248	84	239
Lewis, Harry A., assignor of three-fifths to J. T. Dyer, Norristown, Pa. Fuse-holder, circuit-breaker, and lightning-arrester	607,251	July 12	1164	249	84	240
Lewis, James H., and J. M. Courtney, Kansas City, Mo. Car-fender	607,444	July 19	1515	323	84	326
Lewis, John A. (See Fredrickson, August, assignor.)						
Lewis, John F., Scranton, Pa., assignor to Lackawanna Lubricating Company, of Pennsylvania. Lubricator	609,444	Aug. 23	2374	560	84	1165
Lewis, Miles K., Albany, Oreg. Gate	608,465	Aug. 2	528	118	84	760
Lewis, Thomas E., Dublin, Tex. Acetylene-gas generator	606,673	July 5	71	15	84	16
Lewis, Thomas E., Dougherty, Ind. Ter. Acetylene-gas generator	606,674	July 5	73	15	84	17
Lewis, Thomas H., J. Doran, and B. and E. J. Lewis, Pittsburg, Pa. Machine for doubling and shearing plates	611,134	Sept. 20	1792	412 / 413	84	1821
Lewis, Thomas J. (See Hirst, Samuel E., assignor.)						
Lewis, William C., Washington, D. C. Fireproof ceiling and floor	610,070	Aug. 30	3497	810	84	1396
Leyner, John G., Denver, Colo. Drill for starting holes in rocks	609,107	Aug. 16	1771	421	84	1022
Leyner, John G., Denver, Colo. Air-inlet valve for air-compressors	610,608	Sept. 13	861	197	84	1622
Libby, Peter M., Waterville, Me. Thread-guide	609,282	Aug. 16	2007	497	84	1002
Libby, William J., St. Louis, Mo. Razor-hone holder	607,516	July 19	1821	379	84	392
Liebig, Louis. (See Liebig, Peter, assignor.)						
Liebig, Peter, Frankfort-on-the-Main, Germany, assignor to L. Liebig, St. Louis, Mo. Flushing apparatus	610,683	Sept. 13	975	226	84	1646
Lieblang, John, Amityville, N. Y. Churn	606,806	July 5	326	67, 68	84	65
Liebreich, Mathias E. O., Berlin, Germany. Making artificial butter	611,495	Sept. 27	2498	----	84	1972
Lieux, Raphaël, New Roads, La. Hat	609,514	Aug. 23	2511	587	84	1190
Lightbody, James. (See Burns, Joseph H., assignor.)						
Lightner, Charles E., San Antonio, Tex. Spring attachment for suspenders	611,262	Sept. 27	2038	470	84	1887
Likins, William H., assignor of one-half to L. Blessing, Jackson, Mich. Separator and purifier	608,880	Aug. 9	1299	303	84	926
Limpach, Ludwig, assignor to L. F. Riedel, Berlin, Germany. Making salicylo-acetic acid	611,014	Sept. 20	1566	----	84	1778
Lind, Charles H., Canton, Ohio. Counter or table stool	610,143	Aug. 30	3007	688	84	1419
Lindemeyr, Philip, Baltimore, Md. Water-heater	609,357	Aug. 16	2217	524	84	1116
Lindemeyr, Philip, Baltimore, Md., assignor, by mesne assignments, to C. W. Shoemaker, Bridgeton, N. J. Bottle-cap fastener	609,308	Aug. 16	2285	540 / 541	84	1129
Lindenthal, Gustav, assignor to O. H. Cutler, New York, N. Y. Construction of tension members for bridges, &c	608,690	Aug. 9	938	216	84	861
Lindh, Charles E., assignor of one-fourth to M. B. Hyde, Philadelphia, Pa. Combination table and bed	609,763	Aug. 23	2048	490	84	1274
Lindifield, S. E. (See Jordan, Wallace, assignor.)						
Lindley, Alva A., Oskaloosa, Iowa. Track-sanding apparatus	608,881	Aug. 9	1302	303	84	926
Lindsay, Thomas J., Lafayette, Ind. Bicycle driving-gear	611,329	Sept. 27	2168	501 / 502	84	1912
Lindsey, John M., Crystal Springs, Ga. Fertilizer-distributer	608,055	July 26	2837	605	84	605
Lindwall, Erick L., Kennedy, N. Y. Dovetailing-machine	601,272	Sept. 6	233	52	84	1497
Linich, Frank A., New York, N. Y. Pipe joint and connection	608,613	Aug. 9	794	183	84	831
Link-Belt Machinery Company. (See Davis, Charles E., assignor.)						
Linn, John B., Schenectady, N. Y., assignor to General Electric Company, of New York. Electric brake	610,908	Sept. 20	1375	315	84	1742
Lippincott, Fisher H., Philadelphia, Pa., assignor to American Soda Fountain Company, Trenton, N. J. Soda-water apparatus	610,188	Sept. 6	67	14	84	1458
Lippy, David, Mansfield, Ohio. Trolley	609,969	Aug. 30	3327	774	84	1302
Lisle, Myron C., assignor of eleven-twentieths to W. A. Berkey and J. Bayne, Grand Rapids, Mich. Magazine-gun	609,445	Aug. 23	2375	560	84	1165
Lithosite Manufacturing Company. (See Gallinowsky, Hugo, assignor.)						
Little, Alexander F., assignor of one-half to A. Armstrong, D. and F. McBrearty, M. F. and J. J. Reilly, Philadelphia, Pa. Valve	608,882	Aug. 9	1303	303	84	926
Little, D. P. N., *et al.* (See Woodward, Walter J., assignor.)	607,603	July 19	1981	411	84	421
Little, Eugene J., Bluffton, Ind. Dumping-receptacle	609,889	Aug. 30	3178	744	84	1333
Little, Peter E., assignor to Ohio Rake Company, Dayton, Ohio. Disk harrow and cultivator	607,937	July 26	2615	555	84	559
Littlefield, Charles A., Lowell, Mass., assignor to Draper Company, Portland, Me. Loom.						
Littlefield, Charles A., Lowell, Mass., assignor to Draper Company, Portland, Me., and Hopedale, Mass. Filling-carrier or cop-skewer for loom-shuttles	608,988	Aug. 9	1508	357	84	965
Livtschak, Joseph, Wilna, Russia. Apparatus for automatically recording unevenness in railway-tracks	610,848	Sept. 13	1267	293	84	1705
Lizé, Ernest, Paris, France. Safety-valve	611,496	Sept. 27	2494	575 / 576	84	1972
Lizotte, Joseph, Quincy, assignor of one-half to M. N. Bray, Boston, Mass. Igniting mechanism for explosive-engines	608,409	Aug. 2	436	96	84	748
Ljusne Woxna Aktiebolag. (See Holmberg, Per, assignor.)						
Lloyd, Arthur D., San Francisco, Cal. Folding tent	609,553	Aug. 23	2574	608	84	1202
Lloyd, Charles, Chicago, Ill. Steam-boiler	609,108	Aug. 16	1773	421 / 422	84	1028
Lloyd, Daniel, Cambridge, Md. Fruit-picker	609,515	Aug. 23	2512	588	84	1190
Lloyd, James, Blandon, Pa. Wheel	606,868	July 5	436	93	84	86
Lloyd, James, Blandon, Pa. Vehicle-wheel	608,691	Aug. 9	940	216	84	861
Lloyd, John E., New York, N. Y. Rail-bond	610,909	Sept. 20	1377	316	84	1743
Lloyd, William H., assignor to Smith & Anthony Company, Boston, Mass. Water-closet bowl	609,992	Aug. 30	3375	784	84	1371
Lochmann, Paul, Leipsic-Gohlis, Germany. Apparatus for keeping and sending liquid materials	609,970	Aug. 30	3328	774 / 775	84	1303
Locke, Benjamin T. (See Carley, Allen J., assignor.)						
Locke, Harvey W., assignor to W. F. Carlton, Rochester, N. Y. Photographic shutter	609,033	Aug. 16	1609	383 / 384	84	999
Locke, Martin J., Troy, N. Y. Folding-machine	611,070	Sept. 20	1657	379 / 380	84	1795
Lockhart, William S., assignor to Automatic Gem and Gold Separator Syndicate, Limited, London, England. Hydraulic separator for treating mixed minerals	607,755	July 19	2286	472 / 473	84	469

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lockwood, Benjamin F., Lyons, N. Y. Portable grave-vault	609,358	Aug. 16	2218	524 / 525	84	1117
Lockwood, Virgil H. (See McMillin, Robert S., assignor.)						
Lodge, Oliver J., Liverpool, England. Electric telegraphy	609,154	Aug. 16	1844	438 / 439	84	1041
Loeb, Rudolf, Camden, N. J. Embroidering-machine	608,781	Aug. 9	1087	250 / 251	84	887
Loeble, Gottlob E., and F. Katzenberger, New York, N. Y. Testing-valve	610,452	Sept. 6	579	128	84	1549
Loewe, Adolf, New York, N. Y. Lid-support	608,692	Aug. 9	940	216	84	861
Loewenbach, Hugo. (See Schilz, Frank, assignor.)						
Logan, M. W. (See Tracy, Andrew, assignor.)	611,088	Sept. 20	1606	368	84	1785
Lohman, Benjamin H., St. Louis, Mo. Surgical injector-clamp	608,056	July 26	2839	605	84	605
Loiselle, Aimé. (See Loiselle, Herménégilde and A.)						
Loiselle, Herménégilde and A., Winnipeg, Canada. Car-coupling	608,883	Aug. 9	1304	304	84	927
Loiselle, Herménégilde and A. C. Calkins, Los Angeles, Cal. Assayer's furnace	610,715	Sept. 13	1033	238	84	1638
Lonergan, John J., and A. A. Jones, Philadelphia, Pa. Cap for bottles, jars, &c						
Long, Amos E., and A. A. Jones, Philadelphia, Pa. (See Cowles, William B., assignor.)						
"Long Arm" System Company. (See Cowles, William B., assignor.)	609,821	Aug. 30	3068	715	84	1312
Long, David L., Columbus, Ohio. Sash-fastener	609,822	Aug. 30	3069	716	84	1312
Long, Joseph B., Chicago, Ill. Combined bracket and stand for lamps	611,176	Sept. 20	1862	429	84	1845
Long, Reuben, assignor to B. W. Simmons, Mexia, Tex. Folding camp-bed	610,864	Sept. 13	1299	299	84	1712
Long, Theodore A., Harrisburg, Pa. Carpet and weather strip	609,283	Aug. 16	2100	497	84	1002
Long, William N., assignor of one-half to J. S. Parker, Salem, Oreg. Coupling						
Longden, Charles E., assignor to Seamless Rubber Company, New Haven, Conn. Rubber mitten	609,993	Aug. 30	3376	784	84	1372
Longden, Charles E., assignor to Seamless Rubber Company, New Haven, Conn. Syringe-tube	611,454	Sept. 27	2416	554	84	1957
Longley, George A., Groton, Mass. Mowing-machine	608,057	July 26	2840	605	84	606
Longthorpe, Jeshurun. (See Woodcock, Longthorpe, and Dargue.)						
Lonning, Christ J., Paullina, Iowa. Shingle-nailing machine	610,943	Sept. 20	1432	329	84	1753
Loomis, De Witt, Detroit, Mich. Draft-rigging for railway-cars	608,522	Aug. 2	629	141	84	779
Loos, George, Pittsburg, Pa. Curtain-pole adjuster	607,117	July 12	908	197	84	194
Loos, Heinrich F., Nuremberg, Germany. Locking-link for chains	609,890	Aug. 30	3179	744	84	1333
Lord, Almon, Brooklyn, N. Y., assignor to Consolidated Fastener Company, Portland, Me. Buckle	607,060	July 12	792	172	84	173
Lord, George W., Excelsior Springs, Mo., assignor, by mesne assignments, to Watson Automatic Seat Post Company, Paterson, N. J. Seat-post for bicycles	607,181	July 12	1024	222	84	214
Lord, John S., Des Moines, Iowa. Bicycle attachment	608,262	Aug. 2	158	39	84	685
Loree, Perry E., assignor of one-half to J. C. Ely, Dayton, Ohio. Combined rake and roller cutter	607,383	July 12	1404	299	84	288
Lori, Ferdinando. (See Pignotti, Lori, Regnoli, Besso, and Pantaleoni.)						
Loring, George W. (See Schwedler, Gustav H., assignor.)						
Löser, Franz. (See Diehl, Ruppert, and Löser.)	609,284	Aug. 16	2101	497	84	1093
Losure, Lisander, Van Buren, Ind. Apparatus for separating natural gas from oil, &c	610,865	Sept. 13	1300	299	84	1712
Louden, William, Fairfield, Iowa. Trip-coupling						
Love, John A., Searcy, assignor of one-half to S. L. Joseph, Paragould, Ark. Display device	609,823	Aug. 30	3070	716	84	1312
Lovejoy, Charles C., New York, N. Y. Movable caisson	609,696	Aug. 23	2389	564	84	1258
Lovejoy Company. (See Ferguson, James H., assignor.)						
Louis, Caroline, Pine City, Minn. Washboiler	611,177	Sept. 20	1863	429	84	1835
Louis, Fedor, New York, N. Y. Hoisting or lifting apparatus	611,263	Sept. 27	2039	470 / 471 / 472	84	1888
Lowe, Frank, Oklahoma, Okla. Ter. Automatic can	606,981	July 5	520	114	84	108
Lowenhart, Arthur S. (See Kastle, Ravitch, and Lowenhart.)						
Löwi, Edmund, Prague, Austria-Hungary. Obtaining cattle-food	609,824	Aug. 30	3072	716	84	1312
Lucas, Frederick M., Rathmel, Pa. Farm-gate	606,724	July 5	160	35	84	33
Lucas, Mattie C., Louisville, Ky. Crib attachment for beds	608,523	Aug. 2	630	142	84	780
Luce, Don C., assignor to O. A. Miller, Brockton, Mass. Means for locking or unlocking hinged lasts	608,782	Aug. 9	1089	251	84	887
Lucier, Theophiles, Detroit, Mich. Bow-facing oar	611,497	Sept. 27	2496	576	84	1972
Luckner, Nikolaus. (See Luckner, Reinhold and N.)						
Luckner, Reinhold and N., New York, N. Y. Clothes-line hanger	608,205	Aug. 2	69	19	84	668
Ludlow, William, Buffalo, N. Y. Gas-burner	607,756	July 19	2237	473	84	469
Ludowici Roofing Tile Company. (See Skeele, Henry B., assignor.)						
Ludwig, John H., New York, N. Y. Pianoforte	608,693	Aug. 9	941	217	84	861
Luke, Henry H., Fredonia, N. Y. Bowling-alley pin	608,294	Aug. 2	218	51	84	698
Lukens, Harry D., Spring City, Pa. Scaffold-support	606,763	July 5	247	51	84	49
Lund, Adolph, Chicago, Ill. Floor and ceiling construction	611,366	Sept. 27	2245	518 / 519	84	1926
Lundell, Robert, assignor of two-thirds to Interior Conduit and Insulation Company, New York, N. Y. Electrical circuit-controller	608,134	July 26	2955	634	84	629
Lundell, Robert, assignor of two-thirds to Interior Conduit and Insulation Company, New York, N. Y. Commutator-brush holder for dynamo-electric machines	608,135	July 26	2957	635	84	629
Lundgren, Emil, Zilenoph, Pa. Vessel-cleaner	609,285	Aug. 16	2102	497 / 498	84	1093
Lundquist, Frank A., Chicago, Ill., assignor of two-thirds to J. Anderson, Salina, and G. A. Anderson, Lindsborg, Kans. Telephone-exchange	606,764	July 5	248	52	84	50
Lunken, Edmund H., Denver, Colo., assignor to Lunkenheimer Company, Cincinnati, Ohio. Valve	607,252	July 12	1166	249	84	240
Lunkenheimer Company. (See Lunken, Edmund H., assignor.)						
Lupfer, Edgar N. (See Hiser and Lupfer.)						
Luse, J. L., *et al.* (See Patton, Joseph, assignor.)						
Lutz, Theodor. (See Burger and Lutz.)						
Luxton, William G., assignor to United Alkali Company, Limited, Liverpool, England. Diaphragm for electrolytic purposes	609,745	Aug. 23	2924	----	84	1269
Lwoff, Paul, St. Petersburg, Russia. Vehicle-spring	609,446	Aug. 23	2388	561	84	1167
Lynn, John R., Philadelphia, Pa. Puzzle or toy lock	609,447	Aug. 23	2388	561	84	1167
Lyon, Gustave F., Paris, France. Harp	608,058	July 26	2841	606	84	606
Lyon, Gustave F., Paris, France. Chromatic timbal	608,884	Aug. 9	1305	304	84	927
Lyon & Healy. (See Neumann, Julius J., assignor.)						
Lyon, Henry, assignor of one-half to D. Stewart & Company, Limited, Glasgow, Scotland. Resistance and contact apparatus for electric currents	610,406	Sept. 6	508	111	84	1536
Lyon, Monty A., Wisdom, Mont. Sack-holder	611,498	Sept. 27	2497	576	84	1973
Lyon, Walter. (See Diehl, Walter R., assignor.)						
Lyons, Francis J., St. Louis, Mo. Retaining device for storm-slippers, &c	607,061	July 12	798	172	84	178
Lyons, Fred N., Mendocino City, Cal. Life-boat	610,547	Sept. 13	757	172	84	1600

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lyons, Robert L., Waltham, assignor to Union Button Sewing Machine Company, Boston, Mass. Knitting-machine needle	607,253	July 12	1167	249	84	241
MacCall, Charles R., Howland, assignor of one-half to N. M. Jones, Lincoln, Me. Thill-tug	606,870	July 5	439	94	84	86
MacDonald, Isaiah, San Francisco, Cal. Means for closing shot-holes in war-ships	611,593	Sept. 27	2683	620	84	2007
MacKnight, James A. (See Doty, MacKnight, and Grauten.)						
MacNaughton, James. (See Rossi, Auguste J., assignor.)						
MacPherson, John G., Buffalo, N. Y. Coin-controlled machine	611,071	Sept. 20	1660	380 / 381	84	1796
Macaffree, David L. (See Lawton and Macaffree.)						
Macbrair, Charles C., assignor to C. C. Macbrair & Co., Cincinnati, Ohio. Apparatus for coating paper or other fabrics	606,869	July 5	436	93	84	86
Macbrair & Co., C. C. (See Macbrair, Charles C., assignor.)						
Macdonald, Patrick A., Winnipeg, Canada. Voting-machine	609,825	Aug. 30	3074	717	84	1312
Macdonald, Thomas H., Bridgeport, Conn., assignor to American Graphophone Company, Washington, D. C. Manufacture of graphophone-tablets	606,725	July 5	161	36	84	33
Macdonald, William A. (See Young and Macdonald.)						
Mack, Andrew C., Portland, Oreg. Razor-sharpener	609,516	Aug. 23	2514	588	84	1190
Mack, George S. (See Heine and Mack.)						
Mack, Patrick H., Bradford, Pa. Temper-screw for oil or Artesian well drilling tools	610,239	Sept. 6	183	41	84	1477
Mack, William A., assignor to Standard Sewing Machine Company, Cleveland, Ohio. Bobbin-case retainer for sewing-machines	608,552	Aug. 2	679	154	84	790
Mack, William A., assignor to Standard Sewing Machine Company, Cleveland, Ohio. Sewing-machine	608,553	Aug. 2	681	154 / 155	84	790
Mackay, Edith M. M., London, assignor to W. L. B. Hinde, Birmingham, England. Hair-fastener	607,604	July 19	1982	412	84	421
Mackenzie, William S., Normanton, and W. Crosland, Milnthorpe, England. Furnace for steam-boilers	608,059	July 26	2843	606	84	606
Mackill, Robert, Glasgow, Scotland. Composition for sheep-dipping	608,466	Aug. 2	529	.....	84	761
Macomber, Louis E., assignor of one-half to E. H. Ellis, Ashland, Wis. Thill-coupling	611,135	Sept. 20	1794	413	84	1822
Macphail, James, West Pullman, assignor to Plano Manufacturing Company, Chicago, Ill. Wheel	609,203	Aug. 16	1929	458	84	1057
Macphail, James, West Pullman, assignor to Plano Manufacturing Company, Chicago, Ill. Oil-cup	609,204	Aug. 16	1930	459	84	1057
Macphail, James, Blue Island, assignor to Plano Manufacturing Company, Chicago, Ill. Reaping-machine	609,801	Aug. 30	3180	745	84	1333
Macwilliam, Hugh G., St. Paul, Minn. Suspenders	609,286	Aug. 16	2104	498	84	1093
Madden, Augustine J., Melbourne, Victoria. Chainless gear for velocipedes	607,757	July 19	2239	473	84	470
Madden, William M., *et al.* (See Horton, Peter D., assignor.)						
Maddin, William A., Muscogee, Ind. Ter. Filter	609,942	Aug. 30	3266	763	84	1349
Magini, Giuseppe di P., S. Folli, Florence, and E. Antico, Cagliari, Italy. Target	606,807	July 5	327	68, 69	84	66
Maguire, Thomas R., assignor of one-half to J. J. Bradley, Philadelphia, Pa. Amusing and mystifying coin-in-the-slot machine	607,062	July 12	794	173	84	173
Mahler, William, New York, N. Y. Incandescent-lighting substance	606,726	July 5	163	.....	84	34
Mahler, William, New York, N. Y. Apparatus for forming and baking incandescent-light mantles	609,034	Aug. 16	1614	384	84	1000
Mahon, Ormsby L., Baltimore, Md., assignor to American Fastener Company of Baltimore City. Two-part separable button	608,410	Aug. 2	438	96	84	743
Mahoney, Michael F., Philadelphia, Pa. Trousers-stretcher	608,206	Aug. 2	219	51	84	698
Mahony, John J., *et al.* (See Fraser, Ethelbert M., assignor.)						
Mait, Joseph, Los Angeles, Cal. Concentrator	610,764	Sept. 13	1118	255 / 256	84	1674
Maitland, Alexander, *et al.* (See Neeley, George S., assignor.)						
Maitland, Howard L., Nantucket, Mass. Tool for splicing wires	608,467	Aug. 2	530	118	84	761
Mali, Charles M., New York, N. Y. Photographic-film holder	606,727	July 5	164	36	84	34
Mallen, Edward J., New York, N. Y. Pipe-collar	608,060	July 26	2844	606	84	606
Mallett, Charles E., New York, N. Y. Cotton-press	607,063	July 12	796	173 / 174	84	173
Mallon, James, assignor of one-half to J. W. Bodley, New Orleans, La. Cane-sling	610,816	Sept. 13	1219	281	84	1095
Mallory, Ernest E., West Unity, Ohio. Folding umbrella or parasol	608,694	Aug. 9	943	217	84	862
Mallory, James L. (See Ellis, William R., assignor.)						
Mallory, James L., *et al.* (See Hill, Edward A., assignor.)	607,064	July 12	800	175	84	174
Maloney, Bernard J., Edinburgh, Scotland. Means for securing wheels to axles	610,361	Sept. 6	423	.....	84	1520
Manasse, Otto, Munich, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst, Germany. Oxycamphor and making it	611,039	Sept. 20	1607	368	84	1785
Manchester, Scott, Wethersfield, Conn. Toy watch and coin-retainer						
Manhattan General Construction Company. (See Harris, Max, assignor.)						
Manhattan Optical Company. (See Lange, George C. O., assignor.)						
Manhattan Typewriter Company. (See Price, John B., assignor.)						
Manire, Moses E., and T. Hood; said Manire assignor to W. H. Snow and W. T. Mayfield; said Hood assignor of one-half to J. McCarthy, Norman, Okla. Ter. Plow-bar protector	609,892	Aug. 30	3182	746	84	1334
Manlove, Joseph L., Milton, Ind. Gate	609,085	Aug. 16	1615	384 / 385	84	1000
Mann, Henry L., assignor to J. R. Clark Company, Minneapolis, Minn. Machine for making clothes-pins	610,490	Sept. 6	649	145 / 146 / 147	84	1563
Mann, John, Butte City, Cal. Rotary sand-pump	610,992	Sept. 20	1531	351	84	1771
Manning, Charles J., Cambridge, assignor of one-half to W. F. Peacock, Boston, Mass. Combined chair toy savings-bank and puzzle	608,001	July 26	2726	582	84	580
Manning, Edward J., assignor to Wagner Typewriter Company, New York, N. Y. Indicating mechanism for type-writers	609,036	Aug. 16	1617	385	84	1000
Manning, Edward J., assignor to Wagner Typewriter Company, New York, N. Y. Tabulating mechanism for type-writers	609,517	Aug. 23	2514	588 / 589	84	1191
Manning, Edward S., Des Moines, Iowa. Signal-lamp for railways, &c	608,695	Aug. 9	947	217	84	862
Manning, Frank H., and J. P. Bouchet, Oshkosh, Wis. Car-cuspidor	606,871	July 5	440	94	84	87
Manny, Emilien A., assignor to D. Rochette, Beauharnois, Canada. Canal-lock	610,548	Sept. 13	758	173	84	1600
Manny, Joseph, Butler, Pa. Clothes-rack for bedsteads	607,254	July 12	1168	249	84	241
Mansfield, James W. (See Miehle and Mansfield.)						
Manuel, David, Hyde Park, assignor of two-thirds to L. A. Smith, Boston, Mass. Flush sliding door	609,803	Aug. 30	3183	746	84	1334
Manufacturers and Merchants Warehouse Company. (See Klahn, Emil, assignor.)						
Manula, Erik, Astoria, Ore. Can-soldering machine	611,390	Sept. 27	2170	502	84	1912
Marangos, Apostolos, Marseilles, France. Elevator for granular material	607,255	July 12	1169	250	84	241
Marbach, Herman L. (See Moon and Marbach.)						
Marble, Edwin H. (See Marble, Edwin T. and E. H.)						
Marble, Edwin T. and E. H., Worcester, Mass. Cloth-inspecting machine	608,468	Aug. 2	532	119	84	761

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Marchal, Walter E. F., St. Mandé, France. Driving-chain cover	609,037	Aug. 16	1619	385	84	1000
Marcy, Frank M., Worcester, Mass., assignor to Draper Company, Portland, Me., and Hopedale, Mass. Method of and apparatus for truing spinning-rings	606,675	July 5	75	16	84	17
Marengo, Pietro. (See Pratis and Marengo.)						
Margesin, Anton, Zurich, Switzerland. Aerial cable-railway	609,687	Aug. 23	2842	664 / 665	84	1254
Marino, Pascal, Paris, France. Electrolytic bath	607,646	July 19	2000	.....	84	436
Mark, Clayton B., Lebanon, Pa. Hitching-post	610,993	Sept. 20	1532	352	84	1771
Markel, Adam, assignor to Pottier & Stymus Company, New York, N. Y. Combined bed and sofa	607,182	July 12	1025	222	84	215
Markmann, Ernest, Philadelphia, Pa. Tidal power	608,783	Aug. 9	1090	251 / 252	84	887
Marks, Jacob O., Urbana, Ill. Car-coupling	607,183	July 12	1028	222 / 223	84	215
Marks, Jacob O., Urbana, Ill. Lubricating-bearing	607,184	July 12	1031	223	84	216
Marks, Jacob O., Urbana, Ill. Gate	610,407	Sept. 6	510	111 / 112	84	1537
Marks, Louis Z. (See Newman and Marks.)						
Marks, William D., assignor to American Electric Meter Company, Philadelphia, Pa. Electric meter	607,185	July 12	1032	223	84	216
Maroney, Thomas, Buffalo, N. Y. Car-replacer	607,256	July 12	1171	250 / 251	84	241
Marschner, Carl, Berlin, Germany. Plate for secondary galvanic batteries and composition for producing same	608,614	Aug. 9	796	184	84	832
Marsden, Thomas R., Oldham, England. Exhaust-opener lap-machine	609,155	Aug. 16	1848	439	84	1042
Marsden, Thomas R., Oldham, England. Feeding mechanism for carding-machines	610,655	Sept. 13	932	216	84	1637
Marsden, Thomas R., and H. Walsh, Oldham, England. Stripping-comb	607,988	July 26	2618	556	84	560
Marsh, Charles W. E. (See Price, Marsh, and Laybourne.)						
Marsh, Leonardo M., Warrensburg, Mo. Device for tightening tires	608,989	Aug. 9	1509	357	84	965
Marsh, Willis L., Jefferson City, Mo. Liquid supplying and distributing machine	611,264	Sept. 27	2049	472	84	1889
Marshall, Albert L., New Orleans, La. Cane-crusher	608,885	Aug. 9	1305	304	84	927
Marshall, George S., assignor to Missouri Railway Equipment Company, St. Louis, Mo. Timber-pocket	607,867	July 26	2494	589	84	536
Marshall, Lewis C., assignor to F. W. Bird & Son, Walpole, Mass. Car-roof	606,996	July 5	640	139	84	127
Marshall, William M., Philadelphia, Pa., assignor of one-half to C. M. Busch, Washington, D. C. Exercising device	610,716	Sept. 13	1084	239	84	1658
Martenette, Francis L., Chico, Cal. Apparatus for making gas from oil	610,994	Sept. 20	1583	352	84	1771
Martin, Bertha E., Asbury Park, N. J. Skirt	608,469	Aug. 2	534	119	84	761
Martin, Carlos R., and L. A. Spinelli, San José, Cal. Automatic pressure-equalizing bear-faucet	609,554	Aug. 23	2576	603	84	1202
Martin, Christian S., Elizabethtown, Pa. Gate-latch	610,804	Sept. 6	316	68	84	1502
Martin, Edmond. (See Flanagan and Martin.)	609,826	Aug. 30	3076	717	84	1313
Martin, George F., Eastleigh, England. Rail and joint therefor						
Martin, Henry. (See Furnivall and Martin.)						
Martin, Henry D. (See Tolman and Martin.)	607,257	July 12	1173	251	84	242
Martin, Henry D., Shirley, Mass. Puzzle apparatus	610,656	Sept. 13	933	217	84	1637
Martin, John L., New York, N. Y. Bicycle-hanger	610,328	Sept. 6	359	76	84	1510
Martin, John L., Beaumont, Tex. Handle-bar	610,995	Sept. 20	1534	352	84	1772
Martin, Joseph B., and C. T. Gamble, Almy, Wyo. Horse-releasing device	607,545	July 19	1876	390	84	402
Martin, Louis L., Toronto, Canada. Bicycle-holder	609,688	Aug. 23	2843	665	84	1254
Martin, Stephen C., Tifton, Ga. Ironing-table	610,549	Sept. 13	768	173	84	1601
Martin, William D., Warsaw, N. Y. Mop-wringer	607,118	July 12	909	197	84	194
Martin, William H., Los Angeles, Cal. Car-fender						
Martin, Willis F. (See Jackson, William H., assignor.)	610,657	Sept. 13	935	217	84	1638
Martz, Randolph N., Frederick, Md. Collar and cuff turner and edge-polisher	609,448	Aug. 23	2364	561	84	1167
Martz, Randolph N., assignor of two-thirds to S. D. Thomas and M. Fout, Frederick, Md. Shutter-worker	608,886	Aug. 9	1306	305	84	927
Marvel, Theodore L., Taunton, Mass. Rope-coupling	610,453	Sept. 6	580	128	84	1550
Marvin, Edson E. (See Thomas and Nusser, assignors.)						
Marx, Benjamin, and H. Gassner, New York, N. Y. Magazine-camera	607,758	July 19	2241	473	84	470
Mascord, George W., Glenferrie, Victoria. Slug-cutting mechanism for linotype-machines	611,136	Sept. 20	1796	413	84	1822
Mason, Henry T., Philadelphia, Pa. Package for medical preparations						
Mason Machine Works. (See Meats, John T., assignor.)						
Mason Machine Works. (See Meats and Dean, assignors.)						
Mason, William, assignor to Winchester Repeating Arms Company, New Haven, Conn. Means for detachably uniting barrels to stocks	610,765	Sept. 13	1119	256 / 257	84	1675
Masson, John J., Newark, N. J. Lamp	609,689	Aug. 23	2843	665	84	1254
Mather, Jesse D., Clifton Springs, N. Y. Venting device for closed vessels	611,040	Sept. 20	1608	368	84	1786
Mathews, Albert W., Boston, Mass. Calendar and whist-counter	610,910	Sept. 20	1379	316	84	1743
Mathews, Elisha C., Jacksonville, Ill. Fence-post	609,205	Aug. 16	1931	459	84	1057
Mathews, Elisha C., Jacksonville, Ill. Base for switch-stands, &c	610,684	Sept. 13	976	226	84	1646
Mathews, Samuel R. C., Philadelphia, Pa. Fire-hydrant	607,413	July 12	1456	309	84	297
Mathewson, Jeremiah E., Sheffield, England. Sand-blast apparatus	610,189	Sept. 6	69	14	84	1453
Mathy, Joseph, Washington, D. C. Baking-pan	607,759	July 19	2242	474	84	470
Matteson, Walter C., Stockton, Cal. Gang-plow	608,696	Aug. 9	948	218	84	862
Matthews, Luther, Paris, Tenn. Wire fence	606,872	July 5	441	94	84	87
Matthews, Luther, Paris, Tenn. Post-winder for wire fences	606,873	July 5	442	95	84	87
Matthews, Luther, Union City, Tenn. Fence-post	607,258	July 12	1174	251	84	242
Matthews, Robert L. (See Harper, Daniel W., assignor.)						
Matthias, Edward A., Liverpool, and W. H. Harrison, Manchester, England. Stopper for jars, bottles, cans, or other vessels	610,408	Sept. 6	513	112	84	1537
Mattison, Germain. (See Tiefel, Leonard C., assignor.)	611,178	Sept. 20	1864	430	84	1835
Maulthy, William H., Grand Valley, Pa. Penholder	611,386	Sept. 27	2294	530	84	1934
Maurer, James H., assignor of two-thirds to W. E. Schmick, Hamburg, and G. H. Gerber, Pottsville, Pa. Packing for valve-stems	607,868	July 26	2495	529	84	536
Mauser, Paul, Oberndorf, Germany. Metallic cartridge						
Maver, William, Jr. (See Patten and Maver.)						
Mavor & Coulson. (See Sayers, William B., assignor.)	610,550	Sept. 13	764	174	84	1601
Maxey, John V., Mount Vernon, Ill. Road-grading machine	607,065	July 12	801	175	84	174
Maxham, Lowell M., Boston, Mass. Trolley for third rails						
Maxon, Thomas, Dayton, Ohio, assignor of one-half to E. Ensign, Huntington, W. Va. Extension-step for cars	606,989	July 5	521	114	84	103
May, Charles. (See Newman and Marks, assignors.)	606,728	July 5	164	36	84	34
May, Hermann, Jr., Meiningen, Germany. Frame for ornamental hairwork	611,179	Sept. 20	1866	430	84	1835
May, John E., Rodgers, Tex. Fireplace						

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May, Oliver T., Geneva, N. Y. Trial-frame for oculists	610,817	Sept. 13	1221	281	84	1695
May, Rudolph A., Akron, Ohio. Grate	610,551	Sept. 13	706	174, 175	84	1602
May, William E., assignor to Ellis May Vacuum Steel Syndicate, Limited, London, England. Vacuum-producing apparatus	611,455	Sept. 27	2417	554, 555	84	1957
Maybury, William C. (See Ford, Henry, assignor.)						
Maycock, William A., assignor of one-half to J. Harty, New Haven, Conn. Pole or thill support for vehicles	607,804	July 19	2350	496	84	491
Mayer, William, Jarrow-on-Tyne, England. Ingot-mold	607,869	July 26	2496	529	84	536
Mayerson, Abl, Philadelphia, Pa. Handle-bar and luggage-carrier	609,690	Aug. 23	2845	665, 666	84	1254
Mayfield, Warren T., *et al.* (See Manire and Hood, assignors.)						
Maynadier, James E., trustee. (See Fullerton, George A., assignor.)						
Maynard, William C., Canton, Ohio. Embroidery-hoop	610,658	Sept. 13	987	217	84	1638
Mayo, Benjamin F., Salem, assignor to J. W. Brooks, trustee, Petersham, Mass. Heel-trimming machine	609,518	Aug. 23	2517	589	84	1191
Mayo, Benjamin F., Salem, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail-assorting mechanism	607,939	July 26	2619	556	84	560
Mayo, Benjamin F., Salem, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail-assorting mechanism	607,940	July 26	2621	556	84	560
Mayo, Benjamin F., Salem, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail-assorting mechanism	607,941	July 26	2623	556	84	561
Mayo, Benjamin F., Salem, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail-assorting mechanism	607,942	July 26	2624	557	84	561
Mayo, Benjamin F., Salem, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Trimming-machine for boot or shoe work	609,519	Aug. 23	2521	590	84	1192
Mazzanovich, Anton, New York, N. Y. Car-fender	609,206	Aug. 16	1932	459	84	1057
McAdams, William A., New York, N. Y. Aluminium alloy	611,016	Sept. 20	1576	20	84	1780
McAllister, James, Owen Sound, Canada. Gangway-door for box-cars or steamboats	608,209	Aug. 2	74	254, 255	84	699
McAllister, James, Glasgow, Scotland. Washing-machine	608,788	Aug. 9	1100		84	899
McAlpine, John, assignor of two-thirds to E. S. Torrey and T. S. Allden, London, England. Ball-bearing	610,970	Sept. 20	1492	338	84	1762
McAnlis, J. D. (See Curl, Charles A., assignor.)	609,587	Aug. 23	2641	618	84	1214
McAnulty, John F., and P. Van den Berghe, Philadelphia, Pa. Veterinary tool	608,893	Aug. 9	1316	307	84	929
McArthur, Andrew J., Gainesville, Fla. Refrigerator-door	610,806	Sept. 13	1302	299	84	1713
McBeth, Joseph C., Denver, Colo. Surgeon's splint						
McBrearty, Dennis, *et al.* (See Little, Alexander F., assignor.)						
McBrearty, Francis, *et al.* (See Little, Alexander F., assignor.)						
McCabe, William. (See Norman, Addison, assignor.)						
McCaffery, William, Tyler, assignor of one-half to J. Cassady, Cheney, Wash. Railway-switch	606,730	July 5	166	37	84	34
McCallum, John, Chippewa Falls, Wis. Combined mowing and raking machine	607,698	July 19	2149	452	84	452
McClave, William, Scranton, Pa. Grate-bar and grate for boiler or other furnaces	607,263	July 12	1184	253, 254	84	244
McClave, William, Scranton, Pa. Grate	607,784	July 19	2290	483, 484	84	479
McCarthy, Jerry, *et al.* (See Manire and Hood, assignors.)						
McCarthy, Joseph, assignor of three-fourths to L. H. McCarthy, Franklin, and C. B. Oglesby, Middletown, Ohio. Watchman's time-detector	610,145	Aug. 30	3609	838	84	1419
McCarthy, Leo H., *et al.* (See McCarthy, Joseph, assignor.)	610,554	Sept. 13	772	175	84	1603
McCartney, James, Oakland, Cal. Water-heater and steam-generator	609,455	Aug. 23	2406	564	84	1171
McClafferty, Patrick, assignor of one-half to T. J. Murphy, Bordentown, N. J. Clothes-line prop	608,092	July 26	2728	583, 584	84	580
McClintock, Frank, Grand Junction, Colo., assignor to Empire Type Setting Machine Company, of West Virginia. Machine for justifying type	610,076	Aug. 30	3509	813	84	1398
McClure, George W., Pittsburg, Pa. Valve for regenerative furnaces						
McClure, Silas. (See Terrell and McClure.)						
McCoart, James A. (See Newhall, Charles H., assignor.)	608,704	Aug. 9	961	221	84	865
McCollum, Fenelon, Mansfield, Conn. Pipe-organ foot	609,115	Aug. 16	1783	424	84	1030
McCollum, William F. (See Beckwith and McCollum.)						
McComish, John J., New York, N. Y. Safety-bottle	608,472	Aug. 2	543	121	84	763
McCormack, Charles H., assignor of one-half to C. H. Lee, Towners, N. Y. Carrier for umbrellas or the like	610,492	Sept. 6	603	148, 149	84	1566
McCormick Harvesting Machine Company. (See Pridmore, Henry E., assignor.)						
McCormick, John H., Columbus, Ohio. Cash-register	610,365	Sept. 6	428	93, 94	84	1521
McCormick, John H., assignor, by mesne assignments, to Hallwood Cash Register Company, Columbus, Ohio. Cash register and indicator	610,366	Sept. 6	486	94, 95, 96	84	1523
McCormick, John H., Columbus, Ohio, assignor to Hallwood Cash Register Company, of Ohio. Cash register and indicator	610,945	Sept. 20	1436	330	84	1754
McCormick, John H., assignor to National Cash Register Company, Dayton, Ohio. Cash-register	608,210	Aug. 2	75	20	84	670
McCoy, Charles N., Dehaven, Pa. Vehicle-wheel	610,634	Sept. 13	901	207	84	1631
McCoy, Elijah, assignor to Detroit Sheet Metal and Brass Works, Detroit, Mich. Lubricator	611,502	Sept. 27	2503	577	84	1974
McCoy, Henry L. (See Randolph and McCoy.)						
McCoy, John, New Orleans, La. Hat-pin	606,731	July 5	167	37, 38	84	34
McCoy, Taylor. (See Dean and McCoy.)	607,204	July 12	1187	254	84	245
McCracken, Ralph T. (See Tenny and McCracken.)						
McCreary, Edward, Cohoes, N. Y. Napping-machine	608,473	Aug. 2	544	122	84	763
McCreery, Joseph, Toledo, Ohio. Foul-air escape or vent	610,306	Sept. 6	318	68	84	1502
McCrum, Robert G., Armagh, Ireland. Apparatus for preparing cards for use in jacquard-machines	610,077	Aug. 30	3510	814	84	1398
McCune, William A., Sterling, Ill. Acetylene-gas generator	608,990	Aug. 9	1511	357	84	966
McCurdy, Warren H., Boston, Mass. Ship's log and registering mechanism	607,699	July 19	2152	453	84	452
McCutcheon, John B., Battle Creek, Mich. Attachment for pneumatic stackers	609,623	Aug. 23	2728	635	84	1231
McCutcheon, John B., Battle Creek, Mich., assignor to Advance Thresher Company, Battle Creek, Mich. Grain-separator	607,188	July 12	1088	224	84	217
McCutcheon, John B., Battle Creek, Mich., assignor to Indiana Manufacturing Company, Indianapolis, Ind. Pneumatic straw-stacker	609,116	Aug. 16	1784	424	84	1030
McDermid, Duncan H. (See Keesee, Frank P., assignor.)						
McDonald, Frank, assignor of one-third to C. J. Herrett, Medford, Mass. Boot or shoe						
McDonald, John H. (See Swyny and McDonald.)						
McDonald, John W., Lerna, Ill. Clothes-rack						

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McDonald, Robert A., Aspinwall, assignor of two-thirds to D. W. Dunlevy and R. Miller, Jr., Pittsburg, Pa. Casting ingots	609,693	Aug. 23	2849	666	84	1255
McDonald, Samuel J., Gallatin, Mo. Neck-yoke	608,474	Aug. 2	546	122	84	763
McDonald, William W., *et al.* (See Gates, Caleb C., assignor.)						
McDondland, George T. (See Stephenson, John, assignor.)						
McDonough, Frank, Eau Claire, Wis. Feed mechanism for band resawing-machines	608,894	Aug. 9	1317	307	84	929
McDonough, James, Montclair, N. J. Horseshoe and removable calk therefor	606,875	July 5	445	95	84	88
McDonough, James W., Chicago, Ill., assignor, by mesne assignments, to International Color Photo Company, Jersey City, N. J. Producing photographs in color	611,457	Sept. 27	2422	556	84	1958
McElfresh, Franklin P., Anderson, Ind. Jar-closure	608,475	Aug. 2	548	122	84	764
McElhiney, William. (See Frisbie, Warren M., assignor.)						
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. System for heating by electricity	608,211	Aug. 2	76	20	84	670
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Car-heating system	608,212	Aug. 2	79	21	84	670
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Valve.	608,342	Aug. 2	321	71	84	720
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Electric heater	608,343	Aug. 2	322	71	84	720
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Electric heater	610,999	Sept. 20	1538	353	84	1772
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Electric coupling	611,000	Sept. 20	1539	353, 354	84	1773
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Electric-heating system	611,001	Sept. 20	1541	354, 355	84	1773
McElroy, James F., Lansing, Mich., assignor, by mesne assignments, to Consolidated Car-Heating Company, Wheeling, W. Va. Apparatus for heating cars	610,997	Sept. 20	1536	353	84	1772
McElroy, James F., Albany, N. Y., assignor to Consolidated Car-Heating Company, Wheeling, W. Va. Thermostat	610,998	Sept. 20	1537	353	84	1772
McElroy, Samuel, New York, N. Y. Apparatus for purifying water	610,849	Sept. 13	1270	293	84	1706
McGahey, Richard. (See Bowman, Lewis H., assignor.)						
McGee, Augustus M., assignor of one-half to C. Haas, Cleveland, Ohio. Process of and machine for making chaplets	609,899	Aug. 30	3192	748	84	1336
McGee, William G., Wilmington, Del. Safety stop or brake for elevators	608,297	Aug. 2	221	52	84	699
McGenniss, David, assignor of one-half to O. C. Burt, Easthampton, Mass. Blank for knitted garments	609,694	Aug. 23	2851	667	84	1255
McGinley, James A., Springfield, Mass. Oar-lock	611,436	Sept. 27	2389	548	84	1951
McGlade, Cornelius, Philadelphia, Pa. Measuring device	606,977	July 5	592	130	84	118
McGovern, John F. (See Wilhelm and McGovern.)						
McGowan, John A., Maywood, assignor of three-eighths to W. R. Armstrong, Chicago, Ill. Carbureter	606,998	July 5	643	139	84	128
McGrath, Patrick H., Randolph, Mass., assignor, by mesne assignments, to Johnson Typesetter Company, Portland, Me. Type setting and justifying machine	608,997	Aug. 9	1525	362, 363, 364, 365, 366, 367, 368	84	969
McGuire, William T., Rossville, Iowa. Thill-coupling	611,267	Sept. 27	2054	473	84	1890
McHardy, James A., assignor to Nicholson File Company, Providence, R. I. Rasp-machine	608,213	Aug. 2	81	21, 22	84	671
McInnerney, Benjamin, assignor to McInnerney Manufacturing Company, Omaha, Nebr. Generator for electrical igniters	608,895	Aug. 9	1320	308	84	930
McInnerney, Benjamin, assignor to McInnerney Manufacturing Company, Omaha, Nebr. Generator for electrical igniters	608,896	Aug. 9	1321	308	84	930
McInnerney Manufacturing Company. (See McInnerney, Benjamin, assignor.)						
McIntosh, Harry W. (See Taylor, Joseph W., assignor.)	608,377	Aug. 2	369	81	84	720
McIntosh, Neil W., New York, N. Y. Rotary blower	611,368	Sept. 27	2055	473, 474	84	1890
McInturff, Abraham, and H. J. Stewart, Eversonville, Mo. Wire-stretcher	607,946	July 26	2629	559	84	562
McKanna, Amos, Emporia, Kans. Order-file for locomotive-engineers	610,635	Sept. 13	904	207	84	1631
McKay, Alexander, Montreal, Canada. Dust-tight sifter for ashes	609,361	Aug. 16	2225	526	84	1118
McKean, Samuel G., assignor of one-half to F. and L. Ingersoll, Pittsburg, Pa. Mechanical movement	607,068	July 12	806	177	84	175
McKee, Edward C., Harrisburg, Pa. Plumber's screw-threading die	609,695	Aug. 23	2853	667	84	1255
McKee, James R., Bardsdale, Cal. Fruit-press	608,380	Aug. 2	377	82	84	730
McKenna, Edward W., Milwaukee, Wis. Method of and machine for rolling steel rails	608,378	Aug. 2	370	81	84	729
McKenna, Edward W., assignor to McKenna Steel Working Company, Milwaukee, Wis. Machine for renewing old steel rails	608,379	Aug. 2	374	82	84	730
McKenna, Edward W., assignor to McKenna Steel Working Company, Milwaukee, Wis. Method of and machine for renewing old steel rails	610,687	Sept. 13	979	227, 228	84	1647
McKenna Steel Working Company. (See McKenna, Edward W., assignor.)						
McKenzie, Dougal J., assignor to McKenzie Furnace Company, Chicago, Ill. Grate						
McKenzie Furnace Company. (See McKenzie, Dougal J., assignor.)						
McKinley, John J., *et al.* (See Stanley, Oramel C., assignor.)						
McKinnon, George M. (See Reese, Edwin Y., assignor.)	608,619	Aug. 9	801	185, 186	84	833
McKnight, Alexander, New York, N. Y. Invalid-bed	607,520	July 19	1825	380, 381	84	393
McKnight, Thomas R., assignor to Western Wheeled Scraper Company, Aurora, Ill. Wheeled scraper	607,521	July 19	1828	381	84	393
McKnight, Thomas R., assignor to Western Wheeled Scraper Company, Aurora, Ill. Dump-car						
McLallen, H. D., *et al.* (See Leatherman and Metzler, assignors.)	611,458	Sept. 27	2424	556, 557	84	1958
McLaren, William, London, England. Automatic water-closet for railway-carriages, &c.	608,008	July 26	2752	584	84	589
McLaughlin, George G., Boston, assignor to J. C. Edwards, Brookline, Mass. Pump						
McLaughlin, George T., *et al.* (See Hammond, William E., assignor.)						
McLaughlin, John G., assignor of one-half to R. W. Gleason, New York, N. Y. Guard-rail for open tramway-cars	610,688	Sept. 13	981	228	84	1647
McLaughlin, Patrick, Dover, N. H. Lawn-mower	608,526	Aug. 2	633	142	84	780
McLean, David, Chicago, Ill. Blow-off valve	607,265	July 12	1187	254	84	245
McLean, Horace G., assignor to Allen Tripoli Company, Racine, Mo. Filter	607,570	July 19	1922	398	84	409
McLean, William, Belfast, Ireland. Wringing and mangling machine	611,075	Sept. 20	1666	382	84	1797
McLeland, John C., Buffalo, N. Y. Calculating-machine	611,269	Sept. 27	2057	474, 475	84	1891
McLeskey, Balus J., Reed Creek, Ga. Cotton-planter and fertilizer-distributer	610,718	Sept. 13	1036	239	84	1659

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McMahon, Ellen E. (See McMahon, Joseph, assignor.)						
McMahon, Joseph, assignor of one-half to E. E. McMahon, Chicago, Ill. Car-bumper	609,159	Aug. 16	1853	440	84	1048
McMakin, Lewis, Jr. (See Richardson and McMakin.)						
McManus, John B., assignor of one-half to A. B. and H. S. Van Voast, Schenectady, N. Y. Bicycle-saddle	611,221	Sept. 20	1953	451	84	1851
McMillan, Archie B., New York, N. Y. Electromagnetic motor	607,451	July 19	1529	396	84	228
McMillin, Robert S., assignor of one-half to V. H. Lockwood, Indianapolis, Ind. Garment-holder	609,117	Aug. 16	1785	425	84	1090
McMullen, Wilbert H. (See Hoyt, Rufus L., assignor.)						
McMurray, Dennis B., assignor of one-half to G. R. Wallace, Fitchburg, Mass. Paper-making machine	610,493	Sept. 6	666	149	84	1567
McMurtry, George G., Allegheny, Pa. Rolling-mill	608,381	Aug. 2	380	83	84	731
McMurtry, George G., Allegheny, Pa. Rolling-mill	608,382	Aug. 2	381	83	84	731
McNagny, W. F., *et al.* (See Leatherman and Metzler, assignors.)						
McNairy, Amos B., Cleveland, Ohio. Can or like closure	609,239	Aug. 16	2014	478	84	1076
McNamee, George T., Roanoke, Va. Stove-fender	610,555	Sept. 13	774	176	84	1606
McNaught, J. A. (See Anderson, Edward, assignor.)						
McNear, George W. (See Quinsler and McNear.)						
McNelly, Mathias F., Chicago, Ill., assignor to Monarch Manufacturing Company, Indianapolis, Ind. Acetylene-gas generator	610,877	Sept. 13	1325	304	84	1718
McPartland, James H., Houlton, Me. Ball-cock valve	608,897	Aug. 9	1323	308	84	930
McPherson, Leon O., Highlank Park, assignor to Gray European Telautograph Company, Chicago, Ill. Telautograph	610,274	Sept. 6	237	53, 54	84	1488
McQuarrie, Archibald, Buffalo, N. Y. Cuspidor and attachment	610,556	Sept. 13	775	176	84	1608
McSweeny, James, assignor to E. D. Jones & Sons Company, Pittsfield, Mass. Hand-drill	610,455	Sept. 6	587	131	84	1551
McVay, Jennie L., Winona, Minn. Hook	607,123	July 12	919	199	84	196
McWane, Henry E. (See Wiley, Edgar C., assignor.)						
McWithey, Tilley G., Cloquet, Minn. Corn-popper	609,160	Aug. 16	1854	441	84	1043
Me Yère, Arthur, Nashville, Tenn. Shirt-bosom retainer	609,109	Aug. 16	1775	422	84	1028
Mead, Ernest J., Bridgetown, England. Voting-machine	607,445	July 19	1519	323	84	326
Mead, Theodore H., *et al.* (See Crowell, Luther C., assignor.)						
Mead, Theodore H., *et al.* (See Read, George F., assignor.)						
Meaker, Charles L. (See Buck and Meaker.)						
Means, George H., Frankfort, Ky. Fountain-pen	610,818	Sept. 13	1223	282	84	1695
Means, John H. (See Hardy, Frederick, assignor.)						
Meats, John T., assignor to Mason Machine Works, Taunton, Mass. Loom	609,156	Aug. 16	1849	439, 440	84	1042
Meats, John T., and T. W. Dean, assignors to Mason Machine Works, Taunton, Mass. Twist-indicator for spinning-machines	610,552	Sept. 13	768	175	84	1602
Mechwart, William, and A. Brahm, Chicago, Ill. Wooden flower-tub	610,156	Aug. 30	3629	844	84	1424
Medbery, Nelson H., East Providence, R. I. Valve-coupling	609,207	Aug. 16	1933	459, 460	84	1058
Meeker, Ellis R., Elizabeth, N. J., assignor to New York Belting and Packing Company, New York, N. Y. Tool for repairing pneumatic tires	611,414	Sept. 27	2344	540	84	1944
Meeker, William, Dayton, Ohio. Bearing for vehicle-wheels	608,698	Aug. 9	951	218	84	863
Mehl, Andrew, Garrison, assignor to A. L. Clayton, Baltimore, Md. Detachable link	606,997	July 5	642	139	84	127
Mehner, Hermann, Berlin, Germany. Producing ammonia	607,943	July 26	2625	557	84	561
Meier, Edward D., and H. G. Tidemann, St. Louis, Mo. Boiler	610,969	Sept. 20	1480	338	84	1762
Meisel, Francis, assignor to Kidder Press Manufacturing Company, Boston, Mass. Paper cutting and winding machine	610,329	Sept. 6	360	76, 77	84	1510
Meissner, Friedrich. (See Stocker, Meissner, and Zander.)						
Meldrum, James J., T. F., and J. W., and F. Clayton, Manchester, England. Mechanical stoker	609,038	Aug. 16	1620	385, 386, 387	84	1001
Meldrum, John W. (See Meldrum and Clayton.)						
Meldrum, Thomas F. (See Meldrum and Clayton.)						
Melin, August, Chicago, Ill. Self-locking seal	609,621	Aug. 23	2723	635	84	1230
Meltzer, Heinrich, Ratibor, Germany. Machine for working balls	608,470	Aug. 2	535	120	84	762
Meltzer, Heinrich, Ratibor, Germany. Apparatus for examining the exact spherical form of balls	610,071	Aug. 30	3499	810, 811	84	1396
Melven, Jonathan H., St. Louis, Mo. Inking-pad	608,887	Aug. 9	1308	305	84	928
Menagh, John S., Jersey City, N. J. Apparatus for displaying price-cards	609,359	Aug. 16	2221	525	84	1117
Menke, Gustav. (See Abt, Babette, assignor.)						
Mennons, Francis F. H. L., *et al.* (See Thierry, Michel C. P., assignor.)						
Mentze, Hugo W. E., assignor to Boldt & Vogel, Hamburg, Germany. Bottle-washer	611,180	Sept. 20	1867	430, 431	84	1836
Meredith, Albert M., Philadelphia, Pa., assignor to G. G. Armor, Baltimore, Md. Trolley-pole	611,367	Sept. 27	2246	519	84	1926
Mergenthaler Linotype Company. (See Bates, George A., assignor.)						
Mergenthaler Linotype Company. (See Girod, Ernest, assignor.)						
Mergenthaler Linotype Company. (See Muehleisen, Carl, assignor.)						
Merigan, James, Philadelphia, Pa. Bottle	611,368	Sept. 27	2247	519	84	1927
Merkle, William, Oakland, Cal. Bread-cutting knife	608,337	Aug. 2	312	68	84	718
Merrell, Willard H., Oneida, N. Y. Drill-chuck	608,061	July 26	2435	607	84	607
Merriam, Iram Z., Whitewater, Wis. Wheeled vehicle	609,894	Aug. 30	3185	746	84	1334
Merriam Manufacturing Company. (See Hubbard, Frederic P., assignor.)						
Merriam, Matthew H., Lexington, Mass. Perforating-machine	610,746	Sept. 13	1077	248	84	1606
Merrill, Frank H., Plainfield, N. J. Displacement-pump	609,943	Aug. 30	3268	763	84	1350
Merrill, Freeman C., Paris, Me. Plow	611,456	Sept. 27	2421	556	84	1958
Merrill, John J., Alfred, N. Y. Machine for pressing clay products	607,870	July 26	2497	580	84	537
Merrill, Lemuel, Melrose, Mass. Seam-ripper	608,206	Aug. 2	70	19	84	669
Merrill, Phineas T., Boston, Mass. Powder-distributing apparatus	609,827	Aug. 30	3077	717	84	1313
Merritt, George W., Millbrook, N. Y. Waste or sink pipe cleaner	608,207	Aug. 2	71	19	84	669
Merritt, Hamilton L., Somerville, Mass. Tire	609,157	Aug. 16	1852	440	84	1042
Merry, Benjamin P., Stryker, Ohio. Calf-weaner	610,944	Sept. 20	1435	330	84	1754
Merry, George G. S., Boston, Mass., assignor to Automatic Weighing, Lifting and Grip Machine Company, Portland, Me. Coin-controlled weighing-scale and grip and lifting machine	610,766	Sept. 13	1122	257, 258	84	1675
Mersereau, Charles H., assignor to Inventor's Novelty Manufacturing Company, Paterson, N. J. Trunk	606,892	July 5	468	100	84	92
Mersereau, Charles H., assignor to Inventor's Novelty Manufacturing Company, Paterson, N. J. Folding sample-case	606,893	July 5	469	101	84	93
Mersereau, Charles H., assignor to Inventor's Novelty Manufacturing Company, Paterson, N. J. Folding sample case	606,894	July 5	471	101	84	93
Mersfelder, William L., Cincinnati, Ohio. Mechanism for burning hydrocarbons	607,694	July 19	2143	451	84	450
Mertz, Lewis, Geneseo, Ill. Lamp chimney holder	608,615	Aug. 9	797	184	84	832

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Meserve, George W., Boston, Mass. Pipe-coupling and patch	607,517	July 19	1822	379	84	392
Meserve, George W., Boston, Mass. Plasterer's steel angle-tie	608,888	Aug. 9	1309	305	84	928
Metcalf, William B., Jr., Auburn, Nebr. Nut-lock	607,622	July 19	2017	419	84	428
Metcalf, William G., Dayton, Ohio. Machine for attaching tags to fabrics	607,119	July 12	910	197, 198	84	195
Metcalfe, Charles S., Silver City, N. Mex. Wrench	611,499	Sept. 27	2498	576	84	1973
Metzler, Jonas. (See Leatherman and Metzler.)						
Meyer, Albert A. (See Keller, Henry, assignor.)						
Meyer, Alfred, Zwickau, Germany. Wheel for vehicles	607,518	July 19	1823	379	84	392
Meyer, Frederick M., Jamestown, N. Y. Wood-bending device	609,691	Aug. 23	2847	666	84	1255
Meyer, George J., Buffalo, N. Y. Pneumatic malting apparatus	608,336	Aug. 2	313	69	84	718
Meyer, Robert, Philadelphia, Pa. Oxidizing-machine	609,360	Aug. 16	2223	526	84	1117
Meyer-Sniffen Company. (See Dickinson, Henri D., assignor.)						
Meyer, Wilhelm, Chicago, Ill. Counter-battery	609,994	Aug. 30	3377	784	84	1372
Michael, Ollie P. W. (See Hariman, George V., assignor.)						
Michaelsen, Niels. (See Dowlen and Michaelsen.)						
Michener, Elwood H., assignor to Acme Staple Co., Philadelphia, Pa. Staple-driving machine	608,699	Aug. 9	952	219	84	863
Middaugh, Asa F., A. T. Hoevet, and F. T. Anderson, assignors to Economy Broom Company, Denver, Colo. Combination whisk-broom. (Reissue)	11,688	Aug. 23	2952	690	84	1275
Miehle Printing Press and Manufacturing Company. (See Miehle, Robert, assignor.)						
Miehle, Robert, Chicago, Ill. Velocipede	609,828	Aug. 30	3078	718	84	1313
Miehle, Robert, assignor to Miehle Printing Press and Manufacturing Company, Chicago, Ill. Sheet-delivery mechanism	610,491	Sept. 6	653	147, 148	84	1564
Miehle, Robert, and J. W. Mansfield, Chicago, Ill. Paper-feeding machine	606,975	July 5	584	129	84	116
Miers, Elijah M., Palmerston, Canada. Wheel-hub	610,629	Sept. 13	892	204, 205	84	1629
Miesler, Julius, Vienna, Austria-Hungary, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Circuit arrangement for electrical apparatus	607,760	July 19	2244	474	84	471
Miflin, George W. (See Crossley, William H., assignor.)						
Miles, William C., Huntington, Ind. Rotary paper-cutting knife	610,144	Aug. 30	3608	838	84	1419
Millar, Orville L., Augusta, Mich. Transplanter implement	607,519	July 19	1824	380	84	392
Millen, Thomas, New York, N. Y. Sign	608,616	Aug. 9	798	184	84	832
Millen, Thomas, New York, N. Y. Car-step lifter	608,617	Aug. 9	799	184	84	832
Millen, Thomas, New York, N. Y. Car-step lifter	608,618	Aug. 9	800	185	84	833
Miller, Benjamin M., Crawfordsville, Ind. Barbed-wire machine	608,471	Aug. 2	587	120, 121	84	762
Miller, Charles. (See Earhart and Miller.)						
Miller, Charles G., deceased, Hartford, Conn.; E. C. Farnam administratrix. Tank-valve-controlling means	611,435	Sept. 27	2386	547	84	1950
Miller, Charles W. (See Price, Elmer, assignor.)						
Miller, Franklin. (See Rittenhouse and Miller.)						
Miller, George J., Kenton, Ohio. Secondary battery	610,190	Sept. 6	71	15	84	1454
Miller, Gustof J., assignor of one-half to J. A. Watterworth and H. Fee, Duluth, Minn. Excavating-machine	609,449	Aug. 23	2387	561, 562	84	1168
Miller, Henry, Hannibal, Mo. Car-replacer	611,072	Sept. 20	1602	381	84	1796
Miller, Horace E., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Die for making frames from sheets of celluloid, &c.	610,630	Sept. 13	895	205, 206	84	1629
Miller, Jacob W., and E. Huber, Marion, Ohio. Pneumatic straw-stacker	610,659	Sept. 13	938	218	84	1638
Miller, James A., New Haven, Conn. Heater	607,660	July 19	2091	436	84	441
Miller, James A., New Haven, Conn. Radiator	608,889	Aug. 9	1309	305, 306	84	928
Miller, Jesse, Broadway, Ohio. Washing-machine	610,996	Sept. 20	1535	352	84	1772
Miller, John F., assignor of three-fourths to J. C. Hamilton, N. J. Clodfelter, and J. L. Green, Indianapolis, Ind. Plow	606,895	July 5	472	101	84	93
Miller, Joseph M., Chicago, Ill. Fire-extinguisher	607,591	July 19	1961	407	84	417
Miller, Louis L., Newport, Ky. Trace-trimmer	611,181	Sept. 20	1898	431	84	1836
Miller, Louis S., New York N. Y. Scaffold-bracket	609,287	Aug. 16	2105	498	84	1094
Miller, Martin, Tiffin, Ohio. Land roller and pulverizer	607,186	July 12	1035	224	84	217
Miller, Oliver A. (See Luce, Don C., assignor.)						
Miller, Percival, Carbondale, Pa. Display-stand	606,842	July 5	390	83	84	78
Miller, Peter, Ypsilanti, Mich. Device for retaining heat in locomotive-boilers	607,006	July 12	894	175	84	175
Miller, Reuben, Jr., *et al.* (See McDonald, Robert A., assignor.)						
Miller, Samuel F., Bridgewater, Va. Flood-fence	607,568	July 19	1919	397	84	408
Miller, Samuel H., Nashville, Tenn. Hog-nose cutter	610,911	Sept. 20	1380	316	84	1743
Miller, Thomas S., South Orange, N. J. Rope-driving machinery	610,912	Sept. 20	1382	316, 317	84	1743
Miller, Walter H. B., Melbourne, Victoria. Clothes-line-prop head	607,259	July 12	1175	251	84	242
Miller, William H., New York, N. Y. Spring-bottom for chairs and upholstery	608,062	July 26	2846	607	84	607
Miller, William J., Boston, Mass. Hot-water heating apparatus	610,685	Sept. 13	977	227	84	1646
Miller, William L., Pittsburg, Pa. Automatic water-heater	608,339	Aug. 2	314	69, 70	84	718
Millett & Brosnihan. (See Brosnihan, Thomas H., assignor.)						
Millican, William, *et al.* (See Russell, William, assignor.)						
Milligan, Charles J., Chicago, Ill. Rotary engine	610,191	Sept. 6	72	15	84	1454
Milligan, William F., Ridgeville, Ind. Fence-post	609,829	Aug. 30	3079	718	84	1313
Millikan, W. F., *et al.* (See Wilder, Norman B., assignor.)						
Mills, Howard W., *et al.* (See Van Fleet, Charles G., assignor.)						
Mills, Robert C. (See Twomey and Mills.)						
Mills, Stephen G., Wichita, Kans. Churn	611,500	Sept. 27	2499	577	84	1973
Mills, William H., Westfield, N. Y. Rail-joint	608,206	Aug. 2	72	19	84	669
Milne, Oswald I., London, England. Apparatus for making fly-catchers	610,192	Sept. 6	75	15	84	1455
Milner, Albert R., Canal Dover, assignor to A. R. Milner Seating Company, Canton, Ohio. Store-stool	607,546	July 19	1877	390	84	402
Milner, George E., Chicago, Ill. Insole-reinforcing machine	609,110	Aug. 16	1776	422	84	1028
Milner, William, and W. Wilson, assignors to Speed Indicator Company, Limited, London, England. Speed-indicator	611,265	Sept. 27	2051	472, 473	84	1889
Milwaukee Gas Stove Company. (See Detwiler, Alfred E., assignor.)	610,072	Aug. 30	3501	811	84	1396
Mink, Edward, Catskill, N. Y. Apparatus for use in drying ladies' hair	606,676	July 5	77	16	84	18
Mink, Fritz, assignor to Keystone Watch Case Company, Philadelphia, Pa. Engraving-machine	610,305	Sept. 6	317	68	84	1502
Mino, Joseph, and W. Day, Denver, Colo. Blasting implement	608,063	July 26	2847	607	84	607
Mintzer, Harry H., Philadelphia, Pa. Fishing-float	610,913	Sept. 20	1383	317	84	1744
Missouri Railway Equipment Company. (See Marshall, George S., assignor.)	609,895	Aug. 30	3186	747	84	1335
Mitchell, Charles B., Hays, Tex. Boiler-feed regulator						
Mitchell, Colonel C. A., Indianapolis, Ind. Combination-tool						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mitchell, Edward W., Oberlin, Ohio. Marine propulsion	611,182	Sept. 20	1870	431, 432	84	1836
Mitchell, Guy E. (See Ramsdell, Fred H., assignor.)						
Mitchell, J. L. (See Parker, Middleton N., assignor.)						
Mitchell, Loron, Augusta, Ga. Means for fastening insulator-pins to cross-arms	609,288	Aug. 16	2105	498	84	1094
Mitchell, Thomas W., *et al.* (See Badeker, John, assignor.)						
Mitchell, William A. (See Furber and Mitchell.)						
Mitcheltree, W. B., *et al.* (See Patton, Joseph, assignor.)						
Mix, Frank W., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Bolt for locks	608,784	Aug. 9	1092	252	84	888
Moe, Sivert, E. W. Buell, G. C. Roberts, and A. Conkling, Chicago, Ill., assignors to Troy Laundry Machinery Company, Limited, Troy, N. Y. Starching-machine	611,015	Sept. 20	1567	361	84	1778
Moffitt, John R., Denver, Colo. Rock breaker and crusher	611,205	Sept. 20	1912	441	84	1844
Mohn, Finn. (See Anderson and Mohn.)						
Molas, Jean, London, England. Valve for engines	608,064	July 26	2848	607	84	607
Molby, Joseph P., Cambria, Mich. Heating-furnace	610,273	Sept. 6	235	53	84	1488
Monarch Cycle Manufacturing Company. (See Birner, Charles P., assignor.)						
Monarch Manufacturing Company. (See McNelly, Mathias F., assignor.)						
Monarch Water Heater Company. (See Beckfield, John C., assignor.)						
Monarch Water Heater Company. (See Beler, Adolf, assignor.)						
Mond, Ludwig, London, England. Process of and apparatus for obtaining nickel from nickel-carbonyl	606,843	July 5	302	83, 84	84	78
Monell, Ambrose, Munhall, Pa. Magnetic separator	610,767	Sept. 13	1127	258, 259	84	1676
Monitor Vapor Engine and Power Company. (See Hain, Ralph B., assignor.)						
Monnot, Charles D., Canton, Ohio. Convertible tricycle	609,237	Aug. 16	2009	477	84	1075
Montgomery, John M., Butte, Mont. Ore granulator and pulverizer	608,700	Aug. 9	955	219, 220	84	864
Montupet, Antonin, Paris, France. Steam-generator	609,971	Aug. 30	3330	775, 776	84	1362
Moodie, Robert, London, England. Washing or leaching apparatus	608,554	Aug. 2	685	155	84	791
Moody, Arthur R., Stoke-on-Trent, England. Respirator	610,914	Sept. 20	1385	317	84	1744
Moon, Orville P., and H. L. Marbach, Lorain, Ohio. Hydrocarbon-burner	608,785	Aug. 9	1093	252, 253	84	888
Moonelis, Emil, New York, N. Y. Cigarette-machine	609,039	Aug. 16	1627	387, 388, 389	84	1002
Mooney, Sherman G. and W. J., Pattonsburg, Mo. Apparatus for applying stay-wires to wire fencing	610,819	Sept. 13	1225	282	84	1696
Mooney, Thomas H., Dayton, Ohio. Mold for forming tiles	610,686	Sept. 13	978	227	84	1646
Mooney, William J. (See Mooney, Sherman G. and W. J.)						
Moore, Arthur C., and G. Rodwell, London, England. Elastic tire and rim for wheels	607,695	July 19	2145	451	84	451
Moore, Caleb J., Baltimore, Md. Bottle	610,902	Sept. 6	424	91	84	1520
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Circuit-interrupting device	611,206	Sept. 20	1914	442	84	1844
Moore, Edward J., Philadelphia, Pa. Steam-boiler	608,065	July 26	2849	608	84	607
Moore, Edward Y., assignor to Moore Manufacturing Company, Cleveland, Ohio. Door-hanger	610,409	Sept. 6	514	112	84	1537
Moore Electrical Company. (See Moore, Daniel M., assignor.)						
Moore, Elisha, Meductic, Canada. Mechanism for imparting successive or alternating movements	611,501	Sept. 27	2501	577	84	1973
Moore, George R., Philadelphia, Pa. Door-knob fastening	610,631	Sept. 13	897	206	84	1630
Moore, James B., and J. M. Young, Watertown, Tenn. Vise	608,697	Aug. 9	950	218	84	863
Moore, John C., and J. L. Thurman, Newtown, Ky., assignors of one-third to J. Hawkins, Dolomite, Ala. Means for regulating churn-powers	611,220	Sept. 20	1952	451	84	1851
Moore, Llewellyn C., assignor of one-half to S. A. Cox, S. Crosser, and H. Rogers, Farragut, Iowa. Shoe-lace fastener	609,112	Aug. 16	1780	423	84	1029
Moore Manufacturing Company. (See Moore, Edward G., assignor.)						
Moore Manufacturing Company. (See Moore, Van Zandt M., assignor.)	609,113	Aug. 16	1781	423	84	1029
Moore, Samuel, Wilmington, Del. Street-sweeper	606,808	July 5	328	69	84	66
Moore, Van Zandt M., assignor to Moore Manufacturing Company, Cleveland, Ohio. Door-hanger	608,702	Aug. 9	957	220	84	864
Moore, William J., The Dalles, Oreg. Opening or closing gates	607,871	July 26	2501	531	84	537
Moore, William N., Washington, D. C. Acetylene-gas-generator lamp	610,553	Sept. 13	770	175	84	1602
Moore, William R., Eden, N. Y. Wrench	608,968	Aug. 9	1465	346, 347	84	957
Morava, Wensel, Chicago, Ill. Gas or oil motor for bicycles	608,786	Aug. 9	1096	253	84	888
Morgan, Edwin J., Norwich, England. Sash-fastener	608,524	Aug. 2	631	142	84	780
Morgan, James, assignor of four-fifths to J., C., A. E. A., and F. Scherber, Timboon, Victoria. Antirattling thill-coupling	608,263	Aug. 2	159	39	84	685
Morgan, John O., assignor to Pneumatic Elevator and Weigher Company, Indianapolis, Ind. Driving mechanism for grain-conveyers	607,872	July 26	2502	531	84	537
Morgan, Robert W., New York, N. Y. Curtain for vestibules of cars, &c.	610,632	Sept. 13	808	206	84	1630
Morgan, William, Cleveland, Ohio. Die-head for screw-machines						
Morgan, William A. (See Welch and Burkhart, assignors.)						
Morgan & Wright. (See Golding, William, assignor.)						
Morgan & Wright. (See Young, Ernest W., assignor.)	607,446	July 19	1521	324	84	327
Morgans, William, London, England. Winding and hauling engine						
Morley Button Manufacturing Company. (See Jenkins, Herbert T., assignor.)						
Morley Finishing Machine Company. (See Howe, Oliver I., assignor.)	610,633	Sept. 13	900	206	84	1630
Morley, James, Bournemouth, England. Tire for vehicle-wheels						
Morningstar, Benjamin F., assignor to himself and F. Recht, New York, N. Y. Medicine-spoon	608,890	Aug. 9	1311	306	84	928
Moroney, David J. (See Szabó, Avelin, assignor.)	611,207	Sept. 20	1915	442	84	1844
Morrill, John F., Boston, Mass. Hot-water bottle or ice-compress	606,874	July 5	443	95	84	87
Morris, Charles C., Waldeck, New Zealand. Tobacco-cutter	607,447	July 19	1523	324	84	327
Morris, Clement S., Durham, N. H. Fastening device	609,450	Aug. 23	2893	562	84	1169
Morris, Edmund, Michigan City, Ind. Weaving-needle	609,451	Aug. 23	2895	562	84	1169
Morris, Edmund, Michigan City, Ind. Thread for weaving	609,452	Aug. 23	2896	563	84	1169
Morris, Edmund, Michigan City, Ind. Art of and apparatus for manufacturing composite threads for weaving chair-seat fabrics, &c.	609,896	Aug. 30	3180	747	84	1335
Morris, Edmund, Michigan City, Ind. Rotary cutter	607,448	July 19	1525	324	84	327
Morris, John R., Jewell City, Kans. Combination-tool	607,944	July 26	2627	557, 558	84	561
Morris, Orson, Red Canyon, Wyo. Slide-valve						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Morris, Richard. (See Crabtree, John, assignor.)	609,111	Aug. 16	1779	423	84	1028
Morris, William L., Cleveland, Ohio. Oil-cup	607,696	July 19	2147	452	84	451
Morrison, Andrew, assignor to Dilworth, Porter & Co., Limited, Pittsburg, Pa. Tie-plate	609,622	Aug. 23	2725	635	84	1230
Morrison, Augustus H., Amsterdam, N. Y. Paper-cutting shears						
Morrison Battery Company. (See Williams, Harry, assignor.)						
Morrison, Charles W., *et al.* (See Stanley, Oramel C., assignor.)	606,677	July 5	79	16	84	18
Morrison, James, and H. P. Hansen, Seattle, Wash. Pipe-coupling	611,137	Sept. 20	1797	414	84	1822
Morrison, Josiah, Anderson, Ind. Bicycle crank-shaft bearing	608,891	Aug. 9	1313	306	84	928
Morrison, Myron C., Stockholm, N. Y. Vehicle-brake						
Morrow, Alexander P., assignor of one-half to H. H. Fulton, Elmira, N. Y. Back-pedaling brake	611,073	Sept. 20	1664	381	84	1796
Morse, Elvin H., Colorado Springs, Colo. Seal-lock	607,260	July 12	1176	252	84	242
Morse, Frank B., Haverhill, Mass. Shoe	611,266	Sept. 27	2053	473	84	1890
Morse, Frank W., St. Joseph, Mo. Refrigerator shipping-case	606,701	Aug. 9	956	220	84	864
Morse, Frederick H., assignor of one-half to J. C. Somerville and W. F. Bell, St. Louis, Mo. Exhibitor for series pictures	607,761	July 19	2246	474	84	471
Morse, Frederick H., assignor of one-half to J. C. Somerville and W. F. Bell, St. Louis, Mo. Kinetographic camera	607,783	July 19	2286	482, 483	84	478
Morse, Guy O., and E. D. Rich, Mapuoketa, Iowa. Pipe-cutter	608,066	July 26	2853	609	84	609
Morton, Henry D., San Francisco, Cal. Express-wagon	607,120	July 12	914	198	84	195
Morton, William, Dunedin, New Zealand. Gold-saving apparatus	610,410	Sept. 6	515	112	84	1537
Moseley, Marion S., Franklin, Tex. Word-counter for type-writing machines	608,428	Aug. 2	471	106	84	749
Moseley, Moss, and P. Funck, Rochester, N. Y.; said Funck assignor to said Moseley. Automatic switch for regulating electric air-compressors	608,340	Aug. 2	318	70	84	719
Mosher & Curtis, *et al.* (See Boxley, George, assignor.)						
Moss, Jasper H., assignor of forty-nine one-hundredths to C. J. Brown, Topeka, Kans. Generating gas from kerosene, &c., by means of wicks	608,394	Aug. 2	402	89	84	735
Moss, Jasper H., assignor of forty-nine one-hundredths to C. J. Brown, Topeka, Kans. Burner and chimney-holder	608,395	Aug. 2	408	89	84	737
Motherwell, David M., Chicago, Ill., assignor to Whitman & Barnes Manufacturing Company, Akron, Ohio. Cultivator	608,411	Aug. 2	439	96, 97	84	743
Motherwell, David M., Chicago, Ill., assignor to Whitman & Barnes Manufacturing Company, Akron, Ohio. Cultivator	610,078	Aug. 30	3502	811	84	1396
Motley, Peter, Philadelphia, Pa. Nursery-gate	610,193	Sept. 6	75	16	84	1455
Moulard, Edouard, and J. Guény, Lyons, France. Apparatus for blotting or drying writing	609,158	Aug. 16	1852	440	84	1042
Moulton, Charles J., Chatteris, and A. J. Keeble, Peterborough, England. Potato-digging machine	609,289	Aug. 16	2106	499	84	1094
Moulton, Walter E., Shelby, Ohio. Garment-supporter	606,729	July 5	165	37	84	34
Mowe, George H., Watertown, N. Y. Catch-basin and sewer-trap	611,074	Sept. 20	1665	382	84	1797
Moxley, Richard J., assignor to Empire Type Setting Machine Company, New York, N. Y. Type-setting machine	606,678	July 5	80	17	84	18
Moxley, Richard J., assignor to Empire Type Setting Machine Company, New York, N. Y. Type-distributing machine	609,453	Aug. 23	2401	563	84	1170
Moyer, Harvey A., and C. J. Graf, Syracuse, N. Y.; said Graf assignor to said Moyer. Thill-coupling	610,768	Sept. 13	1128	259, 260	84	1676
Moyer, William W., Lykens, Pa. Water-motor	609,692	Aug. 23	2848	666	84	1255
Muehleisen, Carl, Baltimore, Md. Linotype-machine	608,067	July 26	2855	609, 610, 611	84	609
Muehleisen, Carl, Baltimore, Md. Line-closing attachment for linotype-machines	608,155	July 26	2993	642, 643	84	636
Muehleisen, Carl, Baltimore, Md., assignor to Mergenthaler Linotype Company, of New York. Linotype-machine	610,454	Sept. 6	582	129, 130, 131	84	1550
Mueller, Henry, Decatur, Ill. Tapping-machine	611,387	Sept. 27	2295	530	84	1934
Mühlinghaus, Fritz, Barmen, Germany. Jacquard-machine for looms	607,945	July 26	2628	558	84	562
Mulcahy, Timothy, New York, N. Y. Support for feed-bags	607,449	July 19	1526	325	84	328
Mulconroy, James J., *et al.* (See Armstrong, Ernest, assignor.)						
Muldoon, Charles J., Rochester, N. Y. Stopper for bottles, &c.	608,296	Aug. 2	220	51	84	698
Mullane, Patrick, Moline, Ill. Hasp-fastener	607,873	July 26	2505	531	84	538
Müller, Frank, assignor to F. Buchmüller, New York, N. Y. Foot-rest for boot-blacking stands	610,363	Sept. 6	425	91, 92	84	1521
Muller, Fritz. (See Bille, Numa A., assignor.)	609,897	Aug. 30	3189	747, 748	84	1335
Müller, Henry, London, England. Musical stringed instrument	608,525	Aug. 2	632	142	84	780
Müller, Hugo, Aachen, Germany. Valve for steam-engines						
Müller, I. T. (See Heine, Arthur, assignor.)					84	118
Müller-Thurgau, Hermann, Waedenswell, Switzerland. Coloring and preserving fruit-juices	606,976	July 5	591	----	84	288
Mulligan, John, Dayton, Ohio. Cooking-boiler	607,384	July 12	1404	300	84	175
Mumford, Arthur G., Colchester, England. Steam-generator	607,067	July 12	804	176	84	242
Mumford, Arthur G., Colchester, England. Feed-water regulator for boilers	607,261	July 12	1178	252	84	1029
Munday, William S., Hattiesburg, Miss., assignor, by mesne assignments, of one-half to S. Z. Cohen, New Orleans, La. Machine for preparing wood for fuel	609,114	Aug. 16	1782	424	84	
Munkwitz, Reinhold. (See Bortmann and Munkwitz.)						
Munsell, Harvey M., *et al.* (See Sheriff, James E., assignor.)						
Munson, Peter, *et al.* (See Johnson, Gustaf, assignor.)	610,717	Sept. 13	1035	289	84	1659
Munyon, James M., Philadelphia, Pa. Inhaler						
Murphey, Frank P., *et al.* (See Johnston, John S., assignor.)	607,121	July 12	916	198	84	195
Murphey, Frank P., assignor of one-half to R. G. Green, Chicago, Ill. Folding crate	609,040	Aug. 16	1630	389	84	1003
Murphy, Edward E., Boston, Mass., assignor to New Era Process Company, of West Virginia. Carbonating apparatus	609,238	Aug. 16	2011	477	84	1075
Murphy, Edward E., Boston, Mass., assignor to New Era Process Company, of West Virginia. Carbonating apparatus	609,995	Aug. 30	3378	784	84	1372
Murphy, James J., New York, N. Y. Arithmetic puzzle	606,983	July 5	523	114, 115	84	104
Murphy, Jeremiah H., Flatonia, Texas. Endless band or cord	607,569	July 19	1919	897, 898	84	409
Murphy, John F., assignor to Cooke Locomotive and Machine Company, Paterson, N. J. Intercepting-valve for compound engines	608,703	Aug. 9	958	220, 221	84	864
Murphy, Thomas J. (See McClafferty, Patrick, assignor.)						
Murphy, William, New York, N. Y. Stone-sawing machine	609,972	Aug. 30	3334	776	84	1363
Murphy, William A. (See Eilers, Bernerd, assignor.)						
Murphy, William F., Iowa City, Iowa. Hanger for electric lamps						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Murray, Kenneth S., assignor of one-half to T. N. Hester, London, England. Driving mechanism for velocipedes	608,341	Aug. 2	319	70	84	719
Murray, Nicholas C., Kingston, Tex. End-gate lock	608,892	Aug. 9	1314	307	84	929
Murray, Thomas J., Butte, Mont. Air and water heating apparatus for locomotives	610,074	Aug. 30	3504	812	84	1397
Murray, Thomas J., Butte, Mont. Locomotive-engine	610,075	Aug. 30	3506	812, 813	84	1397
Murray, William H., Tavistock, Canada. Combined door holder and lock	607,122	July 12	917	199	84	196
Murray, William W., assignor to Rochester Athenaeum and Mechanics Institute, Rochester, N. Y. Desk attachment	607,187	July 12	1087	224	84	217
Murrey, Jasper, Cleveland, Ohio. Gravity-railway	608,787	Aug. 9	1097	253, 254	84	889
Musgrove, John T. (See Hughes and Musgrove.)						
Muslar, Nelson, West Boylston, assignor to J. Joyce, Andover, Mass. Automatic feed device for bottle-stoppering machines	607,262	July 12	1178	252	84	243
Musnicki, Antoine, Brussels, Belgium. Automatic safety device for lifts, hoists, &c	607,450	July 19	1527	325	84	328
Myers, Clarence A., Atlantic City, N. J. Electric railway	607,697	July 19	2148	452	84	452
Myers, George A., *et al.* (See Gauntner, Rudolph L., assignor.)	606,823	July 5	348	74	84	70
Myers, George S., Riverside, Cal. Tree-prop bracket	609,898	Aug. 30	3191	748	84	1335
Myers, John E., Springfield, Mo. Key-guard	610,364	Sept. 6	427	92	84	1521
Myers, Phineas B., New York, N. Y. Paper box	609,454	Aug. 23	2403	564	84	1170
Myers, William M., Rockland, Ind. Fence-post	607,605	July 19	1983	.....	84	421
Myles, Frederick F., New Orleans, La. Bath-salt						
Nabors, W. E., *et al.* (See James, Will S., assignor.)						
Nasmith, John W. (See Prost, Victor A., assignor.)	608,214	Aug. 2	86	22	84	672
Nason, Joseph H., Somerville, Mass. Eyeglass-stud						
National Cash Register Company. (See Blanchard, Allen I., assignor.)						
National Cash Register Company. (See Cleal, Joseph P., assignor.)						
National Cash Register Company. (See McCormick, John H., assignor.)						
National Cash Register Company. (See Reeves, Orwell C., assignor.)						
National Machine Company. (See Hogan, James T., assignor.)						
National Tooth Company. (See Foster, Charles E., assignor.)						
Nazel, John, assignor to G. W. and J. H. Borton, Philadelphia, Pa. Magnetic tack-driver	608,555	Aug. 2	687	156	84	791
Neal, William A., Bungers, W. Va. Combined folding coop and trap	608,705	Aug. 9	963	222	84	865
Neef, Julius, Philadelphia, Pa. Tubular pneumatic-organ	609,362	Aug. 16	2226	526, 527	84	1118
Neeley, George S., assignor of two-thirds to A. Maitland and G. E. Birkicht, Pacific, Mo. Means for throwing sewing-machines into or out of gear	609,973	Aug. 30	3335	776, 777	84	1363
Neemes, Spencer. (See Norton and Neemes.)	609,041	Aug. 16	1623	390	84	1004
Nef, John J., New York, N. Y. Air-brake	609,042	Aug. 16	1634	390	84	1004
Nef, John J., New York, N. Y. Air-brake	608,991	Aug. 9	1512	357, 358	84	966
Neff, Elijah, assignor to E. W. Higbee, Milford, Ind. Pumping apparatus for water-distributing systems	607,124	July 12	920	200	84	196
Negbaur, Walter L., Brookline, Mass. Automatic cut-out for secondary batteries	607,125	July 12	922	200	84	197
Negbaur, Walter L., Brookline, and J. J. Feely, Walpole, Mass. Method of and apparatus for generating electricity	610,820	Sept. 13	1427	282	84	1096
Nehr, Herman F., New York, N. Y. Gate-hinge	610,821	Sept. 13	1229	283	84	1096
Nehr, Herman F., New York, N. Y. Candelabrum	609,900	Aug. 30	3194	749	84	1356
Neil, William, assignor to J. H. Smith, Chicago, Ill. Photographic-negative washer	610,194	Sept. 6	77	16	84	1455
Neil, William, assignor to J. H. Smith, Chicago, Ill. Photographer's lantern						
Neill, Burton J. (See Blackman, Cone, and Neill.)	607,266	July 12	1189	254	84	245
Neilson, James F., New Westminster, Canada. Can-end-crimping machine	610,456	Sept. 6	589	131	84	1552
Nelson, Andrew V., Galesburg, Ill. Pulverizer and harrow	608,620	Aug. 9	806	186	84	834
Nelson, Charles O., assignor of one-half to A. H. Peirce, Chicago, Ill. Toe-clip for bicycle-pedals	609,624	Aug. 23	2729	636	84	1231
Nelson, Nelson P., assignor of two-thirds to B. R. Young and F. D. Spratt, Helena, Mont. Amalgamator	610,494	Sept. 6	667	149	84	1567
Nelson, William, Woodford, assignor of one-half to J. M. Divan, Monroe, Wis. Fence-wire truck	610,879	Sept. 13	1329	304	84	1719
Nesbitt, William H., Roland, Canada. Nut-lock	608,344	Aug. 2	322	71	84	720
Nesmith, Frederick P., Portland, assignor of two-thirds to M. W. and C. N. Trefethen, South Portland, Me. Surge-reliever	607,623	July 19	2019	419	84	428
Neu, Louis J., assignor to J. Cousins, Jr., New York, N. Y. Manufacture of shoes or other articles wholly or in part of patent-leather	607,452	July 19	1532	326	84	328
Neubert, Franklin G., assignor to Patent Button Company, Waterbury, Conn. Button	610,275	Sept. 6	255	54	84	1492
Neuenschwander, Bertha J., Vera Cruz, Ind. Noodle-cutter						
Neugroschl, Israel. (See Neugroschl and Walters.)						
Neugroschl, Leo. (See Neugroschl and Walters.)	609,208	Aug. 16	1935	460	84	1058
Neugroschl, Samuel J., L., and I., and C. Walters, New York, N. Y. Letter-clasp	608,068	July 26	2858	611	84	609
Neuhs, Werner, assignor of one-half to W. E. Krumsoy, Cleveland, Ohio. Baker's oven	611,017	Sept. 20	1576	.....	84	1780
Neumann, John G., Indianapolis, Ind. Preparing desiccated potatoes	609,556	Aug. 23	2578	604	84	1208
Neumann, Julius J., assignor to Lyon & Healy, Chicago, Ill. Valve for wind instruments						
Neverslip Manufacturing Company. (See Whitaker, Richard, assignor.)						
Nevill, David J. (See Aymer and Nevill.)						
New Era Process Company. (See Murphy, Edward E., assignor.)						
New Motive Power Syndicate. (See Guattari, Carlo, assignor.)						
New York Belting and Packing Company. (See Meeker, Ellis R., assignor.)						
New York Large Tree Company. (See Ryder, Malcolm, assignor.)	608,789	Aug. 9	1102	255	84	890
Newhall, Charles H., assignor of one-half to J. A. McCoart, Providence, R. I. Elevator	609,456	Aug. 23	2407	564	84	1171
Newkirk, Charles F., Little Georgetown, W. Va. Wire-fence machine	610,822	Sept. 13	1230	283	84	1097
Newman, Morris C., and L. Z. Marks, assignors of one-third to C. May, Chicago, Ill. Window-guard	610,078	Aug. 30	3513	814	84	1399
Newman, Samuel, Cincinnati, Ohio. Post for metal bedsteads	610,823	Sept. 13	1231	283	84	1097
Newton, Francis W., Gainesville, Tex. Device for heating sad-irons						
Niagara Fire Extinguisher Company. (See Kersteter, Charles W., assignor.)	607,069	July 12	808	177	84	176
Nichols, Edwin C., Topeka, Kans. Car-brake	610,276	Sept. 6	257	54, 55	84	1492
Nichols, Edwin C., assignor of one-half to W. C. Smith, Topeka, Kans. Air purifying and refrigerating system for refrigerator-cars, &c	607,267	July 12	1191	255	84	246
Nichols, John S. C., Noble, Ill. Vessel-brake	607,126	July 12	925	200	84	197
Nichols, Martin V., Doyle Station, Tenn. Clamp attachment for anvils	609,161	Aug. 16	1855	441	84	1043
Nichols, William E., Winchendon, Mass. Machine for cutting box-corners	607,762	July 19	2248	475	84	472
Nicholson File Company. (See McHardy, James A., assignor.)						
Nicholson, George C., Melbourne, Victoria. Sash-fastener	608,992	Aug. 9	1517	358	84	967
Nicol, Ludger A. O., and E. Ayotte, Lowell, Mass., assignors to Draper Company, Portland, Me., and Hopedale, Mass. Spindle and bearing						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Nicolai, Charles D., *et al.* (See Atkinson, Mahlon B., assignor.)						
Nicolai, Lawrence S., *et al.* (See Atkinson, Mahlon B., assignor.)	609,696	Aug. 23	2854	667	84	1256
Nicolle, Philip, Toronto, Canada. Valise-seat and lunch vessel	610,946	Sept. 20	1437	330	84	1754
Niebling, William F., Cincinnati, Ohio. Water-cooling device						
Niederstadt, Charles A. (See Borden and Niederstadt.)						
Niedringhaus, Fredrick G., assignor to St. Louis Stamping Company, St. Louis, Mo. Enameling steel	607,624	July 19	2021	.....	84	428
Niedringhaus, William F., assignor to St. Louis Stamping Company, St. Louis, Mo. Manufacture of enameled ware	607,625	July 19	2022	.....	84	429
Nielsen, Hans P. A., Newport News, Va. Cooking apparatus	607,268	July 12	1192	255	84	246
Nielson, Christen, New York, N. Y. Fifth-wheel	609,697	Aug. 23	2855	668	84	1256
Nies, Frederick H., and W. Dunn, New York, N. Y. Gear-case for bicycles	611,076	Sept. 20	1667	382, 383	84	1797
Nies, Frederick H., and W. Dunn, New York, N. Y. Bicycle-frame	611,077	Sept. 20	1670	383	84	1798
Niles, William E. (See Wallis, Henry E., assignor.)						
Nilson, Anton, Natick, Mass. Extensible bedstead	611,270	Sept. 27	2064	475, 476	84	1892
Nilsson, Carl. (See Jones, Smith, and Nilsson.)						
Ninnemann, Louis R. (See Free, Allison N., assignor.)						
Nisbet, George A., London, England. Velocipede	611,138	Sept. 20	1798	414	84	1823
Nisbet, William H. (See Selley and Nisbet.)						
Nissen, Nis S., Racine, Wis. Box-cover brace and support	611,018	Sept. 20	1578	362	84	1780
Nix, James L., Homer City, Pa. Thermometer for incubators	610,079	Aug. 30	3514	814	84	1399
No-Puncture Tire Company. (See Faas and Gray, assignors.)						
Noack, Adolph G., and L. S. Grossman, assignors, by mesne assignments, to C. L. V. Evans, trustee, Cleveland, Ohio. Hydraulic air-compressor	606,732	July 5	170	38	84	35
Noack, Adolph G., and L. S. Grossman, assignors, by mesne assignments, to C. L. V. Evans, trustee, Cleveland, Ohio. Hydraulic air-compressor	606,733	July 5	173	38, 39	84	35
Noack, Carl O., Stamford, assignor to Eagle Lock Company, Terryville, Conn. Cylinder-lock	608,069	July 26	2859	611	84	610
Noble, Donald. (See Rossiter and Noble.)	608,476	Aug. 2	549	123	84	764
Noble, John, and F. R. Bennett, London, England. Pianoforte	611,041	Sept. 20	1609	368, 369	84	1786
Noe, Alexander C., Pikeview, Ky. Combined planter and fertilizer-distributer	610,495	Sept. 6	669	150	84	1567
Noel, Louis, Springfield, assignor of one-half to H. Blodgett, Ludlow, Mass. Bicycle-bell	610,557	Sept. 13	776	176	84	1603
Noera, Frank P., Waterbury, Conn. Closure for oiling-nozzles	607,763	July 19	2249	475	84	472
Noland, Wilbert K., Coupon, Pa. Car-coupling						
Nonatuck Silk Company. (See Dimock, Ira, assignor.)	610,719	Sept. 13	1037	240	84	1659
Norcross, William M., Philadelphia, Pa. Car-seat						
Nord, John O. (See Youngberg and Nord.)						
Nordyke & Marmon Company. (See Seay, John E., assignor.)	606,679	July 5	83	17, 18	84	19
Norling, Otto W., Brooklyn, N. Y. Car-fender	607,070	July 12	812	178	84	176
Norman, Addison, assignor of one-fourth to W. McCabe, Toronto, Canada. Electric cable for driving conveyances	608,556	Aug. 2	687	156	84	792
Norris, Thomas V., assignor of one-half to C. T. Olander, Rockford, Ill. Washing-machine	608,557	Aug. 2	689	156	84	792
Norris, Thomas V., assignor of one-half to C. T. Olander, Rockford, Ill. Washing-machine.						
North Brothers Manufacturing Company. (See Aichele, Christian, assignor.)						
North, Robert, Webster Groves, Mo., assignor to W. North, Faulkner, Kans. Door holder and bolt	610,146	Aug. 30	3610	839	84	1420
North, William. (See North, Robert, assignor.)						
Northrop, James H. (See Draper and Northrop.)						
Northrop, James H., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Warp-stop-motion mechanism for looms	607,947	July 26	2631	559	84	562
Northrop, James H., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Warp stop-motion for looms	608,558	Aug. 2	689	156	84	792
Northrop, James H., Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., and Portland, Me. Take-up mechanism for looms	610,636	Sept. 13	906	208	84	1631
Northrop Loom Company. (See Draper and Northrop, assignors.)						
Norton Bros. (See Hodgson, John G., assignor.)						
Norton Brothers. (See Norton, Edwin, assignor.)	608,215	Aug. 2	86	23	84	672
Norton, Daniel, and S. Neemes, Troy, N. Y. Grate	608,264	Aug. 2	160	40	84	696
Norton, Edwin, Maywood, assignor to Norton Brothers, Chicago, Ill. Heating-furnace	610,558	Sept. 13	778	177	84	1604
Norton, Edwin, Maywood, assignor to Norton Bros., Chicago, Ill. Sheet-metal-seaming machine	609,200	Aug. 16	2108	500	84	1094
Norton, Thomas, New York, N. Y. Bottle-filling machine						
Norton, William B. (See Hoffman and Norton.)						
Nott, George C. (See Bevington and Fisher, assignors.)						
Noyes, La Verne W. (See Dyer and Noyes.)	607,522	July 19	1830	382	84	394
Noyes, La Verne W., Chicago, Ill. Bicycle driving-gear	609,457	Aug. 23	2409	565	84	1171
Noyes, La Verne W., Chicago, Ill. Windmill						
Nucci, Luigi de, assignor of one-tenth to G. Santarisero, Springfield, Mass. Non-refillable bottle	610,874	Sept. 13	1321	303	84	1717
Nurick, Alexander, assignor to Jones & Laughlins, Limited, Pittsburg, Pa. Metallic column	611,019	Sept. 20	1579	362	84	1781
Nusser, William C. (See Thomas and Nusser.)						
Nutting, Elijah G., Faribault, Minn. Truck	608,898	Aug. 9	1324	309	84	931
Nydegger, Arnold. (See Hansen, William, assignor.)						
Nye, Charles E., Walla Walla, Wash. Saddle-skirt protector	609,118	Aug. 16	1786	425	84	1030
Nygaard, Andrew C., Rawlins, Wyo. Sleigh attachment for vehicles	610,824	Sept. 13	1233	284	84	1097
O'Brien, Cornelius, Rock Creek, S. D. Boom	607,269	July 12	1193	255	84	246
O'Brien, James, Evansville, Ind. Mine trap-door	609,746	Aug. 23	2925	684	84	1269
O'Brien, Maurice, Fresno, Cal. Spring-wheel	606,934	July 5	523	115	84	104
O'Connor, Edward J., and E. R. Knowles, New York, N. Y. Bicycle-gear	610,277	Sept. 6	262	55	84	1493
O'Donnell, Maurice J., Fall River, Mass. Compound for preserving belts	611,459	Sept. 27	2426	.....	84	1959
O'Flaherty, Patrick J., *et al.* (See Sultemeyer, Carl F., assignor.)						
O'Hare, Michael, Utley, Wis. Rock and ore crusher	609,458	Aug. 23	2411	565	84	1172
O'Neil, John. (See Boorman, Sharp, and O'Neil.)	609,901	Aug. 30	3195	749	84	1336
O'Neill, Owen F., Philadelphia, Pa. Pneumatic-tire plug	608,966	Aug. 2	166	40	84	687
O'Neill, Theresa E., Baltimore, Md. Dress-skirt hanger						
O'Quinn, J. E. (See Bundick, George E., assignor.)						
O'Sullivan, Michael, assignor to I. W. Whitehead, Flint, Mich. Lock-valve for brake mechanism	606,680	July 5	84	18	84	19
Oakley, Alfred T. (See Oakley, Clifford H. and A. T.)	607,127	July 12	926	201	84	198
Oakley, Clifford H. and A. T., Cleveland, Ohio. Fillet	610,240	Sept. 6	184	41	84	1478
Oberle, Johannes, Gernsbach, Germany. Bell						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Obermier, John G., Canton, Ohio. Lubricating-axle	610,195	Sept. 6	79	16	84	1455
Odell, John H., New York, N. Y. Organ-action	609,291	Aug. 16	2109	500	84	1096
Oden, Joshua K., and S. K. Boleman, Linden, Tex. Car-coupling	606,985	July 5	525	115	84	104
Ogden, Benjamin F., Wellsville, Mo. Planing-machine	610,080	Aug. 30	3515	814 / 815	84	1399
Ogden, Dora, Columbus, Ind. Battery-zinc	608,216	Aug. 2	88	23	84	672
Ogden, John S., Brooklyn, N. Y. Manufacture of rubber-faced type-wheels	606,765	July 5	252	52, 53	84	51
Ogden, William W., Chatham, N. J. Wheel-tire	611,415	Sept. 27	2946	540	84	1944
Ogle, George W. (See Phillips, William R., assignor.)						
Oglesby, Charles B. (See Dennis, Robert A., assignor.)						
Oglesby, Charles B., *et al.* (See McCarthy, Joseph, assignor.)						
Ohio Rake Company. (See Little, Peter E., assignor.)						
Ohio Steel Company. (See Treat, Lincoln A., assignor.)						
Ohl, George A., Newark, N. J., assignor to George A. Ohl & Company, of New Jersey. Machine for making sheet-metal laths	607,071	July 12	814	178	84	177
Ohmer, John F., and H. Tyler, Dayton, Ohio; said Tyler assignor to said Ohmer. Fare-register. (Reissue)	11,681	July 19	2373	503 / 504	84	497
Ohnemus, Anton, Quincy, Ill. Stove	609,608	Aug. 23	2856	668	84	1256
Ohrt, John J., Burlington, Iowa. Gas-engine	608,298	Aug. 2	222	52	84	699
Olander, Charles T. (See Norris, Thomas V., assignor.)						
Oldershaw, John B., Baltimore, Md. Fireplace-heater	610,196	Sept. 6	80	16	84	1456
Oldham, Joshua, New York, N. Y. Meat or hand saw	607,700	July 19	2154	453	84	453
Oldham, Samuel, Philadelphia, Pa. Pneumatic impact-tool	609,162	Aug. 16	1858	442	84	1044
Olin, Otto B. (See Wagner and Olin.)						
Oliver, Christenna A., Payne's Corners, Ohio. Curtain-hanger	608,070	July 26	2860	611	84	610
Oliver, Frederick W., London, England, assignor, by mesne assignments, to American Pegamoid Company, New York, N. Y. Coated spindle or roller	607,453	July 19	1533	326	84	329
Oliver, Frederick W., London, England, assignor, by mesne assignments, to American Pegamoid Company, New York, N. Y. Belting	607,454	July 19	1535	327	84	329
Oliver, Robert, New York, N. Y. Ship's compass	609,363	Aug. 16	2230	527	84	1119
Olmstead, Freeman E., Denver, Colo. Keyhole-guard	606,734	July 5	174	39	84	36
Olmsted, Benjamin F., assignor to W. H. Olmsted, Newark, and J. H. Olmsted, Plainfield, N. J. Car-coupling	606,999	July 5	644	140	84	128
Olmsted, Ida, Denver, Colo. Pinking-scissors	609,364	Aug. 16	2232	527	84	1119
Olmsted, John H., *et al.* (See Olmsted, Benjamin F., assignor.)						
Olmsted, William H., *et al.* (See Olmsted, Benjamin F., assignor.)						
Olsen, Addiel F., Knowlton, Mont. Combination-tool	610,825	Sept. 13	1235	284	84	1098
Olsen, Charles E., Bowery Beach, Me. Automatic feathering-blade propeller	608,265	Aug. 2	164	40	84	697
Olson, John A., Minneapolis, Minn. Acetylene-gas generator	607,701	July 19	2155	453	84	453
Omeis, Francis, Charleston, S. C. Fireproof construction for partitions and walls	610,457	Sept. 6	590	132	84	1592
Opalla, Arthur, Chicago, Ill. Loose-leaf bookbinder	606,978	July 5	594	130	84	118
Ordway, William P., Boston, Mass. Card-holder for duplicate whist	610,559	Sept. 13	780	177	84	1604
Orewiler, Benjamin F., assignor of one-half to J. Currie, Shelby, Ohio. Hook for hook-and-eye fastening	607,189	July 12	1089	224	84	217
Orr, James P., and G. H. Fugh, Pittsburg, Pa. Switch and switch-operating mechanism	609,292	Aug. 16	2111	500 / 501	84	1095
Orr, Leonard D., Pegram, Ill. Registering apparatus	611,139	Sept. 20	1799	415	84	1823
Ortt, Rowley K., Norristown, Pa. Lawn-mower	610,081	Aug. 30	3516	815	84	1400
Osborn, Martin. (See Becker and Osborn.)						
Osborne, John W., San José, Cal. Apparatus for bending form-plates for printing	608,706	Aug. 9	965	222 / 223	84	865
Osgood, Isaac, Amesbury, Mass. Carriage-coupling	607,948	July 26	2633	559	84	562
Ostrom, Freeland W., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Yielding automatic cutter mechanism for sewing-machines	607,949	July 26	2636	560	84	563
Ostrom, Freeland W., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Separator for buttonhole-sewing machines	608,370	Aug. 2	358	78, 79	84	727
Otenhouse, Henry, McKinney, Tex. Cultivator	608,790	Aug. 9	1103	255	84	890
Otis Brothers & Company. (See Otis and Smith, assignors.)						
Otis, Frank I. (See Blazer, Almer N., assignor.)						
Otis, Norton P., and R. C. Smith, Yonkers, assignors to Otis Brothers & Company, New York, N. Y. Controlling device for electric elevators	610,197	Sept. 6	81	17	84	1456
Ott, Charles, Clinton, Iowa. Sleigh-runner	610,082	Aug. 30	3518	815	84	1400
Ottignon, Augustus W., Boston, Mass. Handle for packages	606,936	July 5	526	115	84	105
Ottney, William F., Gibsonburg, Ohio. Oil-well-casing head	608,899	Aug. 9	1326	309	84	931
Otto, Henry J., and A. E. Wielsch, Butte, Mont.; said Otto assignor of one-sixth to said Wielsch. Railway attachment for bicycles	608,071	July 26	2861	612	84	610
Otto, John E., Rush Lake, Wis. Combined bag-holder and weigher	608,900	Aug. 9	1327	309	84	931
Otto, Louis, assignor to Walker Otto Company, Chicago, Ill. Machine for stamping cards from blanks	609,119	Aug. 16	1787	425 / 426	84	1030
Oursler, Jordan M., Council Bluffs, Iowa. Dust-pan	606,809	July 5	329	69	84	66
Overlaugh, Charles E., Bayonne, N. J. Cartridge-shell	610,660	Sept. 13	989	218	84	1639
Overmyer, Charles F., Fostoria, Ohio. Woodworking-machine	608,072	July 26	2862	612	84	610
Owen, Edward H. (See Donaldson, Owen, and Williams.)						
Owens, John H., Hillsborough, Tex. Cultivator	611,437	Sept. 27	2390	548	84	1951
Owens, Oscar N., Cherryvale, Kans. Wire-fence machine	610,514	Sept. 6	701	158	84	1573
Ozenberger, Joseph, Middletown, Cal. Gate	610,661	Sept. 13	940	218	84	1639
P. & F. Corbin. (See Case, Cromwell O., assignor.)						
P. & F. Manufacturing Co. (See Deem, Miller M., assignor.)						
P. H. & F. M. Roots Company. (See Enyart, Ralph C., assignor.)						
P. P. Mast & Company. (See Dodson, Harry E., assignor.)						
Paar, Henry, assignor of one-half to L. D. Paar, Canton, Ohio. Horseshoe	608,156	July 26	2996	643	84	636
Paar, Louis D. (See Paar, Henry, assignor.)	607,455	July 19	1538	327	84	329
Pacaud, George H., Fall River, Mass. Attachment for bicycles						
Pack, John W., Berkeley, Cal. Recovery of gold from waste solutions of chlorination-works	606,810	July 5	330	69	84	66
Packer, Jabez A., Wellington, New Zealand. Artificial limb	608,791	Aug. 9	1105	256	84	890
Paddack, Lewis E., Duluth, Minn. Time-recorder	610,496	Sept. 6	671	150	84	1567
Paddock, H. E., *et al.* (See Wilder, Norman B., assignor.)						
Padget, Elias M. (See Taylor, Ezra, assignor.)	609,944	Aug. 30	3273	763	84	1351
Page, Charles E., assignor to Page Saddle Company, Denver, Colo. Bicycle-saddle						
Page, Robert N. (See Jones, Milton L., assignor.)						
Page Saddle Company. (See Page, Charles E., assignor.)						
Paine, George H. (See English, Peter, assignor.)	607,000	July 5	649	140	84	129
Painter, Edward L., Owen's Mills, Md. Trace-fastener						
Painter, William, assignor to Crown Cork and Seal Company, Baltimore, Md. Bottle-stopper. (Reissue)	11,685	July 26	3018	649	84	639

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Painter, William, assignor to Crown Cork and Seal Company, Baltimore, Md. Bottle-sealing device	608,157	July 26	2997	643	84	636
Painter, William, assignor to Crown Cork and Seal Company, Baltimore, Md. Bottling-machine	608,158	July 26	2998	644 / 645 / 646	84	636
Painter, William, assignor to Crown Cork and Seal Company, Baltimore, Md. Machine for applying corks and seals to bottles	609,209	Aug. 16	1985	460	84	1058
Palla, Anton, Prague, Austria-Hungary. Throttle-valve for controlling locomotive-blowers	609,830	Aug. 30	3080	718	84	1318
Palmer, Charles O., Cleveland, Ohio. Motor-car	609,043	Aug. 16	1637	391	84	1005
Palmer, Frederick L. (See Curtis, Andrew J., assignor.)	611,020	Sept. 20	1580	362	84	1781
Palmer, Isaac E., Middletown, Conn. Reel and support						
Palmer, John F., Riverside, assignor to Palmer Pneumatic Tire Company, Chicago, Ill. Pneumatic tire. (Reissue)	11,677	July 5	664	144	84	132
Palmer, John M., Fort Grant, Ariz. Ter. Direct-acting wave-power	607,072	July 12	816	178 / 179	84	177
Palmer Pneumatic Tire Company. (See Palmer, John F., assignor.) (Reissue.)	606,937	July 5	527	116	84	105
Pancoast, Richard M., Camden, N. J. Ink-eraser and manicure implement	609,459	Aug. 23	2412	565 / 566	84	1172
Pansard, Paul, Paris, France. Saddle for velocipedes	609,210	Aug. 16	1939	461	84	1059
Pantaleoni, Maffeo. (See Pignotti, Lori, Regnoli, Besso, and Pantaleoni.)						
Papps, John H. and L. F., Southsea, assignors of one-third to T. Harrison, London, England. Device for sustaining and adjusting tension of wires of pianofortes	611,183	Sept. 20	1871	432	84	1837
Papps, Louis F. (See Papps, John H. and L. F.)	607,702	July 19	2159	454	84	454
Paris, Hugh, Rat Portage, Canada. Mute for stringed instruments						
Parish, Ulysses S., and F. A. Rudolph, Carmi, Ill. Curtain-holder	608,021	Aug. 9	807	187	84	834
Park, Harvey S., Chicago, Ill., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Air-brake	610,947	Sept. 20	1439	330 / 331	84	1755
Park, Harvey S., Chicago, Ill., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Air-brake	610,948	Sept. 20	1443	331	84	1755
Park, William R., Taunton, assignor to Hancock Inspirator Company, Boston, Mass. Injector	606,766	July 5	254	53	84	51
Park, William R., Taunton, and B. T. Williston, Somerville, assignors to Hancock Inspirator Company, Boston, Mass. Injector	609,163	Aug. 16	1860	442 / 443 / 444	84	1044
Parker, Barton J., and F. G. Cross; said Parker assignor to G. X. Wendling, San Francisco, Cal. Pipe-bending machine	608,388	Aug. 2	382	83, 84	84	731
Parker, Clarence L., assignor to D. Parker, Silver Creek, N. Y. Carbureter	609,831	Aug. 30	3081	719	84	1314
Parker, David. (See Parker, Clarence L., assignor.)						
Parker Engine Company. (See Parker, John C., assignor.)						
Parker, John C., assignor to Parker Engine Company, San Francisco, Cal. Relief-valve	608,217	Aug. 2	89	23	84	673
Parker, John C., assignor to Parker Engine Company, San Francisco, Cal. Steam-generator	608,218	Aug. 2	91	23	84	673
Parker, Joseph H. (See Browning, George, assignor.)						
Parker, Joseph N., Philadelphia, Pa. Clothes-drier	611,503	Sept. 27	2504	578	84	1974
Parker, Joseph S. (See Long, William N., assignor.)						
Parker, Middleton N., Belton, assignor of one-half to J. L. Mitchell, Georgetown, Tex. Land bedder and cultivator	608,901	Aug. 9	1328	310	84	931
Parker, William T., Philadelphia, Pa. Box-fastener	608,004	July 26	2754	585	84	589
Parkhurst & Wilkinson. (See Cornell, Lewis T., assignor.)						
Parks, Edwin E., assignor of one-half to F. A. Simonds, Grand Rapids, Mich. Motor for flue scrapers or cleaners	609,588	Aug. 23	2643	618	84	1215
Parks, Lewis F., Cincinnati, Ohio. Bicycle	607,606	July 19	1984	412	84	421
Parks & Woolson Machine Company. (See Richardson, Charles E., assignor.)						
Parmiter, Philip J., Ansty, England. Boot tree or stretcher	608,396	Aug. 2	410	90	84	737
Parmley, Lemuel D., Waynesborough, Pa., assignor to C. J. Danielson and M. D. Ellingson, Hamlet, Ind. Threshing-machine	606,681	July 5	85	18	84	19
Parnaland, Ambroise F., Paris, France. Kinetographic camera	610,560	Sept. 13	782	178	84	1605
Parrish, John W., Milton, W. Va. Burglar-alarm	610,826	Sept. 13	1236	284	84	1098
Parrish, Rob Roy, Independence, Oreg. Wrench	608,477	Aug. 2	551	123	84	764
Parsell, Orlando W., Flushing, Mich. Weighing-truck	606,735	July 5	175	39	84	36
Parsell, Orlando W., Flushing, Mich. Weighing-truck	609,902	Aug. 30	3196	749	84	1336
Parsons, Charles A., Newcastle-upon-Tyne, England. Marine steam-turbine	608,969	Aug. 9	1471	348	84	958
Parsons, Fred B., *et al.* (See Powell, Noah M., assignor.)	611,331	Sept. 27	2171	502	84	1913
Parsons, George W., Steelton, Pa. Railway-frog	609,974	Aug. 30	3337	777	84	1364
Parsons, William A., and W. Rawson, London, England. Stoppered jar, bottle, or other receptacle	608,267	Aug. 2	167	41	84	688
Partridge, Andrew, Springfield, Mass. Fruit-knife	607,270	July 12	1194	255 / 256 / 257	84	247
Pastre, Eugène, and F. Lambert, Brooklyn, N. Y. Type-writing machine	607,190	July 12	1041	225	84	218
Patent Button Company. (See Neubert, Franklin G., assignor.)						
Patrick, John, Chicago, Ill. Soft-tread horseshoe	608,412	Aug. 2	440	97	84	743
Patten, Herbert S., Montclair, and W. Maver, Jr., Jersey City, N. J., assignors to themselves, and C. L. Heins, New York, N. Y. Joint for electric conductors	607,874	July 26	2506	532	84	538
Patten, James S., Baltimore, Md. Combined car-axle lubricator, dust-guard, and hot-box indicator	608,707	Aug. 9	969	223	84	866
Patterson, Abram A., Wilbur, Wash. Music holder and turner	608,073	July 26	2863	612	84	611
Patterson, Henry N., Humboldt, Nebr. Seed attachment for grain-drills						
Patterson, John G. (See Davey, Foriest A., assignor.)						
Patterson, John M. (See Platt, Patterson, and Hammell.)						
Patton, Joseph, Sharpsville, Pa., assignor, by mesne assignments, to J. L. Luse, Cleveland, Ohio, and W. B. Mitcheltree, Riddlesburg, Pa. Water-trap	609,747	Aug. 23	2927	684	84	1270
Paulissen, Joseph P., Kankakee, Ill. Car-coupling	608,708	Aug. 9	972	223 / 224	84	866
Paulson, Andrew, Snake, Minn. Grapple for lifting logs	607,571	July 19	1924	396	84	410
Payne, J. A. (See Eaton, Enoch H., assignor.)						
Payne, William J. (See Hanes, Erastus W., assignor.)						
Peacock, Edward M., assignor to Iron Clad Manufacturing Company, New York, N. Y. Closure for milk-cans	610,720	Sept. 13	1039	240	84	1659
Peacock, William F. (See Manning, Charles J., assignor.)	607,875	July 26	2509	------	84	589
Peak, Robert H., Orlando, Fla. Producing magnetic oxid of iron	606,682	July 5	86	18	84	20
Pearce, Daniel H., and L. Arbaugh, Arbaugh, Ohio. Fruit-gatherer						
Pearce, William, assignor of two-thirds to M. N. Woodruff and N. A. Barnes, Southington, Conn. Thill-coupling	611,140	Sept. 20	1803	415	84	1823

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pearl, Eugene, New York, N. Y. Fitting attachment for corsets	609,044	Aug. 16	1641	391	84	1005
Pearl, William, Fairport, Mo. Automatic vehicle-brake	610,827	Sept. 13	1237	285	84	1699
Pearson, Edward T. (See Klever, Friedrich W., assignor.)						
Pearson, Fred S., Boston, Mass. Collector for electric railways	610,241	Sept. 6	185	41	84	1478
Pearson, Isaac N., Gas City, Ind. Glass-finishing machine	611,042	Sept. 20	1610	309	84	1786
Pearson, Swain, assignor of one-half to W. W. Harris, Rock Island, Ill. Neck-yoke attachment	609,699	Aug. 23	2857	668	84	1256
Pease, Jules C., Northeast Carry, Me. Ice-velocipede	608,622	Aug. 9	809	187	84	834
Peck, Ira F., Auburn, R. I. Machine for setting heel and sole protectors for boots or shoes	607,001	July 5	650	141	84	129
Peck, Judson R., Naples, N. Y. Wire fence	609,945	Aug. 30	3274	764	84	1352
Peckham, Edgar, New York, N. Y. Car-truck	606,938	July 5	528	116	84	105
Peckham, Edgar, New York, N. Y. Motor-truck	606,979	July 5	595	130	84	118
Pedersen, Fred, Childress, Tex. Tool-handle	608,902	Aug. 9	1330	310	84	982
Pederson, Petter C. N., West Superior, Wis. Fluid-pressure motor	609,625	Aug. 23	2731	636	84	1232
Pederson, Petter C. N., West Superior, Wis. Fluid-pressure motor	609,626	Aug. 23	2735	637	84	1232
Peebles, Charles E. (See Boland, John, assignor.)	606,806	July 5	473	101, 102	84	94
Peed, Oliver H., Nickerson, Kans. Gate-hinge	608,219	Aug. 2	92	24	84	673
Peerless Fountain Cuspidor Company. (See Johnson, George E., assignor.)	609,460	Aug. 23	2413	566	84	1172
Peers, Kester J., Boston, Mass. Hat or bonnet pin guide and protector	610,411	Sept. 6	516	113	84	1538
Peipers, Emil, Siegen, Germany. Mold-chill	608,268	Aug. 2	168	41	84	688
Peirce, A. H. (See Nelson, Charles O., assignor.)	609,832	Aug. 30	3083	719	84	1314
Pelan, Frank, Sioux City, Iowa. Shade-roller support	609,903	Aug. 9	1331	311	84	932
Pelton, George W., Muscatine, Iowa. Domestic press	611,021	Sept. 20	1581	362	84	1781
Penberthy Injector Company. (See Downes, William A., assignor.)	610,878	Sept. 13	1328	304	84	1718
Pencille, John W., Jamestown, N. Y. Rubbing-machine	609,521	Aug. 23	2524	590	84	1193
Pendergast, John, Chicago, Ill. Waist-belt	611,504	Sept. 27	2506	578	84	1974
Pendleton, Andrew F., Franklin, Mass. Life-boat	608,904	Aug. 9	1332	311	84	933
Pendley, William T., and C. C. Fincher, Milan, Ga. Nut-lock	610,880	Sept. 13	1330	305	84	1719
Pennington, John A., Pitcairn, Pa. Nut-lock	609,589	Aug. 23	2644	618	84	1215
Perkey, Henry D., Worcester, Mass. Game apparatus	609,266	Aug. 16	2114	501, 502	84	1095
Perkins, James C., Inwood, Iowa. Roller attachment for sleighs	609,903	Aug. 30	3198	750	84	1337
Perkins, John W., Boston, Mass. Fishing-rod	608,429	Aug. 2	472	106	84	749
Perkins, Montague E., Bristol, Conn. Bag-holder	611,022	Sept. 20	1582	363	84	1781
Perrin, Summerfield M., assignor of three-fourths to W. J. Keenan, Columbia, S. C.) Baling-press	610,201	Sept. 6	88	18, 19	84	1457
Perrin, Thomas, Sedalia, Mo. Meal and flour bin	610,202	Sept. 6	92	19	84	1458
Perry, Allie C. (See Cobb, Norman P., assignor.)						
Perry, Frederick A., East Liverpool, Ohio. Automatic car-brake						
Perry, Howard B., Wakefield, R. I. Nut-lock						
Perry, James L., assignor to Universal Sander Company, Chicago, Ill. Sandpapering-machine for bent work						
Person, Nels, Garner, Iowa. Truss						
Pertwee, Frederick. (See Harris, William G., assignor.)						
Peter Henderson & Company. (See Seymour, James M., Jr., assignor.)						
Peters, Cornelis, Nymwegen, assignor of two-thirds to W. Schoondermark, Waspik, and J. A. A. Schoondermark, Leeuwarden, Netherlands. Device for preventing railway accidents	610,828	Sept. 13	1239	285	84	1699
Peters, Edward H. (See Gropley and Peters.)						
Peters, Elma. (See Peters, Frank H., assignor.)						
Peters, Frank H., assignor, by mesne assignments, of one-half to E. Peters, Montreal, Canada. Sash-fastener	609,904	Aug. 30	3199	750	84	1337
Peters, Harry V., *et al.* (See Suiternеyer, Carl F., assignor.)	607,703	July 19	2160	454	84	454
Peters, John P., Philadelphia, Pa. Decorative attachment for wheels	607,547	July 19	1878	390	84	408
Peters, Perlai W., Washington, D. C. Combined horse-detacher and wheel-lock						
Peters, William F. (See Hunter and Peters.)	607,073	July 12	819	179	84	178
Peterson, Adolphus, Lansdowne, Pa. Panoramic myrioscope	607,074	July 12	821	179	84	179
Peterson, Adolphus, Lansdowne, Pa. Panoramic myrioscope	611,505	Sept. 27	2507	578, 579	84	1975
Peterson, George, Browning, Mont. Irrigating-machine	610,458	Sept. 6	591	132	84	1552
Peterson, George M., deceased; M. A. Peterson, Salem, Oreg., administratrix. Fruit-grader	610,609	Sept. 13	862	197, 198	84	1622
Peterson, John, St. Peter, Minn. Manure gatherer and loader	609,120	Aug. 16	1792	427	84	1031
Peterson, Martha A., administratrix. (See Peterson, George M.)	609,700	Aug. 23	2859	668, 669	84	1256
Peterson, Peter, Menominee, Mich. Lumber-plier	611,388	Sept. 27	2297	531	84	1935
Peterson, Peter, Reels, Iowa. Gate	611,389	Sept. 27	2299	.....	84	1935
Petraeus, Carl V., assignor to O. H. Picher, Joplin, Mo. Lead pigment and manufacturing same	611,460	Sept. 27	2427	557	84	1959
Petraeus, Carl V., assignor to O. H. Picher, Joplin, Mo. Lead pigment and manufacturing same	607,075	July 12	824	180	84	179
Pettengill, Timothy H., Amsterdam, N. Y. Electric-arc lamp	607,572	July 19	1925	399	84	410
Petterson, Ludwig, Chicago, Ill. Bicycle	608,709	Aug. 9	974	224	84	866
Petts, Don I., Keene, N. H. Wrapper for cuffs or like articles	606,683	July 5	88	19	84	20
Petway, Robert G., Nashville, Tenn. Roller-bearing	607,128	July 12	928	201	84	198
Peugh, Peter P., and J. M. Frazee, Wheeling, Mo. Spring bed-bottom	606,939	July 5	531	117	84	105
Pfening, Maria, Santa Barbara, Cal. Butter-mold	608,269	Aug. 2	172	41	84	689
Pfluger, Charles A., Chicago, Ill. Switch for arc-lamps	606,790	July 5	296	61	84	59
Pfluger, Charles A., Chicago, Ill. Electric-arc lamp	610,561	Sept. 13	784	178	84	1605
Phelps, Lucius J., New Brunswick, N. J. Pneumatic tire	608,623	Aug. 9	811	188	84	834
Phelps, Lynn, Kaneville, Ill. Tank-heater	609,557	Aug. 23	2579	604	84	1208
Phelps, William H., Fort Wayne, Ind. Shoe brake and head	608,005	July 26	2755	585	84	589
Phelps, William H., Fort Wayne, Ind. Vaporizer for hydrocarbon oils						
Philadelphia Camera Company. (See Kimsey, James C., assignor.)						
Philbrook, Emmeline W., Boston, Mass. Eye-shade	610,367	Sept. 6	442	.....	84	1528
Philips, Alfred, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst, Germany. Basic disazo dye	611,438	Sept. 27	2390	548	84	1951
Philips, Frank W. Cleveland, Ohio. Speed-wagon	611,141	Sept. 20	1804	415	84	1824
Philips, William W., Glenshaw, Pa. Window-curtain fixture	610,368	Sept. 6	443	96	84	1523
Phillips, Carrie F., Norfolk, Va. Fruit-strainer	609,045	Aug. 16	1642	392	84	1006
Phillips, Frederick W., London, England. Checking apparatus for registering payments on vehicles, &c	610,198	Sept. 6	84	17	84	1456
Phillips, Henry L., London, England, assignor to C. M. Higgins, New York, N. Y. Bottle-stopper						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Phillips, Herbert C., New Castle, Pa. Bicycle-saddle	607,191	July 12	1043	225	84	218
Phillips, John E., Central Square, N. Y. Cream-separator	609,461	Aug. 23	2414	566	84	1172
Phillips, William E., assignor, by mesne assignments, to L. B. Baker, Racine, Wis. Curry-comb	609,240	Aug. 16	2016	478	84	1076
Phillips, William R., assignor to himself and G. W. Ogle, Pomona, Cal. Harness attachment	608,074	July 26	2865	613	84	611
Phinney, Horatio, Providence, R. I. Cooking-range	611,390	Sept. 27	2300	531	84	1935
Phipps, Edward, Glenville, Ohio. Bicycle handle-bar	607,876	July 26	2509	532	84	589
Phœnix Iron Works Company. (See Barnaby, Charles W., assignor.)						
Phœnix Raisin Seeding and Packing Company. (See Cox, Cary S., assignor.)						
Picher, Oliver H. (See Petraeus, Carl V., assignor.)	610,199	Sept. 6	86	17	84	1457
Pickard, Wesley A., Ewing, Ill. Trap	610,200	Sept. 6	87	18	84	1457
Pickett, Oliver B., Richmond, Ind. Lawn-mower						
Pickinpaugh, George J. (See Carder and Pickinpaugh.)	607,414	July 12	1459	309	84	298
Pickles, Charles K., St. Louis, Mo. Step-over car-seat						
Pickring, Charles, Richmond, Canada, assignor to Lappin Brake Shoe Company, Bloomfield, N. J. Smoke-stack. (Reissue)	11,686	Aug. 2	699	158	84	795
Pierce, Joseph H., and E. A. Thayer, Pueblo, Colo. Air-pressure filter	607,523	July 19	1831	382	84	394
Pierrepont, Evelyn, London, England. Shield for corns	607,950	July 26	2639	560	84	563
Piesbergen, Rudolf, Berlin, Germany. Hat-holding device	608,710	Aug. 9	975	224	84	867
Plessens, Henry, Philadelphia, Pa. Shoe	607,573	July 19	1926	399	84	410
Pignotti, Riccardo, F. Lori, S. Regnoli, M. Besso, and M. Fantaleoni, Rome, Italy. Electric furnace	611,142	Sept. 20	1805	415	84	1824
Pike, Harvey A., St. Louis, Mo. Calipers	611,391	Sept. 27	2301	531	84	1935
Pike, Harvey A., St. Louis, Mo. Track-sanding apparatus	611,392	Sept. 27	2303	531, 532	84	1936
Pilkington, William L., St. Helen's, England. Production of corrugated sheet-glass and apparatus therefor	608,905	Aug. 9	1333	311	84	933
Pillatt, Andrew, Nottingham, England. Rocking fire-bar for furnaces	608,712	Aug. 9	977	225	84	867
Pine, Edwin J., Mobile, Ala. Armor for pneumatic tires	608,075	July 26	2866	613	84	611
Pinkert, Johann G., Hamburg, Germany. Self-acting closing device for propeller-pipes	607,548	July 19	1882	391	84	403
Pintsch, Richard, Berlin, Germany, assignor to Safety Car Heating and Lighting Company, New York, N. Y. Acetylene-gas generator	611,002	Sept. 20	1546	356	84	1774
Piotrowski, Rudolf, San Francisco, Cal. Beer-barrel	607,661	July 19	2093	437	84	441
Piper, William M., Allegheny, Pa. Draft-rigging	609,701	Aug. 23	2861	669	84	1257
Piron, Henri J., Brussels, Belgium. Hot-air heating apparatus	610,689	Sept. 13	982	228	84	1647
Pitcher, Alansing D., Marlette, Mich. Pea-harvester	607,704	July 19	2161	454	84	454
Pjerrou, John F., assignor to himself and C. W. Ackerman, West Point, Nebr. Knock-down stove	611,143	Sept. 20	1806	416	84	1824
Plagman, Adolph, Davenport, Iowa. Mechanical movement	608,220	Aug. 2	93	24	84	673
Piano Manufacturing Company. (See Macphail, James, assignor.)						
Plant, Edmund H. T., and S. Dellow, Charters Towers, Queensland. Amalgamating-pan	611,506	Sept. 27	2510	579	84	1975
Plant, Henry W., New York, N. Y. Lap-robe	609,365	Aug. 16	2282	528	84	1119
Platt, Alfred F., Cleveland, Ohio. Apparatus for chemical cleaning	608,782	Aug. 9	1106	256	84	891
Platt, Cyrus W., J. M. Patterson, and J. Hammell, Jr., Windfall, Ind. Implement for holding bottles, &c	606,736	July 5	177	40	84	36
Plattsburgh Filter and Process Company. (See Feroe, William E., assignor.)						
Plaut, Louis, assignor of two-thirds to E. and A. Koch, New York, N. Y. Electric-telephone system for houses	608,076	July 26	2867	613	84	611
Plested, William E., Watford, England. Key for joints	611,439	Sept. 27	2398	548	84	1951
Plish, Walter, trustee. (See Goebel, Christian H., assignor.)						
Plumb, Fawcett. (See Courtney, John C., assignor.)						
Plumber's Metallic Joint Company. (See Davey, Thomas, assignor.)						
Plume & Atwood Manufacturing Company. (See Atwood, Lewis J., assignor.)	611,144	Sept. 20	1808	416	84	1824
Plummer, John E., Waterville, N. Y. Combination furniture						
Pneumatic Elevator and Weigher Company. (See Morgan, John O., assignor.)						
Pneumatic Elevator and Weigher Company. (See Schuman, James B., assignor.)	610,942	Sept. 6	186	42	84	1478
Poage, John N., College Hill, Ohio. Inlet-valve for water-tanks	608,906	Aug. 9	1334	311	84	933
Poché, Joseph A., New Orleans, La. Insulation of electric wires						
Podhaski, Frank M. (See Conner and Podhaski.)	610,915	Sept. 20	1386	317, 318	84	1744
Poelman, Peter J., assignor of one-half to C. Jacob, New Orleans, La. Fender or guard for cars	608,980	July 5	596	131	84	119
Poincy, Paul, New Orleans, La. Raising levels of low lands						
Poindexter, Alfred, *et al.* (See Boxley, George, assignor.)	609,046	Aug. 16	1644	392	84	1006
Poindexter, Robert E., Indianapolis, Ind. Knife or scissors sharpener	607,951	July 26	2640	560	84	563
Poitrimol, René A., Paris, France. Apparatus for vaporizing mineral oils, &c	607,076	July 12	825	180	84	179
Poll, Carl J., Gillett, Ark. Dough-cutter						
Pollack, William. (See Bell, Frank M., assignor.)	611,145	Sept. 20	1810	417	84	1825
Pollock, Thomas H., Neligh, Nebr. Portable automatic way-station						
Pomeroy, William D. (See Bossert and Pomeroy.)	609,996	Aug. 30	3379	785	84	1372
Pond, Merritt G., Minneapolis, Minn. Match-safe and cigar-cutter						
Poole, Benjamin. (See Foster, Lucian M., assignor.)						
Pope, Charles H., Brockton, assignor to W. B. Arnold, Abington, Mass. Treeing-support	608,998	Aug. 9	1518	358	84	967
Popp, Georg, and H. Becker, Frankfort-on-the-Main, Germany. Preparing hides for tanning	607,549	July 19	1883	.....	84	404
Porteous, Dundas W., London, England. Actuating mechanism for station-indicators	607,550	July 19	1888	391	84	404
Porteous, James, and R. W. Cole, Fresno, Cal.; said Cole assignor to said Porteous. Seed-drill	609,905	Aug. 30	3199	750	84	1337
Porter, Daniel R., Chelsea, Mass. Egg-broiler	608,144	July 26	2976	638	84	632
Porter, Edward, Sydney, New South Wales. Telegram-transmitter	610,278	Sept. 6	264	56	84	1408
Post, Gustaf von, Safsjostrom, Sweden. Automatic seed-planter	608,798	Aug. 9	1107	256	84	891
Post, Peter E., Kingston, N. Y. Skirt-supporting belt and belt-holder	608,907	Aug. 9	1335	312	84	933
Postlethwaite, Alonzo W., *et al.* (See Everhart, Logan W., assignor.)						
Postlethwaite, Zachary T., *et al.* (See Everhart, Logan W., assignor.)	609,294	Aug. 16	2116	502	84	1096
Pothoff, Louis, New York, N. Y. Machine for corrugating metal	606,811	July 5	331	70	84	66
Pottenger, James H., Franklin, Ind. Spraying device	609,121	Aug. 16	1794	427	84	1032
Potter, Clark G., Paducah, Ky. Dust-guard for car-axle boxes	607,129	July 12	929	201, 202	84	198
Potter, Samuel A., Washington, D. C. Kite	609,366	Aug. 16	2283	528	84	1119
Potter, William, New York, N. Y. Mortising-chisel						
Potter, William B., Schenectady, N. Y., assignor to General Electric Company, of New York. Commutator	608,299	Aug. 2	223	52	84	699
Pottier & Stymus Company. (See Markel, Adam, assignor.)	607,456	July 19	1540	327	84	329
Pound, Orange, Bartow, Fla. Oil-cup						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Powell, Eddie R., Hustonville, Ky. Shocking device	610,637	Sept. 13	909	208	84	1632
Powell, James, assignor to William Powell Company, Cincinnati, Ohio. Straightway valve	610,412	Sept. 6	517	113	84	1538
Powell, James R., Mattoon, Ill. Awning-protector	608,077	July 26	2870	614	84	612
Powell, Noah M., assignor of two-thirds to F. B. Parsons and O. D. Jones, Knox City, Mo. Photographic register for railway-coaches	610,971	Sept. 20	1484	338 / 339	84	1762
Powell, Noah M., assignor of two-thirds to F. B. Parsons and O. D. Jones, Edina, Mo. Seat-recording device for passenger-cars	610,972	Sept. 20	1487	339	84	1763
Powell, Noah M., assignor of two-thirds to F. B. Parsons and O. D. Jones, Edina, Mo. Tuning-hammer	610,973	Sept. 20	1489	339	84	1763
Powell, William H., Erie, Pa., assignor to Keystone Electric Company, of Pennsylvania. Electric motor	608,711	Aug. 9	976	224	84	867
Powell, William M. (See Dippo, Bruce, Semple, and Powell.)						
Powers, Abner B., assignor of one-half to J. F. Andre, Denver, Colo. Valve-stopper and pouring-nozzle	610,949	Sept. 20	1447	332	84	1756
Powers, Joseph A., Lansingburg, N. Y. Electric regulator	607,551	July 19	1800	391	84	404
Powers, Walter S., and A. J. Reynolds, Nashville, Mich. Acetylene-gas generator	608,270	Aug. 2	173	42	84	689
Poyet, John B., Philadelphia, Pa., assignor to Hensel Colladay Company, of Pennsylvania. Skirt-protector	606,876	July 5	447	96	84	88
Prall, Edgar F. (See Prall, William E. and E. F.)						
Prall, William E. and E. F., New York, N. Y., assignors to Superheated Water Engine Company, of West Virginia. Apparatus for converting heat into power	610,459	Sept. 6	594	133	84	1553
Pratis, Leopoldo V., and P. Marengo, Turin, Italy. Process of and apparatus for making hydrogen gas and other products	610,867	Sept. 13	1304	300	84	1713
Pratis, Leopoldo V., and P. Marengo, Turin, Italy. Utilizing hydrogen gas for producing light and heat	610,868	Sept. 13	1307	300 / 301	84	1714
Pratis, Leopoldo V., and P. Marengo, Turin, Italy. Gas-motor	610,869	Sept. 13	1311	301	84	1715
Pratt & Cady Company. (See Harrison, William F., assignor.)						
Pratt, John, Chatham, Canada. Swinging and sliding farm-gate	610,916	Sept. 20	1388	318	84	1744
Pratt, John J., *et al.* (See Cottle, Henry F., assignor.)						
Pratt & Whitney Company. (See Christiansen, John, assignor.)						
Pratt & Whitney Company. (See Harper and Grohmann, assignors.)						
Prell, Oscar, assignor to Wheless Induction Railway Company, Washington, D. C. Electric railway	611,271	Sept. 27	2065	476	84	1892
Prescott, Charles H., assignor of one-half to W. B. Hunt, Athens, Tenn. Boot or shoe stretcher	607,192	July 12	1044	225	84	218
Prescott, Edwin, Arlington, Mass. Roller-coaster	609,164	Aug. 16	1892	444	84	1044
Preston, John E., London, England. Apparatus for treating refractory ores	610,917	Sept. 20	1390	318	84	1745
Preston, William C., Providence, assignor to J. B. Taft, Edgewood, R. I. Elevator safety attachment	611,332	Sept. 27	2174	502	84	1913
Prétot, Victor E., Paris, France. Self-propelling carriage	610,460	Sept. 6	596	133 / 134	84	1553
Prewitt, William Q., Chicago, Ill. Mirror	610,918	Sept. 20	1391	318	84	1745
Price, Benjamin, C. W. E. Marsh, and R. Laybourne, Newport, England. Tube-rolling mill	608,908	Aug. 9	1336	312 / 313	84	933
Price, Elmer, assignor of one-half to C. W. Miller, Kirklin, Ind. Corn-planter	608,221	Aug. 2	95	24	84	673
Price, George, Tottenville, N. Y. Juice-extractor	609,165	Aug. 16	1865	444	84	1045
Price, George W., Taylorsville, N. C. Device for hanging clothes, &c., on lines	610,850	Sept. 13	1272	294	84	1706
Price, Jesse V. (See Welton and Price.)						
Price, John B., Wollaston, Mass., assignor to Manhatten Typewriter Company, of New Jersey. Carriage-feed mechanism for type-writing machines	606,940	July 5	534	117	84	106
Prichard, Anthony P., Tacoma, Wash. Metallic gate-screen	607,877	July 26	2510	532	84	539
Pridham, Samuel S., Newark, N. J. Apparatus for recovering ammonium salts from refuse	609,122	Aug. 16	1795	428	84	1032
Pridmore, Edward. (See Farrall and Pridmore.)						
Pridmore, Henry E., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Corn-harvesting machine	611,078	Sept. 20	1672	383 / 384 / 385	84	1798
Pridmore, Henry E., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Machine for harvesting grain	611,079	Sept. 20	1679	385 / 386 / 387	84	1799
Pries, Herman. (See Williamson and Pries.)						
Prindle, Frank M., *et al.* (See West, Wharton L., assignor.)						
Pring, John R., Shawnee, Okla. Ter. Washing-machine	609,027	Aug. 23	2740	637 / 638	84	1234
Prior Cotton Gin Co. (See Prior, Matthew and T. W., assignors.)						
Prior, Matthew, Watertown, Mass., and T. W. Prior, assignors to Prior Cotton Gin Co., Philadelphia, Pa. Tire	611,272	Sept. 27	2068	476	84	1893
Prior, Thomas W. (See Prior, Matthew and T. W.)						
Prisley, James, Pawtucket, R. I. Digester	611,393	Sept. 27	2207	532	84	1987
Probasco, Abraham B., near Lebanon, Ohio. Wire fence	606,737	July 5	178	40	84	86
Probst, Edward, assignor of two-fifths to W. H. Hoff, Terre Haute, Ind. Rotary engine	610,497	Sept. 6	674	151	84	1566
Proctor, James, Burnley, England. Coking-stoker	607,365	July 12	1405	300	84	298
Proks, Karel, Prague, assignor to Society Akciova Spolecnost Strojirny Drive Breitfeld, Danek & Spol, Karlin, Austria-Hungary. Frame for filters	607,952	July 26	2641	561	84	564
Proks, Karel, Prague, assignor to Society Akciova Spolecnost Strojirny Drive Breitfeld, Danek & Spol, Karlin, Austria-Hungary. Tubularly-strapped filter plate or sheet	607,953	July 26	2642	561	84	564
Propper, Albert H., New York, N. Y. Bag-fastener	608,909	Aug. 9	1340	313	84	934
Prost, Victor A., Mayenmoutier, France, assignor to J. W. Nasmith, Manchester, England. Steam-trap	608,384	Aug. 2	384	84	84	732
Prudden, David I., Morristown, N. J. Safety mechanism for elevators	607,271	July 12	1305	257 / 258	84	249
Puchmüller, Gerhard B., Schöneberg, Germany, assignor to Daylight Incandescent Mantle Company, Limited, London, England. Manufacture of fluid for impregnating fibers for incandescent lighting	609,702	Aug. 23	2862	------	84	1257
Pugh, William J., assignor of two-thirds to F. X. Busch and A. Clauss, Chicago, Ill. Operating signal-curtains on locomotive-headlights	608,559	Aug. 2	690	157	84	792
Pullman, Herbert S., assignor to Scovill Manufacturing Company, Waterbury, Conn. Bicycle-bell	608,478	Aug. 2	553	123	84	765
Pullman, John, assignor to G. B. Winter and F. J. Stohwasser, London, England. Gaiter or covering for the legs	607,272	July 12	1207	258	84	249
Purdy, Charles H., Lynbrook, N. Y. Combined hoe and edge-trimmer	607,273	July 12	1209	258	84	249
Purdy, Walter, Somerset, Pa. Device for sharpening edged tools	609,357	Aug. 16	2231	528	84	1119
Pusey, Joshua, Lima, Pa. Parcel handle or carrier	609,946	Aug. 30	3276	764	84	1352
Pusey, Joshua, Lima, Pa. Coin holder or wrapper	609,947	Aug. 30	3277	764	84	1352
Pusterla, Attilio, New York, N. Y. Illusion apparatus	608,413	Aug. 2	443	98, 99	84	744

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Putnam, George L., and C. H. Farmer, New York, N. Y. Magazine bolt-gun	609,211	Aug. 16	1940	461 / 462 / 463	84	1059
Pym, Charles F., Windsor, Canada. Last	608,006	July 26	2756	585	84	589
Pyott, Louis T., Philadelphia, Pa. Means for supporting electric motors	611,273	Sept. 27	2070	477	84	1893
Quackenbush, Henry M., assignor to M. A. Deimel, Herkimer, N. Y. Smoke-consuming apparatus	609,628	Aug. 23	2742	638	84	1234
Quast, Charles, Marion, Ohio. Gas-engine	607,878	July 26	2512	533	84	539
Quast, Charles, Bucyrus, Ohio. Gas-engine	607,879	July 26	2515	533	84	540
Quednow, Frederick, Clementon, N. J. Stamp-affixer	606,791	July 5	297	61, 62	84	59
Quentell, William P., New York, N. Y. Type-writer	607,193	July 12	1045	225 / 226	84	218
Quentell, William P., New York, N. Y. Type-writing machine	607,274	July 12	1210	258 / 259	84	250
Quentell, William P., New York, N. Y. Type-writing machine	611,146	Sept. 20	1813	417 / 418	84	1825
Quicksall, William H. (See Williams and Quicksall.)						
Quidas, Frederick W., Mount Washington, assignor of one-half to E. A. Griffith, Baltimore, Md. Electric radiator	606,792	July 5	299	62	84	60
Quiggin, Daniel A., Blundellsands, England. Filter for feed-water for steam-generators	611,507	Sept. 27	2511	580	84	1976
Quigley, John, Blossburg, Pa. Carrier or holder	610,870	Sept. 13	1313	302	84	1715
Quinn, Jeremiah F., Grand Rapids, Mich. Mechanical toy	608,794	Aug. 9	1109	256	84	891
Quinn, Martin F., Straight, Pa. Apparatus for manufacturing wood-alcohol	611,508	Sept. 27	2513	580 / 581	84	1976
Quinn, Patrick F., Somerville, Mass. Seat or cushion	611,274	Sept. 27	2072	477	84	1894
Quinn, William, Fall River, Mass. Paint-distributer	609,047	Aug. 16	1646	392	84	1006
Quinsler, George J., Brookline, and G. W. McNear, Auburndale, Mass. Buggy-top side light	607,705	July 19	2163	455	84	454
Radcliffe, Charles, Newark, N. J. Button	610,662	Sept. 13	942	219	84	1639
Rader, William E. (See Tandy and Rader.)						
Raiguel, Edgar M., Philadelphia, Pa. Valve-stopper for bottles	608,271	Aug. 2	176	42	84	689
Rainbow, Fred L., assignor to Illinois Refrigerator Company, Morrison, Ill. School-seat	607,275	July 12	1214	259	84	251
Rainey, Equieller B., assignor of one-half to W. C. Cross, Glory, Tex. Fertilizer-distributer	611,184	Sept. 20	1872	432	84	1837
Rains, Lafayette, Greenfield, Ohio. Hoe	607,880	July 26	2517	533 / 534	84	540
Raistrick, John, Jamestown, N. Y. Spooling-machine	608,718	Aug. 9	978	225	84	867
Ramage, Joseph, assignor of one-third to C. F. Goodenough, Wrightsborough, Tex. Vehicle-brake	610,974	Sept. 20	1490	340	84	1764
Ramey, William R., Waverly, Kans. Watchcase-pendant	609,462	Aug. 23	2415	566	84	1173
Ramos, Cayetano S., New York, N. Y. Fire-escape	610,562	Sept. 13	785	178 / 179	84	1605
Rampe, Frank B. (See Kendrick, Matthew B., assignor.)						
Ramsdell, Fred H., Melrose, assignor of one-half to G. E. Mitchell, Medford, Mass. Piston-packing	607,077	July 12	826	180 / 181	84	179
Ramsay, Frederick E., Walsenburg, Colo. Direct-current regulator	610,413	Sept. 6	518	113	84	1538
Randall, Sherman A., Honeoye Falls, N. Y. Back-pedaling brake	611,147	Sept. 20	1818	418	84	1826
Randleff, Carl H. B., assignor to R. C. White, trustee, St. Paul, Minn. Heating-drum for lamps	611,509	Sept. 27	2515	581	84	1977
Randolph, Elmer E., and H. L. McCoy, Manito, Ill. Time-recorder	609,906	Aug. 30	3201	751	84	1338
Randolph, John H., Baton Rouge, La. Horse-rake	610,663	Sept. 13	943	219	84	1640
Raney, James L., Toronto, Ohio. Pipe trimmer and cutter	610,829	Sept. 13	1240	285 / 286	84	1699
Range, John W., assignor to Consolidated Car Fender Company, Providence, R. I. Car-fender	607,954	July 26	2642	561	84	564
Rankin, Thomas L., Sackett's Harbor, N. Y., assignor to Regelation Ice Machine Company, Alexandria, Va. Ice-making apparatus	607,764	July 19	2250	475 / 476	84	472
Rankin, Thomas L., Sackett's Harbor, N. Y., assignor to Regelation Ice Machine Company, Alexandria, Va. Ice-making apparatus	607,765	July 19	2253	476	84	473
Rapp, Gustav A., Hudson, N. Y. String-case	607,130	July 12	930	202	84	196
Rasmussen, Peter, Copenhagen, Denmark. Stair-cover	607,457	July 19	1541	327	84	330
Rathburn, Christopher C. (See Collier and Rathburn.)						
Rattek, Frank, Denver, Colo. Dust-guard for axle-boxes	610,147	Aug. 30	3612	839	84	1420
Rauber, Adolph, Munich, Germany. Baker's oven	611,394	Sept. 27	2306	532	84	1937
Raudabaugh, Joshua R. (See Raudabaugh, William A. and J. R.)						
Raudabaugh, William A., Pleasant Hill, and J. R. Raudabaugh, Celina, Ohio. Pulverizer	610,919	Sept. 20	1392	319	84	1745
Rausch, John A., St. Louis, Mo. Nut-lock	609,241	Aug. 16	2017	478	84	1077
Ravitch, Michael L. (See Kastle, Ravitch, and Lowenhart.)						
Rawls, William L., Jones' Station, Tenn. Burglar-alarm	608,145	July 26	2276	639	84	632
Rawson, Walter. (See Parsons and Rawson.)						
Rawson, William S., London, England. Apparatus for electrically coating wire	611,148	Sept. 20	1819	418 / 419	84	1827
Ray, Albert H., Ashland, Mass. Printing-machine	607,131	July 12	932	202 / 203	84	196
Raymond, Charles H., New Haven, Conn. Sash-fastener	610,369	Sept. 6	444	96	84	1523
Raymond, Charles L., Jr., New Orleans, La. Bicycle-support	609,295	Aug. 16	2118	502	84	1096
Read, Charles C., *et al.*, executors. (See Smith, Chauncy.)						
Read, Charles H. (See Hendrickson and Read.)						
Read, George F., assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Web-cutting mechanism	608,624	Aug. 9	812	188 / 189	84	834
Read Holliday & Sons. (See Kelly, Charles, assignor.)						
Reading Crane and Hoist Works. (See Kincaid, Joseph W., assignor.)						
Ream, George W., assignor to Bucher & Gibbs Plow Company, Canton, Ohio. Harrow	609,342	Aug. 16	2018	478	84	1077
Reardon, Patrick H., San Francisco, Cal. Hose-attaching device for rock-drills	607,955	July 26	2643	561	84	564
Reber, James C., Reading, Pa. Antifriction-bearing	607,790	July 19	2302	486	84	481
Recht, Frederick. (See Morningstar, Benjamin F., assignor.)						
Rector, James A., Lancaster, Mo. Creaming-can	611,275	Sept. 27	2075	477	84	1895
Redman, Charles H., Jr., Newark, N. J. Hair-clipper	608,078	July 26	2871	614	84	613
Redman, Thomas, Bolton, England. Lamp-chimney	608,910	Aug. 9	1345	313	84	936
Reece, John, deceased; M. Reece and F. A. Shea, Brookline, Mass., administrators. Machine for cutting worms	607,626	July 19	2083	419 / 420	84	429
Reece, John, deceased; M. Reece and F. A. Shea, Brookline, Mass., administrators. Machine for cutting teeth on worm-toothed gears	607,627	July 19	2086	420	84	429
Reece, John, deceased; M. Reece and F. A. Shea, Brookline, Mass., administrators. Machine for forming irregular cam-grooves	607,628	July 19	2088	421	84	430

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Reece, John, deceased; M. Reece and F. A. Shea, Brookline, Mass., administrators. Machine for cutting gear-teeth	607,629	July 19	2031	421	84	430
Reece, Marietta, *et al.*, administrators. (See Reece, John.)						
Reed, Adam, assignor of one-half to J. H. Sparks, St. Joseph, Mo. Garbage-receptacle	607,524	July 19	1833	382	84	395
Reed, Henry A., Newark, N. J. Electric cable	608,911	Aug. 9	1346	314	84	986
Reed, James A. (See Wallace and Reed.)	608,222	Aug. 2	97	25	84	674
Reed, Lincoln, Tabor, Iowa. Operating mechanism for churns	606,812	July 5	332	70	84	67
Reed, Samuel G., Chelsea, assignor to Crosby Steam Gage and Valve Company, Boston, Mass. Straightway or gate valve	606,813	July 5	334	71	84	67
Reed, William L. (See Abbott, Henry W., assignor.)						
Reed, William S., Leominster, Mass., assignor to American Automatic Banjo Company, of New Jersey. Device for stringed musical instruments	607,574	July 19	1926	399	84	410
Reeder, James A., Memphis, Tenn. Shipping-crate	609,464	Aug. 23	2417	567	84	1173
Reese, Edwin Y., Atlanta, Ga., assignor of one-half to G. M. McKinnon. Gin-brush						
Reese, Jesse E. (See Reese, Seneca C., assignor.)						
Reese, Seneca C., Knoxville, Tenn., assignor of one-half to J. E. Reese, Para, Ill. Mail-pouch	610,769	Sept. 13	1130	260	84	1677
Reeves & Co. (See Reeves and Kailor, assignors.)						
Reeves, Marshal T., and J. N. Kailor, assignors to Reeves & Co., Columbus, Ind. Automatic oscillating mechanism for stackers	608,223	Aug. 2	98	25	84	674
Reeves, Milton O., assignor to Reeves Pulley Company, Columbus, Ind. Hanger	606,941	July 5	536	117	84	107
Reeves, Orwell C., assignor to National Cash Register Company, Dayton, Ohio. Autographic register	609,465	Aug. 23	2419	567 568	84	1173
Reeves Pulley Company. (See Reeves, Milton O., assignor.)						
Regan, Cornelius, assignor to F. Haberman, New York, N. Y. Mottling or spotting device	609,368	Aug. 16	2236	528	84	1120
Regelation Ice Machine Company. (See Rankin, Thomas L., assignor.)						
Regester, Thomas L. (See Head and Regester.)						
Regnoli, Scipione. (See Pignotti, Lori, Regnoli, Besso, and Pantaleoni.)	611,023	Sept. 20	1583	363	84	1781
Reichardt, Ferdinand A., New York, N. Y. Surgical case	607,881	July 26	2518	534	84	540
Reichardt, Hermann, and J. Bueb, Dessau, Germany. Making cyanids from molasses-lyes	607,882	July 26	2519	534	84	540
Reid, Henry C., Wilmurt, N. Y. Spoke-brace	607,276	July 12	1216	259 260	84	251
Reid, Joseph, Oil City, Pa. Gas-engine						
Reif, Joseph, Jr. (See Fisher and Reif.)						
Reilly, John J., *et al.* (See Little, Alexander F., assignor.)						
Reilly, Michael F., *et al.* (See Little, Alexander F., assignor.)						
Reilly, Robert M., Baltimore, Md. Gas-tight connection for traps or pipes and water-closet bowls	608,007 611,276	July 26 Sept. 27	2737 2076	585 477	84 84	589 1895
Reimold, Julius C. F., Metropolitan, N. Y. Barrel-tap						
Reinecker, Firm of J. E. (See Reinecker, Johannes G., assignor.)						
Reinecker, Johannes G., assignor to Firm of J. E. Reinecker, Gablenz, Germany. Apparatus for manufacturing worm-wheels	611,277	Sept. 27	2077	478	84	1895
Reinhardt, William, *et al.* (See Doty, MacKnight, and Grauten, assignors.)						
Reinhold, Max J. (See Breithut, Oscar P., assignor.)						
Remington, Charles H., assignor to C. R. Remington & Son Company, Watertown, N. Y. Counting attachment for rotary cutters	609,296	Aug. 16	2119	502	84	1096
Remington & Sherman Company. (See Williams, James H., assignor.)						
Remsen, Mary A., *et al.* (See Remsen, Timothy A., assignor.)						
Remsen, Timothy A., assignor to H. M. Lee, New York, N. Y., and M. E. Remsen. Car-fender	609,394	Aug. 16	2287	541	84	1130
Renfrow, Francis N., Pearce, Miss. Pinless clothes-line	607,893	July 26	2520	535	84	541
Renn, Mathew M., Louisville, Ky. Vehicle-wheel	608,912	Aug. 9	1347	314	84	986
Renner, William S., Muncie, Ind. Kitchen bakery-cabinet	606,798	July 5	300	62	84	69
Reno, Howard, Folsom, N. Mex. Ter. Gate-hinge	610,243	Sept. 6	187	42	84	1478
Renshaw, Joseph B., Hartford, Conn. Cutting-off apparatus	610,330	Sept. 6	363	77, 78	84	1510
Renton, William F., Sheffield, England. Railway signal apparatus	611,149	Sept. 20	1820	419	84	1827
Rettew, Charles E., and W. R. Johnson, Carbondale, Pa. Reducing-valve	608,845	Aug. 2	324	71	84	730
Reuse, Jean, Enghien, assignor to Société Anonyme d'Exploitation des Brevets Reuse aux Etats-Unis d'Amerique, Brussels, Belgium. Cigar-making machine	608,913	Aug. 9	1348	314 315	84	986
Reuse, Jean, Enghien, assignor to Société Anonyme d'Exploitation des Brevets Reuse aux Etats-Unis d'Amerique, Brussels, Belgium. Cigar-making machine	608,914	Aug. 9	1351	315 316 317 318	84	987
Reuse, Jean, Enghien, assignor to Société Anonyme d'Exploitation des Brevets Reuse aux Etats-Unis d'Amerique, Brussels, Belgium. Cigar-machine	608,915	Aug. 9	1356	318 319	84	988
Reuse, Jean, Enghien, assignor, by mesne assignments, to Société Anonyme l'Exploitation des Brevets Reuse aux Etats Unis d'Amerique, Brussels, Belgium. Cigar-machine. (Reissue)	11,695	Sept. 20	1969	454 455 456	84	1854
Rex Cash Register Company. (See Bentley, William, assignor.)						
Rey, Hermann. (See Schmid and Rey.)						
Reynolds, Adrain J. (See Powers and Reynolds.)						
Reynolds, George H., assignor to Crane Elevator Company, Chicago, Ill. Automatic safety-stop	610,587	Sept. 13	825	189 190	84	1614
Reynolds, George H., assignor to Crane Elevator Company, Chicago, Ill. Cable attachment for elevator-cars	611,416	Sept. 27	2347	541	84	1944
Reynolds, Howard, Sarnia, Canada. Flower-pot cleaner	610,208	Sept. 6	93	30	84	1458
Reynolds, John R., Hartford, Conn. Speed-limit for engines	606,877	July 5	447	96	84	88
Reynolds, Thomas. (See Sutter and Reynolds.)						
Rhind, Frank, assignor to Bridgeport Brass Company, Bridgeport, Conn. Acetylene-gas-generating lamp	606,684	July 5	89	19	84	90
Rhind, Frank, assignor of one-half to Bridgeport Brass Company, Bridgeport, Conn. Gas-burner	610,414	Sept. 6	520	113	84	1588
Rhoades, Francis S. (See Houser, Scott, assignor.)	606,844	July 5	394	84	84	78
Rhodes, Jay B., assignor to F. C. Austin, Chicago, Ill. Steam-pump	608,479	Aug. 2	554	123	84	765
Rhodes, Joseph M., Covington, Ind. Implement for carrying wheels	608,300	Aug. 2	224	53	84	699
Rhodin, John G. A., Eccles, England. Electrolytic apparatus	607,078	July 12	829	181	84	180
Ribbe, Paul F., Berlin, Germany. Electrode-plate for electric accumulators	608,224	Aug. 2	100	25	84	675
Ribert, José M., assignor of one-half to A. Rosenstein, Lancaster, Pa. Ornamenting surfaces	609,833	Aug. 30	3085	719	84	1314
Rice, Abram, Danville, Iowa. Milking-hopple						
Rice, Charles A. (See Belding and Rice.)						
Rice, Edwin W., Jr., Schenectady, N. Y., assignor to General Electric Company, of New York. System of train control	608,301	Aug. 2	296	53	84	700

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Rice, Edwin W., Jr., Schenectady, N. Y., assignor to General Electric Company, of New York. System of train control	608,302	Aug. 2	227	53	84	700
Rice, Joel T., Hot Springs, Ark. Flying-machine	606,942	July 5	537	118	84	107
Rice, John V., Jr., assignor to John V. Rice, Jr., Company, Edgewater Park, N. J. Engine-governor	607,647	July 19	2064	430 431	84	436
Rice, William H., Mechanicsburg, Pa. Adjustable stay for wire fences	610,083	Aug. 30	3519	815	84	1400
Rich, Aden W., and F. R. Freudenweiler, Philadelphia, Pa. Game apparatus	611,278	Sept. 27	2078	478	84	1894
Rich, Elijah D. (See Morse and Rich.)						
Rich, Walter H., Melrose, Mass. Corner-shield for trunks	607,132	July 12	985	208	84	199
Richard, Delia, Appleton, Wis. Work-box	611,333	Sept. 27	2175	503	84	1913
Richards, Charles E., *et al.* (See Hanson, Joseph, assignor.)						
Richards, Francis H., Hartford, Conn. Looper mechanism for sewing-machines	607,080	July 12	837	182 183	84	181
Richards, Francis H., Hartford, Conn. Sewing-machine	607,081	July 12	842	183 184	84	182
Richards, Francis H., Hartford, Conn. Weighing-machine	607,458	July 19	1541	328 329	84	330
Richards, Francis H., Hartford, Conn. Weighing-machine	607,459	July 19	1561	330 331	84	337
Richards, Francis H., Hartford, Conn. Weighing-machine	607,460	July 19	1577	331 332 333	84	341
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,461	July 19	1590	333 334 335	84	345
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,462	July 19	1597	335 336 337	84	346
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,463	July 19	1602	337 338 339	84	348
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,464	July 19	1612	339 340 340	84	350
Richards, Francis H., Hartford, Conn. Weighing-machine	607,465	July 19	1623	341 342 342	84	353
Richards, Francis H., Hartford, Conn. Weighing-machine	607,466	July 19	1630	343 343 343	84	354
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,467	July 19	1636	344 345 345	84	355
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,468	July 19	1643	345 346 347	84	356
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,469	July 19	1648	347 348 348	84	358
Richards, Francis H., Hartford, Conn. Box-filling machine	607,470	July 19	1659	348 349 350	84	360
Richards, Francis H., Hartford, Conn. Box filling and transferring machine	607,471	July 19	1671	351 351 352	84	362
Richards, Francis H., Hartford, Conn. Box filling and transferring apparatus	607,472	July 19	1677	352 352 353	84	363
Richards, Francis H., Hartford, Conn. Box-filling machine	607,473	July 19	1685	354 354 355	84	365
Richards, Francis H., Hartford, Conn. Recording apparatus for weighing-machines	607,474	July 19	1701	356 356 357	84	367
Richards, Francis H., Hartford, Conn. Weighing-machine	607,475	July 19	1712	358 358 359	84	370
Richards, Francis H., Hartford, Conn. Weighing-machine	607,476	July 19	1720	359 360 360	84	371
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,477	July 19	1726	361 362 362	84	373
Richards, Francis H., Hartford, Conn. Weighing-machine	607,478	July 19	1731	363 363 364	84	374
Richards, Francis H., Hartford, Conn. Weighing-machine	607,479	July 19	1742	365 366 366	84	377
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,480	July 19	1745	367 368 368	84	377
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	607,481	July 19	1749	369 369 370	84	378
Richards, Francis H., Hartford, Conn. Weighing-machine	607,482	July 19	1754	371 371 372	84	380
Richards, Francis H., Hartford, Conn. Universal joint	608,625	Aug. 9	815	189	84	835
Richards, Francis H., Hartford, Conn. Combined cycle holder and lock	610,722	Sept. 13	1043	240	84	1660
Richards, Fred M., and H. M. Forbes, assignors of one-third to G. E. York, Portage, Wis. Rotary engine	610,084	Aug. 30	3520	816	84	1401
Richards, Hubert P., New Britain, Conn. Sewing-machine	607,079	July 12	830	181 182	84	180
Richards, Hubert P., New Britain, Conn. Thread-controlling means for sewing-machines	608,795	Aug. 9	1110	257	84	891
Richards, John, San Francisco, Cal. Centrifugal pump	607,183	July 12	986	208	84	199
Richardson, Alfonso A., New York, N. Y. Grate-bar	611,440	Sept. 27	2393	549	84	1951
Richardson, Charles E., assignor to Parks & Woolson Machine Company, Springfield, Vt. Cloth-shearing machine	609,166	Aug. 16	1866	445	84	1045
Richardson, Charles H., and L. McMakin, Jr., assignors to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Rheostat	611,185	Sept. 20	1874	433	84	1838
Richardson, Clayton M., Toronto, Canada. Heating-drum	607,706	July 19	2164	455	84	454
Richardson, Clifford, assignor to Barber Asphalt Paving Company, New York, N. Y. Asphaltic pavement	607,884	July 26	2522		84	541
Richardson, George W., Sparta, Wis. Grain-separator	609,212	Aug. 16	1955	463 464	84	1063
Richardson, James E., Baltimore, assignor of one-half to J. C. Dowell, Woodside, Md. Puzzle	611,334	Sept. 27	2176	503	84	1914
Richardson, John T., Harrisburg, assignor of one-half to A. H. Ege, Mechanicsburg, Pa. Dumping-wagon	609,167	Aug. 16	1868	445	84	1045

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Richardson, Maria, Helmick, Kans. Stay for bed-slats	609,703	Aug. 23	2864	669	84	1257
Richart, William K., Scranton, Pa. Compression lubrication-cup	606,897	July 5	474	102	84	94
Richey, Charles F., Franklin, Pa. Sucker-rod lifter	611,417	Sept. 27	2348	541	84	1945
Richmond, Edward J. (See Bliss and Richmond.)						
Richter, Felix, Tschoepeln, Germany. Universal or ball joint	610,920	Sept. 20	1808	319	84	1745
Ricketts, William M., assignor of one-half to W. H. Slade, Columbus, Ohio. Cistern-cleaning device	610,279	Sept. 6	266	56	84	1498
Ricks, Floyd K., Canton, Ill. Wagon	610,921	Sept. 20	1395	319	84	1746
Riddell, John, Schenectady, N. Y. Grade-delineator	610,747	Sept. 13	1080	248	84	1697
Ridgely, Nellie A., Springfield, Ohio. Paper-trimmer	609,213	Aug. 16	1957	464	84	1063
Ridgway, Herbert N., Winthrop, Mass. Bicycle handle-bar	610,748	Sept. 13	1086	249	84	1668
Riecke, August, Baltimore, Md. Torpedo-exploder	606,685	July 5	91	19	84	20
Riedel, Ludwig F. (See Limpach, Ludwig, assignor.)						
Rieder, Josef, Munich, Germany. Process of and apparatus for producing reliefs in metal	607,484	July 19	1771	368	84	383
Ries, Elias E., New York, N. Y. Method of and means for manufacturing metal tubing	611,222	Sept. 20	1954	451, 452	84	1851
Rife, Lewis F., Mount Sterling, Ohio. Corn-husking implement	608,303	Aug. 2	233	53	84	701
Rigg, Charles H. (See Hazelton and Rigg.)						
Rigg, Hiram F., Russellville, Pa. Bucket	608,304	Aug. 2	234	54	84	701
Riggin, Henry H., Altoona, assignor of one-half to Watson & McDaniel Company, Philadelphia, Pa. Stop-valve	610,723	Sept. 13	1048	241	84	1661
Rightmire, Raymond F., Parsons, W. Va. Dish-cleaner	607,134	July 12	988	204	84	199
Riley, James L., Xenia, Ill. Pocket-holder for pencils	607,766	July 19	2255	477	84	473
Rimmelin, Edward H., Galveston, Tex. Folding cot or bedstead	607,607	July 19	1986	412	84	421
Ring, Allan M., Arlington Heights, Mass. Fire-extinguisher	610,830	Sept. 13	1242	296	84	1700
Ringbom, Ossian A., Lahtis, Finland. Steam-engine	607,630	July 19	2034	422	84	431
Rinley, Daniel C., Pittsburg, Pa. Manufacture of glassware	609,704	Aug. 23	2865	670	84	1258
Ripley, Nathaniel L., Newton, Mass. Crown-setting for jewels	611,279	Sept. 27	2079	479	84	1896
Risbrough, Edward W., Philadelphia, Pa. Spinning-top	607,552	July 19	1891	391	84	404
Rischmuller, George, San Francisco, Cal. Station-indicator	607,135	July 12	989	204	84	200
Rissmuller, Ludwig, Newark, N. J., assignor, by mesne assignments, to General American Reduction Company, New York, N. Y. Treating garbage and fertilizers obtained therefrom	611,580	Sept. 27	2051	.....	84	2002
Ritchie, Harvey W. (See Ritchie, John and H. W.)						
Ritchie, John and H. W., Chicago, Ill. Reciprocating propeller for vessels	610,370	Sept. 6	445	97	84	1524
Ritchie, John and H. W., Chicago, Ill. Reciprocating propeller for vessels	610,371	Sept. 6	447	98	84	1524
Ritchie, John and H. W., Chicago, Ill. Reciprocating propeller for vessels	611,223	Sept. 20	1960	452	84	1852
Ritchie, Robert L., assignor of one-half to T. F. Jones, Walnut, Kans. Ironing-table	607,885	July 26	2523	535	84	541
Rittenhouse, George W., and F. Miller, Indianola, Ill. Car-mover	608,480	Aug. 2	535	124	84	765
Ritter, Alexandre, Basle, Switzerland. Apparatus for drawing liquids	611,581	Sept. 27	2052	611, 612	84	2002
Ritter, Georg, Stuttgart, Germany. Telephone system	608,714	Aug. 9	980	225, 226	84	868
Riverside Iron Works. (See Boyd, Peter, assignor.)						
Rivett, Edward, Boston, Mass. Antifriction-bearing	608,916	Aug. 9	1360	319	84	938
Road Breaking Company, (Voysey and Hosacks Patents.) (See Bomford and Evershed, assignors.)	609,048	Aug. 16	1647	398	84	1006
Robbin, Frederick, Rochester, N. Y. Furnace	609,834	Aug. 30	3086	720	84	1315
Roberts, Charles E., Oak Park, Ill. Drive-wheel for motor-cycles	609,835	Aug. 30	3087	720	84	1315
Roberts, Charles E., Oak Park, Ill. Ball-bearing	611,280	Sept. 27	2061	479	84	1896
Roberton, Charles G., Glasgow, Scotland, and J. J. Roberton, Leeds, England, assignors of one-third to G. E. Roberton, Montreal, Canada. Tire						
Roberton, George E. (See Roberton, Charles G. and J. J., assignors.)						
Roberton, James J. (See Roberton, Charles G. and J. J.)	610,331	Sept. 6	371	78	84	1511
Roberts, Charles E., Oak Park, Ill. Bearing for wheels						
Roberts, George C. (See Moe, Buell, Roberts, and Conkling.)						
Roberts, John E. (See Bently and Roberts.)	610,831	Sept. 13	1243	286	84	1700
Roberts, Ozias F., Jacksonville, Fla. Pipe-wrench						
Roberts, Throp & Company. (See Donovan, James, assignor.)	607,956	July 26	2644	562	84	564
Robertson, Hugh R., Alameda, Cal. Lumber or timber raft	609,629	Aug. 23	2745	698	84	1235
Robinson, Andrew J., Boston, Mass. Ball-cock	609,369	Aug. 16	2236	529	84	1120
Robinson, Aquila S., Camden, N. J. Fence						
Robinson, C. E. (See Williams, William E., assignor.)	607,092	July 12	852	184	84	184
Robinson, Charles W., Saginaw, Mich. Hub						
Robinson, Cory E. (See Williams, William E., assignor.)						
Robinson, Dighton A. (See Simpson, John, assignor.)						
Robinson, George W., and L. Stelzer, Walbert, Mo. Folding chicken-coop	610,610	Sept. 13	864	198	84	1623
Robinson, Hanson, Baltimore, Md., assignor, by mesne assignments, to United States Standard Machine Company, of New Jersey. Machine for making all-tobacco cigarettes	610,280	Sept. 6	267	56, 57, 58, 59	84	1494
Robinson, James E., Chicago, Ill., assignor to A. G. Spalding & Bros., Jersey City, N. J., and New York, N. Y. Forming celluloid or similar open-seam coverings	607,415	July 12	1460	309	84	298
Robinson, James E., Chicago, Ill., assignor to A. G. Spalding & Bros., Jersey City, N. J., and New York, N. Y. Applying celluloid or other like coverings to hollow metal tubes	607,416	July 12	1461	310	84	298
Robinson, James W. (See Knee and Robinson.)						
Robinson, Joseph, assignor to E. Wells and P. Crossman, Ipswich, England. Pneumatic tire	611,510	Sept. 27	2516	581	84	1977
	611,511	Sept. 27	2517	581	84	1977
Robinson, Rupert, Sheffield, England. Construction of boxes	610,832	Sept. 13	1244	297	84	1700
Robinson, William R., Cleveland, Ohio. Fireproof structure	610,833	Sept. 13	1246	297	84	1701
Robinson, William R., Cleveland, Ohio. Fireproof structure	607,093	July 12	853	184	84	184
Roche, David, London, England. Fire-escape						
Rochester Athenaeum and Mechanics Institute. (See Murray, William W., assignor.)						
Rochette, Delia. (See Manny, Emilien A., assignor.)						
Rocholl, Charles, assignor to Westminster Manufacturing Company, Limited, London, England. Grooved pulley	606,794	July 5	301	63	84	60
Rocholl, Charles, assignor to Westminster Manufacturing Company, Limited London, England. Pulley	610,724	Sept. 13	1050	241	84	1661
Rochwite, August, assignor of one-half to W. R. Hammond, Wautoma, Wis. Door hanger	611,395	Sept. 27	2310	533	84	1937
Rock Island Plow Company. (See Head and Regester, assignors.)						
Rock Island Plow Company. (See Waterman, Lewis E., assignor.)						
Rockström, Axel L., Norberg, Sweden. Pressure-regulator for liquid sterilizers	606,738	July 5	180	40	84	37
Rockwell, Frederick C., *et al.* (See Bullock, William J., assignor.)						
Roderick, Thomas. (See Gray and Roderick.)						
Rodgers, James G., Springfield, Ohio. Vehicle-tire	609,948	Aug. 30	3279	764	84	1353

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Rodrick, John S. L., Washington, D. C. Furnace	610,085	Aug. 30	3522	816	84	1401
Rodwell, George. (See Moore and Rodwell.)	609,168	Aug. 16	1871	445	84	1046
Roe, Frederick W., Stonehenge, Tasmania. Vermin-trap						
Roenisch, Bruno. (See Zimmer and Roenisch.)						
Roesch, Jacob M. (See Lang, Benjamin P. M., assignor.)						
Roessler & Hasslacher Chemical Company. (See Bauschlicher, August, assignor.)	610,415	Sept. 6	522	114	84	1539
Rogers, Alexander H., Galveston, Tex. Station-indicator	607,386	July 12	1407	300	84	289
Rogers, George R., Parkersburg, Ind. Gate						
Rogers, Harrison, *et al.* (See Moore, Llewellyn C., assignor.)						
Rogers, Herman A., *et al.* (See Scott, Charles S., assignor.)						
Rogers, Noah C. (See Van Hoevenbergh, Henry, assignor.)						
Rogers, Theodore G. S. (See Davy and Rogers.)	607,084	July 12	854	185	84	184
Rogers, Yubie W., St. Louis, Mo. Dinner-pail						
Rohde, William J. (See Davis, Henry E., assignor.)	610,851	Sept. 13	1273	294	84	1706
Rolle, Max, Philadelphia, Pa. Ventilating-fan	610,852	Sept. 13	1274	294, 295	84	1706
Rolle, Max, Philadelphia, Pa. Ventilating-fan	608,430	Aug. 2	474	107	84	750
Rollins, Joseph, Birnamwood, Wis. Rotary excelsior-machine	608,560	Aug. 2	692	157	84	798
Rollman, George D., Dayton, Ohio. Automatic switch for street-railways						
Rolston, Louis B., *et al.* (See Sterne, Alfred J., assignor.)						
Rolston, William H., *et al.* (See Sterne, Alfred J., assignor.)	608,715	Aug. 9	982	226	84	868
Roman, Reinhard I., London, England. Jointing for tubes						
Romme, William S., New Rochelle, N. Y. Process of and apparatus for decomposing solid substances	606,981	July 5	508	131	84	119
Roney, John H., *et al.* (See De Forest, Charles D., assignor.)						
Rood, Hugh R. (See Rood, Vernon D. and H. R.)						
Rood, Vernon H., assignor of one-half to Jeanesville Iron Works Company, Jeanesville, Pa. Adjustable cut-off for steam-pumps	610,975	Sept. 20	1492	340	84	1764
Rood, Vernon D. and H. R., San Diego, Cal. Machine for applying compounds for protecting piling, timbers, &c	611,208	Sept. 20	1916	442, 443	84	1844
Root, Francis S., Suffield, Conn. Self-folding parcel-carrier	607,277	July 12	1218	260	84	252
Rosback, Frederick P., assignor to W. P. Healy, Chicago, Ill. Machine for making box-blanks	608,796	Aug. 9	1112	257, 258, 259, 260, 320	84	892
Rosback, Frederick P., assignor to W. P. Healy, Chicago, Ill. Box nailing and printing machine	608,917	Aug. 9	1361	321, 322, 323	84	939
Rosback, Frederick P., assignor to W. P. Healy, Chicago, Ill. Machine for step-mitering and printing box-blanks	609,630	Aug. 23	2746	639, 640, 641	84	1235
Rose, Dickinson L., Mankato, Minn. Speed-measurer	606,767	July 5	256	54	84	52
Rose, Henry J., Hythe, and W. Gilbert-Cooper, Dover, England. Military equipment	608,481	Aug. 2	557	124	84	766
Rose, Oren, Gibson, N. Y. Shipping-crate	611,281	Sept. 27	2084	480	84	1896
Rose, Samuel S., Amador City, Cal. Rotary engine	609,049	Aug. 16	1648	393, 394	84	1007
Rose, William H., Baltimore, Md. Photographic developing-tray	607,485	July 19	1773	369	84	383
Rosenbluth, Edwin M., Philadelphia, Pa. Lantern	609,558	Aug. 23	2581	604	84	1208
Rosenstar, Anders P. A., Brooklyn, assignor to G. W. Dietz & Co., New York, N. Y. Hydrocarbon-burner	607,136	July 12	942	204	84	200
Rosenstein, Albert. (See Ribert, José M., assignor.)	608,527	Aug. 2	634	143	84	781
Ross, David, Vancouver, Canada. Door for closing steam-retorts	610,498	Sept. 6	677	151, 152	84	1509
Ross, Finlay W., Britle, Canada. Rotary engine	609,975	Aug. 30	3339	777	84	1364
Ross, Frederick, Craig, Colo. Saddle and girth connection	611,441	Sept. 27	2395	549	84	1952
Ross-Lund, George, Bergen, Norway. Knockdown barrel, &c	610,725	Sept. 13	1051	241	84	1662
Ross, Myron A., Monterey, Mich. Machine for grinding horseshoe-calks	609,297	Aug. 16	2120	503	84	1096
Ross, Simon, Cincinnati, Ohio. Horse-collar-shaping machine						
Rossi, Auguste J., New York, assignor of one-half to J. MacNaughton, Albany, N. Y. Alloy of iron and titanium and producing it	609,466	Aug. 23	2420	568	84	1174
Rossi, Auguste J., New York, N. Y., assignor of one-half to J. MacNaughton. Manufacturing alloys of titanium	609,467	Aug. 23	2424	.....	84	1174
Rossiter, Thomas R., Knowle, and D. Noble, Bristol, England. Friction-clutch	611,512	Sept. 27	2518	582	84	1977
Roth, Joseph C., Buffalo, N. Y. Keg or barrel	611,003	Sept. 20	1547	356	84	1774
Rothgery, Frank A., Cleveland, Ohio. Feed-water coupling for fire-engines	606,739	July 5	182	41	84	37
Rotthoff, William, Duquesne, Pa. Cooling-plate	608,079	July 26	2871	614	84	612
Roure, Edmond V., assignor of two-thirds to C. A. Lane and J. L. Kelly, Philadelphia, Pa. Utilizing liquefiable gases in operating engines, &c	607,602	July 19	2094	437	84	441
Rouse, Hazard & Company. (See Benson, Andrew, assignor.)	606,878	July 5	450	96	84	89
Rouse, Lovell M., Chicago, Ill. Printing-press	607,137	July 12	944	205	84	201
Roussel, Eugène E., Lorient, France. Life-preserver, &c	607,085	July 12	856	185	84	185
Roux, Charles, assignor of one-half to P. Bouhey, Montbard, France. Rotary engine	11,678	July 12	1463	310	84	299
Rowand, Lewis G., Camden, N. J. Electric signaling mechanism. (Reissue)	609,298	Aug. 16	2123	503, 504	84	1097
Rowbotham, Walter, London, England. Primary battery						
Rowbottom, George, assignor to Waterbury Farrel Foundry and Machine Company, Waterbury, Conn. Drop-hammer	609,836	Aug. 30	3088	720	84	1315
Rowe, Frank, Dover, N. J. Sanding apparatus for railway-cars	609,299	Aug. 16	2125	504	84	1097
Rowe, Willard C., assignor to Union Iron Works, Decatur, Ill. Feeder for corn-shellers	606,740	July 5	183	41	84	37
Rowell, Benton C., Boston, Mass., and F. M. Brinckerhoff, Chicago, Ill., assignors to Rowell-Potter Safety Stop Company, Portland, Me. Speed-controlling apparatus for railways	607,767	July 19	2256	477	84	473
Rowell-Potter Safety Stop Company. (See Rowell and Brinckerhoff, assignors.)						
Rowland, Heavlon. (See Baldwin, Rollin A., assignor.)						
Royer, Leander K., Anderson, Ind. Fruit-jar	610,834	Sept. 13	1248	288	84	1701
Rubenstein, Barnet, Chicago, Ill. Miner's pick	608,716	Aug. 9	983	226	84	868
Rude, John A., Chicago, Ill. Trap	607,768	July 19	2259	477	84	474
Rudensky, Israel, New York, N. Y. Device for transmitting power	609,050	Aug. 16	1651	394	84	1008
Rudolph, Flavel A. (See Parish and Rudolph.)						
Rudy, William W., Bound Brook, N. J., assignor of one-third to O. W. Blauvelt, New York, N. Y. Car-coupling	607,769	July 19	2261	478	84	474
Ruete, William T., assignor to Interior Conduit and Insulation Company, New York, N. Y. Bending armored conduit-tubes	610,726	Sept. 13	1052	241	84	1662
Ruff, William J., Quincy, Ill. Apparatus for pasteurizing beer	607,770	July 19	2262	478	84	474
Rugg, De Leonard, Catskill, N. Y. Combination sad-iron and heater	607,057	July 26	2647	592	84	565

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rundwebstuhlfabrik, Herold & Richards. (See Herold, Josef and C., assignors.)						
Runyon, Charles. (See Coleman, Runyon, and Zahn.)	608,797	Aug. 9	1123	260	84	803
Runyon, Walter G., Elizabeth, N. J. Support for verandas, porches, &c						
Ruppert, Friedrich. (See Diehl, Ruppert, and Löser.)	608,798	Aug. 9	1124	261	84	803
Russ, Edwin, London, England. Device for supporting bicycles						
Russell & Erwin Manufacturing Company. (See Voight, Henry G., assignor.)						
Russell, James, *et al.* (See Russell, William, assignor.)	611,282	Sept. 27	2086	480 / 481	84	1897
Russell, John H., assignor of one-half to J. H. Giles, Amsterdam, N. Y. Paper-feeding machine	608,717	Aug. 9	984	226	84	868
Russell, Thomas P., Marquand, Mo. Bolt						
Russell, W. T., *et al.* (See Stephenson, John R., assignor.)						
Russell, William, assignor of one-half to G. S. Bingham, H. Griffin, R. Campbell, J. Thompson, Dow Brothers, J. Stenabaugh, J. Calder, Hamilton, W. Millican, Galt, J. Russell, Carluke, J. Gilfillin, Lucan, and A. Henderson, Toronto, Canada. Machine for shocking grain	611,283	Sept. 27	2089	481 / 482	84	1897
Russell, William A., New York, N. Y. Wall, floor, or ceiling plate	611,418	Sept. 27	2349	542	84	1945
Russell, William A., New York, N. Y. Wall, floor, or ceiling plate	611,419	Sept. 27	2351	542	84	1945
Russell, William H., Chicago, Ill. Trolley	607,194	July 12	1048	226	84	219
Russell, William M., assignor of one-half to T. E. de Sotolongo, New York, N. Y. Locomotive	609,837	Aug. 30	3089	721	84	1316
Russey, Charles H. (See Hefel, Toney C., assignor.)	609,559	Aug. 23	2586	605	84	1204
Rutan, Michael Q., East Orange, N. J. Brake-shoe-operating mechanism	608,225	Aug. 2	101	26	84	675
Ruther, Gustav E., Bridgeport, Conn. Wire-twisting tool						
Rutter, George. (See Gillet and Rutter.)	610,281	Sept. 6	271	59	84	1494
Ruud, Edwin, East Pittsburg, Pa. Automatic water-heater	611,150	Sept. 20	1821	419	84	1827
Ryan, John M., St. Louis, Mo. Combined ash sifter and receiver	607,278	July 12	1219	260	84	253
Ryder, Andrew V., Scio, Ohio. Harrow						
Ryder, Charles S. (See Ryder, Malcolm, assignor.)	610,690	Sept. 13	985	222	84	1648
Ryder, Malcolm, assignor of one-half to C. S. Ryder, New York, N. Y. Dumping-spout				229		
Ryder, Malcolm, assignor to New York Large Tree Company, New York, N. Y. Apparatus for extracting and transporting trees	610,691	Sept. 13	987	230 / 359	84	1648
Ryland, Thomas J., London, assignor of one-half to E. Bird, Robertsbridge, England. Dovetailing-machine	608,994	Aug. 9	1520	360 / 361	84	968
S. A. Woods Machine Company. (See Blood, Charles W. H., assignor.)						
S. S. White Dental Manufacturing Company. (See Browne, Arthur W., assignor.)						
S. S. White Dental Manufacturing Company. (See Richardson and McMakin, assignors.)						
S. S. White Dental Manufacturing Company. Metallic railway-tie	609,123	Aug. 16	1796	428	84	1032
Saathoff, Harm A., Menlo, Kans.						
Sachse, Frank. (See Johnston, John S., assignor.)	608,718	Aug. 9	984	227	84	868
Sachse, Paul C., assignor to T. W. Booth, St. Louis, Mo. Rubber tire						
Sadler & Co., F. H. (See Sadler, Louis E., assignor.)	611,004	Sept. 20	1548	356	84	1774
Sadler, Louis E., assignor to F. H. Sadler & Co., Attleborough, Mass. Ornamental ring.						
Saefke, Henry, *et al.* (See Broichgans, Stephen, assignor.)						
Saefke, William, *et al.* (See Broichgans, Stephen, assignor.)						
Safety Car Heating and Lighting Company. (See Pintsch, Richard, assignor.)	607,096	July 12	858	185	84	185
Safford, Joseph A., Malden, Mass. Cushioned heel for boots or shoes	610,922	Sept. 20	1396	320	84	1746
Sager, William J., Warren, Pa. Sap-spout	607,087	July 12	859	185 / 186	84	185
Salle, Mathew, assignor of one-half to S. D. Wright, Philadelphia, Pa. Supporting mechanism for loom-shuttles						
Salewsky, Clarence E. (See Hahn and Salewsky.)	609,468	Aug. 23	2428	568	84	1174
Salignac, Eugene de, Keyport, N. J. Combination salt-cellar and pepper-box	607,663	July 19	2096	.....	84	442
Sallade, James W., Pottsville, Pa. Detergent composition and making same	607,279	July 12	1220	261	84	252
Salmon, Samuel, Drifton, Pa. Oil-retaining box	607,280	July 12	1221	261	84	253
Sample, Charles, Valley Grove, W. Va. Feed-box for wagon-poles						
Samson Cordage Works. (See Tolman and Martin, assignors.)	606,879	July 5	451	97	84	89
Samuel, Leopold S., Newark, N. J. Soap cake	610,853	Sept. 13	1276	295	84	1707
Sandbo, Anton I., Waukon, Iowa. Attachment for coffee-pots						
Sanders, C. W., *et al.* (See Woodward, Walter J., assignor.)						
Sanders, H. S. (See Knee and Robinson, assignors.)	609,705	Aug. 23	2888	670	84	1258
Sanderson, James G., Scranton, Pa. Gas-producer	610,416	Sept. 6	524	114	84	1539
Sandow, Eugen, London, England. Exercising-machine						
Sands, Lewis. (See Bowen and Federer, assignors.)	607,502	July 19	1964	407	84	418
Sands, William R., Newark, N. J. Hand-strap for street-cars	610,372	Sept. 6	448	98	84	1524
Sanford, John O., New York, N. Y. Safety coat-hanger	609,055	Aug. 16	1660	395	84	1009
Sanford, Joseph, Elysian, Minn. Tire-furnace	607,281	July 12	1222	.....	84	252
Sanford, Percy G., London, England. Preserving albuminous matters						
Sangster, Charles, Bournbrook, England, assignor to F. A. Wilmot, Bridgeport, Conn. Lock for cycles	608,080	July 26	2872	614	84	612
Sanhuber, George W., Milwaukee, Wis. Smoke-consuming furnace	609,051	Aug. 16	1652	394	84	1008
Santa Cruz, Octave de, Versailles, France. Preserving food	609,590	Aug. 23	2546	619	84	1215
Santarisero, Giuseppe. (See Nucci, Luigi de, assignor.)						
Sapio, Clementine de, Paris, France. Corset	609,591	Aug. 23	2647	619	84	1215
Sardi, Vincenzo, Turin, Italy. Acetylene-gas generator	610,086	Aug. 30	3523	816	84	1401
Sargeant, John W., Elmwood, Nebr. Plow	609,370	Aug. 16	2288	529	84	1120
Sargent, Frank E., Chicago, Ill. Creamer	608,482	Aug. 2	559	125	84	766
Sargent, George H., R. H. Coupe, and B. Walker, Bingley, England. Loom for weaving looped pile fabrics	608,226	Aug. 2	103	26	84	675
Sargent, George H., R. H. Coupe, and B. Walker, Bingley, England. Loom for weaving looped pile fabrics	610,563	Sept. 13	788	179 / 180	84	1606
Satterwhite, Emmett J., Falls City, assignor of two-thirds to F. E. and C. W. Faring-ton and T. F. Sullivan, Richardson county, Nebr. Winding-machine	609,300	Aug. 16	2128	504 / 505	84	1098
Sattler, George, Elkhart, Wis. Runner attachment for bicycles	607,088	July 12	860	186	84	185
Sattley, Archibald. (See Sattley, Marshall and A.)						
Sattley, Archibald. (See Sattley and Heineke.)						
Sattley Manufacturing Company. (See Sattley, Marshall and A., assignors.)						
Sattley Manufacturing Company. (See Sattley and Heineke, assignors.)						
Sattley, Marshall and A., assignors to Sattley Manufacturing Company, Springfield, Ill. Combined plow and planter	609,216	Aug. 16	1961	465 / 466	84	1064
Sattley, Marshall and A., and M. Heineke, assignors to Sattley Manufacturing Company, Springfield, Ill. Corn-planter	609,215	Aug. 16	1959	465	84	1064
Saunders, William E. (See Funk, Alexander W., assignor.)	608,196	July 26	2959	635	84	629
Sauvage, William H., Silverton, Colo. Brake	608,561	Aug. 2	698	157	84	798
Sauvage, William H., Denver, Colo. Brake						
Savage, A. C. (See Cooper, John A., assignor.)						
Savage, Alexander J., assignor of one-fourth to A. J. Bolsom, Norfolk, Va. Salt and pepper box	610,087	Aug. 30	3525	817	84	1402

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Savage, Arthur W., assignor, by mesne assignments, to Savage Repeating Arms Company, Utica, N. Y. Indicator for firearms	611,284	Sept. 27	2094	482	84	1808
Savage, Manford, Champaign, Ill. Station-indicator	609,052	Aug. 16	1654	394	84	1008
Savage Repeating Arms Company. (See Savage, Arthur W., assignor.)						
Savery, Thomas H., Wilmington, Del. Paper-making machine	611,420	Sept. 27	2353	542	84	1946
Savery, Thomas H., Wilmington, Del. Paper-making machine	611,421	Sept. 27	2358	542	84	1946
Savery, Thomas H., Wilmington, Del. Paper-making machine	611,422	Sept. 27	2362	543	84	1946
Savidge, Susan F., Asbury Park, N. J. Cake-box, &c	606,880	July 5	452	97	84	89
Sawyer, Harry, Muskegon, Mich. Crane	608,227	Aug. 2	105	27	84	675
Saxton, M. A. (See Kennedy, John W., assignor.)						
Sayers, William B., assignor to himself and Mayor & Coulson, Limited, Glasgow, Scotland. Dynamo-electric machine	607,593	July 19	1965	407 / 408	84	418
Schaffner, Henry L., Florence, Italy. Bicycle-saddle	607,282	July 12	1223	261	84	253
Schaffner, Henry L., Florence, Italy. Bicycle-saddle	607,283	July 12	1224	261	84	1649
Schapler, Richard, Frankfort-on-the-Main, Germany. Fire-escape ladder	610,692	Sept. 13	991	230	84	455
Scharff, John L., Reading, Pa. Window-guard	607,707	July 19	2166	455	84	88
Scharnweber, William, assignor of one-half to B. A. Dyer, St. Louis, Mo. Indicator-lock	606,741	July 5	186	41	84	383
Schaum, Otto W., Philadelphia, Pa. Batten, shuttle-block, and shuttle for looms	607,486	July 19	1773	369	84	384
Schaum, Otto W., Philadelphia, Pa. Parcel-carrier for bicycles	607,487	July 19	1775	369	84	1494
Scheele, Walter T., assignor to C. Beringer, Rahway, N. J. Making coloring-extracts	610,282	Sept. 6	272	.....	84	1746
Scheeren, Hugo M., New York, N. Y. Pedal-crank	610,923	Sept. 20	1397	320	84	1402
Scheerer, Frederick, St. Louis, Mo. Hitching device	610,088	Aug. 30	3526	817	84	1402
Scheid, Adam and C., Harrison, N. J. Combined door spring and check	611,285	Sept. 27	2095	483	84	1809
Scheid, Carl. (See Scheid, Adam and C.)						
Schenck, Charles M., Denver, Colo. Scale	610,307	Sept. 6	320	68, 69	84	1503
Schepman, George W., Richmond, Ind. Luggage-rack for bicycles	610,244	Sept. 6	188	42	84	1478
Scherber, Albert E. A., *et al.* (See Morgan, James, assignor.)						
Scherber, Carl, *et al.* (See Morgan, James, assignor.)						
Scherber, Frederick, *et al.* (See Morgan, James, assignor.)						
Scherber, Julius, *et al.* (See Morgan, James, assignor.)	611,513	Sept. 27	2519	582	84	1978
Scherer, Charles G., and E. Hilt, Lafayette, Ind. Corn-harvester	609,838	Aug. 30	3090	721	84	1316
Scherer, Loephus T., assignor of one-half to H. C. Jones, Hall, Ind. Hydrocarbon-burner						
Schiemann, Emil, *et al.* (See Tersling, Hilmar, assignor.)	611,335	Sept. 27	2178	503 / 504	84	1914
Schildhauer, Joachim, New Holstein, Wis. Feed-cutter	607,958	July 26	2649	563 / 564	84	565
Schilz, Frank, assignor to H. Loewenbach, Milwaukee, Wis. Paper-feeding device	610,245	Sept. 6	189	42	84	1478
Schilz, Frank, assignor to H. Loewenbach, Milwaukee, Wis. Bill or toilet paper holder	609,976	Aug. 30	3340	777	84	1364
Schiminsky, Adolf, Cleveland, Ohio. Pulley	611,886	Sept. 27	2180	504 / 505	84	1914
Schindler, Andrew J., Chicago, Ill. Machine for working off kegs or barrels	610,976	Sept. 20	1494	340	84	1764
Schiönning, Julius, and M. B. Hansen, Copenhagen, Denmark. Air-valve for pneumatic tires	609,907	Aug. 30	3203	.....	84	1338
Schirm, Carl C., assignor of one-half to O. Lessing, Berlin, Germany. Producing ceramic compositions	610,332	Sept. 6	372	79	84	1511
Schlapbach, Albert, Scandia, Kans. End-gate fastener	609,169	Aug. 16	1872	446	84	1046
Schlegelmilch, Heinrich E., Suhl, Germany. Gun-lock	608,272	Aug. 2	177	42, 43	84	690
Schleicher, John W., Louisville, Ky. Cutter-head	610,727	Sept. 13	1053	242	84	1662
Schlemmer, Philippine, Philadelphia, Pa. Money packet or holder	607,959	July 26	2653*	564	84	566
Schlieder, Augustus E., Sioux City, Iowa. Current-motor	607,960	July 26	2654	564 / 565 / 566	84	567
Schlieper, John E., Allegheny, Pa. Sectional feed-water heater	610,246	Sept. 6	190	43	84	1479
Schlosser, John S., Wadsworth, Ill. Jack	611,080	Sept. 20	1685	387	84	1800
Schlundt, Charles H. (See Dohm and Schlundt.)						
Schmadeke, John F., New York, N. Y. Rolling-shoe for coal-barrels, &c						
Schmick, Wilson E., *et al.* (See Maurer, James H., assignor.)						
Schmid, Albert, assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Electric railway-motor	609,977	Aug. 30	3342	778	84	1365
Schmid, Jakob, and H. Rey, Basle, Switzerland, assignors to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Red-violet phthalein dye	609,997	Aug. 30	3381	.....	84	1372
Schmid, Jakob, and H. Rey, Basle, Switzerland, assignors to Badische Anilin and Soda Fabrik, Ludwigshafen, Germany. Sulfonated monobenzyl-phthalein dye	609,998	Aug. 30	3383	.....	84	1373
Schmidt, Julius G., Erkner, Germany. Water-tube boiler	607,284	July 12	1225	262	84	253
Schmidt, Wilhelm, Ballenstädt, Germany. Steam generator and superheater	609,631	Aug. 23	2752	641 / 642	84	1236
Schmidt, Wilhelm, Arlington, N. J. Refining camphor	610,664	Sept. 13	945	.....	84	1640
Schmith, Niels, *et al.* (See Tersling, Hilmar, assignor.)						
Schmitt, Jacob, Jr. (See Smith and Schmitt.)	611,286	Sept. 27	2099	483	84	1809
Schmitz, Egon L., New York, N. Y. Safety-razor	610,770	Sept. 13	1132	260	84	1677
Schnabel, Frederic, New London, Iowa. Razor	608,226	Aug. 2	106	27	84	676
Schnée, Carl E., Carlsbad, Austria-Hungary. Galvanic bath	607,639	July 19	2047	425	84	434
Schneebell, Gustav A., Nazareth, Pa. Corset-waist	611,081	Sept. 20	1686	387	84	1801
Schneible, Joseph, New York, N. Y. Method of and apparatus for collecting and purifying gas	607,640	July 19	2048	425 / 426	84	434
Schneider, Frederick, Erie, Pa. Transmission-gearing	609,949	Aug. 30	3281	765	84	1353
Schneider, Gottlieb, and W. H. Hill, Kendallville, Ind. Tank-heater	606,943	July 5	538	118	84	107
Schneiderlöchner, Frank and M., Pittsburg, Pa. Velocipede	608,008	July 26	2758	586	84	590
Schneiderlöchner, Martin. (See Schneiderlöchner, Frank and M.)						
Schneidewind, Carl T. G., Hamburg, Germany. Driving mechanism for vehicles	610,283	Sept. 6	273	59	84	1494
Schnorr, Herman. (See Underhill, Andrew J., 2d, assignor.)						
Schodt, Paul G. de, Namur, Belgium. Incandescent gas-burner	606,898	July 5	475	102	84	94
Schoen, Anna, *et al.* (See Schoen, Paul, assignor.)	610,771	Sept. 13	1134	261	84	1677
Schoen, Paul, assignor of two-thirds to A. Schoen and A. H. Silverman, Glens Falls, N. Y. Shirt	610,148	Aug. 30	3613	839 / 840	84	1490
Schofield, James D., Dallas, Tex. Planter	607,285	July 12	1227	262	84	253
Schofield, James D., assignor to Texas Implement and Machine Company, Dallas, Tex. Cultivator	609,632	Aug. 23	2755	642	84	1236
Scholz, Louis A., Roanoke, Va. Bottle-stopper						
Schonhoff, Franz, Uniontown, Mo. Land-roller						
Schoondermark, J. A. A., *et al.* (See Peters, Cornelis, assignor.)	607,525	July 19	1834	383	84	395
Schoondermark, Wilhelmus, *et al.* (See Peters, Cornelis, assignor.)	607,526	July 19	1836	383	84	395
Schrader, George H. F., New York, N. Y. Tire-valve and pump-coupling						
Schrader, George H. F., New York, N. Y. Pneumatic-tire or other valve						

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Schrader, George H. F., New York, N. Y. Tire or other valve	607,527	July 19	1840	383	84	396
Schrader, Henry C., Mount Pleasant, Pa. Glass cutting-off or severing machine	610,588	Sept. 13	829	190	84	1615
Schrader, Henry C., Mount Pleasant, Pa. Glass-blowing machine	610,589	Sept. 13	832	191	84	1616
Schrafft, George F. (See Schrafft, William E. and G. F.)						
Schrafft, William E. and G. F., Somerville, Mass. Display device for confectionery	610,247	Sept. 6	192	43	84	1479
Schratweiser, Christian. (See Schratwieser, Jacob, assignor.)						
Schratwieser, Jacob, assignor to C. Schratweiser, New York, N. Y. Tile partition, wall, or ceiling	611,514	Sept. 27	2521	582	84	1978
Schrenkeisen, Henry G., New York, N. Y. Convertible furniture	610,089	Aug. 30	3527	817	84	1402
Schribaux, Pierre E. L. (See Baudoin and Schribaux.)						
Schroeder, Frederick W., Newtown, assignor to Schroeder's Ball Bearing Company, Limited, Sydney, New South Wales. Ball-bearing	609,371	Aug. 16	2238	520	84	1120
Schroeder, Richard F., Sacramento, Cal. Preliminary cooler for ice-machines	609,999	Aug. 30	3384	785	84	1373
Schroeder's Ball Bearing Company. (See Schroeder, Frederick W., assignor.)						
Schubert, Edward A., St. Charles, assignor of one-half to E. A. Zimmermann, St. Louis, Mo. Musical instrument	609,706	Aug. 23	2871	670	84	1259
Schubert, Hermann, New York, N. Y. Step-ladder	610,284	Sept. 6	276	59,60	84	1495
Schubert, William, Oneida, N. Y. Carriage-spring	607,886	July 26	2524	585	84	541
Schuch, John P., Jr., Cripple Creek, Col. Means for extracting precious metals	611,515	Sept. 27	2522	583	84	1978
Schulte, Henry J., Los Angeles, Cal. Fountain-pen	609,978	Aug. 30	3344	778	84	1305
Schultz, Edward H., and E. H. Starkey, Grant, Minn. Back-pedaling brake	609,372	Aug. 16	2240	520	84	1121
Schumacher, Peter A., Reynolds, N. D. Harrow	610,611	Sept. 13	865	198	84	1623
Schuman, James B., Columbia City, assignor to Pneumatic Elevator and Weigher Company, Indianapolis, Ind. Automatic weigher	609,908	Aug. 30	3204	751	84	1338
Schunk, Friedrich. (See Kappler and Schunk.)						
Schwartz, Benjamin F. (See Buckley, Michael G. F., assignor.)						
Schwartz, John Jr., London, England, assignor to H. Carmichael, Malden, Mass. Method of and apparatus for charging liquids with gas	608,397	Aug. 2	412	90	84	737
Schwarz, Arthur, Berlin-Schöneberg, Germany. Continuous photographic-printing apparatus	607,648	July 19	2068	431	84	437
Schwarz, Arthur, Berlin-Schöneberg, Germany. Apparatus for treating and washing photographic paper	607,649	July 19	2069	432	84	437
Schwarz, August. (See Hoffmann, Adolph G., assignor.)						
Schwarz, Louie. (See De Remer, Jared R., assignor.)						
Schwedler, Gustav H., assignor of one-half to G. W. Loring, Kansas City, Mo. Lock	608,229	Aug. 2	107	27	84	676
Scofield, Edwin N., Cos Cob, Conn. Suspenders	606,909	July 5	476	102	84	94
Scoles, James W., Martinsville, Ill. Cup or pail	610,285	Sept. 6	277	60	84	1495
Scott, Benton, and W. S. Benton, Anderson, Ind. Self-clenching tug-holder	610,608	Sept. 13	904	230	84	1650
Scott, Charles F., Pittsburg, Pa., assignor to Westinghouse Electric and Manufacturing Company, of Pennsylvania. System of electrical distribution	611,151	Sept. 20	1822	419 420	84	1827
Scott. Charles S., assignor of three-fourths to R. P. Scott and H. A. Rogers, Cadiz, Ohio. Pneumatic tire	608,273	Aug. 2	178	43	84	690
Scott, Clarence N., assignor to Snow Steam Pump Works, Buffalo, N.Y. Pumping-engine	609,950	Aug. 30	3282	765	84	1353
Scott, George L., Manchester, England. Vehicle-wheel	607,961	July 26	2055	566	84	567
Scott, Robert, Nottingham, England. Jacquard mechanism for embroidering-machines	610,248	Sept. 6	192	43	84	1479
Scott, Robert D. (See Halfpenny, Martin, assignor.)						
Scott, Robert P., *et al.* (See Scott, Charles S., assignor.)						
Scott, Robert P., Cadiz, Ohio, and J. A. Chisholm, Oakville, Canada. Pea-separating machine	608,230	Aug. 2	110	28	84	676
Scott, Robert W., Philadelphia, assignor of one-half to L. N. D. Williams, Ashbourne, Pa. Knitting-machine	607,002	July 5	653	142 143	84	130
Scott, Robert W., Philadelphia, assignor of one-half to L. N. D. Williams, Ashbourne, Pa. Striped knitted fabric	609,707	Aug. 23	2872	671	84	1259
Scott, William, Medford, Mass. Flushing device	610,977	Sept. 20	1495	340	84	1764
Scovell, Leon J., Poynette, Wis. Game-board	608,918	Aug. 9	1368	324	84	940
Scovill Manufacturing Company. (See Ashley, Edward L., assignor.)						
Scovill Manufacturing Company. (See Goss, John H., assignor.)						
Scovill Manufacturing Company. (See Pullman, Herbert S., assignor.)						
Scovill Manufacturing Company. (See Shipley, Alfred J., assignor.)						
Scriven, Jeremiah A., New York, N. Y. Garment	610,564	Sept. 13	789	180	84	1606
Scrogin, John M., and H. C. Womelsdorff, Tyler, Tex. Oil-box cellar and dust-guard	606,686	July 5	92	20	84	20
Scull, James W., Elizabeth, N. J. Tool-sharpening device	609,301	Aug. 16	2130	505	84	1099
Seagrave, Frederic S., Columbus, Ohio. Automatic coupling or lock for extension-ladders	607,664	July 19	2097	437	84	442
Seagrave, Frederic S., Columbus, Ohio. Trussed ladder	607,665	July 19	2099	437	84	442
Seaman, Daniel C., W. R., and M. R., Philadelphia, Pa. Expansion-anchor	610,308	Sept. 6	321	69	84	1503
Seaman, Ezra M. O., Beaver Falls, Pa. Bottle-stopper	610,149	Aug. 30	3616	840	84	1421
Seaman, George L. (See Grosheim and Seaman.)						
Seaman, Herbert H., assignor to Stylus Pencil Company, New York, N. Y. Pencil	609,909	Aug. 30	3207	752	84	1339
Seaman, Herbert H., assignor to Stylus Pencil Company, New York, N. Y. Pencil	609,910	Aug. 30	3210	752	84	1339
Seaman, Milton R. (See Seaman, Daniel C., W. R., and M. R.)						
Seaman, Wilson R. (See Seaman, Daniel C., W. R., and M. R.)						
Seamless Rubber Company. (See Longden, Charles E., assignor.)						
Sears, Charles, Cleveland, Ohio. Key-actuated equalizing-bar	606,814	July 5	396	71	84	67
Sears, Charles, Cleveland, Ohio. Interlocking device for type-writing machines	606,944	July 5	539	118	84	107
Seat, Samuel A., Hematite, Mo. Gage	610,286	Sept. 6	278	60	84	1496
Seaton, Benjamin C., assignor to Electric Third Rail and Signal Company, St. Louis, Mo. Electric railway	610,090	Aug. 30	3528	817	84	1402
Seaton, Benjamin C., assignor to Electric Third Rail and Signal Company, St. Louis, Mo. Third rail for electric railways	610,091	Aug. 30	3530	818	84	1403
Seaton, Benjamin C., assignor to Electric Third Rail and Signal Company, St. Louis, Mo. Contact device for electric railways	610,092	Aug. 30	3531	818	84	1403
Seaton, Benjamin C., assignor to Electric Third Rail and Signal Company, St. Louis, Mo. Third rail for electric railways	610,093	Aug. 30	3533	818	84	1403
Seaton, Benjamin C., assignor to Electric Third Rail and Signal Company, St. Louis, Mo. Electric railway	610,094	Aug. 30	3533	819	84	1403
Seaver, Augustus, assignor to E. B. Seaver, Boston, Mass. Appliance for making inner soles	607,396	July 12	1419	303	84	291
Seaver, E. B. (See Seaver, Augustus, assignor.)						
Seay, John E., Noblesville, assignor to Nordyke & Marmon Company, Indianapolis, Ind. Cleaner for shaking-sieves	606,742	July 5	187	41	84	38
Sebolt, George W., Glenfield, Pa. Marine merry-go-round	608,081	July 26	2874	615	84	613
Secor, Jacob H., St. Joseph, Mich. Machine for uniting knit fabrics	608,696	Aug. 9	818	190	84	835
Sederholm, Edward T., assignor to Fraser & Chalmers, Chicago, Ill. Valve-gear for air-compressors	607,195	July 12	1049	227	84	319

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sedlmayer, Joseph, New York, N. Y. Discharge-valve for ash-pits	611,516	Sept. 27	2527	583	84	1979
Seger, Eberhard, Stockholm, Sweden. Power-transmitting arrangement for compound steam-turbines	607,962	July 26	2056	567	84	567
Seibert, Bennett F., Mansfield, Ohio. Cash register and recorder	606,798	July 5	259	54	84	52
Seidel, Gotthelf M., Easthampton, Mass. Lead-pencil	607,708	July 19	2167	456	84	455
Seidel, Heinrich, Vienna, Austria-Hungary. Mordant from sulfite-cellulose lyes	608,231	Aug. 2	112	.....	84	676
Seifert, John F. (See Baumeister, Leopold, assignor.)						
Seiffert, Hermann, Halle-on-the-Saale, Germany. Steam-generator	608,799	Aug. 9	1126	261 262	84	893
Seldis, Oscar, Boston, Mass. Lathe-tool and holder therefor	611,517	Sept. 27	2528	583 584	84	1979
Sell, Leroy A., assignor of one-half to M. O. Sullivan, Philadelphia, Pa. Wire-stripping tool	608,919	Aug. 9	1369	324	84	940
Sellers, Matthew B., Carter county, Ky. Engine-valve	608,483	Aug. 2	560	125	84	707
Selley, Frederick W., Enmore, and W. H. Nisbet, Sydney, New South Wales. Slack-adjuster	610,095	Aug. 30	3534	819	84	1404
Sells, Frank H., assignor of one-half to E. J. Swerer, Columbus, Ohio. Employee's time-recorder	608,800	Aug. 9	1129	262 263	84	894
Semple, William T. (See Dippo, Bruce, Semple, and Powell.)						
Senior, William, Pendleton, assignor to J. Williams, Salford, England. Apparatus for stripping flats of carding-engines	609,911	Aug. 30	3212	752	84	1339
Senior, William, Pendleton, assignor to J. Williams, Salford, England. Apparatus for stripping flats of carding-engines	609,912	Aug. 30	3213	752	84	1340
Serbán, Lazar M., Vienna, Austria-Hungary. Horseshoe	611,287	Sept. 27	2100	483	84	1899
Serbán, Lazar M., Vienna, Austria-Hungary. Three-sided calk	611,288	Sept. 27	2101	484	84	1900
Serve, Jean P., Lyons, France. Lubricating device for slide-valves	610,000	Aug. 30	3385	785	84	1373
Setter, John J., Poplar Point, Canada. Machine for burning seeds of noxious weeds	610,612	Sept. 13	865	199	84	1623
Settle, Campbell T., San José, Cal. Reversible disk harrow	609,560	Aug. 23	2592	605	84	1295
Severance, Adam W., Walla Walla, Wash. Self-feeder for threshing-machines	607,188	July 12	945	205	84	201
Sewall, Stephen A. (See Abbee, Sewall, and Bennwitz.)						
Sewell, William H., Port Stewart, Ireland. Pneumatic tire for cycles	609,889	Aug. 30	3092	721	84	1316
Sexsmith, George R., Atchison, Kans. Churn	607,771	July 19	2265	478	84	474
Seymour, Elisha, Chicago, Ill. Rotating cut-off valve	607,099	July 12	861	187	84	186
Seymour, Charles, assignor to Defiance Machine Works, Defiance, Ohio. Punching-machine	608,484	Aug. 2	561	125	84	707
Seymour, James M., Jr., Newark, N. J., assignor to Peter Henderson & Company, of New Jersey. Land-roller	606,687	July 5	93	20	84	21
Seymour, Oliver E., Jefferson City, Mo., assignor of one-half to J. H. Shepard, Dallas, Tex. Whip-socket	608,431	Aug. 2	476	107	84	750
Seymour, William S., assignor of one-half to A. J. Cohen, Philadelphia, Pa. Stick or rod for umbrellas or parasols	611,289 608,159	Sept. 27 July 26	2102 3004	484 646	84	1900 637
Shackleton, Joseph, Dayton, Ohio. Smoke-consumer						
Shadall, Charles E., Milwaukee, Wis., assignor to Frick Company, Waynesborough, Pa. Dash-pot for valve-gears	611,337 611,092	Sept. 27 Sept. 20	2184 1689	505 388	84	1915 1801
Shadbolt, William O., New York, N. Y. Wagon						
Shaffer, Eugene E. (See Francisco and Shaffer.)						
Shaffer, James S., Tuttletown, Cal. Combined scissors and knife sharpener	611,309	Sept. 27	2249	520	84	1927
Shank, Augustus W., assignor of one-half to W. Clark, Detroit, Mich. Oil-burner	608,009	July 26	2758	636	84	590
Shankiin, Weller, Sweet Springs, W. Va. Car-coupling	608,719	Aug. 9	966	227	84	869
Shanks, John S. D., and R. Kelly, Jr., Belfast, Ireland. Steam-boiler	611,083	Sept. 20	1692	390	84	1802
Shannon, Maurice W., Worcester, Mass. Bung	611,224	Sept. 20	1962	452	84	1852
Sharp, Albert P. (See Boorman, Sharp, and O'Neil.)						
Sharp, Charles S., assignor to D. M. Osborne & Company, Auburn, N. Y. Disk harrow	609,469	Aug. 23	2429	568 659	84	1174
Sharp, Charles S., assignor to D. M. Osborne & Company, Auburn, N. Y. Knot-tying device for grain-binders	609,522	Aug. 23	2524	590 591	84	1193
Sharp, John C., Delavan, Wis. Stump-splitting device	608,846	Aug. 2	325	72	84	721
Sharp, Joshua H., Madisonville, Tex. Automatic boiler-feeder	607,286	July 12	1228	262	84	253
Sharpe, Joseph, Paterson, N. J. Brick-machine	607,488	July 19	1776	369 370	84	384
Sharples, William E., Fall River, Mass. Spinning-frame	611,338	Sept. 27	2185	505	84	1915
Shartle, John M., Middletown, Ohio. Oyster-pail	610,001	Aug. 30	3388	785	84	1373
Shaw, Charles J., Owosso, Mich. Sleigh-knee	609,470	Aug. 23	2430	569	84	1174
Shaw, Edwin F. (See Smith and Shaw.)						
Shaw, Harvey W. (See Atkinson, Edward E., assignor.)						
Shaw, Nelson, Housatonic, Mass. Door-check	609,214 610,565	Aug. 16 Sept. 13	1958 790	464 180 181	84	1064 1606
Shaw, Noah, Eau Claire, Wis. Sawmill-carriage						
Shaw, Otis M. (See Hanson, Winfield E., assignor.)						
Shaw, William C., Erie, Pa. Collar turning and ironing machine	608,720	Aug. 9	986	227	84	869
Shaw, William S., Bracebridge, Canada. Leather-dressing machinery	610,613	Sept. 13	868	199	84	1624
Shawver, Harvey E., Harvey, Ill. Bench-stop	609,302	Aug. 16	2132	505	84	1099
Shea, Francis A., *et al.*, administrators. (See Reece, John.)						
Sheather, Charles, London, England. Horseshoe-pad	607,196	July 12	1050	227	84	219
Sheid, J. Herbert. (See Teehan, John F., assignor.)						
Shellock, William, London, England. Salt-pan	611,152	Sept. 20	1824	420	84	1828
Sheehan, John, Sing Sing, N. Y. Horseshoe-pad	609,708	Aug. 23	2873	671	84	1259
Sheer, Walter B., assignor to H. B. Dines and J. C. Dussair, Quincy, Ill. Box-fastener	609,913	Aug. 30	3214	753	84	1340
Sheerin, Thomas E., Sedalia, Mo. Car-signal	609,914	Aug. 30	3216	753	84	1340
Sheffield Car Company. (See Ewart, John, assignor.)						
Shek, Frank P., Brooklyn, N. Y. Jumping toy	606,900	July 5	477	103	84	95
Sheldon, Charles R., assignor to Celluloid Goggle Company, Kasson, Minn. Eye-shield	611,396	Sept. 27	2311	533	84	1938
Sheldon, George E., Chill Station, N. Y. Wire-fence spacer	609,523	Aug. 23	2526	591	84	1193
Shelk, John H., Shelbyville, Ind. Shoe-button cleaner	607,090	July 12	862	187	84	186
Shelmire, Warren R., Avondale, Pa. Transom-lifter	610,499	Sept. 6	678	152	84	1569
Shelton, John J., assignor of one-half to H. H. Isenberg, Tea, Mo. Automatic self-setting animal-trap	609,561	Aug. 23	2593	606	84	1205
Shepard & Co., Sidney. (See Foster and Ferber, assignors.)						
Shepard, James H. (See Seymour, Oliver E., assignor.)						
Shepard, Orry M. (See Coates and Shepard.)						
Shepherd, Charles H., New York, N. Y. Lock for flushing-valves	608,485	Aug. 2	562	126	84	767
Sherar, Cora L. W. (See Lane, Sampson W., assignor.)						
Sheridan, Edward, Philadelphia, Pa. Cooling apparatus for air-tanks	609,053	Aug. 16	1656	395	84	1008
Sheridan, Edward, Philadelphia, Pa. Tank for pressure apparatus	610,333	Sept. 6	373	79	84	1512
Sheridan, Philip. (See Dixon, John C., assignor.)						
Sheriff, James E., assignor to H. M. Munsell and J. H. Brown, New York, N. Y. Tubular body	607,594	July 19	1969	408	84	419

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sherman, Antone I., assignor of one-half to A. K. Demere, Punta Gorda, Fla. Ice-steamboat	611,518	Sept. 27	2529	584	84	1979
Sherrill, C. R., *et al.* (See Talley, William H., assignor.)						
Sherwood, Alexander B., assignor of one-half to Z. S. Holbrook, Chicago, Ill. Printing representations of woven fabrics	609,748	Aug. 23	2928	684 685	84	1270
Sherwood, Thomas, Belchertown, Mass. Railway-track securer	610,204	Sept. 6	96	20	84	1458
Sherwood, William E., assignor of two-thirds to W. E. Douglas and J. H. Brown, Oneida, N. Y. Thill-coupling	607,772	July 19	2266	478	84	475
Shields, James A. (See Smith, Benjamin F., assignor.)	608,232	Aug. 2	113	28	84	677
Shields, Nathaniel J., Stevenson, N. D. Spring-bed	607,608	July 19	1988	413	84	422
Shiels, Michael J., Westfield, N. J. Rheostat	607,709	July 19	2168	456	84	455
Shimer, Samuel J., Milton, Pa. Cutter-head						
Shipley, Alfred J., assignor to Scovill Manufacturing Company, Waterbury, Conn. Tack-fastened button	606,881	July 5	453	97	84	89
Shoemaker, Clement W. (See Lindemeyr, Philip, assignor.)						
Sholto-Douglas. (See Wambsganss, Albert, assignor.)						
Shonle, Charles L., Tuscola, Ill. Hand lawn-mower	609,709	Aug. 23	2874	671 672	84	1259
Shope, William, Wood Hill, Mo. Tire-tightener	609,840	Aug. 30	3098	721	84	1317
Shoptaugh, Curtis A., San Francisco, Cal. Apparatus for inflating pneumatic tires	611,339	Sept. 27	2186	506	84	1915
Short, Samuel A., Altoona, Pa. Rail-cleaning device	611,290	Sept. 27	2104	484	84	1900
Short, Sidney H., Cleveland, Ohio. Field-magnet for electric machines	607,609	July 19	1990	413	84	422
Short, Sidney H., Cleveland, Ohio. Electric-railway system	607,610	July 19	1992	413	84	422
Short, Sidney H., Cleveland, Ohio. Electric-railway system	607,611	July 19	1995	414	84	423
Short, Sidney H., Cleveland, Ohio. Motor-mounting for electric cars	611,461	Sept. 27	2429	557	84	1900
Shrout, Thomas M., Hillsborough, Ky. Vehicle-wheel	610,096	Aug. 30	3536	820	84	1404
Shryock, William T., Allegheny, Pa. Chainless bicycle	607,710	July 19	2169	456	84	456
Shultz, Anthony B., North Baltimore, Ohio. Folding or collapsible table	609,502	Aug. 23	2648	619	84	1216
Shute, Samuel I., *et al.* (See Werner, Ernest E., assignor.)	608,920	Aug. 9	1372	324	84	944
Shutt, William M., North Washington, Pa. Checking device	609,915	Aug. 30	3217	753 754	84	1341
Sibley, Clarence C., New York, N. Y. Illuminated sign	610,665	Sept. 13	946	219	84	1640
Siebs, Jovinianus N. F., Middle Village, N. Y. Guard-rail	608,137	July 26	2961	635	84	630
Siemens, Alexander, assignor to Siemens Brothers & Co., Limited, London, England. Electromotor for electrically-propelled vehicles						
Siemens Brothers & Co. (See Lauckert, Eduard F. H. H., assignor.)						
Siemens Brothers & Co. (See Siemens, Alexander, assignor.)						
Siemens & Halske Electric Company of America. (See Eigner, Adolf G., assignor.)						
Siemens & Halske Electric Company of America. (See Hoffmann, Ernst W. G. C., assignor.)						
Siemens & Halske Electric Company of America. (See Hundhausen, Rudolf L. L., assignor.)						
Siemens & Halske Electric Company of America. (See Köttgen, Karl A. B. D., assignor.)						
Siemens & Halske Electric Company of America. (See Miesler, Julius, assignor.)	607,197	July 12	1051	227	84	220
Sievers, Henry, assignor of one-half to H. Degner, West Bend, Wis. Thill-coupling	610,373	Sept. 6	449	98	84	1525
Siggers, Edward G. (See Wolhaupter, David P., assignor.)						
Signorasti, Michele, New York, N. Y. Lock	606,799	July 5	261	55	84	53
Sill, Richard V., assignor of three-fourths to T. Cohalan, G. N. Chase, New York, N. Y., and D. F. Cohalan, Jersey City, N. J. Electric heater or rheostat	610,097	Aug. 30	3537	820	84	1404
Sill Stove Works. (See Clunies, Arthur B., assignor.)						
Silva, Manoel R. de, Georgetown, British Guiana. Gage for finger-rings	608,921	Aug. 9	1373	324	84	941
Silverman, Albert H., *et al.* (See Schoen, Paul, assignor.)	609,562	Aug. 23	2594	606	84	1206
Silverman, Lazarus, Chicago, Ill. Surgical or other dressing and pad	608,233	Aug. 2	114	28	84	677
Silvestri, Giulio, Vienna, Austria-Hungary. Valve-cock for rotary motors	611,519	Sept. 27	2531	584	84	1980
Simkin, Frank R., assignor of one-half to W. A. Canty, Hartford, Conn. Placket-closer	610,287	Sept. 6	279	60 61 62	84	1495
Simmance, John F., London, England. Gas-regulator						
Simmons, Adolphus I., Utica, N. Y. Mowing-machine	606,845	July 5	398	84, 85	84	80
Simmons, B. W. (See Long, Reuben, assignor.)	610,002	Aug. 30	3389	786	84	1374
Simmons, John H., Warren, Pa. Folding table						
Simms, Frederick R., London, England. Pulley, toothed wheel, &c	607,091	July 12	864	------	84	186
Simon, Minnie B. (See Klotz, Sidney, assignor.)						
Simonds, Frank A. (See Parks, Edwin E., assignor.)						
Simonsen, Einar, Christiania, Norway. Treatment of materials containing cellulose	607,711	July 19	2170	457	84	456
Simplex Railway Appliance Company. (See Lamont, Robert P. assignor.)	609,054	Aug. 16	1657	395	84	1009
Simpson, John, Sheffield, England. Umbrella, parasol, &c	608,305	Aug. 2	235	54	84	702
Simpson, John, assignor of one-half to D. A. Robinson, Minneapolis, Minn. Coal-pocket	609,593	Aug. 23	2649	619 620	84	1216
Simpson, Samuel W., assignor to Bardeen Paper Company, Otsego, Mich. Means for removing foreign substances from paper-pulp	607,963	July 26	2657	567	84	567
Simpson, William X., Aurora, Ill. Wheeled scraper	607,297	July 12	1229	------	84	254
Sinclaire, Anna T., New York, N. Y. Hand or finger muff	610,417	Sept. 6	525	------	84	1539
Sinding-Larsen, Alf, Christiania, Norway. Extracting metals	609,841	Aug. 30	3094	722	84	1317
Sines, Henry M. (See Hopkins and Sines.)	608,306	Aug. 2	237	54	84	702
Singleton, Asberry, Richland, Iowa. Gunpowder and making same	609,056	Aug. 16	1661	395	84	1009
Singleton, James M., Lufkin, Tex. Apparatus for checking runaway horses	607,489	July 19	1780	370	84	385
Sisson, Arthur W., Battle Creek, Mich. Pneumatic stacker	608,721	Aug. 9	987	227 228	84	869
Sisson, Fred, assignor of one-half to J. W. Cummins, Paris, Ill. Reach-coupling for vehicles	610,249	Sept. 6	194	44	84	1480
Skeele, Henry B., assignor to Ludowici Roofing Tile Company, Chicago, Ill. Roofing-tile	610,772	Sept. 13	1139	262	84	1679
Skeen, Robert, St. Louis, Mo. Automatic electric regulator	609,524	Aug. 23	2528	591	84	1193
Skilton, Henry, Ramsgate, England. Tobacco-pipe rack	609,134	Aug. 16	1797	428	84	1032
Skilton, John W., Daytona, Fla., assignor of two-thirds to E. B. Brown, Chicago, Ill. Railway-tank feeder	606,901	July 5	478	108	84	95
Skinner, Allen L., assignor of one-half to A. J. Skinner, Springfield, Mass. Friction clutch mechanism	606,801	Aug. 9	1137	263	84	896
Skinner, Arthur J. (See Skinner, Allen L., assignor.)						
Skinner, Ernest B., Ogden, Utah. Electric brake						
Skinner, John, assignor of one-third to R. Ashley, Davison, Mich. Potato-planter						
Slack, Lewis W., Williamsport, Pa. Pigeon-trap						
Slade, William H. (See Ricketts, William M., assignor.)	607,905	July 19	2351	497	84	491
Sladek, Johann, assignor of one-half to G. Ladewich, New York, N. Y. Scaffold	610,694	Sept. 13	994	231	84	1650
Slaght, Lewis H., assignor to R. Slaght, Waterford, Canada. Lawn-mower						

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Slaght, Roxa. (See Slaght, Lewis H., assignor.)						
Slater, Edmond B., assignor to Foster, Merriam & Company, Meriden, Conn. Furniture-caster	610,309	Sept. 6	322	69	84	1503
Slayton, Augustus W., Tecumseh, Mich. Insulating-caster and electric switch combined	608,234	Aug. 2	115	29	84	677
Sleister, Clarence, Peoria, Ill. Spark-conductor	606,770	July 5	262	55	84	53
Sletto, Oscar K., Fergus Falls, Minn. Belt-regulator	608,486	Aug. 2	564	126	84	767
Sloper, Thomas, Devizes, England. Pneumatic tire	610,310	Sept. 6	323	69, 70	84	1503
Sloper, Thomas, Devizes, assignor of one-half to C. H. Gray, Silvertown, England. Closure cap, cover, stopper, or the like	610,924	Sept. 20	1398	320	84	1746
Sloper, Thomas B., Devizes, England. Bicycle-brake	608,082	July 26	2875	615	84	618
Slusser, Bert E., Denver, Colo. Chainless bicycle-gearing	609,471	Aug. 23	2431	569	84	1174
Sly, Cornelius J., Klamath Falls, Oreg. Fish-hook	610,098	Aug. 30	3538	820	84	1405
Small, Ralph D. (See Winger, Oswald E., assignor.)						
Smalley, A. L., *et al.* (See Ansley, George W., assignor.)						
Smart, George E. (See Lester and Smart.)						
Smead Cremating and Power Company. (See Smead, Isaac D., assignor.)						
Smead, Isaac D., assignor, by mesne assignments, to Smead Cremating and Power Company, Toledo, Ohio. Garbage-furnace	607,552	July 19	1892	392	84	404
Smith, Adam and J., Ashley, Ill. Gate	610,978	Sept. 20	1497	341	84	1765
Smith, Albin R., and J. Schmitt, Jr., Wilkes-Barré, Pa. Barrow-wheel	609,308	Aug. 16	2133	506	84	1099
Smith, Alfred H., and W. A. Brainard, Youngstown, Ohio. Car wheel and axle gage	606,772	July 5	265	55	84	53
Smith, Andrew L., New York, N. Y. Car-fender	609,951	Aug. 30	3285	766	84	1354
Smith & Anthony Company. (See Lloyd, William H., assignor.)	610,773	Sept. 13	1142	262	84	1679
Smith, Benjamin F., Somerville, Mass. Hand drilling-machine	608,528	Aug. 2	636	143	84	781
Smith, Benjamin F., assignor of one-half to J. A. Shields, Wichita, Kans. Axle setting and straightening tool	610,500	Sept. 6	679	152	84	1517
Smith, Benjamin T., and A. E. Baker, St. Louis, Mo. Trunk	609,842	Aug. 30	3096	722	84	1475
Smith, Charles G., Detroit, Mich. Spring-bed device	607,773	July 19	2267	------	84	442
Smith, Charles R., Neenah, Wis. Waterproofing material	607,666	July 19	2100	438	84	613
Smith, Charles S., Providence, R. I. Surgical apparatus	608,083	July 26	2876	616	84	
Smith, Charles S., Providence, R. I. Obstetrical apparatus						
Smith, Charles S., Shipley, England. Bottle for holding spirits or other liquids and aerated waters separated until bottle is opened	611,520	Sept. 27	2532	585	84	1980
Smith, Chauncy, deceased; C. C. Read and C. Smith, Cambridge, Mass., executors. Ball-bearing	609,463	Aug. 23	2416	567	84	1173
Smith, Clyde L., Leipsic, Ohio. Envelop-fastening	610,099	Aug. 30	3539	820	84	1405
Smith, Conrad E., Plainfield, Ill. Marker for seed or corn planters	607,897	July 26	2525	536	84	542
Smith, David A., *et al.* (See Lewis, George, assignor.)	609,843	Aug. 30	3097	722	84	1317
Smith, De Wane B., Deerfield, N. Y. Sprayer	608,010	July 26	2760	586	84	590
Smith, Eldridge J., Washington, D. C., assignor to Smith Flexible Chair Manufacturing Company, of Virginia. Chair	609,916	Aug. 30	3220	754	84	1341
Smith, Eldridge J., Washington, D. C., assignor to Smith Flexible Chair Manufacturing Company, of Virginia. Seat or settee	607,092	July 12	865	187	84	186
Smith, Emerson H., Marceline, Mo. Drink-register	607,888	July 26	2527	536	84	542
Smith Flexible Chair Manufacturing Company. (See Smith, Eldridge J., assignor.)	607,889	July 26	2532	537	84	543
Smith, Frank A., Oconto, Wis. Carbureter						
Smith, Frank A., Oconto, Wis. Carbureter	609,844	Aug. 30	3099	722	84	1317
Smith, Frank S. and S. J., Conemaugh, assignors of one-half to J. P. Lehman, Geistown, and L. E. Kinch, Pittsburg, Pa. Car-axle lubricator	607,806	July 19	2352	497	84	491
Smith, Frank W., assignor of one-half to F. O. Conant, Portland, Me. Corn-cooking and can-filling machine	608,274	Aug. 2	179	43	84	690
Smith, Fred C., Delavan, Wis. Oil-pump	607,650	July 19	2071	432	84	437
Smith, Frederick H., Dunblane, Scotland. Acetylene-gas generator	610,334	Sept. 6	375	79	84	1512
Smith, Harper F., Philadelphia, Pa. Vapor-burner						
Smith, Henry H. (See Dittbenner, Hermann G., assignor.)						
Smith, Henry V. H., Norfolk, Va., assignor to Tompkins Brothers, Troy, N. Y. Bur-holder attachment for knitting-machines	609,594	Aug. 23	2652	620	84	1216
Smith, Howard F., Elkhart, Ind. Paper box	610,950	Sept. 20	1448	332	84	1756
Smith, Hugh L. (See Dibble, Morton A., assignor.)						
Smith, Jacob E., Homestead, Pa. Car-coupling	606,688	July 5	94	20, 21	84	21
Smith, James C., assignor to Garford Manufacturing Company, Elyria, Ohio. Bicycle-saddle clamp	606,689	July 5	96	21	84	21
Smith, James H. (See Neil, William, assignor.)	607,890	July 26	2536	537	84	544
Smith, Joel S., New Haven, Conn. Book-support	607,891	July 26	2537	538	84	544
Smith, Joel S., New Haven, Conn. Sheet-metal book-support						
Smith, John. (See Smith, Adam and J.)	607,892	July 26	2538	538	84	545
Smith, John T., Norway, Iowa. Clothes-line tightener	610,774	Sept. 13	1143	262 263	84	1679
Smith, Joseph, and W. Holdsworth, Halifax, England. Gill-box for preparing wool	606,771	July 5	264	55	84	53
Smith, Joseph B., Manchester, N. H. Fuse-box	610,871	Sept. 13	1314	302	84	1715
Smith, Joseph B., Manchester, N. H. Fuse-box						
Smith, Lucy A. (See Manuel, David, assignor.)						
Smith, Michael H., London, England. Steering-handle for motor-cars	611,340	Sept. 27	2189	506	84	1916
Smith, Orison M., Duluth, Minn., assignor of one-half to C. H. Gilman, Boston, Mass. Clamping device for supporting doors, &c	609,563	Aug. 23	2596	606	84	1206
Smith, Paul H., Columbus, Ohio. Lever for operating trunk-trays	609,125	Aug. 16	1799	428	84	1033
Smith, Robert F., assignor of one-half to F. Forch, Victor, Colo. Saw-handle						
Smith, Rudolph C. (See Otis and Smith.)						
Smith, Samuel J. (See Smith, Frank S. and S. J.)	609,170	Aug. 16	1873	446	84	1046
Smith, Samuel L., West Duluth, Minn. Speed-gearing for cycles						
Smith, Thomas B. (See Jones, Smith, and Nilsson.)						
Smith, Thomas J., *et al.* (See Gardanier, George W., assignor.)	606,945	July 5	540	119	84	107
Smith, Watson, and E. J. Gould, Valmont, Colo. Buggy or wagon wrench						
Smith & Watson Iron Works. (See Turney, Edward, assignor.)						
Smith, William, and E. F. Shaw, assignors to Henry Disston & Sons, Incorporated, Philadelphia, Pa. Strainer-rod for wood-saws	607,712	July 19	2171	457	84	456
Smith, William C. (See Nichols, Edwin C., assignor.)	609,304	Aug. 16	2135	506	84	1100
Smith, William M., New Cumberland, W. Va. Rail-joint	610,614	Sept. 13	869	200	84	1094
Smith, William S., Toronto, Canada. Bicycle-saddle	609,754	Aug. 23	2951	690	84	1274
Smith, William V., and H. B. Barton, Denver, Colo. Tobacco-pipe	608,802	Aug. 9	1138	263 264	84	897
Smock, James, Spencer, Ind. Folding wagon-brake	609,472	Aug. 23	2433	569 570	84	1175
Smyser, Henry E., assignor to Arbuckle Brothers, New York, N. Y. Packaging-machine	606,988	July 5	601	131	84	119
Smyth, Joseph, Allentown, Pa. Head-covering	608,160	July 26	2005	646	84	687
Snelling, Jesse E., Newark, Ohio. Roller steak-hacker	608,722	Aug. 9	990	238	84	870
Snider, Gabriel F., assignor of one-half to D and H. Koons, Abingdon, Iowa. Washing-machine						

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Snoeck, Albert, Hartford, Conn. Voting-machine	608,922	Aug. 9	1373	325, 326	84	941
Snoeck, Albert, Hartford, Conn. Voting-machine	608,923	Aug. 9	1381	326, 327, 328, 329	84	942
Snow, Fred P., Lynn, Mass. Electrically-heated roll	607,098	July 12	869	188	84	187
Snow Steam Pump Works. (See Scott, Clarence N., assignor.)						
Snow, William H., *et al.* (See Manire and Hood, assignors.)						
Snyder, Charles W., Port Gibson, N. Y. Whiffletree attachment	610,951	Sept. 20	1450	332	84	1757
Snyder, James A., Trenton, N. J. Elastic tire for wheels	608,908	Aug. 9	1140	264	84	897
Snyder, Otis W., Lexington, Ky. Cooking-stove	606,846	July 5	399	85	84	80
Snyder, William H. (See Dowling, Robert H., assignor.)						
Snyder, William T., assignor of one-half to J. W. Fuller, Catasauqua, Pa. Car-wheel	610,501	Sept. 6	680	152	84	1570
Society Akciova Spolecnost Strojirny Drive Breitfeld, Danek & Spol. (See Proks, Karel, assignor.)						
Société Anonyme d'Exploitation des Brevets Reuse aux Etats Unis d'Amerique. (See Reuse, Jean, assignor.)						
Société Anonyme l'Exploitation des Brevets Reuse aux Etats Unis d'Amerique. (See Reuse, Jean, assignor.) (Reissue.)						
Société Anonyme pour la Transmission de la Force par l'Électricité. (See Hutin and Leblanc, assignors.)						
Société the International Telescriptor Syndicat. (See Hoffmann, Bernhard, assignor.)	607,774	July 19	2268	479, 480	84	475
Soellner, Herman, Rochester, N. Y. Windmill	608,529	Aug. 2	696	143	84	781
Sofield, William J. (See Grube, Aaron C., assignor.)						
Soldan, John J., New York, N. Y. Hat-fastener	607,713	July 19	2172	457	84	456
Sombaty, Alexander. (See Sombaty, Daniel and A.)						
Sombaty, Daniel and A., Euclid, Ohio. Horseshoe	609,126	Aug. 16	1799	429	84	1083
Somerville, Jason C., *et al.* (See Morse, Frederick H., assignor.)						
Sommer, Fritz. (See Hönings and Sommer.)						
Sonntag, Edwin C., Davilla, Tex. Bed-slat fastener	609,057	Aug. 16	1662	.....	84	1010
Sörensen, Sören P., Veile, assignor of one-half to P. W. Heyman, Copenhagen, Denmark. Cattle-food and making same	609,473	Aug. 23	2437	571	84	1176
Sorenson, John G., Davenport, Iowa. Switch-stand	608,161	July 26	3007	647	84	698
Sotolongo, Tomas E. de. (See Russell, William M., assignor.)	608,347	Aug. 2	328	72	84	721
Sotolongo, Tomas E. de, New York, N. Y. Furnace for boilers of locomotive type	609,196	Aug. 16	1916	456	84	1054
Southard, William D., Peekskill, N. Y. Stove-body fastening	611,043	Sept. 20	1614	369	84	1787
Souza, Antoine J. P. de, Paris, France. Traction-motor	607,868	July 26	2539	538	84	545
Spaid, Charles F., Lehew, W. Va. Bootjack	607,894	July 26	2541	539	84	545
Spangler, John H., Pittsburg, Pa. Automatic switch-operating machine						
Spangler, William F., Mount Union, Pa. Chair-seat						
Sparks, John H. (See Reed, Adam, assignor.)						
Speakman, William M. (See Fritz, Charles P., assignor.)						
Speed Indicator Company. (See Milner and Wilson, assignors.)						
Speer, Robert G., St. Louis, Mo. Carbureter	610,159	Aug. 30	3632	844	84	1425
Spelman, Denis, National Home, Wis. Hat-hanger	609,058	Aug. 16	1663	396	84	1010
Spencer, Thomas, Philadelphia, Pa. Electric-arc lamp	608,723	Aug. 9	991	228	84	870
Spencer, William B., Chicago, Ill. Bicycle attachment	608,235	Aug. 2	116	29	84	677
Sperry, John E., Mumsville, N. Y. Weeder	610,008	Aug. 30	3390	786	84	1374
Spinelli, Luigi A. (See Martin and Spinelli.)						
Spitzenberg, Georg K., Eisenach, Germany. Seed-planter	609,305	Aug. 16	2137	506	84	1100
Spooner, Archibald F., and J. H. Cass, Richville, N. Y. Harvester-elevator	611,321	Sept. 27	2533	585	84	1980
Sprague, James H., Norwalk, Ohio. Support for wagon or buggy tops	606,778	July 5	266	56	84	54
Sprague, John L., New Hartford, Iowa. Mop-wringer	609,710	Aug. 23	2676	672	84	1260
Spratt, Frank D., *et al.* (See Nelson, Nelson P., assignor.)						
Sprecher, John M., Ephrata, Pa. Air-heating radiator	609,595	Aug. 23	2654	620	84	1217
Sprigel, Marcus J., assignor of one-half to J. D. Updegrove, Easton, Pa. Reclining-chair	610,925	Sept. 20	1399	320	84	1747
Spriggs, Thomas, Little River, Kans. Wrench	606,690	July 5	97	21	84	21
Spring, Samuel. (See Imhof and Spring.)						
Springer, Amos W., Leando, Iowa. Corner-iron for vehicle-bodies	607,490	July 19	1780	370	84	385
Springer, George W., Indianapolis, Ind. Antirattling thill-coupling	610,835	Sept. 13	1248	288	84	1701
Springer, Narcissa S., Cleveland, Ohio. Ajustable shoe-fitting chair	606,691	July 5	98	21	84	22
Springer, Nelson R., Dixfield, Me. Wood-turning lathe	611,522	Sept. 27	2535	585	84	1981
Springer, William F., Edwardsville, Ill. Flower-pot drainer	611,523	Sept. 27	2538	586	84	1981
Springfield Metallic Casket Company. (See Hiser and Lupfer, assignors.)						
Springville Manufacturing Company. (See Eastwood, John E., assignor.)						
Sprouls, Robert A., assignor to D. M. Cobb, New York, N. Y. Surface condenser	609,243	Aug. 16	2018	479	84	1077
Sprout, James M., Muncy, Pa. Dry-kiln	610,100	Aug. 30	3540	821	84	1405
St. John, Thomas M., New York, N. Y. Game apparatus	606,744	July 5	201	43	84	41
St. John, William W., assignor of one-half to S. A. Byron, Binghamton, N. Y. Key-fastener	607,807	July 19	2355	497	84	492
St. Louis Stamping Company. (See Niedringhaus, Fredrick G., assignor.)						
St. Louis Stamping Company. (See Niedringhaus, William F., assignor.)						
Stacey, Richard D. (See Davidson and Stacey.)						
Stadel, John M., Wilmington, Del. Fish-hook	608,348	Aug. 2	329	72	84	721
Stader, Christian, San Francisco, Cal. Sweat-band for hats	608,724	Aug. 9	995	229	84	870
Stahl, Harry E., Trenton, N. J. Sprocket-chain	608,530	Aug. 2	637	143	84	781
Stalb, Henry, New York, N. Y. Window frame and sash	608,094	July 26	2678	616	84	614
Staley, Edwin H., Burt, Iowa. Steam heater and cooker	607,631	July 19	2085	422	84	431
Stallman, Ferdinand G., Philadelphia, Pa. Type-writing machine	606,743	July 5	188	42, 43	84	98
Stamper, James I., Meade, Kans. Grain-drill	607,964	July 26	2658	567	84	567
Stanbon, Charles P., Lynn, Mass. Channel-flap-turning machine	607,139	July 12	947	206	84	201
Stanbon, Charles P., Lynn, Mass. Channeling-machine	607,140	July 12	949	206	84	201
Standard Buffing Machine Company. (See Keavey, Thomas E., assignor.)						
Standard Filter Company. (See Chandler, John A., assignor.)						
Standard Harrow Company. (See Whipple, Effinger E., assignor.)						
Standard Lithographing Company of the City of New York. (See Cowles, Arthur B., assignor.)						
Standard Machinery Company. (See Briggs, Thomas A., assignor.)						
Standard Sewing Machine Company. (See Mack, William A., assignor.)						
Stanley Electric Manufacturing Company. (See Kelly, John F., assignor.)						
Stanley, Frank F., *et al.*, trustees. (See Casgrain, Louis A., assignor.)						
Stanley Instrument Company. (See Stanley and Darlington, assignors.)						
Stanley, Oramel C., assignor of two-thirds to C. W. Morrison and J. J. McKinley, Philadelphia, Pa. Pipe-wrench	607,288	July 12	1231	263	84	264
Stanley, William, Pittsfield, and F. Darlington, Great Barrington, Mass., assignors to Stanley Instrument Company, of Massachusetts. Electric meter	606,795	July 5	302	63	84	60

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stanton, Thomas J., Little Rock, Ark. Sand-box	610,590	Sept. 13	837	191, 192	84	1617
Staples & Hanford. (See Jackson, John H., assignor.)						
Staples, John A., Newburg, N. Y. Wagon-jack	608,011	July 26	2762	587	84	590
Staples, Nathan E. (See Barbour, Charles C., assignor.)						
Staps, Herman C. (See Kirchmer, Jacob, Jr., assignor.)						
Starck, Halvar, Davenport, Iowa. Non-refillable bottle	610,311	Sept. 6	326	70	84	1504
Stark, Andrew, Chicago, Ill. Fiber vessel	609,525	Aug. 23	2529	592	84	1194
Stark, John P., Iconium, Mo. Punching-machine	608,725	Aug. 9	996	229	84	870
Stark, John W., and G. N. Doyle, West Nicholson, Pa. Grain-elevator	611,044	Sept. 20	1615	370	84	1787
Starkey, Edwin H. (See Schultz and Starkey.)						
Starr, George W., and J. H. Cogswell, Havana, Ill. Mixer and vaporizer for explosive-engines	611,341	Sept. 27	2190	506	84	1916
Stauder, Peter. (See Epple, Herman, assignor.)						
Stauffer, Abraham G. (See Detwiler, Clinton A., assignor.)						
Stayert, Peter, Pittsburg, Pa. Ventilated boot or shoe	607,289	July 12	1232	263	84	254
Stearns, William I. L., Detroit, Mich. Bicycle-lock	609,127	Aug. 16	1801	429	84	1088
Stebbins, Albyn A., Providence, R. I. Window-fastener	611,291	Sept. 27	2104	484	84	1900
Steber, Bernard T., Utica, N. Y. Match-machine	611,524	Sept. 27	2539	586	84	1981
Steber, Bernard T., Utica, N. Y. Match-machine	611,525	Sept. 27	2542	587	84	1982
Steber, Bernard T., Utica, N. Y. Match-machine	611,526	Sept. 27	2543	587	84	1982
Steck, Ernst F., Chicago, Ill., assignor to Fire Extinguisher Manufacturing Company, Chicago, Ill., and New York, N. Y. Dry-pipe valve for fire-extinguishing systems	609,474	Aug. 23	2439	571	84	1176
Stedman, Willard P., Bristol, Conn. Lamp	609,917	Aug. 30	3222	755	84	1341
Steel, James. (See Coleman, Joseph H., assignor.)						
Steel Motor Company. (See Du Pont, Antoine B., assignor.)						
Steel Motor Company. (See Forrer, Joseph D., assignor.)						
Steel Motor Company. (See Harris, Samuel, assignor.)						
Steele, Wilbur S., *et al.* (See Farnam, Charles N., assignor.)	606,946	July 5	541	119	84	108
Steen, Edward A., Findlay, Ohio. Animal-dipping tank	611,186	Sept. 20	1878	433	84	1888
Steffee, Manson, Akron, Ohio. Fence	609,918	Aug. 30	3223	755	84	1342
Steinberger, Julius, San Francisco, Cal. Glove-fastener	607,895	July 26	2542	589	84	545
Steinbrenner, Andrew G., assignor to Western Railway Equipment Company, St. Louis, Mo. Slack-adjuster	611,397	Sept. 27	2312	533	84	1938
Steinenböhmer, Friedrich W., Iserlohn, Germany. Candle-holder	606,824	July 5	349	74, 75	84	70
Steiner, August, Homewood, Ill. Corn stripping and husking mechanism	608,275	Aug. 2	180	43	84	690
Steiner, Elmer E., assignor of one-half to L. M. Edwards, Knightstown, Ind. Weather-strip	608,307	Aug. 2	239	55	84	702
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company, of New York. Electrical distribution	608,308	Aug. 2	244	56	84	703
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company, of New York. System of electrical distribution	608,309	Aug. 2	246	56	84	704
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company, of New York. Regulating dynamo-electric machines	609,633	Aug. 23	2755	643	84	1296
Steinmüller, Lebrecht, Gummersbach, Germany. Riveting						
Steinwachs, Gustavus, *et al.* (See Flickinger, George, assignor.)						
Stelling, Henry, *et al.* (See Bogel, Henry F., assignor.)						
Stelyer, Louis. (See Robinson and Stelyer.)						
Stenabaugh, Janet, *et al.* (See Russell, William, assignor.)						
Stephen, George, assignor to G. G. Turri, Melbourne, Victoria. Extension table, seat, &c.	607,290	July 12	1233	263, 264	84	254
Stephen, Wenzel, St. Louis, Mo. Skittle-table	611,398	Sept. 27	2315	534	84	1938
Stephens, Alejandro, Guadalajara, Mexico. Electric stop-motion for looms	607,714	July 19	2173	457	84	457
Stephenson, John, Newark, N. J., assignor to himself, and G. T. McDondland, New York, N. Y. Apparatus for cleaning boilers	609,845	Aug. 30	3100	723	84	1318
Stephenson, John R., assignor of three-fourths to L. Lampl, H. Benscheidt, and W. T. Russell, Wichita, Kans. Carbureter	608,531	Aug. 2	638	144	84	781
Stern, Isidor. (See Cooper, Herbert, assignor.)						
Sterne, Alfred J., assignor of fifty-one one-hundredths to H. Zuckerman, L. B. and W. H. Rolston, New York, N. Y., W. A. Bass, Little Silver, and E. S. Hooley, Plainfield, N. J. Igniting device	609,749	Aug. 23	2929	685	84	1270
Sterné, Emile, Paris, France. Capeule or container for containing compressed or liquefied gases	608,349	Aug. 2	330	73	84	722
Sterné, Emile, Paris, France. Apparatus employed in aerating water or other liquids in bottles	611,292	Sept. 27	2106	485	84	1901
Sternfeld, Julius, New York, N. Y. Machine for making stencils	607,291	July 12	1237	264	84	255
Stetson, Charles T., deceased; E. S. Stetson, West Hanover, executrix, assignor to J. B. Forsyth, Boston, Mass. Circular-knitting machine	610,461	Sept. 6	600	134, 135	84	1553
Stetson, Elizabeth S., executrix. (See Stetson, Charles T.)	610,952	Sept. 20	1451	333	84	1757
Stettler, William, and T. M. Wilhelm, Allentown, Pa. Level	606,815	July 5	337	72	84	67
Stevens, Aurelius E. (See Dyer, Walter, assignor.)	607,896	July 26	2543	589	84	545
Stevens, Fred A., San Francisco, Cal. Mechanical stoker	607,715	July 19	2174	458	84	457
Stevens, George W., Elyria, Ohio. Shield for air-tubes in fire-boxes for steam-boilers						
Stevens, John F., Philadelphia, Pa. Voltmeter						
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin composition of matter	607,554	July 19	1895	.....	84	405
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin compound	608,726	Aug. 9	998	.....	84	871
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin compound	608,727	Aug. 9	999	.....	84	871
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin compound	609,475	Aug. 23	2441	.....	84	1176
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin compound	610,566	Sept. 13	793	.....	84	1607
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin compound	610,615	Sept. 13	871	.....	84	1624
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin compound	610,953	Sept. 20	1453	.....	84	1757
Stevens, John H., Newark, and F. C. Axtell, Short Hills, N. J., assignors to Celluloid Company, New York, N. Y. Pyroxylin compound	610,728	Sept. 13	1054	.....	84	1662
Stevens, Samuel S., Point Arena, Cal. Boat-propelling mechanism	607,965	July 26	2659	568	84	568
Stevens & Sons, M. T. (See Stone, George, assignor.)						
Stevens, William X., Washington, D. C. Bicycle-frame	609,171	Aug. 16	1875	447	84	1046
Stevenson, Charles M., Harvard, Ill. Spice-cabinet	607,716	July 19	2176	458	84	457
Stevenson, John H., Allegheny, Pa. Hand-guillotine for fowls	610,591	Sept. 13	839	192	84	1617
Stevenson, William N., South Orange, N. J. Self-closing umbrella	607,141	July 12	952	207	84	202

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stewart, Clarence F., Norwalk, Ohio. Dowel-pin-pointing machine	608,924	Aug. 9	1395	329, 330	84	944
Stewart, Henry, Prophetstown, Ill. Box-forming machine	606,692	July 5	99	22, 23	84	22
Stewart, Hugh J. (See McInturff and Stewart.)	611,527	Sept. 27	2544	587	84	1982
Stiassny, Leopold, New York, N. Y. Incandescent-mantle support	609,476	Aug. 23	2442	571, 572, 573	84	1176
Stickney, Burnham C., Elizabeth, N. J. Type-writing machine	607,142	July 12	953	207	84	202
Stienen, Ferdinand, Middletown, Conn. Bicycle-lock	609,373	Aug. 16	2242	530	84	1121
Stilwell, Arthur E., Kansas City, Mo. Oyster or fish car	608,487	Aug. 2	565	126	84	768
Stimson, Charles W., New York, N. Y. Button	607,775	July 19	2273	480	84	476
Stinson, James C., Centre Point, Tenn. Cattle-pump	608,012	July 26	2764	587	84	591
Stirckler, Albert E., Northampton, England. Gripping apparatus	607,292	July 12	1238	------	84	256
Stocker, Johannes, F. Meissner, and H. Zander, Rathenow, Germany. Fire and weather proof composition	608,350	Aug. 2	332	73	84	722
Stockford, Charles E., Sulphur Creek, Cal. Bicycle	609,919	Aug. 30	3224	755	84	1342
Stockwell, John W. (See Bowley, Joseph H., assignor.) (Reissue.)	609,172	Aug. 16	1877	447	84	1046
Stoeffler, William E., Philadelphia, Pa. Baker's oven	609,846	Aug. 30	3101	723	84	1318
Stoermer, Alexander, Sr., Yoakum, Tex. Bed-brace	607,143	July 12	955	207	84	202
Stohwasser, Francis J., *et al.* (See Pullman, John, assignor.)	606,882	July 5	454	------	84	89
Stölting, Adolph, New York, N. Y. Fan attachment for baby-carriages	608,385	Aug. 2	386	85, 86	84	732
Stoltz, Anthony M., St. Paul, Minn. Apparatus for heating and moistening soil	609,374	Aug. 16	2244	531	84	1121
Stone, Charles H., Melrose, Mass. Making waterproof leather	611,005	Sept. 20	1549	357	84	1775
Stone, George, assignor to M. T. Stevens & Sons, North Andover, Mass. Wool-drying apparatus	608,013	July 26	2765	587, 588	84	591
Stone, Henry W. (See Brien, James T. and T. R., assignors.)	608,276	Aug. 2	183	44	84	691
Stone, John S., assignor to American Bell Telephone Company, Boston, Mass. Telephone repeater or relay	608,488	Aug. 2	567	126	84	768
Stone, Sam., Quillayute, Wash. Swimming appliance	609,477	Aug. 23	2459	574	84	1181
Stoner, Joseph A. (See Albright, Harry W., assignor.)	611,045	Sept. 20	1617	370	84	1788
Storey, Imle E., Philadelphia, Pa. Reversing-rheostat	608,276	Aug. 2	183	44	84	691
Storm, Edward, Poughkeepsie, N. Y. Thill-coupling	608,488	Aug. 2	567	126	84	768
Storm, Edward, Poughkeepsie, N. Y. Thill-coupling	609,477	Aug. 23	2459	574	84	1181
Stough, Charlie B., Creston, Iowa. Thill-coupling	611,045	Sept. 20	1617	370	84	1788
Stoughton, Joseph M. (See Hess and Stoughton.)						
Stout, George A., Anderson, Ind. Advertising device						
Stover, Frank E. (See Grove and Stover.)						
Stover Manufacturing Company. (See Held, August S., assignor.)						
Stover Manufacturing Company. (See Ziegler, Oscar J., assignor.)						
Stover Novelty Works. (See Hoefer, Frederick W. and A. G., assignors.)	610,462	Sept. 6	603	135	84	1554
Stowe, Benjamin L., Jersey City, N. J. Tubular woven fabric	610,463	Sept. 6	605	135	84	1554
Stowe, Benjamin L., Jersey City, N. J. Tubular woven fabric	609,920	Aug. 30	3226	755	84	1342
Stowe, Charles B., Cleveland, Ohio. Heating or burning cylinder	610,150	Aug. 30	3618	841	84	1421
Strakosch, Max, Vienna, Austria-Hungary. Apparatus for generating acetylene gas	611,153	Sept. 20	1826	421	84	1826
Strange, Benjamin F., Corvallis, Mont. Stock-yard gate	606,745	July 5	202	43, 44	84	41
Strasburger, Frank C. H., Chicago, Ill. Bottle-labeling machine	606,947	July 5	542	119	84	108
Strate, Henry, New York, N. Y. Bootjack	608,085	July 26	2880	616, 617	84	614
Straub, Ambrose W., Philadelphia, Pa. Double equalizing grinding-mill	610,288	Sept. 6	285	62	84	1496
Strauss, Ferdinand. (See Curtis, Charles L., assignor.)	607,293	July 12	1239	264	84	256
Streeper, Daniel H., Morristown, Pa. Luggage-carrier for bicycles	607,966	July 26	2660	568	84	568
Streit, Charles F., Cincinnati, Ohio. Reclining-chair	608,804	Aug. 9	1140	264, 265	84	897
Strickler, William H., Jeannette, Pa. Water-elevator	611,084	Sept. 20	1698	389, 390	84	1802
Strom, Axel A., Austin, assignor, by mesne assignments, to Walmsley & Company, Chicago, Ill. Apparatus for generating acetylene gas	607,528	July 19	1843	------	84	397
Strom, Axel A., Austin, assignor to Strom Manufacturing Company, Chicago, Ill. Hoisting apparatus	607,529	July 19	1844	------	84	397
Strom Manufacturing Company. (See Strom, Axel A., assignor.)	608,728	Aug. 9	1000	229	84	871
Strong, Robert F., London, England. Treatment of peat or other ligneous substances						
Strong, Robert F., London, England. Composition of matter for and process of manufacturing artificial fuel						
Stroud, Merton J., Paton, Iowa. Draft attachment for vehicles	609,306	Aug. 16	2138	507	84	1100
Strough, John W., *et al.* (See Culbertson, Andrew J., assignor.)	608,925	Aug. 9	1397	330	84	944
Stubbins, Clayton A. (See Wright, Albert C., assignor.)	610,502	Sept. 6	681	153	84	1570
Stubblebine, William, Bethlehem, Pa. Air-heater for furnaces	609,478	Aug. 23	2460	574	84	1181
Studams, Milton R., Bridgeton, N. J. Folding umbrella						
Sturgess, Archibald T., Madrid, Spain. Melting apparatus for solders						
Sturgis, Francis M., Shelbyville, Ill. Bit-brace						
Sturrock, Gordon D., *et al.* (See Thierry, Michel C. P., assignor.)						
Sturtevant, Orrin L., *et al.* (See Hendrickson and Read, assignors.)						
Sturtevant, Thomas J. (See Sturtevant, Thomas L. and T. J.)	607,575	July 19	1928	399, 400	84	411
Sturtevant, Thomas L., Quincy, and T. J. Sturtevant, Framingham, Mass. Crushing machine						
Stylus Pencil Company. (See Seaman, Herbert H., assignor.)	610,418	Sept. 6	595	114	84	1539
Suesenguth, Henry, Jr., Holyoke, Mass. Shutter-worker	610,926	Sept. 20	1400	321	84	1747
Suetterle, John W., Milwaukee, Wis. Automatic distributing-nozzle	609,711	Aug. 23	2877	672	84	1260
Sueur, Alfred. (See Valiquet and Sueur.)						
Sullivan, Cornelius J., Norwood, Mass. Rotary engine	610,101	Aug. 30	3541	821	84	1405
Sullivan, Emma L., *et al.* (See Horton, Peter D., assignor.)	607,094	July 12	870	188	84	187
Sullivan, James, New York, N. Y. Awning-fixture	610,896	Sept. 13	1249	288	84	1701
Sullivan, Jerome, New Kensington, Pa. Glazier's metallic strip						
Sullivan, John D., Potsdam, N. Y. Flat-iron heater						
Sullivan, Meredith O. (See Sell, Leroy A., assignor.)						
Sullivan, Patrick J., *et al.* (See Vail, John, assignor.)						
Sullivan, Theodoric F., *et al.* (See Satterwhite, Emmett J., assignor.)						
Sulman, Henry L., and F. L. Teed, London, England. Extraction of precious metals from their ores	610,616	Sept. 13	872	------	84	1625
Sultemeyer, Carl F., assignor of part to H. V. Peters, H. B. Clarke, and P. J. O'Flaherty, Chicago, Ill. Ship's bandage	609,307	Aug. 16	2141	507	84	1101
Summers, George F., Pleasanton, Kans. Sewing-awl	608,926	Aug. 9	1399	330	84	944
Sumner, John A., Tillar, Ark. Machine for sharpening agricultural implements, &c	609,847	Aug. 30	3106	723	84	1318
Sundell, Frans R. A., Stockholm, Sweden. Method of and composition for producing imitation stone or wood, &c	607,095	July 12	871	------	84	187
Superheated Water Engine Company. (See Prall, William E. and E. F., assignors.)						
Supreme Combination Water Heater Company. (See Coe, John S., assignor.)						
Sussman, Leon, and A. Hill, New York, N. Y. Window-cleaner	610,205	Sept. 6	97	20, 21	84	1459

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Sutro, Ludwig, New York, N. Y. Corded skirt-facing	607,555	July 19	1897	392	84	405
Sutter, Errolled, and T. Reynolds, Reynoldsville, Pa. Safety hitching device	611,528	Sept. 27	2545	587	84	1982
Sutton, John R. (See Vaughan, Charles W., assignor.)	607,776	July 19	2275	480	84	476
Swalm, Mary A., St. Joseph, Ill. Steam-cooker	609,173	Aug. 16	1879	447	84	1047
Swan, Alfred F., Bayonne, N. J. Telephone system	609,848	Aug. 30	3104	723	84	1319
Swan, Charles, and J. G. Gray, Hillside, Pa. Railway tie and clamp	607,576	July 19	1931	401	84	412
Swan, James, Topeka, Kans. Journal-bearing	610,927	Sept. 20	1402	321	84	1747
Swanson, Olof W., Tacoma, Wash. Trolley						
Swanson, Sven G. (See Wieland, Charles F., assignor.)						
Swanzy, Francis, *et al.* (See Thame, Henry, assignor.)	611,529	Sept. 27	2546	588	84	1988
Swarth, August C., Chicago, Ill. Washboard	611,225	Sept. 20	1963	452	84	1853
Sweeney, Henry G., Chicago, Ill. Machine for vending liquids	611,226	Sept. 20	1964	453	84	1853
Sweeney, Henry G., Chicago, Ill. Vending-machine						
Swenson, Magnus, Chicago, Ill., assignor to American Cotton Company, of New Jersey. Automatic relief-valve	607,491	July 19	1781	371	84	395
Swenson, Magnus, Chicago, Ill., assignor to American Cotton Company, New York, N. Y. Cotton-gin	608,729	Aug. 9	1001	229, 230	84	871
Swerer, E. J. (See Sells, Frank H., assignor.)	610,206	Sept. 6	98	21	84	1459
Swett, Albert L., Medina, N. Y. Barrel-heading press	607,967	July 26	2664	569	84	568
Swett, Otis D. (See Fogler, George L., assignor.)	607,294	July 12	1241	264	84	256
Swickard, Clarence O., Janesville, Ill. Trace-fastener						
Swift, Edwin E., Paterson, N. J. Lunch-box	609,564	Aug. 23	2597	607	84	1206
Swift, Horace E., Boston, assignor to Watson & Newell Company, Attleborough, Mass. Cuff-button	608,162	July 26	3009	647	84	638
Swisher, Charles M., assignor to S. N. Gerber, Medaryville, Ind. Nut-lock	608,236	Aug. 2	118	29	84	677
Switzer, Edmund C., Grayson, Ky. Window-shade bracket						
Swyny, Annie, administratrix. (See Swyny and McDonald.)						
Swyny, Henry V., deceased, (A. Swyny, administratrix,) and J. H. McDonald, Butte, Mont. Fire-escape	607,556	July 19	1897	392	84	405
Syburg, Carl A. M. von. (See Hitz and Syburg.)	606,847	July 5	400	85	84	80
Sylven, Walfrid T., Washington, D. C. Marine boiler	611,154	Sept. 20	1827	421	84	1828
Symes, Henry, Dunedin, New Zealand. Back-pedaling brake	611,085	Sept. 20	1696	390	84	1803
Symington, John, Glasgow, Scotland. Combined pumping and winding machinery	607,198	July 12	1051	228	84	220
Symonds, Clarence M., San Francisco, Cal. Grocer's caddy	606,698	July 5	106	------	84	23
Syssoyeff, Alexis, and L. Braly, Lyons, France. Autoluminous composition						
Szabó, Avelin, Terre Haute, Ind., assignor to D. J. Moroney, Marshall, Ill. Combined pocket aspersorium and incense-holder	609,308	Aug. 16	2143	508	84	1101
Tabler, John H., Lanham's, Md. Poncho-holder	608,927	Aug. 9	1401	331	84	944
Tachytype Manufacturing Company. (See Johnson, Frank A., assignor.)						
Taft, John B. (See Preston, William C., assignor.)	607,295	July 12	1942	265	84	256
Talbot, William O., Biloxi, Miss. Dental instrument						
Tallaferro, Sinclair. (See Campbell, Douglas M., assignor.)						
Talley, William H., assignor of nine-tenths to G. H. Williams, C. B. Eames, and C. R. Sherrill, Waco, Tex. Rail-bond	610,004	Aug. 30	3392	786	84	1375
Tandy, John L., and W. E. Rader, Columbia, Mo. Bunching attachment for mowing-machines	606,902	July 5	479	103, 104	84	95
Tanner, Benjamin, Sturgis, Mich. Hay-rack	608,310	Aug. 2	249	56, 57	84	704
Tanner, William J., London, England. Bicycle	609,634	Aug. 23	2756	643	84	1237
Tanzer, Sigmund, *et al.* (See Vail, John, assignor.)	609,375	Aug. 16	2246	531	84	1122
Tarbox, Edward, Jr., Hancock, N. Y. Antirattler and shaft-coupling	607,897	July 26	2544	539	84	546
Tashiro, Frank, New York, N. Y. Device for holding sewing materials, &c						
Tassell, George W. (See Gipe, Emanuel C., assignor.)	610,102	Aug. 30	3542	821	84	1406
Tate, James E., Baltimore, Md. Kitchen-cabinet	607,296	July 12	1244	265	84	257
Taulman, Joseph E., Hubbard City, Tex. Calipers and dividers	607,297	July 12	1245	265	84	257
Taylor, Angie E., Kennedy, N. Y. Clasp	609,921	Aug. 30	3227	756	84	1342
Taylor, Charles E., Ocala, Fla. Horse-detaching device	611,580	Sept. 27	2547	588	84	1963
Taylor, Charles J., Shelbyville, Ill. Coin-chute	610,108	Aug. 30	3544	822	84	1406
Taylor, Clarence W., Sioux City, Iowa. Mucilage-holder						
Taylor, Ezra, assignor of one-half to E. M. Padget, Attica, Kans. Wire stretcher and splicer	610,160	Aug. 30	3633	845	84	1425
Taylor, Harrison G., Montreal, Canada. Trolley-base	607,612	July 19	1998	414	84	424
Taylor, Hiram, assignor of one-half to J. F. Teacher, Salem, Ohio. Cattle-stanchion	608,780	Aug. 9	1005	230	84	872
Taylor, John B., Palmyra, Mo. Horse-detacher	611,342	Sept. 27	2192	507	84	1916
Taylor, John S., assignor to Winsor & Newton, Limited, London, England. Collapsible tube for plastic and liquid materials	607,580	July 19	1845	393	84	397
Taylor, Joseph W., Wilkinsburg, assignor of one-half to H. W. McIntosh, Pittsburg, Pa. Water-heater	609,596	Aug. 23	2656	621	84	1216
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Latch-operating mechanism	608,489	Aug. 2	568	127	84	768
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Lock and latch	611,155	Sept. 20	1829	421	84	1828
Taylor, William, Edinburgh, Scotland. Apparatus for heating air for therapeutic or other purposes	608,928	Aug. 9	1402	331	84	945
Taylor, William, Ballarat, Victoria. Bicycle-brake	610,104	Aug. 30	3546	822	84	1406
Taylor, William L. (See Weddel, Jewett, Taylor, and Bellis.)	609,128	Aug. 16	1802	429	84	1033
Tee, Harry, Liverpool, England. Salt-pan						
Teed, Frank L. (See Sulman and Teed.)						
Teehan, John F., Worcester, Mass., assignor of one-half to J. H. Shedd, Providence, R. I. Last	609,244	Aug. 16	2020	479	84	1077
Teehan, Michael, New York, N. Y. Beer or ale pipe cleaner	609,635	Aug. 23	2757	643	84	1237
Temple, Ansel F., Muskegon, Mich. Bicycle-frame	609,952	Aug. 30	3286	766	84	1354
Temple, Frederic L., St. John, Canada. Electric-light switch	606,746	July 5	210	45	84	43
Templin, Joseph H., assignor to Diamond Drill and Machine Company, Incorporated, Birdsborough, Pa. Wire-coil machine	608,905	Aug. 9	1144	265, 266	84	898
Tenny, John W., and R. T. McCracken, New Orleans, La. Dental plugger	611,531	Sept. 27	2549	588	84	1988
Terramorse, Frank, San Francisco, Cal. Convertible garment and tent	608,351	Aug. 2	334	73	84	722
Terrell, Albert C., and S. McClure, Oskaloosa, Iowa. Stove	606,694	July 5	107	23	84	24
Terrell, John S., Marshall, Mo. Paddle-wheel	611,293	Sept. 27	2107	485	84	1901
Terry, Charles A., New York, N. Y., and H. P. Davis, assignors to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Contact device for electric railways	606,825	July 5	356	75	84	71
Terry, Charles A., New York, N. Y., and H. P. Davis, assignors to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Current-collecting apparatus for electric railways	606,826	July 5	359	76	84	72
Terry, Charles A., New York, N. Y., and H. P. Davis, assignors to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Overhead construction for electric railways	606,827	July 5	362	76	84	72

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Tersling, Hilmar, assignor to J. Caroe, N. Schmith, and E. Schiemann, Copenhagen, Denmark. Fire-alarm	609,309	Aug. 16	2144	508	84	1102
Tescher, John F. (See Taylor, Hiram, assignor.)	607,144	July 12	955	207, 208	84	202
Teske, Charles L., Hartford, Conn. Winding mechanism for timepieces	607,145	July 12	959	208	84	208
Teske, Charles L., Hartford, Conn. Winding mechanism for timepieces	609,245	Aug. 16	2021	479	84	1078
Tesla, Nikola, New York, N. Y. Electrical-circuit controller	609,246	Aug. 16	2024	480	84	1078
Tesla, Nikola, New York, N. Y. Electric-circuit controller	609,247	Aug. 16	2026	480	84	1079
Tesla, Nikola, New York, N. Y. Electric-circuit controller	609,248	Aug. 16	2028	480	84	1079
Tesla, Nikola, New York, N. Y. Electric-circuit controller	609,249	Aug. 16	2030	480	84	1079
Tesla, Nikola, New York, N. Y. Electric-circuit controller	609,250	Aug. 16	2032	481	84	1080
Tesla, Nikola, New York, N. Y. Electrical igniter for gas-engines	609,251	Aug. 16	2033	481	84	1080
Tesseyman, Henry, and J. Kirby, Jr., Dayton, Ohio; said Tesseyman assignor to said Kirby. Car-seat	610,289	Sept. 6	287	62	84	1497
Texas Implement and Machine Company. (See Schofield, James D., assignor.)	607,006	July 12	872	188	84	187
Thacher, Francis, Chicago, Ill. Meat-hook support						
Thacher, George H., *et al.* (See Bergh, Jefferson L., assignor.)						
Thame, Henry, assignor to F. Swanzy and W. Cleaver, London, England. Manufacture of pulpware	610,567	Sept. 13	794	181	84	1607
Thayer, Aaron G., Kensington, Kans. Strap or rope clamp and tightener	610,105	Aug. 30	3547	822	84	1406
Thayer, Alfred I., Newark, N. J. Equalizing appliance for bicycles	607,667	July 19	2101	438	84	443
Thayer, Elmer A. (See Pierce and Thayer.)						
Thayer, Julius W., assignor of two-thirds to H. H. and I. W. Cooper, Milton, Iowa. Cream-separator	608,811	Aug. 2	250	57	84	704
Theleen, Charles G., Kenosha, Wis. Bow-guard for vessels	607,298	July 12	1245	265	84	257
Theobald, William M., McKeesport, Pa. Finishing sheet iron and steel plates	608,432	Aug. 2	477	.....	84	750
Therien, Nelson, assignor of one-half to C. Kroscher, South Chicago, Ill. Tire for vehicle-wheels	606,848	July 5	402	85	84	80
Thiele, Gustav, Sand Town, Tex. Compound for treating seeds	608,627	Aug. 9	824	.....	84	896
Thiell, William H., Chicago, Ill. Portable bath-room and water heater	607,791	July 19	2308	486	84	481
Thierry, Charles V., *et al.* (See Thierry, Michel C. P., assignor.)						
Thierry, Michel C. P., assignor of three-fourths to C. V. Thierry, G. D. Sturrock, and F. H. L. Mennons, Paris, France. Roller-bearing	609,526	Aug. 23	2532	592, 593, 594	84	1194
Thom, David M., Watford, Canada. Combined feed-cutter and blower	608,014	July 26	2769	588	84	592
Thomas, Clarence L., *et al.* (See Hendrickson and Read, assignors.)						
Thomas & Co., Chauncey. (See Lawrence, Joseph L., assignor.)						
Thomas, Eddy T., assignor to H. Binney, trustee, New York, N. Y. Forming integral metallic coatings upon surfaces	610,954	Sept. 20	1454	333	84	1757
Thomas, George, Philadelphia, Pa. Attachment for spectacles or eyeglasses	606,747	July 5	211	45	84	44
Thomas, Harry L., and W. C. Nusser, assignors of one-third to E. E. Marvin, Findlay, Ohio. Stop-cock replacer	607,492	July 19	1783	371	84	385
Thomas, John W., Jr., Nashville, Tenn. Railway switch and lock apparatus	610,419	Sept. 6	527	115	84	1540
Thomas, John W., Jr., Nashville, Tenn. Mechanism for operating railway-switches	610,420	Sept. 6	528	115, 116	84	1540
Thomas, Joseph, and J. M. Truby, Starke, Fla. Refrigerator-car	608,086	July 26	2883	617, 618	84	615
Thomas Manufacturing Company. (See Fordyce, John R., assignor.)						
Thomas Phillips Company. (See Dana, Frederick I., assignor.)						
Thomas, Samuel D., *et al.* (See Martz, Randolph N., assignor.)	607,581	July 19	1846	384	84	397
Thomas, Willard J., Westfield, N. Y. Clutch						
Thomas, William H. (See Campbell, Milton T., assignor.)	609,712	Aug. 23	2879	673	84	1260
Thompson, Elton H., Drake's Mills, Pa. Needle						
Thompson, Frank, assignor to Common Sense Bolster Company, Chicago, Ill. Combined ventilating and refrigerator car	608,237	Aug. 2	119	29	84	677
Thompson, Horace, Concord, N. H. Broom	610,290	Sept. 6	292	63	84	1498
Thompson, James, *et al.* (See Russell, William, assignor.)						
Thompson, Joseph D. and W., assignors to W. W. Greener, Birmingham, England. Single-trigger double-barrel gun	610,569	Sept. 13	796	181	84	1608
Thompson, Joseph W., Salem, Ohio. Riveting-machine	609,479	Aug. 23	2463	574	84	1181
Thompson, Richard, assignor of one-half to J. F. Wolgast, Buffalo, N. Y. Bicycle driving mechanism	607,968	July 26	2666	569	84	569
Thompson, Robert J., Grandin, Mo. Handle for pruning-shears	608,490	Aug. 2	569	127	84	768
Thompson, Robert J., Grandin, Mo. Handle for pruning-shears	608,491	Aug. 2	570	127	84	768
Thompson, Robert P. (See Thompson, William P. and R. P.)						
Thompson, Robert R., Bloomington, Ill. Mattress-stuffing machine	611,294	Sept. 27	2108	485, 486	84	1901
Thompson, Samuel A., Rocky Comfort, Ark. Flooring and ceiling set combined	610,568	Sept. 13	795	181	84	1607
Thompson, Walter. (See Thompson, Joseph D. and W.)						
Thompson, William J., Haw River, N. C. Steam-cooker	608,806	Aug. 9	1147	266	84	898
Thompson, William P. and R. P., Philadelphia, Pa. Radiator for heating air	608,352	Aug. 2	335	73, 74	84	722
Thompson, William S., Jr., Woodside, Md. Tooth-powder receptacle	610,775	Sept. 13	1144	263	84	1680
Thomson, David P. (See Anderson and Thomson.)						
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. Electrostatic measuring instrument	610,928	Sept. 20	1405	321, 322	84	1748
Thomson, George H., Rochdale, and W. Thomson, Shaw, England. Ring-spinning and doubling frame	610,106	Aug. 30	3548	822	84	1407
Thomson, William. (See Thomson, George H. and W.)						
Thomson, William, Manchester, England. Tile	610,776	Sept. 13	1146	263	84	1680
Thorens, Hermann, St. Croix, Switzerland. Mechanical musical toy	610,291	Sept. 6	292	63	84	1498
Thorin, Ernst B., Stockholm, Sweden. Transposing action for organs	606,748	July 5	212	45, 46	84	44
Thornton, James A., Baltimore, Md., assignor to E. E. Gold, New York, N. Y. Heat-storage steam-radiator	610,292	Sept. 6	294	63	84	1498
Thorsen, William R., *et al.* (See Davis, Orin C., assignor.)	610,109	Aug. 30	3551	823	84	1407
Thum, Otto, Grand Rapids, Mich. Sticky fly-paper	610,107	Aug. 30	3549	823	84	1407
Thum, William, Grand Rapids, Mich. Package of sticky fly-paper	610,108	Aug. 30	3550	823	84	1407
Thum, William, Grand Rapids, Mich. Sticky fly-paper						
Thun, Karl, Barmen, Germany, assignor to Farbenfabriken of Elberfeld Company, of New York. Green alizarin dye	608,288	Aug. 2	190	.....	84	678
Thunborg, Jacob, Cœur d'Alene, Idaho. Runner for vehicles	608,433	Aug. 2	478	107	84	750
Thunderbolt, Edward, Carlton, Victoria. Governor for engines	610,950	Sept. 6	195	44	84	1480
Thurber, Charles F., assignor of three-fourths to O. F. Carley, F. L. Gleason, W. M., Jr., and L. J. Abrams, Olean, N. Y. Punch and shear machine	608,562	Aug. 2	694	158	84	794
Thuresson, Andrew, Boston, Mass. Switch operating and locking mechanism	607,399	July 12	1246	266	84	257
Thurlow, Edward, Albert Park, and P. N. Hignett, assignors to G. J. Betts and F. T. Bower, St. Kilda, Victoria. Composition for closing punctures in pneumatic tires	609,636	Aug. 23	2759	.....	84	1237

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Thurman, John L. (See Moore and Thurman.)	609,174	Aug. 16	1882	447	84	1047
Thurston, George S., Santa Rosa, Cal. Bicycle-support						
Tickner, George L. (See Tickner, John H. and G. L.)						
Tickner, John H. and G. L., Syracuse, N. Y.; said John H. Tickner assignor to said G. L. Tickner. Game	611,086	Sept. 20	1697	390	84	1803
Tidemann, Henry G. (See Meier and Tidemann.)	607,808	July 19	2356	498	84	492
Tiefel, Leonard C., assignor to G. Mattison, Rochester N. Y. Ladder						
Tiefel, Leonard C., assignor of one-half to G. Mattison, Rochester, N. Y. Combined extension and step ladder	608,929	Aug. 9	1403	331	84	945
Tilden, Douglas, Oakland, Cal. Fruit or flower stem cutter and holding attachment	608,807	Aug. 9	1148	266	84	899
Tilden, Marshall, Willimantic, Conn. Spool	611,343	Sept. 27	2193	507	84	1917
Tilghman, Merrill H., Norfolk, Va. Barrel	611,532	Sept. 27	2550	588	84	1983
Tillinghast, Henry A., Providence, R. I. Guiding device	609,059	Aug. 16	1664	396	84	1010
Tillson, William H., Quincy, Ill. Overshoe-holder	607,493	July 19	1784	371	84	386
Timberlake, John B., Jackson, Mich. Lamp-bracket	608,138	July 26	2962	635, 636	84	630
Timberlake, John B., Jackson, Mich. Lamp-bracket	608,139	July 26	2965	636	84	630
Timewell, Arthur T., assignor to A. Dickinson, Chicago, Ill. Machine for transferring and sewing filled sacks	607,809	July 19	2357	498, 499, 500	84	492
Timewell, Arthur T., assignor to A. Dickinson, Chicago, Ill. Filled-sack-sewing machine	607,810	July 19	2362	500, 501	84	494
Timewell, Arthur T., assignor to A. Dickinson, Chicago, Ill. Machine for sewing filled sacks	607,811	July 19	2365	501	84	495
Timewell, Arthur T., assignor to A. Dickinson, Chicago, Ill. Machine for sewing filled sacks.						
Tingley, Melvin. (See Tingley, Nelson, assignor.)						
Tingley, Nelson, Scranton, assignor to M. Tingley, Kingsley, Pa. Mail-bag catching, receiving, and delivering apparatus	610,872	Sept. 13	1315	302	84	1715
Tinkham, Howard A., Norton, assignor to White Warner Company, Taunton, Mass. Grate-bar hanger and connections	607,969	July 26	2667	569, 570	84	569
Tinsley, Joseph B., Anthony, Kans. Windmill	607,668	July 19	2102	438, 439	84	443
Tipton, George W., Howard, Pa. Post-driver	607,577	July 19	1932	401	84	412
Tisch, Emil. (See Tisch, Julius and E.)						
Tisch, Julius and E., Grand Rapids, Mich. Tobacco-press	608,532	Aug. 2	689	144	84	781
Tjossem, John, Paullina, Iowa. Corn harvester and husker	608,492	Aug. 2	570	127, 128	84	769
Tobias, Georg, Berlin, Germany. Making pyrocatechin	607,494	July 19	1785	.....	84	386
Todd, Baxter, *et al.* (See Van Fleet, Charles G., assignor.)						
Todd, Vernon C., assignor of one-half to E. H. Ehrler, St. Louis, Mo. Micrometer-gage	607,898	July 26	2545	540	84	546
Tolman, James P., Newton, and H. D. Martin, Shirley, assignors to Samson Cordage Works, Boston, Mass. Spinning-frame	608,731	Aug. 9	1007	230, 231	84	872
Tomkins, Silas P., Tilly Foster, N. Y. Tide-motor	609,637	Aug. 23	2759	643	84	1237
Tomlinson, William F. (See Wilmot, William F., assignor.)						
Tompkins Brothers. (See Smith, Henry V. H., assignor.)						
Torney, John H., assignor of one-half to R. W. Cornwell, Washington, D. C. Signal device for lamps	609,849	Aug. 30	3105	724	84	1319
Torrance, William A., *et al.* (See Choquette, Joseph, assignor.)	606,908	July 5	482	104	84	95
Torrey, Bates, Weymouth, Mass. Keyboard for type-writers						
Torrey, Edward S., *et al.* (See McAlpine, John, assignor.)						
Torrey Roller Bushing Works. (See Lester, Allen H., assignor.)	607,199	July 12	1053	228	84	220
Touchet, Louis P., Watertown, N. Y. Expansible horseshoe	608,386	Aug. 2	389	86	84	732
Tourville, Charles B., assignor of one-half to M. Tully, St. Louis, Mo. Heating-drum						
Tower, John J. (See Le Roy and Converse, assignors.)	611,295	Sept. 27	2111	486	84	1901
Towne, Carroll M., Milwaukee, Wis. Box-fastener	606,849	July 5	408	86	84	80
Townes, William A., Milan, Tenn. Currycomb						
Tozer, John. (See Hall, William H., assignor.)						
Tozier, C. B. (See Arnold, Thomas E., assignor.)	610,207	Sept. 6	90	21	84	1459
Tracy, Andrew, assignor of one-half to M. W. Logan, Richland, Iowa. Sash-fastener	608,981	Aug. 9	1405	332	84	945
Trammell, John W., Chattahoochee, Fla. Governor and safety attachment for elevators	611,156	Sept. 20	1830	422	84	1828
Trapp, Earl J. and L. M., Virgil, N. Y. Cow-tail holder	610,929	Sept. 20	1408	322	84	1749
Trapp, Edward A., New York, N. Y. Elevator						
Trapp, Lee M. (See Trapp, Earl J. and L. M.)						
Traver, Eugene. (See Traver, William A., assignor.)	606,695	July 5	108	23	84	94
Traver, William A., assignor of one-half to E. Traver, Weedsport, N. Y. Press	611,582	Sept. 27	2660	612, 613	84	2003
Travis, James, Jr., Cascade, Mont. Grain-drill	611,583	Sept. 27	2662	613	84	2003
Travis, James, Jr., Cascade, Mont. Combined sod-cutter, harrow, and seed-planter						
Treat, Lincoln A., assignor to Ohio Steel Company, Youngstown, Ohio. Bar-piling mechanism	610,749	Sept. 13	1088	249	84	1668
Trefethen, Charles N., *et al.* (See Nesmith, Frederick P., assignor.)						
Trefethen, Melville W., *et al.* (See Nesmith, Frederick P., assignor.)	611,187	Sept. 20	1880	434	84	1838
Tregurtha, George E., Malden, Mass. Device for reversing motion of propeller-wheels, &c.						
Trench, John T., Kenmare, Ireland, assignor to Trench Tubeless Tyre Company, Limited, London, England. Pneumatic tire	611,584	Sept. 27	2664	613	84	2004
Trench Tubeless Tyre Company. (See Trench, John T., assignor.)						
Tresidder, Tolmie J., Sheffield, England. Apparatus for applying heat to surfaces of armor-plates, &c	607,777	July 19	2276	481	84	477
Trevessick, William J., Glen Campbell, Pa. Car-coupling	610,666	Sept. 13	947	219	84	1640
Triance, John C., Rochester, Pa. Paste-mold glass-blowing machine	611,157	Sept. 20	1831	422	84	1829
Trick, Christopher, Dayton, Ohio. Bone-cutting machine	610,335	Sept. 6	377	79	84	1512
Tripp, Frank F. (See Benham and Barlow, assignors.)						
Trisler, John Jamaica, Ill. Gate	607,300	July 12	1248	266	84	257
Troehler, Rudolph, Cincinnati, Ohio. Barrel-washing machine	607,097	July 19	874	188	84	188
Trott, George V., assignor of one-half to E. M. Cosens, Chicago, Ill. Telegraphy	608,982	Aug. 9	1408	333	84	946
Troutt, Thomas E., Hopewell, Mo. Animal-trap	608,493	Aug. 2	573	128	84	769
Troy Laundry Machinery Company. (See Buell, Edward W., assignor.)						
Troy Laundry Machinery Company. (See Moe, Buell, Roberts, and Conkling, assignors.)	607,785	July 19	2293	484	84	480
Truax, George E., Denver, Colo. Ore-car						
Truby, Jacob M. (See Thomas and Truby.)	610,617	Sept. 13	874	200	84	1625
True, Charles E., Muskegon, Mich. Fastening device for scarf-pins, hat-pins, &c	609,490	Aug. 23	2464	575	84	1181
Truex, William S., Trenton, N. J. Odorless cooking utensil	611,533	Sept. 27	2551	589	84	1988
Tschopp, Henry M., Pickerington, Ohio. Dish-drainer						
Tubbs, George W., assignor of one-half to C. E. Cotton, Cleveland, Ohio. Cushion-tire for bicycles	609,923	Aug. 30	3298	756	84	1343
Tubbs, Watson E., South Haven, Mich. Pan-handle	608,904	July 5	488	104	84	96
Tucker, Frank. (See Gilman, Charles A., assignor.)						
Tucker, Joseph S., Chicago, Ill. Electric rail-bond	609,958	Aug. 16	2086	481	84	1081

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Tuell, Lydia A., Chicago, Ill. Compartment baking-pan	608,930	Aug. 9	1405	332	84	945
Tully, Michael. (See Tourville, Charles B., assignor.)	608,533	Aug. 2	640	144	84	782
Turbeville, John B., Dublin, Tex. Cook-stove	608,594	Aug. 2	642	145	84	782
Turck, Frederick M., assignor of one-half to P. Hano, New York, N. Y. Manifolding-register	610,979	Sept. 20	1498	341	84	1765
Turnbull, David H., Florence, Ala. Running-gear for wagons	609,481	Aug. 23	2465	575	84	1181
Turnbull, George A., assignor to R. E. Turnbull, Chicago, Ill. Lath						
Turnbull, Rosella E. (See Turnbull, George A., assignor.)	611,296	Sept. 27	2112	487	84	1902
Turner, George, and J. M. H. Venour, London, England. Permutation-tire						
Turner, Herbert C., assignor to American Indicator Company, San Francisco, Cal. Station-indicator	607,098	July 12	876	189	84	188
Turner, James, Paterson, N. J., assignor to Kearney & Foot Company, New York, N. Y. Rasp-punching machine	610,618	Sept. 13	875	200 201	84	1625
Turner, James B., Coudersport, Pa. Picture-frame hanger	606,816	July 5	340	72	84	68
Turner, James S., Chelmsford, Mass. Machine for covering rolls with leather	609,597	Aug. 23	2658	621	84	1218
Turner, Joseph, Tillery, N. C. Railway transfer-table	607,146	July 12	962	208	84	203
Turner, Oscar. (See Leach and Turner.)						
Turner, Thomas R., San Francisco, Cal. Convertible berth and settee for ships	610,421	Sept. 6	590	116 117	84	1540
Turner, William A., assignor to American Indicator Company, San Francisco, Cal. Station-indicator	607,200	July 12	1054	228 229	84	220
Turney, Edward, assignor of one-half to Smith & Watson Iron Works, Portland, Oreg. Friction-clutch	607,557	July 19	1898	392	84	405
Turri, George G. (See Stephen, George, assignor.)	607,301	July 12	1248	266	84	258
Tuttle, Beeri W., deceased, Shuilsburg, Wis.; J. L. Tuttle, administrator. Stock-waterer	609,923	Aug. 30	3229	756	84	1343
Tuttle, George H., assignor of one-third to F. H. Willard, Cambridge, Mass. Inhaler	610,208	Sept. 6	101	21	84	1460
Tuttle, Henry A., Stamford, Conn. Tapping-machine						
Tuttle, Jerome L., administrator. (See Tuttle, Beeri W.)	610,503	Sept. 6	682	153	84	1570
Twichell, Walter E., St. Helena, Cal. Motor-carriage	609,129	Aug. 16	1808	429	84	1033
Twist, Levi, Albert Lea, Minn. Combined scoop and hand-truck	609,850	Aug. 30	3107	724	84	1319
Twomey, James P., and R. C. Mills, Anaheim, Cal. Subsoil attachment for riding-plows	610,955	Sept. 20	1456	333	84	1757
Tyden, Emil, Chicago, Ill. Seal	607,778	July 19	2279	481	84	477
Tyler, Aaron J., Passaic, N. J. Domestic water-service	609,130	Aug. 16	1804	430	84	1033
Tyler, Abel D., Jr., Brockton, Mass. Shoe-treeing machine						
Tyler, Hiram. (See Ohmer and Tyler.) (Reissue.)	610,422	Sept. 6	533	117	84	1541
Tyler, Lorin C., Alexandria, Ohio. Gate						
Tyler, William H., deceased, David City, Nebr.; C. O. Crosthwait, administrator. Husking-pin	608,808	Aug. 9	1148	266	84	899
Tymeson, Eugene, assignor to Alexander Smith & Sons Carpet Company, Yonkers, N.Y. Loom for weaving tufted fabrics	609,638	Aug. 23	2761	644	84	1237
Ubil, Zachariah T., Ogontz, Pa. Propelling mechanism for bicycles or similar vehicles	610,956	Sept. 20	1460	334	84	1758
Uehling, Edward A., Newark, N. J. Calorimeter or heat-measuring apparatus	608,749	July 5	214	46, 47	84	44
Ufford, Frank M., Norwich, Conn. Luggage-carrier for bicycles	608,796	July 5	308	68	84	60
Uhlig, Karl G. A., Leitelshain, Germany. Rail and railway-track	608,789	Aug. 9	1014	282	84	873
Uhri, Jacob, assignor to Wire Bound Box Company, Chicago, Ill. Machine for making box-blanks	608,809	Aug. 9	1150	267 268 269 270 271 272 273	84	899
Ulbrich, Richard C., assignor to W. Firth, Boston, Mass. Humidifier	607,970	July 26	2668	570	84	569
Ulrich, Moritz. (See Bammann and Ulrich.)	607,592	July 19	1847	384	84	397
Umsted, Clifton T., Fort Scott, Kans. Power mechanism for bicycles	610,502	Sept. 13	840	192	84	1618
Underhill, Andrew J., 2d, assignor of one-half to H. Schnorr, Gasport, N. Y. Barrel-press	607,669	July 19	2104	439	84	443
Underwood, Robert L., Fostoria, Ohio. Ventilating-damper						
Ungemach, Julio. (See Guerrero and Ungemach.)						
Union Button Sewing Machine Company. (See Lyons, Robert L., assignor.)						
Union Iron Works. (See Rowe, Willard C., assignor.)						
Union Switch and Signal Company. (See Chalmers, James, Jr., assignor.)						
Union Switch and Signal Company. (See Jones, Joseph R., assignor.)						
Union Typewriter Company. (See Brooks, Byron A., assignor.)						
United Alkali Company. (See Clarke, William R., assignor.)						
United Alkali Company. (See Driffield, Carey, and Wright, assignors.)						
United Alkali Company. (See Luxton, William G., assignor.)						
United Hame Company. (See Wiedrich, Charles L., assignor.)						
United States Head-Light Company. (See Kirby, John, Jr., assignor.)						
United States Standard Machine Company. (See Robinson, Hanson, assignor.)						
Universal Sander Company. (See Perry, James L., assignor.)						
Universal Winding Company. (See Wardwell, Simon W., Jr., assignor.)						
Updegrove, Jacob D. (See Sprigel, Marcus J., assignor.)	607,971	July 26	2669	570	84	569
Upshaw, Foy, assignor of one-half to M. L. Bush, Van Alstyne, Tex. Stalk-chopper	608,983	Aug. 9	1412	333	84	947
Upton, Samuel, Somerville, Mass., assignor to Consolidated Fastener Company, Portland, Me. Button-setting machine	611,423	Sept. 27	2367	543	84	1947
Usher, Thomas S., Brantford, Canada. Box-hinge						
Vagt, Fritz H., Mandsbeck, Germany. Driving mechanism for cycles with adjustable gearing	611,210	Sept. 20	1918	443	84	1845
Vail, John, Frostburg, assignor to S. Tanzer and P. J. Sullivan, Cumberland, Md. Single-delivery match-safe	606,750	July 5	217	47	84	45
Valiquet, Anna L. (See Valiquet and Sueur, assignors.)	610,504	Sept. 6	685	153 154	84	1570
Valiquet, Louis P., Hoboken, and A. Sueur, Jersey City, N. J., assignors to A. L. Valiquet. Music-box	611,462	Sept. 27	2431	558 559 560	84	1960
Van Camp, George, Indianapolis, Ind. Can-soldering machine						
Van den Berghe, Peter. (See McAnulty and Van den Berghe.)	610,695	Sept. 13	996	231	84	1650
Van Develde, John, assignor of one-half to H. H. Hyman, Cleveland, Ohio. Bottle	609,482	Aug. 23	2466	575 576	84	1182
Van Dorn, William T., Chicago, Ill. Draft appliance for railway-cars						
Van Dyk, Meindert. (See Van Vliet and Gardenier, assignors.)						
Van Dyke, William J. (See Brooks and Van Dyke.)						
Van Fleet, Charles G., assignor to B. Todd and H. W. Mills, Los Angeles, Cal. Composition of matter for manufacturing glass	607,003	July 5	656	------	84	130
Van Heumen, Hieronimus, Hof van Delft-by-Delft, Netherlands. Means for regenerating steam as a working fluid	607,717	July 19	2177	459	84	458
Van Hoevenbergh, Henry, New York, N. Y. Trolley for electric railways	607,387	July 12	1408	301	84	289

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Van Hoevenbergh, Henry, assignor to N. C. Rogers, New York, N. Y. Electric locomotion	607,302	July 12	1250	266 267	84	258
Van Hoevenbergh, Henry, assignor to N. C. Rogers, New York, N. Y. Electric locomotion	609,851	Aug. 30	3108	724 725	84	1319
Van Olst, Lammert, Orange City, Iowa. Gate latch mechanism	608,353	Aug. 2	336	74	84	722
Van Ommeren, John, Evanston, Ill. Screw	610,423	Sept. 6	534	117	84	1541
Van Tine, David W., *et al.* (See Fraley, George B., assignor.)						
Van Vliet, Arie, and J. Gardinier, assignors of one third to M. Van Dyk, Paterson, N. J. Railway-spike	607,670	July 19	2105	439	84	443
Van Voast, Albert B., *et al.* (See McManus, John B., assignor.)						
Van Voast, Horace S., *et al.* (See McManus, John B., assignor.)	607,812	July 19	2966	502	84	495
Van Wie, Elmer E., Kenosha, Wis. Building-tile						
Vanarsdell, James C. (See Cozine, Charles G., assignor.)	609,310	Aug. 16	2147	508 509 482 483	84	1108
Vandegrift, John H., Allenport, Pa. Rotary engine	609,253	Aug. 16	2087	484 485 486	84	1081
Vanduzen, Benjamin C., Winton Place, assignor to Vanduzen Gas and Gasoline Engine Company, Cincinnati, Ohio. Traction-engine						
Vanduzen Gas and Gasoline Engine Company. (See Vanduzen, Benjamin C., assignor.)	610,505	Sept. 6	687	154 155	84	1571
Vanstone, Enoch C., Cambria, Wyo. Car-door operating and locking mechanism	608,984	Aug. 9	1413	------	84	947
Vaucamps, Valentin, Paris, France. Producing photographs in colors	611,442	Sept. 27	2397	549	84	1952
Vaughan, Charles W., assignor of one-fourth to J. R. Sutton, Hillsdale, Mich. Swivel pipe-coupling	610,777	Sept. 13	1148	263	84	1680
Vaughn, Preston. (See Galley, Felix, assignor.)	611,584	Sept. 27	2552	589	84	1983
Venable, Joseph G., Broadwell, Ky. Nut and bolt lock						
Venable, Vernon D., Farmville, Va. Unicycle						
Venour, James M. H. (See Turner and Venour.)						
Vermehren, Johannes, Hellerup, Denmark. Automatic apparatus for preventing collisions on railways	607,308	July 12	1258	267	84	259
Vernay, Jean B., Paris, France. Machine for manufacturing bottles, &c	610,931	Sept. 20	1412	323 324 325	84	1750
Vernier, Charles P., Butler, Ind. Heating-drum	608,935	Aug. 9	1415	333	84	947
Vesseriat, Frank L. (See Bleakly and Vesseriat.)	609,852	Aug. 30	3110	726	84	1319
Vetere, Nicolas F., Buenos Ayres, Argentina. Lock	610,932	Sept. 20	1418	325 326	84	1750
Vetere, Nicolas F., Buenos Ayres, Argentina. Lock	610,110	Aug. 30	3552	823 824	84	1407
Vickers, Douglas, A. T. Dawson, and G. T. Buckham, assignors to Vickers Sons & Co., Limited, Sheffield, England. Firing mechanism for breech-loading ordnance						
Vickers Sons & Co. (See Hawkins, Frank W., assignor.)						
Vickers Sons & Co. (See Vickers, Dawson, and Buckham, assignors.)	608,354	Aug. 2	338	------	84	723
Vidal, Henri R., Paris, France. Making violet dyes	608,355	Aug. 2	338	------	84	723
Vidal, Henri R., Paris, France. Brown-black sulfur dye	609,598	Aug. 23	2659	------	84	1218
Vidal, Henri R., Paris, France. Red dye and making same	609,599	Aug. 23	2659	------	84	1218
Vidal, Henri R., Paris, France. Obtaining triphenylmethane derivatives						
Vietor, Alwin, Wiesbaden, assignor to Ausführungen für Eisenbahn-Oberbau-Abtheilung Stossfangschiene Siegm Eppenstein, Berlin, Germany. Railway-rail joint	609,853	Aug. 30	3110	726	84	1320
Vignal, Leon, Paris, France. Driving-gear for bicycles	607,972	July 26	2671	570	84	570
Villard, Richard H., Atlanta, Ga. Wheeled scraper	608,585	Aug. 2	645	145 146	84	782
Villon, Aime M., deceased; F. R. Coudert, Jr., New York, N. Y., administrator. Manufacturing ethylic alcohol	608,652	Aug. 9	870	200	84	846
Vincent, Hilaire, assignor of one-half to N. Daigle, Manchester, N. H. Lock	606,883	July 5	455	97	84	90
Vinson, J. T., *et al.* (See Bowen, Shelby, assignor.)						
Visscher, Fred F., *et al.* (See Le Bron, Adolphe W., assignor.)	610,837	Sept. 13	1250	288 289	84	1702
Visser, Henry, Overisel, Mich. Automatic gate for railway-crossings						
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Sash-fastener	610,209	Sept. 6	102	22	84	1460
Voigtlander, Oscar, Trenton, N. J. Door-spring	611,024	Sept. 20	1584	363	84	1781
Voigtmann, Frank, Chicago, Ill. Fireproof window	609,854	Aug. 30	3111	727	84	1320
Volk, Frederick, Jr., New York, N. Y. Wire-stretcher	611,297	Sept. 27	2113	487	84	1902
Volk, John A., New Point, Ind. Threshing-machine	607,671	July 19	2106	439	84	444
Von, Henri P. de, Brussels, Belgium. Baby-carriage	609,520	Aug. 23	2522	590	84	1192
Voncanon, William A., Indianapolis, Ind. Combined pad-moistener and letter-press	608,733	Aug. 9	1014	282	84	873
Vose, Ambrose S. (See Jackson, John, assignor.)	609,254	Aug. 16	2049	486	84	1083
Vreeland, Aaron, East Orange, N. J. Bicycle-tire						
Waddell, C. E., *et al.* (See Hudgepeth, James L., assignor.)	607,099	July 12	879	189	84	189
Wadleigh, William M., Milks Grove, Ill. Attachment for harvesters	607,100	July 12	881	189	84	189
Wadleigh, William M., Milks Grove, Ill. Harvester, reaper, &c	608,986	Aug. 9	1416	334	84	947
Wadman, Frank J., Onondaga, N. Y. Bicycle						
Waggoner, Albert B., assignor of one-half to W. Waggoner, Arkansas City, Kans. Spring-wheel for vehicles	607,201	July 12	1057	229	84	221
Waggoner, William. (See Waggoner, Albert B., assignor.)	611,344	Sept. 27	2195	507	84	1917
Wagner, Charles J., Alma, Mo. Carpet-stretcher	607,304	July 12	1255	268	84	259
Wagner, Edward, St. Louis, Mo. Beer-pasteurizing apparatus	610,111	Aug. 30	3554	824	84	1408
Wagner, Franz X., New York, N. Y. Velocipede	607,718	July 19	2178	459	84	458
Wagner, George, assignor to himself and H. J. Hadlich, St. Paul, Minn. Truing device						
Wagner Typewriter Company. (See Manning, Edward J., assignor.)	609,217	Aug. 16	1964	466	84	1065
Wagner, William F., and O. B. Olin, Hartford, Conn. Boot-cleaner	610,933	Sept. 20	1419	326	84	1750
Wagoner, John N., Sparta, Wis. Hoisting-machine	607,147	July 12	964	208	84	908
Walde, Horace M., New York, N. Y. Producing relief-photographs	606,696	July 5	109	24	84	24
Waite, Guy B., Hoboken, N. J. Beam construction for buildings						
Waltzfelder, Albert S., assignor to Kursheedt Manufacturing Company, New York, N. Y. Brush skirt-binding	606,988	July 5	602	131	84	119
Wakefield, Arthur, London, England. Sanitary or other pipe	608,289	Aug. 2	122	30	84	678
Wakefield, Calvin P., Livington, Cal. Plow-wheel box	609,713	Aug. 23	2660	673	84	1961
Walden, Joseph, Orange, N. J. Vamp-stay for shoes	608,784	Aug. 9	1016	233	84	874
Waldron, William H., New York, N. Y. Axle	609,255	Aug. 16	2050	487	84	1083
Waldstein, Martin E., assignor of two-thirds to J. R. De La Mar, New York, N. Y. Recovering precious metals from their solutions	607,719	July 19	2179	------	84	458
Walenta, Frank, Yonkers, N. Y. Bicycle-support	610,005	Aug. 30	3394	787	84	1375

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Walker, Benjamin. (See Sargent, Coupe, and Walker.)						
Walker, Charles E. (See La Poer and Walker.)						
Walker Company. (See Zweigbergk, Thorsten von, assignor.)	611,046	Sept. 20	1618	370	84	1788
Walker, Edwin, Erie, Pa. Corkscrew	610,312	Sept. 6	328	70	84	1501
Walker, Frank, Los Angeles, Cal. Self-cleaning stand-boiler						
Walker, Harry K. (See Hocker, John W., assignor.)	611,585	Sept. 27	2553	589 / 590	84	1984
Walker, James C., Waco, Tex. Rotary engine	611,586	Sept. 27	2559	590 / 591	84	1985
Walker, James C., Waco, Tex. Rotary engine	610,006	Aug. 30	3395	787	84	1375
Walker, James H., Plain City, Ohio. Fence-machine	607,305	July 12	1257	268	84	260
Walker, John A. W., New York, N. Y. Sanitary cuspidor	607,306	July 12	1258	268	84	260
Walker, Oakley S., Worcester, Mass. Twist-drill-grinding machine						
Walker Otto Company. (See Otto, Louis, assignor.)	610,778	Sept. 13	1149	264	84	1681
Walker, Robert L., Allegheny, Pa. Furnace						
Walker & Sons, Hiram. (See De Wallace, Harry, assignor.)	608,494	Aug. 2	574	129	84	769
Walker, Thomas, Sidnaw, Mich. Saw-swage						
Walker, V. C., *et al.* (See Elliott, William J., assignor.)	608,735	Aug. 9	1016	233	84	874
Walker, William J., St. Louis, Mo. Wrench						
Walkins, Louis E., assignor of two-thirds to F. W. Dickinson, Springfield, Mass., and G. M. Jewett, Glenville, Md. Contact device for electric railways	610,007	Aug. 30	3397	787	84	1375
Walkins, Louis E., Springfield, Mass., assignor to G. M. Jewett, Glenville, Md., and C. N. King, Jersey City, N. J. Contact-rail appliance for electric railways	610,008	Aug. 30	3398	787	84	1376
Walkins, Louis E., Springfield, Mass., assignor of one-half to G. M. Jewett, Glenville, Md. Electric railway	610,009	Aug. 30	3400	788	84	1376
Wall, David M. J., assignor to L. Wall, Buffalo, N. Y. Luggage-carrier	610,251	Sept. 6	199	44	84	1480
Wall, Lillie. (See Wall, David M. J., assignor.)						
Wall, Vincent C. (See Gates, Verner R., assignor.)	609,376	Aug. 16	2247	531	84	1122
Wall, William L., East Radford, Va. Knife-guard for mowing-machines	610,667	Sept. 13	948	220	84	1040
Walla, Frank, Fredsburg, Tex. Seed-cotton distributer and cleaner						
Wallace, George E. (See McMurray, Dennis B., assignor.)						
Wallace, James H. (See Hilton and Wallace.)	606,850	July 5	404	86	84	81
Wallace, James H., and A. G. Hilton, Fort Fairfield, Me. Chimney-holder	609,483	Aug. 23	2468	576	84	1182
Wallace, John A., Clarkton, Mo. Farm-gate				341 / 342 / 343 / 344 / 345 / 346	84	1765
Wallace, Thomas L., and J. A. Reed, assignors to E. C. Atkins & Company, Indianapolis, Ind. Saw-filing machine	610,980	Sept. 20	1499			
Wallace, William M., assignor to Fisher Governor Company, Marshalltown, Iowa. Pin-turning machine	609,060	Aug. 16	1666	396 / 397	84	1010
Wallace, William W., Springfield, Mass. Pianoforte-action	608,998	Aug. 9	1420	335	84	948
Wallace, William W., Willoughby, assignor to American Clay Working Machinery Company, Bucyrus, Ohio. Machine for making clay products	608,997	Aug. 9	1417	334	84	948
Wallis, Henry E., assignor of one-half to W. E. Niles, Chicago, Ill. Furnace	608,995	Aug. 9	1522	361	84	968
Walls, Richard F., Pisgah, W. Va. Brake-operating mechanism	607,558	July 19	1901	393	84	406
Walmsley & Company. (See Strom, Axel A., assignor.)						
Walsh, Edward, Jr. (See Hartung, Charles C., assignor.)	610,593	Sept. 13	841	192 / 193	84	1618
Walsh, Edward, Jr., St. Louis, Mo. Machine for and method of rolling wired glass						
Walsh, Edward F. (See Lang, Lincoln A., assignor.)						
Walsh, Henry. (See Marsden and Walsh.)	608,939	Aug. 9	1422	335	84	948
Walsh, Richard, Philadelphia, Pa. Gasket packing	606,948	July 5	543	120	84	108
Walsh, Walter V., Pittsburg, Pa. Sash-fastener	608,163	July 26	3010	647	84	688
Walstrom, Frank V., and J. Erickson, Chicago, Ill. Bicycle-lock	608,495	Aug. 2	576	129	84	770
Walter, Charles V., New York, N. Y. Fastener	608,015	July 26	2771	589	84	592
Walter, Georg, Strasburg, Germany. Secondary battery						
Walters, Charles. (See Neugroschl and Walters.)						
Wambsganss, Albert, Frankfort, assignor to Sholto-Douglas, Berlin, Germany. Device for regulating position of height of rails over joint-sleepers	606,697	July 5	111	24	84	24
Wanamaker, Henry W., assignor of one-half to J. R. Wilson, Baltimore, Md. Brick-kiln	607,973	July 26	2873	571	84	570
Wantling, Isaac, and J. T. Johnson, Peoria, Ill. Coal cutting or mining machine	608,240	Aug. 2	123	30	84	678
Wappler, Reinhold H., New York, N. Y. Electromedical apparatus	609,639	Aug. 23	2763	644	84	1238
Ward, Charles C., Pendleton, Ky. Pliers	611,537	Sept. 27	2561	591	84	1985
Ward, David R., Newark, N. J., assignor of two-thirds to M. F. Elliot, New York, N. Y. Automatic stoker for furnaces	607,593	July 19	1848	384 / 385	84	397
Ward, Dell, Toledo, Ohio. Hydrocarbon-burner	609,855	Aug. 30	3112	727	84	1320
Ward, Raymond L. (See Kuser, Fred, assignor.)						
Wardwell, Simon W., Jr., Boston, Mass., assignor to Universal Winding Company, Portland, Me. Cop	607,202	July 12	1058	229	84	221
Ware, Henry, Springville, N. Y. Railway-tie-plate surfacer and gage	606,851	July 5	405	86	84	81
Warne, Frank H. (See Warne, Perry, assignor.)	608,536	Aug. 2	647	146	84	783
Warne, Perry, assignor to F. H. Warne, Morenci, Mich. Wire-stretcher	607,203	July 12	1059	229	84	221
Warner, Charles E., Waverly, Kans. Wire fence	607,204	July 12	1061	230	84	221
Warner, Charles E., Waverly, Kans. Wire fence	611,025	Sept. 20	1585	363	84	1782
Warner, Henry H., Tacoma, Wash. Car-coupling	610,112	Aug. 30	3555	824	84	1408
Warner, Oscar L., Naugatuck, Conn. Metallic hub-casing	607,101	July 12	892	190	84	189
Warnock, George F., Jacksonville, Fla. Combined square and bevel						
Warren, Alfred, *et al.* (See Chapman, Charles A., assignor.)	611,463	Sept. 27	2435	560	84	1961
Warren, Christopher C., Chunkey's Station, Miss. Cultivator attachment	611,298	Sept. 27	2115	487	84	1902
Warren, Edward K., Three Oaks, Mich. Stiffening tape or fabric	609,640	Aug. 23	2765	644	84	1238
Wartzenluft, Daniel L., Kutztown, Pa. Burglar-alarm	611,299	Sept. 27	2116	487 / 488	84	1902
Washburn, Helum J., and E. L. Cudaback, assignor of one-half to C. G. Cudaback and W. G. Washburn, Ransomville, N. Y. Spring-tooth harrow	607,495	July 19	1787	371	84	386
Washburn, John R., Valley Junction, Wis. Sliding-door fastener						
Washburn, William G., *et al.* (See Washburn and Cudaback, assignors.)	607,307	July 12	1261	268	84	260
Washburne, James V., Waterbury, Conn. Badge						
Washington Dishwasher Company. (See Leonard and Hescox, assignors.)						
Washington, George, New York, N. Y., assignor to George Washington Lighting Company, Jersey City, N. J. Hydrocarbon incandescence lamp	607,974	July 26	2675	571	84	571
Waterbury Clock Company. (See Bannatyne, Archibald, assignor.)						
Waterbury Farrel Foundry and Machine Company. (See Rowbottom, George, assignor.)	607,397	July 12	1420	304	84	291
Waterman, Lewis E., New York, N. Y. Fountain-pen	607,398	July 12	1424	304	84	292

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Waterman, Lewis E., New York, N. Y. Fountain-pen	607,399	July 12	1425	304	84	292
Waterman, Lewis E., New York, N. Y. Fountain-pen	607,400	July 12	1426	304 / 305	84	293
Waterman, Lewis E., New York, N. Y. Fountain-pen	607,401	July 12	1431	305	84	293
Waterman, Lewis E., Moline, assignor to Rock Island Plow Company, Rock Island, Ill. Sulky-plow	609,311	Aug. 16	2149	509	84	1103
Waters, George A., Troy, N. Y. Chain-guard	610,313	Sept. 6	330	71	84	1505
Waters, Virgil W. (See Jenkins, Warner H., assignor.)	608,940	Aug. 9	1423	335	84	949
Watkins, Charles S., Bloomington, Ill. Rein-clasp						
Watkins, George H., Ridgeway, assignor of one-third to H. C. Clanton, Spencer, Va. Weighing-scoop	607,578	July 19	1935	401	84	412
Watkins, John, Hereford, England. Barrel-tap	608,087	July 26	2847	618	84	615
Watkins, Leigh, Denver, Colo. Wagon steering and driving mechanism	607,308	July 12	1262	269	84	260
Watkins, William, Reedsville, W. Va. Hoe or mattock	610,570	Sept. 13	797	182	84	1608
Watson Automatic Seat Post Company. (See Lord, George W., assignor.)						
Watson, Henry B., London, England. Appliance for supporting books, papers, or other articles	607,496	July 19	1788	372	84	386
Watson & McDaniel Company. (See Riggin, Henry H., assignor.)	608,496	Aug. 2	578	130	84	770
Watson, Nelson M., Detroit, Mich. Coin-controlled medical battery						
Watson & Newell Company. (See Swift, Horace E., assignor.)	610,113	Aug. 30	3556	825	84	1408
Watson, Thomas A., Bentonville, Ark. Weather-strip for doors	610,779	Sept. 13	1149	264	84	1681
Watson, William T., Victoria, Canada. Car-fender						
Watt, Charles W. (See Henigan, John M., assignor.)	609,714	Aug. 23	2881	673	84	1261
Watt, Robert W., Hamburg, Ark. Drill and seed-planter						
Watterworth, J. A., *et al.* (See Miller, Gustof J., assignor.)						
Watts Patents Company. (See Watts, William W., assignor.)						
Watts, William W., Birmingham, assignor to Watts Patents Company, Limited, London, England. Boot-tree	610,506	Sept. 6	680	155	84	1571
Waymack, Martha J., Manchester, Va. Hat-pin	609,061	Aug. 16	1669	397	84	1011
Weatherly, John R., Sumter, S. C. Stalk-cutter	610,114	Aug. 30	3557	825	84	1408
Weaver, Henry M. (See Hutches, Benjamin F., Jr., assignor.)						
Weaver, Henry M., Mansfield, Ohio. Whist-table	609,377	Aug. 16	2248	531 / 532	84	1122
Weaver, Ira A., Oskaloosa, assignor of one-fourth to R. M. Boyer, Tracy, Iowa. Well-drilling machine	608,810	Aug. 9	1169	273 / 274	84	901
Webb, Emmet E., Cadiz, Ohio. Carpet-fastener	611,158	Sept. 20	1883	423	84	1829
Webb, George S., Aurora, Ill. Chain adjustment for bicycles or other machines	609,062	Aug. 16	1670	397	84	1011
Webb, George S., Aurora, Ill. Joint for parts of machinery	611,159	Sept. 20	1885	423	84	1830
Webb, Martin V. (See Webb and Johnson, assignors.)						
Webb, Samuel D., and I. L. Johnson; said Johnson assignor, by mesne assignments, of one-half to M. V. Webb, Washington, D. C. Tobacco-pipe	609,641	Aug. 23	2766	644	84	1238
Webber, Charles F., Boston, Mass. Bicycle-saddle adjusting device and spring	607,148	July 12	965	209	84	208
Webber, Louise E., Parkersburg, W. Va. Portable scaffold	610,934	Sept. 20	1420	326 / 327	84	1751
Weber, Aaron M., Oshkosh, Wis. Edge-protector for dress-skirts	610,780	Sept. 13	1151	264	84	1681
Weber, George A., New York, N. Y. Insulated rail-joint	608,088	July 26	2888	618	84	615
Weber, George A., New York, N. Y. Bond for rails	608,736	Aug. 9	1017	233	84	874
Weber, Leonard, Roslyn, Wash. Combined sleigh and boat	606,905	July 5	484	104 / 105	84	96
Weber, Valentin, Princeville, Ill. Bicycle-gearing	607,149	July 12	967	209	84	204
Webster, John M., assignor to M. S. Goldsmith, Cincinnati, Ohio. Bicycle-frame	611,399	Sept. 27	2316	534	84	1939
Webster, Thomas, and A. E. Bennett, Coventry, England. Profiling-machine	611,300	Sept. 27	2118	488	84	1902
Weck, Johann, Oeflingen, Germany. Sterilizing apparatus	609,856	Aug. 30	3114	727 / 728	84	1320
Weddel, John W., Oregon, Ill. Convertible pump-top	611,301	Sept. 27	2119	489	84	1903
Weddel, John W., H. Jewett, W. L. Taylor, and D. A. Bellis, Oregon, Ill. Motor for operating pumps	609,505	Aug. 23	2597	607	84	1206
Weed, Edward B., assignor to A. I. Root Company, Medina, Ohio. Machine for papering and piling artificial honeycomb-foundations	610,252	Sept. 6	200	45	84	1481
Weeks, Parrish C., assignor to L. L. Ahlborn, Kansas City, Kans. Window-shade fixture	611,345	Sept. 27	2197	507	84	1917
Weichelt, Charles L., W. S. Grady, and A. Jones, Philadelphia, Pa. Machine for mercerizing yarn	607,150	July 12	970	210	84	204
Weidemann, Theodore R., West Hoboken, N. J. Collar and cuff	606,817	July 5	341	72	84	68
Weiffenbach, Hermann, Munich-Schwabing, Germany. Pyrotechnic device	609,063	Aug. 16	1672	397	84	1011
Weigner, Adolf, Vienna, Austria-Hungary. Appliance for producing case-shot-like action of explosive projectiles	608,941	Aug. 9	1424	336	84	949
Weiland, Peter, *et al.* (See De Tamble, Henry, assignor.)	611,538	Sept. 27	2563	591	84	1985
Weimer, Alfred F., Loudonville, Ohio. Permutation whip-lock						
Weintraub-Schnorr, Naum, Geneva, Switzerland, assignor to La Société Chimique des Usines du Rhône, anciennement Gilliard P. Monnet et Cartier, Lyons, France. Compound for closing punctures in pneumatic tires	606,751	July 5	219	.....	84	45
Weir, Hamilton, La Porte, Ind. Dust-pan	607,309	July 12	1265	269	84	261
Weiss, Georg, Chicago, Ill. Feeding device for nut-tapping machines	611,302	Sept. 27	2120	489 / 490	84	1903
Weiss, George. (See Zehnder, William, assignor.)						
Weitz, Jacob H. (See Girrens and Weitz.)	609,378	Aug. 16	2250	532	84	1122
Weitzel, John A., Redlands, Cal. Horizontal windmill						
Welch, Samuel, and H. A. Burkhart, Fitzgerald, assignors to W. A. Morgan, Dodge county, Ga. Bicycle-support	607,779	July 19	2281	481	84	477
Weld, George A., Boston, Mass. Mallet	608,811	Aug. 9	1174	274	84	901
Weller, Henry I., Columbus, Ohio. Artificial leg	608,812	Aug. 9	1176	274 / 275	84	902
Wellman, Charles H., assignor of one-half to S. T. Wellman, Upland, Pa. Treating steel for castings	609,750	Aug. 23	2981	.....	84	1270
Wellman, Harlan P., Ashland, Ky. Electric headlight-lamp	608,497	Aug. 2	581	130 / 131	84	770
Wellman, Samuel T. (See Wellman, Charles H., assignor.)						
Wellmann, Louis P., Union, N. J. Bicycle-saddle	608,089	July 26	2889	618	84	616
Wellock, Laura, Delphi, Ind. Hat-displaying stand	607,310	July 12	1266	270	84	261
Wells, Arthur W., assignor of one-half to J. E. Bishop, Boston, Mass. Tramway-switch	608,090	July 26	2890	619	84	616
Wells, Eugene, *et al.* (See Robinson, Joseph, assignor.)						
Wells, Frank A. (See Wells, Joseph H., Jr., and F. A.)	608,942	Aug. 9	1425	336	84	949
Wells, George H., and H. A. Gleason, Hampshire, Ill. Wrench						
Wells, Henry W., Philadelphia, Pa., assignor to Helios Carbide Specialty Company, Atlantic City, N. J. Acetylene-gas-generator lamp	610,210	Sept. 6	104	22	84	1460
Wells, John V., Wilmerding, Pa. Triple valve	609,312	Aug. 16	2151	509	84	1104

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Wells, Joseph H., Jr., and F. A., Aurora, Ill. Sand-distributer for locomotives	608,091	July 26	2892	619	84	616
Wells, Wallace H., Basher Falls, N. Y. Incandescent-lamp shade or cover	609,924	Aug. 30	3231	756	84	1343
Wells, William W., Sandy Hill, N. Y. Paper-making machinery	611,303	Sept. 27	2124	490	84	1904
Wellstood, Andrew B. (See Wellstood, William, Jr., and A. B.)						
Wellstood, William, Jr., and A. B., New York, N. Y. Combined picture and mirror	608,356	Aug. 2	339	74	84	728
Welsh, George, Providence, R. I. Box and lid-support therefor	609,979	Aug. 30	3345	778	84	1365
Welton, John A., Canal Dover, and J. V. Price, Gnadenhütten, Ohio. Acetylene-gas generator	609,313	Aug. 16	2154	510	84	1105
Wendler, Gottlob, Manchester, England. Mordant	609,131	Aug. 16	1804	.....	84	1084
Wendling, George X. (See Parker and Cross, assignors.)						
Wendt, Joseph P., Phœbus, Va. Packing-case	609,642	Aug. 23	2767	645	84	1238
Wenger, Samuel M., Farmersville, Pa. Fish-hook	611,400	Sept. 27	2317	534	84	1939
Wenker, Franklin J., Watertown, Wis. Convertible pump	611,494	Sept. 27	2368	544	84	1947
Wenning, Alfred, and C. H. Gégauff, assignors to La Société Alsacienne de Constructions Mécaniques, Mulhouse, Germany. Combing-machine	610,464	Sept. 6	606	135, 136	84	1354
Wentworth, Charles C., *et al.* (See Johnson, Gustaf, assignor.)						
Wentworth, Charles C., assignor of one-half to J. E. M. Hanckel, Roanoke, Va. Floor-frame for railway-cars	608,414	Aug. 2	444	99	84	744
Wentworth, Monta D., *et al.* (See Johnson, Gustaf, assignor.)						
Wentworth, Rinaldo R., *et al.* (See Johnson, Gustaf, assignor.)						
Wentworth, Wyatt W., Waterproof, La. Rake	608,737	Aug. 9	1018	233	84	874
Werkzeug Maschinenfabrik "Union," (vormals Diehl.) (See Diehl, Ruppert, and Löser, assignors.)						
Werner, Ernest E., assignor, by mesne assignments, to S. E. Gilbert and S. I. Shute, Philadelphia, Pa. Electric-current controller	607,311	July 12	1267	270	84	202
Werremeyer, Adolph H., Jr., Central, Mo. Funnel attachment for vessels	611,304	Sept. 27	2125	491	84	1904
Wescott, Charles O., Farmington, Minn. Pipe-lock	611,305	Sept. 27	2126	491	84	1904
Wesel, Ferdinand, New York, N. Y. Printer's proof-press	608,813	Aug. 9	1178	275, 276	84	902
Wesel, Ferdinand, New York, N. Y. Machine for shaving electrotypes, stereotypes, &c.	609,643	Aug. 23	2768	645	84	1239
Wesely, Charles, Chicago, Ill. Tub	611,188	Sept. 20	1882	434, 435	84	1839
Wesner, John O., Cameron, S. C. Bed-bottom	607,102	July 12	863	190	84	189
Wessel, John F., Kellogg, Iowa. Beehive	608,943	Aug. 9	1426	336	84	949
Wesselmann, Bruno, Göttingen, Germany. Ball-caster	607,720	July 19	2180	459, 460	84	458
West, Augustus A., Gilman, Ill. Weighing-scoop	609,644	Aug. 23	2770	646	84	1239
West, Cromwell. (See Allen and West.)						
West, Edward B., Bettie, Tex. Churn-dasher	609,858	Aug. 30	3115	728	84	1321
West, Edward M., Bridgeton, N. J. Bicycle attachment	609,857	Aug. 30	3114	728	84	1320
West, Ernest W., Gloversville, N. Y. Safety-elevator	610,211	Sept. 6	105	22, 23, 24	84	1460
West, Eugene S., Marinette, Wis. Garment-holder	608,498	Aug. 2	584	131	84	771
West, Robert. (See Leak and West.)						
West, Wharton L., Portland, Oreg., assignor to F. M. Prindle and J. D. Johnson, San Francisco, Cal. Moistener for gummed surfaces	609,175	Aug. 16	1863	448	84	1047
West, William M., Camden, N. J. Dumping-wagon	607,108	July 12	884	190, 191	84	189
Western Railway Equipment Company. (See Floyd, George G., assignor.)						
Western Railway Equipment Company. (See Steinbrenner, Andrew G., assignor.)						
Western Wheeled Scraper Company. (See McKnight, Thomas R., assignor.)						
Westhaver, James B., Edgewater, Colo. Bicycle-gearing	609,314	Aug. 16	2157	510	84	1105
Westheimer, Augusta, New York, N. Y. Portable cooking utensil	608,738	Aug. 9	1019	234	84	874
Westinghouse Air Brake Company. (See Guillemet, François L., assignor.)						
Westinghouse Air Brake Company. (See Park, Harvey S., assignor.)						
Westinghouse Air Brake Company. (See Westinghouse, George, Jr., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Davis, Harry P., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Davis and Conrad, assignors.)						
Westinghouse Electric and Manufacturing Company. (See Davis and Wright, assignors.)						
Westinghouse Electric and Manufacturing Company. (See Lamme, Benjamin G., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Schmid, Albert, assignor.)						
Westinghouse Electric and Manufacturing Company. (See Scott, Charles F., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Terry and Davis, assignors.)						
Westinghouse, George, Pittsburg, Pa. Traveling contact device for electric railways	606,828	July 5	363	76, 77	84	72
Westinghouse, George, Jr., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure automatic brake	609,484	Aug. 23	2469	576, 577	84	1183
Westman, Gustaf M., New York, N. Y. Process of and apparatus for pyritic smelting	607,497	July 19	1789	372	84	386
Westminster Manufacturing Company. (See Rocholl, Charles, assignor.)						
Westwood, Alexander L., Edinburgh, Scotland. Pulp-strainer for paper-making machines	607,312	July 12	1269	270, 271	84	202
Westwood, Felix, Wheeling, W. Va. Machine for separating packs of tin plates	609,645	Aug. 23	2772	646	84	1239
Westwood, Felix, Wheeling, W. Va. Machine for doubling metal plates	611,539	Sept. 27	2565	501, 502	84	1986
Wettengel, Emil, Markneukirchen, Germany. Tuning device for musical stringed instruments	609,715	Aug. 23	2883	674	84	1261
Weyburn & Briggs Company. (See Clark, William A., assignor.)						
Wezel, Julius, Leipsic, Germany. Smoke-consuming furnace	608,739	Aug. 9	1021	234	84	875
Wharton, Stewart P. (See Cleveland, Roswell W. C., assignor.)						
Wheelan, Fairfax H. (See Jessup, Robert W., assignor.)						
Wheeler, Frank D. (See Buehler, Louis, assignor.)						
Wheeler, Houston J., assignor of one-half to B. D. Atwell, Hutchins, Tex. Automatic cotton elevator and distributer	610,298	Sept. 6	294	64	84	1499
Wheeler, James, Ilfracombe, England. Method of and apparatus for producing films	611,047	Sept. 20	1619	370, 371	84	1788
Wheeler, Seth, Albany, N. Y. Toilet-paper	607,498	July 19	1791	372	84	387
Wheeler & Wilson Manufacturing Company. (See Dimond and Dial, assignors.)						
Wheeler & Wilson Manufacturing Company. (See Ostrom, Freeland W., assignor.)						
Wheless Induction Railway Company. (See Preil, Oscar, assignor.)						
Whipple, Effinger E., Cooperstown, N. Y. Cultivator	607,632	July 19	2096	422, 423	84	431
Whipple, Effinger E., Utica, N. Y. Harrow	609,980	Aug. 30	3346	778, 779	84	1365
Whipple, Effinger E., Utica, N. Y. Wheeled supporting attachment for harrows	609,981	Aug. 30	3351	779	84	1366
Whipple, Effinger E., Utica, N. Y. Supporting attachment for harrows	610,115	Aug. 30	3558	825	84	1408

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Whipple, Effinger E., Utica, N. Y. Supporting attachment for harrows	611,160	Sept. 20	1838	423, 424	84	1830
Whipple, Effinger E., Utica, N. Y., assignor to Standard Harrow Company. Cultivator	609,064	Aug. 16	1674	398	84	1012
Whipple, James C., assignor to R. T. Whipple, Chicago, Ill. Lace-curtain stretcher	610,294	Sept. 6	297	64	84	1499
Whipple, Riley T. (See Whipple, James C., assignor.)						
Whippo, John K., Sherrett, assignor of one-half to J. H. Frederick, West Monterey, Pa. Study-table	609,751	Aug. 23	2932	695, 696	84	1270
Whitacre, Nehemiah R., Marlton, N. J. Pruning-shears	607,388	July 12	1410	301	84	290
Whitaker, Joseph R., Wilmington, Ohio. Tire-bolting machine	611,540	Sept. 27	2569	592	84	1986
Whitaker, Richard assignor to Neverslip Manufacturing Company, New Brunswick, N. J. Horseshoe-calk	610,212	Sept. 6	108	24	84	1461
Whitaker, Simon S., Venetia, Pa. Non-refillable bottle	609,716	Aug. 23	2884	674	84	1262
Whitbeck, Arthur J., New Britain, Conn. Bicycle-tire-repair kit	610,504	Sept. 13	844	194	84	1618
Whitcomb, William A., Downs, Ill. Gate	607,721	July 19	2181	460	84	450
White, Eugene H., New Haven, Conn. Bicycle-bell	608,499	Aug. 2	585	131	84	771
White, Frank W., Marion, Ind. Lock and support for bicycles	611,401	Sept. 27	2318	535	84	1989
White, Herbert E., New York, N. Y. Machine for cutting incandescent mantles	610,213	Sept. 6	109	24	84	1461
White, James H. (See Dubbs, Jesse A., assignor.)						
White, Lemuel R., Hebron, Iowa. Horse-power	610,595	Sept. 13	845	194	84	1619
White, Margaret A., Southampton, N. Y. Trunk	611,189	Sept. 20	1883	435	84	1839
White, Mason F., Bloomington, Ill. Convertible freight-car	606,698	July 5	113	24, 25	84	24
White, Paul H., assignor to Indiana Bicycle Company, Indianapolis, Ind. Back-pedaling brake	610,507	Sept. 6	660	155	84	1571
White, Robe C., trustee. (See Randleff, Carl H. B., assignor.)	609,218	Aug. 16	1965	467	84	1065
White, Rollin H., Cleveland, Ohio. Machine for grinding balls	609,219	Aug. 16	1967	467	84	1065
White, Rollin H., Cleveland, Ohio. Ball-grinding machine	609,220	Aug. 16	1971	468	84	1066
White, Rollin H., Cleveland, Ohio. Machine for sorting balls	609,221	Aug. 16	1973	468, 469	84	1067
White, Rollin H., Cleveland, Ohio. Ball-grinding machine						
White Sewing Machine Company. (See Colegrove, Charles E., assignor.)						
White Warner Company. (See Tinkham, Howard A., assignor.)						
White, William C., Danville, Va. Nut-lock	610,898	Sept. 13	1253	289	84	1702
White, William H., Edinburgh, Scotland. Apparatus for playing of golf	610,356	Sept. 6	377	80	84	1512
Whitehead, Benjamin S., Newark, N. J., assignor to Whitehead & Hoag Company, of New Jersey. Device for displaying photographs, pictures, &c.	607,104	July 12	885	191	84	190
Whitehead & Hoag Company. (See Akins, Ralph L., assignor.)						
Whitehead & Hoag Company. (See Whitehead, Benjamin S., assignor.)						
Whitehead, I. Wixom. (See O'Sullivan, Michael, assignor.)						
Whitehead, John, Fiume, Austria-Hungary. Torpedo-launching apparatus	608,814	Aug. 9	1182	276, 277	84	903
Whiteley, William, Huddersfield, England. Yarn-drying apparatus	610,781	Sept. 13	1152	264, 265	84	1681
Whitfield, Marcy L., Memphis, Tenn., assignor to American Dynamo Engine and Motor Lamp Company, of Tennessee. Combined generator and steam-engine	611,006	Sept. 20	1550	357, 358	84	1775
Whitley, Ralph, assignor of one-half to J. Fairhurst, Paterson, N. J. Swivel batten and shuttle for looms	608,816	Aug. 9	1188	278	84	904
Whitlock, James G. (See Hanson, Victor, assignor.)						
Whitman & Barnes Manufacturing Company. (See Motherwell, David M., assignor.)						
Whitney Bicycle Improvement Company. (See Whitney, George E., assignor.)						
Whitney, George E., Boston, Mass., assignor to Whitney Bicycle Improvement Company, Kittery, Me. Covering for drive-chains	607,786	July 19	2294	484	84	480
Whitney, Oliver B., Marlborough, N. Y. Car brake and fender	609,646	Aug. 23	2773	646, 647	84	1240
Whiton, Lucius E., New London, Conn. Lathe	610,981	Sept. 20	1509	346, 347	84	1767
Whittaker, Edward, Methuen, Mass. Device for bending teeth in card-clothing	606,829	July 5	365	77	84	73
Whittemore, James M., Washington, D. C. Breech-loading firearm	607,313	July 12	1270	271	84	202
Whittier Machine Company. (See Clark, John H., assignor.)						
Whyman, Horatio O., Norfolk, Nebr., assignor to Whyman Patent Shoe Lace Company, Aurora, Ill. Lace-holder	607,813	July 19	2367	502	84	495
Whyman Patent Shoe Lace Company. (See Whyman, Horatio O., assignor.)						
Wible, William F., Gettysburg, Pa. Permutation-padlock	610,424	Sept. 6	535	118	84	1541
Wich, Ferdinand J., Didsbury, England. Speed and distance indicator and recorder for velocipedes, &c.	610,782	Sept. 13	1155	265, 266	84	1682
Wichman, Albert C. F., Fort Wayne, Ind., assignor to Anthony Wayne Manufacturing Company, St. Louis, Mo. Washing-machine	606,699	July 5	114	25	84	25
Wichmann, Henry, New Holstein, Wis. Windmill	607,151	July 12	971	210	84	204
Wickers, Joseph C. (See Brennan, Frank W., assignor.)	610,750	Sept. 13	1089	250	84	1669
Wickers, Joseph C., New York, N. Y. Blacking brush or dauber	608,740	Aug. 9	1022	234	84	875
Wieder, Benjamin G., Seigfried's Bridge, Pa. Steam-valve wheel	610,295	Sept. 6	299	64, 65	84	1499
Wiedrich, Charles L., assignor to United Hame Company, Buffalo, N. Y. Finishing-machine	608,944	Aug. 9	1427	336	84	949
Wiehl, Joseph H., Zelienople, assignor of one-third to W. M. C. Jones, Pittsburg, Pa. Attachment for gas-engines	607,579	July 19	1937	402	84	412
Wieland, Charles F., assignor of one-half to S. G. Swanson, Reedsville, Pa. Drop-press	609,132	Aug. 16	1805	430	84	1034
Wielsch, Arthur E. (See Otto and Wielsch.)	610,571	Sept. 13	709	182	84	1608
Wiesenfeld, Robert S., Baltimore, Md. Horseshoe	608,628	Aug. 9	824	191	84	836
Wigelius, Victor, Scotia, Cal. Journal-box	608,241	Aug. 2	129	31	84	680
Wigtil, Ole, Canby, Minn. Wrench	608,242	Aug. 2	130	31, 32	84	680
Wilburn, Hugh, Ritzville, Wash. Bicycle-gear						
Wilcke, Henry, Liverpool, England. Motor	608,815	Aug. 9	1187	278	84	904
Wilcox, Ernest C. (See Egan, Lawton, and Wilcox.)	609,485	Aug. 23	2471	577	84	1183
Wilcox, Lewis C., Way Cross, Ga. Wagon-pole coupling	607,389	July 12	1410	301, 302	84	290
Wilcox, Lewis T., Lansing, Mich. Burner						
Wild, William E., Denver, Colo. Ore-concentrator	608,568	Aug. 2	695	158	84	794
Wilder, Norman B., Lyndon, assignor of one-half to H. E. Paddock and W. F. Millikan, Prophetstown, Ill. Baling-press	607,899	July 26	2546	540	84	546
Wildermuth, La Fayette, Columbus, Ohio. Grass-receptacle for lawn-mowers	607,975	July 26	2677	572	84	571
Wiley, Edgar C., assignor of one-half to H. E. McWane, Lynchburg, Va. Cut-off valve	611,541	Sept. 27	2570	502	84	1987
Wiley, James T., Preston, Ill. Bicycle-brake	609,597	Aug. 23	2536	504	84	1194
Wilhelm, George, and J. F. McGovern, Kokomo, Ind. Coffee or tea pot handle	610,214	Sept. 6	111	25	84	1462
Wilhelm, Thomas M. (See Stettler and Wilhelm.)	608,537	Aug. 2	649	146	84	783
Wilkens, John D., assignor to J. N. Crouse, Chicago, Ill. Dental engine						
Wilkinson, Henry E., Mount Vernon, Ohio. Battery-electrode						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wilkinson, Irvine. (See Wilkinson, Walter and I.)						
Wilkinson, Walter and I., Philadelphia, Pa. Brush	607,105	July 12	887	191	84	190
Willard, Ben, Schenectady, N. Y., assignor to General Electric Company, of New York. Insulator	606,830	July 5	867	77	84	73
Willard, Frank H. (See Tuttle, George H., assignor.)						
Willcox & Gibbs Sewing Machine Company. (See Borton, Stockton, assignor.)						
William Powell Company. (See Powell, James, assignor.)						
Williams, Abraham C., Gravett, Ark. Spark-arrester	609,066	Aug. 16	1679	399	84	1012
Williams, Charles N. (See Donaldson, Owen, and Williams.)						
Williams Electric Company. (See Williams, Joseph A., assignor.)						
Williams, Frank, and W. H. Quicksall, Stewardson, Ill. Traction-wheel	609,717	Aug. 23	2885	674	84	1262
Williams, Frank M. (See Durfee and Williams.)						
Williams, George G., Charlevoix, Mich. Trousers-hanger	608,092	July 26	2893	619	84	617
Williams, George H., *et al.* (See Talley, William H., assignor.)						
Williams, Harry, assignor to Morrison Battery Company, Cleveland, Ohio. Means for controlling voltage and volume of electrical currents	610,509	Sept. 6	693	156	84	1572
Williams, Henry M. (See Burger, Franz, assignor.)						
Williams, Henry M. (See Burger and Williams.)						
Williams, Herbert B., Castle Gate, Utah. Lixiviation apparatus	608,945	Aug. 9	1429	337	84	949
Williams, James. (See Senior, William, assignor.)						
Williams, James, Salford, England. Apparatus for stripping flats of carding-engines	609,859	Aug. 30	3117	728	84	1321
Williams, James, Salford, England. Apparatus for stripping flats of carding-engines	609,860	Aug. 30	3118	729	84	1322
Williams, James, Salford, England. Apparatus for stripping flats of carding-engines	610,538	Sept. 13	909	208 / 209	84	1632
Williams, James H., assignor to Remington & Sherman Company, Philadelphia, Pa. Bolt	607,780	July 19	2282	482	84	477
Williams, John M., Flatts, Bermuda. Lighthouse appliance	610,215	Sept. 6	113	25	84	1462
Williams, Joseph A., assignor to Williams Electric Company, Cleveland, Ohio. Gear-wheel	610,696	Sept. 13	996	231	84	1651
Williams, Linfrid L., Wyncote, Pa. Back-pedaling brake	610,508	Sept. 6	692	156	84	1572
Williams, Louis N. D. (See Scott, Robert W., assignor.)						
Williams, Mahlon M., Rico, Colo. Automatic fire-extinguisher for passenger-coaches	607,314	July 12	1275	271	84	263
Williams, William E., Chicago, Ill., assignor of one-half to W. Greene, Washington, D. C. Fence-post	610,216	Sept. 6	114	26 / 27 / 28	84	1462
Williams, William E., assignor to C. E. Robinson, Chicago, Ill. Wire-fence machine	610,217	Sept. 6	129	29 / 30 / 31	84	1466
Williamson, George H., Worcester, England. Loose cover and cutter for hermetically-sealed metallic boxes or cases	609,379	Aug. 16	2253	532 / 533 / 31	84	1123
Williamson, Henry C., and H. Pries, Michigan City, Ind. Dumping-car	610,218	Sept. 6	144	32 / 33	84	1470
Williamson, John, Chicago, Ill. Acetylene-gas generator	609,861	Aug. 30	3119	729	84	1322
Williamson, John H. (See Kennedy and Williamson.)						
Williston, Belvin T. (See Park and Williston.)						
Wilmot, Frank A. (See Sangster, Charles, assignor.)						
Wilmot, William F., Utica, assignor of one-half to W. F. Tomlinson, Milton, Mich. Weather-strip for doors	610,219	Sept. 6	146	33	84	1471
Wilson, Amos L. (See Wilson, Charles S., assignor.)						
Wilson, Anna R., Bridgeton, N. J. Coal-hod lifter and box or receiver for same	609,528	Aug. 23	2537	594	84	1195
Wilson, Charles, Newport, Ky. Combined match-box and cigar or pipe lighter	607,722	July 19	2182	460	84	459
Wilson, Charles M., *et al.* (See Horton, Peter D., assignor.)						
Wilson, Charles S., near Macomb, Ill., assignor of one-half to A. L. Wilson, Keokuk, Iowa. Cart for transporting fodder, &c	611,542	Sept. 27	2572	593	84	1987
	611,543	Sept. 27	2573	593	84	1987
Wilson, Curtis S., Forest, Ohio. Incubator	609,486	Aug. 23	2474	577	84	1188
Wilson, Elwood, Noblesville, Ind. Ribbon-clasp	610,668	Sept. 13	962	220	84	1641
Wilson, George R., Austin, Minn. Toaster	606,949	July 5	544	120	84	108
Wilson, Harry L., Erie, Pa. Manhole and cover therefor	606,797	July 5	304	63, 64	84	60
Wilson, James E., Bridgeport, Conn. Bicycle	609,065	Aug. 16	1677	399	84	1012
Wilson, James N., Minneapolis, Minn. Two-horse evener						
Wilson, Joseph R. (See Wanamaker, Henry W., assignor.)						
Wilson, Robert, Govan, Scotland. Apparatus for separating liquids from granular materials	607,723	July 19	2184	461	84	459
Wilson, Samuel T., assignor to himself and W. W. Branch, Charleston, W. Va. Rotary engine	607,305	July 12	1063	230	84	222
Wilson, Thomas B., Springfield, Mass., assignor to C. E. Billings, Hartford, Conn. Magazine bolt-gun	609,600	Aug. 23	2660	621 / 622	84	1218
Wilson, Thomas B., Springfield, Mass., assignor to C. E. Billings, Hartford, Conn. Magazine bolt-gun	609,601	Aug. 23	2665	622 / 623	84	1218
Wilson, Volney M., Jr., assignor of one-half to C. H. Kittredge, Providence, R. I. Aerial toy	608,500	Aug. 2	586	131	84	771
Wilson, William. (See Milner and Wilson.)						
Wiman, William D., Moline, Ill. Molding-machine	607,152	July 12	973	210 / 211	84	205
Wimpenny, Abel B., Hayfield, England. Apparatus for washing printers' blankets, &c.	611,161	Sept. 20	1841	494	84	1831
Winchell, James F., assignor to Foos Manufacturing Company, Springfield, Ohio. Grinding-mill	610,729	Sept. 13	1056	242	84	1664
Winchester, Benjamin T., Baltimore, Md. Hypodermic syringe	609,982	Aug. 30	3355	779	84	1307
Winchester Repeating Arms Company. (See Johnson, Thomas C., assignor.)						
Winchester Repeating Arms Company. (See Mason, William, assignor.)						
Windle, John E., Worcester, Mass. Cloth-winding machine	608,817	Aug. 9	1191	278	84	905
Windle, John E., Worcester, Mass. Cloth-measuring machine	608,818	Aug. 9	1192	278	84	905
Windsor Company. (See Carter, Stewart F., assignor.)						
Wing, Edward J., Centre Hill, Fla. Colter	609,862	Aug. 30	3120	729	84	1322
Wing, Levi J., New York, N. Y. Gas-engine	607,580	July 19	1940	402 / 403	84	413
Wingard, Charles L., assignor of one-half to L. H. Wingard, Walla Walla, Wash. Insulator	607,315	July 12	1276	272	84	263
	611,402	Sept. 27	2319	535	84	1939
Wingard, Edwin V., Philadelphia, Pa. Limekiln	607,792	July 19	2304	486	84	461
Wingard, Luella H. (See Wingard, Charles L., assignor.)						
Winger, Oswald E., assignor to R. D. Small, Chicago, Ill. Window pane or light	606,752	July 5	220	47, 48	84	45
Wingert, Henry L., Montpelier, Ohio. Hot-air furnace						
Winkenwerder, Henry. (See Johnson and Winkenwerder.)						
Winkley, Erastus E., Lynn, Mass., assignor to Goodyear Shoe Machinery Company, Portland, Me. Sole-leveling machine	610,314	Sept. 6	332	71	84	1505

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Winkley, Erastus E., Lynn, Mass., assignor to Goodyear Shoe Machinery Company, Portland, Me. Mechanism for adjusting forms of sole-laying machines	610,315	Sept. 6	334	72	84	1505
Winkley, Frank D., Madison, Wis. Oil-hole cover or cap	608,343	Aug. 2	132	33	84	681
Winkley, Frank D., Madison, Wis. Oil-hole cover or cap	608,344	Aug. 2	134	33	84	681
Winona Wagon Company. (See Hennessy, James F., assignor.)						
Winslow, Francis A. (See Winslow, William H. and F. A.)						
Winslow, Lenna R., Kansas City, Mo. Voting-machine	611,403	Sept. 27	2320	535 / 536	84	1939
Winslow, William H. and F. A., Chicago, Ill. Building construction	609,487	Aug. 23	2475	578	84	1183
Winsor & Newton. (See Taylor, John S., assignor.)						
Winter, George B., *et al.* (See Pullman, John, assignor.)						
Winter, Henry W., Boston, Mass. Heel-nailing machine	611,370	Sept. 27	2249	520 / 521 / 522	84	1927
Winter, Henry W., Boston, Mass. Heel-trimming machine	611,371	Sept. 27	2262	523	84	1929
Winter, Rudolph G., Minneapolis, Minn. Separable suspension-hinge	610,010	Aug. 30	3402	788	84	1377
Winters, Frederick V., New York, N. Y. Coupling-nut for stand-boilers	607,316	July 12	1277	272	84	263
Winters, George T., Cameron, W. Va. Washing-machine	611,306	Sept. 27	2126	491	84	1904
Winton, Alexander, Cleveland, Ohio. Bicycle	607,106	July 12	888	191	84	190
Winton, Alexander, Cleveland, Ohio. Explosive-engine	610,465	Sept. 6	607	136	84	1555
Winton, Alexander, Cleveland, Ohio. Motor-vehicle	610,466	Sept. 6	609	136 / 137	84	1555
Wire Bound Box Company. (See Uhri, Jacob, assignor.)						
Wire Grip Fastening Company of Maine. (See Cutter, Solomon M., assignor.)						
Wirley, John R. (See Brennan, Wirley, and Goldthwait.)						
Wise, Alvin A. and D., Peabody, Kans. Rotary engine	610,783	Sept. 13	1159	266 / 267	84	1683
Wise, Daniel. (See Wise, Alvin A. and D.)						
Wise, William H. (See Horner and Wise.)						
Wisse, Iman, Grand Rapids, Mich. Holdback-hook	607,499	July 19	1792	373	84	397
Witteck, Charles. (See Lancaster and Witteck.)						
Witter, William S., Ridott, Ill. Dumping end-gate for wagons	610,572	Sept. 13	799	182	84	1608
Witts, Nelson, Alma City, Minn. Rotary engine	611,307	Sept. 27	2128	491 / 492	84	1904
Wolcott, Albert G., Lenox, Ohio. Truck	609,176	Aug. 16	1684	448	84	1048
Wolf, Charles J., Memphis, Tenn. Coin-counter	611,544	Sept. 27	2575	594 / 595	84	1988
Wolf, Ernest, assignor to M. Wolf, New York, N. Y. Vessel for dispensing liquids	608,501	Aug. 2	588	132	84	772
Wolf, Hermann, Lodz, Russia. Warp-beam brake	610,784	Sept. 13	1161	267	84	1683
Wolf, Minnie. (See Wolf, Ernest, assignor.)						
Wolfe, Ira B. (See Wolfe, Robert H. and I. B.)	610,697	Sept. 13	998	231	84	1651
Wolfe, Robert H. and I. B., Tillar, Ark. Vehicle-step						
Wolgast, John F. (See Thompson, Richard, assignor.)						
Wolhaupter, David P., assignor of one-half to E. G. Siggers, Washington, D. C. Bicycle-bell	609,983	Aug. 30	3359	780	84	1368
	609,647	Aug. 23	2775	647	84	1240
Wollshlaeger, William, Port Perry, Pa. Bicycle-brake	607,724	July 19	2184	461	81	459
Wolstenholme, Thomas, Philadelphia, Pa. Shield or deflector for drawing-rollers	609,067	Aug. 16	1680	400	84	1013
Woltz, Albert M., Washington, D. C. Blowpipe						
Womelsdorff, Henry C. (See Scrogin and Womelsdorff.)						
Wood, Alfred, Folkestone, England. Link for poles, traces, &c	606,970	Aug. 9	1474	348	84	958
Wood, Alfred F., assignor of one-half to J. R. Edwards, Philadelphia, Pa. Electric snap-switch	606,884	July 5	457	98	84	90
Wood, Charles A., Milwaukee, Wis. Hose-coupling	609,488	Aug. 23	2476	578	84	1184
Wood, Charles F., Wayne, Pa., assignor to American Engineering Company, of Virginia. Automatic damper-regulator	607,900	July 26	2548	540	84	546
	608,741	Aug. 9	1023	235	84	875
Wood, Charles W., New Orleans, La. Sounding-machine	610,751	Sept. 13	1090	250	84	1669
Wood, Eugene E. (See Allen, Charles H., assignor.)						
Wood, Frank W., Indianapolis, Ind. Drive-chain	609,663	Aug. 30	3121	729 / 730	84	1322
Wood, George, Prescott, Ariz. Ter. Stamp-mill	608,629	Aug. 9	826	191	84	837
Wood, John W., Hawarden, Iowa. Extensible clothes-line prop	609,864	Aug. 30	3125	730 / 731	84	1323
Wood, Matthew P., New York, N. Y. Process of and apparatus for producing calcium carbid	607,581	July 19	1943	408	84	413
Wood, Oscar V., and F. Dutcher, Fostoria, Ohio. Signal-torch	608,742	Aug. 9	1026	235	84	876
Wood, Peter M., Ivy Lea, Canada. Safety attachment for gun-locks	608,819	Aug. 9	1194	279	84	905
Wood, Wilfred R., assignor to American Stoker Company, Dayton, Ohio. Underfeed stoker	609,602	Aug. 23	2669	623	84	1219
Wood, William A., Nashville, Tenn. Plow	608,434	Aug. 2	479	108	84	750
Wood, William G., San Francisco, Cal. Boxing-glove	610,220	Sept. 6	148	33	84	1474
Woodcock, John C., Chillicothe, Ohio. Grinding-mill	611,308	Sept. 27	2131	492 / 493	84	1905
Woodcock, Wright, J. Longthorpe, and W. Dargue, Copley, England. Machine for dyeing, sizing, and washing yarn	607,559	July 19	1902	393	84	406
Woodman, George A., assignor of one-half to W. T. Agerter, Lima, Ohio. Pneumatic tire for bicycles	609,865	Aug. 30	3129	731	84	1323
Woodmansee, Harrison, Freeport, Ill. Tightener for brace-rods	608,820	Aug. 9	1198	280	84	906
Woodruff, Merritt N., *et al.* (See Pearce, William, assignor.)						
Woodward, Charles R., Campbell, N. Y. Railway-crossing gate	608,245	Aug. 2	135	33, 34	84	681
Woodward, Elmer E., Rockford, Ill. Governor for water-wheels						
Woodward, Hattie I., *et al.* (See Woodward, Walter J., assignor.)						
Woodward, Stephen, Manchester, N. H. Knitting-machine needle	609,566	Aug. 23	2599	608	84	1206
Woodward, Thomas. (See Holland and Woodward.)						
Woodward, Walter J., assignor to H. I. Woodward, National City, D. P. N. Little, C. W. Sanders, and E. A. Harrington, Los Angeles, Cal. Wooden pipe	607,153	July 12	976	211	84	205
Woodworth, Albert C., assignor to Consolidated Car Fender Company, Providence, R. I. Car-fender	607,901	July 26	2549	541	84	547
	607,317	July 12	1278	272	84	264
Woodworth, George L., Stanford University, Cal. Internal-combustion engine	608,996	Aug. 9	1524	362	84	969
Worden, Frank A., Ypsilanti, Mich. Musical toy						
Wormser, Maurice S. (See Graeff, Friedrich W. H., assignor.)						
Worsley, Frederic S., assignor to British Blahnik Arc Light Company, Limited, London, England. Electric-arc lamp	611,162	Sept. 20	1842	494	84	1881
Worst, Warren H., and C. W. Hart, Nova, Ohio. Nut-lock	607,725	July 19	2186	461	84	460
Worth, William O., Benton Harbor, Mich. Hydrocarbon-gas engine	607,613	July 19	2000	414	84	494
Worth, William O., Chicago, Ill., assignor of two-thirds to W. R. Donaldson, Louisville, Ky., and H. W. Kellogg, Battle Creek, Mich. Motor-vehicle	607,318	July 12	1279	273 / 274	84	264
Worthington, Charles C. (See Gale, Horace B., assignor.)						
Worthington, Charles C., Irvington, N. Y. Valve-movement for pumps	607,902	July 26	2550	541 / 542	84	547

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Worthington, Charles C., Irvington, N. Y. Valve-movement for steam-engines	609,963	Aug. 30	3286	766 767	84	1354
Wrege, Richard C., Detroit, Mich. Centering-tool for lathes	606,985	July 5	605	132	84	119
Wright, Albert C., assignor of one-half to C. A. Stubbins, Britt, Iowa. Ankle-joint	608,164	July 26	3012	647	84	688
Wright, Alfred C., Birmingham, England. Drawing tubes	609,718	Aug. 23	2886	.....	84	1202
Wright, Charles D., Niles, Mich. Nut-lock	608,743	Aug. 9	1027	236	84	876
Wright, Francis T., Edinburg, Ind. Means for extracting pith or cellulose from corn-stalks	608,630	Aug. 9	827	191	84	837
Wright, Francis T., Edinburg, Ind. Railway-tie	610,935	Sept. 20	1421	.....	84	1751
Wright, Frederick W. (See Driffield, Carey, and Wright.)						
Wright, Gilbert. (See Davis and Wright.)						
Wright, James C., Louisville, Ky. Tobacco-pipe	610,839	Sept. 13	1254	289	84	1702
Wright, James E., Fall River, Wis. Respooling-wire	610,730	Sept. 13	1057	242	84	1662
Wright, John N.; Luverne, Minn. Milk-strainer	609,529	Aug. 23	2538	594	84	1195
Wright, Roger, Newcastle-upon-Tyne, England. Gas-compressor	610,573	Sept. 13	800	182 183	84	1608
Wright, Spencer D. (See Saile, Mathew, assignor.)						
Wright, Theodore, London, England. Binder	608,312	Aug. 2	251	57	84	705
Wright, William J., Pittsburg, Pa. Gas-engine	607,908	July 26	2559	543	84	549
Wright, William J., Pittsburg, Pa. Gas-engine	607,904	July 26	2563	543	84	549
Wuest, Frederick, assignor to G. H. Bishop & Co., Lawrenceburg, Ind. Tenon or back saw	607,107	July 12	889	192	84	191
Wunderlich, Herman, Borna, assignor to H. Leonhardt, Hamburg, Germany. Draft-equalizer	608,098	July 26	2894	620	84	617
Wurmbach, Carl F., Müsen, Germany. Disintegrating-machine for glue pieces	609,489	Aug. 23	2476	578	84	1184
Wyckoff, Seamans & Benedict. (See Brigham, Ernest A., assignor.)						
Wyckoff, Seamans & Benedict. (See Diss, Louis P., assignor.)						
Wyke, Thomas H., Boston, Mass. Fluid-motor for pipe-organs	609,133	Aug. 16	1806	430	84	1084
Wyl, Joseph von. (See Kirkham, John, assignor.)						
Wyllie, William L., Hoo St. Werburgh, England. Telemeter or range-finder	609,256	Aug. 16	2052	487	84	1083
Wyman, Horace. (See Goodline and Wyman.)						
Wyman, Horace, and R. Crompton, assignors to Crompton & Knowles Loom Works, Worcester, Mass. Loom	609,257	Aug. 16	2053	487	84	1084
Wyngaard, Christina V., Green Bay, Wis. Combined sofa and cabinet	607,905	July 26	2565	543	84	550
Wynn, John, Cardiff, England. Means for automatic control of gas-supply in gas cooking-stoves	611,425	Sept. 27	2369	544	84	1942
Wynne, Agar. (See Baker, Frederick, assignor.)						
Wynne, Watkin, Waverly, New South Wales. Knife attachment for linotype-machines	609,315	Aug. 16	2158	510	84	1105
Wyser, Alfred, Aarau, Switzerland. Apparatus for mercerizing	610,619	Sept. 13	878	201	84	1626
Yale & Towne Manufacturing Company. (See Lennart, Pehr J., assignor.)						
Yale & Towne Manufacturing Company. (See Mix, Frank W., assignor.)						
Yale & Towne Manufacturing Company. (See Taylor, Warren H., assignor.)						
Yarnall, John F., Altoona, Pa. Slate	611,545	Sept. 27	2580	595	84	1989
Yates, Alexander, assignor to H. H. Palmer Company, Rockford, Ill. Ear for vessels	607,390	July 12	1413	302	84	290
Yeager, Charlie E., Prairie Creek, Ind. Folding bed	609,380	Aug. 16	2254	533	84	1123
Yeager, James W., Waverly, Mo. Roller-feeding device for flour-mills	609,719	Aug. 23	2887	674 675	84	1202
Yearicks, George W., Bridesburg, Pa. Filling material for mattresses, &c.	610,986	Sept. 20	1422	.....	84	1751
Yerkes, John, St. Louis, Mo. Dowel-hole-boring machine	609,567	Aug. 23	2600	608 609	84	1207
York, George E. (See Richards and Forbes, assignors.)						
Young, Benjamin R., *et al.* (See Nelson, Nelson P., assignor.)						
Young, Clarence H., Boston, Mass. Reclining-chair	609,177	Aug. 16	1885	448	84	1048
Young, Edward S., Hartford, Conn. Portable house	611,309	Sept. 27	2134	494	84	1906
Young, Edward T., and W. A. Macdonald, Boston, Mass. Safety device for letters, &c.	607,319	July 12	1282	274	84	264
Young, Elizabeth, assignor of one-half to R. L. Young, Glasgow, Scotland. Corset attachment	611,163	Sept. 20	1843	425	84	1831
Young, Ernest W., Austin, assignor, by mesne assignments, to Morgan & Wright, Chicago, Ill. Pneumatic tire	607,402	July 12	1435	305	84	294
Young, Ernest W., Austin, assignor, by mesne assignments, to Morgan & Wright, Chicago, Ill. Pneumatic tire	607,403	July 12	1437	306	84	294
Young, Frank, and H. Bundy, Santa Ana, Cal. Billiard-cue tip	609,381	Aug. 16	2255	533	84	1123
Young, Hayes, assignor of one-third to W. Young, Cable, Ohio. Carriage-curtain catch	610,374	Sept. 6	450	98	84	1525
Young, Ida C. (See Case and Young.)						
Young, James M. (See Moore and Young.)						
Young, John N., Alameda, Cal. Wrench	607,320	July 12	1284	274	84	265
Young, Josiah N., assignor of one-half to D. S. Jones, Sunnyside, Miss. Indexer	607,781	July 19	2283	482	84	478
Young, Oliver M., Bicknell, Ind. Fruit-gatherer	606,950	July 5	545	120	84	108
Young, Robert L. (See Young, Elizabeth, assignor.)						
Young, Washington H., Indianapolis, Ind. Baling-press	610,731	Sept. 13	1058	243	84	1663
Young, Wilbert. (See Young, Hayes, assignor.)						
Youngberg, Idolf, and J. O. Nord, Ishpeming, Mich. Bootjack	609,603	Aug. 23	2670	623	84	1219
Zahn, Frank. (See Coleman, Runyon, and Zahn.)						
Zahn, Max, Artern, Germany. Obtaining lime sucrate	611,164	Sept. 20	1844	425	84	1831
Zambusky, Eduard, West Leisenring, Pa. Metallic bedstead	610,698	Sept. 13	999	232	84	1651
Zander, Hermann. (See Stocker, Meissner, and Zander.)						
Zawiejski, Ian, Vienna, Austria-Hungary. Arrangement for producing water walls on outside of buildings	609,316	Aug. 16	2159	510	84	1105
Zeal, Giles H. (See Hicks and Zeal.)						
Zehnder, William, Canal Dover, assignor of one-half to G. Weiss, Ragersville, Ohio. Shutter-operating device	611,165	Sept. 20	1845	425	84	1832
Zeidler, Edward P., Cleveland, Ohio. Drum	609,068	Aug. 16	1681	400	84	1013
Zerban, Robert J., Jr., Belleville, Ill. Traction-engine	611,166	Sept. 20	1848	425 426	84	1832
Zertuche, Emilio, Puebla, Mexico. Valve	606,906	July 5	485	105	84	96
Zesiger, John L., Cleveland, Ohio. Check for doors, &c. (Reissue)	11,684	July 26	3017	649	84	639
Ziegler, Oscar J., assignor to Stover Manufacturing Company, Freeport, Ill. Sheet-metal tank	610,574	Sept. 13	808	183	84	1609
Zimmer, Adam, and B. Roenisch, Sebewaing, Mich. Combined clod-crusher and land-roller	609,069	Aug. 16	1682	400	84	1013
Zimmer, Charles, Paris, Ark. Cotton-chopper	609,382	Aug. 16	2256	534	84	1124
Zimmerman, Elmer D., Alzada, Mont. Pistol-holder	609,317	Aug. 16	2160	511	84	1106
Zimmerman, John W., Wilmington, N. C. Awning-frame	607,108	July 12	890	192	84	191
Zimmerman, William. (See Heusch, Anton, assignor.)						
Zimmermann, Ernest A. (See Schubert, Edward A., assignor.)						
Zink, Ernest E., Kansas, Ill. Buttonhole-cutter	609,720	Aug. 23	2888	675	84	1202

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Ziskovsky, Joseph T., Cedar Rapids, Iowa. Attachment for window-screens, storm-sashes, &c	609,490	Aug. 23	2478	579	84	1184
Zoller, William, San Francisco, Cal. Filtering-faucet	609,721	Aug. 23	2889	675	84	1262
Zolper, Wilhelm, Elkton, Md. Game	607,560	July 19	1903	393	84	406
Zook, Jacob H., Gunn City, Mo. Device for raising or lowering coffins	609,070	Aug. 16	1683	401	84	1013
Zschörner, Karl A., Vienna, Austria-Hungary. Producing fibrous material from peat	610,957	Sept. 20	1462	.....	84	1758
Zuber, Henry, Hennesey, Okla. Ter. Time-card receptacle	609,604	Aug. 23	2672	624	84	1219
Zuckerman, Henry, *et al.* (See Sterne, Alfred J., assignor.)						
Zulich, William R., *et al.* (See Abbott, William O., assignor.)						
Zwack, John, Albany, N. Y. Undertaker's wagon	609,590	Aug. 23	2539	595	84	1195
Zweigbergk, Thorsten von, assignor to Walker Company, Cleveland, Ohio. Controller	607,672	July 19	2107	440	84	444
Zweigbergk, Thorsten von, assignor to Walker Company, Cleveland, Ohio. Contact-finger for controllers or electric switches	611,087	Sept. 20	1698	391	84	1803
Zweigbergk, Thorsten von, assignor to Walker Company, Cleveland, Ohio. Governing, reversing, and braking controller	611,088	Sept. 20	1699	391 392	84	1804
Zweigbergk, Thorsten von, assignor to Walker Company, Cleveland, Ohio. Method of and means for controlling and cutting out electric motors	611,089	Sept. 20	1705	392	84	1805
Zweigbergk, Thorsten von, assignor to Walker Company, Cleveland, Ohio. Controller	611,090	Sept. 20	1708	392 393	84	1805

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Abraham, Ferdinand, Boston, Mass. Tobacco-pipe	29,326	Sept. 13	84	1720
Adams, John M., Chicago, Ill. Head or foot for bedsteads	29,423	Sept. 27	84	2012
Adams, Walter S., Philadelphia, Pa. Truck side-bar	29,309	Sept. 6	84	1577
Adams & Westlake Company. (See Peters, William M., assignor.)				
Ahrenfeldt, Charles J., New York, N. Y. Cup	29,122	Aug. 2	84	796
Ahrenfeldt, Charles J., New York, N. Y. Covered dish	29,123	Aug. 2	84	796
Ahrenfeldt, Charles J., New York, N. Y. Plate	29,169	Aug. 9	84	971
Albach, William H., New York, N. Y. Stove	29,074	July 19	84	501
Alitto, Antonio, Chicago, Ill. Cooking-range	29,145	Aug. 2	84	800
Altop, Martin L., Sacramento, Cal. Finger-board guide	29,045	July 12	84	305
American Lithographic Company. (See Kaiser, Frederick A. C., assignor.)				
Anderson, William H., New York, N. Y. Butt-hinge	29,331	Sept. 20	84	1862
Appleton, Robert M., Boston, Mass. Undervest	29,085	July 19	84	503
Armour & Co. (See Conway, Stephen S., assignor.)				
Armstrong, Ezra A., Samaria, Mich., assignor of one-half to A. W. Lefler, Toledo, Ohio. Paper-box blank	29,251	Aug. 16	84	1137
Arnstine, Benjamin V. and H. W., Cleveland, Ohio. Show-case	29,035	July 12	84	303
Arnstine, Harry W. (See Arnstine, Benjamin V. and H. W.)				
Attaway, Thomas W., Hart county, Ga. Rein-guide bracket for hames	29,242	Aug. 16	84	1136
Azeez, Alice A., New York, N. Y. Fabric	29,351	Sept. 13	84	1724
Bailey, Charles A., assignor to J. & E. Stevens Company, Cromwell, Conn. Toy bank	29,049	July 12	84	306
Balcome, Herbert A., Boston, Mass. Motor and fan case	29,374	Sept. 20	84	1860
Bantz, Frederick W., assignor to W. C. and J. D. Padgitt, Dallas, Tex. Stirrup	29,415	Sept. 27	84	2010
Barber, Edward, Hope Valley, R. I. Sarcophagus	29,012	July 5	84	141
Barchard, Walter, Chicago, Ill. Hot-water holder	29,026	July 12	84	301
Barkley, Robert J., Chanute, Kans. Carton-blank	29,094	July 26	84	640
Barkley, Robert J., Chanute, Kans. Carton filler	29,299	Sept. 6	84	1575
Barnes, George A. E., Depew, N. Y. Sign	29,168	Aug. 9	84	975
Baron, Albert L., New York, N. Y. Lamp-base	29,173	Aug. 9	84	972
Barrie, Alexander, assignor to Court Perfumery Company, New York, N. Y. Bottle	29,126	Aug. 2	84	796
Barrie, Alexander, assignor to Court Perfumery Company, New York, N. Y. Bottle	29,127	Aug. 2	84	797
Beatty-Brady Glass Company. (See Croskey, John H., assignor.)	29,202	Aug. 9	84	977
Benkert, William C., Philadelphia, Pa. Shoe-upper blank				
Bens, William. (See Diacont, Frank J., assignor.)				
Bens, William, Providence, R. I., assignor to Wiener Brothers, New York, N. Y. Handle for button-hooks or similar articles	29,098	July 26	84	640
Bernhard, Morris, Buffalo, N. Y. Portière	29,209	Aug. 9	84	978
Bippart, Achill, Newark, N. J. Back and shank for buttons or studs	29,225	Aug. 16	84	1132
Birk, Christian, Buffalo, N. Y. Spoke or nipple wrench	29,339	Sept. 13	84	1722
Bisler, Gustav A., Philadelphia, Pa. Box-lid	29,172	Aug. 9	84	973
Blakesley, Gilbert H., Bristol, Conn. Garter	29,204	Aug. 9	84	977
Blase, William O., Wilkes-Barre, Pa. Cleaner and smoke-deflector	29,298	Aug. 30	84	1249
Bogert, Matthew J., Demarest, N. J. Wooden box	29,252	Aug. 16	84	1137
Bossert, William F., Utica, N. Y. Fuse-box	29,344	Sept. 13	84	1723
Bowen, Joseph W., Philadelphia, Pa. Last	29,161	Aug. 2	84	803
Bowick, Thomas G., London, England. Motor-float	29,151	Aug. 2	84	801
Bowman, William, Medicine Hat, Canada. Ink-well	29,361	Sept. 20	84	1858
Boyle, Robert E., Norristown, Pa. Game-board	29,081	July 19	84	503
Bradley & Hubbard Mfg. Co. (See Linsley and Crooke, assignors.)				
Brand, George, Brooklyn, N. Y. Bedstead-rail member	29,002	July 5	84	139
Brandt, Harry M., and E. Easley, Canton, Kans. Butter-stamping block	29,302	Sept. 6	84	1575
Brewer, W. M., *et al.* (See Goode, Frank R., assignor.)				
Bromley, Edward, *et al.* (See Petzold, Adolph, assignor.)				
Bromley, John H., *et al.* (See Petzold, Adolph, assignor.)				
Brower, Bloomfield, New York, N. Y. Writing-pad	29,253	Aug. 16	84	1138
Brown, Grace P., New York, N. Y. Bicycle or similar stocking	29,067	July 19	84	504
Brown, John W., Jr., Philadelphia, Pa. Grinding-disk for mills	29,029	July 12	84	302
Brown, John W., Jr., Philadelphia, Pa. Fruit-seeder disk	29,030	July 12	84	302
Brown Saddle Company. (See Brown, Sylvester J., assignor.)				
Brown, Sylvester J., Denver, Colo., assignor, by mesne assignments, to Brown Saddle Company, Elyria, Ohio. Bicycle-saddle seat	29,247	Aug. 16	84	1137
Brown, William A., New York, N. Y. Spoon	29,354	Sept. 20	84	1856
Brown, William A., New York, N. Y. Spoon	29,355	Sept. 20	84	1856
Browne, William G., Kingston, N. Y. Can-opener	29,231	Aug. 16	84	1133
Brownell, Frank A., assignor to Eastman Kodak Company, Rochester, N. Y. Photographic-camera body	29,376	Sept. 20	84	1861
Brownell, Ralph E., assignor to W. H. Dietz, Chicago, Ill. Savings-bank	29,133	Aug. 2	84	798
Brubaker, Andrew, Ashland, Ohio. Combined funnel and measure	29,377	Sept. 20	84	1861
Bryant, Louis E. (See Overton and Bryant.)				
Bucher & Gibbs Plow Company. (See Ream, George W., assignor.)	29,416	Sept. 27	84	2011
Buntin, John C., Mitchellville, Tenn. Stirrup	29,102	Aug. 2	84	803
Buren, Elmer P., Santa Ana, Cal. Trousers-protector				
Burrous, R. O., *et al.* (See Goode, Frank R., assignor.)				
Bushnell, Lemuel M. (See Vaughan and Bushnell.)				
Bushnell, Lemuel M., and S. S. Vaughan, assignors to Vaughan & Bushnell Manufacturing Company, Chicago, Ill. Wrench	29,109	July 26	84	644
Butler, Dennis, Custer, S. D. Railway-spike	29,189	Aug. 9	84	974
Byrnes, William E., Cleveland, Ohio. Basin-clamp	29,232	Aug. 16	84	1133
Calcium King Lamp Company. (See White, Frederick L., assignor.)				
Caldwell, Henry W., Pulaski, N. Y. Buggy-top support	29,156	Aug. 2	84	801
Canedy, Ernest E., North Adams, Mass. Holder for shoe-racks	29,334	Sept. 13	84	1721
Carey, George F., New York, N. Y. Tip for hay-forks	29,066	July 19	84	500

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Carver, Susan, Sharon, Pa. Button-plate	29,328	Sept. 13	84	1721
Case, Cromwell O., assignor to P. & F. Corbin, New Britain, Conn. Casing for door-checks	29,042	July 12	84	304
Caspar, Ruben, Attleborough, Mass. Cuff-holder	28,972	July 5	84	134
Chamberlin, Charles E., Detroit, Mich. Bar	29,345	Sept. 13	84	1723
Clark, Alvah B., Springfield, Mass. Ice-shaver	28,988	July 5	84	136
Clauss, Henrie, Fremont, Ohio. Razor-sack	29,020	July 12	84	300
Clowes, George H. (See Goeltz, William F., assignor.)				
Clowes, George H. (See White, Frederick L., assignor.)				
Clulee, John, assignor to Simpson, Hall, Miller & Company, Wallingford, Conn. Handle for spoons, forks, &c.	29,215	Aug. 16	84	1131
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Handle for spoons, &c.	29,261	Aug. 23	84	1276
Coffman, James H., Columbus, Ohio, assignor to Wisconsin Chair Company, Port Washington, Wis. Bent-wood chair-seat	29,308	Sept. 6	84	1575
Coles, Walter S., Cincinnati, Ohio. Whist-tray	29,004	July 5	84	139
Comonn, Isaac, New York, N. Y. Muff	29,256	Aug. 23	84	1275
Computing Scale Company. (See Oziss, Orange O., assignor.)				
Conboy, Daniel, Toronto, Canada. Plate for buggy-tops	29,419	Sept. 27	84	2011
Conley, Lewis S. (See Lake and Conley.)				
Conway, Stephen S., assignor to Armour & Co., Chicago, Ill. Meat-can	28,989	July 5	84	136
Co-Operative Foundry Company. (See Kennedy, Thomas R., assignor.)				
Co-Operative Foundry Company. (See Kennedy and King, assignors.)				
Corbin, Donald R., New York, N. Y. Scarf-pin or similar article	29,055	July 19	84	498
Corral, Francisco J. del, assignor to Enterprise Manufacturing Company of Pennsylvania, Philadelphia, Pa. Bung-hole borer	29,024	July 12	84	301
Court, Charles S. (See Crees and Court.)				
Court Perfumery Company. (See Barrie, Alexander, assignor.)				
Crawford, Samuel S., *et al.* (See Ives, Henry, assignor.)				
Crees, Eustace, and C. S. Court, Providence, R. I., assignors to H. H. Curtis, North Attleborough, Mass. Handle for button-hooks or similar articles	29,016	July 12	84	300
Crees, Eustace, and C. S. Court, Providence, R. I., assignors to G. K. Webster, North Attleborough, Mass. Back for brushes or similar articles	29,216	Aug. 16	84	1131
Crocker, Ara D., assignor to Crocker Chair Company, Sheboygan, Wis. Chair or stool	29,395	Sept. 20	84	1864
Crocker, Ara D., assignor to Crocker Chair Company, Sheboygan, Wis. Chair or stool	29,396	Sept. 20	84	1864
Crocker, Ara D., assignor to Crocker Chair Company, Sheboygan, Wis. Chair or stool	29,397	Sept. 20	84	1864
Crocker Chair Company. (See Crocker, Ara D., assignor.)				
Crooke, Reuben F. (See Linsley and Crooke.)				
Crooker, Herman D., Alvin, Tex. Clothes-pounder	29,412	Sept. 27	84	2010
Crosley, John H., assignor to Beatty-Brady Glass Company, Dunkirk, Ind. Pitcher	29,364	Sept. 20	84	1858
Cruickshank, Arthur B., London, England, assignor to himself, and J. Frace, San Francisco, Cal. Syringe-bulb	29,409	Sept. 27	84	2009
Cumming, Paul R., assignor of one-half to C. I. Pettibone, Kansas City, Mo. Window-cleaner	28,990	July 5	84	136
Curtis, Henry H. (See Crees and Court, assignors.)				
Curtis, Henry H. (See Diacont, Frank J., assignor.)				
Curtis, Henry H. (See Straker, Joseph E., Jr., assignor.)				
Cushman, Joseph W., New York, N. Y. Oil-cup or oiler	29,076	July 19	84	502
Dampeer, William W., Wesson, Miss. Rack-bar for sash-locks	29,147	Aug. 2	84	800
Danum, William C., Franklin, La. Stovepipe-section and hot-water tank	29,027	July 12	84	302
Davies, Thomas W., St. Louis, Mo., assignor to himself and F. T. Long. Shaft-tug	29,393	Sept. 20	84	1862
Davis, Francis G., assignor to H. H. Babcock Company, Watertown, N. Y. Ambulance-body	29,392	Sept. 20	84	1863
De Bevoise, Charles R., New York, N. Y. Underwaist	29,100	July 26	84	642
De Bevoise, Charles R., New York, N. Y. Underwaist	29,424	Sept. 27	84	2012
Deem, Miller M., assignor of one-half to P. & F. Manufacturing Co., Reading, Pa. Pommel-cushion for velocipede-saddles	29,078	July 19	84	502
Dennett, Fred A., Sheboygan, Wis. Bent-wood chair-seat	29,235	Aug. 16	84	1134
Dewey, Walter E., Philadelphia, Pa. Vaginal syringe	29,141	Aug. 2	84	799
Diacont, Frank J., assignor to W. Bens, Providence, R. I. Handle for button-hooks or similar articles	29,017	July 12	84	300
Diacont, Frank J., Providence, R. I., assignor to H. H. Curtis, North Attleborough, Mass. Handle for button-hooks or similar articles	29,018	July 12	84	300
Diesel, Conrad, Chicago, Ill. Sheet-metal can	29,180	Aug. 9	84	973
Diesterweg, Louis, assignor of one-half to G. J. Fliehmann and G. Ittner, St. Louis, Mo. Box-cover brace	29,391	Sept. 20	84	1863
Dietz, William H. (See Brownell, Ralph E., assignor.)				
Dingee, William W., assignor to J. I. Case Threshing Machine Company, Racine, Wis. Separator-sieve	28,987	July 5	84	135
Dittmar, John, New York, N. Y. Cigar-case	29,221	Aug. 16	84	1132
Dixon, Robert M., East Orange, N. J. Hose-coupling member	29,148	Aug. 2	84	800
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating and Lighting Company, of New York. Gas-receiver	29,174	Aug. 9	84	972
Dobbie, John, Leith, Scotland. Reversible cutter for stone-dressing	29,185	Aug. 9	84	974
Dodge, Charles H. (See Rothermel and Dodge.)				
Dolby, Thomas G. F., Elgin, Ill. Tub-fastening	29,079	July 19	84	501
Donahoe, Hedley J., Chicago, Ill. Fence-post	29,316	Sept. 6	84	1578
Donaldson, Elizabeth C., Detroit, Mich. Mustache-guard	29,059	July 19	84	498
Donnell, Harry E., assignor to S. F. Hayward & Company, New York, N. Y. Hose-reel spool	29,104	July 26	84	643
Dowdall, James T. (See Lintner and Dowdall.)				
Drake, William F., *et al.* (See Ives, Henry, assignor.)				
Duke, John F., London, England. Flag or banner	29,052	July 19	84	497
Dunbar, Anna E., Albany, N. Y. Body for waist-belts	29,097	July 26	84	641
Dunn, Claude A., Denver, Colo. Sprocket-wheel	29,142	Aug. 2	84	799
Eastman, George P., Toronto, Canada. Frame for electrically-operated cloth-cutters	29,000	July 5	84	138
Eckhardt, Fredrick C., North Wales, Pa. Hat	29,006	July 5	84	139
Edison, George M., and J. Wheeler, Grand Rapids, Mich. Hot-air furnace	29,295	Aug. 30	84	1430
Egge, Conrad, Boston, assignor to James E. Blake & Company, Attleborough, Mass. Back for brushes or similar articles	29,121	Aug. 2	84	796
Einfeld, William J. (See Harris, Max, assignor.)				
Eldon, Charles H., Williamsport, Pa. Handle-bar grip for bicycles	28,992	July 5	84	136
Eldridge, Herbert M. and R. C., Niagara, Canada. Stall-fixture	29,071	July 19	84	501
Eldridge, Reuben C. (See Eldridge, Herbert M. and R. C.)				
Enterprise Manufacturing Company. (See Corral, Francisco J. del, assignor.)				
Essley, Elmer. (See Brandt and Essley.)	29,058	July 19	84	498
Eustis, John P., Newton, Mass. Tea-strainer				
Facer Forged Steel Car Wheel and Locomotive Wheel Company. (See Facer, James A., assignor.)				
Facer, James A. assignor to Facer Forged Steel Car Wheel and Locomotive Wheel Company, Philadelphia, Pa. Car-wheel blank	29,388	Sept. 20	84	1863

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Farmer, Hiram W. (See Linton and Farmer.)				
Farnham, Paulding, Great Neck, assignor to Tiffany & Company, New York, N. Y. Spoon, fork, or similar article	29,408	Sept. 27	84	2008
Fauser, Gustave M., New York, assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	29,352	Sept. 13	84	1724
Faxon, Alfred A., Philadelphia, Pa. Box	29,057	July 19	84	498
Fay, Ophelia L., Elyria, Ohio. Stocking	29,254	Aug. 16	84	1133
Feder, Harry, New York, N. Y. Skirt-binding	29,350	Sept. 13	84	1724
Fefel, Henry H., New York, N. Y., assignor to Multiple Power Company, of West Virginia. Bicycle-frame	28,991	July 5	84	136
Fensom, George H., Toronto, Canada. Badge	29,013	July 12	84	299
Ferris, Fred H., Mechanicsville, N. Y. Arm for flagstaff-holders	29,228	Aug. 16	84	1133
Field, Benjamin F. (See Shedd and Field.)				
Fincke, Henry C., New York, N. Y. Puzzle-board	29,132	Aug. 2	84	797
Fisher, Joseph E. (See Riley and Fisher.)				
Flaccus, George A., Wheeling, W. Va. Bottle	29,331	Sept. 13	84	1721
Fleisch, Jacob H., New York, N. Y. Combination-garment	29,425	Sept. 27	84	2012
Fleischman, William H., Buffalo, N. Y. Corner-piece	29,150	Aug. 2	84	800
Fleming, Richard, Lynn, Mass., assignor to General Electric Company, of New York. Casing for lamps	29,301	Sept. 6	84	1575
Fletcher, Americus V., Athol, Mass. Cooking-range	29,084	July 12	84	303
Fliehmann, George J., *et al.* (See Diesterweg, Louis, assignor.)				
Fliehmann, George J., St. Louis, Mo., assignor of one-half to G. Ittner. Tag-holder	29,329	Sept. 13	84	1721
Ford, William W., Carthage, Tenn. Tobacco-plug	28,967	July 5	84	133
Foster, Theodore W., Providence, R. I. Handle for nail-files, &c.	29,262	Aug. 23	84	1276
Fowler, Arthur H., Philadelphia, Pa., assignor to Fowler & Wolfe Manufacturing Company, of Pennsylvania. Radiator	29,182	Aug. 9	84	973
Fowler & Wolfe Manufacturing Company. (See Fowler, Arthur H., assignor.)				
Fox, William S., Philadelphia, Pa. Bottle	28,969	July 5	84	133
Frace, John. (See Cruickshank, Arthur B., assignor.)				
Francis, George, Columbus, Ohio. Iuk-well	29,362	Sept. 20	84	1858
Frank, Ferdinand, Munich, Germany. Gong	29,248	Aug. 16	84	1137
Frank M. Whiting & Company. (See Theobald, Jean G., assignor.)				
Freeman, Herbert H., Pierre, S. D. Bottle	29,092	July 26	84	640
Gaisman, Henry J., New York, N. Y. Waist-belt	29,037	July 12	84	304
Gallaway, Perry C., Abbott, Tex. Rein-holder	29,266	Aug. 23	84	1277
Galvin, James A., New York, N. Y. Washboard	29,073	July 19	84	501
Gaskill, Joseph, Trenton, N. J. Rope-cleat	29,330	Sept. 13	84	1721
Gates, Philetus W., Chicago, Ill. Frame for rock and ore crushers	29,155	Aug. 2	84	801
Gebhardt, Martin, New York, N. Y. Ring	29,353	Sept. 20	84	1856
General Electric Company. (See Fleming, Richard, assignor.)				
General Electric Company. (See Moody, Walter S., assignor.)				
General Electric Company. (See Priest, Edward D., assignor.)				
General Electric Company. (See Willard, Ben, assignor.)				
General Electric Company. (See Wirt, Herbert C., assignor.)				
General Incandescent Arc Light Company. (See Klein, Charles J., assignor.)				
Germer, Edward G., Erie, Pa. Heating-stove	29,305	Sept. 6	84	1576
Giese, August, New York, N. Y. Faucet-body	29,025	July 12	84	301
Giles, William B., New York, N. Y. Game-board	29,115	July 26	84	645
Gilfillan, Essington N., Chicago, Ill. Blank or pattern for stamped washboards	29,187	Aug. 9	84	974
Girtanner, Alice, New York, N. Y. Member for manicure-scissors	28,974	July 5	84	134
Gleason, Elliott P. (See MacIntire, George R., assignor.)				
Gnichwitz, Rudolph, Ashbourne, assignor to Mather Manufacturing Co., Philadelphia, Pa. Font of printing-type	29,080	July 19	84	502
Goeltz, William F., assignor to G. H. Clowes, Waterbury, Conn. Lamp-bracket	29,407	Sept. 27	84	2009
Goldschelder, Friedrich, Vienna, Austria-Hungary. Statuette	29,358	Sept. 20	84	1857
Goldstein, Minnie, San Francisco, Cal. Game-board	29,005	July 5	84	139
Goltra, Edward F., St. Louis, Mo. Car-body bolster	29,421	Sept. 27	84	2011
Goode, Frank R., Decatur, assignor to R. O. Burrous and W. M. Brewer, Pierson Station, Ill. Rope and wire holder	29,310	Sept. 6	84	1577
Gorham Manufacturing Company. (See Codman, William C., assignor.)				
Green, Arthur, Atlanta, Ga. Cone for roll-paper	29,264	Aug. 23	84	1276
Greger, Thomas P., Philadelphia, Pa. Manhole-cover	29,312	Sept. 6	84	1577
Greger, Thomas P., Philadelphia, Pa. Manhole-frame	29,313	Sept. 6	84	1577
Guett, Monroe, Hartford, Conn. Switch-contact	28,984	July 5	84	135
Gustin, Henry A., Cambridge, Mass. Bicycle-crank	29,143	Aug. 2	84	799
H. H. Babcock Company. (See Davis, Francis G., assignor.)				
Haaz, Ignatius. (See Whitney and Haaz.)	29,375	Sept. 20	84	1861
Hadden, Maurice B., Savannah, N. Y. Paring-knife				
Hadley, George W., Chicopee, assignor to Lamb Manufacturing Company, Chicopee Falls, Mass. Side bar for bicycle-pedals	29,144	Aug. 2	84	799
Hall, Joseph, Leeds, England. Finishing roll or cylinder	29,343	Sept. 13	84	1723
Halleck, William C., assignor of one-half to A. G. Kalb, New York, N. Y. Pessary	29,408	Sept. 27	84	2009
Handiges, Philip T. (See Simpson and Handiges.)				
Harris, Max, assignor of one-half to W. J. Einfeld, Philadelphia, Pa. Puzzle-board	29,249	Aug. 16	84	1137
Haudel, Fritz, Boston, Mass. Frame for generating sets	29,375	Sept. 20	84	1860
Haviland, Charles E., Limoges, France. Pitcher	28,970	July 5	84	133
Haworth, Julia E. and S., Southport, England. Butter-curler	29,081	July 12	84	302
Haworth, Sam. (See Haworth, Julia E. and S.)				
Hayden, Nicholas, and C. F. C. Wurst, St. Paul, Minn. Calendar-casing	29,137	Aug. 2	84	798
Heasley, Jacob M., Pittsburg, Pa. Envelop	29,360	Sept. 20	84	1857
Heaton, John S., Philadelphia, Pa. Skirt-hanger	29,088	July 12	84	304
Heergeist, Charles W., Oak Lane, assignor to Mather Manufacturing Co., Philadelphia, Pa. Font of printing-type	29,272	Aug. 23	84	1278
Heideger, Frank J., Bridgewater, assignor to Phœnix Glass Company, Pittsburg, Pa. Shade	29,139	Aug. 2	84	797
Heinig, Frank, Winnetka, Ill. Cabinet	29,358	Sept. 20	84	1864
Heitmann, Henry, Miamisburg, Ohio. Cigar	29,089	July 26	84	640
Heitmann, Henry, Miamisburg, Ohio. Cigar	29,090	July 26	84	640
Henley, Albert, Lawrence, Kans. Wire fence	29,160	Aug. 2	84	802
Hewes, James A., Melrose, Mass. Suspender-end	29,208	Aug. 9	84	977
Hill, George W., Blue Ridge, Mo. Hammer	29,021	July 12	84	301
Hill, Sylvester B., Chicopee, Mass. Bicycle-frame	29,077	July 19	84	502
Hirschl, Charles A., Allegheny, assignor to Pittsburg Lamp and Brass Company, Pittsburg, Pa. Clock-frame	29,300	Sept. 6	84	1575
Hoegee, William H. (See Kennedy, John M., assignor.)				
Hoffman, Charles O., *et al.* (See Kelley, Calhoun L., assignor.)				
Hogg & Son, William J (See Parker, Frederic M., assignor.)				
Holcombe, John H. L., U. S. Navy. Badge	29,054	July 19	84	498

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Holland, Mary C. (See Holland, Timothy, assignor.)				
Holland, Timothy, assignor to M. C. Holland, Chicago, Ill. Radiator-section	29,294	Aug. 30	84	1430
Holland, Timothy, assignor to M. C. Holland, Chicago, Ill. Radiator	29,306	Sept. 6	84	1576
Hollands Manufacturing Company. (See Hough, Robert B., assignor.)				
Hope, John and John, Jr., Providence, R. I. Frame for pantograph engraving-machines	28,996	July 5	84	137
Hough, Robert B., assignor to Hollands Manufacturing Company, Erie, Pa. Wrench-jaw	29,338	Sept. 13	84	1722
Howard, Andrew, Wilkinsburg, Pa. Globe or similar article	29,128	Aug. 2	84	797
Hull, Scott H., Oskaloosa, Iowa. Harness-D	29,335	Sept. 13	84	1721
Hulse, Charlottie G., Newark, N. J. Fan	29,165	Aug. 9	84	971
Hussey, Patrick L., Dayton, Ohio. Bicycle crank-hanger	29,246	Aug. 16	84	1136
Huntington, Arthur S., Omaha, Nebr. Legging	29,305	Aug. 9	84	977
I. B. Kleinert Rubber Company. (See Kleinert, Isaac B., assignor.)				
Illinois Glass Company. (See Levis, Robert H., assignor.)	29,258	Aug. 23	84	1275
Isbister, William H., Philadelphia, Pa. Ornamental album-cover				
Ittner, George. (See Fliehmann, George J., assignor.)				
Ittner, George, *et al.* (See Diesterweg, Louis, assignor.)	29,411	Sept. 27	84	2009
Ives, Arthur H., Minneapolis, Minn. Cover for ice-cream tubs	29,001	July 5	84	138
Ives, Henry, assignor of one-half to S. F. Crawford and W. F. Drake, Pueblo, Colo. Mattress				
J. & E. Stevens Company. (See Bailey, Charles A., assignor.)				
J. I. Case Threshing Machine Company. (See Dingee, William W., assignor.)	29,260	Aug. 23	84	1276
Jackson, Austin F., Taunton, Mass. Candlestick	29,039	July 12	84	304
Jacobs, Charles H., Detroit, Mich. Hoop	29,008	July 5	84	139
Jacobs, Jacob, Brooklyn, N. Y. Tile-band	29,040	July 12	84	304
Jacobson, Reynold O., Bangor, Me. Boot-calk	29,063	July 19	84	499
Jackson, Harry A., Searsborough, Iowa. Ribbon-clasp	29,323	Sept. 6	84	1579
Jaeger, Otto, and G. Schmiedel, New York, N. Y. Textile fabric	29,324	Sept. 13	84	1720
Jameson, William A., Niagara Falls, N. Y. Handle for spoons, &c				
James E. Blake & Company. (See Egge, Conrad, assignor.)				
James E. Blake & Company. (See Straker, Joseph E., assignor.)	29,320	Sept. 6	84	1579
Jewell, Major R., Seneca Falls, N. Y. Game-board	28,968	July 5	84	133
Jenks, Barton P., Boston, Mass. Candlestick	29,359	Sept. 20	84	1857
Jones, Joshua R., Philadelphia, Pa. Book-cover	29,233	Aug. 16	84	1134
Jonsson, Nils P., Omaha, Nebr. Shield for sash-pulleys				
Kabis, Leopold, administrator. (See Moore, Thomas.)				
Kaiser, Frederick A. C., Hoboken, N. J., assignor to American Lithographic Company, New York, N. Y. Box	29,274	Aug. 30	84	1427
Kalb, Albert G. (See Halleck, William C., assignor.)				
Kapp, John L. (See Kapp, Levi M. and J. L.)	29,307	Sept. 6	84	1576
Kapp, Levi M. and J. L., La Grange, Ind. Member of a pair of tongs	29,130	Aug. 2	84	797
Kaye, Edward, Moon, assignor to Phœnix Glass Company, Pittsburg, Pa. Shade	28,986	July 5	84	135
Kelley, Calhoun L., assignor of three-fourths to C. O. Hoffman, J. P. Tribble, and V. McKay, Kennett, Mo. Stump-burner	29,028	July 12	84	302
Kennedy, Dwight B., Oakmont, Pa. Car-truck frame	28,998	July 5	84	138
Kennedy, John E., Montreal, Canada. Wardrobe-case				
Kennedy, John M., assignor of one-half to W. H. Hoegee, Los Angeles, Cal. Flag or similar article	29,053	July 19	84	497
Kennedy, John W., assignor to Sill Stove Works, Rochester, N. Y. Water-front for stoves	29,183	Aug. 9	84	973
Kennedy, John W., assignor to Sill Stove Works, Rochester, N. Y. Fire-pot lining	29,184	Aug. 9	84	974
Kennedy, Thomas R., assignor to Co-Operative Foundry Company, Rochester, N. Y. Heating-stove	29,075	July 19	84	501
Kennedy, Thomas R., and E. J. King, assignors to Cooperative Foundry Company, Rochester, N. Y. Heating-stove	29,398	Sept. 20	84	1863
Kerns, Elmer E., Bradford, Pa. Badge	29,116	Aug. 2	84	795
King, Edward J. (See Kennedy and King.)	29,417	Sept. 27	84	2011
Kirkpatrick, Thomas J., Springfield, Ohio. Velocipede-saddle	29,158	Aug. 2	84	802
Kitselman, Alva L., Ridgeville, Ind. Wire fence	29,159	Aug. 2	84	802
Kitselman, Alva L., Ridgeville, Ind. Wire fence				
Klaas, Henry. (See Strahl, Philip C., assignor.)				
Klein, Charles J., New York, N. Y., assignor to General Incandescent Arc Light Company, of New York. Cut-out cabinet	29,154	Aug. 2	84	801
Kleinert, Isaac B., assignor to I. B. Kleinert Rubber Company, New York, N. Y. Skirt-facing	29,084	July 19	84	508
Kolb, Charles W., Philadelphia, Pa. Loaf of bread	29,273	Aug. 23	84	1278
Kramer, Meyer, Norway, Mich. Rock-drill	29,296	Aug. 30	84	1430
Kranz, Louis, assignor to Waite, Thresher Company, Providence, R. I. Handle for button-hooks or similar articles	29,213	Aug. 16	84	1131
Kranz, Louis, assignor to Waite, Thresher Company, Providence, R. I. Handle for button-hooks or similar articles	29,214	Aug. 16	84	1131
Lake, David, Philadelphia, Pa., and L. S. Conley, Hammonton, N. J. Flag-holder	29,051	July 12	84	306
Lamb Manufacturing Company. (See Hadley, George W., assignor.)	29,062	July 19	84	499
Lauber, Simon C., Toledo, Ohio. Tag-fastener	29,111	July 26	84	644
Leechman, George D., Coventry, England. Tandem-velocipede frame				
Leffer, A. W. (See Armstrong, Ezra A., assignor.)	29,293	Aug. 30	84	1429
Leitz, Mary E., Philadelphia, Pa. Canopy for oil-stoves, &c	29,138	Aug. 2	84	798
Leveque, Cyrille, Toronto, Canada. Index-book	29,170	Aug. 9	84	972
Lewis, Robert H., Alton, Ill., assignor to Illinois Glass Company, of Illinois. Bottle				
Lewis, Milford. (See Schleicher, Lewis, and Swan.)				
Linsley, Charles F., and R. F. Crooke, assignors to Bradley & Hubbard Mfg. Co., Meriden, Conn Lamp-body	29,223	Aug. 16	84	1132
Lintner, William T., and J. T. Dowdall, Gloversville, N. Y. Glove	29,096	July 19	84	504
Linton, William D., and H. W. Farmer, Patoka, Ill. Hog-ring	29,107	July 26	84	643
Long, Frank T. (See Davies, Thomas W., assignor.)	28,976	July 5	84	134
Loring, Abbott, Boston, Mass. Atomizer				
Lowell Manufacturing Company. (See Sauer, Emil G., assignor.)	28,979	July 5	84	134
Loynd, Thomas, Worcester, Mass. Ear for vessels	29,366	Sept. 20	84	1856
MacIntire, George R., assignor of one-half to E. P. Gleason, New York, N. Y. Electric lamp	29,367	Sept. 20	84	1859
MacIntire, George R., assignor of one-half to E. P. Gleason, New York, N. Y. Electric lamp	29,368	Sept. 20	84	1859
MacIntire, George R., assignor of one-half to E. P. Gleason, New York, N. Y. Electric lamp	29,369	Sept. 20	84	1859
MacIntire, George R., assignor of one-half to E. P. Gleason, New York, N. Y. Electric lamp	29,050	July 12	84	305
Macker George A., Westborough, Mass. Saddle-seat support for bicycles	29,117	Aug. 2	84	795
Mackoy, Bettie J., Rosedale, Kans. Badge				
Maddock, Thomas, *et al.* (See Weihman, Henry A., assignor.)	29,044	July 12	84	305
Magnusen, James, Chicago, Ill. Vault-light	29,399	Sept. 20	84	1865
Mahony, Michael, Troy, N. Y. Vault-light	29,149	Aug. 2	84	800
Mantz, John A., Jersey City, N. J. Jet for lime-lights	29,197	Aug. 9	84	976
Marsden, James, Wigan, England. Pattern-chart	29,198	Aug. 9	84	976
Marsden, James, Wigan, England. Pattern-chart	29,199	Aug. 9	84	976

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Marsden, James, Wigan, England. Pattern-chart	29,200	Aug. 9	84	976
Marsden, James, Wigan, England. Pattern-chart	29,201	Aug. 9	84	977
Martin, Samuel W., Springfield, Ohio. Gas stove or heater	29,237	Aug. 16	84	1134
Martin, Samuel W., Springfield, Ohio. Gas stove or heater	29,238	Aug. 16	84	1135
Martin, Samuel W., Springfield, Ohio. Gas stove or heater	29,239	Aug. 16	84	1135
Martin, Thomas N., Omaha, Nebr. Check hook	29,382	Sept. 20	84	1862
Mather Manufacturing Co. (See Gnichwitz, Rudolph, assignor.)				
Mather Manufacturing Co. (See Heergeist, Charles W., assignor.)	29,208	Aug. 9	84	978
Maul, Hugo, Rahway, N. J. Trimming braid				
McCallum, Irving, *et al.* (See Rose, Arthur M., assignor.)				
McCallum, William H., *et al.* (See Rose, Arthur M., assignor.)	29,060	July 19	84	499
McGinn, Charles, Hartford, Conn. Bottle	29,342	Sept. 13	84	1722
McGuire, John A., and R. S. Williams, Celeste, Tex. Agricultural hoeing-wheel				
McKay, Virgil, *et al.* (See Kelley, Calhoun L., assignor.)	29,153	Aug. 2	84	801
McMannon, Miller H., and A. H. Powers, Waterloo, Ala. Hame-hook				
McRae, Arthur A., assignor to McRae & Keeler, Attleborough, Mass. Badge or similar article	29,014	July 12	84	299
McRae & Keeler. (See McRae, Arthur A., assignor.)	28,975	July 5	84	134
Meinecke, Christian W., Jersey City, N. J. Tip for atomizers or similar articles				
Metzger, Ferdinand F. (See Riedel and Metzger.)	29,321	Sept. 6	84	1579
Miles, William, Toronto, Canada. Game-board				
Millhiser, Gustavus, assignor to Millhiser Manufacturing Company, Richmond, Va. Tobacco-package	29,192	Aug. 9	84	975
Millhiser Manufacturing Company. (See Millhiser, Gustavus, assignor.)				
Monarch Brake-Beam Company. (See Simpson and Handiges, assignors.)				
Moody, Walter S., Schenectady, N. Y., assignor to General Electric Company, of New York. Casing for dynamo-electric machines	29,373	Sept. 20	84	1860
Moore, Jane B., Covington, Ky. Pin or similar article	29,119	Aug. 2	84	795
Moore, Thomas, deceased; L. Kabis, Cheyenne, Wyo., administrator. Buckle	29,277	Aug. 30	84	1428
Moore, Thomas, deceased; L. Kabis, Cheyenne, Wyo., administrator. Buckle	29,278	Aug. 30	84	1428
Moore, Thomas, deceased; L. Kabis, Cheyenne, Wyo., administrator. Buckle	29,279	Aug. 30	84	1428
Moore, Thomas, deceased; L. Kabis, Cheyenne, Wyo., administrator. Buckle	29,280	Aug. 30	84	1428
Moore, Thomas, deceased; L. Kabis, Cheyenne, Wyo., administrator. Buckle	29,281	Aug. 30	84	1428
Moore, Thomas, deceased; L. Kabis, Cheyenne, Wyo., administrator. Buckle	29,282	Aug. 30	84	1428
Moore, Thomas, deceased; L. Kabis, Cheyenne, Wyo., administrator. Pack-saddle frame	29,298	Aug. 30	84	1430
Moore, Thomas, deceased; L. Kabis, Cheyenne, Wyo., administrator. Arched plate for pack-saddles	29,336	Sept. 13	84	1722
Morley, Jennie G., Buffalo, N. Y. Abdominal supporter	29,163	Aug. 2	84	803
Morris, Ross, assignor of one-half to A. A. Scott, Clarksburg, W. Va. Medicated air-head	29,140	Aug. 2	84	799
Morton, Eunice R., Revere, Mass. Hook	29,152	Aug. 2	84	801
Motherwell, David M., Chicago, Ill., assignor to Whitman & Barnes Manufacturing Company, Akron, Ohio. Cultivator-tool frame	29,070	July 19	84	500
Muckle, Henry A., St. Paul, Minn. Vehicle-spring	29,418	Sept. 27	84	2011
Multiple Power Company. (See Fefel, Henry H., assignor.)				
Mundy, Hendricks S., Guthrie, Okla. Ter. Body for rolling street-stands	28,994	July 5	84	137
Murray, Charles R., Chicago, Ill. Type-space	29,311	Sept. 6	84	1577
Myers, Philip A., Ashland, Ohio. Home-trainer attachment	29,347	Sept. 13	84	1724
Myers, Phineas B., New York, N. Y. Paper box	29,093	July 26	84	640
National Carbon Company. (See Richmond, Charles T., assignor.)				
National Cash Register Company. (See Ringold, Edwin, assignor.)	29,168	Aug. 9	84	971
Netherland, August, New York, N. Y. Dish				
Neuhaus, Trounstine & Co. (See Ringold, Edwin, assignor.)	29,046	July 12	84	305
Norden, Mortimer, assignor to J. Norden, New York, N. Y. Electric-light sign				
Norden, Joseph. (See Norden, Mortimer, assignor.)	29,420	Sept. 27	84	2011
O'Brien, Thomas J., Buffalo, N. Y. Trap for sewers	29,234	Aug. 16	84	1134
O'Brien, William H., Akron, Ohio. Printer's quoin	28,965	July 5	84	132
O'Donnell, Hugh, Liverpool, England. Medal				
Oakville Company. (See Straw, Wilfred, assignor.)	29,348	Sept. 13	84	1724
Oehrle, Albert C., Philadelphia, Pa., assignor to Oehrle Bros. & Co. Fringe	29,349	Sept. 13	84	1724
Oehrle, Albert C., Philadelphia, Pa., assignor to Oehrle Bros. & Co. Fringe				
Oehrle Bros. & Co. (See Oehrle, Albert C., assignor.)				
Osborne, Charles, assignor to Whiting Manufacturing Company, New York, N. Y. Handle for spoons, &c	29,356	Sept. 20	84	1857
Osborne, Charles, assignor to Whiting Manufacturing Company, New York, N. Y. Border for silverware or similar articles	29,357	Sept. 20	84	1857
Ott, Philip, New York, N. Y. Hatchet	29,146	Aug. 2	84	800
Overton, Benjamin F., and L. E. Bryant, Omen, Tex. Quilting-frame stand	28,999	July 5	84	138
Ozias, Orange O., Dayton, Ohio. Price-indicating chart	29,095	July 26	84	641
Ozias, Orange O., assignor to Computing Scale Company, Dayton, Ohio. Scale-lever	29,135	Aug. 2	84	798
P. & F. Corbin. (See Case, Cromwell O., assignor.)				
P. & F. Manufacturing Co. (See Deem, Miller M., assignor.)	29,414	Sept. 27	84	2010
Paar, Henry, Canton, Ohio. Horseshoe	28,997	July 5	84	138
Packard, James W., and H. W. Wiswell, Warren, Ohio. Transformer-casing	29,171	Aug. 9	84	972
Packham, Eldridge, Jr., Baltimore, Md. Bottle				
Padgitt, J. D., *et al.* (See Bantz, Frederick W., assignor.)				
Padgitt, W. C., *et al.* (See Bantz, Frederick W., assignor.)	29,318	Sept. 6	84	1578
Paine, Bennett R., Hamden Junction, Ohio. Bottle	29,422	Sept. 27	84	2012
Palmer, Isaac E., Middletown, Conn. Hammock-support	29,210	Aug. 9	84	978
Parker, Frederic M., assignor to W. J. Hogg & Son, Worcester, Mass. Carpeting	29,304	Sept. 6	84	1575
Parker, Joseph H., Jr., Woburn, Mass. Chair	29,105	July 26	84	643
Patterson, Warren C., Tamaqua, Pa. Rail-chair	29,241	Aug. 16	84	1136
Pearson, Fred S., Boston, Mass. Yoke for railway-conduits	29,270	Aug. 23	84	1277
Pearson, Fred S., Boston, Mass. Yoke for railway-conduits				
Pelouze Scale and Manufacturing Company. (See Triner, James M., assignor.)				
Peters, William M., assignor to Adams & Westlake Company, Chicago, Ill. Panel for the foot or head of bedsteads	29,284	Aug. 30	84	1428
Pettibone, Charles L. (See Cumming, Paul R., assignor.)	29,255	Aug. 16	84	1138
Petzold, Adolph, assignor to J. H. and E. Bromley, Philadelphia, Pa. Rug	29,230	Aug. 16	84	1133
Pflieger, Alice, Columbus, Ohio. Curling-iron holder				
Phillips, Morrill A. (See Sweeny, Edward M., assignor.)				
Phœnix Glass Company. (See Heideger, Frank J., assignor.)				
Phœnix Glass Company. (See Kaye, Edward, assignor.)	29,191	Aug. 9	84	975
Pilkington, James, Liverpool, England. Pipe-cleaner	29,229	Aug. 16	84	1133
Pincus, Edward, Philadelphia, Pa. Flag-holder				
Pirrung, Felix. (See Pirrung, George, Sr., and F.)				
Pirrung, George, Sr., and F., Ravenswood, Ill. Broom-shield	29,332	Sept. 13	84	1721

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Pittsburg Lamp and Brass Company. (See Hirschl, Charles A., assignor.)				
Plunkett, Gail E., New Richmond, Ind. Envelop-blank	29,079	July 19	84	502
Polak, Judah, New York, N. Y. Scarf-pin	29,402	Sept. 27	84	2008
Powers, Alexander H. (See McMannon and Powers.)				
Price, David, Philadelphia, Pa. Door	29,043	July 12	84	305
Price, James F., Boston, Mass. Charm	29,166	Aug. 9	84	971
Priest, Edward D., Schenectady, N. Y., assignor to General Electric Company, of New York. Field-magnet frame	29,372	Sept. 20	84	1860
Pullman, Herbert S., Meriden, Conn. Egg-separator	29,159	Aug. 2	84	799
Quigley, Thomas M., Logansport, Ind. Display-case	29,083	July 19	84	508
R. Wallace & Sons Manufacturing Company. (See Wallace, Henry L., assignor.)				
Rakestraw, James V., Wellington, Kans. Sprayer attachment for washing-machines	29,186	Aug. 9	83	974
Read, Alonzo P., Chicago, Ill. Washer	29,023	July 12	84	301
Ream, George W., assignor to Bucher & Gibbs Plow Company, Canton, Ohio. Plowshare	29,069	July 19	84	500
Ream, George W., assignor to Bucher & Gibbs Plow Company, Canton, Ohio. Harrow-frame	29,314	Sept. 6	84	1577
Ream, George W., assignor to Bucher & Gibbs Plow Company, Canton, Ohio. Harrow-frame	29,315	Sept. 6	84	1578
Redfield, Charles T., Glen Haven, N. Y. Antirattling plate	28,993	July 5	84	135
Redgrave, Montague, Jersey City, N. J. Bagatelle-board	29,047	July 12	84	305
Rice, Edward J., assignor to J. E. Rice, Rochester, N. Y. Closet-bend, &c	29,290	Aug. 30	84	1429
Rice, Edward J., assignor to J. E. Rice, Rochester, N. Y. Flange for closet-bends	29,291	Aug. 30	84	1429
Rice, James E. (See Rice, Edward J., assignor.)				
Richmond, Charles T., assignor to National Carbon Company, Cleveland, Ohio. Battery-plate	29,265	Aug. 23	84	1276
Ridgway, James V., Hinsdale, Ill. Picture-frame	29,285	Aug. 30	84	1428
Riedel, John M., and F. F. Metzger, Philadelphia, Pa. Match-box	29,091	July 26	84	640
Riley, Robert M., New York, N. Y., and J. E. Fisher, Millville, Ohio. Game-board	29,196	Aug. 9	84	975
Rines, Lizzie A., Minneapolis, Minn. Dressmaker's rule	29,134	Aug. 2	84	798
Ringold, Edwin, assignor to Neuhaus, Trounstine & Co., Cincinnati, Ohio. Badge	29,118	Aug. 2	84	795
Ringold, Edwin, Cincinnati, assignor to National Cash Register Company, Dayton, Ohio. Cash-register cabinet	29,346	Sept. 13	84	1723
Ritchey, Joseph K., Roaring Spring, Pa. Casing for base-ball tallies	29,131	Aug. 2	84	797
Roberts, Charles E., Oak Park, Ill. Wheel-hub	28,993	July 5	84	137
Robertson, William, Buffalo, N. Y. Cork-extractor casing	29,379	Sept. 20	84	1861
Rogers, Ethan, Ballston, N. Y. Die-block	29,136	Aug. 2	84	798
Rose, Arthur M., Yonkers, N. Y., assignor to W. H. and I. McCallum, Philadelphia, Pa. Carpet	29,008	July 5	84	140
Rose, Arthur M., Yonkers, N. Y., assignor to W. H. and I. McCallum, Philadelphia, Pa. Carpet	29,009	July 5	84	140
Rose, Arthur M., Yonkers, N. Y., assignor to W. H. and I. McCallum, Philadelphia, Pa. Carpet	29,010	July 5	84	140
Rose, Arthur M., Yonkers, N. Y., assignor to W. H. and I. McCallum, Philadelphia, Pa. Carpet	29,011	July 5	84	141
Rose-Soley, John F., San Francisco, Cal. Belt	29,096	July 26	84	641
Rotharmel, George L., Sunbury, and C. H. Dodge, Northumberland, Pa. Game-board	29,082	July 19	84	508
Rudensky, Israel, New York, N. Y. Bracket for sewing-machine stands	29,360	Sept. 20	84	1863
Rupp, Louis L., New York, N. Y. Trimming	29,007	July 5	84	140
Russell, Edgar A., Wallingford, Conn. Syrup-cup cover	29,124	Aug. 2	84	796
Russell, Edgar A., Wallingford, Conn. Shade-holder	29,224	Aug. 16	84	1132
S. F. Hayward & Company. (See Donnell, Harry E., assignor.)				
Safety Car Heating and Lighting Company. (See Dixon, Robert M., assignor.)	29,098	July 26	84	641
Sahlin, Rose, Chicago, Ill. Waist-front distender				
Sanford & Sons, Stephen. (See Fauser, Gustave M., assignor.)				
Sanford & Sons, Stephen. (See Stewart, Nelson S., assignor.)				
Sauer, Emil G., New York, N. Y., assignor to Lowell Manufacturing Company, of Massachusetts. Carpet	29,401	Sept. 20	84	1865
Sawyer, Amos, Hillsborough, Ill. Tongue-depressor	28,973	July 5	84	134
Schaefer, Henry A., assignor to Schaefer & Schlegel, Rochester, N. Y. Skirt-protector	29,101	July 26	84	642
Schaefer & Schlegel. (See Schaefer, Henry A., assignor.)				
Schanck, Ephraim L., Delaware, Ohio. Tie for bags, &c	29,360	Sept. 20	84	1862
Schanz, Alfred B., Attica, Ind. Display-stand	29,271	Aug. 23	84	1277
Schieffelin, Joseph T., Louisville, Ky. Puzzle box or case	29,400	Sept. 20	84	1865
Schies, John, Anderson, Ind. Jar	29,032	July 12	84	303
Schilz, Mary E., Philadelphia, Pa. Manicure-tool	29,019	July 12	84	300
Schleicher, William A., M. Lewis, Cleveland, Ohio, and H. C. Swan, Oshkosh, Wis. Harness-loop	28,982	July 5	84	135
Schmiedel, George. (See Jaeger and Schmiedel.)				
Schuck, Valentine, assignor to Sutro Brothers Braid Company, New York, N. Y. Braid	29,322	Sept. 6	84	1579
Schuetz, Louis O., and B. G. Sherman, Wauconda, Ill. Night-lamp chimney	29,061	July 19	84	499
Scott, Alfred A. (See Morris, Ross, assignor.)				
Seaman, Benjamin S., Canton, Ohio. Spring	29,022	July 12	84	301
Seymour, William S., Philadelphia, Pa. Package-holder	29,333	Sept. 13	84	1721
Shaffer, Knuland H., Hudson, N. Y. Badge	29,276	Aug. 30	84	1427
Sharps, William E., Philadelphia, Pa. Jar-cap	28,980	July 5	84	134
Shaw, John P., Aberdeen, Miss. Member of a stock-marking tool	29,308	Sept. 6	84	1576
Shedd, William J., and B. F. Field, Chicago, Ill. Seat-post for bicycles	29,190	Aug. 9	84	975
Sheets, John H., New York, N. Y. Necktie-retainer	28,977	July 5	84	134
Shepherd, Robert B., New York, N. Y. Brush-back	29,167	Aug. 9	84	971
Sherman, Ben G. (See Schuetz and Sherman.)				
Sill Stove Works. (See Kennedy, John W., assignor.)				
Simons, Edward S., *et al.* (See Welhman, Henry A., assignor.)				
Simons, Frederic M., *et al.* (See Welhman, Henry A., assignor.)				
Simons, John F., *et al.* (See Welhman, Henry A., assignor.)				
Simpson, Hall, Miller & Company. (See Clulee, John, assignor.)				
Simpson, Thomas H., and P. T. Handiges, assignors to Monarch Brake-Beam Company, Limited, Detroit, Mich. Fulcrum-jaw for brake-beams	29,106	July 26	84	643
Skinner, Chuck Company. (See Skinner, Edward J., assignor.)				
Skinner, Edward J., assignor to Skinner Chuck Company, New Britain, Conn. Chuck	29,067	July 19	84	500
Smith, De Wane B., Deerfield, N. Y. Body for sprayers	29,227	Aug. 16	84	1133
Smith, De Wane B., Deerfield, N. Y. Body for sprayers	29,292	Aug. 30	84	1429
Smith, De Wane B., Deerfield, N. Y. Body for sprayers	29,327	Sept. 13	84	1720
Smith, Dora M., Los Angeles, Cal. Jewel-case	29,319	Sept. 6	84	1578
Smith, Levi C., Whitesborough, N. Y. Cheese-mold	29,033	July 12	84	303
Smith, William H., Omemee, N. D. Envelop-blank	28,966	July 5	84	138
Smith, William T., Philadelphia, Pa. Woven fabric	29,164	Aug. 9	84	908
Smith, William T., Philadelphia, Pa. Woven fabric	29,211	Aug. 9	84	978
Standing, Amos W., St. Louis, Mo. Game device	29,195	Aug. 9	84	975
Stedwell, George H., Hackensack, N. J. Skirt or garment binding	29,206	Aug. 9	84	978
Stedwell, George H., Hackensack, N. J. Skirt or garment binding	29,207	Aug. 9	84	978
Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	29,426	Sept. 27	84	2012
Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	29,427	Sept. 27	84	2012
Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	29,428	Sept. 27	84	2013

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Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	29,429	Sept. 27	84	2013
Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	29,430	Sept. 27	84	2013
Stewart, Nelson S., assignor to S. Sanford & Sons, Amsterdam, N. Y. Carpet	29,431	Sept. 27	84	2013
Stimpson, Walter F., Milan, Mich. Face-plate for computing-scales	29,065	July 19	84	499
Strahl, Philip C., assignor of one-half to H. Klaas, Lawrence, Kans. Grate-bar	28,985	July 5	84	135
Straker, Joseph E., Jr., assignor to H. H. Curtis, North Attleborough, Mass. Back for brushes or similar articles	29,015	July 12	84	300
Straker, Joseph E., Jr., assignor to G. K. Webster, North Attleborough, Mass. Back for brushes or similar articles	29,217	Aug. 16	84	1131
Straker, Joseph E., Jr., North Attleborough, assignor to James E. Blake & Company, Attleborough, Mass. Handle for button-hooks, &c	29,263	Aug. 23	84	1276
Straw, Wilfred, assignor to Oakville Company, Waterbury, Conn. Pin-package container	28,971	July 5	84	133
Stone, Katie R., Saundersville, Mass. Package-supporting clip for bicycles	29,110	July 26	84	644
Sutro Brothers Braid Company. (See Schuck, Valentine, assignor.)				
Sutter, Frederick C., Swissvale, Pa. Transformer-case	29,410	Sept. 27	84	2009
Swan, Henry C. (See Schleicher, Lewis, and Swan.)				
Sweeny, Edward M., assignor of one-half to M. A. Phillips, South Hanover, Mass. Nail	29,283	Aug. 30	84	1426
Tahl, Isidor, New York, N. Y. Box	29,086	July 12	84	303
Taite, Benjamin G., Philadelphia, Pa. Ornamental toilet-powder box	29,259	Aug. 23	84	1275
Taliaferro, Thomas W., South Omaha, Nebr. Sash-holder	29,287	Aug. 30	84	1429
Tappan, Herman, New York, N. Y. Bottle	29,125	Aug. 2	84	796
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Latch-bolt	29,384	Sept. 20	84	1862
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Latch-operating lever	29,385	Sept. 20	84	1862
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Latch-operating lever	29,386	Sept. 20	84	1862
Theobald, Jean, assignor to Frank M. Whiting & Company, North Attleborough, Mass. Back for brushes or similar articles	29,275	Aug. 30	84	1427
Theobald, Jean G., assignor to Frank M. Whiting & Company, North Attleborough, Mass. Mount for dishes	29,325	Sept. 13	84	1720
Thiem, Rudolph, Hamilton, Ohio. Stove or range	29,181	Aug. 9	84	978
Thomas, Edward G., Boston, Mass. Film-holder	29,112	July 26	84	644
Thomas, Edward G., Boston, Mass. Film-holder	29,317	Sept. 6	84	1578
Thomas, Frank A., Cedar Rapids, Iowa. Belaying-hook	29,041	July 12	84	304
Thompson, George L., Chicago, Ill. Bicycle-frame	29,343	Aug. 16	84	1136
Thompson, George L., Chicago, Ill. Bicycle-frame	29,244	Aug. 16	84	1136
Thompson, George L., Chicago, Ill. Front fork for velocipedes	29,245	Aug. 16	84	1136
Thompson, Rufus F., Youngstown, Ohio. Badge	29,212	Aug. 16	84	1130
Tiffany & Company. (See Farnham, Paulding, assignor.)				
Tochtermann, Robert F., Munich, Germany. Member of combs	29,404	Sept. 27	84	2009
Townsend, Samuel C., Baltimore, Md. Hat	29,099	July 26	84	641
Tribble, Joel P., *et al.* (See Kelley, Calhoun L., assignor.)				
Triner, James M., assignor to Pelouze Scale and Manufacturing Company, Chicago, Ill. Supporting-stem for scale-pans	29,064	July 19	84	499
Tyden, Emil, Hastings, Mich. Seal-body	29,367	Sept. 20	84	1862
Tyden, Emil, Hastings, Mich. Seal	29,413	Sept. 27	84	2010
Ufford, Julia F., Boston, Mass. Tooth-brush	29,219	Aug. 16	84	1132
United Hame Company. (See Wilhelm, Edward, assignor.)				
Vaughan & Bushnell Manufacturing Company. (See Bushnell and Vaughan, assignors.)				
Vaughan & Bushnell Manufacturing Company. (See Vaughan and Bushnell, assignors.)				
Vaughan, Sanford S. (See Bushnell and Vaughan.)				
Vaughan, Sanford S., and L. M. Bushnell, assignors to Vaughan & Bushnell Manufacturing Company, Chicago, Ill. Wrench	29,108	July 26	84	643
Veeder, Curtis H., Hartford, Conn. Case for registers	29,175	Aug. 9	84	972
Veeder, Curtis H., Hartford, Conn. Case for registers	29,176	Aug. 9	84	972
Veeder, Curtis H., Hartford, Conn. Case for registers	29,177	Aug. 9	84	972
Veeder, Curtis H., Hartford, Conn. Case for registers	29,178	Aug. 9	84	972
Veeder, Curtis H., Hartford, Conn. Case for registers	29,179	Aug. 9	84	973
Veeder, Curtis H., assignor to Veeder Manufacturing Company, Hartford, Conn. Case for registers	29,222	Aug. 16	84	1132
Veeder Manufacturing Company. (See Veeder, Curtis H., assignor.)				
Vinson, Michael R., Waldo, Ark. Weeding-hoe	29,369	Sept. 20	84	1863
Wagner, Rudolph, New York, N. Y. Cabinet for coin-operated machines	28,995	July 5	84	137
Waite, Thresher Company. (See Kranz, Louis, assignor.)				
Walker, Hugh D., Preston, Canada. Stovepipe-thimble	29,102	July 26	84	642
Wallace, Henry L., assignor to R. Wallace & Sons Manufacturing Company, Wallingford, Conn. Handle for spoons, forks, or similar articles	29,190	Aug. 2	84	796
Walter, Alphonse, New York, N. Y. Storage and display case	29,236	Aug. 16	84	1134
Warner Brothers Company. (See Warner, De Ver H., assignor.)				
Warner, De Ver H., assignor to Warner Brothers Company, Bridgeport, Conn. Holder for garment-supporters	29,226	Aug. 16	84	1133
Webb, George W., Ilion, N. Y. Belt hook or staple	29,405	Sept. 27	84	2009
Webster, George K. (See Crees and Court, assignors.)				
Webster, George K. (See Straker, Joseph E., Jr., assignor.)				
Wehrle, William W., Newark, N. J. Cooking-stove	29,394	Sept. 20	84	1864
Welhman, Henry A., assignor to J. F. Simons, T. Maddock, Philadelphia, F. M. Simons, Swarthmore, Pa., and E. S. Simons, Orange, N. J. Back for brushes, &c	29,218	Aug. 16	84	1131
Weiss, Georg, Chicago, Ill. Lamp-body	29,365	Sept. 20	84	1859
Weiss, Nathan, New York, N. Y. Box for cigars or cigarettes	29,056	July 19	84	498
Wells, Frank B., Masonville, N. Y. Game-board	29,250	Aug. 16	84	1137
Wengler, John R., Allenton, Md. Pipe	29,363	Sept. 20	84	1858
Wheat, Jean, Wallville, Ind. Ter. Cultivator-blade	29,341	Sept. 13	84	1722
Wheatfield, Jacob, Baltimore, Md. Blank for garment-fastening hooks	28,978	July 5	84	134
Wheeler, John. (See Edison and Wheeler.)				
Whipple, Effinger E., Utica, N. Y. Curved spring harrow-tooth	29,157	Aug. 2	84	803
Whistler, Arrah J., Kokomo, Ind. Tire-repairing plug	29,266	Aug. 23	84	1277
White, Frederick L., assignor, by mesne assignments, to Calcium King Lamp Company, Waterbury, Conn. Bicycle-lamp	29,269	Aug. 23	84	1277
White, Frederick L., assignor to G. H. Clowes, Waterbury, Conn. Lamp-body	29,406	Sept. 27	84	2009
White, William, Rutherford, N. J., assignor to C. Whitman & Co., New York, N. Y. Bedspread	29,257	Aug. 23	84	1275
Whiting Manufacturing Company. (See Osborne, Charles, assignor.)				
Whitman & Barnes Manufacturing Company. (See Motherwell, David M., assignor.)				
Whitman & Co., Clarence. (See White, William, assignor.)				
Whitney, Thomas J., and I. Haaz, Philadelphia, Pa. Flagstaff	29,194	Aug. 9	84	975

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Wiener Brothers. (See Bens, William, assignor.)				
Wiessner, Oscar E. A., New York, N. Y. Bedstead end board	29,288	Aug. 9	84	974
Wilbor, Samuel O., Little Compton, R. I. Driving-crank	29,297	Aug. 30	84	1430
Wilhelm, Edward, assignor to United Hame Company, Buffalo, N. Y. Hame-hook	29,267	Aug. 23	84	1277
Willard, Ben, Schenectady, N. Y., assignor to General Electric Company, of New York. Cap for insulators	28,981	July 5	84	135
Willard, George W., Detroit, Mich. Window-pole and picture-hook hanger	29,286	Aug. 30	84	1429
Williams, Richard S. (See McGuire and Williams.)				
Wilson, James E., Bridgeport, Conn. Lever attachment for bicycles	29,340	Sept. 13	84	1722
Winger, Oswald E., Joliet, Ill. Window-light	29,113	July 26	84	644
Winger, Oswald E., Joliet, Ill. Window-light	29,114	July 26	84	645
Wirt, Herbert C., Schenectady, N. Y., assignor to General Electric Company, of New York. Lightning-arrester	29,370	Sept. 20	84	1859
Wirt, Herbert C., Schenectady, N. Y., assignor to General Electric Company, of New York. Lightning-arrester	29,371	Sept. 20	84	1860
Wisconsin Chair Company. (See Coffman, James H., assignor.)				
Wiswell, Henry W. (See Packard and Wiswell.)				
Wolff, Aaron H., New York, N. Y. Stove	29,240	Aug. 16	84	1135
Woodruff, James W., Berlin, Conn. Blank for toy wind-wheels	29,048	July 12	84	306
Wormser, Lillian, Trenton, N. J. Box for ash-sifters	29,108	July 26	84	642
Worthington, Hood, Danville, Ky. Punching-die	29,096	July 19	84	500
Wuest, Jacob, Anglum, Mo. Protector for lamp-chimneys	29,289	Aug. 30	84	1429
Wurst, Charles F. C. (See Hayden and Wurst.)				
Yale & Towne Manufacturing Company. (See Taylor, Warren H., assignor.)				
Zimmerman, Charles, Frederick, Md. Shutter-brace	29,337	Sept. 13	84	1722
Zoerb, William, Dedham, Mass. Eyeglass or spectacle case	29,220	Aug. 16	84	1132

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Alton, Jesse W., Cleveland, Ohio. Compounds for cleaning glass, metal, earthenware, and other articles having smooth surfaces	31,898	Sept. 6	84	1581
American Coffee Company, New York, N. Y. Roasted coffee	31,899	Aug. 23	84	1280
American Compressed Food Company, Passaic, N. J. Compressed food	31,788	July 5	84	144
American Glove Company, Chicago, Ill. Gloves and mittens	31,931	Sept. 6	84	1580
American Pin Company, Waterbury, Conn. Hooks and eyes	31,863	Aug. 9	84	980
American Pin Company, Waterbury, Conn. Pins	31,932	Sept. 6	84	1580
Arnold, Harry, Baltimore, Md. Certain remedy for nervous ailments and sequelæ	31,905	Aug. 23	84	1279
Arnold, Schwinn & Company, Chicago, Ill. Bicycles	31,857	July 26	84	646
Aspell & Company, New York, N. Y. Rye whisky	32,006	Sept. 27	84	2015
Aspell & Company, New York, N. Y. Scotch whisky	32,007	Sept. 27	84	2015
Aspell & Company, New York, N. Y. Old Tom gin	32,008	Sept. 27	84	2015
Aspell & Company, New York, N. Y. Holland gin	32,009	Sept. 27	84	2015
B. B. Mineral Springs Company, Bowling Green, Mo. Certain bitter mineral water	31,943	Sept. 6	84	1581
Badger Brass Manufacturing Company, Kenosha, Wis. Acetylene-gas lamps	31,773	July 5	84	142
Baer, William J., H. H. Yarnell, and J. A. Zimmerman, Connellsville, Ind. Washing-tablet	31,986	Sept. 20	84	1867
Balsa y Hermano, Vera Cruz, Mexico. Cigars	31,969	Sept. 13	84	1726
Baxter & Bro., H. C., Brunswick, Me. Certain named canned goods	31,854	Aug. 9	84	979
Bayle, George A., St. Louis, Mo. Mustard, pickles, and sauces	31,805	July 12	84	308
Beatty, John W., and A. W. Fuller, Norwalk, Conn. Wood-fillers	31,917	Aug. 30	84	1432
Benjamin Moore & Company, New York, N. Y. Mural decorations	31,906	Aug. 30	84	1431
Belcher, Cassius E., Jersey Shore, Pa. Ointments	31,858	Aug. 9	84	980
Bloomingdale, Lyman G., New York, N. Y. Boots and shoes	31,960	Sept. 13	84	1725
Boraline Chemical Co., Baltimore, Md. Antiseptic tablets and powders for certain named purposes	31,859	Aug. 9	84	980
Braun, Samuel J., Toledo, Ohio. Washing-powder	31,884	Aug. 16	84	1140
Brown & Harris, New Orleans, La. Lard	31,787	July 5	84	144
Brown, Millard F., Kansas City, Mo. Chests or bins	31,901	Aug. 23	84	1280
Buck, Harry K., Philadelphia, Pa. Perfumery, toilet water, and toilet powder	31,933	Sept. 6	84	1580
Buescher Manufacturing Company, Elkhart, Ind. Band instruments	31,953	Sept. 6	84	1582
Burnett, William H. C., Detroit, Mich. Perfume for the bath	31,822	July 26	84	646
C. B. Woodworth Sons Company, Rochester, N. Y. Sachet-powders and toilet soap	31,935	Sept. 6	84	1580
Calm, Edward, New York, N. Y. Certain named preservative compound	31,885	Aug. 16	84	1140
Carpenter-Morton Company, Boston, Mass. Paints and varnishes for straw and ratan goods	31,963	Sept. 20	84	1866
Chambre Syndicale des Fabricants de Chapeaux de Paille et Feutre pour Dames et Fournitures pour Modes, Paris, France. Ladies' straw and felt hats	31,997	Sept. 27	84	2014
Champion Chemical Works, Chicago, Ill. Lye and potash	31,984	Sept. 20	84	1867
Chapman, John M., New York, N. Y. Salmon	31,913	Aug. 30	84	1431
Chemicals and Drugs Company of America, New York, N. Y. Sweetener	31,990	Sept. 20	84	1867
Chemische Fabrik in Helfenberg bei Dresden, Eugen Dieterich, Helfenberg, Germany. Certain named pharmaceutical preparations	31,799	July 12	84	307
Choffé, Alexandre, Levallois-Perret, France. Medicinal wine	31,825	July 26	84	646
Clarkes-Pyramid and Fairy Light Company, Limited, London, England. Lamps and candles	31,864	Aug. 9	84	980
Cleveland Veterinary Remedy Co., Cleveland, Ohio. Tonic remedy	31,925	Aug. 30	84	1432
Coburn Metallic Bed and Pneumatic Tube Mattress Company, Holyoke, Mass. Bedsteads made wholly or in part of metal	31,807	July 12	84	308
Coggeshall, George W., Boston, Mass. Chemical fertilizers	31,866	Aug. 16	84	1140
Cohen, Charles J., Philadelphia, Pa. Copying-books and copying-paper	31,957	Sept. 13	84	1725
Commercial Typewriter Company, New York, N. Y. Type-writing machines	31,954	Sept. 6	84	1582
Consumers Company, Chicago, Ill. Ginger-ale	31,804	July 12	84	308
Court Perfumery Company, New York, N. Y. Soaps, perfumery, extracts, and face and tooth powders, excluding perfumed waters	31,936	Sept. 6	84	1580
Crescent Macaroni Company, Davenport, Iowa. Yeast-cakes	31,853	Aug. 9	84	979
Crolley, Harry W., Covington, Ky. Medical compound for the removal of hair from the skin and for skin, scalp, and hair affections	31,964	Sept. 13	84	1725
Cuitoit Co., Chicago, Ill. Certain flavoring and toilet articles	31,934	Sept. 6	84	1580
Davis Sewing Machine Company, Dayton, Ohio. Sewing-machines	32,016	Sept. 27	84	2016
Davis Sewing Machine Company, Dayton, Ohio. Sewing-machines	32,017	Sept. 27	84	2016
De Tar, Monroe, Kinsley, Kans. Dyspepsia, catarrh, liver and kidney, pain and cough cure, pills, and liniment	31,987	Sept. 20	84	1867
Debnam, George R., Baltimore, Md. Tablets and powders for certain named disorders	31,988	Sept. 20	84	1867
Deere & Webber Company, Minneapolis, Minn. Light spring-vehicles ordinarily drawn by horses	31,809	July 12	84	308
Diamond Match Company, Chicago, Ill. Friction-matches	31,916	Aug. 30	84	1431
Dillemann, Fils & Co., Paris, France. Cutlery and cutting-tools	31,995	Sept. 20	84	1868
Dunbar, Anna E., Albany, N. Y. Waist-belts, shirt-waist holders, and skirt-supporters	31,868	Aug. 16	84	1139
E. O. Stanard Milling Company, St. Louis, Mo.; Alton, Ill., and Dallas, Tex. Wheat-flour	31,949	Sept. 6	84	1582
Eagle Lye Works, Milwaukee, Wis. Lye or potash	31,883	Aug. 16	84	1140
Edwin H. Fitler Company, Philadelphia, Pa. Binder-twine	31,955	Sept. 6	84	1582
Eglington, Edward H., Walsall, England. Bits, spurs, stirrups, and harness-fittings	31,975	Sept. 13	84	1726
Erie Preserving Company, Buffalo, N. Y. Fruits and vegetables	31,824	July 26	84	646
Eureka and Epicure Packing Company, Astoria, Oreg. Canned salmon	31,971	Sept. 13	84	1726
Eureka and Epicure Packing Company, Astoria, Oreg. Canned salmon	31,972	Sept. 13	84	1726
Farbenfabriken of Elberfeld Company, New York, N. Y. Sedatives	31,836	Aug. 2	84	805
Farbenfabrixen of Elberfeld Company, New York, N. Y. Antiseptics	31,837	Aug. 2	84	805
Farnum, Mabel E., New York, N. Y. Liquid rouge	31,781	July 5	84	143
Farr & Co., J. H., Toronto, Canada. Soft soap	31,915	Aug. 30	84	1431
Faulkner, Joseph, New York, N. Y. Certain named lubricants	31,989	Sept. 6	84	1581
Fisher, George B., Denver, Colo. Certain named medicinal liquid	31,817	July 19	84	506
Florence Machine Company, Northampton, Mass. Sewing-machines	31,820	July 19	84	506
Florence Manufacturing Company, Northampton, Mass., New York, N. Y., and Chicago, Ill. Brushes	31,862	Aug. 9	84	980
Foerderer, Robert H., Philadelphia, Pa. Light-weight leathers	31,990	Sept. 20	84	1866

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Frame, Edward A., Craig, Mo. Chewing-gum	31,942	Sept. 6	84	1581
Fries Bros., New York, N. Y. Certain named saccharine substances	31,790	July 5	84	144
Fuller, Andrew W. (See Beatty and Fuller.)				
Gaffney, Harriet M., St. Louis, Mo. Salves	31,786	July 5	84	144
George Culver, Limited, London, England, and Sydney, New South Wales. Pince-nez eyeglasses	31,828	Aug. 2	84	804
German Medicine Company, Chicago, Ill. Proprietary medicines for certain named diseases	31,876	Aug. 16	84	1140
Gill Brothers & Co., Steubenville, Ohio. Chimneys, lantern-globes, and reflectors	31,841	Aug. 2	84	805
Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Elastic goring, cords, braids, and narrow webs	31,888	Aug. 23	84	1279
Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Elastic goring, cords, braids, and narrow webs	31,889	Aug. 23	84	1279
Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Elastic goring, cords, braids, and narrow webs	31,890	Aug. 23	84	1279
Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Elastic goring, cords, braids, and narrow webs	31,891	Aug. 23	84	1279
Glendale Elastic Fabrics Company, Easthampton and Boston, Mass. Elastic goring, cords, braids, and narrow webs	31,892	Aug. 23	84	1279
Glidden Varnish Company, Cleveland, Ohio. Floor and wood finish	31,860	Aug. 9	84	980
Goodhue, Harry M., Providence, R. I. Eye-tablets	31,877	Aug. 16	84	1140
Goodyear Rubber Company, New York and Buffalo, N. Y.; St. Louis and Kansas City, Mo.; Chicago, Ill.; Milwaukee, Wis.; Minneapolis and St. Paul, Minn.; San Francisco, Cal.; Portland, Oreg., and Washington, D. C. Rubber goods and articles made therefrom and waterproof oiled fabrics and articles made therefrom	31,929	Sept. 6	84	1580
Gould Gray Hair Remedy Co., Saginaw, Mich. Medicine for restoring gray hair to its natural color and for growing new hair	31,782	July 5	84	143
Gregory & Co., Northampton, England. Lozenge for allaying thirst	32,005	Sept. 27	84	2015
Griggs, Cooper & Co., St. Paul, Minn. Certain named groceries	31,881	Aug. 16	84	1140
Grove Company, Salem, Ohio. Chewing-gum	31,880	Aug. 16	84	1140
Gruneberg, Frederick H., New Orleans, La. Candy	31,855	Aug. 9	84	979
Haigh, Henry B., New York, N. Y. Horseshoes	32,015	Sept. 27	84	2016
Hammer Society, Tournay, Belgium. Portland cement	31,918	Aug. 30	84	1432
Hammer Society, Tournay, Belgium. Portland cement	31,919	Aug. 30	84	1432
Hance Bros. & White, Philadelphia, Pa. Remedies for indigestion, flatulency, and dyspepsia	32,004	Sept. 27	84	2015
Hannan Bros., Wheeling, W. Va. Cigars	31,850	Aug. 9	84	979
Hay, Estate of Henry H., Portland, Me. Vegetable bitters for biliousness and jaundice	31,898	Aug. 23	84	1280
Hazeltine & Perkins Drug Company, Grand Rapids, Mich. Internal remedy for the diseases of women	31,783	July 5	84	143
Hexter & Scheuer, Cleveland, Ohio. Woolen fabrics for clothing	31,906	Aug. 30	84	1431
Hillman, William, Coventry, England. Golf-balls and golf-clubs	31,771	July 5	84	142
Hoffman & Co., Red Hoop, N. Y. Chewing and smoking tobacco	31,991	Sept. 20	84	1867
Hoffmann-La Roche & Co., F., Basle, Switzerland. Certain antiseptic remedy	31,922	Aug. 30	84	1432
Holahan, William M., Cambridge, Mass. Bicycles	31,866	Aug. 9	84	980
Hollis, Thomas, Boston, Mass. Powder for cleaning and polishing the teeth	31,962	Sept. 13	84	1725
Humphrey, James L., Jr., New Bedford, Mass. Butter, milk, cheese, and cream	31,852	Aug. 9	84	979
Hurley & Cashman, Lynn, Mass. Boots and shoes	31,811	July 19	84	505
Independent Brewing Association, Chicago, Ill. Lager-beer	31,792	July 5	84	144
Jacob Dold Packing Company, Buffalo, N. Y.; Kansas City, Mo.; Wichita, Kans.; Harrisburg, Pa., and Liverpool, England. Hams, bacon, shoulders, and canned, cured, and smoked meats	31,914	Aug. 30	84	1431
Jefferson, Charles W., Louisville, Ky. Bourbon whisky	31,992	Sept. 20	84	1867
Jenkinson, Richard C., Newark, N. J. Certain named bicycle sundries	31,902	Aug. 23	84	1280
Jerome, Charles C., Chicago, Ill. Medicinal preparation in the form of a flour for certain disorders	31,923	Aug. 30	84	1432
Johnson, Matthew J., Superior, Wis. Certain rheumatism cure and blood-purifier	31,951	Sept. 6	84	1582
Jones, Jennie E., Boston, Mass. Hair-tonic	31,798	July 12	84	307
Jones, John T. (See Jones, Kornegay, and Mayhew.)				
Jones, Merriman M. and J. T., M. M. Kornegay, and A. L. Mayhew, Jonesborough, Tex. Washing compounds	31,779	July 5	84	143
Kaiser, John, New York, N. Y. Horns used in connection with sound-producing devices	31,772	July 5	84	142
Kansas City Roofing and Corrugating Company, Kansas City, Mo. Roof-paint	31,777	July 5	84	143
Keratol Company, Newark, N. J. Textile material with flexible waterproof coating	31,907	Aug. 30	84	1431
Kirschbaum & Co., Ab., Philadelphia, Pa. Men's, boys', and children's clothing	31,911	Aug. 30	84	1431
Klopsch, Osmar, New York, N. Y. Remedy for skin diseases	31,800	July 12	84	307
Koch & Reis, Antwerp, Belgium. Sulfur	31,897	Aug. 23	84	1279
Kora Company, New York, N. Y. Dress-shields	31,969	Sept. 13	84	1725
Kornegay, Make M. (See Jones, Kornegay, and Mayhew.)	31,987	Sept. 6	84	1580
Kuh, Emanuel S., New York, N. Y. Grease for the manufacture of soap and candles	31,816	July 19	84	505
Kuyper & Son, John de, Rotterdam, Netherlands. Gin	31,813	July 19	84	505
La Industrial, Merida, Mexico, and New York, N. Y. Ropes, cords, twines, threads, bagging, and carpets or floor-coverings	31,900	Aug. 23	84	1280
Larkin, Peter C., Toronto, Canada. Tea	31,985	Sept. 20	84	1867
Larkin Soap Manufacturing Company, Charleston, W. Va., and Buffalo, N. Y. Soap	31,814	July 19	84	505
Lay Whip Company, Westfield, Mass. Fine driving-whips	31,944	Sept. 6	84	1581
Levering & Co., E., Baltimore, Md. Coffee	31,967	Sept. 13	84	1726
Liebig, Franz X., New York, N. Y. Medicinal tonics	31,851	Aug. 9	84	979
Lindemann, Ottocar, Wernigerode, Germany. Milk measuring and registering apparatus and charts therefor	31,912	Aug. 30	84	1431
Little & Co., A. E., Lynn, Mass. Overshoes	31,881	Aug. 2	84	804
Lueders & Co., George, New York, N. Y., and Chicago, Ill. Olive-oil, essential oils, salad-oils, and seed-oil	31,946	Sept. 6	84	1581
M. H. Alexander Company, Cincinnati, Ohio. Sugar, sorghum, molasses, and syrup	31,826	July 26	84	646
Maine Manufacturing Co., Nashua, N. H. Refrigerators	31,778	July 5	84	143
Maire, August E., Minneapolis, Minn. Paints and surface-coatings	31,896	Aug. 23	84	1279
Maltbie Chemical Company, Buffalo, N. Y. Medicinal mixture to aid digestion	31,801	July 12	84	307
Marsh Oil Company, Kansas City, Mo. Castor-oil	31,824	Aug. 2	84	804
Matchless Mineral Water Company, Dallas, Tex. Certain named medicinal mineral water	31,838	Aug. 2	84	805
Max Huncke Chemical Company, Bridgeport, Conn., and New York, N. Y. Embalming fluid				
Mayhew, Aaron L. (See Jones, Kornegay, and Mayhew.)	32,009	Sept. 27	84	2014
Merck, Firm of E., Darmstadt, Germany. Chemical and medicinal preparation	32,008	Sept. 27	84	2014
Merck, Firm of E., Darmstadt, Germany. Chemical and medicinal preparation	31,874	Aug. 16	84	1139
Mineral Spring Medical Co., Mount Clemens, Mich. Blood medicines	31,996	Sept. 20	84	1868
Minneapolis Plow Works, Minneapolis, Minn. Plow	32,001	Sept. 27	84	2014
Mohr, Louis, Pittsburg, Pa. Medicine	31,904	Aug. 23	84	1280
Moline Wagon Company, Moline, Ill. Certain named vehicles	31,973	Sept. 13	84	1726
Moniz & Co., Borlido, Rio Janeiro, Brazil. Mineral lubricating-oils	31,974	Sept. 13	84	1726
Moniz & Co., Borlido, Rio Janeiro, Brazil. Mineral lubricating-oils	31,976	Sept. 20	84	1866
Morgenstern & Goldsmith, New York, N. Y. Musical instruments				

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Morin, Edouard, Quebec, Canada. Remedy for certain named diseases	31,952	Sept. 6	84	1582
Morley Button Manufacturing Company, Boston, Mass. Buttons	31,769	July 5	84	142
Morris, Little & Son, Limited, Doncaster, England; New York, N. Y.; Melbourne, Victoria, and Port Elizabeth, Cape Colony. Medicines for domestic animals	31,871	Aug. 16	84	1139
Muncie Wheel Co., Muncie, Ind. Vehicle-wheels of all sizes for light buggies or heavy trucks and their parts	31,845	Aug. 2	84	806
Muralo Company, New York, N. Y. Wall-finish	31,981	Sept. 20	84	1866
Muzzy Bros., Paterson, N. J. Cold-water paint	32,011	Sept. 27	84	2015
Neptune Meter Company, Jersey City, N. J., and New York, N. Y. Fluid-meters	31,905	Aug. 23	84	1280
Newton Paper Company, Holyoke, Mass. Sheathing-paper	31,846	Aug. 2	84	806
Northrop, Delbert W., Boston, Mass. Shoe-cloth	31,978	Sept. 20	84	1866
Oberhaeusser & Landauer, Würzburg, Germany. Certain named medicinal confections, beverages, and preparations	31,856	Aug. 9	84	980
Ottenheimer Bros., New York, N. Y. Corsets	31,977	Sept. 20	84	1866
P. C. Holmes Company, Gardiner, Me. Certain named fibrous compositions	31,870	Aug. 16	84	1139
Parker, Holmes & Co., Boston, Mass. Footwear, including boots, shoes, gaiters, overgaiters, overshoes, slippers, and rubbers	31,869	Aug. 16	84	1139
Parker, Russell, New York, N. Y. Pistols	31,844	Aug. 2	84	805
Parodi & Co., Bay Point, Fla. Yellow-pine lumber	31,956	Sept. 6	84	1582
Peal Medicine Co., Cleveland, Ohio. Compounds for the cure of nervous debility	31,924	Aug. 30	84	1432
Pearl Roller Mill Company, Oswego, Kans. Wheat-flour	32,013	Sept. 27	84	2015
Peerless Carbon Black Company, Limited, Pittsburg, Pa. Carbon-blacks	31,818	July 19	84	506
Pegram & Penn, Madison, N. C. Plug and twist tobacco	32,012	Sept. 27	84	2015
Peoria Rubber and Manufacturing Company, Peoria, Ill. Bicycles	31,903	Aug. 23	84	1280
Perry & Company, Limited, Birmingham, England. Pens	31,958	Sept. 13	84	1725
Pfister & Vogel Leather Company, Milwaukee, Wis. Soles and other leather parts of boots and shoes	31,849	Aug. 9	84	979
Pharmaceutisches Institut Ludwig Wilhelm Gans, Frankfort-on-the-Main, Germany. Powders, pills, tablets, perls, ointments, and tinctures	31,963	Sept. 13	84	1725
Philadelphia Textile Machinery Company, Philadelphia, Pa. Drying-machines	31,821	July 19	84	506
Pike Manufacturing Company, Haverhill, N. H.; Evansville, Vt.; Manlius and New York, N. Y.; Orleans, Ind., and Hot Springs, Ark. Sharpening-stones	31,774	July 5	84	142
Piano Manufacturing Company, Chicago, Ill. Machinery for harvesting hay and cereals	31,775	July 5	84	143
Piano Manufacturing Company, Chicago, Ill. Machinery for harvesting hay and cereals	31,887	Aug. 16	84	1140
Plymouth Cordage Company, North Plymouth, Mass. Twine and binder-twine	31,812	July 19	84	505
Pollard, Byrd G., Norfolk, Va. Cornmeal	31,880	Aug. 2	84	804
Prescott & Co., J. L., New York, N. Y. Polish	31,992	Sept. 20	84	1866
Provident Chemical Works, St. Louis, Mo. Trisodium phosphate	31,898	Aug. 23	84	1279
R. T. Booth Company, Ithaca, N. Y. Certain named medicinal preparations and medicinal toilet articles	32,000	Sept. 27	84	2014
Raspe, Firm of Carl, Weissensee, Germany. Disinfecting, antiseptic, and asepticizing preparations	31,950	Sept. 6	84	1582
Ray, Richard, Kansas City, Mo. Compound celery extract	31,878	Aug. 16	84	1140
Reichardt, Ferdinand A., New York, N. Y. Surgical instruments and appliances	31,999	Sept. 27	84	2014
Resinol Chemical Co., Baltimore, Md. Elixirs, laxatives, alteratives, and tonics	31,873	Aug. 16	84	1139
Revere Rubber Company, Boston, Mass. Hose, belting, packing, valves, gaskets, and springs	31,980	Sept. 6	84	1580
Reversible Collar Company, Boston and Cambridge, Mass. Stay-tape	31,847	Aug. 9	84	979
Richardson, James M., Cleveland, Ohio. Sewing-machines	31,865	Aug. 9	84	980
Robertson, George W., Corning, N. Y. Letter-books	31,867	Aug. 16	84	1139
Robinson-Danforth Commission Company, St. Louis, Mo. Wheat-flour and bread made therefrom	31,999	Sept. 20	84	1867
Roemheld, Henry F., Milwaukee, Wis. Foot-eole	31,979	Sept. 20	84	1866
Rosedale, Eugene, Boston, Mass. Roasted and ground coffee	31,803	July 12	84	308
Roswell, Charles R., Cleveland, Ohio. Liniment	31,857	Aug. 9	84	980
S. S. Pierce Company, Boston, Mass. Lager-beer	31,926	Aug. 30	84	1432
Saginaw Milling Co., Saginaw, Mich. Baled hay	31,994	Sept. 20	84	1867
Sahlin Novelty Company, Chicago, Ill. Waist-front distenders	31,796	July 12	84	307
Sarawak Cutch Company, Limited, London, England. Cutch or catechu dye	31,920	Aug. 30	84	1432
Sargent, Martha A., Jersey City, N. J. Preparation of sandalwood in paste form	31,797	July 12	84	307
Schuchardt & Schütte, Berlin, Germany. Machine-tools	31,806	July 12	84	308
Schuenemann, Louis, St. Louis, Mo. Liniment	31,966	Sept. 13	84	1725
Schwarz, Firm of F. A. O., New York, N. Y. Toys, dolls, and games	31,839	Aug. 2	84	805
Schwarz, Firm of F. A. O., New York, N. Y. Toys, dolls, and games	31,840	Aug. 2	84	805
Schweinburg, Emil, New York, N. Y. Corsets	31,829	Aug. 2	84	804
Schwill & Co., Albert, Cincinnati, Ohio. Malt for brewers' use	31,968	Sept. 13	84	1726
Shank, Daniel, Clayton, Ill. Plants and trees	31,998	Sept. 20	84	1867
Sibley, William E., Freeport, Ill. Tea, coffee, spices, and canned goods	31,882	Aug. 2	84	804
Smith, Robert R., Pittsburg, Pa. Insect-destroyer	31,921	Aug. 30	84	1432
Smith, William S., Chicago, Ill. Heating and cooking stoves	32,018	Sept. 27	84	2016
Snook, Charles W., New York, N. Y. Tea, coffee, spices, flavoring extracts, and sauces	31,945	Sept. 6	84	1581
Sprague, Warner & Company, Chicago, Ill. Certain named confectionery	31,789	July 5	84	144
Staedtler, Firm of J. S., Nuremberg, Germany. Certain named articles of stationery	31,928	Aug. 30	84	1432
Standard Distilling and Distributing Company, New York, N. Y. Alcohol, spirits, gin, and whisky	31,927	Aug. 30	84	1432
Steinhoff, George B. M., Scott, W. Va. Remedy for diseases of cattle	31,808	July 12	84	307
Strong & Co., Joseph, Terre Haute, Ind. Baking-powder	31,970	Sept. 13	84	1726
Taddei, Antoine L., New York, N. Y. Medicinal pomade or ointment	31,872	Aug. 16	84	1139
Terry, Hubert, West Hoboken, N. J. Medical plasters	31,835	Aug. 2	84	804
Thomas & Clarke, Peoria, Ill. Crackers	31,948	Sept. 6	84	1582
Thompson, Horace, Concord, N. H. Long-handled brooms for household use	31,819	July 19	84	506
Tilton, Eugene H., Boston, Mass. Leather boots and shoes	31,848	Aug. 9	84	979
Turner Brass Works, Chicago, Ill. Certain named metal articles	32,014	Sept. 27	84	2015
Turner, Frederick W., Jr., Boston, Mass. Substitute for soap	31,780	July 5	84	143
Underwood, Francis J., Hartford, Conn. Washing, cleaning, and polishing compounds or substances	31,940	Sept. 6	84	1581
Unger, Charles W., Los Angeles, Cal. Herb remedies for certain named diseases	31,785	July 5	84	144
Union Linen Company, Guild, N. H. Certain named woven linen fabric	31,810	July 19	84	505
Union Oil Company, Providence, R. I., and New York, N. Y. Cooking-oils	31,947	Sept. 6	84	1581
Union Oil Company, Providence, R. I., and New York, N. Y. Cotton-seed oil	32,010	Sept. 27	84	2015
Union Sand Paper and Emery Wheel Company, Portland, Me.; Boston, Mass., and Chicago, Ill. Abrasive materials, sandpaper, and emery paper and cloth	31,776	July 5	84	143
Vacuum Oil Company, Rochester, N. Y. Lubricating-oils	31,861	Aug. 9	84	980
Valentine, Charles R., Lee, England. Certain named food extracts and preparations	31,879	Aug. 16	84	1140
Van Vleet-Mansfield Drug Company, Memphis, Tenn. Mentho-quinine and laxative quinidine tablets, and a kidney cure	31,784	July 5	84	144
Vandergrift Manufacturing Company, Jamestown, N. Y. Washing-machines	31,808	July 12	84	308
Vaupel Samaritan Company, Cleveland, Ohio. Condiment	31,882	Aug. 16	84	1140

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Vogelgesang, Theodore J., Buffalo, N. Y. Fever remedies	31,875	Aug. 16	84	1139
Wanamaker, John, Philadelphia, Pa. Ladies', misses', and gentlemen's kid gloves	31,794	July 12	84	307
Warburton, Frank E., Pawtucket, R. I. Yarn with silk finish	31,909	Aug. 30	84	1431
Warburton, Frank E., Pawtucket, R. I. Yarn with silk finish	31,910	Aug. 30	84	1431
Warner Brothers Company, Bridgeport, Conn. Corsets	31,795	July 12	84	307
Wasson, James R., Chicago, Ill. Remedy for certain named diseases	31,965	Sept. 13	84	1725
Waukesha Water Company, Jersey City, N. J. Mineral waters	31,791	July 5	84	144
Whiting Paper Company, Holyoke, Mass. Writing-papers	31,770	July 5	84	142
Whiting Paper Company, Holyoke, Mass. Writing-paper	31,798	July 12	84	307
Whitcher & Co., Frank W., Boston, Mass. Rubber heels for boots and shoes	31,961	Sept. 13	84	1725
Willard, Edward A., New York, N. Y. Tea	31,815	July 19	84	505
Willard, Edward A., New York, N. Y. Certain named teas	31,823	July 26	84	646
Williamson & Watts, Baltimore, Md. Corn-plaster	31,908	Sept. 27	84	2014
Wilmot & Hobbs Manufacturing Company, Bridgeport, Conn. Sheet-metal tubes	31,842	Aug. 2	84	805
Wilson, Baylor, Navasota, Tex. Flavoring compound for syrup for soda-water	31,833	Aug. 2	84	804
Yale & Towne Manufacturing Company, Stamford, Conn. Locks	31,843	Aug. 2	84	805
Yarnell, Henry H. (See Baer, Yarnell, and Zimmerman.)				
Zimmerman, James A. (See Baer, Yarnell, and Zimmerman.)				
Zucker & Levett & Loeb Company, New York, N. Y. Ammonia cleansing compound	31,941	Sept. 6	84	1581

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
American Lithographic Company, New York, N. Y. "War Signals." (For Cigar.)	6,626	July 19	84	315
American Lithographic Company, New York, N. Y. "Rule Columbia." (For Cigars)	6,627	July 19	84	315
American Lithographic Company, New York, N. Y. "Cupid's Game." (For Cigars)	6,636	Aug. 9	84	813
American Lithographic Company, New York, N. Y. "Our Hero." (For Cigars)	6,645	Aug. 23	84	1147
American Lithographic Company, New York, N. Y. "Navy Belle." (For Cigars)	6,646	Aug. 23	84	1147
American Lithographic Company, New York, N. Y. "Yankee Drops," Manila Flavor. (For Cigars)	6,649	Aug. 30	84	1287
Armstrong & Co., Toledo, Ohio. "Rosedale Brand." (For Canned Fruits, Vegetables, and Wines)	6,676	Sept. 27	84	1875
Bare, J. B., Baltimore, Md. "Bare's Dyspepsia Remedy and Tissue Builder." (For a Medicine)	6,641	Aug. 16	84	987
Berrien, William P., Montclair, N. J., and A. W. Smith, New York, N. Y. "Uncle Sam's Maine Puzzle"	6,638	Aug. 16	84	987
Boericke & Tafel, Philadelphia, Pa. "Physiological Nerve and Tissue Food." (For a Medical Compound)	6,677	Sept. 27	84	1875
Boericke & Tafel, Philadelphia, Pa. "Physiological Salts." (For a Medical Compound)	6,678	Sept. 27	84	1875
Boericke & Tafel, Philadelphia, Pa. "Physiological Salts." (For a Medical Compound)	6,679	Sept. 27	84	1875
Briggs, W. H., Northport, Wash. "The Original Extract of Figs." (For Medicine)	6,663	Sept. 13	84	1589
Buttfield, W. J., New York, N. Y. "Cousins." (For Tea)	6,667	Sept. 13	84	1589
Buttfield, W. J., New York, N. Y. "Ho-Tea." (For Tea)	6,668	Sept. 13	84	1589
Buttfield, W. J., New York, N. Y. "Shield Chop." (For Tea)	6,669	Sept. 13	84	1589
Carrara Paint Company, Barberton, Ohio. "Carrara." (For Paint)	6,635	Aug. 2	84	653
Commonwealth Brewing Company, Philadelphia, Pa. "Cycle Beer." (For Beer)	6,633	Aug. 2	84	653
Concordia Land and Improvement Association, Thorsby, Ala. "From Thorsby Ala. to Market." (For Grapes)	6,671	Sept. 13	84	1589
Court Perfumery Company, New York, N. Y. "Eau de Frangipanni." (For Toilet Water)	6,630	Aug. 2	84	653
Court Perfumery Company, New York, N. Y. "Eau de Toilette Violette." (For Toilet Water)	6,631	Aug. 2	84	653
Court Perfumery Company, New York, N. Y. "Eau de Cologne de la Cour." (For Toilet Water)	6,632	Aug. 2	84	653
Cramer, J. George, Rochester, N. Y. "Pickwick Paper." (For Toilet-Paper)	6,640	Aug. 16	84	987
Dakin, Archibald, Brockton, Mass. "Arab Balsam." (For Balsam)	6,664	Sept. 13	84	1589
Davenport, D. F., Americus, Ga. "Davenport's Tasteless Sulphate Quinine"	6,680	Sept. 27	84	1875
Diamond Match Company, Chicago, Ill. "Chips that Pass in the Night." (For Matches)	6,653	Aug. 30	84	1287
Dunlop, Clark W., New York, N. Y. "Dr. Dunlop's Marvoline (Oriental Oil)." (For Rheumatism, Neuralgia, &c.)	6,643	Aug. 16	84	987
Elliott, Henry H., Washington, D. C. "Golden Slipper." (For Rye Whisky)	6,647	Aug. 23	84	1147
Ford, Frederic G., Philadelphia, Pa. "Ford's Remedies." (For Medical Compounds)	6,642	Aug. 16	84	987
Freter, Theo. H., Chicago, Ill. "Supreme Chief Ranger." (For Cigars)	6,621	July 5	84	1
Glanfield, George, Cleveland, Ohio. "Amicus Relief." (For Medicinal Remedy)	6,628	July 19	84	315
Gottschalk Company, Baltimore, Md. "Social Session." (For Whisky)	6,670	Sept. 13	84	1589
Grebe, Jacob E., Jansen, Nebr. "Dr. Grebe's XXX Chicken Sarsaparilla and Cholera Cure." (For a Medical Compound)	6,634	Aug. 2	84	653
H. W. Johns Manufacturing Company, New York, N. Y. "H. W. Johns Improved Asbestos Roofing." (For Asbestos Roofing and Roofing-Felts)	6,654	Aug. 30	84	1287
Hamilton Medicine Company, Cincinnati, Ohio. "Hamilton Medical Co's Remedies." (For Medicine)	6,637	Aug. 9	84	813
Holland Coffee Company, Limited, New York, N. Y. "Hollands." (For Coffee)	6,658	Sept. 6	84	1441
Huchberger, Jacob O., New York, N. Y. "International Automatic Copying Book"	6,625	July 19	84	315
Hygiene Milling Company, Seymour, Ind. "Hoosier Whole Wheat Pancake Flour." (For Pancakes)	6,644	Aug. 16	84	987
J. Ottman Lithographing Company, New York, N. Y. "Porto Rico Special." (For Beer)	6,672	Sept. 20	84	1733
Kursheedt Manufacturing Company, New York, N. Y. "Chelsea Trimming." (For Fancy Dry Goods)	6,639	Aug. 16	84	987
Lee Broom and Duster Company, Lincoln, Nebr. "Speckled Cracker Jack." (For Cigars)	6,673	Sept. 20	84	1733
Loomis, Frank C., Grand Rapids, Mich. "Ready for Use Rat Cake." (For Rat-Poison)	6,675	Sept. 20	84	1733
Lucas, George B., Austin, Tex. "Lucas' Dengue Medicine." (For Yellow Fever and La Grippe)	6,648	Aug. 23	84	1147
Lucchesi, Eugene, Boston, Mass. "Lucchesi's Cure for Rheumatism." (For Rheumatic Salve)	6,674	Sept. 20	84	1733
McLoughlin Brothers, New York, N. Y. "Game of Race Around the World." (For a Game)	6,655	Sept. 6	84	1441
McLoughlin Brothers, New York, N. Y. "Game of the Robber Kitten." (For a Game)	6,656	Sept. 6	84	1441
McLoughlin Brothers, New York, N. Y. "The Game of the Ten Little Niggers." (For a Game)	6,657	Sept. 6	84	1441
McLoughlin Brothers, New York, N. Y. "Game of Naval War." (For a Game)	6,660	Sept. 13	84	1589
McLoughlin Brothers, New York, N. Y. "The Merry Game of Old Maid." (For a Game)	6,661	Sept. 13	84	1589
McLoughlin Brothers, New York, N. Y. "Game of War at Sea or Don't Give Up the Ship." (For a Game)	6,662	Sept. 13	84	1589
Poong, Chen Yum, New Orleans, La. "Poong's Ready Cure." (For a Medicine)	6,659	Sept. 6	84	1441
Saks, Andrew, New York, N. Y., and I. Saks, Washington, D. C. "Armor Strength Cheviots. Wear and Color Guaranteed. Saks and Company"	6,623	July 12	84	151
Saks, Andrew, New York, N. Y., and I. Saks, Washington, D. C. "Russian Navy." (For Serge)	6,624	July 12	84	151
Saks, Isadore. (See Saks, Andrew and I.)	6,622	July 5	84	1
Schlenker, Joseph, Chicago, Ill. "Hirsau Cloister-Drops." (For Medicine)				
Smith, Alfred W. (See Berrien and Smith.)				
Snook, Charles W., New York, N. Y. "Greatworth's Teas and Coffees." (For Teas and Coffees)	6,650	Aug. 30	84	1287
Tomson & Co., P. C., Philadelphia, Pa. "Red Seal Laundry Soap." (For Soap)	6,666	Sept. 13	84	1589
Vest, Henry E., Chicago, Ill. "The Reform Self Binder"	6,629	July 26	84	513
Voytek, Joseph, Topeka, Kans. "Lightning Polish." (For a Furniture Polish)	6,681	Sept. 27	84	1875
Weed, Edward P., Norwalk, Conn. "Dr. Many's Antiseptic Tooth Powder." (For Tooth-Powder)	6,665	Sept. 13	84	1589
Wirth, Henry R., Providence, R. I. "Select Stock." (For Beer-Bottles)	6,682	Sept. 27	84	1875
Zucker & Levett & Loebe Company, New York, N. Y. "Haas' Kremonia or Ammonia Cream." (For Cleansing Compounds)	6,651	Aug. 30	84	1287
Zucker & Levett & Loebe Company, New York, N. Y. "Haas' Kremonia or Ammonia Cream." (For Cleansing Compounds)	6,652	Aug. 30	84	1287

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Davis, Spencer L., Chicago, Ill. "Army and Navy Puzzle." (For a Game)	78	Sept. 20	84	1733
Finesilver, Isaac, New York, N. Y. "Self Fastening Knobs for Pot Covers"	73	July 26	84	513
George Ziegler Company, Milwaukee, Wis. "Ziegler's Effervescent Soda Water Tablets"	71	July 19	84	315
New York Consolidated Card Company, New York, N. Y. "American-Cuban." (For Playing-Cards)	74	Aug. 16	84	987
New York Consolidated Card Company, New York, N. Y. "How to Catch a Spaniard." (For Playing-Cards)	75	Aug. 23	84	1147
Rogers, Edward S., Cleveland, Ohio. "English Woolen Mills Company." (For Men's Wearing-Apparel, Suits, Overcoats, and the Like)	76	Aug. 30	84	1297
Selter & Kappes, New York, N. Y. "Gone to the Front." (For Plug-Tobacco)	73	Aug. 16	84	987
United States Playing Card Company, Cincinnati, Ohio. "Mystic Playing Cards." (For Playing-Cards)	77	Sept. 6	84	1441

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abrading material. Roll of	T. E. Keavy	610,761	Sept. 13	1114	254	84	1678
Abrading-wheel	D. J. Lattimore	608,877	Aug. 9	1296	302	84	925
Abrasive hand-tools, files, &c. Carrier for	H. Focke	608,513	Aug. 2	608	136	84	776
Acetone. Process of and apparatus for making	A. Bauschlicher	608,019	July 26	2776	591	84	593
Acid and charging water therewith. Apparatus for containing compressed carbonic	V. Durafort	610,127	Aug. 30	3587	832	84	1415
Acid. Ester of paraAmidometaoxybenzoic	A. Einhorn	610,348	Sept. 6	401	.....	84	1517
Acid. Making aldehydo-benzoic	J. Koetschet	607,056	July 12	786	.....	84	179
Acid. Making salicylo-acetic	L. Limpach	611,014	Sept. 20	1506	.....	84	1778
Actinometer	J. A. Cheape	610,028	Aug. 30	3432	705	84	1382
Adding-machine	H. A. Herr	609,885	Aug. 30	3169	741 742	84	1331
Adenin and making same	E. Fischer	607,029	July 12	711	.....	84	159
Adhesive compound	C. M. Higgins	610,182	Sept. 6	55	.....	84	1452
Adhesive compound and producing same	M. Hinzelmann	608,044	July 26	2823	.....	84	602
Adhesive-paste compound	C. M. Higgins	610,183	Sept. 6	59	.....	84	1452
Adhesives. Making	G. Eichelbaum	608,363	Aug. 2	349	76	84	725
Adjustable table	J. J. Anderson	608,094	July 26	2895	620	84	617
Advertising device	A. Barrett	607,327	July 12	1295	277	84	267
Advertising device	J. D. Hefley	608,855	Aug. 9	1263	294	84	919
Advertising device	G. A. Stout	611,045	Sept. 20	1617	370	84	1788
Aerating water or other liquids in bottles. Apparatus employed in	E. Sterné	611,292	Sept. 27	2106	485	84	1901
Aerial conveyer	W. H. Gilman	609,273	Aug. 16	2076	493 494	84	1069
Aerial ship	T. J. Brown	610,843	Sept. 13	1258	290	84	1768
Air-brake	C. L. Ansley	608,095	July 26	2896	620	84	617
Air-brake	M. Corrington	606,708	July 5	132	28	84	28
Air-brake	M. Corrington	608,080	July 26	2804	596	84	598
Air-brake	F. L. Guillemet	606,712	July 5	141	29	84	29
Air-brake	F. L. Guillemet	608,509	Aug. 9	770	177	84	828
Air-brake	F. L. Guillemet	608,600	Aug. 9	773	177	84	828
Air-brake	W. Hirst	607,371	July 12	1374	293 294	84	282
Air-brake	J. J. Nef	609,041	Aug. 16	1633	390	84	1004
Air-brake	J. J. Nef	609,042	Aug. 16	1634	390	84	1004
Air-brake	H. S. Park	608,621	Aug. 9	807	187	84	834
Air-brake	H. S. Park	610,947	Sept. 20	1439	330 331	84	1755
Air-brake	H. S. Park	610,948	Sept. 20	1443	331	84	1755
Air-brake	C. N. Dutton	609,087	Aug. 16	1705	406 407	84	1017
Air-compressor	C. N. Dutton	609,088	Aug. 16	1710	407	84	1018
Air-compressor	F. E. Heston and R. B. Harvison	608,964	Aug. 9	1457	345	84	953
Air-compressor	A. G. Noack and L. S. Grossman	606,732	July 5	170	38	84	35
Air-compressor. Hydraulic	A. G. Noack and L. S. Grossman	606,733	July 5	173	38.39	84	35
Air-compressor. Hydraulic	D. Becker	610,790	Sept. 13	1173	270 271	84	1685
Air-compressor. Tide-water	E. T. Sederholm	607,195	July 12	1049	227	84	219
Air-compressor valve-gear	J. G. Leyner	610,608	Sept. 13	861	197	84	1622
Air-compressors. Air-inlet valve for	M. Moseley and P. Funck	608,340	Aug. 2	318	70	84	719
Air-compressors. Automatic switch for regulating electric	J. McCreery	607,264	July 12	1187	254	84	245
Air escape or vent. Foul-	G. S. Emerick	609,537	Aug. 23	2552	597	84	1197
Air-separator	C. E. Hite	607,240	July 12	1147	244 245	84	237
Air-ship							
Alarm: *See* Burglar-alarm. Fire-alarm. Low-water alarm. Railway signal-alarm.							
Alarm-lock	E. N. Case	611,212	Sept. 20	1921	444	84	1845
Alarm system	C. Coleman	607,407	July 12	1447	307	84	296
Alcohol. Apparatus for manufacturing wood-	M. F. Quinn	611,508	Sept. 27	2513	580 581	84	1976
Alcohol. Manufacturing ethylic	A. M. Villon	608,652	Aug. 9	870	200	84	846
Alkali metals from their chlorids. Apparatus for producing	P. Danckwardt	607,506	July 19	1805	375	84	389
Alloy. Aluminium	W. A. McAdams	611,016	Sept. 20	1576	.....	84	1780
Alloy of iron and titanium and producing it	A. J. Rossi	609,466	Aug. 23	2430	568	84	1174
Alloys of titanium. Manufacturing	A. J. Rossi	609,467	Aug. 23	2424	.....	84	1174
Amalgamating-pan	E. H. T. Plant and S. Dellow	611,506	Sept. 27	2510	579	84	1975
Amalgamator	I. Anderson	611,346	Sept. 27	2199	508	84	1917
Amalgamator	N. P. Nelson	609,624	Aug. 23	2729	636	84	1231
Ammonia. Producing	H. Mehner	607,943	July 26	2625	557	84	561
Ammonium salts from refuse. Apparatus for recovering	S. S. Pridham	609,122	Aug. 16	1795	428	84	1089
Anchor. Expansion-	D. C., W. R., and M. R. Seaman	610,308	Sept. 6	321	69	84	1508
Angle-bars. Device for bending	D. Brennan, J. R. Wirley, and E. Goldthwait.	608,899	Aug. 9	1211	283	84	909
Animal-dipping tank	E. A. Steen	606,946	July 5	541	119	84	108

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Animal-trap	J. L. Farley	609,338	Aug. 16	2193	517, 518	84	1111
Animal-trap	I. Frank	609,184	Aug. 16	1895	451	84	1050
Animal-trap	J. Knoop	607,891	July 19	2134	448	84	449
Animal-trap	T. E. Troutt	608,493	Aug. 2	573	128	84	769
Animal-trap	J. J. Shelton	609,561	Aug. 23	2593	606	84	1205
Animal-trap. Automatic self-setting	J. W. and J. H. Frerich	609,538	Aug. 23	2554	597	84	1198
Ankle-brace	W. C. Huff	607,243	July 12	1152	246	84	238
Ankle-brace	A. C. Wright	608,164	July 26	3012	647	84	638
Ankle-joint	E. Tarbox, Jr.	609,375	Aug. 16	2246	531	84	1122
Antirattler and shaft-coupling	J. A. Guiles	610,137	Aug. 30	3601	836	84	1417
Anvil attachment	W. Duffy	609,014	Aug. 16	1572	374	84	993
Anvil attachment for repairing horseshoe-calks	M. V. Nichols	607,126	July 12	925	200	84	197
Anvil clamp attachment	L. Harr	607,675	July 19	2111	441	84	445
Arm-rest	E. H. Anderson and D. P. Thomson	608,277	Aug. 2	184	44	84	691
Armature for dynamo-electric machines	T. J. Tresidder	607,777	July 19	2276	481	84	477
Armor-plates, &c. Apparatus for applying heat to surfaces of	J. Sedlmayer	611,516	Sept. 27	2527	583	84	1979
Ash-pits. Discharge-valve for	A. Szabó	609,308	Aug. 16	2143	508	84	1101
Aspersorium and incense-holder. Combined pocket	J. A. Dubbs	608,372	Aug. 2	362		84	727
Asphaltum and manufacturing same	J. J. Lonergan and A. C. Calkins	608,883	Aug. 9	1304	304	84	927
Assayer's furnace	W. M. Hamilton	611,120	Sept. 20	1765	404, 405	84	1816
Auger-twisting machine	A. Krauth	611,259	Sept. 27	2028	468	84	1886
Autographic register	O. C. Reeves	609,465	Aug. 23	2419	567, 568	84	1173
Autographic register	A. Syssoyeff and L. Braly	606,698	July 5	106		84	23
Autoluminous composition	F. Lowe	606,931	July 5	520	114	84	1[illegible]
Automatic can	W. H. Jackson	609,436	Aug. 23	2357	556	84	1162
Automatic-locking switch	G. F. Summers	608,926	Aug. 9	1899	330	84	944
Awl. Sewing-	C. Bergeron	610,020	Aug. 30	3422	792	84	1380
Awning	J. Sullivan	610,101	Aug. 30	3541	821	84	1405
Awning-fixture	J. W. Zimmerman	607,108	July 12	900	192	84	191
Awning-frame	J. R. Powell	608,077	July 26	2870	614	84	612
Awning-protector	F. Baker	611,092	Sept. 20	1712	393	84	1807
Axes, hammers, &c., to their handles. Means for securing heads of	F. M. Arnold	609,925	Aug. 30	3232	757	84	1343
Axle	W. H. Waldron	609,255	Aug. 16	2050	487	84	1093
Axle	C. B. Hobron	607,241	July 12	1149	245	84	237
Axle-box. Ball-bearing	E. J. Hunt	610,056	Aug. 30	3474	806	84	1391
Axle box. Car-	F. Rattek	610,147	Aug. 30	3612	839	84	1420
Axle-box dust-guard	C. G. Potter	609,121	Aug. 16	1754	427	84	1032
Axle-box dust-guard. Car-	J. G. Obermier	610,195	Sept. 6	79	16	84	1455
Axle. Lubricating-	H. J. Faust	609,423	Aug. 23	2343	552	84	1159
Axle-lubricator	E. W. Hancock	608,329	Aug. 2	206	65	84	714
Axle lubricator. Car-	F. S. and S. J. Smith	609,844	Aug. 30	3099	722	84	1317
Axle lubricator. Car-	J. S. Patten	607,874	July 26	2506	592	84	538
Axle lubricator, dust-guard, and hot-box indicator. Combined car-	B. F. Smith	608,528	Aug. 2	636	143	84	781
Axle setting and straightening tool	G. Beekman	609,651	Aug. 23	2781	649, 650	84	1241
Back-pedaling brake	J. Harrington	610,649	Sept. 13	923	212, 213	84	1635
Back-pedaling brake	H. M. Hunt	610,270	Sept. 6	229	51	84	1487
Back-pedaling brake	A. P. Morrow	611,078	Sept. 20	1664	381	84	1796
Back-pedaling brake	S. A. Randall	611,147	Sept. 20	1818	418	84	1836
Back-pedaling brake	E. H. Schultz and E. H. Starkey	609,372	Aug. 16	2240	529, 530	84	1121
Back-pedaling brake	H. Symes	611,154	Sept. 20	1827	421	84	1828
Back-pedaling brake	P. H. White	610,507	Sept. 6	690	155	84	1571
Back-pedaling brake	L. L. Williams	610,696	Sept. 13	996	231	84	1651
Back-pedaling brake	A. H. Adams	608,357	Aug. 2	340	74	84	723
Badge	J. V. Washburne	607,307	July 12	1261	268	84	260
Badge							
Bag: *See* Water-bag.	P. Gans	609,989	Aug. 30	3370	788	84	1371
Bag-fastener	A. H. Propper	608,909	Aug. 9	1340	313	84	934
Bag-fastener	N. F. Becker	608,638	Aug. 9	850	195	84	842
Bag-holder	L. E. Biery	611,347	Sept. 27	2201	508	84	1918
Bag-holder	W. D. Graves	608,853	Aug. 9	1261	293	84	918
Bag-holder	M. E. Perkins	609,589	Aug. 23	2644	618	84	1215
Bag-holder	J. E. Otto	608,900	Aug. 9	1327	309	84	931
Bag-holder and weigher. Combined	J. T. Gill	611,033	Sept. 20	1597	366	84	1784
Ball attachment for stone jars	J. Mathy	607,759	July 19	2242	474	84	470
Baking-pan	L. A. Tuell	608,930	Aug. 9	1405	332	84	945
Baking-pan. Compartment	R. Bahnsen	610,517	Sept. 13	709	160	84	1591
Balcony. Portable	M. A. Heath	608,042	July 26	2820	600	84	601
Bale-covering. Metallic	D. M. Botulinski	608,172	Aug. 2	8	2	84	656
Bale or box book	D. M. Campbell	609,872	Aug. 30	3144	735	84	1327
Bale-tie	F. H. Daniels	608,840	Aug. 9	1236	288	84	914
Bale-tie	A. B. Bosca and E. W. Benner	608,399	Aug. 2	415	91	84	738
Bales. Apparatus for unwinding cylindrical cotton-	P. K. Dederick	610,168	Sept. 6	12	4	84	1445
Baling-press	S. M. Perrin	609,293	Aug. 16	2114	501, 502	84	1095
Baling-press	N. B. Wilder	608,563	Aug. 2	695	158	84	794
Baling-press	W. H. Young	610 731	Sept 13	1058	243	84	1663
Baling-press	J. W. Bragger	606,914	July 5	496	109	84	99
Ball-and-socket joint clamp	R. H. White	609,220	Aug. 16	1971	468	84	1066
Ball-sorting machine	H. Meltzer	608,470	Aug. 2	535	120	84	762
Ball-working machine	H. Meltzer	610,071	Aug. 30	3499	810, 811	84	1996
Balls. Apparatus for examining the exact spherical form of	L. M. Foster	608,662	Aug. 9	891	204	84	851
Ballot-box	J. H. Murphy	606,333	July 5	523	114, 115	84	104
Band or cord. Endless	H. Burger and T. Lutz	609,197	Aug. 23	2490	581	84	1186
Bandage							

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bar: *See* Grate-bar. Rail-sustaining bar. Handle-bar. Tubular bar.	L. A. Treat	610,749	Sept. 13	1088	249	84	1668
Bar-piling mechanism	E. Berninghaus	609,002	Aug. 16	1555	370	84	989
Barber's chair	S. W. Butterfield	609,330	Aug. 16	2176	514	84	1106
Bark-cutter	J. C. Estabrook	611,067	Sept. 20	1652	378	84	1794
Barrel	M. H. Tilghman	611,582	Sept. 27	2550	588	84	1968
Barrel	R. Piotrowski	607,661	July 19	2093	437	84	441
Barrel. Beer-	J. D. Copperfield	609,793	Aug. 30	3010	705	84	1299
Barrel-head	A. L. Swett	610,206	Sept. 6	98	21	84	1459
Barrel-heading press	G. Ross-Lund	611,441	Sept. 27	2395	549	84	1962
Barrel, &c. Knockdown	J. Harmatta	608,772	Aug. 9	1075	247	84	885
Barrel. Metal	A. J. Underhill, 2d	610,592	Sept. 13	840	192	84	1618
Barrel-press	A. Griebel	611,576	Sept. 27	2644	610	84	2001
Barrel-scrubbing machine	C. C. F. Ehrengart	609,931	Aug. 30	3241	758, 759	84	1345
Barrel-washer	R. Troehler	607,097	July 12	874	188	84	188
Barrel-washing machine	J. F. Schmadeke	611,080	Sept. 20	1685	387	84	1800
Barrels, &c. Rolling-shoe for coal-	W. Mason	610,765	Sept. 13	1119	256, 257	84	1675
Barrels to stocks. Means for detachably uniting	A. R. Smith and J. Schmitt, Jr.	609,308	Aug. 16	2133	506	84	1099
Barrow-wheel	G. H. Mowe	611,074	Sept. 20	1665	382	84	1797
Basin and sewer-trap. Catch-	A. Biggs, Jr.	606,798	July 5	307	64	84	61
Basket	M. Bach	610,787	Sept. 13	1170	270	84	1685
Basket. Folding	M. C. Arrick	610,854	Sept. 13	1277	295	84	1707
Basket for catching sewing from machines	W. Jackson	607,689	July 19	2127	446, 447, 448	84	448
Basket-machine							
Bath: *See* Electrolytic bath. Galvanic bath.	W. R. Baker	608,947	Aug. 9	1434	338	84	950
Bath apparatus. Shower-	W. H. Thiell	607,791	July 19	2303	486	84	481
Bath-room and water heater. Portable	W. H. Cloud	610,800	Sept. 13	1193	274	84	1690
Bath-trap	D. D. Buick	611,029	Sept. 20	1590	365	84	1783
Bath-tub	W. Demarest and F. J. Cunningham	611,064	Sept. 20	1649	377	84	1794
Bath valve. Shower-	C. Marschner	608,614	Aug. 9	796	184	84	832
Batteries and composition for producing same. Plate for secondary galvanic	W. L. Negbaur	607,124	July 12	920	200	84	196
Batteries. Automatic cut-out for secondary	J. C. Dagoneau	609,142	Aug. 16	1825	433	84	1038
Battery: *See* Counter-battery. Stamp-battery. Electric battery. Storage battery. Primary battery. Storage or secondary battery. Secondary battery.	D. Ogden	608,216	Aug. 2	88	23	84	672
Battery and electric cell. Combined	C. B. Hatfield	607,637	July 19	2043	424	84	453
Battery-zinc	G. B. Waite	606,696	July 5	109	24	84	24
Beading-machine	C. M. Horton	611,202	Sept. 20	1905	439	84	1842
Beam construction for buildings	N. Duval-Pihet	607,353	July 12	1342	287	84	277
Beam, girder, and post. Combination structural metal	W. G. Harris	608,041	July 26	2819	600	84	601
Bearing. Adjustable spring-	W. C. Baker	608,017	July 26	2773	589	84	593
Bearing adjusting device. Ball-	W. C. Baker	609,648	Aug. 23	2777	647	84	1240
Bearing. Antifriction-	T. R. Garnier	611,032	Sept. 20	1595	366	84	1784
Bearing. Antifriction-	J. C. Reber	607,790	July 19	2302	486	84	461
Bearing. Antifriction-	E. Rivett	608,916	Aug. 9	1360	319	84	928
Bearing. Antifriction-	D. Crane	611,236	Sept. 27	1991	459	84	1879
Bearing. Ball-	P. Davies	610,961	Sept. 20	1468	336	84	1759
Bearing. Ball-	I. Faunce	609,503	Aug. 23	2197	504	84	1187
Bearing. Ball-	L. E. Harper and C. L. Grohmann	608,854	Aug. 9	1262	294	84	919
Bearing. Ball-	A. G. Hitchcock	609,674	Aug. 23	2816	657	84	1249
Bearing. Ball-	J. McAlpine	610,970	Sept. 20	1482	338	84	1762
Bearing. Ball-	C. E. Roberts	609,835	Aug. 30	3087	720	84	1315
Bearing. Ball-	F. W. Schroeder	609,371	Aug. 16	2238	529	84	1120
Bearing. Ball-	C. Smith	609,463	Aug. 23	2410	567	84	1173
Bearing. Ball	C. E. Colegrove	610,166	Sept. 6	11	3	84	1445
Bearing. Bicycle-	W. R. Fox	608,961	Aug. 9	1452	344	84	954
Bearing. Bicycle-	J. Morrison	611,137	Sept. 20	1797	414	84	1822
Bearing. Bicycle crank-shaft	G. G. Brown	610,341	Sept. 6	384	82	84	1514
Bearing. End-	J. Knape and C. W. Dake	607,055	July 12	785	171	84	171
Bearing for bicycles. Crank-shaft	H. Ganswindt	610,232	Sept. 6	174	39	84	1475
Bearing for rotary disks	J. O. Marks	607,184	July 12	1031	223	84	216
Bearing. Lubricating-	W. H. Binns	607,584	July 19	1949	404	84	415
Bearing retainer. Ball-	G. J. Capewell	609,776	Aug. 30	2973	695, 696	84	1292
Bearing. Roller-	G. J. Capewell	609,777	Aug. 30	2975	696	84	1292
Bearing. Roller-	G. J. Capewell	609,778	Aug. 30	2977	696	84	1293
Bearing. Roller-	G. J. Capewell	610,436	Sept. 6	535	122	84	1545
Bearing. Roller-	G. W. Dickinson	608,709	Aug. 9	974	224	84	866
Bearing. Roller-	R. G. Petway	609,326	Aug. 23	2532	592, 593, 594	84	1194
Bearing. Roller-	M. C. P. Thierry	607,980	July 26	2688	573	84	573
Bearing. Self-oiling	C. W. H. Blood	608,698	Aug. 9	951	218	84	863
Bearing. Vehicle-wheel	W. Meeker	607,535	July 19	1852	385	84	398
Bearing. Vertical-shaft	O. Anderson	610,331	Sept. 6	871	78	84	1511
Bearing. Wheel-	C. E. Roberts	608,611	Aug. 9	790	181, 182, 183	84	831
Bearings. Machine for assembling ball-retainers for ball-	E. Klahn	609,819	Aug. 30	3054	714, 715	84	1307
Bed	J. Lawrance	607,182	July 12	1025	222	84	215
Bed and sofa. Combined	A. Markel	607,102	July 12	883	190	84	189
Bed-bottom	J. O. Wesper	611,411	Sept. 27	2358	539	84	1943
Bed-bottom casting	L. E. Irish	606,633	July 5	88	19	84	20
Bed-bottom. Spring	P. P. Peugh and J. M. Frazee						

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Bed-brace	A. Stoermer, Sr	609,172	Aug. 16	1877	447	84	1046
Bed. Cot	L. Coburn	608,547	Aug. 2	664	151	84	787
Bed crib attachment	M. C. Lucas	608,523	Aug. 2	680	142	84	780
Bed device. Spring	C. G. Smith	609,842	Aug. 30	3096	722	84	1317
Bed. Extension	A. W. Furnivall and H. Martin	611,115	Sept. 20	1757	402	84	1814
Bed. Folding	F. Jensen	610,057	Aug. 30	3475	806	84	1391
Bed. Folding	B. Krellenstein	611,128	Sept. 20	1779	408	84	1819
Bed. Folding	C. E. Yeager	609,380	Aug. 16	2254	533	84	1123
Bed. Folding	R. Long	611,176	Sept. 20	1862	429	84	1835
Bed. Folding camp	A. B. Bennett	607,011	July 12	678	147	84	154
Bed. Invalid	A. McKnight	608,619	Aug. 9	801	185 186	84	833
Bed. Invalid	N. J. Shields	608,232	Aug. 2	113	28	84	677
Bed. Spring	J. P. Leggett	611,132	Sept. 20	1789	411	84	1821
Bed-springs to cross-wire bases. Machine for attaching	E. C. Sonntag	609,126	Aug. 16	1799	429	84	1033
Bed-slat fastener	M. Richardson	609,708	Aug. 23	2864	669	84	1257
Bed-slat stay	J. H. Jackson	608,048	July 26	2827	602	84	608
Bed work. Spring	L. Coburn	608,545	Aug. 2	661	150	84	786
Bedstead	L. Coburn	608,546	Aug. 2	663	150	84	786
Bedstead	E. Hummel	610,803	Sept. 13	1298	299	84	1712
Bedstead commode attachment	A. Nilson	611,270	Sept. 27	2064	475 476	84	1892
Bedstead. Extensible	E. Zambusky	610,698	Sept. 13	999	232	84	1651
Bedstead. Metallic	S. Newman	610,078	Aug. 30	3513	814	84	1399
Bedstead post. Metal	J. F. Wessel	608,943	Aug. 9	1426	336	84	949
Beehive	J. Koopman	608,261	Aug. 2	157	39	84	685
Beehive swarm-preventer	H. C. Black	607,979	July 26	2686	573	84	573
Beer, &c. Drawing	M. Teehan	609,635	Aug. 23	2757	643	84	1237
Beer or ale pipe cleaner	W. J. Ruff	607,770	July 19	2262	478	84	474
Beer-pasteurizing apparatus	E. Wagner	607,304	July 12	1255	268	84	259
Beer-pasteurizing apparatus	J. L. Alberger	608,744	Aug. 9	1028	236	84	876
Beer, &c. Process of and apparatus for gasing	H. Beutelspacher	609,493	Aug. 23	2484	580	84	1185
Beer-pump air-purifier	J. Oberle	610,240	Sept. 6	184	41	84	1478
Bell	W. H. Barker	608,146	July 26	2977	639	84	632
Bell. Bicycle	A. H. Lester	607,936	July 26	2613	555	84	539
Bell. Bicycle	L. Noel	610,495	Sept. 6	669	150	84	1567
Bell. Bicycle	H. S. Pullman	608,478	Aug. 2	553	123	84	765
Bell. Bicycle	E. H. White	608,499	Aug. 2	585	131	84	771
Bell. Bicycle	D. P. Wolhaupter	609,983	Aug. 30	3359	780	84	1368
Bell. Bicycle	P. E. Post	608,907	Aug. 9	1335	312	84	933
Belt and belt-holder. Skirt-supporting	O. K. Sietto	608,486	Aug. 2	564	126	84	767
Belt-regulator	J. Pendergast	608,908	Aug. 9	1331	311	84	932
Belt. Waist	M. J. O'Donnell	611,459	Sept. 27	2426	.....	84	1959
Belts. Compound for preserving	F. W. Oliver	607,454	July 19	1535	327	84	329
Belting							
Bench: *See* Work-bench.							
Bench-stop	H. E. Shawver	609,302	Aug. 16	2132	505	84	1099
Bending-machine	G. Guild	610,585	Sept. 13	822	188	84	1613
Berth and settee for ships. Convertible	T. R. Turner	610,421	Sept. 6	530	116 117	84	1540
Bevel-tool	F. Lafferty	611,129	Sept. 20	1780	408	84	1820
Beverage and making same. Effervescent milk	F. W. H. Graeff	607,362	July 12	1357	289	84	279
Beverage compound	G. J. L. Janes	607,173	July 12	1010	.....	84	212
Beverage-cooler	L. Baumeister	608,169	Aug. 2	4	1, 2	84	655
Beverages. Vessel for retailing aerated	J. Baer	611,464	Sept. 27	2436	560 561	84	1961
Bicycle	R. P. Ambler	609,722	Aug. 23	2890	675	84	1263
Bicycle	J. H. Bergstrom	606,854	July 5	414	88	84	82
Bicycle	G. G. Bieber	608,825	Aug. 9	1207	282	84	908
Bicycle	J. W. Bramwell	609,005	Aug. 16	1559	371	84	990
Bicycle	T. H. Brigg	609,006	Aug. 16	1559	371	84	990
Bicycle	W. F. Brinton	607,500	July 19	1798	373	84	887
Bicycle	C. T. and W. B. Burgess	606,704	July 5	124	27	84	27
Bicycle	M. T. Campbell	609,498	Aug. 23	2491	582	84	1186
Bicycle	M. T. Campbell	610,157	Aug. 30	3630	844	84	1424
Bicycle	J. F. Foster	610,582	Sept. 13	815	186 187	84	1612
Bicycle	A. W. Hall	611,429	Sept. 27	2375	546	84	1948
Bicycle	C. R. Harris	609,581	Aug. 23	2628	615	84	1212
Bicycle	A. F. Hood	607,438	July 19	1507	321	84	324
Bicycle	L. F. Parks	607,606	July 19	1984	412	84	421
Bicycle	L. Petterson	607,075	July 12	824	180	84	179
Bicycle	C. E. Stockford	608,350	Aug. 2	352	73	84	722
Bicycle	W J. Tanner	609,654	Aug. 23	2756	643	84	1237
Bicycle	F. J. Wadman	608,986	Aug. 9	1416	334	84	947
Bicycle	J. E. Wilson	606,797	July 5	304	63, 64	84	60
Bicycle	A. Winton	607,106	July 12	888	191	84	190
Bicycle	J. H. Bowman	610,796	Sept. 13	1186	273	84	1698
Bicycle air-brake	J. S. Lord	608,262	Aug. 2	158	39	84	685
Bicycle attachment	G. H. Pacaud	607,455	July 19	1538	327	84	329
Bicycle attachment	W. B. Spencer	608,235	Aug. 2	116	29	84	677
Bicycle attachment	E. M. West	609,857	Aug. 30	3114	728	84	1330
Bicycle attachment	W. I. Grubb	609,186	Aug. 16	1897	451	84	1050
Bicycle bottom bracket	B. W. Ashwell	609,766	Aug. 30	2956	691	84	1289
Bicycle-brake	F. E. Baldwin	610,298	Sept. 6	804	66	84	1500
Bicycle-brake	E. W. Hanes	609,742	Aug. 23	2930	683	84	1268
Bicycle-brake	J. and J. F Kaylor	607,857	July 26	2478	526	84	533
Bicycle-brake	T. B. Sloper	608,082	July 26	2875	615	84	618
Bicycle-brake	W. Taylor	610,104	Aug. 30	3546	822	84	1406
Bicycle-brake	J. T. Wiley	611,541	Sept. 27	2570	592	84	1987
Bicycle-brake	W. Wollshlaeger	609,647	Aug. 23	2775	647	84	1240
Bicycle bundle-strap	L. Levi	610,847	Sept. 13	1267	292	84	1705
Bicycle-carrier	C. Eickemeyer	607,855	July 12	1344	287 288	84	877
Bicycle-chain	L. C. Krummel	607,752	July 19	2232	472	84	468

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bicycle-chain brush attachment	F. G. Kinnard	608,609	Aug. 9	788	181	84	830
Bicycle. Chainless	W. T. Shryock	607,710	July 19	2169	456	84	456
Bicycle clothing-protector	C. M. Handover	609,508	Aug. 23	2505	586	84	1189
Bicycle-crank fastening device	E. V. Gauthier	608,448	Aug. 2	497	112	84	754
Bicycle crank-shaft	S. A. Donnelly	608,445	Aug. 2	493	112	84	754
Bicycle crank-shaft	A. Levediahl	608,369	Aug. 2	356	78	84	727
Bicycle driving-gear	J. Howard	611,170	Sept. 20	1853	427	84	1833
Bicycle driving-gear	T. J. Lindsay	611,329	Sept. 27	2168	501, 502	84	1912
Bicycle driving-gear	L. W. Noyes	607,522	July 19	1830	382	84	394
Bicycle driving-gear	L. Vignal	607,972	July 26	2671	570	84	570
Bicycle driving mechanism	R. Thompson	607,968	July 26	2666	569	84	569
Bicycle equalizing appliance	A. J Thayer	607,667	July 19	2101	438	84	443
Bicycle-fork	D. L. Kelly	609,937	Aug. 30	3256	761	84	1348
Bicycle-frame	F. H. Nies and W. Dunn	611,077	Sept. 20	1670	383	84	1798
Bicycle-frame	W. X. Stevens	609,171	Aug. 16	1875	447	84	1046
Bicycle-frame	A. F. Temple	609,952	Aug. 30	3286	766	84	1354
Bicycle-frame	J. M. Webster	611,399	Sept. 27	2316	534	84	1939
Bicycle-frame	D. W. Guiles	607,658	July 19	2087	496	84	440
Bicycle-gear	D. L. Harshner	608,674	Aug. 9	912	209	84	855
Bicycle-gear	E. J. O'Connor and E. R. Knowles	610,277	Sept. 6	262	55	84	1493
Bicycle-gear	H. Wilburn	608,241	Aug. 2	129	31	84	680
Bicycle gear-case	F. H. Nies and W. Dunn	611,076	Sept. 20	1667	382, 383	84	1797
Bicycle-gearing	W. Brown	609,077	Aug. 16	1694	403	84	1015
Bicycle-gearing	N. P. Cobb	607,218	July 12	1092	235	84	228
Bicycle-gearing	E. H. Godfray	608,770	Aug. 9	1072	246, 247	84	885
Bicycle-gearing	M. P. Harrity	609,344	Aug 16	2202	520	84	1113
Bicycle-gearing	V. Weber	607,149	July 12	966	209	84	204
Bicycle-gearing	J. B. Westhaver	609,314	Aug. 16	2157	510	84	1105
Bicycle-gearing. Chainless	B. E. Slusser	609,471	Aug. 23	2431	569	84	1174
Bicycle-gearing. Multiple	M. A. Dibble	609,664	Aug. 23	2800	652, 653	84	1245
Bicycle-handle	E. Anderson	608,566	Aug. 9	704	159	84	815
Bicycle-handle	H. L. Cavanagh	610,471	Sept. 6	618	138	84	1557
Bicycle handle-bar	N. A. Bille	608,021	July 26	2780	591	84	594
Bicycle handle-bar	G. J. Bungay	608,572	Aug. 9	716	164	84	818
Bicycle handle-bar	C. J. Dieterich	610,736	Sept. 13	1064	244, 245	84	1664
Bicycle handle-bar	J. Grady	610,352	Sept. 6	406	87	84	1518
Bicycle handle-bar	E. Phipps	607,676	July 26	2509	532	84	539
Bicycle handle-bar	H. N. Ridgway	610,748	Sept. 13	1086	249	84	1668
Bicycle handle-bar	J. M. Blashfield	610,469	Sept. 6	615	138	84	1556
Bicycle handle-bar. Adjustable	J. F. Goodridge	610,132	Aug. 30	3594	833	84	1416
Bicycle handle-bar. Adjustable	N. A. Bille	610,251	Sept. 6	205	46	84	1482
Bicycle handle-bars. Adjustable grip for	J. L. Martin	610,656	Sept. 13	983	217	84	1637
Bicycle-hanger	C. B. Durfee and F. M. Williams	607,024	July 12	697	151	84	157
Bicycle-holder	L. L. Martin	607,545	July 19	1876	389	84	402
Bicycle-holder	J. Baker	607,727	July 19	2189	462	84	460
Bicycle hub and bearing	H. F. von Ketelhodt	609,149	Aug. 16	1835	435	84	1040
Bicycle lamp-holder	L. Dohm and C. H. Schlundt	606,650	July 5	24	5	84	7
Bicycle-lock	L. T. Lapaugh	610,068	Aug. 30	3493	810	84	1395
Bicycle-lock	W. I. L. Stearns	609,127	Aug. 16	1801	429	84	1033
Bicycle-lock	F. Stienen	607,142	July 12	953	207	84	202
Bicycle-lock	F. V. Walstrom and J. Erickson	608,163	July 26	3010	647	84	638
Bicycle-lock	F. W. White	611,401	Sept. 27	2318	535	84	1939
Bicycle lock and support	T. Gilmer	608,769	Aug. 9	1070	245, 246	84	884
Bicycle locking or securing device	D. H. Streeper	610,288	Sept. 6	285	62	84	1496
Bicycle luggage-carrier	F. M. Ufford	606,796	July 5	303	63	84	60
Bicycle luggage-carrier	G. W. Schepman	610,244	Sept. 6	188	42	84	1478
Bicycle luggage-rack	G. L. Allen	608,313	Aug. 2	252	57, 58, 59	84	705
Bicycle mud-guards. Machine for making	J. M. Erwin	607,782	July 19	2284	482	84	478
Bicycle package-carrier	D. G. Knittel	610,404	Sept. 6	506	110	84	1536
Bicycle package-carrier	O. W. Schaum	607,487	July 19	1775	369	84	384
Bicycle parcel-carrier	C. O. Nelson	608,620	Aug. 9	806	186	84	884
Bicycle-pedal toe-clip	C. T. Umsted	607,532	July 19	1847	384	84	397
Bicycle power mechanism	W. W. Brooks	611,557	Sept. 27	2604	600, 601	84	1993
Bicycle propelling mechanism	E. W. Ericson	610,129	Aug. 30	3591	832	84	1416
Bicycle propulsion	H. J. Otto and A. E. Wielsch	608,071	July 26	2861	612	84	610
Bicycle railway attachment	G. Sattler	607,088	July 12	860	186	84	185
Bicycle runner attachment	W. J. Best	606,818	July 5	342	73	84	68
Bicycle-saddle	H. G. Glover	609,616	Aug. 23	2708	632	84	1227
Bicycle-saddle	L. M. Hildreth	608,857	Aug. 9	1265	294, 295	84	919
Bicycle-saddle	J. A. Hunt	607,565	July 19	1913	395, 396	84	408
Bicycle-saddle	J. B. McManus	611,221	Sept. 20	1953	451	84	1851
Bicycle-saddle	C. E. Page	609,944	Aug. 30	3273	763	84	1351
Bicycle-saddle	H. C. Phillips	607,191	July 12	1043	225	84	218
Bicycle-saddle	H. L. Schaffner	607,282	July 12	1223	261	84	253
Bicycle-saddle	H. L. Schaffner	607,283	July 12	1224	261	84	253
Bicycle-saddle	W. S. Smith	610,614	Sept. 13	869	200	84	1334
Bicycle-saddle	L. P. Wellmann	608,089	July 26	2889	618	84	616
Bicycle-saddle	C. F. Webber	607,148	July 12	965	209	84	208
Bicycle-saddle adjusting device and spring	J. C. Smith	606,689	July 5	96	21	84	21
Bicycle-saddle clamp	B. W. Davis	611,377	Sept. 27	2273	525	84	1951
Bicycle-saddle. Pneumatic	C. A. F. Berg	606,775	July 5	269	56	84	54
Bicycle saddle-post	J. A. Hunt	609,234	Aug. 16	2004	476	84	1074
Bicycle-saddle post and clamp	E. Hathaway	609,964	Aug. 30	3318	772	84	1360
Bicycle-saddle support	G. Beekman	609,652	Aug. 23	2783	649	84	1241
Bicycle safety device							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bicycle seat-post	G. W Lord	607,181	July 12	1024	222	84	214
Bicycle separable frame	B. F. Barnes	607,325	July 12	1292	276	84	267
Bicycle speed-signal	G. Dittmar	608,511	Aug. 2	604	132	84	775
Bicycle-stand	J. F. Bengert	607,330	July 12	1307	279	84	270
Bicycle-stand	P. W. Kirkpatrick	610,061	Aug. 30	3482	807	84	1393
Bicycle-steadying device	F Barto	608,539	Aug. 2	651	147	84	784
Bicycle-support	S. S. Beebe	609,869	Aug. 30	3137	733	84	1325
Bicycle-support	J Booth	608,749	Aug. 9	1037	238	84	878
Bicycle-support	O. P. Breithut	608,543	Aug. 2	657	150	84	785
Bicycle-support	G. E. Bundick	611,374	Sept. 27	2208	524	84	1930
Bicycle-support	A. I. Gallaway	607,795	July 19	2310	489	84	482
Bicycle-support	G. Hipwood	610,536	Sept. 13	736	167 / 168	84	1596
Bicycle-support	W. E. Hunt	607,395	July 12	1418	303	84	291
Bicycle-support	A. E. Jackson and P. J. Britten	608,398	Aug 2	401	88, 89	84	735
Bicycle-support	J. L. Knoll	610,186	Sept. 6	65	13	84	1453
Bicycle-support	A. W. Lewis	608,464	Aug. 2	627	117 / 118	84	760
Bicycle-support	C. L. Raymond, Jr	609,295	Aug. 16	2118	502	84	1096
Bicycle-support	G. S. Thurston	609,174	Aug. 16	1882	447	84	1047
Bicycle-support	F. Walenta	610,005	Aug. 30	3394	787	84	1375
Bicycle-support	S. Welch and H. A. Burkhart	607,779	July 19	2281	481	84	477
Bicycle-support	A. T. Fenner	609,504	Aug. 23	2498	584	84	1187
Bicycle supporting attachment	E. Russ	608,798	Aug. 9	1124	261	84	868
Bicycle-supporting device	H. J. Abernathy	611,190	Sept 20	1894	435	84	1899
Bicycle umbrella-support	G. Hayes	609,542	Aug. 23	2538	599	84	1199
Bicycle-wheel	G. Hayes	610,743	Sept. 13	1074	247	84	1665
Bicycle-wheel	G. S. Webb	609,062	Aug. 16	1670	397	84	1011
Bicycles, &c. Chain adjustment for	L. Burgess	610,382	Sept. 6	471	103	84	1529
Bicycles, &c. Propelling mechanism for	Z. T. Ubil	610,956	Sept. 20	1460	334	84	1758
Bicycles, &c. Propelling mechanism for	G. Browning	611,589	Sept. 27	2672	616 / 617	84	2005
Bicycles, &c. Supporting and locking appliance for	I. N. Deitsch and H. E. Dorn	607,599	July 19	1974	410	84	420
Bicycles, &c. Tool-box for	F. Schlitz	610,245	Sept. 6	189	42	84	1478
Bill or toilet paper holder	J. W. Farrand	610,131	Aug. 30	3598	833	84	1416
Billiard-cue	B. Hutzel	608,457	Aug. 2	514	115	84	758
Billiard-cue	F. Young and H. Bundy	609,381	Aug. 16	2255	533	84	1123
Billiard-cue tip							
Bin: *See* Meal and flour bin.							
Binder	T. Wright	608,312	Aug. 2	251	57	84	705
Binder. File-case	F. P Hubbard	611,365	Sept. 27	2244	518	84	1925
Binder tension device. Twine	J. Lauritsen	609,106	Aug. 16	1770	421	84	1027
Binding. Brush skirt	A. S. Waitzfelder	606,983	July 5	602	131	84	119
Bit: *See* Overcheck-bit.							
Bit-brace	F. M. Sturgis	609,478	Aug. 23	2460	574	84	1181
Blacking stands. Foot-rest for boot	F. Müller	610,963	Sept. 6	425	91, 92	84	1521
Blasting implement	J. Mino and W. Day	610,305	Sept. 6	317	68	84	1502
Bleaching-powder. Process of and apparatus for making	V. C. Driffield, A. Carey, and F. W. Wright.	610,265	Sept. 6	222	50	84	1495
Blind-fastening	A. J. Curtis	607,220	July 12	1097	236	84	229
Block: *See* Pulley-block.							
Block and tackle	C. S. Kershaw	609,438	Aug. 23	2361	557	84	1163
Blotting or drying writing. Apparatus for	E. Moulard and J. Guény	609,158	Aug. 16	1852	440	84	1042
Blower. Rotary	N. W. McIntosh	608,377	Aug. 2	399	81	84	729
Blowpipe	A. M. Woltz	609,067	Aug. 16	1680	400	84	1013
Board: *See* Bulletin-board. Game-board. Ironing-board. Plaster-board. Plow-moldboard. Washboard.							
Board-clamp	W. Jordan	607,567	July 19	1918	397	84	408
Boat	D Ahern	608,565	Aug. 9	708	159	84	815
Boat-launching device	A. Cappellini	609,532	Aug. 23	2542	595 / 596	84	1196
Boat. Life	F. N. Lyons	610,547	Sept. 13	757	172	84	1600
Boat. Life	A. F. Pendleton	611,021	Sept. 20	1581	362	84	1781
Boat. Row	T. H. Brosnihan	609,956	Aug. 30	3301	769	84	1357
Boiler: *See* Cooking-boiler. Egg-boiler. Marine boiler. Stand-boiler. Steam-boiler. Steam and hot-water boiler. Washboiler. Water-tube boiler.							
Boiler	E. D. Meier and H. G. Tidemann	610,909	Sept. 20	1480	338	84	1762
Boiler-cleaner	F. T. Andrews and W. R. Johnson	609,400	Aug. 23	2502	544	84	1151
Boiler-cleaner	J. J. Crall	610,703	Sept. 13	1006	234	84	1672
Boiler-cleaner and filter	W. Dougherty	607,004	July 5	657	143	84	130
Boiler-cleaning apparatus	J. Stephenson	609,845	Aug. 30	3100	723	84	1318
Boiler-furnace	E. Docteur	609,613	Aug. 23	2705	630 / 631	84	1226
Boiler furnace. Steam	E. J. Elms	607,736	July 19	2208	467	84	464
Boiler furnace. Steam	W. S. Mackenzie and W. Crosland	608,059	July 26	2843	605	84	606
Boiler setting. Steam	E. S. T. Kennedy and J. H. Williamson.	611,219	Sept. 20	1948	449 / 450	84	1850
Boiler-tube cleaner	F. W. Bradley	608,418	Aug. 2	454	101	84	746
Boiler-tube cleaner	E. F. Gwynn	607,169	July 12	1004	218	84	211
Boiler-tubes. Device for removing scale from	E. F. Gwynn	607,168	July 12	1003	218	84	211
Boilers. Coupling-nut for stand	F. V. Winters	607,316	July 12	1277	272	84	268
Boilers. Device for keeping lids on	M. R. Brown	608,105	July 26	2911	623	84	620
Boilers. Shield for air-tubes in fire-boxes for steam	G. W. Stevens	607,866	July 26	2543	539	84	515
Bolster-spring	J. F. Bohler	610,841	Sept. 13	1256	290	84	1708
Bolster-stool	J. F. Hennessy	610,050	Aug. 30	3465	808	84	1389
Bolt: *See* Lock-bolt.							
Bolt	T. P. Russell	608,717	Aug. 9	984	226	84	868

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bolt	J. H. Williams	610,638	Sept. 13	909	208 / 209	84	1632
Bolt-heading machine	F. W. Bruch	607,157	July 12	981	212	84	206
Bone cutter. Green	H. A. Hannum	610,531	Sept. 13	727	165	84	1595
Bone-cutting machine	C. Trick	610,335	Sept. 6	377	79	84	1512
Book. Account-keeping	T. G. Knight	610,451	Sept. 6	578	128	84	1549
Bookbinder. Loose-leaf	A. Opalla	606,978	July 5	594	130	84	118
Bookbinding	W. Boehner	607,012	July 12	680	148	84	155
Book-cover. Removable	R. L. Akins	609,072	Aug. 16	1686	401	84	1014
Book. Note	C. H. Hastings	608,286	Aug. 2	203	48	84	695
Book-support	W. F. Frazee	608,515	Aug. 2	612	137	84	777
Book-support	J. S. Smith	607,890	July 26	2536	537	84	544
Book-support. Sheet-metal	J. S. Smith	607,891	July 26	2537	538	84	544
Books, papers, &c. Appliance for supporting	H. B. Watson	607,496	July 19	1708	372	84	386
Boom	C. O'Brien	607,269	July 12	1193	255	84	246
Boot-cleaner	W. F. Wagner and O. B. Olin	609,217	Aug. 16	1964	466	84	1065
Bootjack	C. F. Spaid	611,043	Sept. 20	1614	369	84	1787
Bootjack	H. Strate	606,947	July 5	542	119	84	108
Bootjack	I. A. Youngberg and J. O. Nord	609,603	Aug. 23	2570	623	84	1219
Bootjack	F. McDonald	607,188	July 12	1038	224	84	217
Boot or shoe	C. H. Prescott	607,192	July 12	1044	225	84	218
Boot or shoe stretcher	O. I. Howe	610,235	Sept. 6	177	40	84	1476
Boot or shoe trees. Fore part for	P. Stayert	607,289	July 12	1232	263	84	254
Boot or shoe. Ventilated	B. F. Mayo	609,519	Aug. 23	2521	590	84	1192
Boot or shoe work trimming machine	L. Frazer	609,339	Aug. 16	2195	518 / 519	84	1112
Boot-tree	W. W. Watts	610,506	Sept. 6	689	155	84	1571
Boot-tree	P. J. Parmiter	608,396	Aug. 2	410	90	84	737
Boot tree or stretcher	G. T. Latta	607,999	July 26	2723	592	84	580
Boring and pipe-laying apparatus. Earth-	E. H. Dyer	607,229	July 12	1123	240	84	223
Boring implement for frozen earth	J. Yerkes	609,567	Aug. 23	2000	608 / 609	84	1207
Boring machine. Dowel-hole	U. O. Crane	607,345	July 12	1331	284	84	275
Bottle	J. T. Holland	606,665	July 5	54	12	84	13
Bottle	J. Merigan	611,368	Sept. 27	2247	519	84	1927
Bottle	C. J. Moore	610,362	Sept. 6	424	91	84	1520
Bottle	J. Van Develde	610,695	Sept. 13	996	231	84	1650
Bottle	P. Lindemeyr	609,393	Aug. 16	2285	540 / 541	84	1129
Bottle-cap fastener	G. G. Brown	610,381	Sept. 6	466	102 / 103	84	1528
Bottle-corking machine	C. N. Farnam	609,988	Aug. 30	3368	783	84	1370
Bottle filler-guard	T. Norton	609,290	Aug. 16	2108	500	84	1094
Bottle-filling machine	C. S. Smith	611,520	Sept. 27	2532	585	84	1980
Bottle for holding spirits or other liquids and aerated waters separated until bottle is opened.	G. W. Betjemann and W. Candland	610,794	Sept. 13	1188	273	84	1688
Bottle. Lock	A. Hosfeld	611,485	Sept. 27	2476	571	84	1968
Bottle. Mucilage or blacking	W. R. Coulbourn and J. J. Lankford.	609,415	Aug. 23	2326	549	84	1156
Bottle nipple. Nursing	E. A. Clair	608,650	Aug. 9	867	200	84	845
Bottle. Non-refillable	H. G. Dodds	609,736	Aug. 23	2909	681	84	1267
Bottle. Non-refillable	P. Doflein and K. Billing	606,758	July 5	231	49	84	47
Bottle. Non-refillable	S. W. Durham	608,957	Aug. 9	1447	343	84	953
Bottle. Non-refillable	A. Fairhurst	607,922	July 26	2592	550	84	555
Bottle. Non-refillable	G. Giordano	609,507	Aug. 23	2502	585 / 586	84	1188
Bottle. Non-refillable	E. E. Gore	608,118	July 26	2982	626	84	624
Bottle. Non-refillable	A. M. Legrand	608,879	Aug. 9	1298	303	84	996
Bottle. Non-refillable	L. de Nucci	610,874	Sept. 13	1321	303	84	1717
Bottle. Non-refillable	H. Starck	610,311	Sept. 6	326	70	84	1504
Bottle. Non-refillable	S. S. Whitaker	609,716	Aug. 23	2884	674	84	1262
Bottle. Non-refillable	C. H. Goebel	609,271	Aug. 16	2074	492	84	1068
Bottle. Non-refilling	L. T. Lapaugh	606,053	July 26	2834	604	84	604
Bottle. Nursing	J. F. Morrill	611,207	Sept. 20	1915	442	84	1844
Bottle or ice-compress. Hot-water	J. J. McComish	609,115	Aug. 16	1788	424	84	1080
Bottle. Safety	C. De Quillfeldt	610,721	Sept. 13	1042	240	84	1660
Bottle-stopper	C. J. Muldoon	608,296	Aug. 2	220	51	84	698
Bottle, &c., stopper	W. Painter. (Reissue)	11,665	July 26	3018	649	84	689
Bottle-stopper	H. L. Phillips	610,198	Sept. 6	84	17	84	1456
Bottle-stopper	L. A. Scholz	607,385	July 12	1227	262	84	253
Bottle-stopper	E. M. O. Seaman	610,149	Aug. 30	3616	840	84	1431
Bottle-stopper	J. A. Hensler	610,585	Sept. 13	735	167	84	1526
Bottle-stopper guard	L. Kost and E. Guocchi	609,815	Aug. 30	3048	713	84	1306
Bottle-stoppers, &c. Fastening device for	N. Muslar	607,269	July 12	1178	252	84	243
Bottle-stoppering machines. Automatic feed device for	E. M. Raiguel	608,271	Aug. 2	176	42	84	689
Bottle valve-stopper	W. J. Cunningham	606,757	July 5	230	49	84	47
Bottle-washer	H. W. E. Mentze	611,180	Sept. 20	1867	430 / 431	84	1836
Bottle-washer	C. W. Platt, J. M. Patterson, and J. Hammell, Jr.	606,736	July 5	177	40	84	36
Bottles, &c. Implement for holding	A. E. Long and A. A. Jones	610,715	Sept. 13	1033	238	84	1658
Bottles, jars, &c. Cap for	F. Fleischmann	607,842	July 26	2439	518	84	596
Bottles, jars, &c. Stoppering device for	W. Painter	609,209	Aug. 16	1935	460	84	1058
Bottles. Machine for applying corks and seals to	J. B. Vernay	610,981	Sept. 20	1412	323 / 324 / 325	84	1750
Bottles, &c. Machine for manufacturing	G. Koch	608,407	Aug. 2	433	96	84	742
Bottles, &c. Stopper for	G. Koch	608,408	Aug. 2	435	96	84	742
Bottles, &c. Stopper for	W. Painter	608,158	July 26	2998	644 / 645 / 646	84	636
Bottling-machine	P. Donnelly	605,636	July 19	2042	428	84	433
Bouquet-holder	A. Hazelton and C. H. Rigg	611,363	Sept. 27	2241	517	84	1925
Bouquet-holder	H. H. Luke	608,294	Aug. 2	218	51	84	698
Bowling-alley pin							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Box: *See* Ballot-box. Cake-box. Display-box. Fare-box. Feed-box. Fuse-box. Hat-box. Journal-box. Lunch-box. Mail-box. Match-box. Music-box. Oil-retaining box. Paper box. Paper plant-box. Remailable box. Salt and pepper box. Stuffing-box. Work-box.							
Box	A. B. Cowles	610,474	Sept. 6	622	139 140	84	1557
Box and lid-support therefor	G. Welsh	609,979	Aug. 30	3345	778	84	1365
Box-beam, box-girder, and box-post. Metal	C. M. Horton	608,861	Aug. 9	1272	297	84	920
Box-blank-making machine	F. P. Rosback	608,796	Aug. 9	1112	257 258 259 260 267 268 269	84	892
Box-blank-making machine	J. Uhri	608,809	Aug. 9	1150	270 271 272 273	84	899
Box-blanks. Machine for step-mitering and printing	F. P. Rosback	609,630	Aug. 23	2746	639 640 641	84	1235
Box-corner-cutting machine	W. E. Nichols	609,161	Aug. 16	1855	441	84	1043
Box-cover brace and support	N. S. Nissen	611,018	Sept. 20	1578	302	84	1780
Box-fastener	C. V. Caster	611,445	Sept. 27	2390	550	84	1963
Box-fastener	J. W. Evans	606,918	July 5	504	110	84	100
Box-fastener	W. T Parker	608,004	July 26	2754	585	84	580
Box-fastener	W. B. Sheer	609,913	Aug. 30	3214	733	84	1340
Box-fastener	C. N. Towne	611,295	Sept. 27	2111	486	84	1901
Box filling and transferring apparatus	F. H. Richards	607,471	July 19	1671	350 351	84	362
Box filling and transferring machine	F. H. Richards	607,470	July 19	1659	348 349	84	360
Box-filling machine	F. H. Richards	607,469	July 19	1648	347 348	84	358
Box-filling machine	F. H. Richards	607,472	July 19	1677	351 352	84	363
Box-forming machine	H. Stewart	606,692	July 5	99	22, 23	84	22
Box-making machine	J. F. Gilliland	609,803	Aug. 30	3027	708 709	84	1303
Box-making machine	E. Keunen and R. Högfeldt	608,201	Aug. 2	62	15 16 17	84	667
Box nailing and printing machine	F. P. Rosback	608,917	Aug. 9	1361	320 321 322 323	84	939
Boxes. Construction of	R. Robinson	611,511	Sept. 27	2517	581	84	1977
Boxes or cases. Loose cover and cutter for hermetically-sealed metallic	G. H. Williamson	609,379	Aug. 16	2253	532 533	84	1123
Brace: *See* Ankle-brace. Bed-brace. Bit-brace. Dental jaw-brace. Post-brace.							
Brace-rod tightener	H. Woodmansee	609,865	Aug. 30	3129	731	84	1323
Bracket: *See* Curtain-bracket. Lamp-bracket. Scaffold-bracket. Shade-bracket. Supporting-bracket. Tree-prop bracket. Window-bracket.							
Brake: *See* Air-brake. Back-pedaling brake. Bicycle-brake. Bicycle air-brake. Car-brake. Electric brake. Elevator-brake. Fluid-pressure automatic brake. Hay-frame brake. Rail-brake. Shoe-brake. Sled-brake. Vehicle-brake. Vessel-brake. Wagon-brake. Warp-beam brake.							
Brake	H. W. Albright	610,426	Sept. 6	537	118	84	1541
Brake	E. W. G. C. Hoffmann	607,852	July 26	2460	522	84	580
Brake	W. H. Sauvage	608,136	July 26	2959	635	84	629
Brake	W. H. Sauvage	608,561	Aug. 2	693	157	84	798
Brake-beam	F. B. Aglar	609,396	Aug. 23	2298	543	84	1149
Brake-beam	L. C. Burgess	606,756	July 5	238	49	84	47
Brake-beam	L. C. Burgess	607,016	July 12	664	149	84	156
Brake-beam	L. C. Burgess	607,421	July 19	1480	315	84	319
Brake connection-rod	C. F. Huntoon	607,854	July 26	2467	523	84	531
Brake-operating mechanism	R. F. Walls	607,558	July 19	1901	393	84	406
Brake-rod	B. Haskell	608,392	Aug. 2	400	88	84	735
Brake-rod connecting end	J. H. Baker	607,596	July 19	1971	409	84	419
Brake-shoe	G. Kelly	610,327	Sept. 6	358	76	84	1509
Brake-shoe-operating mechanism	M. Q. Rutan	609,559	Aug. 23	2586	605	84	1204
Brakes. Device for actuating fluid-pressure	R. Fitzgerald	608,661	Aug. 9	887	204	84	850
Brakes. Device for actuating fluid-pressure	M. W. Hibbard	610,052	Aug. 30	3467	804	84	1389
Brakes. Water-jacket for vehicle	P. E. Doolittle	606,959	July 5	556	123	84	110
Brazing-machine	D. Crowther	607,505	July 19	1801	375	84	898

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Bread-cutting knife	W. Merkle	608,337	Aug. 2	312	68	84	718
Bread-raiser	A. Hough	609,546	Aug. 23	2563	600	84	1200
Brick-cleaning machine	S. I. Howard	609,547	Aug. 23	2564	600, 601	84	1200
Brick-kiln	H. W. Wananaker	607,973	July 26	2673	571	84	570
Brick-machine	J. N. Kaufholz	607,856	July 26	2472	525	84	532
Brick-machine	J. Sharpe	607,488	July 19	1776	369, 370	84	384
Brick-machine mold	A. Berg	607,787	July 19	2297	485	84	480
Bridge. Draw-	E. C. Akers	610,575	Sept. 13	804	184	84	1610
Bridges. Construction of metal	W. Beer	609,001	Aug. 16	1554	369	84	989
Bridges, &c. Construction of tension members for	G. Lindenthal	608,690	Aug. 9	938	216	84	861
Bridle-pulley	J. E. Campbell	607,788	July 19	2300	485	84	481
Bridle. Safety-	J. Hammond	608,672	Aug. 9	910	209	84	855
Broiler. Egg-	D. R. Porter	608,144	July 26	2976	638	84	632
Bronze. Crystal aluminium	J. T. Cupper	610,645	Sept. 13	919	.....	84	1634
Brooder. Chicken-	J. H. Herbener	608,043	July 26	2821	600, 601	84	601
Broom	H. Durham	609,665	Aug. 23	2802	653	84	1245
Broom	H. Thompson	610,290	Sept. 6	292	63	84	1498
Broom-case	G. Hacker	608,671	Aug. 9	909	208	84	855
Broom-clamp	J. Hiett	608,773	Aug. 9	1075	247	84	885
Broom-clasp	W. H. Cason	608,510	Aug. 2	608	135	84	775
Broom. Combination whisk-	A. F. Middaugh, A. T. Hoevet, and F. T. Anderson. (Reissue.)	11,688	Aug. 23	2152	690	84	1275
Broom-handle-polishing machine	H. Breckenridge	607,730	July 19	2192	463	84	461
Broom-head	J. L. Hudgepeth	611,319	Sept. 27	2152	497	84	1909
Broom-support	A. I. Gallaway	610,351	Sept. 6	405	86	84	1518
Brush	T. E. Arnold	607,908	July 26	2569	544	84	551
Brush	A. C. Estabrook	611,240	Sept. 27	1996	460	84	1880
Brush	D. B. Forward	611,114	Sept. 20	1756	402	84	1814
Brush	F. Goehring	608,365	Aug. 2	351	76	84	725
Brush	T. H. Gulick	606,713	July 5	143	30	84	30
Brush	R. L. Hall	611,249	Sept. 27	2009	463	84	1882
Brush	W. and I. Wilkinson	607,105	July 12	887	191	84	190
Brush	M. Ackerman	607,206	July 12	1064	230	84	222
Brush for screen-doors. Fly-	G. B. Hussey	606,970	July 5	576	127	84	114
Brush-holder	J. W. Hocker	607,797	July 19	2314	489, 490, 491, 492	84	488
Brush-machine	J. C. Wickers	610,750	Sept. 13	1069	250	84	1660
Brush or dauber. Blacking	P. D. Horton	608,860	Aug. 9	1271	297	84	920
Bubble-blower	H. F. Rigg	608,304	Aug. 2	234	54	84	701
Bucket	D. R. Beardsley	611,289	Sept. 27	1961	457	84	1877
Bucket. Sap-	A. Lord	607,060	July 12	792	172	84	173
Buckle	C. W. Latimer	610,545	Sept. 13	753	171	84	1599
Buckle. Suspender-	T. E. Keavy	610,759	Sept. 13	1110	253	84	1678
Buffing-machine	C. H. Curtis	610,438	Sept. 6	550	120, 121	84	1544
Buffing-machine. Automatic	T. E. Keavy	610,758	Sept. 13	1108	253	84	1672
Buffing-machine buffer. Shoe or other	T. E. Keavy	610,760	Sept. 13	1112	254	84	1673
Buffing-machine buffer. Shoe or other	T. E. Keavy	610,762	Sept. 13	1115	254	84	1674
Buffing-pad	A. H. Bogani	609,326	Aug. 16	2171	.....	84	1107
Buffing-wheel composition	J. F. Lash	609,817	Aug. 30	3050	713	84	1307
Buggy-boot	W. Smith and E. J. Gould	606,945	July 5	540	119	84	107
Buggy or wagon wrench	G. J. Quinsler and G. W. McNear	607,705	July 19	2163	455	84	454
Buggy-top side light	W. H. and F. A. Winslow	609,487	Aug. 23	2475	578	84	1183
Building construction	M. Hunter	608,047	July 26	2826	602	84	602
Bulkhead for ships, &c	D. Du Bois	608,189	Aug. 2	39	9	84	662
Bulkheads and partitions. Passage-way for	H. E. Borden and C. A. Niederstadt.	607,419	July 19	1471	311	84	317
Bulletin-board	M. W. Shannon	611,224	Sept. 20	1962	452	84	1852
Bung	E. W. G. C. Hoffmann	607,745	July 19	2217	469	84	465
Buoy. Electric	A. Fowler and P. N. Green	609,739	Aug. 23	2915	682	84	1268
Burglar-alarm	A. G. Gray	606,863	July 5	426	91	84	84
Burglar-alarm	J. W. Parrish	610,826	Sept. 13	1236	284	84	1698
Burglar-alarm	W. L. Rawls	608,145	July 26	2976	639	84	632
Burglar-alarm	D. L. Wartzenluft	609,640	Aug. 23	2765	644	84	1238
Burglar-alarm	W. M. Frisbie	610,482	Sept. 6	637	143	84	1561
Burglar-alarm. Compressed-air	R. R. Kinney and G. P. Barnard	606,722	July 5	157	35	84	32
Burial apparatus	W. H. Blackford	609,362	Aug. 16	2059	489	84	1085
Burial-casket							
Burner: See Gas-burner. Oil-burner. Hydrocarbon-burner. Vapor-burner. Hydrocarbon incandescent burner.							
Burner	L. T. Wilcox	609,485	Aug. 23	2471	577	84	1183
Burner and chimney-holder	J. H. Moss	608,395	Aug. 2	408	89	84	787
Burning hydrocarbon or other oils. Apparatus for	C. A. Kunzel, Jr	607,863	July 26	2490	588	84	535
Burning pulverulent fuel. Apparatus for	C. A. Freitag	610,845	Sept. 13	1262	291, 292	84	1704
Bushing. Tap-hole	C. Hammer	608,196	Aug. 2	54	13	84	665
Butter cutting and feeding machine	J. Anderson	608,016	July 26	2771	589	84	592
Butter. Making artificial	M. E. O. Liebreich	611,495	Sept. 27	2498	.....	84	1972
Butter-mold	M. Pfening	607,128	July 12	928	201	84	196
Button	F. G. Neubert	607,452	July 19	1532	326	84	398
Button	C. Radcliffe	610,662	Sept. 13	942	219	84	1639
Button	C. W. Stimson	608,487	Aug. 2	565	126	84	708
Button	R. W. C. Cleveland	609,140	Aug. 16	1820	432	84	1037
Button-blank backs. Machine for grinding	H. E. Swift	609,564	Aug. 23	2597	607	84	1206
Button. Cuff-	J. F. Dunn	608,588	Aug. 9	753	173	84	894
Button-fastening device	G. Boxley	610,579	Sept. 13	811	185	84	1611
Buttonhole-band	G. J. Gissing	608,583	Aug. 9	759	175	84	895
Buttonhole-casing	E. E. Zink	609,720	Aug. 23	2888	675	84	1202
Buttonhole-cutter	H. T. Jenkins	610,876	Sept. 13	1323	308	84	1717
Button-machine alarm device							

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Button-setting machine	S. Upton	608,933	Aug. 9	1412	333	84	947
Button. Tack-fastened	E. L. Ashley	607,909	July 26	2569	544	84	551
Button. Tack-fastened	A. J. Shipley	606,881	July 5	453	97	84	89
Button. Two-part separable	O. L. Mahon	608,410	Aug. 2	438	96	84	743
Cab. Hansom-	J. L. Lawrence	611,385	Sept. 27	2292	529, 530	84	1934
Cabinet. Kitchen-	W. Lackey	608,336	Aug. 2	310	68	84	718
Cabinet. Kitchen-	J. E. Tate	610,102	Aug. 30	3542	821	84	1406
Cabinet. Kitchen bakery-	W. S. Renner	606,793	July 5	300	62	84	60
Cabinet. Spice-	C. M. Stevenson	607,716	July 19	2176	458	84	457
Cabinet table. Kitchen-	J. L. Huestis	608,260	Aug. 2	155	38	84	685
Cable-carrier	J. T. Cowley	608,954	Aug. 9	1443	342	84	932
Caddy. Grocer's	C. M. Symonds	607,198	July 12	1051	228	84	220
Caisson. Movable	C. C. Lovejoy	609,686	Aug. 23	2839	664	84	1253
Cake-box, &c	S. F. Savidge	606,880	July 5	452	97	84	89
Cakes, &c. Device for ornamenting	L. Ferraioli	608,958	Aug. 9	1448	343	84	953
Calcium carbid. Process of and apparatus for producing	M. P. Wood	609,864	Aug. 30	3125	730, 731	84	1323
Calculating-machine	J. C. McLeland	611,269	Sept. 27	2057	474, 475	84	1891
Calendar and whist-counter	A. W. Mathews	610,910	Sept. 20	1379	316	84	1743
Calipers	H. A. Pike	611,391	Sept. 27	2301	531	84	1935
Calipers and dividers	J. E. Taulman	607,296	July 12	1244	265	84	257
Calipers. Center-finding register-	G. W. Davis	608,183	Aug. 2	26	7	84	659
Calk. Reversible	K. J. Gaitzsch	608,665	Aug. 9	897	205	84	852
Calk. Three-sided	L. M. Serbán	611,288	Sept. 27	2101	484	84	1900
Calorimeter or heat-measuring apparatus	E. A. Uehling	606,749	July 5	214	46, 47	84	44
Cam filling-piece	E. A. Blanton, Jr	611,556	Sept. 27	2602	600	84	1993
Cam-grooves. Machine for forming irregular	J. Reece	607,628	July 19	2028	420	84	430
Camera. Kinetographic	T. H. Blair	611,231	Sept. 27	1984	458	84	1878
Camera. Kinetographic	F. H. Morse	607,783	July 19	2286	482, 483	84	478
Camera. Kinetographic	A. F. Parnaland	610,560	Sept. 13	782	178	84	1605
Camera. Magazine-	B. Marx and H. Gassner	610,453	Sept. 6	580	128	84	1550
Camera. Panoramic	F. L. Gregory	611,010	Sept. 20	1559	359	84	1777
Camera. Roll-holding	H. E. Bryant	608,026	July 26	2798	594, 595	84	597
Camera. Roll-holding	W. V. Esmond	607,428	July 19	1491	317	84	321
Camphor. Refining	W. Schmidt	610,664	Sept. 13	945	.....	84	1640
Can:							
See Automatic can; Creaming-can; Fruit-can; Milk-can; Oil-can; Tin can.							
Can-bodies. Roller-machine for forming round	H. C. Campen	606,855	July 5	418	89	84	83
Can closure. Milk-	E. M. Peacock	610,720	Sept. 13	1089	240	84	1659
Can cover. Milk-	T. R. Hetland	610,902	Sept. 20	1369	313	84	1741
Can-end-crimping machine	J. F. Neilson	607,266	July 12	1189	254	84	245
Can-lacquering machine	C. A. Burt	610,165	Sept. 6	9	3	84	1444
Can-opener	J. S. Beeman	606,701	July 5	119	26	84	26
Can-opener	M. F. Connett	608,575	Aug. 9	721	165	84	819
Can-opener	M. F. Connett, Jr	609,413	Aug. 23	2324	548	84	1155
Can-opener	F. E. Gowen	606,805	July 5	324	67	84	65
Can-opener and ice-pick	J. Brady	609,406	Aug. 23	2312	546	84	1153
Can-opening nozzle	V. I. Copland	609,500	Aug. 23	2495	583	84	1187
Can or like closure	A. B. McNairy	609,239	Aug. 16	2014	478	84	1076
Can-spout	R. Dreyer	610,737	Sept. 13	1067	245	84	1664
Can-testing machine	E. P. Holden and J. L. Board	609,232	Aug. 16	1998	474, 475	84	1073
Can-top	M. E. Henderson	610,049	Aug. 30	3464	808	84	1389
Canal-lock	E. A. Manny	610,548	Sept. 13	758	173	84	1600
Candelabrum	H. F. Nehr	610,821	Sept. 13	1229	283	84	1696
Candle-holder	F. W. Steinenböhmer	611,397	Sept. 27	2312	533	84	1938
Cane and gas-light. Combined	E. N. Dickerson	610,478	Sept. 6	629	141	84	1559
Cane-crusher	A. L. Marshall	608,885	Aug. 9	1305	304	84	927
Cane-cutter	A. Le Blanc	610,069	Aug. 30	3495	810	84	1395
Cane from cars, &c. Apparatus for unloading sugar-	J. W. Bodley	611,167	Sept. 20	1849	426	84	1882
Cane-sling	J. Mallon	610,816	Sept. 13	1219	281	84	1695
Canister. Shipping and dispensing	F. F. Jaques	611,487	Sept. 27	2480	572	84	1969
Cap and girder-support. Combined	G. R. Kurrie	609,441	Aug. 23	2369	558	84	1164
Capo tasto	P. Benson	608,278	Aug. 2	186	45	84	691
Car	M. J. Griffin and P. W. Hogan	610,442	Sept. 6	562	124	84	1546
Car-brake	P. S. Durei	609,143	Aug. 16	1825	433	84	1098
Car-brake	E. C. Nichols	607,069	July 12	808	177	84	176
Car brake and fender	O. B. Whitney	609,646	Aug. 23	2773	646, 647	84	1240
Car-brake. Automatic	F. A. Perry	608,429	Aug. 2	472	106	84	749
Car-brake. Center-wheel	F. Gabler	609,093	Aug. 16	1720	410	84	1020
Car-brake handle	E. C. Collins	611,058	Sept. 20	1642	376	84	1792
Car brake-lever. Railway-	J. H. Baker	607,595	July 19	1970	409	84	419
Car brake mechanism. Railway-	W. E. Elliott	607,920	July 26	2585	548	84	554
Car brake mechanism. Railway-	J. H. Graham	610,676	Sept. 13	964	223	84	1644
Car-bumper	J. McMahon	609,159	Aug. 16	1853	440	84	1043
Car. Combined ventilating and refrigerator	F. Thompson	608,237	Aug. 2	119	29	84	677
Car construction	R. P. Lamont	611,069	Sept. 20	1650	378	84	1795
Car. Convertible freight-	M. F. White	606,698	July 5	113	24, 25	84	24
Car. Convertible hand-	P. Armstrong	610,297	Sept. 6	903	65	84	1500
Car-coupling	R. C. Beckett	610,519	Sept. 13	710	161	84	1591
Car-coupling	W. H. Bonwell, Jr	607,334	July 12	1313	290	84	271
Car-coupling	P. C. Brown	607,731	July 19	2195	463, 464	84	462
Car-coupling	A. Dougherty	611,066	Sept. 20	1651	378	84	1794
Car-coupling	R. H. Dowling	608,764	Aug. 9	1062	244	84	883
Car-coupling	W. D. Earl	611,315	Sept. 27	2145	496	84	1908
Car-coupling	V. Erbach	608,112	July 26	2932	686	84	632
Car-coupling	W. H. Hopkins and J. S. Evans	611,121	Sept. 20	1773	406	84	1818

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	A. L. Humphrey	608,965	Aug. 9	1458	345	84	956
Car-coupling	J. Jeffery	608,128	July 26	2947	632	84	627
Car-coupling	A. F. Kuhlmann	610,814	Sept. 13	1217	280	84	1694
Car-coupling	A. M. Larue	610,714	Sept. 13	1032	238	84	1658
Car-coupling	H. and A. Loiselle	608,056	July 26	2839	605	84	605
Car-coupling	J. O. Marks	607,183	July 12	1028	222, 223	84	215
Car-coupling	W. K. Noland	607,763	July 19	2249	475	84	472
Car-coupling	J. K. Oden and S. K. Boleman	606,985	July 5	525	115	84	104
Car-coupling	B. F. Olmsted	606,999	July 5	644	140	84	128
Car-coupling	J. P. Paulissen	608,708	Aug. 9	972	223, 224	84	866
Car-coupling	W. W. Rudy	607,769	July 19	2261	478	84	474
Car-coupling	W. Shanklin	608,719	Aug. 9	986	227	84	869
Car-coupling	J. E. Smith	606,688	July 5	94	20, 21	84	21
Car-coupling	W. J. Trevessick	610,666	Sept. 13	947	219	84	1640
Car-coupling	H. H. Warner	611,025	Sept. 20	1585	363	84	1782
Car-coupling	H. R. Cochran	609,792	Aug. 30	3009	705	84	1299
Car-coupling. Automatic	J. Christie	609,410	Aug. 23	2318	547	84	1154
Car-coupling draft-rigging	G. H. Gilman and J. H. Brown	609,095	Aug. 16	1723	410	84	1021
Car-coupling emergency-knuckle	W. R. Ellis	610,940	Sept. 20	1427	328	84	1752
Car-door	G. P. Jones	609,813	Aug. 30	3046	712	84	1306
Car-door	E. A. Hill	607,511	July 19	1813	377	84	390
Car-door bracket	J. Hodge	607,851	July 26	2458	522	84	529
Car-door bracket	J. M. Bedford	610,427	Sept. 6	539	118	84	1542
Car-door lock	J. Hanson	609,021	Aug. 16	1591	378, 379	84	995
Car-door lock. Dumping	E. C. Vanstone	610,505	Sept. 6	687	154, 155	84	1571
Car-door operating and locking mechanism	J. E. Jones and W. G. Hodge	610,990	Sept. 20	1527	351	84	1770
Car doors and sides. Means for protecting	W. T. Van Dorn	609,482	Aug. 23	2466	575, 576	84	1182
Car draft appliance. Railway	D. Loomis	608,522	Aug. 2	629	141	84	779
Car draft-rigging. Railway	T. R. McKnight	607,521	July 19	1828	381	84	393
Car. Dump	H. C. Williamson and H. Pries	610,218	Sept. 6	144	31, 32, 33	84	1470
Car. Dumping	W. W. Annable	607,977	July 26	2682	572	84	572
Car-fender	M. Fernandez. (Reissue)	11,692	Sept. 13	1334	305	84	1719
Car-fender	D. Guarino	608,598	Aug. 9	768	177	84	827
Car-fender	P. E. Law	609,818	Aug. 30	3051	713, 714	84	1307
Car-fender	A. L. Lawton and D. L. Macaffree	607,514	July 19	1817	378	84	391
Car-fender	H. Lehrer	610,238	Sept. 6	182	41	84	1477
Car-fender	J. H. Lewis and J. M. Courtney	607,444	July 19	1515	323	84	826
Car-fender	W. H. Martin	607,118	July 12	900	197	84	194
Car-fender	A. Mazzanovich	609,206	Aug. 16	1932	459	84	1057
Car-fender	O. W. Norling	606,679	July 5	83	17, 18	84	19
Car-fender	J. W. Range	607,954	July 26	2642	561	84	564
Car-fender	T. A. Remsen	609,394	Aug. 16	2287	541	84	1130
Car-fender	A. L. Smith	609,951	Aug. 30	3285	766	84	1354
Car-fender	W. T. Watson	610,779	Sept. 13	1149	264	84	1681
Car-fender	A. C. Woodworth	607,901	July 26	2549	541	84	547
Car fender or guard	P. J. Poelman	610,915	Sept. 20	1386	317, 318	81	1744
Car-fender-supporting means	H. Grootenboer	606,965	July 5	566	125	84	112
Car floor-frame. Railway	C. C. Wentworth	608,414	Aug. 2	444	99	84	744
Car guard and step combined. Street	W. C. Collyer and W. F. Bullock	609,082	Aug. 16	1700	405	84	1016
Car. Hand	P. Flesher	609,881	Aug. 30	3160	737	84	1390
Car hand-strap. Street	W. R. Sands	607,592	July 19	1964	407	84	418
Car-heating apparatus	J. F. McElroy	610,997	Sept. 20	1536	353	84	1772
Car-heating system	J. F. McElroy	608,212	Aug. 2	79	21	84	670
Car journal-box. Railway	F. Hoetzl	608,382	Aug. 2	300	66	84	715
Car. Motor	C. O. Palmer	609,043	Aug. 16	1637	391	84	1005
Car-mover	H. Hardy	609,541	Aug. 23	2557	598	84	1198
Car-mover	G. W. Rittenhouse and F. Miller	607,885	July 26	2523	535	84	541
Car. Ore	G. E. Truax	607,785	July 19	2293	484	84	480
Car. Oyster or fish	A. E. Stilwell	609,373	Aug. 16	2242	530	84	1121
Car-replacer	C. E. Dailey	608,324	Aug. 2	287	63	84	713
Car-replacer	T. Maroney	607,256	July 12	1171	250, 251	84	241
Car-replacer	H. Miller	611,072	Sept. 20	1662	381	84	1796
Car-roof	L. C. Marshall	606,996	July 5	640	139	84	127
Car safety-bridge	H. H. Burkhart	608,751	Aug. 9	1040	239	84	879
Car sanding apparatus. Railway	F. Rowe	609,299	Aug. 16	2125	504	84	1097
Car sanding device. Street	F. O. Furber and W. A. Mitchell	609,506	Aug. 23	2500	585	84	1188
Car-seat	W. M. Norcross	610,719	Sept. 13	1037	240	84	1659
Car-seat	H. Tesseyman and J. Kirby, Jr.	610,289	Sept. 6	287	62	84	1497
Car-seat. Step-over	C. K. Pickles	607,414	July 12	1459	300	84	228
Car-signal	W. O. Abbott	607,561	July 19	1904	393, 394	84	406
Car-signal	T. E. Sheerin	609,914	Aug. 30	3216	753	84	1340
Car. Sleeping	L. B. Bassett and E. E. Castle	606,910	July 5	491	107	84	98
Car steering-handle. Motor	M. H. Smith	610,871	Sept. 13	1314	302	84	1715
Car-step. Extension	T. Maxon	606,982	July 5	521	114	84	103
Car-step. Folding	F. M. Bickelberger	609,136	Aug. 16	1814	431	84	1036
Car-step. Folding	T. Kendrick	608,335	Aug. 2	309	68	84	717
Car-step lifter	T. Millen	608,617	Aug. 9	799	184	84	832
Car-step lifter	T. Millen	608,618	Aug. 9	800	185	84	833
Car-switching apparatus. Street	J. G. Grosheim and G. L. Seaman	611,449	Sept. 27	2405	553	84	1955
Car-transom	G. A. Akerlind and J. T. Carroll	609,323	Aug. 16	2168	512	84	1107
Car-wheel	W. T. Snyder	610,501	Sept. 6	680	152	84	1570
Car wheel and axle gage	A. H. Smith and W. A. Brainard	606,772	July 5	265	55	84	53
Cars. Adjustable rack for railway	M. Butler	608,437	Aug. 2	483	109, 110	84	751
Cars. Guard-rail for open tramway	J. G. McLaughlin	610,688	Sept. 13	981	228	84	1647

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cars. Motor-mounting for electric	S. H. Short	611,461	Sept. 27	2429	557	84	1960
Cars. Seat-recording device for passenger-	N. M. Powell	610,972	Sept. 20	1487	389	84	1763
Carbonating apparatus	C. L. Bastian	609,867	Aug. 30	3131	731, 782	84	1324
Carbonating apparatus	E. E. Murphy	609,040	Aug. 16	1690	389	84	1003
Carbonating apparatus	E. E. Murphy	609,238	Aug. 16	2011	477	84	1075
Carbonating apparatus. Automatic	E. Koenig and M. L. Erlanger	610,062	Aug. 30	3484	808	84	1393
Carbureter	H. Ford	610,040	Aug. 30	3454	800	84	1387
Carbureter	J. A. McGowan	606,998	July 5	643	189	84	128
Carbureter	C. L. Parker	609,831	Aug. 30	3081	719	84	1314
Carbureter	F. A. Smith	607,888	July 26	2527	536	84	542
Carbureter	F. A. Smith	607,889	July 26	2532	537	84	543
Carbureter	R. G. Speer	610,159	Aug. 30	3632	844	84	1425
Carbureter	J. R. Stephenson	608,531	Aug. 2	638	144	84	781
Carbureter	E. Whittaker	606,829	July 5	365	77	84	73
Card-clothing. Device for bending teeth in	H. P. Feister	610,526	Sept. 13	719	163	84	1508
Card-cutting machine	G. Bovensiepen	610,022	Aug. 30	3425	793	84	1381
Card-points. Process of and apparatus for hardening	J. Booth	609,729	Aug. 23	2899	678	84	1266
Card shuffler. Automatic playing-	J. Booth	609,730	Aug. 23	2900	678	84	1265
Card-shuffling apparatus	R. G. McCrum	608,473	Aug. 2	544	122	84	763
Cards for use in jacquard-machines. Apparatus for preparing	L. Otto	609,119	Aug. 16	1787	425, 426	84	1080
Cards from blanks. Machine for stamping	A. Haigh and A. Borlos	610,138	Aug. 30	3602	836	84	1418
Carding-engine	W. Senior	609,911	Aug. 30	3212	752	84	1339
Carding-engine flats. Apparatus for stripping	W. Senior	609,912	Aug. 30	3213	752	84	1340
Carding-engine flats. Apparatus for stripping	J. Williams	609,859	Aug. 30	3117	728	84	1321
Carding-engine flats. Apparatus for stripping	J. Williams	609,860	Aug. 30	3118	729	84	1322
Carding-engine flats. Apparatus for stripping	T. R. Marsden	610,655	Sept. 13	932	216	84	1687
Carding-machine feeding mechanism	H. W. Gays	607,846	July 26	2446	519, 520	84	527
Carline	T. A. Long	610,864	Sept. 13	1299	299	84	1712
Carpet and weather strip	H. Hardwick	610,742	Sept. 13	1073	246	84	1665
Carpet fabric. Two-ply ingrain	E. E. Webb	611,158	Sept. 20	1883	423	84	1829
Carpet-fastener	C. J. Wagner	611,344	Sept. 27	2195	507	84	1917
Carpet-stretcher	C. J. Harvey	609,145	Aug. 16	1832	434	84	1039
Carpet-sweeper	B. Haskell	610,606	Sept. 13	854	196	84	1021
Carpet-sweeper	H. P. de Von	609,520	Aug. 23	2522	590	84	1192
Carriage. Baby-	I. Osgood	607,948	July 26	2633	559	84	562
Carriage-coupling	O. B. Fobes	610,647	Sept. 13	921	211	84	1634
Carriage-cover	H. Young	610,374	Sept. 6	450	98	84	1525
Carriage-curtain catch	J. A. Edwards	610,389	Sept. 6	480	105	84	1531
Carriage curtain-light frame	A. Stölting	609,846	Aug. 30	3101	723	84	1318
Carriage fan attachment. Baby-	W. E. Twichell	610,508	Sept. 6	692	153	84	1570
Carriage. Motor-	V. E. Prétot	610,460	Sept. 6	596	133, 134	84	1553
Carriage. Self-propelling	S. R. Bailey	610,788	Sept. 13	1171	270	84	1685
Carriage-spring	W. Schubert	607,886	July 26	2624	535	84	541
Carriage-spring	E. E. Hilliker	607,436	July 19	1505	330	84	824
Carriage-wrench							
Carrier: *See* Bicycle-carrier. Bicycle package-carrier. Cable-carrier. Cartridge-carrier. Elevated carrier. Luggage-carrier. Parcel-carrier.							
Carrier or holder	J. Quigley	610,870	Sept. 13	1313	302	84	1715
Cart for transporting fodder, &c	C. S. Wilson	611,542	Sept. 27	2572	593	84	1967
Cartridge-carrier	T. E. Jackson	611,172	Sept. 20	1857	428	84	1834
Cartridge. Metallic	P. Mauser	607,868	July 26	2495	529	84	536
Cartridge-shell	C. E. Overbaugh	610,660	Sept. 13	959	218	84	1639
Carvings-clamp	C. J. Gartner	609,599	Aug. 23	2555	598	84	1198
Case: *See* Bicycle gear-case. Broom-case. Cell-case. Eyeglass-case. Match-case. Packing-case. Refrigerating shipping-case. Sample-case. Show-case. Silverware-case. Spectacle or eyeglass case. String-case. Surgical case.							
Cash-carrier apparatus	D. Johnson	611,322	Sept. 27	2157	498, 499	84	1910
Cash-holder	M. R. Daley	608,654	Aug. 9	875	201, 202	84	847
Cash-register	W. Bentley	609,384	Aug. 16	2259	534, 535	84	1124
Cash-register	A. I. Blanchard	610,379	Sept. 6	460	100, 101	84	1527
Cash-register	E. X. Genoud	608,116	July 26	2928	027	84	628
Cash-register	J. G. Hoffman and W. B. Norton	608,551	Aug. 2	673	153, 154	84	789
Cash-register	J. H. McCormick	610,492	Sept. 6	663	148, 149	84	1566
Cash-register	J. H. McCormick	610,945	Sept. 20	1436	330	84	1754
Cash register and indicator	L. S. Burridge	608,509	Aug. 2	600	134, 135	84	774
Cash register and indicator	J. H. McCormick	610,365	Sept. 6	428	93, 94	84	1521
Cash register and indicator	J. H. McCormick	610,366	Sept. 6	436	94, 95, 96	84	1523
Cash register and recorder	B. F. Seibert	606,768	July 5	259	54	84	52
Cash-register. Autograph	J. A. Hoff	608,374	Aug. 2	365	80	84	726
Cask-headings. Machinery for making crozes for curved	J. Anthon	610,012	Aug. 30	3404	769	84	1377
Cask or barrel manufacturing machinery	R. Collen	607,219	July 12	1094	236	84	228
Casket-handle	F. J. Hoefle	610,054	Aug. 30	3471	805	84	1390

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Casket-lowering apparatus	W. H. Lester and G. E. Smart	609,586	Aug. 23	2639	617, 618	84	1214
Casket. Metallic	C. H. Hiser and E. N. Lupfer	610,587	Sept. 13	738	108	84	1597
Casket-stand	G. Cronmiller	608,442	Aug. 2	490	111	84	753
Caster	S. Gluck	610,860	Sept. 13	1891	208	84	1711
Caster. Ball-	H. D. Adell	609,568	Aug. 23	2605	609	84	1207
Caster. Ball-	L. F. Eaton	608,111	July 26	2021	625	84	622
Caster. Ball-	B. Wesselmann	607,720	July 19	2180	459, 460	84	458
Caster. Furniture-	F. J. Burrell	609,187	Aug. 16	1817	431	84	1036
Caster. Furniture-	E. B. Slater	610,309	Sept. 6	322	69	84	1503
Casting apparatus	F. Hardy	609,671	Aug. 23	2809	655, 656	84	1247
Casting ingots	R. A. McDonald	609,693	Aug. 23	2849	666	84	1255
Castings. Tool for facing	A. R. Jackson	611,254	Sept. 27	2017	465, 466	84	1863
Cattle-guard	J. W. Brightwell	609,657	Aug. 23	2791	650	84	1243
Cattle-guard	C. G. Cozine	610,430	Sept. 6	544	119, 120	84	1543
Cattle-guard	P. H. Hazel	608,426	Aug. 2	467	105	84	748
Cattle-tie	O. Gates	606,922	July 5	511	119	84	101
Cell-case	E. C. Bower	606,913	July 5	495	109	84	98
Cell-cases. Machine for making	H. I. Lahr	609,684	Aug. 23	2882	661, 662, 663	84	1252
Celluloid, &c. Die for making frames from sheets of	H. E. Miller	610,630	Sept. 13	895	205, 206	84	1629
Celluloid or similar open-seam coverings. Forming	J. E. Robinson	607,415	July 12	1460	309	84	298
Celluloid-press and vulcanizer	J. C. Dixon	608,512	Aug. 2	606	136	84	776
Cellulose. Treatment of materials containing	E. Simonsen	607,091	July 12	864	.....	84	186
Centering-gage	C. V. Bogart	610,091	Aug. 30	3423	798	84	1381
Ceramic compositions. Producing	C. C. Schirm	609,207	Aug. 30	3208	.....	84	1388
Chain cover. Driving-	W. E. F. Marchal	609,087	Aug. 16	1619	385	84	1000
Chain covering. Drive-	G. E. Whitney	607,7[illegible]	July 19	2294	484	84	480
Chain. Detachable-link	G. W. Fox	610,[illegible]	Sept. 13	817	187	84	1612
Chain. Drive-	C. W. Levalley	609,[illegible]	Aug. 16	1841	438	84	1041
Chain. Drive-	F. W. Wood	610,[illegible]	Sept. 13	1000	250	84	1669
Chain-guard	G. A. Waters	610,[illegible]	Sept. 6	330	71	84	1505
Chain locking-link	H. F. Loos	609,[illegible]	Aug. 30	3179	744	84	1338
Chain. Sprocket-	H. E. Stahl	608,[illegible]	Aug. 2	637	143	84	781
Chains. Machine for manufacturing weldless	J. M. Davis	610,434	Sept. 6	551	121, 122	84	1544
Chair: *See* Barber's chair. Child's chair. Folding chair. Reclining-chair. Reclining high-chair. Shoe-fitting chair.							
Chair	G. A. Garland	608,389	Aug. 16	2379	539	84	1128
Chair	W. H. Herhold	611,251	Sept. 27	2011	464	84	1862
Chair	E. J. Smith	608,010	July 26	2760	586	84	590
Chair and bed. Combined	J. A. Bergman	607,588	July 19	1880	387	84	400
Chair foot-rest	J. D. Kelly	611,337	Sept. 27	2165	501	84	1911
Chair-seat	W. F. Spangler	607,894	July 26	2541	539	84	545
Chair-seat fabrics, &c. Art of and apparatus for manufacturing composite threads for weaving	E. Morris	609,482	Aug. 23	2896	568	84	1169
Chairs and upholstery. Spring-bottom for	W. H. Miller	608,062	July 26	2846	607	84	607
Change-delivering device	J. S. Johnston	608,778	Aug. 9	1061	249	84	886
Channel-flap-turning machine	C. P. Stanbon	607,139	July 12	947	206	84	201
Channeling-machine	C. P. Stanbon	607,140	July 12	949	206	84	201
Chaplets. Process of and machine for making	A. M. McGee	609,899	Aug. 30	3192	748	84	1396
Charcoal-kiln	J. Berry	607,331	July 12	1306	279	84	270
Chart-table	S. N. Greenleaf and H. Barker	609,669	Aug. 23	2807	654	84	1247
Checking apparatus for registering payments on vehicles, &c.	F. W. Phillips	609,045	Aug. 16	1642	392	84	1006
Checking device	W. M. Shutt	608,980	Aug. 9	1372	324	84	941
Chemical engine	T. Down	611,080	Sept. 20	1592	365	84	1783
Child's chair. Combination	C. J. Fichtl	606,654	July 5	31	7	84	8
Chimney and smoke-flue. Masonry	C. H. Ganzel, Sr	610,896	Sept. 6	489	107	84	1533
Chimney-cowl	A. Dickey	610,066	Aug. 30	3430	797	84	1384
Chimney-holder	J. H. Wallace and A. G. Hilton	606,850	July 5	404	86	84	81
Chisel. Mortising-	W. Potter	609,806	Aug. 16	2333	598	84	1119
Chlorates and bleaching liquor. Apparatus for making	W. R. Clarke	609,608	Aug. 23	2679	625	84	1221
Chopper: *See* Cotton-chopper. Stalk-chopper.							
Chuck. Drill-	W. H. Merrell	608,061	July 26	2845	607	84	607
Chuck for woodworking machinery. Lathe-	C. H. Bartlett	608,626	Aug. 9	847	194	84	841
Chuck. Lathe-	E. F. Gibbs	609,019	Aug. 16	1585	377	84	994
Chuck. Screw-machine	E. V. Gauthier	608,449	Aug. 2	498	113	84	755
Churn	H. D. Coffey	609,412	Aug. 23	2832	548	84	1155
Churn	W. P. Coker	607,342	July 12	1293	283	84	274
Churn	W. F. Gatewood	611,470	Sept. 27	2448	564	84	1983
Churn	J. A. Hanger	606,966	July 5	569	125	84	113
Churn	N. Isachson	608,404	Aug. 2	497	94	84	741
Churn	J. Lieblang	606,806	July 5	396	67, 68	84	65
Churn	S. G. Mills	611,500	Sept. 27	2499	577	84	1973
Churn	G. R. Sexsmith	607,771	July 19	2095	478	84	474
Churn	E. B. West	609,858	Aug. 30	3115	723	84	1381
Churn-dasher	L. Reed	608,223	Aug. 2	97	25	84	674
Churn-operating mechanism	J. C. Moore and J. L. Thurman	611,220	Sept. 20	1952	451	84	1851
Churn-powers. Means for regulating	J. S. Chew	609,658	Aug. 23	2799	651	84	1243
Chute. Coal-	C. J. Taylor	611,530	Sept. 27	2547	598	84	1983
Chute. Coin-	F. Kuser	610,066	Aug. 30	3491	809	84	1394
Chute. Grain-	J. R. Grinsfelder	610,807	Sept. 13	1208	277	84	1008
Cigar-box attachment	F. R. Keyes	607,051	July 12	775	169, 170	84	169
Cigar-bunch-rolling machine							

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Cigar-cutter and advertising device. Combination	R. Dykeman	610,388	Sept. 6	479	104, 105	84	1531
Cigar cutting and lighting machine	E. A. Johnston	606,820	July 5	345	73	84	69
Cigar-holder and tobacco-pipe	J. Bigelow	608,170	Aug. 2	6	2	84	656
Cigar-machine	J. Reuse	608,915	Aug. 9	1356	318, 319	84	998
Cigar-machine	J. Reuse. (Reissue)	11,695	Sept. 20	1969	454, 455, 456	84	1854
Cigar-making machine	J. Reuse	608,913	Aug. 9	1348	314, 315	84	996
Cigar-making machine	J. Reuse	608,914	Aug. 9	1351	315, 316, 317, 318	84	997
Cigar-moistener and pressure device	F. Burger and H. M. Williams	607,826	July 26	2400	510	84	519
Cigar-rolling machine	J. Bunn	610,754	Sept. 13	1095	251	84	1670
Cigar-tip-cutter and match-safe. Combined	E. M. Hall	607,365	July 12	1163	291	84	280
Cigar-tip cutter. Registering	F. Fontneau	607,167	July 12	1002	218	84	211
Cigarette-machine	D. J. Campbell	610,855	Sept. 13	1279	296	84	1707
Cigarette-machine	E. Moonelis	609,039	Aug. 16	1627	387, 388, 389	84	1002
Cigarette. Mouthpiece-	E. T. Gilliland	609,741	Aug. 23	2918	682	84	1268
Cigarettes. Machine for making all-tobacco	J. S. Detrick	610,261	Sept. 6	217	49	84	1484
Cigarettes. Machine for making all-tobacco	H. Robinson	610,280	Sept. 6	267	56, 57, 58, 59	84	1494
Circuit-breaker for three-wire systems	E. M. Hewlett	610,908	Sept. 20	1370	314	84	1741
Circuit-breaking switch. Automatic	W. F. Bossert and W. D. Pomeroy	610,887	Sept. 20	1343	307	84	1736
Circuit-interrupting device	D. M. Moore	611,206	Sept. 20	1914	442	84	1844
Cistern-cleaning device	W. M. Ricketts	610,279	Sept. 6	266	56	84	1493
Clamp:							
See Ball-and-socket-joint clamp.	Floor-clamp.						
Bicycle-saddle clamp.	Machinist's clamp.						
Board-clamp.	Pipe-clamp.						
Broom-clamp.	Rail-clamp.						
Carvings-clamp.	Sewing-machine cloth-clamp.						
Electric-wire clamp.	Strap or rope clamp.						
	Surgical injector-clamp.						
Clamping and pivot-supporting device	T. S. Heineken	606,866	July 5	434	93	84	85
Clasp:							
See Broom-clasp.	Rein-clasp.						
Corset-clasp.	Ribbon-clasp.						
Letter-clasp.	Spring-clasp.						
Clasp	A. E. Taylor	607,297	July 12	1245	265	84	257
Clavier. Mute	L. Illmer, Jr	610,448	Sept. 6	573	126	84	1548
Clay products. Machine for making	W. W. Wallace	608,987	Aug. 9	1417	334	84	948
Clay products. Machine for pressing	J. J. Merrill	607,870	July 26	2497	530	84	537
Cleaner:							
See Beer or ale pipe cleaner.	Flue-cleaner.						
	Pipe-cleaner.						
Boiler-cleaner.	Sieve-cleaner.						
Boiler-tube cleaner.	Tobacco-pipe cleaner.						
Boot-cleaner.	Vessel-cleaner.						
Dish-cleaner.	Window-cleaner.						
Flower-pot cleaner.							
Cleaning. Apparatus for chemical	A. F. Platt	608,792	Aug. 9	1106	256	84	891
Clevis. Plow-	C. A. Johnson	610,968	Sept. 20	1479	338	84	1762
Clip:							
See Hat-clip.	Tentering-machine clip.						
Clipper. Hair-	C. H. Redman, Jr	608,078	July 26	2871	614	84	612
Clock. Alarm-	A. Junghans and C. A. Hirth	608,867	Aug. 9	1279	298, 299	84	922
Clock. Electric	F. Hope-Jones and G. B. Bowell	610,539	Sept. 13	741	169	84	1597
Clock. Repeating	A. Bannatyne	610,753	Sept. 13	1092	250	84	1669
Clock. Repeating alarm-	W. D. Davies	608,424	Aug. 2	465	104	84	748
Clock. Repeating alarm-	W. D. Davies	611,506	Sept. 27	2623	605	84	1997
Clock-train. Electric	C. M. Crook	610,229	Sept. 6	162	36	84	1474
Clod-crusher and land-roller. Combined	A. Zimmer and B. Roenisch	609,069	Aug. 16	1682	400	84	1013
Closet:							
See Water-closet.							
Closet-cistern	J. P. J. Cahill	609,079	Aug. 16	1696	404	84	1015
Closure-cap, cover, stopper, &c	T. Sloper	610,924	Sept. 20	1398	320	84	1746
Cloth-cutting machine	C. H. Crowell	607,586	July 19	1951	405	84	415
Cloth-inspecting machine	E. T. and E. H. Marble	608,468	Aug. 2	532	119	84	761
Cloth-ornamenting apparatus	J. Lancaster and C. Witteck	609,190	Aug. 16	1904	453	84	1052
Cloth-shearing machine	C. E. Richardson	609,166	Aug. 16	1866	445	84	1045
Cloth-winding machine	J. E. Windle	608,817	Aug. 9	1191	278	84	905
Clothes and waste receptacle. Collapsible	O. L. Apthorp	608,998	Aug. 16	1551	369	84	989
Clothes-line hanger	R. and N. Luckner	608,205	Aug. 2	69	19	84	608
Clothes-drier	J. N. Parker	611,508	Sept. 27	2504	578	84	1974
Clothes-line. Pinless	J. W. Jackson	610,906	Sept. 20	1374	315	84	1742
Clothes-line. Pinless	F. N. Renfrow	607,883	July 26	2520	535	84	541
Clothes-line prop	P. McClafferty	609,455	Aug. 23	2406	564	84	1171
Clothes-line prop. Extensible	J. W. Wood	608,629	Aug. 9	826	191	84	837
Clothes-line-prop head	W. H. B. Miller	607,259	July 12	1175	251	84	242
Clothes-line reel	H. Hübner	606,666	July 5	56	12	84	13
Clothes-line tightener	J. T. Smith	607,892	July 26	2538	538	84	545
Clothes, &c., on lines. Device for hanging	G. W. Price	610,850	Sept. 13	1272	294	84	1706
Clothes-pin	F. S. Graves	609,198	Aug. 16	1919	457	84	1055
Clothes-pin. Duplex	J. R. Holt	608,966	Aug. 9	1506	356	84	965
Clothes-pin. Wooden	F. E. Benton	609,261	Aug. 16	2059	488	84	1085

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clothes-pins. Machine for making	H. L. Mann	610,490	Sept. 6	649	145, 146, 147	84	1563
Clothes-rack	W. S. Downer	607,683	July 19	2120	444	84	447
Clothes-rack	J. W. McDonald	609,116	Aug. 16	1784	424	84	1030
Clothes-rack for bedsteads	J. Manny	607,254	July 12	1168	249	84	241
Clothes-rack, ironing-board support, and receptacle. Combined	E. C. Grotpeter	611,476	Sept. 27	2461	566	84	1965
Clothes-stick	C. Hameetman	607,266	July 12	1366	291	84	281
Clothes-washer	L. B. Brooks	610,120	Aug. 30	3575	828	84	1413
Clothes-wringer	W. Aab	610,882	Sept. 20	1337	306	84	1735
Clutch	G. E. Anderson	611,549	Sept. 27	2588	596, 597	84	1991
Clutch	W. J. Thomas	607,531	July 19	1846	384	84	397
Clutch for elevators, &c. Self-locking	C. B. Cox	610,857	Sept. 13	1287	297	84	1710
Clutch. Friction	W. J. Elliott	608,977	Aug. 9	1484	350, 351	84	961
Clutch. Friction	T. R. Rossiter and D. Noble	611,512	Sept. 27	2518	582	84	1977
Clutch. Friction	E. Turney	607,557	July 19	1808	392	84	405
Clutch mechanism. Friction	A. L. Skinner	609,524	Aug. 23	2528	591	84	1193
Coal-crusher	T. R. Griffith	610,136	Aug. 30	3599	836	84	1417
Coal cutting or mining machine	I. Wantling and J. T. Johnson	608,240	Aug. 2	123	30	84	678
Coal-handling apparatus	R. C. Greenerd	609,020	Aug. 16	1587	378	84	995
Coal-hod lifter and box or receiver for same	A. R. Wilson	609,528	Aug. 23	2537	594	84	1195
Coal-pocket	J. Simpson	609,054	Aug. 16	1657	395	84	1009
Coat and vest holder	D. W. Axene	608,633	Aug. 9	833	192	84	838
Coat-hanger. Safety	J. O. Sanford	610,372	Sept. 6	448	98	84	1524
Coat-lifter	J. P. Griffith	609,427	Aug. 23	2348	554	84	1160
Coated spindle or roller	F. W. Oliver	607,453	July 19	1533	326	84	329
Coating upon surfaces. Forming integral metallic	E. T. Thomas	610,954	Sept. 20	1454	333	84	1757
Cock and waste. Stop-	J. F. Coffey	608,179	Aug. 2	19	5	84	658
Cock. Ball-	A. J. Robinson	609,629	Aug. 23	2745	638	84	1235
Cock-box cleaner. Stop-	R. Dittrich	607,350	July 12	1336	285	84	276
Cock. Draft-	B. Krall	608,874	Aug. 9	1289	301	84	924
Cock or tap-valve. Self-closing	E. A. Bolinder	607,210	July 12	1072	232	84	223
Cock replacer. Stop-	H. L. Thomas and W. C. Nusser	607,492	July 19	1783	371	84	385
Cock. Rotary-motor valve-	G. Silvestri	609,562	Aug. 23	2594	606	84	1206
Cock. Stop and waste	A. L. Lambert	607,865	July 26	2492	528	84	536
Coffee or tea pot	J. S. Allen	609,073	Aug. 16	1688	402	84	1014
Coffee or tea pot handle	G. Wilhelm and J. F. McGovern	609,527	Aug. 23	2536	594	84	1194
Coffee-pot	J. O. Ingle	607,542	July 19	1870	388	84	401
Coffee-pot attachment	A. I. Sandbo	610,853	Sept. 13	1276	295	84	1707
Coffin raising or lowering device	J. H. Zook	609,070	Aug. 16	1683	401	84	1013
Coin-controlled machine	J. G. MacPherson	611,071	Sept. 20	1660	380, 381	84	1796
Coin-counter	C. J. Wolf	611,544	Sept. 27	2575	594, 595	84	1988
Coin-displayer	J. P. Cleal	609,411	Aug. 23	2319	547, 548	84	1154
Coin-freed apparatus	A. E. Box	608,750	Aug. 9	1038	238	84	878
Coin-holder	D. J. Cable	610,959	Sept. 20	1466	335	84	1759
Coin holder or wrapper	J. Pusey	609,947	Aug. 30	3277	764	84	1352
Coin-in-the-slot machine. Amusing and mystifying	T. R. Maguire	607,062	July 12	794	173	84	173
Coin-operated device	G. K. Cheney	609,791	Aug. 30	3005	704	84	1298
Coin-wrapper. Metallic	H. H. and T. S. Hipwell	608,521	Aug. 2	628	141	84	779
Coke. Process of and apparatus for manufacturing	J. T. Key	609,150	Aug. 16	1836	435, 436	84	1040
Coking-oven	L. J. Hirt	607,437	July 19	1506	320, 321	84	324
Coking-stoker	J. Proctor	607,385	July 12	1405	300	84	288
Colander	E. A. Beach	610,789	Sept. 13	1172	270	84	1085
Collapsible tube for plastic and liquid materials	J. S. Taylor	607,530	July 19	1845	383	81	397
Collar	A. D. Fenwick	606,859	July 5	422	90, 91	84	84
Collar, &c	A. D. Fenwick. (Reissue)	11,683	July 26	3015	648	84	639
Collar-adjuster	V. Greenidge	609,932	Aug. 30	3249	759	84	1347
Collar and cuff	T. R. Weidemann	606,817	July 5	341	72	84	68
Collar and cuff edger	G. N. Kramer	607,179	July 12	1019	221	84	214
Collar and cuff turner and edge-polisher	R. N. Martz	610,657	Sept. 13	935	217	84	1638
Collar and hame and fastening therefor	C. E. Berry	610,792	Sept. 13	1177	272	84	1680
Collar-and-socket machine	C. D. De Forest	608,584	Aug. 9	744	171	84	823
Collar. Horse-	C. Block	609,328	Aug. 16	2173	513	84	1108
Collar-shaping machine. Horse-	S. Ross	609,297	Aug. 16	2120	503	84	1096
Collar. Standing	A. D. Fenwick	606,963	July 5	563	124	84	112
Collar. Tie-holding	M. B. Kendrick	611,578	Sept. 27	2649	611	84	2002
Collar turning and ironing machine	W. C. Shaw	608,720	Aug. 9	986	227	84	869
Color-distributing apparatus	C. Comstock	609,010	Aug. 16	1565	372, 373	84	992
Coloring extracts. Making	W. T. Scheele	610,282	Sept. 6	272	.....	84	1494
Colter	E. J. Wing	609,862	Aug. 30	3120	729	84	1322
Column. Metallic	A. Nurick	611,019	Sept. 20	1579	362	84	1781
Column-shoe	J. M. Hoover	611,452	Sept. 27	2415	554	84	1957
Comb: *See* Currycomb. Stripping-comb.							
Comb-dabbing mechanism	J. W. Clarkson	609,385	Aug. 16	2264	535	84	1125
Combing-machine	E. Delette	607,643	July 19	2055	427, 428	84	435
Combing-machine	A. Wenning and C. H. Gégauff	610,464	Sept. 6	606	135, 136	84	1554
Commutator	W. B. Potter	608,209	Aug. 2	223	52	84	699
Commutator-brush holder	W. K. Bassford, Jr	610,620	Sept. 13	879	202	84	1626
Commutator-brush holder for dynamo-electric machines	R. Lundell	608,135	July 26	2957	635	84	629
Compass. Ship's	R. Oliver	609,363	Aug. 16	2230	527	84	1119
Compasses, &c. Joint for	F. H. Heath	610,354	Sept. 6	410	87	84	1518

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page
Composing-machine	G. A. Goodson	609,097	Aug. 16	1726	411, 412	84	1021
Composite pipe	E. I. Braddock	610,224	Sept. 6	155	35	84	1473
Compressible tube	T. Y. Kinne and A. Gartner	610,355	Sept. 6	411	88	84	1519
Concentrator	J. Mait	610,764	Sept. 13	1118	255, 256	84	1674
Condenser	A. P. Dodge	611,358	Sept. 27	2229	515	84	1923
Condenser. Surface	R. A. Sprouls	609,243	Aug. 16	2018	479	84	1077
Conduit. Flexible metallic tube	C. Husham	607,982	July 26	2610	553	84	558
Conduit. Interior	E. E. and F. W. Erickson	607,989	July 26	2704	577	84	576
Confectioner's separating and filling machine	A. Heine and G. S. Mack	609,583	Aug. 23	2631	615, 616	84	1213
Consecutive-view apparatus	H. Casler	611,591	Sept. 27	2678	618, 619	84	2006
Contact-finger for controllers or electric switches	T. von Zweigbergk	611,087	Sept. 20	1698	391	84	1808
Controller	T. von Zweigbergk	607,672	July 19	2107	440	84	444
Controller	T. von Zweigbergk	611,090	Sept. 20	1708	392, 393	84	1805
Controlling device	K. A. B. D. Köttgen	610,064	Aug. 30	3488	808	84	1304
Conveyer	F. F. Landis	611,388	Sept. 27	2286	528	84	1933
Conveying apparatus	J. T. Cowley	608,576	Aug. 9	723	165	84	819
Conveying apparatus	J. T. Cowley	608,577	Aug. 9	724	166, 167	84	819
Conveying apparatus	J. T. Cowley	608,578	Aug. 9	728	167	84	820
Conveying apparatus	J. T. Cowley	608,579	Aug. 9	730	168	84	820
Conveying apparatus	J. T. Cowley	608,580	Aug. 9	733	168	84	821
Conveying apparatus	J. T. Cowley	608,581	Aug. 9	735	168, 169	84	821
Cooker. Heat-retaining starch	J. E. Dann	611,061	Sept. 20	1645	376	84	1793
Cooker. Steam	M. A. Swaim	607,776	July 19	2275	480	84	476
Cooker. Steam	W. J. Thompson	608,806	Aug. 9	1147	266	84	898
Cooking and can-filling machine. Corn	F. W. Smith	607,806	July 19	2362	497	84	491
Cooking apparatus	H. P. A. Nielsen	607,268	July 12	1192	255	84	246
Cooking apparatus. Electrical	J. B. Cary	608,952	Aug. 9	1441	341	84	952
Cooking apparatus for canneries. Automatic	F. A. Dixon	607,656	July 19	2083	435	84	439
Cooking-boiler	J. Mulligan	607,384	July 12	1404	300	84	288
Cooking utensil	S. Kaufmann	608,868	Aug. 9	1280	299	84	922
Cooking utensil. Odorless	W. S. Truex	609,480	Aug. 23	2464	575	84	1181
Cooking utensil. Portable	A. Westheimer	608,738	Aug. 9	1019	234	84	874
Cooking-utensil supporter	L. D. Craig	611,376	Sept. 27	2272	525	84	1931
Cooking vessel	A. Berchtold	609,569	Aug. 23	2606	609	84	1208
Cooler: *See* Beverage-cooler. Milk-cooler.							
Cooling apparatus for air-tanks	E. Sheridan	609,053	Aug. 16	1656	395	84	1008
Cooling-plate	W. Rotthoff	608,079	July 26	2871	614	84	612
Coop and trap. Combined folding	W. A. Neal	608,705	Aug. 9	963	222	84	865
Coop. Folding chicken	G. W. Robinson and L. Stelzer	610,610	Sept. 13	864	198	84	1623
Coop. Poultry	L. Deveau	609,612	Aug. 23	2704	630	84	1226
Cop	S. W. Wardwell, Jr.	607,202	July 12	1058	229	84	221
Copying-press	A. A. Aikin	609,397	Aug. 23	2298	543	84	1150
Copying-press	C. P. Bell	609,606	Aug. 23	2675	624, 625	84	1220
Corkscrew	E. Walker	611,046	Sept. 20	1618	370	84	1788
Corkscrew. Pocket	E. Hammesfahr	610,580	Sept. 13	726	164	84	1505
Corn cutter and shocker	A. J. Cropp	607,112	July 12	895	194	84	192
Corn cutter. Green	H. J. B. Gravier	607,363	July 12	1359	290	84	280
Corn-husker	I. Korn	610,718	Sept. 13	1060	238	84	1658
Corn-husking implement	L. F. Rife	608,303	Aug. 2	283	53	84	701
Corn-popper	T. G. McWithey	609,160	Aug. 16	1854	441	84	1043
Corn-sheller feeder	W. C. Rowe	606,740	July 5	183	41	84	87
Corn-shield	E. Pierrepont	607,950	July 26	2639	560	84	563
Cornstalks. Means for extracting pith or cellulose from	F. T. Wright	608,630	Aug. 9	827	191	84	837
Corn stripping and husking mechanism	A. Steiner	606,824	July 5	349	74, 75	84	70
Corset	W. B. H. Dowse	607,023	July 12	695	151	84	157
Corset	T. S. Gilbert	611,116	Sept. 20	1760	403	84	1815
Corset	E. E. Howe	609,434	Aug. 23	2355	585	84	1162
Corset	D. Kops	610,063	Aug. 30	3487	808	84	1304
Corset	C. D. Sapio	609,591	Aug. 23	2647	619	84	1215
Corset	E. Young	611,163	Sept. 20	1843	425	84	1831
Corset attachment	D. Kops	611,068	Sept. 20	1654	378	84	1795
Corset. Bustle	J. A. Fitzgerald	610,480	Sept. 6	632	142	84	1560
Corset-clasp	W. B. H. Dowse	607,022	July 12	694	150	84	157
Corset-fastening	E. Pearl	609,044	Aug. 16	1641	391	84	1005
Corset-fitting attachment	G. A. Schneebeli	607,659	July 19	2047	425	84	434
Corset-waist	E. H. Rimmelin	607,607	July 19	1986	412	84	421
Cot or bedstead. Folding	C. Zimmer	609,382	Aug. 16	2256	534	84	1124
Cotton-chopper	F. Walla	610,667	Sept. 13	948	220	84	1640
Cotton distributer and cleaner. Seed	H. J. Wheeler	610,298	Sept. 6	294	64	84	1499
Cotton elevator and distributer. Automatic	J. R. Fordyce	611,360	Sept. 27	2235	516, 517	84	1924
Cotton from gins. Apparatus for conveying lint	M. Swenson	608,729	Aug. 9	1001	229, 230	84	871
Cotton-gin	J. W. Graves	608,667	Aug. 9	899	205, 206	84	852
Cotton-press	J. W. Graves	608,668	Aug. 9	903	206, 207	84	853
Cotton-press	J. W. Graves	608,669	Aug. 9	906	207, 208	84	854
Cotton-press	J. W. Graves	608,982	Aug. 9	1495	354, 355	84	963
Cotton-press	C. E. Mallett	607,068	July 12	796	173, 174	84	173
Counter-battery	W. Meyer	609,994	Aug. 30	3377	784	84	1372
Counter. Score	H. De Wallace	608,585	Aug. 9	748	172	84	894
Counting attachment for rotary cutters	C. H. Remington	609,266	Aug. 16	2119	502	84	1096

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Coupling: *See* Car-coupling. Carriage-coupling. Electric coupling. Hose-coupling. Pipe-coupling. Pipe and hose coupling. Pole-coupling. Rope-coupling. Self-locking coupling. Shaft or pole coupling. Thill-coupling. Trip-coupling. Valve-coupling. Vehicle reach-coupling.							
Coupling	F. R. Emmitt	609,738	Aug. 23	2911	681, 682	84	1267
Coupling	W. N. Long	609,283	Aug. 16	2100	497	84	1092
Cover for chambers, commodes, &c	P. H. Deis	608,082	July 26	2808	597	84	909
Cover. Removable	R. L. Akins	609,071	Aug. 16	1684	401	84	1013
Cow-tail holder	E. J. and L. M. Trapp	611,155	Sept. 20	1830	422	84	1828
Cradle	R. Bird	609,654	Aug. 23	2786	649	84	1249
Cradle. Self-rocking	R. D. King	611,174	Sept. 20	1861	429	84	1834
Crane	H. Sawyer	608,227	Aug. 2	105	27	84	675
Cranes. Apparatus for producing traversing motion of overhead traveling	J. G. and E. G. Fiegehen	608,191	Aug. 2	44	10,11	84	663
Crank-fastening	T. A. Hearson	609,433	Aug. 23	2354	555	84	1162
Crate	J. C. Dozier	609,879	Aug. 30	3156	737	84	1229
Crate. Folding	F. P. Murphey	607,121	July 12	916	198	84	195
Crate or box. Egg	F. H. Champlin	607,423	July 19	1484	315	84	320
Crate. Shipping	N. P. Barclay and C. M. Dayton	611,228	Sept. 27	1979	457	84	1877
Crate. Shipping	J. A. Reeder	607,574	July 19	1926	399	84	410
Crate. Shipping	O. Rose	611,281	Sept. 27	2084	480	84	1896
Cream-separator	J. E. Phillips	609,461	Aug. 23	2414	566	84	1172
Cream-separator	J. W. Thayer	608,311	Aug. 2	250	57	84	704
Creamer	F. E. Sargent	608,482	Aug. 2	559	124	84	766
Creamer. Centrifugal	F. G. Jones	610,058	Aug. 30	3478	807	84	1392
Creaming-can	J. A. Rector	611,275	Sept. 27	2075	477	84	1895
Crib. Folding	R. P. Ashwell	609,491	Aug. 23	2480	579	84	1184
Crib. Folding	R. H. Buchanan	609,496	Aug. 23	2489	581	84	1186
Crossover. Emergency	F. R. Coates and O. M. Shepard	609,660	Aug. 23	2795	651	84	1244
Cross-tie and rail-fastening. Metallic	A. B. Allen	607,906	July 26	2566	544	84	550
Crozing or grooving tool for barrels, &c	E. Frueh	611,408	Sept. 27	2334	538	84	1942
Crucible-furnace. Self-heating	R. Baumann	608,747	Aug. 9	1035	237	84	878
Crusher: *See* Cane-crusher. Clod-crusher. Coal-crusher. Rock and ore crusher.							
Crusher and pulverizer	A. and L. E. Bandeen	607,418	July 19	1469	311	84	317
Crushing-machine	T. L. and T. J. Sturtevant	607,575	July 19	1928	399, 400	84	411
Crushing-machine. Roller	W. J. Dyer	610,802	Sept. 13	1196	275	84	1690
Cultivating and soil-stirring device	C. W. Davis	609,611	Aug. 23	2692	628, 629, 630	84	1224
Cultivation. Apparatus for steam	R. H. Fowler and T. Benstead	608,514	Aug. 2	610	136, 137	84	777
Cultivator	G. C. Avery	611,551	Sept. 27	2590	597	84	1091
Cultivator	S. C. Cobb	610,080	Aug. 30	3436	796	84	1353
Cultivator	C. W. Davis	609,609	Aug. 23	2681	626, 627	84	1221
Cultivator	H. E. Dodson	608,402	Aug. 2	422	93	84	740
Cultivator	J. S. Ford	610,176	Sept. 6	46	11	84	1450
Cultivator	F. A. Head and T. L. Regester	611,036	Sept. 20	1600	367	84	1784
Cultivator	G. Lewis	610,546	Sept. 13	755	172	84	1590
Cultivator	D. M. Motherwell	608,411	Aug. 2	439	96, 97	84	743
Cultivator	D. M. Motherwell	610,073	Aug. 30	3502	811	84	1396
Cultivator	H. Otenhouse	608,790	Aug. 9	1103	255	84	890
Cultivator	J. H. Owens	611,457	Sept. 27	2390	548	84	1951
Cultivator	J. D. Schofield	610,148	Aug. 30	3613	839, 840	84	1490
Cultivator	E. E. Whipple	607,632	July 19	2036	422, 423	84	431
Cultivator	E. E. Whipple	609,064	Aug. 16	1674	398	84	1012
Cultivator	A. H. Green	607,364	July 12	1360	290	84	280
Cultivator and planter. Combined	C. W. Davis	609,610	Aug. 23	2687	627, 628	84	1223
Cultivator and soil-stirring implement	W. A. Douglas	606,835	July 5	378	60	84	75
Cultivator appliance. Wheel	C. C. Warren	611,463	Sept. 27	2435	560	84	1961
Cultivator attachment	J. E. Barron	611,192	Sept. 20	1887	436	84	1840
Cultivator. Cotton	A. L. Brock	608,880	Aug. 9	1213	283, 284	84	909
Cultivator. Disk	P. Jarvis	611,321	Sept. 27	2155	498	84	1909
Cultivator. Double-row	W. Eggert, Jr	609,502	Aug. 23	2496	584	84	1187
Cultivator fertilizer attachment	R. R. Jones	609,886	Aug. 30	3172	742	84	1352
Cultivator. Plow	A. C. Butler	611,195	Sept. 20	1890	436	84	1840
Cultivator-scraper	S. N. Bistline	611,554	Sept. 27	2596	599	84	1992
Cultivator. Sulky	J. A. Brogan	611,351	Sept. 27	2211	511	84	1919
Cuff	J. F. Fellows	611,241	Sept. 27	1997	460	84	1880
Cuff							
Cup: *See* Lubrication-cup. Milk-cup. Oil-cup.							
Cup or pail	J. W. Scoles	610,285	Sept. 6	277	60	84	1495
Cupola	T. P. Byram	607,501	July 19	1794	373	84	888
Current induction-motor. Alternating	C. S. Bradley	608,249	Aug. 2	141	35	84	662
Current-motor	H. C. Keeler	606,131	July 26	2951	633, 634	84	628
Current-motor	A. E. Schlieder	607,959	July 26	2853	564	84	866
Current motor. Alternating	C. S. Bradley	610,025	Aug. 30	3428	794	84	1352
Current motors. Means for controlling non-synchronous alternating	B. G. Lamme	609,990	Aug. 30	3372	788	84	1871
Current regulator. Direct	F. E. Ramsay	610,413	Sept. 6	518	113	84	1536

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Currents. Method of and apparatus for generating alternating	M. Hutin and M. Leblanc	606,761	July 5	235	50	84	48
Currycomb	J. D. Brainard	610,891	Sept. 20	1349	309	84	1737
Currycomb	J. Carden	607,738	July 19	2199	464	84	462
Currycomb	W. E. Phillips	609,240	Aug. 16	2016	478	84	1076
Currycomb	W. A. Townes	606,849	July 5	408	86	84	80
Curtain-bracket. Adjustable	T. H. Eulass	606,962	July 5	563	124	84	111
Curtain-fixture	A. Assorati	610,782	Sept. 13	1059	243	84	1663
Curtain fixture. Window-	W. W. Philips	611,141	Sept. 20	1804	415	84	1824
Curtain for vestibules of cars, &c	R. W. Morgan	607,872	July 26	2502	581	84	537
Curtain-hanger	H. F. Bogel	609,179	Aug. 16	1888	449	84	1048
Curtain-hanger	J. J. Brooks	609,180	Aug. 16	1889	449	84	1049
Curtain-hanger	C. A. Oliver	608,070	July 26	2860	611	84	610
Curtain-holdback	F. W. Kelsey	609,965	Aug. 30	3320	772	84	1361
Curtain-holder	U. S. Parish and F. A. Rudolph	607,702	July 19	2159	454	84	454
Curtain-pole	A. E. Bowers	608,101	July 26	2908	622	84	619
Curtain-pole adjuster	G. Loos	607,117	July 12	908	197	84	194
Curtain ring and holder	P. Casey, Jr	610,342	Sept. 6	385	82	84	1514
Curtain stretcher. Lace-	J. C. Whipple	610,294	Sept. 6	297	61	84	1499
Cuspidor and attachment	A. M. McQuarrie	610,556	Sept. 13	775	176	84	1608
Cuspidor-bowls. Supporting attachment for	G. E. Johnson	611,218	Sept. 20	1947	449	84	1850
Cuspidor. Car-	F. H. Manning and J. P. Bouchet	606,871	July 5	440	94	84	87
Cuspidor for cars, &c	C. F. Cuttingham	606,647	July 5	20	4	84	6
Cuspidor. Sanitary	J. A. W. Walker	607,805	July 12	1257	268	84	260
Cushion: *See* Rocker-cushion. Slate-frame cushion.							
Cut-off and strainer for cisterns. Automatic	A. A. Klar	609,439	Aug. 23	2363	557	84	1163
Cut-off for water-spouts or other conduits	H. Epple	608,765	Aug. 9	1064	244	84	883
Cut-out for magneto-generators. Automatic	W. J. Bowen and C. A. Federer	610,023	Aug. 30	3426	793 794	84	1381
Cutter: *See* Bark-cutter. Bone-cutter. Buttonhole-cutter. Cane-cutter. Cigar-cutter. Cigar-tip cutter. Corn-cutter. Dough-cutter. Feed-cutter. Flue-cutter. Fruit or flower stem cutter. Hair-cutter. Hog-nose cutter. Noodle-cutter. Paper-cutter. Picture-matting cutter. Pipe-cutter. Rotary cutter. Shaping-cutter. Sod-cutter. Stalk-cutter. Tobacco-cutter. Tube-cutter. Twine-cutter. Weed-cutter.							
Cutter-head	J. W. Schleicher	608,272	Aug. 2	177	42, 43	84	690
Cutter-head	S. J. Shimer	607,709	July 19	2168	456	84	455
Cutting and delivery mechanism	L. C. Crowell	608,582	Aug. 9	737	169 170	84	822
Cutting and printing mechanism	W. H. Butler	609,007	Aug. 16	1561	371 372	84	991
Cutting and trimming machine gage	H. Graven	609,199	Aug. 16	1920	457	84	1055
Cutting-off apparatus	J. B. Renshaw	610,330	Sept. 6	363	77, 78	84	1510
Cyanids from molasses-lyes. Making	H. Reichardt and J. Bueb	607,881	July 26	2518	534	84	540
Cycle drive-wheel. Motor-	C. E. Roberts	609,834	Aug. 30	3086	720	84	1315
Cycle driving apparatus	E. B. Killen	609,151	Aug. 16	1838	436 437	84	1041
Cycle holder and lock. Combined	F. H. Richards	610,722	Sept. 13	1043	240	84	1660
Cycle-lock	C. Sangster	608,080	July 26	2873	614	84	612
Cycle or like framings. Machinery for making joints between parts of	C. Harvey	609,343	Aug. 16	2199	519 520	84	1112
Cycle parts. Housing for screw-threaded	C. P. Birner	611,194	Sept. 20	1889	436	84	1840
Cycle-race registering apparatus	A. L. Baird	610,689	Sept. 13	911	209	84	1632
Cycle running-gear. Motor-	R. Gaertner	610,177	Sept. 6	46	11	84	1450
Cycle-saddle	D. M. B. H. Cochrane	610,429	Sept. 6	543	119	84	1542
Cycle-saddle	R. W. Jamieson	608,682	Aug. 9	926	213	84	858
Cycle speed-gearing	S. L. Smith	609,170	Aug. 16	1873	446	84	1046
Cycle sprocket attachment	W. H. Binns	610,152	Aug. 30	3620	841	84	1422
Cycles with adjustable gearing. Driving mechanism for	F. H. Vagt	611,210	Sept. 20	1918	443	84	1845
Cylinder-lock	C. O. Noack	608,069	July 26	2859	611	84	610
Damper-fastener for stoves or stovepipes	J. H. Benson and L. Greenwald	609,135	Aug. 16	1813	431	84	1086
Damper operating mechanism. Chimney-	F. M. Clotworthy	611,057	Sept. 20	1640	373	84	1792
Damper-regulator	E. K. Hutchison	608,966	Aug. 9	1460	345 346	84	956
Damper-regulator. Automatic	C. F. Wood	607,900	July 26	2548	540	84	546
Damper. Ventilating-	R. L. Underwood	607,669	July 19	2104	439	84	443
Deaf to hear. Appliance for enabling the	R. B. G. Gardner	608,255	Aug. 2	149	37	84	684
Decomposing solid substances. Process of and apparatus for	W. S. Romme	606,981	July 5	598	131	84	119
Dehorning-clipper	J. and C. E. Arms	610,669	Sept. 13	954	220	84	1641
Delivery-sheet holder	J. W. Grothier	607,084	July 12	720	154	84	161
Demijohn	G. Beccaro	608,824	Aug. 9	1205	281	84	907
Demijohn safety attachment	J. Lenormand	607,935	July 26	2612	555	84	558
Dental engine	J. D. Wilkens	610,214	Sept. 6	111	25	84	1462
Dental-engine handpiece	A. W. Browne	606,755	July 5	224	48	84	46
Dental-handpiece tool-holder	C. P. Fritz	610,483	Sept. 6	639	143	84	1561
Dental instrument	W. O. Talbot	607,295	July 12	1242	265	84	256
Dental jaw-brace	R. L. Halperin	606,781	July 5	282	58	84	56
Dental pliers	E. H. Angle	610,840	Sept. 13	1255	289	84	1702
Dental plugger	A. Bush	608,150	July 26	2983	640	84	634
Dental plugger	W. E. Hanson	608,984	Aug. 9	1500	355	84	964
Dental plugger	J. W. Tenny and R. T. McCracken	611,581	Sept. 27	2549	588	84	1983
Dental spittoon	F. Hurlbut. (Reissue)	11,696	Sept. 27	2685	620 621	84	2008
Dental tool	L. E. Hendrickson and C. H. Read	610,987	Sept. 20	1523	350	84	1769

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Derailing device	D. Anderson and D. Bevan	611,548	Sept. 27	2587	596	84	1990
Derrick for raising or lowering telegraph-poles	M. T. Gordon	608,198	Aug. 2	48	12	84	664
Desk	C. Fasoldt	610,439	Sept. 6	559	123	84	1545
Desk attachment	W. W. Murray	607,187	July 12	1037	224	84	217
Detergent composition and making same	J. W. Sallade	607,663	July 19	2097	.....	84	442
Detector: *See* Time-detector.							
Diamond cutting and polishing. Dop for	H. Cooper	609,141	Aug. 16	1821	432	84	1037
Die: *See* Forming-die. Plumber's screw-threading die.							
Die-stock bushing	G. P. Bard	606,774	July 5	268	56	84	54
Dies. Blank for making	A. J. Bradley	610,024	Aug. 30	3427	794	84	1382
Digester	J. Prisley	611,393	Sept. 27	2307	532	84	1937
Digester and protecting same	J. L. Coker, Jr	609,733	Aug. 23	2004	680	84	1266
Dipper	D. W. Harper	609,431	Aug. 23	2352	555	84	1161
Dish-cleaner	W. E. Leonard and C. O. Hescox	607,515	July 19	1819	378 379	84	891
Dish-cleaner	R. F. Rightmire	607,134	July 12	988	204	84	199
Dish-drainer	H. M. Tschopp	611,533	Sept. 27	2551	589	84	1983
Disinfecting apparatus for water-closets, &c.	W. G. Ashburner	607,818	July 26	2384	506	84	516
Display-box. Counter	C. E. Davis	611,063	Sept. 20	1648	377	84	1793
Display-cabinet	F. E. Halden	606,714	July 5	144	30	84	30
Display device	J. A. Love	609,823	Aug. 30	3070	716	84	1312
Display device for confectionery	W. E. and G. F. Schrafft	610,247	Sept. 6	192	43	84	1479
Display-rack	W. Best, Sr	610,163	Sept. 6	6	2	84	1444
Display-stand	P. Miller	606,842	July 5	390	83	84	78
Displaying photographs, pictures, &c. Device for	B. S. Whitehead	607,104	July 12	885	191	84	190
Displaying price-cards. Apparatus for	J. S. Menagh	609,359	Aug. 16	2221	525	84	1117
Displaying stand. Hat-	L. Wellock	607,310	July 12	1268	270	84	261
Distiller. Domestic water-	J. E. Hicks	611,123	Sept. 20	1772	406	84	1818
Distilling extracts	J. W. Lathrop	606,789	July 5	295	61	84	59
Ditching-machine	J. H. Clark	606,987	July 5	607	132 133	84	120
Ditching-machine	J. W. Humphreys	607,688	July 19	2126	446	84	448
Diving apparatus	J. and G. Day	609,418	Aug. 23	2333	550 551	84	1157
Diving-armor	J. J. Devine	609,085	Aug. 16	1708	405 406	84	1017
Domestic press	G. W. Pelton	608,268	Aug. 2	168	41	84	688
Door and window-screen. Screen-	L. F. Arno	609,723	Aug. 23	2891	676	84	1263
Door-check	P. J. Lennart	608,462	Aug. 2	523	117	84	759
Door-check	N. Shaw	609,214	Aug. 16	1958	464	84	1064
Door-check. Pneumatic	J. Horsfield	610,447	Sept. 6	571	126	84	1548
Door-fastener	L. J. Gamble	610,624	Sept. 13	886	203	84	1628
Door fastener. Sliding-	J. R. Washburn	607,495	July 19	1787	371	84	386
Door. Flush sliding	D. Manuel	609,893	Aug. 30	3183	746	84	1334
Door guide and closer. Sliding-	C. F. Agard	609,605	Aug. 23	2673	624	84	1220
Door-hanger	W. S. Boyer	610,598	Sept. 13	850	195	84	1620
Door-hanger	J. E. Hartman	606,650	July 5	40	10	84	10
Door-hanger	P. Johnson	608,129	July 26	2949	682	84	627
Door-hanger	E. Y. Moore	610,409	Sept. 6	514	112	84	1537
Door-hanger	V. M. Moore	606,808	July 5	328	69	84	66
Door-hanger	A. Rochwite	611,395	Sept. 27	2310	533	84	1937
Door-hanger	G. Hall	610,399	Sept. 6	494	108	84	1534
Door-holder	R. North	610,146	Aug. 30	3610	839	84	1420
Door holder and bolt	W. H. Murray	607,122	July 12	917	199	84	196
Door holder and lock. Combined	H. Bennik	606,640	July 5	5	1, 2	84	4
Door-operating appliance	J. H. Koons	607,382	July 12	1408	290	84	288
Door or window screen	O. Voigtlander	611,024	Sept. 20	1584	363	84	1781
Door-spring	A. and C. Scheid	611,285	Sept. 27	2095	482 483	84	1899
Door spring and check. Combined	G. Bortman and B. Munkwitz	610,886	Sept. 20	1342	307	84	1736
Door-stop	J. L. Zeaiger. (Reissue)	11,684	July 26	3017	649	84	639
Doors, &c. Check for	O. M. Smith	611,340	Sept. 27	2189	506	84	1916
Doors, &c. Clamping device for supporting	C. J. Poll	607,076	July 12	825	180	84	179
Dough-cutter	W. S. and C. I. Corby	611,563	Sept. 27	2618	603 604	84	1996
Dough working and shaping machine	E. L. Lindwall	610,272	Sept. 6	233	52	84	1487
Dovetailing-machine	T. J. Ryland	608,994	Aug. 9	1520	350 360 361	84	968
Dovetailing-machine	R. Harris	607,037	July 12	725	156	84	162
Dowel-machine rod-guide	C. F. Stewart	608,924	Aug. 9	1395	329 330	84	944
Dowel-pin-pointing machine	C. E. Berry	610,793	Sept. 13	1178	272	84	1680
Draft apparatus	W. M. Ferree	610,267	Sept. 6	225	51	84	1486
Draft-equalizer	G. S. Hoffman	608,776	Aug. 9	1079	248	84	886
Draft-equalizer	H. Wunderlich	608,093	July 26	2894	620	84	617
Draft-equalizer	G. G. Floyd	607,843	July 26	2141	518	84	526
Draft-rigging	W. M. Piper	609,701	Aug. 23	2861	669	84	1257
Draft-rigging	C. H. Emerson	609,737	Aug. 23	2910	681	84	1267
Draw-bar stop	F. M. Kandle	608,180	July 26	2950	633	84	928
Drawer attachment	T. S. James	610,989	Sept. 20	1525	350	84	1770
Drawers-supporter	A. Aigner	607,814	July 26	2377	505	84	515
Drawing-boards. Parallel motion for	T. Wolstenholme	607,724	July 19	2184	461	84	459
Drawing-roller shield or deflector	G. F. Kibling	610,763	Sept. 13	1116	255	84	1674
Dredge for mining purposes. Hydraulic	F. H. Heath	607,237	July 12	1139	243	84	236
Dredge. Suction-	T. R. Jones	609,350	Aug. 16	2209	523	84	1115
Dredger. Pneumatic	J. Dembinski	611,357	Sept. 27	2226	514 515	84	1922
Dredging-bucket	H. A. Francis	610,394	Sept. 6	487	106	84	1532
Dress-fastener							
Drier: *See* Clothes-drier. Steam-drier. Fruit-drier.							
Drier	V. D. Anderson	610,516	Sept. 13	707	160	84	1591

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Drill: *See* Electric drill. Grain-drill. Hand-drill. Ratchet-drill. Ridge-drill. Rock-drill. Seed-drill. Twist-drill.							
Drill	C. Columbus and C. R. Hesseltine	608,548	Aug. 2	666	151	84	787
Drill and seed-planter	R. W. Watt	609,714	Aug. 23	2881	673	84	1261
Drilling-machine	J. L. Jones	611,173	Sept. 20	1858	428	84	1834
Drilling-machine. Hand	B. F. Smith	610,773	Sept. 13	1142	262	84	1679
Drilling-machine. Portable	J. F Allen	607,816	July 26	2379	505	84	515
Drink-register	E. H. Smith	607,092	July 12	865	187	84	186
Drop-press	C. F. Wieland	607,579	July 19	1937	402	84	412
Drum	E. P. Zeidler	609,068	Aug. 16	1681	400	84	1013
Drum. Heating-	L. W. Holland	609,985	Aug. 30	3253	760	84	1347
Drum. Heating-	C. M. Richardson	607,706	July 19	2164	455	84	454
Drum. Heating-	C. B. Tourville	608,386	Aug. 2	389	86	84	732
Drum. Heating-	C. P. Vernier	608,935	Aug. 9	1415	333	84	947
Dry-kiln	J. Guerrero and J. Ungemach	610,444	Sept. 6	565	124, 125	84	1547
Dry-kiln	J. M. Sprout	610,100	Aug. 30	3540	821	84	1405
Dumping-receptacle	E. J. Little	607,603	July 19	1981	411	84	421
Dust-collector	E. R. Draver	608,587	Aug. 9	749	172, 173	84	824
Dust-pan	J. M. Oursler	606,809	July 5	329	69	84	66
Dust-pan	H. Weir	607,309	July 12	1265	269	84	261
Dust receptacle or pouch	W. A. Bartholomew	608,635	Aug. 9	845	194	84	841
Dye and making it. Brown	E. Elsaesser	611,111	Sept. 20	1754	.....	84	1814
Dye and making it. Red acid	B. Delcke	610,345	Sept. 6	394	.....	84	1516
Dye and making it. Violet azo	O. Ernst	610,349	Sept. 6	401	.....	84	1517
Dye and making same. Black	G. Kalischer	610,541	Sept. 13	746	.....	84	1598
Dye and making same. Blue-black	R. Bohn	609,327	Aug. 16	2171	.....	84	1107
Dye and making same. Blue-black	E. Elsaesser	611,112	Sept. 20	1755	.....	84	1814
Dye and making same. Red	H. R. Vidal	609,598	Aug. 23	2659	.....	84	1218
Dye. Basic disazo	A. Phillips	610,367	Sept. 6	442	.....	84	1523
Dye. Blue	P. Julius	609,352	Aug. 16	2212	.....	84	1115
Dye. Blue-black azo	J. Bammann and M. Ulrich	608,999	Aug. 16	1551	.....	84	989
Dye. Brown azo	M. Böniger	608,024	July 26	2794	.....	84	597
Dye. Brown-black sulfur	H. R. Vidal	608,355	Aug. 2	338	.....	84	723
Dye for wool. Blue	E. Elsaesser	607,408	July 12	1450	.....	84	296
Dye. Green alizarin	K. Thun	608,298	Aug. 2	120	.....	84	678
Dye. Red-violet phthalein	J. Schmid and H. Rey	609,997	Aug. 30	3381	.....	84	1372
Dye. Sulfonated monobenzyl-phthalein	J. Schmid and H. Rey	609,998	Aug. 30	3383	.....	84	1373
Dyes. Making violet	H. R. Vidal	608,354	Aug. 2	338	.....	84	723
Dyeing apparatus	E. Decock	611,428	Sept. 27	2373	545	84	1948
Dyeing, &c. Apparatus for	C. Corron	607,834	July 26	2420	513, 514	84	528
Dynamite-cartridges. Fulminate-cap for	W. P. Ferguson	609,963	Aug. 30	3317	772	84	1360
Dynamo. Alternating-current	L. Gutmann	606,863	July 5	428	92	84	85
Dynamo. Alternating-current	M. Hutin and M. Leblanc	606,762	July 5	241	51	84	48
Ear. Vessel	A. Yates	607,390	July 12	1413	302	84	290
Easel. Artist's	A. K. Cross	610,644	Sept. 13	917	210	84	1634
Eaves-trough hanger and screen attachment	F. P. Dick	608,844	Aug. 9	1246	291	84	916
Edgers. Sectional feed-roll for gang	C. E. Buek	606,866	July 5	459	98	84	90
Educational appliance	A. W. Baldwin	610,577	Sept. 13	807	184, 185	84	1610
Egg-boiler	T. and L. Holmes	607,980	July 26	2605	552	84	557
Ejector. Sanitary	L. O. Lawrason	607,758	July 19	2233	472	84	468
Electric battery	V. Jeanty	611,012	Sept. 20	1563	360	84	1777
Electric brake	H. P. Davis	606,917	July 5	500	110	84	99
Electric brake	J. B. Linn	610,908	Sept. 20	1875	315	84	1742
Electric brake	E. B. Skinner	609,124	Aug. 16	1797	428	84	1082
Electric break and induction apparatus	T. B. Kinraide	607,177	July 12	1016	221	84	213
Electric break for induction-coils	T. B. Kinraide	607,176	July 12	1013	220	84	213
Electric cable	H. A. Reed	608,911	Aug. 9	1346	314	84	996
Electric cable for driving conveyances	A. Norman	607,070	July 12	812	178	84	176
Electric-circuit controller	J. H. Bowley. (Reissue)	11,689	Aug. 30	3635	845	84	1425
Electric-circuit controller	N. Tesla	609,246	Aug. 16	2024	480	84	1078
Electric-circuit controller	N. Tesla	609,247	Aug. 16	2026	480	84	1079
Electric-circuit controller	N. Tesla	609,248	Aug. 16	2028	480	84	1079
Electric-circuit controller	N. Tesla	609,249	Aug. 16	2030	480	84	1079
Electric-circuit controller	N. Tesla	609,251	Aug. 16	2033	481	84	1080
Electric-circuit regulating-switch	H. P. Davis and G. Wright	607,617	July 19	2006	416, 417	84	425
Electric combination-lock	H. G. Carleton	608,320	Aug. 2	272	61, 62	84	709
Electric-conductor bond	S. W. Huff	607,746	July 19	2220	469, 470	84	466
Electric-conductor joint	H. S. Patten and W. Maver, Jr.	608,412	Aug. 2	440	97	84	743
Electric conductors. Supporting-clip for overhead	W. A. Bartley	608,687	Aug. 9	848	195	84	842
Electric conduit. Underground	T. Connelly	607,018	July 12	689	149	84	156
Electric controller	J. D. Forrer	609,092	Aug. 16	1718	409	84	1020
Electric controller	S. Harris	611,215	Sept. 20	1989	447	84	1849
Electric coupling	J. F. McElroy	611,000	Sept. 20	1539	353, 354	84	1773
Electric-current controller	E. E. Werner	607,311	July 12	1267	270	84	262
Electric currents. Resistance and contact apparatus for	H. Lyon	610,406	Sept. 6	508	111	84	1536
Electric currents to agricultural machines. Means for supplying	H. Foerster	610,350	Sept. 6	402	85, 86	84	1517
Electric cut-out	H. A. Lewis	607,250	July 12	1162	248	84	239
Electric drill. Reciprocating	H. Casler	608,175	Aug. 2	12	3	84	657
Electric elevator	R. Eickemeyer	609,015	Aug. 16	1573	374	84	903
Electric elevator	R. Eickemeyer	609,016	Aug. 16	1579	375, 376, 377	84	904
Electric furnace	R. Pignotti, F. Lori, S. Regnoli, M. Besso, and M. Pantaleoni.	611,142	Sept. 20	1805	415	84	1824

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Electric heater	J. F. McElroy	608,343	Aug. 2	322	71	84	720
Electric heater	J. F. McElroy	610,999	Sept. 20	1538	353	84	1772
Electric heater or rheostat	R. V. Sill	606,769	July 5	261	55	84	53
Electric heaters. Composition of matter for	G. B. Fraley	606,921	July 5	510	.....	84	101
Electric-light switch	F. L. Temple	606,746	July 5	210	45	84	43
Electric-line switch	A. B. Du Pont	607,638	July 19	2045	425	84	434
Electric lock	H. G. Carleton	608,321	Aug. 2	277	62, 63	84	710
Electric-lock combination mechanism	H. G. Carleton	608,322	Aug. 2	282	63	84	712
Electric locomotion	H. Van Hoevenbergh	609,851	Aug. 30	3108	724, 725	84	1319
Electric machine. Dynamo-	A. G. Eigner	607,737	July 19	2207	466	84	463
Electric machine. Dynamo-	W. B. Sayers	607,593	July 19	1965	407, 408	84	418
Electric-machine safety device. Dynamo-	E. M. Hewlett	610,904	Sept. 20	1371	314	84	1741
Electric machines. Means for preventing stray magnetism in dynamo-	J. F. Kelly	608,133	July 26	2954	634	84	628
Electric machines. Regulating dynamo-	C. P. Steinmetz	608,309	Aug. 2	246	56	84	704
Electric meter	C. D. Haskins	610,899	Sept. 20	1365	312	84	1740
Electric meter	W. D. Marks	607,185	July 12	1032	223	84	216
Electric meter	W. Stanley and F. Darlington	606,795	July 5	302	63	84	60
Electric meter and motor	H. P. Davis and F. Conrad	608,842	Aug. 9	1238	288, 289	84	914
Electric motor	W. S. Johnson and H. Winkenwerder.	607,247	July 12	1157	247	84	239
Electric motor	W. H. Powell	608,711	Aug. 9	976	224	84	867
Electric-motor controller	F. E. Case	610,895	Sept. 20	1360	311	84	1739
Electric-motor controller	H. P. Davis	610,124	Aug. 30	3581	829, 830, 831	84	1414
Electric-motor controller	H. P. Davis	611,465	Sept. 27	2437	561, 562	84	1961
Electric motors. Apparatus for starting and controlling	T. W. Kloman	610,712	Sept. 13	1028	237	84	1657
Electric motors. Means for supporting	L. T. Pyott	611,273	Sept. 27	2070	477	84	1893
Electric motors. Method of and means for controlling and cutting out	T. von Zweigbergk	611,089	Sept. 20	1705	392	84	1805
Electric motors. System of control of	E. R. Gill	609,274	Aug. 16	2078	494	84	1069
Electric regulator	J. A. Powers	607,551	July 19	1890	391	84	404
Electric regulator. Automatic	R. Skeen	608,721	Aug. 9	987	227, 228	84	869
Electric snap-switch	A. F. Wood	606,884	July 5	457	98	84	90
Electric switch	R. A. Baldwin	610,016	Aug. 30	3410	790	84	1378
Electric switch	R. L. L. Hundhausen	610,402	Sept. 6	503	110	84	1536
Electric-wire clamp	S. S. Leonard	609,888	Aug. 30	3176	744	84	1332
Electrical apparatus. Circuit arrangement for	J. Miesler	607,760	July 19	2244	474	84	471
Electrical appliance for assisting anatomical organs	J. Doty	609,614	Aug. 23	2706	631	84	1226
Electrical-circuit controller	R. Lundell	608,134	July 26	2955	634	84	629
Electrical-circuit controller	N. Tesla	609,245	Aug. 16	2021	479	84	1078
Electrical-conduit box	H. Krantz	609,356	Aug. 16	2216	524	84	1116
Electrical currents. Means for controlling voltage and volume of	H. Williams	610,509	Sept. 6	693	156	84	1572
Electrical distribution	C. P. Steinmetz	608,307	Aug. 2	239	55	84	702
Electrical-distribution system	B. G. Lamme	607,621	July 19	2014	418	84	427
Electrical distribution system	C. F. Scott	611,151	Sept. 20	1822	419, 420	84	1827
Electrical-distribution system	C. P. Steinmetz	608,308	Aug. 2	244	56	84	703
Electrical machine brush	J. W. Dickey	610,705	Sept. 13	1016	235	84	1655
Electrical resistance	H. S. Chase	607,540	July 19	1865	387, 388	84	400
Electrical resistance. Switch for varying	E. F. H. H. Lauckert	608,878	Aug. 9	1297	302	84	925
Electrical traction	W. Kingsland	609,188	Aug. 16	1899	452	84	1051
Electrical transmission of speech. Tension-regulator for	A. C. Cousens	609,877	Aug. 30	3151	736	84	1328
Electrically-heated roll	F. P. Snow	607,093	July 12	869	188	84	187
Electricity. Method of and apparatus for generating	W. L. Negbaur and J. J. Feely	607,125	July 12	922	200	84	197
Electrode. Battery-	H. E. Wilkinson	608,537	Aug. 2	649	146	84	783
Electrode-plate for electric accumulators	P. F. Ribbe	607,078	July 12	829	181	84	180
Electrodynamic apparatus for operating clipping, brushing, or other mechanisms.	W. P. Freeman	608,768	Aug. 9	1068	245	84	884
Electrolytic apparatus	J. G. A. Rhodin	608,300	Aug. 2	224	52	84	699
Electrolytic bath	P. Marino	607,646	July 19	2060	.....	84	436
Electrolytic purposes. Diaphragm for	W. G. Luxton	609,745	Aug. 23	2924	.....	84	1269
Electromagnetic motor	A. B. McMillan	607,451	July 19	1529	326	84	328
Electromechanical lock	H. G. Carleton	608,319	Aug. 2	267	61	84	708
Electromedical apparatus	R. H. Wappler	609,639	Aug. 23	2763	644	84	1238
Electromotor for electrically-propelled vehicles	A. Siemens	608,137	July 26	2961	635	84	630
Electroplating apparatus	H. R. Boissier	611,100	Sept. 20	1725	396	84	1809
Electroplating articles in bulk. Apparatus for	G. Langbein	610,907	Sept. 20	1375	315	84	1742
Electrotype-plate-routing machine	J. H. Ferguson	608,550	Aug. 2	671	152	84	788
Electrotypes, stereotypes, &c. Machine for shaving	F. Wesel	609,643	Aug. 23	2768	645	84	1239
Elevated carrier	H. H. Drew	608,656	Aug. 9	880	202	84	848
Elevated carrier	E. C. Gipe	609,275	Aug. 16	2086	494	84	1090
Elevator: *See* Cotton-elevator. Electric elevator. Grain-elevator. Harvester-elevator. Parcel-elevator. Safety-elevator. Tanning-vat elevator. Water-elevator.							
Elevator	J. Barreaux	607,326	July 12	1293	276	84	267
Elevator	J. H. Clark	609,533	Aug. 23	2545	596	84	1196
Elevator	E. M. Fraser	610,481	Sept. 6	633	142	84	1560
Elevator	H. J. Herren	610,901	Sept. 20	1367	313	84	1740
Elevator	C. H. Newhall	608,789	Aug. 9	1102	255	84	890
Elevator	E. A. Trapp	610,927	Sept. 20	1408	322	84	1749
Elevator-brake	G. Brown	610,256	Sept. 6	207	46, 47	84	1482
Elevator-cars. Cable attachment for	G. H. Reynolds	611,416	Sept. 27	2347	541	84	1944

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Elevator controlling device. Electric-	N. P. Otis and R. C. Smith	610,197	Sept. 6	81	17	84	1456
Elevator-door-opening apparatus	F. T. Ellithorpe	609,987	Aug. 30	3307	782	84	1370
Elevator for granular material	A. Marangos	607,255	July 12	1169	250	84	241
Elevator governor and safety attachment	J. W. Trammell	608,931	Aug. 9	1406	332	84	945
Elevator-regulator or power-generating attachment	F. Burrer and H. M. Williams	607,827	July 26	2401	510	84	519
Elevator safety attachment	G. E. and C. L. Cooke	610,642	Sept. 13	914	210	84	1633
Elevator safety attachment	W. C. Preston	611,332	Sept. 27	2174	502	84	1913
Elevator safety mechanism	D. I. Prudden	607,271	July 12	1205	257, 258	84	249
Elevator safety-stop. Automatic	R. T. Crane	606,857	July 5	419	89, 90	84	83
Elevator safety stop or brake	W. G. McGee	608,297	Aug. 2	221	52	84	699
Embroidering-machine	G. Baum	611,097	Sept. 20	1721	395	84	1808
Embroidering-machine	J. A. Groebli	607,848	July 26	2450	520	84	528
Embroidering-machine	R. Loeb	608,781	Aug. 9	1087	250, 251	84	887
Embroidering-machine jacquard mechanism	J. A. Groebli	607,234	July 12	1133	242	84	234
Embroidering-machine jacquard mechanism	H. Hill	611,011	Sept. 20	1561	359, 360	84	1777
Embroidering-machine jacquard mechanism	R. Scott	610,248	Sept. 6	192	43	84	1479
Embroidery-hoop	W. C. Maynard	610,658	Sept. 13	937	217	84	1638
Emery or glass cloth or paper. Machine for making	R. J. Edwards	610,128	Aug. 30	3589	882	84	1415
Emery-wheel protective cover	G. Benicke	608,417	Aug. 2	453	101	84	746
Enameled ware. Manufacture of	W. F. Niedringhaus	607,625	July 19	2022	------	84	429
Enameling steel	F. G. Niedringhaus	607,624	July 19	2021	------	84	428
End-gate fastener	A. Schlapbach	610,332	Sept. 6	372	79	84	1511
End-gate for wagons. Dumping	W. S. Witter	610,572	Sept. 13	799	182	84	1608
End-gate lock	N. C. Murray	608,892	Aug. 9	1314	307	84	929
Engine: *See* Carding-engine. Chemical engine. Dental engine. Explosive-engine. Gas-engine. Gas or oil motor engine. Internal-combustion engine. Locomotive-engine. Pumping-engine. Rotary engine. Rotary steam-engine. Steam-engine. Traction-engine. Winding and hauling engine.							
Engine	J. P. Dorau	607,836	July 26	2423	514, 515, 516	84	523
Engine	J. Keller and C. H. Haeseler	607,859	July 26	2481	526, 527	84	533
Engine attachment. Gas-	J. H. Wiehl	608,944	Aug. 9	1427	336	84	949
Engine igniter. Gas-	R. B. Hain	607,992	July 26	2711	578	84	578
Engine speed-limit	J. R. Reynolds	606,877	July 5	447	96	84	88
Engines. Device for increasing crank-throw of	G. M. Hugus	610,488	Sept. 6	646	144	84	1502
Engines. Electric igniter for gas-	N. Tesla	609,250	Aug. 16	2032	481	84	1090
Engines. Igniting device for gas-	W. A. Bole and T. J. Hogan	611,348	Sept. 27	2202	508, 509, 510	84	1918
Engines. Igniting mechanism for explosive-	J. Lizotte	608,409	Aug. 2	436	96	84	743
Engines. Mixer and vaporizer for explosive-	G. W. Starr and J. H. Cogswell	611,341	Sept. 27	2190	506	84	1916
Engines. Power mechanism for traction-	C. B. Bostwick	607,014	July 12	682	148, 149	84	155
Engraving-machine	F. Mink	606,676	July 5	77	16	84	18
Envelop-fastening	C. L. Smith	610,099	Aug. 30	3539	820	84	1405
Envelop. Reversible	E. A. Burlingame	608,752	Aug. 9	1041	239	84	879
Envelop. Safety-	U. S. G. Brobst	607,336	July 12	1315	281	84	271
Envelop. Safety-	F. C. Cuckson	608,583	Aug. 9	743	171	84	822
Eraser	W. A. Barr. (Reissue)	11,682	July 26	3014	648	84	639
Eraser and manicure implement. Ink-	R. M. Pancoast	606,987	July 5	527	116	84	105
Evener. Eight-horse	A. W. Knee and J. W. Robinson	611,492	Sept. 27	2488	574	84	1970
Evener. Two-horse	J. N. Wilson	609,065	Aug. 16	1677	399	84	1012
Excavating-machine	G. J. Miller	609,449	Aug. 23	2387	561, 562	84	1168
Excelsior-machine	W. H. Brown	610,893	Sept. 20	1355	310	84	1738
Excelsior-machine. Rotary	J. Rollins	608,430	Aug. 2	474	107	84	750
Exercising device	W. M. Marshall	610,716	Sept. 13	1034	239	84	1658
Exercising-machine	E. Sandow	610,416	Sept. 6	524	114	84	1539
Exhibitor for series pictures	F. H. Morse	607,761	July 19	2246	474	84	471
Explosive and making same	G. Benekê	608,316	Aug. 2	260	------	84	707
Explosive-engine	A. Winton	610,465	Sept. 6	607	136	84	1555
Extension-table	C. A. Curl	606,834	July 5	376	80	84	75
Extension table, seat, &c	G. Stephen	607,290	July 12	1233	263, 264	84	254
Extractor: *See* Fruit-juice extractor. Juice-extractor. Nail-extractor.							
Eye-shade	E. W. Philbrook	608,005	July 26	2755	585	84	589
Eye-shield	C. R. Sheldon	611,396	Sept. 27	2311	533	84	1988
Eyes. Machine for forming interlocking	F. W. and A. G. Hoefer	607,372	July 12	1382	294, 295	84	284
Eyeglass-case	H. E. Bemis	608,640	Aug. 9	854	196	84	843
Eyeglass-stud	J. H. Nason	608,214	Aug. 2	86	22	84	672
Eyeleting-machine	S. Field	606,964	July 5	565	125	84	112
Fabric: *See* Carpet fabric. Knitted fabric. Plush fabric. Tubular woven fabric. Woven fabric.							
Fabric-turfing implement	M. F. Connett	606,707	July 5	129	28	84	28
Fabrics. Producing white effects on	S. F. Carter	606,776	July 5	271	------	84	54
Fabrics. Producing white effects on	S. F. Carter	606,777	July 5	272	------	84	54
Fan. Blowing-	J. Brolich	609,571	Aug. 23	2607	610	84	1208
Fan. Ventilating-	M. Rolle	610,851	Sept. 13	1273	294	84	1706
Fan. Ventilating-	M. Rolle	610,852	Sept. 13	1274	294, 295	84	1706

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fanning device	H. De Tamble	610,601	Sept. 13	853	195	84	1620
Fare-box	J. H. Coleman	608,107	July 26	2915	624	84	620
Fare-register	J. A. Keyes	609,938	Aug. 30	3257	761	84	1348
Fare-register	J. F. Ohmer and H. Tyler. (Reissue.)	11,681	July 19	2373	503, 504	84	497
Farm-gate	B. J. Huckey	608,367	Aug. 2	353	77	84	726
Farm-gate	F. M. Lucas	606,724	July 5	160	35	84	33
Farm-gate	J. A. Wallace	609,483	Aug. 23	2468	576	84	1182
Farm-gate	J. Pratt	610,916	Sept. 20	1388	318	84	1744
Farm-gate. Swinging and sliding	C. V. Walter	608,495	Aug. 2	576	129	84	770
Fastener	C. S. Morris	607,447	July 19	1523	324	84	327
Fastening device	C. R. Martin and L. A. Spinelli	609,554	Aug. 23	2576	603	84	1202
Faucet. Automatic pressure-equalizing beer-	W. Zoller	609,721	Aug. 23	2889	675	84	1262
Faucet. Filtering-	G. W. Banker	610,885	Sept. 20	1341	307	84	1735
Faucet for cans, &c. Vented	F. Burger and H. M. Williams	607,732	July 19	2198	464	84	462
Faucet. Self-closing	J. P. Farley	607,429	July 19	1494	317	84	322
Faucet. Self-closing	T. Mulcahy	607,449	July 19	1526	325	84	328
Feed-bag support	C. Sample	607,280	July 12	1221	261	84	252
Feed-box. Wagon-pole	J. Schildhauer	611,335	Sept. 27	2178	503, 504	84	1914
Feed-cutter	D. M. Thom	608,014	July 26	2769	588	84	592
Feed-cutter and blower. Combined	E. W. Buell	607,212	July 12	1074	232	84	223
Feed device. Mechanical	C. B. Mitchell	610,913	Sept. 20	1383	317	84	1744
Feed regulator. Boiler-	A. P. Chapin	609,755	Aug. 23	2940	687	84	1272
Feed-reservoir. Automatic	J. Dickson	606,958	July 5	555	123	84	110
Feed-water heater. Steam-boiler	J. Dickson	609,929	Aug. 30	3237	758	84	1344
Feed-water heater. Steam-boiler	J. E. Schlieper	607,960	July 26	2654	564, 565, 566	84	567
Feed-water heater. Sectional	J. S. Calkins	608,250	Aug. 2	143	35	84	682
Feed-water-purifying device	A. Blechynden	608,568	Aug. 9	710	161, 162	84	816
Feed-water regulator. Boiler	A. G. Mumford	607,261	July 12	1178	252	84	242
Feed-water regulator. Boiler	P. O. Hipp	609,544	Aug. 23	2502	600	84	1200
Feed-water regulator for steam-boilers. Automatic.	E. S. Hough	608,679	Aug. 9	922	212	84	857
Feed-water supply. Engine	H. J. Bolinski	609,728	Aug. 23	2897	677	84	1264
Feeder and waterer. Stock	J. H. Sharp	607,286	July 12	1228	262	84	253
Feeder. Automatic boiler-	R. Downs and A. M. Johnston	607,509	July 19	1809	376	84	390
Feeder. Automatic steam-boiler	E. P. Holden	611,364	Sept. 27	2242	518	84	1925
Feeding mechanism. Automatic	A. A. Innis	608,863	Aug. 9	1275	297	84	921
Feeding-trough	C. H. Flanagan and E. Martin	607,410	July 12	1452	308	84	296
Fence	F. W. Gasper	607,431	July 19	1497	318	84	322
Fence	A. S. Robinson	609,369	Aug. 16	2236	529	84	1120
Fence	M. Steffee	611,186	Sept. 20	1878	433	84	1838
Fence	G. Kentch	608,606	Aug. 9	786	180	84	830
Fence-building appliance. Wire-	J. T. T. Kisinger	610,489	Sept. 6	646	145	84	1562
Fence-building appliance. Wire-	S. F. Miller	607,568	July 19	1919	397	84	406
Fence. Flood-	P. O. Gorman	608,328	Aug. 2	204	65	84	714
Fence gate. Wire-	L. W. Greene	611,362	Sept. 27	2239	517	84	1924
Fence lock. Wire-	J. H. Walker	610,006	Aug. 30	3395	787	84	1375
Fence-machine	H. L. Davis	609,535	Aug. 23	2548	596	84	1197
Fence machine. Wire-	J. Dewitt and L. C. Jolly	610,126	Aug. 30	3586	831	84	1415
Fence machine. Wire-	C. F. Newkirk	609,456	Aug. 23	2407	564	84	1171
Fence machine. Wire-	O. N. Owens	610,514	Sept. 6	701	158	84	1573
Fence machine. Wire-	W. E. Williams	610,216	Sept. 6	114	26, 27, 28	84	1462
Fence-making tool	D. J. Jones	606,821	July 5	346	74	84	69
Fence-post	W. P. Carr	608,758	Aug. 9	1042	239	84	879
Fence-post	J. C. Frost	610,042	Aug. 30	3456	800, 801	84	1357
Fence-post	S. C. Horn	608,288	Aug. 2	208	49	84	696
Fence-post	E. C. Mathews	609,205	Aug. 16	1931	459	84	1057
Fence-post	L. Matthews	607,258	July 12	1174	251	84	242
Fence-post	W. F. Milligan	609,829	Aug. 30	3079	718	84	1313
Fence-post	W. M. Myers	609,454	Aug. 23	2403	564	84	1170
Fence-post	W. E. Williams	607,314	July 12	1275	272	84	263
Fence-post	L. Matthews	606,873	July 5	442	95	84	87
Fence post-winder. Wire-	G. E. Sheldon	609,523	Aug. 23	2526	591	84	1193
Fence spacer. Wire-	T. B. and C. T. Custer	610,896	Sept. 20	1362	312	84	1739
Fence. Wire	L. Matthews	606,872	July 5	441	94	84	87
Fence. Wire	J. R. Peck	609,945	Aug. 30	3274	764	84	1352
Fence. Wire	A. B. Probasco	606,757	July 5	178	40	84	36
Fence. Wire	C. E. Warner	607,203	July 12	1059	229	84	221
Fence. Wire	C. E. Warner	607,204	July 12	1061	230	84	221
Fence. Wire	W. Nelson	610,494	Sept. 6	667	149	84	1567
Fence-wire truck	W. H. Rice	610,063	Aug. 30	3519	815	84	1400
Fences. Adjustable stay for wire	J. B. Eagleston	607,290	July 12	1124	240	84	233
Fences. Machine for weaving cross-wires in	S. G. and W. J. Mooney	610,819	Sept. 13	1225	282	84	1696
Fencing. Apparatus for applying stay-wires to wire	W. E. Williams	610,217	Sept. 6	129	29, 30, 31	84	1466
Fencing. Machine for making woven-wire							
Fender: *See* Car-fender. Stove-fender. Stirrup-fender.							
Ferrocyanids. Process of and apparatus for making	P. Danckwardt	607,507	July 19	1806	376	84	389
Fertilizer-distributer	L. H. Kromm	609,440	Aug. 23	2367	558	84	1164
Fertilizer-distributer	J. M. Lindsey	608,055	July 26	2837	605	84	605
Fertilizer-distributer	E. B. Rainey	611,184	Sept. 20	1872	432	84	1837
Fertilizers. Making	H. Duden	609,797	Aug. 30	3016	------	84	1300
Festoon apparatus	J. A. Groebli	609,429	Aug. 23	2351	554	84	1161
Fiber-treating machine	J. Choquette	607,832	July 26	2413	512	84	522
Fiber vessel	A. Stark	609,525	Aug. 23	2529	592	84	1194
Fibrous material from peat. Producing	K. A. Zschörner	610,957	Sept. 20	1462	------	84	1758
Fibrous materials. Feeding apparatus for machinery for preparing	J. Good	608,981	Aug. 9	1493	353, 354	84	962
Fifth-wheel	I. Cornwell	610,643	Sept. 13	916	210	84	1634

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Fifth-wheel	J. Edgar	610,178	Sept. 6	37	8, 9	84	1448
Fifth-wheel	M. Halfpenny	606,864	July 5	431	92	84	85
Fifth-wheel	C. Nielson	609,697	Aug. 23	2855	668	84	1256
Fifth-wheel	P. H. Holmes	608,122	July 26	2939	630	84	626
File. Bill-	A. McKanna	607,946	July 26	2629	559	84	562
File for locomotive-engineers. Order-	B. Abt	611,443	Sept. 27	2397	550	84	1952
File for loose sheets, papers, &c	C. H. and A. T. Oakley	607,127	July 12	926	201	84	198
Fillet	C. Gitchell	611,409	Sept. 27	2385	.....	84	1943
Film and making same. Multiple-coated carbon	J. Wheeler	611,047	Sept. 20	1619	370 371	84	1788
Films. Method of and apparatus for producing	H. Bleakly and F. L. Vesseriat	607,155	July 12	979	211 212	84	206
Filter	J. A. Chandler	609,754	Aug. 23	2938	687	84	1271
Filter	F. Fischer	610,527	Sept. 13	723	164	84	1594
Filter	W. M. Fowler	608,663	Aug. 9	895	204	84	852
Filter	J. P. Islev-Petersen	608,127	July 26	2945	631 632	84	627
Filter	G. Katzenstein	611,488	Sept. 27	2481	572	84	1969
Filter	W. A. Maddin	609,942	Aug. 30	3266	763	84	1349
Filter	H. G. McLean	607,570	July 19	1922	398	84	409
Filter	J. H. Pierce and E. A. Thayer	607,523	July 19	1831	382	84	394
Filter. Air-pressure	J. Armstrong and W. Heywood	607,673	July 19	2110	440 441	84	444
Filter and cooler. Combined	E. M. Knight	607,513	July 19	1815	377 378	84	391
Filter and cooler. Combined	H. Chapman	610,983	Sept. 20	1518	348 349	84	1768
Filter. Centrifugal	W. H. Barr	609,769	Aug. 30	2961	692	84	1290
Filter. Domestic or other	D. A. Quiggin	611,507	Sept. 27	2511	580	84	1976
Filter for feed-water for steam-generators	W. E. Feroe	608,034	July 26	2810	597 598	84	599
Filter for malt beverages	R. Aymer and D. J. Nevill	610,596	Sept. 13	846	194	84	1619
Filter-frame	K. Proks	607,952	July 26	2641	561	84	564
Filter-frame	K. Proks	607,953	July 26	2642	561	84	564
Filter plate or sheet. Tubularly-strapped	J. H. Hinken	607,929	July 26	2603	552	84	557
Filter-press	D. J. Bliss and E. J. Richmond	611,426	Sept. 27	2370	544	84	1948
Filter. Water-	O. Eastman	606,804	July 5	323	67	84	65
Filter. Water-	G. Katzenstein	611,489	Sept. 27	2483	572 573	84	1969
Filters. Decanting apparatus for	R. Douglas	608,655	Aug. 9	878	202	84	848
Filtering apparatus	T. C. Hefel	611,317	Sept. 27	2148	496 497	84	1908
Filtering plant for waterworks	M. Adams	608,946	Aug. 9	1433	337	84	950
Finger-ring exhibitor	M. R. de Silva	610,097	Aug. 30	3537	820	84	1404
Finger-ring gage	C. L. Wiedrich	610,295	Sept. 6	269	64, 65	84	1499
Finishing-machine	H. Tersling	609,309	Aug. 16	2144	508	84	1102
Fire-alarm	J. Stocker, F. Meissner, and H. Zander.	607,292	July 12	1238	.....	84	256
Fire and weather proof composition	J. M. Whittemore	607,313	July 12	1270	271	84	262
Firearm. Breech-loading	H. W. Holland and T. Woodward	608,046	July 26	2824	601	84	602
Firearm. Double-barrel single-trigger	A. W. Savage	611,284	Sept. 27	2994	482	84	1898
Firearm-indicator	H. Cramer	610,123	Aug. 30	3580	829	84	1414
Firearm-magazine	L. T. Houghton	609,233	Aug. 16	2002	475	84	1074
Firearm safety device	M. J. Griffin and P. W. Hogan	610,443	Sept. 6	564	124	84	1547
Fire-box-door opening or closing device	F. A. Rothgery	606,739	July 5	182	41	84	37
Fire-engine feed-water coupling	S. P. Buck and C. L. Meaker	608,419	Aug. 2	456	102	84	746
Fire-escape	A. Conaway	607,161	July 12	988	213	84	208
Fire-escape	D. Friedheim	610,041	Aug. 30	3456	800	84	1387
Fire-escape	C. S. Ramos	610,562	Sept. 13	785	178 179	84	1605
Fire-escape	D. Roche	607,088	July 12	853	184	84	184
Fire-escape	H. V. Swyny and J. H. McDonald	607,556	July 19	1897	392	84	405
Fire-escape	D. W. Leach and O. Turner	609,281	Aug. 16	2092	496	84	1091
Fire-escape apparatus. Portable	R. Schapler	610,692	Sept. 13	991	230	84	1649
Fire-escape ladder	G. W. Almstead	607,562	July 19	1906	394	84	407
Fire-extinguisher	S. Joseph	609,584	Aug. 23	2636	617	84	1213
Fire-extinguisher	J. M. Miller	607,591	July 19	1961	407	84	417
Fire-extinguisher	A. M. Ring	610,880	Sept. 13	1242	286	84	1700
Fire-extinguisher	A. G. Anderson and F. Mohn	610,376	Sept. 6	453	99	84	1525
Fire-extinguisher. Automatic	W. B. Blake and S. Hubbard	611,555	Sept. 27	2600	609	84	1993
Fire-extinguisher. Chemical	M. M. Williams	610,508	Sept. 6	692	156	84	1572
Fire-extinguisher for passenger-coaches. Automatic	G. H. Downing	607,113	July 12	896	195	84	192
Fire-extinguisher. Portable	G. E. Hibbard	608,677	Aug. 9	918	211	84	857
Fire-extinguishers. Sprinkler-head for automatic	H. Eversmann	607,027	July 12	701	152	84	158
Fire extinguishing and alarm apparatus. Automatic	J. H. R. Dinsmore	607,988	July 26	2702	577	84	576
Fire-extinguishing sprinkler	E. F. Steck	609,474	Aug. 23	2439	571	84	1176
Fire-extinguishing systems. Dry-pipe valve for	S. R. C. Mathews	607,413	July 12	1456	309	84	297
Fire-hydrant	S L. Bligh	611,232	Sept. 27	1987	458	84	1878
Fire-kindler	G. I. Green	610,986	Sept. 20	1521	349	84	1769
Fire-kindler. Automatic	J. E. May	611,179	Sept. 20	1866	430	84	1835
Fireplace	J. A. Dickson	608,763	Aug. 9	1060	243	84	883
Fireplace back or lining	J. B. Oldershaw	610,196	Sept. 6	80	16	84	1456
Fireplace-heater	P. E. Law	609,236	Aug. 16	2008	476	84	1075
Fireplace-screen	F. E. Humphreys	606,667	July 5	57	12	84	13
Fireplace. Smoke-consuming	W. C. Lewis	610,070	Aug. 30	3497	810	84	1396
Fireproof ceiling and floor	H. Gallinowsky	610,964	Sept. 20	1474	336	84	1761
Fireproof. Compound for rendering substances	H. Foveaux	610,984	Sept. 20	1520	349	84	1769
Fireproof concrete floors. Mold for	A. De Man	606,988	July 5	611	133	84	121
Fireproof construction	F. Omeis	610,457	Sept. 6	590	132	84	1552
Fireproof construction for partitions and walls	W. R. Kinnear	610,543	Sept. 13	751	171	84	1599
Fireproof curtain. Rolling	A. De Man	607,224	July 12	1104	237	84	230
Fireproof floor construction	T. L. Banks	608,098	July 26	2904	622	84	618
Fireproof floors. Construction of	E. R. Leonard	609,685	Aug. 23	2838	663	84	1253
Fireproof partition	A. De Man	609,795	Aug. 30	3013	706	84	1300
Fireproof structure							

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Fireproof structure	W. R. Robinson	610,832	Sept. 13	1244	287	84	1700
Fireproof structure	W. R. Robinson	610,833	Sept. 13	1246	287	84	1701
Fireproof window	F. Voigtmann	609,854	Aug. 30	3111	727	84	1320
Fireproofing and deafening for frame structures	A. De Man	610,435	Sept. 6	553	122	84	1544
Fish-hook	C. J. Sly	610,098	Aug. 30	3538	820	84	1405
Fish-hook	J. M. Stadel	608,348	Aug. 2	329	72	84	721
Fish-hook	S. M. Wenger	611,400	Sept. 27	2317	534	84	1939
Fishing-float	H. H. Mintzer	608,063	July 26	2847	607	84	607
Fishing-reel	A. W. Hazelrigg	610,604	Sept. 13	855	196	84	1621
Fishing-rod	J. W. Perkins	610,880	Sept. 13	1330	305	84	1719
Flagstaff-holder	J. Finnegan	610,738	Sept. 13	1069	245	84	1664
Flash-light apparatus	I. Cohn	610,472	Sept. 6	619	139	84	1557
Flat-iron heater	J. D. Sullivan	610,836	Sept. 13	1249	288	84	1701
Floating bodies. Means for increasing lifting capacity of	W. Alexandroff	607,815	July 26	2378	505	84	515
Flood-gate	J. W. Anderson	607,534	July 19	1851	385	84	398
Floor and ceiling construction	A. Lund	611,366	Sept. 27	2245	518, 519	84	1926
Floor-clamp	E. C. Ingersoll	608,458	Aug. 2	515	116	84	758
Floor-laying machine	J. C. Dukes	608,847	Aug. 9	1252	292	84	917
Floors for buildings. Construction of concrete	W. H. Jenkins	610,139	Aug. 30	3603	837	84	1418
Flooring and ceiling set combined	S. A. Thompson	610,568	Sept. 13	795	181	84	1607
Flour-mill roller-feeding device	J. W. Yeager	609,719	Aug. 23	2887	674, 675	84	1262
Flour-packer	C. A. Lanphere	611,261	Sept. 27	2031	469, 470	84	1886
Flower-holder. Rubber	M. P. Hayden	607,411	July 12	1453	308	84	290
Flowers of the order Nymphæaceæ. Preventing closing of cut	G. Harster	607,088	July 12	726	.....	84	162
Flower-pot	A. N. Free	608,664	Aug. 9	897	205	84	852
Flower-pot and hanging basket	G. A. Freund	608,590	Aug. 9	755	174	84	825
Flower-pot cleaner	H. Reynolds	610,203	Sept. 6	93	20	84	1458
Flower-pot drainer	W. F. Springer	611,523	Sept. 27	2538	586	84	1981
Flower-tub. Wooden	W. Mechwart and A. Brahm	610,156	Aug. 30	3629	844	84	1424
Flue-cleaner	C. H. Carrico	607,340	July 12	1324	288	84	274
Flue-cutter	P. Dixon	609,596	Aug. 23	2550	597	84	1197
Flue-opening device Automatic	W. Kane	609,278	Aug. 16	2089	495	84	1091
Flue scrapers or cleaners. Motor for	E. E. Parks	609,588	Aug. 23	2643	618	84	1215
Fluid-pressure automatic brake	G. Westinghouse, Jr	609,484	Aug. 23	2469	576	84	1183
Fluid-pressure motor	P. C. N. Pederson	609,625	Aug. 23	2731	636	84	1232
Fluid-pressure motor	P. C. N. Pederson	609,626	Aug. 23	2735	637	84	1232
Flushing apparatus	P. Liebig	610,683	Sept. 13	975	226	84	1646
Flushing device	W. Scott	610,977	Sept. 20	1495	340	84	1764
Fly-catchers. Apparatus for making	O. I. Milne	610,192	Sept. 6	75	15	84	1455
Fly-paper. Package of sticky	W. Thum	610,107	Aug. 30	3549	823	84	1407
Fly-paper. Sticky	O. Thum	610,109	Aug. 30	3551	823	84	1407
Fly-paper. Sticky	W. Thum	610,108	Aug. 30	3550	823	84	1407
Fly-wheel	K. Chickering	607,615	July 19	2004	415	84	425
Flying-machine	J. T. Rice	606,942	July 5	537	118	84	107
Folding chair	E. E. Allen	611,048	Sept. 20	1625	371	84	1789
Folding-machine	M. J. Locke	611,070	Sept. 20	1657	379, 380	84	1795
Folding or collapsible table	A. B. Shultz	609,592	Aug. 23	2648	619	84	1216
Folding table	C. H. Hodgkins	610,269	Sept. 6	228	51	84	1486
Folding table	J. H. Simmons	606,845	July 5	398	84, 85	84	80
Food and making same. Cattle-	S. P. Sörensen	609,057	Aug. 16	1662	.....	84	1010
Food and preserving same. Fermented milk	M. L. Arakelian. (Reissue)	11,691	Sept. 13	1333	.....	84	1719
Food. Cattle-	J. S. Cochran	610,258	Sept. 6	213	.....	84	1488
Food. Obtaining cattle-	E. Löwi	609,824	Aug. 30	3072	716	84	1312
Foot-warmer	C. S. Clark and H. H. Baltzley	607,160	July 12	987	213	84	207
Fork: *See* Hay-press feeding-fork.							
Form. Dress or garment	A. B. Friel	608,327	Aug. 2	292	64, 65	84	713
Forming-die	W. E. Karns	609,029	Aug. 16	1604	282	84	998
Frame: *See* Awning-frame. Bicycle-frame. Quilting-frame. Spinning-frame. Vehicle truss-frame.							
Fruit can or receptacle	J. J. Heins	606,838	July 5	386	82	84	77
Fruit-drier	T. Beck	607,209	July 12	1070	231	84	223
Fruit-gatherer	D. H. Pearce and L. Arbaugh	606,682	July 5	86	18	84	20
Fruit-gatherer	O. M. Young	606,950	July 5	545	120	84	108
Fruit-grader	G. M. Peterson	610,458	Sept. 6	591	132	84	1552
Fruit-jar	L. K. Royer	610,834	Sept. 13	1248	288	84	1701
Fruit jar or can	S. J. Dunkley	610,897	Sept. 20	1363	312	84	1739
Fruit-juice extractor	G. N. Guthrie	611,477	Sept. 27	2402	566, 567	84	1966
Fruit-juices. Coloring and preserving	H. Müller-Thurgau	606,976	July 5	591	.....	84	118
Fruit-knife	A. Partridge	608,267	Aug. 2	167	41	84	688
Fruit or flower stem cutter and holding attachment	D. Tilden	608,807	Aug. 9	1148	266	84	899
Fruit-picker	D. Lloyd	609,515	Aug. 23	2512	588	84	1190
Fruit-press	J. R. McKee	609,695	Aug. 23	2853	667	84	1255
Fuel. Composition of matter for and process of manufacturing artificial	R. F. Strong	607,529	July 19	1844	.....	84	397
Fuel. Means for utilizing	C. T. Hennig	609,744	Aug. 23	2922	683	84	1269
Funnel attachment for vessels	A. H. Werremeyer, Jr	611,304	Sept. 27	2125	491	84	1904
Funnel. Automatic	C. Bonafede	610,521	Sept. 13	712	161, 162	84	1592
Furnace: *See* Assayer's furnace. Boiler-furnace. Crucible-furnace. Electric furnace. Garbage-furnace. Heating-furnace. Hot-air furnace. Ore-roasting furnace. Portable furnace. Smelting-furnace. Smoke-burning furnace. Smoke-consuming furnace. Tire-furnace.							
Furnace	G. Beesley	610,791	Sept. 13	1175	271, 272	84	1686

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Furnace	P. Boimare	608,826	Aug. 9	1206	282	84	908
Furnace	D. H. Burns	608,105	July 26	2913	623	84	620
Furnace	F. Robbin	609,048	Aug. 16	1647	393	84	1006
Furnace	J. S. L. Rodrick	610,085	Aug. 30	3522	816	84	1401
Furnace	R. L. Walker	610,778	Sept. 13	1149	264	84	1681
Furnace	H. E. Wallis	608,995	Aug. 9	1522	361	84	968
Furnace	W. Stubblebine	609,306	Aug. 16	2138	507	84	1100
Furnace air-heater	M. Killeen	608,143	July 26	2974	638	84	632
Furnace casting apparatus. Blast-	J. G. Antrim	611,310	Sept. 27	2138	494	84	1906
Furnace-door opener	T. E. de Sotolongo	608,161	July 26	3007	647	84	638
Furnace for boilers of locomotive type	F. P. Leonard	608,054	July 26	2836	604	84	605
Furnace for heating buildings	J. Howden	608,376	Aug. 2	368	80, 81	84	729
Furnace-front. Steam-boiler	F. Burger and H. M. Williams	607,828	July 26	2403	510	84	520
Furnace fuel-feeding mechanism	W. McClave	607,263	July 12	1184	253 254	84	244
Furnace grate-bar and grate. Boiler or other	G. W. McClure	610,076	Aug. 30	3509	813	84	1308
Furnace valve. Regenerative-	J. M. Hartman	610,302	Sept. 6	310	67	84	1502
Furnaces. Notch-gun for blast-	A. Pillatt	608,712	Aug. 9	977	225	84	867
Furnaces. Rocking fire-bar for	E. R. Esmond	607,657	July 19	2085	435	84	440
Furniture	J. E. Plummer	611,144	Sept. 20	1808	416	84	1824
Furniture. Combination	H. G. Schrenkeisen	610,089	Aug. 30	3527	817	84	1402
Furniture. Convertible	A. G. Hofstatter	606,992	July 5	619	135	84	122
Furniture spring-back	J. B. Smith	608,771	July 5	264	53	84	53
Fuse-box	G. W. Gardanier	611,243	Sept. 27	1999	461	84	1880
Fuse for electric circuits. Safety-	H. A. Lewis	607,251	July 12	1164	249	84	240
Fuse-holder, circuit-breaker, and lightning-arrester							
Gage:							
See Centering-gage. Micrometer-gage. Cutting and trimming machine gage. Pressure and vacuum gage. Watch-crystal gage. Finger-ring gage.							
Gage	S. A. Seat	610,286	Sept. 6	278	60	84	1495
Gaiter or covering for the legs	J. Pullman	607,272	July 12	1207	258	84	249
Galvanic bath	C. E. Schnée	608,228	Aug. 2	106	27	84	676
Galvanic cell	A. Hell	607,590	July 19	1960	407	84	417
Galvanic element	R. Krayn and C. Koenig	611,175	Sept. 20	1862	429	84	1835
Game	H. G. Hellier	610,534	Sept. 13	734	167	84	1596
Game	J. H. and G. L. Tickner	611,086	Sept. 20	1697	390	84	1803
Game	W. Zolper	607,560	July 19	1903	393	84	406
Game	J. H. C. Boig	607,013	July 12	681	148	84	155
Game apparatus	F. W. Brennan	610,734	Sept. 13	1061	243	84	1603
Game apparatus	W. W. Dodge	607,020	July 12	691	150	84	157
Game apparatus	W. Gilbert	607,081	July 12	716	153	84	160
Game apparatus	A. Hodge	610,053	Aug. 30	3471	805	84	1390
Game apparatus	C. Hollstein	609,390	Aug. 16	2281	539	84	1128
Game apparatus	F. von Holzhausen	609,347	Aug. 16	2205	522	84	1114
Game apparatus	B. F. Hutches, Jr	609,348	Aug. 16	2206	522	84	1114
Game apparatus	H. D. Perky	611,504	Sept. 27	2506	578	84	1974
Game apparatus	A. W. Rich and F. R. Freudenweller	611,278	Sept. 27	2078	478	84	1895
Game apparatus	T. M. St. John	606,744	July 5	201	43	84	41
Game apparatus	C. M. Hyatt	611,453	Sept. 27	2416	554	84	1957
Game-board	L. J. Scovell	608,918	Aug. 9	1368	324	84	940
Game-board	D. Golden	610,046	Aug. 30	3460	802	84	1388
Game-board and educational appliance	G. F. Gruver	611,450	Sept. 27	2411	553	84	1956
Game-board. Tripartite	J. McAllister	608,209	Aug. 2	74	20	84	669
Gangway-door for box-cars or steamboats	L. Rissmuller	611,580	Sept. 27	2651	------	84	2002
Garbage and fertilizers obtained therefrom. Treating	I. D. Smead	607,553	July 19	1892	392	84	404
Garbage-furnace	A. Reed	607,524	July 19	1883	382	84	395
Garbage-receptacle	J. A. Scriven	610,564	Sept. 13	789	180	84	1606
Garment	F. Terramorse	608,351	Aug. 2	334	73	84	722
Garment and tent. Convertible	E. H. Foote	608,766	Aug. 9	1065	244	84	883
Garment-hanger	J. S. Heaton	609,743	Aug. 23	2021	683	84	1269
Garment-hanger	R. S. McMillin	609,117	Aug. 16	1785	425	84	1030
Garment-holder	E. S. West	608,498	Aug. 2	584	131	84	771
Garment-holder	W. E. Moulton	606,729	July 5	165	37	84	84
Garment-supporter	J. S. Cullinan	611,314	Sept. 27	2144	495	84	1907
Gas and oil separator	S. Brolchgans	606,708	July 5	121	27	84	26
Gas apparatus	A. Beler	608,540	Aug. 2	652	147	84	784
Gas-burner	A. L. Dowell	610,263	Sept. 6	220	50	84	1485
Gas-burner	J. C. Gray and T. Roderick	611,248	Sept. 27	2008	463	84	1882
Gas-burner	E. T. Jones	607,049	July 12	772	169	84	169
Gas-burner	W. Ludlow	607,756	July 19	2237	473	84	469
Gas-burner	F. Rhind	610,414	Sept. 6	520	113	84	1538
Gas-burner	E. Herz	607,541	July 19	1869	388	84	401
Gas-burner. Heat-generating	H. A. Bower	609,656	Aug. 23	2790	650	84	1243
Gas-burner heating and illuminating attachment	P. G. de Schodt	610,283	Sept. 6	273	59	84	1494
Gas-burner. Incandescent	R. Gilchriest	611,471	Sept. 27	2450	564	84	1964
Gas-burner regulator	P. C. Folwell	610,623	Sept. 13	884	202	84	1627
Gas-burners. Automatic cut-off for	E. N. Dickerson	610,171	Sept. 6	34	8	84	1448
Gas. Carbid-cartridge for acetylene	R. Wright	610,573	Sept. 13	800	182 183	84	1608
Gas-compressor	M. F. Bates	607,536	July 19	1854	385 386	84	399
Gas-engine	A. H. Dingman	610,034	Aug. 30	3440	797	84	1384
Gas-engine	C. Jacobson	607,566	July 19	1915	396 397	84	408
Gas-engine	J. N. Kelly and W. M. Kelch	610,682	Sept. 13	973	225 226	84	1646
Gas-engine	J. J. Ohrt	608,298	Aug. 2	222	52	84	699
Gas-engine	C. Quast	607,878	July 26	2512	533	84	539
Gas-engine	C. Quast	607,879	July 26	2515	533	84	540
Gas-engine	J. Reid	607,276	July 12	1216	259 260	84	251
Gas-engine	L. J. Wing	607,580	July 19	1940	402 403	84	413
Gas-engine	W. J. Wright	607,908	July 26	2559	543	84	549

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Gas-engine	W. J. Wright	607,904	July 26	2563	543	84	549
Gas engine. Hydrocarbon	W. O. Worth	607,613	July 19	2000	414	84	424
Gas-fixture. Annunciator	J. L. Bixby	608,100	July 26	2907	622	84	619
Gas for producing light and heat. Utilizing hydrogen	L. V. Pratis and P. Marengo	610,868	Sept. 13	1307	300, 301	84	1714
Gas from kerosene, &c., by means of wicks. Generating	J. H. Moss	608,394	Aug. 2	402	89	84	735
Gas from oil. Apparatus for making	F. L. Martenette	610,994	Sept. 20	1533	352	84	1771
Gas from oil, &c. Apparatus for separating natural	L. Losure	609,284	Aug. 16	2101	497	84	1093
Gas-generating apparatus. Acetylene	J. Boland	608,643	Aug. 9	857	197	84	843
Gas-generating apparatus. Acetylene	J. T. and T. C. Hays	609,673	Aug. 23	2815	656	84	1249
Gas-generating apparatus. Acetylene	M. Strakosch	610,150	Aug. 30	3618	841	84	1421
Gas-generating apparatus. Acetylene	A. A. Strom	608,804	Aug. 9	1140	264, 265	84	897
Gas-generator	H. Keller	611,490	Sept. 27	2485	573	84	1970
Gas generator. Acetylene	H. J. Bell	608,541	Aug. 2	653	148, 149	84	784
Gas generator. Acetylene	L. K. Böhm	609,494	Aug. 23	2486	581	84	1185
Gas generator. Acetylene	F. E. Bundy	608,571	Aug. 9	714	163	84	817
Gas generator. Acetylene	F. E. Bundy	610,937	Sept. 20	1423	327	84	1751
Gas generator. Acetylene	E. Gossart	606,861	July 5	425	91	84	84
Gas generator. Acetylene	A. M. Griffin	611,577	Sept. 27	2645	610	84	2001
Gas generator. Acetylene	G. L. Hogan	611,483	Sept. 27	2473	570	84	1967
Gas generator. Acetylene	A. Keith and J. H. Byrne	608,460	Aug. 2	518	116	84	758
Gas generator. Acetylene	C. Kelly	608,869	Aug. 9	1282	299	84	922
Gas generator. Acetylene	J. Kirkham	609,189	Aug. 16	1902	453	84	1051
Gas generator. Acetylene	T. E. Lewis	606,673	July 5	71	15	84	16
Gas generator. Acetylene	T. E. Lewis	606,674	July 5	73	15	84	17
Gas generator. Acetylene	W. A. McCune	610,906	Sept. 6	318	68	84	1502
Gas generator. Acetylene	M. F. McNelly	610,877	Sept. 13	1325	304	84	1718
Gas generator. Acetylene	J. A. Olson	607,701	July 19	2155	453	84	453
Gas generator. Acetylene	R. Pintsch	611,002	Sept. 20	1546	356	84	1774
Gas generator. Acetylene	W. S. Powers and A. J. Reynolds	608,270	Aug. 2	173	42	84	689
Gas generator. Acetylene	V. Sardi	610,086	Aug. 30	3523	816	84	1401
Gas generator. Acetylene	F. H. Smith	607,650	July 19	2071	432	84	437
Gas generator. Acetylene	J. A. Welton and J. V. Price	609,313	Aug. 16	2154	510	84	1105
Gas generator. Acetylene	J. Williamson	609,861	Aug. 30	3119	729	84	1322
Gas generator. Acetylene	A. E. Detwiler	608,974	Aug. 9	1480	350	84	960
Gas-heater valve	J. C. Henderson	606,660	July 5	42	10	84	11
Gas heating and expanding device	C. S. Burton	609,226	Aug. 16	1984	471	84	1069
Gas machine. Automatic acetylene	J. Schneible	611,081	Sept. 20	1686	387	84	1801
Gas. Method of and apparatus for collecting and purifying	C. R. Gillett	611,473	Sept. 27	2454	565	84	1964
Gas. Method of and apparatus for generating acetylene	L. V. Pratis and P. Marengo	610,869	Sept. 13	1311	301	84	1715
Gas-motor	H. A. Humphrey	611,125	Sept. 20	1774	407	84	1818
Gas or oil motor engine	W. Morava	608,968	Aug. 9	1465	346, 347	84	957
Gas or oil motor for bicycles	L. V. Pratis and P. Marengo	610,867	Sept. 13	1304	300	84	1713
Gas, &c. Process of and apparatus for making hydrogen	L. G. Harris	609,582	Aug. 23	2630	615	84	1212
Gas. Process of and composition for making	P. English	609,761	Aug. 23	2945	689	84	1274
Gas-producer	J. G. Sanderson	609,705	Aug. 23	2868	670	84	1258
Gas-producer	T. Hennessy	608,985	Aug. 9	1502	356	84	964
Gas-producing apparatus. Acetylene	T. Holliday	610,055	Aug. 30	3472	805	84	1391
Gas-producing apparatus. Acetylene	J. F. Simmance	611,519	Sept. 27	2531	584	84	1980
Gas-regulator	J. S. Coe	607,406	July 12	1446	307	84	295
Gas-regulator. Thermostatic	E. N. Dickerson	611,168	Sept. 20	1851	427	84	1833
Gas-supply apparatus. Automatic	R. M. Reilly	608,007	July 26	2757	585	84	589
Gas-tight connection for traps or pipes and water-closet bowls.	J. S. Coe	610,343	Sept. 6	386	82	84	1514
Gas, water, &c. Means for automatically controlling supply of	E. Sterné	608,349	Aug. 2	330	73	84	722
Gases. Capsule or container for containing compressed or liquefied	E. V. Roure	607,662	July 19	2094	437	84	441
Gases in operating engines, &c. Utilizing liquefiable.							
Gate:							
See Farm-gate. Fence-gate. Flood-gate. Mine-gate. Nursery-gate. Railway-gate. Railway-crossing gate. Self-closing gate. Stock-yard gate. Stop-gate.							
Gate	H. Asbell	609,926	Aug. 30	3233	757	84	1343
Gate	H. C. Betts	607,333	July 12	1311	280	84	271
Gate	A. C. Burner	609,774	Aug. 30	2970	695	84	1291
Gate	J. H. Chenoweth	610,121	Aug. 30	3577	828	84	1413
Gate	P. Coupal	607,682	July 19	2118	444	84	446
Gate	A. Flesher and J. L. Crisler	608,959	Aug. 9	1449	343	84	954
Gate	I. A. Gorden	609,617	Aug. 23	2711	632	84	1227
Gate	E. Grist	608,670	Aug. 9	908	208	84	854
Gate	S. P. Harrington	609,806	Aug. 30	3033	710	84	1304
Gate	E. J. Hicks	608,330	Aug. 2	298	65	84	715
Gate	A. Hines	608,331	Aug. 2	299	66	84	715
Gate	S. J. Klein	609,680	Aug. 23	2828	660	84	1251
Gate	M. K. Lewis	608,465	Aug. 2	528	118	84	760
Gate	J. L. Manlove	609,035	Aug. 16	1615	384, 385	84	1000
Gate	J. O. Marks	610,407	Sept. 6	510	111, 112	84	1537
Gate	J. Ozenberger	610,661	Sept. 13	940	218	84	1639
Gate	P. Peterson	609,700	Aug. 23	2859	668, 669	84	1256
Gate	G. R. Rogers	607,386	July 12	1407	300	84	289
Gate	A. and J. Smith	610,978	Sept. 20	1497	341	84	1765
Gate	J. Trisler	607,300	July 12	1248	266	84	257
Gate	L. C. Tyler	610,422	Sept. 6	533	117	84	1541

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Gate	W. A. Whitcomb	607,721	July 19	2181	460	84	459
Gate-post	C. A. Dohme	611,568	Sept. 27	2627	606	84	1998
Gate-screen. Metallic	A. P. Prichard	607,877	July 26	2510	532	84	539
Gates. Opening or closing	W. J. Moore	608,702	Aug. 9	957	220	84	864
Gear-case	J. H. Hughes and J. T. Musgrove	606,840	July 5	388	82, 83	84	77
Gear-cutting machine	W. H. Beastow	606,700	July 5	116	25, 26	84	25
Gear-cutting machine	W. G. Burnham	607,982	July 26	2691	573, 574, 575	84	574
Gear-cutting machine	J. H. Gibson	606,837	July 5	381	81	84	76
Gear. Roller-tooth variable	T. Foster	608,851	Aug. 9	1256	293	84	918
Gear-tooth-cutting machine	J. Reece	607,629	July 19	2031	421	84	430
Gear-wheel	J. A. Williams	610,215	Sept. 6	113	25	84	1462
Gears. Machine for cutting teeth on worm-toothed	J. Reece	607,627	July 19	2026	420	84	429
Gearing for transmission of power	T. D. Hollick	609,809	Aug. 30	3038	711	84	1305
Gearing. Sprocket-chain	F. E. Baldwin	609,927	Aug. 30	3235	757	84	1344
Gearing. Transmission-	F. Schneider	607,640	July 19	2048	425, 426	84	434
Gearing. Variable	R. N. Dyer	611,378	Sept. 27	2275	525, 526	84	1931
Gearing. Variable-speed	L. L. H. Gérard	610,178	Sept. 6	48	11	84	1451
Gearing wheel. Chain-	T. Hewett	609,346	Aug. 16	2204	521	84	1114
Gem-setting	G. W. Dover	608,362	Aug. 2	348	76	84	725
Generator: *See* Gas-generator. Steam-generator. Heat-generator.							
Generator and steam-engine. Combined	M. L. Whitfield	611,006	Sept. 20	1550	357, 358	84	1775
Gilding-tool	W. H. Coe	608,106	July 26	2915	624	84	620
Gin-brush	E. Y. Reese	609,464	Aug. 23	2417	567	84	1173
Glass and apparatus therefor. Production of corrugated sheet-	W. L. Pilkington	608,905	Aug. 9	1333	311	84	933
Glass articles. Reheating and finishing machine for	W. Kay and J. C. Adams	608,427	Aug. 2	468	105, 106	84	748
Glass, &c. Automatic mold for pieces in	P. Delorme, Jr	608,141	July 26	2909	637	84	631
Glass-blowing machine	F. C. Ball	610,515	Sept. 6	702	158, 159	84	1574
Glass-blowing machine	A. L. Bingham	608,022	July 26	2781	591, 592, 593	84	594
Glass-blowing machine	H. C. Schrader	610,589	Sept. 13	892	191	84	1616
Glass-blowing machine. Paste-mold	J. C. Triance	611,157	Sept. 20	1831	422	84	1829
Glass. Composition of matter for manufacturing	C. G. Van Fleet	607,003	July 5	656	.....	84	130
Glass cutting-off or severing machine	H. C. Schrader	610,588	Sept. 13	829	190	84	1615
Glass-finishing machine	I. N. Pearson	611,042	Sept. 20	1610	369	84	1786
Glass-holder	J. Kirby, Jr	608,610	Aug. 9	788	181	84	830
Glass. Machine for and method of rolling wired	E. Walsh, Jr	610,593	Sept. 13	841	192, 193	84	1618
Glass. Machine for rolling wire-	C. C. Hartung	610,586	Sept. 13	824	189	84	1614
Glass-press	G. B. Lamb	608,204	Aug. 2	67	18	84	668
Glass with metallic netting embedded therein. Manufacture of	L. Appert	608,096	July 26	2899	621	84	618
Glassware articles. Apparatus for making	C. N. Brady	608,828	Aug. 9	1210	282	84	908
Glassware. Manufacture of	D. C. Ripley	609,704	Aug. 23	2865	670	84	1258
Glassware-manufacturing apparatus	T. Coleman, Jr., C. Runyon, and F. Zahn.	608,754	Aug. 9	1043	239, 240	84	880
Glazier's metallic strip	J. Sullivan	607,094	July 12	870	188	84	187
Glove	H. L. Heath	611,250	Sept. 27	2010	463	84	1882
Glove. Boxing-	W. G. Wood	608,434	Aug. 2	479	108	84	750
Glove-fastener	J. Steinberger	609,918	Aug. 30	3223	755	84	1342
Glove-fasteners to garments. Machine for attaching	E. Flagg	608,978	Aug. 9	1487	351	84	961
Glue pieces. Disintegrating-machine for	C. F. Wurmbach	609,489	Aug. 23	2476	578	84	1184
Gold and ore separator	W. Gray	609,540	Aug. 23	2556	598	84	1196
Gold from waste solutions of chlorination-works. Recovery of	J. W. Pack	606,810	July 5	330	69	84	66
Gold-saving apparatus	W. Morton	610,410	Sept. 6	515	112	84	1537
Gold-separating machine	W. A. Darling	608,841	Aug. 9	1237	288	84	914
Gold, &c. Sizing-machine for	W. Gray	607,564	July 19	1911	395	84	407
Golf-playing apparatus	W. H. White	610,336	Sept. 6	377	80	84	1512
Governing, reversing, and breaking controller	T. von Zweigbergk	611,088	Sept. 20	1699	391, 392	84	1804
Governor. Engine-	J. V. Rice, Jr	607,647	July 19	2064	430, 431	84	436
Governor. Engine-	E. Thunderbolt	610,250	Sept. 6	195	44	84	1480
Grade-delineator	J. Riddell	610,747	Sept. 13	1080	248	84	1667
Grader and scraper	C. Karraker	609,679	Aug. 23	2826	660	84	1251
Grading machine. Road-	J. V. Maxey	610,550	Sept. 13	764	174	84	1601
Grain-bagging machine	J. W. Henry and A. Gunn	611,121	Sept. 20	1766	405, 406	84	1816
Grain-binder knot-tying device	C. S. Sharp	609,522	Aug. 23	2524	590, 591	84	1198
Grain-conveyer driving mechanism	J. O. Morgan	608,263	Aug. 2	159	39	84	685
Grain-drill	J. I. Stamper	607,964	July 26	2658	567	84	567
Grain-drill	J. Travis, Jr	611,582	Sept. 27	2660	612, 613	84	2008
Grain-drill seed attachment	H. N. Patterson	608,073	July 26	2963	612	84	611
Grain-elevator	J. W. Stark and G. N. Doyle	611,044	Sept. 20	1615	370	84	1787
Grain-elevator. Pneumatic	J. Brogan	606,885	July 5	458	98	84	90
Grain feeder and conveyer	B. S. Constant	608,180	Aug. 2	20	5, 6	84	658
Grain, &c. Method of and means for delivering pneumatically-conveyed	F. E. Duckham	611,569	Sept. 27	2629	606	84	1998
Grain-separating machine	C. E. Culver	610,432	Sept. 6	548	120	84	1543
Grain-separator	J. B. McCutcheon	607,699	July 19	2152	453	84	452
Grain-separator	G. W. Richardson	609,212	Aug. 16	1955	463, 464	84	1062

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Grain separator and cleaner	E. L. Fixler	609,091	Aug. 16	1716	408, 409	84	1019
Grain-separator. Centrifugal	F. F. Landis. (Reissue)	11,680	July 19	2371	502, 503	84	496
Grain-shocking machine	W. Russell	611,283	Sept. 27	2089	481, 482	84	1897
Graphophone-tablets. Manufacture of	T. H. Macdonald	606,725	July 5	161	36	84	33
Grapple. Log-lifting	A. Paulson	607,571	July 19	1924	398	84	410
Grass or similar growths. Liquid for exterminating	W. A. Chapman	606,644	July 5	14	.....	84	5
Grate	W. Edgar	610,674	Sept. 13	962	222	84	1643
Grate	R. A. May	610,551	Sept. 13	766	174, 175	84	1602
Grate	W. McClave	607,784	July 19	2290	483, 484	84	479
Grate	D. J. McKenzie	610,687	Sept. 13	979	227, 228	84	1647
Grate	D. Norton and S. Neemes	608,215	Aug. 2	86	23	84	672
Grate	A. A. Richardson	611,440	Sept. 27	2393	549	84	1951
Grate-bar	H. A. Tinkham	607,969	July 26	2667	569, 570	84	569
Grate-bar hanger and connections	W. J. Curry	611,447	Sept. 27	2401	551	84	1953
Grater	A. B. Hostetter	608,604	Aug. 9	780	179	84	820
Grating-machine	G. H. Hathorn	607,368	July 12	1367	292	84	281
Grinding and polishing machine	G. H. Hathorn	607,369	July 12	1369	292, 293	84	282
Grinding and polishing machine	C. R. Kappler and F. Schunk	610,059	Aug. 30	3480	807	84	1392
Grinding cast-steel balls. Machine for	J. E. Harvey	608,285	Aug. 2	201	47	84	695
Grinding-machine	A. Johnston	611,323	Sept. 27	2160	499, 500	84	1910
Grinding-machine	R. H. White	609,218	Aug. 16	1965	467	84	1065
Grinding machine. Ball-	R. H. White	609,219	Aug. 16	1967	467	84	1065
Grinding machine. Ball-	R. H. White	609,221	Aug. 16	1973	468, 469	84	1067
Grinding machine. Ball-	O. S. Walker	607,306	July 12	1258	268	84	260
Grinding machine. Twist-drill-	J. F. Winchell	610,729	Sept. 13	1056	242	84	1662
Grinding-mill	J. C. Woodcock	610,220	Sept. 6	148	33	84	1471
Grinding-mill	A. W. Straub	608,085	July 26	2880	616, 617	84	614
Grinding-mill. Double equalizing	A. E. Stirckler	608,012	July 26	2764	587	84	591
Gripping apparatus	W. Düsedau	611,570	Sept. 27	2630	606, 607	84	1998
Gripping mechanism	C. E. Alvord	610,296	Sept. 6	302	65	84	1500
Grubber. Sage-brush	C. E. Alvord	610,375	Sept. 6	452	99	84	1525
Grubber. Sage-brush	H. A. Tillinghast	609,059	Aug. 16	1664	396	84	1010
Guiding device	J. H. Stevenson	610,591	Sept. 13	839	192	84	1617
Guillotine for fowls. Hand-	P. Benson	608,279	Aug. 2	187	45	84	692
Guitar	T. C. Johnson	609,678	Aug. 23	2823	659	84	1250
Gun. Box-magazine lever-	E. H. Ericson	610,675	Sept. 13	963	223	84	1643
Gun. Cane	H. E. Schlegelmilch	609,169	Aug. 16	1872	446	84	1046
Gun-lock	P. M. Wood	608,742	Aug. 9	1026	235	84	876
Gun-lock safety attachment	M. C. Lisle	609,445	Aug. 23	2375	560	84	1165
Gun. Magazine-	J. H. Blake	608,023	July 26	2787	593, 594	84	595
Gun. Magazine bolt-	G. L. Putnam and C. H. Farmer	609,211	Aug. 16	1940	461, 462, 463	84	1059
Gun. Magazine bolt-	T. B. Wilson	609,600	Aug. 23	2660	621, 622	84	1218
Gun. Magazine bolt-	T. B. Wilson	609,601	Aug. 23	2665	622, 623	84	1218
Gun rifle attachment. Shot-	H. A. Darms	611,062	Sept. 20	1646	377	84	1796
Gun safety device. Bolt-	T. C. Johnson	606,972	July 5	579	127, 128	84	115
Gun-sight	J. A. Cooper	607,344	July 12	1339	284	84	275
Gun. Single-trigger double-barrel	J. D. and W. Thompson	610,569	Sept. 13	796	189	84	1008
Guns. Ammunition-holder for machine-	D. M. B. H. Cochrane	607,661	July 19	2117	443	84	446
Guns. Apparatus for charging heavy breech-loading	F. W. Hawkins	609,345	Aug. 16	2203	591	84	1113
Gunpowder and making same	A. Singleton	610,417	Sept. 6	525	.....	84	1539
Hackling-machine	J. Good	608,979	Aug. 9	1489	351, 352	84	962
Hackling-machine	J. Good	608,980	Aug. 9	1491	352, 353	84	963
Hair. Apparatus for drying ladies'	E. Mink	610,072	Aug. 30	3501	811	84	1396
Hair-curler	M. Fischhaber	608,086	July 26	2812	598	84	600
Hair-cutter	J. E. Ferland	609,090	Aug. 16	1715	408	84	1019
Hair-fastener	E. M. M. Mackay	607,604	July 19	1962	412	84	421
Hair-tonic	H. Koorie	606,723	July 5	160	.....	84	33
Hairwork frame. Ornamental-	H. May, Jr.	606,728	July 5	164	36	84	34
Hame attachment. Harness-	I. P. Davis	610,125	Aug. 30	3585	831	84	1415
Hammer. Drop-	G. Rowbottom	609,886	Aug. 30	3088	790	84	1315
Hammer. Metal-beater	J. E. Hermann	607,510	July 19	1811	376, 377	84	890
Hammer or stamp. Hydraulic	H. Beau	607,910	July 26	2571	545	84	951
Hammer. Tack or nail	G. E. Haszinger	609,672	Aug. 23	2811	650	84	1248
Hammers, &c. Adjusting arrangement for spring-power	P. Holmberg	610,745	Sept. 13	1076	247	84	1666
Hand-drill	J. McSweeny	610,455	Sept. 6	587	131	84	1551
Handle: *See* Car-brake handle. Casket-handle. Coffee or tea pot handle. Package-handle. Pan-handle. Parcel-handle. Pruning-shears handle. Satchel-handle. Saw-handle. Tool-handle.							
Handle-bar	J. L. Martin	610,398	Sept. 6	559	76	84	1510

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Handle-bar. Adjustable	R. M. Keating	607,543	July 19	1871	389	84	401
Handle-bar and luggage-carrier	A. Mayerson	609,690	Aug. 23	2845	665, 666	84	1254
Handle for kerosene-tins or the like	T. B. Abbott	610,425	Sept. 6	536	118	84	1541
Handles. Device for attaching implements to	G. H. Dunlop	608,110	July 26	2920	625	84	622
Hanger: *See* Bicycle-hanger. Clothes-line hanger. Coat-hanger. Curtain-hanger. Door-hanger. Eaves-trough hanger. Garment-hanger. Hat-hanger. Journal-hanger. Meat-hanger. Picture-hanger. Scaffold-hanger. Skirt-hanger. Trousers-hanger.							
Hanger	M. O. Reeves	606,941	July 5	536	117	84	107
Harmonica	C. L. Curtis	611,237	Sept. 27	1992	459	84	1879
Harness attachment	W. R. Phillips	608,074	July 26	2805	613	84	611
Harness suspending and releasing apparatus	J. W. Howgate	609,675	Aug. 23	2819	657	84	1249
Harp	G. F. Lyon	608,058	July 26	2841	606	84	606
Harrow	H. W. Eisenhart	609,333	Aug. 16	2183	514, 515	84	1109
Harrow	H. W. Eisenhart	609,334	Aug. 16	2185	515	84	1109
Harrow	G. Herr, W. Cunningham, and F. Herr.	608,121	July 26	2087	629, 630	84	625
Harrow	G. W. Ream	609,242	Aug. 16	2018	478	84	1077
Harrow	A. V. Ryder	607,278	July 12	1219	260	84	252
Harrow	P. A. Schumacher	610,611	Sept. 13	865	198	84	1623
Harrow	E. E. Whipple	609,980	Aug. 30	1346	778, 779	84	1365
Harrow and cultivator. Disk	P. E. Little	609,889	Aug. 30	3178	744	84	1333
Harrow. Disk	C. S. Sharp	609,469	Aug. 23	2429	568, 569	84	1174
Harrow. Reversible disk	C. T. Settle	609,560	Aug. 23	2592	605	84	1205
Harrow. Riding and folding	J. H. Ayrhart	607,006	July 12	671	145, 146	84	153
Harrow. Spring-tooth	H. J. Washburn and E. L. Cudaback.	611,299	Sept. 27	2116	487, 488	84	1902
Harrow supporting attachment	E. E. Whipple	610,115	Aug. 30	3558	825	84	1406
Harrow-supporting attachment	E. E. Whipple	611,160	Sept. 20	1838	423, 424	84	1880
Harrow truck. Disk-	F. E. Alshouse	608,167	Aug. 2	2	1	84	655
Harrow. Wheel-	N. Fournier	610,300	Sept. 6	306	66, 67	84	1501
Harrow wheeled supporting attachment	E. E. Whipple	609,981	Aug. 30	3351	779	84	1366
Harvester and husker. Corn	J. Tjossem	608,492	Aug. 2	570	127, 128	84	769
Harvester attachment	A. Davis	610,525	Sept. 13	717	163	84	1593
Harvester attachment	W. M. Wadleigh	607,099	July 12	879	189	84	189
Harvester. Corn-	C. G. Scherer and E. Hilt	611,513	Sept. 27	2519	582	84	1978
Harvester. Cotton-	G. S. Lee	608,689	Aug. 9	937	215, 216	84	860
Harvester-elevator	A. F. Spooner and J. H. Cass	611,521	Sept. 27	2533	585	84	1980
Harvester. Grain-	G. A. Farrall and E. Pridmore	608,325	Aug. 2	288	64	84	713
Harvester. Pea-	A. D. Pitcher	607,704	July 19	2161	454	84	454
Harvester, reaper, &c	W. M. Wadleigh	607,100	July 12	881	189	84	189
Harvesting machine. Corn-	H. E. Pridmore	611,078	Sept. 20	1672	383, 384, 385	84	1798
Harvesting machine. Grain-	H. E. Pridmore	611,079	Sept. 20	1679	385, 386, 387	84	1799
Hasp-fastener	P. Mullane	607,873	July 26	2505	531	84	538
Hat	R. Lieux	609,514	Aug. 23	2511	587	84	1190
Hat-box	S. Levy	611,133	Sept. 20	1791	411, 412	84	1821
Hat-clip	E. Anderson	608,821	Aug. 9	1201	281	84	907
Hat-fastener	W. A. Callanan	606,799	July 5	308	64	84	61
Hat-fastener	H. Ingram	607,799	July 19	2342	494	84	489
Hat-fastener	J. J. Soldan	608,529	Aug. 2	636	143	84	781
Hat-finishing machine	W. E. Cummings	607,653	July 19	2077	433	84	438
Hat-hanger	D. Spelman	609,058	Aug. 16	1663	396	84	1010
Hat-holding device	R. Piesbergen	608,710	Aug. 9	975	224	84	867
Hat or bonnet pin guide and protector	K. J. Peers	608,219	Aug. 2	92	24	84	673
Hat-pin	J. McCoy	611,502	Sept. 27	2503	577	84	1974
Hat-pin	M. J. Waymack	609,061	Aug. 16	1669	397	84	1011
Hat sweat-band	C. Stader	608,724	Aug. 9	995	229	84	870
Hats. Manufacture of felt	J. B. Harrison	610,627	Sept. 13	890	203, 204	84	1628
Hay-frame brake	C. C. and W. L. Barrow	611,096	Sept. 20	1719	395	84	1808
Hay-press feeding-fork	W. T. Jones	611,326	Sept. 27	2165	500	84	1911
Hay-rack	W. Gamble	610,395	Sept. 6	488	106, 107	84	1533
Hay-rack	S. B. Hurd	609,102	Aug. 16	1762	419	84	1025
Hay-rack	B. Tanner	608,310	Aug. 2	249	56, 57	84	704
Hay-rack loader	S. Kellum	609,148	Aug. 16	1834	434, 435	84	1040
Hay-rake and baling-press. Combined	T. Caswell	607,216	July 12	1065	234, 235	84	225
Hay-rake. Horse	J. Kerl	611,382	Sept. 27	2286	527, 528	84	1932
Hay-stacker	J. Dain, Jr	608,653	Aug. 9	872	201	84	846
Head-covering	J. Smyth	606,982	July 5	601	131	84	119
Headlight-lamp. Electric	H. P. Wellman	608,497	Aug. 2	581	130, 131	84	770
Headlights. Operating signal-curtains on locomotive-	W. J. Pugh	608,550	Aug. 2	691	157	84	798
Hearse attachment	M. M. Guiley	608,519	Aug. 2	625	140	84	779

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Heat-exchanger for fluids	P. S. Hyslop	609,676	Aug. 23	2821	658	84	1250
Heat-generator	N. J. Carey	609,227	Aug. 16	1987	471, 472	84	1070
Heat-retainer	F. Kahn	608,684	Aug. 9	929	213	84	859
Heater: *See* Bath-room and water heater. Electric heater. Feed-water heater. Fireplace-heater. Flat-iron heater. Steam-heater. Tank-heater. Water-heater.							
Heater	J. Demarest	606,649	July 5	23	5	84	7
Heater	J. A. Miller	607,660	July 19	2091	436	84	441
Heating air for therapeutic or other purposes. Apparatus for	W. Taylor	608,928	Aug. 9	1402	331	84	945
Heating and drying system	C. C. Barbour	608,564	Aug. 2	697	158	84	794
Heating and evaporating liquids	A. G. Hoffmann	608,775	Aug. 9	1077	248	84	886
Heating and ventilating houses. System for	W. D. Dickson	611,359	Sept. 27	2230	515, 516	84	1923
Heating and ventilating system	T. Hennessy	606,717	July 5	148	31,32	84	31
Heating apparatus	E. Green	610,134	Aug. 30	3597	834, 835	84	1417
Heating apparatus. Hot-air	H. J. Piron	610,689	Sept. 13	982	228	84	1647
Heating apparatus. Hot-water	W. J. Miller	610,685	Sept. 13	977	227	84	1646
Heating by electricity. System for	J. F. McElroy	608,211	Aug. 2	76	20	84	670
Heating, drying, and ventilating. Means for	J. Langfield	610,140	Aug. 30	3604	837	84	1418
Heating-furnace	J. P. Molby	610,273	Sept. 6	235	53	84	1488
Heating-furnace	E. Norton	608,264	Aug. 2	160	40	84	684
Heating or burning cylinder	C. B. Stowe	609,920	Aug. 30	3226	755	84	1342
Heating or cooling apparatus	J. C. Henderson	606,661	July 5	43	10	84	11
Heating system. Electric	J. F. McElroy	611,001	Sept. 20	1541	354, 355	84	1773
Heel and sole protectors for boots or shoes. Machine for setting	I. F. Peck	607,001	July 5	650	141	84	129
Heel and toe tip	D. A. Berry	607,729	July 19	2192	462	84	461
Heel-cutting-machine feed	A. A. Hudson	607,041	July 12	730	157	84	162
Heel. Footwear	J. Griffin	611,035	Sept. 20	1599	367	84	1784
Heel for boots or shoes. Cushioned	J. A. Safford	607,086	July 12	858	185	84	185
Heel-nailing machine	H. W. Winter	611,370	Sept. 27	2249	520, 521, 522	84	1927
Heel-plate for men's shoes	M. Heiser	607,686	July 19	2124	445	84	447
Heel-shaver for shoemakers' use	H. Brinker	610,512	Sept. 6	698	157	84	1573
Heel slugging and nailing jack	L. A. Casgrain	609,874	Aug. 30	3147	735	84	1327
Heel-trimming machine	B. F. Mayo	609,518	Aug. 23	2517	589	84	1191
Heel-trimming machine	H. W. Winter	611,371	Sept. 27	2262	523	84	1929
Hinge	J. H. Giesey	607,432	July 19	1499	318, 319	84	323
Hinge	F. R. Jones and F. S. Dearborn	607,050	July 12	774	169	84	169
Hinge. Adjustable	C. M. Elkins	611,468	Sept. 27	2446	563	84	1963
Hinge. Adjustable jamb	L. M. Curry	609,756	Aug. 23	2041	687	84	1272
Hinge and check. Combined door	F. and H. F. Keil	607,858	July 26	2479	526	84	533
Hinge and door-check. Combined	F. and. H. F. Keil	608,334	Aug. 2	907	68	84	717
Hinge. Box	T. S. Usher	611,423	Sept. 27	2367	543	84	1947
Hinge. Detachable	E. J. Blekkink	607,156	July 12	960	212	84	206
Hinge. Detachable	A. S. Held	606,925	July 5	514	113	84	102
Hinge. Door	C. Dietz	609,858	Aug. 30	3154	736	84	1329
Hinge. Gate	J. C. Jones	611,325	Sept. 27	2164	500	84	1911
Hinge. Gate	H. F. Nehr	610,820	Sept. 13	1227	282	84	1796
Hinge. Gate	O. H. Peed	606,896	July 5	478	101, 102	84	94
Hinge. Gate	H. Reno	610,243	Sept. 6	187	42	84	1478
Hinge. Mirror	C. W. Judson	608,459	Aug. 2	517	116	84	758
Hinge. Roller spring	F. L. Barnick	607,728	July 19	2190	402	84	461
Hinge. Separable suspension	R. G. Winter	610,010	Aug. 30	3402	788	84	1977
Hinge. Spring	J. K. and H. R. Clark	610,799	Sept. 13	1192	274	84	1690
Hinge. Spring	J. Keene	609,585	Aug. 23	2638	617	84	1214
Hinge. Trunk	J. S. Isidor	609,277	Aug. 16	2088	495	84	1090
Hitch and brake. Horse	A. H. Harryman	610,678	Sept. 13	967	223, 224	84	1644
Hitching device	F. Scheerer	610,088	Aug. 30	3526	817	84	1402
Hitching device. Horse	S. S. Joy	609,548	Aug. 23	2566	601	84	1201
Hitching device. Safety	E. Sutter and T. Reynolds	611,528	Sept. 27	2545	587	84	1982
Hitching-post	C. B. Mark	610,993	Sept. 20	1532	352	84	1771
Hoe	J. R. Kelley	609,355	Aug. 16	2215	524	84	1116
Hoe	L. Rains	607,880	July 26	2517	533, 534	84	540
Hoe and edge-trimmer. Combined	C. H. Purdy	607,273	July 12	1209	258	84	249
Hoe or mattock	W. Watkins	610,570	Sept. 13	797	182	84	1608
Hoe-sling	A. J. Carley	609,731	Aug. 23	2901	678	84	1264
Hog-holding device	P. Authier	608,632	Aug. 9	852	192	84	838
Hog-nose cutter	S. H. Miller	610,911	Sept. 20	1380	316	84	1743
Hoist. Chain	J. W. Kincaid	609,989	Aug. 30	3261	762	84	1349
Hoisting and conveying apparatus	A. H. De Camp	609,959	Aug. 30	3306	770	84	1358
Hoisting and conveying apparatus	A. H. De Camp	609,960	Aug. 30	3309	771	84	1359
Hoisting and conveying apparatus	A. H. De Camp	609,961	Aug. 30	3314	771	84	1360
Hoisting and conveying apparatus for excavating, &c.	P. N. Jonte	608,405	Aug. 2	427	94, 95	84	741
Hoisting and conveying machines. Carriage mechanism for	H. Fuller	609,615	Aug. 23	2707	631, 632	84	1226
Hoisting apparatus	G. A. Bidwell	610,318	Sept. 6	342	73	84	1507
Hoisting apparatus	A. A. Strom	611,084	Sept. 20	1693	389, 390	84	1802
Hoisting apparatus. Spout	H. F. Kuss	609,683	Aug. 23	2682	661	84	1252
Hoisting-machine	H. C. Behr and R. E. Browne	611,311	Sept. 27	2139	494, 495	84	1907
Hoisting-machine	J. N. Wagoner	610,983	Sept. 20	1419	326	84	1750

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Hoisting or lifting apparatus	F. Louis	611,263	Sept. 27	2089	470, 471, 472	84	1888
Holdback	F. B. Lagrange	607,808	July 19	2349	496	84	491
Holdback-hook	I. Wisse	607,499	July 19	1792	373	84	387
Honeycomb-foundations. Machine for papering and piling artificial	E. B. Weed	610,252	Sept. 6	200	45	84	1481
Hook: *See* Bale or box hook. Singletree-hook. Fish-hook. Slip-hook. Holdback-hook. Snap-hook.							
Hook	G. L. Baker	610,884	Sept. 20	1340	306	84	1735
Hook	J. L. McVay	607,123	July 12	919	199	84	196
Hook and eye	E. A. Johnson	610,710	Sept. 13	1025	237	84	1057
Hook-and-eye-fastening hook	B. F. Orewiler	607,189	July 12	1089	224	84	217
Hoop: *See* Embroidery-hoop.							
Hoop flaring and bending machine. Metal-	E. and B. Holmes	609,807	Aug. 30	3084	710	84	1304
Hooping casks, barrels, or the like. Machinery for	J. Anthon	610,221	Sept. 6	149	33, 34	84	1471
Horse check and hitching device	D. M. Forsyth	606,836	July 5	380	81	84	75
Horse-detacher	A. and A. Baatz	609,734	Aug. 23	2803	676	84	1263
Horse-detacher	J. E. Berkstresser	609,194	Aug. 16	1912	455	84	1054
Horse-detacher	R. L. Gauntner	610,484	Sept. 6	641	143	84	1561
Horse-detacher	J. B. Taylor	611,342	Sept. 27	2192	507	84	1916
Horse-detacher	P. W. Peters	607,547	July 19	1878	390	84	408
Horse-detacher and wheel-lock. Combined	C. E. Taylor	609,921	Aug. 30	3227	756	84	1342
Horse-detaching device	L. R. White	610,595	Sept. 13	845	194	84	1619
Horse-power	J. H. Randolph	610,663	Sept. 13	943	219	84	1640
Horse-rake	J. B. Martin and C. T. Gamble	610,995	Sept. 20	1534	352	84	1772
Horse-releasing device	J. M. Singleton	609,841	Aug. 30	3094	722	84	1317
Horses. Apparatus for checking runaway	G. W. Davenport	610,476	Sept. 6	625	140	84	1538
Horseshoe	H. Paar	608,156	July 26	2996	643	84	696
Horseshoe	L. M. Serbán	611,287	Sept. 27	2100	483	84	1899
Horseshoe	D. and A. Sombaty	607,713	July 19	2172	457	84	456
Horseshoe	R. S. Wiesenfeld	609,152	Aug. 16	1805	430	84	1084
Horseshoe	J. McDonough	606,875	July 5	445	95	84	88
Horseshoe and removable calk therefor	R. Whitaker	610,212	Sept. 6	108	24	84	1461
Horseshoe-calk	M. A. Ross	610,725	Sept. 13	1051	241	84	1662
Horseshoe-calk-grinding machine	C. H. Greenwell	610,965	Sept. 20	1475	337	84	1761
Horseshoe. Combination-	F. Galley	610,394	Sept. 6	352	75	84	1508
Horseshoe. Elastic-tread	L. P. Touchet	607,199	July 12	1053	228	84	220
Horseshoe. Expansible	B. P. M. Lang	609,551	Aug. 23	2571	602	84	1201
Horseshoe. Non-slipping	C. Sheather	607,196	July 12	1050	227	84	219
Horseshoe-pad	J. Sheehan	609,708	Aug. 23	2873	671	84	1259
Horseshoe-pad	R. Evans	610,804	Sept. 13	1199	276	84	1691
Horseshoe. Soft-tread	J. Patrick	607,190	July 12	1041	225	84	218
Horseshoe. Soft-tread	R. H. Langdale	607,659	July 19	2089	456	84	441
Horseshoe. Supplementary	P. H. Reardon	607,955	July 26	2643	561	84	564
Hose-attaching device for rock-drills	C. A. Wood	609,488	Aug. 23	2476	578	84	1184
Hose-coupling	E. Cliff	608,651	Aug. 9	868	200	84	845
Hose-rack	R. Gorton	607,742	July 19	2214	468	84	465
Hose-supporter	J. T. and T. R. Brien	607,798	July 19	2306	486, 487	84	482
Hot-air furnace	J. Evans	610,037	Aug. 30	3430	799	84	1386
Hot-air furnace	H. L. Wingert	606,752	July 5	220	47, 48	84	45
Hot-air furnace	R. A. Brooks	608,148	July 26	2979	639	84	633
Hot-water cylinder and valve mechanism and connections therefor.	C. W. Robinson	607,092	July 12	852	184	84	184
House: *See* Portable house.							
Hub	G. W. Emerick	608,364	Aug. 2	350	76	84	725
Hub-attaching device	O. L. Warner	610,112	Aug. 30	3555	824	84	1408
Hub-casing. Metallic	D. R. Collier and C. C. Rathburn	610,167	Sept. 6	12	4	84	1445
Hub-holding device	W. H. Bentley and J. E. Roberts	608,099	July 26	2905	622	84	619
Hub. Vehicle-	C. C. Ballin	611,095	Sept. 20	1718	394	84	1807
Hub. Vehicle-wheel spring-	W. W. Lacey	610,607	Sept. 13	860	197	84	1622
Hub. Wheel-	E. M. Miers	610,629	Sept. 13	892	204, 205	84	1629
Hubs and machinery therefor. Manufacture of wheel-	H. J. Brookes and A. B. Davis	608,950	Aug. 9	1437	338, 339	84	951
Humidifier	R. C. Ulbrich	607,970	July 26	2668	570	84	562
Husking-pin	W. H. Tyler	608,808	Aug. 9	1148	266	84	899
Hydrant	J. J. Hardy	609,805	Aug. 30	3081	709, 710	84	1303
Hydrant	H. M. Kunz	609,105	Aug. 16	1769	421	84	1027
Hydrant. Hose-	H. M. Kunz	609,104	Aug. 16	1766	420	84	1026
Hydraulic motor or water-wheel	J. R. De Remer	611,405	Sept. 27	2330	537	84	1942
Hydraulic press	L. P. Landtved	607,442	July 19	1512	362	84	385
Hydraulic separator for treating mixed minerals	W. S. Lockhart	607,755	July 19	2236	472, 473	84	469
Hydraulic system for operating reciprocating mechanism.	W. B. Cowles	608,838	Aug. 9	1227	286, 287	84	911
Hydrocarbon-burner	D. W. Bowman and E. R. Kinney	608,085	July 26	2796	594	84	597
Hydrocarbon-burner	J. Johnston	608,290	Aug. 2	211	50	84	697
Hydrocarbon-burner	O. P. Moon and H. L. Marbach	608,785	Aug. 9	1068	252, 253	84	898
Hydrocarbon-burner	A. P. A. Rosenstar	607,136	July 12	942	204	84	200
Hydrocarbon-burner	L. T. Scherer	609,838	Aug. 30	3090	721	84	1316
Hydrocarbon-burner	D. Ward	609,955	Aug. 30	3112	727	84	1320
Hydrocarbon-burning mechanism	W. L. Mersfelder	607,694	July 19	2143	451	84	450
Hydrocarbon incandescent burner	R. Biddle, Jr., and E. J. Frost	609,553	Aug. 23	2784	649	84	1243
Ice-cream, confections, &c. Mold for	Z. W. Harris	609,095	Aug. 16	1596	380	84	996
Ice-cream-freezer dasher	C. Aichele	609,322	Aug. 16	2167	512	84	1106
Ice-creeper	J. W. Brayman	610,842	Sept. 13	1258	290	84	1703
Ice-creeper	K. P. Degge	607,508	July 19	1808	376	84	390
Ice-loader	J. A. Koontz	608,686	Aug. 9	981	214	84	859

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ice-machine preliminary cooler	R. F. Schroeder	609,999	Aug. 30	3384	785	84	1373
Ice-making apparatus	T. L. Rankin	607,764	July 19	2250	475, 476	84	472
Ice-making apparatus	T. L. Rankin	607,765	July 19	2253	476	84	473
Ice. Producing	G. Koser	609,814	Aug. 30	3047	712	84	1306
Ice-tongs	I. L. Edwards	608,848	Aug. 9	1254	292	84	917
Igniters. Generator for electrical	B. McInnerney	608,895	Aug. 9	1320	308	84	930
Igniters. Generator for electrical	B. McInnerney	608,896	Aug. 9	1321	308	84	930
Igniting device	A. J. Sterne	609,749	Aug. 23	2029	685	84	1270
Illusion apparatus	A. Pusteria	608,413	Aug. 2	443	98, 99	84	744
Illusion cabinet. Optical-	A. B. Carrington	609,009	Aug. 16	1564	372	84	901
Illuminating apparatus	L. B. Allen	608,745	Aug. 9	1082	236	84	877
Impact-tool. Pneumatic	S. Oldham	609,102	Aug. 16	1858	442	84	1044
Incandescent-light mantles. Apparatus for forming and baking	W. Mahler	609,034	Aug. 16	1614	384	84	1000
Incandescent lighting. Manufacture of fluid for impregnating fibers for	G. B. Puchmüller	609,702	Aug. 23	2862	------	84	1257
Incandescent-lighting substance	W. Mahler	606,726	July 5	163	------	84	34
Incandescent-mantle support	L. Stiassny	611,527	Sept. 27	2544	587	84	1982
Incandescent mantles. Machine for cutting	H. E. White	610,213	Sept. 6	109	24	84	1461
Incandescent mantles. Thread foundation for	H. Hill	606,719	July 5	153	33	84	32
Incubator	M. E. Bukoutz	606,508	Aug. 2	599	134	84	774
Incubator	C. S. Wilson	611,543	Sept. 27	2573	593	84	1987
Indexer	J. N. Young	607,781	July 19	2283	482	84	478
Indexing-machine	A. H. Alexander	606,853	July 5	408	87	84	81
Indicator: *See* Firearm-indicator. Speed and distance indicator. Pressure-indicator. Railway time-indicator. Station-indicator. Speed-indicator. Water-level indicator.							
Indicator-lock	W. Scharnweber	606,741	July 5	186	41	84	38
Induction-motor	B. G. Lamme	610,067	Aug. 30	3492	809	84	1395
Infusions. Means for making	J. S. Dunlap	607,852	July 12	1340	296, 297	84	276
Ingot-mold	W. Mayer	607,869	July 26	2496	529	84	536
Inhaler	J. M. Munyon	610,717	Sept. 13	1035	239	84	1659
Inhaler	G. H. Tuttle	609,923	Aug. 30	3229	756	84	1343
Inhaling apparatus	V. Koch	608,873	Aug. 9	1288	300, 301	84	924
Injector	W. A. Downes	607,227	July 12	1120	240	84	233
Injector	J. W. Gamble	609,501	Aug. 30	3022	707, 708	84	1302
Injector	W. R. Park	606,766	July 5	254	53	84	51
Injector	W. R. Park and B. T. Williston	609,163	Aug. 16	1860	442, 443, 444	84	1044
Inking-pad	J. H. Melven	608,887	Aug. 9	1308	305	84	928
Inkstand	S. G. Baldwin	611,093	Sept. 20	1714	393, 394	84	1807
Inkstand	R. G. Dorrance	608,283	Aug. 2	197	47	84	694
Ink stand or bottle	C. M. Higgins	607,993	July 26	2712	578	84	578
Inner sole	A. E. Gooch	606,860	July 5	424	91	84	84
Inner-sole-reinforcing machine	M. L. Keith	609,103	Aug. 16	1763	420	84	1025
Inner soles. Appliance for making	A. Seaver	607,396	July 12	1419	303	84	291
Insole-reinforcing machine	G. E. Milner	609,110	Aug. 16	1776	422	84	1028
Insulated rail-joint	G. A. Weber	608,088	July 26	2688	618	84	615
Insulating-caster and electric switch combined	A. W. Slayton	608,234	Aug. 2	115	29	84	677
Insulating or other purposes. Composition containing casein for electric	P. H. Hansen	610,626	Sept. 13	889	------	84	1628
Insulation conduits. Method of and apparatus for making electrical-	H. Gallinowsky	609,094	Aug. 16	1721	410	84	1020
Insulation of electric wires	J. A. Poché	608,906	Aug. 9	1334	311	84	733
Insulator	B. Willard	606,890	July 5	367	77	84	73
Insulator	C. L. Wingard	607,315	July 12	1276	272	84	263
Insulator-pins to cross-arms. Means for fastening	L. Mitchell	609,288	Aug. 16	2105	498	84	1094
Internal-combustion engine	R. Diesel	606,845	Aug. 9	1247	291	84	916
Internal-combustion engine	G. L. Woodworth	607,317	July 12	1278	272	84	264
Iron: *See* Sad-iron.							
Iron and steel plates. Finishing sheet	W. M. Theobald	608,432	Aug. 2	477	------	84	750
Iron and tin-plate. Apparatus for treating sheet-	W. E. Harris	608,119	July 26	2933	628, 629	84	634
Iron oxid. Method of and apparatus for reducing	A. Karyscheff	608,779	Aug. 9	1082	249, 250	84	887
Iron. Producing magnetic oxid of	R. H. Peak	607,875	July 26	2509	------	84	539
Ironing-board	T. H. Kinsman	606,788	July 5	294	61	84	59
Ironing-machine	K. E. Landau	610,942	Sept. 20	1490	328	84	1753
Ironing-table	S. C. Martin	609,688	Aug. 23	2843	665	84	1254
Ironing-table	R. L. Ritchie	611,223	Sept. 20	1960	452	84	1852
Irrigating-machine	G. Peterson	611,505	Sept. 27	2507	578, 579	84	1975
Jack: *See* Bootjack. Screw-jack. Lifting-jack. Wagon-jack. Pumping-jack. Wrench-jack.							
Jack	J. S. Schlosser	610,246	Sept. 6	190	43	84	1479
Jar: *See* Fruit-jar. Stoppered jar. Preserve-jar.							
Jar-closure	F. P. McElfresh	608,475	Aug. 2	548	122	84	764
Jewel-receiving pins. Die for producing	F. C. Blenkner	607,597	July 19	1972	409	84	419
Jewels. Crown-setting for	N. L. Ripley	611,279	Sept. 27	2079	479	84	1806

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Joint: *See* Ankle-joint. Electric-conductor joint. Pipe-joint. Sucker-rod joint. Rail-joint. Railway-rail joint. Universal joint. Universal or ball joint.							
Joint for parts of machinery	G. S. Webb	611,159	Sept. 20	1835	423	84	1830
Joint. Key-	W. E. Plested	611,489	Sept. 27	2308	548	84	1951
Journal-bearing	J. Swan	607,576	July 19	1931	401	84	412
Journal-box	N. M. Farmer	610,130	Aug. 30	3502	833	84	1416
Journal-box	V. Wigelius	610,571	Sept. 13	798	182	84	1608
Journal-box	A. Fredrickson	610,440	Sept. 6	560	123	84	1545
Journal-hanger	G. Price	609,165	Aug. 16	1805	444	84	277
Jug-lid	J. C. Roth	611,003	Sept. 20	1547	356	84	1774
Juice-extractor	A. J. Schindler	611,336	Sept. 27	2180	504 505	84	1914
Keg or barrel							
Kegs or barrels. Machine for working off	C. Sears	606,814	July 5	336	71	84	67
Key: *See* Joint-key.	J. D. King and M. A. Burns	607,381	July 12	1401	299	84	287
Key-actuated equalizing-bar	W. W. St. John	607,807	July 19	2355	497	84	492
Key-fastener	J. E. Myers	609,898	Aug. 30	3191	748	84	1335
Key-fastener	F. E. Olmstead	606,734	July 5	174	39	84	36
Key-guard	T. G. A. Alexander	611,547	Sept. 27	2583	595 596	84	1989
Keyhole-guard	W. B. Holton. (Reissue)	11,679	July 19	2369	502	84	495
Keyless lock							
Keyless lock	D. L. Falardeau	607,409	July 12	1450	307 308	84	296
Kiln: *See* Brick-kiln. Charcoal-kiln. Dry-kiln. Limekiln. Malt-kiln.	C. Lamb	606,928	July 5	517	113	84	108
Kitchen utensil. Combination	W. S. Baker	608,823	Aug. 9	1203	281	84	907
Kitchen-table and ironing-board. Combination	J. Doyle	606,960	July 5	558	123	84	111
Kite	S. A. Potter	607,129	July 12	929	201 202	84	198
Kite							
Kite							
Knife: *See* Bread-cutting knife. Paper-cutting knife. Fruit-knife.	A. Johnston	611,324	Sept. 27	2163	500	84	1911
Knives. Manufacture of table-	J. H. Secor	608,626	Aug. 9	818	190	84	835
Knit fabrics. Machine for uniting	R. W. Scott	609,707	Aug. 23	2872	671	84	1259
Knitted fabric. Striped	D. McGenniss	609,694	Aug. 23	2851	667	84	1255
Knitted-garment blank	A. V. Groupe	608,040	July 26	2816	599 600	84	600
Knitting-machine	I. W. Lamb	611,130	Sept. 20	1781	408 409 410	84	1820
Knitting-machine	R. W. Scott	607,002	July 5	653	142 143	84	130
Knitting-machine bur-holder attachment	H. V. H. Smith	609,594	Aug. 23	2652	620	84	1216
Knitting machine. Circular-	T. J. Holton	607,858	July 26	2461	522 523	84	530
Knitting machine. Circular-	D. Hurley	607,798	July 19	2326	493 494	84	485
Knitting machine. Circular-	C. T. Stetson	610,461	Sept. 6	600	134 135	84	1553
Knitting-machine needle	R. L. Lyons	607,253	July 12	1167	249	84	241
Knitting-machine needle	S. Woodward	609,566	Aug. 23	2599	608	84	1206
Knob fastening. Door-	G. R. Moore	610,631	Sept. 13	897	206	84	1630
Kumiss and making same	H. P. Connell	607,634	July 19	2040	------	84	433
Kumiss compound	J. Carnrick	611,234	Sept. 27	1988	------	84	1678
Label-holder	H. A. Ames	610,338	Sept. 6	381	81	84	1513
Label-holder	J. H. Downing	610,345	Sept. 6	395	84	84	1516
Labeling machine. Bottle-	F. C. H. Strasburger	606,745	July 5	209	43, 44	84	41
Lace fastener. Shoe-	M. L. Byers	610,225	Sept. 6	158	35	84	1473
Lace fastener. Shoe-	L. C. Moore	609,112	Aug. 16	1780	423	84	1029
Lace-holder	H. O. Whyman	607,813	July 19	2307	502	84	495
Lacer	W. H. Hall	611,119	Sept. 20	1764	404	84	1816
Ladder	H. W. Kryder	611,304	Sept. 20	1911	441	84	1843
Ladder	L. C. Tiefel	607,908	July 19	2356	498	84	492
Ladder. Combined extension and step	L. C. Tiefel	608,929	Aug. 9	1403	331	84	945
Ladder. Cornice-	J. W. Anderson	607,328	July 12	1289	275	84	266
Ladder. Orchard-	H. Bowman	610,890	Sept. 20	1848	308	84	1736
Ladder. Step-	G. W. Hoover	610,487	Sept. 6	645	144	84	1562
Ladder. Step-	H. Schubert	610,284	Sept. 6	276	59, 60	84	1495
Ladder. Store-service	W. E. Heffner	610,234	Sept. 6	176	39	84	1476
Ladder. Trussed	F. S. Seagrave	607,665	July 19	2099	437	84	442
Ladders. Automatic coupling or lock for extension-	F. S. Seagrave	607,664	July 19	2097	437	84	442
Lamp	C. Bergener	609,193	Aug. 16	1910	455	84	1053
Lamp	W. P. Crary	607,162	July 12	980	214	84	208
Lamp	J. J. Masson	609,689	Aug. 23	2843	665	84	1254
Lamp	W. P. Stedman	609,917	Aug. 30	3222	755	84	1341
Lamp	F. W. Hedgeland	608,408	Aug. 2	494	98	84	740
Lamp. Acetylene bicycle-	W. H. Dennis	610,477	Sept. 6	626	141	84	1559
Lamp. Acetylene-gas-generating	F. Rhind	606,684	July 5	89	19	84	20
Lamp. Acetylene-gas-generating	W. N. Moore	607,871	July 26	2501	531	84	537
Lamp. Acetylene-gas-generator	H. W. Wells	610,210	Sept. 6	104	23	84	1460
Lamp. Acetylene-gas-generator	L. J. Atwood	608,097	July 26	2901	621	84	618
Lamp. Bicycle-	C. Bergener	609,192	Aug. 16	1908	454	84	1053
Lamp. Bicycle-	C. Bergener	609,222	Aug. 16	1976	469	84	1068
Lamp. Bicycle-	W. Leuckert	606,974	July 5	563	128	84	116

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lamp-bracket	J. B. Timberlake	608,188	July 26	2962	635 636	84	680
Lamp-bracket	J. B. Timberlake	608,189	July 26	2965	636	84	680
Lamp bracket and stand. Combined	J. B. Long	609,822	Aug. 30	3009	716	84	1312
Lamp bulbs. Device for attaching or detaching electric-	C. G. Edwards	609,421	Aug. 23	2240	552	84	1158
Lamp-burner	J. Gregory	608,284	Aug. 2	198	47	84	694
Lamp-burner chimney-holder	G. W. Carver	609,139	Aug. 16	1819	432	84	1037
Lamp-chimney	T. Redman	608,910	Aug. 9	1345	313	84	986
Lamp-chimney holder	A. C. Althouse	609,399	Aug. 23	2300	544	84	1151
Lamp-chimney holder	L. Mertz	608,615	Aug. 9	797	184	84	832
Lamp. Electric-arc	J. H. J. Haines	607,589	July 19	1957	406	84	417
Lamp. Electric-arc	M. Harris	610,898	Sept. 20	1364	312	84	1740
Lamp. Electric-arc	T. H. Pettengill	611,460	Sept. 27	2427	557	84	1959
Lamp. Electric-arc	C. A. Pfluger	608,269	Aug. 2	172	41	84	689
Lamp. Electric-arc	T. Spencer	608,723	Aug. 9	991	228	84	870
Lamp. Electric-arc	F. S. Worsley	611,162	Sept. 20	1842	424	84	1831
Lamp. Electric-arc	C. H. Goodman	611,009	Sept. 20	1557	359	84	1776
Lamp. Flash-	E. S. Manning	608,695	Aug. 9	947	217	84	802
Lamp for railways, &c. Signal-	W. F. Murphy	609,972	Aug. 30	3334	776	84	1363
Lamp hanger. Electric-	G. Washington	607,974	July 26	2675	571	84	571
Lamp. Hydrocarbon incandescence	W. Best	610,511	Sept. 6	697	157	84	1573
Lamp. Miner's safety-	W. H. Wells	609,924	Aug. 30	3231	756	84	1343
Lamp shade or cover. Incandescent-	J. H. Torney	609,849	Aug. 30	3105	724	84	1319
Lamp signal device	C. A. Pfluger	606,939	July 5	531	117	84	105
Lamp switch. Arc-	F. A. Cortis	610,473	Sept. 6	620	139	84	1557
Lamp. Welsbach	H. E. Jackson and J. A. Anderson	608,154	July 26	2902	642	84	635
Lamps. Device for facilitating lighting of cycle or other	C. H. B. Randleff	611,509	Sept. 27	2515	581	84	1977
Lamps. Heating-drum for	M. N. Parker	608,901	Aug. 9	1328	310	84	981
Land bedder and cultivator	F. Schonhoff	609,632	Aug. 23	2755	642	84	1236
Land-roller	J. M. Seymour, Jr	606,687	July 5	93	20	84	21
Land-roller	M. Miller	607,186	July 12	1035	224	84	217
Land roller and pulverizer	P. Poincy	606,980	July 5	596	131	84	119
Lands. Raising levels of low	E. M. Rosenbluth	609,558	Aug. 23	2581	604	84	1208
Lantern	J. H. Lehman	607,544	July 19	1872	389	84	401
Lantern. Bicycle-	A. Bock	611,099	Sept. 20	1734	396	84	1809
Lantern for vehicles, &c. Candle-burning	T. R. Marsden	609,155	Aug. 16	1848	439	84	1042
Lap-machine. Exhaust-opener	H. W. Plant	609,365	Aug. 16	2232	528	84	1119
Lap-robe	W. B. Arnold	607,978	July 26	2685	572	84	573
Last	C. F. Pym	608,006	July 26	2756	585	84	589
Last	J. F. Teehan	609,244	Aug. 16	2020	479	84	1077
Last	D. C. Luce	608,782	Aug. 9	1089	251	84	887
Lasts. Means for locking or unlocking hinged	I. N. Lauder	607,866	July 26	2498	528	84	536
Latch	C. S. Martin	610,304	Sept. 6	316	68	84	1502
Latch. Gate-	L. Van Olst	608,353	Aug. 2	396	74	84	722
Latch mechanism. Gate	W. H. Taylor	608,489	Aug. 2	568	127	84	768
Latch-operating mechanism	H. G. Cleaveland	611,235	Sept. 27	1990	459	84	1879
Latch. Supplemental blind-	G. A. Turnbull	609,481	Aug. 23	2465	575	84	1181
Lath	G. A. Ohl	607,071	July 12	814	178	84	177
Laths. Machine for making sheet-metal	R. E. Daniels	608,759	Aug. 9	1053	241	84	881
Lathing. Metallic	R. E. Daniels	608,760	Aug. 9	1053	241	84	882
Lathing. Metallic	L. E. Whiton	610,981	Sept. 20	1509	346 347	84	1767
Lathe	J. A. Bailey	609,707	Aug. 30	3058	692	84	1289
Lathe attachment	R. O. Wrege	606,985	July 5	605	132	84	119
Lathe centering-tool	J. W. Brown, Jr	610,319	Sept. 6	343	73, 74	84	1507
Lathe. Double-turret	J. D. Hazlet	607,744	July 19	2216	469	84	465
Lathe taper attachment	O. Seldis	611,517	Sept. 27	2528	583 584	84	1979
Lathe-tool and holder therefor	J. P. Lavigne	607,698	July 19	2137	449 450 451	84	449
Lathe. Turret-	J. P. Lavigne. (Reissue)	11,690	Aug. 30	3640	845 846 847	84	1426
Lathe. Turret-	N. R. Springer	611,522	Sept. 27	2535	585	84	1981
Lathe. Wood-turning	P. G. Fischer	610,088	Aug. 30	3453	799	84	1386
Laundry-tub cover and draining-board. Combined	W. F. Brown	608,646	Aug. 9	863	199	84	644
Lawn-sprinkler	H. M. Burnett	607,158	July 12	983	213	84	207
Laying-out or lining device	C. V. Petraeus	611,388	Sept. 27	2297	531	84	1935
Lead pigment and manufacturing same	C. V. Petraeus	611,389	Sept. 27	2299	------	84	1935
Lead pigment and manufacturing same	A. C. J. Charlier	608,028	July 26	2901	596	84	598
Lead sulfite. Manufacturing	W. S. Shaw	610,613	Sept. 13	868	199	84	1624
Leather-dressing machinery	J. S. Turner	609,597	Aug. 23	2658	621	84	1218
Leather. Machine for covering rolls with	W. Kaulhausen	609,549	Aug. 23	2567	601 602	84	1201
Leather. Machine for scarf-jointing	C. H. Stone	606,892	July 5	454	------	84	89
Leather. Making waterproof	C. H. Bayley	609,868	Aug. 30	3134	732	84	1325
Leather-skiving machine	C. H. Allen	611,026	Sept. 20	1587	364	84	1782
Leather-splitting machine	H. I. Weller	608,812	Aug. 9	1176	274 275	84	902
Leg. Artificial	G. H. Cook	608,253	Aug. 2	147	36, 37	84	688
Legging	J. J. Bausch	607,009	July 12	673	146 147	84	153
Lens-cutting machine	S. J., L., and I. Neugroschl and C. Walters.	609,208	Aug. 16	1935	460	84	1058
Letter-clasp	E. T. Young and W. A. Macdonald	607,319	July 12	1282	274	84	264
Letters, &c. Safety device for	W. Stettler and T. M. Wilhelm	610,952	Sept. 20	1451	333	84	1757
Level	W. H. Atwood	609,395	Aug. 16	2288	541	84	1130
Level. Plumb-	L. W. Canady	610,027	Aug. 30	3431	795	84	1382
Lever. Throttle-	A. Loewe	608,692	Aug. 9	940	216	84	861
Lid-support	E. A. Bull	607,912	July 26	2575	545 546	84	552
Life from fires, &c. Apparatus for saving	E. E. Roussel	607,137	July 12	944	205	84	201
Life-preserver, &c	H. Kurtzig	607,998	July 26	2723	581	84	579
Lift safety device							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lifts, hoists, &c. Automatic safety device for	A. Musnicki	607,450	July 19	1527	325	84	328
Lifter: *See* Coal-hod lifter. Coat-lifter. Merchandise-lifter. Sucker-rod lifter.							
Lifting-jack	R. Campbell	609,873	Aug. 30	3145	735	84	1327
Lifting-jack	E. Huber	610,651	Sept. 13	926	213	84	1636
Lifting platform. Vertically-	J. Doldt	610,608	Sept. 13	854	196	84	1620
Lighthouse appliance	J. M. Williams	607,780	July 19	2282	482	84	477
Lightning-arrester	W. E. Athearn	606,954	July 5	550	121	84	109
Lightning-arrester	J. F. Kelly	608,695	Aug. 9	930	214	84	859
Limb. Artificial	J. A. Packer	608,791	Aug. 9	1105	256	84	890
Lime and cement. Apparatus for burning and grinding	G. Duryee	611,110	Sept. 20	1753	402	84	1813
Lime sucrate. Obtaining	M. Zahn	611,164	Sept. 20	1844	425	84	1831
Limekiln	E. V. Wingard	611,402	Sept. 27	2319	535	84	1989
Link. Detachable	A. Mehl	606,997	July 5	642	139	84	127
Link for poles, traces, &c.	A. Wood	608,970	Aug. 9	1474	348	84	958
Linotype-machine	G. A. Bates	609,770	Aug. 30	2963	693	84	1290
Linotype-machine	T. H. Catherall	610,228	Sept. 6	161	36	84	1478
Linotype-machine	C. Muehleisen	608,067	July 26	2855	609, 610, 611, 129	84	609
Linotype-machine	C. Muehleisen	610,454	Sept. 6	582	130, 131	84	1550
Linotype-machine	W. Wynne	609,315	Aug. 16	2158	510	84	1105
Linotype-machine knife attachment	C. Muehleisen	608,155	July 26	2993	642, 643	84	636
Linotype-machine line-closing attachment	E. Girod	609,883	Aug. 30	3161	738	84	1330
Linotype-machine mold	G. W. Mascord	607,758	July 19	2241	473	84	470
Linotype-machine slug-cutting mechanism	M. L. Keith	610,326	Sept. 6	356	76	84	1509
Lip-turning machine	L. M. H. R. Baudoin and P. E. L. Schribaux.	611,404	Sept. 27	2326	536	84	1941
Liquid-concentrating apparatus	E. Wolf	608,501	Aug. 2	588	132	84	772
Liquid-dispensing vessel	A. Ritter	608,480	Aug. 2	555	124	84	765
Liquid-drawing apparatus	B. S. Birdsall	609,655	Aug. 23	2787	650	84	1242
Liquid-elevating wheel	P. Lochmann	609,970	Aug. 30	3328	774, 775	84	1362
Liquid materials. Apparatus for keeping and sending	W. L. Marsh	611,264	Sept. 27	2049	472	84	1890
Liquid supplying and distributing machine	B. Danziger	609,986	Aug. 30	3365	782	84	1360
Liquids containing air or other gases. Apparatus for drawing off	R. Wilson	607,723	July 19	2184	461	84	459
Liquids from granular materials. Apparatus for separating	J. Schwartz, Jr	608,307	Aug. 2	412	90	84	737
Liquids with gas. Method of and apparatus for charging	L. Five	606,709	July 5	135	.....	84	28
Lithographic plates. Production of	H. B. Williams	608,945	Aug. 9	1429	337	84	949
Lixiviation apparatus	J. Carrothers	609,409	Aug. 23	2315	546	84	1154
Loading apparatus	S. B. Kenfield and C. Elvidge	608,142	July 26	2970	637, 638	84	631
Loading appliance	G. H. Hulett	606,720	July 5	154	33, 84	84	32
Loading or unloading machine							
Lock: *See* Alarm-lock. Bicycle-lock. Car-door lock. Cycle-lock. Cylinder-lock. Electric lock. Electric combination-lock. Electromechanical lock. End-gate lock. Fence-lock. Indicator-lock. Keyless lock. Nut-lock. Oar-lock. Pipe-lock. Sash-lock. Seal-lock. Wagon-brake lock. Whip-lock.							
Lock	S. Bowen	609,224	Aug. 16	1981	471	84	1069
Lock	J. C. Coltrim	610,702	Sept. 13	1004	233, 234	84	1652
Lock	E. Fackner	609,422	Aug. 23	2342	552	84	1159
Lock	A. L. Garlough	611,244	Sept. 27	2001	461	84	1890
Lock	N. Girrens and J. H. Weitz	608,592	Aug. 9	757	174	84	895
Lock	S. Houser	610,813	Sept. 13	1214	280	84	1694
Lock	G. H. Schwedler	608,220	Aug. 2	107	27	84	676
Lock	M. Signorastri	610,373	Sept. 6	449	98	84	1525
Lock	N. F. Vetere	609,852	Aug. 30	3110	726	84	1319
Lock	N. F. Vetere	610,982	Sept. 20	1418	325, 326	84	1750
Lock	H. Vincent	606,883	July 5	455	93	84	90
Lock and latch	W. H. Taylor	611,155	Sept. 20	1829	421	84	1828
Lock-bolt	F. W. Mix	608,784	Aug. 9	1092	252	84	884
Lock mechanism. Coin-operated	F. X. Bodnar and S. L. Kreppel	610,578	Sept. 13	808	185	84	1610
Locking device	J. E. Doldt	608,185	Aug. 2	29	7, 8	84	660
Locking device for vehicles, &c	J. E. Doldt	608,186	Aug. 2	33	8	84	661
Locomotion. Electric	H. Van Hoevenbergh	607,302	July 12	1250	256, 257	84	258
Locomotive	C. A. Couch	610,856	Sept. 13	1285	296	84	1709
Locomotive	W. M. Russell	609,837	Aug. 30	3089	721	84	1316
Locomotive air and water heating apparatus	T. J. Murray	610,074	Aug. 30	3504	812	84	1397
Locomotive-boilers. Device for retaining heat in	P. Miller	607,066	July 12	804	175	84	175
Locomotive draft device	M. Kelly	608,870	Aug. 9	1284	300	84	923
Locomotive. Electric	W. S. G. Baker	610,982	Sept. 20	1515	347, 348, 812	84	1768
Locomotive-engine	T. J. Murray	610,075	Aug. 30	3506	812, 813	84	1397
Locomotive-engine attachment	C. Humphrey	607,747	July 19	2221	470	84	466
Locomotive-engines. Mechanical signal-indicator for railway	J. Crabtree	610,386	Sept. 6	476	104	84	1530
Locomotive-furnace arch	A. F. Hack	611,169	Sept. 20	1852	437	84	1883

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Locomotive. Ice-	L. Bowles and J. W. Hansbrough	610,899	Sept. 20	1846	308	84	1736
Locomotive sand-distributer	J. H., Jr., and F. A. Wells	608,091	July 26	2892	619	84	616
Locomotives. Apparatus for signaling on	F. A. Cheetham and R. Bostock	609,732	Aug. 23	2902	679	84	1265
Log-dumper	W. F. Curtis	606,898	July 5	461	99	84	91
Loom	W. F. Draper and J. H. Northrop	607,838	July 26	2434	517	84	525
Loom	A. J. Gillet and G. Rutter	607,360	July 12	1358	289	84	279
Loom	C. A. Littlefield	607,987	July 26	2615	555	84	559
Loom	J. T. Meats	609,156	Aug. 16	1849	439, 440	84	1042
Loom	H. Wyman and R. Crompton	609,257	Aug. 16	2053	437	84	1084
Loom batten, shuttle-block, and shuttle	O. W. Schaum	607,486	July 19	1773	369	84	388
Loom. Circular	J. and C. Herold	608,676	Aug. 9	915	210, 211	84	856
Loom for weaving fringes	J. Ferguson	610,391	Sept. 6	488	105	84	1531
Loom for weaving looped pile fabrics	G. H. Sargent, R. H. Coupe, and B. Walker.	608,226	Aug. 2	103	26	84	675
Loom for weaving looped pile fabrics	G. H. Sargent, R. H. Coupe, and B. Walker.	610,563	Sept. 13	788	179, 180	84	1606
Loom for weaving tufted fabrics	E. Tymeson	609,638	Aug. 23	2761	644	84	1237
Loom jacquard-machine	H. Glorieux	608,087	July 26	2813	598, 599	84	600
Loom jacquard-machine	F. Mühlinghaus	607,945	July 26	2628	558	84	562
Loom picker-staff	J. F. Benoit	608,542	Aug. 2	656	149	84	785
Loom-reed	E. Adamson	610,011	Aug. 30	3404	788	84	1377
Loom selvage-motion	W. E. Cutler	607,985	July 26	2698	575, 576	84	575
Loom-shuttle filling-carrier or cop-skewer	C. A. Littlefield	608,988	Aug. 9	1508	357	84	965
Loom-shuttle-supporting mechanism	M. Salle	607,087	July 12	859	185, 186	84	185
Loom swivel batten and shuttle	R. Whitley	608,816	Aug. 9	1188	278	84	904
Loom take-up mechanism	G. Goodline and H. Wyman	609,272	Aug. 16	2075	493	84	1088
Loom take-up mechanism	J. H. Northrop	610,636	Sept. 13	906	208	84	1631
Loom-temple	G. F. Hutchins	607,377	July 12	1395	297, 298	84	286
Loom warp stop-motion	W. E. Allen	608,971	Aug. 9	1475	349	84	959
Loom warp stop-motion	J. H. Northrop	608,558	Aug. 2	689	156	84	792
Loom warp-stop-motion mechanism	J. H. Northrop	607,947	July 26	2631	559	84	562
Looms. Electric stop-motion for	A. Stephens	607,714	July 19	2173	457	84	457
Looms. Knife-sled motion for plush or velvet	J. Killars	610,711	Sept. 13	1027	237	84	1657
Low-water-alarm and safety valve	W. L. Bone	606,832	July 5	371	79	84	74
Lubrication-cup. Compression	W. K. Richart	606,897	July 5	474	102	84	94
Lubricator: *See* Axle-lubricator.							
Lubricator	T. Blom	610,222	Sept. 6	150	34	84	1471
Lubricator	J. Greenwood	611,475	Sept. 27	2459	566	84	1965
Lubricator	W. Hunt	611,126	Sept. 20	1776	407	84	1818
Lubricator	J. F. Lewis	609,444	Aug. 23	2374	560	84	1165
Lubricator	E. McCoy	610,634	Sept. 13	901	207	84	1631
Luggage-carrier	A. W. Harrison	611,216	Sept. 20	1942	448	84	1849
Luggage-carrier	D. M. J. Wall	610,251	Sept. 6	199	44	84	1480
Luggage-carrying apparatus	N. Lernet	610,654	Sept. 13	931	215, 216	84	1637
Lumber-piler	P. Peterson	609,120	Aug. 16	1792	427	84	1031
Lumber-stacker	W. R. Carroll	607,214	July 12	1079	233	84	224
Lunch-box	E. E. Swift	607,294	July 12	1241	264	84	256
Magnet for electric machines. Field-	S. H. Short	607,609	July 19	1990	413	84	422
Magnetic separator	A. Monell	610,767	Sept. 13	1127	258, 259	84	1676
Mail-bag catching, receiving, and delivering apparatus	N. Tingley	610,872	Sept. 13	1315	302	84	1715
Mail-bag-crane bag-holder	J. W. Eardly	609,419	Aug. 23	2335	551	84	1158
Mail-bag fastener	J. Howells	607,375	July 12	1392	296	84	286
Mail-box	M. F. Cheevers	608,490	Aug. 2	458	102	84	747
Mail-box. Alarm	C. R. Furey	611,573	Sept. 27	2639	609	84	2000
Mail-distributing indicator	P. Brandell	610,621	Sept. 13	880	202	84	1626
Mail-pouch	S. C. Reese	610,769	Sept. 13	1130	260	84	1677
Mail-pouches from moving trains. Device for receiving and delivering	J. Bale and A. E. Lapham	611,094	Sept. 20	1715	394	84	1807
Make-ready press	F. W. Baum	609,650	Aug. 23	2780	648	84	1241
Mallet	G. A. Weld	608,811	Aug. 9	1174	274	84	901
Malt-kiln	J. F. Dornfeld	610,580	Sept. 13	812	186	84	1611
Malting apparatus. Pneumatic	G. J. Meyer	608,338	Aug. 2	313	69	84	718
Manhole and cover therefor	H. L. Wilson	606,949	July 5	544	120	84	108
Manifolding-register	F. M. Turck	608,534	Aug. 2	642	145	84	782
Manure gatherer and loader	J. Peterson	610,609	Sept. 13	862	197, 198	84	1622
Marble or other stone. Machine for cutting	M. J. Hawley and J. B. Clot	610,810	Sept. 13	1208	278	84	1693
Marine boiler	W. T. Sylven	606,847	July 5	300	85	84	80
Marker. Corn-row	W. M. Douglas	607,021	July 12	992	150	84	157
Marker for seed or corn planters	C. E. Smith	607,987	July 26	2595	536	84	542
Marking attachment	S. W. Lane	607,248	July 12	1160	248	84	239
Mat: *See* Oil-press mat.							
Match-box	J. H. Benjamin	607,537	July 19	1858	386	84	399
Match-box	E. I. B. Carrothers	610,227	Sept. 6	160	36	84	1478
Match-box	G. W. Housel	606,889	July 5	387	82	84	77
Match-box	C. Wilson	607,722	July 19	2182	460	84	459
Match-box and cigar or pipe lighter. Combined	W. J. Foss	609,017	Aug. 16	1583	377	84	994
Match-box. Automatic	A. W. Le Bron	610,142	Aug. 30	3606	838	84	1419
Match-box, cigar-cutter, &c. Combined	M. G. Pond	609,996	Aug. 30	3379	785	84	1372
Match-case and cigar-cutter	W. Bernard	609,404	Aug. 23	2310	545	84	1153
Match-holder	W. E. Cook	611,562	Sept. 27	2615	603	84	1995
Match-machine	B. T. Steber	611,594	Sept. 27	2539	586	84	1981
Match-machine	B. T. Steber	611,595	Sept. 27	2542	587	84	1982
Match-machine	B. T. Steber	611,596	Sept. 27	2543	587	84	1982
Match-making	E. Lagneau	607,644	July 19	2057	429	84	496

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Match-making machine	A. Kelley	606,994	July 5	621	135 136 137 138	84	123
Match-safe	W. H. Hooker	608,603	Aug. 9	779	179	84	829
Match-safe. Single-delivery	J. Vail	606,750	July 5	217	47	84	45
Matches. Manufacture of	E. Lagneau	610,357	Sept. 6	413	88 89 90	84	1519
Matches. Manufacture of wooden	F. A. Debize and L. F. Chasseigne	606,648	July 5	21	4	84	6
Matches. Receptacle for good and burned	E. S. Bach	610,893	Sept. 20	1339	306	84	1735
Mattress. Pneumatic	J. B. Andres	611,585	Sept. 27	2665	614	84	2004
Mattress-stuffing machine	R. R. Thompson	611,294	Sept. 27	2108	485 486	84	1901
Mattresses, &c. Filling material for	G. W. Yearicks	610,980	Sept. 20	1422	.....	84	1751
Meal and flour bin	T. Perrin	609,903	Aug. 30	3198	750	84	1557
Measure and funnel. Combined	G. A. Keene	606,927	July 5	516	113	84	102
Measure. Lens-	J. T. Brayton	611,350	Sept. 27	2908	510	84	1919
Measuring device	C. McGlade	606,977	July 5	592	130	84	118
Measuring instrument. Alternating-current-	H. P. Davis and F. Conrad	611,466	Sept. 27	2442	562 563	84	1902
Measuring instrument. Electrical	G. K. Elphinstone and A. C. Heap	607,921	July 26	2587	549	84	554
Measuring instrument. Electrostatic	J. F. Kelly	608,132	July 26	2953	634	84	698
Measuring instrument. Electrostatic	E. Thomson	610,928	Sept. 20	1405	321 322	84	1748
Measuring machine. Cloth	J. E. Windle	606,818	Aug. 9	1192	278	84	905
Measuring machine. Leather-	A. E. Ayer	608,538	Aug. 2	649	146 147	84	784
Measuring machine. Rope-	Ely y Seale Hubbard	610,846	Sept. 13	1266	292	84	1705
Measuring-tank. Automatic	C. H. Gilkerson and D. Glasby	609,096	Aug. 16	1724	410	84	1021
Meat-hanger	L. Couch	609,414	Aug. 23	2325	549	84	1156
Meat-holding device	B. P. Cobb	607,680	July 19	2117	443	84	446
Meat-hook support	F. Thacher	607,096	July 12	872	188	84	187
Meat-packages. Apparatus for making	W. G. Bell	607,676	July 19	2112	441	84	445
Meat-salting device	W. T. Flinn	609,799	Aug. 30	3019	707	84	1301
Mechanical movement	K. Chickering	607,616	July 19	2005	415 416	84	425
Mechanical movement	S. G. McKean	609,361	Aug. 16	2225	526	84	1118
Mechanical movement	A. Plagman	608,220	Aug. 2	98	24	84	673
Mechanical movement	N. M. Watson	608,496	Aug. 2	578	130	84	770
Medical battery. Coin-controlled	H. T. Mason	611,136	Sept. 20	1796	413	84	1822
Medical preparations. Package for	M. N. Clarke	609,875	Aug. 30	3148	736	84	1328
Medical purposes. Electrode for	E. W. Grove	609,342	Aug. 16	2198	.....	84	1112
Medicinal compounds. Preparing	A. M. Chambers	611,560	Sept. 27	2614	602	84	1995
Medicinal vaporizer	J. T. Greenwood	608,194	Aug. 2	54	12	84	665
Mercerizing apparatus	A. Wyser	610,619	Sept. 13	878	201	84	1626
Mercerizing apparatus	J. Dowlen and N. Michaelsen	609,013	Aug. 16	1571	374	84	998
Merchandise-lifter	W. Herfurth	611,482	Sept. 27	2470	569 570	84	1967
Merry-go-round	G. W. Sebolt	608,081	July 26	2874	615	84	613
Merry-go-round. Marine	J. Harmatta	610,532	Sept. 13	729	165 166	84	1595
Metal-cask-forming apparatus	L. Potthoff	609,294	Aug. 16	2116	503	84	1096
Metal-corrugating machine	F. Westwood	611,539	Sept. 27	2565	591 592	84	1966
Metal plates. Machine for doubling	J. Rieder	607,484	July 19	1771	398	84	393
Metal. Process of and apparatus for producing reliefs in	J. E. Gresty	607,088	July 12	720	153	84	161
Metal tube	D. J. C. Arnold	609,258	Aug. 16	2054	487	84	1084
Metal wheel	A. Sinding-Larsen	607,287	July 12	1229	.....	84	254
Metals. Extracting	H. C. Aschermann	610,014	Aug. 30	3407	.....	84	1378
Metals from metallic oxids. Extracting	J. B. F. Gay	611,574	Sept. 27	2640	609	84	2000
Metallic balls. Die for and method of swaging	A. W. Calvert	608,951	Aug. 9	1459	340	84	951
Metallic wheel							
Meter: *See* Electric meter. Voltmeter. Water-meter.	V. C. Todd	607,898	July 26	2545	540	84	546
Micrometer-gage	T. J. Howell	607,994	July 26	2714	579	84	578
Microphone	H. J. Rose and W. Gilbert-Cooper	608,481	Aug. 2	557	124	84	766
Military equipment	W. H. Arner and E. L. Hendershott	609,074	Aug. 16	1689	408	84	1014
Milk-can	J. F. Foster and A. Ferber	611,361	Sept. 27	2238	517	84	1994
Milk-can	H. V. Frink	609,018	Aug. 16	1584	377	84	994
Milk-can	H. B. Haigh	607,453	July 19	1501	319	84	823
Milk-can	C. Cahoon	610,299	Sept. 6	305	66	84	1501
Milk-cooler	R. Estelle	608,113	July 26	2984	626	84	622
Milk-cooler	A. D. Cypher	608,338	Aug. 2	286	63	84	712
Milk cup. Condensed-	J. L. Bergh	607,109	July 12	891	192	84	191
Milk. Process of and apparatus for clarifying	R. T. Hewlett	608,198	Aug. 2	58	14	84	666
Milk-sterilizer	M. L. Hoyt and H. Feldmeier	610,650	Sept. 13	924	213	84	1635
Milk-tester. Centrifugal	A. Rice	609,833	Aug. 30	3085	719	84	1314
Milking-hopple							
Mill: *See* Grinding-mill. Rolling-mill. Sawmill. Stamp-mill. Tea-cutting mill. Windmill.	J. F. Arthur	608,822	Aug. 9	1201	261	84	907
Milling and gear-cutting attachment	C. L. Grohmann	610,677	Sept. 13	965	223	84	1644
Milling-machine tail-stock	N. K. Bowman	608,436	Aug. 2	481	105 109	84	751
Mine-gate	N. K. Bowman	608,506	Aug. 2	595	133 134	84	774
Mine-gate	N. K. Bowman	608,645	Aug. 9	861	196	84	844
Mine-gate	J. O'Brien	609,746	Aug. 23	2085	464	84	1269
Mine trap-door	S. H. and E. B. Haycock	610,048	Aug. 30	3462	808	84	1399
Mining in frozen ground. Apparatus for	W. G. Halbert	607,170	July 12	1006	219	84	212
Mining-machine							

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mirror	W. Q. Prewitt	610,918	Sept. 20	1391	318	84	1745
Mirror. Mouth and throat	H. Bausch	610,518	Sept. 13	709	161	84	1561
Mirror-stand. Portable folding	S. A. Lane	611,434	Sept. 27	2385	547	84	1950
Mixing liquids, &c. Device for	J. F. Flaherty	609,270	Aug. 16	2072	492	84	1068
Moistener for gummed surfaces	W. L. West	609,175	Aug. 16	1893	448	84	1047
Moistener. Stamp and envelop	E. Boggis	608,642	Aug. 9	856	197	84	843
Mold: *See* Brick-machine mold. Butter-mold. Ingot-mold. Linotype-machine mold. Tile-forming mold.							
Mold-chill	E. Peipers	609,460	Aug. 23	2413	566	84	1172
Molding-machine	G. Flickinger	606,779	July 5	276	57	84	55
Molding-machine	W. D. Wiman	607,152	July 12	973	210 211	84	205
Money packet or holder	P. Schlemmer	610,727	Sept. 13	1053	242	84	1662
Monkey-wrench	J. A. Hensler	608,520	Aug. 2	626	141	84	779
Mop-wringer	I. Joyner	609,351	Aug. 16	2211	523	84	1115
Mop-wringer	W. D. Martin	610,549	Sept. 13	763	173	84	1601
Mop-wringer	J. L. Sprague	609,710	Aug. 23	2876	672	84	1260
Mordant	G. Wendler	609,131	Aug. 16	1804	.....	84	1084
Mordant from sulfite-cellulose lyes	H. Seidel	608,231	Aug. 2	112	.....	84	676
Motion. Device for converting	E. P. Herpin	611,318	Sept. 27	2151	497	84	1909
Motion. Mechanism for converting continuous rotary motion into intermittent rotary	J. A. Burden	608,573	Aug. 9	717	164	84	818
Motion or power. Mechanism for transmitting	E. M. Bowden	609,570	Aug. 23	2606	609 610	84	1208
Motor: *See* Current-motor. Current induction-motor. Electric motor. Electromagnetic motor. Fluid-pressure motor. Gas-motor. Gas or oil motor. Hydraulic motor. Induction-motor. Pump-operating motor. Railway-motor. Rotary motor. Tidal motor. Tide-motor. Traction-motor. Vehicle-motor. Water-motor. Wave-motor.							
Motor	L. W. Carson	608,836	Aug. 9	1226	286	84	911
Motor	H. W. E. Horst	606,926	July 5	515	113	84	102
Motor	H. Wilcke	608,242	Aug. 2	190	31, 32	84	680
Motor-starting apparatus	J. Burke	611,558	Sept. 27	2609	601 602	84	1994
Motors. Method of and means for securing constant torque in polyphase	B. G. Lamme	609,991	Aug. 30	3374	783	84	1371
Mottling or spotting device	C. Regan	609,368	Aug. 16	2296	528	84	1120
Movements. Mechanism for imparting successive or alternating	E. Moore	611,501	Sept. 27	2501	577	84	1973
Mower catch-basket. Lawn-	N. Kauffmann	607,880	July 12	1400	298 299	84	987
Mower grass-collector. Lawn-	T. Coldwell	608,029	July 26	2802	596	84	598
Mower grass-receptacle. Lawn-	L. Wildermuth	607,899	July 26	2546	540	84	546
Mower. Hand lawn-	C. L. Shonle	609,709	Aug. 23	2874	671 672	84	1259
Mower. Lawn-	H. Jackson	611,217	Sept. 20	1944	448	84	1849
Mower. Lawn-	P. McLaughlin	608,586	Aug. 2	633	142	84	780
Mower. Lawn-	R. K. Ortt	610,081	Aug. 30	3516	815	84	1400
Mower. Lawn-	O. B. Pickett	610,200	Sept. 6	67	18	84	1457
Mower. Lawn-	L. H. Slaght	610,694	Sept. 13	994	231	84	1650
Mowing and raking machine. Combined	J. McCallum	607,698	July 19	2149	452	84	452
Mowing-machine	J. W. Cypher	610,671	Sept. 13	956	221	84	1642
Mowing-machine	V. Daniele	607,347	July 12	1333	285	84	275
Mowing-machine	G. A. Longley	608,057	July 26	2840	605	84	605
Mowing-machine	A. I. Simmons	610,287	Sept. 6	279	60 61 62	84	1495
Mowing-machine bunching attachment	J. L. Tandy and W. E. Rader	606,902	July 5	479	103 104	84	95
Mowing-machine knife-guard	W. L. Wall	609,376	Aug. 16	2247	531	84	1122
Muciage-holder	C. W. Taylor	610,108	Aug. 30	3544	822	84	1406
Mud-guard	C. Goergen	608,451	Aug. 2	508	113	84	755
Muff	G. C. Leonard	610,187	Sept. 6	66	13	84	1453
Muff. Hand or finger	A. T. Sinclaire	607,963	July 26	2657	567	84	567
Music-book holder	C. D. Hale	606,924	July 5	518	118	84	102
Music-box	L. P. Valiquet and A. Sueur	610,504	Sept. 6	685	153 154	84	1570
Music-holder	O. I. Bye	608,488	Aug. 2	484	110	84	752
Music holder and turner	A. A. Patterson	608,707	Aug. 9	969	223	84	966
Music recording and reproducing device	E. K. Adams	608,415	Aug. 2	448	100	84	745
Music-recording mechanism	A. A. Lateulere	610,141	Aug. 30	3604	837	84	1418
Music stand, case, and folio. Combination	C. H. Hope	607,374	July 12	1390	296	84	396
Musical instrument	F. A. Schubert	609,706	Aug. 23	2871	670	84	1259
Musical-instrument device. Stringed-	W. S. Reed	606,813	July 5	334	71	84	67
Musical instrument. Stringed	A. J. Forrest	607,859	July 12	1351	289	84	278
Musical instrument. Stringed	W. Hönings and F. Sommer	610,905	Sept. 20	1373	314	84	1742
Musical notation	C. C. Guilford	608,771	Aug. 9	1073	247	84	995
Musical stringed instrument	H. Müller	609,897	Aug. 30	3189	747 748	84	1335
Musical-stringed-instrument tuning device	E. Wettengel	609,715	Aug. 23	2988	674	84	1961
Mute for stringed instruments	H. Paris	611,188	Sept. 20	1871	433	84	1897
Myrioscope. Panoramic	A. Peterson	607,073	July 12	819	179	84	178
Myrioscope. Panoramic	A. Peterson	607,074	July 12	821	179	84	179
Nail-assorting mechanism	B. F. Mayo	607,939	July 26	2619	556	84	560
Nail-assorting mechanism	B. F. Mayo	607,940	July 26	2621	556	84	560
Nail-assorting mechanism	B. F. Mayo	607,941	July 26	2623	556	84	561
Nail-assorting mechanism	B. F. Mayo	607,942	July 26	2624	557	84	561

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nail-driving machine	C. M. Green	611,214	Sept. 20	1930	445, 446, 447	84	1847
Nail-extractor	J. M. Le Roy and M. D. Converse	610,360	Sept. 6	421	91	84	1520
Nail or slug strip	S. M. Cutter	610,475	Sept. 6	624	140	84	1558
Nail-puller	F. F. Chancey	611,103	Sept. 20	1731	397	84	1810
Nailing-machine	E. T. Freeman	607,924	July 26	2593	550, 551	84	555
Nailing machine. Shingle	C. J. Lonning	610,943	Sept. 20	1432	329	84	1753
Napping-machine	E. McCreary	606,731	July 5	167	37, 38	84	34
Needle	E. H. Thompson	609,712	Aug. 23	2879	673	84	1299
Needle-grooving machine	P. M. Beers	609,223	Aug. 16	1978	470	84	1068
Net-lifting machine	W. F. Ahearn	608,631	Aug. 9	880	192	84	837
Newspaper or book protector	W. H. Burland	607,390	July 12	1322	282	84	273
Nickel from nickel-carbouyl. Process of and apparatus for obtaining	L. Mond	606,843	July 5	392	83, 84	84	78
Nigger-bar cushion-stop	H. G. Dittbenner	608,975	Aug. 9	1481	350	84	960
Noodle-cutter	B. J. Neuenschwander	610,275	Sept. 6	255	54	84	1492
Nozzle. Adjustable hydraulic	A. B. Eastwood	609,578	Aug. 23	2624	614	84	1211
Nozzle. Automatic distributing	J. W. Suetterle	610,926	Sept. 20	1400	321	84	1747
Nozzle for fires, lawns, &c. Universal	J. T. and P. F. Glazier	608,192	Aug. 2	46	11, 12	84	664
Nursery-gate	P. Motley	610,193	Sept. 6	75	16	84	1435
Nut and bolt lock	J. G. Venable	610,777	Sept. 13	1148	263	84	1690
Nut-lock	E. Asbman	611,559	Sept. 27	2590	597	84	1991
Nut-lock	L. M. Chapman and J. M. Gelatt	607,585	July 19	1949	405	84	415
Nut-lock	J. M. Cullen	609,064	Aug. 16	1702	405	84	1016
Nut-lock	C. A. Detwiler	607,163	July 12	991	214	84	208
Nut-lock	J. H. Eckart	607,025	July 12	698	151	84	158
Nut-lock	E. J. Estey	611,572	Sept. 27	2696	608	84	1999
Nut-lock	J. N. Gardner	607,741	July 19	2213	498	84	465
Nut-lock	C. E. Harling	611,479	Sept. 27	2464	567	84	1966
Nut-lock	A. L. Holmes and J. H. Campbell	610,679	Sept. 13	908	224	84	1644
Nut-lock	J. R. Horn	610,446	Sept. 6	570	126	84	1548
Nut-lock	O. Horner and W. H. Wise	611,201	Sept. 20	1903	439	84	1842
Nut-lock	W. A. Jackson	608,777	Aug. 9	1080	248	84	895
Nut-lock	J. O. and C. D. Kafader	608,607	Aug. 9	785	180	84	830
Nut-lock	J. Kirkwood	608,872	Aug. 9	1287	300	84	923
Nut-lock	C. E. Laraway	610,815	Sept. 13	1218	281	84	1695
Nut-lock	W. B. Metcalf, Jr	607,622	July 19	2017	419	84	428
Nut-lock	W. H. Nesbitt	610,879	Sept. 13	1329	304	84	1719
Nut-lock	W. T. Pendley and C. C. Fincher	610,878	Sept. 13	1328	304	84	1718
Nut-lock	J. A. Pennington	608,521	Aug. 23	2524	590	84	1193
Nut-lock	H. B. Perry	611,022	Sept. 20	1582	363	84	1781
Nut-lock	J. A. Rausch	609,241	Aug. 16	2017	478	84	1077
Nut-lock	C. M. Swisher	608,162	July 26	3009	647	84	638
Nut-lock	W. C. White	610,888	Sept. 13	1253	289	84	1702
Nut-lock	W. H. Worst and C. W. Hart	607,725	July 19	2186	461	84	460
Nut-lock	C. D. Wright	608,743	Aug. 9	1027	236	84	876
Nut-lock	E. A. Goddin	609,144	Aug. 16	1829	433	84	1039
Nut. Lock	E. D. Bosaso	609,325	Aug. 16	2170	513	84	1107
Nut-lock. Weighted	J. A. Costello	606,645	July 5	15	3	84	5
Nut-tapping machine	G. Weiss	611,302	Sept. 27	2120	490, 491	84	1908
Nut-tapping machines. Feeding device for	W. Heffner	608,120	July 26	2636	629	84	625
Nut-wrench	T. Lucier	611,497	Sept. 27	2496	576	84	1972
Oar. Bow-facing	J. A. McGinley	611,436	Sept. 27	2389	548	84	1951
Oar-lock	C. S. Smith	608,063	July 26	2876	616	84	613
Obstetrical apparatus	O. T. May	610,817	Sept. 13	1221	281	84	1695
Oculists' trial-frame	J.M. Scrogin and H.C. Womelsdorff	606,686	July 5	92	20	84	20
Oil-box cellar and dust-guard	A. J. Blackford	607,641	July 19	2051	427	84	435
Oil-burner	L. J. Campbell	607,422	July 19	1482	315	84	319
Oil-burner	J. Johnston	606,784	July 5	286	59	84	57
Oil-burner	A. W. Shank	608,009	July 26	2758	586	84	590
Oil-burner	G. H. Larkin	609,552	Aug. 23	2572	603	84	1201
Oil-burner. Retort	J. A. Kendall and J. B. Kester	611,328	Sept. 27	2167	501	84	1912
Oil can and pump	J. Macphail	609,204	Aug. 16	1930	459	84	1057
Oil-cup	W. L. Morris	609,111	Aug. 16	1779	423	84	1028
Oil-cup	O. Pound	607,456	July 19	1540	327	84	329
Oil-cup	R. B. Hardman	607,367	July 12	1367	291, 292	84	281
Oil-extracting apparatus	F. D. Winkley	608,243	Aug. 2	139	33	84	681
Oil-hole cover or cap	F. D. Winkley	608,244	Aug. 2	134	33	84	681
Oil-hole cover or cap	J. M. Bailey	607,417	July 19	1467	311	84	317
Oil in manufacturing gas and lubricating-oil. Process of and apparatus for treating crude	W. F. Hanse	611,316	Sept. 27	2147	496	84	1908
Oil-press mat	J. C. Henderson	606,788	July 5	285	58	84	57
Oil-refining apparatus	S. Salmon	607,279	July 12	1220	261	84	252
Oil-retaining box	C. G. Hepburn	610,812	Sept. 13	1212	279, 280	84	1694
Oils or fats. Apparatus for treating	F. P. Noera	610,557	Sept. 13	776	176	84	1608
Oiling-nozzle closure	F. W. Klever	608,612	Aug. 9	798	------	84	831
Ointment-base and making same	H. H. Hill	607,171	July 12	1008	219	84	212
Optical instrument	S. W. Gray	610,301	Sept. 6	309	67	84	1501
Optician's instrument for adjusting spectacles	D. Vickers, A. T. Dawson, and G. T. Buckham	610,110	Aug. 30	3552	823, 824	84	1407
Ordnance. Firing mechanism for breech-loading	S. I. Hallett	609,804	Aug. 30	3028	709	84	1308
Ore-concentrator	W. E. Wild	607,389	July 12	1410	301, 302	84	290
Ore-concentrator	U. S. James	606,971	July 5	577	127	84	114
Ore-feeder	J. M. Montgomery	608,700	Aug. 9	955	219, 220, 311, 312, 313, 314	84	868
Ore granulator and pulverizer	H. F. Brown	607,490	July 19	1472	315	84	318
Ore-roasting furnace	G. J. Crean	607,984	July 26	2996	575	84	575
Ore-separator. Magnetic							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Ores. Apparatus for treating auriferous or other	J. W. H. James and T. R. Jordan	606,670	July 5	64	13	84	15
Ores. Apparatus for treating refractory	J. E. Preston	610,917	Sept. 20	1390	318	84	1745
Ores. Treating complex	J. Armstrong	607,817	July 26	2382	506	84	516
Organ-action	J. H. Odell	609,391	Aug. 16	2109	500	84	1095
Organ fluid-motor. Pipe-	T. H. Wyke	609,133	Aug. 16	1806	430	84	1064
Organ foot. Pipe-	F. McCollum	608,704	Aug. 9	961	221	84	865
Organ. Self-playing	J. H. Chase	608,252	Aug. 2	145	36	84	663
Organ transposing action	E. B. Thorin	606,748	July 5	212	45, 46	84	44
Organ. Tubular pneumatic	J. Neef	609,302	Aug. 16	2226	526, 527	84	1118
Ornamental ring	L. E. Sadler	611,004	Sept. 20	1548	356	84	1774
Ornamenting surfaces	J. M. Ribert	606,224	Aug. 2	100	25	84	675
Oven. Baker's	J. M. Fischer	610,648	Sept. 13	922	211, 212	84	1635
Oven. Baker's	W. Neuhs	608,088	July 26	2858	611	84	609
Oven. Baker's	A. Rauber	611,394	Sept. 27	2308	532	84	1987
Oven. Baker's	W. E. Stoeffler	609,919	Aug. 30	3224	755	84	1342
Oven. Baker's	W. N. Carlisle	610,641	Sept. 13	913	209	84	1633
Overcheck-bit	W. H. Tillson	607,493	July 19	1784	371	84	396
Overshoe-holder	R. Meyer	609,360	Aug. 16	2223	526	84	1117
Oxidizing-machine	O. Manasse	610,361	Sept. 6	423	------	84	1520
Oxycamphor and making it	A. B. Hendryx	611,199	Sept. 20	1902	436	84	1842
Oysters. Propagation of	E. Andreoli	607,007	July 12	669	145	84	153
Ozone-manufacturing apparatus	A. W. Ottignon	606,936	July 5	526	115	84	105
Package-handle	H. E. Smyser	609,472	Aug. 23	2438	569, 570	84	1175
Packaging-machine	T. J. Craven	611,059	Sept. 20	1643	376	84	1798
Packing-case	J. P. Wendt	609,642	Aug. 23	2767	645	84	1288
Packing-case	J. H. Maurer	611,886	Sept. 27	2204	530	84	1984
Packing for valve-stems	R. Walsh	608,989	Aug. 9	1422	336	84	948
Packing. Gasket	J. T. N. Angell	609,752	Aug. 23	2934	696	84	1271
Packing. Metallic	J. Badeker	606,698	July 5	2	1	84	3
Packing. Metallic	J. C. Henderson	606,602	July 5	44	10	84	11
Packing. Pipe-joint	J. and R. Derbyshire	608,184	Aug. 2	98	7	84	660
Packing. Piston	J. W. Kennedy	611,483	Sept. 27	2384	180, 181	84	1960
Packing. Piston	F. H. Ramsdell	607,077	July 12	896	181	84	179
Packing. Steam	C. L. Ireson	607,944	July 12	1153	------	84	288
Pad: *See* Buffing-pad. Inking-pad. Horseshoe-pad.							
Pad-moistener and letter-press. Combined	W. A. Voncanon	608,788	Aug. 9	1014	239	84	873
Paddle-wheel	J. S. Terrell	611,298	Sept. 27	2107	495	84	1901
Paddle-wheel. Feathering	D. Abbott	611,007	Sept. 20	1554	355	84	1776
Padlock. Alarm	E. N. Case	607,881	July 26	2409	519	84	521
Padlock. Permutation	W. F. Wible	610,494	Sept. 6	535	118	84	1541
Pail. Dinner	G. Gants	608,591	Aug. 9	756	174	84	885
Pail. Dinner	Y. W. Rogers	607,084	July 12	854	185	84	194
Pail. Milk	E. S. Cave	607,288	July 12	1416	308	84	291
Pail. Oyster	J. M. Shartle	610,001	Aug. 30	3388	785	84	1378
Paint and varnish from surfaces. Device for cleaning	B. F. Aiken	606,907	July 5	487	105	84	97
Paint and varnish. Removing	A. W. Barnard and W. E. Butler	608,948	Aug. 9	1435	338	84	951
Paint-distributer	W. Quinn	609,047	Aug. 16	1646	392	84	1006
Paint. Making	C. D. Ismay	609,986	Aug. 30	3255	760	84	1347
Painting	H. M. Evans	608,589	Aug. 9	754	173	84	884
Pan: *See* Amalgamating-pan. Dust-pan. Baking-pan. Salt-pan.							
Pan-handle	W. E. Tubbs	606,904	July 5	483	104	84	96
Paper, &c. Apparatus for coating	C. C. Macbrair	606,869	July 5	436	98	84	86
Paper-applying device. Wall	T. Carter	609,008	Aug. 16	1568	378	84	991
Paper-bag bottoms. Mechanism for pasting	W. Carter	611,055	Sept. 20	1637	374	84	1791
Paper box	G. A. Bisler	610,255	Sept. 6	206	46	84	1489
Paper box	R. P. Brown	610,582	Sept. 13	718	162	84	1598
Paper box	F. B. Davidson	609,266	Aug. 16	2066	490, 491	84	1086
Paper box	F. Knobeloch	606,671	July 5	66	14	84	15
Paper box	P. B. Myers	610,364	Sept. 6	427	98	84	1521
Paper box	H. F. Smith	610,950	Sept. 20	1448	332	84	1758
Paper-box machine	C. M. Holcomb	611,252	Sept. 27	2019	464, 465	84	1888
Paper-box-machine plunger	C. M. Holcomb	611,431	Sept. 27	2381	547	84	1949
Paper-box-making machine	P. A. Cartier	606,916	July 5	499	109, 110	84	99
Paper-cutter	P. Dillon	608,549	Aug. 2	668	151, 152	84	788
Paper cutting and winding machine	F. Meisel	610,339	Sept. 6	360	76, 77	84	1510
Paper-cutting knife. Rotary	W. C. Miles	610,144	Aug. 30	3008	698	84	1419
Paper-cutting shears	A. H. Morrison	609,622	Aug. 23	2725	635	84	1280
Paper-feeding device	F. Schilz	607,958	July 26	2649	563, 564	84	565
Paper-feeding machine	T. A. Briggs	609,954	Aug. 30	3291	707, 708	84	1356
Paper-feeding machine	E. M. Jillson	609,437	Aug. 23	2980	556	84	1162
Paper-feeding machine	R. Miehle and J. W. Mansfield	606,975	July 5	584	129	84	116
Paper-feeding machine	J. H. Russell	611,282	Sept. 27	2066	480, 481	84	1897
Paper-folding machine	T. C. Dexter	608,843	Aug. 9	1243	290	84	915
Paper-machine	B. Ellery	608,849	Aug. 9	1265	292	84	917
Paper-making machine	D. B. McMurray	610,498	Sept. 6	666	149	84	1507
Paper-making machine	T. H. Savery	611,420	Sept. 27	2363	542	84	1948
Paper-making machine	T. H. Savery	611,421	Sept. 27	2363	542	84	1948
Paper-making machine	T. H. Savery	611,422	Sept. 27	2363	542	84	1948
Paper-making machines. Pulp-strainer for	A. L. Westwood	607,312	July 12	1209	270, 271	84	262

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Paper-making machinery	W. W. Wells	611,303	Sept. 27	2124	490	84	1904
Paper plant-box	J. T. Craw	607,346	July 12	1331	285	84	275
Paper-pulp. Means for removing foreign substances from	S. W. Simpson	608,305	Aug. 2	235	54	84	702
Paper-roll holder	W. H. Clarke	609,228	Aug. 16	1991	472	84	1071
Paper. Toilet-	S. Wheeler	607,498	July 19	1791	372	84	387
Paper-trimmer	N. A. Ridgely	609,213	Aug. 16	1957	464	84	1063
Paper vessel	J. J. Lanzit	608,687	Aug. 9	934	215	84	860
Paper. Wrapping and package-containing	H. Blackman, H. Cone, and B. J. Neill	611,373	Sept. 27	2268	524	84	1930
Parcel-carrier. Self-folding	F. S. Root	607,277	July 12	1218	260	84	252
Parcel-elevator	A. S. Hecht	607,850	July 26	2455	521	84	529
Parcel handle or carrier	J. Pusey	609,946	Aug. 30	3276	764	84	1352
Paris-green, &c. Machine for spreading	W. E. Everitt	609,337	Aug. 16	2191	517	84	1111
Pavement. Asphaltic	C. Richardson	607,884	July 26	2522	.....	84	541
Pea-separating machine	R. P. Scott and J. A. Chisholm	608,290	Aug. 2	110	28	84	676
Peat, &c. Treatment of	R. F. Strong	607,528	July 19	1843	.....	84	397
Pedal	L. T. Cornell	611,355	Sept. 27	2219	513	84	1921
Pedal-crank	H. M. Scheeren	610,923	Sept. 20	1397	320	84	1746
Pedestal. Folding	J. L. Erwin	608,659	Aug. 9	884	208	84	849
Pen. Duplex	H. S. Breeden	611,050	Sept. 20	1629	372	84	1790
Pen. Fountain-	C. W. Boman	610,428	Sept. 6	542	119	84	1542
Pen. Fountain-	G. H. Means	610,818	Sept. 13	1223	282	84	1695
Pen. Fountain-	H. J. Schulte	609,978	Aug. 30	3344	778	84	1365
Pen. Fountain-	L. E. Waterman	607,397	July 12	1420	304	84	291
Pen. Fountain-	L. E. Waterman	607,398	July 12	1424	304	84	292
Pen. Fountain-	L. E. Waterman	607,399	July 12	1425	304	84	292
Pen. Fountain-	L. E. Waterman	607,400	July 12	1426	304 305	84	293
Pen. Fountain-	L. E. Waterman	607,401	July 12	1431	305	84	293
Penholder	J. H. Campbell	607,213	July 12	1078	233	84	224
Penholder	S. Kraus	606,841	July 5	390	83	84	78
Penholder	W. H. Maultby	611,178	Sept. 20	1864	430	84	1835
Pencil	H. H. Seaman	609,909	Aug. 30	3207	752	84	1339
Pencil	H. H. Seaman	609,910	Aug. 30	3210	752	84	1339
Pencil holder and sharpener	C. E. Cousy	608,182	Aug. 2	25	6	84	659
Pencil-holder, spectacle-case, &c. Combined	R. A. Haegelin	609,230	Aug. 16	1995	473	84	1072
Pencil. Lead-	G. M. Seidel	607,708	July 19	2167	456	84	455
Pencil pocket-holder	J. L. Riley	607,766	July 19	2255	477	84	473
Pendulum. Compensating	E. K. Adams	606,753	July 5	223	48	84	45
Penstock and supply-pipe	F. M. F. Cazin	608,176	Aug. 2	13	4	84	657
Perforating-machine	M. H. Merriam	610,746	Sept. 13	1077	248	84	1666
Perforating paper, &c. Machine for	A. Krah	609,682	Aug. 23	2830	661	84	1251
Petroleum. Desulfurizing	T. F. Colin	607,017	July 12	686	.....	84	156
Pharmaceutical compound and making same	K. Hock	607,172	July 12	1008	.....	84	212
Phenyl ethers. Obtaining hydroxylized	L. Lederer	606,930	July 5	519	.....	84	103
Phonograph	T. A. Edison	607,588	July 19	1956	406	84	416
Phonograph	T. A. Edison	609,268	Aug. 16	2068	491	84	1067
Phonograph	T. A. Edison	610,706	Sept. 13	1017	235 236	84	1655
Photographer's lantern	W. Neil	610,194	Sept. 6	77	16	84	1455
Photographic-background carrier	M. C. Harriman	610,808	Sept. 13	1204	277	84	1692
Photographic camera	F. A. Brownell	610,153	Aug. 30	3621	842	84	1422
Photographic developer	A. Bogisch	608,147	July 26	2078	.....	84	633
Photographic developing apparatus	A. S. Cobenzl	609,661	Aug. 23	2797	652	84	1244
Photographic developing apparatus	M. Fernekes	610,392	Sept. 6	485	106	84	1532
Photographic developing-tray	W. H. Rose	607,485	July 19	1773	369	84	383
Photographic-film holder	C. M. Mali	606,727	July 5	164	36	84	34
Photographic films. Apparatus for developing	J. S. Johnston	609,677	Aug. 23	2822	658	84	1250
Photographic finder	O. Bentz	607,583	July 19	1947	404	84	415
Photographic-negative washer	W. Neil	609,900	Aug. 30	3194	749	84	1336
Photographic paper. Apparatus for treating and washing	A. Schwarz	607,649	July 19	2069	432	84	437
Photographic pellicle and producing same	H. Goodwin	610,861	Sept. 13	1292	298	84	1711
Photographic-plate carrying and transferring case	J. C. Kimsey	607,052	July 12	778	170	84	170
Photographic-plate holder	J. C. Kimsey	607,054	July 12	783	171	84	171
Photographic-plate magazine	J. C. Kimsey	607,053	July 12	780	170	84	170
Photographic-plate washer	W. H. Bierwirth	607,677	July 19	2113	442	84	445
Photographic-plate washer	J. Kirkwood	608,871	Aug. 9	1285	300	84	923
Photographic-printing apparatus. Continuous	A. Schwarz	607,648	July 19	2068	431	84	437
Photographic register for railway-coaches	N. M. Powell	610,971	Sept. 20	1484	338 339	84	1762
Photographic shutter	F. A. Brownell	610,154	Aug. 30	3624	842 843	84	1423
Photographic shutter	C. F. H. Huff and O. C. Hale	607,242	July 12	1150	246	84	237
Photographic shutter	G. C. O. Lange	608,875	Aug. 9	1292	301	84	924
Photographic shutter	H. W. Locke	609,033	Aug. 16	1609	383 384	84	999
Photographs in color. Producing	J. W. McDonough	611,457	Sept. 27	2422	556	84	1958
Photographs in colors. Producing	V. Vaucamps	608,934	Aug. 9	1413	.....	84	947
Photographs. Producing relief-	H. M. Waide	607,147	July 12	964	208	84	208
Piano	B. Kroeger	610,065	Aug. 30	3490	809	84	1394
Piano-action	R. E. Cobb	608,177	Aug. 2	16	4,5	84	657
Piano-action	A. Ferner	610,963	Sept. 20	1472	336	84	1760
Piano attachment	F. Kindermann	609,966	Aug. 30	3321	773	84	1361
Pianoforte	J. H. Ludwig	608,698	Aug. 9	941	217	84	861
Pianoforte	J. Noble and F. R. Bennett	608,476	Aug. 2	549	123	84	764
Pianoforte-action	W. W. Wallace	608,998	Aug. 9	1420	335	84	948
Pianoforte-wires. Device for sustaining and adjusting tension of	J. H. and L. F. Papps	609,210	Aug. 16	1939	461	84	1059
Pick. Miner's	B. Rubenstein	608,716	Aug. 9	983	226	84	868
Picker: *See* Fruit-picker.							
Picture and mirror. Combined	W., Jr., and A. B. Wellstood	608,856	Aug. 2	339	74	84	723
Picture. Colored	J. Jacobson	611,380	Sept. 27	2281	527	84	1982
Picture-frame hanger	J. B. Turner	606,816	July 5	340	72	84	68
Picture-hanger	A. Foegate	606,710	July 5	136	29	84	28

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Picture-matting cutter	P. Drinkaus	611,238	Sept. 27	1903	460	84	1879
Pigeon-trap	L. W. Slack	608,801	Aug. 9	1137	263	84	896
Pile of velvets, &c. Apparatus for cutting	J. Kershaw	611,257	Sept. 27	2024	467	84	1885
Piling, timbers, &c. Machine for applying compounds for protecting	V. D. and H. R. Rood	611,208	Sept. 20	1016	442, 443	84	1844
Pin:							
See Bowling-alley pin. Hat-pin.							
Clothes-pin. Husking-pin.							
Pipe:							
See Composite pipe. Tobacco-pipe.							
Sanitary or other pipe. Tobacco smoking-pipe.							
Smoking-pipe. Whistle-pipe. Wooden pipe.							
Pipe and hose coupling	T. F. Lees	610,359	Sept. 6	420	90	84	1520
Pipe. Apparatus for manufacturing composite non-corrodible	E. I. Braddock	610,223	Sept. 6	151	34, 35	84	1472
Pipe-bending machine	B. J. Parker and F. G. Cross	608,383	Aug. 2	382	83, 84	84	731
Pipe-boring machine	B. C. Batcheller	607,820	July 26	2388	507	84	517
Pipe clamp and holder	R. W. Clark	609,534	Aug. 23	2547	596	84	1197
Pipe cleaner. Waste or sink	G. W. Merritt	608,207	Aug. 2	71	19	84	669
Pipe-collar	E. J. Mallen	608,060	July 26	2844	606	84	606
Pipe-compressing machine. Corrugated-	W. A. Kemp	606,786	July 5	290	60	84	58
Pipe-coupling	T. Davey	610,321	Sept. 6	347	74	84	1508
Pipe-coupling	D. K. Keller	609,030	Aug. 16	1606	382	84	998
Pipe-coupling	F. B. Landis	607,180	July 12	1020	222	84	214
Pipe-coupling	F. T. Leatherman and J. Metzler	608,000	July 26	2725	582	84	580
Pipe-coupling	J. Morrison and H. P. Hansen	606,677	July 5	79	16	84	18
Pipe-coupling	G. W. Meserve	607,517	July 19	1822	379	84	392
Pipe-coupling and patch	C. W. Vaughan	611,442	Sept. 27	2307	549	84	1952
Pipe-coupling. Swivel	G. O. Morse and E. D. Rich	608,066	July 26	2853	609	84	609
Pipe-cutter	W. A. Kemp	607,620	July 19	2013	418	84	427
Pipe-elbow	W. A. Kemp	606,785	July 5	288	59	84	57
Pipe-elbow-bending machine	F. A. Linich	608,613	Aug. 9	794	183	84	831
Pipe joint and connection	C. O. Wescott	611,305	Sept. 27	2126	491	84	1904
Pipe-lock	C. A. Bailey	607,726	July 19	2187	462	84	460
Pipe-threading implement	J. L. Raney	610,829	Sept. 13	1240	285, 286	84	1699
Pipe trimmer and cutter	P. Boyd	609,263	Aug. 16	2061	489	84	1085
Pipe-wiping apparatus	D. H. Hollingsworth	609,545	Aug. 23	2563	600	84	1200
Pipe-wrench	D. C. Johnston	610,450	Sept. 6	576	127	84	1549
Pipe-wrench	A. M. Kleckner	608,202	Aug. 2	65	17	84	668
Pipe-wrench	O. Lannon	608,293	Aug. 2	216	50	84	698
Pipe-wrench	O. F. Roberts	610,881	Sept. 13	1243	286	84	1700
Pipe-wrench	O. C. Stanley	607,288	July 12	1231	263	84	254
Pipe-wrench	V. A. Jensen	609,509	Aug. 23	2506	586	84	1189
Pipes. Means for coupling small	E. D. Zimmerman	609,317	Aug. 16	2160	511	84	1106
Pistol-holder	G. D. Beldin	611,312	Sept. 27	2142	495	84	1907
Pitchfork and shovel. Combined	F. R. Simkin	608,233	Aug. 2	114	28	84	677
Placket-closer	E. F. Donne	606,651	July 5	26	5, 6	84	7
Plaiting-machine	E. Diehl, F. Ruppert, and F. Löser	607,987	July 26	2701	576	84	575
Planer ellipse-cutting mechanism	B. F. Ogden	610,080	Aug. 30	3515	814, 815	84	1399
Planing-machine	J. S. Earhart and C. Miller	609,666	Aug. 23	2802	653	84	1245
Planter	W. A. Fowler	611,469	Sept. 27	2447	564	84	1963
Planter	J. D. Schofield	610,771	Sept. 13	1134	261	84	1677
Planter	A. C. Noe	611,041	Sept. 20	1609	368, 369	84	1786
Planter and fertilizer-distributer. Combined	B. J. McLeskey	610,718	Sept. 13	1096	239	84	1659
Planter and fertilizer-distributer. Cotton-	G. von Post	608,793	Aug. 9	1107	256	84	891
Planter. Automatic seed-	M. Gomez	611,034	Sept. 20	1597	366, 367	84	1784
Planter. Cane-	J. W. Allen and C. West	610,786	Sept. 13	1168	269	84	1684
Planter. Check-row	W. A. Kile	609,279	Aug. 16	2090	495	84	1091
Planter. Combined cotton-seed and corn	J. C. Courtney	611,356	Sept. 27	2221	513, 514	84	1921
Planter. Corn-	C. H. Dill	607,600	July 19	1976	410	84	420
Planter. Corn-	W. H. Eckman	609,420	Aug. 23	2336	551	84	1159
Planter. Corn-	W. W. Ellis	608,658	Aug. 9	883	203	84	849
Planter. Corn-	C. D. Keith	609,354	Aug. 16	2214	523	84	1115
Planter. Corn-	E. Price	608,221	Aug. 2	95	24	84	673
Planter. Corn-	M. and A. Sattley and M. Heineke	609,215	Aug. 16	1959	465	84	1064
Planter. Corn-	D. H. Hunter	608,456	Aug. 2	513	115	84	757
Planter. Cotton-	J. P. Caldwell	607,502	July 19	1796	374	84	388
Planter. Cotton-seed	C. N. Baker	607,208	July 12	1068	231	84	223
Planter. Hand seed-	A. N., A. K., and T. O. Burroughs	609,775	Aug. 30	2971	695	84	1291
Planter marker-gage. Corn-	W. H. Dannat	610,858	Sept. 13	1289	297	84	1710
Planter. Potato-	J. Skinner	606,901	July 5	478	105	84	95
Planter. Potato-	G. K. Spitzenberg	609,305	Aug. 16	2137	506	84	1100
Planter. Seed-	M. G. F. Buckley	608,570	Aug. 9	714	163	84	817
Plaster-board	G. W. Meserve	608,888	Aug. 9	1909	305	84	928
Plasterer's steel angle-tie	T. H. Lewis, J. Doran, B. and E. J. Lewis.	611,134	Sept. 20	1792	412, 413	84	1821
Plate doubling and shearing machine							
Platform:							
See Lifting-platform.							
Pliers	C. C. Ward	611,537	Sept. 27	2561	591	84	1965
Plow	N. Ankarstolpe	607,207	July 12	1065	231	84	222
Plow	G. Baldwin	611,191	Sept. 20	1885	435	84	1830
Plow	P. Bayer	611,037	Sept. 20	1589	364	84	1782
Plow	A. F. Bergqvist	609,492	Aug. 23	2481	579, 580	84	1184
Plow	G. A. Crane	611,106	Sept. 20	1734	398	84	1811
Plow	L. Lea	607,984	July 26	2611	554	84	558
Plow	F. C. Merrill	611,456	Sept. 27	2421	556	84	1958
Plow	J. F. Miller	606,895	July 5	472	101	84	98
Plow	J. W. Sargeant	609,370	Aug. 16	2238	529	84	1120
Plow	W. A. Wood	609,602	Aug. 23	2069	623	84	1219

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Plow and harrow. Combined	J. Kolb	607,178	July 12	1018	221	84	214
Plow and planter. Combined	M. and A. Sattley	609,216	Aug. 16	1961	465	84	1064
Plow-bar protector	M. E. Manire and T. Hood	609,892	Aug. 30	3182	466	84	1334
Plow coiter attachment	T. Haynes	607,743	July 19	2215	746	84	465
Plow draft-regulator	C. G. Hampton	609,187	Aug. 16	1908	468	84	1051
Plow. Gang-	G. W. De Witt	610,387	Sept. 6	477	451	84	1330
Plow. Gang-	W. C. Matteson	608,936	Aug. 9	948	218	84	892
Plow-moldboard attachment	F. Borge and J. E. Clary	611,349	Sept. 27	2207	510	84	1919
Plow subsoil attachment. Riding-	J. P. Twomey and R. C. Mills	609,850	Aug. 30	3107	724	84	1319
Plow. Sulky-	L. E. Waterman	609,311	Aug. 16	2149	509	84	1103
Plow-wheel box	C. P. Wakefield	609,713	Aug. 23	2980	673	84	1261
Plowshare-upsetting machine	W. A. Clark	609,265	Aug. 16	2065	490	84	1096
Plumber's screw-threading die	E. C. McKee	607,068	July 12	806	177	84	175
Plush fabric. Double-	E. Claviez	611,104	Sept. 20	1731	397 398	84	1810
Pneumatic-despatch tube	S. R. Gayton	610,528	Sept. 13	734	164	84	1594
Pneumatic tool	J. G. Carlinet	608,953	Aug. 9	1442	341	84	952
Pneumatic tool	D. Drawbaugh	606,961	July 5	559	123 124	84	111
Pocket. Garment-	M. L. Holtz	608,375	Aug. 2	367	80	84	728
Pocket. Safety-	H. L. Broad	610,513	Sept. 6	699	157	84	1573
Poisons. Electric extraction of	J. B. Campbell	606,897	July 5	461	98	84	90
Poke. School waste-	R. Hess and M. H. Curtiss	611,122	Sept. 20	1771	406	84	1817
Pole coupling. Wagon-	L. C. Wilcox	608,815	Aug. 9	1187	278	84	904
Pole or thill support. Vehicle	W. A. Maycock	607,804	July 19	2350	496	84	491
Police-patrol system	O. W. Hart	606,865	July 5	431	92	84	85
Poncho-holder	J. H. Tabler	606,927	Aug. 9	1401	331	84	944
Pop-corn press	A. C. Grube	611,118	Sept. 20	1762	404	84	1815
Portable furnace or stove	A. M. Botelho	607,642	July 19	2054	427	84	435
Portable house	E. S. Young	611,309	Sept. 27	2134	494	84	1906
Post: *See* Fence-post. Gate-post. Hitching-post.							
Post-base	G. W. Brown	611,233	Sept. 27	1988	459	84	1878
Post-brace	H. A. Hill	607,435	July 19	1504	320	84	328
Post-driver	R. Heaton	610,811	Sept. 13	1210	276 278	84	1698
Post-driver	G. W. Tipton	607,577	July 19	1932	401	84	412
Post land-anchor	E. W. Hill	610,184	Sept. 6	68	13	84	1458
Pot: *See* Coffee or tea pot. Flower-pot.							
Potato-digging machine	C. J. Moulton and A. J. Keeble	609,289	Aug. 16	2106	499	84	1094
Potatoes. Preparing desiccated	J. G. Neumann	611,017	Sept. 20	1576	----	84	1780
Powder-compressor	E. C. Clark	610,029	Aug. 30	3434	795	84	1383
Powder-distributer	C. C. Clawson	609,572	Aug. 23	2908	610	84	1208
Powder-distributer	C. C. Clawson	609,573	Aug. 23	2911	611	84	1209
Powder-distributing apparatus	P. T. Merrill	609,827	Aug. 30	3077	717	84	1313
Power: *See* Horse-power. Wave-power. Tidal power.							
Power. Apparatus for converting heat into	W. E. and E. F. Prall	610,459	Sept. 6	594	133	84	1553
Power from compressed gases. Process of and apparatus for generating	E. N. Dickerson	607,655	July 19	2081	434	84	439
Power generation. Motive-	C. Guattari	609,430	Aug. 23	2352	554	84	1161
Power. Means for transmitting	T. Dagley	609,012	Aug. 16	1570	373	84	908
Power-transmitting device	D. Ashman	610,151	Aug. 30	3619	841	84	1421
Power-transmitting device	I. Rudensky	609,050	Aug. 16	1651	394	84	1008
Power-wheel	A. N. Blazer	611,098	Sept. 20	1722	395	84	1808
Precious metals from their ores. Extraction of	H. L. Sulman and F. L. Teed	610,616	Sept. 13	872	----	84	1625
Precious metals from their solutions. Recovering	M. E. Waldstein	607,719	July 19	2179	----	84	438
Precious metals. Means for extracting	J. P. Schuch, Jr	611,515	Sept. 27	2522	583	84	1978
Preserve-jar and cover therefor	A. Legrand	606,822	July 5	347	74	84	69
Preserving albuminous matters	P. G. Sanford	607,281	July 12	1222	----	84	252
Preserving food	O. de Santa Cruz	609,590	Aug. 23	2646	619	84	1215
Preserving fruit-juices	C. Graf	608,425	Aug. 2	466	----	84	748
Press: *See* Baling-press. Barrel-press. Barrel-heading press. Celluloid-press. Copying-press. Cotton-press. Domestic press. Drop-press. Filter-press. Fruit-press. Glass-press. Hydraulic press. Make-ready press. Pop-corn press. Printer's proof-press. Tobacco-press.							
Press	W. A. Traver	606,695	July 5	108	28	84	24
Pressing cloth or fabric. Machine for	W. Hebdon	607,796	July 19	2312	489	84	488
Pressure and vacuum gage	J. Jackson	608,199	Aug. 2	60	14	84	666
Pressure-apparatus tank	E. Sheridan	610,333	Sept. 6	373	79	84	1512
Pressure indicator or power-gage. Mean-	G. F. Atwood	607,819	July 26	2385	506 507	84	516
Primary battery	W. Rowbotham	609,298	Aug. 16	2123	503 504	84	1097
Printed matter. Machine for composing	F. A. Johnson	611,208	Sept. 20	1906	439 440 441	84	1842
Printers' blankets, &c. Apparatus for washing	A. B. Wimpenny	611,161	Sept. 20	1841	424	84	1831
Printer's proof-press	F. Wesel	608,813	Aug. 9	1178	275 276	84	902
Printing. Apparatus for bending form-plates for	J. W. Osborne	608,706	Aug. 9	965	222 223	84	865
Printing-blocks in copper, nickel, &c. Manufacturing	L. Boudreaux	608,948	Aug. 9	140	----	84	682
Printing. Intaglio	G. R. Cornwall	607,915	July 26	2578	----	84	552

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Printing-machine	B. Huber	608,153	July 26	2991	641 642	84	635
Printing-machine	A. H. Ray	607,131	July 12	932	202 203	84	198
Printing machine. Stencil-	F. D. Belknap	609,402	Aug. 23	2307	544 545	84	1152
Printing of music and apparatus for exposing same to readers.	C. Gerandal	607,789	July 19	2301	485	84	481
Printing-press	L. M. Rouse	606,878	July 5	450	96	84	89
Printing press. Color-	S. Klotz	606,891	July 5	465	99 100	84	92
Printing representations of woven fabrics	A. B. Sherwood	609,748	Aug. 23	2928	684 685	84	1270
Printing telegraphic messages. Apparatus for	G. M. Gibson	611,448	Sept. 27	2403	552	84	1954
Printing. Type and type-holder for box-	J. F. Ames	608,746	Aug. 9	1034	236	84	878
Profiling-machine	T. Webster and A. E. Bennett	611,300	Sept. 27	2118	488	84	1902
Projectile	P. Borelli	609,008	Aug. 16	1557	370	84	990
Projectiles. Appliance for producing case-shot-like action of explosive	A. Weigner	608,941	Aug. 9	1424	336	84	949
Propeller	S. W. Carter and W. C. Buhles	606,986	July 5	606	132	84	120
Propeller	C. J. H. Flindt	610,089	Aug. 30	3454	800	84	1395
Propeller. Automatic feathering-blade	C. E. Olsen	608,265	Aug. 2	164	40	84	667
Propeller. Chain	W. Dodge	611,467	Sept. 27	2445	563	84	1992
Propeller for vessels. Reciprocating	J. and H. W. Ritchie	610,370	Sept. 6	445	97	84	1524
Propeller for vessels. Reciprocating	J. and H. W. Ritchie	610,371	Sept. 6	447	98	84	1524
Propeller-pipes. Self-acting closing device for	J. G. Pinkert	607,548	July 19	1882	391	84	408
Propeller-wheels, &c. Device for reversing motion of	G. E. Tregurtha	611,187	Sept. 20	1880	434	84	1838
Propelling means for vessels. Pneumatic	A. J. Culbertson	608,757	Aug. 9	1050	240	84	881
Propelling mechanism. Boat-	J. Hewson	609,096	Aug. 16	1597	380	84	997
Propelling mechanism. Boat-	S. S. Stevens	607,965	July 26	2659	568	84	568
Propelling ships, &c. Device for	C. J. D'Urban	606,653	July 5	30	7	84	8
Propulsion. Marine	E. W. Mitchell	611,182	Sept. 20	1870	431 432	84	1836
Prunes for drying. Apparatus for preparing	W. C. Anderson	610,377	Sept. 6	455	99	84	1526
Pruning implement	L. N. Dobbins	611,065	Sept. 20	1650	377	84	1794
Pruning-shears	N. R. Whitacre	607,388	July 12	1410	301	84	289
Pruning-shears handle	R. J. Thompson	608,490	Aug. 2	569	127	84	768
Pruning-shears handle	R. J. Thompson	608,491	Aug. 2	570	127	84	768
Puller: *See* Nail-puller.							
Pulley	H. F. Arnold	606,908	July 5	488	105	84	97
Pulley	C. Rocholl	610,724	Sept. 13	1050	241	84	1661
Pulley	A. Schliminsky	609,976	Aug. 30	3340	777	84	1364
Pulley	Z. Auger	610,576	Sept. 13	806	184	84	1610
Pulley and device for securing same to shafts	I. M. Dotson	610,172	Sept. 6	35	8	84	1448
Pulley-block	A. Davy and T. G. S. Rogers	607,986	July 26	2700	576	84	575
Pulley. Grip-	A. S. Hallidie	610,353	Sept. 6	407	87	84	1518
Pulley. Grip-	C. Rocholl	606,794	July 5	301	63	84	60
Pulley. Grooved	G. F. Kenny	607,680	July 19	2133	448	84	449
Pulley. Self-oiling loose	F. R. Simms	610,002	Aug. 30	3389	786	84	1374
Pulley, toothed wheel, &c	B. Eilers	607,026	July 12	699	151 152	84	158
Pulp-making. Wood-grinder for	B. Eilers	607,164	July 12	998	214 215	84	209
Pulp-making. Wood-grinder for	H. Thame	610,567	Sept. 13	794	181	84	1607
Pulpware. Manufacture of	W. A. and J. R. Raudabaugh	610,919	Sept. 20	1392	319	84	1745
Pulverizer	A. V. Nelson	610,456	Sept. 6	589	131	84	1552
Pulverizer and harrow	D. Craig	608,361	Aug. 2	346	75	84	724
Pump	G. G. McLaughlin	608,003	July 26	2752	584	84	589
Pump	J. C. Stinson	607,775	July 19	2273	480	84	476
Pump. Cattle-	J. Richards	607,133	July 12	936	203	84	199
Pump. Centrifugal	F. J. Wenker	611,424	Sept. 27	2368	544	84	1947
Pump. Convertible	F. H. Merrill	609,943	Aug. 30	3368	783	84	1350
Pump. Displacement-	C. F. Carty	610,798	Sept. 13	1189	274	84	1689
Pump. Hydraulic-	R. C. Enyart	607,114	July 12	900	195	84	198
Pump journal-box. Rotary-	F. C. Smith	608,274	Aug. 2	179	43	84	690
Pump. Oil-	J. W. Weddel, H. Jewett, W. L. Taylor, and D. A. Bellis.	609,565	Aug. 23	2597	607	84	1206
Pump-operating motor	J. H. Goss	609,185	Aug. 16	1896	451	84	1050
Pump-plunger	W. T. Ellison	607,357	July 12	1349	288	84	278
Pump. Pulsating steam-	J. C. Dean	609,386	Aug. 16	2265	585	84	1125
Pump regulator. Steam-	J. Mann	610,992	Sept. 20	1531	351	84	1771
Pump. Rotary sand-	V. Hanson	610,325	Sept. 6	354	75	84	1509
Pump. Sand-	J. O. Bane	609,000	Aug. 16	1553	369	84	989
Pump spring attachment	J. B. Rhodes	606,844	July 5	394	84	84	78
Pump. Steam-	J. W. Weddel	611,301	Sept. 27	2119	480	84	1903
Pump-top. Convertible	H. B. Gale	607,845	July 26	2443	519	84	526
Pump valve-movement	C. C. Worthington	607,902	July 26	2550	541 542	84	547
Pump valve-movement	W. W. Corey, Jr.	608,181	Aug. 2	22	6	84	658
Pump valve. Steam-	V. H. Rood	610,975	Sept. 20	1492	340	84	1764
Pumps. Adjustable cut-off for steam-	N. A. Christensen	607,217	July 12	1091	235	84	227
Pumps. Means for suspending air-	J. Symington	611,085	Sept. 20	1696	390	84	1808
Pumping and winding machinery. Combined	E. Neff	608,991	Aug. 9	1512	357 358	84	906
Pumping apparatus for water-distributing systems	J. E. and W. Armstrong	610,013	Aug. 30	3405	789	84	1377
Pumping apparatus. Wave-power	C. N. Scott	609,950	Aug. 30	3282	765	84	1353
Pumping-engine	C. P. Gano	607,985	July 26	2597	551	84	556
Pumping-jack	H. Etheridge	609,269	Aug. 16	2070	491	84	1087
Pumping-wells. Trap for	C. F. Thurber	608,562	Aug. 2	694	158	84	794
Punch and shear machine	W. P. Goldthwaite	608,256	Aug. 2	150	37	84	684
Punch attachment	G. Guild and C. A. Bertsch	610,584	Sept. 13	819	187 188	84	1612
Punching and shearing machine	C. Seymour	608,484	Aug. 2	561	125	84	767
Punching-machine	J. P. Stark	608,725	Aug. 9	996	229	84	870
Punching-machine							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Purin derivatives. Making	E. Fischer	607,028	July 12	708	.....	84	159
Puzzle	R. J. C. Collins	609,081	Aug. 16	1699	404	84	1016
Puzzle	C. W. Courtney	609,083	Aug. 16	1701	405	84	1016
Puzzle	N. B. Crary	607,735	July 19	2201	465	84	463
Puzzle	J. E. Richardson	611,334	Sept. 27	2176	503	84	1914
Puzzle	H. D. Martin	607,257	July 12	1173	251	84	242
Puzzle apparatus	J. J. Murphy	609,995	Aug. 30	3378	784	84	1372
Puzzle. Arithmetic	A. G. Jacobs	610,028	Sept. 13	891	204	84	1629
Puzzle-map game	J. R. Lynn	609,447	Aug. 23	2383	561	84	1167
Puzzle or toy lock	G. Tobias	607,494	July 19	1785	.....	84	386
Pyrocatechin. Making	H. Weiffenbach	609,063	Aug. 16	1672	397	84	1011
Pyrotechnic device	J. H. Stevens	607,554	July 19	1895	.....	84	405
Pyroxylin composition of matter	J. H. Stevens	608,726	Aug. 9	998	.....	84	871
Pyroxylin compound	J. H. Stevens	608,727	Aug. 9	999	.....	84	871
Pyroxylin compound	J. H. Stevens	609,475	Aug. 23	2441	.....	84	1176
Pyroxylin compound	J. H. Stevens	610,566	Sept. 13	703	.....	84	1007
Pyroxylin compound	J. H. Stevens	610,615	Sept. 13	871	.....	84	1624
Pyroxylin compound	J. H. Stevens	610,953	Sept. 20	1453	.....	84	1757
Pyroxylin compound	J. H. Stevens and F. C. Axtell	610,728	Sept. 13	1054	.....	84	1692
Quilling-machine spindle	F. Kesselring	606,890	July 5	464	99	84	91
Quilting-frame	E. H. Butler	606,915	July 5	497	109	84	99
Rack: *See* Bicycle luggage-rack. Clothes-rack. Display-rack. Hay-rack. Hose-rack. Tobacco-pipe rack.							
Racking or barrel-filling apparatus	D. Beebe	607,328	July 12	1296	277, 278	84	268
Radiator	A. H. Fowler	609,800	Aug. 30	3020	707	84	1301
Radiator	J. A. Miller	608,880	Aug. 9	1309	805, 806	84	928
Radiator	J. M. Sprecher	609,595	Aug. 23	2454	620	84	1217
Radiator. Air-heating	W. P. and R. P. Thompson	608,352	Aug. 2	335	73, 74	84	722
Radiator. Air-heating	F. W. Quidas	606,792	July 5	209	62	84	60
Radiator. Electric	J. A. Thornton	610,292	Sept. 6	294	68	84	1498
Radiator. Heat-storage steam	E. V. Coulston	608,360	Aug. 2	345	75	84	724
Radiator. Hot-air	E. P. Allen	609,191	Aug. 16	1906	454	84	1062
Radiators. Automatic air-valve for	H. R. Robertson	607,956	July 26	2644	592	84	564
Raft. Lumber or timber	E. H. Horton	609,891	Aug. 16	2281	540	84	1129
Rafters. Apparatus for ascertaining length and bevel of	G. F. Martin	609,896	Aug. 30	3076	717	84	1313
Rail and joint therefor	K. G. A. Uhlig	608,732	Aug. 9	1014	232	84	873
Rail and railway-track	J. E. Lloyd	610,909	Sept. 20	1377	316	84	1743
Rail-bond	W. H. Talley	610,004	Aug. 30	3392	786	84	1375
Rail-bond	G. A. Weber	608,736	Aug. 9	1017	233	84	874
Rail-bond	W. R. Cock	608,178	Aug. 2	18	5	84	658
Rail-bond and securing same in place. Electrical	J. S. Tucker	609,252	Aug. 16	2036	481	84	1081
Rail-bond. Electric	D. W. Davis. (Reissue)	11,693	Sept. 20	1966	453	84	1854
Rail-brake	J. M. Henigan	611,481	Sept. 27	2469	569	84	1967
Rail-clamp	S. A. Short	611,290	Sept. 27	2104	484	84	1900
Rail-cleaning device	J. Fisher	607,358	July 12	1350	288	84	278
Rail fish-plate	J. N. F. Siebs	610,665	Sept. 13	946	219	84	1640
Rail. Guard-	R. Hinchliffe	609,101	Aug. 16	1739	419	84	1025
Rail-joint	W. H. Mills	608,308	Aug. 2	72	19	84	669
Rail-joint	W. M. Smith	609,304	Aug. 16	2135	506	84	1100
Rail-joint	W. Goldie	611,474	Sept. 27	2458	565	84	1965
Rail-sustaining bar and plate	W. Goldie	607,847	July 26	2448	520	84	527
Rail-sustaining bar or tie-plate	E. W. McKenna	608,378	Aug. 2	370	81	84	729
Rails. Machine for renewing old steel	E. W. McKenna	608,379	Aug. 2	374	82	84	730
Rails. Method of and machine for renewing old steel	A. Wambsganss	606,697	July 5	111	24	84	24
Rails over joint-sleepers. Device for regulating position of height of	A. Bonzano	611,101	Sept. 20	1728	396	84	1810
Rails. Strut-tie for preventing creeping of	C. H. Balliette	609,727	Aug. 23	2806	677	84	1264
Railway	G. J. Capewell	609,790	Aug. 30	3003	703	84	1298
Railway	C. Peters	610,828	Sept. 13	1239	285	84	1699
Railway accidents. Device for preventing	A. Margesin	609,687	Aug. 23	2342	664, 665	84	1254
Railway. Aerial cable	W. G. Curtis	607,221	July 12	1099	257	84	229
Railway-bars. Joining	F. S. Pearson	610,241	Sept. 6	185	41	84	1478
Railway collector. Electric	W. Chapman and P. W. Davies	611,056	Sept. 20	1638	375	84	1792
Railway construction. Electric	B. C. Seaton	610,092	Aug. 30	3531	818	84	1408
Railway contact device. Electric	C. A. Terry and H. P. Davis	606,825	July 5	356	75	84	71
Railway contact device. Electric	L. E. Walkins	610,007	Aug. 30	3397	787	84	1375
Railway contact device. Electric	C. R. Woodward	608,820	Aug. 9	1198	280	84	906
Railway-crossing gate	H. Visser	610,837	Sept. 13	1250	288	84	1702
Railway-crossing gate. Automatic	C. A. Terry and H. P. Davis	606,826	July 5	359	76	84	72
Railway current-collecting apparatus. Electric	W. W. Doty, J. A. MacKnight, and C. Grauten.	607,351	July 12	1337	286	84	276
Railway. Electric	J. C. Henry	606,663	July 5	45	11	84	11
Railway. Electric	J. C. Henry	606,664	July 5	50	11	84	12
Railway. Electric	J. C. Henry	606,990	July 5	613	133, 134	84	121
Railway. Electric	J. C. Henry	606,991	July 5	616	134	84	122
Railway. Electric	J. C. Henry	610,445	Sept. 6	566	125, 126	84	1547
Railway. Electric	C. A. Myers	607,697	July 19	2148	452	84	452
Railway. Electric	O. Preil	611,271	Sept. 27	2065	476	84	1892
Railway. Electric	B. C. Seaton	610,090	Aug. 30	3528	817	84	1402
Railway. Electric	B. C. Seaton	610,094	Aug. 30	3533	819	84	1403
Railway. Electric	L. E. Walkins	610,009	Aug. 30	3400	788	84	1376
Railway. Electric	J. Brady	609,407	Aug. 23	2312	546	84	1153
Railway. Elevated	G. W. Parsons	611,331	Sept. 27	2171	502	84	1913
Railway-frog	F. M. Carder and G. J. Pickinpaugh	611,353	Sept. 27	2214	511	84	1920
Railway-gate	J. Murrey	608,787	Aug. 9	1097	253, 254	84	889
Railway. Gravity	L. J. Hirt	608,858	Aug. 9	1266	295, 296	84	919

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Railway grips. Mechanism for automatically placing cables in cable	J. M. Laffas	606,672	July 5	68	14, 15	84	16
Railway-line safety apparatus	A. Schmid	609,977	Aug. 30	3342	778	84	1365
Railway-motor. Electric	S. J. Austin	607,324	July 12	1290	275, 276	84	266
Railway oblique crossing	C. A. Terry and H. P. Davis	606,827	July 5	362	76	84	72
Railway overhead construction. Electric	P. Hevner	606,998	July 5	573	126	84	114
Railway permanent way	G. V. Hariman	609,024	Aug. 16	1595	379	84	996
Railway-rail	S. H. Harrington	608,258	Aug. 2	152	38	84	684
Railway-rail bond. Electric	A. Vietor	609,853	Aug. 30	3110	726	84	1320
Railway-rail joint	E. Day	609,417	Aug. 23	2332	550	84	1157
Railway-rails. Device for handling	T. H. Campbell	608,290	Aug. 2	188	45	84	692
Railway-signal	P. E. Legrand	607,754	July 19	2234	472	84	469
Railway signal-alarm	W. F. Renton	611,149	Sept. 20	1820	419	84	1827
Railway signal apparatus	L. S. Brown	607,338	July 12	1320	282	84	273
Railway-signal. Pneumatic	G. T. Cunningham	608,081	July 26	2806	596	84	599
Railway signal system	J. R. Jones	607,800	July 19	2343	494	84	489
Railway-signals, &c Compensating device for	B. C. Rowell and F. M. Brinckerhoff	607,767	July 19	2256	477	84	473
Railway speed-controlling apparatus	A. Van Vliet and J. Gardenier	607,670	July 19	2105	439	84	443
Railway-spike	B. L. Bonnell	608,569	Aug. 9	711	163	84	817
Railway-switch	R. Cady. (Reissue)	11,687	Aug. 16	2289	542	84	1130
Railway-switch	H. Christenson	609,650	Aug. 23	2793	651	84	1244
Railway-switch	E. W. Coughlin	607,917	July 26	2581	547	84	553
Railway-switch	W. McCaffery	606,790	July 5	166	37	84	34
Railway-switch	J. W. Thomas, Jr	610,419	Sept. 6	527	115	84	1540
Railway switch and lock apparatus	J. J. Benes	609,753	Aug. 23	2336	686, 687	84	1271
Railway-switch. Automatic	J. L. Calame	608,647	Aug. 9	863	199	84	845
Railway-switch. Automatic	E. W. Coughlin	607,916	July 26	2580	547	84	553
Railway switch-box	J. Donovan	609,267	Aug. 16	2067	491	84	1087
Railway switch foot-guard	J. W. Thomas, Jr	610,420	Sept. 6	528	115, 116	84	1540
Railway-switch-operating mechanism	E. Grafstrom	609,099	Aug. 16	1755	418	84	1024
Railway-switch stand	O. B. Englisch	609,335	Aug. 16	2186	516	84	1710
Railway system	G. L. Campbell	611,559	Sept. 27	2612	602	84	1995
Railway system. Electric	S. H. Short	607,610	July 19	1902	413	84	422
Railway system. Electric	S. H. Short	607,611	July 19	1905	414	84	423
Railway system. Electric	J. W. Skilton	610,772	Sept. 13	1139	262	84	1679
Railway-tank feeder	E. G. Carter	608,648	Aug. 9	865	199	84	845
Railway-tie	F. T. Wright	610,985	Sept. 20	1421	.....	84	1751
Railway-tie	C. Swan and J. G. Gray	609,848	Aug. 30	3104	723	84	1319
Railway tie and clamp	C. C. Gates	608,962	Aug. 9	1453	344	84	954
Railway-tie distributer	G. W. Cline	610,670	Sept. 13	955	221	84	1642
Railway-tie. Metal	T. G. Jacklin	611,087	Sept. 20	1604	367	84	1785
Railway-tie. Metallic	H. A. Saathoff	609,123	Aug. 16	1796	428	84	1092
Railway-tie. Metallic	H. Ware	606,851	July 5	405	86	84	81
Railway-tie-plate surfacer and gage	M. Jolly	609,619	Aug. 23	2716	634	84	1228
Railway time-indicator	W. B. and H. L. Brunson	608,507	Aug. 2	598	134	84	774
Railway-track rail-brace	T. Sherwood	610,204	Sept. 6	96	20	84	1458
Railway-track securer	J. Livtschak	610,848	Sept. 13	1267	293	84	1705
Railway-tracks. Apparatus for automatically recording unevenness in	J. Turner	607,146	July 12	962	208	84	208
Railway transfer-table	G. Westinghouse	606,828	July 5	363	76, 77	84	72
Railway traveling contact device. Electric	G. J. Capewell	609,786	Aug. 30	2995	701	84	1296
Railway-vehicles. Air-resistance device for	G. J. Capewell	609,789	Aug. 30	3001	702, 703	84	1297
Railway-vehicles. Air-resistance device for	J. Vermehren	607,308	July 12	1253	267	84	259
Railways. Automatic apparatus for preventing collisions on	G. D. Rollman	608,560	Aug. 2	692	157	84	793
Railways. Automatic switch for street	L. E. Walkins	610,008	Aug. 30	3398	787	84	1376
Railways. Contact-rail appliance for electric	B. C. Seaton	610,091	Aug. 30	3530	818	84	1403
Railways. Third rail for electric	B. C. Seaton	610,093	Aug. 30	3533	818	84	1403
Railways. Third rail for electric	C. S. Cox	608,108	July 26	2917	624, 625	84	621
Raisin-seeder	W. W. Wentworth	608,787	Aug. 9	1018	233	84	874
Rake: *See* Hay-rake. Horse-rake.	P. E. Loree	607,393	July 12	1404	299	84	299
Rake	S. H. Jones	611,127	Sept. 20	1777	407	84	1819
Rake and roller cutter. Combined	G. H. Harris	606,715	July 5	146	30, 31	84	30
Rake-head	H. Phinney	611,390	Sept. 27	2300	531	84	1935
Ram. Hydraulic	J. A. McHardy	608,213	Aug. 2	81	21, 22	84	671
Range. Cooking	J. Turner	610,618	Sept. 13	875	200, 201	84	1625
Rasp-machine	J. Houlehan	611,253	Sept. 27	2016	465	84	1883
Rasp-punching machine	F. Schnabel	610,770	Sept. 13	1132	260	84	1677
Ratchet-drill	W. J. Libby	607,516	July 19	1821	379	84	392
Razor	E. L. Schmitz	611,296	Sept. 27	2099	483	84	1899
Razor-hone holder	D. H. Allen	608,503	Aug. 2	501	132	84	778
Razor. Safety	D. R. Cotner	611,446	Sept. 27	2400	551	84	1953
Reading stand and table. Combined	J. Macphail	609,891	Aug. 30	3180	745	84	1333
Reading, writing, and music stand. Combined	J. Jaquet	608,864	Aug. 9	1276	298	81	921
Reaping-machine	E. E. Allen	611,049	Sept. 20	1627	372	84	1760
Receptacle. Fluid	M. J. Sprigel	610,925	Sept. 20	1399	320	84	1747
Reclining-chair	C. F. Streit	607,298	July 12	1239	264	84	256
Reclining-chair	C. H. Young	609,177	Aug. 16	1885	448	84	1048
Reclining-chair	C. E. and D. W. Brower	608,359	Aug. 2	344	75	84	794
Reclining high-chair	E. T. Gilliland	610,998	Sept. 6	226	51	84	1486
Recorder: *See* Sunshine-recorder. Time-recorder.							
Recorder for conveyances	I. E. Palmer	611,480	Sept. 20	1580	392	84	1781
Reel: *See* Clothes-line reel. Warping-reel. Fishing-reel.	G. B. Blood	609,604	Aug. 16	1558	371	84	990
Reel and support							
Reflector-holder							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Refrigerating apparatus	H. W. Abbott	607,321	July 12	1286	274	84	265
Refrigerating apparatus	W. Hampson	607,849	July 26	2453	521	84	528
Refrigerating-system safety device	J. M. Dortch	610,438	Sept. 6	557	123	84	1545
Refrigerator	E. J. Kneeland	611,013	Sept. 20	1565	360	84	1778
Refrigerator-car	J. Thomas and J. M. Truby	608,086	July 26	2883	617, 618	84	615
Refrigerator-cars, &c. Air purifying and refrigerating system for	E. C. Nichols	610,276	Sept. 6	257	54, 55	84	1492
Refrigerator-door	A. J. McArthur	608,893	Aug. 9	1316	307	84	929
Refrigerator for meat-wagons	H. J. Kelley	611,491	Sept. 27	2487	573, 574	84	1970
Refrigerator shipping-case	F. W. Morse	608,701	Aug. 9	956	220	84	864
Register: *See* Autographic register. Cash-register. Drink-register. Fare-register. Manifolding-register. Photographic register.							
Registering apparatus	L. D. Orr	611,189	Sept. 20	1799	415	84	1823
Regulator: *See* Belt-regulator. Damper-regulator. Electric regulator. Feed-regulator. Feed-water regulator. Gas-regulator. Gas-burner regulator.							
Rein-clasp	C. S. Watkins	608,940	Aug. 9	1423	335	84	949
Rein-shield	F. L. Campbell	610,797	Sept. 13	1187	274	84	1689
Releasing device. Stock	S. J. Gover	610,806	Sept. 13	1201	276	84	1691
Remailable box	H. A. Ames	610,337	Sept. 6	390	81	84	1513
Resawing-machines. Feed mechanism for band	F. McDonough	608,994	Aug. 9	1317	307	84	929
Respirator	S. L. Hannon and M. A. Jordan	611,478	Sept. 27	2463	567	84	1966
Respirator	A. R. Moody	610,914	Sept. 20	1385	317	84	1744
Rheostat	H. B. Cutter	606,646	July 5	18	3, 4	84	6
Rheostat	C. H. Richardson and L. McMakin, Jr.	611,185	Sept. 20	1874	433	84	1838
Rheostat	M. J. Shiels	607,608	July 19	1988	413	84	422
Rheostat. Reversing-	I. E. Storey	608,013	July 26	2765	587, 588	84	591
Ribbon-clasp	E. Wilson	609,486	Aug. 23	2474	577	84	1189
Rice hulling and polishing machine	H. A. Barnard	606,909	July 5	489	106, 107	84	97
Ridge-drill	V. Bedoret	608,748	Aug. 9	1096	237	84	878
Ring: *See* Curtain-ring. Ornamental ring.							
Riprap	W. W. Carson	607,215	July 12	1081	233	84	225
Riveting	L. Steinmüller	609,633	Aug. 23	2755	643	84	1236
Riveting-machine	J. W. Thompson	609,479	Aug. 23	2463	574	84	1181
Road scarifying and breaking apparatus	R. and B. Bomford and H. Evershed.	606,641	July 5	8	2	84	4
Rock and ore crusher	M. O'Hare	609,458	Aug. 23	2411	565	84	1172
Rock breaker and crusher	J. R. Moffitt	611,205	Sept. 20	1912	441	84	1844
Rock-breaker and ore-crusher	F. H. Cook	610,122	Aug. 30	3578	828, 829	84	1414
Rock-drill	W. B. Brooks and T. Altman	610,892	Sept. 20	1850	309, 310	84	1737
Rock-drill	J. R. Brown	607,337	July 12	1317	281	84	272
Rock-drill	J. G. Leyner	609,107	Aug. 16	1771	421	84	1026
Rock-drill. Hand	L. Jones	607,412	July 12	1453	309	84	296
Rocker-cushion	J. H. Fink and R. Andlauer	608,660	Aug. 9	885	203	84	849
Rod: *See* Fishing-rod. Stair-rod.							
Roller: *See* Land-roller.							
Roller-coaster	E. Prescott	609,164	Aug. 16	1862	444	84	1044
Rolling-mill	G. G. McMurtry	608,381	Aug. 2	380	83	84	731
Rolling-mill	G. G. McMurtry	608,382	Aug. 2	381	83	84	731
Rolling-mill	J. G. Hodgson	608,287	Aug. 2	205	48, 49	84	695
Rolling mill. Automatic sheet-metal-	C. F. Brooker	607,110	July 12	893	193	84	191
Rolling-mill edging attachment	F. H. Daniels	611,565	Sept. 27	2622	605, 606	84	1997
Rolling-mill plant	R. Bailey	610,015	Aug. 30	3408	790	84	1378
Rolling-mill rider or carriage. Metal-	B. Price, C. W. E. Marsh, and R. Laybourne.	608,908	Aug. 9	1336	312, 313	84	933
Rolling mill. Tube-	E. W. McKenna	608,380	Aug. 2	377	82	84	730
Rolling steel rails. Method of and machine for	G. F. Drouvé	607,425	July 19	1486	316	84	320
Roof-valley	C. W. Hunt	608,124	July 26	2941	630	84	626
Rope-coupling	T. L. Marvel	608,886	Aug. 9	1306	305	84	927
Rope-coupling	T. S. Miller	610,912	Sept. 20	1382	316, 317	84	1743
Rope-driving machinery	E. Morris	609,896	Aug. 30	3169	747	84	1335
Rotary cutter	H. I. Arnold	610,161	Sept. 6	1	1	84	1443
Rotary engine	C. B. Benson	610,700	Sept. 13	1002	282, 283	84	1652
Rotary engine	F. E. Brainerd	607,678	July 19	2114	442, 443	84	445
Rotary engine	J. T. F. Conti	608,401	Aug. 2	420	92	84	739
Rotary engine	C. Davidson and R. D. Stacey	608,761	Aug. 9	1054	242, 243	84	882
Rotary engine	M. F. Dean and T. McCoy	608,762	Aug. 9	1056	243	84	882
Rotary engine	S. H. Draper	607,684	July 19	2121	444, 445	84	447
Rotary engine	E. H. Eaton	611,289	Sept. 27	1994	460	84	1879
Rotary engine	V. R. Gates	609,802	Aug. 30	3025	708	84	1302
Rotary engine	E. J. Herchert	609,543	Aug. 23	2559	599	84	1199
Rotary engine	H. B. Hits and C. A. M. von Syburg	609,518	Aug. 23	2712	633	84	1227
Rotary engine	C. J. Milligan	610,191	Sept. 6	73	15	84	1454
Rotary engine	E. Probst	610,497	Sept. 6	674	151	84	1568
Rotary engine	F. M. Richards and H. M. Forbes	610,084	Aug. 30	3580	816	84	1401

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rotary engine	S. S. Rose	609,049	Aug. 16	1648	393, 394	84	1007
Rotary engine	F. W. Ross	610,498	Sept. 6	677	151, 152	84	1569
Rotary engine	C. Roux	607,065	July 12	856	185	84	185
Rotary engine	C. J. Sullivan	609,711	Aug. 23	2877	672	84	1260
Rotary engine	J. H. Vandegrift	609,310	Aug. 16	2147	508, 509	84	1103
Rotary engine	J. C. Walker	611,535	Sept. 27	2553	589, 590	84	1984
Rotary engine	J. C. Walker	611,536	Sept. 27	2559	590, 591	84	1985
Rotary engine	S. T. Wilson	607,205	July 12	1063	230	84	222
Rotary engine	A. A. and D. Wise	610,788	Sept. 13	1159	266, 267	84	1683
Rotary engine	N. Witts	611,307	Sept. 27	2128	491, 492	84	1904
Rotary engine. Compound	A. G. Hilton and J. H. Wallace	609,027	Aug. 16	1599	380, 381	84	997
Rotary motor	L. S. Holmes	607,373	July 12	1387	295, 296	84	285
Rotary steam-engine	C. E. Evans and O. E. Barnhart	607,922	July 26	2588	549	84	555
Rotary steam-engine	H. H. Freeman	609,579	Aug. 23	2925	614	84	1211
Rotary steam-engine	C. A. Holcomb	609,808	Aug. 30	3037	711	84	1301
Rotary steam-engine	M. V. B. Howe	606,969	July 5	574	126	84	114
Rotary steam-engine	M. L. Jones	609,028	Aug. 16	1602	381, 382	84	997
Rotary steam-engine	A. J. Kniffen	609,681	Aug. 23	2829	661	84	1251
Router	J. T. Cunneen	608,758	Aug. 9	1051	241	84	881
Roving-frame	T. H. Brosnihan	609,957	Aug. 30	3303	769	84	1358
Rowlock	C. E. Longden	609,923	Aug. 30	3276	784	84	1372
Rubber mitten	J. W. Pencille	609,832	Aug. 30	3063	719	84	1314
Rubbing-machine	M. C. Collins	606,706	July 5	128	28	84	27
Rule. Skirt-cutting	E. Graber and L. Hepworth	609,884	Aug. 30	3164	738, 739, 740, 741	84	1330
Ruling-machine	N. F. Becker	608,567	Aug. 9	705	160, 161	84	815
Sack filling and sewing machine. Automatic	M. A. Lyon	611,498	Sept. 27	2497	576	84	1973
Sack-holder	A. T. Timewell	607,809	July 19	2357	498, 500	84	492
Sacks. Machine for transferring and sewing filled	W. G. Boughton	606,642	July 5	11	3	84	5
Sad-iron	G. H. Dippo, W. C. Bruce, W. T. Semple, and W. M. Powell.	607,349	July 12	1335	295	84	275
Sad-iron	W. E. Hoyt	607,376	July 12	1394	297	84	286
Sad-iron	D. Rugg	607,957	July 26	2647	562	84	565
Sad-iron and heater. Combination	F. W. Newton	610,823	Sept. 13	1231	283	84	1797
Sad-iron-heating device	F. Ross	609,975	Aug. 30	3339	777	84	1364
Saddle and girth connection	O. Klausman	610,403	Sept. 6	505	110	84	1536
Saddle loop. Harness-	C. E. Nye	609,118	Aug. 16	1786	425	84	1030
Saddle-skirt protector	G. L. Damon	609,416	Aug. 23	2327	549, 550, 22, 23, 24	84	1156
Safe-boltwork	E. W. West	610,211	Sept. 6	105		84	1460
Safety-elevator	A. J. Savage	610,097	Aug. 30	3525	817	84	1402
Salt and pepper box	F. F. Myles	607,605	July 19	1983		84	421
Salt. Bath-	E. de Saligmac	609,468	Aug. 23	2428	568	84	1174
Salt-cellar and pepper-box. Combination	W. Shedlock	611,152	Sept. 20	1824	420	84	1828
Salt-pan	H. Tee	609,128	Aug. 16	1802	429	84	1033
Salt-pan	D. A. Grant	608,516	Aug. 2	613	137	84	777
Salt-shaker	C. H. Mersereau	606,893	July 5	469	101	84	93
Sample-case. Folding	C. H. Mersereau	606,894	July 5	471	101	84	93
Sample-case. Folding	O. Byrnes	608,834	Aug. 9	1221	285	84	910
Sampling-machine	F. Burger	607,825	July 26	2397	509	84	519
Sand-blast	J. E. Mathewson	610,189	Sept. 6	69	14	84	1453
Sand-blast apparatus	T. J. Stanton	610,590	Sept. 13	837	191, 192	84	1617
Sand-box	J. L. Perry	610,201	Sept. 6	88	18, 19	84	1457
Sandpapering-machine for bent work	A. Wakefield	608,239	Aug. 2	122	30	84	678
Sanitary or other pipe	G. T. Cooper	607,983	July 26	2695	575	84	574
Sanitary trap	W. Driscoll	609,930	Aug. 30	3239	758	84	1345
Sash-balance	W. R. Fox	607,739	July 19	2209	467	84	464
Sash-cord guide	L. H. Bowman	608,102	July 26	2910	623	84	619
Sash-fastener	G. Feltham	607,685	July 19	2123	445	84	447
Sash-fastener	F. V. Greene	610,739	Sept. 13	1070	245	84	1665
Sash-fastener	R. Griffith	609,428	Aug. 23	2350	554	84	1160
Sash-fastener	G. Henneberg and F. Bergmann	608,601	Aug. 9	775	178	84	828
Sash-fastener	R. B. Hugunin	608,606	Aug. 9	782	180	84	829
Sash-fastener	H. B. Ives	611,171	Sept. 20	1854	427, 428	84	1833
Sash-fastener	H. E. Leach	608,461	Aug. 2	521	116, 117	84	739
Sash-fastener	D. L. Long	609,821	Aug. 30	3068	715	84	1312
Sash-fastener	E. J. Morgan	608,786	Aug. 9	1096	253	84	888
Sash-fastener	G. C. Nicholson	607,762	July 19	2248	475	84	472
Sash-fastener	F. H. Peters	609,904	Aug. 30	3199	750	84	1337
Sash-fastener	C. H. Raymond	610,369	Sept. 6	444	96	84	1583
Sash-fastener	A. Tracy	610,207	Sept. 6	99	21	84	1459
Sash-fastener	H. G. Voight	610,209	Sept. 6	102	22	84	1460
Sash-fastener	W. V. Walsh	606,948	July 5	543	120	84	108
Sash-fastener	R. H. Fenn	610,805	Sept. 13	1200	276	84	1691
Sash-holder	A. J. Inglet	609,810	Aug. 30	3040	711	84	1305
Sash holder and lock	W. P. Gelsbert	607,926	July 26	2599	551	84	557

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sash-lift	W. H. Green	610,135	Aug. 30	3598	835	84	1417
Sash-lock	J. L. Barnes	610,699	Sept. 13	1001	232	84	1651
Sash-lock	R. D. Duff	610,155	Aug. 30	3628	843	84	1423
Sash-lock	G. W. Golden	611,246	Sept. 27	2006	462	84	1881
Sash-lock	L. H. Broome	610,380	Sept. 6	465	101	84	1527
Sash. Swinging window	M. R. Farrar	608,114	July 26	2925	626	84	622
Sash-weight. Sectional	R. Eisenmann	608,254	Aug. 2	148	37	84	683
Satchel handle	H. E. Davis	608,282	Aug. 2	192	46	84	692
Saw-filing machine	T. L. Wallace and J. A. Reed	610,980	Sept. 20	1499	341; 342; 343; 344; 345; 346	84	1765
Saw. Hand	J. W. Helton	610,900	Sept. 20	1366	313	84	1740
Saw-handle	R. F. Smith	609,125	Aug. 16	1799	428	84	1033
Saw. Meat or hand	J. Oldham	607,700	July 19	2154	453	84	453
Saw mill. Band	R. L. Hoyt	607,981	July 26	2607	553	84	558
Sawmill-carriage	N. Shaw	610,565	Sept. 13	790	180; 181	84	1606
Sawmill steam set-works	R. F. Barker and M. Corry	608,018	July 26	2775	590	84	598
Saw set and sharpener	P. E. Erickson	610,266	Sept. 6	223	50	84	1486
Saw strainer-rod. Wood	W. Smith and E. F. Shaw	607,712	July 19	2171	457	84	456
Saw-stretching-machine roll	G. M. Hinkley	608,774	Aug. 9	1077	248	84	886
Saw-swage	T. Walker	608,494	Aug. 2	574	129	84	769
Saw, tenderer, and chopper. Combined meat	W. H. Gwinner	608,455	Aug. 2	512	115	84	737
Saw. Tenon or back	F. Wuest	607,107	July 12	889	192	84	191
Sewing attachment for portable engines. Wood	E. Jacquin	607,618	July 19	2011	417	84	426
Scaffold	J. Sladek	607,905	July 19	2351	497	84	491
Scaffold-bracket	L. S. Miller	609,287	Aug. 16	2105	498	84	1094
Scaffold-hanger	C. H. Bowie	610,898	Sept. 20	1345	308	84	1736
Scaffold. Portable	L. E. Webber	610,934	Sept. 20	1420	326; 327	84	1751
Scaffold-support	H. D. Lukens	606,763	July 5	247	51	84	49
Scale	C. M. Schenck	610,307	Sept. 6	320	68, 69	84	1503
Scale and grip and lifting machine. Coin-controlled weighing	G. G. S. Merry	610,766	Sept. 13	1122	257; 258	84	1675
Scale-beam	J. A. Fleming	609,880	Aug. 30	3158	737	84	1329
Scale. Computing	C. Corbin	608,441	Aug. 2	488	111	84	752
Scale. Spring	J. G. Grimmel	608,518	Aug. 2	622	140	84	778
Scalloping-machine	C. A. Gilman	608,390	Aug. 2	396	88	84	734
Scarf-pins, hat-pins, &c. Fastening device for	C. E. True	610,617	Sept. 13	874	200	84	1625
School-seat	F. L. Rainbow	607,275	July 12	1214	259	84	251
Scissors or shears	G. W. Elliott	607,899	July 26	2486	517	84	525
Scissors. Pinking	I. Olmsted	609,364	Aug. 16	2232	527	84	1119
Scoop and hand-truck. Combined	L. E. Twist	609,129	Aug. 16	1803	429	84	1033
Scoop-handle attachment	G. Berck	607,154	July 12	978	211	84	206
Scraper. Wheeled	T. R. McKnight	607,520	July 19	1825	380; 381	84	393
Scraper. Wheeled	W. X. Simpson	609,593	Aug. 23	2649	619; 620	84	1216
Scraper. Wheeled	R. H. Villard	608,535	Aug. 2	645	145; 146	84	782
Screen: *See* Door or window screen. Fireplace-screen. Gate-screen. Window-screen.	J. Van Ommeren	610,423	Sept. 6	534	117	84	1541
Screw	D. Glenn	610,044	Aug. 30	3458	801	84	1398
Screw-jack. Ball-bearing	D. Glenn	610,045	Aug. 30	3459	801	84	1398
Screw-jack head	D. Glenn	610,632	Sept. 13	898	206	84	1630
Screw-machine die-head	W. Morgan	610,158	Aug. 30	3630	844	84	1424
Screw-thread-cutting tool	F. G. Echols	608,439	Aug. 2	485	110	84	752
Screw-wrench	F. L. Coes	607,040	July 12	739	157	84	162
Scrubber	W. H. Heinz	608,226	Aug. 2	289	64	84	713
Scrubbing-machine	L. B. Fields	610,397	Sept. 6	491	107	84	1533
Scrubbing-machine	J. E. and W. J. Gee	608,059	July 26	2233	604	84	604
Scrubbing-machine	H. E. Lane	607,821	July 26	2391	508	84	517
Seal	W. F. Beasley	609,495	Aug. 23	2487	581	84	1186
Seal	E. J. Brooks	610,405	Sept. 6	507	111	84	1536
Seal	F. R. Lacoste	610,955	Sept. 20	1456	333	84	1757
Seal	E. Tyden	611,242	Sept. 27	1908	461	84	1880
Seal. Bottle	J. L. Follett	607,892	July 26	2392	508	84	518
Seal-lock	W. F. Beasley	607,512	July 19	1814	377	84	391
Seal-lock	O. B. Kirkpatrick and G. L. Banks	607,260	July 12	1176	252	84	242
Seal-lock	E. H. Morse	609,735	Aug. 23	2807	681	84	1366
Seal. Newspaper	L. C. Crowell	609,621	Aug. 23	2723	635	84	1250
Seal. Self-locking	A. Melin	608,157	July 26	2397	643	84	636
Sealing device. Bottle	W. Painter	607,174	July 12	1011	220	84	212
Sealing machine. Envelop	O. S. Jordan and E. F. Baum	607,005	July 5	660	143	84	151
Seam-feller. Lap	J. S. Finkenbiner	608,306	Aug. 2	70	19	84	669
Seam-ripper	L. Merrill	610,568	Sept. 13	778	177	84	1604
Seaming machine. Sheet-metal	E. Norton						
Seat: *See* School-seat. Spring-seat. Valise-seat. Window-seat.							
Seat or cushion	P. F. Quinn	611,274	Sept. 27	2072	477	84	1894
Seat or settee	E. J. Smith	609,916	Aug. 30	3220	754	84	1341
Secondary battery	G. J. Miller	610,190	Sept. 6	71	15	84	1454
Secondary battery	G. Walter	608,015	July 26	2771	589	84	598
Seed-drill	J. Porteous and R. W. Cole	609,905	Aug. 30	3199	750	84	1397
Seeds. Compound for treating	G. Thiele	608,697	Aug. 9	824	———	84	886
Seeding-machine	W. D. Arnett	610,316	Sept. 6	336	73	84	1506
Seeding-machine	E. Christman	607,914	July 26	2577	546	84	552
Self-closing gate	P. B. Green	609,668	Aug. 23	2806	654	84	1247
Self-locking coupling or bearing	C. Dietz	606,778	July 5	273	56, 57	84	55

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Separator: *See* Air-separator. Cream-separator. Gas and oil separator. Gold and ore separator. Grain-separator. Hydraulic separator. Magnetic separator. Ore-separator. Sheet-separator. Steam and water separator.							
Separator	R. W. Jessup	608,049	July 26	2828	603	84	603
Separator and purifier	W. H. Likins	608,880	Aug. 9	1299	303	84	926
Sewage, &c., by bacterial action. Purifying	W. M. Ducat	607,426	July 19	1487	316	84	320
Sewage-raising apparatus	S. H. Adams	609,321	Aug. 16	2165	512	84	1106
Sewer-trap	W. Godfrey	608,450	Aug. 2	500	113	84	755
Sewing-machine	J. E. Bertrand	607,404	July 12	1439	306	84	294
Sewing-machine	S. Borton	608,317	Aug. 2	261	59, 60	84	707
Sewing-machine	H. E. Hawes	610,486	Sept. 6	643	144	84	1562
Sewing-machine	G. E. Kott	611,579	Sept. 27	2650	611	84	2002
Sewing-machine	W. A. Mack	608,553	Aug. 2	681	154; 155	84	790
Sewing-machine	F. H. Richards	607,081	July 12	842	183; 184; 181	84	182
Sewing-machine	H. P. Richards	607,079	July 12	830	182	84	180
Sewing-machine	W. A. Mack	608,552	Aug. 2	679	154	84	790
Sewing-machine bobbin-case retainer	T. Kundtz	607,960	July 26	2484	527	84	534
Sewing-machine cabinet	J. T. Hogan	608,045	July 26	2823	601	84	602
Sewing-machine cloth-clamp	A. T. Timewell	607,810	July 19	2362	500; 501	84	494
Sewing machine. Filed-sack	A. T. Timewell	607,811	July 19	2365	501	84	495
Sewing machine. Filled-sack	A. Eppler, Jr	608,373	Aug. 2	363	79, 80	84	728
Sewing-machine guide. Shoe	G. H. Dimond and W. F. Dial	608,152	July 26	2987	641	84	635
Sewing-machine. Hemstitch or open-work	F. H. Richards	607,080	July 12	837	182; 183	84	181
Sewing-machine looper mechanism	P. A. Kühn and P. F. Kluge	609,887	Aug. 30	3173	742; 743	84	1332
Sewing-machine. Multiple	N. F. Becker	608,689	Aug. 9	851	195; 196	84	842
Sewing machine. Sack	F. W. Ostrom	608,370	Aug. 2	358	78, 79	84	727
Sewing-machine separator. Buttonhole	T. Kundtz and J. Gedeon	607,861	July 26	2485	527	84	534
Sewing-machine table	T. Kundtz and A. Elben	607,862	July 26	2487	527	84	535
Sewing-machine table	H. P. Richards	608,795	Aug. 9	1110	257	84	891
Sewing-machine thread-controlling means	J. E. Bertrand	607,332	July 12	1310	280	84	270
Sewing-machine thread-waxing device	G. S. Neeley	609,973	Aug. 30	3335	776; 777	84	1363
Sewing-machines into or out of gear. Means for throwing	H. C. Fielding	608,085	July 26	2811	598	84	600
Sewing-machines, &c. Spool-holder for	F. W. Ostrom	607,949	July 26	2636	560	84	563
Sewing-machines. Yielding automatic cutter mechanism for	F. Tashiro	607,897	July 26	2544	539	84	546
Sewing materials, &c. Device for holding	G. H. Dimond and W. F. Dial	608,151	July 26	2985	640; 641	84	634
Sewing with hem or open-work stitch. Machine for	E. C. Switzer	608,236	Aug. 2	118	29	84	677
Shade bracket. Window	P. C. Weeks	611,845	Sept. 27	2197	507	84	1917
Shade fixture. Window	F. Pelan	610,411	Sept. 6	516	113	84	1538
Shade-roller support	W. S. G. Baker	608,398	Aug. 2	414	90	84	738
Shaft-collar. Adjustable	O. C. Davis	607,222	July 12	1100	237	84	229
Shaft or pole coupling. Vehicle	J. Hatch	607,394	July 12	1417	303	84	291
Shaping-cutter	J. S. Shaffer	611,369	Sept. 27	2249	520	84	1927
Sharpener. Combined scissors and knife	L. P. Carr	610,226	Sept. 6	159	35	84	1473
Sharpener. Disk	R. E. Poindexter	609,046	Aug. 16	1644	392	84	1006
Sharpener. Knife or scissors	A. C. Mack	609,516	Aug. 23	2514	588	84	1190
Sharpener. Razor	J. A. Sumner	609,847	Aug. 30	3108	723	84	1318
Sharpening agricultural implements, &c. Machine for	J. Buyer	609,078	Aug. 16	1695	404	84	1015
Sharpening device	J. W. Scull	609,301	Aug. 16	2130	505	84	1099
Sharpening device. Tool	W. Purdy	609,367	Aug. 16	2234	528	84	1119
Sharpening edged tools. Device for	G. Guild	608,195	Aug. 2	53	13	84	665
Shearing-machine. Hydraulic							
Shears: *See* Paper-cutting shears. Pruning-shears. Wire-shears.							
Sheep-dipping composition	R. Mackill	608,466	Aug. 2	520	———	84	761
Sheet-delivery mechanism	R. Miehle	610,491	Sept. 6	653	147; 148	84	1564
Sheet-metal tank	O. J. Ziegler	610,574	Sept. 13	803	183	84	1600
Sheet-separator	E. Larson	609,968	Aug. 30	3328	773; 774	84	1361
Shelf. Window	E. H. Heverly	608,259	Aug. 2	155	38	84	685
Shelving and cloth-measurer combined. Roller	T. F. Apperson and C. H. Dorsey	610,510	Sept. 6	695	156; 157	84	1573
Shell and fuse therefor. High-explosive	H. P. Hurst	608,125	July 26	2942	631	84	686
Ships. Apparatus for cleaning paint from	W. P. Freeman	607,794	July 19	2306	488	84	482
Ship's bandage	C. F. Sultemeyer	608,050	July 26	2830	603	84	604
Ship's galley	F. Johnson	610,077	Aug. 30	3510	814	84	1508
Ship's log and registering mechanism	W. H. McCurdy	611,598	Sept. 27	2688	620	84	2007
Ships. Means for closing shot-holes in war	I. MacDonald	609,231	Aug. 16	1906	473; 474	84	1072
Ship's roll. Means for indicating a	J. J. Hicks and G. H. Zeal	607,734	July 19	2200	465	84	463
Shirt	S. C. Chamberlin	606,898	July 5	475	102	84	94
Shirt	P. Schoen	609,109	Aug. 16	1775	423	84	1088
Shirt-bosom retainer	A. Me Yère	610,637	Sept. 13	900	208	84	1632
Shocking device	E. R. Powell	609,505	Aug. 23	2499	585	84	1188
Shoe	O. I. Foster	611,266	Sept. 27	2053	473	84	1890
Shoe	F. B. Morse	607,573	July 19	1926	390	84	410
Shoe	H. Piessens	608,623	Aug. 9	811	186	84	884
Shoe brake and head	W. H. Phelps	610,043	Aug. 30	3457	801	84	1397
Shoe-protecting plate	H. G. H. Glass	607,090	July 12	862	187	84	186
Shoe-button cleaner	J. H. Shelk						

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Shoe-fitting chair. Adjustable	N. S. Springer	606,691	July 5	98	21	84	22
Shoe-shank stiffeners. Machine for cutting	G. E. M. Lewis	607,602	July 19	1980	411	84	420
Shoe-treeing machine	A. D. Tyler, Jr	609,130	Aug. 16	1804	490	84	1033
Shoe vamp-stay	J. Walden	608,734	Aug. 9	1016	283	84	874
Shoes, &c., wholly or in part of patent-leather. Manufacture of	L. J. Neu	607,628	July 19	2019	419	84	428
Shores. Protecting	S. W. Brooks	611,588	Sept. 27	2671	615 616	84	2005
Show-case	C. F. Biele	606,911	July 5	498	107 108	84	98
Shutter and awning. Combination window-	M. Glück	607,282	July 12	1126	241	84	233
Shutter-fastener guard	W. E. Braley	608,318	Aug. 2	286	60	84	708
Shutter-operating device	W. Zehnder	611,165	Sept. 20	1845	425	84	1832
Shutter-worker	R. N. Martz	609,448	Aug. 23	2384	561	84	1167
Shutter-worker	H. Suessenguth, Jr	610,418	Sept. 6	525	114	84	1539
Shuttle-binder spring	A. A. Gordon	608,038	July 26	2814	599	84	600
Shuttle mispick and smash preventer	G. Fair	611,213	Sept. 20	1926	444 445	84	1846
Sieve cleaner. Shaking-	J. E. Seay	606,742	July 5	187	41	84	38
Sieve-scraper	W. Griscom	608,089	July 26	2815	599	84	600
Sifter and receiver. Combined ash	J. M. Ryan	611,159	Sept. 20	1821	419	84	1827
Sifter. Cabinet-	W. H. Curtice	608,371	Aug. 2	361	79	84	727
Sifter. Dust-tight ash-	A. McKay	610,535	Sept. 13	904	207	84	1631
Sign	W. Goessling	606,923	July 5	512	112	84	101
Sign	W. Heeren	608,963	Aug. 9	1456	345	84	955
Sign	T. Millen	608,616	Aug. 9	798	184	84	832
Sign. Illuminated	C. C. Sibley	609,915	Aug. 30	3217	753 754	84	1341
Signal: *See* Bicycle speed-signal. Railway-signal. Car-signal.							
Signal	F. Dutcher	610,672	Sept. 13	957	221	84	1642
Signaling apparatus for transmitting commands. Electrical	C. Arldt	608,246	Aug. 2	138	34	84	682
Signaling at sea	F. V. de Bem	608,387	Aug. 2	391	86, 87	84	733
Signaling mechanism. Electric	L. G. Rowand. (Reissue)	11,678	July 12	1463	310	84	299
Silk-holder	G. S. Abraham	611,227	Sept. 27	1980	457	84	1877
Silverware case or chest	E. F. and E. A. Kolb	610,356	Sept. 6	412	88	84	1519
Singletree	H. C. Bratton	608,949	Aug. 9	1436	338	84	951
Singletree-hook	G. B. Hart	609,022	Aug. 16	1593	379	84	996
Siphon	H. Foulois	608,960	Aug. 9	1451	344	84	954
Siphons. Fitting for aerated-water	R. O. Jones	609,302	Aug. 16	2284	540	84	1129
Sizing composition	C. A. Adde	606,951	July 5	547	.....	84	109
Skate	E. H. Barney	608,416	Aug. 2	452	101	84	745
Skate	C. P. Beisel	609,401	Aug. 23	2304	544	84	1152
Skein-holder	M. A. Arrowsmith	607,674	July 19	2110	441	84	445
Skein holder. Silk-	J. W. Gleason	610,859	Sept. 13	1290	298	84	1710
Skewers, pins, &c. Machine for making	G. A. Ensign	609,336	Aug. 16	2188	516 517	84	1110
Skins. Machine for depilating	G. De Keukelaere	607,654	July 19	2079	433 434	84	439
Skirt	Z. G. Hara	609,023	Aug. 16	1594	379	84	996
Skirt	B. E. Martin	608,469	Aug. 2	534	119	84	761
Skirt. Bicycle-	E. Cottrelly	610,032	Aug. 30	3438	796	84	1384
Skirt. Cycling-	E. M. Hoey	610,988	Sept. 20	1524	350	84	1770
Skirt edge-protector. Dress-	A. M. Weber	610,780	Sept. 13	1151	264	84	1681
Skirt-facing. Corded	L. Sutro	607,555	July 19	1897	392	84	405
Skirt-guard. Bicycle	R. A. Dennis	607,225	July 12	1105	238	84	230
Skirt hanger. Dress-	T. E. O'Neill	608,266	Aug. 2	166	40	84	687
Skirt-protector	A. Allgoever	607,633	July 19	2040	423	84	432
Skirt-protector	H. Evinghaus and M. Herbener	607,840	July 26	2437	517	84	525
Skirt-protector	J. B. Poyet	606,876	July 5	447	96	84	88
Skirt-protector	L. A. Graham	610,133	Aug. 30	3595	833	84	1417
Skirt-supporter	N. B. Conkling and J. H. Lee	610,031	Aug. 30	3437	796	84	1393
Skirt supporter. Dress-	W. Stephen	611,308	Sept. 27	2315	534	84	1938
Skittle-table	A. De Man	607,223	July 12	1102	237	84	229
Slab. Artificial	F. W. Selley and W. H. Nisbet	610,095	Aug. 30	3534	819	84	1404
Slack-adjuster	A. G. Steinbrenner	607,896	July 26	2542	539	84	545
Slack-adjuster	G. P. Fisher, Jr., and J. Reif, Jr	609,387	Aug. 16	2268	535 536 537 538 539	84	1126
Slate	J. F. Yarnall	611,545	Sept. 27	2580	595	84	1999
Slate-frame cushion	G. M. Beyer	608,247	Aug. 2	140	37	84	682
Sled. Bob-	N. T. Canfield	606,800	July 5	309	64	84	61
Sled-brake	G. C. Hopkins and H. M. Sines	608,165	July 26	3013	648	84	639
Sled-runner	J. A. Johnson	609,812	Aug. 30	3045	712	84	1306
Sleigh and boat. Combined	L. Weber	606,905	July 5	484	104 105	84	96
Sleigh-knee	C. J. Shaw	609,470	Aug. 23	2430	569	84	1174
Sleigh roller attachment	J. C. Perkins	608,904	Aug. 9	1332	311	84	933
Sleigh-runner	C. Ott	610,082	Aug. 30	3518	815	84	1400
Slicer, Vegetable-	C. B. Lawson	608,368	Aug. 2	355	78	84	726
Sling-trip	E. Cancienne	607,679	July 19	2116	443	84	445
Slip-hook	J. Johnson	608,683	Aug. 9	928	213	84	858
Slippers, &c. Retaining device for storm-	F. J. Lyons	607,061	July 12	798	172	84	173
Sluice-gates, &c. Mechanism for operating	R. S. Gillespie	611,472	Sept. 27	2451	564 565	84	1964
Smelting furnace. Ore-	H. Kaemmerling	610,540	Sept. 13	743	169	84	1598
Smelting-furnace. Reverberatory	H. L. Charles	608,837	Aug. 9	1227	286	84	911
Smelting. Process of and apparatus for pyritic	G. M. Westman	607,497	July 19	1789	372	84	396
Smoke-burning furnace	G. L. Fogler	607,166	July 12	1000	217	84	211
Smoke-consumer	J. Shackleton	608,159	July 26	3004	646	84	637
Smoke-consuming apparatus	H. M. Quackenbush	609,628	Aug. 23	2749	598	84	1294
Smoke-consuming device	C. E. Briney	609,225	Aug. 16	1982	471	84	1069

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Smoke-consuming furnace	S. O. Berg	608,435	Aug. 2	480	108	84	751
Smoke-consuming furnace	J. Imhof and S. Spring	608,862	Aug. 9	1274	297	84	921
Smoke-consuming furnace	G. W. Sanhuber	609,051	Aug. 16	1652	394	84	1008
Smoke-consuming furnace	J. Wezel	606,739	Aug. 9	1021	234	84	875
Smoke-stack	C. Pickring. (Reissue)	11,686	Aug. 2	690	158	84	795
Smoking-pipe	J. Bigelow	610,597	Sept. 13	848	194	84	1619
Snap-hook	C. F. Francisco and E. E. Shaffer	607,844	July 26	2442	519	84	526
Snow-melting apparatus	J. B. Greenig	610,180	Sept. 6	52	12	84	1451
Snow-removing apparatus	D. Boorman, A. P. Sharp, and J. O'Neil.	608,827	Aug. 9	1209	282	84	908
Soap cake	L. S. Samuel	606,879	July 5	451	97	84	89
Soap-holder	J. C. Baker	609,725	Aug. 23	2894	676	84	1263
Sod-cutter, harrow, and seed-planter. Combined	J. Travis, Jr	611,583	Sept. 27	2662	613	84	2003
Soda-water apparatus	F. H. Lippincott	610,188	Sept. 6	67	14	84	1453
Sofa and cabinet. Combined	C. Vanden Wyngaard	607,905	July 26	2565	543	84	550
Soil heating and moistening apparatus	A. M. Stoltz	607,143	July 12	955	207	84	202
Solar heat. Apparatus for storing and using	H. F. Cottle	608,755	Aug. 9	1046	240	84	880
Solder	D. Crowther	607,504	July 19	1799	374	84	388
Solder-melting apparatus	A. T. Sturgess	610,502	Sept. 6	681	153	84	1570
Soldering-flux	W. Burnley	608,978	Aug. 9	1479	.....	84	960
Soldering machine. Can-	E. Manula	611,330	Sept. 27	2170	502	84	1912
Soldering machine. Can-	G. Van Camp	611,462	Sept. 27	2431	558 559 560	84	1960
Sole-channeling machine	F. J. Freese	607,990	July 26	2706	577 578	84	576
Sole-cutting machine	F. J. Freese	607,165	July 12	996	215 216 217	84	210
Sole-edge-trimming tool	C. G. Belmer	607,391	July 12	1414	302	84	290
Sole-laying-machine forms. Mechanism for adjusting	E. E. Winkley	610,315	Sept. 6	334	72	84	1505
Sole-leveling machine	E. E. Winkley	610,314	Sept. 6	332	71	84	1505
Sole-molding machine	J. J. Heys	607,370	July 12	1372	293	84	282
Sole-rough-rounding machine	H. T. Crosby	607,736	July 19	2302	465 466	84	463
Sole. Shoe-	J. E. Kennedy. (Reissue)	11,694	Sept. 20	1968	454	84	1854
Soles or heels. Machine for uniting welts or rands to	L. A. Casgrain	611,405	Sept. 27	2328	537	84	1941
Sounding device for ships. Electric	J. P. Buckley	608,104	July 26	2912	623	84	620
Sounding-machine	C. W. Wood	608,741	Aug. 9	1023	235	84	875
Spark-arrester	J. R. Allen	606,637	July 5	1	1	84	3
Spark-arrester	A. A. Graham	607,927	July 26	2604	551	84	557
Spark-arrester	A. C. Williams	609,066	Aug. 16	1679	399	84	1012
Spark-conductor	C. Sleister	606,770	July 5	262	55	84	53
Spectacle-frame temple	S. E. Hirst	610,875	Sept. 13	1322	303	84	1717
Spectacle or eyeglass attachment	G. Thomas	606,747	July 5	211	45	84	44
Spectacle or eyeglass case	H. L. Leibe and J. Goerk	607,645	July 19	2059	429	84	436
Speed and distance indicator and recorder for velocipedes, &c.	F. J. Wich	610,782	Sept. 13	1155	265 266	84	1681
Speed-indicator	W. Milner and W. Wilson	611,265	Sept. 27	2051	472 473	84	1889
Speed-measurer	D. L. Rose	606,767	July 5	256	54	84	52
Spindle: *See* Coated spindle. Vehicle-spindle. Quilling-machine spindle.							
Spindle and bearing	G. O. Draper	609,757	Aug. 23	2942	688	84	1272
Spindle and bearing	G. O. Draper	609,758	Aug. 23	2943	688	84	1273
Spindle and bearing	G. O. Draper	609,759	Aug. 23	2943	688	84	1273
Spindle and bearing	G. O. Draper	609,760	Aug. 23	2944	688	84	1273
Spindle and bearing	L. A. O. Nicol and E. Ayotte	608,992	Aug. 9	1517	358	84	967
Spindle and bearing	G. O. Draper	608,976	Aug. 9	1483	350	84	960
Spindle-bearing	E. Herzog	610,605	Sept. 13	857	196	84	1621
Spindles. Apparatus for applying cop-tubes to	G. H. and W. Thomson	610,106	Aug. 30	3548	822	84	1407
Spinning and doubling frame. Ring-	W. E. Sharples	611,338	Sept. 27	2185	505	84	1915
Spinning-frame	J. P. Tolman and H. D. Martin	608,731	Aug. 9	1007	231 232	84	872
Spinning-frame	F. Lacey	607,864	July 26	2491	528	84	535
Spinning-machine stop-motion	J. T. Meats and T. W. Dean	610,552	Sept. 13	768	175	84	1602
Spinning-machine twist-indicator	F. S. Culver	607,635	July 19	2041	423	84	433
Spinning-machines. Adjustable roll-frame for	F. M. Marcy	606,675	July 5	75	16	84	17
Spinning-rings. Method of and apparatus for truing	H. C. Reid	607,882	July 26	2519	534	84	540
Spoke-brace	J. M. Crump	611,564	Sept. 27	2021	604	84	1996
Spoke-grip	M. Tilden	611,343	Sept. 27	2193	507	84	1917
Spool	J. Ralstrick	608,718	Aug. 9	978	225	84	867
Spooling-machine	R. Atherton	610,162	Sept. 6	3	1, 2	84	1443
Spooling or quilling machine. Thread-	B. F. Morningstar	608,890	Aug. 9	1311	306	84	928
Spoon. Medicine-	M. Ryder	610,090	Sept. 13	986	229	84	1648
Spout. Dumping-	W. J. Sager	610,922	Sept. 20	1396	320	84	1746
Spout. Sap-	W. C. Dentler	608,585	Aug. 9	746	171 172	84	823
Spouts. Adjusting means for delivery-	F. M. Gropley and E. H. Peters	608,391	Aug. 2	399	88	84	734
Sprayer	D. B Smith	609,848	Aug. 30	3097	722	84	1317
Sprayer	G. A. and R. F. Dunn	609,183	Aug. 16	1893	450	84	1049
Spraying apparatus	J. H. Pottenger	606,811	July 5	331	70	84	66
Spraying device							
Spring: *See* Bolster-spring. Door-spring. Carriage-spring. Vehicle-spring.							
Spring-bottoms. Manufacture of	J. P. Leggett	611,181	Sept. 20	1787	410 411	84	1690
Spring-clasp	G. Hill	610,967	Sept. 20	1478	337	84	1702
Spring-connecting device	W. B. Dutrow	609,577	Aug. 23	2625	613	84	1211
Spring-seat	C. A. Chapman	610,960	Sept. 20	1467	335	84	1759
Spring-wheel	M. O'Brien	606,984	July 5	523	115	84	104

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sprinkler:							
See Fire-extinguishing Lawn-sprinkler.							
sprinkler.							
Square and bevel. Combined	G. F. Warnock	607,101	July 12	882	190	84	189
Stacker attachment. Pneumatic	J. B. McCutcheon	608,990	Aug. 9	1511	357	84	966
Stacker. Pneumatic	F. F. Landis	611,384	Sept. 27	2290	529	84	1933
Stacker. Pneumatic	A. W. Sisson	608,306	Aug. 2	237	54	84	702
Stacker. Pneumatic straw	J. B. McCutcheon	609,623	Aug. 23	2728	635	84	1231
Stacker. Pneumatic straw	J. W. Miller and E. Huber	610,659	Sept. 13	988	218	84	1638
Stackers. Automatic oscillating mechanism for	M. T. Reeves and J. N. Kailor	608,223	Aug. 2	98	25	84	674
Stair-cover	P. Rasmussen	607,457	July 19	1541	327	84	330
Stair-rod	E. E. Kutz	610,544	Sept. 13	752	171	84	1599
Stairway system for flats. Dual	K. S. Evans	610,174	Sept. 6	39	9, 10	84	1449
Stalk-chopper	F. Upshaw	607,971	July 26	2969	570	84	569
Stalk-cutter	J. R. Weatherly	610,114	Aug. 30	3557	825	84	1408
Stamp-affixer	F. Quednow	606,791	July 5	297	61, 62	84	59
Stamp battery. Ore	J. Champion	610,599	Sept. 13	851	195	84	1620
Stamp-mill	T. W. Capen	609,408	Aug. 23	2314	546	84	1153
Stamp-mill	G. Wood	609,863	Aug. 30	3121	729, 730	84	1322
Stamp-mill feeder. Automatic	P. W. Gates	609,425	Aug. 23	2346	553	84	1160
Stamp. Steam ore	D. Cole	608,422	Aug. 2	460	108	84	747
Stamp. Steam ore	D. Cole	608,423	Aug. 2	463	103, 104	84	748
Stanchion. Cattle	H. Taylor	608,780	Aug. 9	1005	230	84	872
Stand:							
See Display-stand. Reading-stand.							
Displaying-stand. Reading, writing, and							
Mirror-stand. music stand.							
Stand-boiler. Self-cleaning	F. Walker	610,312	Sept. 6	328	70	84	1504
Staple	A. Leigh	609,032	Aug. 16	1608	383	84	998
Staple-driving machine	E. H. Michener	608,699	Aug. 9	952	219	84	863
Staple making and driving machine	P. A. Coupal	610,320	Sept. 6	345	74	84	1508
Stapling-machine	G. W. Ansley	610,116	Aug. 30	3561	825	84	1409
Starching-machine	S. Moe, E. W. Buell, G. C. Roberts, and A. Conkling.	611,015	Sept. 20	1567	361	84	1778
Station-indicator	E. C. Crossman	610,844	Sept. 13	1200	291	84	1704
Station-indicator	L. J. Hunter and W. F. Peters	610,271	Sept. 6	230	52	84	1487
Station-indicator	G. Rischmuller	607,135	July 12	989	204	84	300
Station-indicator	A. H. Rogers	610,415	Sept. 6	522	114	84	1539
Station-indicator	M. Savage	609,052	Aug. 16	1654	394	84	1008
Station-indicator	H. C. Turner	607,098	July 12	876	180	84	188
Station-indicator	W. A. Turner	607,200	July 12	1054	228, 229	84	220
Station-indicator actuating mechanism	D. W. Porteous	607,550	July 19	1888	391	84	404
Station. Portable automatic way	T. H. Pollock	611,145	Sept. 20	1810	417	84	1825
Stave-jointing machine	C. E. Bratt	611,587	Sept. 27	2668	614, 615	84	2004
Steak-hacker. Roller	J. E. Snelling	608,160	July 26	3005	646	84	637
Steam and hot-water boiler	H. G. Bauman	609,771	Aug. 30	2965	693	84	1200
Steam and water separator	H. Kohl	607,441	July 19	1512	322	84	325
Steam and water separator. Centrifugal	E. Leppik	608,463	Aug. 2	525	117	84	760
Steam. Apparatus for regenerating exhaust	H. J. Barron	607,582	July 19	1944	404	84	414
Steam as a working fluid. Means for regenerating	H. Van Heumen	607,717	July 19	2177	459	84	458
Steamboat. Ice	A. I. Sherman	611,518	Sept. 27	2529	584	84	1979
Steam-boiler	P. F. Dundon	611,407	Sept. 27	2331	537, 538	84	1942
Steam-boiler	R. Joy	610,681	Sept. 13	971	224, 225	84	1645
Steam-boiler	C. Lloyd	609,108	Aug. 16	1773	421, 422	84	1028
Steam-boiler	E. J. Moore	608,065	July 26	2849	608	84	607
Steam-boiler	J. S. D. Shanks and R. Kelly, Jr	611,089	Sept. 20	1692	389	84	1802
Steam-boiler	H. P. Dyer	610,982	Sept. 20	1471	336	84	1760
Steam-drier	C. W. Barnaby	610,017	Aug. 30	3411	791	84	1378
Steam-engine	T. G. Clayton	608,421	Aug. 2	459	102	84	747
Steam-engine	O. A. Ringbom	607,630	July 19	2084	422	84	431
Steam-engine	O. L. Krogstad	611,493	Sept. 27	2489	574, 575	84	1971
Steam-engine. Oscillating-piston	C. H. Kenney	611,412	Sept. 27	2340	539	84	1943
Steam-generator	A. Montupet	609,971	Aug. 30	3330	775, 776	84	1362
Steam-generator	A. G. Mumford	607,067	July 12	804	176	84	175
Steam-generator	J. C. Parker	608,218	Aug. 2	91	23	84	673
Steam-generator	H. Seiffert	608,799	Aug. 9	1126	261, 262	84	898
Steam generator and superheater	W. Schmidt	609,631	Aug. 23	2752	641, 642	84	1296
Steam heater and cooker	L. C. Gillett	609,740	Aug. 23	2916	682	84	1268
Steam heater and cooker	E. H. Staley	607,631	July 19	2085	422	84	431
Steam-retorts. Door for closing	D. Ross	608,527	Aug. 2	634	143	84	781
Steam-superheater	S. and S. R. Chatwood	609,499	Aug. 23	2498	582, 583	84	1187
Steam-trap	H. Helling	610,802	Sept. 13	1296	298	84	1712
Steam-trap	V. A. Prost	608,384	Aug. 2	384	84	84	732
Steam-trap and boiler-feeder	T. G. Gallagher	607,740	July 19	2211	467, 468	84	464
Steel balls. Machine for making	W. W. Brisben	607,015	July 12	693	149	84	155
Steel for castings. Treating	C. H. Wellman	609,750	Aug. 23	2931	------	84	1270
Steel or other metals. Dephosphorizing	J. Gordon	609,341	Aug. 16	2196	------	84	1112
Steel. Producing	J. Burns	610,701	Sept. 13	1008	------	84	1652
Steering apparatus braking mechanism	W. T. Johnston	610,680	Sept. 13	969	294	84	1645
Steering-apparatus locking device	W. E. Hammond	610,485	Sept. 6	642	144	84	1561
Stencil-making machine	J. Sternfeld	607,291	July 12	1237	264	84	255
Step and platform gate. Combination	R. H. Catlett	611,196	Sept. 20	1890	437	84	1840

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stereoscopic effects in exhibiting pictures. Device for obtaining	C. F. Jenkins	606,993	July 5	620	135	84	122
Sterilizers. Pressure-regulator for liquid	A. L. Rockström	606,738	July 5	180	40	84	372
Sterilizing apparatus	E. Hilberg	610,709	Sept. 13	1024	236	84	1650
Sterilizing apparatus	J. Weck	609,856	Aug. 30	3114	727, 728	84	1320
Sterilizing corn for making dough	E. and A. Bougleux	607,981	July 26	2690	------	84	574
Sterilizing milk, &c. Device for	W. Kortüm	607,802	July 19	2347	495, 496	84	491
Stirrup	J. T. House	608,605	Aug. 9	781	179	84	829
Stirrup-fender	R. C. Brookes	610,640	Sept. 13	912	209	84	1633
Stitch separating and indenting machine	A. Eppler, Jr	611,571	Sept. 27	2632	607, 608	84	1999
Stitch separating and indenting machine	J. B. Hadaway	609,100	Aug. 16	1756	418, 419	84	1024
Stock-yard gate	B. F. Strange	611,153	Sept. 20	1826	420	84	1828
Stocking. Elastic	A. B. Kendrick	609,031	Aug. 16	1607	383	84	998
Stoker for furnaces. Automatic	D. R. Ward	607,533	July 19	1848	384, 385	84	397
Stoker. Mechanical	J. J., T. F., and J. W. Meldrum and F. Clayton.	609,038	Aug. 16	1620	385, 386, 387	84	1001
Stoker. Mechanical	F. A. Stevens	606,815	July 5	337	72	84	67
Stoker. Underfeed	W. R. Wood	608,819	Aug. 9	1194	279	84	905
Stone. Artificial	W. Courtenay	608,756	Aug. 9	1048	240	84	881
Stone-cleaning composition	J. W. Finerty	606,759	July 5	282	------	84	47
Stone composition. Artificial	J. and H. Hobson	611,200	Sept. 20	1903	------	84	1842
Stone or wood, &c. Method of and composition for producing imitation	F. R. A. Sundell	607,095	July 12	871	------	84	187
Stone-sawing machine	W. Lautz	610,653	Sept. 13	929	214, 215, 220	84	1636
Stone-sawing machine	W. Murphy	608,703	Aug. 9	958	221	84	864
Stool. Counter or table	C. H. Lind	610,143	Aug. 30	3607	838	84	1419
Stool. Store	A. R. Milner	607,546	July 19	1877	390	84	402
Stop. Automatic safety	G. H. Reynolds	610,587	Sept. 13	825	189, 190	84	1614
Stop-gate	E. L. Ford	606,920	July 5	509	112	84	101
Stopper:							
See Bottle-stopper. Bottle valve-stopper.							
Bottle, &c., stopper. Valve-stopper.							
Stopper for jars, bottles, cans, or other vessels	E. A. Matthias and W. H. Harrison	610,408	Sept. 6	513	112	84	1537
Stopper or closure	L. H. Abbee, S. A. Sewall, and A. J. Bennwitz.	608,502	Aug. 2	590	132	84	772
Stoppered jar, bottle, or other receptacle	W. A. Parsons and W. Rawson	609,974	Aug. 30	3337	777	84	1364
Storage battery	J. D. Rively	608,714	Aug. 9	980	225, 226	84	868
Storage or secondary battery	R. Ashley. (Reissue)	11,676	July 5	662	144	84	131
Store-service apparatus	J. H. Goodfellow	607,032	July 12	718	153	84	160
Store-service apparatus	J. H. Goodfellow	608,594	Aug. 9	759	175	84	826
Store-service apparatus	J. H. Goodfellow	608,595	Aug. 9	761	175	84	826
Store-service apparatus	J. H. Goodfellow	608,596	Aug. 9	763	175	84	826
Store-service apparatus	J. H. Goodfellow	608,597	Aug. 9	765	176	84	827
Store-service apparatus	W. W. Baldwin	609,768	Aug. 30	3959	692	84	1290
Stove	L. B. Bowers	610,795	Sept. 13	1184	273	84	1686
Stove	A. B. Clunies	607,111	July 12	894	193, 194	84	192
Stove	R. Fletcher	610,581	Sept. 13	814	186	84	1612
Stove	A. Ohnemus	609,698	Aug. 23	2856	668	84	1256
Stove	A. C. Terrell and S. McClure	606,694	July 5	107	23	84	24
Stove	W. D. Southard	608,347	Aug. 2	328	72	84	721
Stove-body fastening	J. R. Burgess	609,264	Aug. 16	2003	490	84	1096
Stove. Cook	J. B. Turbeville	608,533	Aug. 2	640	144	84	782
Stove. Cook	A. M. Amos	607,976	July 26	2680	572	84	572
Stove. Cooking	O. W. Snyder	606,846	July 5	399	85	84	80
Stove. Cooking	G. T. McNamee	610,555	Sept. 13	774	176	84	1603
Stove-fender	W. Brown	608,388	Aug. 2	393	87	84	733
Stove. Gasolene	J. H. Brown	609,773	Aug. 30	3268	694, 695	84	1290
Stove. Heating	J. R. Carter	608,574	Aug. 9	720	165	84	819
Stove. Heating	P. J. Coppens	609,682	Aug. 23	2798	652	84	1244
Stove. Heating	R. A. Culter	610,260	Sept. 6	214	48	84	1484
Stove. Heating	J. F. Pjerrou	611,143	Sept. 20	1806	416	84	1824
Stove. Knockdown	G. C. Hicks	607,328	July 26	2603	------	84	557
Stove-lining	J. Erben	610,941	Sept. 20	1428	328	84	1752
Stove or range	J. A. Hanger	606,967	July 5	572	125	84	114
Stovepipe attachment	I. Brooke	610,026	Aug. 30	3430	794	84	1382
Stove. Wood	J. Wynn	611,425	Sept. 27	2309	544	84	1047
Stoves. Means for automatic control of gas-supply in gas cooking	J. Jenkins	607,044	July 12	735	158	84	164
Stoves. Supply-tank for gasolene	C. F. Phillips	610,368	Sept. 6	443	96	84	1523
Strainer. Fruit	J. N. Wright	609,529	Aug. 23	2538	594	84	1195
Strainer. Milk	L. T. Cook	611,561	Sept. 27	2615	602	84	1995
Strainer. Washboiler							
Strap:							
See Bicycle bundle-strap. Car hand-strap.							
Trunk-strap.							
Strap or rope clamp and tightener	A. G. Thayer	610,105	Aug. 30	3547	822	84	1409
Street-sweeper	M. B. Atkinson	611,586	Sept. 27	2666	614	84	2004
Street-sweeper	S. Moore	609,113	Aug. 16	1781	423	84	1029
String-case	G. A. Rapp	607,130	July 12	980	202	84	198
String-instrument pin-bridge	G. A. Fullerton	609,892	Aug. 30	3161	738	84	1330
String-instrument striking apparatus	A. Heine	607,494	July 19	1503	320	84	323
Stringed-instrument head	G. Heinzman	608,956	Aug. 9	1264	294	84	919
Stringed-instrument head-piece	J. Brandt	609,531	Aug. 23	2540	595	84	1195
Stripping-comb	T. R. Marsden and H. Walsh	607,986	July 26	2618	556	84	560
Stud and eyelet for same	A. Leblanc	609,512	Aug. 23	2509	587	84	1189

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Study-table	J. K. Whippo	609,751	Aug. 23	2932	685 686	84	1270
Stuffing-box	E. Armstrong	606,754	July 5	223	48	84	46
Stump-splitting device	J. C. Sharp	608,346	Aug. 2	325	72	84	721
Sucker-rod joint	K. Chickering	607,614	July 19	2003	415	84	425
Sucker-rod lifter	C. F. Richey	611,417	Sept. 27	2348	541	84	1945
Sugar-crystallizer	E. P. Eastwick, Jr	608,446	Aug. 2	494	112	84	754
Sugar-crystallizing machine	H. P. Dyer	607,228	July 12	1121	240	84	233
Sugars from molasses. Separating	G. Kassner	611,381	Sept. 27	2283	.....	84	1932
Sunshine-recorder	L. Hunt	607,748	July 19	2222	470	84	466
Support and luggage-carrier. Combined	C. A. Kennedy	611,256	Sept. 27	2021	466	84	1884
Supporter: *See* Drawers-supporter.							
Supporting-bracket	C. H. Hahn and C. E. Salewsky	609,933	Aug. 30	3251	759	84	1347
Surge-reliever	F. P. Nesmith	608,344	Aug. 2	322	71	84	729
Surgeon's splint	J. C. McBeth	610,866	Sept. 13	1302	299	84	1713
Surgical apparatus	C. S. Smith	607,666	July 19	2100	488	84	442
Surgical case	F. A. Reichardt	611,023	Sept. 20	1583	363	84	1781
Surgical injector-clamp	B. H. Lohman	611,038	Sept. 20	1606	368	84	1785
Surgical or other dressing and pad	L. Silverman	608,921	Aug. 9	1373	324	84	941
Surgical purposes. Electric light for	W. E. Dow	608,109	July 26	2019	625	84	621
Suspender spring attachment	C. E. Lightner	611,262	Sept. 27	2088	470	84	1867
Suspenders	J. B. Boos	609,329	Aug. 16	2175	513	84	1108
Suspenders	H. G. Macwilliam	609,286	Aug. 16	2104	498	84	1093
Suspenders	E. N. Scofield	606,899	July 5	476	102	84	94
Swaging-machine	G. H. Hathorn	609,201	Aug. 16	1924	457 458	84	1056
Swaging-machine	G. H. Hathorn	609,202	Aug. 16	1927	458	84	1056
Swimming appliance	S. Stone	611,005	Sept. 20	1549	357	84	1775
Switch: *See* Automatic-locking switch. Electric-light switch. Electric-line switch. Circuit-breaking switch. Electric snap-switch. Lamp-switch. Electric-circuit regulating-switch. Railway-switch. Tramway-switch.							
Switch and signal mechanism	J. Chalmers, Jr	606,801	July 5	310	65	84	61
Switch and signal mechanism. Combined	C. E. Harris	610,809	Sept. 13	1206	277 278	84	1692
Switch and switch-operating mechanism	J. P. Orr and G. H. Fugh	609,292	Aug. 16	2111	500 501	84	1095
Switchboard and alarm mechanism	J. P. Conway	607,343	July 12	1327	283 284	84	274
Switch-keeper	G. W. Bush	608,832	Aug. 9	1219	284	84	910
Switch-lever lock	R. S. Bush	608,833	Aug. 9	1220	285	84	910
Switch operating and locking mechanism	A. Thuresson	607,299	July 12	1246	266	84	257
Switch-operating device	L. J. Bennett	611,193	Sept. 20	1888	436	84	1840
Switch-operating device. Electric-	J. H. Cary	607,890	July 26	2407	511	84	521
Switch-operating machine. Automatic	J. H. Spangler	607,828	July 26	2539	538	84	545
Switch-stand	J. G. Sorenson	609,473	Aug. 23	2437	571	84	1176
Switch-stands, &c. Base for	E. C. Mathews	610,684	Sept. 13	976	226	84	1646
Swivel connection	C. Anderson	609,383	Aug. 16	2258	534	84	1124
Swivel connection. Right-angle	J. H. Goss	608,852	Aug. 9	1259	293	84	918
Syringe	W. S. Kail	609,353	Aug. 16	2213	523	84	1115
Syringe. Hypodermic	B. T. Winchester	609,982	Aug. 30	3355	779	84	1367
Syringe-nozzle	F. King	609,280	Aug. 16	2091	496	84	1091
Syringe-tube	C. E. Longden	611,454	Sept. 27	2416	554	84	1957
Syringe. Vaginal	Z. L. Hayden	609,432	Aug. 23	2353	555	84	1161
Table: *See* Adjustable table. Ironing-table. Chart-table. Kitchen-table. Extension-table. Kitchen-cabinet table. Folding table. Skittle-table. Folding or collapsible table. Study-table. Whist-table.							
Table	K. Abel	609,765	Aug. 30	2955	691	84	1289
Table	W. M. Grace	611,117	Sept. 20	1760	403	84	1815
Table and bed. Combination	C. E. Lindh	609,763	Aug. 23	2048	690	84	1274
Table and drapery-holder	R. S. Ganoung	610,441	Sept. 6	502	124	84	1546
Table leg. Billiard, pool, or other	A. F. Lamoureux	611,280	Sept. 27	2081	469	84	1886
Tablet and note-book. Writing-	E. W. Hill	606,718	July 5	152	33	84	31
Tack-driver. Magnetic	J. Nazel	608,555	Aug. 2	687	156	84	791
Tack-driving machine. Hand	E. F. Grandy	609,426	Aug. 23	2348	553	84	1160
Tags to fabrics. Machine for attaching	W. G. Metcalf	607,119	July 12	910	197 198	84	195
Tank: *See* Animal-dipping tank. Pressure-apparatus tank. Measuring-tank. Sheet-metal tank.							
Tank-heater	L. Phelps	610,561	Sept. 13	784	178	84	1605
Tank-heater	G. Schneider and W. H. Hill	609,949	Aug. 30	3281	765	84	1353
Tanning. Preparing hides for	G. Popp and H. Becker	607,549	July 19	1883	.....	84	404
Tanning-vat elevator	J. H. Burns	611,382	Sept. 27	2211	511	84	1919
Tap. Barrel-	J. C. F. Reimold	611,276	Sept. 27	2076	477	84	1895
Tap. Barrel-	J. Watkins	608,087	July 26	2387	618	84	615
Tapping-machine	H. Mueller	611,397	Sept. 27	2295	530	84	1934
Tapping-machine	H. A. Tuttle	610,208	Sept. 6	101	21	84	1460
Tape or fabric. Stiffening	E. K. Warren	611,298	Sept. 27	2115	487	84	1902
Target	G. D. Magini, S. Folli, and E. Antico	606,807	July 5	327	68, 69	84	66
Tea-cutting mill	C. H. Bartlett	610,019	Aug. 30	3419	792	84	1380
Tea-mixing apparatus	C. H. Bartlett	610,018	Aug. 30	3418	791	84	1379
Tea or coffee, &c. Attachment for tops of vessels used in making	A. J. Blackwood	608,641	Aug. 9	855	197	84	843
Telautograph	L. O. McPherson	610,274	Sept. 6	237	53, 54	84	1498
Telegram-transmitter	E. Porter	610,278	Sept. 6	264	56	84	1498
Telegraph	L. W. Hildburgh	607,239	July 12	1142	244	84	236

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Telegraph-repeater	H. P. Donnelly	608,846	Aug. 9	1251	291	84	917
Telegraph-tape	F. Atherton	610,339	Sept. 6	382	81	84	1518
Telegraphic-paper-punching machine	G. M. Gibson	606,658	July 5	38	9	84	9
Telegraphic transmission on cable-lines. Rapid	C. L. Davies	608,389	Aug. 2	395	87	84	734
Telegraphic transmitting and receiving apparatus	B. Hoffmann	608,333	Aug. 2	302	67	84	716
Telegraphy	G. V. Trott	608,982	Aug. 9	1408	333	84	946
Telegraphy. Electric	O. J. Lodge	609,154	Aug. 16	1844	438 439	84	1041
Telemeter or range-finder	W. L. Wyllie	609,256	Aug. 16	2052	487	84	1088
Telephone	W. A. Drysdale	610,347	Sept. 6	396	84, 85	84	1516
Telephone	S. S. Fisher	610,393	Sept. 6	490	106	84	1532
Telephone-exchange	F. A. Lundquist	606,764	July 5	248	52	84	50
Telephone. Long-distance	P. de Kilduchevcky	607,801	July 19	2345	494 495	84	490
Telephone repeater or relay	J. S. Stone	609,374	Aug. 16	2244	531	84	1121
Telephone system	W. W. Dean	610,704	Sept. 13	1008	234 235	84	1653
Telephone system	B. R. Dodge	606,808	July 5	322	67	84	64
Telephone system	C. E. Egan, B. L. Lawton, and E. C. Wilcox.	609,229	Aug. 16	1992	473	84	1072
Telephone system	G. Ritter	611,581	Sept. 27	2632	611 612	84	2002
Telephone system	A. F. Swan	609,173	Aug. 16	1879	447	84	1047
Telephone system	L. Piaut	608,076	July 26	2867	613	84	611
Telephone system for houses. Electric-	W. J. Barr	608,504	Aug. 2	598	132	84	773
Telephone-transmitter arm and its attachment	O. T. Bláthy and K. de Kandó	606,912	July 5	494	108	84	98
Telephonic circuits. Means for preventing disturbances in	W. W. Dean	609,331	Aug. 16	2177	514	84	1108
Telephonic measured-service system	T. F. Ahern	606,852	July 5	408	86	84	81
Telephonic transmitter	A. M. Baker	610,317	Sept. 6	387	72, 73	84	1506
Tellurian	A. Ballantyne	611,552	Sept. 27	2592	558 559	84	1991
Tenoning-machine	A. D. Lloyd	609,553	Aug. 23	2574	608	84	1202
Tent. Folding	E. N. Laird	607,988	July 26	2610	554	84	558
Tent. Portable folding	F. I. Dana	609,575	Aug. 23	2615	612	84	1210
Tenter-machine clip	F. I. Dana	609,574	Aug. 23	2613	611 612	84	1209
Tentering-machine	C. J. Gadd	606,780	July 5	280	58	84	55
Tentering-machine	L. J. Carter	611,054	Sept. 20	1635	373 374	84	1791
Theatrical appliance	J. L. Nix	610,079	Aug. 30	3514	814	84	1899
Thermometer. Incubator-	J. F. McElroy	610,998	Sept. 20	1537	353	84	1772
Thermostat	C. C. Bradley	609,928	Aug. 30	3236	757	84	1344
Thill-coupling	E. Brush	609,181	Aug. 16	1890	450	84	1049
Thill-coupling	D. W. Clark	609,958	Aug. 30	3304	770	84	1358
Thill-coupling	A. L. Crandall	609,663	Aug. 23	2799	652	84	1245
Thill-coupling	J. W. Howell	608,690	Aug. 9	923	212	84	857
Thill-coupling	E. G. Hoover	610,185	Sept. 6	64	13	84	1452
Thill-coupling	W. S. James	611,820	Sept. 27	2153	498	84	1909
Thill-coupling	M. Knupp	609,510	Aug. 23	2507	586	84	1189
Thill-coupling	G. P. La Poer and C. E. Walker	606,973	July 5	582	136	84	115
Thill-coupling	L. E. Macomber	611,135	Sept. 20	1794	413	84	1822
Thill-coupling	W. T. McGuire	611,267	Sept. 27	2054	473	84	1890
Thill-coupling	H. A. Moyer and C. J. Graf	610,768	Sept. 13	1128	259 260	84	1676
Thill-coupling	W. Pearce	611,140	Sept. 20	1803	415	84	1822
Thill-coupling	W. E. Sherwood	607,772	July 19	2266	478	84	475
Thill-coupling	H. Sievers	607,197	July 12	1051	227	84	230
Thill-coupling	E. Storm	608,276	Aug. 2	183	44	84	691
Thill-coupling	E. Storm	608,488	Aug. 2	567	126	84	768
Thill-coupling	C. B. Stough	609,477	Aug. 23	2459	574	84	1181
Thill-coupling	W. G. Barnhardt	610,467	Sept. 6	613	137	84	1556
Thill-coupling and brake. Combined	J. Morgan	608,524	Aug. 2	631	142	84	780
Thill-coupling. Antirattling	G. W. Springer	610,885	Sept. 13	1348	288	84	1701
Thill-coupling. Antirattling	C. K. Downs	610,264	Sept. 6	221	50	84	1495
Thimble thread-cutting attachment	P. M. Libby	609,282	Aug. 16	2097	497	84	1092
Thread-guide	I. Dimock	607,587	July 19	1954	406	84	416
Thread-package	L. D. Parmley	606,681	July 5	85	18	84	19
Threshing-machine	J. A. Volk	607,671	July 19	2106	439	84	444
Threshing-machine	F. Dentler	611,197	Sept. 20	1891	437	84	1841
Threshing-machine conveyer and elevator	C. Closz	607,598	July 19	1973	409	84	419
Threshing-machine grain-separating screen	A. W. Severance	607,188	July 12	945	205	84	201
Threshing-machine self-feeder	J. F. R. Knobloch	608,208	Aug. 2	66	17, 18	84	668
Tidal motor	E. Markmann	608,783	Aug. 9	1090	251 252	84	887
Tidal power	S. P. Tomkins	609,637	Aug. 23	2759	643	84	1237
Tide-motor							
Tie: *See* Bale-tie. Plasterer's steel angle-tie. Cattle-tie. Railway-tie. Cross-tie.							
Tie-plate	W. Goldie	610,179	Sept. 6	50	11	84	1451
Tie-plate	A. Morrison	607,696	July 19	2147	452	84	451
Tile	W. Thomson	610,776	Sept. 13	1146	263	84	1680
Tile. Building-	E. E. Van Wie	607,812	July 19	2366	502	84	495
Tile-forming mold	T. H. Mooney	610,696	Sept. 13	978	227	84	1646
Tile molding	E. Koehler	609,940	Aug. 30	3264	762	84	1349
Tile partition, wall, or ceiling	J. Schratwieser	611,514	Sept. 27	2321	582	84	1978
Tile. Roofing-	H. B. Skeele	607,489	July 19	1780	370	84	385
Timbal. Chromatic	G. F. Lyon	608,884	Aug. 9	1305	304	84	927
Timber-pocket	G. S. Marshall	607,867	July 26	2494	529	84	536
Time-card receptacle	H. Zuber	609,604	Aug. 23	2672	624	84	1219
Time-detector. Watchman's	J. McCarthy	610,145	Aug. 30	3609	838	84	1419
Timepiece winding mechanism	C. L. Teske	607,144	July 12	955	207 208	84	208
Timepiece winding mechanism	C. L. Teske	607,145	July 12	959	208	84	208
Time-recorder	L. E. Paddack	610,496	Sept. 6	671	150	84	1567

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Time-recorder	E. E. Randolph and H. L. McCoy	609,906	Aug. 30	3201	751	84	1338
Time-recorder. Employee's	F. H. Sells	608,800	Aug. 9	1129	262 / 263	84	891
Time-recorder. Watchman's	I. A. Hermann	610,756	Sept. 13	1106	252	84	1672
Time-recorder. Workman's	J. W. Deübner	610,169	Sept. 6	15	5,6	84	1445
Time-recorder. Workman's	J. W. Deübner	610,170	Sept. 6	26	6,8	84	1447
Tin can. Round	H. C. Campen	606,856	July 5	418	89	84	893
Tin plates. Machine for separating packs of	F. Westwood	609,645	Aug. 23	2772	646	84	1229
Tire	H. L. Merritt	609,157	Aug. 16	1852	440	84	1042
Tire	M. and T. W. Prior	611,272	Sept. 27	2908	476	84	1803
Tire	C. C. and J. J. Roberton	611,280	Sept. 27	2991	479	84	1806
Tire	J. Schiönning and M. B. Hansen	610,976	Sept. 20	1494	340	84	1764
Tire air-valve. Pneumatic	F. Burger	607,824	July 26	2396	508	84	519
Tire and rim. Elastic	A. C. Moore and G. Rodwell	607,695	July 19	2145	451	84	451
Tire and rim for wheels. Elastic	R. Faas and H. S. Gray	607,006	July 5	661	143	84	131
Tire armor. Pneumatic	E. J. Pine	608,075	July 26	2896	613	84	611
Tire armor. Pneumatic	R. W. Churchill	609,080	Aug. 16	1998	404	84	1016
Tire. Bicycle	A. Vreeland	609,254	Aug. 16	2049	486	84	1083
Tire. Bicycle	G. W. Tubbs	609,922	Aug. 30	3228	756	84	1342
Tire. Bicycle cushion	J. R. Whitaker	611,540	Sept. 27	3569	502	84	1985
Tire-bolting machine	C. Eickmann	607,356	July 12	1347	288	84	278
Tire-case buckle	J. Chase	606,705	July 5	125	28	84	27
Tire cover. Pneumatic	J. A. Snyder	608,803	Aug. 9	1140	264	84	897
Tire. Elastic wheel	J. A. Berger	611,230	Sept. 27	1982	458	84	1877
Tire fastener. Pneumatic	W. H. Sewell	609,839	Aug. 30	3092	721	84	1316
Tire for cycles. Pneumatic	J. S. Crowell	609,195	Aug. 16	1914	456	84	1054
Tire for vehicle-wheels. Rubber	H. Bancroft	611,553	Sept. 27	2505	599	84	1992
Tire for vehicles. Pneumatic	J. Sanford	609,055	Aug. 16	1660	395	84	1009
Tire-furnace	J. D. Aitken	611,546	Sept. 27	2582	595	84	1989
Tire-holder	C. A. Shoptaugh	611,339	Sept. 27	2186	506	84	1915
Tire-inflating apparatus. Pneumatic	E. J. Chambers	610,922	Sept. 13	882	202	84	1626
Tire. Metallic wheel	G. H. F. Schrader	607,527	July 19	1840	383	84	396
Tire or other valve	G. H. F. Schrader	607,526	July 19	1836	383	84	395
Tire or other valve. Pneumatic	O. F. O'Neill	609,901	Aug. 30	3195	749	84	1336
Tire plug. Pneumatic	H. J. Doughty	608,187	Aug. 2	36	9	84	662
Tire. Pneumatic	H. J. Doughty	608,188	Aug. 2	38	9	84	662
Tire. Pneumatic	J. W. Dunn	609,962	Aug. 30	3317	772	84	1360
Tire. Pneumatic	N. B. Harmon	610,233	Sept. 6	175	39	84	1475
Tire. Pneumatic	W. H. James	607,043	July 12	734	158	84	163
Tire. Pneumatic	T. B. Jeffery	607,245	July 12	1154	246	84	228
Tire. Pneumatic	E. Kempshall	611,504	Sept. 27	2984	620	84	2008
Tire. Pneumatic	J. F. Palmer. (Reissue)	11,677	July 5	604	141	84	132
Tire. Pneumatic	L. J. Phelps	606,700	July 5	296	61	84	59
Tire. Pneumatic	J. Robinson	611,510	Sept. 27	2516	581	84	1977
Tire. Pneumatic	C. S. Scott	608,273	Aug. 2	178	43	84	690
Tire. Pneumatic	T. Sloper	610,310	Sept. 6	323	69,70	84	1303
Tire. Pneumatic	J. T. Trench	611,584	Sept. 27	2964	613	84	2004
Tire. Pneumatic	G. Turner and J. M. H. Venour	611,296	Sept. 27	2112	487	84	1902
Tire. Pneumatic	E. W. Young	607,402	July 12	1435	305	84	294
Tire. Pneumatic	E. W. Young	607,403	July 12	1437	306	84	294
Tire. Pneumatic	G. A. Woodman	607,559	July 19	1902	393	84	466
Tire. Pneumatic bicycle	P. Knorpp, Jr	610,606	Sept. 13	858	197	84	1622
Tire. Pneumatic vehicle	W. Golding	606,989	July 5	612	133	84	121
Tire. Pneumatic wheel	A. J. Whitbeck	610,594	Sept. 13	844	194	84	1618
Tire repair-kit. Bicycle	D. Crowther	609,794	Aug. 30	3012	705	84	1300
Tire. Rubber	P. C. Sachse	608,718	Aug. 9	984	227	84	868
Tire. Rubber	J. P. Daly	608,830	Aug. 9	1235	287	84	914
Tire shield. Bicycle	S. E. Burke	601,958	Sept. 20	1464	334	84	1758
Tire-tightener	T. F. Leak and R. West	606,925	July 5	518	114	84	108
Tire-tightener	W. Shope	609,840	Aug. 30	3093	721	84	1317
Tire-tightener	L. M. Marsh	608,989	Aug. 9	1509	357	84	965
Tire-tightening device	G. H. F. Schrader	607,525	July 19	1834	383	84	395
Tire-valve and pump-coupling	W. H. Crossley	610,431	Sept. 6	546	120	84	1543
Tire valve. Pneumatic	C. T. Adams	609,318	Aug. 16	2102	511	84	1106
Tire. Vehicle	C. T. Adams	609,319	Aug. 16	2103	511	84	1106
Tire. Vehicle	C. T. Adams	609,320	Aug. 16	2105	511	84	1106
Tire. Vehicle	C. T. Adams	611,375	Sept. 27	2270	524	84	1930
Tire. Vehicle	R. Cowen	609,948	Aug. 30	3279	764	84	1353
Tire. Vehicle	J. G. Rodgers	610,633	Sept. 13	900	206	84	1630
Tire. Vehicle-wheel	J. Morley	606,848	July 5	402	85	84	80
Tire. Vehicle-wheel	N. Therien	611,052	Sept. 20	1633	373	84	1790
Tire. Wheel	F. Brucker	611,415	Sept. 27	2546	540	84	1944
Tire. Wheel	W. W. Ogden	607,991	July 26	2709	578	84	977
Tires. Apparatus for making pneumatic	T. and A. Guthrie	609,259	Aug. 16	2056	488	84	1084
Tires. Coin-controlled apparatus for inflating	I. H. Atwood	609,636	Aug. 23	2759	------	84	1237
Tires. Composition for closing punctures in pneumatic	E. Thurlow and P. N. Hignett	608,956	Aug. 9	1447	------	84	953
Tires. Composition of matter for closing punctures in	H. Du Cane	606,751	July 5	219	------	84	45
Tires. Compound for closing punctures in pneumatic	N. Weintraub-Schnorr	610,966	Sept. 20	1477	337	84	1761
Tires. Means for inflating pneumatic	J. Heimann	610,991	Sept. 20	1529	351	84	1771
Tires. Pump for inflating pneumatic	C. B. Lentz	608,166	Aug. 2	1	1	84	655
Tires. Puncture-band for pneumatic	J. V. Allen	607,379	July 12	1398	298	84	267
Tires. Repair-kit for single-tube bicycle	W. M. Jones	611,414	Sept. 27	2344	540	84	1944
Tires. Tool for repairing pneumatic	F. R. Meeker	610,668	Sept. 13	952	220	84	1641
Toaster	G. R. Wilson	606,874	July 5	443	95	84	87
Tobacco-cutter	C. C. Morris	611,107	Sept. 20	1796	------	84	1811
Tobacco into wrappers. Forming	P. Dillon	609,260	Aug. 16	2058	488	84	1085
Tobacco-pipe	H. R. Barnard	610,520	Sept. 13	711	161	84	1592
Tobacco-pipe	G. Berghaus	611,575	Sept. 27	2643	610	84	2001
Tobacco-pipe	T. M. Gill	610,757	Sept. 13	1107	253	84	1672
Tobacco-pipe	P. Johnson	609,764	Aug. 23	2951	690	84	1274
Tobacco-pipe	W. V. Smith and H. B. Barton	609,641	Aug. 23	2766	644	84	1238
Tobacco-pipe	S. D. Webb and I. L. Johnson	610,889	Sept. 13	1254	289	84	1702
Tobacco-pipe	J. C. Wright	606,716	July 5	147	31	84	31
Tobacco-pipe cleaner	W. B. Hausman						

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tobacco-pipe rack	H. Skilton	610,249	Sept. 6	194	44	84	1480
Tobacco-press	J. and E. Tisch	608,582	Aug. 2	689	144	84	781
Tobacco smoking-pipe	G. Ferrata	607,601	July 19	1979	411	84	420
Toilet appliance	L. M. Biggs	609,870	Aug. 30	3139	733 / 734	84	1326
Tombstone-anchor	W. C. Gilbert	610,529	Sept. 13	725	164	84	1595
Tool. Combination	J. H. Allen	607,907	July 26	2568	544	84	550
Tool. Combination	C. C. A. Mitchell	609,895	Aug. 30	3186	747	84	1335
Tool. Combination	J. R. Morris	607,448	July 19	1525	324	84	327
Tool. Combination	A. F. Olsen	610,825	Sept. 13	1235	284	84	1698
Tool. Combination	J. D. Barry	606,950	July 5	552	121	84	110
Tool-handle	F. J. Hall	607,115	July 12	901	195	84	198
Tool-handle	F. Pedersen	608,902	Aug. 9	1330	310	84	932
Tool-handle	W. C. Ladd	609,967	Aug. 30	3322	773	84	1361
Tool-holder	A. Biggs, Jr	610,733	Sept. 18	1060	243	84	1663
Tools on handles. Means for securing	G. Buchanan	607,211	July 12	1073	232	84	223
Tooth. Artificial	C. E. Foster	607,231	July 12	1125	241	84	233
Tooth. Artificial	E. B. Benham and H. E. Barlow	609,075	Aug. 16	1692	403	84	1015
Toothpick-making machine	T. O. Holland	611,410	Sept. 27	2336	538	84	1943
Tooth-powder receptacle	W. S. Thompson, Jr	610,775	Sept. 13	1144	263	84	1690
Tooth-powder receptacle	E. W. Risbrough	607,552	July 19	1891	391	84	404
Top. Spinning	O. V. Wood and F. Dutcher	607,581	July 19	1943	403	84	413
Torch. Signal	A. Riecke	606,685	July 5	91	19	84	20
Torpedo-exploder	J. Whitehead	608,814	Aug. 9	1182	276 / 277	84	903
Torpedo-launching apparatus	J. H. Bevington and H. M. Fisher	608,020	July 26	2779	591	84	594
Torpedo. Railway	E. Kaselowsky	607,440	July 19	1510	321 / 322	84	325
Torpedoes. Automatic steering device for	F. W. Babbidge	606,955	July 5	551	121	84	109
Toy	A. Busse	607,159	July 12	985	213	84	207
Toy	A. S. Card	608,885	Aug. 9	1223	285	84	911
Toy	D. W. Davis	610,600	Sept. 13	852	195	84	1620
Toy	H. E. Lejeune	609,941	Aug. 30	3264	762	84	1349
Toy	V. M. Wilson, Jr	608,500	Aug. 2	586	131	84	771
Toy. Aerial	J. R. Jester	608,200	Aug. 2	61	14	84	667
Toy cannon	F. H. Donaldson, E. H. Owen, and C. N. Williams	609,332	Aug. 16	2181	514	84	1109
Toy. Gyroscopic	F. P. Shek	606,900	July 5	477	103	84	95
Toy. Jumping	J. F. Quinn	608,794	Aug. 9	1109	256	84	891
Toy. Mechanical	H. Thorens	610,291	Sept. 6	202	63	84	1496
Toy. Mechanical musical	F. A. Worden	608,906	Aug. 9	1524	362	84	969
Toy. Musical	C. J. Manning	608,001	July 26	2736	582	84	580
Toy savings-bank and puzzle. Combined chair	S. Manchester	611,089	Sept. 20	1907	368	84	1785
Toy watch and coin-retainer	H. J. Leconte and H. M. Gourrier	609,820	Aug. 30	3068	715	84	1311
Toys, &c. Manufacture of stamped wheels for	E. L. Painter	607,090	July 5	649	140	84	129
Trace-fastener	C. O. Swickard	607,967	July 26	2664	569	84	568
Trace-fastener	G. Baumann	606,639	July 5	4	1	84	3
Trace-holder	L. L. Miller	611,181	Sept. 20	1868	431	84	1836
Trace-trimmer	A. A. Lindley	608,881	Aug. 9	1302	303	84	926
Track-sanding apparatus	H. A. Pike	611,392	Sept. 27	2303	531 / 532	84	1936
Track-sanding apparatus	S. B. Gray	608,517	Aug. 2	614	138 / 139 / 482 / 483	84	777
Traction-engine	B. C. Vanduzen	609,253	Aug. 16	2037	484 / 485 / 486	84	1081
Traction-engine	R. J. Zerban, Jr	611,166	Sept. 20	1848	425 / 426	84	1832
Traction-motor	A. J. P. de Souza	609,196	Aug. 16	1916	456	84	1054
Traction-wheel	F. Williams and W. H. Quicksall	609,717	Aug. 23	2885	674	84	1202
Train-control system	E. W. Rice, Jr	608,301	Aug. 2	226	53	84	700
Train-control system	E. W. Rice, Jr	608,302	Aug. 2	227	53	84	700
Train-pipes. Automatic flexible coupling for	S. B. Kitchin	608,406	Aug. 2	430	95	84	742
Tramway. Electric	A. Diatto	607,919	July 26	2584	548	84	553
Tramway-switch	A. W. Wells	608,090	July 26	2890	610	84	616
Transom-center	C. O. Case	606,643	July 5	13	3	84	5
Transom fastener and pivot	C. M. Bright and W. O. Ballard	608,544	Aug. 2	659	150	84	785
Transom-lifter	W. R. Shelmire	610,499	Sept. 6	678	152	84	1569
Transplanter	W. D. Grim	610,625	Sept. 13	888	203	84	1628
Transplanter implement	O. I. Millar	607,519	July 19	1824	380	84	392
Transporting apparatus	W. R. Diehl	611,567	Sept. 27	2625	605 / 606	84	1997
Trap. *See* Animal-trap. Bath-trap. Pigeon-trap. Sanitary trap. Sewer-trap. Steam-trap. Vermin-trap. Water-trap.							
Trap	F. Carpenter	610,755	Sept. 13	1103	252	84	1671
Trap	W. A. Pickard	610,199	Sept. 6	86	17	84	1457
Trap	J. A. Rude	607,768	July 19	2259	477	84	474
Trap	G. A. Ensign	610,086	Aug. 30	3448	798	84	1395
Tread-sanding machine	M. Ryder	610,691	Sept. 13	987	229 / 230	84	1648
Tree extracting and transporting apparatus	F. F. Dow	610,230	Sept. 6	166	37, 38	84	1474
Tree-felling machine	G. S. Myers	606,823	July 5	348	74	84	70
Tree-prop bracket	C. H. Pope	608,908	Aug. 9	1518	358	84	967
Treeing-support	C. D. Monnot	609,237	Aug. 16	2009	477	84	1075
Tricycle. Convertible	F. S. Allen	606,962	July 5	547	120	84	109
Tricycle for propulsion by hand-power							
Trimmer. *See* Paper-trimmer. Trace-trimmer. Vine-trimmer.							
Trimmings. Machine for making beaded	F. P. Ledreux	609,152	Aug. 16	1839	437 / 438	84	1041
Trip-coupling	W. Louden	610,865	Sept. 13	1300	299	84	1712

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Triphenylmethane derivatives. Obtaining	H. R. Vidal	609,599	Aug. 23	2650	.....	84	1218
Tripod	W. F. Folmer	608,850	Aug. 9	1257	298	84	918
Trolley	F. E. Case	608,281	Aug. 2	190	46	84	692
Trolley	D. Lippy	609,069	Aug. 30	3327	774	84	1302
Trolley	W. H. Russell	607,194	July 12	1048	226	84	219
Trolley	O. W. Swanson	610,927	Sept. 20	1402	321	84	1747
Trolley	H. G. Taylor	607,612	July 19	1998	414	84	424
Trolley-base	H. Van Hoevenbergh	607,397	July 12	1408	301	84	289
Trolley. Electric-railway	C. Grover	606,711	July 5	138	29	84	29
Trolley-head	A. M. Meredith	611,367	Sept. 27	2246	519	84	1926
Trolley-pole	C. E. Davis	607,918	July 26	2583	547	84	553
Trolley-system crossover	L. M. Maxham	607,065	July 12	801	175	84	174
Trolley. Third-rail							
Trough: *See* Feeding-trough. Watering-trough.	S. Kepner	610,060	Aug. 30	3481	807	84	1392
Trousers bagging at the knee. Device for preventing	W. H. Davis	610,646	Sept. 13	920	210	84	1634
Trousers-guard	G. G. Williams	608,092	July 26	2493	619	84	617
Trousers-hanger	M. F. Mahoney	608,295	Aug. 2	219	51	84	698
Trousers-stretcher	W. H. Beebe	607,329	July 12	1303	278 279	84	270
Truck	W. A. Johnson	607,048	July 12	771	169	84	168
Truck	E. G. Nutting	608,898	Aug. 9	1324	309	84	931
Truck	A. G. Wolcott	609,176	Aug. 16	1884	448	84	1048
Truck	B. F. Allen	610,785	Sept. 13	1163	268 269	84	1684
Truck. Car-	G. J. Capewell	609,781	Aug. 30	2984	698 699	84	1294
Truck. Car-	W. Hansen	608,983	Aug. 9	1499	355	84	964
Truck. Car-	E. Peckham	606,988	July 5	528	116	84	105
Truck. Car-	G. J. Capewell	610,894	Sept. 20	1358	311	84	1738
Truck. Electric-railway car	L. R. Cather	609,985	Aug. 30	3363	781	84	1369
Truck. Hand-	E. Peckham	606,979	July 5	505	130	84	118
Truck. Motor-	P. Kramer	609,816	Aug. 30	3049	713	84	1306
Truck or car. Dumping	G. M. Brill and S. M. Curwen	610,118	Aug. 30	3564	826 827	84	1410
Truck. Pivotal	G. M. Brill and S. M. Curwen	610,119	Aug. 30	3573	827	84	1413
Truck. Pivotal	G. J. Capewell	609,779	Aug. 30	2979	697	84	1293
Truck. Railway-car	G. J. Capewell	609,780	Aug. 30	2982	698	84	1293
Truck. Railway-car	G. J. Capewell	609,782	Aug. 30	2987	699	84	1295
Truck. Railway-car	G. J. Capewell	609,783	Aug. 30	2989	700	84	1295
Truck. Railway-car	G. J. Capewell	609,784	Aug. 30	2991	700	84	1295
Truck. Railway-car	G. J. Capewell	609,785	Aug. 30	2993	700	84	1296
Truck. Railway-car	G. J. Capewell	609,788	Aug. 30	2998	702	84	1296
Truck. Railway-car	B. Bagshawe	609,178	Aug. 16	1887	449	84	1048
Trucks. Wearing-liner for car-	G. Wagner	607,718	July 19	2178	459	84	458
Truing device	C. H. Mersereau	606,992	July 5	408	100	84	92
Trunk	B. T. Smith and A. E. Baker	610,500	Sept. 6	679	152	84	1569
Trunk	M. A. White	611,189	Sept. 20	1883	435	84	1839
Trunk	W. H. Rich	607,132	July 12	935	208	84	199
Trunk corner-shield	E. Edwards	606,858	July 5	421	90	84	83
Trunk-lifting device	P. R. Camp	607,539	July 19	1861	387	84	400
Trunk, sample-case, &c	A. T. Jones, T. B. Smith, and C. Nilsson.	611,255	Sept. 27	2020	466	84	1884
Trunk-strap	C. E. Johnson	609,349	Aug. 16	2209	522	84	1114
Trunk-tray	P. H. Smith	609,563	Aug. 23	2596	606	84	1206
Trunk-tray-operating lever	D. D. Dennis	608,444	Aug. 2	492	111	84	753
Truss	N. Person	610,202	Sept. 6	92	19	84	1458
Truss	W. A. Boring	607,335	July 12	1315	281	84	271
Truss. Building-	R. Collen	606,957	July 5	553	122	84	110
Trussing-machine	C. Wesely	611,188	Sept. 20	1882	434 435	84	1839
Tub: *See* Bath-tub. Flower-tub.							
Tub							
Tube: *See* Collapsible tube. Metal tube. Compressible tube. Syringe-tube.							
Tube-cutter	F. J. Burrell	609,138	Aug. 16	1817	432	84	1036
Tube-jointing	R. I. Roman	608,715	Aug. 9	982	226	84	868
Tubes. Applying celluloid or other like coverings to hollow metal	J. E. Robinson	607,416	July 12	1461	310	84	298
Tubes. Bending armored conduit-	W. T. Ruete	610,726	Sept. 13	1052	241	84	1662
Tubes. Device for manufacturing compressible	H. Goodwin	610,398	Sept. 6	492	108	84	1534
Tubes. Drawing	A. C. Wright	609,718	Aug. 23	2886	.....	84	1262
Tubes. Machine for manufacturing seamless drawn	E. Iwins	609,147	Aug. 16	1883	434	84	1039
Tubes, &c. Manufacture of flexible metallic	T. Guilleaume	610,740	Sept. 13	1071	246	84	1665
Tubing. Method of and means for manufacturing metal	E. E. Ries	611,222	Sept. 20	1954	451 452	84	1851
Tubular bar	C. S. Dikeman	610,202	Sept. 6	219	49	84	1485
Tubular body	J. E. Sheriff	607,594	July 19	1969	408	84	419
Tubular joints. Apparatus for making	C. T. Crowden	609,734	Aug. 23	2906	680	84	1266
Tubular woven fabric	B. L. Stowe	610,462	Sept. 6	603	135	84	1554
Tubular woven fabric	B. L. Stowe	610,463	Sept. 6	605	135	84	1554
Tug fastener. Hame-	S. B. Davis	611,427	Sept. 27	2372	545	84	1948
Tug-holder. Self-clenching	B. Scott and W. S. Benton	610,698	Sept. 13	994	230	84	1650
Tug. Thill-	C. R. MacCall	606,870	July 5	439	94	84	86
Tumbler, jug, &c	L. Christiansen	608,649	Aug. 9	866	199	84	845
Tuning-hammer	N. M. Powell	610,973	Sept. 20	1489	339	84	1763
Turbine. Marine steam-	C. A. Parsons	608,969	Aug. 9	1471	348	84	958
Turbines. Power-transmitting arrangement for compound steam-	E. Seger	607,962	July 26	2656	567	84	567
Turning machine. Pin-	W. M. Wallace	609,060	Aug. 16	1666	396 397	84	1010
Twine-cutter. Finger-ring	J. Crandall	611,313	Sept. 27	2143	495	84	1907
Twine-holder	A. Heusch	609,984	Aug. 30	3252	759	84	1347
Twist-drill and socket	G. F. Leonard	611,494	Sept. 27	2492	575	84	1971

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Type-bars and apparatus for constructing same.	M. Gally	606,657	July 5	35	8,9	84	9
Swaged							
Type-bars and product produced by such machine.	M. Gally	606,656	July 5	34	8	84	9
Machine for making swage-locked	G. A. Goodson	609,098	Aug. 16	1732	412 413 414 415 416 417 418	84	1022
Type casting and setting machine	R. J. Moxley	609,453	Aug. 23	2401	563	84	1170
Type-distributing machine	F. A. Johnson	607,046	July 12	751	163 164	84	166
Type-justifying machine	F. McClintock	608,002	July 26	2728	583 584	84	580
Type-justifying machine	M. Gally	610,231	Sept. 6	170	38,39	84	1475
Type-making machine	F. A. Johnson	607,045	July 12	737	159 160 161 162 163 164 165	84	164
Type setting and justifying machine	F. A. Johnson	607,047	July 12	755	166 167 168	84	166
Type setting and justifying machine	P. H. McGrath	608,997	Aug. 9	1525	362 363 364 365 366 367 368	84	969
Type-setting machine	R. J. Moxley	606,678	July 5	80	17	84	18
Type-wheels. Manufacture of rubber-faced	J. S. Ogden	606,765	July 5	252	52,53	84	51
Type-writer	J. D. Daugherty	610,801	Sept. 13	1194	275	84	1690
Type-writer	M. Higuchi	611,379	Sept. 27	2278	526 527	84	1982
Type-writer	W. P. Quentell	607,193	July 12	1045	225 226	84	218
Type-writer cabinet	E. E. Baker	610,752	Sept. 13	1091	250	84	1669
Type-writer indicating mechanism	E. J. Manning	609,086	Aug. 16	1617	385	84	1000
Type-writer keyboard	B. Torrey	606,903	July 5	482	104	84	95
Type-writer tabulating mechanism	E. J. Manning	609,517	Aug. 23	2514	588 589	84	1191
Type-writers or the like. Support for	J. F. Gregory	606,889	July 5	462	99	84	91
Type-writing machine	S. M. Balzer	608,634	Aug. 9	835	193 194	84	838
Type-writing machine	E. A. Brigham	607,405	July 12	1442	307	84	294
Type-writing machine	B. A. Brooks	608,881	Aug. 9	1214	284	84	909
Type-writing machine	L. P. Diss	607,226	July 12	1107	238 239	84	230
Type-writing machine	J. Felbel	610,390	Sept. 6	482	105	84	1531
Type-writing machine	E. B. Hess and J. M. Stoughton	610,400	Sept. 6	495	108 109	84	1534
Type-writing machine	E. Pastre and F. Lambert	607,270	July 12	1194	255 256 257	84	247
Type-writing machine	W. P. Quentell	607,274	July 12	1210	258 259	84	250
Type-writing machine	W. P. Quentell	611,146	Sept. 20	1813	417 418	84	1825
Type-writing machine	F. G. Stallman	606,743	July 5	188	42,43	84	38
Type-writing machine	B. C. Stickney	609,476	Aug. 23	2442	571 572 573	84	1176
Type-writing machine interlocking device	C. Sears	606,944	July 5	589	118	84	107
Type-writing machine word-counter	M. S. Moseley	608,428	Aug. 2	471	106	84	749
Type-writing machine word-register	F. A. Hassler	610,181	Sept. 6	53	12	84	1451
Type-writing machines. Automatic device for returning carriages for	W. E. Jackson, Jr	606,669	July 5	60	13	84	14
Type-writing machines. Carriage-feed mechanism for	J. B. Price	606,940	July 5	534	117	84	106
Type-writing or printing machine	O. E. Converse	608,440	Aug. 2	487	110	84	752
Umbrella and cane. Combined	E. Hugendubel	609,435	Aug. 23	2356	556	84	1162
Umbrella fan attachment	K. E. Landau	610,358	Sept. 6	418	90	84	1519
Umbrella. Folding	F. G. Grove and F. E. Stover	608,453	Aug. 2	508	114	84	756
Umbrella. Folding	M. R. Studams	608,925	Aug. 9	1397	330	84	944
Umbrella or parasol. Folding	E. E. Mallory	608,694	Aug. 9	943	217	84	902
Umbrella or parasol stick or rod	W. S. Seymour	611,280	Sept. 27	2102	484	84	1900
Umbrella, parasol, &c	J. Simpson	607,711	July 19	2170	457	84	456
Umbrella. Self-closing	W. N. Stevenson	607,141	July 12	952	207	84	209
Umbrellas, &c. Carrier for	C. H. McCormack	608,472	Aug. 2	543	121	84	768
Unicycle	W. M. Carey	607,829	July 26	2405	511	84	520
Unicycle	V. D. Venable	611,534	Sept. 27	2552	589	84	1983
Universal or ball joint	F. Richter	610,920	Sept. 20	1393	319	84	1745
Universal joint	F. H. Richards	608,625	Aug. 9	815	189	84	685
Upholstering. Device for forming tufted	E. Hahn	610,741	Sept. 13	1072	246	84	1665
Vacuum-producing apparatus	W. E. May	611,455	Sept. 27	2417	554 555	84	1957
Valise-seat and lunch vessel	P. Nicolle	609,696	Aug. 23	2854	667	84	1256
Valve	P. D. Ball	609,726	Aug. 23	2895	676	84	1264
Valve	F. M. Bell	610,253	Sept. 6	204	45	84	1481
Valve	J. Collis	610,878	Sept. 13	1330	303	84	1717
Valve	C. Gulland	608,454	Aug. 2	511	115	84	757
Valve	W. Heston	607,238	July 12	1141	243	84	236

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Valve	W. I. Hoover	606,867	July 5	434	93	84	86
Valve	A. F. Little	608,882	Aug. 9	1303	303	84	926
Valve	E. H. Lunken	607,252	July 12	1166	249	84	240
Valve	J. F. McElroy	608,342	Aug. 2	321	71	84	720
Valve	E. Zertuche	606,906	July 5	485	105	84	96
Valve	W. J. Bullock	611,211	Sept. 20	1919	444	84	1845
Valve. Air-	H. Comer	607,019	July 12	690	150	84	156
Valve and fluid-dispenser	M. Swenson	607,491	July 19	1781	371	84	385
Valve. Automatic relief-	J. H. McPartland	608,867	Aug. 9	1321	308	84	930
Valve. Ball-cock	D. McLean	607,265	July 12	1187	254	84	245
Valve. Blow-off	J. Ewart	610,479	Sept. 6	681	141 142	84	1559
Valve-check	L. Buehler	610,470	Sept. 6	616	138	84	1557
Valve. Combined check and stop	C. G. Miller	611,435	Sept. 27	2386	547	84	1950
Valve-controlling means. Tank-	N. H. Medbery	609,207	Aug. 16	1933	459 460	84	1658
Valve-coupling	E. C. Wiley	607,975	July 26	2677	572	84	571
Valve. Cut-off	J. H. Champ	610,938	Sept. 20	1424	327	84	1751
Valve device. Regulating-	G. R. Hislop	610,538	Sept. 13	740	169	84	1597
Valve. Dip-pipe	J. Molas	608,064	July 26	2848	607	84	607
Valve. Engine-	M. B. Sellers	608,483	Aug. 2	560	125	84	767
Valve. Engine-	J. H. Fogarty	606,655	July 5	32	7	84	8
Valve. Float-	C. N. Dutton	609,089	Aug. 16	1712	407 408	84	1019
Valve. Fluid-actuated	J. R. Hannan	607,035	July 12	721	154 155	84	161
Valve for air and gases. Liquid-sealed	A. G. Kinyon	610,237	Sept. 6	179	40	84	1476
Valve for air-brakes. Triple	C. W. Kersteter	606,787	July 5	292	60	84	58
Valve for automatic sprinklers. Duplex induction-	M. O'Sullivan	606,680	July 5	84	18	84	19
Valve for brake mechanism. Lock-	J. F. Murphy	607,569	July 19	1919	397 398	84	409
Valve for compound engines. Intercepting-	A. Palla	609,830	Aug. 30	3080	718	84	1313
Valve for controlling locomotive-blowers. Throttle-	G. W. Edgington	610,035	Aug. 30	3446	798	84	1395
Valve for hose-couplings. Automatic stop-	W. B. Cleveland	610,524	Sept. 13	715	162	84	1593
Valve for hydraulic presses. Electrically-controlled.	J. H. Goss	610,985	Sept. 20	1520	349	84	1769
Valve for inflation	J. N. Poage	610,242	Sept. 6	186	42	84	1478
Valve for water-tanks. Inlet-	A. L. Hyde	608,681	Aug. 9	924	213	84	857
Valve. Gate-	A. Bever	609,772	Aug. 30	2967	694	84	1291
Valve-gear	L. A. Lang	607,058	July 12	789	171 172	84	172
Valve-gear	J. P. Dorau	607,837	July 26	2431	516	84	524
Valve-gear. Engine	R. S. Hill	611,430	Sept. 27	2378	546	84	1949
Valve-gear. Engine	C. E. Shadall	611,337	Sept. 27	2184	505	84	1915
Valve-gears. Dash-pot for	C. H. Shepherd	608,485	Aug. 2	562	126	84	767
Valve lock. Flushing-	J. P. Serve	610,000	Aug. 30	3386	785	84	1373
Valve lubricating device. Slide-	C. C. Worthington	609,953	Aug. 30	3286	766 767	84	1354
Valve-movement. Steam-engine	C. E. Rettew and W. R. Johnson	608,345	Aug. 2	324	71	84	720
Valve. Reducing-	M. Hanner	610,047	Aug. 30	3461	802	84	1398
Valve-regulating mechanism. Cut-off-	J. C. Parker	608,217	Aug. 2	89	23	84	673
Valve. Relief-	E. Seymour	607,090	July 12	861	187	84	186
Valve. Rotating cut-off	E. Lizé	611,496	Sept. 27	2491	575 576	84	1972
Valve. Safety-	W. B. Henion	610,744	Sept. 13	1075	247	84	1666
Valve-seat	O. Morris	607,944	July 26	2627	557	84	561
Valve. Slide-	H. Müller	608,525	Aug. 2	632	142	84	780
Valve. Steam-engine	J. Hopkinson	611,484	Sept. 27	2475	571	84	1958
Valve. Stop-	H. H. Riggin	610,723	Sept. 13	1048	241	84	1661
Valve. Stop-	A. B. Powers	610,949	Sept. 20	1447	332	84	1756
Valve-stopper and pouring-nozzle	J. Powell	610,412	Sept. 6	517	113	84	1588
Valve. Straightway	S. G. Reed	606,812	July 5	332	7	84	67
Valve. Straightway or gate	F. Jackson	611,486	Sept. 27	2478	571	84	1958
Valve. Swab-	G. E. Loeble and F. Katzenberger	610,452	Sept. 6	579	128	84	1549
Valve. Testing-	W. F. Harrison	608,197	Aug. 2	56	13	84	666
Valve. Throttle-	J. V. Wells	609,312	Aug. 16	2151	500	84	1104
Valve. Triple	B. G. Wieder	608,740	Aug. 9	1022	234	84	875
Valve wheel. Steam-	E. G. Harris	607,036	July 12	728	155	84	161
Valves. Electric controlling apparatus for switch-	G. Johnson	606,721	July 5	156	35	84	32
Vapor-burner	H. F. Smith	610,334	Sept. 6	375	79	84	1512
Vapor-burner	A. Kitson	607,995	July 26	2716	579	84	578
Vapor-burning apparatus	A. Kitson	607,996	July 26	2717	579	84	579
Vapor-burning apparatus	A. Kitson	608,051	July 26	2832	603	84	604
Vapor-burning apparatus	E. S. Griffith	611,198	Sept. 20	1894	437 438	84	1841
Vapor-generating and heating apparatus	J. H. Kastle, M. L. Ravitch, and A. S. Lowenhart.	608,967	Aug. 9	1463	346	84	957
Vaporizer	W. H. Phelps	609,557	Aug. 23	2579	604	84	1203
Vaporizer for hydrocarbon oils	R. A. Poltrimol	607,951	July 26	2640	560	84	563
Vaporizing mineral oils, &c. Apparatus for	C. Day	607,348	July 12	1334		84	275
Varnish	B. F. Lockwood	609,358	Aug. 16	2218	524 525	84	1117
Vault. Portable grave-	B. F. Douglas	606,632	July 5	29	6	84	8
Vault. Grave-	A. W. Springer	607,490	July 19	1780	379	84	385
Vehicle-body corner-iron	F. W. Chadwick	610,523	Sept. 13	714	162	84	1592
Vehicle-brake	C. B. Jones	608,865	Aug. 9	1277	298	84	921
Vehicle-brake	M. C. Morrison	608,891	Aug. 9	1313	306	84	928
Vehicle-brake	J. Ramage	610,974	Sept. 20	1490	340	84	1764
Vehicle brake and safety-guard. Automatic	A. W. Funk	607,090	July 12	718	152 153	84	150
Vehicle-brake. Automatic	W. Pearl	610,827	Sept. 13	1237	285	84	1699
Vehicle-curtains. Device for raising or lowering	E. E. Atkinson	608,314	Aug. 2	257	59	84	706
Vehicle draft attachment	M. J. Stroud	608,728	Aug. 9	1000	229	84	871
Vehicle driving mechanism	C. T. G. Schneidewind	608,008	July 26	2758	586	84	590
Vehicle. Dumping-	W. A. Cowley	609,182	Aug. 16	1891	450	84	1049
Vehicle. Electrically-self-propelling	L. Krieger	607,997	July 26	2719	580 581	84	579
Vehicle. Motor-	E. Haynes and E. Apperson	607,116	July 12	902	196	84	198

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Vehicle. Motor-	C. M. Johnson	609,811	Aug. 30	3042	711 712	84	1305
Vehicle. Motor-	A. Winton	610,466	Sept. 6	609	136 137	84	1555
Vehicle. Motor-	W. O. Worth	607,318	July 12	1279	273 274	84	264
Vehicle-motor	G. W. Lewis	609,443	Aug. 23	2371	559	84	1164
Vehicle reach-coupling	F. Sisson	609,056	Aug. 16	1661	395	84	1009
Vehicle-runner	T. Thunborg	608,483	Aug. 2	478	107	84	750
Vehicle running-gear	J. F. Hennessy	609,276	Aug. 16	2087	495	84	1090
Vehicle running gear	A. A. Holt	608,859	Aug. 9	1269	296	84	920
Vehicle sleigh attachment	A. C. Nygaard	610,824	Sept. 13	1233	284	84	1697
Vehicle-spindle	R. D. Critchfield	609,501	Aug. 23	2495	584	84	1187
Vehicle-spring	P. Lwoff	609,446	Aug. 23	2382	561	84	1167
Vehicle spring-wheel	A. B. Waggoner	607,201	July 12	1057	229	84	221
Vehicle steering mechanism. Motor-	A. W. Brightmore	609,955	Aug. 30	3299	768 769	84	1357
Vehicle-step	R. H. and I. B. Wolfe	610,697	Sept. 13	998	231	84	1651
Vehicle truss-frame. Electric	K. Knudsen	611,258	Sept. 27	2026	467 468	84	1885
Vehicle-wheel	J. Blais	610,468	Sept. 6	614	137 138	84	1556
Vehicle-wheel	J. L. Fowler	609,424	Aug. 23	2345	552	84	1159
Vehicle-wheel	G. Hayes	607,089	July 12	727	156	84	162
Vehicle-wheel	J. N. Johnson	607,378	July 12	1396	298	84	287
Vehicle-wheel	J. A. Labatt and G. H. Lewis	607,057	July 12	788	171	84	172
Vehicle-wheel	J. Lloyd	608,691	Aug. 9	940	216	84	861
Vehicle-wheel	C. N. McCoy	608,210	Aug. 2	75	20	84	670
Vehicle-wheel	A. Meyer	607,518	July 19	1823	379	84	392
Vehicle-wheel	M. M. Renn	608,912	Aug. 9	1347	314	84	936
Vehicle-wheel	G. L. Scott	607,961	July 26	2655	566	84	567
Vehicle-wheel	T. M. Shrout	610,096	Aug. 30	3536	820	84	1404
Vehicle-wheel	I. Z. Merriam	609,894	Aug. 30	3185	746	84	1334
Vehicle. Wheeled	H. P. Davis	606,819	July 5	343	73	84	68
Vehicles. Contact device for electrically-propelled	C. R. Binney	608,505	Aug. 2	594	133	84	773
Vehicles. Means for preventing vibration in	R. Miehle	609,828	Aug. 30	3078	718	84	1313
Velocipede	G. A. Nisbet	611,138	Sept. 20	1798	414	84	1823
Velocipede	F. and M. Schneiderlöchner	606,943	July 5	538	118	84	107
Velocipede	F. X. Wagner	610,111	Aug. 30	3554	824	84	1408
Velocipede	F. G. Adams	607,322	July 12	1288	275	84	265
Velocipede chain-wheel	A. J. Madden	607,757	July 19	2239	473	84	470
Velocipede chainless gear	A. Johnsen	610,236	Sept. 6	179	40	84	1476
Velocipede driving-gear	K. S. Murray	608,341	Aug. 2	319	70	84	719
Velocipede driving mechanism	W. Hillman	608,678	Aug. 9	921	211 212	84	857
Velocipede-frames. Manufacture of	J. C. Pease	608,622	Aug. 9	809	187	84	834
Velocipede. Ice-	R. Edgar, Jr.	608,190	Aug. 2	41	9, 10	84	663
Velocipede, &c. Manu-pedal and hand-steering	J. Flindall	610,175	Sept. 6	40	10	84	1449
Velocipede pedal-crank	H. Blossom	607,651	July 19	2072	433	84	438
Velocipede-saddle	M. M. Deem	608,443	Aug. 2	491	111	84	758
Velocipede-saddle	P. Pansard	609,459	Aug. 23	2412	565 566	84	1172
Velocipede-saddle support	L. Bonet	609,076	Aug. 16	1693	403	84	1015
Velocipedes, autocars, &c. Driving-gear for	C. Larue	607,443	July 19	1514	325	84	326
Vending-machine	P. H. Conner and F. M. Podhaski	611,354	Sept. 27	2216	512	84	1920
Vending-machine	W. Dyer	610,673	Sept. 13	959	222	84	1642
Vending-machine	F. P. Keesee	610,542	Sept. 13	747	170	84	1598
Vending-machine	H. G. Sweeney	611,226	Sept. 20	1964	453	84	1853
Vending machine	G. A. Cline	606,802	July 5	312	65, 66	84	62
Vending machine. Automatic	H. G. Sweeney	611,225	Sept. 20	1963	452	84	1853
Vending machine. Liquid-	G. E. M. Lewis	609,513	Aug. 23	2510	567 568 569	84	1190
Veneer-cutting machine	J. A. Hart	611,480	Sept. 27	2466	567 568 569	84	1966
Ventilating apparatus	J. D. Mather	611,040	Sept. 20	1608	368	84	1786
Venting device for closed vessels	W. G. Runyon	608,797	Aug. 9	1123	260	84	893
Verandas, porches, &c. Support for	F. W. Roe	609,168	Aug. 16	1871	445	84	1046
Vermin-trap	C. G. Theleen	607,298	July 12	1245	295	84	257
Vessel bow-guard	J. S. C. Nichols	607,267	July 12	1191	255	84	246
Vessel-brake	E. Lundgren	609,285	Aug. 16	2102	497 498	84	1003
Vessel-cleaner	A. and M. Gerstendorfer	611,008	Sept. 20	1556	358	84	1776
Vessel or package. Containing	J. F. McAnulty and P. Van den Berghe.	609,587	Aug. 23	2641	618	84	1214
Veterinary tool	T. I. Elliott	610,803	Sept. 13	1198	275	84	1691
Vine-supporter	G. N. Jeune	610,449	Sept. 6	575	127	84	1549
Vine-trimmer	H. B. Abernathy	611,091	Sept. 20	1711	308	84	1806
Vise	J. B. Moore and J. M. Young	608,697	Aug. 9	950	218	84	863
Vise	J. F. Stevens	607,715	July 19	2174	458	84	457
Voltmeter	H. P. Davis and F. Conrad	611,592	Sept. 27	2681	619 620	84	2007
Voltmeter. Alternating-current	J. B. Corey	607,503	July 19	1797	374	84	888
Voting apparatus	S. Ducas	609,576	Aug. 23	2616	612 613	84	1210
Voting-machine	P. A. Macdonald	609,825	Aug. 30	3074	717	84	1312
Voting-machine	E. J. Mead	607,445	July 19	1519	323	84	326
Voting-machine	A. Snoeck	608,922	Aug. 9	1373	325 326	84	941
Voting-machine	A. Snoeck	608,923	Aug. 9	1381	326 327 328 329	84	942
Voting-machine	L. R. Winslow	611,463	Sept 27	2320	535 536	84	1939
Vulcanizing apparatus	L. H. Berg	607,823	July 26	2395	508	84	518
Wagon	F. K. Ricks	610,921	Sept. 20	1395	319	84	1746

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wagon	W. O. Shadbolt	611,082	Sept. 20	1689	388	84	1801
Wagon-bed raiser	S. H. Drysdale	609,796	Aug. 30	3015	706	84	1300
Wagon-brake	A. B. Chitwood	607,341	July 12	1825	283	84	274
Wagon-brake. Folding	J. Smock	608,802	Aug. 9	1138	263 264	84	897
Wagon-brake lock	A. F. Jackson	607,749	July 19	2225	471	84	467
Wagon-brake lock-rod	J. H. Hoover	607,687	July 19	2125	445	84	448
Wagon. Dumping-	W. Leonhardt	607,249	July 12	1161	248	84	289
Wagon. Dumping-	J. T. Richardson	609,167	Aug. 16	1868	445	84	1045
Wagon. Dumping-	W. M. West	607,103	July 12	884	190 191	84	189
Wagon. Express-	H. D. Morton	607,120	July 12	914	198	84	195
Wagon-jack	J. A. Staples	608,011	July 26	2762	587	84	590
Wagon. Lumber-	W. J. Bond	608,644	Aug. 9	859	198	84	844
Wagon or buggy top support	J. H. Sprague	606,773	July 5	266	56	84	54
Wagon running-gear	D. H. Turnbull	610,979	Sept. 20	1498	341	84	1765
Wagon-seat	G. M. Bowen	609,807	Aug. 23	2677	625	84	1220
Wagon, sleigh, and boat. Combined	C. Baltruweit	609,649	Aug. 23	2778	647 648	84	1240
Wagon. Speed-	F. W. Philips	611,438	Sept. 27	2390	548	84	1951
Wagon steering and driving mechanism	L. Watkins	607,308	July 12	1262	269	84	260
Wagon. Undertaker's	J. Zwack	609,530	Aug. 23	2539	595	84	1195
Waist. Child's	G. J. Burns	608,149	July 26	2081	640	84	683
Waist. Lady's	M. E. de Latour	608,688	Aug. 9	936	215	84	860
Wall, floor, or ceiling plate	W. A. Russell	611,418	Sept. 27	2349	542	84	1945
Wall, floor, or ceiling plate	W. A. Russell	611,419	Sept. 27	2351	542	84	1945
Warp-beam brake	H. Wolf	610,784	Sept. 13	1161	207	84	1683
Warping-reel	J. E. Eastwood	609,667	Aug. 23	2804	653 654	84	1246
Washboard	E. F. and L. J. Hedderick	610,708	Sept. 13	1022	236	84	1656
Washboard	A. C. Swarth	611,529	Sept. 27	2546	588	84	1983
Washboiler	G. A. Crooker	611,060	Sept. 20	1644	376	84	1793
Washboiler	C. Louis	611,177	Sept. 20	1863	429	84	1835
Washboard	A. S. Ireson	608,289	Aug. 2	209	49	84	696
Washer: *See* Barrel-washer. Clothes-washer. Bottle-washer.							
Washing-machine	J. Q. Adams	611,372	Sept. 27	2266	523 524	84	1930
Washing-machine	A. M. Belding and C. A. Rice	610,117	Aug. 30	3563	826	84	1410
Washing-machine	F. S. Blackmarr	607,911	July 26	2572	545	84	551
Washing-machine	J. R. Carter	607,913	July 26	2576	546	84	552
Washing-machine	A. A. Casler	608,251	Aug. 2	144	36	84	683
Washing-machine	A. A. Casler	608,400	Aug. 2	419	91	84	739
Washing-machine	J. W. Craig	607,424	July 19	1485	316	84	320
Washing-machine	W. F. Glidden	611,245	Sept. 27	2003	402	84	1881
Washing-machine	J. F. Heberger	606,782	July 5	263	58	84	56
Washing-machine	J. W. Heldreth	610,533	Sept. 13	731	166 167	84	1595
Washing-machine	F. L. Johnson	607,619	July 19	2012	417 418	84	426
Washing-machine	W. T. King	609,550	Aug. 23	2569	602 254	84	1201
Washing-machine	J. McAllister	608,788	Aug. 9	1100	255	84	889
Washing-machine	J. Miller	610,906	Sept. 20	1535	352	84	1772
Washing-machine	T. V. Norris	608,556	Aug. 2	667	156	84	792
Washing-machine	T. V. Norris	608,557	Aug. 2	669	156	84	792
Washing-machine	J. R. Pring	609,627	Aug. 23	2740	637 638	84	1234
Washing-machine	G. F. Snider	608,722	Aug. 9	990	228	84	870
Washing-machine	A. C. F. Wichman	606,699	July 5	114	25	84	25
Washing-machine	G. T. Winters	611,306	Sept. 27	2126	491	84	1904
Washing-machine	O. Hammarstrom	608,257	Aug. 2	151	38	84	684
Washing machine. Clothes-	R. Moodie	608,554	Aug. 2	685	155	84	791
Washing or leaching apparatus	W. R. Ramey	609,462	Aug. 23	2415	566	84	1173
Watchcase-pendant	M. Gordon	609,580	Aug. 23	2627	615	84	1212
Watch-crystal gage	A. G. Jacobs	609,235	Aug. 16	2000	476	84	1075
Watch winding-indicator	J. Hardman, Jr.	607,235	July 12	1136	243	84	235
Water bag or bottle	J. Hardman, Jr.	607,236	July 12	1138	243	84	236
Water bag or bottle	W. H. Lloyd	609,992	Aug. 30	3374	784	84	1371
Water-closet bowl	W. E. Byrnes	608,174	Aug. 2	10	3	84	657
Water-closet bowls. Repair connection for	W. McLaren	611,458	Sept. 27	2424	556 557	84	1959
Water-closet for railway-carriages, &c. Automatic	A. Burgin	607,652	July 19	2075	433	84	438
Water-closet tanks. Water supplying and controlling apparatus for	J. M. Cameron	611,053	Sept. 20	1634	373	84	1791
Water-closet valve	H. D. Dickinson	607,835	July 26	2422	514	84	523
Water-closets, &c. Sanitary fixture for	W. F. Niebling	610,946	Sept. 20	1437	330	84	1754
Water-cooling device	W. H. Strickler	607,966	July 26	2660	568	84	568
Water-elevator	J. E. Baker	609,866	Aug. 30	3180	731	84	1324
Water-heater	J. C. Beckfield	608,972	Aug. 9	1477	349	84	959
Water-heater	M. Edelmuth	610,989	Sept. 20	1425	328	84	1752
Water-heater	C. M. Kemp	608,291	Aug. 2	213	50	84	697
Water-heater	P. Lindemeyr	609,357	Aug. 16	2217	524	84	1116
Water-heater	J. W. Taylor	609,596	Aug. 23	2656	621	84	1217
Water-heater	J. McCartney	610,554	Sept. 13	772	175	84	1008
Water-heater and steam-generator	W. L. Miller	608,339	Aug. 2	314	69, 70	84	718
Water-heater. Automatic	E. Ruud	610,281	Sept. 6	271	59	84	1494
Water-heater. Automatic	W. C. Flöring	607,563	July 19	1908	394	84	407
Water-level indicator	G. B. Bassett	608,168	Aug. 2	3	1	84	655
Water-meter	J. K. Hill	608,602	Aug. 9	777	178	84	829
Water-meter	W. W. Moyer	609,692	Aug. 23	2848	666	84	1254
Water-motor	M. and G. Glaesener and E. D'Huart	607,261	July 12	1354	289	84	279
Water. Process of and apparatus for purifying	F. A. Isaacson	608,126	July 26	2944	681	84	627
Waterproof trousers	W. A. Hall	609,200	Aug. 16	1922	.....	84	1056
Waterproofing compound	C. R. Smith	607,773	July 19	2267	.....	84	475
Waterproofing material							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Water-purifying apparatus	W. Lawrence	607,059	July 12	791	172	84	172
Water-purifying apparatus	S. McElroy	610,849	Sept. 13	1270	293	84	1706
Water-service. Domestic	A. J. Tyler	607,778	July 19	2279	481	84	477
Water-trap	J. Patton	609,747	Aug. 23	2927	684	84	1270
Water-tube boiler	J. G. Schmidt	607,284	July 12	1225	262	84	253
Water walls on outside of buildings. Arrangement for producing	I. Zawiejski	609,316	Aug. 16	2159	510	84	1105
Water-wheel	F. Jacob	607,042	July 12	732	158	84	163
Water-wheel bucket. Momentum	G. H. Johnson	607,246	July 12	1156	247	84	238
Water-wheel governor	E. E. Woodward	608,245	Aug. 2	135	33, 34	84	681
Waterer. Stock-	J. Patton	607,301	July 12	1248	266	84	258
Watering-trough. Automatic	B. W. Tuttle	610,707	Sept. 13	1021	236	84	1656
Wave-motor	B. F. Heckaman	610,378	Sept. 6	459	100	84	1526
Wave-power. Direct-acting	M. Barthel	607,072	July 12	816	178 179	84	177
Weaner. Calf-	J. M. Palmer	610,944	Sept. 20	1435	330	84	1754
Weapon of defense	B. P. Merry	608,666	Aug. 9	898	205	84	852
Weather-strip	F. Garrett	609,798	Aug. 30	3017	706	84	1301
Weather-strip	C. M. Eveleth	611,247	Sept. 27	2007	463	84	1982
Weather-strip	G. W. Golden	608,275	Aug. 2	180	43	84	690
Weather-strip	E. E. Steiner	610,113	Aug. 30	3556	825	84	1408
Weather-strip for doors	T. A. Watson	610,219	Sept. 6	146	33	84	1471
Weather-strip for doors	W. F. Wilmot	609,450	Aug. 23	2393	562	84	1169
Weaving-needle	E. Morris	609,451	Aug. 23	2395	562	84	1169
Weaving-thread	E. Morris	608,624	Aug. 9	812	188 189	84	834
Web-cutting mechanism	G. F. Read	611,590	Sept. 27	2673	617 618	84	2006
Web-feeding mechanism	H. Casler	610,164	Sept. 6	7	2, 3	84	1444
Weed-cutter	J. Branagan	607,392	July 12	1415	302	84	290
Weed-cutting implement	G. H. Brune	610,612	Sept. 13	865	199	84	1623
Weeds. Machine for burning seeds of noxious	J. J. Setter	610,003	Aug. 30	3390	786	84	1374
Weeder	J. E. Sperry	609,908	Aug. 30	3204	751	84	1338
Weigher. Automatic	J. B. Schuman	608,117	July 26	2930	627 628	84	624
Weighing and filling apparatus	J. E. J. Goodlett	607,855	July 26	2468	523 524	84	531
Weighing and recording apparatus. Coal	C. Ingrey	606,831	July 5	369	77, 78	84	73
Weighing-machine	J. P. Armstrong	607,455	July 19	1541	328 329	84	330
Weighing-machine	F. H. Richards	607,459	July 19	1561	330 331	84	337
Weighing-machine	F. H. Richards	607,460	July 19	1577	332 333	84	341
Weighing-machine	F. H. Richards	607,465	July 19	1623	340 341 342	84	353
Weighing-machine	F. H. Richards	607,466	July 19	1630	342 343	84	354
Weighing-machine	F. H. Richards	607,474	July 19	1701	354 355 356	84	367
Weighing-machine	F. H. Richards	607,475	July 19	1712	356 357 358	84	370
Weighing-machine	F. H. Richards	607,476	July 19	1720	358 359 360	84	371
Weighing-machine	F. H. Richards	607,478	July 19	1731	361 362	84	374
Weighing-machine	F. H. Richards	607,479	July 19	1742	362 363	84	377
Weighing-machine	F. H. Richards	607,482	July 19	1754	366 367	84	380
Weighing-machine. Automatic	J. Christiansen	607,483	July 19	1764	367 368	84	381
Weighing-machine. Automatic	F. H. Richards	607,461	July 19	1590	333 334 335	84	345
Weighing-machine. Automatic	F. H. Richards	607,462	July 19	1597	335 336	84	346
Weighing-machine. Automatic	F. H. Richards	607,463	July 19	1602	337 338	84	348
Weighing-machine. Automatic	F. H. Richards	607,464	July 19	1612	339 340	84	350
Weighing-machine. Automatic	F. H. Richards	607,467	July 19	1636	343 344 345	84	355
Weighing-machine. Automatic	F. H. Richards	607,468	July 19	1643	345 346 347	84	356
Weighing-machine. Automatic	F. H. Richards	607,477	July 19	1726	359 360	84	373
Weighing-machine. Automatic	F. H. Richards	607,480	July 19	1745	363 364	84	377
Weighing-machine. Automatic	F. H. Richards	607,481	July 19	1749	365 366	84	378
Weighing-machine recording apparatus	F. H. Richards	607,473	July 19	1685	352 353 354	84	365
Weighing-receptacle	G. A. Baumann	607,010	July 12	677	147	84	154
Weighing-scoop	G. H. Watkins	607,578	July 19	1935	401	84	412
Weighing-scoop	A. A. West	609,644	Aug. 23	2770	646	84	1239
Weighing-truck	O. W. Parsell	606,785	July 5	175	30	84	36
Weighing-truck	O. W. Parsell	609,908	Aug. 30	3196	749	84	1336

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Well-casing head. Oil-	W. F. Ottney	608,899	Aug. 9	1326	300	84	931
Well-drilling machine	I. A. Weaver	608,810	Aug. 9	1169	273 / 274	84	901
Well drilling tools. Temper-screw for oil or Artesian	P. H. Mack	610,239	Sept. 6	183	41	84	1477
Wells. Mechanism for lifting pipes or rods from	G. Allsup and G. D. Barry	609,398	Aug. 23	2299	543	84	1150
Welt-guide	W. J. Drey	610,323	Sept. 6	350	75	84	1508
Wheel: *See* Abrading-wheel. Barrow-wheel. Bicycle-wheel. Car-wheel. Cycle drive-wheel. Fifth-wheel. Fly-wheel. Gear-wheel. Gearing-wheel. Liquid-elevating wheel. Metal wheel. Metallic wheel. Paddle-wheel. Power-wheel. Spring-wheel. Traction-wheel. Valve-wheel. Vehicle-wheel. Vehicle spring-wheel. Velocipede chain-wheel. Water-wheel.							
Wheel	R. M. Keating	607,175	July 12	1012	220	84	213
Wheel	J. Lloyd	606,868	July 5	436	93	84	86
Wheel	J. Macphail	609,203	Aug. 16	1929	458	84	1057
Wheel	G. Kitzelman	608,292	Aug. 2	215	50	84	697
Wheel	A. Benson	609,403	Aug. 23	2309	545	84	1152
Wheel-adjusting device. Rear-	J. M. Rhodes	608,479	Aug. 2	554	123	84	705
Wheel-carrying implement	J. P. Peters	607,703	July 19	2160	454	84	454
Wheel decorative attachment	J. G. Reinecker	611,277	Sept. 27	2077	478	84	1995
Wheels. Apparatus for manufacturing worm-	S. Hodgson	611,451	Sept. 27	2412	453	84	1952
Wheels. Attachment for traveling	F. Hurst and A. J. E. Jones	610,652	Sept. 13	927	214	84	1636
Wheels. Machine for assembling cycle or similar	B. J. Maloney	607,064	July 12	800	175	84	174
Wheels to axles. Means for securing	L. W. Greenleaf	608,452	Aug. 2	504	113 / 114	84	756
Wheelwright-machine	J. W. Hyde	608,987	Aug. 9	1507	356	84	965
Whiffletree	C. W. Snyder	610,951	Sept. 20	1450	332	84	1757
Whiffletree attachment	A. F. Weimer	611,538	Sept. 27	2563	591	84	1985
Whip-lock. Permutation	O. E. Seymour	608,431	Aug. 2	476	107	84	750
Whip-socket	C. G. Becker and M. Osborn	608,315	Aug. 2	259	59	84	706
Whips. Treating rawhide for use in manufacturing	W. P. Ordway	610,559	Sept. 13	780	177	84	1604
Whist. Card-holder for duplicate	H. M. Weaver	609,377	Aug. 16	2248	531 / 532	84	1122
Whist-table	W. S. Coles	609,876	Aug. 30	3149	736	84	1328
Whist tray. Duplicate	S. H. Hunter	606,668	July 5	59	12	84	14
Whistle. Fog-	J. Brysch	611,028	Sept. 20	1500	364	84	1782
Whistle-pipe	F. A. Davey	608,955	Aug. 9	1445	342	84	953
Whistle. Steam-	J. J. Neumann	609,556	Aug. 23	2578	604	84	1203
Wind-instrument valve	W. Morgans	607,446	July 19	1521	324	84	327
Winding and hauling engine	R. Atherton	610,340	Sept. 6	382	82	84	1513
Winding and quilling machine. Weft-thread-	E. J. Satterwhite	609,300	Aug. 16	2128	504 / 505	84	1098
Winding-machine	W. Leist	600,620	Aug. 23	2718	634	84	1229
Winding machine. Field-spool-	B. M. Knox	607,692	July 19	2135	449	84	449
Winding machinery for thread, yarn, &c	S. Humble	608,123	July 26	2940	630	84	626
Winding purposes. Self-detaching hook for	G. Brunelle	609,871	Aug. 30	3142	734	84	1326
Windlass	A. M. Carlson	608,027	July 26	2800	595	84	597
Windmill	A. J. Corcoran	610,785	Sept. 13	1002	244	84	1063
Windmill	W. S. Douglass	610,322	Sept. 6	349	75	84	1506
Windmill	R. M. Dyer and L. W. Noyes	608,657	Aug. 9	1481	202	84	848
Windmill	H. A. French	607,490	July 19	1495	318	84	322
Windmill	L. W. Noyes	609,457	Aug. 23	2409	565	84	1171
Windmill	H. Soellner	607,774	July 19	2268	479 / 480	84	475
Windmill	J. B. Tinsley	607,668	July 19	2102	438 / 439	84	443
Windmill	H. Wichmann	607,151	July 12	971	210	84	204
Windmill-governor	H. S. Gaskill	609,340	Aug. 16	2196	519	84	1112
Windmill. Horizontal	J. A. Weitzel	609,378	Aug. 16	2250	532	84	1122
Window	O. Frotscher	611,031	Sept. 20	1594	366	84	1784
Window-bracket. Folding	H. Frahm	608,115	July 26	2926	626	84	622
Window-cleaner	G. J. Capewell	609,787	Aug. 30	2997	701	84	1296
Window-cleaner	H. Case and I. C. Young	608,140	July 26	2968	636	84	631
Window-cleaner	J. Kirchmer, Jr	606,995	July 5	699	138	84	127
Window-cleaner	L. Sussman and A. Hill	610,205	Sept. 6	97	20, 21	84	1459
Window-cleaner	A. A. Stebbins	611,291	Sept. 27	2104	484	84	1900
Window-fastener	E. Duval	607,427	July 19	1490	317	84	321
Window frame and sash	H. Stalb	608,084	July 26	2878	616	84	614
Window frame and sash	E. F. Bertolett	609,984	Aug. 30	3361	780	84	1368
Window frame and sash. Metal	M. C. Newman and L. Z. Marks	610,822	Sept. 13	1290	283	84	1697
Window-guard	J. L. Scharff	607,707	July 19	2166	455	84	455
Window-guard	O. E. Winger	607,702	July 19	2304	486	84	481
Window pane or light	F. Bruno	608,173	Aug. 2	9	3	84	656
Window raising and locking device	G. R. Beckwith and W. F. McCollum	609,134	Aug. 16	1810	430 / 431	84	1095
Window-screen	E. T. Burrowes	610,257	Sept. 6	210	47	84	1483
Window-screen	E. T. Burrowes	610,383	Sept. 6	472	103	84	1529
Window-screen	E. T. Burrowes	610,384	Sept. 6	474	103	84	1530
Window-screen	E. T. Burrowes	610,385	Sept. 6	475	104	84	1530
Window-screen	E. T. Burrowes	610,437	Sept. 6	556	123	84	1545
Window-screen	A. L. Dillenbeck	611,113	Sept. 20	1756	402	84	1814
Window-screen	L. A. Field	609,197	Aug. 16	1918	457	84	1055
Window-screen fastener	J. Fries	609,490	Aug. 23	2478	579	84	1184
Window-screens, storm-sashes, &c. Attachment for	J. T. Ziskovsky	608,366	Aug. 2	351	77	84	725
Window-seat	J. Gosling	611,148	Sept. 20	1819	418 / 419	84	1827
Wire. Apparatus for electrically coating	W. S. Rawson	611,051	Sept. 20	1630	372	84	1790
Wire-cloth holder and measurer	D. W. Brooks and W. J. Van Dyke	608,805	Aug. 9	1144	265 / 266	84	898
Wire-coil machine	J. H. Templin						

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wire-coiling machine	J. E. Criggal	609,011	Aug. 16	1567	373	84	992
Wire-fastener	E. L. Cowgill	611,105	Sept. 20	1734	398	84	1811
Wire machine. Barbed-	B. M. Miller	608,471	Aug. 2	537	120 / 121	84	702
Wire. Respooling-	J. E. Wright	610,730	Sept. 13	1057	242	84	1062
Wire rope or hawser	R. A. Hammond	608,673	Aug. 9	911	209	84	855
Wire-shears and parallel-jaw pliers. Combined	P. Broadbooks	611,102	Sept. 20	1729	396 / 397	84	1810
Wire-splicing tool	H. L. Maitland	608,467	Aug. 2	530	118	84	761
Wire-stretcher	J. H. Heisey	606,760	July 5	233	50	84	47
Wire-stretcher	W. H. Jones	607,750	July 19	2227	471	84	467
Wire-stretcher	A. L. Kitselman	607,751	July 19	2229	471	84	468
Wire-stretcher	A. McInturff and H. J. Stewart	611,268	Sept. 27	2055	473 / 474	84	1890
Wire-stretcher	F. Volk, Jr	611,297	Sept. 27	2113	487	84	1902
Wire-stretcher	P. Warne	608,536	Aug. 2	647	146	84	783
Wire stretcher and cutter	S. A. D. Clark	610,881	Sept. 13	1331	305	84	1719
Wire stretcher and splicer	E. Taylor	610,160	Aug. 30	3033	345	84	1425
Wire-stretching machine	J. N. Dozier	609,086	Aug. 16	1704	406	84	1017
Wire-stripping tool	L. A. Sell	608,919	Aug. 9	1369	324	84	940
Wire-tightener	L. Bickel	609,405	Aug. 23	2311	545	84	1158
Wire-tightener	W. Brown	606,833	July 5	375	80	84	75
Wire-tightener	G. E. Ruther	608,225	Aug. 2	101	26	84	675
Wire-twisting tool	F. M. Meyer	609,691	Aug. 23	2847	666	84	1255
Wood-bending device	G. F. Lebioda	608,780	Aug. 9	1097	250	84	887
Wood drying and hardening apparatus	G. F. Lebioda	609,442	Aug. 23	2370	559	84	1164
Wood dyeing and impregnating apparatus	C. Birely	608,171	Aug. 2	7	2	84	656
Wood-finishing device	W. S. Munday	609,114	Aug. 16	1782	424	84	1029
Wood for fuel. Machine for preparing	G. H. Allen	606,953	July 5	548	121	84	109
Wood in imitation of marquetry. Decorating	H. H. Blodgett	606,702	July 5	121	----	84	26
Wood-preserving composition	W. J. Woodward	607,153	July 12	976	211	84	205
Wooden pipe	C. F. Overmyer	608,072	July 26	2862	612	84	610
Woodworking-machine	G. Stone	608,385	Aug. 2	386	85, 86	84	732
Wool-drying apparatus	J. Smith and W. Holdsworth	610,774	Sept. 13	1143	202 / 203	84	1679
Wool. Gill-box for preparing	G. Katzenstein	611,432	Sept. 27	2388	547	84	1950
Wool-washing machine	H. Flegel	607,841	July 26	2438	518	84	525
Work-bench	D. Richard	611,333	Sept. 27	2175	503	84	1913
Work-box	J. Reece	607,626	July 19	2023	419 / 420	84	429
Worm-cutting machine	R. H. Hey	610,051	Aug. 30	3466	804	84	1389
Woven fabric	G. Kocherhans	611,413	Sept. 27	2342	540	84	1943
Woven fabrics. Apparatus for indicating number of weft-shots in	D. I. Petts	607,572	July 19	1925	399	84	410
Wrapper for cuffs, &c	L. C. Crowell	610,344	Sept. 6	389	83, 84	84	1514
Wrapping-machine	J. H. Felmlee	606,919	July 5	504	111	84	100
Wrapping soap, caramels, &c. Machine for							
Wrench: *See* Buggy or wagon wrench. Carriage-wrench. Monkey-wrench. Nut-wrench. Pipe-wrench. Screw-wrench.							
Wrench	A. Assorati	608,358	Aug. 2	342	75	84	724
Wrench	J. H. Atkinson	609,324	Aug. 16	2169	512	84	1107
Wrench	L. Coes	610,259	Sept. 6	213	48	84	1483
Wrench	L. W. Everhart	609,762	Aug. 23	2947	689	84	1274
Wrench	W. C. Flint	609,388	Aug. 16	2278	539	84	1128
Wrench	L. Frederick and G. H. Dugan	608,767	Aug. 9	1066	245	84	884
Wrench	S. A. Haines	609,670	Aug. 23	2808	655	84	1247
Wrench	H. C. Hart	609,146	Aug. 16	1832	436	84	1039
Wrench	J. L. Jones	608,866	Aug. 9	1278	298	84	921
Wrench	H. Lanius	608,876	Aug. 9	1295	302	84	925
Wrench	C. S. Metcalfe	611,499	Sept. 27	2498	576	84	1973
Wrench	W. R. Moore	610,553	Sept. 13	770	175	84	1602
Wrench	R. Parrish	608,477	Aug. 2	551	123	84	764
Wrench	T. Spriggs	606,690	July 5	97	21	84	21
Wrench	W. J. Walker	608,735	Aug. 9	1016	233	84	874
Wrench	G. H. Wells and H. A. Gleason	608,942	Aug. 9	1425	336	84	949
Wrench	O. Wigtil	608,628	Aug. 9	824	191	84	896
Wrench	J. N. Young	607,320	July 12	1284	274	84	265
Wrench	S. J. Johnston	607,439	July 19	1508	321	84	324
Wrench-jack							
Wringer: *See* Clothes-wringer. Mop-wringer.							
Wringer-holding device	J. Farrell and P. J. Hoar	608,447	Aug. 2	496	112	84	754
Wringing and mangling machine	W. McLean	611,075	Sept. 20	1666	382	84	1797
Writing machine. Check-	H. Clarke	607,833	July 26	2415	513 / 514	84	522
X-ray apparatus	H. Green	607,233	July 12	1128	241 / 242	84	234
Yarn-drying apparatus	W. Whiteley	610,781	Sept. 13	1152	264 / 265	84	1681
Yarn dyeing, sizing, and washing machine	W. Woodcock, J. Longthorpe, and W. Dargue.	611,306	Sept. 27	2131	492 / 493	84	1905
Yarn from fibrous materials. Machinery for manufacturing	W. H. Drury	611,109	Sept. 20	1745	400 / 401	84	1812
Yarn from fibrous materials. Manufacturing	W. H. Drury	611,108	Sept. 20	1737	399 / 400	84	1811
Yarn-mercerizing machine	C. L. Welchelt, W. S. Grady, and A. Jones.	607,150	July 12	970	210	84	204
Yarn-skein	O. Hoffmann	610,401	Sept. 6	502	109 / 110	84	1535
Yarn while mercerizing. Apparatus for stretching	J. R. Ecob	608,033	July 26	2809	597	84	599
Yoke attachment. Neck-	S. Pearson	609,699	Aug. 23	2857	668	84	1250
Yoke connection. Neck-	G. Bryanton	611,444	Sept. 27	2398	550	84	1952
Yoke. Neck-	S. J. McDonald	608,474	Aug. 2	546	122	84	763
Zinc. Apparatus for applying grease to sheet-	H. Hegeler	608,675	Aug. 9	913	210	84	856

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abdominal supporter	J. G. Morley	29,163	Aug. 2	84	803
Album-cover. Ornamental	W. H. Isbister	29,258	Aug. 23	84	1275
Ambulance-body	F. G. Davis	29,392	Sept. 20	84	1863
Antirattling plate	C. T. Redfield	28,963	July 5	84	135
Atomizer	A. Loring	28,976	July 5	84	134
Atomizers, &c. Tip for	C. W. Meinecke	28,975	July 5	84	134
Badge	G. H. Fenson	29,013	July 12	84	299
Badge	J. H. L. Holcomb	29,054	July 19	84	498
Badge	E. E. Kerns	29,116	Aug. 2	84	795
Badge	B. J. Mackoy	29,117	Aug. 2	84	795
Badge	E. Ringold	29,118	Aug. 2	84	795
Badge	K. H. Shaffer	29,276	Aug. 30	84	1427
Badge	R. F. Thompson	29,212	Aug. 16	84	1130
Badge or similar article	A. A. McRae	29,014	July 12	84	299
Bagatelle-board	M. Redgrave	29,047	July 12	84	305
Bags, &c. Tie for	E. L. Schanck	29,380	Sept. 20	84	1862
Bank. Savings-	R. E. Brownell	29,133	Aug. 2	84	796
Bar	C. E. Chamberlin	29,345	Sept. 13	84	1723
Basin-clamp	W. E. Byrnes	29,222	Aug. 16	84	1133
Battery-plate	C. T. Richmond	29,265	Aug. 23	84	1276
Bedspread	W. White	29,257	Aug. 23	84	1275
Bedstead end board	O. E. A. Wiessner	29,188	Aug. 9	84	974
Bedstead foot or head panel	W. M. Peters	29,284	Aug. 30	84	1428
Bedstead head or foot	J. M. Adams	29,423	Sept. 27	84	2013
Bedstead-rail member	G. Brand	29,002	July 5	84	139
Belt	J. F. Rose-Soley	29,096	July 26	84	641
Belt body. Waist-	A. E. Dunbar	29,097	July 26	84	641
Belt hook or staple	G. W Webb	29,405	Sept. 27	84	2009
Belt. Waist-	H. J Galsman	29,037	July 12	84	304
Bicycle-crank	H. A. Gustin	29,143	Aug. 2	84	799
Bicycle crank-hanger	P. L. Hussey	29,246	Aug. 16	84	1136
Bicycle-frame	H. H. Fefel	28,991	July 5	84	136
Bicycle-frame	S. B. Hill	29,077	July 19	84	502
Bicycle-frame	G. L. Thompson	29,243	Aug. 16	84	1136
Bicycle-frame	G. L. Thompson	29,244	Aug. 16	84	1136
Bicycle handle-bar grip	C. H. Eldon	28,992	July 5	84	136
Bicycle lever attachment	J. E. Wilson	29,340	Sept. 13	84	1722
Bicycle package-supporting clip	K. R. Stone	29,110	July 26	84	644
Bicycle-pedal side bar	G. W. Hadley	29,144	Aug. 2	84	799
Bicycle-saddle seat	S. J. Brown	29,247	Aug. 16	84	1137
Bicycle saddle-seat support	G. A. Macker	29,050	July 12	84	306
Bicycle seat-post	W. J. Shedd and B. F. Field	29,190	Aug. 9	84	975
Binding. Skirt-	H. Feder	29,350	Sept. 13	84	1724
Binding. Skirt or garment	G. H. Stedwell	29,206	Aug. 9	84	978
Binding. Skirt or garment	G. H. Stedwell	29,207	Aug. 9	84	978
Book-cover	J. R. Jones	29,359	Sept. 20	84	1857
Book. Index-	C. Leveque	29,138	Aug. 2	84	798
Boot-calk	R. O. Jacobson	29,040	July 12	84	304
Bottle	A. Barrie	29,126	Aug. 2	84	796
Bottle	A. Barrie	29,127	Aug. 2	84	797
Bottle	G. A. Flaccus	29,331	Sept. 13	84	1721
Bottle	W. S. Fox	28,969	July 5	84	133
Bottle	H. H. Freeman	29,092	July 26	84	640
Bottle	R. H. Levis	29,170	Aug. 9	84	972
Bottle	C. McGinn	29,060	July 19	84	499
Bottle	E. Packham, Jr	29,171	Aug. 9	84	972
Bottle	B. R. Paine	29,318	Sept. 6	84	1578
Bottle	H. Tappan	29,125	Aug. 2	84	796
Box	A. A. Faxon	29,057	July 19	84	498
Box	F. A. C. Kaiser	29,274	Aug. 30	84	1427
Box	I. Tahl	29,036	July 12	84	303
Box blank. Paper-	E. A. Armstrong	29,251	Aug. 16	84	1137
Box-cover brace	L. Diesterweg	29,391	Sept. 20	84	1863
Box-lid	G. A. Bisler	29,172	Aug. 9	84	972
Box. Ornamental toilet-powder	B. G. Talte	29,259	Aug. 23	84	1275
Box. Paper	P. B Myers	29,093	July 26	84	640
Box. Wooden	M. J. Bogert	29,252	Aug. 16	84	1137
Braid	V. Schuck	29,322	Sept. 6	84	1579
Braid. Trimming	H. Maul	29,208	Aug. 9	84	973
Brake-beam fulcrum-jaw	T. H Simpson and P. T. Handiges	29,106	July 26	84	643
Bread. Loaf of	C. W. Kolb	29,273	Aug. 23	84	1277
Broom-shield	G. Sr , and F. Pirrung	29,332	Sept. 13	84	1721
Brush-back	R. B Shepherd	29,167	Aug. 9	84	971
Brush. Tooth-	J. F. Ufford	29,219	Aug. 16	84	1133
Brushes, &c. Back for	E. Crees and C. S. Court	29,216	Aug. 16	84	1131
Brushes, &c. Back for	C. Egge	29,121	Aug. 2	84	796
Brushes, &c. Back for	J. E Straker, Jr.	29,015	July 12	84	300
Brushes, &c. Back for	J. E Straker, Jr	29,217	Aug. 16	84	1131
Brushes, &c. Back for	J. Theobald	29,275	Aug. 30	84	1427
Brushes, &c. Back for	H. A. Welhman	29,218	Aug. 16	84	1131
Buckle	T. Moore	29,277	Aug. 30	84	1428
Buckle	T. Moore	29,278	Aug. 30	84	1428

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name	No.	Date.	Official Gazette. Vol.	Page.
Buckle	T. Moore	29,279	Aug. 30	84	1428
Buckle	T. Moore	29,280	Aug. 30	84	1428
Buckle	T. Moore	29,281	Aug. 30	84	1428
Buckle	T. Moore	29,282	Aug. 30	84	1428
Buckle	T. Moore	29,419	Sept. 27	84	2011
Buckle	D. Conboy	29,156	Aug. 2	84	801
Buggy-top plate	H. W. Caldwell	29,024	July 12	84	301
Buggy-top support	F. J. del Corral	29,031	July 12	84	302
Bung-hole borer	J. E. and S. Haworth	29,302	Sept. 6	84	1575
Butter-curler	H. M. Brandt and E. Essley	29,088	July 26	84	640
Butter-stamping block	W. Bens	29,016	July 12	84	300
Button-hooks, &c. Handle for	E. Crees and C. S. Court	29,017	July 12	84	300
Button-hooks, &c. Handle for	F. J. Diacont	29,018	July 12	84	300
Button-hooks, &c. Handle for	F. J. Diacont	29,213	Aug. 16	84	1131
Button-hooks, &c. Handle for	L. Kranz	29,214	Aug. 16	84	1131
Button-hooks, &c. Handle for	L. Kranz	29,263	Aug. 23	84	1276
Button-hooks, &c. Handle for	J. E. Straker, Jr	29,225	Aug. 16	84	1132
Button or stud back and shank	A. Bippart	29,328	Sept. 13	84	1721
Button-plate	S. Carver	29,398	Sept. 20	84	1864
Cabinet	F. Helnig	29,137	Aug. 2	84	798
Calendar-casing	N. Hayden and C. F. C. Wurst	29,376	Sept. 20	84	1861
Camera body. Photographic	F. A. Brownell	28,989	July 5	84	136
Can. Meat	S. S. Conway	29,231	Aug. 16	84	1133
Can-opener	W. G. Browne	29,180	Aug. 9	84	973
Can. Sheet-metal	C. Diesel	29,260	Aug. 23	84	1276
Candlestick	A. F. Jackson	28,968	July 5	84	133
Candlestick	B. P. Jenks	29,421	Sept. 27	84	2011
Car-body bolster	E. F. Goltra	29,388	Sept. 20	84	1863
Car-wheel blank	J. A. Facer	29,352	Sept. 13	84	1724
Carpet	G. M. Fauser	29,008	July 5	84	140
Carpet	A. M. Rose	29,009	July 5	84	140
Carpet	A. M. Rose	29,010	July 5	84	140
Carpet	A. M. Rose	29,011	July 5	84	141
Carpet	A. M. Rose	29,401	Sept. 20	84	1865
Carpet	E. G. Sauer	29,426	Sept. 27	84	2012
Carpet	N. S. Stewart	29,427	Sept. 27	84	2012
Carpet	N. S. Stewart	29,428	Sept. 27	84	2013
Carpet	N. S. Stewart	29,429	Sept. 27	84	2013
Carpet	N. S. Stewart	29,430	Sept. 27	84	2013
Carpet	N. S. Stewart	29,431	Sept. 27	84	2013
Carpet	N. S. Stewart	29,210	Aug. 9	84	978
Carpet	F. M. Parker	29,094	July 26	84	640
Carpeting	R. J. Barkley	29,299	Sept. 6	84	1575
Carton-blank	R. J. Barkley	29,846	Sept. 13	84	1723
Carton filler	E. Ringold	29,304	Sept. 6	84	1575
Cash-register cabinet	J. H. Parker, Jr	29,395	Sept. 20	84	1864
Chair	A. D. Crocker	29,396	Sept. 20	84	1864
Chair or stool	A. D. Crocker	29,397	Sept. 20	84	1864
Chair or stool	A. D. Crocker	29,303	Sept. 6	84	1575
Chair or stool	J. H. Coffman	29,235	Aug. 16	84	1134
Chair-seat. Bent-wood	F. A. Dennett	29,166	Aug. 9	84	971
Chair-seat. Bent-wood	J. F. Price	29,033	July 12	84	303
Charm	L. C. Smith	29,067	July 19	84	500
Cheese-mold	E. J. Skinner	29,089	July 26	84	640
Chuck	H. Heltmann	29,090	July 26	84	640
Cigar	H. Heltmann	29,221	Aug. 16	84	1132
Cigar	J. Ditmar	29,055	July 19	84	498
Cigar-case	N. Weiss	29,288	Aug. 30	84	1429
Cigar or cigarette box	W. O. Blase	29,330	Sept. 13	84	1721
Cleaner and smoke-deflector	J. Gaskill	29,300	Sept. 6	84	1575
Cleat. Rope	C. A. Hirschi	29,290	Aug. 30	84	1429
Clock-frame	E. J. Rice	29,291	Aug. 30	84	1429
Closet-bend, &c	E. J. Rice	29,000	July 5	84	138
Closet-bend flange	G. P. Eastman	29,412	Sept. 27	84	2010
Cloth-cutters. Frame for electrically-operated	H. D. Crooker	28,995	July 5	84	137
Clothes-pounder	R. Wagner	29,404	Sept. 27	84	2009
Coin-operated-machine cabinet	R. F. Tochtermann	29,379	Sept. 20	84	1861
Combs. Member of	W. Robertson	29,150	Aug. 2	84	800
Cork-extractor casing	W. H. Fleischman	29,297	Aug. 30	84	1430
Corner-piece	S. O. Wilbor	28,972	July 5	84	134
Crank. Driving	R. Caspar	29,341	Sept. 13	84	1722
Cuff-holder	T. Wheat	29,070	July 19	84	500
Cultivator-blade	D. M. Motherwell	29,122	Aug. 2	84	796
Cultivator-tool frame	C. J. Ahrenfeldt	29,230	Aug. 16	84	1133
Cup	A. Pfliegler	29,154	Aug. 2	84	801
Curling-iron holder	C. J. Klein	29,136	Aug. 2	84	798
Cut-out cabinet	E. Rogers	29,168	Aug. 9	84	971
Die-block	A. Netherland	29,123	Aug. 2	84	796
Dish	C. J. Ahrenfeldt	29,325	Sept. 13	84	1720
Dish. Covered	J. G. Theobald	29,083	July 19	84	503
Dish-mount	T. M. Quigley	29,271	Aug. 23	84	1277
Display-case	A. B. Schanz	29,043	July 12	84	305
Display-stand	D Price	29,042	July 12	84	304
Door	C. O. Case	28,979	July 5	84	134
Door check casing	T Loynd	29,139	Aug. 2	84	799
Ear. Vessel	H S. Pullman	29,373	Sept. 20	84	1860
Egg-separator	W. S. Moody	28,996	July 5	84	137
Electric-machine casing. Dynamo	J and J. Hope, Jr	29,360	Sept. 20	84	1867
Engraving-machine frame. Pantograph	J M. Heasley	29,079	July 19	84	502
Envelop	G E. Plunkett	28,966	July 5	84	133
Envelop-blank	W. H Smith	29,220	Aug. 16	84	1132
Envelop-blank	W. Zoerb	29,351	Sept. 13	84	1724
Eyeglass or spectacle case	A A Azeez	29,165	Aug. 9	84	971
Fabric	C G. Hulse	29,025	July 12	84	301
Fan	A Giese	29,318	Sept. 6	84	1578
Faucet-body	H J Donahoe	29,160	Aug. 2	84	802
Fence-post	A Henley	29,158	Aug. 2	84	802
Fence. Wire	A L Kitselman				
Fence. Wire					

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Fence. Wire	A. L. Kitselman	29,159	Aug. 2	84	802
Film-holder	E. G. Thomas	29,112	July 26	84	644
Film-holder	E. G. Thomas	29,317	Sept. 6	84	1578
Finger-board guide	M L. Altop	29,045	July 12	84	305
Finishing roll or cylinder	J. Hall	29,343	Sept. 13	84	1723
Fire-pot lining	J. W. Kennedy	29,184	Aug. 9	84	974
Flag-holder	D. Lake and L. S. Conley	29,051	July 12	84	306
Flag-holder	E. Pincus	29,220	Aug. 16	84	1133
Flag or banner	J. F. Duke	29,052	July 19	84	497
Flag or similar article	J. M. Kennedy	29,053	July 19	84	497
Flagstaff	T. J. Whitney and I. Haaz	29,194	Aug. 9	84	975
Flagstaff-holder arm	F. H. Ferris	29,228	Aug. 16	84	1133
Fork tip. Hay	G. F. Carey	29,068	July 19	84	500
Fringe	A. C. Oehrle	29,348	Sept. 13	84	1724
Fringe	A C. Oehrle	29,349	Sept. 13	84	1724
Fruit-seeder disk	J. W. Brown, Jr	29,030	July 12	84	302
Funnel and measure. Combined	A. Brubaker	29,377	Sept. 20	84	1861
Fuse-box	W. F. Bossert	29,344	Sept. 13	84	1725
Game-board	R. E. Boyle	29,081	July 19	84	503
Game-board	W. B. Giles	29,115	July 26	84	645
Game-board	M. Goldstein	29,005	July 5	84	139
Game-board	M. R. Jewell	29,320	Sept. 6	84	1579
Game-board	W. Miles	29,321	Sept. 6	84	1579
Game-board	R. M. Riley and J. E. Fisher	29,196	Aug. 9	84	975
Game-board	G. L. Rothermel and C. H. Dodge	29,082	July 19	84	503
Game-board	F. B. Wells	29,250	Aug. 16	84	1137
Game-board	A. W. Standing	29,195	Aug. 9	84	975
Game device	J. H. Fleisch	29,425	Sept. 27	84	2012
Garment. Combination	D. H. Warner	29,226	Aug. 16	84	1132
Garment-supporter holder	G. H. Blakesley	29,204	Aug. 9	84	977
Garter	R. M. Dixon	29,174	Aug. 9	84	972
Gas-receiver	F. Haudel	29,375	Sept. 20	84	1860
Generating-set frame	A. Howard	29,128	Aug. 2	84	797
Globe or similar article	W. T. Lintner and J. T. Dowdall	29,099	July 19	84	504
Glove	F. Frank	29,248	Aug. 16	84	1137
Gong	P. C. Strahl	28,985	July 5	84	135
Grate-bar	J. W. Brown, Jr	29,029	July 12	84	302
Grinding-disk for mills	T. W. Attaway	29,242	Aug. 16	84	1136
Hame rein-guide bracket	G. W. Hill	29,021	July 12	84	301
Hammer	I. E. Palmer	29,422	Sept. 27	84	2012
Hammock-support	S. H. Hull	29,335	Sept. 13	84	1721
Harness-D	W. A. Schleicher, M. Lewis, and H. C. Swan.	28,982	July 5	84	135
Harness-loop	G. W. Ream	29,314	Sept. 6	84	1577
Harrow-frame	G. W. Ream	29,315	Sept. 6	84	1578
Harrow-frame	E. Whipple	29,157	Aug. 2	84	802
Harrow-tooth. Curved spring	F. C. Eckhardt	29,006	July 5	84	139
Hat	S. C. Townsend	29,099	July 26	84	641
Hat	P. Ott	29,146	Aug. 2	84	800
Hatchet	W. H. Anderson	29,361	Sept. 20	84	1862
Hinge. Butt	M. R. Vinson	29,389	Sept. 20	84	1863
Hoe. Weeding	J. A. McGuire and R. S. Williams	29,342	Sept. 13	84	1722
Hoeing-wheel. Agricultural	W. D. Linton and H. W. Farmer	29,107	July 26	84	643
Hog-ring	P. A. Myers	29,347	Sept. 13	84	1724
Home trainer attachment	E. R. Morton	29,152	Aug. 2	84	801
Hook	F. A. Thomas	29,041	July 12	84	304
Hook. Belaying	T. N. Martin	29,382	Sept. 20	84	1862
Hook. Check	M. H. McMannon and A. H. Powers	29,153	Aug. 2	84	801
Hook. Hame	E. Wilhelm	29,267	Aug. 23	84	1277
Hook. Hame	J. Wheatfield	28,978	July 5	84	134
Hooks. Blank for garment-fastening	C. H. Jacobs	29,039	July 12	84	304
Hoop	H. Paar	29,414	Sept. 27	84	2010
Horseshoe	R. M. Dixon	29,148	Aug. 2	84	800
Hose-coupling member	H. E. Donnell	29,104	July 26	84	643
Hose-reel spool	G. M. Edison and J. Wheeler	29,295	Aug. 30	84	1430
Hot-air furnace	W. Barchard	29,026	July 12	84	301
Hot-water holder	C. E. Roberts	28,993	July 5	84	137
Hub. Wheel	A. H. Ives	29,411	Sept. 27	84	2009
Ice-cream-tub cover	A. B. Clark	28,988	July 5	84	136
Ice-shaver	W. Bowman	29,361	Sept. 20	84	1858
Ink-well	G. Francis	29,362	Sept. 20	84	1858
Ink-well	B. Willard	28,981	July 5	84	135
Insulator-cap	J. Schies	29,032	July 12	84	303
Jar	W. E. Sharpe	28,980	July 5	84	134
Jar-cap	D. M. Smith	29,319	Sept. 6	84	1578
Jewel case	A. L. Baron	29,173	Aug. 9	84	972
Lamp-base	F. L. White	29,269	Aug. 23	84	1277
Lamp Bicycle	C. F. Linsley and R. F. Crooke	29,223	Aug. 16	84	1132
Lamp-body	G. Weiss	29,365	Sept. 20	84	1859
Lamp-body	F. L. White	29,406	Sept. 27	84	2009
Lamp body	W. F. Goeltz	29,407	Sept. 27	84	2009
Lamp bracket	R. Fleming	29,301	Sept. 6	84	1575
Lamp casing	G. R. MacIntire	29,366	Sept. 20	84	1859
Lamp. Electric	G. R. MacIntire	29,367	Sept. 20	84	1859
Lamp. Electric	G. R. MacIntire	29,368	Sept. 20	84	1859
Lamp. Electric	G. R. MacIntire	29,369	Sept. 20	84	1859
Lamp. Electric	L. O. Schuetz and B. G. Sherman	29,061	July 19	84	499
Lamp chimney. Night	J. Wuest	29,299	Aug. 30	84	1429
Lamp-chimney protector	J. W. Bowen	29,161	Aug. 2	84	803
Last	W. H. Taylor	29,384	Sept. 20	84	1862
Latch-bolt	W H. Taylor	29,385	Sept. 20	84	1862
Latch operating lever	W. H. Taylor	29,386	Sept. 20	84	1862
Latch-operating lever	A. S. Huntington	29,205	Aug. 9	84	977
Legging	H C Wirt	29,370	Sept. 20	84	1859
Lightning arrester	H. C. Wirt	29,371	Sept. 20	84	1860
Lightning-arrester	J. A. Mantz	29,149	Aug. 2	84	800
Lime light jet	E. D. Priest	29,372	Sept. 20	84	1860
Magnet frame. Field					

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Manhole-cover	T. P. Greger	29,312	Sept. 6	84	1577
Manhole-frame	T. P. Greger	29,313	Sept. 6	84	1577
Manicure-tool	M. E. Schilz	29,019	July 12	84	300
Match-box	J. M. Riedel and F. F. Metzger	29,091	July 26	84	640
Mattress	H. Ives	29,001	July 5	84	138
Medal	H. O'Donnell	28,965	July 5	84	132
Medicated air-head	R. Morris	29,140	Aug. 2	84	799
Motor and fan case	H. A. Balcome	29,374	Sept. 20	84	1860
Motor-float	T. G. Bowick	29,151	Aug. 2	84	801
Muff	I. Comonn	29,356	Aug. 23	84	1275
Mustache-guard	E. C. Donaldson	29,059	July 19	84	498
Nail	E. M. Sweeny	29,263	Aug. 30	84	1428
Nail-files, &c. Handle for	T. W. Foster	29,262	Aug. 23	84	1276
Necktie-retainer	J. H. Sheets	28,977	July 5	84	134
Oil-cup or oiler	J. W. Cushman	29,076	July 19	84	502
Package-holder	W. S. Seymour	29,333	Sept. 13	84	1721
Paper. Cone for roll-	A. Green	29,264	Aug. 23	84	1276
Paring-knife	M. E. Hadden	29,378	Sept. 20	84	1861
Pattern-chart	J. Marsden	29,197	Aug. 9	84	976
Pattern-chart	J. Marsden	29,198	Aug. 9	84	976
Pattern-chart	J. Marsden	29,199	Aug. 9	84	976
Pattern-chart	J. Marsden	29,200	Aug. 9	84	976
Pattern-chart	J. Marsden	29,201	Aug. 9	84	977
Pattern-chart	W. C. Halleck	29,408	Sept. 27	84	2009
Pessary	J. Y. Ridgway	29,285	Aug. 30	84	1428
Picture-frame	J. B. Moore	29,119	Aug. 2	84	795
Pin or similar article	D. K. Corbin	29,055	July 19	84	498
Pin or similar article. Scarf-	W. Straw	28,971	July 5	84	133
Pin-package container	J. R. Wengler	29,363	Sept. 20	84	1858
Pipe	J. Pilkington	29,191	Aug. 9	84	975
Pipe-cleaner	F. Abraham	29,326	Sept. 13	84	1720
Pipe. Tobacco-	J. H. Croskey	29,364	Sept. 20	84	1858
Pitcher	C. E. Haviland	28,970	July 5	84	133
Pitcher	C. J. Ahrenfeldt	29,169	Aug. 9	84	971
Plate	G. W. Ream	29,069	July 19	84	500
Plowshare	M. Bernhard	29,209	Aug. 9	84	978
Portière	O. O. Ozias	29,095	July 26	84	641
Price-indicating chart	W. H. O'Brien	29,234	Aug. 16	84	1134
Printer's quoin	H. Worthington	29,066	July 19	84	500
Punching-die	H. C. Fincke	29,132	Aug. 2	84	797
Puzzle-board	M. Harris	29,249	Aug. 16	84	1137
Puzzle-board	J. T. Schieffelin	29,400	Sept. 20	84	1865
Puzzle box or case	B. F. Overton and L. E. Bryant	28,999	July 5	84	138
Quilting-frame stand	A. H. Fowler	29,182	Aug. 9	84	973
Radiator	T. Holland	29,306	Sept. 6	84	1576
Radiator	T. Holland	29,294	Aug. 30	84	1430
Radiator-section	W. C. Patterson	29,105	July 26	84	643
Rail-chair	F. S. Pearson	29,241	Aug. 16	84	1136
Railway-conduit yoke	F. S. Pearson	29,270	Aug. 23	84	1277
Railway-conduit yoke	D. Butler	29,189	Aug. 9	84	974
Railway-spike	A. Alitto	29,145	Aug. 2	84	800
Range. Cooking-	A. V. Fletcher	29,034	July 12	84	303
Range. Cooking-	H. Clauss	29,020	July 12	84	300
Razor-sack	C. H. Veeder	29,175	Aug. 9	84	972
Register-case	C. H. Veeder	29,176	Aug. 9	84	972
Register-case	C. H. Veeder	29,177	Aug. 9	84	972
Register-case	C. H. Veeder	29,178	Aug. 9	84	972
Register-case	C. H. Veeder	29,179	Aug. 9	84	973
Register-case	C. H. Veeder	29,222	Aug. 16	84	1132
Register-case	P. C. Gallaway	29,266	Aug. 23	84	1277
Rein-holder	H. A. Jackson	29,063	July 19	84	499
Ribbon-clasp	M. Gebhardt	29,353	Sept. 20	84	1856
Ring	P. W. Gates	29,155	Aug. 2	84	801
Rock and ore crusher frame	M. Kramer	29,296	Aug. 30	84	1430
Rock-drill	F. R. Goode	29,310	Sept. 6	84	1577
Rope and wire holder	A. Petzold	29,253	Aug. 16	84	1138
Rug	L. A. Rines	29,134	Aug. 2	84	798
Rule. Dressmaker's	T. Moore	29,336	Sept. 13	84	1722
Saddle arched plate. Pack	T. Moore	29,298	Aug. 30	84	1430
Saddle frame. Pack-	E. Barber	29,012	July 5	84	141
Sarcophagus	T. W. Taliaferro	29,287	Aug. 30	84	1429
Sash-holder	W. W. Dampeer	29,147	Aug. 2	84	800
Sash-lock rack-bar	N. P. Jonsson	29,233	Aug. 16	84	1134
Sash-pulley shield	W. F. Stimpson	29,065	July 19	84	499
Scale face-plate. Computing	O. O. Ozias	29,135	Aug. 2	84	798
Scale-lever	J. M. Triner	29,064	July 19	84	499
Scale-pan-supporting stem	J. Polak	29,402	Sept. 27	84	2008
Scarf-pin	A. Girtanner	28,974	July 5	84	134
Scissors member. Manicure	E. Tyden	29,413	Sept. 27	84	2010
Seal	E. Tyden	29,387	Sept. 20	84	1862
Seal-body	W. W. Dingee	28,967	July 5	84	135
Separator-sieve	T. J. O'Brien	29,420	Sept. 27	84	2011
Sewer-trap	I. Rudinsky	29,390	Sept. 20	84	1863
Sewing-machine-stand bracket	F. J. Heideger	29,129	Aug. 2	84	797
Shade	E. Kaye	29,130	Aug. 2	84	797
Shade	E. A. Russell	29,224	Aug. 16	84	1132
Shade-holder	E. E. Canedy	29,334	Sept. 13	84	1721
Shoe-rack holder	W. C. Benkert	29,202	Aug. 9	84	977
Shoe-upper blank	B. V. and H. W. Arnstine	29,035	July 12	84	303
Show-case	C. Zimmerman	29,337	Sept. 13	84	1722
Shuttle-brace	L. Wormser	29,103	July 26	84	642
Sifter box. Ash-	G. A. E. Barnes	29,193	Aug. 9	84	975
Sign	M. Norden	29,046	July 12	84	305
Sign. Electric-light	C. Osborne	29,357	Sept. 20	84	1857
Silverware, &c. Border for	I B Kleinert	29,064	July 19	84	503
Skirt-facing	J S Heaton	29,088	July 12	84	304
Skirt-hanger	H. A. Schaefer	29,101	July 26	84	643
Skirt-protector					

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Spoon	W. A. Brown	29,354	Sept. 20	84	1856
Spoon	W. A. Brown	29,355	Sept. 20	84	1856
Spoon, fork, or similar article	P. Farnham	29,403	Sept. 27	84	2008
Spoons, forks, &c. Handle for	J. Clulee	29,215	Aug. 16	84	1131
Spoons, forks, &c. Handle for	H. L. Wallace	29,120	Aug. 2	84	796
Spoons, &c. Handle for	W. A. Jameson	29,324	Sept. 13	84	1720
Spoons, &c. Handle for	C. Osborne	29,356	Sept. 20	84	1857
Spoons, &c. Handle for	W. C. Codman	29,361	Aug. 23	84	1276
Sprayer-body	D. B. Smith	29,227	Aug. 16	84	1133
Sprayer-body	D. B. Smith	29,292	Aug. 30	84	1429
Sprayer-body	D. B. Smith	29,327	Sept. 13	84	1720
Spring	B. S. Seaman	29,022	July 12	84	301
Stall-fixture	H. M. and R. C. Eldridge	29,071	July 19	84	501
Statuette	F. Goldscheider	29,358	Sept. 20	84	1857
Stirrup	F. W. Bantz	29,415	Sept. 27	84	2010
Stirrup	J. C. Buntin	29,416	Sept. 27	84	2011
Stock-marking-tool member	J. P. Shaw	29,308	Sept. 6	84	1576
Stocking	O. L. Fay	29,254	Aug. 16	84	1138
Stocking. Bicycle or similar	G. P. Brown	29,087	July 19	84	504
Stone-dressing. Reversible cutter for	J. Dobbie	29,185	Aug. 9	84	974
Storage and display case	A. Walter	29,236	Aug. 16	84	1134
Stove	W. H. Albach	29,074	July 19	84	501
Stove	A. H. Wolff	29,240	Aug. 16	84	1135
Stove. Cooking-	W. W. Wehrle	29,394	Sept. 20	84	1864
Stove. Heating-	E. G. Germer	29,305	Sept. 6	84	1576
Stove. Heating-	T. R. Kennedy	29,075	July 19	84	501
Stove. Heating-	T. R. Kennedy and E. J. King	29,393	Sept. 20	84	1863
Stove or heater. Gas	S. W. Martin	29,237	Aug. 16	84	1134
Stove or heater. Gas	S. W. Martin	29,238	Aug. 16	84	1135
Stove or heater. Gas	S. W. Martin	29,239	Aug. 16	84	1135
Stove or range	R. Thiem	29,181	Aug. 9	84	973
Stovepipe-section and hot-water tank	W. C. Danum	29,027	July 12	84	302
Stovepipe-thimble	H. D. Walker	29,102	July 26	84	642
Stove water-front	J. W. Kennedy	29,183	Aug. 9	84	973
Stoves, &c. Canopy for oil-	M. E. Leitz	29,293	Aug. 30	84	1429
Strainer. Tea-	J. P. Eustis	29,058	July 19	84	498
Street-stands. Body for rolling	H. S. Mundy	28,994	July 5	84	137
Stump-burner	C. L. Kelley	28,986	July 5	84	135
Suspender-end	J. A. Hewes	29,208	Aug. 9	84	977
Switch-contact	M. Guett	28,984	July 5	84	135
Syringe-bulb	A. B. Cruickshank	29,409	Sept. 27	84	2009
Syringe. Vaginal	W. E. Dewey	29,141	Aug. 2	84	799
Syrup-cup cover	E. A. Russell	29,124	Aug. 2	84	796
Tag-fastener	S. C. Lauber	29,062	July 19	84	499
Tag-holder	G. J. Fliehmann	29,329	Sept. 13	84	1721
Tally casing. Base-ball-	J. K. Ritchey	29,131	Aug. 2	84	797
Textile fabric	O. Jaeger and G. Schmiedel	29,323	Sept. 6	84	1579
Tile-band	J. Jacobs	29,003	July 5	84	139
Tire-repairing plug	A. J. Whisler	29,268	Aug. 23	84	1277
Tobacco-package	G. Millhiser	29,192	Aug. 9	84	975
Tobacco-plug	W. W. Ford	28,967	July 5	84	133
Tongs. Member of a pair of	L. M. and J. L. Kapp	29,307	Sept. 6	84	1576
Tongue-depressor	A. Sawyer	28,973	July 5	84	134
Toy bank	C. A. Bailey	29,049	July 12	84	306
Toy-wind-wheel blank	J. W. Woodruff	29,048	July 12	84	306
Transformer-case	F. C. Sutter	29,410	Sept. 27	84	2009
Transformer-casing	J. W. Packard and H. W. Wiswell	28,997	July 5	84	138
Trimming	L. L. Rupp	29,007	July 5	84	140
Trousers-protector	E. P. Buren	29,162	Aug. 2	84	803
Truck frame. Car-	D. B. Kennedy	29,028	July 12	84	302
Truck side-bar	W. S. Adams	29,309	Sept. 6	84	1577
Tub-fastening	T. G. F. Dolby	29,072	July 19	84	501
Tug. Shaft-	T. W. Davies	29,383	Sept. 20	84	1862
Type. Font of printing-	R. Gnichwitz	29,080	July 19	84	502
Type. Font of printing-	C. W. Heergeist	29,272	Aug. 23	84	1278
Type-space	C. R. Murray	29,311	Sept. 6	84	1577
Undervest	R. M. Appleton	29,085	July 19	84	503
Underwaist	C. R. De Bevoise	29,100	July 26	84	642
Underwaist	C. R. De Bevoise	29,429	Sept. 27	84	2012
Vault-light	J. Magnusen	29,044	July 12	84	305
Vault-light	M. Mahony	29,399	Sept. 20	84	1865
Vehicle-spring	H. A. Muckle	29,418	Sept. 27	84	2011
Velocipede frame. Tandem-	G. D. Leechman	29,111	July 26	84	644
Velocipede front fork	G. L. Thompson	29,245	Aug. 16	84	1136
Velocipede-saddle	T. J. Kirkpatrick	29,417	Sept. 27	84	2011
Velocipede-saddle pommel-cushion	M. M. Deem	29,078	July 19	84	502
Waist-front distender	R. Sahlin	29,098	July 26	84	641
Wardrobe-case	J. E. Kennedy	28,998	July 5	84	138
Washboard	J. A. Galvin	29,073	July 19	84	501
Washboards. Blank or pattern for stamped	E. N. Gilfillan	29,187	Aug. 9	84	974
Washer	A. P. Read	29,023	July 12	84	301
Washing-machine sprayer attachment	J. V. Rakestraw	29,186	Aug. 9	84	974
Whist-tray	W. S. Coles	29,004	July 5	84	139
Window-cleaner	P. R. Cumming	28,990	July 5	84	136
Window-light	O. E. Winger	29,113	July 26	84	644
Window-light	O. E. Winger	29,114	July 26	84	645
Window-pole and picture-hook hanger	G. W. Willard	29,286	Aug. 30	84	1429
Wheel. Sprocket-	C. A. Dunn	29,142	Aug. 2	84	799
Woven fabric	W. T. Smith	29,164	Aug. 2	84	803
Woven fabric	W. T. Smith	29,211	Aug. 9	84	978
Wrench	L. M. Bushnell and S. S. Vaughan	29,109	July 26	84	644
Wrench	S. S. Vaughan and L. M. Bushnell	29,108	July 26	84	643
Wrench-jaw	R. B. Hough	29,338	Sept. 13	84	1722
Wrench. Spoke or nipple	C. Birk	29,339	Sept. 13	84	1722
Writing-pad	B. Brower	29,253	Aug. 16	84	1138

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abrasive materials, sandpaper, and emery paper and cloth	Union Sand Paper and Emery Wheel Company.	31,776	July 5	84	143
Alcohol, spirits, gin, and whisky	Standard Distilling and Distributing Company.	31,927	Aug. 30	84	1432
Ale. Ginger	Consumers Company	31,804	July 12	84	308
Antiseptic tablets and powder for certain named purposes	Boraline Chemical Co	31,859	Aug. 9	84	980
Antiseptics	Farbenfabriken of Elberfeld Company.	31,837	Aug. 2	84	805
Baking-powder	J. Strong & Co	31,970	Sept. 13	84	1726
Band instruments	Buescher Manufacturing Company	31,953	Sept. 6	84	1582
Bedsteads made wholly or in part of metal	Coburn Metallic Bed and Pneumatic Tube Mattress Company.	31,807	July 12	84	308
Beer. Lager	Independent Brewing Association	31,792	July 5	84	144
Beer. Lager	S. S. Pierce Company	31,926	Aug. 30	84	1432
Belts, shirt-waist holders, and skirt-supporters. Waist	A. E. Dunbar	31,868	Aug. 16	84	1139
Bicycle sundries. Certain named	R. C. Jenkinson	31,902	Aug. 23	84	1280
Bicycles	Arnold, Schwinn & Company	31,827	July 26	84	646
Bicycles	W. M. Holahan	31,866	Aug. 9	84	980
Bicycles	Peoria Rubber and Manufacturing Company.	31,903	Aug. 23	84	1280
Bits, spurs, stirrups, and harness-fittings	E. H. Eglington	31,975	Sept. 13	84	1726
Bitters for biliousness and jaundice. Vegetable	Estate of H. H. Hay	31,898	Aug. 23	84	1280
Books. Letter	G. W. Robertson	31,867	Aug. 16	84	1139
Boots and shoes	L. G. Bloomingdale	31,960	Sept. 13	84	1725
Boots and shoes	Hurley & Cashman	31,811	July 19	84	505
Boots and shoes. Leather	E. H. Tilton	31,848	Aug. 9	84	979
Boots and shoes. Soles and other leather parts of	Pfister & Vogel Leather Company	31,849	Aug. 9	84	979
Brooms for household use. Long-handled	H. Thompson	31,819	July 19	84	506
Brushes	Florence Manufacturing Company	31,862	Aug. 9	84	980
Butter, milk, cheese, and cream	J. L. Humphrey, Jr	31,852	Aug. 9	84	979
Buttons	Morley Button Manufacturing Company.	31,769	July 5	84	142
Candy	F. H. Gruneberg	31,855	Aug. 9	84	979
Canned goods. Certain named	H. C. Baxter & Bro	31,854	Aug. 9	84	979
Canned salmon	Eureka and Epicure Packing Company.	31,971	Sept. 13	84	1726
Canned salmon	Eureka and Epicure Packing Company.	31,972	Sept. 13	84	1726
Carbon blacks	Peerless Carbon Black Company	31,818	July 19	84	506
Celery extract. Compound	R. Ray	31,878	Aug. 16	84	1140
Cement. Portland	Hammer Society	31,918	Aug. 30	84	1432
Cement. Portland	Hammer Society	31,919	Aug. 30	84	1432
Chemical and medicinal preparation	Firm of E. Merck	32,002	Sept. 27	84	2014
Chemical and medicinal preparation	Firm of E. Merck	32,003	Sept. 27	84	2014
Chests or bins	M. F. Brown	31,901	Aug. 23	84	1280
Chimneys, lantern-globes, and reflectors	Gill Brothers & Co	31,841	Aug. 2	84	805
Cigars	Balsa y Hermano	31,969	Sept. 13	84	1726
Cigars	Hannan Bros	31,850	Aug. 9	84	979
Cleaning glass, metal, earthenware, and other articles having smooth surfaces. Compounds for	J. W. Alton	31,938	Sept. 6	84	1581
Cleansing compound. Ammonia	Zucker & Levett & Loeb Company	31,941	Sept. 6	84	1581
Clothing. Men's, boys', and children's	A. Kirschbaum & Co	31,911	Aug. 30	84	1431
Coffee	E. Levering & Co	31,944	Sept. 6	84	1581
Coffee. Roasted	American Coffee Company	31,899	Aug. 23	84	1280
Coffee. Roasted and ground	E. Rosedale	31,803	July 12	84	308
Compounds for the cure of nervous debility	Pearl Medicine Co	31,924	Aug. 30	84	1432
Condiment	Vaupel Samaritan Company	31,882	Aug. 16	84	1140
Confectionery. Certain named	Sprague, Warner & Company	31,789	July 5	84	144
Copying-book and copying-paper	C. J. Cohen	31,957	Sept. 13	84	1725
Cornmeal	B. G. Pollard	31,880	Aug. 2	84	804
Corn-plaster	Williamson & Watts	31,998	Sept. 27	84	2014
Corsets	Ottenheimer Bros	31,977	Sept. 20	84	1866
Corsets	E. Schweinburg	31,829	Aug. 2	84	804
Corsets	Warner Brothers Company	31,795	July 12	84	307
Crackers	Thomas & Clarke	31,948	Sept. 6	84	1582
Cutlery and cutting-tools	Dillemann, Fils & Co	31,905	Sept. 20	84	1868
Decorations. Mural	Benjamin Moore & Company	31,906	Aug. 30	84	1431
Disinfecting, antiseptic, and ascepticizing preparations	Firm of C. Raspe	31,950	Sept. 6	84	1582
Dress-shields	Kora Company	31,959	Sept. 13	84	1725
Drying-machines	Philadelphia Textile Machinery Company	31,821	July 19	84	506
Dye. Cutch or catechu	Sarawak Cutch Company	31,920	Aug. 30	84	1432
Dyspepsia, catarrh, liver and kidney, pain and cough cure, pills, and liniment	M. De Tar	31,987	Sept. 20	84	1867
Elastic goring, cords, braids, and narrow webs	Glendale Elastic Fabrics Company	31,888	Aug. 23	84	1279
Elastic goring, cords, braids, and narrow webs	Glendale Elastic Fabrics Company	31,889	Aug. 23	84	1279
Elastic goring, cords, braids, and narrow webs	Glendale Elastic Fabrics Company	31,890	Aug. 23	84	1279
Elastic goring, cords, braids, and narrow webs	Glendale Elastic Fabrics Company	31,891	Aug. 23	84	1279
Elastic goring. cords, braids, and narrow webs	Glendale Elastic Fabrics Company	31,892	Aug. 23	84	1279
Elixirs, laxatives, alteratives, and tonics	Resinol Chemical Co	31,873	Aug. 16	84	1139
Embalming fluid	Max Huncke Chemical Company	31,898	Aug. 2	84	805
Eyeglasses. Pince-nez	George Culver, Limited	31,828	Aug. 2	84	804

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Eye-tablets	H. M. Goodhue	31,877	Aug. 16	84	1140
Fertilizers. Chemical	G. W. Coggeshall	31,886	Aug. 16	84	1140
Fibrous compositions. Certain named	P. C. Holmes Company	31,870	Aug. 16	84	1139
Flavoring and toilet articles. Certain	Cuitoit Co	31,934	Sept. 6	84	1580
Flavoring compound for syrup for soda-water	B. Wilson	31,833	Aug. 2	84	804
Floor and wood finish	Glidden Varnish Company	31,860	Aug. 9	84	980
Flour and bread therefrom	Robinson-Danforth Commission Company.	31,969	Sept. 20	84	1867
Flour. Wheat	Pearl Roller Mill Company	32,013	Sept. 27	84	2015
Flour. Wheat	E. O. Stanard Milling Company	31,949	Sept. 6	84	1582
Food. Compressed	American Compressed Food Company.	31,788	July 5	84	144
Food extracts and preparations. Certain named	C. R. Valentine	31,870	Aug. 16	84	1140
Footwear, including boots, shoes, gaiters, overgaiters, overshoes, slippers, and rubbers.	Parker, Holmes & Co	31,869	Aug. 16	84	1139
Fruits and vegetables	Erie Preserving Company	31,824	July 26	84	646
Gin	J. de Kuyper & Son	31,816	July 19	84	505
Gin. Holland	Aspell & Company	32,009	Sept. 27	84	2015
Gin. Old Tom	Aspell & Company	32,008	Sept. 27	84	2015
Gloves and mittens	American Glove Company	31,931	Sept. 6	84	1580
Gloves. Ladies', misses', and gentlemen's kid	W. Hillman	31,794	July 12	84	307
Golf balls and clubs	Griggs, Cooper & Co	31,771	July 5	84	142
Groceries. Certain named	E. A. Frame	31,881	Aug. 16	84	1140
Gum. Chewing	Grove Company	31,942	Sept. 6	84	1581
Gum. Chewing	J. E. Jones	31,880	Aug. 16	84	1140
Hair-tonic	Jacob Dold Packing Company	31,798	July 12	84	307
Hams, bacon, shoulders, and canned, cured, and smoked meats.	Plano Manufacturing Company	31,914	Aug. 30	84	1431
Harvesting hay and cereals. Machinery for	Plano Manufacturing Company	31,775	July 5	84	143
Harvesting hay and cereals. Machinery for	Chambre Syndicale des Fabricants de Chapeaux de Paille et Feutre pour Dames et Fournitures pour Modes.	31,887	Aug. 16	84	1140
Hats. Ladies' straw and felt	Saginaw Milling Co	31,997	Sept. 27	84	2014
Hay. Baled	American Pin Company	31,994	Sept. 20	84	1867
Hooks and eyes	J. Kaiser	31,863	Aug. 9	84	980
Horns used in connection with sound-producing devices	H. B. Haigh	31,772	July 5	84	142
Horseshoes	Revere Rubber Company	32,015	Sept. 27	84	2016
Hose, belting, packing, valves, gaskets, and springs	R. R. Smith	31,930	Sept. 6	84	1580
Insect-destroyer	Badger Brass Manufacturing Company.	31,921	Aug. 30	84	1432
Lamps. Acetylene-gas	Clarkes-Pyramid and Fairy Light Company.	31,773	July 5	84	142
Lamps and candles	Brown & Harris	31,864	Aug. 9	84	980
Lard	R. H. Foerderer	31,787	July 5	84	144
Leathers. Light-weight	Union Linen Company	31,978	Sept. 20	84	1866
Linen fabric. Certain named woven	C. R. Roswell	31,810	July 19	84	505
Liniment	L. Schuenemann	31,857	Aug. 9	84	980
Liniment	Yale & Towne Manufacturing Company.	31,966	Sept. 13	84	1725
Locks	Gregory & Co	31,843	Aug. 2	84	805
Lozenges for allaying thirst	J. Faulkner	32,005	Sept. 27	84	2015
Lubricants. Certain named	Parodi & Co	31,939	Sept. 6	84	1581
Lumber. Yellow-pine	Champion Chemical Works	31,955	Sept. 6	84	1582
Lye and potash	Eagle Lye Works	31,984	Sept. 20	84	1867
Lye or potash	Schuchardt & Schütte	31,883	Aug. 16	84	1140
Machine-tools	A. Schwill & Co	31,806	July 12	84	308
Malt for brewers' use	Diamond Match Company	31,968	Sept. 13	84	1726
Matches. Friction	H. W. Crolley	31,916	Aug. 30	84	1431
Medical compound for the removal of hair from the skin, and for skin, scalp, and hair affections.	H. Terry	31,964	Sept. 13	84	1725
Medical plasters	Oberhaeusser & Landauer	31,835	Aug. 2	84	804
Medicinal confections, beverages, and preparations. Certain named	G. B. Fisher	31,856	Aug. 9	84	980
Medicinal liquid. Certain named	Matchless Mineral Water Company	31,817	July 19	84	506
Medicinal mineral water. Certain named	Maltbie Chemical Company	31,834	Aug. 2	84	804
Medicinal mixture to aid digestion	A. L. Taddéi	31,896	Aug. 23	84	1279
Medicinal pomade or ointment	C. C. Jerome	31,872	Aug. 16	84	1139
Medicinal preparation in the form of a flour for certain disorders.	R. T. Booth Company	31,923	Aug. 30	84	1432
Medicinal preparations and medicinal toilet articles. Certain named	F. X. Liebig	32,000	Sept. 27	84	2014
Medicinal tonics	A. Choffé	31,967	Sept. 13	84	1726
Medicinal wine	L. Mohr	31,825	July 26	84	646
Medicine	Gould Gray Hair Remedy Co	32,001	Sept. 27	84	2014
Medicine for restoring gray hair to its natural color and for growing new hair.	Mineral Spring Medical Co	31,782	July 5	84	143
Medicines. Blood	German Medicine Company	31,874	Aug. 16	84	1139
Medicines for certain named diseases. Proprietary	Morris, Little & Son	31,876	Aug. 16	84	1140
Medicines for domestic animals	Van Vleet-Mansfield Drug Company	31,871	Aug. 16	84	1139
Mentho-quinine and laxative quinidine tablets, and a kidney cure.	Turner Brass Works	31,784	July 5	84	144
Metal articles. Certain named	Neptune Meter Company	32,014	Sept. 27	84	2015
Meters. Fluid	O. Lindemann	31,905	Aug. 23	84	1280
Milk measuring and registering apparatus and charts therefor.	B. B. Mineral Springs Company	31,851	Aug. 9	84	979
Mineral water. Certain bitter	Waukesha Water Company	31,943	Sept. 6	84	1581
Mineral waters	Morgenstern & Goldsmith	31,791	July 5	84	144
Musical instruments	G. A. Bayle	31,976	Sept. 20	84	1866
Mustard, pickles, and sauces	Marsh Oil Company	31,805	July 12	84	308
Oil. Castor	Union Oil Company	31,801	July 12	84	307
Oil. Cotton-seed	G. Lueders & Co	32,010	Sept. 27	84	2015
Oil. Olive, essential, salad, and seed	Union Oil Company	31,881	Aug. 2	84	804
Oils. Cooking	Vacuum Oil Company	31,947	Sept. 6	84	1581
Oils. Lubricating	B. Moniz & Co	31,861	Aug. 9	84	980
Oils. Mineral lubricating		31,973	Sept. 13	84	1726

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Oils. Mineral lubricating	B. Moniz & Co	31,974	Sept. 13	84	1726
Ointments	C. E. Belcher	31,858	Aug. 9	84	980
Overshoes	A. E. Little & Co	31,912	Aug. 30	84	1431
Paint. Cold-water	Muzzy Bros	32,011	Sept. 27	84	2015
Paint. Roof	Kansas City Roofing and Corrugating Company.	31,777	July 5	84	143
Paints and surface-coatings	A. E. Maire	31,778	July 5	84	143
Paints and varnishes for straw and ratan goods	Carpenter-Morton Company	31,983	Sept. 20	84	1866
Paper. Sheathing	Newton Paper Company	31,846	Aug. 2	84	806
Paper. Writing	Whiting Paper Company	31,793	July 12	84	307
Papers. Writing	Whiting Paper Company	31,770	July 5	84	142
Pens	Perry & Company	31,958	Sept. 13	84	1725
Perfume for the bath	W. H. C. Burnett	31,822	July 26	84	646
Perfumery, toilet water, and toilet powder	H. K. Buck	31,933	Sept. 6	84	1580
Pharmaceutical preparations. Certain named	Chemische Fabrik in Helfenberg bei Dresden, Eugen Dieterich.	31,799	July 12	84	307
Pins	American Pin Company	31,932	Sept. 6	84	1580
Pistols	R. Parker	31,844	Aug. 2	84	805
Plants and trees	D. Shank	31,993	Sept. 20	84	1867
Plows	Minneapolis Plow Works	31,996	Sept. 20	84	1868
Polish	J. L. Prescott & Co	31,982	Sept. 20	84	1866
Powders, pills, tablets, perls, ointments, and tinctures	Pharmaceutisches Institut Ludwig Wilhelm Gans.	31,963	Sept. 13	84	1725
Preservative compound. Certain named	E. Calm	31,885	Aug. 16	84	1140
Refrigerators	Maine Manufacturing Co	31,826	July 26	84	646
Remedies. Fever	T. J. Vogelgesang	31,875	Aug. 16	84	1139
Remedies for certain named diseases. Herb	C. W. Unger	31,785	July 5	84	144
Remedies for indigestion, flatulency, and dyspepsia	Hance Bros. & White	32,004	Sept. 27	84	2015
Remedy. Certain antiseptic	F. Hoffmann-La Roche & Co	31,922	Aug. 30	84	1432
Remedy for certain named diseases	E. Morin	31,952	Sept. 6	84	1582
Remedy for certain named diseases	J. R. Wasson	31,965	Sept. 13	84	1725
Remedy for nervous ailments and sequelæ. Certain	H. Arnold	31,895	Aug. 23	84	1279
Remedy for skin diseases	O. Klopsch	31,800	July 12	84	307
Remedy for the diseases of cattle	G. B. M. Steinhoff	31,802	July 12	84	307
Remedy for the diseases of women. Internal	Hazeltine & Perkins Drug Company	31,783	July 5	84	143
Remedy. Tonic	Cleveland Veterinary Remedy Co	31,925	Aug. 30	84	1432
Rheumatism cure and blood-purifier. Certain	M. J. Johnson	31,951	Sept. 6	84	1582
Ropes, cords, twines, threads, bagging, and carpets or floor-coverings.	La Industrial	31,813	July 19	84	505
Rouge. Liquid	M. E. Farnum	31,781	July 5	84	143
Rubber goods and articles made therefrom and waterproof oiled fabrics and articles made therefrom.	Goodyear Rubber Company	31,929	Sept. 6	84	1580
Rubber heels for boots and shoes	F. W. Whitcher & Co	31,961	Sept. 13	84	1725
Saccharine substances. Certain named	Fries Bros	31,790	July 5	84	144
Sachet-powders and toilet soap	C. B. Woodworth Sons Company	31,935	Sept. 6	84	1580
Salmon	J. M. Chapman	31,913	Aug. 30	84	1431
Salves	H. M. Gaffney	31,786	July 5	84	144
Sandalwood in paste form. Preparation of	M. A. Sargent	31,797	July 12	84	307
Sedatives	Farbenfabriken of Elberfeld Company.	31,836	Aug. 2	84	805
Sewing-machines	Davis Sewing Machine Company	32,016	Sept. 27	84	2016
Sewing-machines	Davis Sewing Machine Company	32,017	Sept. 27	84	2016
Sewing-machines	Florence Machine Company	31,820	July 19	84	506
Sewing-machines	J. M. Richardson	31,865	Aug. 9	84	980
Sharpening-stones	Pike Manufacturing Company	31,774	July 5	84	142
Shoe-cloth	D. W. Northrop	31,978	Sept. 20	84	1866
Soap	Larkin Soap Manufacturing Company.	31,985	Sept. 20	84	1867
Soap and candles. Grease for the manufacture of	E. S. Kuh	31,937	Sept. 6	84	1580
Soap. Soft	J. H. Farr & Co	31,915	Aug. 30	84	1431
Soap substitute	F. W. Turner, Jr	31,780	July 5	84	143
Soaps, perfumery, extracts, face and tooth powders, excluding perfumed waters.	Court Perfumery Company	31,936	Sept. 6	84	1580
Soles. Foot	H. F. Roemheld	31,979	Sept. 20	84	1866
Stationery. Certain named articles of	Firm of J. S. Staedtler	31,928	Aug. 30	84	1432
Stay-tape	Reversible Collar Company	31,847	Aug. 9	84	979
Stoves. Heating and cooking	W. S. Smith	32,018	Sept. 27	84	2016
Sugar, sorghum, molasses, and syrup	M. H. Alexander Company	31,946	Sept. 6	84	1581
Sulfur	Koch & Reis	31,897	Aug. 23	84	1279
Surgical instruments and appliances	F. A. Reichardt	31,999	Sept. 27	84	2014
Sweetener	Chemicals and Drugs Company	31,990	Sept. 20	84	1867
Tablets and powders for certain named disorders	G. R. Debnam	31,988	Sept. 20	84	1867
Tea	P. C. Larkin	31,900	Aug. 23	84	1280
Tea	E. A. Willard	31,815	July 19	84	505
Tea, coffee, spices, and canned goods	W. E. Sibley	31,832	Aug. 2	84	804
Tea, coffee, spices, flavoring extracts, and sauces	C. W. Snook	31,945	Sept. 6	84	1581
Teas. Certain named	E. A. Willard	31,823	July 26	84	646
Textile material with flexible waterproof coating	Keratol Company	31,907	Aug. 30	84	1431
Tobacco. Chewing and smoking	Hoffman & Co	31,991	Sept. 20	84	1867
Tobacco. Plug and twist	Pegram & Penn	32,012	Sept. 27	84	2015
Tooth-powder	T. Hollis	31,962	Sept. 13	84	1725
Toys, dolls, and games	Firm of F. A. O. Schwarz	31,839	Aug. 2	84	805
Toys, dolls, and games	Firm of F. A. O. Schwarz	31,840	Aug. 2	84	805
Trisodium phosphate	Provident Chemical Works	31,898	Aug. 23	84	1279
Tubes. Sheet-metal	Wilmot & Hobbs Manufacturing Company.	31,842	Aug. 2	84	805
Twine and binder-twine	Plymouth Cordage Company	31,812	July 19	84	505
Twine. Binder	Edwin H. Fitler Company	31,954	Sept. 6	84	1582
Vehicles. Certain named	Moline Wagon Company	31,904	Aug. 23	84	1280
Vehicles ordinarily drawn by horses. Light spring	Deere & Webber Company	31,809	July 12	84	308
Waist-front distenders	Sahlin Novelty Company	31,796	July 12	84	307
Wall-finish	Muralo Company	31,981	Sept. 20	84	1866
Washing, cleaning, and polishing compounds or substances	F. J. Underwood	31,940	Sept. 6	84	1581
Washing compounds	M. M. and J. T. Jones, M. M. Kornegay, and A. L. Mayhew.	31,779	July 5	84	143

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Washing-machines	Vandergrift Manufacturing Company.	31,808	July 12	84	308
Washing-powder	S. J. Braun	31,884	Aug. 16	84	1140
Washing-tablets	W. J. Baer, H. H. Yarnell, and J. A. Zimmerman.	31,986	Sept. 20	84	1807
Wheels of all sizes for light buggies or heavy trucks and their parts. Vehicle-	Muncie Wheel Co	31,845	Aug. 2	84	806
Whips. Fine driving-	Lay Whip Company	31,814	July 19	84	505
Whisky. Bourbon	C. W. Jefferson	31,992	Sept. 20	84	1867
Whisky. Rye	Aspell & Company	32,006	Sept. 27	84	2015
Whisky. Scotch	Aspell & Company	32,007	Sept. 27	84	2015
Wood-fillers	J. W. Beatty and A. W. Fuller	31,917	Aug. 30	84	1432
Woolen fabrics for clothing	Hexter & Scheuer	31,908	Aug. 30	84	1431
Yarn with silk finish	F. E. Warburton	31,909	Aug. 30	84	1431
Yarn with silk finish	F. E. Warburton	31,910	Aug. 30	84	1431
Yeast-cakes	Crescent Macaroni Company	31,853	Aug. 9	84	979

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"Amicus Relief." (For Medicinal Remedy)	G. Glanfield	6,628	July 19	84	315
"Arab Balsam." (For Balsam)	A. Dakin	6,664	Sept. 13	84	1589
"Armor Strength Cheviots. Wear and Color Guaranteed. Saks and Company."	A. and I. Saks	6,623	July 12	84	151
"Bare's Dyspepsia Remedy and Tissue Builder." (For a Medicine.)	J. B. Bare	6,641	Aug. 16	84	987
"Carrara." (For Paint)	Carrara Paint Company	6,635	Aug. 2	84	653
"Chelsea Trimming." (For Fancy Dry Goods)	Kursheedt Manufacturing Company.	6,639	Aug. 16	84	987
"Chips that Pass in the Night." (For Matches)	Diamond Match Company	6,653	Aug. 30	84	1287
"Cousins." (For Tea)	W. J. Buttfield	6,667	Sept. 13	84	1589
"Cupid's Game." (For Cigars)	American Lithographic Company	6,636	Aug 9	84	813
"Cycle Beer." (For Beer)	Commonwealth Brewing Company	6,633	Aug. 2	84	653
"Davenport s Tasteless Sulphate Quinine"	D. F. Davenport	6,680	Sept. 27	84	1875
"Dr. Dunlop's Marvoline (Oriental Oil)." (For Rheumatism, Neuralgia, &c.)	C. W. Dunlop	6,643	Aug. 16	84	987
"Dr. Grebe s XXX Chicken Sarsaparilla and Cholera Cure." (For a Medical Compound.)	J. E. Grebe	6,634	Aug. 2	84	653
"Dr. Many's Antiseptic Tooth Powder." (For Tooth-Powder.)	E. P. Weed	6,665	Sept. 13	84	1589
"Eau de Cologne de la Cour." (For Toilet Water)	Court Perfumery Company	6,632	Aug. 2	84	653
"Eau de Frangipanni." (For Toilet Water)	Court Perfumery Company	6,630	Aug. 2	84	653
"Eau de Toilette Violette." (For Toilet Water)	Court Perfumery Company	6,631	Aug. 2	84	653
"Ford's Remedies." (For Medical Compounds)	F. G. Ford	6,642	Aug. 16	84	987
"From Thorsby Ala. to Market." (For Grapes)	Concordia Land and Improvement Association.	6,671	Sept. 13	84	1589
"Game of Naval War." (For a Game)	McLoughlin Brothers	6,660	Sept. 13	84	1589
"Game of Race Around the World." (For a Game)	McLoughlin Brothers	6,655	Sept. 6	84	1441
"Game of the Robber Kitten." (For a Game)	McLoughlin Brothers	6,656	Sept. 6	84	1441
"Game of War at Sea or Don't Give Up the Ship." (For a Game.)	McLoughlin Brothers	6,662	Sept 13	84	1589
"Golden Slipper." (For Rye Whisky)	H. H. Elliott	6,647	Aug. 23	84	1147
"Greatworth's Teas and Coffees." (For Teas and Coffees)	C. W. Snook	6,650	Aug. 30	84	1287
"H. W. Johns Improved Asbestos Roofing." (For Asbestos Roofing and Roofing-Felts.)	H. W. Johns Manufacturing Company.	6,654	Aug. 30	84	1287
"Haas' Kremonia or Ammonia Cream." (For Cleansing Compounds.)	Zucker & Levett & Loebe Company.	6,651	Aug. 30	84	1287
"Haas' Kremonia or Ammonia Cream." (For Cleansing Compounds.)	Zucker & Levett & Loebe Company	6,652	Aug. 30	84	1287
"Hamilton Medical Co's Remedies." (For Medicine)	Hamilton Medicine Company	6,637	Aug. 9	84	813
"Hirsau Cloister Drops." (For Medicine)	J. Schlenker	6,622	July 5	84	1
"Ho-Tea." (For Tea)	W. J. Buttfield	6,668	Sept. 13	84	1589
"Hollands." (For Coffee)	Holland Coffee Company	6,658	Sept. 6	84	1441
"Hoosier Whole Wheat Pancake Flour." (For Pancakes)	Hygienic Milling Company	6,644	Aug. 16	84	987
"International Automatic Copying Book"	J. O. Huehberger	6,625	July 19	84	315
"Lightning Polish." (For a Furniture Polish)	J. Voytek	6,681	Sept. 27	84	1875
"Lucas' Dengue Medicine." (For Yellow Fever and La Grippe.)	G. B. Lucas	6,648	Aug. 23	84	1147
"Lucchesi's Cure for Rheumatism." (For Rheumatic Salve)	E. Lucchesi	6,674	Sept. 20	84	1733
"Navy Belle." (For Cigars)	American Lithographic Company	6,646	Aug. 23	84	1147
"Our Hero." (For Cigars)	American Lithographic Company	6,645	Aug. 23	84	1147
"Physiological Nerve and Tissue Food." (For a Medical Compound.)	Boericke & Tafel	6,677	Sept. 27	84	1875
"Physiological Salts." (For a Medical Compound)	Boericke & Tafel	6,678	Sept. 27	84	1875
"Physiological Tonicum." (For a Medical Compound)	Boericke & Tafel	6,679	Sept. 27	84	1875
"Pickwick Paper." (For Toilet-Paper)	J. G. Cramer	6,640	Aug. 16	84	987
"Poong's Ready Cure." (For a Medicine)	Chen Yum Poong	6,659	Sept. 6	84	1441
"Porto Rico Special." (For Beer)	J. Ottman Lithographing Company	6,672	Sept. 20	84	1733
"Ready for Use Rat Cake." (For Rat-Poison)	F. C. Loomis	6,675	Sept. 20	84	1733
"Red Seal Laundry Soap." (For Soap)	P. C. Tomson & Co	6,666	Sept. 13	84	1589
"Rosedale Brand." (For Canned Fruits, Vegetables, and Wines.)	Armstrong & Co	6,676	Sept. 27	84	1875
"Rule Columbia." (For Cigars)	American Lithographic Company	6,627	July 19	84	315
"Russian Navy." (For Serge)	A. and I Saks	6,624	July 12	84	151
"Select Stock." (For Beer-Bottles)	H. R. Wirth	6,682	Sept. 27	84	1875
"Shield Chop." (For Tea)	W. J. Buttfield	6,669	Sept. 13	84	1589
"Social Session." (For Whisky)	Gottschalk Company	6,670	Sept. 13	84	1589
"Speckled Cracker Jack." (For Cigars)	Lee Broom and Duster Company	6,673	Sept. 20	84	1733
"Supreme Chief Ranger." (For Cigars)	T. H. Freter	6,621	July 5	84	1
"The Game of the Ten Little Niggers." (For a Game)	McLoughlin Brothers	6,657	Sept. 6	84	1441
"The Merry Game of Old Maid." (For a Game)	McLoughlin Brothers	6,661	Sept. 13	84	1589
"The Original Extract of Figs." (For Medicine)	W. H. Briggs	6,663	Sept. 13	84	1589
"The Reform Self Binder"	H. E. Velt	6,629	July 26	84	513
"Uncle Sam's Maine Puzzle"	W. P. Berrien and A. H. Smith	6,638	Aug. 16	84	987
"War Signals." (For Cigars)	American Lithographic Company	6,626	July 19	84	315
"Yankee Drops, Manila Flavor." (For Cigars)	American Lithographic Company	6,649	Aug. 30	84	1287

PRINTS.

Title.	Name.	No.	Date.	Official Gazette.	
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"American-Cuban." (For Playing-Cards)	New York Consolidated Card Company.	74	Aug. 16	84	987
"Army and Navy Puzzle." (For a Game)	S. L. Davis	78	Sept. 20	84	1733
"English Woolen Mills Company." (For Men's Wearing-Apparel, Suits, Overcoats, and the Like.)	E. S. Rogers	76	Aug. 30	84	1287
"Gone to the Front." (For Plug-Tobacco)	Seiter & Kappes	73	Aug. 16	84	987
"How to Catch a Spaniard." (For Playing-Cards)	New York Consolidated Card Company.	75	Aug. 23	84	1147
"Mystic Playing Cards." (For Playing-Cards)	United States Playing Card Company.	77	Sept. 6	84	1441
"Self Fastening Knobs for Pot Covers"	I. Finesilver	72	July 26	84	513
"Ziegler's Effervescent Soda Water Tablets"	George Ziegler Company	71	July 19	84	315

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